



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 09:57 PM GMT

PDB ID : 4V5D
Title : Structure of the *Thermus thermophilus* 70S ribosome in complex with mRNA, paromomycin, acylated A- and P-site tRNAs, and E-site tRNA.
Authors : Voorhees, R.M.; Weixlbaumer, A.; Loakes, D.; Kelley, A.C.; Ramakrishnan, V.
Deposited on : 2009-03-24
Resolution : 3.50 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

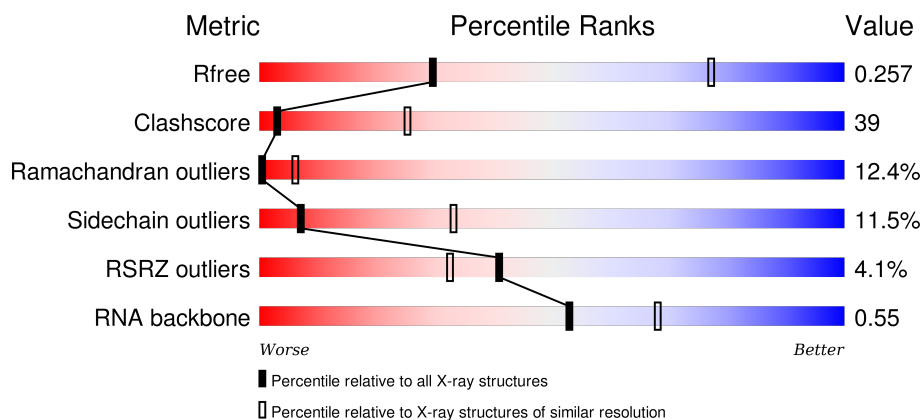
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.50 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



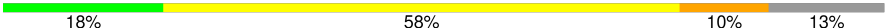
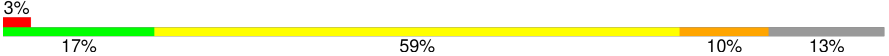
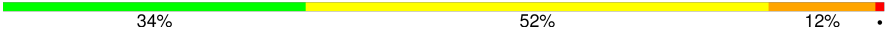
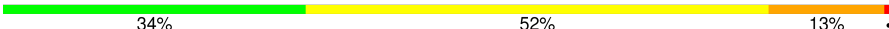
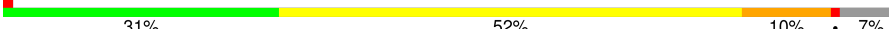
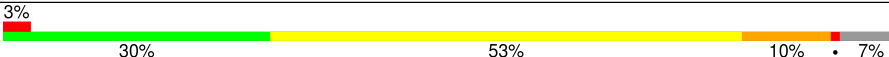


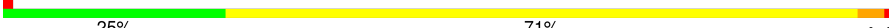
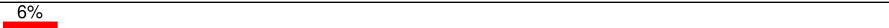

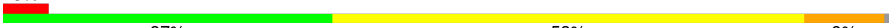
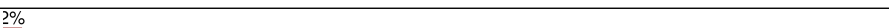



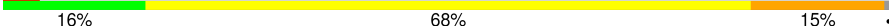

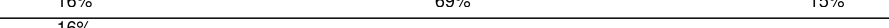
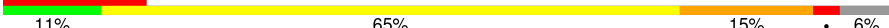


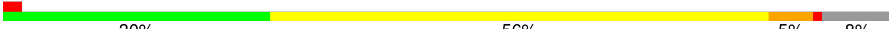


| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| R_{free} | 91344 | 1051 (3.60-3.40) |
| Clashscore | 102246 | 1157 (3.60-3.40) |
| Ramachandran outliers | 100387 | 1120 (3.60-3.40) |
| Sidechain outliers | 100360 | 1121 (3.60-3.40) |
| RSRZ outliers | 91569 | 1058 (3.60-3.40) |
| RNA backbone | 2183 | 1050 (4.20-2.80) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | AA | 1522 | <div> <div>2%</div> <div>27% 60% 11% ..</div> </div> |
| 1 | CA | 1522 | <div> <div>2%</div> <div>26% 61% 11% ..</div> </div> |
| 2 | AB | 256 | <div> <div>3%</div> <div>17% 58% 14% • 8%</div> </div> |
| 2 | CB | 256 | <div> <div>2%</div> <div>17% 58% 14% • 8%</div> </div> |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 3 | AC | 239 |  |
| 3 | CC | 239 |  |
| 4 | AD | 209 |  |
| 4 | CD | 209 |  |
| 5 | AE | 162 |  |
| 5 | CE | 162 |  |
| 6 | AF | 101 |  |
| 6 | CF | 101 |  |
| 7 | AG | 156 |  |
| 7 | CG | 156 |  |
| 8 | AH | 138 |  |
| 8 | CH | 138 |  |
| 9 | AI | 128 |  |
| 9 | CI | 128 |  |
| 10 | AJ | 105 |  |
| 10 | CJ | 105 |  |
| 11 | AK | 129 |  |
| 11 | CK | 129 |  |
| 12 | AL | 135 |  |
| 12 | CL | 135 |  |
| 13 | AM | 126 |  |
| 13 | CM | 126 |  |
| 14 | AN | 61 |  |
| 14 | CN | 61 |  |
| 15 | AO | 89 |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 15 | CO | 89 | |
| 16 | AP | 88 | |
| 16 | CP | 88 | |
| 17 | AQ | 105 | |
| 17 | CQ | 105 | |
| 18 | AR | 88 | |
| 18 | CR | 88 | |
| 19 | AS | 93 | |
| 19 | CS | 93 | |
| 20 | AT | 106 | |
| 20 | CT | 106 | |
| 21 | AU | 27 | |
| 21 | CU | 27 | |
| 22 | AV | 77 | |
| 22 | AY | 77 | |
| 22 | CV | 77 | |
| 22 | CY | 77 | |
| 23 | AW | 76 | |
| 23 | CW | 76 | |
| 24 | AX | 11 | |
| 24 | CX | 11 | |
| 25 | B0 | 85 | |
| 25 | D0 | 85 | |
| 26 | B1 | 98 | |
| 26 | D1 | 98 | |

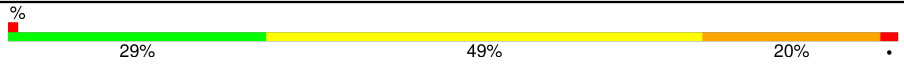

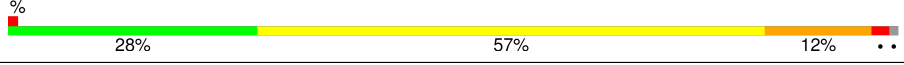
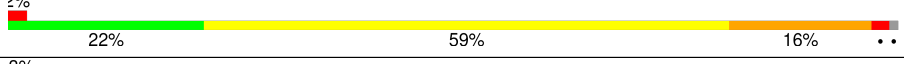
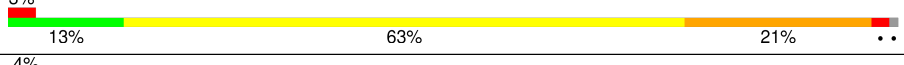
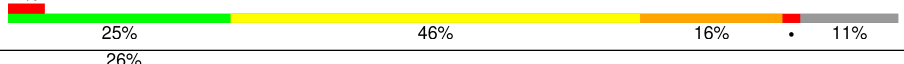
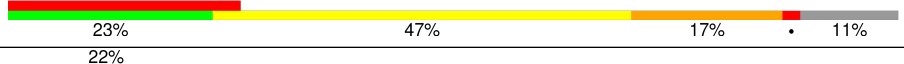
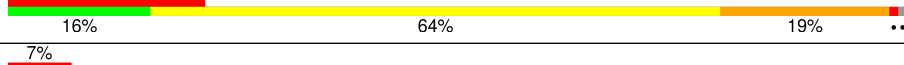
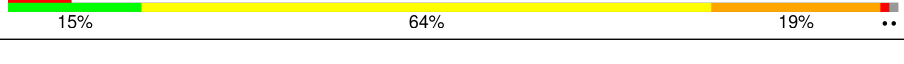
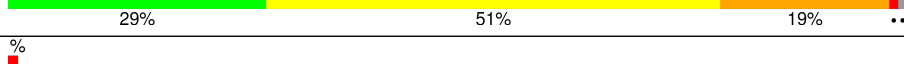

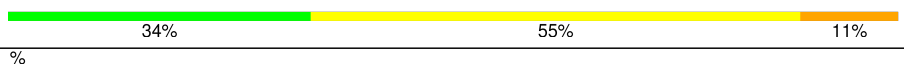
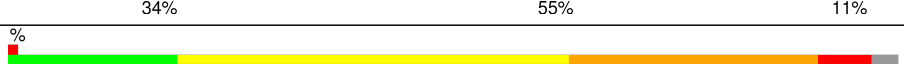
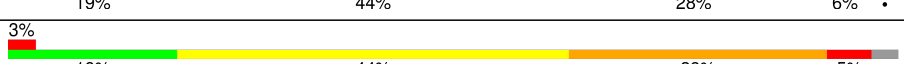
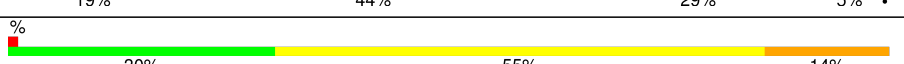
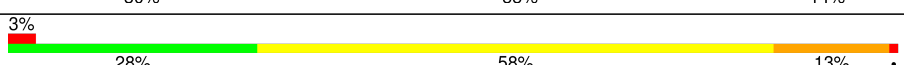
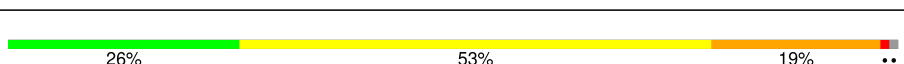
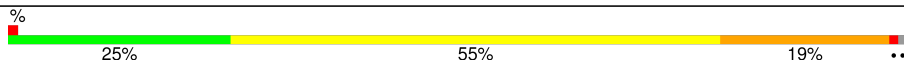
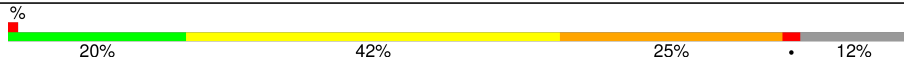


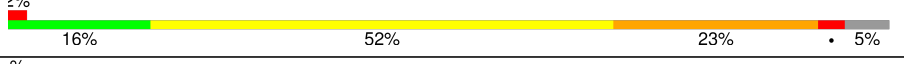

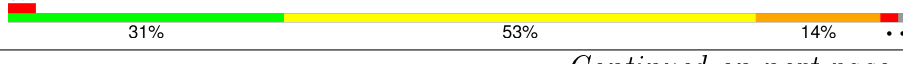

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 27 | B2 | 72 | |
| 27 | D2 | 72 | |
| 28 | B3 | 60 | |
| 28 | D3 | 60 | |
| 29 | B4 | 71 | |
| 29 | D4 | 71 | |
| 30 | B5 | 60 | |
| 30 | D5 | 60 | |
| 31 | B6 | 54 | |
| 31 | D6 | 54 | |
| 32 | B7 | 49 | |
| 32 | D7 | 49 | |
| 33 | B8 | 65 | |
| 33 | D8 | 65 | |
| 34 | B9 | 37 | |
| 34 | D9 | 37 | |
| 35 | BA | 2822 | |
| 35 | DA | 2822 | |
| 36 | BB | 122 | |
| 36 | DB | 122 | |
| 37 | BC | 229 | |
| 37 | DC | 229 | |
| 38 | BD | 276 | |
| 38 | DD | 276 | |
| 39 | BE | 206 | |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 39 | DE | 206 |  |
| 40 | BF | 210 |  |
| 40 | DF | 210 |  |
| 41 | BG | 182 |  |
| 41 | DG | 182 |  |
| 42 | BH | 180 |  |
| 42 | DH | 180 |  |
| 43 | BI | 148 |  |
| 43 | DI | 148 |  |
| 44 | BN | 140 |  |
| 44 | DN | 140 |  |
| 45 | BO | 122 |  |
| 45 | DO | 122 |  |
| 46 | BP | 150 |  |
| 46 | DP | 150 |  |
| 47 | BQ | 141 |  |
| 47 | DQ | 141 |  |
| 48 | BR | 118 |  |
| 48 | DR | 118 |  |
| 49 | BS | 112 |  |
| 49 | DS | 112 |  |
| 50 | BT | 146 |  |
| 50 | DT | 146 |  |
| 51 | BU | 118 |  |
| 51 | DU | 118 |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 52 | BV | 101 | |
| 52 | DV | 101 | |
| 53 | BW | 113 | |
| 53 | DW | 113 | |
| 54 | BX | 96 | |
| 54 | DX | 96 | |
| 55 | BY | 110 | |
| 55 | DY | 110 | |
| 56 | BZ | 206 | |
| 56 | DZ | 206 | |

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 57 | MG | AA | 1610 | - | - | - | X |
| 57 | MG | AA | 1623 | - | - | - | X |
| 57 | MG | AA | 1630 | - | - | - | X |
| 57 | MG | AA | 1634 | - | - | - | X |
| 57 | MG | AA | 1636 | - | - | - | X |
| 57 | MG | AA | 1664 | - | - | - | X |
| 57 | MG | AA | 1666 | - | - | - | X |
| 57 | MG | AA | 1682 | - | - | - | X |
| 57 | MG | AA | 1688 | - | - | - | X |
| 57 | MG | AA | 1694 | - | - | - | X |
| 57 | MG | AA | 1705 | - | - | - | X |
| 57 | MG | AA | 1706 | - | - | - | X |
| 57 | MG | AA | 1712 | - | - | - | X |
| 57 | MG | AA | 1715 | - | - | - | X |
| 57 | MG | AA | 1719 | - | - | - | X |
| 57 | MG | AA | 1721 | - | - | - | X |
| 57 | MG | AA | 1739 | - | - | - | X |
| 57 | MG | AA | 1773 | - | - | - | X |
| 57 | MG | AA | 1774 | - | - | - | X |
| 57 | MG | AA | 1781 | - | - | - | X |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 57 | MG | AA | 1786 | - | - | - | X |
| 57 | MG | AA | 1788 | - | - | - | X |
| 57 | MG | B0 | 101 | - | - | - | X |
| 57 | MG | B2 | 602 | - | - | - | X |
| 57 | MG | B7 | 101 | - | - | - | X |
| 57 | MG | BA | 3001 | - | - | - | X |
| 57 | MG | BA | 3004 | - | - | - | X |
| 57 | MG | BA | 3005 | - | - | - | X |
| 57 | MG | BA | 3007 | - | - | - | X |
| 57 | MG | BA | 3009 | - | - | - | X |
| 57 | MG | BA | 3011 | - | - | - | X |
| 57 | MG | BA | 3012 | - | - | - | X |
| 57 | MG | BA | 3021 | - | - | - | X |
| 57 | MG | BA | 3022 | - | - | - | X |
| 57 | MG | BA | 3023 | - | - | - | X |
| 57 | MG | BA | 3025 | - | - | - | X |
| 57 | MG | BA | 3026 | - | - | - | X |
| 57 | MG | BA | 3028 | - | - | - | X |
| 57 | MG | BA | 3035 | - | - | - | X |
| 57 | MG | BA | 3039 | - | - | - | X |
| 57 | MG | BA | 3045 | - | - | - | X |
| 57 | MG | BA | 3046 | - | - | - | X |
| 57 | MG | BA | 3047 | - | - | - | X |
| 57 | MG | BA | 3048 | - | - | - | X |
| 57 | MG | BA | 3053 | - | - | - | X |
| 57 | MG | BA | 3055 | - | - | - | X |
| 57 | MG | BA | 3058 | - | - | - | X |
| 57 | MG | BA | 3060 | - | - | - | X |
| 57 | MG | BA | 3062 | - | - | - | X |
| 57 | MG | BA | 3064 | - | - | - | X |
| 57 | MG | BA | 3065 | - | - | - | X |
| 57 | MG | BA | 3067 | - | - | - | X |
| 57 | MG | BA | 3069 | - | - | - | X |
| 57 | MG | BA | 3070 | - | - | - | X |
| 57 | MG | BA | 3082 | - | - | - | X |
| 57 | MG | BA | 3086 | - | - | - | X |
| 57 | MG | BA | 3091 | - | - | - | X |
| 57 | MG | BA | 3092 | - | - | - | X |
| 57 | MG | BA | 3097 | - | - | - | X |
| 57 | MG | BA | 3105 | - | - | - | X |
| 57 | MG | BA | 3110 | - | - | - | X |
| 57 | MG | BA | 3112 | - | - | - | X |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 57 | MG | BA | 3113 | - | - | - | X |
| 57 | MG | BA | 3114 | - | - | - | X |
| 57 | MG | BA | 3117 | - | - | - | X |
| 57 | MG | BA | 3118 | - | - | - | X |
| 57 | MG | BA | 3120 | - | - | - | X |
| 57 | MG | BA | 3123 | - | - | - | X |
| 57 | MG | BA | 3129 | - | - | - | X |
| 57 | MG | BA | 3143 | - | - | - | X |
| 57 | MG | BA | 3150 | - | - | - | X |
| 57 | MG | BA | 3161 | - | - | - | X |
| 57 | MG | BA | 3169 | - | - | - | X |
| 57 | MG | BA | 3170 | - | - | - | X |
| 57 | MG | BA | 3178 | - | - | - | X |
| 57 | MG | BA | 3180 | - | - | - | X |
| 57 | MG | BA | 3190 | - | - | - | X |
| 57 | MG | BA | 3194 | - | - | - | X |
| 57 | MG | BA | 3200 | - | - | - | X |
| 57 | MG | BA | 3215 | - | - | - | X |
| 57 | MG | BA | 3216 | - | - | - | X |
| 57 | MG | BA | 3229 | - | - | - | X |
| 57 | MG | BA | 3233 | - | - | - | X |
| 57 | MG | BA | 3237 | - | - | - | X |
| 57 | MG | BA | 3239 | - | - | - | X |
| 57 | MG | BA | 3241 | - | - | - | X |
| 57 | MG | BA | 3255 | - | - | - | X |
| 57 | MG | BA | 3256 | - | - | - | X |
| 57 | MG | BA | 3266 | - | - | - | X |
| 57 | MG | BA | 3268 | - | - | - | X |
| 57 | MG | BA | 3271 | - | - | - | X |
| 57 | MG | BA | 3272 | - | - | - | X |
| 57 | MG | BA | 3275 | - | - | - | X |
| 57 | MG | BA | 3279 | - | - | - | X |
| 57 | MG | BA | 3291 | - | - | - | X |
| 57 | MG | BA | 3295 | - | - | - | X |
| 57 | MG | BA | 3299 | - | - | - | X |
| 57 | MG | BA | 3300 | - | - | - | X |
| 57 | MG | BA | 3301 | - | - | - | X |
| 57 | MG | BA | 3307 | - | - | - | X |
| 57 | MG | BA | 3340 | - | - | - | X |
| 57 | MG | BA | 3366 | - | - | - | X |
| 57 | MG | BA | 3375 | - | - | - | X |
| 57 | MG | BA | 3376 | - | - | - | X |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 57 | MG | BA | 3379 | - | - | - | X |
| 57 | MG | BA | 3381 | - | - | - | X |
| 57 | MG | BA | 3382 | - | - | - | X |
| 57 | MG | BA | 3398 | - | - | - | X |
| 57 | MG | BA | 3403 | - | - | - | X |
| 57 | MG | BA | 3409 | - | - | - | X |
| 57 | MG | BA | 3410 | - | - | - | X |
| 57 | MG | BB | 203 | - | - | - | X |
| 57 | MG | BB | 204 | - | - | - | X |
| 57 | MG | BB | 205 | - | - | - | X |
| 57 | MG | BB | 212 | - | - | - | X |
| 57 | MG | BN | 201 | - | - | - | X |
| 57 | MG | BO | 201 | - | - | - | X |
| 57 | MG | BX | 102 | - | - | - | X |
| 57 | MG | CA | 1609 | - | - | - | X |
| 57 | MG | CA | 1623 | - | - | - | X |
| 57 | MG | CA | 1625 | - | - | - | X |
| 57 | MG | CA | 1634 | - | - | - | X |
| 57 | MG | CA | 1636 | - | - | - | X |
| 57 | MG | CA | 1638 | - | - | - | X |
| 57 | MG | CA | 1652 | - | - | - | X |
| 57 | MG | CA | 1678 | - | - | - | X |
| 57 | MG | CA | 1686 | - | - | - | X |
| 57 | MG | CA | 1690 | - | - | - | X |
| 57 | MG | CA | 1695 | - | - | - | X |
| 57 | MG | CA | 1707 | - | - | - | X |
| 57 | MG | CA | 1709 | - | - | - | X |
| 57 | MG | CA | 1716 | - | - | - | X |
| 57 | MG | CA | 1719 | - | - | - | X |
| 57 | MG | CA | 1721 | - | - | - | X |
| 57 | MG | CA | 1739 | - | - | - | X |
| 57 | MG | CA | 1783 | - | - | - | X |
| 57 | MG | CA | 1785 | - | - | - | X |
| 57 | MG | CA | 1789 | - | - | - | X |
| 57 | MG | D2 | 601 | - | - | - | X |
| 57 | MG | D7 | 101 | - | - | - | X |
| 57 | MG | D7 | 102 | - | - | - | X |
| 57 | MG | DA | 3005 | - | - | - | X |
| 57 | MG | DA | 3006 | - | - | - | X |
| 57 | MG | DA | 3010 | - | - | - | X |
| 57 | MG | DA | 3012 | - | - | - | X |
| 57 | MG | DA | 3013 | - | - | - | X |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 57 | MG | DA | 3018 | - | - | - | X |
| 57 | MG | DA | 3022 | - | - | - | X |
| 57 | MG | DA | 3023 | - | - | - | X |
| 57 | MG | DA | 3024 | - | - | - | X |
| 57 | MG | DA | 3027 | - | - | - | X |
| 57 | MG | DA | 3029 | - | - | - | X |
| 57 | MG | DA | 3036 | - | - | - | X |
| 57 | MG | DA | 3046 | - | - | - | X |
| 57 | MG | DA | 3047 | - | - | - | X |
| 57 | MG | DA | 3048 | - | - | - | X |
| 57 | MG | DA | 3049 | - | - | - | X |
| 57 | MG | DA | 3054 | - | - | - | X |
| 57 | MG | DA | 3056 | - | - | - | X |
| 57 | MG | DA | 3061 | - | - | - | X |
| 57 | MG | DA | 3063 | - | - | - | X |
| 57 | MG | DA | 3066 | - | - | - | X |
| 57 | MG | DA | 3070 | - | - | - | X |
| 57 | MG | DA | 3071 | - | - | - | X |
| 57 | MG | DA | 3074 | - | - | - | X |
| 57 | MG | DA | 3083 | - | - | - | X |
| 57 | MG | DA | 3088 | - | - | - | X |
| 57 | MG | DA | 3090 | - | - | - | X |
| 57 | MG | DA | 3092 | - | - | - | X |
| 57 | MG | DA | 3093 | - | - | - | X |
| 57 | MG | DA | 3098 | - | - | - | X |
| 57 | MG | DA | 3101 | - | - | - | X |
| 57 | MG | DA | 3106 | - | - | - | X |
| 57 | MG | DA | 3118 | - | - | - | X |
| 57 | MG | DA | 3119 | - | - | - | X |
| 57 | MG | DA | 3121 | - | - | - | X |
| 57 | MG | DA | 3124 | - | - | - | X |
| 57 | MG | DA | 3130 | - | - | - | X |
| 57 | MG | DA | 3144 | - | - | - | X |
| 57 | MG | DA | 3146 | - | - | - | X |
| 57 | MG | DA | 3148 | - | - | - | X |
| 57 | MG | DA | 3152 | - | - | - | X |
| 57 | MG | DA | 3158 | - | - | - | X |
| 57 | MG | DA | 3163 | - | - | - | X |
| 57 | MG | DA | 3165 | - | - | - | X |
| 57 | MG | DA | 3171 | - | - | - | X |
| 57 | MG | DA | 3172 | - | - | - | X |
| 57 | MG | DA | 3178 | - | - | - | X |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 57 | MG | DA | 3182 | - | - | - | X |
| 57 | MG | DA | 3184 | - | - | - | X |
| 57 | MG | DA | 3192 | - | - | - | X |
| 57 | MG | DA | 3196 | - | - | - | X |
| 57 | MG | DA | 3202 | - | - | - | X |
| 57 | MG | DA | 3217 | - | - | - | X |
| 57 | MG | DA | 3222 | - | - | - | X |
| 57 | MG | DA | 3231 | - | - | - | X |
| 57 | MG | DA | 3235 | - | - | - | X |
| 57 | MG | DA | 3239 | - | - | - | X |
| 57 | MG | DA | 3241 | - | - | - | X |
| 57 | MG | DA | 3258 | - | - | - | X |
| 57 | MG | DA | 3270 | - | - | - | X |
| 57 | MG | DA | 3274 | - | - | - | X |
| 57 | MG | DA | 3283 | - | - | - | X |
| 57 | MG | DA | 3293 | - | - | - | X |
| 57 | MG | DA | 3297 | - | - | - | X |
| 57 | MG | DA | 3341 | - | - | - | X |
| 57 | MG | DA | 3364 | - | - | - | X |
| 57 | MG | DA | 3378 | - | - | - | X |
| 57 | MG | DA | 3380 | - | - | - | X |
| 57 | MG | DA | 3395 | - | - | - | X |
| 57 | MG | DA | 3399 | - | - | - | X |
| 57 | MG | DA | 3409 | - | - | - | X |
| 57 | MG | DB | 212 | - | - | - | X |
| 57 | MG | DD | 301 | - | - | - | X |
| 57 | MG | DF | 302 | - | - | - | X |
| 57 | MG | DN | 201 | - | - | - | X |
| 57 | MG | DO | 201 | - | - | - | X |
| 58 | PAR | AA | 1799 | - | - | - | X |
| 58 | PAR | CA | 1800 | - | - | - | X |

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 296042 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 16S RRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|---------|-------|
| 1 | AA | 1504 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 32329 | 14390 | 5992 | 10444 | 1503 | | | |
| 1 | CA | 1504 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 32329 | 14390 | 5992 | 10444 | 1503 | | | |

- Molecule 2 is a protein called 30S RIBOSOMAL PROTEIN S2.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 2 | AB | 235 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1901 | 1213 | 342 | 341 | 5 | | | |
| 2 | CB | 235 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1901 | 1213 | 342 | 341 | 5 | | | |

- Molecule 3 is a protein called 30S RIBOSOMAL PROTEIN S3.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 3 | AC | 207 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1613 | 1016 | 315 | 281 | 1 | | | |
| 3 | CC | 207 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1613 | 1016 | 315 | 281 | 1 | | | |

- Molecule 4 is a protein called 30S RIBOSOMAL PROTEIN S4.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 4 | AD | 208 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1703 | 1066 | 339 | 291 | 7 | | | |
| 4 | CD | 208 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1703 | 1066 | 339 | 291 | 7 | | | |

- Molecule 5 is a protein called 30S RIBOSOMAL PROTEIN S5.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 5 | AE | 151 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1147 | 724 | 218 | 201 | 4 | | | |
| 5 | CE | 151 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1147 | 724 | 218 | 201 | 4 | | | |

- Molecule 6 is a protein called 30S RIBOSOMAL PROTEIN S6.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 6 | AF | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 843 | 531 | 155 | 154 | 3 | | | |
| 6 | CF | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 843 | 531 | 155 | 154 | 3 | | | |

- Molecule 7 is a protein called 30S RIBOSOMAL PROTEIN S7.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 7 | AG | 155 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1257 | 781 | 252 | 218 | 6 | | | |
| 7 | CG | 155 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1257 | 781 | 252 | 218 | 6 | | | |

- Molecule 8 is a protein called 30S RIBOSOMAL PROTEIN S8.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 8 | AH | 138 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1116 | 705 | 215 | 193 | 3 | | | |
| 8 | CH | 138 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1116 | 705 | 215 | 193 | 3 | | | |

- Molecule 9 is a protein called 30S RIBOSOMAL PROTEIN S9.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|--|---------|---------|-------|
| 9 | AI | 127 | Total | C | N | O | | 0 | 0 | 0 |
| | | | 1011 | 639 | 198 | 174 | | | | |
| 9 | CI | 127 | Total | C | N | O | | 0 | 0 | 0 |
| | | | 1011 | 639 | 198 | 174 | | | | |

- Molecule 10 is a protein called 30S RIBOSOMAL PROTEIN S10.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 10 | AJ | 99 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 795 | 499 | 157 | 138 | 1 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 10 | CJ | 99 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 795 | 499 | 157 | 138 | 1 | | | |

- Molecule 11 is a protein called 30S RIBOSOMAL PROTEIN S11.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 11 | AK | 119 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 885 | 549 | 168 | 165 | 3 | | | |
| 11 | CK | 119 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 885 | 549 | 168 | 165 | 3 | | | |

- Molecule 12 is a protein called 30S RIBOSOMAL PROTEIN S12.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 12 | AL | 125 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 971 | 611 | 196 | 163 | 1 | | | |
| 12 | CL | 125 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 971 | 611 | 196 | 163 | 1 | | | |

- Molecule 13 is a protein called 30S RIBOSOMAL PROTEIN S13.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 13 | AM | 125 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 988 | 611 | 206 | 169 | 2 | | | |
| 13 | CM | 125 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 988 | 611 | 206 | 169 | 2 | | | |

- Molecule 14 is a protein called 30S RIBOSOMAL PROTEIN S14.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| 14 | AN | 60 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 492 | 312 | 104 | 72 | 4 | | | |
| 14 | CN | 60 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 492 | 312 | 104 | 72 | 4 | | | |

- Molecule 15 is a protein called 30S RIBOSOMAL PROTEIN S15.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 15 | AO | 88 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 734 | 459 | 147 | 126 | 2 | | | |
| 15 | CO | 88 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 734 | 459 | 147 | 126 | 2 | | | |

- Molecule 16 is a protein called 30S RIBOSOMAL PROTEIN S16.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 16 | AP | 84 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 701 | 443 | 140 | 117 | 1 | | | |
| 16 | CP | 84 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 701 | 443 | 140 | 117 | 1 | | | |

- Molecule 17 is a protein called 30S RIBOSOMAL PROTEIN S17.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 17 | AQ | 100 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 824 | 528 | 152 | 142 | 2 | | | |
| 17 | CQ | 100 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 824 | 528 | 152 | 142 | 2 | | | |

- Molecule 18 is a protein called 30S RIBOSOMAL PROTEIN S18.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---------|---------|-------|
| 18 | AR | 70 | Total | C | N | O | 0 | 0 | 0 |
| | | | 574 | 367 | 112 | 95 | | | |
| 18 | CR | 70 | Total | C | N | O | 0 | 0 | 0 |
| | | | 574 | 367 | 112 | 95 | | | |

- Molecule 19 is a protein called 30S RIBOSOMAL PROTEIN S19.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 19 | AS | 79 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 630 | 403 | 115 | 110 | 2 | | | |
| 19 | CS | 79 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 630 | 403 | 115 | 110 | 2 | | | |

- Molecule 20 is a protein called 30S RIBOSOMAL PROTEIN S20.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 20 | AT | 99 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 763 | 470 | 162 | 129 | 2 | | | |
| 20 | CT | 99 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 763 | 470 | 162 | 129 | 2 | | | |

- Molecule 21 is a protein called 30S RIBOSOMAL PROTEIN THX.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 21 | AU | 25 | Total | C | N | O | 0 | 0 | 1 |
| | | | 209 | 128 | 51 | 30 | | | |
| 21 | CU | 25 | Total | C | N | O | 0 | 0 | 1 |
| | | | 209 | 128 | 51 | 30 | | | |

- Molecule 22 is a RNA chain called P AND A-SITE PHE-TRNA PHE.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|---------|-------|
| 22 | AV | 77 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1630 | 732 | 292 | 531 | 75 | | | |
| 22 | AY | 77 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1630 | 732 | 292 | 531 | 75 | | | |
| 22 | CV | 77 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1630 | 732 | 292 | 531 | 75 | | | |
| 22 | CY | 77 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1630 | 732 | 292 | 531 | 75 | | | |

- Molecule 23 is a RNA chain called E-SITE TRNA PHE.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|---------|-------|
| 23 | AW | 76 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1619 | 723 | 290 | 531 | 75 | | | |
| 23 | CW | 76 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1619 | 723 | 290 | 531 | 75 | | | |

- Molecule 24 is a RNA chain called MRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|----|---------|---------|-------|
| 24 | AX | 11 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 227 | 104 | 39 | 74 | 10 | | | |
| 24 | CX | 11 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 227 | 104 | 39 | 74 | 10 | | | |

- Molecule 25 is a protein called 50S RIBOSOMAL PROTEIN L27.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 25 | B0 | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 662 | 410 | 140 | 111 | 1 | | | |
| 25 | D0 | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 662 | 410 | 140 | 111 | 1 | | | |

- Molecule 26 is a protein called 50S RIBOSOMAL PROTEIN L28.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 26 | B1 | 94 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 732 | 460 | 146 | 125 | 1 | | | |
| 26 | D1 | 94 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 732 | 460 | 146 | 125 | 1 | | | |

- Molecule 27 is a protein called 50S RIBOSOMAL PROTEIN L29.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 27 | B2 | 71 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 598 | 370 | 121 | 106 | 1 | | | |
| 27 | D2 | 71 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 598 | 370 | 121 | 106 | 1 | | | |

- Molecule 28 is a protein called 50S RIBOSOMAL PROTEIN L30.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 28 | B3 | 60 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 468 | 298 | 91 | 78 | 1 | | | |
| 28 | D3 | 60 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 468 | 298 | 91 | 78 | 1 | | | |

- Molecule 29 is a protein called 50S RIBOSOMAL PROTEIN L31.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 29 | B4 | 31 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 226 | 142 | 37 | 43 | 4 | | | |
| 29 | D4 | 31 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 226 | 142 | 37 | 43 | 4 | | | |

- Molecule 30 is a protein called 50S RIBOSOMAL PROTEIN L32.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 30 | B5 | 59 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 459 | 288 | 90 | 76 | 5 | | | |
| 30 | D5 | 59 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 459 | 288 | 90 | 76 | 5 | | | |

- Molecule 31 is a protein called 50S RIBOSOMAL PROTEIN L33.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 31 | B6 | 45 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 381 | 235 | 78 | 64 | 4 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 31 | D6 | 45 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 381 | 235 | 78 | 64 | 4 | | | |

- Molecule 32 is a protein called 50S RIBOSOMAL PROTEIN L34.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| 32 | B7 | 49 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 419 | 257 | 105 | 55 | 2 | | | |
| 32 | D7 | 49 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 419 | 257 | 105 | 55 | 2 | | | |

- Molecule 33 is a protein called 50S RIBOSOMAL PROTEIN L35.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| 33 | B8 | 64 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 508 | 326 | 102 | 78 | 2 | | | |
| 33 | D8 | 64 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 508 | 326 | 102 | 78 | 2 | | | |

- Molecule 34 is a protein called 50S RIBOSOMAL PROTEIN L36.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 34 | B9 | 36 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 299 | 183 | 67 | 46 | 3 | | | |
| 34 | D9 | 36 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 299 | 183 | 67 | 46 | 3 | | | |

- Molecule 35 is a RNA chain called 23S RIBOSOMAL RNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| 35 | BA | 2807 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 60459 | 26907 | 11311 | 19435 | 2806 | | | |
| 35 | DA | 2807 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 60459 | 26907 | 11311 | 19435 | 2806 | | | |

- Molecule 36 is a RNA chain called 5S RIBOSOMAL RNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| 36 | BB | 119 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 2551 | 1136 | 471 | 826 | 118 | | | |
| 36 | DB | 119 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 2551 | 1136 | 471 | 826 | 118 | | | |

- Molecule 37 is a protein called 50S RIBOSOMAL PROTEIN L1.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 37 | BC | 191 | Total | C | N | O | 0 | 0 | 1 |
| | | | 1140 | 689 | 221 | 230 | | | |
| 37 | DC | 191 | Total | C | N | O | 0 | 0 | 1 |
| | | | 1142 | 691 | 221 | 230 | | | |

- Molecule 38 is a protein called 50S RIBOSOMAL PROTEIN L2.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 38 | BD | 272 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 2105 | 1329 | 417 | 356 | 3 | | | |
| 38 | DD | 272 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 2105 | 1329 | 417 | 356 | 3 | | | |

- Molecule 39 is a protein called 50S RIBOSOMAL PROTEIN L3.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 39 | BE | 205 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1564 | 988 | 300 | 270 | 6 | | | |
| 39 | DE | 205 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1564 | 988 | 300 | 270 | 6 | | | |

- Molecule 40 is a protein called 50S RIBOSOMAL PROTEIN L4.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 40 | BF | 208 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1624 | 1035 | 304 | 282 | 3 | | | |
| 40 | DF | 208 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1624 | 1035 | 304 | 282 | 3 | | | |

- Molecule 41 is a protein called 50S RIBOSOMAL PROTEIN L5.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 41 | BG | 181 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1474 | 942 | 268 | 260 | 4 | | | |
| 41 | DG | 181 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1474 | 942 | 268 | 260 | 4 | | | |

- Molecule 42 is a protein called 50S RIBOSOMAL PROTEIN L6.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 42 | BH | 160 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1223 | 773 | 229 | 220 | 1 | | | |
| 42 | DH | 160 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1223 | 773 | 229 | 220 | 1 | | | |

- Molecule 43 is a protein called 50S RIBOSOMAL PROTEIN L9.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 43 | BI | 146 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1132 | 723 | 201 | 207 | 1 | | | |
| 43 | DI | 146 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1132 | 723 | 201 | 207 | 1 | | | |

- Molecule 44 is a protein called 50S RIBOSOMAL PROTEIN L13.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 44 | BN | 139 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1105 | 712 | 207 | 182 | 4 | | | |
| 44 | DN | 139 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1105 | 712 | 207 | 182 | 4 | | | |

- Molecule 45 is a protein called 50S RIBOSOMAL PROTEIN L14.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 45 | BO | 122 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 933 | 588 | 171 | 170 | 4 | | | |
| 45 | DO | 122 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 933 | 588 | 171 | 170 | 4 | | | |

- Molecule 46 is a protein called 50S RIBOSOMAL PROTEIN L15.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 46 | BP | 146 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1114 | 692 | 227 | 193 | 2 | | | |
| 46 | DP | 146 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1114 | 692 | 227 | 193 | 2 | | | |

- Molecule 47 is a protein called 50S RIBOSOMAL PROTEIN L16.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 47 | BQ | 141 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1122 | 715 | 212 | 188 | 7 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 47 | DQ | 141 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1122 | 715 | 212 | 188 | 7 | | | |

- Molecule 48 is a protein called 50S RIBOSOMAL PROTEIN L17.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|--|---------|---------|-------|
| 48 | BR | 117 | Total | C | N | O | | 0 | 0 | 0 |
| | | | 960 | 599 | 202 | 159 | | | | |
| 48 | DR | 117 | Total | C | N | O | | 0 | 0 | 0 |
| | | | 960 | 599 | 202 | 159 | | | | |

- Molecule 49 is a protein called 50S RIBOSOMAL PROTEIN L18.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|--|---------|---------|-------|
| 49 | BS | 99 | Total | C | N | O | | 0 | 0 | 1 |
| | | | 771 | 486 | 155 | 130 | | | | |
| 49 | DS | 99 | Total | C | N | O | | 0 | 0 | 1 |
| | | | 771 | 486 | 155 | 130 | | | | |

- Molecule 50 is a protein called 50S RIBOSOMAL PROTEIN L19.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 50 | BT | 138 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1142 | 710 | 235 | 196 | 1 | | | |
| 50 | DT | 138 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1142 | 710 | 235 | 196 | 1 | | | |

- Molecule 51 is a protein called 50S RIBOSOMAL PROTEIN L20.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 51 | BU | 117 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 958 | 604 | 202 | 151 | 1 | | | |
| 51 | DU | 117 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 958 | 604 | 202 | 151 | 1 | | | |

- Molecule 52 is a protein called 50S RIBOSOMAL PROTEIN L21.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 52 | BV | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 779 | 501 | 142 | 135 | 1 | | | |
| 52 | DV | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 779 | 501 | 142 | 135 | 1 | | | |

- Molecule 53 is a protein called 50S RIBOSOMAL PROTEIN L22.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 53 | BW | 113 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 896 | 563 | 176 | 155 | 2 | | | |
| 53 | DW | 113 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 896 | 563 | 176 | 155 | 2 | | | |

- Molecule 54 is a protein called 50S RIBOSOMAL PROTEIN L23.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 54 | BX | 93 | Total | C | N | O | 0 | 0 | 1 |
| | | | 726 | 471 | 132 | 123 | | | |
| 54 | DX | 93 | Total | C | N | O | 0 | 0 | 1 |
| | | | 726 | 471 | 132 | 123 | | | |

- Molecule 55 is a protein called 50S RIBOSOMAL PROTEIN L24.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 55 | BY | 101 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 776 | 500 | 149 | 123 | 4 | | | |
| 55 | DY | 101 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 776 | 500 | 149 | 123 | 4 | | | |

- Molecule 56 is a protein called 50S RIBOSOMAL PROTEIN L25.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 56 | BZ | 177 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1404 | 897 | 253 | 252 | 2 | | | |
| 56 | DZ | 177 | Total | C | N | O | S | 0 | 0 | 1 |
| | | | 1404 | 897 | 253 | 252 | 2 | | | |

- Molecule 57 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 57 | BA | 422 | Total | Mg | 0 | 0 |
| | | | 422 | 422 | | |
| 57 | CA | 199 | Total | Mg | 0 | 0 |
| | | | 199 | 199 | | |
| 57 | DF | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 57 | CV | 5 | Total | Mg | 0 | 0 |
| | | | 5 | 5 | | |

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| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|--------------|-----------|---------|---------|
| 57 | D2 | 3 | Total 3 | Mg 3 | 0 | 0 |
| 57 | BE | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AW | 8 | Total 8 | Mg 8 | 0 | 0 |
| 57 | B1 | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AN | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AX | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | CN | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | DN | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | DC | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | DD | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | B5 | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | BB | 14 | Total 14 | Mg 14 | 0 | 0 |
| 57 | DO | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AE | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | BF | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AV | 5 | Total 5 | Mg 5 | 0 | 0 |
| 57 | BX | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | B2 | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | AA | 198 | Total 198 | Mg 198 | 0 | 0 |
| 57 | D7 | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | CX | 3 | Total 3 | Mg 3 | 0 | 0 |

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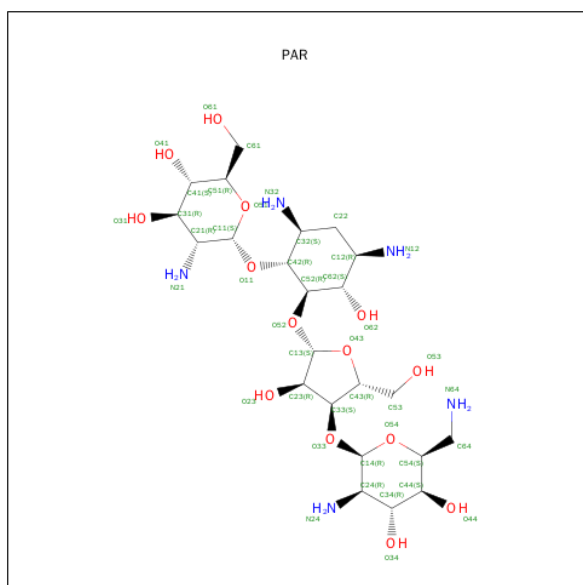
| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|--------------|-----------|---------|---------|
| 57 | DV | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | BU | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AD | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | BN | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AI | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | DS | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | DE | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | DX | 3 | Total 3 | Mg 3 | 0 | 0 |
| 57 | DA | 421 | Total 421 | Mg 421 | 0 | 0 |
| 57 | B7 | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AL | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | BV | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | AG | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | BO | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | D1 | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | CI | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | CW | 7 | Total 7 | Mg 7 | 0 | 0 |
| 57 | D5 | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | BD | 2 | Total 2 | Mg 2 | 0 | 0 |
| 57 | B0 | 1 | Total 1 | Mg 1 | 0 | 0 |
| 57 | CE | 1 | Total 1 | Mg 1 | 0 | 0 |

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| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 57 | CL | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | DB | 13 | Total | Mg | 0 | 0 |
| | | | 13 | 13 | | |

- Molecule 58 is PAROMOMYCIN (three-letter code: PAR) (formula: $C_{23}H_{45}N_5O_{14}$).



| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|----|---------|---------|
| 58 | AA | 1 | Total | C | N | O | 0 | 0 |
| | | | 42 | 23 | 5 | 14 | | |
| 58 | CA | 1 | Total | C | N | O | 0 | 0 |
| | | | 42 | 23 | 5 | 14 | | |

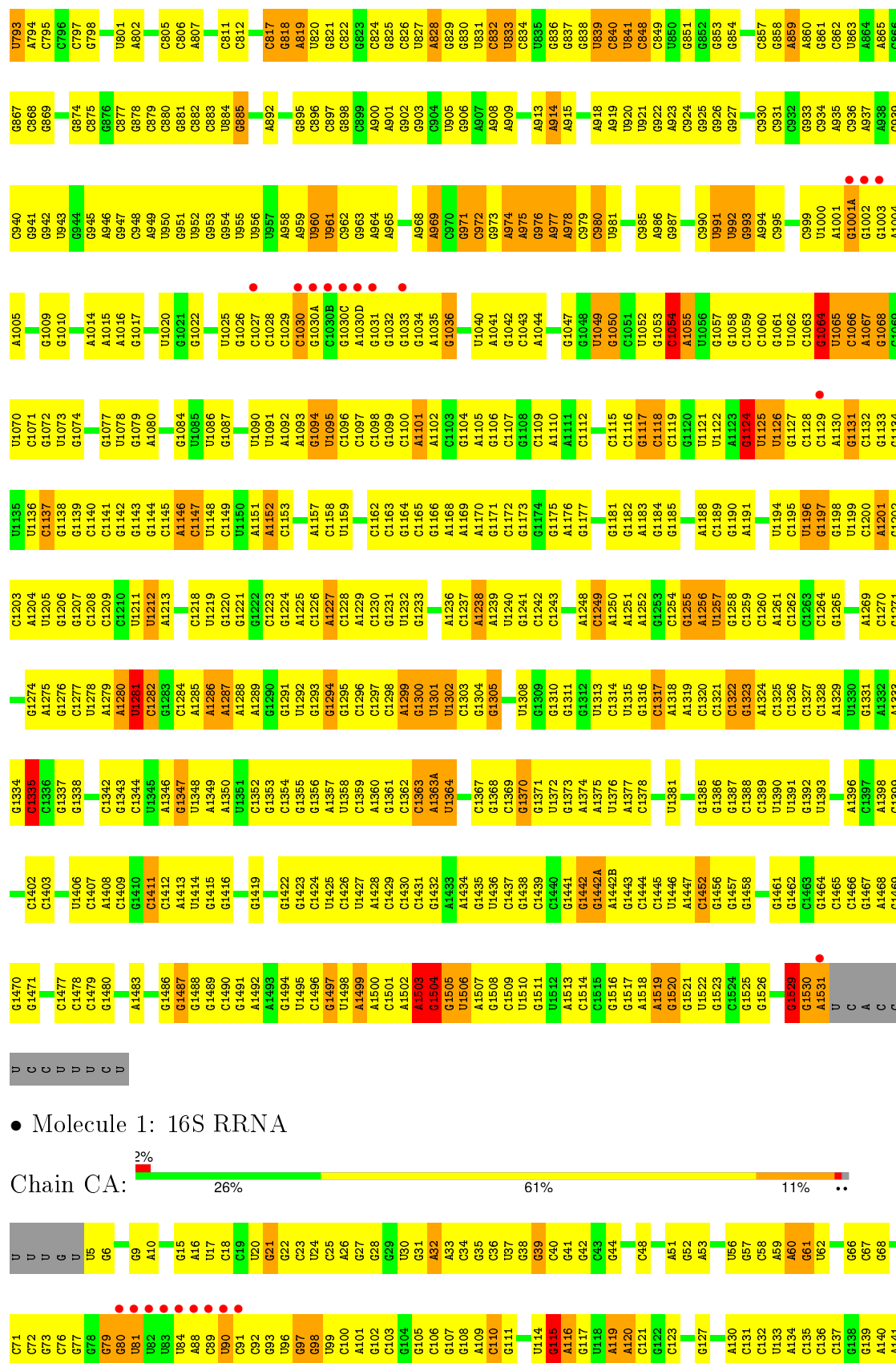
- Molecule 59 is ZINC ION (three-letter code: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 59 | CN | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 59 | AN | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 59 | B9 | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 59 | D9 | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 59 | CD | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |

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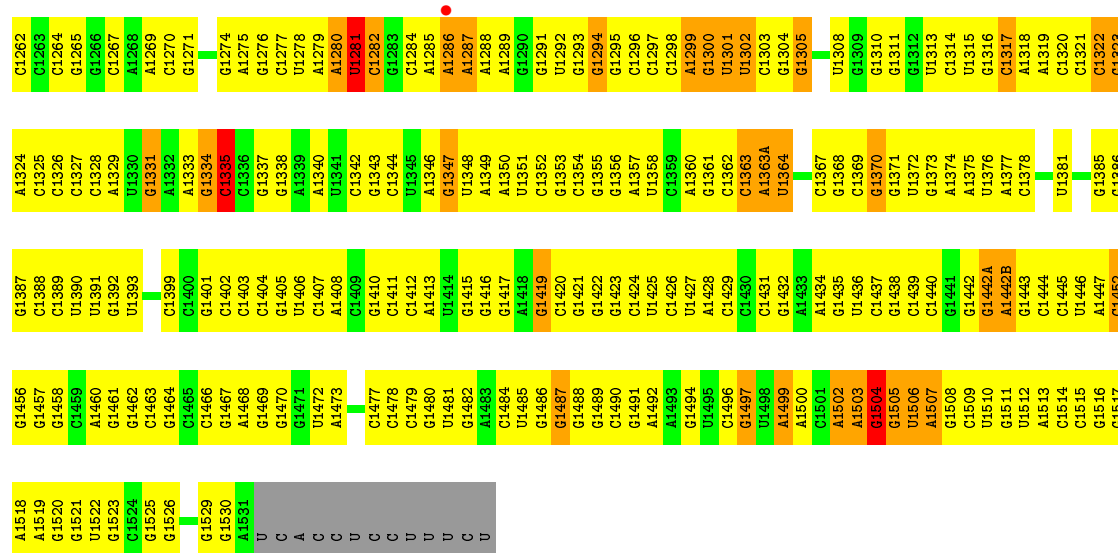
| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|------------|--------------|-----------------|--------------|----|----------------|----------------|
| 59 | AD | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |



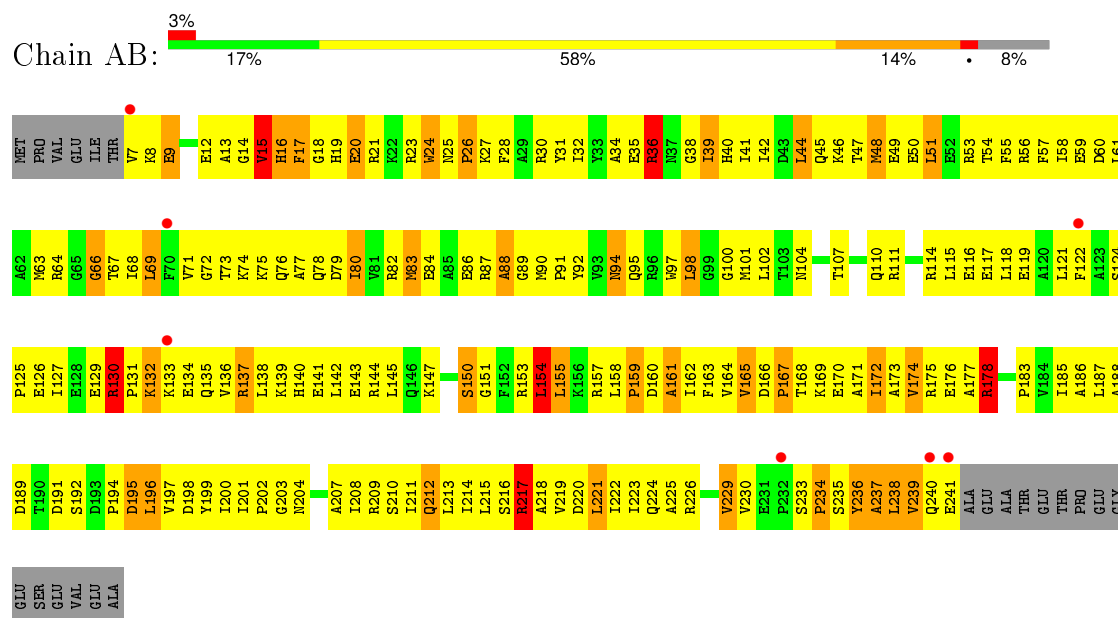
- Molecule 1: 16S rRNA

Chain CA:

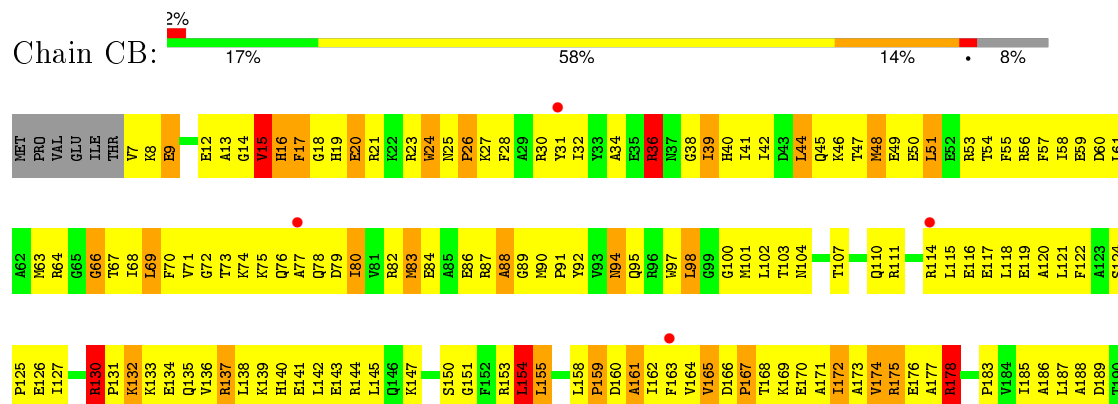


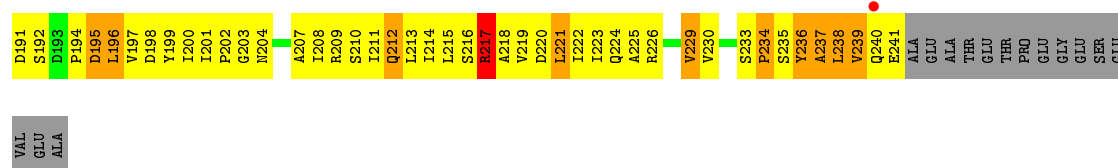


- Molecule 2: 30S RIBOSOMAL PROTEIN S2



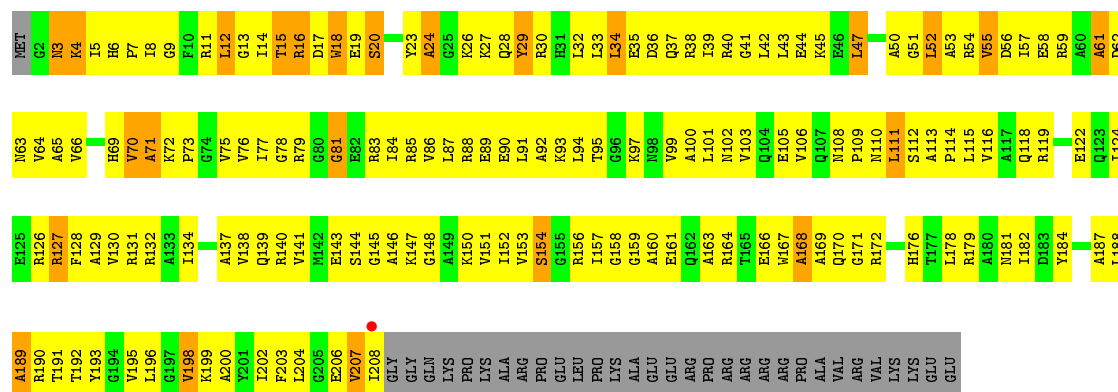
- Molecule 2: 30S RIBOSOMAL PROTEIN S2





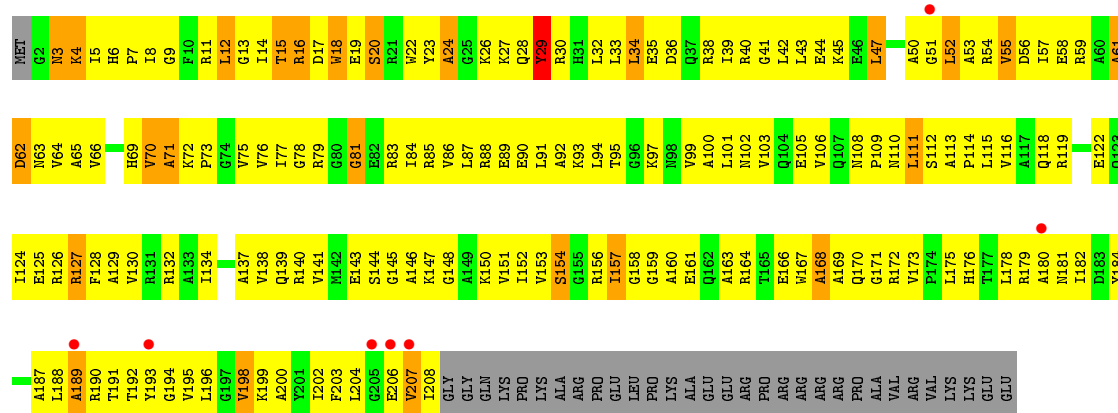
• Molecule 3: 30S RIBOSOMAL PROTEIN S3

Chain AC: 18% 58% 10% 13%



• Molecule 3: 30S RIBOSOMAL PROTEIN S3

Chain CC: 3% 17% 59% 10% 13%



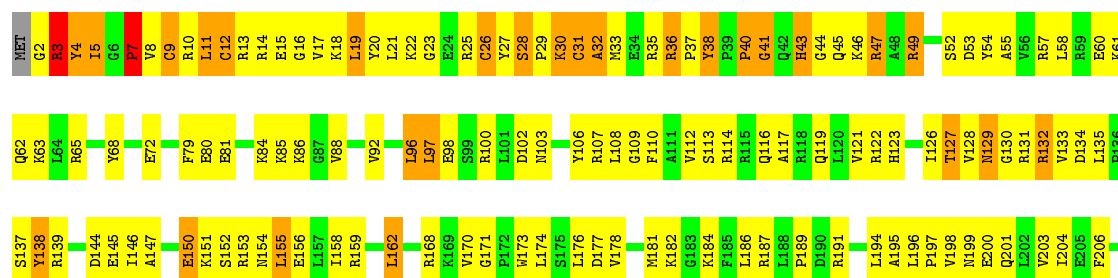
• Molecule 4: 30S RIBOSOMAL PROTEIN S4

Chain AD: 34% 52% 12%



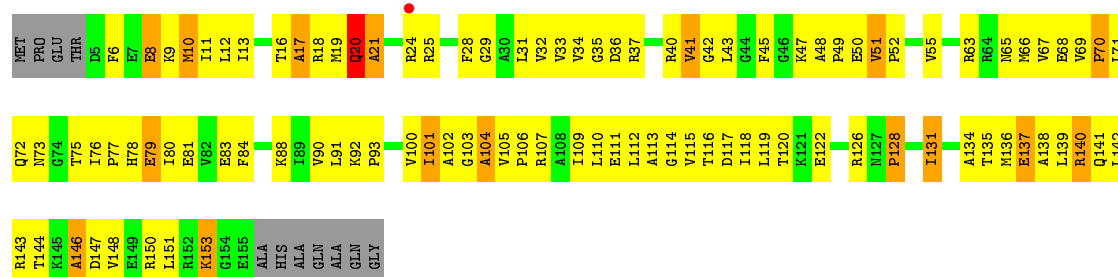
R209

- Molecule 4: 30S RIBOSOMAL PROTEIN S4

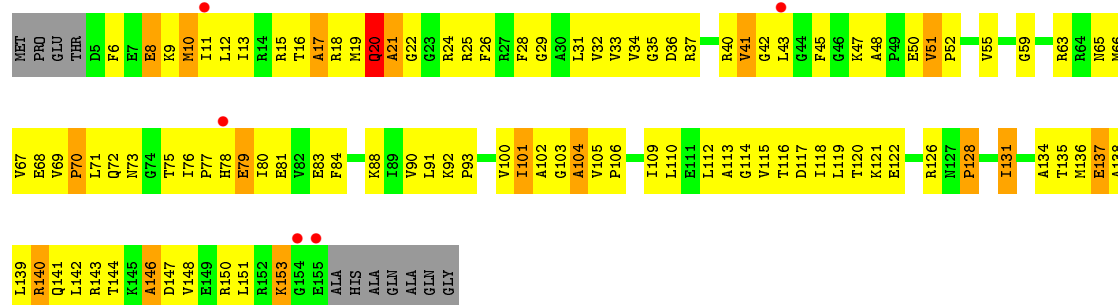
Chain CD:  34% 52% 13%

R209

- Molecule 5: 30S RIBOSOMAL PROTEIN S5

Chain AE:  31% 52% 10% 7%

- Molecule 5: 30S RIBOSOMAL PROTEIN S5

Chain CE:  3% 30% 53% 10% 7%

- Molecule 6: 30S RIBOSOMAL PROTEIN S6

Chain AF:  24% 70% 5%



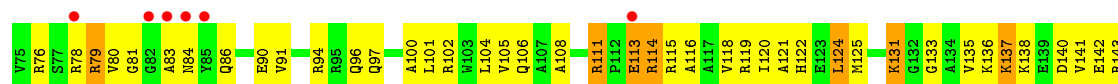
• Molecule 6: 30S RIBOSOMAL PROTEIN S6



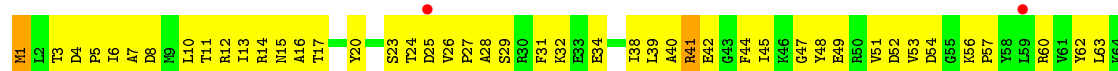
• Molecule 7: 30S RIBOSOMAL PROTEIN S7



• Molecule 7: 30S RIBOSOMAL PROTEIN S7

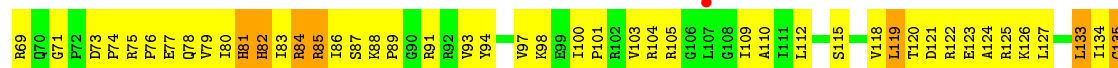


• Molecule 8: 30S RIBOSOMAL PROTEIN S8

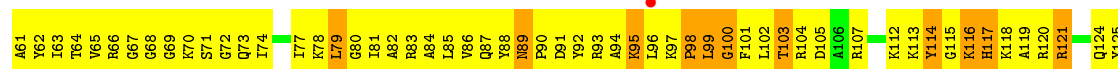
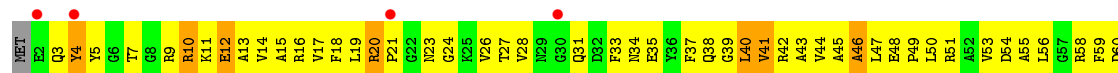




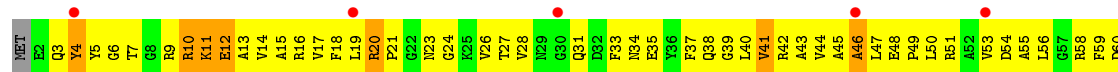
• Molecule 8: 30S RIBOSOMAL PROTEIN S8



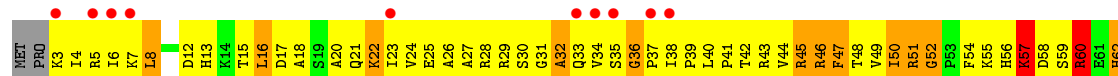
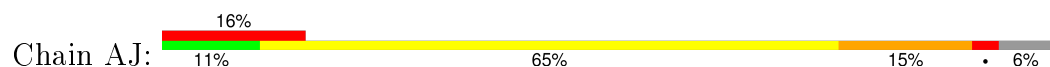
• Molecule 9: 30S RIBOSOMAL PROTEIN S9

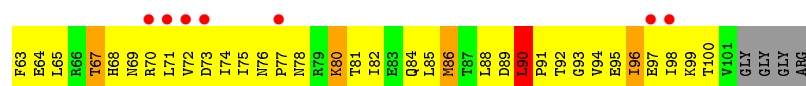


• Molecule 9: 30S RIBOSOMAL PROTEIN S9

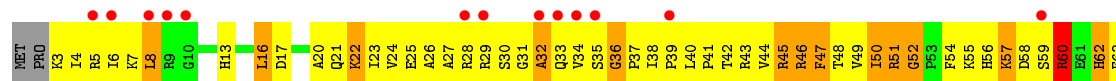


• Molecule 10: 30S RIBOSOMAL PROTEIN S10





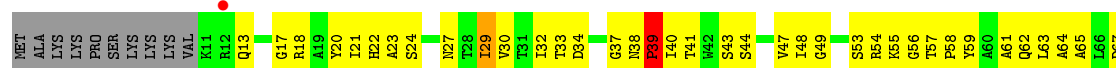
• Molecule 10: 30S RIBOSOMAL PROTEIN S10



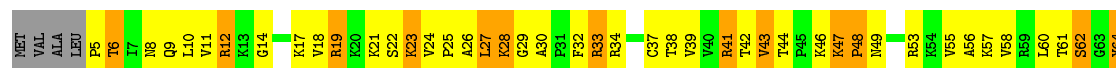
• Molecule 11: 30S RIBOSOMAL PROTEIN S11



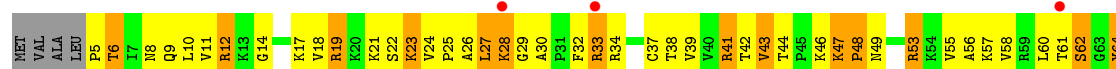
• Molecule 11: 30S RIBOSOMAL PROTEIN S11

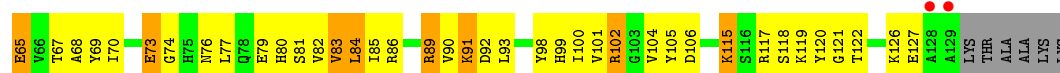


• Molecule 12: 30S RIBOSOMAL PROTEIN S12

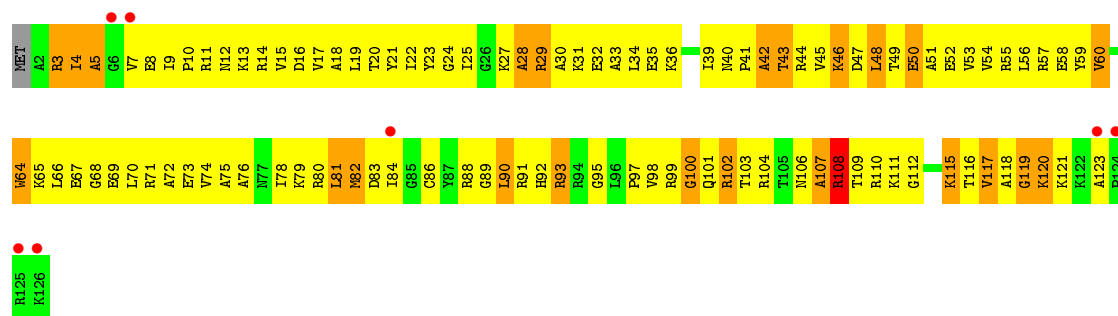


• Molecule 12: 30S RIBOSOMAL PROTEIN S12

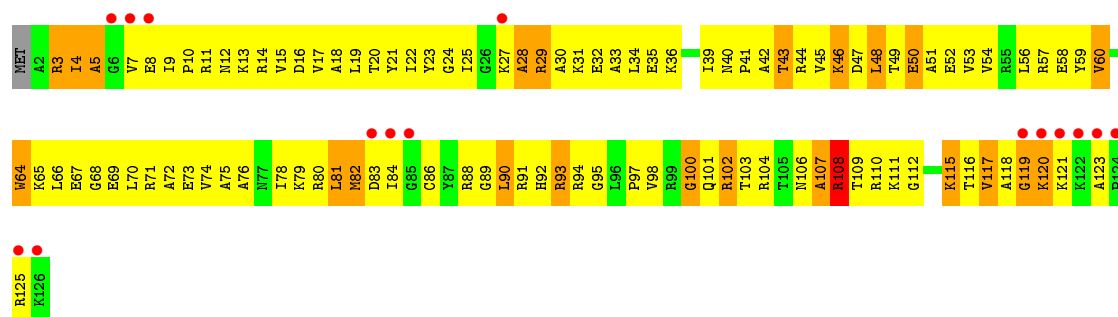




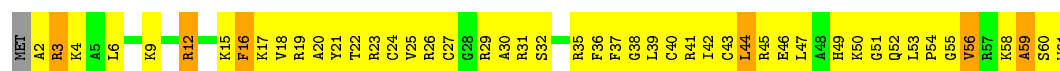
• Molecule 13: 30S RIBOSOMAL PROTEIN S13



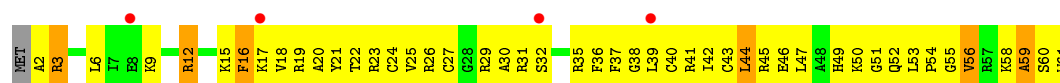
• Molecule 13: 30S RIBOSOMAL PROTEIN S13



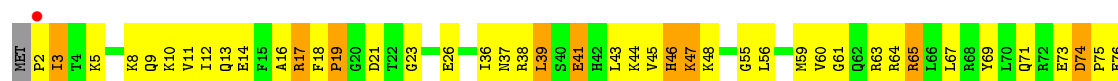
• Molecule 14: 30S RIBOSOMAL PROTEIN S14



• Molecule 14: 30S RIBOSOMAL PROTEIN S14

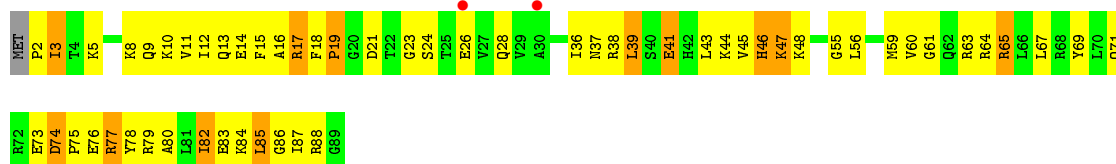


• Molecule 15: 30S RIBOSOMAL PROTEIN S15

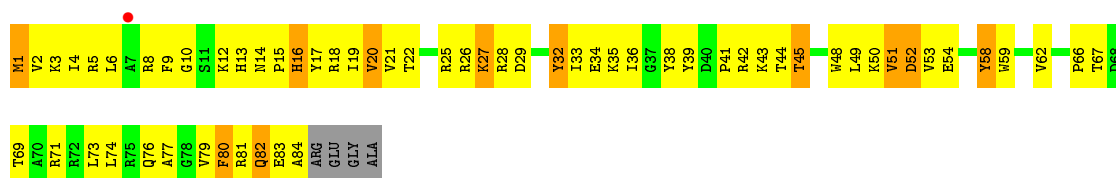




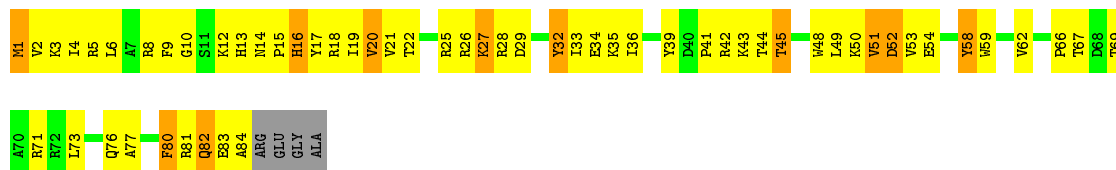
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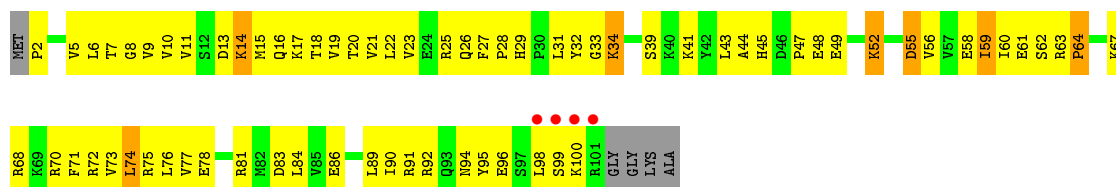
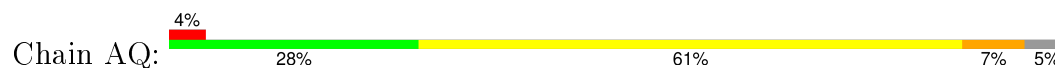
• Molecule 16: 30S RIBOSOMAL PROTEIN S16



• Molecule 16: 30S RIBOSOMAL PROTEIN S16

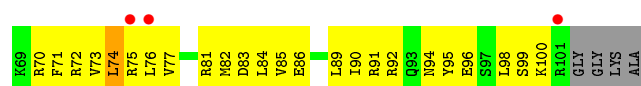


• Molecule 17: 30S RIBOSOMAL PROTEIN S17

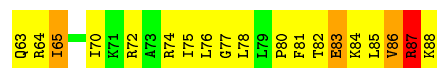
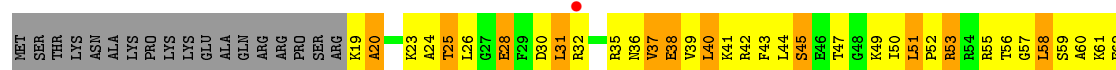
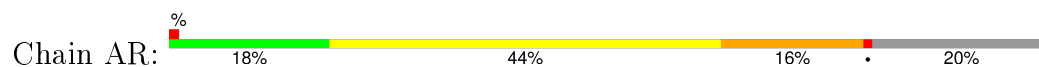


• Molecule 17: 30S RIBOSOMAL PROTEIN S17

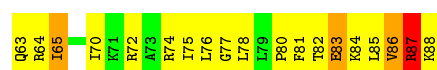
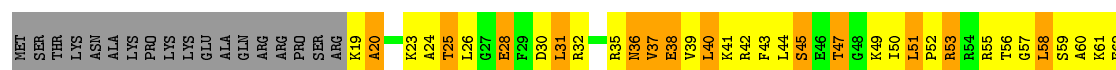
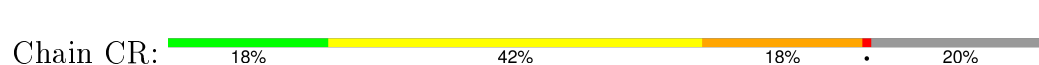




• Molecule 18: 30S RIBOSOMAL PROTEIN S18



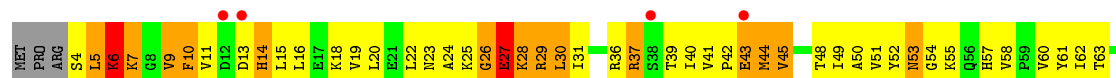
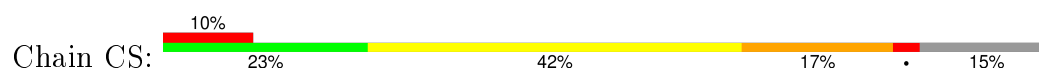
• Molecule 18: 30S RIBOSOMAL PROTEIN S18



• Molecule 19: 30S RIBOSOMAL PROTEIN S19

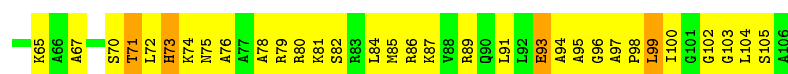


• Molecule 19: 30S RIBOSOMAL PROTEIN S19

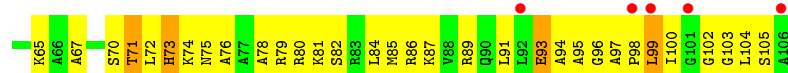


• Molecule 20: 30S RIBOSOMAL PROTEIN S20





• Molecule 20: 30S RIBOSOMAL PROTEIN S20



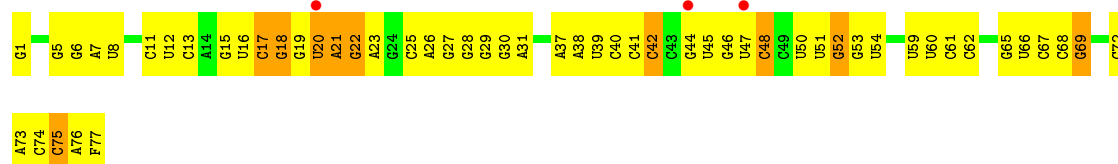
• Molecule 21: 30S RIBOSOMAL PROTEIN THX



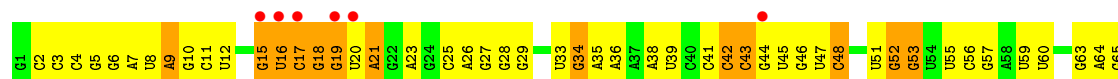
• Molecule 21: 30S RIBOSOMAL PROTEIN THX



• Molecule 22: P AND A-SITE PHE-TRNA PHE

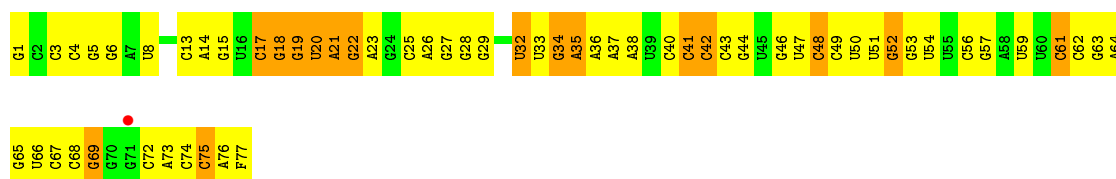


• Molecule 22: P AND A-SITE PHE-TRNA PHE

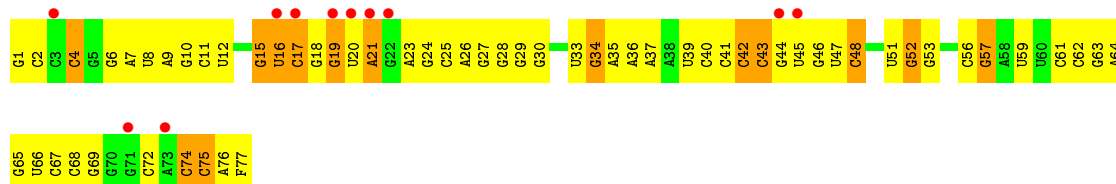


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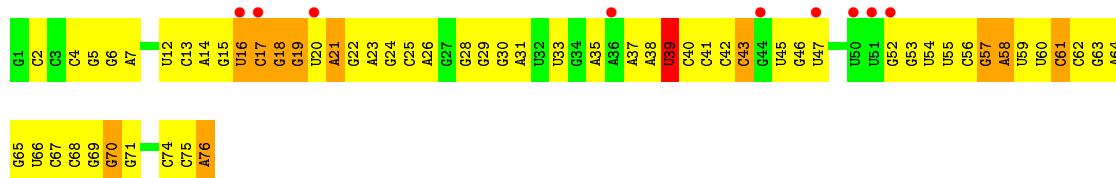




• Molecule 22: P AND A-SITE PHE-TRNA PHE



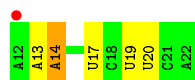
• Molecule 23: E-SITE TRNA PHE



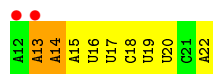
• Molecule 23: E-SITE TRNA PHE



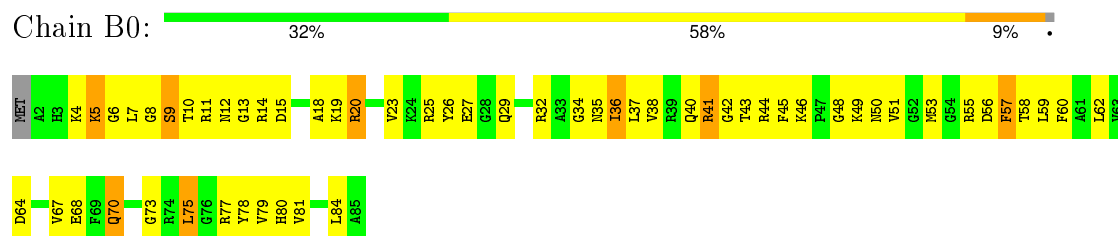
• Molecule 24: MRNA



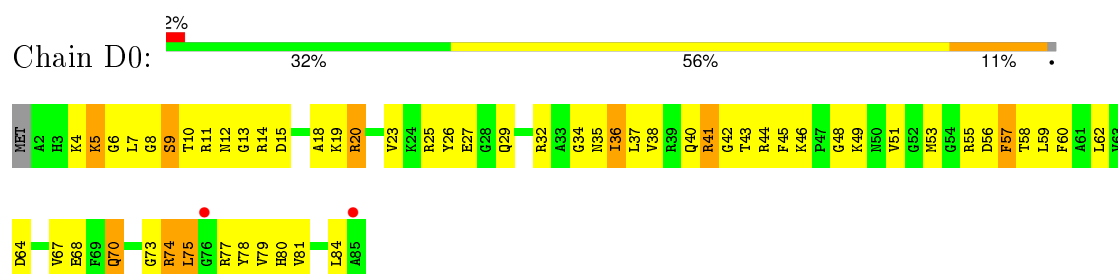
• Molecule 24: MRNA



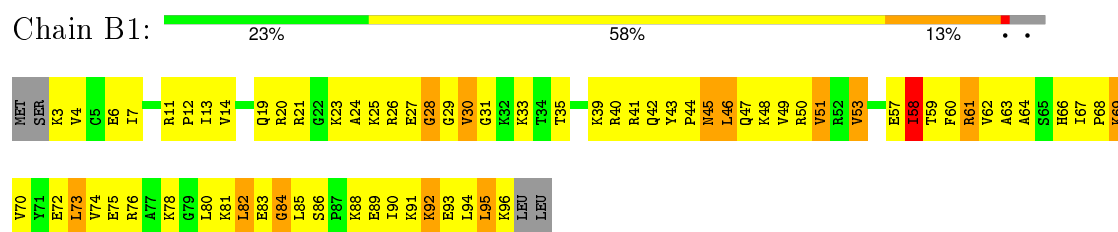
• Molecule 25: 50S RIBOSOMAL PROTEIN L27



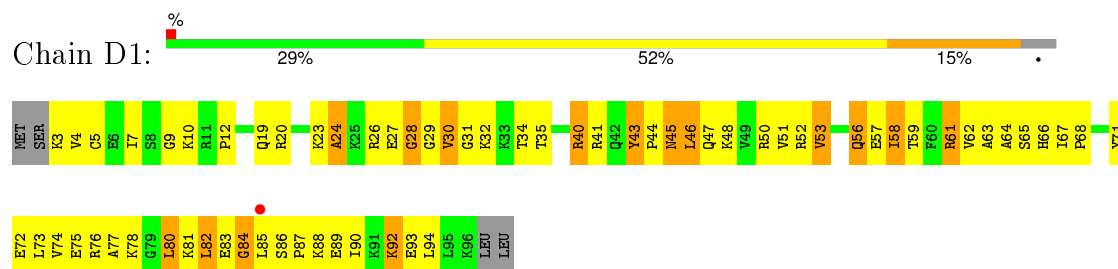
• Molecule 25: 50S RIBOSOMAL PROTEIN L27



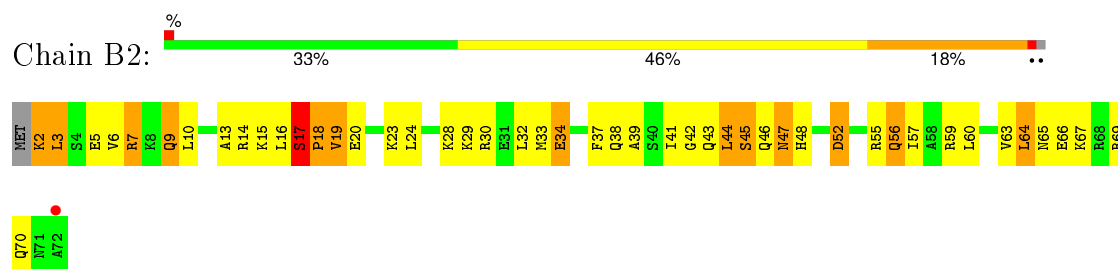
• Molecule 26: 50S RIBOSOMAL PROTEIN L28



• Molecule 26: 50S RIBOSOMAL PROTEIN L28

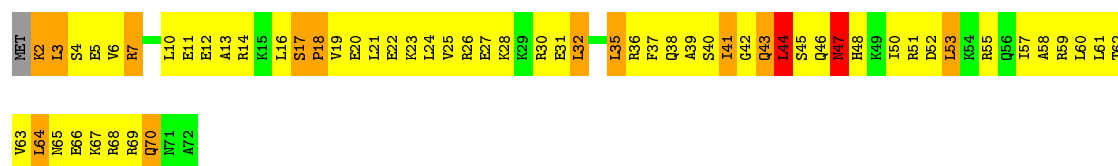


• Molecule 27: 50S RIBOSOMAL PROTEIN L29

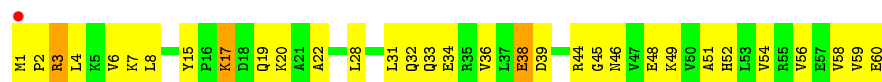


• Molecule 27: 50S RIBOSOMAL PROTEIN L29





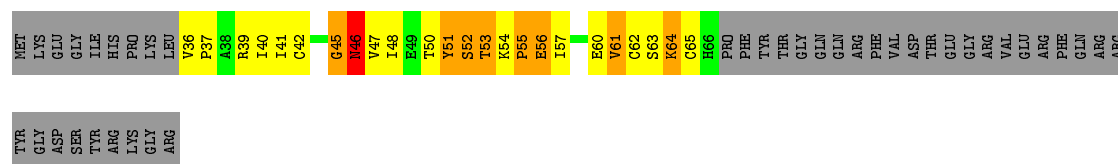
- Molecule 28: 50S RIBOSOMAL PROTEIN L30



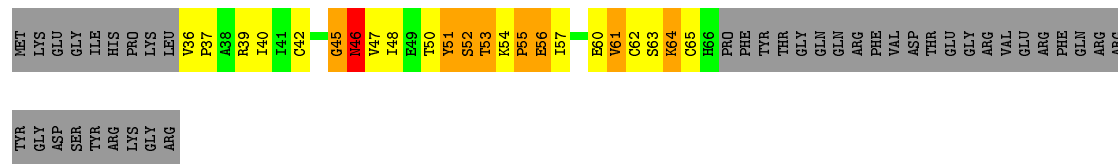
- Molecule 28: 50S RIBOSOMAL PROTEIN L30



- Molecule 29: 50S RIBOSOMAL PROTEIN L31



- Molecule 29: 50S RIBOSOMAL PROTEIN L31

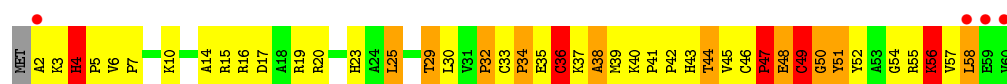


- Molecule 30: 50S RIBOSOMAL PROTEIN L32

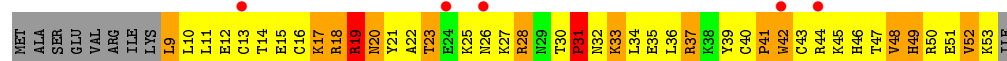


- Molecule 30: 50S RIBOSOMAL PROTEIN L32





• Molecule 31: 50S RIBOSOMAL PROTEIN L33



• Molecule 31: 50S RIBOSOMAL PROTEIN L33



• Molecule 32: 50S RIBOSOMAL PROTEIN L34



• Molecule 32: 50S RIBOSOMAL PROTEIN L34



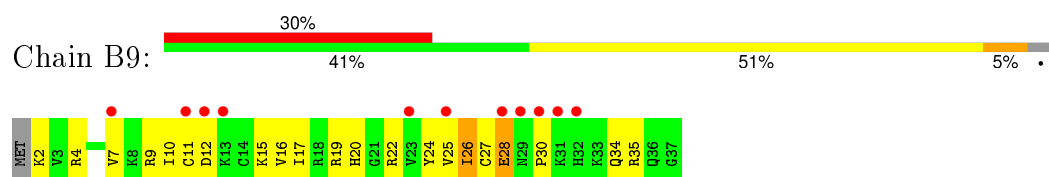
• Molecule 33: 50S RIBOSOMAL PROTEIN L35



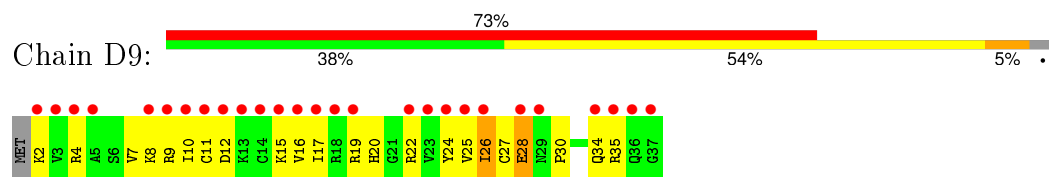
• Molecule 33: 50S RIBOSOMAL PROTEIN L35



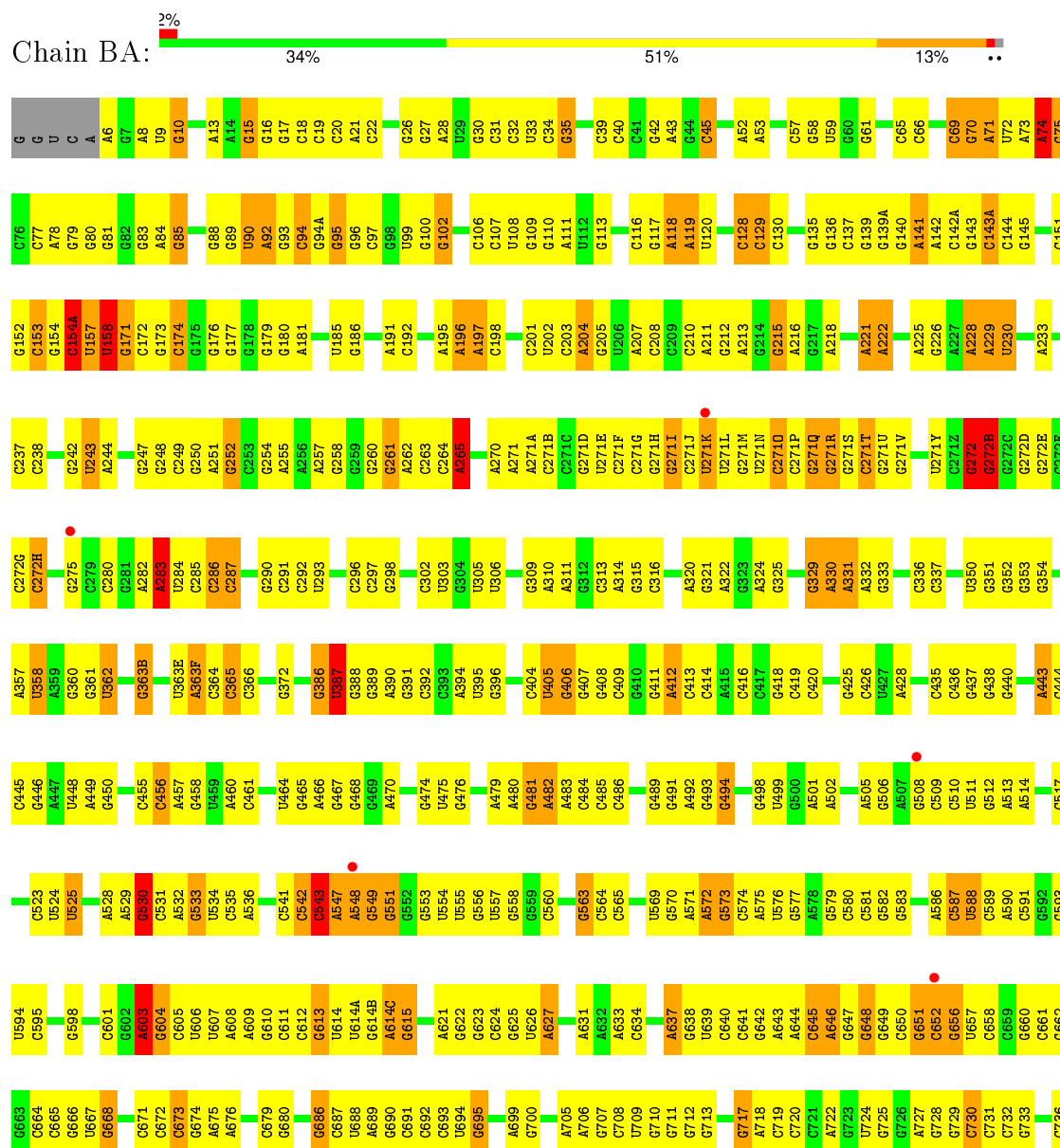
• Molecule 34: 50S RIBOSOMAL PROTEIN L36



• Molecule 34: 50S RIBOSOMAL PROTEIN L36



• Molecule 35: 23S RIBOSOMAL RNA

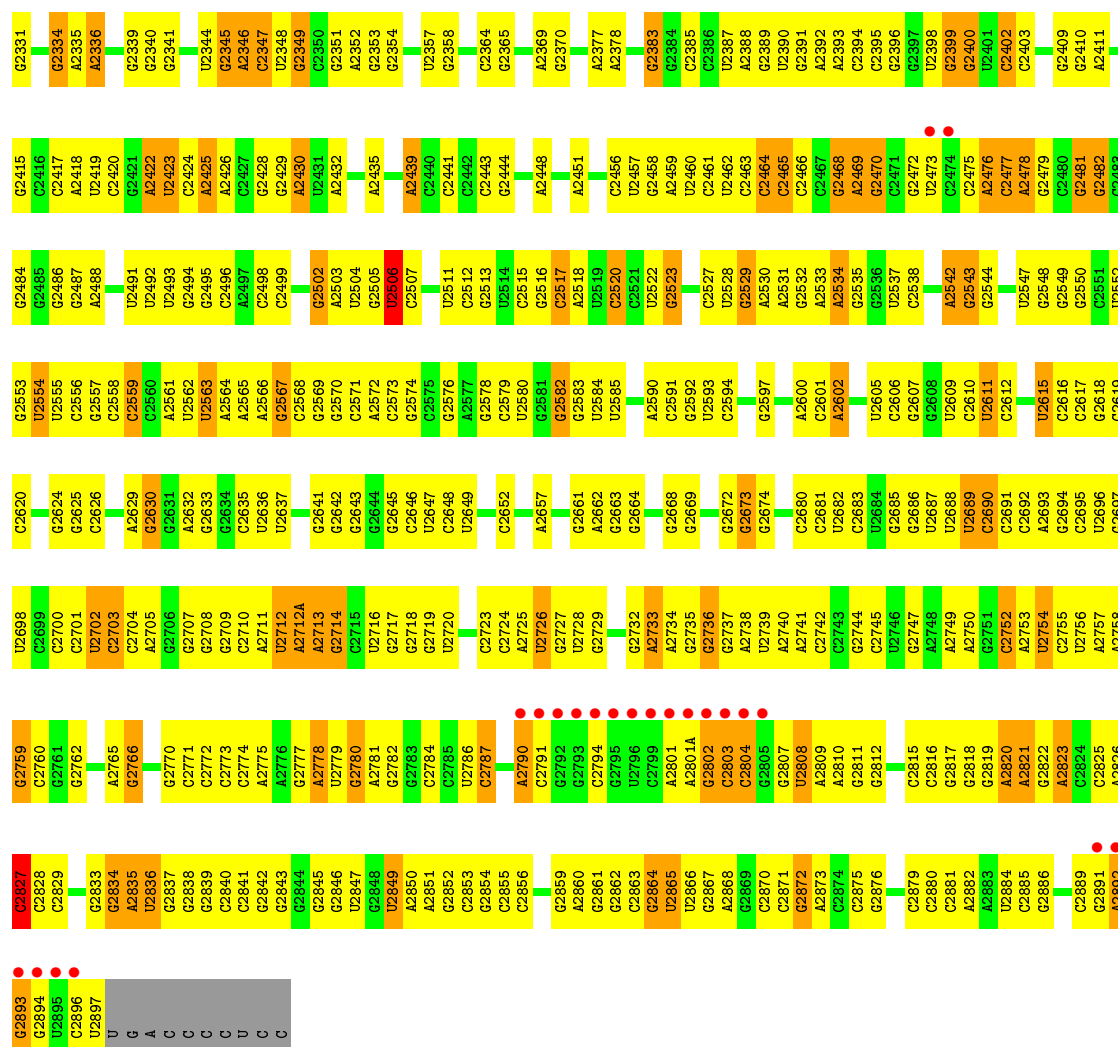




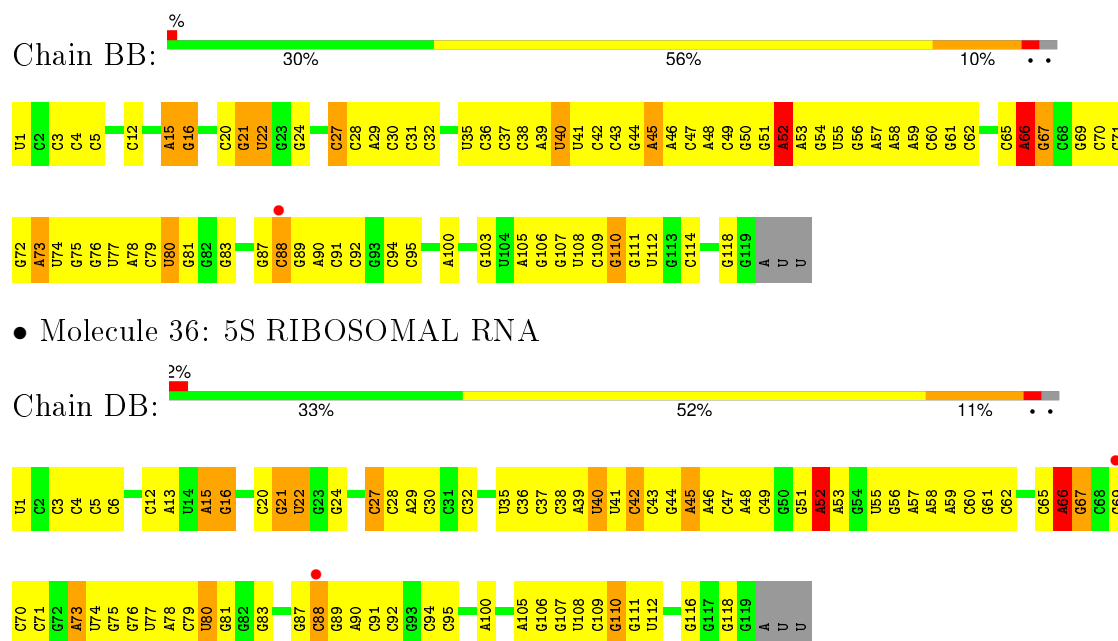
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| G2937 | G2871 | | | | G2527 | G2440 | G2363 | | | | | |
| G2938 | G2872 | | | | G2528 | G2441 | G2364 | | | | | |
| G2939 | G2873 | | | | G2529 | G2442 | G2365 | | | | | |
| G2940 | G2874 | | | | G2530 | G2443 | G2366 | | | | | |
| G2941 | G2875 | | | | G2531 | G2444 | G2367 | | | | | |
| G2942 | G2876 | | | | G2532 | G2445 | G2368 | | | | | |
| G2943 | G2877 | | | | G2533 | G2446 | G2369 | | | | | |
| G2944 | G2878 | | | | G2534 | G2447 | G2370 | | | | | |
| G2945 | G2879 | | | | G2535 | G2448 | G2371 | | | | | |
| G2946 | G2880 | | | | G2536 | G2449 | G2372 | | | | | |
| G2947 | G2881 | | | | G2537 | G2450 | G2373 | | | | | |
| G2948 | G2882 | | | | G2538 | G2451 | G2374 | | | | | |
| G2949 | G2883 | | | | G2539 | G2452 | G2375 | | | | | |
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| G2953 | G2887 | | | | G2543 | G2456 | G2379 | | | | | |
| G2954 | G2888 | | | | G2544 | G2457 | G2380 | | | | | |
| G2955 | G2889 | | | | G2545 | G2458 | G2381 | | | | | |
| G2956 | G2890 | | | | G2546 | G2459 | G2382 | | | | | |
| G2957 | G2891 | | | | G2547 | G2460 | G2383 | | | | | |
| G2958 | G2892 | | | | G2548 | G2461 | G2384 | | | | | |
| G2959 | G2893 | | | | G2549 | G2462 | G2385 | | | | | |
| G2960 | G2894 | | | | G2550 | G2463 | G2386 | | | | | |
| G2961 | G2895 | | | | G2551 | G2464 | G2387 | | | | | |
| G2962 | G2896 | | | | G2552 | G2465 | G2388 | | | | | |
| G2963 | G2897 | | | | G2553 | G2466 | G2389 | | | | | |
| G2964 | G2898 | | | | G2554 | G2467 | G2390 | | | | | |
| | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
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| G1152 | G1153 | U1033 | U959 | G882 | G806 | C737 | C666 | G598 | A447 | U358 | C272H | C231 | C151 | C77 | U |
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| G1167 | G1168 | U1041 | G966 | G889 | C815 | A746 | A676 | G459 | U459 | A363F | G242 | C172 | C172 | G85 | |
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| G1177 | G1178 | A1046 | G972 | U895 | A896 | C754 | G688 | U614B | U464 | C366 | C287 | G248 | G177 | G17 | |
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| G1181 | G1182 | U1048 | G974 | G897 | U897 | C756 | U689 | A614C | A467 | G386 | G291 | G250 | G179 | C19 | |
| G1183 | G1184 | A1049 | C975 | A900 | U826 | C757 | U689 | G615 | A467 | U387 | C292 | G251 | G180 | C20 | |
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| G1227 | G1228 | U1125 | C1001 | C928 | U848 | C781 | G716 | G643 | A491 | U493 | A325 | G271M | G212 | G58 | |
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| G1267 | G1268 | U1145 | C1021 | U868 | U868 | C801 | G736 | G663 | A511 | U513 | U359 | G272G | A232 | A81 | |
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| G1303 | G1304 | U1161 | C1039 | U886 | U886 | C819 | G754 | G681 | A529 | U531 | U377 | G272Y | A250 | A99 | |
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| G1321 | G1322 | A1170 | G1048 | U895 | U895 | C828 | G763 | G690 | A538 | U540 | U386 | G273H | A259 | A108 | |
| G1323 | G1324 | U1171 | C1049 | U896 | U896 | C829 | G764 | G691 | A539 | U541 | U387 | G273I | A260 | A109 | |
| G1325 | G1326 | C1172 | C1050 | U897 | U897 | C830 | G765 | G692 | A540 | U542 | U388 | G273J | A261 | A110 | |
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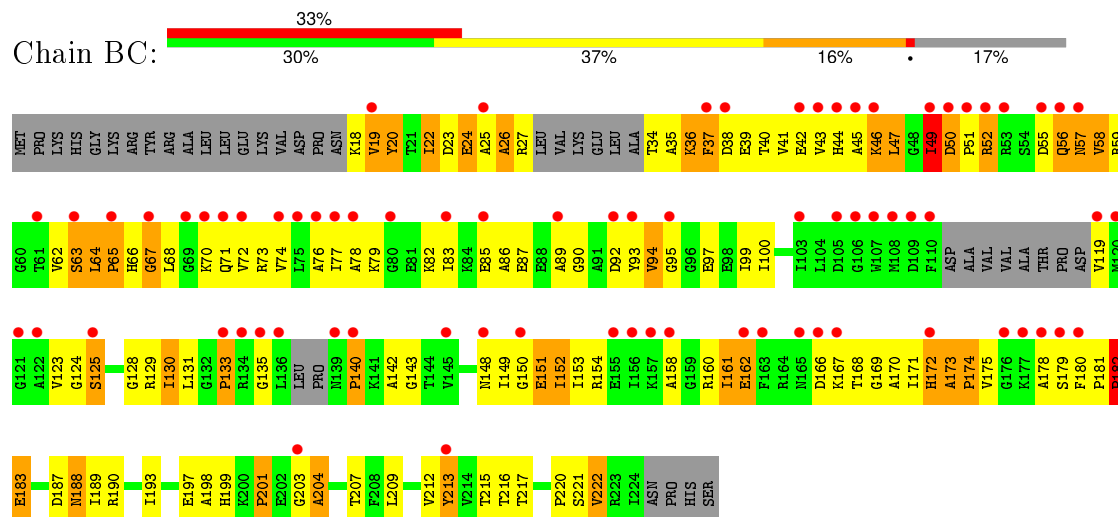




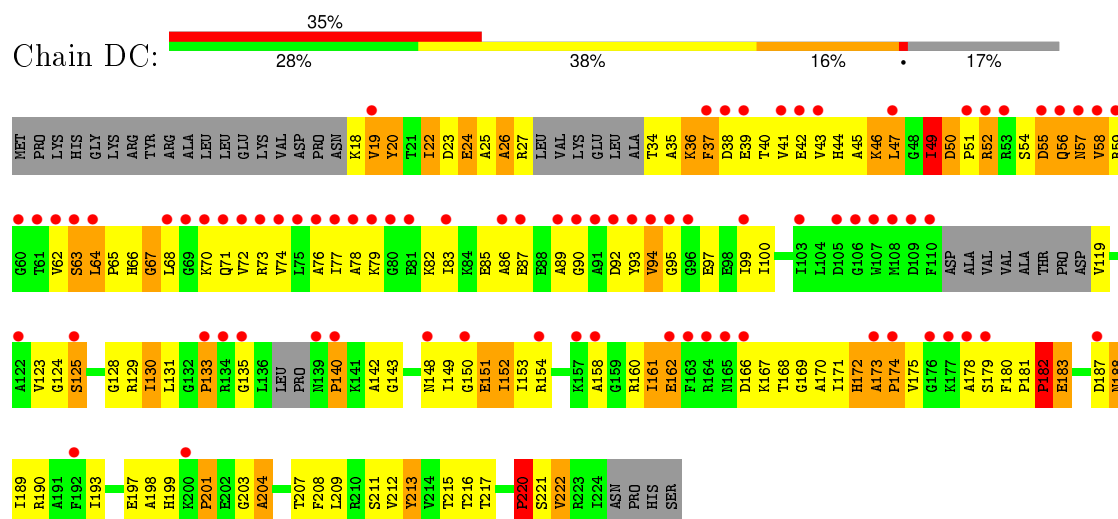
• Molecule 36: 5S RIBOSOMAL RNA



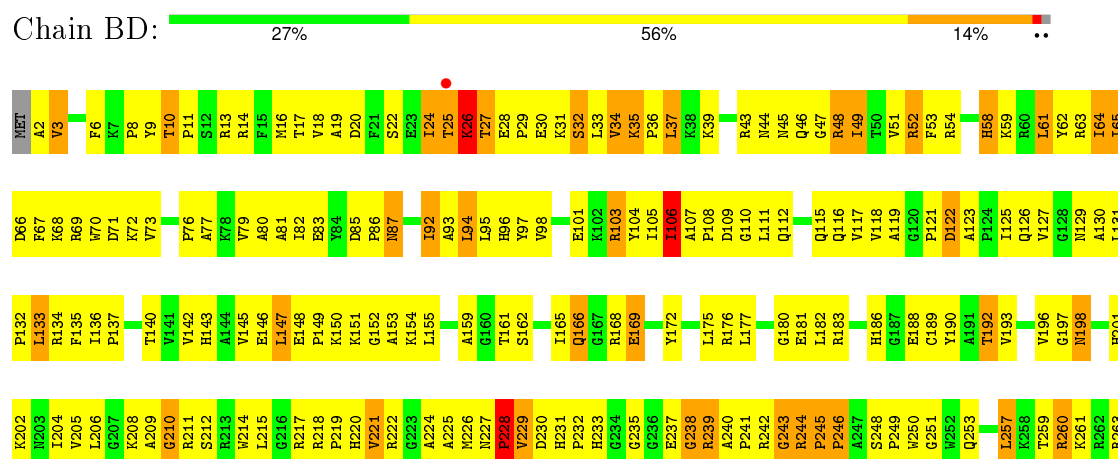
• Molecule 37: 50S RIBOSOMAL PROTEIN L1



• Molecule 37: 50S RIBOSOMAL PROTEIN L1



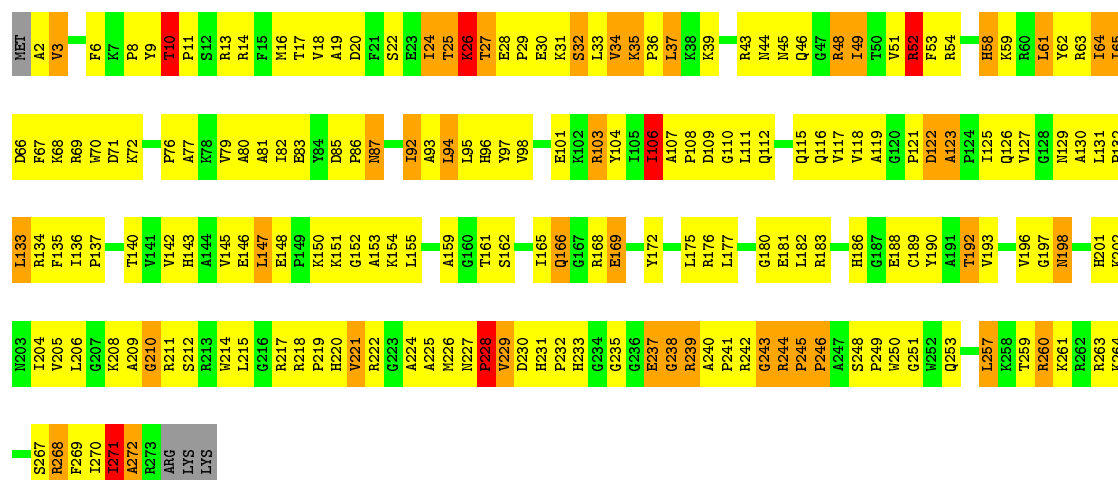
• Molecule 38: 50S RIBOSOMAL PROTEIN L2





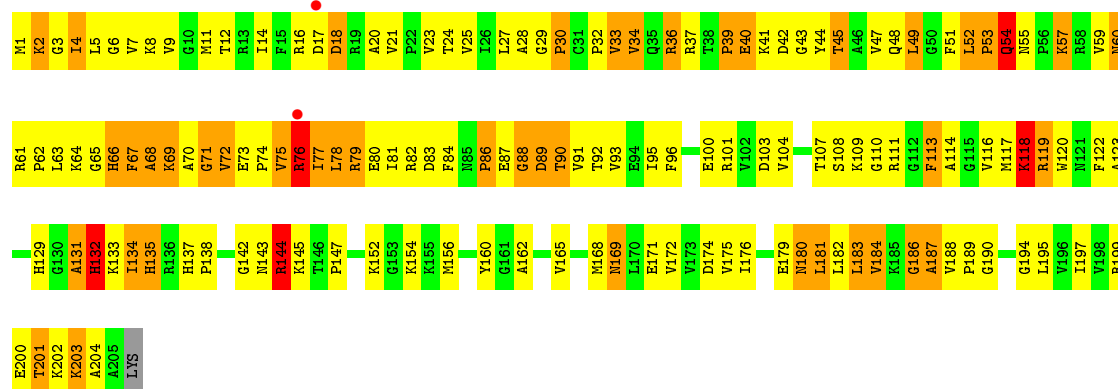
• Molecule 38: 50S RIBOSOMAL PROTEIN L2

Chain DD: 28% 54% 14%



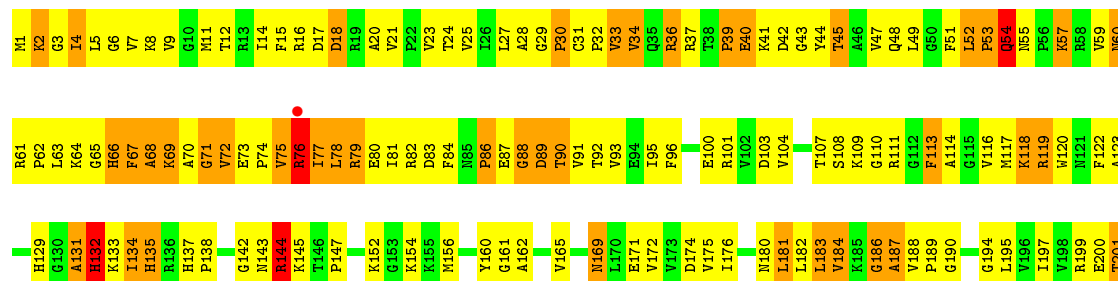
• Molecule 39: 50S RIBOSOMAL PROTEIN L3

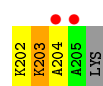
Chain BE: 29% 47% 21%



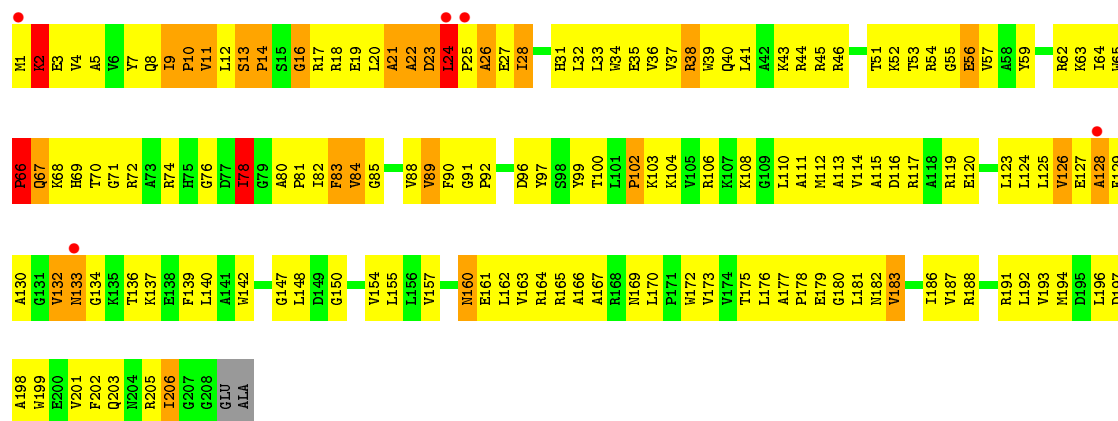
• Molecule 39: 50S RIBOSOMAL PROTEIN L3

Chain DE: 29% 49% 20%

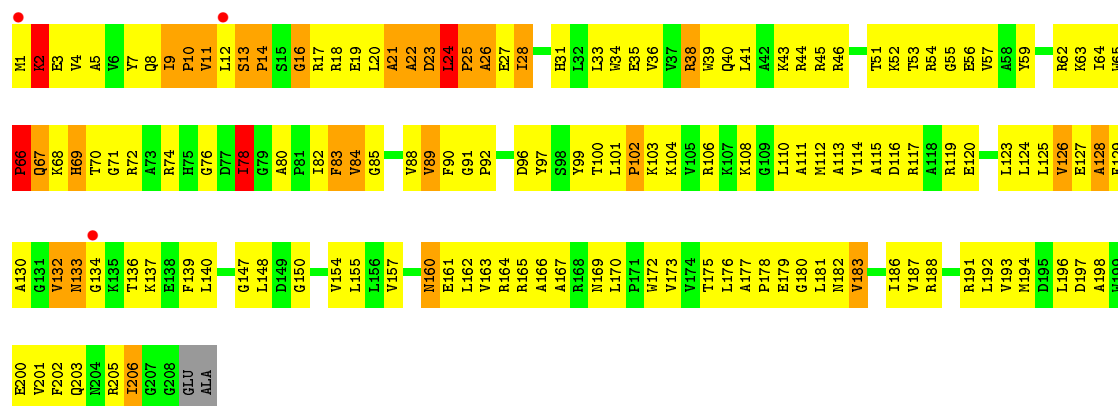




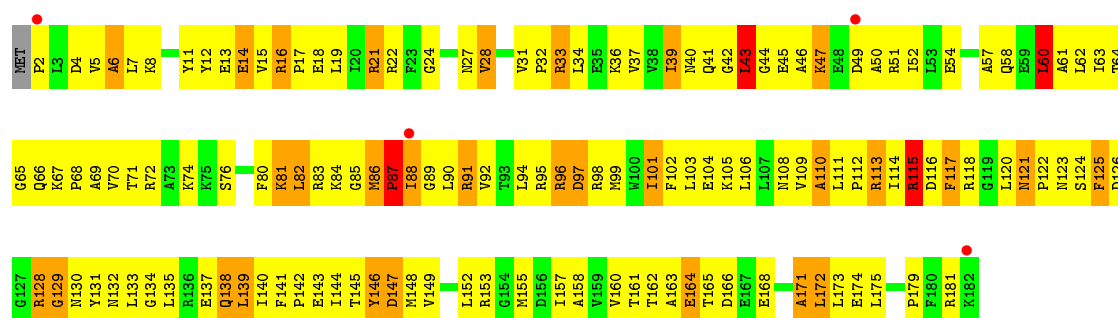
• Molecule 40: 50S RIBOSOMAL PROTEIN L4



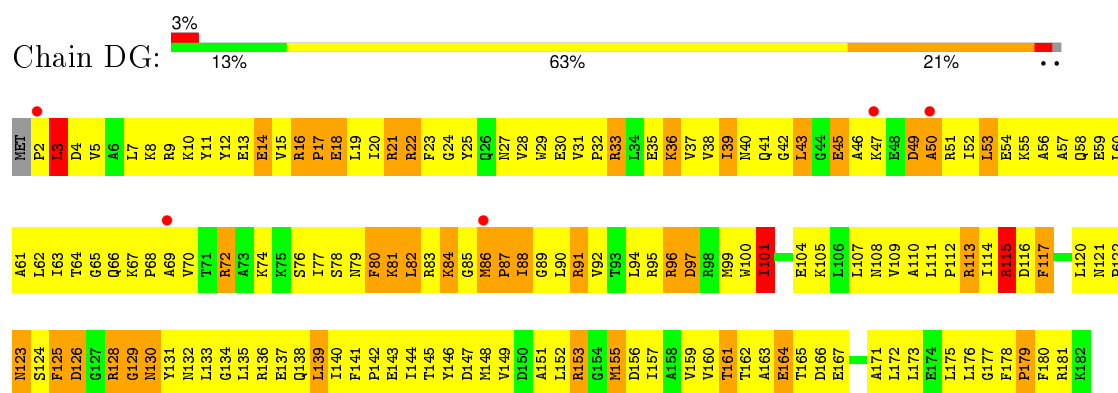
• Molecule 40: 50S RIBOSOMAL PROTEIN L4



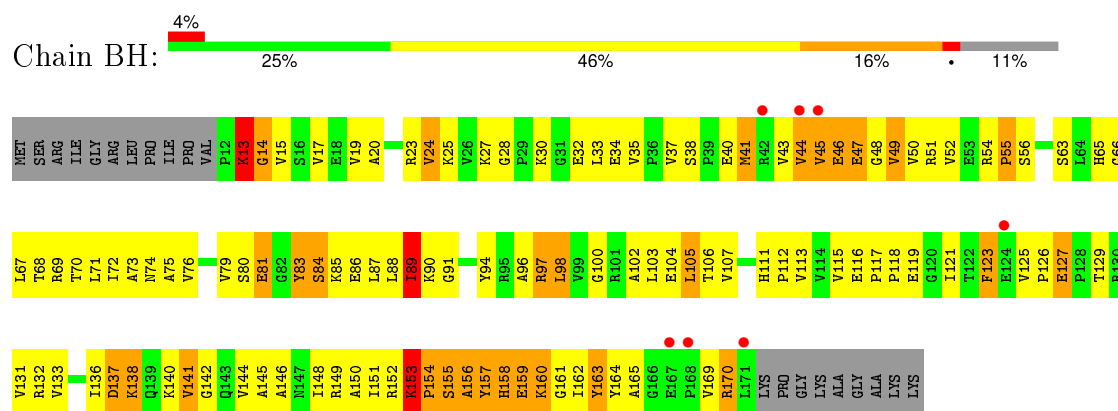
• Molecule 41: 50S RIBOSOMAL PROTEIN L5



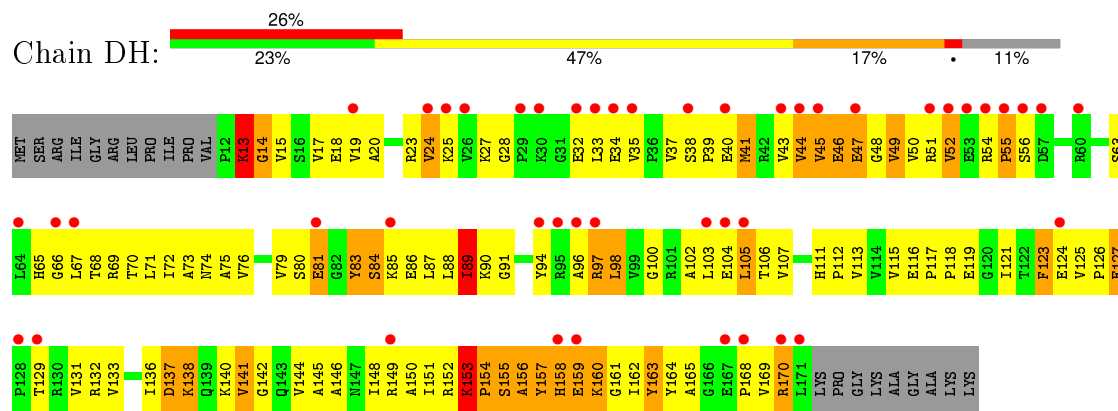
• Molecule 41: 50S RIBOSOMAL PROTEIN L5



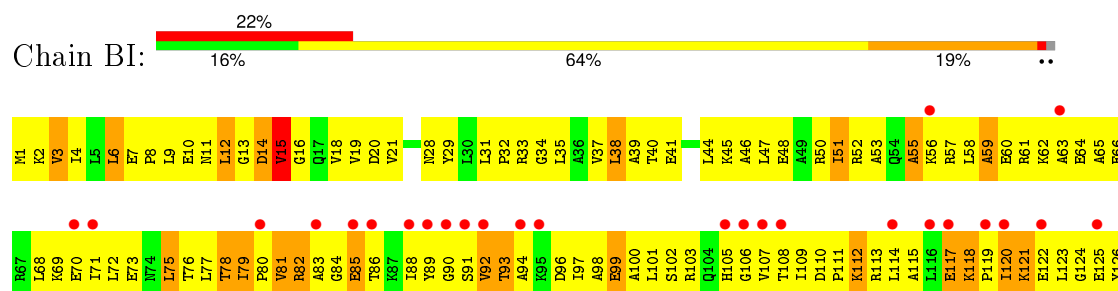
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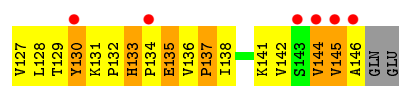


• Molecule 42: 50S RIBOSOMAL PROTEIN L6

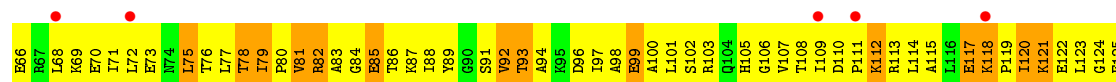
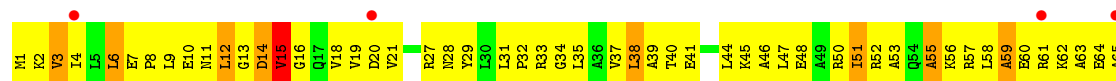


• Molecule 43: 50S RIBOSOMAL PROTEIN L9

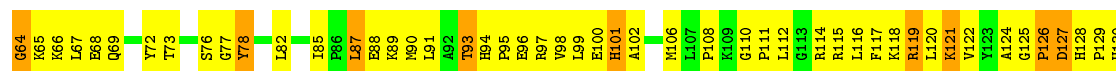




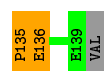
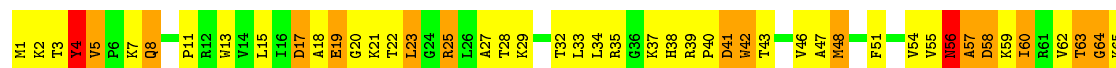
• Molecule 43: 50S RIBOSOMAL PROTEIN L9



• Molecule 44: 50S RIBOSOMAL PROTEIN L13



• Molecule 44: 50S RIBOSOMAL PROTEIN L13

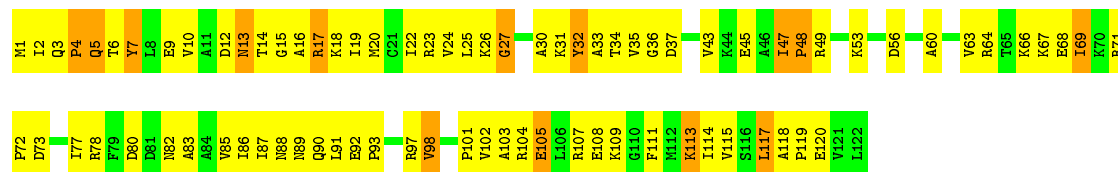


• Molecule 45: 50S RIBOSOMAL PROTEIN L14

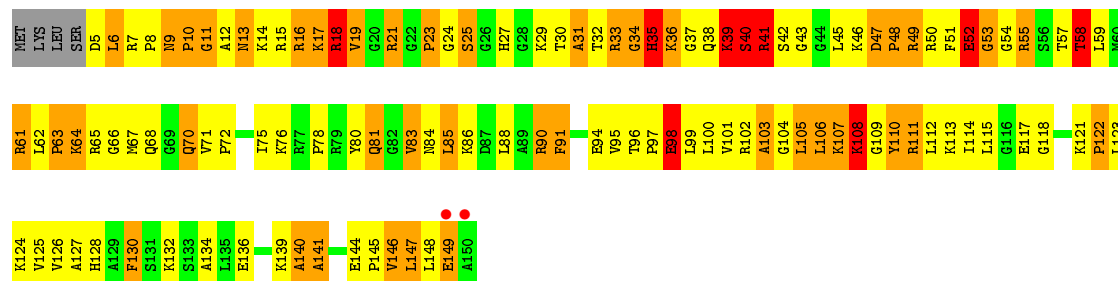
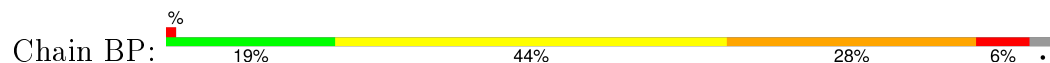




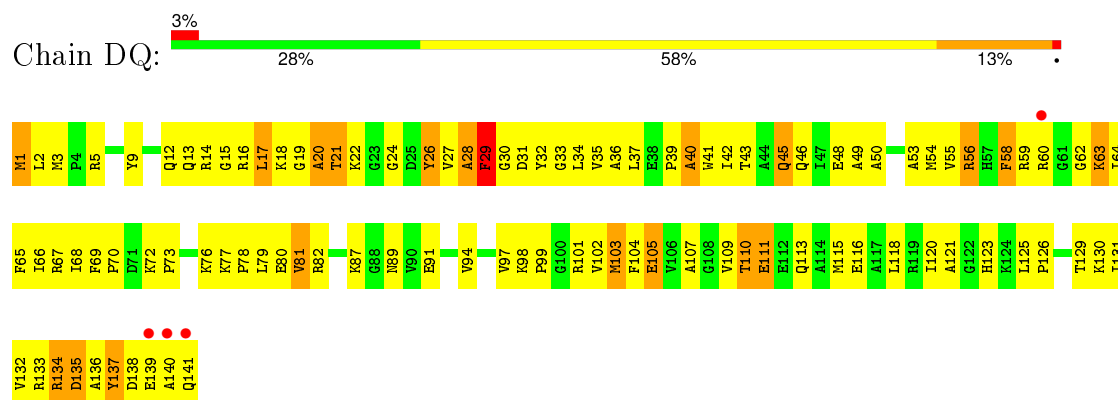
• Molecule 45: 50S RIBOSOMAL PROTEIN L14



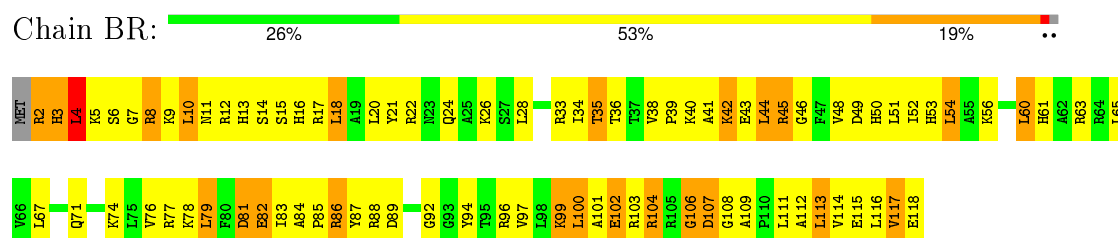
• Molecule 46: 50S RIBOSOMAL PROTEIN L15



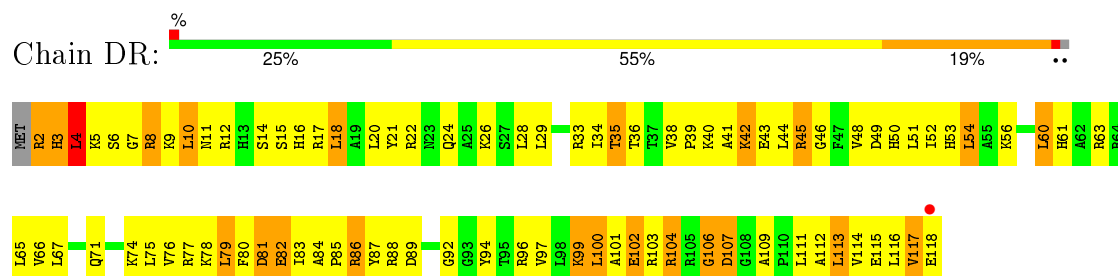
- Molecule 47: 50S RIBOSOMAL PROTEIN L16



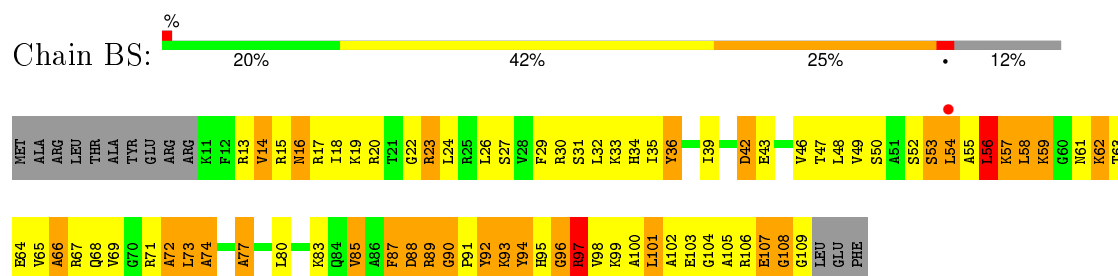
- Molecule 48: 50S RIBOSOMAL PROTEIN L17



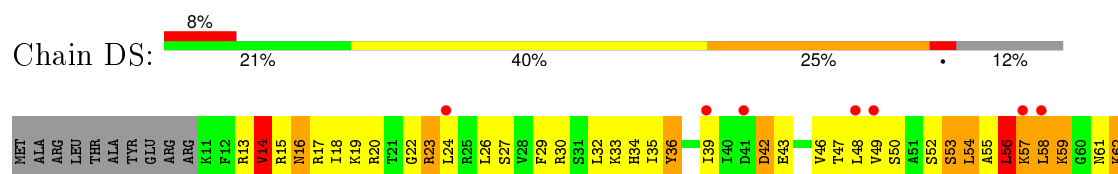
- Molecule 48: 50S RIBOSOMAL PROTEIN L17

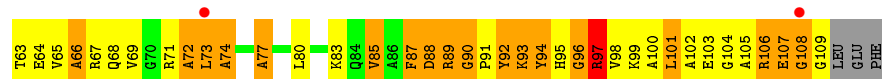


- Molecule 49: 50S RIBOSOMAL PROTEIN L18

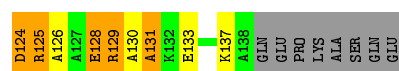
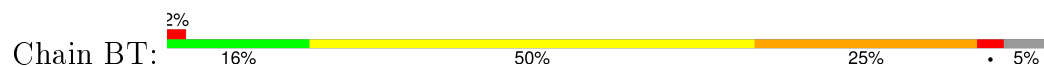


- Molecule 49: 50S RIBOSOMAL PROTEIN L18

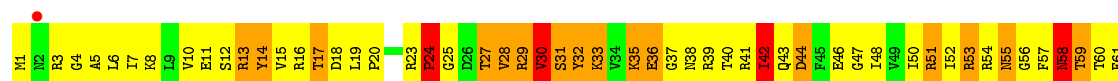
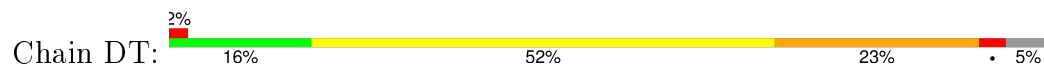




• Molecule 50: 50S RIBOSOMAL PROTEIN L19



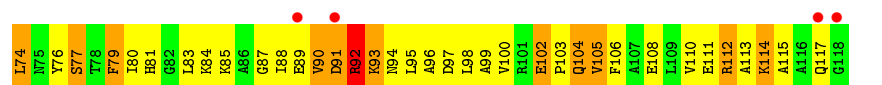
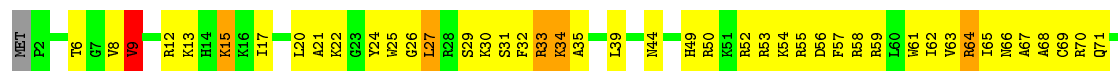
• Molecule 50: 50S RIBOSOMAL PROTEIN L19



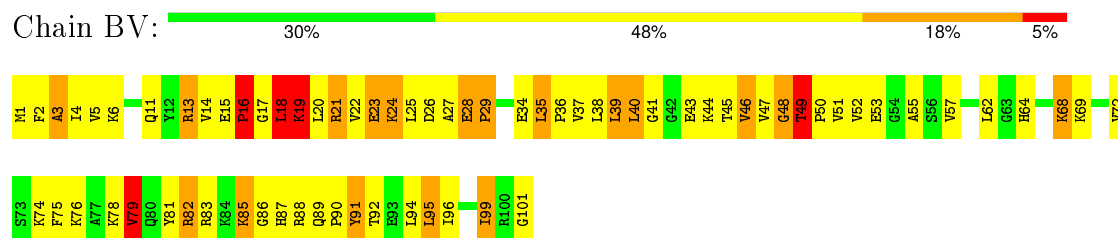
• Molecule 51: 50S RIBOSOMAL PROTEIN L20



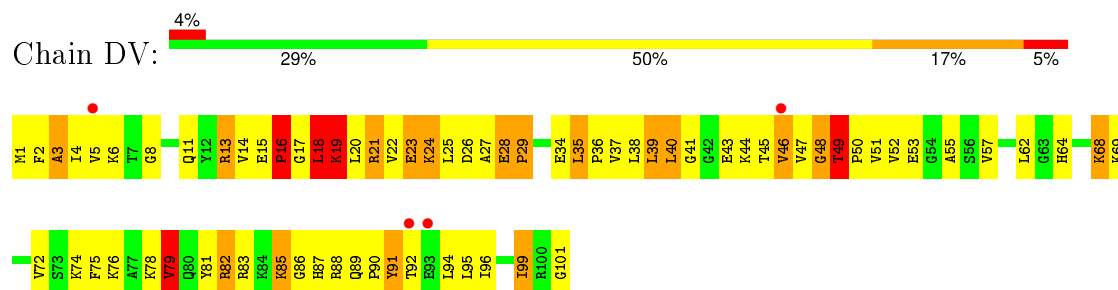
• Molecule 51: 50S RIBOSOMAL PROTEIN L20



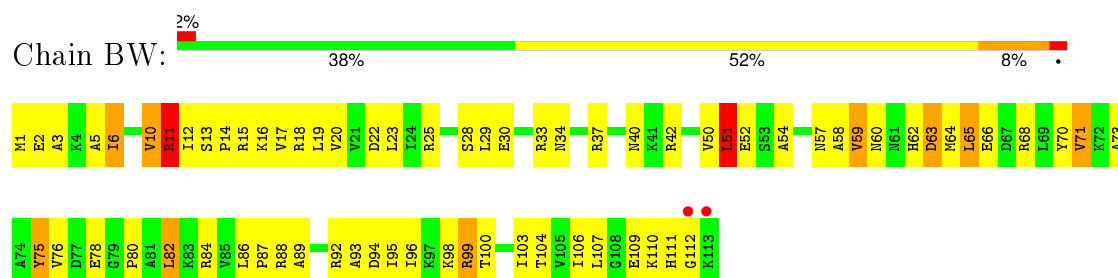
• Molecule 52: 50S RIBOSOMAL PROTEIN L21



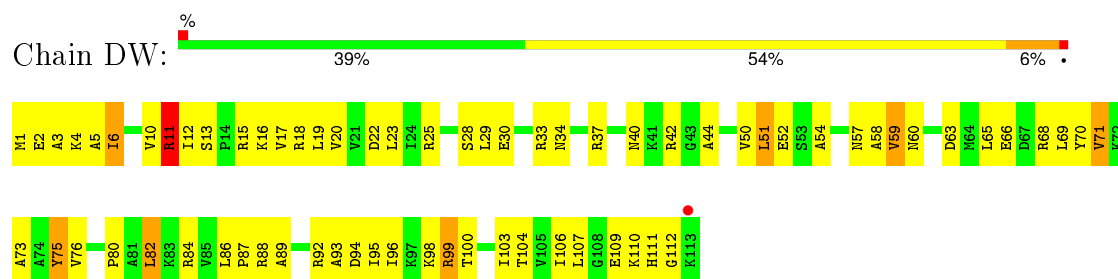
• Molecule 52: 50S RIBOSOMAL PROTEIN L21



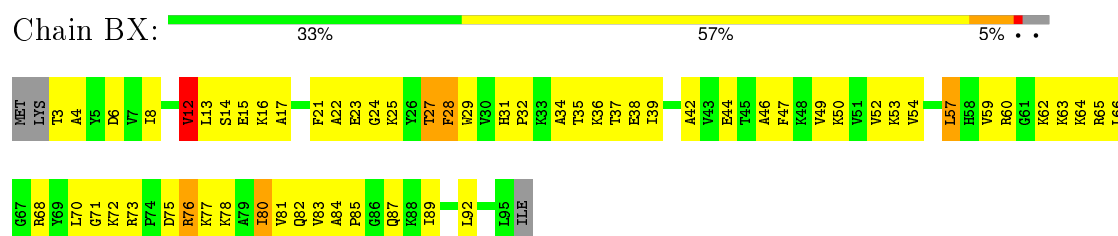
• Molecule 53: 50S RIBOSOMAL PROTEIN L22



• Molecule 53: 50S RIBOSOMAL PROTEIN L22

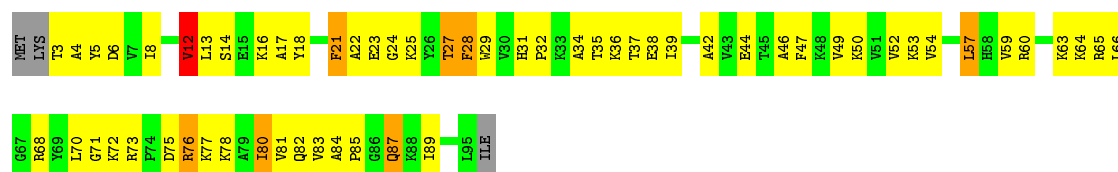


• Molecule 54: 50S RIBOSOMAL PROTEIN L23

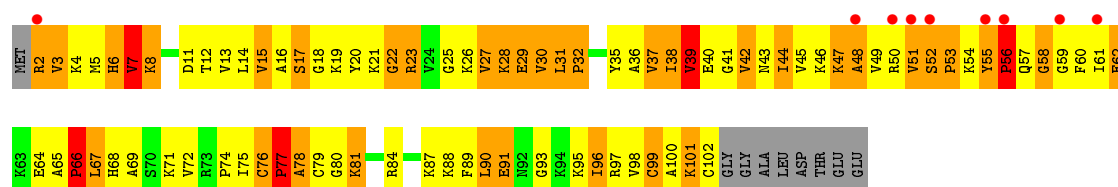


• Molecule 54: 50S RIBOSOMAL PROTEIN L23

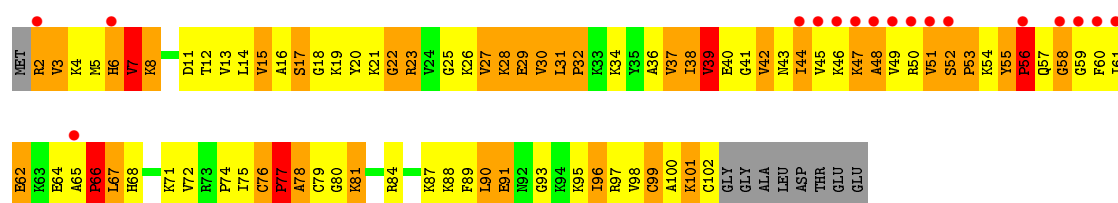
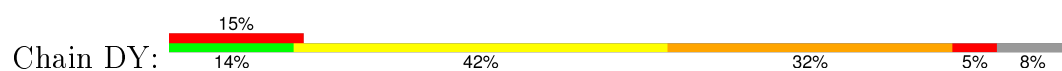




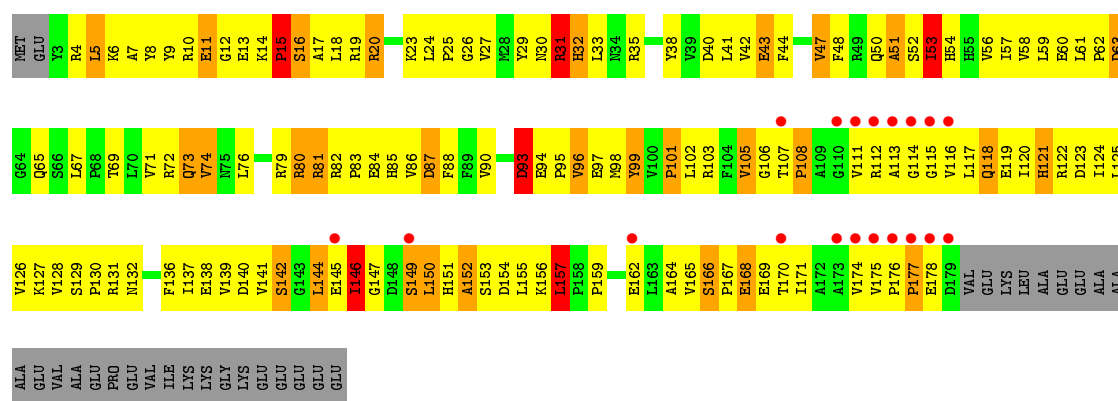
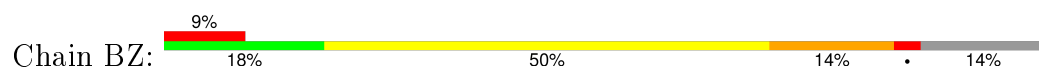
• Molecule 55: 50S RIBOSOMAL PROTEIN L24



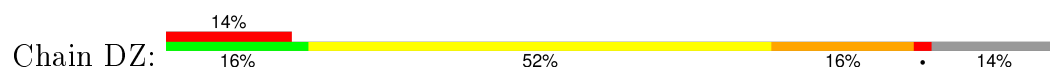
• Molecule 55: 50S RIBOSOMAL PROTEIN L24

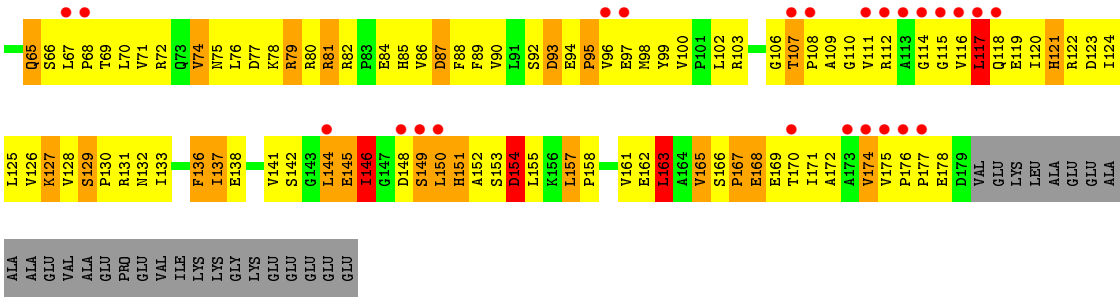


• Molecule 56: 50S RIBOSOMAL PROTEIN L25



• Molecule 56: 50S RIBOSOMAL PROTEIN L25





4 Data and refinement statistics

| Property | Value | Source |
|---|---|------------------|
| Space group | P 21 21 21 | Depositor |
| Cell constants a, b, c, α , β , γ | 210.86Å 450.46Å 628.88Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 50.00 – 3.50 49.74 – 3.40 | Depositor EDS |
| % Data completeness (in resolution range) | 99.1 (50.00-3.50) 97.2 (49.74-3.40) | Depositor EDS |
| R_{merge} | 0.20 | Depositor |
| R_{sym} | (Not available) | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 1.64 (at 3.40Å) | Xtriage |
| Refinement program | CNS 1.2 | Depositor |
| R, R_{free} | 0.208 , 0.256 0.210 , 0.257 | Depositor DCC |
| R_{free} test set | 33758 reflections (4.79%) | DCC |
| Wilson B-factor (Å ²) | 83.7 | Xtriage |
| Anisotropy | 0.102 | Xtriage |
| Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²) | 0.28 , 99.8 | EDS |
| Estimated twinning fraction | No twinning to report. | Xtriage |
| L-test for twinning ² | $\langle L \rangle = 0.41$, $\langle L^2 \rangle = 0.23$ | Xtriage |
| Outliers | 0 of 789128 reflections | Xtriage |
| F_o, F_c correlation | 0.92 | EDS |
| Total number of atoms | 296042 | wwPDB-VP |
| Average B, all atoms (Å ²) | 104.0 | wwPDB-VP |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.45% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MG, PAR, 8AN, PHA

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|-------------|-------------|-----------------|
| | | RMSZ | # $ Z > 5$ | RMSZ | # $ Z > 5$ |
| 1 | AA | 0.42 | 0/36190 | 0.70 | 16/56486 (0.0%) |
| 1 | CA | 0.40 | 0/36190 | 0.69 | 14/56486 (0.0%) |
| 2 | AB | 0.33 | 0/1936 | 0.60 | 0/2611 |
| 2 | CB | 0.32 | 0/1936 | 0.60 | 0/2611 |
| 3 | AC | 0.34 | 0/1637 | 0.60 | 0/2207 |
| 3 | CC | 0.33 | 0/1637 | 0.59 | 0/2207 |
| 4 | AD | 0.36 | 0/1733 | 0.64 | 0/2318 |
| 4 | CD | 0.36 | 0/1733 | 0.64 | 0/2318 |
| 5 | AE | 0.36 | 0/1163 | 0.64 | 0/1566 |
| 5 | CE | 0.35 | 0/1163 | 0.64 | 0/1566 |
| 6 | AF | 0.36 | 0/856 | 0.66 | 0/1154 |
| 6 | CF | 0.35 | 0/856 | 0.66 | 0/1154 |
| 7 | AG | 0.32 | 0/1276 | 0.57 | 0/1709 |
| 7 | CG | 0.31 | 0/1276 | 0.57 | 0/1709 |
| 8 | AH | 0.31 | 0/1136 | 0.63 | 0/1527 |
| 8 | CH | 0.30 | 0/1136 | 0.62 | 0/1527 |
| 9 | AI | 0.32 | 0/1027 | 0.59 | 0/1372 |
| 9 | CI | 0.32 | 0/1027 | 0.59 | 0/1372 |
| 10 | AJ | 0.36 | 0/808 | 0.66 | 0/1087 |
| 10 | CJ | 0.35 | 0/808 | 0.64 | 0/1087 |
| 11 | AK | 0.35 | 0/900 | 0.62 | 0/1213 |
| 11 | CK | 0.33 | 0/900 | 0.61 | 0/1213 |
| 12 | AL | 0.39 | 0/987 | 0.70 | 0/1322 |
| 12 | CL | 0.37 | 0/987 | 0.68 | 0/1322 |
| 13 | AM | 0.34 | 0/996 | 0.66 | 0/1329 |
| 13 | CM | 0.33 | 0/996 | 0.66 | 0/1329 |
| 14 | AN | 0.36 | 0/501 | 0.62 | 0/664 |
| 14 | CN | 0.33 | 0/501 | 0.61 | 0/664 |
| 15 | AO | 0.35 | 0/745 | 0.59 | 0/992 |
| 15 | CO | 0.33 | 0/745 | 0.58 | 0/992 |
| 16 | AP | 0.37 | 0/717 | 0.63 | 0/965 |
| 16 | CP | 0.37 | 0/717 | 0.63 | 0/965 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|----------------|-------------|------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 17 | AQ | 0.36 | 0/837 | 0.61 | 0/1119 |
| 17 | CQ | 0.37 | 0/837 | 0.62 | 0/1119 |
| 18 | AR | 0.36 | 0/579 | 0.60 | 0/768 |
| 18 | CR | 0.36 | 0/579 | 0.60 | 0/768 |
| 19 | AS | 0.38 | 0/643 | 0.63 | 0/867 |
| 19 | CS | 0.36 | 0/643 | 0.62 | 0/867 |
| 20 | AT | 0.30 | 0/765 | 0.59 | 0/1007 |
| 20 | CT | 0.30 | 0/765 | 0.58 | 0/1007 |
| 21 | AU | 0.46 | 0/213 | 0.61 | 0/279 |
| 21 | CU | 0.45 | 0/213 | 0.60 | 0/279 |
| 22 | AV | 0.44 | 0/1784 | 0.75 | 0/2780 |
| 22 | AY | 0.47 | 0/1784 | 0.74 | 0/2780 |
| 22 | CV | 0.40 | 0/1784 | 0.71 | 0/2780 |
| 22 | CY | 0.41 | 0/1784 | 0.73 | 0/2780 |
| 23 | AW | 0.43 | 0/1809 | 0.71 | 0/2819 |
| 23 | CW | 0.42 | 0/1809 | 0.71 | 0/2819 |
| 24 | AX | 0.48 | 0/253 | 0.72 | 0/391 |
| 24 | CX | 0.42 | 0/253 | 0.73 | 1/391 (0.3%) |
| 25 | B0 | 0.44 | 0/671 | 0.71 | 0/892 |
| 25 | D0 | 0.41 | 0/671 | 0.69 | 0/892 |
| 26 | B1 | 0.48 | 0/739 | 0.85 | 0/983 |
| 26 | D1 | 0.46 | 0/739 | 0.72 | 0/983 |
| 27 | B2 | 0.43 | 0/600 | 0.73 | 0/793 |
| 27 | D2 | 0.39 | 0/600 | 0.65 | 0/793 |
| 28 | B3 | 0.43 | 0/473 | 0.68 | 0/636 |
| 28 | D3 | 0.37 | 0/473 | 0.64 | 0/636 |
| 29 | B4 | 0.46 | 0/229 | 0.68 | 0/311 |
| 29 | D4 | 0.44 | 0/229 | 0.67 | 0/311 |
| 30 | B5 | 0.62 | 0/473 | 0.96 | 0/639 |
| 30 | D5 | 0.49 | 0/473 | 0.92 | 0/639 |
| 31 | B6 | 0.57 | 0/387 | 0.76 | 0/517 |
| 31 | D6 | 0.51 | 0/387 | 0.75 | 0/517 |
| 32 | B7 | 0.52 | 0/427 | 0.67 | 0/563 |
| 32 | D7 | 0.48 | 0/427 | 0.65 | 0/563 |
| 33 | B8 | 0.59 | 0/516 | 0.89 | 2/681 (0.3%) |
| 33 | D8 | 0.51 | 0/516 | 0.88 | 2/681 (0.3%) |
| 34 | B9 | 0.33 | 0/302 | 0.54 | 0/397 |
| 34 | D9 | 0.29 | 0/302 | 0.53 | 0/397 |
| 35 | BA | 0.59 | 5/67716 (0.0%) | 0.76 | 38/105718 (0.0%) |
| 35 | DA | 0.48 | 4/67716 (0.0%) | 0.74 | 31/105718 (0.0%) |
| 36 | BB | 0.50 | 0/2853 | 0.75 | 1/4451 (0.0%) |
| 36 | DB | 0.42 | 0/2853 | 0.74 | 1/4451 (0.0%) |
| 37 | BC | 0.37 | 0/1143 | 0.68 | 5/1552 (0.3%) |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|-----------------|-------------|-------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 37 | DC | 0.37 | 0/1145 | 0.69 | 6/1556 (0.4%) |
| 38 | BD | 0.51 | 0/2155 | 0.80 | 1/2907 (0.0%) |
| 38 | DD | 0.47 | 0/2155 | 0.79 | 1/2907 (0.0%) |
| 39 | BE | 0.47 | 0/1597 | 0.80 | 1/2155 (0.0%) |
| 39 | DE | 0.41 | 0/1597 | 0.77 | 0/2155 |
| 40 | BF | 0.46 | 0/1659 | 0.71 | 0/2246 |
| 40 | DF | 0.42 | 0/1659 | 0.69 | 0/2246 |
| 41 | BG | 0.40 | 0/1498 | 0.77 | 2/2013 (0.1%) |
| 41 | DG | 0.38 | 0/1498 | 0.71 | 1/2013 (0.0%) |
| 42 | BH | 0.44 | 0/1246 | 0.77 | 0/1684 |
| 42 | DH | 0.37 | 0/1246 | 0.74 | 0/1684 |
| 43 | BI | 0.36 | 0/1147 | 0.65 | 0/1553 |
| 43 | DI | 0.35 | 0/1147 | 0.63 | 0/1553 |
| 44 | BN | 0.45 | 0/1132 | 0.75 | 0/1527 |
| 44 | DN | 0.38 | 0/1132 | 0.72 | 0/1527 |
| 45 | BO | 0.44 | 0/943 | 0.68 | 0/1269 |
| 45 | DO | 0.37 | 0/943 | 0.67 | 0/1269 |
| 46 | BP | 0.51 | 0/1131 | 1.01 | 5/1504 (0.3%) |
| 46 | DP | 0.45 | 0/1131 | 0.98 | 5/1504 (0.3%) |
| 47 | BQ | 0.45 | 0/1143 | 0.69 | 0/1527 |
| 47 | DQ | 0.40 | 0/1143 | 0.67 | 0/1527 |
| 48 | BR | 0.44 | 0/974 | 0.79 | 2/1302 (0.2%) |
| 48 | DR | 0.39 | 0/974 | 0.76 | 1/1302 (0.1%) |
| 49 | BS | 0.48 | 0/779 | 0.83 | 1/1038 (0.1%) |
| 49 | DS | 0.42 | 0/779 | 0.79 | 2/1038 (0.2%) |
| 50 | BT | 0.44 | 0/1156 | 0.79 | 1/1544 (0.1%) |
| 50 | DT | 0.41 | 0/1156 | 0.78 | 1/1544 (0.1%) |
| 51 | BU | 0.52 | 0/975 | 0.79 | 2/1297 (0.2%) |
| 51 | DU | 0.42 | 0/975 | 0.74 | 2/1297 (0.2%) |
| 52 | BV | 0.46 | 0/790 | 0.77 | 1/1057 (0.1%) |
| 52 | DV | 0.38 | 0/790 | 0.74 | 1/1057 (0.1%) |
| 53 | BW | 0.49 | 0/907 | 0.78 | 1/1216 (0.1%) |
| 53 | DW | 0.42 | 0/907 | 0.75 | 0/1216 |
| 54 | BX | 0.48 | 0/740 | 0.73 | 1/995 (0.1%) |
| 54 | DX | 0.44 | 0/740 | 0.71 | 1/995 (0.1%) |
| 55 | BY | 0.56 | 0/789 | 0.85 | 0/1053 |
| 55 | DY | 0.49 | 0/789 | 0.83 | 0/1053 |
| 56 | BZ | 0.42 | 0/1436 | 0.72 | 0/1951 |
| 56 | DZ | 0.36 | 0/1436 | 0.65 | 0/1951 |
| All | All | 0.47 | 9/320004 (0.0%) | 0.72 | 150/478610 (0.0%) |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is

detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | AA | 0 | 10 |
| 1 | CA | 0 | 8 |
| 23 | AW | 0 | 2 |
| 35 | BA | 4 | 39 |
| 35 | DA | 3 | 33 |
| 36 | BB | 0 | 3 |
| 36 | DB | 0 | 3 |
| All | All | 7 | 98 |

All (9) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 35 | BA | 652 | C | C3'-O3' | 8.01 | 1.53 | 1.42 |
| 35 | DA | 652 | C | C3'-O3' | 7.44 | 1.52 | 1.42 |
| 35 | BA | 652 | C | O3'-P | 6.31 | 1.68 | 1.61 |
| 35 | DA | 652 | C | O3'-P | 5.91 | 1.68 | 1.61 |
| 35 | BA | 652 | C | O5'-C5' | 5.67 | 1.53 | 1.44 |
| 35 | BA | 656 | G | O5'-C5' | 5.34 | 1.53 | 1.44 |
| 35 | DA | 652 | C | O5'-C5' | 5.32 | 1.52 | 1.44 |
| 35 | BA | 1332 | G | N9-C4 | -5.29 | 1.33 | 1.38 |
| 35 | DA | 656 | G | O5'-C5' | 5.11 | 1.52 | 1.44 |

All (150) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 46 | BP | 52 | GLU | N-CA-C | 9.63 | 137.00 | 111.00 |
| 46 | DP | 52 | GLU | N-CA-C | 9.54 | 136.76 | 111.00 |
| 35 | BA | 283 | A | C2'-C3'-O3' | 9.40 | 130.18 | 109.50 |
| 35 | BA | 1799 | G | C2'-C3'-O3' | 9.35 | 130.07 | 109.50 |
| 35 | DA | 1799 | G | C2'-C3'-O3' | 9.28 | 129.91 | 109.50 |
| 35 | BA | 1819 | A | C2'-C3'-O3' | 9.20 | 129.73 | 109.50 |
| 35 | BA | 1378 | A | C2'-C3'-O3' | 9.18 | 129.70 | 109.50 |
| 35 | DA | 1378 | A | C2'-C3'-O3' | 9.16 | 129.66 | 109.50 |
| 35 | DA | 283 | A | C2'-C3'-O3' | 9.15 | 129.64 | 109.50 |
| 35 | BA | 387 | U | C2'-C3'-O3' | 8.76 | 128.78 | 109.50 |
| 35 | DA | 387 | U | C2'-C3'-O3' | 8.74 | 128.72 | 109.50 |
| 35 | DA | 1819 | A | C2'-C3'-O3' | 8.64 | 128.52 | 109.50 |
| 46 | BP | 53 | GLY | N-CA-C | -8.62 | 91.55 | 113.10 |
| 46 | DP | 53 | GLY | N-CA-C | -8.41 | 92.07 | 113.10 |
| 35 | BA | 1653 | G | C2'-C3'-O3' | 8.41 | 127.99 | 109.50 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|--------|------|-------------|-------|-------------|----------|
| 35 | DA | 1786 | A | N9-C1'-C2' | 8.22 | 124.68 | 114.00 |
| 1 | AA | 366 | C | C2'-C3'-O3' | 8.10 | 127.33 | 109.50 |
| 1 | CA | 575 | G | C2'-C3'-O3' | 8.01 | 127.11 | 109.50 |
| 1 | CA | 366 | C | C2'-C3'-O3' | 7.98 | 127.06 | 109.50 |
| 1 | AA | 575 | G | C2'-C3'-O3' | 7.97 | 127.05 | 109.50 |
| 35 | BA | 1786 | A | N9-C1'-C2' | 7.83 | 124.18 | 114.00 |
| 35 | DA | 1992 | G | N9-C1'-C2' | 7.82 | 124.17 | 114.00 |
| 35 | DA | 1653 | G | C2'-C3'-O3' | 7.74 | 126.53 | 109.50 |
| 35 | BA | 1992 | G | N9-C1'-C2' | 7.57 | 123.84 | 114.00 |
| 35 | BA | 2225 | A | C2'-C3'-O3' | 7.50 | 126.01 | 109.50 |
| 46 | DP | 41 | ARG | N-CA-C | -7.30 | 91.29 | 111.00 |
| 35 | DA | 2225 | A | C2'-C3'-O3' | 7.29 | 125.53 | 109.50 |
| 46 | BP | 41 | ARG | N-CA-C | -7.16 | 91.66 | 111.00 |
| 35 | BA | 1493 | C | N1-C1'-C2' | 6.99 | 123.09 | 114.00 |
| 35 | BA | 272 | G | C2'-C3'-O3' | 6.99 | 124.89 | 113.70 |
| 35 | BA | 1992 | G | C2'-C3'-O3' | 6.88 | 124.70 | 113.70 |
| 35 | DA | 1992 | G | C2'-C3'-O3' | 6.86 | 124.68 | 113.70 |
| 1 | AA | 115 | G | C2'-C3'-O3' | 6.86 | 124.67 | 113.70 |
| 35 | DA | 272 | G | C2'-C3'-O3' | 6.80 | 124.58 | 113.70 |
| 35 | DA | 1493 | C | N1-C1'-C2' | 6.76 | 122.79 | 114.00 |
| 35 | BA | 856 | C | C2'-C3'-O3' | 6.75 | 124.50 | 113.70 |
| 1 | AA | 1064 | G | C2'-C3'-O3' | 6.74 | 124.49 | 113.70 |
| 35 | BA | 272(B) | G | N9-C1'-C2' | -6.72 | 104.61 | 112.00 |
| 1 | CA | 1064 | G | C2'-C3'-O3' | 6.67 | 124.37 | 113.70 |
| 35 | BA | 656 | G | C5'-C4'-C3' | 6.49 | 126.38 | 116.00 |
| 51 | BU | 34 | LYS | N-CA-C | -6.49 | 93.49 | 111.00 |
| 1 | CA | 115 | G | C2'-C3'-O3' | 6.46 | 124.04 | 113.70 |
| 51 | DU | 34 | LYS | N-CA-C | -6.44 | 93.62 | 111.00 |
| 41 | BG | 129 | GLY | N-CA-C | -6.43 | 97.02 | 113.10 |
| 35 | BA | 1053 | C | N1-C1'-C2' | 6.42 | 122.35 | 114.00 |
| 35 | DA | 1053 | C | N1-C1'-C2' | 6.42 | 122.35 | 114.00 |
| 35 | DA | 2506 | U | C2'-C3'-O3' | 6.33 | 123.83 | 113.70 |
| 35 | DA | 856 | C | C2'-C3'-O3' | 6.32 | 123.81 | 113.70 |
| 33 | D8 | 32 | LEU | N-CA-C | -6.31 | 93.96 | 111.00 |
| 35 | DA | 272(B) | G | N9-C1'-C2' | -6.30 | 105.06 | 112.00 |
| 37 | BC | 174 | PRO | N-CA-CB | 6.24 | 110.78 | 103.30 |
| 35 | BA | 2506 | U | C2'-C3'-O3' | 6.23 | 123.67 | 113.70 |
| 1 | CA | 1504 | G | C2'-C3'-O3' | 6.16 | 123.56 | 113.70 |
| 36 | BB | 52 | A | N9-C1'-C2' | 6.16 | 122.00 | 114.00 |
| 54 | BX | 57 | LEU | CA-CB-CG | 6.13 | 129.40 | 115.30 |
| 33 | B8 | 32 | LEU | N-CA-C | -6.11 | 94.50 | 111.00 |
| 33 | D8 | 45 | GLY | N-CA-C | -6.08 | 97.91 | 113.10 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|--------|------|-------------|-------|-------------|----------|
| 37 | BC | 133 | PRO | N-CA-CB | 6.04 | 110.56 | 103.30 |
| 36 | DB | 52 | A | N9-C1'-C2' | 5.93 | 121.72 | 114.00 |
| 35 | BA | 673 | C | C5'-C4'-C3' | -5.93 | 106.52 | 116.00 |
| 54 | DX | 57 | LEU | CA-CB-CG | 5.93 | 128.93 | 115.30 |
| 35 | DA | 656 | G | C5'-C4'-C3' | 5.91 | 125.46 | 116.00 |
| 1 | AA | 1335 | C | N1-C1'-C2' | 5.91 | 121.68 | 114.00 |
| 1 | CA | 1335 | C | N1-C1'-C2' | 5.88 | 121.65 | 114.00 |
| 37 | DC | 133 | PRO | N-CA-CB | 5.86 | 110.33 | 103.30 |
| 37 | DC | 174 | PRO | N-CA-CB | 5.86 | 110.33 | 103.30 |
| 1 | AA | 1067 | A | C2'-C3'-O3' | 5.84 | 123.04 | 113.70 |
| 46 | BP | 54 | GLY | N-CA-C | -5.83 | 98.54 | 113.10 |
| 35 | BA | 1616 | A | N9-C1'-C2' | 5.80 | 121.54 | 114.00 |
| 35 | BA | 945 | A | N9-C1'-C2' | 5.80 | 121.54 | 114.00 |
| 46 | DP | 54 | GLY | N-CA-C | -5.79 | 98.64 | 113.10 |
| 1 | CA | 1067 | A | C2'-C3'-O3' | 5.77 | 122.93 | 113.70 |
| 50 | BT | 30 | VAL | N-CA-C | 5.75 | 126.54 | 111.00 |
| 37 | DC | 182 | PRO | N-CA-CB | 5.74 | 110.19 | 103.30 |
| 38 | BD | 210 | GLY | N-CA-C | -5.71 | 98.83 | 113.10 |
| 33 | B8 | 45 | GLY | N-CA-C | -5.70 | 98.86 | 113.10 |
| 46 | BP | 58 | THR | N-CA-C | -5.68 | 95.67 | 111.00 |
| 37 | BC | 182 | PRO | N-CA-CB | 5.68 | 110.11 | 103.30 |
| 50 | DT | 30 | VAL | N-CA-C | 5.67 | 126.30 | 111.00 |
| 35 | BA | 2827 | C | C5'-C4'-C3' | -5.65 | 106.95 | 116.00 |
| 35 | BA | 1495 | A | N9-C1'-C2' | 5.64 | 121.33 | 114.00 |
| 35 | DA | 673 | C | C5'-C4'-C3' | -5.64 | 106.97 | 116.00 |
| 49 | BS | 16 | ASN | N-CA-C | -5.61 | 95.86 | 111.00 |
| 1 | AA | 920 | U | C5'-C4'-C3' | -5.59 | 107.06 | 116.00 |
| 35 | BA | 272(B) | G | C5'-C4'-C3' | 5.58 | 124.92 | 116.00 |
| 35 | BA | 1365 | A | C5'-C4'-C3' | 5.58 | 124.92 | 116.00 |
| 35 | DA | 272(B) | G | C5'-C4'-C3' | 5.57 | 124.91 | 116.00 |
| 49 | DS | 16 | ASN | N-CA-C | -5.56 | 95.98 | 111.00 |
| 41 | DG | 129 | GLY | N-CA-C | -5.54 | 99.26 | 113.10 |
| 24 | CX | 22 | A | C2'-C3'-O3' | 5.51 | 122.52 | 113.70 |
| 38 | DD | 210 | GLY | N-CA-C | -5.51 | 99.32 | 113.10 |
| 46 | DP | 58 | THR | N-CA-C | -5.51 | 96.13 | 111.00 |
| 48 | DR | 10 | LEU | CA-CB-CG | 5.50 | 127.96 | 115.30 |
| 48 | BR | 10 | LEU | CA-CB-CG | 5.50 | 127.95 | 115.30 |
| 35 | DA | 945 | A | N9-C1'-C2' | 5.50 | 121.15 | 114.00 |
| 1 | CA | 1502 | A | N9-C1'-C2' | 5.49 | 121.14 | 114.00 |
| 37 | DC | 220 | PRO | N-CA-CB | 5.49 | 109.89 | 103.30 |
| 35 | BA | 74 | A | N9-C1'-C2' | 5.47 | 121.11 | 114.00 |
| 35 | BA | 1529 | G | N9-C1'-C2' | 5.45 | 121.08 | 114.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|--------|------|-------------|-------|-------------|----------|
| 1 | CA | 920 | U | C5'-C4'-C3' | -5.42 | 107.32 | 116.00 |
| 35 | DA | 2346 | A | N9-C1'-C2' | 5.42 | 121.04 | 114.00 |
| 1 | AA | 428 | G | C2'-C3'-O3' | 5.38 | 122.31 | 113.70 |
| 35 | DA | 1365 | A | C5'-C4'-C3' | 5.37 | 124.60 | 116.00 |
| 52 | BV | 49 | THR | N-CA-C | -5.35 | 96.55 | 111.00 |
| 35 | DA | 1529 | G | N9-C1'-C2' | 5.33 | 120.94 | 114.00 |
| 1 | AA | 1504 | G | C2'-C3'-O3' | 5.32 | 122.22 | 113.70 |
| 35 | DA | 310 | A | C5'-C4'-C3' | -5.32 | 107.48 | 116.00 |
| 35 | BA | 783 | A | N9-C1'-C2' | -5.32 | 106.15 | 112.00 |
| 1 | CA | 484 | G | N9-C1'-C2' | 5.29 | 120.87 | 114.00 |
| 1 | AA | 1529 | G | N9-C1'-C2' | 5.26 | 120.84 | 114.00 |
| 48 | BR | 44 | LEU | CA-CB-CG | 5.22 | 127.31 | 115.30 |
| 35 | BA | 1378 | A | C4'-C3'-O3' | 5.17 | 123.35 | 113.00 |
| 52 | DV | 49 | THR | N-CA-C | -5.17 | 97.03 | 111.00 |
| 35 | BA | 310 | A | C5'-C4'-C3' | -5.17 | 107.72 | 116.00 |
| 37 | DC | 201 | PRO | N-CA-CB | 5.17 | 109.50 | 103.30 |
| 1 | CA | 1124 | G | N9-C1'-C2' | 5.17 | 120.72 | 114.00 |
| 35 | BA | 265 | A | N9-C1'-C2' | 5.16 | 120.70 | 114.00 |
| 35 | DA | 158 | U | N1-C1'-C2' | 5.15 | 120.70 | 114.00 |
| 1 | AA | 1411 | C | N1-C1'-C2' | -5.15 | 106.34 | 112.00 |
| 35 | DA | 1698 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 1 | CA | 428 | G | C2'-C3'-O3' | 5.12 | 121.88 | 113.70 |
| 35 | DA | 1495 | A | N9-C1'-C2' | 5.11 | 120.64 | 114.00 |
| 37 | BC | 140 | PRO | N-CA-CB | 5.11 | 109.43 | 103.30 |
| 1 | AA | 328 | C | N1-C1'-C2' | 5.10 | 120.63 | 114.00 |
| 35 | BA | 2346 | A | N9-C1'-C2' | 5.09 | 120.62 | 114.00 |
| 35 | DA | 74 | A | N9-C1'-C2' | 5.08 | 120.61 | 114.00 |
| 35 | BA | 158 | U | N1-C1'-C2' | 5.08 | 120.60 | 114.00 |
| 35 | BA | 2263 | C | C5'-C4'-O4' | -5.08 | 103.01 | 109.10 |
| 1 | AA | 484 | G | N9-C1'-C2' | 5.08 | 120.60 | 114.00 |
| 1 | AA | 1124 | G | N9-C1'-C2' | 5.08 | 120.60 | 114.00 |
| 1 | AA | 1054 | C | N1-C1'-C2' | 5.07 | 120.59 | 114.00 |
| 35 | BA | 1594 | G | C5'-C4'-O4' | -5.07 | 103.02 | 109.10 |
| 35 | BA | 154(A) | C | N1-C1'-C2' | -5.06 | 106.43 | 112.00 |
| 35 | DA | 2827 | C | C5'-C4'-C3' | -5.05 | 107.92 | 116.00 |
| 1 | CA | 1281 | U | N1-C1'-C2' | 5.05 | 120.56 | 114.00 |
| 35 | BA | 1698 | A | O4'-C1'-N9 | 5.04 | 112.23 | 108.20 |
| 35 | DA | 1616 | A | N9-C1'-C2' | 5.04 | 120.56 | 114.00 |
| 35 | BA | 1332 | G | N9-C1'-C2' | -5.04 | 106.46 | 112.00 |
| 39 | BE | 118 | LYS | N-CA-C | -5.03 | 97.43 | 111.00 |
| 1 | CA | 1054 | C | N1-C1'-C2' | 5.03 | 120.54 | 114.00 |
| 1 | AA | 1531 | A | C2'-C3'-O3' | 5.03 | 121.74 | 113.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 35 | DA | 783 | A | N9-C1'-C2' | -5.03 | 106.47 | 112.00 |
| 53 | BW | 51 | LEU | CA-CB-CG | 5.02 | 126.85 | 115.30 |
| 37 | BC | 201 | PRO | N-CA-CB | 5.02 | 109.32 | 103.30 |
| 49 | DS | 14 | VAL | N-CA-C | -5.02 | 97.45 | 111.00 |
| 51 | DU | 97 | ASP | N-CA-C | -5.01 | 97.46 | 111.00 |
| 35 | BA | 603 | A | N9-C1'-C2' | 5.01 | 120.52 | 114.00 |
| 41 | BG | 60 | LEU | CA-CB-CG | 5.01 | 126.83 | 115.30 |
| 51 | BU | 97 | ASP | N-CA-C | -5.01 | 97.48 | 111.00 |
| 37 | DC | 140 | PRO | N-CA-CB | 5.00 | 109.31 | 103.30 |

All (7) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|------|------|------|
| 35 | BA | 283 | A | C3' |
| 35 | BA | 1378 | A | C3' |
| 35 | BA | 1799 | G | C3' |
| 35 | BA | 1819 | A | C3' |
| 35 | DA | 283 | A | C3' |
| 35 | DA | 1378 | A | C3' |
| 35 | DA | 1799 | G | C3' |

All (98) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-----------|
| 1 | AA | 1077 | G | Sidechain |
| 1 | AA | 1124 | G | Sidechain |
| 1 | AA | 1131 | G | Sidechain |
| 1 | AA | 1281 | U | Sidechain |
| 1 | AA | 1503 | A | Sidechain |
| 1 | AA | 21 | G | Sidechain |
| 1 | AA | 484 | G | Sidechain |
| 1 | AA | 760 | G | Sidechain |
| 1 | AA | 832 | C | Sidechain |
| 1 | AA | 9 | G | Sidechain |
| 23 | AW | 39 | U | Sidechain |
| 23 | AW | 5 | G | Sidechain |
| 35 | BA | 1025 | G | Sidechain |
| 35 | BA | 1040 | C | Sidechain |
| 35 | BA | 1139 | G | Sidechain |
| 35 | BA | 1300 | U | Sidechain |
| 35 | BA | 1379 | A | Sidechain |
| 35 | BA | 15 | G | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|--------|------|-----------|
| 35 | BA | 171 | G | Sidechain |
| 35 | BA | 1772 | G | Sidechain |
| 35 | BA | 1807 | G | Sidechain |
| 35 | BA | 1929 | G | Sidechain |
| 35 | BA | 1940 | U | Sidechain |
| 35 | BA | 1955 | U | Sidechain |
| 35 | BA | 1956 | U | Sidechain |
| 35 | BA | 1992 | G | Sidechain |
| 35 | BA | 243 | U | Sidechain |
| 35 | BA | 2464 | C | Sidechain |
| 35 | BA | 249 | C | Sidechain |
| 35 | BA | 2504 | U | Sidechain |
| 35 | BA | 2517 | C | Sidechain |
| 35 | BA | 2563 | U | Sidechain |
| 35 | BA | 2580 | U | Sidechain |
| 35 | BA | 2595 | G | Sidechain |
| 35 | BA | 271(Q) | G | Sidechain |
| 35 | BA | 272 | G | Sidechain |
| 35 | BA | 272(B) | G | Sidechain |
| 35 | BA | 2842 | G | Sidechain |
| 35 | BA | 2867 | G | Sidechain |
| 35 | BA | 2885 | C | Sidechain |
| 35 | BA | 387 | U | Sidechain |
| 35 | BA | 443 | A | Sidechain |
| 35 | BA | 476 | G | Sidechain |
| 35 | BA | 525 | U | Sidechain |
| 35 | BA | 530 | G | Sidechain |
| 35 | BA | 543 | C | Sidechain |
| 35 | BA | 648 | G | Sidechain |
| 35 | BA | 70 | G | Sidechain |
| 35 | BA | 74 | A | Sidechain |
| 35 | BA | 806 | C | Sidechain |
| 35 | BA | 987 | G | Sidechain |
| 36 | BB | 21 | G | Sidechain |
| 36 | BB | 66 | A | Sidechain |
| 36 | BB | 80 | U | Sidechain |
| 1 | CA | 1131 | G | Sidechain |
| 1 | CA | 1281 | U | Sidechain |
| 1 | CA | 1485 | U | Sidechain |
| 1 | CA | 21 | G | Sidechain |
| 1 | CA | 666 | G | Sidechain |
| 1 | CA | 760 | G | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|--------|------|-----------|
| 1 | CA | 832 | C | Sidechain |
| 1 | CA | 901 | A | Sidechain |
| 35 | DA | 1040 | C | Sidechain |
| 35 | DA | 1139 | G | Sidechain |
| 35 | DA | 1300 | U | Sidechain |
| 35 | DA | 15 | G | Sidechain |
| 35 | DA | 171 | G | Sidechain |
| 35 | DA | 1772 | G | Sidechain |
| 35 | DA | 1807 | G | Sidechain |
| 35 | DA | 1955 | U | Sidechain |
| 35 | DA | 1956 | U | Sidechain |
| 35 | DA | 1992 | G | Sidechain |
| 35 | DA | 2426 | A | Sidechain |
| 35 | DA | 2464 | C | Sidechain |
| 35 | DA | 249 | C | Sidechain |
| 35 | DA | 2504 | U | Sidechain |
| 35 | DA | 2517 | C | Sidechain |
| 35 | DA | 2563 | U | Sidechain |
| 35 | DA | 2597 | G | Sidechain |
| 35 | DA | 271(Q) | G | Sidechain |
| 35 | DA | 272(B) | G | Sidechain |
| 35 | DA | 2867 | G | Sidechain |
| 35 | DA | 2885 | C | Sidechain |
| 35 | DA | 387 | U | Sidechain |
| 35 | DA | 443 | A | Sidechain |
| 35 | DA | 530 | G | Sidechain |
| 35 | DA | 543 | C | Sidechain |
| 35 | DA | 630 | G | Sidechain |
| 35 | DA | 648 | G | Sidechain |
| 35 | DA | 70 | G | Sidechain |
| 35 | DA | 74 | A | Sidechain |
| 35 | DA | 806 | C | Sidechain |
| 35 | DA | 827 | U | Sidechain |
| 35 | DA | 963 | U | Sidechain |
| 35 | DA | 987 | G | Sidechain |
| 36 | DB | 21 | G | Sidechain |
| 36 | DB | 66 | A | Sidechain |
| 36 | DB | 80 | U | Sidechain |

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | AA | 32329 | 0 | 16315 | 1281 | 0 |
| 1 | CA | 32329 | 0 | 16312 | 1277 | 0 |
| 2 | AB | 1901 | 0 | 1951 | 273 | 0 |
| 2 | CB | 1901 | 0 | 1951 | 273 | 0 |
| 3 | AC | 1613 | 0 | 1677 | 245 | 0 |
| 3 | CC | 1613 | 0 | 1677 | 250 | 0 |
| 4 | AD | 1703 | 0 | 1762 | 166 | 0 |
| 4 | CD | 1703 | 0 | 1763 | 166 | 0 |
| 5 | AE | 1147 | 0 | 1207 | 137 | 0 |
| 5 | CE | 1147 | 0 | 1207 | 134 | 0 |
| 6 | AF | 843 | 0 | 857 | 97 | 0 |
| 6 | CF | 843 | 0 | 857 | 91 | 0 |
| 7 | AG | 1257 | 0 | 1296 | 117 | 0 |
| 7 | CG | 1257 | 0 | 1296 | 113 | 0 |
| 8 | AH | 1116 | 0 | 1177 | 127 | 0 |
| 8 | CH | 1116 | 0 | 1177 | 127 | 0 |
| 9 | AI | 1011 | 0 | 1041 | 170 | 0 |
| 9 | CI | 1011 | 0 | 1041 | 167 | 0 |
| 10 | AJ | 795 | 0 | 840 | 175 | 0 |
| 10 | CJ | 795 | 0 | 840 | 177 | 0 |
| 11 | AK | 885 | 0 | 904 | 103 | 0 |
| 11 | CK | 885 | 0 | 904 | 98 | 0 |
| 12 | AL | 971 | 0 | 1057 | 130 | 0 |
| 12 | CL | 971 | 0 | 1057 | 126 | 0 |
| 13 | AM | 988 | 0 | 1056 | 173 | 0 |
| 13 | CM | 988 | 0 | 1056 | 168 | 0 |
| 14 | AN | 492 | 0 | 529 | 74 | 0 |
| 14 | CN | 492 | 0 | 529 | 75 | 0 |
| 15 | AO | 734 | 0 | 771 | 74 | 0 |
| 15 | CO | 734 | 0 | 771 | 77 | 0 |
| 16 | AP | 701 | 0 | 720 | 82 | 0 |
| 16 | CP | 701 | 0 | 720 | 78 | 0 |
| 17 | AQ | 824 | 0 | 891 | 92 | 0 |
| 17 | CQ | 824 | 0 | 891 | 88 | 0 |
| 18 | AR | 574 | 0 | 644 | 82 | 0 |
| 18 | CR | 574 | 0 | 644 | 86 | 0 |
| 19 | AS | 630 | 0 | 652 | 105 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 19 | CS | 630 | 0 | 652 | 96 | 0 |
| 20 | AT | 763 | 0 | 861 | 102 | 0 |
| 20 | CT | 763 | 0 | 861 | 102 | 0 |
| 21 | AU | 209 | 0 | 221 | 17 | 0 |
| 21 | CU | 209 | 0 | 221 | 19 | 0 |
| 22 | AV | 1630 | 0 | 831 | 66 | 0 |
| 22 | AY | 1630 | 0 | 831 | 84 | 0 |
| 22 | CV | 1630 | 0 | 831 | 78 | 0 |
| 22 | CY | 1630 | 0 | 831 | 71 | 0 |
| 23 | AW | 1619 | 0 | 822 | 93 | 0 |
| 23 | CW | 1619 | 0 | 821 | 94 | 0 |
| 24 | AX | 227 | 0 | 119 | 7 | 0 |
| 24 | CX | 227 | 0 | 118 | 10 | 0 |
| 25 | B0 | 662 | 0 | 688 | 81 | 0 |
| 25 | D0 | 662 | 0 | 688 | 81 | 0 |
| 26 | B1 | 732 | 0 | 808 | 95 | 0 |
| 26 | D1 | 732 | 0 | 808 | 88 | 0 |
| 27 | B2 | 598 | 0 | 653 | 59 | 0 |
| 27 | D2 | 598 | 0 | 653 | 86 | 0 |
| 28 | B3 | 468 | 0 | 523 | 31 | 0 |
| 28 | D3 | 468 | 0 | 523 | 30 | 0 |
| 29 | B4 | 226 | 0 | 229 | 43 | 0 |
| 29 | D4 | 226 | 0 | 229 | 35 | 0 |
| 30 | B5 | 459 | 0 | 480 | 86 | 0 |
| 30 | D5 | 459 | 0 | 480 | 86 | 0 |
| 31 | B6 | 381 | 0 | 390 | 106 | 0 |
| 31 | D6 | 381 | 0 | 390 | 105 | 0 |
| 32 | B7 | 419 | 0 | 467 | 30 | 0 |
| 32 | D7 | 419 | 0 | 467 | 30 | 0 |
| 33 | B8 | 508 | 0 | 576 | 100 | 0 |
| 33 | D8 | 508 | 0 | 576 | 98 | 0 |
| 34 | B9 | 299 | 0 | 325 | 29 | 0 |
| 34 | D9 | 299 | 0 | 325 | 31 | 0 |
| 35 | BA | 60459 | 0 | 30474 | 2058 | 0 |
| 35 | DA | 60459 | 0 | 30478 | 2069 | 0 |
| 36 | BB | 2551 | 0 | 1294 | 105 | 0 |
| 36 | DB | 2551 | 0 | 1294 | 89 | 0 |
| 37 | BC | 1140 | 0 | 863 | 123 | 0 |
| 37 | DC | 1142 | 0 | 865 | 126 | 0 |
| 38 | BD | 2105 | 0 | 2182 | 327 | 0 |
| 38 | DD | 2105 | 0 | 2182 | 319 | 0 |
| 39 | BE | 1564 | 0 | 1629 | 245 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 39 | DE | 1564 | 0 | 1629 | 245 | 0 |
| 40 | BF | 1624 | 0 | 1677 | 211 | 0 |
| 40 | DF | 1624 | 0 | 1677 | 207 | 0 |
| 41 | BG | 1474 | 0 | 1534 | 253 | 0 |
| 41 | DG | 1474 | 0 | 1534 | 269 | 0 |
| 42 | BH | 1223 | 0 | 1282 | 173 | 0 |
| 42 | DH | 1223 | 0 | 1282 | 173 | 0 |
| 43 | BI | 1132 | 0 | 1218 | 196 | 0 |
| 43 | DI | 1132 | 0 | 1218 | 198 | 0 |
| 44 | BN | 1105 | 0 | 1180 | 138 | 0 |
| 44 | DN | 1105 | 0 | 1180 | 138 | 0 |
| 45 | BO | 933 | 0 | 996 | 121 | 0 |
| 45 | DO | 933 | 0 | 996 | 123 | 0 |
| 46 | BP | 1114 | 0 | 1187 | 280 | 0 |
| 46 | DP | 1114 | 0 | 1187 | 278 | 0 |
| 47 | BQ | 1122 | 0 | 1179 | 169 | 0 |
| 47 | DQ | 1122 | 0 | 1179 | 166 | 0 |
| 48 | BR | 960 | 0 | 1021 | 139 | 0 |
| 48 | DR | 960 | 0 | 1021 | 140 | 0 |
| 49 | BS | 771 | 0 | 832 | 152 | 0 |
| 49 | DS | 771 | 0 | 832 | 143 | 0 |
| 50 | BT | 1142 | 0 | 1202 | 241 | 0 |
| 50 | DT | 1142 | 0 | 1202 | 228 | 0 |
| 51 | BU | 958 | 0 | 1015 | 156 | 0 |
| 51 | DU | 958 | 0 | 1015 | 154 | 0 |
| 52 | BV | 779 | 0 | 852 | 159 | 0 |
| 52 | DV | 779 | 0 | 852 | 162 | 0 |
| 53 | BW | 896 | 0 | 953 | 90 | 0 |
| 53 | DW | 896 | 0 | 953 | 85 | 0 |
| 54 | BX | 726 | 0 | 778 | 87 | 0 |
| 54 | DX | 726 | 0 | 778 | 86 | 0 |
| 55 | BY | 776 | 0 | 870 | 184 | 0 |
| 55 | DY | 776 | 0 | 870 | 193 | 0 |
| 56 | BZ | 1404 | 0 | 1432 | 232 | 0 |
| 56 | DZ | 1404 | 0 | 1432 | 232 | 0 |
| 57 | AA | 198 | 0 | 0 | 0 | 0 |
| 57 | AD | 1 | 0 | 0 | 0 | 0 |
| 57 | AE | 1 | 0 | 0 | 0 | 0 |
| 57 | AG | 1 | 0 | 0 | 0 | 0 |
| 57 | AI | 1 | 0 | 0 | 0 | 0 |
| 57 | AL | 2 | 0 | 0 | 0 | 0 |
| 57 | AN | 1 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 57 | AV | 5 | 0 | 0 | 0 | 0 |
| 57 | AW | 8 | 0 | 0 | 0 | 0 |
| 57 | AX | 2 | 0 | 0 | 0 | 0 |
| 57 | B0 | 1 | 0 | 0 | 0 | 0 |
| 57 | B1 | 1 | 0 | 0 | 0 | 0 |
| 57 | B2 | 2 | 0 | 0 | 0 | 0 |
| 57 | B5 | 2 | 0 | 0 | 0 | 0 |
| 57 | B7 | 1 | 0 | 0 | 0 | 0 |
| 57 | BA | 422 | 0 | 0 | 0 | 0 |
| 57 | BB | 14 | 0 | 0 | 0 | 0 |
| 57 | BD | 2 | 0 | 0 | 0 | 0 |
| 57 | BE | 1 | 0 | 0 | 0 | 0 |
| 57 | BF | 1 | 0 | 0 | 0 | 0 |
| 57 | BN | 1 | 0 | 0 | 0 | 0 |
| 57 | BO | 1 | 0 | 0 | 0 | 0 |
| 57 | BU | 1 | 0 | 0 | 1 | 0 |
| 57 | BV | 1 | 0 | 0 | 0 | 0 |
| 57 | BX | 2 | 0 | 0 | 0 | 0 |
| 57 | CA | 199 | 0 | 0 | 0 | 0 |
| 57 | CE | 1 | 0 | 0 | 0 | 0 |
| 57 | CI | 1 | 0 | 0 | 0 | 0 |
| 57 | CL | 1 | 0 | 0 | 0 | 0 |
| 57 | CN | 1 | 0 | 0 | 0 | 0 |
| 57 | CV | 5 | 0 | 0 | 0 | 0 |
| 57 | CW | 7 | 0 | 0 | 0 | 0 |
| 57 | CX | 3 | 0 | 0 | 0 | 0 |
| 57 | D1 | 1 | 0 | 0 | 0 | 0 |
| 57 | D2 | 3 | 0 | 0 | 0 | 0 |
| 57 | D5 | 2 | 0 | 0 | 0 | 0 |
| 57 | D7 | 2 | 0 | 0 | 0 | 0 |
| 57 | DA | 421 | 0 | 0 | 0 | 0 |
| 57 | DB | 13 | 0 | 0 | 0 | 0 |
| 57 | DC | 1 | 0 | 0 | 0 | 0 |
| 57 | DD | 2 | 0 | 0 | 0 | 0 |
| 57 | DE | 1 | 0 | 0 | 0 | 0 |
| 57 | DF | 2 | 0 | 0 | 0 | 0 |
| 57 | DN | 1 | 0 | 0 | 0 | 0 |
| 57 | DO | 1 | 0 | 0 | 0 | 0 |
| 57 | DS | 1 | 0 | 0 | 0 | 0 |
| 57 | DV | 1 | 0 | 0 | 0 | 0 |
| 57 | DX | 3 | 0 | 0 | 0 | 0 |
| 58 | AA | 42 | 0 | 45 | 2 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 58 | CA | 42 | 0 | 45 | 2 | 0 |
| 59 | AD | 1 | 0 | 0 | 0 | 0 |
| 59 | AN | 1 | 0 | 0 | 0 | 0 |
| 59 | B9 | 1 | 0 | 0 | 0 | 0 |
| 59 | CD | 1 | 0 | 0 | 0 | 0 |
| 59 | CN | 1 | 0 | 0 | 0 | 0 |
| 59 | D9 | 1 | 0 | 0 | 0 | 0 |
| All | All | 296042 | 0 | 199734 | 19173 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 39.

All (19173) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 54:BX:63:LYS:HE3 | 54:BX:72:LYS:HE3 | 1.23 | 1.21 |
| 56:DZ:53:ILE:HG23 | 56:DZ:71:VAL:HG23 | 1.21 | 1.18 |
| 46:DP:59:LEU:HA | 46:DP:61:ARG:CZ | 1.73 | 1.18 |
| 53:BW:1:MET:HE2 | 53:BW:2:GLU:H | 1.06 | 1.17 |
| 35:BA:2334:G:H21 | 49:BS:18:ILE:HD11 | 1.09 | 1.17 |
| 35:DA:925:C:H2' | 35:DA:926:A:H5'' | 1.27 | 1.16 |
| 35:DA:1887:C:H2' | 35:DA:1888:G:H5'' | 1.28 | 1.16 |
| 40:DF:3:GLU:HA | 40:DF:24:LEU:HG | 1.19 | 1.16 |
| 35:DA:2701:C:H3' | 35:DA:2702:U:H5'' | 1.18 | 1.16 |
| 12:AL:41:ARG:HH11 | 12:AL:41:ARG:HB3 | 1.11 | 1.15 |
| 35:BA:571:A:H5' | 35:BA:2030:A:H62 | 1.06 | 1.15 |
| 41:BG:46:ALA:HB3 | 41:BG:82:LEU:HD11 | 1.23 | 1.15 |
| 35:BA:2701:C:H3' | 35:BA:2702:U:H5'' | 1.17 | 1.15 |
| 40:BF:3:GLU:HA | 40:BF:24:LEU:HG | 1.16 | 1.15 |
| 31:B6:19:ARG:HG2 | 31:B6:20:ASN:H | 1.07 | 1.14 |
| 55:BY:76:CYS:HB3 | 55:BY:96:ILE:HD11 | 1.25 | 1.14 |
| 33:D8:25:MET:HG3 | 46:DP:64:LYS:HB3 | 1.23 | 1.14 |
| 1:AA:1146:A:H2' | 1:AA:1147:C:H5'' | 1.25 | 1.14 |
| 1:CA:1442(A):G:H3' | 1:CA:1442(B):A:H5'' | 1.16 | 1.13 |
| 1:CA:1348:U:H4' | 9:CI:120:ARG:HD2 | 1.29 | 1.13 |
| 1:AA:954:G:H4' | 13:AM:120:LYS:HG3 | 1.30 | 1.13 |
| 31:D6:19:ARG:HG2 | 31:D6:20:ASN:H | 1.07 | 1.13 |
| 35:DA:612:C:H2' | 35:DA:613:G:H5'' | 1.16 | 1.13 |
| 12:CL:46:LYS:HG2 | 12:CL:47:LYS:H | 1.01 | 1.13 |
| 2:AB:219:VAL:HA | 2:AB:222:ILE:HD12 | 1.30 | 1.13 |
| 35:BA:925:C:H2' | 35:BA:926:A:H5'' | 1.30 | 1.12 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 35:BA:694:U:H2' | 35:BA:695:G:H5'' | 1.27 | 1.12 |
| 1:AA:979:C:H3' | 1:AA:980:C:H5'' | 1.24 | 1.12 |
| 1:CA:1146:A:H2' | 1:CA:1147:C:H5'' | 1.24 | 1.12 |
| 35:BA:1747(A):G:H2' | 35:BA:1748:G:H5'' | 1.28 | 1.12 |
| 54:DX:63:LYS:HE3 | 54:DX:72:LYS:HE3 | 1.21 | 1.12 |
| 35:BA:612:C:H2' | 35:BA:613:G:H5'' | 1.16 | 1.12 |
| 35:DA:2334:G:H21 | 49:DS:18:ILE:HD11 | 1.08 | 1.12 |
| 2:CB:91:PRO:HG2 | 2:CB:155:LEU:HB2 | 1.33 | 1.11 |
| 18:AR:36:ASN:HD22 | 18:AR:39:VAL:HG21 | 1.10 | 1.11 |
| 1:AA:1348:U:H4' | 9:AI:120:ARG:HD2 | 1.27 | 1.11 |
| 50:DT:80:SER:HB3 | 50:DT:81:PRO:HD3 | 1.32 | 1.11 |
| 50:BT:80:SER:HB3 | 50:BT:81:PRO:HD3 | 1.32 | 1.11 |
| 2:CB:219:VAL:HA | 2:CB:222:ILE:HD12 | 1.27 | 1.11 |
| 35:DA:2801(A):A:H4' | 35:DA:2802:G:H5' | 1.32 | 1.10 |
| 46:BP:59:LEU:HA | 46:BP:61:ARG:CZ | 1.81 | 1.10 |
| 1:AA:1256:A:H61 | 1:AA:1278:U:H1' | 1.16 | 1.10 |
| 33:B8:25:MET:HG3 | 46:BP:64:LYS:HB3 | 1.25 | 1.10 |
| 18:CR:36:ASN:HD22 | 18:CR:39:VAL:HG21 | 1.06 | 1.10 |
| 35:DA:2571:C:H5' | 35:DA:2572:A:H5'' | 1.25 | 1.10 |
| 55:DY:76:CYS:HB3 | 55:DY:96:ILE:HD11 | 1.31 | 1.09 |
| 12:CL:47:LYS:HB3 | 12:CL:48:PRO:HD3 | 1.31 | 1.09 |
| 12:AL:47:LYS:HB3 | 12:AL:48:PRO:HD3 | 1.33 | 1.09 |
| 35:BA:2571:C:H5' | 35:BA:2572:A:H5'' | 1.26 | 1.09 |
| 23:CW:69:G:H2' | 23:CW:70:G:H5'' | 1.33 | 1.09 |
| 49:BS:97:ARG:HH21 | 49:BS:98:VAL:HA | 1.11 | 1.09 |
| 41:BG:82:LEU:HD22 | 41:BG:87:PRO:HG3 | 1.23 | 1.09 |
| 35:DA:694:U:H2' | 35:DA:695:G:H5'' | 1.25 | 1.09 |
| 22:AV:20:U:H3' | 22:AV:21:A:H5' | 1.33 | 1.09 |
| 12:CL:41:ARG:HH11 | 12:CL:41:ARG:HB3 | 1.14 | 1.09 |
| 41:DG:46:ALA:HB3 | 41:DG:82:LEU:HD11 | 1.35 | 1.09 |
| 1:CA:954:G:H4' | 13:CM:120:LYS:HG3 | 1.28 | 1.09 |
| 35:BA:1884:A:H2' | 35:BA:1885:A:H5'' | 1.26 | 1.08 |
| 52:DV:62:LEU:HD21 | 52:DV:95:LEU:HB2 | 1.33 | 1.08 |
| 38:DD:44:ASN:HB3 | 38:DD:49:ILE:HA | 1.33 | 1.08 |
| 35:DA:1884:A:H2' | 35:DA:1885:A:H5'' | 1.26 | 1.08 |
| 2:AB:91:PRO:HG2 | 2:AB:155:LEU:HB2 | 1.34 | 1.08 |
| 2:AB:77:ALA:HB2 | 2:AB:211:ILE:HD13 | 1.34 | 1.08 |
| 12:AL:46:LYS:HG2 | 12:AL:47:LYS:H | 1.02 | 1.08 |
| 1:CA:180:U:H2' | 1:CA:181:G:H5'' | 1.34 | 1.08 |
| 35:DA:2758:A:H2' | 35:DA:2759:G:H5'' | 1.34 | 1.08 |
| 43:BI:118:LYS:HD2 | 43:BI:119:PRO:HD2 | 1.35 | 1.08 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 55:DY:76:CYS:SG | 55:DY:77:PRO:HD2 | 1.93 | 1.07 |
| 35:BA:2758:A:H2' | 35:BA:2759:G:H5'' | 1.31 | 1.07 |
| 1:CA:979:C:H3' | 1:CA:980:C:H5'' | 1.26 | 1.07 |
| 50:DT:13:ARG:CZ | 50:DT:13:ARG:HA | 1.84 | 1.07 |
| 38:BD:30:GLU:HB3 | 38:BD:35:LYS:HD2 | 1.35 | 1.07 |
| 22:CV:20:U:H3' | 22:CV:21:A:C5' | 1.83 | 1.07 |
| 35:DA:1747(A):G:H2' | 35:DA:1748:G:H5'' | 1.28 | 1.07 |
| 35:DA:2701:C:H3' | 35:DA:2702:U:C5' | 1.84 | 1.07 |
| 35:BA:2801(A):A:H4' | 35:BA:2802:G:H5' | 1.32 | 1.07 |
| 51:BU:92:ARG:CZ | 52:BV:11:GLN:HB2 | 1.85 | 1.07 |
| 40:DF:132:VAL:HG22 | 40:DF:133:ASN:H | 1.15 | 1.07 |
| 39:DE:111:ARG:HA | 48:DR:2:ARG:HG3 | 1.36 | 1.07 |
| 38:BD:44:ASN:HB3 | 38:BD:49:ILE:HA | 1.34 | 1.07 |
| 35:BA:2701:C:H3' | 35:BA:2702:U:C5' | 1.83 | 1.06 |
| 46:BP:16:ARG:HD3 | 46:BP:18:ARG:H | 1.19 | 1.06 |
| 56:DZ:150:LEU:HD23 | 56:DZ:171:ILE:HB | 1.33 | 1.06 |
| 39:DE:77:ILE:HG22 | 39:DE:78:LEU:H | 1.13 | 1.06 |
| 28:D3:44:ARG:O | 28:D3:48:GLU:HG2 | 1.54 | 1.06 |
| 49:DS:97:ARG:HH21 | 49:DS:98:VAL:HA | 1.09 | 1.06 |
| 40:BF:132:VAL:HG22 | 40:BF:133:ASN:H | 1.14 | 1.06 |
| 47:DQ:141:GLN:HE22 | 56:DZ:72:ARG:HA | 1.17 | 1.06 |
| 35:BA:1171:G:H3' | 35:BA:1173:G:H4' | 1.37 | 1.06 |
| 56:BZ:53:ILE:HG22 | 56:BZ:71:VAL:HB | 1.12 | 1.06 |
| 49:BS:89:ARG:HB3 | 49:BS:92:TYR:HB3 | 1.33 | 1.06 |
| 50:BT:13:ARG:HA | 50:BT:13:ARG:CZ | 1.84 | 1.06 |
| 35:DA:1590:U:H2' | 35:DA:1591:G:H5'' | 1.38 | 1.06 |
| 5:CE:101:ILE:HG13 | 5:CE:119:LEU:HD23 | 1.31 | 1.06 |
| 48:DR:10:LEU:HD22 | 48:DR:17:ARG:HD2 | 1.35 | 1.06 |
| 39:BE:77:ILE:HG22 | 39:BE:78:LEU:H | 1.11 | 1.06 |
| 2:CB:77:ALA:HB2 | 2:CB:211:ILE:HD13 | 1.32 | 1.05 |
| 39:BE:111:ARG:HA | 48:BR:2:ARG:HG3 | 1.34 | 1.05 |
| 1:CA:1381:U:H1' | 7:CG:78:ARG:HH21 | 1.18 | 1.05 |
| 35:DA:571:A:H5' | 35:DA:2030:A:H62 | 1.10 | 1.05 |
| 1:CA:1256:A:H61 | 1:CA:1278:U:H1' | 1.15 | 1.05 |
| 35:DA:1171:G:H3' | 35:DA:1173:G:H4' | 1.37 | 1.05 |
| 1:CA:973:G:H1' | 10:CJ:55:LYS:HE2 | 1.37 | 1.05 |
| 41:DG:144:ILE:HD11 | 41:DG:148:MET:HG2 | 1.39 | 1.05 |
| 35:DA:1798:U:H5' | 38:DD:259:THR:HG22 | 1.38 | 1.05 |
| 48:BR:10:LEU:HD22 | 48:BR:17:ARG:HD2 | 1.36 | 1.05 |
| 1:AA:180:U:H2' | 1:AA:181:G:H5'' | 1.34 | 1.05 |
| 1:AA:973:G:H1' | 10:AJ:55:LYS:HE2 | 1.38 | 1.05 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 49:DS:89:ARG:HB3 | 49:DS:92:TYR:HB3 | 1.35 | 1.05 |
| 38:DD:30:GLU:HB3 | 38:DD:35:LYS:HD2 | 1.37 | 1.05 |
| 33:D8:59:LYS:HD3 | 46:DP:50:ARG:HB3 | 1.38 | 1.05 |
| 35:DA:612:C:C2' | 35:DA:613:G:H5'' | 1.87 | 1.05 |
| 28:B3:44:ARG:O | 28:B3:48:GLU:HG2 | 1.56 | 1.05 |
| 10:AJ:75:ILE:HG13 | 10:AJ:76:ASN:H | 1.20 | 1.05 |
| 46:DP:16:ARG:HD3 | 46:DP:18:ARG:H | 1.20 | 1.05 |
| 40:BF:36:VAL:HG11 | 40:BF:183:VAL:HG11 | 1.35 | 1.04 |
| 35:BA:1887:C:H2' | 35:BA:1888:G:H5'' | 1.29 | 1.04 |
| 53:DW:1:MET:HE2 | 53:DW:2:GLU:H | 1.05 | 1.04 |
| 3:AC:77:ILE:HA | 3:AC:84:ILE:HB | 1.38 | 1.04 |
| 3:CC:70:VAL:HG12 | 3:CC:71:ALA:H | 1.18 | 1.04 |
| 35:DA:2491:U:H5' | 35:DA:2570:G:H5'' | 1.39 | 1.04 |
| 39:DE:59:VAL:HG22 | 39:DE:63:LEU:HA | 1.38 | 1.04 |
| 3:AC:70:VAL:HG12 | 3:AC:71:ALA:H | 1.18 | 1.04 |
| 33:D8:13:ARG:HB3 | 46:DP:63:PRO:HB3 | 1.37 | 1.04 |
| 22:CV:20:U:H3' | 22:CV:21:A:H5' | 1.37 | 1.04 |
| 44:BN:47:ALA:HB2 | 44:BN:112:LEU:HD11 | 1.40 | 1.04 |
| 5:AE:101:ILE:HG13 | 5:AE:119:LEU:HD23 | 1.37 | 1.04 |
| 41:BG:46:ALA:HB2 | 41:BG:88:ILE:HD13 | 1.33 | 1.04 |
| 33:B8:13:ARG:HB3 | 46:BP:63:PRO:HB3 | 1.39 | 1.03 |
| 44:DN:47:ALA:HB2 | 44:DN:112:LEU:HD11 | 1.40 | 1.03 |
| 43:DI:118:LYS:HD2 | 43:DI:119:PRO:HD2 | 1.40 | 1.03 |
| 41:BG:44:GLY:H | 41:BG:88:ILE:HG21 | 1.21 | 1.03 |
| 35:BA:612:C:C2' | 35:BA:613:G:H5'' | 1.86 | 1.03 |
| 35:BA:1590:U:H2' | 35:BA:1591:G:H5'' | 1.38 | 1.03 |
| 52:BV:62:LEU:HD21 | 52:BV:95:LEU:HB2 | 1.35 | 1.03 |
| 13:AM:69:GLU:HA | 13:AM:70:LEU:N | 1.72 | 1.03 |
| 39:DE:104:VAL:HG11 | 39:DE:188:VAL:HG23 | 1.39 | 1.03 |
| 13:CM:69:GLU:HA | 13:CM:70:LEU:N | 1.73 | 1.03 |
| 35:DA:1685:C:H2' | 35:DA:1686:C:H5'' | 1.40 | 1.03 |
| 55:BY:76:CYS:SG | 55:BY:77:PRO:HD2 | 1.98 | 1.03 |
| 3:CC:77:ILE:HA | 3:CC:84:ILE:HB | 1.38 | 1.03 |
| 37:BC:58:VAL:HG21 | 37:BC:166:ASP:N | 1.74 | 1.03 |
| 42:DH:47:GLU:HG2 | 42:DH:48:GLY:H | 1.20 | 1.03 |
| 10:CJ:50:ILE:HA | 10:CJ:60:ARG:HB3 | 1.39 | 1.03 |
| 33:B8:59:LYS:HD3 | 46:BP:50:ARG:HB3 | 1.38 | 1.02 |
| 12:CL:89:ARG:HB2 | 12:CL:89:ARG:HH11 | 1.21 | 1.02 |
| 46:BP:30:THR:HG22 | 46:BP:31:ALA:H | 1.22 | 1.02 |
| 42:BH:47:GLU:HG2 | 42:BH:48:GLY:H | 1.18 | 1.02 |
| 49:DS:97:ARG:NH2 | 49:DS:98:VAL:HA | 1.75 | 1.02 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:1175:U:H4' | 35:BA:1176:G:H5' | 1.41 | 1.02 |
| 35:DA:1175:U:H4' | 35:DA:1176:G:H5' | 1.42 | 1.02 |
| 37:DC:58:VAL:HG21 | 37:DC:166:ASP:N | 1.73 | 1.02 |
| 43:BI:38:LEU:HD12 | 43:BI:38:LEU:H | 1.24 | 1.02 |
| 35:DA:2127:G:H5' | 37:DC:36:LYS:HE2 | 1.41 | 1.02 |
| 42:BH:19:VAL:HG21 | 42:BH:44:VAL:HA | 1.40 | 1.02 |
| 35:BA:1594:G:H5' | 35:BA:1594:G:H8 | 1.23 | 1.02 |
| 3:CC:141:VAL:HG11 | 3:CC:202:ILE:HD12 | 1.42 | 1.02 |
| 42:DH:102:ALA:HB2 | 42:DH:117:PRO:HD3 | 1.42 | 1.02 |
| 40:DF:181:LEU:HD11 | 40:DF:186:ILE:HD11 | 1.41 | 1.02 |
| 50:DT:28:VAL:HG21 | 50:DT:46:GLU:HG3 | 1.40 | 1.02 |
| 51:DU:92:ARG:CZ | 52:DV:11:GLN:HB2 | 1.89 | 1.02 |
| 35:DA:2312:U:H2' | 35:DA:2313:C:H5'' | 1.41 | 1.02 |
| 50:BT:28:VAL:HG21 | 50:BT:46:GLU:HG3 | 1.39 | 1.01 |
| 10:AJ:50:ILE:HA | 10:AJ:60:ARG:HB3 | 1.42 | 1.01 |
| 40:BF:181:LEU:HD11 | 40:BF:186:ILE:HD11 | 1.42 | 1.01 |
| 52:DV:64:HIS:ND1 | 52:DV:92:THR:HG22 | 1.75 | 1.01 |
| 35:DA:2206:G:H21 | 35:DA:2207:G:H5' | 1.25 | 1.01 |
| 39:BE:59:VAL:HG22 | 39:BE:63:LEU:HA | 1.38 | 1.01 |
| 52:BV:64:HIS:ND1 | 52:BV:92:THR:HG22 | 1.74 | 1.01 |
| 12:AL:89:ARG:HH11 | 12:AL:89:ARG:HB2 | 1.23 | 1.01 |
| 33:D8:62:LEU:HD13 | 35:DA:242:G:H5'' | 1.42 | 1.01 |
| 22:AV:20:U:C3' | 22:AV:21:A:H5' | 1.91 | 1.01 |
| 1:AA:192:U:H4' | 20:AT:103:GLY:HA2 | 1.41 | 1.01 |
| 7:CG:102:ARG:HG2 | 7:CG:106:GLN:HE21 | 1.26 | 1.01 |
| 1:AA:585:G:H4' | 12:AL:8:ASN:HD21 | 1.23 | 1.01 |
| 46:DP:30:THR:HG22 | 46:DP:31:ALA:H | 1.22 | 1.01 |
| 35:DA:1798:U:H5' | 38:DD:259:THR:CG2 | 1.90 | 1.01 |
| 35:DA:1685:C:C2' | 35:DA:1686:C:H5'' | 1.90 | 1.01 |
| 33:B8:50:LEU:HD12 | 33:B8:51:ALA:H | 1.25 | 1.01 |
| 35:BA:2312:U:H2' | 35:BA:2313:C:H5'' | 1.40 | 1.01 |
| 42:BH:102:ALA:HB2 | 42:BH:117:PRO:HD3 | 1.41 | 1.01 |
| 52:BV:19:LYS:NZ | 52:BV:20:LEU:H | 1.58 | 1.01 |
| 35:BA:2206:G:N2 | 35:BA:2207:G:H5' | 1.74 | 1.01 |
| 43:BI:91:SER:HB2 | 43:BI:119:PRO:HB2 | 1.40 | 1.01 |
| 56:DZ:150:LEU:H | 56:DZ:150:LEU:HD13 | 1.26 | 1.01 |
| 35:BA:2468:G:HO2' | 35:BA:2469:A:H8 | 1.07 | 1.00 |
| 3:AC:71:ALA:HA | 3:AC:105:GLU:HG3 | 1.42 | 1.00 |
| 43:DI:91:SER:HB2 | 43:DI:119:PRO:HB2 | 1.43 | 1.00 |
| 35:BA:2206:G:H21 | 35:BA:2207:G:H5' | 1.22 | 1.00 |
| 41:DG:129:GLY:HA2 | 41:DG:164:GLU:HA | 1.44 | 1.00 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BD:181:GLU:HA | 38:BD:272:ALA:HB3 | 1.42 | 1.00 |
| 1:CA:192:U:H4' | 20:CT:103:GLY:HA2 | 1.41 | 1.00 |
| 49:BS:97:ARG:NH2 | 49:BS:98:VAL:HA | 1.76 | 1.00 |
| 35:BA:2491:U:H5' | 35:BA:2570:G:H5'' | 1.41 | 1.00 |
| 35:DA:2092:U:H4' | 35:DA:2093:G:H5'' | 1.42 | 1.00 |
| 4:AD:18:LYS:HB2 | 4:AD:33:MET:HG2 | 1.44 | 0.99 |
| 1:AA:1256:A:N6 | 1:AA:1278:U:H1' | 1.77 | 0.99 |
| 10:CJ:75:ILE:HG13 | 10:CJ:76:ASN:H | 1.21 | 0.99 |
| 1:CA:585:G:H4' | 12:CL:8:ASN:HD21 | 1.24 | 0.99 |
| 1:CA:1256:A:N6 | 1:CA:1278:U:H1' | 1.77 | 0.99 |
| 3:AC:141:VAL:HG11 | 3:AC:202:ILE:HD12 | 1.41 | 0.99 |
| 55:DY:26:LYS:HG2 | 55:DY:27:VAL:H | 1.25 | 0.99 |
| 35:BA:1798:U:H5' | 38:BD:259:THR:CG2 | 1.93 | 0.99 |
| 23:CW:27:G:H1 | 23:CW:43:C:H42 | 1.05 | 0.99 |
| 10:AJ:50:ILE:H | 10:AJ:50:ILE:HD13 | 1.27 | 0.99 |
| 1:AA:1381:U:H1' | 7:AG:78:ARG:HH21 | 1.19 | 0.99 |
| 30:D5:46:CYS:SG | 30:D5:47:PRO:HD2 | 2.02 | 0.99 |
| 52:DV:19:LYS:HZ3 | 52:DV:20:LEU:H | 1.07 | 0.99 |
| 1:CA:1442(A):G:H3' | 1:CA:1442(B):A:C5' | 1.93 | 0.99 |
| 50:BT:91:ARG:HB3 | 50:BT:116:ALA:HA | 1.45 | 0.99 |
| 47:BQ:141:GLN:HE22 | 56:BZ:72:ARG:HA | 1.26 | 0.99 |
| 12:AL:41:ARG:NH1 | 12:AL:41:ARG:HB3 | 1.77 | 0.99 |
| 23:AW:38:A:H3' | 23:AW:39:U:H5'' | 1.43 | 0.99 |
| 55:BY:26:LYS:HG2 | 55:BY:27:VAL:H | 1.26 | 0.99 |
| 35:BA:2645:G:H3' | 35:BA:2646:C:H5' | 1.45 | 0.99 |
| 35:DA:2206:G:N2 | 35:DA:2207:G:H5' | 1.76 | 0.98 |
| 19:CS:6:LYS:HG2 | 19:CS:7:LYS:HD3 | 1.45 | 0.98 |
| 35:BA:1685:C:H2' | 35:BA:1686:C:H5'' | 1.41 | 0.98 |
| 37:DC:169:GLY:H | 37:DC:173:ALA:HA | 1.25 | 0.98 |
| 35:DA:925:C:C2' | 35:DA:926:A:H5'' | 1.92 | 0.98 |
| 5:AE:10:MET:HB2 | 5:AE:32:VAL:HG22 | 1.45 | 0.98 |
| 50:DT:55:ASN:HD22 | 50:DT:58:ASN:HD21 | 1.12 | 0.98 |
| 3:AC:152:ILE:HG22 | 3:AC:167:TRP:HA | 1.45 | 0.98 |
| 3:CC:71:ALA:HA | 3:CC:105:GLU:HG3 | 1.42 | 0.98 |
| 41:DG:124:SER:HB2 | 41:DG:131:TYR:CE1 | 1.99 | 0.98 |
| 35:BA:2127:G:H5' | 37:BC:36:LYS:HE2 | 1.43 | 0.98 |
| 38:DD:181:GLU:HA | 38:DD:272:ALA:HB3 | 1.43 | 0.98 |
| 2:CB:91:PRO:HG3 | 2:CB:154:LEU:HB2 | 1.46 | 0.98 |
| 41:BG:112:PRO:C | 41:BG:113:ARG:HA | 1.83 | 0.98 |
| 35:BA:1798:U:H5' | 38:BD:259:THR:HG22 | 1.40 | 0.98 |
| 35:BA:2068:U:H3 | 35:BA:2430:A:H2 | 1.02 | 0.98 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:DZ:4:ARG:HG2 | 56:DZ:58:VAL:HB | 1.45 | 0.98 |
| 1:CA:975:A:H4' | 1:CA:976:G:H5'' | 1.45 | 0.98 |
| 35:DA:1884:A:C2' | 35:DA:1885:A:H5'' | 1.94 | 0.97 |
| 40:DF:36:VAL:HG11 | 40:DF:183:VAL:HG11 | 1.42 | 0.97 |
| 1:CA:1363(A):A:H4' | 1:CA:1364:U:H5'' | 1.45 | 0.97 |
| 3:CC:152:ILE:HG22 | 3:CC:167:TRP:HA | 1.45 | 0.97 |
| 52:DV:19:LYS:NZ | 52:DV:20:LEU:H | 1.61 | 0.97 |
| 35:DA:2645:G:H3' | 35:DA:2646:C:H5' | 1.43 | 0.97 |
| 41:BG:76:SER:HB2 | 41:BG:83:ARG:HB2 | 1.43 | 0.97 |
| 7:AG:102:ARG:HG2 | 7:AG:106:GLN:HE21 | 1.26 | 0.97 |
| 5:CE:81:GLU:HG2 | 5:CE:90:VAL:HG12 | 1.47 | 0.97 |
| 50:DT:91:ARG:HB3 | 50:DT:116:ALA:HA | 1.44 | 0.97 |
| 18:CR:37:VAL:HG23 | 18:CR:38:GLU:H | 1.27 | 0.97 |
| 42:DH:19:VAL:HG21 | 42:DH:44:VAL:HA | 1.42 | 0.97 |
| 35:BA:1685:C:C2' | 35:BA:1686:C:H5'' | 1.94 | 0.97 |
| 35:DA:1594:G:H5' | 35:DA:1594:G:H8 | 1.23 | 0.97 |
| 33:D8:50:LEU:HD12 | 33:D8:51:ALA:H | 1.30 | 0.97 |
| 50:BT:28:VAL:HG22 | 50:BT:47:GLY:N | 1.79 | 0.97 |
| 55:DY:14:LEU:HD12 | 55:DY:15:VAL:H | 1.28 | 0.97 |
| 47:BQ:24:GLY:HA2 | 47:BQ:67:ARG:HH22 | 1.29 | 0.97 |
| 56:BZ:31:ARG:NH1 | 56:BZ:31:ARG:HB3 | 1.79 | 0.97 |
| 5:CE:51:VAL:HB | 5:CE:52:PRO:HD3 | 1.44 | 0.97 |
| 12:CL:41:ARG:NH1 | 12:CL:41:ARG:HB3 | 1.79 | 0.97 |
| 56:DZ:165:VAL:HG12 | 56:DZ:166:SER:H | 1.29 | 0.97 |
| 52:BV:15:GLU:HB3 | 52:BV:16:PRO:HD2 | 1.47 | 0.97 |
| 2:CB:208:ILE:HA | 2:CB:211:ILE:HD12 | 1.47 | 0.97 |
| 38:BD:71:ASP:HB2 | 38:BD:103:ARG:HH22 | 1.29 | 0.97 |
| 19:AS:6:LYS:HG2 | 19:AS:7:LYS:HD3 | 1.46 | 0.97 |
| 36:DB:20:C:H2' | 36:DB:21:G:H5'' | 1.47 | 0.97 |
| 46:BP:18:ARG:HB3 | 46:BP:18:ARG:NH1 | 1.79 | 0.97 |
| 38:DD:71:ASP:HB2 | 38:DD:103:ARG:HH22 | 1.28 | 0.97 |
| 43:BI:4:ILE:HG12 | 43:BI:18:VAL:HG22 | 1.47 | 0.97 |
| 35:DA:2468:G:HO2' | 35:DA:2469:A:H8 | 1.05 | 0.97 |
| 42:DH:66:GLY:HA2 | 42:DH:69:ARG:HB2 | 1.44 | 0.97 |
| 22:AY:41:C:H3' | 22:AY:42:C:H5'' | 1.46 | 0.97 |
| 35:BA:925:C:C2' | 35:BA:926:A:H5'' | 1.94 | 0.96 |
| 41:BG:124:SER:HB2 | 41:BG:131:TYR:CE1 | 1.99 | 0.96 |
| 55:BY:25:GLY:HA3 | 55:BY:39:VAL:HG12 | 1.47 | 0.96 |
| 43:DI:38:LEU:H | 43:DI:38:LEU:HD12 | 1.24 | 0.96 |
| 18:AR:37:VAL:HG23 | 18:AR:38:GLU:H | 1.28 | 0.96 |
| 5:CE:10:MET:HB2 | 5:CE:32:VAL:HG22 | 1.44 | 0.96 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 10:CJ:4:ILE:HA | 10:CJ:100:THR:HG22 | 1.48 | 0.96 |
| 1:AA:1363(A):A:H4' | 1:AA:1364:U:H5'' | 1.45 | 0.96 |
| 55:BY:14:LEU:HD12 | 55:BY:15:VAL:H | 1.30 | 0.96 |
| 39:BE:36:ARG:HH12 | 39:BE:88:GLY:HA3 | 1.29 | 0.96 |
| 52:DV:49:THR:HG22 | 52:DV:50:PRO:HD3 | 1.47 | 0.96 |
| 4:CD:18:LYS:HB2 | 4:CD:33:MET:HG2 | 1.44 | 0.96 |
| 17:CQ:52:LYS:H | 17:CQ:52:LYS:HD2 | 1.30 | 0.96 |
| 42:BH:44:VAL:HG12 | 42:BH:45:VAL:H | 1.30 | 0.96 |
| 42:BH:66:GLY:HA2 | 42:BH:69:ARG:HB2 | 1.43 | 0.96 |
| 26:D1:45:ASN:HD21 | 35:DA:2090:G:H21 | 1.14 | 0.96 |
| 30:B5:46:CYS:SG | 30:B5:47:PRO:HD2 | 2.06 | 0.96 |
| 28:B3:8:LEU:HD12 | 28:B3:31:LEU:HA | 1.46 | 0.96 |
| 35:BA:2729:G:H1' | 39:BE:187:ALA:HB2 | 1.48 | 0.96 |
| 2:AB:67:THR:HG21 | 2:AB:155:LEU:HD11 | 1.48 | 0.96 |
| 50:DT:28:VAL:HG13 | 50:DT:46:GLU:HA | 1.45 | 0.96 |
| 5:AE:81:GLU:HG2 | 5:AE:90:VAL:HG12 | 1.44 | 0.96 |
| 45:BO:4:PRO:O | 45:BO:5:GLN:HB2 | 1.66 | 0.96 |
| 45:DO:63:VAL:HB | 45:DO:102:VAL:HG12 | 1.46 | 0.96 |
| 37:BC:169:GLY:H | 37:BC:173:ALA:HA | 1.27 | 0.96 |
| 2:CB:67:THR:HG21 | 2:CB:155:LEU:HD11 | 1.47 | 0.96 |
| 53:DW:88:ARG:HB2 | 53:DW:92:ARG:HB3 | 1.48 | 0.96 |
| 26:B1:61:ARG:HG2 | 26:B1:61:ARG:HH11 | 1.28 | 0.96 |
| 10:CJ:50:ILE:HD13 | 10:CJ:50:ILE:H | 1.29 | 0.95 |
| 45:BO:63:VAL:HB | 45:BO:102:VAL:HG12 | 1.46 | 0.95 |
| 45:DO:4:PRO:O | 45:DO:5:GLN:HB2 | 1.64 | 0.95 |
| 39:DE:36:ARG:HH12 | 39:DE:88:GLY:HA3 | 1.28 | 0.95 |
| 35:DA:2863:C:H2' | 35:DA:2864:G:H5'' | 1.47 | 0.95 |
| 10:AJ:4:ILE:HA | 10:AJ:100:THR:HG22 | 1.48 | 0.95 |
| 1:AA:975:A:H4' | 1:AA:976:G:H5'' | 1.46 | 0.95 |
| 35:BA:2758:A:C2' | 35:BA:2759:G:H5'' | 1.96 | 0.95 |
| 37:DC:64:LEU:HD22 | 37:DC:65:PRO:HD2 | 1.48 | 0.95 |
| 41:DG:112:PRO:C | 41:DG:113:ARG:HA | 1.87 | 0.95 |
| 43:DI:77:LEU:HD11 | 43:DI:101:LEU:HD13 | 1.48 | 0.95 |
| 52:DV:15:GLU:HB3 | 52:DV:16:PRO:HD2 | 1.47 | 0.95 |
| 52:BV:72:VAL:HG23 | 52:BV:85:LYS:HB3 | 1.48 | 0.95 |
| 42:DH:44:VAL:HG12 | 42:DH:45:VAL:H | 1.28 | 0.95 |
| 35:BA:1884:A:C2' | 35:BA:1885:A:H5'' | 1.95 | 0.95 |
| 47:DQ:24:GLY:HA2 | 47:DQ:67:ARG:HH22 | 1.29 | 0.95 |
| 28:D3:8:LEU:HD12 | 28:D3:31:LEU:HA | 1.45 | 0.95 |
| 40:DF:22:ALA:HA | 40:DF:26:ALA:HB2 | 1.49 | 0.95 |
| 35:BA:1747(A):G:C2' | 35:BA:1748:G:H5'' | 1.95 | 0.95 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 35:DA:1590:U:C2' | 35:DA:1591:G:H5'' | 1.96 | 0.95 |
| 35:BA:1899:G:N2 | 35:BA:1902:C:H41 | 1.63 | 0.95 |
| 52:DV:72:VAL:HG23 | 52:DV:85:LYS:HB3 | 1.47 | 0.95 |
| 35:DA:1747(A):G:C2' | 35:DA:1748:G:H5'' | 1.96 | 0.95 |
| 35:BA:1174:A:H5'' | 35:BA:1175:U:H5' | 1.48 | 0.95 |
| 22:AY:28:G:H1 | 22:AY:42:C:H42 | 1.03 | 0.95 |
| 23:AW:69:G:H2' | 23:AW:70:G:H5'' | 1.49 | 0.95 |
| 2:CB:61:LEU:HD21 | 2:CB:68:ILE:HD11 | 1.49 | 0.94 |
| 35:BA:1697:G:H3' | 35:BA:1698:A:H5'' | 1.49 | 0.94 |
| 45:DO:35:VAL:HG11 | 45:DO:103:ALA:HB3 | 1.48 | 0.94 |
| 46:BP:97:PRO:O | 46:BP:98:GLU:HG3 | 1.67 | 0.94 |
| 35:DA:1899:G:N2 | 35:DA:1902:C:H41 | 1.65 | 0.94 |
| 46:DP:18:ARG:HB3 | 46:DP:18:ARG:NH1 | 1.81 | 0.94 |
| 35:BA:1590:U:C2' | 35:BA:1591:G:H5'' | 1.97 | 0.94 |
| 38:BD:227:ASN:HB3 | 38:BD:228:PRO:HD2 | 1.50 | 0.94 |
| 52:BV:49:THR:HG22 | 52:BV:50:PRO:HD3 | 1.47 | 0.94 |
| 26:D1:64:ALA:HA | 26:D1:67:ILE:HG13 | 1.49 | 0.94 |
| 35:BA:2308:G:O6 | 35:BA:2310:A:H2' | 1.68 | 0.94 |
| 35:DA:6:A:O2' | 44:DN:130:HIS:HB3 | 1.68 | 0.94 |
| 37:DC:59:ARG:HB2 | 37:DC:62:VAL:HG22 | 1.50 | 0.94 |
| 50:DT:28:VAL:HG22 | 50:DT:47:GLY:N | 1.82 | 0.94 |
| 50:BT:28:VAL:HG13 | 50:BT:46:GLU:HA | 1.46 | 0.94 |
| 31:D6:15:GLU:CD | 31:D6:18:ARG:HE | 1.71 | 0.94 |
| 2:AB:7:VAL:HG12 | 2:AB:217:ARG:HH21 | 1.30 | 0.94 |
| 42:DH:13:LYS:HA | 42:DH:13:LYS:HE2 | 1.49 | 0.94 |
| 46:DP:97:PRO:O | 46:DP:98:GLU:HG3 | 1.67 | 0.94 |
| 22:AV:68:C:H2' | 22:AV:69:G:H5'' | 1.46 | 0.94 |
| 22:AV:17:C:H3' | 22:AV:18:G:H5'' | 1.49 | 0.94 |
| 3:AC:6:HIS:HD2 | 3:AC:7:PRO:HD2 | 1.31 | 0.94 |
| 22:CY:42:C:H3' | 22:CY:43:C:H5'' | 1.50 | 0.94 |
| 48:BR:97:VAL:HG22 | 48:BR:114:VAL:HG22 | 1.50 | 0.94 |
| 35:DA:2729:G:H1' | 39:DE:187:ALA:HB2 | 1.50 | 0.94 |
| 41:BG:72:ARG:HD3 | 41:BG:86:MET:HA | 1.47 | 0.94 |
| 35:BA:2863:C:H2' | 35:BA:2864:G:H5'' | 1.48 | 0.94 |
| 48:DR:97:VAL:HG22 | 48:DR:114:VAL:HG22 | 1.48 | 0.94 |
| 35:BA:2533:A:H2' | 35:BA:2534:A:H5'' | 1.49 | 0.94 |
| 6:AF:21:LEU:O | 6:AF:24:GLU:HG2 | 1.67 | 0.94 |
| 46:BP:23:PRO:HB2 | 46:BP:33:ARG:CD | 1.98 | 0.94 |
| 45:BO:105:GLU:HA | 45:BO:108:GLU:OE1 | 1.68 | 0.94 |
| 42:BH:158:HIS:NE2 | 42:BH:170:ARG:HA | 1.83 | 0.93 |
| 12:CL:46:LYS:CG | 12:CL:47:LYS:H | 1.81 | 0.93 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:BB:20:C:H2' | 36:BB:21:G:H5'' | 1.48 | 0.93 |
| 39:BE:24:THR:HG23 | 39:BE:184:VAL:HG23 | 1.50 | 0.93 |
| 2:AB:91:PRO:HG3 | 2:AB:154:LEU:HB2 | 1.48 | 0.93 |
| 52:BV:39:LEU:HD12 | 52:BV:47:VAL:HG11 | 1.51 | 0.93 |
| 46:BP:7:ARG:HA | 46:BP:7:ARG:HH11 | 1.32 | 0.93 |
| 6:CF:21:LEU:O | 6:CF:24:GLU:HG2 | 1.68 | 0.93 |
| 49:DS:53:SER:O | 49:DS:55:ALA:N | 2.01 | 0.93 |
| 53:BW:88:ARG:HB2 | 53:BW:92:ARG:HB3 | 1.49 | 0.93 |
| 22:CY:74:C:H2' | 22:CY:75:C:H5' | 1.51 | 0.93 |
| 1:AA:1278:U:H5'' | 1:AA:1279:A:O4' | 1.68 | 0.93 |
| 56:BZ:48:PHE:CE2 | 56:BZ:52:SER:HA | 2.04 | 0.93 |
| 52:BV:19:LYS:HZ3 | 52:BV:20:LEU:H | 1.14 | 0.93 |
| 44:DN:133:GLN:HG2 | 44:DN:135:PRO:HD3 | 1.51 | 0.93 |
| 2:CB:48:MET:HG2 | 2:CB:49:GLU:N | 1.81 | 0.93 |
| 2:CB:118:LEU:HB2 | 2:CB:142:LEU:HD13 | 1.50 | 0.93 |
| 40:BF:24:LEU:HD12 | 40:BF:25:PRO:HD3 | 1.51 | 0.93 |
| 31:D6:13:CYS:HB3 | 31:D6:49:HIS:HB3 | 1.51 | 0.93 |
| 46:DP:7:ARG:HA | 46:DP:7:ARG:HH11 | 1.31 | 0.93 |
| 42:DH:158:HIS:NE2 | 42:DH:170:ARG:HA | 1.84 | 0.93 |
| 2:AB:48:MET:HG2 | 2:AB:49:GLU:N | 1.80 | 0.93 |
| 43:BI:77:LEU:HD11 | 43:BI:101:LEU:HD13 | 1.50 | 0.93 |
| 35:BA:141:A:H8 | 35:BA:1408:C:HO2' | 0.99 | 0.93 |
| 23:CW:69:G:C2' | 23:CW:70:G:H5'' | 1.98 | 0.93 |
| 36:BB:20:C:C2' | 36:BB:21:G:H5'' | 1.99 | 0.93 |
| 55:BY:8:LYS:H | 55:BY:8:LYS:HD2 | 1.33 | 0.93 |
| 55:DY:8:LYS:H | 55:DY:8:LYS:HD2 | 1.34 | 0.93 |
| 35:DA:2394:C:OP1 | 46:DP:63:PRO:HD2 | 1.69 | 0.92 |
| 37:BC:59:ARG:HB2 | 37:BC:62:VAL:HG22 | 1.50 | 0.92 |
| 3:CC:6:HIS:HD2 | 3:CC:7:PRO:HD2 | 1.33 | 0.92 |
| 49:BS:53:SER:O | 49:BS:55:ALA:N | 2.02 | 0.92 |
| 31:D6:19:ARG:HG2 | 31:D6:20:ASN:N | 1.84 | 0.92 |
| 2:CB:7:VAL:HG12 | 2:CB:217:ARG:HH21 | 1.32 | 0.92 |
| 37:BC:64:LEU:HD22 | 37:BC:65:PRO:HD2 | 1.49 | 0.92 |
| 42:DH:46:GLU:HB2 | 42:DH:50:VAL:HA | 1.51 | 0.92 |
| 38:DD:227:ASN:HB3 | 38:DD:228:PRO:HD2 | 1.50 | 0.92 |
| 9:AI:96:LEU:HD21 | 9:AI:102:LEU:HD12 | 1.51 | 0.92 |
| 10:AJ:49:VAL:HG23 | 14:AN:41:ARG:HB2 | 1.51 | 0.92 |
| 35:DA:1697:G:H3' | 35:DA:1698:A:H5'' | 1.50 | 0.92 |
| 51:BU:91:ASP:OD2 | 51:BU:96:ALA:HB2 | 1.68 | 0.92 |
| 17:AQ:52:LYS:HD2 | 17:AQ:52:LYS:H | 1.32 | 0.92 |
| 27:D2:43:GLN:O | 27:D2:44:LEU:HB2 | 1.68 | 0.92 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 12:CL:46:LYS:HG2 | 12:CL:47:LYS:N | 1.85 | 0.92 |
| 2:AB:45:GLN:HG2 | 2:AB:48:MET:HE1 | 1.50 | 0.92 |
| 35:DA:2533:A:H2' | 35:DA:2534:A:H5'' | 1.51 | 0.92 |
| 35:BA:1779:U:H5 | 35:BA:1784:A:N7 | 1.68 | 0.92 |
| 44:BN:25:ARG:HH11 | 44:BN:25:ARG:HG3 | 1.34 | 0.92 |
| 31:D6:19:ARG:CG | 31:D6:20:ASN:H | 1.81 | 0.92 |
| 2:AB:208:ILE:HA | 2:AB:211:ILE:HD12 | 1.49 | 0.92 |
| 27:B2:3:LEU:HD22 | 27:B2:7:ARG:HH12 | 1.33 | 0.92 |
| 9:CI:96:LEU:HD21 | 9:CI:102:LEU:HD12 | 1.51 | 0.92 |
| 12:AL:46:LYS:CG | 12:AL:47:LYS:H | 1.82 | 0.92 |
| 46:DP:7:ARG:CA | 46:DP:7:ARG:HH11 | 1.83 | 0.92 |
| 5:AE:51:VAL:HB | 5:AE:52:PRO:HD3 | 1.52 | 0.92 |
| 36:DB:3:C:H42 | 36:DB:118:G:H1 | 1.17 | 0.92 |
| 40:BF:3:GLU:HA | 40:BF:24:LEU:CG | 1.99 | 0.92 |
| 40:DF:123:LEU:HD12 | 40:DF:124:LEU:H | 1.33 | 0.92 |
| 44:BN:55:VAL:HG22 | 44:BN:126:PRO:HA | 1.52 | 0.92 |
| 33:B8:62:LEU:HD13 | 35:BA:242:G:H5'' | 1.50 | 0.92 |
| 35:BA:6:A:O2' | 44:BN:130:HIS:HB3 | 1.68 | 0.92 |
| 1:CA:192:U:C4' | 20:CT:103:GLY:HA2 | 2.00 | 0.92 |
| 47:BQ:43:THR:OG1 | 47:BQ:46:GLN:HG3 | 1.70 | 0.92 |
| 2:AB:118:LEU:HB2 | 2:AB:142:LEU:HD13 | 1.48 | 0.92 |
| 35:DA:2068:U:H3 | 35:DA:2430:A:H2 | 1.03 | 0.92 |
| 1:CA:1277:C:HO2' | 1:CA:1279:A:H8 | 1.17 | 0.92 |
| 35:DA:27:G:HO2' | 35:DA:28:A:H8 | 0.92 | 0.92 |
| 37:DC:83:ILE:HG23 | 37:DC:94:VAL:HG23 | 1.52 | 0.92 |
| 38:BD:48:ARG:HH11 | 38:BD:48:ARG:HG3 | 1.33 | 0.91 |
| 52:DV:19:LYS:HG2 | 52:DV:94:LEU:HB2 | 1.51 | 0.91 |
| 36:DB:20:C:C2' | 36:DB:21:G:H5'' | 2.00 | 0.91 |
| 2:CB:45:GLN:HG2 | 2:CB:48:MET:HE1 | 1.50 | 0.91 |
| 44:DN:25:ARG:HG3 | 44:DN:25:ARG:HH11 | 1.33 | 0.91 |
| 37:BC:72:VAL:HG21 | 37:BC:161:ILE:HA | 1.52 | 0.91 |
| 43:DI:4:ILE:HG12 | 43:DI:18:VAL:HG22 | 1.49 | 0.91 |
| 35:DA:2758:A:C2' | 35:DA:2759:G:H5'' | 2.00 | 0.91 |
| 31:B6:19:ARG:HG2 | 31:B6:20:ASN:N | 1.84 | 0.91 |
| 1:CA:1278:U:H5'' | 1:CA:1279:A:O4' | 1.69 | 0.91 |
| 20:CT:30:LYS:HE2 | 20:CT:72:LEU:HD21 | 1.52 | 0.91 |
| 13:AM:49:THR:HG22 | 13:AM:51:ALA:H | 1.35 | 0.91 |
| 50:BT:13:ARG:HA | 50:BT:13:ARG:NE | 1.83 | 0.91 |
| 46:DP:23:PRO:HB2 | 46:DP:33:ARG:CD | 2.01 | 0.91 |
| 45:DO:105:GLU:HA | 45:DO:108:GLU:OE1 | 1.70 | 0.91 |
| 55:DY:81:LYS:HD3 | 55:DY:97:ARG:HB3 | 1.52 | 0.91 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 41:DG:64:THR:HG23 | 41:DG:66:GLN:H | 1.33 | 0.91 |
| 56:DZ:72:ARG:HB2 | 56:DZ:87:ASP:HB2 | 1.52 | 0.91 |
| 1:CA:939:G:H5'' | 7:CG:102:ARG:HH22 | 1.34 | 0.91 |
| 45:BO:35:VAL:HG11 | 45:BO:103:ALA:HB3 | 1.51 | 0.91 |
| 48:DR:45:ARG:HG3 | 48:DR:46:GLY:H | 1.35 | 0.91 |
| 35:DA:1174:A:H5'' | 35:DA:1175:U:H5' | 1.49 | 0.91 |
| 35:BA:271(T):C:H5' | 35:BA:271(T):C:H6 | 1.35 | 0.91 |
| 54:DX:35:THR:O | 54:DX:39:ILE:HG12 | 1.71 | 0.91 |
| 44:DN:133:GLN:HG2 | 44:DN:134:ARG:H | 1.35 | 0.91 |
| 2:AB:61:LEU:HD21 | 2:AB:68:ILE:HD11 | 1.50 | 0.91 |
| 35:BA:2394:C:OP1 | 46:BP:63:PRO:HD2 | 1.70 | 0.91 |
| 50:DT:13:ARG:HA | 50:DT:13:ARG:NE | 1.84 | 0.91 |
| 44:BN:133:GLN:HG2 | 44:BN:135:PRO:HD3 | 1.52 | 0.91 |
| 1:AA:192:U:C4' | 20:AT:103:GLY:HA2 | 2.00 | 0.91 |
| 1:AA:939:G:H5'' | 7:AG:102:ARG:HH22 | 1.34 | 0.91 |
| 40:DF:3:GLU:HA | 40:DF:24:LEU:CG | 2.01 | 0.91 |
| 51:DU:83:LEU:HG | 51:DU:88:ILE:HD11 | 1.49 | 0.91 |
| 1:AA:194:C:H2' | 1:AA:195:A:H5'' | 1.53 | 0.91 |
| 38:BD:79:VAL:HG21 | 38:BD:111:LEU:HD21 | 1.53 | 0.91 |
| 35:BA:271(S):G:C2' | 35:BA:271(T):C:H5'' | 2.00 | 0.90 |
| 25:B0:41:ARG:H | 25:B0:41:ARG:CD | 1.84 | 0.90 |
| 42:DH:85:LYS:HD2 | 42:DH:141:VAL:HG13 | 1.53 | 0.90 |
| 35:DA:271(S):G:C2' | 35:DA:271(T):C:H5'' | 2.00 | 0.90 |
| 31:B6:15:GLU:CD | 31:B6:18:ARG:HE | 1.73 | 0.90 |
| 37:BC:83:ILE:HG23 | 37:BC:94:VAL:HG23 | 1.52 | 0.90 |
| 46:DP:47:ASP:HB3 | 46:DP:48:PRO:CA | 2.01 | 0.90 |
| 20:AT:30:LYS:HE2 | 20:AT:72:LEU:HD21 | 1.49 | 0.90 |
| 1:AA:346:G:H5'' | 50:BT:41:ARG:HE | 1.35 | 0.90 |
| 1:AA:434:U:H2' | 1:AA:435:C:C6 | 2.05 | 0.90 |
| 35:BA:2092:U:H4' | 35:BA:2093:G:H5'' | 1.50 | 0.90 |
| 52:DV:39:LEU:HD12 | 52:DV:47:VAL:HG11 | 1.50 | 0.90 |
| 35:DA:2308:G:O6 | 35:DA:2310:A:H2' | 1.69 | 0.90 |
| 31:B6:9:LEU:HD13 | 31:B6:11:LEU:HD21 | 1.51 | 0.90 |
| 38:DD:79:VAL:HG21 | 38:DD:111:LEU:HD21 | 1.53 | 0.90 |
| 46:DP:47:ASP:HB3 | 46:DP:48:PRO:HA | 1.52 | 0.90 |
| 2:AB:69:LEU:HD22 | 2:AB:91:PRO:HB2 | 1.54 | 0.90 |
| 44:BN:133:GLN:HG2 | 44:BN:134:ARG:H | 1.36 | 0.90 |
| 44:DN:55:VAL:HG22 | 44:DN:126:PRO:HA | 1.51 | 0.90 |
| 13:AM:90:LEU:C | 13:AM:92:HIS:H | 1.75 | 0.90 |
| 50:BT:55:ASN:HD22 | 50:BT:58:ASN:HD21 | 1.14 | 0.90 |
| 27:D2:14:ARG:HG3 | 27:D2:14:ARG:HH11 | 1.33 | 0.90 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:AW:16:U:H3' | 23:AW:17:C:H5' | 1.52 | 0.90 |
| 35:BA:404:C:H4' | 35:BA:405:U:H5' | 1.51 | 0.90 |
| 32:B7:11:LYS:HE2 | 35:BA:686:G:H5'' | 1.52 | 0.90 |
| 10:CJ:48:THR:HA | 10:CJ:62:HIS:HB3 | 1.52 | 0.90 |
| 35:DA:2312:U:C2' | 35:DA:2313:C:H5'' | 2.01 | 0.90 |
| 37:DC:72:VAL:HG21 | 37:DC:161:ILE:HA | 1.53 | 0.90 |
| 1:AA:266:G:H5'' | 1:AA:268:C:H41 | 1.37 | 0.90 |
| 35:DA:1348:G:H2' | 35:DA:1349:A:H5'' | 1.54 | 0.90 |
| 48:BR:45:ARG:HG3 | 48:BR:46:GLY:H | 1.33 | 0.90 |
| 42:BH:13:LYS:HA | 42:BH:13:LYS:HE2 | 1.51 | 0.90 |
| 27:D2:18:PRO:HG2 | 27:D2:19:VAL:H | 1.36 | 0.90 |
| 31:B6:13:CYS:HB3 | 31:B6:49:HIS:HB3 | 1.52 | 0.90 |
| 10:CJ:49:VAL:HG23 | 14:CN:41:ARG:HB2 | 1.52 | 0.90 |
| 39:BE:24:THR:HB | 39:BE:186:GLY:HA2 | 1.54 | 0.90 |
| 27:D2:65:ASN:HD22 | 27:D2:69:ARG:HH22 | 1.14 | 0.90 |
| 1:CA:1146:A:C2' | 1:CA:1147:C:H5'' | 2.02 | 0.89 |
| 35:BA:1887:C:C2' | 35:BA:1888:G:H5'' | 2.02 | 0.89 |
| 35:BA:1403:C:H5'' | 35:BA:1471:A:H1' | 1.54 | 0.89 |
| 2:AB:158:LEU:H | 2:AB:158:LEU:HD12 | 1.38 | 0.89 |
| 56:DZ:40:ASP:HB3 | 56:DZ:43:GLU:HB2 | 1.54 | 0.89 |
| 18:CR:36:ASN:ND2 | 18:CR:39:VAL:HG21 | 1.87 | 0.89 |
| 35:BA:1858:G:H2' | 35:BA:1883:G:H22 | 1.38 | 0.89 |
| 51:DU:91:ASP:OD2 | 51:DU:96:ALA:HB2 | 1.70 | 0.89 |
| 2:CB:158:LEU:H | 2:CB:158:LEU:HD12 | 1.37 | 0.89 |
| 56:DZ:30:ASN:OD1 | 56:DZ:33:LEU:HB3 | 1.73 | 0.89 |
| 12:AL:46:LYS:HG2 | 12:AL:47:LYS:N | 1.86 | 0.89 |
| 5:AE:12:LEU:HD22 | 5:AE:13:ILE:H | 1.36 | 0.89 |
| 35:BA:2726:U:O2 | 35:BA:2726:U:H5' | 1.71 | 0.89 |
| 49:BS:58:LEU:HD21 | 49:BS:68:GLN:HB2 | 1.53 | 0.89 |
| 31:B6:19:ARG:CG | 31:B6:20:ASN:H | 1.81 | 0.89 |
| 46:BP:47:ASP:HB3 | 46:BP:48:PRO:HA | 1.54 | 0.89 |
| 1:CA:194:C:H2' | 1:CA:195:A:H5'' | 1.54 | 0.89 |
| 35:BA:1879:C:H2' | 35:BA:1880:C:H5'' | 1.55 | 0.89 |
| 45:BO:2:ILE:HD12 | 45:BO:6:THR:HG21 | 1.55 | 0.89 |
| 40:DF:24:LEU:HD12 | 40:DF:25:PRO:HD3 | 1.54 | 0.89 |
| 2:CB:44:LEU:H | 2:CB:44:LEU:HD12 | 1.38 | 0.89 |
| 56:DZ:163:LEU:H | 56:DZ:163:LEU:HD12 | 1.36 | 0.89 |
| 39:BE:104:VAL:HG11 | 39:BE:188:VAL:HG23 | 1.51 | 0.89 |
| 50:DT:64:ARG:HD2 | 50:DT:73:GLU:HG2 | 1.54 | 0.89 |
| 8:AH:10:LEU:HD22 | 8:AH:83:ILE:HD11 | 1.55 | 0.89 |
| 13:CM:49:THR:HG22 | 13:CM:51:ALA:H | 1.36 | 0.89 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:2701:C:C3' | 35:DA:2702:U:H5'' | 2.03 | 0.89 |
| 35:DA:694:U:C2' | 35:DA:695:G:H5'' | 2.03 | 0.89 |
| 10:AJ:6:ILE:HD11 | 10:AJ:72:VAL:HB | 1.54 | 0.89 |
| 46:BP:7:ARG:HH11 | 46:BP:7:ARG:CA | 1.83 | 0.89 |
| 48:DR:103:ARG:HD2 | 53:DW:40:ASN:ND2 | 1.88 | 0.89 |
| 13:CM:90:LEU:C | 13:CM:92:HIS:H | 1.74 | 0.89 |
| 49:BS:89:ARG:HB3 | 49:BS:92:TYR:CB | 2.02 | 0.89 |
| 55:BY:81:LYS:HD3 | 55:BY:97:ARG:HB3 | 1.54 | 0.89 |
| 1:AA:1146:A:C2' | 1:AA:1147:C:H5'' | 2.03 | 0.89 |
| 10:AJ:48:THR:HA | 10:AJ:62:HIS:HB3 | 1.54 | 0.89 |
| 41:DG:107:LEU:HD23 | 41:DG:111:LEU:HD12 | 1.54 | 0.89 |
| 45:BO:88:ASN:HD21 | 45:BO:90:GLN:HB2 | 1.35 | 0.89 |
| 35:DA:2415:G:O3' | 46:DP:66:GLY:HA3 | 1.73 | 0.89 |
| 2:CB:69:LEU:HD22 | 2:CB:91:PRO:HB2 | 1.53 | 0.89 |
| 41:BG:112:PRO:O | 41:BG:113:ARG:HD3 | 1.72 | 0.89 |
| 49:DS:58:LEU:HD21 | 49:DS:68:GLN:HB2 | 1.54 | 0.89 |
| 33:B8:6:THR:CG2 | 33:B8:63:PRO:HD3 | 2.03 | 0.89 |
| 35:BA:1681:G:O2' | 35:BA:1762:A:H2' | 1.73 | 0.89 |
| 38:DD:48:ARG:HG3 | 38:DD:48:ARG:HH11 | 1.36 | 0.89 |
| 35:BA:1594:G:H5' | 35:BA:1594:G:C8 | 2.08 | 0.89 |
| 35:BA:2312:U:C2' | 35:BA:2313:C:H5'' | 2.03 | 0.89 |
| 35:DA:404:C:H4' | 35:DA:405:U:H5' | 1.53 | 0.89 |
| 26:D1:29:GLY:O | 26:D1:30:VAL:HG22 | 1.72 | 0.89 |
| 55:BY:79:CYS:SG | 55:BY:80:GLY:N | 2.41 | 0.88 |
| 35:DA:2263:C:H6 | 35:DA:2263:C:H5' | 1.37 | 0.88 |
| 35:DA:141:A:H8 | 35:DA:1408:C:HO2' | 0.97 | 0.88 |
| 35:DA:1887:C:C2' | 35:DA:1888:G:H5'' | 2.01 | 0.88 |
| 41:BG:46:ALA:HB3 | 41:BG:82:LEU:CD1 | 2.04 | 0.88 |
| 46:BP:18:ARG:HH11 | 46:BP:18:ARG:HB3 | 1.37 | 0.88 |
| 23:CW:62:C:H2' | 23:CW:63:G:H8 | 1.36 | 0.88 |
| 4:AD:114:ARG:HG3 | 4:AD:114:ARG:HH11 | 1.37 | 0.88 |
| 1:AA:1256:A:H61 | 1:AA:1278:U:C1' | 1.87 | 0.88 |
| 38:BD:26:LYS:NZ | 38:BD:26:LYS:HB3 | 1.89 | 0.88 |
| 38:BD:26:LYS:HD3 | 38:BD:81:ALA:HB1 | 1.54 | 0.88 |
| 39:DE:24:THR:HG23 | 39:DE:184:VAL:HG23 | 1.54 | 0.88 |
| 37:DC:58:VAL:HG21 | 37:DC:166:ASP:H | 1.37 | 0.88 |
| 55:DY:25:GLY:HA3 | 55:DY:39:VAL:HG12 | 1.53 | 0.88 |
| 54:DX:35:THR:HG22 | 54:DX:37:THR:H | 1.38 | 0.88 |
| 56:BZ:40:ASP:OD1 | 56:BZ:42:VAL:HG12 | 1.73 | 0.88 |
| 42:BH:85:LYS:HD2 | 42:BH:141:VAL:HG13 | 1.53 | 0.88 |
| 46:BP:45:LEU:HD23 | 46:BP:46:LYS:N | 1.88 | 0.88 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 55:DY:79:CYS:SG | 55:DY:80:GLY:N | 2.42 | 0.88 |
| 35:DA:1858:G:H2' | 35:DA:1883:G:H22 | 1.36 | 0.88 |
| 46:BP:23:PRO:HB2 | 46:BP:33:ARG:HD2 | 1.53 | 0.88 |
| 33:B8:6:THR:HG22 | 33:B8:63:PRO:HD3 | 1.56 | 0.88 |
| 55:BY:31:LEU:HB2 | 55:BY:32:PRO:HA | 1.56 | 0.88 |
| 56:BZ:53:ILE:CG2 | 56:BZ:71:VAL:HB | 2.02 | 0.88 |
| 35:DA:271(T):C:H6 | 35:DA:271(T):C:H5' | 1.36 | 0.88 |
| 23:AW:57:G:H2' | 23:AW:58:A:H5' | 1.54 | 0.88 |
| 49:DS:89:ARG:HB3 | 49:DS:92:TYR:CB | 2.04 | 0.88 |
| 3:AC:76:VAL:HG23 | 3:AC:77:ILE:H | 1.39 | 0.88 |
| 45:DO:88:ASN:HD21 | 45:DO:90:GLN:HB2 | 1.36 | 0.88 |
| 39:BE:59:VAL:CG2 | 39:BE:63:LEU:HA | 2.03 | 0.88 |
| 55:BY:55:TYR:HB2 | 55:BY:56:PRO:HD2 | 1.56 | 0.88 |
| 3:AC:73:PRO:O | 3:AC:76:VAL:HG22 | 1.74 | 0.88 |
| 41:DG:61:ALA:HA | 41:DG:64:THR:HG22 | 1.55 | 0.88 |
| 1:CA:1347:G:N2 | 1:CA:1373:G:H2' | 1.89 | 0.87 |
| 48:BR:24:GLN:HE22 | 48:BR:36:THR:HG21 | 1.39 | 0.87 |
| 38:BD:26:LYS:HZ2 | 38:BD:26:LYS:HB3 | 1.39 | 0.87 |
| 1:AA:1291:G:H4' | 9:AI:39:GLY:HA3 | 1.56 | 0.87 |
| 15:CO:87:ILE:HG22 | 15:CO:88:ARG:H | 1.39 | 0.87 |
| 43:DI:133:HIS:HB2 | 43:DI:134:PRO:CD | 2.03 | 0.87 |
| 1:CA:1321:C:H5'' | 1:CA:1322:C:H5'' | 1.56 | 0.87 |
| 35:BA:2701:C:C3' | 35:BA:2702:U:H5'' | 2.03 | 0.87 |
| 51:BU:83:LEU:HG | 51:BU:88:ILE:HD11 | 1.56 | 0.87 |
| 13:CM:13:LYS:HA | 13:CM:44:ARG:HH11 | 1.40 | 0.87 |
| 1:CA:434:U:H2' | 1:CA:435:C:C6 | 2.09 | 0.87 |
| 31:D6:9:LEU:HD13 | 31:D6:11:LEU:HD21 | 1.53 | 0.87 |
| 35:DA:2290:G:H8 | 35:DA:2290:G:H5' | 1.39 | 0.87 |
| 39:BE:51:PHE:O | 39:BE:74:PRO:HB2 | 1.73 | 0.87 |
| 35:DA:2726:U:H5' | 35:DA:2726:U:O2 | 1.74 | 0.87 |
| 22:CY:28:G:H1 | 22:CY:42:C:N4 | 1.71 | 0.87 |
| 46:DP:23:PRO:HB2 | 46:DP:33:ARG:HD2 | 1.55 | 0.87 |
| 35:DA:1779:U:H5 | 35:DA:1784:A:N7 | 1.70 | 0.87 |
| 18:CR:50:ILE:HD12 | 18:CR:70:ILE:HG21 | 1.56 | 0.87 |
| 35:DA:1681:G:O2' | 35:DA:1762:A:H2' | 1.75 | 0.87 |
| 32:D7:11:LYS:HE2 | 35:DA:686:G:H5'' | 1.56 | 0.87 |
| 46:BP:48:PRO:HG2 | 46:BP:49:ARG:H | 1.40 | 0.87 |
| 1:CA:1256:A:H61 | 1:CA:1278:U:C1' | 1.86 | 0.87 |
| 5:CE:12:LEU:HD22 | 5:CE:13:ILE:H | 1.39 | 0.87 |
| 35:BA:1348:G:H2' | 35:BA:1349:A:H5'' | 1.54 | 0.87 |
| 35:DA:483:A:H1' | 55:DY:60:PHE:HZ | 1.38 | 0.87 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:2267:A:H5'' | 35:DA:2268:A:H5' | 1.56 | 0.87 |
| 25:D0:41:ARG:CD | 25:D0:41:ARG:H | 1.86 | 0.87 |
| 22:CV:68:C:H2' | 22:CV:69:G:H5'' | 1.56 | 0.87 |
| 35:DA:795:C:H2' | 35:DA:796:C:H6 | 1.37 | 0.87 |
| 1:CA:266:G:H5'' | 1:CA:268:C:H41 | 1.39 | 0.87 |
| 1:CA:1291:G:H4' | 9:CI:39:GLY:HA3 | 1.57 | 0.87 |
| 35:BA:795:C:H2' | 35:BA:796:C:H6 | 1.39 | 0.87 |
| 1:CA:137:C:H42 | 1:CA:226:G:H1 | 1.22 | 0.87 |
| 53:BW:5:ALA:HB2 | 53:BW:54:ALA:HB2 | 1.57 | 0.87 |
| 40:BF:22:ALA:HA | 40:BF:26:ALA:HB2 | 1.54 | 0.87 |
| 54:DX:63:LYS:CE | 54:DX:72:LYS:HE3 | 2.04 | 0.87 |
| 39:DE:59:VAL:CG2 | 39:DE:63:LEU:HA | 2.05 | 0.87 |
| 56:BZ:97:GLU:HG2 | 56:BZ:125:LEU:HD11 | 1.56 | 0.87 |
| 10:CJ:6:ILE:HD11 | 10:CJ:72:VAL:HB | 1.57 | 0.87 |
| 44:BN:25:ARG:HH11 | 44:BN:25:ARG:CG | 1.88 | 0.87 |
| 54:BX:35:THR:HG22 | 54:BX:37:THR:H | 1.37 | 0.87 |
| 36:BB:3:C:H42 | 36:BB:118:G:H1 | 1.20 | 0.87 |
| 45:DO:2:ILE:HD12 | 45:DO:6:THR:HG21 | 1.54 | 0.87 |
| 35:BA:27:G:HO2' | 35:BA:28:A:H8 | 0.94 | 0.87 |
| 35:BA:1170:G:H1 | 35:BA:1179:C:H42 | 1.23 | 0.87 |
| 39:DE:51:PHE:O | 39:DE:74:PRO:HB2 | 1.75 | 0.87 |
| 35:BA:2263:C:H6 | 35:BA:2263:C:H5' | 1.37 | 0.87 |
| 26:D1:94:LEU:O | 26:D1:94:LEU:HD23 | 1.74 | 0.87 |
| 48:BR:103:ARG:HD2 | 53:BW:40:ASN:ND2 | 1.90 | 0.87 |
| 1:CA:1030:C:H2' | 1:CA:1030(A):G:H5' | 1.57 | 0.87 |
| 31:D6:13:CYS:O | 31:D6:21:TYR:HA | 1.74 | 0.87 |
| 50:BT:29:ARG:HB3 | 50:BT:85:LYS:HA | 1.57 | 0.87 |
| 35:DA:1594:G:H5' | 35:DA:1594:G:C8 | 2.08 | 0.87 |
| 30:B5:2:ALA:HA | 35:BA:2015:A:H1' | 1.56 | 0.87 |
| 35:DA:1170:G:H1 | 35:DA:1179:C:H42 | 1.22 | 0.87 |
| 35:DA:286:C:H2' | 35:DA:287:C:H5'' | 1.56 | 0.86 |
| 44:BN:3:THR:O | 44:BN:5:VAL:HG12 | 1.75 | 0.86 |
| 50:DT:29:ARG:HB3 | 50:DT:85:LYS:HA | 1.55 | 0.86 |
| 1:AA:1277:C:HO2' | 1:AA:1279:A:H8 | 1.22 | 0.86 |
| 39:DE:111:ARG:HA | 48:DR:2:ARG:CG | 2.05 | 0.86 |
| 3:CC:6:HIS:CD2 | 3:CC:7:PRO:HD2 | 2.10 | 0.86 |
| 55:DY:55:TYR:HB2 | 55:DY:56:PRO:HD2 | 1.55 | 0.86 |
| 56:DZ:53:ILE:HG23 | 56:DZ:71:VAL:CG2 | 2.04 | 0.86 |
| 9:CI:79:LEU:HD11 | 9:CI:102:LEU:HA | 1.56 | 0.86 |
| 1:AA:1347:G:N2 | 1:AA:1373:G:H2' | 1.90 | 0.86 |
| 33:D8:6:THR:CG2 | 33:D8:63:PRO:HD3 | 2.05 | 0.86 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:D8:6:THR:HG22 | 33:D8:63:PRO:HD3 | 1.57 | 0.86 |
| 35:BA:483:A:H1' | 55:BY:60:PHE:HZ | 1.37 | 0.86 |
| 36:DB:65:C:H41 | 36:DB:109:C:H2' | 1.40 | 0.86 |
| 35:BA:2290:G:H5' | 35:BA:2290:G:H8 | 1.39 | 0.86 |
| 2:AB:44:LEU:HD12 | 2:AB:44:LEU:H | 1.38 | 0.86 |
| 1:AA:979:C:C3' | 1:AA:980:C:H5'' | 2.04 | 0.86 |
| 41:DG:46:ALA:HB3 | 41:DG:82:LEU:CD1 | 2.04 | 0.86 |
| 39:DE:24:THR:HB | 39:DE:186:GLY:HA2 | 1.55 | 0.86 |
| 35:BA:1899:G:H22 | 35:BA:1902:C:H41 | 1.17 | 0.86 |
| 35:BA:286:C:H2' | 35:BA:287:C:H5'' | 1.55 | 0.86 |
| 46:DP:45:LEU:HD23 | 46:DP:46:LYS:N | 1.89 | 0.86 |
| 15:AO:87:ILE:HG22 | 15:AO:88:ARG:H | 1.39 | 0.86 |
| 35:BA:2415:G:O3' | 46:BP:66:GLY:HA3 | 1.75 | 0.86 |
| 39:BE:111:ARG:HA | 48:BR:2:ARG:CG | 2.04 | 0.86 |
| 46:DP:101:VAL:HB | 46:DP:107:LYS:HA | 1.56 | 0.86 |
| 30:D5:2:ALA:HA | 35:DA:2015:A:H1' | 1.57 | 0.86 |
| 41:BG:125:PHE:O | 41:BG:128:ARG:HG2 | 1.75 | 0.86 |
| 41:BG:82:LEU:CD2 | 41:BG:87:PRO:HG3 | 2.05 | 0.86 |
| 9:AI:79:LEU:HD11 | 9:AI:102:LEU:HA | 1.56 | 0.86 |
| 46:DP:18:ARG:HH11 | 46:DP:18:ARG:HB3 | 1.39 | 0.86 |
| 20:CT:26:ASN:O | 20:CT:30:LYS:HB2 | 1.76 | 0.86 |
| 40:BF:17:ARG:HG3 | 40:BF:17:ARG:HH11 | 1.41 | 0.86 |
| 46:BP:47:ASP:HB3 | 46:BP:48:PRO:CA | 2.05 | 0.86 |
| 41:DG:82:LEU:HD22 | 41:DG:87:PRO:HG3 | 1.56 | 0.86 |
| 23:AW:69:G:C2' | 23:AW:70:G:H5'' | 2.06 | 0.86 |
| 48:DR:24:GLN:HE22 | 48:DR:36:THR:HG21 | 1.38 | 0.86 |
| 40:DF:188:ARG:HA | 46:DP:7:ARG:HD3 | 1.58 | 0.86 |
| 35:BA:143:G:H1' | 54:BX:37:THR:HG21 | 1.58 | 0.86 |
| 53:DW:5:ALA:HB2 | 53:DW:54:ALA:HB2 | 1.58 | 0.86 |
| 1:CA:32:A:H2' | 1:CA:33:A:C8 | 2.11 | 0.86 |
| 35:BA:2523:G:H5' | 35:BA:2523:G:H8 | 1.40 | 0.86 |
| 54:BX:63:LYS:CE | 54:BX:72:LYS:HE3 | 2.05 | 0.86 |
| 52:BV:19:LYS:HG2 | 52:BV:94:LEU:HB2 | 1.55 | 0.86 |
| 11:AK:127:LYS:HE2 | 11:AK:127:LYS:HA | 1.57 | 0.86 |
| 5:AE:126:ARG:HG3 | 5:AE:126:ARG:HH11 | 1.41 | 0.86 |
| 46:DP:59:LEU:HA | 46:DP:61:ARG:NH1 | 1.90 | 0.86 |
| 1:CA:1028:C:H2' | 1:CA:1029:C:H5' | 1.58 | 0.86 |
| 35:BA:2753:A:O2' | 35:BA:2754:U:H5' | 1.74 | 0.86 |
| 36:BB:65:C:H41 | 36:BB:109:C:H2' | 1.41 | 0.86 |
| 1:AA:1163:C:H2' | 1:AA:1164:G:H8 | 1.40 | 0.86 |
| 10:CJ:30:SER:HA | 10:CJ:80:LYS:HD3 | 1.58 | 0.86 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:2134:A:H62 | 35:DA:2157:G:H1' | 1.41 | 0.86 |
| 1:CA:1163:C:H2' | 1:CA:1164:G:H8 | 1.40 | 0.86 |
| 37:BC:49:ILE:HD12 | 37:BC:49:ILE:H | 1.39 | 0.86 |
| 35:BA:2807:G:H3' | 35:BA:2808:U:H5'' | 1.58 | 0.86 |
| 41:DG:66:GLN:NE2 | 41:DG:94:LEU:HD23 | 1.90 | 0.85 |
| 38:DD:26:LYS:NZ | 38:DD:26:LYS:HB3 | 1.88 | 0.85 |
| 38:DD:26:LYS:HD3 | 38:DD:81:ALA:HB1 | 1.58 | 0.85 |
| 43:BI:79:ILE:HD13 | 43:BI:80:PRO:HD2 | 1.58 | 0.85 |
| 43:DI:79:ILE:HD13 | 43:DI:80:PRO:HD2 | 1.58 | 0.85 |
| 35:DA:2147:G:H2' | 35:DA:2148:G:O4' | 1.76 | 0.85 |
| 31:B6:13:CYS:O | 31:B6:21:TYR:HA | 1.76 | 0.85 |
| 1:CA:979:C:C3' | 1:CA:980:C:H5'' | 2.06 | 0.85 |
| 3:AC:6:HIS:CD2 | 3:AC:7:PRO:HD2 | 2.10 | 0.85 |
| 44:DN:25:ARG:CG | 44:DN:25:ARG:HH11 | 1.88 | 0.85 |
| 20:AT:26:ASN:O | 20:AT:30:LYS:HB2 | 1.75 | 0.85 |
| 54:BX:35:THR:O | 54:BX:39:ILE:HG12 | 1.76 | 0.85 |
| 13:CM:123:ALA:HB2 | 22:CY:39:U:H4' | 1.58 | 0.85 |
| 35:BA:1301:A:O2' | 35:BA:1302:A:H2' | 1.74 | 0.85 |
| 13:AM:120:LYS:HE3 | 13:AM:120:LYS:HA | 1.58 | 0.85 |
| 46:BP:50:ARG:O | 46:BP:57:THR:HG22 | 1.76 | 0.85 |
| 29:D4:51:TYR:HE1 | 41:DG:5:VAL:HG12 | 1.38 | 0.85 |
| 35:BA:847:U:H2' | 35:BA:848:G:H5'' | 1.59 | 0.85 |
| 32:B7:47:ARG:CZ | 54:BX:60:ARG:HH22 | 1.89 | 0.85 |
| 35:BA:2147:G:H2' | 35:BA:2148:G:O4' | 1.77 | 0.85 |
| 22:CY:64:A:H2' | 22:CY:65:G:H8 | 1.40 | 0.85 |
| 53:BW:13:SER:HB3 | 53:BW:16:LYS:HG3 | 1.59 | 0.85 |
| 50:BT:64:ARG:HD2 | 50:BT:73:GLU:HG2 | 1.55 | 0.85 |
| 35:BA:152:G:H1 | 35:BA:174:C:H42 | 1.20 | 0.85 |
| 35:DA:2523:G:H8 | 35:DA:2523:G:H5' | 1.41 | 0.85 |
| 1:CA:180:U:C2' | 1:CA:181:G:H5'' | 2.06 | 0.85 |
| 10:CJ:32:ALA:HB1 | 10:CJ:75:ILE:HG13 | 1.59 | 0.85 |
| 48:BR:38:VAL:HB | 48:BR:39:PRO:HD3 | 1.56 | 0.85 |
| 1:AA:1432:G:OP1 | 50:BT:107:ASP:HB2 | 1.75 | 0.85 |
| 56:BZ:151:HIS:HA | 56:BZ:171:ILE:HD12 | 1.56 | 0.85 |
| 37:DC:49:ILE:HD12 | 37:DC:49:ILE:H | 1.42 | 0.85 |
| 56:BZ:125:LEU:HG | 56:BZ:164:ALA:HB3 | 1.57 | 0.85 |
| 53:DW:1:MET:HE2 | 53:DW:2:GLU:N | 1.90 | 0.85 |
| 42:BH:46:GLU:HB2 | 42:BH:50:VAL:HA | 1.56 | 0.85 |
| 35:DA:807:U:OP2 | 46:DP:39:LYS:HG3 | 1.77 | 0.85 |
| 35:DA:2262:U:C2' | 35:DA:2263:C:H5'' | 2.06 | 0.85 |
| 56:BZ:144:LEU:HD12 | 56:BZ:174:VAL:CG2 | 2.07 | 0.85 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:CK:127:LYS:HA | 11:CK:127:LYS:HE2 | 1.58 | 0.85 |
| 35:BA:807:U:OP2 | 46:BP:39:LYS:HG3 | 1.76 | 0.85 |
| 43:BI:111:PRO:O | 43:BI:112:LYS:HG3 | 1.77 | 0.85 |
| 35:DA:143:G:H1' | 54:DX:37:THR:HG21 | 1.57 | 0.85 |
| 38:BD:132:PRO:HG3 | 38:BD:190:TYR:CE1 | 2.12 | 0.85 |
| 4:CD:114:ARG:HG3 | 4:CD:114:ARG:HH11 | 1.39 | 0.85 |
| 32:B7:9:ARG:HH12 | 35:BA:1309:G:H3' | 1.41 | 0.85 |
| 35:DA:1301:A:O2' | 35:DA:1302:A:H2' | 1.77 | 0.85 |
| 51:BU:92:ARG:HD2 | 52:BV:11:GLN:CD | 1.97 | 0.85 |
| 52:DV:19:LYS:HZ3 | 52:DV:20:LEU:N | 1.75 | 0.85 |
| 35:DA:1899:G:H22 | 35:DA:1902:C:H41 | 1.20 | 0.85 |
| 22:CY:28:G:H1 | 22:CY:42:C:H42 | 0.86 | 0.85 |
| 1:CA:1513:A:H2' | 1:CA:1514:C:H6 | 1.41 | 0.85 |
| 1:AA:137:C:H42 | 1:AA:226:G:H1 | 1.24 | 0.85 |
| 35:DA:152:G:H1 | 35:DA:174:C:H42 | 1.20 | 0.85 |
| 18:CR:40:LEU:HD12 | 18:CR:40:LEU:H | 1.42 | 0.84 |
| 13:CM:120:LYS:HE3 | 13:CM:120:LYS:HA | 1.58 | 0.84 |
| 38:BD:48:ARG:NH1 | 38:BD:48:ARG:HG3 | 1.91 | 0.84 |
| 35:BA:1686:C:H5' | 35:BA:1686:C:H6 | 1.41 | 0.84 |
| 1:AA:939:G:H5'' | 7:AG:102:ARG:NH2 | 1.91 | 0.84 |
| 35:DA:1879:C:H2' | 35:DA:1880:C:H5'' | 1.57 | 0.84 |
| 1:AA:1028:C:H2' | 1:AA:1029:C:H5' | 1.59 | 0.84 |
| 39:BE:101:ARG:HH11 | 39:BE:169:ASN:ND2 | 1.75 | 0.84 |
| 1:CA:939:G:H5'' | 7:CG:102:ARG:NH2 | 1.91 | 0.84 |
| 41:DG:128:ARG:C | 41:DG:130:ASN:H | 1.76 | 0.84 |
| 49:DS:58:LEU:HD23 | 49:DS:65:VAL:HG13 | 1.59 | 0.84 |
| 1:AA:1030:C:H2' | 1:AA:1030(A):G:H5' | 1.56 | 0.84 |
| 1:CA:1057:G:H5'' | 3:CC:154:SER:HB2 | 1.58 | 0.84 |
| 35:DA:2189:U:H2' | 35:DA:2190:G:H5'' | 1.60 | 0.84 |
| 43:BI:133:HIS:HB2 | 43:BI:134:PRO:CD | 2.06 | 0.84 |
| 1:AA:1321:C:H5'' | 1:AA:1322:C:H5'' | 1.57 | 0.84 |
| 40:DF:17:ARG:HH11 | 40:DF:17:ARG:HG3 | 1.41 | 0.84 |
| 52:BV:18:LEU:HD13 | 52:BV:19:LYS:H | 1.42 | 0.84 |
| 1:CA:585:G:H4' | 12:CL:8:ASN:ND2 | 1.91 | 0.84 |
| 41:BG:76:SER:HB3 | 41:BG:84:LYS:H | 1.41 | 0.84 |
| 1:AA:1321:C:H3' | 1:AA:1322:C:H5'' | 1.59 | 0.84 |
| 35:DA:1403:C:H5'' | 35:DA:1471:A:H1' | 1.57 | 0.84 |
| 3:CC:73:PRO:O | 3:CC:76:VAL:HG22 | 1.76 | 0.84 |
| 35:BA:2334:G:N2 | 49:BS:18:ILE:HD11 | 1.93 | 0.84 |
| 40:BF:123:LEU:HD12 | 40:BF:124:LEU:H | 1.42 | 0.84 |
| 37:BC:36:LYS:HG3 | 37:BC:37:PHE:H | 1.42 | 0.84 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 10:AJ:30:SER:HA | 10:AJ:80:LYS:HD3 | 1.59 | 0.84 |
| 1:CA:617:G:H4' | 16:CP:44:THR:HB | 1.58 | 0.84 |
| 11:CK:48:ILE:HD11 | 11:CK:64:ALA:HA | 1.58 | 0.84 |
| 3:AC:50:ALA:HB1 | 3:AC:70:VAL:HG11 | 1.58 | 0.84 |
| 23:AW:38:A:C3' | 23:AW:39:U:H5'' | 2.08 | 0.84 |
| 27:D2:65:ASN:HB3 | 27:D2:69:ARG:NH2 | 1.92 | 0.84 |
| 16:AP:22:THR:HA | 16:AP:33:ILE:HG12 | 1.58 | 0.84 |
| 3:CC:76:VAL:HG23 | 3:CC:77:ILE:H | 1.39 | 0.84 |
| 37:BC:58:VAL:HG21 | 37:BC:166:ASP:H | 1.40 | 0.84 |
| 35:DA:2068:U:N3 | 35:DA:2430:A:H2 | 1.76 | 0.84 |
| 6:AF:69:GLU:HG2 | 6:AF:70:ASP:H | 1.42 | 0.84 |
| 41:BG:121:ASN:ND2 | 41:BG:123:ASN:H | 1.75 | 0.84 |
| 41:DG:97:ASP:O | 41:DG:101:ILE:HG22 | 1.77 | 0.84 |
| 1:AA:353:A:H5' | 1:AA:353:A:H8 | 1.43 | 0.84 |
| 46:DP:58:THR:O | 46:DP:61:ARG:NE | 2.11 | 0.84 |
| 1:AA:180:U:C2' | 1:AA:181:G:H5'' | 2.06 | 0.84 |
| 22:AY:25:C:H2' | 22:AY:26:A:H8 | 1.40 | 0.84 |
| 1:AA:579:G:H5' | 1:AA:728:A:H1' | 1.59 | 0.84 |
| 47:DQ:43:THR:OG1 | 47:DQ:46:GLN:HG3 | 1.76 | 0.84 |
| 6:CF:69:GLU:HG2 | 6:CF:70:ASP:H | 1.42 | 0.84 |
| 1:AA:1057:G:H5'' | 3:AC:154:SER:HB2 | 1.58 | 0.84 |
| 46:DP:48:PRO:HG2 | 46:DP:49:ARG:H | 1.41 | 0.84 |
| 52:DV:18:LEU:HD13 | 52:DV:19:LYS:H | 1.43 | 0.84 |
| 56:DZ:157:LEU:HD13 | 56:DZ:161:VAL:HG12 | 1.59 | 0.84 |
| 23:AW:20:U:H2' | 23:AW:21:A:H4' | 1.58 | 0.84 |
| 1:CA:1321:C:H3' | 1:CA:1322:C:H5'' | 1.59 | 0.84 |
| 8:AH:112:LEU:HA | 8:AH:134:ILE:HG12 | 1.60 | 0.84 |
| 35:DA:486:C:H4' | 53:DW:60:ASN:HD21 | 1.42 | 0.84 |
| 45:BO:85:VAL:HG11 | 45:BO:114:ILE:HD12 | 1.59 | 0.84 |
| 43:DI:92:VAL:HG11 | 43:DI:120:ILE:HD12 | 1.60 | 0.84 |
| 56:BZ:53:ILE:HG12 | 56:BZ:53:ILE:O | 1.78 | 0.84 |
| 48:DR:10:LEU:HB3 | 48:DR:17:ARG:NE | 1.93 | 0.84 |
| 35:DA:2522:U:H2' | 35:DA:2523:G:H5'' | 1.60 | 0.84 |
| 30:D5:55:ARG:O | 30:D5:56:LYS:HB3 | 1.76 | 0.84 |
| 43:DI:88:ILE:HG22 | 43:DI:89:TYR:N | 1.93 | 0.84 |
| 43:BI:8:PRO:HB3 | 43:BI:14:ASP:H | 1.42 | 0.84 |
| 47:DQ:141:GLN:NE2 | 56:DZ:72:ARG:HA | 1.92 | 0.83 |
| 3:CC:50:ALA:HB1 | 3:CC:70:VAL:HG11 | 1.60 | 0.83 |
| 46:BP:101:VAL:HB | 46:BP:107:LYS:HA | 1.59 | 0.83 |
| 35:DA:271(S):G:H2' | 35:DA:271(T):C:H5'' | 1.58 | 0.83 |
| 35:BA:2870:C:H5'' | 48:BR:65:LEU:HD21 | 1.58 | 0.83 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:CT:50:GLU:HG3 | 20:CT:51:GLU:N | 1.93 | 0.83 |
| 32:D7:9:ARG:HH12 | 35:DA:1309:G:H3' | 1.43 | 0.83 |
| 36:BB:114:C:O2' | 49:BS:46:VAL:HG13 | 1.77 | 0.83 |
| 39:BE:9:VAL:HG22 | 39:BE:25:VAL:HB | 1.60 | 0.83 |
| 35:DA:1654:A:OP1 | 48:DR:3:HIS:HB2 | 1.78 | 0.83 |
| 48:BR:10:LEU:HB3 | 48:BR:17:ARG:NE | 1.93 | 0.83 |
| 51:DU:55:ARG:HA | 51:DU:58:ARG:HG3 | 1.60 | 0.83 |
| 27:B2:3:LEU:HD22 | 27:B2:7:ARG:NH1 | 1.93 | 0.83 |
| 38:DD:26:LYS:HE2 | 38:DD:82:ILE:H | 1.43 | 0.83 |
| 32:D7:47:ARG:CZ | 54:DX:60:ARG:HH22 | 1.91 | 0.83 |
| 8:CH:10:LEU:HD22 | 8:CH:83:ILE:HD11 | 1.57 | 0.83 |
| 47:BQ:56:ARG:HA | 47:BQ:56:ARG:HE | 1.42 | 0.83 |
| 35:BA:2522:U:H2' | 35:BA:2523:G:H5'' | 1.60 | 0.83 |
| 29:D4:51:TYR:CE1 | 41:DG:5:VAL:HG12 | 2.13 | 0.83 |
| 11:AK:48:ILE:HD11 | 11:AK:64:ALA:HA | 1.60 | 0.83 |
| 35:DA:2870:C:H5'' | 48:DR:65:LEU:HD21 | 1.60 | 0.83 |
| 53:BW:1:MET:HE2 | 53:BW:2:GLU:N | 1.91 | 0.83 |
| 18:AR:36:ASN:ND2 | 18:AR:39:VAL:HG21 | 1.91 | 0.83 |
| 1:AA:192:U:H2' | 1:AA:193:C:H6 | 1.43 | 0.83 |
| 41:BG:76:SER:CB | 41:BG:83:ARG:HB2 | 2.08 | 0.83 |
| 35:DA:1022:G:H22 | 35:DA:1142(A):A:H2 | 1.26 | 0.83 |
| 23:AW:16:U:C5 | 23:AW:18:G:H3' | 2.14 | 0.83 |
| 44:DN:3:THR:O | 44:DN:5:VAL:HG12 | 1.79 | 0.83 |
| 43:DI:66:GLU:O | 43:DI:70:GLU:HG2 | 1.78 | 0.83 |
| 1:AA:106:C:H2' | 1:AA:107:G:H8 | 1.43 | 0.83 |
| 48:DR:38:VAL:HB | 48:DR:39:PRO:HD3 | 1.57 | 0.83 |
| 52:BV:99:ILE:H | 52:BV:99:ILE:HD13 | 1.44 | 0.83 |
| 56:DZ:93:ASP:HA | 56:DZ:130:PRO:HG2 | 1.61 | 0.83 |
| 46:DP:50:ARG:O | 46:DP:57:THR:HG22 | 1.79 | 0.83 |
| 39:BE:77:ILE:HG22 | 39:BE:78:LEU:N | 1.92 | 0.83 |
| 10:AJ:75:ILE:HG13 | 10:AJ:76:ASN:N | 1.93 | 0.83 |
| 35:DA:1278:A:OP1 | 48:DR:36:THR:HG22 | 1.79 | 0.83 |
| 20:AT:50:GLU:HG3 | 20:AT:51:GLU:N | 1.92 | 0.83 |
| 18:AR:50:ILE:HD12 | 18:AR:70:ILE:HG21 | 1.59 | 0.83 |
| 55:DY:87:LYS:O | 55:DY:88:LYS:HB2 | 1.77 | 0.83 |
| 35:DA:271(A):A:H5' | 35:DA:271(B):C:OP2 | 1.79 | 0.83 |
| 46:DP:111:ARG:NH1 | 46:DP:149:GLU:HG3 | 1.92 | 0.83 |
| 35:DA:1946:U:H2' | 35:DA:1947:C:H6 | 1.42 | 0.83 |
| 35:DA:2787:C:H2' | 35:DA:2787:C:O2 | 1.78 | 0.83 |
| 35:DA:2807:G:H3' | 35:DA:2808:U:H5'' | 1.58 | 0.83 |
| 35:BA:694:U:C2' | 35:BA:695:G:H5'' | 2.05 | 0.83 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 3:AC:70:VAL:HG12 | 3:AC:72:LYS:H | 1.43 | 0.83 |
| 35:DA:1686:C:H5' | 35:DA:1686:C:H6 | 1.41 | 0.83 |
| 49:DS:54:LEU:HA | 49:DS:57:LYS:O | 1.78 | 0.83 |
| 23:AW:56:C:H2' | 23:AW:57:G:O4' | 1.79 | 0.83 |
| 35:DA:1318:C:H3' | 35:DA:1319:G:H5'' | 1.60 | 0.83 |
| 22:CY:68:C:H2' | 22:CY:69:G:H8 | 1.43 | 0.83 |
| 22:CV:77:PHA:H | 22:CY:77:PHA:H2 | 1.26 | 0.83 |
| 38:BD:186:HIS:HD2 | 38:BD:188:GLU:H | 1.27 | 0.83 |
| 26:D1:51:VAL:HG21 | 26:D1:74:VAL:HG21 | 1.60 | 0.83 |
| 35:DA:2863:C:C2' | 35:DA:2864:G:H5'' | 2.08 | 0.83 |
| 10:AJ:32:ALA:HB1 | 10:AJ:75:ILE:HG13 | 1.58 | 0.83 |
| 1:CA:625:G:H4' | 16:CP:16:HIS:CD2 | 2.14 | 0.83 |
| 39:BE:101:ARG:HH11 | 39:BE:169:ASN:HD22 | 1.26 | 0.83 |
| 35:DA:1528(A):A:H3' | 35:DA:1529:G:H5'' | 1.61 | 0.83 |
| 35:BA:2134:A:H62 | 35:BA:2157:G:H1' | 1.41 | 0.83 |
| 17:AQ:7:THR:HG22 | 17:AQ:58:GLU:HG2 | 1.61 | 0.83 |
| 53:BW:1:MET:CE | 53:BW:2:GLU:H | 1.90 | 0.83 |
| 1:AA:32:A:H2' | 1:AA:33:A:C8 | 2.13 | 0.83 |
| 39:BE:116:VAL:O | 39:BE:117:MET:HB3 | 1.77 | 0.83 |
| 41:BG:97:ASP:O | 41:BG:101:ILE:HG22 | 1.79 | 0.83 |
| 35:DA:1846:G:H5' | 35:DA:1847:A:OP2 | 1.79 | 0.83 |
| 35:BA:1485:G:H2' | 35:BA:1486:A:C8 | 2.13 | 0.83 |
| 22:AY:28:G:H1 | 22:AY:42:C:N4 | 1.77 | 0.83 |
| 38:DD:132:PRO:HG3 | 38:DD:190:TYR:CE1 | 2.14 | 0.83 |
| 56:DZ:151:HIS:HA | 56:DZ:171:ILE:HG13 | 1.61 | 0.83 |
| 1:AA:585:G:H4' | 12:AL:8:ASN:ND2 | 1.94 | 0.83 |
| 52:BV:19:LYS:HG3 | 52:BV:20:LEU:O | 1.79 | 0.83 |
| 30:D5:35:GLU:O | 30:D5:36:CYS:HB2 | 1.78 | 0.83 |
| 46:DP:13:ASN:C | 46:DP:13:ASN:HD22 | 1.81 | 0.83 |
| 51:DU:27:LEU:HD23 | 51:DU:30:LYS:HB2 | 1.61 | 0.83 |
| 4:AD:32:ALA:O | 4:AD:36:ARG:HG3 | 1.79 | 0.83 |
| 27:B2:16:LEU:HD22 | 27:B2:20:GLU:HG2 | 1.60 | 0.83 |
| 55:DY:31:LEU:HB2 | 55:DY:32:PRO:HA | 1.59 | 0.83 |
| 56:BZ:33:LEU:HD23 | 56:BZ:90:VAL:HG21 | 1.60 | 0.83 |
| 35:BA:2630:G:H1' | 35:BA:2894:G:H1' | 1.61 | 0.83 |
| 6:CF:37:VAL:HG13 | 6:CF:65:VAL:HG12 | 1.60 | 0.82 |
| 3:CC:71:ALA:HB1 | 3:CC:109:PRO:HG3 | 1.61 | 0.82 |
| 55:DY:14:LEU:CD1 | 55:DY:15:VAL:H | 1.91 | 0.82 |
| 55:BY:14:LEU:CD1 | 55:BY:15:VAL:H | 1.92 | 0.82 |
| 1:AA:255:G:H1' | 17:AQ:16:GLN:NE2 | 1.93 | 0.82 |
| 35:DA:2753:A:O2' | 35:DA:2754:U:H5' | 1.78 | 0.82 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 8:AH:122:ARG:HB2 | 8:AH:122:ARG:HH11 | 1.44 | 0.82 |
| 56:DZ:97:GLU:HB3 | 56:DZ:125:LEU:HD11 | 1.62 | 0.82 |
| 31:B6:15:GLU:CG | 31:B6:18:ARG:HE | 1.90 | 0.82 |
| 2:AB:187:LEU:HD22 | 2:AB:201:ILE:O | 1.79 | 0.82 |
| 42:DH:47:GLU:CG | 42:DH:48:GLY:H | 1.92 | 0.82 |
| 30:B5:55:ARG:O | 30:B5:56:LYS:HB3 | 1.76 | 0.82 |
| 38:DD:85:ASP:HB2 | 38:DD:92:ILE:HD12 | 1.60 | 0.82 |
| 1:CA:1505:G:H5'' | 1:CA:1506:U:H5'' | 1.61 | 0.82 |
| 47:DQ:140:ALA:HB1 | 56:DZ:99:TYR:HB2 | 1.60 | 0.82 |
| 31:B6:16:CYS:SG | 31:B6:48:VAL:HG13 | 2.19 | 0.82 |
| 35:DA:2334:G:N2 | 49:DS:18:ILE:HD11 | 1.91 | 0.82 |
| 51:BU:55:ARG:HA | 51:BU:58:ARG:HG3 | 1.61 | 0.82 |
| 35:BA:1278:A:OP1 | 48:BR:36:THR:HG22 | 1.78 | 0.82 |
| 35:BA:2068:U:N3 | 35:BA:2430:A:H2 | 1.76 | 0.82 |
| 49:BS:58:LEU:HD23 | 49:BS:65:VAL:HG13 | 1.59 | 0.82 |
| 35:DA:2392:A:H2 | 35:DA:2424:C:H42 | 1.26 | 0.82 |
| 22:CV:5:G:H2' | 22:CV:6:G:O4' | 1.79 | 0.82 |
| 31:B6:20:ASN:ND2 | 31:B6:21:TYR:H | 1.76 | 0.82 |
| 31:B6:47:THR:HG22 | 31:B6:48:VAL:H | 1.44 | 0.82 |
| 1:CA:1146:A:H2' | 1:CA:1147:C:C5' | 2.08 | 0.82 |
| 39:BE:24:THR:CG2 | 39:BE:184:VAL:HG23 | 2.08 | 0.82 |
| 35:BA:2262:U:C2' | 35:BA:2263:C:H5'' | 2.08 | 0.82 |
| 35:DA:674:G:H1' | 40:DF:74:ARG:HD3 | 1.62 | 0.82 |
| 35:BA:2267:A:H5'' | 35:BA:2268:A:H5' | 1.58 | 0.82 |
| 35:BA:1528(A):A:H3' | 35:BA:1529:G:H5'' | 1.59 | 0.82 |
| 35:BA:631:A:OP1 | 46:BP:64:LYS:HE2 | 1.78 | 0.82 |
| 35:BA:2571:C:C5' | 35:BA:2572:A:H5'' | 2.09 | 0.82 |
| 1:AA:100:C:H2' | 1:AA:101:A:C8 | 2.15 | 0.82 |
| 35:BA:486:C:H4' | 53:BW:60:ASN:HD21 | 1.44 | 0.82 |
| 39:BE:27:LEU:HD23 | 50:BT:1:MET:HE1 | 1.59 | 0.82 |
| 35:BA:71:A:H8 | 35:BA:71:A:H5' | 1.45 | 0.82 |
| 35:DA:2630:G:H1' | 35:DA:2894:G:H1' | 1.62 | 0.82 |
| 51:BU:112:ARG:HG2 | 51:BU:112:ARG:HH11 | 1.44 | 0.82 |
| 12:CL:8:ASN:HD22 | 17:CQ:34:LYS:HE2 | 1.45 | 0.82 |
| 43:DI:111:PRO:O | 43:DI:112:LYS:HG3 | 1.80 | 0.82 |
| 10:CJ:13:HIS:HB3 | 10:CJ:68:HIS:CE1 | 2.15 | 0.82 |
| 38:BD:155:LEU:HD23 | 38:BD:177:LEU:HD22 | 1.61 | 0.82 |
| 10:AJ:13:HIS:HB3 | 10:AJ:68:HIS:CE1 | 2.14 | 0.82 |
| 35:BA:2150:U:H2' | 35:BA:2151:G:C8 | 2.14 | 0.82 |
| 35:DA:2150:U:H2' | 35:DA:2151:G:C8 | 2.14 | 0.82 |
| 3:CC:70:VAL:HG12 | 3:CC:72:LYS:H | 1.45 | 0.82 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 51:DU:92:ARG:HD2 | 52:DV:11:GLN:CD | 2.00 | 0.82 |
| 12:AL:8:ASN:HD22 | 17:AQ:34:LYS:HE2 | 1.43 | 0.82 |
| 35:BA:2787:C:O2 | 35:BA:2787:C:H2' | 1.79 | 0.82 |
| 46:BP:111:ARG:NH1 | 46:BP:149:GLU:HG3 | 1.93 | 0.82 |
| 51:BU:27:LEU:HD23 | 51:BU:30:LYS:HB2 | 1.61 | 0.82 |
| 56:BZ:93:ASP:HA | 56:BZ:130:PRO:HG3 | 1.61 | 0.82 |
| 19:CS:20:LEU:HA | 19:CS:23:ASN:ND2 | 1.95 | 0.82 |
| 35:DA:1221:C:H6 | 35:DA:1221:C:H5' | 1.45 | 0.82 |
| 1:AA:1333:A:H2' | 1:AA:1334:G:O4' | 1.79 | 0.82 |
| 41:BG:46:ALA:CB | 41:BG:82:LEU:HD11 | 2.09 | 0.82 |
| 5:AE:12:LEU:HD22 | 5:AE:13:ILE:N | 1.95 | 0.82 |
| 4:CD:31:CYS:C | 4:CD:33:MET:H | 1.83 | 0.82 |
| 8:AH:73:ASP:OD2 | 8:AH:75:ARG:HD3 | 1.80 | 0.82 |
| 1:AA:6:G:H4' | 1:AA:298:A:H4' | 1.61 | 0.82 |
| 1:CA:174:C:H2' | 1:CA:175:C:H6 | 1.44 | 0.82 |
| 42:DH:89:ILE:HD13 | 42:DH:90:LYS:H | 1.45 | 0.82 |
| 15:CO:16:ALA:HB1 | 15:CO:21:ASP:HB3 | 1.62 | 0.82 |
| 35:BA:674:G:H1' | 40:BF:74:ARG:HD3 | 1.62 | 0.82 |
| 4:AD:170:VAL:HG22 | 4:AD:171:GLY:H | 1.44 | 0.82 |
| 30:D5:4:HIS:HB3 | 30:D5:5:PRO:CD | 2.10 | 0.82 |
| 8:CH:112:LEU:HA | 8:CH:134:ILE:HG12 | 1.61 | 0.82 |
| 50:BT:115:ARG:HA | 50:BT:115:ARG:HE | 1.45 | 0.82 |
| 12:CL:47:LYS:CB | 12:CL:48:PRO:HD3 | 2.10 | 0.82 |
| 6:CF:63:TYR:O | 6:CF:65:VAL:HG13 | 1.80 | 0.82 |
| 48:DR:2:ARG:HH11 | 48:DR:5:LYS:HE2 | 1.43 | 0.82 |
| 22:AV:41:C:C3' | 22:AV:42:C:H5'' | 2.09 | 0.82 |
| 50:DT:115:ARG:HA | 50:DT:115:ARG:HE | 1.44 | 0.82 |
| 26:D1:44:PRO:O | 26:D1:46:LEU:HD13 | 1.80 | 0.82 |
| 42:BH:20:ALA:HB3 | 42:BH:23:ARG:HB2 | 1.59 | 0.82 |
| 1:AA:174:C:H2' | 1:AA:175:C:H6 | 1.44 | 0.82 |
| 12:AL:25:PRO:C | 12:AL:27:LEU:H | 1.81 | 0.81 |
| 39:DE:77:ILE:HG22 | 39:DE:78:LEU:N | 1.94 | 0.81 |
| 35:BA:1654:A:OP1 | 48:BR:3:HIS:HB2 | 1.80 | 0.81 |
| 47:DQ:56:ARG:HA | 47:DQ:56:ARG:HE | 1.44 | 0.81 |
| 50:BT:53:ARG:O | 50:BT:53:ARG:HG2 | 1.80 | 0.81 |
| 35:DA:1485:G:H2' | 35:DA:1486:A:C8 | 2.14 | 0.81 |
| 12:CL:24:VAL:HG13 | 12:CL:98:TYR:CE2 | 2.15 | 0.81 |
| 1:AA:1499:A:H1' | 1:AA:1520:G:H5' | 1.62 | 0.81 |
| 6:AF:37:VAL:HG13 | 6:AF:65:VAL:HG12 | 1.62 | 0.81 |
| 41:BG:164:GLU:OE1 | 41:BG:164:GLU:N | 2.12 | 0.81 |
| 15:AO:47:LYS:HD3 | 15:AO:47:LYS:H | 1.42 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:389:A:H2' | 1:AA:390:C:H5' | 1.61 | 0.81 |
| 35:DA:631:A:OP1 | 46:DP:64:LYS:HE2 | 1.80 | 0.81 |
| 46:BP:59:LEU:HA | 46:BP:61:ARG:NH1 | 1.94 | 0.81 |
| 3:AC:71:ALA:HB1 | 3:AC:109:PRO:HG3 | 1.62 | 0.81 |
| 37:DC:36:LYS:HG3 | 37:DC:37:PHE:H | 1.43 | 0.81 |
| 38:BD:26:LYS:HE2 | 38:BD:82:ILE:H | 1.42 | 0.81 |
| 1:CA:255:G:H1' | 17:CQ:16:GLN:NE2 | 1.95 | 0.81 |
| 39:BE:117:MET:HA | 39:BE:122:PHE:H | 1.42 | 0.81 |
| 1:AA:1104:G:H4' | 2:AB:111:ARG:NH1 | 1.95 | 0.81 |
| 39:DE:143:ASN:HB2 | 39:DE:147:PRO:HD2 | 1.62 | 0.81 |
| 54:DX:27:THR:HB | 54:DX:80:ILE:HB | 1.62 | 0.81 |
| 46:BP:45:LEU:HD23 | 46:BP:46:LYS:H | 1.45 | 0.81 |
| 1:CA:1277:C:H2' | 1:CA:1278:U:H5' | 1.61 | 0.81 |
| 53:DW:1:MET:CE | 53:DW:2:GLU:H | 1.92 | 0.81 |
| 19:AS:6:LYS:HG2 | 19:AS:7:LYS:CD | 2.10 | 0.81 |
| 43:DI:120:ILE:HG22 | 43:DI:121:LYS:N | 1.95 | 0.81 |
| 53:BW:73:ALA:HB3 | 53:BW:106:ILE:HD11 | 1.61 | 0.81 |
| 35:BA:2189:U:H2' | 35:BA:2190:G:H5'' | 1.59 | 0.81 |
| 3:AC:52:LEU:HD23 | 3:AC:52:LEU:H | 1.46 | 0.81 |
| 33:D8:43:GLN:C | 33:D8:44:LYS:HD2 | 2.01 | 0.81 |
| 38:DD:28:GLU:H | 38:DD:29:PRO:HD2 | 1.46 | 0.81 |
| 13:AM:13:LYS:HA | 13:AM:44:ARG:HH11 | 1.42 | 0.81 |
| 15:CO:47:LYS:H | 15:CO:47:LYS:HD3 | 1.44 | 0.81 |
| 50:DT:125:ARG:HA | 50:DT:125:ARG:NH1 | 1.95 | 0.81 |
| 35:BA:2555:U:H2' | 35:BA:2556:C:H5' | 1.60 | 0.81 |
| 35:BA:571:A:H5' | 35:BA:2030:A:N6 | 1.92 | 0.81 |
| 2:CB:187:LEU:HD22 | 2:CB:201:ILE:O | 1.80 | 0.81 |
| 38:BD:35:LYS:N | 38:BD:36:PRO:HD2 | 1.95 | 0.81 |
| 4:AD:30:LYS:C | 4:AD:32:ALA:H | 1.83 | 0.81 |
| 8:AH:122:ARG:NH1 | 8:AH:122:ARG:HB2 | 1.96 | 0.81 |
| 43:DI:8:PRO:HB3 | 43:DI:14:ASP:H | 1.43 | 0.81 |
| 1:CA:579:G:H5' | 1:CA:728:A:H1' | 1.63 | 0.81 |
| 26:B1:64:ALA:HA | 26:B1:67:ILE:HG13 | 1.62 | 0.81 |
| 52:DV:99:ILE:H | 52:DV:99:ILE:HD13 | 1.45 | 0.81 |
| 41:DG:47:LYS:NZ | 41:DG:82:LEU:HD12 | 1.94 | 0.81 |
| 1:CA:979:C:H3' | 1:CA:980:C:C5' | 2.10 | 0.81 |
| 39:BE:45:THR:HG22 | 39:BE:83:ASP:HA | 1.62 | 0.81 |
| 35:DA:847:U:H2' | 35:DA:848:G:H5'' | 1.62 | 0.81 |
| 56:BZ:31:ARG:HB3 | 56:BZ:31:ARG:HH11 | 1.45 | 0.81 |
| 46:BP:83:VAL:HG11 | 46:BP:112:LEU:HD21 | 1.63 | 0.81 |
| 6:AF:63:TYR:O | 6:AF:65:VAL:HG13 | 1.81 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:CP:22:THR:HA | 16:CP:33:ILE:HG12 | 1.61 | 0.81 |
| 35:BA:1318:C:H3' | 35:BA:1319:G:H5'' | 1.60 | 0.81 |
| 43:BI:66:GLU:O | 43:BI:70:GLU:HG2 | 1.80 | 0.81 |
| 55:BY:87:LYS:O | 55:BY:88:LYS:HB2 | 1.79 | 0.81 |
| 1:AA:1070:U:H2' | 1:AA:1071:C:H6 | 1.45 | 0.81 |
| 16:AP:8:ARG:HG2 | 16:AP:9:PHE:N | 1.93 | 0.81 |
| 1:AA:1146:A:H2' | 1:AA:1147:C:C5' | 2.10 | 0.81 |
| 18:AR:40:LEU:H | 18:AR:40:LEU:HD12 | 1.43 | 0.81 |
| 39:DE:119:ARG:HG2 | 39:DE:160:TYR:HB2 | 1.62 | 0.81 |
| 55:BY:27:VAL:CA | 55:BY:28:LYS:HZ2 | 1.93 | 0.81 |
| 38:BD:85:ASP:HB2 | 38:BD:92:ILE:HD12 | 1.61 | 0.81 |
| 38:DD:33:LEU:HD22 | 38:DD:34:VAL:H | 1.46 | 0.81 |
| 42:BH:48:GLY:O | 42:BH:49:VAL:HG13 | 1.81 | 0.81 |
| 35:BA:2863:C:C2' | 35:BA:2864:G:H5'' | 2.10 | 0.81 |
| 13:AM:118:ALA:HB3 | 22:AV:29:G:H5'' | 1.60 | 0.81 |
| 35:BA:1286:A:H2' | 35:BA:1288:U:OP2 | 1.80 | 0.81 |
| 4:CD:32:ALA:O | 4:CD:36:ARG:HG3 | 1.80 | 0.81 |
| 38:DD:186:HIS:HD2 | 38:DD:188:GLU:H | 1.28 | 0.81 |
| 22:AY:16:U:H3' | 22:AY:17:C:H5' | 1.61 | 0.81 |
| 39:BE:119:ARG:HG2 | 39:BE:160:TYR:HB2 | 1.61 | 0.81 |
| 48:BR:2:ARG:HG2 | 48:BR:5:LYS:HZ1 | 1.46 | 0.81 |
| 41:DG:121:ASN:HD22 | 41:DG:122:PRO:HD2 | 1.46 | 0.81 |
| 19:CS:6:LYS:HG2 | 19:CS:7:LYS:CD | 2.10 | 0.81 |
| 40:BF:188:ARG:HA | 46:BP:7:ARG:HD3 | 1.60 | 0.81 |
| 8:AH:87:SER:HA | 8:AH:93:VAL:HG23 | 1.62 | 0.81 |
| 1:AA:511:C:H1' | 4:AD:43:HIS:HE2 | 1.45 | 0.81 |
| 1:CA:389:A:H2' | 1:CA:390:C:H5' | 1.60 | 0.81 |
| 40:DF:2:LYS:NZ | 40:DF:25:PRO:HB2 | 1.96 | 0.81 |
| 38:BD:33:LEU:HD22 | 38:BD:34:VAL:H | 1.44 | 0.81 |
| 48:DR:2:ARG:HG2 | 48:DR:5:LYS:HZ1 | 1.44 | 0.81 |
| 49:BS:54:LEU:HA | 49:BS:57:LYS:O | 1.80 | 0.81 |
| 35:BA:1022:G:H22 | 35:BA:1142(A):A:H2 | 1.28 | 0.81 |
| 25:B0:36:ILE:HD13 | 25:B0:58:THR:HG23 | 1.62 | 0.81 |
| 4:CD:30:LYS:C | 4:CD:32:ALA:H | 1.82 | 0.81 |
| 2:AB:171:ALA:HA | 2:AB:174:VAL:HG23 | 1.63 | 0.81 |
| 6:CF:99:ALA:HB1 | 18:CR:23:LYS:HZ2 | 1.45 | 0.81 |
| 35:DA:1040:C:H42 | 35:DA:1115:G:H1 | 1.28 | 0.81 |
| 39:DE:101:ARG:HH11 | 39:DE:169:ASN:ND2 | 1.78 | 0.81 |
| 42:BH:47:GLU:CG | 42:BH:48:GLY:H | 1.93 | 0.80 |
| 46:BP:38:GLN:HG3 | 46:BP:39:LYS:H | 1.45 | 0.80 |
| 16:CP:8:ARG:HG2 | 16:CP:9:PHE:N | 1.94 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:DA:2245:U:H5' | 35:DA:2246:G:H5' | 1.63 | 0.80 |
| 56:DZ:137:ILE:HG12 | 56:DZ:138:GLU:H | 1.46 | 0.80 |
| 10:CJ:75:ILE:HG13 | 10:CJ:76:ASN:N | 1.95 | 0.80 |
| 27:B2:2:LYS:HB3 | 35:BA:97:C:H5'' | 1.63 | 0.80 |
| 40:BF:66:PRO:O | 40:BF:67:GLN:HB3 | 1.80 | 0.80 |
| 54:BX:54:VAL:HG22 | 54:BX:81:VAL:HG12 | 1.62 | 0.80 |
| 26:D1:3:LYS:HG3 | 26:D1:4:VAL:H | 1.46 | 0.80 |
| 35:DA:1286:A:H2' | 35:DA:1288:U:OP2 | 1.80 | 0.80 |
| 49:DS:89:ARG:HD2 | 49:DS:92:TYR:HA | 1.63 | 0.80 |
| 50:DT:27:THR:HG23 | 50:DT:28:VAL:H | 1.47 | 0.80 |
| 39:DE:9:VAL:HG22 | 39:DE:25:VAL:HB | 1.63 | 0.80 |
| 42:DH:20:ALA:HB3 | 42:DH:23:ARG:HB2 | 1.63 | 0.80 |
| 13:AM:76:ALA:HA | 13:AM:79:LYS:HG3 | 1.63 | 0.80 |
| 2:CB:21:ARG:HB3 | 2:CB:39:ILE:HA | 1.64 | 0.80 |
| 15:AO:16:ALA:HB1 | 15:AO:21:ASP:HB3 | 1.61 | 0.80 |
| 1:AA:80:G:H3' | 1:AA:81:U:H5' | 1.63 | 0.80 |
| 35:BA:1946:U:H2' | 35:BA:1947:C:H6 | 1.45 | 0.80 |
| 16:AP:18:ARG:HD3 | 16:AP:35:LYS:HD2 | 1.64 | 0.80 |
| 40:DF:66:PRO:O | 40:DF:67:GLN:HB3 | 1.80 | 0.80 |
| 5:AE:91:LEU:HD13 | 5:AE:120:THR:HG22 | 1.63 | 0.80 |
| 39:DE:24:THR:CG2 | 39:DE:184:VAL:HG23 | 2.10 | 0.80 |
| 55:BY:7:VAL:HG21 | 55:BY:8:LYS:HZ3 | 1.46 | 0.80 |
| 44:DN:62:VAL:HG22 | 44:DN:66:LYS:HD2 | 1.63 | 0.80 |
| 43:DI:130:TYR:HD1 | 43:DI:131:LYS:H | 1.26 | 0.80 |
| 35:BA:8:A:H2' | 35:BA:9:U:C6 | 2.16 | 0.80 |
| 35:BA:1846:G:H5' | 35:BA:1847:A:OP2 | 1.82 | 0.80 |
| 35:BA:1040:C:H42 | 35:BA:1115:G:H1 | 1.27 | 0.80 |
| 35:BA:910:A:C5 | 47:BQ:13:GLN:HG3 | 2.15 | 0.80 |
| 38:DD:155:LEU:HD23 | 38:DD:177:LEU:HD22 | 1.64 | 0.80 |
| 45:BO:17:ARG:HD3 | 45:BO:47:ILE:HD13 | 1.64 | 0.80 |
| 31:B6:34:LEU:HD22 | 31:B6:36:LEU:HD22 | 1.64 | 0.80 |
| 40:BF:36:VAL:HG11 | 40:BF:183:VAL:CG1 | 2.10 | 0.80 |
| 22:AY:51:U:H3 | 22:AY:63:G:H1 | 1.30 | 0.80 |
| 35:BA:271(S):G:H2' | 35:BA:271(T):C:H5'' | 1.62 | 0.80 |
| 35:DA:481:G:H1' | 35:DA:506:G:N2 | 1.97 | 0.80 |
| 23:CW:16:U:C5 | 23:CW:18:G:H3' | 2.17 | 0.80 |
| 50:BT:23:ARG:O | 50:BT:25:GLY:N | 2.13 | 0.80 |
| 39:DE:117:MET:HA | 39:DE:122:PHE:H | 1.47 | 0.80 |
| 1:CA:106:C:H2' | 1:CA:107:G:H8 | 1.43 | 0.80 |
| 50:BT:27:THR:HG23 | 50:BT:28:VAL:H | 1.45 | 0.80 |
| 50:BT:28:VAL:CG2 | 50:BT:46:GLU:HG3 | 2.10 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 48:BR:103:ARG:HD2 | 53:BW:40:ASN:HD22 | 1.46 | 0.80 |
| 1:CA:1513:A:H2' | 1:CA:1514:C:C6 | 2.16 | 0.80 |
| 43:DI:120:ILE:HG22 | 43:DI:121:LYS:H | 1.47 | 0.80 |
| 19:CS:20:LEU:HA | 19:CS:23:ASN:HD21 | 1.46 | 0.80 |
| 41:BG:161:THR:HG22 | 41:BG:163:ALA:N | 1.97 | 0.80 |
| 52:DV:28:GLU:HB3 | 52:DV:29:PRO:HD2 | 1.64 | 0.80 |
| 1:CA:353:A:H5' | 1:CA:353:A:H8 | 1.45 | 0.80 |
| 19:AS:20:LEU:HA | 19:AS:23:ASN:ND2 | 1.96 | 0.80 |
| 31:D6:16:CYS:SG | 31:D6:48:VAL:HG13 | 2.22 | 0.80 |
| 35:DA:1654:A:P | 48:DR:3:HIS:HB2 | 2.21 | 0.80 |
| 42:BH:47:GLU:HG2 | 42:BH:48:GLY:N | 1.95 | 0.80 |
| 55:DY:16:ALA:H | 55:DY:22:GLY:H | 1.27 | 0.80 |
| 30:B5:35:GLU:O | 30:B5:36:CYS:HB2 | 1.80 | 0.80 |
| 43:BI:130:TYR:HD1 | 43:BI:131:LYS:H | 1.26 | 0.80 |
| 38:BD:147:LEU:HD13 | 38:BD:155:LEU:HD11 | 1.64 | 0.80 |
| 1:CA:1333:A:H2' | 1:CA:1334:G:O4' | 1.82 | 0.80 |
| 38:BD:28:GLU:H | 38:BD:29:PRO:HD2 | 1.45 | 0.80 |
| 1:AA:1165:C:H2' | 1:AA:1166:G:H8 | 1.47 | 0.80 |
| 35:BA:1332:G:N2 | 35:BA:1609:A:O2' | 2.15 | 0.80 |
| 31:D6:47:THR:HG22 | 31:D6:48:VAL:H | 1.47 | 0.80 |
| 38:DD:44:ASN:HB2 | 38:DD:48:ARG:O | 1.82 | 0.80 |
| 35:BA:1174:A:C5' | 35:BA:1175:U:H5' | 2.10 | 0.80 |
| 35:BA:2468:G:H22 | 35:BA:2481:G:H2' | 1.46 | 0.80 |
| 2:CB:171:ALA:HA | 2:CB:174:VAL:HG23 | 1.64 | 0.80 |
| 7:AG:16:LEU:HD13 | 9:AI:42:ARG:HA | 1.63 | 0.80 |
| 45:DO:85:VAL:HG11 | 45:DO:114:ILE:HD12 | 1.64 | 0.80 |
| 50:BT:125:ARG:NH1 | 50:BT:125:ARG:HA | 1.97 | 0.80 |
| 56:BZ:150:LEU:HD23 | 56:BZ:154:ASP:OD1 | 1.82 | 0.80 |
| 38:BD:32:SER:O | 38:BD:36:PRO:HG3 | 1.81 | 0.80 |
| 55:BY:17:SER:CA | 55:BY:71:LYS:HE2 | 2.11 | 0.80 |
| 23:AW:2:C:H42 | 23:AW:71:G:H1 | 1.30 | 0.80 |
| 55:DY:87:LYS:HG3 | 55:DY:88:LYS:H | 1.46 | 0.80 |
| 1:CA:100:C:H2' | 1:CA:101:A:C8 | 2.17 | 0.80 |
| 46:DP:85:LEU:HD23 | 46:DP:85:LEU:H | 1.45 | 0.80 |
| 44:BN:23:LEU:H | 44:BN:23:LEU:HD23 | 1.47 | 0.80 |
| 36:DB:42:C:H4' | 41:DG:67:LYS:O | 1.82 | 0.80 |
| 50:BT:28:VAL:HG22 | 50:BT:47:GLY:H | 1.46 | 0.80 |
| 38:BD:44:ASN:HB2 | 38:BD:48:ARG:O | 1.80 | 0.80 |
| 3:CC:26:LYS:HG3 | 3:CC:27:LYS:H | 1.47 | 0.80 |
| 5:CE:91:LEU:HD13 | 5:CE:120:THR:HG22 | 1.64 | 0.80 |
| 55:DY:17:SER:HB2 | 55:DY:71:LYS:HE2 | 1.63 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:BO:7:TYR:HE1 | 45:BO:20:MET:HE3 | 1.45 | 0.80 |
| 3:AC:170:GLN:HG2 | 3:AC:171:GLY:H | 1.47 | 0.80 |
| 1:CA:1070:U:H2' | 1:CA:1071:C:H6 | 1.46 | 0.80 |
| 1:CA:6:G:H4' | 1:CA:298:A:H4' | 1.63 | 0.80 |
| 35:BA:2036:C:H6 | 35:BA:2036:C:H5' | 1.45 | 0.80 |
| 55:DY:17:SER:CA | 55:DY:71:LYS:HE2 | 2.12 | 0.79 |
| 44:DN:15:LEU:HB2 | 44:DN:134:ARG:HB2 | 1.64 | 0.79 |
| 27:B2:13:ALA:HA | 27:B2:16:LEU:HD12 | 1.64 | 0.79 |
| 39:DE:101:ARG:HH11 | 39:DE:169:ASN:HD22 | 1.30 | 0.79 |
| 38:BD:145:VAL:HG12 | 38:BD:146:GLU:O | 1.83 | 0.79 |
| 54:BX:12:VAL:HG22 | 54:BX:27:THR:O | 1.81 | 0.79 |
| 35:DA:1024:G:H3' | 35:DA:1025:G:H5'' | 1.64 | 0.79 |
| 31:D6:15:GLU:CG | 31:D6:18:ARG:HE | 1.94 | 0.79 |
| 9:CI:28:VAL:HA | 9:CI:63:ILE:O | 1.83 | 0.79 |
| 1:AA:1277:C:H2' | 1:AA:1278:U:H5' | 1.63 | 0.79 |
| 52:BV:46:VAL:HG13 | 52:BV:47:VAL:N | 1.97 | 0.79 |
| 1:CA:322:C:H4' | 20:CT:23:ARG:HD2 | 1.63 | 0.79 |
| 48:DR:103:ARG:HD2 | 53:DW:40:ASN:HD22 | 1.43 | 0.79 |
| 35:BA:1484:G:C3' | 35:BA:1485:G:H5'' | 2.12 | 0.79 |
| 35:DA:1484:G:C3' | 35:DA:1485:G:H5'' | 2.13 | 0.79 |
| 7:AG:16:LEU:CD1 | 9:AI:42:ARG:HA | 2.12 | 0.79 |
| 39:DE:45:THR:HG22 | 39:DE:83:ASP:HA | 1.62 | 0.79 |
| 35:BA:365:C:H6 | 35:BA:365:C:H5' | 1.47 | 0.79 |
| 31:D6:45:LYS:HZ1 | 35:DA:2370:G:H21 | 1.28 | 0.79 |
| 1:CA:1104:G:H4' | 2:CB:111:ARG:NH1 | 1.96 | 0.79 |
| 46:BP:58:THR:O | 46:BP:61:ARG:NE | 2.15 | 0.79 |
| 41:BG:141:PHE:HB3 | 41:BG:142:PRO:HD2 | 1.63 | 0.79 |
| 25:B0:41:ARG:H | 25:B0:41:ARG:HD2 | 1.44 | 0.79 |
| 46:DP:45:LEU:HD23 | 46:DP:46:LYS:H | 1.47 | 0.79 |
| 56:BZ:165:VAL:HG12 | 56:BZ:166:SER:H | 1.48 | 0.79 |
| 55:BY:87:LYS:HG3 | 55:BY:88:LYS:H | 1.46 | 0.79 |
| 39:DE:116:VAL:O | 39:DE:117:MET:HB3 | 1.81 | 0.79 |
| 1:CA:511:C:H1' | 4:CD:43:HIS:HE2 | 1.45 | 0.79 |
| 35:DA:910:A:C5 | 47:DQ:13:GLN:HG3 | 2.16 | 0.79 |
| 53:DW:13:SER:HB3 | 53:DW:16:LYS:HG3 | 1.63 | 0.79 |
| 35:BA:1050:A:H2' | 35:BA:1051:G:H8 | 1.47 | 0.79 |
| 23:CW:38:A:H3' | 23:CW:39:U:H5'' | 1.63 | 0.79 |
| 1:CA:80:G:H3' | 1:CA:81:U:H5' | 1.63 | 0.79 |
| 50:BT:51:ARG:HG3 | 50:BT:98:LYS:HE3 | 1.64 | 0.79 |
| 7:CG:20:ASP:HB3 | 7:CG:23:VAL:HG23 | 1.62 | 0.79 |
| 35:BA:2287:A:N6 | 35:BA:2344:U:H3 | 1.79 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:BF:2:LYS:HZ1 | 40:BF:25:PRO:HB2 | 1.47 | 0.79 |
| 35:DA:1174:A:C5' | 35:DA:1175:U:H5' | 2.11 | 0.79 |
| 1:CA:192:U:H2' | 1:CA:193:C:H6 | 1.45 | 0.79 |
| 27:D2:64:LEU:O | 27:D2:68:ARG:HG2 | 1.81 | 0.79 |
| 35:DA:1050:A:H2' | 35:DA:1051:G:H8 | 1.47 | 0.79 |
| 56:BZ:7:ALA:O | 56:BZ:62:PRO:HD3 | 1.83 | 0.79 |
| 1:AA:1439:C:H42 | 1:AA:1462:G:H1 | 1.30 | 0.79 |
| 40:BF:2:LYS:NZ | 40:BF:25:PRO:HB2 | 1.98 | 0.79 |
| 12:CL:8:ASN:ND2 | 17:CQ:34:LYS:HE2 | 1.97 | 0.79 |
| 54:DX:12:VAL:HG22 | 54:DX:27:THR:O | 1.82 | 0.79 |
| 35:DA:676:A:H2 | 35:DA:802:A:H61 | 1.31 | 0.79 |
| 54:BX:27:THR:HB | 54:BX:80:ILE:HB | 1.63 | 0.79 |
| 31:D6:34:LEU:HD22 | 31:D6:36:LEU:HD22 | 1.64 | 0.79 |
| 3:CC:52:LEU:HD23 | 3:CC:52:LEU:H | 1.46 | 0.79 |
| 39:DE:100:GLU:O | 39:DE:172:VAL:HG23 | 1.83 | 0.79 |
| 49:BS:89:ARG:HD2 | 49:BS:92:TYR:HA | 1.65 | 0.79 |
| 12:AL:24:VAL:HG13 | 12:AL:98:TYR:CE2 | 2.17 | 0.79 |
| 50:DT:28:VAL:CG2 | 50:DT:46:GLU:HG3 | 2.10 | 0.79 |
| 4:AD:31:CYS:C | 4:AD:33:MET:H | 1.83 | 0.79 |
| 1:AA:1125:U:O4 | 10:AJ:5:ARG:HD3 | 1.83 | 0.79 |
| 35:DA:1899:G:O2' | 35:DA:1900:A:H5'' | 1.83 | 0.79 |
| 35:DA:141:A:H8 | 35:DA:1408:C:O2' | 1.65 | 0.79 |
| 54:DX:29:TRP:CZ3 | 54:DX:78:LYS:HB3 | 2.17 | 0.79 |
| 8:CH:73:ASP:OD2 | 8:CH:75:ARG:HD3 | 1.80 | 0.79 |
| 56:DZ:108:PRO:HG3 | 56:DZ:117:LEU:HD22 | 1.63 | 0.79 |
| 38:BD:130:ALA:C | 38:BD:131:LEU:HD12 | 2.03 | 0.79 |
| 40:BF:132:VAL:HG22 | 40:BF:133:ASN:N | 1.95 | 0.79 |
| 38:DD:32:SER:O | 38:DD:36:PRO:HG3 | 1.82 | 0.79 |
| 3:CC:76:VAL:HG23 | 3:CC:77:ILE:N | 1.98 | 0.79 |
| 6:AF:39:LYS:HD2 | 6:AF:62:TRP:HZ3 | 1.47 | 0.79 |
| 55:DY:31:LEU:HD22 | 55:DY:31:LEU:N | 1.98 | 0.79 |
| 7:CG:16:LEU:HD13 | 9:CI:42:ARG:HA | 1.65 | 0.79 |
| 5:CE:126:ARG:HH11 | 5:CE:126:ARG:HG3 | 1.47 | 0.79 |
| 26:B1:53:VAL:HG22 | 26:B1:74:VAL:HG13 | 1.64 | 0.79 |
| 25:D0:36:ILE:HD13 | 25:D0:58:THR:HG23 | 1.64 | 0.79 |
| 2:AB:223:ILE:HG22 | 2:AB:226:ARG:HH21 | 1.48 | 0.79 |
| 2:CB:223:ILE:HG22 | 2:CB:226:ARG:HH21 | 1.47 | 0.79 |
| 13:CM:76:ALA:HA | 13:CM:79:LYS:HG3 | 1.65 | 0.79 |
| 4:AD:9:CYS:SG | 4:AD:31:CYS:O | 2.41 | 0.79 |
| 55:BY:52:SER:O | 55:BY:54:LYS:N | 2.16 | 0.79 |
| 1:CA:1512:U:H2' | 1:CA:1513:A:H8 | 1.47 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 42:DH:89:ILE:CD1 | 42:DH:90:LYS:H | 1.96 | 0.79 |
| 43:BI:88:ILE:HG22 | 43:BI:89:TYR:N | 1.96 | 0.79 |
| 39:BE:131:ALA:O | 39:BE:133:LYS:N | 2.15 | 0.79 |
| 39:BE:143:ASN:HB2 | 39:BE:147:PRO:HD2 | 1.64 | 0.79 |
| 1:CA:1277:C:C2' | 1:CA:1278:U:H5' | 2.12 | 0.79 |
| 52:DV:4:ILE:HD12 | 52:DV:40:LEU:HG | 1.63 | 0.79 |
| 28:D3:31:LEU:HD23 | 28:D3:32:GLN:HG2 | 1.65 | 0.79 |
| 55:DY:52:SER:O | 55:DY:54:LYS:N | 2.16 | 0.79 |
| 1:AA:1030:C:C2' | 1:AA:1030(A):G:H5' | 2.13 | 0.79 |
| 12:CL:25:PRO:C | 12:CL:27:LEU:H | 1.82 | 0.79 |
| 39:DE:44:TYR:O | 39:DE:45:THR:HB | 1.81 | 0.79 |
| 35:DA:1532:C:O2 | 35:DA:1532:C:H2' | 1.82 | 0.79 |
| 1:AA:979:C:H3' | 1:AA:980:C:C5' | 2.08 | 0.79 |
| 41:DG:47:LYS:HD2 | 41:DG:81:LYS:HD3 | 1.64 | 0.79 |
| 48:DR:2:ARG:NH1 | 48:DR:5:LYS:HE2 | 1.98 | 0.79 |
| 13:CM:76:ALA:HB2 | 13:CM:79:LYS:HZ3 | 1.47 | 0.79 |
| 51:DU:112:ARG:HG2 | 51:DU:112:ARG:HH11 | 1.47 | 0.79 |
| 22:CY:27:G:H2' | 22:CY:28:G:C8 | 2.18 | 0.79 |
| 25:D0:41:ARG:H | 25:D0:41:ARG:HD2 | 1.45 | 0.79 |
| 26:D1:90:ILE:O | 26:D1:94:LEU:HB2 | 1.83 | 0.79 |
| 30:D5:3:LYS:HE3 | 35:DA:2611:U:H1' | 1.64 | 0.79 |
| 35:BA:271(A):A:H5' | 35:BA:271(B):C:OP2 | 1.83 | 0.79 |
| 17:CQ:7:THR:HG22 | 17:CQ:58:GLU:HG2 | 1.62 | 0.79 |
| 40:BF:78:ILE:H | 40:BF:78:ILE:HD13 | 1.49 | 0.79 |
| 43:BI:92:VAL:HG11 | 43:BI:120:ILE:HD12 | 1.63 | 0.79 |
| 1:CA:56:U:H2' | 1:CA:57:G:H8 | 1.48 | 0.79 |
| 54:BX:29:TRP:CZ3 | 54:BX:78:LYS:HB3 | 2.18 | 0.79 |
| 35:DA:8:A:H2' | 35:DA:9:U:C6 | 2.17 | 0.79 |
| 40:DF:2:LYS:HZ1 | 40:DF:25:PRO:HB2 | 1.47 | 0.78 |
| 2:CB:54:THR:HG21 | 2:CB:201:ILE:HD11 | 1.65 | 0.78 |
| 50:BT:88:ILE:HG22 | 50:BT:89:VAL:N | 1.98 | 0.78 |
| 41:DG:82:LEU:HD22 | 41:DG:87:PRO:CG | 2.13 | 0.78 |
| 41:DG:41:GLN:HE21 | 41:DG:155:MET:HB3 | 1.49 | 0.78 |
| 49:BS:69:VAL:HG13 | 49:BS:99:LYS:HE3 | 1.65 | 0.78 |
| 23:AW:18:G:H1 | 23:AW:55:U:H1' | 1.48 | 0.78 |
| 35:BA:2134:A:C2 | 35:BA:2159:G:H1' | 2.17 | 0.78 |
| 38:DD:147:LEU:HD13 | 38:DD:155:LEU:HD11 | 1.65 | 0.78 |
| 2:AB:21:ARG:HB3 | 2:AB:39:ILE:HA | 1.64 | 0.78 |
| 41:BG:58:GLN:O | 41:BG:62:LEU:HD13 | 1.82 | 0.78 |
| 26:B1:3:LYS:HG2 | 26:B1:4:VAL:H | 1.48 | 0.78 |
| 50:DT:23:ARG:O | 50:DT:25:GLY:N | 2.15 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 50:DT:53:ARG:HG2 | 50:DT:53:ARG:O | 1.82 | 0.78 |
| 33:B8:43:GLN:C | 33:B8:44:LYS:HD2 | 2.04 | 0.78 |
| 50:DT:88:ILE:HG22 | 50:DT:89:VAL:N | 1.98 | 0.78 |
| 41:DG:112:PRO:O | 41:DG:113:ARG:HD3 | 1.83 | 0.78 |
| 30:B5:40:LYS:HZ3 | 30:B5:46:CYS:HB3 | 1.47 | 0.78 |
| 35:BA:1899:G:H22 | 35:BA:1902:C:N4 | 1.81 | 0.78 |
| 35:BA:1899:G:O2' | 35:BA:1900:A:H5'' | 1.81 | 0.78 |
| 1:AA:322:C:H4' | 20:AT:23:ARG:HD2 | 1.66 | 0.78 |
| 19:AS:20:LEU:HA | 19:AS:23:ASN:HD21 | 1.47 | 0.78 |
| 23:CW:53:G:O2' | 23:CW:54:U:H5' | 1.84 | 0.78 |
| 30:B5:4:HIS:HB3 | 30:B5:5:PRO:CD | 2.13 | 0.78 |
| 27:B2:43:GLN:O | 27:B2:44:LEU:HB2 | 1.83 | 0.78 |
| 35:BA:662:G:OP1 | 46:BP:18:ARG:HD2 | 1.84 | 0.78 |
| 39:DE:47:VAL:HG12 | 39:DE:49:LEU:HD12 | 1.63 | 0.78 |
| 13:CM:3:ARG:NH2 | 13:CM:7:VAL:HG13 | 1.99 | 0.78 |
| 6:AF:5:GLU:HG3 | 6:AF:93:SER:OG | 1.83 | 0.78 |
| 35:DA:855:G:H2' | 35:DA:856:C:C6 | 2.17 | 0.78 |
| 35:BA:286:C:H2' | 35:BA:287:C:C5' | 2.14 | 0.78 |
| 1:AA:735:C:H2' | 1:AA:736:C:H6 | 1.47 | 0.78 |
| 43:BI:8:PRO:CB | 43:BI:14:ASP:H | 1.96 | 0.78 |
| 35:DA:2197:U:O2' | 35:DA:2198:A:H5'' | 1.83 | 0.78 |
| 16:CP:27:LYS:H | 16:CP:27:LYS:HD2 | 1.49 | 0.78 |
| 1:CA:883:C:C2 | 1:CA:884:U:H5 | 2.00 | 0.78 |
| 1:CA:1054:C:O2' | 1:CA:1055:A:H5'' | 1.83 | 0.78 |
| 43:DI:38:LEU:H | 43:DI:38:LEU:CD1 | 1.96 | 0.78 |
| 35:DA:2134:A:C2 | 35:DA:2159:G:H1' | 2.18 | 0.78 |
| 22:CY:64:A:H2' | 22:CY:65:G:C8 | 2.19 | 0.78 |
| 42:DH:20:ALA:HB2 | 42:DH:25:LYS:NZ | 1.98 | 0.78 |
| 42:BH:89:ILE:HD13 | 42:BH:90:LYS:H | 1.48 | 0.78 |
| 56:DZ:69:THR:HG22 | 56:DZ:90:VAL:HA | 1.63 | 0.78 |
| 13:AM:19:LEU:HD22 | 13:AM:19:LEU:H | 1.49 | 0.78 |
| 43:DI:75:LEU:HD23 | 43:DI:105:HIS:ND1 | 1.98 | 0.78 |
| 55:DY:7:VAL:HG21 | 55:DY:8:LYS:HZ3 | 1.46 | 0.78 |
| 42:BH:20:ALA:HB2 | 42:BH:25:LYS:NZ | 1.99 | 0.78 |
| 52:BV:28:GLU:HB3 | 52:BV:29:PRO:HD2 | 1.63 | 0.78 |
| 4:CD:170:VAL:HG22 | 4:CD:171:GLY:H | 1.48 | 0.78 |
| 31:D6:20:ASN:ND2 | 31:D6:21:TYR:H | 1.81 | 0.78 |
| 52:DV:46:VAL:HG22 | 52:DV:47:VAL:H | 1.47 | 0.78 |
| 35:DA:2468:G:H22 | 35:DA:2481:G:H2' | 1.48 | 0.78 |
| 3:AC:14:ILE:HG23 | 3:AC:15:THR:H | 1.49 | 0.78 |
| 35:BA:2533:A:C2' | 35:BA:2534:A:H5'' | 2.14 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:B0:43:THR:HG22 | 35:BA:2331:G:O2' | 1.82 | 0.78 |
| 43:DI:113:ARG:NH2 | 43:DI:132:PRO:HB3 | 1.98 | 0.78 |
| 56:BZ:153:SER:HB2 | 56:BZ:167:PRO:HG3 | 1.64 | 0.78 |
| 47:DQ:132:VAL:HB | 56:DZ:81:ARG:NH1 | 1.97 | 0.78 |
| 55:BY:17:SER:HB2 | 55:BY:71:LYS:HE2 | 1.64 | 0.78 |
| 45:DO:7:TYR:HE1 | 45:DO:20:MET:HE3 | 1.49 | 0.78 |
| 43:DI:8:PRO:CB | 43:DI:14:ASP:H | 1.97 | 0.78 |
| 6:CF:100:ASN:O | 18:CR:28:GLU:HG2 | 1.84 | 0.78 |
| 23:CW:6:G:O2' | 23:CW:7:A:H5' | 1.84 | 0.78 |
| 1:CA:337:C:H2' | 1:CA:338:A:H8 | 1.47 | 0.78 |
| 35:BA:2773:C:H2' | 35:BA:2774:C:H6 | 1.48 | 0.78 |
| 35:DA:2317:C:C2' | 35:DA:2318:G:H5' | 2.13 | 0.78 |
| 35:BA:322:A:H3' | 40:BF:169:ASN:HD21 | 1.49 | 0.78 |
| 37:DC:41:VAL:HG23 | 37:DC:178:ALA:HB3 | 1.65 | 0.78 |
| 35:BA:197:A:H5' | 35:BA:197:A:H8 | 1.47 | 0.78 |
| 50:DT:51:ARG:HG3 | 50:DT:98:LYS:HE3 | 1.66 | 0.78 |
| 30:B5:29:THR:HG21 | 35:BA:2815:C:H5' | 1.66 | 0.78 |
| 40:BF:108:LYS:O | 40:BF:112:MET:HB2 | 1.84 | 0.78 |
| 31:D6:17:LYS:HB3 | 31:D6:18:ARG:HH11 | 1.49 | 0.78 |
| 40:DF:132:VAL:HG22 | 40:DF:133:ASN:N | 1.96 | 0.78 |
| 39:BE:47:VAL:HG12 | 39:BE:49:LEU:HD12 | 1.66 | 0.78 |
| 39:BE:95:ILE:HD12 | 39:BE:95:ILE:H | 1.48 | 0.78 |
| 48:BR:2:ARG:HH11 | 48:BR:5:LYS:HE2 | 1.48 | 0.78 |
| 5:AE:42:GLY:HA3 | 5:AE:65:ASN:O | 1.84 | 0.78 |
| 1:CA:1030:C:C2' | 1:CA:1030(A):G:H5' | 2.12 | 0.78 |
| 43:BI:88:ILE:HG22 | 43:BI:89:TYR:H | 1.49 | 0.78 |
| 7:AG:20:ASP:HB3 | 7:AG:23:VAL:HG23 | 1.65 | 0.78 |
| 1:AA:883:C:C2 | 1:AA:884:U:H5 | 2.01 | 0.78 |
| 41:BG:82:LEU:HD22 | 41:BG:87:PRO:CG | 2.08 | 0.78 |
| 35:DA:2415:G:H4' | 46:DP:67:MET:N | 1.99 | 0.78 |
| 40:DF:40:GLN:HE22 | 40:DF:182:ASN:HB2 | 1.46 | 0.78 |
| 12:AL:47:LYS:CB | 12:AL:48:PRO:HD3 | 2.12 | 0.78 |
| 50:DT:13:ARG:HH12 | 50:DT:15:VAL:HG22 | 1.49 | 0.78 |
| 3:AC:76:VAL:HG23 | 3:AC:77:ILE:N | 1.99 | 0.78 |
| 13:CM:23:TYR:HE1 | 13:CM:70:LEU:HD22 | 1.48 | 0.78 |
| 20:AT:104:LEU:HD23 | 20:AT:105:SER:N | 1.99 | 0.78 |
| 38:DD:69:ARG:HD2 | 38:DD:119:ALA:HB2 | 1.64 | 0.78 |
| 1:AA:56:U:H2' | 1:AA:57:G:H8 | 1.49 | 0.78 |
| 26:B1:26:ARG:HH22 | 35:BA:389:G:H5'' | 1.48 | 0.78 |
| 20:CT:104:LEU:HD23 | 20:CT:105:SER:N | 1.98 | 0.78 |
| 22:AV:51:U:H2' | 22:AV:52:G:C8 | 2.19 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:71:A:H5' | 35:DA:71:A:H8 | 1.49 | 0.78 |
| 22:CY:16:U:H3' | 22:CY:17:C:H5' | 1.66 | 0.78 |
| 1:AA:1277:C:C2' | 1:AA:1278:U:H5' | 2.13 | 0.78 |
| 52:BV:46:VAL:HG22 | 52:BV:47:VAL:H | 1.49 | 0.78 |
| 38:DD:35:LYS:N | 38:DD:36:PRO:HD2 | 1.97 | 0.78 |
| 41:BG:124:SER:HB2 | 41:BG:131:TYR:HE1 | 1.44 | 0.78 |
| 35:DA:1607:C:H4' | 35:DA:1608:A:O5' | 1.84 | 0.78 |
| 35:DA:2555:U:H2' | 35:DA:2556:C:H5' | 1.66 | 0.78 |
| 35:BA:1024:G:H3' | 35:BA:1025:G:H5'' | 1.65 | 0.78 |
| 42:DH:103:LEU:HD21 | 42:DH:105:LEU:HD12 | 1.64 | 0.78 |
| 39:BE:100:GLU:O | 39:BE:172:VAL:HG23 | 1.82 | 0.78 |
| 8:AH:51:VAL:HG11 | 8:AH:60:ARG:HG3 | 1.66 | 0.78 |
| 36:BB:48:A:H4' | 49:BS:95:HIS:HD2 | 1.48 | 0.77 |
| 47:BQ:141:GLN:NE2 | 56:BZ:72:ARG:HA | 1.99 | 0.77 |
| 41:BG:63:ILE:HA | 41:BG:143:GLU:HG3 | 1.64 | 0.77 |
| 44:BN:62:VAL:HG22 | 44:BN:66:LYS:HD2 | 1.66 | 0.77 |
| 41:BG:161:THR:HG22 | 41:BG:163:ALA:H | 1.47 | 0.77 |
| 3:AC:36:ASP:HA | 3:AC:39:ILE:HD12 | 1.66 | 0.77 |
| 1:AA:673:G:H2' | 1:AA:674:G:C8 | 2.19 | 0.77 |
| 35:BA:991:C:H5' | 35:BA:991:C:H6 | 1.49 | 0.77 |
| 31:B6:16:CYS:O | 31:B6:17:LYS:HB2 | 1.84 | 0.77 |
| 52:BV:19:LYS:HG3 | 52:BV:20:LEU:N | 1.98 | 0.77 |
| 35:DA:2732:G:O2' | 35:DA:2733:A:H5' | 1.85 | 0.77 |
| 36:DB:3:C:N4 | 36:DB:118:G:H1 | 1.82 | 0.77 |
| 41:DG:61:ALA:HB2 | 41:DG:68:PRO:HD3 | 1.65 | 0.77 |
| 23:CW:62:C:H2' | 23:CW:63:G:C8 | 2.19 | 0.77 |
| 56:BZ:43:GLU:O | 56:BZ:47:VAL:HG12 | 1.84 | 0.77 |
| 15:AO:63:ARG:HG2 | 15:AO:67:LEU:HD12 | 1.67 | 0.77 |
| 30:B5:3:LYS:HE3 | 35:BA:2611:U:H1' | 1.64 | 0.77 |
| 35:BA:1532:C:O2 | 35:BA:1532:C:H2' | 1.84 | 0.77 |
| 22:CV:41:C:H2' | 22:CV:41:C:O2 | 1.81 | 0.77 |
| 19:AS:40:ILE:HD13 | 19:AS:62:ILE:HD11 | 1.65 | 0.77 |
| 26:B1:90:ILE:HG22 | 26:B1:94:LEU:HD11 | 1.66 | 0.77 |
| 48:BR:10:LEU:HB3 | 48:BR:17:ARG:CD | 2.15 | 0.77 |
| 52:BV:19:LYS:HZ3 | 52:BV:20:LEU:N | 1.81 | 0.77 |
| 5:CE:12:LEU:HD22 | 5:CE:13:ILE:N | 1.99 | 0.77 |
| 46:DP:83:VAL:HG11 | 46:DP:112:LEU:HD21 | 1.66 | 0.77 |
| 43:DI:88:ILE:HG22 | 43:DI:89:TYR:H | 1.49 | 0.77 |
| 19:CS:40:ILE:HD13 | 19:CS:62:ILE:HD11 | 1.66 | 0.77 |
| 37:DC:68:LEU:HD22 | 37:DC:180:PHE:H | 1.49 | 0.77 |
| 8:CH:51:VAL:HG11 | 8:CH:60:ARG:HG3 | 1.67 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:99:ALA:HB1 | 18:AR:23:LYS:HZ2 | 1.47 | 0.77 |
| 1:CA:1468:A:H2' | 1:CA:1469:G:O4' | 1.83 | 0.77 |
| 35:BA:480:A:H1' | 55:BY:44:ILE:HG21 | 1.65 | 0.77 |
| 35:DA:2773:C:H2' | 35:DA:2774:C:H6 | 1.48 | 0.77 |
| 35:DA:197:A:H8 | 35:DA:197:A:H5' | 1.49 | 0.77 |
| 1:AA:17:U:H2' | 1:AA:18:C:C6 | 2.19 | 0.77 |
| 41:DG:172:LEU:HD23 | 41:DG:173:LEU:HD23 | 1.65 | 0.77 |
| 38:DD:181:GLU:HA | 38:DD:272:ALA:CB | 2.15 | 0.77 |
| 35:DA:1899:G:H22 | 35:DA:1902:C:N4 | 1.83 | 0.77 |
| 46:DP:38:GLN:HG3 | 46:DP:39:LYS:H | 1.49 | 0.77 |
| 55:BY:31:LEU:HD22 | 55:BY:31:LEU:N | 1.97 | 0.77 |
| 5:CE:42:GLY:HA3 | 5:CE:65:ASN:O | 1.84 | 0.77 |
| 1:AA:328:C:H4' | 1:AA:329:A:H5' | 1.65 | 0.77 |
| 44:BN:40:PRO:HB3 | 51:BU:68:ALA:HB2 | 1.67 | 0.77 |
| 41:BG:6:ALA:HB3 | 41:BG:104:GLU:OE1 | 1.84 | 0.77 |
| 35:BA:2645:G:H3' | 35:BA:2646:C:C5' | 2.15 | 0.77 |
| 3:CC:14:ILE:HG23 | 3:CC:15:THR:H | 1.50 | 0.77 |
| 25:D0:43:THR:HG22 | 35:DA:2331:G:O2' | 1.84 | 0.77 |
| 1:CA:349:A:O2' | 1:CA:350:G:H5' | 1.85 | 0.77 |
| 35:BA:547:A:H8 | 35:BA:549:G:H1 | 1.32 | 0.77 |
| 37:BC:68:LEU:HD22 | 37:BC:180:PHE:H | 1.50 | 0.77 |
| 39:DE:131:ALA:O | 39:DE:133:LYS:N | 2.18 | 0.77 |
| 46:BP:13:ASN:HD22 | 46:BP:13:ASN:C | 1.88 | 0.77 |
| 26:D1:48:LYS:HD2 | 26:D1:61:ARG:HG2 | 1.67 | 0.77 |
| 35:BA:1011:G:H5'' | 51:BU:77:SER:OG | 1.85 | 0.77 |
| 31:B6:15:GLU:HG2 | 31:B6:18:ARG:HH21 | 1.49 | 0.77 |
| 48:DR:10:LEU:HB3 | 48:DR:17:ARG:CD | 2.15 | 0.77 |
| 39:BE:89:ASP:O | 39:BE:90:THR:HB | 1.84 | 0.77 |
| 5:CE:41:VAL:CG1 | 5:CE:113:ALA:HA | 2.15 | 0.77 |
| 35:BA:598:G:H5' | 46:BP:15:ARG:HD2 | 1.67 | 0.77 |
| 22:CY:56:C:H5' | 35:DA:897:C:H4' | 1.67 | 0.77 |
| 13:CM:88:ARG:HA | 13:CM:98:VAL:HG11 | 1.66 | 0.77 |
| 13:AM:88:ARG:HA | 13:AM:98:VAL:HG11 | 1.67 | 0.77 |
| 1:CA:1106:G:H5'' | 3:CC:172:ARG:HG2 | 1.66 | 0.77 |
| 40:DF:24:LEU:HB3 | 40:DF:25:PRO:CD | 2.15 | 0.77 |
| 43:BI:38:LEU:H | 43:BI:38:LEU:CD1 | 1.97 | 0.77 |
| 26:D1:45:ASN:ND2 | 35:DA:2090:G:H21 | 1.82 | 0.77 |
| 41:DG:109:VAL:HG11 | 41:DG:142:PRO:HB3 | 1.66 | 0.77 |
| 35:BA:676:A:H2 | 35:BA:802:A:H61 | 1.31 | 0.77 |
| 7:CG:16:LEU:CD1 | 9:CI:42:ARG:HA | 2.14 | 0.77 |
| 27:D2:3:LEU:HD22 | 27:D2:7:ARG:HH12 | 1.47 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:BA:271(M):G:H2' | 35:BA:271(N):U:H5'' | 1.66 | 0.77 |
| 56:DZ:10:ARG:NH2 | 56:DZ:25:PRO:HA | 2.00 | 0.77 |
| 35:BA:2790:A:H2 | 35:BA:2791:C:H2' | 1.49 | 0.77 |
| 35:BA:2875:C:H4' | 50:BT:5:ALA:HB2 | 1.67 | 0.77 |
| 16:CP:18:ARG:HD3 | 16:CP:35:LYS:HD2 | 1.64 | 0.77 |
| 9:AI:28:VAL:HA | 9:AI:63:ILE:O | 1.85 | 0.77 |
| 35:DA:2571:C:C5' | 35:DA:2572:A:H5'' | 2.10 | 0.77 |
| 38:BD:30:GLU:HG2 | 38:BD:63:ARG:NE | 2.00 | 0.77 |
| 35:BA:1654:A:P | 48:BR:3:HIS:HB2 | 2.24 | 0.77 |
| 1:CA:1256:A:OP1 | 3:CC:26:LYS:HE3 | 1.85 | 0.77 |
| 38:BD:181:GLU:HA | 38:BD:272:ALA:CB | 2.14 | 0.77 |
| 52:DV:19:LYS:HG3 | 52:DV:20:LEU:O | 1.84 | 0.77 |
| 22:AV:68:C:C2' | 22:AV:69:G:H5'' | 2.14 | 0.77 |
| 43:DI:133:HIS:HB2 | 43:DI:134:PRO:HD3 | 1.66 | 0.77 |
| 35:BA:2498:C:O2' | 35:BA:2499:C:H5' | 1.84 | 0.77 |
| 35:DA:2287:A:N6 | 35:DA:2344:U:H3 | 1.82 | 0.77 |
| 1:CA:186:C:H5' | 20:CT:78:ALA:HB1 | 1.67 | 0.77 |
| 1:AA:973:G:H3' | 1:AA:974:A:H5'' | 1.67 | 0.77 |
| 50:DT:28:VAL:HG22 | 50:DT:47:GLY:H | 1.50 | 0.77 |
| 39:DE:89:ASP:O | 39:DE:90:THR:HB | 1.83 | 0.77 |
| 41:BG:91:ARG:C | 41:BG:91:ARG:HD2 | 2.04 | 0.77 |
| 35:BA:1221:C:H5' | 35:BA:1221:C:H6 | 1.49 | 0.77 |
| 35:BA:2506:U:H6 | 35:BA:2506:U:H3' | 1.49 | 0.77 |
| 40:DF:22:ALA:CA | 40:DF:26:ALA:HB2 | 2.13 | 0.77 |
| 54:DX:63:LYS:HB3 | 54:DX:72:LYS:HG3 | 1.67 | 0.77 |
| 41:BG:60:LEU:O | 41:BG:63:ILE:HG13 | 1.85 | 0.77 |
| 25:B0:41:ARG:HH11 | 25:B0:44:ARG:HD3 | 1.49 | 0.77 |
| 1:AA:346:G:H5'' | 50:BT:41:ARG:NE | 2.00 | 0.77 |
| 35:DA:2189:U:C2' | 35:DA:2190:G:H5'' | 2.14 | 0.77 |
| 35:BA:855:G:H2' | 35:BA:856:C:C6 | 2.19 | 0.77 |
| 33:D8:43:GLN:O | 33:D8:44:LYS:HD2 | 1.84 | 0.77 |
| 6:AF:100:ASN:O | 18:AR:28:GLU:HG2 | 1.84 | 0.77 |
| 35:DA:2036:C:H6 | 35:DA:2036:C:H5' | 1.48 | 0.77 |
| 30:D5:29:THR:HG21 | 35:DA:2815:C:H5' | 1.67 | 0.77 |
| 7:AG:54:THR:OG1 | 7:AG:56:GLN:HG2 | 1.85 | 0.77 |
| 31:D6:16:CYS:O | 31:D6:17:LYS:HB2 | 1.84 | 0.76 |
| 49:BS:96:GLY:O | 49:BS:98:VAL:N | 2.18 | 0.76 |
| 38:DD:48:ARG:NH1 | 38:DD:48:ARG:HG3 | 1.95 | 0.76 |
| 50:DT:8:LYS:HA | 50:DT:11:GLU:OE1 | 1.86 | 0.76 |
| 35:BA:2732:G:O2' | 35:BA:2733:A:H5' | 1.85 | 0.76 |
| 35:DA:2645:G:H3' | 35:DA:2646:C:C5' | 2.13 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 22:CY:25:C:H2' | 22:CY:26:A:H8 | 1.50 | 0.76 |
| 20:CT:29:LYS:O | 20:CT:33:ILE:HG12 | 1.85 | 0.76 |
| 35:BA:481:G:H1' | 35:BA:506:G:N2 | 1.99 | 0.76 |
| 7:CG:54:THR:OG1 | 7:CG:56:GLN:HG2 | 1.85 | 0.76 |
| 4:CD:119:GLN:HG3 | 4:CD:123:HIS:CD2 | 2.20 | 0.76 |
| 1:CA:673:G:H2' | 1:CA:674:G:C8 | 2.20 | 0.76 |
| 1:AA:1106:G:H5'' | 3:AC:172:ARG:HG2 | 1.65 | 0.76 |
| 35:DA:1332:G:N2 | 35:DA:1609:A:O2' | 2.18 | 0.76 |
| 38:DD:145:VAL:HG12 | 38:DD:146:GLU:O | 1.85 | 0.76 |
| 35:DA:1227:G:OP1 | 51:DU:13:LYS:HD2 | 1.85 | 0.76 |
| 35:DA:389:G:H1 | 46:DP:71:VAL:HG12 | 1.50 | 0.76 |
| 38:DD:165:ILE:HD13 | 38:DD:175:LEU:HD21 | 1.66 | 0.76 |
| 8:CH:122:ARG:HH11 | 8:CH:122:ARG:HB2 | 1.49 | 0.76 |
| 22:AY:5:G:H2' | 22:AY:6:G:C8 | 2.20 | 0.76 |
| 1:CA:328:C:H4' | 1:CA:329:A:H5' | 1.67 | 0.76 |
| 2:AB:54:THR:HG21 | 2:AB:201:ILE:HD11 | 1.65 | 0.76 |
| 3:AC:26:LYS:HG3 | 3:AC:27:LYS:H | 1.49 | 0.76 |
| 12:CL:89:ARG:HB2 | 12:CL:89:ARG:NH1 | 1.98 | 0.76 |
| 35:BA:2314:C:O2' | 35:BA:2315:G:H5' | 1.85 | 0.76 |
| 41:DG:129:GLY:CA | 41:DG:164:GLU:HA | 2.15 | 0.76 |
| 35:DA:2151:G:H2' | 35:DA:2152:G:H8 | 1.50 | 0.76 |
| 3:CC:18:TRP:HE3 | 3:CC:18:TRP:H | 1.33 | 0.76 |
| 16:AP:27:LYS:H | 16:AP:27:LYS:HD2 | 1.50 | 0.76 |
| 12:AL:34:ARG:O | 12:AL:61:THR:HG23 | 1.85 | 0.76 |
| 35:DA:2124:G:O2' | 37:DC:40:THR:HA | 1.86 | 0.76 |
| 40:DF:20:LEU:HB3 | 40:DF:23:ASP:OD2 | 1.85 | 0.76 |
| 1:AA:1256:A:OP1 | 3:AC:26:LYS:HE3 | 1.85 | 0.76 |
| 13:CM:19:LEU:HD22 | 13:CM:19:LEU:H | 1.49 | 0.76 |
| 38:BD:165:ILE:HD13 | 38:BD:175:LEU:HD21 | 1.66 | 0.76 |
| 30:B5:33:CYS:HG | 30:B5:49:CYS:HG | 0.99 | 0.76 |
| 1:AA:194:C:C2' | 1:AA:195:A:H5'' | 2.15 | 0.76 |
| 1:CA:625:G:H2' | 1:CA:626:U:H6 | 1.50 | 0.76 |
| 19:CS:15:LEU:O | 19:CS:19:VAL:HG23 | 1.86 | 0.76 |
| 58:AA:1799:PAR:H34 | 58:AA:1799:PAR:HN61 | 1.49 | 0.76 |
| 9:CI:97:LYS:HB3 | 9:CI:98:PRO:HD3 | 1.67 | 0.76 |
| 10:CJ:49:VAL:CG2 | 14:CN:41:ARG:HB2 | 2.15 | 0.76 |
| 37:DC:36:LYS:CG | 37:DC:37:PHE:H | 1.99 | 0.76 |
| 10:AJ:49:VAL:CG2 | 14:AN:41:ARG:HB2 | 2.15 | 0.76 |
| 52:BV:18:LEU:HD22 | 52:BV:19:LYS:N | 2.00 | 0.76 |
| 47:BQ:34:LEU:HD11 | 47:BQ:129:THR:HB | 1.67 | 0.76 |
| 35:DA:1348:G:C2' | 35:DA:1349:A:H5'' | 2.15 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:271(T):C:H5' | 35:DA:271(T):C:C6 | 2.20 | 0.76 |
| 27:D2:12:GLU:O | 27:D2:16:LEU:HG | 1.85 | 0.76 |
| 1:AA:617:G:H1 | 1:AA:623:C:H42 | 1.34 | 0.76 |
| 36:BB:3:C:N4 | 36:BB:118:G:H1 | 1.83 | 0.76 |
| 53:DW:6:ILE:HG13 | 53:DW:104:THR:HG23 | 1.66 | 0.76 |
| 43:BI:120:ILE:HG22 | 43:BI:121:LYS:N | 2.00 | 0.76 |
| 8:CH:122:ARG:NH1 | 8:CH:122:ARG:HB2 | 1.99 | 0.76 |
| 20:AT:29:LYS:O | 20:AT:33:ILE:HG12 | 1.85 | 0.76 |
| 35:BA:2317:C:C2' | 35:BA:2318:G:H5' | 2.15 | 0.76 |
| 1:AA:92:C:H2' | 1:AA:93:G:H8 | 1.49 | 0.76 |
| 8:CH:87:SER:HA | 8:CH:93:VAL:HG23 | 1.68 | 0.76 |
| 35:BA:1607:C:H4' | 35:BA:1608:A:O5' | 1.86 | 0.76 |
| 50:DT:32:TYR:CD2 | 50:DT:81:PRO:HB2 | 2.20 | 0.76 |
| 18:CR:36:ASN:HD22 | 18:CR:39:VAL:CG2 | 1.94 | 0.76 |
| 13:CM:13:LYS:HA | 13:CM:44:ARG:NH1 | 2.00 | 0.76 |
| 40:BF:164:ARG:HG3 | 40:BF:175:THR:OG1 | 1.85 | 0.76 |
| 35:BA:1348:G:C2' | 35:BA:1349:A:H5'' | 2.16 | 0.76 |
| 39:BE:60:ASN:OD1 | 39:BE:62:PRO:HD2 | 1.86 | 0.76 |
| 13:AM:3:ARG:NH2 | 13:AM:7:VAL:HG13 | 1.99 | 0.76 |
| 46:BP:85:LEU:HD23 | 46:BP:85:LEU:H | 1.49 | 0.76 |
| 55:DY:2:ARG:HD3 | 55:DY:3:VAL:HG23 | 1.67 | 0.76 |
| 35:BA:528:A:C2 | 35:BA:2042:A:H2' | 2.20 | 0.76 |
| 1:AA:1054:C:O2' | 1:AA:1055:A:H5'' | 1.84 | 0.76 |
| 50:BT:80:SER:HB3 | 50:BT:81:PRO:CD | 2.14 | 0.76 |
| 6:CF:5:GLU:HG3 | 6:CF:93:SER:OG | 1.84 | 0.76 |
| 5:AE:41:VAL:CG1 | 5:AE:113:ALA:HA | 2.15 | 0.76 |
| 44:DN:40:PRO:HB3 | 51:DU:68:ALA:HB2 | 1.65 | 0.76 |
| 23:AW:18:G:N1 | 23:AW:55:U:H1' | 1.99 | 0.76 |
| 35:DA:910:A:H62 | 47:DQ:12:GLN:HA | 1.51 | 0.76 |
| 47:DQ:130:LYS:NZ | 56:DZ:80:ARG:HA | 2.00 | 0.76 |
| 38:DD:130:ALA:C | 38:DD:131:LEU:HD12 | 2.05 | 0.76 |
| 45:BO:49:ARG:HH11 | 45:BO:49:ARG:HG2 | 1.49 | 0.76 |
| 3:AC:150:LYS:HG3 | 3:AC:169:ALA:HB2 | 1.68 | 0.76 |
| 40:BF:24:LEU:HB3 | 40:BF:25:PRO:CD | 2.15 | 0.76 |
| 9:CI:9:ARG:HG2 | 9:CI:14:VAL:HG22 | 1.68 | 0.76 |
| 50:DT:27:THR:O | 50:DT:28:VAL:HB | 1.85 | 0.76 |
| 35:DA:1494:A:O2' | 35:DA:1495:A:H5'' | 1.86 | 0.76 |
| 55:BY:8:LYS:CE | 55:BY:72:VAL:HG23 | 2.16 | 0.76 |
| 35:DA:2533:A:C2' | 35:DA:2534:A:H5'' | 2.16 | 0.76 |
| 35:BA:271(R):G:H2' | 35:BA:271(S):G:H8 | 1.50 | 0.76 |
| 46:BP:80:TYR:CZ | 46:BP:111:ARG:HD3 | 2.20 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:10:A:OP2 | 5:CE:126:ARG:HD3 | 1.86 | 0.76 |
| 35:BA:389:G:H1 | 46:BP:71:VAL:HG12 | 1.48 | 0.76 |
| 4:AD:119:GLN:HG3 | 4:AD:123:HIS:CD2 | 2.21 | 0.76 |
| 35:BA:2392:A:H2 | 35:BA:2424:C:H42 | 1.31 | 0.76 |
| 37:BC:41:VAL:HG23 | 37:BC:178:ALA:HB3 | 1.66 | 0.76 |
| 35:DA:2103:C:H3' | 35:DA:2104:G:H5'' | 1.66 | 0.76 |
| 42:BH:107:VAL:HB | 42:BH:152:ARG:HG3 | 1.67 | 0.76 |
| 40:BF:40:GLN:HE22 | 40:BF:182:ASN:HB2 | 1.49 | 0.76 |
| 23:AW:69:G:C3' | 23:AW:70:G:H5'' | 2.16 | 0.76 |
| 26:D1:67:ILE:N | 26:D1:68:PRO:HD2 | 2.00 | 0.76 |
| 44:DN:126:PRO:O | 44:DN:127:ASP:HB2 | 1.84 | 0.76 |
| 8:AH:134:ILE:O | 8:AH:135:CYS:HB3 | 1.86 | 0.76 |
| 35:BA:92:A:H2' | 35:BA:93:G:H8 | 1.50 | 0.76 |
| 35:BA:2124:G:O2' | 37:BC:40:THR:HA | 1.85 | 0.76 |
| 35:DA:365:C:H5' | 35:DA:365:C:H6 | 1.50 | 0.76 |
| 1:CA:1479:C:H2' | 1:CA:1480:G:H8 | 1.51 | 0.76 |
| 1:CA:1442(B):A:OP2 | 1:CA:1442(B):A:H4' | 1.85 | 0.76 |
| 6:CF:39:LYS:HD2 | 6:CF:62:TRP:HZ3 | 1.51 | 0.76 |
| 42:BH:44:VAL:O | 42:BH:46:GLU:HG2 | 1.85 | 0.76 |
| 35:DA:2314:C:O2' | 35:DA:2315:G:H5' | 1.84 | 0.76 |
| 35:BA:2189:U:C2' | 35:BA:2190:G:H5'' | 2.15 | 0.76 |
| 42:BH:89:ILE:CD1 | 42:BH:90:LYS:H | 1.99 | 0.76 |
| 40:BF:20:LEU:HB3 | 40:BF:23:ASP:OD2 | 1.86 | 0.76 |
| 49:DS:39:ILE:HD11 | 49:DS:73:LEU:HD21 | 1.68 | 0.76 |
| 11:CK:18:ARG:HH21 | 11:CK:37:GLY:N | 1.83 | 0.76 |
| 35:DA:914:C:H2' | 35:DA:915:C:H5' | 1.67 | 0.76 |
| 49:BS:106:ARG:NH1 | 49:BS:108:GLY:HA3 | 2.01 | 0.76 |
| 31:D6:15:GLU:HG2 | 31:D6:18:ARG:HH21 | 1.50 | 0.76 |
| 49:DS:96:GLY:O | 49:DS:98:VAL:N | 2.19 | 0.76 |
| 35:DA:2313:C:H2' | 35:DA:2314:C:H6 | 1.51 | 0.76 |
| 37:BC:36:LYS:CG | 37:BC:37:PHE:H | 1.98 | 0.76 |
| 1:CA:1125:U:O4 | 10:CJ:5:ARG:HD3 | 1.85 | 0.76 |
| 10:CJ:21:GLN:HA | 10:CJ:24:VAL:HG23 | 1.68 | 0.76 |
| 43:BI:75:LEU:HD23 | 43:BI:105:HIS:ND1 | 2.02 | 0.76 |
| 46:DP:146:VAL:HG22 | 46:DP:147:LEU:H | 1.51 | 0.76 |
| 41:BG:129:GLY:CA | 41:BG:164:GLU:HA | 2.16 | 0.76 |
| 22:AY:77:PHA:HD2 | 35:BA:2451:A:C2 | 2.19 | 0.76 |
| 12:AL:84:LEU:HD12 | 12:AL:104:VAL:HG11 | 1.68 | 0.76 |
| 28:D3:19:GLN:HE22 | 28:D3:52:HIS:HE1 | 1.34 | 0.76 |
| 1:CA:1165:C:H2' | 1:CA:1166:G:H8 | 1.50 | 0.76 |
| 48:BR:28:LEU:HD11 | 48:BR:116:LEU:HD21 | 1.67 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:BA:2245:U:H5' | 35:BA:2246:G:H5' | 1.66 | 0.76 |
| 38:BD:69:ARG:HD2 | 38:BD:119:ALA:HB2 | 1.66 | 0.76 |
| 35:DA:612:C:H2' | 35:DA:613:G:C5' | 2.10 | 0.75 |
| 12:AL:8:ASN:ND2 | 17:AQ:34:LYS:HE2 | 1.99 | 0.75 |
| 50:BT:107:ASP:CG | 50:BT:108:ARG:H | 1.88 | 0.75 |
| 1:CA:1190:G:H3' | 3:CC:3:ASN:ND2 | 2.00 | 0.75 |
| 1:AA:650:G:O2' | 1:AA:651:C:H5' | 1.86 | 0.75 |
| 42:BH:103:LEU:HD21 | 42:BH:105:LEU:HD12 | 1.66 | 0.75 |
| 39:BE:132:HIS:HA | 39:BE:135:HIS:CE1 | 2.21 | 0.75 |
| 51:BU:20:LEU:HB3 | 51:BU:39:LEU:HD11 | 1.66 | 0.75 |
| 35:DA:271(M):G:H2' | 35:DA:271(N):U:H5'' | 1.67 | 0.75 |
| 1:CA:460:G:O6 | 1:CA:470:C:H5'' | 1.86 | 0.75 |
| 46:DP:59:LEU:HA | 46:DP:61:ARG:NE | 2.00 | 0.75 |
| 2:AB:84:GLU:HB3 | 2:AB:219:VAL:HG21 | 1.68 | 0.75 |
| 40:DF:38:ARG:HD3 | 40:DF:99:TYR:OH | 1.86 | 0.75 |
| 44:BN:15:LEU:HB2 | 44:BN:134:ARG:HB2 | 1.68 | 0.75 |
| 12:AL:89:ARG:HB2 | 12:AL:89:ARG:NH1 | 2.01 | 0.75 |
| 30:D5:40:LYS:HZ3 | 30:D5:46:CYS:HB3 | 1.50 | 0.75 |
| 28:B3:31:LEU:HD23 | 28:B3:32:GLN:HG2 | 1.67 | 0.75 |
| 49:DS:69:VAL:HG13 | 49:DS:99:LYS:HE3 | 1.68 | 0.75 |
| 55:DY:8:LYS:CE | 55:DY:72:VAL:HG23 | 2.15 | 0.75 |
| 55:BY:60:PHE:HA | 55:BY:62:GLU:OE2 | 1.86 | 0.75 |
| 41:DG:2:PRO:O | 41:DG:3:LEU:HB2 | 1.86 | 0.75 |
| 43:BI:133:HIS:HB2 | 43:BI:134:PRO:HD3 | 1.68 | 0.75 |
| 35:BA:676:A:H8 | 35:BA:2069:G:H21 | 1.31 | 0.75 |
| 35:DA:547:A:H8 | 35:DA:549:G:H1 | 1.30 | 0.75 |
| 22:AY:63:G:H2' | 22:AY:64:A:C8 | 2.21 | 0.75 |
| 52:DV:19:LYS:HG3 | 52:DV:20:LEU:N | 2.01 | 0.75 |
| 50:BT:8:LYS:HA | 50:BT:11:GLU:OE1 | 1.85 | 0.75 |
| 1:AA:1152:A:H5'' | 10:AJ:13:HIS:HB2 | 1.69 | 0.75 |
| 46:BP:146:VAL:HG22 | 46:BP:147:LEU:H | 1.51 | 0.75 |
| 35:DA:1011:G:H5'' | 51:DU:77:SER:OG | 1.87 | 0.75 |
| 9:AI:70:LYS:O | 9:AI:74:ILE:HG13 | 1.87 | 0.75 |
| 40:DF:78:ILE:H | 40:DF:78:ILE:HD13 | 1.50 | 0.75 |
| 9:AI:97:LYS:HB3 | 9:AI:98:PRO:HD3 | 1.67 | 0.75 |
| 51:BU:90:VAL:O | 51:BU:92:ARG:N | 2.20 | 0.75 |
| 22:CV:68:C:C2' | 22:CV:69:G:H5'' | 2.16 | 0.75 |
| 35:DA:795:C:H2' | 35:DA:796:C:C6 | 2.22 | 0.75 |
| 43:BI:113:ARG:NH2 | 43:BI:132:PRO:HB3 | 1.99 | 0.75 |
| 26:D1:46:LEU:HA | 26:D1:63:ALA:HA | 1.67 | 0.75 |
| 39:BE:44:TYR:O | 39:BE:45:THR:HB | 1.85 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 54:DX:54:VAL:HG22 | 54:DX:81:VAL:HG12 | 1.67 | 0.75 |
| 15:AO:2:PRO:HB2 | 15:AO:3:ILE:HD13 | 1.68 | 0.75 |
| 44:DN:23:LEU:H | 44:DN:23:LEU:HD23 | 1.50 | 0.75 |
| 35:DA:953:A:C2' | 35:DA:954:G:H5' | 2.16 | 0.75 |
| 41:DG:72:ARG:HH12 | 41:DG:86:MET:HG2 | 1.50 | 0.75 |
| 52:DV:18:LEU:HD22 | 52:DV:19:LYS:N | 2.01 | 0.75 |
| 50:DT:54:ARG:HA | 50:DT:59:THR:HB | 1.68 | 0.75 |
| 10:CJ:34:VAL:HG22 | 10:CJ:74:ILE:HG22 | 1.68 | 0.75 |
| 35:BA:141:A:H8 | 35:BA:1408:C:O2' | 1.68 | 0.75 |
| 44:BN:126:PRO:O | 44:BN:127:ASP:HB2 | 1.86 | 0.75 |
| 35:DA:2262:U:O2' | 35:DA:2263:C:H5'' | 1.87 | 0.75 |
| 46:DP:85:LEU:HA | 46:DP:88:LEU:HD13 | 1.68 | 0.75 |
| 35:BA:389:G:N1 | 46:BP:71:VAL:HG12 | 2.01 | 0.75 |
| 19:AS:15:LEU:O | 19:AS:19:VAL:HG23 | 1.86 | 0.75 |
| 35:BA:2103:C:H3' | 35:BA:2104:G:H5'' | 1.66 | 0.75 |
| 50:DT:3:ARG:HB3 | 50:DT:6:LEU:HB3 | 1.68 | 0.75 |
| 39:BE:4:ILE:HG21 | 39:BE:96:PHE:HE2 | 1.52 | 0.75 |
| 1:AA:148:G:H2' | 1:AA:149:A:H8 | 1.52 | 0.75 |
| 45:DO:17:ARG:HD3 | 45:DO:47:ILE:HD13 | 1.69 | 0.75 |
| 40:BF:22:ALA:CA | 40:BF:26:ALA:HB2 | 2.16 | 0.75 |
| 2:CB:76:GLN:O | 2:CB:208:ILE:HG12 | 1.87 | 0.75 |
| 36:BB:48:A:H2' | 36:BB:49:C:C6 | 2.20 | 0.75 |
| 48:BR:2:ARG:HD3 | 48:BR:5:LYS:HE2 | 1.68 | 0.75 |
| 33:B8:50:LEU:HD12 | 33:B8:51:ALA:N | 2.02 | 0.75 |
| 10:AJ:34:VAL:HG22 | 10:AJ:74:ILE:HG22 | 1.68 | 0.75 |
| 27:D2:14:ARG:HG3 | 27:D2:14:ARG:NH1 | 2.02 | 0.75 |
| 13:CM:90:LEU:HA | 13:CM:93:ARG:HB2 | 1.68 | 0.75 |
| 35:DA:286:C:H2' | 35:DA:287:C:C5' | 2.15 | 0.75 |
| 1:CA:735:C:H2' | 1:CA:736:C:H6 | 1.51 | 0.75 |
| 46:BP:111:ARG:HG2 | 46:BP:128:HIS:ND1 | 2.02 | 0.75 |
| 1:AA:337:C:H2' | 1:AA:338:A:H8 | 1.50 | 0.75 |
| 1:AA:1190:G:H3' | 3:AC:3:ASN:ND2 | 2.01 | 0.75 |
| 35:DA:999:U:H2' | 35:DA:1000:A:H5' | 1.67 | 0.75 |
| 50:DT:16:ARG:HD2 | 50:DT:18:ASP:OD1 | 1.86 | 0.75 |
| 1:AA:1504:G:OP1 | 1:AA:1507:A:H4' | 1.86 | 0.75 |
| 9:CI:70:LYS:O | 9:CI:74:ILE:HG13 | 1.87 | 0.75 |
| 35:DA:2506:U:H3' | 35:DA:2506:U:H6 | 1.51 | 0.75 |
| 3:CC:127:ARG:HD2 | 3:CC:127:ARG:N | 2.02 | 0.75 |
| 54:BX:65:ARG:HH11 | 54:BX:65:ARG:HG2 | 1.50 | 0.75 |
| 50:DT:80:SER:HB3 | 50:DT:81:PRO:CD | 2.14 | 0.75 |
| 55:BY:16:ALA:H | 55:BY:22:GLY:H | 1.32 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:170:GLN:HG2 | 3:AC:171:GLY:N | 2.01 | 0.75 |
| 35:BA:999:U:H2' | 35:BA:1000:A:H5' | 1.69 | 0.75 |
| 35:BA:94:C:H5' | 35:BA:94(A):G:OP2 | 1.87 | 0.75 |
| 3:CC:170:GLN:HG2 | 3:CC:171:GLY:H | 1.49 | 0.75 |
| 47:DQ:2:LEU:HD11 | 47:DQ:69:PHE:HE1 | 1.51 | 0.75 |
| 1:CA:1412:C:H2' | 1:CA:1413:A:C8 | 2.22 | 0.75 |
| 38:BD:35:LYS:HB2 | 38:BD:63:ARG:HG2 | 1.69 | 0.75 |
| 28:D3:8:LEU:HA | 28:D3:54:VAL:HG12 | 1.68 | 0.75 |
| 35:BA:1899:G:N2 | 35:BA:1902:C:N4 | 2.35 | 0.75 |
| 1:AA:10:A:OP2 | 5:AE:126:ARG:HD3 | 1.86 | 0.75 |
| 8:CH:7:ALA:HB2 | 8:CH:85:ARG:HG3 | 1.68 | 0.75 |
| 35:DA:528:A:C2 | 35:DA:2042:A:H2' | 2.21 | 0.75 |
| 9:CI:3:GLN:HG2 | 9:CI:20:ARG:HH12 | 1.52 | 0.75 |
| 12:AL:70:ILE:HG12 | 12:AL:100:ILE:HD12 | 1.69 | 0.75 |
| 35:BA:2415:G:H4' | 46:BP:67:MET:N | 2.02 | 0.75 |
| 38:BD:33:LEU:O | 38:BD:34:VAL:HB | 1.85 | 0.75 |
| 48:BR:2:ARG:NH1 | 48:BR:5:LYS:HE2 | 2.01 | 0.75 |
| 49:BS:99:LYS:O | 49:BS:101:LEU:HD13 | 1.87 | 0.75 |
| 27:D2:13:ALA:HA | 27:D2:16:LEU:HD12 | 1.69 | 0.75 |
| 15:CO:63:ARG:HG2 | 15:CO:67:LEU:HD12 | 1.68 | 0.75 |
| 1:CA:1321:C:H5'' | 1:CA:1322:C:C5' | 2.16 | 0.75 |
| 1:AA:736:C:H2' | 1:AA:737:A:H8 | 1.51 | 0.75 |
| 8:AH:7:ALA:HB2 | 8:AH:85:ARG:HG3 | 1.68 | 0.75 |
| 35:DA:676:A:H8 | 35:DA:2069:G:H21 | 1.32 | 0.75 |
| 3:CC:36:ASP:HA | 3:CC:39:ILE:HD12 | 1.67 | 0.75 |
| 50:BT:16:ARG:HD2 | 50:BT:18:ASP:OD1 | 1.87 | 0.75 |
| 5:AE:150:ARG:HA | 5:AE:153:LYS:HE2 | 1.69 | 0.75 |
| 35:DA:322:A:H3' | 40:DF:169:ASN:HD21 | 1.52 | 0.75 |
| 35:BA:1987:G:H8 | 35:BA:1987:G:H5' | 1.52 | 0.75 |
| 35:BA:2197:U:O2' | 35:BA:2198:A:H5'' | 1.86 | 0.75 |
| 12:AL:58:VAL:O | 12:AL:65:GLU:HA | 1.87 | 0.74 |
| 52:BV:4:ILE:HD12 | 52:BV:40:LEU:HG | 1.67 | 0.74 |
| 10:CJ:62:HIS:O | 14:CN:59:ALA:HB3 | 1.87 | 0.74 |
| 33:B8:52:LYS:N | 33:B8:53:PRO:HD2 | 2.02 | 0.74 |
| 55:BY:27:VAL:HG12 | 55:BY:29:GLU:OE1 | 1.87 | 0.74 |
| 35:DA:172:C:H2' | 35:DA:173:G:H8 | 1.52 | 0.74 |
| 1:CA:1057:G:H5'' | 3:CC:154:SER:CB | 2.17 | 0.74 |
| 38:BD:186:HIS:CD2 | 38:BD:188:GLU:H | 2.05 | 0.74 |
| 35:DA:598:G:H5' | 46:DP:15:ARG:HD2 | 1.67 | 0.74 |
| 35:DA:2069:G:C2' | 35:DA:2070:G:H5' | 2.17 | 0.74 |
| 47:DQ:34:LEU:HD11 | 47:DQ:129:THR:HB | 1.68 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BC:39:GLU:HG2 | 37:BC:180:PHE:HA | 1.68 | 0.74 |
| 23:CW:23:A:H2' | 23:CW:24:G:C8 | 2.22 | 0.74 |
| 48:DR:28:LEU:HD11 | 48:DR:116:LEU:HD21 | 1.69 | 0.74 |
| 35:BA:1488:G:H5' | 35:BA:1489:U:OP2 | 1.87 | 0.74 |
| 31:B6:19:ARG:H | 31:B6:19:ARG:HD2 | 1.53 | 0.74 |
| 52:DV:46:VAL:HG13 | 52:DV:47:VAL:N | 2.03 | 0.74 |
| 49:DS:65:VAL:O | 49:DS:69:VAL:HG12 | 1.86 | 0.74 |
| 1:CA:617:G:H1 | 1:CA:623:C:H42 | 1.32 | 0.74 |
| 1:AA:1321:C:H5'' | 1:AA:1322:C:C5' | 2.16 | 0.74 |
| 54:DX:12:VAL:HG21 | 54:DX:27:THR:HG23 | 1.69 | 0.74 |
| 35:DA:389:G:N1 | 46:DP:71:VAL:HG12 | 2.02 | 0.74 |
| 42:DH:107:VAL:HB | 42:DH:152:ARG:HG3 | 1.68 | 0.74 |
| 34:B9:26:ILE:HD12 | 34:B9:26:ILE:H | 1.52 | 0.74 |
| 55:DY:27:VAL:CA | 55:DY:28:LYS:HZ2 | 2.00 | 0.74 |
| 8:CH:86:ILE:HG21 | 8:CH:133:LEU:HD22 | 1.69 | 0.74 |
| 50:BT:3:ARG:HB3 | 50:BT:6:LEU:HB3 | 1.67 | 0.74 |
| 49:DS:106:ARG:NH1 | 49:DS:108:GLY:HA3 | 2.02 | 0.74 |
| 1:AA:1251:A:H2' | 1:AA:1252:A:C8 | 2.22 | 0.74 |
| 4:AD:92:VAL:O | 4:AD:96:LEU:HD13 | 1.87 | 0.74 |
| 12:CL:70:ILE:HG12 | 12:CL:100:ILE:HD12 | 1.68 | 0.74 |
| 31:B6:17:LYS:HB3 | 31:B6:18:ARG:HH11 | 1.49 | 0.74 |
| 9:AI:24:GLY:HA2 | 9:AI:59:PHE:O | 1.88 | 0.74 |
| 12:CL:58:VAL:O | 12:CL:65:GLU:HA | 1.88 | 0.74 |
| 13:AM:23:TYR:HE1 | 13:AM:70:LEU:HD22 | 1.52 | 0.74 |
| 39:BE:24:THR:HG22 | 39:BE:186:GLY:H | 1.52 | 0.74 |
| 23:AW:56:C:H3' | 23:AW:57:G:H5'' | 1.68 | 0.74 |
| 50:DT:62:THR:HG22 | 50:DT:75:ILE:HG12 | 1.69 | 0.74 |
| 44:BN:3:THR:O | 44:BN:5:VAL:N | 2.20 | 0.74 |
| 37:DC:39:GLU:HG2 | 37:DC:180:PHE:HA | 1.69 | 0.74 |
| 5:CE:40:ARG:HH11 | 5:CE:40:ARG:HG2 | 1.52 | 0.74 |
| 35:DA:2875:C:H4' | 50:DT:5:ALA:HB2 | 1.68 | 0.74 |
| 9:CI:116:LYS:NZ | 9:CI:116:LYS:HB3 | 2.02 | 0.74 |
| 28:B3:19:GLN:HE22 | 28:B3:52:HIS:HE1 | 1.34 | 0.74 |
| 39:DE:27:LEU:HD23 | 50:DT:1:MET:HE1 | 1.69 | 0.74 |
| 52:BV:18:LEU:HD22 | 52:BV:19:LYS:H | 1.52 | 0.74 |
| 52:DV:18:LEU:HD22 | 52:DV:19:LYS:H | 1.53 | 0.74 |
| 55:BY:27:VAL:HA | 55:BY:28:LYS:HZ2 | 1.50 | 0.74 |
| 25:B0:40:GLN:HA | 25:B0:41:ARG:CZ | 2.17 | 0.74 |
| 32:B7:47:ARG:CZ | 54:BX:60:ARG:NH2 | 2.50 | 0.74 |
| 46:DP:80:TYR:CZ | 46:DP:111:ARG:HD3 | 2.23 | 0.74 |
| 39:DE:60:ASN:OD1 | 39:DE:62:PRO:HD2 | 1.87 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:953:A:O2' | 35:DA:954:G:H5' | 1.87 | 0.74 |
| 1:CA:17:U:H2' | 1:CA:18:C:C6 | 2.22 | 0.74 |
| 38:BD:65:ILE:HD11 | 38:BD:67:PHE:CE1 | 2.22 | 0.74 |
| 42:DH:97:ARG:O | 42:DH:98:LEU:HB2 | 1.88 | 0.74 |
| 31:B6:47:THR:HG22 | 31:B6:48:VAL:N | 2.03 | 0.74 |
| 50:BT:32:TYR:CD2 | 50:BT:81:PRO:HB2 | 2.22 | 0.74 |
| 3:CC:113:ALA:HB2 | 3:CC:202:ILE:HG12 | 1.70 | 0.74 |
| 35:BA:2313:C:H2' | 35:BA:2314:C:H6 | 1.52 | 0.74 |
| 10:CJ:33:GLN:H | 10:CJ:75:ILE:HG12 | 1.51 | 0.74 |
| 46:BP:81:GLN:HG2 | 46:BP:106:LEU:HD12 | 1.69 | 0.74 |
| 35:BA:271(T):C:H5' | 35:BA:271(T):C:C6 | 2.21 | 0.74 |
| 25:D0:41:ARG:HH11 | 25:D0:44:ARG:HD3 | 1.50 | 0.74 |
| 55:DY:88:LYS:HZ1 | 55:DY:93:GLY:HA3 | 1.52 | 0.74 |
| 55:BY:88:LYS:NZ | 55:BY:93:GLY:HA3 | 2.03 | 0.74 |
| 36:DB:48:A:H2' | 36:DB:49:C:C6 | 2.22 | 0.74 |
| 56:BZ:146:ILE:HG21 | 56:BZ:177:PRO:HD3 | 1.68 | 0.74 |
| 12:AL:55:VAL:HG12 | 12:AL:56:ALA:N | 2.03 | 0.74 |
| 1:AA:186:C:H5' | 20:AT:78:ALA:HB1 | 1.69 | 0.74 |
| 45:DO:49:ARG:HH11 | 45:DO:49:ARG:HG2 | 1.50 | 0.74 |
| 54:DX:65:ARG:HH11 | 54:DX:65:ARG:HG2 | 1.51 | 0.74 |
| 23:CW:45:U:O2' | 23:CW:46:G:H5' | 1.86 | 0.74 |
| 22:AV:20:U:H3' | 22:AV:21:A:C5' | 2.14 | 0.74 |
| 50:BT:13:ARG:HH12 | 50:BT:15:VAL:HG22 | 1.53 | 0.74 |
| 13:CM:69:GLU:OE1 | 13:CM:72:ALA:HB3 | 1.87 | 0.74 |
| 10:CJ:50:ILE:HG21 | 10:CJ:57:LYS:HD2 | 1.70 | 0.74 |
| 35:BA:1494:A:O2' | 35:BA:1495:A:H5'' | 1.88 | 0.74 |
| 41:DG:4:ASP:HA | 41:DG:8:LYS:HD2 | 1.70 | 0.74 |
| 35:BA:1779:U:C5 | 35:BA:1784:A:N7 | 2.55 | 0.74 |
| 35:DA:271(R):G:H2' | 35:DA:271(S):G:H8 | 1.52 | 0.74 |
| 38:BD:28:GLU:N | 38:BD:29:PRO:HD2 | 2.02 | 0.74 |
| 9:AI:116:LYS:NZ | 9:AI:116:LYS:HB3 | 2.02 | 0.74 |
| 42:DH:86:GLU:HB3 | 42:DH:132:ARG:HB3 | 1.70 | 0.74 |
| 35:BA:330:A:HO2' | 35:BA:331:A:H8 | 1.35 | 0.74 |
| 35:DA:2790:A:H2 | 35:DA:2791:C:H2' | 1.51 | 0.74 |
| 35:BA:2571:C:H5' | 35:BA:2572:A:C5' | 2.13 | 0.74 |
| 38:BD:30:GLU:HB3 | 38:BD:35:LYS:CD | 2.17 | 0.74 |
| 52:BV:38:LEU:O | 52:BV:39:LEU:HD13 | 1.87 | 0.74 |
| 42:DH:48:GLY:O | 42:DH:49:VAL:HG13 | 1.88 | 0.74 |
| 43:BI:41:GLU:O | 43:BI:45:LYS:HG2 | 1.87 | 0.74 |
| 52:DV:15:GLU:HB3 | 52:DV:16:PRO:CD | 2.18 | 0.74 |
| 35:DA:27:G:H22 | 35:DA:512:G:H2' | 1.52 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:27:G:O2' | 35:DA:28:A:H8 | 1.68 | 0.74 |
| 1:CA:194:C:C2' | 1:CA:195:A:H5'' | 2.18 | 0.74 |
| 35:DA:796:C:H2' | 35:DA:797:C:C6 | 2.23 | 0.74 |
| 35:BA:2875:C:O2' | 50:BT:5:ALA:HB3 | 1.86 | 0.74 |
| 38:DD:65:ILE:HD11 | 38:DD:67:PHE:CE1 | 2.22 | 0.74 |
| 11:AK:18:ARG:HH21 | 11:AK:37:GLY:N | 1.84 | 0.74 |
| 39:DE:137:HIS:HB3 | 39:DE:138:PRO:HD2 | 1.70 | 0.74 |
| 1:CA:650:G:O2' | 1:CA:651:C:H5' | 1.87 | 0.74 |
| 1:CA:148:G:H2' | 1:CA:149:A:H8 | 1.51 | 0.74 |
| 35:DA:1497:U:H5' | 35:DA:1498:C:C5 | 2.23 | 0.74 |
| 5:CE:51:VAL:HB | 5:CE:52:PRO:CD | 2.18 | 0.74 |
| 49:DS:99:LYS:O | 49:DS:101:LEU:HD13 | 1.86 | 0.74 |
| 41:BG:128:ARG:C | 41:BG:130:ASN:H | 1.91 | 0.74 |
| 38:DD:26:LYS:HZ2 | 38:DD:26:LYS:HB3 | 1.53 | 0.74 |
| 7:CG:15:ASP:H | 7:CG:20:ASP:H | 1.35 | 0.74 |
| 3:CC:170:GLN:HG2 | 3:CC:171:GLY:N | 2.03 | 0.74 |
| 25:D0:18:ALA:HB1 | 35:DA:2271:G:OP1 | 1.88 | 0.74 |
| 1:AA:625:G:H2' | 1:AA:626:U:H6 | 1.53 | 0.74 |
| 1:CA:76:C:H42 | 1:CA:93:G:H1 | 1.36 | 0.74 |
| 35:BA:2735:G:C2' | 35:BA:2736:G:H5'' | 2.18 | 0.74 |
| 1:AA:817:C:H1' | 1:AA:819:A:H5' | 1.68 | 0.74 |
| 22:AY:41:C:C3' | 22:AY:42:C:H5'' | 2.18 | 0.74 |
| 28:B3:8:LEU:HA | 28:B3:54:VAL:HG12 | 1.68 | 0.74 |
| 1:CA:1152:A:H5'' | 10:CJ:13:HIS:HB2 | 1.69 | 0.74 |
| 16:CP:4:ILE:HG23 | 16:CP:36:ILE:HD11 | 1.70 | 0.74 |
| 40:DF:108:LYS:O | 40:DF:112:MET:HB2 | 1.88 | 0.74 |
| 1:CA:92:C:H2' | 1:CA:93:G:H8 | 1.52 | 0.74 |
| 49:BS:39:ILE:HD11 | 49:BS:73:LEU:HD21 | 1.70 | 0.74 |
| 45:DO:104:ARG:HH21 | 50:DT:33:LYS:HE2 | 1.53 | 0.74 |
| 10:CJ:45:ARG:HG3 | 10:CJ:45:ARG:HH11 | 1.53 | 0.74 |
| 20:CT:35:THR:HA | 20:CT:38:LYS:HD3 | 1.69 | 0.74 |
| 50:BT:81:PRO:C | 50:BT:82:LEU:HD12 | 2.09 | 0.73 |
| 50:BT:88:ILE:HG22 | 50:BT:89:VAL:HG23 | 1.70 | 0.73 |
| 3:CC:11:ARG:HB3 | 3:CC:15:THR:HB | 1.69 | 0.73 |
| 37:BC:51:PRO:HG3 | 37:BC:204:ALA:HB2 | 1.69 | 0.73 |
| 20:CT:50:GLU:HA | 20:CT:100:ILE:HG21 | 1.70 | 0.73 |
| 54:DX:80:ILE:HD13 | 54:DX:80:ILE:O | 1.86 | 0.73 |
| 19:AS:16:LEU:O | 19:AS:20:LEU:HG | 1.88 | 0.73 |
| 1:AA:922:G:H4' | 5:AE:20:GLN:HA | 1.70 | 0.73 |
| 3:AC:18:TRP:HE3 | 3:AC:18:TRP:H | 1.33 | 0.73 |
| 15:CO:2:PRO:HB2 | 15:CO:3:ILE:HD13 | 1.68 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:191:A:O2' | 35:BA:192:C:H5' | 1.88 | 0.73 |
| 35:DA:480:A:H1' | 55:DY:44:ILE:HG21 | 1.68 | 0.73 |
| 27:D2:37:PHE:O | 27:D2:41:ILE:HG23 | 1.88 | 0.73 |
| 31:D6:19:ARG:H | 31:D6:19:ARG:HD2 | 1.52 | 0.73 |
| 5:AE:40:ARG:HH11 | 5:AE:40:ARG:HG2 | 1.52 | 0.73 |
| 52:DV:38:LEU:O | 52:DV:39:LEU:HD13 | 1.87 | 0.73 |
| 43:BI:71:ILE:HG13 | 43:BI:72:LEU:H | 1.53 | 0.73 |
| 1:AA:736:C:H2' | 1:AA:737:A:C8 | 2.22 | 0.73 |
| 32:D7:47:ARG:CZ | 54:DX:60:ARG:NH2 | 2.51 | 0.73 |
| 56:DZ:24:LEU:HB2 | 56:DZ:41:LEU:HD23 | 1.68 | 0.73 |
| 1:CA:97:G:O2' | 1:CA:98:G:H5'' | 1.88 | 0.73 |
| 45:DO:23:ARG:HD2 | 45:DO:24:VAL:H | 1.53 | 0.73 |
| 43:DI:9:LEU:H | 43:DI:13:GLY:HA2 | 1.52 | 0.73 |
| 36:BB:56:G:H5'' | 41:BG:27:ASN:HD21 | 1.53 | 0.73 |
| 25:B0:56:ASP:O | 25:B0:57:PHE:HB2 | 1.88 | 0.73 |
| 42:BH:97:ARG:O | 42:BH:98:LEU:HB2 | 1.86 | 0.73 |
| 13:AM:50:GLU:O | 13:AM:54:VAL:HG23 | 1.88 | 0.73 |
| 2:CB:238:LEU:H | 2:CB:238:LEU:HD23 | 1.53 | 0.73 |
| 56:DZ:56:VAL:HG13 | 56:DZ:69:THR:O | 1.88 | 0.73 |
| 38:DD:30:GLU:HG2 | 38:DD:63:ARG:NE | 2.03 | 0.73 |
| 13:AM:8:GLU:OE1 | 13:AM:22:ILE:HG23 | 1.88 | 0.73 |
| 46:BP:81:GLN:HG2 | 46:BP:106:LEU:HA | 1.70 | 0.73 |
| 49:BS:65:VAL:O | 49:BS:69:VAL:HG12 | 1.89 | 0.73 |
| 35:DA:1779:U:C5 | 35:DA:1784:A:N7 | 2.56 | 0.73 |
| 25:D0:40:GLN:HA | 25:D0:41:ARG:CZ | 2.18 | 0.73 |
| 19:AS:9:VAL:O | 19:AS:11:VAL:N | 2.22 | 0.73 |
| 33:B8:43:GLN:O | 33:B8:44:LYS:HD2 | 1.87 | 0.73 |
| 47:BQ:2:LEU:HD11 | 47:BQ:69:PHE:HE1 | 1.52 | 0.73 |
| 1:CA:1310:G:O2' | 1:CA:1311:G:H5' | 1.88 | 0.73 |
| 3:AC:127:ARG:HD2 | 3:AC:127:ARG:N | 2.03 | 0.73 |
| 35:DA:662:G:OP1 | 46:DP:18:ARG:HD2 | 1.88 | 0.73 |
| 1:AA:1310:G:O2' | 1:AA:1311:G:H5' | 1.88 | 0.73 |
| 51:DU:64:ARG:HG2 | 51:DU:64:ARG:HH21 | 1.52 | 0.73 |
| 41:DG:16:ARG:NH2 | 41:DG:28:VAL:HG12 | 2.04 | 0.73 |
| 55:BY:17:SER:CB | 55:BY:71:LYS:HE2 | 2.18 | 0.73 |
| 1:CA:1163:C:H2' | 1:CA:1164:G:C8 | 2.22 | 0.73 |
| 8:CH:134:ILE:O | 8:CH:135:CYS:HB3 | 1.87 | 0.73 |
| 18:AR:56:THR:HB | 18:AR:58:LEU:HD12 | 1.70 | 0.73 |
| 48:BR:67:LEU:HD13 | 48:BR:76:VAL:HG21 | 1.71 | 0.73 |
| 18:CR:25:THR:HG22 | 18:CR:42:ARG:HH11 | 1.53 | 0.73 |
| 2:CB:71:VAL:HB | 2:CB:164:VAL:HG22 | 1.69 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 50:DT:107:ASP:CG | 50:DT:108:ARG:H | 1.90 | 0.73 |
| 25:D0:51:VAL:HG22 | 25:D0:81:VAL:HG23 | 1.70 | 0.73 |
| 1:AA:1172:C:H2' | 1:AA:1173:G:H8 | 1.52 | 0.73 |
| 1:CA:973:G:H3' | 1:CA:974:A:H5'' | 1.69 | 0.73 |
| 38:DD:39:LYS:HB2 | 38:DD:62:TYR:HB2 | 1.69 | 0.73 |
| 38:DD:39:LYS:NZ | 38:DD:87:ASN:HB3 | 2.02 | 0.73 |
| 51:DU:90:VAL:O | 51:DU:92:ARG:N | 2.21 | 0.73 |
| 1:AA:192:U:H2' | 1:AA:193:C:C6 | 2.22 | 0.73 |
| 8:AH:91:ARG:HG2 | 17:AQ:34:LYS:H | 1.52 | 0.73 |
| 33:B8:50:LEU:CD1 | 33:B8:51:ALA:H | 2.00 | 0.73 |
| 55:DY:27:VAL:HA | 55:DY:28:LYS:HZ2 | 1.51 | 0.73 |
| 55:BY:8:LYS:HD2 | 55:BY:8:LYS:N | 2.01 | 0.73 |
| 38:DD:28:GLU:N | 38:DD:29:PRO:HD2 | 2.03 | 0.73 |
| 43:BI:47:LEU:HG | 43:BI:51:ILE:HG12 | 1.70 | 0.73 |
| 46:BP:85:LEU:HA | 46:BP:88:LEU:HD13 | 1.71 | 0.73 |
| 10:AJ:45:ARG:HH11 | 10:AJ:45:ARG:HG3 | 1.53 | 0.73 |
| 35:DA:2735:G:C2' | 35:DA:2736:G:H5'' | 2.19 | 0.73 |
| 51:DU:20:LEU:HB3 | 51:DU:39:LEU:HD11 | 1.69 | 0.73 |
| 12:CL:34:ARG:O | 12:CL:61:THR:HG23 | 1.88 | 0.73 |
| 50:BT:80:SER:CB | 50:BT:81:PRO:HD3 | 2.16 | 0.73 |
| 13:CM:8:GLU:OE1 | 13:CM:22:ILE:HG23 | 1.88 | 0.73 |
| 33:D8:6:THR:HA | 33:D8:61:LEU:HD11 | 1.68 | 0.73 |
| 55:DY:27:VAL:HG12 | 55:DY:29:GLU:OE1 | 1.88 | 0.73 |
| 52:BV:15:GLU:HB3 | 52:BV:16:PRO:CD | 2.18 | 0.73 |
| 1:AA:1163:C:H2' | 1:AA:1164:G:C8 | 2.22 | 0.73 |
| 1:AA:976:G:H5' | 1:AA:1358:U:O2' | 1.87 | 0.73 |
| 22:CY:42:C:H3' | 22:CY:43:C:C5' | 2.19 | 0.73 |
| 43:BI:113:ARG:HB2 | 43:BI:130:TYR:CE1 | 2.23 | 0.73 |
| 35:BA:2683:C:P | 50:BT:53:ARG:HH22 | 2.11 | 0.73 |
| 50:BT:3:ARG:CB | 50:BT:6:LEU:HB3 | 2.19 | 0.73 |
| 35:DA:2348:U:H2' | 35:DA:2349:G:H5'' | 1.70 | 0.73 |
| 35:DA:963:U:H2' | 35:DA:964:C:H6 | 1.54 | 0.73 |
| 1:AA:460:G:O6 | 1:AA:470:C:H5'' | 1.88 | 0.73 |
| 5:CE:150:ARG:HA | 5:CE:153:LYS:HE2 | 1.70 | 0.73 |
| 52:BV:1:MET:HA | 52:BV:1:MET:HE2 | 1.71 | 0.73 |
| 2:AB:238:LEU:H | 2:AB:238:LEU:HD23 | 1.52 | 0.73 |
| 4:CD:146:ILE:HD12 | 4:CD:146:ILE:N | 2.03 | 0.73 |
| 2:AB:14:GLY:O | 2:AB:15:VAL:HG13 | 1.88 | 0.73 |
| 40:BF:3:GLU:CA | 40:BF:24:LEU:HG | 2.09 | 0.73 |
| 2:CB:8:LYS:HD3 | 2:CB:217:ARG:NH2 | 2.04 | 0.73 |
| 1:CA:192:U:H2' | 1:CA:193:C:C6 | 2.24 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:D8:52:LYS:N | 33:D8:53:PRO:HD2 | 2.03 | 0.73 |
| 1:AA:1057:G:H5'' | 3:AC:154:SER:CB | 2.17 | 0.73 |
| 3:AC:35:GLU:O | 3:AC:39:ILE:HG13 | 1.88 | 0.73 |
| 13:AM:13:LYS:HA | 13:AM:44:ARG:NH1 | 2.03 | 0.73 |
| 22:AY:16:U:C3' | 22:AY:17:C:H5' | 2.19 | 0.73 |
| 16:AP:4:ILE:HG23 | 16:AP:36:ILE:HD11 | 1.70 | 0.73 |
| 54:BX:12:VAL:HG21 | 54:BX:27:THR:HG23 | 1.70 | 0.73 |
| 1:CA:634:C:H2' | 1:CA:635:G:H8 | 1.54 | 0.73 |
| 52:DV:21:ARG:HB3 | 52:DV:91:TYR:HB2 | 1.70 | 0.73 |
| 49:BS:30:ARG:HH22 | 49:BS:62:LYS:HB3 | 1.54 | 0.73 |
| 1:CA:750:G:N3 | 15:CO:23:GLY:HA3 | 2.03 | 0.73 |
| 56:DZ:99:TYR:HA | 56:DZ:125:LEU:HA | 1.70 | 0.73 |
| 2:AB:76:GLN:O | 2:AB:208:ILE:HG12 | 1.89 | 0.73 |
| 10:AJ:33:GLN:H | 10:AJ:75:ILE:HG12 | 1.51 | 0.73 |
| 13:CM:24:GLY:C | 13:CM:25:ILE:HD12 | 2.10 | 0.73 |
| 55:DY:17:SER:CB | 55:DY:71:LYS:HE2 | 2.18 | 0.73 |
| 10:AJ:21:GLN:HA | 10:AJ:24:VAL:HG23 | 1.70 | 0.73 |
| 27:D2:17:SER:HB2 | 27:D2:18:PRO:HD2 | 1.71 | 0.73 |
| 35:BA:1879:C:H2' | 35:BA:1880:C:C5' | 2.18 | 0.73 |
| 43:DI:62:LYS:HE2 | 43:DI:134:PRO:HG2 | 1.69 | 0.73 |
| 43:BI:62:LYS:HE2 | 43:BI:134:PRO:HG2 | 1.70 | 0.73 |
| 1:CA:736:C:H2' | 1:CA:737:A:H8 | 1.53 | 0.73 |
| 20:AT:50:GLU:HA | 20:AT:100:ILE:HG21 | 1.70 | 0.73 |
| 20:AT:43:LEU:HD22 | 20:AT:48:LYS:HG3 | 1.69 | 0.73 |
| 35:DA:8:A:H2' | 35:DA:9:U:C5 | 2.24 | 0.73 |
| 35:BA:549:G:H2' | 35:BA:551:G:H5'' | 1.71 | 0.73 |
| 3:CC:118:GLN:O | 3:CC:122:GLU:HG3 | 1.89 | 0.73 |
| 39:BE:137:HIS:HB3 | 39:BE:138:PRO:HD2 | 1.70 | 0.73 |
| 53:DW:73:ALA:HB3 | 53:DW:106:ILE:HD11 | 1.69 | 0.73 |
| 33:B8:21:LYS:HD3 | 33:B8:48:PHE:CZ | 2.24 | 0.73 |
| 1:CA:1404:C:H2' | 1:CA:1405:G:C8 | 2.23 | 0.73 |
| 38:BD:39:LYS:HB2 | 38:BD:62:TYR:HB2 | 1.71 | 0.73 |
| 51:BU:64:ARG:HH21 | 51:BU:64:ARG:HG2 | 1.54 | 0.73 |
| 35:DA:1591:G:H5' | 35:DA:1591:G:H8 | 1.53 | 0.73 |
| 22:CY:74:C:H2' | 22:CY:75:C:C5' | 2.18 | 0.73 |
| 45:BO:104:ARG:NH1 | 50:BT:35:LYS:HD3 | 2.04 | 0.73 |
| 13:AM:90:LEU:HA | 13:AM:93:ARG:HB2 | 1.69 | 0.73 |
| 8:AH:82:HIS:HD2 | 8:AH:138:TRP:HE1 | 1.37 | 0.73 |
| 37:DC:51:PRO:HG3 | 37:DC:204:ALA:HB2 | 1.70 | 0.73 |
| 41:BG:144:ILE:HD11 | 41:BG:148:MET:HB3 | 1.70 | 0.73 |
| 35:BA:910:A:H62 | 47:BQ:12:GLN:HA | 1.52 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1438:G:H2' | 1:AA:1439:C:H6 | 1.54 | 0.73 |
| 35:DA:991:C:H5' | 35:DA:991:C:H6 | 1.52 | 0.73 |
| 23:AW:61:C:H2' | 23:AW:62:C:C6 | 2.24 | 0.73 |
| 18:CR:56:THR:HB | 18:CR:58:LEU:HD12 | 1.70 | 0.73 |
| 1:CA:382:A:H2' | 1:CA:383:A:C8 | 2.23 | 0.73 |
| 40:DF:36:VAL:HG11 | 40:DF:183:VAL:CG1 | 2.16 | 0.73 |
| 40:DF:3:GLU:CA | 40:DF:24:LEU:HG | 2.11 | 0.73 |
| 50:BT:27:THR:O | 50:BT:28:VAL:HB | 1.87 | 0.73 |
| 47:BQ:141:GLN:OXT | 56:BZ:99:TYR:N | 2.22 | 0.73 |
| 41:BG:61:ALA:HA | 41:BG:64:THR:CG2 | 2.19 | 0.73 |
| 23:AW:30:G:H2' | 23:AW:31:A:H8 | 1.54 | 0.73 |
| 10:AJ:6:ILE:HG22 | 10:AJ:98:ILE:CG1 | 2.19 | 0.73 |
| 46:DP:144:GLU:N | 46:DP:145:PRO:HD3 | 2.04 | 0.73 |
| 35:BA:2151:G:H2' | 35:BA:2152:G:H8 | 1.51 | 0.73 |
| 55:BY:90:LEU:HD12 | 55:BY:91:GLU:HB2 | 1.69 | 0.73 |
| 38:DD:186:HIS:CD2 | 38:DD:188:GLU:H | 2.07 | 0.73 |
| 35:DA:803:U:O2' | 35:DA:804:A:H5' | 1.88 | 0.73 |
| 1:CA:341:C:O2' | 1:CA:342:C:H5' | 1.88 | 0.73 |
| 51:BU:9:VAL:HG12 | 51:BU:13:LYS:HE2 | 1.69 | 0.73 |
| 49:BS:74:ALA:HB1 | 49:BS:103:GLU:HB2 | 1.71 | 0.73 |
| 25:B0:51:VAL:HG22 | 25:B0:81:VAL:HG23 | 1.69 | 0.73 |
| 22:CV:27:G:H2' | 22:CV:28:G:H8 | 1.54 | 0.73 |
| 39:BE:176:ILE:N | 39:BE:176:ILE:HD12 | 2.04 | 0.73 |
| 51:BU:92:ARG:HH21 | 51:BU:95:LEU:HG | 1.52 | 0.72 |
| 35:DA:2724:C:OP1 | 39:DE:118:LYS:HE3 | 1.88 | 0.72 |
| 13:AM:69:GLU:OE1 | 13:AM:72:ALA:HB3 | 1.88 | 0.72 |
| 5:CE:50:GLU:OE2 | 5:CE:51:VAL:HG23 | 1.88 | 0.72 |
| 56:DZ:166:SER:HB2 | 56:DZ:168:GLU:H | 1.54 | 0.72 |
| 14:AN:25:VAL:HG22 | 14:AN:38:GLY:O | 1.88 | 0.72 |
| 43:DI:71:ILE:HG13 | 43:DI:72:LEU:N | 2.04 | 0.72 |
| 56:BZ:124:ILE:HD12 | 56:BZ:155:LEU:HD21 | 1.70 | 0.72 |
| 5:CE:9:LYS:HB3 | 5:CE:112:LEU:HD11 | 1.71 | 0.72 |
| 22:AY:75:C:H2' | 22:AY:76:8AN:C8 | 2.19 | 0.72 |
| 12:AL:55:VAL:HG12 | 12:AL:56:ALA:H | 1.54 | 0.72 |
| 47:BQ:69:PHE:CD1 | 47:BQ:70:PRO:HD2 | 2.24 | 0.72 |
| 35:DA:92:A:H2' | 35:DA:93:G:H8 | 1.53 | 0.72 |
| 56:BZ:103:ARG:HG3 | 56:BZ:136:PHE:HB2 | 1.71 | 0.72 |
| 56:DZ:53:ILE:CG2 | 56:DZ:71:VAL:HG23 | 2.12 | 0.72 |
| 35:DA:1858:G:H2' | 35:DA:1883:G:N2 | 2.03 | 0.72 |
| 39:BE:36:ARG:NH1 | 39:BE:88:GLY:HA3 | 2.02 | 0.72 |
| 10:CJ:50:ILE:CD1 | 10:CJ:50:ILE:H | 2.02 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 10:AJ:50:ILE:CD1 | 10:AJ:50:ILE:H | 2.00 | 0.72 |
| 4:CD:9:CYS:SG | 4:CD:31:CYS:O | 2.46 | 0.72 |
| 43:DI:71:ILE:HG13 | 43:DI:72:LEU:H | 1.53 | 0.72 |
| 31:B6:23:THR:HG21 | 35:BA:2419:U:H5' | 1.69 | 0.72 |
| 35:DA:1879:C:H2' | 35:DA:1880:C:C5' | 2.18 | 0.72 |
| 47:DQ:134:ARG:HA | 47:DQ:137:TYR:CE1 | 2.24 | 0.72 |
| 35:BA:953:A:C2' | 35:BA:954:G:H5' | 2.20 | 0.72 |
| 35:BA:34:C:H2' | 35:BA:35:G:H5' | 1.71 | 0.72 |
| 1:AA:382:A:H2' | 1:AA:383:A:C8 | 2.24 | 0.72 |
| 12:CL:55:VAL:HG12 | 12:CL:56:ALA:N | 2.05 | 0.72 |
| 14:AN:3:ARG:HB3 | 14:AN:3:ARG:HH11 | 1.55 | 0.72 |
| 2:CB:84:GLU:HB3 | 2:CB:219:VAL:HG21 | 1.70 | 0.72 |
| 42:DH:44:VAL:O | 42:DH:46:GLU:HG2 | 1.88 | 0.72 |
| 35:DA:1899:G:N2 | 35:DA:1902:C:N4 | 2.36 | 0.72 |
| 35:DA:2875:C:O2' | 50:DT:5:ALA:HB3 | 1.90 | 0.72 |
| 1:CA:1172:C:H2' | 1:CA:1173:G:H8 | 1.54 | 0.72 |
| 1:AA:664:G:H22 | 1:AA:741:G:H1 | 1.37 | 0.72 |
| 33:D8:21:LYS:HD3 | 33:D8:48:PHE:CZ | 2.24 | 0.72 |
| 8:AH:11:THR:HG23 | 8:AH:14:ARG:HH12 | 1.53 | 0.72 |
| 6:CF:60:PHE:C | 6:CF:61:LEU:HD12 | 2.09 | 0.72 |
| 35:DA:586:A:H5' | 40:DF:89:VAL:HG21 | 1.70 | 0.72 |
| 33:D8:9:GLY:O | 33:D8:13:ARG:HG2 | 1.90 | 0.72 |
| 39:DE:36:ARG:NH1 | 39:DE:88:GLY:HA3 | 2.02 | 0.72 |
| 35:BA:2312:U:OP1 | 41:BG:74:LYS:HG3 | 1.90 | 0.72 |
| 41:DG:107:LEU:HD23 | 41:DG:111:LEU:CD1 | 2.19 | 0.72 |
| 23:AW:16:U:C3' | 23:AW:17:C:H5' | 2.18 | 0.72 |
| 1:AA:1293:G:HO2' | 1:AA:1294:G:H8 | 1.34 | 0.72 |
| 32:D7:9:ARG:HG3 | 32:D7:9:ARG:HH11 | 1.54 | 0.72 |
| 42:BH:41:MET:HG2 | 42:BH:55:PRO:HD3 | 1.72 | 0.72 |
| 1:CA:1251:A:H2' | 1:CA:1252:A:C8 | 2.25 | 0.72 |
| 1:AA:1298:C:H2' | 7:AG:114:ARG:HH12 | 1.54 | 0.72 |
| 12:CL:18:VAL:HG23 | 12:CL:19:ARG:H | 1.54 | 0.72 |
| 56:BZ:112:ARG:HH11 | 56:BZ:112:ARG:HG2 | 1.54 | 0.72 |
| 49:BS:89:ARG:CD | 49:BS:92:TYR:HA | 2.18 | 0.72 |
| 35:BA:1858:G:H2' | 35:BA:1883:G:N2 | 2.03 | 0.72 |
| 35:BA:997:G:OP1 | 51:BU:93:LYS:HD3 | 1.89 | 0.72 |
| 39:BE:110:GLY:O | 48:BR:2:ARG:HG2 | 1.89 | 0.72 |
| 42:DH:47:GLU:HG2 | 42:DH:48:GLY:N | 1.97 | 0.72 |
| 35:DA:2162:G:H2' | 35:DA:2163:C:H6 | 1.55 | 0.72 |
| 30:B5:40:LYS:NZ | 30:B5:46:CYS:HB3 | 2.04 | 0.72 |
| 35:BA:1879:C:C2' | 35:BA:1880:C:H5'' | 2.19 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:1484:G:H2' | 35:BA:1485:G:H5'' | 1.70 | 0.72 |
| 22:AV:41:C:H3' | 22:AV:42:C:H5'' | 1.68 | 0.72 |
| 54:DX:12:VAL:CG2 | 54:DX:17:ALA:HB1 | 2.19 | 0.72 |
| 46:DP:71:VAL:CG1 | 46:DP:72:PRO:HD3 | 2.20 | 0.72 |
| 35:BA:953:A:O2' | 35:BA:954:G:H5' | 1.89 | 0.72 |
| 11:AK:29:ILE:HB | 11:AK:44:SER:HB3 | 1.71 | 0.72 |
| 1:AA:1205:U:O2' | 3:AC:195:VAL:HG23 | 1.89 | 0.72 |
| 35:BA:1866:C:H2' | 35:BA:1866:C:O2 | 1.89 | 0.72 |
| 10:AJ:51:ARG:HG3 | 10:AJ:60:ARG:HA | 1.72 | 0.72 |
| 44:BN:125:GLY:HA3 | 44:BN:126:PRO:O | 1.89 | 0.72 |
| 20:AT:99:LEU:C | 20:AT:100:ILE:HD12 | 2.10 | 0.72 |
| 35:DA:673:C:H5' | 40:DF:54:ARG:HH12 | 1.53 | 0.72 |
| 19:CS:9:VAL:O | 19:CS:11:VAL:N | 2.22 | 0.72 |
| 12:CL:22:SER:O | 12:CL:24:VAL:N | 2.22 | 0.72 |
| 6:CF:100:ASN:HD21 | 18:CR:23:LYS:HE3 | 1.55 | 0.72 |
| 35:BA:2069:G:C2' | 35:BA:2070:G:H5' | 2.20 | 0.72 |
| 2:CB:167:PRO:HG2 | 2:CB:192:SER:OG | 1.90 | 0.72 |
| 26:B1:58:ILE:HD11 | 26:B1:60:PHE:CE2 | 2.25 | 0.72 |
| 6:AF:100:ASN:HD21 | 18:AR:23:LYS:HE3 | 1.54 | 0.72 |
| 1:CA:148:G:O2' | 1:CA:149:A:H5' | 1.89 | 0.72 |
| 2:CB:14:GLY:O | 2:CB:15:VAL:HG13 | 1.88 | 0.72 |
| 48:DR:104:ARG:HB2 | 48:DR:104:ARG:HH11 | 1.54 | 0.72 |
| 56:BZ:20:ARG:CZ | 56:BZ:20:ARG:HA | 2.19 | 0.72 |
| 54:BX:63:LYS:HA | 54:BX:72:LYS:HA | 1.71 | 0.72 |
| 50:DT:81:PRO:C | 50:DT:82:LEU:HD12 | 2.10 | 0.72 |
| 39:DE:95:ILE:HD12 | 39:DE:95:ILE:H | 1.52 | 0.72 |
| 35:BA:1497:U:H5' | 35:BA:1498:C:H5 | 1.54 | 0.72 |
| 5:CE:79:GLU:HA | 5:CE:91:LEU:O | 1.90 | 0.72 |
| 35:BA:2307:G:N2 | 35:BA:2308:G:H5'' | 2.04 | 0.72 |
| 43:DI:41:GLU:O | 43:DI:45:LYS:HG2 | 1.90 | 0.72 |
| 23:CW:61:C:H2' | 23:CW:62:C:C6 | 2.24 | 0.72 |
| 35:BA:27:G:H22 | 35:BA:512:G:H2' | 1.53 | 0.72 |
| 53:BW:59:VAL:HG12 | 53:BW:60:ASN:N | 2.04 | 0.72 |
| 7:AG:15:ASP:H | 7:AG:20:ASP:H | 1.34 | 0.72 |
| 47:DQ:137:TYR:CD2 | 47:DQ:137:TYR:N | 2.56 | 0.72 |
| 53:BW:99:ARG:HH11 | 53:BW:99:ARG:HG2 | 1.55 | 0.72 |
| 11:CK:29:ILE:HB | 11:CK:44:SER:HB3 | 1.71 | 0.72 |
| 9:AI:3:GLN:HG2 | 9:AI:20:ARG:HH12 | 1.54 | 0.72 |
| 1:CA:707:C:O2' | 1:CA:708:C:H5' | 1.90 | 0.72 |
| 25:B0:68:GLU:CG | 25:B0:80:HIS:HB2 | 2.20 | 0.72 |
| 1:AA:634:C:H2' | 1:AA:635:G:H8 | 1.55 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 46:BP:18:ARG:HH11 | 46:BP:18:ARG:CB | 2.03 | 0.72 |
| 13:AM:24:GLY:C | 13:AM:25:ILE:HD12 | 2.09 | 0.72 |
| 51:DU:92:ARG:HH21 | 51:DU:95:LEU:HG | 1.55 | 0.72 |
| 30:D5:46:CYS:SG | 30:D5:47:PRO:CD | 2.78 | 0.72 |
| 43:BI:71:ILE:HG13 | 43:BI:72:LEU:N | 2.04 | 0.72 |
| 43:DI:113:ARG:HB2 | 43:DI:130:TYR:CE1 | 2.24 | 0.72 |
| 56:BZ:151:HIS:HB2 | 56:BZ:169:GLU:O | 1.90 | 0.72 |
| 8:CH:82:HIS:HD2 | 8:CH:138:TRP:HE1 | 1.37 | 0.72 |
| 55:BY:2:ARG:HD3 | 55:BY:3:VAL:HG23 | 1.70 | 0.72 |
| 2:AB:178:ARG:HB2 | 2:AB:178:ARG:HH11 | 1.55 | 0.72 |
| 35:DA:1987:G:H5' | 35:DA:1987:G:H8 | 1.53 | 0.72 |
| 7:AG:145:ALA:C | 7:AG:147:ALA:H | 1.92 | 0.72 |
| 1:AA:405:U:H3' | 1:AA:406:G:H5' | 1.72 | 0.72 |
| 45:BO:23:ARG:HD2 | 45:BO:24:VAL:H | 1.55 | 0.72 |
| 39:DE:132:HIS:HA | 39:DE:135:HIS:CE1 | 2.24 | 0.72 |
| 43:BI:9:LEU:H | 43:BI:13:GLY:HA2 | 1.55 | 0.72 |
| 35:DA:1866:C:O2 | 35:DA:1866:C:H2' | 1.89 | 0.72 |
| 40:DF:164:ARG:HG3 | 40:DF:175:THR:OG1 | 1.89 | 0.72 |
| 49:DS:17:ARG:O | 49:DS:18:ILE:HB | 1.88 | 0.72 |
| 51:BU:91:ASP:CG | 51:BU:96:ALA:HB2 | 2.10 | 0.72 |
| 38:DD:30:GLU:HB3 | 38:DD:35:LYS:CD | 2.18 | 0.72 |
| 38:DD:94:LEU:HD23 | 38:DD:95:LEU:N | 2.05 | 0.72 |
| 44:DN:1:MET:HG2 | 44:DN:2:LYS:N | 2.05 | 0.72 |
| 4:AD:31:CYS:O | 4:AD:33:MET:N | 2.22 | 0.72 |
| 3:AC:113:ALA:HB2 | 3:AC:202:ILE:HG12 | 1.70 | 0.72 |
| 35:DA:1902:C:O2' | 38:DD:244:ARG:HB2 | 1.90 | 0.72 |
| 19:CS:16:LEU:O | 19:CS:20:LEU:HG | 1.89 | 0.72 |
| 43:BI:120:ILE:HG22 | 43:BI:121:LYS:H | 1.50 | 0.72 |
| 1:CA:1327:C:H2' | 1:CA:1328:C:C6 | 2.25 | 0.72 |
| 35:BA:914:C:H2' | 35:BA:915:C:H5' | 1.72 | 0.72 |
| 35:BA:1854:A:H3' | 35:BA:1855:G:H8 | 1.55 | 0.72 |
| 34:D9:26:ILE:H | 34:D9:26:ILE:HD12 | 1.55 | 0.72 |
| 35:BA:963:U:H2' | 35:BA:964:C:H6 | 1.55 | 0.72 |
| 54:DX:63:LYS:HA | 54:DX:72:LYS:HA | 1.71 | 0.72 |
| 42:BH:71:LEU:H | 42:BH:74:ASN:ND2 | 1.87 | 0.72 |
| 48:BR:2:ARG:HH11 | 48:BR:5:LYS:CE | 2.03 | 0.72 |
| 10:CJ:51:ARG:HG3 | 10:CJ:60:ARG:HA | 1.70 | 0.72 |
| 35:BA:1497:U:H5' | 35:BA:1498:C:C5 | 2.25 | 0.72 |
| 25:B0:18:ALA:HB1 | 35:BA:2271:G:OP1 | 1.89 | 0.72 |
| 1:CA:736:C:H2' | 1:CA:737:A:C8 | 2.24 | 0.72 |
| 55:DY:90:LEU:HD12 | 55:DY:91:GLU:HB2 | 1.70 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:BI:58:LEU:C | 43:BI:60:GLU:H | 1.93 | 0.72 |
| 2:CB:95:GLN:NE2 | 2:CB:147:LYS:HE3 | 2.05 | 0.72 |
| 4:CD:92:VAL:O | 4:CD:96:LEU:HD13 | 1.90 | 0.72 |
| 1:AA:750:G:N3 | 15:AO:23:GLY:HA3 | 2.04 | 0.72 |
| 52:BV:21:ARG:HB3 | 52:BV:91:TYR:HB2 | 1.71 | 0.72 |
| 8:CH:119:LEU:N | 8:CH:119:LEU:HD23 | 2.04 | 0.72 |
| 48:DR:67:LEU:HD13 | 48:DR:76:VAL:HG21 | 1.70 | 0.72 |
| 11:AK:126:ARG:NH1 | 11:AK:126:ARG:HB3 | 2.05 | 0.72 |
| 23:AW:45:U:O2' | 23:AW:46:G:H5' | 1.89 | 0.72 |
| 4:AD:146:ILE:HD12 | 4:AD:146:ILE:N | 2.04 | 0.72 |
| 1:AA:15:G:H4' | 5:AE:24:ARG:NH1 | 2.05 | 0.72 |
| 2:AB:71:VAL:HB | 2:AB:164:VAL:HG22 | 1.71 | 0.72 |
| 12:AL:22:SER:O | 12:AL:24:VAL:N | 2.23 | 0.71 |
| 39:BE:78:LEU:C | 39:BE:79:ARG:HD2 | 2.11 | 0.71 |
| 38:DD:33:LEU:O | 38:DD:34:VAL:HB | 1.88 | 0.71 |
| 5:AE:76:ILE:HG23 | 5:AE:77:PRO:HD2 | 1.72 | 0.71 |
| 37:DC:168:THR:HA | 37:DC:173:ALA:CB | 2.20 | 0.71 |
| 35:BA:2162:G:H2' | 35:BA:2163:C:H6 | 1.53 | 0.71 |
| 46:DP:81:GLN:HG2 | 46:DP:106:LEU:HA | 1.72 | 0.71 |
| 3:AC:15:THR:HG21 | 3:AC:181:ASN:HA | 1.72 | 0.71 |
| 48:DR:42:LYS:O | 48:DR:45:ARG:HG2 | 1.90 | 0.71 |
| 44:DN:125:GLY:HA3 | 44:DN:126:PRO:O | 1.90 | 0.71 |
| 50:BT:62:THR:HG22 | 50:BT:75:ILE:HG12 | 1.70 | 0.71 |
| 44:DN:3:THR:O | 44:DN:5:VAL:N | 2.22 | 0.71 |
| 35:BA:8:A:H2' | 35:BA:9:U:C5 | 2.24 | 0.71 |
| 1:CA:337:C:H2' | 1:CA:338:A:C8 | 2.25 | 0.71 |
| 25:B0:48:GLY:HA3 | 25:B0:80:HIS:CD2 | 2.24 | 0.71 |
| 1:CA:15:G:H4' | 5:CE:24:ARG:NH1 | 2.05 | 0.71 |
| 2:AB:95:GLN:NE2 | 2:AB:147:LYS:HE3 | 2.05 | 0.71 |
| 35:BA:2348:U:H2' | 35:BA:2349:G:H5'' | 1.71 | 0.71 |
| 40:DF:167:ALA:HB1 | 40:DF:173:VAL:HG11 | 1.72 | 0.71 |
| 48:BR:11:ASN:OD1 | 48:BR:12:ARG:N | 2.23 | 0.71 |
| 54:BX:63:LYS:HB3 | 54:BX:72:LYS:HG3 | 1.69 | 0.71 |
| 39:BE:109:LYS:CB | 48:BR:2:ARG:HH22 | 2.02 | 0.71 |
| 5:AE:9:LYS:HB3 | 5:AE:112:LEU:HD11 | 1.71 | 0.71 |
| 52:BV:18:LEU:CD1 | 52:BV:19:LYS:H | 2.02 | 0.71 |
| 3:AC:113:ALA:HA | 3:AC:116:VAL:HG23 | 1.71 | 0.71 |
| 46:DP:81:GLN:HG2 | 46:DP:106:LEU:HD12 | 1.73 | 0.71 |
| 3:AC:11:ARG:HB3 | 3:AC:15:THR:HB | 1.69 | 0.71 |
| 26:D1:81:LYS:C | 26:D1:82:LEU:HD13 | 2.11 | 0.71 |
| 1:AA:148:G:O2' | 1:AA:149:A:H5' | 1.89 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 42:DH:153:LYS:N | 42:DH:153:LYS:HD3 | 2.05 | 0.71 |
| 35:DA:2734:A:H5' | 35:DA:2735:G:OP2 | 1.90 | 0.71 |
| 35:BA:172:C:H2' | 35:BA:173:G:H8 | 1.54 | 0.71 |
| 8:AH:119:LEU:HD12 | 8:AH:124:ALA:HA | 1.71 | 0.71 |
| 35:DA:1108:U:H2' | 35:DA:1109:C:H5' | 1.72 | 0.71 |
| 1:CA:539:A:H2' | 1:CA:540:G:C8 | 2.25 | 0.71 |
| 1:CA:817:C:H1' | 1:CA:819:A:H5' | 1.71 | 0.71 |
| 35:BA:2724:C:OP1 | 39:BE:118:LYS:HE3 | 1.91 | 0.71 |
| 1:AA:1510:U:H2' | 1:AA:1511:G:C8 | 2.25 | 0.71 |
| 46:BP:90:ARG:HG2 | 46:BP:91:PHE:N | 2.04 | 0.71 |
| 35:DA:1488:G:H5' | 35:DA:1489:U:OP2 | 1.89 | 0.71 |
| 8:CH:42:GLU:HG3 | 8:CH:109:ILE:HD12 | 1.72 | 0.71 |
| 1:CA:1205:U:O2' | 3:CC:195:VAL:HG23 | 1.89 | 0.71 |
| 12:CL:84:LEU:HD12 | 12:CL:104:VAL:HG11 | 1.72 | 0.71 |
| 49:DS:89:ARG:CD | 49:DS:92:TYR:HA | 2.20 | 0.71 |
| 46:BP:30:THR:HG22 | 46:BP:31:ALA:N | 2.02 | 0.71 |
| 3:CC:113:ALA:HA | 3:CC:116:VAL:HG23 | 1.72 | 0.71 |
| 10:CJ:6:ILE:HG22 | 10:CJ:98:ILE:CG1 | 2.20 | 0.71 |
| 10:AJ:38:ILE:HD11 | 10:AJ:71:LEU:HD23 | 1.72 | 0.71 |
| 41:DG:61:ALA:HA | 41:DG:64:THR:CG2 | 2.19 | 0.71 |
| 46:BP:41:ARG:HA | 46:BP:41:ARG:HE | 1.55 | 0.71 |
| 35:DA:1879:C:C2' | 35:DA:1880:C:H5'' | 2.20 | 0.71 |
| 55:DY:88:LYS:NZ | 55:DY:93:GLY:HA3 | 2.04 | 0.71 |
| 46:DP:111:ARG:HG2 | 46:DP:128:HIS:ND1 | 2.04 | 0.71 |
| 35:DA:1484:G:H3' | 35:DA:1485:G:H5'' | 1.71 | 0.71 |
| 11:CK:54:ARG:HH12 | 23:CW:40:C:H5' | 1.55 | 0.71 |
| 47:BQ:16:ARG:C | 47:BQ:17:LEU:HD23 | 2.09 | 0.71 |
| 35:DA:94:C:H5' | 35:DA:94(A):G:OP2 | 1.89 | 0.71 |
| 31:D6:28:ARG:O | 31:D6:32:ASN:HB3 | 1.90 | 0.71 |
| 48:DR:78:LYS:O | 48:DR:82:GLU:HB3 | 1.90 | 0.71 |
| 41:BG:118:ARG:HB2 | 41:BG:181:ARG:NH2 | 2.05 | 0.71 |
| 2:AB:69:LEU:HB3 | 2:AB:162:ILE:HG22 | 1.71 | 0.71 |
| 54:DX:63:LYS:CB | 54:DX:72:LYS:HG3 | 2.20 | 0.71 |
| 51:DU:90:VAL:HG21 | 52:DV:47:VAL:HG21 | 1.72 | 0.71 |
| 10:AJ:50:ILE:N | 10:AJ:50:ILE:HD13 | 2.02 | 0.71 |
| 33:D8:61:LEU:HD12 | 33:D8:63:PRO:HD2 | 1.72 | 0.71 |
| 46:DP:30:THR:HG22 | 46:DP:31:ALA:N | 2.02 | 0.71 |
| 33:B8:6:THR:HA | 33:B8:61:LEU:HD11 | 1.71 | 0.71 |
| 35:BA:1485:G:H2' | 35:BA:1486:A:H8 | 1.54 | 0.71 |
| 46:BP:144:GLU:N | 46:BP:145:PRO:HD3 | 2.06 | 0.71 |
| 47:DQ:16:ARG:C | 47:DQ:17:LEU:HD23 | 2.10 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 50:DT:3:ARG:CB | 50:DT:6:LEU:HB3 | 2.20 | 0.71 |
| 47:DQ:69:PHE:CD1 | 47:DQ:70:PRO:HD2 | 2.24 | 0.71 |
| 35:BA:1441:G:O2' | 35:BA:1442:G:H5' | 1.90 | 0.71 |
| 35:DA:2136:C:H2' | 35:DA:2137:C:H6 | 1.54 | 0.71 |
| 8:AH:42:GLU:HG3 | 8:AH:109:ILE:HD12 | 1.73 | 0.71 |
| 39:DE:4:ILE:HG21 | 39:DE:96:PHE:HE2 | 1.54 | 0.71 |
| 39:DE:176:ILE:N | 39:DE:176:ILE:HD12 | 2.05 | 0.71 |
| 1:AA:341:C:O2' | 1:AA:342:C:H5' | 1.91 | 0.71 |
| 13:CM:50:GLU:O | 13:CM:54:VAL:HG23 | 1.91 | 0.71 |
| 56:DZ:39:VAL:HG21 | 56:DZ:44:PHE:HB2 | 1.71 | 0.71 |
| 56:DZ:33:LEU:HD23 | 56:DZ:90:VAL:HG21 | 1.71 | 0.71 |
| 40:DF:40:GLN:NE2 | 40:DF:182:ASN:HB2 | 2.05 | 0.71 |
| 47:BQ:141:GLN:H | 56:BZ:99:TYR:HB2 | 1.54 | 0.71 |
| 38:DD:35:LYS:HB2 | 38:DD:63:ARG:HG2 | 1.70 | 0.71 |
| 35:BA:2126:A:H4' | 35:BA:2127:G:O5' | 1.90 | 0.71 |
| 55:DY:8:LYS:HE3 | 55:DY:72:VAL:HG23 | 1.70 | 0.71 |
| 45:BO:104:ARG:HH21 | 50:BT:33:LYS:HE2 | 1.55 | 0.71 |
| 20:CT:43:LEU:HD22 | 20:CT:48:LYS:HG3 | 1.73 | 0.71 |
| 35:DA:1484:G:H2' | 35:DA:1485:G:H5'' | 1.71 | 0.71 |
| 12:AL:18:VAL:HG23 | 12:AL:19:ARG:H | 1.53 | 0.71 |
| 6:AF:60:PHE:C | 6:AF:61:LEU:HD12 | 2.10 | 0.71 |
| 46:DP:90:ARG:HG2 | 46:DP:91:PHE:N | 2.04 | 0.71 |
| 35:BA:2136:C:H2' | 35:BA:2137:C:H6 | 1.54 | 0.71 |
| 42:BH:86:GLU:HB3 | 42:BH:132:ARG:HB3 | 1.71 | 0.71 |
| 39:BE:81:ILE:O | 39:BE:82:ARG:HB2 | 1.88 | 0.71 |
| 18:AR:25:THR:HG22 | 18:AR:42:ARG:HH11 | 1.54 | 0.71 |
| 2:CB:224:GLN:HG3 | 2:CB:229:VAL:HG22 | 1.73 | 0.71 |
| 50:DT:88:ILE:HG22 | 50:DT:89:VAL:HG23 | 1.72 | 0.71 |
| 35:BA:1697:G:H3' | 35:BA:1698:A:C5' | 2.21 | 0.71 |
| 44:DN:134:ARG:O | 44:DN:136:GLU:N | 2.24 | 0.71 |
| 50:BT:54:ARG:HA | 50:BT:59:THR:HB | 1.71 | 0.71 |
| 53:DW:59:VAL:HG12 | 53:DW:60:ASN:N | 2.04 | 0.71 |
| 22:CV:40:C:H2' | 22:CV:41:C:H6 | 1.55 | 0.71 |
| 1:AA:349:A:O2' | 1:AA:350:G:H5' | 1.90 | 0.71 |
| 41:BG:46:ALA:HB2 | 41:BG:88:ILE:CD1 | 2.15 | 0.71 |
| 46:BP:6:LEU:HG | 46:BP:8:PRO:O | 1.90 | 0.71 |
| 2:AB:8:LYS:HD3 | 2:AB:217:ARG:NH2 | 2.05 | 0.71 |
| 42:BH:71:LEU:H | 42:BH:74:ASN:HD22 | 1.37 | 0.71 |
| 51:BU:90:VAL:HG21 | 52:BV:47:VAL:HG21 | 1.70 | 0.71 |
| 39:DE:110:GLY:O | 48:DR:2:ARG:HG2 | 1.90 | 0.71 |
| 39:DE:78:LEU:C | 39:DE:79:ARG:HD2 | 2.10 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 52:BV:19:LYS:HB3 | 52:BV:94:LEU:O | 1.90 | 0.71 |
| 3:CC:15:THR:HG21 | 3:CC:181:ASN:HA | 1.72 | 0.71 |
| 1:CA:253:U:H2' | 1:CA:254:G:H8 | 1.55 | 0.71 |
| 53:DW:6:ILE:CG1 | 53:DW:104:THR:HG23 | 2.21 | 0.71 |
| 35:BA:809:G:O2' | 35:BA:810:U:H5' | 1.90 | 0.71 |
| 42:BH:24:VAL:HG23 | 42:BH:35:VAL:HB | 1.73 | 0.71 |
| 1:AA:76:C:H42 | 1:AA:93:G:H1 | 1.37 | 0.71 |
| 1:AA:97:G:O2' | 1:AA:98:G:H5'' | 1.90 | 0.71 |
| 35:DA:2348:U:C2' | 35:DA:2349:G:H5'' | 2.21 | 0.71 |
| 11:AK:21:ILE:HA | 11:AK:30:VAL:HG12 | 1.70 | 0.71 |
| 9:AI:4:TYR:HB2 | 9:AI:19:LEU:HB2 | 1.73 | 0.71 |
| 50:BT:96:ARG:HG2 | 50:BT:96:ARG:HH11 | 1.55 | 0.71 |
| 9:AI:9:ARG:HG2 | 9:AI:14:VAL:HG22 | 1.72 | 0.71 |
| 39:DE:92:THR:H | 39:DE:95:ILE:HD11 | 1.56 | 0.71 |
| 35:BA:1591:G:H5' | 35:BA:1591:G:H8 | 1.54 | 0.71 |
| 41:DG:15:VAL:HG13 | 41:DG:175:LEU:HD12 | 1.72 | 0.71 |
| 22:AY:43:C:H2' | 22:AY:44:G:O4' | 1.91 | 0.71 |
| 25:B0:43:THR:O | 25:B0:43:THR:HG23 | 1.89 | 0.71 |
| 22:CV:68:C:C3' | 22:CV:69:G:H5'' | 2.21 | 0.71 |
| 56:BZ:120:ILE:HB | 56:BZ:171:ILE:O | 1.90 | 0.71 |
| 55:BY:88:LYS:HZ1 | 55:BY:93:GLY:HA3 | 1.56 | 0.71 |
| 35:BA:2734:A:H5' | 35:BA:2735:G:OP2 | 1.90 | 0.71 |
| 1:AA:15:G:H4' | 5:AE:24:ARG:HH12 | 1.54 | 0.71 |
| 8:AH:119:LEU:N | 8:AH:119:LEU:HD23 | 2.06 | 0.71 |
| 38:DD:210:GLY:O | 38:DD:212:SER:N | 2.22 | 0.71 |
| 35:DA:330:A:HO2' | 35:DA:331:A:H8 | 1.38 | 0.71 |
| 21:AU:10:ARG:HA | 21:AU:13:ILE:HD12 | 1.73 | 0.71 |
| 41:DG:47:LYS:N | 41:DG:51:ARG:HD2 | 2.05 | 0.71 |
| 56:BZ:102:LEU:HG | 56:BZ:123:ASP:HA | 1.72 | 0.71 |
| 35:DA:2126:A:H4' | 35:DA:2127:G:O5' | 1.90 | 0.71 |
| 35:DA:1497:U:H5' | 35:DA:1498:C:H5 | 1.53 | 0.71 |
| 56:BZ:79:ARG:O | 56:BZ:80:ARG:HB2 | 1.90 | 0.71 |
| 22:AY:27:G:H21 | 22:AY:43:C:H5 | 1.36 | 0.71 |
| 31:B6:9:LEU:HD23 | 31:B6:10:LEU:H | 1.56 | 0.71 |
| 55:DY:60:PHE:HA | 55:DY:62:GLU:OE2 | 1.91 | 0.71 |
| 35:BA:70:G:H21 | 35:BA:71:A:H62 | 1.36 | 0.71 |
| 1:CA:57:G:H2' | 1:CA:58:C:C6 | 2.26 | 0.71 |
| 45:DO:104:ARG:NH1 | 50:DT:35:LYS:HD3 | 2.05 | 0.71 |
| 8:CH:119:LEU:HD12 | 8:CH:124:ALA:HA | 1.71 | 0.71 |
| 35:DA:774:A:H2 | 35:DA:787:U:HO2' | 1.38 | 0.71 |
| 29:D4:48:ILE:H | 29:D4:48:ILE:HD12 | 1.55 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 49:DS:74:ALA:HB1 | 49:DS:103:GLU:HB2 | 1.72 | 0.71 |
| 1:AA:385:C:O2' | 1:AA:386:C:H5' | 1.90 | 0.71 |
| 33:D8:14:VAL:HG23 | 33:D8:24:ALA:HB2 | 1.72 | 0.71 |
| 35:DA:1441:G:O2' | 35:DA:1442:G:H5' | 1.91 | 0.71 |
| 41:BG:138:GLN:OE1 | 41:BG:152:LEU:HA | 1.91 | 0.71 |
| 31:B6:28:ARG:O | 31:B6:32:ASN:HB3 | 1.90 | 0.71 |
| 56:DZ:39:VAL:HG23 | 56:DZ:40:ASP:N | 2.06 | 0.71 |
| 3:AC:70:VAL:HG12 | 3:AC:71:ALA:N | 2.00 | 0.71 |
| 40:BF:126:VAL:HG21 | 40:BF:129:PHE:CZ | 2.25 | 0.71 |
| 41:DG:130:ASN:HB3 | 41:DG:160:VAL:HA | 1.71 | 0.71 |
| 14:CN:25:VAL:HG22 | 14:CN:38:GLY:O | 1.90 | 0.71 |
| 42:BH:84:SER:O | 42:BH:85:LYS:HB3 | 1.90 | 0.71 |
| 14:CN:3:ARG:HB3 | 14:CN:3:ARG:HH11 | 1.56 | 0.71 |
| 30:D5:4:HIS:HB3 | 30:D5:5:PRO:HD3 | 1.72 | 0.71 |
| 35:BA:197:A:C8 | 35:BA:197:A:H5' | 2.26 | 0.71 |
| 1:AA:191:G:C4 | 20:AT:105:SER:HB3 | 2.26 | 0.71 |
| 1:CA:15:G:H4' | 5:CE:24:ARG:HH12 | 1.56 | 0.71 |
| 35:BA:2834:G:H5' | 35:BA:2835:A:OP2 | 1.91 | 0.71 |
| 1:AA:1003:G:H2' | 1:AA:1004:A:O4' | 1.90 | 0.71 |
| 25:D0:48:GLY:HA3 | 25:D0:80:HIS:CD2 | 2.25 | 0.71 |
| 38:BD:76:PRO:HG2 | 38:BD:98:VAL:HG21 | 1.73 | 0.71 |
| 3:AC:118:GLN:O | 3:AC:122:GLU:HG3 | 1.90 | 0.71 |
| 23:AW:6:G:O2' | 23:AW:7:A:H5' | 1.91 | 0.71 |
| 25:D0:56:ASP:O | 25:D0:57:PHE:HB2 | 1.91 | 0.71 |
| 35:DA:852:G:O2' | 35:DA:853:G:H5' | 1.91 | 0.71 |
| 1:CA:135:C:H2' | 1:CA:136:C:H5' | 1.72 | 0.71 |
| 1:AA:1053:G:C3' | 1:AA:1054:C:H5' | 2.21 | 0.70 |
| 31:D6:47:THR:HG22 | 31:D6:48:VAL:N | 2.05 | 0.70 |
| 9:CI:24:GLY:HA2 | 9:CI:59:PHE:O | 1.89 | 0.70 |
| 38:DD:43:ARG:HD2 | 38:DD:44:ASN:OD1 | 1.91 | 0.70 |
| 39:DE:109:LYS:CB | 48:DR:2:ARG:HH22 | 2.04 | 0.70 |
| 38:BD:43:ARG:HD2 | 38:BD:44:ASN:OD1 | 1.91 | 0.70 |
| 4:CD:31:CYS:O | 4:CD:33:MET:N | 2.24 | 0.70 |
| 46:DP:115:LEU:HA | 46:DP:134:ALA:HB2 | 1.73 | 0.70 |
| 55:DY:8:LYS:HD2 | 55:DY:8:LYS:N | 2.06 | 0.70 |
| 5:AE:50:GLU:OE2 | 5:AE:51:VAL:HG23 | 1.91 | 0.70 |
| 25:D0:43:THR:O | 25:D0:43:THR:HG23 | 1.89 | 0.70 |
| 8:AH:84:ARG:O | 8:AH:135:CYS:HB2 | 1.91 | 0.70 |
| 1:AA:1437:C:H2' | 1:AA:1438:G:H8 | 1.54 | 0.70 |
| 3:CC:35:GLU:O | 3:CC:39:ILE:HG13 | 1.91 | 0.70 |
| 25:D0:36:ILE:HG23 | 35:DA:2354:G:O2' | 1.90 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:1986:A:C3' | 35:BA:1987:G:H5'' | 2.20 | 0.70 |
| 35:DA:1986:A:C3' | 35:DA:1987:G:H5'' | 2.21 | 0.70 |
| 35:BA:2348:U:C2' | 35:BA:2349:G:H5'' | 2.21 | 0.70 |
| 6:CF:87:ARG:HG2 | 6:CF:87:ARG:HH11 | 1.53 | 0.70 |
| 35:BA:1021:A:H8 | 35:BA:1021:A:H3' | 1.56 | 0.70 |
| 40:DF:4:VAL:HA | 40:DF:19:GLU:HB3 | 1.73 | 0.70 |
| 40:BF:103:LYS:HA | 40:BF:106:ARG:HG3 | 1.71 | 0.70 |
| 12:CL:47:LYS:HB3 | 12:CL:48:PRO:CD | 2.17 | 0.70 |
| 50:DT:42:ILE:HG21 | 50:DT:83:ILE:HG12 | 1.72 | 0.70 |
| 51:DU:112:ARG:NH2 | 52:DV:46:VAL:HG11 | 2.06 | 0.70 |
| 35:DA:2312:U:H2' | 35:DA:2313:C:C5' | 2.18 | 0.70 |
| 42:DH:84:SER:O | 42:DH:85:LYS:HB3 | 1.91 | 0.70 |
| 39:BE:51:PHE:CE1 | 39:BE:52:LEU:HD13 | 2.26 | 0.70 |
| 43:BI:132:PRO:HG2 | 43:BI:133:HIS:CD2 | 2.26 | 0.70 |
| 39:BE:27:LEU:HD12 | 39:BE:180:ASN:O | 1.91 | 0.70 |
| 54:BX:80:ILE:O | 54:BX:80:ILE:HD13 | 1.91 | 0.70 |
| 1:AA:1439:C:O2 | 1:AA:1439:C:H2' | 1.91 | 0.70 |
| 25:D0:68:GLU:CG | 25:D0:80:HIS:HB2 | 2.20 | 0.70 |
| 48:BR:104:ARG:HB2 | 48:BR:104:ARG:HH11 | 1.56 | 0.70 |
| 1:AA:135:C:H2' | 1:AA:136:C:H5' | 1.73 | 0.70 |
| 50:BT:129:ARG:CZ | 50:BT:131:ALA:HB3 | 2.21 | 0.70 |
| 1:AA:1199:U:H4' | 10:AJ:54:PHE:CZ | 2.26 | 0.70 |
| 39:DE:57:LYS:C | 39:DE:59:VAL:H | 1.94 | 0.70 |
| 39:BE:28:ALA:HB3 | 39:BE:93:VAL:HG22 | 1.72 | 0.70 |
| 35:BA:2312:U:H2' | 35:BA:2313:C:C5' | 2.20 | 0.70 |
| 55:BY:15:VAL:HG12 | 55:BY:17:SER:H | 1.56 | 0.70 |
| 44:BN:67:LEU:O | 44:BN:68:GLU:HB2 | 1.91 | 0.70 |
| 43:DI:132:PRO:HG2 | 43:DI:133:HIS:CD2 | 2.26 | 0.70 |
| 55:DY:50:ARG:C | 55:DY:52:SER:H | 1.95 | 0.70 |
| 35:BA:795:C:H2' | 35:BA:796:C:C6 | 2.24 | 0.70 |
| 1:CA:235:C:H1' | 17:CQ:61:GLU:OE1 | 1.91 | 0.70 |
| 1:CA:191:G:C4 | 20:CT:105:SER:HB3 | 2.26 | 0.70 |
| 43:DI:10:GLU:OE2 | 43:DI:11:ASN:HB2 | 1.91 | 0.70 |
| 35:BA:1639:U:C2' | 35:BA:1640:C:H5'' | 2.21 | 0.70 |
| 3:CC:150:LYS:HG3 | 3:CC:169:ALA:HB2 | 1.72 | 0.70 |
| 35:DA:34:C:H2' | 35:DA:35:G:H5' | 1.73 | 0.70 |
| 44:BN:4:TYR:CD1 | 44:BN:4:TYR:N | 2.59 | 0.70 |
| 39:BE:57:LYS:C | 39:BE:59:VAL:H | 1.93 | 0.70 |
| 3:AC:73:PRO:HA | 3:AC:76:VAL:HG13 | 1.73 | 0.70 |
| 10:AJ:6:ILE:HG22 | 10:AJ:98:ILE:HG13 | 1.73 | 0.70 |
| 3:AC:30:ARG:HH12 | 14:AN:35:ARG:HA | 1.56 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:27:G:O2' | 35:BA:28:A:H8 | 1.70 | 0.70 |
| 4:AD:170:VAL:HG22 | 4:AD:171:GLY:N | 2.07 | 0.70 |
| 35:BA:2736:G:H5' | 35:BA:2736:G:H8 | 1.56 | 0.70 |
| 35:DA:106:C:H2' | 35:DA:107:C:C6 | 2.26 | 0.70 |
| 1:CA:1003:G:H2' | 1:CA:1004:A:O4' | 1.90 | 0.70 |
| 38:DD:10:THR:HG23 | 38:DD:13:ARG:CB | 2.21 | 0.70 |
| 8:AH:44:PHE:O | 8:AH:45:ILE:HG23 | 1.92 | 0.70 |
| 46:DP:136:GLU:O | 46:DP:139:LYS:HB3 | 1.91 | 0.70 |
| 39:DE:36:ARG:HH12 | 39:DE:88:GLY:CA | 2.03 | 0.70 |
| 10:AJ:50:ILE:HG21 | 10:AJ:57:LYS:HD2 | 1.71 | 0.70 |
| 10:AJ:62:HIS:O | 14:AN:59:ALA:HB3 | 1.90 | 0.70 |
| 56:BZ:167:PRO:O | 56:BZ:168:GLU:HB2 | 1.91 | 0.70 |
| 1:CA:376:G:OP2 | 16:CP:67:THR:HG21 | 1.91 | 0.70 |
| 47:BQ:134:ARG:HA | 47:BQ:137:TYR:CE1 | 2.26 | 0.70 |
| 1:AA:223:U:H2' | 1:AA:224:C:C6 | 2.26 | 0.70 |
| 37:BC:71:GLN:HG3 | 37:BC:73:ARG:HE | 1.56 | 0.70 |
| 7:CG:145:ALA:C | 7:CG:147:ALA:H | 1.91 | 0.70 |
| 1:AA:707:C:O2' | 1:AA:708:C:H5' | 1.91 | 0.70 |
| 1:CA:405:U:H3' | 1:CA:406:G:H5' | 1.72 | 0.70 |
| 50:BT:28:VAL:CG1 | 50:BT:46:GLU:HA | 2.20 | 0.70 |
| 41:DG:46:ALA:HB2 | 41:DG:88:ILE:HB | 1.73 | 0.70 |
| 31:D6:9:LEU:HD23 | 31:D6:10:LEU:H | 1.54 | 0.70 |
| 16:AP:18:ARG:O | 16:AP:20:VAL:HG12 | 1.91 | 0.70 |
| 51:DU:9:VAL:HG12 | 51:DU:13:LYS:HE2 | 1.72 | 0.70 |
| 43:DI:58:LEU:C | 43:DI:60:GLU:H | 1.95 | 0.70 |
| 49:BS:26:LEU:HG | 49:BS:39:ILE:CD1 | 2.20 | 0.70 |
| 41:BG:146:TYR:O | 41:BG:149:VAL:HG22 | 1.92 | 0.70 |
| 2:CB:141:GLU:O | 2:CB:145:LEU:HD23 | 1.91 | 0.70 |
| 20:AT:35:THR:HA | 20:AT:38:LYS:HD3 | 1.72 | 0.70 |
| 26:B1:12:PRO:HB3 | 26:B1:43:TYR:HD2 | 1.57 | 0.70 |
| 35:BA:484:C:H2' | 35:BA:485:C:C6 | 2.26 | 0.70 |
| 35:BA:673:C:H5' | 40:BF:54:ARG:HH12 | 1.55 | 0.70 |
| 56:BZ:118:GLN:HG2 | 56:BZ:119:GLU:H | 1.57 | 0.70 |
| 1:CA:1199:U:H4' | 10:CJ:54:PHE:CZ | 2.27 | 0.70 |
| 44:BN:134:ARG:O | 44:BN:136:GLU:N | 2.25 | 0.70 |
| 51:DU:83:LEU:HG | 51:DU:88:ILE:CD1 | 2.22 | 0.70 |
| 51:DU:92:ARG:O | 51:DU:94:ASN:N | 2.25 | 0.70 |
| 30:D5:40:LYS:NZ | 30:D5:46:CYS:HB3 | 2.06 | 0.70 |
| 10:CJ:21:GLN:HA | 10:CJ:24:VAL:CG2 | 2.21 | 0.70 |
| 55:BY:46:LYS:H | 55:BY:62:GLU:HG2 | 1.57 | 0.70 |
| 56:BZ:153:SER:N | 56:BZ:167:PRO:HB2 | 2.06 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BA:1484:G:C2' | 35:BA:1485:G:H5'' | 2.22 | 0.70 |
| 9:CI:4:TYR:HB2 | 9:CI:19:LEU:HB2 | 1.73 | 0.70 |
| 47:BQ:17:LEU:C | 47:BQ:18:LYS:HD2 | 2.12 | 0.70 |
| 24:CX:13:A:H3' | 24:CX:14:A:C5' | 2.22 | 0.70 |
| 2:CB:178:ARG:HH22 | 2:CB:196:LEU:HA | 1.55 | 0.70 |
| 40:DF:126:VAL:HG21 | 40:DF:129:PHE:CZ | 2.26 | 0.70 |
| 35:BA:612:C:H2' | 35:BA:613:G:C5' | 2.09 | 0.70 |
| 38:BD:39:LYS:NZ | 38:BD:87:ASN:HB3 | 2.07 | 0.70 |
| 56:DZ:150:LEU:CD1 | 56:DZ:150:LEU:H | 2.04 | 0.70 |
| 3:CC:108:ASN:HD21 | 3:CC:144:SER:HB2 | 1.57 | 0.70 |
| 4:AD:22:LYS:HB2 | 4:AD:26:CYS:HB2 | 1.74 | 0.70 |
| 8:CH:91:ARG:HG2 | 17:CQ:34:LYS:H | 1.56 | 0.70 |
| 1:CA:976:G:H5' | 1:CA:1358:U:O2' | 1.91 | 0.70 |
| 30:B5:46:CYS:SG | 30:B5:47:PRO:CD | 2.79 | 0.70 |
| 48:BR:42:LYS:O | 48:BR:45:ARG:HG2 | 1.91 | 0.70 |
| 43:BI:113:ARG:HB3 | 43:BI:131:LYS:HB2 | 1.73 | 0.70 |
| 43:BI:113:ARG:O | 43:BI:131:LYS:HG2 | 1.92 | 0.70 |
| 2:AB:27:LYS:HD3 | 2:AB:195:ASP:OD1 | 1.92 | 0.70 |
| 6:AF:87:ARG:HG2 | 6:AF:87:ARG:HH11 | 1.57 | 0.70 |
| 41:BG:66:GLN:NE2 | 41:BG:94:LEU:HD23 | 2.07 | 0.70 |
| 10:AJ:82:ILE:O | 10:AJ:86:MET:HB3 | 1.91 | 0.70 |
| 39:BE:37:ARG:HA | 39:BE:42:ASP:OD2 | 1.92 | 0.70 |
| 10:CJ:82:ILE:O | 10:CJ:86:MET:HB3 | 1.91 | 0.70 |
| 1:AA:539:A:H2' | 1:AA:540:G:C8 | 2.27 | 0.70 |
| 40:BF:38:ARG:HD3 | 40:BF:99:TYR:OH | 1.92 | 0.70 |
| 39:DE:95:ILE:HD12 | 39:DE:95:ILE:N | 2.06 | 0.70 |
| 46:DP:16:ARG:NH1 | 46:DP:16:ARG:HB2 | 2.07 | 0.70 |
| 46:DP:18:ARG:HH11 | 46:DP:18:ARG:CB | 2.05 | 0.70 |
| 38:BD:108:PRO:HG2 | 38:BD:111:LEU:HB2 | 1.74 | 0.70 |
| 31:B6:23:THR:HG21 | 35:BA:2419:U:C5' | 2.22 | 0.70 |
| 31:D6:23:THR:HG21 | 35:DA:2419:U:H5' | 1.72 | 0.70 |
| 34:B9:15:LYS:HE2 | 34:B9:17:ILE:HD11 | 1.73 | 0.70 |
| 12:CL:55:VAL:HG12 | 12:CL:56:ALA:H | 1.55 | 0.70 |
| 11:CK:29:ILE:HD12 | 11:CK:43:SER:O | 1.92 | 0.70 |
| 11:CK:21:ILE:HA | 11:CK:30:VAL:HG12 | 1.74 | 0.70 |
| 1:AA:373:A:O2' | 1:AA:374:A:H5' | 1.91 | 0.70 |
| 48:DR:11:ASN:OD1 | 48:DR:12:ARG:N | 2.24 | 0.70 |
| 46:BP:136:GLU:O | 46:BP:139:LYS:HB3 | 1.91 | 0.70 |
| 1:CA:1010:G:N2 | 1:CA:1020:U:H1' | 2.06 | 0.70 |
| 1:CA:662:G:H2' | 1:CA:663:A:C8 | 2.26 | 0.70 |
| 46:DP:6:LEU:HG | 46:DP:8:PRO:O | 1.92 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:DF:155:LEU:HD23 | 40:DF:186:ILE:HD13 | 1.74 | 0.70 |
| 42:DH:71:LEU:H | 42:DH:74:ASN:HD22 | 1.39 | 0.70 |
| 48:DR:2:ARG:HH11 | 48:DR:5:LYS:CE | 2.04 | 0.70 |
| 39:DE:28:ALA:HB3 | 39:DE:93:VAL:HG22 | 1.74 | 0.70 |
| 52:DV:19:LYS:HB3 | 52:DV:94:LEU:O | 1.91 | 0.70 |
| 56:BZ:31:ARG:CB | 56:BZ:31:ARG:HH11 | 2.04 | 0.70 |
| 46:BP:23:PRO:HD2 | 46:BP:33:ARG:CZ | 2.22 | 0.70 |
| 35:DA:271(F):C:H2' | 35:DA:271(G):C:O4' | 1.91 | 0.70 |
| 31:D6:9:LEU:CD2 | 31:D6:10:LEU:H | 2.04 | 0.70 |
| 35:BA:807:U:H2' | 35:BA:808:G:H8 | 1.57 | 0.70 |
| 8:AH:86:ILE:HG21 | 8:AH:133:LEU:HD22 | 1.73 | 0.70 |
| 35:DA:2683:C:P | 50:DT:53:ARG:HH22 | 2.14 | 0.70 |
| 35:BA:1227:G:OP1 | 51:BU:13:LYS:HD2 | 1.90 | 0.70 |
| 2:CB:178:ARG:HB2 | 2:CB:178:ARG:HH11 | 1.57 | 0.70 |
| 37:DC:71:GLN:HG3 | 37:DC:73:ARG:HE | 1.57 | 0.70 |
| 42:DH:41:MET:HG2 | 42:DH:55:PRO:HD3 | 1.73 | 0.70 |
| 11:AK:109:VAL:HG13 | 18:AR:85:LEU:O | 1.91 | 0.70 |
| 1:CA:838:G:H2' | 1:CA:839:U:H5'' | 1.74 | 0.70 |
| 1:AA:723:U:H2' | 1:AA:723:U:O2 | 1.92 | 0.70 |
| 52:DV:1:MET:HA | 52:DV:1:MET:HE2 | 1.72 | 0.70 |
| 39:BE:92:THR:H | 39:BE:95:ILE:HD11 | 1.57 | 0.69 |
| 41:BG:60:LEU:O | 41:BG:64:THR:HG22 | 1.91 | 0.69 |
| 41:DG:128:ARG:C | 41:DG:130:ASN:N | 2.46 | 0.69 |
| 41:DG:12:TYR:HA | 41:DG:16:ARG:HB2 | 1.72 | 0.69 |
| 36:DB:20:C:H2' | 36:DB:21:G:C5' | 2.22 | 0.69 |
| 46:BP:98:GLU:O | 46:BP:101:VAL:HG22 | 1.92 | 0.69 |
| 27:D2:65:ASN:HD22 | 27:D2:69:ARG:NH2 | 1.89 | 0.69 |
| 27:D2:65:ASN:O | 27:D2:69:ARG:HG3 | 1.91 | 0.69 |
| 42:DH:24:VAL:HG23 | 42:DH:35:VAL:HB | 1.72 | 0.69 |
| 35:DA:549:G:H2' | 35:DA:551:G:H5'' | 1.74 | 0.69 |
| 35:DA:2736:G:H5' | 35:DA:2736:G:H8 | 1.58 | 0.69 |
| 1:CA:1343:G:H1' | 9:CI:121:ARG:NH1 | 2.07 | 0.69 |
| 1:AA:474:G:H2' | 1:AA:475:G:H8 | 1.57 | 0.69 |
| 17:AQ:14:LYS:HB2 | 17:AQ:14:LYS:HZ3 | 1.57 | 0.69 |
| 19:AS:10:PHE:HZ | 19:AS:70:LYS:HD2 | 1.57 | 0.69 |
| 36:DB:111:G:O2' | 36:DB:112:U:H5' | 1.92 | 0.69 |
| 33:B8:9:GLY:O | 33:B8:13:ARG:HG2 | 1.91 | 0.69 |
| 39:BE:77:ILE:CG2 | 39:BE:78:LEU:H | 1.89 | 0.69 |
| 51:DU:91:ASP:CG | 51:DU:96:ALA:HB2 | 2.12 | 0.69 |
| 10:CJ:6:ILE:HG22 | 10:CJ:98:ILE:HG13 | 1.74 | 0.69 |
| 42:BH:54:ARG:HB3 | 42:BH:65:HIS:HD2 | 1.57 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 45:DO:64:ARG:NH1 | 45:DO:83:ALA:HB2 | 2.07 | 0.69 |
| 42:DH:159:GLU:HG3 | 42:DH:160:LYS:N | 2.06 | 0.69 |
| 27:B2:2:LYS:HD2 | 27:B2:5:GLU:OE1 | 1.91 | 0.69 |
| 33:B8:61:LEU:HD12 | 33:B8:63:PRO:HD2 | 1.73 | 0.69 |
| 55:DY:50:ARG:HD2 | 55:DY:57:GLN:O | 1.92 | 0.69 |
| 35:BA:796:C:H2' | 35:BA:797:C:C6 | 2.27 | 0.69 |
| 35:BA:1528(A):A:C3' | 35:BA:1529:G:H5'' | 2.21 | 0.69 |
| 41:BG:137:GLU:HB3 | 41:BG:152:LEU:HD11 | 1.75 | 0.69 |
| 1:CA:664:G:H22 | 1:CA:741:G:H1 | 1.37 | 0.69 |
| 27:D2:63:VAL:O | 27:D2:66:GLU:HG2 | 1.92 | 0.69 |
| 5:CE:71:LEU:O | 5:CE:72:GLN:HG3 | 1.91 | 0.69 |
| 1:AA:1317:C:OP2 | 14:AN:17:LYS:HG2 | 1.92 | 0.69 |
| 1:CA:134:A:H61 | 16:CP:25:ARG:HH12 | 1.40 | 0.69 |
| 35:BA:1876:A:H2' | 35:BA:1877:A:C8 | 2.27 | 0.69 |
| 35:BA:221:A:H4' | 35:BA:222:A:O5' | 1.92 | 0.69 |
| 9:CI:15:ALA:HA | 9:CI:65:VAL:HA | 1.74 | 0.69 |
| 39:BE:36:ARG:HH12 | 39:BE:88:GLY:CA | 2.04 | 0.69 |
| 39:BE:55:ASN:HD21 | 39:BE:75:VAL:HG22 | 1.57 | 0.69 |
| 35:BA:1689:A:H62 | 35:BA:1698:A:H2 | 1.40 | 0.69 |
| 56:BZ:40:ASP:HB3 | 56:BZ:43:GLU:HB2 | 1.74 | 0.69 |
| 53:DW:5:ALA:O | 53:DW:6:ILE:HB | 1.92 | 0.69 |
| 38:DD:26:LYS:HD2 | 38:DD:26:LYS:O | 1.92 | 0.69 |
| 56:BZ:166:SER:HB2 | 56:BZ:167:PRO:C | 2.13 | 0.69 |
| 1:CA:624:C:H2' | 1:CA:625:G:H8 | 1.56 | 0.69 |
| 1:AA:1028:C:C2' | 1:AA:1029:C:H5' | 2.22 | 0.69 |
| 35:DA:1485:G:H2' | 35:DA:1486:A:H8 | 1.55 | 0.69 |
| 35:DA:70:G:H21 | 35:DA:71:A:H62 | 1.39 | 0.69 |
| 1:AA:337:C:H2' | 1:AA:338:A:C8 | 2.28 | 0.69 |
| 15:AO:39:LEU:HD12 | 15:AO:59:MET:CE | 2.23 | 0.69 |
| 34:D9:15:LYS:HE2 | 34:D9:17:ILE:HD11 | 1.74 | 0.69 |
| 41:BG:118:ARG:HB2 | 41:BG:181:ARG:HH21 | 1.56 | 0.69 |
| 11:CK:109:VAL:HG13 | 18:CR:85:LEU:O | 1.92 | 0.69 |
| 41:DG:91:ARG:HG2 | 41:DG:92:VAL:N | 2.07 | 0.69 |
| 40:BF:39:TRP:O | 40:BF:43:LYS:HG2 | 1.92 | 0.69 |
| 4:CD:7:PRO:HB2 | 4:CD:10:ARG:HD2 | 1.74 | 0.69 |
| 27:B2:10:LEU:HD13 | 27:B2:14:ARG:NH2 | 2.07 | 0.69 |
| 35:DA:1639:U:C2' | 35:DA:1640:C:H5'' | 2.22 | 0.69 |
| 41:BG:47:LYS:NZ | 41:BG:82:LEU:HD12 | 2.07 | 0.69 |
| 31:B6:15:GLU:HG2 | 31:B6:18:ARG:HE | 1.57 | 0.69 |
| 1:AA:1255:G:H5' | 1:AA:1256:A:OP1 | 1.93 | 0.69 |
| 39:BE:95:ILE:N | 39:BE:95:ILE:HD12 | 2.06 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 51:DU:68:ALA:CB | 51:DU:99:ALA:HB1 | 2.23 | 0.69 |
| 35:DA:997:G:OP1 | 51:DU:93:LYS:HD3 | 1.91 | 0.69 |
| 56:DZ:166:SER:HB2 | 56:DZ:168:GLU:N | 2.07 | 0.69 |
| 19:AS:6:LYS:HG2 | 19:AS:7:LYS:CE | 2.22 | 0.69 |
| 45:BO:7:TYR:CE1 | 45:BO:20:MET:HE3 | 2.27 | 0.69 |
| 46:BP:107:LYS:O | 46:BP:109:GLY:N | 2.25 | 0.69 |
| 55:BY:8:LYS:HE3 | 55:BY:72:VAL:HG23 | 1.73 | 0.69 |
| 36:DB:41:U:C5 | 41:DG:69:ALA:HB1 | 2.27 | 0.69 |
| 1:CA:1293:G:HO2' | 1:CA:1294:G:H8 | 1.37 | 0.69 |
| 4:CD:133:VAL:HG11 | 4:CD:138:TYR:CD1 | 2.27 | 0.69 |
| 1:AA:57:G:H2' | 1:AA:58:C:C6 | 2.27 | 0.69 |
| 46:BP:71:VAL:CG1 | 46:BP:72:PRO:HD3 | 2.21 | 0.69 |
| 22:CY:19:G:H1' | 22:CY:57:G:N2 | 2.07 | 0.69 |
| 56:DZ:75:ASN:C | 56:DZ:76:LEU:HD22 | 2.12 | 0.69 |
| 35:BA:1986:A:C2' | 35:BA:1987:G:H5'' | 2.22 | 0.69 |
| 20:AT:82:SER:O | 20:AT:86:ARG:HB2 | 1.92 | 0.69 |
| 41:BG:137:GLU:HG2 | 41:BG:152:LEU:HD21 | 1.74 | 0.69 |
| 47:DQ:78:PRO:O | 47:DQ:81:VAL:HG13 | 1.93 | 0.69 |
| 1:AA:447:G:H2' | 1:AA:485:G:N2 | 2.08 | 0.69 |
| 54:BX:63:LYS:CB | 54:BX:72:LYS:HG3 | 2.21 | 0.69 |
| 50:BT:42:ILE:HG21 | 50:BT:83:ILE:HG12 | 1.74 | 0.69 |
| 12:AL:47:LYS:HB3 | 12:AL:48:PRO:CD | 2.19 | 0.69 |
| 35:DA:1495:A:N3 | 35:DA:1496:A:C2 | 2.60 | 0.69 |
| 35:BA:1495:A:N3 | 35:BA:1496:A:C2 | 2.60 | 0.69 |
| 41:DG:115:ARG:HH11 | 41:DG:140:ILE:HD11 | 1.58 | 0.69 |
| 3:CC:30:ARG:HH12 | 14:CN:35:ARG:HA | 1.56 | 0.69 |
| 1:CA:1028:C:C2' | 1:CA:1029:C:H5' | 2.22 | 0.69 |
| 35:BA:2522:U:C2' | 35:BA:2523:G:H5'' | 2.22 | 0.69 |
| 1:AA:376:G:OP2 | 16:AP:67:THR:HG21 | 1.92 | 0.69 |
| 23:CW:16:U:H3' | 23:CW:17:C:H5' | 1.73 | 0.69 |
| 43:BI:48:GLU:HA | 43:BI:51:ILE:HB | 1.74 | 0.69 |
| 35:DA:389:G:N1 | 46:DP:70:GLN:HG3 | 2.07 | 0.69 |
| 46:DP:71:VAL:HG13 | 46:DP:72:PRO:HD3 | 1.74 | 0.69 |
| 42:BH:153:LYS:N | 42:BH:153:LYS:HD3 | 2.06 | 0.69 |
| 1:AA:61:G:H2' | 1:AA:62:U:O4' | 1.92 | 0.69 |
| 35:DA:784:A:H5' | 35:DA:785:G:OP1 | 1.92 | 0.69 |
| 52:DV:81:TYR:C | 52:DV:82:ARG:HD2 | 2.11 | 0.69 |
| 35:BA:1108:U:H2' | 35:BA:1109:C:H5' | 1.72 | 0.69 |
| 30:B5:25:LEU:HD12 | 53:BW:19:LEU:HB3 | 1.74 | 0.69 |
| 4:CD:189:PRO:HB2 | 4:CD:194:LEU:HD21 | 1.75 | 0.69 |
| 35:DA:1021:A:H3' | 35:DA:1021:A:H8 | 1.58 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 31:B6:45:LYS:HZ1 | 35:BA:2370:G:H21 | 1.38 | 0.69 |
| 49:BS:13:ARG:O | 49:BS:14:VAL:HB | 1.93 | 0.69 |
| 55:DY:96:ILE:HD12 | 55:DY:99:CYS:CB | 2.22 | 0.69 |
| 49:BS:65:VAL:C | 49:BS:67:ARG:H | 1.96 | 0.69 |
| 31:B6:11:LEU:HD12 | 31:B6:51:GLU:HB3 | 1.75 | 0.69 |
| 33:B8:36:LYS:HB3 | 33:B8:40:GLU:OE1 | 1.91 | 0.69 |
| 55:BY:50:ARG:C | 55:BY:52:SER:H | 1.95 | 0.69 |
| 41:BG:130:ASN:HB3 | 41:BG:160:VAL:HA | 1.72 | 0.69 |
| 56:BZ:151:HIS:HA | 56:BZ:171:ILE:CD1 | 2.23 | 0.69 |
| 35:DA:1528(A):A:C3' | 35:DA:1529:G:H5'' | 2.21 | 0.69 |
| 35:BA:1484:G:H3' | 35:BA:1485:G:H5'' | 1.73 | 0.69 |
| 2:AB:167:PRO:HG2 | 2:AB:192:SER:OG | 1.92 | 0.69 |
| 1:AA:626:U:H5'' | 16:AP:38:TYR:CD2 | 2.26 | 0.69 |
| 56:BZ:118:GLN:HG2 | 56:BZ:119:GLU:N | 2.07 | 0.69 |
| 35:DA:221:A:H4' | 35:DA:222:A:O5' | 1.92 | 0.69 |
| 21:CU:10:ARG:HA | 21:CU:13:ILE:HD12 | 1.74 | 0.69 |
| 8:AH:120:THR:HG23 | 8:AH:123:GLU:OE1 | 1.91 | 0.69 |
| 1:CA:1298:C:H2' | 7:CG:114:ARG:HH12 | 1.56 | 0.69 |
| 40:BF:4:VAL:HA | 40:BF:19:GLU:HB3 | 1.73 | 0.69 |
| 50:DT:80:SER:CB | 50:DT:81:PRO:HD3 | 2.16 | 0.69 |
| 1:CA:1053:G:C3' | 1:CA:1054:C:H5' | 2.22 | 0.69 |
| 38:BD:94:LEU:HD23 | 38:BD:95:LEU:N | 2.07 | 0.69 |
| 40:BF:40:GLN:NE2 | 40:BF:182:ASN:HB2 | 2.08 | 0.69 |
| 22:AY:63:G:H2' | 22:AY:64:A:H8 | 1.57 | 0.69 |
| 41:BG:28:VAL:O | 41:BG:31:VAL:HG12 | 1.92 | 0.69 |
| 46:BP:146:VAL:HG22 | 46:BP:147:LEU:N | 2.08 | 0.69 |
| 8:CH:84:ARG:O | 8:CH:135:CYS:HB2 | 1.93 | 0.69 |
| 35:BA:1946:U:H2' | 35:BA:1947:C:C6 | 2.28 | 0.69 |
| 1:CA:101:A:H2' | 1:CA:102:G:H8 | 1.58 | 0.69 |
| 49:DS:26:LEU:HG | 49:DS:39:ILE:CD1 | 2.22 | 0.69 |
| 1:CA:539:A:OP2 | 12:CL:115:LYS:HE3 | 1.93 | 0.69 |
| 28:D3:17:LYS:HD3 | 35:DA:969:U:OP1 | 1.93 | 0.69 |
| 35:BA:106:C:H2' | 35:BA:107:C:C6 | 2.28 | 0.69 |
| 44:DN:73:THR:CG2 | 44:DN:82:LEU:HD11 | 2.23 | 0.69 |
| 26:B1:45:ASN:ND2 | 26:B1:47:GLN:NE2 | 2.40 | 0.69 |
| 50:DT:92:GLY:HA2 | 50:DT:114:LEU:HB3 | 1.75 | 0.69 |
| 56:DZ:40:ASP:HB2 | 56:DZ:43:GLU:OE1 | 1.93 | 0.69 |
| 9:CI:63:ILE:HD11 | 9:CI:81:ILE:HD11 | 1.74 | 0.69 |
| 50:DT:28:VAL:CG1 | 50:DT:46:GLU:HA | 2.21 | 0.69 |
| 42:DH:71:LEU:H | 42:DH:74:ASN:ND2 | 1.90 | 0.69 |
| 39:DE:69:LYS:HD2 | 39:DE:90:THR:OG1 | 1.92 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:71:ALA:CB | 3:AC:109:PRO:HG3 | 2.23 | 0.69 |
| 13:CM:76:ALA:HA | 13:CM:79:LYS:CG | 2.22 | 0.69 |
| 42:DH:44:VAL:HG12 | 42:DH:45:VAL:N | 2.06 | 0.69 |
| 46:DP:30:THR:CG2 | 46:DP:31:ALA:H | 1.99 | 0.69 |
| 52:BV:18:LEU:HD13 | 52:BV:19:LYS:N | 2.07 | 0.69 |
| 52:DV:18:LEU:CD1 | 52:DV:19:LYS:H | 2.04 | 0.69 |
| 19:AS:6:LYS:HD2 | 19:AS:6:LYS:N | 2.07 | 0.69 |
| 42:DH:54:ARG:HB3 | 42:DH:65:HIS:HD2 | 1.57 | 0.69 |
| 37:BC:168:THR:HA | 37:BC:173:ALA:CB | 2.23 | 0.69 |
| 46:BP:7:ARG:NH1 | 46:BP:7:ARG:O | 2.26 | 0.69 |
| 35:DA:1697:G:H3' | 35:DA:1698:A:C5' | 2.22 | 0.69 |
| 23:AW:16:U:H3' | 23:AW:17:C:C5' | 2.21 | 0.69 |
| 55:DY:46:LYS:H | 55:DY:62:GLU:HG2 | 1.58 | 0.69 |
| 1:AA:101:A:H2' | 1:AA:102:G:H8 | 1.57 | 0.69 |
| 42:BH:24:VAL:CG2 | 42:BH:35:VAL:HB | 2.23 | 0.69 |
| 19:AS:29:ARG:HD2 | 19:AS:30:LEU:N | 2.08 | 0.69 |
| 43:BI:47:LEU:HG | 43:BI:51:ILE:CG1 | 2.22 | 0.69 |
| 16:CP:18:ARG:O | 16:CP:20:VAL:HG12 | 1.93 | 0.69 |
| 24:AX:13:A:H3' | 24:AX:14:A:C5' | 2.21 | 0.69 |
| 35:BA:61:G:H1 | 35:BA:94:C:H42 | 1.41 | 0.69 |
| 35:BA:1987:G:H5' | 35:BA:1987:G:C8 | 2.26 | 0.69 |
| 44:BN:1:MET:HG2 | 44:BN:2:LYS:N | 2.07 | 0.69 |
| 35:BA:671:C:O2' | 35:BA:672:C:H5' | 1.92 | 0.69 |
| 2:CB:178:ARG:HH22 | 2:CB:196:LEU:CA | 2.06 | 0.69 |
| 1:CA:841:U:H3' | 1:CA:848:C:H5' | 1.75 | 0.69 |
| 22:AY:67:C:H2' | 22:AY:68:C:C6 | 2.27 | 0.69 |
| 1:CA:20:U:H2' | 1:CA:21:G:O4' | 1.91 | 0.69 |
| 1:AA:1040:U:H2' | 1:AA:1041:A:C8 | 2.27 | 0.69 |
| 56:DZ:131:ARG:HG2 | 56:DZ:131:ARG:HH11 | 1.58 | 0.69 |
| 15:AO:61:GLY:O | 15:AO:65:ARG:HD3 | 1.92 | 0.69 |
| 47:DQ:103:MET:HE1 | 47:DQ:125:LEU:HD13 | 1.75 | 0.69 |
| 35:BA:557:U:H2' | 35:BA:558:G:H8 | 1.58 | 0.69 |
| 35:DA:2834:G:H5' | 35:DA:2835:A:OP2 | 1.92 | 0.69 |
| 11:AK:116:HIS:O | 11:AK:117:ASN:HB2 | 1.93 | 0.69 |
| 22:CV:14:A:C2 | 22:CV:22:G:H1' | 2.27 | 0.69 |
| 35:BA:2340:G:O2' | 35:BA:2341:G:H5' | 1.92 | 0.69 |
| 47:DQ:141:GLN:OXT | 56:DZ:98:MET:HB2 | 1.92 | 0.69 |
| 9:AI:15:ALA:HA | 9:AI:65:VAL:HA | 1.74 | 0.69 |
| 48:DR:2:ARG:HD3 | 48:DR:5:LYS:HE2 | 1.75 | 0.69 |
| 56:BZ:127:LYS:HD2 | 56:BZ:162:GLU:OE1 | 1.93 | 0.69 |
| 3:CC:71:ALA:CB | 3:CC:109:PRO:HG3 | 2.22 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:1686:C:C5' | 35:DA:1686:C:H6 | 2.06 | 0.69 |
| 23:AW:38:A:H3' | 23:AW:39:U:C5' | 2.20 | 0.69 |
| 10:AJ:6:ILE:HG13 | 10:AJ:6:ILE:O | 1.93 | 0.69 |
| 46:DP:107:LYS:O | 46:DP:109:GLY:N | 2.26 | 0.69 |
| 46:DP:98:GLU:O | 46:DP:101:VAL:HG22 | 1.92 | 0.69 |
| 31:B6:9:LEU:CD2 | 31:B6:10:LEU:H | 2.05 | 0.69 |
| 35:DA:1946:U:H2' | 35:DA:1947:C:C6 | 2.26 | 0.69 |
| 25:B0:25:ARG:HA | 25:B0:29:GLN:HE22 | 1.58 | 0.69 |
| 13:AM:76:ALA:HA | 13:AM:79:LYS:CG | 2.22 | 0.69 |
| 2:CB:98:LEU:O | 2:CB:101:MET:HG3 | 1.92 | 0.69 |
| 35:DA:2287:A:N6 | 35:DA:2344:U:N3 | 2.41 | 0.69 |
| 35:DA:1287:A:H5' | 48:DR:104:ARG:HD2 | 1.74 | 0.69 |
| 24:CX:13:A:H3' | 24:CX:14:A:H5'' | 1.75 | 0.69 |
| 46:BP:115:LEU:HA | 46:BP:134:ALA:HB2 | 1.73 | 0.69 |
| 1:CA:1457:G:H2' | 1:CA:1458:G:H8 | 1.58 | 0.69 |
| 1:CA:474:G:H2' | 1:CA:475:G:H8 | 1.57 | 0.69 |
| 1:AA:134:A:H61 | 16:AP:25:ARG:HH12 | 1.38 | 0.69 |
| 55:BY:95:LYS:HG2 | 55:BY:100:ALA:HA | 1.75 | 0.69 |
| 2:CB:69:LEU:HB3 | 2:CB:162:ILE:HG22 | 1.75 | 0.69 |
| 18:CR:37:VAL:HG23 | 18:CR:38:GLU:N | 2.06 | 0.69 |
| 35:BA:2758:A:C3' | 35:BA:2759:G:H5'' | 2.23 | 0.69 |
| 39:DE:108:SER:O | 39:DE:162:ALA:HA | 1.93 | 0.69 |
| 1:CA:1381:U:H1' | 7:CG:78:ARG:NH2 | 2.01 | 0.69 |
| 3:AC:108:ASN:HD21 | 3:AC:144:SER:HB2 | 1.56 | 0.69 |
| 35:BA:1686:C:H6 | 35:BA:1686:C:C5' | 2.06 | 0.69 |
| 22:AY:41:C:H2' | 22:AY:42:C:O4' | 1.93 | 0.69 |
| 18:CR:45:SER:H | 18:CR:51:LEU:HG | 1.58 | 0.69 |
| 53:BW:75:TYR:CE1 | 53:BW:104:THR:HB | 2.28 | 0.69 |
| 1:CA:624:C:O3' | 16:CP:10:GLY:HA2 | 1.93 | 0.69 |
| 35:DA:2810:A:O2' | 39:DE:61:ARG:HB2 | 1.92 | 0.69 |
| 35:BA:855:G:H1 | 35:BA:922:U:H3 | 1.41 | 0.69 |
| 7:CG:15:ASP:HB3 | 7:CG:19:GLY:N | 2.07 | 0.69 |
| 35:DA:2876:G:H4' | 50:DT:3:ARG:HD3 | 1.74 | 0.69 |
| 5:AE:147:ASP:O | 5:AE:151:LEU:HG | 1.93 | 0.69 |
| 3:AC:18:TRP:HE3 | 3:AC:18:TRP:N | 1.90 | 0.69 |
| 15:CO:39:LEU:HD12 | 15:CO:59:MET:CE | 2.23 | 0.69 |
| 1:AA:130:A:C8 | 17:AQ:63:ARG:HG3 | 2.28 | 0.69 |
| 35:DA:2498:C:O2' | 35:DA:2499:C:H5' | 1.92 | 0.69 |
| 5:AE:71:LEU:O | 5:AE:72:GLN:HG3 | 1.93 | 0.69 |
| 53:DW:29:LEU:O | 53:DW:33:ARG:HG3 | 1.93 | 0.69 |
| 39:BE:69:LYS:HZ1 | 39:BE:89:ASP:HA | 1.59 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:109:ILE:O | 5:AE:113:ALA:HB2 | 1.93 | 0.68 |
| 41:DG:172:LEU:O | 41:DG:176:LEU:HG | 1.92 | 0.68 |
| 30:B5:36:CYS:HB3 | 30:B5:38:ALA:CB | 2.23 | 0.68 |
| 38:BD:172:TYR:HD1 | 38:BD:186:HIS:HA | 1.58 | 0.68 |
| 35:DA:547:A:H8 | 35:DA:549:G:N1 | 1.89 | 0.68 |
| 35:DA:1987:G:C8 | 35:DA:1987:G:H5' | 2.28 | 0.68 |
| 35:BA:2712:U:O2' | 35:BA:2713:A:H5' | 1.93 | 0.68 |
| 1:CA:1260:C:H4' | 1:CA:1284:C:H5' | 1.76 | 0.68 |
| 35:DA:1754:C:OP1 | 50:DT:96:ARG:NH1 | 2.25 | 0.68 |
| 35:DA:572:A:OP2 | 52:DV:78:LYS:HE2 | 1.93 | 0.68 |
| 10:CJ:40:LEU:HD23 | 10:CJ:40:LEU:H | 1.58 | 0.68 |
| 1:CA:61:G:H2' | 1:CA:62:U:O4' | 1.93 | 0.68 |
| 38:DD:106:ILE:HD11 | 38:DD:196:VAL:HG13 | 1.75 | 0.68 |
| 1:CA:1040:U:H2' | 1:CA:1041:A:C8 | 2.28 | 0.68 |
| 49:BS:17:ARG:O | 49:BS:18:ILE:HB | 1.92 | 0.68 |
| 10:CJ:50:ILE:N | 10:CJ:50:ILE:HD13 | 2.04 | 0.68 |
| 35:BA:2162:G:H2' | 35:BA:2163:C:C6 | 2.28 | 0.68 |
| 36:BB:52:A:N7 | 49:BS:33:LYS:HE3 | 2.08 | 0.68 |
| 19:CS:10:PHE:HZ | 19:CS:70:LYS:HD2 | 1.58 | 0.68 |
| 35:BA:2810:A:O2' | 39:BE:61:ARG:HB2 | 1.93 | 0.68 |
| 56:BZ:144:LEU:HD12 | 56:BZ:174:VAL:HG21 | 1.74 | 0.68 |
| 38:DD:172:TYR:HD1 | 38:DD:186:HIS:HA | 1.58 | 0.68 |
| 3:CC:18:TRP:HE3 | 3:CC:18:TRP:N | 1.91 | 0.68 |
| 35:BA:547:A:H8 | 35:BA:549:G:N1 | 1.91 | 0.68 |
| 38:BD:76:PRO:O | 38:BD:98:VAL:HG23 | 1.92 | 0.68 |
| 2:CB:27:LYS:HD3 | 2:CB:195:ASP:OD1 | 1.93 | 0.68 |
| 56:BZ:111:VAL:HG22 | 56:BZ:111:VAL:O | 1.93 | 0.68 |
| 9:AI:63:ILE:HD11 | 9:AI:81:ILE:HD11 | 1.75 | 0.68 |
| 38:BD:61:LEU:O | 38:BD:63:ARG:NH1 | 2.26 | 0.68 |
| 35:BA:1686:C:H5' | 35:BA:1686:C:C6 | 2.27 | 0.68 |
| 46:DP:41:ARG:HE | 46:DP:41:ARG:HA | 1.56 | 0.68 |
| 1:AA:1030(A):G:H1' | 1:AA:1031:G:H22 | 1.58 | 0.68 |
| 35:BA:2287:A:N6 | 35:BA:2344:U:N3 | 2.40 | 0.68 |
| 1:CA:880:C:OP2 | 12:CL:6:THR:HG21 | 1.92 | 0.68 |
| 38:DD:118:VAL:HG22 | 38:DD:119:ALA:H | 1.56 | 0.68 |
| 1:AA:1501:C:OP2 | 1:AA:1504:G:H2' | 1.93 | 0.68 |
| 35:DA:2506:U:C6 | 35:DA:2506:U:H3' | 2.28 | 0.68 |
| 1:AA:223:U:H2' | 1:AA:224:C:H6 | 1.59 | 0.68 |
| 35:DA:1876:A:H2' | 35:DA:1877:A:C8 | 2.28 | 0.68 |
| 33:B8:14:VAL:HG23 | 33:B8:24:ALA:HB2 | 1.75 | 0.68 |
| 1:AA:838:G:H2' | 1:AA:839:U:H5'' | 1.75 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:979:G:H3' | 35:DA:980:A:H5'' | 1.75 | 0.68 |
| 1:AA:662:G:H2' | 1:AA:663:A:C8 | 2.28 | 0.68 |
| 52:DV:69:LYS:HA | 52:DV:88:ARG:HG2 | 1.74 | 0.68 |
| 1:CA:373:A:O2' | 1:CA:374:A:H5' | 1.93 | 0.68 |
| 35:DA:2393:A:H5' | 46:DP:62:LEU:HB3 | 1.75 | 0.68 |
| 1:CA:1250:A:H4' | 9:CI:68:GLY:H | 1.58 | 0.68 |
| 10:CJ:56:HIS:O | 10:CJ:58:ASP:N | 2.26 | 0.68 |
| 28:B3:17:LYS:HD3 | 35:BA:969:U:OP1 | 1.94 | 0.68 |
| 11:CK:126:ARG:HB3 | 11:CK:126:ARG:NH1 | 2.07 | 0.68 |
| 31:D6:15:GLU:OE1 | 31:D6:18:ARG:HG3 | 1.93 | 0.68 |
| 54:DX:63:LYS:O | 54:DX:63:LYS:HG3 | 1.93 | 0.68 |
| 35:DA:1590:U:H2' | 35:DA:1591:G:C5' | 2.20 | 0.68 |
| 35:DA:1173:G:H3' | 35:DA:1174:A:H5' | 1.75 | 0.68 |
| 35:BA:1593:G:C3' | 35:BA:1594:G:H5'' | 2.23 | 0.68 |
| 35:DA:2092:U:C4' | 35:DA:2093:G:H5'' | 2.23 | 0.68 |
| 55:DY:14:LEU:HG | 55:DY:15:VAL:N | 2.08 | 0.68 |
| 45:BO:64:ARG:NH1 | 45:BO:83:ALA:HB2 | 2.08 | 0.68 |
| 55:BY:50:ARG:HD2 | 55:BY:57:GLN:O | 1.93 | 0.68 |
| 15:CO:85:LEU:HD12 | 15:CO:87:ILE:HD11 | 1.75 | 0.68 |
| 1:CA:625:G:H2' | 1:CA:626:U:C6 | 2.28 | 0.68 |
| 42:BH:32:GLU:O | 42:BH:33:LEU:HD23 | 1.93 | 0.68 |
| 54:BX:12:VAL:CG2 | 54:BX:17:ALA:HB1 | 2.23 | 0.68 |
| 5:CE:109:ILE:O | 5:CE:113:ALA:HB2 | 1.94 | 0.68 |
| 56:DZ:19:ARG:NH1 | 56:DZ:25:PRO:HD2 | 2.07 | 0.68 |
| 35:BA:2740:A:H2' | 35:BA:2741:A:C8 | 2.29 | 0.68 |
| 11:CK:22:HIS:HB3 | 11:CK:29:ILE:HG23 | 1.74 | 0.68 |
| 47:BQ:137:TYR:CD2 | 47:BQ:137:TYR:N | 2.58 | 0.68 |
| 48:BR:78:LYS:O | 48:BR:82:GLU:HB3 | 1.91 | 0.68 |
| 35:DA:212:G:O2' | 35:DA:213:A:H5' | 1.93 | 0.68 |
| 31:B6:15:GLU:HG2 | 31:B6:18:ARG:NH2 | 2.08 | 0.68 |
| 50:DT:27:THR:HG23 | 50:DT:28:VAL:N | 2.08 | 0.68 |
| 51:BU:68:ALA:CB | 51:BU:99:ALA:HB1 | 2.24 | 0.68 |
| 56:BZ:53:ILE:O | 56:BZ:53:ILE:CG1 | 2.41 | 0.68 |
| 39:DE:24:THR:HG22 | 39:DE:186:GLY:H | 1.57 | 0.68 |
| 19:CS:6:LYS:HD2 | 19:CS:6:LYS:N | 2.08 | 0.68 |
| 10:CJ:38:ILE:HD11 | 10:CJ:71:LEU:HD23 | 1.75 | 0.68 |
| 26:D1:64:ALA:HA | 26:D1:67:ILE:CG1 | 2.21 | 0.68 |
| 35:BA:271(F):C:H2' | 35:BA:271(G):C:O4' | 1.92 | 0.68 |
| 35:BA:2262:U:O2' | 35:BA:2263:C:H5'' | 1.92 | 0.68 |
| 1:CA:1030(A):G:H1' | 1:CA:1031:G:H22 | 1.58 | 0.68 |
| 43:DI:81:VAL:O | 43:DI:82:ARG:HB2 | 1.94 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:580:C:H2' | 35:DA:581:C:H6 | 1.59 | 0.68 |
| 7:AG:15:ASP:HB3 | 7:AG:19:GLY:N | 2.07 | 0.68 |
| 35:DA:197:A:H5' | 35:DA:197:A:C8 | 2.28 | 0.68 |
| 11:CK:21:ILE:HB | 11:CK:84:VAL:HG12 | 1.76 | 0.68 |
| 11:AK:122:LYS:O | 11:AK:126:ARG:HG3 | 1.94 | 0.68 |
| 2:AB:165:VAL:HG23 | 2:AB:166:ASP:H | 1.59 | 0.68 |
| 35:BA:2387:U:H5' | 35:BA:2388:A:OP2 | 1.93 | 0.68 |
| 31:B6:15:GLU:HA | 31:B6:47:THR:HG21 | 1.75 | 0.68 |
| 46:BP:59:LEU:HA | 46:BP:61:ARG:NE | 2.08 | 0.68 |
| 3:CC:70:VAL:HG12 | 3:CC:71:ALA:N | 2.00 | 0.68 |
| 5:AE:79:GLU:HA | 5:AE:91:LEU:O | 1.93 | 0.68 |
| 35:DA:2543:G:H2' | 35:DA:2544:G:C8 | 2.28 | 0.68 |
| 55:BY:17:SER:HA | 55:BY:71:LYS:HE2 | 1.75 | 0.68 |
| 31:D6:11:LEU:HD12 | 31:D6:51:GLU:HB3 | 1.74 | 0.68 |
| 40:BF:7:TYR:HD2 | 40:BF:16:GLY:H | 1.41 | 0.68 |
| 19:CS:48:THR:HG22 | 19:CS:61:TYR:HA | 1.76 | 0.68 |
| 42:DH:24:VAL:CG2 | 42:DH:35:VAL:HB | 2.24 | 0.68 |
| 1:CA:57:G:H2' | 1:CA:58:C:H6 | 1.59 | 0.68 |
| 30:B5:16:ARG:HD2 | 30:B5:20:ARG:HH21 | 1.58 | 0.68 |
| 35:BA:1187:G:H5'' | 52:BV:81:TYR:CE2 | 2.28 | 0.68 |
| 52:BV:81:TYR:C | 52:BV:82:ARG:HD2 | 2.13 | 0.68 |
| 15:CO:61:GLY:O | 15:CO:65:ARG:HD3 | 1.94 | 0.68 |
| 23:CW:74:C:H4' | 26:D1:23:LYS:HB2 | 1.76 | 0.68 |
| 1:CA:1317:C:OP2 | 14:CN:17:LYS:HG2 | 1.93 | 0.68 |
| 7:CG:26:PHE:O | 7:CG:30:ILE:HG12 | 1.92 | 0.68 |
| 22:AV:16:U:O3' | 22:AV:17:C:H6 | 1.77 | 0.68 |
| 35:BA:1173:G:H3' | 35:BA:1174:A:H5' | 1.76 | 0.68 |
| 3:CC:73:PRO:HA | 3:CC:76:VAL:HG13 | 1.75 | 0.68 |
| 52:DV:55:ALA:HA | 52:DV:101:GLY:HA2 | 1.76 | 0.68 |
| 33:B8:50:LEU:C | 33:B8:53:PRO:HD2 | 2.13 | 0.68 |
| 10:CJ:33:GLN:H | 10:CJ:75:ILE:CG1 | 2.06 | 0.68 |
| 55:BY:14:LEU:HG | 55:BY:15:VAL:N | 2.08 | 0.68 |
| 10:AJ:21:GLN:HA | 10:AJ:24:VAL:CG2 | 2.22 | 0.68 |
| 35:DA:1689:A:H62 | 35:DA:1698:A:H2 | 1.41 | 0.68 |
| 38:BD:79:VAL:HG11 | 38:BD:111:LEU:HD11 | 1.75 | 0.68 |
| 20:AT:26:ASN:HB2 | 20:AT:71:THR:HG23 | 1.76 | 0.68 |
| 25:B0:26:TYR:H | 25:B0:29:GLN:NE2 | 1.91 | 0.68 |
| 47:DQ:133:ARG:O | 47:DQ:134:ARG:HG2 | 1.94 | 0.68 |
| 35:BA:2506:U:C6 | 35:BA:2506:U:H3' | 2.27 | 0.68 |
| 29:D4:48:ILE:HD12 | 29:D4:48:ILE:N | 2.09 | 0.68 |
| 4:CD:8:VAL:O | 4:CD:10:ARG:N | 2.26 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 36:DB:87:G:C3' | 36:DB:88:C:H5'' | 2.24 | 0.68 |
| 10:AJ:56:HIS:O | 10:AJ:58:ASP:N | 2.26 | 0.68 |
| 35:DA:2668:G:O2' | 35:DA:2669:G:H5' | 1.94 | 0.68 |
| 8:CH:120:THR:HG23 | 8:CH:123:GLU:OE1 | 1.94 | 0.68 |
| 2:AB:224:GLN:HG3 | 2:AB:229:VAL:HG22 | 1.76 | 0.68 |
| 3:AC:86:VAL:O | 3:AC:89:GLU:HB3 | 1.94 | 0.68 |
| 1:AA:20:U:H2' | 1:AA:21:G:O4' | 1.93 | 0.68 |
| 39:BE:109:LYS:HB3 | 48:BR:2:ARG:HH22 | 1.59 | 0.68 |
| 35:DA:571:A:H5' | 35:DA:2030:A:N6 | 1.96 | 0.68 |
| 55:DY:42:VAL:CG1 | 55:DY:65:ALA:HB3 | 2.23 | 0.68 |
| 47:DQ:19:GLY:HA3 | 56:DZ:79:ARG:NH2 | 2.08 | 0.68 |
| 20:CT:26:ASN:HB2 | 20:CT:71:THR:HG23 | 1.74 | 0.68 |
| 42:BH:141:VAL:HG12 | 42:BH:142:GLY:N | 2.07 | 0.68 |
| 35:BA:483:A:H1' | 55:BY:60:PHE:CZ | 2.26 | 0.68 |
| 39:DE:9:VAL:O | 39:DE:9:VAL:HG23 | 1.94 | 0.68 |
| 1:CA:1105:A:H2' | 1:CA:1106:G:H8 | 1.58 | 0.68 |
| 35:BA:2790:A:C2 | 35:BA:2791:C:H2' | 2.29 | 0.68 |
| 50:BT:3:ARG:HB3 | 50:BT:6:LEU:CB | 2.24 | 0.68 |
| 3:CC:127:ARG:HD2 | 3:CC:127:ARG:H | 1.58 | 0.68 |
| 18:AR:56:THR:CB | 18:AR:58:LEU:HD12 | 2.24 | 0.68 |
| 43:BI:10:GLU:OE2 | 43:BI:11:ASN:HB2 | 1.92 | 0.68 |
| 35:DA:1188:U:O2' | 35:DA:1189:A:H5' | 1.94 | 0.68 |
| 1:CA:723:U:O2 | 1:CA:723:U:H2' | 1.94 | 0.68 |
| 50:BT:92:GLY:O | 50:BT:94:ALA:N | 2.26 | 0.68 |
| 35:BA:979:G:H3' | 35:BA:980:A:H5'' | 1.76 | 0.68 |
| 1:AA:1146:A:H8 | 1:AA:1146:A:H5' | 1.59 | 0.68 |
| 2:AB:163:PHE:HA | 2:AB:185:ILE:O | 1.94 | 0.68 |
| 39:DE:55:ASN:HD21 | 39:DE:75:VAL:HG22 | 1.59 | 0.68 |
| 35:DA:1686:C:C6 | 35:DA:1686:C:H5' | 2.28 | 0.68 |
| 4:AD:33:MET:CE | 4:AD:37:PRO:HA | 2.24 | 0.68 |
| 42:BH:159:GLU:HG3 | 42:BH:160:LYS:N | 2.07 | 0.68 |
| 44:DN:56:ASN:H | 44:DN:126:PRO:HA | 1.59 | 0.68 |
| 38:BD:26:LYS:HD2 | 38:BD:26:LYS:O | 1.94 | 0.68 |
| 18:CR:50:ILE:CD1 | 18:CR:70:ILE:HG21 | 2.24 | 0.68 |
| 41:BG:128:ARG:HE | 41:BG:128:ARG:N | 1.91 | 0.68 |
| 20:CT:43:LEU:HD13 | 20:CT:51:GLU:HG3 | 1.75 | 0.68 |
| 20:CT:49:ALA:HB1 | 20:CT:100:ILE:HD11 | 1.74 | 0.68 |
| 41:BG:144:ILE:HD12 | 41:BG:145:THR:H | 1.57 | 0.68 |
| 35:BA:2103:C:C3' | 35:BA:2104:G:H5'' | 2.24 | 0.68 |
| 9:AI:112:LYS:HA | 9:AI:119:ALA:HB2 | 1.76 | 0.68 |
| 27:B2:59:ARG:O | 27:B2:63:VAL:HG23 | 1.94 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:1652:A:C2' | 35:BA:1653:G:H5' | 2.24 | 0.68 |
| 43:DI:48:GLU:HA | 43:DI:51:ILE:HB | 1.74 | 0.68 |
| 46:BP:75:ILE:N | 46:BP:75:ILE:HD12 | 2.09 | 0.68 |
| 16:AP:50:LYS:HD3 | 16:AP:51:VAL:H | 1.59 | 0.68 |
| 33:D8:59:LYS:CD | 46:DP:50:ARG:HB3 | 2.21 | 0.68 |
| 38:BD:35:LYS:HA | 38:BD:63:ARG:HA | 1.77 | 0.68 |
| 51:BU:112:ARG:NH2 | 52:BV:46:VAL:HG11 | 2.09 | 0.68 |
| 48:DR:3:HIS:O | 48:DR:5:LYS:N | 2.27 | 0.68 |
| 35:BA:1175:U:C4' | 35:BA:1176:G:H5' | 2.22 | 0.68 |
| 35:DA:1022:G:N2 | 35:DA:1142(A):A:H2 | 1.90 | 0.68 |
| 38:DD:108:PRO:HG2 | 38:DD:111:LEU:HB2 | 1.75 | 0.68 |
| 38:DD:79:VAL:HG11 | 38:DD:111:LEU:HD11 | 1.75 | 0.68 |
| 13:AM:81:LEU:HD22 | 13:AM:86:CYS:SG | 2.34 | 0.68 |
| 43:DI:113:ARG:O | 43:DI:131:LYS:HG2 | 1.94 | 0.68 |
| 35:DA:855:G:H1 | 35:DA:922:U:H3 | 1.41 | 0.68 |
| 56:BZ:116:VAL:O | 56:BZ:174:VAL:HA | 1.93 | 0.68 |
| 20:AT:40:ALA:HB2 | 20:AT:55:ILE:HG22 | 1.76 | 0.68 |
| 20:AT:13:LEU:C | 20:AT:13:LEU:HD12 | 2.14 | 0.68 |
| 41:BG:129:GLY:HA3 | 41:BG:163:ALA:O | 1.93 | 0.68 |
| 5:CE:147:ASP:O | 5:CE:151:LEU:HG | 1.92 | 0.68 |
| 49:BS:74:ALA:HB1 | 49:BS:103:GLU:CB | 2.24 | 0.68 |
| 2:AB:97:TRP:CH2 | 2:AB:173:ALA:HA | 2.29 | 0.68 |
| 52:BV:55:ALA:HA | 52:BV:101:GLY:HA2 | 1.74 | 0.68 |
| 40:DF:39:TRP:O | 40:DF:43:LYS:HG2 | 1.93 | 0.68 |
| 10:AJ:40:LEU:HD23 | 10:AJ:40:LEU:H | 1.57 | 0.68 |
| 35:DA:1751:C:H2' | 35:DA:1752:C:H6 | 1.59 | 0.68 |
| 35:DA:484:C:H2' | 35:DA:485:C:C6 | 2.29 | 0.68 |
| 30:D5:25:LEU:HD12 | 53:DW:19:LEU:HB3 | 1.76 | 0.68 |
| 1:AA:1343:G:H2' | 1:AA:1344:C:C6 | 2.29 | 0.68 |
| 40:BF:178:PRO:HB2 | 40:BF:201:VAL:HG11 | 1.76 | 0.68 |
| 35:BA:1240:U:O2' | 35:BA:1241:A:H5' | 1.94 | 0.68 |
| 2:AB:7:VAL:HG12 | 2:AB:217:ARG:NH2 | 2.07 | 0.67 |
| 50:DT:29:ARG:CB | 50:DT:85:LYS:HA | 2.24 | 0.67 |
| 38:BD:34:VAL:O | 38:BD:64:ILE:HG23 | 1.93 | 0.67 |
| 56:BZ:99:TYR:CE2 | 56:BZ:125:LEU:HD13 | 2.29 | 0.67 |
| 40:BF:155:LEU:HD23 | 40:BF:186:ILE:HD13 | 1.76 | 0.67 |
| 23:AW:30:G:H2' | 23:AW:31:A:C8 | 2.29 | 0.67 |
| 55:BY:25:GLY:HA3 | 55:BY:39:VAL:CG1 | 2.23 | 0.67 |
| 56:DZ:157:LEU:HD11 | 56:DZ:163:LEU:HG | 1.75 | 0.67 |
| 46:DP:96:THR:O | 46:DP:99:LEU:HB3 | 1.94 | 0.67 |
| 46:DP:23:PRO:HD2 | 46:DP:33:ARG:CZ | 2.23 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 4:CD:11:LEU:C | 4:CD:13:ARG:N | 2.43 | 0.67 |
| 46:BP:71:VAL:HG13 | 46:BP:72:PRO:HD3 | 1.76 | 0.67 |
| 35:DA:1608:A:H1' | 35:DA:1610:A:OP2 | 1.94 | 0.67 |
| 7:CG:53:LYS:O | 7:CG:54:THR:HB | 1.93 | 0.67 |
| 35:DA:271(M):G:H5'' | 43:DI:57:ARG:NH1 | 2.09 | 0.67 |
| 9:CI:43:ALA:HA | 9:CI:74:ILE:HD13 | 1.76 | 0.67 |
| 3:AC:54:ARG:NH1 | 3:AC:56:ASP:HB2 | 2.09 | 0.67 |
| 11:AK:22:HIS:HB3 | 11:AK:29:ILE:HG23 | 1.76 | 0.67 |
| 35:DA:2537:U:H2' | 35:DA:2538:C:C6 | 2.29 | 0.67 |
| 38:BD:106:ILE:HD11 | 38:BD:196:VAL:HG13 | 1.76 | 0.67 |
| 41:BG:68:PRO:HB3 | 41:BG:90:LEU:HD21 | 1.76 | 0.67 |
| 44:DN:57:ALA:HB3 | 44:DN:124:ALA:HA | 1.76 | 0.67 |
| 39:DE:107:THR:O | 39:DE:190:GLY:HA2 | 1.94 | 0.67 |
| 35:BA:736:C:H2' | 35:BA:737:C:H6 | 1.59 | 0.67 |
| 35:BA:572:A:OP2 | 52:BV:78:LYS:HE2 | 1.93 | 0.67 |
| 1:AA:1010:G:N2 | 1:AA:1020:U:H1' | 2.08 | 0.67 |
| 1:AA:489:C:H2' | 1:AA:490:G:H8 | 1.59 | 0.67 |
| 35:DA:2866:U:C6 | 35:DA:2868:A:H1' | 2.29 | 0.67 |
| 35:BA:2182:G:H2' | 35:BA:2183:C:C6 | 2.30 | 0.67 |
| 44:BN:58:ASP:O | 44:BN:60:ILE:N | 2.25 | 0.67 |
| 12:AL:27:LEU:HD11 | 12:AL:64:TYR:CZ | 2.29 | 0.67 |
| 2:CB:163:PHE:HA | 2:CB:185:ILE:O | 1.94 | 0.67 |
| 50:BT:27:THR:HG23 | 50:BT:28:VAL:N | 2.08 | 0.67 |
| 38:DD:39:LYS:HZ1 | 38:DD:87:ASN:HB3 | 1.58 | 0.67 |
| 30:D5:36:CYS:HB3 | 30:D5:38:ALA:CB | 2.25 | 0.67 |
| 1:CA:1313:U:OP2 | 19:CS:6:LYS:HB3 | 1.94 | 0.67 |
| 19:CS:6:LYS:HG2 | 19:CS:7:LYS:CE | 2.25 | 0.67 |
| 3:AC:7:PRO:O | 3:AC:11:ARG:HG2 | 1.93 | 0.67 |
| 35:BA:1022:G:N2 | 35:BA:1142(A):A:H2 | 1.93 | 0.67 |
| 35:DA:2189:U:C3' | 35:DA:2190:G:H5'' | 2.23 | 0.67 |
| 20:CT:99:LEU:C | 20:CT:100:ILE:HD12 | 2.14 | 0.67 |
| 46:DP:146:VAL:HG22 | 46:DP:147:LEU:N | 2.10 | 0.67 |
| 26:D1:44:PRO:HB2 | 26:D1:46:LEU:HD12 | 1.76 | 0.67 |
| 47:DQ:17:LEU:C | 47:DQ:18:LYS:HD2 | 2.13 | 0.67 |
| 1:AA:624:C:H2' | 1:AA:625:G:H8 | 1.58 | 0.67 |
| 18:CR:56:THR:CB | 18:CR:58:LEU:HD12 | 2.24 | 0.67 |
| 11:AK:44:SER:H | 11:AK:47:VAL:CG2 | 2.07 | 0.67 |
| 23:AW:6:G:C2' | 23:AW:7:A:H5' | 2.24 | 0.67 |
| 27:B2:10:LEU:HD21 | 27:B2:59:ARG:HG2 | 1.74 | 0.67 |
| 1:CA:385:C:O2' | 1:CA:386:C:H5' | 1.95 | 0.67 |
| 2:AB:59:GLU:HB2 | 2:AB:221:LEU:CD1 | 2.25 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:AV:76:8AN:H2' | 35:BA:2602:A:N6 | 2.09 | 0.67 |
| 35:DA:646:A:H2' | 35:DA:647:G:O4' | 1.95 | 0.67 |
| 35:BA:1042:G:H1' | 35:BA:1114:G:N2 | 2.09 | 0.67 |
| 55:DY:96:ILE:HB | 55:DY:99:CYS:HB2 | 1.77 | 0.67 |
| 48:BR:3:HIS:O | 48:BR:5:LYS:N | 2.27 | 0.67 |
| 44:BN:13:TRP:O | 44:BN:135:PRO:HD2 | 1.94 | 0.67 |
| 1:AA:1327:C:H2' | 1:AA:1328:C:C6 | 2.29 | 0.67 |
| 10:AJ:50:ILE:HD11 | 14:AN:41:ARG:HD2 | 1.76 | 0.67 |
| 33:D8:50:LEU:C | 33:D8:53:PRO:HD2 | 2.13 | 0.67 |
| 18:AR:37:VAL:HG23 | 18:AR:38:GLU:N | 2.08 | 0.67 |
| 39:DE:51:PHE:CE1 | 39:DE:52:LEU:HD13 | 2.30 | 0.67 |
| 35:DA:2522:U:C2' | 35:DA:2523:G:H5'' | 2.23 | 0.67 |
| 8:CH:81:HIS:O | 8:CH:82:HIS:HB2 | 1.93 | 0.67 |
| 30:B5:4:HIS:HB3 | 30:B5:5:PRO:HD3 | 1.75 | 0.67 |
| 35:BA:2172:U:H3' | 35:BA:2173:A:H8 | 1.58 | 0.67 |
| 38:BD:118:VAL:HG22 | 38:BD:119:ALA:H | 1.58 | 0.67 |
| 1:AA:1239:A:H62 | 1:AA:1299:A:N6 | 1.92 | 0.67 |
| 56:BZ:175:VAL:HG13 | 56:BZ:176:PRO:HD2 | 1.76 | 0.67 |
| 47:DQ:103:MET:CE | 47:DQ:125:LEU:HD13 | 2.25 | 0.67 |
| 30:D5:16:ARG:HD2 | 30:D5:20:ARG:HH21 | 1.60 | 0.67 |
| 35:DA:2712:U:O2' | 35:DA:2713:A:H5' | 1.94 | 0.67 |
| 1:CA:165:C:H2' | 1:CA:166:G:C8 | 2.30 | 0.67 |
| 11:CK:116:HIS:O | 11:CK:117:ASN:HB2 | 1.94 | 0.67 |
| 7:AG:26:PHE:O | 7:AG:30:ILE:HG12 | 1.93 | 0.67 |
| 56:BZ:10:ARG:HH21 | 56:BZ:26:GLY:H | 1.41 | 0.67 |
| 55:BY:96:ILE:HD12 | 55:BY:99:CYS:CB | 2.23 | 0.67 |
| 35:DA:613:G:H8 | 35:DA:613:G:H5' | 1.60 | 0.67 |
| 2:AB:17:PHE:HB2 | 2:AB:42:ILE:HG23 | 1.75 | 0.67 |
| 35:DA:1175:U:H4' | 35:DA:1176:G:C5' | 2.22 | 0.67 |
| 3:CC:76:VAL:CG2 | 3:CC:77:ILE:H | 2.07 | 0.67 |
| 42:BH:44:VAL:HG12 | 42:BH:45:VAL:N | 2.07 | 0.67 |
| 49:DS:64:GLU:O | 49:DS:67:ARG:HB2 | 1.94 | 0.67 |
| 43:DI:124:GLY:O | 43:DI:142:VAL:HG22 | 1.95 | 0.67 |
| 35:DA:1484:G:C2' | 35:DA:1485:G:H5'' | 2.23 | 0.67 |
| 35:BA:2189:U:C3' | 35:BA:2190:G:H5'' | 2.25 | 0.67 |
| 1:CA:390:C:O3' | 16:CP:28:ARG:NH2 | 2.28 | 0.67 |
| 47:DQ:132:VAL:HB | 56:DZ:81:ARG:HH12 | 1.57 | 0.67 |
| 35:DA:2103:C:C3' | 35:DA:2104:G:H5'' | 2.24 | 0.67 |
| 35:BA:92:A:H2' | 35:BA:93:G:C8 | 2.29 | 0.67 |
| 15:AO:55:GLY:O | 15:AO:59:MET:HG3 | 1.94 | 0.67 |
| 1:AA:539:A:OP2 | 12:AL:115:LYS:HE3 | 1.94 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 50:DT:129:ARG:CZ | 50:DT:131:ALA:HB3 | 2.23 | 0.67 |
| 35:BA:1354:A:H2' | 35:BA:1355:G:O4' | 1.94 | 0.67 |
| 35:DA:2340:G:O2' | 35:DA:2341:G:H5' | 1.93 | 0.67 |
| 40:BF:82:ILE:HG13 | 40:BF:82:ILE:O | 1.93 | 0.67 |
| 35:DA:2059:A:H5' | 35:DA:2060:A:OP2 | 1.95 | 0.67 |
| 35:BA:784:A:H5' | 35:BA:785:G:OP1 | 1.95 | 0.67 |
| 38:BD:210:GLY:O | 38:BD:212:SER:N | 2.27 | 0.67 |
| 12:AL:27:LEU:HB2 | 12:AL:33:ARG:HD2 | 1.77 | 0.67 |
| 31:B6:15:GLU:OE2 | 31:B6:41:PRO:HG3 | 1.95 | 0.67 |
| 40:DF:181:LEU:CD1 | 40:DF:186:ILE:HD11 | 2.23 | 0.67 |
| 33:B8:56:GLU:HA | 33:B8:59:LYS:HZ2 | 1.59 | 0.67 |
| 35:DA:2571:C:H5' | 35:DA:2572:A:C5' | 2.14 | 0.67 |
| 22:CV:20:U:C3' | 22:CV:21:A:C5' | 2.68 | 0.67 |
| 33:D8:4:MET:CB | 33:D8:61:LEU:HD22 | 2.24 | 0.67 |
| 3:AC:130:VAL:O | 3:AC:134:ILE:HG12 | 1.95 | 0.67 |
| 4:AD:138:TYR:HD2 | 4:AD:139:ARG:N | 1.92 | 0.67 |
| 42:BH:85:LYS:NZ | 42:BH:133:VAL:HB | 2.09 | 0.67 |
| 4:CD:133:VAL:HG11 | 4:CD:138:TYR:HD1 | 1.57 | 0.67 |
| 20:CT:40:ALA:HB2 | 20:CT:55:ILE:HG22 | 1.76 | 0.67 |
| 22:AV:27:G:H2' | 22:AV:28:G:C8 | 2.30 | 0.67 |
| 4:AD:11:LEU:C | 4:AD:13:ARG:N | 2.43 | 0.67 |
| 35:BA:2287:A:H62 | 35:BA:2344:U:H3 | 1.40 | 0.67 |
| 40:DF:53:THR:HG22 | 40:DF:56:GLU:CD | 2.14 | 0.67 |
| 45:DO:104:ARG:HH21 | 50:DT:33:LYS:CE | 2.07 | 0.67 |
| 2:AB:98:LEU:O | 2:AB:101:MET:HG3 | 1.93 | 0.67 |
| 35:DA:2114:A:H2' | 35:DA:2115:G:O4' | 1.95 | 0.67 |
| 4:AD:7:PRO:HB2 | 4:AD:10:ARG:HD2 | 1.76 | 0.67 |
| 11:CK:111:ASP:HA | 18:CR:84:LYS:HG3 | 1.75 | 0.67 |
| 35:DA:2784:C:H1' | 39:DE:37:ARG:NH1 | 2.09 | 0.67 |
| 31:D6:15:GLU:HA | 31:D6:47:THR:HG21 | 1.77 | 0.67 |
| 49:DS:13:ARG:O | 49:DS:14:VAL:HB | 1.94 | 0.67 |
| 35:DA:1814:G:H2' | 35:DA:1815:A:C8 | 2.30 | 0.67 |
| 35:DA:2723:C:H5'' | 48:DR:2:ARG:NE | 2.09 | 0.67 |
| 39:DE:34:VAL:HG22 | 39:DE:48:GLN:HE21 | 1.60 | 0.67 |
| 35:DA:1175:U:C4' | 35:DA:1176:G:H5' | 2.22 | 0.67 |
| 30:D5:33:CYS:CB | 30:D5:38:ALA:HB3 | 2.24 | 0.67 |
| 35:DA:1593:G:C3' | 35:DA:1594:G:H5'' | 2.23 | 0.67 |
| 35:BA:2305:A:H5'' | 41:BG:134:GLY:HA3 | 1.77 | 0.67 |
| 33:D8:36:LYS:HB3 | 33:D8:40:GLU:OE1 | 1.94 | 0.67 |
| 1:CA:267:C:OP2 | 17:CQ:67:LYS:HD2 | 1.94 | 0.67 |
| 35:DA:486:C:H4' | 53:DW:60:ASN:ND2 | 2.10 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 42:BH:20:ALA:HB2 | 42:BH:25:LYS:HZ1 | 1.58 | 0.67 |
| 12:CL:27:LEU:HB2 | 12:CL:33:ARG:HD2 | 1.75 | 0.67 |
| 38:BD:131:LEU:N | 38:BD:131:LEU:HD12 | 2.09 | 0.67 |
| 26:B1:91:LYS:HA | 26:B1:94:LEU:HD12 | 1.75 | 0.67 |
| 5:CE:41:VAL:HG13 | 5:CE:113:ALA:HA | 1.76 | 0.67 |
| 49:DS:74:ALA:HB1 | 49:DS:103:GLU:CB | 2.25 | 0.67 |
| 1:AA:841:U:H3' | 1:AA:848:C:H5' | 1.75 | 0.67 |
| 38:BD:210:GLY:O | 38:BD:211:ARG:HB3 | 1.95 | 0.67 |
| 35:DA:1510:G:O2' | 35:DA:1511:C:H5' | 1.95 | 0.67 |
| 8:CH:44:PHE:O | 8:CH:45:ILE:HG23 | 1.94 | 0.67 |
| 49:DS:30:ARG:HH22 | 49:DS:62:LYS:HB3 | 1.60 | 0.67 |
| 34:B9:9:ARG:HB3 | 34:B9:9:ARG:NH1 | 2.10 | 0.67 |
| 2:AB:9:GLU:HA | 2:AB:12:GLU:OE1 | 1.93 | 0.67 |
| 35:BA:613:G:H5' | 35:BA:613:G:H8 | 1.58 | 0.67 |
| 50:DT:83:ILE:O | 50:DT:84:GLN:HB3 | 1.94 | 0.67 |
| 41:DG:39:ILE:HD13 | 41:DG:155:MET:SD | 2.35 | 0.67 |
| 38:BD:176:ARG:HG2 | 38:BD:176:ARG:HH11 | 1.60 | 0.67 |
| 23:AW:33:U:H2' | 23:AW:35:A:OP2 | 1.95 | 0.67 |
| 1:AA:1313:U:OP2 | 19:AS:6:LYS:HB3 | 1.94 | 0.67 |
| 4:CD:22:LYS:HB2 | 4:CD:26:CYS:HB2 | 1.74 | 0.67 |
| 4:AD:133:VAL:HG11 | 4:AD:138:TYR:HD1 | 1.59 | 0.67 |
| 55:BY:47:LYS:N | 55:BY:47:LYS:HD2 | 2.10 | 0.67 |
| 50:BT:64:ARG:HD2 | 50:BT:73:GLU:CG | 2.25 | 0.67 |
| 35:BA:1453:U:OP1 | 48:BR:77:ARG:HD3 | 1.94 | 0.67 |
| 2:AB:178:ARG:HH22 | 2:AB:196:LEU:HA | 1.59 | 0.67 |
| 35:DA:1986:A:C2' | 35:DA:1987:G:H5'' | 2.25 | 0.67 |
| 35:DA:314:A:O2' | 35:DA:315:G:H5' | 1.95 | 0.67 |
| 43:DI:145:VAL:HG12 | 43:DI:146:ALA:N | 2.09 | 0.67 |
| 38:BD:121:PRO:HB3 | 38:BD:135:PHE:CE1 | 2.30 | 0.67 |
| 1:AA:1250:A:H4' | 9:AI:68:GLY:H | 1.59 | 0.67 |
| 7:AG:70:LYS:O | 7:AG:138:LYS:HE3 | 1.95 | 0.67 |
| 43:DI:2:LYS:HB2 | 43:DI:39:ALA:HB3 | 1.77 | 0.67 |
| 52:BV:69:LYS:HA | 52:BV:88:ARG:HG2 | 1.75 | 0.67 |
| 1:AA:1424:C:O2' | 1:AA:1425:U:H5' | 1.95 | 0.67 |
| 35:BA:314:A:O2' | 35:BA:315:G:H5' | 1.93 | 0.67 |
| 15:CO:56:LEU:O | 15:CO:60:VAL:HG23 | 1.95 | 0.67 |
| 38:BD:129:ASN:O | 38:BD:193:VAL:HG12 | 1.95 | 0.67 |
| 2:CB:55:PHE:HA | 2:CB:58:ILE:HB | 1.77 | 0.67 |
| 35:DA:2758:A:C3' | 35:DA:2759:G:H5'' | 2.25 | 0.67 |
| 3:AC:76:VAL:CG2 | 3:AC:77:ILE:H | 2.08 | 0.67 |
| 35:DA:1155:A:OP1 | 51:DU:55:ARG:HD2 | 1.94 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 29:B4:48:ILE:H | 29:B4:48:ILE:HD12 | 1.59 | 0.67 |
| 3:AC:30:ARG:HH11 | 14:AN:38:GLY:CA | 2.08 | 0.67 |
| 23:AW:67:C:H2' | 23:AW:68:C:C6 | 2.29 | 0.67 |
| 44:DN:133:GLN:HG2 | 44:DN:134:ARG:N | 2.08 | 0.67 |
| 2:AB:48:MET:HG2 | 2:AB:49:GLU:H | 1.58 | 0.67 |
| 43:BI:72:LEU:O | 43:BI:138:ILE:HG23 | 1.94 | 0.67 |
| 27:D2:64:LEU:CD2 | 27:D2:68:ARG:HD3 | 2.24 | 0.67 |
| 15:AO:85:LEU:HD12 | 15:AO:87:ILE:HD11 | 1.77 | 0.67 |
| 33:D8:29:LYS:O | 33:D8:29:LYS:HG3 | 1.95 | 0.67 |
| 22:AY:8:U:H4' | 22:AY:48:C:H4' | 1.75 | 0.67 |
| 4:CD:170:VAL:HG22 | 4:CD:171:GLY:N | 2.09 | 0.67 |
| 1:AA:1308:U:OP1 | 13:AM:98:VAL:N | 2.28 | 0.67 |
| 35:BA:271(M):G:H5'' | 43:BI:57:ARG:NH1 | 2.09 | 0.67 |
| 3:AC:148:GLY:HA3 | 3:AC:172:ARG:O | 1.95 | 0.67 |
| 35:BA:330:A:O2' | 35:BA:331:A:H8 | 1.77 | 0.67 |
| 13:CM:16:ASP:HB3 | 13:CM:41:PRO:HB3 | 1.77 | 0.67 |
| 50:BT:92:GLY:HA2 | 50:BT:114:LEU:HB3 | 1.76 | 0.67 |
| 43:DI:47:LEU:HG | 43:DI:51:ILE:HG12 | 1.76 | 0.67 |
| 39:DE:37:ARG:HA | 39:DE:42:ASP:OD2 | 1.94 | 0.67 |
| 2:CB:82:ARG:HB2 | 2:CB:94:ASN:ND2 | 2.09 | 0.67 |
| 35:BA:1272:A:OP2 | 35:BA:1647:G:OP1 | 2.13 | 0.67 |
| 37:BC:18:LYS:O | 37:BC:22:ILE:HD11 | 1.95 | 0.67 |
| 35:BA:1405:U:H2' | 35:BA:1406:U:C6 | 2.30 | 0.67 |
| 38:DD:76:PRO:HG2 | 38:DD:98:VAL:HG21 | 1.76 | 0.67 |
| 14:CN:24:CYS:HB3 | 14:CN:27:CYS:O | 1.95 | 0.67 |
| 9:AI:55:ALA:HB1 | 9:AI:58:ARG:HB2 | 1.77 | 0.67 |
| 9:AI:17:VAL:CG1 | 9:AI:81:ILE:HD13 | 2.24 | 0.67 |
| 1:AA:1346:A:C5' | 9:AI:120:ARG:HH12 | 2.08 | 0.67 |
| 50:DT:91:ARG:CB | 50:DT:116:ALA:HA | 2.22 | 0.67 |
| 5:AE:41:VAL:HG13 | 5:AE:113:ALA:HA | 1.75 | 0.67 |
| 35:DA:2162:G:H2' | 35:DA:2163:C:C6 | 2.30 | 0.67 |
| 55:DY:17:SER:HA | 55:DY:71:LYS:HE2 | 1.76 | 0.67 |
| 3:AC:14:ILE:HG12 | 3:AC:15:THR:N | 2.09 | 0.67 |
| 36:DB:6:C:HO2' | 49:DS:29:PHE:HE1 | 1.41 | 0.67 |
| 49:BS:64:GLU:O | 49:BS:67:ARG:HB2 | 1.95 | 0.67 |
| 43:DI:113:ARG:HB3 | 43:DI:131:LYS:HB2 | 1.77 | 0.67 |
| 35:BA:2808:U:H5' | 35:BA:2891:G:O6 | 1.95 | 0.67 |
| 19:CS:29:ARG:HD2 | 19:CS:30:LEU:N | 2.10 | 0.67 |
| 4:CD:28:SER:HB3 | 4:CD:29:PRO:HD2 | 1.77 | 0.67 |
| 7:AG:53:LYS:O | 7:AG:54:THR:HB | 1.93 | 0.67 |
| 11:CK:44:SER:H | 11:CK:47:VAL:CG2 | 2.08 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:DE:3:GLY:HA3 | 39:DE:81:ILE:HG21 | 1.77 | 0.67 |
| 39:BE:3:GLY:HA3 | 39:BE:81:ILE:HG21 | 1.75 | 0.67 |
| 1:CA:1343:G:H1' | 9:CI:121:ARG:HH12 | 1.58 | 0.67 |
| 22:AY:66:U:H2' | 22:AY:67:C:C6 | 2.30 | 0.67 |
| 35:DA:1240:U:O2' | 35:DA:1241:A:H5' | 1.95 | 0.67 |
| 43:BI:145:VAL:HG12 | 43:BI:146:ALA:N | 2.10 | 0.67 |
| 34:D9:27:CYS:SG | 34:D9:28:GLU:N | 2.67 | 0.67 |
| 46:DP:58:THR:O | 46:DP:58:THR:HG22 | 1.95 | 0.67 |
| 2:AB:61:LEU:CD2 | 2:AB:68:ILE:HD11 | 2.25 | 0.67 |
| 46:BP:58:THR:O | 46:BP:58:THR:HG22 | 1.94 | 0.67 |
| 51:BU:62:ILE:HD12 | 51:BU:76:TYR:CZ | 2.28 | 0.67 |
| 41:BG:111:LEU:O | 41:BG:112:PRO:O | 2.12 | 0.67 |
| 35:BA:1902:C:O2' | 38:BD:244:ARG:HB2 | 1.95 | 0.67 |
| 46:DP:7:ARG:NH1 | 46:DP:7:ARG:O | 2.28 | 0.67 |
| 33:B8:4:MET:CB | 33:B8:61:LEU:HD22 | 2.25 | 0.67 |
| 31:D6:52:VAL:HG12 | 31:D6:53:LYS:N | 2.10 | 0.67 |
| 25:D0:25:ARG:HA | 25:D0:29:GLN:HE22 | 1.60 | 0.67 |
| 40:DF:7:TYR:HD2 | 40:DF:16:GLY:H | 1.41 | 0.67 |
| 20:AT:49:ALA:HB1 | 20:AT:100:ILE:HD11 | 1.76 | 0.67 |
| 23:CW:38:A:C3' | 23:CW:39:U:H5'' | 2.24 | 0.67 |
| 8:AH:12:ARG:HH12 | 8:AH:27:PRO:HD3 | 1.60 | 0.67 |
| 35:BA:1986:A:H2' | 35:BA:1987:G:H5'' | 1.77 | 0.67 |
| 1:CA:339:C:OP2 | 45:DO:97:ARG:NH1 | 2.28 | 0.67 |
| 48:DR:104:ARG:CB | 48:DR:104:ARG:HH11 | 2.08 | 0.67 |
| 35:DA:61:G:H1 | 35:DA:94:C:H42 | 1.42 | 0.67 |
| 30:D5:16:ARG:HG2 | 30:D5:16:ARG:HH11 | 1.60 | 0.67 |
| 35:DA:2784:C:H1' | 39:DE:37:ARG:HH12 | 1.59 | 0.67 |
| 35:DA:1854:A:H3' | 35:DA:1855:G:H8 | 1.58 | 0.67 |
| 35:BA:2668:G:O2' | 35:BA:2669:G:H5' | 1.94 | 0.67 |
| 2:AB:141:GLU:O | 2:AB:145:LEU:HD23 | 1.94 | 0.67 |
| 40:DF:103:LYS:HA | 40:DF:106:ARG:HG3 | 1.76 | 0.67 |
| 35:BA:2593:U:H2' | 35:BA:2594:C:C6 | 2.30 | 0.67 |
| 1:AA:598:U:H4' | 8:AH:94:TYR:CD2 | 2.30 | 0.67 |
| 8:CH:11:THR:HG23 | 8:CH:14:ARG:HH12 | 1.58 | 0.67 |
| 39:BE:55:ASN:O | 39:BE:57:LYS:N | 2.28 | 0.66 |
| 10:AJ:33:GLN:H | 10:AJ:75:ILE:CG1 | 2.07 | 0.66 |
| 51:DU:62:ILE:HD12 | 51:DU:76:TYR:CZ | 2.30 | 0.66 |
| 52:DV:18:LEU:HD13 | 52:DV:19:LYS:N | 2.09 | 0.66 |
| 39:BE:12:THR:HG23 | 50:BT:8:LYS:NZ | 2.10 | 0.66 |
| 49:DS:65:VAL:C | 49:DS:67:ARG:H | 1.97 | 0.66 |
| 55:DY:7:VAL:HB | 55:DY:8:LYS:HZ2 | 1.60 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 3:CC:7:PRO:O | 3:CC:11:ARG:HG2 | 1.94 | 0.66 |
| 35:DA:27:G:N2 | 35:DA:512:G:H2' | 2.09 | 0.66 |
| 1:CA:737:A:H2' | 1:CA:738:C:C6 | 2.30 | 0.66 |
| 25:B0:36:ILE:HG23 | 35:BA:2354:G:O2' | 1.93 | 0.66 |
| 1:AA:1070:U:H2' | 1:AA:1071:C:C6 | 2.29 | 0.66 |
| 1:AA:826:C:H5' | 8:AH:12:ARG:HH21 | 1.60 | 0.66 |
| 35:DA:2287:A:H62 | 35:DA:2344:U:H3 | 1.43 | 0.66 |
| 50:DT:3:ARG:HB3 | 50:DT:6:LEU:CB | 2.25 | 0.66 |
| 18:CR:86:VAL:C | 18:CR:87:ARG:HD3 | 2.15 | 0.66 |
| 35:BA:1188:U:O2' | 35:BA:1189:A:H5' | 1.95 | 0.66 |
| 34:B9:27:CYS:SG | 34:B9:28:GLU:N | 2.66 | 0.66 |
| 35:BA:586:A:H5' | 40:BF:89:VAL:HG21 | 1.78 | 0.66 |
| 11:CK:61:ALA:CB | 11:CK:90:GLY:HA3 | 2.25 | 0.66 |
| 47:BQ:78:PRO:O | 47:BQ:81:VAL:HG13 | 1.95 | 0.66 |
| 1:AA:950:U:H2' | 1:AA:951:G:C8 | 2.30 | 0.66 |
| 1:CA:493:G:HO2' | 1:CA:494:U:H6 | 1.43 | 0.66 |
| 49:BS:93:LYS:HE3 | 49:BS:93:LYS:HA | 1.78 | 0.66 |
| 50:DT:91:ARG:HA | 50:DT:117:ASP:H | 1.60 | 0.66 |
| 5:CE:101:ILE:CG1 | 5:CE:119:LEU:HD23 | 2.17 | 0.66 |
| 1:CA:972:C:O3' | 10:CJ:57:LYS:HG3 | 1.96 | 0.66 |
| 52:DV:19:LYS:HE2 | 52:DV:19:LYS:HA | 1.76 | 0.66 |
| 4:CD:33:MET:CE | 4:CD:37:PRO:HA | 2.25 | 0.66 |
| 1:CA:624:C:H2' | 1:CA:625:G:C8 | 2.30 | 0.66 |
| 43:DI:88:ILE:CG2 | 43:DI:89:TYR:H | 2.07 | 0.66 |
| 8:CH:84:ARG:HH22 | 8:CH:86:ILE:CD1 | 2.08 | 0.66 |
| 1:AA:376:G:O2' | 1:AA:377:G:H5' | 1.95 | 0.66 |
| 23:CW:57:G:H2' | 23:CW:58:A:H5' | 1.76 | 0.66 |
| 35:BA:389:G:N1 | 46:BP:70:GLN:HG3 | 2.10 | 0.66 |
| 24:AX:13:A:H3' | 24:AX:14:A:H5'' | 1.77 | 0.66 |
| 9:CI:116:LYS:HZ3 | 9:CI:116:LYS:HB3 | 1.60 | 0.66 |
| 35:DA:2352:A:H2' | 35:DA:2353:G:H5' | 1.77 | 0.66 |
| 35:DA:2387:U:H5' | 35:DA:2388:A:OP2 | 1.95 | 0.66 |
| 7:AG:148:ASN:C | 7:AG:150:ALA:H | 1.98 | 0.66 |
| 35:DA:2779:U:H4' | 35:DA:2780:G:H5' | 1.77 | 0.66 |
| 42:DH:149:ARG:HH21 | 42:DH:154:PRO:HG3 | 1.61 | 0.66 |
| 1:CA:1146:A:H8 | 1:CA:1146:A:H5' | 1.59 | 0.66 |
| 40:DF:132:VAL:HG13 | 40:DF:133:ASN:OD1 | 1.94 | 0.66 |
| 1:CA:1255:G:H5' | 1:CA:1256:A:OP1 | 1.94 | 0.66 |
| 38:DD:33:LEU:HD13 | 38:DD:34:VAL:N | 2.10 | 0.66 |
| 39:DE:11:MET:CB | 39:DE:24:THR:HA | 2.26 | 0.66 |
| 35:DA:2307:G:N2 | 35:DA:2308:G:H5'' | 2.09 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 55:BY:29:GLU:OE1 | 55:BY:29:GLU:N | 2.28 | 0.66 |
| 38:DD:176:ARG:HH11 | 38:DD:176:ARG:HG2 | 1.61 | 0.66 |
| 56:DZ:163:LEU:HB3 | 56:DZ:165:VAL:HG23 | 1.76 | 0.66 |
| 22:CY:74:C:C2' | 22:CY:75:C:H5' | 2.24 | 0.66 |
| 8:AH:81:HIS:O | 8:AH:82:HIS:HB2 | 1.94 | 0.66 |
| 1:CA:1321:C:C3' | 1:CA:1322:C:H5'' | 2.25 | 0.66 |
| 53:BW:5:ALA:HB1 | 53:BW:50:VAL:HG22 | 1.77 | 0.66 |
| 1:AA:735:C:H2' | 1:AA:736:C:C6 | 2.29 | 0.66 |
| 43:BI:8:PRO:HB3 | 43:BI:14:ASP:N | 2.08 | 0.66 |
| 39:DE:16:ARG:C | 39:DE:18:ASP:H | 1.99 | 0.66 |
| 19:AS:45:VAL:HA | 19:AS:62:ILE:HG23 | 1.77 | 0.66 |
| 19:AS:49:ILE:O | 19:AS:60:VAL:HG12 | 1.95 | 0.66 |
| 18:AR:43:PHE:HE2 | 18:AR:58:LEU:HD11 | 1.60 | 0.66 |
| 1:AA:339:C:H2' | 1:AA:340:U:C6 | 2.31 | 0.66 |
| 1:CA:1239:A:H62 | 1:CA:1299:A:N6 | 1.92 | 0.66 |
| 40:BF:4:VAL:HG12 | 40:BF:19:GLU:OE1 | 1.95 | 0.66 |
| 1:AA:1260:C:H4' | 1:AA:1284:C:H5' | 1.76 | 0.66 |
| 44:BN:73:THR:CG2 | 44:BN:82:LEU:HD11 | 2.25 | 0.66 |
| 1:CA:1305:G:OP1 | 21:CU:2:GLY:HA3 | 1.95 | 0.66 |
| 35:BA:2010:G:H5'' | 53:BW:42:ARG:HB2 | 1.77 | 0.66 |
| 56:BZ:27:VAL:HG12 | 56:BZ:87:ASP:HB3 | 1.76 | 0.66 |
| 35:DA:1952:A:C5 | 45:DO:22:ILE:HD12 | 2.31 | 0.66 |
| 9:AI:79:LEU:CD1 | 9:AI:102:LEU:HA | 2.26 | 0.66 |
| 50:BT:83:ILE:O | 50:BT:84:GLN:HB3 | 1.94 | 0.66 |
| 47:BQ:140:ALA:HB1 | 56:BZ:99:TYR:HB2 | 1.76 | 0.66 |
| 46:DP:16:ARG:CD | 46:DP:18:ARG:H | 2.04 | 0.66 |
| 52:DV:39:LEU:HD11 | 52:DV:51:VAL:HG22 | 1.78 | 0.66 |
| 33:D8:4:MET:HB3 | 33:D8:61:LEU:HD22 | 1.77 | 0.66 |
| 52:BV:19:LYS:HE2 | 52:BV:19:LYS:HA | 1.77 | 0.66 |
| 41:DG:112:PRO:C | 41:DG:113:ARG:HH11 | 1.99 | 0.66 |
| 37:DC:169:GLY:N | 37:DC:173:ALA:HA | 2.06 | 0.66 |
| 10:AJ:6:ILE:HG12 | 10:AJ:72:VAL:O | 1.95 | 0.66 |
| 35:DA:271(D):G:H1 | 35:DA:271(T):C:H42 | 1.43 | 0.66 |
| 35:DA:2117:A:O2' | 35:DA:2118:U:H3' | 1.96 | 0.66 |
| 9:AI:43:ALA:HA | 9:AI:74:ILE:HD13 | 1.77 | 0.66 |
| 3:AC:127:ARG:H | 3:AC:127:ARG:HD2 | 1.61 | 0.66 |
| 35:BA:1639:U:O2' | 35:BA:1640:C:H5'' | 1.96 | 0.66 |
| 43:DI:47:LEU:HG | 43:DI:51:ILE:CG1 | 2.26 | 0.66 |
| 1:AA:163:C:H2' | 1:AA:164:U:H6 | 1.60 | 0.66 |
| 38:DD:121:PRO:HB3 | 38:DD:135:PHE:CE1 | 2.30 | 0.66 |
| 7:CG:70:LYS:O | 7:CG:138:LYS:HE3 | 1.95 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1347:G:H22 | 1:AA:1373:G:H2' | 1.61 | 0.66 |
| 1:CA:1381:U:C1' | 7:CG:78:ARG:HH21 | 2.03 | 0.66 |
| 37:DC:64:LEU:CD1 | 37:DC:66:HIS:HB2 | 2.25 | 0.66 |
| 56:DZ:158:PRO:HG2 | 56:DZ:161:VAL:HG21 | 1.78 | 0.66 |
| 46:BP:107:LYS:C | 46:BP:109:GLY:H | 1.99 | 0.66 |
| 35:BA:2310:A:O2' | 35:BA:2311:A:H5'' | 1.95 | 0.66 |
| 41:DG:66:GLN:HE21 | 41:DG:94:LEU:HD23 | 1.59 | 0.66 |
| 46:BP:41:ARG:CA | 46:BP:41:ARG:HE | 2.09 | 0.66 |
| 7:AG:37:ASN:HD21 | 9:AI:40:LEU:HA | 1.60 | 0.66 |
| 7:CG:37:ASN:HD21 | 9:CI:40:LEU:HA | 1.59 | 0.66 |
| 20:CT:82:SER:O | 20:CT:86:ARG:HB2 | 1.94 | 0.66 |
| 35:DA:2173:A:C2' | 35:DA:2174:C:H5' | 2.26 | 0.66 |
| 1:CA:163:C:H2' | 1:CA:164:U:H6 | 1.60 | 0.66 |
| 36:BB:35:U:O2' | 36:BB:36:C:H5' | 1.95 | 0.66 |
| 47:BQ:79:LEU:HD23 | 47:BQ:80:GLU:N | 2.10 | 0.66 |
| 1:AA:556:C:O2' | 1:AA:557:G:H5' | 1.96 | 0.66 |
| 22:CV:17:C:O2' | 22:CV:18:G:H3' | 1.96 | 0.66 |
| 4:AD:196:LEU:HD12 | 4:AD:196:LEU:H | 1.61 | 0.66 |
| 45:BO:86:ILE:HD12 | 45:BO:86:ILE:N | 2.10 | 0.66 |
| 9:AI:27:THR:HG23 | 9:AI:31:GLN:H | 1.61 | 0.66 |
| 35:BA:893:C:H2' | 35:BA:894:C:C6 | 2.30 | 0.66 |
| 40:DF:123:LEU:HD12 | 40:DF:124:LEU:N | 2.09 | 0.66 |
| 41:DG:46:ALA:CB | 41:DG:82:LEU:HD11 | 2.20 | 0.66 |
| 46:BP:16:ARG:HB2 | 46:BP:16:ARG:NH1 | 2.10 | 0.66 |
| 40:BF:132:VAL:HG13 | 40:BF:133:ASN:OD1 | 1.96 | 0.66 |
| 10:AJ:32:ALA:HB2 | 10:AJ:76:ASN:O | 1.96 | 0.66 |
| 3:AC:84:ILE:O | 3:AC:88:ARG:HG3 | 1.96 | 0.66 |
| 35:BA:1593:G:C2' | 35:BA:1594:G:H5'' | 2.25 | 0.66 |
| 10:CJ:6:ILE:O | 10:CJ:71:LEU:HD12 | 1.96 | 0.66 |
| 10:CJ:34:VAL:HG13 | 10:CJ:73:ASP:O | 1.95 | 0.66 |
| 30:B5:33:CYS:SG | 30:B5:36:CYS:HB2 | 2.35 | 0.66 |
| 2:AB:114:ARG:NH1 | 2:AB:118:LEU:HD11 | 2.10 | 0.66 |
| 38:BD:26:LYS:HD3 | 38:BD:81:ALA:CB | 2.25 | 0.66 |
| 25:D0:26:TYR:H | 25:D0:29:GLN:NE2 | 1.94 | 0.66 |
| 35:BA:2117:A:O2' | 35:BA:2118:U:H3' | 1.95 | 0.66 |
| 4:AD:28:SER:HB3 | 4:AD:29:PRO:HD2 | 1.77 | 0.66 |
| 56:DZ:76:LEU:O | 56:DZ:84:GLU:HG3 | 1.96 | 0.66 |
| 35:BA:1210:A:H4' | 35:BA:1211:U:O5' | 1.96 | 0.66 |
| 1:CA:382:A:H2' | 1:CA:383:A:H8 | 1.61 | 0.66 |
| 35:BA:2784:C:H1' | 39:BE:37:ARG:HH12 | 1.61 | 0.66 |
| 35:BA:203:C:H3' | 35:BA:204:A:H5'' | 1.77 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 36:BB:87:G:C3' | 36:BB:88:C:H5'' | 2.25 | 0.66 |
| 9:CI:56:LEU:HD23 | 9:CI:56:LEU:O | 1.95 | 0.66 |
| 1:AA:1442(A):G:O2' | 1:AA:1442(B):A:H5'' | 1.95 | 0.66 |
| 38:DD:129:ASN:O | 38:DD:193:VAL:HG12 | 1.95 | 0.66 |
| 35:BA:2559:C:H2' | 35:BA:2559:C:O2 | 1.96 | 0.66 |
| 12:AL:28:LYS:HE2 | 12:AL:33:ARG:HH12 | 1.61 | 0.66 |
| 2:CB:7:VAL:HG12 | 2:CB:217:ARG:NH2 | 2.09 | 0.66 |
| 18:AR:36:ASN:HD22 | 18:AR:39:VAL:CG2 | 1.97 | 0.66 |
| 39:DE:79:ARG:HH11 | 39:DE:79:ARG:HG2 | 1.61 | 0.66 |
| 35:BA:1591:G:O2' | 35:BA:1592:C:H5' | 1.96 | 0.66 |
| 37:BC:64:LEU:CD1 | 37:BC:66:HIS:HB2 | 2.25 | 0.66 |
| 41:BG:39:ILE:HD13 | 41:BG:155:MET:HE1 | 1.78 | 0.66 |
| 10:CJ:6:ILE:HG12 | 10:CJ:72:VAL:O | 1.96 | 0.66 |
| 35:BA:2685:G:H5' | 45:BO:68:GLU:OE1 | 1.96 | 0.66 |
| 46:BP:97:PRO:C | 46:BP:99:LEU:H | 1.99 | 0.66 |
| 27:B2:2:LYS:HA | 27:B2:5:GLU:OE1 | 1.96 | 0.66 |
| 35:BA:2632:A:C2 | 39:BE:61:ARG:HD3 | 2.31 | 0.66 |
| 1:AA:235:C:H1' | 17:AQ:61:GLU:OE1 | 1.96 | 0.66 |
| 3:CC:54:ARG:NH1 | 3:CC:56:ASP:HB2 | 2.10 | 0.66 |
| 35:DA:2172:U:H3' | 35:DA:2173:A:H8 | 1.59 | 0.66 |
| 10:AJ:45:ARG:NH1 | 10:AJ:45:ARG:HG3 | 2.10 | 0.66 |
| 3:CC:195:VAL:HG12 | 3:CC:196:LEU:N | 2.10 | 0.66 |
| 3:AC:126:ARG:HG2 | 3:AC:126:ARG:HH11 | 1.61 | 0.66 |
| 35:BA:1405:U:H2' | 35:BA:1406:U:H6 | 1.61 | 0.66 |
| 1:CA:250:A:H4' | 1:CA:251:G:O5' | 1.96 | 0.66 |
| 35:DA:1363:C:H2' | 35:DA:1364:G:H8 | 1.60 | 0.66 |
| 7:CG:148:ASN:HD22 | 7:CG:148:ASN:N | 1.93 | 0.66 |
| 54:BX:63:LYS:HG3 | 54:BX:63:LYS:O | 1.96 | 0.66 |
| 31:D6:15:GLU:OE1 | 31:D6:18:ARG:CG | 2.44 | 0.66 |
| 2:CB:17:PHE:HB2 | 2:CB:42:ILE:HG23 | 1.77 | 0.66 |
| 40:BF:8:GLN:HB2 | 40:BF:124:LEU:HD11 | 1.77 | 0.66 |
| 41:BG:63:ILE:HD12 | 41:BG:64:THR:N | 2.10 | 0.66 |
| 36:BB:20:C:H2' | 36:BB:21:G:C5' | 2.21 | 0.66 |
| 1:AA:267:C:OP2 | 17:AQ:67:LYS:HD2 | 1.96 | 0.66 |
| 53:BW:5:ALA:HB1 | 53:BW:50:VAL:CG2 | 2.26 | 0.66 |
| 53:BW:6:ILE:HG13 | 53:BW:104:THR:HG23 | 1.78 | 0.66 |
| 15:AO:87:ILE:HG22 | 15:AO:88:ARG:N | 2.10 | 0.66 |
| 35:DA:2808:U:H5' | 35:DA:2891:G:O6 | 1.95 | 0.66 |
| 33:D8:29:LYS:HD3 | 33:D8:44:LYS:HG2 | 1.78 | 0.66 |
| 42:DH:32:GLU:O | 42:DH:33:LEU:HD23 | 1.96 | 0.66 |
| 35:DA:2182:G:H2' | 35:DA:2183:C:C6 | 2.30 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 19:AS:48:THR:HG22 | 19:AS:61:TYR:HA | 1.77 | 0.66 |
| 25:B0:48:GLY:HA3 | 25:B0:80:HIS:HD2 | 1.61 | 0.66 |
| 35:DA:106:C:H2' | 35:DA:107:C:H6 | 1.61 | 0.66 |
| 1:CA:840:C:H4' | 1:CA:848:C:C2 | 2.31 | 0.66 |
| 26:B1:45:ASN:HD21 | 26:B1:47:GLN:NE2 | 1.94 | 0.66 |
| 11:CK:122:LYS:O | 11:CK:126:ARG:HG3 | 1.95 | 0.66 |
| 41:BG:50:ALA:C | 41:BG:52:ILE:H | 1.99 | 0.66 |
| 2:CB:59:GLU:HB2 | 2:CB:221:LEU:CD1 | 2.24 | 0.66 |
| 35:DA:893:C:H2' | 35:DA:894:C:C6 | 2.31 | 0.66 |
| 35:DA:17:G:H4' | 51:DU:25:TRP:CZ3 | 2.31 | 0.66 |
| 35:DA:1272:A:OP2 | 35:DA:1647:G:OP1 | 2.13 | 0.66 |
| 36:BB:111:G:O2' | 36:BB:112:U:H5' | 1.96 | 0.66 |
| 36:DB:35:U:O2' | 36:DB:36:C:H5' | 1.96 | 0.66 |
| 37:DC:18:LYS:O | 37:DC:22:ILE:HD11 | 1.96 | 0.66 |
| 35:BA:792:G:H5'' | 35:BA:793:A:H5' | 1.77 | 0.66 |
| 1:AA:165:C:H2' | 1:AA:166:G:C8 | 2.29 | 0.66 |
| 35:DA:203:C:H3' | 35:DA:204:A:H5'' | 1.77 | 0.66 |
| 9:AI:96:LEU:CD2 | 9:AI:102:LEU:HD12 | 2.26 | 0.66 |
| 39:BE:79:ARG:HH11 | 39:BE:79:ARG:HG2 | 1.60 | 0.66 |
| 41:DG:29:TRP:O | 41:DG:33:ARG:NH1 | 2.29 | 0.66 |
| 35:BA:1803:A:O2' | 38:BD:259:THR:HG21 | 1.95 | 0.66 |
| 1:CA:1325:C:H4' | 21:CU:17:THR:HG21 | 1.77 | 0.66 |
| 55:DY:14:LEU:CG | 55:DY:15:VAL:N | 2.59 | 0.66 |
| 1:AA:1319:A:OP2 | 19:AS:5:LEU:HD21 | 1.96 | 0.66 |
| 55:BY:14:LEU:HD11 | 55:BY:22:GLY:HA2 | 1.77 | 0.66 |
| 10:AJ:34:VAL:HG13 | 10:AJ:73:ASP:O | 1.95 | 0.66 |
| 2:AB:119:GLU:O | 2:AB:122:PHE:HB3 | 1.95 | 0.66 |
| 1:AA:253:U:H2' | 1:AA:254:G:H8 | 1.60 | 0.66 |
| 35:DA:142:A:C8 | 35:DA:1408:C:H1' | 2.30 | 0.66 |
| 1:AA:1293:G:O2' | 1:AA:1294:G:H8 | 1.78 | 0.66 |
| 55:DY:47:LYS:HD2 | 55:DY:47:LYS:N | 2.10 | 0.66 |
| 8:AH:7:ALA:HB2 | 8:AH:85:ARG:HH11 | 1.61 | 0.66 |
| 52:BV:99:ILE:N | 52:BV:99:ILE:HD13 | 2.09 | 0.66 |
| 38:BD:172:TYR:CD1 | 38:BD:186:HIS:HA | 2.30 | 0.66 |
| 1:CA:174:C:H2' | 1:CA:175:C:C6 | 2.29 | 0.66 |
| 35:BA:2876:G:H4' | 50:BT:3:ARG:HD3 | 1.77 | 0.66 |
| 18:AR:86:VAL:C | 18:AR:87:ARG:HD3 | 2.16 | 0.66 |
| 35:DA:1187:G:H5'' | 52:DV:81:TYR:CE2 | 2.30 | 0.66 |
| 35:DA:1405:U:H2' | 35:DA:1406:U:C6 | 2.31 | 0.66 |
| 40:DF:178:PRO:HB2 | 40:DF:201:VAL:HG11 | 1.76 | 0.66 |
| 56:BZ:4:ARG:HD3 | 56:BZ:60:GLU:OE1 | 1.95 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 26:B1:29:GLY:HA3 | 35:BA:2396:G:O2' | 1.96 | 0.66 |
| 56:DZ:107:THR:HG23 | 56:DZ:111:VAL:HG11 | 1.77 | 0.66 |
| 1:CA:223:U:H2' | 1:CA:224:C:C6 | 2.31 | 0.66 |
| 39:BE:107:THR:O | 39:BE:190:GLY:HA2 | 1.96 | 0.66 |
| 51:DU:98:LEU:HD21 | 52:DV:2:PHE:HZ | 1.61 | 0.66 |
| 54:DX:22:ALA:HB3 | 54:DX:23:GLU:OE2 | 1.96 | 0.66 |
| 41:BG:45:GLU:H | 41:BG:88:ILE:HG12 | 1.61 | 0.66 |
| 2:CB:61:LEU:CD2 | 2:CB:68:ILE:HD11 | 2.24 | 0.66 |
| 2:CB:9:GLU:HA | 2:CB:12:GLU:OE1 | 1.96 | 0.66 |
| 10:AJ:32:ALA:HB1 | 10:AJ:76:ASN:H | 1.61 | 0.66 |
| 46:BP:32:THR:HG21 | 46:BP:37:GLY:HA2 | 1.78 | 0.66 |
| 3:CC:16:ARG:NH1 | 3:CC:16:ARG:HB2 | 2.11 | 0.66 |
| 48:BR:45:ARG:HG3 | 48:BR:46:GLY:N | 2.10 | 0.66 |
| 50:DT:62:THR:CG2 | 50:DT:75:ILE:HG12 | 2.25 | 0.66 |
| 4:AD:133:VAL:HG11 | 4:AD:138:TYR:CD1 | 2.30 | 0.66 |
| 1:AA:1321:C:C3' | 1:AA:1322:C:H5'' | 2.24 | 0.66 |
| 18:AR:50:ILE:CD1 | 18:AR:70:ILE:HG21 | 2.26 | 0.66 |
| 35:BA:2151:G:H2' | 35:BA:2152:G:C8 | 2.30 | 0.66 |
| 1:AA:174:C:H2' | 1:AA:175:C:C6 | 2.29 | 0.66 |
| 12:CL:28:LYS:HE2 | 12:CL:33:ARG:HH12 | 1.61 | 0.66 |
| 43:DI:8:PRO:HB3 | 43:DI:14:ASP:N | 2.10 | 0.66 |
| 39:DE:81:ILE:O | 39:DE:82:ARG:HB2 | 1.93 | 0.66 |
| 12:AL:18:VAL:HG23 | 12:AL:19:ARG:N | 2.11 | 0.66 |
| 35:BA:1021:A:C8 | 35:BA:1021:A:H3' | 2.31 | 0.66 |
| 37:BC:71:GLN:CG | 37:BC:73:ARG:HE | 2.08 | 0.66 |
| 35:BA:1108:U:C2' | 35:BA:1109:C:H5' | 2.26 | 0.66 |
| 38:DD:76:PRO:O | 38:DD:98:VAL:HG23 | 1.96 | 0.66 |
| 25:B0:14:ARG:HD2 | 35:BA:2279:G:O6 | 1.96 | 0.66 |
| 28:D3:59:VAL:HG12 | 28:D3:60:GLU:N | 2.11 | 0.66 |
| 1:CA:805:C:H2' | 1:CA:806:C:H6 | 1.60 | 0.66 |
| 38:BD:10:THR:HG23 | 38:BD:13:ARG:CB | 2.25 | 0.66 |
| 56:BZ:76:LEU:HD23 | 56:BZ:83:PRO:HA | 1.78 | 0.66 |
| 1:AA:683:G:H2' | 1:AA:684:A:C8 | 2.31 | 0.66 |
| 14:AN:9:LYS:HG3 | 14:AN:12:ARG:NH1 | 2.11 | 0.66 |
| 30:B5:58:LEU:HD12 | 30:B5:58:LEU:H | 1.60 | 0.66 |
| 9:CI:55:ALA:HB1 | 9:CI:58:ARG:HB2 | 1.77 | 0.65 |
| 35:BA:1885:A:H5' | 35:BA:1885:A:H8 | 1.61 | 0.65 |
| 39:BE:77:ILE:HG22 | 39:BE:78:LEU:HG | 1.77 | 0.65 |
| 35:BA:2723:C:H5'' | 48:BR:2:ARG:NE | 2.11 | 0.65 |
| 35:DA:483:A:H1' | 55:DY:60:PHE:CZ | 2.26 | 0.65 |
| 56:BZ:117:LEU:HA | 56:BZ:174:VAL:HG22 | 1.78 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:BZ:30:ASN:HB3 | 56:BZ:90:VAL:HB | 1.78 | 0.65 |
| 35:DA:2151:G:H2' | 35:DA:2152:G:C8 | 2.30 | 0.65 |
| 19:CS:49:ILE:O | 19:CS:60:VAL:HG12 | 1.95 | 0.65 |
| 43:BI:123:LEU:HD11 | 43:BI:144:VAL:CG1 | 2.26 | 0.65 |
| 35:BA:803:U:O2' | 35:BA:804:A:H5' | 1.96 | 0.65 |
| 1:CA:339:C:H2' | 1:CA:340:U:C6 | 2.31 | 0.65 |
| 35:DA:2740:A:H2' | 35:DA:2741:A:C8 | 2.30 | 0.65 |
| 47:BQ:133:ARG:O | 47:BQ:134:ARG:HG2 | 1.96 | 0.65 |
| 1:CA:1241:G:H2' | 1:CA:1242:C:C6 | 2.31 | 0.65 |
| 43:DI:47:LEU:O | 43:DI:51:ILE:HG12 | 1.95 | 0.65 |
| 35:BA:17:G:H4' | 51:BU:25:TRP:CZ3 | 2.31 | 0.65 |
| 23:CW:67:C:H2' | 23:CW:68:C:C6 | 2.31 | 0.65 |
| 1:CA:1466:C:H2' | 1:CA:1467:G:O4' | 1.96 | 0.65 |
| 11:AK:111:ASP:HA | 18:AR:84:LYS:HG3 | 1.77 | 0.65 |
| 43:BI:85:GLU:HG3 | 43:BI:86:THR:HG23 | 1.78 | 0.65 |
| 22:CY:10:G:H2' | 22:CY:11:C:C6 | 2.31 | 0.65 |
| 2:CB:77:ALA:CB | 2:CB:211:ILE:HD13 | 2.19 | 0.65 |
| 50:BT:91:ARG:CB | 50:BT:116:ALA:HA | 2.22 | 0.65 |
| 50:BT:91:ARG:HA | 50:BT:117:ASP:H | 1.61 | 0.65 |
| 22:AV:20:U:C3' | 22:AV:21:A:C5' | 2.73 | 0.65 |
| 35:DA:2491:U:O2' | 35:DA:2492:U:H5' | 1.96 | 0.65 |
| 9:CI:114:TYR:H | 9:CI:114:TYR:HD2 | 1.44 | 0.65 |
| 55:DY:26:LYS:HG2 | 55:DY:27:VAL:N | 2.07 | 0.65 |
| 33:D8:50:LEU:CD1 | 33:D8:51:ALA:H | 2.06 | 0.65 |
| 10:CJ:6:ILE:HG13 | 10:CJ:6:ILE:O | 1.95 | 0.65 |
| 55:BY:14:LEU:CG | 55:BY:15:VAL:N | 2.58 | 0.65 |
| 30:B5:35:GLU:O | 30:B5:49:CYS:HB3 | 1.96 | 0.65 |
| 10:AJ:6:ILE:O | 10:AJ:71:LEU:HD12 | 1.96 | 0.65 |
| 35:BA:142:A:C8 | 35:BA:1408:C:H1' | 2.31 | 0.65 |
| 47:BQ:42:ILE:N | 47:BQ:42:ILE:HD12 | 2.11 | 0.65 |
| 46:DP:34:GLY:O | 46:DP:35:HIS:HB2 | 1.95 | 0.65 |
| 42:DH:141:VAL:HG12 | 42:DH:142:GLY:N | 2.10 | 0.65 |
| 45:BO:87:ILE:HG22 | 45:BO:88:ASN:H | 1.60 | 0.65 |
| 53:BW:6:ILE:CG1 | 53:BW:104:THR:HG23 | 2.25 | 0.65 |
| 8:AH:20:TYR:HE2 | 8:AH:75:ARG:HE | 1.44 | 0.65 |
| 1:AA:390:C:O3' | 16:AP:28:ARG:NH2 | 2.29 | 0.65 |
| 38:DD:172:TYR:CD1 | 38:DD:186:HIS:HA | 2.30 | 0.65 |
| 5:CE:76:ILE:HG23 | 5:CE:77:PRO:HD2 | 1.77 | 0.65 |
| 35:BA:2196:C:O2' | 35:BA:2197:U:H5' | 1.96 | 0.65 |
| 2:AB:97:TRP:HZ2 | 2:AB:102:LEU:HD13 | 1.61 | 0.65 |
| 37:DC:71:GLN:CG | 37:DC:73:ARG:HE | 2.09 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:AP:50:LYS:HD3 | 16:AP:51:VAL:N | 2.10 | 0.65 |
| 35:DA:1042:G:H1' | 35:DA:1114:G:N2 | 2.11 | 0.65 |
| 35:BA:2114:A:H2' | 35:BA:2115:G:O4' | 1.95 | 0.65 |
| 1:AA:986:A:H1' | 19:AS:54:GLY:O | 1.96 | 0.65 |
| 1:CA:447:G:H2' | 1:CA:485:G:N2 | 2.10 | 0.65 |
| 35:BA:829:A:N7 | 35:BA:2248:C:H5' | 2.10 | 0.65 |
| 17:CQ:14:LYS:HB2 | 17:CQ:14:LYS:NZ | 2.10 | 0.65 |
| 1:CA:26:A:N6 | 1:CA:558:G:H1' | 2.12 | 0.65 |
| 1:CA:1194:U:H4' | 5:CE:22:GLY:HA2 | 1.78 | 0.65 |
| 1:CA:1319:A:OP2 | 19:CS:5:LEU:HD21 | 1.96 | 0.65 |
| 35:BA:212:G:O2' | 35:BA:213:A:H5' | 1.95 | 0.65 |
| 41:DG:59:GLU:OE2 | 41:DG:149:VAL:HG12 | 1.96 | 0.65 |
| 35:BA:1419:A:O2' | 35:BA:1420:U:H5'' | 1.96 | 0.65 |
| 55:BY:96:ILE:HB | 55:BY:99:CYS:HB2 | 1.77 | 0.65 |
| 9:CI:50:LEU:HG | 9:CI:81:ILE:HG21 | 1.79 | 0.65 |
| 1:CA:180:U:H2' | 1:CA:181:G:C5' | 2.21 | 0.65 |
| 46:BP:16:ARG:CD | 46:BP:18:ARG:H | 2.02 | 0.65 |
| 13:AM:16:ASP:HB3 | 13:AM:41:PRO:HB3 | 1.77 | 0.65 |
| 52:DV:49:THR:CG2 | 52:DV:50:PRO:HD3 | 2.24 | 0.65 |
| 41:BG:76:SER:CB | 41:BG:84:LYS:H | 2.08 | 0.65 |
| 10:CJ:5:ARG:CG | 10:CJ:71:LEU:HD11 | 2.27 | 0.65 |
| 26:B1:61:ARG:CG | 26:B1:61:ARG:HH11 | 2.07 | 0.65 |
| 44:DN:13:TRP:O | 44:DN:135:PRO:HD2 | 1.96 | 0.65 |
| 43:BI:72:LEU:HD11 | 43:BI:101:LEU:HD11 | 1.79 | 0.65 |
| 27:D2:16:LEU:O | 27:D2:20:GLU:HB3 | 1.96 | 0.65 |
| 39:BE:16:ARG:C | 39:BE:18:ASP:H | 1.99 | 0.65 |
| 20:CT:50:GLU:HG3 | 20:CT:51:GLU:H | 1.60 | 0.65 |
| 26:B1:82:LEU:HB3 | 26:B1:90:ILE:HD12 | 1.78 | 0.65 |
| 40:DF:21:ALA:C | 40:DF:23:ASP:H | 2.00 | 0.65 |
| 20:AT:33:ILE:HD13 | 20:AT:62:LEU:HB3 | 1.79 | 0.65 |
| 35:BA:2173:A:C2' | 35:BA:2174:C:H5' | 2.26 | 0.65 |
| 12:AL:102:ARG:HH11 | 12:AL:102:ARG:HG2 | 1.60 | 0.65 |
| 9:CI:3:GLN:HG2 | 9:CI:20:ARG:NH1 | 2.11 | 0.65 |
| 35:DA:2790:A:C2 | 35:DA:2791:C:H2' | 2.31 | 0.65 |
| 35:BA:2784:C:H1' | 39:BE:37:ARG:NH1 | 2.11 | 0.65 |
| 1:CA:166:G:O2' | 1:CA:167:G:H5' | 1.95 | 0.65 |
| 38:DD:221:VAL:HG22 | 38:DD:226:MET:CE | 2.25 | 0.65 |
| 30:D5:58:LEU:HD12 | 30:D5:58:LEU:H | 1.60 | 0.65 |
| 35:BA:2648:C:H2' | 35:BA:2649:U:C6 | 2.32 | 0.65 |
| 41:BG:51:ARG:NE | 41:BG:51:ARG:HA | 2.10 | 0.65 |
| 50:BT:83:ILE:O | 50:BT:83:ILE:HD12 | 1.97 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:AD:33:MET:HE3 | 4:AD:37:PRO:HA | 1.77 | 0.65 |
| 55:BY:42:VAL:CG1 | 55:BY:65:ALA:HB3 | 2.26 | 0.65 |
| 3:AC:16:ARG:NH1 | 3:AC:16:ARG:HB2 | 2.11 | 0.65 |
| 46:DP:7:ARG:CA | 46:DP:7:ARG:NH1 | 2.58 | 0.65 |
| 44:DN:67:LEU:O | 44:DN:68:GLU:HB2 | 1.94 | 0.65 |
| 35:DA:807:U:H2' | 35:DA:808:G:H8 | 1.60 | 0.65 |
| 4:AD:114:ARG:O | 4:AD:117:ALA:HB3 | 1.96 | 0.65 |
| 1:AA:1030(A):G:H2' | 1:AA:1030(C):G:OP2 | 1.96 | 0.65 |
| 20:CT:46:GLU:HG2 | 20:CT:46:GLU:O | 1.95 | 0.65 |
| 35:DA:1115:G:H2' | 35:DA:1116:C:C6 | 2.31 | 0.65 |
| 2:CB:21:ARG:HH11 | 2:CB:38:GLY:HA3 | 1.62 | 0.65 |
| 35:DA:1050:A:H2' | 35:DA:1051:G:C8 | 2.30 | 0.65 |
| 40:BF:21:ALA:C | 40:BF:23:ASP:H | 2.00 | 0.65 |
| 36:BB:56:G:C5' | 41:BG:27:ASN:HD21 | 2.09 | 0.65 |
| 52:BV:21:ARG:HG2 | 52:BV:91:TYR:CD2 | 2.31 | 0.65 |
| 1:AA:840:C:H4' | 1:AA:848:C:C2 | 2.32 | 0.65 |
| 1:AA:532:A:N6 | 3:AC:156:ARG:HH12 | 1.95 | 0.65 |
| 20:AT:45:GLN:C | 20:AT:47:GLY:H | 2.00 | 0.65 |
| 1:AA:110:C:H2' | 1:AA:111:G:O4' | 1.95 | 0.65 |
| 1:CA:1240:U:OP2 | 7:CG:116:ALA:HB2 | 1.96 | 0.65 |
| 25:D0:84:LEU:H | 25:D0:84:LEU:HD12 | 1.60 | 0.65 |
| 28:B3:59:VAL:HG12 | 28:B3:60:GLU:N | 2.12 | 0.65 |
| 22:CV:53:G:H2' | 22:CV:54:U:C6 | 2.32 | 0.65 |
| 44:BN:133:GLN:HG2 | 44:BN:134:ARG:N | 2.09 | 0.65 |
| 5:AE:137:GLU:OE2 | 5:AE:140:ARG:HD2 | 1.96 | 0.65 |
| 52:BV:19:LYS:NZ | 52:BV:20:LEU:N | 2.39 | 0.65 |
| 35:BA:2543:G:H2' | 35:BA:2544:G:C8 | 2.31 | 0.65 |
| 55:BY:15:VAL:HG12 | 55:BY:16:ALA:N | 2.12 | 0.65 |
| 43:DI:72:LEU:HD11 | 43:DI:101:LEU:HD11 | 1.77 | 0.65 |
| 45:BO:104:ARG:HH21 | 50:BT:33:LYS:CE | 2.08 | 0.65 |
| 13:CM:90:LEU:C | 13:CM:92:HIS:N | 2.46 | 0.65 |
| 35:BA:2133:G:H2' | 35:BA:2157:G:H22 | 1.61 | 0.65 |
| 12:CL:27:LEU:HD11 | 12:CL:64:TYR:CZ | 2.31 | 0.65 |
| 40:BF:78:ILE:CD1 | 40:BF:78:ILE:H | 2.09 | 0.65 |
| 2:AB:21:ARG:HH11 | 2:AB:38:GLY:HA3 | 1.61 | 0.65 |
| 42:DH:103:LEU:CD2 | 42:DH:105:LEU:HD12 | 2.27 | 0.65 |
| 35:BA:1608:A:H1' | 35:BA:1610:A:OP2 | 1.96 | 0.65 |
| 8:AH:45:ILE:HG22 | 8:AH:63:LEU:HA | 1.77 | 0.65 |
| 56:BZ:119:GLU:HG3 | 56:BZ:119:GLU:O | 1.96 | 0.65 |
| 46:BP:84:ASN:HA | 46:BP:115:LEU:O | 1.97 | 0.65 |
| 50:DT:96:ARG:HG2 | 50:DT:96:ARG:HH11 | 1.61 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:AG:148:ASN:HD22 | 7:AG:148:ASN:N | 1.92 | 0.65 |
| 51:BU:98:LEU:HD21 | 52:BV:2:PHE:HZ | 1.61 | 0.65 |
| 43:BI:2:LYS:HB2 | 43:BI:39:ALA:HB3 | 1.78 | 0.65 |
| 56:BZ:63:ASP:HB2 | 56:BZ:65:GLN:OE1 | 1.95 | 0.65 |
| 35:DA:2648:C:H2' | 35:DA:2649:U:C6 | 2.31 | 0.65 |
| 1:AA:1137:C:H4' | 1:AA:1138:G:C2 | 2.32 | 0.65 |
| 1:CA:598:U:H4' | 8:CH:94:TYR:CD2 | 2.31 | 0.65 |
| 54:BX:47:PHE:HD2 | 54:BX:89:ILE:HG23 | 1.60 | 0.65 |
| 1:CA:1346:A:C5' | 9:CI:120:ARG:HH12 | 2.08 | 0.65 |
| 9:CI:77:ILE:O | 9:CI:81:ILE:HG12 | 1.96 | 0.65 |
| 49:DS:89:ARG:O | 49:DS:92:TYR:HB3 | 1.97 | 0.65 |
| 35:BA:833:U:H5'' | 46:BP:48:PRO:HB3 | 1.78 | 0.65 |
| 1:CA:178:C:O2' | 1:CA:179:A:H5' | 1.97 | 0.65 |
| 49:DS:96:GLY:O | 49:DS:98:VAL:HG23 | 1.95 | 0.65 |
| 56:BZ:48:PHE:HE2 | 56:BZ:52:SER:HA | 1.58 | 0.65 |
| 52:BV:18:LEU:CG | 52:BV:19:LYS:H | 2.08 | 0.65 |
| 37:DC:45:ALA:O | 37:DC:46:LYS:HB2 | 1.96 | 0.65 |
| 46:BP:96:THR:O | 46:BP:99:LEU:HB3 | 1.95 | 0.65 |
| 46:DP:97:PRO:C | 46:DP:99:LEU:H | 1.98 | 0.65 |
| 55:BY:31:LEU:CB | 55:BY:32:PRO:HA | 2.26 | 0.65 |
| 55:BY:49:VAL:O | 55:BY:53:PRO:HG3 | 1.96 | 0.65 |
| 56:BZ:165:VAL:HG12 | 56:BZ:166:SER:N | 2.11 | 0.65 |
| 43:DI:88:ILE:CG2 | 43:DI:89:TYR:N | 2.59 | 0.65 |
| 20:AT:50:GLU:HG3 | 20:AT:51:GLU:H | 1.59 | 0.65 |
| 30:B5:51:TYR:HB2 | 30:B5:54:GLY:HA3 | 1.79 | 0.65 |
| 43:BI:88:ILE:CG2 | 43:BI:89:TYR:H | 2.08 | 0.65 |
| 2:CB:97:TRP:CH2 | 2:CB:173:ALA:HA | 2.31 | 0.65 |
| 43:BI:47:LEU:O | 43:BI:51:ILE:HG12 | 1.95 | 0.65 |
| 35:BA:528:A:H2 | 35:BA:2043:C:H5' | 1.61 | 0.65 |
| 35:DA:1986:A:H2' | 35:DA:1987:G:H5'' | 1.76 | 0.65 |
| 48:BR:104:ARG:CB | 48:BR:104:ARG:HH11 | 2.10 | 0.65 |
| 1:AA:1442:G:C8 | 1:AA:1442(B):A:H2 | 2.14 | 0.65 |
| 1:AA:166:G:O2' | 1:AA:167:G:H5' | 1.97 | 0.65 |
| 38:BD:58:HIS:HD2 | 38:BD:59:LYS:O | 1.79 | 0.65 |
| 1:CA:130:A:C8 | 17:CQ:63:ARG:HG3 | 2.31 | 0.65 |
| 2:AB:82:ARG:HB2 | 2:AB:94:ASN:ND2 | 2.11 | 0.65 |
| 6:CF:23:LYS:O | 6:CF:27:GLN:HG2 | 1.97 | 0.65 |
| 23:CW:19:G:H5' | 23:CW:20:U:H5 | 1.62 | 0.65 |
| 22:AY:9:A:H2 | 22:AY:45:U:H3 | 1.42 | 0.65 |
| 2:AB:50:GLU:HG3 | 2:AB:202:PRO:HG3 | 1.79 | 0.65 |
| 39:DE:109:LYS:HB3 | 48:DR:2:ARG:HH22 | 1.61 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:CC:30:ARG:HH11 | 14:CN:38:GLY:CA | 2.07 | 0.65 |
| 55:DY:17:SER:HB2 | 55:DY:71:LYS:CE | 2.26 | 0.65 |
| 35:DA:2685:G:H5' | 45:DO:68:GLU:OE1 | 1.97 | 0.65 |
| 46:BP:7:ARG:NH1 | 46:BP:7:ARG:CA | 2.59 | 0.65 |
| 33:B8:61:LEU:CD1 | 33:B8:62:LEU:H | 2.10 | 0.65 |
| 37:BC:87:GLU:HG2 | 37:BC:93:TYR:HA | 1.78 | 0.65 |
| 17:CQ:68:ARG:HH11 | 17:CQ:68:ARG:HG2 | 1.62 | 0.65 |
| 1:CA:1293:G:O2' | 1:CA:1294:G:H8 | 1.78 | 0.65 |
| 45:DO:2:ILE:HD11 | 45:DO:82:ASN:ND2 | 2.11 | 0.65 |
| 35:BA:2290:G:H5' | 35:BA:2290:G:C8 | 2.27 | 0.65 |
| 41:BG:15:VAL:O | 41:BG:19:LEU:HG | 1.97 | 0.65 |
| 17:CQ:22:LEU:HD13 | 17:CQ:41:LYS:HG2 | 1.77 | 0.65 |
| 1:CA:376:G:O2' | 1:CA:377:G:H5' | 1.96 | 0.65 |
| 1:AA:437:U:O2' | 1:AA:438:G:H5' | 1.97 | 0.65 |
| 3:AC:5:ILE:HD12 | 3:AC:5:ILE:O | 1.97 | 0.65 |
| 35:BA:999:U:H2' | 35:BA:1000:A:C5' | 2.26 | 0.65 |
| 2:CB:165:VAL:HG23 | 2:CB:166:ASP:H | 1.61 | 0.65 |
| 26:B1:45:ASN:ND2 | 26:B1:47:GLN:HE21 | 1.95 | 0.65 |
| 17:AQ:63:ARG:HG2 | 17:AQ:64:PRO:HD2 | 1.77 | 0.65 |
| 53:DW:29:LEU:HD21 | 53:DW:33:ARG:HH21 | 1.62 | 0.65 |
| 1:AA:1343:G:H1' | 9:AI:121:ARG:NH1 | 2.10 | 0.65 |
| 45:BO:86:ILE:H | 45:BO:86:ILE:HD12 | 1.62 | 0.65 |
| 9:CI:27:THR:HG23 | 9:CI:31:GLN:H | 1.60 | 0.65 |
| 37:BC:45:ALA:O | 37:BC:46:LYS:HB2 | 1.95 | 0.65 |
| 53:BW:29:LEU:O | 53:BW:33:ARG:HG3 | 1.95 | 0.65 |
| 35:DA:191:A:O2' | 35:DA:192:C:H5' | 1.96 | 0.65 |
| 2:AB:172:ILE:HD12 | 2:AB:172:ILE:H | 1.61 | 0.65 |
| 9:CI:96:LEU:CD2 | 9:CI:102:LEU:HD12 | 2.25 | 0.65 |
| 55:DY:95:LYS:HG2 | 55:DY:100:ALA:HA | 1.77 | 0.65 |
| 12:AL:53:ARG:HB3 | 12:AL:69:TYR:HE1 | 1.61 | 0.65 |
| 35:BA:2803:C:H2' | 35:BA:2804:C:C6 | 2.31 | 0.65 |
| 39:BE:69:LYS:HD2 | 39:BE:90:THR:OG1 | 1.95 | 0.65 |
| 3:AC:70:VAL:O | 3:AC:106:VAL:HG23 | 1.96 | 0.65 |
| 35:BA:2468:G:N2 | 35:BA:2481:G:H2' | 2.11 | 0.65 |
| 30:D5:35:GLU:O | 30:D5:49:CYS:HB3 | 1.96 | 0.65 |
| 4:CD:31:CYS:SG | 4:CD:31:CYS:O | 2.55 | 0.65 |
| 30:B5:35:GLU:O | 30:B5:36:CYS:CB | 2.45 | 0.65 |
| 33:B8:4:MET:HB3 | 33:B8:61:LEU:HD22 | 1.77 | 0.65 |
| 20:CT:33:ILE:HD13 | 20:CT:62:LEU:HB3 | 1.79 | 0.65 |
| 35:DA:809:G:O2' | 35:DA:810:U:H5' | 1.97 | 0.65 |
| 35:BA:271(S):G:H2' | 35:BA:271(T):C:C5' | 2.27 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:D0:20:ARG:CD | 25:D0:20:ARG:N | 2.59 | 0.65 |
| 31:D6:11:LEU:HD23 | 31:D6:26:ASN:HB2 | 1.77 | 0.65 |
| 47:DQ:42:ILE:N | 47:DQ:42:ILE:HD12 | 2.12 | 0.65 |
| 56:DZ:117:LEU:HA | 56:DZ:174:VAL:HG22 | 1.79 | 0.65 |
| 1:AA:1298:C:H2' | 7:AG:114:ARG:NH1 | 2.12 | 0.65 |
| 12:CL:18:VAL:HG23 | 12:CL:19:ARG:N | 2.12 | 0.65 |
| 1:AA:1241:G:H2' | 1:AA:1242:C:C6 | 2.31 | 0.65 |
| 35:BA:1287:A:H5' | 48:BR:104:ARG:HD2 | 1.79 | 0.65 |
| 1:CA:662:G:H2' | 1:CA:663:A:H8 | 1.60 | 0.65 |
| 15:CO:55:GLY:O | 15:CO:59:MET:HG3 | 1.96 | 0.65 |
| 1:CA:1239:A:H62 | 1:CA:1299:A:H62 | 1.45 | 0.65 |
| 1:AA:1343:G:H1' | 9:AI:121:ARG:HH12 | 1.62 | 0.65 |
| 2:CB:82:ARG:O | 2:CB:86:GLU:HG3 | 1.97 | 0.65 |
| 1:CA:1520:G:H2' | 1:CA:1521:G:H8 | 1.62 | 0.65 |
| 4:AD:189:PRO:HB2 | 4:AD:194:LEU:HD21 | 1.78 | 0.65 |
| 35:DA:1438:U:O2' | 35:DA:1439:A:H5' | 1.97 | 0.65 |
| 35:BA:2352:A:H2' | 35:BA:2353:G:H5' | 1.78 | 0.65 |
| 54:BX:22:ALA:HB3 | 54:BX:23:GLU:OE2 | 1.95 | 0.65 |
| 49:BS:14:VAL:HG12 | 49:BS:15:ARG:H | 1.61 | 0.65 |
| 39:BE:95:ILE:CD1 | 39:BE:95:ILE:H | 2.10 | 0.65 |
| 10:CJ:50:ILE:HD11 | 14:CN:41:ARG:HD2 | 1.77 | 0.65 |
| 35:BA:1594:G:H8 | 35:BA:1594:G:C5' | 2.06 | 0.65 |
| 44:DN:4:TYR:CD1 | 44:DN:4:TYR:N | 2.62 | 0.65 |
| 9:AI:114:TYR:CD1 | 10:AJ:60:ARG:HG3 | 2.32 | 0.65 |
| 33:D8:61:LEU:CD1 | 33:D8:62:LEU:H | 2.09 | 0.65 |
| 10:CJ:32:ALA:HB1 | 10:CJ:75:ILE:CG1 | 2.27 | 0.65 |
| 38:BD:26:LYS:CE | 38:BD:82:ILE:H | 2.09 | 0.65 |
| 45:DO:87:ILE:HG22 | 45:DO:88:ASN:H | 1.62 | 0.65 |
| 43:DI:133:HIS:CB | 43:DI:134:PRO:CD | 2.75 | 0.65 |
| 15:AO:67:LEU:HD22 | 15:AO:78:TYR:HE1 | 1.61 | 0.65 |
| 41:BG:128:ARG:HB2 | 41:BG:130:ASN:O | 1.96 | 0.65 |
| 1:CA:735:C:H2' | 1:CA:736:C:C6 | 2.32 | 0.65 |
| 35:DA:580:C:H2' | 35:DA:581:C:C6 | 2.31 | 0.65 |
| 13:AM:4:ILE:HA | 13:AM:57:ARG:HD3 | 1.78 | 0.65 |
| 3:CC:5:ILE:O | 3:CC:5:ILE:HD12 | 1.97 | 0.65 |
| 43:DI:9:LEU:H | 43:DI:13:GLY:CA | 2.10 | 0.65 |
| 11:AK:29:ILE:HD12 | 11:AK:43:SER:O | 1.96 | 0.65 |
| 35:DA:792:G:H5'' | 35:DA:793:A:H5' | 1.78 | 0.65 |
| 40:BF:167:ALA:HB1 | 40:BF:173:VAL:HG11 | 1.77 | 0.65 |
| 35:BA:1952:A:C5 | 45:BO:22:ILE:HD12 | 2.32 | 0.65 |
| 25:B0:73:GLY:HA3 | 36:BB:12:C:H2' | 1.79 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:110:C:H2' | 1:CA:111:G:O4' | 1.97 | 0.65 |
| 9:AI:56:LEU:HD23 | 9:AI:56:LEU:O | 1.97 | 0.65 |
| 12:AL:28:LYS:C | 12:AL:30:ALA:H | 2.00 | 0.65 |
| 55:BY:84:ARG:HH12 | 55:BY:97:ARG:HA | 1.61 | 0.65 |
| 31:D6:15:GLU:HG2 | 31:D6:18:ARG:NH2 | 2.12 | 0.65 |
| 31:D6:46:HIS:HB2 | 31:D6:47:THR:N | 2.12 | 0.65 |
| 12:CL:90:VAL:O | 12:CL:92:ASP:N | 2.25 | 0.65 |
| 1:CA:939:G:H2' | 1:CA:940:C:C6 | 2.32 | 0.65 |
| 41:DG:18:GLU:O | 41:DG:22:ARG:HG3 | 1.97 | 0.65 |
| 3:AC:116:VAL:O | 3:AC:119:ARG:HB3 | 1.96 | 0.65 |
| 3:CC:30:ARG:HH11 | 14:CN:38:GLY:HA2 | 1.61 | 0.65 |
| 35:DA:1593:G:C2' | 35:DA:1594:G:H5'' | 2.27 | 0.65 |
| 2:CB:119:GLU:O | 2:CB:122:PHE:HB3 | 1.96 | 0.65 |
| 44:BN:17:ASP:HB2 | 44:BN:55:VAL:HG12 | 1.79 | 0.65 |
| 31:B6:11:LEU:HD23 | 31:B6:26:ASN:HB2 | 1.79 | 0.65 |
| 31:B6:52:VAL:HG12 | 31:B6:53:LYS:N | 2.12 | 0.65 |
| 35:DA:481:G:H1' | 35:DA:506:G:H21 | 1.62 | 0.65 |
| 1:CA:253:U:H2' | 1:CA:254:G:C8 | 2.31 | 0.65 |
| 53:DW:5:ALA:HB1 | 53:DW:50:VAL:HG22 | 1.78 | 0.65 |
| 35:BA:943:U:OP2 | 46:BP:38:GLN:CD | 2.35 | 0.65 |
| 43:BI:81:VAL:O | 43:BI:82:ARG:HB2 | 1.96 | 0.65 |
| 1:CA:102:G:H2' | 1:CA:103:C:H6 | 1.62 | 0.65 |
| 38:DD:65:ILE:H | 38:DD:65:ILE:HD13 | 1.62 | 0.65 |
| 12:CL:102:ARG:HG2 | 12:CL:102:ARG:HH11 | 1.62 | 0.65 |
| 6:AF:55:ASP:HB3 | 6:AF:86:ARG:HH12 | 1.62 | 0.65 |
| 44:DN:58:ASP:O | 44:DN:60:ILE:N | 2.28 | 0.65 |
| 17:CQ:63:ARG:HG2 | 17:CQ:64:PRO:HD2 | 1.78 | 0.65 |
| 47:DQ:79:LEU:HD23 | 47:DQ:80:GLU:N | 2.12 | 0.65 |
| 35:BA:534:U:O2' | 51:BU:49:HIS:HD2 | 1.80 | 0.65 |
| 1:CA:1440:C:H1' | 1:CA:1462:G:N2 | 2.11 | 0.65 |
| 1:AA:1305:G:OP1 | 21:AU:2:GLY:HA3 | 1.97 | 0.65 |
| 1:AA:26:A:N6 | 1:AA:558:G:H1' | 2.11 | 0.65 |
| 35:DA:2700:C:O2' | 35:DA:2701:C:H5' | 1.97 | 0.64 |
| 2:AB:17:PHE:HB2 | 2:AB:42:ILE:CG2 | 2.27 | 0.64 |
| 9:CI:79:LEU:CD1 | 9:CI:102:LEU:HA | 2.26 | 0.64 |
| 1:AA:1490:C:O2' | 1:AA:1491:G:H5' | 1.96 | 0.64 |
| 35:DA:1591:G:O2' | 35:DA:1592:C:H5' | 1.96 | 0.64 |
| 38:DD:35:LYS:HA | 38:DD:63:ARG:HA | 1.78 | 0.64 |
| 46:DP:16:ARG:CZ | 46:DP:18:ARG:HG2 | 2.27 | 0.64 |
| 13:CM:7:VAL:HG21 | 41:DG:115:ARG:HG3 | 1.79 | 0.64 |
| 23:CW:27:G:H1 | 23:CW:43:C:N4 | 1.86 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1381:U:H1' | 7:AG:78:ARG:NH2 | 2.02 | 0.64 |
| 3:CC:130:VAL:O | 3:CC:134:ILE:HG12 | 1.97 | 0.64 |
| 10:CJ:30:SER:OG | 10:CJ:81:THR:HG22 | 1.97 | 0.64 |
| 10:AJ:5:ARG:CG | 10:AJ:71:LEU:HD11 | 2.28 | 0.64 |
| 47:DQ:21:THR:HG21 | 47:DQ:101:ARG:HB2 | 1.79 | 0.64 |
| 44:BN:25:ARG:NH1 | 44:BN:25:ARG:CG | 2.58 | 0.64 |
| 46:DP:32:THR:HG21 | 46:DP:37:GLY:HA2 | 1.77 | 0.64 |
| 38:BD:108:PRO:HB3 | 38:BD:143:HIS:CE1 | 2.32 | 0.64 |
| 50:BT:54:ARG:HH11 | 50:BT:54:ARG:HG2 | 1.63 | 0.64 |
| 25:B0:20:ARG:NH1 | 35:BA:2357:U:OP1 | 2.30 | 0.64 |
| 4:CD:117:ALA:O | 4:CD:121:VAL:HG23 | 1.97 | 0.64 |
| 41:BG:121:ASN:HD22 | 41:BG:122:PRO:N | 1.94 | 0.64 |
| 30:D5:51:TYR:HB2 | 30:D5:54:GLY:HA3 | 1.79 | 0.64 |
| 19:CS:29:ARG:O | 19:CS:31:ILE:HG22 | 1.97 | 0.64 |
| 19:CS:29:ARG:O | 19:CS:31:ILE:N | 2.31 | 0.64 |
| 41:BG:148:MET:O | 41:BG:148:MET:HE2 | 1.97 | 0.64 |
| 55:BY:87:LYS:HG3 | 55:BY:88:LYS:N | 2.12 | 0.64 |
| 40:DF:78:ILE:CD1 | 40:DF:78:ILE:H | 2.10 | 0.64 |
| 35:DA:2348:U:H2' | 35:DA:2349:G:C5' | 2.27 | 0.64 |
| 35:BA:2348:U:H2' | 35:BA:2349:G:C5' | 2.27 | 0.64 |
| 35:DA:34:C:N4 | 35:DA:455:C:H5' | 2.12 | 0.64 |
| 35:DA:1021:A:C8 | 35:DA:1021:A:H3' | 2.32 | 0.64 |
| 1:AA:302:G:N3 | 1:AA:556:C:H4' | 2.13 | 0.64 |
| 53:DW:86:LEU:HD12 | 53:DW:87:PRO:HD2 | 1.77 | 0.64 |
| 1:AA:392:G:H2' | 1:AA:393:A:H8 | 1.62 | 0.64 |
| 1:CA:296:U:H2' | 1:CA:297:G:H8 | 1.62 | 0.64 |
| 56:DZ:61:LEU:HB2 | 56:DZ:65:GLN:HB2 | 1.79 | 0.64 |
| 1:CA:392:G:H2' | 1:CA:393:A:H8 | 1.61 | 0.64 |
| 35:DA:2593:U:H2' | 35:DA:2594:C:C6 | 2.32 | 0.64 |
| 12:AL:90:VAL:O | 12:AL:92:ASP:N | 2.25 | 0.64 |
| 38:BD:48:ARG:HH11 | 38:BD:48:ARG:CG | 2.10 | 0.64 |
| 35:BA:1175:U:H4' | 35:BA:1176:G:C5' | 2.22 | 0.64 |
| 33:D8:62:LEU:CD1 | 35:DA:242:G:H5'' | 2.22 | 0.64 |
| 55:DY:14:LEU:HD11 | 55:DY:22:GLY:HA2 | 1.79 | 0.64 |
| 44:BN:56:ASN:H | 44:BN:126:PRO:HA | 1.62 | 0.64 |
| 25:B0:20:ARG:CD | 25:B0:20:ARG:N | 2.59 | 0.64 |
| 41:BG:125:PHE:HB3 | 41:BG:130:ASN:O | 1.96 | 0.64 |
| 53:DW:75:TYR:CE1 | 53:DW:104:THR:HB | 2.32 | 0.64 |
| 5:AE:126:ARG:NH1 | 5:AE:126:ARG:HG3 | 2.12 | 0.64 |
| 35:DA:2133:G:H2' | 35:DA:2157:G:H22 | 1.62 | 0.64 |
| 26:B1:80:LEU:HD23 | 26:B1:81:LYS:H | 1.62 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:CE:41:VAL:HG22 | 5:CE:69:VAL:HG21 | 1.80 | 0.64 |
| 1:AA:73:G:H22 | 1:AA:96:U:H3 | 1.46 | 0.64 |
| 13:AM:3:ARG:HG3 | 29:B4:60:GLU:HG2 | 1.79 | 0.64 |
| 35:DA:1108:U:C2' | 35:DA:1109:C:H5' | 2.27 | 0.64 |
| 4:CD:81:GLU:O | 4:CD:85:LYS:HB2 | 1.97 | 0.64 |
| 35:DA:1436:G:H3' | 35:DA:1437:C:H5'' | 1.79 | 0.64 |
| 29:D4:60:GLU:O | 29:D4:61:VAL:HB | 1.97 | 0.64 |
| 35:DA:357:A:H2' | 35:DA:358:U:C6 | 2.32 | 0.64 |
| 35:BA:851:U:O2' | 35:BA:852:G:H5' | 1.97 | 0.64 |
| 35:BA:852:G:O2' | 35:BA:853:G:H5' | 1.95 | 0.64 |
| 35:DA:736:C:H2' | 35:DA:737:C:H6 | 1.61 | 0.64 |
| 35:BA:2059:A:H5' | 35:BA:2060:A:OP2 | 1.98 | 0.64 |
| 9:AI:77:ILE:O | 9:AI:81:ILE:HG12 | 1.97 | 0.64 |
| 9:CI:17:VAL:CG1 | 9:CI:81:ILE:HD13 | 2.26 | 0.64 |
| 35:DA:1882:C:H5' | 35:DA:1883:G:OP2 | 1.98 | 0.64 |
| 13:CM:13:LYS:CA | 13:CM:44:ARG:HH11 | 2.10 | 0.64 |
| 55:DY:15:VAL:HG12 | 55:DY:17:SER:H | 1.61 | 0.64 |
| 38:DD:71:ASP:HB2 | 38:DD:103:ARG:NH2 | 2.08 | 0.64 |
| 3:AC:30:ARG:HH11 | 14:AN:38:GLY:HA2 | 1.63 | 0.64 |
| 35:BA:2533:A:C3' | 35:BA:2534:A:H5'' | 2.28 | 0.64 |
| 50:DT:64:ARG:HD2 | 50:DT:73:GLU:CG | 2.25 | 0.64 |
| 15:CO:82:ILE:HG12 | 15:CO:87:ILE:HB | 1.79 | 0.64 |
| 4:CD:138:TYR:HD2 | 4:CD:139:ARG:N | 1.94 | 0.64 |
| 35:DA:2807:G:C3' | 35:DA:2808:U:H5'' | 2.27 | 0.64 |
| 35:DA:2632:A:C2 | 39:DE:61:ARG:HD3 | 2.32 | 0.64 |
| 19:CS:45:VAL:HA | 19:CS:62:ILE:HG23 | 1.78 | 0.64 |
| 3:AC:43:LEU:O | 3:AC:47:LEU:HB3 | 1.96 | 0.64 |
| 35:BA:1050:A:H2' | 35:BA:1051:G:C8 | 2.31 | 0.64 |
| 27:D2:7:ARG:HH11 | 27:D2:7:ARG:HG2 | 1.62 | 0.64 |
| 1:AA:1105:A:H2' | 1:AA:1106:G:H8 | 1.61 | 0.64 |
| 1:CA:1343:G:H2' | 1:CA:1344:C:C6 | 2.32 | 0.64 |
| 49:DS:30:ARG:NH2 | 49:DS:62:LYS:HD2 | 2.11 | 0.64 |
| 1:AA:1456:G:H2' | 1:AA:1457:G:O4' | 1.97 | 0.64 |
| 35:BA:1907:G:O2' | 35:BA:1908:C:H5' | 1.98 | 0.64 |
| 18:AR:19:LYS:O | 18:AR:20:ALA:HB2 | 1.96 | 0.64 |
| 35:DA:534:U:O2' | 51:DU:49:HIS:HD2 | 1.80 | 0.64 |
| 35:BA:1751:C:H2' | 35:BA:1752:C:H6 | 1.61 | 0.64 |
| 35:DA:813:U:H2' | 35:DA:814:C:C6 | 2.32 | 0.64 |
| 35:BA:1223:G:H5' | 35:BA:1224:C:OP2 | 1.97 | 0.64 |
| 25:B0:84:LEU:H | 25:B0:84:LEU:HD12 | 1.61 | 0.64 |
| 34:D9:9:ARG:NH1 | 34:D9:9:ARG:HB3 | 2.13 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:886:C:O2' | 35:BA:887:A:H4' | 1.97 | 0.64 |
| 23:CW:33:U:H2' | 23:CW:35:A:OP2 | 1.96 | 0.64 |
| 1:AA:250:A:H4' | 1:AA:251:G:O5' | 1.97 | 0.64 |
| 47:DQ:141:GLN:O | 56:DZ:53:ILE:HG22 | 1.97 | 0.64 |
| 2:CB:17:PHE:HB2 | 2:CB:42:ILE:CG2 | 2.27 | 0.64 |
| 41:DG:82:LEU:HD22 | 41:DG:87:PRO:CB | 2.27 | 0.64 |
| 39:DE:27:LEU:HD12 | 39:DE:180:ASN:O | 1.98 | 0.64 |
| 39:DE:55:ASN:O | 39:DE:57:LYS:N | 2.29 | 0.64 |
| 10:CJ:62:HIS:H | 10:CJ:62:HIS:CD2 | 2.14 | 0.64 |
| 1:AA:939:G:H2' | 1:AA:940:C:C6 | 2.33 | 0.64 |
| 47:BQ:130:LYS:NZ | 56:BZ:80:ARG:HD2 | 2.12 | 0.64 |
| 35:BA:1190:G:H5'' | 46:BP:35:HIS:HA | 1.79 | 0.64 |
| 35:DA:671:C:O2' | 35:DA:672:C:H5' | 1.97 | 0.64 |
| 35:BA:486:C:H4' | 53:BW:60:ASN:ND2 | 2.12 | 0.64 |
| 3:CC:43:LEU:O | 3:CC:47:LEU:HB3 | 1.97 | 0.64 |
| 35:DA:2317:C:H2' | 35:DA:2318:G:H5' | 1.80 | 0.64 |
| 1:AA:624:C:H2' | 1:AA:625:G:C8 | 2.32 | 0.64 |
| 1:AA:625:G:H2' | 1:AA:626:U:C6 | 2.32 | 0.64 |
| 47:BQ:39:PRO:O | 47:BQ:40:ALA:HB2 | 1.97 | 0.64 |
| 1:AA:382:A:H2' | 1:AA:383:A:H8 | 1.62 | 0.64 |
| 36:BB:41:U:C5 | 41:BG:69:ALA:HB1 | 2.33 | 0.64 |
| 1:AA:857:C:H2' | 1:AA:858:G:O4' | 1.96 | 0.64 |
| 35:BA:1935:G:H1' | 35:BA:1964:G:N2 | 2.13 | 0.64 |
| 35:DA:1652:A:C2' | 35:DA:1653:G:H5' | 2.27 | 0.64 |
| 22:AY:55:U:H2' | 22:AY:56:C:H3' | 1.79 | 0.64 |
| 35:BA:2199:A:H3' | 35:BA:2200:C:H6 | 1.61 | 0.64 |
| 31:B6:46:HIS:HB2 | 31:B6:47:THR:N | 2.12 | 0.64 |
| 2:AB:51:LEU:HB3 | 2:AB:55:PHE:HE2 | 1.62 | 0.64 |
| 35:BA:994:C:H3' | 51:BU:54:LYS:HE3 | 1.80 | 0.64 |
| 51:BU:92:ARG:HH21 | 51:BU:95:LEU:CG | 2.10 | 0.64 |
| 39:DE:12:THR:HG23 | 50:DT:8:LYS:NZ | 2.12 | 0.64 |
| 55:DY:26:LYS:CG | 55:DY:27:VAL:H | 2.07 | 0.64 |
| 33:D8:50:LEU:HD12 | 33:D8:51:ALA:N | 2.07 | 0.64 |
| 10:AJ:5:ARG:HG3 | 10:AJ:71:LEU:HD11 | 1.80 | 0.64 |
| 46:DP:115:LEU:HA | 46:DP:134:ALA:CB | 2.28 | 0.64 |
| 46:BP:34:GLY:O | 46:BP:35:HIS:HB2 | 1.97 | 0.64 |
| 48:DR:45:ARG:HG3 | 48:DR:46:GLY:N | 2.12 | 0.64 |
| 38:BD:26:LYS:O | 38:BD:27:THR:HG22 | 1.97 | 0.64 |
| 35:BA:2807:G:C3' | 35:BA:2808:U:H5'' | 2.27 | 0.64 |
| 6:CF:72:VAL:HG13 | 6:CF:73:ASN:N | 2.11 | 0.64 |
| 20:AT:43:LEU:HD13 | 20:AT:51:GLU:HG3 | 1.79 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 40:BF:53:THR:HG22 | 40:BF:56:GLU:CD | 2.17 | 0.64 |
| 35:BA:2125:G:H22 | 35:BA:2172:U:H5' | 1.63 | 0.64 |
| 1:CA:1479:C:H2' | 1:CA:1480:G:C8 | 2.33 | 0.64 |
| 35:DA:999:U:H2' | 35:DA:1000:A:C5' | 2.27 | 0.64 |
| 9:AI:3:GLN:HG2 | 9:AI:20:ARG:NH1 | 2.12 | 0.64 |
| 35:DA:1453:U:H5' | 48:DR:63:ARG:HE | 1.62 | 0.64 |
| 35:DA:1210:A:H4' | 35:DA:1211:U:O5' | 1.97 | 0.64 |
| 38:BD:76:PRO:HG2 | 38:BD:98:VAL:CG2 | 2.26 | 0.64 |
| 6:CF:55:ASP:HB3 | 6:CF:86:ARG:HH12 | 1.63 | 0.64 |
| 2:AB:19:HIS:CG | 2:AB:20:GLU:H | 2.15 | 0.64 |
| 15:CO:5:LYS:O | 15:CO:9:GLN:HG2 | 1.98 | 0.64 |
| 16:CP:50:LYS:HD3 | 16:CP:51:VAL:N | 2.13 | 0.64 |
| 47:BQ:103:MET:CE | 47:BQ:125:LEU:HD13 | 2.27 | 0.64 |
| 23:AW:40:C:H2' | 23:AW:41:C:C6 | 2.33 | 0.64 |
| 40:DF:82:ILE:HG13 | 40:DF:82:ILE:O | 1.98 | 0.64 |
| 1:AA:805:C:H2' | 1:AA:806:C:H6 | 1.62 | 0.64 |
| 25:D0:14:ARG:HD2 | 35:DA:2279:G:O6 | 1.97 | 0.64 |
| 49:BS:89:ARG:O | 49:BS:92:TYR:HB3 | 1.98 | 0.64 |
| 55:BY:81:LYS:HD3 | 55:BY:97:ARG:CB | 2.28 | 0.64 |
| 40:DF:8:GLN:HB2 | 40:DF:124:LEU:HD11 | 1.79 | 0.64 |
| 2:CB:51:LEU:HB3 | 2:CB:55:PHE:HE2 | 1.62 | 0.64 |
| 35:DA:2803:C:H2' | 35:DA:2804:C:C6 | 2.33 | 0.64 |
| 1:AA:522:C:H41 | 12:AL:53:ARG:NH2 | 1.96 | 0.64 |
| 39:BE:69:LYS:NZ | 39:BE:89:ASP:HA | 2.12 | 0.64 |
| 5:AE:65:ASN:O | 5:AE:66:MET:HG3 | 1.98 | 0.64 |
| 10:AJ:62:HIS:H | 10:AJ:62:HIS:CD2 | 2.16 | 0.64 |
| 10:AJ:30:SER:OG | 10:AJ:81:THR:HG22 | 1.98 | 0.64 |
| 46:DP:84:ASN:HA | 46:DP:115:LEU:O | 1.96 | 0.64 |
| 39:BE:8:LYS:HE3 | 39:BE:188:VAL:HG13 | 1.80 | 0.64 |
| 2:CB:48:MET:HG2 | 2:CB:49:GLU:H | 1.60 | 0.64 |
| 13:AM:86:CYS:HA | 19:AS:73:GLU:O | 1.97 | 0.64 |
| 26:D1:29:GLY:HA3 | 35:DA:2396:G:O2' | 1.98 | 0.64 |
| 20:AT:46:GLU:O | 20:AT:46:GLU:HG2 | 1.97 | 0.64 |
| 55:DY:87:LYS:HG3 | 55:DY:88:LYS:N | 2.12 | 0.64 |
| 29:B4:60:GLU:O | 29:B4:61:VAL:HB | 1.97 | 0.64 |
| 35:BA:2175:C:H1' | 37:BC:215:THR:H | 1.62 | 0.64 |
| 35:BA:1453:U:H5' | 48:BR:63:ARG:HE | 1.62 | 0.64 |
| 3:CC:126:ARG:HG2 | 3:CC:126:ARG:HH11 | 1.61 | 0.64 |
| 2:AB:73:THR:HG22 | 2:AB:95:GLN:O | 1.98 | 0.64 |
| 35:BA:106:C:H2' | 35:BA:107:C:H6 | 1.63 | 0.64 |
| 35:DA:2712:U:H1' | 35:DA:2712(A):A:C8 | 2.33 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1442(B):A:N3 | 1:AA:1442(B):A:H2' | 2.12 | 0.64 |
| 35:DA:17:G:H2' | 35:DA:18:C:C6 | 2.33 | 0.64 |
| 56:BZ:59:LEU:HD12 | 56:BZ:69:THR:HG21 | 1.79 | 0.64 |
| 56:BZ:9:TYR:HE2 | 56:BZ:35:ARG:HE | 1.46 | 0.64 |
| 4:CD:196:LEU:HD12 | 4:CD:196:LEU:H | 1.61 | 0.64 |
| 38:BD:18:VAL:HG12 | 38:BD:19:ALA:N | 2.13 | 0.64 |
| 42:BH:148:ILE:O | 42:BH:151:ILE:HG12 | 1.97 | 0.64 |
| 2:AB:121:LEU:HD11 | 2:AB:130:ARG:HH11 | 1.62 | 0.64 |
| 31:D6:15:GLU:CD | 31:D6:18:ARG:NE | 2.47 | 0.64 |
| 2:AB:55:PHE:HA | 2:AB:58:ILE:CG1 | 2.28 | 0.64 |
| 55:DY:84:ARG:HH12 | 55:DY:97:ARG:HA | 1.62 | 0.64 |
| 10:CJ:48:THR:HA | 10:CJ:62:HIS:CB | 2.27 | 0.64 |
| 26:B1:61:ARG:NH1 | 26:B1:61:ARG:HG2 | 2.08 | 0.64 |
| 35:DA:2533:A:C3' | 35:DA:2534:A:H5'' | 2.28 | 0.64 |
| 46:DP:23:PRO:HD2 | 46:DP:33:ARG:NH2 | 2.12 | 0.64 |
| 54:BX:35:THR:HG22 | 54:BX:37:THR:N | 2.11 | 0.64 |
| 1:CA:1030(A):G:H2' | 1:CA:1030(C):G:OP2 | 1.97 | 0.64 |
| 32:B7:9:ARG:HG3 | 32:B7:9:ARG:HH11 | 1.62 | 0.64 |
| 18:AR:45:SER:H | 18:AR:51:LEU:HG | 1.61 | 0.64 |
| 43:BI:83:ALA:HA | 43:BI:89:TYR:CE1 | 2.33 | 0.64 |
| 1:AA:80:G:H3' | 1:AA:81:U:C5' | 2.28 | 0.64 |
| 35:DA:2069:G:O2' | 35:DA:2070:G:H5' | 1.97 | 0.64 |
| 40:BF:20:LEU:HD22 | 40:BF:203:GLN:OE1 | 1.97 | 0.64 |
| 35:BA:2175:C:H1' | 37:BC:215:THR:HA | 1.80 | 0.64 |
| 11:AK:21:ILE:HB | 11:AK:84:VAL:HG12 | 1.80 | 0.64 |
| 2:AB:178:ARG:HH22 | 2:AB:196:LEU:CA | 2.10 | 0.64 |
| 2:AB:82:ARG:O | 2:AB:86:GLU:HG3 | 1.97 | 0.64 |
| 14:CN:9:LYS:HG3 | 14:CN:12:ARG:NH1 | 2.13 | 0.64 |
| 35:DA:608:A:OP1 | 40:DF:100:THR:HG21 | 1.97 | 0.64 |
| 22:AV:30:G:H2' | 22:AV:31:A:H5' | 1.80 | 0.64 |
| 1:CA:683:G:H2' | 1:CA:684:A:C8 | 2.33 | 0.64 |
| 1:CA:1137:C:H4' | 1:CA:1138:G:C2 | 2.32 | 0.64 |
| 14:CN:26:ARG:NH1 | 14:CN:47:LEU:HD21 | 2.13 | 0.64 |
| 56:DZ:44:PHE:CE2 | 56:DZ:86:VAL:HG21 | 2.33 | 0.64 |
| 56:DZ:5:LEU:HD11 | 56:DZ:43:GLU:HB3 | 1.79 | 0.64 |
| 49:BS:14:VAL:HG12 | 49:BS:15:ARG:N | 2.13 | 0.64 |
| 2:AB:217:ARG:HA | 2:AB:220:ASP:OD2 | 1.98 | 0.64 |
| 35:BA:1155:A:OP1 | 51:BU:55:ARG:HD2 | 1.97 | 0.64 |
| 39:DE:59:VAL:HG21 | 39:DE:63:LEU:HG | 1.79 | 0.64 |
| 56:BZ:48:PHE:CD2 | 56:BZ:52:SER:HA | 2.33 | 0.64 |
| 43:BI:38:LEU:N | 43:BI:38:LEU:HD12 | 2.06 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 52:BV:18:LEU:CD2 | 52:BV:19:LYS:H | 2.10 | 0.64 |
| 38:DD:267:SER:C | 38:DD:269:PHE:H | 2.02 | 0.64 |
| 33:D8:51:ALA:C | 33:D8:53:PRO:HD2 | 2.18 | 0.64 |
| 37:BC:169:GLY:N | 37:BC:173:ALA:HA | 2.08 | 0.64 |
| 43:BI:98:ALA:HB1 | 43:BI:109:ILE:HB | 1.80 | 0.64 |
| 47:BQ:43:THR:HB | 47:BQ:45:GLN:HE21 | 1.62 | 0.64 |
| 46:DP:41:ARG:HE | 46:DP:41:ARG:CA | 2.10 | 0.64 |
| 8:AH:84:ARG:HH22 | 8:AH:86:ILE:CD1 | 2.10 | 0.64 |
| 35:DA:1503:U:H2' | 35:DA:1504:C:C6 | 2.33 | 0.64 |
| 35:DA:2317:C:O2' | 35:DA:2318:G:H5' | 1.97 | 0.64 |
| 35:DA:2125:G:H22 | 35:DA:2172:U:H5' | 1.63 | 0.64 |
| 35:BA:2122:U:H2' | 35:BA:2123:G:C8 | 2.33 | 0.64 |
| 15:AO:3:ILE:HD13 | 15:AO:3:ILE:N | 2.12 | 0.64 |
| 52:DV:21:ARG:HG2 | 52:DV:91:TYR:CD2 | 2.33 | 0.64 |
| 40:DF:4:VAL:HG12 | 40:DF:19:GLU:OE1 | 1.97 | 0.64 |
| 18:CR:19:LYS:O | 18:CR:20:ALA:HB2 | 1.97 | 0.64 |
| 35:BA:357:A:H2' | 35:BA:358:U:C6 | 2.33 | 0.64 |
| 1:CA:677:U:H3 | 1:CA:713:G:H22 | 1.45 | 0.64 |
| 35:DA:1419:A:O2' | 35:DA:1420:U:H5'' | 1.96 | 0.64 |
| 11:CK:72:ALA:O | 11:CK:77:MET:HB2 | 1.98 | 0.64 |
| 49:BS:42:ASP:O | 49:BS:43:GLU:HB2 | 1.95 | 0.64 |
| 35:DA:535:C:O2' | 35:DA:536:A:H5' | 1.98 | 0.64 |
| 3:CC:8:ILE:HD11 | 3:CC:184:TYR:HB3 | 1.79 | 0.64 |
| 1:CA:489:C:H2' | 1:CA:490:G:H8 | 1.61 | 0.64 |
| 38:DD:168:ARG:O | 38:DD:169:GLU:HB2 | 1.97 | 0.64 |
| 2:CB:172:ILE:H | 2:CB:172:ILE:HD12 | 1.61 | 0.64 |
| 2:CB:121:LEU:HD11 | 2:CB:130:ARG:HH11 | 1.62 | 0.64 |
| 1:CA:90:U:H5'' | 1:CA:91:C:H5' | 1.80 | 0.64 |
| 56:DZ:44:PHE:CE1 | 56:DZ:48:PHE:HB2 | 2.33 | 0.64 |
| 51:BU:92:ARG:O | 51:BU:94:ASN:N | 2.30 | 0.64 |
| 56:BZ:125:LEU:HG | 56:BZ:164:ALA:CB | 2.26 | 0.64 |
| 41:BG:39:ILE:HD12 | 41:BG:40:ASN:N | 2.13 | 0.64 |
| 10:CJ:4:ILE:HB | 10:CJ:74:ILE:HD11 | 1.80 | 0.64 |
| 30:B5:48:GLU:O | 30:B5:50:GLY:N | 2.31 | 0.64 |
| 30:B5:6:VAL:HG22 | 30:B5:7:PRO:HD2 | 1.80 | 0.64 |
| 35:DA:1190:G:H5'' | 46:DP:35:HIS:HA | 1.80 | 0.64 |
| 47:DQ:43:THR:HB | 47:DQ:45:GLN:HE21 | 1.62 | 0.64 |
| 46:BP:125:VAL:O | 46:BP:145:PRO:HD2 | 1.98 | 0.64 |
| 8:CH:84:ARG:NH2 | 8:CH:86:ILE:HD11 | 2.13 | 0.64 |
| 47:DQ:32:TYR:O | 47:DQ:105:GLU:HB2 | 1.98 | 0.64 |
| 22:CY:56:C:H5'' | 35:DA:897:C:O5' | 1.97 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:20:SER:HB2 | 3:AC:40:ARG:NH2 | 2.13 | 0.64 |
| 3:CC:126:ARG:O | 3:CC:128:PHE:HD1 | 1.81 | 0.64 |
| 18:CR:43:PHE:HE2 | 18:CR:58:LEU:HD11 | 1.61 | 0.64 |
| 35:DA:729:G:C5 | 38:DD:208:LYS:HB2 | 2.32 | 0.64 |
| 37:BC:71:GLN:HG2 | 37:BC:73:ARG:HH21 | 1.63 | 0.64 |
| 35:DA:1854:A:H5' | 35:DA:1855:G:OP1 | 1.97 | 0.64 |
| 4:AD:196:LEU:CD1 | 4:AD:196:LEU:H | 2.10 | 0.64 |
| 1:CA:184:G:H2' | 1:CA:185:A:H8 | 1.63 | 0.64 |
| 3:CC:86:VAL:O | 3:CC:89:GLU:HB3 | 1.97 | 0.64 |
| 13:AM:108:ARG:N | 13:AM:108:ARG:HD2 | 2.12 | 0.64 |
| 35:DA:1354:A:H2' | 35:DA:1355:G:O4' | 1.96 | 0.64 |
| 6:AF:23:LYS:O | 6:AF:27:GLN:HG2 | 1.98 | 0.64 |
| 35:DA:557:U:H2' | 35:DA:558:G:H8 | 1.63 | 0.64 |
| 26:D1:26:ARG:HH11 | 26:D1:26:ARG:HG3 | 1.63 | 0.64 |
| 22:CV:48:C:H2' | 22:CV:59:U:H1' | 1.80 | 0.64 |
| 35:BA:1436:G:H3' | 35:BA:1437:C:H5'' | 1.78 | 0.64 |
| 35:BA:774:A:H2 | 35:BA:787:U:HO2' | 1.45 | 0.64 |
| 56:DZ:40:ASP:HB3 | 56:DZ:43:GLU:CB | 2.27 | 0.64 |
| 35:DA:833:U:H5'' | 46:DP:48:PRO:HB3 | 1.79 | 0.64 |
| 40:DF:2:LYS:O | 40:DF:24:LEU:HG | 1.98 | 0.64 |
| 1:CA:522:C:H41 | 12:CL:53:ARG:NH2 | 1.96 | 0.64 |
| 38:BD:30:GLU:CD | 38:BD:63:ARG:HE | 2.02 | 0.64 |
| 39:BE:78:LEU:O | 39:BE:79:ARG:HD2 | 1.97 | 0.64 |
| 1:AA:972:C:O3' | 10:AJ:57:LYS:HG3 | 1.98 | 0.64 |
| 52:DV:18:LEU:CD2 | 52:DV:19:LYS:H | 2.11 | 0.64 |
| 55:DY:17:SER:HB3 | 55:DY:71:LYS:HB3 | 1.79 | 0.64 |
| 2:CB:114:ARG:NH1 | 2:CB:118:LEU:HD11 | 2.12 | 0.64 |
| 43:BI:72:LEU:HD12 | 43:BI:138:ILE:HD13 | 1.80 | 0.64 |
| 49:BS:34:HIS:HB3 | 49:BS:53:SER:HB3 | 1.80 | 0.64 |
| 27:D2:17:SER:OG | 27:D2:20:GLU:HB2 | 1.96 | 0.64 |
| 35:DA:2290:G:C8 | 35:DA:2290:G:H5' | 2.28 | 0.64 |
| 38:DD:24:ILE:O | 38:DD:26:LYS:N | 2.31 | 0.64 |
| 40:DF:17:ARG:HG3 | 40:DF:17:ARG:NH1 | 2.11 | 0.64 |
| 43:DI:92:VAL:CG1 | 43:DI:120:ILE:HD12 | 2.27 | 0.64 |
| 35:BA:1286:A:C2' | 35:BA:1288:U:OP2 | 2.45 | 0.64 |
| 2:AB:168:THR:HG23 | 2:AB:192:SER:HB3 | 1.80 | 0.64 |
| 2:CB:97:TRP:HZ2 | 2:CB:102:LEU:HD13 | 1.62 | 0.64 |
| 8:CH:20:TYR:HE2 | 8:CH:75:ARG:HE | 1.44 | 0.64 |
| 7:CG:47:CYS:HB3 | 7:CG:58:PRO:HG2 | 1.80 | 0.64 |
| 42:DH:86:GLU:CB | 42:DH:132:ARG:HB3 | 2.28 | 0.64 |
| 35:DA:92:A:H2' | 35:DA:93:G:C8 | 2.32 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:BZ:16:SER:O | 56:BZ:20:ARG:HG2 | 1.98 | 0.64 |
| 41:BG:138:GLN:HG2 | 41:BG:139:LEU:N | 2.12 | 0.64 |
| 7:CG:146:GLU:OE2 | 7:CG:149:ARG:HD2 | 1.97 | 0.64 |
| 1:AA:662:G:H2' | 1:AA:663:A:H8 | 1.62 | 0.64 |
| 35:BA:729:G:C5 | 38:BD:208:LYS:HB2 | 2.32 | 0.64 |
| 23:CW:67:C:H2' | 23:CW:68:C:H6 | 1.63 | 0.64 |
| 35:BA:850:C:O2' | 35:BA:851:U:H5' | 1.98 | 0.64 |
| 42:DH:148:ILE:O | 42:DH:151:ILE:HG12 | 1.97 | 0.64 |
| 1:CA:986:A:H1' | 19:CS:54:GLY:O | 1.97 | 0.64 |
| 35:BA:646:A:H2' | 35:BA:647:G:O4' | 1.97 | 0.64 |
| 1:AA:677:U:H3 | 1:AA:713:G:H22 | 1.46 | 0.64 |
| 35:DA:1352:U:O2' | 35:DA:1353:A:H5' | 1.98 | 0.64 |
| 3:AC:8:ILE:HD11 | 3:AC:184:TYR:HB3 | 1.80 | 0.64 |
| 35:BA:1396:U:H2' | 35:BA:1396:U:O2 | 1.98 | 0.64 |
| 35:DA:925:C:C3' | 35:DA:926:A:H5'' | 2.28 | 0.63 |
| 40:BF:24:LEU:CD1 | 40:BF:25:PRO:HD3 | 2.28 | 0.63 |
| 33:D8:25:MET:HG3 | 46:DP:64:LYS:CB | 2.15 | 0.63 |
| 9:AI:50:LEU:HG | 9:AI:81:ILE:HG21 | 1.79 | 0.63 |
| 23:CW:69:G:C3' | 23:CW:70:G:H5'' | 2.28 | 0.63 |
| 49:BS:96:GLY:O | 49:BS:98:VAL:HG23 | 1.97 | 0.63 |
| 41:DG:46:ALA:HA | 41:DG:51:ARG:CD | 2.27 | 0.63 |
| 35:BA:1590:U:H2' | 35:BA:1591:G:C5' | 2.21 | 0.63 |
| 50:DT:54:ARG:HH11 | 50:DT:54:ARG:HG2 | 1.63 | 0.63 |
| 35:DA:1594:G:C5' | 35:DA:1594:G:H8 | 2.06 | 0.63 |
| 10:AJ:4:ILE:HB | 10:AJ:74:ILE:HD11 | 1.80 | 0.63 |
| 46:BP:23:PRO:HD2 | 46:BP:33:ARG:NE | 2.14 | 0.63 |
| 1:AA:253:U:H2' | 1:AA:254:G:C8 | 2.33 | 0.63 |
| 38:BD:24:ILE:O | 38:BD:26:LYS:N | 2.31 | 0.63 |
| 15:CO:67:LEU:HD22 | 15:CO:78:TYR:HE1 | 1.63 | 0.63 |
| 31:D6:23:THR:HG21 | 35:DA:2419:U:C5' | 2.27 | 0.63 |
| 1:CA:266:G:H5' | 1:CA:266:G:C8 | 2.33 | 0.63 |
| 53:DW:5:ALA:HB1 | 53:DW:50:VAL:CG2 | 2.28 | 0.63 |
| 51:BU:31:SER:C | 51:BU:33:ARG:H | 2.02 | 0.63 |
| 43:BI:123:LEU:HD22 | 43:BI:142:VAL:O | 1.98 | 0.63 |
| 54:BX:24:GLY:O | 54:BX:82:GLN:HA | 1.98 | 0.63 |
| 2:CB:168:THR:HG23 | 2:CB:192:SER:HB3 | 1.79 | 0.63 |
| 35:DA:2175:C:H1' | 37:DC:215:THR:H | 1.63 | 0.63 |
| 9:CI:112:LYS:HA | 9:CI:119:ALA:HB2 | 1.79 | 0.63 |
| 10:CJ:45:ARG:HG3 | 10:CJ:45:ARG:NH1 | 2.11 | 0.63 |
| 35:BA:2347:C:H2' | 35:BA:2348:U:C6 | 2.33 | 0.63 |
| 17:AQ:14:LYS:NZ | 17:AQ:14:LYS:HB2 | 2.13 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:CD:7:PRO:CB | 4:CD:10:ARG:HD2 | 2.28 | 0.63 |
| 2:CB:121:LEU:O | 2:CB:127:ILE:HD11 | 1.98 | 0.63 |
| 35:BA:467:G:O2' | 35:BA:468:G:H5' | 1.98 | 0.63 |
| 6:CF:33:TYR:HE2 | 6:CF:74:ASP:HB3 | 1.63 | 0.63 |
| 23:AW:12:U:H3 | 23:AW:23:A:H61 | 1.44 | 0.63 |
| 35:BA:1510:G:O2' | 35:BA:1511:C:H5' | 1.97 | 0.63 |
| 31:D6:15:GLU:OE2 | 31:D6:41:PRO:HG3 | 1.98 | 0.63 |
| 2:CB:212:GLN:HE22 | 2:CB:216:SER:HB2 | 1.63 | 0.63 |
| 55:DY:81:LYS:HD3 | 55:DY:97:ARG:CB | 2.27 | 0.63 |
| 52:BV:39:LEU:HD11 | 52:BV:51:VAL:HG22 | 1.78 | 0.63 |
| 46:BP:16:ARG:CZ | 46:BP:18:ARG:HG2 | 2.28 | 0.63 |
| 10:AJ:32:ALA:HB1 | 10:AJ:75:ILE:CG1 | 2.27 | 0.63 |
| 3:CC:84:ILE:O | 3:CC:88:ARG:HG3 | 1.97 | 0.63 |
| 13:CM:17:VAL:O | 13:CM:20:THR:HB | 1.99 | 0.63 |
| 51:DU:110:VAL:O | 51:DU:114:LYS:HD2 | 1.98 | 0.63 |
| 44:DN:42:TRP:HB3 | 51:DU:64:ARG:HD2 | 1.78 | 0.63 |
| 29:B4:52:SER:HB2 | 41:BG:143:GLU:OE2 | 1.98 | 0.63 |
| 41:BG:40:ASN:HD22 | 41:BG:91:ARG:HB2 | 1.64 | 0.63 |
| 55:DY:15:VAL:O | 55:DY:16:ALA:HB3 | 1.97 | 0.63 |
| 47:BQ:21:THR:HG21 | 47:BQ:101:ARG:HB2 | 1.79 | 0.63 |
| 35:DA:271(S):G:H2' | 35:DA:271(T):C:C5' | 2.27 | 0.63 |
| 1:AA:266:G:H5' | 1:AA:266:G:C8 | 2.33 | 0.63 |
| 15:CO:74:ASP:OD2 | 15:CO:77:ARG:HG2 | 1.98 | 0.63 |
| 25:D0:29:GLN:HG2 | 35:DA:923:C:H4' | 1.79 | 0.63 |
| 41:BG:125:PHE:CD1 | 41:BG:125:PHE:N | 2.67 | 0.63 |
| 35:BA:580:C:H2' | 35:BA:581:C:H6 | 1.62 | 0.63 |
| 39:DE:101:ARG:NH2 | 39:DE:171:GLU:HB2 | 2.14 | 0.63 |
| 1:CA:101:A:O2' | 1:CA:102:G:H5' | 1.98 | 0.63 |
| 1:CA:1070:U:H2' | 1:CA:1071:C:C6 | 2.29 | 0.63 |
| 17:CQ:58:GLU:C | 17:CQ:59:ILE:HD13 | 2.19 | 0.63 |
| 1:CA:56:U:H2' | 1:CA:57:G:C8 | 2.33 | 0.63 |
| 19:AS:15:LEU:N | 19:AS:15:LEU:HD22 | 2.14 | 0.63 |
| 19:AS:29:ARG:O | 19:AS:31:ILE:HG22 | 1.98 | 0.63 |
| 35:BA:1854:A:H5' | 35:BA:1855:G:OP1 | 1.97 | 0.63 |
| 4:CD:4:TYR:O | 4:CD:5:ILE:HB | 1.99 | 0.63 |
| 30:B5:16:ARG:HG2 | 30:B5:16:ARG:HH11 | 1.62 | 0.63 |
| 23:AW:40:C:H2' | 23:AW:41:C:H6 | 1.63 | 0.63 |
| 48:BR:7:GLY:O | 48:BR:8:ARG:HG2 | 1.98 | 0.63 |
| 42:BH:106:THR:HG22 | 42:BH:112:PRO:HB3 | 1.80 | 0.63 |
| 1:CA:950:U:H2' | 1:CA:951:G:C8 | 2.32 | 0.63 |
| 1:AA:90:U:H5'' | 1:AA:91:C:H5' | 1.79 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:DA:829:A:N7 | 35:DA:2248:C:H5' | 2.12 | 0.63 |
| 1:AA:1148:U:H2' | 1:AA:1149:C:O4' | 1.98 | 0.63 |
| 9:CI:94:ALA:O | 9:CI:98:PRO:HG2 | 1.98 | 0.63 |
| 49:DS:87:PHE:O | 49:DS:88:ASP:HB2 | 1.98 | 0.63 |
| 50:DT:27:THR:O | 50:DT:28:VAL:CB | 2.46 | 0.63 |
| 1:CA:980:C:H5' | 1:CA:981:U:C5 | 2.34 | 0.63 |
| 35:DA:994:C:H3' | 51:DU:54:LYS:HE3 | 1.79 | 0.63 |
| 51:DU:68:ALA:O | 51:DU:71:GLN:HB3 | 1.98 | 0.63 |
| 52:DV:6:LYS:O | 52:DV:37:VAL:HG21 | 1.99 | 0.63 |
| 35:DA:2310:A:O2' | 35:DA:2311:A:H5'' | 1.98 | 0.63 |
| 29:B4:48:ILE:HD12 | 29:B4:48:ILE:N | 2.13 | 0.63 |
| 41:DG:11:TYR:O | 41:DG:16:ARG:HB2 | 1.98 | 0.63 |
| 35:DA:2645:G:C3' | 35:DA:2646:C:H5' | 2.25 | 0.63 |
| 46:DP:107:LYS:C | 46:DP:109:GLY:H | 1.99 | 0.63 |
| 41:DG:56:ALA:HB1 | 41:DG:153:ARG:HE | 1.63 | 0.63 |
| 45:DO:87:ILE:HG22 | 45:DO:88:ASN:N | 2.14 | 0.63 |
| 56:BZ:108:PRO:HB3 | 56:BZ:117:LEU:HB2 | 1.80 | 0.63 |
| 22:CY:77:PHA:HD2 | 35:DA:2451:A:C2 | 2.32 | 0.63 |
| 12:CL:28:LYS:C | 12:CL:30:ALA:H | 1.99 | 0.63 |
| 1:AA:57:G:H2' | 1:AA:58:C:H6 | 1.61 | 0.63 |
| 1:CA:826:C:H5' | 8:CH:12:ARG:HH21 | 1.62 | 0.63 |
| 8:CH:12:ARG:HH12 | 8:CH:27:PRO:HD3 | 1.61 | 0.63 |
| 5:CE:41:VAL:HG11 | 5:CE:113:ALA:HA | 1.79 | 0.63 |
| 35:BA:271(J):C:C3' | 35:BA:271(K):U:H5'' | 2.28 | 0.63 |
| 8:AH:103:VAL:CG2 | 8:AH:110:ALA:HB2 | 2.28 | 0.63 |
| 1:CA:838:G:C2' | 1:CA:839:U:H5'' | 2.28 | 0.63 |
| 35:BA:2293:C:H42 | 35:BA:2339:G:H1 | 1.46 | 0.63 |
| 35:BA:2712:U:H1' | 35:BA:2712(A):A:C8 | 2.33 | 0.63 |
| 25:B0:11:ARG:O | 25:B0:14:ARG:NH2 | 2.31 | 0.63 |
| 35:BA:2113:U:H2' | 35:BA:2114:A:C8 | 2.33 | 0.63 |
| 38:DD:58:HIS:HD2 | 38:DD:59:LYS:O | 1.82 | 0.63 |
| 35:DA:2398:U:H5' | 35:DA:2399:G:OP2 | 1.98 | 0.63 |
| 54:DX:47:PHE:HD2 | 54:DX:89:ILE:HG23 | 1.63 | 0.63 |
| 55:BY:19:LYS:NZ | 55:BY:19:LYS:HB2 | 2.14 | 0.63 |
| 11:AK:61:ALA:CB | 11:AK:90:GLY:HA3 | 2.27 | 0.63 |
| 2:CB:217:ARG:HA | 2:CB:220:ASP:OD2 | 1.98 | 0.63 |
| 50:BT:28:VAL:O | 50:BT:29:ARG:HD3 | 1.99 | 0.63 |
| 50:DT:13:ARG:NH1 | 50:DT:15:VAL:HG22 | 2.14 | 0.63 |
| 3:AC:72:LYS:HE3 | 3:AC:75:VAL:HG21 | 1.80 | 0.63 |
| 47:BQ:37:LEU:HD11 | 47:BQ:130:LYS:HB2 | 1.81 | 0.63 |
| 15:AO:74:ASP:OD2 | 15:AO:77:ARG:HG2 | 1.98 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:BG:33:ARG:O | 41:BG:34:LEU:HD23 | 1.99 | 0.63 |
| 52:DV:99:ILE:HD13 | 52:DV:99:ILE:N | 2.13 | 0.63 |
| 35:BA:675:A:OP1 | 40:BF:63:LYS:HE2 | 1.98 | 0.63 |
| 1:CA:99:U:H2' | 1:CA:100:C:C6 | 2.34 | 0.63 |
| 47:DQ:137:TYR:N | 47:DQ:137:TYR:HD2 | 1.97 | 0.63 |
| 2:CB:73:THR:HG22 | 2:CB:95:GLN:O | 1.99 | 0.63 |
| 38:DD:210:GLY:O | 38:DD:211:ARG:HB3 | 1.96 | 0.63 |
| 35:DA:330:A:O2' | 35:DA:331:A:H8 | 1.81 | 0.63 |
| 4:CD:196:LEU:H | 4:CD:196:LEU:CD1 | 2.11 | 0.63 |
| 35:DA:1223:G:H5' | 35:DA:1224:C:OP2 | 1.99 | 0.63 |
| 49:DS:42:ASP:O | 49:DS:43:GLU:HB2 | 1.99 | 0.63 |
| 36:DB:106:G:O2' | 36:DB:107:G:H5' | 1.98 | 0.63 |
| 3:CC:206:GLU:O | 3:CC:208:ILE:N | 2.32 | 0.63 |
| 9:AI:17:VAL:HG11 | 9:AI:81:ILE:HA | 1.81 | 0.63 |
| 2:AB:212:GLN:HE22 | 2:AB:216:SER:HB2 | 1.63 | 0.63 |
| 1:CA:1148:U:H2' | 1:CA:1149:C:O4' | 1.98 | 0.63 |
| 35:DA:1885:A:H5' | 35:DA:1885:A:H8 | 1.63 | 0.63 |
| 39:BE:119:ARG:HG2 | 39:BE:160:TYR:CB | 2.29 | 0.63 |
| 38:DD:34:VAL:O | 38:DD:64:ILE:HG23 | 1.98 | 0.63 |
| 5:AE:101:ILE:CG1 | 5:AE:119:LEU:HD23 | 2.22 | 0.63 |
| 5:AE:41:VAL:HG11 | 5:AE:113:ALA:HA | 1.80 | 0.63 |
| 13:CM:65:LYS:NZ | 13:CM:65:LYS:HB3 | 2.13 | 0.63 |
| 9:AI:114:TYR:HD1 | 10:AJ:60:ARG:HG3 | 1.64 | 0.63 |
| 55:DY:29:GLU:N | 55:DY:29:GLU:OE1 | 2.31 | 0.63 |
| 4:CD:19:LEU:HD12 | 4:CD:19:LEU:H | 1.63 | 0.63 |
| 30:B5:33:CYS:CB | 30:B5:38:ALA:HB3 | 2.28 | 0.63 |
| 30:B5:46:CYS:O | 30:B5:48:GLU:N | 2.31 | 0.63 |
| 22:AV:68:C:H2' | 22:AV:69:G:C5' | 2.25 | 0.63 |
| 35:BA:1022:G:O2' | 35:BA:1023:U:OP2 | 2.16 | 0.63 |
| 35:DA:943:U:OP2 | 46:DP:38:GLN:CD | 2.36 | 0.63 |
| 38:DD:26:LYS:HD3 | 38:DD:81:ALA:CB | 2.28 | 0.63 |
| 46:DP:13:ASN:C | 46:DP:13:ASN:ND2 | 2.52 | 0.63 |
| 25:B0:29:GLN:HG2 | 35:BA:923:C:H4' | 1.81 | 0.63 |
| 33:B8:29:LYS:HG3 | 33:B8:29:LYS:O | 1.97 | 0.63 |
| 1:CA:1308:U:OP1 | 13:CM:98:VAL:N | 2.31 | 0.63 |
| 47:BQ:32:TYR:O | 47:BQ:105:GLU:HB2 | 1.98 | 0.63 |
| 1:AA:184:G:H2' | 1:AA:185:A:H8 | 1.62 | 0.63 |
| 28:B3:17:LYS:HD2 | 28:B3:20:LYS:HD2 | 1.81 | 0.63 |
| 27:D2:35:LEU:HD22 | 27:D2:50:ILE:HG12 | 1.80 | 0.63 |
| 35:DA:1935:G:H1' | 35:DA:1964:G:N2 | 2.13 | 0.63 |
| 41:BG:70:VAL:HG23 | 41:BG:70:VAL:O | 1.98 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:DF:183:VAL:O | 40:DF:187:VAL:HG23 | 1.99 | 0.63 |
| 35:DA:2415:G:H4' | 46:DP:67:MET:H | 1.62 | 0.63 |
| 35:BA:925:C:C3' | 35:BA:926:A:H5'' | 2.29 | 0.63 |
| 39:DE:78:LEU:O | 39:DE:79:ARG:HD2 | 1.99 | 0.63 |
| 5:AE:109:ILE:HG22 | 5:AE:110:LEU:HD23 | 1.81 | 0.63 |
| 35:DA:2312:U:OP1 | 41:DG:74:LYS:HG3 | 1.99 | 0.63 |
| 10:CJ:32:ALA:HB2 | 10:CJ:76:ASN:O | 1.98 | 0.63 |
| 55:BY:17:SER:HB2 | 55:BY:71:LYS:CE | 2.26 | 0.63 |
| 26:D1:45:ASN:HD21 | 35:DA:2090:G:N2 | 1.93 | 0.63 |
| 46:BP:23:PRO:HD2 | 46:BP:33:ARG:NH2 | 2.14 | 0.63 |
| 35:BA:271(R):G:H2' | 35:BA:271(S):G:C8 | 2.32 | 0.63 |
| 38:DD:26:LYS:O | 38:DD:27:THR:HG22 | 1.97 | 0.63 |
| 35:DA:1286:A:C2' | 35:DA:1288:U:OP2 | 2.46 | 0.63 |
| 42:DH:20:ALA:HB2 | 42:DH:25:LYS:HZ1 | 1.61 | 0.63 |
| 1:AA:1165:C:H2' | 1:AA:1166:G:C8 | 2.31 | 0.63 |
| 19:AS:29:ARG:O | 19:AS:31:ILE:N | 2.31 | 0.63 |
| 26:B1:75:GLU:O | 26:B1:78:LYS:HE2 | 1.98 | 0.63 |
| 1:CA:1469:G:H2' | 1:CA:1470:G:H8 | 1.64 | 0.63 |
| 35:DA:2122:U:H2' | 35:DA:2123:G:C8 | 2.33 | 0.63 |
| 35:DA:528:A:H2 | 35:DA:2043:C:H5' | 1.64 | 0.63 |
| 3:AC:153:VAL:HG12 | 3:AC:196:LEU:HD12 | 1.81 | 0.63 |
| 44:BN:57:ALA:HB3 | 44:BN:124:ALA:HA | 1.81 | 0.63 |
| 35:BA:2593:U:H2' | 35:BA:2594:C:H6 | 1.63 | 0.63 |
| 7:AG:148:ASN:C | 7:AG:150:ALA:N | 2.51 | 0.63 |
| 23:CW:65:G:H2' | 23:CW:66:U:C6 | 2.33 | 0.63 |
| 1:AA:1240:U:OP2 | 7:AG:116:ALA:HB2 | 1.97 | 0.63 |
| 11:CK:33:THR:HG22 | 11:CK:39:PRO:N | 2.14 | 0.63 |
| 2:CB:53:ARG:O | 2:CB:56:ARG:HB2 | 1.98 | 0.63 |
| 45:BO:26:LYS:HB2 | 45:BO:30:ALA:HB2 | 1.80 | 0.63 |
| 22:CV:32:U:H5' | 22:CV:33:U:OP2 | 1.98 | 0.63 |
| 14:CN:44:LEU:C | 14:CN:44:LEU:HD12 | 2.19 | 0.63 |
| 32:B7:24:THR:HG23 | 32:B7:27:GLY:H | 1.64 | 0.63 |
| 41:BG:51:ARG:CA | 41:BG:51:ARG:NE | 2.62 | 0.63 |
| 46:BP:8:PRO:O | 46:BP:9:ASN:CB | 2.47 | 0.63 |
| 1:CA:1347:G:H22 | 1:CA:1373:G:H2' | 1.59 | 0.63 |
| 2:AB:47:THR:O | 2:AB:50:GLU:HB2 | 1.98 | 0.63 |
| 2:CB:235:SER:O | 2:CB:237:ALA:N | 2.32 | 0.63 |
| 52:BV:49:THR:CG2 | 52:BV:50:PRO:HD3 | 2.26 | 0.63 |
| 1:AA:178:C:O2' | 1:AA:179:A:H5' | 1.99 | 0.63 |
| 5:AE:41:VAL:HG22 | 5:AE:69:VAL:HG21 | 1.80 | 0.63 |
| 5:AE:83:GLU:HG2 | 5:AE:88:LYS:HG3 | 1.80 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AM:17:VAL:O | 13:AM:20:THR:HB | 1.97 | 0.63 |
| 13:CM:76:ALA:HA | 13:CM:79:LYS:CD | 2.28 | 0.63 |
| 3:CC:116:VAL:O | 3:CC:119:ARG:HB3 | 1.98 | 0.63 |
| 41:DG:177:GLY:O | 41:DG:179:PRO:HD3 | 1.99 | 0.63 |
| 30:D5:35:GLU:O | 30:D5:36:CYS:CB | 2.47 | 0.63 |
| 29:B4:40:ILE:HG13 | 29:B4:57:ILE:HG21 | 1.79 | 0.63 |
| 5:CE:91:LEU:HD13 | 5:CE:120:THR:CG2 | 2.29 | 0.63 |
| 55:BY:15:VAL:O | 55:BY:16:ALA:HB3 | 1.98 | 0.63 |
| 46:DP:21:ARG:O | 46:DP:23:PRO:HD3 | 1.99 | 0.63 |
| 13:CM:49:THR:O | 13:CM:53:VAL:HG23 | 1.99 | 0.63 |
| 13:CM:86:CYS:HA | 19:CS:73:GLU:O | 1.98 | 0.63 |
| 45:BO:87:ILE:HG22 | 45:BO:88:ASN:N | 2.14 | 0.63 |
| 35:DA:1170:G:H1 | 35:DA:1179:C:N4 | 1.94 | 0.63 |
| 56:BZ:117:LEU:CA | 56:BZ:174:VAL:HG22 | 2.28 | 0.63 |
| 35:BA:71:A:C8 | 35:BA:71:A:H5' | 2.30 | 0.63 |
| 46:BP:144:GLU:O | 46:BP:144:GLU:HG2 | 1.98 | 0.63 |
| 35:BA:34:C:N4 | 35:BA:455:C:H5' | 2.14 | 0.63 |
| 25:D0:6:GLY:O | 25:D0:7:LEU:HG | 1.99 | 0.63 |
| 13:CM:108:ARG:N | 13:CM:108:ARG:HD2 | 2.14 | 0.63 |
| 5:AE:148:VAL:HG21 | 8:AH:107:LEU:HD22 | 1.80 | 0.63 |
| 35:BA:1718:G:H1 | 35:BA:1744:C:H42 | 1.45 | 0.63 |
| 1:AA:1112:C:O2 | 3:AC:179:ARG:HG2 | 1.98 | 0.63 |
| 1:AA:930:C:O2' | 1:AA:931:C:H5' | 1.99 | 0.63 |
| 13:AM:27:LYS:HE3 | 13:AM:31:LYS:HE3 | 1.81 | 0.63 |
| 38:DD:248:SER:HB2 | 38:DD:249:PRO:HD2 | 1.81 | 0.63 |
| 23:CW:11:C:H2' | 23:CW:12:U:C6 | 2.33 | 0.63 |
| 35:DA:1718:G:H1 | 35:DA:1744:C:H42 | 1.47 | 0.63 |
| 11:CK:57:THR:CG2 | 11:CK:58:PRO:HD2 | 2.29 | 0.63 |
| 49:BS:14:VAL:HG13 | 49:BS:90:GLY:HA2 | 1.81 | 0.63 |
| 2:CB:47:THR:O | 2:CB:50:GLU:HB2 | 1.99 | 0.63 |
| 47:BQ:140:ALA:O | 56:BZ:53:ILE:HG13 | 1.98 | 0.63 |
| 3:CC:72:LYS:HE3 | 3:CC:75:VAL:HG21 | 1.81 | 0.63 |
| 5:AE:91:LEU:HD13 | 5:AE:120:THR:CG2 | 2.29 | 0.63 |
| 42:DH:17:VAL:O | 42:DH:17:VAL:HG12 | 1.99 | 0.63 |
| 33:B8:51:ALA:C | 33:B8:53:PRO:HD2 | 2.19 | 0.63 |
| 41:DG:15:VAL:HG13 | 41:DG:175:LEU:CD1 | 2.29 | 0.63 |
| 7:AG:102:ARG:HG2 | 7:AG:106:GLN:NE2 | 2.09 | 0.63 |
| 10:CJ:5:ARG:HG3 | 10:CJ:71:LEU:HD11 | 1.81 | 0.63 |
| 48:DR:24:GLN:NE2 | 48:DR:36:THR:HG21 | 2.10 | 0.63 |
| 35:DA:1141:U:P | 44:DN:25:ARG:HH12 | 2.21 | 0.63 |
| 42:BH:85:LYS:HG3 | 42:BH:145:ALA:HB2 | 1.81 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 46:DP:126:VAL:HA | 46:DP:145:PRO:HB2 | 1.80 | 0.63 |
| 46:BP:126:VAL:HA | 46:BP:145:PRO:HB2 | 1.79 | 0.63 |
| 4:CD:11:LEU:C | 4:CD:13:ARG:H | 2.01 | 0.63 |
| 47:DQ:63:LYS:HA | 56:DZ:178:GLU:OE1 | 1.98 | 0.63 |
| 35:BA:2317:C:O2' | 35:BA:2318:G:H5' | 1.99 | 0.63 |
| 20:AT:37:SER:O | 20:AT:41:ILE:HG12 | 1.99 | 0.63 |
| 51:DU:102:GLU:HG3 | 52:DV:2:PHE:CE1 | 2.32 | 0.63 |
| 28:B3:45:GLY:HA3 | 35:BA:851:U:O2' | 1.99 | 0.63 |
| 1:AA:1248:A:H2' | 1:AA:1249:C:H5' | 1.81 | 0.63 |
| 35:DA:419:C:O2' | 35:DA:420:C:H5' | 1.99 | 0.63 |
| 1:AA:657:G:O2' | 1:AA:658:G:H5' | 1.99 | 0.63 |
| 42:BH:17:VAL:HG12 | 42:BH:17:VAL:O | 1.98 | 0.63 |
| 45:DO:86:ILE:N | 45:DO:86:ILE:HD12 | 2.14 | 0.63 |
| 1:AA:59:A:H1' | 1:AA:354:G:N2 | 2.14 | 0.63 |
| 44:BN:65:LYS:O | 44:BN:69:GLN:HG3 | 1.99 | 0.63 |
| 22:AV:20:U:C2' | 22:AV:21:A:H5' | 2.29 | 0.63 |
| 10:CJ:32:ALA:HB1 | 10:CJ:76:ASN:H | 1.63 | 0.63 |
| 22:AY:27:G:H2' | 22:AY:28:G:C8 | 2.34 | 0.63 |
| 10:AJ:97:GLU:O | 10:AJ:98:ILE:HD12 | 1.99 | 0.63 |
| 55:DY:7:VAL:HB | 55:DY:8:LYS:NZ | 2.13 | 0.63 |
| 35:DA:2073:C:H5'' | 38:DD:229:VAL:HG13 | 1.81 | 0.63 |
| 35:DA:808:G:H2' | 35:DA:809:G:H8 | 1.63 | 0.63 |
| 42:BH:85:LYS:HD2 | 42:BH:141:VAL:HG22 | 1.79 | 0.63 |
| 1:AA:101:A:O2' | 1:AA:102:G:H5' | 1.99 | 0.63 |
| 43:BI:88:ILE:CG2 | 43:BI:89:TYR:N | 2.62 | 0.63 |
| 1:AA:674:G:H2' | 1:AA:675:A:H8 | 1.64 | 0.63 |
| 3:AC:126:ARG:O | 3:AC:128:PHE:HD1 | 1.81 | 0.63 |
| 1:AA:473:G:H2' | 1:AA:474:G:H8 | 1.63 | 0.63 |
| 35:DA:886:C:O2' | 35:DA:887:A:H4' | 1.99 | 0.63 |
| 35:BA:1638:C:H4' | 35:BA:2710:C:O2 | 1.99 | 0.63 |
| 35:BA:2398:U:H5' | 35:BA:2399:G:OP2 | 1.99 | 0.63 |
| 1:CA:302:G:N3 | 1:CA:556:C:H4' | 2.13 | 0.63 |
| 35:BA:2866:U:C6 | 35:BA:2868:A:H1' | 2.34 | 0.63 |
| 35:BA:2591:C:OP2 | 38:BD:239:ARG:HB3 | 1.99 | 0.63 |
| 1:CA:189(J):G:O2' | 1:CA:189(K):U:H5' | 1.98 | 0.63 |
| 1:AA:1238:A:C8 | 1:AA:1303:C:H1' | 2.33 | 0.63 |
| 11:CK:24:SER:HB3 | 11:CK:27:ASN:O | 1.98 | 0.63 |
| 53:DW:99:ARG:HG2 | 53:DW:99:ARG:HH11 | 1.61 | 0.63 |
| 15:AO:56:LEU:O | 15:AO:60:VAL:HG23 | 1.99 | 0.63 |
| 35:BA:608:A:OP1 | 40:BF:100:THR:HG21 | 1.98 | 0.63 |
| 41:BG:85:GLY:C | 41:BG:87:PRO:HD2 | 2.19 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 31:B6:15:GLU:OE1 | 31:B6:18:ARG:HG3 | 1.99 | 0.62 |
| 2:AB:55:PHE:HA | 2:AB:58:ILE:HB | 1.79 | 0.62 |
| 41:DG:51:ARG:C | 41:DG:53:LEU:H | 2.01 | 0.62 |
| 35:BA:1882:C:H5' | 35:BA:1883:G:OP2 | 1.99 | 0.62 |
| 48:BR:24:GLN:NE2 | 48:BR:36:THR:HG21 | 2.12 | 0.62 |
| 3:CC:108:ASN:OD1 | 3:CC:110:ASN:HB2 | 1.99 | 0.62 |
| 5:CE:102:ALA:HB1 | 5:CE:106:PRO:HG2 | 1.81 | 0.62 |
| 35:DA:626:U:C2 | 46:DP:105:LEU:HG | 2.34 | 0.62 |
| 3:CC:14:ILE:HG12 | 3:CC:15:THR:N | 2.14 | 0.62 |
| 42:DH:85:LYS:NZ | 42:DH:133:VAL:HB | 2.13 | 0.62 |
| 35:BA:1681:G:HO2' | 35:BA:1762:A:H2' | 1.63 | 0.62 |
| 38:BD:26:LYS:CD | 38:BD:81:ALA:HB1 | 2.29 | 0.62 |
| 45:DO:88:ASN:ND2 | 45:DO:90:GLN:H | 1.96 | 0.62 |
| 35:DA:1786:A:C2 | 35:DA:2606:C:H1' | 2.34 | 0.62 |
| 25:D0:40:GLN:NE2 | 25:D0:43:THR:HA | 2.14 | 0.62 |
| 53:BW:5:ALA:O | 53:BW:6:ILE:HB | 1.98 | 0.62 |
| 39:BE:101:ARG:NH2 | 39:BE:171:GLU:HB2 | 2.13 | 0.62 |
| 35:BA:1503:U:H2' | 35:BA:1504:C:C6 | 2.33 | 0.62 |
| 13:AM:11:ARG:HH22 | 41:BG:147:ASP:HB3 | 1.64 | 0.62 |
| 1:AA:818:G:C3' | 1:AA:819:A:H5'' | 2.29 | 0.62 |
| 35:DA:271(J):C:C3' | 35:DA:271(K):U:H5'' | 2.29 | 0.62 |
| 35:DA:2113:U:H2' | 35:DA:2114:A:C8 | 2.33 | 0.62 |
| 53:BW:29:LEU:HD21 | 53:BW:33:ARG:HH21 | 1.64 | 0.62 |
| 1:AA:1452:C:H5' | 1:AA:1456:G:C4 | 2.34 | 0.62 |
| 1:AA:1188:A:C2' | 1:AA:1189:C:H5' | 2.29 | 0.62 |
| 35:DA:877:U:O2' | 35:DA:878:A:H5'' | 1.99 | 0.62 |
| 35:BA:176:G:O2' | 35:BA:177:G:H5' | 1.99 | 0.62 |
| 1:AA:41:G:H2' | 1:AA:42:G:H8 | 1.62 | 0.62 |
| 22:CY:51:U:H3' | 22:CY:52:G:H8 | 1.63 | 0.62 |
| 2:AB:53:ARG:O | 2:AB:56:ARG:HB2 | 1.99 | 0.62 |
| 26:B1:19:GLN:O | 26:B1:35:THR:HG22 | 1.99 | 0.62 |
| 42:DH:106:THR:HG22 | 42:DH:112:PRO:HB3 | 1.81 | 0.62 |
| 8:AH:69:ARG:HB2 | 8:AH:69:ARG:HH11 | 1.63 | 0.62 |
| 1:CA:1406:U:O2' | 1:CA:1407:C:H5' | 1.99 | 0.62 |
| 42:DH:126:PRO:O | 42:DH:127:GLU:HG3 | 1.99 | 0.62 |
| 40:BF:183:VAL:O | 40:BF:187:VAL:HG23 | 1.98 | 0.62 |
| 1:AA:1116:C:H2' | 1:AA:1117:G:O4' | 1.99 | 0.62 |
| 9:AI:94:ALA:O | 9:AI:98:PRO:HG2 | 1.98 | 0.62 |
| 12:CL:53:ARG:HB3 | 12:CL:69:TYR:HE1 | 1.64 | 0.62 |
| 56:BZ:72:ARG:O | 56:BZ:73:GLN:HB2 | 1.97 | 0.62 |
| 35:DA:2417:C:H2' | 35:DA:2418:A:H8 | 1.64 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:1682:G:H5' | 35:DA:1762:A:O2' | 2.00 | 0.62 |
| 43:DI:120:ILE:CG2 | 43:DI:121:LYS:H | 2.12 | 0.62 |
| 47:DQ:27:VAL:HB | 47:DQ:137:TYR:HD1 | 1.64 | 0.62 |
| 3:CC:148:GLY:HA3 | 3:CC:172:ARG:O | 1.99 | 0.62 |
| 49:BS:30:ARG:NH2 | 49:BS:62:LYS:HD2 | 2.14 | 0.62 |
| 46:BP:115:LEU:HA | 46:BP:134:ALA:CB | 2.28 | 0.62 |
| 8:CH:45:ILE:HG22 | 8:CH:63:LEU:HA | 1.80 | 0.62 |
| 1:AA:1422:G:O2' | 1:AA:1423:G:H5' | 1.99 | 0.62 |
| 2:AB:140:HIS:O | 2:AB:143:GLU:HB2 | 1.99 | 0.62 |
| 1:AA:950:U:H2' | 1:AA:951:G:H8 | 1.65 | 0.62 |
| 40:BF:70:THR:C | 40:BF:72:ARG:H | 2.03 | 0.62 |
| 11:AK:33:THR:HG22 | 11:AK:39:PRO:N | 2.14 | 0.62 |
| 7:AG:74:GLU:HG2 | 7:AG:91:VAL:HG22 | 1.81 | 0.62 |
| 1:AA:199:G:H2' | 1:AA:200:G:H8 | 1.63 | 0.62 |
| 35:DA:2836:U:H2' | 35:DA:2837:G:C8 | 2.34 | 0.62 |
| 35:BA:2417:C:H2' | 35:BA:2418:A:H8 | 1.64 | 0.62 |
| 31:D6:15:GLU:HG2 | 31:D6:18:ARG:HE | 1.64 | 0.62 |
| 9:CI:65:VAL:HG21 | 9:CI:73:GLN:HB3 | 1.81 | 0.62 |
| 50:DT:28:VAL:HG13 | 50:DT:46:GLU:CA | 2.26 | 0.62 |
| 36:BB:106:G:O2' | 36:BB:107:G:H5' | 1.99 | 0.62 |
| 13:CM:10:PRO:O | 13:CM:11:ARG:HG3 | 1.98 | 0.62 |
| 33:D8:4:MET:HE2 | 35:DA:593:G:O4' | 1.99 | 0.62 |
| 35:BA:1798:U:H5'' | 38:BD:260:ARG:HB3 | 1.82 | 0.62 |
| 43:DI:77:LEU:CD1 | 43:DI:101:LEU:HD13 | 2.28 | 0.62 |
| 35:BA:2534:A:H5' | 35:BA:2534:A:H8 | 1.65 | 0.62 |
| 42:BH:158:HIS:O | 42:BH:159:GLU:HB3 | 1.99 | 0.62 |
| 49:DS:34:HIS:HB3 | 49:DS:53:SER:HB3 | 1.80 | 0.62 |
| 13:CM:81:LEU:HD22 | 13:CM:86:CYS:SG | 2.39 | 0.62 |
| 35:DA:1264:G:H3' | 35:DA:1265:A:H5'' | 1.80 | 0.62 |
| 41:BG:125:PHE:C | 41:BG:128:ARG:HG2 | 2.19 | 0.62 |
| 1:AA:737:A:H2' | 1:AA:738:C:C6 | 2.34 | 0.62 |
| 41:DG:101:ILE:HD11 | 41:DG:105:LYS:NZ | 2.14 | 0.62 |
| 22:CY:68:C:H2' | 22:CY:69:G:C8 | 2.31 | 0.62 |
| 35:BA:1504:C:O2' | 35:BA:1505:C:C5' | 2.47 | 0.62 |
| 1:AA:102:G:H2' | 1:AA:103:C:H6 | 1.63 | 0.62 |
| 1:AA:99:U:H2' | 1:AA:100:C:C6 | 2.33 | 0.62 |
| 12:CL:33:ARG:HA | 12:CL:33:ARG:HE | 1.65 | 0.62 |
| 35:BA:2069:G:O2' | 35:BA:2070:G:H5' | 1.99 | 0.62 |
| 23:CW:18:G:H22 | 23:CW:55:U:H1' | 1.62 | 0.62 |
| 1:CA:277:C:O2' | 1:CA:278:G:H5' | 1.99 | 0.62 |
| 20:CT:81:LYS:O | 20:CT:85:MET:HG2 | 1.99 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:DD:131:LEU:N | 38:DD:131:LEU:HD12 | 2.14 | 0.62 |
| 42:BH:103:LEU:CD2 | 42:BH:105:LEU:HD12 | 2.29 | 0.62 |
| 3:AC:195:VAL:HG12 | 3:AC:196:LEU:N | 2.15 | 0.62 |
| 2:AB:178:ARG:NH2 | 8:AH:74:PRO:HG3 | 2.14 | 0.62 |
| 12:CL:104:VAL:HG12 | 12:CL:105:TYR:CD1 | 2.34 | 0.62 |
| 48:DR:12:ARG:HH11 | 48:DR:12:ARG:HG3 | 1.64 | 0.62 |
| 2:AB:139:LYS:O | 2:AB:143:GLU:HG2 | 1.99 | 0.62 |
| 1:CA:1248:A:H2' | 1:CA:1249:C:H5' | 1.81 | 0.62 |
| 4:CD:79:PHE:HE1 | 4:CD:204:ILE:HD13 | 1.64 | 0.62 |
| 22:AY:72:C:C2 | 22:AY:73:A:H2 | 2.16 | 0.62 |
| 42:BH:126:PRO:O | 42:BH:127:GLU:HG3 | 1.99 | 0.62 |
| 14:AN:44:LEU:C | 14:AN:44:LEU:HD12 | 2.20 | 0.62 |
| 5:CE:18:ARG:NH2 | 5:CE:25:ARG:HD2 | 2.15 | 0.62 |
| 4:AD:80:GLU:O | 4:AD:84:LYS:HG2 | 1.99 | 0.62 |
| 4:AD:81:GLU:O | 4:AD:85:LYS:HB2 | 1.99 | 0.62 |
| 1:CA:501:C:H2' | 1:CA:502:G:H8 | 1.65 | 0.62 |
| 56:DZ:99:TYR:HB3 | 56:DZ:123:ASP:OD1 | 2.00 | 0.62 |
| 9:CI:15:ALA:HB2 | 9:CI:65:VAL:HB | 1.82 | 0.62 |
| 50:DT:28:VAL:O | 50:DT:29:ARG:HD3 | 1.99 | 0.62 |
| 50:BT:29:ARG:CB | 50:BT:85:LYS:HA | 2.28 | 0.62 |
| 12:CL:37:CYS:SG | 12:CL:81:SER:HB2 | 2.40 | 0.62 |
| 38:DD:61:LEU:O | 38:DD:63:ARG:NH1 | 2.32 | 0.62 |
| 5:AE:68:GLU:HG3 | 5:AE:70:PRO:HD3 | 1.81 | 0.62 |
| 9:AI:114:TYR:N | 9:AI:114:TYR:CD2 | 2.67 | 0.62 |
| 55:DY:19:LYS:HB2 | 55:DY:19:LYS:NZ | 2.15 | 0.62 |
| 43:BI:4:ILE:HG12 | 43:BI:18:VAL:CG2 | 2.27 | 0.62 |
| 10:AJ:28:ARG:HH12 | 10:AJ:34:VAL:H | 1.48 | 0.62 |
| 38:BD:243:GLY:O | 38:BD:244:ARG:HB3 | 1.99 | 0.62 |
| 44:DN:120:LEU:CD1 | 44:DN:122:VAL:HG23 | 2.30 | 0.62 |
| 35:BA:589:C:O2' | 35:BA:590:A:H5' | 1.99 | 0.62 |
| 42:DH:158:HIS:O | 42:DH:159:GLU:HB3 | 1.99 | 0.62 |
| 38:DD:228:PRO:HD3 | 38:DD:235:GLY:CA | 2.29 | 0.62 |
| 35:BA:1784:A:H4' | 35:BA:1785:A:O5' | 2.00 | 0.62 |
| 37:BC:78:ALA:HB3 | 37:BC:83:ILE:CD1 | 2.29 | 0.62 |
| 23:CW:18:G:N2 | 23:CW:55:U:H1' | 2.13 | 0.62 |
| 43:BI:9:LEU:H | 43:BI:13:GLY:CA | 2.13 | 0.62 |
| 42:BH:86:GLU:CB | 42:BH:132:ARG:HB3 | 2.29 | 0.62 |
| 42:DH:55:PRO:HG2 | 42:DH:56:SER:H | 1.63 | 0.62 |
| 35:DA:1639:U:H2' | 35:DA:1640:C:H5'' | 1.80 | 0.62 |
| 50:DT:92:GLY:O | 50:DT:94:ALA:N | 2.27 | 0.62 |
| 35:BA:626:U:C2 | 46:BP:105:LEU:HG | 2.34 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 2:CB:79:ASP:O | 2:CB:82:ARG:HB3 | 2.00 | 0.62 |
| 14:CN:24:CYS:HB2 | 14:CN:29:ARG:HB3 | 1.80 | 0.62 |
| 2:AB:79:ASP:O | 2:AB:82:ARG:HB3 | 2.00 | 0.62 |
| 11:AK:24:SER:HB3 | 11:AK:27:ASN:O | 2.00 | 0.62 |
| 45:BO:71:ARG:C | 45:BO:73:ASP:H | 2.03 | 0.62 |
| 35:BA:813:U:H2' | 35:BA:814:C:C6 | 2.34 | 0.62 |
| 53:DW:110:LYS:HG3 | 53:DW:111:HIS:H | 1.63 | 0.62 |
| 35:DA:2199:A:H3' | 35:DA:2200:C:H6 | 1.64 | 0.62 |
| 48:DR:33:ARG:HD2 | 48:DR:33:ARG:N | 2.15 | 0.62 |
| 58:CA:1800:PAR:H34 | 58:CA:1800:PAR:HN61 | 1.63 | 0.62 |
| 32:B7:19:ARG:HH11 | 32:B7:19:ARG:HG2 | 1.64 | 0.62 |
| 1:AA:1513:A:H2' | 1:AA:1514:C:C6 | 2.34 | 0.62 |
| 44:DN:102:ALA:O | 44:DN:106:MET:HG3 | 2.00 | 0.62 |
| 43:DI:85:GLU:HG3 | 43:DI:86:THR:HG23 | 1.81 | 0.62 |
| 48:BR:101:ALA:O | 48:BR:102:GLU:HB2 | 1.99 | 0.62 |
| 45:DO:26:LYS:HB2 | 45:DO:30:ALA:HB2 | 1.82 | 0.62 |
| 2:CB:50:GLU:HG3 | 2:CB:202:PRO:HG3 | 1.82 | 0.62 |
| 2:CB:69:LEU:HD22 | 2:CB:91:PRO:CB | 2.29 | 0.62 |
| 50:BT:28:VAL:O | 50:BT:29:ARG:HB2 | 2.00 | 0.62 |
| 43:BI:118:LYS:CD | 43:BI:119:PRO:HD2 | 2.23 | 0.62 |
| 51:BU:112:ARG:O | 51:BU:115:ALA:HB3 | 1.98 | 0.62 |
| 52:BV:39:LEU:HD12 | 52:BV:47:VAL:CG1 | 2.28 | 0.62 |
| 48:BR:2:ARG:HG2 | 48:BR:5:LYS:NZ | 2.13 | 0.62 |
| 1:AA:180:U:H2' | 1:AA:181:G:C5' | 2.20 | 0.62 |
| 42:DH:102:ALA:CB | 42:DH:117:PRO:HD3 | 2.26 | 0.62 |
| 45:BO:1:MET:CE | 45:BO:67:LYS:HG2 | 2.28 | 0.62 |
| 43:DI:72:LEU:HD12 | 43:DI:138:ILE:HD13 | 1.81 | 0.62 |
| 6:AF:18:GLN:O | 6:AF:21:LEU:HB2 | 1.99 | 0.62 |
| 45:BO:104:ARG:NE | 50:BT:33:LYS:HD2 | 2.14 | 0.62 |
| 50:BT:57:PHE:O | 50:BT:59:THR:N | 2.32 | 0.62 |
| 33:D8:34:TRP:O | 33:D8:35:GLN:HB2 | 1.98 | 0.62 |
| 46:DP:144:GLU:N | 46:DP:145:PRO:CD | 2.63 | 0.62 |
| 39:DE:103:ASP:OD2 | 39:DE:201:THR:HA | 2.00 | 0.62 |
| 19:AS:16:LEU:H | 19:AS:16:LEU:HD12 | 1.63 | 0.62 |
| 1:CA:1308:U:H5' | 13:CM:110:ARG:HD2 | 1.80 | 0.62 |
| 1:AA:1308:U:H5' | 13:AM:110:ARG:HD2 | 1.81 | 0.62 |
| 35:DA:271(M):G:O2' | 35:DA:271(O):C:H5' | 1.99 | 0.62 |
| 1:AA:1239:A:H62 | 1:AA:1299:A:H62 | 1.46 | 0.62 |
| 2:CB:178:ARG:NH2 | 8:CH:74:PRO:HG3 | 2.14 | 0.62 |
| 42:DH:41:MET:SD | 42:DH:41:MET:N | 2.73 | 0.62 |
| 18:CR:86:VAL:O | 18:CR:87:ARG:HD3 | 1.99 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:1298:C:H2' | 7:CG:114:ARG:NH1 | 2.13 | 0.62 |
| 35:DA:17:G:H4' | 51:DU:25:TRP:CH2 | 2.34 | 0.62 |
| 51:BU:102:GLU:HG3 | 52:BV:2:PHE:CE1 | 2.34 | 0.62 |
| 35:DA:558:G:P | 44:DN:111:PRO:HD2 | 2.39 | 0.62 |
| 29:D4:40:ILE:HG13 | 29:D4:57:ILE:HG21 | 1.81 | 0.62 |
| 35:DA:2444:G:OP2 | 40:DF:68:LYS:HE2 | 1.99 | 0.62 |
| 17:CQ:83:ASP:O | 17:CQ:86:GLU:HB2 | 1.99 | 0.62 |
| 2:CB:19:HIS:CG | 2:CB:20:GLU:H | 2.16 | 0.62 |
| 35:DA:1709:U:H2' | 35:DA:1710:C:C6 | 2.35 | 0.62 |
| 35:BA:2779:U:H4' | 35:BA:2780:G:H5' | 1.81 | 0.62 |
| 35:DA:2010:G:H5'' | 53:DW:42:ARG:HB2 | 1.80 | 0.62 |
| 38:DD:231:HIS:ND1 | 38:DD:232:PRO:HD2 | 2.13 | 0.62 |
| 35:BA:74:A:H4' | 35:BA:75:G:O5' | 1.99 | 0.62 |
| 33:B8:2:PRO:HA | 35:BA:591:C:O2 | 1.99 | 0.62 |
| 46:DP:75:ILE:HD12 | 46:DP:75:ILE:N | 2.14 | 0.62 |
| 35:DA:2328:A:H2' | 35:DA:2329:G:C8 | 2.35 | 0.62 |
| 31:B6:47:THR:HB | 31:B6:49:HIS:CE1 | 2.35 | 0.62 |
| 2:CB:44:LEU:H | 2:CB:44:LEU:CD1 | 2.11 | 0.62 |
| 2:CB:55:PHE:HA | 2:CB:58:ILE:CG1 | 2.28 | 0.62 |
| 50:DT:83:ILE:HD12 | 50:DT:83:ILE:O | 1.98 | 0.62 |
| 36:BB:48:A:H4' | 49:BS:95:HIS:CD2 | 2.32 | 0.62 |
| 22:CY:33:U:C3' | 22:CY:34:G:H5'' | 2.29 | 0.62 |
| 42:BH:19:VAL:CG2 | 42:BH:44:VAL:HA | 2.23 | 0.62 |
| 9:AI:114:TYR:H | 9:AI:114:TYR:HD2 | 1.45 | 0.62 |
| 35:BA:1264:G:H3' | 35:BA:1265:A:H5'' | 1.81 | 0.62 |
| 55:BY:7:VAL:HB | 55:BY:8:LYS:HZ2 | 1.63 | 0.62 |
| 37:DC:87:GLU:HG2 | 37:DC:93:TYR:HA | 1.81 | 0.62 |
| 42:DH:85:LYS:HG3 | 42:DH:145:ALA:HB2 | 1.80 | 0.62 |
| 50:BT:38:ASN:HD22 | 50:BT:39:ARG:N | 1.97 | 0.62 |
| 25:B0:20:ARG:HD3 | 25:B0:20:ARG:N | 2.15 | 0.62 |
| 43:DI:83:ALA:HB2 | 43:DI:88:ILE:HA | 1.81 | 0.62 |
| 2:CB:168:THR:HA | 2:CB:171:ALA:HB2 | 1.82 | 0.62 |
| 25:D0:36:ILE:HD12 | 25:D0:37:LEU:N | 2.14 | 0.62 |
| 35:BA:271(M):G:O2' | 35:BA:271(O):C:H5' | 1.99 | 0.62 |
| 35:DA:1153:C:H2' | 35:DA:1154:G:O4' | 2.00 | 0.62 |
| 45:DO:104:ARG:NE | 50:DT:33:LYS:HD2 | 2.14 | 0.62 |
| 15:CO:3:ILE:N | 15:CO:3:ILE:HD13 | 2.15 | 0.62 |
| 1:CA:818:G:C3' | 1:CA:819:A:H5'' | 2.30 | 0.62 |
| 8:AH:103:VAL:HG21 | 8:AH:110:ALA:HB2 | 1.82 | 0.62 |
| 35:BA:877:U:O2' | 35:BA:878:A:H5'' | 1.99 | 0.62 |
| 1:CA:797:C:OP1 | 11:CK:124:LYS:HE2 | 1.99 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:BZ:10:ARG:HH21 | 56:BZ:26:GLY:N | 1.97 | 0.62 |
| 7:CG:148:ASN:C | 7:CG:150:ALA:H | 2.01 | 0.62 |
| 46:DP:17:LYS:O | 46:DP:17:LYS:HG2 | 1.99 | 0.62 |
| 35:DA:993:G:O2' | 52:DV:89:GLN:HG3 | 1.98 | 0.62 |
| 14:AN:24:CYS:HB3 | 14:AN:27:CYS:O | 2.00 | 0.62 |
| 17:CQ:74:LEU:HD12 | 17:CQ:75:ARG:HG2 | 1.82 | 0.62 |
| 38:DD:242:ARG:N | 38:DD:242:ARG:HD2 | 2.14 | 0.62 |
| 15:AO:5:LYS:O | 15:AO:9:GLN:HG2 | 1.98 | 0.62 |
| 48:DR:7:GLY:O | 48:DR:8:ARG:HG2 | 1.99 | 0.62 |
| 35:BA:1839:G:H5' | 35:BA:1839:G:H8 | 1.63 | 0.62 |
| 35:DA:1839:G:H8 | 35:DA:1839:G:H5' | 1.64 | 0.62 |
| 13:CM:4:ILE:HA | 13:CM:57:ARG:HD3 | 1.80 | 0.62 |
| 46:DP:8:PRO:O | 46:DP:9:ASN:CB | 2.47 | 0.62 |
| 12:AL:25:PRO:C | 12:AL:27:LEU:N | 2.52 | 0.62 |
| 2:AB:235:SER:O | 2:AB:237:ALA:N | 2.33 | 0.62 |
| 38:BD:33:LEU:HD13 | 38:BD:34:VAL:N | 2.15 | 0.62 |
| 46:BP:16:ARG:HD3 | 46:BP:18:ARG:N | 2.03 | 0.62 |
| 35:DA:2308:G:H21 | 41:DG:79:ASN:ND2 | 1.97 | 0.62 |
| 38:BD:182:LEU:O | 38:BD:271:ILE:HG13 | 1.98 | 0.62 |
| 30:D5:33:CYS:SG | 30:D5:36:CYS:HB2 | 2.40 | 0.62 |
| 52:DV:18:LEU:CG | 52:DV:19:LYS:H | 2.12 | 0.62 |
| 6:AF:39:LYS:HD2 | 6:AF:62:TRP:CZ3 | 2.31 | 0.62 |
| 1:AA:1325:C:H4' | 21:AU:17:THR:HG21 | 1.80 | 0.62 |
| 10:AJ:30:SER:O | 10:AJ:81:THR:HG23 | 2.00 | 0.62 |
| 43:DI:101:LEU:HG | 43:DI:109:ILE:HD11 | 1.81 | 0.62 |
| 38:BD:228:PRO:HD3 | 38:BD:235:GLY:CA | 2.30 | 0.62 |
| 39:BE:11:MET:CB | 39:BE:24:THR:HA | 2.28 | 0.62 |
| 55:BY:7:VAL:HB | 55:BY:8:LYS:NZ | 2.15 | 0.62 |
| 44:BN:55:VAL:HG22 | 44:BN:126:PRO:CA | 2.28 | 0.62 |
| 45:BO:107:ARG:NH1 | 50:BT:36:GLU:H | 1.98 | 0.62 |
| 45:BO:88:ASN:ND2 | 45:BO:90:GLN:H | 1.96 | 0.62 |
| 38:BD:27:THR:HG23 | 38:BD:27:THR:O | 1.99 | 0.62 |
| 35:DA:1485:G:H1' | 35:DA:1505:C:N4 | 2.14 | 0.62 |
| 12:CL:25:PRO:C | 12:CL:27:LEU:N | 2.53 | 0.62 |
| 35:BA:2444:G:OP2 | 40:BF:68:LYS:HE2 | 2.00 | 0.62 |
| 31:B6:36:LEU:HD23 | 31:B6:36:LEU:H | 1.65 | 0.62 |
| 42:BH:89:ILE:N | 42:BH:89:ILE:HD12 | 2.15 | 0.62 |
| 19:AS:13:ASP:C | 19:AS:15:LEU:H | 2.03 | 0.62 |
| 26:B1:58:ILE:HD11 | 26:B1:60:PHE:CZ | 2.34 | 0.62 |
| 1:CA:473:G:H2' | 1:CA:474:G:H8 | 1.65 | 0.62 |
| 41:BG:68:PRO:CB | 41:BG:90:LEU:HD21 | 2.30 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:1952:A:C2 | 45:BO:22:ILE:HG23 | 2.35 | 0.62 |
| 16:CP:50:LYS:HD3 | 16:CP:51:VAL:H | 1.63 | 0.62 |
| 14:AN:44:LEU:HD12 | 14:AN:44:LEU:O | 2.00 | 0.62 |
| 35:DA:2327:A:H2' | 35:DA:2328:A:C8 | 2.35 | 0.62 |
| 1:AA:189(J):G:O2' | 1:AA:189(K):U:H5' | 2.00 | 0.62 |
| 54:DX:8:ILE:N | 54:DX:8:ILE:HD12 | 2.15 | 0.62 |
| 1:CA:533:A:H1' | 1:CA:534:U:OP1 | 2.00 | 0.62 |
| 44:DN:65:LYS:O | 44:DN:69:GLN:HG3 | 1.98 | 0.62 |
| 45:DO:71:ARG:C | 45:DO:73:ASP:H | 2.03 | 0.62 |
| 35:DA:1638:C:H4' | 35:DA:2710:C:O2 | 1.99 | 0.62 |
| 1:CA:857:C:H2' | 1:CA:858:G:O4' | 1.98 | 0.62 |
| 20:CT:45:GLN:C | 20:CT:47:GLY:H | 2.03 | 0.62 |
| 13:CM:27:LYS:HE3 | 13:CM:31:LYS:HE3 | 1.81 | 0.62 |
| 22:AY:20:U:H2' | 22:AY:21:A:H4' | 1.81 | 0.62 |
| 36:DB:60:C:H2' | 36:DB:61:G:H8 | 1.64 | 0.62 |
| 51:BU:83:LEU:HG | 51:BU:88:ILE:CD1 | 2.29 | 0.62 |
| 35:BA:1814:G:H2' | 35:BA:1815:A:C8 | 2.34 | 0.62 |
| 39:DE:77:ILE:HG22 | 39:DE:78:LEU:HG | 1.81 | 0.62 |
| 48:DR:10:LEU:CD2 | 48:DR:17:ARG:HD2 | 2.22 | 0.62 |
| 5:AE:6:PHE:HB3 | 5:AE:35:GLY:O | 1.99 | 0.62 |
| 5:AE:8:GLU:HB2 | 5:AE:34:VAL:HG22 | 1.82 | 0.62 |
| 38:DD:271:ILE:O | 38:DD:272:ALA:HB2 | 1.99 | 0.62 |
| 49:DS:54:LEU:HD22 | 49:DS:54:LEU:H | 1.64 | 0.62 |
| 33:B8:34:TRP:O | 33:B8:35:GLN:HB2 | 2.00 | 0.62 |
| 38:DD:108:PRO:HB3 | 38:DD:143:HIS:CE1 | 2.35 | 0.62 |
| 13:AM:90:LEU:C | 13:AM:92:HIS:N | 2.47 | 0.62 |
| 17:AQ:68:ARG:HG2 | 17:AQ:68:ARG:HH11 | 1.65 | 0.62 |
| 35:BA:1403:C:H5'' | 35:BA:1471:A:C1' | 2.28 | 0.62 |
| 25:D0:20:ARG:N | 25:D0:20:ARG:HD3 | 2.14 | 0.62 |
| 35:BA:136:G:H1 | 35:BA:143(A):C:H42 | 1.47 | 0.62 |
| 35:BA:27:G:N2 | 35:BA:512:G:H2' | 2.14 | 0.62 |
| 29:D4:36:VAL:HB | 29:D4:37:PRO:HD2 | 1.81 | 0.62 |
| 41:DG:101:ILE:C | 41:DG:101:ILE:HD13 | 2.20 | 0.62 |
| 47:DQ:41:TRP:HB3 | 47:DQ:94:VAL:HG21 | 1.81 | 0.62 |
| 44:BN:23:LEU:H | 44:BN:23:LEU:CD2 | 2.13 | 0.62 |
| 1:CA:674:G:H2' | 1:CA:675:A:H8 | 1.63 | 0.62 |
| 22:CV:17:C:H3' | 22:CV:18:G:H5'' | 1.82 | 0.62 |
| 35:DA:1405:U:H2' | 35:DA:1406:U:H6 | 1.62 | 0.62 |
| 23:CW:19:G:H5' | 23:CW:20:U:C5 | 2.35 | 0.62 |
| 1:AA:39:G:O2' | 1:AA:40:C:H5' | 1.99 | 0.62 |
| 15:AO:64:ARG:HG3 | 15:AO:64:ARG:HH11 | 1.64 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:57:C:O2' | 35:DA:58:G:H5' | 2.00 | 0.62 |
| 22:CV:61:C:H2' | 22:CV:62:C:C6 | 2.35 | 0.62 |
| 1:CA:1116:C:H2' | 1:CA:1117:G:O4' | 2.00 | 0.62 |
| 22:CV:20:U:H3' | 22:CV:21:A:H5'' | 1.79 | 0.62 |
| 46:BP:17:LYS:HG2 | 46:BP:17:LYS:O | 1.99 | 0.62 |
| 39:DE:69:LYS:NZ | 39:DE:89:ASP:HA | 2.15 | 0.62 |
| 50:BT:12:SER:O | 50:BT:13:ARG:NH2 | 2.32 | 0.62 |
| 1:CA:1277:C:O2' | 1:CA:1279:A:H8 | 1.83 | 0.62 |
| 3:AC:77:ILE:CG2 | 3:AC:81:GLY:HA2 | 2.30 | 0.62 |
| 52:DV:39:LEU:HD12 | 52:DV:47:VAL:CG1 | 2.28 | 0.62 |
| 35:DA:2468:G:N2 | 35:DA:2481:G:H2' | 2.12 | 0.62 |
| 42:DH:66:GLY:CA | 42:DH:69:ARG:HB2 | 2.24 | 0.62 |
| 45:DO:7:TYR:CE1 | 45:DO:20:MET:HE3 | 2.33 | 0.62 |
| 26:D1:67:ILE:N | 26:D1:68:PRO:CD | 2.62 | 0.62 |
| 22:CY:42:C:C3' | 22:CY:43:C:H5'' | 2.27 | 0.62 |
| 3:CC:6:HIS:HB2 | 14:CN:49:HIS:HD2 | 1.65 | 0.62 |
| 31:B6:10:LEU:HD12 | 33:B8:34:TRP:CD1 | 2.35 | 0.62 |
| 41:BG:128:ARG:C | 41:BG:130:ASN:N | 2.49 | 0.62 |
| 1:AA:106:C:H2' | 1:AA:107:G:C8 | 2.32 | 0.62 |
| 46:DP:144:GLU:HG2 | 46:DP:144:GLU:O | 2.00 | 0.62 |
| 41:BG:129:GLY:HA2 | 41:BG:164:GLU:HA | 1.81 | 0.62 |
| 43:BI:124:GLY:O | 43:BI:142:VAL:HG22 | 1.99 | 0.62 |
| 37:DC:68:LEU:HD13 | 37:DC:179:SER:HA | 1.82 | 0.62 |
| 37:BC:68:LEU:CD1 | 37:BC:179:SER:HA | 2.30 | 0.62 |
| 51:DU:17:ILE:HG23 | 51:DU:39:LEU:HD12 | 1.82 | 0.62 |
| 1:AA:134:A:H61 | 16:AP:25:ARG:NH1 | 1.98 | 0.62 |
| 4:AD:8:VAL:O | 4:AD:10:ARG:N | 2.27 | 0.62 |
| 1:CA:1136:U:H5'' | 1:CA:1137:C:C4 | 2.34 | 0.62 |
| 1:CA:90:U:C5' | 1:CA:91:C:H5' | 2.30 | 0.62 |
| 1:CA:556:C:O2' | 1:CA:557:G:H5' | 2.00 | 0.62 |
| 54:DX:8:ILE:H | 54:DX:8:ILE:HD12 | 1.64 | 0.62 |
| 56:DZ:128:VAL:HG22 | 56:DZ:129:SER:N | 2.15 | 0.62 |
| 53:BW:86:LEU:HD12 | 53:BW:87:PRO:HD2 | 1.82 | 0.62 |
| 1:AA:408:A:H4' | 4:AD:112:VAL:HG11 | 1.82 | 0.62 |
| 3:CC:24:ALA:HB1 | 3:CC:28:GLN:O | 1.99 | 0.62 |
| 33:D8:2:PRO:HA | 35:DA:591:C:O2 | 2.00 | 0.62 |
| 50:DT:28:VAL:O | 50:DT:29:ARG:HB2 | 1.98 | 0.62 |
| 46:BP:50:ARG:HG2 | 46:BP:50:ARG:HH21 | 1.65 | 0.62 |
| 1:CA:954:G:C4' | 13:CM:120:LYS:HG3 | 2.17 | 0.62 |
| 3:CC:70:VAL:CG1 | 3:CC:71:ALA:H | 1.99 | 0.62 |
| 37:DC:59:ARG:HB2 | 37:DC:62:VAL:CG2 | 2.29 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:2126:A:N6 | 35:DA:2163:C:H4' | 2.14 | 0.62 |
| 4:AD:31:CYS:C | 4:AD:33:MET:N | 2.53 | 0.62 |
| 1:CA:1323:G:H2' | 1:CA:1324:A:C8 | 2.34 | 0.62 |
| 5:CE:79:GLU:HB3 | 5:CE:92:LYS:CG | 2.30 | 0.62 |
| 55:BY:17:SER:HB3 | 55:BY:71:LYS:HB3 | 1.82 | 0.62 |
| 6:CF:18:GLN:O | 6:CF:21:LEU:HB2 | 2.00 | 0.62 |
| 25:B0:40:GLN:NE2 | 25:B0:43:THR:HA | 2.15 | 0.62 |
| 45:DO:77:ILE:HD12 | 50:DT:73:GLU:O | 2.00 | 0.62 |
| 50:BT:62:THR:CG2 | 50:BT:75:ILE:HG12 | 2.29 | 0.62 |
| 35:BA:152:G:H1 | 35:BA:174:C:N4 | 1.96 | 0.62 |
| 1:AA:353:A:H5' | 1:AA:353:A:C8 | 2.32 | 0.62 |
| 55:DY:31:LEU:CB | 55:DY:32:PRO:HA | 2.30 | 0.62 |
| 35:DA:2152:G:H2' | 35:DA:2153:G:H8 | 1.65 | 0.62 |
| 41:BG:144:ILE:HD11 | 41:BG:148:MET:CB | 2.30 | 0.62 |
| 13:AM:76:ALA:HA | 13:AM:79:LYS:CD | 2.30 | 0.62 |
| 23:CW:57:G:H2' | 23:CW:57:G:N3 | 2.13 | 0.62 |
| 20:CT:13:LEU:C | 20:CT:13:LEU:HD12 | 2.20 | 0.62 |
| 35:DA:2175:C:H1' | 37:DC:215:THR:HA | 1.82 | 0.62 |
| 35:BA:2317:C:H2' | 35:BA:2318:G:H5' | 1.80 | 0.62 |
| 35:DA:851:U:O2' | 35:DA:852:G:H5' | 1.99 | 0.62 |
| 47:BQ:27:VAL:HB | 47:BQ:137:TYR:HD1 | 1.64 | 0.62 |
| 2:CB:140:HIS:O | 2:CB:143:GLU:HB2 | 1.99 | 0.62 |
| 1:CA:484:G:H4' | 1:CA:485:G:O5' | 1.99 | 0.62 |
| 1:AA:1452:C:H5' | 1:AA:1456:G:C5 | 2.35 | 0.62 |
| 14:CN:44:LEU:O | 14:CN:44:LEU:HD12 | 1.99 | 0.62 |
| 35:BA:843:G:O2' | 35:BA:844:C:H5' | 2.00 | 0.62 |
| 35:DA:1721:G:C6 | 35:DA:1739:U:H5' | 2.35 | 0.62 |
| 35:DA:1688:U:O2 | 35:DA:1700:A:H5' | 2.00 | 0.62 |
| 35:BA:523:C:O2' | 35:BA:524:U:H5' | 2.00 | 0.62 |
| 53:BW:110:LYS:HG3 | 53:BW:111:HIS:H | 1.65 | 0.62 |
| 1:AA:243:A:H4' | 1:AA:244:U:O5' | 1.98 | 0.62 |
| 1:AA:980:C:H5' | 1:AA:981:U:C5 | 2.35 | 0.61 |
| 50:DT:82:LEU:C | 50:DT:84:GLN:H | 2.04 | 0.61 |
| 52:DV:35:LEU:HB2 | 52:DV:57:VAL:HG13 | 1.81 | 0.61 |
| 55:DY:14:LEU:HD12 | 55:DY:15:VAL:N | 2.08 | 0.61 |
| 22:AY:25:C:H2' | 22:AY:26:A:C8 | 2.31 | 0.61 |
| 44:DN:17:ASP:HB2 | 44:DN:55:VAL:HG12 | 1.82 | 0.61 |
| 35:BA:2523:G:C8 | 35:BA:2523:G:H5' | 2.30 | 0.61 |
| 39:BE:101:ARG:NH1 | 39:BE:169:ASN:HD22 | 1.97 | 0.61 |
| 12:CL:24:VAL:HG12 | 12:CL:24:VAL:O | 2.00 | 0.61 |
| 12:CL:28:LYS:C | 12:CL:30:ALA:N | 2.53 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:2773:C:H2' | 35:DA:2774:C:C6 | 2.34 | 0.61 |
| 1:CA:437:U:O2' | 1:CA:438:G:H5' | 2.00 | 0.61 |
| 7:AG:146:GLU:OE2 | 7:AG:149:ARG:HD2 | 2.00 | 0.61 |
| 8:CH:103:VAL:CG2 | 8:CH:110:ALA:HB2 | 2.29 | 0.61 |
| 35:DA:1800:C:OP1 | 38:DD:264:LYS:NZ | 2.31 | 0.61 |
| 3:AC:187:ALA:O | 3:AC:198:VAL:HG23 | 1.99 | 0.61 |
| 1:CA:1188:A:C2' | 1:CA:1189:C:H5' | 2.29 | 0.61 |
| 1:CA:39:G:O2' | 1:CA:40:C:H5' | 2.00 | 0.61 |
| 1:CA:408:A:H4' | 4:CD:112:VAL:HG11 | 1.82 | 0.61 |
| 22:CY:1:G:N3 | 22:CY:1:G:H2' | 2.15 | 0.61 |
| 1:AA:620:C:H2' | 1:AA:621:A:O4' | 1.99 | 0.61 |
| 35:DA:74:A:H4' | 35:DA:75:G:O5' | 2.00 | 0.61 |
| 31:D6:17:LYS:HD3 | 31:D6:17:LYS:O | 2.00 | 0.61 |
| 31:D6:47:THR:HB | 31:D6:49:HIS:CE1 | 2.35 | 0.61 |
| 51:BU:70:ARG:HA | 51:BU:74:LEU:O | 2.00 | 0.61 |
| 56:DZ:121:HIS:ND1 | 56:DZ:171:ILE:HA | 2.15 | 0.61 |
| 48:BR:10:LEU:CD2 | 48:BR:17:ARG:HD2 | 2.23 | 0.61 |
| 3:CC:70:VAL:O | 3:CC:106:VAL:HG23 | 1.98 | 0.61 |
| 38:BD:271:ILE:O | 38:BD:272:ALA:HB2 | 2.00 | 0.61 |
| 35:BA:2126:A:N6 | 35:BA:2163:C:H4' | 2.15 | 0.61 |
| 41:BG:112:PRO:C | 41:BG:113:ARG:HD3 | 2.19 | 0.61 |
| 43:DI:72:LEU:O | 43:DI:138:ILE:HG12 | 2.00 | 0.61 |
| 46:DP:83:VAL:O | 46:DP:114:ILE:HD12 | 1.99 | 0.61 |
| 44:DN:55:VAL:HG22 | 44:DN:126:PRO:CA | 2.26 | 0.61 |
| 26:D1:89:GLU:O | 26:D1:93:GLU:HB2 | 2.00 | 0.61 |
| 35:BA:1485:G:H1' | 35:BA:1505:C:N4 | 2.15 | 0.61 |
| 8:CH:7:ALA:HB2 | 8:CH:85:ARG:HH11 | 1.63 | 0.61 |
| 31:B6:36:LEU:HB3 | 31:B6:50:ARG:NH1 | 2.15 | 0.61 |
| 33:B8:29:LYS:HD3 | 33:B8:44:LYS:HG2 | 1.82 | 0.61 |
| 35:BA:2815:C:H2' | 35:BA:2816:C:H6 | 1.65 | 0.61 |
| 5:CE:65:ASN:O | 5:CE:66:MET:HG3 | 1.99 | 0.61 |
| 56:DZ:10:ARG:HH22 | 56:DZ:26:GLY:N | 1.98 | 0.61 |
| 56:DZ:10:ARG:NH2 | 56:DZ:37:VAL:O | 2.33 | 0.61 |
| 1:CA:376:G:H4' | 16:CP:5:ARG:HH11 | 1.65 | 0.61 |
| 33:B8:23:VAL:CG1 | 33:B8:46:ARG:HB3 | 2.30 | 0.61 |
| 42:BH:55:PRO:HG2 | 42:BH:56:SER:H | 1.64 | 0.61 |
| 3:AC:153:VAL:CG1 | 3:AC:196:LEU:HD12 | 2.30 | 0.61 |
| 35:BA:17:G:H2' | 35:BA:18:C:C6 | 2.34 | 0.61 |
| 35:DA:1042:G:N3 | 35:DA:1042:G:H2' | 2.15 | 0.61 |
| 35:BA:1719:G:C2' | 35:BA:1720:U:H5' | 2.30 | 0.61 |
| 52:DV:89:GLN:OE1 | 52:DV:90:PRO:HD2 | 2.00 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:1259:G:O2' | 35:BA:1260:G:H5' | 2.00 | 0.61 |
| 3:AC:23:TYR:CG | 3:AC:24:ALA:N | 2.68 | 0.61 |
| 35:DA:2694:G:O2' | 35:DA:2695:C:H5' | 1.99 | 0.61 |
| 1:CA:711:G:O2' | 1:CA:712:A:H5' | 2.00 | 0.61 |
| 40:DF:70:THR:C | 40:DF:72:ARG:H | 2.04 | 0.61 |
| 1:CA:999:C:O2' | 1:CA:1000:U:H5' | 2.01 | 0.61 |
| 39:BE:34:VAL:HG22 | 39:BE:48:GLN:HE21 | 1.66 | 0.61 |
| 12:CL:119:LYS:C | 12:CL:120:TYR:HD1 | 2.03 | 0.61 |
| 46:BP:9:ASN:C | 46:BP:11:GLY:H | 2.03 | 0.61 |
| 49:DS:14:VAL:HG13 | 49:DS:90:GLY:HA2 | 1.81 | 0.61 |
| 50:BT:27:THR:O | 50:BT:28:VAL:CB | 2.48 | 0.61 |
| 52:BV:51:VAL:HG12 | 52:BV:52:VAL:N | 2.14 | 0.61 |
| 10:AJ:48:THR:HA | 10:AJ:62:HIS:CB | 2.27 | 0.61 |
| 30:D5:48:GLU:O | 30:D5:50:GLY:N | 2.34 | 0.61 |
| 42:BH:66:GLY:CA | 42:BH:69:ARG:HB2 | 2.26 | 0.61 |
| 43:DI:98:ALA:HB1 | 43:DI:109:ILE:HB | 1.82 | 0.61 |
| 39:BE:186:GLY:O | 39:BE:188:VAL:N | 2.32 | 0.61 |
| 35:BA:1141:U:P | 44:BN:25:ARG:HH12 | 2.23 | 0.61 |
| 33:D8:33:ASN:HA | 33:D8:36:LYS:CD | 2.31 | 0.61 |
| 22:CV:66:U:H2' | 22:CV:67:C:C6 | 2.35 | 0.61 |
| 51:DU:34:LYS:HE2 | 51:DU:34:LYS:HA | 1.81 | 0.61 |
| 35:BA:580:C:H2' | 35:BA:581:C:C6 | 2.35 | 0.61 |
| 12:CL:25:PRO:O | 12:CL:27:LEU:HD22 | 2.01 | 0.61 |
| 3:CC:20:SER:HB2 | 3:CC:40:ARG:NH2 | 2.16 | 0.61 |
| 37:DC:68:LEU:CD1 | 37:DC:179:SER:HA | 2.30 | 0.61 |
| 37:DC:40:THR:HG21 | 37:DC:215:THR:CB | 2.30 | 0.61 |
| 1:AA:77:G:H1 | 1:AA:92:C:N4 | 1.98 | 0.61 |
| 13:AM:9:ILE:HD12 | 13:AM:9:ILE:N | 2.15 | 0.61 |
| 20:AT:82:SER:O | 20:AT:86:ARG:HD3 | 2.00 | 0.61 |
| 2:CB:139:LYS:O | 2:CB:143:GLU:HG2 | 2.00 | 0.61 |
| 26:B1:11:ARG:HB2 | 26:B1:12:PRO:HD2 | 1.82 | 0.61 |
| 53:DW:12:ILE:HG13 | 53:DW:42:ARG:HH11 | 1.64 | 0.61 |
| 3:CC:23:TYR:CG | 3:CC:24:ALA:N | 2.68 | 0.61 |
| 50:DT:78:LEU:O | 50:DT:78:LEU:HD23 | 2.00 | 0.61 |
| 35:BA:2845:G:O2' | 35:BA:2846:G:H5' | 1.99 | 0.61 |
| 41:DG:37:VAL:HG21 | 41:DG:99:MET:HG3 | 1.82 | 0.61 |
| 35:DA:185:U:H4' | 35:DA:218:A:H4' | 1.83 | 0.61 |
| 32:D7:19:ARG:HG2 | 32:D7:19:ARG:HH11 | 1.63 | 0.61 |
| 3:CC:64:VAL:O | 3:CC:100:ALA:HB3 | 2.00 | 0.61 |
| 35:BA:986:C:O2' | 35:BA:987:G:H5' | 2.01 | 0.61 |
| 56:DZ:97:GLU:HG2 | 56:DZ:127:LYS:HA | 1.82 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:DF:24:LEU:O | 40:DF:26:ALA:N | 2.31 | 0.61 |
| 35:BA:2700:C:O2' | 35:BA:2701:C:H5' | 2.00 | 0.61 |
| 40:BF:34:TRP:CZ2 | 46:BP:12:ALA:HB2 | 2.35 | 0.61 |
| 1:AA:1053:G:H3' | 1:AA:1054:C:H5' | 1.81 | 0.61 |
| 35:BA:631:A:O2' | 46:BP:67:MET:HB3 | 1.99 | 0.61 |
| 41:DG:47:LYS:HZ1 | 41:DG:82:LEU:HD12 | 1.62 | 0.61 |
| 41:DG:85:GLY:C | 41:DG:87:PRO:HD2 | 2.20 | 0.61 |
| 35:DA:2759:G:O2' | 35:DA:2760:C:H5' | 2.00 | 0.61 |
| 39:DE:34:VAL:HG22 | 39:DE:48:GLN:NE2 | 2.14 | 0.61 |
| 13:CM:75:ALA:O | 13:CM:79:LYS:HG3 | 2.00 | 0.61 |
| 52:BV:19:LYS:CE | 52:BV:20:LEU:H | 2.13 | 0.61 |
| 26:D1:45:ASN:ND2 | 26:D1:47:GLN:NE2 | 2.47 | 0.61 |
| 35:DA:1666:G:H1' | 45:DO:3:GLN:NE2 | 2.16 | 0.61 |
| 1:AA:1281:U:H5' | 1:AA:1282:C:OP2 | 2.01 | 0.61 |
| 38:BD:228:PRO:HD3 | 38:BD:235:GLY:HA3 | 1.82 | 0.61 |
| 43:BI:72:LEU:O | 43:BI:138:ILE:HG12 | 1.99 | 0.61 |
| 35:BA:271(D):G:H1 | 35:BA:271(T):C:H42 | 1.46 | 0.61 |
| 35:DA:271(R):G:H2' | 35:DA:271(S):G:C8 | 2.33 | 0.61 |
| 35:BA:1880:C:H6 | 35:BA:1880:C:H5' | 1.65 | 0.61 |
| 4:AD:138:TYR:HD2 | 4:AD:138:TYR:C | 2.04 | 0.61 |
| 35:DA:1880:C:H6 | 35:DA:1880:C:H5' | 1.66 | 0.61 |
| 6:AF:72:VAL:HG13 | 6:AF:73:ASN:N | 2.15 | 0.61 |
| 48:BR:61:HIS:O | 48:BR:65:LEU:HB2 | 2.01 | 0.61 |
| 17:AQ:58:GLU:C | 17:AQ:59:ILE:HD13 | 2.21 | 0.61 |
| 46:BP:146:VAL:O | 46:BP:148:LEU:HG | 2.00 | 0.61 |
| 35:DA:1801:G:OP2 | 38:DD:154:LYS:HE2 | 2.01 | 0.61 |
| 35:BA:1363:C:H2' | 35:BA:1364:G:H8 | 1.66 | 0.61 |
| 47:DQ:39:PRO:O | 47:DQ:40:ALA:HB2 | 2.00 | 0.61 |
| 35:DA:90:U:O2' | 35:DA:92:A:H5'' | 2.00 | 0.61 |
| 42:BH:41:MET:SD | 42:BH:41:MET:N | 2.73 | 0.61 |
| 11:CK:123:LYS:HA | 11:CK:126:ARG:HB2 | 1.80 | 0.61 |
| 35:BA:2617:C:O2' | 35:BA:2618:G:H5' | 2.01 | 0.61 |
| 14:AN:26:ARG:NH1 | 14:AN:47:LEU:HD21 | 2.13 | 0.61 |
| 1:CA:41:G:H2' | 1:CA:42:G:H8 | 1.64 | 0.61 |
| 35:DA:467:G:O2' | 35:DA:468:G:H5' | 2.00 | 0.61 |
| 1:CA:312:C:H2' | 1:CA:313:A:C8 | 2.36 | 0.61 |
| 1:AA:711:G:O2' | 1:AA:712:A:H5' | 2.00 | 0.61 |
| 26:D1:50:ARG:HG2 | 26:D1:59:THR:HG22 | 1.82 | 0.61 |
| 7:AG:62:PHE:O | 7:AG:66:VAL:HG23 | 2.01 | 0.61 |
| 12:AL:24:VAL:O | 12:AL:24:VAL:HG12 | 2.01 | 0.61 |
| 55:BY:76:CYS:CB | 55:BY:96:ILE:HD11 | 2.17 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 38:DD:43:ARG:HB3 | 38:DD:54:ARG:HB2 | 1.83 | 0.61 |
| 42:BH:71:LEU:N | 42:BH:74:ASN:HD22 | 1.98 | 0.61 |
| 51:BU:88:ILE:HG13 | 51:BU:88:ILE:O | 1.99 | 0.61 |
| 56:DZ:150:LEU:HD21 | 56:DZ:172:ALA:HB3 | 1.81 | 0.61 |
| 1:AA:1327:C:OP1 | 21:AU:20:LYS:HB3 | 2.01 | 0.61 |
| 55:DY:25:GLY:HA3 | 55:DY:39:VAL:CG1 | 2.29 | 0.61 |
| 4:CD:20:TYR:HA | 4:CD:26:CYS:SG | 2.40 | 0.61 |
| 53:BW:88:ARG:NH1 | 53:BW:94:ASP:OD1 | 2.33 | 0.61 |
| 46:DP:23:PRO:HD2 | 46:DP:33:ARG:NE | 2.16 | 0.61 |
| 35:DA:1598:C:H5' | 54:DX:36:LYS:HB2 | 1.81 | 0.61 |
| 35:DA:2134:A:N6 | 35:DA:2157:G:H1' | 2.15 | 0.61 |
| 46:BP:41:ARG:HA | 46:BP:41:ARG:NE | 2.15 | 0.61 |
| 35:DA:1301:A:H4' | 35:DA:1302:A:OP1 | 1.99 | 0.61 |
| 35:BA:2870:C:H2' | 35:BA:2871:C:O4' | 2.01 | 0.61 |
| 19:CS:13:ASP:C | 19:CS:15:LEU:H | 2.03 | 0.61 |
| 13:AM:76:ALA:HB2 | 13:AM:79:LYS:HZ3 | 1.64 | 0.61 |
| 26:B1:3:LYS:CG | 26:B1:4:VAL:H | 2.12 | 0.61 |
| 19:AS:62:ILE:HG13 | 19:AS:63:THR:H | 1.65 | 0.61 |
| 48:DR:87:TYR:HE1 | 48:DR:117:VAL:O | 1.83 | 0.61 |
| 1:AA:818:G:C2' | 1:AA:819:A:H5'' | 2.31 | 0.61 |
| 35:BA:963:U:H2' | 35:BA:964:C:C6 | 2.36 | 0.61 |
| 25:D0:27:GLU:HG3 | 25:D0:68:GLU:HA | 1.81 | 0.61 |
| 9:CI:124:GLN:O | 9:CI:125:TYR:HB3 | 2.00 | 0.61 |
| 1:AA:484:G:H4' | 1:AA:485:G:O5' | 2.00 | 0.61 |
| 35:BA:558:G:P | 44:BN:111:PRO:HD2 | 2.40 | 0.61 |
| 38:DD:76:PRO:HG2 | 38:DD:98:VAL:CG2 | 2.31 | 0.61 |
| 17:CQ:14:LYS:HB2 | 17:CQ:14:LYS:HZ3 | 1.64 | 0.61 |
| 2:AB:121:LEU:O | 2:AB:127:ILE:HD11 | 2.00 | 0.61 |
| 1:CA:501:C:H2' | 1:CA:502:G:C8 | 2.35 | 0.61 |
| 1:CA:243:A:H4' | 1:CA:244:U:O5' | 2.00 | 0.61 |
| 1:AA:296:U:H2' | 1:AA:297:G:H8 | 1.64 | 0.61 |
| 1:CA:620:C:H2' | 1:CA:621:A:O4' | 1.99 | 0.61 |
| 1:AA:1079:G:H2' | 1:AA:1080:A:C8 | 2.36 | 0.61 |
| 40:BF:154:VAL:HG22 | 40:BF:191:ARG:HB3 | 1.82 | 0.61 |
| 1:AA:601:C:H2' | 1:AA:602:A:H8 | 1.64 | 0.61 |
| 41:DG:83:ARG:HH11 | 41:DG:84:LYS:HD2 | 1.66 | 0.61 |
| 38:BD:53:PHE:CD1 | 38:BD:220:HIS:HA | 2.35 | 0.61 |
| 1:AA:170:U:O2' | 1:AA:171:A:H5' | 2.00 | 0.61 |
| 31:B6:20:ASN:ND2 | 31:B6:21:TYR:N | 2.48 | 0.61 |
| 1:CA:954:G:H4' | 13:CM:120:LYS:CG | 2.19 | 0.61 |
| 52:BV:6:LYS:O | 52:BV:37:VAL:HG21 | 2.00 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:CC:77:ILE:CG2 | 3:CC:81:GLY:HA2 | 2.30 | 0.61 |
| 13:AM:65:LYS:NZ | 13:AM:65:LYS:HB3 | 2.16 | 0.61 |
| 35:BA:1682:G:H5' | 35:BA:1762:A:O2' | 2.01 | 0.61 |
| 35:DA:2870:C:H2' | 35:DA:2871:C:O4' | 1.99 | 0.61 |
| 46:DP:146:VAL:O | 46:DP:148:LEU:HG | 2.00 | 0.61 |
| 35:BA:2134:A:N6 | 35:BA:2157:G:H1' | 2.15 | 0.61 |
| 1:AA:376:G:H4' | 16:AP:5:ARG:HH11 | 1.64 | 0.61 |
| 1:CA:80:G:H3' | 1:CA:81:U:C5' | 2.28 | 0.61 |
| 23:CW:5:G:O2' | 23:CW:6:G:H5' | 2.00 | 0.61 |
| 35:DA:71:A:C8 | 35:DA:71:A:H5' | 2.34 | 0.61 |
| 35:DA:953:A:H2' | 35:DA:954:G:H5' | 1.82 | 0.61 |
| 9:CI:20:ARG:HH11 | 9:CI:20:ARG:HG3 | 1.65 | 0.61 |
| 38:DD:210:GLY:C | 38:DD:212:SER:H | 2.04 | 0.61 |
| 2:CB:178:ARG:HH22 | 2:CB:196:LEU:C | 2.03 | 0.61 |
| 1:CA:1519:A:H2' | 1:CA:1520:G:H5' | 1.82 | 0.61 |
| 1:CA:1238:A:C8 | 1:CA:1303:C:H1' | 2.35 | 0.61 |
| 35:BA:2327:A:H2' | 35:BA:2328:A:C8 | 2.36 | 0.61 |
| 1:CA:930:C:O2' | 1:CA:931:C:H5' | 2.01 | 0.61 |
| 31:B6:17:LYS:O | 31:B6:17:LYS:HD3 | 2.00 | 0.61 |
| 41:DG:47:LYS:HZ2 | 41:DG:82:LEU:HD12 | 1.66 | 0.61 |
| 38:BD:35:LYS:O | 38:BD:62:TYR:O | 2.18 | 0.61 |
| 44:BN:42:TRP:HB3 | 51:BU:64:ARG:HD2 | 1.80 | 0.61 |
| 52:BV:38:LEU:HD23 | 52:BV:39:LEU:N | 2.16 | 0.61 |
| 39:DE:95:ILE:CD1 | 39:DE:95:ILE:H | 2.12 | 0.61 |
| 3:CC:76:VAL:HG21 | 3:CC:103:VAL:HG11 | 1.82 | 0.61 |
| 1:CA:1060:C:H2' | 1:CA:1061:G:H8 | 1.66 | 0.61 |
| 51:DU:112:ARG:O | 51:DU:115:ALA:HB3 | 2.01 | 0.61 |
| 51:DU:92:ARG:HH21 | 51:DU:95:LEU:CG | 2.13 | 0.61 |
| 40:BF:124:LEU:HD12 | 40:BF:125:LEU:N | 2.15 | 0.61 |
| 41:DG:121:ASN:HD22 | 41:DG:122:PRO:CD | 2.12 | 0.61 |
| 41:DG:16:ARG:HE | 41:DG:31:VAL:HG11 | 1.65 | 0.61 |
| 30:D5:46:CYS:O | 30:D5:48:GLU:N | 2.29 | 0.61 |
| 36:DB:21:G:O6 | 36:DB:62:C:N3 | 2.33 | 0.61 |
| 43:DI:72:LEU:O | 43:DI:138:ILE:HG23 | 2.00 | 0.61 |
| 28:D3:31:LEU:O | 28:D3:32:GLN:HB2 | 2.00 | 0.61 |
| 33:B8:4:MET:O | 33:B8:62:LEU:HD12 | 2.01 | 0.61 |
| 27:D2:17:SER:HB2 | 27:D2:18:PRO:CD | 2.29 | 0.61 |
| 38:BD:27:THR:HG23 | 38:BD:83:GLU:HB3 | 1.83 | 0.61 |
| 15:CO:69:TYR:CZ | 15:CO:73:GLU:HG3 | 2.35 | 0.61 |
| 1:CA:1030(C):G:O2' | 1:CA:1030(D):A:H5' | 2.01 | 0.61 |
| 48:DR:61:HIS:O | 48:DR:65:LEU:HB2 | 2.00 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:AD:38:TYR:CD2 | 4:AD:45:GLN:HB3 | 2.36 | 0.61 |
| 13:AM:75:ALA:O | 13:AM:79:LYS:HG3 | 2.01 | 0.61 |
| 7:CG:151:TYR:OH | 11:CK:54:ARG:HD3 | 2.01 | 0.61 |
| 1:AA:328:C:H4' | 1:AA:329:A:C5' | 2.29 | 0.61 |
| 38:DD:226:MET:HB3 | 38:DD:230:ASP:HB2 | 1.81 | 0.61 |
| 35:DA:2593:U:H2' | 35:DA:2594:C:H6 | 1.66 | 0.61 |
| 29:D4:61:VAL:HG13 | 29:D4:65:CYS:SG | 2.40 | 0.61 |
| 1:AA:90:U:C5' | 1:AA:91:C:H5' | 2.30 | 0.61 |
| 1:AA:1478:C:H2' | 1:AA:1479:C:C6 | 2.36 | 0.61 |
| 35:DA:1358:G:O2' | 35:DA:1359:A:H5'' | 2.00 | 0.61 |
| 1:CA:199:G:H2' | 1:CA:200:G:H8 | 1.64 | 0.61 |
| 35:DA:1925:C:O2' | 35:DA:1926:U:H5' | 2.01 | 0.61 |
| 49:BS:19:LYS:C | 49:BS:20:ARG:HH11 | 2.05 | 0.61 |
| 9:AI:15:ALA:HB2 | 9:AI:65:VAL:HB | 1.82 | 0.61 |
| 1:AA:954:G:C4' | 13:AM:120:LYS:HG3 | 2.19 | 0.61 |
| 22:AV:17:C:H3' | 22:AV:18:G:C5' | 2.29 | 0.61 |
| 1:CA:1053:G:H3' | 1:CA:1054:C:H5' | 1.83 | 0.61 |
| 13:AM:65:LYS:O | 13:AM:66:LEU:HG | 2.00 | 0.61 |
| 39:DE:11:MET:HB2 | 39:DE:23:VAL:O | 2.00 | 0.61 |
| 52:DV:51:VAL:HG12 | 52:DV:52:VAL:N | 2.16 | 0.61 |
| 41:DG:41:GLN:NE2 | 41:DG:155:MET:HB3 | 2.14 | 0.61 |
| 41:DG:133:LEU:HG | 41:DG:157:ILE:HG23 | 1.83 | 0.61 |
| 55:BY:26:LYS:HG2 | 55:BY:27:VAL:N | 2.08 | 0.61 |
| 5:CE:51:VAL:O | 5:CE:55:VAL:HG23 | 2.01 | 0.61 |
| 35:BA:1141:U:H2' | 44:BN:63:THR:HG21 | 1.82 | 0.61 |
| 35:DA:1022:G:O2' | 35:DA:1023:U:OP2 | 2.18 | 0.61 |
| 54:DX:35:THR:HG22 | 54:DX:37:THR:N | 2.13 | 0.61 |
| 42:DH:85:LYS:HD2 | 42:DH:141:VAL:HG22 | 1.81 | 0.61 |
| 33:B8:28:GLY:O | 33:B8:32:LEU:HG | 2.01 | 0.61 |
| 50:BT:106:SER:O | 50:BT:107:ASP:HB3 | 2.01 | 0.61 |
| 1:CA:106:C:H2' | 1:CA:107:G:C8 | 2.32 | 0.61 |
| 40:DF:20:LEU:HD22 | 40:DF:203:GLN:OE1 | 1.99 | 0.61 |
| 46:BP:85:LEU:HD23 | 46:BP:85:LEU:N | 2.15 | 0.61 |
| 36:BB:31:C:N4 | 49:BS:32:LEU:HD22 | 2.16 | 0.61 |
| 22:CV:28:G:O2' | 22:CV:29:G:H5' | 2.00 | 0.61 |
| 1:AA:797:C:OP1 | 11:AK:124:LYS:HE2 | 2.00 | 0.61 |
| 37:DC:71:GLN:HG2 | 37:DC:73:ARG:HH21 | 1.64 | 0.61 |
| 35:BA:17:G:H4' | 51:BU:25:TRP:CH2 | 2.36 | 0.61 |
| 8:AH:5:PRO:O | 8:AH:8:ASP:HB3 | 2.01 | 0.61 |
| 35:BA:993:G:O2' | 52:BV:89:GLN:HG3 | 2.00 | 0.61 |
| 41:DG:36:LYS:HD2 | 41:DG:38:VAL:HG23 | 1.82 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:2012:G:O2' | 53:BW:96:ILE:HD11 | 2.00 | 0.61 |
| 35:DA:2845:G:O2' | 35:DA:2846:G:H5' | 2.00 | 0.61 |
| 47:DQ:76:LYS:HB3 | 47:DQ:91:GLU:HG3 | 1.83 | 0.61 |
| 49:BS:87:PHE:O | 49:BS:88:ASP:HB2 | 2.01 | 0.61 |
| 46:DP:9:ASN:C | 46:DP:11:GLY:H | 2.02 | 0.61 |
| 35:DA:631:A:O2' | 46:DP:67:MET:HB3 | 2.01 | 0.61 |
| 31:D6:46:HIS:CB | 31:D6:47:THR:N | 2.64 | 0.61 |
| 41:DG:82:LEU:CD2 | 41:DG:87:PRO:HG3 | 2.29 | 0.61 |
| 3:CC:83:ARG:HG2 | 3:CC:83:ARG:HH11 | 1.65 | 0.61 |
| 52:BV:20:LEU:N | 52:BV:20:LEU:HD12 | 2.16 | 0.61 |
| 38:DD:71:ASP:CB | 38:DD:103:ARG:HH22 | 2.08 | 0.61 |
| 1:CA:1281:U:H5' | 1:CA:1282:C:OP2 | 2.01 | 0.61 |
| 1:AA:1323:G:H2' | 1:AA:1324:A:C8 | 2.36 | 0.61 |
| 42:BH:54:ARG:HB3 | 42:BH:65:HIS:CD2 | 2.35 | 0.61 |
| 35:DA:271(E):U:H2' | 35:DA:271(F):C:C6 | 2.36 | 0.61 |
| 13:CM:90:LEU:O | 13:CM:92:HIS:N | 2.34 | 0.61 |
| 35:BA:1170:G:H1 | 35:BA:1179:C:N4 | 1.95 | 0.61 |
| 19:CS:16:LEU:HD12 | 19:CS:16:LEU:H | 1.66 | 0.61 |
| 35:DA:1504:C:O2' | 35:DA:1505:C:C5' | 2.49 | 0.61 |
| 4:AD:11:LEU:C | 4:AD:13:ARG:H | 2.02 | 0.61 |
| 1:AA:56:U:H2' | 1:AA:57:G:C8 | 2.35 | 0.61 |
| 35:BA:1153:C:H2' | 35:BA:1154:G:O4' | 2.01 | 0.61 |
| 4:AD:4:TYR:O | 4:AD:5:ILE:HB | 2.01 | 0.61 |
| 25:D0:48:GLY:HA3 | 25:D0:80:HIS:HD2 | 1.65 | 0.61 |
| 28:D3:45:GLY:HA3 | 35:DA:851:U:O2' | 2.01 | 0.61 |
| 9:AI:124:GLN:O | 9:AI:125:TYR:HB3 | 2.00 | 0.61 |
| 1:AA:1136:U:H5'' | 1:AA:1137:C:C4 | 2.36 | 0.61 |
| 48:BR:33:ARG:N | 48:BR:33:ARG:HD2 | 2.16 | 0.61 |
| 38:BD:226:MET:HB3 | 38:BD:230:ASP:HB2 | 1.81 | 0.61 |
| 20:AT:32:ALA:O | 20:AT:36:LEU:HB2 | 2.00 | 0.61 |
| 35:BA:185:U:H4' | 35:BA:218:A:H4' | 1.83 | 0.61 |
| 1:AA:560:U:O2' | 1:AA:561:U:OP2 | 2.19 | 0.61 |
| 26:D1:43:TYR:CD1 | 26:D1:43:TYR:N | 2.68 | 0.61 |
| 35:DA:1242:A:H5' | 35:DA:1243:G:OP2 | 2.00 | 0.61 |
| 40:BF:2:LYS:O | 40:BF:24:LEU:HG | 2.00 | 0.61 |
| 31:B6:46:HIS:CB | 31:B6:47:THR:N | 2.62 | 0.61 |
| 55:DY:76:CYS:HB3 | 55:DY:96:ILE:CD1 | 2.20 | 0.61 |
| 51:BU:74:LEU:HD13 | 51:BU:79:PHE:HB2 | 1.81 | 0.61 |
| 52:DV:38:LEU:HD23 | 52:DV:39:LEU:N | 2.15 | 0.61 |
| 41:DG:120:LEU:HB2 | 41:DG:179:PRO:O | 2.00 | 0.61 |
| 38:BD:267:SER:C | 38:BD:269:PHE:H | 2.03 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:BG:76:SER:HB3 | 41:BG:84:LYS:N | 2.13 | 0.61 |
| 55:BY:14:LEU:HD12 | 55:BY:15:VAL:N | 2.10 | 0.61 |
| 46:BP:83:VAL:O | 46:BP:114:ILE:HD12 | 2.01 | 0.61 |
| 39:BE:11:MET:HB3 | 39:BE:24:THR:HA | 1.83 | 0.61 |
| 49:BS:101:LEU:O | 49:BS:101:LEU:HD22 | 2.01 | 0.61 |
| 13:AM:39:ILE:HD12 | 13:AM:56:LEU:HD23 | 1.81 | 0.61 |
| 35:DA:271(T):C:H6 | 35:DA:271(T):C:C5' | 2.10 | 0.61 |
| 25:D0:20:ARG:NH1 | 35:DA:2357:U:OP1 | 2.34 | 0.61 |
| 35:DA:142:A:H5'' | 35:DA:142(A):C:H5 | 1.65 | 0.61 |
| 15:CO:87:ILE:HG22 | 15:CO:88:ARG:N | 2.10 | 0.61 |
| 55:DY:49:VAL:O | 55:DY:53:PRO:HG3 | 2.01 | 0.61 |
| 35:DA:286:C:C2' | 35:DA:287:C:H5'' | 2.31 | 0.61 |
| 1:CA:1512:U:H2' | 1:CA:1513:A:C8 | 2.32 | 0.61 |
| 8:AH:85:ARG:HG3 | 8:AH:85:ARG:HH11 | 1.66 | 0.61 |
| 17:AQ:22:LEU:HD13 | 17:AQ:41:LYS:HG2 | 1.83 | 0.61 |
| 42:DH:89:ILE:N | 42:DH:89:ILE:HD12 | 2.16 | 0.61 |
| 6:CF:99:ALA:HB1 | 18:CR:23:LYS:NZ | 2.15 | 0.61 |
| 51:BU:17:ILE:HG23 | 51:BU:39:LEU:HD12 | 1.82 | 0.61 |
| 38:DD:65:ILE:CD1 | 38:DD:65:ILE:H | 2.14 | 0.61 |
| 1:CA:1327:C:OP1 | 21:CU:20:LYS:HB3 | 2.00 | 0.61 |
| 1:AA:288:A:H2' | 1:AA:289:G:H4' | 1.83 | 0.61 |
| 35:BA:2393:A:H5' | 46:BP:62:LEU:HB3 | 1.83 | 0.61 |
| 56:BZ:106:GLY:O | 56:BZ:107:THR:HG23 | 2.01 | 0.61 |
| 35:DA:2463:C:O2' | 35:DA:2464:C:H5' | 2.00 | 0.61 |
| 4:CD:147:ALA:HB2 | 4:CD:182:LYS:HB3 | 1.83 | 0.61 |
| 35:BA:1721:G:C6 | 35:BA:1739:U:H5' | 2.36 | 0.61 |
| 40:DF:154:VAL:HG22 | 40:DF:191:ARG:HB3 | 1.81 | 0.61 |
| 42:BH:149:ARG:HH21 | 42:BH:154:PRO:HG3 | 1.63 | 0.61 |
| 35:DA:1396:U:O2 | 35:DA:1396:U:H2' | 2.00 | 0.61 |
| 22:CV:37:A:H3' | 22:CV:38:A:H8 | 1.66 | 0.61 |
| 54:BX:8:ILE:HD12 | 54:BX:8:ILE:N | 2.16 | 0.61 |
| 56:DZ:102:LEU:CD1 | 56:DZ:123:ASP:HA | 2.30 | 0.60 |
| 55:BY:11:ASP:OD1 | 55:BY:12:THR:N | 2.34 | 0.60 |
| 1:CA:1128:C:C5' | 9:CI:16:ARG:HH12 | 2.13 | 0.60 |
| 35:DA:2569:G:O2' | 35:DA:2570:G:H5' | 2.01 | 0.60 |
| 43:DI:118:LYS:NZ | 43:DI:119:PRO:HG2 | 2.16 | 0.60 |
| 9:CI:114:TYR:CD1 | 10:CJ:60:ARG:HG3 | 2.36 | 0.60 |
| 52:DV:19:LYS:CE | 52:DV:20:LEU:H | 2.14 | 0.60 |
| 41:BG:114:ILE:O | 41:BG:115:ARG:C | 2.39 | 0.60 |
| 43:BI:101:LEU:HG | 43:BI:109:ILE:HD11 | 1.81 | 0.60 |
| 43:BI:72:LEU:HB3 | 43:BI:138:ILE:CD1 | 2.31 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 8:AH:84:ARG:NH2 | 8:AH:86:ILE:HD11 | 2.16 | 0.60 |
| 41:BG:54:GLU:O | 41:BG:58:GLN:HG3 | 2.01 | 0.60 |
| 35:BA:1657:C:O2' | 35:BA:1658:C:H5' | 2.01 | 0.60 |
| 35:DA:963:U:H2' | 35:DA:964:C:C6 | 2.36 | 0.60 |
| 33:D8:23:VAL:CG1 | 33:D8:46:ARG:HB3 | 2.31 | 0.60 |
| 30:B5:20:ARG:NH1 | 35:BA:1266:G:OP2 | 2.34 | 0.60 |
| 1:AA:37:U:O2' | 1:AA:38:G:H5' | 2.00 | 0.60 |
| 1:AA:1194:U:H2' | 1:AA:1195:C:C6 | 2.36 | 0.60 |
| 33:D8:28:GLY:O | 33:D8:32:LEU:HG | 2.00 | 0.60 |
| 6:CF:6:VAL:HG13 | 6:CF:90:VAL:HG22 | 1.81 | 0.60 |
| 1:CA:133:U:OP1 | 20:CT:74:LYS:HE2 | 2.01 | 0.60 |
| 56:DZ:47:VAL:HG12 | 56:DZ:51:ALA:HB2 | 1.83 | 0.60 |
| 9:AI:65:VAL:HG21 | 9:AI:73:GLN:HB3 | 1.82 | 0.60 |
| 2:CB:223:ILE:CG2 | 2:CB:226:ARG:HH21 | 2.14 | 0.60 |
| 46:BP:48:PRO:HG2 | 46:BP:49:ARG:N | 2.15 | 0.60 |
| 18:CR:37:VAL:HG23 | 18:CR:38:GLU:HG3 | 1.83 | 0.60 |
| 39:BE:59:VAL:HG21 | 39:BE:63:LEU:HG | 1.82 | 0.60 |
| 35:DA:1803:A:O2' | 38:DD:259:THR:HG21 | 2.01 | 0.60 |
| 46:DP:16:ARG:CZ | 46:DP:16:ARG:HB2 | 2.31 | 0.60 |
| 55:DY:68:HIS:HB3 | 55:DY:71:LYS:HG2 | 1.83 | 0.60 |
| 10:CJ:97:GLU:C | 10:CJ:98:ILE:HD12 | 2.21 | 0.60 |
| 35:BA:1666:G:H1' | 45:BO:3:GLN:NE2 | 2.16 | 0.60 |
| 49:BS:54:LEU:H | 49:BS:54:LEU:HD22 | 1.65 | 0.60 |
| 35:BA:271(T):C:C5' | 35:BA:271(T):C:H6 | 2.11 | 0.60 |
| 35:BA:405:U:H3' | 35:BA:406:G:H5' | 1.84 | 0.60 |
| 1:CA:1321:C:C5' | 1:CA:1322:C:H5'' | 2.30 | 0.60 |
| 35:BA:2262:U:H2' | 35:BA:2263:C:H5'' | 1.81 | 0.60 |
| 1:AA:1030(C):G:O2' | 1:AA:1030(D):A:H5' | 2.01 | 0.60 |
| 35:DA:1309:G:O2' | 35:DA:1310:G:H5' | 2.01 | 0.60 |
| 8:CH:84:ARG:HH11 | 8:CH:84:ARG:HG2 | 1.66 | 0.60 |
| 37:BC:68:LEU:HD13 | 37:BC:179:SER:HA | 1.82 | 0.60 |
| 55:DY:2:ARG:N | 55:DY:4:LYS:HG2 | 2.16 | 0.60 |
| 35:DA:1257:C:O2' | 40:DF:84:VAL:HG23 | 2.00 | 0.60 |
| 15:AO:3:ILE:HG12 | 15:AO:3:ILE:O | 2.01 | 0.60 |
| 1:AA:340:U:O2' | 1:AA:341:C:H5' | 2.00 | 0.60 |
| 35:BA:1754:C:OP1 | 50:BT:96:ARG:NH1 | 2.32 | 0.60 |
| 1:AA:542:G:OP1 | 4:AD:10:ARG:NH2 | 2.34 | 0.60 |
| 1:AA:1442(B):A:HO2' | 1:AA:1443:G:H8 | 1.47 | 0.60 |
| 35:DA:15:G:O2' | 35:DA:16:G:H5' | 2.02 | 0.60 |
| 1:CA:223:U:H2' | 1:CA:224:C:H6 | 1.66 | 0.60 |
| 43:DI:84:GLY:O | 43:DI:85:GLU:HB3 | 2.00 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:67:C:O2' | 1:AA:171:A:H1' | 2.01 | 0.60 |
| 35:DA:99:U:O5' | 35:DA:100:G:H5' | 2.00 | 0.60 |
| 39:DE:203:LYS:HE2 | 39:DE:204:ALA:HB2 | 1.83 | 0.60 |
| 35:DA:709:U:H2' | 35:DA:710:G:H8 | 1.66 | 0.60 |
| 1:CA:1211:U:H5' | 1:CA:1212:U:OP1 | 2.00 | 0.60 |
| 1:AA:1211:U:H5' | 1:AA:1212:U:OP1 | 2.01 | 0.60 |
| 3:AC:206:GLU:O | 3:AC:208:ILE:N | 2.34 | 0.60 |
| 7:AG:47:CYS:HB3 | 7:AG:58:PRO:HG2 | 1.82 | 0.60 |
| 53:DW:95:ILE:O | 53:DW:95:ILE:HG13 | 2.00 | 0.60 |
| 48:DR:100:LEU:HD22 | 48:DR:100:LEU:H | 1.65 | 0.60 |
| 35:BA:1339:G:H21 | 35:BA:1603:A:H1' | 1.66 | 0.60 |
| 49:DS:56:LEU:O | 49:DS:56:LEU:HD23 | 2.01 | 0.60 |
| 6:AF:33:TYR:HE2 | 6:AF:74:ASP:HB3 | 1.66 | 0.60 |
| 41:BG:47:LYS:HZ2 | 41:BG:82:LEU:HD12 | 1.63 | 0.60 |
| 31:B6:15:GLU:CD | 31:B6:18:ARG:NE | 2.49 | 0.60 |
| 49:DS:93:LYS:HE3 | 49:DS:93:LYS:HA | 1.81 | 0.60 |
| 2:CB:212:GLN:CG | 2:CB:235:SER:HB2 | 2.31 | 0.60 |
| 43:BI:118:LYS:NZ | 43:BI:119:PRO:HG2 | 2.16 | 0.60 |
| 39:DE:119:ARG:HG2 | 39:DE:160:TYR:CB | 2.29 | 0.60 |
| 3:AC:108:ASN:OD1 | 3:AC:110:ASN:HB2 | 2.00 | 0.60 |
| 55:BY:68:HIS:HB3 | 55:BY:71:LYS:HG2 | 1.83 | 0.60 |
| 45:DO:3:GLN:HB2 | 45:DO:4:PRO:HD2 | 1.82 | 0.60 |
| 35:DA:2726:U:H6 | 45:DO:67:LYS:HZ3 | 1.46 | 0.60 |
| 10:AJ:4:ILE:HG12 | 10:AJ:100:THR:HG21 | 1.84 | 0.60 |
| 46:DP:105:LEU:H | 46:DP:105:LEU:HD12 | 1.65 | 0.60 |
| 43:BI:102:SER:O | 43:BI:106:GLY:HA2 | 2.01 | 0.60 |
| 50:DT:64:ARG:HA | 50:DT:72:VAL:O | 2.01 | 0.60 |
| 35:BA:2262:U:H2' | 35:BA:2263:C:C5' | 2.31 | 0.60 |
| 38:DD:27:THR:HG23 | 38:DD:27:THR:O | 2.00 | 0.60 |
| 35:BA:848:G:H8 | 35:BA:848:G:H5' | 1.67 | 0.60 |
| 43:BI:69:LYS:HA | 43:BI:136:VAL:HG21 | 1.83 | 0.60 |
| 2:AB:168:THR:HA | 2:AB:171:ALA:HB2 | 1.82 | 0.60 |
| 56:BZ:7:ALA:HB3 | 56:BZ:61:LEU:HD23 | 1.82 | 0.60 |
| 19:AS:40:ILE:HG12 | 19:AS:71:LEU:CD2 | 2.31 | 0.60 |
| 5:CE:137:GLU:OE2 | 5:CE:140:ARG:HD2 | 2.01 | 0.60 |
| 25:B0:27:GLU:HG3 | 25:B0:68:GLU:HA | 1.82 | 0.60 |
| 3:CC:153:VAL:HG12 | 3:CC:196:LEU:HD12 | 1.83 | 0.60 |
| 13:AM:116:THR:HG22 | 13:AM:117:VAL:N | 2.16 | 0.60 |
| 27:B2:55:ARG:NH1 | 35:BA:75:G:H4' | 2.16 | 0.60 |
| 35:DA:1924:C:H2' | 35:DA:1925:C:H6 | 1.67 | 0.60 |
| 4:CD:209:ARG:HH11 | 4:CD:209:ARG:HG3 | 1.66 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:1358:G:O2' | 35:BA:1359:A:H5'' | 2.00 | 0.60 |
| 7:AG:120:ILE:O | 7:AG:124:LEU:HD12 | 2.01 | 0.60 |
| 1:CA:52:G:H2' | 1:CA:53:A:H8 | 1.64 | 0.60 |
| 27:B2:15:LYS:O | 27:B2:15:LYS:HG3 | 2.01 | 0.60 |
| 38:BD:70:TRP:CH2 | 38:BD:150:LYS:HA | 2.37 | 0.60 |
| 27:D2:39:ALA:HA | 27:D2:45:SER:HB3 | 1.84 | 0.60 |
| 35:BA:1447:G:H21 | 35:BA:1528:A:H62 | 1.49 | 0.60 |
| 17:CQ:99:SER:O | 17:CQ:100:LYS:HD3 | 2.01 | 0.60 |
| 35:DA:83:G:C2 | 35:DA:102:G:H2' | 2.35 | 0.60 |
| 35:DA:83:G:N2 | 35:DA:102:G:H2' | 2.16 | 0.60 |
| 46:BP:63:PRO:C | 46:BP:65:ARG:H | 2.04 | 0.60 |
| 1:CA:1054:C:C4 | 22:CY:34:G:H1' | 2.37 | 0.60 |
| 47:BQ:141:GLN:HA | 56:BZ:53:ILE:HG12 | 1.84 | 0.60 |
| 5:AE:102:ALA:HB1 | 5:AE:106:PRO:HG2 | 1.82 | 0.60 |
| 7:CG:102:ARG:HG2 | 7:CG:106:GLN:NE2 | 2.09 | 0.60 |
| 42:BH:102:ALA:CB | 42:BH:117:PRO:HD3 | 2.25 | 0.60 |
| 41:DG:15:VAL:HG21 | 41:DG:176:LEU:HD23 | 1.83 | 0.60 |
| 55:DY:7:VAL:CB | 55:DY:8:LYS:NZ | 2.64 | 0.60 |
| 33:B8:33:ASN:HA | 33:B8:36:LYS:CD | 2.31 | 0.60 |
| 23:AW:58:A:H1' | 23:AW:60:U:C5 | 2.37 | 0.60 |
| 45:DO:88:ASN:ND2 | 45:DO:90:GLN:HB2 | 2.14 | 0.60 |
| 41:BG:33:ARG:HB2 | 41:BG:162:THR:HG21 | 1.84 | 0.60 |
| 38:DD:26:LYS:CE | 38:DD:82:ILE:H | 2.11 | 0.60 |
| 35:BA:808:G:H2' | 35:BA:809:G:H8 | 1.65 | 0.60 |
| 35:DA:582:G:H2' | 35:DA:583:G:C8 | 2.36 | 0.60 |
| 10:AJ:96:ILE:HD13 | 10:AJ:96:ILE:N | 2.15 | 0.60 |
| 35:BA:2152:G:H2' | 35:BA:2153:G:C8 | 2.37 | 0.60 |
| 19:CS:39:THR:HG22 | 19:CS:40:ILE:N | 2.16 | 0.60 |
| 19:CS:40:ILE:HG12 | 19:CS:71:LEU:CD2 | 2.31 | 0.60 |
| 8:CH:85:ARG:HG3 | 8:CH:85:ARG:HH11 | 1.66 | 0.60 |
| 46:DP:85:LEU:HD23 | 46:DP:85:LEU:N | 2.13 | 0.60 |
| 19:AS:40:ILE:HG12 | 19:AS:71:LEU:HD23 | 1.83 | 0.60 |
| 48:BR:87:TYR:HE1 | 48:BR:117:VAL:O | 1.85 | 0.60 |
| 44:DN:23:LEU:CD2 | 44:DN:23:LEU:H | 2.13 | 0.60 |
| 35:DA:1453:U:OP1 | 48:DR:77:ARG:HD3 | 2.02 | 0.60 |
| 35:BA:158:U:H4' | 35:BA:171:G:C8 | 2.36 | 0.60 |
| 8:CH:103:VAL:HG21 | 8:CH:110:ALA:HB2 | 1.83 | 0.60 |
| 35:BA:1652:A:O2' | 35:BA:1653:G:H5' | 2.02 | 0.60 |
| 7:CG:148:ASN:C | 7:CG:150:ALA:N | 2.53 | 0.60 |
| 1:CA:950:U:H4' | 1:CA:971:G:N2 | 2.15 | 0.60 |
| 38:BD:231:HIS:ND1 | 38:BD:232:PRO:HD2 | 2.17 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 9:CI:26:VAL:HG13 | 9:CI:61:ALA:O | 2.00 | 0.60 |
| 35:DA:843:G:O2' | 35:DA:844:C:H5' | 2.01 | 0.60 |
| 35:BA:2672:G:H2' | 35:BA:2673:G:H5'' | 1.83 | 0.60 |
| 1:CA:59:A:H1' | 1:CA:354:G:N2 | 2.16 | 0.60 |
| 4:CD:61:LYS:HA | 4:CD:203:VAL:HG22 | 1.83 | 0.60 |
| 35:BA:2681:C:H5 | 35:BA:2725:A:H62 | 1.50 | 0.60 |
| 38:BD:168:ARG:O | 38:BD:169:GLU:HB2 | 2.01 | 0.60 |
| 38:BD:166:GLN:CA | 38:BD:166:GLN:HE21 | 2.14 | 0.60 |
| 22:CV:51:U:H2' | 22:CV:52:G:C8 | 2.36 | 0.60 |
| 49:BS:92:TYR:CD1 | 49:BS:93:LYS:N | 2.69 | 0.60 |
| 46:DP:9:ASN:C | 46:DP:11:GLY:N | 2.54 | 0.60 |
| 55:BY:95:LYS:HE2 | 55:BY:100:ALA:CB | 2.31 | 0.60 |
| 46:BP:48:PRO:O | 46:BP:50:ARG:N | 2.34 | 0.60 |
| 1:CA:973:G:C1' | 10:CJ:55:LYS:HE2 | 2.24 | 0.60 |
| 51:BU:68:ALA:O | 51:BU:71:GLN:HB3 | 2.01 | 0.60 |
| 52:BV:35:LEU:HB2 | 52:BV:57:VAL:HG13 | 1.82 | 0.60 |
| 5:CE:83:GLU:HG2 | 5:CE:88:LYS:HG3 | 1.84 | 0.60 |
| 55:DY:66:PRO:O | 55:DY:67:LEU:HB3 | 2.00 | 0.60 |
| 10:CJ:30:SER:O | 10:CJ:81:THR:HG23 | 2.00 | 0.60 |
| 10:CJ:97:GLU:O | 10:CJ:98:ILE:HD12 | 2.01 | 0.60 |
| 10:AJ:97:GLU:C | 10:AJ:98:ILE:HD12 | 2.21 | 0.60 |
| 39:BE:186:GLY:C | 39:BE:188:VAL:H | 2.04 | 0.60 |
| 30:B5:7:PRO:HG2 | 35:BA:2016:U:O2 | 2.02 | 0.60 |
| 35:DA:2534:A:H5' | 35:DA:2534:A:H8 | 1.65 | 0.60 |
| 22:CV:65:G:O2' | 22:CV:66:U:H5' | 2.01 | 0.60 |
| 15:AO:74:ASP:C | 15:AO:76:GLU:H | 2.04 | 0.60 |
| 38:DD:27:THR:HG23 | 38:DD:83:GLU:HB3 | 1.83 | 0.60 |
| 35:DA:2523:G:H5' | 35:DA:2523:G:C8 | 2.30 | 0.60 |
| 43:DI:83:ALA:HA | 43:DI:89:TYR:CE1 | 2.37 | 0.60 |
| 26:D1:44:PRO:HB2 | 26:D1:46:LEU:CD1 | 2.30 | 0.60 |
| 25:D0:55:ARG:HG3 | 35:DA:2365:G:OP1 | 2.01 | 0.60 |
| 50:DT:125:ARG:CZ | 50:DT:125:ARG:HA | 2.31 | 0.60 |
| 35:BA:2556:C:H2' | 35:BA:2557:G:O4' | 2.02 | 0.60 |
| 31:D6:36:LEU:HB3 | 31:D6:50:ARG:NH1 | 2.16 | 0.60 |
| 40:BF:78:ILE:N | 40:BF:78:ILE:HD13 | 2.15 | 0.60 |
| 40:BF:21:ALA:O | 40:BF:23:ASP:N | 2.34 | 0.60 |
| 1:AA:148:G:H2' | 1:AA:149:A:C8 | 2.35 | 0.60 |
| 18:CR:59:SER:H | 18:CR:62:GLU:HB2 | 1.66 | 0.60 |
| 47:BQ:26:TYR:HB2 | 47:BQ:137:TYR:HB3 | 1.81 | 0.60 |
| 35:BA:1042:G:N3 | 35:BA:1042:G:H2' | 2.17 | 0.60 |
| 35:DA:1509(A):A:H2' | 35:DA:1509(B):A:C8 | 2.36 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 14:AN:2:ALA:O | 14:AN:6:LEU:HD12 | 2.01 | 0.60 |
| 14:AN:24:CYS:HB2 | 14:AN:29:ARG:HB3 | 1.83 | 0.60 |
| 51:DU:59:ARG:O | 51:DU:63:VAL:HG23 | 2.01 | 0.60 |
| 35:DA:603:A:H4' | 35:DA:604:G:O5' | 2.01 | 0.60 |
| 17:AQ:74:LEU:HD12 | 17:AQ:75:ARG:HG2 | 1.82 | 0.60 |
| 35:BA:1767:C:O2' | 35:BA:1768:U:H5' | 2.02 | 0.60 |
| 55:DY:11:ASP:OD1 | 55:DY:12:THR:N | 2.35 | 0.60 |
| 54:BX:66:LEU:HD23 | 54:BX:66:LEU:C | 2.22 | 0.60 |
| 46:DP:49:ARG:HH21 | 46:DP:50:ARG:HH22 | 1.49 | 0.60 |
| 12:AL:25:PRO:O | 12:AL:27:LEU:HD22 | 2.01 | 0.60 |
| 9:CI:17:VAL:HG11 | 9:CI:81:ILE:HA | 1.82 | 0.60 |
| 9:CI:88:TYR:O | 9:CI:89:ASN:HB2 | 2.01 | 0.60 |
| 44:BN:42:TRP:CE3 | 44:BN:48:MET:HE1 | 2.37 | 0.60 |
| 51:BU:90:VAL:CG1 | 52:BV:39:LEU:HG | 2.32 | 0.60 |
| 13:AM:65:LYS:C | 13:AM:66:LEU:N | 2.55 | 0.60 |
| 51:DU:70:ARG:HA | 51:DU:74:LEU:O | 2.00 | 0.60 |
| 51:DU:74:LEU:HD13 | 51:DU:79:PHE:HB2 | 1.82 | 0.60 |
| 50:DT:57:PHE:O | 50:DT:59:THR:N | 2.34 | 0.60 |
| 55:BY:66:PRO:O | 55:BY:67:LEU:HB3 | 2.01 | 0.60 |
| 43:DI:72:LEU:HB3 | 43:DI:138:ILE:CD1 | 2.32 | 0.60 |
| 46:BP:21:ARG:O | 46:BP:23:PRO:HD3 | 2.02 | 0.60 |
| 36:BB:21:G:O6 | 36:BB:62:C:N3 | 2.34 | 0.60 |
| 45:BO:104:ARG:HE | 50:BT:33:LYS:HD2 | 1.67 | 0.60 |
| 4:AD:138:TYR:CD2 | 4:AD:138:TYR:C | 2.75 | 0.60 |
| 35:DA:1784:A:H4' | 35:DA:1785:A:O5' | 2.02 | 0.60 |
| 30:D5:6:VAL:HG22 | 30:D5:7:PRO:HD2 | 1.83 | 0.60 |
| 27:B2:16:LEU:HD22 | 27:B2:20:GLU:CG | 2.32 | 0.60 |
| 27:B2:16:LEU:CD2 | 27:B2:20:GLU:HG2 | 2.31 | 0.60 |
| 40:DF:21:ALA:O | 40:DF:23:ASP:N | 2.34 | 0.60 |
| 35:BA:90:U:O2' | 35:BA:92:A:H5'' | 2.00 | 0.60 |
| 35:BA:2735:G:H2' | 35:BA:2736:G:H5'' | 1.84 | 0.60 |
| 18:AR:58:LEU:HD23 | 18:AR:62:GLU:HB3 | 1.84 | 0.60 |
| 1:CA:818:G:C2' | 1:CA:819:A:H5'' | 2.31 | 0.60 |
| 2:CB:178:ARG:NH2 | 2:CB:196:LEU:HA | 2.16 | 0.60 |
| 35:DA:1952:A:C2 | 45:DO:22:ILE:HG23 | 2.36 | 0.60 |
| 35:BA:15:G:O2' | 35:BA:16:G:H5' | 2.01 | 0.60 |
| 1:CA:601:C:H2' | 1:CA:602:A:H8 | 1.66 | 0.60 |
| 35:BA:648:G:O2' | 35:BA:649:G:H5' | 2.02 | 0.60 |
| 35:BA:2537:U:H2' | 35:BA:2538:C:C6 | 2.35 | 0.60 |
| 1:CA:1112:C:O2 | 3:CC:179:ARG:HG2 | 2.00 | 0.60 |
| 35:DA:2672:G:H2' | 35:DA:2673:G:H5'' | 1.83 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:501:C:H2' | 1:AA:502:G:H8 | 1.67 | 0.60 |
| 1:CA:1207:G:H2' | 1:CA:1208:C:C6 | 2.37 | 0.60 |
| 7:CG:57:GLU:N | 7:CG:57:GLU:OE2 | 2.35 | 0.60 |
| 1:CA:575:G:OP1 | 1:CA:575:G:H4' | 2.01 | 0.60 |
| 39:BE:203:LYS:HE2 | 39:BE:204:ALA:HB2 | 1.83 | 0.60 |
| 49:DS:93:LYS:HG3 | 49:DS:93:LYS:O | 2.01 | 0.60 |
| 2:CB:77:ALA:HB2 | 2:CB:211:ILE:CD1 | 2.22 | 0.60 |
| 38:BD:33:LEU:HD22 | 38:BD:34:VAL:N | 2.17 | 0.60 |
| 35:BA:2823:A:OP1 | 39:BE:113:PHE:HB2 | 2.01 | 0.60 |
| 38:DD:33:LEU:HD13 | 38:DD:34:VAL:HG23 | 1.83 | 0.60 |
| 4:AD:12:CYS:HA | 4:AD:19:LEU:HD12 | 1.82 | 0.60 |
| 38:BD:71:ASP:HB2 | 38:BD:103:ARG:NH2 | 2.10 | 0.60 |
| 49:DS:101:LEU:O | 49:DS:101:LEU:HD22 | 2.01 | 0.60 |
| 55:BY:7:VAL:CG2 | 55:BY:8:LYS:HZ3 | 2.15 | 0.60 |
| 13:AM:49:THR:O | 13:AM:53:VAL:HG23 | 2.01 | 0.60 |
| 35:DA:2262:U:H2' | 35:DA:2263:C:H5'' | 1.83 | 0.60 |
| 35:DA:172:C:H2' | 35:DA:173:G:C8 | 2.36 | 0.60 |
| 35:DA:2556:C:H2' | 35:DA:2557:G:O4' | 2.01 | 0.60 |
| 22:AY:5:G:H2' | 22:AY:6:G:H8 | 1.64 | 0.60 |
| 34:B9:17:ILE:CG1 | 34:B9:26:ILE:HD11 | 2.32 | 0.60 |
| 1:CA:73:G:H22 | 1:CA:96:U:H3 | 1.47 | 0.60 |
| 9:AI:20:ARG:HG3 | 9:AI:20:ARG:HH11 | 1.67 | 0.60 |
| 1:AA:197:A:N6 | 1:AA:221:C:H5' | 2.15 | 0.60 |
| 38:DD:221:VAL:HG22 | 38:DD:226:MET:HE3 | 1.84 | 0.60 |
| 35:BA:624:C:O2' | 35:BA:657:U:H5' | 2.02 | 0.60 |
| 35:DA:1447:G:H21 | 35:DA:1528:A:H62 | 1.50 | 0.60 |
| 1:CA:472:A:H4' | 16:CP:80:PHE:O | 2.02 | 0.60 |
| 36:BB:60:C:H2' | 36:BB:61:G:H8 | 1.66 | 0.60 |
| 12:AL:119:LYS:C | 12:AL:120:TYR:HD1 | 2.05 | 0.60 |
| 56:DZ:114:GLY:O | 56:DZ:146:ILE:HG23 | 2.02 | 0.60 |
| 1:CA:1049:U:H1' | 1:CA:1201:A:N7 | 2.16 | 0.60 |
| 50:DT:12:SER:O | 50:DT:13:ARG:NH2 | 2.34 | 0.60 |
| 38:BD:30:GLU:HG2 | 38:BD:63:ARG:CZ | 2.32 | 0.60 |
| 51:BU:62:ILE:CD1 | 51:BU:93:LYS:HG2 | 2.32 | 0.60 |
| 48:BR:2:ARG:CD | 48:BR:5:LYS:HE2 | 2.32 | 0.60 |
| 13:AM:66:LEU:N | 13:AM:70:LEU:HB2 | 2.16 | 0.60 |
| 35:BA:2206:G:C2 | 35:BA:2207:G:H5' | 2.36 | 0.60 |
| 1:AA:1381:U:C1' | 7:AG:78:ARG:HH21 | 2.04 | 0.60 |
| 19:AS:6:LYS:HG2 | 19:AS:7:LYS:HE2 | 1.81 | 0.60 |
| 10:CJ:28:ARG:HH12 | 10:CJ:34:VAL:H | 1.48 | 0.60 |
| 45:DO:1:MET:CE | 45:DO:67:LYS:HG2 | 2.31 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:2310:A:O2' | 35:BA:2311:A:C5' | 2.50 | 0.60 |
| 3:AC:6:HIS:HB2 | 14:AN:49:HIS:HD2 | 1.66 | 0.60 |
| 5:AE:51:VAL:CB | 5:AE:52:PRO:HD3 | 2.29 | 0.60 |
| 37:DC:78:ALA:HB3 | 37:DC:83:ILE:CD1 | 2.32 | 0.60 |
| 35:BA:847:U:H2' | 35:BA:848:G:C5' | 2.32 | 0.60 |
| 4:CD:138:TYR:C | 4:CD:138:TYR:HD2 | 2.05 | 0.60 |
| 56:DZ:93:ASP:HA | 56:DZ:130:PRO:CG | 2.31 | 0.60 |
| 55:DY:88:LYS:NZ | 55:DY:93:GLY:CA | 2.65 | 0.60 |
| 1:AA:277:C:O2' | 1:AA:278:G:H5' | 2.02 | 0.60 |
| 16:AP:8:ARG:HG2 | 16:AP:9:PHE:H | 1.67 | 0.60 |
| 1:CA:148:G:H2' | 1:CA:149:A:C8 | 2.35 | 0.60 |
| 47:BQ:16:ARG:HG2 | 47:BQ:17:LEU:H | 1.67 | 0.60 |
| 35:DA:642:G:H21 | 35:DA:646:A:H2 | 1.49 | 0.60 |
| 35:DA:1439:A:H2' | 35:DA:1440:G:O4' | 2.01 | 0.60 |
| 41:DG:37:VAL:CG2 | 41:DG:99:MET:HG3 | 2.32 | 0.60 |
| 1:CA:545:C:H5'' | 4:CD:72:GLU:HG2 | 1.83 | 0.60 |
| 1:CA:1062:U:H2' | 1:CA:1063:C:C6 | 2.37 | 0.60 |
| 1:AA:639:G:O2' | 1:AA:640:A:H5' | 2.02 | 0.60 |
| 35:DA:2681:C:H5 | 35:DA:2725:A:H62 | 1.50 | 0.60 |
| 1:CA:1452:C:H4' | 1:CA:1456:G:H5'' | 1.82 | 0.60 |
| 1:CA:288:A:H2' | 1:CA:289:G:H4' | 1.82 | 0.60 |
| 3:AC:64:VAL:O | 3:AC:100:ALA:HB3 | 2.02 | 0.60 |
| 7:CG:74:GLU:HG2 | 7:CG:91:VAL:HG22 | 1.83 | 0.60 |
| 35:BA:419:C:O2' | 35:BA:420:C:H5' | 2.00 | 0.60 |
| 1:AA:1128:C:C5' | 9:AI:16:ARG:HH12 | 2.14 | 0.60 |
| 9:AI:89:ASN:C | 9:AI:91:ASP:H | 2.05 | 0.60 |
| 2:AB:212:GLN:CG | 2:AB:235:SER:HB2 | 2.32 | 0.60 |
| 43:BI:93:THR:HG22 | 43:BI:119:PRO:HB3 | 1.84 | 0.60 |
| 44:BN:40:PRO:O | 51:BU:64:ARG:HG3 | 2.02 | 0.60 |
| 38:DD:30:GLU:CD | 38:DD:63:ARG:HE | 2.06 | 0.60 |
| 38:DD:267:SER:O | 38:DD:269:PHE:N | 2.34 | 0.60 |
| 42:BH:70:THR:C | 42:BH:72:ILE:H | 2.04 | 0.60 |
| 45:BO:3:GLN:HB2 | 45:BO:4:PRO:HD2 | 1.82 | 0.60 |
| 35:BA:1697:G:C3' | 35:BA:1698:A:H5'' | 2.26 | 0.60 |
| 39:BE:12:THR:HG23 | 50:BT:8:LYS:CE | 2.32 | 0.60 |
| 39:BE:11:MET:HB2 | 39:BE:23:VAL:O | 2.01 | 0.60 |
| 1:CA:1320:C:H5' | 19:CS:70:LYS:HG2 | 1.84 | 0.60 |
| 18:CR:50:ILE:HD11 | 18:CR:74:ARG:NH1 | 2.17 | 0.60 |
| 41:BG:125:PHE:CA | 41:BG:128:ARG:HG2 | 2.32 | 0.60 |
| 41:BG:22:ARG:HH11 | 41:BG:22:ARG:HB3 | 1.64 | 0.60 |
| 4:CD:114:ARG:O | 4:CD:117:ALA:HB3 | 2.02 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:2152:G:H2' | 35:BA:2153:G:H8 | 1.65 | 0.60 |
| 35:DA:2152:G:H2' | 35:DA:2153:G:C8 | 2.37 | 0.60 |
| 13:AM:10:PRO:O | 13:AM:11:ARG:HG3 | 2.01 | 0.60 |
| 35:BA:1257:C:O2' | 40:BF:84:VAL:HG23 | 2.02 | 0.60 |
| 43:BI:120:ILE:CG2 | 43:BI:121:LYS:H | 2.15 | 0.60 |
| 5:CE:109:ILE:HG22 | 5:CE:110:LEU:HD23 | 1.83 | 0.60 |
| 5:CE:68:GLU:HG3 | 5:CE:70:PRO:HD3 | 1.83 | 0.60 |
| 1:CA:77:G:H1 | 1:CA:92:C:N4 | 1.99 | 0.60 |
| 1:AA:818:G:O2' | 1:AA:819:A:H5'' | 2.01 | 0.60 |
| 50:DT:38:ASN:HD22 | 50:DT:39:ARG:N | 1.99 | 0.60 |
| 35:DA:2347:C:H2' | 35:DA:2348:U:C6 | 2.37 | 0.60 |
| 11:AK:123:LYS:HA | 11:AK:126:ARG:HB2 | 1.84 | 0.60 |
| 48:BR:12:ARG:HG3 | 48:BR:12:ARG:HH11 | 1.67 | 0.60 |
| 8:CH:123:GLU:O | 8:CH:127:LEU:HD23 | 2.02 | 0.60 |
| 1:AA:1228:C:P | 13:AM:108:ARG:HH22 | 2.25 | 0.60 |
| 41:DG:96:ARG:O | 41:DG:99:MET:HB3 | 2.01 | 0.60 |
| 35:BA:2836:U:H2' | 35:BA:2837:G:C8 | 2.36 | 0.60 |
| 38:DD:110:GLY:O | 38:DD:112:GLN:HG3 | 2.02 | 0.60 |
| 2:CB:16:HIS:CD2 | 2:CB:210:SER:HA | 2.37 | 0.60 |
| 17:AQ:83:ASP:O | 17:AQ:86:GLU:HB2 | 2.01 | 0.60 |
| 35:BA:99:U:O5' | 35:BA:100:G:H5' | 2.01 | 0.60 |
| 35:DA:2591:C:OP2 | 38:DD:239:ARG:HB3 | 2.02 | 0.60 |
| 35:DA:2389:G:H5'' | 35:DA:2390:U:O4' | 2.02 | 0.60 |
| 6:CF:91:VAL:HG11 | 18:CR:72:ARG:NH1 | 2.16 | 0.60 |
| 35:DA:1843:C:H5' | 38:DD:253:GLN:NE2 | 2.17 | 0.60 |
| 6:AF:47:ARG:HA | 6:AF:57:GLN:HG2 | 1.84 | 0.60 |
| 1:AA:1349:A:H2' | 1:AA:1350:A:C8 | 2.37 | 0.60 |
| 46:BP:9:ASN:C | 46:BP:11:GLY:N | 2.53 | 0.60 |
| 2:AB:77:ALA:CB | 2:AB:211:ILE:HD13 | 2.21 | 0.60 |
| 33:B8:59:LYS:CD | 46:BP:50:ARG:HB3 | 2.22 | 0.60 |
| 39:BE:47:VAL:HG12 | 39:BE:49:LEU:CD1 | 2.30 | 0.60 |
| 35:BA:1887:C:C3' | 35:BA:1888:G:H5'' | 2.31 | 0.60 |
| 51:DU:92:ARG:HG2 | 51:DU:92:ARG:HH11 | 1.67 | 0.60 |
| 10:AJ:48:THR:CA | 10:AJ:62:HIS:HB3 | 2.29 | 0.60 |
| 40:BF:181:LEU:CD1 | 40:BF:186:ILE:HD11 | 2.25 | 0.60 |
| 41:DG:29:TRP:C | 41:DG:31:VAL:H | 2.05 | 0.60 |
| 56:DZ:4:ARG:HG2 | 56:DZ:58:VAL:CB | 2.24 | 0.60 |
| 55:DY:15:VAL:HG12 | 55:DY:16:ALA:N | 2.17 | 0.60 |
| 43:DI:4:ILE:HG12 | 43:DI:18:VAL:CG2 | 2.29 | 0.60 |
| 50:BT:58:ASN:C | 50:BT:58:ASN:HD22 | 2.06 | 0.60 |
| 27:D2:69:ARG:O | 27:D2:70:GLN:HB3 | 2.01 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:CL:27:LEU:HG | 12:CL:62:SER:OG | 2.01 | 0.60 |
| 50:DT:23:ARG:HG2 | 50:DT:120:ARG:NH1 | 2.17 | 0.60 |
| 20:CT:82:SER:O | 20:CT:86:ARG:HD3 | 2.02 | 0.60 |
| 12:AL:104:VAL:HG12 | 12:AL:105:TYR:CD1 | 2.37 | 0.60 |
| 35:BA:2736:G:H5' | 35:BA:2736:G:C8 | 2.37 | 0.60 |
| 18:AR:59:SER:H | 18:AR:62:GLU:HB2 | 1.67 | 0.60 |
| 1:CA:134:A:H61 | 16:CP:25:ARG:NH1 | 2.00 | 0.60 |
| 1:CA:542:G:OP1 | 4:CD:10:ARG:NH2 | 2.34 | 0.60 |
| 1:AA:264:U:O2' | 17:AQ:64:PRO:HB2 | 2.02 | 0.60 |
| 35:BA:2328:A:H2' | 35:BA:2329:G:C8 | 2.36 | 0.60 |
| 40:BF:45:ARG:CZ | 40:BF:97:TYR:CE1 | 2.84 | 0.60 |
| 35:BA:1827:C:O2' | 35:BA:1828:G:H5' | 2.02 | 0.60 |
| 7:CG:113:GLU:CG | 7:CG:119:ARG:HG2 | 2.32 | 0.60 |
| 35:BA:2694:G:O2' | 35:BA:2695:C:H5' | 2.02 | 0.60 |
| 20:CT:37:SER:O | 20:CT:41:ILE:HG12 | 2.02 | 0.60 |
| 11:AK:72:ALA:O | 11:AK:77:MET:HB2 | 2.01 | 0.60 |
| 1:AA:1116:C:C3' | 1:AA:1117:G:H5'' | 2.31 | 0.59 |
| 1:AA:954:G:H21 | 1:AA:1227:A:H62 | 1.50 | 0.59 |
| 9:CI:89:ASN:C | 9:CI:91:ASP:H | 2.06 | 0.59 |
| 49:DS:14:VAL:HG12 | 49:DS:15:ARG:H | 1.65 | 0.59 |
| 12:AL:90:VAL:HG11 | 12:AL:93:LEU:HG | 1.84 | 0.59 |
| 38:BD:33:LEU:HD13 | 38:BD:34:VAL:HG23 | 1.84 | 0.59 |
| 48:BR:113:LEU:HD12 | 48:BR:113:LEU:C | 2.22 | 0.59 |
| 9:CI:114:TYR:HD1 | 10:CJ:60:ARG:HG3 | 1.66 | 0.59 |
| 41:BG:61:ALA:HA | 41:BG:64:THR:HG22 | 1.84 | 0.59 |
| 42:DH:54:ARG:HB3 | 42:DH:65:HIS:CD2 | 2.35 | 0.59 |
| 44:DN:62:VAL:HG22 | 44:DN:66:LYS:HB2 | 1.83 | 0.59 |
| 46:DP:41:ARG:NE | 46:DP:41:ARG:HA | 2.16 | 0.59 |
| 35:DA:271(U):G:O2' | 35:DA:271(V):G:H5' | 2.01 | 0.59 |
| 41:BG:125:PHE:H | 41:BG:125:PHE:HD1 | 1.49 | 0.59 |
| 50:BT:107:ASP:CG | 50:BT:108:ARG:N | 2.55 | 0.59 |
| 1:AA:1321:C:C5' | 1:AA:1322:C:H5'' | 2.30 | 0.59 |
| 43:DI:120:ILE:CG2 | 43:DI:121:LYS:N | 2.64 | 0.59 |
| 43:DI:81:VAL:O | 43:DI:82:ARG:CB | 2.50 | 0.59 |
| 22:AV:27:G:H2' | 22:AV:28:G:H8 | 1.67 | 0.59 |
| 16:AP:4:ILE:HA | 16:AP:20:VAL:O | 2.02 | 0.59 |
| 11:CK:54:ARG:HH12 | 23:CW:40:C:C5' | 2.15 | 0.59 |
| 31:D6:36:LEU:HD23 | 31:D6:36:LEU:H | 1.66 | 0.59 |
| 3:CC:18:TRP:N | 3:CC:18:TRP:CE3 | 2.70 | 0.59 |
| 29:B4:61:VAL:HG13 | 29:B4:65:CYS:SG | 2.42 | 0.59 |
| 40:DF:78:ILE:N | 40:DF:78:ILE:HD13 | 2.17 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:2349:G:H8 | 35:DA:2349:G:H5' | 1.67 | 0.59 |
| 8:AH:123:GLU:O | 8:AH:127:LEU:HD23 | 2.00 | 0.59 |
| 1:CA:167:G:H2' | 1:CA:168:G:C8 | 2.36 | 0.59 |
| 35:DA:2293:C:H42 | 35:DA:2339:G:H1 | 1.49 | 0.59 |
| 35:DA:1952:A:C4 | 45:DO:22:ILE:HD12 | 2.36 | 0.59 |
| 1:CA:197:A:N6 | 1:CA:221:C:H5' | 2.17 | 0.59 |
| 27:D2:55:ARG:O | 27:D2:58:ALA:HB3 | 2.02 | 0.59 |
| 1:AA:472:A:H4' | 16:AP:80:PHE:O | 2.01 | 0.59 |
| 35:BA:1910:G:O2' | 35:BA:1911:U:H5' | 2.01 | 0.59 |
| 47:BQ:76:LYS:HB3 | 47:BQ:91:GLU:HG3 | 1.84 | 0.59 |
| 53:DW:10:VAL:HG21 | 53:DW:103:ILE:HG13 | 1.84 | 0.59 |
| 51:BU:44:ASN:ND2 | 52:BV:75:PHE:HB3 | 2.17 | 0.59 |
| 3:AC:92:ALA:N | 3:AC:99:VAL:HG11 | 2.17 | 0.59 |
| 35:DA:492:A:H2' | 35:DA:493:G:O4' | 2.02 | 0.59 |
| 53:DW:20:VAL:O | 53:DW:23:LEU:HB3 | 2.02 | 0.59 |
| 12:AL:33:ARG:HA | 12:AL:33:ARG:HE | 1.66 | 0.59 |
| 31:B6:15:GLU:HG2 | 31:B6:18:ARG:NE | 2.16 | 0.59 |
| 50:BT:86:ILE:HG12 | 50:BT:87:ASP:H | 1.67 | 0.59 |
| 1:CA:1053:G:N7 | 1:CA:1199:U:H3' | 2.17 | 0.59 |
| 38:DD:44:ASN:CB | 38:DD:49:ILE:HA | 2.22 | 0.59 |
| 52:BV:6:LYS:HG3 | 52:BV:11:GLN:HG2 | 1.84 | 0.59 |
| 39:DE:47:VAL:HG12 | 39:DE:49:LEU:CD1 | 2.30 | 0.59 |
| 43:DI:93:THR:HG22 | 43:DI:119:PRO:HB3 | 1.84 | 0.59 |
| 52:DV:20:LEU:N | 52:DV:20:LEU:HD12 | 2.17 | 0.59 |
| 35:DA:2732:G:C2' | 35:DA:2733:A:H5' | 2.32 | 0.59 |
| 10:CJ:27:ALA:HA | 10:CJ:30:SER:OG | 2.01 | 0.59 |
| 4:CD:12:CYS:HA | 4:CD:19:LEU:HD12 | 1.83 | 0.59 |
| 35:DA:136:G:H1 | 35:DA:143(A):C:H42 | 1.48 | 0.59 |
| 17:AQ:67:LYS:HA | 17:AQ:70:ARG:HH12 | 1.67 | 0.59 |
| 4:AD:134:ASP:OD2 | 4:AD:135:LEU:HD22 | 2.02 | 0.59 |
| 26:D1:92:LYS:HG3 | 26:D1:93:GLU:N | 2.16 | 0.59 |
| 37:BC:49:ILE:O | 37:BC:51:PRO:HD3 | 2.02 | 0.59 |
| 13:CM:123:ALA:HB2 | 22:CY:39:U:C4' | 2.31 | 0.59 |
| 43:BI:133:HIS:CB | 43:BI:134:PRO:CD | 2.78 | 0.59 |
| 8:AH:84:ARG:HG2 | 8:AH:84:ARG:HH11 | 1.66 | 0.59 |
| 41:BG:101:ILE:HG23 | 41:BG:102:PHE:H | 1.67 | 0.59 |
| 35:BA:1505:C:H6 | 35:BA:1506:C:C6 | 2.20 | 0.59 |
| 8:AH:122:ARG:HH11 | 8:AH:122:ARG:CB | 2.12 | 0.59 |
| 39:BE:45:THR:CG2 | 39:BE:83:ASP:HA | 2.31 | 0.59 |
| 16:AP:5:ARG:O | 16:AP:20:VAL:HG13 | 2.01 | 0.59 |
| 39:DE:45:THR:CG2 | 39:DE:83:ASP:HA | 2.30 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 47:DQ:137:TYR:CZ | 56:DZ:81:ARG:NH1 | 2.69 | 0.59 |
| 26:B1:86:SER:HB2 | 26:B1:89:GLU:HB2 | 1.84 | 0.59 |
| 40:DF:53:THR:HG23 | 40:DF:56:GLU:H | 1.67 | 0.59 |
| 47:DQ:16:ARG:HG2 | 47:DQ:17:LEU:H | 1.67 | 0.59 |
| 3:AC:18:TRP:CE3 | 3:AC:18:TRP:N | 2.69 | 0.59 |
| 56:BZ:10:ARG:HG3 | 56:BZ:18:LEU:HD11 | 1.84 | 0.59 |
| 1:CA:1194:U:H2' | 1:CA:1195:C:C6 | 2.36 | 0.59 |
| 52:DV:87:HIS:NE2 | 52:DV:89:GLN:HG2 | 2.17 | 0.59 |
| 38:BD:221:VAL:HG22 | 38:BD:226:MET:HE3 | 1.83 | 0.59 |
| 35:BA:603:A:H4' | 35:BA:604:G:O5' | 2.02 | 0.59 |
| 38:BD:242:ARG:HD2 | 38:BD:242:ARG:N | 2.16 | 0.59 |
| 38:BD:248:SER:HB2 | 38:BD:249:PRO:HD2 | 1.83 | 0.59 |
| 35:DA:271(P):C:H5' | 43:DI:46:ALA:HB2 | 1.83 | 0.59 |
| 38:DD:166:GLN:HE21 | 38:DD:166:GLN:CA | 2.14 | 0.59 |
| 3:CC:147:LYS:HG3 | 3:CC:204:LEU:O | 2.02 | 0.59 |
| 38:DD:109:ASP:HB2 | 38:DD:197:GLY:CA | 2.31 | 0.59 |
| 6:CF:47:ARG:HA | 6:CF:57:GLN:HG2 | 1.83 | 0.59 |
| 56:DZ:137:ILE:HG12 | 56:DZ:138:GLU:N | 2.17 | 0.59 |
| 1:CA:1116:C:C3' | 1:CA:1117:G:H5'' | 2.32 | 0.59 |
| 35:BA:2759:G:O2' | 35:BA:2760:C:H5' | 2.01 | 0.59 |
| 44:BN:133:GLN:O | 44:BN:134:ARG:HB3 | 2.03 | 0.59 |
| 39:DE:8:LYS:HE3 | 39:DE:188:VAL:HG13 | 1.84 | 0.59 |
| 51:DU:62:ILE:CD1 | 51:DU:93:LYS:HG2 | 2.32 | 0.59 |
| 10:AJ:57:LYS:HE3 | 10:AJ:60:ARG:NH2 | 2.17 | 0.59 |
| 4:AD:31:CYS:O | 4:AD:31:CYS:SG | 2.61 | 0.59 |
| 47:DQ:55:VAL:HG22 | 47:DQ:56:ARG:N | 2.17 | 0.59 |
| 18:AR:37:VAL:HG23 | 18:AR:38:GLU:HG3 | 1.84 | 0.59 |
| 35:BA:2073:C:H5'' | 38:BD:229:VAL:HG13 | 1.84 | 0.59 |
| 46:BP:35:HIS:O | 46:BP:36:LYS:HB2 | 2.02 | 0.59 |
| 4:AD:114:ARG:HH11 | 4:AD:114:ARG:CG | 2.13 | 0.59 |
| 15:AO:69:TYR:CZ | 15:AO:73:GLU:HG3 | 2.37 | 0.59 |
| 32:B7:46:VAL:HG12 | 32:B7:47:ARG:N | 2.17 | 0.59 |
| 56:BZ:166:SER:HB2 | 56:BZ:167:PRO:CA | 2.31 | 0.59 |
| 37:DC:49:ILE:O | 37:DC:51:PRO:HD3 | 2.02 | 0.59 |
| 8:AH:85:ARG:HD3 | 8:AH:86:ILE:N | 2.17 | 0.59 |
| 43:DI:123:LEU:HD22 | 43:DI:142:VAL:O | 2.02 | 0.59 |
| 42:BH:89:ILE:HD11 | 42:BH:129:THR:O | 2.01 | 0.59 |
| 1:AA:190:U:H2' | 1:AA:191:G:H8 | 1.67 | 0.59 |
| 1:AA:865:A:H5' | 1:AA:1078:U:C5 | 2.37 | 0.59 |
| 1:CA:328:C:H4' | 1:CA:329:A:C5' | 2.31 | 0.59 |
| 35:BA:2735:G:O2' | 35:BA:2736:G:H5'' | 2.03 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 35:DA:2735:G:H2' | 35:DA:2736:G:H5'' | 1.84 | 0.59 |
| 1:CA:340:U:O2' | 1:CA:341:C:H5' | 2.02 | 0.59 |
| 34:D9:17:ILE:CG1 | 34:D9:26:ILE:HD11 | 2.32 | 0.59 |
| 1:AA:838:G:C2' | 1:AA:839:U:H5'' | 2.31 | 0.59 |
| 36:DB:87:G:H3' | 36:DB:88:C:H5'' | 1.83 | 0.59 |
| 52:DV:2:PHE:O | 52:DV:3:ALA:HB3 | 2.02 | 0.59 |
| 28:B3:49:LYS:NZ | 35:BA:850:C:O3' | 2.34 | 0.59 |
| 14:CN:6:LEU:HD23 | 14:CN:9:LYS:HE2 | 1.84 | 0.59 |
| 35:BA:1509(A):A:H2' | 35:BA:1509(B):A:C8 | 2.37 | 0.59 |
| 1:CA:1452:C:H5' | 1:CA:1456:G:C4 | 2.37 | 0.59 |
| 35:DA:1411:C:H2' | 35:DA:1412:A:C8 | 2.37 | 0.59 |
| 7:CG:45:ASP:O | 7:CG:49:ILE:HG12 | 2.02 | 0.59 |
| 38:DD:70:TRP:CH2 | 38:DD:150:LYS:HA | 2.38 | 0.59 |
| 19:AS:58:VAL:HG23 | 19:AS:58:VAL:O | 2.02 | 0.59 |
| 35:DA:2559:C:O2 | 35:DA:2559:C:H2' | 2.00 | 0.59 |
| 32:D7:24:THR:HG23 | 32:D7:27:GLY:H | 1.66 | 0.59 |
| 40:DF:45:ARG:CZ | 40:DF:97:TYR:CE1 | 2.85 | 0.59 |
| 11:AK:57:THR:CG2 | 11:AK:58:PRO:HD2 | 2.32 | 0.59 |
| 35:BA:1411:C:H2' | 35:BA:1412:A:C8 | 2.37 | 0.59 |
| 35:DA:2025:C:H2' | 35:DA:2026:C:C6 | 2.36 | 0.59 |
| 3:CC:187:ALA:O | 3:CC:198:VAL:HG23 | 2.02 | 0.59 |
| 1:CA:1206:G:H4' | 3:CC:192:THR:O | 2.03 | 0.59 |
| 4:AD:79:PHE:HE1 | 4:AD:204:ILE:HD13 | 1.65 | 0.59 |
| 35:BA:1045:A:H2' | 35:BA:1045:A:N3 | 2.17 | 0.59 |
| 50:BT:95:ARG:HH11 | 50:BT:95:ARG:HB3 | 1.67 | 0.59 |
| 7:AG:100:ALA:O | 7:AG:104:LEU:HD23 | 2.02 | 0.59 |
| 40:BF:1:MET:O | 40:BF:3:GLU:N | 2.35 | 0.59 |
| 1:AA:1117:G:O3' | 9:AI:104:ARG:HG3 | 2.02 | 0.59 |
| 50:DT:86:ILE:HG12 | 50:DT:87:ASP:H | 1.65 | 0.59 |
| 41:DG:45:GLU:OE1 | 41:DG:47:LYS:HG2 | 2.03 | 0.59 |
| 51:BU:112:ARG:CG | 51:BU:112:ARG:HH11 | 2.14 | 0.59 |
| 35:DA:2823:A:OP1 | 39:DE:113:PHE:HB2 | 2.02 | 0.59 |
| 10:CJ:51:ARG:O | 10:CJ:52:GLY:O | 2.20 | 0.59 |
| 10:CJ:57:LYS:HE3 | 10:CJ:60:ARG:NH2 | 2.18 | 0.59 |
| 35:DA:2310:A:O2' | 35:DA:2311:A:C5' | 2.50 | 0.59 |
| 52:BV:24:LYS:O | 52:BV:25:LEU:HD23 | 2.01 | 0.59 |
| 29:B4:36:VAL:HB | 29:B4:37:PRO:HD2 | 1.84 | 0.59 |
| 19:CS:6:LYS:HG2 | 19:CS:7:LYS:HE2 | 1.85 | 0.59 |
| 45:BO:64:ARG:HG3 | 45:BO:83:ALA:HB3 | 1.85 | 0.59 |
| 44:DN:125:GLY:HA3 | 44:DN:126:PRO:C | 2.23 | 0.59 |
| 27:D2:69:ARG:HH11 | 27:D2:69:ARG:HG2 | 1.68 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:195:A:OP1 | 46:DP:46:LYS:HE2 | 2.02 | 0.59 |
| 39:BE:103:ASP:OD2 | 39:BE:201:THR:HA | 2.02 | 0.59 |
| 17:AQ:22:LEU:HD12 | 17:AQ:23:VAL:H | 1.66 | 0.59 |
| 19:CS:15:LEU:HD22 | 19:CS:15:LEU:N | 2.17 | 0.59 |
| 43:BI:123:LEU:HD11 | 43:BI:144:VAL:HG13 | 1.83 | 0.59 |
| 35:DA:2184:G:H2' | 35:DA:2185:C:C6 | 2.37 | 0.59 |
| 1:CA:102:G:H2' | 1:CA:103:C:C6 | 2.38 | 0.59 |
| 1:CA:1165:C:H2' | 1:CA:1166:G:C8 | 2.33 | 0.59 |
| 35:DA:2790:A:N3 | 35:DA:2790:A:H2' | 2.17 | 0.59 |
| 18:CR:58:LEU:HD23 | 18:CR:62:GLU:HB3 | 1.83 | 0.59 |
| 1:CA:542:G:H5' | 4:CD:41:GLY:HA3 | 1.83 | 0.59 |
| 35:BA:1719:G:O2' | 35:BA:1720:U:H5' | 2.02 | 0.59 |
| 30:B5:30:LEU:HD23 | 30:B5:41:PRO:HA | 1.83 | 0.59 |
| 39:BE:48:GLN:HA | 39:BE:80:GLU:HA | 1.85 | 0.59 |
| 41:DG:83:ARG:O | 41:DG:84:LYS:HB2 | 2.01 | 0.59 |
| 52:BV:89:GLN:OE1 | 52:BV:90:PRO:HD2 | 2.03 | 0.59 |
| 46:BP:62:LEU:HD23 | 46:BP:62:LEU:H | 1.67 | 0.59 |
| 35:BA:709:U:H2' | 35:BA:710:G:H8 | 1.66 | 0.59 |
| 35:BA:535:C:O2' | 35:BA:536:A:H5' | 2.03 | 0.59 |
| 1:CA:5:U:N3 | 4:CD:86:LYS:HE2 | 2.17 | 0.59 |
| 1:AA:580:U:H2' | 1:AA:581:G:O4' | 2.02 | 0.59 |
| 15:CO:64:ARG:HH11 | 15:CO:64:ARG:HG3 | 1.66 | 0.59 |
| 1:CA:1218:C:H2' | 1:CA:1219:U:C6 | 2.37 | 0.59 |
| 49:BS:56:LEU:O | 49:BS:56:LEU:HD23 | 2.03 | 0.59 |
| 1:CA:639:G:O2' | 1:CA:640:A:H5' | 2.02 | 0.59 |
| 7:AG:57:GLU:N | 7:AG:57:GLU:OE2 | 2.36 | 0.59 |
| 3:CC:79:ARG:NH1 | 3:CC:79:ARG:HB3 | 2.17 | 0.59 |
| 1:AA:429:U:H1' | 1:AA:430:A:H5'' | 1.85 | 0.59 |
| 56:DZ:30:ASN:ND2 | 56:DZ:33:LEU:H | 2.00 | 0.59 |
| 40:DF:116:ASP:OD1 | 40:DF:119:ARG:NH2 | 2.35 | 0.59 |
| 12:AL:28:LYS:C | 12:AL:30:ALA:N | 2.54 | 0.59 |
| 35:BA:2702:U:H5 | 35:BA:2705:A:H61 | 1.47 | 0.59 |
| 31:D6:17:LYS:HB3 | 31:D6:18:ARG:NH1 | 2.17 | 0.59 |
| 46:BP:16:ARG:CZ | 46:BP:16:ARG:HB2 | 2.32 | 0.59 |
| 5:AE:81:GLU:HB3 | 5:AE:88:LYS:NZ | 2.18 | 0.59 |
| 33:D8:62:LEU:N | 33:D8:63:PRO:HD2 | 2.17 | 0.59 |
| 41:DG:111:LEU:HD23 | 41:DG:114:ILE:HD12 | 1.85 | 0.59 |
| 56:DZ:4:ARG:CG | 56:DZ:58:VAL:HB | 2.27 | 0.59 |
| 45:DO:64:ARG:HG3 | 45:DO:83:ALA:HB3 | 1.85 | 0.59 |
| 43:DI:102:SER:O | 43:DI:106:GLY:HA2 | 2.01 | 0.59 |
| 44:DN:120:LEU:HD11 | 44:DN:122:VAL:HG23 | 1.83 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:AO:82:ILE:O | 15:AO:82:ILE:HD13 | 2.02 | 0.59 |
| 15:AO:78:TYR:OH | 15:AO:88:ARG:HD2 | 2.02 | 0.59 |
| 8:AH:7:ALA:CB | 8:AH:85:ARG:HG3 | 2.32 | 0.59 |
| 32:D7:46:VAL:HG12 | 32:D7:47:ARG:N | 2.17 | 0.59 |
| 35:BA:582:G:H2' | 35:BA:583:G:C8 | 2.37 | 0.59 |
| 35:DA:1505:C:H6 | 35:DA:1506:C:C6 | 2.21 | 0.59 |
| 47:DQ:26:TYR:HB2 | 47:DQ:137:TYR:HB3 | 1.84 | 0.59 |
| 1:AA:1016:A:H2' | 1:AA:1017:G:O4' | 2.03 | 0.59 |
| 26:B1:91:LYS:HA | 26:B1:94:LEU:CD1 | 2.32 | 0.59 |
| 35:BA:2735:G:H2' | 35:BA:2736:G:C5' | 2.32 | 0.59 |
| 35:DA:2735:G:H2' | 35:DA:2736:G:C5' | 2.33 | 0.59 |
| 2:AB:14:GLY:O | 2:AB:15:VAL:HG22 | 2.03 | 0.59 |
| 43:BI:12:LEU:H | 43:BI:12:LEU:HD23 | 1.67 | 0.59 |
| 8:CH:110:ALA:HB3 | 8:CH:121:ASP:HB3 | 1.85 | 0.59 |
| 48:DR:81:ASP:O | 48:DR:82:GLU:HB2 | 2.02 | 0.59 |
| 44:BN:2:LYS:O | 44:BN:4:TYR:CZ | 2.55 | 0.59 |
| 48:BR:83:ILE:O | 48:BR:86:ARG:HG3 | 2.02 | 0.59 |
| 4:AD:7:PRO:CB | 4:AD:10:ARG:HD2 | 2.31 | 0.59 |
| 1:CA:1490:C:O2' | 1:CA:1491:G:H5' | 2.02 | 0.59 |
| 34:B9:11:CYS:SG | 34:B9:12:ASP:N | 2.76 | 0.59 |
| 2:AB:183:PRO:HA | 2:AB:198:ASP:OD1 | 2.03 | 0.59 |
| 7:CG:100:ALA:O | 7:CG:104:LEU:HD23 | 2.01 | 0.59 |
| 1:AA:659:U:O2' | 1:AA:660:G:H5' | 2.02 | 0.59 |
| 35:BA:1844:C:O2' | 35:BA:1845:G:H5' | 2.01 | 0.59 |
| 35:DA:1907:G:O2' | 35:DA:1908:C:H5' | 2.02 | 0.59 |
| 10:CJ:96:ILE:N | 10:CJ:96:ILE:HD13 | 2.17 | 0.59 |
| 1:CA:114:U:H2' | 1:CA:115:G:C8 | 2.37 | 0.59 |
| 1:AA:575:G:OP1 | 1:AA:575:G:H4' | 2.02 | 0.59 |
| 3:AC:79:ARG:NH1 | 3:AC:79:ARG:HB3 | 2.17 | 0.59 |
| 35:BA:2547:U:H2' | 35:BA:2548:G:C8 | 2.37 | 0.59 |
| 33:D8:56:GLU:HA | 33:D8:59:LYS:HZ2 | 1.68 | 0.59 |
| 35:DA:2702:U:H5 | 35:DA:2705:A:H61 | 1.49 | 0.59 |
| 12:AL:37:CYS:SG | 12:AL:81:SER:HB2 | 2.43 | 0.59 |
| 46:BP:9:ASN:O | 46:BP:11:GLY:N | 2.36 | 0.59 |
| 39:DE:11:MET:HB3 | 39:DE:24:THR:HA | 1.82 | 0.59 |
| 3:CC:182:ILE:HG23 | 3:CC:202:ILE:C | 2.23 | 0.59 |
| 4:AD:19:LEU:HD12 | 4:AD:19:LEU:H | 1.67 | 0.59 |
| 1:AA:1313:U:H2' | 1:AA:1314:C:H6 | 1.67 | 0.59 |
| 42:DH:70:THR:C | 42:DH:72:ILE:H | 2.04 | 0.59 |
| 46:BP:101:VAL:C | 46:BP:103:ALA:H | 2.04 | 0.59 |
| 35:BA:2864:G:H5' | 35:BA:2864:G:H8 | 1.68 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:AD:117:ALA:O | 4:AD:121:VAL:HG23 | 2.01 | 0.59 |
| 35:BA:286:C:C2' | 35:BA:287:C:H5'' | 2.29 | 0.59 |
| 41:BG:121:ASN:HD22 | 41:BG:123:ASN:H | 1.49 | 0.59 |
| 26:D1:51:VAL:CG2 | 26:D1:74:VAL:HG21 | 2.31 | 0.59 |
| 35:DA:2069:G:H2' | 35:DA:2070:G:H5' | 1.84 | 0.59 |
| 42:BH:89:ILE:HD12 | 42:BH:89:ILE:H | 1.67 | 0.59 |
| 35:BA:2790:A:H2' | 35:BA:2790:A:N3 | 2.17 | 0.59 |
| 35:BA:528:A:H2 | 35:BA:2043:C:C5' | 2.16 | 0.59 |
| 38:BD:65:ILE:HD13 | 38:BD:65:ILE:H | 1.65 | 0.59 |
| 9:AI:116:LYS:HZ3 | 9:AI:116:LYS:HB3 | 1.66 | 0.59 |
| 35:BA:2349:G:H5' | 35:BA:2349:G:H8 | 1.68 | 0.59 |
| 18:AR:86:VAL:O | 18:AR:87:ARG:HD3 | 2.02 | 0.59 |
| 46:BP:105:LEU:H | 46:BP:105:LEU:HD12 | 1.68 | 0.59 |
| 43:BI:84:GLY:O | 43:BI:85:GLU:HB3 | 2.02 | 0.59 |
| 35:DA:2443:C:H2' | 35:DA:2444:G:H8 | 1.68 | 0.59 |
| 54:DX:8:ILE:HD11 | 54:DX:42:ALA:HB1 | 1.84 | 0.59 |
| 1:CA:243:A:H4' | 1:CA:244:U:C5' | 2.33 | 0.59 |
| 17:AQ:86:GLU:O | 17:AQ:90:ILE:HG12 | 2.03 | 0.59 |
| 24:CX:17:U:O2' | 24:CX:18:C:H5' | 2.03 | 0.59 |
| 35:DA:1344:G:H4' | 35:DA:1384:A:C5 | 2.37 | 0.59 |
| 1:CA:657:G:O2' | 1:CA:658:G:H5' | 2.03 | 0.59 |
| 22:AY:18:G:N1 | 22:AY:57:G:N7 | 2.50 | 0.59 |
| 7:AG:45:ASP:O | 7:AG:49:ILE:HG12 | 2.02 | 0.59 |
| 35:DA:816:C:O2' | 35:DA:817:C:H5' | 2.02 | 0.59 |
| 1:AA:533:A:H1' | 1:AA:534:U:OP1 | 2.02 | 0.59 |
| 55:BY:76:CYS:HB3 | 55:BY:96:ILE:CD1 | 2.16 | 0.59 |
| 40:DF:124:LEU:HD12 | 40:DF:125:LEU:N | 2.18 | 0.59 |
| 46:BP:50:ARG:NH2 | 46:BP:50:ARG:HG2 | 2.17 | 0.59 |
| 51:BU:110:VAL:O | 51:BU:114:LYS:HD2 | 2.02 | 0.59 |
| 56:BZ:52:SER:O | 56:BZ:54:HIS:N | 2.36 | 0.59 |
| 35:DA:2206:G:C2 | 35:DA:2207:G:H5' | 2.37 | 0.59 |
| 48:DR:101:ALA:O | 48:DR:102:GLU:HB2 | 2.02 | 0.59 |
| 55:DY:42:VAL:HG12 | 55:DY:65:ALA:HB3 | 1.84 | 0.59 |
| 5:CE:51:VAL:CB | 5:CE:52:PRO:HD3 | 2.24 | 0.59 |
| 5:AE:51:VAL:HB | 5:AE:52:PRO:CD | 2.23 | 0.59 |
| 5:AE:51:VAL:O | 5:AE:55:VAL:HG23 | 2.02 | 0.59 |
| 45:BO:2:ILE:HD11 | 45:BO:82:ASN:ND2 | 2.17 | 0.59 |
| 31:D6:10:LEU:HD12 | 33:D8:34:TRP:CD1 | 2.38 | 0.59 |
| 35:BA:1301:A:H4' | 35:BA:1302:A:OP1 | 2.02 | 0.59 |
| 54:DX:12:VAL:HG21 | 54:DX:17:ALA:HB1 | 1.84 | 0.59 |
| 13:AM:13:LYS:CA | 13:AM:44:ARG:HH11 | 2.13 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 55:BY:88:LYS:NZ | 55:BY:93:GLY:CA | 2.66 | 0.59 |
| 16:AP:8:ARG:CG | 16:AP:9:PHE:N | 2.66 | 0.59 |
| 42:DH:20:ALA:HB2 | 42:DH:25:LYS:HZ2 | 1.67 | 0.59 |
| 23:CW:58:A:H1' | 23:CW:60:U:C5 | 2.38 | 0.59 |
| 35:BA:2773:C:H2' | 35:BA:2774:C:C6 | 2.34 | 0.59 |
| 1:CA:190:U:H2' | 1:CA:191:G:H8 | 1.67 | 0.59 |
| 35:DA:914:C:C2' | 35:DA:915:C:H5' | 2.33 | 0.59 |
| 50:DT:106:SER:O | 50:DT:107:ASP:HB3 | 2.02 | 0.59 |
| 36:BB:87:G:H3' | 36:BB:88:C:H5'' | 1.84 | 0.59 |
| 35:DA:1719:G:C2' | 35:DA:1720:U:H5' | 2.33 | 0.59 |
| 1:CA:533:A:O2' | 1:CA:534:U:H5'' | 2.02 | 0.59 |
| 1:AA:554:C:H2' | 1:AA:555:C:H6 | 1.67 | 0.59 |
| 3:CC:92:ALA:N | 3:CC:99:VAL:HG11 | 2.17 | 0.59 |
| 1:AA:1000:U:H2' | 1:AA:1001:A:C8 | 2.37 | 0.59 |
| 1:CA:67:C:O2' | 1:CA:171:A:H1' | 2.02 | 0.59 |
| 35:DA:247:G:H4' | 35:DA:386:G:C5 | 2.37 | 0.59 |
| 8:CH:69:ARG:HH11 | 8:CH:69:ARG:HB2 | 1.66 | 0.59 |
| 7:AG:38:LEU:O | 7:AG:42:ILE:HG13 | 2.03 | 0.59 |
| 1:AA:545:C:H5'' | 4:AD:72:GLU:HG2 | 1.84 | 0.59 |
| 40:BF:24:LEU:O | 40:BF:26:ALA:N | 2.30 | 0.59 |
| 2:AB:91:PRO:N | 2:AB:154:LEU:HD12 | 2.17 | 0.59 |
| 9:CI:95:LYS:HD3 | 9:CI:96:LEU:N | 2.17 | 0.59 |
| 2:CB:8:LYS:O | 2:CB:12:GLU:HG3 | 2.03 | 0.59 |
| 6:CF:39:LYS:HD2 | 6:CF:62:TRP:CZ3 | 2.35 | 0.59 |
| 35:BA:1155:A:OP2 | 51:BU:58:ARG:NH1 | 2.36 | 0.59 |
| 38:DD:35:LYS:HD3 | 38:DD:36:PRO:HD3 | 1.84 | 0.59 |
| 13:CM:65:LYS:C | 13:CM:66:LEU:N | 2.55 | 0.59 |
| 13:CM:67:GLU:OE2 | 13:CM:71:ARG:NH2 | 2.35 | 0.59 |
| 1:AA:1060:C:H2' | 1:AA:1061:G:H8 | 1.67 | 0.59 |
| 29:B4:51:TYR:CD2 | 41:BG:2:PRO:HG2 | 2.38 | 0.59 |
| 47:BQ:55:VAL:HG22 | 47:BQ:56:ARG:N | 2.17 | 0.59 |
| 41:DG:111:LEU:HD22 | 41:DG:117:PHE:HE2 | 1.68 | 0.59 |
| 55:BY:28:LYS:O | 55:BY:38:ILE:HB | 2.02 | 0.59 |
| 3:CC:30:ARG:HH22 | 14:CN:35:ARG:CA | 2.15 | 0.59 |
| 43:DI:38:LEU:HD12 | 43:DI:38:LEU:N | 2.06 | 0.59 |
| 35:DA:627:A:N7 | 46:DP:84:ASN:ND2 | 2.50 | 0.59 |
| 44:BN:62:VAL:HG22 | 44:BN:66:LYS:HB2 | 1.83 | 0.59 |
| 35:DA:589:C:O2' | 35:DA:590:A:H5' | 2.02 | 0.59 |
| 35:DA:808:G:H2' | 35:DA:809:G:C8 | 2.37 | 0.59 |
| 35:DA:142:A:H5' | 35:DA:142(A):C:OP2 | 2.03 | 0.59 |
| 41:BG:22:ARG:CB | 41:BG:22:ARG:HH11 | 2.16 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:BE:101:ARG:CZ | 39:BE:171:GLU:HB2 | 2.33 | 0.59 |
| 2:AB:171:ALA:HA | 2:AB:174:VAL:CG2 | 2.32 | 0.59 |
| 13:AM:76:ALA:CA | 13:AM:79:LYS:HZ2 | 2.15 | 0.59 |
| 35:DA:1024:G:C3' | 35:DA:1025:G:H5'' | 2.33 | 0.59 |
| 43:BI:48:GLU:C | 43:BI:50:ARG:H | 2.06 | 0.59 |
| 1:CA:376:G:H5'' | 16:CP:5:ARG:HB2 | 1.85 | 0.59 |
| 35:BA:1658:C:OP1 | 39:BE:132:HIS:ND1 | 2.36 | 0.59 |
| 45:DO:107:ARG:NH1 | 50:DT:36:GLU:H | 1.99 | 0.59 |
| 31:B6:32:ASN:O | 31:B6:33:LYS:HB2 | 2.01 | 0.59 |
| 35:DA:1799:G:H5' | 35:DA:1819:A:N6 | 2.18 | 0.59 |
| 38:BD:206:LEU:HD23 | 38:BD:211:ARG:HH11 | 1.68 | 0.59 |
| 1:AA:167:G:H2' | 1:AA:168:G:C8 | 2.37 | 0.59 |
| 52:BV:2:PHE:O | 52:BV:3:ALA:HB3 | 2.03 | 0.59 |
| 7:AG:151:TYR:OH | 11:AK:54:ARG:HD3 | 2.03 | 0.59 |
| 45:DO:86:ILE:H | 45:DO:86:ILE:HD12 | 1.68 | 0.59 |
| 1:AA:533:A:O2' | 1:AA:534:U:H5'' | 2.03 | 0.59 |
| 1:AA:999:C:O2' | 1:AA:1000:U:H5' | 2.02 | 0.59 |
| 17:AQ:99:SER:O | 17:AQ:100:LYS:HD3 | 2.03 | 0.59 |
| 35:BA:2389:G:H5'' | 35:BA:2390:U:O4' | 2.02 | 0.59 |
| 4:CD:80:GLU:O | 4:CD:84:LYS:HG2 | 2.01 | 0.59 |
| 6:CF:67:MET:HB2 | 6:CF:68:PRO:HD2 | 1.85 | 0.59 |
| 1:AA:1218:C:H2' | 1:AA:1219:U:C6 | 2.38 | 0.59 |
| 37:BC:193:ILE:O | 37:BC:197:GLU:N | 2.36 | 0.59 |
| 44:BN:28:THR:HG22 | 44:BN:29:LYS:N | 2.17 | 0.59 |
| 38:BD:109:ASP:HB2 | 38:BD:197:GLY:CA | 2.33 | 0.59 |
| 42:DH:137:ASP:OD1 | 42:DH:138:LYS:N | 2.36 | 0.59 |
| 35:BA:1439:A:H2' | 35:BA:1440:G:O4' | 2.01 | 0.59 |
| 1:CA:1116:C:H3' | 1:CA:1117:G:H5'' | 1.84 | 0.59 |
| 33:B8:56:GLU:HA | 33:B8:59:LYS:NZ | 2.17 | 0.59 |
| 51:BU:92:ARG:CZ | 51:BU:92:ARG:HB2 | 2.32 | 0.59 |
| 37:DC:36:LYS:HZ2 | 37:DC:36:LYS:HA | 1.68 | 0.59 |
| 35:BA:2569:G:O2' | 35:BA:2570:G:H5' | 2.01 | 0.59 |
| 23:AW:37:A:H2' | 23:AW:38:A:O4' | 2.03 | 0.59 |
| 23:AW:38:A:C2' | 23:AW:39:U:H5'' | 2.32 | 0.59 |
| 28:B3:31:LEU:O | 28:B3:32:GLN:HB2 | 2.00 | 0.59 |
| 35:DA:1278:A:O2' | 35:DA:1279:G:H5' | 2.03 | 0.59 |
| 38:DD:227:ASN:HB3 | 38:DD:228:PRO:CD | 2.29 | 0.59 |
| 44:BN:19:GLU:HG3 | 44:BN:20:GLY:N | 2.17 | 0.59 |
| 35:BA:271(E):U:H2' | 35:BA:271(F):C:C6 | 2.37 | 0.59 |
| 38:BD:26:LYS:HE2 | 38:BD:82:ILE:HB | 1.85 | 0.59 |
| 35:BA:2133:G:H2' | 35:BA:2157:G:N2 | 2.18 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:AE:18:ARG:NH2 | 5:AE:25:ARG:HD2 | 2.18 | 0.59 |
| 7:CG:37:ASN:ND2 | 9:CI:40:LEU:HA | 2.18 | 0.59 |
| 35:DA:2195:C:O2' | 35:DA:2196:C:H5' | 2.03 | 0.59 |
| 47:DQ:37:LEU:HD11 | 47:DQ:130:LYS:HB2 | 1.84 | 0.59 |
| 40:BF:32:LEU:HD22 | 40:BF:112:MET:HE3 | 1.84 | 0.59 |
| 19:AS:13:ASP:O | 19:AS:15:LEU:N | 2.36 | 0.59 |
| 5:AE:19:MET:O | 5:AE:20:GLN:HB2 | 2.03 | 0.59 |
| 1:CA:1432:G:OP1 | 50:DT:107:ASP:HB2 | 2.02 | 0.59 |
| 35:BA:952:G:P | 47:BQ:16:ARG:HH22 | 2.26 | 0.59 |
| 11:AK:21:ILE:HD13 | 11:AK:82:VAL:HG13 | 1.85 | 0.59 |
| 35:BA:1639:U:H2' | 35:BA:1640:C:H5'' | 1.85 | 0.59 |
| 33:B8:14:VAL:HG21 | 33:B8:22:VAL:CG1 | 2.33 | 0.59 |
| 35:BA:969:U:H2' | 35:BA:970:C:C6 | 2.38 | 0.59 |
| 1:CA:1207:G:H2' | 1:CA:1208:C:H6 | 1.68 | 0.59 |
| 35:BA:1547:C:O2' | 35:BA:1548:C:H5' | 2.02 | 0.59 |
| 1:AA:52:G:H2' | 1:AA:53:A:H8 | 1.68 | 0.59 |
| 38:DD:53:PHE:CD1 | 38:DD:220:HIS:HA | 2.38 | 0.59 |
| 1:CA:630:G:H2' | 1:CA:631:G:H5'' | 1.85 | 0.59 |
| 13:AM:40:ASN:O | 13:AM:43:THR:HG23 | 2.03 | 0.59 |
| 1:AA:668:G:O2' | 15:AO:46:HIS:HB3 | 2.03 | 0.59 |
| 54:DX:66:LEU:C | 54:DX:66:LEU:HD23 | 2.22 | 0.59 |
| 46:DP:48:PRO:O | 46:DP:50:ARG:N | 2.36 | 0.59 |
| 49:BS:93:LYS:O | 49:BS:93:LYS:HG3 | 2.03 | 0.59 |
| 35:DA:1887:C:C3' | 35:DA:1888:G:H5'' | 2.32 | 0.59 |
| 55:BY:95:LYS:CG | 55:BY:100:ALA:HA | 2.32 | 0.59 |
| 51:BU:64:ARG:NH2 | 51:BU:64:ARG:HG2 | 2.18 | 0.59 |
| 35:DA:1171:G:H5' | 35:DA:1173:G:OP1 | 2.02 | 0.59 |
| 5:AE:79:GLU:HB3 | 5:AE:92:LYS:CG | 2.33 | 0.59 |
| 13:AM:65:LYS:C | 13:AM:66:LEU:HG | 2.24 | 0.59 |
| 41:BG:39:ILE:HD13 | 41:BG:155:MET:CE | 2.33 | 0.59 |
| 4:CD:31:CYS:C | 4:CD:33:MET:N | 2.54 | 0.59 |
| 10:AJ:80:LYS:HE3 | 10:AJ:80:LYS:O | 2.03 | 0.59 |
| 38:DD:243:GLY:O | 38:DD:244:ARG:HB3 | 2.02 | 0.59 |
| 35:BA:1786:A:C2 | 35:BA:2606:C:H1' | 2.37 | 0.59 |
| 23:AW:56:C:C3' | 23:AW:57:G:H5'' | 2.32 | 0.59 |
| 35:DA:2262:U:H2' | 35:DA:2263:C:C5' | 2.32 | 0.59 |
| 47:DQ:43:THR:OG1 | 47:DQ:45:GLN:HG2 | 2.02 | 0.59 |
| 25:B0:53:MET:HB3 | 25:B0:59:LEU:HD23 | 1.84 | 0.59 |
| 10:CJ:16:LEU:HD23 | 10:CJ:94:VAL:HG13 | 1.85 | 0.59 |
| 19:CS:40:ILE:HG12 | 19:CS:71:LEU:HD23 | 1.84 | 0.59 |
| 47:BQ:12:GLN:HE21 | 47:BQ:73:PRO:HD3 | 1.67 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 50:BT:23:ARG:HG2 | 50:BT:120:ARG:NH1 | 2.18 | 0.59 |
| 38:DD:130:ALA:HA | 38:DD:192:THR:HA | 1.84 | 0.59 |
| 1:AA:1391:U:H2' | 1:AA:1392:G:C8 | 2.37 | 0.59 |
| 43:DI:12:LEU:HD23 | 43:DI:12:LEU:H | 1.68 | 0.59 |
| 1:AA:1004:A:H2' | 1:AA:1005:A:H5' | 1.85 | 0.59 |
| 1:CA:1243:C:OP2 | 21:CU:10:ARG:CZ | 2.51 | 0.59 |
| 1:CA:274:A:H4' | 1:CA:275:G:OP1 | 2.03 | 0.59 |
| 1:CA:950:U:H2' | 1:CA:951:G:H8 | 1.67 | 0.59 |
| 35:BA:523:C:C2' | 35:BA:524:U:H5' | 2.33 | 0.59 |
| 7:AG:57:GLU:CD | 7:AG:57:GLU:H | 2.07 | 0.59 |
| 26:D1:5:CYS:SG | 26:D1:62:VAL:HG23 | 2.42 | 0.59 |
| 1:CA:429:U:H1' | 1:CA:430:A:H5'' | 1.85 | 0.59 |
| 4:AD:162:LEU:HD13 | 4:AD:181:MET:HG2 | 1.85 | 0.59 |
| 7:CG:62:PHE:O | 7:CG:66:VAL:HG23 | 2.02 | 0.59 |
| 1:CA:554:C:H2' | 1:CA:555:C:H6 | 1.66 | 0.59 |
| 35:BA:1755:A:H2' | 35:BA:1756:G:H5' | 1.85 | 0.59 |
| 26:D1:35:THR:OG1 | 35:DA:2079:U:O3' | 2.20 | 0.59 |
| 1:CA:1084:G:H5' | 1:CA:1102:A:OP2 | 2.03 | 0.59 |
| 10:AJ:92:THR:HG23 | 10:AJ:93:GLY:H | 1.66 | 0.59 |
| 4:AD:209:ARG:HG3 | 4:AD:209:ARG:HH11 | 1.67 | 0.59 |
| 35:DA:1045:A:H2' | 35:DA:1045:A:N3 | 2.18 | 0.59 |
| 49:DS:48:LEU:N | 49:DS:48:LEU:HD12 | 2.18 | 0.59 |
| 35:DA:1037:G:H1 | 35:DA:1118:C:H42 | 1.50 | 0.59 |
| 22:CY:15:G:H22 | 22:CY:59:U:H3 | 1.50 | 0.59 |
| 40:DF:24:LEU:CD1 | 40:DF:25:PRO:HD3 | 2.30 | 0.58 |
| 46:DP:9:ASN:O | 46:DP:11:GLY:N | 2.35 | 0.58 |
| 31:B6:15:GLU:CG | 31:B6:18:ARG:HH21 | 2.16 | 0.58 |
| 2:CB:68:ILE:HG12 | 2:CB:90:MET:HE1 | 1.85 | 0.58 |
| 35:BA:1171:G:H5' | 35:BA:1173:G:OP1 | 2.03 | 0.58 |
| 38:DD:35:LYS:HE3 | 38:DD:36:PRO:CA | 2.33 | 0.58 |
| 3:AC:76:VAL:HG21 | 3:AC:103:VAL:HG11 | 1.83 | 0.58 |
| 7:AG:79:ARG:HH11 | 7:AG:79:ARG:HG3 | 1.68 | 0.58 |
| 41:BG:112:PRO:C | 41:BG:113:ARG:CA | 2.66 | 0.58 |
| 55:DY:16:ALA:HA | 55:DY:21:LYS:HD2 | 1.84 | 0.58 |
| 35:BA:588:U:O5' | 35:BA:588:U:H6 | 1.86 | 0.58 |
| 35:DA:1141:U:H2' | 44:DN:63:THR:HG21 | 1.84 | 0.58 |
| 35:BA:481:G:H1' | 35:BA:506:G:H21 | 1.65 | 0.58 |
| 15:CO:76:GLU:O | 15:CO:78:TYR:N | 2.36 | 0.58 |
| 15:CO:82:ILE:O | 15:CO:82:ILE:HD13 | 2.03 | 0.58 |
| 15:CO:78:TYR:OH | 15:CO:88:ARG:HD2 | 2.02 | 0.58 |
| 35:DA:922:U:H2' | 35:DA:923:C:C6 | 2.38 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:1300:U:H1' | 35:BA:1626:G:C2 | 2.38 | 0.58 |
| 45:BO:77:ILE:HD12 | 50:BT:73:GLU:O | 2.03 | 0.58 |
| 1:AA:977:A:C2' | 1:AA:978:A:H5' | 2.32 | 0.58 |
| 16:AP:20:VAL:HG21 | 16:AP:32:TYR:HB3 | 1.85 | 0.58 |
| 7:CG:20:ASP:HB3 | 7:CG:23:VAL:CG2 | 2.30 | 0.58 |
| 22:AY:6:G:O2' | 22:AY:7:A:H5' | 2.03 | 0.58 |
| 4:AD:119:GLN:HG3 | 4:AD:123:HIS:HD2 | 1.67 | 0.58 |
| 28:D3:19:GLN:HE22 | 28:D3:52:HIS:CE1 | 2.19 | 0.58 |
| 25:D0:51:VAL:CG2 | 25:D0:81:VAL:HG23 | 2.33 | 0.58 |
| 2:AB:178:ARG:HH22 | 2:AB:196:LEU:C | 2.05 | 0.58 |
| 26:B1:46:LEU:HB3 | 26:B1:63:ALA:HA | 1.85 | 0.58 |
| 22:AY:9:A:C8 | 22:AY:46:G:N2 | 2.71 | 0.58 |
| 46:BP:62:LEU:CD2 | 46:BP:62:LEU:H | 2.16 | 0.58 |
| 54:BX:8:ILE:H | 54:BX:8:ILE:HD12 | 1.67 | 0.58 |
| 27:D2:32:LEU:HA | 27:D2:53:LEU:HD13 | 1.85 | 0.58 |
| 7:AG:121:ALA:O | 7:AG:125:MET:HG3 | 2.03 | 0.58 |
| 35:DA:1339:G:H21 | 35:DA:1603:A:H1' | 1.67 | 0.58 |
| 35:DA:438:G:O2' | 35:DA:440:G:H5' | 2.04 | 0.58 |
| 49:BS:105:ALA:C | 49:BS:107:GLU:H | 2.05 | 0.58 |
| 1:CA:1016:A:H2' | 1:CA:1017:G:O4' | 2.03 | 0.58 |
| 39:DE:154:LYS:HG2 | 39:DE:156:MET:HE3 | 1.84 | 0.58 |
| 35:DA:614(C):A:O2' | 35:DA:615:G:O4' | 2.20 | 0.58 |
| 52:BV:38:LEU:C | 52:BV:39:LEU:HD13 | 2.24 | 0.58 |
| 44:BN:120:LEU:CD1 | 44:BN:122:VAL:HG23 | 2.33 | 0.58 |
| 35:BA:614(C):A:O2' | 35:BA:615:G:O4' | 2.21 | 0.58 |
| 55:DY:28:LYS:O | 55:DY:38:ILE:HB | 2.02 | 0.58 |
| 55:BY:29:GLU:N | 55:BY:29:GLU:CD | 2.56 | 0.58 |
| 35:BA:907:U:OP1 | 47:BQ:24:GLY:N | 2.36 | 0.58 |
| 56:DZ:165:VAL:HG12 | 56:DZ:166:SER:N | 2.10 | 0.58 |
| 10:AJ:6:ILE:CD1 | 10:AJ:72:VAL:HB | 2.30 | 0.58 |
| 35:BA:142:A:H5'' | 35:BA:142(A):C:H5 | 1.68 | 0.58 |
| 41:DG:68:PRO:HB2 | 41:DG:90:LEU:HD21 | 1.84 | 0.58 |
| 42:DH:85:LYS:HD2 | 42:DH:141:VAL:CG1 | 2.31 | 0.58 |
| 13:AM:90:LEU:O | 13:AM:92:HIS:N | 2.35 | 0.58 |
| 13:AM:89:GLY:O | 13:AM:92:HIS:HB2 | 2.02 | 0.58 |
| 27:D2:18:PRO:CG | 27:D2:19:VAL:H | 2.11 | 0.58 |
| 13:CM:39:ILE:HD12 | 13:CM:56:LEU:HD23 | 1.84 | 0.58 |
| 1:CA:977:A:C2' | 1:CA:978:A:H5' | 2.33 | 0.58 |
| 54:BX:34:ALA:HA | 54:BX:38:GLU:OE1 | 2.03 | 0.58 |
| 1:CA:255:G:H2' | 1:CA:256:U:C6 | 2.38 | 0.58 |
| 55:DY:31:LEU:CD2 | 55:DY:31:LEU:N | 2.66 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 46:BP:144:GLU:N | 46:BP:145:PRO:CD | 2.65 | 0.58 |
| 8:CH:7:ALA:CB | 8:CH:85:ARG:HG3 | 2.33 | 0.58 |
| 19:AS:39:THR:HG22 | 19:AS:40:ILE:N | 2.16 | 0.58 |
| 3:AC:53:ALA:O | 3:AC:54:ARG:HB2 | 2.03 | 0.58 |
| 50:DT:107:ASP:CG | 50:DT:108:ARG:N | 2.56 | 0.58 |
| 1:CA:818:G:O2' | 1:CA:819:A:H5'' | 2.03 | 0.58 |
| 48:DR:83:ILE:O | 48:DR:86:ARG:HG3 | 2.03 | 0.58 |
| 35:DA:850:C:O2' | 35:DA:851:U:H5' | 2.01 | 0.58 |
| 4:AD:196:LEU:N | 4:AD:196:LEU:HD12 | 2.17 | 0.58 |
| 6:CF:19:LEU:HD11 | 6:CF:59:TYR:CE2 | 2.38 | 0.58 |
| 35:BA:1952:A:C4 | 45:BO:22:ILE:HD12 | 2.37 | 0.58 |
| 13:CM:116:THR:HG22 | 13:CM:117:VAL:N | 2.18 | 0.58 |
| 35:DA:709:U:H2' | 35:DA:710:G:C8 | 2.37 | 0.58 |
| 7:AG:113:GLU:CG | 7:AG:119:ARG:HG2 | 2.33 | 0.58 |
| 1:CA:333:G:H4' | 20:CT:16:HIS:CE1 | 2.37 | 0.58 |
| 6:AF:97:PHE:O | 18:AR:31:LEU:HD23 | 2.02 | 0.58 |
| 35:DA:2547:U:H2' | 35:DA:2548:G:C8 | 2.38 | 0.58 |
| 35:DA:706:A:C2 | 35:DA:707:G:H1' | 2.39 | 0.58 |
| 22:AV:25:C:O2' | 22:AV:26:A:H5' | 2.03 | 0.58 |
| 1:AA:493:G:HO2' | 1:AA:494:U:H6 | 1.49 | 0.58 |
| 6:AF:22:GLU:O | 6:AF:26:ILE:HG13 | 2.03 | 0.58 |
| 47:DQ:59:ARG:HG3 | 47:DQ:59:ARG:HH11 | 1.67 | 0.58 |
| 35:DA:2203:U:H1' | 38:DD:151:LYS:HE3 | 1.85 | 0.58 |
| 34:D9:4:ARG:HB2 | 35:DA:2466:C:OP1 | 2.04 | 0.58 |
| 1:CA:1223:C:OP2 | 1:CA:1224:G:H2' | 2.03 | 0.58 |
| 6:AF:67:MET:HB2 | 6:AF:68:PRO:HD2 | 1.85 | 0.58 |
| 13:CM:106:ASN:O | 13:CM:107:ALA:CB | 2.50 | 0.58 |
| 10:CJ:92:THR:HG23 | 10:CJ:93:GLY:H | 1.68 | 0.58 |
| 56:DZ:94:GLU:O | 56:DZ:96:VAL:HG23 | 2.03 | 0.58 |
| 31:B6:17:LYS:C | 31:B6:18:ARG:HD3 | 2.23 | 0.58 |
| 18:CR:37:VAL:CG2 | 18:CR:38:GLU:H | 2.09 | 0.58 |
| 39:BE:67:PHE:HD2 | 39:BE:68:ALA:H | 1.51 | 0.58 |
| 44:DN:40:PRO:O | 51:DU:64:ARG:HG3 | 2.03 | 0.58 |
| 1:CA:1313:U:H2' | 1:CA:1314:C:H6 | 1.67 | 0.58 |
| 37:BC:36:LYS:HG3 | 37:BC:37:PHE:N | 2.17 | 0.58 |
| 35:BA:271(P):C:H5' | 43:BI:46:ALA:HB2 | 1.85 | 0.58 |
| 5:CE:10:MET:HA | 5:CE:32:VAL:HA | 1.85 | 0.58 |
| 44:BN:67:LEU:HB3 | 44:BN:88:GLU:HG2 | 1.84 | 0.58 |
| 4:CD:138:TYR:CD2 | 4:CD:138:TYR:C | 2.77 | 0.58 |
| 19:CS:62:ILE:HG13 | 19:CS:63:THR:H | 1.67 | 0.58 |
| 16:CP:8:ARG:CG | 16:CP:9:PHE:N | 2.66 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:675:A:OP1 | 40:DF:63:LYS:HE2 | 2.03 | 0.58 |
| 38:DD:154:LYS:C | 38:DD:155:LEU:HD12 | 2.23 | 0.58 |
| 23:CW:55:U:C6 | 23:CW:57:G:H5' | 2.38 | 0.58 |
| 35:BA:1332:G:H22 | 35:BA:1609:A:C2' | 2.16 | 0.58 |
| 13:CM:110:ARG:HH11 | 13:CM:110:ARG:HG2 | 1.69 | 0.58 |
| 3:CC:172:ARG:NH1 | 3:CC:172:ARG:HB3 | 2.18 | 0.58 |
| 16:CP:19:ILE:HG22 | 16:CP:36:ILE:HG13 | 1.85 | 0.58 |
| 46:DP:70:GLN:HB3 | 46:DP:72:PRO:HD2 | 1.85 | 0.58 |
| 9:CI:3:GLN:CG | 9:CI:20:ARG:HH12 | 2.15 | 0.58 |
| 20:AT:81:LYS:O | 20:AT:85:MET:HG2 | 2.02 | 0.58 |
| 45:DO:104:ARG:HE | 50:DT:33:LYS:HD2 | 1.68 | 0.58 |
| 1:CA:339:C:H2' | 1:CA:340:U:H6 | 1.69 | 0.58 |
| 2:AB:97:TRP:CZ3 | 2:AB:173:ALA:HA | 2.39 | 0.58 |
| 48:BR:81:ASP:O | 48:BR:82:GLU:HB2 | 2.03 | 0.58 |
| 14:CN:2:ALA:O | 14:CN:6:LEU:HD12 | 2.02 | 0.58 |
| 5:AE:144:THR:O | 5:AE:148:VAL:HG23 | 2.03 | 0.58 |
| 3:AC:24:ALA:HB1 | 3:AC:28:GLN:O | 2.03 | 0.58 |
| 1:AA:501:C:H2' | 1:AA:502:G:C8 | 2.37 | 0.58 |
| 1:AA:1062:U:H2' | 1:AA:1063:C:C6 | 2.38 | 0.58 |
| 7:CG:6:ARG:HH21 | 7:CG:94:ARG:HH22 | 1.50 | 0.58 |
| 23:AW:14:A:H3' | 23:AW:15:G:H8 | 1.69 | 0.58 |
| 42:BH:80:SER:O | 42:BH:81:GLU:HB2 | 2.02 | 0.58 |
| 35:DA:270:A:O2' | 35:DA:271:A:H5' | 2.03 | 0.58 |
| 1:CA:678:U:H2' | 1:CA:679:C:C6 | 2.38 | 0.58 |
| 19:CS:58:VAL:O | 19:CS:58:VAL:HG23 | 2.02 | 0.58 |
| 35:DA:1921:G:O2' | 35:DA:1922:G:H5' | 2.03 | 0.58 |
| 1:AA:630:G:H2' | 1:AA:631:G:H5'' | 1.84 | 0.58 |
| 9:AI:88:TYR:O | 9:AI:89:ASN:HB2 | 2.02 | 0.58 |
| 1:CA:1442(B):A:N1 | 50:DT:118:ARG:NH2 | 2.51 | 0.58 |
| 2:AB:223:ILE:CG2 | 2:AB:226:ARG:HH21 | 2.14 | 0.58 |
| 9:CI:78:LYS:HE3 | 9:CI:101:PHE:CE2 | 2.38 | 0.58 |
| 55:DY:81:LYS:HB2 | 55:DY:96:ILE:CG2 | 2.34 | 0.58 |
| 1:CA:954:G:H21 | 1:CA:1227:A:H62 | 1.50 | 0.58 |
| 13:AM:67:GLU:OE2 | 13:AM:71:ARG:NH2 | 2.36 | 0.58 |
| 10:CJ:48:THR:CA | 10:CJ:62:HIS:HB3 | 2.28 | 0.58 |
| 35:BA:2491:U:O2' | 35:BA:2492:U:H5' | 2.03 | 0.58 |
| 55:DY:39:VAL:O | 55:DY:40:GLU:CD | 2.42 | 0.58 |
| 1:CA:1270:C:O2' | 1:CA:1271:G:H5' | 2.02 | 0.58 |
| 41:BG:108:ASN:C | 41:BG:112:PRO:HG2 | 2.23 | 0.58 |
| 33:D8:50:LEU:O | 33:D8:52:LYS:N | 2.37 | 0.58 |
| 44:DN:128:HIS:NE2 | 44:DN:134:ARG:HD3 | 2.18 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:BG:18:GLU:OE1 | 41:BG:22:ARG:HD2 | 2.03 | 0.58 |
| 51:DU:31:SER:C | 51:DU:33:ARG:H | 2.07 | 0.58 |
| 38:BD:28:GLU:N | 38:BD:29:PRO:CD | 2.66 | 0.58 |
| 25:B0:51:VAL:CG2 | 25:B0:81:VAL:HG23 | 2.34 | 0.58 |
| 2:AB:178:ARG:HH21 | 8:AH:74:PRO:HG3 | 1.68 | 0.58 |
| 3:CC:153:VAL:CG1 | 3:CC:196:LEU:HD12 | 2.33 | 0.58 |
| 31:D6:32:ASN:O | 31:D6:33:LYS:HB2 | 2.02 | 0.58 |
| 15:CO:39:LEU:HD12 | 15:CO:59:MET:HE2 | 1.84 | 0.58 |
| 35:BA:2369:A:O2' | 35:BA:2370:G:H5' | 2.03 | 0.58 |
| 56:BZ:87:ASP:OD2 | 56:BZ:87:ASP:N | 2.36 | 0.58 |
| 30:D5:58:LEU:CD1 | 30:D5:58:LEU:H | 2.16 | 0.58 |
| 36:DB:105:A:H2' | 36:DB:106:G:O4' | 2.03 | 0.58 |
| 1:CA:1228:C:H2' | 1:CA:1229:A:H8 | 1.69 | 0.58 |
| 5:AE:16:THR:O | 5:AE:17:ALA:HB2 | 2.03 | 0.58 |
| 1:CA:545:C:O2' | 1:CA:546:G:H5' | 2.04 | 0.58 |
| 13:AM:106:ASN:O | 13:AM:107:ALA:CB | 2.51 | 0.58 |
| 50:BT:67:SER:O | 50:BT:68:TYR:HB2 | 2.03 | 0.58 |
| 1:CA:1391:U:H2' | 1:CA:1392:G:C8 | 2.37 | 0.58 |
| 35:DA:2777:G:H5'' | 35:DA:2778:A:C5' | 2.33 | 0.58 |
| 8:CH:16:ALA:HB2 | 8:CH:24:THR:OG1 | 2.04 | 0.58 |
| 40:DF:1:MET:O | 40:DF:3:GLU:N | 2.36 | 0.58 |
| 31:B6:15:GLU:OE1 | 31:B6:18:ARG:CG | 2.51 | 0.58 |
| 55:BY:81:LYS:HB2 | 55:BY:96:ILE:CG2 | 2.34 | 0.58 |
| 35:DA:2402:C:H2' | 35:DA:2403:C:H5' | 1.86 | 0.58 |
| 2:CB:91:PRO:N | 2:CB:154:LEU:HD12 | 2.18 | 0.58 |
| 50:DT:84:GLN:O | 50:DT:85:LYS:HB2 | 2.03 | 0.58 |
| 1:CA:1054:C:N4 | 22:CY:34:G:H1' | 2.19 | 0.58 |
| 38:BD:35:LYS:HE3 | 38:BD:36:PRO:CA | 2.33 | 0.58 |
| 51:BU:74:LEU:HD12 | 51:BU:74:LEU:O | 2.04 | 0.58 |
| 50:BT:13:ARG:NH1 | 50:BT:15:VAL:HG22 | 2.19 | 0.58 |
| 3:AC:83:ARG:HG2 | 3:AC:83:ARG:HH11 | 1.68 | 0.58 |
| 46:BP:30:THR:CG2 | 46:BP:31:ALA:H | 1.98 | 0.58 |
| 33:D8:61:LEU:HD12 | 33:D8:63:PRO:CD | 2.33 | 0.58 |
| 35:BA:2491:U:C5' | 35:BA:2570:G:H5'' | 2.25 | 0.58 |
| 46:DP:105:LEU:HD12 | 46:DP:105:LEU:N | 2.18 | 0.58 |
| 33:B8:4:MET:HE2 | 35:BA:593:G:O4' | 2.04 | 0.58 |
| 54:DX:35:THR:HG22 | 54:DX:36:LYS:N | 2.18 | 0.58 |
| 50:BT:57:PHE:O | 50:BT:59:THR:HG22 | 2.03 | 0.58 |
| 35:DA:405:U:H3' | 35:DA:406:G:H5' | 1.86 | 0.58 |
| 42:BH:85:LYS:HD2 | 42:BH:141:VAL:CG1 | 2.31 | 0.58 |
| 15:AO:82:ILE:HG12 | 15:AO:87:ILE:HB | 1.85 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BA:2146:C:H4' | 35:BA:2147:G:C8 | 2.39 | 0.58 |
| 43:DI:123:LEU:HD11 | 43:DI:144:VAL:CG1 | 2.33 | 0.58 |
| 18:AR:74:ARG:HB3 | 18:AR:81:PHE:CE1 | 2.39 | 0.58 |
| 2:AB:167:PRO:HG3 | 2:AB:188:ALA:HB2 | 1.86 | 0.58 |
| 39:DE:101:ARG:CZ | 39:DE:171:GLU:HB2 | 2.34 | 0.58 |
| 50:BT:125:ARG:CZ | 50:BT:125:ARG:HA | 2.32 | 0.58 |
| 25:D0:53:MET:HB3 | 25:D0:59:LEU:HD23 | 1.86 | 0.58 |
| 47:DQ:132:VAL:CB | 56:DZ:81:ARG:NH1 | 2.66 | 0.58 |
| 8:CH:122:ARG:HH11 | 8:CH:122:ARG:CB | 2.16 | 0.58 |
| 45:BO:49:ARG:NH1 | 45:BO:49:ARG:HG2 | 2.19 | 0.58 |
| 12:CL:70:ILE:CD1 | 12:CL:77:LEU:HD12 | 2.34 | 0.58 |
| 13:CM:118:ALA:HB3 | 22:CV:29:G:H5'' | 1.85 | 0.58 |
| 55:BY:2:ARG:C | 55:BY:4:LYS:H | 2.06 | 0.58 |
| 1:CA:1239:A:H2' | 1:CA:1298:C:H42 | 1.67 | 0.58 |
| 1:CA:474:G:H2' | 1:CA:475:G:C8 | 2.39 | 0.58 |
| 30:B5:58:LEU:H | 30:B5:58:LEU:CD1 | 2.15 | 0.58 |
| 1:CA:597:G:H2' | 1:CA:598:U:H5' | 1.85 | 0.58 |
| 19:CS:51:VAL:O | 19:CS:58:VAL:HG22 | 2.03 | 0.58 |
| 35:DA:1336:A:H2' | 35:DA:1337:G:H8 | 1.68 | 0.58 |
| 4:CD:150:GLU:HA | 4:CD:153:ARG:HD2 | 1.86 | 0.58 |
| 20:CT:32:ALA:O | 20:CT:36:LEU:HB2 | 2.02 | 0.58 |
| 41:BG:51:ARG:N | 41:BG:51:ARG:HE | 2.01 | 0.58 |
| 2:AB:51:LEU:HB3 | 2:AB:55:PHE:CE2 | 2.39 | 0.58 |
| 50:DT:82:LEU:O | 50:DT:84:GLN:N | 2.37 | 0.58 |
| 5:AE:81:GLU:HB3 | 5:AE:88:LYS:HZ1 | 1.69 | 0.58 |
| 13:AM:19:LEU:CB | 13:AM:25:ILE:HG21 | 2.34 | 0.58 |
| 13:CM:66:LEU:N | 13:CM:70:LEU:HB2 | 2.18 | 0.58 |
| 4:AD:20:TYR:HA | 4:AD:26:CYS:SG | 2.44 | 0.58 |
| 5:CE:103:GLY:O | 5:CE:106:PRO:HD2 | 2.04 | 0.58 |
| 22:AY:42:C:H3' | 22:AY:43:C:H5'' | 1.84 | 0.58 |
| 10:CJ:80:LYS:HE3 | 10:CJ:80:LYS:O | 2.03 | 0.58 |
| 36:BB:52:A:H62 | 49:BS:33:LYS:HG2 | 1.67 | 0.58 |
| 49:BS:65:VAL:O | 49:BS:67:ARG:N | 2.37 | 0.58 |
| 35:BA:1777:U:O2' | 35:BA:1778:U:H5' | 2.04 | 0.58 |
| 43:DI:61:ARG:HB3 | 43:DI:133:HIS:NE2 | 2.18 | 0.58 |
| 35:DA:158:U:H4' | 35:DA:171:G:C8 | 2.38 | 0.58 |
| 50:BT:50:ILE:CD1 | 50:BT:64:ARG:HB3 | 2.33 | 0.58 |
| 35:DA:1403:C:H5'' | 35:DA:1471:A:C1' | 2.31 | 0.58 |
| 42:DH:89:ILE:H | 42:DH:89:ILE:HD12 | 1.69 | 0.58 |
| 35:DA:1040:C:N4 | 35:DA:1115:G:H1 | 2.00 | 0.58 |
| 25:B0:55:ARG:HG3 | 35:BA:2365:G:OP1 | 2.03 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:B5:43:HIS:HA | 35:BA:2884:U:H5 | 1.69 | 0.58 |
| 16:CP:4:ILE:HA | 16:CP:20:VAL:O | 2.04 | 0.58 |
| 55:DY:2:ARG:C | 55:DY:4:LYS:H | 2.07 | 0.58 |
| 18:CR:53:ARG:HE | 18:CR:59:SER:C | 2.07 | 0.58 |
| 15:AO:39:LEU:HD12 | 15:AO:59:MET:HE1 | 1.86 | 0.58 |
| 50:BT:129:ARG:NH1 | 50:BT:131:ALA:HB3 | 2.18 | 0.58 |
| 1:AA:1320:C:H5' | 19:AS:70:LYS:HG2 | 1.84 | 0.58 |
| 15:CO:36:ILE:HG23 | 15:CO:56:LEU:HD11 | 1.85 | 0.58 |
| 1:CA:1208:C:H2' | 1:CA:1209:C:C6 | 2.38 | 0.58 |
| 11:AK:105:VAL:O | 11:AK:107:SER:N | 2.37 | 0.58 |
| 7:CG:120:ILE:O | 7:CG:124:LEU:HD12 | 2.04 | 0.58 |
| 32:D7:28:ARG:NH2 | 35:DA:1368:G:OP1 | 2.37 | 0.58 |
| 44:DN:96:GLU:H | 44:DN:96:GLU:CD | 2.07 | 0.58 |
| 1:CA:1401:G:H2' | 1:CA:1402:C:O4' | 2.03 | 0.58 |
| 35:BA:2516:G:C5 | 35:BA:2517:C:C4 | 2.92 | 0.58 |
| 7:AG:6:ARG:HH21 | 7:AG:94:ARG:HH22 | 1.50 | 0.58 |
| 35:BA:1688:U:O2 | 35:BA:1700:A:H5' | 2.04 | 0.58 |
| 2:AB:16:HIS:CD2 | 2:AB:210:SER:HA | 2.39 | 0.58 |
| 33:D8:15:LYS:HB2 | 46:DP:65:ARG:HH12 | 1.67 | 0.58 |
| 50:DT:46:GLU:CD | 50:DT:88:ILE:HD11 | 2.24 | 0.58 |
| 50:BT:89:VAL:HG12 | 50:BT:91:ARG:HG3 | 1.86 | 0.58 |
| 41:DG:72:ARG:NH1 | 41:DG:86:MET:HG2 | 2.16 | 0.58 |
| 42:DH:71:LEU:N | 42:DH:74:ASN:HD22 | 2.00 | 0.58 |
| 38:BD:35:LYS:HD3 | 38:BD:36:PRO:HD3 | 1.84 | 0.58 |
| 39:DE:93:VAL:HG11 | 39:DE:181:LEU:O | 2.03 | 0.58 |
| 35:DA:1798:U:H5'' | 38:DD:260:ARG:HB3 | 1.86 | 0.58 |
| 13:AM:19:LEU:HB3 | 13:AM:25:ILE:HG21 | 1.84 | 0.58 |
| 41:DG:113:ARG:HG2 | 41:DG:113:ARG:HH11 | 1.68 | 0.58 |
| 38:BD:267:SER:O | 38:BD:269:PHE:N | 2.36 | 0.58 |
| 38:DD:182:LEU:O | 38:DD:271:ILE:HG13 | 2.04 | 0.58 |
| 55:DY:42:VAL:O | 55:DY:64:GLU:HA | 2.04 | 0.58 |
| 1:AA:1363(A):A:C4' | 1:AA:1364:U:H5'' | 2.29 | 0.58 |
| 55:DY:7:VAL:CG2 | 55:DY:8:LYS:HZ3 | 2.15 | 0.58 |
| 38:DD:228:PRO:HD3 | 38:DD:235:GLY:HA3 | 1.86 | 0.58 |
| 35:BA:271(U):G:O2' | 35:BA:271(V):G:H5' | 2.03 | 0.58 |
| 55:BY:31:LEU:CD2 | 55:BY:31:LEU:N | 2.65 | 0.58 |
| 43:DI:132:PRO:HG2 | 43:DI:133:HIS:NE2 | 2.18 | 0.58 |
| 1:CA:1030(D):A:H2' | 1:CA:1031:G:H5' | 1.85 | 0.58 |
| 41:BG:14:GLU:H | 41:BG:17:PRO:HD2 | 1.68 | 0.58 |
| 35:BA:1040:C:N4 | 35:BA:1115:G:H1 | 2.00 | 0.58 |
| 31:D6:36:LEU:HD13 | 31:D6:50:ARG:HH12 | 1.69 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 26:B1:82:LEU:HB3 | 26:B1:90:ILE:CD1 | 2.32 | 0.58 |
| 1:CA:187:C:H5'' | 20:CT:86:ARG:HG3 | 1.86 | 0.58 |
| 35:BA:2506:U:C3' | 35:BA:2506:U:C6 | 2.87 | 0.58 |
| 35:DA:2815:C:H2' | 35:DA:2816:C:H6 | 1.67 | 0.58 |
| 39:BE:134:ILE:C | 39:BE:134:ILE:HD13 | 2.24 | 0.58 |
| 11:CK:21:ILE:HD13 | 11:CK:82:VAL:HG13 | 1.86 | 0.58 |
| 48:DR:79:LEU:HA | 48:DR:83:ILE:HG13 | 1.85 | 0.58 |
| 26:B1:44:PRO:O | 26:B1:46:LEU:HD13 | 2.04 | 0.58 |
| 1:AA:474:G:H2' | 1:AA:475:G:C8 | 2.38 | 0.58 |
| 35:DA:1652:A:O2' | 35:DA:1653:G:H5' | 2.03 | 0.58 |
| 4:CD:68:TYR:OH | 4:CD:196:LEU:HD21 | 2.03 | 0.58 |
| 55:DY:12:THR:O | 55:DY:75:ILE:HG22 | 2.04 | 0.58 |
| 5:CE:143:ARG:NH1 | 8:CH:77:GLU:OE1 | 2.35 | 0.58 |
| 1:AA:1208:C:H2' | 1:AA:1209:C:C6 | 2.39 | 0.58 |
| 1:CA:291:C:O2' | 1:CA:292:G:H5' | 2.03 | 0.58 |
| 35:BA:1231:G:H2' | 35:BA:1232:G:H8 | 1.69 | 0.58 |
| 19:CS:67:VAL:HG23 | 19:CS:68:GLY:H | 1.68 | 0.58 |
| 38:DD:18:VAL:HG12 | 38:DD:19:ALA:N | 2.17 | 0.58 |
| 1:AA:801:U:H2' | 1:AA:802:A:C8 | 2.39 | 0.58 |
| 9:AI:95:LYS:HD3 | 9:AI:96:LEU:N | 2.18 | 0.58 |
| 31:D6:16:CYS:N | 31:D6:47:THR:HG21 | 2.18 | 0.58 |
| 2:AB:8:LYS:O | 2:AB:12:GLU:HG3 | 2.04 | 0.58 |
| 2:AB:44:LEU:CD1 | 2:AB:44:LEU:H | 2.11 | 0.58 |
| 1:CA:1117:G:O3' | 9:CI:104:ARG:HG3 | 2.03 | 0.58 |
| 49:DS:17:ARG:C | 49:DS:19:LYS:H | 2.06 | 0.58 |
| 38:BD:43:ARG:HB3 | 38:BD:54:ARG:HB2 | 1.84 | 0.58 |
| 47:BQ:140:ALA:HA | 56:BZ:99:TYR:CD1 | 2.38 | 0.58 |
| 39:DE:186:GLY:O | 39:DE:188:VAL:N | 2.36 | 0.58 |
| 39:DE:186:GLY:C | 39:DE:188:VAL:H | 2.06 | 0.58 |
| 3:AC:30:ARG:HH22 | 14:AN:35:ARG:CA | 2.17 | 0.58 |
| 46:DP:114:ILE:O | 46:DP:130:PHE:HA | 2.03 | 0.58 |
| 39:BE:24:THR:CB | 39:BE:186:GLY:HA2 | 2.31 | 0.58 |
| 35:BA:141:A:C8 | 35:BA:1408:C:O2' | 2.51 | 0.58 |
| 47:BQ:41:TRP:HB3 | 47:BQ:94:VAL:HG21 | 1.86 | 0.58 |
| 35:BA:271(Q):G:HO2' | 35:BA:271(R):G:H8 | 1.52 | 0.58 |
| 45:BO:104:ARG:HH12 | 50:BT:35:LYS:HD3 | 1.69 | 0.58 |
| 45:BO:107:ARG:HH11 | 50:BT:36:GLU:H | 1.51 | 0.58 |
| 35:BA:1762:A:O5' | 35:BA:1762:A:H8 | 1.87 | 0.58 |
| 38:BD:26:LYS:HE2 | 38:BD:82:ILE:N | 2.16 | 0.58 |
| 30:D5:2:ALA:HA | 35:DA:2015:A:C1' | 2.32 | 0.58 |
| 35:DA:671:C:OP1 | 46:DP:43:GLY:HA2 | 2.03 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:CD:38:TYR:CD2 | 4:CD:45:GLN:HB3 | 2.38 | 0.58 |
| 45:DO:47:ILE:HG13 | 45:DO:48:PRO:HD2 | 1.86 | 0.58 |
| 35:BA:2195:C:O2' | 35:BA:2196:C:H5' | 2.03 | 0.58 |
| 15:CO:3:ILE:O | 15:CO:3:ILE:HG12 | 2.03 | 0.58 |
| 35:DA:2736:G:H5' | 35:DA:2736:G:C8 | 2.38 | 0.58 |
| 1:AA:1239:A:H2' | 1:AA:1298:C:H42 | 1.67 | 0.58 |
| 11:CK:95:ILE:HD13 | 11:CK:95:ILE:N | 2.19 | 0.58 |
| 35:BA:2347:C:H2' | 35:BA:2348:U:H6 | 1.68 | 0.58 |
| 1:CA:1004:A:H2' | 1:CA:1005:A:H5' | 1.84 | 0.58 |
| 28:D3:17:LYS:HD2 | 28:D3:20:LYS:HD2 | 1.85 | 0.58 |
| 38:BD:210:GLY:C | 38:BD:212:SER:H | 2.07 | 0.58 |
| 1:CA:1466:C:C2' | 1:CA:1467:G:H5' | 2.34 | 0.58 |
| 1:CA:1319:A:P | 19:CS:5:LEU:HD21 | 2.43 | 0.58 |
| 35:BA:1637:A:H4' | 35:BA:2711:A:O2' | 2.03 | 0.58 |
| 8:AH:69:ARG:NH1 | 8:AH:69:ARG:HB2 | 2.18 | 0.58 |
| 1:CA:828:A:H2' | 1:CA:829:G:O4' | 2.03 | 0.58 |
| 35:DA:1740:G:H4' | 35:DA:1741:A:OP1 | 2.03 | 0.58 |
| 4:CD:147:ALA:CB | 4:CD:182:LYS:HB3 | 2.34 | 0.58 |
| 35:DA:2672:G:C3' | 35:DA:2673:G:H5'' | 2.34 | 0.58 |
| 44:BN:28:THR:N | 44:BN:106:MET:HE1 | 2.18 | 0.58 |
| 1:CA:793:U:O2 | 1:CA:1516:G:H4' | 2.04 | 0.58 |
| 4:AD:150:GLU:N | 4:AD:150:GLU:OE1 | 2.34 | 0.58 |
| 22:CV:76:8AN:H2' | 35:DA:2602:A:N6 | 2.19 | 0.58 |
| 35:DA:1844:C:O2' | 35:DA:1845:G:H5' | 2.04 | 0.58 |
| 44:BN:96:GLU:H | 44:BN:96:GLU:CD | 2.05 | 0.58 |
| 35:BA:2771:C:H2' | 35:BA:2772:C:C6 | 2.38 | 0.58 |
| 4:AD:147:ALA:HB2 | 4:AD:182:LYS:HB3 | 1.84 | 0.58 |
| 1:AA:678:U:H2' | 1:AA:679:C:C6 | 2.38 | 0.58 |
| 11:AK:74:ALA:C | 11:AK:76:GLY:H | 2.06 | 0.58 |
| 51:DU:8:VAL:HG11 | 51:DU:12:ARG:CZ | 2.34 | 0.58 |
| 42:BH:155:SER:O | 42:BH:156:ALA:HB3 | 2.03 | 0.58 |
| 35:DA:2236:C:H2' | 35:DA:2237:G:H5' | 1.85 | 0.58 |
| 37:DC:193:ILE:O | 37:DC:197:GLU:N | 2.36 | 0.58 |
| 11:CK:74:ALA:C | 11:CK:76:GLY:H | 2.07 | 0.58 |
| 2:AB:55:PHE:HA | 2:AB:58:ILE:HG12 | 1.86 | 0.58 |
| 35:DA:2334:G:C4 | 49:DS:15:ARG:NH1 | 2.71 | 0.58 |
| 50:BT:28:VAL:HG13 | 50:BT:46:GLU:CA | 2.25 | 0.58 |
| 35:DA:1685:C:H2' | 35:DA:1686:C:C5' | 2.25 | 0.58 |
| 51:DU:66:ASN:HB2 | 51:DU:76:TYR:HB2 | 1.86 | 0.58 |
| 35:BA:2645:G:C3' | 35:BA:2646:C:H5' | 2.27 | 0.58 |
| 35:DA:2543:G:H2' | 35:DA:2544:G:H8 | 1.69 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 10:AJ:27:ALA:HA | 10:AJ:30:SER:OG | 2.04 | 0.58 |
| 46:BP:114:ILE:O | 46:BP:130:PHE:HA | 2.04 | 0.58 |
| 30:B5:7:PRO:HA | 35:BA:2615:U:C2 | 2.38 | 0.58 |
| 43:BI:77:LEU:CD1 | 43:BI:101:LEU:HD13 | 2.29 | 0.58 |
| 33:B8:62:LEU:N | 33:B8:63:PRO:HD2 | 2.18 | 0.58 |
| 35:DA:1019:U:H3 | 35:DA:1142(A):A:H62 | 1.52 | 0.58 |
| 41:DG:63:ILE:HG13 | 41:DG:64:THR:N | 2.19 | 0.58 |
| 45:BO:35:VAL:HG21 | 45:BO:69:ILE:CD1 | 2.34 | 0.58 |
| 55:DY:46:LYS:N | 55:DY:62:GLU:HG2 | 2.18 | 0.58 |
| 25:D0:43:THR:H | 35:DA:2331:G:H4' | 1.68 | 0.58 |
| 30:D5:7:PRO:HG2 | 35:DA:2016:U:O2 | 2.04 | 0.58 |
| 56:BZ:117:LEU:HD13 | 56:BZ:144:LEU:HG | 1.85 | 0.58 |
| 39:BE:30:PRO:O | 39:BE:32:PRO:HD3 | 2.04 | 0.58 |
| 1:CA:728:A:H2' | 1:CA:729:A:C8 | 2.37 | 0.58 |
| 43:BI:81:VAL:HG11 | 43:BI:88:ILE:HD13 | 1.84 | 0.58 |
| 43:BI:92:VAL:CG1 | 43:BI:120:ILE:HD12 | 2.32 | 0.58 |
| 56:DZ:81:ARG:HG3 | 56:DZ:81:ARG:O | 2.04 | 0.58 |
| 13:CM:88:ARG:HA | 13:CM:98:VAL:CG1 | 2.34 | 0.58 |
| 46:DP:71:VAL:HG13 | 46:DP:72:PRO:CD | 2.33 | 0.58 |
| 35:DA:541:C:H2' | 35:DA:542:C:C6 | 2.38 | 0.58 |
| 1:AA:625:G:H4' | 16:AP:16:HIS:CD2 | 2.39 | 0.58 |
| 11:AK:21:ILE:HG12 | 11:AK:94:ALA:HB1 | 1.86 | 0.58 |
| 8:AH:119:LEU:HD12 | 8:AH:124:ALA:CA | 2.34 | 0.58 |
| 22:AY:68:C:H2' | 22:AY:69:G:H8 | 1.68 | 0.58 |
| 25:B0:6:GLY:O | 25:B0:7:LEU:HG | 2.03 | 0.58 |
| 1:AA:1442:G:N7 | 1:AA:1442(B):A:C2 | 2.71 | 0.58 |
| 1:CA:1195:C:H2' | 1:CA:1197:G:O4' | 2.03 | 0.58 |
| 4:CD:196:LEU:HD12 | 4:CD:196:LEU:N | 2.18 | 0.58 |
| 35:BA:642:G:H21 | 35:BA:646:A:H2 | 1.50 | 0.58 |
| 1:CA:1228:C:P | 13:CM:108:ARG:HH22 | 2.27 | 0.58 |
| 44:DN:29:LYS:O | 44:DN:33:LEU:HB2 | 2.04 | 0.58 |
| 1:AA:243:A:O2' | 1:AA:244:U:OP2 | 2.22 | 0.58 |
| 35:BA:2672:G:C3' | 35:BA:2673:G:H5'' | 2.34 | 0.58 |
| 6:CF:91:VAL:HG12 | 6:CF:92:LYS:O | 2.03 | 0.58 |
| 35:DA:443:A:H1' | 35:DA:1201:C:O4' | 2.04 | 0.58 |
| 1:AA:948:C:C5 | 13:AM:106:ASN:ND2 | 2.72 | 0.58 |
| 35:DA:2777:G:H5'' | 35:DA:2778:A:H5'' | 1.86 | 0.58 |
| 23:CW:50:U:O2' | 23:CW:51:U:H5' | 2.04 | 0.58 |
| 1:CA:801:U:H2' | 1:CA:802:A:C8 | 2.39 | 0.58 |
| 8:CH:5:PRO:O | 8:CH:8:ASP:HB3 | 2.03 | 0.58 |
| 35:DA:1448:G:H2' | 35:DA:1449:A:C8 | 2.39 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:828:A:H2' | 1:AA:829:G:O4' | 2.03 | 0.58 |
| 1:AA:568:G:N7 | 12:AL:5:PRO:HD3 | 2.18 | 0.58 |
| 50:BT:78:LEU:O | 50:BT:78:LEU:HD23 | 2.04 | 0.58 |
| 1:AA:1116:C:H3' | 1:AA:1117:G:H5'' | 1.84 | 0.58 |
| 35:BA:2415:G:H4' | 46:BP:67:MET:H | 1.68 | 0.58 |
| 13:CM:65:LYS:O | 13:CM:66:LEU:HG | 2.03 | 0.58 |
| 41:DG:111:LEU:O | 41:DG:112:PRO:O | 2.21 | 0.58 |
| 35:BA:1685:C:H2' | 35:BA:1686:C:C5' | 2.26 | 0.58 |
| 1:AA:1319:A:P | 19:AS:5:LEU:HD21 | 2.44 | 0.58 |
| 35:DA:1697:G:C3' | 35:DA:1698:A:H5'' | 2.28 | 0.58 |
| 46:DP:34:GLY:O | 46:DP:35:HIS:CB | 2.52 | 0.58 |
| 55:BY:46:LYS:HD3 | 55:BY:47:LYS:NZ | 2.19 | 0.58 |
| 55:DY:45:VAL:HG13 | 55:DY:60:PHE:O | 2.04 | 0.58 |
| 50:BT:64:ARG:HA | 50:BT:72:VAL:O | 2.03 | 0.58 |
| 1:AA:579:G:C5' | 1:AA:728:A:H1' | 2.33 | 0.58 |
| 47:DQ:45:GLN:O | 47:DQ:49:ALA:HB2 | 2.04 | 0.58 |
| 43:DI:92:VAL:HG12 | 43:DI:120:ILE:HB | 1.84 | 0.58 |
| 18:AR:50:ILE:HD11 | 18:AR:74:ARG:NH1 | 2.19 | 0.58 |
| 3:AC:52:LEU:CD2 | 3:AC:52:LEU:H | 2.16 | 0.58 |
| 47:DQ:63:LYS:HZ3 | 56:DZ:175:VAL:HB | 1.67 | 0.58 |
| 5:CE:6:PHE:HB3 | 5:CE:35:GLY:O | 2.04 | 0.58 |
| 38:DD:210:GLY:C | 38:DD:212:SER:N | 2.57 | 0.58 |
| 1:CA:264:U:O2' | 17:CQ:64:PRO:HB2 | 2.03 | 0.58 |
| 11:AK:27:ASN:HB2 | 11:AK:55:LYS:HE2 | 1.85 | 0.58 |
| 35:DA:1637:A:H4' | 35:DA:2711:A:O2' | 2.04 | 0.58 |
| 1:CA:200:G:N2 | 1:CA:201:C:H1' | 2.19 | 0.58 |
| 48:BR:33:ARG:O | 48:BR:34:ILE:HD13 | 2.03 | 0.58 |
| 4:CD:150:GLU:OE1 | 4:CD:150:GLU:N | 2.32 | 0.58 |
| 1:AA:1207:G:H2' | 1:AA:1208:C:C6 | 2.39 | 0.58 |
| 1:AA:1468:A:H2' | 1:AA:1469:G:O4' | 2.03 | 0.58 |
| 35:DA:1146:C:O2' | 35:DA:1147:C:H5' | 2.04 | 0.58 |
| 1:CA:1525:G:H2' | 1:CA:1526:G:C8 | 2.39 | 0.58 |
| 1:AA:5:U:N3 | 4:AD:86:LYS:HE2 | 2.19 | 0.58 |
| 1:AA:671:G:O2' | 1:AA:672:U:H5' | 2.04 | 0.58 |
| 2:AB:75:LYS:HA | 2:AB:78:GLN:HB2 | 1.86 | 0.58 |
| 51:BU:59:ARG:O | 51:BU:63:VAL:HG23 | 2.03 | 0.58 |
| 13:CM:100:GLY:O | 13:CM:101:GLN:HG3 | 2.04 | 0.58 |
| 35:DA:1863:G:H2' | 35:DA:1864:U:O4' | 2.03 | 0.58 |
| 35:DA:861:A:H2' | 35:DA:862:G:O4' | 2.04 | 0.58 |
| 9:AI:17:VAL:HG13 | 9:AI:81:ILE:HD13 | 1.84 | 0.57 |
| 9:CI:17:VAL:HG13 | 9:CI:81:ILE:HD13 | 1.85 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 50:BT:82:LEU:C | 50:BT:84:GLN:H | 2.06 | 0.57 |
| 52:BV:5:VAL:HG21 | 52:BV:35:LEU:HG | 1.85 | 0.57 |
| 39:BE:53:PRO:O | 39:BE:54:GLN:O | 2.22 | 0.57 |
| 13:AM:25:ILE:HD11 | 13:AM:66:LEU:CD2 | 2.35 | 0.57 |
| 13:CM:82:MET:HG2 | 13:CM:82:MET:O | 2.04 | 0.57 |
| 44:DN:42:TRP:CE3 | 44:DN:48:MET:HE1 | 2.39 | 0.57 |
| 35:BA:2469:A:O2' | 47:BQ:56:ARG:HD3 | 2.04 | 0.57 |
| 1:CA:1363(A):A:C4' | 1:CA:1364:U:H5'' | 2.29 | 0.57 |
| 1:AA:1270:C:O2' | 1:AA:1271:G:H5' | 2.03 | 0.57 |
| 10:CJ:37:PRO:HA | 10:CJ:72:VAL:HG22 | 1.85 | 0.57 |
| 46:DP:96:THR:O | 46:DP:100:LEU:HD23 | 2.04 | 0.57 |
| 47:BQ:43:THR:OG1 | 47:BQ:45:GLN:HG2 | 2.04 | 0.57 |
| 55:BY:45:VAL:HG13 | 55:BY:60:PHE:O | 2.04 | 0.57 |
| 32:D7:11:LYS:HE2 | 35:DA:686:G:C5' | 2.32 | 0.57 |
| 35:BA:285:C:H2' | 35:BA:286:C:H5'' | 1.86 | 0.57 |
| 35:DA:2133:G:H2' | 35:DA:2157:G:N2 | 2.19 | 0.57 |
| 25:B0:36:ILE:HD12 | 25:B0:37:LEU:N | 2.19 | 0.57 |
| 12:CL:62:SER:O | 12:CL:64:TYR:HD1 | 1.87 | 0.57 |
| 1:AA:1104:G:O5' | 2:AB:111:ARG:HD2 | 2.04 | 0.57 |
| 35:BA:2443:C:H2' | 35:BA:2444:G:H8 | 1.69 | 0.57 |
| 17:CQ:59:ILE:CG2 | 17:CQ:71:PHE:HB3 | 2.33 | 0.57 |
| 8:CH:12:ARG:HD3 | 8:CH:25:ASP:O | 2.04 | 0.57 |
| 7:CG:50:ILE:O | 7:CG:54:THR:HG22 | 2.03 | 0.57 |
| 34:B9:24:TYR:O | 34:B9:25:VAL:HG23 | 2.04 | 0.57 |
| 47:BQ:109:VAL:HG12 | 47:BQ:110:THR:N | 2.19 | 0.57 |
| 35:BA:1799:G:H5' | 35:BA:1819:A:N6 | 2.19 | 0.57 |
| 30:D5:20:ARG:NH1 | 53:DW:15:ARG:NH1 | 2.52 | 0.57 |
| 1:AA:542:G:H5' | 4:AD:41:GLY:HA3 | 1.85 | 0.57 |
| 1:AA:165:C:H2' | 1:AA:166:G:H8 | 1.68 | 0.57 |
| 11:CK:57:THR:HG23 | 11:CK:58:PRO:HD2 | 1.84 | 0.57 |
| 14:AN:23:ARG:NH1 | 14:AN:30:ALA:HB2 | 2.18 | 0.57 |
| 35:BA:1740:G:H4' | 35:BA:1741:A:OP1 | 2.04 | 0.57 |
| 7:CG:57:GLU:CD | 7:CG:57:GLU:H | 2.07 | 0.57 |
| 1:CA:552:U:O2' | 1:CA:553:A:H5' | 2.04 | 0.57 |
| 35:DA:2619:C:H1' | 39:DE:156:MET:HE1 | 1.86 | 0.57 |
| 47:DQ:59:ARG:O | 47:DQ:60:ARG:HB2 | 2.04 | 0.57 |
| 35:DA:874:G:O2' | 35:DA:875:G:H5' | 2.04 | 0.57 |
| 35:DA:1755:A:H2' | 35:DA:1756:G:H5' | 1.86 | 0.57 |
| 35:BA:1924:C:H2' | 35:BA:1925:C:H6 | 1.67 | 0.57 |
| 35:BA:2223:G:H2' | 35:BA:2224:G:H5' | 1.86 | 0.57 |
| 36:BB:45:A:OP2 | 41:BG:96:ARG:NH2 | 2.37 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:CG:121:ALA:O | 7:CG:125:MET:HG3 | 2.03 | 0.57 |
| 53:DW:84:ARG:HB2 | 53:DW:96:ILE:CG2 | 2.34 | 0.57 |
| 25:B0:4:LYS:O | 25:B0:5:LYS:HB2 | 2.04 | 0.57 |
| 4:CD:162:LEU:HD13 | 4:CD:181:MET:HG2 | 1.85 | 0.57 |
| 35:DA:361:G:H2' | 35:DA:362:U:H5'' | 1.86 | 0.57 |
| 6:CF:97:PHE:O | 18:CR:31:LEU:HD23 | 2.04 | 0.57 |
| 35:BA:2680:C:H5' | 39:BE:189:PRO:HA | 1.85 | 0.57 |
| 35:BA:102:G:OP1 | 35:BA:102:G:H4' | 2.03 | 0.57 |
| 1:CA:1504:G:C8 | 1:CA:1504:G:H5' | 2.39 | 0.57 |
| 38:BD:110:GLY:O | 38:BD:112:GLN:HG3 | 2.03 | 0.57 |
| 46:DP:59:LEU:CA | 46:DP:61:ARG:CZ | 2.67 | 0.57 |
| 40:BF:116:ASP:OD1 | 40:BF:119:ARG:NH2 | 2.36 | 0.57 |
| 50:BT:27:THR:CG2 | 50:BT:28:VAL:H | 2.06 | 0.57 |
| 33:B8:13:ARG:HD2 | 46:BP:61:ARG:HH11 | 1.69 | 0.57 |
| 55:DY:95:LYS:HE2 | 55:DY:100:ALA:CB | 2.34 | 0.57 |
| 39:BE:108:SER:O | 39:BE:162:ALA:HA | 2.04 | 0.57 |
| 5:AE:76:ILE:HG23 | 5:AE:142:LEU:HD13 | 1.85 | 0.57 |
| 51:DU:55:ARG:HA | 51:DU:58:ARG:CG | 2.34 | 0.57 |
| 20:AT:54:LYS:HA | 20:AT:57:ARG:NH2 | 2.18 | 0.57 |
| 5:AE:10:MET:HA | 5:AE:32:VAL:HA | 1.86 | 0.57 |
| 5:CE:103:GLY:O | 5:CE:105:VAL:N | 2.37 | 0.57 |
| 1:CA:1126:U:O2' | 1:CA:1127:G:H5' | 2.03 | 0.57 |
| 42:BH:68:THR:O | 42:BH:70:THR:O | 2.22 | 0.57 |
| 43:DI:72:LEU:HD21 | 43:DI:107:VAL:HG21 | 1.86 | 0.57 |
| 22:AV:67:C:H2' | 22:AV:68:C:C6 | 2.38 | 0.57 |
| 49:DS:69:VAL:O | 49:DS:72:ALA:HB3 | 2.03 | 0.57 |
| 55:BY:7:VAL:CB | 55:BY:8:LYS:NZ | 2.67 | 0.57 |
| 25:B0:43:THR:H | 35:BA:2331:G:H4' | 1.68 | 0.57 |
| 41:BG:22:ARG:NH1 | 41:BG:22:ARG:HB3 | 2.19 | 0.57 |
| 1:AA:1030(D):A:H2' | 1:AA:1031:G:H5' | 1.86 | 0.57 |
| 19:CS:13:ASP:O | 19:CS:15:LEU:N | 2.36 | 0.57 |
| 26:B1:67:ILE:N | 26:B1:68:PRO:HD2 | 2.19 | 0.57 |
| 35:DA:1116:C:H2' | 35:DA:1117:G:H5' | 1.86 | 0.57 |
| 39:DE:101:ARG:NH1 | 39:DE:169:ASN:HD22 | 1.99 | 0.57 |
| 1:AA:376:G:H5'' | 16:AP:5:ARG:HB2 | 1.85 | 0.57 |
| 44:BN:23:LEU:N | 44:BN:23:LEU:HD23 | 2.16 | 0.57 |
| 26:B1:26:ARG:NH2 | 35:BA:389:G:H5'' | 2.18 | 0.57 |
| 37:BC:40:THR:HG21 | 37:BC:215:THR:CB | 2.34 | 0.57 |
| 56:BZ:145:GLU:HG3 | 56:BZ:146:ILE:HG12 | 1.86 | 0.57 |
| 8:CH:119:LEU:HD12 | 8:CH:124:ALA:CA | 2.33 | 0.57 |
| 2:CB:178:ARG:O | 8:CH:71:GLY:HA2 | 2.04 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 44:DN:28:THR:HG22 | 44:DN:29:LYS:N | 2.20 | 0.57 |
| 35:BA:709:U:H2' | 35:BA:710:G:C8 | 2.39 | 0.57 |
| 4:AD:61:LYS:HA | 4:AD:203:VAL:HG22 | 1.85 | 0.57 |
| 35:DA:782:A:H5' | 35:DA:783:A:C2 | 2.39 | 0.57 |
| 35:BA:1448:G:H2' | 35:BA:1449:A:C8 | 2.39 | 0.57 |
| 1:CA:665:A:H2' | 1:CA:725:G:N2 | 2.19 | 0.57 |
| 5:CE:144:THR:O | 5:CE:148:VAL:HG23 | 2.04 | 0.57 |
| 35:DA:176:G:O2' | 35:DA:177:G:H5' | 2.04 | 0.57 |
| 35:DA:445:C:O2' | 35:DA:446:G:H5' | 2.04 | 0.57 |
| 7:AG:60:LYS:NZ | 7:AG:64:GLN:HB2 | 2.18 | 0.57 |
| 1:AA:1053:G:N7 | 1:AA:1199:U:H3' | 2.19 | 0.57 |
| 1:AA:1054:C:N4 | 22:AY:34:G:H1' | 2.19 | 0.57 |
| 2:CB:212:GLN:HG3 | 2:CB:235:SER:HB2 | 1.86 | 0.57 |
| 35:BA:1593:G:H2' | 35:BA:1594:G:H5'' | 1.85 | 0.57 |
| 44:DN:2:LYS:O | 44:DN:4:TYR:CZ | 2.57 | 0.57 |
| 51:DU:88:ILE:O | 51:DU:88:ILE:HG13 | 2.03 | 0.57 |
| 51:DU:92:ARG:HB2 | 51:DU:92:ARG:CZ | 2.32 | 0.57 |
| 49:DS:65:VAL:O | 49:DS:67:ARG:N | 2.38 | 0.57 |
| 30:B5:2:ALA:HA | 35:BA:2015:A:C1' | 2.30 | 0.57 |
| 20:CT:71:THR:HG22 | 20:CT:72:LEU:N | 2.19 | 0.57 |
| 27:D2:21:LEU:HD12 | 27:D2:64:LEU:HG | 1.85 | 0.57 |
| 13:CM:89:GLY:O | 13:CM:92:HIS:HB2 | 2.03 | 0.57 |
| 35:DA:1762:A:H8 | 35:DA:1762:A:O5' | 1.85 | 0.57 |
| 17:CQ:67:LYS:HA | 17:CQ:70:ARG:HH12 | 1.70 | 0.57 |
| 15:AO:76:GLU:O | 15:AO:78:TYR:N | 2.37 | 0.57 |
| 41:BG:121:ASN:C | 41:BG:121:ASN:HD22 | 2.06 | 0.57 |
| 10:AJ:8:LEU:HD23 | 10:AJ:95:GLU:O | 2.05 | 0.57 |
| 42:DH:25:LYS:HB3 | 42:DH:32:GLU:OE2 | 2.05 | 0.57 |
| 7:AG:20:ASP:HB3 | 7:AG:23:VAL:CG2 | 2.33 | 0.57 |
| 1:AA:880:C:OP2 | 12:AL:6:THR:HG21 | 2.03 | 0.57 |
| 5:CE:76:ILE:HG23 | 5:CE:142:LEU:HD13 | 1.87 | 0.57 |
| 28:B3:19:GLN:HE22 | 28:B3:52:HIS:CE1 | 2.18 | 0.57 |
| 9:AI:116:LYS:O | 9:AI:118:LYS:N | 2.38 | 0.57 |
| 35:BA:484:C:H2' | 35:BA:485:C:H6 | 1.70 | 0.57 |
| 2:CB:178:ARG:HH21 | 8:CH:74:PRO:HG3 | 1.68 | 0.57 |
| 35:DA:969:U:H2' | 35:DA:970:C:C6 | 2.39 | 0.57 |
| 30:D5:20:ARG:NH1 | 35:DA:1266:G:OP2 | 2.37 | 0.57 |
| 45:BO:26:LYS:HB2 | 45:BO:30:ALA:CB | 2.35 | 0.57 |
| 17:AQ:76:LEU:HG | 17:AQ:77:VAL:N | 2.19 | 0.57 |
| 9:AI:26:VAL:HG13 | 9:AI:61:ALA:O | 2.04 | 0.57 |
| 19:CS:24:ALA:O | 19:CS:25:LYS:HB2 | 2.04 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:DZ:31:ARG:HD2 | 56:DZ:32:HIS:CE1 | 2.39 | 0.57 |
| 48:DR:26:LYS:HE2 | 48:DR:71:GLN:H | 1.69 | 0.57 |
| 49:BS:48:LEU:N | 49:BS:48:LEU:HD12 | 2.18 | 0.57 |
| 2:CB:75:LYS:HA | 2:CB:78:GLN:HB2 | 1.87 | 0.57 |
| 53:DW:22:ASP:HA | 53:DW:25:ARG:HH12 | 1.69 | 0.57 |
| 35:DA:2707:G:H2' | 35:DA:2708:G:H8 | 1.69 | 0.57 |
| 56:DZ:52:SER:OG | 56:DZ:53:ILE:HD12 | 2.04 | 0.57 |
| 31:B6:15:GLU:HG3 | 31:B6:47:THR:OG1 | 2.04 | 0.57 |
| 5:CE:101:ILE:HG12 | 5:CE:119:LEU:HA | 1.85 | 0.57 |
| 39:BE:70:ALA:O | 39:BE:71:GLY:C | 2.41 | 0.57 |
| 7:CG:79:ARG:HH11 | 7:CG:79:ARG:HG3 | 1.69 | 0.57 |
| 5:AE:93:PRO:HA | 5:AE:118:ILE:HD12 | 1.85 | 0.57 |
| 13:CM:7:VAL:HG22 | 41:DG:115:ARG:HA | 1.86 | 0.57 |
| 55:DY:38:ILE:HG22 | 55:DY:39:VAL:N | 2.19 | 0.57 |
| 35:BA:2732:G:C2' | 35:BA:2733:A:H5' | 2.33 | 0.57 |
| 46:BP:101:VAL:HG12 | 46:BP:107:LYS:H | 1.68 | 0.57 |
| 46:DP:101:VAL:C | 46:DP:103:ALA:H | 2.08 | 0.57 |
| 22:AV:68:C:C3' | 22:AV:69:G:H5'' | 2.33 | 0.57 |
| 45:BO:105:GLU:HA | 45:BO:108:GLU:CD | 2.24 | 0.57 |
| 33:B8:61:LEU:HD12 | 33:B8:63:PRO:CD | 2.34 | 0.57 |
| 20:CT:26:ASN:HB3 | 20:CT:71:THR:OG1 | 2.04 | 0.57 |
| 35:DA:941:A:H4' | 46:DP:35:HIS:NE2 | 2.19 | 0.57 |
| 15:CO:76:GLU:C | 15:CO:78:TYR:H | 2.07 | 0.57 |
| 35:DA:152:G:H1 | 35:DA:174:C:N4 | 1.95 | 0.57 |
| 38:DD:26:LYS:HE2 | 38:DD:82:ILE:N | 2.17 | 0.57 |
| 35:DA:2808:U:O2' | 35:DA:2809:A:H5' | 2.03 | 0.57 |
| 13:AM:82:MET:HG2 | 13:AM:82:MET:O | 2.03 | 0.57 |
| 1:CA:511:C:H1' | 4:CD:43:HIS:NE2 | 2.17 | 0.57 |
| 6:AF:99:ALA:HB1 | 18:AR:23:LYS:NZ | 2.19 | 0.57 |
| 55:BY:43:ASN:O | 55:BY:44:ILE:C | 2.41 | 0.57 |
| 40:DF:83:PHE:O | 40:DF:85:GLY:N | 2.37 | 0.57 |
| 55:BY:2:ARG:N | 55:BY:4:LYS:HG2 | 2.19 | 0.57 |
| 21:CU:9:ARG:O | 21:CU:13:ILE:HG13 | 2.05 | 0.57 |
| 1:AA:1442(A):G:H3' | 1:AA:1442(A):G:OP2 | 2.04 | 0.57 |
| 54:BX:84:ALA:HB3 | 54:BX:87:GLN:OE1 | 2.05 | 0.57 |
| 1:CA:1439:C:H42 | 1:CA:1462:G:H1 | 1.52 | 0.57 |
| 1:AA:200:G:N2 | 1:AA:201:C:H1' | 2.20 | 0.57 |
| 16:AP:82:GLN:NE2 | 16:AP:82:GLN:N | 2.53 | 0.57 |
| 35:BA:1844:C:H2' | 35:BA:1845:G:H8 | 1.69 | 0.57 |
| 1:CA:67:C:H2' | 1:CA:68:G:C8 | 2.39 | 0.57 |
| 6:AF:91:VAL:HG11 | 18:AR:72:ARG:NH1 | 2.19 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:2828:C:O2' | 35:DA:2829:C:H5' | 2.04 | 0.57 |
| 7:CG:60:LYS:NZ | 7:CG:64:GLN:HB2 | 2.19 | 0.57 |
| 42:BH:118:PRO:HG2 | 42:BH:121:ILE:HB | 1.85 | 0.57 |
| 42:BH:137:ASP:OD1 | 42:BH:138:LYS:N | 2.37 | 0.57 |
| 1:AA:1206:G:H4' | 3:AC:192:THR:O | 2.04 | 0.57 |
| 1:AA:1223:C:OP2 | 1:AA:1224:G:H2' | 2.04 | 0.57 |
| 1:CA:591:U:H2' | 1:CA:592:G:C8 | 2.39 | 0.57 |
| 35:BA:869:G:O2' | 35:BA:870:A:H5' | 2.03 | 0.57 |
| 1:CA:1231:G:O2' | 1:CA:1232:U:H5' | 2.04 | 0.57 |
| 1:CA:543:C:H2' | 1:CA:544:G:H8 | 1.69 | 0.57 |
| 54:BX:71:GLY:C | 54:BX:72:LYS:HD2 | 2.24 | 0.57 |
| 50:DT:89:VAL:HG21 | 50:DT:91:ARG:NH2 | 2.20 | 0.57 |
| 51:BU:92:ARG:HG2 | 51:BU:92:ARG:HH11 | 1.67 | 0.57 |
| 39:DE:93:VAL:HG12 | 39:DE:175:VAL:HG23 | 1.86 | 0.57 |
| 38:DD:31:LYS:HZ2 | 38:DD:94:LEU:HD11 | 1.69 | 0.57 |
| 5:AE:101:ILE:N | 5:AE:101:ILE:HD13 | 2.19 | 0.57 |
| 55:BY:38:ILE:C | 55:BY:39:VAL:HG23 | 2.24 | 0.57 |
| 29:B4:39:ARG:C | 29:B4:40:ILE:HD12 | 2.25 | 0.57 |
| 23:AW:68:C:O2' | 23:AW:69:G:H5' | 2.05 | 0.57 |
| 22:CY:43:C:OP2 | 22:CY:43:C:H4' | 2.04 | 0.57 |
| 49:BS:35:ILE:H | 49:BS:53:SER:HB3 | 1.70 | 0.57 |
| 44:DN:67:LEU:HB3 | 44:DN:88:GLU:HG2 | 1.86 | 0.57 |
| 20:AT:71:THR:HG22 | 20:AT:72:LEU:N | 2.19 | 0.57 |
| 44:DN:17:ASP:OD1 | 44:DN:56:ASN:HB3 | 2.04 | 0.57 |
| 45:BO:88:ASN:ND2 | 45:BO:90:GLN:HB2 | 2.13 | 0.57 |
| 15:CO:74:ASP:C | 15:CO:76:GLU:H | 2.07 | 0.57 |
| 46:DP:125:VAL:O | 46:DP:145:PRO:HD2 | 2.05 | 0.57 |
| 35:DA:848:G:H8 | 35:DA:848:G:H5' | 1.69 | 0.57 |
| 1:CA:389:A:H2' | 1:CA:390:C:C5' | 2.34 | 0.57 |
| 35:BA:2069:G:H2' | 35:BA:2070:G:H5' | 1.85 | 0.57 |
| 16:AP:19:ILE:HG22 | 16:AP:36:ILE:HG13 | 1.86 | 0.57 |
| 31:B6:36:LEU:HD13 | 31:B6:50:ARG:HH12 | 1.68 | 0.57 |
| 1:CA:353:A:H5' | 1:CA:353:A:C8 | 2.34 | 0.57 |
| 2:CB:97:TRP:CZ3 | 2:CB:173:ALA:HA | 2.40 | 0.57 |
| 7:AG:37:ASN:ND2 | 9:AI:40:LEU:HA | 2.19 | 0.57 |
| 35:DA:2369:A:O2' | 35:DA:2370:G:H5' | 2.05 | 0.57 |
| 35:BA:549:G:H2' | 35:BA:551:G:O4' | 2.05 | 0.57 |
| 13:AM:91:ARG:NH1 | 19:AS:81:ARG:NH2 | 2.52 | 0.57 |
| 16:CP:20:VAL:HG21 | 16:CP:32:TYR:HB3 | 1.86 | 0.57 |
| 35:BA:2175:C:C1' | 37:BC:215:THR:HA | 2.33 | 0.57 |
| 47:BQ:18:LYS:N | 47:BQ:18:LYS:HD2 | 2.18 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1203:C:H2' | 1:AA:1204:A:H8 | 1.69 | 0.57 |
| 42:BH:41:MET:SD | 42:BH:55:PRO:HD3 | 2.45 | 0.57 |
| 47:BQ:137:TYR:N | 47:BQ:137:TYR:HD2 | 1.98 | 0.57 |
| 35:DA:1639:U:O2' | 35:DA:1640:C:H5'' | 2.04 | 0.57 |
| 8:AH:123:GLU:O | 8:AH:126:LYS:HB3 | 2.04 | 0.57 |
| 1:CA:1226:C:O2' | 13:CM:111:LYS:NZ | 2.37 | 0.57 |
| 1:AA:189(K):U:H2' | 1:AA:189(L):G:C8 | 2.39 | 0.57 |
| 1:AA:243:A:H4' | 1:AA:244:U:C5' | 2.34 | 0.57 |
| 52:BV:87:HIS:NE2 | 52:BV:89:GLN:HG2 | 2.19 | 0.57 |
| 44:DN:90:MET:HB3 | 44:DN:98:VAL:HG22 | 1.84 | 0.57 |
| 35:BA:1925:C:O2' | 35:BA:1926:U:H5' | 2.04 | 0.57 |
| 35:BA:1709:U:H2' | 35:BA:1710:C:C6 | 2.38 | 0.57 |
| 35:BA:1350:C:O2' | 35:BA:1351:C:H5' | 2.04 | 0.57 |
| 35:DA:320:A:H2' | 40:DF:136:THR:HG21 | 1.87 | 0.57 |
| 53:BW:82:LEU:HD12 | 53:BW:98:LYS:O | 2.04 | 0.57 |
| 47:BQ:59:ARG:HG3 | 47:BQ:59:ARG:HH11 | 1.68 | 0.57 |
| 35:DA:986:C:O2' | 35:DA:987:G:H5' | 2.05 | 0.57 |
| 17:CQ:45:HIS:CD2 | 17:CQ:47:PRO:HD3 | 2.39 | 0.57 |
| 26:D1:71:TYR:CE1 | 43:DI:27:ARG:HD2 | 2.39 | 0.57 |
| 1:CA:37:U:O2' | 1:CA:38:G:H5' | 2.05 | 0.57 |
| 6:CF:82:ARG:HB2 | 6:CF:85:VAL:CG2 | 2.34 | 0.57 |
| 35:DA:263:C:H2' | 35:DA:264:C:O4' | 2.05 | 0.57 |
| 1:CA:644:G:H2' | 1:CA:645:C:H5' | 1.86 | 0.57 |
| 35:BA:2818:G:O2' | 35:BA:2819:G:H5' | 2.05 | 0.57 |
| 10:CJ:90:LEU:N | 10:CJ:91:PRO:CD | 2.68 | 0.57 |
| 1:AA:333:G:H4' | 20:AT:16:HIS:CE1 | 2.39 | 0.57 |
| 12:AL:27:LEU:HG | 12:AL:62:SER:OG | 2.04 | 0.57 |
| 41:BG:81:LYS:O | 41:BG:82:LEU:O | 2.23 | 0.57 |
| 2:CB:154:LEU:HD23 | 2:CB:154:LEU:N | 2.20 | 0.57 |
| 6:CF:62:TRP:HB2 | 18:CR:35:ARG:HH12 | 1.69 | 0.57 |
| 39:DE:2:LYS:HE2 | 39:DE:95:ILE:HG22 | 1.85 | 0.57 |
| 3:CC:113:ALA:HA | 3:CC:116:VAL:CG2 | 2.35 | 0.57 |
| 55:BY:28:LYS:N | 55:BY:28:LYS:HZ2 | 2.02 | 0.57 |
| 35:BA:1686:C:H2' | 35:BA:1687:G:O4' | 2.05 | 0.57 |
| 56:BZ:31:ARG:HB2 | 56:BZ:32:HIS:CE1 | 2.40 | 0.57 |
| 55:BY:16:ALA:HA | 55:BY:21:LYS:HD2 | 1.86 | 0.57 |
| 35:BA:2306:C:C5 | 35:BA:2307:G:H1' | 2.40 | 0.57 |
| 35:BA:588:U:H2' | 35:BA:589:C:C6 | 2.40 | 0.57 |
| 27:D2:43:GLN:NE2 | 27:D2:44:LEU:H | 2.02 | 0.57 |
| 35:DA:1019:U:H2' | 35:DA:1020:A:C8 | 2.38 | 0.57 |
| 4:AD:114:ARG:HG3 | 4:AD:114:ARG:NH1 | 2.15 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 56:BZ:47:VAL:HA | 56:BZ:50:GLN:OE1 | 2.04 | 0.57 |
| 35:BA:481:G:O5' | 55:BY:47:LYS:HE2 | 2.05 | 0.57 |
| 35:DA:481:G:O5' | 55:DY:47:LYS:HE2 | 2.03 | 0.57 |
| 35:DA:855:G:H2' | 35:DA:856:C:H6 | 1.68 | 0.57 |
| 38:DD:26:LYS:CD | 38:DD:81:ALA:HB1 | 2.32 | 0.57 |
| 50:BT:106:SER:O | 50:BT:107:ASP:CB | 2.52 | 0.57 |
| 35:BA:808:G:H2' | 35:BA:809:G:C8 | 2.40 | 0.57 |
| 8:CH:85:ARG:HD3 | 8:CH:86:ILE:N | 2.20 | 0.57 |
| 1:CA:580:U:H2' | 1:CA:581:G:O4' | 2.03 | 0.57 |
| 35:BA:1116:C:H2' | 35:BA:1117:G:H5' | 1.87 | 0.57 |
| 1:AA:1439:C:N4 | 1:AA:1462:G:H1 | 2.01 | 0.57 |
| 3:CC:53:ALA:O | 3:CC:54:ARG:HB2 | 2.04 | 0.57 |
| 38:BD:130:ALA:HA | 38:BD:192:THR:HA | 1.86 | 0.57 |
| 20:CT:104:LEU:HD23 | 20:CT:105:SER:H | 1.68 | 0.57 |
| 27:D2:4:SER:O | 27:D2:7:ARG:HG2 | 2.04 | 0.57 |
| 35:DA:2506:U:C6 | 35:DA:2506:U:C3' | 2.87 | 0.57 |
| 38:BD:65:ILE:H | 38:BD:65:ILE:CD1 | 2.17 | 0.57 |
| 23:CW:44:G:H5'' | 23:CW:45:U:OP2 | 2.03 | 0.57 |
| 35:BA:627:A:N7 | 46:BP:84:ASN:ND2 | 2.51 | 0.57 |
| 1:CA:165:C:H2' | 1:CA:166:G:H8 | 1.68 | 0.57 |
| 35:DA:1363:C:H2' | 35:DA:1364:G:C8 | 2.40 | 0.57 |
| 35:BA:2113:U:H2' | 35:BA:2114:A:H8 | 1.69 | 0.57 |
| 56:BZ:59:LEU:CD1 | 56:BZ:69:THR:HG21 | 2.35 | 0.57 |
| 35:DA:2693:A:H2' | 35:DA:2694:G:H8 | 1.69 | 0.57 |
| 4:AD:206:PHE:O | 4:AD:209:ARG:HB2 | 2.05 | 0.57 |
| 1:CA:948:C:C5 | 13:CM:106:ASN:ND2 | 2.72 | 0.57 |
| 1:CA:1504:G:H5' | 1:CA:1504:G:H8 | 1.70 | 0.57 |
| 35:BA:768:G:O2' | 35:BA:1379:A:N6 | 2.37 | 0.57 |
| 35:DA:523:C:C2' | 35:DA:524:U:H5' | 2.34 | 0.57 |
| 36:DB:29:A:H2' | 36:DB:30:C:C6 | 2.40 | 0.57 |
| 51:BU:34:LYS:HA | 51:BU:34:LYS:HE2 | 1.85 | 0.57 |
| 35:BA:247:G:H4' | 35:BA:386:G:C5 | 2.40 | 0.57 |
| 35:BA:438:G:O2' | 35:BA:440:G:H5' | 2.04 | 0.57 |
| 1:AA:1199:U:H4' | 10:AJ:54:PHE:CE1 | 2.40 | 0.57 |
| 31:D6:19:ARG:CG | 31:D6:20:ASN:N | 2.51 | 0.57 |
| 9:CI:63:ILE:HD13 | 9:CI:77:ILE:HG23 | 1.87 | 0.57 |
| 50:BT:28:VAL:HG22 | 50:BT:46:GLU:C | 2.24 | 0.57 |
| 55:DY:96:ILE:HD12 | 55:DY:99:CYS:HB3 | 1.87 | 0.57 |
| 1:CA:1199:U:H4' | 10:CJ:54:PHE:CE1 | 2.39 | 0.57 |
| 1:CA:1054:C:N3 | 22:CY:34:G:H1' | 2.19 | 0.57 |
| 39:DE:67:PHE:HD2 | 39:DE:68:ALA:H | 1.51 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 13:CM:10:PRO:CB | 13:CM:18:ALA:HB1 | 2.34 | 0.57 |
| 10:AJ:33:GLN:N | 10:AJ:75:ILE:HG12 | 2.19 | 0.57 |
| 13:CM:19:LEU:HB3 | 13:CM:25:ILE:HG21 | 1.86 | 0.57 |
| 41:BG:91:ARG:HH11 | 41:BG:91:ARG:HG3 | 1.69 | 0.57 |
| 35:BA:2206:G:H21 | 35:BA:2207:G:C5' | 2.07 | 0.57 |
| 47:BQ:130:LYS:HZ3 | 56:BZ:80:ARG:HD2 | 1.70 | 0.57 |
| 35:DA:626:U:O2 | 46:DP:105:LEU:HG | 2.05 | 0.57 |
| 35:DA:588:U:H2' | 35:DA:589:C:C6 | 2.39 | 0.57 |
| 35:DA:1503:U:H2' | 35:DA:1504:C:H6 | 1.70 | 0.57 |
| 43:BI:81:VAL:O | 43:BI:82:ARG:CB | 2.52 | 0.57 |
| 35:DA:1040:C:H6 | 35:DA:1040:C:OP2 | 1.88 | 0.57 |
| 23:CW:15:G:N2 | 23:CW:59:U:C2 | 2.72 | 0.57 |
| 43:BI:92:VAL:O | 43:BI:92:VAL:HG22 | 2.04 | 0.57 |
| 5:CE:100:VAL:HG22 | 5:CE:118:ILE:HG22 | 1.87 | 0.57 |
| 30:D5:42:PRO:HB2 | 30:D5:43:HIS:CD2 | 2.39 | 0.57 |
| 35:DA:952:G:P | 47:DQ:16:ARG:HH22 | 2.27 | 0.57 |
| 47:DQ:18:LYS:HD2 | 47:DQ:18:LYS:N | 2.20 | 0.57 |
| 34:D9:24:TYR:O | 34:D9:25:VAL:HG23 | 2.04 | 0.57 |
| 35:BA:158:U:H2' | 35:BA:158:U:O2 | 2.04 | 0.57 |
| 35:BA:889:C:H1' | 35:BA:890:A:O4' | 2.04 | 0.57 |
| 1:CA:189(K):U:H2' | 1:CA:189(L):G:C8 | 2.40 | 0.57 |
| 11:AK:33:THR:HB | 11:AK:38:ASN:N | 2.20 | 0.57 |
| 39:BE:34:VAL:HG22 | 39:BE:48:GLN:NE2 | 2.19 | 0.57 |
| 35:DA:102:G:OP1 | 35:DA:102:G:H4' | 2.04 | 0.57 |
| 3:CC:179:ARG:O | 3:CC:179:ARG:HG3 | 2.04 | 0.57 |
| 7:CG:38:LEU:O | 7:CG:42:ILE:HG13 | 2.04 | 0.57 |
| 6:AF:82:ARG:HB2 | 6:AF:85:VAL:CG2 | 2.35 | 0.57 |
| 1:CA:161:A:O2' | 1:CA:162:A:H5' | 2.04 | 0.57 |
| 35:BA:2025:C:H2' | 35:BA:2026:C:C6 | 2.40 | 0.57 |
| 49:DS:105:ALA:C | 49:DS:107:GLU:H | 2.06 | 0.57 |
| 1:CA:636:U:H2' | 1:CA:637:G:H8 | 1.69 | 0.57 |
| 7:CG:73:MET:HG2 | 7:CG:90:GLU:HA | 1.87 | 0.57 |
| 35:BA:207:A:H2' | 35:BA:208:C:O4' | 2.05 | 0.57 |
| 1:AA:312:C:H2' | 1:AA:313:A:C8 | 2.39 | 0.57 |
| 2:CB:183:PRO:HA | 2:CB:198:ASP:OD1 | 2.05 | 0.57 |
| 35:BA:2335:A:O2' | 35:BA:2336:A:H5'' | 2.04 | 0.57 |
| 13:AM:100:GLY:O | 13:AM:101:GLN:HG3 | 2.05 | 0.57 |
| 51:BU:8:VAL:HG11 | 51:BU:12:ARG:CZ | 2.34 | 0.57 |
| 48:BR:100:LEU:HD22 | 48:BR:100:LEU:H | 1.70 | 0.57 |
| 35:DA:1767:C:O2' | 35:DA:1768:U:H5' | 2.04 | 0.57 |
| 35:BA:1434:A:H61 | 35:BA:1558:A:H62 | 1.52 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:DZ:98:MET:O | 56:DZ:98:MET:HG3 | 2.03 | 0.57 |
| 46:DP:63:PRO:C | 46:DP:65:ARG:H | 2.05 | 0.57 |
| 2:AB:212:GLN:HG3 | 2:AB:235:SER:HB2 | 1.86 | 0.57 |
| 9:CI:47:LEU:C | 9:CI:49:PRO:HD2 | 2.25 | 0.57 |
| 35:BA:1171:G:H3' | 35:BA:1173:G:C4' | 2.26 | 0.57 |
| 3:AC:110:ASN:C | 3:AC:112:SER:H | 2.08 | 0.57 |
| 13:AM:20:THR:C | 13:AM:22:ILE:H | 2.08 | 0.57 |
| 35:DA:2206:G:H21 | 35:DA:2207:G:C5' | 2.10 | 0.57 |
| 33:B8:50:LEU:O | 33:B8:52:LYS:N | 2.37 | 0.57 |
| 41:DG:114:ILE:HG12 | 41:DG:140:ILE:HD13 | 1.87 | 0.57 |
| 10:CJ:7:LYS:HD3 | 10:CJ:71:LEU:HD13 | 1.86 | 0.57 |
| 55:BY:42:VAL:HG12 | 55:BY:65:ALA:HB3 | 1.87 | 0.57 |
| 46:BP:34:GLY:O | 46:BP:35:HIS:CB | 2.52 | 0.57 |
| 3:CC:6:HIS:ND1 | 14:CN:49:HIS:HB3 | 2.20 | 0.57 |
| 49:BS:65:VAL:C | 49:BS:67:ARG:N | 2.58 | 0.57 |
| 33:B8:34:TRP:HB2 | 35:BA:2420:C:OP1 | 2.04 | 0.57 |
| 35:DA:2335:A:O2' | 35:DA:2336:A:H5'' | 2.03 | 0.57 |
| 15:AO:73:GLU:O | 15:AO:74:ASP:HB2 | 2.05 | 0.57 |
| 15:AO:76:GLU:C | 15:AO:78:TYR:H | 2.08 | 0.57 |
| 30:D5:7:PRO:HA | 35:DA:2615:U:C2 | 2.39 | 0.57 |
| 1:CA:1162:C:H2' | 1:CA:1163:C:C6 | 2.40 | 0.57 |
| 35:BA:832:G:OP1 | 46:BP:40:SER:HB3 | 2.04 | 0.57 |
| 35:BA:922:U:H2' | 35:BA:923:C:C6 | 2.40 | 0.57 |
| 8:CH:86:ILE:CG2 | 8:CH:133:LEU:HD22 | 2.33 | 0.57 |
| 35:BA:2683:C:P | 50:BT:53:ARG:NH2 | 2.78 | 0.57 |
| 4:AD:13:ARG:HD2 | 4:AD:38:TYR:O | 2.05 | 0.57 |
| 43:BI:81:VAL:HG12 | 43:BI:82:ARG:N | 2.18 | 0.57 |
| 47:DQ:62:GLY:H | 47:DQ:109:VAL:HG22 | 1.69 | 0.57 |
| 35:DA:1332:G:H22 | 35:DA:1609:A:C2' | 2.18 | 0.57 |
| 55:DY:43:ASN:O | 55:DY:44:ILE:C | 2.43 | 0.57 |
| 18:AR:56:THR:HB | 18:AR:58:LEU:CD1 | 2.35 | 0.57 |
| 48:DR:74:LYS:HD2 | 48:DR:77:ARG:NH2 | 2.20 | 0.57 |
| 1:AA:339:C:H2' | 1:AA:340:U:H6 | 1.68 | 0.57 |
| 31:B6:28:ARG:O | 31:B6:32:ASN:CB | 2.52 | 0.57 |
| 35:BA:1042:G:H5' | 35:BA:1043:C:OP2 | 2.05 | 0.57 |
| 30:D5:20:ARG:NH2 | 53:DW:15:ARG:NH1 | 2.53 | 0.57 |
| 1:CA:167:G:H2' | 1:CA:168:G:H8 | 1.70 | 0.57 |
| 35:BA:1355:G:O2' | 35:BA:1356:G:H5' | 2.03 | 0.57 |
| 6:AF:19:LEU:HD11 | 6:AF:59:TYR:CE2 | 2.40 | 0.57 |
| 35:DA:1636:C:H2' | 35:DA:1637:A:C8 | 2.40 | 0.57 |
| 38:BD:221:VAL:HG22 | 38:BD:226:MET:CE | 2.34 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:413:G:N2 | 1:AA:429:U:OP2 | 2.35 | 0.57 |
| 35:DA:2777:G:H4' | 35:DA:2778:A:H5' | 1.86 | 0.57 |
| 1:CA:636:U:H2' | 1:CA:637:G:C8 | 2.40 | 0.57 |
| 1:CA:895:G:H2' | 1:CA:896:C:C6 | 2.40 | 0.57 |
| 2:CB:160:ASP:O | 2:CB:161:ALA:HB2 | 2.04 | 0.57 |
| 46:BP:94:GLU:HG3 | 46:BP:124:LYS:HB3 | 1.87 | 0.57 |
| 19:AS:67:VAL:HG23 | 19:AS:68:GLY:H | 1.69 | 0.57 |
| 53:BW:10:VAL:HG21 | 53:BW:103:ILE:HG13 | 1.86 | 0.57 |
| 30:D5:10:LYS:HB2 | 35:DA:2017:U:O2 | 2.05 | 0.57 |
| 35:BA:2502:G:H5'' | 35:BA:2503:A:H5'' | 1.87 | 0.57 |
| 1:CA:773:G:O2' | 1:CA:774:G:H5' | 2.04 | 0.57 |
| 4:AD:126:ILE:HG22 | 4:AD:127:THR:N | 2.19 | 0.57 |
| 5:CE:16:THR:O | 5:CE:17:ALA:HB2 | 2.04 | 0.57 |
| 34:D9:10:ILE:HD11 | 34:D9:34:GLN:NE2 | 2.19 | 0.57 |
| 1:AA:161:A:O2' | 1:AA:162:A:H5' | 2.05 | 0.57 |
| 50:DT:67:SER:O | 50:DT:68:TYR:HB2 | 2.05 | 0.57 |
| 40:DF:160:ASN:OD1 | 40:DF:163:VAL:HG23 | 2.05 | 0.57 |
| 42:BH:46:GLU:O | 42:BH:47:GLU:HB3 | 2.05 | 0.57 |
| 51:DU:90:VAL:CG1 | 52:DV:39:LEU:HG | 2.35 | 0.57 |
| 35:DA:1593:G:H2' | 35:DA:1594:G:H5'' | 1.86 | 0.57 |
| 55:BY:17:SER:OG | 55:BY:18:GLY:N | 2.36 | 0.57 |
| 1:AA:1126:U:O2' | 1:AA:1127:G:H5' | 2.05 | 0.57 |
| 44:BN:125:GLY:HA3 | 44:BN:126:PRO:C | 2.22 | 0.57 |
| 27:D2:69:ARG:O | 27:D2:70:GLN:CB | 2.52 | 0.57 |
| 41:BG:128:ARG:HB3 | 41:BG:130:ASN:ND2 | 2.20 | 0.57 |
| 4:CD:134:ASP:OD2 | 4:CD:135:LEU:HD22 | 2.04 | 0.57 |
| 35:BA:71:A:H2 | 54:BX:31:HIS:CE1 | 2.22 | 0.57 |
| 23:CW:57:G:H2' | 23:CW:58:A:C5' | 2.35 | 0.57 |
| 50:BT:23:ARG:HB2 | 50:BT:24:PRO:HD2 | 1.86 | 0.57 |
| 54:BX:12:VAL:HG11 | 54:BX:27:THR:OG1 | 2.05 | 0.57 |
| 1:CA:190:U:H2' | 1:CA:191:G:C8 | 2.39 | 0.57 |
| 19:AS:29:ARG:HD2 | 19:AS:30:LEU:H | 1.69 | 0.57 |
| 7:AG:50:ILE:O | 7:AG:54:THR:HG22 | 2.05 | 0.57 |
| 35:DA:549:G:H2' | 35:DA:551:G:O4' | 2.05 | 0.57 |
| 45:DO:107:ARG:HH11 | 50:DT:36:GLU:H | 1.53 | 0.57 |
| 51:BU:13:LYS:HD3 | 51:BU:13:LYS:N | 2.20 | 0.57 |
| 11:AK:95:ILE:HD13 | 11:AK:95:ILE:N | 2.19 | 0.57 |
| 9:AI:3:GLN:CG | 9:AI:20:ARG:HH12 | 2.17 | 0.57 |
| 35:BA:1266:G:O4' | 53:BW:15:ARG:NH2 | 2.37 | 0.57 |
| 8:CH:123:GLU:O | 8:CH:126:LYS:HB3 | 2.04 | 0.57 |
| 35:DA:2113:U:H2' | 35:DA:2114:A:H8 | 1.70 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:1208:C:H2' | 1:CA:1209:C:H6 | 1.70 | 0.57 |
| 1:AA:946:A:H2' | 1:AA:947:G:C8 | 2.40 | 0.57 |
| 35:DA:1336:A:H2' | 35:DA:1337:G:C8 | 2.40 | 0.57 |
| 1:CA:1525:G:H2' | 1:CA:1526:G:H8 | 1.70 | 0.57 |
| 13:CM:100:GLY:C | 13:CM:101:GLN:HG3 | 2.25 | 0.57 |
| 35:DA:2012:G:O2' | 53:DW:96:ILE:HD11 | 2.04 | 0.57 |
| 11:CK:69:ALA:O | 11:CK:73:MET:HG2 | 2.05 | 0.57 |
| 35:DA:1910:G:O2' | 35:DA:1911:U:H5' | 2.04 | 0.57 |
| 35:BA:78:A:H2' | 35:BA:79:G:H8 | 1.69 | 0.57 |
| 35:BA:1863:G:H2' | 35:BA:1864:U:O4' | 2.04 | 0.57 |
| 1:AA:1434:A:C2' | 1:AA:1435:G:H5' | 2.34 | 0.57 |
| 50:DT:95:ARG:HB3 | 50:DT:95:ARG:HH11 | 1.69 | 0.57 |
| 51:DU:44:ASN:ND2 | 52:DV:75:PHE:HB3 | 2.19 | 0.57 |
| 35:DA:78:A:H2' | 35:DA:79:G:H8 | 1.70 | 0.57 |
| 1:AA:665:A:H2' | 1:AA:725:G:N2 | 2.19 | 0.57 |
| 56:DZ:47:VAL:O | 56:DZ:51:ALA:N | 2.37 | 0.57 |
| 35:BA:2334:G:C4 | 49:BS:15:ARG:NH1 | 2.73 | 0.57 |
| 12:AL:62:SER:O | 12:AL:64:TYR:HD1 | 1.87 | 0.57 |
| 2:AB:154:LEU:HD23 | 2:AB:154:LEU:N | 2.19 | 0.57 |
| 2:CB:51:LEU:HB3 | 2:CB:55:PHE:CE2 | 2.39 | 0.57 |
| 50:BT:89:VAL:HG21 | 50:BT:91:ARG:NH2 | 2.20 | 0.57 |
| 1:AA:1276:G:C2' | 1:AA:1277:C:H5' | 2.34 | 0.57 |
| 35:BA:2402:C:H2' | 35:BA:2403:C:H5' | 1.86 | 0.57 |
| 55:DY:95:LYS:CG | 55:DY:100:ALA:HA | 2.35 | 0.57 |
| 1:CA:1276:G:C2' | 1:CA:1277:C:H5' | 2.34 | 0.57 |
| 42:DH:100:GLY:C | 42:DH:102:ALA:H | 2.07 | 0.57 |
| 52:DV:24:LYS:O | 52:DV:25:LEU:HD23 | 2.05 | 0.57 |
| 13:CM:9:ILE:N | 13:CM:9:ILE:HD12 | 2.20 | 0.57 |
| 41:DG:28:VAL:O | 41:DG:31:VAL:HG12 | 2.04 | 0.57 |
| 50:DT:58:ASN:C | 50:DT:58:ASN:HD22 | 2.06 | 0.57 |
| 10:CJ:4:ILE:HG12 | 10:CJ:100:THR:HG21 | 1.85 | 0.57 |
| 27:B2:3:LEU:CD2 | 27:B2:7:ARG:HH12 | 2.11 | 0.57 |
| 15:CO:73:GLU:O | 15:CO:74:ASP:HB2 | 2.04 | 0.57 |
| 35:BA:1598:C:H5' | 54:BX:36:LYS:HB2 | 1.86 | 0.57 |
| 35:DA:158:U:H2' | 35:DA:158:U:O2 | 2.04 | 0.57 |
| 35:BA:2787:C:O2 | 35:BA:2787:C:C2' | 2.52 | 0.57 |
| 35:DA:2146:C:H4' | 35:DA:2147:G:C8 | 2.40 | 0.57 |
| 45:BO:93:PRO:HB3 | 45:BO:114:ILE:CD1 | 2.35 | 0.57 |
| 54:DX:12:VAL:HG11 | 54:DX:27:THR:HG23 | 1.87 | 0.57 |
| 38:DD:28:GLU:N | 38:DD:29:PRO:CD | 2.67 | 0.57 |
| 35:DA:847:U:H2' | 35:DA:848:G:C5' | 2.33 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:CB:171:ALA:HA | 2:CB:174:VAL:CG2 | 2.35 | 0.57 |
| 1:CA:1104:G:O5' | 2:CB:111:ARG:HD2 | 2.05 | 0.57 |
| 43:BI:120:ILE:CG2 | 43:BI:121:LYS:N | 2.68 | 0.57 |
| 26:B1:94:LEU:O | 26:B1:96:LYS:N | 2.38 | 0.57 |
| 5:CE:67:VAL:HG22 | 5:CE:68:GLU:N | 2.20 | 0.57 |
| 30:D5:43:HIS:HA | 35:DA:2884:U:H5 | 1.69 | 0.57 |
| 1:AA:924:C:H2' | 1:AA:925:G:C8 | 2.39 | 0.57 |
| 1:AA:1299:A:C8 | 1:AA:1301:U:H1' | 2.40 | 0.57 |
| 31:D6:28:ARG:O | 31:D6:32:ASN:CB | 2.52 | 0.57 |
| 43:DI:48:GLU:C | 43:DI:50:ARG:H | 2.07 | 0.57 |
| 1:AA:489:C:H2' | 1:AA:490:G:C8 | 2.40 | 0.57 |
| 1:CA:222:U:H2' | 1:CA:223:U:C6 | 2.40 | 0.57 |
| 1:AA:1228:C:O3' | 13:AM:116:THR:HA | 2.05 | 0.57 |
| 1:CA:1000:U:H2' | 1:CA:1001:A:C8 | 2.40 | 0.57 |
| 36:DB:29:A:H2' | 36:DB:30:C:H6 | 1.69 | 0.57 |
| 35:DA:1794:U:H2' | 35:DA:1795:C:H6 | 1.68 | 0.57 |
| 37:DC:128:GLY:C | 37:DC:130:ILE:H | 2.08 | 0.57 |
| 35:DA:2022:U:O2' | 35:DA:2617:C:H5' | 2.05 | 0.57 |
| 35:DA:52:A:O2' | 35:DA:53:A:H5' | 2.05 | 0.57 |
| 8:AH:16:ALA:HB2 | 8:AH:24:THR:OG1 | 2.04 | 0.57 |
| 31:B6:22:ALA:HB2 | 31:B6:39:TYR:CE2 | 2.40 | 0.57 |
| 40:DF:116:ASP:O | 40:DF:120:GLU:HG3 | 2.04 | 0.56 |
| 31:B6:17:LYS:HB3 | 31:B6:18:ARG:NH1 | 2.19 | 0.56 |
| 9:AI:21:PRO:HA | 9:AI:58:ARG:O | 2.04 | 0.56 |
| 31:D6:16:CYS:H | 31:D6:47:THR:HG21 | 1.70 | 0.56 |
| 9:CI:48:GLU:N | 9:CI:49:PRO:HD2 | 2.20 | 0.56 |
| 50:DT:28:VAL:HG22 | 50:DT:46:GLU:C | 2.26 | 0.56 |
| 35:DA:779:U:OP1 | 38:DD:49:ILE:HG23 | 2.04 | 0.56 |
| 38:BD:30:GLU:CG | 38:BD:63:ARG:NE | 2.68 | 0.56 |
| 35:BA:779:U:OP1 | 38:BD:49:ILE:HG23 | 2.05 | 0.56 |
| 39:DE:2:LYS:CE | 39:DE:95:ILE:HG22 | 2.34 | 0.56 |
| 38:DD:35:LYS:O | 38:DD:62:TYR:O | 2.22 | 0.56 |
| 44:BN:128:HIS:NE2 | 44:BN:134:ARG:HD3 | 2.19 | 0.56 |
| 5:AE:79:GLU:HB3 | 5:AE:92:LYS:HG2 | 1.87 | 0.56 |
| 39:DE:12:THR:O | 39:DE:23:VAL:HG22 | 2.05 | 0.56 |
| 13:CM:65:LYS:C | 13:CM:66:LEU:HG | 2.26 | 0.56 |
| 42:DH:19:VAL:CG2 | 42:DH:44:VAL:HA | 2.26 | 0.56 |
| 38:BD:270:ILE:C | 38:BD:271:ILE:HG12 | 2.24 | 0.56 |
| 20:CT:54:LYS:HA | 20:CT:57:ARG:NH2 | 2.20 | 0.56 |
| 37:BC:36:LYS:CG | 37:BC:37:PHE:N | 2.67 | 0.56 |
| 55:DY:17:SER:CB | 55:DY:71:LYS:HB3 | 2.35 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:DW:92:ARG:HG2 | 53:DW:92:ARG:HH11 | 1.69 | 0.56 |
| 1:AA:1126:U:OP2 | 1:AA:1281:U:O2 | 2.23 | 0.56 |
| 46:BP:29:LYS:HB3 | 46:BP:34:GLY:H | 1.70 | 0.56 |
| 42:BH:85:LYS:HE2 | 42:BH:145:ALA:HB2 | 1.87 | 0.56 |
| 33:D8:34:TRP:HB2 | 35:DA:2420:C:OP1 | 2.05 | 0.56 |
| 44:BN:3:THR:C | 44:BN:5:VAL:H | 2.07 | 0.56 |
| 40:BF:17:ARG:HG3 | 40:BF:17:ARG:NH1 | 2.11 | 0.56 |
| 35:DA:1484:G:H3' | 35:DA:1485:G:C5' | 2.35 | 0.56 |
| 54:DX:12:VAL:HG11 | 54:DX:27:THR:CG2 | 2.35 | 0.56 |
| 2:AB:21:ARG:NH1 | 2:AB:38:GLY:HA3 | 2.20 | 0.56 |
| 20:AT:104:LEU:HD23 | 20:AT:105:SER:H | 1.66 | 0.56 |
| 35:BA:1024:G:C3' | 35:BA:1025:G:H5'' | 2.35 | 0.56 |
| 37:DC:68:LEU:HB2 | 37:DC:70:LYS:HG2 | 1.87 | 0.56 |
| 5:CE:67:VAL:HG13 | 5:CE:69:VAL:HG23 | 1.87 | 0.56 |
| 13:AM:110:ARG:HH11 | 13:AM:110:ARG:HG2 | 1.68 | 0.56 |
| 35:DA:2172:U:H3' | 35:DA:2173:A:C8 | 2.38 | 0.56 |
| 35:DA:1259:G:O2' | 35:DA:1260:G:H5' | 2.05 | 0.56 |
| 9:CI:116:LYS:O | 9:CI:118:LYS:N | 2.37 | 0.56 |
| 50:DT:106:SER:HA | 50:DT:110:ILE:HG13 | 1.87 | 0.56 |
| 11:AK:21:ILE:N | 11:AK:21:ILE:HD12 | 2.20 | 0.56 |
| 2:AB:178:ARG:NH2 | 2:AB:196:LEU:HA | 2.20 | 0.56 |
| 35:BA:171:G:H2' | 35:BA:172:C:C6 | 2.40 | 0.56 |
| 38:DD:11:PRO:O | 38:DD:13:ARG:N | 2.33 | 0.56 |
| 47:BQ:80:GLU:HG2 | 47:BQ:80:GLU:O | 2.05 | 0.56 |
| 35:DA:443:A:N7 | 40:DF:45:ARG:HD2 | 2.20 | 0.56 |
| 8:CH:69:ARG:NH1 | 8:CH:69:ARG:HB2 | 2.19 | 0.56 |
| 42:DH:118:PRO:HG2 | 42:DH:121:ILE:HB | 1.87 | 0.56 |
| 42:DH:155:SER:O | 42:DH:156:ALA:HB3 | 2.05 | 0.56 |
| 1:CA:1510:U:H2' | 1:CA:1511:G:C8 | 2.40 | 0.56 |
| 35:DA:869:G:O2' | 35:DA:870:A:H5' | 2.04 | 0.56 |
| 1:AA:895:G:H2' | 1:AA:896:C:C6 | 2.40 | 0.56 |
| 6:AF:6:VAL:HG13 | 6:AF:90:VAL:HG22 | 1.87 | 0.56 |
| 35:DA:1157:G:O2' | 35:DA:1158:C:H5' | 2.05 | 0.56 |
| 3:AC:32:LEU:HD22 | 3:AC:59:ARG:HH11 | 1.70 | 0.56 |
| 35:DA:435:C:H2' | 35:DA:436:C:H5' | 1.86 | 0.56 |
| 38:BD:93:ALA:HB2 | 38:BD:107:ALA:HB2 | 1.86 | 0.56 |
| 56:DZ:45:ASP:O | 56:DZ:49:ARG:HG2 | 2.04 | 0.56 |
| 35:DA:1547:C:O2' | 35:DA:1548:C:H5' | 2.05 | 0.56 |
| 35:BA:2233:U:H2' | 35:BA:2234:G:C8 | 2.40 | 0.56 |
| 35:BA:861:A:H2' | 35:BA:862:G:O4' | 2.04 | 0.56 |
| 1:AA:1231:G:O2' | 1:AA:1232:U:H5' | 2.05 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:AS:24:ALA:O | 19:AS:25:LYS:HB2 | 2.04 | 0.56 |
| 56:DZ:69:THR:CG2 | 56:DZ:90:VAL:HA | 2.35 | 0.56 |
| 56:DZ:69:THR:HG22 | 56:DZ:90:VAL:CA | 2.34 | 0.56 |
| 40:DF:34:TRP:CZ2 | 46:DP:12:ALA:HB2 | 2.40 | 0.56 |
| 1:AA:973:G:C1' | 10:AJ:55:LYS:HE2 | 2.25 | 0.56 |
| 2:CB:55:PHE:HA | 2:CB:58:ILE:HG12 | 1.87 | 0.56 |
| 35:DA:2864:G:H8 | 35:DA:2864:G:H5' | 1.70 | 0.56 |
| 50:BT:32:TYR:CD2 | 50:BT:32:TYR:N | 2.73 | 0.56 |
| 5:AE:67:VAL:HG22 | 5:AE:68:GLU:N | 2.19 | 0.56 |
| 35:DA:2305:A:H5'' | 41:DG:134:GLY:HA3 | 1.87 | 0.56 |
| 10:AJ:63:PHE:HZ | 14:AN:45:ARG:HG3 | 1.70 | 0.56 |
| 1:AA:1162:C:H2' | 1:AA:1163:C:C6 | 2.40 | 0.56 |
| 37:DC:78:ALA:HB1 | 37:DC:82:LYS:HB2 | 1.87 | 0.56 |
| 45:BO:88:ASN:O | 45:BO:91:LEU:N | 2.38 | 0.56 |
| 54:BX:35:THR:HG22 | 54:BX:36:LYS:N | 2.18 | 0.56 |
| 32:B7:9:ARG:NH1 | 35:BA:1310:G:OP2 | 2.38 | 0.56 |
| 39:BE:101:ARG:NE | 39:BE:171:GLU:HB2 | 2.20 | 0.56 |
| 1:AA:102:G:H2' | 1:AA:103:C:C6 | 2.39 | 0.56 |
| 35:BA:1801:G:OP2 | 38:BD:154:LYS:HE2 | 2.05 | 0.56 |
| 12:CL:62:SER:HB2 | 12:CL:64:TYR:CD1 | 2.40 | 0.56 |
| 1:AA:377:G:OP1 | 16:AP:3:LYS:HD2 | 2.05 | 0.56 |
| 56:BZ:124:ILE:HD12 | 56:BZ:155:LEU:CD2 | 2.35 | 0.56 |
| 50:DT:23:ARG:HB2 | 50:DT:24:PRO:HD2 | 1.86 | 0.56 |
| 40:BF:33:LEU:HD22 | 40:BF:112:MET:HG2 | 1.87 | 0.56 |
| 1:CA:1469:G:H2' | 1:CA:1470:G:C8 | 2.39 | 0.56 |
| 51:BU:20:LEU:CB | 51:BU:39:LEU:HD11 | 2.34 | 0.56 |
| 49:DS:85:VAL:HG22 | 49:DS:106:ARG:HB2 | 1.87 | 0.56 |
| 49:BS:26:LEU:HG | 49:BS:39:ILE:HD13 | 1.86 | 0.56 |
| 44:BN:58:ASP:C | 44:BN:60:ILE:H | 2.07 | 0.56 |
| 30:D5:20:ARG:CZ | 53:DW:15:ARG:NH1 | 2.68 | 0.56 |
| 53:BW:12:ILE:HG13 | 53:BW:42:ARG:HH11 | 1.68 | 0.56 |
| 1:CA:275:G:H5' | 17:CQ:14:LYS:HZ3 | 1.69 | 0.56 |
| 35:DA:889:C:H1' | 35:DA:890:A:O4' | 2.05 | 0.56 |
| 26:D1:43:TYR:HD1 | 26:D1:43:TYR:N | 2.00 | 0.56 |
| 1:CA:413:G:N2 | 1:CA:429:U:OP2 | 2.38 | 0.56 |
| 53:BW:82:LEU:H | 53:BW:82:LEU:HD12 | 1.69 | 0.56 |
| 8:AH:53:VAL:O | 8:AH:54:ASP:HB2 | 2.05 | 0.56 |
| 1:CA:245:C:O2' | 1:CA:246:A:H5' | 2.05 | 0.56 |
| 22:CY:48:C:H2' | 22:CY:48:C:OP2 | 2.05 | 0.56 |
| 35:BA:320:A:H2' | 40:BF:136:THR:HG21 | 1.87 | 0.56 |
| 1:CA:1318:A:H1' | 19:CS:37:ARG:HH21 | 1.70 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 22:CV:19:G:H21 | 22:CV:57:G:H1' | 1.70 | 0.56 |
| 35:DA:768:G:O2' | 35:DA:1379:A:N6 | 2.39 | 0.56 |
| 35:BA:2473:U:O2 | 35:BA:2473:U:H2' | 2.04 | 0.56 |
| 17:AQ:45:HIS:CD2 | 17:AQ:47:PRO:HD3 | 2.39 | 0.56 |
| 35:BA:435:C:H2' | 35:BA:436:C:H5' | 1.87 | 0.56 |
| 40:DF:24:LEU:HB3 | 40:DF:25:PRO:HD2 | 1.87 | 0.56 |
| 40:DF:34:TRP:HB2 | 46:DP:10:PRO:O | 2.05 | 0.56 |
| 9:AI:78:LYS:HE3 | 9:AI:101:PHE:CE2 | 2.40 | 0.56 |
| 40:DF:9:ILE:HG23 | 40:DF:13:SER:O | 2.06 | 0.56 |
| 49:DS:14:VAL:HG12 | 49:DS:15:ARG:N | 2.19 | 0.56 |
| 49:DS:16:ASN:ND2 | 49:DS:92:TYR:CE1 | 2.73 | 0.56 |
| 2:CB:237:ALA:H | 2:CB:239:VAL:HG23 | 1.69 | 0.56 |
| 41:DG:88:ILE:HG23 | 41:DG:89:GLY:N | 2.20 | 0.56 |
| 38:BD:39:LYS:HZ2 | 38:BD:87:ASN:HB3 | 1.68 | 0.56 |
| 51:BU:62:ILE:HD12 | 51:BU:76:TYR:OH | 2.04 | 0.56 |
| 35:BA:2801(A):A:C4' | 35:BA:2802:G:H5' | 2.23 | 0.56 |
| 39:DE:69:LYS:HZ1 | 39:DE:89:ASP:HA | 1.70 | 0.56 |
| 39:DE:89:ASP:O | 39:DE:90:THR:CB | 2.54 | 0.56 |
| 56:BZ:96:VAL:HG22 | 56:BZ:97:GLU:N | 2.20 | 0.56 |
| 41:DG:146:TYR:C | 41:DG:148:MET:H | 2.08 | 0.56 |
| 35:DA:2491:U:C5' | 35:DA:2570:G:H5'' | 2.22 | 0.56 |
| 44:BN:114:ARG:O | 44:BN:118:LYS:HG3 | 2.06 | 0.56 |
| 5:AE:67:VAL:HG13 | 5:AE:69:VAL:HG23 | 1.87 | 0.56 |
| 43:DI:118:LYS:HZ2 | 43:DI:119:PRO:HG2 | 1.71 | 0.56 |
| 10:CJ:63:PHE:HZ | 14:CN:45:ARG:HG3 | 1.70 | 0.56 |
| 35:DA:1155:A:OP2 | 51:DU:58:ARG:NH1 | 2.38 | 0.56 |
| 35:BA:2481:G:O2' | 35:BA:2482:G:P | 2.63 | 0.56 |
| 3:AC:157:ILE:CD1 | 3:AC:166:GLU:HB2 | 2.35 | 0.56 |
| 38:DD:270:ILE:C | 38:DD:271:ILE:HG12 | 2.25 | 0.56 |
| 3:CC:157:ILE:CD1 | 3:CC:166:GLU:HB2 | 2.35 | 0.56 |
| 38:BD:71:ASP:CB | 38:BD:103:ARG:HH22 | 2.10 | 0.56 |
| 1:CA:1125:U:H5'' | 1:CA:1126:U:H5 | 1.70 | 0.56 |
| 10:AJ:27:ALA:HB3 | 10:AJ:34:VAL:HG21 | 1.87 | 0.56 |
| 3:AC:30:ARG:HH11 | 14:AN:38:GLY:N | 2.03 | 0.56 |
| 46:BP:96:THR:O | 46:BP:100:LEU:HD23 | 2.05 | 0.56 |
| 13:AM:52:GLU:O | 13:AM:56:LEU:HB2 | 2.05 | 0.56 |
| 20:AT:26:ASN:ND2 | 20:AT:26:ASN:H | 2.03 | 0.56 |
| 13:CM:49:THR:HB | 13:CM:52:GLU:HG3 | 1.86 | 0.56 |
| 35:DA:141:A:C8 | 35:DA:1408:C:O2' | 2.49 | 0.56 |
| 35:DA:171:G:H2' | 35:DA:172:C:C6 | 2.41 | 0.56 |
| 37:BC:49:ILE:HG22 | 37:BC:50:ASP:OD1 | 2.06 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:DG:2:PRO:O | 41:DG:3:LEU:CB | 2.52 | 0.56 |
| 38:BD:154:LYS:C | 38:BD:155:LEU:HD12 | 2.25 | 0.56 |
| 46:BP:108:LYS:C | 46:BP:110:TYR:H | 2.08 | 0.56 |
| 8:CH:84:ARG:HH22 | 8:CH:86:ILE:HD11 | 1.69 | 0.56 |
| 1:AA:511:C:H1' | 4:AD:43:HIS:NE2 | 2.18 | 0.56 |
| 6:CF:100:ASN:HD21 | 18:CR:23:LYS:CE | 2.18 | 0.56 |
| 23:CW:16:U:C3' | 23:CW:17:C:H5' | 2.35 | 0.56 |
| 7:AG:15:ASP:H | 7:AG:20:ASP:N | 2.03 | 0.56 |
| 1:CA:103:C:OP2 | 20:CT:14:LYS:HE3 | 2.05 | 0.56 |
| 4:CD:11:LEU:O | 4:CD:13:ARG:O | 2.23 | 0.56 |
| 46:BP:70:GLN:HB3 | 46:BP:72:PRO:HD2 | 1.87 | 0.56 |
| 56:DZ:10:ARG:NH2 | 56:DZ:26:GLY:H | 2.03 | 0.56 |
| 35:BA:2172:U:H3' | 35:BA:2173:A:C8 | 2.38 | 0.56 |
| 35:BA:2173:A:H2' | 35:BA:2174:C:H5' | 1.87 | 0.56 |
| 3:AC:54:ARG:HH12 | 3:AC:56:ASP:HB2 | 1.70 | 0.56 |
| 35:BA:953:A:H2' | 35:BA:954:G:H5' | 1.87 | 0.56 |
| 42:BH:41:MET:O | 42:BH:43:VAL:HG13 | 2.06 | 0.56 |
| 42:BH:41:MET:CG | 42:BH:55:PRO:HD3 | 2.34 | 0.56 |
| 35:DA:1657:C:O2' | 35:DA:1658:C:H5' | 2.05 | 0.56 |
| 28:D3:49:LYS:NZ | 35:DA:850:C:O3' | 2.38 | 0.56 |
| 35:BA:874:G:O2' | 35:BA:875:G:H5' | 2.04 | 0.56 |
| 19:AS:10:PHE:CZ | 19:AS:70:LYS:HD2 | 2.40 | 0.56 |
| 27:B2:14:ARG:HH11 | 27:B2:14:ARG:HG3 | 1.70 | 0.56 |
| 40:BF:198:ALA:O | 40:BF:201:VAL:HG12 | 2.05 | 0.56 |
| 14:CN:23:ARG:NH1 | 14:CN:30:ALA:HB2 | 2.20 | 0.56 |
| 1:CA:163:C:H2' | 1:CA:164:U:C6 | 2.39 | 0.56 |
| 23:AW:75:C:H5'' | 26:B1:30:VAL:HG21 | 1.86 | 0.56 |
| 16:CP:51:VAL:O | 16:CP:53:VAL:N | 2.38 | 0.56 |
| 11:CK:27:ASN:HB2 | 11:CK:55:LYS:HE2 | 1.86 | 0.56 |
| 17:CQ:86:GLU:O | 17:CQ:90:ILE:HG12 | 2.03 | 0.56 |
| 2:CB:16:HIS:HD2 | 2:CB:210:SER:HA | 1.71 | 0.56 |
| 1:CA:731:G:O2' | 1:CA:732:C:H5' | 2.06 | 0.56 |
| 13:AM:100:GLY:C | 13:AM:101:GLN:HG3 | 2.25 | 0.56 |
| 1:CA:1352:C:H2' | 1:CA:1353:G:C8 | 2.40 | 0.56 |
| 1:AA:114:U:H2' | 1:AA:115:G:C8 | 2.40 | 0.56 |
| 35:DA:1350:C:O2' | 35:DA:1351:C:H5' | 2.06 | 0.56 |
| 35:DA:648:G:O2' | 35:DA:649:G:H5' | 2.04 | 0.56 |
| 37:DC:77:ILE:O | 37:DC:77:ILE:HG12 | 2.06 | 0.56 |
| 20:CT:27:LYS:O | 20:CT:27:LYS:HD3 | 2.05 | 0.56 |
| 35:DA:769:G:O2' | 35:DA:770:G:H5' | 2.04 | 0.56 |
| 1:AA:824:C:H4' | 8:AH:1:MET:H1 | 1.70 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:CA:1349:A:H2' | 1:CA:1350:A:C8 | 2.40 | 0.56 |
| 35:BA:742:G:O2' | 35:BA:743:G:H5' | 2.06 | 0.56 |
| 6:AF:16:GLN:HG3 | 4:CD:197:PRO:HD3 | 1.87 | 0.56 |
| 10:AJ:90:LEU:N | 10:AJ:91:PRO:CD | 2.68 | 0.56 |
| 56:DZ:11:GLU:H | 56:DZ:11:GLU:CD | 2.08 | 0.56 |
| 56:DZ:47:VAL:HG12 | 56:DZ:51:ALA:CB | 2.36 | 0.56 |
| 12:AL:62:SER:HB2 | 12:AL:64:TYR:CD1 | 2.41 | 0.56 |
| 35:BA:1242:A:H5' | 35:BA:1243:G:OP2 | 2.05 | 0.56 |
| 55:BY:12:THR:O | 55:BY:75:ILE:HG22 | 2.06 | 0.56 |
| 55:BY:74:PRO:O | 55:BY:80:GLY:HA2 | 2.04 | 0.56 |
| 9:AI:47:LEU:C | 9:AI:49:PRO:HD2 | 2.26 | 0.56 |
| 50:DT:27:THR:CG2 | 50:DT:28:VAL:H | 2.06 | 0.56 |
| 38:DD:43:ARG:HH11 | 38:DD:44:ASN:CG | 2.08 | 0.56 |
| 51:BU:89:GLU:HG2 | 52:BV:50:PRO:CG | 2.36 | 0.56 |
| 46:DP:16:ARG:HD3 | 46:DP:18:ARG:N | 2.04 | 0.56 |
| 44:BN:133:GLN:O | 44:BN:134:ARG:CB | 2.54 | 0.56 |
| 13:CM:25:ILE:HD11 | 13:CM:66:LEU:CD2 | 2.35 | 0.56 |
| 43:BI:37:VAL:HG12 | 43:BI:38:LEU:N | 2.21 | 0.56 |
| 20:CT:57:ARG:NH1 | 20:CT:57:ARG:HB2 | 2.21 | 0.56 |
| 5:CE:102:ALA:HB2 | 5:CE:120:THR:OG1 | 2.06 | 0.56 |
| 42:DH:65:HIS:CE1 | 42:DH:69:ARG:HD3 | 2.41 | 0.56 |
| 10:CJ:78:ASN:ND2 | 10:CJ:80:LYS:H | 2.04 | 0.56 |
| 1:AA:1125:U:H5'' | 1:AA:1126:U:H5 | 1.71 | 0.56 |
| 56:DZ:79:ARG:HH11 | 56:DZ:79:ARG:HG2 | 1.71 | 0.56 |
| 27:D2:43:GLN:HE22 | 27:D2:46:GLN:HE22 | 1.53 | 0.56 |
| 35:BA:1786:A:H3' | 35:BA:1787:A:C8 | 2.40 | 0.56 |
| 1:AA:226:G:O2' | 1:AA:227:G:H5' | 2.06 | 0.56 |
| 46:DP:13:ASN:O | 46:DP:15:ARG:N | 2.37 | 0.56 |
| 4:AD:30:LYS:C | 4:AD:32:ALA:N | 2.53 | 0.56 |
| 3:AC:34:LEU:HD23 | 3:AC:35:GLU:N | 2.21 | 0.56 |
| 31:D6:34:LEU:CD2 | 31:D6:36:LEU:HD22 | 2.34 | 0.56 |
| 40:BF:53:THR:HG23 | 40:BF:56:GLU:H | 1.70 | 0.56 |
| 56:DZ:80:ARG:O | 56:DZ:81:ARG:C | 2.44 | 0.56 |
| 43:BI:58:LEU:C | 43:BI:60:GLU:N | 2.57 | 0.56 |
| 16:CP:5:ARG:O | 16:CP:20:VAL:HG13 | 2.04 | 0.56 |
| 47:BQ:16:ARG:CG | 47:BQ:17:LEU:H | 2.17 | 0.56 |
| 41:BG:139:LEU:HD23 | 41:BG:140:ILE:N | 2.20 | 0.56 |
| 7:CG:145:ALA:C | 7:CG:147:ALA:N | 2.59 | 0.56 |
| 9:AI:121:ARG:HH11 | 9:AI:121:ARG:HG2 | 1.68 | 0.56 |
| 35:DA:1889:A:H2' | 35:DA:1890:A:C8 | 2.40 | 0.56 |
| 1:AA:597:G:H2' | 1:AA:598:U:H5' | 1.87 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:AC:179:ARG:HG3 | 3:AC:179:ARG:O | 2.06 | 0.56 |
| 1:CA:556:C:C2' | 1:CA:557:G:H5' | 2.36 | 0.56 |
| 26:D1:50:ARG:HA | 26:D1:59:THR:HG22 | 1.87 | 0.56 |
| 1:AA:1195:C:H2' | 1:AA:1197:G:O4' | 2.06 | 0.56 |
| 16:CP:82:GLN:NE2 | 16:CP:82:GLN:N | 2.52 | 0.56 |
| 1:CA:170:U:O2' | 1:CA:171:A:H5' | 2.05 | 0.56 |
| 35:BA:263:C:H2' | 35:BA:264:C:O4' | 2.05 | 0.56 |
| 42:BH:104:GLU:HA | 42:BH:113:VAL:O | 2.06 | 0.56 |
| 35:DA:752:A:O2' | 35:DA:753:C:OP2 | 2.22 | 0.56 |
| 35:DA:1434:A:H61 | 35:DA:1558:A:H62 | 1.53 | 0.56 |
| 23:AW:74:C:H4' | 26:B1:23:LYS:HB2 | 1.86 | 0.56 |
| 53:BW:20:VAL:O | 53:BW:23:LEU:HB3 | 2.05 | 0.56 |
| 27:B2:56:GLN:O | 27:B2:60:LEU:HG | 2.05 | 0.56 |
| 1:AA:1049:U:H1' | 1:AA:1201:A:N7 | 2.20 | 0.56 |
| 23:AW:52:G:H2' | 23:AW:53:G:H8 | 1.71 | 0.56 |
| 25:D0:8:GLY:O | 25:D0:9:SER:HB3 | 2.05 | 0.56 |
| 31:B6:27:LYS:HD2 | 35:BA:2285:C:OP2 | 2.05 | 0.56 |
| 1:AA:1356:G:H2' | 1:AA:1357:A:C8 | 2.40 | 0.56 |
| 49:BS:17:ARG:C | 49:BS:19:LYS:H | 2.08 | 0.56 |
| 9:CI:21:PRO:HA | 9:CI:58:ARG:O | 2.06 | 0.56 |
| 9:CI:89:ASN:HB3 | 9:CI:92:TYR:CD1 | 2.40 | 0.56 |
| 35:BA:613:G:H5' | 35:BA:613:G:C8 | 2.40 | 0.56 |
| 50:BT:46:GLU:CD | 50:BT:88:ILE:HD11 | 2.26 | 0.56 |
| 35:DA:2747:G:O6 | 35:DA:2755:C:H5'' | 2.06 | 0.56 |
| 39:BE:2:LYS:HE2 | 39:BE:95:ILE:HG22 | 1.88 | 0.56 |
| 37:DC:36:LYS:CG | 37:DC:37:PHE:N | 2.68 | 0.56 |
| 52:BV:22:VAL:O | 52:BV:23:GLU:HB2 | 2.06 | 0.56 |
| 33:D8:4:MET:O | 33:D8:62:LEU:HD12 | 2.05 | 0.56 |
| 20:AT:57:ARG:HB2 | 20:AT:57:ARG:NH1 | 2.21 | 0.56 |
| 13:CM:3:ARG:HA | 13:CM:9:ILE:HG13 | 1.88 | 0.56 |
| 10:CJ:33:GLN:N | 10:CJ:75:ILE:HG12 | 2.19 | 0.56 |
| 30:D5:30:LEU:HD23 | 30:D5:41:PRO:HA | 1.86 | 0.56 |
| 29:B4:40:ILE:HG23 | 29:B4:57:ILE:HG22 | 1.87 | 0.56 |
| 5:CE:79:GLU:HB3 | 5:CE:92:LYS:HG2 | 1.87 | 0.56 |
| 47:DQ:55:VAL:CG2 | 47:DQ:56:ARG:N | 2.68 | 0.56 |
| 26:B1:6:GLU:HG3 | 26:B1:61:ARG:O | 2.05 | 0.56 |
| 10:AJ:38:ILE:HG13 | 10:AJ:71:LEU:HB3 | 1.87 | 0.56 |
| 50:BT:38:ASN:HD22 | 50:BT:40:THR:N | 2.04 | 0.56 |
| 33:B8:30:ARG:O | 33:B8:31:HIS:HB3 | 2.05 | 0.56 |
| 27:D2:13:ALA:HA | 27:D2:16:LEU:CD1 | 2.35 | 0.56 |
| 45:BO:77:ILE:HD13 | 50:BT:74:ARG:HG2 | 1.86 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:1309:G:O2' | 35:BA:1310:G:H5' | 2.05 | 0.56 |
| 32:D7:9:ARG:NH1 | 35:DA:1310:G:OP2 | 2.39 | 0.56 |
| 35:BA:2099:U:O2 | 35:BA:2099:U:H2' | 2.06 | 0.56 |
| 46:BP:71:VAL:HG13 | 46:BP:72:PRO:CD | 2.34 | 0.56 |
| 35:BA:991:C:O2' | 35:BA:992:C:H5' | 2.05 | 0.56 |
| 19:AS:49:ILE:HD12 | 19:AS:49:ILE:N | 2.20 | 0.56 |
| 19:AS:62:ILE:HG13 | 19:AS:63:THR:N | 2.21 | 0.56 |
| 22:AY:76:8AN:H5'A | 22:AY:77:PHA:O | 2.06 | 0.56 |
| 47:DQ:16:ARG:CG | 47:DQ:17:LEU:H | 2.18 | 0.56 |
| 50:DT:3:ARG:HH11 | 50:DT:3:ARG:HG3 | 1.71 | 0.56 |
| 1:AA:625:G:O2' | 1:AA:626:U:H5' | 2.05 | 0.56 |
| 35:DA:89:G:H3' | 35:DA:90:U:H5'' | 1.87 | 0.56 |
| 11:CK:21:ILE:HD12 | 11:CK:21:ILE:N | 2.20 | 0.56 |
| 1:CA:1280:A:H5'' | 10:CJ:40:LEU:HD12 | 1.86 | 0.56 |
| 29:D4:39:ARG:C | 29:D4:40:ILE:HD12 | 2.25 | 0.56 |
| 22:CV:61:C:H2' | 22:CV:62:C:H6 | 1.69 | 0.56 |
| 44:BN:29:LYS:O | 44:BN:33:LEU:HB2 | 2.05 | 0.56 |
| 42:DH:140:LYS:O | 42:DH:144:VAL:HG23 | 2.05 | 0.56 |
| 1:CA:946:A:H2' | 1:CA:947:G:C8 | 2.41 | 0.56 |
| 35:BA:80:G:O2' | 35:BA:81:G:H5' | 2.05 | 0.56 |
| 1:AA:1096:C:H2' | 1:AA:1097:C:H6 | 1.71 | 0.56 |
| 35:BA:1352:U:O2' | 35:BA:1353:A:H5' | 2.05 | 0.56 |
| 35:BA:2201:C:O2' | 35:BA:2202:C:H5' | 2.06 | 0.56 |
| 35:BA:2689:U:H5'' | 35:BA:2690:C:H5' | 1.87 | 0.56 |
| 1:AA:591:U:H2' | 1:AA:592:G:C8 | 2.40 | 0.56 |
| 35:DA:1270:C:H5'' | 35:DA:1271:G:H5' | 1.87 | 0.56 |
| 35:BA:2177:C:H1' | 37:BC:44:HIS:CD2 | 2.41 | 0.56 |
| 4:CD:176:LEU:HD12 | 4:CD:177:ASP:H | 1.69 | 0.56 |
| 35:BA:1956:U:H2' | 35:BA:1957:C:H5' | 1.87 | 0.56 |
| 11:CK:56:GLY:O | 11:CK:89:ALA:HB3 | 2.05 | 0.56 |
| 37:BC:77:ILE:O | 37:BC:77:ILE:HG12 | 2.05 | 0.56 |
| 37:BC:128:GLY:C | 37:BC:130:ILE:H | 2.08 | 0.56 |
| 3:AC:147:LYS:HG3 | 3:AC:204:LEU:O | 2.05 | 0.56 |
| 47:DQ:141:GLN:HE22 | 56:DZ:72:ARG:CA | 2.05 | 0.56 |
| 46:DP:48:PRO:CG | 46:DP:49:ARG:H | 2.16 | 0.56 |
| 12:AL:28:LYS:HE2 | 12:AL:33:ARG:HH22 | 1.71 | 0.56 |
| 1:CA:1442:G:C5 | 1:CA:1442(B):A:C2 | 2.94 | 0.56 |
| 54:DX:71:GLY:C | 54:DX:72:LYS:HD2 | 2.25 | 0.56 |
| 1:AA:1346:A:N1 | 1:AA:1374:A:H5'' | 2.19 | 0.56 |
| 43:BI:94:ALA:CB | 43:BI:111:PRO:HA | 2.36 | 0.56 |
| 51:BU:92:ARG:HD2 | 52:BV:11:GLN:NE2 | 2.20 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:DE:48:GLN:HA | 39:DE:80:GLU:HA | 1.85 | 0.56 |
| 3:CC:110:ASN:C | 3:CC:112:SER:H | 2.09 | 0.56 |
| 1:CA:1060:C:H4' | 10:CJ:52:GLY:H | 1.70 | 0.56 |
| 51:DU:66:ASN:O | 51:DU:70:ARG:HB2 | 2.06 | 0.56 |
| 40:BF:192:LEU:HD23 | 40:BF:193:VAL:N | 2.21 | 0.56 |
| 52:DV:24:LYS:HA | 52:DV:92:THR:HG23 | 1.87 | 0.56 |
| 41:DG:107:LEU:HD22 | 41:DG:177:GLY:O | 2.06 | 0.56 |
| 41:DG:21:ARG:HD3 | 41:DG:22:ARG:N | 2.21 | 0.56 |
| 3:AC:113:ALA:HA | 3:AC:116:VAL:CG2 | 2.34 | 0.56 |
| 55:BY:42:VAL:O | 55:BY:64:GLU:HA | 2.05 | 0.56 |
| 4:CD:33:MET:HE1 | 4:CD:37:PRO:HA | 1.88 | 0.56 |
| 10:AJ:30:SER:HB2 | 10:AJ:80:LYS:C | 2.26 | 0.56 |
| 49:DS:35:ILE:HG22 | 49:DS:53:SER:HB2 | 1.88 | 0.56 |
| 43:BI:72:LEU:HD21 | 43:BI:107:VAL:HG21 | 1.86 | 0.56 |
| 35:DA:588:U:H6 | 35:DA:588:U:O5' | 1.89 | 0.56 |
| 45:BO:104:ARG:HH11 | 45:BO:104:ARG:HB2 | 1.71 | 0.56 |
| 46:DP:111:ARG:CZ | 46:DP:149:GLU:HG3 | 2.36 | 0.56 |
| 46:DP:126:VAL:HG12 | 46:DP:148:LEU:HD11 | 1.88 | 0.56 |
| 41:BG:101:ILE:HG23 | 41:BG:102:PHE:N | 2.20 | 0.56 |
| 1:CA:1152:A:H5' | 10:CJ:70:ARG:HH22 | 1.70 | 0.56 |
| 49:DS:26:LEU:HG | 49:DS:39:ILE:HD13 | 1.87 | 0.56 |
| 9:AI:46:ALA:HB2 | 9:AI:74:ILE:HG23 | 1.88 | 0.56 |
| 1:AA:187:C:H5'' | 20:AT:86:ARG:HG3 | 1.88 | 0.56 |
| 50:DT:106:SER:O | 50:DT:107:ASP:CB | 2.53 | 0.56 |
| 8:AH:11:THR:HA | 8:AH:14:ARG:NH1 | 2.20 | 0.56 |
| 3:AC:189:ALA:HB3 | 3:AC:196:LEU:HB2 | 1.88 | 0.56 |
| 35:BA:17:G:H2' | 35:BA:18:C:H6 | 1.71 | 0.56 |
| 47:BQ:103:MET:HE1 | 47:BQ:125:LEU:HD13 | 1.87 | 0.56 |
| 29:D4:40:ILE:HG23 | 29:D4:57:ILE:HG22 | 1.88 | 0.56 |
| 35:BA:443:A:H1' | 35:BA:1201:C:O4' | 2.05 | 0.56 |
| 35:BA:2223:G:C2' | 35:BA:2224:G:H5' | 2.36 | 0.56 |
| 35:DA:2617:C:O2' | 35:DA:2618:G:H5' | 2.05 | 0.56 |
| 35:BA:2777:G:H5'' | 35:BA:2778:A:C5' | 2.36 | 0.56 |
| 35:DA:2563:U:H2' | 35:DA:2565:A:OP2 | 2.04 | 0.56 |
| 43:DI:31:LEU:HB2 | 43:DI:32:PRO:HD3 | 1.87 | 0.56 |
| 35:BA:2236:C:H2' | 35:BA:2237:G:H5' | 1.86 | 0.56 |
| 35:DA:2037:G:H2' | 35:DA:2038:G:C8 | 2.39 | 0.56 |
| 35:DA:2512:C:H2' | 35:DA:2513:G:O4' | 2.05 | 0.56 |
| 5:CE:28:PHE:O | 5:CE:47:LYS:HA | 2.06 | 0.56 |
| 34:B9:4:ARG:HB2 | 35:BA:2466:C:OP1 | 2.06 | 0.56 |
| 28:B3:22:ALA:HA | 28:B3:46:ASN:HD22 | 1.70 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:CC:76:VAL:CG2 | 3:CC:77:ILE:N | 2.67 | 0.56 |
| 10:AJ:51:ARG:O | 10:AJ:52:GLY:O | 2.23 | 0.56 |
| 35:DA:1493:C:H4' | 35:DA:1494:A:OP2 | 2.05 | 0.56 |
| 5:CE:81:GLU:HB3 | 5:CE:88:LYS:HZ1 | 1.70 | 0.56 |
| 10:CJ:30:SER:HB2 | 10:CJ:80:LYS:C | 2.26 | 0.56 |
| 39:BE:12:THR:O | 39:BE:23:VAL:HG22 | 2.05 | 0.56 |
| 20:CT:26:ASN:ND2 | 20:CT:26:ASN:H | 2.03 | 0.56 |
| 42:DH:85:LYS:HE2 | 42:DH:145:ALA:HB2 | 1.87 | 0.56 |
| 44:DN:19:GLU:HG3 | 44:DN:20:GLY:N | 2.21 | 0.56 |
| 1:CA:1292:U:O2' | 1:CA:1293:G:H5' | 2.05 | 0.56 |
| 1:CA:1203:C:H2' | 1:CA:1204:A:H8 | 1.71 | 0.56 |
| 42:BH:25:LYS:HB3 | 42:BH:32:GLU:OE2 | 2.05 | 0.56 |
| 26:B1:7:ILE:HD11 | 26:B1:70:VAL:HG22 | 1.86 | 0.56 |
| 23:CW:15:G:H22 | 23:CW:59:U:H1' | 1.70 | 0.56 |
| 3:CC:34:LEU:HD21 | 3:CC:38:ARG:NH1 | 2.21 | 0.56 |
| 17:CQ:8:GLY:HA3 | 17:CQ:22:LEU:O | 2.05 | 0.56 |
| 5:CE:93:PRO:HA | 5:CE:118:ILE:HD12 | 1.87 | 0.56 |
| 35:BA:2175:C:H1' | 37:BC:215:THR:CA | 2.35 | 0.56 |
| 14:AN:3:ARG:CB | 14:AN:3:ARG:HH11 | 2.19 | 0.56 |
| 8:AH:110:ALA:HB3 | 8:AH:121:ASP:HB3 | 1.87 | 0.56 |
| 38:DD:11:PRO:C | 38:DD:13:ARG:H | 2.08 | 0.56 |
| 2:AB:27:LYS:HD3 | 2:AB:195:ASP:CG | 2.26 | 0.56 |
| 41:DG:91:ARG:CG | 41:DG:92:VAL:N | 2.69 | 0.56 |
| 15:CO:10:LYS:HG3 | 15:CO:11:VAL:N | 2.19 | 0.56 |
| 54:DX:84:ALA:HB3 | 54:DX:87:GLN:OE1 | 2.06 | 0.56 |
| 35:BA:649:G:H2' | 35:BA:650:C:C6 | 2.41 | 0.56 |
| 3:AC:79:ARG:HH11 | 3:AC:79:ARG:HB3 | 1.71 | 0.56 |
| 1:CA:1079:G:H2' | 1:CA:1080:A:C8 | 2.41 | 0.56 |
| 1:CA:627:G:H2' | 1:CA:628:G:H8 | 1.71 | 0.56 |
| 3:AC:9:GLY:HA2 | 3:AC:12:LEU:HB2 | 1.88 | 0.56 |
| 30:B5:10:LYS:HB2 | 35:BA:2017:U:O2 | 2.06 | 0.56 |
| 47:BQ:14:ARG:HG2 | 47:BQ:14:ARG:HH11 | 1.70 | 0.56 |
| 9:AI:17:VAL:HG11 | 9:AI:81:ILE:HD13 | 1.87 | 0.56 |
| 2:AB:68:ILE:HG12 | 2:AB:90:MET:HE1 | 1.87 | 0.56 |
| 44:DN:46:VAL:O | 44:DN:47:ALA:HB3 | 2.06 | 0.56 |
| 35:DA:1686:C:H2' | 35:DA:1687:G:O4' | 2.04 | 0.56 |
| 23:AW:38:A:H2' | 23:AW:39:U:C4' | 2.35 | 0.56 |
| 35:BA:2127:G:H2' | 35:BA:2128:C:C6 | 2.41 | 0.56 |
| 4:CD:33:MET:HE3 | 4:CD:37:PRO:HA | 1.88 | 0.56 |
| 45:DO:63:VAL:HG23 | 45:DO:83:ALA:HB3 | 1.88 | 0.56 |
| 53:BW:88:ARG:HB2 | 53:BW:92:ARG:CB | 2.31 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:B8:62:LEU:CD1 | 35:BA:242:G:H5'' | 2.31 | 0.56 |
| 54:DX:34:ALA:HA | 54:DX:38:GLU:OE1 | 2.05 | 0.56 |
| 32:B7:11:LYS:HE2 | 35:BA:686:G:C5' | 2.30 | 0.56 |
| 55:BY:46:LYS:N | 55:BY:62:GLU:HG2 | 2.18 | 0.56 |
| 32:B7:47:ARG:NH2 | 35:BA:1311:G:C4 | 2.74 | 0.56 |
| 50:BT:106:SER:HA | 50:BT:110:ILE:HG13 | 1.87 | 0.56 |
| 43:BI:132:PRO:HG2 | 43:BI:133:HIS:NE2 | 2.21 | 0.56 |
| 46:DP:108:LYS:C | 46:DP:110:TYR:H | 2.09 | 0.56 |
| 19:CS:49:ILE:N | 19:CS:49:ILE:HD12 | 2.21 | 0.56 |
| 3:AC:36:ASP:O | 3:AC:39:ILE:HB | 2.06 | 0.56 |
| 22:AY:15:G:H22 | 22:AY:59:U:H3 | 1.54 | 0.56 |
| 2:CB:167:PRO:HG3 | 2:CB:188:ALA:HB2 | 1.86 | 0.56 |
| 4:CD:13:ARG:HD2 | 4:CD:38:TYR:O | 2.05 | 0.56 |
| 23:CW:39:U:H2' | 23:CW:40:C:H6 | 1.70 | 0.56 |
| 3:CC:34:LEU:HD23 | 3:CC:35:GLU:N | 2.19 | 0.56 |
| 26:B1:80:LEU:HD23 | 26:B1:81:LYS:N | 2.20 | 0.56 |
| 35:BA:2298:A:H2' | 35:BA:2299:G:O4' | 2.06 | 0.56 |
| 35:BA:172:C:H2' | 35:BA:173:G:C8 | 2.38 | 0.56 |
| 38:DD:10:THR:HG23 | 38:DD:13:ARG:HB3 | 1.88 | 0.56 |
| 2:CB:27:LYS:HD3 | 2:CB:195:ASP:CG | 2.26 | 0.56 |
| 1:CA:1316:G:H2' | 1:CA:1317:C:H5'' | 1.88 | 0.56 |
| 16:AP:51:VAL:O | 16:AP:52:ASP:C | 2.44 | 0.56 |
| 44:DN:58:ASP:C | 44:DN:60:ILE:H | 2.09 | 0.56 |
| 35:BA:573:G:O2' | 35:BA:574:C:H3' | 2.06 | 0.56 |
| 35:BA:2184:G:H2' | 35:BA:2185:C:C6 | 2.40 | 0.56 |
| 21:CU:6:ARG:O | 21:CU:8:THR:N | 2.37 | 0.56 |
| 47:DQ:80:GLU:HG2 | 47:DQ:80:GLU:O | 2.06 | 0.56 |
| 14:CN:40:CYS:O | 14:CN:44:LEU:HB3 | 2.05 | 0.56 |
| 1:AA:67:C:H2' | 1:AA:68:G:C8 | 2.41 | 0.56 |
| 10:CJ:8:LEU:HD13 | 10:CJ:20:ALA:CB | 2.36 | 0.56 |
| 18:AR:61:LYS:O | 18:AR:65:ILE:HG12 | 2.06 | 0.56 |
| 38:BD:112:GLN:HB2 | 38:BD:115:GLN:HE21 | 1.69 | 0.56 |
| 1:AA:1466:C:O2' | 1:AA:1467:G:H5' | 2.06 | 0.56 |
| 1:CA:1435:G:H2' | 1:CA:1436:U:C6 | 2.40 | 0.56 |
| 5:CE:135:THR:O | 5:CE:138:ALA:HB3 | 2.05 | 0.56 |
| 35:DA:1651:G:OP1 | 48:DR:40:LYS:HE3 | 2.06 | 0.56 |
| 55:DY:101:LYS:HG2 | 55:DY:102:CYS:N | 2.20 | 0.56 |
| 3:CC:59:ARG:HG2 | 3:CC:63:ASN:O | 2.06 | 0.56 |
| 46:DP:94:GLU:HG3 | 46:DP:124:LYS:HB3 | 1.87 | 0.56 |
| 53:BW:95:ILE:O | 53:BW:95:ILE:HG13 | 2.04 | 0.56 |
| 53:BW:3:ALA:HB2 | 53:BW:58:ALA:HA | 1.88 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:878:G:H5'' | 8:CH:89:PRO:HG2 | 1.88 | 0.56 |
| 2:AB:160:ASP:O | 2:AB:161:ALA:HB2 | 2.05 | 0.56 |
| 1:AA:1054:C:C4 | 22:AY:34:G:H1' | 2.40 | 0.56 |
| 12:CL:41:ARG:HH12 | 12:CL:57:LYS:NZ | 2.04 | 0.56 |
| 40:BF:132:VAL:CG2 | 40:BF:133:ASN:H | 1.99 | 0.56 |
| 36:BB:105:A:H2' | 36:BB:106:G:O4' | 2.06 | 0.56 |
| 39:BE:92:THR:N | 39:BE:95:ILE:HD11 | 2.21 | 0.56 |
| 35:DA:1173:G:H3' | 35:DA:1174:A:C5' | 2.36 | 0.56 |
| 42:DH:46:GLU:O | 42:DH:47:GLU:HB3 | 2.06 | 0.56 |
| 13:CM:3:ARG:CA | 13:CM:9:ILE:HG13 | 2.36 | 0.56 |
| 41:DG:33:ARG:O | 41:DG:161:THR:HG22 | 2.05 | 0.56 |
| 55:DY:27:VAL:CA | 55:DY:28:LYS:NZ | 2.68 | 0.56 |
| 41:BG:115:ARG:HD3 | 41:BG:115:ARG:N | 2.20 | 0.56 |
| 5:CE:81:GLU:HB3 | 5:CE:88:LYS:NZ | 2.20 | 0.56 |
| 55:DY:17:SER:OG | 55:DY:18:GLY:N | 2.35 | 0.56 |
| 56:DZ:165:VAL:CG1 | 56:DZ:166:SER:H | 2.09 | 0.56 |
| 46:BP:101:VAL:HG12 | 46:BP:107:LYS:N | 2.20 | 0.56 |
| 46:DP:101:VAL:HG12 | 46:DP:107:LYS:H | 1.69 | 0.56 |
| 41:DG:60:LEU:HD12 | 41:DG:68:PRO:HG3 | 1.87 | 0.56 |
| 8:AH:82:HIS:CD2 | 8:AH:138:TRP:HE1 | 2.21 | 0.56 |
| 35:BA:2808:U:O2' | 35:BA:2809:A:H5' | 2.05 | 0.56 |
| 56:BZ:144:LEU:HD12 | 56:BZ:174:VAL:HG23 | 1.88 | 0.56 |
| 56:DZ:92:SER:O | 56:DZ:130:PRO:HG2 | 2.06 | 0.56 |
| 1:AA:103:C:OP2 | 20:AT:14:LYS:HE3 | 2.06 | 0.56 |
| 3:AC:34:LEU:HD21 | 3:AC:38:ARG:NH1 | 2.21 | 0.56 |
| 4:CD:30:LYS:C | 4:CD:32:ALA:N | 2.52 | 0.56 |
| 2:CB:21:ARG:NH1 | 2:CB:38:GLY:HA3 | 2.21 | 0.56 |
| 3:CC:52:LEU:CD2 | 3:CC:52:LEU:H | 2.17 | 0.56 |
| 5:CE:40:ARG:HH11 | 5:CE:40:ARG:CG | 2.19 | 0.56 |
| 1:CA:1327:C:H2' | 1:CA:1328:C:H6 | 1.70 | 0.56 |
| 1:CA:1404:C:H2' | 1:CA:1405:G:H8 | 1.71 | 0.56 |
| 1:CA:708:C:H2' | 1:CA:709:G:H8 | 1.71 | 0.56 |
| 25:B0:68:GLU:HG3 | 25:B0:80:HIS:HB2 | 1.87 | 0.56 |
| 2:AB:164:VAL:O | 2:AB:186:ALA:HB1 | 2.06 | 0.56 |
| 9:CI:121:ARG:HH11 | 9:CI:121:ARG:HG2 | 1.71 | 0.56 |
| 1:AA:556:C:C2' | 1:AA:557:G:H5' | 2.36 | 0.56 |
| 16:CP:51:VAL:O | 16:CP:52:ASP:C | 2.44 | 0.56 |
| 35:DA:1719:G:O2' | 35:DA:1720:U:H5' | 2.06 | 0.56 |
| 35:DA:1711:C:H2' | 35:DA:1712:C:C6 | 2.41 | 0.56 |
| 53:BW:84:ARG:HB2 | 53:BW:96:ILE:CG2 | 2.36 | 0.56 |
| 35:BA:2693:A:H2' | 35:BA:2694:G:H8 | 1.71 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 45:BO:119:PRO:O | 50:BT:68:TYR:HE1 | 1.89 | 0.56 |
| 1:AA:1084:G:H5' | 1:AA:1102:A:OP2 | 2.06 | 0.56 |
| 43:BI:31:LEU:HB2 | 43:BI:32:PRO:HD3 | 1.88 | 0.56 |
| 35:DA:1669:A:H5'' | 35:DA:2550:G:OP1 | 2.06 | 0.56 |
| 1:AA:773:G:O2' | 1:AA:774:G:H5' | 2.06 | 0.56 |
| 25:D0:32:ARG:H | 25:D0:35:ASN:ND2 | 2.04 | 0.56 |
| 49:BS:88:ASP:OD2 | 49:BS:89:ARG:N | 2.39 | 0.56 |
| 41:BG:46:ALA:CB | 41:BG:88:ILE:HD13 | 2.23 | 0.56 |
| 49:DS:88:ASP:OD2 | 49:DS:89:ARG:N | 2.39 | 0.56 |
| 50:DT:32:TYR:CG | 50:DT:81:PRO:HB2 | 2.41 | 0.56 |
| 35:BA:195:A:OP1 | 46:BP:46:LYS:HE2 | 2.06 | 0.56 |
| 49:BS:96:GLY:C | 49:BS:98:VAL:N | 2.58 | 0.56 |
| 35:BA:1278:A:O2' | 35:BA:1279:G:H5' | 2.06 | 0.56 |
| 10:AJ:32:ALA:CB | 10:AJ:76:ASN:H | 2.18 | 0.56 |
| 52:DV:22:VAL:O | 52:DV:23:GLU:HB2 | 2.06 | 0.56 |
| 41:DG:9:ARG:O | 41:DG:13:GLU:HG2 | 2.06 | 0.56 |
| 50:DT:57:PHE:O | 50:DT:59:THR:HG22 | 2.06 | 0.56 |
| 3:AC:157:ILE:HD13 | 3:AC:166:GLU:HB2 | 1.88 | 0.56 |
| 36:DB:6:C:O2' | 49:DS:29:PHE:HE1 | 1.87 | 0.56 |
| 30:B5:6:VAL:HG23 | 35:BA:2015:A:C2 | 2.41 | 0.56 |
| 44:DN:68:GLU:HG2 | 44:DN:88:GLU:CD | 2.27 | 0.56 |
| 13:AM:81:LEU:HB3 | 13:AM:89:GLY:HA2 | 1.88 | 0.56 |
| 1:AA:255:G:H2' | 1:AA:256:U:C6 | 2.41 | 0.56 |
| 43:BI:61:ARG:HB3 | 43:BI:133:HIS:NE2 | 2.21 | 0.56 |
| 17:AQ:8:GLY:HA3 | 17:AQ:22:LEU:O | 2.06 | 0.56 |
| 1:AA:1152:A:H2' | 1:AA:1153:C:H6 | 1.71 | 0.56 |
| 23:CW:39:U:H4' | 23:CW:39:U:OP2 | 2.06 | 0.56 |
| 35:DA:2298:A:H2' | 35:DA:2299:G:O4' | 2.06 | 0.56 |
| 35:BA:541:C:H2' | 35:BA:542:C:C6 | 2.41 | 0.56 |
| 35:DA:2173:A:H2' | 35:DA:2174:C:H5' | 1.88 | 0.56 |
| 28:D3:22:ALA:HA | 28:D3:46:ASN:HD22 | 1.70 | 0.56 |
| 1:AA:708:C:H2' | 1:AA:709:G:H8 | 1.71 | 0.56 |
| 36:DB:111:G:C2' | 36:DB:112:U:H5' | 2.36 | 0.56 |
| 4:CD:10:ARG:HH11 | 4:CD:10:ARG:HG2 | 1.70 | 0.56 |
| 1:CA:370:C:H2' | 1:CA:371:G:H8 | 1.71 | 0.56 |
| 1:AA:1280:A:H5'' | 10:AJ:40:LEU:HD12 | 1.87 | 0.56 |
| 37:BC:22:ILE:HG22 | 37:BC:25:ALA:H | 1.70 | 0.56 |
| 35:DA:2352:A:C2' | 35:DA:2353:G:H5' | 2.36 | 0.56 |
| 1:AA:1442:G:H2' | 50:BT:118:ARG:HH12 | 1.71 | 0.56 |
| 14:AN:6:LEU:HD23 | 14:AN:9:LYS:HE2 | 1.88 | 0.56 |
| 1:CA:296:U:H2' | 1:CA:297:G:C8 | 2.41 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:392:G:H2' | 1:CA:393:A:C8 | 2.41 | 0.56 |
| 1:AA:1349:A:H2' | 1:AA:1350:A:H8 | 1.71 | 0.56 |
| 44:BN:102:ALA:O | 44:BN:106:MET:HG3 | 2.06 | 0.56 |
| 4:AD:158:ILE:O | 4:AD:162:LEU:HB2 | 2.06 | 0.56 |
| 4:AD:150:GLU:HA | 4:AD:153:ARG:HD2 | 1.88 | 0.56 |
| 25:D0:4:LYS:O | 25:D0:5:LYS:HB2 | 2.06 | 0.56 |
| 35:BA:320:A:OP2 | 40:BF:137:LYS:HD2 | 2.06 | 0.56 |
| 3:CC:32:LEU:HD22 | 3:CC:59:ARG:HH11 | 1.71 | 0.56 |
| 35:BA:1444:G:H2' | 35:BA:1445(A):C:C5 | 2.40 | 0.56 |
| 35:BA:32:C:C2' | 35:BA:33:U:H5' | 2.36 | 0.56 |
| 1:CA:1356:G:H2' | 1:CA:1357:A:C8 | 2.40 | 0.56 |
| 38:DD:125:ILE:O | 38:DD:125:ILE:HG22 | 2.06 | 0.56 |
| 8:CH:53:VAL:O | 8:CH:54:ASP:HB2 | 2.05 | 0.56 |
| 42:DH:80:SER:O | 42:DH:81:GLU:HB2 | 2.04 | 0.56 |
| 48:BR:26:LYS:HE2 | 48:BR:71:GLN:H | 1.70 | 0.56 |
| 35:DA:30:G:O2' | 35:DA:31:C:H5' | 2.06 | 0.56 |
| 35:BA:1037:G:H1 | 35:BA:1118:C:H42 | 1.53 | 0.56 |
| 22:AY:19:G:H22 | 35:BA:881:G:H21 | 1.54 | 0.56 |
| 35:DA:207:A:H2' | 35:DA:208:C:O4' | 2.05 | 0.56 |
| 1:CA:402:G:O2' | 1:CA:403:C:H5' | 2.06 | 0.56 |
| 1:AA:445:G:H2' | 1:AA:446:G:H8 | 1.71 | 0.56 |
| 33:D8:13:ARG:HD2 | 46:DP:61:ARG:HH11 | 1.70 | 0.55 |
| 2:CB:8:LYS:HA | 2:CB:217:ARG:HH22 | 1.71 | 0.55 |
| 35:BA:662:G:P | 46:BP:18:ARG:HD2 | 2.45 | 0.55 |
| 56:DZ:144:LEU:HD21 | 56:DZ:150:LEU:CD1 | 2.36 | 0.55 |
| 49:DS:95:HIS:O | 49:DS:96:GLY:O | 2.24 | 0.55 |
| 13:CM:20:THR:C | 13:CM:22:ILE:H | 2.08 | 0.55 |
| 52:DV:47:VAL:O | 52:DV:48:GLY:C | 2.45 | 0.55 |
| 52:DV:4:ILE:HG22 | 52:DV:4:ILE:O | 2.05 | 0.55 |
| 55:DY:28:LYS:N | 55:DY:28:LYS:HZ2 | 2.03 | 0.55 |
| 35:DA:2177:C:H1' | 37:DC:44:HIS:CD2 | 2.41 | 0.55 |
| 42:DH:68:THR:HG22 | 42:DH:72:ILE:HD11 | 1.87 | 0.55 |
| 49:DS:65:VAL:C | 49:DS:67:ARG:N | 2.59 | 0.55 |
| 27:B2:7:ARG:HH11 | 27:B2:7:ARG:HG2 | 1.71 | 0.55 |
| 44:BN:17:ASP:OD1 | 44:BN:56:ASN:HB3 | 2.05 | 0.55 |
| 41:DG:58:GLN:O | 41:DG:62:LEU:HD13 | 2.07 | 0.55 |
| 41:DG:101:ILE:HD11 | 41:DG:105:LYS:HZ3 | 1.70 | 0.55 |
| 39:BE:9:VAL:HG13 | 39:BE:25:VAL:O | 2.06 | 0.55 |
| 35:BA:1484:G:H3' | 35:BA:1485:G:C5' | 2.35 | 0.55 |
| 35:BA:71:A:H2 | 54:BX:31:HIS:HE1 | 1.53 | 0.55 |
| 5:CE:126:ARG:NH1 | 5:CE:126:ARG:HG3 | 2.17 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 47:DQ:63:LYS:NZ | 56:DZ:175:VAL:HB | 2.20 | 0.55 |
| 56:BZ:17:ALA:HA | 56:BZ:20:ARG:HG3 | 1.87 | 0.55 |
| 25:D0:27:GLU:HA | 25:D0:67:VAL:O | 2.06 | 0.55 |
| 47:BQ:133:ARG:HG3 | 47:BQ:133:ARG:HH11 | 1.71 | 0.55 |
| 2:CB:137:ARG:HD3 | 2:CB:137:ARG:C | 2.27 | 0.55 |
| 56:BZ:118:GLN:NE2 | 56:BZ:175:VAL:HG21 | 2.21 | 0.55 |
| 4:AD:68:TYR:OH | 4:AD:196:LEU:HD21 | 2.05 | 0.55 |
| 11:CK:59:TYR:O | 11:CK:62:GLN:HB3 | 2.06 | 0.55 |
| 44:DN:28:THR:N | 44:DN:106:MET:HE1 | 2.21 | 0.55 |
| 48:BR:34:ILE:HG22 | 48:BR:35:THR:N | 2.21 | 0.55 |
| 40:DF:136:THR:O | 40:DF:140:LEU:HB2 | 2.05 | 0.55 |
| 35:DA:1312:U:H4' | 35:DA:1313:U:O5' | 2.04 | 0.55 |
| 35:BA:1270:C:H5'' | 35:BA:1271:G:H5' | 1.87 | 0.55 |
| 35:DA:2516:G:C5 | 35:DA:2517:C:C4 | 2.93 | 0.55 |
| 35:DA:2689:U:O2' | 35:DA:2690:C:OP2 | 2.19 | 0.55 |
| 35:DA:2703:C:O2 | 35:DA:2703:C:H2' | 2.05 | 0.55 |
| 35:BA:692:C:O2' | 35:BA:693:C:H5' | 2.06 | 0.55 |
| 31:D6:16:CYS:H | 31:D6:47:THR:CG2 | 2.19 | 0.55 |
| 50:BT:28:VAL:HG22 | 50:BT:46:GLU:HA | 1.87 | 0.55 |
| 39:DE:70:ALA:O | 39:DE:71:GLY:C | 2.45 | 0.55 |
| 38:DD:30:GLU:HG2 | 38:DD:63:ARG:CZ | 2.35 | 0.55 |
| 17:AQ:33:GLY:O | 17:AQ:34:LYS:O | 2.24 | 0.55 |
| 41:DG:12:TYR:HA | 41:DG:16:ARG:CB | 2.36 | 0.55 |
| 10:CJ:34:VAL:HG12 | 10:CJ:35:SER:N | 2.21 | 0.55 |
| 35:BA:1019:U:H2' | 35:BA:1020:A:C8 | 2.41 | 0.55 |
| 13:CM:81:LEU:HB3 | 13:CM:89:GLY:HA2 | 1.87 | 0.55 |
| 36:DB:65:C:N4 | 36:DB:109:C:H2' | 2.15 | 0.55 |
| 37:DC:49:ILE:HG22 | 37:DC:50:ASP:OD1 | 2.06 | 0.55 |
| 39:BE:16:ARG:O | 39:BE:18:ASP:N | 2.38 | 0.55 |
| 41:BG:101:ILE:C | 41:BG:101:ILE:HD13 | 2.26 | 0.55 |
| 1:CA:1152:A:H2' | 1:CA:1153:C:H6 | 1.72 | 0.55 |
| 35:BA:2101:G:H2' | 35:BA:2102:U:O4' | 2.06 | 0.55 |
| 38:BD:28:GLU:CD | 38:BD:28:GLU:N | 2.60 | 0.55 |
| 2:CB:167:PRO:HG3 | 2:CB:188:ALA:CB | 2.36 | 0.55 |
| 8:AH:26:VAL:HG23 | 8:AH:27:PRO:HD2 | 1.87 | 0.55 |
| 35:BA:2175:C:H1' | 37:BC:215:THR:N | 2.20 | 0.55 |
| 16:AP:51:VAL:O | 16:AP:53:VAL:N | 2.39 | 0.55 |
| 35:DA:1751:C:H2' | 35:DA:1752:C:C6 | 2.41 | 0.55 |
| 38:BD:18:VAL:CG1 | 38:BD:19:ALA:N | 2.69 | 0.55 |
| 1:CA:489:C:H2' | 1:CA:490:G:C8 | 2.41 | 0.55 |
| 35:DA:624:C:O2' | 35:DA:657:U:H5' | 2.06 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:CC:79:ARG:HH11 | 3:CC:79:ARG:HB3 | 1.71 | 0.55 |
| 35:BA:2475:C:H5' | 35:BA:2476:A:OP2 | 2.06 | 0.55 |
| 7:AG:73:MET:HG2 | 7:AG:90:GLU:HA | 1.88 | 0.55 |
| 4:CD:126:ILE:HG22 | 4:CD:127:THR:N | 2.21 | 0.55 |
| 5:CE:19:MET:O | 5:CE:20:GLN:HB2 | 2.06 | 0.55 |
| 35:DA:2101:G:H2' | 35:DA:2102:U:O4' | 2.06 | 0.55 |
| 25:B0:8:GLY:O | 25:B0:9:SER:HB3 | 2.05 | 0.55 |
| 35:BA:946:G:O2' | 35:BA:947:G:H5' | 2.06 | 0.55 |
| 35:BA:2703:C:O2 | 35:BA:2703:C:H2' | 2.05 | 0.55 |
| 35:DA:2233:U:H2' | 35:DA:2234:G:C8 | 2.41 | 0.55 |
| 46:DP:47:ASP:HB3 | 46:DP:48:PRO:C | 2.26 | 0.55 |
| 40:BF:24:LEU:HB3 | 40:BF:25:PRO:HD2 | 1.88 | 0.55 |
| 31:B6:16:CYS:N | 31:B6:47:THR:HG21 | 2.22 | 0.55 |
| 55:BY:80:GLY:O | 55:BY:81:LYS:O | 2.25 | 0.55 |
| 1:CA:1346:A:N1 | 1:CA:1374:A:H5'' | 2.21 | 0.55 |
| 31:D6:17:LYS:C | 31:D6:18:ARG:HD3 | 2.26 | 0.55 |
| 1:AA:1372:U:H5'' | 9:AI:71:SER:HB3 | 1.89 | 0.55 |
| 50:BT:32:TYR:CD2 | 50:BT:81:PRO:O | 2.59 | 0.55 |
| 35:BA:2358:G:H22 | 46:BP:55:ARG:HH22 | 1.54 | 0.55 |
| 35:BA:1884:A:H2' | 35:BA:1885:A:C5' | 2.19 | 0.55 |
| 56:BZ:101:PRO:O | 56:BZ:102:LEU:HD23 | 2.05 | 0.55 |
| 39:BE:93:VAL:HG12 | 39:BE:175:VAL:HG23 | 1.87 | 0.55 |
| 5:AE:101:ILE:HG12 | 5:AE:119:LEU:HA | 1.88 | 0.55 |
| 44:DN:1:MET:HG2 | 44:DN:2:LYS:H | 1.71 | 0.55 |
| 51:DU:62:ILE:HD12 | 51:DU:76:TYR:OH | 2.05 | 0.55 |
| 47:BQ:55:VAL:CG2 | 47:BQ:56:ARG:N | 2.69 | 0.55 |
| 55:BY:39:VAL:O | 55:BY:40:GLU:CD | 2.45 | 0.55 |
| 10:CJ:84:GLN:NE2 | 10:CJ:88:LEU:HD23 | 2.22 | 0.55 |
| 22:CY:74:C:H6 | 22:CY:74:C:H5' | 1.71 | 0.55 |
| 49:BS:35:ILE:HG22 | 49:BS:53:SER:HB2 | 1.89 | 0.55 |
| 45:DO:88:ASN:OD1 | 45:DO:92:GLU:O | 2.24 | 0.55 |
| 33:D8:30:ARG:O | 33:D8:31:HIS:HB3 | 2.06 | 0.55 |
| 53:BW:75:TYR:CD1 | 53:BW:104:THR:HB | 2.42 | 0.55 |
| 35:DA:1167:U:H2' | 35:DA:1168:G:C8 | 2.41 | 0.55 |
| 43:BI:132:PRO:O | 43:BI:133:HIS:C | 2.45 | 0.55 |
| 8:AH:85:ARG:C | 8:AH:85:ARG:HD3 | 2.26 | 0.55 |
| 30:D5:55:ARG:O | 30:D5:56:LYS:CB | 2.52 | 0.55 |
| 1:AA:389:A:H2' | 1:AA:390:C:C5' | 2.35 | 0.55 |
| 4:AD:11:LEU:O | 4:AD:13:ARG:O | 2.23 | 0.55 |
| 23:CW:48:C:H2' | 23:CW:59:U:H4' | 1.88 | 0.55 |
| 8:CH:26:VAL:HG23 | 8:CH:27:PRO:HD2 | 1.88 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 13:AM:3:ARG:HA | 13:AM:9:ILE:HG13 | 1.88 | 0.55 |
| 35:DA:271(M):G:H5'' | 43:DI:57:ARG:HH12 | 1.72 | 0.55 |
| 54:BX:65:ARG:HG2 | 54:BX:65:ARG:NH1 | 2.21 | 0.55 |
| 35:DA:528:A:H2 | 35:DA:2043:C:C5' | 2.18 | 0.55 |
| 35:DA:528:A:C2 | 35:DA:2043:C:H4' | 2.41 | 0.55 |
| 49:BS:26:LEU:HG | 49:BS:39:ILE:HD11 | 1.86 | 0.55 |
| 35:DA:2735:G:O2' | 35:DA:2736:G:H5'' | 2.05 | 0.55 |
| 2:CB:14:GLY:O | 2:CB:15:VAL:HG22 | 2.05 | 0.55 |
| 1:AA:221:C:H2' | 1:AA:222:U:H6 | 1.71 | 0.55 |
| 1:AA:370:C:H2' | 1:AA:371:G:H8 | 1.71 | 0.55 |
| 35:BA:626:U:O2 | 46:BP:105:LEU:HG | 2.06 | 0.55 |
| 35:DA:573:G:O2' | 35:DA:574:C:H3' | 2.06 | 0.55 |
| 35:BA:2199:A:H3' | 35:BA:2200:C:C6 | 2.41 | 0.55 |
| 11:CK:33:THR:HB | 11:CK:38:ASN:N | 2.22 | 0.55 |
| 1:CA:532:A:H2 | 1:CA:1207:G:O4' | 1.90 | 0.55 |
| 7:CG:111:ARG:NH2 | 7:CG:122:HIS:HB3 | 2.21 | 0.55 |
| 35:BA:1438:U:O2' | 35:BA:1439:A:H5' | 2.06 | 0.55 |
| 7:AG:111:ARG:NH2 | 7:AG:122:HIS:HB3 | 2.21 | 0.55 |
| 35:DA:523:C:O2' | 35:DA:524:U:H5' | 2.05 | 0.55 |
| 44:DN:38:HIS:O | 51:DU:67:ALA:HB1 | 2.06 | 0.55 |
| 54:BX:64:LYS:HD3 | 54:BX:73:ARG:HD2 | 1.88 | 0.55 |
| 35:BA:1661:G:O2' | 35:BA:1662:C:H5' | 2.06 | 0.55 |
| 1:CA:560:U:H5' | 1:CA:566:G:N2 | 2.21 | 0.55 |
| 1:AA:779:C:O2' | 1:AA:780:A:H5' | 2.07 | 0.55 |
| 13:CM:40:ASN:O | 13:CM:43:THR:HG23 | 2.05 | 0.55 |
| 35:BA:2707:G:H2' | 35:BA:2708:G:H8 | 1.70 | 0.55 |
| 16:AP:49:LEU:HG | 16:AP:49:LEU:O | 2.07 | 0.55 |
| 35:BA:2463:C:O2' | 35:BA:2464:C:H5' | 2.06 | 0.55 |
| 35:BA:1344:G:H4' | 35:BA:1384:A:C5 | 2.40 | 0.55 |
| 35:DA:833:U:H2' | 35:DA:834:C:C6 | 2.42 | 0.55 |
| 46:DP:47:ASP:HB3 | 46:DP:48:PRO:O | 2.06 | 0.55 |
| 12:AL:37:CYS:HA | 12:AL:57:LYS:O | 2.06 | 0.55 |
| 31:D6:15:GLU:CD | 31:D6:41:PRO:HG3 | 2.27 | 0.55 |
| 2:CB:223:ILE:HG22 | 2:CB:226:ARG:NH2 | 2.21 | 0.55 |
| 39:DE:53:PRO:O | 39:DE:54:GLN:O | 2.25 | 0.55 |
| 39:DE:12:THR:HG23 | 50:DT:8:LYS:CE | 2.36 | 0.55 |
| 37:BC:64:LEU:O | 37:BC:66:HIS:N | 2.40 | 0.55 |
| 14:AN:37:PHE:C | 14:AN:39:LEU:H | 2.10 | 0.55 |
| 22:AY:64:A:H2' | 22:AY:65:G:H8 | 1.72 | 0.55 |
| 41:DG:115:ARG:NH2 | 41:DG:136:ARG:HG3 | 2.21 | 0.55 |
| 1:CA:1363:C:H5' | 1:CA:1363(A):A:O5' | 2.06 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:CC:30:ARG:HH11 | 14:CN:38:GLY:N | 2.03 | 0.55 |
| 10:AJ:34:VAL:HG12 | 10:AJ:35:SER:N | 2.21 | 0.55 |
| 44:DN:114:ARG:O | 44:DN:118:LYS:HG3 | 2.06 | 0.55 |
| 1:AA:346:G:H5' | 50:BT:41:ARG:HG3 | 1.88 | 0.55 |
| 45:DO:77:ILE:HD13 | 50:DT:74:ARG:HG2 | 1.87 | 0.55 |
| 35:BA:1167:U:H2' | 35:BA:1168:G:C8 | 2.42 | 0.55 |
| 1:AA:1464:G:O2' | 1:AA:1465:C:H5' | 2.06 | 0.55 |
| 35:DA:2099:U:H2' | 35:DA:2099:U:O2 | 2.05 | 0.55 |
| 26:B1:64:ALA:HA | 26:B1:67:ILE:CG1 | 2.36 | 0.55 |
| 56:DZ:10:ARG:NH2 | 56:DZ:25:PRO:CA | 2.68 | 0.55 |
| 56:DZ:10:ARG:HH22 | 56:DZ:26:GLY:H | 1.54 | 0.55 |
| 48:BR:74:LYS:HD2 | 48:BR:77:ARG:NH2 | 2.20 | 0.55 |
| 2:CB:164:VAL:O | 2:CB:186:ALA:HB1 | 2.05 | 0.55 |
| 35:DA:2347:C:H2' | 35:DA:2348:U:H6 | 1.71 | 0.55 |
| 21:AU:9:ARG:O | 21:AU:13:ILE:HG13 | 2.06 | 0.55 |
| 50:BT:131:ALA:C | 50:BT:133:GLU:H | 2.10 | 0.55 |
| 1:AA:1316:G:H2' | 1:AA:1317:C:H5'' | 1.89 | 0.55 |
| 1:CA:1457:G:O2' | 1:CA:1458:G:H5' | 2.06 | 0.55 |
| 1:AA:841:U:H3' | 1:AA:848:C:C5' | 2.36 | 0.55 |
| 35:DA:17:G:H2' | 35:DA:18:C:H6 | 1.71 | 0.55 |
| 35:DA:1934:C:O2' | 35:DA:1935:G:H5' | 2.06 | 0.55 |
| 11:AK:34:ASP:OD1 | 11:AK:38:ASN:HB2 | 2.05 | 0.55 |
| 35:DA:2681:C:H5 | 35:DA:2725:A:N6 | 2.05 | 0.55 |
| 1:CA:630:G:N3 | 1:CA:630:G:H2' | 2.22 | 0.55 |
| 1:AA:630:G:H2' | 1:AA:630:G:N3 | 2.22 | 0.55 |
| 56:DZ:153:SER:C | 56:DZ:155:LEU:H | 2.10 | 0.55 |
| 1:CA:668:G:O2' | 15:CO:46:HIS:HB3 | 2.06 | 0.55 |
| 35:DA:2223:G:H2' | 35:DA:2224:G:H5' | 1.88 | 0.55 |
| 11:AK:41:THR:HG21 | 11:AK:71:LYS:HB3 | 1.88 | 0.55 |
| 22:AV:53:G:H2' | 22:AV:54:U:C6 | 2.42 | 0.55 |
| 35:DA:2052:G:O4' | 39:DE:142:GLY:HA3 | 2.06 | 0.55 |
| 11:CK:41:THR:HG21 | 11:CK:71:LYS:HB3 | 1.88 | 0.55 |
| 35:DA:2680:C:H5' | 39:DE:189:PRO:HA | 1.89 | 0.55 |
| 56:DZ:43:GLU:O | 56:DZ:47:VAL:HG23 | 2.06 | 0.55 |
| 1:CA:1372:U:H5'' | 9:CI:71:SER:HB3 | 1.87 | 0.55 |
| 55:DY:81:LYS:CD | 55:DY:97:ARG:HB3 | 2.31 | 0.55 |
| 41:DG:148:MET:O | 41:DG:148:MET:HE2 | 2.06 | 0.55 |
| 37:DC:59:ARG:HH21 | 37:DC:199:HIS:CB | 2.19 | 0.55 |
| 51:DU:58:ARG:O | 51:DU:62:ILE:HG12 | 2.06 | 0.55 |
| 52:DV:6:LYS:HG3 | 52:DV:11:GLN:HG2 | 1.88 | 0.55 |
| 35:DA:2306:C:C5 | 35:DA:2307:G:H1' | 2.41 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 52:BV:24:LYS:HA | 52:BV:92:THR:HG23 | 1.87 | 0.55 |
| 42:BH:100:GLY:C | 42:BH:102:ALA:H | 2.08 | 0.55 |
| 23:AW:39:U:OP2 | 23:AW:39:U:H4' | 2.07 | 0.55 |
| 30:B5:36:CYS:HB3 | 30:B5:38:ALA:H | 1.72 | 0.55 |
| 10:AJ:4:ILE:HB | 10:AJ:74:ILE:CD1 | 2.37 | 0.55 |
| 35:DA:907:U:OP1 | 47:DQ:24:GLY:N | 2.40 | 0.55 |
| 46:DP:97:PRO:O | 46:DP:99:LEU:N | 2.37 | 0.55 |
| 3:AC:6:HIS:ND1 | 14:AN:49:HIS:HB3 | 2.21 | 0.55 |
| 30:B5:6:VAL:CG2 | 30:B5:7:PRO:HD2 | 2.36 | 0.55 |
| 53:DW:80:PRO:O | 53:DW:100:THR:HG21 | 2.06 | 0.55 |
| 45:DO:105:GLU:HA | 45:DO:108:GLU:CD | 2.26 | 0.55 |
| 41:DG:42:GLY:O | 41:DG:43:LEU:HB2 | 2.06 | 0.55 |
| 20:AT:30:LYS:CE | 20:AT:72:LEU:HD21 | 2.32 | 0.55 |
| 27:D2:61:LEU:O | 27:D2:64:LEU:N | 2.39 | 0.55 |
| 45:DO:88:ASN:O | 45:DO:91:LEU:N | 2.39 | 0.55 |
| 1:CA:226:G:O2' | 1:CA:227:G:H5' | 2.07 | 0.55 |
| 35:BA:2263:C:O2' | 35:BA:2264:C:H5' | 2.06 | 0.55 |
| 38:DD:24:ILE:O | 38:DD:26:LYS:NZ | 2.38 | 0.55 |
| 1:AA:738:C:H5'' | 6:AF:69:GLU:HB2 | 1.89 | 0.55 |
| 1:AA:728:A:H2' | 1:AA:729:A:C8 | 2.41 | 0.55 |
| 17:AQ:59:ILE:CG2 | 17:AQ:71:PHE:HB3 | 2.37 | 0.55 |
| 35:BA:1528(A):A:N7 | 35:BA:1529:G:C8 | 2.74 | 0.55 |
| 1:AA:1152:A:H5' | 10:AJ:70:ARG:HH22 | 1.71 | 0.55 |
| 31:B6:34:LEU:CD2 | 31:B6:36:LEU:HD22 | 2.34 | 0.55 |
| 3:CC:54:ARG:HH12 | 3:CC:56:ASP:HB2 | 1.70 | 0.55 |
| 8:AH:12:ARG:HD3 | 8:AH:25:ASP:O | 2.05 | 0.55 |
| 47:BQ:110:THR:HG23 | 47:BQ:113:GLN:OE1 | 2.07 | 0.55 |
| 45:DO:104:ARG:HH12 | 50:DT:35:LYS:HD3 | 1.70 | 0.55 |
| 18:CR:56:THR:HB | 18:CR:58:LEU:CD1 | 2.35 | 0.55 |
| 1:AA:1243:C:OP2 | 21:AU:10:ARG:CZ | 2.54 | 0.55 |
| 25:D0:68:GLU:HG3 | 25:D0:80:HIS:HB2 | 1.88 | 0.55 |
| 8:AH:44:PHE:HB3 | 8:AH:80:ILE:HD11 | 1.87 | 0.55 |
| 1:AA:539:A:H2' | 1:AA:540:G:H8 | 1.71 | 0.55 |
| 46:BP:105:LEU:HD12 | 46:BP:105:LEU:N | 2.21 | 0.55 |
| 36:BB:41:U:H5 | 41:BG:69:ALA:HB1 | 1.69 | 0.55 |
| 15:AO:10:LYS:HG3 | 15:AO:11:VAL:N | 2.21 | 0.55 |
| 1:CA:41:G:H2' | 1:CA:42:G:C8 | 2.42 | 0.55 |
| 46:BP:62:LEU:N | 46:BP:62:LEU:HD23 | 2.22 | 0.55 |
| 1:CA:659:U:O2' | 1:CA:660:G:H5' | 2.06 | 0.55 |
| 35:DA:839:U:H2' | 35:DA:840:C:C6 | 2.40 | 0.55 |
| 1:AA:1208:C:H2' | 1:AA:1209:C:H6 | 1.71 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 4:AD:147:ALA:CB | 4:AD:182:LYS:HB3 | 2.36 | 0.55 |
| 53:DW:82:LEU:HD12 | 53:DW:82:LEU:H | 1.71 | 0.55 |
| 51:BU:8:VAL:CG1 | 51:BU:12:ARG:NE | 2.70 | 0.55 |
| 22:CY:8:U:H4' | 22:CY:48:C:H4' | 1.89 | 0.55 |
| 35:DA:1048:A:H4' | 35:DA:1049:C:C5 | 2.42 | 0.55 |
| 7:CG:152:ALA:O | 7:CG:155:ARG:HG3 | 2.07 | 0.55 |
| 38:DD:93:ALA:HB2 | 38:DD:107:ALA:HB2 | 1.88 | 0.55 |
| 35:BA:361:G:H2' | 35:BA:362:U:H5'' | 1.88 | 0.55 |
| 31:D6:27:LYS:HD2 | 35:DA:2285:C:OP2 | 2.06 | 0.55 |
| 35:BA:553:G:H2' | 35:BA:554:U:O4' | 2.07 | 0.55 |
| 53:DW:68:ARG:HB3 | 53:DW:109:GLU:HB3 | 1.89 | 0.55 |
| 35:DA:2107:C:H2' | 35:DA:2108:C:O4' | 2.06 | 0.55 |
| 1:CA:1410:G:O2' | 1:CA:1411:C:H5' | 2.07 | 0.55 |
| 33:D8:56:GLU:HA | 33:D8:59:LYS:NZ | 2.21 | 0.55 |
| 40:BF:34:TRP:HB2 | 46:BP:10:PRO:O | 2.07 | 0.55 |
| 2:AB:237:ALA:H | 2:AB:239:VAL:HG23 | 1.70 | 0.55 |
| 18:AR:36:ASN:O | 18:AR:40:LEU:HD12 | 2.06 | 0.55 |
| 52:BV:47:VAL:O | 52:BV:48:GLY:C | 2.44 | 0.55 |
| 35:DA:2636:U:OP1 | 39:DE:80:GLU:HG3 | 2.06 | 0.55 |
| 39:DE:92:THR:N | 39:DE:95:ILE:HD11 | 2.20 | 0.55 |
| 39:BE:54:GLN:HA | 39:BE:72:VAL:HG11 | 1.89 | 0.55 |
| 39:BE:93:VAL:HG11 | 39:BE:181:LEU:O | 2.06 | 0.55 |
| 48:BR:21:TYR:OH | 48:BR:43:GLU:HG2 | 2.06 | 0.55 |
| 40:BF:11:VAL:HG12 | 40:BF:12:LEU:H | 1.72 | 0.55 |
| 23:AW:39:U:O2 | 23:AW:39:U:H5' | 2.07 | 0.55 |
| 6:AF:62:TRP:HB2 | 18:AR:35:ARG:HH12 | 1.71 | 0.55 |
| 10:CJ:38:ILE:HG13 | 10:CJ:71:LEU:HB3 | 1.89 | 0.55 |
| 4:CD:18:LYS:CB | 4:CD:33:MET:HG2 | 2.30 | 0.55 |
| 23:AW:68:C:H2' | 23:AW:69:G:H8 | 1.71 | 0.55 |
| 35:BA:271(S):G:O2' | 35:BA:271(T):C:H5'' | 2.06 | 0.55 |
| 56:BZ:30:ASN:OD1 | 56:BZ:33:LEU:HB3 | 2.07 | 0.55 |
| 46:BP:146:VAL:HG13 | 46:BP:147:LEU:N | 2.22 | 0.55 |
| 19:CS:18:LYS:O | 19:CS:22:LEU:HD23 | 2.07 | 0.55 |
| 22:AY:16:U:H3' | 22:AY:17:C:C5' | 2.35 | 0.55 |
| 39:DE:101:ARG:NE | 39:DE:171:GLU:HB2 | 2.22 | 0.55 |
| 2:CB:21:ARG:HD2 | 2:CB:38:GLY:C | 2.27 | 0.55 |
| 26:B1:57:GLU:O | 26:B1:57:GLU:HG2 | 2.07 | 0.55 |
| 33:D8:46:ARG:O | 33:D8:47:LYS:HB3 | 2.06 | 0.55 |
| 2:AB:178:ARG:O | 8:AH:71:GLY:HA2 | 2.07 | 0.55 |
| 46:DP:132:LYS:O | 46:DP:136:GLU:HG3 | 2.07 | 0.55 |
| 1:CA:839:U:H2' | 1:CA:839:U:O2 | 2.07 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:841:U:H3' | 1:CA:848:C:C5' | 2.36 | 0.55 |
| 21:AU:6:ARG:O | 21:AU:8:THR:N | 2.36 | 0.55 |
| 6:AF:19:LEU:HD23 | 6:AF:23:LYS:HD3 | 1.89 | 0.55 |
| 1:AA:296:U:H2' | 1:AA:297:G:C8 | 2.42 | 0.55 |
| 11:AK:57:THR:HG23 | 11:AK:58:PRO:HD2 | 1.87 | 0.55 |
| 18:CR:61:LYS:O | 18:CR:65:ILE:HG12 | 2.07 | 0.55 |
| 1:CA:1437:C:H2' | 1:CA:1438:G:C8 | 2.42 | 0.55 |
| 35:DA:2718:G:H2' | 35:DA:2719:G:O4' | 2.06 | 0.55 |
| 1:AA:1318:A:H1' | 19:AS:37:ARG:HH21 | 1.72 | 0.55 |
| 35:BA:2661:G:H2' | 35:BA:2662:A:C8 | 2.41 | 0.55 |
| 35:BA:1921:G:O2' | 35:BA:1922:G:H5' | 2.07 | 0.55 |
| 19:CS:36:ARG:NH1 | 19:CS:53:ASN:HA | 2.22 | 0.55 |
| 1:AA:1406:U:O2' | 1:AA:1407:C:H5' | 2.06 | 0.55 |
| 11:AK:69:ALA:O | 11:AK:73:MET:HG2 | 2.06 | 0.55 |
| 1:CA:671:G:O2' | 1:CA:672:U:H5' | 2.07 | 0.55 |
| 43:DI:59:ALA:O | 43:DI:63:ALA:HB3 | 2.07 | 0.55 |
| 6:AF:96:PRO:HB3 | 18:AR:30:ASP:CG | 2.26 | 0.55 |
| 55:BY:81:LYS:CD | 55:BY:97:ARG:HB3 | 2.33 | 0.55 |
| 9:AI:89:ASN:HB3 | 9:AI:92:TYR:CD1 | 2.42 | 0.55 |
| 40:DF:126:VAL:HG13 | 40:DF:193:VAL:HG13 | 1.89 | 0.55 |
| 47:BQ:141:GLN:OXT | 56:BZ:99:TYR:O | 2.25 | 0.55 |
| 48:BR:9:LYS:O | 48:BR:10:LEU:HD23 | 2.07 | 0.55 |
| 42:BH:44:VAL:O | 42:BH:46:GLU:N | 2.38 | 0.55 |
| 51:DU:64:ARG:NH2 | 51:DU:64:ARG:HG2 | 2.15 | 0.55 |
| 51:DU:89:GLU:HG2 | 52:DV:50:PRO:CG | 2.37 | 0.55 |
| 41:BG:64:THR:HG23 | 41:BG:65:GLY:N | 2.22 | 0.55 |
| 41:DG:115:ARG:NH1 | 41:DG:140:ILE:HD11 | 2.19 | 0.55 |
| 12:CL:11:VAL:HG21 | 17:CQ:34:LYS:HD3 | 1.88 | 0.55 |
| 3:AC:152:ILE:HG13 | 3:AC:199:LYS:HB2 | 1.89 | 0.55 |
| 46:DP:101:VAL:CB | 46:DP:107:LYS:HA | 2.34 | 0.55 |
| 46:DP:29:LYS:N | 46:DP:29:LYS:HD2 | 2.22 | 0.55 |
| 20:AT:26:ASN:HB3 | 20:AT:71:THR:OG1 | 2.06 | 0.55 |
| 50:BT:35:LYS:HG3 | 50:BT:36:GLU:N | 2.22 | 0.55 |
| 1:CA:619:U:N3 | 4:CD:135:LEU:HD21 | 2.21 | 0.55 |
| 1:CA:738:C:H5'' | 6:CF:69:GLU:HB2 | 1.89 | 0.55 |
| 30:B5:55:ARG:O | 30:B5:56:LYS:CB | 2.51 | 0.55 |
| 46:BP:111:ARG:CZ | 46:BP:149:GLU:HG3 | 2.37 | 0.55 |
| 19:CS:29:ARG:HD2 | 19:CS:30:LEU:H | 1.71 | 0.55 |
| 42:DH:89:ILE:HG12 | 42:DH:129:THR:HA | 1.89 | 0.55 |
| 35:BA:674:G:C1' | 40:BF:74:ARG:HD3 | 2.36 | 0.55 |
| 37:BC:68:LEU:HB2 | 37:BC:70:LYS:HG2 | 1.87 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BP:13:ASN:ND2 | 46:BP:13:ASN:C | 2.57 | 0.55 |
| 35:BA:89:G:H3' | 35:BA:90:U:H5'' | 1.87 | 0.55 |
| 47:BQ:62:GLY:H | 47:BQ:109:VAL:HG22 | 1.71 | 0.55 |
| 45:DO:49:ARG:NH1 | 45:DO:49:ARG:HG2 | 2.20 | 0.55 |
| 51:DU:20:LEU:CB | 51:DU:39:LEU:HD11 | 2.35 | 0.55 |
| 11:AK:95:ILE:H | 11:AK:95:ILE:HD13 | 1.72 | 0.55 |
| 39:DE:5:LEU:N | 39:DE:5:LEU:HD23 | 2.21 | 0.55 |
| 1:AA:274:A:H4' | 1:AA:275:G:OP1 | 2.05 | 0.55 |
| 35:BA:2495:G:H5'' | 47:BQ:82:ARG:HB3 | 1.88 | 0.55 |
| 42:DH:87:LEU:HD23 | 42:DH:164:TYR:HA | 1.88 | 0.55 |
| 1:CA:805:C:H2' | 1:CA:806:C:C6 | 2.40 | 0.55 |
| 2:CB:124:SER:OG | 2:CB:125:PRO:HD2 | 2.07 | 0.55 |
| 11:CK:34:ASP:OD1 | 11:CK:38:ASN:HB2 | 2.07 | 0.55 |
| 1:AA:41:G:H2' | 1:AA:42:G:C8 | 2.41 | 0.55 |
| 1:CA:243:A:O2' | 1:CA:244:U:OP2 | 2.24 | 0.55 |
| 1:CA:59:A:C5' | 1:CA:60:A:H5'' | 2.37 | 0.55 |
| 38:DD:166:GLN:CA | 38:DD:166:GLN:NE2 | 2.70 | 0.55 |
| 1:AA:545:C:O2' | 1:AA:546:G:H5' | 2.07 | 0.55 |
| 35:DA:2236:C:C2' | 35:DA:2237:G:H5' | 2.37 | 0.55 |
| 35:DA:272(D):G:H2' | 35:DA:272(E):G:H8 | 1.72 | 0.55 |
| 40:DF:192:LEU:HD23 | 40:DF:193:VAL:N | 2.22 | 0.55 |
| 2:AB:69:LEU:HD22 | 2:AB:91:PRO:CB | 2.31 | 0.55 |
| 50:BT:82:LEU:O | 50:BT:84:GLN:N | 2.36 | 0.55 |
| 56:BZ:94:GLU:O | 56:BZ:96:VAL:N | 2.37 | 0.55 |
| 44:BN:120:LEU:HD11 | 44:BN:122:VAL:HG23 | 1.88 | 0.55 |
| 55:DY:27:VAL:HA | 55:DY:28:LYS:NZ | 2.21 | 0.55 |
| 55:DY:38:ILE:C | 55:DY:39:VAL:HG23 | 2.26 | 0.55 |
| 35:BA:2305:A:C2 | 35:BA:2306:C:H1' | 2.42 | 0.55 |
| 2:CB:114:ARG:HD3 | 2:CB:117:GLU:OE1 | 2.07 | 0.55 |
| 44:DN:25:ARG:NH1 | 44:DN:25:ARG:CG | 2.57 | 0.55 |
| 35:BA:1680:U:H2' | 35:BA:1681:G:O4' | 2.07 | 0.55 |
| 36:BB:65:C:N4 | 36:BB:109:C:H2' | 2.16 | 0.55 |
| 56:BZ:151:HIS:O | 56:BZ:152:ALA:HB3 | 2.06 | 0.55 |
| 43:DI:92:VAL:HG22 | 43:DI:92:VAL:O | 2.07 | 0.55 |
| 35:DA:2786:U:O2' | 39:DE:62:PRO:HA | 2.07 | 0.55 |
| 25:B0:53:MET:CB | 25:B0:59:LEU:HD23 | 2.37 | 0.55 |
| 12:CL:28:LYS:HE2 | 12:CL:33:ARG:HH22 | 1.72 | 0.55 |
| 2:AB:168:THR:HG23 | 2:AB:192:SER:CB | 2.37 | 0.55 |
| 47:DQ:12:GLN:HE21 | 47:DQ:73:PRO:HD3 | 1.72 | 0.55 |
| 35:BA:322:A:OP2 | 40:BF:169:ASN:HB2 | 2.07 | 0.55 |
| 1:AA:190:U:H2' | 1:AA:191:G:C8 | 2.40 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:AY:74:C:H2' | 22:AY:75:C:H5' | 1.89 | 0.55 |
| 1:CA:1190:G:P | 3:CC:5:ILE:HG13 | 2.46 | 0.55 |
| 1:AA:1190:G:P | 3:AC:5:ILE:HG13 | 2.47 | 0.55 |
| 7:AG:145:ALA:C | 7:AG:147:ALA:N | 2.60 | 0.55 |
| 26:B1:12:PRO:HB3 | 26:B1:43:TYR:CD2 | 2.38 | 0.55 |
| 41:DG:91:ARG:HG2 | 41:DG:92:VAL:H | 1.70 | 0.55 |
| 2:AB:136:VAL:HA | 2:AB:139:LYS:HB2 | 1.89 | 0.55 |
| 35:BA:829:A:N7 | 35:BA:2247:A:O2' | 2.35 | 0.55 |
| 1:AA:1226:C:O2' | 13:AM:111:LYS:NZ | 2.40 | 0.55 |
| 6:AF:42:GLU:O | 6:AF:44:GLY:N | 2.40 | 0.55 |
| 27:D2:48:HIS:CD2 | 35:DA:96:G:H4' | 2.42 | 0.55 |
| 34:B9:10:ILE:HD11 | 34:B9:34:GLN:NE2 | 2.22 | 0.55 |
| 25:D0:4:LYS:HD2 | 35:DA:2252:G:O6 | 2.07 | 0.55 |
| 45:DO:119:PRO:O | 50:DT:68:TYR:HE1 | 1.90 | 0.55 |
| 35:DA:118:A:OP2 | 35:DA:119:A:H5'' | 2.06 | 0.55 |
| 35:DA:2689:U:H5'' | 35:DA:2690:C:H5' | 1.89 | 0.55 |
| 35:DA:2528:U:H2' | 35:DA:2530:A:O5' | 2.07 | 0.55 |
| 35:DA:1444:G:H2' | 35:DA:1445(A):C:C5 | 2.42 | 0.55 |
| 42:DH:104:GLU:HA | 42:DH:113:VAL:O | 2.06 | 0.55 |
| 11:AK:56:GLY:O | 11:AK:89:ALA:HB3 | 2.06 | 0.55 |
| 35:BA:1312:U:H4' | 35:BA:1313:U:O5' | 2.06 | 0.55 |
| 50:DT:14:TYR:N | 50:DT:14:TYR:CD1 | 2.74 | 0.55 |
| 1:AA:1346:A:H5'' | 9:AI:120:ARG:HH12 | 1.72 | 0.55 |
| 38:BD:35:LYS:HB2 | 38:BD:63:ARG:CG | 2.37 | 0.55 |
| 48:DR:2:ARG:CD | 48:DR:5:LYS:HE2 | 2.37 | 0.55 |
| 56:DZ:150:LEU:N | 56:DZ:150:LEU:HD13 | 2.09 | 0.55 |
| 39:DE:30:PRO:O | 39:DE:32:PRO:HD3 | 2.07 | 0.55 |
| 28:D3:38:GLU:HG3 | 28:D3:39:ASP:H | 1.71 | 0.55 |
| 14:CN:37:PHE:C | 14:CN:39:LEU:H | 2.10 | 0.55 |
| 52:DV:38:LEU:C | 52:DV:39:LEU:HD13 | 2.26 | 0.55 |
| 40:BF:9:ILE:HG23 | 40:BF:13:SER:O | 2.05 | 0.55 |
| 1:CA:1126:U:OP2 | 1:CA:1281:U:O2 | 2.25 | 0.55 |
| 45:BO:63:VAL:HG23 | 45:BO:83:ALA:HB3 | 1.89 | 0.55 |
| 35:DA:2728:U:O2' | 35:DA:2729:G:H5' | 2.07 | 0.55 |
| 2:AB:48:MET:CG | 2:AB:49:GLU:N | 2.64 | 0.55 |
| 20:CT:71:THR:HG22 | 20:CT:72:LEU:H | 1.72 | 0.55 |
| 43:DI:94:ALA:CB | 43:DI:111:PRO:HA | 2.37 | 0.55 |
| 1:CA:254:G:OP1 | 17:CQ:67:LYS:O | 2.25 | 0.55 |
| 35:DA:285:C:H2' | 35:DA:286:C:H5'' | 1.89 | 0.55 |
| 39:BE:101:ARG:NH1 | 39:BE:169:ASN:ND2 | 2.50 | 0.55 |
| 43:DI:81:VAL:HG11 | 43:DI:88:ILE:HD13 | 1.88 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 17:AQ:6:LEU:O | 17:AQ:58:GLU:HA | 2.07 | 0.55 |
| 1:AA:1152:A:H2' | 1:AA:1153:C:C6 | 2.41 | 0.55 |
| 30:D5:4:HIS:O | 35:DA:2056:G:N2 | 2.40 | 0.55 |
| 2:AB:167:PRO:HG3 | 2:AB:188:ALA:CB | 2.36 | 0.55 |
| 35:BA:1847:A:H3' | 35:BA:1848:A:H5' | 1.88 | 0.55 |
| 35:BA:1116:C:C2' | 35:BA:1117:G:H5' | 2.37 | 0.55 |
| 31:D6:22:ALA:HB2 | 31:D6:39:TYR:CE2 | 2.42 | 0.55 |
| 25:D0:53:MET:CB | 25:D0:59:LEU:HD23 | 2.37 | 0.55 |
| 40:BF:83:PHE:O | 40:BF:85:GLY:N | 2.40 | 0.55 |
| 5:CE:8:GLU:HB2 | 5:CE:34:VAL:HG22 | 1.88 | 0.55 |
| 56:DZ:10:ARG:HH21 | 56:DZ:25:PRO:HA | 1.70 | 0.55 |
| 1:CA:1478:C:H2' | 1:CA:1479:C:H6 | 1.72 | 0.55 |
| 45:DO:17:ARG:O | 45:DO:18:LYS:HG3 | 2.06 | 0.55 |
| 6:CF:60:PHE:CE2 | 18:CR:78:LEU:HD21 | 2.42 | 0.55 |
| 42:BH:41:MET:HG2 | 42:BH:55:PRO:CD | 2.37 | 0.55 |
| 43:BI:12:LEU:HG | 43:BI:12:LEU:O | 2.07 | 0.55 |
| 1:AA:386:C:O2' | 1:AA:387:U:H5' | 2.07 | 0.55 |
| 35:BA:1021:A:C3' | 35:BA:1021:A:C8 | 2.89 | 0.55 |
| 35:DA:729:G:N7 | 38:DD:208:LYS:HB2 | 2.22 | 0.55 |
| 8:CH:44:PHE:HB3 | 8:CH:80:ILE:HD11 | 1.89 | 0.55 |
| 38:BD:13:ARG:HA | 38:BD:16:MET:HE3 | 1.88 | 0.55 |
| 6:CF:42:GLU:O | 6:CF:44:GLY:N | 2.40 | 0.55 |
| 22:CV:34:G:H2' | 22:CV:35:A:H8 | 1.72 | 0.55 |
| 44:DN:65:LYS:O | 44:DN:69:GLN:CG | 2.55 | 0.55 |
| 40:BF:191:ARG:HH11 | 40:BF:191:ARG:HG2 | 1.72 | 0.55 |
| 41:DG:77:ILE:H | 41:DG:83:ARG:HB3 | 1.72 | 0.55 |
| 1:CA:1207:G:O2' | 1:CA:1208:C:H5' | 2.07 | 0.55 |
| 1:AA:552:U:O2' | 1:AA:553:A:H5' | 2.06 | 0.55 |
| 51:DU:8:VAL:CG1 | 51:DU:12:ARG:NE | 2.70 | 0.55 |
| 35:BA:83:G:C2 | 35:BA:102:G:H2' | 2.42 | 0.55 |
| 35:BA:1862:G:O2' | 35:BA:1863:G:H5' | 2.07 | 0.55 |
| 11:CK:105:VAL:O | 11:CK:107:SER:N | 2.39 | 0.55 |
| 18:CR:82:THR:O | 18:CR:83:GLU:HB3 | 2.06 | 0.55 |
| 35:DA:1914:C:H2' | 35:DA:1915:U:O4' | 2.06 | 0.55 |
| 35:BA:2828:C:O2' | 35:BA:2829:C:H5' | 2.07 | 0.55 |
| 31:B6:15:GLU:CD | 31:B6:41:PRO:HG3 | 2.27 | 0.55 |
| 2:AB:8:LYS:HA | 2:AB:217:ARG:HH22 | 1.72 | 0.55 |
| 2:AB:13:ALA:HB2 | 2:AB:44:LEU:HD23 | 1.89 | 0.55 |
| 2:AB:47:THR:O | 2:AB:51:LEU:HD12 | 2.06 | 0.55 |
| 49:DS:92:TYR:CD1 | 49:DS:93:LYS:N | 2.69 | 0.55 |
| 50:BT:32:TYR:CG | 50:BT:81:PRO:HB2 | 2.41 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:BT:84:GLN:O | 50:BT:85:LYS:HB2 | 2.07 | 0.55 |
| 33:B8:15:LYS:HB2 | 46:BP:65:ARG:HH12 | 1.70 | 0.55 |
| 51:BU:66:ASN:HB2 | 51:BU:76:TYR:HB2 | 1.87 | 0.55 |
| 47:BQ:141:GLN:CB | 56:BZ:98:MET:HA | 2.37 | 0.55 |
| 38:DD:77:ALA:HB2 | 38:DD:97:TYR:CD2 | 2.41 | 0.55 |
| 13:AM:28:ALA:O | 13:AM:30:ALA:N | 2.40 | 0.55 |
| 35:BA:1494:A:C2' | 35:BA:1495:A:H5'' | 2.37 | 0.55 |
| 41:DG:116:ASP:O | 41:DG:117:PHE:CB | 2.55 | 0.55 |
| 41:DG:125:PHE:O | 41:DG:128:ARG:HG2 | 2.06 | 0.55 |
| 20:CT:57:ARG:HH11 | 20:CT:57:ARG:HB2 | 1.72 | 0.55 |
| 10:CJ:32:ALA:CB | 10:CJ:76:ASN:H | 2.20 | 0.55 |
| 3:AC:113:ALA:HB3 | 3:AC:114:PRO:HD3 | 1.88 | 0.55 |
| 46:BP:101:VAL:CB | 46:BP:107:LYS:HA | 2.35 | 0.55 |
| 55:BY:8:LYS:H | 55:BY:8:LYS:CD | 2.14 | 0.55 |
| 3:CC:6:HIS:HB2 | 14:CN:49:HIS:CD2 | 2.42 | 0.55 |
| 35:DA:1019:U:H3 | 35:DA:1142(A):A:N6 | 2.05 | 0.55 |
| 46:DP:35:HIS:O | 46:DP:36:LYS:HB2 | 2.07 | 0.55 |
| 35:DA:2262:U:C2' | 35:DA:2263:C:C5' | 2.81 | 0.55 |
| 42:BH:141:VAL:CG1 | 42:BH:142:GLY:N | 2.70 | 0.55 |
| 43:BI:115:ALA:HB2 | 43:BI:131:LYS:HE2 | 1.89 | 0.55 |
| 1:AA:978:A:O2' | 1:AA:1322:C:N3 | 2.40 | 0.55 |
| 32:D7:47:ARG:NH2 | 35:DA:1311:G:C4 | 2.75 | 0.55 |
| 44:DN:3:THR:C | 44:DN:5:VAL:H | 2.11 | 0.55 |
| 4:AD:25:ARG:HA | 4:AD:28:SER:OG | 2.07 | 0.55 |
| 35:DA:673:C:H5' | 40:DF:54:ARG:NH1 | 2.19 | 0.55 |
| 46:BP:80:TYR:CE1 | 46:BP:111:ARG:HD3 | 2.41 | 0.55 |
| 22:AV:41:C:H2' | 22:AV:41:C:O2 | 2.06 | 0.55 |
| 39:DE:116:VAL:O | 39:DE:117:MET:CB | 2.55 | 0.55 |
| 2:AB:21:ARG:HD2 | 2:AB:38:GLY:C | 2.27 | 0.55 |
| 25:B0:60:PHE:CE2 | 35:BA:2365:G:H4' | 2.42 | 0.55 |
| 35:BA:528:A:C2 | 35:BA:2043:C:H4' | 2.42 | 0.55 |
| 54:DX:24:GLY:O | 54:DX:82:GLN:HA | 2.07 | 0.55 |
| 43:BI:10:GLU:O | 43:BI:12:LEU:HD23 | 2.07 | 0.55 |
| 18:CR:87:ARG:HG2 | 18:CR:87:ARG:O | 2.06 | 0.55 |
| 35:DA:2494:G:H2' | 35:DA:2495:G:H8 | 1.71 | 0.55 |
| 30:B5:16:ARG:NH2 | 35:BA:517:C:OP1 | 2.39 | 0.55 |
| 1:AA:167:G:H2' | 1:AA:168:G:H8 | 1.71 | 0.55 |
| 38:BD:11:PRO:C | 38:BD:13:ARG:H | 2.10 | 0.55 |
| 23:AW:12:U:H3 | 23:AW:23:A:N6 | 2.03 | 0.55 |
| 4:CD:206:PHE:O | 4:CD:209:ARG:HB2 | 2.07 | 0.55 |
| 1:CA:546:G:P | 4:CD:72:GLU:HB3 | 2.47 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AQ:81:ARG:HD3 | 17:AQ:84:LEU:HD11 | 1.89 | 0.55 |
| 35:DA:320:A:OP2 | 40:DF:137:LYS:HD2 | 2.06 | 0.55 |
| 35:BA:2203:U:H1' | 38:BD:151:LYS:HE3 | 1.87 | 0.55 |
| 1:CA:1428:A:H2' | 1:CA:1429:C:C6 | 2.42 | 0.55 |
| 55:BY:101:LYS:HG2 | 55:BY:102:CYS:N | 2.21 | 0.55 |
| 44:DN:76:SER:O | 44:DN:78:TYR:N | 2.40 | 0.55 |
| 35:BA:290:G:O2' | 35:BA:291:C:H5' | 2.07 | 0.55 |
| 40:DF:111:ALA:HB2 | 40:DF:206:ILE:HD13 | 1.89 | 0.55 |
| 7:AG:154:TYR:O | 7:AG:156:TRP:N | 2.39 | 0.55 |
| 39:BE:39:PRO:O | 39:BE:41:LYS:N | 2.40 | 0.55 |
| 56:BZ:41:LEU:HD23 | 56:BZ:41:LEU:C | 2.27 | 0.55 |
| 35:BA:1518:U:H2' | 35:BA:1519:G:O4' | 2.07 | 0.55 |
| 35:BA:336:C:O2' | 35:BA:337:C:H5' | 2.07 | 0.55 |
| 55:BY:96:ILE:HD12 | 55:BY:99:CYS:HB3 | 1.89 | 0.54 |
| 35:BA:833:U:H2' | 35:BA:834:C:C6 | 2.42 | 0.54 |
| 40:DF:132:VAL:CG2 | 40:DF:133:ASN:H | 1.99 | 0.54 |
| 47:BQ:141:GLN:CA | 56:BZ:53:ILE:HG12 | 2.37 | 0.54 |
| 44:BN:121:LYS:HD2 | 44:BN:121:LYS:N | 2.22 | 0.54 |
| 5:AE:103:GLY:O | 5:AE:105:VAL:N | 2.40 | 0.54 |
| 33:D8:62:LEU:HD13 | 35:DA:242:G:C5' | 2.28 | 0.54 |
| 20:AT:57:ARG:HH11 | 20:AT:57:ARG:HB2 | 1.72 | 0.54 |
| 35:BA:1494:A:N3 | 35:BA:1494:A:H3' | 2.22 | 0.54 |
| 43:DI:37:VAL:HG12 | 43:DI:38:LEU:N | 2.22 | 0.54 |
| 46:BP:33:ARG:O | 46:BP:35:HIS:O | 2.25 | 0.54 |
| 53:BW:92:ARG:HH11 | 53:BW:92:ARG:HG2 | 1.72 | 0.54 |
| 31:D6:52:VAL:CG1 | 31:D6:53:LYS:N | 2.69 | 0.54 |
| 45:BO:77:ILE:CD1 | 50:BT:74:ARG:HG2 | 2.37 | 0.54 |
| 35:BA:1503:U:H2' | 35:BA:1504:C:H6 | 1.70 | 0.54 |
| 25:B0:36:ILE:HD13 | 25:B0:58:THR:CG2 | 2.35 | 0.54 |
| 35:DA:1485:G:H1' | 35:DA:1505:C:H41 | 1.71 | 0.54 |
| 42:DH:23:ARG:O | 42:DH:24:VAL:HG13 | 2.07 | 0.54 |
| 23:CW:59:U:H2' | 23:CW:60:U:O4' | 2.07 | 0.54 |
| 2:CB:168:THR:HG23 | 2:CB:192:SER:CB | 2.37 | 0.54 |
| 35:DA:910:A:N7 | 47:DQ:13:GLN:HG3 | 2.20 | 0.54 |
| 3:CC:52:LEU:HD23 | 3:CC:52:LEU:N | 2.20 | 0.54 |
| 26:B1:91:LYS:CA | 26:B1:94:LEU:HD12 | 2.37 | 0.54 |
| 50:BT:3:ARG:HH11 | 50:BT:3:ARG:HG3 | 1.71 | 0.54 |
| 51:DU:13:LYS:HD3 | 51:DU:13:LYS:N | 2.21 | 0.54 |
| 40:DF:33:LEU:HD22 | 40:DF:112:MET:HG2 | 1.88 | 0.54 |
| 1:AA:438:G:H4' | 4:AD:123:HIS:ND1 | 2.22 | 0.54 |
| 40:DF:59:TYR:HB3 | 40:DF:78:ILE:HD11 | 1.89 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:865:A:H5' | 1:CA:1078:U:C5 | 2.42 | 0.54 |
| 36:BB:29:A:H2' | 36:BB:30:C:H6 | 1.72 | 0.54 |
| 36:BB:29:A:H2' | 36:BB:30:C:C6 | 2.42 | 0.54 |
| 56:BZ:103:ARG:HD2 | 56:BZ:136:PHE:CG | 2.42 | 0.54 |
| 2:AB:72:GLY:HA2 | 2:AB:165:VAL:CG2 | 2.38 | 0.54 |
| 30:B5:20:ARG:NH2 | 53:BW:15:ARG:NH1 | 2.55 | 0.54 |
| 35:BA:313:C:O2' | 35:BA:314:A:H5' | 2.08 | 0.54 |
| 2:CB:82:ARG:HB2 | 2:CB:94:ASN:HD21 | 1.72 | 0.54 |
| 1:AA:163:C:H2' | 1:AA:164:U:C6 | 2.39 | 0.54 |
| 1:AA:392:G:H2' | 1:AA:393:A:C8 | 2.42 | 0.54 |
| 1:AA:805:C:H2' | 1:AA:806:C:C6 | 2.42 | 0.54 |
| 48:DR:34:ILE:HG22 | 48:DR:35:THR:N | 2.22 | 0.54 |
| 41:DG:76:SER:CB | 41:DG:83:ARG:HB2 | 2.37 | 0.54 |
| 22:CV:50:U:O2' | 22:CV:51:U:H5' | 2.06 | 0.54 |
| 49:BS:105:ALA:C | 49:BS:107:GLU:N | 2.60 | 0.54 |
| 4:CD:158:ILE:O | 4:CD:162:LEU:HB2 | 2.07 | 0.54 |
| 6:AF:91:VAL:HG12 | 6:AF:92:LYS:O | 2.07 | 0.54 |
| 35:BA:2718:G:H2' | 35:BA:2719:G:O4' | 2.07 | 0.54 |
| 35:DA:1270:C:H5'' | 35:DA:1271:G:C5' | 2.37 | 0.54 |
| 41:DG:54:GLU:O | 41:DG:57:ALA:HB3 | 2.07 | 0.54 |
| 35:DA:2661:G:H2' | 35:DA:2662:A:C8 | 2.42 | 0.54 |
| 5:AE:47:LYS:HD2 | 5:AE:47:LYS:N | 2.22 | 0.54 |
| 28:B3:38:GLU:HG3 | 28:B3:39:ASP:H | 1.72 | 0.54 |
| 20:AT:87:LYS:HG3 | 20:AT:91:LEU:HD11 | 1.89 | 0.54 |
| 35:DA:2473:U:O2 | 35:DA:2473:U:H2' | 2.05 | 0.54 |
| 1:AA:993:G:H2' | 1:AA:995:C:H41 | 1.72 | 0.54 |
| 13:CM:29:ARG:HB3 | 13:CM:64:TRP:CZ2 | 2.42 | 0.54 |
| 1:AA:1277:C:O2' | 1:AA:1279:A:H8 | 1.85 | 0.54 |
| 1:CA:179:A:H2' | 1:CA:180:U:C6 | 2.43 | 0.54 |
| 39:BE:109:LYS:HB3 | 48:BR:2:ARG:HH12 | 1.72 | 0.54 |
| 1:CA:1258:G:H2' | 1:CA:1259:C:C6 | 2.43 | 0.54 |
| 37:BC:59:ARG:HB2 | 37:BC:62:VAL:CG2 | 2.28 | 0.54 |
| 40:BF:160:ASN:OD1 | 40:BF:163:VAL:HG23 | 2.08 | 0.54 |
| 35:DA:1494:A:C2' | 35:DA:1495:A:H5'' | 2.36 | 0.54 |
| 6:AF:62:TRP:CH2 | 6:AF:64:GLN:HB2 | 2.42 | 0.54 |
| 10:CJ:4:ILE:HB | 10:CJ:74:ILE:CD1 | 2.37 | 0.54 |
| 45:DO:1:MET:HE3 | 45:DO:67:LYS:HG2 | 1.87 | 0.54 |
| 10:AJ:84:GLN:NE2 | 10:AJ:88:LEU:HD23 | 2.21 | 0.54 |
| 44:DN:133:GLN:O | 44:DN:134:ARG:HB3 | 2.07 | 0.54 |
| 35:DA:589:C:H2' | 35:DA:590:A:C8 | 2.42 | 0.54 |
| 45:DO:77:ILE:CD1 | 50:DT:74:ARG:HG2 | 2.38 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:977:A:H2' | 1:CA:978:A:H5' | 1.89 | 0.54 |
| 18:CR:44:LEU:O | 18:CR:45:SER:C | 2.45 | 0.54 |
| 25:B0:26:TYR:CE2 | 35:BA:857:C:H1' | 2.41 | 0.54 |
| 35:DA:675:A:N6 | 35:DA:676:A:N6 | 2.54 | 0.54 |
| 17:CQ:22:LEU:HD12 | 17:CQ:23:VAL:H | 1.71 | 0.54 |
| 47:DQ:133:ARG:HH11 | 47:DQ:133:ARG:HG3 | 1.72 | 0.54 |
| 35:DA:71:A:H2 | 54:DX:31:HIS:CE1 | 2.25 | 0.54 |
| 50:BT:3:ARG:HG3 | 50:BT:6:LEU:HD13 | 1.88 | 0.54 |
| 13:AM:3:ARG:CA | 13:AM:9:ILE:HG13 | 2.37 | 0.54 |
| 1:AA:795:C:H1' | 1:AA:1506:U:C6 | 2.42 | 0.54 |
| 12:AL:70:ILE:CD1 | 12:AL:77:LEU:HD12 | 2.38 | 0.54 |
| 1:AA:627:G:H2' | 1:AA:628:G:H8 | 1.71 | 0.54 |
| 50:DT:35:LYS:HG3 | 50:DT:36:GLU:N | 2.22 | 0.54 |
| 3:AC:20:SER:HB2 | 3:AC:40:ARG:HH22 | 1.72 | 0.54 |
| 8:CH:119:LEU:CD1 | 8:CH:124:ALA:HA | 2.37 | 0.54 |
| 33:D8:14:VAL:HG21 | 33:D8:22:VAL:CG1 | 2.37 | 0.54 |
| 46:DP:140:ALA:O | 46:DP:141:ALA:HB3 | 2.07 | 0.54 |
| 40:BF:5:ALA:N | 40:BF:18:ARG:O | 2.36 | 0.54 |
| 35:BA:1652:A:H2' | 35:BA:1653:G:H5' | 1.89 | 0.54 |
| 38:BD:161:THR:O | 38:BD:196:VAL:HG23 | 2.08 | 0.54 |
| 22:AV:74:C:H2' | 22:AV:75:C:H5' | 1.89 | 0.54 |
| 37:DC:22:ILE:HG22 | 37:DC:25:ALA:H | 1.71 | 0.54 |
| 1:AA:683:G:H2' | 1:AA:684:A:H8 | 1.72 | 0.54 |
| 1:CA:1228:C:O3' | 13:CM:116:THR:HA | 2.07 | 0.54 |
| 12:CL:119:LYS:C | 12:CL:120:TYR:CD1 | 2.80 | 0.54 |
| 35:BA:2022:U:O2' | 35:BA:2617:C:H5' | 2.07 | 0.54 |
| 17:AQ:9:VAL:HG21 | 17:AQ:84:LEU:HD13 | 1.89 | 0.54 |
| 38:DD:70:TRP:CD1 | 38:DD:70:TRP:C | 2.80 | 0.54 |
| 47:DQ:60:ARG:NH1 | 47:DQ:60:ARG:HB2 | 2.22 | 0.54 |
| 44:BN:90:MET:HB3 | 44:BN:98:VAL:HG22 | 1.89 | 0.54 |
| 40:BF:136:THR:O | 40:BF:140:LEU:HB2 | 2.07 | 0.54 |
| 35:DA:649:G:H2' | 35:DA:650:C:C6 | 2.42 | 0.54 |
| 36:DB:78:A:C2 | 36:DB:100:A:C4 | 2.96 | 0.54 |
| 35:BA:1001:A:H2' | 35:BA:1002:G:O4' | 2.07 | 0.54 |
| 1:CA:35:G:H2' | 1:CA:36:C:C6 | 2.43 | 0.54 |
| 35:BA:57:C:O2' | 35:BA:58:G:H5' | 2.06 | 0.54 |
| 1:AA:1445:C:O2' | 1:AA:1446:U:H5' | 2.08 | 0.54 |
| 1:AA:543:C:H2' | 1:AA:544:G:H8 | 1.72 | 0.54 |
| 12:AL:41:ARG:HH12 | 12:AL:57:LYS:NZ | 2.04 | 0.54 |
| 46:BP:9:ASN:N | 46:BP:10:PRO:HD2 | 2.22 | 0.54 |
| 50:DT:32:TYR:CD2 | 50:DT:81:PRO:O | 2.61 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:BT:27:THR:OG1 | 50:BT:28:VAL:N | 2.40 | 0.54 |
| 51:BU:66:ASN:O | 51:BU:70:ARG:HB2 | 2.07 | 0.54 |
| 38:BD:44:ASN:CB | 38:BD:49:ILE:HA | 2.23 | 0.54 |
| 39:DE:175:VAL:O | 39:DE:175:VAL:HG13 | 2.08 | 0.54 |
| 48:DR:9:LYS:O | 48:DR:10:LEU:HD23 | 2.08 | 0.54 |
| 44:BN:43:THR:O | 44:BN:46:VAL:HG12 | 2.07 | 0.54 |
| 5:AE:34:VAL:O | 5:AE:41:VAL:HA | 2.08 | 0.54 |
| 52:BV:25:LEU:C | 52:BV:27:ALA:H | 2.11 | 0.54 |
| 55:DY:29:GLU:N | 55:DY:29:GLU:CD | 2.61 | 0.54 |
| 30:B5:35:GLU:O | 30:B5:49:CYS:CB | 2.55 | 0.54 |
| 10:AJ:78:ASN:ND2 | 10:AJ:80:LYS:H | 2.06 | 0.54 |
| 22:AV:65:G:O2' | 22:AV:66:U:H5' | 2.07 | 0.54 |
| 19:CS:10:PHE:CZ | 19:CS:70:LYS:HD2 | 2.40 | 0.54 |
| 26:D1:84:GLY:O | 26:D1:86:SER:N | 2.40 | 0.54 |
| 22:CY:39:U:H2' | 22:CY:40:C:C6 | 2.42 | 0.54 |
| 35:DA:1300:U:H1' | 35:DA:1626:G:C2 | 2.42 | 0.54 |
| 35:DA:2870:C:C2' | 35:DA:2871:C:H5' | 2.37 | 0.54 |
| 19:CS:62:ILE:HG13 | 19:CS:63:THR:N | 2.21 | 0.54 |
| 42:BH:27:LYS:HA | 42:BH:32:GLU:HG3 | 1.89 | 0.54 |
| 35:DA:1116:C:C2' | 35:DA:1117:G:H5' | 2.36 | 0.54 |
| 39:DE:44:TYR:O | 39:DE:45:THR:CB | 2.54 | 0.54 |
| 35:DA:2175:C:C1' | 37:DC:215:THR:HA | 2.37 | 0.54 |
| 50:DT:3:ARG:HG3 | 50:DT:6:LEU:HD13 | 1.89 | 0.54 |
| 35:BA:2136:C:H2' | 35:BA:2137:C:C6 | 2.39 | 0.54 |
| 3:AC:122:GLU:O | 3:AC:126:ARG:HG3 | 2.08 | 0.54 |
| 35:DA:271(K):U:H3 | 43:DI:50:ARG:NH1 | 2.04 | 0.54 |
| 13:AM:27:LYS:HE3 | 13:AM:31:LYS:CE | 2.38 | 0.54 |
| 35:DA:706:A:H2' | 35:DA:707:G:O4' | 2.07 | 0.54 |
| 43:DI:78:THR:HG23 | 43:DI:141:LYS:HB2 | 1.89 | 0.54 |
| 35:DA:1231:G:H2' | 35:DA:1232:G:H8 | 1.72 | 0.54 |
| 17:CQ:31:LEU:O | 17:CQ:31:LEU:HD12 | 2.06 | 0.54 |
| 35:DA:1518:U:H2' | 35:DA:1519:G:O4' | 2.06 | 0.54 |
| 1:CA:445:G:H2' | 1:CA:446:G:H8 | 1.71 | 0.54 |
| 35:BA:1843:C:H5' | 38:BD:253:GLN:NE2 | 2.22 | 0.54 |
| 53:BW:22:ASP:HA | 53:BW:25:ARG:HH12 | 1.70 | 0.54 |
| 1:CA:821:G:O2' | 1:CA:822:C:H5' | 2.08 | 0.54 |
| 16:AP:58:TYR:C | 16:AP:58:TYR:CD1 | 2.81 | 0.54 |
| 1:AA:1352:C:H2' | 1:AA:1353:G:C8 | 2.42 | 0.54 |
| 12:AL:22:SER:C | 12:AL:24:VAL:H | 2.11 | 0.54 |
| 12:AL:22:SER:C | 12:AL:24:VAL:N | 2.60 | 0.54 |
| 41:BG:42:GLY:O | 41:BG:43:LEU:HB2 | 2.07 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:BF:116:ASP:OD2 | 46:BP:5:ASP:N | 2.40 | 0.54 |
| 1:AA:1258:G:H2' | 1:AA:1259:C:C6 | 2.42 | 0.54 |
| 52:BV:39:LEU:CD1 | 52:BV:47:VAL:HG11 | 2.33 | 0.54 |
| 5:CE:101:ILE:N | 5:CE:101:ILE:HD13 | 2.21 | 0.54 |
| 5:AE:102:ALA:HB2 | 5:AE:120:THR:OG1 | 2.07 | 0.54 |
| 39:DE:24:THR:CB | 39:DE:186:GLY:HA2 | 2.35 | 0.54 |
| 10:CJ:63:PHE:HA | 14:CN:59:ALA:HB2 | 1.89 | 0.54 |
| 35:DA:2127:G:H5' | 37:DC:36:LYS:CE | 2.28 | 0.54 |
| 51:DU:74:LEU:HD12 | 51:DU:74:LEU:O | 2.08 | 0.54 |
| 3:CC:152:ILE:HG13 | 3:CC:199:LYS:HB2 | 1.89 | 0.54 |
| 42:BH:65:HIS:CE1 | 42:BH:69:ARG:HD3 | 2.41 | 0.54 |
| 43:DI:77:LEU:HD21 | 43:DI:101:LEU:HD13 | 1.90 | 0.54 |
| 46:DP:101:VAL:HG12 | 46:DP:107:LYS:N | 2.23 | 0.54 |
| 55:BY:8:LYS:HE2 | 55:BY:72:VAL:HG23 | 1.89 | 0.54 |
| 35:DA:1786:A:H3' | 35:DA:1787:A:C8 | 2.42 | 0.54 |
| 22:CV:77:PHA:N | 22:CY:77:PHA:N | 2.48 | 0.54 |
| 26:D1:53:VAL:O | 26:D1:53:VAL:HG12 | 2.08 | 0.54 |
| 1:AA:636:U:H2' | 1:AA:637:G:C8 | 2.42 | 0.54 |
| 1:CA:1152:A:H2' | 1:CA:1153:C:C6 | 2.42 | 0.54 |
| 35:BA:582:G:H2' | 35:BA:583:G:H8 | 1.73 | 0.54 |
| 16:AP:3:LYS:O | 16:AP:21:VAL:HA | 2.08 | 0.54 |
| 38:BD:131:LEU:HB2 | 38:BD:136:ILE:HD11 | 1.90 | 0.54 |
| 56:DZ:15:PRO:O | 56:DZ:19:ARG:HG3 | 2.07 | 0.54 |
| 1:CA:1412:C:H2' | 1:CA:1413:A:H8 | 1.70 | 0.54 |
| 45:DO:104:ARG:HH11 | 45:DO:104:ARG:HB2 | 1.72 | 0.54 |
| 2:AB:14:GLY:C | 2:AB:15:VAL:HG22 | 2.27 | 0.54 |
| 11:CK:95:ILE:H | 11:CK:95:ILE:HD13 | 1.72 | 0.54 |
| 1:AA:222:U:H2' | 1:AA:223:U:C6 | 2.42 | 0.54 |
| 42:DH:41:MET:SD | 42:DH:55:PRO:HD3 | 2.48 | 0.54 |
| 35:BA:557:U:H2' | 35:BA:558:G:C8 | 2.41 | 0.54 |
| 50:DT:129:ARG:NH1 | 50:DT:131:ALA:HB3 | 2.22 | 0.54 |
| 8:CH:11:THR:HA | 8:CH:14:ARG:NH1 | 2.23 | 0.54 |
| 35:DA:1042:G:H5' | 35:DA:1043:C:OP2 | 2.08 | 0.54 |
| 6:CF:19:LEU:HD23 | 6:CF:23:LYS:HD3 | 1.89 | 0.54 |
| 35:BA:1751:C:H2' | 35:BA:1752:C:C6 | 2.43 | 0.54 |
| 25:D0:11:ARG:O | 25:D0:14:ARG:NH2 | 2.35 | 0.54 |
| 17:CQ:81:ARG:HD3 | 17:CQ:84:LEU:HD11 | 1.89 | 0.54 |
| 13:CM:27:LYS:HE3 | 13:CM:31:LYS:CE | 2.37 | 0.54 |
| 4:CD:23:GLY:O | 4:CD:27:TYR:HD1 | 1.89 | 0.54 |
| 26:D1:50:ARG:HG2 | 26:D1:59:THR:CG2 | 2.37 | 0.54 |
| 35:BA:1412:A:H2' | 35:BA:1413:G:C8 | 2.43 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AM:14:ARG:CZ | 13:AM:42:ALA:HA | 2.37 | 0.54 |
| 11:AK:99:GLN:NE2 | 11:AK:105:VAL:HG11 | 2.21 | 0.54 |
| 1:AA:1355:G:H2' | 1:AA:1356:G:C8 | 2.42 | 0.54 |
| 2:CB:83:MET:SD | 2:CB:234:PRO:HG2 | 2.47 | 0.54 |
| 35:BA:1651:G:OP1 | 48:BR:40:LYS:HE3 | 2.07 | 0.54 |
| 35:BA:1914:C:H2' | 35:BA:1915:U:O4' | 2.07 | 0.54 |
| 41:BG:132:ASN:OD1 | 41:BG:158:ALA:HB2 | 2.07 | 0.54 |
| 35:BA:2037:G:H2' | 35:BA:2038:G:C8 | 2.43 | 0.54 |
| 35:BA:2009:G:N3 | 48:BR:107:ASP:HA | 2.23 | 0.54 |
| 1:CA:824:C:H4' | 8:CH:1:MET:H1 | 1.73 | 0.54 |
| 2:AB:83:MET:SD | 2:AB:234:PRO:HG2 | 2.48 | 0.54 |
| 49:DS:49:VAL:HG21 | 49:DS:77:ALA:HA | 1.89 | 0.54 |
| 1:AA:352:C:H2' | 1:AA:352:C:O2 | 2.07 | 0.54 |
| 31:B6:30:THR:O | 31:B6:31:PRO:C | 2.45 | 0.54 |
| 32:B7:28:ARG:NH2 | 35:BA:1368:G:OP1 | 2.40 | 0.54 |
| 35:DA:613:G:C8 | 35:DA:613:G:H5' | 2.42 | 0.54 |
| 49:DS:19:LYS:C | 49:DS:20:ARG:HH11 | 2.09 | 0.54 |
| 2:CB:55:PHE:HA | 2:CB:58:ILE:CB | 2.37 | 0.54 |
| 23:AW:76:A:O2' | 35:BA:2394:C:N3 | 2.39 | 0.54 |
| 1:AA:522:C:H41 | 12:AL:53:ARG:HH22 | 1.55 | 0.54 |
| 52:BV:4:ILE:O | 52:BV:4:ILE:HG22 | 2.08 | 0.54 |
| 39:DE:111:ARG:HB2 | 39:DE:160:TYR:O | 2.08 | 0.54 |
| 48:BR:2:ARG:HD3 | 48:BR:5:LYS:CE | 2.35 | 0.54 |
| 44:BN:120:LEU:C | 44:BN:121:LYS:HD2 | 2.28 | 0.54 |
| 37:BC:59:ARG:HH21 | 37:BC:199:HIS:CB | 2.20 | 0.54 |
| 14:AN:37:PHE:HB3 | 14:AN:39:LEU:HD12 | 1.89 | 0.54 |
| 41:DG:29:TRP:C | 41:DG:31:VAL:N | 2.60 | 0.54 |
| 17:CQ:33:GLY:O | 17:CQ:34:LYS:O | 2.26 | 0.54 |
| 47:BQ:19:GLY:HA3 | 56:BZ:79:ARG:HH22 | 1.73 | 0.54 |
| 10:CJ:27:ALA:HB3 | 10:CJ:34:VAL:HG21 | 1.88 | 0.54 |
| 10:CJ:6:ILE:CD1 | 10:CJ:72:VAL:HB | 2.33 | 0.54 |
| 23:AW:2:C:N4 | 23:AW:71:G:H1 | 2.02 | 0.54 |
| 46:DP:33:ARG:O | 46:DP:34:GLY:C | 2.45 | 0.54 |
| 23:AW:57:G:N3 | 23:AW:57:G:H2' | 2.21 | 0.54 |
| 1:AA:1292:U:O2' | 1:AA:1293:G:H5' | 2.08 | 0.54 |
| 8:CH:82:HIS:HD2 | 8:CH:138:TRP:NE1 | 2.05 | 0.54 |
| 55:DY:6:HIS:CE1 | 55:DY:30:VAL:HG11 | 2.43 | 0.54 |
| 35:DA:2150:U:H2' | 35:DA:2151:G:H8 | 1.71 | 0.54 |
| 19:CS:41:VAL:O | 19:CS:44:MET:SD | 2.66 | 0.54 |
| 42:DH:27:LYS:HG2 | 42:DH:32:GLU:CD | 2.28 | 0.54 |
| 7:CG:15:ASP:H | 7:CG:20:ASP:N | 2.03 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 5:CE:76:ILE:HD12 | 5:CE:118:ILE:CD1 | 2.38 | 0.54 |
| 16:CP:19:ILE:CG2 | 16:CP:36:ILE:HG13 | 2.36 | 0.54 |
| 12:AL:74:GLY:O | 12:AL:102:ARG:NH2 | 2.40 | 0.54 |
| 15:AO:3:ILE:H | 15:AO:3:ILE:HD13 | 1.72 | 0.54 |
| 12:CL:55:VAL:HG13 | 12:CL:68:ALA:O | 2.07 | 0.54 |
| 11:CK:21:ILE:HG12 | 11:CK:94:ALA:HB1 | 1.89 | 0.54 |
| 35:DA:2393:A:C5' | 46:DP:62:LEU:HB3 | 2.37 | 0.54 |
| 35:DA:1509(A):A:H2' | 35:DA:1509(B):A:H8 | 1.70 | 0.54 |
| 38:DD:126:GLN:HG3 | 38:DD:129:ASN:ND2 | 2.23 | 0.54 |
| 35:BA:1908:C:H2' | 35:BA:1909:C:H6 | 1.72 | 0.54 |
| 56:DZ:128:VAL:CG2 | 56:DZ:132:ASN:HB2 | 2.37 | 0.54 |
| 19:AS:51:VAL:O | 19:AS:58:VAL:HG22 | 2.07 | 0.54 |
| 47:BQ:59:ARG:O | 47:BQ:60:ARG:HB2 | 2.06 | 0.54 |
| 1:CA:402:G:C2' | 1:CA:403:C:H5' | 2.38 | 0.54 |
| 44:BN:78:TYR:N | 44:BN:78:TYR:CD1 | 2.76 | 0.54 |
| 2:AB:24:TRP:CZ3 | 2:AB:26:PRO:HA | 2.43 | 0.54 |
| 19:AS:44:MET:SD | 19:AS:44:MET:N | 2.80 | 0.54 |
| 1:CA:261:U:OP1 | 20:CT:79:ARG:NH2 | 2.40 | 0.54 |
| 35:BA:564:C:O2' | 35:BA:565:C:H5' | 2.07 | 0.54 |
| 1:AA:1027:C:H1' | 1:AA:1035:A:N1 | 2.22 | 0.54 |
| 1:CA:924:C:H2' | 1:CA:925:G:C8 | 2.42 | 0.54 |
| 35:DA:1192:G:O2' | 35:DA:1193:G:H5' | 2.07 | 0.54 |
| 1:AA:793:U:O2 | 1:AA:1516:G:H4' | 2.08 | 0.54 |
| 4:CD:107:ARG:HB3 | 4:CD:174:LEU:HD13 | 1.89 | 0.54 |
| 2:CB:13:ALA:HB2 | 2:CB:44:LEU:HD23 | 1.89 | 0.54 |
| 50:BT:85:LYS:O | 50:BT:85:LYS:HG2 | 2.07 | 0.54 |
| 6:CF:62:TRP:CH2 | 6:CF:64:GLN:HB2 | 2.43 | 0.54 |
| 55:DY:80:GLY:O | 55:DY:81:LYS:O | 2.25 | 0.54 |
| 49:BS:95:HIS:O | 49:BS:96:GLY:O | 2.25 | 0.54 |
| 12:CL:37:CYS:HA | 12:CL:57:LYS:O | 2.06 | 0.54 |
| 1:CA:980:C:H3' | 1:CA:981:U:C6 | 2.43 | 0.54 |
| 49:DS:96:GLY:C | 49:DS:98:VAL:N | 2.60 | 0.54 |
| 5:AE:103:GLY:O | 5:AE:106:PRO:HD2 | 2.07 | 0.54 |
| 14:CN:37:PHE:HB3 | 14:CN:39:LEU:HD12 | 1.89 | 0.54 |
| 14:AN:37:PHE:O | 14:AN:39:LEU:HG | 2.08 | 0.54 |
| 12:AL:11:VAL:HG21 | 17:AQ:34:LYS:HD3 | 1.89 | 0.54 |
| 29:B4:51:TYR:CD1 | 41:BG:2:PRO:HD2 | 2.42 | 0.54 |
| 35:DA:2469:A:O2' | 47:DQ:56:ARG:HD3 | 2.06 | 0.54 |
| 45:DO:68:GLU:HB3 | 45:DO:78:ARG:HB2 | 1.90 | 0.54 |
| 46:DP:29:LYS:HB3 | 46:DP:34:GLY:H | 1.71 | 0.54 |
| 56:BZ:168:GLU:HA | 56:BZ:168:GLU:OE2 | 2.07 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:DA:1528(A):A:N7 | 35:DA:1529:G:C8 | 2.76 | 0.54 |
| 19:CS:23:ASN:HA | 19:CS:26:GLY:HA2 | 1.89 | 0.54 |
| 12:CL:22:SER:C | 12:CL:24:VAL:N | 2.61 | 0.54 |
| 1:AA:1499:A:C1' | 1:AA:1520:G:H5' | 2.35 | 0.54 |
| 55:BY:88:LYS:HZ3 | 55:BY:93:GLY:CA | 2.20 | 0.54 |
| 35:BA:1039:G:C6 | 35:BA:1040:C:N4 | 2.76 | 0.54 |
| 45:BO:17:ARG:O | 45:BO:18:LYS:HG3 | 2.08 | 0.54 |
| 45:BO:47:ILE:HG13 | 45:BO:48:PRO:HD2 | 1.88 | 0.54 |
| 45:DO:93:PRO:HB3 | 45:DO:114:ILE:CD1 | 2.38 | 0.54 |
| 26:B1:53:VAL:CG2 | 26:B1:74:VAL:HG13 | 2.35 | 0.54 |
| 43:BI:92:VAL:HG12 | 43:BI:120:ILE:HB | 1.90 | 0.54 |
| 35:DA:2683:C:P | 50:DT:53:ARG:NH2 | 2.81 | 0.54 |
| 5:CE:35:GLY:HA3 | 5:CE:112:LEU:O | 2.07 | 0.54 |
| 43:BI:58:LEU:O | 43:BI:60:GLU:N | 2.41 | 0.54 |
| 56:BZ:146:ILE:CG2 | 56:BZ:177:PRO:HD3 | 2.37 | 0.54 |
| 1:CA:539:A:H2' | 1:CA:540:G:H8 | 1.70 | 0.54 |
| 12:CL:74:GLY:O | 12:CL:102:ARG:NH2 | 2.40 | 0.54 |
| 35:DA:786:C:O2' | 35:DA:787:U:H5' | 2.07 | 0.54 |
| 49:DS:74:ALA:HB1 | 49:DS:103:GLU:CG | 2.37 | 0.54 |
| 38:DD:16:MET:CE | 38:DD:208:LYS:HD2 | 2.38 | 0.54 |
| 11:CK:111:ASP:OD2 | 18:CR:84:LYS:HE3 | 2.06 | 0.54 |
| 1:AA:950:U:H4' | 1:AA:971:G:N2 | 2.22 | 0.54 |
| 22:CV:34:G:O2' | 22:CV:35:A:H5' | 2.07 | 0.54 |
| 35:DA:1710:C:O2' | 35:DA:1711:C:H5' | 2.08 | 0.54 |
| 1:AA:546:G:P | 4:AD:72:GLU:HB3 | 2.47 | 0.54 |
| 1:AA:1434:A:H2' | 1:AA:1435:G:H5' | 1.90 | 0.54 |
| 35:BA:320:A:H3' | 40:BF:136:THR:CG2 | 2.38 | 0.54 |
| 1:AA:291:C:O2' | 1:AA:292:G:H5' | 2.06 | 0.54 |
| 35:DA:108:U:H2' | 35:DA:109:G:H8 | 1.71 | 0.54 |
| 16:CP:58:TYR:C | 16:CP:58:TYR:CD1 | 2.81 | 0.54 |
| 35:BA:118:A:OP2 | 35:BA:119:A:H5'' | 2.08 | 0.54 |
| 31:D6:42:TRP:HA | 31:D6:42:TRP:CE3 | 2.43 | 0.54 |
| 35:BA:2257:U:O2' | 35:BA:2258:C:H5' | 2.08 | 0.54 |
| 47:DQ:14:ARG:HH11 | 47:DQ:14:ARG:HG2 | 1.71 | 0.54 |
| 40:BF:116:ASP:O | 40:BF:120:GLU:HG3 | 2.07 | 0.54 |
| 40:DF:11:VAL:HG12 | 40:DF:12:LEU:H | 1.71 | 0.54 |
| 50:DT:32:TYR:CD2 | 50:DT:32:TYR:N | 2.75 | 0.54 |
| 50:DT:85:LYS:HZ2 | 50:DT:85:LYS:HB3 | 1.73 | 0.54 |
| 39:DE:27:LEU:HD23 | 50:DT:1:MET:CE | 2.38 | 0.54 |
| 39:BE:2:LYS:HA | 39:BE:84:PHE:CE2 | 2.42 | 0.54 |
| 39:DE:12:THR:HG23 | 50:DT:8:LYS:HZ1 | 1.73 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:2127:G:H2' | 35:DA:2128:C:C6 | 2.42 | 0.54 |
| 41:DG:172:LEU:CD2 | 41:DG:173:LEU:HD23 | 2.35 | 0.54 |
| 23:AW:38:A:H2' | 23:AW:39:U:H5'' | 1.90 | 0.54 |
| 55:BY:27:VAL:HA | 55:BY:28:LYS:NZ | 2.23 | 0.54 |
| 41:BG:141:PHE:HB3 | 41:BG:142:PRO:CD | 2.35 | 0.54 |
| 46:BP:101:VAL:HG23 | 46:BP:102:ARG:N | 2.22 | 0.54 |
| 35:BA:1020:A:N1 | 35:BA:1141:U:H1' | 2.23 | 0.54 |
| 37:BC:78:ALA:HB1 | 37:BC:82:LYS:HB2 | 1.89 | 0.54 |
| 55:BY:31:LEU:CB | 55:BY:32:PRO:CA | 2.85 | 0.54 |
| 31:D6:12:GLU:HB3 | 31:D6:23:THR:HG22 | 1.89 | 0.54 |
| 56:BZ:152:ALA:HB2 | 56:BZ:168:GLU:HA | 1.89 | 0.54 |
| 39:BE:9:VAL:HG23 | 39:BE:9:VAL:O | 2.06 | 0.54 |
| 46:DP:80:TYR:CD1 | 46:DP:111:ARG:HB3 | 2.43 | 0.54 |
| 42:BH:27:LYS:HG2 | 42:BH:32:GLU:CD | 2.28 | 0.54 |
| 12:CL:27:LEU:N | 12:CL:27:LEU:HD22 | 2.23 | 0.54 |
| 35:BA:2099:U:H3 | 35:BA:2190:G:H1 | 1.56 | 0.54 |
| 13:AM:88:ARG:HA | 13:AM:98:VAL:CG1 | 2.36 | 0.54 |
| 1:CA:438:G:H4' | 4:CD:123:HIS:ND1 | 2.23 | 0.54 |
| 35:DA:2175:C:H1' | 37:DC:215:THR:N | 2.22 | 0.54 |
| 44:DN:23:LEU:N | 44:DN:23:LEU:HD23 | 2.19 | 0.54 |
| 1:CA:865:A:H2 | 1:CA:918:A:H4' | 1.73 | 0.54 |
| 43:DI:12:LEU:O | 43:DI:12:LEU:HG | 2.08 | 0.54 |
| 46:BP:132:LYS:O | 46:BP:136:GLU:HG3 | 2.07 | 0.54 |
| 35:DA:16:G:O2' | 35:DA:17:G:H5' | 2.07 | 0.54 |
| 40:DF:198:ALA:O | 40:DF:201:VAL:HG12 | 2.07 | 0.54 |
| 1:CA:1462:G:O2' | 1:CA:1463:C:H5' | 2.07 | 0.54 |
| 22:AV:30:G:C2' | 22:AV:31:A:H5' | 2.37 | 0.54 |
| 45:BO:71:ARG:O | 45:BO:73:ASP:N | 2.40 | 0.54 |
| 32:D7:19:ARG:HG2 | 32:D7:19:ARG:NH1 | 2.22 | 0.54 |
| 38:BD:166:GLN:CA | 38:BD:166:GLN:NE2 | 2.70 | 0.54 |
| 38:DD:218:ARG:HG3 | 38:DD:218:ARG:HH11 | 1.71 | 0.54 |
| 10:AJ:92:THR:HG23 | 10:AJ:93:GLY:N | 2.23 | 0.54 |
| 7:AG:5:ARG:C | 7:AG:7:ALA:H | 2.10 | 0.54 |
| 49:DS:105:ALA:C | 49:DS:107:GLU:N | 2.60 | 0.54 |
| 1:CA:627:G:O2' | 1:CA:628:G:H5' | 2.08 | 0.54 |
| 35:DA:2818:G:O2' | 35:DA:2819:G:H5' | 2.07 | 0.54 |
| 35:DA:1661:G:O2' | 35:DA:1662:C:H5' | 2.08 | 0.54 |
| 4:AD:107:ARG:HB3 | 4:AD:174:LEU:CD1 | 2.38 | 0.54 |
| 36:BB:78:A:C2 | 36:BB:100:A:C4 | 2.94 | 0.54 |
| 17:CQ:76:LEU:HG | 17:CQ:77:VAL:N | 2.22 | 0.54 |
| 35:DA:1375:C:H2' | 35:DA:1376:C:H6 | 1.71 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:BA:1794:U:H2' | 35:BA:1795:C:H6 | 1.73 | 0.54 |
| 47:DQ:141:GLN:HB2 | 56:DZ:98:MET:HA | 1.89 | 0.54 |
| 49:BS:16:ASN:ND2 | 49:BS:92:TYR:CE1 | 2.76 | 0.54 |
| 41:BG:88:ILE:HG23 | 41:BG:89:GLY:N | 2.22 | 0.54 |
| 2:AB:220:ASP:C | 2:AB:222:ILE:H | 2.10 | 0.54 |
| 52:BV:40:LEU:N | 52:BV:40:LEU:CD2 | 2.71 | 0.54 |
| 47:BQ:141:GLN:NE2 | 56:BZ:72:ARG:HD3 | 2.23 | 0.54 |
| 1:AA:179:A:H2' | 1:AA:180:U:C6 | 2.42 | 0.54 |
| 38:DD:35:LYS:HB2 | 38:DD:63:ARG:CG | 2.38 | 0.54 |
| 3:CC:110:ASN:O | 3:CC:112:SER:N | 2.41 | 0.54 |
| 51:DU:62:ILE:HD13 | 51:DU:93:LYS:HG2 | 1.88 | 0.54 |
| 35:BA:614(C):A:O2' | 35:BA:615:G:P | 2.66 | 0.54 |
| 21:CU:18:TYR:CD2 | 21:CU:24:ARG:HG2 | 2.42 | 0.54 |
| 44:DN:15:LEU:HG | 44:DN:134:ARG:HD2 | 1.89 | 0.54 |
| 46:BP:33:ARG:O | 46:BP:34:GLY:C | 2.45 | 0.54 |
| 44:BN:18:ALA:O | 44:BN:20:GLY:N | 2.41 | 0.54 |
| 47:BQ:42:ILE:HD13 | 47:BQ:97:VAL:CG2 | 2.38 | 0.54 |
| 35:DA:1141:U:OP1 | 44:DN:25:ARG:NH1 | 2.40 | 0.54 |
| 20:AT:23:ARG:HA | 20:AT:26:ASN:HD21 | 1.73 | 0.54 |
| 1:CA:137:C:N4 | 1:CA:226:G:H1 | 1.98 | 0.54 |
| 41:BG:171:ALA:C | 41:BG:175:LEU:HD12 | 2.28 | 0.54 |
| 38:DD:26:LYS:HD2 | 38:DD:27:THR:HG22 | 1.88 | 0.54 |
| 25:B0:53:MET:HB3 | 25:B0:59:LEU:CD2 | 2.38 | 0.54 |
| 35:BA:911:A:C5 | 47:BQ:9:TYR:CD1 | 2.96 | 0.54 |
| 17:CQ:7:THR:O | 17:CQ:23:VAL:HG13 | 2.08 | 0.54 |
| 47:DQ:109:VAL:HG12 | 47:DQ:110:THR:N | 2.23 | 0.54 |
| 35:BA:271(M):G:C2' | 35:BA:271(N):U:H5'' | 2.37 | 0.54 |
| 56:DZ:13:GLU:HB3 | 56:DZ:18:LEU:HD11 | 1.88 | 0.54 |
| 55:DY:2:ARG:CD | 55:DY:3:VAL:HG23 | 2.37 | 0.54 |
| 47:DQ:16:ARG:HG2 | 47:DQ:17:LEU:N | 2.23 | 0.54 |
| 1:CA:93:G:H2' | 1:CA:93:G:N3 | 2.22 | 0.54 |
| 45:DO:23:ARG:HD2 | 45:DO:24:VAL:N | 2.22 | 0.54 |
| 45:BO:31:LYS:HB3 | 45:BO:32:TYR:CD1 | 2.42 | 0.54 |
| 1:AA:221:C:O2' | 1:AA:222:U:H5' | 2.07 | 0.54 |
| 2:AB:197:VAL:HB | 2:AB:200:ILE:CG1 | 2.38 | 0.54 |
| 42:DH:41:MET:CG | 42:DH:55:PRO:HD3 | 2.37 | 0.54 |
| 30:B5:20:ARG:NH1 | 53:BW:15:ARG:NH1 | 2.56 | 0.54 |
| 51:BU:98:LEU:HD21 | 52:BV:2:PHE:CZ | 2.42 | 0.54 |
| 18:AR:19:LYS:O | 18:AR:20:ALA:CB | 2.55 | 0.54 |
| 35:DA:829:A:N7 | 35:DA:2247:A:O2' | 2.37 | 0.54 |
| 41:DG:83:ARG:HD3 | 41:DG:84:LYS:HG3 | 1.89 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|---------------------|--------------------------|-------------------|
| 38:BD:231:HIS:CG | 38:BD:232:PRO:HD2 | 2.43 | 0.54 |
| 1:CA:1112:C:C4 | 3:CC:178:LEU:HD23 | 2.43 | 0.54 |
| 10:CJ:8:LEU:HD23 | 10:CJ:95:GLU:O | 2.08 | 0.54 |
| 47:BQ:60:ARG:HB2 | 47:BQ:60:ARG:NH1 | 2.23 | 0.54 |
| 1:AA:332:G:H2' | 1:AA:333:G:H8 | 1.72 | 0.54 |
| 3:AC:59:ARG:HG2 | 3:AC:63:ASN:O | 2.08 | 0.54 |
| 35:BA:2777:G:H4' | 35:BA:2778:A:H5' | 1.88 | 0.54 |
| 13:CM:14:ARG:CZ | 13:CM:42:ALA:HA | 2.38 | 0.54 |
| 4:CD:107:ARG:HB3 | 4:CD:174:LEU:CD1 | 2.37 | 0.54 |
| 6:CF:11:ASN:O | 6:CF:14:LEU:HG | 2.08 | 0.54 |
| 37:DC:212:VAL:O | 37:DC:213:TYR:CB | 2.56 | 0.54 |
| 1:CA:993:G:H2' | 1:CA:995:C:H41 | 1.73 | 0.54 |
| 4:AD:176:LEU:HD12 | 4:AD:177:ASP:H | 1.71 | 0.54 |
| 35:DA:1713:U:O2' | 35:DA:1714:G:H5' | 2.08 | 0.54 |
| 35:DA:2475:C:H5' | 35:DA:2476:A:OP2 | 2.08 | 0.54 |
| 27:B2:32:LEU:O | 27:B2:32:LEU:HD23 | 2.07 | 0.54 |
| 56:DZ:30:ASN:HA | 56:DZ:89:PHE:HE2 | 1.73 | 0.54 |
| 9:AI:48:GLU:N | 9:AI:49:PRO:HD2 | 2.23 | 0.54 |
| 1:CA:521:G:O2' | 1:CA:522:C:H5' | 2.08 | 0.54 |
| 2:AB:57:PHE:O | 2:AB:61:LEU:HB2 | 2.08 | 0.54 |
| 33:B8:56:GLU:O | 33:B8:59:LYS:HE3 | 2.07 | 0.54 |
| 38:BD:77:ALA:HB2 | 38:BD:97:TYR:CD2 | 2.43 | 0.54 |
| 39:DE:54:GLN:HA | 39:DE:72:VAL:HG11 | 1.89 | 0.54 |
| 39:DE:91:VAL:HG13 | 39:DE:95:ILE:HG12 | 1.90 | 0.54 |
| 40:DF:38:ARG:HH12 | 46:DP:16:ARG:HH22 | 1.56 | 0.54 |
| 3:CC:73:PRO:C | 3:CC:75:VAL:H | 2.11 | 0.54 |
| 5:AE:35:GLY:HA3 | 5:AE:112:LEU:O | 2.08 | 0.54 |
| 35:DA:2127:G:H4' | 37:DC:36:LYS:HG2 | 1.90 | 0.54 |
| 35:DA:1163:G:O2' | 35:DA:1164:G:H5' | 2.08 | 0.54 |
| 41:DG:120:LEU:H | 41:DG:181:ARG:H | 1.56 | 0.54 |
| 46:BP:32:THR:CG2 | 46:BP:37:GLY:HA2 | 2.37 | 0.54 |
| 35:BA:142:A:H5' | 35:BA:142(A):C:OP2 | 2.08 | 0.54 |
| 35:BA:1019:U:H3 | 35:BA:1142(A):A:H62 | 1.54 | 0.54 |
| 13:AM:49:THR:HB | 13:AM:52:GLU:HG3 | 1.89 | 0.54 |
| 31:B6:10:LEU:CD1 | 33:B8:34:TRP:CD1 | 2.91 | 0.54 |
| 13:CM:52:GLU:O | 13:CM:56:LEU:HB2 | 2.08 | 0.54 |
| 35:BA:2148:G:O2' | 35:BA:2149:G:H5' | 2.08 | 0.54 |
| 35:DA:1847:A:H3' | 35:DA:1848:A:H5' | 1.88 | 0.54 |
| 35:DA:582:G:H2' | 35:DA:583:G:H8 | 1.73 | 0.54 |
| 10:AJ:16:LEU:HD23 | 10:AJ:94:VAL:HG13 | 1.88 | 0.54 |
| 10:AJ:8:LEU:HG | 10:AJ:96:ILE:HG22 | 1.90 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:AD:46:LYS:O | 4:AD:47:ARG:C | 2.46 | 0.54 |
| 16:AP:19:ILE:CG2 | 16:AP:36:ILE:HG13 | 2.37 | 0.54 |
| 39:DE:1:MET:HG2 | 39:DE:83:ASP:O | 2.07 | 0.54 |
| 4:CD:46:LYS:O | 4:CD:47:ARG:C | 2.46 | 0.54 |
| 1:AA:1437:C:H2' | 1:AA:1438:G:C8 | 2.39 | 0.54 |
| 40:BF:53:THR:O | 40:BF:57:VAL:HG23 | 2.08 | 0.54 |
| 42:BH:89:ILE:HG12 | 42:BH:129:THR:HA | 1.88 | 0.54 |
| 1:AA:1015:A:H2' | 1:AA:1016:A:C8 | 2.42 | 0.54 |
| 5:CE:34:VAL:O | 5:CE:41:VAL:HA | 2.07 | 0.54 |
| 1:CA:377:G:OP1 | 16:CP:3:LYS:HD2 | 2.07 | 0.54 |
| 35:DA:2175:C:H1' | 37:DC:215:THR:CA | 2.38 | 0.54 |
| 1:CA:1368:G:OP2 | 9:CI:112:LYS:HE3 | 2.08 | 0.54 |
| 50:DT:38:ASN:HD22 | 50:DT:40:THR:N | 2.05 | 0.54 |
| 18:AR:53:ARG:HE | 18:AR:59:SER:C | 2.11 | 0.54 |
| 11:AK:21:ILE:HG13 | 11:AK:30:VAL:HG12 | 1.88 | 0.54 |
| 56:BZ:15:PRO:O | 56:BZ:17:ALA:N | 2.40 | 0.54 |
| 6:CF:87:ARG:HG2 | 6:CF:87:ARG:NH1 | 2.22 | 0.54 |
| 2:CB:136:VAL:HA | 2:CB:139:LYS:HB2 | 1.90 | 0.54 |
| 50:DT:131:ALA:C | 50:DT:133:GLU:H | 2.10 | 0.54 |
| 11:AK:111:ASP:OD2 | 18:AR:84:LYS:HE3 | 2.07 | 0.54 |
| 11:AK:59:TYR:O | 11:AK:62:GLN:HB3 | 2.07 | 0.54 |
| 34:D9:11:CYS:SG | 34:D9:12:ASP:N | 2.81 | 0.54 |
| 7:AG:152:ALA:O | 7:AG:155:ARG:HG3 | 2.07 | 0.54 |
| 4:AD:107:ARG:HB3 | 4:AD:174:LEU:HD13 | 1.90 | 0.54 |
| 19:AS:36:ARG:NH1 | 19:AS:53:ASN:HA | 2.23 | 0.54 |
| 1:AA:821:G:O2' | 1:AA:822:C:H5' | 2.08 | 0.54 |
| 2:AB:30:ARG:HG3 | 2:AB:31:TYR:CD2 | 2.43 | 0.54 |
| 1:AA:1411:C:O2' | 1:AA:1412:C:H5' | 2.08 | 0.54 |
| 35:DA:2282:G:O2' | 35:DA:2283:C:OP2 | 2.25 | 0.54 |
| 1:CA:1184:G:H2' | 1:CA:1185:G:H8 | 1.73 | 0.54 |
| 1:CA:189:G:H2' | 1:CA:189(A):C:C6 | 2.42 | 0.54 |
| 27:B2:34:GLU:HA | 27:B2:34:GLU:OE1 | 2.08 | 0.54 |
| 35:DA:1917:U:O2' | 35:DA:1918:A:H5' | 2.07 | 0.54 |
| 35:DA:553:G:H2' | 35:DA:554:U:O4' | 2.07 | 0.54 |
| 35:DA:1001:A:H2' | 35:DA:1002:G:O4' | 2.08 | 0.54 |
| 56:DZ:100:VAL:N | 56:DZ:124:ILE:O | 2.41 | 0.54 |
| 35:DA:1243:G:O2' | 46:DP:9:ASN:HA | 2.08 | 0.54 |
| 46:DP:9:ASN:N | 46:DP:10:PRO:HD2 | 2.23 | 0.54 |
| 41:BG:44:GLY:N | 41:BG:88:ILE:HG21 | 2.05 | 0.54 |
| 31:D6:15:GLU:HG3 | 31:D6:41:PRO:HG3 | 1.89 | 0.54 |
| 1:AA:521:G:O5' | 12:AL:73:GLU:HG3 | 2.08 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 35:DA:661:C:H2' | 35:DA:662:G:H8 | 1.73 | 0.54 |
| 3:AC:73:PRO:HA | 3:AC:76:VAL:CG1 | 2.38 | 0.54 |
| 44:BN:15:LEU:HG | 44:BN:134:ARG:HD2 | 1.89 | 0.54 |
| 13:CM:80:ARG:C | 13:CM:82:MET:H | 2.12 | 0.54 |
| 1:AA:1060:C:H4' | 10:AJ:52:GLY:H | 1.73 | 0.54 |
| 30:B5:40:LYS:HD3 | 30:B5:45:VAL:C | 2.28 | 0.54 |
| 46:BP:101:VAL:CG2 | 46:BP:102:ARG:N | 2.71 | 0.54 |
| 2:AB:115:LEU:HD12 | 2:AB:142:LEU:CD1 | 2.38 | 0.54 |
| 41:DG:64:THR:HG23 | 41:DG:66:GLN:N | 2.15 | 0.54 |
| 35:DA:271(Q):G:HO2' | 35:DA:271(R):G:H8 | 1.52 | 0.54 |
| 37:BC:82:LYS:HE3 | 37:BC:151:GLU:N | 2.23 | 0.54 |
| 4:CD:114:ARG:HH11 | 4:CD:114:ARG:CG | 2.15 | 0.54 |
| 35:BA:2870:C:C2' | 35:BA:2871:C:H5' | 2.38 | 0.54 |
| 8:CH:82:HIS:CD2 | 8:CH:138:TRP:HE1 | 2.21 | 0.54 |
| 1:AA:636:U:H2' | 1:AA:637:G:H8 | 1.73 | 0.54 |
| 46:BP:146:VAL:HG13 | 46:BP:147:LEU:H | 1.73 | 0.54 |
| 16:AP:28:ARG:HG2 | 16:AP:29:ASP:OD2 | 2.07 | 0.54 |
| 35:BA:1288:U:C2 | 35:BA:1327:C:O2 | 2.61 | 0.54 |
| 54:BX:12:VAL:HG21 | 54:BX:17:ALA:HB1 | 1.89 | 0.54 |
| 30:B5:3:LYS:HG3 | 30:B5:4:HIS:H | 1.73 | 0.54 |
| 35:BA:330:A:O2' | 35:BA:331:A:C8 | 2.58 | 0.54 |
| 1:CA:651:C:H2' | 1:CA:652:U:C6 | 2.43 | 0.54 |
| 56:BZ:103:ARG:CG | 56:BZ:136:PHE:HB2 | 2.38 | 0.54 |
| 25:B0:27:GLU:HA | 25:B0:67:VAL:O | 2.07 | 0.54 |
| 35:DA:484:C:H2' | 35:DA:485:C:H6 | 1.73 | 0.54 |
| 1:CA:184:G:H2' | 1:CA:185:A:C8 | 2.43 | 0.54 |
| 51:DU:98:LEU:HD21 | 52:DV:2:PHE:CZ | 2.41 | 0.54 |
| 23:CW:21:A:H5' | 23:CW:21:A:H8 | 1.73 | 0.54 |
| 47:BQ:103:MET:HE2 | 47:BQ:125:LEU:HD13 | 1.90 | 0.54 |
| 35:BA:1509(A):A:H2' | 35:BA:1509(B):A:H8 | 1.72 | 0.54 |
| 1:AA:1207:G:O2' | 1:AA:1208:C:H5' | 2.08 | 0.54 |
| 35:DA:1862:G:O2' | 35:DA:1863:G:H5' | 2.08 | 0.54 |
| 36:BB:40:U:H1' | 36:BB:45:A:H61 | 1.72 | 0.54 |
| 35:BA:321:G:OP2 | 40:BF:136:THR:HG22 | 2.07 | 0.54 |
| 35:BA:1920:C:O2' | 35:BA:1921:G:H5' | 2.07 | 0.54 |
| 1:AA:189:G:H2' | 1:AA:189(A):C:C6 | 2.42 | 0.54 |
| 35:BA:1800:C:OP1 | 38:BD:264:LYS:NZ | 2.36 | 0.54 |
| 1:CA:309:G:H1' | 1:CA:608:A:C2 | 2.43 | 0.54 |
| 13:AM:29:ARG:HB3 | 13:AM:64:TRP:CZ2 | 2.42 | 0.54 |
| 1:AA:853:G:H2' | 1:AA:854:G:H8 | 1.72 | 0.54 |
| 35:BA:1930:G:N2 | 35:BA:1968:G:H2' | 2.23 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:688:U:H2' | 35:DA:689:A:H8 | 1.74 | 0.54 |
| 41:BG:85:GLY:O | 41:BG:87:PRO:CD | 2.55 | 0.53 |
| 31:B6:16:CYS:H | 31:B6:47:THR:HG21 | 1.73 | 0.53 |
| 12:CL:90:VAL:HG11 | 12:CL:93:LEU:HG | 1.88 | 0.53 |
| 35:DA:661:C:H2' | 35:DA:662:G:C8 | 2.43 | 0.53 |
| 3:AC:70:VAL:HG12 | 3:AC:72:LYS:N | 2.20 | 0.53 |
| 37:DC:64:LEU:O | 37:DC:66:HIS:N | 2.41 | 0.53 |
| 52:DV:5:VAL:HG21 | 52:DV:35:LEU:HG | 1.90 | 0.53 |
| 6:AF:17:SER:O | 6:AF:21:LEU:HD23 | 2.08 | 0.53 |
| 35:DA:128:C:H2' | 35:DA:129:C:H6 | 1.73 | 0.53 |
| 20:AT:71:THR:HG22 | 20:AT:72:LEU:H | 1.73 | 0.53 |
| 43:DI:132:PRO:O | 43:DI:133:HIS:C | 2.47 | 0.53 |
| 35:DA:2632:A:H2 | 39:DE:61:ARG:HD3 | 1.72 | 0.53 |
| 10:AJ:8:LEU:HD13 | 10:AJ:20:ALA:CB | 2.37 | 0.53 |
| 30:D5:3:LYS:HG3 | 30:D5:4:HIS:H | 1.73 | 0.53 |
| 8:CH:85:ARG:C | 8:CH:85:ARG:HD3 | 2.29 | 0.53 |
| 4:CD:25:ARG:HA | 4:CD:28:SER:OG | 2.07 | 0.53 |
| 8:AH:87:SER:HA | 8:AH:93:VAL:CG2 | 2.35 | 0.53 |
| 35:BA:1847:A:H3' | 35:BA:1848:A:C5' | 2.38 | 0.53 |
| 56:DZ:80:ARG:HH11 | 56:DZ:80:ARG:HG3 | 1.72 | 0.53 |
| 13:CM:91:ARG:NH1 | 19:CS:81:ARG:NH2 | 2.56 | 0.53 |
| 35:BA:271(M):G:H5" | 43:BI:57:ARG:HH12 | 1.71 | 0.53 |
| 3:AC:172:ARG:NH1 | 3:AC:172:ARG:HB3 | 2.23 | 0.53 |
| 40:DF:23:ASP:O | 40:DF:115:ALA:HA | 2.08 | 0.53 |
| 12:CL:70:ILE:HD13 | 12:CL:77:LEU:HD12 | 1.90 | 0.53 |
| 47:BQ:109:VAL:CG1 | 47:BQ:113:GLN:HB2 | 2.39 | 0.53 |
| 54:DX:65:ARG:HG2 | 54:DX:65:ARG:NH1 | 2.21 | 0.53 |
| 36:BB:56:G:C5' | 41:BG:27:ASN:ND2 | 2.70 | 0.53 |
| 3:CC:126:ARG:HG2 | 3:CC:126:ARG:NH1 | 2.24 | 0.53 |
| 52:DV:2:PHE:HB3 | 52:DV:41:GLY:C | 2.28 | 0.53 |
| 18:CR:19:LYS:O | 18:CR:20:ALA:CB | 2.56 | 0.53 |
| 3:CC:90:GLU:O | 3:CC:93:LYS:HB3 | 2.08 | 0.53 |
| 6:CF:12:PRO:HD3 | 6:CF:58:GLY:HA2 | 1.91 | 0.53 |
| 53:DW:82:LEU:HD12 | 53:DW:98:LYS:O | 2.07 | 0.53 |
| 35:DA:320:A:C2' | 40:DF:136:THR:HG21 | 2.38 | 0.53 |
| 35:BA:320:A:C2' | 40:BF:136:THR:HG21 | 2.38 | 0.53 |
| 10:AJ:89:ASP:C | 10:AJ:90:LEU:HD12 | 2.28 | 0.53 |
| 43:DI:78:THR:HA | 43:DI:141:LYS:O | 2.08 | 0.53 |
| 37:DC:38:ASP:HB2 | 37:DC:181:PRO:CB | 2.38 | 0.53 |
| 3:CC:156:ARG:NH2 | 3:CC:161:GLU:HA | 2.23 | 0.53 |
| 40:DF:114:VAL:HG21 | 40:DF:202:PHE:CZ | 2.42 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DA:32:C:C2' | 35:DA:33:U:H5' | 2.38 | 0.53 |
| 16:AP:13:HIS:C | 16:AP:15:PRO:HD3 | 2.29 | 0.53 |
| 35:BA:1234:U:H2' | 35:BA:1235:G:H5' | 1.90 | 0.53 |
| 35:BA:2512:C:H2' | 35:BA:2513:G:O4' | 2.08 | 0.53 |
| 35:DA:460:A:H2' | 35:DA:461:C:O4' | 2.08 | 0.53 |
| 1:AA:1086:U:O2' | 1:AA:1087:G:H5' | 2.09 | 0.53 |
| 47:DQ:136:ALA:HA | 56:DZ:48:PHE:CE1 | 2.43 | 0.53 |
| 56:DZ:71:VAL:HG12 | 56:DZ:88:PHE:CE2 | 2.43 | 0.53 |
| 31:D6:19:ARG:N | 31:D6:19:ARG:HD2 | 2.22 | 0.53 |
| 2:CB:47:THR:O | 2:CB:51:LEU:HD12 | 2.07 | 0.53 |
| 18:CR:36:ASN:O | 18:CR:40:LEU:HD12 | 2.08 | 0.53 |
| 12:CL:37:CYS:HA | 12:CL:58:VAL:HG22 | 1.89 | 0.53 |
| 1:CA:954:G:H21 | 1:CA:1227:A:N6 | 2.06 | 0.53 |
| 38:DD:35:LYS:O | 38:DD:36:PRO:C | 2.46 | 0.53 |
| 3:AC:110:ASN:O | 3:AC:112:SER:N | 2.41 | 0.53 |
| 13:AM:16:ASP:HA | 13:AM:34:LEU:HD11 | 1.89 | 0.53 |
| 51:DU:95:LEU:CD1 | 52:DV:4:ILE:HG23 | 2.39 | 0.53 |
| 35:DA:1494:A:H3' | 35:DA:1494:A:N3 | 2.23 | 0.53 |
| 55:BY:27:VAL:CA | 55:BY:28:LYS:NZ | 2.69 | 0.53 |
| 22:CY:75:C:H2' | 22:CY:76:8AN:C8 | 2.37 | 0.53 |
| 37:DC:82:LYS:HE3 | 37:DC:151:GLU:N | 2.23 | 0.53 |
| 46:DP:32:THR:CG2 | 46:DP:37:GLY:HA2 | 2.38 | 0.53 |
| 55:BY:54:LYS:O | 55:BY:55:TYR:O | 2.26 | 0.53 |
| 43:DI:115:ALA:HB2 | 43:DI:131:LYS:HE2 | 1.90 | 0.53 |
| 18:CR:74:ARG:HB3 | 18:CR:81:PHE:CE1 | 2.42 | 0.53 |
| 35:DA:674:G:C1' | 40:DF:74:ARG:HD3 | 2.36 | 0.53 |
| 42:DH:33:LEU:HD21 | 42:DH:136:ILE:CG2 | 2.38 | 0.53 |
| 35:DA:70:G:H2' | 35:DA:113:G:O2' | 2.08 | 0.53 |
| 19:AS:14:HIS:C | 19:AS:15:LEU:HD22 | 2.27 | 0.53 |
| 6:AF:100:ASN:HD21 | 18:AR:23:LYS:CE | 2.20 | 0.53 |
| 49:DS:26:LEU:HG | 49:DS:39:ILE:HD11 | 1.89 | 0.53 |
| 1:CA:1190:G:H3' | 3:CC:3:ASN:HD21 | 1.74 | 0.53 |
| 1:AA:644:G:H2' | 1:AA:645:C:H5' | 1.90 | 0.53 |
| 1:AA:795:C:H1' | 1:AA:1506:U:C5 | 2.43 | 0.53 |
| 2:CB:72:GLY:HA2 | 2:CB:165:VAL:CG2 | 2.37 | 0.53 |
| 11:CK:20:TYR:C | 11:CK:21:ILE:HD12 | 2.29 | 0.53 |
| 3:AC:126:ARG:HG2 | 3:AC:126:ARG:NH1 | 2.23 | 0.53 |
| 35:DA:729:G:H2' | 35:DA:1775:U:O2 | 2.08 | 0.53 |
| 42:DH:41:MET:O | 42:DH:43:VAL:HG13 | 2.07 | 0.53 |
| 8:CH:44:PHE:HA | 8:CH:79:VAL:HG11 | 1.90 | 0.53 |
| 1:AA:1423:G:H2' | 1:AA:1424:C:C6 | 2.43 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:CA:1305:G:H5' | 21:CU:4:GLY:HA3 | 1.90 | 0.53 |
| 22:CV:17:C:C3' | 22:CV:18:G:H5'' | 2.38 | 0.53 |
| 1:CA:221:C:O2' | 1:CA:222:U:H5' | 2.08 | 0.53 |
| 35:BA:2591:C:H2' | 35:BA:2592:G:C8 | 2.43 | 0.53 |
| 22:CY:51:U:H2' | 22:CY:52:G:C8 | 2.42 | 0.53 |
| 14:AN:40:CYS:O | 14:AN:44:LEU:HB3 | 2.08 | 0.53 |
| 1:CA:132:C:O2' | 1:CA:133:U:H5' | 2.07 | 0.53 |
| 27:D2:32:LEU:CA | 27:D2:53:LEU:HD13 | 2.38 | 0.53 |
| 35:DA:1908:C:H2' | 35:DA:1909:C:H6 | 1.73 | 0.53 |
| 6:CF:97:PHE:CD2 | 18:CR:65:ILE:HD12 | 2.43 | 0.53 |
| 35:DA:80:G:O2' | 35:DA:81:G:H5' | 2.08 | 0.53 |
| 35:DA:2476:A:N1 | 35:DA:2477:C:C5 | 2.77 | 0.53 |
| 16:CP:43:LYS:HG2 | 16:CP:48:TRP:CE2 | 2.43 | 0.53 |
| 1:CA:1086:U:O2' | 1:CA:1087:G:H5' | 2.09 | 0.53 |
| 31:D6:30:THR:O | 31:D6:31:PRO:C | 2.46 | 0.53 |
| 7:AG:143:ARG:NH1 | 23:AW:42:C:H5'' | 2.23 | 0.53 |
| 1:AA:402:G:O2' | 1:AA:403:C:H5' | 2.07 | 0.53 |
| 35:DA:2749:A:H2' | 35:DA:2750:A:C8 | 2.44 | 0.53 |
| 35:DA:2687:U:H2' | 35:DA:2688:U:O4' | 2.08 | 0.53 |
| 1:CA:853:G:H2' | 1:CA:854:G:H8 | 1.74 | 0.53 |
| 20:AT:27:LYS:HD3 | 20:AT:27:LYS:O | 2.08 | 0.53 |
| 1:CA:352:C:O2 | 1:CA:352:C:H2' | 2.07 | 0.53 |
| 55:BY:95:LYS:CD | 55:BY:100:ALA:HA | 2.38 | 0.53 |
| 9:CI:88:TYR:O | 9:CI:89:ASN:CB | 2.56 | 0.53 |
| 49:DS:18:ILE:C | 49:DS:20:ARG:H | 2.10 | 0.53 |
| 2:CB:91:PRO:CD | 2:CB:155:LEU:HD23 | 2.37 | 0.53 |
| 38:BD:43:ARG:HH11 | 38:BD:44:ASN:CG | 2.11 | 0.53 |
| 39:DE:33:VAL:HG13 | 39:DE:69:LYS:HZ1 | 1.73 | 0.53 |
| 47:BQ:141:GLN:HB2 | 56:BZ:99:TYR:H | 1.72 | 0.53 |
| 39:BE:69:LYS:C | 39:BE:71:GLY:N | 2.62 | 0.53 |
| 5:AE:100:VAL:HG22 | 5:AE:118:ILE:HG22 | 1.89 | 0.53 |
| 46:BP:24:GLY:O | 46:BP:25:SER:HB3 | 2.09 | 0.53 |
| 35:DA:1165:U:H2' | 35:DA:1166:C:C6 | 2.43 | 0.53 |
| 5:CE:11:ILE:HD11 | 5:CE:33:VAL:CG2 | 2.38 | 0.53 |
| 35:BA:2728:U:O2' | 35:BA:2729:G:H5' | 2.08 | 0.53 |
| 35:DA:6:A:N3 | 35:DA:6:A:H2' | 2.24 | 0.53 |
| 35:BA:589:C:H2' | 35:BA:590:A:C8 | 2.43 | 0.53 |
| 44:BN:68:GLU:HG2 | 44:BN:88:GLU:CD | 2.28 | 0.53 |
| 41:DG:56:ALA:HB2 | 41:DG:153:ARG:CZ | 2.38 | 0.53 |
| 44:BN:3:THR:C | 44:BN:5:VAL:N | 2.60 | 0.53 |
| 30:D5:6:VAL:CG2 | 30:D5:7:PRO:HD2 | 2.39 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:2632:A:H2 | 39:BE:61:ARG:HD3 | 1.71 | 0.53 |
| 38:DD:26:LYS:HE2 | 38:DD:82:ILE:HB | 1.89 | 0.53 |
| 35:BA:1300:U:O2 | 35:BA:1300:U:O4' | 2.26 | 0.53 |
| 1:AA:137:C:N4 | 1:AA:226:G:H1 | 2.00 | 0.53 |
| 46:BP:110:TYR:O | 46:BP:111:ARG:O | 2.26 | 0.53 |
| 46:BP:80:TYR:CD1 | 46:BP:111:ARG:HB3 | 2.44 | 0.53 |
| 7:CG:86:GLN:NE2 | 23:CW:39:U:H5 | 2.06 | 0.53 |
| 3:CC:122:GLU:O | 3:CC:126:ARG:HG3 | 2.07 | 0.53 |
| 34:D9:19:ARG:O | 34:D9:20:HIS:HB2 | 2.08 | 0.53 |
| 12:CL:83:VAL:HG13 | 12:CL:84:LEU:N | 2.22 | 0.53 |
| 41:BG:137:GLU:CB | 41:BG:152:LEU:HD11 | 2.36 | 0.53 |
| 44:BN:1:MET:HG2 | 44:BN:2:LYS:H | 1.71 | 0.53 |
| 35:BA:673:C:H5' | 40:BF:54:ARG:NH1 | 2.23 | 0.53 |
| 47:DQ:78:PRO:HB2 | 47:DQ:81:VAL:HG11 | 1.90 | 0.53 |
| 35:BA:1266:G:C8 | 53:BW:15:ARG:NH2 | 2.77 | 0.53 |
| 41:BG:57:ALA:HB2 | 41:BG:90:LEU:HD11 | 1.89 | 0.53 |
| 35:DA:315:G:H2' | 35:DA:316:C:C6 | 2.43 | 0.53 |
| 2:AB:137:ARG:HD3 | 2:AB:137:ARG:C | 2.28 | 0.53 |
| 38:BD:16:MET:CE | 38:BD:208:LYS:HD2 | 2.39 | 0.53 |
| 1:CA:1466:C:O2' | 1:CA:1467:G:H5' | 2.09 | 0.53 |
| 35:BA:2352:A:C2' | 35:BA:2353:G:H5' | 2.37 | 0.53 |
| 32:B7:19:ARG:NH1 | 32:B7:19:ARG:HG2 | 2.23 | 0.53 |
| 12:AL:119:LYS:C | 12:AL:120:TYR:CD1 | 2.82 | 0.53 |
| 35:BA:1410:G:O2' | 35:BA:1411:C:H5' | 2.09 | 0.53 |
| 47:DQ:59:ARG:HG3 | 47:DQ:59:ARG:NH1 | 2.23 | 0.53 |
| 1:AA:1184:G:H2' | 1:AA:1185:G:H8 | 1.73 | 0.53 |
| 35:BA:445:C:O2' | 35:BA:446:G:H5' | 2.08 | 0.53 |
| 35:BA:2107:C:H2' | 35:BA:2108:C:O4' | 2.07 | 0.53 |
| 35:BA:272(D):G:H2' | 35:BA:272(E):G:H8 | 1.73 | 0.53 |
| 1:AA:1483:A:H2 | 35:BA:1959:G:N3 | 2.06 | 0.53 |
| 25:B0:32:ARG:H | 25:B0:35:ASN:ND2 | 2.04 | 0.53 |
| 35:BA:52:A:O2' | 35:BA:53:A:H5' | 2.08 | 0.53 |
| 6:AF:11:ASN:O | 6:AF:14:LEU:HG | 2.08 | 0.53 |
| 4:CD:156:GLU:O | 4:CD:159:ARG:HB2 | 2.09 | 0.53 |
| 48:DR:94:TYR:CD1 | 48:DR:94:TYR:N | 2.76 | 0.53 |
| 1:CA:1027:C:H1' | 1:CA:1035:A:N1 | 2.23 | 0.53 |
| 41:BG:21:ARG:HD2 | 41:BG:21:ARG:C | 2.28 | 0.53 |
| 50:BT:14:TYR:CD1 | 50:BT:14:TYR:N | 2.76 | 0.53 |
| 22:CY:72:C:H2' | 22:CY:72:C:O2 | 2.09 | 0.53 |
| 1:CA:509:A:H2' | 1:CA:510:A:C8 | 2.42 | 0.53 |
| 35:BA:706:A:C2 | 35:BA:707:G:H1' | 2.43 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 56:DZ:127:LYS:N | 56:DZ:162:GLU:O | 2.41 | 0.53 |
| 41:BG:43:LEU:HB2 | 41:BG:88:ILE:HG21 | 1.91 | 0.53 |
| 9:AI:63:ILE:HD13 | 9:AI:77:ILE:HG23 | 1.89 | 0.53 |
| 6:CF:3:ARG:HG2 | 6:CF:93:SER:HB2 | 1.90 | 0.53 |
| 50:DT:13:ARG:HH12 | 50:DT:15:VAL:CG2 | 2.21 | 0.53 |
| 35:BA:661:C:H4' | 46:BP:16:ARG:NH1 | 2.23 | 0.53 |
| 35:BA:1173:G:H3' | 35:BA:1174:A:C5' | 2.36 | 0.53 |
| 39:BE:75:VAL:O | 39:BE:77:ILE:N | 2.30 | 0.53 |
| 42:DH:44:VAL:O | 42:DH:46:GLU:N | 2.39 | 0.53 |
| 42:BH:47:GLU:CG | 42:BH:48:GLY:N | 2.62 | 0.53 |
| 37:DC:58:VAL:C | 37:DC:59:ARG:HD3 | 2.29 | 0.53 |
| 35:DA:2126:A:H8 | 35:DA:2126:A:OP2 | 1.92 | 0.53 |
| 29:B4:39:ARG:O | 29:B4:57:ILE:HB | 2.09 | 0.53 |
| 35:BA:2533:A:H2' | 35:BA:2534:A:C5' | 2.32 | 0.53 |
| 35:BA:941:A:H4' | 46:BP:35:HIS:NE2 | 2.23 | 0.53 |
| 6:CF:17:SER:O | 6:CF:21:LEU:HD23 | 2.08 | 0.53 |
| 2:CB:114:ARG:HG3 | 2:CB:114:ARG:HH11 | 1.73 | 0.53 |
| 2:CB:115:LEU:HD12 | 2:CB:142:LEU:CD1 | 2.37 | 0.53 |
| 47:BQ:45:GLN:O | 47:BQ:49:ALA:HB2 | 2.09 | 0.53 |
| 2:AB:114:ARG:HD3 | 2:AB:117:GLU:OE1 | 2.08 | 0.53 |
| 31:B6:51:GLU:O | 31:B6:52:VAL:CB | 2.57 | 0.53 |
| 35:BA:128:C:H2' | 35:BA:129:C:C6 | 2.44 | 0.53 |
| 55:DY:54:LYS:O | 55:DY:55:TYR:O | 2.27 | 0.53 |
| 1:AA:1431:C:H2' | 1:AA:1432:G:O4' | 2.08 | 0.53 |
| 39:BE:116:VAL:O | 39:BE:117:MET:CB | 2.52 | 0.53 |
| 20:AT:13:LEU:HD12 | 20:AT:14:LYS:N | 2.23 | 0.53 |
| 42:DH:89:ILE:HD11 | 42:DH:129:THR:O | 2.07 | 0.53 |
| 1:AA:390:C:H2' | 1:AA:391:G:C8 | 2.42 | 0.53 |
| 13:AM:13:LYS:O | 13:AM:45:VAL:HG23 | 2.09 | 0.53 |
| 43:BI:81:VAL:CG2 | 43:BI:142:VAL:HB | 2.37 | 0.53 |
| 35:BA:675:A:N6 | 35:BA:676:A:N6 | 2.56 | 0.53 |
| 19:AS:18:LYS:O | 19:AS:22:LEU:HD23 | 2.09 | 0.53 |
| 54:DX:29:TRP:HA | 54:DX:29:TRP:CE3 | 2.44 | 0.53 |
| 30:B5:4:HIS:O | 35:BA:2056:G:N2 | 2.41 | 0.53 |
| 26:B1:82:LEU:HD22 | 26:B1:82:LEU:N | 2.23 | 0.53 |
| 49:BS:85:VAL:HG22 | 49:BS:106:ARG:HB2 | 1.91 | 0.53 |
| 49:BS:106:ARG:O | 49:BS:106:ARG:HD2 | 2.09 | 0.53 |
| 1:CA:1064:G:H21 | 1:CA:1190:G:H2' | 1.73 | 0.53 |
| 1:CA:1191:A:P | 3:CC:3:ASN:HD21 | 2.32 | 0.53 |
| 43:DI:58:LEU:O | 43:DI:60:GLU:N | 2.42 | 0.53 |
| 47:BQ:16:ARG:HG2 | 47:BQ:17:LEU:N | 2.22 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:CA:1251:A:H2' | 1:CA:1252:A:H8 | 1.74 | 0.53 |
| 34:D9:17:ILE:HG21 | 34:D9:19:ARG:HE | 1.72 | 0.53 |
| 2:AB:19:HIS:ND1 | 2:AB:189:ASP:OD2 | 2.42 | 0.53 |
| 26:B1:45:ASN:ND2 | 35:BA:2090:G:H21 | 2.05 | 0.53 |
| 2:CB:28:PHE:CD1 | 2:CB:28:PHE:O | 2.61 | 0.53 |
| 48:BR:79:LEU:HA | 48:BR:83:ILE:HG13 | 1.89 | 0.53 |
| 38:BD:206:LEU:HD23 | 38:BD:211:ARG:NH1 | 2.23 | 0.53 |
| 1:CA:221:C:H2' | 1:CA:222:U:H6 | 1.72 | 0.53 |
| 27:D2:2:LYS:CB | 35:DA:97:C:H5'' | 2.38 | 0.53 |
| 1:CA:966:G:C2 | 22:CV:34:G:H5' | 2.43 | 0.53 |
| 35:BA:1636:C:H2' | 35:BA:1637:A:C8 | 2.43 | 0.53 |
| 35:BA:2636:U:OP1 | 39:BE:80:GLU:HG3 | 2.08 | 0.53 |
| 35:BA:2672:G:C2' | 35:BA:2673:G:H5'' | 2.39 | 0.53 |
| 26:D1:19:GLN:O | 26:D1:35:THR:HG22 | 2.08 | 0.53 |
| 35:BA:83:G:N2 | 35:BA:102:G:H2' | 2.23 | 0.53 |
| 35:BA:2203:U:O2' | 38:BD:151:LYS:HG3 | 2.08 | 0.53 |
| 8:CH:88:LYS:NZ | 8:CH:88:LYS:HB2 | 2.24 | 0.53 |
| 35:BA:1270:C:H5'' | 35:BA:1271:G:C5' | 2.37 | 0.53 |
| 1:AA:402:G:C2' | 1:AA:403:C:H5' | 2.37 | 0.53 |
| 1:CA:699:C:H2' | 1:CA:700:G:H5' | 1.91 | 0.53 |
| 37:DC:74:VAL:HG12 | 37:DC:76:ALA:H | 1.74 | 0.53 |
| 3:AC:41:GLY:O | 3:AC:45:LYS:HG3 | 2.08 | 0.53 |
| 36:BB:44:G:H1' | 36:BB:47:C:N4 | 2.24 | 0.53 |
| 35:DA:2771:C:H2' | 35:DA:2772:C:C6 | 2.43 | 0.53 |
| 2:AB:239:VAL:O | 2:AB:241:GLU:N | 2.41 | 0.53 |
| 2:CB:239:VAL:O | 2:CB:241:GLU:N | 2.41 | 0.53 |
| 46:BP:45:LEU:CD2 | 46:BP:46:LYS:N | 2.68 | 0.53 |
| 33:B8:27:THR:HG22 | 46:BP:61:ARG:HA | 1.91 | 0.53 |
| 55:DY:74:PRO:O | 55:DY:80:GLY:HA2 | 2.09 | 0.53 |
| 13:CM:19:LEU:CB | 13:CM:25:ILE:HG21 | 2.38 | 0.53 |
| 51:DU:112:ARG:HG2 | 51:DU:112:ARG:NH1 | 2.22 | 0.53 |
| 22:AY:64:A:H2' | 22:AY:65:G:C8 | 2.44 | 0.53 |
| 30:D5:36:CYS:HB3 | 30:D5:38:ALA:H | 1.72 | 0.53 |
| 35:BA:2128:C:H2' | 35:BA:2129:C:H6 | 1.73 | 0.53 |
| 3:CC:157:ILE:HD13 | 3:CC:166:GLU:HB2 | 1.90 | 0.53 |
| 55:DY:14:LEU:CD1 | 55:DY:15:VAL:N | 2.66 | 0.53 |
| 10:CJ:28:ARG:HG2 | 10:CJ:28:ARG:HH11 | 1.73 | 0.53 |
| 30:B5:40:LYS:NZ | 30:B5:49:CYS:SG | 2.74 | 0.53 |
| 35:BA:2726:U:H6 | 45:BO:67:LYS:HZ3 | 1.54 | 0.53 |
| 44:DN:120:LEU:C | 44:DN:121:LYS:HD2 | 2.29 | 0.53 |
| 36:BB:52:A:N7 | 49:BS:33:LYS:CE | 2.71 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:404:C:C4' | 35:BA:405:U:H5' | 2.32 | 0.53 |
| 35:DA:1680:U:H2' | 35:DA:1681:G:O4' | 2.09 | 0.53 |
| 43:BI:79:ILE:CD1 | 43:BI:80:PRO:HD2 | 2.36 | 0.53 |
| 29:D4:52:SER:OG | 29:D4:53:THR:N | 2.42 | 0.53 |
| 30:D5:51:TYR:CB | 30:D5:54:GLY:HA3 | 2.39 | 0.53 |
| 25:D0:60:PHE:CZ | 35:DA:2365:G:H4' | 2.44 | 0.53 |
| 41:BG:144:ILE:HD11 | 41:BG:148:MET:CG | 2.39 | 0.53 |
| 39:DE:16:ARG:O | 39:DE:18:ASP:N | 2.39 | 0.53 |
| 19:AS:23:ASN:HA | 19:AS:26:GLY:HA2 | 1.89 | 0.53 |
| 56:BZ:124:ILE:CD1 | 56:BZ:155:LEU:HD21 | 2.36 | 0.53 |
| 35:DA:956:G:H5'' | 47:DQ:77:LYS:HD2 | 1.91 | 0.53 |
| 56:DZ:117:LEU:N | 56:DZ:117:LEU:HD23 | 2.24 | 0.53 |
| 25:D0:53:MET:HB3 | 25:D0:59:LEU:CD2 | 2.39 | 0.53 |
| 43:DI:29:TYR:HE1 | 43:DI:33:ARG:HE | 1.56 | 0.53 |
| 12:AL:55:VAL:CG1 | 12:AL:56:ALA:H | 2.20 | 0.53 |
| 49:BS:74:ALA:HB1 | 49:BS:103:GLU:CG | 2.38 | 0.53 |
| 48:DR:104:ARG:HH12 | 48:DR:109:ALA:HB3 | 1.73 | 0.53 |
| 2:CB:144:ARG:O | 2:CB:147:LYS:HB3 | 2.08 | 0.53 |
| 18:AR:87:ARG:HG2 | 18:AR:87:ARG:HH11 | 1.74 | 0.53 |
| 26:B1:45:ASN:HD21 | 35:BA:2090:G:H21 | 1.56 | 0.53 |
| 35:DA:1266:G:C8 | 53:DW:15:ARG:NH2 | 2.77 | 0.53 |
| 35:DA:887:A:H1' | 35:DA:889:C:N4 | 2.24 | 0.53 |
| 11:AK:34:ASP:HB3 | 11:AK:40:ILE:HD11 | 1.89 | 0.53 |
| 38:DD:231:HIS:CG | 38:DD:232:PRO:HD2 | 2.43 | 0.53 |
| 38:DD:241:PRO:O | 38:DD:242:ARG:HB2 | 2.08 | 0.53 |
| 41:DG:76:SER:HB2 | 41:DG:83:ARG:HB2 | 1.90 | 0.53 |
| 54:BX:8:ILE:HD11 | 54:BX:42:ALA:HB1 | 1.90 | 0.53 |
| 7:AG:113:GLU:HG3 | 7:AG:119:ARG:HA | 1.90 | 0.53 |
| 2:AB:16:HIS:HD2 | 2:AB:210:SER:HA | 1.73 | 0.53 |
| 1:AA:725:G:H2' | 1:AA:726:C:H6 | 1.74 | 0.53 |
| 11:CK:99:GLN:NE2 | 11:CK:105:VAL:HG11 | 2.24 | 0.53 |
| 39:DE:39:PRO:O | 39:DE:41:LYS:N | 2.41 | 0.53 |
| 35:BA:2687:U:H2' | 35:BA:2688:U:O4' | 2.09 | 0.53 |
| 1:AA:1498:U:C5 | 24:AX:17:U:H5' | 2.43 | 0.53 |
| 1:AA:878:G:H5'' | 8:AH:89:PRO:HG2 | 1.89 | 0.53 |
| 1:AA:692:U:H2' | 1:AA:694:A:OP2 | 2.09 | 0.53 |
| 35:DA:290:G:O2' | 35:DA:291:C:H5' | 2.09 | 0.53 |
| 36:BB:89:G:N2 | 36:BB:90:A:C2 | 2.77 | 0.53 |
| 33:D8:25:MET:SD | 46:DP:64:LYS:HD2 | 2.49 | 0.53 |
| 2:AB:211:ILE:O | 2:AB:215:LEU:HD23 | 2.08 | 0.53 |
| 9:CI:9:ARG:HG3 | 9:CI:14:VAL:HG13 | 1.90 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:CI:35:GLU:HA | 9:CI:38:GLN:HB2 | 1.91 | 0.53 |
| 46:BP:63:PRO:C | 46:BP:65:ARG:N | 2.62 | 0.53 |
| 12:CL:60:LEU:HD22 | 12:CL:60:LEU:N | 2.23 | 0.53 |
| 56:DZ:150:LEU:O | 56:DZ:151:HIS:HB3 | 2.07 | 0.53 |
| 39:BE:47:VAL:HG23 | 39:BE:84:PHE:O | 2.08 | 0.53 |
| 13:CM:11:ARG:NH2 | 41:DG:146:TYR:HD2 | 2.06 | 0.53 |
| 38:DD:33:LEU:HA | 38:DD:36:PRO:HG3 | 1.90 | 0.53 |
| 51:DU:112:ARG:CG | 51:DU:112:ARG:HH11 | 2.16 | 0.53 |
| 41:DG:126:ASP:O | 41:DG:128:ARG:NH2 | 2.35 | 0.53 |
| 41:DG:126:ASP:HA | 41:DG:166:ASP:HB2 | 1.90 | 0.53 |
| 30:D5:39:MET:HG3 | 53:DW:34:ASN:OD1 | 2.09 | 0.53 |
| 50:DT:55:ASN:HD22 | 50:DT:58:ASN:ND2 | 1.94 | 0.53 |
| 47:BQ:19:GLY:O | 47:BQ:20:ALA:HB3 | 2.09 | 0.53 |
| 43:BI:77:LEU:HD21 | 43:BI:101:LEU:HD13 | 1.90 | 0.53 |
| 2:AB:114:ARG:HH11 | 2:AB:114:ARG:HG3 | 1.73 | 0.53 |
| 35:DA:128:C:H2' | 35:DA:129:C:C6 | 2.44 | 0.53 |
| 31:B6:12:GLU:HB3 | 31:B6:23:THR:HG22 | 1.91 | 0.53 |
| 1:AA:254:G:OP1 | 17:AQ:67:LYS:O | 2.26 | 0.53 |
| 35:DA:404:C:C4' | 35:DA:405:U:H5' | 2.34 | 0.53 |
| 46:DP:80:TYR:CE1 | 46:DP:111:ARG:HD3 | 2.43 | 0.53 |
| 25:D0:60:PHE:CE2 | 35:DA:2365:G:H4' | 2.44 | 0.53 |
| 38:DD:28:GLU:CD | 38:DD:28:GLU:N | 2.62 | 0.53 |
| 13:AM:10:PRO:CB | 13:AM:18:ALA:HB1 | 2.39 | 0.53 |
| 42:DH:27:LYS:HA | 42:DH:32:GLU:HG3 | 1.90 | 0.53 |
| 13:AM:76:ALA:HA | 13:AM:79:LYS:HZ2 | 1.72 | 0.53 |
| 35:BA:1050:A:C4 | 35:BA:1051:G:N7 | 2.77 | 0.53 |
| 40:BF:80:ALA:O | 40:BF:83:PHE:HB2 | 2.08 | 0.53 |
| 47:DQ:110:THR:HG23 | 47:DQ:113:GLN:OE1 | 2.09 | 0.53 |
| 47:DQ:32:TYR:CE2 | 47:DQ:133:ARG:HG2 | 2.44 | 0.53 |
| 5:CE:35:GLY:HA2 | 5:CE:40:ARG:O | 2.09 | 0.53 |
| 7:AG:53:LYS:O | 7:AG:54:THR:CB | 2.57 | 0.53 |
| 8:AH:118:VAL:C | 8:AH:119:LEU:HD23 | 2.29 | 0.53 |
| 18:AR:25:THR:HG22 | 18:AR:42:ARG:NH1 | 2.24 | 0.53 |
| 27:B2:14:ARG:HD3 | 27:B2:63:VAL:HG13 | 1.90 | 0.53 |
| 35:BA:1396:U:O2 | 35:BA:1396:U:C2' | 2.57 | 0.53 |
| 1:AA:1112:C:C4 | 3:AC:178:LEU:HD23 | 2.43 | 0.53 |
| 53:DW:110:LYS:HG3 | 53:DW:111:HIS:ND1 | 2.24 | 0.53 |
| 35:DA:2591:C:H2' | 35:DA:2592:G:C8 | 2.44 | 0.53 |
| 1:CA:1392:G:O2' | 1:CA:1393:U:H5' | 2.08 | 0.53 |
| 35:BA:1711:C:H2' | 35:BA:1712:C:C6 | 2.44 | 0.53 |
| 1:AA:1096:C:O2' | 1:AA:1097:C:H5' | 2.09 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:CG:154:TYR:O | 7:CG:156:TRP:N | 2.42 | 0.53 |
| 44:BN:76:SER:O | 44:BN:78:TYR:N | 2.42 | 0.53 |
| 17:AQ:31:LEU:HG | 17:AQ:32:TYR:CE2 | 2.44 | 0.53 |
| 4:CD:100:ARG:NH1 | 4:CD:137:SER:HA | 2.24 | 0.53 |
| 13:AM:74:VAL:O | 13:AM:78:ILE:HG13 | 2.08 | 0.53 |
| 26:D1:24:ALA:HB2 | 26:D1:32:LYS:HE3 | 1.88 | 0.53 |
| 49:DS:36:TYR:N | 49:DS:36:TYR:CD1 | 2.77 | 0.53 |
| 1:CA:1496:C:H2' | 1:CA:1497:G:C8 | 2.44 | 0.53 |
| 1:CA:1496:C:H2' | 1:CA:1497:G:O4' | 2.09 | 0.53 |
| 53:BW:68:ARG:HB3 | 53:BW:109:GLU:HB3 | 1.90 | 0.53 |
| 31:D6:20:ASN:ND2 | 31:D6:21:TYR:N | 2.52 | 0.53 |
| 35:DA:614(C):A:O2' | 35:DA:615:G:P | 2.67 | 0.53 |
| 2:AB:55:PHE:HA | 2:AB:58:ILE:CB | 2.38 | 0.53 |
| 9:CI:13:ALA:HA | 9:CI:67:GLY:O | 2.09 | 0.53 |
| 50:BT:83:ILE:O | 50:BT:84:GLN:CB | 2.57 | 0.53 |
| 43:BI:94:ALA:C | 43:BI:96:ASP:H | 2.10 | 0.53 |
| 38:BD:33:LEU:HA | 38:BD:36:PRO:HG3 | 1.89 | 0.53 |
| 50:BT:13:ARG:HA | 50:BT:13:ARG:NH1 | 2.22 | 0.53 |
| 35:DA:662:G:P | 46:DP:18:ARG:HD2 | 2.48 | 0.53 |
| 13:AM:5:ALA:HB3 | 13:AM:8:GLU:HB2 | 1.91 | 0.53 |
| 1:CA:940:C:H2' | 1:CA:941:G:C8 | 2.44 | 0.53 |
| 35:BA:1493:C:H4' | 35:BA:1494:A:OP2 | 2.07 | 0.53 |
| 41:DG:22:ARG:NH1 | 41:DG:23:PHE:CE1 | 2.77 | 0.53 |
| 4:AD:18:LYS:HB2 | 4:AD:33:MET:CG | 2.31 | 0.53 |
| 35:BA:2228:G:OP2 | 38:BD:261:LYS:HE3 | 2.08 | 0.53 |
| 18:AR:35:ARG:O | 18:AR:37:VAL:N | 2.38 | 0.53 |
| 6:AF:15:ASP:HA | 4:CD:20:TYR:CE1 | 2.44 | 0.53 |
| 35:BA:1019:U:H3 | 35:BA:1142(A):A:N6 | 2.07 | 0.53 |
| 37:DC:93:TYR:O | 37:DC:94:VAL:HG13 | 2.09 | 0.53 |
| 37:BC:93:TYR:O | 37:BC:94:VAL:HG13 | 2.09 | 0.53 |
| 44:DN:18:ALA:O | 44:DN:20:GLY:N | 2.42 | 0.53 |
| 35:DA:2263:C:O2' | 35:DA:2264:C:H5' | 2.09 | 0.53 |
| 55:DY:50:ARG:HG3 | 55:DY:58:GLY:HA2 | 1.91 | 0.53 |
| 35:BA:2786:U:O2' | 39:BE:62:PRO:HA | 2.08 | 0.53 |
| 1:AA:737:A:O2' | 6:AF:72:VAL:HG11 | 2.09 | 0.53 |
| 20:CT:40:ALA:HB2 | 20:CT:55:ILE:CG2 | 2.39 | 0.53 |
| 39:DE:61:ARG:HB3 | 39:DE:62:PRO:CD | 2.39 | 0.53 |
| 10:CJ:16:LEU:C | 10:CJ:16:LEU:HD13 | 2.29 | 0.53 |
| 30:D5:3:LYS:CE | 35:DA:2611:U:H1' | 2.37 | 0.53 |
| 42:BH:35:VAL:O | 42:BH:37:VAL:HG23 | 2.09 | 0.53 |
| 43:BI:83:ALA:HB2 | 43:BI:88:ILE:HA | 1.88 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:37:ASN:HD22 | 9:AI:40:LEU:HD23 | 1.74 | 0.53 |
| 20:CT:13:LEU:HD12 | 20:CT:14:LYS:N | 2.23 | 0.53 |
| 56:DZ:110:GLY:HA3 | 56:DZ:145:GLU:CG | 2.39 | 0.53 |
| 40:BF:59:TYR:HB3 | 40:BF:78:ILE:HD11 | 1.89 | 0.53 |
| 54:BX:29:TRP:HA | 54:BX:29:TRP:CE3 | 2.44 | 0.53 |
| 28:D3:52:HIS:CD2 | 36:DB:83:G:H4' | 2.43 | 0.53 |
| 35:DA:1011:G:P | 51:DU:77:SER:HG | 2.31 | 0.53 |
| 35:DA:1656:C:H2' | 35:DA:1657:C:H6 | 1.74 | 0.53 |
| 35:BA:171:G:O2' | 35:BA:172:C:H5' | 2.09 | 0.53 |
| 48:DR:78:LYS:O | 48:DR:83:ILE:HG12 | 2.09 | 0.53 |
| 46:DP:62:LEU:H | 46:DP:62:LEU:CD2 | 2.22 | 0.53 |
| 35:BA:1187:G:O5' | 35:BA:1187:G:H8 | 1.92 | 0.53 |
| 35:BA:2199:A:H5' | 35:BA:2200:C:OP2 | 2.08 | 0.53 |
| 27:D2:35:LEU:HD22 | 27:D2:50:ILE:CG1 | 2.38 | 0.53 |
| 45:DO:26:LYS:HB2 | 45:DO:30:ALA:CB | 2.38 | 0.53 |
| 1:CA:52:G:H2' | 1:CA:53:A:C8 | 2.42 | 0.53 |
| 35:BA:2681:C:H5 | 35:BA:2725:A:N6 | 2.05 | 0.53 |
| 35:BA:622:G:O2' | 35:BA:623:G:H5' | 2.09 | 0.53 |
| 38:BD:241:PRO:O | 38:BD:242:ARG:HB2 | 2.09 | 0.53 |
| 35:DA:320:A:H3' | 40:DF:136:THR:CG2 | 2.39 | 0.53 |
| 35:BA:1956:U:C2' | 35:BA:1957:C:H5' | 2.39 | 0.53 |
| 53:BW:28:SER:HA | 53:BW:70:TYR:HB2 | 1.91 | 0.53 |
| 35:DA:692:C:O2' | 35:DA:693:C:H5' | 2.08 | 0.53 |
| 35:BA:1917:U:O2' | 35:BA:1918:A:H5' | 2.09 | 0.53 |
| 1:CA:1096:C:H2' | 1:CA:1097:C:H6 | 1.72 | 0.53 |
| 35:DA:2009:G:N3 | 48:DR:107:ASP:HA | 2.24 | 0.53 |
| 49:BS:49:VAL:HG21 | 49:BS:77:ALA:HA | 1.91 | 0.53 |
| 1:CA:779:C:O2' | 1:CA:780:A:H5' | 2.09 | 0.53 |
| 43:BI:78:THR:HA | 43:BI:141:LYS:O | 2.09 | 0.53 |
| 43:BI:78:THR:HG23 | 43:BI:141:LYS:HB2 | 1.90 | 0.53 |
| 27:B2:65:ASN:HB3 | 27:B2:69:ARG:NH2 | 2.23 | 0.53 |
| 37:BC:212:VAL:O | 37:BC:213:TYR:CB | 2.56 | 0.53 |
| 19:CS:79:THR:O | 19:CS:80:TYR:CB | 2.57 | 0.53 |
| 50:DT:66:VAL:HA | 50:DT:71:GLY:HA2 | 1.91 | 0.53 |
| 31:B6:47:THR:CG2 | 31:B6:48:VAL:H | 2.18 | 0.53 |
| 9:AI:49:PRO:HA | 9:AI:101:PHE:CE1 | 2.44 | 0.53 |
| 1:CA:1149:C:OP1 | 9:CI:9:ARG:HD3 | 2.09 | 0.53 |
| 2:CB:211:ILE:O | 2:CB:215:LEU:HD23 | 2.09 | 0.53 |
| 50:DT:28:VAL:O | 50:DT:29:ARG:CB | 2.57 | 0.53 |
| 50:DT:28:VAL:HG22 | 50:DT:46:GLU:HA | 1.90 | 0.53 |
| 1:AA:521:G:O2' | 1:AA:522:C:H5' | 2.08 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 51:BU:62:ILE:HD13 | 51:BU:93:LYS:HG2 | 1.89 | 0.53 |
| 38:DD:30:GLU:CG | 38:DD:63:ARG:NE | 2.71 | 0.53 |
| 35:DA:2128:C:H2' | 35:DA:2129:C:H6 | 1.73 | 0.53 |
| 3:CC:113:ALA:HB2 | 3:CC:202:ILE:CG1 | 2.39 | 0.53 |
| 4:AD:18:LYS:CB | 4:AD:33:MET:HG2 | 2.30 | 0.53 |
| 41:BG:106:LEU:HA | 41:BG:110:ALA:HB3 | 1.91 | 0.53 |
| 52:BV:15:GLU:O | 52:BV:16:PRO:C | 2.46 | 0.53 |
| 42:BH:68:THR:C | 42:BH:70:THR:N | 2.58 | 0.53 |
| 10:AJ:24:VAL:HG21 | 10:AJ:37:PRO:CG | 2.39 | 0.53 |
| 45:DO:35:VAL:HG21 | 45:DO:69:ILE:CD1 | 2.39 | 0.53 |
| 26:D1:64:ALA:HA | 26:D1:67:ILE:CD1 | 2.38 | 0.53 |
| 3:AC:6:HIS:HB2 | 14:AN:49:HIS:CD2 | 2.44 | 0.53 |
| 6:AF:17:SER:C | 6:AF:21:LEU:HD23 | 2.29 | 0.53 |
| 6:AF:20:ALA:HB2 | 4:CD:195:ALA:HB2 | 1.91 | 0.53 |
| 27:D2:43:GLN:O | 27:D2:44:LEU:CB | 2.51 | 0.53 |
| 41:DG:56:ALA:CB | 41:DG:153:ARG:NE | 2.71 | 0.53 |
| 31:B6:51:GLU:O | 31:B6:52:VAL:HB | 2.09 | 0.53 |
| 8:AH:83:ILE:HG23 | 8:AH:83:ILE:O | 2.09 | 0.53 |
| 25:D0:29:GLN:HG2 | 35:DA:923:C:C4' | 2.39 | 0.53 |
| 25:D0:77:ARG:HH22 | 35:DA:857:C:H5' | 1.73 | 0.53 |
| 35:BA:285:C:C3' | 35:BA:286:C:H5'' | 2.39 | 0.53 |
| 39:BE:61:ARG:HB3 | 39:BE:62:PRO:CD | 2.39 | 0.53 |
| 35:DA:2099:U:H3 | 35:DA:2190:G:H1 | 1.57 | 0.53 |
| 35:DA:2787:C:H1' | 39:DE:61:ARG:HG2 | 1.90 | 0.53 |
| 38:BD:28:GLU:CD | 38:BD:28:GLU:H | 2.12 | 0.53 |
| 35:DA:1050:A:C4 | 35:DA:1051:G:N7 | 2.77 | 0.53 |
| 35:BA:2579:C:H2' | 35:BA:2580:U:O4' | 2.08 | 0.53 |
| 30:B5:3:LYS:CE | 35:BA:2611:U:H1' | 2.37 | 0.53 |
| 12:AL:83:VAL:HG13 | 12:AL:84:LEU:N | 2.24 | 0.53 |
| 38:BD:118:VAL:HG22 | 38:BD:119:ALA:N | 2.24 | 0.53 |
| 35:BA:999:U:C2' | 35:BA:1000:A:C5' | 2.86 | 0.53 |
| 34:B9:17:ILE:HG21 | 34:B9:19:ARG:HE | 1.73 | 0.53 |
| 49:DS:104:GLY:C | 49:DS:106:ARG:H | 2.11 | 0.53 |
| 18:CR:25:THR:HG22 | 18:CR:42:ARG:NH1 | 2.23 | 0.53 |
| 35:DA:991:C:O2' | 35:DA:992:C:H5' | 2.09 | 0.53 |
| 45:BO:23:ARG:HD2 | 45:BO:24:VAL:N | 2.22 | 0.53 |
| 8:AH:40:ALA:C | 8:AH:42:GLU:H | 2.11 | 0.53 |
| 35:BA:671:C:OP1 | 46:BP:43:GLY:HA2 | 2.09 | 0.53 |
| 1:AA:370:C:O2' | 1:AA:371:G:H5' | 2.09 | 0.53 |
| 9:CI:124:GLN:O | 9:CI:125:TYR:CB | 2.57 | 0.53 |
| 3:AC:90:GLU:O | 3:AC:93:LYS:HB3 | 2.08 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 47:BQ:78:PRO:HB2 | 47:BQ:81:VAL:HG11 | 1.90 | 0.53 |
| 42:DH:149:ARG:NH2 | 42:DH:154:PRO:HG3 | 2.23 | 0.53 |
| 38:DD:221:VAL:HG22 | 38:DD:226:MET:HE2 | 1.90 | 0.53 |
| 38:BD:218:ARG:HG3 | 38:BD:218:ARG:HH11 | 1.73 | 0.53 |
| 35:DA:2846:G:H2' | 35:DA:2847:U:O4' | 2.08 | 0.53 |
| 22:CV:49:C:H2' | 22:CV:50:U:H6 | 1.73 | 0.53 |
| 7:CG:113:GLU:HG3 | 7:CG:119:ARG:HA | 1.91 | 0.53 |
| 22:AV:53:G:H2' | 22:AV:54:U:H6 | 1.73 | 0.53 |
| 13:AM:29:ARG:HD3 | 13:AM:64:TRP:CE2 | 2.44 | 0.53 |
| 43:BI:78:THR:OG1 | 43:BI:141:LYS:HB2 | 2.09 | 0.53 |
| 5:AE:135:THR:O | 5:AE:138:ALA:HB3 | 2.09 | 0.53 |
| 36:DB:44:G:H1' | 36:DB:47:C:N4 | 2.23 | 0.53 |
| 20:CT:87:LYS:HG3 | 20:CT:91:LEU:HD11 | 1.90 | 0.53 |
| 35:BA:1192:G:O2' | 35:BA:1193:G:H5' | 2.08 | 0.53 |
| 43:BI:1:MET:O | 43:BI:20:ASP:HA | 2.09 | 0.53 |
| 35:BA:1048:A:H4' | 35:BA:1049:C:C5 | 2.44 | 0.53 |
| 49:BS:18:ILE:C | 49:BS:20:ARG:H | 2.12 | 0.53 |
| 49:BS:89:ARG:O | 49:BS:90:GLY:O | 2.27 | 0.53 |
| 12:AL:27:LEU:N | 12:AL:27:LEU:HD22 | 2.24 | 0.53 |
| 22:AY:33:U:C3' | 22:AY:34:G:H5'' | 2.38 | 0.53 |
| 1:CA:521:G:O5' | 12:CL:73:GLU:HG3 | 2.08 | 0.53 |
| 1:CA:522:C:H41 | 12:CL:53:ARG:HH22 | 1.56 | 0.53 |
| 49:DS:14:VAL:HG13 | 49:DS:90:GLY:CA | 2.39 | 0.53 |
| 2:CB:57:PHE:O | 2:CB:61:LEU:HB2 | 2.09 | 0.53 |
| 50:DT:28:VAL:HG21 | 50:DT:88:ILE:CD1 | 2.38 | 0.53 |
| 50:BT:31:SER:C | 50:BT:32:TYR:CD2 | 2.82 | 0.53 |
| 6:CF:40:VAL:HG13 | 6:CF:40:VAL:O | 2.09 | 0.53 |
| 1:CA:176:C:H2' | 1:CA:177:C:C6 | 2.44 | 0.53 |
| 39:BE:57:LYS:C | 39:BE:59:VAL:N | 2.62 | 0.53 |
| 39:BE:89:ASP:O | 39:BE:90:THR:CB | 2.55 | 0.53 |
| 35:BA:6:A:N3 | 35:BA:6:A:H2' | 2.24 | 0.53 |
| 37:BC:58:VAL:C | 37:BC:59:ARG:HD3 | 2.29 | 0.53 |
| 3:CC:113:ALA:HB3 | 3:CC:114:PRO:HD3 | 1.90 | 0.53 |
| 41:BG:5:VAL:HG12 | 41:BG:104:GLU:OE1 | 2.09 | 0.53 |
| 37:BC:36:LYS:HA | 37:BC:36:LYS:NZ | 2.24 | 0.53 |
| 41:BG:83:ARG:HH11 | 41:BG:84:LYS:HD2 | 1.73 | 0.53 |
| 35:DA:1594:G:C5' | 35:DA:1594:G:C8 | 2.87 | 0.53 |
| 47:BQ:21:THR:O | 47:BQ:22:LYS:C | 2.47 | 0.53 |
| 46:BP:83:VAL:CG1 | 46:BP:112:LEU:HD21 | 2.35 | 0.53 |
| 46:BP:29:LYS:HD2 | 46:BP:29:LYS:N | 2.24 | 0.53 |
| 47:BQ:42:ILE:HD13 | 47:BQ:97:VAL:HG23 | 1.91 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:DN:62:VAL:HG13 | 44:DN:62:VAL:O | 2.08 | 0.53 |
| 20:CT:26:ASN:N | 20:CT:26:ASN:ND2 | 2.57 | 0.53 |
| 35:BA:2787:C:H1' | 39:BE:61:ARG:HG2 | 1.90 | 0.53 |
| 8:AH:86:ILE:CG2 | 8:AH:133:LEU:HD22 | 2.37 | 0.53 |
| 1:AA:105:G:H2' | 1:AA:106:C:C6 | 2.44 | 0.53 |
| 46:DP:146:VAL:HG13 | 46:DP:147:LEU:N | 2.23 | 0.53 |
| 1:AA:636:U:C5' | 17:AQ:2:PRO:HG3 | 2.39 | 0.53 |
| 12:CL:22:SER:C | 12:CL:24:VAL:H | 2.12 | 0.53 |
| 39:DE:101:ARG:NH1 | 39:DE:169:ASN:ND2 | 2.52 | 0.53 |
| 35:BA:910:A:N7 | 47:BQ:13:GLN:HG3 | 2.23 | 0.53 |
| 50:DT:23:ARG:HA | 50:DT:52:ILE:HD11 | 1.90 | 0.53 |
| 22:CV:41:C:N3 | 22:CV:42:C:C5 | 2.77 | 0.53 |
| 1:AA:918:A:O2' | 1:AA:919:A:H5' | 2.09 | 0.53 |
| 35:BA:90:U:H2' | 35:BA:90:U:O2 | 2.09 | 0.53 |
| 35:DA:999:U:O2' | 35:DA:1000:A:H5'' | 2.08 | 0.53 |
| 23:CW:25:C:H2' | 23:CW:26:A:H8 | 1.74 | 0.53 |
| 45:DO:31:LYS:HB3 | 45:DO:32:TYR:CD1 | 2.44 | 0.53 |
| 8:AH:119:LEU:CD1 | 8:AH:124:ALA:HA | 2.38 | 0.53 |
| 35:DA:1108:U:H2' | 35:DA:1109:C:C5' | 2.39 | 0.53 |
| 48:DR:11:ASN:O | 48:DR:12:ARG:HB2 | 2.08 | 0.53 |
| 45:DO:71:ARG:O | 45:DO:73:ASP:N | 2.40 | 0.53 |
| 53:BW:110:LYS:HG3 | 53:BW:111:HIS:ND1 | 2.24 | 0.53 |
| 1:CA:332:G:H2' | 1:CA:333:G:H8 | 1.74 | 0.53 |
| 38:BD:112:GLN:H | 38:BD:115:GLN:NE2 | 2.06 | 0.53 |
| 5:AE:28:PHE:O | 5:AE:47:LYS:HA | 2.09 | 0.53 |
| 31:B6:42:TRP:CE3 | 31:B6:42:TRP:HA | 2.43 | 0.53 |
| 35:BA:2747:G:O6 | 35:BA:2755:C:H5'' | 2.08 | 0.53 |
| 35:BA:492:A:H2' | 35:BA:493:G:O4' | 2.09 | 0.53 |
| 38:DD:3:VAL:CG1 | 38:DD:17:THR:HB | 2.38 | 0.53 |
| 16:CP:13:HIS:C | 16:CP:15:PRO:HD3 | 2.29 | 0.53 |
| 35:DA:1777:U:O2' | 35:DA:1778:U:H5' | 2.08 | 0.53 |
| 1:CA:1346:A:H5'' | 9:CI:120:ARG:HH12 | 1.73 | 0.53 |
| 2:CB:220:ASP:C | 2:CB:222:ILE:H | 2.12 | 0.53 |
| 50:DT:83:ILE:O | 50:DT:84:GLN:CB | 2.57 | 0.53 |
| 1:AA:1490:C:H2' | 1:AA:1491:G:H8 | 1.72 | 0.53 |
| 3:CC:70:VAL:HG12 | 3:CC:72:LYS:N | 2.21 | 0.53 |
| 13:CM:66:LEU:O | 13:CM:67:GLU:C | 2.46 | 0.53 |
| 13:CM:5:ALA:HB3 | 13:CM:8:GLU:HB2 | 1.90 | 0.53 |
| 41:DG:110:ALA:HA | 41:DG:140:ILE:HG22 | 1.91 | 0.53 |
| 37:DC:168:THR:HA | 37:DC:173:ALA:HB1 | 1.91 | 0.53 |
| 35:BA:1666:G:C2' | 35:BA:1667:G:H5' | 2.39 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AJ:28:ARG:HH11 | 10:AJ:28:ARG:HG2 | 1.73 | 0.53 |
| 49:DS:35:ILE:H | 49:DS:53:SER:HB3 | 1.73 | 0.53 |
| 20:CT:30:LYS:CE | 20:CT:72:LEU:HD21 | 2.34 | 0.53 |
| 23:AW:16:U:C4 | 23:AW:18:G:H3' | 2.43 | 0.53 |
| 31:D6:10:LEU:HD22 | 31:D6:10:LEU:N | 2.24 | 0.53 |
| 35:DA:686:G:H21 | 35:DA:788:A:H61 | 1.57 | 0.53 |
| 45:DO:2:ILE:HD11 | 45:DO:82:ASN:HD22 | 1.73 | 0.53 |
| 1:AA:977:A:H2' | 1:AA:978:A:H5' | 1.90 | 0.53 |
| 38:BD:147:LEU:CD1 | 38:BD:155:LEU:HD11 | 2.35 | 0.53 |
| 19:CS:15:LEU:HD12 | 19:CS:31:ILE:HD11 | 1.91 | 0.53 |
| 4:AD:170:VAL:CG2 | 4:AD:171:GLY:H | 2.19 | 0.53 |
| 54:DX:14:SER:H | 54:DX:17:ALA:HB3 | 1.74 | 0.53 |
| 39:DE:17:ASP:O | 39:DE:18:ASP:CB | 2.56 | 0.53 |
| 56:BZ:150:LEU:HD22 | 56:BZ:150:LEU:C | 2.29 | 0.53 |
| 56:DZ:108:PRO:CG | 56:DZ:117:LEU:HD22 | 2.34 | 0.53 |
| 40:BF:52:LYS:HD3 | 40:BF:56:GLU:O | 2.09 | 0.53 |
| 30:B5:42:PRO:HB2 | 30:B5:43:HIS:CD2 | 2.44 | 0.53 |
| 1:CA:826:C:H2' | 1:CA:827:U:C6 | 2.44 | 0.53 |
| 35:BA:271(K):U:H3 | 43:BI:50:ARG:NH1 | 2.06 | 0.53 |
| 4:CD:119:GLN:HG3 | 4:CD:123:HIS:HD2 | 1.67 | 0.53 |
| 49:DS:106:ARG:HD2 | 49:DS:106:ARG:O | 2.09 | 0.53 |
| 35:BA:65:C:O2' | 35:BA:66:C:H5' | 2.09 | 0.53 |
| 35:BA:729:G:N7 | 38:BD:208:LYS:HB2 | 2.23 | 0.53 |
| 1:CA:79:G:O6 | 1:CA:90:U:H4' | 2.09 | 0.53 |
| 35:BA:1718:G:H1 | 35:BA:1744:C:N4 | 2.07 | 0.53 |
| 15:AO:9:GLN:HA | 15:AO:12:ILE:HD12 | 1.90 | 0.53 |
| 1:AA:1096:C:H2' | 1:AA:1097:C:C6 | 2.44 | 0.53 |
| 35:DA:30:G:H2' | 35:DA:31:C:C6 | 2.44 | 0.53 |
| 36:DB:79:C:H2' | 36:DB:80:U:O4' | 2.09 | 0.53 |
| 36:DB:89:G:N2 | 36:DB:90:A:C2 | 2.77 | 0.53 |
| 41:DG:7:LEU:HB3 | 41:DG:100:TRP:CE3 | 2.44 | 0.53 |
| 35:DA:902:C:O2' | 35:DA:903:C:H5' | 2.08 | 0.53 |
| 35:DA:633:A:H2' | 35:DA:634:C:H5' | 1.91 | 0.53 |
| 1:CA:1484:C:O2' | 35:DA:1961:C:H5' | 2.08 | 0.53 |
| 4:CD:145:GLU:HG2 | 4:CD:184:LYS:HZ3 | 1.73 | 0.53 |
| 3:CC:58:GLU:H | 3:CC:65:ALA:HB3 | 1.74 | 0.53 |
| 1:AA:954:G:H21 | 1:AA:1227:A:N6 | 2.07 | 0.52 |
| 31:D6:19:ARG:O | 31:D6:20:ASN:O | 2.27 | 0.52 |
| 2:CB:44:LEU:HD12 | 2:CB:44:LEU:N | 2.16 | 0.52 |
| 1:AA:1372:U:OP1 | 9:AI:72:GLY:N | 2.41 | 0.52 |
| 50:DT:88:ILE:HG22 | 50:DT:89:VAL:H | 1.74 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 50:BT:28:VAL:HG22 | 50:BT:46:GLU:CA | 2.39 | 0.52 |
| 49:BS:98:VAL:HG12 | 49:BS:100:ALA:HB2 | 1.90 | 0.52 |
| 52:BV:38:LEU:O | 52:BV:51:VAL:HG13 | 2.09 | 0.52 |
| 39:BE:70:ALA:O | 39:BE:72:VAL:N | 2.43 | 0.52 |
| 13:CM:10:PRO:HB2 | 13:CM:18:ALA:HB1 | 1.89 | 0.52 |
| 13:CM:79:LYS:O | 13:CM:82:MET:HB3 | 2.10 | 0.52 |
| 52:DV:46:VAL:HG22 | 52:DV:47:VAL:N | 2.22 | 0.52 |
| 52:BV:19:LYS:C | 52:BV:20:LEU:HD12 | 2.29 | 0.52 |
| 1:AA:1313:U:H2' | 1:AA:1314:C:C6 | 2.44 | 0.52 |
| 55:BY:17:SER:CB | 55:BY:71:LYS:HB3 | 2.39 | 0.52 |
| 53:DW:88:ARG:NH1 | 53:DW:94:ASP:OD1 | 2.41 | 0.52 |
| 35:DA:1666:G:C2' | 35:DA:1667:G:H5' | 2.39 | 0.52 |
| 26:D1:66:HIS:C | 26:D1:68:PRO:HD2 | 2.28 | 0.52 |
| 30:B5:2:ALA:CA | 35:BA:2015:A:H1' | 2.34 | 0.52 |
| 2:CB:116:GLU:HA | 2:CB:119:GLU:CB | 2.38 | 0.52 |
| 41:DG:60:LEU:O | 41:DG:63:ILE:HG12 | 2.09 | 0.52 |
| 23:AW:18:G:H1 | 23:AW:55:U:C1' | 2.20 | 0.52 |
| 42:BH:13:LYS:O | 42:BH:15:VAL:N | 2.33 | 0.52 |
| 8:AH:82:HIS:HD2 | 8:AH:138:TRP:NE1 | 2.04 | 0.52 |
| 36:DB:109:C:H5' | 36:DB:110:G:O5' | 2.09 | 0.52 |
| 15:AO:82:ILE:HD11 | 15:AO:87:ILE:O | 2.09 | 0.52 |
| 18:AR:44:LEU:O | 18:AR:45:SER:C | 2.45 | 0.52 |
| 26:D1:51:VAL:HG21 | 26:D1:74:VAL:CG2 | 2.37 | 0.52 |
| 13:AM:11:ARG:O | 13:AM:13:LYS:N | 2.42 | 0.52 |
| 39:BE:1:MET:HG2 | 39:BE:83:ASP:O | 2.09 | 0.52 |
| 16:CP:28:ARG:HG2 | 16:CP:29:ASP:OD2 | 2.09 | 0.52 |
| 19:AS:16:LEU:H | 19:AS:16:LEU:CD1 | 2.22 | 0.52 |
| 54:BX:14:SER:H | 54:BX:17:ALA:HB3 | 1.73 | 0.52 |
| 7:CG:37:ASN:HD22 | 9:CI:40:LEU:HD23 | 1.74 | 0.52 |
| 35:DA:1532:C:C2' | 35:DA:1532:C:O2 | 2.56 | 0.52 |
| 47:DQ:109:VAL:CG1 | 47:DQ:113:GLN:HB2 | 2.38 | 0.52 |
| 35:DA:1150:C:O2' | 35:DA:1151:G:H5' | 2.09 | 0.52 |
| 35:DA:999:U:C2' | 35:DA:1000:A:C5' | 2.87 | 0.52 |
| 25:B0:56:ASP:O | 25:B0:57:PHE:CB | 2.57 | 0.52 |
| 13:CM:16:ASP:HA | 13:CM:34:LEU:HD11 | 1.91 | 0.52 |
| 3:CC:195:VAL:CG1 | 3:CC:196:LEU:N | 2.71 | 0.52 |
| 38:DD:206:LEU:HD23 | 38:DD:211:ARG:HH11 | 1.72 | 0.52 |
| 1:AA:184:G:H2' | 1:AA:185:A:C8 | 2.43 | 0.52 |
| 42:DH:41:MET:HG2 | 42:DH:55:PRO:CD | 2.38 | 0.52 |
| 35:DA:1751:C:O2' | 35:DA:1752:C:H5' | 2.09 | 0.52 |
| 30:D5:16:ARG:NH2 | 35:DA:517:C:OP1 | 2.42 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1442(A):G:C8 | 50:BT:118:ARG:HD2 | 2.44 | 0.52 |
| 1:AA:1443:G:H2' | 1:AA:1443:G:N3 | 2.24 | 0.52 |
| 22:CV:32:U:H2' | 22:CV:32:U:O2 | 2.08 | 0.52 |
| 1:CA:1494:G:N7 | 58:CA:1800:PAR:N32 | 2.57 | 0.52 |
| 29:D4:39:ARG:O | 29:D4:57:ILE:HB | 2.09 | 0.52 |
| 35:DA:2201:C:O2' | 35:DA:2202:C:H5' | 2.09 | 0.52 |
| 44:BN:89:LYS:O | 44:BN:93:THR:HG23 | 2.09 | 0.52 |
| 1:CA:877:C:O2' | 1:CA:878:G:H5' | 2.10 | 0.52 |
| 35:BA:2464:C:O2' | 35:BA:2465:C:P | 2.67 | 0.52 |
| 1:AA:878:G:C5' | 8:AH:89:PRO:HG2 | 2.39 | 0.52 |
| 35:BA:1713:U:O2' | 35:BA:1714:G:H5' | 2.09 | 0.52 |
| 1:AA:1157:A:H4' | 1:AA:1158:C:O5' | 2.08 | 0.52 |
| 50:BT:124:ASP:C | 50:BT:126:ALA:H | 2.12 | 0.52 |
| 3:CC:139:GLN:O | 3:CC:143:GLU:HB2 | 2.09 | 0.52 |
| 38:BD:201:HIS:O | 38:BD:204:ILE:HG12 | 2.08 | 0.52 |
| 18:AR:82:THR:O | 18:AR:83:GLU:HB3 | 2.09 | 0.52 |
| 35:DA:832:G:OP1 | 46:DP:40:SER:HB3 | 2.09 | 0.52 |
| 48:DR:99:LYS:H | 48:DR:99:LYS:CD | 2.22 | 0.52 |
| 49:BS:13:ARG:O | 49:BS:14:VAL:CB | 2.57 | 0.52 |
| 12:AL:37:CYS:HA | 12:AL:58:VAL:HG22 | 1.90 | 0.52 |
| 55:BY:81:LYS:CB | 55:BY:96:ILE:HG22 | 2.40 | 0.52 |
| 1:AA:954:G:H4' | 13:AM:120:LYS:CG | 2.22 | 0.52 |
| 2:AB:91:PRO:CD | 2:AB:155:LEU:HD23 | 2.39 | 0.52 |
| 39:BE:33:VAL:HG13 | 39:BE:69:LYS:NZ | 2.24 | 0.52 |
| 13:AM:66:LEU:O | 13:AM:67:GLU:C | 2.47 | 0.52 |
| 13:CM:19:LEU:O | 13:CM:22:ILE:HB | 2.09 | 0.52 |
| 51:DU:92:ARG:HD2 | 52:DV:11:GLN:NE2 | 2.23 | 0.52 |
| 51:DU:88:ILE:HG22 | 52:DV:47:VAL:HG23 | 1.92 | 0.52 |
| 35:BA:1165:U:H2' | 35:BA:1166:C:C6 | 2.44 | 0.52 |
| 10:CJ:24:VAL:HG21 | 10:CJ:37:PRO:CG | 2.39 | 0.52 |
| 55:BY:14:LEU:CD1 | 55:BY:15:VAL:N | 2.68 | 0.52 |
| 45:BO:1:MET:HE2 | 45:BO:67:LYS:HG2 | 1.91 | 0.52 |
| 52:DV:85:LYS:HB2 | 52:DV:85:LYS:HZ3 | 1.73 | 0.52 |
| 46:BP:107:LYS:C | 46:BP:109:GLY:N | 2.63 | 0.52 |
| 6:CF:21:LEU:HD13 | 6:CF:24:GLU:OE1 | 2.09 | 0.52 |
| 49:BS:69:VAL:O | 49:BS:72:ALA:HB3 | 2.10 | 0.52 |
| 47:BQ:42:ILE:CD1 | 47:BQ:42:ILE:N | 2.72 | 0.52 |
| 17:AQ:68:ARG:O | 17:AQ:68:ARG:HG3 | 2.09 | 0.52 |
| 35:BA:286:C:C2' | 35:BA:287:C:C5' | 2.87 | 0.52 |
| 43:DI:81:VAL:HG12 | 43:DI:82:ARG:N | 2.23 | 0.52 |
| 25:B0:77:ARG:HH22 | 35:BA:857:C:H5' | 1.74 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BP:126:VAL:HG12 | 46:BP:148:LEU:HD11 | 1.90 | 0.52 |
| 22:AY:59:U:O2' | 22:AY:60:U:H5' | 2.10 | 0.52 |
| 1:AA:511:C:HO2' | 1:AA:512:U:H6 | 1.57 | 0.52 |
| 47:DQ:134:ARG:HE | 56:DZ:122:ARG:CZ | 2.22 | 0.52 |
| 8:AH:12:ARG:NH1 | 8:AH:27:PRO:HD3 | 2.25 | 0.52 |
| 1:CA:348:G:O2' | 1:CA:349:A:H5' | 2.08 | 0.52 |
| 56:DZ:19:ARG:NH1 | 56:DZ:84:GLU:O | 2.42 | 0.52 |
| 40:DF:33:LEU:CD2 | 40:DF:112:MET:HG2 | 2.39 | 0.52 |
| 28:D3:52:HIS:CG | 36:DB:83:G:H4' | 2.45 | 0.52 |
| 9:CI:46:ALA:HB2 | 9:CI:74:ILE:HG23 | 1.90 | 0.52 |
| 1:AA:1368:G:OP2 | 9:AI:112:LYS:HE3 | 2.08 | 0.52 |
| 11:AK:21:ILE:HG13 | 11:AK:30:VAL:CG1 | 2.40 | 0.52 |
| 48:BR:104:ARG:HH12 | 48:BR:109:ALA:HB3 | 1.74 | 0.52 |
| 35:DA:65:C:O2' | 35:DA:66:C:H5' | 2.09 | 0.52 |
| 50:DT:92:GLY:HA2 | 50:DT:114:LEU:CB | 2.38 | 0.52 |
| 2:CB:197:VAL:HB | 2:CB:200:ILE:CG1 | 2.39 | 0.52 |
| 35:BA:1042:G:H1' | 35:BA:1114:G:H22 | 1.72 | 0.52 |
| 4:AD:10:ARG:HH11 | 4:AD:10:ARG:HG2 | 1.72 | 0.52 |
| 36:BB:111:G:C2' | 36:BB:112:U:H5' | 2.39 | 0.52 |
| 35:BA:774:A:H2 | 35:BA:787:U:O2' | 1.93 | 0.52 |
| 27:D2:2:LYS:HA | 27:D2:5:GLU:OE1 | 2.09 | 0.52 |
| 44:BN:65:LYS:O | 44:BN:69:GLN:CG | 2.57 | 0.52 |
| 35:DA:2199:A:H5' | 35:DA:2200:C:OP2 | 2.09 | 0.52 |
| 41:DG:76:SER:HA | 41:DG:84:LYS:H | 1.74 | 0.52 |
| 38:BD:70:TRP:CD1 | 38:BD:70:TRP:C | 2.83 | 0.52 |
| 3:AC:92:ALA:HB2 | 3:AC:99:VAL:CG2 | 2.40 | 0.52 |
| 1:AA:1207:G:H2' | 1:AA:1208:C:H6 | 1.71 | 0.52 |
| 22:CV:19:G:N2 | 22:CV:57:G:H1' | 2.24 | 0.52 |
| 5:AE:45:PHE:CE2 | 5:AE:47:LYS:HE3 | 2.44 | 0.52 |
| 21:AU:18:TYR:CD2 | 21:AU:24:ARG:HG2 | 2.44 | 0.52 |
| 6:CF:96:PRO:HB3 | 18:CR:30:ASP:CG | 2.29 | 0.52 |
| 35:DA:1345:C:O2' | 35:DA:1346:G:H5' | 2.09 | 0.52 |
| 15:CO:80:ALA:O | 15:CO:84:LYS:HG3 | 2.09 | 0.52 |
| 35:DA:2250:G:C8 | 35:DA:2496:C:H5'' | 2.44 | 0.52 |
| 1:AA:232:G:H2' | 1:AA:233:C:H6 | 1.74 | 0.52 |
| 17:AQ:18:THR:HG22 | 17:AQ:19:VAL:N | 2.25 | 0.52 |
| 51:BU:104:GLN:OE1 | 51:BU:104:GLN:N | 2.42 | 0.52 |
| 1:AA:1525:G:H2' | 1:AA:1526:G:H8 | 1.74 | 0.52 |
| 1:AA:424:G:O2' | 1:AA:425:G:H5' | 2.09 | 0.52 |
| 40:DF:8:GLN:HB3 | 40:DF:126:VAL:HA | 1.92 | 0.52 |
| 49:DS:89:ARG:NH1 | 49:DS:91:PRO:HG2 | 2.23 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 49:DS:98:VAL:HG12 | 49:DS:100:ALA:N | 2.24 | 0.52 |
| 1:AA:176:C:H2' | 1:AA:177:C:C6 | 2.43 | 0.52 |
| 5:AE:110:LEU:HD12 | 5:AE:118:ILE:HG21 | 1.92 | 0.52 |
| 35:DA:1685:C:O2' | 35:DA:1686:C:H5'' | 2.09 | 0.52 |
| 41:BG:41:GLN:HG2 | 41:BG:155:MET:HB3 | 1.90 | 0.52 |
| 36:DB:57:A:H5' | 41:DG:27:ASN:ND2 | 2.25 | 0.52 |
| 1:AA:940:C:H2' | 1:AA:941:G:C8 | 2.44 | 0.52 |
| 44:DN:121:LYS:HD2 | 44:DN:121:LYS:N | 2.24 | 0.52 |
| 45:BO:36:GLY:HA3 | 45:BO:109:LYS:HG3 | 1.91 | 0.52 |
| 23:AW:21:A:H5' | 23:AW:21:A:H8 | 1.73 | 0.52 |
| 1:AA:618:C:H5' | 1:AA:619:U:H5'' | 1.92 | 0.52 |
| 47:DQ:42:ILE:HD13 | 47:DQ:97:VAL:CG2 | 2.39 | 0.52 |
| 39:DE:116:VAL:HG22 | 39:DE:117:MET:N | 2.25 | 0.52 |
| 35:DA:389:G:H22 | 46:DP:72:PRO:HD3 | 1.75 | 0.52 |
| 46:BP:88:LEU:N | 46:BP:88:LEU:HD12 | 2.24 | 0.52 |
| 42:BH:152:ARG:O | 42:BH:153:LYS:O | 2.27 | 0.52 |
| 28:B3:52:HIS:CG | 36:BB:83:G:H4' | 2.45 | 0.52 |
| 25:B0:51:VAL:N | 25:B0:62:LEU:HD12 | 2.24 | 0.52 |
| 12:CL:55:VAL:CG1 | 12:CL:56:ALA:H | 2.21 | 0.52 |
| 48:DR:63:ARG:O | 48:DR:67:LEU:HB2 | 2.09 | 0.52 |
| 46:DP:122:PRO:HG3 | 46:DP:141:ALA:HB3 | 1.90 | 0.52 |
| 2:AB:63:MET:HB3 | 2:AB:225:ALA:HB1 | 1.90 | 0.52 |
| 8:CH:23:SER:HA | 8:CH:63:LEU:CD2 | 2.39 | 0.52 |
| 7:CG:138:LYS:HE2 | 7:CG:142:GLU:OE2 | 2.10 | 0.52 |
| 13:AM:108:ARG:NH1 | 13:AM:112:GLY:HA3 | 2.24 | 0.52 |
| 17:CQ:9:VAL:HG21 | 17:CQ:84:LEU:HD13 | 1.90 | 0.52 |
| 35:BA:2846:G:H2' | 35:BA:2847:U:O4' | 2.09 | 0.52 |
| 1:AA:560:U:H5' | 1:AA:566:G:N2 | 2.24 | 0.52 |
| 42:BH:155:SER:O | 42:BH:156:ALA:CB | 2.56 | 0.52 |
| 1:CA:1318:A:H1' | 19:CS:37:ARG:NH2 | 2.24 | 0.52 |
| 1:CA:878:G:C5' | 8:CH:89:PRO:HG2 | 2.40 | 0.52 |
| 43:DI:78:THR:OG1 | 43:DI:141:LYS:HB2 | 2.10 | 0.52 |
| 35:DA:489:G:N2 | 35:DA:1321:A:OP1 | 2.42 | 0.52 |
| 35:BA:1146:C:O2' | 35:BA:1147:C:H5' | 2.09 | 0.52 |
| 35:DA:925:C:H2' | 35:DA:926:A:C5' | 2.19 | 0.52 |
| 41:BG:46:ALA:C | 41:BG:51:ARG:HG3 | 2.30 | 0.52 |
| 1:AA:1346:A:H5' | 9:AI:120:ARG:HH12 | 1.73 | 0.52 |
| 50:DT:86:ILE:HG12 | 50:DT:87:ASP:N | 2.23 | 0.52 |
| 50:BT:27:THR:HA | 50:BT:87:ASP:HB2 | 1.90 | 0.52 |
| 50:BT:89:VAL:HG11 | 50:BT:91:ARG:NE | 2.24 | 0.52 |
| 51:BU:55:ARG:HA | 51:BU:58:ARG:CG | 2.34 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:DE:75:VAL:O | 39:DE:77:ILE:N | 2.30 | 0.52 |
| 39:DE:47:VAL:HG23 | 39:DE:84:PHE:O | 2.09 | 0.52 |
| 39:BE:109:LYS:HB2 | 48:BR:2:ARG:HH22 | 1.74 | 0.52 |
| 7:CG:79:ARG:NE | 7:CG:84:ASN:OD1 | 2.43 | 0.52 |
| 44:BN:46:VAL:O | 44:BN:47:ALA:HB3 | 2.09 | 0.52 |
| 35:DA:2305:A:C2 | 35:DA:2306:C:H1' | 2.44 | 0.52 |
| 29:B4:51:TYR:CG | 41:BG:2:PRO:CD | 2.92 | 0.52 |
| 41:DG:16:ARG:HG3 | 41:DG:16:ARG:HH11 | 1.75 | 0.52 |
| 3:CC:30:ARG:NH1 | 14:CN:35:ARG:HA | 2.23 | 0.52 |
| 47:DQ:21:THR:O | 47:DQ:22:LYS:C | 2.47 | 0.52 |
| 46:BP:97:PRO:O | 46:BP:99:LEU:N | 2.38 | 0.52 |
| 46:DP:83:VAL:CG1 | 46:DP:112:LEU:HD21 | 2.38 | 0.52 |
| 43:BI:101:LEU:HD23 | 43:BI:109:ILE:HG12 | 1.90 | 0.52 |
| 55:DY:8:LYS:HE2 | 55:DY:72:VAL:HG23 | 1.90 | 0.52 |
| 2:AB:118:LEU:CB | 2:AB:142:LEU:HD13 | 2.32 | 0.52 |
| 13:CM:48:LEU:HB2 | 13:CM:52:GLU:OE1 | 2.10 | 0.52 |
| 15:CO:82:ILE:HD11 | 15:CO:87:ILE:O | 2.10 | 0.52 |
| 22:CV:68:C:H3' | 22:CV:69:G:H5'' | 1.91 | 0.52 |
| 15:AO:63:ARG:CG | 15:AO:67:LEU:HD12 | 2.38 | 0.52 |
| 47:DQ:42:ILE:N | 47:DQ:42:ILE:CD1 | 2.73 | 0.52 |
| 42:DH:35:VAL:O | 42:DH:37:VAL:HG23 | 2.09 | 0.52 |
| 1:AA:1436:U:O2' | 1:AA:1437:C:H5' | 2.10 | 0.52 |
| 38:BD:125:ILE:O | 38:BD:125:ILE:HG22 | 2.09 | 0.52 |
| 35:BA:1363:C:H2' | 35:BA:1364:G:C8 | 2.44 | 0.52 |
| 35:BA:322:A:H3' | 40:BF:169:ASN:ND2 | 2.22 | 0.52 |
| 38:DD:118:VAL:HG22 | 38:DD:119:ALA:N | 2.22 | 0.52 |
| 22:AV:52:G:H1 | 22:AV:62:C:H42 | 1.57 | 0.52 |
| 26:D1:48:LYS:HD2 | 26:D1:61:ARG:CG | 2.35 | 0.52 |
| 35:BA:528:A:C2 | 35:BA:2043:C:C5' | 2.93 | 0.52 |
| 9:CI:4:TYR:CD1 | 9:CI:4:TYR:N | 2.78 | 0.52 |
| 12:AL:55:VAL:CG1 | 12:AL:56:ALA:N | 2.71 | 0.52 |
| 23:CW:9:A:H5' | 23:CW:46:G:N3 | 2.25 | 0.52 |
| 11:AK:20:TYR:C | 11:AK:21:ILE:HD12 | 2.30 | 0.52 |
| 26:B1:13:ILE:HD11 | 26:B1:42:GLN:OE1 | 2.10 | 0.52 |
| 52:DV:76:LYS:HB2 | 52:DV:81:TYR:HB3 | 1.92 | 0.52 |
| 35:DA:1021:A:C3' | 35:DA:1021:A:C8 | 2.91 | 0.52 |
| 1:AA:1342:C:H1' | 9:AI:124:GLN:HE22 | 1.73 | 0.52 |
| 1:AA:1250:A:H4' | 9:AI:68:GLY:N | 2.25 | 0.52 |
| 35:DA:780:G:OP1 | 38:DD:218:ARG:NH2 | 2.42 | 0.52 |
| 10:CJ:92:THR:HG23 | 10:CJ:93:GLY:N | 2.24 | 0.52 |
| 7:CG:5:ARG:C | 7:CG:7:ALA:H | 2.12 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:333:G:O2' | 1:AA:334:C:H5' | 2.10 | 0.52 |
| 35:BA:2476:A:N1 | 35:BA:2477:C:C5 | 2.77 | 0.52 |
| 51:BU:104:GLN:HB3 | 52:BV:44:LYS:HZ3 | 1.74 | 0.52 |
| 40:BF:114:VAL:HG21 | 40:BF:202:PHE:CZ | 2.45 | 0.52 |
| 53:BW:80:PRO:O | 53:BW:100:THR:HG21 | 2.09 | 0.52 |
| 35:BA:816:C:O2' | 35:BA:817:C:H5' | 2.09 | 0.52 |
| 2:CB:60:ASP:OD2 | 2:CB:64:ARG:CZ | 2.57 | 0.52 |
| 8:CH:97:VAL:HA | 8:CH:100:ILE:HD11 | 1.92 | 0.52 |
| 1:CA:936:C:O2' | 1:CA:937:A:H5' | 2.09 | 0.52 |
| 50:BT:60:THR:HG22 | 50:BT:77:PRO:HA | 1.91 | 0.52 |
| 4:AD:108:LEU:HB3 | 4:AD:110:PHE:HE1 | 1.75 | 0.52 |
| 20:CT:53:LEU:HD13 | 20:CT:102:GLY:HA3 | 1.92 | 0.52 |
| 12:AL:21:LYS:HD2 | 12:AL:21:LYS:N | 2.24 | 0.52 |
| 49:BS:89:ARG:NH1 | 49:BS:91:PRO:HG2 | 2.25 | 0.52 |
| 40:BF:1:MET:O | 40:BF:3:GLU:HG2 | 2.10 | 0.52 |
| 2:CB:236:TYR:HA | 2:CB:239:VAL:HG21 | 1.91 | 0.52 |
| 38:BD:35:LYS:O | 38:BD:36:PRO:C | 2.47 | 0.52 |
| 46:BP:16:ARG:HD3 | 46:BP:16:ARG:C | 2.30 | 0.52 |
| 39:BE:2:LYS:CE | 39:BE:95:ILE:HG22 | 2.39 | 0.52 |
| 13:AM:19:LEU:O | 13:AM:22:ILE:HB | 2.09 | 0.52 |
| 40:BF:126:VAL:HG13 | 40:BF:193:VAL:HG13 | 1.92 | 0.52 |
| 40:BF:9:ILE:HG22 | 40:BF:9:ILE:O | 2.10 | 0.52 |
| 35:BA:2468:G:H5' | 47:BQ:120:ILE:HD12 | 1.92 | 0.52 |
| 41:DG:33:ARG:HB2 | 41:DG:162:THR:CG2 | 2.39 | 0.52 |
| 30:D5:41:PRO:O | 30:D5:44:THR:OG1 | 2.28 | 0.52 |
| 30:B5:33:CYS:O | 30:B5:34:PRO:C | 2.48 | 0.52 |
| 35:BA:2864:G:H5' | 35:BA:2864:G:C8 | 2.44 | 0.52 |
| 17:AQ:52:LYS:HD2 | 17:AQ:52:LYS:N | 2.13 | 0.52 |
| 41:DG:56:ALA:CB | 41:DG:153:ARG:HE | 2.23 | 0.52 |
| 31:B6:52:VAL:CG1 | 31:B6:53:LYS:N | 2.71 | 0.52 |
| 25:D0:26:TYR:CE2 | 35:DA:857:C:H1' | 2.45 | 0.52 |
| 41:BG:11:TYR:OH | 41:BG:32:PRO:O | 2.26 | 0.52 |
| 43:BI:113:ARG:HB2 | 43:BI:130:TYR:HE1 | 1.74 | 0.52 |
| 6:CF:69:GLU:HG2 | 6:CF:70:ASP:N | 2.20 | 0.52 |
| 20:AT:40:ALA:HB2 | 20:AT:55:ILE:CG2 | 2.39 | 0.52 |
| 35:DA:598:G:H5' | 46:DP:15:ARG:HB2 | 1.92 | 0.52 |
| 35:DA:2752:C:H5' | 35:DA:2753:A:OP2 | 2.09 | 0.52 |
| 13:AM:80:ARG:C | 13:AM:82:MET:H | 2.13 | 0.52 |
| 47:DQ:63:LYS:HZ1 | 56:DZ:176:PRO:HD2 | 1.74 | 0.52 |
| 1:AA:93:G:N3 | 1:AA:93:G:H2' | 2.24 | 0.52 |
| 13:AM:57:ARG:NH1 | 29:B4:60:GLU:HG3 | 2.24 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:D0:51:VAL:N | 25:D0:62:LEU:HD12 | 2.24 | 0.52 |
| 35:DA:2345:G:H5'' | 35:DA:2347:C:O4' | 2.09 | 0.52 |
| 1:CA:750:G:H1' | 15:CO:23:GLY:H | 1.75 | 0.52 |
| 11:CK:95:ILE:CD1 | 11:CK:95:ILE:H | 2.23 | 0.52 |
| 1:AA:633:G:H5' | 1:AA:634:C:OP2 | 2.09 | 0.52 |
| 55:BY:2:ARG:C | 55:BY:4:LYS:N | 2.62 | 0.52 |
| 3:CC:189:ALA:HB3 | 3:CC:196:LEU:HB2 | 1.89 | 0.52 |
| 40:DF:4:VAL:HA | 40:DF:18:ARG:O | 2.10 | 0.52 |
| 18:CR:87:ARG:HG2 | 18:CR:87:ARG:HH11 | 1.74 | 0.52 |
| 35:DA:2495:G:H5'' | 47:DQ:82:ARG:HB3 | 1.91 | 0.52 |
| 35:DA:1187:G:H8 | 35:DA:1187:G:O5' | 1.92 | 0.52 |
| 1:CA:1315:U:H2' | 1:CA:1316:G:O4' | 2.09 | 0.52 |
| 1:AA:245:C:O2' | 1:AA:246:A:H5' | 2.10 | 0.52 |
| 35:DA:2461:C:H2' | 35:DA:2462:U:C6 | 2.45 | 0.52 |
| 35:DA:271(P):C:C5' | 43:DI:46:ALA:HB2 | 2.38 | 0.52 |
| 3:CC:92:ALA:HB2 | 3:CC:99:VAL:CG2 | 2.40 | 0.52 |
| 1:AA:1000:U:H2' | 1:AA:1001:A:H8 | 1.74 | 0.52 |
| 35:BA:2462:U:H2' | 35:BA:2463:C:H6 | 1.74 | 0.52 |
| 35:BA:118:A:H5' | 35:BA:119:A:H8 | 1.74 | 0.52 |
| 1:AA:35:G:H2' | 1:AA:36:C:C6 | 2.44 | 0.52 |
| 15:AO:80:ALA:O | 15:AO:84:LYS:HG3 | 2.10 | 0.52 |
| 35:DA:1984:G:O2' | 35:DA:1985:G:H5' | 2.09 | 0.52 |
| 22:AV:72:C:H2' | 22:AV:73:A:H5' | 1.91 | 0.52 |
| 43:DI:1:MET:O | 43:DI:20:ASP:HA | 2.09 | 0.52 |
| 4:AD:145:GLU:HG2 | 4:AD:184:LYS:HZ3 | 1.73 | 0.52 |
| 2:AB:60:ASP:OD2 | 2:AB:64:ARG:CZ | 2.57 | 0.52 |
| 1:CA:583:A:H2' | 1:CA:584:G:O4' | 2.09 | 0.52 |
| 19:AS:79:THR:O | 19:AS:80:TYR:CB | 2.57 | 0.52 |
| 35:BA:1669:A:H5'' | 35:BA:2550:G:OP1 | 2.09 | 0.52 |
| 4:AD:128:VAL:HG12 | 4:AD:129:ASN:ND2 | 2.25 | 0.52 |
| 47:DQ:48:GLU:HG3 | 47:DQ:48:GLU:O | 2.10 | 0.52 |
| 56:BZ:82:ARG:HH11 | 56:BZ:82:ARG:HG2 | 1.74 | 0.52 |
| 2:CB:41:ILE:N | 2:CB:41:ILE:HD12 | 2.25 | 0.52 |
| 44:BN:38:HIS:O | 51:BU:67:ALA:HB1 | 2.09 | 0.52 |
| 35:BA:2030:A:H4' | 35:BA:2031:A:C8 | 2.45 | 0.52 |
| 9:AI:88:TYR:O | 9:AI:89:ASN:CB | 2.57 | 0.52 |
| 31:D6:15:GLU:HG2 | 31:D6:18:ARG:NE | 2.24 | 0.52 |
| 9:CI:33:PHE:C | 9:CI:35:GLU:H | 2.13 | 0.52 |
| 50:BT:91:ARG:C | 50:BT:93:ARG:H | 2.13 | 0.52 |
| 55:DY:96:ILE:HG22 | 55:DY:97:ARG:N | 2.25 | 0.52 |
| 39:DE:77:ILE:CG2 | 39:DE:78:LEU:H | 1.91 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 13:AM:25:ILE:HD12 | 13:AM:25:ILE:N | 2.24 | 0.52 |
| 13:CM:25:ILE:N | 13:CM:25:ILE:HD12 | 2.24 | 0.52 |
| 55:BY:26:LYS:O | 55:BY:27:VAL:C | 2.47 | 0.52 |
| 37:BC:36:LYS:HA | 37:BC:36:LYS:HZ2 | 1.74 | 0.52 |
| 1:AA:1363:C:H5' | 1:AA:1363(A):A:O5' | 2.10 | 0.52 |
| 43:DI:109:ILE:HD12 | 43:DI:109:ILE:N | 2.25 | 0.52 |
| 43:DI:101:LEU:HD23 | 43:DI:109:ILE:HG12 | 1.91 | 0.52 |
| 38:BD:244:ARG:HG2 | 38:BD:245:PRO:HD3 | 1.91 | 0.52 |
| 2:AB:116:GLU:HA | 2:AB:119:GLU:CB | 2.40 | 0.52 |
| 20:AT:26:ASN:ND2 | 20:AT:26:ASN:N | 2.57 | 0.52 |
| 31:B6:12:GLU:H | 31:B6:12:GLU:CD | 2.13 | 0.52 |
| 50:DT:50:ILE:CD1 | 50:DT:64:ARG:HB3 | 2.39 | 0.52 |
| 38:BD:26:LYS:HD2 | 38:BD:27:THR:HG22 | 1.90 | 0.52 |
| 35:BA:2811:G:C2' | 35:BA:2812:G:H5' | 2.40 | 0.52 |
| 1:CA:618:C:H5' | 1:CA:619:U:H5'' | 1.91 | 0.52 |
| 1:CA:625:G:O2' | 1:CA:626:U:H5' | 2.10 | 0.52 |
| 35:DA:2787:C:O2 | 35:DA:2787:C:C2' | 2.51 | 0.52 |
| 52:DV:28:GLU:CB | 52:DV:29:PRO:HD2 | 2.37 | 0.52 |
| 35:DA:71:A:H2 | 54:DX:31:HIS:HE1 | 1.58 | 0.52 |
| 35:BA:1011:G:P | 51:BU:77:SER:HG | 2.32 | 0.52 |
| 13:AM:57:ARG:HH12 | 29:B4:60:GLU:HG3 | 1.74 | 0.52 |
| 13:CM:28:ALA:O | 13:CM:30:ALA:N | 2.43 | 0.52 |
| 1:AA:1203:C:H2' | 1:AA:1204:A:C8 | 2.44 | 0.52 |
| 2:CB:14:GLY:C | 2:CB:15:VAL:HG22 | 2.29 | 0.52 |
| 35:BA:914:C:C2' | 35:BA:915:C:H5' | 2.38 | 0.52 |
| 11:AK:125:PHE:N | 11:AK:125:PHE:CD1 | 2.77 | 0.52 |
| 2:AB:144:ARG:O | 2:AB:147:LYS:HB3 | 2.09 | 0.52 |
| 1:AA:348:G:O2' | 1:AA:349:A:H5' | 2.10 | 0.52 |
| 18:AR:87:ARG:O | 18:AR:87:ARG:HG2 | 2.08 | 0.52 |
| 30:B5:20:ARG:CZ | 53:BW:15:ARG:NH1 | 2.73 | 0.52 |
| 1:AA:542:G:H5' | 4:AD:41:GLY:CA | 2.40 | 0.52 |
| 35:DA:814:C:O2' | 35:DA:815:C:H5' | 2.09 | 0.52 |
| 35:BA:887:A:H1' | 35:BA:889:C:N4 | 2.24 | 0.52 |
| 35:DA:1652:A:H2' | 35:DA:1653:G:H5' | 1.92 | 0.52 |
| 2:AB:124:SER:OG | 2:AB:125:PRO:HD2 | 2.09 | 0.52 |
| 35:DA:2462:U:H2' | 35:DA:2463:C:H6 | 1.75 | 0.52 |
| 42:BH:149:ARG:NH2 | 42:BH:154:PRO:HG3 | 2.25 | 0.52 |
| 22:CV:49:C:H2' | 22:CV:50:U:C6 | 2.44 | 0.52 |
| 6:AF:68:PRO:HG3 | 6:AF:71:ARG:NH2 | 2.24 | 0.52 |
| 5:CE:80:ILE:HG22 | 8:CH:104:ARG:NH2 | 2.25 | 0.52 |
| 35:BA:1231:G:H2' | 35:BA:1232:G:C8 | 2.45 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DA:1844:C:H2' | 35:DA:1845:G:H8 | 1.73 | 0.52 |
| 18:CR:31:LEU:H | 18:CR:31:LEU:CD2 | 2.22 | 0.52 |
| 10:CJ:89:ASP:C | 10:CJ:90:LEU:HD12 | 2.30 | 0.52 |
| 25:B0:32:ARG:HB2 | 25:B0:35:ASN:HD21 | 1.73 | 0.52 |
| 1:AA:1269:A:H5' | 21:AU:18:TYR:O | 2.10 | 0.52 |
| 35:BA:2563:U:H2' | 35:BA:2565:A:OP2 | 2.10 | 0.52 |
| 13:CM:74:VAL:O | 13:CM:78:ILE:HG13 | 2.09 | 0.52 |
| 35:DA:2872:G:C2 | 35:DA:2873:A:N6 | 2.77 | 0.52 |
| 35:BA:460:A:H2' | 35:BA:461:C:O4' | 2.10 | 0.52 |
| 1:AA:936:C:O2' | 1:AA:937:A:H5' | 2.10 | 0.52 |
| 35:DA:2567:G:H2' | 35:DA:2568:C:C6 | 2.44 | 0.52 |
| 35:DA:2291:U:O2' | 35:DA:2292:C:H5' | 2.10 | 0.52 |
| 45:DO:113:LYS:O | 45:DO:117:LEU:HB2 | 2.08 | 0.52 |
| 35:BA:2141:G:H2' | 35:BA:2142:C:C6 | 2.45 | 0.52 |
| 1:AA:1521:G:H2' | 1:AA:1522:U:C6 | 2.45 | 0.52 |
| 56:DZ:100:VAL:O | 56:DZ:123:ASP:HB2 | 2.10 | 0.52 |
| 12:AL:28:LYS:CE | 12:AL:33:ARG:HH22 | 2.23 | 0.52 |
| 9:AI:33:PHE:C | 9:AI:35:GLU:H | 2.12 | 0.52 |
| 9:AI:9:ARG:HG3 | 9:AI:14:VAL:HG13 | 1.92 | 0.52 |
| 50:DT:27:THR:OG1 | 50:DT:28:VAL:N | 2.40 | 0.52 |
| 50:DT:89:VAL:HG12 | 50:DT:91:ARG:HG3 | 1.91 | 0.52 |
| 55:DY:81:LYS:CB | 55:DY:96:ILE:HG22 | 2.39 | 0.52 |
| 39:DE:65:GLY:C | 39:DE:67:PHE:H | 2.13 | 0.52 |
| 47:BQ:141:GLN:HB2 | 56:BZ:99:TYR:CD2 | 2.44 | 0.52 |
| 47:BQ:141:GLN:HA | 56:BZ:53:ILE:CG1 | 2.39 | 0.52 |
| 39:BE:111:ARG:HB2 | 39:BE:160:TYR:O | 2.10 | 0.52 |
| 48:BR:2:ARG:NH1 | 48:BR:5:LYS:CE | 2.68 | 0.52 |
| 1:AA:1329:A:P | 13:AM:28:ALA:HB3 | 2.50 | 0.52 |
| 3:CC:119:ARG:HH21 | 3:CC:140:ARG:CZ | 2.22 | 0.52 |
| 1:CA:1313:U:H2' | 1:CA:1314:C:C6 | 2.44 | 0.52 |
| 55:DY:20:TYR:N | 55:DY:20:TYR:CD1 | 2.75 | 0.52 |
| 47:BQ:34:LEU:HD12 | 47:BQ:130:LYS:O | 2.09 | 0.52 |
| 37:BC:56:GLN:O | 37:BC:57:ASN:HB2 | 2.08 | 0.52 |
| 3:AC:16:ARG:HG3 | 3:AC:17:ASP:N | 2.25 | 0.52 |
| 48:DR:21:TYR:OH | 48:DR:43:GLU:HG2 | 2.08 | 0.52 |
| 13:AM:48:LEU:HB2 | 13:AM:52:GLU:OE1 | 2.08 | 0.52 |
| 35:DA:135:G:O2' | 35:DA:136:G:H5' | 2.10 | 0.52 |
| 33:B8:30:ARG:CZ | 35:BA:2419:U:O4 | 2.56 | 0.52 |
| 55:BY:6:HIS:CE1 | 55:BY:30:VAL:HG11 | 2.45 | 0.52 |
| 1:CA:978:A:O2' | 1:CA:1322:C:N3 | 2.41 | 0.52 |
| 41:BG:13:GLU:O | 41:BG:14:GLU:CB | 2.57 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BG:34:LEU:HD21 | 41:BG:172:LEU:HD21 | 1.92 | 0.52 |
| 35:DA:2111:C:H4' | 35:DA:2112:G:OP1 | 2.09 | 0.52 |
| 1:AA:977:A:O2' | 1:AA:978:A:H5' | 2.10 | 0.52 |
| 35:BA:1485:G:H1' | 35:BA:1505:C:H41 | 1.73 | 0.52 |
| 10:AJ:16:LEU:HD13 | 10:AJ:16:LEU:C | 2.29 | 0.52 |
| 8:CH:85:ARG:HH11 | 8:CH:85:ARG:CG | 2.21 | 0.52 |
| 16:CP:8:ARG:HG2 | 16:CP:9:PHE:H | 1.69 | 0.52 |
| 19:AS:9:VAL:C | 19:AS:11:VAL:H | 2.13 | 0.52 |
| 19:AS:16:LEU:N | 19:AS:16:LEU:HD12 | 2.25 | 0.52 |
| 35:BA:2580:U:OP1 | 39:BE:131:ALA:HB2 | 2.10 | 0.52 |
| 47:DQ:111:GLU:O | 47:DQ:115:MET:HG2 | 2.10 | 0.52 |
| 1:AA:22:G:H4' | 1:AA:885:G:C8 | 2.45 | 0.52 |
| 1:AA:924:C:H5' | 1:AA:1399:C:OP2 | 2.10 | 0.52 |
| 42:DH:152:ARG:O | 42:DH:153:LYS:O | 2.27 | 0.52 |
| 12:AL:55:VAL:HG13 | 12:AL:68:ALA:O | 2.10 | 0.52 |
| 3:AC:18:TRP:C | 3:AC:20:SER:H | 2.13 | 0.52 |
| 45:BO:32:TYR:N | 45:BO:32:TYR:CD1 | 2.77 | 0.52 |
| 1:CA:840:C:H4' | 1:CA:848:C:O2 | 2.10 | 0.52 |
| 1:AA:473:G:H2' | 1:AA:474:G:C8 | 2.45 | 0.52 |
| 1:AA:473:G:H5'' | 16:AP:81:ARG:HE | 1.75 | 0.52 |
| 2:CB:194:PRO:HA | 2:CB:200:ILE:CD1 | 2.40 | 0.52 |
| 1:AA:839:U:O2 | 1:AA:839:U:H2' | 2.08 | 0.52 |
| 50:BT:92:GLY:HA2 | 50:BT:114:LEU:CB | 2.40 | 0.52 |
| 35:DA:313:C:O2' | 35:DA:314:A:H5' | 2.10 | 0.52 |
| 2:CB:63:MET:HB3 | 2:CB:225:ALA:HB1 | 1.91 | 0.52 |
| 15:AO:36:ILE:HG23 | 15:AO:56:LEU:HD11 | 1.91 | 0.52 |
| 35:BA:814:C:O2' | 35:BA:815:C:H5' | 2.10 | 0.52 |
| 35:BA:814:C:C5 | 46:BP:27:HIS:CE1 | 2.98 | 0.52 |
| 48:DR:33:ARG:O | 48:DR:34:ILE:HD13 | 2.10 | 0.52 |
| 4:AD:23:GLY:O | 4:AD:27:TYR:HD1 | 1.93 | 0.52 |
| 35:DA:1722:A:N1 | 35:DA:1741:A:C2 | 2.78 | 0.52 |
| 35:BA:1464:C:HO2' | 35:BA:1528:A:H8 | 1.51 | 0.52 |
| 55:DY:13:VAL:HA | 55:DY:75:ILE:HG22 | 1.92 | 0.52 |
| 35:DA:1412:A:H2' | 35:DA:1413:G:C8 | 2.44 | 0.52 |
| 41:BG:96:ARG:O | 41:BG:99:MET:HB3 | 2.10 | 0.52 |
| 35:DA:2377:A:H2' | 35:DA:2378:A:C8 | 2.44 | 0.52 |
| 1:CA:401:C:H2' | 1:CA:402:G:H8 | 1.75 | 0.52 |
| 1:AA:444:C:H2' | 1:AA:445:G:H8 | 1.75 | 0.52 |
| 11:CK:41:THR:HG21 | 11:CK:71:LYS:CB | 2.40 | 0.52 |
| 8:CH:97:VAL:O | 8:CH:100:ILE:HG13 | 2.09 | 0.52 |
| 50:BT:61:PHE:CE2 | 50:BT:76:PHE:HB2 | 2.45 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1521:G:H2' | 1:AA:1522:U:H6 | 1.75 | 0.52 |
| 42:BH:38:SER:OG | 42:BH:40:GLU:HG2 | 2.10 | 0.52 |
| 56:BZ:44:PHE:CE2 | 56:BZ:86:VAL:HG11 | 2.44 | 0.52 |
| 35:BA:449:A:C2' | 35:BA:450:G:H5' | 2.40 | 0.52 |
| 35:BA:179:G:O2' | 35:BA:180:G:H5' | 2.09 | 0.52 |
| 1:AA:699:C:H2' | 1:AA:700:G:H5' | 1.92 | 0.52 |
| 1:CA:887:G:H21 | 1:CA:1489:G:H4' | 1.75 | 0.52 |
| 1:AA:509:A:H2' | 1:AA:510:A:C8 | 2.45 | 0.52 |
| 3:CC:41:GLY:O | 3:CC:45:LYS:HG3 | 2.09 | 0.52 |
| 35:DA:1678:G:N2 | 35:DA:1989:G:H22 | 2.08 | 0.52 |
| 35:DA:1215:G:O2' | 35:DA:1216:G:H5' | 2.10 | 0.52 |
| 56:DZ:44:PHE:C | 56:DZ:44:PHE:CD1 | 2.83 | 0.52 |
| 56:DZ:98:MET:CE | 56:DZ:100:VAL:HG22 | 2.40 | 0.52 |
| 40:BF:28:ILE:O | 40:BF:28:ILE:HD12 | 2.10 | 0.52 |
| 31:D6:15:GLU:CG | 31:D6:18:ARG:HH21 | 2.21 | 0.52 |
| 40:DF:10:PRO:HD2 | 40:DF:13:SER:HB2 | 1.91 | 0.52 |
| 2:AB:212:GLN:NE2 | 2:AB:216:SER:HB2 | 2.25 | 0.52 |
| 49:DS:17:ARG:C | 49:DS:19:LYS:N | 2.62 | 0.52 |
| 49:DS:97:ARG:HH21 | 49:DS:98:VAL:CA | 2.01 | 0.52 |
| 39:BE:91:VAL:HG13 | 39:BE:95:ILE:HG12 | 1.91 | 0.52 |
| 13:AM:19:LEU:HD22 | 13:AM:19:LEU:N | 2.23 | 0.52 |
| 37:DC:36:LYS:NZ | 37:DC:36:LYS:HA | 2.23 | 0.52 |
| 52:DV:25:LEU:C | 52:DV:27:ALA:H | 2.12 | 0.52 |
| 3:AC:119:ARG:HH21 | 3:AC:140:ARG:CZ | 2.23 | 0.52 |
| 35:DA:2646:C:H2' | 35:DA:2647:U:O4' | 2.10 | 0.52 |
| 33:D8:52:LYS:N | 33:D8:53:PRO:CD | 2.73 | 0.52 |
| 5:CE:10:MET:CE | 5:CE:13:ILE:HD11 | 2.40 | 0.52 |
| 45:BO:1:MET:HE3 | 45:BO:67:LYS:HG2 | 1.91 | 0.52 |
| 44:DN:133:GLN:O | 44:DN:134:ARG:CB | 2.58 | 0.52 |
| 22:CY:44:G:H3' | 22:CY:45:U:C6 | 2.44 | 0.52 |
| 44:BN:125:GLY:CA | 44:BN:126:PRO:O | 2.58 | 0.52 |
| 2:AB:114:ARG:NH1 | 2:AB:118:LEU:HD21 | 2.24 | 0.52 |
| 20:CT:23:ARG:HA | 20:CT:26:ASN:HD21 | 1.74 | 0.52 |
| 35:DA:686:G:N2 | 35:DA:788:A:H61 | 2.07 | 0.52 |
| 35:BA:135:G:O2' | 35:BA:136:G:H5' | 2.09 | 0.52 |
| 55:DY:47:LYS:HD2 | 55:DY:47:LYS:H | 1.75 | 0.52 |
| 35:DA:171:G:O2' | 35:DA:172:C:H5' | 2.09 | 0.52 |
| 30:D5:2:ALA:N | 35:DA:747:U:N3 | 2.57 | 0.52 |
| 43:DI:79:ILE:CD1 | 43:DI:80:PRO:HD2 | 2.35 | 0.52 |
| 35:DA:2118:U:H5 | 35:DA:2148:G:O2' | 1.92 | 0.52 |
| 56:BZ:108:PRO:HD3 | 56:BZ:117:LEU:HD23 | 1.92 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:BE:17:ASP:O | 39:BE:18:ASP:CB | 2.56 | 0.52 |
| 32:D7:9:ARG:HG3 | 32:D7:9:ARG:NH1 | 2.22 | 0.52 |
| 51:BU:31:SER:O | 51:BU:33:ARG:N | 2.42 | 0.52 |
| 3:AC:52:LEU:HD23 | 3:AC:52:LEU:N | 2.19 | 0.52 |
| 33:D8:39:LYS:HA | 33:D8:42:ARG:NH1 | 2.24 | 0.52 |
| 35:BA:1040:C:H6 | 35:BA:1040:C:OP2 | 1.93 | 0.52 |
| 1:CA:105:G:H2' | 1:CA:106:C:C6 | 2.45 | 0.52 |
| 1:AA:1438:G:H2' | 1:AA:1439:C:C6 | 2.40 | 0.52 |
| 3:CC:18:TRP:C | 3:CC:20:SER:H | 2.13 | 0.52 |
| 35:BA:1532:C:O2 | 35:BA:1532:C:C2' | 2.57 | 0.52 |
| 19:AS:15:LEU:HD12 | 19:AS:31:ILE:HD11 | 1.92 | 0.52 |
| 56:DZ:22:GLY:HA2 | 56:DZ:41:LEU:CD1 | 2.40 | 0.52 |
| 1:CA:186:C:H1' | 20:CT:85:MET:CE | 2.40 | 0.52 |
| 35:DA:2171:A:O2' | 35:DA:2172:U:O5' | 2.28 | 0.52 |
| 35:DA:1257:C:H4' | 40:DF:83:PHE:CE2 | 2.45 | 0.52 |
| 9:CI:37:PHE:HB3 | 9:CI:43:ALA:CB | 2.40 | 0.52 |
| 9:AI:4:TYR:CD1 | 9:AI:4:TYR:N | 2.77 | 0.52 |
| 45:BO:24:VAL:HG23 | 45:BO:33:ALA:HB2 | 1.92 | 0.52 |
| 48:BR:11:ASN:O | 48:BR:12:ARG:HB2 | 2.10 | 0.52 |
| 6:AF:60:PHE:CE2 | 18:AR:78:LEU:HD21 | 2.44 | 0.52 |
| 1:AA:184:G:O4' | 1:AA:224:C:H4' | 2.09 | 0.52 |
| 38:DD:161:THR:O | 38:DD:196:VAL:HG23 | 2.10 | 0.52 |
| 46:DP:62:LEU:H | 46:DP:62:LEU:HD23 | 1.74 | 0.52 |
| 38:BD:126:GLN:HG3 | 38:BD:129:ASN:ND2 | 2.24 | 0.52 |
| 35:DA:1853:A:N1 | 35:DA:2087:G:H1' | 2.25 | 0.52 |
| 3:AC:156:ARG:NH2 | 3:AC:161:GLU:HA | 2.25 | 0.52 |
| 1:AA:1228:C:H2' | 1:AA:1229:A:H8 | 1.75 | 0.52 |
| 6:AF:45:LEU:HD11 | 6:AF:57:GLN:OE1 | 2.10 | 0.52 |
| 47:BQ:59:ARG:NH1 | 47:BQ:59:ARG:HG3 | 2.24 | 0.52 |
| 1:CA:127:G:HO2' | 17:CQ:2:PRO:N | 2.08 | 0.52 |
| 42:DH:155:SER:O | 42:DH:156:ALA:CB | 2.58 | 0.52 |
| 35:DA:407:G:H2' | 35:DA:408:G:C8 | 2.44 | 0.52 |
| 35:DA:1791:A:N6 | 35:DA:1828:G:O2' | 2.40 | 0.52 |
| 18:CR:24:ALA:C | 18:CR:26:LEU:H | 2.13 | 0.52 |
| 36:DB:94:C:H2' | 36:DB:95:C:H6 | 1.75 | 0.52 |
| 54:DX:64:LYS:HD3 | 54:DX:73:ARG:HD2 | 1.92 | 0.52 |
| 8:AH:97:VAL:O | 8:AH:100:ILE:HG13 | 2.09 | 0.52 |
| 35:DA:449:A:C2' | 35:DA:450:G:H5' | 2.39 | 0.52 |
| 35:DA:179:G:O2' | 35:DA:180:G:H5' | 2.09 | 0.52 |
| 22:CY:62:C:H2' | 22:CY:62:C:O2 | 2.10 | 0.52 |
| 9:AI:35:GLU:HA | 9:AI:38:GLN:HB2 | 1.90 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 40:DF:9:ILE:HG22 | 40:DF:9:ILE:O | 2.09 | 0.52 |
| 50:DT:27:THR:HA | 50:DT:87:ASP:HB2 | 1.91 | 0.52 |
| 1:AA:1277:C:HO2' | 1:AA:1278:U:H5' | 1.75 | 0.52 |
| 12:AL:47:LYS:CB | 12:AL:48:PRO:CD | 2.85 | 0.52 |
| 52:BV:34:GLU:O | 52:BV:36:PRO:CD | 2.58 | 0.52 |
| 49:DS:97:ARG:C | 49:DS:97:ARG:NE | 2.63 | 0.52 |
| 44:DN:43:THR:O | 44:DN:46:VAL:HG12 | 2.10 | 0.52 |
| 51:DU:54:LYS:O | 51:DU:58:ARG:HG3 | 2.10 | 0.52 |
| 29:B4:52:SER:OG | 29:B4:53:THR:N | 2.40 | 0.52 |
| 1:CA:1323:G:H4' | 1:CA:1363:C:N3 | 2.24 | 0.52 |
| 41:BG:83:ARG:NH1 | 41:BG:84:LYS:HD2 | 2.25 | 0.52 |
| 47:BQ:20:ALA:O | 47:BQ:21:THR:OG1 | 2.26 | 0.52 |
| 39:BE:24:THR:HG22 | 39:BE:186:GLY:N | 2.23 | 0.52 |
| 44:BN:126:PRO:O | 44:BN:127:ASP:CB | 2.57 | 0.52 |
| 20:CT:30:LYS:HE2 | 20:CT:72:LEU:HD11 | 1.92 | 0.52 |
| 26:B1:76:ARG:NH2 | 35:BA:271(R):G:OP1 | 2.43 | 0.52 |
| 42:DH:123:PHE:CD1 | 42:DH:123:PHE:N | 2.78 | 0.52 |
| 35:BA:2092:U:C4' | 35:BA:2093:G:H5'' | 2.33 | 0.52 |
| 27:D2:18:PRO:HG2 | 27:D2:19:VAL:N | 2.16 | 0.52 |
| 42:BH:123:PHE:CD1 | 42:BH:123:PHE:N | 2.78 | 0.52 |
| 43:DI:69:LYS:HA | 43:DI:136:VAL:HG21 | 1.90 | 0.52 |
| 53:BW:75:TYR:CE1 | 53:BW:104:THR:CB | 2.93 | 0.52 |
| 35:BA:2263:C:C6 | 35:BA:2263:C:H5' | 2.29 | 0.52 |
| 35:BA:285:C:H2' | 35:BA:286:C:O4' | 2.09 | 0.52 |
| 15:AO:69:TYR:CE1 | 15:AO:73:GLU:HG3 | 2.45 | 0.52 |
| 35:BA:2808:U:C2' | 35:BA:2809:A:H5' | 2.40 | 0.52 |
| 44:DN:3:THR:C | 44:DN:5:VAL:N | 2.63 | 0.52 |
| 17:CQ:6:LEU:O | 17:CQ:58:GLU:HA | 2.09 | 0.52 |
| 2:AB:21:ARG:HD2 | 2:AB:38:GLY:CA | 2.40 | 0.52 |
| 1:AA:649:G:H2' | 1:AA:650:G:H8 | 1.75 | 0.52 |
| 11:AK:95:ILE:H | 11:AK:95:ILE:CD1 | 2.23 | 0.52 |
| 53:BW:99:ARG:HG2 | 53:BW:99:ARG:NH1 | 2.24 | 0.52 |
| 30:B5:20:ARG:HA | 30:B5:23:HIS:ND1 | 2.25 | 0.52 |
| 1:CA:683:G:H2' | 1:CA:684:A:H8 | 1.75 | 0.52 |
| 1:CA:1228:C:OP1 | 13:CM:115:LYS:HE3 | 2.10 | 0.52 |
| 14:AN:29:ARG:HG3 | 14:AN:29:ARG:HH11 | 1.74 | 0.52 |
| 1:CA:553:A:H2' | 1:CA:554:C:C6 | 2.45 | 0.52 |
| 1:AA:1445:C:C2' | 1:AA:1446:U:H5' | 2.40 | 0.52 |
| 36:BB:79:C:H2' | 36:BB:80:U:O4' | 2.09 | 0.52 |
| 1:CA:1109:C:P | 3:CC:176:HIS:HD1 | 2.33 | 0.52 |
| 50:DT:61:PHE:CE2 | 50:DT:76:PHE:HB2 | 2.45 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:154:C:H2' | 1:AA:155:C:H6 | 1.75 | 0.52 |
| 35:BA:902:C:O2' | 35:BA:903:C:H5' | 2.10 | 0.52 |
| 1:AA:577:G:H2' | 1:AA:578:C:H6 | 1.75 | 0.52 |
| 35:BA:2839:G:H2' | 35:BA:2840:C:H6 | 1.75 | 0.52 |
| 38:BD:3:VAL:CG1 | 38:BD:17:THR:HB | 2.40 | 0.52 |
| 16:AP:6:LEU:HB3 | 16:AP:17:TYR:CD2 | 2.45 | 0.52 |
| 50:BT:66:VAL:HA | 50:BT:71:GLY:HA2 | 1.90 | 0.52 |
| 35:BA:977:G:C2' | 35:BA:978:G:H5' | 2.40 | 0.52 |
| 1:CA:1408:A:HO2' | 35:DA:1916:A:H61 | 1.58 | 0.52 |
| 35:BA:1984:G:O2' | 35:BA:1985:G:H5' | 2.10 | 0.52 |
| 1:AA:1149:C:OP1 | 9:AI:9:ARG:HD3 | 2.10 | 0.52 |
| 38:BD:35:LYS:N | 38:BD:36:PRO:CD | 2.70 | 0.52 |
| 51:BU:74:LEU:HD12 | 51:BU:74:LEU:C | 2.30 | 0.52 |
| 51:BU:69:CYS:SG | 51:BU:79:PHE:HD1 | 2.34 | 0.52 |
| 52:BV:39:LEU:HD12 | 52:BV:51:VAL:HA | 1.92 | 0.52 |
| 39:DE:59:VAL:HG11 | 39:DE:63:LEU:HG | 1.91 | 0.52 |
| 35:DA:661:C:H4' | 46:DP:16:ARG:NH1 | 2.25 | 0.52 |
| 44:BN:121:LYS:HG2 | 44:BN:130:HIS:NE2 | 2.25 | 0.52 |
| 35:DA:2127:G:C5' | 37:DC:36:LYS:HG2 | 2.40 | 0.52 |
| 51:DU:69:CYS:SG | 51:DU:79:PHE:HD1 | 2.32 | 0.52 |
| 55:DY:26:LYS:O | 55:DY:27:VAL:C | 2.48 | 0.52 |
| 35:BA:2126:A:OP2 | 35:BA:2126:A:H8 | 1.93 | 0.52 |
| 55:DY:15:VAL:O | 55:DY:16:ALA:CB | 2.58 | 0.52 |
| 45:DO:101:PRO:O | 45:DO:102:VAL:HG13 | 2.10 | 0.52 |
| 22:CY:44:G:H2' | 22:CY:45:U:O4' | 2.09 | 0.52 |
| 42:DH:159:GLU:HG3 | 42:DH:160:LYS:H | 1.75 | 0.52 |
| 31:B6:23:THR:HG21 | 35:BA:2419:U:H4' | 1.91 | 0.52 |
| 1:AA:1321:C:C5' | 1:AA:1322:C:C5' | 2.86 | 0.52 |
| 43:DI:124:GLY:H | 43:DI:142:VAL:HG23 | 1.75 | 0.52 |
| 35:BA:855:G:H2' | 35:BA:856:C:H6 | 1.71 | 0.52 |
| 40:DF:66:PRO:O | 40:DF:67:GLN:CB | 2.56 | 0.52 |
| 40:BF:23:ASP:O | 40:BF:115:ALA:HA | 2.10 | 0.52 |
| 22:CV:41:C:C2' | 22:CV:41:C:O2 | 2.54 | 0.52 |
| 56:DZ:13:GLU:O | 56:DZ:15:PRO:HD3 | 2.10 | 0.52 |
| 16:CP:3:LYS:O | 16:CP:21:VAL:HA | 2.09 | 0.52 |
| 35:BA:999:U:O2' | 35:BA:1000:A:H5'' | 2.10 | 0.52 |
| 1:CA:918:A:O2' | 1:CA:919:A:H5' | 2.10 | 0.52 |
| 56:BZ:17:ALA:O | 56:BZ:20:ARG:HB2 | 2.09 | 0.52 |
| 45:BO:31:LYS:HB3 | 45:BO:32:TYR:CE1 | 2.45 | 0.52 |
| 1:CA:1342:C:H1' | 9:CI:124:GLN:HE22 | 1.75 | 0.52 |
| 1:CA:473:G:H5'' | 16:CP:81:ARG:HE | 1.75 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 46:BP:75:ILE:N | 46:BP:75:ILE:CD1 | 2.73 | 0.52 |
| 1:AA:1423:G:H2' | 1:AA:1424:C:H6 | 1.75 | 0.52 |
| 7:CG:69:VAL:HA | 7:CG:138:LYS:HD2 | 1.92 | 0.52 |
| 26:B1:25:LYS:NZ | 35:BA:2396:G:OP1 | 2.35 | 0.52 |
| 11:CK:34:ASP:HB3 | 11:CK:40:ILE:HD11 | 1.91 | 0.52 |
| 35:DA:2199:A:H3' | 35:DA:2200:C:C6 | 2.45 | 0.52 |
| 35:DA:2443:C:O2' | 35:DA:2444:G:H5' | 2.09 | 0.52 |
| 3:CC:23:TYR:O | 3:CC:24:ALA:HB2 | 2.10 | 0.52 |
| 35:BA:648:G:O4' | 35:BA:2351:G:H5'' | 2.09 | 0.52 |
| 7:AG:113:GLU:HB2 | 7:AG:119:ARG:HG2 | 1.92 | 0.52 |
| 11:AK:99:GLN:HA | 11:AK:105:VAL:HG11 | 1.92 | 0.52 |
| 1:AA:801:U:H2' | 1:AA:802:A:H8 | 1.75 | 0.52 |
| 35:DA:321:G:OP2 | 40:DF:136:THR:HG22 | 2.10 | 0.52 |
| 1:AA:725:G:H2' | 1:AA:726:C:C6 | 2.44 | 0.52 |
| 35:BA:2689:U:O2' | 35:BA:2690:C:OP2 | 2.23 | 0.52 |
| 35:BA:2777:G:H5'' | 35:BA:2778:A:H5'' | 1.91 | 0.52 |
| 17:CQ:31:LEU:HG | 17:CQ:32:TYR:CE2 | 2.45 | 0.52 |
| 19:AS:44:MET:HA | 19:AS:44:MET:HE3 | 1.92 | 0.52 |
| 1:AA:877:C:O2' | 1:AA:878:G:H5' | 2.10 | 0.52 |
| 5:AE:136:MET:C | 5:AE:138:ALA:H | 2.13 | 0.52 |
| 1:AA:424:G:H2' | 1:AA:425:G:H8 | 1.75 | 0.52 |
| 35:DA:2257:U:O2' | 35:DA:2258:C:H5' | 2.09 | 0.52 |
| 40:BF:111:ALA:HB2 | 40:BF:206:ILE:HD13 | 1.92 | 0.52 |
| 35:BA:260:G:C2 | 35:BA:261:G:H1' | 2.45 | 0.52 |
| 35:DA:336:C:O2' | 35:DA:337:C:H5' | 2.10 | 0.52 |
| 35:BA:108:U:H2' | 35:BA:109:G:H8 | 1.75 | 0.52 |
| 35:BA:498:G:O2' | 35:BA:499:U:H5' | 2.10 | 0.52 |
| 35:BA:225:A:H2' | 35:BA:226:G:H5' | 1.91 | 0.52 |
| 49:BS:36:TYR:N | 49:BS:36:TYR:CD1 | 2.78 | 0.52 |
| 40:DF:116:ASP:OD2 | 46:DP:5:ASP:N | 2.43 | 0.51 |
| 31:B6:37:ARG:O | 31:B6:48:VAL:O | 2.28 | 0.51 |
| 2:AB:50:GLU:HG3 | 2:AB:202:PRO:CG | 2.40 | 0.51 |
| 9:CI:17:VAL:HG11 | 9:CI:81:ILE:HD13 | 1.91 | 0.51 |
| 2:CB:212:GLN:NE2 | 2:CB:216:SER:HB2 | 2.25 | 0.51 |
| 50:BT:86:ILE:HG12 | 50:BT:87:ASP:N | 2.24 | 0.51 |
| 18:CR:35:ARG:O | 18:CR:37:VAL:N | 2.40 | 0.51 |
| 41:DG:51:ARG:O | 41:DG:53:LEU:N | 2.36 | 0.51 |
| 38:BD:35:LYS:NZ | 38:BD:61:LEU:HG | 2.25 | 0.51 |
| 39:DE:109:LYS:HB3 | 48:DR:2:ARG:HH12 | 1.73 | 0.51 |
| 5:AE:40:ARG:HH11 | 5:AE:40:ARG:CG | 2.19 | 0.51 |
| 42:DH:44:VAL:CG1 | 42:DH:45:VAL:H | 2.09 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 52:DV:39:LEU:HD12 | 52:DV:51:VAL:HA | 1.92 | 0.51 |
| 40:BF:123:LEU:HD12 | 40:BF:124:LEU:N | 2.18 | 0.51 |
| 40:BF:8:GLN:HB3 | 40:BF:126:VAL:HA | 1.91 | 0.51 |
| 35:BA:1163:G:O2' | 35:BA:1164:G:H5' | 2.09 | 0.51 |
| 3:AC:182:ILE:HG23 | 3:AC:202:ILE:C | 2.31 | 0.51 |
| 23:AW:38:A:H2' | 23:AW:39:U:O4' | 2.10 | 0.51 |
| 35:BA:2564:A:C2 | 35:BA:2647:U:H4' | 2.45 | 0.51 |
| 41:BG:115:ARG:HD3 | 41:BG:115:ARG:H | 1.74 | 0.51 |
| 35:DA:2468:G:H5' | 47:DQ:120:ILE:HD12 | 1.91 | 0.51 |
| 1:AA:975:A:C4' | 1:AA:976:G:H5'' | 2.32 | 0.51 |
| 2:CB:115:LEU:HD12 | 2:CB:142:LEU:HD11 | 1.92 | 0.51 |
| 55:DY:8:LYS:CD | 55:DY:8:LYS:H | 2.15 | 0.51 |
| 35:BA:1142(A):A:O2' | 35:BA:1143:A:H3' | 2.10 | 0.51 |
| 35:BA:1141:U:OP1 | 44:BN:25:ARG:NH1 | 2.42 | 0.51 |
| 33:B8:6:THR:HB | 33:B8:63:PRO:HG3 | 1.92 | 0.51 |
| 31:B6:12:GLU:HA | 31:B6:23:THR:HA | 1.93 | 0.51 |
| 45:BO:88:ASN:OD1 | 45:BO:92:GLU:O | 2.27 | 0.51 |
| 22:CV:68:C:H2' | 22:CV:69:G:C5' | 2.33 | 0.51 |
| 41:BG:171:ALA:O | 41:BG:175:LEU:HD12 | 2.09 | 0.51 |
| 35:DA:1300:U:O2 | 35:DA:1300:U:O4' | 2.27 | 0.51 |
| 35:DA:2808:U:C2' | 35:DA:2809:A:H5' | 2.40 | 0.51 |
| 35:BA:2133:G:H21 | 35:BA:2158:A:H62 | 1.58 | 0.51 |
| 17:AQ:22:LEU:HD12 | 17:AQ:23:VAL:N | 2.24 | 0.51 |
| 56:BZ:155:LEU:C | 56:BZ:157:LEU:HD23 | 2.30 | 0.51 |
| 23:CW:38:A:H3' | 23:CW:39:U:C5' | 2.38 | 0.51 |
| 40:BF:53:THR:HG22 | 40:BF:56:GLU:CG | 2.39 | 0.51 |
| 8:CH:12:ARG:NH1 | 8:CH:27:PRO:HD3 | 2.25 | 0.51 |
| 35:BA:598:G:H5' | 46:BP:15:ARG:HB2 | 1.91 | 0.51 |
| 35:BA:1656:C:H2' | 35:BA:1657:C:H6 | 1.74 | 0.51 |
| 40:DF:53:THR:HG23 | 40:DF:55:GLY:H | 1.74 | 0.51 |
| 34:B9:19:ARG:O | 34:B9:20:HIS:HB2 | 2.09 | 0.51 |
| 1:AA:1298:C:H4' | 1:AA:1299:A:C4 | 2.45 | 0.51 |
| 8:CH:118:VAL:C | 8:CH:119:LEU:HD23 | 2.30 | 0.51 |
| 49:DS:74:ALA:HB1 | 49:DS:103:GLU:HG3 | 1.92 | 0.51 |
| 9:CI:125:TYR:HD2 | 9:CI:126:SER:H | 1.58 | 0.51 |
| 1:AA:1315:U:H2' | 1:AA:1316:G:O4' | 2.10 | 0.51 |
| 7:AG:69:VAL:HA | 7:AG:138:LYS:HD2 | 1.91 | 0.51 |
| 51:BU:98:LEU:HD13 | 51:BU:105:VAL:HG11 | 1.92 | 0.51 |
| 35:BA:560:C:H4' | 51:BU:52:ARG:CZ | 2.39 | 0.51 |
| 35:DA:557:U:H2' | 35:DA:558:G:C8 | 2.43 | 0.51 |
| 6:CF:33:TYR:HB2 | 6:CF:75:LEU:HD12 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:950:U:H4' | 1:CA:971:G:C2 | 2.44 | 0.51 |
| 35:BA:2399:G:H2' | 35:BA:2399:G:N3 | 2.25 | 0.51 |
| 35:DA:2672:G:C2' | 35:DA:2673:G:H5'' | 2.39 | 0.51 |
| 5:CE:45:PHE:CE2 | 5:CE:47:LYS:HE3 | 2.45 | 0.51 |
| 1:AA:1318:A:H1' | 19:AS:37:ARG:NH2 | 2.25 | 0.51 |
| 1:CA:1096:C:H2' | 1:CA:1097:C:C6 | 2.45 | 0.51 |
| 35:BA:718:A:H2' | 35:BA:719:C:O4' | 2.10 | 0.51 |
| 35:BA:1375:C:H2' | 35:BA:1376:C:H6 | 1.75 | 0.51 |
| 35:DA:533:G:H5' | 51:DU:24:TYR:CD2 | 2.45 | 0.51 |
| 35:BA:1582:C:O2' | 35:BA:1586:A:C8 | 2.62 | 0.51 |
| 1:CA:577:G:H2' | 1:CA:578:C:H6 | 1.74 | 0.51 |
| 12:CL:21:LYS:N | 12:CL:21:LYS:HD2 | 2.25 | 0.51 |
| 7:CG:136:LYS:O | 7:CG:140:ASP:HB2 | 2.10 | 0.51 |
| 40:BF:51:THR:HG21 | 40:BF:92:PRO:HD2 | 1.92 | 0.51 |
| 35:DA:2358:G:H22 | 46:DP:55:ARG:HH22 | 1.56 | 0.51 |
| 40:DF:24:LEU:C | 40:DF:26:ALA:H | 2.13 | 0.51 |
| 40:BF:38:ARG:HH12 | 46:BP:16:ARG:HH22 | 1.58 | 0.51 |
| 5:AE:110:LEU:CD1 | 5:AE:118:ILE:HG21 | 2.39 | 0.51 |
| 43:DI:117:GLU:HG3 | 43:DI:118:LYS:H | 1.75 | 0.51 |
| 7:AG:79:ARG:NE | 7:AG:84:ASN:OD1 | 2.43 | 0.51 |
| 41:BG:141:PHE:HD2 | 41:BG:141:PHE:N | 2.08 | 0.51 |
| 41:BG:141:PHE:CD2 | 41:BG:141:PHE:N | 2.78 | 0.51 |
| 55:BY:20:TYR:CD1 | 55:BY:20:TYR:N | 2.77 | 0.51 |
| 35:BA:2308:G:H2' | 35:BA:2309:A:C8 | 2.45 | 0.51 |
| 35:DA:2533:A:H2' | 35:DA:2534:A:C5' | 2.33 | 0.51 |
| 20:CT:26:ASN:N | 20:CT:26:ASN:HD22 | 2.07 | 0.51 |
| 36:DB:41:U:H5 | 41:DG:69:ALA:HB1 | 1.73 | 0.51 |
| 35:BA:271(T):C:O2' | 35:BA:271(U):G:H5' | 2.10 | 0.51 |
| 33:D8:30:ARG:CZ | 35:DA:2419:U:O4 | 2.58 | 0.51 |
| 25:D0:41:ARG:HD2 | 25:D0:41:ARG:N | 2.22 | 0.51 |
| 35:DA:1169:G:H1 | 35:DA:1180:C:H42 | 1.59 | 0.51 |
| 35:DA:2148:G:O2' | 35:DA:2149:G:H5' | 2.10 | 0.51 |
| 56:BZ:116:VAL:H | 56:BZ:174:VAL:HG13 | 1.75 | 0.51 |
| 14:CN:3:ARG:CB | 14:CN:3:ARG:HH11 | 2.21 | 0.51 |
| 10:AJ:17:ASP:OD1 | 10:AJ:70:ARG:NH1 | 2.42 | 0.51 |
| 42:BH:33:LEU:HD21 | 42:BH:136:ILE:CG2 | 2.40 | 0.51 |
| 1:CA:335:C:H2' | 1:CA:336:C:C6 | 2.46 | 0.51 |
| 40:BF:112:MET:O | 40:BF:115:ALA:HB3 | 2.10 | 0.51 |
| 35:DA:2579:C:H2' | 35:DA:2580:U:O4' | 2.11 | 0.51 |
| 1:CA:1105:A:H2' | 1:CA:1106:G:C8 | 2.43 | 0.51 |
| 38:DD:131:LEU:HB2 | 38:DD:136:ILE:HD11 | 1.90 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:CL:55:VAL:CG1 | 12:CL:56:ALA:N | 2.72 | 0.51 |
| 1:AA:1298:C:H4' | 1:AA:1299:A:O4' | 2.10 | 0.51 |
| 38:DD:13:ARG:HA | 38:DD:16:MET:HE3 | 1.92 | 0.51 |
| 8:AH:23:SER:HA | 8:AH:63:LEU:CD2 | 2.41 | 0.51 |
| 2:AB:194:PRO:HA | 2:AB:200:ILE:CD1 | 2.40 | 0.51 |
| 1:CA:1298:C:H4' | 1:CA:1299:A:O4' | 2.11 | 0.51 |
| 8:CH:44:PHE:HD1 | 8:CH:79:VAL:HG12 | 1.75 | 0.51 |
| 40:DF:177:ALA:HB1 | 40:DF:178:PRO:HD2 | 1.91 | 0.51 |
| 56:BZ:4:ARG:HG2 | 56:BZ:58:VAL:HB | 1.92 | 0.51 |
| 22:CY:11:C:H2' | 22:CY:12:U:H6 | 1.74 | 0.51 |
| 15:CO:9:GLN:HA | 15:CO:12:ILE:HD12 | 1.91 | 0.51 |
| 35:DA:1355:G:O2' | 35:DA:1356:G:H5' | 2.10 | 0.51 |
| 35:DA:558:G:OP1 | 44:DN:111:PRO:HD2 | 2.10 | 0.51 |
| 22:CV:48:C:H2' | 22:CV:59:U:C1' | 2.39 | 0.51 |
| 35:BA:2709:G:O2' | 35:BA:2710:C:H5' | 2.09 | 0.51 |
| 38:DD:112:GLN:HB2 | 38:DD:115:GLN:HE21 | 1.74 | 0.51 |
| 1:AA:52:G:H2' | 1:AA:53:A:C8 | 2.45 | 0.51 |
| 1:CA:1015:A:H2' | 1:CA:1016:A:C8 | 2.45 | 0.51 |
| 18:AR:31:LEU:H | 18:AR:31:LEU:CD2 | 2.24 | 0.51 |
| 25:B0:4:LYS:HD2 | 35:BA:2252:G:O6 | 2.10 | 0.51 |
| 1:AA:1409:C:H4' | 35:BA:1915:U:O4 | 2.10 | 0.51 |
| 1:CA:1157:A:H4' | 1:CA:1158:C:O5' | 2.10 | 0.51 |
| 1:AA:1158:C:H2' | 1:AA:1158:C:O2 | 2.11 | 0.51 |
| 48:BR:94:TYR:CD1 | 48:BR:94:TYR:N | 2.78 | 0.51 |
| 56:DZ:8:TYR:HD2 | 56:DZ:62:PRO:HG3 | 1.75 | 0.51 |
| 35:DA:2620:C:OP1 | 39:DE:152:LYS:O | 2.28 | 0.51 |
| 35:DA:560:C:H4' | 51:DU:52:ARG:CZ | 2.40 | 0.51 |
| 30:B5:32:PRO:HD2 | 35:BA:2886:G:O2' | 2.10 | 0.51 |
| 50:DT:102:ILE:HG13 | 50:DT:103:ARG:N | 2.25 | 0.51 |
| 41:DG:137:GLU:HA | 41:DG:152:LEU:HD11 | 1.92 | 0.51 |
| 35:DA:2065:C:H2' | 35:DA:2066:C:C6 | 2.46 | 0.51 |
| 46:DP:48:PRO:HG2 | 46:DP:49:ARG:N | 2.16 | 0.51 |
| 49:BS:17:ARG:O | 49:BS:19:LYS:N | 2.39 | 0.51 |
| 31:B6:16:CYS:H | 31:B6:47:THR:CG2 | 2.24 | 0.51 |
| 31:B6:19:ARG:N | 31:B6:19:ARG:HD2 | 2.23 | 0.51 |
| 1:CA:1346:A:H5' | 9:CI:120:ARG:HH12 | 1.73 | 0.51 |
| 1:CA:1372:U:OP1 | 9:CI:72:GLY:N | 2.42 | 0.51 |
| 1:CA:523:A:N1 | 12:CL:92:ASP:HB2 | 2.25 | 0.51 |
| 2:CB:209:ARG:HH12 | 2:CB:236:TYR:HE2 | 1.57 | 0.51 |
| 1:AA:523:A:N1 | 12:AL:92:ASP:HB2 | 2.24 | 0.51 |
| 35:DA:1884:A:H2' | 35:DA:1885:A:C5' | 2.18 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 51:BU:88:ILE:C | 51:BU:90:VAL:H | 2.13 | 0.51 |
| 39:DE:2:LYS:HA | 39:DE:84:PHE:CE2 | 2.45 | 0.51 |
| 39:DE:30:PRO:HD3 | 39:DE:180:ASN:ND2 | 2.26 | 0.51 |
| 39:DE:69:LYS:C | 39:DE:71:GLY:N | 2.63 | 0.51 |
| 56:BZ:52:SER:O | 56:BZ:53:ILE:C | 2.47 | 0.51 |
| 38:DD:35:LYS:N | 38:DD:36:PRO:CD | 2.72 | 0.51 |
| 3:AC:73:PRO:C | 3:AC:75:VAL:H | 2.12 | 0.51 |
| 5:AE:11:ILE:HD11 | 5:AE:33:VAL:CG2 | 2.40 | 0.51 |
| 51:DU:74:LEU:HD12 | 51:DU:74:LEU:C | 2.30 | 0.51 |
| 35:DA:2313:C:H2' | 35:DA:2314:C:C6 | 2.39 | 0.51 |
| 41:DG:16:ARG:N | 41:DG:17:PRO:HD2 | 2.25 | 0.51 |
| 53:DW:37:ARG:HG3 | 53:DW:37:ARG:HH11 | 1.75 | 0.51 |
| 55:BY:37:VAL:O | 55:BY:38:ILE:HG12 | 2.10 | 0.51 |
| 41:BG:111:LEU:HB2 | 41:BG:112:PRO:HD3 | 1.92 | 0.51 |
| 22:AY:28:G:H2' | 22:AY:29:G:H8 | 1.75 | 0.51 |
| 3:AC:30:ARG:NH1 | 14:AN:35:ARG:HA | 2.24 | 0.51 |
| 35:BA:2307:G:C2 | 35:BA:2308:G:H5'' | 2.45 | 0.51 |
| 46:DP:107:LYS:C | 46:DP:109:GLY:N | 2.63 | 0.51 |
| 43:BI:101:LEU:HG | 43:BI:109:ILE:CD1 | 2.40 | 0.51 |
| 43:BI:109:ILE:N | 43:BI:109:ILE:HD12 | 2.25 | 0.51 |
| 35:DA:271(D):G:H1 | 35:DA:271(T):C:N4 | 2.08 | 0.51 |
| 31:D6:51:GLU:O | 31:D6:52:VAL:HB | 2.10 | 0.51 |
| 26:D1:82:LEU:HD13 | 26:D1:82:LEU:N | 2.26 | 0.51 |
| 1:CA:1028:C:H2' | 1:CA:1033:G:H22 | 1.75 | 0.51 |
| 1:AA:1028:C:H2' | 1:AA:1033:G:H22 | 1.76 | 0.51 |
| 35:BA:2159:G:N2 | 35:BA:2160:G:H1' | 2.25 | 0.51 |
| 42:BH:23:ARG:O | 42:BH:24:VAL:HG13 | 2.10 | 0.51 |
| 50:BT:23:ARG:HA | 50:BT:52:ILE:HD11 | 1.92 | 0.51 |
| 23:CW:38:A:H2' | 23:CW:39:U:H5'' | 1.92 | 0.51 |
| 47:DQ:104:PHE:O | 47:DQ:105:GLU:HB3 | 2.11 | 0.51 |
| 35:BA:1532:C:H2' | 35:BA:1533:G:N2 | 2.26 | 0.51 |
| 46:BP:13:ASN:O | 46:BP:15:ARG:N | 2.43 | 0.51 |
| 1:CA:1478:C:H2' | 1:CA:1479:C:C6 | 2.45 | 0.51 |
| 9:AI:37:PHE:HB3 | 9:AI:43:ALA:CB | 2.40 | 0.51 |
| 40:DF:80:ALA:O | 40:DF:83:PHE:HB2 | 2.09 | 0.51 |
| 33:B8:19:SER:HB2 | 33:B8:21:LYS:HG3 | 1.92 | 0.51 |
| 1:CA:709:G:H2' | 1:CA:710:G:H8 | 1.75 | 0.51 |
| 2:AB:178:ARG:CB | 2:AB:178:ARG:HH11 | 2.22 | 0.51 |
| 35:BA:154(A):C:N4 | 35:BA:171:G:N1 | 2.59 | 0.51 |
| 48:DR:12:ARG:HH11 | 48:DR:12:ARG:CG | 2.23 | 0.51 |
| 16:CP:81:ARG:HD3 | 16:CP:83:GLU:OE2 | 2.10 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:CK:125:PHE:CD1 | 11:CK:125:PHE:N | 2.79 | 0.51 |
| 38:BD:210:GLY:C | 38:BD:212:SER:N | 2.61 | 0.51 |
| 35:BA:1188:U:H4' | 52:BV:79:VAL:HG22 | 1.91 | 0.51 |
| 35:DA:2648:C:H2' | 35:DA:2649:U:H6 | 1.76 | 0.51 |
| 1:AA:59:A:C5' | 1:AA:60:A:H5'' | 2.41 | 0.51 |
| 2:CB:19:HIS:ND1 | 2:CB:189:ASP:OD2 | 2.42 | 0.51 |
| 3:AC:23:TYR:O | 3:AC:24:ALA:HB2 | 2.09 | 0.51 |
| 27:D2:36:ARG:O | 27:D2:39:ALA:HB3 | 2.11 | 0.51 |
| 12:AL:119:LYS:O | 12:AL:120:TYR:HB2 | 2.10 | 0.51 |
| 35:DA:2590:A:OP2 | 38:DD:238:GLY:HA2 | 2.10 | 0.51 |
| 35:BA:2547:U:H2' | 35:BA:2548:G:H8 | 1.74 | 0.51 |
| 18:CR:31:LEU:HD23 | 18:CR:31:LEU:H | 1.73 | 0.51 |
| 1:CA:644:G:C2' | 1:CA:645:C:H5' | 2.40 | 0.51 |
| 1:CA:1158:C:N3 | 1:CA:1181:G:N2 | 2.57 | 0.51 |
| 4:AD:108:LEU:HB3 | 4:AD:110:PHE:CE1 | 2.44 | 0.51 |
| 35:DA:228:A:H2' | 35:DA:230:U:O4' | 2.11 | 0.51 |
| 4:CD:128:VAL:HG12 | 4:CD:129:ASN:ND2 | 2.25 | 0.51 |
| 1:CA:1444:C:O2' | 1:CA:1445:C:H5' | 2.11 | 0.51 |
| 35:DA:2825:C:H2' | 35:DA:2826:A:O4' | 2.10 | 0.51 |
| 1:AA:132:C:O2' | 1:AA:133:U:H5' | 2.10 | 0.51 |
| 1:AA:261:U:OP1 | 20:AT:79:ARG:NH2 | 2.43 | 0.51 |
| 15:CO:38:ARG:HG2 | 15:CO:38:ARG:HH11 | 1.75 | 0.51 |
| 16:CP:49:LEU:HG | 16:CP:49:LEU:O | 2.10 | 0.51 |
| 35:DA:2141:G:H2' | 35:DA:2142:C:C6 | 2.45 | 0.51 |
| 30:D5:32:PRO:HD2 | 35:DA:2886:G:O2' | 2.09 | 0.51 |
| 1:CA:692:U:H2' | 1:CA:694:A:OP2 | 2.11 | 0.51 |
| 41:BG:47:LYS:N | 41:BG:51:ARG:HD2 | 2.25 | 0.51 |
| 31:B6:14:THR:O | 31:B6:49:HIS:HA | 2.11 | 0.51 |
| 9:AI:13:ALA:HA | 9:AI:67:GLY:O | 2.10 | 0.51 |
| 9:CI:102:LEU:HD23 | 9:CI:103:THR:N | 2.25 | 0.51 |
| 9:CI:80:GLY:O | 9:CI:83:ARG:HB3 | 2.10 | 0.51 |
| 9:CI:53:VAL:HG11 | 9:CI:85:LEU:HD22 | 1.91 | 0.51 |
| 49:DS:89:ARG:O | 49:DS:90:GLY:O | 2.28 | 0.51 |
| 50:BT:28:VAL:HG21 | 50:BT:88:ILE:CD1 | 2.40 | 0.51 |
| 46:BP:47:ASP:HB3 | 46:BP:48:PRO:O | 2.10 | 0.51 |
| 1:AA:1277:C:O2' | 1:AA:1278:U:H5' | 2.09 | 0.51 |
| 41:DG:47:LYS:H | 41:DG:51:ARG:HD2 | 1.76 | 0.51 |
| 5:AE:67:VAL:HG21 | 5:AE:140:ARG:HA | 1.93 | 0.51 |
| 1:AA:192:U:O4' | 20:AT:103:GLY:HA2 | 2.11 | 0.51 |
| 41:DG:125:PHE:CD1 | 41:DG:125:PHE:N | 2.77 | 0.51 |
| 22:AV:5:G:H1' | 22:AV:69:G:N2 | 2.25 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 48:DR:113:LEU:C | 48:DR:113:LEU:HD12 | 2.30 | 0.51 |
| 44:BN:17:ASP:C | 44:BN:19:GLU:H | 2.13 | 0.51 |
| 46:DP:21:ARG:HD3 | 46:DP:29:LYS:HE3 | 1.93 | 0.51 |
| 35:BA:271(D):G:O2' | 35:BA:271(E):U:H5' | 2.10 | 0.51 |
| 20:AT:26:ASN:HD22 | 20:AT:26:ASN:N | 2.08 | 0.51 |
| 33:B8:35:GLN:O | 33:B8:36:LYS:HG3 | 2.11 | 0.51 |
| 35:DA:2266:A:H5' | 35:DA:2267:A:N7 | 2.25 | 0.51 |
| 41:BG:126:ASP:HA | 41:BG:166:ASP:OD1 | 2.11 | 0.51 |
| 35:BA:847:U:C2' | 35:BA:848:G:H5'' | 2.36 | 0.51 |
| 43:DI:81:VAL:CG2 | 43:DI:142:VAL:HB | 2.41 | 0.51 |
| 43:DI:123:LEU:HD11 | 43:DI:144:VAL:HG13 | 1.91 | 0.51 |
| 35:DA:1847:A:H3' | 35:DA:1848:A:C5' | 2.40 | 0.51 |
| 30:B5:54:GLY:O | 30:B5:56:LYS:HD2 | 2.11 | 0.51 |
| 35:BA:1040:C:O2' | 35:BA:1041:C:P | 2.69 | 0.51 |
| 38:BD:146:GLU:HG2 | 38:BD:152:GLY:C | 2.30 | 0.51 |
| 35:DA:911:A:C5 | 47:DQ:9:TYR:CD1 | 2.98 | 0.51 |
| 22:CY:16:U:H3' | 22:CY:17:C:C5' | 2.37 | 0.51 |
| 35:DA:2580:U:OP1 | 39:DE:131:ALA:HB2 | 2.11 | 0.51 |
| 35:BA:2171:A:O2' | 35:BA:2172:U:O5' | 2.28 | 0.51 |
| 35:DA:271(M):G:C2' | 35:DA:271(N):U:H5'' | 2.38 | 0.51 |
| 2:CB:169:LYS:HD2 | 2:CB:170:GLU:OE2 | 2.10 | 0.51 |
| 52:DV:21:ARG:N | 52:DV:21:ARG:HD3 | 2.24 | 0.51 |
| 11:CK:21:ILE:HG13 | 11:CK:30:VAL:HG12 | 1.92 | 0.51 |
| 12:CL:32:PHE:HB3 | 12:CL:84:LEU:HD21 | 1.92 | 0.51 |
| 1:AA:1316:G:H4' | 14:AN:18:VAL:CG1 | 2.40 | 0.51 |
| 1:CA:1298:C:H4' | 1:CA:1299:A:C4 | 2.44 | 0.51 |
| 40:BF:4:VAL:HA | 40:BF:18:ARG:O | 2.11 | 0.51 |
| 36:BB:111:G:H2' | 36:BB:112:U:O4' | 2.11 | 0.51 |
| 1:CA:794:A:H4' | 1:CA:1521:G:O2' | 2.10 | 0.51 |
| 3:CC:89:GLU:OE2 | 3:CC:93:LYS:HB2 | 2.10 | 0.51 |
| 1:AA:79:G:O6 | 1:AA:90:U:H4' | 2.09 | 0.51 |
| 35:DA:2399:G:H2' | 35:DA:2399:G:N3 | 2.25 | 0.51 |
| 35:BA:2590:A:OP2 | 38:BD:238:GLY:HA2 | 2.10 | 0.51 |
| 1:AA:554:C:H2' | 1:AA:555:C:C6 | 2.45 | 0.51 |
| 35:DA:2777:G:C4' | 35:DA:2778:A:H5' | 2.40 | 0.51 |
| 1:CA:1288:A:O2' | 1:CA:1289:A:H5' | 2.11 | 0.51 |
| 1:AA:1466:C:C2' | 1:AA:1467:G:H5' | 2.39 | 0.51 |
| 12:CL:126:LYS:HD2 | 12:CL:127:GLU:H | 1.75 | 0.51 |
| 35:BA:2051:A:OP2 | 35:BA:2051:A:H8 | 1.94 | 0.51 |
| 44:DN:7:LYS:O | 44:DN:8:GLN:C | 2.49 | 0.51 |
| 45:DO:111:PHE:O | 45:DO:115:VAL:HG23 | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:AC:58:GLU:H | 3:AC:65:ALA:HB3 | 1.75 | 0.51 |
| 37:BC:74:VAL:HG12 | 37:BC:76:ALA:H | 1.75 | 0.51 |
| 1:AA:139:G:H2' | 1:AA:140:A:H8 | 1.76 | 0.51 |
| 1:AA:525:C:H2' | 1:AA:526:C:H6 | 1.75 | 0.51 |
| 4:CD:132:ARG:HD2 | 4:CD:132:ARG:O | 2.10 | 0.51 |
| 2:AB:41:ILE:HD12 | 2:AB:41:ILE:N | 2.25 | 0.51 |
| 35:DA:1956:U:H2' | 35:DA:1957:C:H5' | 1.93 | 0.51 |
| 35:BA:2825:C:H2' | 35:BA:2826:A:O4' | 2.09 | 0.51 |
| 56:DZ:102:LEU:HD12 | 56:DZ:102:LEU:N | 2.25 | 0.51 |
| 56:DZ:67:LEU:HD23 | 56:DZ:90:VAL:HG11 | 1.93 | 0.51 |
| 41:BG:43:LEU:HB2 | 41:BG:88:ILE:CG2 | 2.40 | 0.51 |
| 31:B6:19:ARG:O | 31:B6:20:ASN:O | 2.27 | 0.51 |
| 1:AA:952:U:O2' | 1:AA:953:G:H5' | 2.11 | 0.51 |
| 22:AV:15:G:O2' | 22:AV:16:U:H5' | 2.11 | 0.51 |
| 51:BU:95:LEU:CD1 | 52:BV:4:ILE:HG23 | 2.39 | 0.51 |
| 36:BB:74:U:H2' | 36:BB:75:G:O4' | 2.10 | 0.51 |
| 39:BE:175:VAL:HG13 | 39:BE:175:VAL:O | 2.10 | 0.51 |
| 3:AC:70:VAL:CG1 | 3:AC:71:ALA:H | 2.00 | 0.51 |
| 5:AE:76:ILE:HD12 | 5:AE:118:ILE:CD1 | 2.41 | 0.51 |
| 42:BH:47:GLU:C | 42:BH:49:VAL:H | 2.14 | 0.51 |
| 35:DA:2732:G:C3' | 35:DA:2733:A:H5' | 2.41 | 0.51 |
| 35:DA:2469:A:H3' | 35:DA:2470:G:O4' | 2.10 | 0.51 |
| 22:AY:26:A:H2' | 22:AY:27:G:H5' | 1.92 | 0.51 |
| 10:CJ:4:ILE:HA | 10:CJ:100:THR:CG2 | 2.32 | 0.51 |
| 10:AJ:99:LYS:O | 10:AJ:100:THR:HG23 | 2.11 | 0.51 |
| 10:AJ:30:SER:O | 10:AJ:80:LYS:HB3 | 2.10 | 0.51 |
| 2:CB:114:ARG:NH1 | 2:CB:118:LEU:HD21 | 2.25 | 0.51 |
| 35:BA:1140:C:H5'' | 44:BN:66:LYS:HZ3 | 1.76 | 0.51 |
| 41:DG:61:ALA:CA | 41:DG:64:THR:HG22 | 2.35 | 0.51 |
| 37:BC:95:GLY:CA | 37:BC:99:ILE:HD12 | 2.40 | 0.51 |
| 15:CO:69:TYR:CE1 | 15:CO:73:GLU:HG3 | 2.45 | 0.51 |
| 36:BB:109:C:H5' | 36:BB:110:G:O5' | 2.11 | 0.51 |
| 43:BI:79:ILE:HD11 | 43:BI:100:ALA:HB1 | 1.91 | 0.51 |
| 35:BA:2118:U:H5 | 35:BA:2148:G:O2' | 1.92 | 0.51 |
| 56:BZ:120:ILE:HG21 | 56:BZ:170:THR:HG22 | 1.93 | 0.51 |
| 1:CA:1203:C:H2' | 1:CA:1204:A:C8 | 2.45 | 0.51 |
| 1:AA:107:G:C2' | 1:AA:108:G:H5' | 2.40 | 0.51 |
| 35:BA:70:G:H2' | 35:BA:113:G:O2' | 2.11 | 0.51 |
| 19:CS:14:HIS:C | 19:CS:15:LEU:HD22 | 2.31 | 0.51 |
| 1:AA:1237:C:O4' | 1:AA:1334:G:N2 | 2.43 | 0.51 |
| 42:BH:33:LEU:HD12 | 42:BH:75:ALA:HA | 1.93 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:DB:42:C:C4' | 41:DG:67:LYS:O | 2.58 | 0.51 |
| 54:BX:12:VAL:HG11 | 54:BX:27:THR:CG2 | 2.40 | 0.51 |
| 3:CC:20:SER:HB2 | 3:CC:40:ARG:HH22 | 1.76 | 0.51 |
| 35:DA:1532:C:H2' | 35:DA:1533:G:N2 | 2.26 | 0.51 |
| 33:B8:39:LYS:HA | 33:B8:42:ARG:NH1 | 2.25 | 0.51 |
| 1:AA:826:C:H2' | 1:AA:827:U:C6 | 2.46 | 0.51 |
| 19:AS:31:ILE:CG2 | 19:AS:49:ILE:HG13 | 2.41 | 0.51 |
| 35:BA:542:C:H2' | 35:BA:543:C:OP1 | 2.11 | 0.51 |
| 35:BA:1987:G:H8 | 35:BA:1987:G:C5' | 2.22 | 0.51 |
| 45:DO:24:VAL:HG23 | 45:DO:33:ALA:HB2 | 1.91 | 0.51 |
| 10:AJ:45:ARG:NH1 | 14:AN:36:PHE:CE2 | 2.78 | 0.51 |
| 2:AB:165:VAL:HG23 | 2:AB:166:ASP:N | 2.24 | 0.51 |
| 39:BE:81:ILE:O | 39:BE:82:ARG:CB | 2.57 | 0.51 |
| 1:AA:386:C:C2' | 1:AA:387:U:H5' | 2.40 | 0.51 |
| 38:DD:10:THR:HG23 | 38:DD:13:ARG:HB2 | 1.92 | 0.51 |
| 8:AH:44:PHE:HD1 | 8:AH:79:VAL:HG12 | 1.75 | 0.51 |
| 1:CA:542:G:H5' | 4:CD:41:GLY:CA | 2.40 | 0.51 |
| 1:CA:370:C:O2' | 1:CA:371:G:H5' | 2.10 | 0.51 |
| 9:AI:125:TYR:HD2 | 9:AI:126:SER:H | 1.59 | 0.51 |
| 51:DU:98:LEU:CD2 | 52:DV:2:PHE:HZ | 2.22 | 0.51 |
| 52:BV:2:PHE:HB3 | 52:BV:41:GLY:C | 2.30 | 0.51 |
| 22:AY:55:U:H3' | 22:AY:55:U:O2 | 2.11 | 0.51 |
| 35:DA:1825:A:OP1 | 38:DD:249:PRO:HD3 | 2.10 | 0.51 |
| 1:CA:1406:U:C2' | 1:CA:1407:C:H5' | 2.41 | 0.51 |
| 35:DA:1926:U:H2' | 35:DA:1928:A:OP2 | 2.11 | 0.51 |
| 38:BD:166:GLN:N | 38:BD:166:GLN:HE21 | 2.09 | 0.51 |
| 35:DA:1410:G:O2' | 35:DA:1411:C:H5' | 2.11 | 0.51 |
| 13:AM:14:ARG:HA | 13:AM:43:THR:O | 2.11 | 0.51 |
| 23:AW:14:A:H1' | 23:AW:22:G:N2 | 2.26 | 0.51 |
| 1:AA:1288:A:O2' | 1:AA:1289:A:H5' | 2.10 | 0.51 |
| 4:CD:173:TRP:CD1 | 4:CD:174:LEU:HG | 2.44 | 0.51 |
| 1:AA:364:A:H2' | 1:AA:365:U:O2 | 2.10 | 0.51 |
| 9:CI:18:PHE:HB2 | 9:CI:62:TYR:O | 2.11 | 0.51 |
| 1:CA:1169:A:H2' | 1:CA:1170:A:C8 | 2.45 | 0.51 |
| 35:BA:270:A:O2' | 35:BA:271:A:H5' | 2.11 | 0.51 |
| 23:AW:25:C:O2' | 23:AW:26:A:H5' | 2.10 | 0.51 |
| 1:AA:688:G:H2' | 1:AA:689:C:H6 | 1.74 | 0.51 |
| 40:DF:24:LEU:CB | 40:DF:25:PRO:CD | 2.88 | 0.51 |
| 9:AI:102:LEU:HD23 | 9:AI:103:THR:N | 2.25 | 0.51 |
| 31:D6:37:ARG:O | 31:D6:48:VAL:O | 2.29 | 0.51 |
| 50:BT:28:VAL:O | 50:BT:29:ARG:CB | 2.59 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:DG:51:ARG:C | 41:DG:53:LEU:N | 2.64 | 0.51 |
| 35:BA:661:C:H4' | 46:BP:16:ARG:HH12 | 1.76 | 0.51 |
| 51:DU:83:LEU:CG | 51:DU:88:ILE:HD11 | 2.32 | 0.51 |
| 52:DV:34:GLU:O | 52:DV:36:PRO:CD | 2.58 | 0.51 |
| 3:AC:138:VAL:C | 3:AC:140:ARG:H | 2.14 | 0.51 |
| 35:BA:2646:C:H2' | 35:BA:2647:U:O4' | 2.11 | 0.51 |
| 35:DA:2481:G:O2' | 35:DA:2482:G:P | 2.69 | 0.51 |
| 53:DW:88:ARG:HB2 | 53:DW:92:ARG:CB | 2.31 | 0.51 |
| 46:DP:112:LEU:HD22 | 46:DP:113:LYS:N | 2.26 | 0.51 |
| 35:BA:2863:C:C3' | 35:BA:2864:G:H5'' | 2.41 | 0.51 |
| 37:BC:78:ALA:HB3 | 37:BC:83:ILE:HD11 | 1.93 | 0.51 |
| 31:B6:51:GLU:O | 31:B6:52:VAL:HG23 | 2.11 | 0.51 |
| 45:BO:89:ASN:C | 45:BO:91:LEU:H | 2.12 | 0.51 |
| 55:DY:46:LYS:HD3 | 55:DY:47:LYS:NZ | 2.25 | 0.51 |
| 35:BA:27:G:N2 | 35:BA:512:G:C2' | 2.74 | 0.51 |
| 26:D1:78:LYS:C | 26:D1:80:LEU:H | 2.14 | 0.51 |
| 41:BG:125:PHE:HA | 41:BG:128:ARG:HG2 | 1.92 | 0.51 |
| 35:BA:807:U:H2' | 35:BA:808:G:C8 | 2.42 | 0.51 |
| 35:DA:2190:G:H8 | 35:DA:2190:G:H5' | 1.76 | 0.51 |
| 55:DY:6:HIS:NE2 | 55:DY:32:PRO:HB3 | 2.26 | 0.51 |
| 19:CS:40:ILE:HD13 | 19:CS:62:ILE:CD1 | 2.39 | 0.51 |
| 39:DE:201:THR:OG1 | 39:DE:202:LYS:N | 2.42 | 0.51 |
| 23:CW:18:G:N2 | 23:CW:55:U:H6 | 2.09 | 0.51 |
| 47:DQ:109:VAL:HG12 | 47:DQ:113:GLN:HB2 | 1.92 | 0.51 |
| 38:DD:66:ASP:OD2 | 38:DD:69:ARG:HA | 2.10 | 0.51 |
| 8:CH:25:ASP:OD2 | 8:CH:60:ARG:HG2 | 2.10 | 0.51 |
| 35:BA:2345:G:H5'' | 35:BA:2347:C:O4' | 2.11 | 0.51 |
| 50:BT:96:ARG:HG2 | 50:BT:96:ARG:NH1 | 2.25 | 0.51 |
| 8:AH:44:PHE:HA | 8:AH:79:VAL:HG11 | 1.92 | 0.51 |
| 47:BQ:111:GLU:CD | 47:BQ:133:ARG:HH21 | 2.13 | 0.51 |
| 35:BA:1934:C:O2' | 35:BA:1935:G:H5' | 2.11 | 0.51 |
| 35:BA:1722:A:N1 | 35:BA:1741:A:C2 | 2.78 | 0.51 |
| 1:CA:333:G:O2' | 1:CA:334:C:H5' | 2.11 | 0.51 |
| 45:DO:119:PRO:HB2 | 50:DT:68:TYR:CE1 | 2.45 | 0.51 |
| 1:AA:731:G:O2' | 1:AA:732:C:H5' | 2.10 | 0.51 |
| 35:BA:1443:G:H2' | 35:BA:1444:G:H5' | 1.93 | 0.51 |
| 13:CM:29:ARG:HD3 | 13:CM:64:TRP:CE2 | 2.46 | 0.51 |
| 35:BA:1794:U:O2' | 35:BA:1795:C:H5' | 2.10 | 0.51 |
| 35:BA:839:U:H2' | 35:BA:840:C:C6 | 2.45 | 0.51 |
| 35:BA:2562:U:H2' | 35:BA:2563:U:H5' | 1.93 | 0.51 |
| 49:BS:22:GLY:O | 49:BS:23:ARG:O | 2.29 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:DG:25:TYR:HA | 41:DG:30:GLU:OE2 | 2.11 | 0.51 |
| 52:BV:68:LYS:NZ | 52:BV:68:LYS:HB2 | 2.26 | 0.51 |
| 7:AG:76:ARG:HH11 | 7:AG:76:ARG:HG2 | 1.74 | 0.51 |
| 35:BA:228:A:H2' | 35:BA:230:U:O4' | 2.10 | 0.51 |
| 36:DB:40:U:H1' | 36:DB:45:A:H61 | 1.74 | 0.51 |
| 46:DP:63:PRO:C | 46:DP:65:ARG:N | 2.63 | 0.51 |
| 40:DF:164:ARG:HG2 | 40:DF:164:ARG:HH11 | 1.75 | 0.51 |
| 1:AA:980:C:H3' | 1:AA:981:U:C6 | 2.46 | 0.51 |
| 46:BP:49:ARG:HH21 | 46:BP:50:ARG:HH22 | 1.58 | 0.51 |
| 6:CF:5:GLU:HG2 | 6:CF:62:TRP:CZ2 | 2.46 | 0.51 |
| 55:DY:81:LYS:NZ | 55:DY:97:ARG:O | 2.39 | 0.51 |
| 41:DG:86:MET:O | 41:DG:87:PRO:C | 2.47 | 0.51 |
| 35:BA:661:C:H2' | 35:BA:662:G:C8 | 2.45 | 0.51 |
| 38:DD:35:LYS:NZ | 38:DD:61:LEU:HG | 2.26 | 0.51 |
| 5:AE:35:GLY:HA2 | 5:AE:40:ARG:O | 2.10 | 0.51 |
| 5:AE:76:ILE:CG2 | 5:AE:77:PRO:HD2 | 2.39 | 0.51 |
| 37:DC:36:LYS:HG3 | 37:DC:37:PHE:N | 2.18 | 0.51 |
| 52:BV:19:LYS:CG | 52:BV:20:LEU:N | 2.69 | 0.51 |
| 41:DG:131:TYR:HE2 | 41:DG:133:LEU:HD23 | 1.76 | 0.51 |
| 38:BD:133:LEU:HD23 | 38:BD:189:CYS:O | 2.11 | 0.51 |
| 43:BI:4:ILE:HD11 | 43:BI:44:LEU:HD13 | 1.93 | 0.51 |
| 37:DC:95:GLY:CA | 37:DC:99:ILE:HD12 | 2.40 | 0.51 |
| 54:DX:36:LYS:O | 54:DX:39:ILE:HB | 2.11 | 0.51 |
| 42:DH:141:VAL:CG1 | 42:DH:142:GLY:N | 2.73 | 0.51 |
| 50:BT:54:ARG:HG2 | 50:BT:54:ARG:NH1 | 2.26 | 0.51 |
| 35:BA:1762:A:C8 | 35:BA:1762:A:O5' | 2.64 | 0.51 |
| 43:DI:94:ALA:C | 43:DI:96:ASP:H | 2.13 | 0.51 |
| 31:D6:12:GLU:HA | 31:D6:23:THR:HA | 1.93 | 0.51 |
| 41:BG:16:ARG:HE | 41:BG:31:VAL:HG11 | 1.75 | 0.51 |
| 8:CH:83:ILE:O | 8:CH:83:ILE:HG23 | 2.10 | 0.51 |
| 35:BA:1484:G:H22 | 35:BA:1505:C:H5 | 1.59 | 0.51 |
| 38:DD:28:GLU:H | 38:DD:29:PRO:CD | 2.20 | 0.51 |
| 43:BI:89:TYR:HB3 | 1:CA:368:U:C4 | 2.45 | 0.51 |
| 40:BF:63:LYS:HA | 40:BF:76:GLY:O | 2.09 | 0.51 |
| 35:BA:1257:C:H4' | 40:BF:83:PHE:CE2 | 2.46 | 0.51 |
| 25:B0:60:PHE:CZ | 35:BA:2365:G:H4' | 2.45 | 0.51 |
| 35:DA:2196:C:O2' | 35:DA:2197:U:H5' | 2.10 | 0.51 |
| 47:DQ:133:ARG:O | 47:DQ:134:ARG:CG | 2.58 | 0.51 |
| 13:AM:91:ARG:HB2 | 13:AM:98:VAL:HG22 | 1.93 | 0.51 |
| 1:CA:186:C:H4' | 20:CT:82:SER:HB3 | 1.92 | 0.51 |
| 30:D5:42:PRO:HB2 | 30:D5:43:HIS:HD2 | 1.75 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 7:CG:53:LYS:O | 7:CG:54:THR:CB | 2.58 | 0.51 |
| 1:AA:651:C:H2' | 1:AA:652:U:C6 | 2.46 | 0.51 |
| 39:BE:134:ILE:O | 39:BE:134:ILE:HG12 | 2.10 | 0.51 |
| 1:AA:1251:A:H1' | 1:AA:1369:C:O2' | 2.11 | 0.51 |
| 47:BQ:109:VAL:HG12 | 47:BQ:113:GLN:HB2 | 1.92 | 0.51 |
| 1:AA:186:C:H4' | 20:AT:82:SER:HB3 | 1.93 | 0.51 |
| 2:AB:101:MET:C | 2:AB:102:LEU:HD12 | 2.30 | 0.51 |
| 12:CL:32:PHE:HB3 | 12:CL:84:LEU:CD2 | 2.41 | 0.51 |
| 35:DA:1566:A:C4 | 38:DD:214:TRP:CE3 | 2.99 | 0.51 |
| 1:CA:1299:A:C8 | 1:CA:1301:U:H1' | 2.45 | 0.51 |
| 26:B1:29:GLY:O | 26:B1:30:VAL:HG22 | 2.11 | 0.51 |
| 35:DA:1042:G:H1' | 35:DA:1114:G:H22 | 1.76 | 0.51 |
| 48:BR:7:GLY:O | 48:BR:8:ARG:CB | 2.59 | 0.51 |
| 35:DA:1224:C:H4' | 52:DV:86:GLY:O | 2.11 | 0.51 |
| 12:CL:119:LYS:O | 12:CL:120:TYR:HB2 | 2.10 | 0.51 |
| 41:DG:77:ILE:N | 41:DG:83:ARG:HB3 | 2.25 | 0.51 |
| 42:BH:140:LYS:O | 42:BH:144:VAL:HG23 | 2.10 | 0.51 |
| 11:AK:41:THR:HG21 | 11:AK:71:LYS:CB | 2.41 | 0.51 |
| 25:B0:35:ASN:HD22 | 25:B0:35:ASN:H | 1.59 | 0.51 |
| 1:AA:933:G:OP2 | 7:AG:3:ARG:HB3 | 2.11 | 0.51 |
| 53:DW:28:SER:HA | 53:DW:70:TYR:HB2 | 1.92 | 0.51 |
| 34:D9:16:VAL:HG11 | 35:DA:1032:A:O3' | 2.10 | 0.51 |
| 1:CA:681:C:O2' | 1:CA:682:G:H5' | 2.11 | 0.51 |
| 9:CI:41:VAL:HG12 | 9:CI:41:VAL:O | 2.10 | 0.51 |
| 18:AR:24:ALA:C | 18:AR:26:LEU:H | 2.14 | 0.51 |
| 56:DZ:68:PRO:O | 56:DZ:69:THR:HG23 | 2.10 | 0.51 |
| 33:D8:56:GLU:O | 33:D8:59:LYS:HE3 | 2.10 | 0.51 |
| 40:DF:187:VAL:HG13 | 46:DP:5:ASP:O | 2.11 | 0.51 |
| 12:AL:60:LEU:HD22 | 12:AL:60:LEU:N | 2.25 | 0.51 |
| 35:BA:1243:G:O2' | 46:BP:9:ASN:HA | 2.10 | 0.51 |
| 40:BF:24:LEU:CB | 40:BF:25:PRO:CD | 2.89 | 0.51 |
| 55:BY:96:ILE:HG22 | 55:BY:97:ARG:N | 2.26 | 0.51 |
| 35:DA:2801(A):A:C4' | 35:DA:2802:G:H5' | 2.23 | 0.51 |
| 55:DY:76:CYS:HG | 55:DY:77:PRO:HD2 | 1.69 | 0.51 |
| 55:DY:97:ARG:HG2 | 55:DY:97:ARG:HH11 | 1.76 | 0.51 |
| 49:BS:96:GLY:C | 49:BS:98:VAL:H | 2.14 | 0.51 |
| 22:CV:20:U:C3' | 22:CV:21:A:H5" | 2.39 | 0.51 |
| 35:DA:1797:C:O2' | 38:DD:259:THR:CG2 | 2.58 | 0.51 |
| 28:B3:48:GLU:O | 28:B3:51:ALA:HB2 | 2.11 | 0.51 |
| 6:AF:40:VAL:O | 6:AF:40:VAL:HG13 | 2.10 | 0.51 |
| 45:BO:68:GLU:HB3 | 45:BO:78:ARG:HB2 | 1.93 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:BO:66:LYS:NZ | 45:BO:78:ARG:HD2 | 2.26 | 0.51 |
| 10:AJ:7:LYS:HD3 | 10:AJ:71:LEU:HD13 | 1.93 | 0.51 |
| 28:D3:31:LEU:C | 28:D3:33:GLN:H | 2.13 | 0.51 |
| 39:BE:8:LYS:HE3 | 39:BE:188:VAL:CG1 | 2.40 | 0.51 |
| 45:DO:36:GLY:HA3 | 45:DO:109:LYS:HG3 | 1.93 | 0.51 |
| 25:B0:41:ARG:N | 25:B0:41:ARG:HD2 | 2.20 | 0.51 |
| 42:BH:85:LYS:HD3 | 42:BH:133:VAL:HB | 1.93 | 0.51 |
| 35:DA:1762:A:C8 | 35:DA:1762:A:O5' | 2.63 | 0.51 |
| 30:D5:6:VAL:HG23 | 35:DA:2015:A:C2 | 2.45 | 0.51 |
| 56:BZ:153:SER:HB2 | 56:BZ:167:PRO:CG | 2.36 | 0.51 |
| 19:CS:31:ILE:CG2 | 19:CS:49:ILE:HG13 | 2.41 | 0.51 |
| 42:BH:27:LYS:HE3 | 42:BH:32:GLU:OE1 | 2.11 | 0.51 |
| 38:DD:28:GLU:CD | 38:DD:28:GLU:H | 2.14 | 0.51 |
| 56:BZ:156:LYS:O | 56:BZ:157:LEU:HG | 2.09 | 0.51 |
| 3:CC:36:ASP:O | 3:CC:39:ILE:HB | 2.11 | 0.51 |
| 40:BF:57:VAL:HG12 | 40:BF:59:TYR:CD1 | 2.46 | 0.51 |
| 47:DQ:34:LEU:HD12 | 47:DQ:130:LYS:O | 2.10 | 0.51 |
| 1:AA:865:A:H2 | 1:AA:918:A:H4' | 1.75 | 0.51 |
| 35:DA:322:A:H3' | 40:DF:169:ASN:ND2 | 2.24 | 0.51 |
| 35:BA:1853:A:N1 | 35:BA:2087:G:H1' | 2.26 | 0.51 |
| 50:BT:129:ARG:NH1 | 50:BT:130:ALA:O | 2.43 | 0.51 |
| 7:CG:145:ALA:O | 7:CG:147:ALA:N | 2.44 | 0.51 |
| 52:DV:1:MET:HE1 | 52:DV:43:GLU:OE2 | 2.11 | 0.51 |
| 10:CJ:40:LEU:HB2 | 10:CJ:41:PRO:HD2 | 1.93 | 0.51 |
| 1:CA:1041:A:H2' | 1:CA:1042:G:C8 | 2.46 | 0.51 |
| 10:AJ:40:LEU:HG | 10:AJ:69:ASN:HB2 | 1.93 | 0.51 |
| 1:CA:26:A:H61 | 1:CA:558:G:H1' | 1.73 | 0.51 |
| 30:B5:30:LEU:HD23 | 30:B5:41:PRO:CA | 2.40 | 0.51 |
| 3:AC:66:VAL:O | 3:AC:66:VAL:HG12 | 2.11 | 0.51 |
| 1:AA:413:G:H1' | 1:AA:428:G:H21 | 1.76 | 0.51 |
| 38:DD:18:VAL:CG1 | 38:DD:19:ALA:N | 2.73 | 0.51 |
| 17:AQ:76:LEU:HG | 17:AQ:77:VAL:H | 1.75 | 0.51 |
| 48:BR:92:GLY:HA2 | 48:BR:94:TYR:CE1 | 2.46 | 0.51 |
| 43:BI:29:TYR:HE1 | 43:BI:33:ARG:HE | 1.59 | 0.51 |
| 26:D1:75:GLU:C | 26:D1:77:ALA:H | 2.14 | 0.51 |
| 51:BU:21:ALA:O | 51:BU:22:LYS:C | 2.49 | 0.51 |
| 3:AC:139:GLN:O | 3:AC:143:GLU:HB2 | 2.11 | 0.51 |
| 56:BZ:11:GLU:OE2 | 56:BZ:11:GLU:N | 2.43 | 0.51 |
| 1:AA:1426:C:H2' | 1:AA:1427:U:H6 | 1.74 | 0.51 |
| 1:CA:323:U:H4' | 20:CT:22:ARG:HB2 | 1.93 | 0.51 |
| 17:CQ:18:THR:HG22 | 17:CQ:19:VAL:N | 2.25 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:BA:1345:C:O2' | 35:BA:1346:G:H5' | 2.10 | 0.51 |
| 46:DP:50:ARG:HH21 | 46:DP:50:ARG:HG2 | 1.76 | 0.51 |
| 40:BF:187:VAL:HG13 | 46:BP:5:ASP:O | 2.11 | 0.51 |
| 31:D6:15:GLU:CA | 31:D6:47:THR:HG21 | 2.40 | 0.51 |
| 1:AA:521:G:H4' | 12:AL:73:GLU:OE1 | 2.11 | 0.51 |
| 49:BS:97:ARG:C | 49:BS:97:ARG:NE | 2.64 | 0.51 |
| 48:DR:2:ARG:NH1 | 48:DR:5:LYS:CE | 2.70 | 0.51 |
| 43:DI:118:LYS:CD | 43:DI:119:PRO:HD2 | 2.27 | 0.51 |
| 35:DA:1162:G:H2' | 35:DA:1163:G:H8 | 1.75 | 0.51 |
| 35:BA:2468:G:N2 | 35:BA:2481:G:C2' | 2.74 | 0.51 |
| 35:BA:2481:G:HO2' | 35:BA:2482:G:P | 2.34 | 0.51 |
| 35:BA:271(P):C:C5' | 43:BI:46:ALA:HB2 | 2.40 | 0.51 |
| 55:BY:22:GLY:O | 55:BY:23:ARG:HB2 | 2.10 | 0.51 |
| 44:DN:133:GLN:CG | 44:DN:134:ARG:H | 2.17 | 0.51 |
| 36:BB:52:A:C8 | 49:BS:33:LYS:NZ | 2.76 | 0.51 |
| 49:BS:101:LEU:HD13 | 49:BS:101:LEU:H | 1.75 | 0.51 |
| 44:BN:18:ALA:O | 44:BN:21:LYS:N | 2.44 | 0.51 |
| 35:DA:27:G:N2 | 35:DA:512:G:C2' | 2.74 | 0.51 |
| 35:DA:1020:A:N1 | 35:DA:1141:U:H1' | 2.25 | 0.51 |
| 35:DA:271(S):G:O2' | 35:DA:271(T):C:H5'' | 2.09 | 0.51 |
| 44:DN:17:ASP:C | 44:DN:19:GLU:H | 2.14 | 0.51 |
| 23:AW:20:U:H2' | 23:AW:21:A:C4' | 2.36 | 0.51 |
| 31:D6:12:GLU:H | 31:D6:12:GLU:CD | 2.13 | 0.51 |
| 1:CA:1292:U:H2' | 1:CA:1293:G:C8 | 2.46 | 0.51 |
| 47:DQ:42:ILE:HD13 | 47:DQ:97:VAL:HG23 | 1.92 | 0.51 |
| 39:BE:116:VAL:HG22 | 39:BE:117:MET:N | 2.25 | 0.51 |
| 22:AV:41:C:C2' | 22:AV:42:C:H5'' | 2.40 | 0.51 |
| 13:AM:10:PRO:HB2 | 13:AM:18:ALA:HB1 | 1.93 | 0.51 |
| 42:DH:33:LEU:HD21 | 42:DH:136:ILE:HG22 | 1.92 | 0.51 |
| 2:CB:21:ARG:HD2 | 2:CB:38:GLY:CA | 2.41 | 0.51 |
| 38:DD:147:LEU:CD1 | 38:DD:155:LEU:HD11 | 2.37 | 0.51 |
| 1:CA:107:G:C2' | 1:CA:108:G:H5' | 2.40 | 0.51 |
| 3:CC:9:GLY:HA2 | 3:CC:12:LEU:HB2 | 1.91 | 0.51 |
| 26:B1:86:SER:CB | 26:B1:89:GLU:HB2 | 2.40 | 0.51 |
| 43:DI:58:LEU:C | 43:DI:60:GLU:N | 2.59 | 0.51 |
| 40:DF:53:THR:HG22 | 40:DF:56:GLU:CG | 2.40 | 0.51 |
| 39:BE:5:LEU:N | 39:BE:5:LEU:HD23 | 2.24 | 0.51 |
| 2:CB:165:VAL:HG23 | 2:CB:166:ASP:N | 2.26 | 0.51 |
| 15:AO:39:LEU:HD12 | 15:AO:59:MET:HE2 | 1.93 | 0.51 |
| 35:BA:1889:A:H2' | 35:BA:1890:A:C8 | 2.45 | 0.51 |
| 30:D5:20:ARG:HA | 30:D5:23:HIS:ND1 | 2.26 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:168:G:H2' | 1:CA:169:C:O4' | 2.10 | 0.51 |
| 35:DA:1853:A:H2' | 35:DA:1854:A:C8 | 2.46 | 0.51 |
| 56:DZ:107:THR:CG2 | 56:DZ:111:VAL:HG11 | 2.41 | 0.51 |
| 35:DA:1615:C:C2 | 53:DW:87:PRO:HG3 | 2.46 | 0.51 |
| 46:BP:27:HIS:C | 46:BP:27:HIS:CD2 | 2.85 | 0.51 |
| 35:BA:780:G:H21 | 35:BA:783:A:H62 | 1.59 | 0.51 |
| 42:BH:87:LEU:HD23 | 42:BH:164:TYR:HA | 1.93 | 0.51 |
| 1:CA:545:C:OP1 | 4:CD:61:LYS:NZ | 2.44 | 0.51 |
| 35:DA:2673:G:O2' | 35:DA:2674:G:H5' | 2.11 | 0.51 |
| 16:AP:82:GLN:HE21 | 16:AP:82:GLN:N | 2.09 | 0.51 |
| 38:DD:109:ASP:HB2 | 38:DD:197:GLY:HA2 | 1.93 | 0.51 |
| 35:BA:1411:C:H2' | 35:BA:1412:A:H8 | 1.76 | 0.51 |
| 18:AR:31:LEU:H | 18:AR:31:LEU:HD23 | 1.76 | 0.51 |
| 35:BA:2236:C:C2' | 35:BA:2237:G:H5' | 2.40 | 0.51 |
| 13:CM:14:ARG:HA | 13:CM:43:THR:O | 2.10 | 0.51 |
| 35:DA:1443:G:H2' | 35:DA:1444:G:H5' | 1.93 | 0.51 |
| 1:CA:444:C:H2' | 1:CA:445:G:H8 | 1.76 | 0.51 |
| 1:AA:1158:C:N3 | 1:AA:1181:G:N2 | 2.57 | 0.51 |
| 35:BA:2749:A:H2' | 35:BA:2750:A:C8 | 2.45 | 0.51 |
| 35:DA:2642:G:O2' | 35:DA:2643:G:H5' | 2.11 | 0.51 |
| 35:BA:2528:U:H2' | 35:BA:2530:A:O5' | 2.11 | 0.51 |
| 42:DH:38:SER:OG | 42:DH:40:GLU:HG2 | 2.11 | 0.51 |
| 13:AM:102:ARG:C | 13:AM:104:ARG:H | 2.14 | 0.51 |
| 30:B5:39:MET:HG3 | 53:BW:34:ASN:OD1 | 2.10 | 0.51 |
| 5:AE:75:THR:HB | 5:AE:117:ASP:HB2 | 1.92 | 0.51 |
| 49:BS:14:VAL:HG13 | 49:BS:90:GLY:CA | 2.40 | 0.51 |
| 40:DF:28:ILE:HD12 | 40:DF:28:ILE:O | 2.10 | 0.51 |
| 55:BY:95:LYS:HG2 | 55:BY:100:ALA:C | 2.31 | 0.51 |
| 9:CI:104:ARG:C | 9:CI:105:ASP:N | 2.65 | 0.51 |
| 9:CI:5:TYR:HA | 9:CI:17:VAL:O | 2.10 | 0.51 |
| 49:DS:88:ASP:CG | 49:DS:89:ARG:H | 2.14 | 0.51 |
| 2:CB:218:ALA:O | 2:CB:222:ILE:HG13 | 2.12 | 0.51 |
| 35:DA:2864:G:C8 | 35:DA:2864:G:H5' | 2.46 | 0.51 |
| 39:BE:119:ARG:HD2 | 39:BE:120:TRP:CE2 | 2.46 | 0.51 |
| 13:CM:11:ARG:O | 13:CM:13:LYS:N | 2.43 | 0.51 |
| 13:CM:45:VAL:C | 13:CM:47:ASP:H | 2.14 | 0.51 |
| 38:DD:33:LEU:HD22 | 38:DD:34:VAL:N | 2.18 | 0.51 |
| 41:BG:91:ARG:CG | 41:BG:92:VAL:N | 2.73 | 0.51 |
| 36:DB:57:A:OP2 | 36:DB:58:A:OP2 | 2.29 | 0.51 |
| 20:CT:57:ARG:HD3 | 20:CT:103:GLY:N | 2.26 | 0.51 |
| 35:BA:2543:G:H2' | 35:BA:2544:G:H8 | 1.74 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:DC:56:GLN:O | 37:DC:57:ASN:HB2 | 2.10 | 0.51 |
| 1:AA:1313:U:OP1 | 19:AS:6:LYS:HB2 | 2.10 | 0.51 |
| 42:DH:68:THR:C | 42:DH:70:THR:N | 2.61 | 0.51 |
| 10:AJ:29:ARG:HH22 | 10:AJ:84:GLN:CD | 2.14 | 0.51 |
| 41:BG:133:LEU:HD11 | 41:BG:157:ILE:CG2 | 2.40 | 0.51 |
| 44:DN:121:LYS:HG2 | 44:DN:130:HIS:NE2 | 2.25 | 0.51 |
| 2:AB:114:ARG:O | 2:AB:118:LEU:HG | 2.11 | 0.51 |
| 45:DO:105:GLU:O | 45:DO:109:LYS:HG2 | 2.11 | 0.51 |
| 1:CA:256:U:H2' | 1:CA:257:G:C8 | 2.46 | 0.51 |
| 41:BG:16:ARG:NE | 41:BG:31:VAL:HG11 | 2.26 | 0.51 |
| 35:BA:2811:G:O2' | 35:BA:2812:G:H5' | 2.10 | 0.51 |
| 39:BE:201:THR:OG1 | 39:BE:202:LYS:N | 2.42 | 0.51 |
| 35:DA:2786:U:H2' | 35:DA:2787:C:H6 | 1.75 | 0.51 |
| 17:AQ:5:VAL:O | 17:AQ:6:LEU:HD23 | 2.11 | 0.51 |
| 54:DX:12:VAL:HG11 | 54:DX:27:THR:OG1 | 2.10 | 0.51 |
| 25:D0:36:ILE:HD13 | 25:D0:58:THR:CG2 | 2.39 | 0.51 |
| 17:CQ:5:VAL:O | 17:CQ:6:LEU:HD23 | 2.11 | 0.51 |
| 40:BF:53:THR:HG23 | 40:BF:55:GLY:H | 1.75 | 0.51 |
| 5:CE:36:ASP:O | 5:CE:37:ARG:HB2 | 2.11 | 0.51 |
| 35:BA:1150:C:O2' | 35:BA:1151:G:H5' | 2.11 | 0.51 |
| 38:DD:165:ILE:HD13 | 38:DD:175:LEU:CD2 | 2.40 | 0.51 |
| 35:BA:2317:C:H2' | 35:BA:2318:G:C5' | 2.41 | 0.51 |
| 1:AA:438:G:H4' | 4:AD:123:HIS:HD1 | 1.76 | 0.51 |
| 40:DF:52:LYS:HD3 | 40:DF:56:GLU:O | 2.10 | 0.51 |
| 35:DA:852:G:C2' | 35:DA:853:G:H5' | 2.42 | 0.51 |
| 27:B2:63:VAL:O | 27:B2:66:GLU:HG2 | 2.11 | 0.51 |
| 35:BA:1108:U:H2' | 35:BA:1109:C:C5' | 2.39 | 0.51 |
| 7:CG:69:VAL:O | 7:CG:69:VAL:HG12 | 2.11 | 0.51 |
| 1:AA:168:G:H2' | 1:AA:169:C:O4' | 2.10 | 0.51 |
| 1:CA:130:A:H1' | 1:CA:263:A:O2' | 2.10 | 0.51 |
| 1:CA:491:G:H2' | 1:CA:492:G:H8 | 1.75 | 0.51 |
| 13:AM:108:ARG:HH12 | 13:AM:112:GLY:HA3 | 1.76 | 0.51 |
| 13:AM:116:THR:O | 13:AM:117:VAL:HB | 2.10 | 0.51 |
| 27:D2:50:ILE:O | 27:D2:52:ASP:N | 2.44 | 0.51 |
| 1:CA:312:C:H2' | 1:CA:313:A:H8 | 1.76 | 0.51 |
| 38:BD:218:ARG:HB3 | 38:BD:219:PRO:HD2 | 1.93 | 0.51 |
| 1:AA:287:U:O2' | 1:AA:288:A:H5' | 2.11 | 0.51 |
| 35:BA:1722:A:O2' | 35:BA:1739:U:H5'' | 2.11 | 0.51 |
| 38:DD:166:GLN:HE21 | 38:DD:166:GLN:N | 2.08 | 0.51 |
| 4:AD:173:TRP:O | 4:AD:186:LEU:HB2 | 2.10 | 0.51 |
| 8:AH:88:LYS:HB2 | 8:AH:88:LYS:NZ | 2.26 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:34:C:H2' | 1:AA:35:G:C8 | 2.46 | 0.51 |
| 35:DA:407:G:H2' | 35:DA:408:G:H8 | 1.76 | 0.51 |
| 1:CA:1168:A:H2' | 1:CA:1169:A:C8 | 2.46 | 0.51 |
| 1:CA:990:C:H2' | 1:CA:991:U:C6 | 2.46 | 0.51 |
| 1:CA:1072:G:H2' | 1:CA:1073:U:C6 | 2.47 | 0.51 |
| 1:CA:22:G:H4' | 1:CA:885:G:C8 | 2.46 | 0.51 |
| 1:CA:364:A:H2' | 1:CA:365:U:O2 | 2.11 | 0.51 |
| 1:CA:568:G:N7 | 12:CL:5:PRO:HD3 | 2.26 | 0.51 |
| 50:BT:102:ILE:HG13 | 50:BT:103:ARG:N | 2.25 | 0.51 |
| 41:BG:67:LYS:N | 41:BG:67:LYS:HD2 | 2.26 | 0.51 |
| 1:AA:990:C:H2' | 1:AA:991:U:C6 | 2.45 | 0.51 |
| 49:BS:88:ASP:CG | 49:BS:89:ARG:H | 2.15 | 0.50 |
| 12:AL:57:LYS:HG2 | 12:AL:67:THR:HG22 | 1.93 | 0.50 |
| 46:BP:8:PRO:C | 46:BP:10:PRO:HD2 | 2.31 | 0.50 |
| 9:AI:104:ARG:C | 9:AI:105:ASP:N | 2.65 | 0.50 |
| 2:CB:61:LEU:CD1 | 2:CB:66:GLY:HA3 | 2.41 | 0.50 |
| 12:CL:57:LYS:HG2 | 12:CL:67:THR:HG22 | 1.93 | 0.50 |
| 46:BP:17:LYS:O | 46:BP:19:VAL:N | 2.44 | 0.50 |
| 41:BG:64:THR:HG23 | 41:BG:65:GLY:H | 1.76 | 0.50 |
| 1:AA:1323:G:H4' | 1:AA:1363:C:N3 | 2.26 | 0.50 |
| 23:AW:65:G:H2' | 23:AW:66:U:C6 | 2.46 | 0.50 |
| 46:BP:101:VAL:C | 46:BP:103:ALA:N | 2.64 | 0.50 |
| 2:CB:48:MET:CG | 2:CB:49:GLU:N | 2.64 | 0.50 |
| 49:BS:58:LEU:HD11 | 49:BS:68:GLN:NE2 | 2.26 | 0.50 |
| 17:AQ:52:LYS:CD | 17:AQ:52:LYS:H | 2.15 | 0.50 |
| 35:DA:1141:U:OP2 | 44:DN:63:THR:OG1 | 2.23 | 0.50 |
| 45:BO:104:ARG:HH21 | 50:BT:33:LYS:CD | 2.24 | 0.50 |
| 38:BD:27:THR:O | 38:BD:27:THR:CG2 | 2.58 | 0.50 |
| 1:CA:977:A:O2' | 1:CA:978:A:H5' | 2.12 | 0.50 |
| 1:CA:255:G:H1' | 17:CQ:16:GLN:HE21 | 1.75 | 0.50 |
| 41:BG:11:TYR:HD2 | 41:BG:12:TYR:CD1 | 2.30 | 0.50 |
| 43:DI:79:ILE:HD11 | 43:DI:100:ALA:HB1 | 1.94 | 0.50 |
| 45:BO:77:ILE:HD11 | 50:BT:72:VAL:CG1 | 2.41 | 0.50 |
| 43:BI:115:ALA:HB3 | 43:BI:129:THR:HG23 | 1.91 | 0.50 |
| 20:AT:14:LYS:HA | 20:AT:17:ARG:HE | 1.75 | 0.50 |
| 1:CA:1151:A:N3 | 10:CJ:39:PRO:HG3 | 2.25 | 0.50 |
| 35:DA:1288:U:C2 | 35:DA:1327:C:O2 | 2.64 | 0.50 |
| 39:DE:9:VAL:O | 39:DE:9:VAL:CG2 | 2.59 | 0.50 |
| 23:CW:56:C:C3' | 23:CW:57:G:H5'' | 2.41 | 0.50 |
| 1:CA:1237:C:O4' | 1:CA:1334:G:N2 | 2.44 | 0.50 |
| 54:BX:12:VAL:HG11 | 54:BX:27:THR:HG23 | 1.93 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 47:DQ:111:GLU:CD | 47:DQ:133:ARG:HH21 | 2.14 | 0.50 |
| 35:BA:389:G:H22 | 46:BP:72:PRO:HD3 | 1.76 | 0.50 |
| 13:AM:97:PRO:O | 13:AM:98:VAL:HA | 2.11 | 0.50 |
| 55:DY:2:ARG:C | 55:DY:4:LYS:N | 2.62 | 0.50 |
| 36:BB:56:G:H5'' | 41:BG:27:ASN:ND2 | 2.21 | 0.50 |
| 1:CA:1329:A:P | 13:CM:28:ALA:HB3 | 2.51 | 0.50 |
| 55:BY:3:VAL:HG12 | 55:BY:3:VAL:O | 2.11 | 0.50 |
| 2:AB:169:LYS:HD2 | 2:AB:170:GLU:OE2 | 2.11 | 0.50 |
| 2:AB:28:PHE:O | 2:AB:28:PHE:CD1 | 2.64 | 0.50 |
| 5:AE:71:LEU:CD2 | 5:AE:115:VAL:HG22 | 2.41 | 0.50 |
| 1:CA:1250:A:H4' | 9:CI:68:GLY:N | 2.24 | 0.50 |
| 1:CA:797:C:O2' | 1:CA:798:G:H5' | 2.11 | 0.50 |
| 35:BA:203:C:C3' | 35:BA:204:A:H5'' | 2.40 | 0.50 |
| 23:AW:75:C:C5' | 26:B1:30:VAL:HG21 | 2.41 | 0.50 |
| 35:DA:1718:G:H1 | 35:DA:1744:C:N4 | 2.08 | 0.50 |
| 6:CF:4:TYR:HA | 6:CF:91:VAL:O | 2.11 | 0.50 |
| 10:CJ:8:LEU:HG | 10:CJ:96:ILE:HG22 | 1.93 | 0.50 |
| 51:DU:8:VAL:HG11 | 51:DU:12:ARG:NH2 | 2.27 | 0.50 |
| 1:CA:591:U:H2' | 1:CA:592:G:H8 | 1.76 | 0.50 |
| 35:DA:648:G:O4' | 35:DA:2351:G:H5'' | 2.11 | 0.50 |
| 35:BA:817:C:O2' | 35:BA:839:U:H5'' | 2.11 | 0.50 |
| 35:DA:1827:C:O2' | 35:DA:1828:G:H5' | 2.11 | 0.50 |
| 35:DA:1930:G:N2 | 35:DA:1968:G:H2' | 2.26 | 0.50 |
| 1:CA:154:C:H2' | 1:CA:155:C:H6 | 1.76 | 0.50 |
| 1:AA:1388:C:H2' | 1:AA:1389:C:C6 | 2.46 | 0.50 |
| 22:CY:66:U:H2' | 22:CY:67:C:C6 | 2.46 | 0.50 |
| 1:AA:583:A:H2' | 1:AA:584:G:O4' | 2.12 | 0.50 |
| 37:BC:38:ASP:HB2 | 37:BC:181:PRO:CB | 2.42 | 0.50 |
| 35:BA:489:G:N2 | 35:BA:1321:A:OP1 | 2.44 | 0.50 |
| 36:DB:24:G:H21 | 36:DB:27:C:H42 | 1.59 | 0.50 |
| 35:DA:732:C:C2' | 35:DA:733:G:H5' | 2.41 | 0.50 |
| 35:BA:2065:C:H2' | 35:BA:2066:C:C6 | 2.45 | 0.50 |
| 39:BE:200:GLU:OE2 | 39:BE:200:GLU:N | 2.41 | 0.50 |
| 55:BY:95:LYS:HG2 | 55:BY:100:ALA:CA | 2.40 | 0.50 |
| 2:AB:236:TYR:HA | 2:AB:239:VAL:HG21 | 1.92 | 0.50 |
| 49:DS:20:ARG:HH11 | 49:DS:20:ARG:HG2 | 1.76 | 0.50 |
| 46:BP:47:ASP:HB3 | 46:BP:48:PRO:C | 2.31 | 0.50 |
| 46:BP:48:PRO:CG | 46:BP:49:ARG:H | 2.16 | 0.50 |
| 38:DD:44:ASN:HB3 | 38:DD:49:ILE:CA | 2.24 | 0.50 |
| 38:BD:39:LYS:HZ1 | 38:BD:87:ASN:HB3 | 1.76 | 0.50 |
| 51:BU:54:LYS:O | 51:BU:58:ARG:HG3 | 2.11 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:661:C:H2' | 35:BA:662:G:H8 | 1.77 | 0.50 |
| 39:DE:57:LYS:C | 39:DE:59:VAL:N | 2.63 | 0.50 |
| 39:DE:70:ALA:O | 39:DE:72:VAL:N | 2.44 | 0.50 |
| 35:BA:2723:C:H5'' | 48:BR:2:ARG:CD | 2.42 | 0.50 |
| 7:CG:78:ARG:HG3 | 7:CG:79:ARG:N | 2.27 | 0.50 |
| 1:CA:1277:C:O2' | 1:CA:1278:U:H5' | 2.09 | 0.50 |
| 35:DA:1171:G:H3' | 35:DA:1173:G:C4' | 2.25 | 0.50 |
| 48:BR:49:ASP:O | 48:BR:50:HIS:C | 2.49 | 0.50 |
| 46:DP:16:ARG:HD3 | 46:DP:16:ARG:C | 2.31 | 0.50 |
| 52:DV:39:LEU:CD1 | 52:DV:47:VAL:HG11 | 2.32 | 0.50 |
| 20:AT:57:ARG:HD3 | 20:AT:103:GLY:N | 2.26 | 0.50 |
| 30:D5:40:LYS:NZ | 30:D5:49:CYS:SG | 2.69 | 0.50 |
| 52:DV:19:LYS:C | 52:DV:20:LEU:HD12 | 2.32 | 0.50 |
| 35:BA:2127:G:H2' | 35:BA:2128:C:H6 | 1.76 | 0.50 |
| 19:AS:6:LYS:CG | 19:AS:7:LYS:HE2 | 2.42 | 0.50 |
| 56:DZ:79:ARG:CG | 56:DZ:79:ARG:HH11 | 2.24 | 0.50 |
| 46:BP:112:LEU:HD22 | 46:BP:113:LYS:N | 2.25 | 0.50 |
| 6:AF:17:SER:O | 6:AF:20:ALA:N | 2.44 | 0.50 |
| 43:BI:71:ILE:O | 43:BI:75:LEU:HD13 | 2.11 | 0.50 |
| 50:BT:38:ASN:ND2 | 50:BT:40:THR:N | 2.59 | 0.50 |
| 44:DN:55:VAL:O | 44:DN:56:ASN:C | 2.49 | 0.50 |
| 1:AA:255:G:O6 | 1:AA:266:G:O6 | 2.29 | 0.50 |
| 13:CM:93:ARG:HE | 13:CM:93:ARG:HA | 1.77 | 0.50 |
| 55:BY:55:TYR:O | 55:BY:56:PRO:C | 2.50 | 0.50 |
| 55:DY:55:TYR:O | 55:DY:56:PRO:C | 2.49 | 0.50 |
| 41:BG:11:TYR:CE2 | 41:BG:16:ARG:HG2 | 2.46 | 0.50 |
| 43:BI:79:ILE:HD11 | 43:BI:100:ALA:CB | 2.40 | 0.50 |
| 6:AF:69:GLU:HG2 | 6:AF:70:ASP:N | 2.20 | 0.50 |
| 45:BO:93:PRO:HB3 | 45:BO:114:ILE:HD11 | 1.93 | 0.50 |
| 20:CT:49:ALA:O | 20:CT:52:ALA:HB3 | 2.11 | 0.50 |
| 35:DA:2892:A:H2' | 35:DA:2893:G:H4' | 1.93 | 0.50 |
| 19:CS:9:VAL:HG12 | 19:CS:9:VAL:O | 2.11 | 0.50 |
| 1:CA:511:C:HO2' | 1:CA:512:U:H6 | 1.59 | 0.50 |
| 22:CY:19:G:H1' | 22:CY:57:G:H22 | 1.72 | 0.50 |
| 1:AA:92:C:H2' | 1:AA:93:G:C8 | 2.40 | 0.50 |
| 35:BA:2124:G:H2' | 35:BA:2125:G:O4' | 2.12 | 0.50 |
| 18:AR:43:PHE:CE2 | 18:AR:58:LEU:HD11 | 2.45 | 0.50 |
| 1:CA:1251:A:H1' | 1:CA:1369:C:O2' | 2.11 | 0.50 |
| 52:BV:21:ARG:HD3 | 52:BV:21:ARG:N | 2.27 | 0.50 |
| 35:BA:154(A):C:N4 | 35:BA:171:G:H1 | 2.09 | 0.50 |
| 47:BQ:104:PHE:O | 47:BQ:105:GLU:HB3 | 2.10 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1042:G:O2' | 1:AA:1043:C:H5' | 2.11 | 0.50 |
| 22:CV:14:A:N1 | 22:CV:22:G:H1' | 2.25 | 0.50 |
| 35:BA:979:G:H3' | 35:BA:980:A:C5' | 2.40 | 0.50 |
| 21:CU:4:GLY:C | 21:CU:6:ARG:H | 2.15 | 0.50 |
| 38:BD:10:THR:HG23 | 38:BD:13:ARG:HB3 | 1.92 | 0.50 |
| 35:BA:16:G:O2' | 35:BA:17:G:H5' | 2.11 | 0.50 |
| 35:DA:2199:A:H5'' | 35:DA:2200:C:H5 | 1.75 | 0.50 |
| 6:AF:97:PHE:CD2 | 18:AR:65:ILE:HD12 | 2.46 | 0.50 |
| 6:AF:1:MET:HE1 | 6:AF:68:PRO:HB3 | 1.93 | 0.50 |
| 42:BH:80:SER:O | 42:BH:81:GLU:CB | 2.59 | 0.50 |
| 44:DN:78:TYR:CD1 | 44:DN:78:TYR:N | 2.77 | 0.50 |
| 35:DA:108:U:H2' | 35:DA:109:G:C8 | 2.47 | 0.50 |
| 1:CA:1183:A:H5'' | 1:CA:1184:G:OP1 | 2.12 | 0.50 |
| 1:CA:1423:G:H2' | 1:CA:1424:C:H6 | 1.75 | 0.50 |
| 1:AA:681:C:O2' | 1:AA:682:G:H5' | 2.10 | 0.50 |
| 17:AQ:25:ARG:O | 17:AQ:25:ARG:HG2 | 2.11 | 0.50 |
| 4:AD:132:ARG:HD2 | 4:AD:132:ARG:O | 2.12 | 0.50 |
| 35:BA:790:C:O2' | 35:BA:791:C:OP1 | 2.26 | 0.50 |
| 1:AA:1168:A:H2' | 1:AA:1169:A:C8 | 2.47 | 0.50 |
| 44:BN:7:LYS:O | 44:BN:8:GLN:C | 2.48 | 0.50 |
| 56:DZ:33:LEU:HD12 | 56:DZ:34:ASN:H | 1.75 | 0.50 |
| 46:DP:59:LEU:C | 46:DP:61:ARG:HD2 | 2.31 | 0.50 |
| 49:BS:20:ARG:HG2 | 49:BS:20:ARG:NH1 | 2.25 | 0.50 |
| 31:B6:15:GLU:HG2 | 31:B6:18:ARG:CZ | 2.41 | 0.50 |
| 40:DF:160:ASN:HD22 | 40:DF:161:GLU:N | 2.09 | 0.50 |
| 1:CA:1128:C:H5'' | 9:CI:16:ARG:HH12 | 1.74 | 0.50 |
| 49:DS:87:PHE:CG | 49:DS:88:ASP:N | 2.78 | 0.50 |
| 50:DT:28:VAL:HG22 | 50:DT:46:GLU:CA | 2.41 | 0.50 |
| 50:BT:88:ILE:CG2 | 50:BT:89:VAL:HG23 | 2.40 | 0.50 |
| 55:DY:96:ILE:HG13 | 55:DY:100:ALA:O | 2.11 | 0.50 |
| 43:BI:94:ALA:C | 43:BI:96:ASP:N | 2.65 | 0.50 |
| 35:BA:1568:G:P | 38:BD:63:ARG:HH22 | 2.34 | 0.50 |
| 48:DR:2:ARG:HD3 | 48:DR:5:LYS:CE | 2.40 | 0.50 |
| 49:DS:98:VAL:HG12 | 49:DS:100:ALA:HB2 | 1.93 | 0.50 |
| 35:DA:2308:G:H2' | 35:DA:2309:A:C8 | 2.46 | 0.50 |
| 33:D8:4:MET:HB2 | 33:D8:61:LEU:HD22 | 1.93 | 0.50 |
| 41:BG:39:ILE:HG23 | 41:BG:92:VAL:HG13 | 1.92 | 0.50 |
| 41:DG:17:PRO:O | 41:DG:19:LEU:N | 2.44 | 0.50 |
| 52:DV:19:LYS:CG | 52:DV:20:LEU:N | 2.73 | 0.50 |
| 5:AE:10:MET:CE | 5:AE:13:ILE:HD11 | 2.42 | 0.50 |
| 10:CJ:30:SER:O | 10:CJ:80:LYS:HB3 | 2.10 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:B3:8:LEU:HD12 | 28:B3:31:LEU:CA | 2.32 | 0.50 |
| 47:DQ:19:GLY:O | 47:DQ:20:ALA:HB3 | 2.11 | 0.50 |
| 48:DR:44:LEU:O | 48:DR:48:VAL:HG23 | 2.11 | 0.50 |
| 35:BA:1142(A):A:C5 | 35:BA:1144:G:C5 | 2.98 | 0.50 |
| 2:AB:115:LEU:HD12 | 2:AB:142:LEU:HD11 | 1.93 | 0.50 |
| 41:DG:56:ALA:HB2 | 41:DG:153:ARG:NH2 | 2.27 | 0.50 |
| 13:AM:93:ARG:HA | 13:AM:93:ARG:HE | 1.77 | 0.50 |
| 35:BA:481:G:O2' | 35:BA:482:A:OP2 | 2.30 | 0.50 |
| 15:CO:76:GLU:C | 15:CO:78:TYR:N | 2.64 | 0.50 |
| 31:D6:23:THR:HG21 | 35:DA:2419:U:H4' | 1.94 | 0.50 |
| 39:BE:51:PHE:CD1 | 39:BE:52:LEU:HB2 | 2.45 | 0.50 |
| 53:DW:75:TYR:CD1 | 53:DW:104:THR:HB | 2.47 | 0.50 |
| 29:D4:51:TYR:CG | 41:DG:2:PRO:HD3 | 2.45 | 0.50 |
| 1:AA:1464:G:OP1 | 50:BT:108:ARG:HD2 | 2.11 | 0.50 |
| 46:BP:38:GLN:CG | 46:BP:41:ARG:HG3 | 2.40 | 0.50 |
| 35:BA:943:U:OP2 | 46:BP:38:GLN:OE1 | 2.29 | 0.50 |
| 8:CH:137:VAL:HG12 | 8:CH:138:TRP:N | 2.26 | 0.50 |
| 55:DY:31:LEU:CB | 55:DY:32:PRO:CA | 2.89 | 0.50 |
| 30:B5:51:TYR:CB | 30:B5:54:GLY:HA3 | 2.41 | 0.50 |
| 54:BX:12:VAL:CG1 | 54:BX:27:THR:OG1 | 2.58 | 0.50 |
| 25:D0:36:ILE:HD12 | 25:D0:38:VAL:N | 2.26 | 0.50 |
| 56:DZ:10:ARG:HD2 | 56:DZ:36:LYS:HB2 | 1.93 | 0.50 |
| 38:DD:146:GLU:HG2 | 38:DD:152:GLY:C | 2.31 | 0.50 |
| 49:BS:104:GLY:C | 49:BS:106:ARG:H | 2.12 | 0.50 |
| 1:AA:1385:G:O2' | 1:AA:1386:G:H5' | 2.12 | 0.50 |
| 1:CA:865:A:C2 | 1:CA:918:A:H4' | 2.46 | 0.50 |
| 10:CJ:45:ARG:NH1 | 14:CN:36:PHE:CE2 | 2.79 | 0.50 |
| 3:AC:19:GLU:O | 3:AC:20:SER:HB2 | 2.10 | 0.50 |
| 1:CA:1431:C:C2' | 1:CA:1432:G:H5' | 2.41 | 0.50 |
| 40:DF:5:ALA:N | 40:DF:18:ARG:O | 2.37 | 0.50 |
| 10:CJ:40:LEU:HD21 | 10:CJ:69:ASN:HB3 | 1.93 | 0.50 |
| 1:AA:491:G:H2' | 1:AA:492:G:H8 | 1.76 | 0.50 |
| 1:AA:596:C:H2' | 1:AA:597:G:H8 | 1.77 | 0.50 |
| 1:AA:166:G:H2' | 1:AA:167:G:H8 | 1.77 | 0.50 |
| 1:AA:1305:G:H5' | 21:AU:4:GLY:HA3 | 1.92 | 0.50 |
| 1:CA:491:G:O2' | 1:CA:492:G:H5' | 2.12 | 0.50 |
| 1:CA:958:A:C8 | 19:CS:55:LYS:HD2 | 2.46 | 0.50 |
| 13:CM:116:THR:O | 13:CM:117:VAL:HB | 2.11 | 0.50 |
| 15:AO:8:LYS:HG2 | 15:AO:12:ILE:HD11 | 1.93 | 0.50 |
| 49:BS:52:SER:O | 49:BS:56:LEU:HB3 | 2.11 | 0.50 |
| 1:AA:836:G:C6 | 1:AA:851:G:C6 | 2.99 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 35:BA:1270:C:H5'' | 35:BA:1271:G:O5' | 2.11 | 0.50 |
| 18:CR:47:THR:HA | 18:CR:83:GLU:HG3 | 1.93 | 0.50 |
| 1:CA:1096:C:O2' | 1:CA:1097:C:H5' | 2.11 | 0.50 |
| 31:B6:42:TRP:HA | 31:B6:42:TRP:HE3 | 1.77 | 0.50 |
| 35:BA:719:C:O2' | 35:BA:720:C:H5' | 2.11 | 0.50 |
| 41:DG:137:GLU:HA | 41:DG:152:LEU:CD1 | 2.41 | 0.50 |
| 29:D4:46:ASN:HD22 | 29:D4:47:VAL:N | 2.09 | 0.50 |
| 53:DW:3:ALA:HB2 | 53:DW:58:ALA:HA | 1.91 | 0.50 |
| 35:BA:30:G:O2' | 35:BA:31:C:H5' | 2.11 | 0.50 |
| 35:BA:1550:C:H2' | 35:BA:1551:C:C6 | 2.47 | 0.50 |
| 35:DA:1817:G:C2' | 35:DA:1818:U:H5' | 2.42 | 0.50 |
| 1:CA:933:G:OP2 | 7:CG:3:ARG:HB3 | 2.11 | 0.50 |
| 35:BA:2620:C:OP1 | 39:BE:152:LYS:O | 2.28 | 0.50 |
| 2:AB:209:ARG:HH12 | 2:AB:236:TYR:HE2 | 1.59 | 0.50 |
| 1:AA:1256:A:H5' | 1:AA:1257:U:OP1 | 2.12 | 0.50 |
| 55:DY:95:LYS:CD | 55:DY:100:ALA:HA | 2.41 | 0.50 |
| 1:CA:952:U:O2' | 1:CA:953:G:H5' | 2.11 | 0.50 |
| 35:BA:1815:A:OP2 | 38:BD:54:ARG:NH2 | 2.44 | 0.50 |
| 39:DE:30:PRO:HG3 | 39:DE:180:ASN:HD21 | 1.77 | 0.50 |
| 35:BA:1173:G:C3' | 35:BA:1174:A:H5' | 2.41 | 0.50 |
| 47:BQ:141:GLN:HB3 | 56:BZ:98:MET:HA | 1.92 | 0.50 |
| 56:BZ:128:VAL:HG22 | 56:BZ:129:SER:N | 2.26 | 0.50 |
| 3:AC:106:VAL:HG12 | 3:AC:108:ASN:H | 1.76 | 0.50 |
| 14:AN:37:PHE:C | 14:AN:39:LEU:N | 2.64 | 0.50 |
| 3:AC:137:ALA:O | 3:AC:141:VAL:HG23 | 2.12 | 0.50 |
| 52:DV:19:LYS:HG2 | 52:DV:94:LEU:CB | 2.33 | 0.50 |
| 35:BA:2127:G:H4' | 37:BC:36:LYS:HG2 | 1.92 | 0.50 |
| 47:DQ:116:GLU:O | 47:DQ:120:ILE:HG12 | 2.12 | 0.50 |
| 55:BY:20:TYR:CZ | 55:BY:42:VAL:HA | 2.46 | 0.50 |
| 10:AJ:37:PRO:HA | 10:AJ:72:VAL:HG22 | 1.92 | 0.50 |
| 46:DP:83:VAL:HG13 | 46:DP:83:VAL:O | 2.12 | 0.50 |
| 46:BP:23:PRO:HB2 | 46:BP:33:ARG:CG | 2.41 | 0.50 |
| 45:BO:105:GLU:O | 45:BO:109:LYS:HG2 | 2.11 | 0.50 |
| 6:CF:17:SER:C | 6:CF:21:LEU:HD23 | 2.31 | 0.50 |
| 35:DA:1142(A):A:O2' | 35:DA:1143:A:H3' | 2.11 | 0.50 |
| 55:BY:47:LYS:HD2 | 55:BY:47:LYS:H | 1.74 | 0.50 |
| 31:D6:51:GLU:O | 31:D6:52:VAL:CB | 2.58 | 0.50 |
| 35:BA:2786:U:H2' | 35:BA:2787:C:H6 | 1.76 | 0.50 |
| 35:DA:2870:C:O2' | 35:DA:2871:C:H5' | 2.10 | 0.50 |
| 1:AA:636:U:H5' | 17:AQ:2:PRO:HG3 | 1.93 | 0.50 |
| 35:BA:581:C:O2' | 35:BA:582:G:H5' | 2.11 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:AV:41:C:H3' | 22:AV:42:C:C5' | 2.38 | 0.50 |
| 35:DA:848:G:H2' | 35:DA:849:A:C8 | 2.47 | 0.50 |
| 47:DQ:137:TYR:OH | 56:DZ:81:ARG:NH1 | 2.44 | 0.50 |
| 19:AS:40:ILE:HD13 | 19:AS:62:ILE:CD1 | 2.39 | 0.50 |
| 12:AL:102:ARG:O | 12:AL:104:VAL:HG23 | 2.12 | 0.50 |
| 1:AA:1064:G:H21 | 1:AA:1190:G:H2' | 1.75 | 0.50 |
| 35:DA:999:U:H5'' | 35:DA:1154:G:O6 | 2.10 | 0.50 |
| 15:CO:3:ILE:H | 15:CO:3:ILE:HD13 | 1.77 | 0.50 |
| 13:AM:54:VAL:O | 13:AM:58:GLU:N | 2.33 | 0.50 |
| 48:BR:63:ARG:O | 48:BR:67:LEU:HB2 | 2.11 | 0.50 |
| 11:CK:44:SER:H | 11:CK:47:VAL:HG23 | 1.76 | 0.50 |
| 47:BQ:32:TYR:CE2 | 47:BQ:133:ARG:HG2 | 2.47 | 0.50 |
| 35:DA:979:G:H3' | 35:DA:980:A:C5' | 2.40 | 0.50 |
| 1:CA:1316:G:H4' | 14:CN:18:VAL:CG1 | 2.41 | 0.50 |
| 9:AI:124:GLN:O | 9:AI:125:TYR:CB | 2.58 | 0.50 |
| 51:DU:98:LEU:HD13 | 51:DU:105:VAL:HG11 | 1.92 | 0.50 |
| 9:CI:27:THR:HG23 | 9:CI:31:GLN:N | 2.27 | 0.50 |
| 35:DA:1718:G:H2' | 35:DA:1719:G:H8 | 1.77 | 0.50 |
| 40:BF:70:THR:O | 40:BF:72:ARG:N | 2.44 | 0.50 |
| 3:CC:66:VAL:O | 3:CC:66:VAL:HG12 | 2.11 | 0.50 |
| 22:CV:13:C:O2' | 35:DA:1924:C:H4' | 2.12 | 0.50 |
| 35:BA:1741:A:H8 | 35:BA:1742:G:C8 | 2.29 | 0.50 |
| 49:DS:52:SER:O | 49:DS:56:LEU:HB3 | 2.12 | 0.50 |
| 1:CA:836:G:C6 | 1:CA:851:G:C6 | 3.00 | 0.50 |
| 1:AA:1109:C:P | 3:AC:176:HIS:HD1 | 2.33 | 0.50 |
| 35:DA:1270:C:H5'' | 35:DA:1271:G:O5' | 2.11 | 0.50 |
| 1:CA:1355:G:H2' | 1:CA:1356:G:C8 | 2.47 | 0.50 |
| 35:DA:2223:G:C2' | 35:DA:2224:G:H5' | 2.39 | 0.50 |
| 35:DA:1193:G:H2' | 35:DA:1194:A:O4' | 2.12 | 0.50 |
| 31:D6:42:TRP:HA | 31:D6:42:TRP:HE3 | 1.76 | 0.50 |
| 1:AA:1413:A:C2 | 1:AA:1488:G:C2 | 2.99 | 0.50 |
| 50:DT:124:ASP:C | 50:DT:126:ALA:H | 2.13 | 0.50 |
| 45:BO:10:VAL:HG21 | 45:BO:16:ALA:O | 2.12 | 0.50 |
| 48:DR:4:LEU:O | 48:DR:4:LEU:HD13 | 2.12 | 0.50 |
| 27:D2:30:ARG:HE | 54:DX:5:TYR:HE2 | 1.60 | 0.50 |
| 49:BS:20:ARG:HG2 | 49:BS:20:ARG:HH11 | 1.76 | 0.50 |
| 40:BF:24:LEU:C | 40:BF:26:ALA:H | 2.13 | 0.50 |
| 9:AI:53:VAL:HG11 | 9:AI:85:LEU:HD22 | 1.92 | 0.50 |
| 9:AI:5:TYR:HA | 9:AI:17:VAL:O | 2.11 | 0.50 |
| 1:CA:521:G:H4' | 12:CL:73:GLU:OE1 | 2.10 | 0.50 |
| 9:CI:49:PRO:HA | 9:CI:101:PHE:CE1 | 2.46 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 2:CB:185:ILE:HG12 | 2:CB:199:TYR:HB2 | 1.94 | 0.50 |
| 43:BI:117:GLU:HG3 | 43:BI:118:LYS:H | 1.75 | 0.50 |
| 39:BE:36:ARG:HD3 | 39:BE:47:VAL:HG22 | 1.93 | 0.50 |
| 51:DU:88:ILE:C | 51:DU:90:VAL:H | 2.13 | 0.50 |
| 33:B8:52:LYS:N | 33:B8:53:PRO:CD | 2.72 | 0.50 |
| 41:BG:91:ARG:NH1 | 41:BG:91:ARG:HG3 | 2.25 | 0.50 |
| 55:BY:38:ILE:HG22 | 55:BY:39:VAL:N | 2.26 | 0.50 |
| 1:CA:1269:A:H5' | 21:CU:18:TYR:O | 2.10 | 0.50 |
| 35:DA:1665:A:H1' | 45:DO:1:MET:HG2 | 1.93 | 0.50 |
| 38:BD:245:PRO:O | 38:BD:246:PRO:C | 2.49 | 0.50 |
| 49:DS:101:LEU:HD13 | 49:DS:101:LEU:H | 1.77 | 0.50 |
| 3:CC:16:ARG:HG3 | 3:CC:17:ASP:N | 2.26 | 0.50 |
| 35:DA:1141:U:H5'' | 35:DA:1142(A):A:O4' | 2.11 | 0.50 |
| 20:CT:33:ILE:CD1 | 20:CT:62:LEU:HB3 | 2.41 | 0.50 |
| 46:DP:38:GLN:CG | 46:DP:41:ARG:HG3 | 2.41 | 0.50 |
| 35:DA:143:G:H1' | 54:DX:37:THR:CG2 | 2.37 | 0.50 |
| 31:D6:10:LEU:CD1 | 33:D8:34:TRP:CD1 | 2.94 | 0.50 |
| 35:BA:1349:A:N6 | 35:BA:1598:C:N4 | 2.60 | 0.50 |
| 39:BE:116:VAL:HG21 | 39:BE:122:PHE:CD2 | 2.46 | 0.50 |
| 42:BH:20:ALA:HB2 | 42:BH:25:LYS:HZ2 | 1.72 | 0.50 |
| 13:AM:45:VAL:C | 13:AM:47:ASP:H | 2.14 | 0.50 |
| 2:CB:101:MET:C | 2:CB:102:LEU:HD12 | 2.32 | 0.50 |
| 55:DY:3:VAL:HG12 | 55:DY:3:VAL:O | 2.10 | 0.50 |
| 1:CA:1367:C:OP1 | 9:CI:115:GLY:N | 2.38 | 0.50 |
| 36:BB:29:A:OP2 | 49:BS:31:SER:HB2 | 2.11 | 0.50 |
| 33:D8:19:SER:HB2 | 33:D8:21:LYS:HG3 | 1.93 | 0.50 |
| 8:AH:11:THR:HG23 | 8:AH:14:ARG:NH1 | 2.23 | 0.50 |
| 1:AA:1298:C:P | 7:AG:114:ARG:HH22 | 2.34 | 0.50 |
| 43:BI:12:LEU:N | 43:BI:12:LEU:HD23 | 2.26 | 0.50 |
| 47:BQ:104:PHE:N | 47:BQ:104:PHE:CD2 | 2.79 | 0.50 |
| 47:BQ:133:ARG:O | 47:BQ:134:ARG:CG | 2.58 | 0.50 |
| 5:CE:75:THR:HB | 5:CE:117:ASP:HB2 | 1.92 | 0.50 |
| 35:BA:315:G:H2' | 35:BA:316:C:C6 | 2.47 | 0.50 |
| 1:CA:184:G:O4' | 1:CA:224:C:H4' | 2.12 | 0.50 |
| 35:BA:2781:A:H5'' | 35:BA:2782:G:H5' | 1.93 | 0.50 |
| 40:DF:70:THR:O | 40:DF:72:ARG:N | 2.44 | 0.50 |
| 32:D7:33:ARG:NH1 | 35:DA:467:G:OP1 | 2.44 | 0.50 |
| 6:AF:12:PRO:HD3 | 6:AF:58:GLY:HA2 | 1.92 | 0.50 |
| 38:BD:249:PRO:HG2 | 38:BD:250:TRP:CZ3 | 2.47 | 0.50 |
| 1:CA:606:G:H2' | 1:CA:631:G:N2 | 2.27 | 0.50 |
| 47:DQ:60:ARG:HB2 | 47:DQ:60:ARG:HH11 | 1.76 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:CE:16:THR:OG1 | 5:CE:17:ALA:N | 2.45 | 0.50 |
| 1:CA:1436:U:H2' | 1:CA:1437:C:O4' | 2.12 | 0.50 |
| 1:AA:1027:C:H1' | 1:AA:1035:A:C2 | 2.47 | 0.50 |
| 1:AA:877:C:H1' | 8:AH:3:THR:OG1 | 2.12 | 0.50 |
| 35:DA:692:C:H2' | 35:DA:693:C:H6 | 1.77 | 0.50 |
| 1:CA:1109:C:H2' | 1:CA:1110:A:O4' | 2.12 | 0.50 |
| 51:DU:21:ALA:HA | 51:DU:24:TYR:CE1 | 2.46 | 0.50 |
| 1:AA:1092:A:O2' | 1:AA:1093:A:H5' | 2.12 | 0.50 |
| 1:CA:1090:U:H2' | 1:CA:1091:U:C6 | 2.47 | 0.50 |
| 42:DH:83:TYR:H | 42:DH:83:TYR:HD1 | 1.59 | 0.50 |
| 7:CG:76:ARG:HH11 | 7:CG:76:ARG:HG2 | 1.76 | 0.50 |
| 1:CA:1220:G:H2' | 1:CA:1221:G:H8 | 1.76 | 0.50 |
| 33:D8:27:THR:HG22 | 46:DP:61:ARG:HA | 1.92 | 0.50 |
| 49:BS:17:ARG:C | 49:BS:19:LYS:N | 2.64 | 0.50 |
| 41:BG:46:ALA:O | 41:BG:51:ARG:HG3 | 2.12 | 0.50 |
| 55:BY:96:ILE:HG22 | 55:BY:97:ARG:H | 1.77 | 0.50 |
| 1:AA:1128:C:H5'' | 9:AI:16:ARG:HH12 | 1.76 | 0.50 |
| 35:BA:995:C:OP1 | 51:BU:54:LYS:HD3 | 2.11 | 0.50 |
| 56:BZ:131:ARG:CG | 56:BZ:132:ASN:H | 2.24 | 0.50 |
| 48:BR:2:ARG:HH11 | 48:BR:2:ARG:HG2 | 1.77 | 0.50 |
| 38:DD:33:LEU:C | 38:DD:36:PRO:HD2 | 2.32 | 0.50 |
| 3:AC:76:VAL:CG2 | 3:AC:77:ILE:N | 2.68 | 0.50 |
| 5:AE:90:VAL:C | 5:AE:91:LEU:HD22 | 2.31 | 0.50 |
| 44:DN:112:LEU:O | 44:DN:116:LEU:HG | 2.11 | 0.50 |
| 13:AM:28:ALA:C | 13:AM:30:ALA:H | 2.15 | 0.50 |
| 10:AJ:50:ILE:HG12 | 14:AN:41:ARG:HE | 1.76 | 0.50 |
| 36:DB:57:A:H5' | 41:DG:27:ASN:HD22 | 1.76 | 0.50 |
| 41:DG:128:ARG:NE | 41:DG:128:ARG:N | 2.60 | 0.50 |
| 30:D5:35:GLU:O | 30:D5:49:CYS:CB | 2.59 | 0.50 |
| 55:DY:17:SER:HB2 | 55:DY:71:LYS:NZ | 2.27 | 0.50 |
| 6:AF:5:GLU:HG2 | 6:AF:62:TRP:CZ2 | 2.47 | 0.50 |
| 52:DV:15:GLU:O | 52:DV:16:PRO:C | 2.48 | 0.50 |
| 35:DA:863:A:O2' | 35:DA:864:G:H5' | 2.12 | 0.50 |
| 36:BB:20:C:C3' | 36:BB:21:G:H5'' | 2.42 | 0.50 |
| 50:DT:64:ARG:HH11 | 50:DT:64:ARG:HG2 | 1.77 | 0.50 |
| 50:DT:64:ARG:CD | 50:DT:73:GLU:HG2 | 2.35 | 0.50 |
| 8:AH:137:VAL:HG12 | 8:AH:138:TRP:N | 2.27 | 0.50 |
| 43:DI:115:ALA:HB3 | 43:DI:129:THR:HG23 | 1.94 | 0.50 |
| 43:DI:62:LYS:HE2 | 43:DI:134:PRO:CG | 2.41 | 0.50 |
| 33:D8:33:ASN:HA | 33:D8:36:LYS:HD2 | 1.93 | 0.50 |
| 55:DY:46:LYS:HB3 | 55:DY:47:LYS:HD2 | 1.94 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 26:D1:73:LEU:HB3 | 26:D1:94:LEU:HD21 | 1.93 | 0.50 |
| 41:BG:13:GLU:O | 41:BG:14:GLU:HB2 | 2.11 | 0.50 |
| 20:AT:98:PRO:C | 20:AT:100:ILE:H | 2.15 | 0.50 |
| 1:AA:127:G:HO2' | 17:AQ:2:PRO:N | 2.08 | 0.50 |
| 25:B0:53:MET:HA | 25:B0:58:THR:O | 2.11 | 0.50 |
| 35:BA:70:G:H21 | 35:BA:71:A:N6 | 2.08 | 0.50 |
| 22:AV:40:C:H2' | 22:AV:41:C:H6 | 1.76 | 0.50 |
| 35:DA:847:U:C2' | 35:DA:848:G:H5'' | 2.39 | 0.50 |
| 1:CA:390:C:H2' | 1:CA:391:G:C8 | 2.46 | 0.50 |
| 23:CW:18:G:N1 | 23:CW:55:U:H1' | 2.27 | 0.50 |
| 1:CA:107:G:N2 | 1:CA:108:G:H1' | 2.27 | 0.50 |
| 2:CB:97:TRP:CZ2 | 2:CB:102:LEU:HD13 | 2.44 | 0.50 |
| 5:CE:67:VAL:HG21 | 5:CE:140:ARG:HA | 1.92 | 0.50 |
| 51:DU:6:THR:O | 51:DU:9:VAL:HG23 | 2.12 | 0.50 |
| 35:DA:363(F):A:O2' | 35:DA:364:C:H5 | 1.95 | 0.50 |
| 40:DF:53:THR:O | 40:DF:57:VAL:HG23 | 2.11 | 0.50 |
| 49:BS:74:ALA:HB1 | 49:BS:103:GLU:HG3 | 1.93 | 0.50 |
| 1:AA:741:G:H4' | 15:AO:55:GLY:HA3 | 1.93 | 0.50 |
| 12:CL:17:LYS:HD3 | 12:CL:18:VAL:H | 1.77 | 0.50 |
| 11:CK:91:ARG:O | 11:CK:95:ILE:HD11 | 2.12 | 0.50 |
| 35:DA:1658:C:OP1 | 39:DE:132:HIS:ND1 | 2.43 | 0.50 |
| 11:AK:125:PHE:N | 11:AK:125:PHE:HD1 | 2.10 | 0.50 |
| 8:CH:40:ALA:C | 8:CH:42:GLU:H | 2.13 | 0.50 |
| 23:AW:6:G:H2' | 23:AW:7:A:H5' | 1.93 | 0.50 |
| 1:AA:709:G:H2' | 1:AA:710:G:H8 | 1.75 | 0.50 |
| 4:CD:3:ARG:HG2 | 4:CD:3:ARG:HH21 | 1.76 | 0.50 |
| 10:CJ:40:LEU:HG | 10:CJ:69:ASN:HB2 | 1.94 | 0.50 |
| 1:CA:386:C:O2' | 1:CA:387:U:H5' | 2.10 | 0.50 |
| 1:CA:1042:G:O2' | 1:CA:1043:C:H5' | 2.12 | 0.50 |
| 1:AA:840:C:H4' | 1:AA:848:C:O2 | 2.11 | 0.50 |
| 50:DT:128:GLU:O | 50:DT:130:ALA:N | 2.45 | 0.50 |
| 42:DH:149:ARG:HD3 | 42:DH:164:TYR:CE1 | 2.47 | 0.50 |
| 35:DA:2693:A:H2' | 35:DA:2694:G:C8 | 2.47 | 0.50 |
| 35:DA:2591:C:OP1 | 38:DD:239:ARG:HG2 | 2.12 | 0.50 |
| 35:BA:1827:C:H2' | 35:BA:1828:G:O4' | 2.12 | 0.50 |
| 35:DA:1411:C:H2' | 35:DA:1412:A:H8 | 1.75 | 0.50 |
| 1:CA:554:C:H2' | 1:CA:555:C:C6 | 2.46 | 0.50 |
| 51:BU:8:VAL:HG11 | 51:BU:12:ARG:NE | 2.27 | 0.50 |
| 1:AA:1522:U:O2' | 1:AA:1523:G:H5' | 2.11 | 0.50 |
| 36:DB:74:U:H2' | 36:DB:75:G:O4' | 2.12 | 0.50 |
| 4:AD:156:GLU:O | 4:AD:159:ARG:HB2 | 2.12 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:2111:C:H4' | 35:BA:2112:G:OP1 | 2.11 | 0.50 |
| 16:CP:6:LEU:HB3 | 16:CP:17:TYR:CD2 | 2.47 | 0.50 |
| 35:BA:2052:G:O4' | 39:BE:142:GLY:HA3 | 2.12 | 0.50 |
| 35:BA:688:U:H2' | 35:BA:689:A:H8 | 1.77 | 0.50 |
| 35:DA:1832:C:N4 | 35:DA:1833:U:C4 | 2.80 | 0.50 |
| 26:D1:56:GLN:HA | 26:D1:56:GLN:HE21 | 1.76 | 0.50 |
| 1:CA:586:C:O2' | 1:CA:587:G:H5' | 2.12 | 0.50 |
| 20:AT:89:ARG:HH21 | 20:AT:89:ARG:HG3 | 1.76 | 0.50 |
| 33:D8:7:HIS:CD2 | 46:DP:50:ARG:HD3 | 2.47 | 0.50 |
| 46:DP:57:THR:OG1 | 46:DP:59:LEU:HB3 | 2.12 | 0.50 |
| 49:BS:19:LYS:C | 49:BS:20:ARG:NH1 | 2.65 | 0.50 |
| 2:CB:68:ILE:H | 2:CB:90:MET:HE2 | 1.77 | 0.50 |
| 12:AL:46:LYS:HB2 | 12:AL:92:ASP:O | 2.12 | 0.50 |
| 1:CA:1276:G:H2' | 1:CA:1277:C:H5' | 1.93 | 0.50 |
| 1:AA:1326:C:O2' | 1:AA:1327:C:H5' | 2.12 | 0.50 |
| 39:DE:14:ILE:O | 39:DE:20:ALA:HA | 2.12 | 0.50 |
| 10:CJ:50:ILE:HG12 | 14:CN:41:ARG:HE | 1.76 | 0.50 |
| 35:DA:2127:G:H2' | 35:DA:2128:C:H6 | 1.77 | 0.50 |
| 41:DG:135:LEU:HD13 | 41:DG:155:MET:CE | 2.42 | 0.50 |
| 35:BA:2469:A:H3' | 35:BA:2470:G:O4' | 2.12 | 0.50 |
| 3:AC:51:GLY:O | 3:AC:115:LEU:HD21 | 2.12 | 0.50 |
| 1:CA:1313:U:OP1 | 19:CS:6:LYS:HB2 | 2.11 | 0.50 |
| 35:BA:2127:G:C5' | 37:BC:36:LYS:HG2 | 2.41 | 0.50 |
| 10:CJ:99:LYS:O | 10:CJ:100:THR:HG23 | 2.11 | 0.50 |
| 49:DS:53:SER:OG | 49:DS:54:LEU:N | 2.45 | 0.50 |
| 20:AT:30:LYS:HE2 | 20:AT:72:LEU:CD2 | 2.32 | 0.50 |
| 35:DA:285:C:H2' | 35:DA:286:C:O4' | 2.12 | 0.50 |
| 15:AO:76:GLU:C | 15:AO:78:TYR:N | 2.64 | 0.50 |
| 35:DA:2159:G:N2 | 35:DA:2160:G:H1' | 2.26 | 0.50 |
| 37:BC:51:PRO:O | 37:BC:52:ARG:HB2 | 2.11 | 0.50 |
| 43:DI:79:ILE:HD11 | 43:DI:100:ALA:CB | 2.42 | 0.50 |
| 35:DA:2100:G:H1 | 35:DA:2189:U:H3 | 1.60 | 0.50 |
| 1:AA:107:G:N2 | 1:AA:108:G:H1' | 2.27 | 0.50 |
| 39:BE:117:MET:HA | 39:BE:122:PHE:N | 2.19 | 0.50 |
| 10:CJ:16:LEU:HD13 | 10:CJ:17:ASP:N | 2.26 | 0.50 |
| 1:AA:389:A:C2' | 1:AA:390:C:H5' | 2.38 | 0.50 |
| 35:BA:2098:U:H2' | 35:BA:2099:U:O4' | 2.11 | 0.50 |
| 20:CT:14:LYS:HA | 20:CT:17:ARG:HE | 1.76 | 0.50 |
| 27:B2:38:GLN:O | 27:B2:41:ILE:HG12 | 2.12 | 0.50 |
| 8:CH:87:SER:HA | 8:CH:93:VAL:CG2 | 2.40 | 0.50 |
| 35:DA:542:C:H2' | 35:DA:543:C:OP1 | 2.11 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 45:DO:31:LYS:HB3 | 45:DO:32:TYR:CE1 | 2.47 | 0.50 |
| 18:AR:63:GLN:OE1 | 18:AR:63:GLN:HA | 2.12 | 0.50 |
| 3:AC:195:VAL:CG1 | 3:AC:196:LEU:N | 2.75 | 0.50 |
| 6:AF:87:ARG:NH1 | 6:AF:87:ARG:HG2 | 2.25 | 0.50 |
| 10:AJ:23:ILE:HG12 | 10:AJ:85:LEU:HD22 | 1.94 | 0.50 |
| 1:CA:848:C:O2' | 1:CA:849:C:H5' | 2.12 | 0.50 |
| 16:CP:25:ARG:HG3 | 16:CP:25:ARG:HH11 | 1.77 | 0.50 |
| 35:BA:558:G:OP1 | 44:BN:111:PRO:HD2 | 2.10 | 0.50 |
| 48:BR:78:LYS:O | 48:BR:83:ILE:HG12 | 2.11 | 0.50 |
| 16:AP:51:VAL:O | 16:AP:51:VAL:HG12 | 2.12 | 0.50 |
| 38:BD:11:PRO:O | 38:BD:13:ARG:N | 2.39 | 0.50 |
| 22:CV:34:G:H2' | 22:CV:35:A:C8 | 2.47 | 0.50 |
| 35:BA:176:G:C2' | 35:BA:177:G:H5' | 2.42 | 0.50 |
| 35:DA:1722:A:O2' | 35:DA:1739:U:H5'' | 2.12 | 0.50 |
| 38:BD:168:ARG:HG3 | 38:BD:168:ARG:HH11 | 1.77 | 0.50 |
| 27:D2:53:LEU:O | 27:D2:57:ILE:HG12 | 2.11 | 0.50 |
| 53:DW:10:VAL:O | 53:DW:11:ARG:HB2 | 2.11 | 0.50 |
| 6:AF:97:PHE:CD2 | 18:AR:31:LEU:HD21 | 2.47 | 0.50 |
| 1:AA:859:A:H2' | 1:AA:860:A:O4' | 2.11 | 0.50 |
| 35:BA:1926:U:H2' | 35:BA:1928:A:OP2 | 2.11 | 0.50 |
| 1:AA:1109:C:H2' | 1:AA:1110:A:O4' | 2.11 | 0.50 |
| 1:CA:34:C:H2' | 1:CA:35:G:C8 | 2.47 | 0.50 |
| 35:BA:1193:G:H2' | 35:BA:1194:A:O4' | 2.10 | 0.50 |
| 35:DA:408:G:O2' | 35:DA:409:C:H5' | 2.11 | 0.50 |
| 35:DA:719:C:O2' | 35:DA:720:C:H5' | 2.12 | 0.50 |
| 17:CQ:25:ARG:O | 17:CQ:25:ARG:HG2 | 2.11 | 0.50 |
| 29:B4:46:ASN:HD22 | 29:B4:47:VAL:N | 2.09 | 0.50 |
| 35:BA:407:G:H2' | 35:BA:408:G:C8 | 2.47 | 0.50 |
| 12:AL:24:VAL:HG13 | 12:AL:98:TYR:HE2 | 1.73 | 0.50 |
| 50:DT:85:LYS:HG2 | 50:DT:85:LYS:O | 2.11 | 0.50 |
| 18:CR:36:ASN:ND2 | 18:CR:39:VAL:CG2 | 2.65 | 0.50 |
| 55:DY:96:ILE:HG22 | 55:DY:97:ARG:H | 1.76 | 0.50 |
| 51:BU:92:ARG:CG | 51:BU:92:ARG:HH11 | 2.25 | 0.50 |
| 51:DU:90:VAL:CG2 | 52:DV:47:VAL:HG21 | 2.41 | 0.50 |
| 40:BF:125:LEU:N | 40:BF:125:LEU:HD22 | 2.26 | 0.50 |
| 40:BF:164:ARG:O | 40:BF:166:ALA:N | 2.45 | 0.50 |
| 30:D5:33:CYS:HG | 30:D5:36:CYS:HB2 | 1.75 | 0.50 |
| 37:DC:169:GLY:O | 37:DC:171:ILE:N | 2.44 | 0.50 |
| 50:DT:55:ASN:N | 50:DT:59:THR:HB | 2.26 | 0.50 |
| 3:CC:30:ARG:HH22 | 14:CN:35:ARG:HA | 1.76 | 0.50 |
| 55:BY:15:VAL:O | 55:BY:16:ALA:CB | 2.59 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 42:BH:68:THR:HG22 | 42:BH:72:ILE:HD11 | 1.93 | 0.50 |
| 48:DR:50:HIS:O | 48:DR:54:LEU:HD12 | 2.12 | 0.50 |
| 43:DI:4:ILE:HD11 | 43:DI:44:LEU:HD13 | 1.94 | 0.50 |
| 26:D1:86:SER:O | 26:D1:89:GLU:N | 2.45 | 0.50 |
| 32:B7:47:ARG:NH1 | 54:BX:60:ARG:HH22 | 2.09 | 0.50 |
| 56:BZ:144:LEU:HD21 | 56:BZ:149:SER:CB | 2.42 | 0.50 |
| 35:BA:1528(A):A:N7 | 35:BA:1529:G:H8 | 2.09 | 0.50 |
| 55:BY:88:LYS:O | 55:BY:89:PHE:HB2 | 2.12 | 0.50 |
| 22:AY:16:U:H2' | 22:AY:17:C:H5' | 1.94 | 0.50 |
| 1:AA:375:U:H2' | 1:AA:376:G:H8 | 1.77 | 0.50 |
| 23:CW:38:A:C2' | 23:CW:39:U:H5'' | 2.42 | 0.50 |
| 47:DQ:134:ARG:HA | 47:DQ:137:TYR:CD1 | 2.46 | 0.50 |
| 8:CH:48:TYR:HB2 | 8:CH:60:ARG:O | 2.11 | 0.50 |
| 35:DA:2172:U:C3' | 35:DA:2173:A:H8 | 2.25 | 0.50 |
| 1:AA:1191:A:P | 3:AC:3:ASN:HD21 | 2.34 | 0.50 |
| 35:DA:528:A:C2 | 35:DA:2043:C:C5' | 2.94 | 0.50 |
| 1:CA:647:C:H2' | 1:CA:648:A:H8 | 1.77 | 0.50 |
| 43:DI:12:LEU:N | 43:DI:12:LEU:HD23 | 2.27 | 0.50 |
| 22:CV:28:G:C2' | 22:CV:29:G:H5' | 2.42 | 0.50 |
| 35:DA:1658:C:H2' | 35:DA:1659:U:C6 | 2.47 | 0.50 |
| 12:CL:102:ARG:O | 12:CL:104:VAL:HG23 | 2.12 | 0.50 |
| 12:CL:83:VAL:CG1 | 12:CL:84:LEU:N | 2.74 | 0.50 |
| 24:CX:13:A:H2' | 24:CX:13:A:N3 | 2.26 | 0.50 |
| 16:AP:81:ARG:HD3 | 16:AP:83:GLU:OE2 | 2.11 | 0.50 |
| 5:AE:71:LEU:HD13 | 5:AE:114:GLY:O | 2.11 | 0.50 |
| 41:BG:69:ALA:O | 41:BG:90:LEU:HG | 2.12 | 0.50 |
| 35:DA:1854:A:H3' | 35:DA:1855:G:C8 | 2.44 | 0.50 |
| 2:AB:136:VAL:O | 2:AB:140:HIS:HB2 | 2.11 | 0.50 |
| 35:BA:2494:G:H2' | 35:BA:2495:G:H8 | 1.76 | 0.50 |
| 9:AI:27:THR:HG23 | 9:AI:31:GLN:N | 2.27 | 0.50 |
| 36:BB:87:G:H1 | 36:BB:91:C:N4 | 2.09 | 0.50 |
| 1:AA:958:A:C8 | 19:AS:55:LYS:HD2 | 2.47 | 0.50 |
| 38:DD:249:PRO:HG2 | 38:DD:250:TRP:CE3 | 2.47 | 0.50 |
| 35:BA:1528:A:H2' | 35:BA:1528:A:N3 | 2.26 | 0.50 |
| 35:DA:1528:A:H2' | 35:DA:1528:A:N3 | 2.27 | 0.50 |
| 38:DD:166:GLN:HA | 38:DD:166:GLN:NE2 | 2.26 | 0.50 |
| 44:DN:89:LYS:O | 44:DN:93:THR:HG23 | 2.12 | 0.50 |
| 1:CA:1349:A:H2' | 1:CA:1350:A:H8 | 1.75 | 0.50 |
| 3:AC:42:LEU:O | 3:AC:45:LYS:HB2 | 2.11 | 0.50 |
| 45:BO:19:ILE:HG22 | 45:BO:43:VAL:HA | 1.93 | 0.50 |
| 35:DA:957:A:N6 | 35:DA:2459:A:C8 | 2.80 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:CA:232:G:H2' | 1:CA:233:C:H6 | 1.77 | 0.50 |
| 46:DP:8:PRO:C | 46:DP:10:PRO:HD2 | 2.32 | 0.50 |
| 31:D6:15:GLU:HG3 | 31:D6:47:THR:OG1 | 2.11 | 0.50 |
| 31:D6:47:THR:CG2 | 31:D6:48:VAL:H | 2.20 | 0.50 |
| 52:BV:46:VAL:HG22 | 52:BV:47:VAL:N | 2.23 | 0.50 |
| 35:DA:1568:G:P | 38:DD:63:ARG:HH22 | 2.35 | 0.50 |
| 3:CC:51:GLY:O | 3:CC:115:LEU:HD21 | 2.12 | 0.50 |
| 52:DV:39:LEU:HD12 | 52:DV:50:PRO:O | 2.12 | 0.50 |
| 41:DG:135:LEU:HD12 | 41:DG:135:LEU:N | 2.27 | 0.50 |
| 1:CA:975:A:C4' | 1:CA:976:G:H5" | 2.30 | 0.50 |
| 43:DI:101:LEU:HG | 43:DI:109:ILE:CD1 | 2.41 | 0.50 |
| 52:BV:85:LYS:HZ3 | 52:BV:85:LYS:HB2 | 1.77 | 0.50 |
| 46:DP:101:VAL:HG23 | 46:DP:102:ARG:N | 2.26 | 0.50 |
| 48:DR:48:VAL:O | 48:DR:49:ASP:C | 2.49 | 0.50 |
| 33:B8:6:THR:CA | 33:B8:61:LEU:HD11 | 2.42 | 0.50 |
| 50:DT:62:THR:HG22 | 50:DT:75:ILE:HA | 1.92 | 0.50 |
| 55:BY:46:LYS:HD3 | 55:BY:47:LYS:HZ2 | 1.74 | 0.50 |
| 56:BZ:120:ILE:HB | 56:BZ:171:ILE:C | 2.31 | 0.50 |
| 37:DC:51:PRO:O | 37:DC:52:ARG:HB2 | 2.12 | 0.50 |
| 40:DF:7:TYR:HB2 | 40:DF:17:ARG:N | 2.27 | 0.50 |
| 32:D7:47:ARG:NH1 | 54:DX:60:ARG:HH22 | 2.09 | 0.50 |
| 35:DA:579:G:H2' | 35:DA:580:C:C6 | 2.47 | 0.50 |
| 19:CS:16:LEU:CD1 | 19:CS:16:LEU:H | 2.25 | 0.50 |
| 25:D0:53:MET:HA | 25:D0:58:THR:O | 2.12 | 0.50 |
| 22:CY:21:A:N6 | 22:CY:46:G:C2 | 2.80 | 0.50 |
| 1:CA:375:U:H2' | 1:CA:376:G:H8 | 1.76 | 0.50 |
| 47:DQ:18:LYS:O | 47:DQ:98:LYS:HD3 | 2.11 | 0.50 |
| 34:B9:17:ILE:HG12 | 34:B9:26:ILE:HD11 | 1.94 | 0.50 |
| 33:D8:23:VAL:HG12 | 33:D8:46:ARG:HB3 | 1.94 | 0.50 |
| 11:AK:21:ILE:CD1 | 11:AK:82:VAL:HG13 | 2.42 | 0.50 |
| 38:DD:206:LEU:HD23 | 38:DD:211:ARG:NH1 | 2.27 | 0.50 |
| 16:AP:25:ARG:HH11 | 16:AP:25:ARG:HG3 | 1.76 | 0.50 |
| 16:AP:50:LYS:NZ | 16:AP:52:ASP:HA | 2.27 | 0.50 |
| 52:BV:2:PHE:O | 52:BV:3:ALA:CB | 2.60 | 0.50 |
| 1:AA:26:A:H61 | 1:AA:558:G:H1' | 1.74 | 0.50 |
| 35:BA:329:G:H1 | 55:BY:19:LYS:NZ | 2.09 | 0.50 |
| 1:CA:859:A:H2' | 1:CA:860:A:O4' | 2.12 | 0.50 |
| 35:DA:623:G:H2' | 35:DA:624:C:C6 | 2.47 | 0.50 |
| 26:B1:23:LYS:HE2 | 26:B1:28:GLY:HA3 | 1.92 | 0.50 |
| 1:AA:591:U:H2' | 1:AA:592:G:H8 | 1.77 | 0.50 |
| 5:CE:136:MET:C | 5:CE:138:ALA:H | 2.15 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:820:U:H4' | 1:AA:821:G:OP2 | 2.11 | 0.50 |
| 1:AA:1411:C:C2' | 1:AA:1412:C:H5' | 2.42 | 0.50 |
| 43:BI:78:THR:OG1 | 43:BI:141:LYS:HD2 | 2.11 | 0.50 |
| 35:BA:408:G:O2' | 35:BA:409:C:H5' | 2.12 | 0.50 |
| 12:CL:82:VAL:O | 12:CL:106:ASP:HB2 | 2.12 | 0.50 |
| 12:AL:82:VAL:O | 12:AL:106:ASP:HB2 | 2.12 | 0.50 |
| 1:CA:811:C:H4' | 1:CA:900:A:N6 | 2.26 | 0.50 |
| 20:CT:84:LEU:HD13 | 20:CT:84:LEU:C | 2.32 | 0.50 |
| 35:BA:1336:A:H2' | 35:BA:1337:G:C8 | 2.47 | 0.50 |
| 4:CD:60:GLU:O | 4:CD:63:LYS:HB3 | 2.12 | 0.50 |
| 51:DU:104:GLN:OE1 | 51:DU:104:GLN:N | 2.45 | 0.50 |
| 46:BP:8:PRO:O | 46:BP:9:ASN:HB3 | 2.11 | 0.49 |
| 1:CA:1442(A):G:H22 | 50:DT:119:LYS:HB2 | 1.77 | 0.49 |
| 31:D6:47:THR:CG2 | 31:D6:48:VAL:N | 2.75 | 0.49 |
| 12:CL:46:LYS:HB2 | 12:CL:92:ASP:O | 2.12 | 0.49 |
| 1:AA:1276:G:H2' | 1:AA:1277:C:H5' | 1.94 | 0.49 |
| 35:BA:2402:C:C2' | 35:BA:2403:C:H5' | 2.42 | 0.49 |
| 35:DA:1815:A:OP2 | 38:DD:54:ARG:NH2 | 2.45 | 0.49 |
| 39:DE:110:GLY:HA2 | 39:DE:162:ALA:N | 2.27 | 0.49 |
| 39:DE:174:ASP:HB3 | 39:DE:183:LEU:HD22 | 1.93 | 0.49 |
| 38:DD:37:LEU:HD12 | 38:DD:64:ILE:CG2 | 2.42 | 0.49 |
| 39:DE:104:VAL:HG11 | 39:DE:188:VAL:CG2 | 2.26 | 0.49 |
| 4:AD:19:LEU:HD13 | 4:AD:21:LEU:HG | 1.94 | 0.49 |
| 55:DY:20:TYR:CZ | 55:DY:42:VAL:HA | 2.47 | 0.49 |
| 56:BZ:31:ARG:HB3 | 56:BZ:31:ARG:CZ | 2.39 | 0.49 |
| 10:AJ:30:SER:HB2 | 10:AJ:80:LYS:O | 2.11 | 0.49 |
| 46:DP:102:ARG:O | 46:DP:103:ALA:HB2 | 2.12 | 0.49 |
| 46:BP:23:PRO:HB2 | 46:BP:33:ARG:NE | 2.26 | 0.49 |
| 36:BB:51:G:H5' | 36:BB:52:A:OP2 | 2.12 | 0.49 |
| 43:DI:41:GLU:HA | 43:DI:44:LEU:HB3 | 1.94 | 0.49 |
| 35:DA:807:U:O2' | 35:DA:808:G:H5' | 2.12 | 0.49 |
| 55:BY:49:VAL:O | 55:BY:50:ARG:HB2 | 2.12 | 0.49 |
| 33:D8:33:ASN:HA | 33:D8:36:LYS:HD3 | 1.92 | 0.49 |
| 55:DY:47:LYS:CD | 55:DY:47:LYS:N | 2.73 | 0.49 |
| 4:CD:102:ASP:HA | 4:CD:121:VAL:HG21 | 1.93 | 0.49 |
| 43:BI:62:LYS:HE2 | 43:BI:134:PRO:CG | 2.42 | 0.49 |
| 35:DA:2811:G:O2' | 35:DA:2812:G:H5' | 2.12 | 0.49 |
| 35:BA:2150:U:H2' | 35:BA:2151:G:H8 | 1.71 | 0.49 |
| 16:AP:34:GLU:HG2 | 16:AP:35:LYS:N | 2.27 | 0.49 |
| 7:CG:23:VAL:O | 7:CG:27:ILE:HG13 | 2.12 | 0.49 |
| 1:CA:1191:A:H5" | 3:CC:4:LYS:HZ2 | 1.77 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:2739:U:O2' | 35:BA:2740:A:H5' | 2.12 | 0.49 |
| 1:AA:627:G:O2' | 1:AA:628:G:H5' | 2.11 | 0.49 |
| 33:B8:46:ARG:O | 33:B8:47:LYS:HB3 | 2.12 | 0.49 |
| 18:CR:63:GLN:OE1 | 18:CR:63:GLN:HA | 2.11 | 0.49 |
| 35:DA:90:U:H2' | 35:DA:90:U:O2 | 2.11 | 0.49 |
| 47:BQ:18:LYS:O | 47:BQ:98:LYS:HD3 | 2.11 | 0.49 |
| 35:DA:1987:G:C5' | 35:DA:1987:G:H8 | 2.23 | 0.49 |
| 2:CB:95:GLN:HE21 | 2:CB:147:LYS:HE3 | 1.75 | 0.49 |
| 12:AL:17:LYS:HD3 | 12:AL:18:VAL:H | 1.77 | 0.49 |
| 46:DP:139:LYS:C | 46:DP:141:ALA:H | 2.16 | 0.49 |
| 47:BQ:111:GLU:O | 47:BQ:115:MET:HG2 | 2.12 | 0.49 |
| 2:CB:178:ARG:HH11 | 2:CB:178:ARG:CB | 2.25 | 0.49 |
| 6:AF:9:VAL:C | 6:AF:10:LEU:HD12 | 2.32 | 0.49 |
| 52:DV:82:ARG:HD2 | 52:DV:82:ARG:N | 2.27 | 0.49 |
| 1:CA:1298:C:P | 7:CG:114:ARG:HH22 | 2.34 | 0.49 |
| 35:BA:729:G:H2' | 35:BA:1775:U:O2 | 2.11 | 0.49 |
| 22:CV:63:G:H2' | 22:CV:64:A:H8 | 1.76 | 0.49 |
| 35:DA:1339:G:N2 | 35:DA:1603:A:H1' | 2.27 | 0.49 |
| 1:AA:829:G:O2' | 1:AA:830:G:H5' | 2.12 | 0.49 |
| 36:BB:40:U:HO2' | 36:BB:43:C:H5 | 1.60 | 0.49 |
| 36:BB:40:U:H1' | 36:BB:45:A:N6 | 2.25 | 0.49 |
| 19:AS:41:VAL:O | 19:AS:44:MET:SD | 2.69 | 0.49 |
| 4:AD:173:TRP:CD1 | 4:AD:174:LEU:HG | 2.48 | 0.49 |
| 48:DR:53:HIS:HA | 48:DR:56:LYS:HD3 | 1.93 | 0.49 |
| 1:CA:1095:U:C5' | 1:CA:1109:C:O2 | 2.60 | 0.49 |
| 1:AA:690:G:H2' | 1:AA:691:G:C8 | 2.47 | 0.49 |
| 35:DA:1234:U:H2' | 35:DA:1235:G:H5' | 1.92 | 0.49 |
| 1:AA:294:U:H2' | 1:AA:295:C:C6 | 2.47 | 0.49 |
| 35:DA:2502:G:H5'' | 35:DA:2503:A:H5'' | 1.94 | 0.49 |
| 35:DA:740:U:H2' | 35:DA:741:G:C8 | 2.47 | 0.49 |
| 42:DH:76:VAL:O | 42:DH:79:VAL:HG22 | 2.12 | 0.49 |
| 39:BE:87:GLU:HG3 | 39:BE:87:GLU:O | 2.12 | 0.49 |
| 47:DQ:58:PHE:HD1 | 47:DQ:58:PHE:O | 1.95 | 0.49 |
| 35:DA:1582:C:O2' | 35:DA:1586:A:C8 | 2.65 | 0.49 |
| 35:BA:1157:G:O2' | 35:BA:1158:C:H5' | 2.12 | 0.49 |
| 56:DZ:28:MET:HE2 | 56:DZ:33:LEU:HD21 | 1.95 | 0.49 |
| 56:DZ:5:LEU:CD1 | 56:DZ:43:GLU:HB3 | 2.43 | 0.49 |
| 40:DF:25:PRO:HG3 | 40:DF:119:ARG:HD3 | 1.94 | 0.49 |
| 12:AL:85:ILE:CG2 | 12:AL:98:TYR:HB3 | 2.42 | 0.49 |
| 31:B6:15:GLU:CA | 31:B6:47:THR:HG21 | 2.40 | 0.49 |
| 43:BI:118:LYS:HZ1 | 43:BI:119:PRO:HG2 | 1.76 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BD:33:LEU:C | 38:BD:36:PRO:HD2 | 2.31 | 0.49 |
| 51:BU:90:VAL:CG2 | 52:BV:47:VAL:HG21 | 2.38 | 0.49 |
| 38:BD:44:ASN:ND2 | 38:BD:47:GLY:O | 2.44 | 0.49 |
| 39:BE:114:ALA:HB3 | 39:BE:160:TYR:HB3 | 1.94 | 0.49 |
| 48:BR:2:ARG:N | 48:BR:2:ARG:HD2 | 2.27 | 0.49 |
| 3:CC:106:VAL:HG12 | 3:CC:108:ASN:H | 1.76 | 0.49 |
| 9:CI:114:TYR:HD2 | 9:CI:114:TYR:N | 2.05 | 0.49 |
| 14:CN:37:PHE:O | 14:CN:39:LEU:HG | 2.11 | 0.49 |
| 37:DC:187:ASP:C | 37:DC:189:ILE:H | 2.15 | 0.49 |
| 41:BG:91:ARG:HG2 | 41:BG:92:VAL:N | 2.27 | 0.49 |
| 41:DG:120:LEU:N | 41:DG:179:PRO:O | 2.46 | 0.49 |
| 4:AD:12:CYS:SG | 4:AD:19:LEU:O | 2.70 | 0.49 |
| 42:DH:68:THR:O | 42:DH:70:THR:O | 2.30 | 0.49 |
| 4:CD:19:LEU:HD13 | 4:CD:21:LEU:HG | 1.94 | 0.49 |
| 28:B3:31:LEU:C | 28:B3:33:GLN:H | 2.14 | 0.49 |
| 46:DP:101:VAL:CG2 | 46:DP:102:ARG:N | 2.74 | 0.49 |
| 44:BN:62:VAL:HG13 | 44:BN:62:VAL:O | 2.11 | 0.49 |
| 44:BN:55:VAL:O | 44:BN:56:ASN:C | 2.50 | 0.49 |
| 46:DP:32:THR:O | 46:DP:33:ARG:CB | 2.60 | 0.49 |
| 1:AA:1291:G:O2' | 1:AA:1292:U:H5' | 2.12 | 0.49 |
| 15:CO:82:ILE:C | 15:CO:82:ILE:HD13 | 2.33 | 0.49 |
| 1:CA:1291:G:O2' | 1:CA:1292:U:H5' | 2.12 | 0.49 |
| 30:D5:2:ALA:CA | 35:DA:2015:A:H1' | 2.35 | 0.49 |
| 41:BG:36:LYS:HE2 | 41:BG:160:VAL:HG21 | 1.93 | 0.49 |
| 56:DZ:130:PRO:O | 56:DZ:133:ILE:HG13 | 2.11 | 0.49 |
| 46:DP:146:VAL:HG13 | 46:DP:147:LEU:H | 1.75 | 0.49 |
| 35:DA:1484:G:H22 | 35:DA:1505:C:H5 | 1.60 | 0.49 |
| 19:AS:9:VAL:HG12 | 19:AS:9:VAL:O | 2.12 | 0.49 |
| 46:DP:88:LEU:N | 46:DP:88:LEU:HD12 | 2.26 | 0.49 |
| 4:CD:13:ARG:O | 4:CD:15:GLU:N | 2.43 | 0.49 |
| 1:AA:17:U:H2' | 1:AA:18:C:H6 | 1.72 | 0.49 |
| 1:CA:438:G:H4' | 4:CD:123:HIS:HD1 | 1.76 | 0.49 |
| 1:AA:335:C:H2' | 1:AA:336:C:C6 | 2.47 | 0.49 |
| 35:BA:2736:G:H2' | 35:BA:2737:G:H8 | 1.77 | 0.49 |
| 13:CM:28:ALA:C | 13:CM:30:ALA:H | 2.16 | 0.49 |
| 1:CA:708:C:H2' | 1:CA:709:G:C8 | 2.47 | 0.49 |
| 35:DA:2739:U:O2' | 35:DA:2740:A:H5' | 2.12 | 0.49 |
| 2:AB:95:GLN:HE21 | 2:AB:147:LYS:HE3 | 1.76 | 0.49 |
| 1:CA:1004:A:C3' | 1:CA:1005:A:H5' | 2.42 | 0.49 |
| 8:AH:45:ILE:C | 8:AH:47:GLY:H | 2.15 | 0.49 |
| 2:CB:136:VAL:O | 2:CB:140:HIS:HB2 | 2.11 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 52:BV:76:LYS:HB2 | 52:BV:81:TYR:HB3 | 1.92 | 0.49 |
| 20:AT:45:GLN:C | 20:AT:47:GLY:N | 2.65 | 0.49 |
| 35:DA:1137:G:H2' | 35:DA:1138:G:H8 | 1.76 | 0.49 |
| 35:BA:2693:A:H2' | 35:BA:2694:G:C8 | 2.47 | 0.49 |
| 44:BN:101:HIS:O | 44:BN:102:ALA:C | 2.50 | 0.49 |
| 4:AD:162:LEU:CD1 | 4:AD:181:MET:HG2 | 2.42 | 0.49 |
| 35:BA:2377:A:H2' | 35:BA:2378:A:C8 | 2.46 | 0.49 |
| 44:BN:91:LEU:HA | 44:BN:95:PRO:HB3 | 1.93 | 0.49 |
| 35:BA:706:A:H2' | 35:BA:707:G:O4' | 2.11 | 0.49 |
| 1:AA:232:G:H2' | 1:AA:233:C:C6 | 2.48 | 0.49 |
| 7:CG:143:ARG:NH1 | 23:CW:42:C:H5'' | 2.26 | 0.49 |
| 35:BA:30:G:H2' | 35:BA:31:C:C6 | 2.47 | 0.49 |
| 35:DA:699:A:H2' | 35:DA:700:G:O4' | 2.12 | 0.49 |
| 35:BA:2208:A:H1' | 35:BA:2219:G:C4 | 2.47 | 0.49 |
| 35:DA:2511:U:O3' | 39:DE:123:ALA:HB3 | 2.12 | 0.49 |
| 1:AA:769:G:O2' | 1:AA:770:C:H5' | 2.12 | 0.49 |
| 35:DA:637:A:H2' | 46:DP:117:GLU:OE2 | 2.11 | 0.49 |
| 35:DA:2239:G:H5' | 38:DD:251:GLY:HA3 | 1.92 | 0.49 |
| 1:CA:116:A:H2' | 1:CA:117:G:O4' | 2.12 | 0.49 |
| 35:BA:137:C:O2 | 35:BA:137:C:H2' | 2.12 | 0.49 |
| 41:DG:167:GLU:CD | 41:DG:167:GLU:H | 2.14 | 0.49 |
| 6:CF:22:GLU:O | 6:CF:26:ILE:HG13 | 2.12 | 0.49 |
| 36:BB:94:C:H2' | 36:BB:95:C:H6 | 1.76 | 0.49 |
| 44:DN:35:ARG:O | 44:DN:37:LYS:N | 2.45 | 0.49 |
| 35:BA:2030:A:H4' | 35:BA:2031:A:H8 | 1.78 | 0.49 |
| 31:D6:16:CYS:O | 31:D6:17:LYS:CB | 2.58 | 0.49 |
| 40:DF:10:PRO:HG2 | 40:DF:11:VAL:H | 1.77 | 0.49 |
| 40:DF:205:ARG:O | 40:DF:205:ARG:HG2 | 2.11 | 0.49 |
| 50:DT:89:VAL:HB | 50:DT:91:ARG:NE | 2.27 | 0.49 |
| 50:DT:91:ARG:C | 50:DT:93:ARG:H | 2.15 | 0.49 |
| 46:BP:46:LYS:HG2 | 46:BP:52:GLU:CG | 2.43 | 0.49 |
| 35:DA:2029:G:H2' | 35:DA:2031:A:OP1 | 2.11 | 0.49 |
| 48:BR:50:HIS:O | 48:BR:54:LEU:HD12 | 2.12 | 0.49 |
| 38:DD:31:LYS:O | 38:DD:35:LYS:HD3 | 2.13 | 0.49 |
| 37:BC:187:ASP:C | 37:BC:189:ILE:H | 2.15 | 0.49 |
| 42:DH:47:GLU:CG | 42:DH:48:GLY:N | 2.63 | 0.49 |
| 14:CN:37:PHE:C | 14:CN:39:LEU:N | 2.65 | 0.49 |
| 51:DU:92:ARG:NH2 | 52:DV:11:GLN:HB2 | 2.25 | 0.49 |
| 52:DV:38:LEU:O | 52:DV:51:VAL:HG13 | 2.12 | 0.49 |
| 35:DA:2307:G:C2 | 35:DA:2308:G:H5'' | 2.47 | 0.49 |
| 10:AJ:63:PHE:HA | 14:AN:59:ALA:HB2 | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DA:1497:U:C5' | 35:DA:1498:C:C5 | 2.95 | 0.49 |
| 41:BG:39:ILE:HG23 | 41:BG:92:VAL:CG1 | 2.42 | 0.49 |
| 1:CA:192:U:O4' | 20:CT:103:GLY:HA2 | 2.12 | 0.49 |
| 30:B5:36:CYS:HB3 | 30:B5:38:ALA:HB3 | 1.94 | 0.49 |
| 35:DA:1663:C:HO2' | 35:DA:1664:A:H8 | 1.61 | 0.49 |
| 46:BP:101:VAL:O | 46:BP:103:ALA:N | 2.40 | 0.49 |
| 6:CF:17:SER:O | 6:CF:20:ALA:N | 2.45 | 0.49 |
| 2:CB:114:ARG:O | 2:CB:118:LEU:HG | 2.12 | 0.49 |
| 35:DA:2657:A:O2' | 42:DH:160:LYS:HE2 | 2.11 | 0.49 |
| 37:BC:72:VAL:HG11 | 37:BC:160:ARG:O | 2.12 | 0.49 |
| 56:BZ:5:LEU:HD23 | 56:BZ:6:LYS:N | 2.27 | 0.49 |
| 55:DY:51:VAL:O | 55:DY:51:VAL:HG12 | 2.12 | 0.49 |
| 17:CQ:67:LYS:O | 17:CQ:68:ARG:C | 2.50 | 0.49 |
| 38:DD:27:THR:CG2 | 38:DD:27:THR:O | 2.59 | 0.49 |
| 43:BI:129:THR:HA | 43:BI:137:PRO:HA | 1.93 | 0.49 |
| 25:B0:29:GLN:HG2 | 35:BA:923:C:C4' | 2.41 | 0.49 |
| 1:AA:1151:A:N3 | 10:AJ:39:PRO:HG3 | 2.27 | 0.49 |
| 35:DA:1506:C:H2' | 35:DA:1506:C:O2 | 2.11 | 0.49 |
| 12:CL:28:LYS:CE | 12:CL:33:ARG:HH22 | 2.25 | 0.49 |
| 42:DH:27:LYS:HE3 | 42:DH:32:GLU:OE1 | 2.11 | 0.49 |
| 1:CA:826:C:H5' | 8:CH:12:ARG:NH2 | 2.27 | 0.49 |
| 35:BA:549:G:H2' | 35:BA:551:G:C5' | 2.40 | 0.49 |
| 1:CA:674:G:H2' | 1:CA:675:A:C8 | 2.45 | 0.49 |
| 49:BS:106:ARG:NH2 | 49:BS:109:GLY:N | 2.61 | 0.49 |
| 1:AA:644:G:C2' | 1:AA:645:C:H5' | 2.42 | 0.49 |
| 1:AA:627:G:H2' | 1:AA:628:G:C8 | 2.47 | 0.49 |
| 1:AA:750:G:H1' | 15:AO:23:GLY:H | 1.77 | 0.49 |
| 31:B6:28:ARG:CZ | 31:B6:28:ARG:HA | 2.43 | 0.49 |
| 5:CE:71:LEU:HD13 | 5:CE:114:GLY:O | 2.12 | 0.49 |
| 1:CA:386:C:C2' | 1:CA:387:U:H5' | 2.41 | 0.49 |
| 48:BR:79:LEU:HA | 48:BR:83:ILE:CG1 | 2.43 | 0.49 |
| 44:DN:57:ALA:O | 44:DN:58:ASP:O | 2.31 | 0.49 |
| 52:DV:2:PHE:O | 52:DV:3:ALA:CB | 2.60 | 0.49 |
| 25:B0:34:GLY:HA3 | 35:BA:2353:G:H1' | 1.94 | 0.49 |
| 35:DA:2837:G:H2' | 35:DA:2838:G:H8 | 1.77 | 0.49 |
| 38:DD:240:ALA:HB1 | 38:DD:241:PRO:HD2 | 1.94 | 0.49 |
| 1:CA:1000:U:H2' | 1:CA:1001:A:H8 | 1.77 | 0.49 |
| 35:DA:100:G:OP2 | 35:DA:100:G:H4' | 2.12 | 0.49 |
| 16:CP:82:GLN:HE21 | 16:CP:82:GLN:N | 2.09 | 0.49 |
| 7:CG:113:GLU:HB2 | 7:CG:119:ARG:HG2 | 1.94 | 0.49 |
| 27:D2:31:GLU:HB3 | 27:D2:53:LEU:HD11 | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:801:U:H2' | 1:CA:802:A:H8 | 1.75 | 0.49 |
| 35:DA:2012:G:H4' | 53:DW:96:ILE:HD11 | 1.94 | 0.49 |
| 47:BQ:60:ARG:HH11 | 47:BQ:60:ARG:HB2 | 1.76 | 0.49 |
| 8:AH:54:ASP:O | 8:AH:56:LYS:HG3 | 2.12 | 0.49 |
| 22:CV:56:C:H2' | 22:CV:57:G:H8 | 1.77 | 0.49 |
| 35:BA:263:C:O2' | 35:BA:264:C:H5' | 2.11 | 0.49 |
| 27:B2:24:LEU:O | 27:B2:28:LYS:HG2 | 2.12 | 0.49 |
| 11:AK:73:MET:SD | 11:AK:103:LEU:HD21 | 2.52 | 0.49 |
| 1:AA:1183:A:H5'' | 1:AA:1184:G:OP1 | 2.12 | 0.49 |
| 51:BU:104:GLN:CD | 51:BU:104:GLN:H | 2.15 | 0.49 |
| 8:CH:97:VAL:HA | 8:CH:100:ILE:CD1 | 2.42 | 0.49 |
| 1:CA:1425:U:H2' | 1:CA:1426:C:C6 | 2.47 | 0.49 |
| 35:DA:225:A:H2' | 35:DA:226:G:H5' | 1.94 | 0.49 |
| 8:CH:29:SER:HB3 | 8:CH:32:LYS:HG3 | 1.94 | 0.49 |
| 35:BA:1817:G:H2' | 35:BA:1818:U:H5' | 1.94 | 0.49 |
| 52:DV:74:LYS:HB2 | 52:DV:83:ARG:HB2 | 1.94 | 0.49 |
| 20:AT:53:LEU:HD13 | 20:AT:102:GLY:HA3 | 1.93 | 0.49 |
| 35:DA:1268:A:H2' | 35:DA:1269:A:O4' | 2.13 | 0.49 |
| 7:CG:81:GLY:C | 7:CG:83:ALA:H | 2.16 | 0.49 |
| 1:AA:783:C:O2' | 1:AA:784:C:H5' | 2.12 | 0.49 |
| 4:AD:52:SER:O | 4:AD:55:ALA:HB3 | 2.11 | 0.49 |
| 55:BY:13:VAL:HA | 55:BY:75:ILE:HG22 | 1.95 | 0.49 |
| 9:AI:80:GLY:O | 9:AI:83:ARG:HB3 | 2.13 | 0.49 |
| 1:AA:1054:C:H2' | 1:AA:1054:C:O2 | 2.12 | 0.49 |
| 2:AB:223:ILE:HG22 | 2:AB:226:ARG:NH2 | 2.23 | 0.49 |
| 49:DS:13:ARG:O | 49:DS:15:ARG:HG2 | 2.13 | 0.49 |
| 49:DS:20:ARG:NH1 | 49:DS:20:ARG:HG2 | 2.27 | 0.49 |
| 2:CB:50:GLU:HG3 | 2:CB:202:PRO:CG | 2.42 | 0.49 |
| 35:DA:2863:C:C3' | 35:DA:2864:G:H5'' | 2.42 | 0.49 |
| 35:DA:2723:C:H5'' | 48:DR:2:ARG:CD | 2.42 | 0.49 |
| 39:DE:109:LYS:HB2 | 48:DR:2:ARG:HH22 | 1.77 | 0.49 |
| 35:DA:1591:G:C8 | 35:DA:1591:G:H5' | 2.41 | 0.49 |
| 13:CM:13:LYS:O | 13:CM:45:VAL:HG23 | 2.12 | 0.49 |
| 52:DV:47:VAL:O | 52:DV:47:VAL:HG23 | 2.13 | 0.49 |
| 35:BA:2313:C:H5' | 35:BA:2313:C:H6 | 1.78 | 0.49 |
| 35:BA:1798:U:H5' | 38:BD:259:THR:HG23 | 1.89 | 0.49 |
| 10:CJ:5:ARG:HA | 10:CJ:73:ASP:OD1 | 2.12 | 0.49 |
| 10:CJ:29:ARG:HH22 | 10:CJ:84:GLN:CD | 2.15 | 0.49 |
| 3:AC:30:ARG:HH22 | 14:AN:35:ARG:HA | 1.77 | 0.49 |
| 47:DQ:21:THR:CG2 | 47:DQ:101:ARG:HH11 | 2.25 | 0.49 |
| 49:DS:58:LEU:HD11 | 49:DS:68:GLN:NE2 | 2.26 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 49:BS:61:ASN:O | 49:BS:65:VAL:HG23 | 2.12 | 0.49 |
| 26:B1:69:LYS:O | 26:B1:73:LEU:HD12 | 2.12 | 0.49 |
| 35:DA:271(T):C:O2' | 35:DA:271(U):G:H5' | 2.12 | 0.49 |
| 56:BZ:5:LEU:HD23 | 56:BZ:6:LYS:H | 1.78 | 0.49 |
| 1:CA:1321:C:C5' | 1:CA:1322:C:C5' | 2.86 | 0.49 |
| 35:DA:2419:U:O2' | 35:DA:2420:C:H5' | 2.12 | 0.49 |
| 35:DA:1785:A:OP2 | 35:DA:1982:C:H5' | 2.12 | 0.49 |
| 35:DA:152:G:H2' | 35:DA:153:C:O4' | 2.12 | 0.49 |
| 41:BG:33:ARG:N | 41:BG:162:THR:OG1 | 2.44 | 0.49 |
| 35:DA:2133:G:H21 | 35:DA:2158:A:H62 | 1.59 | 0.49 |
| 56:BZ:151:HIS:CD2 | 56:BZ:170:THR:HA | 2.46 | 0.49 |
| 8:AH:112:LEU:HA | 8:AH:134:ILE:CG1 | 2.38 | 0.49 |
| 35:DA:1528(A):A:N7 | 35:DA:1529:G:H8 | 2.10 | 0.49 |
| 46:BP:95:VAL:HG23 | 46:BP:95:VAL:O | 2.13 | 0.49 |
| 35:BA:2443:C:O2' | 35:BA:2444:G:H5' | 2.12 | 0.49 |
| 23:CW:18:G:H1 | 23:CW:55:U:H1' | 1.77 | 0.49 |
| 1:AA:882:C:O2' | 1:AA:883:C:H5' | 2.12 | 0.49 |
| 1:CA:376:G:H5'' | 16:CP:5:ARG:HD2 | 1.95 | 0.49 |
| 16:CP:34:GLU:HG2 | 16:CP:35:LYS:N | 2.27 | 0.49 |
| 22:AY:74:C:H2' | 22:AY:75:C:C5' | 2.43 | 0.49 |
| 35:BA:2172:U:C3' | 35:BA:2173:A:H8 | 2.25 | 0.49 |
| 12:AL:102:ARG:CG | 12:AL:102:ARG:HH11 | 2.22 | 0.49 |
| 3:AC:3:ASN:O | 3:AC:4:LYS:C | 2.51 | 0.49 |
| 27:D2:38:GLN:O | 27:D2:41:ILE:HG12 | 2.12 | 0.49 |
| 1:CA:633:G:H5' | 1:CA:634:C:OP2 | 2.12 | 0.49 |
| 36:BB:50:G:OP1 | 49:BS:63:THR:HG23 | 2.11 | 0.49 |
| 11:CK:44:SER:H | 11:CK:47:VAL:HG21 | 1.77 | 0.49 |
| 4:AD:3:ARG:HG2 | 4:AD:3:ARG:HH21 | 1.77 | 0.49 |
| 2:AB:97:TRP:CZ2 | 2:AB:102:LEU:HD13 | 2.45 | 0.49 |
| 12:CL:102:ARG:CG | 12:CL:102:ARG:HH11 | 2.24 | 0.49 |
| 46:BP:140:ALA:O | 46:BP:141:ALA:HB3 | 2.13 | 0.49 |
| 1:CA:1342:C:H4' | 9:CI:124:GLN:O | 2.13 | 0.49 |
| 35:DA:1799:G:H5' | 35:DA:1819:A:H61 | 1.76 | 0.49 |
| 1:AA:848:C:O2' | 1:AA:849:C:H5' | 2.12 | 0.49 |
| 52:BV:82:ARG:HG2 | 52:BV:82:ARG:HH11 | 1.75 | 0.49 |
| 10:AJ:40:LEU:HD21 | 10:AJ:69:ASN:HB3 | 1.92 | 0.49 |
| 51:BU:98:LEU:CD2 | 52:BV:2:PHE:HZ | 2.23 | 0.49 |
| 1:CA:596:C:H2' | 1:CA:597:G:H8 | 1.77 | 0.49 |
| 45:BO:25:LEU:O | 45:BO:26:LYS:HG3 | 2.13 | 0.49 |
| 38:DD:249:PRO:HG2 | 38:DD:250:TRP:CZ3 | 2.47 | 0.49 |
| 35:BA:2591:C:OP1 | 38:BD:239:ARG:HG2 | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:1188:A:H2' | 1:CA:1189:C:H5' | 1.95 | 0.49 |
| 44:BN:28:THR:HA | 44:BN:106:MET:CE | 2.42 | 0.49 |
| 7:AG:115:ARG:O | 7:AG:119:ARG:HG3 | 2.12 | 0.49 |
| 35:BA:1707:G:H2' | 35:BA:1708:C:C6 | 2.47 | 0.49 |
| 51:BU:12:ARG:O | 51:BU:15:LYS:HD3 | 2.12 | 0.49 |
| 11:CK:99:GLN:HA | 11:CK:105:VAL:HG11 | 1.93 | 0.49 |
| 1:CA:443:C:H2' | 1:CA:444:C:C6 | 2.48 | 0.49 |
| 25:B0:32:ARG:O | 25:B0:35:ASN:ND2 | 2.44 | 0.49 |
| 1:CA:1027:C:H1' | 1:CA:1035:A:C2 | 2.47 | 0.49 |
| 56:BZ:24:LEU:O | 56:BZ:24:LEU:HD23 | 2.12 | 0.49 |
| 53:BW:37:ARG:HG3 | 53:BW:37:ARG:HH11 | 1.77 | 0.49 |
| 1:AA:1169:A:H2' | 1:AA:1170:A:C8 | 2.47 | 0.49 |
| 29:D4:45:GLY:O | 29:D4:46:ASN:O | 2.29 | 0.49 |
| 7:CG:28:ASN:O | 7:CG:31:MET:HB3 | 2.12 | 0.49 |
| 9:AI:18:PHE:HB2 | 9:AI:62:TYR:O | 2.13 | 0.49 |
| 35:BA:752:A:O2' | 35:BA:753:C:OP2 | 2.26 | 0.49 |
| 49:DS:22:GLY:O | 49:DS:23:ARG:O | 2.29 | 0.49 |
| 17:CQ:62:SER:OG | 17:CQ:72:ARG:NE | 2.46 | 0.49 |
| 1:AA:1220:G:H2' | 1:AA:1221:G:H8 | 1.76 | 0.49 |
| 35:BA:2154:G:O2' | 35:BA:2155:G:H5' | 2.12 | 0.49 |
| 7:AG:28:ASN:O | 7:AG:31:MET:HB3 | 2.12 | 0.49 |
| 14:AN:31:ARG:HH11 | 14:AN:31:ARG:HG3 | 1.77 | 0.49 |
| 28:B3:1:MET:O | 28:B3:3:ARG:N | 2.46 | 0.49 |
| 35:BA:1678:G:N2 | 35:BA:1989:G:H22 | 2.10 | 0.49 |
| 46:DP:8:PRO:O | 46:DP:9:ASN:HB3 | 2.12 | 0.49 |
| 41:BG:85:GLY:O | 41:BG:87:PRO:HD2 | 2.13 | 0.49 |
| 50:DT:28:VAL:HB | 50:DT:88:ILE:HG13 | 1.95 | 0.49 |
| 55:DY:96:ILE:HD12 | 55:DY:99:CYS:HB2 | 1.93 | 0.49 |
| 39:DE:111:ARG:HD2 | 39:DE:160:TYR:HE1 | 1.78 | 0.49 |
| 35:BA:661:C:O3' | 46:BP:18:ARG:HD2 | 2.13 | 0.49 |
| 1:CA:1256:A:H5' | 1:CA:1257:U:OP1 | 2.13 | 0.49 |
| 44:BN:134:ARG:H | 44:BN:135:PRO:HD3 | 1.77 | 0.49 |
| 35:BA:1162:G:H2' | 35:BA:1163:G:H8 | 1.78 | 0.49 |
| 35:BA:2313:C:H4' | 41:BG:40:ASN:ND2 | 2.27 | 0.49 |
| 41:DG:15:VAL:HG21 | 41:DG:176:LEU:CD2 | 2.42 | 0.49 |
| 55:DY:28:LYS:C | 55:DY:38:ILE:HB | 2.33 | 0.49 |
| 47:BQ:21:THR:CG2 | 47:BQ:101:ARG:HH11 | 2.24 | 0.49 |
| 10:CJ:30:SER:HB2 | 10:CJ:80:LYS:O | 2.11 | 0.49 |
| 46:DP:101:VAL:HG12 | 46:DP:106:LEU:HB3 | 1.94 | 0.49 |
| 35:BA:2861:G:H2' | 35:BA:2862:G:H8 | 1.77 | 0.49 |
| 37:BC:82:LYS:HG2 | 37:BC:151:GLU:HA | 1.95 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:B8:33:ASN:HA | 33:B8:36:LYS:HD2 | 1.93 | 0.49 |
| 33:B8:33:ASN:HA | 33:B8:36:LYS:HD3 | 1.93 | 0.49 |
| 50:BT:55:ASN:HD22 | 50:BT:58:ASN:ND2 | 1.96 | 0.49 |
| 45:DO:77:ILE:HD11 | 50:DT:72:VAL:CG1 | 2.42 | 0.49 |
| 55:BY:46:LYS:HB3 | 55:BY:47:LYS:HD2 | 1.93 | 0.49 |
| 55:BY:50:ARG:HG3 | 55:BY:58:GLY:HA2 | 1.94 | 0.49 |
| 36:DB:15:A:H1' | 36:DB:110:G:N7 | 2.28 | 0.49 |
| 15:AO:87:ILE:O | 15:AO:88:ARG:HB2 | 2.13 | 0.49 |
| 29:D4:51:TYR:O | 29:D4:52:SER:HB3 | 2.12 | 0.49 |
| 35:BA:2870:C:O2' | 35:BA:2871:C:H5' | 2.13 | 0.49 |
| 35:DA:1529:G:H21 | 35:DA:1530:C:H5'' | 1.76 | 0.49 |
| 10:AJ:16:LEU:HD13 | 10:AJ:17:ASP:N | 2.27 | 0.49 |
| 35:DA:2579:C:O3' | 39:DE:131:ALA:CB | 2.61 | 0.49 |
| 35:BA:2197:U:HO2' | 35:BA:2198:A:H5'' | 1.76 | 0.49 |
| 50:BT:128:GLU:OE1 | 50:BT:129:ARG:N | 2.46 | 0.49 |
| 25:D0:7:LEU:HD21 | 47:DQ:81:VAL:HB | 1.94 | 0.49 |
| 35:DA:563:G:H5' | 35:DA:572:A:H4' | 1.94 | 0.49 |
| 33:B8:14:VAL:HG21 | 33:B8:22:VAL:HG13 | 1.95 | 0.49 |
| 35:BA:1799:G:H5' | 35:BA:1819:A:H61 | 1.77 | 0.49 |
| 35:DA:1203:G:H3' | 35:DA:1204:A:H5'' | 1.95 | 0.49 |
| 2:AB:82:ARG:HB2 | 2:AB:94:ASN:HD21 | 1.74 | 0.49 |
| 35:DA:1707:G:H2' | 35:DA:1708:C:C6 | 2.46 | 0.49 |
| 53:DW:12:ILE:HG13 | 53:DW:42:ARG:NH1 | 2.27 | 0.49 |
| 1:CA:860:A:H2' | 1:CA:861:G:O4' | 2.12 | 0.49 |
| 3:CC:64:VAL:HG12 | 3:CC:66:VAL:HG23 | 1.94 | 0.49 |
| 6:CF:1:MET:HE1 | 6:CF:68:PRO:HB3 | 1.94 | 0.49 |
| 35:BA:1710:C:O2' | 35:BA:1711:C:H5' | 2.12 | 0.49 |
| 1:CA:627:G:H2' | 1:CA:628:G:C8 | 2.47 | 0.49 |
| 35:DA:1231:G:H2' | 35:DA:1232:G:C8 | 2.47 | 0.49 |
| 35:DA:1827:C:H2' | 35:DA:1828:G:O4' | 2.12 | 0.49 |
| 7:AG:81:GLY:C | 7:AG:83:ALA:H | 2.16 | 0.49 |
| 1:AA:116:A:H2' | 1:AA:117:G:O4' | 2.12 | 0.49 |
| 1:CA:477:A:O2' | 1:CA:479:C:H5' | 2.12 | 0.49 |
| 4:AD:100:ARG:NH1 | 4:AD:137:SER:HA | 2.27 | 0.49 |
| 43:BI:99:GLU:O | 43:BI:103:ARG:HD3 | 2.13 | 0.49 |
| 1:AA:908:A:H2' | 1:AA:909:A:C8 | 2.48 | 0.49 |
| 56:DZ:40:ASP:OD1 | 56:DZ:42:VAL:HG12 | 2.13 | 0.49 |
| 2:CB:88:ALA:O | 2:CB:90:MET:HG3 | 2.12 | 0.49 |
| 35:DA:2802:G:H3' | 35:DA:2803:C:C5' | 2.43 | 0.49 |
| 22:AV:20:U:H2' | 22:AV:21:A:H5' | 1.93 | 0.49 |
| 35:DA:1747:G:H2' | 35:DA:1747(A):G:H8 | 1.78 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 51:BU:58:ARG:O | 51:BU:62:ILE:HG12 | 2.12 | 0.49 |
| 56:BZ:99:TYR:HD2 | 56:BZ:99:TYR:N | 2.11 | 0.49 |
| 38:DD:37:LEU:HD12 | 38:DD:64:ILE:HG22 | 1.93 | 0.49 |
| 5:AE:36:ASP:O | 5:AE:37:ARG:HB2 | 2.12 | 0.49 |
| 12:CL:91:LYS:HG3 | 12:CL:91:LYS:O | 2.13 | 0.49 |
| 10:AJ:48:THR:HG22 | 10:AJ:49:VAL:N | 2.27 | 0.49 |
| 4:AD:12:CYS:HA | 4:AD:19:LEU:CD1 | 2.43 | 0.49 |
| 3:AC:113:ALA:HB2 | 3:AC:202:ILE:CG1 | 2.40 | 0.49 |
| 35:BA:1797:C:O2' | 38:BD:259:THR:CG2 | 2.61 | 0.49 |
| 38:DD:267:SER:C | 38:DD:269:PHE:N | 2.66 | 0.49 |
| 43:DI:77:LEU:HD11 | 43:DI:101:LEU:CD1 | 2.33 | 0.49 |
| 46:DP:97:PRO:C | 46:DP:99:LEU:N | 2.66 | 0.49 |
| 30:B5:2:ALA:N | 35:BA:747:U:N3 | 2.61 | 0.49 |
| 1:AA:266:G:O2' | 1:AA:267:C:OP2 | 2.31 | 0.49 |
| 35:BA:128:C:H2' | 35:BA:129:C:H6 | 1.77 | 0.49 |
| 40:DF:7:TYR:HB3 | 40:DF:16:GLY:N | 2.28 | 0.49 |
| 20:CT:98:PRO:C | 20:CT:100:ILE:H | 2.16 | 0.49 |
| 55:DY:88:LYS:O | 55:DY:89:PHE:HB2 | 2.12 | 0.49 |
| 35:DA:2811:G:C2' | 35:DA:2812:G:H5' | 2.42 | 0.49 |
| 35:DA:1529:G:N2 | 35:DA:1530:C:H2' | 2.28 | 0.49 |
| 12:CL:62:SER:C | 12:CL:64:TYR:H | 2.16 | 0.49 |
| 35:BA:956:G:H5'' | 47:BQ:77:LYS:HD2 | 1.94 | 0.49 |
| 39:DE:117:MET:HG2 | 39:DE:117:MET:O | 2.13 | 0.49 |
| 39:DE:116:VAL:HG21 | 39:DE:122:PHE:CD2 | 2.47 | 0.49 |
| 27:B2:39:ALA:HA | 27:B2:45:SER:HB3 | 1.95 | 0.49 |
| 8:AH:48:TYR:HB2 | 8:AH:60:ARG:O | 2.12 | 0.49 |
| 43:BI:60:GLU:OE2 | 43:BI:60:GLU:HA | 2.13 | 0.49 |
| 1:AA:1105:A:H2' | 1:AA:1106:G:C8 | 2.46 | 0.49 |
| 35:BA:1656:C:H2' | 35:BA:1657:C:C6 | 2.48 | 0.49 |
| 1:CA:1251:A:H4' | 9:CI:12:GLU:OE1 | 2.13 | 0.49 |
| 4:CD:8:VAL:C | 4:CD:10:ARG:N | 2.65 | 0.49 |
| 2:CB:194:PRO:HA | 2:CB:200:ILE:HD11 | 1.94 | 0.49 |
| 1:CA:797:C:H2' | 1:CA:798:G:H8 | 1.77 | 0.49 |
| 44:BN:57:ALA:O | 44:BN:58:ASP:C | 2.51 | 0.49 |
| 56:BZ:8:TYR:HB2 | 56:BZ:38:TYR:CE2 | 2.48 | 0.49 |
| 13:CM:111:LYS:HG2 | 13:CM:112:GLY:N | 2.28 | 0.49 |
| 35:DA:1137:G:H2' | 35:DA:1138:G:C8 | 2.47 | 0.49 |
| 14:AN:23:ARG:HD3 | 14:AN:29:ARG:O | 2.13 | 0.49 |
| 41:DG:76:SER:O | 41:DG:77:ILE:HD13 | 2.12 | 0.49 |
| 41:DG:83:ARG:NH1 | 41:DG:84:LYS:HD2 | 2.27 | 0.49 |
| 38:BD:53:PHE:CE1 | 38:BD:220:HIS:HA | 2.48 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BD:166:GLN:HA | 38:BD:166:GLN:NE2 | 2.26 | 0.49 |
| 38:DD:257:LEU:CD2 | 38:DD:257:LEU:C | 2.81 | 0.49 |
| 1:AA:606:G:H2' | 1:AA:631:G:N2 | 2.27 | 0.49 |
| 42:DH:80:SER:O | 42:DH:81:GLU:CB | 2.60 | 0.49 |
| 1:CA:820:U:H4' | 1:CA:821:G:OP2 | 2.12 | 0.49 |
| 31:D6:30:THR:HB | 31:D6:31:PRO:HD2 | 1.94 | 0.49 |
| 48:DR:106:GLY:O | 48:DR:107:ASP:HB3 | 2.12 | 0.49 |
| 56:DZ:152:ALA:C | 56:DZ:154:ASP:H | 2.15 | 0.49 |
| 35:DA:977:G:C2' | 35:DA:978:G:H5' | 2.43 | 0.49 |
| 35:BA:637:A:H2' | 46:BP:117:GLU:OE2 | 2.11 | 0.49 |
| 35:BA:1641:A:H2' | 35:BA:1642:G:O4' | 2.13 | 0.49 |
| 47:BQ:132:VAL:HG11 | 56:BZ:81:ARG:HD3 | 1.94 | 0.49 |
| 35:DA:2208:A:H1' | 35:DA:2219:G:C4 | 2.47 | 0.49 |
| 39:BE:182:LEU:O | 39:BE:183:LEU:HD12 | 2.12 | 0.49 |
| 16:AP:43:LYS:HG2 | 16:AP:48:TRP:CE2 | 2.47 | 0.49 |
| 6:CF:77:ARG:HB3 | 6:CF:77:ARG:CZ | 2.42 | 0.49 |
| 45:DO:19:ILE:HG22 | 45:DO:43:VAL:HA | 1.93 | 0.49 |
| 43:DI:99:GLU:O | 43:DI:103:ARG:HD3 | 2.13 | 0.49 |
| 47:DQ:140:ALA:HA | 56:DZ:99:TYR:CD2 | 2.47 | 0.49 |
| 46:DP:50:ARG:NH2 | 46:DP:50:ARG:HG2 | 2.28 | 0.49 |
| 40:BF:25:PRO:HG3 | 40:BF:119:ARG:HD3 | 1.95 | 0.49 |
| 2:AB:162:ILE:O | 2:AB:162:ILE:HG13 | 2.12 | 0.49 |
| 50:BT:89:VAL:CG1 | 50:BT:91:ARG:NE | 2.76 | 0.49 |
| 6:CF:3:ARG:HD3 | 6:CF:64:GLN:OE1 | 2.12 | 0.49 |
| 12:AL:48:PRO:C | 12:AL:49:ASN:HD22 | 2.16 | 0.49 |
| 38:BD:31:LYS:NZ | 38:BD:94:LEU:HD11 | 2.28 | 0.49 |
| 51:BU:91:ASP:OD2 | 51:BU:96:ALA:CB | 2.52 | 0.49 |
| 35:DA:2030:A:H4' | 35:DA:2031:A:C8 | 2.48 | 0.49 |
| 48:BR:44:LEU:HD12 | 48:BR:114:VAL:HG11 | 1.95 | 0.49 |
| 48:BR:48:VAL:HA | 48:BR:51:LEU:HD12 | 1.95 | 0.49 |
| 37:DC:65:PRO:HG2 | 37:DC:189:ILE:CB | 2.42 | 0.49 |
| 51:DU:92:ARG:HH11 | 51:DU:92:ARG:CG | 2.25 | 0.49 |
| 35:DA:2305:A:H5' | 41:DG:156:ASP:OD1 | 2.13 | 0.49 |
| 40:BF:9:ILE:HA | 40:BF:14:PRO:O | 2.13 | 0.49 |
| 38:BD:133:LEU:HD13 | 38:BD:165:ILE:CD1 | 2.43 | 0.49 |
| 7:AG:84:ASN:ND2 | 23:AW:33:U:H4' | 2.28 | 0.49 |
| 35:BA:2732:G:C3' | 35:BA:2733:A:H5' | 2.42 | 0.49 |
| 10:AJ:26:ALA:HB1 | 10:AJ:84:GLN:HG3 | 1.95 | 0.49 |
| 35:DA:587:C:O2' | 35:DA:588:U:OP2 | 2.29 | 0.49 |
| 44:DN:125:GLY:CA | 44:DN:126:PRO:O | 2.60 | 0.49 |
| 55:DY:49:VAL:O | 55:DY:50:ARG:HB2 | 2.13 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:D5:2:ALA:HB3 | 35:DA:747:U:N1 | 2.28 | 0.49 |
| 35:DA:2098:U:H2' | 35:DA:2099:U:O4' | 2.12 | 0.49 |
| 20:CT:43:LEU:HB3 | 20:CT:48:LYS:HG3 | 1.94 | 0.49 |
| 8:CH:83:ILE:HG13 | 8:CH:137:VAL:HG22 | 1.93 | 0.49 |
| 55:DY:88:LYS:HZ3 | 55:DY:93:GLY:CA | 2.26 | 0.49 |
| 46:DP:95:VAL:HG23 | 46:DP:95:VAL:O | 2.13 | 0.49 |
| 39:BE:30:PRO:HG3 | 39:BE:180:ASN:HD21 | 1.77 | 0.49 |
| 3:CC:19:GLU:O | 3:CC:20:SER:HB2 | 2.11 | 0.49 |
| 38:BD:142:VAL:HG23 | 38:BD:192:THR:C | 2.32 | 0.49 |
| 56:DZ:178:GLU:HA | 56:DZ:178:GLU:OE2 | 2.12 | 0.49 |
| 35:BA:542:C:N4 | 35:BA:543:C:N4 | 2.61 | 0.49 |
| 16:CP:20:VAL:HB | 16:CP:32:TYR:HD1 | 1.77 | 0.49 |
| 38:DD:133:LEU:HD23 | 38:DD:189:CYS:O | 2.12 | 0.49 |
| 1:AA:186:C:H1' | 20:AT:85:MET:CE | 2.43 | 0.49 |
| 1:CA:1369:C:H2' | 1:CA:1370:G:C8 | 2.48 | 0.49 |
| 27:B2:14:ARG:NH2 | 35:BA:77:C:O3' | 2.46 | 0.49 |
| 56:BZ:27:VAL:O | 56:BZ:87:ASP:HA | 2.13 | 0.49 |
| 13:AM:111:LYS:HG2 | 13:AM:112:GLY:N | 2.27 | 0.49 |
| 13:CM:108:ARG:NH1 | 13:CM:112:GLY:HA3 | 2.28 | 0.49 |
| 35:BA:524:U:H4' | 35:BA:555:U:H4' | 1.95 | 0.49 |
| 35:BA:1339:G:N2 | 35:BA:1603:A:H1' | 2.28 | 0.49 |
| 38:BD:240:ALA:HB1 | 38:BD:241:PRO:HD2 | 1.92 | 0.49 |
| 6:CF:45:LEU:HD11 | 6:CF:57:GLN:OE1 | 2.13 | 0.49 |
| 1:CA:660:G:H1 | 1:CA:745:C:H42 | 1.61 | 0.49 |
| 1:CA:636:U:H5'' | 17:CQ:2:PRO:HG3 | 1.95 | 0.49 |
| 5:CE:47:LYS:O | 5:CE:48:ALA:HB2 | 2.11 | 0.49 |
| 25:D0:32:ARG:HB2 | 25:D0:35:ASN:HD21 | 1.76 | 0.49 |
| 35:BA:1443:G:C2' | 35:BA:1444:G:H5' | 2.43 | 0.49 |
| 8:CH:54:ASP:O | 8:CH:56:LYS:HG3 | 2.12 | 0.49 |
| 1:AA:445:G:H2' | 1:AA:446:G:C8 | 2.48 | 0.49 |
| 4:CD:173:TRP:NE1 | 4:CD:174:LEU:HG | 2.27 | 0.49 |
| 35:DA:644:A:H4' | 35:DA:645:C:C5 | 2.48 | 0.49 |
| 4:AD:187:ARG:HH11 | 4:AD:187:ARG:HG2 | 1.77 | 0.49 |
| 7:AG:136:LYS:O | 7:AG:140:ASP:HB2 | 2.12 | 0.49 |
| 35:BA:2879:C:H4' | 35:BA:2880:C:OP1 | 2.12 | 0.49 |
| 34:B9:16:VAL:HG11 | 35:BA:1032:A:O3' | 2.12 | 0.49 |
| 35:BA:633:A:H2' | 35:BA:634:C:H5' | 1.93 | 0.49 |
| 17:CQ:48:GLU:O | 17:CQ:49:GLU:C | 2.51 | 0.49 |
| 35:DA:260:G:C2 | 35:DA:261:G:H1' | 2.48 | 0.49 |
| 36:DB:51:G:H5' | 36:DB:52:A:OP2 | 2.12 | 0.49 |
| 35:BA:363(B):G:N3 | 35:BA:363(B):G:H2' | 2.27 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AQ:48:GLU:O | 17:AQ:49:GLU:C | 2.51 | 0.49 |
| 1:CA:139:G:H2' | 1:CA:140:A:H8 | 1.77 | 0.49 |
| 5:AE:131:ILE:HD13 | 5:AE:131:ILE:O | 2.13 | 0.49 |
| 56:DZ:74:VAL:HA | 56:DZ:86:VAL:HG12 | 1.94 | 0.49 |
| 56:DZ:85:HIS:ND1 | 56:DZ:86:VAL:N | 2.61 | 0.49 |
| 49:BS:13:ARG:O | 49:BS:15:ARG:HG2 | 2.13 | 0.49 |
| 12:AL:62:SER:C | 12:AL:64:TYR:H | 2.16 | 0.49 |
| 31:B6:16:CYS:O | 31:B6:17:LYS:CB | 2.57 | 0.49 |
| 55:BY:95:LYS:HE2 | 55:BY:100:ALA:HB1 | 1.95 | 0.49 |
| 9:AI:66:ARG:CB | 9:AI:66:ARG:HH11 | 2.26 | 0.49 |
| 1:CA:1442(A):G:C3' | 1:CA:1442(B):A:C5' | 2.81 | 0.49 |
| 2:CB:216:SER:C | 2:CB:218:ALA:H | 2.16 | 0.49 |
| 35:DA:1246:A:OP2 | 46:DP:18:ARG:HG3 | 2.13 | 0.49 |
| 13:CM:8:GLU:OE2 | 13:CM:22:ILE:HA | 2.12 | 0.49 |
| 51:DU:112:ARG:CG | 51:DU:112:ARG:NH1 | 2.74 | 0.49 |
| 51:DU:66:ASN:CB | 51:DU:76:TYR:HB2 | 2.42 | 0.49 |
| 9:AI:114:TYR:N | 9:AI:114:TYR:HD2 | 2.05 | 0.49 |
| 35:BA:1497:U:H3 | 35:BA:1578:U:P | 2.36 | 0.49 |
| 22:AY:52:G:H4' | 47:BQ:56:ARG:NH1 | 2.28 | 0.49 |
| 41:BG:113:ARG:CD | 41:BG:114:ILE:H | 2.26 | 0.49 |
| 1:AA:939:G:H2' | 1:AA:940:C:H6 | 1.78 | 0.49 |
| 55:BY:17:SER:HB2 | 55:BY:71:LYS:NZ | 2.28 | 0.49 |
| 44:DN:134:ARG:H | 44:DN:135:PRO:HD3 | 1.78 | 0.49 |
| 35:BA:1140:C:H5'' | 44:BN:66:LYS:NZ | 2.27 | 0.49 |
| 50:BT:55:ASN:N | 50:BT:59:THR:HB | 2.28 | 0.49 |
| 17:AQ:67:LYS:O | 17:AQ:68:ARG:C | 2.51 | 0.49 |
| 38:BD:24:ILE:O | 38:BD:26:LYS:NZ | 2.40 | 0.49 |
| 45:DO:89:ASN:C | 45:DO:91:LEU:H | 2.15 | 0.49 |
| 35:BA:2262:U:C2' | 35:BA:2263:C:C5' | 2.84 | 0.49 |
| 26:D1:80:LEU:HD13 | 26:D1:82:LEU:HD11 | 1.95 | 0.49 |
| 35:DA:285:C:C3' | 35:DA:286:C:H5'' | 2.43 | 0.49 |
| 41:BG:128:ARG:HE | 41:BG:128:ARG:H | 1.57 | 0.49 |
| 46:BP:41:ARG:CA | 46:BP:41:ARG:NE | 2.73 | 0.49 |
| 20:CT:49:ALA:HB1 | 20:CT:100:ILE:CD1 | 2.40 | 0.49 |
| 35:BA:1506:C:O2 | 35:BA:1506:C:H2' | 2.12 | 0.49 |
| 35:BA:1529:G:H21 | 35:BA:1530:C:H5'' | 1.77 | 0.49 |
| 35:BA:579:G:H2' | 35:BA:580:C:C6 | 2.47 | 0.49 |
| 12:CL:85:ILE:CG2 | 12:CL:98:TYR:HB3 | 2.43 | 0.49 |
| 40:BF:65:TRP:O | 40:BF:67:GLN:N | 2.46 | 0.49 |
| 27:B2:37:PHE:O | 27:B2:41:ILE:HG23 | 2.12 | 0.49 |
| 26:B1:84:GLY:O | 26:B1:86:SER:N | 2.46 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:DZ:10:ARG:HH22 | 56:DZ:25:PRO:CA | 2.25 | 0.49 |
| 12:AL:83:VAL:CG1 | 12:AL:84:LEU:N | 2.76 | 0.49 |
| 1:AA:922:G:H2' | 1:AA:923:A:C8 | 2.48 | 0.49 |
| 1:AA:797:C:O2' | 1:AA:798:G:H5' | 2.13 | 0.49 |
| 48:BR:12:ARG:CG | 48:BR:12:ARG:HH11 | 2.25 | 0.49 |
| 1:AA:1004:A:C3' | 1:AA:1005:A:H5' | 2.43 | 0.49 |
| 46:DP:62:LEU:N | 46:DP:62:LEU:HD23 | 2.27 | 0.49 |
| 45:BO:26:LYS:O | 45:BO:27:GLY:O | 2.30 | 0.49 |
| 53:DW:12:ILE:HD13 | 53:DW:17:VAL:HG12 | 1.95 | 0.49 |
| 35:BA:2393:A:C5' | 46:BP:62:LEU:HB3 | 2.43 | 0.49 |
| 22:CV:37:A:H2' | 22:CV:38:A:O4' | 2.13 | 0.49 |
| 7:CG:118:VAL:HG23 | 7:CG:119:ARG:N | 2.27 | 0.49 |
| 35:BA:1825:A:OP1 | 38:BD:249:PRO:HD3 | 2.12 | 0.49 |
| 50:BT:95:ARG:NH1 | 50:BT:95:ARG:HB3 | 2.27 | 0.49 |
| 1:CA:413:G:H1' | 1:CA:428:G:H21 | 1.78 | 0.49 |
| 7:AG:118:VAL:HG23 | 7:AG:119:ARG:N | 2.27 | 0.49 |
| 20:CT:16:HIS:O | 20:CT:19:SER:HB3 | 2.13 | 0.49 |
| 1:CA:636:U:C5' | 17:CQ:2:PRO:HG3 | 2.43 | 0.49 |
| 53:BW:10:VAL:O | 53:BW:11:ARG:HB2 | 2.12 | 0.49 |
| 35:DA:272(D):G:O2' | 35:DA:272(E):G:H5' | 2.12 | 0.49 |
| 36:DB:78:A:H2' | 36:DB:79:C:O4' | 2.13 | 0.49 |
| 17:CQ:76:LEU:HG | 17:CQ:77:VAL:H | 1.78 | 0.49 |
| 7:AG:143:ARG:NH1 | 23:AW:42:C:C5' | 2.76 | 0.49 |
| 35:BA:26:G:OP1 | 53:BW:80:PRO:HB3 | 2.12 | 0.49 |
| 1:AA:36:C:H4' | 12:AL:122:THR:O | 2.12 | 0.49 |
| 36:DB:40:U:H1' | 36:DB:45:A:N6 | 2.27 | 0.49 |
| 1:CA:232:G:H2' | 1:CA:233:C:C6 | 2.48 | 0.49 |
| 1:CA:424:G:H2' | 1:CA:425:G:H8 | 1.78 | 0.49 |
| 1:CA:945:G:N1 | 1:CA:1337:G:C2 | 2.81 | 0.49 |
| 19:AS:50:ALA:HB1 | 19:AS:57:HIS:HB3 | 1.95 | 0.49 |
| 40:DF:51:THR:HG21 | 40:DF:92:PRO:HD2 | 1.93 | 0.49 |
| 7:AG:137:LYS:O | 7:AG:141:VAL:HG23 | 2.12 | 0.49 |
| 45:DO:98:VAL:HG13 | 45:DO:118:ALA:HA | 1.93 | 0.49 |
| 35:BA:769:G:O2' | 35:BA:770:G:H5' | 2.13 | 0.49 |
| 8:AH:6:ILE:N | 8:AH:6:ILE:HD12 | 2.28 | 0.49 |
| 1:AA:1477:C:O5' | 1:AA:1477:C:H6 | 1.95 | 0.49 |
| 1:CA:414:A:O2' | 1:CA:415:A:H5' | 2.12 | 0.49 |
| 35:BA:2282:G:O2' | 35:BA:2283:C:OP2 | 2.26 | 0.49 |
| 35:DA:252:G:OP2 | 46:DP:50:ARG:NH1 | 2.46 | 0.49 |
| 49:DS:17:ARG:O | 49:DS:19:LYS:N | 2.37 | 0.49 |
| 41:DG:51:ARG:NE | 41:DG:51:ARG:HA | 2.27 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 51:BU:112:ARG:NH1 | 51:BU:112:ARG:CG | 2.72 | 0.49 |
| 39:DE:36:ARG:HD3 | 39:DE:47:VAL:HG22 | 1.95 | 0.49 |
| 51:DU:83:LEU:CD1 | 51:DU:113:ALA:HB2 | 2.43 | 0.49 |
| 52:DV:40:LEU:N | 52:DV:40:LEU:CD2 | 2.76 | 0.49 |
| 33:D8:6:THR:HB | 33:D8:63:PRO:HG3 | 1.94 | 0.49 |
| 41:DG:112:PRO:O | 41:DG:114:ILE:N | 2.45 | 0.49 |
| 7:AG:78:ARG:HG3 | 7:AG:79:ARG:N | 2.28 | 0.49 |
| 30:D5:40:LYS:HD3 | 30:D5:45:VAL:C | 2.33 | 0.49 |
| 3:AC:134:ILE:HG21 | 3:AC:168:ALA:HB3 | 1.94 | 0.49 |
| 29:B4:40:ILE:N | 29:B4:40:ILE:HD12 | 2.28 | 0.49 |
| 1:AA:1324:A:H2' | 1:AA:1325:C:C6 | 2.47 | 0.49 |
| 37:BC:169:GLY:O | 37:BC:171:ILE:N | 2.45 | 0.49 |
| 10:AJ:5:ARG:HA | 10:AJ:73:ASP:OD1 | 2.12 | 0.49 |
| 35:BA:1141:U:H5'' | 35:BA:1142(A):A:O4' | 2.13 | 0.49 |
| 35:BA:1141:U:OP2 | 44:BN:63:THR:OG1 | 2.28 | 0.49 |
| 44:DN:62:VAL:HG11 | 44:DN:67:LEU:HD21 | 1.94 | 0.49 |
| 45:BO:35:VAL:HG21 | 45:BO:69:ILE:HD11 | 1.94 | 0.49 |
| 27:D2:64:LEU:HD22 | 27:D2:68:ARG:HD3 | 1.93 | 0.49 |
| 4:AD:102:ASP:HA | 4:AD:121:VAL:HG21 | 1.93 | 0.49 |
| 1:AA:1292:U:H2' | 1:AA:1293:G:C8 | 2.48 | 0.49 |
| 1:AA:1294:G:O2' | 1:AA:1295:G:H5' | 2.13 | 0.49 |
| 15:AO:87:ILE:CG2 | 15:AO:88:ARG:H | 2.18 | 0.49 |
| 35:DA:747:U:O2 | 35:DA:2014:A:H1' | 2.12 | 0.49 |
| 35:BA:2892:A:H2' | 35:BA:2893:G:H4' | 1.94 | 0.49 |
| 32:B7:9:ARG:NH1 | 32:B7:9:ARG:HG3 | 2.28 | 0.49 |
| 35:DA:1301:A:O2' | 35:DA:1302:A:C2' | 2.57 | 0.49 |
| 39:BE:27:LEU:HD23 | 50:BT:1:MET:CE | 2.36 | 0.49 |
| 10:AJ:95:GLU:HA | 10:AJ:95:GLU:OE2 | 2.13 | 0.49 |
| 42:BH:33:LEU:HD21 | 42:BH:136:ILE:HG22 | 1.95 | 0.49 |
| 1:CA:579:G:C5' | 1:CA:728:A:H1' | 2.37 | 0.49 |
| 43:BI:81:VAL:HG11 | 43:BI:88:ILE:CD1 | 2.43 | 0.49 |
| 13:AM:76:ALA:N | 13:AM:79:LYS:HZ2 | 2.10 | 0.49 |
| 17:CQ:22:LEU:HD13 | 17:CQ:41:LYS:CG | 2.43 | 0.49 |
| 35:DA:2555:U:C2' | 35:DA:2556:C:H5' | 2.41 | 0.49 |
| 42:DH:105:LEU:HD13 | 42:DH:105:LEU:H | 1.77 | 0.49 |
| 20:AT:33:ILE:CD1 | 20:AT:62:LEU:HB3 | 2.41 | 0.49 |
| 3:CC:3:ASN:O | 3:CC:4:LYS:C | 2.51 | 0.49 |
| 35:DA:547:A:N3 | 35:DA:547:A:H2' | 2.28 | 0.49 |
| 23:CW:9:A:C8 | 23:CW:46:G:N2 | 2.81 | 0.49 |
| 1:CA:93:G:H2' | 1:CA:96:U:H5' | 1.95 | 0.49 |
| 43:DI:10:GLU:O | 43:DI:12:LEU:HD23 | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:CM:34:LEU:HD13 | 13:CM:41:PRO:HG3 | 1.95 | 0.49 |
| 1:CA:741:G:H4' | 15:CO:55:GLY:HA3 | 1.95 | 0.49 |
| 35:DA:1877:A:H5' | 35:DA:1878:G:OP2 | 2.12 | 0.49 |
| 10:AJ:40:LEU:HB2 | 10:AJ:41:PRO:HD2 | 1.94 | 0.49 |
| 44:DN:57:ALA:O | 44:DN:58:ASP:C | 2.50 | 0.49 |
| 8:CH:11:THR:HG23 | 8:CH:14:ARG:NH1 | 2.26 | 0.49 |
| 35:BA:2648:C:H2' | 35:BA:2649:U:H6 | 1.77 | 0.49 |
| 1:CA:90:U:P | 1:CA:91:C:H4' | 2.53 | 0.49 |
| 44:DN:28:THR:HA | 44:DN:106:MET:HE3 | 1.95 | 0.49 |
| 53:DW:12:ILE:HG21 | 53:DW:17:VAL:HG11 | 1.94 | 0.49 |
| 35:DA:2464:C:O2' | 35:DA:2465:C:P | 2.70 | 0.49 |
| 35:DA:1396:U:O2 | 35:DA:1396:U:C2' | 2.59 | 0.49 |
| 20:CT:41:ILE:HG13 | 20:CT:42:GLN:N | 2.27 | 0.49 |
| 35:DA:2558:C:H2' | 35:DA:2559:C:O4' | 2.13 | 0.49 |
| 1:AA:545:C:OP1 | 4:AD:61:LYS:NZ | 2.46 | 0.49 |
| 1:AA:678:U:H2' | 1:AA:679:C:H6 | 1.77 | 0.49 |
| 51:DU:8:VAL:HG12 | 51:DU:12:ARG:NE | 2.28 | 0.49 |
| 6:AF:4:TYR:HA | 6:AF:91:VAL:O | 2.13 | 0.49 |
| 31:B6:27:LYS:HE3 | 35:BA:2285:C:C5 | 2.48 | 0.49 |
| 1:AA:992:U:H1' | 1:AA:993:G:C2 | 2.48 | 0.49 |
| 35:BA:2303:G:O2' | 41:BG:132:ASN:HB2 | 2.12 | 0.49 |
| 35:DA:645:C:O2 | 35:DA:645:C:H2' | 2.13 | 0.49 |
| 8:AH:88:LYS:HB3 | 8:AH:89:PRO:HD2 | 1.95 | 0.49 |
| 1:AA:35:G:C6 | 1:AA:36:C:N4 | 2.81 | 0.49 |
| 1:AA:1090:U:H2' | 1:AA:1091:U:C6 | 2.48 | 0.49 |
| 1:CA:525:C:H2' | 1:CA:526:C:H6 | 1.77 | 0.49 |
| 28:D3:1:MET:O | 28:D3:3:ARG:N | 2.46 | 0.49 |
| 40:DF:41:LEU:HA | 40:DF:44:ARG:HG2 | 1.95 | 0.49 |
| 2:CB:24:TRP:CZ3 | 2:CB:26:PRO:HA | 2.47 | 0.49 |
| 27:B2:29:LYS:HG2 | 27:B2:57:ILE:HD12 | 1.94 | 0.49 |
| 4:AD:60:GLU:O | 4:AD:63:LYS:HB3 | 2.12 | 0.49 |
| 1:CA:486:U:H2' | 1:CA:487:A:H8 | 1.78 | 0.49 |
| 22:AY:53:G:H2' | 22:AY:53:G:N3 | 2.27 | 0.49 |
| 42:DH:163:TYR:CD1 | 42:DH:163:TYR:N | 2.81 | 0.49 |
| 3:CC:164:ARG:NH1 | 3:CC:164:ARG:HB2 | 2.27 | 0.49 |
| 25:D0:73:GLY:HA3 | 36:DB:12:C:H2' | 1.94 | 0.49 |
| 40:DF:128:ALA:O | 40:DF:130:ALA:N | 2.46 | 0.49 |
| 2:AB:215:LEU:O | 2:AB:219:VAL:HG23 | 2.13 | 0.49 |
| 14:CN:21:TYR:HD2 | 14:CN:22:THR:O | 1.95 | 0.49 |
| 39:BE:33:VAL:HG13 | 39:BE:69:LYS:HZ1 | 1.78 | 0.49 |
| 39:BE:110:GLY:HA2 | 39:BE:162:ALA:N | 2.28 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:DD:77:ALA:HB1 | 38:DD:96:HIS:O | 2.12 | 0.49 |
| 23:AW:38:A:C3' | 23:AW:39:U:C5' | 2.83 | 0.49 |
| 1:CA:1314:C:H41 | 19:CS:4:SER:N | 2.11 | 0.49 |
| 50:DT:54:ARG:NH1 | 50:DT:54:ARG:HG2 | 2.26 | 0.49 |
| 10:CJ:4:ILE:HB | 10:CJ:74:ILE:CG1 | 2.43 | 0.49 |
| 10:AJ:38:ILE:CG1 | 10:AJ:71:LEU:HB3 | 2.43 | 0.49 |
| 36:BB:32:C:C2 | 36:BB:51:G:C2 | 3.01 | 0.49 |
| 8:AH:83:ILE:HG13 | 8:AH:137:VAL:HG22 | 1.94 | 0.49 |
| 35:DA:142:A:H5'' | 35:DA:142(A):C:C5 | 2.46 | 0.49 |
| 15:CO:87:ILE:O | 15:CO:88:ARG:HB2 | 2.13 | 0.49 |
| 33:D8:35:GLN:O | 33:D8:36:LYS:HG3 | 2.12 | 0.49 |
| 17:CQ:68:ARG:O | 17:CQ:68:ARG:HG3 | 2.13 | 0.49 |
| 40:BF:7:TYR:HB3 | 40:BF:16:GLY:N | 2.28 | 0.49 |
| 50:BT:62:THR:HG22 | 50:BT:75:ILE:HA | 1.95 | 0.49 |
| 56:BZ:166:SER:HB2 | 56:BZ:168:GLU:N | 2.27 | 0.49 |
| 37:DC:49:ILE:O | 37:DC:51:PRO:CD | 2.60 | 0.49 |
| 1:AA:1029:C:O2' | 1:AA:1030:C:H5 | 1.96 | 0.49 |
| 35:BA:856:C:C6 | 35:BA:856:C:H5'' | 2.48 | 0.49 |
| 54:DX:12:VAL:HG23 | 54:DX:13:LEU:H | 1.76 | 0.49 |
| 23:CW:18:G:C2 | 23:CW:55:U:H1' | 2.48 | 0.49 |
| 38:BD:146:GLU:HG2 | 38:BD:152:GLY:O | 2.13 | 0.49 |
| 25:D0:23:VAL:HA | 25:D0:38:VAL:HG22 | 1.94 | 0.49 |
| 35:DA:2317:C:H2' | 35:DA:2318:G:C5' | 2.41 | 0.49 |
| 35:DA:2124:G:H2' | 35:DA:2125:G:O4' | 2.11 | 0.49 |
| 48:BR:28:LEU:HD11 | 48:BR:116:LEU:CD2 | 2.42 | 0.49 |
| 35:DA:2876:G:O2' | 50:DT:3:ARG:NE | 2.46 | 0.49 |
| 5:AE:20:GLN:O | 5:AE:21:ALA:C | 2.51 | 0.49 |
| 45:DO:104:ARG:CZ | 50:DT:33:LYS:HD2 | 2.43 | 0.49 |
| 18:AR:56:THR:OG1 | 18:AR:58:LEU:HD12 | 2.13 | 0.49 |
| 7:AG:145:ALA:O | 7:AG:147:ALA:N | 2.44 | 0.49 |
| 35:BA:1853:A:H2' | 35:BA:1854:A:C8 | 2.48 | 0.49 |
| 35:DA:34:C:H42 | 35:DA:455:C:H5' | 1.78 | 0.49 |
| 41:DG:91:ARG:C | 41:DG:91:ARG:HD2 | 2.32 | 0.49 |
| 35:DA:221:A:O2' | 35:DA:222:A:OP2 | 2.30 | 0.49 |
| 2:AB:138:LEU:O | 2:AB:141:GLU:HB3 | 2.13 | 0.49 |
| 38:BD:10:THR:HG23 | 38:BD:13:ARG:HB2 | 1.95 | 0.49 |
| 25:B0:73:GLY:O | 25:B0:75:LEU:N | 2.42 | 0.49 |
| 35:BA:1615:C:C2 | 53:BW:87:PRO:HG3 | 2.48 | 0.49 |
| 38:BD:226:MET:HB3 | 38:BD:230:ASP:CB | 2.43 | 0.49 |
| 15:AO:46:HIS:N | 15:AO:46:HIS:ND1 | 2.61 | 0.49 |
| 1:AA:606:G:N2 | 1:AA:631:G:H2' | 2.28 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:AK:99:GLN:HA | 11:AK:105:VAL:CG1 | 2.43 | 0.49 |
| 51:DU:8:VAL:HG11 | 51:DU:12:ARG:NE | 2.28 | 0.49 |
| 4:CD:162:LEU:CD1 | 4:CD:181:MET:HG2 | 2.42 | 0.49 |
| 1:AA:1444:C:H2' | 1:AA:1445:C:C6 | 2.48 | 0.49 |
| 35:DA:2839:G:H2' | 35:DA:2840:C:H6 | 1.78 | 0.49 |
| 7:CG:140:ASP:HA | 7:CG:143:ARG:HH21 | 1.78 | 0.49 |
| 35:BA:1817:G:C2' | 35:BA:1818:U:H5' | 2.42 | 0.49 |
| 35:BA:1469:A:O2' | 35:BA:1470:G:H5' | 2.13 | 0.49 |
| 1:CA:908:A:H2' | 1:CA:909:A:C8 | 2.48 | 0.49 |
| 35:DA:564:C:O2' | 35:DA:565:C:H5' | 2.13 | 0.49 |
| 1:AA:945:G:N1 | 1:AA:1337:G:C2 | 2.81 | 0.49 |
| 47:BQ:48:GLU:O | 47:BQ:48:GLU:HG3 | 2.13 | 0.49 |
| 47:BQ:58:PHE:O | 47:BQ:58:PHE:HD1 | 1.96 | 0.49 |
| 2:AB:191:ASP:OD2 | 2:AB:191:ASP:C | 2.51 | 0.49 |
| 1:AA:420:U:H2' | 1:AA:422:C:C5 | 2.47 | 0.49 |
| 55:DY:77:PRO:O | 55:DY:78:ALA:HB2 | 2.13 | 0.48 |
| 51:BU:87:GLY:O | 52:BV:50:PRO:HG3 | 2.13 | 0.48 |
| 37:BC:58:VAL:HG13 | 37:BC:166:ASP:O | 2.12 | 0.48 |
| 51:DU:110:VAL:HG12 | 51:DU:114:LYS:HE3 | 1.93 | 0.48 |
| 41:DG:111:LEU:HD23 | 41:DG:114:ILE:CD1 | 2.42 | 0.48 |
| 38:BD:260:ARG:HD3 | 38:BD:261:LYS:O | 2.12 | 0.48 |
| 38:DD:181:GLU:CA | 38:DD:272:ALA:HB3 | 2.29 | 0.48 |
| 55:DY:41:GLY:O | 55:DY:42:VAL:O | 2.31 | 0.48 |
| 6:AF:3:ARG:HG2 | 6:AF:93:SER:HB2 | 1.94 | 0.48 |
| 23:AW:70:G:H2' | 23:AW:71:G:O4' | 2.12 | 0.48 |
| 41:BG:134:GLY:O | 41:BG:135:LEU:HD12 | 2.12 | 0.48 |
| 35:DA:510:C:C2' | 35:DA:511:U:H5' | 2.43 | 0.48 |
| 37:DC:82:LYS:HG2 | 37:DC:151:GLU:HA | 1.95 | 0.48 |
| 35:DA:807:U:H2' | 35:DA:808:G:C8 | 2.43 | 0.48 |
| 45:BO:104:ARG:CZ | 50:BT:33:LYS:HD2 | 2.43 | 0.48 |
| 27:D2:64:LEU:O | 27:D2:67:LYS:HB2 | 2.13 | 0.48 |
| 13:CM:49:THR:HB | 13:CM:52:GLU:H | 1.78 | 0.48 |
| 55:BY:6:HIS:NE2 | 55:BY:32:PRO:HB3 | 2.28 | 0.48 |
| 35:DA:154(A):C:N4 | 35:DA:171:G:N1 | 2.61 | 0.48 |
| 46:DP:110:TYR:O | 46:DP:111:ARG:O | 2.31 | 0.48 |
| 56:BZ:29:TYR:HA | 56:BZ:33:LEU:O | 2.13 | 0.48 |
| 20:AT:14:LYS:HB2 | 20:AT:17:ARG:HH21 | 1.78 | 0.48 |
| 22:AY:16:U:C2' | 22:AY:17:C:H5' | 2.43 | 0.48 |
| 43:BI:81:VAL:HG21 | 43:BI:142:VAL:HB | 1.94 | 0.48 |
| 26:B1:26:ARG:HH12 | 35:BA:389:G:H5'' | 1.78 | 0.48 |
| 1:AA:865:A:C2 | 1:AA:918:A:H4' | 2.47 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 49:BS:106:ARG:NH1 | 49:BS:108:GLY:CA | 2.73 | 0.48 |
| 47:DQ:16:ARG:CG | 47:DQ:17:LEU:N | 2.76 | 0.48 |
| 1:AA:1502:A:H5' | 1:AA:1504:G:N7 | 2.28 | 0.48 |
| 12:CL:100:ILE:HG22 | 12:CL:101:VAL:N | 2.28 | 0.48 |
| 9:AI:113:LYS:N | 9:AI:113:LYS:HD2 | 2.28 | 0.48 |
| 42:DH:86:GLU:HA | 42:DH:132:ARG:HA | 1.95 | 0.48 |
| 39:BE:176:ILE:N | 39:BE:176:ILE:CD1 | 2.73 | 0.48 |
| 48:DR:79:LEU:CD2 | 48:DR:79:LEU:C | 2.82 | 0.48 |
| 25:D0:68:GLU:HG2 | 25:D0:80:HIS:HB2 | 1.95 | 0.48 |
| 46:BP:139:LYS:O | 46:BP:141:ALA:N | 2.37 | 0.48 |
| 18:AR:85:LEU:HG | 18:AR:86:VAL:N | 2.28 | 0.48 |
| 1:AA:275:G:H5' | 17:AQ:14:LYS:HZ3 | 1.77 | 0.48 |
| 4:CD:10:ARG:NH1 | 4:CD:40:PRO:HG3 | 2.28 | 0.48 |
| 2:CB:27:LYS:HD3 | 2:CB:195:ASP:OD2 | 2.13 | 0.48 |
| 35:DA:1188:U:H4' | 52:DV:79:VAL:HG22 | 1.94 | 0.48 |
| 35:DA:1490:A:H5' | 35:DA:1491:G:OP1 | 2.13 | 0.48 |
| 21:AU:4:GLY:C | 21:AU:6:ARG:H | 2.16 | 0.48 |
| 35:BA:2199:A:H5'' | 35:BA:2200:C:H5 | 1.78 | 0.48 |
| 16:CP:51:VAL:HG12 | 16:CP:51:VAL:O | 2.12 | 0.48 |
| 42:BH:115:VAL:HG11 | 42:BH:148:ILE:HD11 | 1.95 | 0.48 |
| 35:DA:2709:G:O2' | 35:DA:2710:C:H5' | 2.13 | 0.48 |
| 1:CA:829:G:O2' | 1:CA:830:G:H5' | 2.13 | 0.48 |
| 12:AL:117:ARG:O | 12:AL:118:SER:C | 2.51 | 0.48 |
| 35:DA:817:C:O2' | 35:DA:839:U:H5'' | 2.13 | 0.48 |
| 38:DD:52:ARG:HB2 | 38:DD:53:PHE:CD2 | 2.48 | 0.48 |
| 20:AT:16:HIS:O | 20:AT:19:SER:HB3 | 2.13 | 0.48 |
| 35:BA:2202:C:H2' | 35:BA:2203:U:O4' | 2.13 | 0.48 |
| 15:CO:46:HIS:ND1 | 15:CO:46:HIS:N | 2.61 | 0.48 |
| 31:B6:30:THR:HB | 31:B6:31:PRO:HD2 | 1.94 | 0.48 |
| 1:AA:401:C:H2' | 1:AA:402:G:H8 | 1.77 | 0.48 |
| 5:AE:136:MET:O | 5:AE:138:ALA:N | 2.45 | 0.48 |
| 1:CA:1423:G:H2' | 1:CA:1424:C:C6 | 2.48 | 0.48 |
| 41:BG:116:ASP:O | 41:BG:117:PHE:CB | 2.61 | 0.48 |
| 1:AA:676:A:H1' | 11:AK:115:PRO:HB3 | 1.95 | 0.48 |
| 2:CB:107:THR:HG23 | 2:CB:110:GLN:NE2 | 2.28 | 0.48 |
| 35:DA:638:G:H2' | 35:DA:639:U:C6 | 2.48 | 0.48 |
| 35:DA:606:U:OP2 | 40:DF:104:LYS:HE3 | 2.13 | 0.48 |
| 52:DV:14:VAL:HB | 52:DV:96:ILE:HG13 | 1.94 | 0.48 |
| 38:BD:183:ARG:HG2 | 38:BD:183:ARG:HH11 | 1.77 | 0.48 |
| 15:AO:38:ARG:HG2 | 15:AO:38:ARG:HH11 | 1.76 | 0.48 |
| 13:CM:36:LYS:HG3 | 13:CM:59:TYR:OH | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 13:CM:102:ARG:C | 13:CM:104:ARG:H | 2.16 | 0.48 |
| 1:CA:1499:A:H2' | 1:CA:1500:A:H8 | 1.78 | 0.48 |
| 35:BA:699:A:H2' | 35:BA:700:G:O4' | 2.13 | 0.48 |
| 56:DZ:102:LEU:HA | 56:DZ:137:ILE:HG22 | 1.95 | 0.48 |
| 55:BY:96:ILE:HG13 | 55:BY:100:ALA:O | 2.13 | 0.48 |
| 1:AA:1146:A:C3' | 1:AA:1147:C:H5'' | 2.43 | 0.48 |
| 9:AI:53:VAL:HG12 | 9:AI:92:TYR:HD2 | 1.79 | 0.48 |
| 1:CA:1348:U:H4' | 9:CI:120:ARG:CD | 2.21 | 0.48 |
| 1:CA:1348:U:C4' | 9:CI:120:ARG:HD2 | 2.21 | 0.48 |
| 2:AB:185:ILE:HG12 | 2:AB:199:TYR:HB2 | 1.94 | 0.48 |
| 49:DS:90:GLY:C | 49:DS:92:TYR:H | 2.16 | 0.48 |
| 35:DA:2861:G:H2' | 35:DA:2862:G:H8 | 1.78 | 0.48 |
| 22:CY:33:U:H3' | 22:CY:34:G:H5'' | 1.93 | 0.48 |
| 38:BD:37:LEU:HD12 | 38:BD:64:ILE:HG22 | 1.94 | 0.48 |
| 52:BV:45:THR:O | 52:BV:46:VAL:HG12 | 2.13 | 0.48 |
| 51:BU:88:ILE:HG22 | 52:BV:47:VAL:HG23 | 1.95 | 0.48 |
| 39:DE:67:PHE:CD2 | 39:DE:68:ALA:N | 2.81 | 0.48 |
| 39:DE:55:ASN:ND2 | 39:DE:75:VAL:HG22 | 2.27 | 0.48 |
| 5:AE:81:GLU:HG2 | 5:AE:90:VAL:CG1 | 2.31 | 0.48 |
| 37:DC:58:VAL:HG13 | 37:DC:166:ASP:O | 2.12 | 0.48 |
| 1:AA:585:G:N3 | 1:AA:879:C:H4' | 2.27 | 0.48 |
| 38:BD:181:GLU:CA | 38:BD:272:ALA:HB3 | 2.28 | 0.48 |
| 55:BY:28:LYS:C | 55:BY:38:ILE:HB | 2.34 | 0.48 |
| 38:DD:270:ILE:O | 38:DD:271:ILE:HG12 | 2.13 | 0.48 |
| 10:CJ:25:GLU:C | 10:CJ:27:ALA:H | 2.16 | 0.48 |
| 10:CJ:26:ALA:HB1 | 10:CJ:84:GLN:HG3 | 1.95 | 0.48 |
| 48:DR:49:ASP:O | 48:DR:50:HIS:C | 2.49 | 0.48 |
| 35:BA:747:U:O2 | 35:BA:2014:A:H1' | 2.13 | 0.48 |
| 33:B8:33:ASN:O | 33:B8:34:TRP:HB3 | 2.13 | 0.48 |
| 55:DY:48:ALA:C | 55:DY:50:ARG:H | 2.16 | 0.48 |
| 35:BA:1169:G:H1 | 35:BA:1180:C:H42 | 1.61 | 0.48 |
| 26:D1:80:LEU:HB3 | 26:D1:82:LEU:HD11 | 1.94 | 0.48 |
| 39:BE:61:ARG:HB3 | 39:BE:62:PRO:HD3 | 1.95 | 0.48 |
| 39:DE:61:ARG:HB3 | 39:DE:62:PRO:HD3 | 1.95 | 0.48 |
| 26:D1:51:VAL:O | 26:D1:57:GLU:O | 2.31 | 0.48 |
| 51:DU:26:GLY:O | 51:DU:30:LYS:HG2 | 2.12 | 0.48 |
| 35:BA:858:U:O2 | 35:BA:2268:A:H2' | 2.12 | 0.48 |
| 35:BA:1528(A):A:H3' | 35:BA:1529:G:C5' | 2.38 | 0.48 |
| 19:CS:23:ASN:C | 19:CS:26:GLY:H | 2.17 | 0.48 |
| 19:CS:43:GLU:OE1 | 19:CS:45:VAL:HG22 | 2.13 | 0.48 |
| 35:BA:675:A:C8 | 35:BA:804:A:C6 | 3.01 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:AP:20:VAL:HB | 16:AP:32:TYR:HD1 | 1.77 | 0.48 |
| 40:DF:65:TRP:O | 40:DF:67:GLN:N | 2.47 | 0.48 |
| 52:BV:28:GLU:CB | 52:BV:29:PRO:HD2 | 2.37 | 0.48 |
| 47:DQ:104:PHE:N | 47:DQ:104:PHE:CD2 | 2.80 | 0.48 |
| 37:DC:41:VAL:HG23 | 37:DC:178:ALA:CB | 2.41 | 0.48 |
| 13:CM:91:ARG:HH22 | 13:CM:103:THR:HG21 | 1.77 | 0.48 |
| 35:BA:2875:C:C4' | 50:BT:5:ALA:HB2 | 2.42 | 0.48 |
| 40:DF:20:LEU:HG | 40:DF:21:ALA:H | 1.77 | 0.48 |
| 38:DD:142:VAL:HG23 | 38:DD:192:THR:C | 2.34 | 0.48 |
| 1:CA:1065:U:O2' | 1:CA:1066:C:OP2 | 2.31 | 0.48 |
| 35:DA:322:A:OP2 | 40:DF:169:ASN:HB2 | 2.12 | 0.48 |
| 48:DR:115:GLU:HG2 | 48:DR:116:LEU:N | 2.27 | 0.48 |
| 1:AA:1251:A:H2' | 1:AA:1252:A:H8 | 1.72 | 0.48 |
| 1:CA:17:U:H2' | 1:CA:18:C:H6 | 1.76 | 0.48 |
| 1:AA:818:G:H3' | 1:AA:819:A:C5' | 2.43 | 0.48 |
| 48:DR:79:LEU:HA | 48:DR:83:ILE:CG1 | 2.43 | 0.48 |
| 1:AA:62:U:H5'' | 1:AA:385:C:O2 | 2.13 | 0.48 |
| 3:AC:124:ILE:C | 3:AC:126:ARG:H | 2.16 | 0.48 |
| 1:AA:706:A:N7 | 1:AA:707:C:H5 | 2.12 | 0.48 |
| 2:CB:178:ARG:HD2 | 8:CH:71:GLY:C | 2.33 | 0.48 |
| 18:CR:85:LEU:HG | 18:CR:86:VAL:N | 2.28 | 0.48 |
| 1:AA:1342:C:H4' | 9:AI:124:GLN:O | 2.13 | 0.48 |
| 2:AB:59:GLU:HB2 | 2:AB:221:LEU:HD12 | 1.96 | 0.48 |
| 7:AG:69:VAL:HG12 | 7:AG:69:VAL:O | 2.13 | 0.48 |
| 14:CN:29:ARG:HH11 | 14:CN:29:ARG:HG3 | 1.78 | 0.48 |
| 35:DA:1240:U:O2' | 35:DA:1241:A:C5' | 2.60 | 0.48 |
| 1:CA:606:G:N2 | 1:CA:631:G:H2' | 2.28 | 0.48 |
| 7:CG:60:LYS:HZ1 | 7:CG:64:GLN:HB2 | 1.78 | 0.48 |
| 51:DU:44:ASN:HD21 | 52:DV:75:PHE:H | 1.61 | 0.48 |
| 35:DA:2023:G:H5' | 35:DA:2617:C:H4' | 1.95 | 0.48 |
| 1:AA:443:C:H2' | 1:AA:444:C:C6 | 2.48 | 0.48 |
| 17:AQ:31:LEU:O | 17:AQ:31:LEU:HD12 | 2.13 | 0.48 |
| 39:BE:154:LYS:HG2 | 39:BE:156:MET:HE3 | 1.95 | 0.48 |
| 35:DA:718:A:H2' | 35:DA:719:C:O4' | 2.13 | 0.48 |
| 35:BA:39:C:H2' | 35:BA:40:C:C6 | 2.49 | 0.48 |
| 20:AT:56:MET:O | 20:AT:59:ALA:HB3 | 2.14 | 0.48 |
| 10:AJ:22:LYS:O | 10:AJ:22:LYS:HD2 | 2.13 | 0.48 |
| 3:AC:164:ARG:HB2 | 3:AC:164:ARG:NH1 | 2.28 | 0.48 |
| 42:BH:83:TYR:HD1 | 42:BH:83:TYR:H | 1.60 | 0.48 |
| 54:BX:28:PHE:N | 54:BX:28:PHE:CD1 | 2.81 | 0.48 |
| 4:CD:187:ARG:HH11 | 4:CD:187:ARG:HG2 | 1.78 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:DA:1027:A:C2 | 35:DA:2488:A:H5' | 2.48 | 0.48 |
| 35:DA:2154:G:O2' | 35:DA:2155:G:H5' | 2.12 | 0.48 |
| 35:BA:2553:G:H2' | 35:BA:2554:U:H4' | 1.96 | 0.48 |
| 35:BA:606:U:OP2 | 40:BF:104:LYS:HE3 | 2.13 | 0.48 |
| 56:DZ:51:ALA:HB1 | 56:DZ:57:ILE:CD1 | 2.42 | 0.48 |
| 56:DZ:71:VAL:HG12 | 56:DZ:88:PHE:HE2 | 1.78 | 0.48 |
| 56:DZ:33:LEU:CD2 | 56:DZ:90:VAL:HG21 | 2.43 | 0.48 |
| 35:DA:2402:C:C2' | 35:DA:2403:C:H5' | 2.42 | 0.48 |
| 9:AI:66:ARG:HB2 | 9:AI:66:ARG:HH11 | 1.78 | 0.48 |
| 2:AB:61:LEU:CD1 | 2:AB:66:GLY:HA3 | 2.43 | 0.48 |
| 2:CB:42:ILE:HD13 | 2:CB:203:GLY:HA2 | 1.94 | 0.48 |
| 50:BT:89:VAL:HB | 50:BT:91:ARG:CZ | 2.43 | 0.48 |
| 1:CA:1054:C:O2 | 1:CA:1054:C:H2' | 2.13 | 0.48 |
| 39:DE:119:ARG:HD2 | 39:DE:120:TRP:CE2 | 2.48 | 0.48 |
| 48:DR:2:ARG:HH11 | 48:DR:2:ARG:HG2 | 1.77 | 0.48 |
| 56:BZ:96:VAL:HG22 | 56:BZ:97:GLU:H | 1.76 | 0.48 |
| 3:CC:70:VAL:CG1 | 3:CC:72:LYS:H | 2.23 | 0.48 |
| 13:CM:19:LEU:CD2 | 13:CM:19:LEU:H | 2.24 | 0.48 |
| 30:D5:44:THR:HG21 | 48:DR:101:ALA:HA | 1.95 | 0.48 |
| 5:CE:79:GLU:HB3 | 5:CE:92:LYS:HG3 | 1.96 | 0.48 |
| 35:DA:329:G:H1 | 55:DY:19:LYS:NZ | 2.10 | 0.48 |
| 22:AV:5:G:H2' | 22:AV:6:G:O4' | 2.12 | 0.48 |
| 35:BA:1142(A):A:N7 | 35:BA:1144:G:C6 | 2.81 | 0.48 |
| 33:B8:4:MET:O | 33:B8:62:LEU:CD1 | 2.61 | 0.48 |
| 35:DA:1142(A):A:C5 | 35:DA:1144:G:C5 | 3.01 | 0.48 |
| 41:DG:60:LEU:HD12 | 41:DG:68:PRO:CG | 2.43 | 0.48 |
| 45:BO:35:VAL:HG21 | 45:BO:69:ILE:HD13 | 1.95 | 0.48 |
| 35:BA:271(D):G:H1 | 35:BA:271(T):C:N4 | 2.10 | 0.48 |
| 1:AA:617:G:H4' | 16:AP:44:THR:HB | 1.96 | 0.48 |
| 43:DI:94:ALA:C | 43:DI:96:ASP:N | 2.67 | 0.48 |
| 31:D6:51:GLU:O | 31:D6:52:VAL:HG23 | 2.13 | 0.48 |
| 35:BA:143(A):C:H2' | 35:BA:143(A):C:O2 | 2.13 | 0.48 |
| 35:DA:2266:A:H5' | 35:DA:2267:A:C8 | 2.48 | 0.48 |
| 35:BA:285:C:C2' | 35:BA:286:C:H5'' | 2.43 | 0.48 |
| 25:B0:23:VAL:HA | 25:B0:38:VAL:HG22 | 1.95 | 0.48 |
| 10:CJ:17:ASP:OD1 | 10:CJ:70:ARG:NH1 | 2.45 | 0.48 |
| 46:BP:126:VAL:HG12 | 46:BP:127:ALA:N | 2.28 | 0.48 |
| 51:BU:27:LEU:HD22 | 51:BU:31:SER:CB | 2.42 | 0.48 |
| 1:AA:355:C:C4 | 1:AA:356:A:N7 | 2.80 | 0.48 |
| 43:BI:82:ARG:HG3 | 43:BI:82:ARG:NH1 | 2.27 | 0.48 |
| 3:CC:55:VAL:O | 3:CC:55:VAL:HG12 | 2.12 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:CA:882:C:O2' | 1:CA:883:C:H5' | 2.13 | 0.48 |
| 35:BA:2790:A:H2' | 35:BA:2791:C:H5' | 1.95 | 0.48 |
| 1:AA:647:C:H2' | 1:AA:648:A:H8 | 1.77 | 0.48 |
| 35:DA:1257:C:H4' | 40:DF:83:PHE:CD2 | 2.48 | 0.48 |
| 35:BA:2735:G:C2' | 35:BA:2736:G:C5' | 2.89 | 0.48 |
| 50:DT:38:ASN:ND2 | 50:DT:40:THR:N | 2.60 | 0.48 |
| 18:AR:58:LEU:CD2 | 18:AR:62:GLU:HB3 | 2.43 | 0.48 |
| 23:AW:63:G:H2' | 23:AW:64:A:C8 | 2.49 | 0.48 |
| 1:CA:342:C:O2' | 1:CA:343:U:H5' | 2.13 | 0.48 |
| 55:BY:2:ARG:HG2 | 55:BY:2:ARG:HH11 | 1.78 | 0.48 |
| 35:BA:2561:A:H2 | 45:BO:23:ARG:HH12 | 1.59 | 0.48 |
| 35:BA:154(A):C:O4' | 35:BA:154(A):C:O2 | 2.30 | 0.48 |
| 25:D0:49:LYS:HB2 | 25:D0:80:HIS:HB3 | 1.95 | 0.48 |
| 1:AA:197:A:N7 | 1:AA:221:C:H4' | 2.28 | 0.48 |
| 26:B1:42:GLN:HB3 | 35:BA:396:G:H1' | 1.94 | 0.48 |
| 35:BA:221:A:H61 | 35:BA:265:A:H8 | 1.61 | 0.48 |
| 2:CB:197:VAL:HG11 | 2:CB:200:ILE:HG12 | 1.95 | 0.48 |
| 14:CN:23:ARG:HD3 | 14:CN:29:ARG:O | 2.13 | 0.48 |
| 52:BV:13:ARG:HH11 | 52:BV:13:ARG:CG | 2.26 | 0.48 |
| 38:BD:58:HIS:CD2 | 38:BD:59:LYS:O | 2.63 | 0.48 |
| 35:BA:1751:C:O2' | 35:BA:1752:C:H5' | 2.13 | 0.48 |
| 15:CO:8:LYS:HG2 | 15:CO:12:ILE:HD11 | 1.96 | 0.48 |
| 1:CA:676:A:H1' | 11:CK:115:PRO:HB3 | 1.95 | 0.48 |
| 1:CA:90:U:OP1 | 1:CA:91:C:H4' | 2.13 | 0.48 |
| 1:AA:90:U:P | 1:AA:91:C:H4' | 2.54 | 0.48 |
| 1:CA:301:G:H2' | 1:CA:302:G:H8 | 1.79 | 0.48 |
| 38:BD:52:ARG:HB2 | 38:BD:53:PHE:CD2 | 2.48 | 0.48 |
| 35:BA:2012:G:H4' | 53:BW:96:ILE:HD11 | 1.94 | 0.48 |
| 35:DA:1842:G:H2' | 35:DA:1843:C:C6 | 2.48 | 0.48 |
| 35:BA:2461:C:H2' | 35:BA:2462:U:C6 | 2.48 | 0.48 |
| 1:CA:34:C:H2' | 1:CA:35:G:H8 | 1.78 | 0.48 |
| 35:DA:644:A:H4' | 35:DA:645:C:H5 | 1.79 | 0.48 |
| 1:CA:1158:C:H2' | 1:CA:1158:C:O2 | 2.12 | 0.48 |
| 48:DR:99:LYS:HD3 | 48:DR:99:LYS:H | 1.77 | 0.48 |
| 2:CB:41:ILE:H | 2:CB:41:ILE:HD12 | 1.78 | 0.48 |
| 35:DA:1956:U:C2' | 35:DA:1957:C:H5' | 2.43 | 0.48 |
| 36:DB:32:C:C2 | 36:DB:51:G:C2 | 3.02 | 0.48 |
| 1:AA:457:C:H6 | 1:AA:457:C:O5' | 1.96 | 0.48 |
| 1:CA:420:U:H2' | 1:CA:422:C:C5 | 2.48 | 0.48 |
| 1:AA:323:U:H4' | 20:AT:22:ARG:HB2 | 1.94 | 0.48 |
| 35:BA:2291:U:O2' | 35:BA:2292:C:H5' | 2.14 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:BO:98:VAL:HG13 | 45:BO:118:ALA:HA | 1.96 | 0.48 |
| 35:DA:2781:A:H5'' | 35:DA:2782:G:H5' | 1.95 | 0.48 |
| 1:CA:547:A:H4' | 1:CA:548:G:O5' | 2.12 | 0.48 |
| 53:DW:18:ARG:HG2 | 53:DW:76:VAL:CG1 | 2.43 | 0.48 |
| 35:BA:201:C:O2' | 35:BA:202:U:H5' | 2.13 | 0.48 |
| 35:DA:2033:A:H2' | 35:DA:2035:G:OP2 | 2.12 | 0.48 |
| 15:CO:17:ARG:HG3 | 15:CO:17:ARG:HH11 | 1.78 | 0.48 |
| 7:AG:131:LYS:HG3 | 7:AG:131:LYS:O | 2.13 | 0.48 |
| 1:CA:688:G:H2' | 1:CA:689:C:H6 | 1.78 | 0.48 |
| 35:BA:896:A:N1 | 56:BZ:113:ALA:HB3 | 2.28 | 0.48 |
| 40:DF:182:ASN:O | 40:DF:186:ILE:HG12 | 2.12 | 0.48 |
| 2:AB:218:ALA:O | 2:AB:222:ILE:HG13 | 2.12 | 0.48 |
| 2:AB:91:PRO:HG2 | 2:AB:155:LEU:CB | 2.24 | 0.48 |
| 9:CI:16:ARG:O | 9:CI:63:ILE:HG23 | 2.13 | 0.48 |
| 2:CB:17:PHE:CD2 | 2:CB:17:PHE:O | 2.67 | 0.48 |
| 50:BT:46:GLU:CG | 50:BT:88:ILE:HD11 | 2.44 | 0.48 |
| 46:BP:46:LYS:HG2 | 46:BP:52:GLU:HG2 | 1.94 | 0.48 |
| 51:BU:115:ALA:C | 51:BU:117:GLN:H | 2.16 | 0.48 |
| 35:BA:1591:G:H5' | 35:BA:1591:G:C8 | 2.41 | 0.48 |
| 13:AM:19:LEU:H | 13:AM:19:LEU:CD2 | 2.23 | 0.48 |
| 39:DE:8:LYS:HE3 | 39:DE:188:VAL:CG1 | 2.42 | 0.48 |
| 37:BC:65:PRO:HG2 | 37:BC:189:ILE:CB | 2.42 | 0.48 |
| 35:DA:995:C:OP1 | 51:DU:54:LYS:HD3 | 2.13 | 0.48 |
| 1:CA:939:G:H2' | 1:CA:940:C:H6 | 1.76 | 0.48 |
| 29:B4:51:TYR:N | 29:B4:51:TYR:CD1 | 2.81 | 0.48 |
| 41:DG:17:PRO:C | 41:DG:19:LEU:N | 2.66 | 0.48 |
| 30:D5:30:LEU:HD23 | 30:D5:41:PRO:CA | 2.42 | 0.48 |
| 3:AC:167:TRP:O | 3:AC:168:ALA:HB2 | 2.14 | 0.48 |
| 38:DD:271:ILE:O | 38:DD:272:ALA:CB | 2.62 | 0.48 |
| 3:CC:134:ILE:HG21 | 3:CC:168:ALA:HB3 | 1.95 | 0.48 |
| 43:BI:41:GLU:HA | 43:BI:44:LEU:HB3 | 1.96 | 0.48 |
| 46:DP:7:ARG:C | 46:DP:7:ARG:NH1 | 2.67 | 0.48 |
| 42:DH:158:HIS:NE2 | 42:DH:170:ARG:CA | 2.69 | 0.48 |
| 23:AW:21:A:H5' | 23:AW:21:A:C8 | 2.49 | 0.48 |
| 1:AA:256:U:H2' | 1:AA:257:G:C8 | 2.48 | 0.48 |
| 38:BD:22:SER:HA | 38:BD:25:THR:OG1 | 2.14 | 0.48 |
| 45:DO:60:ALA:HA | 45:DO:87:ILE:HG12 | 1.96 | 0.48 |
| 17:CQ:68:ARG:HH11 | 17:CQ:68:ARG:CG | 2.26 | 0.48 |
| 41:BG:172:LEU:HD23 | 41:BG:172:LEU:C | 2.33 | 0.48 |
| 50:BT:64:ARG:HG2 | 50:BT:64:ARG:HH11 | 1.79 | 0.48 |
| 35:BA:152:G:H2' | 35:BA:153:C:O4' | 2.12 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:CF:72:VAL:CG1 | 6:CF:73:ASN:N | 2.76 | 0.48 |
| 35:BA:1529:G:N2 | 35:BA:1530:C:H2' | 2.27 | 0.48 |
| 12:CL:24:VAL:HG13 | 12:CL:98:TYR:HE2 | 1.70 | 0.48 |
| 1:AA:376:G:H5'' | 16:AP:5:ARG:HD2 | 1.94 | 0.48 |
| 23:CW:14:A:H3' | 23:CW:15:G:H8 | 1.78 | 0.48 |
| 23:CW:59:U:C2' | 23:CW:60:U:H5' | 2.43 | 0.48 |
| 35:DA:2181:G:O2' | 35:DA:2182:G:H5' | 2.14 | 0.48 |
| 54:BX:12:VAL:HG23 | 54:BX:13:LEU:H | 1.78 | 0.48 |
| 1:AA:1439:C:C2' | 1:AA:1439:C:O2 | 2.61 | 0.48 |
| 20:CT:75:ASN:O | 20:CT:78:ALA:N | 2.46 | 0.48 |
| 42:BH:96:ALA:HB2 | 42:BH:105:LEU:HB3 | 1.94 | 0.48 |
| 12:AL:70:ILE:HD13 | 12:AL:77:LEU:HD12 | 1.95 | 0.48 |
| 34:B9:17:ILE:HG13 | 34:B9:26:ILE:HD11 | 1.94 | 0.48 |
| 56:BZ:20:ARG:HA | 56:BZ:20:ARG:NH1 | 2.29 | 0.48 |
| 34:D9:17:ILE:HG13 | 34:D9:26:ILE:HD11 | 1.94 | 0.48 |
| 34:D9:22:ARG:HB2 | 34:D9:24:TYR:HE1 | 1.77 | 0.48 |
| 8:CH:42:GLU:HG3 | 8:CH:109:ILE:CD1 | 2.42 | 0.48 |
| 1:CA:541:G:H2' | 1:CA:542:G:H8 | 1.78 | 0.48 |
| 35:BA:626:U:H3 | 46:BP:105:LEU:HA | 1.79 | 0.48 |
| 2:CB:30:ARG:HG3 | 2:CB:31:TYR:CD2 | 2.48 | 0.48 |
| 35:DA:1266:G:O4' | 53:DW:15:ARG:NH2 | 2.46 | 0.48 |
| 4:AD:10:ARG:NH1 | 4:AD:40:PRO:HG3 | 2.28 | 0.48 |
| 1:AA:1442(A):G:H2' | 50:BT:118:ARG:HH11 | 1.78 | 0.48 |
| 38:BD:9:TYR:C | 38:BD:10:THR:HG22 | 2.34 | 0.48 |
| 23:CW:19:G:C5' | 23:CW:20:U:H5 | 2.26 | 0.48 |
| 30:B5:44:THR:HG21 | 48:BR:101:ALA:HA | 1.94 | 0.48 |
| 22:CV:50:U:C2' | 22:CV:51:U:H5' | 2.42 | 0.48 |
| 1:AA:860:A:H2' | 1:AA:861:G:O4' | 2.14 | 0.48 |
| 35:BA:2819:G:O2' | 35:BA:2820:A:H5' | 2.12 | 0.48 |
| 35:BA:78:A:H2' | 35:BA:79:G:C8 | 2.48 | 0.48 |
| 35:DA:2562:U:C2' | 35:DA:2563:U:H5' | 2.44 | 0.48 |
| 35:DA:2840:C:H5'' | 48:DR:53:HIS:CD2 | 2.49 | 0.48 |
| 12:AL:10:LEU:HB3 | 17:AQ:32:TYR:CE1 | 2.49 | 0.48 |
| 38:BD:3:VAL:HG12 | 38:BD:17:THR:HB | 1.95 | 0.48 |
| 51:BU:24:TYR:HB2 | 51:BU:29:SER:HB3 | 1.95 | 0.48 |
| 1:CA:1420:C:O2' | 1:CA:1421:G:H5' | 2.12 | 0.48 |
| 1:CA:1090:U:H2' | 1:CA:1091:U:H6 | 1.78 | 0.48 |
| 1:CA:690:G:H2' | 1:CA:691:G:C8 | 2.48 | 0.48 |
| 41:DG:20:ILE:O | 41:DG:24:GLY:HA2 | 2.13 | 0.48 |
| 35:BA:1027:A:C2 | 35:BA:2488:A:H5' | 2.48 | 0.48 |
| 1:AA:487:A:H2' | 1:AA:488:C:O4' | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 17:AQ:92:ARG:HA | 17:AQ:95:TYR:CD2 | 2.48 | 0.48 |
| 20:CT:56:MET:O | 20:CT:59:ALA:HB3 | 2.14 | 0.48 |
| 49:DS:80:LEU:HD12 | 49:DS:80:LEU:N | 2.28 | 0.48 |
| 10:CJ:22:LYS:O | 10:CJ:22:LYS:HD2 | 2.14 | 0.48 |
| 1:AA:1073:U:H2' | 1:AA:1074:G:C8 | 2.49 | 0.48 |
| 35:DA:1341:U:O4 | 54:DX:16:LYS:HE2 | 2.13 | 0.48 |
| 35:BA:690:G:O2' | 35:BA:691:C:H5' | 2.13 | 0.48 |
| 1:CA:145:G:H5' | 1:CA:146:G:OP2 | 2.12 | 0.48 |
| 41:BG:71:THR:N | 41:BG:89:GLY:O | 2.47 | 0.48 |
| 41:BG:47:LYS:HD2 | 41:BG:81:LYS:HD3 | 1.96 | 0.48 |
| 2:AB:17:PHE:CD2 | 2:AB:17:PHE:O | 2.66 | 0.48 |
| 2:AB:44:LEU:HD12 | 2:AB:44:LEU:N | 2.17 | 0.48 |
| 2:AB:58:ILE:O | 2:AB:61:LEU:HB3 | 2.14 | 0.48 |
| 2:AB:84:GLU:HB3 | 2:AB:219:VAL:CG2 | 2.41 | 0.48 |
| 9:CI:66:ARG:HH11 | 9:CI:66:ARG:CB | 2.26 | 0.48 |
| 50:BT:89:VAL:HG11 | 50:BT:91:ARG:HE | 1.78 | 0.48 |
| 50:BT:89:VAL:HB | 50:BT:91:ARG:NE | 2.28 | 0.48 |
| 1:CA:963:G:H21 | 10:CJ:55:LYS:HD3 | 1.79 | 0.48 |
| 51:BU:66:ASN:CB | 51:BU:76:TYR:HB2 | 2.43 | 0.48 |
| 51:BU:91:ASP:O | 51:BU:92:ARG:O | 2.31 | 0.48 |
| 52:BV:51:VAL:CG1 | 52:BV:52:VAL:N | 2.76 | 0.48 |
| 49:DS:96:GLY:C | 49:DS:98:VAL:H | 2.16 | 0.48 |
| 13:AM:8:GLU:OE2 | 13:AM:22:ILE:HA | 2.13 | 0.48 |
| 3:CC:137:ALA:O | 3:CC:141:VAL:HG23 | 2.13 | 0.48 |
| 40:BF:10:PRO:HG2 | 40:BF:11:VAL:H | 1.78 | 0.48 |
| 35:BA:2313:C:H2' | 35:BA:2314:C:C6 | 2.40 | 0.48 |
| 41:DG:15:VAL:O | 41:DG:19:LEU:HG | 2.13 | 0.48 |
| 55:DY:26:LYS:O | 55:DY:39:VAL:HA | 2.14 | 0.48 |
| 1:CA:1314:C:N4 | 19:CS:4:SER:N | 2.61 | 0.48 |
| 3:CC:151:VAL:HA | 3:CC:199:LYS:O | 2.14 | 0.48 |
| 35:DA:2468:G:N2 | 35:DA:2481:G:C2' | 2.77 | 0.48 |
| 10:CJ:38:ILE:HG13 | 10:CJ:38:ILE:O | 2.12 | 0.48 |
| 45:DO:5:GLN:HE21 | 45:DO:20:MET:CE | 2.27 | 0.48 |
| 52:BV:72:VAL:CG2 | 52:BV:85:LYS:HB3 | 2.34 | 0.48 |
| 35:BA:1902:C:C2' | 35:BA:1903:G:O5' | 2.61 | 0.48 |
| 35:DA:2582:G:N2 | 35:DA:2583:G:H1' | 2.28 | 0.48 |
| 2:CB:116:GLU:HA | 2:CB:119:GLU:HB3 | 1.96 | 0.48 |
| 46:DP:23:PRO:HB2 | 46:DP:33:ARG:CG | 2.43 | 0.48 |
| 20:AT:30:LYS:HE2 | 20:AT:72:LEU:HD11 | 1.95 | 0.48 |
| 31:D6:12:GLU:N | 31:D6:12:GLU:CD | 2.67 | 0.48 |
| 37:BC:49:ILE:O | 37:BC:51:PRO:CD | 2.61 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:2889:C:H2' | 35:BA:2891:G:O4' | 2.14 | 0.48 |
| 39:BE:17:ASP:O | 39:BE:18:ASP:HB2 | 2.13 | 0.48 |
| 1:CA:1203:C:H2' | 1:CA:1204:A:O4' | 2.13 | 0.48 |
| 43:BI:124:GLY:H | 43:BI:142:VAL:HG23 | 1.77 | 0.48 |
| 39:DE:9:VAL:HG13 | 39:DE:25:VAL:O | 2.13 | 0.48 |
| 35:BA:2579:C:O3' | 39:BE:131:ALA:HB3 | 2.13 | 0.48 |
| 52:BV:28:GLU:HB3 | 52:BV:29:PRO:CD | 2.40 | 0.48 |
| 40:BF:33:LEU:CD2 | 40:BF:112:MET:HG2 | 2.43 | 0.48 |
| 22:AV:50:U:H2' | 22:AV:51:U:O4' | 2.12 | 0.48 |
| 8:AH:25:ASP:OD2 | 8:AH:60:ARG:HG2 | 2.14 | 0.48 |
| 1:AA:1190:G:H3' | 3:AC:3:ASN:HD22 | 1.76 | 0.48 |
| 3:CC:124:ILE:C | 3:CC:126:ARG:H | 2.16 | 0.48 |
| 33:B8:23:VAL:HG12 | 33:B8:46:ARG:HB3 | 1.94 | 0.48 |
| 1:AA:1203:C:H2' | 1:AA:1204:A:O4' | 2.14 | 0.48 |
| 1:AA:1300:G:O2' | 1:AA:1301:U:P | 2.71 | 0.48 |
| 25:B0:68:GLU:HG2 | 25:B0:80:HIS:HB2 | 1.94 | 0.48 |
| 34:D9:22:ARG:HH12 | 35:DA:2741:A:H5'' | 1.78 | 0.48 |
| 15:CO:39:LEU:HD12 | 15:CO:59:MET:HE1 | 1.94 | 0.48 |
| 56:BZ:111:VAL:O | 56:BZ:111:VAL:CG2 | 2.61 | 0.48 |
| 22:AV:74:C:C2' | 22:AV:75:C:H5' | 2.44 | 0.48 |
| 25:D0:34:GLY:HA3 | 35:DA:2353:G:H1' | 1.95 | 0.48 |
| 32:B7:33:ARG:NH1 | 35:BA:467:G:OP1 | 2.46 | 0.48 |
| 35:DA:1133:U:O2 | 35:DA:1137:G:H5'' | 2.13 | 0.48 |
| 35:BA:2023:G:H5' | 35:BA:2617:C:H4' | 1.95 | 0.48 |
| 6:AF:33:TYR:HB2 | 6:AF:75:LEU:HD12 | 1.94 | 0.48 |
| 35:BA:2673:G:O2' | 35:BA:2674:G:H5' | 2.13 | 0.48 |
| 38:BD:249:PRO:HG2 | 38:BD:250:TRP:CE3 | 2.49 | 0.48 |
| 35:BA:79:G:O2' | 35:BA:80:G:H5' | 2.14 | 0.48 |
| 35:BA:2777:G:C4' | 35:BA:2778:A:H5' | 2.43 | 0.48 |
| 43:DI:78:THR:OG1 | 43:DI:141:LYS:HD2 | 2.13 | 0.48 |
| 4:CD:145:GLU:HG2 | 4:CD:184:LYS:NZ | 2.29 | 0.48 |
| 35:BA:2562:U:C2' | 35:BA:2563:U:H5' | 2.42 | 0.48 |
| 35:DA:1817:G:H2' | 35:DA:1818:U:H5' | 1.95 | 0.48 |
| 1:AA:1073:U:H2' | 1:AA:1074:G:H8 | 1.78 | 0.48 |
| 29:B4:62:CYS:SG | 29:B4:63:SER:N | 2.87 | 0.48 |
| 45:BO:113:LYS:O | 45:BO:117:LEU:HB2 | 2.13 | 0.48 |
| 52:BV:14:VAL:HB | 52:BV:96:ILE:HG13 | 1.96 | 0.48 |
| 1:CA:1522:U:H2' | 1:CA:1523:G:H8 | 1.79 | 0.48 |
| 1:CA:1092:A:O2' | 1:CA:1093:A:H5' | 2.13 | 0.48 |
| 1:CA:862:C:O2' | 1:CA:863:U:H5' | 2.14 | 0.48 |
| 22:CV:25:C:O2' | 22:CV:26:A:H5' | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:B3:7:LYS:HD2 | 28:B3:34:GLU:OE1 | 2.14 | 0.48 |
| 1:CA:766:A:H2' | 1:CA:767:A:O4' | 2.13 | 0.48 |
| 43:DI:125:GLU:OE1 | 43:DI:125:GLU:HA | 2.11 | 0.48 |
| 45:DO:10:VAL:HG21 | 45:DO:16:ALA:O | 2.13 | 0.48 |
| 35:BA:244:A:C2 | 35:BA:255:A:C4 | 3.01 | 0.48 |
| 12:AL:23:LYS:O | 12:AL:24:VAL:HG23 | 2.14 | 0.48 |
| 2:AB:91:PRO:HA | 2:AB:151:GLY:O | 2.13 | 0.48 |
| 9:CI:66:ARG:HB2 | 9:CI:66:ARG:HH11 | 1.78 | 0.48 |
| 50:BT:85:LYS:HB3 | 50:BT:85:LYS:HZ2 | 1.79 | 0.48 |
| 38:BD:33:LEU:O | 38:BD:34:VAL:CB | 2.56 | 0.48 |
| 35:DA:2724:C:OP1 | 39:DE:111:ARG:HD3 | 2.14 | 0.48 |
| 48:DR:2:ARG:HG2 | 48:DR:5:LYS:NZ | 2.20 | 0.48 |
| 39:BE:59:VAL:HG11 | 39:BE:63:LEU:HG | 1.95 | 0.48 |
| 3:AC:78:GLY:HA3 | 3:AC:83:ARG:CB | 2.44 | 0.48 |
| 5:AE:40:ARG:CZ | 5:AE:40:ARG:HB3 | 2.43 | 0.48 |
| 35:DA:2305:A:H1' | 41:DG:135:LEU:O | 2.14 | 0.48 |
| 55:BY:27:VAL:C | 55:BY:28:LYS:HZ2 | 2.17 | 0.48 |
| 35:BA:863:A:O2' | 35:BA:864:G:H5' | 2.14 | 0.48 |
| 35:DA:1665:A:O2' | 35:DA:1666:G:H5' | 2.13 | 0.48 |
| 10:AJ:31:GLY:HA3 | 10:AJ:78:ASN:OD1 | 2.14 | 0.48 |
| 1:AA:1124:G:H5' | 10:AJ:35:SER:HB2 | 1.95 | 0.48 |
| 35:DA:626:U:C5' | 35:DA:627:A:H5' | 2.44 | 0.48 |
| 49:DS:61:ASN:O | 49:DS:65:VAL:HG23 | 2.14 | 0.48 |
| 43:BI:68:LEU:O | 43:BI:72:LEU:HB2 | 2.14 | 0.48 |
| 35:DA:943:U:OP2 | 46:DP:38:GLN:OE1 | 2.32 | 0.48 |
| 46:DP:33:ARG:O | 46:DP:35:HIS:O | 2.32 | 0.48 |
| 50:DT:50:ILE:HA | 50:DT:99:LEU:HD11 | 1.95 | 0.48 |
| 43:DI:129:THR:HA | 43:DI:137:PRO:HA | 1.94 | 0.48 |
| 33:D8:33:ASN:O | 33:D8:34:TRP:HB3 | 2.13 | 0.48 |
| 54:BX:36:LYS:O | 54:BX:39:ILE:HB | 2.14 | 0.48 |
| 35:DA:154(A):C:N4 | 35:DA:171:G:H1 | 2.12 | 0.48 |
| 56:BZ:116:VAL:N | 56:BZ:174:VAL:HG13 | 2.29 | 0.48 |
| 35:BA:807:U:O2' | 35:BA:808:G:H5' | 2.13 | 0.48 |
| 43:DI:82:ARG:HG3 | 43:DI:82:ARG:NH1 | 2.28 | 0.48 |
| 20:CT:50:GLU:CA | 20:CT:100:ILE:HG12 | 2.44 | 0.48 |
| 19:CS:44:MET:N | 19:CS:44:MET:SD | 2.86 | 0.48 |
| 9:AI:40:LEU:C | 9:AI:42:ARG:H | 2.16 | 0.48 |
| 38:BD:137:PRO:HB2 | 38:BD:140:THR:HG23 | 1.95 | 0.48 |
| 1:AA:22:G:H2' | 1:AA:23:C:C6 | 2.48 | 0.48 |
| 5:CE:40:ARG:NH1 | 5:CE:40:ARG:HG2 | 2.27 | 0.48 |
| 30:D5:43:HIS:CD2 | 35:DA:2815:C:O2' | 2.67 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BC:42:GLU:HA | 37:BC:178:ALA:HB2 | 1.95 | 0.48 |
| 1:AA:1392:G:O2' | 1:AA:1393:U:H5' | 2.13 | 0.48 |
| 35:DA:2561:A:H2 | 45:DO:23:ARG:HH12 | 1.62 | 0.48 |
| 45:DO:24:VAL:CG2 | 45:DO:33:ALA:HB2 | 2.43 | 0.48 |
| 52:BV:21:ARG:HG2 | 52:BV:91:TYR:CE2 | 2.49 | 0.48 |
| 2:AB:72:GLY:HA2 | 2:AB:165:VAL:HG22 | 1.95 | 0.48 |
| 20:AT:41:ILE:HG13 | 20:AT:42:GLN:N | 2.28 | 0.48 |
| 1:AA:848:C:H2' | 1:AA:849:C:H6 | 1.79 | 0.48 |
| 43:DI:51:ILE:HG22 | 43:DI:52:ARG:N | 2.28 | 0.48 |
| 35:BA:1819:A:H5'' | 38:BD:161:THR:HG21 | 1.95 | 0.48 |
| 1:AA:301:G:H2' | 1:AA:302:G:H8 | 1.78 | 0.48 |
| 37:DC:25:ALA:C | 37:DC:27:ARG:H | 2.16 | 0.48 |
| 3:AC:28:GLN:HA | 3:AC:28:GLN:NE2 | 2.29 | 0.48 |
| 40:DF:191:ARG:HG2 | 40:DF:191:ARG:HH11 | 1.77 | 0.48 |
| 35:BA:1827:C:C2' | 35:BA:1828:G:H5' | 2.44 | 0.48 |
| 1:CA:1399:C:C2 | 1:CA:1502:A:N6 | 2.82 | 0.48 |
| 6:AF:82:ARG:HB2 | 6:AF:85:VAL:HG23 | 1.95 | 0.48 |
| 1:AA:1407:C:O2' | 1:AA:1408:A:H5' | 2.13 | 0.48 |
| 4:AD:173:TRP:NE1 | 4:AD:174:LEU:HG | 2.28 | 0.48 |
| 1:AA:133:U:OP1 | 20:AT:74:LYS:HE2 | 2.13 | 0.48 |
| 1:CA:1073:U:H2' | 1:CA:1074:G:C8 | 2.48 | 0.48 |
| 1:CA:424:G:O2' | 1:CA:425:G:H5' | 2.13 | 0.48 |
| 1:AA:486:U:H2' | 1:AA:487:A:H8 | 1.79 | 0.48 |
| 1:AA:269:C:H2' | 1:AA:270:A:C8 | 2.49 | 0.48 |
| 35:DA:39:C:H2' | 35:DA:40:C:C6 | 2.49 | 0.48 |
| 46:DP:123:LEU:HD12 | 46:DP:123:LEU:O | 2.13 | 0.48 |
| 34:D9:30:PRO:HB2 | 35:DA:2527:C:H5' | 1.95 | 0.48 |
| 39:DE:40:GLU:OE1 | 39:DE:40:GLU:N | 2.46 | 0.48 |
| 35:DA:363(B):G:N3 | 35:DA:363(B):G:H2' | 2.28 | 0.48 |
| 1:CA:783:C:O2' | 1:CA:784:C:H5' | 2.14 | 0.48 |
| 1:AA:1518:A:H2' | 1:AA:1519:A:C8 | 2.49 | 0.48 |
| 13:AM:123:ALA:HB2 | 22:AY:39:U:H4' | 1.95 | 0.48 |
| 37:BC:100:ILE:HG23 | 37:BC:131:LEU:O | 2.14 | 0.48 |
| 55:BY:77:PRO:O | 55:BY:78:ALA:HB2 | 2.12 | 0.48 |
| 14:AN:19:ARG:O | 14:AN:20:ALA:C | 2.52 | 0.48 |
| 23:AW:76:A:H3' | 23:AW:76:A:OP1 | 2.14 | 0.48 |
| 55:DY:96:ILE:CG2 | 55:DY:97:ARG:H | 2.26 | 0.48 |
| 41:DG:86:MET:N | 41:DG:87:PRO:HD2 | 2.27 | 0.48 |
| 35:DA:1747:G:H2' | 35:DA:1747(A):G:C8 | 2.48 | 0.48 |
| 35:DA:1654:A:C2 | 39:DE:113:PHE:CD1 | 3.02 | 0.48 |
| 39:DE:7:VAL:HA | 39:DE:194:GLY:O | 2.14 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 49:DS:96:GLY:C | 49:DS:97:ARG:HG3 | 2.33 | 0.48 |
| 39:BE:65:GLY:C | 39:BE:67:PHE:H | 2.16 | 0.48 |
| 13:AM:68:GLY:O | 13:AM:71:ARG:N | 2.46 | 0.48 |
| 37:BC:62:VAL:O | 37:BC:64:LEU:N | 2.47 | 0.48 |
| 10:CJ:48:THR:HG22 | 10:CJ:49:VAL:N | 2.28 | 0.48 |
| 3:CC:138:VAL:C | 3:CC:140:ARG:H | 2.17 | 0.48 |
| 35:DA:2313:C:H5' | 35:DA:2313:C:H6 | 1.78 | 0.48 |
| 40:BF:192:LEU:C | 40:BF:192:LEU:HD23 | 2.34 | 0.48 |
| 1:CA:939:G:C5' | 7:CG:102:ARG:HH22 | 2.17 | 0.48 |
| 46:DP:24:GLY:O | 46:DP:25:SER:HB3 | 2.13 | 0.48 |
| 35:BA:2313:C:H5' | 35:BA:2313:C:C6 | 2.48 | 0.48 |
| 41:DG:125:PHE:CD2 | 41:DG:131:TYR:HB2 | 2.49 | 0.48 |
| 55:DY:28:LYS:HB3 | 55:DY:37:VAL:HB | 1.94 | 0.48 |
| 10:CJ:4:ILE:HB | 10:CJ:74:ILE:HG13 | 1.96 | 0.48 |
| 42:BH:68:THR:C | 42:BH:70:THR:H | 2.15 | 0.48 |
| 35:BA:1665:A:H1' | 45:BO:1:MET:HG2 | 1.95 | 0.48 |
| 46:BP:35:HIS:O | 46:BP:36:LYS:CB | 2.61 | 0.48 |
| 13:AM:56:LEU:O | 13:AM:60:VAL:HG23 | 2.13 | 0.48 |
| 42:DH:85:LYS:HD3 | 42:DH:133:VAL:HB | 1.95 | 0.48 |
| 35:DA:174:C:O2 | 35:DA:174:C:H2' | 2.13 | 0.48 |
| 35:DA:286:C:C2' | 35:DA:287:C:C5' | 2.89 | 0.48 |
| 30:D5:54:GLY:O | 30:D5:56:LYS:HD2 | 2.14 | 0.48 |
| 46:DP:78:PRO:HB2 | 46:DP:111:ARG:HD2 | 1.96 | 0.48 |
| 35:DA:1528(A):A:H3' | 35:DA:1529:G:C5' | 2.38 | 0.48 |
| 41:BG:101:ILE:HD11 | 41:BG:105:LYS:NZ | 2.27 | 0.48 |
| 19:CS:11:VAL:HG22 | 19:CS:16:LEU:HD11 | 1.96 | 0.48 |
| 54:DX:12:VAL:CG1 | 54:DX:27:THR:OG1 | 2.62 | 0.48 |
| 35:BA:2188:C:H2' | 35:BA:2189:U:O4' | 2.14 | 0.48 |
| 26:B1:68:PRO:O | 26:B1:70:VAL:N | 2.47 | 0.48 |
| 35:BA:1318:C:C3' | 35:BA:1319:G:H5'' | 2.39 | 0.48 |
| 13:AM:80:ARG:NH2 | 19:AS:69:HIS:NE2 | 2.61 | 0.48 |
| 2:CB:97:TRP:HZ2 | 2:CB:102:LEU:CD1 | 2.26 | 0.48 |
| 7:AG:23:VAL:O | 7:AG:27:ILE:HG13 | 2.13 | 0.48 |
| 20:CT:14:LYS:HB2 | 20:CT:17:ARG:HH21 | 1.79 | 0.48 |
| 11:CK:54:ARG:NH1 | 23:CW:40:C:H5' | 2.26 | 0.48 |
| 40:BF:20:LEU:HG | 40:BF:21:ALA:H | 1.78 | 0.48 |
| 12:AL:6:THR:HG23 | 12:AL:9:GLN:H | 1.79 | 0.48 |
| 5:CE:40:ARG:HB3 | 5:CE:40:ARG:CZ | 2.44 | 0.48 |
| 16:CP:20:VAL:HG23 | 16:CP:21:VAL:N | 2.29 | 0.48 |
| 3:AC:150:LYS:CG | 3:AC:169:ALA:HB2 | 2.42 | 0.48 |
| 35:BA:2123:G:H2' | 35:BA:2124:G:C8 | 2.48 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:365:C:H2' | 35:DA:366:C:O4' | 2.14 | 0.48 |
| 48:BR:116:LEU:O | 48:BR:117:VAL:C | 2.52 | 0.48 |
| 1:AA:625:G:H4' | 16:AP:16:HIS:HD2 | 1.78 | 0.48 |
| 1:CA:92:C:H2' | 1:CA:93:G:C8 | 2.42 | 0.48 |
| 3:AC:54:ARG:HH12 | 3:AC:56:ASP:CB | 2.27 | 0.48 |
| 1:AA:383:A:H2' | 1:AA:384:G:H5' | 1.96 | 0.48 |
| 11:CK:21:ILE:CD1 | 11:CK:82:VAL:HG13 | 2.43 | 0.48 |
| 34:D9:17:ILE:HG12 | 34:D9:26:ILE:HD11 | 1.95 | 0.48 |
| 8:AH:42:GLU:HG3 | 8:AH:109:ILE:CD1 | 2.41 | 0.48 |
| 29:D4:48:ILE:HG22 | 29:D4:50:THR:HG23 | 1.95 | 0.48 |
| 1:CA:837:G:O2' | 1:CA:838:G:H5' | 2.13 | 0.48 |
| 40:BF:177:ALA:HB1 | 40:BF:178:PRO:HD2 | 1.94 | 0.48 |
| 35:BA:2181:G:O2' | 35:BA:2182:G:H5' | 2.13 | 0.48 |
| 47:BQ:81:VAL:HG23 | 47:BQ:82:ARG:O | 2.14 | 0.48 |
| 7:AG:148:ASN:O | 7:AG:150:ALA:N | 2.47 | 0.48 |
| 1:CA:1194:U:H4' | 5:CE:22:GLY:CA | 2.42 | 0.48 |
| 35:DA:814:C:C5 | 46:DP:27:HIS:CE1 | 3.01 | 0.48 |
| 35:BA:786:C:O2' | 35:BA:787:U:H5' | 2.14 | 0.48 |
| 1:AA:59:A:H5'' | 1:AA:60:A:H5'' | 1.95 | 0.48 |
| 13:CM:27:LYS:HE3 | 13:CM:31:LYS:NZ | 2.29 | 0.48 |
| 35:DA:2547:U:H2' | 35:DA:2548:G:H8 | 1.76 | 0.48 |
| 45:BO:119:PRO:HB2 | 50:BT:68:TYR:CE1 | 2.48 | 0.48 |
| 35:DA:860:U:O2' | 35:DA:861:A:H5' | 2.13 | 0.48 |
| 1:CA:725:G:H2' | 1:CA:726:C:C6 | 2.49 | 0.48 |
| 35:DA:1443:G:C2' | 35:DA:1444:G:H5' | 2.44 | 0.48 |
| 2:CB:233:SER:OG | 2:CB:234:PRO:HD2 | 2.13 | 0.48 |
| 31:B6:42:TRP:CH2 | 35:BA:643:A:N7 | 2.82 | 0.48 |
| 48:BR:53:HIS:HA | 48:BR:56:LYS:HD3 | 1.96 | 0.48 |
| 35:BA:977:G:O2' | 35:BA:978:G:H5' | 2.13 | 0.48 |
| 35:DA:977:G:O2' | 35:DA:978:G:H5' | 2.14 | 0.48 |
| 1:AA:1072:G:H2' | 1:AA:1073:U:C6 | 2.49 | 0.48 |
| 35:BA:2567:G:H2' | 35:BA:2568:C:C6 | 2.47 | 0.48 |
| 40:DF:31:HIS:O | 40:DF:35:GLU:HG3 | 2.14 | 0.48 |
| 35:DA:2082:A:H2' | 35:DA:2083:G:O4' | 2.13 | 0.48 |
| 35:BA:732:C:C2' | 35:BA:733:G:H5' | 2.43 | 0.48 |
| 43:DI:3:VAL:HG21 | 43:DI:21:VAL:HG22 | 1.96 | 0.48 |
| 38:DD:201:HIS:O | 38:DD:204:ILE:HG12 | 2.13 | 0.48 |
| 35:DA:1373:A:H2' | 35:DA:1374:G:O4' | 2.14 | 0.48 |
| 38:BD:45:ASN:OD1 | 38:BD:46:GLN:N | 2.46 | 0.48 |
| 12:AL:126:LYS:HD2 | 12:AL:127:GLU:H | 1.77 | 0.48 |
| 52:DV:68:LYS:NZ | 52:DV:68:LYS:HB2 | 2.28 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 12:AL:28:LYS:HE2 | 12:AL:33:ARG:NH1 | 2.29 | 0.48 |
| 55:BY:97:ARG:HH11 | 55:BY:97:ARG:HG2 | 1.77 | 0.48 |
| 9:AI:50:LEU:HA | 9:AI:53:VAL:HG22 | 1.95 | 0.48 |
| 35:BA:1747(A):G:C3' | 35:BA:1748:G:H5'' | 2.44 | 0.48 |
| 2:CB:54:THR:O | 2:CB:58:ILE:HG12 | 2.14 | 0.48 |
| 50:DT:88:ILE:CG2 | 50:DT:89:VAL:HG23 | 2.42 | 0.48 |
| 50:DT:89:VAL:HG11 | 50:DT:91:ARG:NE | 2.29 | 0.48 |
| 55:DY:95:LYS:HG2 | 55:DY:100:ALA:C | 2.33 | 0.48 |
| 51:BU:79:PHE:C | 51:BU:79:PHE:CD2 | 2.86 | 0.48 |
| 39:DE:47:VAL:CG2 | 39:DE:84:PHE:O | 2.62 | 0.48 |
| 35:BA:1999:C:H4' | 35:BA:2723:C:O2 | 2.14 | 0.48 |
| 35:DA:1798:U:H5' | 38:DD:259:THR:HG23 | 1.89 | 0.48 |
| 46:DP:16:ARG:CZ | 46:DP:18:ARG:CG | 2.92 | 0.48 |
| 37:DC:62:VAL:O | 37:DC:64:LEU:N | 2.47 | 0.48 |
| 52:DV:46:VAL:CG1 | 52:DV:47:VAL:N | 2.72 | 0.48 |
| 35:DA:2313:C:H5' | 35:DA:2313:C:C6 | 2.49 | 0.48 |
| 33:D8:62:LEU:N | 33:D8:63:PRO:CD | 2.76 | 0.48 |
| 29:B4:48:ILE:HG22 | 29:B4:50:THR:HG23 | 1.95 | 0.48 |
| 41:DG:117:PHE:HZ | 41:DG:179:PRO:HB2 | 1.79 | 0.48 |
| 30:D5:33:CYS:HB3 | 30:D5:38:ALA:HB3 | 1.96 | 0.48 |
| 42:DH:70:THR:O | 42:DH:72:ILE:N | 2.38 | 0.48 |
| 43:DI:98:ALA:CB | 43:DI:109:ILE:HB | 2.44 | 0.48 |
| 6:AF:21:LEU:HD13 | 6:AF:24:GLU:OE1 | 2.14 | 0.48 |
| 46:BP:7:ARG:HH11 | 46:BP:7:ARG:C | 2.17 | 0.48 |
| 33:B8:4:MET:HB2 | 33:B8:61:LEU:HD22 | 1.96 | 0.48 |
| 35:DA:1142(A):A:N7 | 35:DA:1144:G:C6 | 2.82 | 0.48 |
| 45:DO:77:ILE:HD11 | 50:DT:72:VAL:HG12 | 1.96 | 0.48 |
| 42:BH:85:LYS:CD | 42:BH:141:VAL:HG22 | 2.44 | 0.48 |
| 55:BY:51:VAL:O | 55:BY:51:VAL:HG12 | 2.14 | 0.48 |
| 15:AO:82:ILE:HD13 | 15:AO:82:ILE:C | 2.33 | 0.48 |
| 35:BA:1300:U:O2' | 35:BA:1301:A:P | 2.72 | 0.48 |
| 11:CK:48:ILE:HD11 | 11:CK:64:ALA:CA | 2.39 | 0.48 |
| 45:BO:18:LYS:HB2 | 45:BO:45:GLU:HG2 | 1.96 | 0.48 |
| 4:CD:43:HIS:O | 4:CD:45:GLN:N | 2.47 | 0.48 |
| 35:BA:2579:C:O3' | 39:BE:131:ALA:CB | 2.61 | 0.48 |
| 35:BA:1257:C:H4' | 40:BF:83:PHE:CD2 | 2.49 | 0.48 |
| 42:BH:89:ILE:O | 42:BH:161:GLY:O | 2.32 | 0.48 |
| 47:DQ:27:VAL:HB | 47:DQ:137:TYR:CD1 | 2.48 | 0.48 |
| 35:DA:2773:C:O2' | 35:DA:2774:C:H5' | 2.14 | 0.48 |
| 35:BA:2876:G:O2' | 50:BT:3:ARG:NE | 2.46 | 0.48 |
| 1:AA:93:G:H2' | 1:AA:96:U:H5' | 1.96 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 43:DI:56:LYS:HG3 | 43:DI:57:ARG:N | 2.29 | 0.48 |
| 43:DI:56:LYS:C | 43:DI:58:LEU:H | 2.16 | 0.48 |
| 47:DQ:17:LEU:HD23 | 47:DQ:17:LEU:N | 2.29 | 0.48 |
| 1:AA:1191:A:H5'' | 3:AC:4:LYS:HZ2 | 1.79 | 0.48 |
| 35:BA:999:U:H5'' | 35:BA:1154:G:O6 | 2.14 | 0.48 |
| 55:BY:2:ARG:CD | 55:BY:3:VAL:HG23 | 2.40 | 0.48 |
| 2:AB:194:PRO:HA | 2:AB:200:ILE:HD11 | 1.96 | 0.48 |
| 5:CE:71:LEU:CD2 | 5:CE:115:VAL:HG22 | 2.44 | 0.48 |
| 35:DA:1188:U:C2' | 35:DA:1189:A:H5' | 2.43 | 0.48 |
| 1:AA:491:G:O2' | 1:AA:492:G:H5' | 2.14 | 0.48 |
| 52:BV:69:LYS:CA | 52:BV:88:ARG:HG2 | 2.42 | 0.48 |
| 38:DD:134:ARG:HG3 | 38:DD:135:PHE:CD2 | 2.49 | 0.48 |
| 35:DA:15:G:H2' | 35:DA:16:G:H8 | 1.78 | 0.48 |
| 54:DX:47:PHE:O | 54:DX:49:VAL:HG13 | 2.13 | 0.48 |
| 4:AD:106:TYR:HE1 | 4:AD:112:VAL:O | 1.97 | 0.48 |
| 35:BA:1603:A:H5' | 35:BA:1603:A:H8 | 1.78 | 0.48 |
| 1:CA:59:A:H5'' | 1:CA:60:A:H5'' | 1.95 | 0.48 |
| 35:BA:443:A:N7 | 40:BF:45:ARG:HD2 | 2.29 | 0.48 |
| 16:AP:82:GLN:O | 16:AP:84:ALA:N | 2.47 | 0.48 |
| 35:DA:2202:C:H2' | 35:DA:2203:U:O4' | 2.13 | 0.48 |
| 36:DB:28:C:H2' | 36:DB:29:A:O4' | 2.13 | 0.48 |
| 50:DT:95:ARG:NH1 | 50:DT:95:ARG:HB3 | 2.27 | 0.48 |
| 35:DA:435:C:C2' | 35:DA:436:C:H5' | 2.44 | 0.48 |
| 23:AW:53:G:O2' | 23:AW:54:U:H5' | 2.13 | 0.48 |
| 7:AG:140:ASP:HA | 7:AG:143:ARG:HH21 | 1.79 | 0.48 |
| 48:DR:92:GLY:HA2 | 48:DR:94:TYR:CE1 | 2.48 | 0.48 |
| 18:AR:47:THR:HA | 18:AR:83:GLU:HG3 | 1.95 | 0.48 |
| 8:AH:97:VAL:HA | 8:AH:100:ILE:HD11 | 1.95 | 0.48 |
| 1:CA:1073:U:H2' | 1:CA:1074:G:H8 | 1.78 | 0.48 |
| 24:CX:20:U:N3 | 22:CY:36:A:C2 | 2.82 | 0.48 |
| 35:DA:2696:U:H2' | 35:DA:2697:G:C8 | 2.49 | 0.48 |
| 1:CA:457:C:H6 | 1:CA:457:C:O5' | 1.97 | 0.48 |
| 35:DA:2051:A:H5' | 35:DA:2578:G:O4' | 2.14 | 0.48 |
| 35:DA:271(H):G:O2' | 35:DA:271(I):G:H5'' | 2.13 | 0.48 |
| 35:BA:1203:G:H3' | 35:BA:1204:A:H5'' | 1.95 | 0.48 |
| 1:AA:324:G:OP1 | 20:AT:70:SER:HB2 | 2.14 | 0.48 |
| 35:BA:1035:U:H2' | 35:BA:1036:G:C8 | 2.49 | 0.48 |
| 42:BH:163:TYR:CD1 | 42:BH:163:TYR:N | 2.82 | 0.48 |
| 6:AF:77:ARG:CZ | 6:AF:77:ARG:HB3 | 2.44 | 0.48 |
| 8:AH:29:SER:HB3 | 8:AH:32:LYS:HG3 | 1.95 | 0.48 |
| 1:AA:530:G:H1' | 22:AY:35:A:O2' | 2.14 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 9:CI:86:VAL:HG21 | 9:CI:93:ARG:HH11 | 1.79 | 0.48 |
| 49:BS:98:VAL:HG12 | 49:BS:100:ALA:N | 2.29 | 0.48 |
| 46:BP:16:ARG:CZ | 46:BP:18:ARG:CG | 2.92 | 0.48 |
| 47:BQ:141:GLN:CB | 56:BZ:99:TYR:H | 2.27 | 0.48 |
| 48:BR:113:LEU:HD12 | 48:BR:114:VAL:N | 2.29 | 0.48 |
| 48:BR:48:VAL:O | 48:BR:49:ASP:C | 2.50 | 0.48 |
| 13:CM:19:LEU:HD22 | 13:CM:19:LEU:N | 2.23 | 0.48 |
| 35:DA:2126:A:C6 | 35:DA:2163:C:H4' | 2.49 | 0.48 |
| 51:DU:115:ALA:C | 51:DU:117:GLN:H | 2.17 | 0.48 |
| 40:BF:164:ARG:HH11 | 40:BF:164:ARG:HG2 | 1.79 | 0.48 |
| 41:DG:161:THR:HB | 41:DG:163:ALA:H | 1.79 | 0.48 |
| 52:DV:19:LYS:NZ | 52:DV:20:LEU:HB2 | 2.29 | 0.48 |
| 3:AC:130:VAL:HG21 | 3:AC:157:ILE:HG23 | 1.96 | 0.48 |
| 35:BA:2307:G:H5'' | 35:BA:2307:G:N3 | 2.29 | 0.48 |
| 44:DN:118:LYS:C | 44:DN:120:LEU:H | 2.16 | 0.48 |
| 46:BP:7:ARG:NH1 | 46:BP:7:ARG:C | 2.66 | 0.48 |
| 45:BO:104:ARG:NH1 | 45:BO:104:ARG:CB | 2.77 | 0.48 |
| 32:B7:12:ARG:HG3 | 35:BA:686:G:O6 | 2.13 | 0.48 |
| 23:CW:61:C:H2' | 23:CW:62:C:C5 | 2.49 | 0.48 |
| 32:D7:12:ARG:HG3 | 35:DA:686:G:O6 | 2.13 | 0.48 |
| 35:BA:174:C:O2 | 35:BA:174:C:H2' | 2.13 | 0.48 |
| 35:BA:1528(A):A:C2' | 35:BA:1529:G:H5'' | 2.44 | 0.48 |
| 4:AD:170:VAL:CG2 | 4:AD:171:GLY:N | 2.77 | 0.48 |
| 35:DA:848:G:C8 | 35:DA:848:G:H5' | 2.48 | 0.48 |
| 16:AP:8:ARG:CG | 16:AP:9:PHE:H | 2.26 | 0.48 |
| 4:AD:13:ARG:O | 4:AD:15:GLU:N | 2.45 | 0.48 |
| 42:DH:33:LEU:HD12 | 42:DH:75:ALA:HA | 1.96 | 0.48 |
| 39:DE:117:MET:HA | 39:DE:122:PHE:N | 2.23 | 0.48 |
| 22:CV:42:C:H2' | 22:CV:43:C:O4' | 2.13 | 0.48 |
| 8:CH:60:ARG:HH11 | 8:CH:60:ARG:HG3 | 1.79 | 0.48 |
| 40:DF:112:MET:O | 40:DF:115:ALA:HB3 | 2.14 | 0.48 |
| 1:AA:436:C:O2' | 1:AA:437:U:P | 2.72 | 0.48 |
| 1:AA:1503:A:O2' | 24:AX:13:A:N6 | 2.44 | 0.48 |
| 1:AA:624:C:H4' | 16:AP:10:GLY:HA2 | 1.96 | 0.48 |
| 47:BQ:16:ARG:CG | 47:BQ:17:LEU:N | 2.76 | 0.48 |
| 56:BZ:14:LYS:O | 56:BZ:15:PRO:C | 2.51 | 0.48 |
| 46:BP:122:PRO:HG3 | 46:BP:141:ALA:HB3 | 1.95 | 0.48 |
| 36:DB:111:G:H2' | 36:DB:112:U:O4' | 2.12 | 0.48 |
| 35:BA:1877:A:H5' | 35:BA:1878:G:OP2 | 2.14 | 0.48 |
| 1:AA:837:G:O2' | 1:AA:838:G:H5' | 2.14 | 0.48 |
| 54:BX:44:GLU:OE2 | 54:BX:50:LYS:HA | 2.14 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 14:CN:9:LYS:HA | 14:CN:12:ARG:HH11 | 1.79 | 0.48 |
| 1:AA:1228:C:OP1 | 13:AM:115:LYS:HE3 | 2.14 | 0.48 |
| 35:BA:466:A:H2' | 35:BA:467:G:H5' | 1.96 | 0.48 |
| 40:BF:70:THR:C | 40:BF:72:ARG:N | 2.67 | 0.48 |
| 29:D4:40:ILE:N | 29:D4:40:ILE:HD12 | 2.28 | 0.48 |
| 48:DR:7:GLY:O | 48:DR:8:ARG:CB | 2.61 | 0.48 |
| 1:CA:287:U:O2' | 1:CA:288:A:H5' | 2.14 | 0.48 |
| 38:DD:112:GLN:H | 38:DD:115:GLN:NE2 | 2.12 | 0.48 |
| 3:AC:92:ALA:HB2 | 3:AC:99:VAL:CG1 | 2.44 | 0.48 |
| 3:CC:92:ALA:HB2 | 3:CC:99:VAL:CG1 | 2.44 | 0.48 |
| 6:CF:68:PRO:HG3 | 6:CF:71:ARG:NH2 | 2.28 | 0.48 |
| 26:D1:7:ILE:HD12 | 26:D1:7:ILE:N | 2.29 | 0.48 |
| 44:DN:91:LEU:HA | 44:DN:95:PRO:HB3 | 1.95 | 0.48 |
| 35:DA:2562:U:H2' | 35:DA:2563:U:H5' | 1.95 | 0.48 |
| 1:AA:774:G:O2' | 1:AA:775:G:H5' | 2.14 | 0.48 |
| 35:DA:2516:G:C6 | 35:DA:2517:C:N4 | 2.82 | 0.48 |
| 38:BD:257:LEU:CD2 | 38:BD:257:LEU:C | 2.82 | 0.48 |
| 35:BA:645:C:H2' | 35:BA:645:C:O2 | 2.14 | 0.48 |
| 35:BA:229:A:H5'' | 35:BA:230:U:H5' | 1.96 | 0.48 |
| 28:D3:4:LEU:O | 28:D3:36:VAL:HA | 2.14 | 0.48 |
| 1:CA:269:C:H2' | 1:CA:270:A:C8 | 2.49 | 0.48 |
| 1:AA:965:A:C2 | 1:AA:969:A:C2 | 3.01 | 0.48 |
| 35:DA:1550:C:H2' | 35:DA:1551:C:C6 | 2.49 | 0.48 |
| 5:AE:63:ARG:HG2 | 5:AE:63:ARG:HH11 | 1.78 | 0.48 |
| 43:BI:125:GLU:HA | 43:BI:125:GLU:OE1 | 2.14 | 0.48 |
| 4:CD:52:SER:O | 4:CD:55:ALA:HB3 | 2.14 | 0.48 |
| 1:CA:892:A:O2' | 1:CA:1415:G:H4' | 2.14 | 0.48 |
| 56:DZ:33:LEU:HG | 56:DZ:34:ASN:N | 2.28 | 0.48 |
| 50:BT:28:VAL:HB | 50:BT:88:ILE:HG13 | 1.95 | 0.48 |
| 38:BD:37:LEU:HD12 | 38:BD:64:ILE:CG2 | 2.43 | 0.48 |
| 35:DA:2635:C:H5'' | 39:DE:78:LEU:O | 2.13 | 0.48 |
| 39:DE:34:VAL:CG2 | 39:DE:48:GLN:HE21 | 2.26 | 0.48 |
| 39:DE:49:LEU:O | 39:DE:78:LEU:HB3 | 2.13 | 0.48 |
| 28:D3:48:GLU:O | 28:D3:51:ALA:HB2 | 2.14 | 0.48 |
| 56:BZ:99:TYR:CD2 | 56:BZ:99:TYR:N | 2.81 | 0.48 |
| 3:CC:73:PRO:HA | 3:CC:76:VAL:CG1 | 2.42 | 0.48 |
| 52:DV:45:THR:O | 52:DV:46:VAL:HG12 | 2.14 | 0.48 |
| 41:DG:121:ASN:ND2 | 41:DG:123:ASN:H | 2.12 | 0.48 |
| 12:CL:8:ASN:HD22 | 17:CQ:34:LYS:CE | 2.22 | 0.48 |
| 30:D5:33:CYS:O | 30:D5:34:PRO:C | 2.51 | 0.48 |
| 55:DY:22:GLY:O | 55:DY:23:ARG:HB2 | 2.14 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 47:DQ:120:ILE:O | 47:DQ:123:HIS:HB2 | 2.14 | 0.48 |
| 22:CY:25:C:H2' | 22:CY:26:A:C8 | 2.41 | 0.48 |
| 2:AB:114:ARG:HH12 | 2:AB:118:LEU:HD11 | 1.77 | 0.48 |
| 37:DC:86:ALA:HB2 | 37:DC:152:ILE:CB | 2.43 | 0.48 |
| 37:DC:95:GLY:HA2 | 37:DC:99:ILE:HD12 | 1.96 | 0.48 |
| 31:B6:9:LEU:CD2 | 31:B6:10:LEU:N | 2.76 | 0.48 |
| 1:CA:255:G:O6 | 1:CA:266:G:O6 | 2.30 | 0.48 |
| 39:DE:51:PHE:HE1 | 39:DE:52:LEU:HD13 | 1.78 | 0.48 |
| 1:CA:1029:C:O2' | 1:CA:1030:C:H5 | 1.97 | 0.48 |
| 22:CY:63:G:H2' | 22:CY:64:A:C8 | 2.49 | 0.48 |
| 22:CY:63:G:H2' | 22:CY:64:A:H8 | 1.79 | 0.48 |
| 42:DH:89:ILE:CD1 | 42:DH:90:LYS:N | 2.71 | 0.48 |
| 35:BA:2100:G:H1 | 35:BA:2189:U:H3 | 1.60 | 0.48 |
| 43:BI:82:ARG:HG3 | 43:BI:82:ARG:HH11 | 1.79 | 0.48 |
| 13:AM:79:LYS:O | 13:AM:82:MET:HB3 | 2.13 | 0.48 |
| 47:BQ:12:GLN:HG2 | 47:BQ:73:PRO:HD2 | 1.96 | 0.48 |
| 56:BZ:155:LEU:N | 56:BZ:155:LEU:HD12 | 2.29 | 0.48 |
| 37:DC:42:GLU:HA | 37:DC:178:ALA:HB2 | 1.96 | 0.48 |
| 1:CA:1064:G:OP2 | 1:CA:1386:G:H4' | 2.14 | 0.48 |
| 49:DS:106:ARG:NH1 | 49:DS:108:GLY:CA | 2.75 | 0.48 |
| 51:DU:17:ILE:O | 51:DU:20:LEU:HB2 | 2.14 | 0.48 |
| 35:BA:2348:U:C2' | 35:BA:2349:G:C5' | 2.91 | 0.48 |
| 31:B6:32:ASN:O | 31:B6:33:LYS:CB | 2.62 | 0.48 |
| 6:CF:9:VAL:C | 6:CF:10:LEU:HD12 | 2.34 | 0.48 |
| 35:BA:626:U:C5' | 35:BA:627:A:H5' | 2.44 | 0.48 |
| 3:AC:89:GLU:OE2 | 3:AC:93:LYS:HB2 | 2.14 | 0.48 |
| 35:DA:2339:G:O2' | 35:DA:2340:G:H5' | 2.14 | 0.48 |
| 35:DA:2087:G:O2' | 35:DA:2088:G:H5' | 2.14 | 0.48 |
| 35:BA:2558:C:H2' | 35:BA:2559:C:O4' | 2.13 | 0.48 |
| 21:AU:5:ASP:O | 21:AU:7:ARG:N | 2.47 | 0.48 |
| 35:BA:1615:C:C5 | 35:BA:1617:C:C4 | 3.02 | 0.48 |
| 1:CA:243:A:H4' | 1:CA:244:U:H5'' | 1.95 | 0.48 |
| 35:BA:1767:C:C2' | 35:BA:1768:U:H5' | 2.44 | 0.48 |
| 42:DH:118:PRO:HG3 | 42:DH:144:VAL:HG21 | 1.96 | 0.48 |
| 7:AG:113:GLU:O | 7:AG:119:ARG:HD3 | 2.14 | 0.48 |
| 17:AQ:76:LEU:CG | 17:AQ:77:VAL:H | 2.27 | 0.48 |
| 8:CH:88:LYS:HB3 | 8:CH:89:PRO:HD2 | 1.95 | 0.48 |
| 1:CA:35:G:C6 | 1:CA:36:C:N4 | 2.82 | 0.48 |
| 17:CQ:31:LEU:HG | 17:CQ:32:TYR:CD2 | 2.49 | 0.48 |
| 35:DA:449:A:O2' | 35:DA:450:G:H5' | 2.13 | 0.48 |
| 52:BV:74:LYS:HB2 | 52:BV:83:ARG:HB2 | 1.96 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:139:G:H2' | 35:DA:140:G:N7 | 2.28 | 0.48 |
| 35:BA:712:G:O2' | 35:BA:713:G:H5' | 2.14 | 0.48 |
| 35:BA:2841:C:H2' | 35:BA:2842:G:H8 | 1.78 | 0.48 |
| 35:BA:2766:G:N3 | 35:BA:2766:G:H2' | 2.29 | 0.48 |
| 35:DA:244:A:C2 | 35:DA:255:A:C4 | 3.02 | 0.48 |
| 22:AY:11:C:H2' | 22:AY:12:U:C6 | 2.49 | 0.48 |
| 39:DE:87:GLU:HG3 | 39:DE:87:GLU:O | 2.13 | 0.48 |
| 26:B1:92:LYS:HG3 | 26:B1:93:GLU:N | 2.28 | 0.48 |
| 56:DZ:98:MET:HE2 | 56:DZ:100:VAL:HG22 | 1.96 | 0.47 |
| 9:AI:16:ARG:O | 9:AI:63:ILE:HG23 | 2.13 | 0.47 |
| 2:AB:42:ILE:HD11 | 2:AB:202:PRO:HB2 | 1.96 | 0.47 |
| 2:AB:88:ALA:O | 2:AB:90:MET:HG3 | 2.13 | 0.47 |
| 42:BH:71:LEU:CA | 42:BH:74:ASN:HD22 | 2.27 | 0.47 |
| 51:BU:83:LEU:CD1 | 51:BU:113:ALA:HB2 | 2.43 | 0.47 |
| 47:BQ:141:GLN:CD | 56:BZ:72:ARG:HD3 | 2.34 | 0.47 |
| 39:BE:47:VAL:CG2 | 39:BE:84:PHE:O | 2.62 | 0.47 |
| 33:D8:6:THR:CA | 33:D8:61:LEU:HD11 | 2.41 | 0.47 |
| 33:D8:61:LEU:HD13 | 33:D8:62:LEU:H | 1.79 | 0.47 |
| 35:BA:2313:C:C6 | 35:BA:2314:C:H5 | 2.33 | 0.47 |
| 52:BV:19:LYS:NZ | 52:BV:20:LEU:HB2 | 2.29 | 0.47 |
| 41:DG:22:ARG:NH1 | 41:DG:22:ARG:HB3 | 2.29 | 0.47 |
| 38:BD:267:SER:C | 38:BD:269:PHE:N | 2.68 | 0.47 |
| 35:DA:2092:U:H4' | 35:DA:2093:G:C5' | 2.29 | 0.47 |
| 3:AC:151:VAL:HA | 3:AC:199:LYS:O | 2.14 | 0.47 |
| 38:DD:176:ARG:CG | 38:DD:176:ARG:HH11 | 2.24 | 0.47 |
| 1:CA:1058:G:OP1 | 3:CC:199:LYS:HE3 | 2.14 | 0.47 |
| 1:AA:1314:C:H41 | 19:AS:4:SER:N | 2.12 | 0.47 |
| 36:DB:20:C:C3' | 36:DB:21:G:H5'' | 2.42 | 0.47 |
| 42:BH:70:THR:O | 42:BH:72:ILE:N | 2.42 | 0.47 |
| 39:BE:14:ILE:O | 39:BE:20:ALA:HA | 2.13 | 0.47 |
| 35:BA:2615:U:H2' | 35:BA:2616:C:H6 | 1.78 | 0.47 |
| 43:BI:98:ALA:CB | 43:BI:109:ILE:HB | 2.42 | 0.47 |
| 13:AM:49:THR:HB | 13:AM:52:GLU:H | 1.78 | 0.47 |
| 46:DP:41:ARG:NE | 46:DP:41:ARG:CA | 2.74 | 0.47 |
| 25:B0:43:THR:CG2 | 25:B0:43:THR:O | 2.60 | 0.47 |
| 45:BO:107:ARG:O | 45:BO:112:MET:HE1 | 2.14 | 0.47 |
| 42:BH:13:LYS:HA | 42:BH:13:LYS:CE | 2.33 | 0.47 |
| 56:BZ:42:VAL:HG13 | 56:BZ:43:GLU:N | 2.28 | 0.47 |
| 56:BZ:117:LEU:HD13 | 56:BZ:174:VAL:HG23 | 1.96 | 0.47 |
| 4:CD:114:ARG:HG3 | 4:CD:114:ARG:NH1 | 2.17 | 0.47 |
| 43:DI:81:VAL:HG11 | 43:DI:88:ILE:CD1 | 2.44 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:BA:2266:A:H5' | 35:BA:2267:A:N7 | 2.29 | 0.47 |
| 1:AA:99:U:H2' | 1:AA:100:C:C5 | 2.49 | 0.47 |
| 39:BE:6:GLY:O | 39:BE:195:LEU:HD12 | 2.14 | 0.47 |
| 10:CJ:16:LEU:HD23 | 10:CJ:94:VAL:CG1 | 2.44 | 0.47 |
| 38:BD:153:ALA:O | 38:BD:154:LYS:HG2 | 2.14 | 0.47 |
| 35:BA:2555:U:C2' | 35:BA:2556:C:H5' | 2.36 | 0.47 |
| 39:BE:44:TYR:O | 39:BE:45:THR:CB | 2.57 | 0.47 |
| 1:CA:355:C:C4 | 1:CA:356:A:N7 | 2.82 | 0.47 |
| 16:AP:21:VAL:HG12 | 16:AP:34:GLU:O | 2.14 | 0.47 |
| 35:BA:2036:C:H5' | 35:BA:2036:C:C6 | 2.37 | 0.47 |
| 35:BA:365:C:H2' | 35:BA:366:C:O4' | 2.14 | 0.47 |
| 38:BD:125:ILE:HG13 | 38:BD:137:PRO:CD | 2.44 | 0.47 |
| 12:CL:6:THR:HG23 | 12:CL:9:GLN:HB2 | 1.96 | 0.47 |
| 35:DA:2579:C:O3' | 39:DE:131:ALA:HB3 | 2.13 | 0.47 |
| 35:BA:271(J):C:C2' | 35:BA:271(K):U:H5'' | 2.44 | 0.47 |
| 35:BA:271(J):C:H2' | 35:BA:271(K):U:H5'' | 1.96 | 0.47 |
| 12:AL:32:PHE:HB3 | 12:AL:84:LEU:CD2 | 2.44 | 0.47 |
| 1:CA:1385:G:O2' | 1:CA:1386:G:H5' | 2.13 | 0.47 |
| 45:DO:32:TYR:CD1 | 45:DO:32:TYR:N | 2.81 | 0.47 |
| 35:BA:1455:G:C8 | 48:BR:60:LEU:HD11 | 2.48 | 0.47 |
| 22:CV:27:G:H2' | 22:CV:28:G:C8 | 2.43 | 0.47 |
| 47:BQ:17:LEU:HD23 | 47:BQ:17:LEU:N | 2.29 | 0.47 |
| 11:AK:44:SER:H | 11:AK:47:VAL:HG23 | 1.75 | 0.47 |
| 13:CM:54:VAL:O | 13:CM:58:GLU:N | 2.33 | 0.47 |
| 50:BT:128:GLU:O | 50:BT:130:ALA:N | 2.47 | 0.47 |
| 2:CB:28:PHE:HD2 | 2:CB:194:PRO:HD3 | 1.79 | 0.47 |
| 1:AA:950:U:H4' | 1:AA:971:G:C2 | 2.49 | 0.47 |
| 21:CU:5:ASP:O | 21:CU:7:ARG:N | 2.47 | 0.47 |
| 38:DD:58:HIS:CD2 | 38:DD:59:LYS:O | 2.65 | 0.47 |
| 13:CM:108:ARG:HH12 | 13:CM:112:GLY:HA3 | 1.79 | 0.47 |
| 35:DA:2443:C:H2' | 35:DA:2444:G:C8 | 2.49 | 0.47 |
| 15:AO:64:ARG:HG3 | 15:AO:64:ARG:NH1 | 2.28 | 0.47 |
| 35:BA:860:U:O2' | 35:BA:861:A:H5' | 2.13 | 0.47 |
| 11:CK:99:GLN:HA | 11:CK:105:VAL:CG1 | 2.44 | 0.47 |
| 1:CA:445:G:H2' | 1:CA:446:G:C8 | 2.48 | 0.47 |
| 38:DD:3:VAL:HG12 | 38:DD:17:THR:HB | 1.95 | 0.47 |
| 1:AA:782:A:H2' | 1:AA:783:C:H5' | 1.95 | 0.47 |
| 28:D3:36:VAL:HG23 | 28:D3:36:VAL:O | 2.14 | 0.47 |
| 4:CD:108:LEU:HB3 | 4:CD:110:PHE:HE1 | 1.79 | 0.47 |
| 35:DA:967:C:O2' | 35:DA:968:G:H5' | 2.14 | 0.47 |
| 35:DA:690:G:O2' | 35:DA:691:C:H5' | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:139:LEU:C | 5:AE:141:GLN:H | 2.17 | 0.47 |
| 43:BI:34:GLY:O | 43:BI:35:LEU:HD23 | 2.13 | 0.47 |
| 5:CE:131:ILE:HD13 | 5:CE:131:ILE:O | 2.14 | 0.47 |
| 1:CA:24:U:O2' | 1:CA:25:C:H5' | 2.14 | 0.47 |
| 54:DX:3:THR:HA | 54:DX:6:ASP:OD2 | 2.13 | 0.47 |
| 1:CA:1286:A:H2 | 21:CU:22:ARG:NH2 | 2.12 | 0.47 |
| 35:BA:1215:G:O2' | 35:BA:1216:G:H5' | 2.13 | 0.47 |
| 47:DQ:141:GLN:HA | 56:DZ:53:ILE:CG2 | 2.44 | 0.47 |
| 33:D8:7:HIS:HD2 | 46:DP:50:ARG:HD3 | 1.80 | 0.47 |
| 55:BY:96:ILE:CG2 | 55:BY:97:ARG:H | 2.27 | 0.47 |
| 9:AI:9:ARG:HA | 9:AI:13:ALA:O | 2.14 | 0.47 |
| 35:BA:1747:G:H2' | 35:BA:1747(A):G:C8 | 2.49 | 0.47 |
| 49:BS:96:GLY:C | 49:BS:97:ARG:HG3 | 2.33 | 0.47 |
| 35:DA:1815:A:P | 38:DD:54:ARG:HH22 | 2.36 | 0.47 |
| 43:BI:94:ALA:HB1 | 43:BI:111:PRO:HA | 1.96 | 0.47 |
| 52:BV:47:VAL:O | 52:BV:47:VAL:HG23 | 2.13 | 0.47 |
| 39:BE:67:PHE:CD2 | 39:BE:68:ALA:N | 2.81 | 0.47 |
| 3:CC:26:LYS:HG3 | 3:CC:27:LYS:N | 2.23 | 0.47 |
| 38:DD:94:LEU:HB2 | 38:DD:104:TYR:HE2 | 1.79 | 0.47 |
| 13:CM:68:GLY:O | 13:CM:71:ARG:N | 2.47 | 0.47 |
| 1:CA:1060:C:O2' | 1:CA:1061:G:H5' | 2.15 | 0.47 |
| 10:CJ:63:PHE:CA | 14:CN:59:ALA:HB2 | 2.45 | 0.47 |
| 51:DU:76:TYR:CZ | 51:DU:80:ILE:HG13 | 2.49 | 0.47 |
| 29:B4:51:TYR:O | 29:B4:52:SER:HB3 | 2.13 | 0.47 |
| 1:AA:1058:G:OP1 | 3:AC:199:LYS:HE3 | 2.14 | 0.47 |
| 1:CA:1358:U:OP1 | 14:CN:35:ARG:HG2 | 2.13 | 0.47 |
| 10:CJ:78:ASN:HD21 | 10:CJ:80:LYS:HB2 | 1.79 | 0.47 |
| 35:DA:1666:G:H1' | 45:DO:3:GLN:HE21 | 1.78 | 0.47 |
| 43:DI:71:ILE:O | 43:DI:75:LEU:HD13 | 2.14 | 0.47 |
| 46:DP:101:VAL:C | 46:DP:103:ALA:N | 2.67 | 0.47 |
| 36:BB:21:G:N3 | 36:BB:21:G:H2' | 2.29 | 0.47 |
| 30:B5:2:ALA:HB3 | 35:BA:747:U:N1 | 2.29 | 0.47 |
| 37:DC:78:ALA:HB3 | 37:DC:83:ILE:HD11 | 1.96 | 0.47 |
| 41:DG:43:LEU:HD11 | 41:DG:153:ARG:HD2 | 1.96 | 0.47 |
| 41:DG:64:THR:HG23 | 41:DG:65:GLY:N | 2.29 | 0.47 |
| 41:DG:68:PRO:CB | 41:DG:90:LEU:HD21 | 2.44 | 0.47 |
| 42:DH:123:PHE:HA | 42:DH:133:VAL:HG22 | 1.95 | 0.47 |
| 35:DA:271(D):G:O2' | 35:DA:271(E):U:H5' | 2.13 | 0.47 |
| 50:BT:43:GLN:HG2 | 50:BT:44:ASP:N | 2.29 | 0.47 |
| 27:D2:24:LEU:O | 27:D2:24:LEU:HD12 | 2.14 | 0.47 |
| 35:BA:481:G:O2' | 35:BA:482:A:P | 2.71 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 55:BY:51:VAL:O | 55:BY:52:SER:CB | 2.62 | 0.47 |
| 43:DI:133:HIS:HB2 | 43:DI:134:PRO:HD2 | 1.93 | 0.47 |
| 35:DA:858:U:O2 | 35:DA:2268:A:H2' | 2.14 | 0.47 |
| 35:DA:1168:G:H1 | 35:DA:1181:C:H42 | 1.62 | 0.47 |
| 46:DP:46:LYS:HG2 | 46:DP:52:GLU:CG | 2.44 | 0.47 |
| 41:BG:7:LEU:O | 41:BG:8:LYS:C | 2.52 | 0.47 |
| 8:AH:85:ARG:CG | 8:AH:85:ARG:HH11 | 2.22 | 0.47 |
| 55:DY:89:PHE:O | 55:DY:90:LEU:HB3 | 2.14 | 0.47 |
| 35:DA:2889:C:H2' | 35:DA:2891:G:O4' | 2.14 | 0.47 |
| 35:DA:2892:A:H3' | 35:DA:2893:G:H4' | 1.96 | 0.47 |
| 35:BA:2190:G:H5' | 35:BA:2190:G:H8 | 1.77 | 0.47 |
| 1:AA:511:C:O2' | 1:AA:512:U:H5'' | 2.13 | 0.47 |
| 26:B1:86:SER:HB2 | 26:B1:89:GLU:CG | 2.44 | 0.47 |
| 55:DY:2:ARG:HH11 | 55:DY:2:ARG:HG2 | 1.78 | 0.47 |
| 43:DI:9:LEU:HB2 | 43:DI:12:LEU:O | 2.14 | 0.47 |
| 18:CR:56:THR:OG1 | 18:CR:58:LEU:HD12 | 2.13 | 0.47 |
| 40:DF:89:VAL:HG12 | 40:DF:90:PHE:N | 2.29 | 0.47 |
| 1:CA:706:A:N7 | 1:CA:707:C:H5 | 2.11 | 0.47 |
| 27:D2:47:ASN:ND2 | 35:DA:94(A):G:N3 | 2.62 | 0.47 |
| 31:D6:28:ARG:HA | 31:D6:28:ARG:CZ | 2.44 | 0.47 |
| 35:DA:2136:C:H2' | 35:DA:2137:C:C6 | 2.40 | 0.47 |
| 38:DD:11:PRO:C | 38:DD:13:ARG:N | 2.67 | 0.47 |
| 47:BQ:134:ARG:HA | 47:BQ:137:TYR:CD1 | 2.49 | 0.47 |
| 35:BA:221:A:O2' | 35:BA:222:A:OP2 | 2.28 | 0.47 |
| 1:CA:1242:C:C5' | 21:CU:10:ARG:HH12 | 2.26 | 0.47 |
| 1:AA:1041:A:H2' | 1:AA:1042:G:C8 | 2.49 | 0.47 |
| 1:CA:1043:C:H2' | 1:CA:1044:A:C8 | 2.49 | 0.47 |
| 52:BV:82:ARG:HD2 | 52:BV:82:ARG:N | 2.29 | 0.47 |
| 38:BD:210:GLY:O | 38:BD:211:ARG:CB | 2.61 | 0.47 |
| 54:DX:46:ALA:C | 54:DX:47:PHE:CD1 | 2.88 | 0.47 |
| 54:DX:52:VAL:HG21 | 54:DX:84:ALA:HA | 1.97 | 0.47 |
| 40:DF:70:THR:C | 40:DF:72:ARG:N | 2.67 | 0.47 |
| 1:CA:532:A:C2 | 1:CA:1207:G:O4' | 2.68 | 0.47 |
| 1:CA:745:C:H5'' | 1:CA:851:G:H1' | 1.95 | 0.47 |
| 1:CA:1014:A:H2' | 1:CA:1015:A:C8 | 2.49 | 0.47 |
| 1:AA:1353:G:O2' | 1:AA:1354:C:H5' | 2.14 | 0.47 |
| 35:BA:1800:C:P | 38:BD:264:LYS:HZ3 | 2.37 | 0.47 |
| 35:BA:272(D):G:O2' | 35:BA:272(E):G:H5' | 2.14 | 0.47 |
| 1:AA:34:C:H2' | 1:AA:35:G:H8 | 1.77 | 0.47 |
| 51:DU:21:ALA:O | 51:DU:22:LYS:C | 2.52 | 0.47 |
| 7:CG:133:GLY:O | 7:CG:136:LYS:HB3 | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 35:DA:560:C:H4' | 51:DU:52:ARG:NH2 | 2.29 | 0.47 |
| 35:BA:533:G:H5' | 51:BU:24:TYR:CD2 | 2.49 | 0.47 |
| 1:CA:885:G:H8 | 1:CA:885:G:O5' | 1.97 | 0.47 |
| 4:CD:108:LEU:HB3 | 4:CD:110:PHE:CE1 | 2.49 | 0.47 |
| 35:DA:1221(A):C:O2' | 35:DA:1222:C:H5' | 2.14 | 0.47 |
| 18:AR:60:ALA:O | 18:AR:64:ARG:HG3 | 2.14 | 0.47 |
| 35:BA:728:G:C6 | 35:BA:730:C:C4 | 3.02 | 0.47 |
| 48:DR:18:LEU:HD13 | 48:DR:18:LEU:C | 2.34 | 0.47 |
| 7:CG:137:LYS:O | 7:CG:141:VAL:HG23 | 2.14 | 0.47 |
| 12:CL:43:VAL:HG23 | 12:CL:44:THR:N | 2.28 | 0.47 |
| 35:BA:2164:C:H3' | 35:BA:2165:G:H8 | 1.79 | 0.47 |
| 42:BH:125:VAL:HG12 | 42:BH:125:VAL:O | 2.14 | 0.47 |
| 1:AA:1529:G:H4' | 1:AA:1530:G:OP2 | 2.14 | 0.47 |
| 1:CA:1142:G:H2' | 1:CA:1143:G:O4' | 2.14 | 0.47 |
| 43:BI:3:VAL:HG21 | 43:BI:21:VAL:HG22 | 1.95 | 0.47 |
| 33:D8:13:ARG:NH2 | 35:DA:250:G:OP2 | 2.45 | 0.47 |
| 46:DP:59:LEU:CA | 46:DP:61:ARG:NH1 | 2.73 | 0.47 |
| 40:DF:9:ILE:HA | 40:DF:14:PRO:O | 2.14 | 0.47 |
| 18:AR:36:ASN:ND2 | 18:AR:39:VAL:CG2 | 2.68 | 0.47 |
| 36:BB:37:C:O2' | 36:BB:38:C:H5' | 2.13 | 0.47 |
| 1:CA:1054:C:N4 | 22:CY:34:G:C4 | 2.82 | 0.47 |
| 40:BF:132:VAL:O | 40:BF:134:GLY:N | 2.47 | 0.47 |
| 35:DA:661:C:H4' | 46:DP:16:ARG:HH12 | 1.80 | 0.47 |
| 46:BP:25:SER:O | 46:BP:30:THR:HG23 | 2.14 | 0.47 |
| 40:BF:160:ASN:HD22 | 40:BF:161:GLU:N | 2.12 | 0.47 |
| 23:AW:31:A:N1 | 23:AW:39:U:O4 | 2.48 | 0.47 |
| 55:BY:28:LYS:HB3 | 55:BY:37:VAL:HB | 1.97 | 0.47 |
| 35:BA:2646:C:OP2 | 35:BA:2732:G:O2' | 2.22 | 0.47 |
| 3:CC:167:TRP:O | 3:CC:168:ALA:HB2 | 2.14 | 0.47 |
| 1:AA:939:G:C5' | 7:AG:102:ARG:HH22 | 2.15 | 0.47 |
| 47:BQ:20:ALA:O | 47:BQ:21:THR:CB | 2.62 | 0.47 |
| 19:AS:5:LEU:H | 19:AS:6:LYS:HZ1 | 1.61 | 0.47 |
| 10:CJ:78:ASN:ND2 | 10:CJ:80:LYS:HB2 | 2.29 | 0.47 |
| 46:BP:97:PRO:C | 46:BP:99:LEU:N | 2.67 | 0.47 |
| 3:CC:16:ARG:CA | 3:CC:16:ARG:HH11 | 2.27 | 0.47 |
| 35:DA:1140:C:H5'' | 44:DN:66:LYS:NZ | 2.28 | 0.47 |
| 31:B6:12:GLU:N | 31:B6:12:GLU:CD | 2.67 | 0.47 |
| 33:B8:35:GLN:C | 33:B8:36:LYS:HG3 | 2.34 | 0.47 |
| 37:DC:72:VAL:HG11 | 37:DC:160:ARG:O | 2.14 | 0.47 |
| 26:D1:73:LEU:HD13 | 26:D1:94:LEU:CD2 | 2.44 | 0.47 |
| 35:DA:1301:A:HO2' | 35:DA:1302:A:P | 2.36 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:2097:C:O2' | 35:DA:2098:U:H5' | 2.14 | 0.47 |
| 1:CA:737:A:O2' | 6:CF:72:VAL:HG11 | 2.13 | 0.47 |
| 17:AQ:7:THR:O | 17:AQ:23:VAL:HG13 | 2.13 | 0.47 |
| 1:CA:1505:G:H4' | 1:CA:1506:U:H5' | 1.96 | 0.47 |
| 38:BD:155:LEU:HD23 | 38:BD:177:LEU:CD2 | 2.40 | 0.47 |
| 22:AY:15:G:O2' | 22:AY:16:U:OP1 | 2.25 | 0.47 |
| 16:AP:4:ILE:HB | 16:AP:66:PRO:HB3 | 1.96 | 0.47 |
| 40:BF:83:PHE:O | 40:BF:84:VAL:HB | 2.14 | 0.47 |
| 47:DQ:65:PHE:HB2 | 47:DQ:105:GLU:HG2 | 1.96 | 0.47 |
| 30:B5:43:HIS:CD2 | 35:BA:2815:C:O2' | 2.68 | 0.47 |
| 26:B1:90:ILE:HG22 | 26:B1:94:LEU:CD1 | 2.40 | 0.47 |
| 49:BS:30:ARG:NH2 | 49:BS:62:LYS:HB3 | 2.25 | 0.47 |
| 35:BA:951:C:O2' | 35:BA:952:G:H5' | 2.14 | 0.47 |
| 11:AK:29:ILE:HD13 | 11:AK:44:SER:HB3 | 1.97 | 0.47 |
| 7:AG:146:GLU:HA | 7:AG:149:ARG:HB2 | 1.96 | 0.47 |
| 11:AK:126:ARG:HB3 | 11:AK:126:ARG:CZ | 2.44 | 0.47 |
| 13:CM:54:VAL:HG12 | 13:CM:58:GLU:HG2 | 1.96 | 0.47 |
| 1:AA:1242:C:C5' | 21:AU:10:ARG:HH12 | 2.28 | 0.47 |
| 47:BQ:27:VAL:HB | 47:BQ:137:TYR:CD1 | 2.48 | 0.47 |
| 1:AA:708:C:H2' | 1:AA:709:G:C8 | 2.48 | 0.47 |
| 2:AB:27:LYS:HD3 | 2:AB:195:ASP:OD2 | 2.13 | 0.47 |
| 10:CJ:23:ILE:HG12 | 10:CJ:85:LEU:HD22 | 1.95 | 0.47 |
| 1:CA:1260:C:OP1 | 1:CA:1284:C:H4' | 2.14 | 0.47 |
| 36:DB:87:G:H1 | 36:DB:91:C:N4 | 2.11 | 0.47 |
| 35:BA:1240:U:O2' | 35:BA:1241:A:C5' | 2.60 | 0.47 |
| 1:CA:166:G:H2' | 1:CA:167:G:H8 | 1.78 | 0.47 |
| 25:B0:7:LEU:HD21 | 47:BQ:81:VAL:HB | 1.95 | 0.47 |
| 56:DZ:111:VAL:O | 56:DZ:111:VAL:HG13 | 2.14 | 0.47 |
| 35:BA:560:C:H4' | 51:BU:52:ARG:NH2 | 2.29 | 0.47 |
| 6:AF:75:LEU:HD23 | 6:AF:79:LEU:HG | 1.97 | 0.47 |
| 7:CG:115:ARG:O | 7:CG:119:ARG:HG3 | 2.14 | 0.47 |
| 35:DA:1037:G:H1 | 35:DA:1118:C:N4 | 2.12 | 0.47 |
| 1:CA:678:U:H2' | 1:CA:679:C:H6 | 1.79 | 0.47 |
| 44:BN:91:LEU:CD2 | 44:BN:98:VAL:HG21 | 2.44 | 0.47 |
| 35:BA:320:A:H3' | 40:BF:136:THR:HG22 | 1.96 | 0.47 |
| 38:DD:137:PRO:HB2 | 38:DD:140:THR:HG23 | 1.97 | 0.47 |
| 35:BA:1842:G:H2' | 35:BA:1843:C:C6 | 2.49 | 0.47 |
| 1:CA:693:G:O2' | 1:CA:694:A:H5' | 2.14 | 0.47 |
| 1:AA:524:G:H2' | 1:AA:525:C:C6 | 2.50 | 0.47 |
| 35:BA:407:G:H2' | 35:BA:408:G:H8 | 1.79 | 0.47 |
| 1:CA:487:A:H2' | 1:CA:488:C:O4' | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:2164:C:H3' | 35:DA:2165:G:H8 | 1.80 | 0.47 |
| 38:DD:72:LYS:HE2 | 38:DD:101:GLU:CD | 2.34 | 0.47 |
| 47:BQ:118:LEU:O | 47:BQ:121:ALA:N | 2.47 | 0.47 |
| 43:BI:59:ALA:O | 43:BI:63:ALA:HB3 | 2.14 | 0.47 |
| 35:DA:712:G:O2' | 35:DA:713:G:H5' | 2.14 | 0.47 |
| 35:BA:667:U:H2' | 35:BA:668:G:O4' | 2.14 | 0.47 |
| 1:CA:1472:U:O2' | 1:CA:1473:A:H5' | 2.14 | 0.47 |
| 19:CS:50:ALA:HB1 | 19:CS:57:HIS:HB3 | 1.94 | 0.47 |
| 9:AI:41:VAL:O | 9:AI:41:VAL:HG12 | 2.13 | 0.47 |
| 25:B0:70:GLN:HB3 | 25:B0:70:GLN:HE21 | 1.50 | 0.47 |
| 39:BE:7:VAL:HA | 39:BE:194:GLY:O | 2.14 | 0.47 |
| 35:DA:498:G:O2' | 35:DA:499:U:H5' | 2.14 | 0.47 |
| 35:BA:884:C:H42 | 35:BA:892:G:H1 | 1.61 | 0.47 |
| 1:AA:811:C:H4' | 1:AA:900:A:N6 | 2.29 | 0.47 |
| 31:B6:46:HIS:HB3 | 31:B6:47:THR:N | 2.29 | 0.47 |
| 12:CL:47:LYS:CB | 12:CL:48:PRO:CD | 2.83 | 0.47 |
| 1:AA:1348:U:C4' | 9:AI:120:ARG:HD2 | 2.19 | 0.47 |
| 50:DT:46:GLU:CG | 50:DT:88:ILE:HD11 | 2.45 | 0.47 |
| 14:CN:19:ARG:O | 14:CN:20:ALA:C | 2.52 | 0.47 |
| 51:BU:64:ARG:HH21 | 51:BU:64:ARG:CG | 2.27 | 0.47 |
| 39:DE:33:VAL:HG13 | 39:DE:69:LYS:NZ | 2.28 | 0.47 |
| 10:CJ:50:ILE:CD1 | 14:CN:41:ARG:HD2 | 2.44 | 0.47 |
| 35:DA:2307:G:N3 | 35:DA:2307:G:H5'' | 2.29 | 0.47 |
| 41:DG:107:LEU:HD11 | 41:DG:178:PHE:CE1 | 2.50 | 0.47 |
| 38:BD:267:SER:HA | 38:BD:270:ILE:HG13 | 1.96 | 0.47 |
| 55:DY:67:LEU:HD11 | 55:DY:71:LYS:HB2 | 1.96 | 0.47 |
| 18:AR:37:VAL:CG2 | 18:AR:38:GLU:H | 2.10 | 0.47 |
| 4:CD:12:CYS:SG | 4:CD:19:LEU:O | 2.72 | 0.47 |
| 30:B5:37:LYS:O | 30:B5:38:ALA:O | 2.32 | 0.47 |
| 41:BG:133:LEU:HD12 | 41:BG:133:LEU:C | 2.35 | 0.47 |
| 35:BA:1786:A:H3' | 35:BA:1787:A:H8 | 1.77 | 0.47 |
| 35:BA:405:U:H3' | 35:BA:406:G:C5' | 2.44 | 0.47 |
| 1:AA:255:G:H1' | 17:AQ:16:GLN:HE21 | 1.73 | 0.47 |
| 50:DT:50:ILE:HD12 | 50:DT:50:ILE:N | 2.29 | 0.47 |
| 42:BH:85:LYS:HZ3 | 42:BH:133:VAL:HB | 1.79 | 0.47 |
| 55:BY:48:ALA:C | 55:BY:50:ARG:H | 2.17 | 0.47 |
| 35:BA:1181:C:O2' | 35:BA:1182:A:H5' | 2.15 | 0.47 |
| 50:BT:50:ILE:HA | 50:BT:99:LEU:HD11 | 1.96 | 0.47 |
| 1:CA:1512:U:O2' | 1:CA:1513:A:H5' | 2.14 | 0.47 |
| 39:BE:16:ARG:C | 39:BE:18:ASP:N | 2.66 | 0.47 |
| 1:AA:107:G:C2 | 1:AA:108:G:H1' | 2.50 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 55:DY:90:LEU:HD12 | 55:DY:90:LEU:C | 2.35 | 0.47 |
| 55:BY:90:LEU:HD12 | 55:BY:90:LEU:C | 2.35 | 0.47 |
| 26:D1:3:LYS:O | 26:D1:12:PRO:HD3 | 2.14 | 0.47 |
| 8:AH:60:ARG:HG3 | 8:AH:60:ARG:HH11 | 1.79 | 0.47 |
| 26:B1:48:LYS:HA | 26:B1:60:PHE:O | 2.13 | 0.47 |
| 13:AM:91:ARG:HH22 | 13:AM:103:THR:HG21 | 1.79 | 0.47 |
| 4:CD:119:GLN:NE2 | 4:CD:123:HIS:NE2 | 2.62 | 0.47 |
| 49:BS:106:ARG:HH22 | 49:BS:109:GLY:N | 2.12 | 0.47 |
| 48:BR:115:GLU:HG2 | 48:BR:116:LEU:N | 2.29 | 0.47 |
| 35:DA:528:A:N1 | 35:DA:2042:A:H2' | 2.30 | 0.47 |
| 48:DR:116:LEU:O | 48:DR:117:VAL:C | 2.52 | 0.47 |
| 45:DO:49:ARG:CG | 45:DO:49:ARG:HH11 | 2.24 | 0.47 |
| 35:DA:330:A:O2' | 35:DA:331:A:C8 | 2.61 | 0.47 |
| 35:DA:774:A:H2 | 35:DA:787:U:O2' | 1.97 | 0.47 |
| 38:DD:16:MET:HE2 | 38:DD:208:LYS:HD2 | 1.94 | 0.47 |
| 2:AB:23:ARG:HB3 | 2:AB:23:ARG:CZ | 2.45 | 0.47 |
| 52:DV:82:ARG:HH11 | 52:DV:82:ARG:HG2 | 1.80 | 0.47 |
| 1:CA:1457:G:H2' | 1:CA:1458:G:C8 | 2.45 | 0.47 |
| 35:BA:2712:U:OP1 | 35:BA:2714:G:H4' | 2.14 | 0.47 |
| 50:DT:129:ARG:NH1 | 50:DT:130:ALA:O | 2.47 | 0.47 |
| 8:CH:45:ILE:C | 8:CH:47:GLY:H | 2.17 | 0.47 |
| 37:BC:25:ALA:C | 37:BC:27:ARG:H | 2.18 | 0.47 |
| 47:BQ:78:PRO:HB2 | 47:BQ:81:VAL:CG1 | 2.44 | 0.47 |
| 1:CA:197:A:N7 | 1:CA:221:C:H4' | 2.28 | 0.47 |
| 38:DD:226:MET:HB3 | 38:DD:230:ASP:CB | 2.44 | 0.47 |
| 1:CA:1228:C:H4' | 13:CM:116:THR:CA | 2.45 | 0.47 |
| 1:CA:1249:C:H6 | 1:CA:1249:C:H5' | 1.79 | 0.47 |
| 35:DA:1708:C:O2' | 35:DA:1709:U:H5' | 2.14 | 0.47 |
| 35:DA:2710:C:OP1 | 48:DR:15:SER:HB2 | 2.14 | 0.47 |
| 35:BA:2837:G:H2' | 35:BA:2838:G:H8 | 1.80 | 0.47 |
| 38:DD:148:GLU:HB3 | 38:DD:151:LYS:HD2 | 1.95 | 0.47 |
| 1:AA:630:G:H2' | 1:AA:631:G:C5' | 2.44 | 0.47 |
| 44:BN:90:MET:O | 44:BN:93:THR:O | 2.33 | 0.47 |
| 38:BD:112:GLN:N | 38:BD:115:GLN:NE2 | 2.63 | 0.47 |
| 35:DA:1794:U:H2' | 35:DA:1795:C:C6 | 2.48 | 0.47 |
| 23:AW:52:G:H2' | 23:AW:53:G:C8 | 2.49 | 0.47 |
| 5:CE:136:MET:O | 5:CE:138:ALA:N | 2.47 | 0.47 |
| 15:CO:45:VAL:HB | 15:CO:46:HIS:ND1 | 2.29 | 0.47 |
| 36:BB:78:A:H2' | 36:BB:79:C:O4' | 2.13 | 0.47 |
| 35:BA:644:A:H4' | 35:BA:645:C:C5 | 2.49 | 0.47 |
| 35:DA:449:A:H2' | 35:DA:450:G:H5' | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 35:BA:108:U:H2' | 35:BA:109:G:C8 | 2.49 | 0.47 |
| 56:DZ:8:TYR:HD2 | 56:DZ:62:PRO:CG | 2.28 | 0.47 |
| 53:BW:34:ASN:O | 53:BW:37:ARG:HB3 | 2.14 | 0.47 |
| 29:B4:45:GLY:O | 29:B4:46:ASN:O | 2.31 | 0.47 |
| 35:BA:2552:U:C2 | 35:BA:2554:U:H5' | 2.50 | 0.47 |
| 35:DA:884:C:H42 | 35:DA:892:G:H1 | 1.62 | 0.47 |
| 10:AJ:44:VAL:HG12 | 10:AJ:46:ARG:HG3 | 1.97 | 0.47 |
| 2:AB:34:ALA:HB1 | 2:AB:36:ARG:HD2 | 1.96 | 0.47 |
| 5:CE:139:LEU:C | 5:CE:141:GLN:H | 2.17 | 0.47 |
| 20:CT:67:ALA:O | 20:CT:73:HIS:NE2 | 2.47 | 0.47 |
| 16:CP:39:TYR:CD1 | 16:CP:73:LEU:HD13 | 2.49 | 0.47 |
| 2:AB:213:LEU:HD23 | 2:AB:213:LEU:O | 2.15 | 0.47 |
| 9:CI:128:ARG:HD3 | 9:CI:128:ARG:H | 1.80 | 0.47 |
| 56:DZ:102:LEU:HG | 56:DZ:137:ILE:CG2 | 2.45 | 0.47 |
| 41:BG:45:GLU:O | 41:BG:88:ILE:HD11 | 2.15 | 0.47 |
| 1:AA:1115:C:O2' | 1:AA:1116:C:H5' | 2.14 | 0.47 |
| 2:AB:80:ILE:HD11 | 2:AB:212:GLN:HA | 1.96 | 0.47 |
| 50:DT:89:VAL:HB | 50:DT:91:ARG:CZ | 2.43 | 0.47 |
| 35:BA:2394:C:O2' | 35:BA:2395:C:H5' | 2.15 | 0.47 |
| 49:BS:97:ARG:HH21 | 49:BS:98:VAL:CA | 2.02 | 0.47 |
| 35:DA:1747(A):G:C3' | 35:DA:1748:G:H5'' | 2.44 | 0.47 |
| 51:BU:90:VAL:HG12 | 51:BU:91:ASP:N | 2.30 | 0.47 |
| 40:BF:38:ARG:HH11 | 40:BF:38:ARG:HG3 | 1.79 | 0.47 |
| 5:AE:105:VAL:HB | 5:AE:106:PRO:CD | 2.45 | 0.47 |
| 5:AE:67:VAL:HG13 | 5:AE:69:VAL:CG2 | 2.43 | 0.47 |
| 13:AM:22:ILE:CG2 | 13:AM:25:ILE:HD13 | 2.44 | 0.47 |
| 13:AM:28:ALA:C | 13:AM:30:ALA:N | 2.66 | 0.47 |
| 13:CM:76:ALA:HA | 13:CM:79:LYS:HD2 | 1.94 | 0.47 |
| 40:BF:10:PRO:HD2 | 40:BF:13:SER:HB2 | 1.94 | 0.47 |
| 35:BA:2126:A:C6 | 35:BA:2163:C:H4' | 2.49 | 0.47 |
| 1:CA:1324:A:H2' | 1:CA:1325:C:C6 | 2.49 | 0.47 |
| 55:DY:67:LEU:HD11 | 55:DY:71:LYS:CB | 2.45 | 0.47 |
| 42:DH:65:HIS:HE1 | 42:DH:69:ARG:CD | 2.28 | 0.47 |
| 6:AF:3:ARG:HD3 | 6:AF:64:GLN:OE1 | 2.13 | 0.47 |
| 1:AA:1163:C:H5' | 10:CJ:80:LYS:HD2 | 1.96 | 0.47 |
| 10:CJ:31:GLY:HA3 | 10:CJ:78:ASN:OD1 | 2.14 | 0.47 |
| 1:AA:1163:C:H5' | 10:CJ:80:LYS:HZ3 | 1.80 | 0.47 |
| 10:AJ:4:ILE:HB | 10:AJ:74:ILE:CG1 | 2.44 | 0.47 |
| 10:AJ:78:ASN:ND2 | 10:AJ:80:LYS:HB2 | 2.29 | 0.47 |
| 56:DZ:77:ASP:C | 56:DZ:79:ARG:H | 2.18 | 0.47 |
| 46:BP:81:GLN:CG | 46:BP:106:LEU:HD12 | 2.43 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:2864:G:C5' | 35:BA:2864:G:H8 | 2.27 | 0.47 |
| 48:DR:48:VAL:HA | 48:DR:51:LEU:HD12 | 1.95 | 0.47 |
| 46:BP:32:THR:O | 46:BP:33:ARG:CB | 2.63 | 0.47 |
| 42:BH:158:HIS:NE2 | 42:BH:169:VAL:O | 2.48 | 0.47 |
| 35:BA:1785:A:O2' | 35:BA:1786:A:H2' | 2.14 | 0.47 |
| 37:BC:85:GLU:C | 37:BC:87:GLU:H | 2.18 | 0.47 |
| 1:AA:617:G:H1 | 1:AA:623:C:N4 | 2.07 | 0.47 |
| 38:BD:26:LYS:CD | 38:BD:82:ILE:H | 2.28 | 0.47 |
| 35:DA:1786:A:H3' | 35:DA:1787:A:H8 | 1.80 | 0.47 |
| 41:BG:128:ARG:NE | 41:BG:128:ARG:N | 2.62 | 0.47 |
| 20:AT:50:GLU:CA | 20:AT:100:ILE:HG12 | 2.45 | 0.47 |
| 35:DA:2892:A:C5 | 35:DA:2893:G:H1' | 2.49 | 0.47 |
| 35:BA:581:C:OP1 | 51:BU:33:ARG:HG2 | 2.14 | 0.47 |
| 23:CW:55:U:H5 | 23:CW:58:A:OP1 | 1.96 | 0.47 |
| 1:CA:511:C:O2' | 1:CA:512:U:H5'' | 2.14 | 0.47 |
| 26:B1:3:LYS:HD2 | 35:BA:1364:G:OP2 | 2.14 | 0.47 |
| 12:AL:6:THR:HG23 | 12:AL:9:GLN:HB2 | 1.95 | 0.47 |
| 5:CE:67:VAL:HG13 | 5:CE:69:VAL:CG2 | 2.45 | 0.47 |
| 46:DP:71:VAL:HG12 | 46:DP:72:PRO:HD3 | 1.96 | 0.47 |
| 12:AL:32:PHE:HB3 | 12:AL:84:LEU:HD21 | 1.97 | 0.47 |
| 43:DI:60:GLU:HA | 43:DI:60:GLU:OE2 | 2.14 | 0.47 |
| 9:AI:43:ALA:C | 9:AI:45:ALA:H | 2.18 | 0.47 |
| 9:CI:43:ALA:C | 9:CI:45:ALA:H | 2.18 | 0.47 |
| 1:CA:649:G:H2' | 1:CA:650:G:H8 | 1.78 | 0.47 |
| 36:BB:30:C:H5 | 49:BS:32:LEU:CD1 | 2.27 | 0.47 |
| 56:BZ:103:ARG:O | 56:BZ:105:VAL:N | 2.43 | 0.47 |
| 8:AH:11:THR:O | 8:AH:15:ASN:ND2 | 2.48 | 0.47 |
| 11:CK:108:ILE:HB | 18:CR:87:ARG:HA | 1.97 | 0.47 |
| 50:DT:92:GLY:HA2 | 50:DT:114:LEU:CA | 2.44 | 0.47 |
| 4:AD:8:VAL:C | 4:AD:10:ARG:N | 2.66 | 0.47 |
| 4:AD:68:TYR:CD2 | 4:AD:97:LEU:HD22 | 2.49 | 0.47 |
| 13:AM:116:THR:HG22 | 13:AM:117:VAL:H | 1.78 | 0.47 |
| 54:DX:44:GLU:OE2 | 54:DX:50:LYS:HA | 2.14 | 0.47 |
| 3:CC:28:GLN:NE2 | 3:CC:28:GLN:HA | 2.29 | 0.47 |
| 35:DA:1741:A:H8 | 35:DA:1742:G:C8 | 2.33 | 0.47 |
| 35:DA:1722:A:C6 | 35:DA:1741:A:N1 | 2.82 | 0.47 |
| 1:CA:1452:C:H4' | 1:CA:1456:G:C5' | 2.44 | 0.47 |
| 26:D1:19:GLN:HB3 | 26:D1:35:THR:CG2 | 2.44 | 0.47 |
| 44:DN:94:HIS:N | 44:DN:95:PRO:CD | 2.77 | 0.47 |
| 1:AA:665:A:N3 | 1:AA:732:C:H2' | 2.30 | 0.47 |
| 31:D6:27:LYS:HE3 | 35:DA:2285:C:C5 | 2.50 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:DC:182:PRO:O | 37:DC:183:GLU:CB | 2.62 | 0.47 |
| 17:AQ:31:LEU:HG | 17:AQ:32:TYR:CD2 | 2.49 | 0.47 |
| 35:DA:832:G:H21 | 46:DP:53:GLY:HA3 | 1.79 | 0.47 |
| 35:BA:270:A:C2' | 35:BA:271:A:H5' | 2.45 | 0.47 |
| 35:DA:2208:A:H1' | 35:DA:2219:G:C5 | 2.49 | 0.47 |
| 1:CA:767:A:H2' | 1:CA:768:A:O4' | 2.15 | 0.47 |
| 37:DC:124:GLY:O | 37:DC:125:SER:CB | 2.62 | 0.47 |
| 1:AA:477:A:O2' | 1:AA:479:C:H5' | 2.14 | 0.47 |
| 40:BF:31:HIS:O | 40:BF:35:GLU:HG3 | 2.15 | 0.47 |
| 35:BA:1860:G:H2' | 35:BA:1861:G:H8 | 1.80 | 0.47 |
| 35:DA:1469:A:O2' | 35:DA:1470:G:H5' | 2.13 | 0.47 |
| 37:DC:47:LEU:N | 37:DC:47:LEU:HD23 | 2.29 | 0.47 |
| 35:BA:1428:C:O2' | 35:BA:1429:G:H5' | 2.15 | 0.47 |
| 35:DA:210:C:H2' | 35:DA:211:A:C8 | 2.49 | 0.47 |
| 37:DC:100:ILE:HG23 | 37:DC:131:LEU:O | 2.13 | 0.47 |
| 56:DZ:94:GLU:O | 56:DZ:96:VAL:N | 2.46 | 0.47 |
| 49:BS:87:PHE:CG | 49:BS:88:ASP:N | 2.78 | 0.47 |
| 31:B6:19:ARG:CG | 31:B6:20:ASN:N | 2.51 | 0.47 |
| 55:BY:96:ILE:HD12 | 55:BY:99:CYS:HB2 | 1.94 | 0.47 |
| 40:DF:10:PRO:O | 40:DF:128:ALA:HB2 | 2.15 | 0.47 |
| 35:BA:1747:G:H2' | 35:BA:1747(A):G:H8 | 1.80 | 0.47 |
| 2:CB:80:ILE:HD11 | 2:CB:212:GLN:HA | 1.96 | 0.47 |
| 1:CA:1054:C:H5 | 1:CA:1196:U:C5 | 2.32 | 0.47 |
| 50:DT:13:ARG:HA | 50:DT:13:ARG:NH1 | 2.24 | 0.47 |
| 38:BD:31:LYS:O | 38:BD:33:LEU:O | 2.32 | 0.47 |
| 35:DA:2686:G:C2 | 35:DA:2724:C:O2 | 2.67 | 0.47 |
| 40:BF:99:TYR:O | 40:BF:99:TYR:CD2 | 2.67 | 0.47 |
| 48:DR:10:LEU:HD22 | 48:DR:17:ARG:CD | 2.25 | 0.47 |
| 39:BE:119:ARG:CG | 39:BE:160:TYR:HB2 | 2.38 | 0.47 |
| 3:AC:85:ARG:HA | 3:AC:88:ARG:HD2 | 1.96 | 0.47 |
| 10:CJ:50:ILE:O | 10:CJ:51:ARG:O | 2.33 | 0.47 |
| 10:CJ:62:HIS:N | 10:CJ:62:HIS:CD2 | 2.82 | 0.47 |
| 10:AJ:50:ILE:O | 10:AJ:51:ARG:O | 2.33 | 0.47 |
| 22:AY:51:U:H3' | 22:AY:52:G:H8 | 1.79 | 0.47 |
| 38:BD:263:ARG:CZ | 38:BD:263:ARG:HB2 | 2.45 | 0.47 |
| 19:CS:6:LYS:N | 19:CS:6:LYS:CD | 2.76 | 0.47 |
| 42:DH:70:THR:C | 42:DH:72:ILE:N | 2.67 | 0.47 |
| 46:BP:32:THR:HG21 | 46:BP:37:GLY:CA | 2.44 | 0.47 |
| 33:B8:61:LEU:HD13 | 33:B8:62:LEU:H | 1.80 | 0.47 |
| 37:DC:86:ALA:CB | 37:DC:94:VAL:HG11 | 2.45 | 0.47 |
| 26:B1:73:LEU:HA | 26:B1:76:ARG:HG2 | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 35:DA:1349:A:N6 | 35:DA:1598:C:N4 | 2.61 | 0.47 |
| 45:BO:104:ARG:HB2 | 45:BO:104:ARG:NH1 | 2.30 | 0.47 |
| 15:CO:87:ILE:CG2 | 15:CO:88:ARG:H | 2.19 | 0.47 |
| 33:D8:35:GLN:C | 33:D8:36:LYS:HG3 | 2.35 | 0.47 |
| 35:DA:922:U:H2' | 35:DA:923:C:H6 | 1.79 | 0.47 |
| 35:DA:154(A):C:O2 | 35:DA:154(A):C:O4' | 2.30 | 0.47 |
| 35:DA:1264:G:H2' | 35:DA:2014:A:N6 | 2.29 | 0.47 |
| 41:BG:32:PRO:HB2 | 41:BG:172:LEU:HD12 | 1.95 | 0.47 |
| 19:CS:9:VAL:C | 19:CS:11:VAL:H | 2.13 | 0.47 |
| 8:CH:85:ARG:CG | 8:CH:85:ARG:NH1 | 2.77 | 0.47 |
| 22:AV:28:G:O2' | 22:AV:29:G:H5' | 2.14 | 0.47 |
| 12:CL:28:LYS:HE2 | 12:CL:33:ARG:NH1 | 2.29 | 0.47 |
| 40:DF:63:LYS:HA | 40:DF:76:GLY:O | 2.14 | 0.47 |
| 1:CA:881:G:H2' | 1:CA:882:C:O4' | 2.14 | 0.47 |
| 35:DA:2875:C:C4' | 50:DT:5:ALA:HB2 | 2.42 | 0.47 |
| 14:AN:3:ARG:HH11 | 14:AN:3:ARG:CG | 2.28 | 0.47 |
| 35:BA:1854:A:H3' | 35:BA:1855:G:C8 | 2.41 | 0.47 |
| 34:D9:17:ILE:HG21 | 34:D9:19:ARG:HH21 | 1.79 | 0.47 |
| 42:BH:86:GLU:HA | 42:BH:132:ARG:HA | 1.95 | 0.47 |
| 37:BC:73:ARG:O | 37:BC:119:VAL:N | 2.48 | 0.47 |
| 26:B1:43:TYR:HA | 26:B1:44:PRO:HD3 | 1.76 | 0.47 |
| 56:BZ:118:GLN:CG | 56:BZ:119:GLU:H | 2.27 | 0.47 |
| 11:CK:125:PHE:HD1 | 11:CK:125:PHE:N | 2.11 | 0.47 |
| 11:CK:126:ARG:HH11 | 11:CK:126:ARG:HB3 | 1.78 | 0.47 |
| 35:DA:271(J):C:H2' | 35:DA:271(K):U:H5'' | 1.96 | 0.47 |
| 53:BW:12:ILE:HG13 | 53:BW:42:ARG:NH1 | 2.29 | 0.47 |
| 1:AA:1080:A:H5'' | 5:AE:16:THR:HG21 | 1.95 | 0.47 |
| 35:BA:1464:C:O2' | 35:BA:1528:A:C8 | 2.65 | 0.47 |
| 22:CV:50:U:H2' | 22:CV:51:U:O4' | 2.15 | 0.47 |
| 15:AO:45:VAL:HB | 15:AO:46:HIS:ND1 | 2.28 | 0.47 |
| 18:AR:65:ILE:H | 18:AR:65:ILE:HG12 | 1.51 | 0.47 |
| 1:CA:877:C:H1' | 8:CH:3:THR:OG1 | 2.14 | 0.47 |
| 39:DE:39:PRO:O | 39:DE:43:GLY:N | 2.48 | 0.47 |
| 5:AE:136:MET:C | 5:AE:138:ALA:N | 2.67 | 0.47 |
| 35:BA:449:A:O2' | 35:BA:450:G:H5' | 2.13 | 0.47 |
| 8:AH:97:VAL:HA | 8:AH:100:ILE:CD1 | 2.45 | 0.47 |
| 43:BI:33:ARG:HG2 | 43:BI:33:ARG:HH11 | 1.80 | 0.47 |
| 35:DA:946:G:O2' | 35:DA:947:G:H5' | 2.14 | 0.47 |
| 35:BA:2586:C:C5 | 35:BA:2608:G:N2 | 2.82 | 0.47 |
| 35:BA:2250:G:C8 | 35:BA:2496:C:H5'' | 2.50 | 0.47 |
| 1:AA:1494:G:C2 | 1:AA:1495:U:C6 | 3.03 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:CB:34:ALA:HB1 | 2:CB:36:ARG:HD2 | 1.96 | 0.47 |
| 35:DA:282:A:HO2' | 35:DA:283:A:H8 | 1.60 | 0.47 |
| 35:BA:139:G:H2' | 35:BA:140:G:N7 | 2.29 | 0.47 |
| 44:BN:35:ARG:O | 44:BN:37:LYS:N | 2.43 | 0.47 |
| 40:DF:196:LEU:HA | 40:DF:196:LEU:HD23 | 1.73 | 0.47 |
| 48:BR:18:LEU:HD13 | 48:BR:18:LEU:C | 2.35 | 0.47 |
| 41:BG:46:ALA:HA | 41:BG:51:ARG:HD3 | 1.96 | 0.47 |
| 9:AI:59:PHE:CD1 | 9:AI:59:PHE:N | 2.82 | 0.47 |
| 2:AB:77:ALA:HB2 | 2:AB:211:ILE:CD1 | 2.24 | 0.47 |
| 1:CA:1115:C:O2' | 1:CA:1116:C:H5' | 2.15 | 0.47 |
| 2:CB:91:PRO:HA | 2:CB:151:GLY:O | 2.14 | 0.47 |
| 2:CB:42:ILE:HD11 | 2:CB:202:PRO:HB2 | 1.97 | 0.47 |
| 46:BP:48:PRO:CG | 46:BP:49:ARG:N | 2.76 | 0.47 |
| 38:BD:31:LYS:HZ2 | 38:BD:94:LEU:HD11 | 1.78 | 0.47 |
| 51:BU:81:HIS:O | 51:BU:84:LYS:HB3 | 2.14 | 0.47 |
| 35:BA:660:G:C6 | 35:BA:661:C:C4 | 3.03 | 0.47 |
| 36:BB:107:G:O2' | 36:BB:108:U:H5' | 2.14 | 0.47 |
| 56:BZ:99:TYR:CD2 | 56:BZ:125:LEU:HD13 | 2.50 | 0.47 |
| 35:DA:1171:G:C3' | 35:DA:1173:G:H4' | 2.27 | 0.47 |
| 13:AM:34:LEU:HD13 | 13:AM:41:PRO:HG3 | 1.96 | 0.47 |
| 13:CM:22:ILE:CG2 | 13:CM:25:ILE:HD13 | 2.45 | 0.47 |
| 35:BA:1594:G:C5' | 35:BA:1594:G:C8 | 2.87 | 0.47 |
| 51:DU:87:GLY:O | 52:DV:50:PRO:HG3 | 2.14 | 0.47 |
| 10:AJ:47:PHE:HD1 | 10:AJ:47:PHE:O | 1.98 | 0.47 |
| 12:AL:91:LYS:O | 12:AL:91:LYS:HG3 | 2.14 | 0.47 |
| 17:AQ:29:HIS:HB3 | 17:AQ:33:GLY:O | 2.15 | 0.47 |
| 41:BG:91:ARG:HD2 | 41:BG:92:VAL:N | 2.29 | 0.47 |
| 41:BG:5:VAL:O | 41:BG:6:ALA:C | 2.52 | 0.47 |
| 52:BV:19:LYS:HG2 | 52:BV:94:LEU:CB | 2.37 | 0.47 |
| 35:BA:1497:U:C5' | 35:BA:1498:C:C5 | 2.96 | 0.47 |
| 13:CM:3:ARG:HB3 | 13:CM:9:ILE:HD11 | 1.96 | 0.47 |
| 38:BD:271:ILE:O | 38:BD:272:ALA:CB | 2.62 | 0.47 |
| 35:DA:2564:A:C2 | 35:DA:2647:U:H4' | 2.50 | 0.47 |
| 33:D8:51:ALA:N | 33:D8:53:PRO:HD2 | 2.29 | 0.47 |
| 52:BV:15:GLU:CB | 52:BV:16:PRO:CD | 2.89 | 0.47 |
| 4:CD:9:CYS:CB | 4:CD:22:LYS:HD2 | 2.42 | 0.47 |
| 35:DA:863:A:P | 47:DQ:22:LYS:HG2 | 2.55 | 0.47 |
| 56:DZ:77:ASP:OD2 | 56:DZ:79:ARG:O | 2.33 | 0.47 |
| 28:D3:8:LEU:HB2 | 28:D3:28:LEU:HD13 | 1.97 | 0.47 |
| 44:DN:54:VAL:HB | 44:DN:122:VAL:HG22 | 1.97 | 0.47 |
| 46:DP:99:LEU:C | 46:DP:99:LEU:HD23 | 2.35 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 42:DH:13:LYS:O | 42:DH:15:VAL:N | 2.33 | 0.47 |
| 35:BA:2682:U:C6 | 39:BE:11:MET:HE2 | 2.50 | 0.47 |
| 49:DS:29:PHE:O | 49:DS:35:ILE:HA | 2.14 | 0.47 |
| 35:DA:2533:A:H3' | 35:DA:2534:A:H5'' | 1.97 | 0.47 |
| 33:B8:62:LEU:N | 33:B8:63:PRO:CD | 2.77 | 0.47 |
| 35:DA:129:C:O2' | 35:DA:130:C:H5' | 2.15 | 0.47 |
| 37:BC:95:GLY:HA2 | 37:BC:99:ILE:HD12 | 1.97 | 0.47 |
| 23:AW:59:U:H2' | 23:AW:60:U:H5' | 1.96 | 0.47 |
| 55:BY:48:ALA:HB3 | 55:BY:59:GLY:O | 2.14 | 0.47 |
| 31:D6:35:GLU:HB3 | 31:D6:51:GLU:CG | 2.45 | 0.47 |
| 35:DA:923:C:H2' | 35:DA:924:C:C6 | 2.50 | 0.47 |
| 1:CA:266:G:O2' | 1:CA:267:C:OP2 | 2.32 | 0.47 |
| 35:BA:28:A:C4 | 35:BA:513:A:C8 | 3.02 | 0.47 |
| 26:D1:86:SER:HB2 | 26:D1:89:GLU:HG3 | 1.97 | 0.47 |
| 39:DE:51:PHE:CD1 | 39:DE:52:LEU:HB2 | 2.49 | 0.47 |
| 41:BG:32:PRO:HA | 41:BG:162:THR:OG1 | 2.15 | 0.47 |
| 35:BA:2752:C:H5' | 35:BA:2753:A:OP2 | 2.14 | 0.47 |
| 35:BA:2810:A:N6 | 35:BA:2891:G:O2' | 2.46 | 0.47 |
| 29:D4:51:TYR:CD1 | 29:D4:51:TYR:N | 2.82 | 0.47 |
| 50:BT:64:ARG:HD2 | 50:BT:73:GLU:CD | 2.35 | 0.47 |
| 1:CA:617:G:H4' | 16:CP:44:THR:CB | 2.37 | 0.47 |
| 1:CA:735:C:H1' | 18:CR:75:ILE:HD11 | 1.96 | 0.47 |
| 43:BI:8:PRO:HB3 | 43:BI:14:ASP:CA | 2.44 | 0.47 |
| 35:DA:2787:C:O2' | 39:DE:61:ARG:HA | 2.15 | 0.47 |
| 35:DA:2392:A:H2 | 35:DA:2424:C:N4 | 2.03 | 0.47 |
| 39:BE:30:PRO:HD3 | 39:BE:180:ASN:ND2 | 2.30 | 0.47 |
| 56:BZ:93:ASP:HA | 56:BZ:130:PRO:CG | 2.38 | 0.47 |
| 19:CS:48:THR:C | 19:CS:49:ILE:HD12 | 2.35 | 0.47 |
| 35:DA:1486:A:N6 | 35:DA:1504:C:H42 | 2.13 | 0.47 |
| 1:AA:1402:C:H2' | 1:AA:1403:C:O4' | 2.14 | 0.47 |
| 26:B1:7:ILE:N | 26:B1:7:ILE:HD12 | 2.29 | 0.47 |
| 35:DA:1040:C:O2' | 35:DA:1041:C:P | 2.73 | 0.47 |
| 39:DE:17:ASP:O | 39:DE:18:ASP:HB2 | 2.13 | 0.47 |
| 35:DA:675:A:C8 | 35:DA:804:A:C6 | 3.02 | 0.47 |
| 23:CW:16:U:O4 | 23:CW:18:G:H2' | 2.14 | 0.47 |
| 19:AS:23:ASN:C | 19:AS:26:GLY:H | 2.17 | 0.47 |
| 7:CG:15:ASP:HB3 | 7:CG:19:GLY:CA | 2.45 | 0.47 |
| 7:CG:37:ASN:ND2 | 9:CI:40:LEU:HD23 | 2.29 | 0.47 |
| 3:CC:44:GLU:HG2 | 3:CC:52:LEU:HD11 | 1.96 | 0.47 |
| 4:CD:170:VAL:CG2 | 4:CD:171:GLY:H | 2.22 | 0.47 |
| 1:AA:18:C:H4' | 1:AA:1078:U:O2 | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 13:CM:91:ARG:HB2 | 13:CM:98:VAL:HG22 | 1.96 | 0.47 |
| 43:BI:51:ILE:HG22 | 43:BI:52:ARG:N | 2.28 | 0.47 |
| 16:CP:4:ILE:HB | 16:CP:66:PRO:HB3 | 1.95 | 0.47 |
| 35:DA:2171:A:O2' | 35:DA:2172:U:C6 | 2.66 | 0.47 |
| 37:BC:41:VAL:HG23 | 37:BC:178:ALA:CB | 2.43 | 0.47 |
| 35:DA:542:C:N4 | 35:DA:543:C:N4 | 2.62 | 0.47 |
| 35:DA:952:G:C6 | 35:DA:953:A:N7 | 2.83 | 0.47 |
| 1:AA:1191:A:H5'' | 3:AC:4:LYS:NZ | 2.29 | 0.47 |
| 12:AL:100:ILE:HG22 | 12:AL:101:VAL:N | 2.28 | 0.47 |
| 9:CI:113:LYS:HD2 | 9:CI:113:LYS:N | 2.30 | 0.47 |
| 35:DA:2790:A:H2' | 35:DA:2791:C:H5' | 1.95 | 0.47 |
| 45:DO:104:ARG:NH1 | 45:DO:104:ARG:CB | 2.78 | 0.47 |
| 45:DO:104:ARG:HH21 | 50:DT:33:LYS:CD | 2.27 | 0.47 |
| 3:AC:18:TRP:HD1 | 14:AN:54:PRO:HA | 1.79 | 0.47 |
| 36:BB:57:A:OP2 | 36:BB:58:A:OP2 | 2.32 | 0.47 |
| 18:CR:58:LEU:CD2 | 18:CR:62:GLU:HB3 | 2.45 | 0.47 |
| 56:BZ:105:VAL:HG13 | 56:BZ:105:VAL:O | 2.14 | 0.47 |
| 35:BA:952:G:C6 | 35:BA:953:A:N7 | 2.83 | 0.47 |
| 42:BH:43:VAL:O | 42:BH:43:VAL:CG2 | 2.63 | 0.47 |
| 3:AC:188:LEU:O | 3:AC:189:ALA:HB2 | 2.14 | 0.47 |
| 31:D6:32:ASN:O | 31:D6:33:LYS:CB | 2.63 | 0.47 |
| 26:B1:46:LEU:HA | 26:B1:63:ALA:HA | 1.96 | 0.47 |
| 2:CB:137:ARG:HD3 | 2:CB:138:LEU:N | 2.30 | 0.47 |
| 2:CB:138:LEU:O | 2:CB:141:GLU:HB3 | 2.15 | 0.47 |
| 2:AB:197:VAL:HG11 | 2:AB:200:ILE:HG12 | 1.97 | 0.47 |
| 9:CI:125:TYR:CD2 | 9:CI:126:SER:N | 2.82 | 0.47 |
| 1:CA:541:G:O2' | 1:CA:542:G:H5' | 2.15 | 0.47 |
| 56:DZ:131:ARG:HG2 | 56:DZ:131:ARG:NH1 | 2.26 | 0.47 |
| 1:AA:130:A:H1' | 1:AA:263:A:O2' | 2.15 | 0.47 |
| 2:CB:197:VAL:CG1 | 2:CB:200:ILE:HG12 | 2.45 | 0.47 |
| 7:AG:138:LYS:HE2 | 7:AG:142:GLU:OE2 | 2.13 | 0.47 |
| 45:BO:86:ILE:H | 45:BO:86:ILE:CD1 | 2.27 | 0.47 |
| 52:DV:13:ARG:CG | 52:DV:13:ARG:HH11 | 2.27 | 0.47 |
| 6:CF:19:LEU:C | 6:CF:19:LEU:HD23 | 2.35 | 0.47 |
| 1:AA:858:G:O6 | 1:AA:869:G:H3' | 2.15 | 0.47 |
| 47:BQ:68:ILE:HD13 | 47:BQ:103:MET:HG2 | 1.96 | 0.47 |
| 1:AA:90:U:OP1 | 1:AA:91:C:H4' | 2.14 | 0.47 |
| 53:DW:99:ARG:HG2 | 53:DW:99:ARG:NH1 | 2.28 | 0.47 |
| 2:CB:23:ARG:HH11 | 2:CB:23:ARG:HG2 | 1.80 | 0.47 |
| 16:CP:80:PHE:N | 16:CP:80:PHE:CD1 | 2.83 | 0.47 |
| 35:BA:100:G:H4' | 35:BA:100:G:OP2 | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 11:AK:59:TYR:CE1 | 11:AK:63:LEU:HD21 | 2.50 | 0.47 |
| 34:B9:10:ILE:O | 34:B9:10:ILE:HG22 | 2.15 | 0.47 |
| 10:CJ:95:GLU:OE2 | 10:CJ:95:GLU:HA | 2.15 | 0.47 |
| 1:CA:630:G:H2' | 1:CA:631:G:C5' | 2.44 | 0.47 |
| 35:DA:1920:C:O2' | 35:DA:1921:G:H5' | 2.14 | 0.47 |
| 34:D9:10:ILE:O | 34:D9:10:ILE:HG22 | 2.14 | 0.47 |
| 34:D9:10:ILE:O | 34:D9:11:CYS:HB2 | 2.15 | 0.47 |
| 1:CA:560:U:O2' | 1:CA:561:U:OP2 | 2.21 | 0.47 |
| 1:CA:1427:U:O2' | 1:CA:1428:A:H5' | 2.14 | 0.47 |
| 1:AA:1445:C:H2' | 1:AA:1446:U:H5' | 1.97 | 0.47 |
| 7:AG:133:GLY:O | 7:AG:136:LYS:HB3 | 2.14 | 0.47 |
| 29:B4:46:ASN:HD22 | 29:B4:46:ASN:C | 2.18 | 0.47 |
| 1:AA:914:A:H2' | 1:AA:915:A:H8 | 1.79 | 0.47 |
| 1:AA:862:C:O2' | 1:AA:863:U:H5' | 2.13 | 0.47 |
| 5:CE:31:LEU:HD11 | 5:CE:43:LEU:HD11 | 1.97 | 0.47 |
| 1:AA:145:G:H5' | 1:AA:146:G:OP2 | 2.15 | 0.47 |
| 35:BA:1221(A):C:H2' | 35:BA:1222:C:H6 | 1.80 | 0.47 |
| 1:CA:874:G:H2' | 1:CA:875:C:C6 | 2.49 | 0.47 |
| 35:DA:1035:U:H2' | 35:DA:1036:G:C8 | 2.49 | 0.47 |
| 28:D3:7:LYS:HD2 | 28:D3:34:GLU:OE1 | 2.14 | 0.47 |
| 35:BA:1373:A:H2' | 35:BA:1374:G:O4' | 2.14 | 0.47 |
| 35:DA:1810:A:H2' | 35:DA:1811:G:O4' | 2.14 | 0.47 |
| 56:BZ:141:VAL:HG22 | 56:BZ:142:SER:N | 2.30 | 0.47 |
| 21:AU:25:LYS:HB2 | 21:AU:25:LYS:NZ | 2.30 | 0.47 |
| 15:AO:37:ASN:HD22 | 15:AO:37:ASN:N | 2.13 | 0.47 |
| 35:BA:1137:G:H2' | 35:BA:1138:G:C8 | 2.50 | 0.47 |
| 1:CA:965:A:C2 | 1:CA:969:A:C2 | 3.03 | 0.47 |
| 41:DG:138:GLN:OE1 | 41:DG:151:ALA:O | 2.32 | 0.47 |
| 1:CA:409:G:H2' | 1:CA:410:G:O4' | 2.15 | 0.47 |
| 54:BX:70:LEU:HD23 | 54:BX:71:GLY:N | 2.29 | 0.47 |
| 46:BP:6:LEU:CG | 46:BP:8:PRO:O | 2.59 | 0.47 |
| 55:BY:97:ARG:O | 55:BY:97:ARG:HG3 | 2.14 | 0.47 |
| 31:D6:15:GLU:CG | 31:D6:41:PRO:HG3 | 2.44 | 0.47 |
| 40:DF:180:GLY:O | 40:DF:181:LEU:C | 2.52 | 0.47 |
| 9:CI:50:LEU:HA | 9:CI:53:VAL:HG22 | 1.95 | 0.47 |
| 49:DS:13:ARG:O | 49:DS:14:VAL:CB | 2.60 | 0.47 |
| 43:BI:93:THR:O | 43:BI:97:ILE:HG13 | 2.15 | 0.47 |
| 35:BA:1815:A:P | 38:BD:54:ARG:HH22 | 2.38 | 0.47 |
| 12:CL:89:ARG:HH21 | 12:CL:91:LYS:NZ | 2.13 | 0.47 |
| 51:DU:90:VAL:HG12 | 51:DU:91:ASP:N | 2.29 | 0.47 |
| 36:DB:56:G:H4' | 36:DB:57:A:O5' | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BD:270:ILE:O | 38:BD:271:ILE:HG12 | 2.15 | 0.47 |
| 30:D5:36:CYS:HB3 | 30:D5:38:ALA:HB2 | 1.96 | 0.47 |
| 10:CJ:38:ILE:CG1 | 10:CJ:71:LEU:HB3 | 2.45 | 0.47 |
| 10:AJ:25:GLU:C | 10:AJ:27:ALA:H | 2.17 | 0.47 |
| 47:DQ:20:ALA:O | 47:DQ:21:THR:CB | 2.63 | 0.47 |
| 35:DA:942:G:O2' | 35:DA:943:U:H5' | 2.14 | 0.47 |
| 37:BC:83:ILE:HG23 | 37:BC:94:VAL:CG2 | 2.37 | 0.47 |
| 23:AW:58:A:H1' | 23:AW:60:U:H5 | 1.80 | 0.47 |
| 55:BY:47:LYS:N | 55:BY:47:LYS:CD | 2.73 | 0.47 |
| 55:BY:47:LYS:O | 55:BY:49:VAL:N | 2.48 | 0.47 |
| 1:CA:625:G:H4' | 16:CP:16:HIS:HD2 | 1.74 | 0.47 |
| 35:BA:1504:C:O2' | 35:BA:1505:C:H5' | 2.14 | 0.47 |
| 35:DA:581:C:O2' | 35:DA:582:G:H5' | 2.15 | 0.47 |
| 35:DA:1039:G:H1 | 35:DA:1116:C:H42 | 1.63 | 0.47 |
| 16:AP:20:VAL:HG23 | 16:AP:21:VAL:N | 2.30 | 0.47 |
| 1:CA:107:G:C2 | 1:CA:108:G:H1' | 2.49 | 0.47 |
| 56:BZ:155:LEU:O | 56:BZ:157:LEU:HD23 | 2.15 | 0.47 |
| 47:DQ:131:ILE:HG22 | 47:DQ:132:VAL:N | 2.30 | 0.47 |
| 35:BA:547:A:H2' | 35:BA:547:A:N3 | 2.29 | 0.47 |
| 38:DD:165:ILE:HA | 38:DD:175:LEU:HD23 | 1.97 | 0.47 |
| 35:DA:2123:G:H2' | 35:DA:2124:G:C8 | 2.49 | 0.47 |
| 4:AD:154:ASN:O | 4:AD:155:LEU:C | 2.53 | 0.47 |
| 45:DO:18:LYS:HB2 | 45:DO:45:GLU:HG2 | 1.96 | 0.47 |
| 50:DT:43:GLN:HG2 | 50:DT:44:ASP:N | 2.30 | 0.47 |
| 47:BQ:2:LEU:O | 47:BQ:3:MET:HB3 | 2.15 | 0.47 |
| 52:DV:91:TYR:C | 52:DV:91:TYR:CD1 | 2.88 | 0.47 |
| 9:AI:3:GLN:CD | 9:AI:20:ARG:HH12 | 2.18 | 0.47 |
| 11:AK:126:ARG:HH11 | 11:AK:126:ARG:HB3 | 1.77 | 0.47 |
| 1:CA:818:G:H3' | 1:CA:819:A:C5' | 2.44 | 0.47 |
| 39:DE:3:GLY:HA3 | 39:DE:81:ILE:CG2 | 2.44 | 0.47 |
| 38:DD:8:PRO:C | 38:DD:10:THR:H | 2.18 | 0.47 |
| 26:B1:45:ASN:CB | 35:BA:2230:G:H1' | 2.45 | 0.47 |
| 1:CA:62:U:H5'' | 1:CA:385:C:O2 | 2.15 | 0.47 |
| 1:CA:370:C:H2' | 1:CA:371:G:C8 | 2.50 | 0.47 |
| 30:D5:16:ARG:HG2 | 30:D5:16:ARG:NH1 | 2.28 | 0.47 |
| 42:DH:149:ARG:HH11 | 42:DH:164:TYR:HD1 | 1.63 | 0.47 |
| 38:DD:168:ARG:HG3 | 38:DD:168:ARG:HH11 | 1.80 | 0.47 |
| 1:AA:1188:A:H2' | 1:AA:1189:C:H5' | 1.96 | 0.47 |
| 1:AA:1188:A:O2' | 1:AA:1189:C:H5' | 2.14 | 0.47 |
| 35:BA:780:G:OP1 | 38:BD:218:ARG:NH2 | 2.48 | 0.47 |
| 35:DA:437:G:O2' | 35:DA:438:G:H5' | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 7:CG:72:ARG:O | 7:CG:73:MET:HG3 | 2.15 | 0.47 |
| 34:D9:7:VAL:HG13 | 34:D9:34:GLN:HB2 | 1.96 | 0.47 |
| 1:AA:444:C:H2' | 1:AA:445:G:C8 | 2.50 | 0.47 |
| 16:CP:58:TYR:HD1 | 16:CP:59:TRP:N | 2.13 | 0.47 |
| 35:DA:2879:C:H4' | 35:DA:2880:C:OP1 | 2.13 | 0.47 |
| 1:AA:1181:G:O2' | 1:AA:1182:G:H5' | 2.15 | 0.47 |
| 50:BT:124:ASP:C | 50:BT:126:ALA:N | 2.69 | 0.47 |
| 56:BZ:11:GLU:N | 56:BZ:11:GLU:CD | 2.68 | 0.47 |
| 22:AY:38:A:H2' | 22:AY:39:U:O4' | 2.14 | 0.47 |
| 37:DC:97:GLU:HA | 37:DC:100:ILE:HG12 | 1.97 | 0.47 |
| 35:BA:1810:A:H2' | 35:BA:1811:G:O4' | 2.15 | 0.47 |
| 1:CA:439:A:H2' | 1:CA:441:A:O4' | 2.15 | 0.47 |
| 35:BA:271(H):G:O2' | 35:BA:271(I):G:H5'' | 2.13 | 0.47 |
| 2:CB:100:GLY:HA3 | 2:CB:104:ASN:HB3 | 1.97 | 0.47 |
| 20:AT:67:ALA:O | 20:AT:73:HIS:NE2 | 2.48 | 0.47 |
| 1:AA:1508:G:O2' | 1:AA:1509:C:H5' | 2.15 | 0.47 |
| 54:DX:28:PHE:CD1 | 54:DX:28:PHE:N | 2.82 | 0.47 |
| 32:B7:8:ASN:C | 32:B7:8:ASN:ND2 | 2.66 | 0.47 |
| 35:DA:201:C:O2' | 35:DA:202:U:H5' | 2.15 | 0.47 |
| 1:AA:1175:G:H2' | 1:AA:1176:A:C8 | 2.50 | 0.47 |
| 1:AA:24:U:O2' | 1:AA:25:C:H5' | 2.14 | 0.47 |
| 40:DF:192:LEU:C | 40:DF:192:LEU:HD23 | 2.35 | 0.47 |
| 35:DA:615:G:O2' | 40:DF:205:ARG:NH2 | 2.48 | 0.47 |
| 2:AB:216:SER:C | 2:AB:218:ALA:H | 2.17 | 0.47 |
| 9:CI:99:LEU:O | 9:CI:100:GLY:C | 2.53 | 0.47 |
| 49:DS:93:LYS:O | 49:DS:94:TYR:C | 2.53 | 0.47 |
| 1:AA:1274:G:H2' | 1:AA:1275:A:C8 | 2.50 | 0.47 |
| 41:DG:46:ALA:CA | 41:DG:51:ARG:HD2 | 2.45 | 0.47 |
| 1:CA:1054:C:C2' | 1:CA:1055:A:H5'' | 2.45 | 0.47 |
| 51:BU:92:ARG:NH2 | 52:BV:11:GLN:HB2 | 2.24 | 0.47 |
| 1:AA:1328:C:H2' | 1:AA:1329:A:H8 | 1.80 | 0.47 |
| 52:DV:49:THR:HB | 52:DV:50:PRO:CD | 2.44 | 0.47 |
| 52:DV:51:VAL:CG1 | 52:DV:52:VAL:N | 2.78 | 0.47 |
| 52:DV:5:VAL:HG22 | 52:DV:6:LYS:N | 2.30 | 0.47 |
| 52:BV:18:LEU:HD22 | 52:BV:19:LYS:CA | 2.45 | 0.47 |
| 36:DB:21:G:N3 | 36:DB:21:G:H2' | 2.29 | 0.47 |
| 30:B5:40:LYS:HZ2 | 30:B5:46:CYS:CA | 2.27 | 0.47 |
| 43:BI:107:VAL:O | 43:BI:109:ILE:HD12 | 2.15 | 0.47 |
| 44:BN:62:VAL:HG11 | 44:BN:67:LEU:HD21 | 1.97 | 0.47 |
| 35:DA:26:G:OP1 | 53:DW:80:PRO:HB3 | 2.14 | 0.47 |
| 37:DC:85:GLU:C | 37:DC:87:GLU:H | 2.19 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 44:DN:18:ALA:O | 44:DN:21:LYS:N | 2.47 | 0.47 |
| 1:AA:622:A:C8 | 1:AA:623:C:C6 | 3.03 | 0.47 |
| 43:DI:114:LEU:N | 43:DI:114:LEU:HD23 | 2.30 | 0.47 |
| 31:D6:25:LYS:HD2 | 33:D8:34:TRP:CZ2 | 2.49 | 0.47 |
| 18:CR:50:ILE:O | 18:CR:51:LEU:C | 2.52 | 0.47 |
| 35:DA:481:G:O2' | 35:DA:482:A:OP2 | 2.32 | 0.47 |
| 22:CV:67:C:O2' | 22:CV:68:C:H5' | 2.15 | 0.47 |
| 1:CA:1294:G:O2' | 1:CA:1295:G:H5' | 2.15 | 0.47 |
| 35:BA:2809:A:C2 | 35:BA:2892:A:N3 | 2.83 | 0.47 |
| 35:BA:2787:C:O2' | 39:BE:61:ARG:HA | 2.15 | 0.47 |
| 37:DC:49:ILE:O | 37:DC:51:PRO:N | 2.48 | 0.47 |
| 8:CH:82:HIS:CD2 | 8:CH:138:TRP:NE1 | 2.81 | 0.47 |
| 20:AT:49:ALA:O | 20:AT:52:ALA:HB3 | 2.14 | 0.47 |
| 39:DE:61:ARG:CB | 39:DE:62:PRO:CD | 2.93 | 0.47 |
| 25:B0:25:ARG:HA | 25:B0:29:GLN:NE2 | 2.26 | 0.47 |
| 46:BP:108:LYS:C | 46:BP:110:TYR:N | 2.68 | 0.47 |
| 23:CW:16:U:H3' | 23:CW:17:C:C5' | 2.43 | 0.47 |
| 35:BA:2057:A:H2' | 35:BA:2058:A:O4' | 2.15 | 0.47 |
| 19:AS:48:THR:C | 19:AS:49:ILE:HD12 | 2.35 | 0.47 |
| 26:B1:78:LYS:C | 26:B1:80:LEU:H | 2.18 | 0.47 |
| 35:BA:744:G:H2' | 35:BA:745:G:O4' | 2.15 | 0.47 |
| 39:BE:4:ILE:O | 39:BE:4:ILE:HG23 | 2.15 | 0.47 |
| 1:AA:818:G:H3' | 1:AA:819:A:H5'' | 1.96 | 0.47 |
| 2:CB:72:GLY:HA2 | 2:CB:165:VAL:HG22 | 1.96 | 0.47 |
| 11:CK:21:ILE:HG13 | 11:CK:30:VAL:CG1 | 2.45 | 0.47 |
| 35:DA:1657:C:H2' | 35:DA:1658:C:H6 | 1.79 | 0.47 |
| 1:AA:797:C:H2' | 1:AA:798:G:H8 | 1.78 | 0.47 |
| 1:AA:342:C:O2' | 1:AA:343:U:H5' | 2.14 | 0.47 |
| 1:CA:1004:A:C2' | 1:CA:1005:A:H5' | 2.44 | 0.47 |
| 47:BQ:134:ARG:HE | 56:BZ:122:ARG:CZ | 2.28 | 0.47 |
| 2:AB:28:PHE:HD2 | 2:AB:194:PRO:HD3 | 1.79 | 0.47 |
| 47:DQ:81:VAL:HG23 | 47:DQ:82:ARG:O | 2.14 | 0.47 |
| 35:BA:2339:G:O2' | 35:BA:2340:G:H5' | 2.15 | 0.47 |
| 50:BT:92:GLY:HA2 | 50:BT:114:LEU:CA | 2.45 | 0.47 |
| 43:DI:51:ILE:O | 43:DI:55:ALA:HB2 | 2.15 | 0.47 |
| 35:BA:2558:C:H2' | 35:BA:2559:C:H6 | 1.79 | 0.47 |
| 35:DA:893:C:H2' | 35:DA:894:C:H6 | 1.80 | 0.47 |
| 4:CD:68:TYR:CD2 | 4:CD:97:LEU:HD22 | 2.49 | 0.47 |
| 22:CV:33:U:H2' | 22:CV:34:G:H3' | 1.97 | 0.47 |
| 44:DN:101:HIS:O | 44:DN:102:ALA:C | 2.54 | 0.47 |
| 35:BA:623:G:H2' | 35:BA:624:C:C6 | 2.50 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:2203:U:O2' | 38:DD:151:LYS:HG3 | 2.15 | 0.47 |
| 42:DH:156:ALA:O | 42:DH:157:TYR:C | 2.53 | 0.47 |
| 1:CA:34:C:O2' | 1:CA:35:G:H5' | 2.14 | 0.47 |
| 1:CA:1181:G:O2' | 1:CA:1182:G:H5' | 2.15 | 0.47 |
| 1:AA:1388:C:H2' | 1:AA:1389:C:H6 | 1.77 | 0.47 |
| 1:CA:1424:C:H2' | 1:CA:1425:U:O4' | 2.15 | 0.47 |
| 1:CA:1425:U:H2' | 1:CA:1426:C:H6 | 1.80 | 0.47 |
| 35:DA:742:G:O2' | 35:DA:743:G:H5' | 2.15 | 0.47 |
| 35:BA:711:G:O2' | 35:BA:712:G:H5' | 2.14 | 0.47 |
| 1:AA:1494:G:H5' | 35:BA:1913:A:C6 | 2.49 | 0.47 |
| 35:DA:1131:G:OP2 | 35:DA:2515:C:H4' | 2.14 | 0.47 |
| 35:DA:1691:C:O2' | 35:DA:1692:U:H5' | 2.15 | 0.47 |
| 32:B7:30:VAL:HG12 | 32:B7:31:LEU:N | 2.29 | 0.47 |
| 45:BO:111:PHE:O | 45:BO:115:VAL:HG23 | 2.14 | 0.47 |
| 35:DA:412:A:N7 | 35:DA:2411:A:H2 | 2.13 | 0.47 |
| 35:DA:1675:C:C2 | 39:DE:129:HIS:CD2 | 3.03 | 0.47 |
| 1:AA:874:G:H2' | 1:AA:875:C:C6 | 2.50 | 0.47 |
| 1:CA:1388:C:H2' | 1:CA:1389:C:C6 | 2.49 | 0.47 |
| 1:AA:407:G:O2' | 4:AD:116:GLN:HG3 | 2.15 | 0.47 |
| 14:CN:31:ARG:HG3 | 14:CN:31:ARG:HH11 | 1.79 | 0.47 |
| 1:AA:1053:G:N7 | 1:AA:1200:C:H5'' | 2.30 | 0.47 |
| 2:AB:8:LYS:HD3 | 2:AB:217:ARG:HH22 | 1.79 | 0.47 |
| 35:BA:612:C:C3' | 35:BA:613:G:H5'' | 2.42 | 0.47 |
| 1:CA:963:G:H21 | 10:CJ:55:LYS:HZ2 | 1.63 | 0.47 |
| 42:DH:71:LEU:CA | 42:DH:74:ASN:HD22 | 2.28 | 0.47 |
| 35:BA:2802:G:H3' | 35:BA:2803:C:C5' | 2.44 | 0.47 |
| 35:DA:1173:G:C3' | 35:DA:1174:A:H5' | 2.41 | 0.47 |
| 35:DA:2228:G:OP2 | 38:DD:261:LYS:HE3 | 2.15 | 0.47 |
| 38:DD:263:ARG:HB2 | 38:DD:263:ARG:CZ | 2.45 | 0.47 |
| 3:AC:70:VAL:CG1 | 3:AC:72:LYS:H | 2.22 | 0.47 |
| 47:BQ:54:MET:CG | 47:BQ:64:ILE:HD13 | 2.45 | 0.47 |
| 41:DG:35:GLU:HB2 | 41:DG:160:VAL:HB | 1.97 | 0.47 |
| 41:DG:17:PRO:C | 41:DG:19:LEU:H | 2.17 | 0.47 |
| 41:DG:17:PRO:HG2 | 41:DG:18:GLU:H | 1.79 | 0.47 |
| 35:BA:2128:C:H2' | 35:BA:2129:C:C6 | 2.49 | 0.47 |
| 35:BA:2162:G:O2' | 35:BA:2163:C:H5' | 2.15 | 0.47 |
| 22:AY:42:C:C3' | 22:AY:43:C:H5'' | 2.45 | 0.47 |
| 53:DW:92:ARG:NH1 | 53:DW:92:ARG:HG2 | 2.30 | 0.47 |
| 26:B1:61:ARG:NH1 | 26:B1:61:ARG:CG | 2.72 | 0.47 |
| 10:AJ:38:ILE:O | 10:AJ:38:ILE:HG13 | 2.14 | 0.47 |
| 10:AJ:4:ILE:HB | 10:AJ:74:ILE:HG13 | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1358:U:OP1 | 14:AN:35:ARG:HG2 | 2.15 | 0.47 |
| 38:DD:245:PRO:O | 38:DD:246:PRO:C | 2.53 | 0.47 |
| 3:AC:15:THR:HG22 | 3:AC:16:ARG:N | 2.30 | 0.47 |
| 2:AB:45:GLN:O | 2:AB:48:MET:HB3 | 2.15 | 0.47 |
| 20:CT:30:LYS:HE2 | 20:CT:72:LEU:CD2 | 2.35 | 0.47 |
| 54:DX:35:THR:CG2 | 54:DX:36:LYS:N | 2.78 | 0.47 |
| 1:AA:254:G:O2' | 1:AA:255:G:H5' | 2.15 | 0.47 |
| 43:DI:113:ARG:HB2 | 43:DI:130:TYR:HE1 | 1.77 | 0.47 |
| 35:BA:130:C:O3' | 35:BA:1349:A:H1' | 2.15 | 0.47 |
| 55:DY:51:VAL:O | 55:DY:52:SER:CB | 2.62 | 0.47 |
| 46:DP:45:LEU:CD2 | 46:DP:46:LYS:N | 2.70 | 0.47 |
| 35:BA:2787:C:H1' | 39:BE:61:ARG:CG | 2.45 | 0.47 |
| 35:BA:2892:A:C5 | 35:BA:2893:G:H1' | 2.50 | 0.47 |
| 1:AA:1033:G:C2' | 1:AA:1034:G:H5' | 2.45 | 0.47 |
| 43:BI:114:LEU:O | 43:BI:129:THR:O | 2.33 | 0.47 |
| 20:AT:49:ALA:HB1 | 20:AT:100:ILE:CD1 | 2.43 | 0.47 |
| 18:AR:50:ILE:O | 18:AR:51:LEU:C | 2.53 | 0.47 |
| 19:CS:16:LEU:N | 19:CS:16:LEU:HD12 | 2.28 | 0.47 |
| 42:DH:89:ILE:O | 42:DH:161:GLY:O | 2.32 | 0.47 |
| 13:AM:76:ALA:HA | 13:AM:79:LYS:HD2 | 1.96 | 0.47 |
| 40:DF:63:LYS:HE3 | 40:DF:67:GLN:HB2 | 1.97 | 0.47 |
| 20:CT:14:LYS:CA | 20:CT:17:ARG:HH21 | 2.28 | 0.47 |
| 3:CC:18:TRP:HD1 | 14:CN:54:PRO:HA | 1.79 | 0.47 |
| 35:DA:70:G:H21 | 35:DA:71:A:N6 | 2.09 | 0.47 |
| 1:AA:674:G:H2' | 1:AA:675:A:C8 | 2.46 | 0.47 |
| 1:AA:865:A:H5' | 1:AA:1078:U:C4 | 2.50 | 0.47 |
| 35:BA:542:C:C4 | 35:BA:543:C:N4 | 2.83 | 0.47 |
| 40:DF:57:VAL:HG12 | 40:DF:59:TYR:CD1 | 2.49 | 0.47 |
| 54:DX:53:LYS:HB3 | 54:DX:82:GLN:HB3 | 1.96 | 0.47 |
| 9:AI:113:LYS:H | 9:AI:119:ALA:HA | 1.79 | 0.47 |
| 13:CM:28:ALA:C | 13:CM:30:ALA:N | 2.68 | 0.47 |
| 11:AK:94:ALA:HB3 | 11:AK:95:ILE:HD13 | 1.97 | 0.47 |
| 43:BI:9:LEU:HB2 | 43:BI:12:LEU:O | 2.15 | 0.47 |
| 35:DA:1455:G:C8 | 48:DR:60:LEU:HD11 | 2.50 | 0.47 |
| 35:BA:154:G:C6 | 35:BA:154(A):C:N4 | 2.83 | 0.47 |
| 3:CC:195:VAL:O | 3:CC:196:LEU:HD22 | 2.15 | 0.47 |
| 48:DR:81:ASP:N | 48:DR:81:ASP:OD2 | 2.35 | 0.47 |
| 41:BG:138:GLN:C | 41:BG:140:ILE:H | 2.18 | 0.47 |
| 46:BP:139:LYS:C | 46:BP:141:ALA:H | 2.17 | 0.47 |
| 1:CA:473:G:H2' | 1:CA:474:G:C8 | 2.47 | 0.47 |
| 52:DV:69:LYS:CA | 52:DV:88:ARG:HG2 | 2.42 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 43:BI:145:VAL:CG1 | 43:BI:146:ALA:N | 2.78 | 0.47 |
| 35:BA:15:G:H2' | 35:BA:16:G:H8 | 1.80 | 0.47 |
| 54:BX:49:VAL:HB | 54:BX:83:VAL:HG13 | 1.97 | 0.47 |
| 44:DN:28:THR:HA | 44:DN:106:MET:CE | 2.45 | 0.47 |
| 46:DP:17:LYS:O | 46:DP:19:VAL:N | 2.48 | 0.47 |
| 7:AG:43:PHE:O | 7:AG:46:ALA:HB3 | 2.15 | 0.47 |
| 35:DA:270:A:C2' | 35:DA:271:A:H5' | 2.44 | 0.47 |
| 35:DA:280:C:H42 | 35:DA:360:G:H1 | 1.62 | 0.47 |
| 42:BH:118:PRO:HG3 | 42:BH:144:VAL:HG21 | 1.97 | 0.47 |
| 35:DA:1794:U:O2' | 35:DA:1795:C:H5' | 2.15 | 0.47 |
| 35:DA:753:C:O5' | 35:DA:753:C:H6 | 1.98 | 0.47 |
| 5:AE:47:LYS:O | 5:AE:48:ALA:HB2 | 2.14 | 0.47 |
| 1:CA:36:C:H4' | 12:CL:122:THR:O | 2.15 | 0.47 |
| 12:CL:10:LEU:HB3 | 17:CQ:32:TYR:CE1 | 2.50 | 0.47 |
| 16:CP:6:LEU:N | 16:CP:6:LEU:HD12 | 2.30 | 0.47 |
| 1:CA:781:A:H4' | 1:CA:1522:U:O2' | 2.15 | 0.47 |
| 35:DA:1221(A):C:H2' | 35:DA:1222:C:H6 | 1.79 | 0.47 |
| 17:AQ:62:SER:OG | 17:AQ:72:ARG:NE | 2.48 | 0.47 |
| 36:BB:24:G:H21 | 36:BB:27:C:H42 | 1.63 | 0.47 |
| 7:CG:18:TYR:HD2 | 7:CG:59:LEU:HB2 | 1.80 | 0.47 |
| 1:AA:763:G:H2' | 1:AA:764:C:H6 | 1.80 | 0.47 |
| 35:DA:21:A:O2' | 35:DA:22:C:H5' | 2.15 | 0.47 |
| 35:DA:2323:G:H2' | 35:DA:2324:C:O4' | 2.15 | 0.47 |
| 35:BA:2439:A:C8 | 35:BA:2439:A:H5' | 2.50 | 0.47 |
| 25:D0:46:LYS:HD2 | 25:D0:78:TYR:CE1 | 2.50 | 0.47 |
| 56:DZ:85:HIS:HD1 | 56:DZ:86:VAL:N | 2.13 | 0.46 |
| 1:AA:964:A:OP1 | 1:AA:1199:U:OP1 | 2.34 | 0.46 |
| 1:CA:1146:A:C3' | 1:CA:1147:C:H5'' | 2.44 | 0.46 |
| 1:AA:1375:A:H2' | 1:AA:1376:U:C6 | 2.50 | 0.46 |
| 50:DT:31:SER:C | 50:DT:32:TYR:CD2 | 2.88 | 0.46 |
| 38:BD:32:SER:O | 38:BD:36:PRO:CG | 2.59 | 0.46 |
| 39:BE:36:ARG:HH22 | 39:BE:88:GLY:HA3 | 1.80 | 0.46 |
| 35:DA:2128:C:H2' | 35:DA:2129:C:C6 | 2.49 | 0.46 |
| 41:DG:135:LEU:HD13 | 41:DG:155:MET:HE1 | 1.97 | 0.46 |
| 55:BY:27:VAL:O | 55:BY:29:GLU:OE2 | 2.33 | 0.46 |
| 3:CC:151:VAL:HG12 | 3:CC:152:ILE:N | 2.30 | 0.46 |
| 5:CE:11:ILE:HG21 | 5:CE:105:VAL:HA | 1.97 | 0.46 |
| 30:B5:36:CYS:HB3 | 30:B5:38:ALA:HB2 | 1.95 | 0.46 |
| 28:B3:8:LEU:HB2 | 28:B3:28:LEU:HD13 | 1.96 | 0.46 |
| 45:DO:66:LYS:NZ | 45:DO:78:ARG:HD2 | 2.30 | 0.46 |
| 10:AJ:80:LYS:O | 10:AJ:84:GLN:HB2 | 2.15 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:BN:62:VAL:HG22 | 44:BN:66:LYS:CD | 2.42 | 0.46 |
| 35:DA:1190:G:H2' | 35:DA:1191:G:H8 | 1.80 | 0.46 |
| 35:BA:271(Q):G:O2' | 35:BA:271(R):G:H8 | 1.98 | 0.46 |
| 42:BH:85:LYS:CD | 42:BH:141:VAL:HG13 | 2.37 | 0.46 |
| 50:BT:64:ARG:CD | 50:BT:73:GLU:HG2 | 2.36 | 0.46 |
| 46:DP:108:LYS:C | 46:DP:110:TYR:N | 2.68 | 0.46 |
| 51:BU:27:LEU:HD22 | 51:BU:31:SER:HB3 | 1.96 | 0.46 |
| 35:DA:2057:A:H2' | 35:DA:2058:A:O4' | 2.14 | 0.46 |
| 7:AG:37:ASN:ND2 | 9:AI:40:LEU:HD23 | 2.29 | 0.46 |
| 9:CI:40:LEU:C | 9:CI:42:ARG:H | 2.16 | 0.46 |
| 17:CQ:22:LEU:HD12 | 17:CQ:23:VAL:N | 2.30 | 0.46 |
| 1:AA:1014:A:H2' | 1:AA:1015:A:C8 | 2.50 | 0.46 |
| 19:AS:62:ILE:HD12 | 19:AS:66:MET:SD | 2.55 | 0.46 |
| 37:DC:68:LEU:HD22 | 37:DC:180:PHE:N | 2.26 | 0.46 |
| 35:BA:479:A:H4' | 35:BA:480:A:OP1 | 2.15 | 0.46 |
| 22:AY:77:PHA:CD2 | 35:BA:2451:A:C2 | 2.94 | 0.46 |
| 35:DA:271(M):G:C5' | 43:DI:57:ARG:HH12 | 2.28 | 0.46 |
| 9:CI:19:LEU:C | 9:CI:20:ARG:HD2 | 2.36 | 0.46 |
| 9:CI:3:GLN:CD | 9:CI:20:ARG:HH12 | 2.18 | 0.46 |
| 9:CI:113:LYS:H | 9:CI:119:ALA:HA | 1.80 | 0.46 |
| 35:DA:2736:G:H2' | 35:DA:2737:G:H8 | 1.80 | 0.46 |
| 56:BZ:112:ARG:HH11 | 56:BZ:112:ARG:CG | 2.25 | 0.46 |
| 1:CA:1300:G:O2' | 1:CA:1301:U:P | 2.73 | 0.46 |
| 48:BR:79:LEU:C | 48:BR:79:LEU:CD2 | 2.83 | 0.46 |
| 9:AI:125:TYR:CD2 | 9:AI:126:SER:N | 2.83 | 0.46 |
| 35:DA:2850:A:C2 | 35:DA:2851:A:C4 | 3.03 | 0.46 |
| 15:CO:12:ILE:C | 15:CO:14:GLU:H | 2.18 | 0.46 |
| 2:AB:126:GLU:O | 2:AB:130:ARG:HG3 | 2.15 | 0.46 |
| 11:CK:59:TYR:CE1 | 11:CK:63:LEU:HD21 | 2.50 | 0.46 |
| 1:AA:1249:C:H5' | 1:AA:1249:C:H6 | 1.80 | 0.46 |
| 35:DA:878:A:N3 | 35:DA:878:A:H5' | 2.31 | 0.46 |
| 35:DA:1711:C:H2' | 35:DA:1712:C:H6 | 1.80 | 0.46 |
| 35:BA:986:C:C2' | 35:BA:987:G:H5' | 2.44 | 0.46 |
| 32:D7:17:GLY:O | 32:D7:21:ARG:HG2 | 2.15 | 0.46 |
| 5:CE:78:HIS:CD2 | 8:CH:104:ARG:HG3 | 2.51 | 0.46 |
| 1:AA:828:A:H5'' | 1:AA:859:A:C2 | 2.50 | 0.46 |
| 1:CA:774:G:O2' | 1:CA:775:G:H5' | 2.15 | 0.46 |
| 35:DA:118:A:H5' | 35:DA:119:A:H8 | 1.80 | 0.46 |
| 35:BA:740:U:H2' | 35:BA:741:G:C8 | 2.50 | 0.46 |
| 35:DA:2821:A:O5' | 35:DA:2821:A:H8 | 1.98 | 0.46 |
| 1:CA:992:U:H1' | 1:CA:993:G:C2 | 2.50 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:DT:65:LYS:HG3 | 50:DT:66:VAL:H | 1.80 | 0.46 |
| 16:CP:14:ASN:N | 16:CP:15:PRO:HD3 | 2.30 | 0.46 |
| 56:BZ:44:PHE:C | 56:BZ:44:PHE:CD1 | 2.89 | 0.46 |
| 4:CD:128:VAL:O | 4:CD:129:ASN:C | 2.54 | 0.46 |
| 51:DU:104:GLN:CD | 51:DU:104:GLN:H | 2.18 | 0.46 |
| 1:AA:141:A:H1' | 1:AA:182:U:C2 | 2.50 | 0.46 |
| 1:AA:833:U:H2' | 1:AA:834:C:C6 | 2.51 | 0.46 |
| 27:D2:28:LYS:HG3 | 27:D2:60:LEU:HD11 | 1.97 | 0.46 |
| 1:CA:1175:G:H2' | 1:CA:1176:A:C8 | 2.50 | 0.46 |
| 39:DE:64:LYS:C | 39:DE:66:HIS:H | 2.18 | 0.46 |
| 35:DA:2552:U:C2 | 35:DA:2554:U:H5' | 2.49 | 0.46 |
| 35:BA:198:C:H5' | 35:BA:2244:U:OP1 | 2.15 | 0.46 |
| 13:AM:36:LYS:HG3 | 13:AM:59:TYR:OH | 2.15 | 0.46 |
| 1:CA:833:U:H2' | 1:CA:834:C:C6 | 2.50 | 0.46 |
| 1:AA:1142:G:H2' | 1:AA:1143:G:O4' | 2.13 | 0.46 |
| 8:AH:13:ILE:O | 8:AH:17:THR:HG23 | 2.15 | 0.46 |
| 38:DD:183:ARG:HG2 | 38:DD:183:ARG:HH11 | 1.79 | 0.46 |
| 39:DE:200:GLU:N | 39:DE:200:GLU:OE2 | 2.42 | 0.46 |
| 37:BC:124:GLY:O | 37:BC:125:SER:CB | 2.62 | 0.46 |
| 48:DR:84:ALA:N | 48:DR:85:PRO:CD | 2.78 | 0.46 |
| 8:CH:13:ILE:O | 8:CH:17:THR:HG23 | 2.14 | 0.46 |
| 35:BA:1341:U:O4 | 54:BX:16:LYS:HE2 | 2.15 | 0.46 |
| 9:AI:99:LEU:O | 9:AI:100:GLY:C | 2.53 | 0.46 |
| 9:AI:15:ALA:CB | 9:AI:65:VAL:HB | 2.45 | 0.46 |
| 40:DF:162:LEU:N | 40:DF:162:LEU:HD12 | 2.29 | 0.46 |
| 14:AN:21:TYR:HD2 | 14:AN:22:THR:O | 1.97 | 0.46 |
| 9:CI:63:ILE:HG22 | 9:CI:64:THR:N | 2.30 | 0.46 |
| 1:AA:1491:G:H5'' | 12:AL:46:LYS:HG3 | 1.98 | 0.46 |
| 39:BE:144:ARG:HB3 | 39:BE:145:LYS:H | 1.51 | 0.46 |
| 22:AV:16:U:H4' | 22:AV:17:C:C5 | 2.50 | 0.46 |
| 41:DG:46:ALA:HA | 41:DG:51:ARG:HD2 | 1.95 | 0.46 |
| 38:BD:31:LYS:O | 38:BD:35:LYS:HD3 | 2.15 | 0.46 |
| 3:AC:70:VAL:O | 3:AC:106:VAL:N | 2.48 | 0.46 |
| 3:AC:77:ILE:C | 3:AC:83:ARG:HB3 | 2.35 | 0.46 |
| 10:AJ:50:ILE:CD1 | 14:AN:41:ARG:HD2 | 2.43 | 0.46 |
| 40:BF:205:ARG:O | 40:BF:205:ARG:HG2 | 2.15 | 0.46 |
| 35:BA:2206:G:N3 | 35:BA:2206:G:H3' | 2.30 | 0.46 |
| 1:CA:585:G:N3 | 1:CA:879:C:H4' | 2.30 | 0.46 |
| 55:DY:27:VAL:N | 55:DY:28:LYS:HZ1 | 2.13 | 0.46 |
| 55:DY:27:VAL:CG1 | 55:DY:29:GLU:OE1 | 2.62 | 0.46 |
| 23:AW:39:U:C5' | 23:AW:39:U:O2 | 2.63 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 55:BY:28:LYS:CB | 55:BY:37:VAL:HB | 2.46 | 0.46 |
| 19:CS:6:LYS:CG | 19:CS:7:LYS:HE2 | 2.44 | 0.46 |
| 41:BG:110:ALA:O | 41:BG:111:LEU:C | 2.54 | 0.46 |
| 42:DH:68:THR:C | 42:DH:70:THR:H | 2.18 | 0.46 |
| 43:DI:71:ILE:CG1 | 43:DI:72:LEU:N | 2.76 | 0.46 |
| 35:DA:1902:C:C2' | 35:DA:1903:G:O5' | 2.64 | 0.46 |
| 44:DN:128:HIS:HA | 44:DN:129:PRO:HD2 | 1.77 | 0.46 |
| 49:BS:53:SER:OG | 49:BS:54:LEU:N | 2.48 | 0.46 |
| 49:BS:69:VAL:CG1 | 49:BS:99:LYS:HE3 | 2.42 | 0.46 |
| 27:B2:2:LYS:CB | 35:BA:97:C:H5'' | 2.39 | 0.46 |
| 41:DG:63:ILE:CG1 | 41:DG:64:THR:N | 2.77 | 0.46 |
| 35:DA:271(F):C:H2' | 35:DA:271(G):C:H6 | 1.80 | 0.46 |
| 44:DN:55:VAL:HG22 | 44:DN:56:ASN:H | 1.81 | 0.46 |
| 42:BH:123:PHE:HA | 42:BH:133:VAL:HG22 | 1.96 | 0.46 |
| 55:DY:46:LYS:HD3 | 55:DY:47:LYS:HZ2 | 1.80 | 0.46 |
| 55:DY:48:ALA:O | 55:DY:58:GLY:HA3 | 2.16 | 0.46 |
| 53:BW:6:ILE:HG12 | 53:BW:104:THR:HG23 | 1.95 | 0.46 |
| 35:BA:510:C:C2' | 35:BA:511:U:H5' | 2.45 | 0.46 |
| 35:DA:154:G:C6 | 35:DA:154(A):C:N4 | 2.83 | 0.46 |
| 35:DA:1301:A:HO2' | 35:DA:1302:A:H2' | 1.78 | 0.46 |
| 8:AH:85:ARG:NH1 | 8:AH:85:ARG:CG | 2.78 | 0.46 |
| 35:DA:1528(A):A:C2' | 35:DA:1529:G:H5'' | 2.44 | 0.46 |
| 35:DA:674:G:P | 40:DF:54:ARG:HH22 | 2.38 | 0.46 |
| 35:BA:2266:A:H5' | 35:BA:2267:A:C8 | 2.50 | 0.46 |
| 23:CW:56:C:H3' | 23:CW:57:G:H5'' | 1.97 | 0.46 |
| 19:AS:11:VAL:HG22 | 19:AS:16:LEU:HD11 | 1.97 | 0.46 |
| 1:CA:436:C:O2' | 1:CA:437:U:P | 2.72 | 0.46 |
| 35:DA:548:A:O2' | 35:DA:549:G:OP2 | 2.27 | 0.46 |
| 34:B9:22:ARG:HB2 | 34:B9:24:TYR:HE1 | 1.79 | 0.46 |
| 36:DB:37:C:O2' | 36:DB:38:C:H5' | 2.15 | 0.46 |
| 1:CA:1431:C:H2' | 1:CA:1432:G:O4' | 2.15 | 0.46 |
| 52:DV:21:ARG:CD | 52:DV:21:ARG:N | 2.78 | 0.46 |
| 33:D8:47:LYS:HD3 | 33:D8:48:PHE:O | 2.15 | 0.46 |
| 11:AK:44:SER:H | 11:AK:47:VAL:HG21 | 1.77 | 0.46 |
| 11:AK:91:ARG:O | 11:AK:95:ILE:HD11 | 2.15 | 0.46 |
| 34:D9:17:ILE:CG2 | 34:D9:19:ARG:HE | 2.28 | 0.46 |
| 34:D9:26:ILE:N | 34:D9:26:ILE:HD12 | 2.29 | 0.46 |
| 8:CH:119:LEU:N | 8:CH:119:LEU:CD2 | 2.76 | 0.46 |
| 7:CG:146:GLU:HA | 7:CG:149:ARG:HB2 | 1.96 | 0.46 |
| 2:AB:25:ASN:OD1 | 2:AB:27:LYS:HB2 | 2.15 | 0.46 |
| 1:AA:723:U:C2' | 1:AA:723:U:O2 | 2.62 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 22:CV:14:A:H2' | 22:CV:15:G:H5' | 1.98 | 0.46 |
| 35:BA:626:U:H5'' | 35:BA:627:A:H5' | 1.97 | 0.46 |
| 48:BR:81:ASP:N | 48:BR:81:ASP:OD2 | 2.37 | 0.46 |
| 35:DA:271(J):C:C2' | 35:DA:271(K):U:H5'' | 2.45 | 0.46 |
| 1:AA:1260:C:OP1 | 1:AA:1284:C:H4' | 2.14 | 0.46 |
| 1:AA:1442(B):A:O2' | 1:AA:1443:G:H8 | 1.97 | 0.46 |
| 1:CA:88:A:OP1 | 1:CA:90:U:H1' | 2.15 | 0.46 |
| 38:BD:238:GLY:O | 38:BD:239:ARG:O | 2.33 | 0.46 |
| 1:CA:828:A:H5'' | 1:CA:859:A:C2 | 2.51 | 0.46 |
| 1:AA:1479:C:H2' | 1:AA:1480:G:H8 | 1.81 | 0.46 |
| 38:BD:109:ASP:HB2 | 38:BD:197:GLY:HA2 | 1.96 | 0.46 |
| 38:DD:218:ARG:HB3 | 38:DD:219:PRO:HD2 | 1.96 | 0.46 |
| 2:AB:16:HIS:HB3 | 2:AB:210:SER:OG | 2.15 | 0.46 |
| 35:BA:2771:C:H2' | 35:BA:2772:C:H6 | 1.78 | 0.46 |
| 1:CA:725:G:H2' | 1:CA:726:C:H6 | 1.80 | 0.46 |
| 35:DA:176:G:C2' | 35:DA:177:G:H5' | 2.45 | 0.46 |
| 1:AA:1095:U:C5' | 1:AA:1109:C:O2 | 2.63 | 0.46 |
| 51:DU:24:TYR:HB2 | 51:DU:29:SER:HB3 | 1.96 | 0.46 |
| 37:BC:182:PRO:O | 37:BC:183:GLU:CB | 2.63 | 0.46 |
| 29:D4:46:ASN:C | 29:D4:46:ASN:ND2 | 2.69 | 0.46 |
| 15:AO:37:ASN:N | 15:AO:37:ASN:ND2 | 2.64 | 0.46 |
| 7:CG:18:TYR:CD2 | 7:CG:59:LEU:HB2 | 2.50 | 0.46 |
| 2:AB:107:THR:HG23 | 2:AB:110:GLN:NE2 | 2.30 | 0.46 |
| 39:DE:134:ILE:HG12 | 39:DE:134:ILE:O | 2.15 | 0.46 |
| 49:BS:20:ARG:HA | 49:BS:20:ARG:HD3 | 1.58 | 0.46 |
| 31:B6:20:ASN:CG | 31:B6:21:TYR:N | 2.68 | 0.46 |
| 9:AI:86:VAL:HG21 | 9:AI:93:ARG:HH11 | 1.80 | 0.46 |
| 1:AA:963:G:H21 | 10:AJ:55:LYS:CD | 2.29 | 0.46 |
| 2:CB:58:ILE:O | 2:CB:61:LEU:HB3 | 2.16 | 0.46 |
| 41:DG:82:LEU:HD22 | 41:DG:87:PRO:HB3 | 1.97 | 0.46 |
| 39:DE:36:ARG:HH22 | 39:DE:88:GLY:HA3 | 1.80 | 0.46 |
| 50:BT:13:ARG:HH12 | 50:BT:15:VAL:CG2 | 2.25 | 0.46 |
| 38:DD:31:LYS:O | 38:DD:33:LEU:O | 2.34 | 0.46 |
| 38:DD:33:LEU:O | 38:DD:34:VAL:CB | 2.58 | 0.46 |
| 43:DI:93:THR:O | 43:DI:97:ILE:HG13 | 2.16 | 0.46 |
| 13:AM:23:TYR:CE1 | 13:AM:70:LEU:HD22 | 2.42 | 0.46 |
| 13:CM:80:ARG:NH2 | 19:CS:69:HIS:NE2 | 2.61 | 0.46 |
| 51:DU:57:PHE:O | 51:DU:58:ARG:C | 2.54 | 0.46 |
| 40:BF:10:PRO:O | 40:BF:128:ALA:HB2 | 2.15 | 0.46 |
| 40:BF:162:LEU:HD12 | 40:BF:162:LEU:N | 2.31 | 0.46 |
| 35:DA:1497:U:H3 | 35:DA:1578:U:P | 2.38 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:B4:51:TYR:CG | 41:BG:2:PRO:HD2 | 2.50 | 0.46 |
| 38:BD:165:ILE:HD13 | 38:BD:175:LEU:CD2 | 2.41 | 0.46 |
| 55:BY:28:LYS:HA | 55:BY:39:VAL:H | 1.80 | 0.46 |
| 4:CD:12:CYS:HA | 4:CD:19:LEU:CD1 | 2.43 | 0.46 |
| 43:DI:71:ILE:CG1 | 43:DI:72:LEU:H | 2.24 | 0.46 |
| 35:DA:626:U:H3 | 46:DP:105:LEU:HA | 1.79 | 0.46 |
| 22:AV:66:U:O2' | 22:AV:67:C:H5' | 2.16 | 0.46 |
| 39:BE:12:THR:HG23 | 50:BT:8:LYS:HZ1 | 1.78 | 0.46 |
| 50:BT:7:ILE:O | 50:BT:11:GLU:OE2 | 2.33 | 0.46 |
| 49:BS:99:LYS:HB3 | 49:BS:101:LEU:HD12 | 1.97 | 0.46 |
| 49:BS:99:LYS:O | 49:BS:101:LEU:N | 2.44 | 0.46 |
| 46:DP:35:HIS:O | 46:DP:36:LYS:CB | 2.64 | 0.46 |
| 45:BO:104:ARG:NH2 | 50:BT:33:LYS:HD2 | 2.29 | 0.46 |
| 27:D2:69:ARG:NH2 | 35:DA:111:A:H4' | 2.30 | 0.46 |
| 54:BX:35:THR:CG2 | 54:BX:36:LYS:N | 2.77 | 0.46 |
| 26:D1:86:SER:OG | 26:D1:89:GLU:HB2 | 2.15 | 0.46 |
| 41:BG:171:ALA:O | 41:BG:174:GLU:N | 2.48 | 0.46 |
| 4:CD:138:TYR:CD2 | 4:CD:139:ARG:N | 2.81 | 0.46 |
| 35:DA:2787:C:H1' | 39:DE:61:ARG:CG | 2.46 | 0.46 |
| 19:CS:18:LYS:HG3 | 19:CS:18:LYS:O | 2.15 | 0.46 |
| 19:CS:41:VAL:HB | 19:CS:44:MET:SD | 2.55 | 0.46 |
| 43:BI:123:LEU:HD11 | 43:BI:144:VAL:HG11 | 1.97 | 0.46 |
| 1:CA:356:A:H1' | 1:CA:368:U:O2' | 2.16 | 0.46 |
| 50:DT:23:ARG:HA | 50:DT:52:ILE:CD1 | 2.45 | 0.46 |
| 50:BT:3:ARG:HB2 | 50:BT:6:LEU:HB3 | 1.96 | 0.46 |
| 22:AY:76:8AN:H2 | 35:BA:2583:G:N3 | 2.31 | 0.46 |
| 35:BA:1658:C:H2' | 35:BA:1659:U:C6 | 2.50 | 0.46 |
| 51:BU:17:ILE:O | 51:BU:20:LEU:HB2 | 2.16 | 0.46 |
| 42:DH:107:VAL:CB | 42:DH:152:ARG:HG3 | 2.43 | 0.46 |
| 49:DS:106:ARG:HB3 | 49:DS:106:ARG:HE | 1.54 | 0.46 |
| 4:AD:96:LEU:CD1 | 4:AD:96:LEU:N | 2.78 | 0.46 |
| 36:BB:56:G:H4' | 36:BB:57:A:O5' | 2.15 | 0.46 |
| 56:BZ:112:ARG:NH1 | 56:BZ:112:ARG:HG2 | 2.27 | 0.46 |
| 11:CK:94:ALA:HB3 | 11:CK:95:ILE:HD13 | 1.97 | 0.46 |
| 9:AI:20:ARG:O | 9:AI:60:ASP:N | 2.47 | 0.46 |
| 55:BY:2:ARG:HD3 | 55:BY:2:ARG:C | 2.36 | 0.46 |
| 2:AB:144:ARG:HA | 2:AB:147:LYS:HB3 | 1.97 | 0.46 |
| 8:AH:63:LEU:N | 8:AH:63:LEU:HD22 | 2.30 | 0.46 |
| 26:B1:46:LEU:H | 26:B1:46:LEU:HD22 | 1.79 | 0.46 |
| 35:DA:2712:U:O2' | 35:DA:2712(A):A:P | 2.74 | 0.46 |
| 35:DA:2086:U:H2' | 35:DA:2087:G:C8 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 23:CW:64:A:H2' | 23:CW:65:G:C8 | 2.50 | 0.46 |
| 54:BX:47:PHE:HD2 | 54:BX:89:ILE:CG2 | 2.26 | 0.46 |
| 22:AY:56:C:H5' | 35:BA:897:C:H4' | 1.97 | 0.46 |
| 35:BA:1718:G:H2' | 35:BA:1719:G:H8 | 1.80 | 0.46 |
| 2:CB:16:HIS:HB3 | 2:CB:210:SER:OG | 2.15 | 0.46 |
| 1:AA:745:C:H5'' | 1:AA:851:G:H1' | 1.97 | 0.46 |
| 44:BN:28:THR:HA | 44:BN:106:MET:HE3 | 1.97 | 0.46 |
| 13:CM:107:ALA:C | 13:CM:109:THR:H | 2.18 | 0.46 |
| 51:DU:12:ARG:O | 51:DU:15:LYS:HD3 | 2.16 | 0.46 |
| 35:DA:78:A:H2' | 35:DA:79:G:C8 | 2.49 | 0.46 |
| 1:CA:1288:A:N1 | 1:CA:1371:G:H1' | 2.29 | 0.46 |
| 4:AD:128:VAL:O | 4:AD:129:ASN:C | 2.54 | 0.46 |
| 2:AB:41:ILE:HD12 | 2:AB:41:ILE:H | 1.79 | 0.46 |
| 35:DA:2051:A:H8 | 35:DA:2051:A:OP2 | 1.99 | 0.46 |
| 5:CE:128:PRO:O | 5:CE:131:ILE:HG22 | 2.14 | 0.46 |
| 35:DA:2553:G:H2' | 35:DA:2554:U:H4' | 1.96 | 0.46 |
| 1:AA:547:A:H4' | 1:AA:548:G:O5' | 2.15 | 0.46 |
| 8:CH:38:ILE:HA | 8:CH:41:ARG:HB3 | 1.97 | 0.46 |
| 35:BA:2859:G:C6 | 35:BA:2860:A:N6 | 2.83 | 0.46 |
| 22:CY:6:G:O2' | 22:CY:7:A:H5' | 2.16 | 0.46 |
| 37:DC:211:SER:HA | 37:DC:220:PRO:CB | 2.45 | 0.46 |
| 35:BA:1832:C:N4 | 35:BA:1833:U:C4 | 2.83 | 0.46 |
| 40:BF:147:GLY:O | 40:BF:148:LEU:HD23 | 2.15 | 0.46 |
| 35:DA:42:G:H2' | 35:DA:43:A:O4' | 2.15 | 0.46 |
| 3:CC:101:LEU:HD23 | 3:CC:102:ASN:O | 2.15 | 0.46 |
| 52:BV:43:GLU:HA | 52:BV:43:GLU:OE1 | 2.15 | 0.46 |
| 41:DG:139:LEU:HD23 | 41:DG:139:LEU:H | 1.79 | 0.46 |
| 1:AA:439:A:H2' | 1:AA:441:A:O4' | 2.15 | 0.46 |
| 56:DZ:125:LEU:HD12 | 56:DZ:126:VAL:H | 1.80 | 0.46 |
| 31:D6:14:THR:O | 31:D6:49:HIS:HA | 2.15 | 0.46 |
| 9:CI:15:ALA:CB | 9:CI:65:VAL:HB | 2.45 | 0.46 |
| 41:DG:81:LYS:O | 41:DG:82:LEU:O | 2.33 | 0.46 |
| 1:CA:954:G:H2' | 1:CA:955:U:C6 | 2.50 | 0.46 |
| 38:BD:95:LEU:HD12 | 38:BD:95:LEU:O | 2.15 | 0.46 |
| 46:BP:17:LYS:C | 46:BP:19:VAL:N | 2.67 | 0.46 |
| 35:DA:1797:C:O2' | 38:DD:259:THR:HG21 | 2.15 | 0.46 |
| 3:AC:77:ILE:O | 3:AC:83:ARG:HB3 | 2.15 | 0.46 |
| 44:BN:112:LEU:O | 44:BN:116:LEU:HG | 2.15 | 0.46 |
| 51:DU:79:PHE:C | 51:DU:79:PHE:CD2 | 2.86 | 0.46 |
| 35:DA:1495:A:H3' | 35:DA:1496:A:C2 | 2.51 | 0.46 |
| 29:B4:37:PRO:HA | 29:B4:51:TYR:HD2 | 1.80 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:DG:108:ASN:C | 41:DG:112:PRO:HG2 | 2.36 | 0.46 |
| 1:AA:1314:C:N4 | 19:AS:4:SER:N | 2.62 | 0.46 |
| 10:CJ:28:ARG:NH1 | 10:CJ:28:ARG:HG2 | 2.30 | 0.46 |
| 42:BH:66:GLY:C | 42:BH:68:THR:N | 2.69 | 0.46 |
| 38:BD:227:ASN:HB3 | 38:BD:228:PRO:CD | 2.31 | 0.46 |
| 42:BH:158:HIS:O | 42:BH:159:GLU:CB | 2.64 | 0.46 |
| 36:BB:21:G:O2' | 36:BB:22:U:P | 2.74 | 0.46 |
| 39:BE:104:VAL:HG11 | 39:BE:188:VAL:CG2 | 2.34 | 0.46 |
| 2:CB:116:GLU:HA | 2:CB:119:GLU:HB2 | 1.97 | 0.46 |
| 55:DY:7:VAL:CB | 55:DY:8:LYS:HZ2 | 2.24 | 0.46 |
| 46:DP:23:PRO:HB2 | 46:DP:33:ARG:NE | 2.30 | 0.46 |
| 31:B6:35:GLU:HB3 | 31:B6:51:GLU:CG | 2.45 | 0.46 |
| 35:BA:143:G:C1' | 54:BX:37:THR:HG21 | 2.39 | 0.46 |
| 35:BA:848:G:H2' | 35:BA:849:A:C8 | 2.49 | 0.46 |
| 35:BA:848:G:H5' | 35:BA:848:G:C8 | 2.46 | 0.46 |
| 45:BO:77:ILE:HD11 | 50:BT:72:VAL:HG12 | 1.96 | 0.46 |
| 1:AA:1057:G:H5'' | 3:AC:154:SER:OG | 2.14 | 0.46 |
| 43:DI:82:ARG:HH11 | 43:DI:82:ARG:HG3 | 1.80 | 0.46 |
| 35:DA:2810:A:N6 | 35:DA:2891:G:O2' | 2.48 | 0.46 |
| 41:BG:101:ILE:HD11 | 41:BG:105:LYS:HZ1 | 1.79 | 0.46 |
| 35:DA:1221:C:H5' | 35:DA:1221:C:C6 | 2.37 | 0.46 |
| 12:CL:23:LYS:O | 12:CL:24:VAL:HG23 | 2.16 | 0.46 |
| 35:BA:2443:C:H2' | 35:BA:2444:G:C8 | 2.50 | 0.46 |
| 31:D6:45:LYS:NZ | 35:DA:2370:G:H21 | 2.06 | 0.46 |
| 42:DH:105:LEU:HD22 | 42:DH:105:LEU:O | 2.15 | 0.46 |
| 1:AA:826:C:H5' | 8:AH:12:ARG:NH2 | 2.26 | 0.46 |
| 26:B1:86:SER:HB2 | 26:B1:89:GLU:CB | 2.44 | 0.46 |
| 13:CM:97:PRO:O | 13:CM:98:VAL:HA | 2.15 | 0.46 |
| 43:BI:51:ILE:O | 43:BI:55:ALA:HB2 | 2.15 | 0.46 |
| 43:BI:56:LYS:C | 43:BI:58:LEU:H | 2.18 | 0.46 |
| 16:CP:1:MET:HG2 | 16:CP:2:VAL:O | 2.15 | 0.46 |
| 4:AD:119:GLN:NE2 | 4:AD:123:HIS:NE2 | 2.63 | 0.46 |
| 35:DA:915:C:O2' | 35:DA:916:G:H5' | 2.16 | 0.46 |
| 1:AA:1251:A:H4' | 9:AI:12:GLU:OE1 | 2.15 | 0.46 |
| 56:BZ:145:GLU:HG3 | 56:BZ:146:ILE:N | 2.30 | 0.46 |
| 13:AM:50:GLU:N | 13:AM:50:GLU:OE1 | 2.48 | 0.46 |
| 25:D0:51:VAL:HG21 | 25:D0:79:VAL:O | 2.15 | 0.46 |
| 1:AA:1172:C:H2' | 1:AA:1173:G:C8 | 2.42 | 0.46 |
| 9:AI:19:LEU:C | 9:AI:20:ARG:HD2 | 2.35 | 0.46 |
| 1:CA:15:G:H2' | 1:CA:16:A:C8 | 2.51 | 0.46 |
| 13:CM:50:GLU:N | 13:CM:50:GLU:OE1 | 2.48 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1004:A:C2' | 1:AA:1005:A:H5' | 2.44 | 0.46 |
| 5:AE:71:LEU:HD22 | 5:AE:114:GLY:O | 2.16 | 0.46 |
| 44:BN:57:ALA:O | 44:BN:58:ASP:O | 2.34 | 0.46 |
| 48:BR:7:GLY:O | 48:BR:8:ARG:CG | 2.64 | 0.46 |
| 11:AK:53:SER:C | 11:AK:55:LYS:H | 2.18 | 0.46 |
| 20:CT:45:GLN:C | 20:CT:47:GLY:N | 2.68 | 0.46 |
| 56:DZ:128:VAL:CG2 | 56:DZ:129:SER:N | 2.79 | 0.46 |
| 38:BD:231:HIS:ND1 | 38:BD:232:PRO:CD | 2.79 | 0.46 |
| 36:BB:59:A:H2' | 36:BB:60:C:O4' | 2.16 | 0.46 |
| 38:DD:218:ARG:NH1 | 38:DD:218:ARG:HG3 | 2.30 | 0.46 |
| 26:D1:10:LYS:HE3 | 26:D1:65:SER:OG | 2.15 | 0.46 |
| 35:DA:320:A:H3' | 40:DF:136:THR:HG22 | 1.96 | 0.46 |
| 1:CA:1353:G:O2' | 1:CA:1354:C:H5' | 2.15 | 0.46 |
| 31:D6:42:TRP:CH2 | 35:DA:643:A:N7 | 2.84 | 0.46 |
| 35:BA:2208:A:H1' | 35:BA:2219:G:C5 | 2.51 | 0.46 |
| 40:DF:51:THR:HG23 | 40:DF:92:PRO:HG2 | 1.97 | 0.46 |
| 1:CA:524:G:H2' | 1:CA:525:C:C6 | 2.49 | 0.46 |
| 1:AA:759:A:H2' | 1:AA:760:G:H5' | 1.98 | 0.46 |
| 54:DX:3:THR:O | 54:DX:4:ALA:HB3 | 2.14 | 0.46 |
| 35:BA:2033:A:H2' | 35:BA:2035:G:OP2 | 2.15 | 0.46 |
| 2:AB:100:GLY:HA3 | 2:AB:104:ASN:HB3 | 1.96 | 0.46 |
| 1:AA:766:A:H2' | 1:AA:767:A:O4' | 2.15 | 0.46 |
| 22:AV:37:A:H3' | 22:AV:38:A:H8 | 1.80 | 0.46 |
| 35:BA:2872:G:O2' | 35:BA:2873:A:H5' | 2.15 | 0.46 |
| 35:BA:412:A:N7 | 35:BA:2411:A:H2 | 2.13 | 0.46 |
| 35:DA:828:U:H4' | 35:DA:831:G:N1 | 2.30 | 0.46 |
| 6:CF:28:ARG:HG3 | 6:CF:28:ARG:HH11 | 1.81 | 0.46 |
| 40:BF:46:ARG:HH11 | 40:BF:46:ARG:HG3 | 1.81 | 0.46 |
| 35:DA:137:C:O2 | 35:DA:137:C:H2' | 2.15 | 0.46 |
| 53:DW:52:GLU:HA | 53:DW:52:GLU:OE2 | 2.16 | 0.46 |
| 20:AT:84:LEU:HD13 | 20:AT:84:LEU:C | 2.35 | 0.46 |
| 35:BA:2642:G:O2' | 35:BA:2643:G:H5' | 2.15 | 0.46 |
| 49:BS:90:GLY:C | 49:BS:92:TYR:H | 2.18 | 0.46 |
| 40:DF:161:GLU:O | 40:DF:164:ARG:HB3 | 2.14 | 0.46 |
| 2:AB:54:THR:O | 2:AB:58:ILE:HG12 | 2.16 | 0.46 |
| 9:CI:7:THR:O | 9:CI:83:ARG:HD2 | 2.16 | 0.46 |
| 2:CB:215:LEU:O | 2:CB:219:VAL:HG23 | 2.16 | 0.46 |
| 49:BS:98:VAL:CG1 | 49:BS:100:ALA:HB2 | 2.45 | 0.46 |
| 1:CA:963:G:H21 | 10:CJ:55:LYS:CD | 2.28 | 0.46 |
| 38:BD:86:PRO:HG2 | 38:BD:87:ASN:OD1 | 2.15 | 0.46 |
| 51:BU:76:TYR:CZ | 51:BU:80:ILE:HG13 | 2.50 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 52:BV:46:VAL:HG13 | 52:BV:47:VAL:H | 1.80 | 0.46 |
| 39:BE:111:ARG:HD2 | 39:BE:160:TYR:HE1 | 1.80 | 0.46 |
| 35:DA:2228:G:P | 38:DD:263:ARG:HH12 | 2.39 | 0.46 |
| 35:DA:661:C:O3' | 46:DP:18:ARG:HD2 | 2.16 | 0.46 |
| 13:AM:30:ALA:C | 13:AM:32:GLU:H | 2.17 | 0.46 |
| 33:D8:61:LEU:HD12 | 33:D8:62:LEU:H | 1.80 | 0.46 |
| 12:AL:8:ASN:HD22 | 17:AQ:34:LYS:CE | 2.23 | 0.46 |
| 46:DP:25:SER:O | 46:DP:30:THR:HG23 | 2.15 | 0.46 |
| 41:DG:33:ARG:NE | 41:DG:162:THR:HG21 | 2.31 | 0.46 |
| 35:DA:309:G:N3 | 35:DA:329:G:O2' | 2.48 | 0.46 |
| 47:DQ:54:MET:CG | 47:DQ:64:ILE:HD13 | 2.46 | 0.46 |
| 10:CJ:80:LYS:O | 10:CJ:84:GLN:HB2 | 2.15 | 0.46 |
| 35:BA:1665:A:O2' | 35:BA:1666:G:H5' | 2.15 | 0.46 |
| 35:DA:1664:A:H1' | 35:DA:2726:U:C5 | 2.51 | 0.46 |
| 35:BA:1190:G:H5'' | 46:BP:35:HIS:CA | 2.44 | 0.46 |
| 47:BQ:42:ILE:HA | 47:BQ:46:GLN:OE1 | 2.15 | 0.46 |
| 44:DN:126:PRO:O | 44:DN:127:ASP:CB | 2.55 | 0.46 |
| 35:DA:2263:C:C6 | 35:DA:2263:C:H5' | 2.30 | 0.46 |
| 1:AA:619:U:C4 | 4:AD:135:LEU:HD21 | 2.51 | 0.46 |
| 35:BA:1168:G:H1 | 35:BA:1181:C:H42 | 1.64 | 0.46 |
| 35:BA:1301:A:O2' | 35:BA:1302:A:C2' | 2.54 | 0.46 |
| 1:AA:735:C:H1' | 18:AR:75:ILE:HD11 | 1.97 | 0.46 |
| 35:BA:923:C:H2' | 35:BA:924:C:C6 | 2.51 | 0.46 |
| 31:D6:39:TYR:CG | 31:D6:40:CYS:N | 2.83 | 0.46 |
| 38:BD:131:LEU:CD1 | 38:BD:131:LEU:N | 2.78 | 0.46 |
| 5:CE:35:GLY:HA3 | 5:CE:41:VAL:HG12 | 1.97 | 0.46 |
| 16:CP:66:PRO:HG2 | 16:CP:71:ARG:NH1 | 2.30 | 0.46 |
| 1:AA:309:G:H2' | 1:AA:310:G:H8 | 1.80 | 0.46 |
| 38:BD:66:ASP:OD2 | 38:BD:69:ARG:HA | 2.15 | 0.46 |
| 35:DA:953:A:H2' | 35:DA:954:G:C5' | 2.46 | 0.46 |
| 43:DI:10:GLU:O | 43:DI:11:ASN:HB3 | 2.15 | 0.46 |
| 13:CM:30:ALA:C | 13:CM:32:GLU:H | 2.19 | 0.46 |
| 52:DV:21:ARG:H | 52:DV:21:ARG:HD3 | 1.80 | 0.46 |
| 1:AA:405:U:OP2 | 4:AD:3:ARG:HD2 | 2.16 | 0.46 |
| 35:DA:1656:C:H2' | 35:DA:1657:C:C6 | 2.49 | 0.46 |
| 2:AB:23:ARG:HH11 | 2:AB:23:ARG:HG2 | 1.79 | 0.46 |
| 18:AR:85:LEU:HG | 18:AR:86:VAL:H | 1.81 | 0.46 |
| 1:CA:848:C:H2' | 1:CA:849:C:H6 | 1.79 | 0.46 |
| 2:CB:25:ASN:OD1 | 2:CB:27:LYS:HB2 | 2.16 | 0.46 |
| 11:CK:126:ARG:C | 11:CK:128:ALA:N | 2.69 | 0.46 |
| 30:D5:16:ARG:NH1 | 30:D5:17:ASP:OD1 | 2.49 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:AB:137:ARG:HD3 | 2:AB:138:LEU:N | 2.31 | 0.46 |
| 14:AN:9:LYS:HA | 14:AN:12:ARG:HH11 | 1.80 | 0.46 |
| 41:DG:149:VAL:O | 41:DG:149:VAL:HG23 | 2.15 | 0.46 |
| 36:DB:107:G:O2' | 36:DB:108:U:H5' | 2.15 | 0.46 |
| 13:AM:27:LYS:HE3 | 13:AM:31:LYS:NZ | 2.31 | 0.46 |
| 35:BA:2710:C:OP1 | 48:BR:15:SER:HB2 | 2.15 | 0.46 |
| 2:CB:23:ARG:HB3 | 2:CB:23:ARG:CZ | 2.44 | 0.46 |
| 46:DP:75:ILE:N | 46:DP:75:ILE:CD1 | 2.79 | 0.46 |
| 35:BA:185:U:H2' | 35:BA:186:G:H8 | 1.79 | 0.46 |
| 16:CP:82:GLN:O | 16:CP:84:ALA:N | 2.49 | 0.46 |
| 3:AC:64:VAL:HG12 | 3:AC:66:VAL:HG23 | 1.96 | 0.46 |
| 38:DD:238:GLY:O | 38:DD:239:ARG:O | 2.34 | 0.46 |
| 42:BH:156:ALA:O | 42:BH:157:TYR:C | 2.53 | 0.46 |
| 31:B6:39:TYR:CG | 31:B6:40:CYS:N | 2.84 | 0.46 |
| 4:AD:105:VAL:HG13 | 4:AD:110:PHE:HB2 | 1.98 | 0.46 |
| 4:CD:63:LYS:HD2 | 4:CD:198:VAL:HG22 | 1.96 | 0.46 |
| 37:BC:97:GLU:HA | 37:BC:100:ILE:HG12 | 1.98 | 0.46 |
| 35:DA:1401:G:H2' | 35:DA:1402:C:C6 | 2.51 | 0.46 |
| 35:BA:2511:U:O3' | 39:BE:123:ALA:HB3 | 2.16 | 0.46 |
| 1:CA:346:G:H2' | 1:CA:346:G:N3 | 2.30 | 0.46 |
| 24:CX:19:U:C2 | 22:CY:37:A:C2 | 3.03 | 0.46 |
| 38:BD:72:LYS:HE2 | 38:BD:101:GLU:CD | 2.35 | 0.46 |
| 5:CE:84:PHE:HB3 | 5:CE:134:ALA:HB2 | 1.97 | 0.46 |
| 1:CA:1460:A:H2' | 1:CA:1461:G:O4' | 2.16 | 0.46 |
| 1:CA:44:G:H1' | 1:CA:399:G:N2 | 2.31 | 0.46 |
| 35:BA:2082:A:H2' | 35:BA:2083:G:O4' | 2.14 | 0.46 |
| 35:DA:2801:A:H2' | 35:DA:2801:A:N3 | 2.31 | 0.46 |
| 40:BF:41:LEU:HA | 40:BF:44:ARG:HG2 | 1.96 | 0.46 |
| 12:AL:41:ARG:HH12 | 12:AL:57:LYS:HZ3 | 1.63 | 0.46 |
| 55:BY:77:PRO:O | 55:BY:78:ALA:CB | 2.64 | 0.46 |
| 9:AI:63:ILE:HG22 | 9:AI:64:THR:N | 2.31 | 0.46 |
| 1:CA:1346:A:C5' | 9:CI:120:ARG:NH1 | 2.78 | 0.46 |
| 1:AA:963:G:H21 | 10:AJ:55:LYS:HD3 | 1.79 | 0.46 |
| 2:AB:87:ARG:NH1 | 2:AB:223:ILE:HD11 | 2.30 | 0.46 |
| 9:CI:59:PHE:N | 9:CI:59:PHE:CD1 | 2.84 | 0.46 |
| 2:CB:236:TYR:HA | 2:CB:239:VAL:CG2 | 2.46 | 0.46 |
| 35:BA:2403:C:N3 | 35:BA:2415:G:C2 | 2.84 | 0.46 |
| 22:CV:8:U:O2 | 22:CV:21:A:H2 | 1.98 | 0.46 |
| 52:BV:49:THR:HB | 52:BV:50:PRO:CD | 2.46 | 0.46 |
| 39:BE:110:GLY:O | 48:BR:5:LYS:NZ | 2.40 | 0.46 |
| 38:DD:31:LYS:NZ | 38:DD:94:LEU:HD11 | 2.30 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 51:DU:61:TRP:O | 51:DU:62:ILE:C | 2.53 | 0.46 |
| 38:BD:165:ILE:HA | 38:BD:175:LEU:HD23 | 1.98 | 0.46 |
| 12:CL:8:ASN:O | 12:CL:12:ARG:HG3 | 2.16 | 0.46 |
| 35:BA:2228:G:P | 38:BD:263:ARG:HH12 | 2.38 | 0.46 |
| 35:BA:1686:C:C6 | 35:BA:1686:C:C5' | 2.94 | 0.46 |
| 35:BA:1685:C:O2' | 35:BA:1686:C:H5'' | 2.14 | 0.46 |
| 56:BZ:31:ARG:CB | 56:BZ:31:ARG:NH1 | 2.60 | 0.46 |
| 45:BO:101:PRO:O | 45:BO:102:VAL:HG13 | 2.15 | 0.46 |
| 10:AJ:78:ASN:HD21 | 10:AJ:80:LYS:HB2 | 1.81 | 0.46 |
| 44:DN:110:GLY:C | 44:DN:114:ARG:HH21 | 2.18 | 0.46 |
| 3:CC:16:ARG:HH11 | 3:CC:16:ARG:CB | 2.29 | 0.46 |
| 35:BA:1785:A:OP2 | 35:BA:1982:C:H5' | 2.15 | 0.46 |
| 27:B2:2:LYS:O | 27:B2:6:VAL:HG23 | 2.14 | 0.46 |
| 25:B0:41:ARG:CD | 25:B0:44:ARG:HD3 | 2.45 | 0.46 |
| 37:BC:86:ALA:HB2 | 37:BC:152:ILE:CB | 2.45 | 0.46 |
| 37:BC:86:ALA:CB | 37:BC:94:VAL:HG11 | 2.46 | 0.46 |
| 27:D2:21:LEU:O | 27:D2:25:VAL:HG23 | 2.15 | 0.46 |
| 8:AH:82:HIS:CD2 | 8:AH:138:TRP:NE1 | 2.81 | 0.46 |
| 43:DI:94:ALA:HB1 | 43:DI:111:PRO:HA | 1.97 | 0.46 |
| 35:DA:857:C:C2 | 35:DA:858:U:C5 | 3.03 | 0.46 |
| 35:BA:1300:U:C6 | 35:BA:1626:G:C6 | 3.03 | 0.46 |
| 56:BZ:165:VAL:CG1 | 56:BZ:166:SER:H | 2.22 | 0.46 |
| 1:CA:617:G:H1 | 1:CA:623:C:N4 | 2.06 | 0.46 |
| 39:BE:16:ARG:NH2 | 39:BE:171:GLU:OE2 | 2.43 | 0.46 |
| 25:B0:36:ILE:HD12 | 25:B0:38:VAL:N | 2.31 | 0.46 |
| 1:AA:356:A:H1' | 1:AA:368:U:O2' | 2.15 | 0.46 |
| 33:D8:42:ARG:O | 33:D8:44:LYS:N | 2.45 | 0.46 |
| 4:AD:43:HIS:O | 4:AD:45:GLN:N | 2.48 | 0.46 |
| 13:AM:82:MET:CG | 13:AM:82:MET:O | 2.63 | 0.46 |
| 19:AS:18:LYS:HG3 | 19:AS:18:LYS:O | 2.15 | 0.46 |
| 3:CC:34:LEU:HD23 | 3:CC:34:LEU:C | 2.36 | 0.46 |
| 27:B2:42:GLY:O | 27:B2:43:GLN:C | 2.53 | 0.46 |
| 42:DH:96:ALA:HB2 | 42:DH:105:LEU:HB3 | 1.98 | 0.46 |
| 19:AS:43:GLU:OE1 | 19:AS:45:VAL:HG22 | 2.14 | 0.46 |
| 22:CY:20:U:H2' | 22:CY:21:A:H4' | 1.97 | 0.46 |
| 35:BA:271(M):G:C5' | 43:BI:57:ARG:HH12 | 2.27 | 0.46 |
| 54:DX:65:ARG:HH11 | 54:DX:65:ARG:CG | 2.25 | 0.46 |
| 45:DO:104:ARG:NH2 | 50:DT:33:LYS:HD2 | 2.30 | 0.46 |
| 36:BB:28:C:H2' | 36:BB:29:A:O4' | 2.15 | 0.46 |
| 18:CR:43:PHE:CE2 | 18:CR:58:LEU:HD11 | 2.45 | 0.46 |
| 25:B0:51:VAL:HG21 | 25:B0:79:VAL:O | 2.14 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:1889:A:O2' | 35:BA:2087:G:H5' | 2.16 | 0.46 |
| 26:B1:44:PRO:HA | 35:BA:396:G:O3' | 2.15 | 0.46 |
| 35:BA:874:G:H5'' | 56:BZ:175:VAL:HG22 | 1.98 | 0.46 |
| 48:DR:11:ASN:O | 48:DR:12:ARG:CB | 2.63 | 0.46 |
| 15:CO:39:LEU:HD22 | 15:CO:43:LEU:HG | 1.96 | 0.46 |
| 11:AK:108:ILE:HB | 18:AR:87:ARG:HA | 1.97 | 0.46 |
| 27:D2:63:VAL:HA | 27:D2:66:GLU:HG2 | 1.96 | 0.46 |
| 4:CD:10:ARG:HH11 | 4:CD:10:ARG:CG | 2.28 | 0.46 |
| 44:DN:73:THR:HG22 | 44:DN:82:LEU:HD11 | 1.98 | 0.46 |
| 2:AB:224:GLN:HG2 | 2:AB:224:GLN:O | 2.16 | 0.46 |
| 40:BF:89:VAL:HG12 | 40:BF:90:PHE:N | 2.31 | 0.46 |
| 2:CB:59:GLU:HB2 | 2:CB:221:LEU:HD12 | 1.95 | 0.46 |
| 2:CB:59:GLU:O | 2:CB:63:MET:HG2 | 2.15 | 0.46 |
| 35:DA:203:C:C3' | 35:DA:204:A:H5'' | 2.41 | 0.46 |
| 11:AK:54:ARG:HH22 | 23:AW:40:C:P | 2.38 | 0.46 |
| 1:AA:88:A:OP1 | 1:AA:90:U:H1' | 2.16 | 0.46 |
| 54:DX:49:VAL:HB | 54:DX:83:VAL:HG13 | 1.98 | 0.46 |
| 1:CA:868:C:H2' | 1:CA:869:G:O4' | 2.16 | 0.46 |
| 35:DA:185:U:H2' | 35:DA:186:G:H8 | 1.80 | 0.46 |
| 35:BA:782:A:H5' | 35:BA:783:A:C2 | 2.51 | 0.46 |
| 35:BA:1721:G:C2 | 35:BA:1739:U:OP2 | 2.68 | 0.46 |
| 35:DA:622:G:O2' | 35:DA:623:G:H5' | 2.16 | 0.46 |
| 1:AA:640:A:N3 | 8:AH:115:SER:HB3 | 2.31 | 0.46 |
| 27:D2:31:GLU:CB | 27:D2:53:LEU:HD11 | 2.45 | 0.46 |
| 51:BU:44:ASN:HD22 | 52:BV:75:PHE:HB3 | 1.80 | 0.46 |
| 1:AA:553:A:H2' | 1:AA:554:C:C6 | 2.50 | 0.46 |
| 1:CA:1392:G:H21 | 1:CA:1502:A:H8 | 1.64 | 0.46 |
| 4:CD:162:LEU:HD12 | 4:CD:181:MET:HE2 | 1.98 | 0.46 |
| 35:DA:529:A:H4' | 35:DA:530:G:H5' | 1.96 | 0.46 |
| 8:AH:28:ALA:HB3 | 8:AH:57:PRO:HB2 | 1.97 | 0.46 |
| 39:BE:39:PRO:O | 39:BE:43:GLY:N | 2.49 | 0.46 |
| 35:DA:2819:G:O2' | 35:DA:2820:A:H5' | 2.16 | 0.46 |
| 1:CA:1095:U:H5'' | 1:CA:1109:C:O2 | 2.15 | 0.46 |
| 35:BA:644:A:H4' | 35:BA:645:C:H5 | 1.80 | 0.46 |
| 1:AA:1525:G:H2' | 1:AA:1526:G:C8 | 2.50 | 0.46 |
| 4:AD:108:LEU:CB | 4:AD:110:PHE:HE1 | 2.28 | 0.46 |
| 35:DA:392:C:H5'' | 35:DA:409:C:H5'' | 1.98 | 0.46 |
| 29:D4:45:GLY:O | 29:D4:46:ASN:C | 2.54 | 0.46 |
| 35:DA:638:G:H2' | 35:DA:639:U:H6 | 1.80 | 0.46 |
| 35:DA:1820:U:O2 | 38:DD:201:HIS:HB3 | 2.15 | 0.46 |
| 35:BA:2716:U:O2' | 35:BA:2717:G:H5' | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CH:6:ILE:HD12 | 8:CH:6:ILE:N | 2.30 | 0.46 |
| 37:BC:47:LEU:HD23 | 37:BC:47:LEU:N | 2.30 | 0.46 |
| 35:DA:1860:G:H2' | 35:DA:1861:G:H8 | 1.81 | 0.46 |
| 46:DP:49:ARG:NH2 | 46:DP:50:ARG:HH22 | 2.14 | 0.46 |
| 49:BS:93:LYS:CA | 49:BS:93:LYS:HE3 | 2.45 | 0.46 |
| 35:BA:2029:G:H2' | 35:BA:2031:A:OP1 | 2.15 | 0.46 |
| 55:BY:84:ARG:NH1 | 55:BY:97:ARG:HA | 2.30 | 0.46 |
| 9:CI:15:ALA:HB2 | 9:CI:65:VAL:CB | 2.46 | 0.46 |
| 36:BB:48:A:H2' | 36:BB:49:C:H6 | 1.78 | 0.46 |
| 12:CL:38:THR:HG23 | 12:CL:39:VAL:N | 2.31 | 0.46 |
| 39:DE:114:ALA:HB3 | 39:DE:160:TYR:HB3 | 1.97 | 0.46 |
| 56:BZ:97:GLU:CG | 56:BZ:125:LEU:HD11 | 2.38 | 0.46 |
| 35:DA:2030:A:H4' | 35:DA:2031:A:H8 | 1.80 | 0.46 |
| 44:BN:54:VAL:HB | 44:BN:122:VAL:HG22 | 1.96 | 0.46 |
| 5:AE:11:ILE:HG21 | 5:AE:105:VAL:HA | 1.98 | 0.46 |
| 5:AE:40:ARG:NH1 | 5:AE:40:ARG:CG | 2.77 | 0.46 |
| 13:AM:15:VAL:O | 13:AM:19:LEU:CD2 | 2.64 | 0.46 |
| 10:CJ:63:PHE:C | 14:CN:59:ALA:HB2 | 2.35 | 0.46 |
| 35:DA:2162:G:O2' | 35:DA:2163:C:H5' | 2.16 | 0.46 |
| 35:DA:1162:G:H4' | 52:DV:24:LYS:HB2 | 1.98 | 0.46 |
| 36:DB:55:U:O2' | 36:DB:56:G:H5' | 2.16 | 0.46 |
| 41:DG:14:GLU:H | 41:DG:17:PRO:HD2 | 1.81 | 0.46 |
| 38:DD:267:SER:HA | 38:DD:270:ILE:HG13 | 1.97 | 0.46 |
| 43:DI:68:LEU:O | 43:DI:72:LEU:HB2 | 2.16 | 0.46 |
| 23:AW:4:C:C2 | 23:AW:70:G:C2 | 3.04 | 0.46 |
| 3:AC:16:ARG:CB | 3:AC:16:ARG:HH11 | 2.29 | 0.46 |
| 46:BP:33:ARG:O | 46:BP:35:HIS:N | 2.49 | 0.46 |
| 46:DP:7:ARG:C | 46:DP:7:ARG:HH11 | 2.19 | 0.46 |
| 2:AB:116:GLU:HA | 2:AB:119:GLU:HB2 | 1.98 | 0.46 |
| 35:DA:1140:C:H5'' | 44:DN:66:LYS:HZ3 | 1.81 | 0.46 |
| 35:DA:271(Q):G:O2' | 35:DA:271(R):G:H8 | 1.99 | 0.46 |
| 13:AM:86:CYS:O | 13:AM:89:GLY:N | 2.49 | 0.46 |
| 27:D2:10:LEU:O | 27:D2:14:ARG:HG2 | 2.16 | 0.46 |
| 1:CA:1033:G:C2' | 1:CA:1034:G:H5' | 2.46 | 0.46 |
| 46:DP:46:LYS:HG2 | 46:DP:52:GLU:HG2 | 1.97 | 0.46 |
| 35:BA:151:C:O2' | 35:BA:152:G:H5' | 2.15 | 0.46 |
| 46:DP:148:LEU:O | 46:DP:149:GLU:HB2 | 2.16 | 0.46 |
| 35:DA:581:C:OP1 | 51:DU:33:ARG:HG2 | 2.16 | 0.46 |
| 51:DU:27:LEU:HD22 | 51:DU:31:SER:CB | 2.46 | 0.46 |
| 51:BU:26:GLY:O | 51:BU:30:LYS:HG2 | 2.16 | 0.46 |
| 4:CD:28:SER:C | 4:CD:30:LYS:H | 2.19 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 23:CW:17:C:N4 | 35:DA:2181:G:H5' | 2.31 | 0.46 |
| 35:BA:363(F):A:O2' | 35:BA:364:C:H5 | 1.98 | 0.46 |
| 35:BA:365:C:C6 | 35:BA:365:C:H5' | 2.37 | 0.46 |
| 3:CC:54:ARG:HH12 | 3:CC:56:ASP:CB | 2.28 | 0.46 |
| 34:B9:20:HIS:C | 34:B9:22:ARG:H | 2.19 | 0.46 |
| 42:BH:43:VAL:O | 42:BH:43:VAL:HG23 | 2.15 | 0.46 |
| 35:DA:744:G:H2' | 35:DA:745:G:O4' | 2.16 | 0.46 |
| 31:D6:28:ARG:HA | 31:D6:28:ARG:NE | 2.30 | 0.46 |
| 48:DR:79:LEU:HD23 | 48:DR:83:ILE:HB | 1.97 | 0.46 |
| 1:AA:350:G:O2' | 1:AA:351:G:H5' | 2.16 | 0.46 |
| 50:BT:133:GLU:OE2 | 50:BT:137:LYS:HE2 | 2.16 | 0.46 |
| 8:AH:63:LEU:H | 8:AH:63:LEU:HD22 | 1.81 | 0.46 |
| 1:AA:370:C:H2' | 1:AA:371:G:C8 | 2.49 | 0.46 |
| 1:AA:1043:C:H2' | 1:AA:1044:A:C8 | 2.50 | 0.46 |
| 1:CA:373:A:H2' | 1:CA:374:A:H8 | 1.80 | 0.46 |
| 38:BD:161:THR:O | 38:BD:162:SER:HB3 | 2.16 | 0.46 |
| 35:BA:1566:A:C4 | 38:BD:214:TRP:CE3 | 3.03 | 0.46 |
| 35:DA:1204:A:N1 | 35:DA:1241:A:H2 | 2.14 | 0.46 |
| 54:BX:47:PHE:O | 54:BX:49:VAL:HG13 | 2.16 | 0.46 |
| 54:BX:52:VAL:CG2 | 54:BX:84:ALA:HA | 2.46 | 0.46 |
| 54:BX:23:GLU:O | 54:BX:25:LYS:N | 2.47 | 0.46 |
| 35:DA:2460:U:H4' | 47:DQ:79:LEU:HD11 | 1.98 | 0.46 |
| 35:BA:852:G:C2' | 35:BA:853:G:H5' | 2.46 | 0.46 |
| 46:DP:27:HIS:CD2 | 46:DP:27:HIS:C | 2.88 | 0.46 |
| 1:AA:1228:C:H4' | 13:AM:116:THR:CA | 2.45 | 0.46 |
| 35:DA:96:G:O2' | 35:DA:97:C:H5' | 2.15 | 0.46 |
| 13:CM:116:THR:HG22 | 13:CM:117:VAL:H | 1.80 | 0.46 |
| 1:AA:502:G:OP1 | 12:AL:117:ARG:N | 2.49 | 0.46 |
| 17:AQ:9:VAL:HG21 | 17:AQ:84:LEU:CD1 | 2.45 | 0.46 |
| 7:CG:108:ALA:HA | 7:CG:111:ARG:HD2 | 1.97 | 0.46 |
| 51:BU:44:ASN:HD21 | 52:BV:75:PHE:H | 1.64 | 0.46 |
| 1:AA:660:G:H1 | 1:AA:745:C:H42 | 1.63 | 0.46 |
| 10:CJ:96:ILE:H | 10:CJ:96:ILE:HD13 | 1.80 | 0.46 |
| 13:AM:107:ALA:C | 13:AM:109:THR:H | 2.18 | 0.46 |
| 17:AQ:76:LEU:CG | 17:AQ:77:VAL:N | 2.78 | 0.46 |
| 8:AH:56:LYS:HA | 8:AH:57:PRO:HD2 | 1.74 | 0.46 |
| 8:CH:28:ALA:HB3 | 8:CH:57:PRO:HB2 | 1.97 | 0.46 |
| 22:AY:19:G:N2 | 35:BA:881:G:H21 | 2.12 | 0.46 |
| 15:CO:38:ARG:HG2 | 15:CO:38:ARG:NH1 | 2.31 | 0.46 |
| 1:CA:22:G:H2' | 1:CA:23:C:C6 | 2.51 | 0.46 |
| 1:CA:457:C:H2' | 1:CA:458:C:C6 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 48:DR:80:PHE:O | 48:DR:85:PRO:HD3 | 2.15 | 0.46 |
| 35:DA:972:G:OP2 | 35:DA:974:G:H5' | 2.16 | 0.46 |
| 35:BA:724:U:H2' | 35:BA:725:G:O4' | 2.16 | 0.46 |
| 20:CT:12:ALA:O | 20:CT:15:ARG:HB2 | 2.16 | 0.46 |
| 22:AV:77:PHA:HE2 | 35:BA:2061:G:H21 | 1.80 | 0.46 |
| 10:CJ:42:THR:HG22 | 10:CJ:43:ARG:N | 2.31 | 0.46 |
| 7:CG:131:LYS:O | 7:CG:131:LYS:HG3 | 2.15 | 0.46 |
| 3:AC:94:LEU:HD12 | 3:AC:94:LEU:C | 2.36 | 0.46 |
| 1:CA:407:G:O2' | 4:CD:116:GLN:HG3 | 2.16 | 0.46 |
| 50:DT:109:GLU:HA | 50:DT:112:ARG:HD3 | 1.96 | 0.46 |
| 35:DA:2240:C:O2' | 35:DA:2241:A:H5' | 2.15 | 0.46 |
| 33:D8:15:LYS:HB2 | 46:DP:65:ARG:NH1 | 2.31 | 0.46 |
| 35:DA:2394:C:O2' | 35:DA:2395:C:H5' | 2.16 | 0.46 |
| 35:DA:1886:C:H2' | 35:DA:1887:C:H6 | 1.81 | 0.46 |
| 12:CL:48:PRO:C | 12:CL:49:ASN:HD22 | 2.20 | 0.46 |
| 33:B8:25:MET:SD | 46:BP:64:LYS:HD2 | 2.55 | 0.46 |
| 55:DY:95:LYS:HG2 | 55:DY:100:ALA:CA | 2.43 | 0.46 |
| 55:DY:97:ARG:O | 55:DY:97:ARG:HG3 | 2.16 | 0.46 |
| 38:DD:63:ARG:HG3 | 38:DD:63:ARG:HH11 | 1.80 | 0.46 |
| 3:CC:77:ILE:O | 3:CC:83:ARG:HB3 | 2.16 | 0.46 |
| 44:BN:118:LYS:C | 44:BN:120:LEU:H | 2.19 | 0.46 |
| 13:CM:15:VAL:O | 13:CM:19:LEU:CD2 | 2.63 | 0.46 |
| 40:BF:182:ASN:O | 40:BF:186:ILE:HG12 | 2.15 | 0.46 |
| 4:AD:9:CYS:CB | 4:AD:22:LYS:HD2 | 2.45 | 0.46 |
| 3:AC:119:ARG:NE | 3:AC:140:ARG:NE | 2.63 | 0.46 |
| 52:DV:19:LYS:HZ3 | 52:DV:20:LEU:CB | 2.29 | 0.46 |
| 3:CC:30:ARG:HH11 | 14:CN:38:GLY:H | 1.64 | 0.46 |
| 41:BG:133:LEU:CD1 | 41:BG:157:ILE:CG2 | 2.94 | 0.46 |
| 39:BE:21:VAL:HG23 | 39:BE:23:VAL:CG1 | 2.45 | 0.46 |
| 3:CC:15:THR:HG22 | 3:CC:16:ARG:N | 2.30 | 0.46 |
| 49:BS:29:PHE:O | 49:BS:35:ILE:HA | 2.16 | 0.46 |
| 2:CB:158:LEU:HA | 2:CB:159:PRO:HD3 | 1.81 | 0.46 |
| 1:CA:195:A:OP1 | 20:CT:65:LYS:HE2 | 2.16 | 0.46 |
| 31:D6:9:LEU:CD2 | 31:D6:10:LEU:N | 2.75 | 0.46 |
| 39:BE:51:PHE:HE1 | 39:BE:52:LEU:HD13 | 1.75 | 0.46 |
| 25:D0:42:GLY:HA3 | 35:DA:2331:G:O4' | 2.16 | 0.46 |
| 25:D0:43:THR:N | 35:DA:2331:G:H4' | 2.30 | 0.46 |
| 37:BC:49:ILE:O | 37:BC:51:PRO:N | 2.49 | 0.46 |
| 1:CA:617:G:C2 | 1:CA:618:C:C5 | 3.04 | 0.46 |
| 35:DA:2097:C:H2' | 35:DA:2098:U:O4' | 2.16 | 0.46 |
| 51:DU:31:SER:O | 51:DU:33:ARG:N | 2.48 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:BF:63:LYS:HE3 | 40:BF:67:GLN:HB2 | 1.97 | 0.46 |
| 35:DA:676:A:H8 | 35:DA:2069:G:N2 | 2.08 | 0.46 |
| 19:AS:29:ARG:HB2 | 19:AS:48:THR:H | 1.79 | 0.46 |
| 5:CE:6:PHE:HB2 | 5:CE:34:VAL:HG13 | 1.98 | 0.46 |
| 1:CA:1065:U:H6 | 1:CA:1190:G:H21 | 1.62 | 0.46 |
| 9:AI:37:PHE:HB3 | 9:AI:43:ALA:HB2 | 1.98 | 0.46 |
| 56:BZ:105:VAL:O | 56:BZ:140:ASP:HA | 2.15 | 0.46 |
| 11:CK:29:ILE:HD13 | 11:CK:44:SER:HB3 | 1.97 | 0.46 |
| 39:DE:81:ILE:O | 39:DE:82:ARG:CB | 2.62 | 0.46 |
| 31:B6:28:ARG:HA | 31:B6:28:ARG:NE | 2.30 | 0.46 |
| 35:BA:1490:A:H5' | 35:BA:1491:G:OP1 | 2.16 | 0.46 |
| 37:DC:73:ARG:O | 37:DC:119:VAL:N | 2.48 | 0.46 |
| 47:DQ:103:MET:HE2 | 47:DQ:125:LEU:HD13 | 1.98 | 0.46 |
| 30:B5:16:ARG:NH1 | 30:B5:17:ASP:OD1 | 2.49 | 0.46 |
| 1:CA:723:U:O2 | 1:CA:723:U:C2' | 2.64 | 0.46 |
| 1:AA:1442(B):A:O2' | 1:AA:1443:G:C8 | 2.68 | 0.46 |
| 22:CY:11:C:N4 | 22:CY:24:G:H1 | 2.14 | 0.46 |
| 1:CA:1463:C:H2' | 1:CA:1464:G:C8 | 2.51 | 0.46 |
| 6:AF:19:LEU:HD23 | 6:AF:19:LEU:C | 2.36 | 0.46 |
| 1:AA:1188:A:H2' | 1:AA:1189:C:O4' | 2.15 | 0.46 |
| 15:AO:10:LYS:HZ1 | 15:AO:14:GLU:HG2 | 1.80 | 0.46 |
| 35:DA:1721:G:C2 | 35:DA:1739:U:OP2 | 2.69 | 0.46 |
| 35:DA:780:G:H21 | 35:DA:783:A:H62 | 1.63 | 0.46 |
| 17:AQ:56:VAL:O | 17:AQ:76:LEU:HD12 | 2.16 | 0.46 |
| 35:DA:1766:U:O2' | 35:DA:1767:C:H5' | 2.16 | 0.46 |
| 38:BD:148:GLU:HB3 | 38:BD:151:LYS:HD2 | 1.97 | 0.46 |
| 5:CE:20:GLN:O | 5:CE:21:ALA:C | 2.53 | 0.46 |
| 53:DW:68:ARG:HG3 | 53:DW:68:ARG:HH11 | 1.81 | 0.46 |
| 5:AE:45:PHE:CD2 | 5:AE:47:LYS:HE3 | 2.51 | 0.46 |
| 16:AP:58:TYR:HD1 | 16:AP:59:TRP:N | 2.14 | 0.46 |
| 1:AA:1288:A:N1 | 1:AA:1371:G:H1' | 2.31 | 0.46 |
| 35:DA:2749:A:H1' | 42:DH:63:SER:OG | 2.16 | 0.46 |
| 1:CA:699:C:C2' | 1:CA:700:G:H5' | 2.46 | 0.46 |
| 1:AA:1158:C:C2' | 1:AA:1158:C:O2 | 2.63 | 0.46 |
| 51:DU:104:GLN:HB3 | 52:DV:44:LYS:HZ3 | 1.81 | 0.46 |
| 3:CC:164:ARG:CZ | 3:CC:164:ARG:HB2 | 2.46 | 0.46 |
| 48:DR:18:LEU:HD11 | 48:DR:22:ARG:CZ | 2.46 | 0.46 |
| 1:AA:271:C:O2' | 1:AA:272:C:H5' | 2.15 | 0.46 |
| 54:BX:75:ASP:C | 54:BX:76:ARG:HG3 | 2.36 | 0.46 |
| 23:CW:72:C:H2' | 23:CW:73:A:H8 | 1.80 | 0.46 |
| 35:BA:2850:A:C2 | 35:BA:2851:A:C4 | 3.04 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 48:BR:84:ALA:N | 48:BR:85:PRO:CD | 2.78 | 0.46 |
| 35:DA:1292:U:O2' | 35:DA:1293:C:H5' | 2.16 | 0.46 |
| 7:CG:67:GLU:HA | 7:CG:67:GLU:OE2 | 2.16 | 0.46 |
| 35:DA:2766:G:N3 | 35:DA:2766:G:H2' | 2.30 | 0.46 |
| 49:BS:80:LEU:N | 49:BS:80:LEU:HD12 | 2.31 | 0.46 |
| 35:DA:1851:U:C2' | 35:DA:1852:C:H5' | 2.46 | 0.46 |
| 35:BA:705:A:C2 | 35:BA:727:A:H1' | 2.50 | 0.46 |
| 20:AT:12:ALA:O | 20:AT:15:ARG:HB2 | 2.16 | 0.46 |
| 1:CA:791:G:C6 | 1:CA:792:A:N7 | 2.83 | 0.46 |
| 35:BA:1992:G:O2' | 35:BA:1993:U:OP2 | 2.28 | 0.46 |
| 41:BG:81:LYS:HB3 | 41:BG:82:LEU:H | 1.48 | 0.46 |
| 40:DF:164:ARG:O | 40:DF:166:ALA:N | 2.49 | 0.46 |
| 40:DF:157:VAL:HB | 40:DF:194:MET:HB3 | 1.98 | 0.46 |
| 9:CI:14:VAL:O | 9:CI:65:VAL:HA | 2.16 | 0.46 |
| 9:CI:53:VAL:HG12 | 9:CI:92:TYR:HD2 | 1.80 | 0.46 |
| 2:CB:91:PRO:HG2 | 2:CB:155:LEU:CB | 2.23 | 0.46 |
| 50:DT:28:VAL:HG11 | 50:DT:46:GLU:OE1 | 2.16 | 0.46 |
| 23:AW:76:A:C2 | 35:BA:2421:G:C6 | 3.04 | 0.46 |
| 22:AV:16:U:H4' | 22:AV:17:C:H5 | 1.81 | 0.46 |
| 52:BV:49:THR:CB | 52:BV:50:PRO:CD | 2.94 | 0.46 |
| 56:DZ:150:LEU:HD21 | 56:DZ:172:ALA:CB | 2.45 | 0.46 |
| 39:BE:55:ASN:ND2 | 39:BE:75:VAL:HG22 | 2.27 | 0.46 |
| 3:CC:70:VAL:O | 3:CC:106:VAL:N | 2.49 | 0.46 |
| 3:CC:78:GLY:HA3 | 3:CC:83:ARG:CB | 2.45 | 0.46 |
| 22:AY:52:G:H2' | 22:AY:52:G:N3 | 2.30 | 0.46 |
| 55:DY:37:VAL:O | 55:DY:38:ILE:HG12 | 2.16 | 0.46 |
| 1:AA:939:G:H5'' | 7:AG:102:ARG:CZ | 2.44 | 0.46 |
| 35:BA:2178:C:H2' | 35:BA:2179:C:C6 | 2.51 | 0.46 |
| 37:BC:168:THR:HA | 37:BC:173:ALA:HB1 | 1.95 | 0.46 |
| 3:AC:16:ARG:HH11 | 3:AC:16:ARG:CA | 2.28 | 0.46 |
| 22:CY:41:C:H2' | 22:CY:42:C:O4' | 2.16 | 0.46 |
| 2:CB:115:LEU:O | 2:CB:119:GLU:HB2 | 2.16 | 0.46 |
| 42:DH:158:HIS:O | 42:DH:159:GLU:CB | 2.63 | 0.46 |
| 55:BY:7:VAL:HB | 55:BY:8:LYS:HD2 | 1.98 | 0.46 |
| 35:BA:1141:U:H2' | 44:BN:63:THR:CG2 | 2.45 | 0.46 |
| 35:BA:271(F):C:H2' | 35:BA:271(G):C:H6 | 1.80 | 0.46 |
| 31:B6:10:LEU:HD22 | 31:B6:10:LEU:N | 2.31 | 0.46 |
| 35:BA:2419:U:O2' | 35:BA:2420:C:H5' | 2.14 | 0.46 |
| 27:D2:17:SER:HG | 27:D2:20:GLU:HB2 | 1.78 | 0.46 |
| 55:BY:50:ARG:C | 55:BY:52:SER:N | 2.67 | 0.46 |
| 1:CA:1028:C:H42 | 1:CA:1034:G:N2 | 2.14 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:1169:G:H1 | 35:DA:1180:C:N4 | 2.14 | 0.46 |
| 35:DA:2615:U:H2' | 35:DA:2616:C:H6 | 1.81 | 0.46 |
| 40:BF:7:TYR:HB2 | 40:BF:17:ARG:N | 2.31 | 0.46 |
| 1:AA:1033:G:H2' | 1:AA:1034:G:O4' | 2.15 | 0.46 |
| 20:AT:43:LEU:HB3 | 20:AT:48:LYS:HG3 | 1.98 | 0.46 |
| 35:DA:1486:A:H61 | 35:DA:1504:C:H42 | 1.63 | 0.46 |
| 3:AC:55:VAL:HG12 | 3:AC:55:VAL:O | 2.15 | 0.46 |
| 54:BX:53:LYS:HB3 | 54:BX:82:GLN:HB3 | 1.98 | 0.46 |
| 17:CQ:59:ILE:HG21 | 17:CQ:71:PHE:HB3 | 1.97 | 0.46 |
| 47:DQ:62:GLY:O | 56:DZ:178:GLU:OE1 | 2.34 | 0.46 |
| 35:BA:548:A:O2' | 35:BA:549:G:OP2 | 2.26 | 0.46 |
| 30:D5:43:HIS:HA | 35:DA:2884:U:C5 | 2.50 | 0.46 |
| 35:BA:2392:A:H2 | 35:BA:2424:C:N4 | 2.07 | 0.46 |
| 35:DA:952:G:OP1 | 47:DQ:16:ARG:NH2 | 2.46 | 0.46 |
| 1:AA:1065:U:O2' | 1:AA:1066:C:OP2 | 2.31 | 0.46 |
| 48:DR:28:LEU:C | 48:DR:28:LEU:HD13 | 2.36 | 0.46 |
| 52:BV:1:MET:HA | 52:BV:1:MET:CE | 2.44 | 0.46 |
| 11:AK:30:VAL:O | 11:AK:30:VAL:HG23 | 2.15 | 0.46 |
| 2:CB:144:ARG:HA | 2:CB:147:LYS:HB3 | 1.97 | 0.46 |
| 35:DA:1109:C:H5 | 35:DA:1110:G:C5 | 2.33 | 0.46 |
| 8:AH:40:ALA:C | 8:AH:42:GLU:N | 2.69 | 0.46 |
| 38:DD:9:TYR:C | 38:DD:10:THR:HG22 | 2.35 | 0.46 |
| 1:CA:838:G:C2 | 1:CA:840:C:H5' | 2.51 | 0.46 |
| 5:CE:71:LEU:HD22 | 5:CE:114:GLY:O | 2.15 | 0.46 |
| 10:AJ:58:ASP:O | 10:AJ:59:SER:C | 2.54 | 0.46 |
| 2:AB:59:GLU:O | 2:AB:63:MET:HG2 | 2.15 | 0.46 |
| 38:BD:209:ALA:C | 38:BD:210:GLY:O | 2.53 | 0.46 |
| 38:BD:134:ARG:HG3 | 38:BD:135:PHE:CD2 | 2.51 | 0.46 |
| 1:CA:1518:A:H2' | 1:CA:1519:A:C8 | 2.51 | 0.46 |
| 35:BA:1952:A:C5 | 45:BO:22:ILE:CD1 | 2.99 | 0.46 |
| 54:DX:52:VAL:CG2 | 54:DX:84:ALA:HA | 2.46 | 0.46 |
| 35:BA:2636:U:H4' | 39:BE:80:GLU:OE1 | 2.16 | 0.46 |
| 38:DD:253:GLN:HB2 | 38:DD:257:LEU:HD12 | 1.98 | 0.46 |
| 34:B9:7:VAL:HG13 | 34:B9:34:GLN:HB2 | 1.96 | 0.46 |
| 6:AF:91:VAL:HG12 | 6:AF:92:LYS:N | 2.31 | 0.46 |
| 5:CE:136:MET:C | 5:CE:138:ALA:N | 2.69 | 0.46 |
| 54:BX:62:LYS:O | 54:BX:73:ARG:HG3 | 2.16 | 0.46 |
| 7:AG:155:ARG:O | 7:AG:156:TRP:O | 2.34 | 0.46 |
| 12:CL:10:LEU:O | 12:CL:14:GLY:HA2 | 2.15 | 0.46 |
| 2:AB:233:SER:OG | 2:AB:234:PRO:HD2 | 2.16 | 0.46 |
| 36:BB:44:G:H1' | 36:BB:47:C:H42 | 1.81 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BA:493:G:H2' | 35:BA:494:G:O4' | 2.16 | 0.46 |
| 4:AD:145:GLU:HG2 | 4:AD:184:LYS:NZ | 2.30 | 0.46 |
| 17:AQ:92:ARG:HA | 17:AQ:95:TYR:CE2 | 2.50 | 0.46 |
| 35:DA:2553:G:H2' | 35:DA:2554:U:C4' | 2.46 | 0.46 |
| 1:AA:44:G:H1' | 1:AA:399:G:H22 | 1.80 | 0.46 |
| 1:AA:1470:G:O2' | 1:AA:1471:G:H5' | 2.16 | 0.46 |
| 35:DA:609:A:H2' | 35:DA:610:G:O4' | 2.16 | 0.46 |
| 35:DA:1525:G:H2' | 35:DA:1526:G:C8 | 2.51 | 0.46 |
| 10:CJ:44:VAL:CG1 | 10:CJ:46:ARG:HG3 | 2.46 | 0.46 |
| 35:BA:1676:A:H2' | 35:BA:1677:A:O4' | 2.16 | 0.46 |
| 35:DA:2859:G:C6 | 35:DA:2860:A:N6 | 2.84 | 0.46 |
| 44:BN:87:LEU:HD23 | 44:BN:87:LEU:O | 2.16 | 0.46 |
| 48:BR:4:LEU:O | 48:BR:4:LEU:HD13 | 2.16 | 0.46 |
| 35:DA:116:C:O2' | 35:DA:117:G:H5' | 2.16 | 0.46 |
| 1:CA:1134:G:N2 | 1:CA:1141:C:C2 | 2.84 | 0.46 |
| 17:CQ:95:TYR:O | 17:CQ:96:GLU:C | 2.54 | 0.46 |
| 1:AA:955:U:H2' | 1:AA:956:U:H6 | 1.81 | 0.46 |
| 50:BT:19:LEU:HD22 | 50:BT:85:LYS:HZ2 | 1.81 | 0.46 |
| 35:BA:2759:G:C8 | 35:BA:2759:G:H5' | 2.51 | 0.46 |
| 38:BD:35:LYS:CA | 38:BD:63:ARG:HA | 2.44 | 0.46 |
| 51:BU:57:PHE:O | 51:BU:58:ARG:C | 2.54 | 0.46 |
| 52:BV:39:LEU:CB | 52:BV:40:LEU:HD23 | 2.46 | 0.46 |
| 35:BA:2635:C:H5'' | 39:BE:78:LEU:O | 2.15 | 0.46 |
| 48:BR:10:LEU:HD13 | 48:BR:17:ARG:NH1 | 2.31 | 0.46 |
| 38:DD:35:LYS:HZ1 | 38:DD:61:LEU:HG | 1.81 | 0.46 |
| 5:AE:35:GLY:HA3 | 5:AE:41:VAL:HG12 | 1.97 | 0.46 |
| 51:DU:85:LYS:C | 51:DU:87:GLY:N | 2.70 | 0.46 |
| 52:BV:20:LEU:N | 52:BV:20:LEU:CD1 | 2.78 | 0.46 |
| 13:CM:7:VAL:CG2 | 41:DG:115:ARG:HA | 2.44 | 0.46 |
| 41:DG:8:LYS:O | 41:DG:12:TYR:HD1 | 1.99 | 0.46 |
| 55:DY:28:LYS:CB | 55:DY:37:VAL:HB | 2.45 | 0.46 |
| 41:BG:106:LEU:HD12 | 41:BG:110:ALA:HB3 | 1.97 | 0.46 |
| 46:BP:101:VAL:HG12 | 46:BP:106:LEU:HB3 | 1.97 | 0.46 |
| 2:CB:114:ARG:HH12 | 2:CB:118:LEU:HD11 | 1.78 | 0.46 |
| 49:BS:99:LYS:C | 49:BS:101:LEU:H | 2.18 | 0.46 |
| 35:DA:587:C:C4 | 46:DP:33:ARG:HG2 | 2.51 | 0.46 |
| 17:AQ:43:LEU:HD12 | 17:AQ:68:ARG:HG3 | 1.98 | 0.46 |
| 35:DA:2262:U:H2' | 35:DA:2263:C:H5' | 1.98 | 0.46 |
| 35:DA:142:A:H8 | 35:DA:1408:C:H1' | 1.80 | 0.46 |
| 4:AD:138:TYR:CD2 | 4:AD:139:ARG:N | 2.79 | 0.46 |
| 43:DI:61:ARG:O | 43:DI:133:HIS:HE1 | 1.99 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:1786:A:H2 | 35:DA:2606:C:H1' | 1.81 | 0.46 |
| 55:DY:48:ALA:HB3 | 55:DY:59:GLY:O | 2.16 | 0.46 |
| 35:BA:27:G:O2' | 35:BA:28:A:P | 2.73 | 0.46 |
| 1:AA:1030(D):A:C2' | 1:AA:1031:G:H5' | 2.46 | 0.46 |
| 1:CA:1057:G:H5'' | 3:CC:154:SER:OG | 2.14 | 0.46 |
| 43:BI:113:ARG:HA | 43:BI:131:LYS:HG3 | 1.98 | 0.46 |
| 43:BI:73:GLU:HB2 | 43:BI:136:VAL:HG21 | 1.96 | 0.46 |
| 47:DQ:43:THR:HA | 47:DQ:94:VAL:HG12 | 1.98 | 0.46 |
| 43:DI:81:VAL:HG21 | 43:DI:142:VAL:HB | 1.98 | 0.46 |
| 56:DZ:93:ASP:HA | 56:DZ:130:PRO:CD | 2.46 | 0.46 |
| 30:D5:3:LYS:HE3 | 35:DA:2611:U:O2 | 2.16 | 0.46 |
| 13:AM:45:VAL:O | 13:AM:47:ASP:N | 2.49 | 0.46 |
| 1:CA:389:A:C2' | 1:CA:390:C:H5' | 2.37 | 0.46 |
| 1:CA:99:U:H2' | 1:CA:100:C:C5 | 2.50 | 0.46 |
| 19:AS:31:ILE:HG23 | 19:AS:49:ILE:HA | 1.98 | 0.46 |
| 49:DS:85:VAL:HG22 | 49:DS:106:ARG:CB | 2.45 | 0.46 |
| 1:CA:1328:C:H2' | 1:CA:1329:A:H8 | 1.81 | 0.46 |
| 2:CB:71:VAL:O | 2:CB:165:VAL:HG22 | 2.16 | 0.46 |
| 1:CA:342:C:H2' | 1:CA:343:U:O4' | 2.17 | 0.46 |
| 56:BZ:136:PHE:O | 56:BZ:137:ILE:HD13 | 2.16 | 0.46 |
| 35:BA:34:C:H42 | 35:BA:455:C:H5' | 1.80 | 0.46 |
| 2:AB:178:ARG:CG | 2:AB:178:ARG:HH11 | 2.28 | 0.46 |
| 4:CD:40:PRO:O | 4:CD:41:GLY:O | 2.34 | 0.46 |
| 38:BD:134:ARG:HG3 | 38:BD:135:PHE:CE2 | 2.51 | 0.46 |
| 42:DH:124:GLU:O | 42:DH:131:VAL:HG13 | 2.16 | 0.46 |
| 16:CP:50:LYS:NZ | 16:CP:52:ASP:HA | 2.30 | 0.46 |
| 3:CC:87:LEU:C | 3:CC:89:GLU:N | 2.68 | 0.46 |
| 26:D1:26:ARG:NH1 | 26:D1:26:ARG:HG3 | 2.27 | 0.46 |
| 11:CK:53:SER:C | 11:CK:55:LYS:H | 2.19 | 0.46 |
| 29:D4:57:ILE:HG22 | 29:D4:57:ILE:O | 2.15 | 0.46 |
| 27:B2:55:ARG:HH11 | 35:BA:75:G:H4' | 1.79 | 0.46 |
| 35:BA:1722:A:C6 | 35:BA:1741:A:N1 | 2.83 | 0.46 |
| 42:BH:87:LEU:N | 42:BH:131:VAL:O | 2.44 | 0.46 |
| 35:BA:1791:A:N6 | 35:BA:1828:G:O2' | 2.40 | 0.46 |
| 34:B9:10:ILE:O | 34:B9:11:CYS:HB2 | 2.16 | 0.46 |
| 44:BN:94:HIS:N | 44:BN:95:PRO:CD | 2.78 | 0.46 |
| 35:DA:2377:A:H4' | 49:DS:107:GLU:O | 2.16 | 0.46 |
| 35:BA:692:C:H2' | 35:BA:693:C:H6 | 1.81 | 0.46 |
| 35:DA:732:C:O2' | 35:DA:733:G:H5' | 2.16 | 0.46 |
| 35:BA:1336:A:H2' | 35:BA:1337:G:H8 | 1.80 | 0.46 |
| 1:CA:423:G:C2' | 1:CA:424:G:H5' | 2.46 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1090:U:H2' | 1:AA:1091:U:H6 | 1.80 | 0.46 |
| 35:DA:947:G:N2 | 35:DA:971:C:C2 | 2.84 | 0.46 |
| 40:BF:46:ARG:NH1 | 40:BF:46:ARG:HG3 | 2.31 | 0.46 |
| 17:CQ:26:GLN:O | 17:CQ:27:PHE:HB3 | 2.16 | 0.46 |
| 35:DA:237:C:O2' | 35:DA:238:C:H5' | 2.16 | 0.46 |
| 35:DA:144:C:H2' | 35:DA:145:G:C8 | 2.51 | 0.46 |
| 44:DN:97:ARG:HA | 44:DN:100:GLU:HB2 | 1.98 | 0.46 |
| 1:AA:418:C:H2' | 1:AA:419:C:H6 | 1.81 | 0.46 |
| 16:CP:26:ARG:HH11 | 16:CP:26:ARG:HG2 | 1.81 | 0.46 |
| 35:BA:2897:U:O2 | 35:BA:2897:U:H2' | 2.16 | 0.46 |
| 35:DA:297:C:H2' | 35:DA:298:G:O4' | 2.16 | 0.46 |
| 35:DA:1028:A:H2' | 35:DA:1029:A:C8 | 2.51 | 0.46 |
| 9:AI:21:PRO:HA | 9:AI:59:PHE:HA | 1.98 | 0.45 |
| 31:D6:17:LYS:CB | 31:D6:18:ARG:NH1 | 2.78 | 0.45 |
| 9:AI:69:GLY:O | 9:AI:72:GLY:N | 2.49 | 0.45 |
| 38:BD:35:LYS:HD3 | 38:BD:36:PRO:CD | 2.46 | 0.45 |
| 51:BU:92:ARG:CZ | 52:BV:11:GLN:CB | 2.76 | 0.45 |
| 56:BZ:94:GLU:OE1 | 56:BZ:95:PRO:HD2 | 2.17 | 0.45 |
| 1:CA:1259:C:N4 | 1:CA:1276:G:H1 | 2.15 | 0.45 |
| 1:AA:176:C:H2' | 1:AA:177:C:H6 | 1.81 | 0.45 |
| 42:DH:47:GLU:C | 42:DH:49:VAL:H | 2.18 | 0.45 |
| 10:CJ:47:PHE:O | 10:CJ:47:PHE:CD1 | 2.69 | 0.45 |
| 10:AJ:47:PHE:CD1 | 10:AJ:47:PHE:O | 2.68 | 0.45 |
| 40:BF:180:GLY:O | 40:BF:181:LEU:C | 2.54 | 0.45 |
| 12:AL:89:ARG:HH21 | 12:AL:91:LYS:NZ | 2.14 | 0.45 |
| 35:BA:1686:C:H2' | 35:BA:1687:G:C5' | 2.46 | 0.45 |
| 35:BA:1686:C:C2' | 35:BA:1687:G:H5' | 2.46 | 0.45 |
| 37:DC:46:LYS:NZ | 37:DC:171:ILE:O | 2.44 | 0.45 |
| 41:BG:109:VAL:C | 41:BG:112:PRO:HD2 | 2.36 | 0.45 |
| 19:AS:6:LYS:CD | 19:AS:6:LYS:N | 2.75 | 0.45 |
| 42:BH:70:THR:C | 42:BH:72:ILE:N | 2.69 | 0.45 |
| 35:BA:1665:A:C2' | 35:BA:1666:G:H5' | 2.46 | 0.45 |
| 35:DA:1902:C:H2' | 35:DA:1903:G:O5' | 2.16 | 0.45 |
| 35:BA:2533:A:H3' | 35:BA:2534:A:H5'' | 1.98 | 0.45 |
| 37:DC:83:ILE:HD12 | 37:DC:94:VAL:HB | 1.98 | 0.45 |
| 35:DA:1140:C:P | 44:DN:66:LYS:HZ3 | 2.39 | 0.45 |
| 35:DA:1141:U:H2' | 44:DN:63:THR:CG2 | 2.46 | 0.45 |
| 35:DA:664:C:H4' | 35:DA:941:A:OP1 | 2.17 | 0.45 |
| 35:BA:686:G:N2 | 35:BA:788:A:H61 | 2.13 | 0.45 |
| 13:CM:56:LEU:O | 13:CM:60:VAL:HG23 | 2.16 | 0.45 |
| 35:DA:2263:C:C5' | 35:DA:2263:C:H6 | 2.19 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 55:BY:60:PHE:O | 55:BY:61:ILE:C | 2.53 | 0.45 |
| 35:DA:1785:A:O2' | 35:DA:1786:A:H2' | 2.15 | 0.45 |
| 18:CR:45:SER:H | 18:CR:51:LEU:CG | 2.28 | 0.45 |
| 1:CA:1030(D):A:C2' | 1:CA:1031:G:H5' | 2.46 | 0.45 |
| 36:DB:15:A:H3' | 36:DB:16:G:C5' | 2.46 | 0.45 |
| 35:BA:286:C:H2' | 35:BA:287:C:H5' | 1.95 | 0.45 |
| 41:BG:14:GLU:HG2 | 41:BG:15:VAL:N | 2.31 | 0.45 |
| 38:DD:22:SER:HA | 38:DD:25:THR:OG1 | 2.16 | 0.45 |
| 29:D4:51:TYR:CD2 | 41:DG:2:PRO:HD2 | 2.51 | 0.45 |
| 35:BA:2870:C:H2' | 35:BA:2871:C:C5' | 2.46 | 0.45 |
| 35:DA:2809:A:C2 | 35:DA:2892:A:N3 | 2.84 | 0.45 |
| 20:AT:13:LEU:C | 20:AT:13:LEU:CD1 | 2.83 | 0.45 |
| 19:CS:44:MET:HA | 19:CS:44:MET:HE3 | 1.98 | 0.45 |
| 35:BA:2100:G:H2' | 35:BA:2101:G:C8 | 2.50 | 0.45 |
| 35:BA:675:A:N3 | 35:BA:2443:C:O2' | 2.45 | 0.45 |
| 45:DO:93:PRO:HB3 | 45:DO:114:ILE:HD11 | 1.97 | 0.45 |
| 7:CG:15:ASP:OD2 | 7:CG:16:LEU:N | 2.46 | 0.45 |
| 43:BI:90:GLY:N | 43:BI:121:LYS:HZ1 | 2.14 | 0.45 |
| 42:BH:89:ILE:CD1 | 42:BH:90:LYS:N | 2.74 | 0.45 |
| 30:B5:43:HIS:HA | 35:BA:2884:U:C5 | 2.49 | 0.45 |
| 1:AA:880:C:OP2 | 12:AL:9:GLN:HG3 | 2.16 | 0.45 |
| 8:AH:48:TYR:CD1 | 8:AH:49:GLU:N | 2.84 | 0.45 |
| 22:CV:43:C:H2' | 22:CV:44:G:C8 | 2.51 | 0.45 |
| 1:AA:328:C:O2' | 1:AA:329:A:OP2 | 2.32 | 0.45 |
| 1:AA:308:C:H2' | 1:AA:309:G:H8 | 1.81 | 0.45 |
| 35:BA:2171:A:O2' | 35:BA:2172:U:C6 | 2.65 | 0.45 |
| 1:AA:1503:A:C2 | 1:AA:1507:A:OP2 | 2.69 | 0.45 |
| 47:DQ:2:LEU:O | 47:DQ:3:MET:HB3 | 2.15 | 0.45 |
| 9:CI:20:ARG:O | 9:CI:60:ASP:N | 2.47 | 0.45 |
| 13:AM:54:VAL:HG12 | 13:AM:58:GLU:HG2 | 1.97 | 0.45 |
| 35:DA:2735:G:C2' | 35:DA:2736:G:C5' | 2.90 | 0.45 |
| 35:BA:952:G:OP1 | 47:BQ:16:ARG:NH2 | 2.44 | 0.45 |
| 35:BA:1865:G:H5' | 35:BA:1866:C:P | 2.56 | 0.45 |
| 35:DA:572:A:H2' | 35:DA:573:G:O4' | 2.16 | 0.45 |
| 30:B5:16:ARG:HG2 | 30:B5:16:ARG:NH1 | 2.31 | 0.45 |
| 1:AA:1342:C:H2' | 1:AA:1343:G:C8 | 2.51 | 0.45 |
| 1:AA:1342:C:H2' | 1:AA:1343:G:H8 | 1.81 | 0.45 |
| 49:DS:32:LEU:O | 49:DS:62:LYS:HE2 | 2.17 | 0.45 |
| 42:DH:149:ARG:HA | 42:DH:162:ILE:HG21 | 1.98 | 0.45 |
| 3:CC:184:TYR:HA | 3:CC:200:ALA:O | 2.16 | 0.45 |
| 6:CF:33:TYR:CE2 | 6:CF:74:ASP:HB3 | 2.48 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DA:1718:G:H2' | 35:DA:1719:G:C8 | 2.50 | 0.45 |
| 30:B5:44:THR:HG21 | 48:BR:101:ALA:CA | 2.46 | 0.45 |
| 45:DO:26:LYS:O | 45:DO:27:GLY:O | 2.35 | 0.45 |
| 15:AO:12:ILE:C | 15:AO:14:GLU:H | 2.19 | 0.45 |
| 35:DA:1800:C:P | 38:DD:264:LYS:HZ3 | 2.38 | 0.45 |
| 42:BH:149:ARG:HD3 | 42:BH:164:TYR:CE1 | 2.50 | 0.45 |
| 44:DN:90:MET:O | 44:DN:93:THR:O | 2.35 | 0.45 |
| 34:D9:7:VAL:HG13 | 34:D9:34:GLN:CB | 2.46 | 0.45 |
| 1:AA:544:G:OP1 | 4:AD:62:GLN:HG3 | 2.16 | 0.45 |
| 35:BA:449:A:H2' | 35:BA:450:G:H5' | 1.97 | 0.45 |
| 27:D2:27:GLU:O | 27:D2:30:ARG:HB3 | 2.15 | 0.45 |
| 35:DA:606:U:H4' | 35:DA:658:C:H4' | 1.98 | 0.45 |
| 48:BR:18:LEU:HD11 | 48:BR:22:ARG:CZ | 2.46 | 0.45 |
| 35:BA:1137:G:H2' | 35:BA:1138:G:H8 | 1.80 | 0.45 |
| 50:DT:60:THR:HG22 | 50:DT:77:PRO:HA | 1.97 | 0.45 |
| 35:DA:324:A:H2' | 35:DA:325:G:O4' | 2.16 | 0.45 |
| 56:BZ:19:ARG:NH1 | 56:BZ:84:GLU:O | 2.49 | 0.45 |
| 47:BQ:135:ASP:O | 47:BQ:138:ASP:OD2 | 2.34 | 0.45 |
| 35:BA:302:C:H2' | 35:BA:303:U:C6 | 2.51 | 0.45 |
| 35:DA:921:G:H4' | 35:DA:2269:A:C6 | 2.51 | 0.45 |
| 48:BR:99:LYS:HA | 48:BR:112:ALA:HA | 1.97 | 0.45 |
| 39:BE:40:GLU:N | 39:BE:40:GLU:OE1 | 2.48 | 0.45 |
| 21:CU:25:LYS:NZ | 21:CU:25:LYS:HB2 | 2.31 | 0.45 |
| 22:CV:3:C:H2' | 22:CV:4:C:C6 | 2.51 | 0.45 |
| 56:DZ:100:VAL:C | 56:DZ:123:ASP:HB2 | 2.35 | 0.45 |
| 40:DF:1:MET:O | 40:DF:3:GLU:HG2 | 2.15 | 0.45 |
| 41:BG:47:LYS:HE3 | 41:BG:81:LYS:HB3 | 1.98 | 0.45 |
| 40:DF:123:LEU:CD1 | 40:DF:124:LEU:H | 2.17 | 0.45 |
| 40:DF:8:GLN:O | 40:DF:9:ILE:C | 2.53 | 0.45 |
| 9:CI:65:VAL:HG21 | 9:CI:73:GLN:CB | 2.46 | 0.45 |
| 1:AA:1259:C:N4 | 1:AA:1276:G:H1 | 2.14 | 0.45 |
| 35:BA:2572:A:P | 39:BE:144:ARG:HB2 | 2.56 | 0.45 |
| 38:BD:30:GLU:CB | 38:BD:35:LYS:HD2 | 2.27 | 0.45 |
| 38:BD:35:LYS:HZ1 | 38:BD:61:LEU:HG | 1.79 | 0.45 |
| 38:BD:77:ALA:HB1 | 38:BD:96:HIS:O | 2.16 | 0.45 |
| 38:BD:44:ASN:HB3 | 38:BD:49:ILE:CA | 2.25 | 0.45 |
| 35:BA:1171:G:H5'' | 35:BA:1173:G:H4' | 1.98 | 0.45 |
| 1:CA:1274:G:H2' | 1:CA:1275:A:C8 | 2.51 | 0.45 |
| 3:CC:77:ILE:C | 3:CC:83:ARG:HB3 | 2.36 | 0.45 |
| 35:DA:2491:U:C2' | 35:DA:2492:U:H5' | 2.46 | 0.45 |
| 51:DU:81:HIS:CE1 | 51:DU:85:LYS:HD3 | 2.51 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 51:DU:91:ASP:OD2 | 51:DU:96:ALA:CB | 2.55 | 0.45 |
| 52:DV:52:VAL:HG13 | 52:DV:55:ALA:HB3 | 1.98 | 0.45 |
| 40:BF:164:ARG:CG | 40:BF:175:THR:OG1 | 2.60 | 0.45 |
| 46:DP:30:THR:CG2 | 46:DP:31:ALA:N | 2.70 | 0.45 |
| 29:B4:37:PRO:HA | 29:B4:51:TYR:CD2 | 2.51 | 0.45 |
| 41:DG:28:VAL:HG12 | 41:DG:28:VAL:O | 2.16 | 0.45 |
| 5:AE:13:ILE:HA | 5:AE:29:GLY:O | 2.17 | 0.45 |
| 41:BG:103:LEU:O | 41:BG:106:LEU:HB3 | 2.15 | 0.45 |
| 55:BY:67:LEU:HD11 | 55:BY:71:LYS:CB | 2.47 | 0.45 |
| 42:BH:65:HIS:HE1 | 42:BH:69:ARG:CD | 2.28 | 0.45 |
| 42:BH:70:THR:HA | 42:BH:73:ALA:CB | 2.47 | 0.45 |
| 46:BP:99:LEU:C | 46:BP:99:LEU:HD23 | 2.36 | 0.45 |
| 39:BE:14:ILE:HG12 | 39:BE:21:VAL:HG22 | 1.98 | 0.45 |
| 36:BB:52:A:N7 | 49:BS:33:LYS:NZ | 2.64 | 0.45 |
| 33:B8:61:LEU:HD12 | 33:B8:62:LEU:N | 2.31 | 0.45 |
| 47:BQ:43:THR:HA | 47:BQ:94:VAL:HG12 | 1.97 | 0.45 |
| 35:DA:806:C:OP2 | 46:DP:39:LYS:HB3 | 2.16 | 0.45 |
| 45:BO:60:ALA:HA | 45:BO:87:ILE:HG12 | 1.98 | 0.45 |
| 35:BA:513:A:C2 | 35:BA:514:A:C4 | 3.04 | 0.45 |
| 15:AO:79:ARG:O | 15:AO:82:ILE:HG22 | 2.16 | 0.45 |
| 38:DD:26:LYS:CD | 38:DD:82:ILE:H | 2.29 | 0.45 |
| 41:DG:105:LYS:HD3 | 41:DG:142:PRO:HG2 | 1.98 | 0.45 |
| 46:DP:126:VAL:HG12 | 46:DP:127:ALA:N | 2.31 | 0.45 |
| 35:BA:1484:G:C3' | 35:BA:1485:G:C5' | 2.89 | 0.45 |
| 19:CS:66:MET:H | 19:CS:66:MET:HG2 | 1.47 | 0.45 |
| 8:AH:20:TYR:HA | 8:AH:65:TYR:CE2 | 2.51 | 0.45 |
| 35:BA:2683:C:OP1 | 50:BT:53:ARG:NH2 | 2.34 | 0.45 |
| 1:AA:1402:C:O2 | 1:AA:1500:A:N1 | 2.49 | 0.45 |
| 1:CA:355:C:H5' | 1:CA:389:A:OP2 | 2.17 | 0.45 |
| 39:DE:16:ARG:C | 39:DE:18:ASP:N | 2.66 | 0.45 |
| 7:AG:15:ASP:HB3 | 7:AG:19:GLY:CA | 2.45 | 0.45 |
| 56:BZ:154:ASP:N | 56:BZ:155:LEU:HD12 | 2.30 | 0.45 |
| 20:CT:14:LYS:HA | 20:CT:17:ARG:HH21 | 1.81 | 0.45 |
| 4:CD:43:HIS:CE1 | 4:CD:46:LYS:HZ1 | 2.32 | 0.45 |
| 1:CA:310:G:OP1 | 16:CP:27:LYS:HD3 | 2.16 | 0.45 |
| 35:BA:2773:C:O2' | 35:BA:2774:C:H5' | 2.16 | 0.45 |
| 1:AA:881:G:H2' | 1:AA:882:C:O4' | 2.16 | 0.45 |
| 8:CH:60:ARG:HG3 | 8:CH:60:ARG:NH1 | 2.31 | 0.45 |
| 22:CY:56:C:O2' | 22:CY:57:G:O4' | 2.34 | 0.45 |
| 55:DY:2:ARG:HD3 | 55:DY:2:ARG:C | 2.36 | 0.45 |
| 43:DI:60:GLU:OE1 | 43:DI:64:GLU:HG3 | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:818:G:C3' | 1:AA:819:A:C5' | 2.94 | 0.45 |
| 47:BQ:1:MET:HE2 | 47:BQ:2:LEU:HB3 | 1.97 | 0.45 |
| 1:AA:1301:U:H3' | 1:AA:1302:U:H5'' | 1.98 | 0.45 |
| 25:B0:49:LYS:HB2 | 25:B0:80:HIS:HB3 | 1.97 | 0.45 |
| 52:BV:21:ARG:N | 52:BV:21:ARG:CD | 2.79 | 0.45 |
| 8:CH:109:ILE:HG12 | 8:CH:110:ALA:N | 2.31 | 0.45 |
| 8:AH:45:ILE:C | 8:AH:47:GLY:N | 2.69 | 0.45 |
| 2:AB:197:VAL:CG1 | 2:AB:200:ILE:HG12 | 2.45 | 0.45 |
| 53:BW:12:ILE:HD13 | 53:BW:17:VAL:HG12 | 1.98 | 0.45 |
| 53:DW:86:LEU:HD12 | 53:DW:87:PRO:CD | 2.46 | 0.45 |
| 56:DZ:61:LEU:N | 56:DZ:61:LEU:HD22 | 2.31 | 0.45 |
| 35:DA:608:A:OP1 | 40:DF:100:THR:CG2 | 2.64 | 0.45 |
| 17:CQ:9:VAL:HG21 | 17:CQ:84:LEU:CD1 | 2.45 | 0.45 |
| 35:DA:2329:G:H2' | 35:DA:2330:G:C8 | 2.51 | 0.45 |
| 46:DP:17:LYS:C | 46:DP:19:VAL:N | 2.68 | 0.45 |
| 1:AA:905:U:H2' | 1:AA:906:G:H5' | 1.97 | 0.45 |
| 1:AA:600:C:O2' | 1:AA:601:C:H5' | 2.17 | 0.45 |
| 1:AA:1478:C:H2' | 1:AA:1479:C:H6 | 1.78 | 0.45 |
| 7:AG:57:GLU:HG2 | 7:AG:57:GLU:O | 2.15 | 0.45 |
| 34:B9:7:VAL:HG13 | 34:B9:34:GLN:CB | 2.45 | 0.45 |
| 42:BH:155:SER:OG | 42:BH:156:ALA:N | 2.48 | 0.45 |
| 35:BA:435:C:C2' | 35:BA:436:C:H5' | 2.46 | 0.45 |
| 5:CE:47:LYS:HD2 | 5:CE:47:LYS:N | 2.31 | 0.45 |
| 1:AA:779:C:C2' | 1:AA:780:A:H5' | 2.47 | 0.45 |
| 35:BA:1922:G:H2' | 35:BA:1923:U:O4' | 2.16 | 0.45 |
| 1:CA:444:C:H2' | 1:CA:445:G:C8 | 2.51 | 0.45 |
| 1:AA:693:G:O2' | 1:AA:694:A:H5' | 2.16 | 0.45 |
| 50:DT:65:LYS:HG3 | 50:DT:66:VAL:N | 2.31 | 0.45 |
| 35:BA:1820:U:O2 | 38:BD:201:HIS:HB3 | 2.17 | 0.45 |
| 3:CC:42:LEU:O | 3:CC:45:LYS:HB2 | 2.16 | 0.45 |
| 40:BF:51:THR:HG23 | 40:BF:92:PRO:HG2 | 1.98 | 0.45 |
| 51:BU:21:ALA:HA | 51:BU:24:TYR:CE1 | 2.50 | 0.45 |
| 29:D4:46:ASN:HD22 | 29:D4:46:ASN:C | 2.18 | 0.45 |
| 35:DA:1234:U:C2' | 35:DA:1235:G:H5' | 2.47 | 0.45 |
| 10:AJ:44:VAL:CG1 | 10:AJ:46:ARG:HG3 | 2.46 | 0.45 |
| 48:BR:99:LYS:H | 48:BR:99:LYS:CD | 2.29 | 0.45 |
| 17:AQ:27:PHE:C | 17:AQ:27:PHE:CD1 | 2.89 | 0.45 |
| 35:BA:1268:A:H2' | 35:BA:1269:A:O4' | 2.16 | 0.45 |
| 45:DO:53:LYS:N | 45:DO:53:LYS:HD2 | 2.31 | 0.45 |
| 46:BP:123:LEU:O | 46:BP:123:LEU:HD12 | 2.17 | 0.45 |
| 1:CA:141:A:H1' | 1:CA:182:U:C2 | 2.51 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:AE:31:LEU:HD11 | 5:AE:43:LEU:HD11 | 1.99 | 0.45 |
| 35:BA:2422:A:H4' | 35:BA:2423:U:OP1 | 2.15 | 0.45 |
| 49:DS:46:VAL:HG12 | 49:DS:47:THR:N | 2.32 | 0.45 |
| 35:BA:1401:G:H2' | 35:BA:1402:C:C6 | 2.51 | 0.45 |
| 35:DA:2400:G:N3 | 35:DA:2400:G:H2' | 2.30 | 0.45 |
| 20:CT:89:ARG:HH21 | 20:CT:89:ARG:HG3 | 1.80 | 0.45 |
| 1:CA:961:U:O2' | 1:CA:962:C:H5' | 2.17 | 0.45 |
| 1:AA:1441:G:H1' | 1:AA:1461:G:N2 | 2.31 | 0.45 |
| 38:DD:45:ASN:HB2 | 38:DD:46:GLN:OE1 | 2.15 | 0.45 |
| 1:CA:418:C:H2' | 1:CA:419:C:H6 | 1.81 | 0.45 |
| 56:DZ:136:PHE:HD1 | 56:DZ:137:ILE:N | 2.14 | 0.45 |
| 12:AL:38:THR:HG23 | 12:AL:39:VAL:N | 2.31 | 0.45 |
| 55:BY:81:LYS:NZ | 55:BY:97:ARG:O | 2.39 | 0.45 |
| 9:CI:9:ARG:HA | 9:CI:13:ALA:O | 2.15 | 0.45 |
| 49:DS:19:LYS:C | 49:DS:20:ARG:NH1 | 2.69 | 0.45 |
| 33:B8:7:HIS:CD2 | 46:BP:50:ARG:HD3 | 2.51 | 0.45 |
| 12:CL:41:ARG:HH12 | 12:CL:57:LYS:HZ3 | 1.64 | 0.45 |
| 51:BU:61:TRP:O | 51:BU:62:ILE:C | 2.54 | 0.45 |
| 51:BU:92:ARG:NH2 | 51:BU:95:LEU:HG | 2.26 | 0.45 |
| 38:DD:35:LYS:HD3 | 38:DD:36:PRO:CD | 2.45 | 0.45 |
| 38:DD:86:PRO:HG2 | 38:DD:87:ASN:OD1 | 2.16 | 0.45 |
| 44:BN:133:GLN:CG | 44:BN:134:ARG:H | 2.18 | 0.45 |
| 39:DE:24:THR:HG22 | 39:DE:186:GLY:N | 2.28 | 0.45 |
| 13:CM:76:ALA:CA | 13:CM:79:LYS:NZ | 2.79 | 0.45 |
| 35:BA:615:G:O2' | 40:BF:205:ARG:NH2 | 2.49 | 0.45 |
| 41:DG:111:LEU:HA | 41:DG:114:ILE:CD1 | 2.46 | 0.45 |
| 41:DG:116:ASP:O | 41:DG:117:PHE:HB3 | 2.16 | 0.45 |
| 41:DG:32:PRO:HB2 | 41:DG:172:LEU:CD1 | 2.46 | 0.45 |
| 38:BD:176:ARG:CG | 38:BD:176:ARG:HH11 | 2.24 | 0.45 |
| 48:DR:44:LEU:HD12 | 48:DR:114:VAL:HG11 | 1.97 | 0.45 |
| 39:BE:188:VAL:O | 39:BE:188:VAL:HG13 | 2.16 | 0.45 |
| 42:DH:158:HIS:NE2 | 42:DH:169:VAL:O | 2.50 | 0.45 |
| 33:B8:6:THR:HG21 | 33:B8:63:PRO:HD3 | 1.92 | 0.45 |
| 33:B8:6:THR:CG2 | 35:BA:243:U:OP1 | 2.65 | 0.45 |
| 37:BC:83:ILE:O | 37:BC:83:ILE:HG22 | 2.17 | 0.45 |
| 27:D2:22:GLU:HG2 | 27:D2:64:LEU:HD11 | 1.98 | 0.45 |
| 27:D2:65:ASN:C | 27:D2:67:LYS:H | 2.19 | 0.45 |
| 35:DA:796:C:H2' | 35:DA:797:C:H6 | 1.75 | 0.45 |
| 35:BA:2892:A:H3' | 35:BA:2893:G:H4' | 1.97 | 0.45 |
| 39:BE:61:ARG:CB | 39:BE:62:PRO:CD | 2.94 | 0.45 |
| 39:BE:168:MET:O | 39:BE:169:ASN:C | 2.55 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:AD:28:SER:C | 4:AD:30:LYS:H | 2.19 | 0.45 |
| 30:B5:56:LYS:HG2 | 30:B5:57:VAL:N | 2.31 | 0.45 |
| 1:CA:1151:A:HO2' | 1:CA:1152:A:H8 | 1.64 | 0.45 |
| 46:BP:95:VAL:HG23 | 46:BP:125:VAL:HG23 | 1.97 | 0.45 |
| 19:CS:29:ARG:HB2 | 19:CS:48:THR:H | 1.81 | 0.45 |
| 4:AD:43:HIS:CE1 | 4:AD:46:LYS:HZ1 | 2.31 | 0.45 |
| 16:AP:21:VAL:HG13 | 16:AP:21:VAL:O | 2.17 | 0.45 |
| 16:AP:66:PRO:HG2 | 16:AP:71:ARG:NH1 | 2.31 | 0.45 |
| 54:BX:12:VAL:CG2 | 54:BX:27:THR:HG23 | 2.44 | 0.45 |
| 3:CC:20:SER:O | 14:CN:54:PRO:HG3 | 2.17 | 0.45 |
| 1:AA:883:C:N3 | 1:AA:884:U:H5 | 2.14 | 0.45 |
| 1:CA:1106:G:H2' | 1:CA:1107:C:C6 | 2.51 | 0.45 |
| 1:AA:310:G:OP1 | 16:AP:27:LYS:HD3 | 2.16 | 0.45 |
| 4:AD:152:SER:HA | 4:AD:155:LEU:HG | 1.99 | 0.45 |
| 1:CA:1190:G:H3' | 3:CC:3:ASN:HD22 | 1.75 | 0.45 |
| 20:AT:75:ASN:O | 20:AT:78:ALA:N | 2.45 | 0.45 |
| 52:DV:21:ARG:HG2 | 52:DV:91:TYR:CE2 | 2.51 | 0.45 |
| 1:CA:383:A:H2' | 1:CA:384:G:H5' | 1.98 | 0.45 |
| 15:AO:39:LEU:HD22 | 15:AO:43:LEU:HG | 1.97 | 0.45 |
| 45:BO:24:VAL:CG2 | 45:BO:33:ALA:HB2 | 2.46 | 0.45 |
| 3:CC:188:LEU:O | 3:CC:189:ALA:HB2 | 2.16 | 0.45 |
| 1:CA:1342:C:H2' | 1:CA:1343:G:H8 | 1.82 | 0.45 |
| 18:CR:85:LEU:HG | 18:CR:86:VAL:H | 1.80 | 0.45 |
| 50:DT:133:GLU:HG3 | 50:DT:137:LYS:HG3 | 1.98 | 0.45 |
| 38:BD:211:ARG:HA | 38:BD:214:TRP:CD2 | 2.51 | 0.45 |
| 37:DC:18:LYS:HD3 | 37:DC:19:VAL:HG23 | 1.98 | 0.45 |
| 1:CA:597:G:C2' | 1:CA:598:U:H5' | 2.45 | 0.45 |
| 54:BX:50:LYS:H | 54:BX:87:GLN:HE22 | 1.63 | 0.45 |
| 35:DA:1615:C:C5 | 35:DA:1617:C:C4 | 3.04 | 0.45 |
| 54:DX:8:ILE:HD11 | 54:DX:42:ALA:CB | 2.46 | 0.45 |
| 44:BN:91:LEU:C | 44:BN:93:THR:H | 2.19 | 0.45 |
| 1:CA:665:A:N3 | 1:CA:732:C:H2' | 2.32 | 0.45 |
| 35:DA:832:G:H21 | 46:DP:53:GLY:CA | 2.30 | 0.45 |
| 35:BA:1670:C:C4 | 35:BA:1671:U:N3 | 2.85 | 0.45 |
| 35:BA:2839:G:H2' | 35:BA:2840:C:C6 | 2.51 | 0.45 |
| 16:AP:6:LEU:HD12 | 16:AP:6:LEU:N | 2.31 | 0.45 |
| 1:AA:690:G:H2' | 1:AA:691:G:O4' | 2.16 | 0.45 |
| 1:AA:1170:A:H2' | 1:AA:1171:G:O4' | 2.16 | 0.45 |
| 50:DT:124:ASP:C | 50:DT:126:ALA:N | 2.70 | 0.45 |
| 29:B4:46:ASN:ND2 | 29:B4:46:ASN:C | 2.69 | 0.45 |
| 35:BA:1133:U:O2 | 35:BA:1137:G:H5" | 2.17 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:767:A:H2' | 1:AA:768:A:O4' | 2.16 | 0.45 |
| 1:CA:44:G:H1' | 1:CA:399:G:H22 | 1.81 | 0.45 |
| 10:CJ:46:ARG:HD3 | 14:CN:61:TRP:CZ3 | 2.51 | 0.45 |
| 6:CF:49:ALA:HB1 | 18:CR:80:PRO:HG3 | 1.98 | 0.45 |
| 43:DI:15:VAL:CG2 | 43:DI:16:GLY:N | 2.79 | 0.45 |
| 35:BA:2301:C:H2' | 35:BA:2302:G:O4' | 2.16 | 0.45 |
| 35:BA:1473:G:O2' | 35:BA:1474:C:H5' | 2.16 | 0.45 |
| 35:DA:2841:C:H2' | 35:DA:2842:G:H8 | 1.82 | 0.45 |
| 1:CA:294:U:H2' | 1:CA:295:C:C6 | 2.50 | 0.45 |
| 35:DA:2855:C:H2' | 35:DA:2856:C:C6 | 2.52 | 0.45 |
| 35:DA:2855:C:H2' | 35:DA:2856:C:H6 | 1.82 | 0.45 |
| 35:BA:210:C:H2' | 35:BA:211:A:C8 | 2.51 | 0.45 |
| 35:DA:2301:C:H2' | 35:DA:2302:G:O4' | 2.17 | 0.45 |
| 2:CB:191:ASP:OD2 | 2:CB:191:ASP:C | 2.53 | 0.45 |
| 35:DA:2881:C:H2' | 35:DA:2882:A:H8 | 1.81 | 0.45 |
| 35:BA:609:A:H2' | 35:BA:610:G:O4' | 2.16 | 0.45 |
| 49:DS:14:VAL:CG1 | 49:DS:15:ARG:H | 2.25 | 0.45 |
| 49:DS:15:ARG:HA | 49:DS:15:ARG:HD3 | 1.76 | 0.45 |
| 50:BT:88:ILE:HG22 | 50:BT:89:VAL:H | 1.75 | 0.45 |
| 33:B8:13:ARG:NH2 | 35:BA:250:G:OP2 | 2.50 | 0.45 |
| 55:DY:95:LYS:HE2 | 55:DY:100:ALA:HB1 | 1.98 | 0.45 |
| 51:BU:81:HIS:CE1 | 51:BU:85:LYS:HD3 | 2.51 | 0.45 |
| 36:BB:73:A:H2' | 36:BB:74:U:H5' | 1.98 | 0.45 |
| 48:BR:2:ARG:HH11 | 48:BR:5:LYS:NZ | 2.14 | 0.45 |
| 35:DA:1171:G:H5'' | 35:DA:1173:G:H4' | 1.97 | 0.45 |
| 35:DA:660:G:C6 | 35:DA:661:C:C4 | 3.05 | 0.45 |
| 35:BA:2468:G:O2' | 35:BA:2469:A:H8 | 1.85 | 0.45 |
| 41:DG:122:PRO:HG2 | 41:DG:123:ASN:OD1 | 2.17 | 0.45 |
| 55:BY:28:LYS:HG2 | 55:BY:28:LYS:H | 1.41 | 0.45 |
| 22:AY:27:G:N2 | 22:AY:43:C:H5 | 2.10 | 0.45 |
| 6:AF:39:LYS:O | 6:AF:40:VAL:HB | 2.17 | 0.45 |
| 35:BA:2864:G:H2' | 35:BA:2865:U:O4' | 2.17 | 0.45 |
| 46:BP:21:ARG:HD3 | 46:BP:29:LYS:HE3 | 1.99 | 0.45 |
| 49:BS:57:LYS:HG2 | 49:BS:58:LEU:N | 2.32 | 0.45 |
| 35:DA:2073:C:H4' | 38:DD:228:PRO:HB2 | 1.98 | 0.45 |
| 32:B7:46:VAL:CG1 | 32:B7:47:ARG:N | 2.79 | 0.45 |
| 35:DA:1300:U:C6 | 35:DA:1626:G:C6 | 3.04 | 0.45 |
| 47:DQ:42:ILE:HA | 47:DQ:46:GLN:OE1 | 2.16 | 0.45 |
| 35:DA:2808:U:H2' | 35:DA:2809:A:H5' | 1.98 | 0.45 |
| 13:CM:84:ILE:HG21 | 19:CS:60:VAL:HG23 | 1.97 | 0.45 |
| 26:D1:44:PRO:O | 26:D1:46:LEU:N | 2.45 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BG:147:ASP:OD1 | 41:BG:148:MET:N | 2.50 | 0.45 |
| 54:BX:53:LYS:HG2 | 54:BX:54:VAL:N | 2.32 | 0.45 |
| 23:CW:57:G:N2 | 23:CW:58:A:O4' | 2.50 | 0.45 |
| 19:AS:22:LEU:O | 19:AS:26:GLY:HA2 | 2.17 | 0.45 |
| 23:CW:52:G:H2' | 23:CW:53:G:C8 | 2.52 | 0.45 |
| 13:AM:84:ILE:HG21 | 19:AS:60:VAL:HG23 | 1.97 | 0.45 |
| 43:BI:48:GLU:C | 43:BI:50:ARG:N | 2.70 | 0.45 |
| 35:BA:2123:G:H2' | 35:BA:2124:G:H8 | 1.82 | 0.45 |
| 35:DA:549:G:H2' | 35:DA:551:G:C5' | 2.42 | 0.45 |
| 47:DQ:1:MET:HE2 | 47:DQ:2:LEU:HB3 | 1.98 | 0.45 |
| 42:DH:86:GLU:HB3 | 42:DH:132:ARG:CB | 2.44 | 0.45 |
| 1:CA:646:U:H2' | 1:CA:647:C:C6 | 2.52 | 0.45 |
| 4:CD:96:LEU:N | 4:CD:96:LEU:CD1 | 2.79 | 0.45 |
| 48:DR:67:LEU:CD1 | 48:DR:76:VAL:HG21 | 2.45 | 0.45 |
| 1:AA:15:G:H2' | 1:AA:16:A:C8 | 2.51 | 0.45 |
| 48:BR:11:ASN:O | 48:BR:12:ARG:CB | 2.64 | 0.45 |
| 1:AA:342:C:H2' | 1:AA:343:U:O4' | 2.16 | 0.45 |
| 47:BQ:65:PHE:HB2 | 47:BQ:105:GLU:HG2 | 1.99 | 0.45 |
| 1:CA:1301:U:H3' | 1:CA:1302:U:H5'' | 1.97 | 0.45 |
| 35:DA:2712:U:OP1 | 35:DA:2714:G:H4' | 2.17 | 0.45 |
| 38:BD:11:PRO:C | 38:BD:13:ARG:N | 2.69 | 0.45 |
| 22:AY:56:C:H5'' | 35:BA:897:C:O5' | 2.17 | 0.45 |
| 1:CA:640:A:N3 | 8:CH:115:SER:HB3 | 2.31 | 0.45 |
| 19:CS:51:VAL:HG12 | 19:CS:52:TYR:O | 2.16 | 0.45 |
| 44:DN:91:LEU:C | 44:DN:93:THR:H | 2.19 | 0.45 |
| 1:CA:1401:G:O5' | 1:CA:1401:G:H8 | 1.99 | 0.45 |
| 35:BA:2516:G:C6 | 35:BA:2517:C:N4 | 2.83 | 0.45 |
| 7:AG:60:LYS:HZ3 | 7:AG:64:GLN:HB2 | 1.80 | 0.45 |
| 35:BA:78:A:O2' | 35:BA:79:G:H5' | 2.17 | 0.45 |
| 1:AA:724:G:O2' | 1:AA:725:G:H5' | 2.16 | 0.45 |
| 35:BA:947:G:N2 | 35:BA:971:C:C2 | 2.84 | 0.45 |
| 1:CA:1158:C:O2 | 1:CA:1158:C:C2' | 2.64 | 0.45 |
| 56:BZ:24:LEU:CD2 | 56:BZ:86:VAL:HG12 | 2.46 | 0.45 |
| 1:AA:759:A:H61 | 17:AQ:94:ASN:HD22 | 1.63 | 0.45 |
| 1:AA:1143:G:H2' | 1:AA:1144:G:H8 | 1.81 | 0.45 |
| 39:DE:134:ILE:C | 39:DE:134:ILE:HD13 | 2.37 | 0.45 |
| 35:DA:2716:U:O2' | 35:DA:2717:G:H5' | 2.16 | 0.45 |
| 44:DN:11:PRO:HB2 | 44:DN:51:PHE:CE1 | 2.52 | 0.45 |
| 35:DA:1573:G:H2' | 35:DA:1574:C:H5' | 1.99 | 0.45 |
| 1:AA:1118:C:O2' | 1:AA:1119:C:H5' | 2.16 | 0.45 |
| 53:BW:18:ARG:HG2 | 53:BW:76:VAL:CG1 | 2.46 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BA:2063:C:C5 | 35:BA:2064:C:C5 | 3.04 | 0.45 |
| 28:B3:4:LEU:O | 28:B3:36:VAL:HA | 2.16 | 0.45 |
| 35:BA:957:A:N6 | 35:BA:2459:A:C8 | 2.84 | 0.45 |
| 49:BS:14:VAL:CG1 | 49:BS:15:ARG:N | 2.76 | 0.45 |
| 9:AI:28:VAL:HG22 | 9:AI:63:ILE:HB | 1.99 | 0.45 |
| 1:AA:1054:C:O2 | 1:AA:1054:C:C2' | 2.65 | 0.45 |
| 1:AA:954:G:H2' | 1:AA:955:U:C6 | 2.52 | 0.45 |
| 9:CI:50:LEU:HB3 | 9:CI:55:ALA:O | 2.17 | 0.45 |
| 50:DT:89:VAL:CG1 | 50:DT:91:ARG:NE | 2.80 | 0.45 |
| 46:BP:47:ASP:CB | 46:BP:48:PRO:CA | 2.87 | 0.45 |
| 33:B8:25:MET:HG3 | 46:BP:64:LYS:CB | 2.18 | 0.45 |
| 1:CA:1053:G:N7 | 1:CA:1200:C:H5'' | 2.30 | 0.45 |
| 35:DA:1859:A:N6 | 35:DA:1883:G:O2' | 2.50 | 0.45 |
| 46:BP:18:ARG:O | 46:BP:18:ARG:NH1 | 2.49 | 0.45 |
| 47:BQ:140:ALA:HB1 | 56:BZ:99:TYR:CB | 2.46 | 0.45 |
| 1:AA:1060:C:H2' | 1:AA:1061:G:C8 | 2.50 | 0.45 |
| 35:DA:2178:C:H2' | 35:DA:2179:C:C6 | 2.51 | 0.45 |
| 37:DC:56:GLN:HE22 | 37:DC:168:THR:N | 2.14 | 0.45 |
| 3:AC:134:ILE:CG2 | 3:AC:168:ALA:HB3 | 2.46 | 0.45 |
| 1:CA:1124:G:H5' | 10:CJ:35:SER:HB2 | 1.97 | 0.45 |
| 4:CD:9:CYS:HB2 | 4:CD:22:LYS:HD2 | 1.97 | 0.45 |
| 30:B5:48:GLU:HB2 | 30:B5:49:CYS:H | 1.37 | 0.45 |
| 35:BA:1902:C:H2' | 35:BA:1903:G:O5' | 2.16 | 0.45 |
| 42:DH:13:LYS:HB3 | 42:DH:14:GLY:H | 1.63 | 0.45 |
| 46:DP:7:ARG:CB | 46:DP:7:ARG:NH1 | 2.79 | 0.45 |
| 50:BT:35:LYS:NZ | 50:BT:41:ARG:HE | 2.14 | 0.45 |
| 50:BT:38:ASN:ND2 | 50:BT:40:THR:H | 2.14 | 0.45 |
| 55:DY:50:ARG:C | 55:DY:52:SER:N | 2.67 | 0.45 |
| 25:D0:41:ARG:CD | 25:D0:41:ARG:N | 2.66 | 0.45 |
| 1:AA:1031:G:H2' | 1:AA:1032:G:C8 | 2.52 | 0.45 |
| 46:BP:148:LEU:O | 46:BP:149:GLU:HB2 | 2.15 | 0.45 |
| 19:CS:62:ILE:HD12 | 19:CS:66:MET:SD | 2.57 | 0.45 |
| 35:BA:803:U:C2' | 35:BA:804:A:H5' | 2.47 | 0.45 |
| 35:DA:803:U:C2' | 35:DA:804:A:H5' | 2.45 | 0.45 |
| 38:DD:177:LEU:O | 38:DD:180:GLY:N | 2.45 | 0.45 |
| 26:B1:3:LYS:CG | 26:B1:4:VAL:N | 2.79 | 0.45 |
| 30:B5:3:LYS:HE3 | 35:BA:2611:U:O2 | 2.16 | 0.45 |
| 1:CA:186:C:H1' | 20:CT:85:MET:HE3 | 1.99 | 0.45 |
| 38:DD:133:LEU:HD13 | 38:DD:165:ILE:CD1 | 2.47 | 0.45 |
| 35:DA:365:C:C5' | 35:DA:365:C:H6 | 2.27 | 0.45 |
| 1:CA:1413:A:C2 | 1:CA:1488:G:C2 | 3.05 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:CV:27:G:O2' | 22:CV:28:G:H5' | 2.16 | 0.45 |
| 1:AA:1203:C:O2' | 1:AA:1204:A:H5' | 2.17 | 0.45 |
| 35:BA:1865:G:H5' | 35:BA:1866:C:OP2 | 2.17 | 0.45 |
| 2:CB:95:GLN:NE2 | 2:CB:147:LYS:CE | 2.78 | 0.45 |
| 1:AA:838:G:C2 | 1:AA:840:C:H5' | 2.52 | 0.45 |
| 1:CA:1317:C:OP1 | 14:CN:17:LYS:HE2 | 2.16 | 0.45 |
| 35:BA:2460:U:H4' | 47:BQ:79:LEU:HD11 | 1.98 | 0.45 |
| 37:DC:19:VAL:O | 37:DC:20:TYR:HB3 | 2.16 | 0.45 |
| 1:AA:1452:C:O4' | 1:AA:1456:G:C2 | 2.69 | 0.45 |
| 1:AA:90:U:C3' | 1:AA:91:C:H5' | 2.47 | 0.45 |
| 12:CL:117:ARG:O | 12:CL:118:SER:C | 2.55 | 0.45 |
| 1:CA:858:G:O6 | 1:CA:869:G:H3' | 2.16 | 0.45 |
| 4:CD:147:ALA:HB2 | 4:CD:182:LYS:CB | 2.47 | 0.45 |
| 35:DA:2672:G:H3' | 35:DA:2673:G:H5'' | 1.98 | 0.45 |
| 18:CR:72:ARG:O | 18:CR:76:LEU:HD23 | 2.16 | 0.45 |
| 35:BA:2377:A:H4' | 49:BS:107:GLU:O | 2.17 | 0.45 |
| 8:CH:77:GLU:HG2 | 8:CH:78:GLN:N | 2.32 | 0.45 |
| 6:CF:97:PHE:CD2 | 18:CR:31:LEU:HD21 | 2.52 | 0.45 |
| 1:AA:1099:G:H5' | 1:AA:1100:C:OP2 | 2.17 | 0.45 |
| 1:CA:401:C:H2' | 1:CA:402:G:C8 | 2.51 | 0.45 |
| 35:BA:2464:C:H42 | 35:BA:2486:G:H1 | 1.65 | 0.45 |
| 35:BA:280:C:H42 | 35:BA:360:G:H1 | 1.64 | 0.45 |
| 1:AA:687:A:N3 | 1:AA:688:G:H1' | 2.32 | 0.45 |
| 1:CA:1072:G:H2' | 1:CA:1073:U:H6 | 1.81 | 0.45 |
| 39:BE:174:ASP:HB3 | 39:BE:183:LEU:HD22 | 1.99 | 0.45 |
| 3:AC:164:ARG:HB2 | 3:AC:164:ARG:CZ | 2.46 | 0.45 |
| 17:AQ:95:TYR:O | 17:AQ:96:GLU:C | 2.54 | 0.45 |
| 1:AA:1132:C:O2' | 1:AA:1133:G:H5' | 2.16 | 0.45 |
| 10:CJ:44:VAL:HG12 | 10:CJ:46:ARG:HG3 | 1.97 | 0.45 |
| 9:CI:84:ALA:O | 9:CI:87:GLN:HB3 | 2.16 | 0.45 |
| 35:DA:2624:G:O2' | 35:DA:2625:G:H5' | 2.17 | 0.45 |
| 1:AA:1286:A:H2 | 21:AU:22:ARG:NH2 | 2.15 | 0.45 |
| 1:AA:897:C:O2' | 1:AA:898:G:H5' | 2.17 | 0.45 |
| 37:DC:43:VAL:O | 37:DC:43:VAL:HG12 | 2.16 | 0.45 |
| 40:DF:179:GLU:CD | 40:DF:179:GLU:H | 2.19 | 0.45 |
| 7:AG:67:GLU:HA | 7:AG:67:GLU:OE2 | 2.17 | 0.45 |
| 15:AO:17:ARG:HH11 | 15:AO:17:ARG:HG3 | 1.81 | 0.45 |
| 35:DA:833:U:O2 | 46:DP:55:ARG:NH1 | 2.50 | 0.45 |
| 40:DF:25:PRO:HB3 | 40:DF:119:ARG:HD3 | 1.98 | 0.45 |
| 35:DA:2572:A:OP1 | 39:DE:144:ARG:HB2 | 2.17 | 0.45 |
| 51:BU:110:VAL:HG12 | 51:BU:114:LYS:HE3 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 52:BV:39:LEU:HD12 | 52:BV:50:PRO:O | 2.16 | 0.45 |
| 35:DA:1999:C:H4' | 35:DA:2723:C:O2 | 2.16 | 0.45 |
| 56:DZ:121:HIS:CE1 | 56:DZ:169:GLU:HG3 | 2.52 | 0.45 |
| 56:BZ:129:SER:OG | 56:BZ:131:ARG:HG2 | 2.17 | 0.45 |
| 3:AC:70:VAL:O | 3:AC:105:GLU:HA | 2.17 | 0.45 |
| 3:CC:119:ARG:NE | 3:CC:140:ARG:NE | 2.64 | 0.45 |
| 42:DH:116:GLU:HG2 | 42:DH:117:PRO:HD2 | 1.99 | 0.45 |
| 51:DU:79:PHE:HE2 | 51:DU:83:LEU:HD11 | 1.82 | 0.45 |
| 52:DV:35:LEU:O | 52:DV:36:PRO:C | 2.55 | 0.45 |
| 35:DA:1496:A:C8 | 35:DA:1498:C:N3 | 2.84 | 0.45 |
| 4:AD:19:LEU:HD13 | 4:AD:21:LEU:CG | 2.47 | 0.45 |
| 10:CJ:32:ALA:HB2 | 10:CJ:76:ASN:HB3 | 1.98 | 0.45 |
| 36:DB:21:G:O2' | 36:DB:22:U:O4' | 2.34 | 0.45 |
| 4:CD:9:CYS:HA | 4:CD:12:CYS:HB2 | 1.98 | 0.45 |
| 30:B5:36:CYS:SG | 30:B5:49:CYS:HB3 | 2.57 | 0.45 |
| 10:AJ:4:ILE:HA | 10:AJ:100:THR:CG2 | 2.32 | 0.45 |
| 43:DI:107:VAL:O | 43:DI:109:ILE:HD12 | 2.17 | 0.45 |
| 53:BW:92:ARG:HG2 | 53:BW:92:ARG:NH1 | 2.31 | 0.45 |
| 35:BA:142:A:H8 | 35:BA:1408:C:H1' | 1.80 | 0.45 |
| 35:BA:2606:C:C2' | 35:BA:2607:G:H5' | 2.47 | 0.45 |
| 35:DA:1141:U:C5 | 44:DN:64:GLY:HA3 | 2.52 | 0.45 |
| 41:DG:56:ALA:HB2 | 41:DG:153:ARG:NE | 2.32 | 0.45 |
| 41:DG:69:ALA:O | 41:DG:90:LEU:HG | 2.16 | 0.45 |
| 50:DT:50:ILE:HA | 50:DT:99:LEU:CD1 | 2.47 | 0.45 |
| 38:BD:25:THR:O | 38:BD:26:LYS:CB | 2.65 | 0.45 |
| 35:BA:143:G:H1' | 54:BX:37:THR:CG2 | 2.37 | 0.45 |
| 25:D0:43:THR:HG22 | 35:DA:2331:G:O3' | 2.17 | 0.45 |
| 1:CA:1033:G:H2' | 1:CA:1034:G:O4' | 2.16 | 0.45 |
| 15:AO:74:ASP:O | 15:AO:76:GLU:N | 2.49 | 0.45 |
| 1:AA:735:C:O2' | 1:AA:736:C:H5' | 2.17 | 0.45 |
| 43:DI:83:ALA:CB | 43:DI:88:ILE:HA | 2.46 | 0.45 |
| 17:AQ:59:ILE:HG21 | 17:AQ:71:PHE:HB3 | 1.99 | 0.45 |
| 38:DD:132:PRO:HG3 | 38:DD:190:TYR:CZ | 2.51 | 0.45 |
| 12:CL:27:LEU:O | 12:CL:29:GLY:N | 2.49 | 0.45 |
| 35:DA:2180:U:H2' | 35:DA:2181:G:C8 | 2.52 | 0.45 |
| 50:BT:125:ARG:HH11 | 50:BT:125:ARG:HA | 1.80 | 0.45 |
| 43:DI:33:ARG:HG2 | 43:DI:33:ARG:HH11 | 1.82 | 0.45 |
| 42:BH:88:LEU:HB3 | 42:BH:89:ILE:H | 1.60 | 0.45 |
| 47:DQ:50:ALA:CB | 47:DQ:104:PHE:HE1 | 2.29 | 0.45 |
| 5:CE:110:LEU:CD1 | 5:CE:118:ILE:HG21 | 2.47 | 0.45 |
| 56:DZ:19:ARG:NH1 | 56:DZ:25:PRO:CD | 2.78 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 46:BP:85:LEU:CD2 | 46:BP:85:LEU:H | 2.19 | 0.45 |
| 35:BA:528:A:N1 | 35:BA:2042:A:H2' | 2.31 | 0.45 |
| 45:BO:49:ARG:NH1 | 45:BO:49:ARG:CG | 2.78 | 0.45 |
| 50:DT:3:ARG:O | 50:DT:4:GLY:C | 2.55 | 0.45 |
| 45:DO:104:ARG:NH1 | 45:DO:104:ARG:HB2 | 2.30 | 0.45 |
| 56:BZ:17:ALA:HA | 56:BZ:20:ARG:CG | 2.46 | 0.45 |
| 35:BA:2087:G:O2' | 35:BA:2088:G:H5' | 2.17 | 0.45 |
| 52:BV:91:TYR:C | 52:BV:91:TYR:CD1 | 2.90 | 0.45 |
| 8:AH:109:ILE:HG12 | 8:AH:110:ALA:N | 2.32 | 0.45 |
| 4:CD:2:GLY:O | 4:CD:3:ARG:C | 2.55 | 0.45 |
| 56:BZ:175:VAL:CG1 | 56:BZ:176:PRO:HD2 | 2.44 | 0.45 |
| 10:AJ:85:LEU:O | 10:AJ:86:MET:C | 2.54 | 0.45 |
| 35:BA:1109:C:H5 | 35:BA:1110:G:C5 | 2.34 | 0.45 |
| 35:BA:1047:G:C8 | 35:BA:1110:G:C6 | 3.05 | 0.45 |
| 35:BA:2180:U:H2' | 35:BA:2181:G:C8 | 2.52 | 0.45 |
| 35:DA:315:G:H2' | 35:DA:316:C:H6 | 1.80 | 0.45 |
| 2:CB:126:GLU:O | 2:CB:130:ARG:HG3 | 2.17 | 0.45 |
| 6:AF:44:GLY:HA2 | 6:AF:59:TYR:CE1 | 2.52 | 0.45 |
| 35:BA:1436:G:C3' | 35:BA:1437:C:H5'' | 2.45 | 0.45 |
| 42:DH:115:VAL:HG11 | 42:DH:148:ILE:HD11 | 1.99 | 0.45 |
| 1:AA:199:G:H2' | 1:AA:200:G:C8 | 2.49 | 0.45 |
| 1:CA:1188:A:O2' | 1:CA:1189:C:H5' | 2.16 | 0.45 |
| 38:DD:257:LEU:HD23 | 38:DD:257:LEU:C | 2.36 | 0.45 |
| 6:AF:1:MET:CE | 6:AF:68:PRO:HB3 | 2.46 | 0.45 |
| 1:CA:544:G:OP1 | 4:CD:62:GLN:HG3 | 2.16 | 0.45 |
| 35:DA:263:C:O2' | 35:DA:264:C:H5' | 2.17 | 0.45 |
| 36:DB:44:G:H1' | 36:DB:47:C:H42 | 1.81 | 0.45 |
| 1:AA:991:U:O2 | 1:AA:991:U:H2' | 2.16 | 0.45 |
| 1:CA:1220:G:O2' | 1:CA:1221:G:H5' | 2.16 | 0.45 |
| 1:AA:782:A:C2' | 1:AA:783:C:H5' | 2.47 | 0.45 |
| 13:CM:35:GLU:HG3 | 13:CM:36:LYS:N | 2.32 | 0.45 |
| 5:CE:122:GLU:OE1 | 5:CE:131:ILE:HG13 | 2.17 | 0.45 |
| 38:DD:72:LYS:HE3 | 38:DD:101:GLU:HB3 | 1.98 | 0.45 |
| 35:BA:42:G:H2' | 35:BA:43:A:O4' | 2.17 | 0.45 |
| 35:BA:297:C:H2' | 35:BA:298:G:O4' | 2.16 | 0.45 |
| 35:DA:575:A:O2' | 35:DA:576:U:H5' | 2.15 | 0.45 |
| 1:CA:1001(A):G:H2' | 1:CA:1002:G:O4' | 2.16 | 0.45 |
| 32:D7:37:LYS:HG2 | 35:DA:458:G:C8 | 2.52 | 0.45 |
| 4:CD:199:ASN:OD1 | 4:CD:201:GLN:HB2 | 2.17 | 0.45 |
| 35:BA:2240:C:O2' | 35:BA:2241:A:H5' | 2.16 | 0.45 |
| 35:DA:2422:A:H4' | 35:DA:2423:U:OP1 | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:DA:305:U:H2' | 35:DA:306:U:C6 | 2.52 | 0.45 |
| 35:BA:1788:C:OP1 | 38:BD:222:ARG:NH2 | 2.42 | 0.45 |
| 2:AB:236:TYR:HA | 2:AB:239:VAL:CG2 | 2.47 | 0.45 |
| 50:BT:85:LYS:NZ | 50:BT:85:LYS:HB3 | 2.31 | 0.45 |
| 1:CA:955:U:O2' | 1:CA:956:U:H5' | 2.17 | 0.45 |
| 52:DV:62:LEU:N | 52:DV:62:LEU:HD22 | 2.31 | 0.45 |
| 1:CA:177:C:O2' | 1:CA:178:C:H5' | 2.16 | 0.45 |
| 1:CA:981:U:H5' | 14:CN:21:TYR:CE1 | 2.52 | 0.45 |
| 48:DR:2:ARG:HD2 | 48:DR:2:ARG:N | 2.31 | 0.45 |
| 48:BR:2:ARG:HH11 | 48:BR:5:LYS:HZ1 | 1.64 | 0.45 |
| 1:AA:1327:C:H2' | 1:AA:1328:C:H6 | 1.75 | 0.45 |
| 52:DV:49:THR:CB | 52:DV:50:PRO:CD | 2.94 | 0.45 |
| 10:AJ:57:LYS:HE3 | 10:AJ:60:ARG:HH22 | 1.82 | 0.45 |
| 10:AJ:63:PHE:C | 14:AN:59:ALA:HB2 | 2.37 | 0.45 |
| 33:B8:51:ALA:N | 33:B8:53:PRO:HD2 | 2.32 | 0.45 |
| 29:B4:51:TYR:CE1 | 41:BG:2:PRO:HD2 | 2.51 | 0.45 |
| 41:DG:111:LEU:HB2 | 41:DG:112:PRO:HD3 | 1.99 | 0.45 |
| 41:DG:11:TYR:HD2 | 41:DG:12:TYR:CE1 | 2.35 | 0.45 |
| 35:BA:2492:U:C2 | 35:BA:2493:U:C5 | 3.05 | 0.45 |
| 55:BY:26:LYS:O | 55:BY:28:LYS:HE3 | 2.15 | 0.45 |
| 35:DA:1665:A:C2' | 35:DA:1666:G:H5' | 2.46 | 0.45 |
| 35:DA:1666:G:O2' | 35:DA:1667:G:H5' | 2.16 | 0.45 |
| 38:BD:244:ARG:HG2 | 38:BD:245:PRO:CD | 2.47 | 0.45 |
| 43:BI:107:VAL:HG12 | 43:BI:108:THR:N | 2.32 | 0.45 |
| 37:DC:83:ILE:HG22 | 37:DC:83:ILE:O | 2.16 | 0.45 |
| 13:AM:52:GLU:O | 13:AM:56:LEU:CB | 2.64 | 0.45 |
| 41:DG:153:ARG:HH11 | 41:DG:153:ARG:HB2 | 1.81 | 0.45 |
| 35:DA:130:C:O3' | 35:DA:1349:A:H1' | 2.17 | 0.45 |
| 35:DA:1598:C:O3' | 54:DX:35:THR:HG23 | 2.16 | 0.45 |
| 50:BT:57:PHE:O | 50:BT:58:ASN:ND2 | 2.49 | 0.45 |
| 19:CS:10:PHE:HZ | 19:CS:70:LYS:CD | 2.28 | 0.45 |
| 15:CO:63:ARG:CG | 15:CO:67:LEU:HD12 | 2.41 | 0.45 |
| 35:DA:2606:C:C2' | 35:DA:2607:G:H5' | 2.46 | 0.45 |
| 41:BG:18:GLU:O | 41:BG:19:LEU:C | 2.55 | 0.45 |
| 32:B7:47:ARG:NH2 | 54:BX:60:ARG:NH2 | 2.65 | 0.45 |
| 1:CA:619:U:C2 | 4:CD:135:LEU:CD2 | 3.00 | 0.45 |
| 43:BI:61:ARG:O | 43:BI:65:ALA:HB3 | 2.17 | 0.45 |
| 47:DQ:41:TRP:HB3 | 47:DQ:94:VAL:CG2 | 2.47 | 0.45 |
| 20:AT:46:GLU:CD | 20:AT:48:LYS:HE2 | 2.37 | 0.45 |
| 51:DU:34:LYS:HA | 51:DU:34:LYS:CE | 2.45 | 0.45 |
| 10:AJ:96:ILE:HD13 | 10:AJ:96:ILE:H | 1.80 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:CS:39:THR:CG2 | 19:CS:40:ILE:N | 2.80 | 0.45 |
| 35:BA:1039:G:H1 | 35:BA:1116:C:H42 | 1.65 | 0.45 |
| 1:AA:1437:C:O2' | 1:AA:1438:G:H5' | 2.17 | 0.45 |
| 8:AH:51:VAL:HG11 | 8:AH:60:ARG:CG | 2.44 | 0.45 |
| 19:AS:39:THR:CG2 | 19:AS:40:ILE:N | 2.80 | 0.45 |
| 35:BA:543:C:N3 | 35:BA:551:G:C2 | 2.84 | 0.45 |
| 29:B4:64:LYS:O | 29:B4:65:CYS:SG | 2.72 | 0.45 |
| 1:CA:1064:G:N2 | 1:CA:1190:G:H2' | 2.31 | 0.45 |
| 35:BA:744:G:O2' | 35:BA:745:G:H5' | 2.16 | 0.45 |
| 1:AA:1190:G:H3' | 3:AC:3:ASN:HD21 | 1.74 | 0.45 |
| 1:CA:1326:C:O2' | 1:CA:1327:C:H5' | 2.16 | 0.45 |
| 56:BZ:105:VAL:HG12 | 56:BZ:139:VAL:H | 1.82 | 0.45 |
| 6:CF:9:VAL:HB | 6:CF:87:ARG:HB2 | 1.99 | 0.45 |
| 47:BQ:133:ARG:HG3 | 47:BQ:133:ARG:NH1 | 2.31 | 0.45 |
| 6:AF:9:VAL:HB | 6:AF:87:ARG:HB2 | 1.99 | 0.45 |
| 10:CJ:85:LEU:O | 10:CJ:86:MET:C | 2.54 | 0.45 |
| 4:AD:40:PRO:O | 4:AD:41:GLY:O | 2.34 | 0.45 |
| 43:DI:145:VAL:CG1 | 43:DI:146:ALA:N | 2.76 | 0.45 |
| 38:DD:134:ARG:HG3 | 38:DD:135:PHE:CE2 | 2.52 | 0.45 |
| 1:AA:1442(B):A:N1 | 50:BT:118:ARG:NH2 | 2.65 | 0.45 |
| 35:DA:1043:C:O2' | 35:DA:1044:G:C8 | 2.69 | 0.45 |
| 35:BA:2247:A:O2' | 35:BA:2248:C:H5' | 2.17 | 0.45 |
| 1:AA:532:A:N6 | 3:AC:156:ARG:NH1 | 2.65 | 0.45 |
| 54:BX:52:VAL:HG21 | 54:BX:84:ALA:HA | 1.97 | 0.45 |
| 21:AU:5:ASP:O | 21:AU:6:ARG:C | 2.55 | 0.45 |
| 7:CG:57:GLU:HG2 | 7:CG:57:GLU:O | 2.17 | 0.45 |
| 35:BA:605:C:H1' | 35:BA:657:U:O2' | 2.16 | 0.45 |
| 19:AS:51:VAL:HG12 | 19:AS:52:TYR:O | 2.17 | 0.45 |
| 1:AA:413:G:H21 | 1:AA:428:G:H1' | 1.82 | 0.45 |
| 15:AO:41:GLU:O | 15:AO:45:VAL:HG23 | 2.17 | 0.45 |
| 18:CR:31:LEU:HD23 | 18:CR:31:LEU:N | 2.31 | 0.45 |
| 11:CK:73:MET:SD | 11:CK:103:LEU:HD21 | 2.57 | 0.45 |
| 25:D0:35:ASN:HD22 | 25:D0:35:ASN:H | 1.64 | 0.45 |
| 16:CP:45:THR:HG23 | 16:CP:48:TRP:HB3 | 1.99 | 0.45 |
| 51:BU:100:VAL:HG12 | 51:BU:101:ARG:N | 2.31 | 0.45 |
| 56:BZ:11:GLU:HB2 | 56:BZ:12:GLY:H | 1.53 | 0.45 |
| 47:BQ:131:ILE:HG22 | 47:BQ:132:VAL:N | 2.32 | 0.45 |
| 1:CA:690:G:H2' | 1:CA:691:G:O4' | 2.17 | 0.45 |
| 46:DP:121:LYS:O | 46:DP:123:LEU:HG | 2.16 | 0.45 |
| 35:DA:1861:G:H1 | 35:DA:1881:C:H42 | 1.64 | 0.45 |
| 17:CQ:27:PHE:C | 17:CQ:27:PHE:CD1 | 2.89 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 35:BA:1290:C:H2' | 35:BA:1291:C:H6 | 1.81 | 0.45 |
| 35:BA:758:C:O2 | 35:BA:1981:A:H2 | 2.00 | 0.45 |
| 38:DD:224:ALA:HB2 | 38:DD:233:HIS:HB3 | 1.98 | 0.45 |
| 35:BA:324:A:H2' | 35:BA:325:G:O4' | 2.16 | 0.45 |
| 3:AC:111:LEU:HD21 | 3:AC:146:ALA:HB2 | 1.99 | 0.45 |
| 1:CA:109:A:C6 | 1:CA:326:G:C6 | 3.05 | 0.45 |
| 1:AA:414:A:H8 | 1:AA:414:A:H5' | 1.81 | 0.45 |
| 1:CA:1118:C:O2' | 1:CA:1119:C:H5' | 2.17 | 0.45 |
| 41:BG:153:ARG:NH1 | 41:BG:153:ARG:HB3 | 2.32 | 0.45 |
| 35:BA:85:G:H5'' | 35:BA:85:G:H8 | 1.82 | 0.45 |
| 5:AE:78:HIS:HE1 | 5:AE:143:ARG:H | 1.63 | 0.45 |
| 50:DT:118:ARG:O | 50:DT:121:ILE:HB | 2.17 | 0.45 |
| 2:CB:67:THR:O | 2:CB:68:ILE:HD13 | 2.16 | 0.45 |
| 22:AV:20:U:H4' | 22:AV:20:U:OP2 | 2.15 | 0.45 |
| 35:DA:779:U:P | 38:DD:49:ILE:HG23 | 2.57 | 0.45 |
| 51:BU:90:VAL:HG13 | 52:BV:39:LEU:HG | 1.99 | 0.45 |
| 39:DE:48:GLN:NE2 | 39:DE:78:LEU:HD13 | 2.32 | 0.45 |
| 56:BZ:51:ALA:O | 56:BZ:52:SER:HB3 | 2.17 | 0.45 |
| 39:BE:79:ARG:NH1 | 39:BE:79:ARG:HG2 | 2.31 | 0.45 |
| 1:AA:180:U:C2' | 1:AA:181:G:C5' | 2.89 | 0.45 |
| 38:DD:32:SER:O | 38:DD:36:PRO:CG | 2.61 | 0.45 |
| 10:AJ:32:ALA:HB2 | 10:AJ:76:ASN:HB3 | 1.98 | 0.45 |
| 40:DF:99:TYR:CD2 | 40:DF:99:TYR:O | 2.69 | 0.45 |
| 3:CC:83:ARG:NH1 | 3:CC:83:ARG:HG2 | 2.31 | 0.45 |
| 5:AE:83:GLU:CG | 5:AE:88:LYS:HG3 | 2.47 | 0.45 |
| 35:DA:1578:U:H6 | 35:DA:1578:U:OP2 | 1.99 | 0.45 |
| 41:BG:61:ALA:CA | 41:BG:64:THR:HG22 | 2.47 | 0.45 |
| 41:DG:31:VAL:HG22 | 41:DG:32:PRO:HD2 | 1.99 | 0.45 |
| 35:BA:2073:C:H4' | 38:BD:228:PRO:HB2 | 1.98 | 0.45 |
| 46:BP:7:ARG:CB | 46:BP:7:ARG:NH1 | 2.80 | 0.45 |
| 35:DA:28:A:C4 | 35:DA:513:A:C8 | 3.05 | 0.45 |
| 35:DA:806:C:P | 46:DP:39:LYS:HB3 | 2.57 | 0.45 |
| 20:AT:30:LYS:HD2 | 20:AT:34:LYS:HE3 | 1.99 | 0.45 |
| 1:CA:1030:C:H2' | 1:CA:1030(A):G:C5' | 2.38 | 0.45 |
| 35:BA:2787:C:O2 | 39:BE:61:ARG:NH1 | 2.50 | 0.45 |
| 50:BT:109:GLU:HA | 50:BT:112:ARG:HD3 | 1.99 | 0.45 |
| 41:DG:101:ILE:CD1 | 41:DG:105:LYS:NZ | 2.80 | 0.45 |
| 35:DA:2870:C:H2' | 35:DA:2871:C:C5' | 2.46 | 0.45 |
| 35:DA:1946:U:C2 | 35:DA:1947:C:C5 | 3.04 | 0.45 |
| 35:BA:1528(A):A:H2' | 35:BA:1529:G:H5'' | 1.99 | 0.45 |
| 20:AT:14:LYS:CA | 20:AT:17:ARG:HH21 | 2.30 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:59:U:O2' | 35:BA:73:A:H2' | 2.16 | 0.45 |
| 26:B1:7:ILE:HD13 | 26:B1:62:VAL:CG2 | 2.46 | 0.45 |
| 38:BD:28:GLU:H | 38:BD:29:PRO:CD | 2.20 | 0.45 |
| 8:CH:20:TYR:HA | 8:CH:65:TYR:CE2 | 2.51 | 0.45 |
| 1:CA:277:C:P | 17:CQ:41:LYS:HZ2 | 2.40 | 0.45 |
| 35:BA:2816:C:O2' | 35:BA:2817:G:H5' | 2.17 | 0.45 |
| 8:AH:60:ARG:NH1 | 8:AH:60:ARG:HG3 | 2.32 | 0.45 |
| 19:AS:31:ILE:HG23 | 19:AS:49:ILE:HG13 | 1.98 | 0.45 |
| 26:B1:82:LEU:C | 26:B1:83:GLU:CD | 2.75 | 0.45 |
| 18:CR:53:ARG:HD2 | 18:CR:63:GLN:HB2 | 1.98 | 0.45 |
| 47:BQ:39:PRO:HB3 | 47:BQ:99:PRO:HD3 | 1.98 | 0.45 |
| 2:AB:95:GLN:NE2 | 2:AB:147:LYS:CE | 2.78 | 0.45 |
| 48:BR:13:HIS:CE1 | 48:BR:16:HIS:HB2 | 2.52 | 0.45 |
| 1:CA:818:G:H3' | 1:CA:819:A:H5'' | 1.98 | 0.45 |
| 3:CC:188:LEU:HD22 | 3:CC:188:LEU:N | 2.32 | 0.45 |
| 50:BT:96:ARG:HH11 | 50:BT:96:ARG:CG | 2.25 | 0.45 |
| 25:D0:56:ASP:O | 25:D0:57:PHE:CB | 2.60 | 0.45 |
| 6:CF:50:TYR:CE1 | 18:CR:77:GLY:HA2 | 2.52 | 0.45 |
| 46:DP:139:LYS:O | 46:DP:141:ALA:N | 2.37 | 0.45 |
| 35:DA:221:A:H61 | 35:DA:265:A:H8 | 1.64 | 0.45 |
| 30:B5:20:ARG:HH11 | 30:B5:20:ARG:HG2 | 1.80 | 0.45 |
| 1:AA:597:G:C2' | 1:AA:598:U:H5' | 2.47 | 0.45 |
| 1:AA:1442:G:N7 | 1:AA:1442(B):A:H2 | 2.10 | 0.45 |
| 1:AA:867:G:O2' | 1:AA:868:C:H5' | 2.17 | 0.45 |
| 3:AC:184:TYR:HA | 3:AC:200:ALA:O | 2.17 | 0.45 |
| 29:D4:40:ILE:HG23 | 29:D4:57:ILE:CG2 | 2.47 | 0.45 |
| 36:DB:59:A:H2' | 36:DB:60:C:O4' | 2.17 | 0.45 |
| 35:DA:2464:C:H42 | 35:DA:2486:G:H1 | 1.64 | 0.45 |
| 11:AK:17:GLY:HA3 | 11:AK:77:MET:SD | 2.57 | 0.45 |
| 35:DA:1603:A:H8 | 35:DA:1603:A:H5' | 1.82 | 0.45 |
| 1:AA:948:C:O2' | 1:AA:949:A:H5' | 2.17 | 0.45 |
| 35:BA:2517:C:C4 | 35:BA:2542:A:C6 | 3.04 | 0.45 |
| 50:BT:78:LEU:C | 50:BT:79:HIS:ND1 | 2.70 | 0.45 |
| 10:CJ:90:LEU:N | 10:CJ:91:PRO:HD3 | 2.31 | 0.45 |
| 1:AA:853:G:O2' | 1:AA:854:G:H5' | 2.17 | 0.45 |
| 16:AP:14:ASN:N | 16:AP:15:PRO:HD3 | 2.32 | 0.45 |
| 48:BR:56:LYS:HD2 | 48:BR:94:TYR:HE2 | 1.82 | 0.45 |
| 1:AA:1426:C:O2' | 1:AA:1427:U:H5' | 2.16 | 0.45 |
| 4:AD:63:LYS:HD2 | 4:AD:198:VAL:HG22 | 1.99 | 0.45 |
| 1:AA:518:C:H2' | 1:AA:530:G:C2 | 2.52 | 0.45 |
| 35:DA:711:G:O2' | 35:DA:712:G:H5' | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:CE:31:LEU:CD1 | 5:CE:43:LEU:HD11 | 2.46 | 0.45 |
| 32:B7:21:ARG:HB2 | 32:B7:31:LEU:HD11 | 1.98 | 0.45 |
| 1:AA:1143:G:H2' | 1:AA:1144:G:C8 | 2.52 | 0.45 |
| 41:DG:139:LEU:CD2 | 41:DG:139:LEU:H | 2.30 | 0.45 |
| 1:AA:44:G:H1' | 1:AA:399:G:N2 | 2.32 | 0.45 |
| 16:CP:26:ARG:NH1 | 16:CP:26:ARG:HG2 | 2.32 | 0.45 |
| 22:CV:3:C:H2' | 22:CV:4:C:H6 | 1.82 | 0.45 |
| 29:D4:54:LYS:C | 29:D4:56:GLU:H | 2.20 | 0.45 |
| 47:DQ:35:VAL:HA | 47:DQ:102:VAL:HA | 1.98 | 0.45 |
| 33:D8:8:LYS:O | 33:D8:12:LYS:HG3 | 2.17 | 0.45 |
| 41:DG:49:ASP:O | 41:DG:50:ALA:HB2 | 2.17 | 0.45 |
| 53:BW:52:GLU:OE2 | 53:BW:52:GLU:HA | 2.16 | 0.45 |
| 26:B1:88:LYS:HD2 | 26:B1:88:LYS:HA | 1.84 | 0.45 |
| 15:CO:44:LYS:HE3 | 15:CO:44:LYS:HB2 | 1.75 | 0.45 |
| 35:DA:2456:C:O5' | 35:DA:2456:C:H6 | 2.00 | 0.45 |
| 35:DA:760:G:H2' | 35:DA:761:A:O4' | 2.17 | 0.45 |
| 35:BA:1896:G:O2' | 35:BA:1897:G:H5' | 2.17 | 0.45 |
| 1:CA:1419:G:H1 | 1:CA:1481:U:H3 | 1.65 | 0.45 |
| 35:DA:2394:C:P | 46:DP:63:PRO:HD2 | 2.57 | 0.45 |
| 12:AL:27:LEU:O | 12:AL:29:GLY:N | 2.49 | 0.45 |
| 2:AB:18:GLY:N | 2:AB:42:ILE:HG22 | 2.32 | 0.45 |
| 9:CI:98:PRO:C | 9:CI:100:GLY:H | 2.20 | 0.45 |
| 2:CB:8:LYS:HD3 | 2:CB:217:ARG:HH22 | 1.78 | 0.45 |
| 39:DE:119:ARG:CG | 39:DE:160:TYR:HB2 | 2.39 | 0.45 |
| 39:DE:181:LEU:HB3 | 39:DE:182:LEU:H | 1.66 | 0.45 |
| 5:AE:68:GLU:O | 5:AE:69:VAL:C | 2.55 | 0.45 |
| 13:CM:23:TYR:CE1 | 13:CM:70:LEU:HD22 | 2.39 | 0.45 |
| 35:DA:1495:A:N3 | 35:DA:1495:A:H2' | 2.31 | 0.45 |
| 33:D8:61:LEU:HD12 | 33:D8:62:LEU:N | 2.32 | 0.45 |
| 41:BG:40:ASN:ND2 | 41:BG:91:ARG:HB2 | 2.31 | 0.45 |
| 55:BY:27:VAL:CG1 | 55:BY:29:GLU:OE1 | 2.63 | 0.45 |
| 29:B4:40:ILE:HG23 | 29:B4:57:ILE:CG2 | 2.47 | 0.45 |
| 41:BG:108:ASN:O | 41:BG:112:PRO:HG2 | 2.17 | 0.45 |
| 3:CC:134:ILE:CG2 | 3:CC:168:ALA:HB3 | 2.47 | 0.45 |
| 35:DA:626:U:H5'' | 35:DA:627:A:H5' | 1.98 | 0.45 |
| 49:DS:58:LEU:HG | 49:DS:59:LYS:H | 1.81 | 0.45 |
| 35:BA:1264:G:H2' | 35:BA:2014:A:N6 | 2.32 | 0.45 |
| 44:BN:55:VAL:HG22 | 44:BN:56:ASN:H | 1.81 | 0.45 |
| 33:B8:61:LEU:C | 33:B8:63:PRO:HD2 | 2.38 | 0.45 |
| 35:DA:941:A:H2' | 35:DA:942:G:C8 | 2.52 | 0.45 |
| 42:DH:85:LYS:CD | 42:DH:141:VAL:HG22 | 2.45 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 23:AW:59:U:C2' | 23:AW:60:U:H5' | 2.46 | 0.45 |
| 43:DI:61:ARG:O | 43:DI:65:ALA:HB3 | 2.17 | 0.45 |
| 50:BT:50:ILE:HD12 | 50:BT:50:ILE:N | 2.32 | 0.45 |
| 1:CA:625:G:C4 | 1:CA:626:U:C5 | 3.05 | 0.45 |
| 43:BI:73:GLU:HB2 | 43:BI:136:VAL:CG2 | 2.47 | 0.45 |
| 43:DI:92:VAL:CG1 | 43:DI:120:ILE:HB | 2.47 | 0.45 |
| 51:DU:27:LEU:CD2 | 51:DU:30:LYS:HB2 | 2.40 | 0.45 |
| 46:BP:78:PRO:HB2 | 46:BP:111:ARG:HD2 | 1.99 | 0.45 |
| 43:BI:83:ALA:HA | 43:BI:89:TYR:CZ | 2.52 | 0.45 |
| 39:DE:101:ARG:HA | 39:DE:101:ARG:HD3 | 1.63 | 0.45 |
| 39:DE:16:ARG:NH2 | 39:DE:171:GLU:OE2 | 2.44 | 0.45 |
| 35:BA:365:C:H6 | 35:BA:365:C:C5' | 2.25 | 0.45 |
| 39:BE:134:ILE:HD13 | 39:BE:135:HIS:N | 2.32 | 0.45 |
| 40:DF:78:ILE:HA | 40:DF:83:PHE:CD1 | 2.51 | 0.45 |
| 9:CI:37:PHE:HB3 | 9:CI:43:ALA:HB2 | 1.98 | 0.45 |
| 47:BQ:62:GLY:O | 56:BZ:178:GLU:OE1 | 2.35 | 0.45 |
| 42:DH:86:GLU:N | 42:DH:86:GLU:OE1 | 2.50 | 0.45 |
| 3:AC:40:ARG:HH11 | 3:AC:40:ARG:HG3 | 1.82 | 0.45 |
| 35:DA:89:G:H3' | 35:DA:90:U:C5' | 2.47 | 0.45 |
| 1:AA:383:A:C2' | 1:AA:384:G:H5' | 2.47 | 0.45 |
| 35:DA:1657:C:H2' | 35:DA:1658:C:C6 | 2.51 | 0.45 |
| 34:D9:24:TYR:CE2 | 34:D9:35:ARG:HG3 | 2.51 | 0.45 |
| 4:AD:146:ILE:N | 4:AD:146:ILE:CD1 | 2.75 | 0.45 |
| 1:CA:818:G:C3' | 1:CA:819:A:C5' | 2.94 | 0.45 |
| 39:BE:3:GLY:CA | 39:BE:81:ILE:HG21 | 2.46 | 0.45 |
| 1:AA:61:G:O2' | 1:AA:62:U:H5' | 2.16 | 0.45 |
| 6:AF:50:TYR:CE1 | 18:AR:77:GLY:HA2 | 2.52 | 0.45 |
| 1:CA:541:G:H2' | 1:CA:542:G:C8 | 2.52 | 0.45 |
| 4:AD:10:ARG:HH11 | 4:AD:10:ARG:CG | 2.30 | 0.45 |
| 8:CH:11:THR:O | 8:CH:15:ASN:ND2 | 2.50 | 0.45 |
| 41:BG:50:ALA:C | 41:BG:52:ILE:N | 2.68 | 0.45 |
| 6:CF:44:GLY:HA2 | 6:CF:59:TYR:CE1 | 2.51 | 0.45 |
| 2:AB:121:LEU:CD1 | 2:AB:130:ARG:HH11 | 2.28 | 0.45 |
| 49:BS:42:ASP:O | 49:BS:43:GLU:CB | 2.63 | 0.45 |
| 1:CA:90:U:C3' | 1:CA:91:C:H5' | 2.47 | 0.45 |
| 13:AM:108:ARG:HH12 | 13:AM:112:GLY:CA | 2.30 | 0.45 |
| 35:DA:558:G:OP2 | 44:DN:111:PRO:HD2 | 2.16 | 0.45 |
| 6:CF:75:LEU:HD23 | 6:CF:79:LEU:HG | 1.98 | 0.45 |
| 35:BA:2672:G:H3' | 35:BA:2673:G:H5'' | 1.99 | 0.45 |
| 35:BA:604:G:C6 | 35:BA:625:G:C2 | 3.05 | 0.45 |
| 32:D7:21:ARG:HB2 | 32:D7:31:LEU:HD11 | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:CO:64:ARG:NH1 | 15:CO:64:ARG:HG3 | 2.30 | 0.45 |
| 38:DD:53:PHE:CE1 | 38:DD:220:HIS:HA | 2.52 | 0.45 |
| 1:CA:413:G:H21 | 1:CA:428:G:H1' | 1.81 | 0.45 |
| 7:AG:6:ARG:O | 7:AG:6:ARG:HG2 | 2.17 | 0.45 |
| 1:CA:1287:A:H2 | 1:CA:1353:G:N3 | 2.15 | 0.45 |
| 1:CA:922:G:H2' | 1:CA:923:A:C8 | 2.52 | 0.45 |
| 35:BA:1968:G:C2' | 35:BA:1969:A:H5'' | 2.47 | 0.45 |
| 35:DA:2839:G:H2' | 35:DA:2840:C:C6 | 2.52 | 0.45 |
| 49:BS:49:VAL:HG12 | 49:BS:50:SER:N | 2.32 | 0.45 |
| 1:AA:1525:G:O2' | 1:AA:1526:G:H5' | 2.17 | 0.45 |
| 4:CD:128:VAL:O | 4:CD:130:GLY:N | 2.50 | 0.45 |
| 36:DB:40:U:HO2' | 36:DB:43:C:H5 | 1.61 | 0.45 |
| 56:BZ:81:ARG:HH11 | 56:BZ:81:ARG:HG3 | 1.82 | 0.45 |
| 5:AE:128:PRO:O | 5:AE:131:ILE:HG22 | 2.16 | 0.45 |
| 1:CA:457:C:H2' | 1:CA:458:C:H6 | 1.82 | 0.45 |
| 1:CA:518:C:H2' | 1:CA:530:G:C2 | 2.52 | 0.45 |
| 35:BA:638:G:H2' | 35:BA:639:U:C6 | 2.51 | 0.45 |
| 1:CA:1264:C:H2' | 1:CA:1265:G:H8 | 1.81 | 0.45 |
| 42:BH:76:VAL:O | 42:BH:79:VAL:HG22 | 2.17 | 0.45 |
| 9:AI:84:ALA:O | 9:AI:87:GLN:HB3 | 2.17 | 0.45 |
| 1:AA:71:C:H2' | 1:AA:72:C:H6 | 1.82 | 0.45 |
| 35:BA:2323:G:H2' | 35:BA:2324:C:O4' | 2.17 | 0.45 |
| 35:DA:1275:A:N1 | 35:DA:1295:C:O2' | 2.44 | 0.45 |
| 1:AA:506:G:C6 | 1:AA:507:C:N3 | 2.85 | 0.45 |
| 45:BO:53:LYS:N | 45:BO:53:LYS:HD2 | 2.32 | 0.45 |
| 35:DA:2439:A:H5' | 35:DA:2439:A:C8 | 2.52 | 0.45 |
| 9:AI:128:ARG:H | 9:AI:128:ARG:HD3 | 1.82 | 0.45 |
| 32:D7:8:ASN:ND2 | 32:D7:8:ASN:C | 2.69 | 0.45 |
| 24:AX:20:U:N3 | 22:AY:36:A:C2 | 2.84 | 0.45 |
| 22:CY:29:G:H2' | 22:CY:30:G:O4' | 2.17 | 0.45 |
| 47:BQ:35:VAL:HA | 47:BQ:102:VAL:HA | 1.99 | 0.45 |
| 47:BQ:35:VAL:HG22 | 47:BQ:36:ALA:N | 2.32 | 0.45 |
| 54:DX:70:LEU:HD23 | 54:DX:71:GLY:N | 2.32 | 0.45 |
| 2:CB:162:ILE:O | 2:CB:162:ILE:HG13 | 2.15 | 0.45 |
| 41:DG:45:GLU:OE1 | 41:DG:45:GLU:HA | 2.17 | 0.45 |
| 39:DE:111:ARG:HD2 | 39:DE:160:TYR:CE1 | 2.52 | 0.45 |
| 39:DE:76:ARG:O | 39:DE:77:ILE:O | 2.35 | 0.45 |
| 35:BA:1171:G:C3' | 35:BA:1173:G:H4' | 2.27 | 0.45 |
| 1:CA:1275:A:O2' | 1:CA:1276:G:H5' | 2.16 | 0.45 |
| 48:BR:49:ASP:O | 48:BR:52:ILE:N | 2.50 | 0.45 |
| 37:BC:64:LEU:HD13 | 37:BC:66:HIS:HB2 | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BD:176:ARG:HA | 38:BD:182:LEU:HD23 | 1.99 | 0.45 |
| 3:AC:115:LEU:O | 3:AC:116:VAL:C | 2.55 | 0.45 |
| 19:AS:5:LEU:N | 19:AS:6:LYS:HZ1 | 2.15 | 0.45 |
| 42:DH:68:THR:HG22 | 42:DH:72:ILE:CD1 | 2.46 | 0.45 |
| 45:BO:5:GLN:HE21 | 45:BO:20:MET:CE | 2.30 | 0.45 |
| 30:B5:6:VAL:HG22 | 30:B5:7:PRO:CD | 2.45 | 0.45 |
| 55:DY:7:VAL:HB | 55:DY:8:LYS:HD2 | 1.99 | 0.45 |
| 49:BS:58:LEU:HG | 49:BS:59:LYS:H | 1.82 | 0.45 |
| 46:DP:32:THR:HG21 | 46:DP:37:GLY:CA | 2.47 | 0.45 |
| 41:DG:56:ALA:O | 41:DG:60:LEU:HB2 | 2.17 | 0.45 |
| 37:BC:83:ILE:HD12 | 37:BC:94:VAL:HB | 1.98 | 0.45 |
| 1:AA:346:G:N3 | 1:AA:346:G:H2' | 2.32 | 0.45 |
| 1:AA:346:G:C5' | 50:BT:41:ARG:NE | 2.77 | 0.45 |
| 45:BO:2:ILE:CD1 | 45:BO:6:THR:HG21 | 2.37 | 0.45 |
| 50:DT:62:THR:HA | 50:DT:74:ARG:O | 2.16 | 0.45 |
| 43:DI:113:ARG:HA | 43:DI:131:LYS:HG3 | 1.99 | 0.45 |
| 25:D0:41:ARG:H | 25:D0:41:ARG:NE | 2.14 | 0.45 |
| 17:CQ:43:LEU:HD12 | 17:CQ:68:ARG:HG3 | 1.99 | 0.45 |
| 53:DW:5:ALA:O | 53:DW:6:ILE:CB | 2.63 | 0.45 |
| 35:BA:2808:U:H2' | 35:BA:2809:A:H5' | 1.97 | 0.45 |
| 50:BT:106:SER:O | 50:BT:107:ASP:OD1 | 2.35 | 0.45 |
| 35:BA:1486:A:N6 | 35:BA:1504:C:H42 | 2.15 | 0.45 |
| 8:CH:112:LEU:HA | 8:CH:134:ILE:CG1 | 2.39 | 0.45 |
| 39:DE:143:ASN:CB | 39:DE:147:PRO:HD2 | 2.41 | 0.45 |
| 1:AA:1070:U:H5' | 5:AE:18:ARG:HH22 | 1.82 | 0.45 |
| 16:AP:1:MET:HG2 | 16:AP:2:VAL:O | 2.17 | 0.45 |
| 35:BA:955:C:H5' | 35:BA:956:G:OP2 | 2.17 | 0.45 |
| 38:DD:153:ALA:O | 38:DD:154:LYS:HG2 | 2.17 | 0.45 |
| 23:CW:17:C:N4 | 35:DA:2180:U:O3' | 2.49 | 0.45 |
| 1:AA:885:G:H8 | 1:AA:885:G:O5' | 2.00 | 0.45 |
| 38:DD:117:VAL:HG22 | 38:DD:118:VAL:N | 2.31 | 0.45 |
| 26:B1:58:ILE:CD1 | 26:B1:94:LEU:HD13 | 2.47 | 0.45 |
| 22:AY:74:C:C2' | 22:AY:75:C:H5' | 2.46 | 0.45 |
| 23:CW:25:C:H2' | 23:CW:26:A:C8 | 2.52 | 0.45 |
| 34:B9:17:ILE:CG2 | 34:B9:19:ARG:HE | 2.30 | 0.45 |
| 1:CA:706:A:C8 | 1:CA:707:C:H5 | 2.35 | 0.45 |
| 52:BV:21:ARG:HD3 | 52:BV:21:ARG:H | 1.82 | 0.45 |
| 42:BH:86:GLU:N | 42:BH:86:GLU:OE1 | 2.50 | 0.45 |
| 35:DA:34:C:C4 | 35:DA:455:C:H5' | 2.52 | 0.45 |
| 1:CA:1342:C:H2' | 1:CA:1343:G:C8 | 2.52 | 0.45 |
| 47:DQ:68:ILE:HD13 | 47:DQ:103:MET:HG2 | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:BG:57:ALA:CB | 41:BG:90:LEU:HD11 | 2.47 | 0.45 |
| 1:AA:541:G:H2' | 1:AA:542:G:H8 | 1.80 | 0.45 |
| 1:CA:1194:U:H5'' | 5:CE:22:GLY:O | 2.17 | 0.45 |
| 35:BA:1224:C:H4' | 52:BV:86:GLY:O | 2.16 | 0.45 |
| 22:CV:63:G:H5'' | 25:D0:11:ARG:HH12 | 1.82 | 0.45 |
| 32:B7:24:THR:HG23 | 32:B7:27:GLY:N | 2.31 | 0.45 |
| 1:AA:243:A:H4' | 1:AA:244:U:H5'' | 1.98 | 0.45 |
| 4:CD:106:TYR:HE1 | 4:CD:112:VAL:O | 2.00 | 0.45 |
| 35:BA:993:G:OP1 | 51:BU:50:ARG:NH2 | 2.50 | 0.45 |
| 27:D2:57:ILE:O | 27:D2:58:ALA:C | 2.55 | 0.45 |
| 35:DA:2012:G:O3' | 53:DW:96:ILE:HD11 | 2.17 | 0.45 |
| 56:DZ:31:ARG:O | 56:DZ:31:ARG:HG2 | 2.16 | 0.45 |
| 35:DA:1548:C:H2' | 35:DA:1549:C:H6 | 1.82 | 0.45 |
| 35:BA:1445:A:H5'' | 35:BA:1445(A):C:H5 | 1.81 | 0.45 |
| 19:AS:37:ARG:H | 19:AS:37:ARG:HG3 | 1.53 | 0.45 |
| 32:B7:22:MET:O | 32:B7:28:ARG:NH1 | 2.45 | 0.45 |
| 50:DT:48:ILE:CD1 | 50:DT:65:LYS:HD3 | 2.47 | 0.45 |
| 48:DR:99:LYS:N | 48:DR:99:LYS:CD | 2.80 | 0.45 |
| 41:DG:137:GLU:HG2 | 41:DG:152:LEU:HD11 | 1.99 | 0.45 |
| 35:BA:2219:G:C2' | 35:BA:2220:G:H5' | 2.47 | 0.45 |
| 1:CA:784:C:H4' | 35:DA:1837:C:OP1 | 2.17 | 0.45 |
| 10:AJ:46:ARG:HD3 | 14:AN:61:TRP:CZ3 | 2.52 | 0.45 |
| 1:CA:1388:C:H2' | 1:CA:1389:C:H6 | 1.82 | 0.45 |
| 5:AE:31:LEU:CD1 | 5:AE:43:LEU:HD11 | 2.47 | 0.45 |
| 37:DC:67:GLY:HA2 | 37:DC:162:GLU:HA | 1.99 | 0.45 |
| 56:DZ:16:SER:O | 56:DZ:20:ARG:HB2 | 2.16 | 0.45 |
| 35:DA:425:G:O2' | 35:DA:426:C:H5' | 2.16 | 0.45 |
| 43:BI:6:LEU:O | 43:BI:7:GLU:C | 2.55 | 0.45 |
| 35:DA:2193:G:C4 | 35:DA:2194:G:C8 | 3.05 | 0.45 |
| 1:AA:314:C:O2' | 1:AA:315:A:H5' | 2.17 | 0.45 |
| 35:DA:2852:G:C2 | 35:DA:2853:C:C2 | 3.05 | 0.45 |
| 26:B1:50:ARG:HA | 26:B1:59:THR:HG22 | 1.99 | 0.45 |
| 46:DP:135:LEU:HD13 | 46:DP:135:LEU:O | 2.17 | 0.45 |
| 54:BX:63:LYS:HB2 | 54:BX:72:LYS:HG3 | 1.98 | 0.44 |
| 47:DQ:141:GLN:HG3 | 56:DZ:72:ARG:NH1 | 2.32 | 0.44 |
| 9:AI:98:PRO:C | 9:AI:100:GLY:H | 2.19 | 0.44 |
| 31:D6:46:HIS:HB3 | 31:D6:47:THR:N | 2.31 | 0.44 |
| 6:CF:5:GLU:HB3 | 6:CF:62:TRP:HE1 | 1.81 | 0.44 |
| 35:BA:2572:A:OP1 | 39:BE:144:ARG:HB2 | 2.17 | 0.44 |
| 39:BE:145:LYS:HD3 | 39:BE:145:LYS:HA | 1.88 | 0.44 |
| 35:DA:2758:A:C5 | 42:DH:67:LEU:HD21 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:DE:182:LEU:O | 39:DE:183:LEU:HD12 | 2.17 | 0.44 |
| 39:BE:49:LEU:O | 39:BE:78:LEU:HB3 | 2.17 | 0.44 |
| 38:DD:260:ARG:HD3 | 38:DD:261:LYS:O | 2.17 | 0.44 |
| 48:BR:10:LEU:HD23 | 48:BR:21:TYR:OH | 2.16 | 0.44 |
| 40:DF:38:ARG:HH11 | 40:DF:38:ARG:HG3 | 1.81 | 0.44 |
| 35:BA:1886:C:H2' | 35:BA:1887:C:H6 | 1.82 | 0.44 |
| 39:DE:21:VAL:HG23 | 39:DE:23:VAL:CG1 | 2.47 | 0.44 |
| 42:DH:46:GLU:HG3 | 42:DH:50:VAL:HG13 | 2.00 | 0.44 |
| 1:CA:972:C:OP2 | 10:CJ:57:LYS:NZ | 2.33 | 0.44 |
| 37:DC:58:VAL:O | 37:DC:59:ARG:HD3 | 2.17 | 0.44 |
| 51:DU:81:HIS:O | 51:DU:84:LYS:HB3 | 2.17 | 0.44 |
| 40:BF:157:VAL:HB | 40:BF:194:MET:HB3 | 1.99 | 0.44 |
| 40:BF:8:GLN:O | 40:BF:9:ILE:C | 2.55 | 0.44 |
| 47:BQ:120:ILE:O | 47:BQ:123:HIS:HB2 | 2.16 | 0.44 |
| 3:CC:30:ARG:NH1 | 14:CN:38:GLY:H | 2.15 | 0.44 |
| 5:CE:52:PRO:HA | 5:CE:55:VAL:HG23 | 1.98 | 0.44 |
| 26:D1:45:ASN:ND2 | 26:D1:47:GLN:HE21 | 2.13 | 0.44 |
| 45:DO:1:MET:HE2 | 45:DO:67:LYS:HG2 | 1.99 | 0.44 |
| 35:BA:1899:G:HO2' | 35:BA:1900:A:H5'' | 1.79 | 0.44 |
| 52:DV:72:VAL:CG2 | 52:DV:85:LYS:HB3 | 2.33 | 0.44 |
| 35:BA:587:C:C4 | 46:BP:33:ARG:HG2 | 2.52 | 0.44 |
| 45:BO:105:GLU:OE1 | 45:BO:105:GLU:N | 2.50 | 0.44 |
| 42:DH:169:VAL:O | 42:DH:169:VAL:HG13 | 2.17 | 0.44 |
| 2:AB:115:LEU:O | 2:AB:119:GLU:HB2 | 2.18 | 0.44 |
| 35:DA:1348:G:H2' | 35:DA:1349:A:C5' | 2.37 | 0.44 |
| 1:AA:195:A:OP1 | 20:AT:65:LYS:HE2 | 2.18 | 0.44 |
| 42:BH:13:LYS:HB3 | 42:BH:14:GLY:H | 1.63 | 0.44 |
| 35:BA:129:C:O2' | 35:BA:130:C:H5' | 2.17 | 0.44 |
| 35:BA:796:C:H2' | 35:BA:797:C:H6 | 1.80 | 0.44 |
| 35:DA:151:C:O2' | 35:DA:152:G:H5' | 2.17 | 0.44 |
| 1:CA:1031:G:H2' | 1:CA:1032:G:C8 | 2.52 | 0.44 |
| 15:AO:67:LEU:CD2 | 15:AO:78:TYR:HE1 | 2.29 | 0.44 |
| 53:DW:75:TYR:CE1 | 53:DW:104:THR:CB | 3.00 | 0.44 |
| 50:BT:50:ILE:HD13 | 50:BT:64:ARG:HB3 | 1.97 | 0.44 |
| 19:CS:31:ILE:HG23 | 19:CS:49:ILE:HG13 | 1.99 | 0.44 |
| 54:DX:12:VAL:CG2 | 54:DX:27:THR:HG23 | 2.42 | 0.44 |
| 33:D8:39:LYS:HE3 | 35:DA:2365:G:O6 | 2.16 | 0.44 |
| 39:DE:101:ARG:HH21 | 39:DE:171:GLU:HB2 | 1.80 | 0.44 |
| 35:BA:1333:C:H2' | 35:BA:1334:G:H8 | 1.82 | 0.44 |
| 13:AM:84:ILE:HG12 | 19:AS:66:MET:HE3 | 1.99 | 0.44 |
| 27:D2:4:SER:HA | 27:D2:7:ARG:NH1 | 2.32 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1106:G:H2' | 1:AA:1107:C:C6 | 2.52 | 0.44 |
| 38:DD:146:GLU:HG2 | 38:DD:152:GLY:O | 2.17 | 0.44 |
| 1:CA:1191:A:H5' | 3:CC:4:LYS:NZ | 2.31 | 0.44 |
| 9:CI:3:GLN:C | 9:CI:4:TYR:CD1 | 2.90 | 0.44 |
| 48:DR:28:LEU:HD11 | 48:DR:116:LEU:CD2 | 2.43 | 0.44 |
| 9:AI:118:LYS:NZ | 9:AI:118:LYS:CB | 2.80 | 0.44 |
| 1:CA:648:A:H2' | 1:CA:649:G:H8 | 1.82 | 0.44 |
| 35:DA:94(A):G:H2' | 35:DA:95:G:O4' | 2.17 | 0.44 |
| 1:AA:1317:C:OP1 | 14:AN:17:LYS:HE2 | 2.16 | 0.44 |
| 8:CH:63:LEU:N | 8:CH:63:LEU:HD22 | 2.32 | 0.44 |
| 35:DA:1889:A:O2' | 35:DA:2087:G:H5' | 2.16 | 0.44 |
| 42:DH:87:LEU:N | 42:DH:131:VAL:O | 2.45 | 0.44 |
| 4:AD:196:LEU:CD1 | 4:AD:196:LEU:N | 2.76 | 0.44 |
| 37:DC:27:ARG:O | 37:DC:34:THR:HB | 2.17 | 0.44 |
| 23:AW:23:A:H2' | 23:AW:24:G:C8 | 2.52 | 0.44 |
| 5:AE:16:THR:OG1 | 5:AE:17:ALA:N | 2.48 | 0.44 |
| 16:AP:80:PHE:CD1 | 16:AP:80:PHE:N | 2.83 | 0.44 |
| 7:AG:111:ARG:HB3 | 7:AG:113:GLU:OE2 | 2.17 | 0.44 |
| 50:BT:78:LEU:O | 50:BT:79:HIS:ND1 | 2.50 | 0.44 |
| 51:BU:8:VAL:HG12 | 51:BU:12:ARG:NE | 2.30 | 0.44 |
| 35:DA:1767:C:C2' | 35:DA:1768:U:H5' | 2.47 | 0.44 |
| 1:CA:775:G:O2' | 1:CA:776:G:H5' | 2.17 | 0.44 |
| 35:BA:360:G:H2' | 35:BA:361:G:H8 | 1.83 | 0.44 |
| 35:DA:2662:A:H2' | 35:DA:2663:G:O4' | 2.17 | 0.44 |
| 41:BG:132:ASN:OD1 | 41:BG:158:ALA:CB | 2.64 | 0.44 |
| 1:CA:853:G:O2' | 1:CA:854:G:H5' | 2.17 | 0.44 |
| 35:DA:2872:G:O2' | 35:DA:2873:A:H5' | 2.17 | 0.44 |
| 35:DA:1034:G:H2' | 35:DA:1035:U:O4' | 2.17 | 0.44 |
| 13:AM:35:GLU:HG3 | 13:AM:36:LYS:N | 2.33 | 0.44 |
| 26:D1:34:THR:O | 35:DA:2432:A:N6 | 2.45 | 0.44 |
| 35:DA:1428:C:O2' | 35:DA:1429:G:H5' | 2.16 | 0.44 |
| 35:DA:667:U:H2' | 35:DA:668:G:O4' | 2.17 | 0.44 |
| 35:BA:2600:A:H2' | 35:BA:2601:C:C6 | 2.51 | 0.44 |
| 35:DA:1641:A:H2' | 35:DA:1642:G:O4' | 2.17 | 0.44 |
| 35:BA:237:C:O2' | 35:BA:238:C:H5' | 2.18 | 0.44 |
| 35:BA:2400:G:N3 | 35:BA:2400:G:H2' | 2.31 | 0.44 |
| 10:CJ:67:THR:O | 10:CJ:67:THR:HG22 | 2.16 | 0.44 |
| 35:DA:2745:C:H5' | 42:DH:146:ALA:HB2 | 1.99 | 0.44 |
| 39:BE:64:LYS:C | 39:BE:66:HIS:H | 2.20 | 0.44 |
| 56:DZ:97:GLU:CB | 56:DZ:125:LEU:HD11 | 2.41 | 0.44 |
| 49:BS:89:ARG:CB | 49:BS:92:TYR:HB3 | 2.25 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 46:DP:6:LEU:CG | 46:DP:8:PRO:O | 2.62 | 0.44 |
| 1:AA:955:U:O2' | 1:AA:956:U:H5' | 2.18 | 0.44 |
| 2:AB:67:THR:O | 2:AB:68:ILE:HD13 | 2.17 | 0.44 |
| 9:CI:99:LEU:HD12 | 9:CI:101:PHE:CZ | 2.53 | 0.44 |
| 9:CI:92:TYR:O | 9:CI:95:LYS:HG3 | 2.17 | 0.44 |
| 2:CB:89:GLY:O | 2:CB:154:LEU:HD13 | 2.17 | 0.44 |
| 52:BV:40:LEU:N | 52:BV:40:LEU:HD22 | 2.32 | 0.44 |
| 49:DS:98:VAL:CG1 | 49:DS:100:ALA:HB2 | 2.47 | 0.44 |
| 13:CM:45:VAL:O | 13:CM:47:ASP:N | 2.50 | 0.44 |
| 35:DA:1247:A:OP2 | 46:DP:18:ARG:NH2 | 2.50 | 0.44 |
| 3:CC:85:ARG:HA | 3:CC:88:ARG:HD2 | 1.98 | 0.44 |
| 13:AM:17:VAL:O | 13:AM:17:VAL:HG12 | 2.17 | 0.44 |
| 52:BV:23:GLU:O | 52:BV:24:LYS:C | 2.56 | 0.44 |
| 47:BQ:55:VAL:HG12 | 47:BQ:64:ILE:HD12 | 1.97 | 0.44 |
| 55:DY:28:LYS:HA | 55:DY:39:VAL:H | 1.81 | 0.44 |
| 29:B4:41:ILE:N | 29:B4:57:ILE:O | 2.45 | 0.44 |
| 29:B4:57:ILE:O | 29:B4:57:ILE:HG22 | 2.16 | 0.44 |
| 6:AF:5:GLU:HB3 | 6:AF:62:TRP:HE1 | 1.82 | 0.44 |
| 4:CD:19:LEU:HD13 | 4:CD:21:LEU:CG | 2.47 | 0.44 |
| 1:AA:976:G:P | 14:AN:32:SER:H | 2.40 | 0.44 |
| 46:DP:99:LEU:HD23 | 46:DP:99:LEU:O | 2.16 | 0.44 |
| 49:DS:66:ALA:HA | 49:DS:69:VAL:CG1 | 2.48 | 0.44 |
| 43:BI:101:LEU:CD2 | 43:BI:109:ILE:HG12 | 2.47 | 0.44 |
| 2:AB:116:GLU:HA | 2:AB:119:GLU:HB3 | 1.98 | 0.44 |
| 27:D2:18:PRO:CG | 27:D2:19:VAL:N | 2.76 | 0.44 |
| 45:BO:2:ILE:HD11 | 45:BO:82:ASN:HD22 | 1.81 | 0.44 |
| 38:BD:24:ILE:O | 38:BD:25:THR:C | 2.56 | 0.44 |
| 15:CO:74:ASP:C | 15:CO:76:GLU:N | 2.71 | 0.44 |
| 15:CO:79:ARG:O | 15:CO:82:ILE:HG22 | 2.17 | 0.44 |
| 41:BG:18:GLU:HG3 | 41:BG:22:ARG:HD2 | 2.00 | 0.44 |
| 35:DA:1300:U:H4' | 35:DA:1301:A:O5' | 2.17 | 0.44 |
| 43:BI:114:LEU:O | 43:BI:115:ALA:HB3 | 2.17 | 0.44 |
| 6:AF:72:VAL:CG1 | 6:AF:73:ASN:N | 2.80 | 0.44 |
| 10:CJ:13:HIS:HB3 | 10:CJ:68:HIS:HE1 | 1.75 | 0.44 |
| 1:AA:355:C:H5' | 1:AA:389:A:OP2 | 2.17 | 0.44 |
| 3:AC:34:LEU:HD23 | 3:AC:34:LEU:C | 2.38 | 0.44 |
| 3:AC:52:LEU:HD12 | 3:AC:55:VAL:CG2 | 2.47 | 0.44 |
| 35:BA:2070:G:H2' | 35:BA:2071:A:O4' | 2.17 | 0.44 |
| 23:CW:56:C:H2' | 23:CW:57:G:H5'' | 1.99 | 0.44 |
| 7:AG:15:ASP:OD2 | 7:AG:16:LEU:N | 2.46 | 0.44 |
| 43:BI:60:GLU:OE1 | 43:BI:64:GLU:HG3 | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:AL:102:ARG:NH1 | 12:AL:102:ARG:CG | 2.79 | 0.44 |
| 35:DA:542:C:C4 | 35:DA:543:C:N4 | 2.85 | 0.44 |
| 35:DA:1257:C:H2' | 35:DA:1258:C:C6 | 2.52 | 0.44 |
| 28:B3:52:HIS:CD2 | 28:B3:52:HIS:H | 2.34 | 0.44 |
| 36:DB:38:C:O2 | 36:DB:48:A:H1' | 2.17 | 0.44 |
| 1:AA:186:C:H1' | 20:AT:85:MET:HE3 | 2.00 | 0.44 |
| 50:DT:35:LYS:O | 50:DT:37:GLY:N | 2.50 | 0.44 |
| 52:DV:91:TYR:C | 52:DV:91:TYR:HD1 | 2.19 | 0.44 |
| 53:DW:4:LYS:HA | 53:DW:106:ILE:HG22 | 2.00 | 0.44 |
| 9:AI:3:GLN:C | 9:AI:4:TYR:CD1 | 2.90 | 0.44 |
| 13:CM:54:VAL:O | 13:CM:58:GLU:HG2 | 2.17 | 0.44 |
| 38:DD:8:PRO:HB3 | 38:DD:14:ARG:HB3 | 1.99 | 0.44 |
| 42:DH:43:VAL:HG23 | 42:DH:43:VAL:O | 2.17 | 0.44 |
| 3:AC:86:VAL:C | 3:AC:89:GLU:HB3 | 2.37 | 0.44 |
| 37:BC:19:VAL:O | 37:BC:20:TYR:HB3 | 2.16 | 0.44 |
| 37:BC:27:ARG:O | 37:BC:34:THR:HB | 2.18 | 0.44 |
| 54:BX:23:GLU:C | 54:BX:25:LYS:H | 2.20 | 0.44 |
| 35:BA:1718:G:H2' | 35:BA:1719:G:C8 | 2.53 | 0.44 |
| 35:DA:2328:A:H2' | 35:DA:2329:G:H8 | 1.82 | 0.44 |
| 1:AA:601:C:H2' | 1:AA:602:A:C8 | 2.49 | 0.44 |
| 56:DZ:146:ILE:HG12 | 56:DZ:146:ILE:H | 1.30 | 0.44 |
| 38:DD:198:ASN:HD22 | 38:DD:198:ASN:C | 2.21 | 0.44 |
| 1:CA:949:A:C2 | 1:CA:1233:G:N3 | 2.86 | 0.44 |
| 1:AA:949:A:C2 | 1:AA:1233:G:N3 | 2.85 | 0.44 |
| 44:BN:94:HIS:HA | 44:BN:96:GLU:OE1 | 2.17 | 0.44 |
| 3:AC:32:LEU:HD22 | 3:AC:59:ARG:NH1 | 2.32 | 0.44 |
| 1:CA:1437:C:H2' | 1:CA:1438:G:H8 | 1.79 | 0.44 |
| 7:CG:155:ARG:O | 7:CG:156:TRP:O | 2.35 | 0.44 |
| 38:BD:257:LEU:HD23 | 38:BD:257:LEU:C | 2.37 | 0.44 |
| 4:CD:173:TRP:O | 4:CD:186:LEU:HB2 | 2.18 | 0.44 |
| 35:DA:1968:G:C2' | 35:DA:1969:A:H5'' | 2.48 | 0.44 |
| 35:BA:1034:G:H2' | 35:BA:1035:U:O4' | 2.17 | 0.44 |
| 35:DA:2882:A:OP1 | 48:DR:96:ARG:HD3 | 2.17 | 0.44 |
| 41:BG:153:ARG:CZ | 41:BG:153:ARG:HB3 | 2.46 | 0.44 |
| 3:AC:158:GLY:C | 3:AC:160:ALA:H | 2.20 | 0.44 |
| 35:BA:2855:C:H2' | 35:BA:2856:C:C6 | 2.52 | 0.44 |
| 1:CA:66:G:H4' | 1:CA:173:U:C5 | 2.52 | 0.44 |
| 11:CK:32:ILE:HD12 | 11:CK:68:ALA:O | 2.17 | 0.44 |
| 35:BA:1851:U:C2' | 35:BA:1852:C:H5' | 2.47 | 0.44 |
| 35:DA:2584:U:O2 | 35:DA:2585:U:C4 | 2.71 | 0.44 |
| 1:CA:685:G:O2' | 1:CA:686:U:H5' | 2.16 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:1473:G:O2' | 35:DA:1474:C:H5' | 2.16 | 0.44 |
| 35:DA:2897:U:H2' | 35:DA:2897:U:O2 | 2.17 | 0.44 |
| 35:DA:2192:G:H2' | 35:DA:2192:G:N3 | 2.32 | 0.44 |
| 48:BR:111:LEU:HD23 | 48:BR:111:LEU:HA | 1.72 | 0.44 |
| 43:BI:15:VAL:CG2 | 43:BI:16:GLY:N | 2.80 | 0.44 |
| 31:B6:17:LYS:CB | 31:B6:18:ARG:NH1 | 2.80 | 0.44 |
| 9:AI:65:VAL:HG21 | 9:AI:73:GLN:CB | 2.46 | 0.44 |
| 1:CA:1372:U:H2' | 1:CA:1373:G:H5' | 1.99 | 0.44 |
| 31:D6:19:ARG:HD3 | 31:D6:43:CYS:SG | 2.57 | 0.44 |
| 9:CI:28:VAL:HG22 | 9:CI:63:ILE:HB | 1.99 | 0.44 |
| 1:AA:1256:A:H5'' | 3:AC:27:LYS:NZ | 2.33 | 0.44 |
| 51:BU:90:VAL:HG11 | 52:BV:39:LEU:HG | 1.97 | 0.44 |
| 38:BD:44:ASN:N | 38:BD:44:ASN:OD1 | 2.50 | 0.44 |
| 48:BR:44:LEU:O | 48:BR:48:VAL:HG23 | 2.18 | 0.44 |
| 3:AC:83:ARG:NH1 | 3:AC:83:ARG:HG2 | 2.33 | 0.44 |
| 5:AE:6:PHE:HB2 | 5:AE:34:VAL:HG13 | 2.00 | 0.44 |
| 10:CJ:47:PHE:O | 10:CJ:47:PHE:HD1 | 1.99 | 0.44 |
| 35:DA:2206:G:N3 | 35:DA:2206:G:H3' | 2.32 | 0.44 |
| 41:BG:91:ARG:CD | 41:BG:92:VAL:N | 2.81 | 0.44 |
| 52:BV:19:LYS:CG | 52:BV:94:LEU:HB2 | 2.39 | 0.44 |
| 35:BA:1496:A:C8 | 35:BA:1498:C:N3 | 2.85 | 0.44 |
| 41:DG:9:ARG:O | 41:DG:11:TYR:N | 2.51 | 0.44 |
| 4:AD:9:CYS:HB2 | 4:AD:22:LYS:HD2 | 1.98 | 0.44 |
| 17:CQ:29:HIS:HB3 | 17:CQ:33:GLY:O | 2.16 | 0.44 |
| 23:CW:27:G:H2' | 23:CW:28:G:C8 | 2.52 | 0.44 |
| 30:D5:36:CYS:HB3 | 30:D5:38:ALA:HB3 | 1.96 | 0.44 |
| 35:BA:2162:G:H2' | 35:BA:2163:C:O4' | 2.17 | 0.44 |
| 3:AC:30:ARG:NH1 | 14:AN:38:GLY:H | 2.16 | 0.44 |
| 35:BA:2309:A:H2 | 35:BA:2310:A:C2 | 2.35 | 0.44 |
| 41:BG:133:LEU:HD12 | 41:BG:157:ILE:HG22 | 2.00 | 0.44 |
| 35:BA:2657:A:O2' | 42:BH:160:LYS:HE2 | 2.18 | 0.44 |
| 2:CB:45:GLN:O | 2:CB:48:MET:HB3 | 2.16 | 0.44 |
| 13:AM:56:LEU:HD13 | 13:AM:56:LEU:C | 2.38 | 0.44 |
| 50:BT:33:LYS:O | 50:BT:40:THR:O | 2.35 | 0.44 |
| 33:D8:37:SER:OG | 33:D8:40:GLU:HG3 | 2.17 | 0.44 |
| 35:DA:1181:C:O2' | 35:DA:1182:A:H5' | 2.17 | 0.44 |
| 36:BB:69:G:H2' | 36:BB:70:C:H6 | 1.81 | 0.44 |
| 35:BA:2811:G:N2 | 35:BA:2891:G:H1' | 2.32 | 0.44 |
| 30:D5:56:LYS:HG2 | 30:D5:57:VAL:N | 2.31 | 0.44 |
| 31:D6:40:CYS:SG | 31:D6:45:LYS:NZ | 2.82 | 0.44 |
| 35:BA:2056:G:N2 | 35:BA:2057:A:C4 | 2.86 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 46:BP:71:VAL:HG12 | 46:BP:72:PRO:HD3 | 1.97 | 0.44 |
| 35:DA:389:G:C2 | 46:DP:70:GLN:HG3 | 2.52 | 0.44 |
| 1:CA:460:G:C6 | 1:CA:470:C:H5' | 2.51 | 0.44 |
| 35:DA:1260:G:O2' | 35:DA:1261:C:H5' | 2.17 | 0.44 |
| 47:DQ:1:MET:HE2 | 47:DQ:2:LEU:CB | 2.47 | 0.44 |
| 3:AC:19:GLU:O | 3:AC:40:ARG:NH2 | 2.40 | 0.44 |
| 2:CB:166:ASP:CG | 2:CB:169:LYS:HB2 | 2.37 | 0.44 |
| 35:BA:2086:U:H2' | 35:BA:2087:G:C8 | 2.52 | 0.44 |
| 19:AS:10:PHE:HZ | 19:AS:70:LYS:CD | 2.28 | 0.44 |
| 30:D5:19:ARG:NH1 | 35:DA:1266:G:OP2 | 2.50 | 0.44 |
| 3:AC:156:ARG:H | 3:AC:163:ALA:HA | 1.82 | 0.44 |
| 54:BX:52:VAL:O | 54:BX:52:VAL:HG12 | 2.18 | 0.44 |
| 1:AA:930:C:C2' | 1:AA:931:C:H5' | 2.47 | 0.44 |
| 44:BN:65:LYS:O | 44:BN:69:GLN:HB2 | 2.18 | 0.44 |
| 45:DO:26:LYS:HB3 | 45:DO:27:GLY:H | 1.66 | 0.44 |
| 1:CA:199:G:H2' | 1:CA:200:G:C8 | 2.50 | 0.44 |
| 41:DG:36:LYS:HD2 | 41:DG:38:VAL:CG2 | 2.46 | 0.44 |
| 46:BP:62:LEU:CD2 | 46:BP:62:LEU:N | 2.81 | 0.44 |
| 1:CA:472:A:H4' | 16:CP:82:GLN:HE22 | 1.82 | 0.44 |
| 1:AA:413:G:H22 | 1:AA:429:U:P | 2.41 | 0.44 |
| 6:CF:1:MET:CE | 6:CF:68:PRO:HB3 | 2.47 | 0.44 |
| 1:AA:312:C:H2' | 1:AA:313:A:H8 | 1.81 | 0.44 |
| 8:CH:56:LYS:HA | 8:CH:57:PRO:HD2 | 1.75 | 0.44 |
| 35:BA:1037:G:H1 | 35:BA:1118:C:N4 | 2.16 | 0.44 |
| 5:AE:47:LYS:H | 5:AE:47:LYS:HD2 | 1.81 | 0.44 |
| 35:DA:2472:G:H2' | 35:DA:2475:C:H42 | 1.82 | 0.44 |
| 13:AM:29:ARG:HD3 | 13:AM:64:TRP:CZ2 | 2.52 | 0.44 |
| 1:AA:401:C:H2' | 1:AA:402:G:C8 | 2.53 | 0.44 |
| 1:CA:1095:U:H2' | 1:CA:1096:C:O4' | 2.17 | 0.44 |
| 22:AV:72:C:C2' | 22:AV:73:A:H5' | 2.47 | 0.44 |
| 35:BA:1550:C:H2' | 35:BA:1551:C:H6 | 1.81 | 0.44 |
| 35:BA:2553:G:H2' | 35:BA:2554:U:C4' | 2.48 | 0.44 |
| 20:AT:18:GLN:O | 20:AT:22:ARG:HG3 | 2.17 | 0.44 |
| 35:BA:201:C:C2' | 35:BA:202:U:H5' | 2.48 | 0.44 |
| 54:BX:59:VAL:N | 54:BX:76:ARG:O | 2.50 | 0.44 |
| 17:CQ:94:ASN:O | 17:CQ:98:LEU:HG | 2.17 | 0.44 |
| 12:CL:79:GLU:HG2 | 12:CL:80:HIS:ND1 | 2.33 | 0.44 |
| 1:CA:898:G:N2 | 1:CA:901:A:OP2 | 2.49 | 0.44 |
| 1:CA:914:A:H2' | 1:CA:915:A:H8 | 1.82 | 0.44 |
| 7:CG:97:GLN:HG2 | 7:CG:101:LEU:HD11 | 1.99 | 0.44 |
| 35:BA:594:U:H2' | 35:BA:595:C:H6 | 1.82 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 47:DQ:118:LEU:O | 47:DQ:121:ALA:N | 2.50 | 0.44 |
| 6:AF:7:ASN:HD22 | 6:AF:7:ASN:N | 2.14 | 0.44 |
| 35:BA:2456:C:H6 | 35:BA:2456:C:O5' | 2.00 | 0.44 |
| 37:BC:43:VAL:O | 37:BC:43:VAL:HG12 | 2.17 | 0.44 |
| 8:CH:125:ARG:HH11 | 8:CH:125:ARG:HG3 | 1.82 | 0.44 |
| 43:DI:127:VAL:HG12 | 43:DI:128:LEU:N | 2.33 | 0.44 |
| 35:DA:302:C:H2' | 35:DA:303:U:C6 | 2.52 | 0.44 |
| 1:CA:1508:G:H2' | 1:CA:1509:C:O4' | 2.17 | 0.44 |
| 54:BX:3:THR:O | 54:BX:4:ALA:HB3 | 2.18 | 0.44 |
| 12:AL:64:TYR:HB3 | 12:AL:65:GLU:H | 1.60 | 0.44 |
| 9:AI:103:THR:HG22 | 9:AI:105:ASP:N | 2.32 | 0.44 |
| 9:AI:53:VAL:HG11 | 9:AI:85:LEU:CD2 | 2.48 | 0.44 |
| 9:AI:65:VAL:C | 9:AI:66:ARG:HG3 | 2.38 | 0.44 |
| 9:AI:93:ARG:NH1 | 9:AI:96:LEU:HD23 | 2.32 | 0.44 |
| 1:AA:1054:C:H5 | 1:AA:1196:U:C5 | 2.36 | 0.44 |
| 31:D6:47:THR:HB | 31:D6:49:HIS:HE1 | 1.82 | 0.44 |
| 54:DX:63:LYS:HB2 | 54:DX:72:LYS:HG3 | 1.98 | 0.44 |
| 2:CB:57:PHE:HD2 | 2:CB:185:ILE:HD11 | 1.82 | 0.44 |
| 2:CB:74:LYS:HB2 | 2:CB:74:LYS:NZ | 2.32 | 0.44 |
| 38:DD:44:ASN:OD1 | 38:DD:44:ASN:N | 2.50 | 0.44 |
| 39:DE:68:ALA:C | 39:DE:70:ALA:H | 2.21 | 0.44 |
| 49:DS:98:VAL:HG12 | 49:DS:100:ALA:H | 1.82 | 0.44 |
| 1:CA:1259:C:H42 | 1:CA:1276:G:H1 | 1.64 | 0.44 |
| 3:CC:70:VAL:O | 3:CC:105:GLU:HA | 2.16 | 0.44 |
| 35:DA:2313:C:C4' | 41:DG:40:ASN:ND2 | 2.81 | 0.44 |
| 35:DA:2313:C:C6 | 35:DA:2314:C:H5 | 2.35 | 0.44 |
| 35:BA:1162:G:H4' | 52:BV:24:LYS:HB2 | 1.99 | 0.44 |
| 23:AW:38:A:H2' | 23:AW:39:U:C5' | 2.47 | 0.44 |
| 43:DI:107:VAL:HG12 | 43:DI:108:THR:N | 2.32 | 0.44 |
| 47:DQ:20:ALA:O | 47:DQ:21:THR:OG1 | 2.30 | 0.44 |
| 49:BS:99:LYS:C | 49:BS:101:LEU:N | 2.71 | 0.44 |
| 35:DA:827:U:H2' | 35:DA:2068:U:C2 | 2.52 | 0.44 |
| 41:DG:153:ARG:NH1 | 41:DG:153:ARG:HB2 | 2.31 | 0.44 |
| 25:B0:41:ARG:H | 25:B0:41:ARG:NE | 2.12 | 0.44 |
| 35:BA:686:G:H21 | 35:BA:788:A:H61 | 1.64 | 0.44 |
| 33:D8:33:ASN:O | 33:D8:34:TRP:CB | 2.65 | 0.44 |
| 35:BA:1168:G:O2' | 35:BA:1169:G:H5' | 2.17 | 0.44 |
| 1:CA:769:G:H4' | 1:CA:1513:A:H4' | 1.99 | 0.44 |
| 1:AA:1030:C:C3' | 1:AA:1030(A):G:H5' | 2.48 | 0.44 |
| 14:CN:3:ARG:CG | 14:CN:3:ARG:HH11 | 2.30 | 0.44 |
| 32:D7:46:VAL:CG1 | 32:D7:47:ARG:N | 2.80 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 51:BU:27:LEU:HA | 51:BU:27:LEU:HD23 | 1.73 | 0.44 |
| 35:DA:1504:C:O2' | 35:DA:1505:C:H5' | 2.17 | 0.44 |
| 35:BA:2097:C:H2' | 35:BA:2098:U:O4' | 2.18 | 0.44 |
| 43:DI:8:PRO:HB3 | 43:DI:14:ASP:CA | 2.47 | 0.44 |
| 47:BQ:72:LYS:HA | 47:BQ:73:PRO:HD3 | 1.79 | 0.44 |
| 23:CW:36:A:H2' | 23:CW:37:A:O4' | 2.17 | 0.44 |
| 27:B2:37:PHE:HE2 | 54:BX:92:LEU:HD21 | 1.81 | 0.44 |
| 1:AA:190:U:O2 | 20:AT:105:SER:HB2 | 2.16 | 0.44 |
| 37:DC:40:THR:CG2 | 37:DC:215:THR:CB | 2.96 | 0.44 |
| 38:BD:65:ILE:HD13 | 38:BD:65:ILE:O | 2.17 | 0.44 |
| 50:DT:38:ASN:ND2 | 50:DT:40:THR:H | 2.15 | 0.44 |
| 35:BA:1996:C:P | 45:BO:31:LYS:NZ | 2.90 | 0.44 |
| 50:BT:128:GLU:C | 50:BT:128:GLU:OE1 | 2.56 | 0.44 |
| 50:BT:133:GLU:HG3 | 50:BT:137:LYS:HG3 | 1.99 | 0.44 |
| 38:DD:8:PRO:HB3 | 38:DD:14:ARG:CB | 2.47 | 0.44 |
| 35:BA:878:A:H5' | 35:BA:878:A:N3 | 2.32 | 0.44 |
| 1:AA:513:C:N3 | 1:AA:539:A:C2 | 2.85 | 0.44 |
| 35:BA:1107:G:O2' | 35:BA:1108:U:H5' | 2.17 | 0.44 |
| 35:BA:563:G:H5' | 35:BA:572:A:H4' | 1.98 | 0.44 |
| 7:AG:148:ASN:ND2 | 7:AG:148:ASN:N | 2.64 | 0.44 |
| 38:BD:8:PRO:HB3 | 38:BD:14:ARG:CB | 2.48 | 0.44 |
| 35:DA:1139:G:H5' | 44:DN:102:ALA:HA | 1.98 | 0.44 |
| 38:DD:231:HIS:ND1 | 38:DD:232:PRO:CD | 2.78 | 0.44 |
| 1:CA:830:G:N2 | 1:CA:857:C:C2 | 2.86 | 0.44 |
| 41:DG:95:ARG:O | 41:DG:96:ARG:C | 2.55 | 0.44 |
| 48:BR:34:ILE:CG2 | 48:BR:35:THR:N | 2.80 | 0.44 |
| 12:CL:86:ARG:N | 12:CL:99:HIS:O | 2.45 | 0.44 |
| 6:AF:66:GLU:O | 6:AF:67:MET:HB3 | 2.16 | 0.44 |
| 1:AA:830:G:O2' | 1:AA:831:U:H5' | 2.18 | 0.44 |
| 35:DA:79:G:O2' | 35:DA:80:G:H5' | 2.18 | 0.44 |
| 35:BA:2777:G:H5'' | 35:BA:2778:A:H5' | 1.99 | 0.44 |
| 35:BA:1958:C:O2' | 35:BA:1959:G:H5' | 2.17 | 0.44 |
| 51:BU:103:PRO:HG2 | 51:BU:104:GLN:OE1 | 2.18 | 0.44 |
| 12:CL:126:LYS:CD | 12:CL:127:GLU:H | 2.31 | 0.44 |
| 50:BT:103:ARG:O | 50:BT:104:ASN:C | 2.56 | 0.44 |
| 20:AT:89:ARG:HG3 | 20:AT:89:ARG:NH2 | 2.32 | 0.44 |
| 29:B4:45:GLY:O | 29:B4:46:ASN:C | 2.56 | 0.44 |
| 1:CA:1143:G:H2' | 1:CA:1144:G:H8 | 1.83 | 0.44 |
| 17:CQ:89:LEU:O | 17:CQ:92:ARG:HB3 | 2.17 | 0.44 |
| 44:BN:72:TYR:N | 44:BN:85:ILE:O | 2.34 | 0.44 |
| 10:AJ:42:THR:HG22 | 10:AJ:43:ARG:N | 2.32 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:665:C:O2' | 35:DA:666:G:H5' | 2.17 | 0.44 |
| 7:AG:18:TYR:HD2 | 7:AG:59:LEU:HB2 | 1.82 | 0.44 |
| 1:AA:409:G:H2' | 1:AA:410:G:O4' | 2.17 | 0.44 |
| 56:DZ:141:VAL:HG13 | 56:DZ:141:VAL:O | 2.18 | 0.44 |
| 22:CV:1:G:H1 | 22:CV:72:C:H42 | 1.64 | 0.44 |
| 35:DA:1125:G:H3' | 35:DA:1126:A:H5'' | 1.99 | 0.44 |
| 38:BD:215:LEU:HD13 | 38:BD:217:ARG:NH2 | 2.33 | 0.44 |
| 1:CA:324:G:OP1 | 20:CT:70:SER:HB2 | 2.17 | 0.44 |
| 2:CB:132:LYS:HA | 2:CB:135:GLN:HG3 | 1.99 | 0.44 |
| 40:DF:24:LEU:HD13 | 40:DF:24:LEU:HA | 1.88 | 0.44 |
| 9:AI:48:GLU:HA | 9:AI:51:ARG:HD2 | 2.00 | 0.44 |
| 1:CA:1375:A:H2' | 1:CA:1376:U:C6 | 2.52 | 0.44 |
| 2:AB:214:ILE:O | 2:AB:218:ALA:HB2 | 2.18 | 0.44 |
| 35:BA:833:U:O2 | 46:BP:55:ARG:NH1 | 2.50 | 0.44 |
| 36:BB:37:C:C2' | 36:BB:38:C:H5' | 2.47 | 0.44 |
| 51:BU:62:ILE:HD11 | 51:BU:93:LYS:HG2 | 1.99 | 0.44 |
| 56:BZ:128:VAL:CG2 | 56:BZ:129:SER:N | 2.81 | 0.44 |
| 39:BE:79:ARG:HH11 | 39:BE:79:ARG:CG | 2.29 | 0.44 |
| 38:DD:80:ALA:HB3 | 38:DD:94:LEU:HD22 | 1.98 | 0.44 |
| 3:CC:182:ILE:HG12 | 3:CC:203:PHE:HA | 1.98 | 0.44 |
| 52:BV:18:LEU:HD22 | 52:BV:19:LYS:HA | 1.97 | 0.44 |
| 35:BA:1495:A:N3 | 35:BA:1495:A:H2' | 2.33 | 0.44 |
| 1:CA:1324:A:C4' | 1:CA:1362:C:H4' | 2.47 | 0.44 |
| 10:AJ:28:ARG:NH1 | 10:AJ:28:ARG:HG2 | 2.31 | 0.44 |
| 28:D3:8:LEU:HD12 | 28:D3:31:LEU:CA | 2.32 | 0.44 |
| 41:BG:133:LEU:CD1 | 41:BG:157:ILE:HG22 | 2.48 | 0.44 |
| 36:BB:21:G:O2' | 36:BB:22:U:C6 | 2.70 | 0.44 |
| 36:BB:32:C:C2 | 36:BB:51:G:N2 | 2.86 | 0.44 |
| 49:BS:66:ALA:HA | 49:BS:69:VAL:CG1 | 2.47 | 0.44 |
| 37:DC:78:ALA:HB3 | 37:DC:83:ILE:HD13 | 2.00 | 0.44 |
| 55:DY:60:PHE:O | 55:DY:61:ILE:C | 2.55 | 0.44 |
| 38:DD:25:THR:O | 38:DD:26:LYS:CB | 2.65 | 0.44 |
| 35:DA:672:C:H2' | 35:DA:673:C:H6 | 1.83 | 0.44 |
| 8:AH:65:TYR:N | 8:AH:65:TYR:CD1 | 2.85 | 0.44 |
| 1:AA:174:C:O5' | 1:AA:174:C:H6 | 2.01 | 0.44 |
| 22:AY:8:U:C4' | 22:AY:48:C:H4' | 2.44 | 0.44 |
| 47:DQ:62:GLY:HA3 | 47:DQ:107:ALA:O | 2.17 | 0.44 |
| 19:AS:13:ASP:C | 19:AS:15:LEU:N | 2.70 | 0.44 |
| 26:B1:80:LEU:HD22 | 26:B1:82:LEU:CD1 | 2.48 | 0.44 |
| 35:BA:94(A):G:H2' | 35:BA:95:G:O4' | 2.17 | 0.44 |
| 3:AC:40:ARG:NH1 | 3:AC:40:ARG:HG3 | 2.33 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:CR:53:ARG:HH11 | 18:CR:53:ARG:CB | 2.31 | 0.44 |
| 43:BI:10:GLU:O | 43:BI:11:ASN:HB3 | 2.16 | 0.44 |
| 35:DA:1865:G:H5' | 35:DA:1866:C:P | 2.57 | 0.44 |
| 6:AF:86:ARG:O | 6:AF:87:ARG:HG2 | 2.17 | 0.44 |
| 6:AF:52:ILE:HD12 | 6:AF:87:ARG:HH12 | 1.82 | 0.44 |
| 1:AA:373:A:H2' | 1:AA:374:A:H8 | 1.82 | 0.44 |
| 27:B2:10:LEU:HD11 | 35:BA:77:C:H5'' | 1.99 | 0.44 |
| 50:BT:92:GLY:C | 50:BT:94:ALA:N | 2.71 | 0.44 |
| 8:CH:44:PHE:HA | 8:CH:79:VAL:CG1 | 2.47 | 0.44 |
| 19:CS:5:LEU:HD22 | 19:CS:5:LEU:N | 2.32 | 0.44 |
| 35:DA:1436:G:C3' | 35:DA:1437:C:H5'' | 2.47 | 0.44 |
| 11:CK:17:GLY:HA3 | 11:CK:77:MET:SD | 2.58 | 0.44 |
| 2:CB:121:LEU:CD1 | 2:CB:130:ARG:HH11 | 2.29 | 0.44 |
| 1:CA:1228:C:H2' | 1:CA:1229:A:C8 | 2.52 | 0.44 |
| 35:DA:418:G:O2' | 35:DA:419:C:H5' | 2.18 | 0.44 |
| 30:B5:41:PRO:O | 30:B5:44:THR:OG1 | 2.32 | 0.44 |
| 35:DA:605:C:H1' | 35:DA:657:U:O2' | 2.17 | 0.44 |
| 32:D7:30:VAL:HG12 | 32:D7:31:LEU:N | 2.32 | 0.44 |
| 35:BA:1548:C:H2' | 35:BA:1549:C:H6 | 1.82 | 0.44 |
| 35:DA:2777:G:H5'' | 35:DA:2778:A:H5' | 1.99 | 0.44 |
| 35:DA:875:G:O4' | 56:DZ:170:THR:HG21 | 2.17 | 0.44 |
| 42:BH:137:ASP:HB3 | 42:BH:140:LYS:HB3 | 1.99 | 0.44 |
| 53:BW:82:LEU:HD13 | 53:BW:98:LYS:CB | 2.48 | 0.44 |
| 51:BU:8:VAL:HG11 | 51:BU:12:ARG:NH2 | 2.32 | 0.44 |
| 54:BX:64:LYS:HB2 | 54:BX:64:LYS:NZ | 2.33 | 0.44 |
| 1:AA:1445:C:H2' | 1:AA:1446:U:C5' | 2.47 | 0.44 |
| 35:DA:2820:A:O2' | 35:DA:2821:A:OP1 | 2.29 | 0.44 |
| 35:BA:1794:U:H2' | 35:BA:1795:C:C6 | 2.51 | 0.44 |
| 1:CA:1097:C:O2' | 1:CA:1098:C:H5' | 2.17 | 0.44 |
| 35:BA:491:G:H2' | 35:BA:492:A:C8 | 2.52 | 0.44 |
| 1:AA:699:C:C2' | 1:AA:700:G:H5' | 2.47 | 0.44 |
| 35:BA:2282:G:H5'' | 35:BA:2283:C:O4' | 2.18 | 0.44 |
| 35:BA:353:G:O2' | 35:BA:354:G:H5' | 2.18 | 0.44 |
| 35:BA:2855:C:H2' | 35:BA:2856:C:H6 | 1.82 | 0.44 |
| 54:BX:3:THR:HA | 54:BX:6:ASP:OD2 | 2.17 | 0.44 |
| 1:AA:1001(A):G:H2' | 1:AA:1002:G:O4' | 2.17 | 0.44 |
| 35:BA:2852:G:C2 | 35:BA:2853:C:C2 | 3.05 | 0.44 |
| 44:BN:97:ARG:HA | 44:BN:100:GLU:HB2 | 2.00 | 0.44 |
| 1:CA:359:U:H2' | 1:CA:360:A:C8 | 2.53 | 0.44 |
| 1:AA:119:A:H4' | 1:AA:120:A:O5' | 2.18 | 0.44 |
| 35:BA:2409:G:H2' | 35:BA:2410:G:O4' | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:685:G:O2' | 1:AA:686:U:H5' | 2.17 | 0.44 |
| 35:DA:728:G:C6 | 35:DA:730:C:C4 | 3.05 | 0.44 |
| 3:AC:101:LEU:HD23 | 3:AC:102:ASN:O | 2.17 | 0.44 |
| 36:BB:4:C:H2' | 36:BB:5:C:C6 | 2.53 | 0.44 |
| 35:BA:760:G:H2' | 35:BA:761:A:O4' | 2.18 | 0.44 |
| 1:AA:1134:G:N2 | 1:AA:1141:C:C2 | 2.85 | 0.44 |
| 35:BA:972:G:OP2 | 35:BA:974:G:H5'' | 2.18 | 0.44 |
| 40:BF:179:GLU:CD | 40:BF:179:GLU:H | 2.20 | 0.44 |
| 44:BN:51:PHE:CE2 | 44:BN:119:ARG:HD2 | 2.53 | 0.44 |
| 56:DZ:27:VAL:HG12 | 56:DZ:85:HIS:HE1 | 1.83 | 0.44 |
| 12:AL:41:ARG:HH22 | 12:AL:57:LYS:NZ | 2.15 | 0.44 |
| 40:DF:125:LEU:HD22 | 40:DF:125:LEU:N | 2.33 | 0.44 |
| 40:DF:157:VAL:HB | 40:DF:194:MET:CB | 2.48 | 0.44 |
| 1:CA:522:C:H42 | 1:CA:528:C:N4 | 2.15 | 0.44 |
| 2:CB:61:LEU:HD12 | 2:CB:66:GLY:HA3 | 1.98 | 0.44 |
| 2:CB:8:LYS:HD3 | 2:CB:217:ARG:CZ | 2.46 | 0.44 |
| 2:CB:69:LEU:HD13 | 2:CB:92:TYR:HA | 2.00 | 0.44 |
| 35:DA:2864:G:H8 | 35:DA:2864:G:C5' | 2.30 | 0.44 |
| 35:DA:2759:G:H5' | 35:DA:2759:G:C8 | 2.52 | 0.44 |
| 43:BI:110:ASP:HA | 43:BI:111:PRO:HD2 | 1.92 | 0.44 |
| 51:BU:114:LYS:HA | 51:BU:117:GLN:HG3 | 2.00 | 0.44 |
| 52:BV:34:GLU:O | 52:BV:36:PRO:HD2 | 2.17 | 0.44 |
| 39:BE:111:ARG:HD2 | 39:BE:160:TYR:CE1 | 2.53 | 0.44 |
| 46:DP:16:ARG:C | 46:DP:16:ARG:HH11 | 2.21 | 0.44 |
| 39:DE:14:ILE:HG12 | 39:DE:21:VAL:HG22 | 1.98 | 0.44 |
| 35:DA:2162:G:H2' | 35:DA:2163:C:O4' | 2.17 | 0.44 |
| 40:BF:161:GLU:O | 40:BF:164:ARG:HB3 | 2.17 | 0.44 |
| 41:BG:92:VAL:HG13 | 41:BG:92:VAL:O | 2.17 | 0.44 |
| 35:BA:1493:C:C4 | 35:BA:2206:G:O2' | 2.70 | 0.44 |
| 47:BQ:56:ARG:HA | 47:BQ:56:ARG:NE | 2.22 | 0.44 |
| 47:BQ:53:ALA:O | 47:BQ:56:ARG:HB2 | 2.17 | 0.44 |
| 47:BQ:55:VAL:HG12 | 47:BQ:64:ILE:CD1 | 2.48 | 0.44 |
| 53:DW:34:ASN:O | 53:DW:37:ARG:HB3 | 2.18 | 0.44 |
| 3:AC:151:VAL:HG12 | 3:AC:152:ILE:N | 2.33 | 0.44 |
| 1:AA:940:C:H2' | 1:AA:941:G:H8 | 1.83 | 0.44 |
| 1:AA:1313:U:P | 19:AS:6:LYS:CB | 3.06 | 0.44 |
| 35:DA:2481:G:HO2' | 35:DA:2482:G:P | 2.40 | 0.44 |
| 22:AY:41:C:C3' | 22:AY:42:C:C5' | 2.94 | 0.44 |
| 55:BY:41:GLY:O | 55:BY:42:VAL:O | 2.35 | 0.44 |
| 30:B5:48:GLU:C | 30:B5:50:GLY:H | 2.21 | 0.44 |
| 3:AC:30:ARG:HH11 | 14:AN:38:GLY:H | 1.64 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:587:C:O2' | 35:BA:588:U:OP2 | 2.27 | 0.44 |
| 35:DA:827:U:H2' | 35:DA:2068:U:O2 | 2.17 | 0.44 |
| 25:B0:43:THR:N | 35:BA:2331:G:H4' | 2.31 | 0.44 |
| 42:DH:85:LYS:HE2 | 42:DH:141:VAL:O | 2.16 | 0.44 |
| 37:BC:78:ALA:HB3 | 37:BC:83:ILE:HD13 | 1.98 | 0.44 |
| 33:B8:37:SER:OG | 33:B8:40:GLU:HG3 | 2.18 | 0.44 |
| 23:AW:19:G:H5' | 23:AW:20:U:H5 | 1.82 | 0.44 |
| 26:D1:73:LEU:HD13 | 26:D1:94:LEU:HD22 | 1.99 | 0.44 |
| 41:BG:8:LYS:O | 41:BG:12:TYR:HD1 | 2.01 | 0.44 |
| 1:CA:622:A:C8 | 1:CA:623:C:C6 | 3.05 | 0.44 |
| 1:AA:1028:C:H42 | 1:AA:1034:G:N2 | 2.15 | 0.44 |
| 43:BI:114:LEU:HD23 | 43:BI:114:LEU:N | 2.31 | 0.44 |
| 1:AA:977:A:HO2' | 1:AA:978:A:H5' | 1.83 | 0.44 |
| 35:DA:2632:A:H2' | 35:DA:2633:G:C8 | 2.53 | 0.44 |
| 43:BI:81:VAL:HB | 43:BI:123:LEU:HD21 | 2.00 | 0.44 |
| 16:CP:8:ARG:CG | 16:CP:9:PHE:H | 2.29 | 0.44 |
| 16:AP:21:VAL:CG1 | 16:AP:34:GLU:HB3 | 2.48 | 0.44 |
| 7:CG:15:ASP:HB3 | 7:CG:19:GLY:H | 1.82 | 0.44 |
| 35:DA:2849:U:O4 | 50:DT:23:ARG:NH2 | 2.49 | 0.44 |
| 56:DZ:19:ARG:HH11 | 56:DZ:25:PRO:HD2 | 1.77 | 0.44 |
| 56:DZ:41:LEU:HD22 | 56:DZ:82:ARG:NH1 | 2.32 | 0.44 |
| 1:AA:646:U:H2' | 1:AA:647:C:C6 | 2.53 | 0.44 |
| 1:AA:649:G:H2' | 1:AA:650:G:C8 | 2.51 | 0.44 |
| 35:BA:744:G:OP1 | 39:BE:132:HIS:HB2 | 2.17 | 0.44 |
| 43:DI:60:GLU:O | 43:DI:64:GLU:HB2 | 2.18 | 0.44 |
| 47:DQ:39:PRO:HB3 | 47:DQ:99:PRO:HD3 | 1.99 | 0.44 |
| 1:AA:624:C:O3' | 16:AP:10:GLY:HA2 | 2.18 | 0.44 |
| 36:BB:56:G:H5' | 41:BG:27:ASN:ND2 | 2.32 | 0.44 |
| 47:BQ:1:MET:HE2 | 47:BQ:2:LEU:CB | 2.47 | 0.44 |
| 51:BU:6:THR:O | 51:BU:9:VAL:HG23 | 2.18 | 0.44 |
| 35:BA:1866:C:O2 | 35:BA:1866:C:C2' | 2.60 | 0.44 |
| 39:DE:176:ILE:N | 39:DE:176:ILE:CD1 | 2.75 | 0.44 |
| 35:BA:672:C:H2' | 35:BA:673:C:H6 | 1.83 | 0.44 |
| 35:DA:948:G:C2 | 35:DA:970:C:O2 | 2.71 | 0.44 |
| 1:CA:371:G:H21 | 1:CA:374:A:N6 | 2.16 | 0.44 |
| 36:DB:87:G:H3' | 36:DB:88:C:C5' | 2.47 | 0.44 |
| 1:AA:942:G:N2 | 9:AI:124:GLN:HE22 | 2.16 | 0.44 |
| 35:BA:1188:U:C2' | 35:BA:1189:A:H5' | 2.47 | 0.44 |
| 35:BA:1952:A:C6 | 45:BO:22:ILE:HD12 | 2.53 | 0.44 |
| 1:CA:90:U:H3' | 1:CA:91:C:H5' | 2.00 | 0.44 |
| 3:CC:90:GLU:OE1 | 3:CC:93:LYS:HD3 | 2.18 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:D2:50:ILE:C | 27:D2:52:ASP:N | 2.70 | 0.44 |
| 17:CQ:83:ASP:CG | 17:CQ:84:LEU:H | 2.21 | 0.44 |
| 35:BA:2779:U:H4' | 35:BA:2780:G:C5' | 2.48 | 0.44 |
| 4:AD:23:GLY:HA3 | 4:AD:112:VAL:HG22 | 1.99 | 0.44 |
| 41:DG:83:ARG:NH1 | 41:DG:84:LYS:NZ | 2.64 | 0.44 |
| 7:CG:43:PHE:O | 7:CG:46:ALA:HB3 | 2.17 | 0.44 |
| 51:BU:34:LYS:HA | 51:BU:34:LYS:CE | 2.46 | 0.44 |
| 35:DA:1445:A:H5'' | 35:DA:1445(A):C:H5 | 1.81 | 0.44 |
| 1:AA:1287:A:H2 | 1:AA:1353:G:N3 | 2.15 | 0.44 |
| 35:DA:688:U:H2' | 35:DA:689:A:C8 | 2.52 | 0.44 |
| 3:CC:156:ARG:H | 3:CC:163:ALA:HA | 1.82 | 0.44 |
| 51:BU:104:GLN:HB3 | 52:BV:44:LYS:NZ | 2.33 | 0.44 |
| 27:D2:23:LYS:O | 27:D2:27:GLU:HG3 | 2.17 | 0.44 |
| 35:BA:39:C:H2' | 35:BA:40:C:H6 | 1.83 | 0.44 |
| 35:BA:2841:C:H2' | 35:BA:2842:G:C8 | 2.51 | 0.44 |
| 1:CA:1264:C:H2' | 1:CA:1265:G:C8 | 2.53 | 0.44 |
| 26:B1:50:ARG:HG2 | 26:B1:59:THR:HG22 | 1.99 | 0.44 |
| 5:CE:63:ARG:HG2 | 5:CE:63:ARG:HH11 | 1.82 | 0.44 |
| 35:BA:2625:G:H2' | 35:BA:2626:C:O4' | 2.18 | 0.44 |
| 4:CD:154:ASN:O | 4:CD:155:LEU:C | 2.55 | 0.44 |
| 35:BA:501:A:C6 | 35:BA:502:A:C6 | 3.05 | 0.44 |
| 1:AA:961:U:O2' | 1:AA:962:C:H5' | 2.17 | 0.44 |
| 1:CA:1486:G:H2' | 1:CA:1487:G:O4' | 2.16 | 0.44 |
| 42:DH:125:VAL:HG12 | 42:DH:125:VAL:O | 2.17 | 0.44 |
| 44:DN:117:PHE:O | 44:DN:117:PHE:CG | 2.70 | 0.44 |
| 35:DA:594:U:H2' | 35:DA:595:C:H6 | 1.82 | 0.44 |
| 35:DA:251:A:C5 | 35:DA:252:G:H1' | 2.52 | 0.44 |
| 1:AA:1147:C:O2 | 9:AI:16:ARG:NH1 | 2.50 | 0.44 |
| 9:AI:82:ALA:HA | 9:AI:85:LEU:HG | 1.98 | 0.44 |
| 22:AY:33:U:H3' | 22:AY:34:G:H5'' | 1.99 | 0.44 |
| 2:AB:42:ILE:HD13 | 2:AB:203:GLY:HA2 | 1.99 | 0.44 |
| 2:AB:61:LEU:HD12 | 2:AB:66:GLY:HA3 | 2.00 | 0.44 |
| 2:CB:8:LYS:C | 2:CB:12:GLU:HG3 | 2.38 | 0.44 |
| 51:BU:91:ASP:OD1 | 51:BU:96:ALA:HB2 | 2.16 | 0.44 |
| 35:DA:2492:U:C2 | 35:DA:2493:U:C5 | 3.05 | 0.44 |
| 10:CJ:57:LYS:HE3 | 10:CJ:60:ARG:HH22 | 1.83 | 0.44 |
| 10:CJ:48:THR:CB | 10:CJ:62:HIS:HB3 | 2.48 | 0.44 |
| 51:DU:85:LYS:C | 51:DU:87:GLY:H | 2.21 | 0.44 |
| 10:AJ:47:PHE:CE2 | 14:AN:37:PHE:HE2 | 2.36 | 0.44 |
| 10:AJ:62:HIS:N | 10:AJ:62:HIS:CD2 | 2.83 | 0.44 |
| 33:D8:6:THR:HG21 | 33:D8:63:PRO:HD3 | 1.95 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:DG:171:ALA:O | 41:DG:175:LEU:HG | 2.17 | 0.44 |
| 10:CJ:28:ARG:NH1 | 10:CJ:34:VAL:H | 2.15 | 0.44 |
| 46:BP:98:GLU:C | 46:BP:98:GLU:OE1 | 2.56 | 0.44 |
| 48:DR:49:ASP:O | 48:DR:52:ILE:N | 2.51 | 0.44 |
| 42:BH:158:HIS:NE2 | 42:BH:170:ARG:CA | 2.67 | 0.44 |
| 49:DS:99:LYS:C | 49:DS:101:LEU:H | 2.21 | 0.44 |
| 49:DS:57:LYS:HG2 | 49:DS:58:LEU:N | 2.33 | 0.44 |
| 46:DP:7:ARG:NH1 | 46:DP:7:ARG:HB3 | 2.33 | 0.44 |
| 35:DA:2534:A:H2' | 35:DA:2535:G:O4' | 2.18 | 0.44 |
| 37:BC:99:ILE:HG22 | 37:BC:99:ILE:O | 2.18 | 0.44 |
| 31:B6:23:THR:HG21 | 35:BA:2419:U:C4' | 2.48 | 0.44 |
| 35:BA:2262:U:H2' | 35:BA:2263:C:H5' | 2.00 | 0.44 |
| 26:D1:83:GLU:O | 26:D1:84:GLY:O | 2.35 | 0.44 |
| 11:AK:127:LYS:CE | 11:AK:127:LYS:HA | 2.38 | 0.44 |
| 35:BA:2147:G:C2' | 35:BA:2148:G:O4' | 2.58 | 0.44 |
| 56:BZ:108:PRO:HD3 | 56:BZ:117:LEU:CD2 | 2.47 | 0.44 |
| 56:BZ:108:PRO:CB | 56:BZ:117:LEU:HB2 | 2.48 | 0.44 |
| 35:BA:942:G:O2' | 35:BA:943:U:H5' | 2.18 | 0.44 |
| 35:BA:2870:C:H5'' | 48:BR:65:LEU:CD2 | 2.40 | 0.44 |
| 11:AK:48:ILE:HG22 | 11:AK:49:GLY:H | 1.82 | 0.44 |
| 1:AA:277:C:P | 17:AQ:41:LYS:HZ2 | 2.40 | 0.44 |
| 35:BA:1503:U:C2 | 35:BA:1504:C:C5 | 3.06 | 0.44 |
| 35:DA:1503:U:C2 | 35:DA:1504:C:C5 | 3.06 | 0.44 |
| 12:CL:24:VAL:HA | 12:CL:25:PRO:HD2 | 1.89 | 0.44 |
| 35:BA:2097:C:O2' | 35:BA:2098:U:H5' | 2.17 | 0.44 |
| 42:DH:27:LYS:HG2 | 42:DH:32:GLU:OE1 | 2.18 | 0.44 |
| 23:CW:56:C:C4 | 23:CW:57:G:N7 | 2.86 | 0.44 |
| 50:BT:23:ARG:HA | 50:BT:52:ILE:CD1 | 2.48 | 0.44 |
| 2:CB:103:THR:OG1 | 2:CB:176:GLU:HG2 | 2.17 | 0.44 |
| 54:BX:27:THR:HA | 54:BX:80:ILE:HA | 1.99 | 0.44 |
| 31:D6:39:TYR:O | 31:D6:40:CYS:HB2 | 2.18 | 0.44 |
| 26:B1:51:VAL:HG21 | 26:B1:74:VAL:HG21 | 1.99 | 0.44 |
| 5:CE:76:ILE:CG2 | 5:CE:77:PRO:HD2 | 2.44 | 0.44 |
| 48:BR:87:TYR:CE1 | 48:BR:117:VAL:O | 2.67 | 0.44 |
| 35:DA:1011:G:C2 | 35:DA:1151:G:C2 | 3.06 | 0.44 |
| 48:DR:87:TYR:CE1 | 48:DR:117:VAL:O | 2.66 | 0.44 |
| 34:B9:22:ARG:HH12 | 35:BA:2741:A:H5'' | 1.83 | 0.44 |
| 50:DT:33:LYS:O | 50:DT:40:THR:O | 2.36 | 0.44 |
| 52:DV:21:ARG:H | 52:DV:21:ARG:CD | 2.30 | 0.44 |
| 11:AK:88:GLY:O | 11:AK:91:ARG:HB2 | 2.18 | 0.44 |
| 8:CH:40:ALA:C | 8:CH:42:GLU:N | 2.71 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:DE:4:ILE:HG23 | 39:DE:4:ILE:O | 2.17 | 0.44 |
| 38:DD:211:ARG:HA | 38:DD:214:TRP:CD2 | 2.53 | 0.44 |
| 46:BP:139:LYS:HD2 | 46:BP:139:LYS:O | 2.17 | 0.44 |
| 1:CA:942:G:C2 | 1:CA:943:U:C2 | 3.06 | 0.44 |
| 1:CA:61:G:O2' | 1:CA:62:U:H5' | 2.18 | 0.44 |
| 1:CA:62:U:O2' | 1:CA:379:C:H1' | 2.18 | 0.44 |
| 30:B5:19:ARG:NH1 | 35:BA:1266:G:OP2 | 2.51 | 0.44 |
| 7:AG:30:ILE:HD13 | 7:AG:105:VAL:HG22 | 2.00 | 0.44 |
| 11:CK:111:ASP:HA | 18:CR:84:LYS:CG | 2.46 | 0.44 |
| 22:CV:17:C:C2' | 22:CV:18:G:H5'' | 2.48 | 0.44 |
| 35:DA:1362:C:O2' | 35:DA:1363:C:H5' | 2.18 | 0.44 |
| 1:AA:59:A:H1' | 1:AA:354:G:C2 | 2.53 | 0.44 |
| 35:BA:608:A:OP1 | 40:BF:100:THR:CG2 | 2.65 | 0.44 |
| 22:CY:51:U:H3' | 22:CY:52:G:C8 | 2.48 | 0.44 |
| 35:DA:2558:C:H2' | 35:DA:2559:C:H6 | 1.82 | 0.44 |
| 35:BA:2391:G:O6 | 35:BA:2425:A:H8 | 2.01 | 0.44 |
| 4:AD:162:LEU:HD12 | 4:AD:181:MET:HE2 | 1.99 | 0.44 |
| 7:AG:108:ALA:HA | 7:AG:111:ARG:HD2 | 2.00 | 0.44 |
| 44:DN:90:MET:HB3 | 44:DN:98:VAL:CG2 | 2.47 | 0.44 |
| 6:AF:2:ARG:HD2 | 6:AF:4:TYR:OH | 2.18 | 0.44 |
| 1:AA:123:C:H5'' | 1:AA:311:C:O2' | 2.17 | 0.44 |
| 1:CA:1349:A:H2' | 1:CA:1350:A:O4' | 2.17 | 0.44 |
| 35:BA:2707:G:H2' | 35:BA:2708:G:C8 | 2.52 | 0.44 |
| 17:CQ:76:LEU:CG | 17:CQ:77:VAL:H | 2.30 | 0.44 |
| 53:BW:68:ARG:HH11 | 53:BW:68:ARG:HG3 | 1.81 | 0.44 |
| 35:BA:1192:G:C2' | 35:BA:1193:G:H5' | 2.47 | 0.44 |
| 1:AA:509:A:C2 | 1:AA:510:A:C2 | 3.06 | 0.44 |
| 20:CT:18:GLN:O | 20:CT:22:ARG:HG3 | 2.17 | 0.44 |
| 36:DB:73:A:H2' | 36:DB:74:U:H5' | 1.99 | 0.44 |
| 52:DV:83:ARG:HG2 | 52:DV:83:ARG:HH11 | 1.83 | 0.44 |
| 5:AE:122:GLU:OE1 | 5:AE:131:ILE:HG13 | 2.18 | 0.44 |
| 1:CA:1132:C:O2' | 1:CA:1133:G:H5' | 2.18 | 0.44 |
| 17:CQ:92:ARG:HA | 17:CQ:95:TYR:CD2 | 2.52 | 0.44 |
| 17:AQ:26:GLN:O | 17:AQ:27:PHE:HB3 | 2.18 | 0.44 |
| 1:CA:603:U:H2' | 1:CA:604:G:H8 | 1.82 | 0.44 |
| 35:BA:1261:C:C2' | 35:BA:1262:A:O5' | 2.66 | 0.44 |
| 35:DA:1570:A:H2' | 35:DA:1571:A:C8 | 2.53 | 0.44 |
| 3:CC:158:GLY:C | 3:CC:160:ALA:H | 2.21 | 0.44 |
| 35:BA:1570:A:H2' | 35:BA:1571:A:C8 | 2.52 | 0.44 |
| 35:BA:1028:A:H2' | 35:BA:1029:A:C8 | 2.53 | 0.44 |
| 40:DF:147:GLY:O | 40:DF:148:LEU:HD23 | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:1186:G:H8 | 35:BA:1186:G:O5' | 2.01 | 0.44 |
| 1:AA:1036:G:OP2 | 1:AA:1036:G:H8 | 2.01 | 0.44 |
| 35:BA:1588:C:O2 | 35:BA:1588:C:H2' | 2.16 | 0.44 |
| 8:AH:38:ILE:HA | 8:AH:41:ARG:HB3 | 1.99 | 0.44 |
| 28:B3:6:VAL:HG13 | 28:B3:56:VAL:HG22 | 1.98 | 0.44 |
| 1:AA:66:G:H4' | 1:AA:173:U:C5 | 2.53 | 0.44 |
| 3:AC:159:GLY:HA2 | 3:AC:193:TYR:CG | 2.53 | 0.44 |
| 33:D8:13:ARG:HD2 | 46:DP:61:ARG:NH1 | 2.33 | 0.44 |
| 49:BS:93:LYS:O | 49:BS:94:TYR:C | 2.55 | 0.44 |
| 55:BY:84:ARG:HH22 | 55:BY:97:ARG:HD3 | 1.83 | 0.44 |
| 13:AM:120:LYS:HA | 13:AM:120:LYS:CE | 2.39 | 0.44 |
| 2:AB:67:THR:CG2 | 2:AB:155:LEU:HD21 | 2.48 | 0.44 |
| 9:CI:53:VAL:HG11 | 9:CI:85:LEU:CD2 | 2.47 | 0.44 |
| 35:DA:2334:G:H5' | 49:DS:13:ARG:HG3 | 1.98 | 0.44 |
| 46:BP:59:LEU:C | 46:BP:61:ARG:HD2 | 2.38 | 0.44 |
| 39:DE:110:GLY:O | 48:DR:5:LYS:NZ | 2.48 | 0.44 |
| 52:BV:62:LEU:N | 52:BV:62:LEU:HD22 | 2.33 | 0.44 |
| 33:D8:61:LEU:C | 33:D8:63:PRO:HD2 | 2.38 | 0.44 |
| 41:DG:113:ARG:HG2 | 41:DG:113:ARG:NH1 | 2.33 | 0.44 |
| 52:DV:20:LEU:CD1 | 52:DV:20:LEU:N | 2.80 | 0.44 |
| 56:DZ:166:SER:HB2 | 56:DZ:167:PRO:CA | 2.48 | 0.44 |
| 47:DQ:55:VAL:HG12 | 47:DQ:64:ILE:HD12 | 2.00 | 0.44 |
| 1:AA:1324:A:C4' | 1:AA:1362:C:H4' | 2.48 | 0.44 |
| 55:BY:67:LEU:HD11 | 55:BY:71:LYS:HB2 | 1.99 | 0.44 |
| 30:B5:33:CYS:HB3 | 30:B5:38:ALA:HB3 | 1.99 | 0.44 |
| 37:BC:172:HIS:O | 37:BC:173:ALA:O | 2.35 | 0.44 |
| 35:DA:2726:U:H6 | 45:DO:67:LYS:NZ | 2.14 | 0.44 |
| 22:AV:68:C:H2' | 22:AV:69:G:O4' | 2.17 | 0.44 |
| 36:BB:21:G:O2' | 36:BB:22:U:O4' | 2.36 | 0.44 |
| 35:BA:1140:C:P | 44:BN:66:LYS:HZ3 | 2.41 | 0.44 |
| 27:B2:2:LYS:HE3 | 27:B2:2:LYS:O | 2.17 | 0.44 |
| 2:AB:118:LEU:HB2 | 2:AB:142:LEU:CD1 | 2.35 | 0.44 |
| 44:DN:62:VAL:CG1 | 44:DN:62:VAL:O | 2.65 | 0.44 |
| 35:DA:136:G:H1 | 35:DA:143(A):C:N4 | 2.14 | 0.44 |
| 31:B6:25:LYS:HD2 | 33:B8:34:TRP:CZ2 | 2.53 | 0.44 |
| 23:AW:16:U:N3 | 23:AW:19:G:OP2 | 2.51 | 0.44 |
| 50:DT:64:ARG:HG2 | 50:DT:64:ARG:NH1 | 2.33 | 0.44 |
| 45:BO:88:ASN:ND2 | 45:BO:90:GLN:N | 2.64 | 0.44 |
| 25:D0:20:ARG:H | 25:D0:20:ARG:HD3 | 1.82 | 0.44 |
| 35:BA:1598:C:O3' | 54:BX:35:THR:HG23 | 2.18 | 0.44 |
| 35:DA:481:G:O2' | 35:DA:482:A:P | 2.76 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:858:U:O2 | 35:DA:2268:A:N3 | 2.51 | 0.44 |
| 25:B0:19:LYS:O | 25:B0:20:ARG:C | 2.56 | 0.44 |
| 1:CA:1030:C:C3' | 1:CA:1030(A):G:H5' | 2.48 | 0.44 |
| 53:DW:6:ILE:HG12 | 53:DW:104:THR:HG23 | 2.00 | 0.44 |
| 56:BZ:153:SER:H | 56:BZ:167:PRO:HB2 | 1.82 | 0.44 |
| 1:CA:1513:A:C4 | 1:CA:1514:C:C5 | 3.06 | 0.44 |
| 43:BI:113:ARG:HB3 | 43:BI:131:LYS:CB | 2.43 | 0.44 |
| 43:BI:8:PRO:HB3 | 43:BI:14:ASP:HA | 2.00 | 0.44 |
| 35:DA:2811:G:N2 | 35:DA:2891:G:H1' | 2.33 | 0.44 |
| 54:DX:12:VAL:HG13 | 54:DX:27:THR:O | 2.17 | 0.44 |
| 16:AP:18:ARG:HD3 | 16:AP:35:LYS:CD | 2.42 | 0.44 |
| 56:DZ:115:GLY:HA2 | 56:DZ:174:VAL:CG1 | 2.48 | 0.44 |
| 47:DQ:133:ARG:HG3 | 47:DQ:133:ARG:NH1 | 2.32 | 0.44 |
| 5:CE:41:VAL:C | 5:CE:66:MET:HG2 | 2.38 | 0.44 |
| 50:BT:3:ARG:C | 50:BT:5:ALA:N | 2.71 | 0.44 |
| 16:CP:2:VAL:HG22 | 16:CP:3:LYS:N | 2.33 | 0.44 |
| 1:AA:1369:C:H2' | 1:AA:1370:G:C8 | 2.52 | 0.44 |
| 28:B3:19:GLN:NE2 | 28:B3:52:HIS:HE1 | 2.09 | 0.44 |
| 46:DP:90:ARG:HD3 | 46:DP:91:PHE:CD2 | 2.53 | 0.44 |
| 38:DD:10:THR:O | 38:DD:13:ARG:HB3 | 2.18 | 0.44 |
| 1:AA:718:G:H5' | 11:AK:117:ASN:CG | 2.38 | 0.44 |
| 10:CJ:58:ASP:O | 10:CJ:59:SER:C | 2.56 | 0.44 |
| 10:AJ:40:LEU:HG | 10:AJ:69:ASN:CB | 2.48 | 0.44 |
| 30:D5:20:ARG:HG2 | 30:D5:20:ARG:HH11 | 1.83 | 0.44 |
| 27:B2:30:ARG:NH2 | 54:BX:46:ALA:HA | 2.33 | 0.44 |
| 3:CC:86:VAL:C | 3:CC:89:GLU:HB3 | 2.38 | 0.44 |
| 54:DX:83:VAL:HG12 | 54:DX:87:GLN:HB2 | 1.99 | 0.44 |
| 3:CC:206:GLU:HG2 | 3:CC:207:VAL:N | 2.33 | 0.44 |
| 39:BE:48:GLN:O | 39:BE:48:GLN:HG2 | 2.18 | 0.44 |
| 38:BD:52:ARG:HG3 | 38:BD:52:ARG:H | 1.52 | 0.44 |
| 6:AF:33:TYR:CE2 | 6:AF:74:ASP:HB3 | 2.49 | 0.44 |
| 7:CG:111:ARG:HB3 | 7:CG:113:GLU:OE2 | 2.17 | 0.44 |
| 35:DA:817:C:H2' | 35:DA:818:G:O4' | 2.17 | 0.44 |
| 35:BA:2390:U:O2' | 35:BA:2391:G:H5' | 2.18 | 0.44 |
| 35:DA:1045:A:N3 | 35:DA:1045:A:C2' | 2.81 | 0.44 |
| 35:BA:2819:G:H1 | 35:BA:2827:C:H42 | 1.66 | 0.44 |
| 22:CV:56:C:H2' | 22:CV:57:G:C8 | 2.53 | 0.44 |
| 18:AR:30:ASP:C | 18:AR:32:ARG:H | 2.22 | 0.44 |
| 35:BA:1234:U:C2' | 35:BA:1235:G:H5' | 2.47 | 0.44 |
| 1:AA:423:G:C2' | 1:AA:424:G:H5' | 2.48 | 0.44 |
| 4:AD:128:VAL:O | 4:AD:130:GLY:N | 2.51 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:CA:414:A:H5' | 1:CA:414:A:H8 | 1.82 | 0.44 |
| 1:CA:687:A:N3 | 1:CA:688:G:H1' | 2.33 | 0.44 |
| 35:BA:730:C:O2' | 35:BA:731:C:H5' | 2.17 | 0.44 |
| 38:BD:72:LYS:HE3 | 38:BD:101:GLU:HB3 | 2.00 | 0.44 |
| 35:DA:2854:G:O2' | 35:DA:2855:C:H5' | 2.18 | 0.44 |
| 35:BA:1292:U:H2' | 35:BA:1293:C:C6 | 2.53 | 0.44 |
| 7:AG:18:TYR:CD2 | 7:AG:59:LEU:HB2 | 2.52 | 0.44 |
| 13:CM:119:GLY:O | 13:CM:121:LYS:HE2 | 2.18 | 0.44 |
| 35:BA:1125:G:H3' | 35:BA:1126:A:H5'' | 1.99 | 0.44 |
| 3:CC:159:GLY:HA2 | 3:CC:193:TYR:CG | 2.53 | 0.44 |
| 10:AJ:65:LEU:CD1 | 14:AN:55:GLY:HA3 | 2.48 | 0.44 |
| 35:DA:1963:U:C2' | 35:DA:1963:U:O2 | 2.66 | 0.44 |
| 35:DA:157:U:P | 35:DA:157:U:H6 | 2.41 | 0.44 |
| 3:CC:111:LEU:HD21 | 3:CC:146:ALA:HB2 | 1.99 | 0.44 |
| 31:B6:19:ARG:HD3 | 31:B6:43:CYS:SG | 2.58 | 0.44 |
| 9:AI:92:TYR:O | 9:AI:95:LYS:HG3 | 2.18 | 0.44 |
| 1:AA:1054:C:C2' | 1:AA:1055:A:H5'' | 2.47 | 0.44 |
| 1:CA:522:C:H2' | 1:CA:523:A:O4' | 2.18 | 0.44 |
| 1:CA:1147:C:O2 | 9:CI:16:ARG:NH1 | 2.51 | 0.44 |
| 1:AA:1376:U:H2' | 1:AA:1377:A:C8 | 2.53 | 0.44 |
| 46:BP:57:THR:OG1 | 46:BP:59:LEU:HB3 | 2.17 | 0.44 |
| 55:DY:77:PRO:O | 55:DY:78:ALA:CB | 2.65 | 0.44 |
| 1:CA:1053:G:C3' | 1:CA:1054:C:C5' | 2.94 | 0.44 |
| 38:DD:48:ARG:CG | 38:DD:48:ARG:HH11 | 2.12 | 0.44 |
| 43:BI:94:ALA:O | 43:BI:96:ASP:N | 2.50 | 0.44 |
| 51:BU:92:ARG:HH21 | 51:BU:95:LEU:CD1 | 2.31 | 0.44 |
| 51:BU:92:ARG:NH1 | 51:BU:92:ARG:CG | 2.80 | 0.44 |
| 47:BQ:140:ALA:HA | 56:BZ:99:TYR:CE1 | 2.53 | 0.44 |
| 39:BE:86:PRO:O | 39:BE:88:GLY:N | 2.47 | 0.44 |
| 35:BA:1999:C:H2' | 35:BA:2000:G:O4' | 2.18 | 0.44 |
| 3:AC:77:ILE:HG12 | 3:AC:84:ILE:CD1 | 2.48 | 0.44 |
| 3:CC:141:VAL:CG1 | 3:CC:202:ILE:HD12 | 2.30 | 0.44 |
| 44:DN:41:ASP:O | 44:DN:42:TRP:C | 2.56 | 0.44 |
| 33:D8:6:THR:CG2 | 35:DA:243:U:OP1 | 2.65 | 0.44 |
| 47:BQ:54:MET:HG2 | 47:BQ:64:ILE:HD13 | 2.00 | 0.44 |
| 55:DY:28:LYS:HG2 | 55:DY:28:LYS:H | 1.43 | 0.44 |
| 50:DT:57:PHE:O | 50:DT:58:ASN:ND2 | 2.50 | 0.44 |
| 3:CC:130:VAL:HG21 | 3:CC:157:ILE:HG23 | 2.00 | 0.44 |
| 5:CE:105:VAL:HB | 5:CE:106:PRO:CD | 2.46 | 0.44 |
| 1:CA:1124:G:H4' | 10:CJ:38:ILE:CG2 | 2.48 | 0.44 |
| 45:DO:5:GLN:HE21 | 45:DO:20:MET:HE1 | 1.83 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 45:DO:69:ILE:HG13 | 45:DO:69:ILE:H | 1.68 | 0.44 |
| 46:DP:106:LEU:HD13 | 46:DP:112:LEU:HD23 | 2.00 | 0.44 |
| 3:AC:11:ARG:O | 3:AC:13:GLY:N | 2.50 | 0.44 |
| 25:B0:42:GLY:HA3 | 35:BA:2331:G:O4' | 2.17 | 0.44 |
| 1:AA:266:G:H4' | 1:AA:267:C:C5 | 2.52 | 0.44 |
| 13:CM:52:GLU:O | 13:CM:56:LEU:CB | 2.66 | 0.44 |
| 17:CQ:68:ARG:NH1 | 17:CQ:68:ARG:CG | 2.81 | 0.44 |
| 26:D1:86:SER:O | 26:D1:87:PRO:C | 2.56 | 0.44 |
| 38:DD:24:ILE:O | 38:DD:25:THR:C | 2.55 | 0.44 |
| 39:BE:101:ARG:HD3 | 39:BE:101:ARG:HA | 1.65 | 0.44 |
| 35:DA:2188:C:H2' | 35:DA:2189:U:O4' | 2.18 | 0.44 |
| 6:AF:70:ASP:O | 6:AF:72:VAL:N | 2.50 | 0.44 |
| 35:DA:1528(A):A:H2' | 35:DA:1529:G:H5'' | 2.00 | 0.44 |
| 35:BA:1502:C:H5' | 35:BA:1503:U:OP2 | 2.18 | 0.44 |
| 22:AV:41:C:H2' | 22:AV:42:C:H5'' | 1.99 | 0.44 |
| 3:AC:39:ILE:HG21 | 3:AC:57:ILE:HD11 | 2.00 | 0.44 |
| 38:DD:186:HIS:HD2 | 38:DD:188:GLU:N | 2.07 | 0.44 |
| 6:CF:100:ASN:ND2 | 18:CR:23:LYS:HE3 | 2.28 | 0.44 |
| 35:DA:910:A:C6 | 35:DA:911:A:C6 | 3.06 | 0.44 |
| 26:B1:78:LYS:HB2 | 26:B1:78:LYS:HE3 | 1.84 | 0.44 |
| 22:CY:19:G:H5' | 22:CY:20:U:C5 | 2.53 | 0.44 |
| 1:CA:328:C:O2' | 1:CA:329:A:OP2 | 2.33 | 0.44 |
| 55:DY:2:ARG:HG2 | 55:DY:2:ARG:NH1 | 2.33 | 0.44 |
| 35:DA:1003:G:N2 | 35:DA:1153:C:C2 | 2.85 | 0.44 |
| 35:BA:999:U:C2' | 35:BA:1000:A:H5'' | 2.48 | 0.44 |
| 49:DS:106:ARG:NH2 | 49:DS:109:GLY:N | 2.66 | 0.44 |
| 9:AI:116:LYS:O | 9:AI:117:HIS:C | 2.56 | 0.44 |
| 35:DA:479:A:H4' | 35:DA:480:A:OP1 | 2.17 | 0.44 |
| 35:DA:2735:G:H2' | 35:DA:2736:G:H5' | 2.00 | 0.44 |
| 48:DR:104:ARG:NH1 | 48:DR:104:ARG:CB | 2.78 | 0.44 |
| 11:CK:88:GLY:O | 11:CK:91:ARG:HB2 | 2.18 | 0.44 |
| 4:AD:2:GLY:O | 4:AD:3:ARG:C | 2.56 | 0.44 |
| 2:AB:166:ASP:CG | 2:AB:169:LYS:HB2 | 2.38 | 0.44 |
| 48:BR:12:ARG:HB3 | 48:BR:16:HIS:CD2 | 2.53 | 0.44 |
| 43:DI:48:GLU:C | 43:DI:50:ARG:N | 2.71 | 0.44 |
| 35:BA:1042:G:N2 | 35:BA:1043:C:H4' | 2.33 | 0.44 |
| 35:DA:527:C:N4 | 35:DA:2779:U:OP1 | 2.51 | 0.44 |
| 42:DH:149:ARG:NH1 | 42:DH:164:TYR:HD1 | 2.16 | 0.44 |
| 7:CG:148:ASN:O | 7:CG:150:ALA:N | 2.50 | 0.44 |
| 1:AA:90:U:H3' | 1:AA:91:C:H5' | 2.00 | 0.44 |
| 45:BO:71:ARG:HB3 | 45:BO:73:ASP:OD2 | 2.18 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:189(I):G:H2' | 1:AA:189(J):G:C8 | 2.53 | 0.44 |
| 39:BE:34:VAL:CG2 | 39:BE:48:GLN:HE21 | 2.30 | 0.44 |
| 1:CA:551:U:H5' | 12:CL:119:LYS:HE2 | 1.99 | 0.44 |
| 35:BA:529:A:H4' | 35:BA:530:G:H5' | 1.99 | 0.44 |
| 35:BA:2329:G:H2' | 35:BA:2330:G:C8 | 2.52 | 0.44 |
| 1:AA:1349:A:H2' | 1:AA:1350:A:O4' | 2.18 | 0.44 |
| 7:AG:46:ALA:O | 7:AG:49:ILE:N | 2.50 | 0.44 |
| 38:BD:197:GLY:O | 38:BD:198:ASN:HB3 | 2.18 | 0.44 |
| 15:AO:46:HIS:C | 15:AO:48:LYS:H | 2.21 | 0.44 |
| 4:AD:54:TYR:CE1 | 4:AD:209:ARG:NH1 | 2.86 | 0.44 |
| 6:AF:22:GLU:HA | 6:AF:22:GLU:OE2 | 2.18 | 0.44 |
| 35:DA:1922:G:H2' | 35:DA:1923:U:O4' | 2.17 | 0.44 |
| 35:BA:1711:C:H2' | 35:BA:1712:C:H6 | 1.83 | 0.44 |
| 35:DA:1157:G:C2' | 35:DA:1158:C:H5' | 2.47 | 0.44 |
| 1:AA:1098:C:H2' | 1:AA:1099:G:O4' | 2.17 | 0.44 |
| 53:BW:57:ASN:O | 53:BW:58:ALA:C | 2.57 | 0.44 |
| 1:AA:1487:G:C2' | 1:AA:1488:G:H5' | 2.47 | 0.44 |
| 1:CA:1098:C:H2' | 1:CA:1099:G:O4' | 2.18 | 0.44 |
| 48:DR:107:ASP:C | 48:DR:107:ASP:OD2 | 2.56 | 0.44 |
| 50:BT:48:ILE:CD1 | 50:BT:65:LYS:HD3 | 2.48 | 0.44 |
| 35:BA:2749:A:H1' | 42:BH:63:SER:OG | 2.18 | 0.44 |
| 1:CA:586:C:C2' | 1:CA:587:G:H5' | 2.48 | 0.44 |
| 17:CQ:25:ARG:HG3 | 17:CQ:25:ARG:HH11 | 1.82 | 0.44 |
| 15:AO:38:ARG:NH1 | 15:AO:38:ARG:HG2 | 2.33 | 0.44 |
| 35:DA:1131:G:O2' | 35:DA:1132:A:H8 | 2.01 | 0.44 |
| 38:BD:215:LEU:HD13 | 38:BD:217:ARG:HH21 | 1.83 | 0.44 |
| 1:CA:71:C:H2' | 1:CA:72:C:H6 | 1.83 | 0.44 |
| 38:DD:215:LEU:HD13 | 38:DD:217:ARG:HH21 | 1.82 | 0.44 |
| 38:DD:215:LEU:HD13 | 38:DD:217:ARG:NH2 | 2.33 | 0.44 |
| 40:DF:150:GLY:HA2 | 40:DF:172:TRP:CD2 | 2.53 | 0.44 |
| 35:BA:765:G:H2' | 35:BA:766:C:C6 | 2.53 | 0.44 |
| 4:AD:49:ARG:O | 4:AD:51:PRO:HD3 | 2.18 | 0.44 |
| 35:BA:1131:G:OP2 | 35:BA:2515:C:H4' | 2.18 | 0.44 |
| 43:DI:6:LEU:O | 43:DI:7:GLU:C | 2.54 | 0.44 |
| 2:AB:132:LYS:HA | 2:AB:135:GLN:HG3 | 1.99 | 0.44 |
| 1:AA:282:A:H2' | 1:AA:282:A:N3 | 2.32 | 0.44 |
| 4:AD:168:ARG:HH11 | 4:AD:168:ARG:HG3 | 1.83 | 0.44 |
| 15:AO:44:LYS:HB2 | 15:AO:44:LYS:HE3 | 1.74 | 0.44 |
| 35:DA:826:U:OP1 | 35:DA:2428:G:H3' | 2.17 | 0.44 |
| 56:DZ:29:TYR:O | 56:DZ:89:PHE:HD2 | 2.01 | 0.43 |
| 56:DZ:44:PHE:HE1 | 56:DZ:48:PHE:CD2 | 2.36 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:DZ:89:PHE:CE1 | 56:DZ:96:VAL:HG21 | 2.53 | 0.43 |
| 46:DP:5:ASP:OD2 | 46:DP:6:LEU:HD22 | 2.18 | 0.43 |
| 9:AI:15:ALA:HB2 | 9:AI:65:VAL:CB | 2.46 | 0.43 |
| 31:D6:20:ASN:CG | 31:D6:21:TYR:N | 2.71 | 0.43 |
| 2:AB:8:LYS:HD3 | 2:AB:217:ARG:CZ | 2.47 | 0.43 |
| 2:CB:207:ALA:C | 2:CB:209:ARG:N | 2.70 | 0.43 |
| 1:CA:180:U:C2' | 1:CA:181:G:C5' | 2.89 | 0.43 |
| 51:BU:89:GLU:HG2 | 52:BV:50:PRO:HG3 | 2.00 | 0.43 |
| 39:DE:86:PRO:O | 39:DE:88:GLY:N | 2.45 | 0.43 |
| 35:DA:1175:U:O5' | 35:DA:1176:G:H5' | 2.18 | 0.43 |
| 13:CM:82:MET:O | 13:CM:82:MET:CG | 2.64 | 0.43 |
| 41:DG:123:ASN:O | 41:DG:126:ASP:OD2 | 2.35 | 0.43 |
| 38:BD:270:ILE:C | 38:BD:271:ILE:CG1 | 2.85 | 0.43 |
| 55:DY:40:GLU:HA | 55:DY:40:GLU:OE2 | 2.18 | 0.43 |
| 35:BA:1797:C:O2' | 38:BD:259:THR:HG21 | 2.17 | 0.43 |
| 30:D5:36:CYS:SG | 30:D5:38:ALA:HB2 | 2.58 | 0.43 |
| 41:BG:112:PRO:O | 41:BG:114:ILE:N | 2.51 | 0.43 |
| 35:DA:510:C:O2' | 35:DA:511:U:H5' | 2.17 | 0.43 |
| 35:DA:1190:G:H5'' | 46:DP:35:HIS:CA | 2.45 | 0.43 |
| 1:AA:266:G:O2' | 1:AA:267:C:P | 2.76 | 0.43 |
| 43:DI:114:LEU:O | 43:DI:129:THR:O | 2.35 | 0.43 |
| 53:BW:75:TYR:HE1 | 53:BW:104:THR:CB | 2.30 | 0.43 |
| 35:BA:1169:G:H1 | 35:BA:1180:C:N4 | 2.16 | 0.43 |
| 46:BP:40:SER:O | 46:BP:41:ARG:NE | 2.51 | 0.43 |
| 8:AH:84:ARG:HH22 | 8:AH:86:ILE:HD11 | 1.74 | 0.43 |
| 1:AA:105:G:H2' | 1:AA:106:C:H6 | 1.83 | 0.43 |
| 27:B2:18:PRO:O | 27:B2:20:GLU:N | 2.51 | 0.43 |
| 10:AJ:13:HIS:HB3 | 10:AJ:68:HIS:HE1 | 1.74 | 0.43 |
| 35:DA:1503:U:C4 | 35:DA:1504:C:N4 | 2.85 | 0.43 |
| 23:CW:15:G:N2 | 23:CW:48:C:C2 | 2.86 | 0.43 |
| 3:CC:47:LEU:HD23 | 3:CC:52:LEU:HD13 | 2.00 | 0.43 |
| 8:AH:12:ARG:HH11 | 8:AH:26:VAL:HA | 1.83 | 0.43 |
| 19:AS:15:LEU:N | 19:AS:15:LEU:CD2 | 2.80 | 0.43 |
| 43:BI:56:LYS:HG3 | 43:BI:57:ARG:N | 2.33 | 0.43 |
| 56:DZ:41:LEU:HD22 | 56:DZ:82:ARG:HH12 | 1.83 | 0.43 |
| 36:DB:37:C:C2' | 36:DB:38:C:H5' | 2.48 | 0.43 |
| 18:AR:53:ARG:HD2 | 18:AR:63:GLN:HB2 | 1.99 | 0.43 |
| 23:AW:62:C:H2' | 23:AW:63:G:C8 | 2.53 | 0.43 |
| 35:BA:953:A:H2' | 35:BA:954:G:C5' | 2.48 | 0.43 |
| 55:BY:2:ARG:HG2 | 55:BY:2:ARG:NH1 | 2.33 | 0.43 |
| 34:D9:20:HIS:C | 34:D9:22:ARG:H | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AK:124:LYS:HB3 | 11:AK:125:PHE:HD1 | 1.81 | 0.43 |
| 39:DE:4:ILE:C | 39:DE:5:LEU:HD23 | 2.39 | 0.43 |
| 6:CF:52:ILE:HD12 | 6:CF:87:ARG:HH12 | 1.83 | 0.43 |
| 35:DA:1819:A:H5'' | 38:DD:161:THR:HG21 | 2.00 | 0.43 |
| 21:AU:5:ASP:O | 21:AU:8:THR:HG23 | 2.18 | 0.43 |
| 29:D4:64:LYS:O | 29:D4:65:CYS:SG | 2.73 | 0.43 |
| 35:DA:1419:A:C3' | 35:DA:1420:U:H5'' | 2.48 | 0.43 |
| 35:BA:2592:G:O5' | 35:BA:2592:G:H8 | 2.01 | 0.43 |
| 48:DR:34:ILE:CG2 | 48:DR:35:THR:N | 2.80 | 0.43 |
| 7:CG:113:GLU:O | 7:CG:119:ARG:HD3 | 2.18 | 0.43 |
| 1:CA:5:U:C2 | 4:CD:86:LYS:HE2 | 2.53 | 0.43 |
| 1:CA:1101:A:H4' | 1:CA:1102:A:O5' | 2.17 | 0.43 |
| 35:DA:1368:G:O2' | 35:DA:1369:G:H5' | 2.18 | 0.43 |
| 35:BA:1711:C:O2' | 35:BA:1712:C:H5' | 2.18 | 0.43 |
| 10:AJ:90:LEU:N | 10:AJ:91:PRO:HD3 | 2.31 | 0.43 |
| 35:DA:2517:C:C4 | 35:DA:2542:A:C6 | 3.06 | 0.43 |
| 7:AG:72:ARG:O | 7:AG:73:MET:HG3 | 2.17 | 0.43 |
| 1:AA:189(B):C:H2' | 1:AA:189(C):C:C6 | 2.53 | 0.43 |
| 1:AA:586:C:O2' | 1:AA:587:G:H5' | 2.18 | 0.43 |
| 50:DT:103:ARG:O | 50:DT:104:ASN:C | 2.56 | 0.43 |
| 35:DA:741:G:O2' | 35:DA:742:G:H5' | 2.18 | 0.43 |
| 16:CP:73:LEU:O | 16:CP:77:ALA:HB2 | 2.18 | 0.43 |
| 2:CB:34:ALA:HB1 | 2:CB:36:ARG:CD | 2.48 | 0.43 |
| 10:CJ:46:ARG:HA | 10:CJ:64:GLU:HA | 2.00 | 0.43 |
| 11:CK:93:GLN:O | 11:CK:97:ALA:HB3 | 2.18 | 0.43 |
| 1:AA:1068:G:N7 | 1:AA:1094:G:H2' | 2.34 | 0.43 |
| 39:DE:6:GLY:O | 39:DE:195:LEU:HD12 | 2.18 | 0.43 |
| 1:CA:119:A:H4' | 1:CA:120:A:O5' | 2.18 | 0.43 |
| 35:DA:724:U:H2' | 35:DA:725:G:O4' | 2.18 | 0.43 |
| 1:CA:143:A:H2 | 1:CA:220:G:H1 | 1.64 | 0.43 |
| 16:AP:73:LEU:O | 16:AP:77:ALA:HB2 | 2.18 | 0.43 |
| 36:DB:66:A:O2' | 36:DB:67:G:P | 2.76 | 0.43 |
| 40:BF:25:PRO:CB | 40:BF:119:ARG:HD3 | 2.49 | 0.43 |
| 31:B6:47:THR:HB | 31:B6:49:HIS:HE1 | 1.82 | 0.43 |
| 9:AI:14:VAL:O | 9:AI:65:VAL:HA | 2.17 | 0.43 |
| 9:AI:88:TYR:O | 9:AI:89:ASN:ND2 | 2.52 | 0.43 |
| 1:CA:1376:U:H2' | 1:CA:1377:A:C8 | 2.53 | 0.43 |
| 9:CI:82:ALA:HA | 9:CI:85:LEU:HG | 1.99 | 0.43 |
| 50:BT:32:TYR:HB3 | 50:BT:81:PRO:HB3 | 2.00 | 0.43 |
| 1:AA:1254:C:H2' | 1:AA:1255:G:C8 | 2.53 | 0.43 |
| 41:DG:46:ALA:C | 41:DG:51:ARG:HD2 | 2.38 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 38:BD:44:ASN:CB | 38:BD:48:ARG:O | 2.59 | 0.43 |
| 39:DE:79:ARG:NH1 | 39:DE:79:ARG:HG2 | 2.31 | 0.43 |
| 39:BE:69:LYS:O | 39:BE:71:GLY:N | 2.51 | 0.43 |
| 3:AC:72:LYS:O | 3:AC:72:LYS:HG2 | 2.18 | 0.43 |
| 10:CJ:63:PHE:CZ | 14:CN:45:ARG:HG3 | 2.52 | 0.43 |
| 51:DU:114:LYS:HA | 51:DU:117:GLN:HG3 | 1.99 | 0.43 |
| 35:DA:2310:A:O2' | 35:DA:2311:A:H5' | 2.18 | 0.43 |
| 41:DG:14:GLU:H | 41:DG:17:PRO:CD | 2.30 | 0.43 |
| 1:CA:1313:U:P | 19:CS:6:LYS:CB | 3.06 | 0.43 |
| 29:B4:57:ILE:HD12 | 41:BG:142:PRO:O | 2.18 | 0.43 |
| 35:BA:1666:G:H1' | 45:BO:3:GLN:HE21 | 1.80 | 0.43 |
| 35:BA:2862:G:H2' | 35:BA:2863:C:H6 | 1.83 | 0.43 |
| 49:DS:33:LYS:C | 49:DS:34:HIS:HD2 | 2.21 | 0.43 |
| 33:B8:61:LEU:HD12 | 33:B8:62:LEU:H | 1.81 | 0.43 |
| 35:DA:143(A):C:H2' | 35:DA:143(A):C:O2 | 2.17 | 0.43 |
| 50:BT:35:LYS:O | 50:BT:37:GLY:N | 2.51 | 0.43 |
| 35:DA:405:U:H3' | 35:DA:406:G:C5' | 2.45 | 0.43 |
| 43:DI:130:TYR:O | 43:DI:135:GLU:HG2 | 2.18 | 0.43 |
| 25:D0:41:ARG:CD | 25:D0:44:ARG:HD3 | 2.48 | 0.43 |
| 35:DA:1168:G:O2' | 35:DA:1169:G:H5' | 2.18 | 0.43 |
| 43:BI:73:GLU:OE2 | 43:BI:137:PRO:HD2 | 2.18 | 0.43 |
| 20:AT:43:LEU:HB3 | 20:AT:48:LYS:HB2 | 1.99 | 0.43 |
| 41:BG:105:LYS:NZ | 41:BG:105:LYS:HB2 | 2.32 | 0.43 |
| 20:AT:14:LYS:HA | 20:AT:17:ARG:HH21 | 1.83 | 0.43 |
| 3:AC:44:GLU:HG2 | 3:AC:52:LEU:HD11 | 2.00 | 0.43 |
| 13:AM:46:LYS:O | 13:AM:47:ASP:HB3 | 2.18 | 0.43 |
| 35:DA:2070:G:H2' | 35:DA:2071:A:O4' | 2.17 | 0.43 |
| 2:CB:167:PRO:HG2 | 2:CB:168:THR:H | 1.83 | 0.43 |
| 2:CB:173:ALA:O | 2:CB:175:ARG:N | 2.51 | 0.43 |
| 56:DZ:108:PRO:O | 56:DZ:110:GLY:N | 2.51 | 0.43 |
| 35:DA:2197:U:H1' | 35:DA:2198:A:C8 | 2.53 | 0.43 |
| 1:AA:880:C:O2' | 1:AA:881:G:H5' | 2.18 | 0.43 |
| 26:B1:57:GLU:O | 26:B1:58:ILE:O | 2.36 | 0.43 |
| 35:BA:1011:G:C2 | 35:BA:1151:G:C2 | 3.06 | 0.43 |
| 1:CA:376:G:H4' | 16:CP:5:ARG:NH1 | 2.32 | 0.43 |
| 35:BA:2298:A:H62 | 35:BA:2318:G:H8 | 1.63 | 0.43 |
| 55:DY:2:ARG:N | 55:DY:5:MET:CE | 2.81 | 0.43 |
| 47:DQ:39:PRO:HD3 | 47:DQ:99:PRO:HG3 | 1.99 | 0.43 |
| 9:CI:115:GLY:C | 9:CI:116:LYS:HG2 | 2.39 | 0.43 |
| 9:CI:118:LYS:CB | 9:CI:118:LYS:NZ | 2.81 | 0.43 |
| 1:CA:96:U:HO2' | 1:CA:97:G:P | 2.41 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 47:BQ:17:LEU:HD12 | 47:BQ:39:PRO:HB2 | 1.99 | 0.43 |
| 3:AC:188:LEU:HD22 | 3:AC:188:LEU:N | 2.33 | 0.43 |
| 2:AB:97:TRP:CH2 | 2:AB:176:GLU:CD | 2.91 | 0.43 |
| 46:BP:90:ARG:HD3 | 46:BP:91:PHE:CD2 | 2.53 | 0.43 |
| 1:AA:184:G:C4' | 1:AA:224:C:H4' | 2.47 | 0.43 |
| 1:CA:1298:C:H4' | 1:CA:1299:A:N9 | 2.33 | 0.43 |
| 48:BR:79:LEU:HD23 | 48:BR:83:ILE:HB | 1.99 | 0.43 |
| 1:AA:490:G:H2' | 1:AA:491:G:H8 | 1.83 | 0.43 |
| 8:CH:63:LEU:H | 8:CH:63:LEU:HD22 | 1.83 | 0.43 |
| 40:DF:101:LEU:HD12 | 40:DF:102:PRO:HD2 | 2.00 | 0.43 |
| 23:CW:20:U:H2' | 23:CW:21:A:H4' | 2.00 | 0.43 |
| 23:CW:31:A:O2' | 23:CW:32:U:H5' | 2.17 | 0.43 |
| 11:CK:17:GLY:O | 11:CK:80:VAL:HA | 2.18 | 0.43 |
| 54:DX:50:LYS:H | 54:DX:87:GLN:HE22 | 1.66 | 0.43 |
| 15:AO:9:GLN:O | 15:AO:10:LYS:C | 2.55 | 0.43 |
| 35:BA:843:G:C2' | 35:BA:844:C:H5' | 2.48 | 0.43 |
| 38:BD:218:ARG:HG3 | 38:BD:218:ARG:NH1 | 2.33 | 0.43 |
| 35:BA:185:U:H2' | 35:BA:186:G:C8 | 2.53 | 0.43 |
| 35:BA:1464:C:O2' | 35:BA:1528:A:H8 | 1.99 | 0.43 |
| 1:CA:59:A:H5' | 1:CA:60:A:H5'' | 2.00 | 0.43 |
| 38:DD:159:ALA:HB1 | 38:DD:198:ASN:O | 2.18 | 0.43 |
| 35:BA:1139:G:H5' | 44:BN:102:ALA:HA | 2.00 | 0.43 |
| 44:BN:27:ALA:O | 44:BN:28:THR:C | 2.55 | 0.43 |
| 1:CA:947:G:H2' | 1:CA:948:C:H6 | 1.83 | 0.43 |
| 1:CA:1401:G:C2' | 1:CA:1402:C:H5' | 2.48 | 0.43 |
| 31:B6:27:LYS:HG3 | 35:BA:2286:A:OP2 | 2.18 | 0.43 |
| 36:DB:80:U:H2' | 36:DB:81:G:C8 | 2.53 | 0.43 |
| 1:AA:1486:G:H2' | 1:AA:1487:G:O4' | 2.18 | 0.43 |
| 23:CW:41:C:H2' | 23:CW:42:C:H6 | 1.83 | 0.43 |
| 35:BA:2051:A:H5' | 35:BA:2578:G:O4' | 2.18 | 0.43 |
| 6:CF:77:ARG:HB3 | 6:CF:77:ARG:NH1 | 2.33 | 0.43 |
| 25:D0:73:GLY:O | 25:D0:75:LEU:N | 2.45 | 0.43 |
| 44:BN:32:THR:HG22 | 44:BN:37:LYS:HB3 | 2.00 | 0.43 |
| 35:BA:1291:C:H2' | 35:BA:1292:U:C6 | 2.53 | 0.43 |
| 20:AT:94:ALA:O | 20:AT:95:ALA:HB3 | 2.17 | 0.43 |
| 35:BA:2457:U:O2' | 35:BA:2458:G:H5' | 2.18 | 0.43 |
| 8:AH:77:GLU:HG2 | 8:AH:78:GLN:N | 2.33 | 0.43 |
| 35:BA:575:A:O2' | 35:BA:576:U:H5' | 2.18 | 0.43 |
| 35:BA:390:A:O3' | 35:BA:391:G:H8 | 2.02 | 0.43 |
| 35:BA:413:C:H2' | 35:BA:414:C:H6 | 1.82 | 0.43 |
| 18:CR:60:ALA:O | 18:CR:64:ARG:HG3 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:BO:12:ASP:C | 45:BO:14:THR:H | 2.22 | 0.43 |
| 35:BA:2192:G:N3 | 35:BA:2192:G:H2' | 2.32 | 0.43 |
| 6:AF:89:MET:HG2 | 6:AF:89:MET:O | 2.18 | 0.43 |
| 40:DF:25:PRO:CB | 40:DF:119:ARG:HD3 | 2.47 | 0.43 |
| 40:BF:25:PRO:HB3 | 40:BF:119:ARG:HD3 | 2.00 | 0.43 |
| 9:AI:102:LEU:C | 9:AI:102:LEU:HD23 | 2.38 | 0.43 |
| 1:AA:980:C:O2 | 14:AN:19:ARG:HA | 2.19 | 0.43 |
| 49:DS:27:SER:HA | 49:DS:88:ASP:HB3 | 2.00 | 0.43 |
| 2:CB:91:PRO:CG | 2:CB:154:LEU:HB2 | 2.33 | 0.43 |
| 35:DA:2864:G:H2' | 35:DA:2865:U:O4' | 2.18 | 0.43 |
| 50:DT:89:VAL:HG11 | 50:DT:91:ARG:HE | 1.82 | 0.43 |
| 1:AA:1275:A:O2' | 1:AA:1276:G:H5' | 2.18 | 0.43 |
| 6:CF:39:LYS:O | 6:CF:40:VAL:HB | 2.18 | 0.43 |
| 41:DG:81:LYS:O | 41:DG:82:LEU:C | 2.56 | 0.43 |
| 1:CA:1052:U:H2' | 1:CA:1055:A:OP1 | 2.18 | 0.43 |
| 1:CA:1054:C:C2' | 1:CA:1054:C:O2 | 2.65 | 0.43 |
| 39:BE:36:ARG:HE | 39:BE:36:ARG:HB2 | 1.44 | 0.43 |
| 50:DT:8:LYS:HE2 | 50:DT:8:LYS:HB3 | 1.79 | 0.43 |
| 13:CM:70:LEU:O | 13:CM:73:GLU:N | 2.48 | 0.43 |
| 9:CI:114:TYR:N | 9:CI:114:TYR:CD2 | 2.67 | 0.43 |
| 3:CC:182:ILE:HG23 | 3:CC:202:ILE:O | 2.18 | 0.43 |
| 52:DV:39:LEU:CB | 52:DV:40:LEU:HD23 | 2.48 | 0.43 |
| 40:BF:128:ALA:O | 40:BF:130:ALA:N | 2.46 | 0.43 |
| 35:DA:2646:C:OP2 | 35:DA:2732:G:O2' | 2.25 | 0.43 |
| 36:DB:21:G:O2' | 36:DB:22:U:P | 2.76 | 0.43 |
| 47:DQ:53:ALA:O | 47:DQ:56:ARG:HB2 | 2.19 | 0.43 |
| 10:CJ:35:SER:O | 10:CJ:36:GLY:C | 2.57 | 0.43 |
| 4:CD:16:GLY:O | 4:CD:18:LYS:N | 2.52 | 0.43 |
| 30:B5:36:CYS:SG | 30:B5:38:ALA:HB2 | 2.58 | 0.43 |
| 27:D2:43:GLN:HE21 | 27:D2:44:LEU:H | 1.66 | 0.43 |
| 44:BN:19:GLU:HG3 | 44:BN:20:GLY:H | 1.82 | 0.43 |
| 25:B0:43:THR:HG22 | 35:BA:2331:G:O3' | 2.18 | 0.43 |
| 33:B8:30:ARG:O | 33:B8:30:ARG:HD3 | 2.18 | 0.43 |
| 50:DT:64:ARG:HD2 | 50:DT:73:GLU:CD | 2.38 | 0.43 |
| 25:D0:19:LYS:NZ | 35:DA:2262:U:P | 2.91 | 0.43 |
| 42:BH:85:LYS:HE2 | 42:BH:141:VAL:O | 2.18 | 0.43 |
| 35:BA:481:G:C2' | 35:BA:482:A:OP2 | 2.66 | 0.43 |
| 43:DI:113:ARG:HB3 | 43:DI:131:LYS:CB | 2.47 | 0.43 |
| 43:DI:94:ALA:O | 43:DI:96:ASP:N | 2.51 | 0.43 |
| 31:D6:10:LEU:HD12 | 33:D8:34:TRP:HD1 | 1.83 | 0.43 |
| 35:DA:481:G:C2' | 35:DA:482:A:OP2 | 2.66 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:D0:25:ARG:HA | 25:D0:29:GLN:NE2 | 2.29 | 0.43 |
| 26:D1:78:LYS:O | 26:D1:80:LEU:N | 2.49 | 0.43 |
| 15:AO:74:ASP:OD2 | 15:AO:76:GLU:HB3 | 2.19 | 0.43 |
| 15:AO:78:TYR:O | 15:AO:82:ILE:HG22 | 2.19 | 0.43 |
| 56:BZ:166:SER:CB | 56:BZ:167:PRO:C | 2.84 | 0.43 |
| 1:AA:1321:C:H5'' | 1:AA:1322:C:H5' | 2.00 | 0.43 |
| 43:DI:121:LYS:O | 43:DI:122:GLU:HB2 | 2.19 | 0.43 |
| 48:DR:38:VAL:CB | 48:DR:39:PRO:HD3 | 2.37 | 0.43 |
| 35:DA:1947:C:H2' | 35:DA:1947:C:O2 | 2.18 | 0.43 |
| 22:CY:77:PHA:HD2 | 35:DA:2451:A:N3 | 2.34 | 0.43 |
| 25:B0:45:PHE:HB2 | 25:B0:59:LEU:HD11 | 2.00 | 0.43 |
| 20:AT:14:LYS:CB | 20:AT:17:ARG:HH21 | 2.31 | 0.43 |
| 19:CS:15:LEU:O | 19:CS:19:VAL:N | 2.52 | 0.43 |
| 1:AA:1334:G:OP2 | 1:AA:1334:G:H8 | 2.02 | 0.43 |
| 42:DH:88:LEU:HB3 | 42:DH:89:ILE:H | 1.61 | 0.43 |
| 1:AA:376:G:H4' | 16:AP:5:ARG:NH1 | 2.30 | 0.43 |
| 35:BA:910:A:C6 | 35:BA:911:A:C6 | 3.06 | 0.43 |
| 45:BO:17:ARG:HD3 | 45:BO:47:ILE:CD1 | 2.43 | 0.43 |
| 52:DV:28:GLU:HB3 | 52:DV:29:PRO:CD | 2.40 | 0.43 |
| 20:CT:14:LYS:CB | 20:CT:17:ARG:HH21 | 2.31 | 0.43 |
| 56:DZ:116:VAL:O | 56:DZ:117:LEU:C | 2.56 | 0.43 |
| 17:CQ:59:ILE:N | 17:CQ:59:ILE:HD13 | 2.33 | 0.43 |
| 43:BI:120:ILE:HD13 | 43:BI:126:TYR:CD1 | 2.53 | 0.43 |
| 33:B8:39:LYS:HE3 | 35:BA:2365:G:O6 | 2.17 | 0.43 |
| 26:B1:57:GLU:O | 26:B1:58:ILE:C | 2.57 | 0.43 |
| 8:CH:48:TYR:CD1 | 8:CH:49:GLU:N | 2.86 | 0.43 |
| 35:DA:1332:G:H5' | 35:DA:1333:C:H5 | 1.83 | 0.43 |
| 38:DD:65:ILE:N | 38:DD:65:ILE:HD13 | 2.29 | 0.43 |
| 35:DA:744:G:O2' | 35:DA:745:G:H5' | 2.17 | 0.43 |
| 1:AA:798:G:OP1 | 11:AK:122:LYS:NZ | 2.51 | 0.43 |
| 2:AB:97:TRP:HZ2 | 2:AB:102:LEU:CD1 | 2.28 | 0.43 |
| 50:BT:96:ARG:CG | 50:BT:96:ARG:NH1 | 2.82 | 0.43 |
| 50:BT:129:ARG:NH2 | 50:BT:131:ALA:HB3 | 2.32 | 0.43 |
| 46:DP:140:ALA:O | 46:DP:141:ALA:CB | 2.67 | 0.43 |
| 24:CX:14:A:O2' | 24:CX:15:A:H5' | 2.18 | 0.43 |
| 27:B2:63:VAL:O | 27:B2:66:GLU:CG | 2.67 | 0.43 |
| 50:DT:128:GLU:OE1 | 50:DT:129:ARG:N | 2.51 | 0.43 |
| 11:AK:54:ARG:HH12 | 23:AW:40:C:H5'' | 1.82 | 0.43 |
| 11:CK:33:THR:HA | 11:CK:40:ILE:HG12 | 2.01 | 0.43 |
| 2:CB:23:ARG:HH11 | 2:CB:23:ARG:CG | 2.32 | 0.43 |
| 4:CD:23:GLY:HA3 | 4:CD:112:VAL:HG22 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:185:U:H2' | 35:DA:186:G:C8 | 2.54 | 0.43 |
| 38:BD:53:PHE:CD1 | 38:BD:219:PRO:O | 2.71 | 0.43 |
| 42:BH:149:ARG:HH11 | 42:BH:164:TYR:HD1 | 1.65 | 0.43 |
| 35:DA:2236:C:H2' | 35:DA:2237:G:C5' | 2.47 | 0.43 |
| 35:DA:986:C:C2' | 35:DA:987:G:H5' | 2.49 | 0.43 |
| 6:CF:82:ARG:HB2 | 6:CF:85:VAL:HG23 | 1.99 | 0.43 |
| 4:AD:173:TRP:HA | 4:AD:187:ARG:NH1 | 2.33 | 0.43 |
| 1:CA:509:A:C2 | 1:CA:510:A:C2 | 3.06 | 0.43 |
| 1:CA:991:U:O2 | 1:CA:991:U:H2' | 2.16 | 0.43 |
| 35:DA:565:C:H4' | 35:DA:1253:A:C6 | 2.53 | 0.43 |
| 3:AC:91:LEU:O | 3:AC:94:LEU:HG | 2.18 | 0.43 |
| 1:AA:414:A:O2' | 1:AA:415:A:H5' | 2.18 | 0.43 |
| 1:AA:892:A:O2' | 1:AA:1415:G:H4' | 2.18 | 0.43 |
| 56:BZ:56:VAL:CG1 | 56:BZ:57:ILE:N | 2.82 | 0.43 |
| 35:BA:464:U:O2' | 35:BA:465:G:H5' | 2.18 | 0.43 |
| 35:BA:282:A:HO2' | 35:BA:283:A:H8 | 1.67 | 0.43 |
| 14:AN:15:LYS:O | 14:AN:16:PHE:C | 2.57 | 0.43 |
| 35:DA:811:U:C2 | 35:DA:1251:C:C5 | 3.06 | 0.43 |
| 34:B9:30:PRO:HB2 | 35:BA:2527:C:H5' | 2.01 | 0.43 |
| 6:CF:25:ILE:HD13 | 6:CF:25:ILE:HA | 1.84 | 0.43 |
| 42:DH:91:GLY:HA3 | 42:DH:94:TYR:CG | 2.53 | 0.43 |
| 35:DA:2600:A:H2' | 35:DA:2601:C:C6 | 2.54 | 0.43 |
| 31:B6:15:GLU:HG3 | 31:B6:41:PRO:HG3 | 1.99 | 0.43 |
| 2:AB:87:ARG:HD2 | 2:AB:87:ARG:O | 2.19 | 0.43 |
| 1:AA:981:U:H5' | 14:AN:21:TYR:CE1 | 2.53 | 0.43 |
| 50:DT:32:TYR:HB3 | 50:DT:81:PRO:HB3 | 2.01 | 0.43 |
| 1:AA:1258:G:O2' | 1:AA:1259:C:H5' | 2.18 | 0.43 |
| 35:BA:2758:A:C5 | 42:BH:67:LEU:HD21 | 2.53 | 0.43 |
| 48:BR:2:ARG:O | 48:BR:2:ARG:HD2 | 2.19 | 0.43 |
| 3:CC:77:ILE:HG12 | 3:CC:84:ILE:CD1 | 2.48 | 0.43 |
| 41:DG:164:GLU:OE1 | 41:DG:165:THR:HG23 | 2.17 | 0.43 |
| 4:AD:33:MET:HE1 | 4:AD:37:PRO:HA | 1.97 | 0.43 |
| 3:AC:141:VAL:CG1 | 3:AC:202:ILE:HD12 | 2.29 | 0.43 |
| 55:DY:27:VAL:O | 55:DY:29:GLU:OE2 | 2.36 | 0.43 |
| 35:BA:1796:U:H2' | 35:BA:1797:C:C6 | 2.53 | 0.43 |
| 30:D5:48:GLU:C | 30:D5:50:GLY:H | 2.22 | 0.43 |
| 1:CA:1125:U:O3' | 1:CA:1126:U:C6 | 2.72 | 0.43 |
| 46:BP:106:LEU:HD13 | 46:BP:112:LEU:HD23 | 1.99 | 0.43 |
| 3:CC:16:ARG:HH11 | 3:CC:16:ARG:HA | 1.83 | 0.43 |
| 37:DC:82:LYS:HE2 | 37:DC:149:ILE:HA | 2.00 | 0.43 |
| 37:DC:99:ILE:O | 37:DC:99:ILE:HG22 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:1022:G:C6 | 35:DA:1140:C:C4 | 3.07 | 0.43 |
| 20:CT:30:LYS:HD2 | 20:CT:34:LYS:HE3 | 1.99 | 0.43 |
| 41:DG:60:LEU:HD13 | 41:DG:60:LEU:C | 2.39 | 0.43 |
| 37:BC:82:LYS:HE2 | 37:BC:149:ILE:HA | 2.00 | 0.43 |
| 20:AT:28:ALA:O | 20:AT:30:LYS:N | 2.51 | 0.43 |
| 43:DI:110:ASP:OD1 | 43:DI:113:ARG:HG2 | 2.18 | 0.43 |
| 35:BA:510:C:O2' | 35:BA:511:U:H5' | 2.19 | 0.43 |
| 36:BB:15:A:H3' | 36:BB:16:G:C5' | 2.47 | 0.43 |
| 56:BZ:144:LEU:HD21 | 56:BZ:149:SER:HB3 | 2.00 | 0.43 |
| 6:CF:69:GLU:O | 6:CF:70:ASP:C | 2.56 | 0.43 |
| 27:B2:17:SER:O | 27:B2:18:PRO:C | 2.57 | 0.43 |
| 54:BX:32:PRO:HA | 54:BX:77:LYS:HB2 | 2.01 | 0.43 |
| 19:CS:13:ASP:C | 19:CS:15:LEU:N | 2.70 | 0.43 |
| 13:AM:76:ALA:CA | 13:AM:79:LYS:NZ | 2.81 | 0.43 |
| 3:CC:52:LEU:HD12 | 3:CC:55:VAL:CG2 | 2.49 | 0.43 |
| 5:CE:6:PHE:CD2 | 5:CE:36:ASP:HB3 | 2.53 | 0.43 |
| 28:D3:52:HIS:CD2 | 28:D3:52:HIS:H | 2.36 | 0.43 |
| 35:BA:330:A:H2 | 35:BA:1210:A:H2' | 1.84 | 0.43 |
| 56:BZ:138:GLU:O | 56:BZ:139:VAL:HG13 | 2.18 | 0.43 |
| 11:CK:29:ILE:CB | 11:CK:44:SER:HB3 | 2.46 | 0.43 |
| 35:DA:1865:G:H5' | 35:DA:1866:C:OP2 | 2.19 | 0.43 |
| 11:AK:126:ARG:C | 11:AK:128:ALA:N | 2.68 | 0.43 |
| 35:BA:158:U:C2' | 35:BA:158:U:O2 | 2.66 | 0.43 |
| 1:CA:513:C:N3 | 1:CA:539:A:C2 | 2.86 | 0.43 |
| 26:B1:12:PRO:CG | 35:BA:1365:A:H5' | 2.49 | 0.43 |
| 1:CA:838:G:N2 | 1:CA:849:C:C2 | 2.87 | 0.43 |
| 28:B3:15:TYR:O | 28:B3:20:LYS:HE2 | 2.18 | 0.43 |
| 1:AA:1280:A:C8 | 10:AJ:41:PRO:HD2 | 2.54 | 0.43 |
| 1:AA:159:G:H1 | 1:AA:163:C:N4 | 2.15 | 0.43 |
| 47:BQ:79:LEU:HD23 | 47:BQ:80:GLU:HB2 | 1.98 | 0.43 |
| 35:BA:1419:A:C3' | 35:BA:1420:U:H5'' | 2.49 | 0.43 |
| 1:CA:1340:A:OP1 | 23:CW:35:A:OP1 | 2.36 | 0.43 |
| 15:CO:9:GLN:O | 15:CO:10:LYS:C | 2.57 | 0.43 |
| 1:AA:60:A:H8 | 1:AA:60:A:P | 2.41 | 0.43 |
| 35:DA:993:G:OP1 | 51:DU:50:ARG:NH2 | 2.51 | 0.43 |
| 3:AC:28:GLN:CA | 3:AC:28:GLN:HE21 | 2.31 | 0.43 |
| 39:BE:34:VAL:HG13 | 39:BE:48:GLN:O | 2.18 | 0.43 |
| 1:CA:1049:U:O2' | 1:CA:1050:G:OP2 | 2.30 | 0.43 |
| 35:DA:2391:G:O6 | 35:DA:2425:A:H8 | 2.01 | 0.43 |
| 35:BA:1045:A:C2' | 35:BA:1045:A:N3 | 2.80 | 0.43 |
| 6:CF:66:GLU:O | 6:CF:67:MET:HB3 | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:1335:U:H2' | 35:DA:1336:A:H8 | 1.83 | 0.43 |
| 44:DN:91:LEU:CD2 | 44:DN:98:VAL:HG21 | 2.48 | 0.43 |
| 35:DA:524:U:H4' | 35:DA:555:U:H4' | 1.99 | 0.43 |
| 35:DA:649:G:H2' | 35:DA:650:C:H6 | 1.83 | 0.43 |
| 1:CA:1434:A:H2' | 1:CA:1435:G:O4' | 2.18 | 0.43 |
| 11:AK:67:ASP:OD1 | 11:AK:71:LYS:HE3 | 2.19 | 0.43 |
| 16:AP:15:PRO:HB2 | 16:AP:41:PRO:HG3 | 2.00 | 0.43 |
| 51:DU:104:GLN:HB3 | 52:DV:44:LYS:NZ | 2.33 | 0.43 |
| 36:DB:32:C:C2 | 36:DB:51:G:N2 | 2.86 | 0.43 |
| 1:CA:782:A:H2' | 1:CA:783:C:H5' | 2.00 | 0.43 |
| 6:AF:77:ARG:NH1 | 6:AF:77:ARG:HB3 | 2.33 | 0.43 |
| 13:AM:33:ALA:HB1 | 13:AM:59:TYR:HD2 | 1.84 | 0.43 |
| 35:BA:2872:G:C2 | 35:BA:2873:A:N6 | 2.86 | 0.43 |
| 50:DT:112:ARG:HB2 | 50:DT:112:ARG:HH11 | 1.83 | 0.43 |
| 35:BA:2063:C:C2' | 35:BA:2064:C:H5' | 2.48 | 0.43 |
| 47:DQ:35:VAL:HG22 | 47:DQ:36:ALA:N | 2.33 | 0.43 |
| 35:DA:758:C:O2 | 35:DA:1981:A:H2 | 2.00 | 0.43 |
| 1:CA:448:A:O2' | 1:CA:449:C:H5' | 2.18 | 0.43 |
| 35:BA:292:C:C2' | 35:BA:293:U:H5' | 2.49 | 0.43 |
| 25:D0:12:ASN:O | 25:D0:13:GLY:C | 2.56 | 0.43 |
| 1:AA:603:U:H2' | 1:AA:604:G:H8 | 1.83 | 0.43 |
| 35:BA:679:C:H2' | 35:BA:680:G:C8 | 2.54 | 0.43 |
| 35:BA:144:C:H2' | 35:BA:145:G:C8 | 2.53 | 0.43 |
| 1:CA:763:G:H2' | 1:CA:764:C:H6 | 1.83 | 0.43 |
| 36:BB:1:U:O2 | 36:BB:1:U:H2' | 2.19 | 0.43 |
| 15:CO:24:SER:O | 15:CO:28:GLN:HG3 | 2.18 | 0.43 |
| 1:CA:316:G:H2' | 1:CA:317:G:H8 | 1.84 | 0.43 |
| 37:BC:221:SER:O | 37:BC:222:VAL:O | 2.36 | 0.43 |
| 56:DZ:72:ARG:HD3 | 56:DZ:72:ARG:HA | 1.83 | 0.43 |
| 47:DQ:141:GLN:NE2 | 56:DZ:72:ARG:HD3 | 2.33 | 0.43 |
| 35:BA:2334:G:H5' | 49:BS:13:ARG:HG3 | 2.00 | 0.43 |
| 40:BF:119:ARG:HH11 | 40:BF:119:ARG:HG2 | 1.83 | 0.43 |
| 55:BY:75:ILE:HG13 | 55:BY:79:CYS:O | 2.19 | 0.43 |
| 9:AI:89:ASN:O | 9:AI:91:ASP:N | 2.47 | 0.43 |
| 9:CI:53:VAL:C | 9:CI:54:ASP:N | 2.71 | 0.43 |
| 9:CI:88:TYR:O | 9:CI:89:ASN:ND2 | 2.51 | 0.43 |
| 18:AR:36:ASN:OD1 | 18:AR:36:ASN:N | 2.48 | 0.43 |
| 1:AA:1346:A:C5' | 9:AI:120:ARG:NH1 | 2.79 | 0.43 |
| 1:AA:1259:C:H42 | 1:AA:1276:G:H1 | 1.64 | 0.43 |
| 41:DG:87:PRO:O | 41:DG:88:ILE:HD12 | 2.18 | 0.43 |
| 43:BI:93:THR:O | 43:BI:96:ASP:HB2 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 51:BU:85:LYS:C | 51:BU:87:GLY:N | 2.72 | 0.43 |
| 35:DA:2636:U:H4' | 39:DE:80:GLU:CD | 2.39 | 0.43 |
| 39:DE:92:THR:OG1 | 39:DE:93:VAL:N | 2.52 | 0.43 |
| 56:BZ:97:GLU:HG2 | 56:BZ:125:LEU:CD1 | 2.37 | 0.43 |
| 38:DD:95:LEU:HD12 | 38:DD:95:LEU:O | 2.18 | 0.43 |
| 5:AE:8:GLU:CB | 5:AE:34:VAL:HG22 | 2.47 | 0.43 |
| 35:BA:1591:G:H8 | 35:BA:1591:G:C5' | 2.29 | 0.43 |
| 13:AM:22:ILE:HG22 | 13:AM:25:ILE:HD13 | 2.00 | 0.43 |
| 42:BH:46:GLU:HG3 | 42:BH:51:ARG:O | 2.18 | 0.43 |
| 51:DU:92:ARG:CZ | 52:DV:11:GLN:CB | 2.80 | 0.43 |
| 51:DU:92:ARG:NH2 | 51:DU:95:LEU:HG | 2.29 | 0.43 |
| 10:AJ:48:THR:CB | 10:AJ:62:HIS:HB3 | 2.48 | 0.43 |
| 41:DG:173:LEU:HD13 | 41:DG:178:PHE:CE2 | 2.53 | 0.43 |
| 55:BY:26:LYS:O | 55:BY:39:VAL:HA | 2.17 | 0.43 |
| 56:DZ:163:LEU:H | 56:DZ:163:LEU:CD1 | 2.15 | 0.43 |
| 19:AS:5:LEU:N | 19:AS:5:LEU:HD22 | 2.32 | 0.43 |
| 4:CD:18:LYS:HB2 | 4:CD:33:MET:CG | 2.30 | 0.43 |
| 43:DI:102:SER:HA | 43:DI:107:VAL:H | 1.84 | 0.43 |
| 45:DO:35:VAL:HG21 | 45:DO:69:ILE:HD13 | 2.00 | 0.43 |
| 3:AC:16:ARG:HH11 | 3:AC:16:ARG:HB2 | 1.83 | 0.43 |
| 44:BN:62:VAL:CG1 | 44:BN:62:VAL:O | 2.66 | 0.43 |
| 35:BA:1141:U:C5 | 44:BN:64:GLY:HA3 | 2.53 | 0.43 |
| 33:B8:37:SER:HG | 33:B8:40:GLU:HG3 | 1.83 | 0.43 |
| 1:AA:255:G:O3' | 17:AQ:17:LYS:HD2 | 2.19 | 0.43 |
| 13:CM:56:LEU:C | 13:CM:56:LEU:HD13 | 2.39 | 0.43 |
| 13:CM:86:CYS:O | 13:CM:89:GLY:N | 2.51 | 0.43 |
| 56:BZ:5:LEU:HG | 56:BZ:47:VAL:HG11 | 2.00 | 0.43 |
| 35:BA:1348:G:H2' | 35:BA:1349:A:C5' | 2.38 | 0.43 |
| 29:D4:37:PRO:HA | 29:D4:51:TYR:CD2 | 2.53 | 0.43 |
| 50:BT:62:THR:HA | 50:BT:74:ARG:O | 2.19 | 0.43 |
| 50:BT:50:ILE:HA | 50:BT:99:LEU:CD1 | 2.48 | 0.43 |
| 39:BE:101:ARG:HH21 | 39:BE:171:GLU:HB2 | 1.79 | 0.43 |
| 40:DF:16:GLY:O | 40:DF:17:ARG:HG3 | 2.18 | 0.43 |
| 25:B0:25:ARG:HD2 | 25:B0:29:GLN:HE21 | 1.84 | 0.43 |
| 15:CO:18:PHE:CD1 | 15:CO:19:PRO:O | 2.72 | 0.43 |
| 6:CF:100:ASN:ND2 | 6:CF:100:ASN:N | 2.67 | 0.43 |
| 3:CC:19:GLU:O | 3:CC:40:ARG:NH2 | 2.44 | 0.43 |
| 8:CH:65:TYR:N | 8:CH:65:TYR:CD1 | 2.86 | 0.43 |
| 43:BI:121:LYS:O | 43:BI:122:GLU:HB2 | 2.18 | 0.43 |
| 30:B5:42:PRO:HB2 | 30:B5:43:HIS:HD2 | 1.81 | 0.43 |
| 35:DA:543:C:N3 | 35:DA:551:G:C2 | 2.85 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BA:1003:G:N2 | 35:BA:1153:C:C2 | 2.87 | 0.43 |
| 5:AE:147:ASP:HA | 5:AE:150:ARG:HB3 | 2.01 | 0.43 |
| 9:AI:115:GLY:C | 9:AI:116:LYS:HG2 | 2.39 | 0.43 |
| 50:DT:41:ARG:O | 50:DT:43:GLN:N | 2.52 | 0.43 |
| 36:BB:55:U:O2' | 36:BB:56:G:H5' | 2.17 | 0.43 |
| 50:DT:106:SER:O | 50:DT:107:ASP:OD1 | 2.37 | 0.43 |
| 2:AB:173:ALA:O | 2:AB:175:ARG:N | 2.51 | 0.43 |
| 1:CA:405:U:OP2 | 4:CD:3:ARG:HD2 | 2.19 | 0.43 |
| 46:BP:115:LEU:HD23 | 46:BP:115:LEU:O | 2.18 | 0.43 |
| 35:BA:2712:U:O2' | 35:BA:2712(A):A:P | 2.76 | 0.43 |
| 10:CJ:40:LEU:HG | 10:CJ:69:ASN:CB | 2.49 | 0.43 |
| 38:DD:161:THR:O | 38:DD:162:SER:HB3 | 2.18 | 0.43 |
| 2:CB:28:PHE:CE1 | 2:CB:31:TYR:HB2 | 2.53 | 0.43 |
| 50:DT:133:GLU:OE2 | 50:DT:137:LYS:HE2 | 2.18 | 0.43 |
| 34:B9:9:ARG:CB | 34:B9:9:ARG:HH11 | 2.32 | 0.43 |
| 38:BD:121:PRO:HB3 | 38:BD:135:PHE:CD1 | 2.53 | 0.43 |
| 35:BA:811:U:C2 | 35:BA:1251:C:C5 | 3.06 | 0.43 |
| 21:CU:5:ASP:O | 21:CU:6:ARG:C | 2.56 | 0.43 |
| 35:BA:893:C:H2' | 35:BA:894:C:H6 | 1.78 | 0.43 |
| 1:AA:985:C:H2' | 1:AA:986:A:C8 | 2.54 | 0.43 |
| 54:BX:46:ALA:C | 54:BX:47:PHE:CD1 | 2.91 | 0.43 |
| 15:CO:10:LYS:CG | 15:CO:11:VAL:N | 2.82 | 0.43 |
| 51:DU:50:ARG:HG2 | 51:DU:53:ARG:NH2 | 2.33 | 0.43 |
| 3:AC:206:GLU:HG2 | 3:AC:207:VAL:N | 2.34 | 0.43 |
| 38:BD:149:PRO:O | 38:BD:150:LYS:HB2 | 2.18 | 0.43 |
| 1:CA:600:C:H2' | 1:CA:601:C:C6 | 2.54 | 0.43 |
| 6:CF:91:VAL:HG12 | 6:CF:92:LYS:N | 2.32 | 0.43 |
| 47:BQ:14:ARG:HG2 | 47:BQ:14:ARG:NH1 | 2.32 | 0.43 |
| 48:BR:26:LYS:CE | 48:BR:71:GLN:H | 2.31 | 0.43 |
| 1:CA:35:G:H2' | 1:CA:36:C:H6 | 1.82 | 0.43 |
| 47:DQ:14:ARG:NH1 | 47:DQ:14:ARG:HG2 | 2.33 | 0.43 |
| 41:BG:21:ARG:CD | 41:BG:21:ARG:O | 2.67 | 0.43 |
| 5:AE:80:ILE:HD11 | 5:AE:138:ALA:HB1 | 2.00 | 0.43 |
| 35:BA:1820:U:H4' | 35:BA:1821:A:OP2 | 2.17 | 0.43 |
| 38:BD:2:ALA:O | 38:BD:3:VAL:CB | 2.67 | 0.43 |
| 50:BT:48:ILE:HD12 | 50:BT:48:ILE:N | 2.33 | 0.43 |
| 50:BT:65:LYS:HG3 | 50:BT:66:VAL:N | 2.33 | 0.43 |
| 1:AA:1389:C:H2' | 1:AA:1390:U:O4' | 2.19 | 0.43 |
| 35:DA:957:A:C6 | 35:DA:2459:A:C8 | 3.07 | 0.43 |
| 35:BA:699:A:C2' | 35:BA:700:G:H5' | 2.49 | 0.43 |
| 1:CA:832:C:O2' | 1:CA:833:U:P | 2.77 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:344:A:O2' | 1:CA:346:G:N7 | 2.47 | 0.43 |
| 35:DA:1292:U:H2' | 35:DA:1293:C:C6 | 2.53 | 0.43 |
| 35:DA:2841:C:H2' | 35:DA:2842:G:C8 | 2.53 | 0.43 |
| 35:DA:302:C:H2' | 35:DA:303:U:H6 | 1.83 | 0.43 |
| 7:AG:17:VAL:HG12 | 7:AG:18:TYR:CD1 | 2.54 | 0.43 |
| 45:DO:34:THR:HG22 | 45:DO:37:ASP:OD2 | 2.19 | 0.43 |
| 25:B0:12:ASN:O | 25:B0:13:GLY:C | 2.56 | 0.43 |
| 35:DA:413:C:H2' | 35:DA:414:C:H6 | 1.83 | 0.43 |
| 35:DA:1972:A:H2' | 35:DA:1973:G:H8 | 1.84 | 0.43 |
| 11:CK:13:GLN:HG2 | 11:CK:75:TYR:HA | 2.01 | 0.43 |
| 35:BA:10:G:C6 | 35:BA:2629:A:C8 | 3.06 | 0.43 |
| 35:BA:2696:U:H2' | 35:BA:2697:G:C8 | 2.53 | 0.43 |
| 40:BF:150:GLY:HA2 | 40:BF:172:TRP:CE3 | 2.54 | 0.43 |
| 40:BF:150:GLY:HA2 | 40:BF:172:TRP:CD2 | 2.54 | 0.43 |
| 35:BA:305:U:H2' | 35:BA:306:U:C6 | 2.54 | 0.43 |
| 35:BA:2801:A:N3 | 35:BA:2801:A:H2' | 2.32 | 0.43 |
| 35:DA:85:G:H5'' | 35:DA:85:G:H8 | 1.82 | 0.43 |
| 38:DD:6:PHE:N | 38:DD:6:PHE:CD1 | 2.86 | 0.43 |
| 42:DH:52:VAL:HG12 | 42:DH:52:VAL:O | 2.19 | 0.43 |
| 2:AB:54:THR:CG2 | 2:AB:201:ILE:HD11 | 2.43 | 0.43 |
| 2:AB:74:LYS:NZ | 2:AB:76:GLN:HB2 | 2.34 | 0.43 |
| 9:CI:95:LYS:HD3 | 9:CI:95:LYS:C | 2.39 | 0.43 |
| 2:CB:87:ARG:NH1 | 2:CB:223:ILE:HD11 | 2.32 | 0.43 |
| 50:BT:46:GLU:HG3 | 50:BT:88:ILE:HD11 | 2.01 | 0.43 |
| 50:BT:28:VAL:HG11 | 50:BT:46:GLU:OE1 | 2.17 | 0.43 |
| 1:AA:522:C:H42 | 1:AA:528:C:N4 | 2.16 | 0.43 |
| 1:CA:179:A:H2' | 1:CA:180:U:H6 | 1.84 | 0.43 |
| 51:BU:106:PHE:O | 51:BU:110:VAL:HG23 | 2.19 | 0.43 |
| 51:BU:114:LYS:HD2 | 51:BU:114:LYS:H | 1.83 | 0.43 |
| 51:BU:92:ARG:CZ | 51:BU:92:ARG:CB | 2.95 | 0.43 |
| 46:BP:16:ARG:HH11 | 46:BP:16:ARG:C | 2.21 | 0.43 |
| 49:DS:96:GLY:O | 49:DS:97:ARG:C | 2.57 | 0.43 |
| 1:AA:177:C:O2' | 1:AA:178:C:H5' | 2.18 | 0.43 |
| 44:BN:128:HIS:HE1 | 44:BN:134:ARG:NH1 | 2.16 | 0.43 |
| 35:BA:1590:U:C3' | 35:BA:1591:G:H5'' | 2.48 | 0.43 |
| 13:AM:16:ASP:OD2 | 13:AM:17:VAL:N | 2.52 | 0.43 |
| 13:CM:65:LYS:HZ2 | 13:CM:65:LYS:HB3 | 1.83 | 0.43 |
| 41:DG:135:LEU:N | 41:DG:135:LEU:CD1 | 2.82 | 0.43 |
| 1:AA:1060:C:O2' | 1:AA:1061:G:H5' | 2.17 | 0.43 |
| 10:AJ:63:PHE:CA | 14:AN:59:ALA:HB2 | 2.49 | 0.43 |
| 52:BV:19:LYS:HZ3 | 52:BV:20:LEU:CB | 2.32 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:DG:129:GLY:C | 41:DG:130:ASN:OD1 | 2.57 | 0.43 |
| 41:DG:27:ASN:C | 41:DG:29:TRP:H | 2.21 | 0.43 |
| 1:CA:1271:G:H5' | 1:CA:1314:C:H5' | 2.00 | 0.43 |
| 1:CA:1270:C:OP2 | 21:CU:24:ARG:NH2 | 2.51 | 0.43 |
| 5:CE:13:ILE:HA | 5:CE:29:GLY:O | 2.18 | 0.43 |
| 10:CJ:29:ARG:HH11 | 10:CJ:29:ARG:HG2 | 1.83 | 0.43 |
| 42:BH:70:THR:HA | 42:BH:73:ALA:HB3 | 2.01 | 0.43 |
| 1:AA:1124:G:H4' | 10:AJ:38:ILE:CG2 | 2.49 | 0.43 |
| 38:DD:244:ARG:HA | 38:DD:245:PRO:HA | 1.85 | 0.43 |
| 35:BA:2534:A:H2' | 35:BA:2535:G:O4' | 2.18 | 0.43 |
| 49:DS:99:LYS:HB3 | 49:DS:101:LEU:HD12 | 2.00 | 0.43 |
| 49:DS:69:VAL:CG1 | 49:DS:99:LYS:HE3 | 2.44 | 0.43 |
| 43:BI:102:SER:HA | 43:BI:107:VAL:H | 1.84 | 0.43 |
| 27:B2:3:LEU:C | 27:B2:5:GLU:H | 2.20 | 0.43 |
| 27:B2:7:ARG:CG | 27:B2:7:ARG:HH11 | 2.31 | 0.43 |
| 42:DH:84:SER:O | 42:DH:85:LYS:CB | 2.64 | 0.43 |
| 35:DA:286:C:H2' | 35:DA:287:C:H5' | 1.97 | 0.43 |
| 41:BG:15:VAL:HG22 | 41:BG:175:LEU:CB | 2.48 | 0.43 |
| 38:BD:132:PRO:HG3 | 38:BD:190:TYR:CZ | 2.51 | 0.43 |
| 20:CT:43:LEU:HB3 | 20:CT:48:LYS:HB2 | 2.00 | 0.43 |
| 20:CT:50:GLU:N | 20:CT:100:ILE:HG12 | 2.34 | 0.43 |
| 19:CS:22:LEU:O | 19:CS:26:GLY:HA2 | 2.18 | 0.43 |
| 19:CS:31:ILE:HG23 | 19:CS:49:ILE:HA | 1.99 | 0.43 |
| 8:CH:86:ILE:CB | 8:CH:133:LEU:HD22 | 2.48 | 0.43 |
| 41:BG:144:ILE:HD12 | 41:BG:145:THR:N | 2.30 | 0.43 |
| 41:BG:144:ILE:HD11 | 41:BG:148:MET:HG2 | 2.01 | 0.43 |
| 55:BY:89:PHE:O | 55:BY:90:LEU:HB3 | 2.17 | 0.43 |
| 13:AM:76:ALA:HB2 | 13:AM:79:LYS:NZ | 2.32 | 0.43 |
| 35:BA:271(A):A:H1' | 35:BA:365:C:O4' | 2.18 | 0.43 |
| 35:DA:955:C:H2' | 35:DA:955:C:O2 | 2.19 | 0.43 |
| 47:DQ:12:GLN:HG2 | 47:DQ:73:PRO:HD2 | 1.99 | 0.43 |
| 1:CA:190:U:O2 | 20:CT:105:SER:HB2 | 2.18 | 0.43 |
| 1:CA:350:G:O2' | 1:CA:351:G:H5' | 2.19 | 0.43 |
| 7:CG:47:CYS:O | 7:CG:50:ILE:HB | 2.19 | 0.43 |
| 42:BH:105:LEU:HD13 | 42:BH:105:LEU:H | 1.83 | 0.43 |
| 40:DF:83:PHE:O | 40:DF:84:VAL:HB | 2.19 | 0.43 |
| 1:AA:1392:G:H21 | 1:AA:1502:A:H8 | 1.67 | 0.43 |
| 1:AA:186:C:H2' | 1:AA:187:C:H6 | 1.84 | 0.43 |
| 35:DA:2737:G:H2' | 35:DA:2738:A:H8 | 1.84 | 0.43 |
| 49:BS:32:LEU:O | 49:BS:62:LYS:HE2 | 2.19 | 0.43 |
| 3:AC:195:VAL:O | 3:AC:196:LEU:HD22 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:D9:24:TYR:CZ | 34:D9:35:ARG:HG3 | 2.54 | 0.43 |
| 52:BV:21:ARG:CD | 52:BV:21:ARG:H | 2.32 | 0.43 |
| 8:AH:103:VAL:HG21 | 8:AH:109:ILE:O | 2.19 | 0.43 |
| 41:BG:138:GLN:C | 41:BG:140:ILE:N | 2.72 | 0.43 |
| 6:CF:50:TYR:HE2 | 6:CF:52:ILE:HD11 | 1.84 | 0.43 |
| 46:DP:139:LYS:O | 46:DP:139:LYS:HD2 | 2.18 | 0.43 |
| 50:DT:92:GLY:C | 50:DT:94:ALA:N | 2.72 | 0.43 |
| 2:CB:194:PRO:O | 2:CB:195:ASP:C | 2.57 | 0.43 |
| 1:AA:838:G:N2 | 1:AA:849:C:C2 | 2.87 | 0.43 |
| 21:CU:5:ASP:O | 21:CU:8:THR:HG23 | 2.19 | 0.43 |
| 53:BW:12:ILE:HD13 | 53:BW:17:VAL:CG1 | 2.48 | 0.43 |
| 38:DD:121:PRO:HB3 | 38:DD:135:PHE:CD1 | 2.53 | 0.43 |
| 1:AA:301:G:H2' | 1:AA:302:G:C8 | 2.54 | 0.43 |
| 47:DQ:79:LEU:HD23 | 47:DQ:80:GLU:HB2 | 2.01 | 0.43 |
| 1:CA:189(I):G:H2' | 1:CA:189(J):G:C8 | 2.53 | 0.43 |
| 54:DX:8:ILE:CD1 | 54:DX:42:ALA:HB1 | 2.47 | 0.43 |
| 1:CA:533:A:C1' | 1:CA:534:U:OP1 | 2.67 | 0.43 |
| 1:CA:930:C:C2' | 1:CA:931:C:H5' | 2.49 | 0.43 |
| 42:BH:149:ARG:HA | 42:BH:162:ILE:HG21 | 1.99 | 0.43 |
| 1:CA:52:G:O2' | 1:CA:53:A:H5' | 2.18 | 0.43 |
| 35:DA:1464:C:O2' | 35:DA:1528:A:C8 | 2.69 | 0.43 |
| 4:AD:209:ARG:HG3 | 4:AD:209:ARG:NH1 | 2.33 | 0.43 |
| 7:AG:115:ARG:HB2 | 7:AG:118:VAL:CG2 | 2.48 | 0.43 |
| 11:AK:99:GLN:CD | 11:AK:105:VAL:HG11 | 2.39 | 0.43 |
| 18:AR:72:ARG:O | 18:AR:76:LEU:HD23 | 2.18 | 0.43 |
| 1:AA:123:C:O5' | 1:AA:123:C:H6 | 2.01 | 0.43 |
| 35:BA:32:C:H2' | 35:BA:33:U:H5' | 2.00 | 0.43 |
| 1:CA:1184:G:O2' | 1:CA:1185:G:H5' | 2.17 | 0.43 |
| 50:DT:48:ILE:HD12 | 50:DT:48:ILE:N | 2.33 | 0.43 |
| 16:CP:12:LYS:C | 16:CP:14:ASN:H | 2.21 | 0.43 |
| 35:BA:26:G:P | 53:BW:80:PRO:HB3 | 2.58 | 0.43 |
| 35:BA:392:C:H5'' | 35:BA:409:C:H5'' | 2.01 | 0.43 |
| 1:AA:1220:G:O2' | 1:AA:1221:G:H5' | 2.17 | 0.43 |
| 35:DA:2219:G:C2' | 35:DA:2220:G:H5' | 2.48 | 0.43 |
| 35:DA:1550:C:H2' | 35:DA:1551:C:H6 | 1.82 | 0.43 |
| 1:CA:1143:G:H2' | 1:CA:1144:G:C8 | 2.53 | 0.43 |
| 41:BG:153:ARG:HG2 | 41:BG:153:ARG:O | 2.19 | 0.43 |
| 38:BD:224:ALA:HB2 | 38:BD:233:HIS:HB3 | 1.99 | 0.43 |
| 1:CA:1296:C:H5' | 1:CA:1297:C:OP2 | 2.19 | 0.43 |
| 13:AM:119:GLY:O | 13:AM:121:LYS:HE2 | 2.19 | 0.43 |
| 13:CM:125:ARG:NH1 | 35:DA:1913:A:C8 | 2.87 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BA:1782:C:H1' | 35:BA:2609:U:H5'' | 2.00 | 0.43 |
| 35:DA:198:C:H5' | 35:DA:2244:U:OP1 | 2.19 | 0.43 |
| 1:AA:791:G:C6 | 1:AA:792:A:N7 | 2.87 | 0.43 |
| 35:DA:1588:C:O2 | 35:DA:1588:C:H2' | 2.16 | 0.43 |
| 35:DA:614:U:O2 | 35:DA:614:U:O4' | 2.36 | 0.43 |
| 50:DT:7:ILE:O | 50:DT:10:VAL:HB | 2.18 | 0.43 |
| 1:CA:237:C:H2' | 1:CA:238:G:H8 | 1.83 | 0.43 |
| 40:DF:119:ARG:HH11 | 40:DF:119:ARG:HG2 | 1.84 | 0.43 |
| 2:AB:69:LEU:HB2 | 2:AB:159:PRO:HG2 | 2.00 | 0.43 |
| 2:AB:17:PHE:HD1 | 2:AB:44:LEU:HG | 1.84 | 0.43 |
| 2:AB:69:LEU:HD13 | 2:AB:92:TYR:HA | 2.00 | 0.43 |
| 9:CI:65:VAL:C | 9:CI:66:ARG:HG3 | 2.39 | 0.43 |
| 9:CI:17:VAL:HG21 | 9:CI:80:GLY:C | 2.39 | 0.43 |
| 2:CB:54:THR:CG2 | 2:CB:201:ILE:HD11 | 2.43 | 0.43 |
| 35:DA:2863:C:OP1 | 50:DT:93:ARG:NH2 | 2.47 | 0.43 |
| 50:BT:19:LEU:HA | 50:BT:20:PRO:HD3 | 1.73 | 0.43 |
| 1:CA:964:A:OP1 | 1:CA:1199:U:OP1 | 2.36 | 0.43 |
| 52:DV:95:LEU:HD23 | 52:DV:95:LEU:C | 2.39 | 0.43 |
| 52:BV:47:VAL:O | 52:BV:49:THR:O | 2.37 | 0.43 |
| 35:BA:1246:A:OP2 | 46:BP:18:ARG:HG3 | 2.19 | 0.43 |
| 39:DE:93:VAL:C | 39:DE:95:ILE:H | 2.21 | 0.43 |
| 47:BQ:141:GLN:HB2 | 56:BZ:98:MET:HA | 2.00 | 0.43 |
| 39:BE:68:ALA:C | 39:BE:70:ALA:H | 2.21 | 0.43 |
| 39:BE:76:ARG:O | 39:BE:77:ILE:O | 2.36 | 0.43 |
| 39:DE:23:VAL:HA | 39:DE:184:VAL:O | 2.19 | 0.43 |
| 10:CJ:47:PHE:CE2 | 14:CN:37:PHE:HE2 | 2.37 | 0.43 |
| 51:DU:91:ASP:O | 51:DU:92:ARG:O | 2.36 | 0.43 |
| 10:AJ:47:PHE:CE1 | 10:AJ:63:PHE:HB2 | 2.54 | 0.43 |
| 47:BQ:54:MET:HG2 | 47:BQ:64:ILE:HG21 | 2.00 | 0.43 |
| 30:D5:37:LYS:O | 30:D5:38:ALA:O | 2.37 | 0.43 |
| 30:D5:40:LYS:HZ2 | 30:D5:46:CYS:CA | 2.31 | 0.43 |
| 55:BY:27:VAL:N | 55:BY:28:LYS:NZ | 2.67 | 0.43 |
| 37:DC:172:HIS:O | 37:DC:173:ALA:O | 2.37 | 0.43 |
| 38:DD:176:ARG:NH1 | 38:DD:176:ARG:CG | 2.82 | 0.43 |
| 43:DI:101:LEU:CD2 | 43:DI:109:ILE:HG12 | 2.47 | 0.43 |
| 46:BP:99:LEU:O | 46:BP:99:LEU:HD23 | 2.18 | 0.43 |
| 46:DP:115:LEU:HD23 | 46:DP:115:LEU:N | 2.33 | 0.43 |
| 35:BA:1190:G:H2' | 35:BA:1191:G:H8 | 1.83 | 0.43 |
| 49:BS:33:LYS:C | 49:BS:34:HIS:HD2 | 2.22 | 0.43 |
| 5:AE:52:PRO:HA | 5:AE:55:VAL:HG23 | 2.01 | 0.43 |
| 17:AQ:68:ARG:CG | 17:AQ:68:ARG:HH11 | 2.29 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:D2:17:SER:CB | 27:D2:18:PRO:CD | 2.96 | 0.43 |
| 55:DY:47:LYS:O | 55:DY:49:VAL:N | 2.52 | 0.43 |
| 1:CA:1030(A):G:H1' | 1:CA:1031:G:N2 | 2.32 | 0.43 |
| 41:BG:128:ARG:O | 41:BG:130:ASN:N | 2.39 | 0.43 |
| 35:BA:1300:U:H4' | 35:BA:1301:A:O5' | 2.18 | 0.43 |
| 29:D4:37:PRO:HA | 29:D4:51:TYR:HD2 | 1.83 | 0.43 |
| 56:BZ:121:HIS:HB2 | 56:BZ:171:ILE:HA | 1.99 | 0.43 |
| 56:BZ:151:HIS:CB | 56:BZ:171:ILE:HG13 | 2.49 | 0.43 |
| 1:CA:1203:C:O2' | 1:CA:1204:A:H5' | 2.19 | 0.43 |
| 35:BA:922:U:H2' | 35:BA:923:C:H6 | 1.83 | 0.43 |
| 10:AJ:8:LEU:O | 10:AJ:16:LEU:HD21 | 2.19 | 0.43 |
| 41:BG:161:THR:C | 41:BG:163:ALA:H | 2.22 | 0.43 |
| 54:DX:27:THR:HA | 54:DX:80:ILE:HA | 1.99 | 0.43 |
| 4:CD:30:LYS:CB | 4:CD:35:ARG:HD2 | 2.49 | 0.43 |
| 35:DA:59:U:O2' | 35:DA:73:A:H2' | 2.19 | 0.43 |
| 26:B1:49:VAL:HB | 26:B1:60:PHE:HB2 | 2.01 | 0.43 |
| 5:CE:41:VAL:HG11 | 5:CE:113:ALA:CA | 2.48 | 0.43 |
| 35:DA:2168:G:N2 | 35:DA:2171:A:C8 | 2.87 | 0.43 |
| 1:CA:1477:C:O2' | 1:CA:1478:C:H5' | 2.17 | 0.43 |
| 49:BS:85:VAL:HG22 | 49:BS:106:ARG:CB | 2.48 | 0.43 |
| 1:CA:649:G:H2' | 1:CA:650:G:C8 | 2.53 | 0.43 |
| 1:AA:626:U:C2 | 1:AA:627:G:C8 | 3.07 | 0.43 |
| 52:DV:21:ARG:HB3 | 52:DV:91:TYR:CB | 2.45 | 0.43 |
| 18:CR:53:ARG:CD | 18:CR:63:GLN:HB2 | 2.49 | 0.43 |
| 1:AA:1203:C:OP1 | 14:AN:3:ARG:CD | 2.67 | 0.43 |
| 35:DA:744:G:OP1 | 39:DE:132:HIS:HB2 | 2.19 | 0.43 |
| 6:AF:52:ILE:HD12 | 6:AF:87:ARG:NH1 | 2.33 | 0.43 |
| 1:CA:839:U:C2' | 1:CA:839:U:O2 | 2.66 | 0.43 |
| 46:BP:115:LEU:HD23 | 46:BP:115:LEU:N | 2.32 | 0.43 |
| 15:CO:65:ARG:NH1 | 15:CO:65:ARG:HG2 | 2.34 | 0.43 |
| 1:CA:1316:G:C2' | 1:CA:1317:C:H5'' | 2.49 | 0.43 |
| 8:CH:39:LEU:O | 8:CH:44:PHE:HB2 | 2.19 | 0.43 |
| 40:DF:101:LEU:O | 40:DF:106:ARG:NH1 | 2.52 | 0.43 |
| 40:BF:89:VAL:O | 40:BF:91:GLY:N | 2.49 | 0.43 |
| 7:CG:148:ASN:N | 7:CG:148:ASN:ND2 | 2.64 | 0.43 |
| 35:BA:16:G:H2' | 35:BA:17:G:H8 | 1.83 | 0.43 |
| 23:CW:66:U:H2' | 23:CW:67:C:C6 | 2.54 | 0.43 |
| 11:AK:111:ASP:HA | 18:AR:84:LYS:CG | 2.47 | 0.43 |
| 22:AY:45:U:H6 | 22:AY:45:U:O5' | 2.02 | 0.43 |
| 42:BH:115:VAL:O | 42:BH:115:VAL:HG12 | 2.18 | 0.43 |
| 27:D2:48:HIS:O | 27:D2:52:ASP:OD2 | 2.36 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 44:DN:65:LYS:O | 44:DN:69:GLN:HB2 | 2.18 | 0.43 |
| 4:AD:106:TYR:CE1 | 4:AD:113:SER:HA | 2.53 | 0.43 |
| 35:DA:1357:U:H2' | 35:DA:1358:G:O4' | 2.18 | 0.43 |
| 7:AG:113:GLU:CB | 7:AG:119:ARG:HG2 | 2.49 | 0.43 |
| 13:AM:106:ASN:O | 13:AM:107:ALA:HB3 | 2.19 | 0.43 |
| 5:CE:78:HIS:HE1 | 5:CE:143:ARG:H | 1.65 | 0.43 |
| 35:BA:1448:G:H5' | 35:BA:1449:A:P | 2.58 | 0.43 |
| 26:D1:71:TYR:CD1 | 43:DI:27:ARG:HD2 | 2.54 | 0.43 |
| 37:DC:128:GLY:O | 37:DC:130:ILE:N | 2.52 | 0.43 |
| 31:D6:27:LYS:HG3 | 35:DA:2286:A:OP2 | 2.18 | 0.43 |
| 1:CA:443:C:H2' | 1:CA:444:C:H6 | 1.84 | 0.43 |
| 1:CA:189(A):C:H2' | 1:CA:189(B):C:C6 | 2.54 | 0.43 |
| 16:CP:15:PRO:HB2 | 16:CP:41:PRO:HG3 | 2.00 | 0.43 |
| 2:CB:60:ASP:OD2 | 2:CB:64:ARG:NH2 | 2.52 | 0.43 |
| 1:CA:936:C:H2' | 1:CA:937:A:O4' | 2.17 | 0.43 |
| 1:AA:154:C:H2' | 1:AA:155:C:C6 | 2.54 | 0.43 |
| 51:BU:22:LYS:HE2 | 57:BU:201:MG:MG | 1.44 | 0.43 |
| 1:AA:457:C:H2' | 1:AA:458:C:C6 | 2.54 | 0.43 |
| 1:AA:518:C:H2' | 1:AA:530:G:N3 | 2.34 | 0.43 |
| 5:CE:122:GLU:HG2 | 5:CE:131:ILE:HD11 | 2.00 | 0.43 |
| 17:CQ:95:TYR:O | 17:CQ:98:LEU:N | 2.51 | 0.43 |
| 45:DO:53:LYS:O | 45:DO:56:ASP:CG | 2.57 | 0.43 |
| 46:BP:121:LYS:O | 46:BP:123:LEU:HG | 2.18 | 0.43 |
| 42:BH:28:GLY:HA3 | 42:BH:79:VAL:CG2 | 2.49 | 0.43 |
| 42:BH:30:LYS:HB2 | 42:BH:79:VAL:HA | 2.01 | 0.43 |
| 6:CF:53:ALA:O | 6:CF:54:LYS:HB2 | 2.19 | 0.43 |
| 37:BC:67:GLY:HA2 | 37:BC:162:GLU:HA | 2.00 | 0.43 |
| 35:BA:2531:A:H2' | 35:BA:2532:G:C8 | 2.54 | 0.43 |
| 35:DA:755:C:H2' | 35:DA:756:C:C6 | 2.53 | 0.43 |
| 12:AL:43:VAL:HG23 | 12:AL:44:THR:N | 2.33 | 0.43 |
| 4:CD:191:ARG:NE | 4:CD:200:GLU:OE2 | 2.52 | 0.43 |
| 4:AD:199:ASN:OD1 | 4:AD:201:GLN:HB2 | 2.18 | 0.43 |
| 1:AA:143:A:H2 | 1:AA:220:G:H1 | 1.62 | 0.43 |
| 35:BA:2745:C:H5' | 42:BH:146:ALA:HB2 | 2.00 | 0.43 |
| 1:CA:394:G:H2' | 1:CA:395:C:H6 | 1.83 | 0.43 |
| 36:BB:76:G:H2' | 36:BB:77:U:O4' | 2.19 | 0.43 |
| 6:CF:7:ASN:HD22 | 6:CF:7:ASN:N | 2.17 | 0.43 |
| 6:AF:28:ARG:HG3 | 6:AF:28:ARG:HH11 | 1.82 | 0.43 |
| 3:CC:61:ALA:O | 3:CC:62:ASP:HB2 | 2.19 | 0.43 |
| 27:D2:40:SER:C | 27:D2:42:GLY:H | 2.21 | 0.43 |
| 12:AL:58:VAL:O | 12:AL:60:LEU:HD22 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 40:BF:3:GLU:HA | 40:BF:24:LEU:CD2 | 2.49 | 0.43 |
| 9:AI:17:VAL:HG21 | 9:AI:80:GLY:C | 2.39 | 0.43 |
| 12:CL:38:THR:CG2 | 12:CL:57:LYS:HB2 | 2.49 | 0.43 |
| 12:CL:41:ARG:HH22 | 12:CL:57:LYS:HZ1 | 1.67 | 0.43 |
| 1:CA:952:U:H4' | 1:CA:964:A:N1 | 2.33 | 0.43 |
| 1:CA:953:G:H2' | 1:CA:954:G:O4' | 2.19 | 0.43 |
| 35:BA:1568:G:C5' | 38:BD:61:LEU:HB2 | 2.48 | 0.43 |
| 56:BZ:95:PRO:O | 56:BZ:96:VAL:O | 2.37 | 0.43 |
| 35:BA:2821:A:O5' | 35:BA:2821:A:H8 | 2.01 | 0.43 |
| 13:CM:46:LYS:O | 13:CM:47:ASP:HB3 | 2.19 | 0.43 |
| 44:BN:110:GLY:C | 44:BN:114:ARG:HH21 | 2.22 | 0.43 |
| 13:AM:19:LEU:O | 13:AM:25:ILE:HB | 2.18 | 0.43 |
| 37:BC:58:VAL:O | 37:BC:59:ARG:HD3 | 2.18 | 0.43 |
| 10:CJ:47:PHE:CE1 | 10:CJ:63:PHE:HB2 | 2.54 | 0.43 |
| 52:DV:34:GLU:O | 52:DV:36:PRO:HD2 | 2.18 | 0.43 |
| 1:CA:939:G:H5'' | 7:CG:102:ARG:CZ | 2.46 | 0.43 |
| 41:DG:110:ALA:CA | 41:DG:140:ILE:HG22 | 2.48 | 0.43 |
| 41:DG:31:VAL:CG2 | 41:DG:32:PRO:HD2 | 2.49 | 0.43 |
| 3:AC:141:VAL:CG1 | 3:AC:202:ILE:HG23 | 2.48 | 0.43 |
| 29:B4:40:ILE:HA | 29:B4:57:ILE:HB | 2.01 | 0.43 |
| 5:CE:90:VAL:C | 5:CE:91:LEU:HD22 | 2.39 | 0.43 |
| 35:BA:1666:G:O2' | 35:BA:1667:G:H5' | 2.19 | 0.43 |
| 46:DP:99:LEU:HA | 46:DP:102:ARG:HH22 | 1.84 | 0.43 |
| 42:BH:159:GLU:HG3 | 42:BH:160:LYS:H | 1.78 | 0.43 |
| 43:BI:77:LEU:HD11 | 43:BI:101:LEU:CD1 | 2.35 | 0.43 |
| 35:BA:1980:G:O2' | 35:BA:1982:C:OP2 | 2.35 | 0.43 |
| 31:B6:10:LEU:C | 31:B6:11:LEU:HD22 | 2.39 | 0.43 |
| 27:D2:13:ALA:O | 27:D2:16:LEU:N | 2.50 | 0.43 |
| 27:D2:65:ASN:C | 27:D2:67:LYS:N | 2.71 | 0.43 |
| 43:DI:73:GLU:HB2 | 43:DI:136:VAL:HG21 | 2.01 | 0.43 |
| 35:BA:143:G:H5'' | 35:BA:1598:C:O2' | 2.18 | 0.43 |
| 54:BX:37:THR:O | 54:BX:38:GLU:C | 2.57 | 0.43 |
| 35:DA:158:U:O2 | 35:DA:158:U:C2' | 2.66 | 0.43 |
| 35:BA:2811:G:C6 | 35:BA:2891:G:N2 | 2.86 | 0.43 |
| 29:D4:51:TYR:CG | 41:DG:2:PRO:CD | 3.02 | 0.43 |
| 1:CA:769:G:O2' | 1:CA:770:C:H5' | 2.19 | 0.43 |
| 8:AH:86:ILE:CB | 8:AH:133:LEU:HD22 | 2.49 | 0.43 |
| 20:CT:46:GLU:CD | 20:CT:48:LYS:HE2 | 2.38 | 0.43 |
| 35:DA:1847:A:H2' | 35:DA:1847:A:N3 | 2.34 | 0.43 |
| 10:AJ:16:LEU:HD23 | 10:AJ:94:VAL:CG1 | 2.49 | 0.43 |
| 13:CM:84:ILE:HG12 | 19:CS:66:MET:HE3 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 3:CC:40:ARG:HH11 | 3:CC:40:ARG:HG3 | 1.83 | 0.43 |
| 1:CA:336:C:O2' | 1:CA:337:C:H5' | 2.19 | 0.43 |
| 19:AS:15:LEU:O | 19:AS:19:VAL:N | 2.51 | 0.43 |
| 5:CE:110:LEU:HD12 | 5:CE:118:ILE:HG21 | 1.99 | 0.43 |
| 37:BC:68:LEU:HD22 | 37:BC:180:PHE:CB | 2.49 | 0.43 |
| 16:CP:21:VAL:CG1 | 16:CP:34:GLU:HB3 | 2.48 | 0.43 |
| 35:BA:2506:U:C3' | 35:BA:2506:U:H6 | 2.21 | 0.43 |
| 35:BA:2741:A:H2' | 35:BA:2742:C:O4' | 2.19 | 0.43 |
| 38:DD:65:ILE:O | 38:DD:65:ILE:HD13 | 2.19 | 0.43 |
| 50:DT:30:VAL:HA | 50:DT:44:ASP:HA | 2.01 | 0.43 |
| 3:AC:20:SER:O | 14:AN:54:PRO:HG3 | 2.18 | 0.43 |
| 11:AK:124:LYS:HD2 | 11:AK:125:PHE:HE1 | 1.84 | 0.43 |
| 35:DA:1107:G:O2' | 35:DA:1108:U:H5' | 2.18 | 0.43 |
| 35:DA:786:C:C2' | 35:DA:787:U:H5' | 2.49 | 0.43 |
| 6:CF:50:TYR:CE2 | 6:CF:52:ILE:HD11 | 2.54 | 0.43 |
| 8:AH:39:LEU:O | 8:AH:44:PHE:HB2 | 2.19 | 0.43 |
| 2:AB:20:GLU:OE2 | 2:AB:23:ARG:NH2 | 2.52 | 0.43 |
| 1:CA:797:C:H2' | 1:CA:798:G:C8 | 2.53 | 0.43 |
| 56:BZ:10:ARG:NH2 | 56:BZ:26:GLY:N | 2.63 | 0.43 |
| 56:BZ:23:LYS:HB3 | 56:BZ:38:TYR:CD1 | 2.54 | 0.43 |
| 44:BN:73:THR:HG22 | 44:BN:82:LEU:HD11 | 2.00 | 0.43 |
| 45:DO:22:ILE:HA | 45:DO:22:ILE:HD13 | 1.75 | 0.43 |
| 50:BT:118:ARG:O | 50:BT:121:ILE:HB | 2.18 | 0.43 |
| 42:DH:115:VAL:HG12 | 42:DH:115:VAL:O | 2.17 | 0.43 |
| 1:CA:830:G:O2' | 1:CA:831:U:H5' | 2.17 | 0.43 |
| 4:CD:54:TYR:CE1 | 4:CD:209:ARG:NH1 | 2.87 | 0.43 |
| 35:DA:843:G:C2' | 35:DA:844:C:H5' | 2.49 | 0.43 |
| 15:CO:64:ARG:NH2 | 35:DA:715:G:OP1 | 2.51 | 0.43 |
| 38:BD:198:ASN:HD22 | 38:BD:198:ASN:C | 2.22 | 0.43 |
| 7:AG:6:ARG:O | 7:AG:7:ALA:O | 2.37 | 0.43 |
| 22:CV:74:C:H42 | 35:DA:2252:G:H1 | 1.66 | 0.43 |
| 1:CA:724:G:O2' | 1:CA:725:G:H5' | 2.19 | 0.43 |
| 40:BF:139:PHE:O | 40:BF:140:LEU:C | 2.57 | 0.43 |
| 1:AA:775:G:O2' | 1:AA:776:G:H5' | 2.19 | 0.43 |
| 38:DD:125:ILE:HG13 | 38:DD:137:PRO:CD | 2.49 | 0.43 |
| 1:CA:570:G:C2 | 1:CA:571:U:C4 | 3.07 | 0.43 |
| 1:CA:570:G:H1' | 1:CA:820:U:C4 | 2.54 | 0.43 |
| 41:BG:21:ARG:HD2 | 41:BG:21:ARG:O | 2.19 | 0.43 |
| 8:CH:100:ILE:HA | 8:CH:101:PRO:HD3 | 1.75 | 0.43 |
| 56:BZ:82:ARG:NH1 | 56:BZ:82:ARG:HG2 | 2.34 | 0.43 |
| 18:AR:24:ALA:O | 18:AR:26:LEU:N | 2.52 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:232:G:H2' | 1:CA:233:C:O4' | 2.19 | 0.43 |
| 8:CH:29:SER:HB3 | 8:CH:32:LYS:CG | 2.49 | 0.43 |
| 35:BA:606:U:H4' | 35:BA:658:C:H4' | 2.01 | 0.43 |
| 35:BA:2373:G:H2' | 35:BA:2374:C:C6 | 2.54 | 0.43 |
| 41:DG:139:LEU:C | 41:DG:141:PHE:N | 2.72 | 0.43 |
| 20:AT:10:LEU:C | 20:AT:12:ALA:H | 2.22 | 0.43 |
| 17:CQ:92:ARG:HA | 17:CQ:95:TYR:CE2 | 2.53 | 0.43 |
| 44:BN:11:PRO:HB2 | 44:BN:51:PHE:CE1 | 2.54 | 0.43 |
| 35:BA:413:C:H2' | 35:BA:414:C:C6 | 2.54 | 0.43 |
| 16:AP:74:LEU:O | 16:AP:79:VAL:HG23 | 2.19 | 0.43 |
| 35:BA:21:A:O2' | 35:BA:22:C:H5' | 2.19 | 0.43 |
| 1:AA:285:G:O2' | 1:AA:286:G:H5' | 2.19 | 0.43 |
| 3:CC:94:LEU:HD12 | 3:CC:94:LEU:C | 2.39 | 0.43 |
| 35:BA:1184:G:C6 | 35:BA:1185:C:C4 | 3.07 | 0.43 |
| 45:BO:13:ASN:C | 45:BO:15:GLY:N | 2.72 | 0.43 |
| 14:CN:15:LYS:O | 14:CN:16:PHE:C | 2.56 | 0.43 |
| 48:DR:111:LEU:HA | 48:DR:111:LEU:HD23 | 1.74 | 0.43 |
| 38:DD:268:ARG:HB3 | 38:DD:268:ARG:CZ | 2.49 | 0.43 |
| 1:CA:1036:G:H8 | 1:CA:1036:G:OP2 | 2.01 | 0.43 |
| 35:BA:157:U:H6 | 35:BA:157:U:P | 2.42 | 0.43 |
| 16:AP:76:GLN:CG | 16:AP:76:GLN:O | 2.67 | 0.43 |
| 1:CA:282:A:H2' | 1:CA:282:A:N3 | 2.34 | 0.43 |
| 29:B4:54:LYS:C | 29:B4:56:GLU:H | 2.21 | 0.43 |
| 56:DZ:148:ASP:O | 56:DZ:149:SER:HB3 | 2.17 | 0.43 |
| 35:DA:1123:C:H2' | 35:DA:1124:C:C6 | 2.53 | 0.43 |
| 2:CB:131:PRO:O | 2:CB:133:LYS:N | 2.52 | 0.43 |
| 1:AA:1199:U:H4' | 10:AJ:54:PHE:CE2 | 2.54 | 0.43 |
| 2:CB:84:GLU:HB3 | 2:CB:219:VAL:CG2 | 2.43 | 0.43 |
| 50:BT:28:VAL:CG2 | 50:BT:46:GLU:HA | 2.48 | 0.43 |
| 6:CF:63:TYR:O | 6:CF:64:GLN:C | 2.56 | 0.43 |
| 35:DA:2572:A:P | 39:DE:144:ARG:HB2 | 2.59 | 0.43 |
| 1:CA:973:G:C3' | 1:CA:974:A:H5'' | 2.45 | 0.43 |
| 35:DA:1748:G:H8 | 35:DA:1748:G:H5' | 1.84 | 0.43 |
| 35:BA:1654:A:C2 | 39:BE:113:PHE:CD1 | 3.07 | 0.43 |
| 10:AJ:32:ALA:CB | 10:AJ:76:ASN:N | 2.82 | 0.43 |
| 1:AA:1310:G:N2 | 1:AA:1328:C:C2 | 2.87 | 0.43 |
| 13:CM:76:ALA:CB | 13:CM:79:LYS:HZ3 | 2.23 | 0.43 |
| 51:DU:92:ARG:NH1 | 51:DU:92:ARG:CG | 2.81 | 0.43 |
| 5:CE:83:GLU:CG | 5:CE:88:LYS:HG3 | 2.49 | 0.43 |
| 1:CA:1125:U:O3' | 1:CA:1126:U:H6 | 2.01 | 0.43 |
| 37:BC:56:GLN:HE22 | 37:BC:168:THR:N | 2.16 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:1665:A:H5'' | 45:DO:66:LYS:HG3 | 2.01 | 0.43 |
| 44:DN:115:ARG:O | 44:DN:118:LYS:HB2 | 2.18 | 0.43 |
| 22:CY:27:G:N2 | 22:CY:43:C:H5 | 2.16 | 0.43 |
| 42:BH:169:VAL:O | 42:BH:169:VAL:HG13 | 2.19 | 0.43 |
| 3:CC:16:ARG:HB2 | 3:CC:16:ARG:HH11 | 1.84 | 0.43 |
| 49:BS:57:LYS:HG2 | 49:BS:58:LEU:H | 1.84 | 0.43 |
| 41:DG:55:LYS:O | 41:DG:58:GLN:NE2 | 2.49 | 0.43 |
| 45:BO:69:ILE:HG13 | 45:BO:69:ILE:H | 1.69 | 0.43 |
| 42:DH:85:LYS:CD | 42:DH:141:VAL:HG13 | 2.36 | 0.43 |
| 26:D1:29:GLY:O | 26:D1:30:VAL:CG2 | 2.57 | 0.43 |
| 45:DO:88:ASN:ND2 | 45:DO:90:GLN:N | 2.65 | 0.43 |
| 47:DQ:42:ILE:HG23 | 47:DQ:46:GLN:OE1 | 2.18 | 0.43 |
| 8:CH:84:ARG:NH2 | 8:CH:86:ILE:CD1 | 2.74 | 0.43 |
| 35:DA:1503:U:O2' | 35:DA:1504:C:H5' | 2.19 | 0.43 |
| 25:D0:45:PHE:HB2 | 25:D0:59:LEU:HD11 | 1.99 | 0.43 |
| 47:DQ:29:PHE:HB3 | 47:DQ:105:GLU:OE2 | 2.19 | 0.43 |
| 5:CE:40:ARG:NH1 | 5:CE:40:ARG:CG | 2.76 | 0.43 |
| 1:AA:1505:G:H5'' | 1:AA:1506:U:H5'' | 2.00 | 0.43 |
| 9:AI:118:LYS:O | 9:AI:119:ALA:HB3 | 2.18 | 0.43 |
| 1:AA:460:G:C6 | 1:AA:470:C:H5'' | 2.53 | 0.43 |
| 1:CA:634:C:H2' | 1:CA:635:G:C8 | 2.44 | 0.43 |
| 1:AA:406:G:H5'' | 4:AD:5:ILE:HD13 | 1.99 | 0.43 |
| 1:AA:1004:A:OP1 | 1:AA:1025:U:O4 | 2.37 | 0.43 |
| 35:BA:875:G:C6 | 35:BA:876:C:N3 | 2.86 | 0.43 |
| 35:BA:1106:A:C4 | 35:BA:1107:G:N7 | 2.87 | 0.43 |
| 36:DB:91:C:H2' | 36:DB:92:C:C6 | 2.53 | 0.43 |
| 2:AB:229:VAL:HG12 | 2:AB:229:VAL:O | 2.19 | 0.43 |
| 3:AC:87:LEU:C | 3:AC:89:GLU:N | 2.68 | 0.43 |
| 35:DA:16:G:H2' | 35:DA:17:G:H8 | 1.84 | 0.43 |
| 1:CA:184:G:C4' | 1:CA:224:C:H4' | 2.49 | 0.43 |
| 38:BD:8:PRO:C | 38:BD:10:THR:H | 2.21 | 0.43 |
| 1:AA:806:C:H2' | 1:AA:807:A:C8 | 2.53 | 0.43 |
| 35:DA:2247:A:O2' | 35:DA:2248:C:H5' | 2.18 | 0.43 |
| 35:BA:814:C:H41 | 46:BP:27:HIS:CD2 | 2.37 | 0.43 |
| 14:AN:26:ARG:HD3 | 14:AN:43:CYS:HB3 | 2.00 | 0.43 |
| 6:CF:2:ARG:HD2 | 6:CF:4:TYR:OH | 2.19 | 0.43 |
| 11:AK:17:GLY:O | 11:AK:80:VAL:HA | 2.19 | 0.43 |
| 1:CA:1222:G:O2' | 1:CA:1223:C:H5' | 2.18 | 0.43 |
| 18:CR:65:ILE:H | 18:CR:65:ILE:HG12 | 1.53 | 0.43 |
| 35:BA:1708:C:O2' | 35:BA:1709:U:H5' | 2.19 | 0.43 |
| 35:BA:320:A:H3' | 40:BF:136:THR:HG21 | 2.01 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1095:U:H2' | 1:AA:1096:C:O4' | 2.19 | 0.43 |
| 3:CC:32:LEU:HD22 | 3:CC:59:ARG:NH1 | 2.33 | 0.43 |
| 15:CO:46:HIS:C | 15:CO:48:LYS:H | 2.22 | 0.43 |
| 1:AA:1412:C:H2' | 1:AA:1413:A:C8 | 2.53 | 0.43 |
| 35:DA:2282:G:H5'' | 35:DA:2283:C:O4' | 2.19 | 0.43 |
| 35:DA:832:G:N3 | 46:DP:53:GLY:HA2 | 2.34 | 0.43 |
| 50:BT:65:LYS:HG3 | 50:BT:66:VAL:H | 1.83 | 0.43 |
| 17:AQ:25:ARG:HH11 | 17:AQ:25:ARG:HG3 | 1.84 | 0.43 |
| 35:BA:2619:C:H1' | 39:BE:156:MET:HE1 | 2.00 | 0.43 |
| 35:BA:688:U:H2' | 35:BA:689:A:C8 | 2.53 | 0.43 |
| 35:DA:2219:G:H2' | 35:DA:2220:G:H5' | 2.01 | 0.43 |
| 35:DA:1400:G:H2' | 35:DA:1401:G:C8 | 2.54 | 0.43 |
| 20:CT:89:ARG:NH2 | 20:CT:89:ARG:HG3 | 2.34 | 0.43 |
| 38:DD:45:ASN:OD1 | 38:DD:46:GLN:N | 2.52 | 0.43 |
| 35:DA:2625:G:H2' | 35:DA:2626:C:O4' | 2.19 | 0.43 |
| 1:AA:1415:G:O2' | 1:AA:1416:G:H5' | 2.18 | 0.43 |
| 35:DA:1316:U:O2' | 35:DA:1317:A:H5' | 2.18 | 0.43 |
| 35:DA:1782:C:H1' | 35:DA:2609:U:H5'' | 2.01 | 0.43 |
| 35:DA:1600:C:O2' | 35:DA:1601:G:H5' | 2.19 | 0.43 |
| 19:CS:27:GLU:O | 19:CS:28:LYS:O | 2.37 | 0.43 |
| 4:AD:191:ARG:NE | 4:AD:200:GLU:OE2 | 2.51 | 0.43 |
| 33:D8:18:ALA:HB3 | 35:DA:651:G:H4' | 2.01 | 0.43 |
| 35:DA:679:C:H2' | 35:DA:680:G:C8 | 2.53 | 0.43 |
| 56:DZ:89:PHE:HE1 | 56:DZ:96:VAL:HG11 | 1.84 | 0.43 |
| 9:AI:92:TYR:C | 9:AI:94:ALA:N | 2.73 | 0.43 |
| 40:DF:164:ARG:CG | 40:DF:175:THR:OG1 | 2.63 | 0.43 |
| 2:AB:74:LYS:NZ | 2:AB:74:LYS:HB2 | 2.33 | 0.43 |
| 49:DS:88:ASP:CG | 49:DS:89:ARG:N | 2.73 | 0.43 |
| 50:DT:91:ARG:O | 50:DT:93:ARG:N | 2.41 | 0.43 |
| 12:CL:58:VAL:O | 12:CL:60:LEU:HD22 | 2.19 | 0.43 |
| 1:CA:955:U:H2' | 1:CA:956:U:H6 | 1.84 | 0.43 |
| 38:BD:80:ALA:HB3 | 38:BD:94:LEU:HD22 | 2.00 | 0.43 |
| 44:BN:41:ASP:O | 44:BN:42:TRP:C | 2.56 | 0.43 |
| 35:DA:2636:U:H4' | 39:DE:80:GLU:OE1 | 2.18 | 0.43 |
| 39:DE:33:VAL:HA | 39:DE:49:LEU:HA | 2.01 | 0.43 |
| 39:DE:69:LYS:O | 39:DE:71:GLY:N | 2.52 | 0.43 |
| 35:DA:1796:U:H2' | 35:DA:1797:C:C6 | 2.54 | 0.43 |
| 48:BR:41:ALA:O | 48:BR:43:GLU:N | 2.51 | 0.43 |
| 39:DE:11:MET:HB2 | 39:DE:24:THR:HA | 1.97 | 0.43 |
| 13:CM:17:VAL:O | 13:CM:17:VAL:HG12 | 2.18 | 0.43 |
| 51:DU:90:VAL:HG13 | 52:DV:39:LEU:HG | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:BF:157:VAL:HB | 40:BF:194:MET:CB | 2.49 | 0.43 |
| 41:BG:91:ARG:O | 41:BG:91:ARG:HD2 | 2.19 | 0.43 |
| 4:AD:9:CYS:HA | 4:AD:12:CYS:HB2 | 2.01 | 0.43 |
| 7:AG:84:ASN:HD22 | 23:AW:33:U:H4' | 1.84 | 0.43 |
| 1:AA:1058:G:H2' | 1:AA:1059:C:O4' | 2.19 | 0.43 |
| 41:BG:109:VAL:HG11 | 41:BG:142:PRO:HB3 | 2.00 | 0.43 |
| 35:DA:2468:G:O2' | 35:DA:2469:A:H8 | 1.83 | 0.43 |
| 42:DH:65:HIS:HE1 | 42:DH:69:ARG:HD3 | 1.84 | 0.43 |
| 35:DA:1663:C:O2' | 35:DA:1664:A:H8 | 2.02 | 0.43 |
| 48:DR:41:ALA:O | 48:DR:43:GLU:N | 2.51 | 0.43 |
| 35:BA:2015:A:H5' | 53:BW:92:ARG:HH22 | 1.84 | 0.43 |
| 43:BI:71:ILE:CG1 | 43:BI:72:LEU:H | 2.26 | 0.43 |
| 35:DA:513:A:C2 | 35:DA:514:A:C4 | 3.07 | 0.43 |
| 44:DN:68:GLU:HG2 | 44:DN:88:GLU:OE1 | 2.19 | 0.43 |
| 43:DI:40:THR:O | 43:DI:44:LEU:HB2 | 2.19 | 0.43 |
| 1:CA:255:G:O3' | 17:CQ:17:LYS:HD2 | 2.19 | 0.43 |
| 36:DB:16:G:C6 | 36:DB:69:G:C2 | 3.06 | 0.43 |
| 37:BC:51:PRO:HB2 | 37:BC:203:GLY:O | 2.19 | 0.43 |
| 35:BA:832:G:H21 | 46:BP:53:GLY:HA3 | 1.83 | 0.43 |
| 1:CA:735:C:O2' | 1:CA:736:C:H5' | 2.19 | 0.43 |
| 43:DI:120:ILE:HD13 | 43:DI:126:TYR:CD1 | 2.54 | 0.43 |
| 20:AT:50:GLU:N | 20:AT:100:ILE:HG12 | 2.34 | 0.43 |
| 35:BA:857:C:C2 | 35:BA:858:U:C5 | 3.07 | 0.43 |
| 3:AC:35:GLU:OE2 | 3:AC:97:LYS:HD2 | 2.19 | 0.43 |
| 35:DA:1039:G:C6 | 35:DA:1040:C:N4 | 2.87 | 0.43 |
| 16:AP:4:ILE:O | 16:AP:66:PRO:HA | 2.19 | 0.43 |
| 3:CC:40:ARG:NH1 | 3:CC:40:ARG:HG3 | 2.33 | 0.43 |
| 40:BF:84:VAL:HB | 40:BF:85:GLY:H | 1.47 | 0.43 |
| 47:DQ:31:ASP:OD2 | 47:DQ:107:ALA:HA | 2.18 | 0.43 |
| 35:DA:365:C:C6 | 35:DA:365:C:H5' | 2.40 | 0.43 |
| 48:BR:87:TYR:O | 48:BR:89:ASP:N | 2.52 | 0.43 |
| 35:DA:951:C:O2' | 35:DA:952:G:H5' | 2.18 | 0.43 |
| 35:DA:953:A:OP2 | 47:DQ:16:ARG:NH2 | 2.52 | 0.43 |
| 34:B9:24:TYR:CE2 | 34:B9:35:ARG:HG3 | 2.54 | 0.43 |
| 49:DS:106:ARG:HH22 | 49:DS:109:GLY:N | 2.17 | 0.43 |
| 54:DX:65:ARG:CG | 54:DX:65:ARG:NH1 | 2.82 | 0.43 |
| 35:BA:2735:G:H2' | 35:BA:2736:G:H5' | 1.98 | 0.43 |
| 27:D2:41:ILE:O | 27:D2:41:ILE:HG13 | 2.18 | 0.43 |
| 35:DA:745:G:H2' | 35:DA:746:A:H5' | 2.01 | 0.43 |
| 2:AB:97:TRP:HH2 | 2:AB:176:GLU:CD | 2.22 | 0.43 |
| 2:AB:71:VAL:O | 2:AB:165:VAL:HG22 | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:BE:3:GLY:HA3 | 39:BE:81:ILE:CG2 | 2.44 | 0.43 |
| 1:AA:371:G:H21 | 1:AA:374:A:N6 | 2.16 | 0.43 |
| 47:DQ:78:PRO:HB2 | 47:DQ:81:VAL:CG1 | 2.48 | 0.43 |
| 1:AA:1043:C:H2' | 1:AA:1044:A:H8 | 1.84 | 0.43 |
| 1:CA:1043:C:H2' | 1:CA:1044:A:H8 | 1.83 | 0.43 |
| 56:BZ:23:LYS:HB3 | 56:BZ:38:TYR:HD1 | 1.84 | 0.43 |
| 23:AW:23:A:C8 | 23:AW:24:G:N7 | 2.87 | 0.43 |
| 35:BA:1637:A:H2' | 35:BA:1638:C:C6 | 2.54 | 0.43 |
| 11:AK:33:THR:HG22 | 11:AK:39:PRO:CA | 2.49 | 0.43 |
| 44:DN:27:ALA:O | 44:DN:28:THR:C | 2.56 | 0.43 |
| 35:DA:1711:C:O2' | 35:DA:1712:C:H5' | 2.19 | 0.43 |
| 35:DA:1637:A:H2' | 35:DA:1638:C:C6 | 2.53 | 0.43 |
| 1:CA:200:G:C2 | 1:CA:201:C:H1' | 2.54 | 0.43 |
| 35:DA:2464:C:N4 | 35:DA:2487:G:C6 | 2.87 | 0.43 |
| 7:CG:115:ARG:HB2 | 7:CG:118:VAL:CG2 | 2.48 | 0.43 |
| 53:DW:10:VAL:O | 53:DW:11:ARG:CB | 2.67 | 0.43 |
| 35:DA:2025:C:H2' | 35:DA:2026:C:H6 | 1.80 | 0.43 |
| 1:CA:1515:C:H2' | 1:CA:1516:G:H8 | 1.84 | 0.43 |
| 35:DA:1844:C:H2' | 35:DA:1845:G:C8 | 2.54 | 0.43 |
| 11:AK:74:ALA:C | 11:AK:76:GLY:N | 2.70 | 0.43 |
| 36:BB:45:A:H1' | 41:BG:95:ARG:NH2 | 2.34 | 0.43 |
| 35:BA:742:G:H2' | 35:BA:743:G:H8 | 1.83 | 0.43 |
| 1:AA:1101:A:H4' | 1:AA:1102:A:O5' | 2.19 | 0.43 |
| 38:BD:253:GLN:HB2 | 38:BD:257:LEU:HD12 | 2.01 | 0.43 |
| 17:CQ:76:LEU:CG | 17:CQ:77:VAL:N | 2.81 | 0.43 |
| 1:AA:1488:G:O2' | 1:AA:1489:G:H5' | 2.18 | 0.43 |
| 37:DC:181:PRO:O | 37:DC:182:PRO:CB | 2.67 | 0.43 |
| 37:BC:181:PRO:O | 37:BC:182:PRO:CB | 2.66 | 0.43 |
| 1:CA:1422:G:H2' | 1:CA:1423:G:H8 | 1.84 | 0.43 |
| 35:BA:2219:G:H2' | 35:BA:2220:G:H5' | 2.01 | 0.43 |
| 17:AQ:91:ARG:O | 17:AQ:94:ASN:HB2 | 2.19 | 0.43 |
| 5:CE:139:LEU:C | 5:CE:141:GLN:N | 2.72 | 0.43 |
| 28:B3:4:LEU:HA | 28:B3:4:LEU:HD23 | 1.86 | 0.43 |
| 35:DA:2852:G:H2' | 35:DA:2853:C:C6 | 2.54 | 0.43 |
| 4:CD:152:SER:HA | 4:CD:155:LEU:HG | 2.00 | 0.43 |
| 35:BA:464:U:H2' | 35:BA:465:G:O4' | 2.19 | 0.43 |
| 1:CA:449:C:O2 | 16:CP:42:ARG:HD2 | 2.19 | 0.43 |
| 17:CQ:11:VAL:HG22 | 17:CQ:20:THR:O | 2.18 | 0.43 |
| 35:DA:1789:A:P | 38:DD:222:ARG:HE | 2.42 | 0.43 |
| 1:CA:1068:G:N7 | 1:CA:1094:G:H2' | 2.33 | 0.43 |
| 35:BA:45:C:OP2 | 35:BA:215:G:H2' | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 54:DX:75:ASP:C | 54:DX:76:ARG:HG3 | 2.39 | 0.43 |
| 35:DA:188:G:H2' | 35:DA:189:G:H5' | 2.00 | 0.43 |
| 42:BH:91:GLY:HA3 | 42:BH:94:TYR:CG | 2.54 | 0.43 |
| 2:AB:131:PRO:O | 2:AB:133:LYS:N | 2.52 | 0.43 |
| 38:BD:68:LYS:HG3 | 38:BD:68:LYS:O | 2.18 | 0.43 |
| 15:CO:37:ASN:N | 15:CO:37:ASN:ND2 | 2.67 | 0.43 |
| 53:BW:71:VAL:O | 53:BW:71:VAL:HG12 | 2.18 | 0.43 |
| 1:AA:643:C:H5' | 8:AH:31:PHE:CD1 | 2.54 | 0.43 |
| 10:AJ:67:THR:HG22 | 10:AJ:67:THR:O | 2.18 | 0.43 |
| 1:AA:448:A:O2' | 1:AA:449:C:H5' | 2.19 | 0.43 |
| 35:DA:1958:C:O2' | 35:DA:1959:G:H5' | 2.19 | 0.43 |
| 35:BA:2193:G:C4 | 35:BA:2194:G:C8 | 3.07 | 0.43 |
| 56:DZ:52:SER:O | 56:DZ:71:VAL:HG21 | 2.18 | 0.42 |
| 35:BA:570:G:H2' | 35:BA:2030:A:C5 | 2.54 | 0.42 |
| 2:AB:57:PHE:HD2 | 2:AB:185:ILE:HD11 | 1.83 | 0.42 |
| 9:CI:89:ASN:O | 9:CI:91:ASP:N | 2.48 | 0.42 |
| 49:DS:93:LYS:HE3 | 49:DS:93:LYS:CA | 2.48 | 0.42 |
| 35:BA:195:A:H5'' | 35:BA:196:A:OP2 | 2.19 | 0.42 |
| 35:BA:2402:C:C3' | 35:BA:2403:C:H5' | 2.49 | 0.42 |
| 46:BP:66:GLY:O | 46:BP:67:MET:CB | 2.66 | 0.42 |
| 55:DY:81:LYS:HB2 | 55:DY:96:ILE:HG22 | 2.01 | 0.42 |
| 35:BA:1859:A:N6 | 35:BA:1883:G:O2' | 2.52 | 0.42 |
| 51:BU:99:ALA:HB2 | 51:BU:106:PHE:CE1 | 2.54 | 0.42 |
| 39:DE:67:PHE:O | 39:DE:70:ALA:HB2 | 2.19 | 0.42 |
| 38:DD:30:GLU:CB | 38:DD:35:LYS:HD2 | 2.28 | 0.42 |
| 35:DA:2491:U:H4' | 35:DA:2570:G:OP1 | 2.18 | 0.42 |
| 5:AE:67:VAL:CG2 | 5:AE:68:GLU:N | 2.82 | 0.42 |
| 13:CM:73:GLU:O | 13:CM:76:ALA:N | 2.51 | 0.42 |
| 42:BH:45:VAL:O | 42:BH:47:GLU:N | 2.52 | 0.42 |
| 56:DZ:157:LEU:HD11 | 56:DZ:163:LEU:CG | 2.46 | 0.42 |
| 45:BO:1:MET:CE | 45:BO:67:LYS:HE2 | 2.49 | 0.42 |
| 10:AJ:34:VAL:CG1 | 10:AJ:35:SER:N | 2.82 | 0.42 |
| 10:AJ:3:LYS:O | 10:AJ:100:THR:HG22 | 2.19 | 0.42 |
| 45:DO:35:VAL:HG21 | 45:DO:69:ILE:HD11 | 2.00 | 0.42 |
| 44:DN:128:HIS:HE1 | 44:DN:134:ARG:NH1 | 2.17 | 0.42 |
| 22:CY:26:A:H2' | 22:CY:27:G:H5' | 2.00 | 0.42 |
| 22:CY:43:C:O2' | 22:CY:44:G:H5' | 2.18 | 0.42 |
| 35:BA:589:C:H2' | 35:BA:590:A:H8 | 1.82 | 0.42 |
| 35:DA:26:G:N1 | 35:DA:27:G:N2 | 2.67 | 0.42 |
| 48:DR:42:LYS:O | 48:DR:45:ARG:CG | 2.64 | 0.42 |
| 50:BT:57:PHE:CG | 50:BT:58:ASN:N | 2.87 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 50:DT:50:ILE:HD13 | 50:DT:64:ARG:HB3 | 2.01 | 0.42 |
| 35:DA:1980:G:O2' | 35:DA:1982:C:OP2 | 2.35 | 0.42 |
| 35:BA:2263:C:H6 | 35:BA:2263:C:C5' | 2.19 | 0.42 |
| 15:AO:74:ASP:C | 15:AO:76:GLU:N | 2.68 | 0.42 |
| 5:AE:126:ARG:NH1 | 5:AE:126:ARG:CG | 2.74 | 0.42 |
| 37:DC:51:PRO:HB2 | 37:DC:203:GLY:O | 2.19 | 0.42 |
| 1:CA:623:C:C5 | 1:CA:624:C:C5 | 3.07 | 0.42 |
| 39:BE:101:ARG:HB3 | 39:BE:201:THR:HG21 | 2.01 | 0.42 |
| 35:DA:1528(A):A:C3' | 35:DA:1529:G:C5' | 2.96 | 0.42 |
| 17:AQ:61:GLU:HA | 17:AQ:71:PHE:CE1 | 2.54 | 0.42 |
| 20:AT:14:LYS:HA | 20:AT:17:ARG:NE | 2.34 | 0.42 |
| 35:BA:71:A:H5'' | 35:BA:73:A:C8 | 2.54 | 0.42 |
| 4:AD:171:GLY:HA2 | 4:AD:172:PRO:HD3 | 1.85 | 0.42 |
| 35:DA:1502:C:H5' | 35:DA:1503:U:OP2 | 2.19 | 0.42 |
| 13:AM:73:GLU:O | 13:AM:76:ALA:N | 2.50 | 0.42 |
| 35:BA:1847:A:H2' | 35:BA:1847:A:N3 | 2.33 | 0.42 |
| 3:CC:39:ILE:HG22 | 3:CC:43:LEU:HD12 | 2.01 | 0.42 |
| 27:D2:4:SER:O | 27:D2:7:ARG:CG | 2.66 | 0.42 |
| 56:DZ:19:ARG:HB3 | 56:DZ:82:ARG:NH2 | 2.34 | 0.42 |
| 35:DA:1333:C:H2' | 35:DA:1334:G:H8 | 1.84 | 0.42 |
| 42:BH:107:VAL:CB | 42:BH:152:ARG:HG3 | 2.42 | 0.42 |
| 35:BA:92:A:O2' | 35:BA:93:G:H5' | 2.18 | 0.42 |
| 43:DI:60:GLU:CD | 43:DI:64:GLU:HG3 | 2.39 | 0.42 |
| 35:BA:1453:U:O2 | 48:BR:60:LEU:HD21 | 2.19 | 0.42 |
| 35:DA:960:A:N7 | 35:DA:962:G:C4 | 2.87 | 0.42 |
| 3:CC:124:ILE:C | 3:CC:126:ARG:N | 2.72 | 0.42 |
| 53:BW:99:ARG:CG | 53:BW:99:ARG:NH1 | 2.82 | 0.42 |
| 1:CA:942:G:N2 | 9:CI:124:GLN:HE22 | 2.17 | 0.42 |
| 1:AA:1040:U:H2' | 1:AA:1041:A:H8 | 1.83 | 0.42 |
| 11:CK:126:ARG:CZ | 11:CK:126:ARG:HB3 | 2.49 | 0.42 |
| 3:AC:89:GLU:HG3 | 3:AC:90:GLU:N | 2.33 | 0.42 |
| 49:DS:30:ARG:NH2 | 49:DS:62:LYS:HB3 | 2.29 | 0.42 |
| 35:DA:2779:U:H4' | 35:DA:2780:G:C5' | 2.46 | 0.42 |
| 26:B1:29:GLY:C | 26:B1:31:GLY:N | 2.72 | 0.42 |
| 14:AN:12:ARG:H | 14:AN:12:ARG:HD3 | 1.84 | 0.42 |
| 3:CC:89:GLU:HG3 | 3:CC:90:GLU:N | 2.34 | 0.42 |
| 48:BR:7:GLY:O | 48:BR:8:ARG:HB2 | 2.18 | 0.42 |
| 13:CM:108:ARG:HG3 | 13:CM:108:ARG:NH1 | 2.32 | 0.42 |
| 56:DZ:128:VAL:HG21 | 56:DZ:132:ASN:HB2 | 2.00 | 0.42 |
| 35:DA:1925:C:C2' | 35:DA:1926:U:H5' | 2.49 | 0.42 |
| 35:BA:443:A:H2 | 35:BA:1245:G:N3 | 2.17 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 18:AR:31:LEU:N | 18:AR:31:LEU:HD23 | 2.33 | 0.42 |
| 53:DW:82:LEU:HD13 | 53:DW:98:LYS:CB | 2.49 | 0.42 |
| 48:DR:26:LYS:CE | 48:DR:71:GLN:H | 2.31 | 0.42 |
| 1:CA:1288:A:O4' | 1:CA:1353:G:H4' | 2.19 | 0.42 |
| 1:AA:1097:C:O2' | 1:AA:1098:C:H5' | 2.18 | 0.42 |
| 35:DA:1651:G:C2 | 35:DA:2007:C:C2 | 3.07 | 0.42 |
| 51:BU:108:GLU:OE1 | 52:BV:44:LYS:HD3 | 2.18 | 0.42 |
| 29:B4:42:CYS:SG | 29:B4:62:CYS:HB3 | 2.59 | 0.42 |
| 34:D9:30:PRO:HB2 | 35:DA:2527:C:H4' | 2.01 | 0.42 |
| 4:CD:108:LEU:CB | 4:CD:110:PHE:HE1 | 2.31 | 0.42 |
| 44:BN:51:PHE:CZ | 44:BN:119:ARG:HD2 | 2.54 | 0.42 |
| 35:DA:413:C:H2' | 35:DA:414:C:C6 | 2.54 | 0.42 |
| 20:CT:93:GLU:OE1 | 20:CT:94:ALA:N | 2.52 | 0.42 |
| 32:B7:37:LYS:HG2 | 35:BA:458:G:C8 | 2.54 | 0.42 |
| 22:AV:12:U:H2' | 22:AV:13:C:O4' | 2.19 | 0.42 |
| 27:B2:48:HIS:O | 27:B2:52:ASP:HB2 | 2.19 | 0.42 |
| 35:BA:1477:A:H5' | 35:BA:1478:G:OP2 | 2.19 | 0.42 |
| 35:BA:2346:A:H5' | 35:BA:2383:G:H1' | 1.99 | 0.42 |
| 26:D1:20:ARG:HH11 | 26:D1:20:ARG:HG2 | 1.84 | 0.42 |
| 35:DA:1676:A:H2' | 35:DA:1677:A:O4' | 2.18 | 0.42 |
| 1:AA:538:G:H5'' | 12:AL:114:LYS:HB2 | 2.01 | 0.42 |
| 46:DP:48:PRO:CG | 46:DP:49:ARG:N | 2.77 | 0.42 |
| 40:BF:117:ARG:CZ | 46:BP:5:ASP:N | 2.82 | 0.42 |
| 2:AB:220:ASP:C | 2:AB:222:ILE:N | 2.71 | 0.42 |
| 9:CI:93:ARG:NH1 | 9:CI:96:LEU:HD23 | 2.33 | 0.42 |
| 49:DS:20:ARG:HA | 49:DS:20:ARG:HD3 | 1.62 | 0.42 |
| 49:DS:92:TYR:N | 49:DS:92:TYR:CD1 | 2.87 | 0.42 |
| 46:BP:47:ASP:HB2 | 46:BP:51:PHE:HD2 | 1.84 | 0.42 |
| 1:CA:955:U:H2' | 1:CA:956:U:O4' | 2.20 | 0.42 |
| 38:BD:63:ARG:HH11 | 38:BD:63:ARG:HG3 | 1.84 | 0.42 |
| 40:DF:132:VAL:O | 40:DF:134:GLY:N | 2.51 | 0.42 |
| 35:BA:779:U:P | 38:BD:49:ILE:HG23 | 2.59 | 0.42 |
| 35:BA:1175:U:O5' | 35:BA:1176:G:H5' | 2.19 | 0.42 |
| 44:DN:1:MET:C | 44:DN:2:LYS:HD2 | 2.39 | 0.42 |
| 51:DU:68:ALA:HB1 | 51:DU:99:ALA:HB1 | 2.01 | 0.42 |
| 41:DG:78:SER:O | 41:DG:79:ASN:C | 2.56 | 0.42 |
| 52:BV:18:LEU:CD2 | 52:BV:19:LYS:N | 2.74 | 0.42 |
| 52:DV:18:LEU:HD22 | 52:DV:19:LYS:CA | 2.48 | 0.42 |
| 52:DV:19:LYS:HZ3 | 52:DV:20:LEU:CA | 2.33 | 0.42 |
| 37:BC:36:LYS:HZ3 | 37:BC:36:LYS:HB2 | 1.84 | 0.42 |
| 42:DH:66:GLY:C | 42:DH:68:THR:N | 2.73 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:CQ:52:LYS:H | 17:CQ:52:LYS:CD | 2.14 | 0.42 |
| 10:AJ:18:ALA:O | 10:AJ:21:GLN:N | 2.45 | 0.42 |
| 35:BA:2309:A:C2 | 35:BA:2310:A:C2 | 3.07 | 0.42 |
| 46:BP:7:ARG:HB3 | 46:BP:7:ARG:NH1 | 2.34 | 0.42 |
| 3:CC:11:ARG:O | 3:CC:13:GLY:N | 2.53 | 0.42 |
| 35:BA:96:G:O2' | 35:BA:97:C:H5' | 2.19 | 0.42 |
| 35:DA:1190:G:H2' | 35:DA:1191:G:C8 | 2.54 | 0.42 |
| 45:BO:107:ARG:HB2 | 45:BO:107:ARG:HE | 1.69 | 0.42 |
| 33:B8:33:ASN:O | 33:B8:34:TRP:CB | 2.66 | 0.42 |
| 43:DI:73:GLU:OE2 | 43:DI:137:PRO:HD2 | 2.19 | 0.42 |
| 1:CA:266:G:H4' | 1:CA:267:C:C5 | 2.54 | 0.42 |
| 56:BZ:144:LEU:O | 56:BZ:174:VAL:HG21 | 2.19 | 0.42 |
| 8:AH:4:ASP:OD1 | 8:AH:7:ALA:N | 2.48 | 0.42 |
| 35:DA:2811:G:C6 | 35:DA:2891:G:N2 | 2.87 | 0.42 |
| 35:BA:1486:A:H61 | 35:BA:1504:C:H42 | 1.65 | 0.42 |
| 30:B5:51:TYR:CD1 | 30:B5:52:TYR:CE2 | 3.08 | 0.42 |
| 35:DA:2056:G:H2' | 35:DA:2056:G:N3 | 2.34 | 0.42 |
| 3:AC:39:ILE:HG22 | 3:AC:43:LEU:HD12 | 2.00 | 0.42 |
| 1:CA:1334:G:OP2 | 1:CA:1334:G:H8 | 2.01 | 0.42 |
| 2:CB:97:TRP:CH2 | 2:CB:176:GLU:CD | 2.93 | 0.42 |
| 3:AC:170:GLN:CG | 3:AC:171:GLY:N | 2.78 | 0.42 |
| 3:CC:35:GLU:OE2 | 3:CC:97:LYS:HD2 | 2.19 | 0.42 |
| 33:B8:42:ARG:O | 33:B8:44:LYS:N | 2.42 | 0.42 |
| 56:DZ:118:GLN:NE2 | 56:DZ:175:VAL:HG13 | 2.33 | 0.42 |
| 1:AA:328:C:HO2' | 1:AA:329:A:P | 2.41 | 0.42 |
| 56:DZ:22:GLY:HA2 | 56:DZ:41:LEU:HD12 | 2.00 | 0.42 |
| 42:BH:105:LEU:HD22 | 42:BH:105:LEU:O | 2.19 | 0.42 |
| 35:BA:1987:G:C5' | 35:BA:1987:G:C8 | 2.99 | 0.42 |
| 1:CA:1310:G:N2 | 1:CA:1328:C:C2 | 2.87 | 0.42 |
| 1:CA:1431:C:H2' | 1:CA:1432:G:H5' | 2.01 | 0.42 |
| 12:CL:18:VAL:CG2 | 12:CL:19:ARG:H | 2.27 | 0.42 |
| 52:BV:91:TYR:C | 52:BV:91:TYR:HD1 | 2.21 | 0.42 |
| 1:AA:797:C:H2' | 1:AA:798:G:C8 | 2.54 | 0.42 |
| 35:DA:1047:G:C8 | 35:DA:1110:G:C6 | 3.07 | 0.42 |
| 35:DA:1488:G:H2' | 35:DA:1488:G:N3 | 2.34 | 0.42 |
| 38:DD:205:VAL:O | 38:DD:206:LEU:C | 2.58 | 0.42 |
| 39:DE:145:LYS:HA | 39:DE:145:LYS:HD3 | 1.88 | 0.42 |
| 1:CA:798:G:OP1 | 11:CK:122:LYS:NZ | 2.52 | 0.42 |
| 3:AC:90:GLU:OE1 | 3:AC:93:LYS:HD3 | 2.18 | 0.42 |
| 35:BA:1042:G:H3' | 35:BA:1043:C:O4' | 2.19 | 0.42 |
| 2:AB:134:GLU:HA | 2:AB:137:ARG:HB3 | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:AY:9:A:O2' | 22:AY:10:G:C8 | 2.72 | 0.42 |
| 22:CV:63:G:H2' | 22:CV:64:A:C8 | 2.53 | 0.42 |
| 4:CD:196:LEU:N | 4:CD:196:LEU:CD1 | 2.77 | 0.42 |
| 13:AM:108:ARG:HG3 | 13:AM:108:ARG:NH1 | 2.34 | 0.42 |
| 23:AW:12:U:H2' | 23:AW:13:C:O4' | 2.18 | 0.42 |
| 5:CE:18:ARG:HH21 | 5:CE:25:ARG:HD2 | 1.82 | 0.42 |
| 14:AN:26:ARG:HD2 | 14:AN:47:LEU:HD11 | 2.01 | 0.42 |
| 1:CA:600:C:O2' | 1:CA:601:C:H5' | 2.19 | 0.42 |
| 15:AO:46:HIS:C | 15:AO:48:LYS:N | 2.73 | 0.42 |
| 1:CA:552:U:H4' | 12:CL:86:ARG:O | 2.18 | 0.42 |
| 1:CA:948:C:O2' | 1:CA:949:A:H5' | 2.18 | 0.42 |
| 7:CG:120:ILE:HG22 | 7:CG:124:LEU:HD12 | 2.01 | 0.42 |
| 44:BN:91:LEU:C | 44:BN:93:THR:N | 2.72 | 0.42 |
| 8:AH:16:ALA:CB | 8:AH:24:THR:OG1 | 2.67 | 0.42 |
| 1:AA:1095:U:H5'' | 1:AA:1109:C:O2 | 2.18 | 0.42 |
| 19:CS:36:ARG:HH22 | 19:CS:75:ALA:HB3 | 1.84 | 0.42 |
| 1:AA:1406:U:C2' | 1:AA:1407:C:H5' | 2.49 | 0.42 |
| 43:DI:59:ALA:O | 43:DI:63:ALA:CB | 2.68 | 0.42 |
| 41:BG:37:VAL:HA | 41:BG:158:ALA:O | 2.20 | 0.42 |
| 48:DR:56:LYS:HD2 | 48:DR:94:TYR:HE2 | 1.83 | 0.42 |
| 1:AA:586:C:C2' | 1:AA:587:G:H5' | 2.49 | 0.42 |
| 35:DA:742:G:H2' | 35:DA:743:G:H8 | 1.84 | 0.42 |
| 49:DS:80:LEU:CD1 | 49:DS:80:LEU:N | 2.83 | 0.42 |
| 1:AA:1072:G:H2' | 1:AA:1073:U:H6 | 1.84 | 0.42 |
| 35:BA:302:C:H2' | 35:BA:303:U:H6 | 1.83 | 0.42 |
| 20:AT:93:GLU:OE1 | 20:AT:94:ALA:N | 2.51 | 0.42 |
| 54:DX:59:VAL:N | 54:DX:76:ARG:O | 2.49 | 0.42 |
| 20:CT:94:ALA:O | 20:CT:95:ALA:HB3 | 2.19 | 0.42 |
| 35:DA:2273:A:O2' | 35:DA:2274:A:H5' | 2.19 | 0.42 |
| 1:AA:109:A:C6 | 1:AA:326:G:C6 | 3.07 | 0.42 |
| 1:CA:271:C:O2' | 1:CA:272:C:H5' | 2.19 | 0.42 |
| 3:AC:61:ALA:O | 3:AC:62:ASP:HB2 | 2.19 | 0.42 |
| 35:BA:2882:A:OP1 | 48:BR:96:ARG:HD3 | 2.18 | 0.42 |
| 3:AC:129:ALA:HB3 | 3:AC:132:ARG:HB3 | 2.01 | 0.42 |
| 36:DB:1:U:O2 | 36:DB:1:U:H2' | 2.17 | 0.42 |
| 44:BN:117:PHE:O | 44:BN:117:PHE:CG | 2.71 | 0.42 |
| 22:CV:73:A:H3' | 22:CV:73:A:N3 | 2.33 | 0.42 |
| 46:BP:86:LYS:HG2 | 46:BP:86:LYS:O | 2.19 | 0.42 |
| 4:CD:151:LYS:O | 4:CD:151:LYS:HG2 | 2.19 | 0.42 |
| 37:DC:24:GLU:CD | 37:DC:24:GLU:H | 2.22 | 0.42 |
| 36:DB:4:C:H2' | 36:DB:5:C:C6 | 2.53 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:1943:U:C2 | 35:DA:1945:G:O4' | 2.73 | 0.42 |
| 4:CD:53:ASP:O | 4:CD:57:ARG:HG3 | 2.18 | 0.42 |
| 35:BA:1691:C:O2' | 35:BA:1692:U:H5' | 2.19 | 0.42 |
| 17:AQ:11:VAL:HG22 | 17:AQ:20:THR:O | 2.19 | 0.42 |
| 35:BA:1525:G:H2' | 35:BA:1526:G:C8 | 2.54 | 0.42 |
| 56:DZ:28:MET:CE | 56:DZ:33:LEU:HD21 | 2.49 | 0.42 |
| 49:BS:89:ARG:HD3 | 49:BS:92:TYR:HA | 1.99 | 0.42 |
| 35:DA:1857:G:N2 | 35:DA:1886:C:N4 | 2.67 | 0.42 |
| 40:BF:22:ALA:C | 40:BF:26:ALA:HB2 | 2.40 | 0.42 |
| 40:BF:34:TRP:CH2 | 46:BP:12:ALA:HB2 | 2.54 | 0.42 |
| 9:AI:53:VAL:C | 9:AI:54:ASP:N | 2.72 | 0.42 |
| 35:DA:612:C:C3' | 35:DA:613:G:H5'' | 2.45 | 0.42 |
| 2:CB:67:THR:CG2 | 2:CB:155:LEU:HD21 | 2.49 | 0.42 |
| 50:BT:82:LEU:C | 50:BT:84:GLN:N | 2.72 | 0.42 |
| 18:CR:36:ASN:O | 18:CR:39:VAL:HB | 2.18 | 0.42 |
| 12:AL:46:LYS:CG | 12:AL:47:LYS:N | 2.59 | 0.42 |
| 22:AV:22:G:H2' | 22:AV:23:A:C8 | 2.54 | 0.42 |
| 1:CA:176:C:H2' | 1:CA:177:C:H6 | 1.83 | 0.42 |
| 38:BD:94:LEU:HB2 | 38:BD:104:TYR:HE2 | 1.85 | 0.42 |
| 35:DA:1654:A:H2 | 39:DE:113:PHE:CD1 | 2.38 | 0.42 |
| 46:BP:18:ARG:CB | 46:BP:18:ARG:NH1 | 2.64 | 0.42 |
| 38:DD:94:LEU:HA | 38:DD:104:TYR:HD2 | 1.85 | 0.42 |
| 3:AC:71:ALA:HB2 | 3:AC:106:VAL:HB | 2.01 | 0.42 |
| 13:CM:22:ILE:HG22 | 13:CM:25:ILE:HD13 | 2.01 | 0.42 |
| 3:CC:115:LEU:O | 3:CC:116:VAL:C | 2.57 | 0.42 |
| 51:DU:61:TRP:O | 51:DU:65:ILE:HG13 | 2.19 | 0.42 |
| 52:DV:5:VAL:HG23 | 52:DV:37:VAL:O | 2.19 | 0.42 |
| 35:DA:2309:A:H2 | 35:DA:2310:A:C2 | 2.37 | 0.42 |
| 40:BF:129:PHE:CD2 | 40:BF:163:VAL:HG21 | 2.54 | 0.42 |
| 33:D8:4:MET:O | 33:D8:62:LEU:CD1 | 2.66 | 0.42 |
| 55:DY:27:VAL:N | 55:DY:28:LYS:NZ | 2.66 | 0.42 |
| 7:AG:79:ARG:HD3 | 7:AG:80:VAL:H | 1.84 | 0.42 |
| 30:D5:30:LEU:HD22 | 30:D5:39:MET:O | 2.18 | 0.42 |
| 30:D5:36:CYS:HB3 | 30:D5:38:ALA:N | 2.34 | 0.42 |
| 52:DV:19:LYS:NZ | 52:DV:20:LEU:N | 2.42 | 0.42 |
| 35:DA:2178:C:H4' | 37:DC:172:HIS:CB | 2.49 | 0.42 |
| 37:DC:168:THR:CB | 37:DC:173:ALA:HB2 | 2.50 | 0.42 |
| 47:DQ:54:MET:HG2 | 47:DQ:64:ILE:HD13 | 2.01 | 0.42 |
| 1:CA:1124:G:H4' | 10:CJ:38:ILE:HG21 | 2.02 | 0.42 |
| 45:BO:7:TYR:CZ | 45:BO:44:LYS:HG3 | 2.54 | 0.42 |
| 22:AV:6:G:C6 | 22:AV:7:A:C6 | 3.07 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 31:B6:10:LEU:HD12 | 33:B8:34:TRP:HD1 | 1.81 | 0.42 |
| 42:BH:123:PHE:N | 42:BH:123:PHE:HD1 | 2.17 | 0.42 |
| 43:DI:131:LYS:HB3 | 43:DI:132:PRO:HA | 2.00 | 0.42 |
| 35:DA:856:C:H5'' | 35:DA:856:C:C6 | 2.54 | 0.42 |
| 35:DA:923:C:H2' | 35:DA:924:C:H6 | 1.85 | 0.42 |
| 35:DA:2147:G:C2' | 35:DA:2148:G:O4' | 2.57 | 0.42 |
| 4:CD:133:VAL:CG1 | 4:CD:138:TYR:HD1 | 2.30 | 0.42 |
| 41:BG:120:LEU:O | 41:BG:121:ASN:C | 2.57 | 0.42 |
| 47:DQ:43:THR:CB | 47:DQ:45:GLN:HE21 | 2.30 | 0.42 |
| 39:BE:6:GLY:HA2 | 39:BE:27:LEU:O | 2.20 | 0.42 |
| 1:CA:1151:A:C4 | 1:CA:1152:A:N7 | 2.88 | 0.42 |
| 22:AV:42:C:H6 | 22:AV:42:C:H5' | 1.83 | 0.42 |
| 3:AC:39:ILE:O | 3:AC:43:LEU:HG | 2.19 | 0.42 |
| 15:AO:18:PHE:CD1 | 15:AO:19:PRO:O | 2.72 | 0.42 |
| 1:AA:80:G:N7 | 1:AA:81:U:C5 | 2.87 | 0.42 |
| 16:AP:20:VAL:CG2 | 16:AP:21:VAL:N | 2.82 | 0.42 |
| 35:DA:2183:C:H2' | 35:DA:2184:G:H8 | 1.84 | 0.42 |
| 56:BZ:150:LEU:N | 56:BZ:150:LEU:HD13 | 2.35 | 0.42 |
| 1:CA:880:C:O2' | 1:CA:881:G:H5' | 2.19 | 0.42 |
| 35:BA:2774:C:H2' | 35:BA:2775:A:O4' | 2.18 | 0.42 |
| 22:AY:77:PHA:HD2 | 35:BA:2451:A:N3 | 2.33 | 0.42 |
| 22:AY:77:PHA:HA | 35:BA:2506:U:O2 | 2.20 | 0.42 |
| 1:AA:437:U:OP1 | 4:AD:155:LEU:HD22 | 2.19 | 0.42 |
| 35:DA:543:C:O2 | 35:DA:549:G:N2 | 2.52 | 0.42 |
| 8:CH:103:VAL:HG21 | 8:CH:109:ILE:O | 2.19 | 0.42 |
| 20:AT:38:LYS:HA | 20:AT:41:ILE:HD11 | 2.00 | 0.42 |
| 26:B1:46:LEU:CB | 26:B1:63:ALA:HA | 2.47 | 0.42 |
| 2:AB:23:ARG:HH11 | 2:AB:23:ARG:CG | 2.31 | 0.42 |
| 52:DV:43:GLU:OE1 | 52:DV:43:GLU:HA | 2.19 | 0.42 |
| 1:CA:475:G:O2' | 1:CA:476:G:H5' | 2.20 | 0.42 |
| 1:AA:839:U:O2 | 1:AA:839:U:C2' | 2.68 | 0.42 |
| 35:BA:1043:C:O2' | 35:BA:1044:G:C8 | 2.70 | 0.42 |
| 1:CA:250:A:HO2' | 1:CA:251:G:P | 2.42 | 0.42 |
| 1:AA:986:A:H2' | 1:AA:987:G:C8 | 2.55 | 0.42 |
| 1:AA:986:A:H1' | 19:AS:55:LYS:HA | 2.01 | 0.42 |
| 1:AA:868:C:H2' | 1:AA:869:G:O4' | 2.19 | 0.42 |
| 15:CO:10:LYS:C | 15:CO:10:LYS:HD2 | 2.39 | 0.42 |
| 1:CA:501:C:OP1 | 12:CL:117:ARG:NH2 | 2.52 | 0.42 |
| 45:BO:71:ARG:C | 45:BO:73:ASP:N | 2.71 | 0.42 |
| 45:DO:25:LEU:O | 45:DO:26:LYS:HG3 | 2.19 | 0.42 |
| 35:BA:2780:G:H4' | 35:BA:2781:A:OP2 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:2636:U:H4' | 39:BE:80:GLU:CD | 2.39 | 0.42 |
| 4:CD:209:ARG:NH1 | 4:CD:209:ARG:HG3 | 2.32 | 0.42 |
| 55:DY:12:THR:HG23 | 55:DY:12:THR:O | 2.20 | 0.42 |
| 1:AA:501:C:OP1 | 12:AL:117:ARG:NH2 | 2.52 | 0.42 |
| 32:D7:27:GLY:O | 32:D7:30:VAL:HB | 2.20 | 0.42 |
| 35:DA:443:A:H2 | 35:DA:1245:G:N3 | 2.17 | 0.42 |
| 26:D1:5:CYS:HB3 | 26:D1:10:LYS:N | 2.35 | 0.42 |
| 51:DU:44:ASN:HD21 | 52:DV:75:PHE:N | 2.16 | 0.42 |
| 1:AA:1049:U:O2' | 1:AA:1050:G:OP2 | 2.31 | 0.42 |
| 15:CO:48:LYS:HD3 | 15:CO:48:LYS:HA | 1.89 | 0.42 |
| 2:AB:31:TYR:N | 2:AB:31:TYR:CD2 | 2.85 | 0.42 |
| 12:AL:10:LEU:O | 12:AL:14:GLY:HA2 | 2.19 | 0.42 |
| 1:CA:1099:G:H5' | 1:CA:1100:C:OP2 | 2.18 | 0.42 |
| 35:BA:2880:C:H1' | 48:BR:92:GLY:O | 2.19 | 0.42 |
| 1:CA:1170:A:H2' | 1:CA:1171:G:O4' | 2.19 | 0.42 |
| 7:CG:17:VAL:HG12 | 7:CG:18:TYR:CD1 | 2.53 | 0.42 |
| 1:AA:1133:G:N3 | 1:AA:1142:G:N2 | 2.67 | 0.42 |
| 1:CA:1460:A:C2' | 1:CA:1461:G:H5' | 2.49 | 0.42 |
| 1:AA:898:G:N2 | 1:AA:901:A:OP2 | 2.52 | 0.42 |
| 35:BA:2438:U:H5'' | 35:BA:2600:A:OP1 | 2.19 | 0.42 |
| 35:DA:2600:A:OP2 | 38:DD:237:GLU:OE1 | 2.38 | 0.42 |
| 12:AL:79:GLU:HG2 | 12:AL:80:HIS:ND1 | 2.34 | 0.42 |
| 35:DA:1424:G:H2' | 35:DA:1425:G:O4' | 2.19 | 0.42 |
| 35:DA:748:G:C8 | 53:DW:89:ALA:HB1 | 2.54 | 0.42 |
| 35:DA:292:C:C2' | 35:DA:293:U:H5' | 2.49 | 0.42 |
| 19:AS:27:GLU:O | 19:AS:28:LYS:O | 2.36 | 0.42 |
| 47:DQ:135:ASP:O | 47:DQ:138:ASP:OD2 | 2.38 | 0.42 |
| 9:AI:50:LEU:HB3 | 9:AI:55:ALA:O | 2.19 | 0.42 |
| 1:AA:1052:U:H2' | 1:AA:1055:A:OP1 | 2.19 | 0.42 |
| 40:DF:129:PHE:CD2 | 40:DF:163:VAL:HG21 | 2.53 | 0.42 |
| 2:AB:163:PHE:HE1 | 2:AB:215:LEU:HD13 | 1.85 | 0.42 |
| 2:AB:8:LYS:C | 2:AB:12:GLU:HG3 | 2.39 | 0.42 |
| 9:CI:102:LEU:C | 9:CI:102:LEU:HD23 | 2.39 | 0.42 |
| 49:DS:92:TYR:HD1 | 49:DS:92:TYR:N | 2.18 | 0.42 |
| 1:AA:1372:U:H2' | 1:AA:1373:G:H5' | 2.01 | 0.42 |
| 50:DT:85:LYS:NZ | 50:DT:85:LYS:HB3 | 2.32 | 0.42 |
| 38:BD:34:VAL:C | 38:BD:36:PRO:HD2 | 2.40 | 0.42 |
| 10:AJ:33:GLN:HB2 | 10:AJ:75:ILE:HD13 | 2.01 | 0.42 |
| 5:AE:41:VAL:HG11 | 5:AE:113:ALA:CA | 2.48 | 0.42 |
| 10:CJ:62:HIS:H | 10:CJ:62:HIS:HD2 | 1.66 | 0.42 |
| 37:DC:62:VAL:O | 37:DC:63:SER:C | 2.58 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 51:DU:99:ALA:HB2 | 51:DU:106:PHE:CE1 | 2.54 | 0.42 |
| 35:BA:614(C):A:C4 | 40:BF:180:GLY:HA2 | 2.54 | 0.42 |
| 33:D8:6:THR:HG21 | 35:DA:243:U:OP1 | 2.18 | 0.42 |
| 47:BQ:116:GLU:O | 47:BQ:120:ILE:HG12 | 2.18 | 0.42 |
| 52:DV:18:LEU:CD2 | 52:DV:19:LYS:N | 2.76 | 0.42 |
| 41:BG:83:ARG:HD3 | 41:BG:84:LYS:HG3 | 2.01 | 0.42 |
| 6:AF:5:GLU:HG2 | 6:AF:62:TRP:HZ2 | 1.85 | 0.42 |
| 35:BA:2178:C:H4' | 37:BC:172:HIS:CB | 2.49 | 0.42 |
| 10:AJ:29:ARG:HH11 | 10:AJ:29:ARG:HG2 | 1.84 | 0.42 |
| 23:AW:66:U:H2' | 23:AW:67:C:C6 | 2.55 | 0.42 |
| 48:DR:51:LEU:CD2 | 48:DR:66:VAL:HG13 | 2.49 | 0.42 |
| 23:CW:75:C:H5' | 26:D1:30:VAL:HG11 | 2.01 | 0.42 |
| 35:DA:2266:A:C2 | 35:DA:2272:U:C5 | 3.07 | 0.42 |
| 45:DO:2:ILE:HG23 | 45:DO:6:THR:HB | 2.01 | 0.42 |
| 50:BT:106:SER:C | 50:BT:107:ASP:OD1 | 2.58 | 0.42 |
| 4:CD:133:VAL:HG12 | 4:CD:135:LEU:H | 1.84 | 0.42 |
| 35:BA:2870:C:H2' | 35:BA:2871:C:H5' | 2.01 | 0.42 |
| 51:BU:31:SER:C | 51:BU:33:ARG:N | 2.71 | 0.42 |
| 54:BX:14:SER:O | 54:BX:15:GLU:C | 2.58 | 0.42 |
| 3:CC:39:ILE:O | 3:CC:43:LEU:HG | 2.20 | 0.42 |
| 3:CC:39:ILE:HG21 | 3:CC:57:ILE:HD11 | 2.01 | 0.42 |
| 35:BA:1257:C:H2' | 35:BA:1258:C:C6 | 2.55 | 0.42 |
| 13:AM:91:ARG:HG3 | 13:AM:98:VAL:HG13 | 2.02 | 0.42 |
| 50:BT:3:ARG:O | 50:BT:4:GLY:C | 2.58 | 0.42 |
| 35:DA:448:U:H1' | 40:DF:84:VAL:HG13 | 2.01 | 0.42 |
| 1:AA:625:G:C4 | 1:AA:626:U:C5 | 3.08 | 0.42 |
| 1:CA:73:G:C2 | 1:CA:97:G:N1 | 2.87 | 0.42 |
| 35:BA:2737:G:H2' | 35:BA:2738:A:H8 | 1.84 | 0.42 |
| 11:CK:21:ILE:CG1 | 11:CK:94:ALA:HB1 | 2.50 | 0.42 |
| 1:AA:1241:G:H2' | 1:AA:1242:C:H6 | 1.84 | 0.42 |
| 3:AC:124:ILE:C | 3:AC:126:ARG:N | 2.72 | 0.42 |
| 44:BN:1:MET:C | 44:BN:2:LYS:HD2 | 2.40 | 0.42 |
| 1:AA:706:A:C8 | 1:AA:707:C:H5 | 2.38 | 0.42 |
| 8:CH:45:ILE:C | 8:CH:47:GLY:N | 2.72 | 0.42 |
| 35:DA:1952:A:C5 | 45:DO:22:ILE:CD1 | 3.02 | 0.42 |
| 54:DX:23:GLU:C | 54:DX:25:LYS:H | 2.22 | 0.42 |
| 25:D0:14:ARG:O | 25:D0:15:ASP:HB2 | 2.20 | 0.42 |
| 1:CA:985:C:H2' | 1:CA:986:A:C8 | 2.53 | 0.42 |
| 35:BA:309:G:N3 | 35:BA:329:G:O2' | 2.52 | 0.42 |
| 1:AA:200:G:C2 | 1:AA:201:C:H1' | 2.55 | 0.42 |
| 17:CQ:83:ASP:CG | 17:CQ:84:LEU:N | 2.73 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:842:G:O2' | 35:BA:843:G:H5' | 2.19 | 0.42 |
| 12:CL:119:LYS:O | 12:CL:120:TYR:CB | 2.67 | 0.42 |
| 40:BF:191:ARG:HG2 | 40:BF:191:ARG:NH1 | 2.33 | 0.42 |
| 35:DA:620:G:H8 | 35:DA:622:G:O6 | 2.01 | 0.42 |
| 35:DA:604:G:C6 | 35:DA:625:G:C2 | 3.07 | 0.42 |
| 35:BA:649:G:H2' | 35:BA:650:C:H6 | 1.82 | 0.42 |
| 35:BA:1844:C:H2' | 35:BA:1845:G:C8 | 2.51 | 0.42 |
| 2:AB:16:HIS:HB3 | 2:AB:210:SER:CB | 2.49 | 0.42 |
| 5:CE:45:PHE:CD2 | 5:CE:47:LYS:HE3 | 2.54 | 0.42 |
| 48:BR:106:GLY:O | 48:BR:107:ASP:HB3 | 2.20 | 0.42 |
| 1:AA:403:C:H2' | 1:AA:404:U:H6 | 1.83 | 0.42 |
| 8:CH:97:VAL:HG13 | 8:CH:98:LYS:N | 2.34 | 0.42 |
| 48:BR:56:LYS:HD2 | 48:BR:94:TYR:CE2 | 2.54 | 0.42 |
| 1:AA:689:C:H2' | 1:AA:690:G:O4' | 2.20 | 0.42 |
| 35:BA:2619:C:OP1 | 39:BE:152:LYS:HE3 | 2.19 | 0.42 |
| 5:AE:139:LEU:C | 5:AE:141:GLN:N | 2.73 | 0.42 |
| 2:AB:34:ALA:HB1 | 2:AB:36:ARG:CD | 2.49 | 0.42 |
| 1:AA:763:G:H2' | 1:AA:764:C:C6 | 2.54 | 0.42 |
| 35:DA:1290:C:H2' | 35:DA:1291:C:H6 | 1.85 | 0.42 |
| 35:DA:730:C:O2' | 35:DA:731:C:H5' | 2.19 | 0.42 |
| 35:DA:2346:A:H5' | 35:DA:2383:G:H1' | 2.02 | 0.42 |
| 35:BA:1451:C:N3 | 35:BA:1459:G:O6 | 2.52 | 0.42 |
| 35:BA:640:C:H2' | 35:BA:641:C:C6 | 2.54 | 0.42 |
| 35:DA:1430:C:H2' | 35:DA:1431:U:C6 | 2.54 | 0.42 |
| 35:DA:45:C:OP2 | 35:DA:215:G:H2' | 2.18 | 0.42 |
| 17:CQ:82:MET:O | 17:CQ:85:VAL:HB | 2.18 | 0.42 |
| 4:CD:49:ARG:HD3 | 4:CD:49:ARG:HA | 1.81 | 0.42 |
| 26:D1:88:LYS:O | 26:D1:88:LYS:HD2 | 2.18 | 0.42 |
| 16:CP:76:GLN:O | 16:CP:76:GLN:CG | 2.67 | 0.42 |
| 44:DN:87:LEU:O | 44:DN:87:LEU:HD23 | 2.18 | 0.42 |
| 3:CC:29:TYR:O | 3:CC:29:TYR:HD2 | 2.01 | 0.42 |
| 11:CK:23:ALA:O | 11:CK:87:THR:O | 2.37 | 0.42 |
| 17:CQ:13:ASP:C | 17:CQ:15:MET:H | 2.23 | 0.42 |
| 56:DZ:103:ARG:HG2 | 56:DZ:137:ILE:O | 2.20 | 0.42 |
| 1:AA:1053:G:O2' | 1:AA:1199:U:H5 | 2.02 | 0.42 |
| 2:AB:207:ALA:C | 2:AB:209:ARG:N | 2.70 | 0.42 |
| 1:CA:1177:G:OP2 | 9:CI:97:LYS:HE3 | 2.18 | 0.42 |
| 49:DS:92:TYR:O | 49:DS:93:LYS:HB3 | 2.20 | 0.42 |
| 2:CB:214:ILE:O | 2:CB:218:ALA:HB2 | 2.18 | 0.42 |
| 2:CB:219:VAL:O | 2:CB:223:ILE:HG12 | 2.18 | 0.42 |
| 50:DT:82:LEU:C | 50:DT:84:GLN:N | 2.70 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DA:1590:U:C3' | 35:DA:1591:G:H5'' | 2.48 | 0.42 |
| 13:AM:16:ASP:O | 13:AM:30:ALA:HB1 | 2.19 | 0.42 |
| 35:DA:1686:C:H2' | 35:DA:1687:G:C5' | 2.48 | 0.42 |
| 42:DH:46:GLU:HG3 | 42:DH:51:ARG:O | 2.20 | 0.42 |
| 12:AL:89:ARG:HH21 | 12:AL:91:LYS:HZ3 | 1.68 | 0.42 |
| 55:DY:65:ALA:HA | 55:DY:66:PRO:HD2 | 1.80 | 0.42 |
| 35:DA:1614:A:H61 | 53:DW:88:ARG:H | 1.68 | 0.42 |
| 3:AC:16:ARG:NH1 | 3:AC:16:ARG:CB | 2.81 | 0.42 |
| 48:DR:51:LEU:HD23 | 48:DR:66:VAL:HG13 | 2.01 | 0.42 |
| 35:BA:142:A:H5'' | 35:BA:142(A):C:C5 | 2.50 | 0.42 |
| 35:DA:2068:U:C2 | 35:DA:2430:A:H2 | 2.37 | 0.42 |
| 20:AT:28:ALA:C | 20:AT:30:LYS:N | 2.73 | 0.42 |
| 27:D2:21:LEU:O | 27:D2:24:LEU:N | 2.52 | 0.42 |
| 26:D1:81:LYS:HG2 | 26:D1:83:GLU:OE2 | 2.18 | 0.42 |
| 36:BB:16:G:C6 | 36:BB:69:G:C2 | 3.07 | 0.42 |
| 35:BA:806:C:OP2 | 46:BP:39:LYS:HB3 | 2.20 | 0.42 |
| 35:BA:806:C:P | 46:BP:39:LYS:HB3 | 2.59 | 0.42 |
| 1:AA:737:A:H2' | 1:AA:738:C:H6 | 1.84 | 0.42 |
| 8:AH:84:ARG:HH22 | 8:AH:86:ILE:HD13 | 1.85 | 0.42 |
| 35:DA:2787:C:O2 | 39:DE:61:ARG:NH1 | 2.53 | 0.42 |
| 38:BD:153:ALA:C | 38:BD:154:LYS:HG2 | 2.40 | 0.42 |
| 26:D1:46:LEU:O | 26:D1:46:LEU:CD2 | 2.67 | 0.42 |
| 42:BH:27:LYS:HG2 | 42:BH:32:GLU:OE1 | 2.18 | 0.42 |
| 56:BZ:155:LEU:HB2 | 56:BZ:157:LEU:CD2 | 2.50 | 0.42 |
| 35:BA:364:C:H2' | 35:BA:365:C:C5' | 2.49 | 0.42 |
| 35:DA:71:A:H5'' | 35:DA:73:A:C8 | 2.55 | 0.42 |
| 37:DC:68:LEU:HD22 | 37:DC:180:PHE:CB | 2.49 | 0.42 |
| 43:BI:60:GLU:O | 43:BI:64:GLU:HB2 | 2.18 | 0.42 |
| 16:CP:21:VAL:HG12 | 16:CP:34:GLU:O | 2.19 | 0.42 |
| 45:DO:49:ARG:CG | 45:DO:49:ARG:NH1 | 2.80 | 0.42 |
| 1:CA:1404:C:H6 | 1:CA:1404:C:O5' | 2.03 | 0.42 |
| 35:BA:34:C:C2' | 35:BA:35:G:H5' | 2.45 | 0.42 |
| 42:BH:41:MET:SD | 42:BH:55:PRO:HG3 | 2.59 | 0.42 |
| 53:BW:78:GLU:OE2 | 53:BW:99:ARG:HG2 | 2.19 | 0.42 |
| 55:BY:2:ARG:O | 55:BY:4:LYS:N | 2.52 | 0.42 |
| 35:BA:1854:A:C2 | 35:BA:2087:G:N3 | 2.88 | 0.42 |
| 48:DR:74:LYS:CD | 48:DR:77:ARG:NH2 | 2.83 | 0.42 |
| 2:CB:224:GLN:O | 2:CB:224:GLN:HG2 | 2.19 | 0.42 |
| 47:BQ:50:ALA:HB2 | 47:BQ:124:LYS:HB2 | 2.01 | 0.42 |
| 35:BA:558:G:OP2 | 44:BN:111:PRO:HD2 | 2.20 | 0.42 |
| 1:AA:541:G:O2' | 1:AA:542:G:H5' | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 35:BA:893:C:O2' | 35:BA:894:C:H5' | 2.19 | 0.42 |
| 28:B3:59:VAL:CG1 | 28:B3:60:GLU:N | 2.81 | 0.42 |
| 1:CA:490:G:H2' | 1:CA:491:G:H8 | 1.85 | 0.42 |
| 13:AM:111:LYS:CG | 13:AM:112:GLY:N | 2.82 | 0.42 |
| 17:AQ:83:ASP:CG | 17:AQ:84:LEU:H | 2.23 | 0.42 |
| 35:DA:2390:U:O2' | 35:DA:2391:G:H5' | 2.19 | 0.42 |
| 35:DA:491:G:H2' | 35:DA:492:A:C8 | 2.54 | 0.42 |
| 4:CD:86:LYS:HD3 | 4:CD:86:LYS:HA | 1.82 | 0.42 |
| 1:AA:947:G:H2' | 1:AA:948:C:H6 | 1.84 | 0.42 |
| 8:CH:16:ALA:CB | 8:CH:24:THR:OG1 | 2.67 | 0.42 |
| 7:AG:60:LYS:HZ1 | 7:AG:64:GLN:HB2 | 1.84 | 0.42 |
| 35:DA:51:G:N3 | 35:DA:119:A:C2 | 2.87 | 0.42 |
| 31:B6:39:TYR:O | 31:B6:40:CYS:HB2 | 2.20 | 0.42 |
| 11:CK:67:ASP:CG | 11:CK:71:LYS:HE3 | 2.40 | 0.42 |
| 35:BA:565:C:H4' | 35:BA:1253:A:C6 | 2.54 | 0.42 |
| 35:DA:533:G:H5' | 51:DU:24:TYR:CE2 | 2.55 | 0.42 |
| 35:BA:753:C:H6 | 35:BA:753:C:O5' | 2.02 | 0.42 |
| 35:DA:39:C:H2' | 35:DA:40:C:H6 | 1.84 | 0.42 |
| 35:BA:732:C:O2' | 35:BA:733:G:H5' | 2.19 | 0.42 |
| 38:BD:45:ASN:HB2 | 38:BD:46:GLN:OE1 | 2.19 | 0.42 |
| 35:BA:1221(A):C:O2' | 35:BA:1222:C:H5' | 2.19 | 0.42 |
| 48:BR:99:LYS:H | 48:BR:99:LYS:HD3 | 1.84 | 0.42 |
| 28:B3:36:VAL:HG23 | 28:B3:36:VAL:O | 2.18 | 0.42 |
| 15:CO:37:ASN:N | 15:CO:37:ASN:HD22 | 2.17 | 0.42 |
| 22:AV:11:C:H2' | 22:AV:12:U:C6 | 2.54 | 0.42 |
| 35:DA:501:A:C6 | 35:DA:502:A:C6 | 3.07 | 0.42 |
| 35:BA:908:C:O2' | 35:BA:909:A:H5' | 2.19 | 0.42 |
| 28:D3:6:VAL:HG13 | 28:D3:56:VAL:HG22 | 2.01 | 0.42 |
| 11:AK:32:ILE:HD12 | 11:AK:68:ALA:O | 2.20 | 0.42 |
| 1:AA:1496:C:H2' | 1:AA:1497:G:O4' | 2.19 | 0.42 |
| 35:BA:1573:G:H2' | 35:BA:1574:C:H5' | 2.00 | 0.42 |
| 1:AA:593:G:O2' | 1:AA:594:G:H5' | 2.20 | 0.42 |
| 43:BI:127:VAL:HG12 | 43:BI:128:LEU:N | 2.34 | 0.42 |
| 16:AP:26:ARG:HH11 | 16:AP:26:ARG:HG2 | 1.85 | 0.42 |
| 35:BA:425:G:O2' | 35:BA:426:C:H5' | 2.20 | 0.42 |
| 45:DO:13:ASN:C | 45:DO:15:GLY:N | 2.72 | 0.42 |
| 1:AA:27:G:H2' | 1:AA:28:G:O4' | 2.19 | 0.42 |
| 5:AE:84:PHE:HB3 | 5:AE:134:ALA:HB2 | 2.00 | 0.42 |
| 35:BA:1430:C:H2' | 35:BA:1431:U:C6 | 2.55 | 0.42 |
| 33:D8:13:ARG:CB | 46:DP:63:PRO:HB3 | 2.27 | 0.42 |
| 12:AL:38:THR:CG2 | 12:AL:57:LYS:HB2 | 2.49 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:AL:25:PRO:HG2 | 12:AL:98:TYR:OH | 2.19 | 0.42 |
| 9:CI:21:PRO:HA | 9:CI:59:PHE:HA | 1.99 | 0.42 |
| 2:CB:163:PHE:HE1 | 2:CB:215:LEU:HD13 | 1.84 | 0.42 |
| 1:AA:1346:A:H61 | 1:AA:1374:A:H3' | 1.85 | 0.42 |
| 49:BS:96:GLY:O | 49:BS:97:ARG:C | 2.56 | 0.42 |
| 49:BS:97:ARG:O | 49:BS:97:ARG:NE | 2.53 | 0.42 |
| 41:DG:51:ARG:NE | 41:DG:51:ARG:CA | 2.83 | 0.42 |
| 35:DA:2747:G:O2' | 42:DH:67:LEU:HD13 | 2.19 | 0.42 |
| 40:BF:132:VAL:C | 40:BF:134:GLY:N | 2.72 | 0.42 |
| 39:BE:67:PHE:O | 39:BE:70:ALA:HB2 | 2.20 | 0.42 |
| 46:DP:18:ARG:O | 46:DP:18:ARG:NH1 | 2.53 | 0.42 |
| 3:CC:141:VAL:CG1 | 3:CC:202:ILE:HG23 | 2.50 | 0.42 |
| 51:DU:91:ASP:OD1 | 51:DU:96:ALA:HB2 | 2.18 | 0.42 |
| 51:DU:90:VAL:HG11 | 52:DV:39:LEU:HG | 2.02 | 0.42 |
| 52:DV:39:LEU:HB3 | 52:DV:47:VAL:HG11 | 2.01 | 0.42 |
| 40:BF:186:ILE:HD12 | 40:BF:192:LEU:HD12 | 2.02 | 0.42 |
| 40:BF:192:LEU:HD21 | 40:BF:194:MET:CE | 2.49 | 0.42 |
| 36:DB:56:G:H4' | 36:DB:57:A:H8 | 1.84 | 0.42 |
| 41:DG:114:ILE:HG23 | 41:DG:115:ARG:NH1 | 2.34 | 0.42 |
| 5:CE:103:GLY:O | 5:CE:104:ALA:C | 2.58 | 0.42 |
| 5:CE:90:VAL:HG23 | 5:CE:121:LYS:H | 1.84 | 0.42 |
| 42:BH:68:THR:HG22 | 42:BH:72:ILE:CD1 | 2.49 | 0.42 |
| 30:B5:40:LYS:HZ2 | 30:B5:46:CYS:C | 2.23 | 0.42 |
| 46:BP:83:VAL:O | 46:BP:83:VAL:HG13 | 2.20 | 0.42 |
| 38:DD:244:ARG:HG2 | 38:DD:245:PRO:HD3 | 2.02 | 0.42 |
| 3:AC:16:ARG:HA | 3:AC:16:ARG:HH11 | 1.84 | 0.42 |
| 35:BA:1778:U:H2' | 35:BA:1784:A:N6 | 2.34 | 0.42 |
| 20:CT:28:ALA:O | 20:CT:30:LYS:N | 2.51 | 0.42 |
| 45:DO:105:GLU:N | 45:DO:105:GLU:OE1 | 2.52 | 0.42 |
| 25:B0:20:ARG:HD3 | 25:B0:20:ARG:H | 1.84 | 0.42 |
| 35:DA:285:C:C2' | 35:DA:286:C:H5'' | 2.48 | 0.42 |
| 44:BN:3:THR:HG22 | 44:BN:5:VAL:HB | 2.01 | 0.42 |
| 36:BB:70:C:H2' | 36:BB:71:C:H6 | 1.85 | 0.42 |
| 43:BI:133:HIS:ND1 | 43:BI:134:PRO:HD2 | 2.35 | 0.42 |
| 39:BE:6:GLY:CA | 39:BE:27:LEU:O | 2.68 | 0.42 |
| 1:AA:1333:A:H2' | 1:AA:1334:G:C1' | 2.50 | 0.42 |
| 22:AY:48:C:N3 | 22:AY:59:U:C2 | 2.87 | 0.42 |
| 35:DA:955:C:H5' | 35:DA:956:G:OP2 | 2.18 | 0.42 |
| 1:CA:80:G:N7 | 1:CA:81:U:C5 | 2.87 | 0.42 |
| 47:DQ:33:GLY:O | 47:DQ:131:ILE:HG23 | 2.19 | 0.42 |
| 1:AA:883:C:C2 | 1:AA:884:U:C5 | 2.93 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:CC:172:ARG:HH11 | 3:CC:172:ARG:HB3 | 1.83 | 0.42 |
| 35:BA:2582:G:N2 | 35:BA:2583:G:H1' | 2.34 | 0.42 |
| 35:BA:89:G:H3' | 35:BA:90:U:C5' | 2.48 | 0.42 |
| 43:DI:56:LYS:C | 43:DI:58:LEU:N | 2.72 | 0.42 |
| 35:DA:1261:C:C2' | 35:DA:1262:A:O5' | 2.67 | 0.42 |
| 1:AA:336:C:O2' | 1:AA:337:C:H5' | 2.19 | 0.42 |
| 35:BA:2197:U:H1' | 35:BA:2198:A:C8 | 2.54 | 0.42 |
| 18:AR:53:ARG:HH11 | 18:AR:53:ARG:CB | 2.32 | 0.42 |
| 36:BB:50:G:P | 49:BS:62:LYS:HB2 | 2.60 | 0.42 |
| 33:B8:47:LYS:HD3 | 33:B8:48:PHE:O | 2.20 | 0.42 |
| 9:AI:4:TYR:HD1 | 9:AI:4:TYR:N | 2.18 | 0.42 |
| 35:DA:1565:C:H1' | 35:DA:1566:A:H8 | 1.84 | 0.42 |
| 47:BQ:50:ALA:CB | 47:BQ:104:PHE:HE1 | 2.33 | 0.42 |
| 47:BQ:63:LYS:NZ | 56:BZ:175:VAL:HG11 | 2.34 | 0.42 |
| 9:AI:121:ARG:NH1 | 9:AI:121:ARG:HG2 | 2.34 | 0.42 |
| 30:D5:20:ARG:NH2 | 53:DW:15:ARG:HH11 | 2.18 | 0.42 |
| 45:BO:86:ILE:CD1 | 45:BO:86:ILE:N | 2.79 | 0.42 |
| 56:BZ:74:VAL:O | 56:BZ:76:LEU:HG | 2.19 | 0.42 |
| 20:AT:45:GLN:O | 20:AT:47:GLY:N | 2.53 | 0.42 |
| 54:BX:83:VAL:HG12 | 54:BX:87:GLN:HB2 | 2.00 | 0.42 |
| 1:AA:250:A:HO2' | 1:AA:251:G:P | 2.42 | 0.42 |
| 13:CM:111:LYS:CG | 13:CM:112:GLY:N | 2.82 | 0.42 |
| 2:CB:23:ARG:NH1 | 2:CB:23:ARG:HB3 | 2.35 | 0.42 |
| 48:DR:7:GLY:O | 48:DR:8:ARG:CG | 2.65 | 0.42 |
| 35:DA:1924:C:H2' | 35:DA:1925:C:C6 | 2.52 | 0.42 |
| 53:BW:84:ARG:HB2 | 53:BW:96:ILE:HG22 | 2.00 | 0.42 |
| 35:BA:418:G:O2' | 35:BA:419:C:H5' | 2.20 | 0.42 |
| 2:CB:16:HIS:HB3 | 2:CB:210:SER:CB | 2.49 | 0.42 |
| 49:BS:105:ALA:O | 49:BS:107:GLU:N | 2.53 | 0.42 |
| 13:CM:106:ASN:O | 13:CM:107:ALA:HB3 | 2.19 | 0.42 |
| 53:BW:82:LEU:HD13 | 53:BW:98:LYS:HB2 | 2.00 | 0.42 |
| 53:BW:10:VAL:O | 53:BW:11:ARG:CB | 2.67 | 0.42 |
| 1:CA:403:C:H2' | 1:CA:404:U:H6 | 1.85 | 0.42 |
| 2:AB:24:TRP:HD1 | 2:AB:24:TRP:H | 1.65 | 0.42 |
| 1:AA:570:G:H1' | 1:AA:820:U:C4 | 2.55 | 0.42 |
| 1:CA:1160:G:O6 | 1:CA:1181:G:C6 | 2.73 | 0.42 |
| 16:AP:12:LYS:C | 16:AP:14:ASN:H | 2.22 | 0.42 |
| 1:CA:1095:U:H5' | 1:CA:1109:C:O2 | 2.19 | 0.42 |
| 1:AA:936:C:H2' | 1:AA:937:A:O4' | 2.19 | 0.42 |
| 35:DA:229:A:H5'' | 35:DA:230:U:H5' | 2.00 | 0.42 |
| 53:DW:58:ALA:HB1 | 53:DW:69:LEU:HD21 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 47:BQ:58:PHE:CD1 | 47:BQ:58:PHE:O | 2.72 | 0.42 |
| 35:DA:353:G:O2' | 35:DA:354:G:H5' | 2.18 | 0.42 |
| 35:DA:2842:G:O2' | 35:DA:2843:G:H5' | 2.20 | 0.42 |
| 1:AA:506:G:C5 | 1:AA:507:C:C4 | 3.07 | 0.42 |
| 35:BA:2854:G:O2' | 35:BA:2855:C:H5' | 2.19 | 0.42 |
| 11:AK:93:GLN:O | 11:AK:97:ALA:HB3 | 2.19 | 0.42 |
| 35:DA:231:C:O2' | 35:DA:232:G:H5' | 2.20 | 0.42 |
| 35:BA:1812:A:H2' | 35:BA:1813:G:C8 | 2.55 | 0.42 |
| 35:BA:748:G:C8 | 53:BW:89:ALA:HB1 | 2.55 | 0.42 |
| 35:BA:272(G):C:N4 | 35:BA:272(H):C:N4 | 2.68 | 0.42 |
| 1:CA:1236:A:O2' | 1:CA:1304:G:H4' | 2.18 | 0.42 |
| 36:BB:39:A:H2' | 36:BB:39:A:N3 | 2.34 | 0.42 |
| 35:BA:1663:C:HO2' | 35:BA:1664:A:H8 | 1.66 | 0.42 |
| 35:BA:110:G:O2' | 35:BA:111:A:H5' | 2.19 | 0.42 |
| 4:AD:53:ASP:O | 4:AD:57:ARG:HG3 | 2.20 | 0.42 |
| 36:BB:66:A:O2' | 36:BB:67:G:P | 2.77 | 0.42 |
| 32:D7:7:PRO:HG3 | 35:DA:1612:C:H5' | 2.01 | 0.42 |
| 35:BA:1773:A:C2' | 35:BA:1774:C:H5' | 2.50 | 0.42 |
| 26:D1:27:GLU:O | 26:D1:28:GLY:O | 2.38 | 0.42 |
| 14:AN:53:LEU:HB3 | 14:AN:56:VAL:HG21 | 2.01 | 0.42 |
| 1:CA:759:A:H2' | 1:CA:760:G:H5' | 2.02 | 0.42 |
| 9:CI:23:ASN:HD22 | 9:CI:23:ASN:N | 2.17 | 0.42 |
| 35:DA:1670:C:C4 | 35:DA:1671:U:N3 | 2.88 | 0.42 |
| 20:CT:76:ALA:O | 20:CT:80:ARG:HG2 | 2.19 | 0.42 |
| 56:DZ:44:PHE:C | 56:DZ:44:PHE:HD1 | 2.22 | 0.42 |
| 9:AI:7:THR:O | 9:AI:83:ARG:HD2 | 2.19 | 0.42 |
| 9:AI:99:LEU:HD12 | 9:AI:101:PHE:CZ | 2.55 | 0.42 |
| 1:CA:1347:G:O2' | 1:CA:1348:U:OP2 | 2.37 | 0.42 |
| 40:DF:186:ILE:HD12 | 40:DF:192:LEU:HD12 | 2.02 | 0.42 |
| 50:BT:91:ARG:C | 50:BT:93:ARG:N | 2.73 | 0.42 |
| 33:B8:7:HIS:HD2 | 46:BP:50:ARG:HD3 | 1.85 | 0.42 |
| 35:DA:1999:C:H2' | 35:DA:2000:G:O4' | 2.19 | 0.42 |
| 35:DA:2822:G:H2' | 35:DA:2823:A:H5'' | 2.02 | 0.42 |
| 56:DZ:150:LEU:HD23 | 56:DZ:171:ILE:CB | 2.24 | 0.42 |
| 49:DS:95:HIS:C | 49:DS:96:GLY:O | 2.55 | 0.42 |
| 36:BB:103:G:H21 | 56:BZ:73:GLN:HE22 | 1.68 | 0.42 |
| 36:BB:75:G:H22 | 56:BZ:73:GLN:HE21 | 1.67 | 0.42 |
| 35:DA:570:G:H2' | 35:DA:2030:A:C5 | 2.55 | 0.42 |
| 35:BA:1887:C:C3' | 35:BA:1888:G:C5' | 2.97 | 0.42 |
| 44:BN:128:HIS:O | 44:BN:130:HIS:N | 2.53 | 0.42 |
| 5:AE:41:VAL:C | 5:AE:66:MET:HG2 | 2.40 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AM:65:LYS:HG2 | 13:AM:66:LEU:N | 2.35 | 0.42 |
| 40:BF:160:ASN:ND2 | 40:BF:162:LEU:H | 2.18 | 0.42 |
| 35:BA:1496:A:N7 | 35:BA:1498:C:N3 | 2.67 | 0.42 |
| 35:BA:1578:U:OP2 | 35:BA:1578:U:H6 | 2.03 | 0.42 |
| 41:DG:115:ARG:HD3 | 41:DG:115:ARG:N | 2.35 | 0.42 |
| 52:DV:19:LYS:CG | 52:DV:94:LEU:HB2 | 2.35 | 0.42 |
| 1:CA:976:G:N2 | 1:CA:1362:C:H2' | 2.35 | 0.42 |
| 35:DA:2543:G:H21 | 35:DA:2646:C:H5'' | 1.83 | 0.42 |
| 42:BH:65:HIS:HE1 | 42:BH:69:ARG:HD3 | 1.84 | 0.42 |
| 1:AA:1125:U:O3' | 1:AA:1126:U:H6 | 2.02 | 0.42 |
| 46:BP:102:ARG:HB3 | 46:BP:102:ARG:NH2 | 2.34 | 0.42 |
| 46:DP:98:GLU:OE1 | 46:DP:98:GLU:C | 2.57 | 0.42 |
| 39:BE:11:MET:HB2 | 39:BE:24:THR:HA | 2.01 | 0.42 |
| 35:BA:1022:G:C6 | 35:BA:1140:C:C4 | 3.07 | 0.42 |
| 47:BQ:45:GLN:H | 47:BQ:45:GLN:NE2 | 2.17 | 0.42 |
| 35:DA:26:G:P | 53:DW:80:PRO:HB3 | 2.59 | 0.42 |
| 20:CT:28:ALA:C | 20:CT:30:LYS:N | 2.73 | 0.42 |
| 41:DG:58:GLN:C | 41:DG:60:LEU:N | 2.72 | 0.42 |
| 35:DA:143:G:H2' | 35:DA:143(A):C:C6 | 2.55 | 0.42 |
| 27:D2:69:ARG:HH11 | 27:D2:69:ARG:CG | 2.32 | 0.42 |
| 27:D2:69:ARG:C | 27:D2:70:GLN:HG2 | 2.40 | 0.42 |
| 25:D0:20:ARG:CD | 25:D0:20:ARG:H | 2.33 | 0.42 |
| 15:CO:74:ASP:OD2 | 15:CO:76:GLU:HB3 | 2.19 | 0.42 |
| 43:DI:110:ASP:HA | 43:DI:111:PRO:HD2 | 1.94 | 0.42 |
| 35:DA:1979:C:O2' | 35:DA:1980:G:H5' | 2.20 | 0.42 |
| 53:BW:5:ALA:O | 53:BW:6:ILE:CB | 2.67 | 0.42 |
| 41:BG:126:ASP:O | 41:BG:128:ARG:NH2 | 2.52 | 0.42 |
| 40:BF:16:GLY:O | 40:BF:17:ARG:HG3 | 2.20 | 0.42 |
| 46:BP:38:GLN:CG | 46:BP:39:LYS:H | 2.16 | 0.42 |
| 4:CD:121:VAL:O | 4:CD:134:ASP:HA | 2.20 | 0.42 |
| 35:DA:1879:C:C2' | 35:DA:1880:C:C5' | 2.90 | 0.42 |
| 1:AA:1030:C:H2' | 1:AA:1030(A):G:C5' | 2.38 | 0.42 |
| 43:BI:133:HIS:HB2 | 43:BI:134:PRO:HD2 | 1.96 | 0.42 |
| 20:CT:43:LEU:HB3 | 20:CT:48:LYS:CG | 2.49 | 0.42 |
| 51:DU:33:ARG:HG3 | 51:DU:33:ARG:O | 2.20 | 0.42 |
| 27:B2:16:LEU:O | 27:B2:17:SER:HB3 | 2.19 | 0.42 |
| 35:BA:2266:A:C2 | 35:BA:2272:U:C5 | 3.07 | 0.42 |
| 35:DA:1485:G:C8 | 35:DA:1486:A:N7 | 2.88 | 0.42 |
| 3:AC:39:ILE:HG22 | 3:AC:43:LEU:CD1 | 2.50 | 0.42 |
| 31:B6:36:LEU:HB3 | 31:B6:50:ARG:HH11 | 1.84 | 0.42 |
| 3:CC:12:LEU:HD13 | 3:CC:18:TRP:CH2 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:CC:95:THR:C | 3:CC:97:LYS:H | 2.23 | 0.42 |
| 40:BF:53:THR:CG2 | 40:BF:56:GLU:H | 2.32 | 0.42 |
| 1:CA:883:C:N3 | 1:CA:884:U:H5 | 2.15 | 0.42 |
| 13:AM:97:PRO:C | 13:AM:98:VAL:HA | 2.40 | 0.42 |
| 35:DA:2123:G:H2' | 35:DA:2124:G:H8 | 1.83 | 0.42 |
| 49:BS:106:ARG:HB3 | 49:BS:106:ARG:HE | 1.51 | 0.42 |
| 1:CA:1065:U:H4' | 1:CA:1066:C:O5' | 2.19 | 0.42 |
| 35:BA:1657:C:H2' | 35:BA:1658:C:C6 | 2.55 | 0.42 |
| 1:AA:1065:U:H4' | 1:AA:1066:C:O5' | 2.20 | 0.42 |
| 34:B9:24:TYR:CZ | 34:B9:35:ARG:HG3 | 2.54 | 0.42 |
| 3:AC:19:GLU:HA | 3:AC:54:ARG:NH2 | 2.34 | 0.42 |
| 33:D8:46:ARG:O | 33:D8:47:LYS:CB | 2.67 | 0.42 |
| 40:DF:89:VAL:O | 40:DF:91:GLY:N | 2.52 | 0.42 |
| 11:AK:95:ILE:N | 11:AK:95:ILE:CD1 | 2.81 | 0.42 |
| 35:DA:2637:U:H5'' | 39:DE:82:ARG:NH2 | 2.34 | 0.42 |
| 42:BH:86:GLU:HB3 | 42:BH:132:ARG:CB | 2.45 | 0.42 |
| 38:DD:210:GLY:O | 38:DD:211:ARG:CB | 2.62 | 0.42 |
| 6:CF:52:ILE:HD12 | 6:CF:87:ARG:NH1 | 2.34 | 0.42 |
| 1:CA:385:C:HO2' | 1:CA:386:C:H5' | 1.85 | 0.42 |
| 2:CB:197:VAL:HB | 2:CB:200:ILE:HG12 | 2.01 | 0.42 |
| 1:AA:541:G:H2' | 1:AA:542:G:C8 | 2.54 | 0.42 |
| 37:BC:18:LYS:HD3 | 37:BC:19:VAL:HG23 | 2.01 | 0.42 |
| 9:AI:27:THR:CG2 | 9:AI:31:GLN:H | 2.30 | 0.42 |
| 1:CA:676:A:H2' | 1:CA:677:U:H6 | 1.85 | 0.42 |
| 45:DO:71:ARG:HB3 | 45:DO:73:ASP:OD2 | 2.20 | 0.42 |
| 53:BW:86:LEU:HD12 | 53:BW:87:PRO:CD | 2.49 | 0.42 |
| 1:CA:1188:A:H2' | 1:CA:1189:C:O4' | 2.19 | 0.42 |
| 12:AL:119:LYS:O | 12:AL:120:TYR:CB | 2.67 | 0.42 |
| 38:DD:112:GLN:N | 38:DD:115:GLN:NE2 | 2.67 | 0.42 |
| 2:CB:16:HIS:HD2 | 2:CB:210:SER:CA | 2.32 | 0.42 |
| 10:CJ:8:LEU:HD13 | 10:CJ:20:ALA:HA | 2.01 | 0.42 |
| 42:DH:137:ASP:HB3 | 42:DH:140:LYS:HB3 | 2.01 | 0.42 |
| 38:DD:52:ARG:H | 38:DD:52:ARG:HG3 | 1.52 | 0.42 |
| 1:CA:606:G:H21 | 1:CA:631:G:H2' | 1.85 | 0.42 |
| 35:BA:2662:A:H2' | 35:BA:2663:G:O4' | 2.20 | 0.42 |
| 1:AA:189(A):C:H2' | 1:AA:189(B):C:C6 | 2.54 | 0.42 |
| 48:DR:99:LYS:HA | 48:DR:112:ALA:HA | 2.00 | 0.42 |
| 18:CR:30:ASP:C | 18:CR:32:ARG:H | 2.23 | 0.42 |
| 35:BA:225:A:C2' | 35:BA:226:G:H5' | 2.50 | 0.42 |
| 35:BA:717:G:H2' | 35:BA:718:A:O4' | 2.20 | 0.42 |
| 35:DA:717:G:H2' | 35:DA:718:A:O4' | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 51:DU:103:PRO:HG2 | 51:DU:104:GLN:OE1 | 2.19 | 0.42 |
| 47:DQ:58:PHE:CD1 | 47:DQ:58:PHE:O | 2.71 | 0.42 |
| 5:AE:122:GLU:HG2 | 5:AE:131:ILE:HD11 | 2.02 | 0.42 |
| 35:DA:966:G:H2' | 35:DA:967:C:C6 | 2.55 | 0.42 |
| 35:DA:1291:C:H2' | 35:DA:1292:U:C6 | 2.55 | 0.42 |
| 1:CA:66:G:H4' | 1:CA:173:U:C4 | 2.55 | 0.42 |
| 3:CC:91:LEU:O | 3:CC:94:LEU:HG | 2.19 | 0.42 |
| 35:BA:1812:A:H2' | 35:BA:1813:G:H8 | 1.84 | 0.42 |
| 35:DA:703:U:C2' | 35:DA:704:G:H5' | 2.50 | 0.42 |
| 26:B1:20:ARG:C | 26:B1:21:ARG:HG2 | 2.39 | 0.42 |
| 29:D4:42:CYS:SG | 29:D4:62:CYS:HB3 | 2.60 | 0.42 |
| 35:DA:350:U:H2' | 35:DA:351:G:O4' | 2.20 | 0.42 |
| 23:AW:28:G:H2' | 23:AW:29:G:H8 | 1.84 | 0.42 |
| 43:DI:34:GLY:O | 43:DI:35:LEU:HD23 | 2.19 | 0.42 |
| 35:BA:755:C:H2' | 35:BA:756:C:C6 | 2.55 | 0.42 |
| 37:DC:23:ASP:O | 37:DC:26:ALA:HB3 | 2.19 | 0.42 |
| 4:AD:151:LYS:HG2 | 4:AD:151:LYS:O | 2.20 | 0.42 |
| 4:CD:168:ARG:HH11 | 4:CD:168:ARG:HG3 | 1.83 | 0.42 |
| 56:DZ:52:SER:OG | 56:DZ:53:ILE:N | 2.53 | 0.42 |
| 56:DZ:89:PHE:CE1 | 56:DZ:96:VAL:HG11 | 2.54 | 0.42 |
| 40:BF:27:GLU:O | 40:BF:28:ILE:C | 2.58 | 0.42 |
| 9:AI:95:LYS:C | 9:AI:95:LYS:HD3 | 2.40 | 0.42 |
| 1:CA:1346:A:H5' | 9:CI:120:ARG:NH1 | 2.34 | 0.42 |
| 35:DA:613:G:H8 | 35:DA:613:G:C5' | 2.31 | 0.42 |
| 2:AB:55:PHE:HE1 | 2:AB:218:ALA:HA | 1.85 | 0.42 |
| 2:CB:87:ARG:HD2 | 2:CB:87:ARG:O | 2.20 | 0.42 |
| 1:AA:522:C:H2' | 1:AA:523:A:O4' | 2.18 | 0.42 |
| 49:BS:95:HIS:C | 49:BS:96:GLY:O | 2.56 | 0.42 |
| 22:AV:15:G:N2 | 22:AV:21:A:H1' | 2.35 | 0.42 |
| 1:CA:980:C:O2 | 14:CN:19:ARG:HA | 2.20 | 0.42 |
| 39:DE:59:VAL:CG2 | 39:DE:63:LEU:HG | 2.47 | 0.42 |
| 49:DS:95:HIS:O | 49:DS:96:GLY:C | 2.58 | 0.42 |
| 39:BE:68:ALA:O | 39:BE:70:ALA:N | 2.53 | 0.42 |
| 1:CA:1254:C:H2' | 1:CA:1255:G:C8 | 2.55 | 0.42 |
| 48:BR:24:GLN:HB2 | 48:BR:44:LEU:HD23 | 2.02 | 0.42 |
| 38:DD:39:LYS:HZ2 | 38:DD:87:ASN:HB3 | 1.77 | 0.42 |
| 3:CC:77:ILE:HG22 | 3:CC:81:GLY:HA2 | 2.01 | 0.42 |
| 42:DH:100:GLY:C | 42:DH:102:ALA:N | 2.72 | 0.42 |
| 51:DU:106:PHE:O | 51:DU:110:VAL:HG23 | 2.20 | 0.42 |
| 35:DA:1493:C:C4 | 35:DA:2206:G:O2' | 2.70 | 0.42 |
| 3:AC:152:ILE:CG1 | 3:AC:199:LYS:HB2 | 2.49 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:DZ:4:ARG:HG2 | 56:DZ:58:VAL:CG2 | 2.49 | 0.42 |
| 5:CE:11:ILE:HD11 | 5:CE:33:VAL:HG21 | 2.02 | 0.42 |
| 36:DB:21:G:O2' | 36:DB:22:U:C6 | 2.73 | 0.42 |
| 35:DA:2726:U:O2' | 35:DA:2727:G:H5' | 2.20 | 0.42 |
| 43:DI:76:THR:O | 43:DI:77:LEU:HB2 | 2.19 | 0.42 |
| 35:BA:664:C:H4' | 35:BA:941:A:OP1 | 2.20 | 0.42 |
| 42:BH:159:GLU:HG2 | 42:BH:160:LYS:NZ | 2.35 | 0.42 |
| 33:B8:6:THR:HG21 | 35:BA:243:U:OP1 | 2.19 | 0.42 |
| 35:DA:271(Q):G:O2' | 35:DA:271(R):G:P | 2.78 | 0.42 |
| 23:AW:20:U:O4 | 23:AW:59:U:O4 | 2.38 | 0.42 |
| 25:D0:19:LYS:O | 25:D0:20:ARG:C | 2.58 | 0.42 |
| 53:BW:50:VAL:HG13 | 53:BW:51:LEU:N | 2.34 | 0.42 |
| 35:BA:1169:G:H2' | 35:BA:1170:G:O4' | 2.20 | 0.42 |
| 25:B0:19:LYS:NZ | 35:BA:2262:U:P | 2.93 | 0.42 |
| 36:DB:70:C:H2' | 36:DB:71:C:H6 | 1.84 | 0.42 |
| 36:BB:15:A:H1' | 36:BB:110:G:N7 | 2.34 | 0.42 |
| 6:CF:72:VAL:HG13 | 6:CF:73:ASN:H | 1.83 | 0.42 |
| 22:AV:39:U:O2' | 22:AV:40:C:H5' | 2.20 | 0.42 |
| 1:AA:1499:A:O2' | 1:AA:1500:A:H5' | 2.19 | 0.42 |
| 33:D8:44:LYS:HD2 | 33:D8:44:LYS:N | 2.34 | 0.42 |
| 35:DA:1286:A:N6 | 35:DA:1289:C:C2 | 2.88 | 0.42 |
| 35:BA:1051:G:N3 | 35:BA:1052:C:H5 | 2.18 | 0.42 |
| 3:CC:39:ILE:HG22 | 3:CC:43:LEU:CD1 | 2.50 | 0.42 |
| 26:B1:80:LEU:HB3 | 26:B1:82:LEU:HD21 | 2.02 | 0.42 |
| 35:DA:2774:C:H2' | 35:DA:2775:A:O4' | 2.19 | 0.42 |
| 5:CE:67:VAL:CG2 | 5:CE:68:GLU:N | 2.83 | 0.42 |
| 27:D2:7:ARG:O | 27:D2:11:GLU:HG3 | 2.20 | 0.42 |
| 36:DB:76:G:H2' | 36:DB:77:U:O4' | 2.19 | 0.42 |
| 35:DA:2172:U:O3' | 35:DA:2173:A:H8 | 2.03 | 0.42 |
| 58:AA:1799:PAR:N64 | 58:AA:1799:PAR:H34 | 2.27 | 0.42 |
| 55:DY:2:ARG:O | 55:DY:4:LYS:N | 2.52 | 0.42 |
| 47:DQ:17:LEU:HD12 | 47:DQ:39:PRO:HB2 | 2.02 | 0.42 |
| 5:CE:147:ASP:HA | 5:CE:150:ARG:HB3 | 2.01 | 0.42 |
| 35:BA:455:C:H3' | 35:BA:456:C:H5'' | 2.02 | 0.42 |
| 38:DD:209:ALA:C | 38:DD:210:GLY:O | 2.55 | 0.42 |
| 26:B1:12:PRO:HG3 | 35:BA:1365:A:H5' | 2.02 | 0.42 |
| 2:CB:178:ARG:HH11 | 2:CB:178:ARG:CG | 2.32 | 0.42 |
| 2:CB:178:ARG:HD2 | 8:CH:71:GLY:O | 2.20 | 0.42 |
| 2:CB:31:TYR:N | 2:CB:31:TYR:CD2 | 2.87 | 0.42 |
| 44:DN:57:ALA:C | 44:DN:58:ASP:O | 2.57 | 0.42 |
| 34:B9:9:ARG:HH11 | 34:B9:9:ARG:HB3 | 1.84 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 1:CA:1305:G:N2 | 1:CA:1331:G:O2' | 2.44 | 0.42 |
| 43:BI:85:GLU:OE2 | 43:BI:85:GLU:HA | 2.20 | 0.42 |
| 35:DA:1042:G:H3' | 35:DA:1043:C:O4' | 2.20 | 0.42 |
| 52:BV:2:PHE:CZ | 52:BV:13:ARG:HD2 | 2.55 | 0.42 |
| 1:AA:1457:G:H2' | 1:AA:1458:G:H8 | 1.85 | 0.42 |
| 35:BA:1509(B):A:H2' | 35:BA:1510:G:C8 | 2.55 | 0.42 |
| 1:CA:1229:A:H2' | 1:CA:1230:C:C6 | 2.54 | 0.42 |
| 35:DA:2692:C:O2' | 35:DA:2693:A:H5' | 2.20 | 0.42 |
| 1:AA:600:C:H2' | 1:AA:601:C:C6 | 2.55 | 0.42 |
| 1:AA:551:U:H5' | 12:AL:119:LYS:HE2 | 2.01 | 0.42 |
| 35:DA:2681:C:C5 | 35:DA:2725:A:N6 | 2.81 | 0.42 |
| 38:DD:197:GLY:O | 38:DD:198:ASN:HB3 | 2.20 | 0.42 |
| 40:DF:46:ARG:HG3 | 40:DF:46:ARG:NH1 | 2.34 | 0.42 |
| 40:DF:46:ARG:HG3 | 40:DF:46:ARG:HH11 | 1.85 | 0.42 |
| 42:DH:137:ASP:O | 42:DH:138:LYS:HB2 | 2.20 | 0.42 |
| 7:CG:6:ARG:O | 7:CG:7:ALA:O | 2.38 | 0.42 |
| 44:DN:94:HIS:HA | 44:DN:96:GLU:OE1 | 2.20 | 0.42 |
| 35:DA:530:G:C5 | 35:DA:2022:U:H5'' | 2.55 | 0.42 |
| 35:DA:1548:C:H2' | 35:DA:1549:C:C6 | 2.55 | 0.42 |
| 41:DG:7:LEU:HB3 | 41:DG:100:TRP:HE3 | 1.82 | 0.42 |
| 1:AA:1427:U:H2' | 1:AA:1428:A:C8 | 2.54 | 0.42 |
| 1:AA:1387:G:C6 | 1:AA:1388:C:N4 | 2.88 | 0.42 |
| 16:AP:45:THR:HG23 | 16:AP:48:TRP:HB3 | 2.00 | 0.42 |
| 41:BG:116:ASP:HB3 | 41:BG:117:PHE:H | 1.59 | 0.42 |
| 35:DA:531:C:C5 | 35:DA:2035:G:C2 | 3.07 | 0.42 |
| 35:DA:201:C:C2' | 35:DA:202:U:H5' | 2.50 | 0.42 |
| 32:B7:17:GLY:O | 32:B7:21:ARG:HG2 | 2.19 | 0.42 |
| 1:AA:449:C:O2 | 16:AP:42:ARG:HD2 | 2.19 | 0.42 |
| 36:DB:39:A:O2' | 36:DB:46:A:N1 | 2.48 | 0.42 |
| 1:CA:643:C:H5' | 8:CH:31:PHE:CD1 | 2.54 | 0.42 |
| 14:AN:42:ILE:O | 14:AN:46:GLU:HG3 | 2.19 | 0.42 |
| 1:CA:1417:G:N2 | 1:CA:1482:G:H2' | 2.34 | 0.42 |
| 35:DA:2409:G:H2' | 35:DA:2410:G:O4' | 2.18 | 0.42 |
| 35:DA:2520:C:H6 | 35:DA:2520:C:O5' | 2.02 | 0.42 |
| 2:AB:150:SER:O | 2:AB:153:ARG:HG3 | 2.20 | 0.42 |
| 1:CA:314:C:O2' | 1:CA:315:A:H5' | 2.19 | 0.42 |
| 56:DZ:30:ASN:OD1 | 56:DZ:90:VAL:HB | 2.20 | 0.42 |
| 56:DZ:94:GLU:HA | 56:DZ:95:PRO:HD3 | 1.83 | 0.42 |
| 46:BP:6:LEU:HD21 | 46:BP:9:ASN:HB3 | 2.00 | 0.42 |
| 31:B6:16:CYS:O | 31:B6:18:ARG:NH1 | 2.53 | 0.42 |
| 9:CI:69:GLY:O | 9:CI:72:GLY:N | 2.51 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:953:G:H2' | 1:AA:954:G:O4' | 2.20 | 0.42 |
| 10:AJ:54:PHE:CD2 | 10:AJ:55:LYS:HE3 | 2.55 | 0.42 |
| 2:CB:18:GLY:N | 2:CB:42:ILE:HG22 | 2.35 | 0.42 |
| 1:AA:1347:G:H5'' | 9:AI:107:ARG:HB3 | 2.01 | 0.42 |
| 46:BP:48:PRO:O | 46:BP:49:ARG:HB2 | 2.20 | 0.42 |
| 35:DA:1858:G:O2' | 35:DA:1884:A:N6 | 2.53 | 0.42 |
| 35:BA:2759:G:H8 | 35:BA:2759:G:H5' | 1.85 | 0.42 |
| 38:BD:80:ALA:HB2 | 38:BD:96:HIS:CD2 | 2.55 | 0.42 |
| 35:BA:997:G:OP1 | 51:BU:93:LYS:HB2 | 2.20 | 0.42 |
| 39:DE:2:LYS:HE3 | 39:DE:95:ILE:HG22 | 2.01 | 0.42 |
| 1:AA:179:A:H2' | 1:AA:180:U:H6 | 1.83 | 0.42 |
| 5:AE:6:PHE:CD2 | 5:AE:36:ASP:HB3 | 2.54 | 0.42 |
| 10:AJ:52:GLY:O | 14:AN:41:ARG:NH2 | 2.52 | 0.42 |
| 35:BA:2468:G:C2' | 35:BA:2469:A:OP2 | 2.68 | 0.42 |
| 30:D5:44:THR:HG21 | 48:DR:101:ALA:CA | 2.49 | 0.42 |
| 1:AA:1125:U:O3' | 1:AA:1126:U:C6 | 2.73 | 0.42 |
| 48:DR:113:LEU:HD12 | 48:DR:114:VAL:N | 2.34 | 0.42 |
| 49:DS:99:LYS:C | 49:DS:101:LEU:N | 2.73 | 0.42 |
| 2:CB:118:LEU:CB | 2:CB:142:LEU:HD13 | 2.35 | 0.42 |
| 37:BC:158:ALA:C | 37:BC:160:ARG:N | 2.72 | 0.42 |
| 50:BT:41:ARG:O | 50:BT:43:GLN:N | 2.51 | 0.42 |
| 19:CS:70:LYS:HD3 | 19:CS:70:LYS:N | 2.35 | 0.42 |
| 4:AD:133:VAL:HG12 | 4:AD:135:LEU:H | 1.83 | 0.42 |
| 33:D8:31:HIS:C | 33:D8:33:ASN:N | 2.68 | 0.42 |
| 35:BA:136:G:H1 | 35:BA:143(A):C:N4 | 2.15 | 0.42 |
| 1:CA:266:G:O2' | 1:CA:267:C:P | 2.78 | 0.42 |
| 35:BA:2632:A:H2' | 35:BA:2633:G:C8 | 2.55 | 0.42 |
| 43:BI:61:ARG:O | 43:BI:133:HIS:HE1 | 2.01 | 0.42 |
| 20:CT:48:LYS:HB2 | 20:CT:52:ALA:HB2 | 2.01 | 0.42 |
| 32:D7:47:ARG:NH2 | 54:DX:60:ARG:NH2 | 2.67 | 0.42 |
| 8:CH:82:HIS:HB3 | 8:CH:138:TRP:CE2 | 2.55 | 0.42 |
| 41:BG:102:PHE:O | 41:BG:105:LYS:HB3 | 2.20 | 0.42 |
| 1:CA:174:C:H6 | 1:CA:174:C:O5' | 2.03 | 0.42 |
| 22:AV:28:G:H1 | 22:AV:42:C:H42 | 1.67 | 0.42 |
| 43:DI:8:PRO:HB3 | 43:DI:14:ASP:HA | 2.01 | 0.42 |
| 4:AD:38:TYR:CG | 4:AD:45:GLN:HB3 | 2.55 | 0.42 |
| 13:AM:73:GLU:C | 13:AM:76:ALA:H | 2.22 | 0.42 |
| 35:DA:956:G:P | 47:DQ:87:LYS:HG3 | 2.59 | 0.42 |
| 35:BA:1258:C:O4' | 40:BF:84:VAL:HG21 | 2.19 | 0.42 |
| 27:B2:46:GLN:OE1 | 27:B2:46:GLN:HA | 2.20 | 0.42 |
| 47:DQ:63:LYS:HD3 | 47:DQ:65:PHE:CZ | 2.55 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DA:69:C:O2 | 35:DA:73:A:O2' | 2.37 | 0.42 |
| 38:DD:131:LEU:CD1 | 38:DD:131:LEU:N | 2.82 | 0.42 |
| 54:DX:53:LYS:HG2 | 54:DX:54:VAL:N | 2.35 | 0.42 |
| 9:CI:118:LYS:O | 9:CI:119:ALA:HB3 | 2.20 | 0.42 |
| 1:CA:18:C:H4' | 1:CA:1078:U:O2 | 2.20 | 0.42 |
| 47:BQ:31:ASP:OD2 | 47:BQ:107:ALA:HA | 2.20 | 0.42 |
| 35:DA:2457:U:O2' | 35:DA:2458:G:H5' | 2.18 | 0.42 |
| 35:DA:92:A:O2' | 35:DA:93:G:H5' | 2.20 | 0.42 |
| 11:AK:21:ILE:HG21 | 11:AK:94:ALA:CB | 2.50 | 0.42 |
| 25:B0:49:LYS:O | 25:B0:50:ASN:HB2 | 2.20 | 0.42 |
| 35:DA:61:G:H1 | 35:DA:94:C:N4 | 2.14 | 0.42 |
| 2:AB:197:VAL:HB | 2:AB:200:ILE:HG12 | 2.01 | 0.42 |
| 48:DR:12:ARG:HB3 | 48:DR:16:HIS:CD2 | 2.53 | 0.42 |
| 1:CA:663:A:O2' | 1:CA:664:G:H5' | 2.20 | 0.42 |
| 40:BF:19:GLU:CD | 40:BF:19:GLU:N | 2.73 | 0.42 |
| 15:AO:65:ARG:NH1 | 15:AO:65:ARG:HG2 | 2.34 | 0.42 |
| 35:DA:1490:A:H62 | 38:DD:98:VAL:HG11 | 1.85 | 0.42 |
| 14:CN:27:CYS:SG | 14:CN:29:ARG:HB2 | 2.59 | 0.42 |
| 35:BA:2558:C:H2' | 35:BA:2559:C:C6 | 2.55 | 0.42 |
| 53:BW:29:LEU:CD2 | 53:BW:33:ARG:HH21 | 2.30 | 0.42 |
| 51:BU:49:HIS:O | 51:BU:52:ARG:HB2 | 2.20 | 0.42 |
| 2:CB:124:SER:C | 2:CB:126:GLU:H | 2.23 | 0.42 |
| 4:CD:106:TYR:CE1 | 4:CD:113:SER:HA | 2.54 | 0.42 |
| 1:CA:123:C:O5' | 1:CA:123:C:H6 | 2.03 | 0.42 |
| 1:CA:123:C:OP1 | 1:CA:312:C:H5' | 2.20 | 0.42 |
| 11:AK:58:PRO:HG2 | 11:AK:59:TYR:H | 1.85 | 0.42 |
| 4:AD:147:ALA:HB2 | 4:AD:182:LYS:CB | 2.48 | 0.42 |
| 40:DF:139:PHE:O | 40:DF:140:LEU:C | 2.58 | 0.42 |
| 10:CJ:90:LEU:HD12 | 10:CJ:90:LEU:N | 2.35 | 0.42 |
| 1:AA:311:C:O2' | 1:AA:312:C:H5' | 2.20 | 0.42 |
| 11:CK:67:ASP:OD1 | 11:CK:71:LYS:HE3 | 2.19 | 0.42 |
| 35:DA:2819:G:H1 | 35:DA:2827:C:H42 | 1.68 | 0.42 |
| 50:DT:65:LYS:HD2 | 50:DT:65:LYS:HA | 1.82 | 0.42 |
| 53:DW:57:ASN:O | 53:DW:58:ALA:C | 2.58 | 0.42 |
| 35:BA:687:C:H2' | 35:BA:688:U:O4' | 2.20 | 0.42 |
| 6:CF:22:GLU:HA | 6:CF:22:GLU:OE2 | 2.19 | 0.42 |
| 22:CV:25:C:H2' | 22:CV:26:A:O4' | 2.20 | 0.42 |
| 32:B7:29:LYS:HE3 | 35:BA:210:C:OP2 | 2.20 | 0.42 |
| 1:CA:518:C:H2' | 1:CA:530:G:N3 | 2.35 | 0.42 |
| 16:AP:26:ARG:NH1 | 16:AP:26:ARG:HG2 | 2.35 | 0.42 |
| 1:CA:514:C:O2' | 1:CA:515:G:H5' | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:905:U:H2' | 1:CA:906:G:H5' | 2.01 | 0.42 |
| 17:CQ:3:LYS:HD3 | 17:CQ:60:ILE:HD11 | 2.02 | 0.42 |
| 25:D0:74:ARG:NH1 | 36:DB:13:A:OP2 | 2.53 | 0.42 |
| 1:AA:1121:U:O2' | 1:AA:1122:U:H5' | 2.20 | 0.42 |
| 30:B5:15:ARG:HH21 | 35:BA:2021:C:P | 2.43 | 0.42 |
| 48:DR:118:GLU:HA | 48:DR:118:GLU:OE1 | 2.20 | 0.42 |
| 39:DE:199:ARG:NH1 | 39:DE:199:ARG:HG3 | 2.35 | 0.42 |
| 37:BC:24:GLU:CD | 37:BC:24:GLU:H | 2.22 | 0.42 |
| 27:D2:59:ARG:HH11 | 35:DA:77:C:P | 2.42 | 0.42 |
| 35:DA:2063:C:C5 | 35:DA:2064:C:C5 | 3.08 | 0.42 |
| 35:DA:1127:A:C2' | 35:DA:1128:A:H5'' | 2.50 | 0.42 |
| 53:BW:2:GLU:HA | 53:BW:64:MET:HE1 | 2.02 | 0.42 |
| 1:AA:1177:G:OP2 | 9:AI:97:LYS:HE3 | 2.20 | 0.42 |
| 9:AI:33:PHE:CZ | 9:AI:47:LEU:HD11 | 2.55 | 0.42 |
| 9:CI:10:ARG:HG2 | 9:CI:104:ARG:O | 2.19 | 0.42 |
| 18:CR:37:VAL:O | 18:CR:39:VAL:N | 2.53 | 0.42 |
| 12:CL:41:ARG:HH22 | 12:CL:57:LYS:NZ | 2.17 | 0.42 |
| 41:DG:81:LYS:HG2 | 41:DG:82:LEU:H | 1.85 | 0.42 |
| 35:BA:1858:G:O2' | 35:BA:1884:A:N6 | 2.53 | 0.42 |
| 51:BU:79:PHE:HE2 | 51:BU:83:LEU:HD11 | 1.85 | 0.42 |
| 39:DE:7:VAL:HG21 | 50:DT:1:MET:HE1 | 2.01 | 0.42 |
| 3:AC:78:GLY:HA3 | 3:AC:83:ARG:HB3 | 2.01 | 0.42 |
| 52:DV:39:LEU:CD1 | 52:DV:51:VAL:HA | 2.50 | 0.42 |
| 35:BA:2481:G:O2' | 35:BA:2482:G:O5' | 2.38 | 0.42 |
| 35:BA:2491:U:H4' | 35:BA:2570:G:OP1 | 2.20 | 0.42 |
| 3:AC:182:ILE:HG12 | 3:AC:203:PHE:HA | 2.01 | 0.42 |
| 7:AG:79:ARG:HG3 | 7:AG:79:ARG:NH1 | 2.34 | 0.42 |
| 10:CJ:34:VAL:CG1 | 10:CJ:35:SER:N | 2.83 | 0.42 |
| 52:DV:15:GLU:CB | 52:DV:16:PRO:CD | 2.89 | 0.42 |
| 35:DA:907:U:O2' | 47:DQ:101:ARG:NH2 | 2.52 | 0.42 |
| 46:BP:99:LEU:HA | 46:BP:102:ARG:HH22 | 1.84 | 0.42 |
| 35:BA:2308:G:C2 | 35:BA:2309:A:C6 | 3.08 | 0.42 |
| 47:BQ:43:THR:CB | 47:BQ:45:GLN:HE21 | 2.31 | 0.42 |
| 20:AT:71:THR:CG2 | 20:AT:72:LEU:H | 2.31 | 0.42 |
| 55:BY:50:ARG:HB2 | 55:BY:53:PRO:HA | 2.02 | 0.42 |
| 35:DA:195:A:H5'' | 35:DA:196:A:OP2 | 2.20 | 0.42 |
| 35:DA:1264:G:C3' | 35:DA:1265:A:H5'' | 2.49 | 0.42 |
| 41:BG:172:LEU:HD23 | 41:BG:173:LEU:N | 2.35 | 0.42 |
| 35:DA:2111:C:H42 | 35:DA:2147:G:N2 | 2.18 | 0.42 |
| 11:CK:48:ILE:HG22 | 11:CK:49:GLY:H | 1.85 | 0.42 |
| 32:D7:9:ARG:CZ | 35:DA:1310:G:OP2 | 2.68 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:2870:C:H2' | 35:DA:2871:C:H5' | 2.02 | 0.42 |
| 46:DP:95:VAL:HG23 | 46:DP:125:VAL:HG23 | 2.02 | 0.42 |
| 23:CW:57:G:H21 | 23:CW:58:A:C4' | 2.33 | 0.42 |
| 23:CW:15:G:N2 | 23:CW:59:U:H1' | 2.35 | 0.42 |
| 1:CA:1334:G:H5' | 1:CA:1335:C:OP2 | 2.20 | 0.42 |
| 17:CQ:61:GLU:HA | 17:CQ:71:PHE:CE1 | 2.54 | 0.42 |
| 26:B1:3:LYS:HE2 | 35:BA:1364:G:N7 | 2.35 | 0.42 |
| 35:BA:2364:C:H2' | 35:BA:2365:G:O4' | 2.20 | 0.42 |
| 6:AF:100:ASN:N | 6:AF:100:ASN:ND2 | 2.68 | 0.42 |
| 35:DA:2175:C:H2' | 35:DA:2176:A:C8 | 2.55 | 0.42 |
| 35:DA:364:C:H2' | 35:DA:365:C:C5' | 2.50 | 0.42 |
| 9:CI:4:TYR:HD1 | 9:CI:4:TYR:N | 2.18 | 0.42 |
| 23:CW:24:G:H2' | 23:CW:25:C:C6 | 2.55 | 0.42 |
| 28:B3:19:GLN:NE2 | 28:B3:52:HIS:CE1 | 2.87 | 0.42 |
| 9:AI:112:LYS:HD2 | 9:AI:117:HIS:O | 2.19 | 0.42 |
| 50:DT:35:LYS:CE | 50:DT:41:ARG:HG3 | 2.50 | 0.42 |
| 11:AK:43:SER:HA | 11:AK:47:VAL:HG21 | 2.02 | 0.42 |
| 45:BO:24:VAL:HG21 | 45:BO:32:TYR:O | 2.19 | 0.42 |
| 8:AH:40:ALA:O | 8:AH:42:GLU:N | 2.53 | 0.42 |
| 35:BA:1754:C:H5' | 50:BT:101:PHE:CE2 | 2.55 | 0.42 |
| 35:DA:330:A:H2 | 35:DA:1210:A:H2' | 1.84 | 0.42 |
| 33:D8:14:VAL:HG21 | 33:D8:22:VAL:HG13 | 2.01 | 0.42 |
| 41:BG:139:LEU:C | 41:BG:139:LEU:HD23 | 2.41 | 0.42 |
| 35:BA:1490:A:H62 | 38:BD:98:VAL:HG11 | 1.84 | 0.42 |
| 47:BQ:111:GLU:OE2 | 47:BQ:133:ARG:NH2 | 2.52 | 0.42 |
| 16:CP:25:ARG:HG3 | 16:CP:25:ARG:NH1 | 2.35 | 0.42 |
| 18:CR:85:LEU:CG | 18:CR:86:VAL:H | 2.33 | 0.42 |
| 22:AY:3:C:H2' | 22:AY:4:C:H6 | 1.85 | 0.42 |
| 2:CB:59:GLU:HB2 | 2:CB:221:LEU:HD11 | 2.00 | 0.42 |
| 14:CN:43:CYS:O | 14:CN:46:GLU:HB2 | 2.20 | 0.42 |
| 14:CN:47:LEU:HB2 | 14:CN:53:LEU:HD11 | 2.01 | 0.42 |
| 1:CA:986:A:H2' | 1:CA:987:G:C8 | 2.55 | 0.42 |
| 1:CA:986:A:H1' | 19:CS:55:LYS:HA | 2.02 | 0.42 |
| 45:DO:71:ARG:C | 45:DO:73:ASP:N | 2.72 | 0.42 |
| 50:DT:78:LEU:C | 50:DT:79:HIS:ND1 | 2.73 | 0.42 |
| 51:BU:44:ASN:HD21 | 52:BV:75:PHE:N | 2.17 | 0.42 |
| 17:AQ:99:SER:OG | 17:AQ:100:LYS:N | 2.51 | 0.42 |
| 22:CV:75:C:H2' | 22:CV:76:8AN:O4' | 2.19 | 0.42 |
| 35:BA:262:A:H2' | 35:BA:263:C:O4' | 2.20 | 0.42 |
| 35:BA:2236:C:H2' | 35:BA:2237:G:C5' | 2.48 | 0.42 |
| 15:CO:46:HIS:C | 15:CO:48:LYS:N | 2.74 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:CM:29:ARG:HD3 | 13:CM:64:TRP:CZ2 | 2.55 | 0.42 |
| 36:BB:80:U:H2' | 36:BB:81:G:C8 | 2.55 | 0.42 |
| 48:DR:56:LYS:HD2 | 48:DR:94:TYR:CE2 | 2.55 | 0.42 |
| 35:BA:817:C:H2' | 35:BA:818:G:O4' | 2.19 | 0.42 |
| 1:AA:34:C:O2' | 1:AA:35:G:H5' | 2.20 | 0.42 |
| 2:AB:60:ASP:OD2 | 2:AB:64:ARG:NH2 | 2.53 | 0.42 |
| 51:DU:108:GLU:HA | 51:DU:111:GLU:HG2 | 2.02 | 0.42 |
| 2:CB:24:TRP:H | 2:CB:24:TRP:HD1 | 1.67 | 0.42 |
| 3:CC:164:ARG:CB | 3:CC:164:ARG:NH1 | 2.83 | 0.42 |
| 35:BA:2063:C:H2' | 35:BA:2064:C:H5' | 2.02 | 0.42 |
| 1:AA:119:A:O2' | 1:AA:120:A:OP2 | 2.29 | 0.42 |
| 40:DF:150:GLY:HA2 | 40:DF:172:TRP:CE3 | 2.54 | 0.42 |
| 1:AA:1414:U:H2' | 1:AA:1415:G:H8 | 1.85 | 0.42 |
| 36:BB:39:A:O2' | 36:BB:46:A:N1 | 2.48 | 0.42 |
| 8:AH:67:PRO:O | 8:AH:68:ARG:C | 2.58 | 0.42 |
| 1:CA:27:G:H2' | 1:CA:28:G:O4' | 2.20 | 0.42 |
| 35:BA:921:G:H4' | 35:BA:2269:A:C6 | 2.55 | 0.42 |
| 37:BC:23:ASP:O | 37:BC:26:ALA:HB3 | 2.20 | 0.42 |
| 6:AF:49:ALA:HB1 | 18:AR:80:PRO:HG3 | 2.02 | 0.42 |
| 20:AT:76:ALA:O | 20:AT:80:ARG:HG2 | 2.20 | 0.42 |
| 35:BA:1972:A:H2' | 35:BA:1973:G:H8 | 1.84 | 0.42 |
| 26:D1:40:ARG:HD3 | 26:D1:40:ARG:C | 2.40 | 0.42 |
| 34:D9:8:LYS:HE2 | 34:D9:8:LYS:HB3 | 1.90 | 0.42 |
| 38:BD:268:ARG:HB3 | 38:BD:268:ARG:CZ | 2.49 | 0.42 |
| 35:BA:967:C:O2' | 35:BA:968:G:H5' | 2.19 | 0.42 |
| 35:BA:1424:G:H2' | 35:BA:1425:G:O4' | 2.20 | 0.42 |
| 54:DX:18:TYR:HA | 54:DX:21:PHE:CD1 | 2.55 | 0.42 |
| 49:BS:27:SER:HA | 49:BS:88:ASP:HB3 | 2.02 | 0.41 |
| 35:DA:1243:G:C6 | 35:DA:1244:G:C5 | 3.08 | 0.41 |
| 40:BF:117:ARG:HD3 | 40:BF:117:ARG:HA | 1.74 | 0.41 |
| 49:DS:18:ILE:HD13 | 49:DS:18:ILE:HA | 1.94 | 0.41 |
| 1:AA:1346:A:H5' | 9:AI:120:ARG:NH1 | 2.35 | 0.41 |
| 35:DA:2864:G:O2' | 35:DA:2865:U:H5' | 2.19 | 0.41 |
| 1:CA:1198:G:H2' | 1:CA:1199:U:O4' | 2.20 | 0.41 |
| 35:DA:1884:A:C3' | 35:DA:1885:A:H5'' | 2.48 | 0.41 |
| 38:BD:35:LYS:HE3 | 38:BD:36:PRO:N | 2.35 | 0.41 |
| 36:BB:75:G:H22 | 56:BZ:73:GLN:NE2 | 2.18 | 0.41 |
| 13:AM:65:LYS:HB3 | 13:AM:65:LYS:HZ2 | 1.84 | 0.41 |
| 35:DA:1686:C:C2' | 35:DA:1687:G:H5' | 2.50 | 0.41 |
| 41:BG:39:ILE:HD13 | 41:BG:155:MET:SD | 2.60 | 0.41 |
| 42:BH:116:GLU:HG2 | 42:BH:117:PRO:HD2 | 2.00 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:DG:33:ARG:HB2 | 41:DG:162:THR:HG21 | 2.02 | 0.41 |
| 55:DY:29:GLU:HB2 | 55:DY:38:ILE:HG13 | 2.02 | 0.41 |
| 35:BA:2543:G:H21 | 35:BA:2646:C:H5'' | 1.85 | 0.41 |
| 35:DA:2645:G:C3' | 35:DA:2646:C:C5' | 2.93 | 0.41 |
| 5:CE:50:GLU:HG3 | 5:CE:52:PRO:HD2 | 2.02 | 0.41 |
| 1:AA:1271:G:H5' | 1:AA:1314:C:H5' | 2.01 | 0.41 |
| 1:CA:1126:U:P | 1:CA:1126:U:H6 | 2.42 | 0.41 |
| 47:DQ:19:GLY:HA3 | 56:DZ:79:ARG:HH22 | 1.79 | 0.41 |
| 23:AW:66:U:O2' | 23:AW:67:C:H5' | 2.20 | 0.41 |
| 44:DN:128:HIS:O | 44:DN:130:HIS:N | 2.53 | 0.41 |
| 35:DA:1022:G:O2' | 35:DA:1023:U:P | 2.77 | 0.41 |
| 37:BC:158:ALA:C | 37:BC:160:ARG:H | 2.23 | 0.41 |
| 35:DA:589:C:H2' | 35:DA:590:A:H8 | 1.83 | 0.41 |
| 23:AW:57:G:H21 | 23:AW:58:A:H4' | 1.85 | 0.41 |
| 42:BH:141:VAL:HG12 | 42:BH:142:GLY:H | 1.84 | 0.41 |
| 43:DI:133:HIS:ND1 | 43:DI:134:PRO:HD2 | 2.35 | 0.41 |
| 1:CA:137:C:H1' | 16:CP:62:VAL:O | 2.20 | 0.41 |
| 35:DA:1301:A:O2' | 35:DA:1302:A:P | 2.78 | 0.41 |
| 6:AF:69:GLU:O | 6:AF:70:ASP:C | 2.58 | 0.41 |
| 35:DA:1318:C:C3' | 35:DA:1319:G:H5'' | 2.41 | 0.41 |
| 27:B2:20:GLU:O | 27:B2:23:LYS:HB2 | 2.19 | 0.41 |
| 35:BA:923:C:H2' | 35:BA:924:C:H6 | 1.85 | 0.41 |
| 42:BH:24:VAL:HG23 | 42:BH:24:VAL:O | 2.20 | 0.41 |
| 22:AY:16:U:C3' | 22:AY:17:C:C5' | 2.96 | 0.41 |
| 4:CD:11:LEU:O | 4:CD:13:ARG:N | 2.53 | 0.41 |
| 23:CW:37:A:H2' | 23:CW:38:A:O4' | 2.20 | 0.41 |
| 3:CC:19:GLU:HA | 3:CC:54:ARG:NH2 | 2.35 | 0.41 |
| 39:BE:143:ASN:CB | 39:BE:147:PRO:HD2 | 2.44 | 0.41 |
| 12:CL:6:THR:HG23 | 12:CL:9:GLN:H | 1.85 | 0.41 |
| 35:BA:2815:C:H2' | 35:BA:2816:C:C6 | 2.51 | 0.41 |
| 40:BF:32:LEU:HD22 | 40:BF:112:MET:CE | 2.48 | 0.41 |
| 19:AS:29:ARG:HD3 | 19:AS:48:THR:OG1 | 2.20 | 0.41 |
| 8:CH:12:ARG:HH11 | 8:CH:26:VAL:HA | 1.84 | 0.41 |
| 36:DB:77:U:OP1 | 56:DZ:15:PRO:HB2 | 2.20 | 0.41 |
| 35:BA:1221:C:C6 | 35:BA:1221:C:H5' | 2.40 | 0.41 |
| 1:AA:1399:C:C2 | 1:AA:1502:A:N6 | 2.88 | 0.41 |
| 35:BA:1488:G:N3 | 35:BA:1488:G:H2' | 2.34 | 0.41 |
| 35:BA:2736:G:O2' | 35:BA:2737:G:H5' | 2.19 | 0.41 |
| 36:BB:56:G:H4' | 36:BB:57:A:H8 | 1.85 | 0.41 |
| 1:AA:1203:C:OP1 | 14:AN:3:ARG:HD2 | 2.20 | 0.41 |
| 11:CK:43:SER:HA | 11:CK:47:VAL:HG21 | 2.01 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 52:BV:21:ARG:HB3 | 52:BV:91:TYR:CB | 2.46 | 0.41 |
| 35:DA:1106:A:C4 | 35:DA:1107:G:N7 | 2.88 | 0.41 |
| 35:DA:94:C:O2 | 35:DA:94:C:H2' | 2.20 | 0.41 |
| 6:AF:60:PHE:N | 6:AF:60:PHE:CD1 | 2.88 | 0.41 |
| 35:DA:455:C:H3' | 35:DA:456:C:H5'' | 2.01 | 0.41 |
| 8:AH:44:PHE:HA | 8:AH:79:VAL:CG1 | 2.49 | 0.41 |
| 44:DN:82:LEU:HD12 | 44:DN:82:LEU:HA | 1.83 | 0.41 |
| 10:AJ:40:LEU:CD2 | 10:AJ:69:ASN:HB3 | 2.50 | 0.41 |
| 38:BD:10:THR:O | 38:BD:13:ARG:HB3 | 2.19 | 0.41 |
| 14:CN:42:ILE:O | 14:CN:46:GLU:HG3 | 2.19 | 0.41 |
| 1:AA:244:U:O4 | 1:AA:906:G:H1' | 2.20 | 0.41 |
| 22:CV:37:A:H3' | 22:CV:38:A:C8 | 2.51 | 0.41 |
| 54:BX:66:LEU:C | 54:BX:66:LEU:CD2 | 2.87 | 0.41 |
| 1:AA:638:G:O2' | 1:AA:639:G:H5' | 2.19 | 0.41 |
| 40:DF:45:ARG:NH1 | 40:DF:97:TYR:CE1 | 2.88 | 0.41 |
| 54:DX:66:LEU:C | 54:DX:66:LEU:CD2 | 2.88 | 0.41 |
| 23:AW:14:A:H3' | 23:AW:15:G:C8 | 2.54 | 0.41 |
| 50:BT:78:LEU:HD22 | 50:BT:79:HIS:CE1 | 2.55 | 0.41 |
| 53:DW:84:ARG:HB2 | 53:DW:96:ILE:HG22 | 2.02 | 0.41 |
| 35:BA:2025:C:H2' | 35:BA:2026:C:H6 | 1.84 | 0.41 |
| 11:CK:102:GLY:C | 11:CK:103:LEU:HD22 | 2.41 | 0.41 |
| 1:AA:590:C:H2' | 1:AA:591:U:C6 | 2.55 | 0.41 |
| 1:CA:189(B):C:H2' | 1:CA:189(C):C:C6 | 2.55 | 0.41 |
| 35:BA:1675:C:C2 | 39:BE:129:HIS:CD2 | 3.07 | 0.41 |
| 17:AQ:95:TYR:O | 17:AQ:98:LEU:N | 2.53 | 0.41 |
| 52:BV:83:ARG:HG2 | 52:BV:83:ARG:HH11 | 1.85 | 0.41 |
| 35:BA:1861:G:H1 | 35:BA:1881:C:H42 | 1.66 | 0.41 |
| 1:AA:1508:G:H2' | 1:AA:1509:C:O4' | 2.20 | 0.41 |
| 1:CA:1389:C:H2' | 1:CA:1390:U:O4' | 2.20 | 0.41 |
| 3:AC:94:LEU:HD12 | 3:AC:94:LEU:O | 2.20 | 0.41 |
| 35:BA:576:U:H2' | 35:BA:577:G:C8 | 2.55 | 0.41 |
| 35:DA:13:A:H61 | 35:DA:525:U:H3' | 1.85 | 0.41 |
| 35:DA:19:C:H2' | 35:DA:20:C:H6 | 1.85 | 0.41 |
| 26:B1:95:LEU:HA | 26:B1:95:LEU:HD12 | 1.79 | 0.41 |
| 1:AA:749:C:O2 | 1:AA:749:C:H2' | 2.20 | 0.41 |
| 55:DY:34:LYS:HE2 | 55:DY:34:LYS:HB3 | 1.91 | 0.41 |
| 33:B8:58:ILE:HG22 | 33:B8:58:ILE:O | 2.20 | 0.41 |
| 20:CT:25:ARG:HH11 | 20:CT:25:ARG:HG3 | 1.85 | 0.41 |
| 11:AK:114:VAL:HG13 | 11:AK:114:VAL:O | 2.19 | 0.41 |
| 45:DO:12:ASP:C | 45:DO:14:THR:H | 2.23 | 0.41 |
| 47:DQ:140:ALA:HB1 | 56:DZ:99:TYR:CB | 2.41 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:DF:2:LYS:H | 40:DF:2:LYS:HD3 | 1.84 | 0.41 |
| 1:AA:1053:G:C3' | 1:AA:1054:C:C5' | 2.95 | 0.41 |
| 1:AA:952:U:H4' | 1:AA:964:A:N1 | 2.35 | 0.41 |
| 35:DA:613:G:C2 | 35:DA:615:G:C5 | 3.08 | 0.41 |
| 49:DS:18:ILE:C | 49:DS:20:ARG:N | 2.72 | 0.41 |
| 18:CR:36:ASN:N | 18:CR:36:ASN:OD1 | 2.50 | 0.41 |
| 51:BU:79:PHE:HE1 | 51:BU:106:PHE:CZ | 2.38 | 0.41 |
| 52:BV:35:LEU:O | 52:BV:36:PRO:C | 2.57 | 0.41 |
| 40:BF:37:VAL:O | 40:BF:38:ARG:C | 2.58 | 0.41 |
| 7:CG:79:ARG:HD3 | 7:CG:80:VAL:H | 1.84 | 0.41 |
| 1:CA:1258:G:O2' | 1:CA:1259:C:H5' | 2.20 | 0.41 |
| 3:CC:110:ASN:C | 3:CC:112:SER:N | 2.74 | 0.41 |
| 5:AE:79:GLU:HB3 | 5:AE:92:LYS:HG3 | 2.01 | 0.41 |
| 37:BC:66:HIS:NE2 | 37:BC:187:ASP:HA | 2.35 | 0.41 |
| 43:BI:37:VAL:CG1 | 43:BI:38:LEU:N | 2.83 | 0.41 |
| 35:DA:2126:A:O2' | 35:DA:2127:G:OP2 | 2.37 | 0.41 |
| 51:DU:110:VAL:O | 51:DU:113:ALA:HB3 | 2.20 | 0.41 |
| 40:BF:160:ASN:HD22 | 40:BF:160:ASN:C | 2.23 | 0.41 |
| 41:DG:178:PHE:O | 41:DG:180:PHE:N | 2.53 | 0.41 |
| 55:DY:26:LYS:O | 55:DY:28:LYS:HE3 | 2.21 | 0.41 |
| 35:DA:309:G:O3' | 55:DY:18:GLY:HA2 | 2.20 | 0.41 |
| 10:CJ:3:LYS:O | 10:CJ:100:THR:HG22 | 2.19 | 0.41 |
| 45:BO:63:VAL:HG23 | 45:BO:83:ALA:CB | 2.49 | 0.41 |
| 3:AC:14:ILE:HG23 | 3:AC:15:THR:N | 2.27 | 0.41 |
| 43:BI:71:ILE:CG1 | 43:BI:72:LEU:N | 2.77 | 0.41 |
| 49:BS:61:ASN:OD1 | 49:BS:64:GLU:OE2 | 2.38 | 0.41 |
| 35:BA:1022:G:O2' | 35:BA:1023:U:P | 2.78 | 0.41 |
| 27:B2:3:LEU:C | 27:B2:5:GLU:N | 2.73 | 0.41 |
| 44:DN:62:VAL:HG22 | 44:DN:66:LYS:CD | 2.42 | 0.41 |
| 35:BA:271(Q):G:O2' | 35:BA:271(R):G:P | 2.78 | 0.41 |
| 42:DH:85:LYS:HZ2 | 42:DH:133:VAL:HB | 1.84 | 0.41 |
| 42:DH:85:LYS:CE | 42:DH:145:ALA:HB2 | 2.50 | 0.41 |
| 27:D2:25:VAL:O | 27:D2:26:ARG:C | 2.58 | 0.41 |
| 1:AA:617:G:C2 | 1:AA:618:C:C5 | 3.07 | 0.41 |
| 35:DA:2418:A:C6 | 35:DA:2419:U:C4 | 3.09 | 0.41 |
| 35:DA:2605:U:H2' | 35:DA:2606:C:C6 | 2.55 | 0.41 |
| 1:CA:227:G:O2' | 1:CA:228:A:H5' | 2.19 | 0.41 |
| 35:DA:1169:G:H2' | 35:DA:1170:G:O4' | 2.20 | 0.41 |
| 36:DB:15:A:H1' | 36:DB:110:G:C5 | 2.55 | 0.41 |
| 36:DB:15:A:C3' | 36:DB:16:G:H5' | 2.50 | 0.41 |
| 15:AO:74:ASP:OD2 | 15:AO:77:ARG:N | 2.51 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 36:BB:71:C:C2 | 36:BB:72:G:C8 | 3.08 | 0.41 |
| 1:CA:1203:C:OP1 | 14:CN:3:ARG:HD2 | 2.20 | 0.41 |
| 20:CT:51:GLU:O | 20:CT:55:ILE:HG12 | 2.20 | 0.41 |
| 35:BA:1503:U:O2' | 35:BA:1504:C:H5' | 2.19 | 0.41 |
| 1:AA:1334:G:H5' | 1:AA:1335:C:OP2 | 2.20 | 0.41 |
| 15:CO:18:PHE:HD1 | 15:CO:19:PRO:O | 2.03 | 0.41 |
| 53:BW:73:ALA:HB3 | 53:BW:106:ILE:CD1 | 2.41 | 0.41 |
| 35:BA:676:A:H8 | 35:BA:2069:G:N2 | 2.09 | 0.41 |
| 35:BA:2849:U:O4 | 50:BT:23:ARG:NH2 | 2.50 | 0.41 |
| 3:CC:19:GLU:HG2 | 3:CC:19:GLU:O | 2.20 | 0.41 |
| 40:BF:78:ILE:HA | 40:BF:83:PHE:CD1 | 2.55 | 0.41 |
| 35:DA:8:A:H2 | 35:DA:2896:C:O2 | 2.03 | 0.41 |
| 1:AA:1014:A:H5' | 19:AS:14:HIS:CD2 | 2.54 | 0.41 |
| 5:CE:68:GLU:O | 5:CE:69:VAL:C | 2.58 | 0.41 |
| 37:BC:68:LEU:HD22 | 37:BC:180:PHE:N | 2.26 | 0.41 |
| 1:AA:645:C:H2' | 1:AA:646:U:C6 | 2.55 | 0.41 |
| 1:AA:648:A:H2' | 1:AA:649:G:H8 | 1.86 | 0.41 |
| 1:AA:1064:G:OP2 | 1:AA:1386:G:H4' | 2.20 | 0.41 |
| 9:CI:20:ARG:HH11 | 9:CI:20:ARG:CG | 2.31 | 0.41 |
| 56:BZ:177:PRO:HB2 | 56:BZ:178:GLU:H | 1.72 | 0.41 |
| 18:AR:56:THR:O | 18:AR:58:LEU:N | 2.53 | 0.41 |
| 35:DA:2348:U:O2' | 35:DA:2349:G:H5'' | 2.20 | 0.41 |
| 1:CA:383:A:C2' | 1:CA:384:G:H5' | 2.50 | 0.41 |
| 11:AK:29:ILE:CB | 11:AK:44:SER:HB3 | 2.45 | 0.41 |
| 11:CK:91:ARG:HH11 | 11:CK:91:ARG:HG2 | 1.86 | 0.41 |
| 6:AF:60:PHE:O | 6:AF:61:LEU:HD12 | 2.20 | 0.41 |
| 6:CF:86:ARG:O | 6:CF:87:ARG:HG2 | 2.20 | 0.41 |
| 38:DD:9:TYR:CD2 | 38:DD:10:THR:HG22 | 2.55 | 0.41 |
| 2:AB:194:PRO:O | 2:AB:195:ASP:C | 2.57 | 0.41 |
| 11:AK:109:VAL:HG12 | 11:AK:110:ASP:N | 2.35 | 0.41 |
| 19:AS:70:LYS:HD3 | 19:AS:70:LYS:N | 2.35 | 0.41 |
| 35:DA:1186:G:H2' | 35:DA:1187:G:O4' | 2.20 | 0.41 |
| 35:DA:574:C:N3 | 39:DE:145:LYS:HE2 | 2.35 | 0.41 |
| 2:CB:25:ASN:O | 2:CB:27:LYS:N | 2.53 | 0.41 |
| 41:BG:68:PRO:HB3 | 41:BG:90:LEU:CD2 | 2.48 | 0.41 |
| 7:AG:65:ALA:O | 7:AG:69:VAL:HG23 | 2.20 | 0.41 |
| 30:D5:58:LEU:N | 30:D5:58:LEU:HD12 | 2.31 | 0.41 |
| 42:BH:148:ILE:C | 42:BH:150:ALA:N | 2.73 | 0.41 |
| 2:CB:127:ILE:O | 2:CB:127:ILE:HG22 | 2.20 | 0.41 |
| 1:AA:1248:A:C2' | 1:AA:1249:C:H5' | 2.50 | 0.41 |
| 45:DO:86:ILE:H | 45:DO:86:ILE:CD1 | 2.31 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:CA:301:G:H2' | 1:CA:302:G:C8 | 2.56 | 0.41 |
| 1:CA:502:G:OP1 | 12:CL:117:ARG:N | 2.53 | 0.41 |
| 17:CQ:9:VAL:HA | 17:CQ:55:ASP:O | 2.20 | 0.41 |
| 7:AG:22:LEU:HG | 7:AG:62:PHE:HE2 | 1.84 | 0.41 |
| 1:CA:60:A:P | 1:CA:60:A:H8 | 2.42 | 0.41 |
| 22:CV:50:U:H2' | 22:CV:51:U:C5' | 2.49 | 0.41 |
| 53:DW:20:VAL:HG11 | 53:DW:44:ALA:HA | 2.02 | 0.41 |
| 1:CA:67:C:H2' | 1:CA:68:G:H8 | 1.83 | 0.41 |
| 35:BA:2516:G:C6 | 35:BA:2517:C:C4 | 3.09 | 0.41 |
| 50:BT:78:LEU:HD22 | 50:BT:79:HIS:HE1 | 1.85 | 0.41 |
| 35:BA:437:G:O2' | 35:BA:438:G:H5' | 2.21 | 0.41 |
| 10:AJ:90:LEU:N | 10:AJ:90:LEU:HD12 | 2.35 | 0.41 |
| 35:DA:2038:G:H2' | 35:DA:2039:C:O4' | 2.20 | 0.41 |
| 25:D0:32:ARG:O | 25:D0:35:ASN:ND2 | 2.52 | 0.41 |
| 49:DS:49:VAL:HG12 | 49:DS:50:SER:N | 2.35 | 0.41 |
| 17:CQ:56:VAL:O | 17:CQ:76:LEU:HD12 | 2.20 | 0.41 |
| 35:BA:1048:A:N3 | 35:BA:1048:A:P | 2.93 | 0.41 |
| 35:BA:1669:A:O3' | 35:BA:2549:G:H5' | 2.21 | 0.41 |
| 13:CM:33:ALA:HB1 | 13:CM:59:TYR:HD2 | 1.85 | 0.41 |
| 53:DW:18:ARG:CG | 53:DW:76:VAL:CG1 | 2.98 | 0.41 |
| 17:AQ:89:LEU:O | 17:AQ:92:ARG:HB3 | 2.20 | 0.41 |
| 8:AH:29:SER:HB3 | 8:AH:32:LYS:CG | 2.49 | 0.41 |
| 10:AJ:46:ARG:HA | 10:AJ:64:GLU:HA | 2.01 | 0.41 |
| 2:AB:213:LEU:HD23 | 2:AB:213:LEU:C | 2.41 | 0.41 |
| 20:CT:10:LEU:C | 20:CT:12:ALA:H | 2.24 | 0.41 |
| 1:AA:271:C:H2' | 1:AA:272:C:H6 | 1.85 | 0.41 |
| 1:AA:418:C:H2' | 1:AA:419:C:C6 | 2.56 | 0.41 |
| 29:D4:62:CYS:SG | 29:D4:63:SER:N | 2.93 | 0.41 |
| 1:CA:1360:A:H2' | 1:CA:1361:G:O4' | 2.20 | 0.41 |
| 35:DA:2295:C:O2' | 35:DA:2296:U:H5' | 2.20 | 0.41 |
| 50:DT:19:LEU:HA | 50:DT:20:PRO:HD3 | 1.73 | 0.41 |
| 2:CB:32:ILE:HD11 | 2:CB:40:HIS:HB3 | 2.02 | 0.41 |
| 35:DA:705:A:C2 | 35:DA:727:A:H1' | 2.55 | 0.41 |
| 35:DA:1451:C:N3 | 35:DA:1459:G:O6 | 2.52 | 0.41 |
| 35:BA:614:U:O4' | 35:BA:614:U:O2 | 2.38 | 0.41 |
| 35:DA:1771:C:H2' | 35:DA:1772:G:C8 | 2.55 | 0.41 |
| 56:DZ:56:VAL:CG1 | 56:DZ:57:ILE:N | 2.83 | 0.41 |
| 35:DA:833:U:H5'' | 46:DP:48:PRO:CB | 2.47 | 0.41 |
| 1:CA:1346:A:H5'' | 9:CI:120:ARG:NH1 | 2.35 | 0.41 |
| 2:AB:219:VAL:O | 2:AB:223:ILE:HG12 | 2.19 | 0.41 |
| 2:AB:8:LYS:O | 2:AB:9:GLU:C | 2.59 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:1748:G:H8 | 35:BA:1748:G:H5' | 1.85 | 0.41 |
| 39:DE:15:PHE:CD2 | 50:DT:80:SER:HB2 | 2.55 | 0.41 |
| 36:BB:38:C:O2 | 36:BB:48:A:H1' | 2.20 | 0.41 |
| 41:DG:86:MET:O | 41:DG:87:PRO:O | 2.39 | 0.41 |
| 42:DH:67:LEU:O | 42:DH:71:LEU:HB2 | 2.20 | 0.41 |
| 51:BU:110:VAL:O | 51:BU:113:ALA:HB3 | 2.20 | 0.41 |
| 39:DE:109:LYS:HB3 | 48:DR:2:ARG:NH2 | 2.33 | 0.41 |
| 39:DE:68:ALA:O | 39:DE:70:ALA:N | 2.53 | 0.41 |
| 39:BE:109:LYS:HB3 | 48:BR:2:ARG:NH2 | 2.31 | 0.41 |
| 1:CA:1256:A:H5' | 3:CC:27:LYS:NZ | 2.34 | 0.41 |
| 38:DD:80:ALA:HB2 | 38:DD:96:HIS:CD2 | 2.54 | 0.41 |
| 40:DF:38:ARG:HH12 | 46:DP:16:ARG:NH2 | 2.19 | 0.41 |
| 5:AE:92:LYS:O | 5:AE:119:LEU:HB2 | 2.20 | 0.41 |
| 13:AM:69:GLU:CA | 13:AM:70:LEU:N | 2.64 | 0.41 |
| 37:DC:64:LEU:HD13 | 37:DC:66:HIS:HB2 | 2.00 | 0.41 |
| 52:DV:23:GLU:O | 52:DV:24:LYS:C | 2.58 | 0.41 |
| 1:CA:940:C:H2' | 1:CA:941:G:H8 | 1.82 | 0.41 |
| 29:B4:51:TYR:HE1 | 41:BG:5:VAL:HG13 | 1.85 | 0.41 |
| 52:BV:18:LEU:CG | 52:BV:19:LYS:N | 2.81 | 0.41 |
| 41:DG:114:ILE:O | 41:DG:115:ARG:C | 2.58 | 0.41 |
| 41:DG:32:PRO:HB2 | 41:DG:172:LEU:HD13 | 2.02 | 0.41 |
| 55:BY:40:GLU:HA | 55:BY:40:GLU:OE2 | 2.20 | 0.41 |
| 1:CA:976:G:P | 14:CN:32:SER:H | 2.43 | 0.41 |
| 45:DO:101:PRO:HG3 | 45:DO:120:GLU:HG2 | 2.02 | 0.41 |
| 35:DA:1902:C:H5' | 38:DD:246:PRO:HD3 | 2.02 | 0.41 |
| 48:DR:41:ALA:O | 48:DR:44:LEU:N | 2.54 | 0.41 |
| 55:BY:7:VAL:CG2 | 55:BY:8:LYS:NZ | 2.84 | 0.41 |
| 55:DY:7:VAL:CB | 55:DY:8:LYS:HZ3 | 2.33 | 0.41 |
| 13:AM:56:LEU:HD13 | 13:AM:60:VAL:HG21 | 2.02 | 0.41 |
| 33:D8:30:ARG:HD3 | 33:D8:30:ARG:O | 2.21 | 0.41 |
| 35:BA:143:G:H2' | 35:BA:143(A):C:C6 | 2.55 | 0.41 |
| 30:D5:2:ALA:HB3 | 35:DA:747:U:C2 | 2.55 | 0.41 |
| 41:BG:12:TYR:O | 41:BG:17:PRO:HD3 | 2.20 | 0.41 |
| 1:CA:1057:G:C5 | 1:CA:1204:A:C2 | 3.08 | 0.41 |
| 35:DA:1309:G:C2' | 35:DA:1310:G:H5' | 2.50 | 0.41 |
| 6:CF:100:ASN:N | 6:CF:100:ASN:HD22 | 2.18 | 0.41 |
| 15:AO:18:PHE:HD1 | 15:AO:19:PRO:O | 2.03 | 0.41 |
| 23:CW:16:U:C4 | 23:CW:18:G:H3' | 2.55 | 0.41 |
| 20:CT:14:LYS:HA | 20:CT:17:ARG:NE | 2.34 | 0.41 |
| 38:BD:122:ASP:OD1 | 38:BD:123:ALA:N | 2.54 | 0.41 |
| 43:BI:60:GLU:CD | 43:BI:64:GLU:HG3 | 2.39 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:73:G:C2 | 1:AA:97:G:N1 | 2.87 | 0.41 |
| 1:AA:1503:A:O2' | 1:AA:1504:G:O5' | 2.33 | 0.41 |
| 47:BQ:109:VAL:CG1 | 47:BQ:110:THR:N | 2.84 | 0.41 |
| 56:BZ:114:GLY:HA3 | 56:BZ:177:PRO:HG3 | 2.01 | 0.41 |
| 13:CM:16:ASP:O | 13:CM:30:ALA:HB1 | 2.19 | 0.41 |
| 35:DA:2348:U:C2' | 35:DA:2349:G:C5' | 2.91 | 0.41 |
| 35:BA:34:C:C4 | 35:BA:455:C:H5' | 2.55 | 0.41 |
| 56:BZ:13:GLU:O | 56:BZ:15:PRO:HD3 | 2.20 | 0.41 |
| 35:DA:1453:U:O2 | 48:DR:60:LEU:HD21 | 2.20 | 0.41 |
| 35:DA:1210:A:O2' | 35:DA:1211:U:OP2 | 2.33 | 0.41 |
| 35:DA:2652:C:H42 | 35:DA:2668:G:H1 | 1.68 | 0.41 |
| 38:BD:206:LEU:O | 38:BD:211:ARG:HG2 | 2.20 | 0.41 |
| 40:BF:89:VAL:C | 40:BF:91:GLY:H | 2.24 | 0.41 |
| 44:BN:82:LEU:HA | 44:BN:82:LEU:HD12 | 1.81 | 0.41 |
| 7:CG:135:VAL:O | 7:CG:138:LYS:HB3 | 2.20 | 0.41 |
| 25:B0:14:ARG:O | 25:B0:15:ASP:HB2 | 2.20 | 0.41 |
| 37:BC:45:ALA:O | 37:BC:46:LYS:CB | 2.63 | 0.41 |
| 35:DA:814:C:H41 | 46:DP:27:HIS:CD2 | 2.38 | 0.41 |
| 23:CW:32:U:C2' | 23:CW:33:U:H5' | 2.50 | 0.41 |
| 1:AA:1229:A:H2' | 1:AA:1230:C:C6 | 2.55 | 0.41 |
| 1:CA:986:A:H2' | 1:CA:987:G:H8 | 1.85 | 0.41 |
| 1:CA:189(I):G:H2' | 1:CA:189(J):G:H8 | 1.85 | 0.41 |
| 29:D4:40:ILE:HA | 29:D4:57:ILE:HB | 2.02 | 0.41 |
| 2:CB:19:HIS:CG | 2:CB:20:GLU:N | 2.85 | 0.41 |
| 35:BA:2328:A:H2' | 35:BA:2329:G:H8 | 1.85 | 0.41 |
| 1:AA:1479:C:O2' | 1:AA:1480:G:H5' | 2.20 | 0.41 |
| 1:AA:472:A:H4' | 16:AP:82:GLN:HE22 | 1.83 | 0.41 |
| 1:CA:1378:C:H5" | 7:CG:6:ARG:HE | 1.84 | 0.41 |
| 11:AK:104:GLN:C | 11:AK:106:LYS:H | 2.23 | 0.41 |
| 53:DW:82:LEU:HB3 | 53:DW:84:ARG:HH12 | 1.85 | 0.41 |
| 4:AD:126:ILE:CG2 | 4:AD:127:THR:N | 2.83 | 0.41 |
| 51:DU:44:ASN:HD22 | 52:DV:75:PHE:HB3 | 1.83 | 0.41 |
| 35:BA:2464:C:HO2' | 35:BA:2465:C:P | 2.43 | 0.41 |
| 48:BR:107:ASP:C | 48:BR:107:ASP:OD2 | 2.59 | 0.41 |
| 1:AA:1487:G:H2' | 1:AA:1488:G:H5' | 2.02 | 0.41 |
| 35:BA:1670:C:O2 | 39:BE:129:HIS:HE1 | 2.04 | 0.41 |
| 50:BT:70:VAL:HG12 | 50:BT:71:GLY:N | 2.35 | 0.41 |
| 35:BA:1983:C:O2' | 35:BA:1984:G:H5' | 2.20 | 0.41 |
| 1:CA:1445:C:C4 | 1:CA:1446:U:C4 | 3.09 | 0.41 |
| 38:BD:45:ASN:CG | 38:BD:46:GLN:H | 2.22 | 0.41 |
| 6:AF:77:ARG:NH1 | 6:AF:77:ARG:CB | 2.83 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 28:D3:4:LEU:HD23 | 28:D3:4:LEU:HA | 1.90 | 0.41 |
| 35:DA:690:G:H2' | 35:DA:691:C:C6 | 2.56 | 0.41 |
| 17:AQ:62:SER:CB | 17:AQ:72:ARG:HG3 | 2.50 | 0.41 |
| 44:BN:87:LEU:CD2 | 44:BN:87:LEU:O | 2.68 | 0.41 |
| 35:BA:960:A:C4' | 35:BA:2457:U:H4' | 2.50 | 0.41 |
| 35:DA:239:U:H2' | 35:DA:240:G:O4' | 2.20 | 0.41 |
| 1:AA:1296:C:H5' | 1:AA:1297:C:OP2 | 2.20 | 0.41 |
| 37:DC:221:SER:O | 37:DC:222:VAL:O | 2.39 | 0.41 |
| 35:BA:1554:A:H3' | 35:BA:1555:G:H8 | 1.85 | 0.41 |
| 51:BU:28:ARG:HG2 | 51:BU:38:THR:OG1 | 2.20 | 0.41 |
| 35:DA:394:A:C6 | 35:DA:395:U:C4 | 3.08 | 0.41 |
| 35:BA:116:C:O2' | 35:BA:117:G:H5' | 2.20 | 0.41 |
| 1:AA:959:A:H3' | 1:AA:960:U:H5'' | 2.01 | 0.41 |
| 35:DA:464:U:O2' | 35:DA:465:G:H5' | 2.20 | 0.41 |
| 1:AA:1429:C:H2' | 1:AA:1430:C:H6 | 1.85 | 0.41 |
| 4:AD:169:LYS:HE2 | 4:AD:169:LYS:HB3 | 1.83 | 0.41 |
| 35:BA:2110:G:OP2 | 35:BA:2110:G:H8 | 2.03 | 0.41 |
| 1:CA:1026:G:N3 | 1:CA:1026:G:H2' | 2.35 | 0.41 |
| 55:BY:35:TYR:CE2 | 55:BY:69:ALA:HB3 | 2.55 | 0.41 |
| 1:AA:1261:A:H2' | 1:AA:1262:C:H5' | 2.02 | 0.41 |
| 30:D5:15:ARG:HH21 | 35:DA:2021:C:P | 2.43 | 0.41 |
| 47:DQ:141:GLN:CB | 56:DZ:98:MET:HA | 2.49 | 0.41 |
| 40:DF:27:GLU:O | 40:DF:28:ILE:C | 2.59 | 0.41 |
| 46:BP:5:ASP:OD2 | 46:BP:6:LEU:HD22 | 2.21 | 0.41 |
| 9:CI:66:ARG:CB | 9:CI:66:ARG:NH1 | 2.84 | 0.41 |
| 2:CB:220:ASP:C | 2:CB:222:ILE:N | 2.72 | 0.41 |
| 44:BN:116:LEU:C | 44:BN:118:LYS:N | 2.74 | 0.41 |
| 37:DC:36:LYS:CD | 37:DC:37:PHE:H | 2.34 | 0.41 |
| 52:DV:39:LEU:HB3 | 52:DV:47:VAL:CG1 | 2.51 | 0.41 |
| 35:DA:1496:A:N7 | 35:DA:1498:C:N3 | 2.68 | 0.41 |
| 42:BH:100:GLY:C | 42:BH:102:ALA:N | 2.73 | 0.41 |
| 55:DY:27:VAL:C | 55:DY:28:LYS:HZ2 | 2.24 | 0.41 |
| 1:CA:1058:G:H2' | 1:CA:1059:C:O4' | 2.20 | 0.41 |
| 35:BA:863:A:P | 47:BQ:22:LYS:HG2 | 2.61 | 0.41 |
| 43:BI:40:THR:O | 43:BI:44:LEU:HB2 | 2.20 | 0.41 |
| 47:DQ:54:MET:HG2 | 47:DQ:64:ILE:HG21 | 2.02 | 0.41 |
| 45:BO:4:PRO:O | 45:BO:5:GLN:CB | 2.50 | 0.41 |
| 52:BV:72:VAL:HG23 | 52:BV:72:VAL:O | 2.21 | 0.41 |
| 46:DP:102:ARG:HB3 | 46:DP:102:ARG:NH2 | 2.35 | 0.41 |
| 41:DG:64:THR:OG1 | 41:DG:94:LEU:HD21 | 2.20 | 0.41 |
| 35:BA:271(D):G:N2 | 35:BA:271(T):C:N3 | 2.68 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BC:83:ILE:HD11 | 37:BC:95:GLY:O | 2.20 | 0.41 |
| 37:DC:158:ALA:C | 37:DC:160:ARG:N | 2.73 | 0.41 |
| 26:D1:29:GLY:C | 26:D1:31:GLY:H | 2.24 | 0.41 |
| 45:DO:87:ILE:CG2 | 45:DO:88:ASN:N | 2.83 | 0.41 |
| 26:D1:87:PRO:O | 26:D1:90:ILE:HG12 | 2.20 | 0.41 |
| 20:AT:48:LYS:HB2 | 20:AT:52:ALA:HB2 | 2.01 | 0.41 |
| 17:AQ:59:ILE:N | 17:AQ:59:ILE:HD13 | 2.36 | 0.41 |
| 10:AJ:8:LEU:HD13 | 10:AJ:20:ALA:HA | 2.03 | 0.41 |
| 19:CS:41:VAL:HG13 | 19:CS:42:PRO:HD2 | 2.01 | 0.41 |
| 19:CS:29:ARG:HD3 | 19:CS:48:THR:OG1 | 2.20 | 0.41 |
| 35:DA:2056:G:N2 | 35:DA:2057:A:C4 | 2.88 | 0.41 |
| 1:CA:579:G:C6 | 1:CA:580:U:C4 | 3.08 | 0.41 |
| 35:BA:1331:A:H2' | 35:BA:1333:C:C5 | 2.55 | 0.41 |
| 35:BA:1332:G:H5' | 35:BA:1333:C:H5 | 1.85 | 0.41 |
| 56:BZ:155:LEU:HB2 | 56:BZ:157:LEU:HD22 | 2.02 | 0.41 |
| 35:BA:364:C:H2' | 35:BA:365:C:H5'' | 2.01 | 0.41 |
| 35:DA:2298:A:H62 | 35:DA:2318:G:H8 | 1.67 | 0.41 |
| 1:AA:865:A:H5' | 1:AA:1078:U:O4 | 2.20 | 0.41 |
| 3:CC:5:ILE:C | 3:CC:5:ILE:HD12 | 2.41 | 0.41 |
| 1:AA:1064:G:N2 | 1:AA:1190:G:H2' | 2.34 | 0.41 |
| 35:DA:999:U:C2' | 35:DA:1000:A:H5'' | 2.50 | 0.41 |
| 49:DS:85:VAL:HG22 | 49:DS:106:ARG:CG | 2.50 | 0.41 |
| 47:BQ:39:PRO:O | 47:BQ:40:ALA:CB | 2.63 | 0.41 |
| 1:CA:15:G:H2' | 1:CA:16:A:H8 | 1.86 | 0.41 |
| 40:DF:19:GLU:N | 40:DF:19:GLU:CD | 2.74 | 0.41 |
| 48:BR:104:ARG:CB | 48:BR:104:ARG:NH1 | 2.80 | 0.41 |
| 35:DA:34:C:C2' | 35:DA:35:G:H5' | 2.46 | 0.41 |
| 47:BQ:27:VAL:O | 47:BQ:28:ALA:C | 2.58 | 0.41 |
| 42:DH:43:VAL:CG2 | 42:DH:43:VAL:O | 2.67 | 0.41 |
| 53:BW:14:PRO:O | 53:BW:15:ARG:C | 2.57 | 0.41 |
| 1:AA:1342:C:H1' | 9:AI:124:GLN:NE2 | 2.35 | 0.41 |
| 1:CA:718:G:H5' | 11:CK:117:ASN:CG | 2.40 | 0.41 |
| 43:DI:2:LYS:N | 43:DI:2:LYS:HD2 | 2.35 | 0.41 |
| 7:CG:65:ALA:O | 7:CG:69:VAL:HG23 | 2.20 | 0.41 |
| 1:CA:159:G:H1 | 1:CA:163:C:N4 | 2.18 | 0.41 |
| 38:BD:16:MET:HE1 | 38:BD:208:LYS:HD2 | 2.02 | 0.41 |
| 14:CN:26:ARG:HD3 | 14:CN:43:CYS:HB3 | 2.01 | 0.41 |
| 35:BA:1839:G:H5' | 35:BA:1839:G:C8 | 2.50 | 0.41 |
| 50:DT:78:LEU:O | 50:DT:79:HIS:ND1 | 2.54 | 0.41 |
| 35:BA:2012:G:O3' | 53:BW:96:ILE:HD11 | 2.21 | 0.41 |
| 1:AA:1194:U:H2' | 1:AA:1195:C:H6 | 1.84 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BA:601:C:O2' | 35:BA:605:C:H5'' | 2.21 | 0.41 |
| 35:BA:1005:C:O2' | 44:BN:28:THR:HG21 | 2.21 | 0.41 |
| 35:BA:1548:C:H2' | 35:BA:1549:C:C6 | 2.56 | 0.41 |
| 44:DN:91:LEU:C | 44:DN:93:THR:N | 2.74 | 0.41 |
| 2:AB:16:HIS:HD2 | 2:AB:210:SER:CA | 2.34 | 0.41 |
| 1:CA:161:A:H2' | 1:CA:162:A:O4' | 2.20 | 0.41 |
| 49:DS:105:ALA:O | 49:DS:107:GLU:N | 2.53 | 0.41 |
| 35:DA:1313:U:C2' | 35:DA:1313:U:O2 | 2.68 | 0.41 |
| 35:DA:2689:U:P | 35:DA:2719:G:H22 | 2.44 | 0.41 |
| 35:DA:2222:G:H2' | 35:DA:2223:G:O4' | 2.21 | 0.41 |
| 35:DA:2529:G:OP2 | 35:DA:2530:A:H5'' | 2.20 | 0.41 |
| 19:AS:36:ARG:HH22 | 19:AS:75:ALA:HB3 | 1.84 | 0.41 |
| 22:AV:1:G:O6 | 22:AV:72:C:N4 | 2.52 | 0.41 |
| 18:CR:24:ALA:O | 18:CR:26:LEU:N | 2.52 | 0.41 |
| 1:AA:688:G:H2' | 1:AA:689:C:C6 | 2.54 | 0.41 |
| 17:CQ:62:SER:CB | 17:CQ:72:ARG:HG3 | 2.50 | 0.41 |
| 17:AQ:94:ASN:O | 17:AQ:98:LEU:HG | 2.20 | 0.41 |
| 12:AL:126:LYS:CD | 12:AL:127:GLU:H | 2.32 | 0.41 |
| 35:BA:2842:G:O2' | 35:BA:2843:G:H5' | 2.20 | 0.41 |
| 1:CA:1387:G:C6 | 1:CA:1388:C:N4 | 2.89 | 0.41 |
| 35:BA:1290:C:H2' | 35:BA:1291:C:C6 | 2.56 | 0.41 |
| 5:CE:59:GLY:O | 5:CE:63:ARG:HG3 | 2.20 | 0.41 |
| 1:CA:604:G:C6 | 1:CA:605:U:C4 | 3.08 | 0.41 |
| 1:AA:604:G:C6 | 1:AA:605:U:C4 | 3.08 | 0.41 |
| 35:DA:10:G:C6 | 35:DA:2629:A:C8 | 3.09 | 0.41 |
| 26:B1:33:LYS:HB3 | 35:BA:2432:A:C6 | 2.55 | 0.41 |
| 35:BA:1963:U:C2' | 35:BA:1963:U:O2 | 2.68 | 0.41 |
| 48:BR:118:GLU:HA | 48:BR:118:GLU:OE1 | 2.21 | 0.41 |
| 40:BF:196:LEU:O | 40:BF:199:TRP:HB3 | 2.20 | 0.41 |
| 35:DA:1773:A:C2' | 35:DA:1774:C:H5' | 2.49 | 0.41 |
| 45:BO:50:GLY:C | 45:BO:52:VAL:H | 2.21 | 0.41 |
| 35:DA:777:A:O2' | 35:DA:778:G:H5' | 2.21 | 0.41 |
| 56:DZ:136:PHE:CD1 | 56:DZ:137:ILE:N | 2.88 | 0.41 |
| 56:DZ:29:TYR:O | 56:DZ:89:PHE:CD2 | 2.74 | 0.41 |
| 46:DP:47:ASP:HB2 | 46:DP:51:PHE:HD2 | 1.84 | 0.41 |
| 41:BG:81:LYS:O | 41:BG:82:LEU:C | 2.59 | 0.41 |
| 31:D6:15:GLU:HG2 | 31:D6:18:ARG:CZ | 2.49 | 0.41 |
| 31:D6:16:CYS:O | 31:D6:18:ARG:NH1 | 2.53 | 0.41 |
| 9:CI:92:TYR:C | 9:CI:94:ALA:N | 2.74 | 0.41 |
| 1:AA:1376:U:H2' | 1:AA:1377:A:H8 | 1.85 | 0.41 |
| 35:BA:631:A:HO2' | 46:BP:67:MET:HB3 | 1.84 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:AV:21:A:C3' | 22:AV:22:G:H5'' | 2.50 | 0.41 |
| 52:BV:57:VAL:O | 52:BV:57:VAL:HG13 | 2.19 | 0.41 |
| 56:DZ:121:HIS:CB | 56:DZ:171:ILE:HA | 2.50 | 0.41 |
| 39:BE:92:THR:OG1 | 39:BE:93:VAL:N | 2.53 | 0.41 |
| 5:AE:101:ILE:H | 5:AE:101:ILE:HD13 | 1.85 | 0.41 |
| 13:CM:80:ARG:O | 13:CM:82:MET:N | 2.53 | 0.41 |
| 37:BC:62:VAL:O | 37:BC:63:SER:C | 2.58 | 0.41 |
| 35:BA:1164:G:C2 | 35:BA:1165:U:C2 | 3.08 | 0.41 |
| 33:D8:4:MET:HE2 | 35:DA:593:G:C1' | 2.50 | 0.41 |
| 41:DG:110:ALA:O | 41:DG:111:LEU:C | 2.59 | 0.41 |
| 38:BD:175:LEU:O | 38:BD:182:LEU:HA | 2.21 | 0.41 |
| 35:BA:2492:U:H2' | 35:BA:2493:U:H6 | 1.85 | 0.41 |
| 35:BA:1686:C:H2' | 35:BA:1687:G:H5' | 2.01 | 0.41 |
| 50:DT:57:PHE:CD2 | 50:DT:58:ASN:N | 2.85 | 0.41 |
| 22:AY:43:C:O2' | 22:AY:44:G:H5' | 2.21 | 0.41 |
| 1:AA:1163:C:H5' | 10:CJ:80:LYS:NZ | 2.36 | 0.41 |
| 10:CJ:38:ILE:HG12 | 10:CJ:71:LEU:O | 2.21 | 0.41 |
| 50:BT:8:LYS:HB3 | 50:BT:8:LYS:HE2 | 1.81 | 0.41 |
| 49:BS:33:LYS:HA | 49:BS:33:LYS:HD3 | 1.81 | 0.41 |
| 35:BA:1784:A:H4' | 35:BA:1785:A:C5' | 2.51 | 0.41 |
| 42:DH:123:PHE:HD1 | 42:DH:123:PHE:N | 2.18 | 0.41 |
| 33:B8:32:LEU:CB | 33:B8:36:LYS:NZ | 2.84 | 0.41 |
| 55:BY:31:LEU:HD23 | 55:BY:36:ALA:C | 2.41 | 0.41 |
| 55:BY:48:ALA:O | 55:BY:58:GLY:HA3 | 2.20 | 0.41 |
| 15:CO:78:TYR:O | 15:CO:82:ILE:HG22 | 2.20 | 0.41 |
| 41:BG:125:PHE:O | 41:BG:128:ARG:NE | 2.54 | 0.41 |
| 50:BT:64:ARG:HG2 | 50:BT:64:ARG:NH1 | 2.34 | 0.41 |
| 56:BZ:151:HIS:HA | 56:BZ:171:ILE:CG1 | 2.50 | 0.41 |
| 35:DA:1300:U:O2' | 35:DA:1301:A:P | 2.79 | 0.41 |
| 18:AR:45:SER:H | 18:AR:51:LEU:CG | 2.30 | 0.41 |
| 17:AQ:22:LEU:HD11 | 17:AQ:39:SER:HB2 | 2.03 | 0.41 |
| 4:AD:30:LYS:CB | 4:AD:35:ARG:HD2 | 2.50 | 0.41 |
| 1:AA:1151:A:C4 | 1:AA:1152:A:N7 | 2.88 | 0.41 |
| 19:CS:19:VAL:HG11 | 19:CS:44:MET:CE | 2.50 | 0.41 |
| 35:DA:2364:C:H2' | 35:DA:2365:G:O4' | 2.20 | 0.41 |
| 38:DD:153:ALA:C | 38:DD:154:LYS:HG2 | 2.41 | 0.41 |
| 2:CB:173:ALA:O | 2:CB:174:VAL:C | 2.59 | 0.41 |
| 54:BX:12:VAL:HG13 | 54:BX:27:THR:O | 2.21 | 0.41 |
| 35:DA:2773:C:C2 | 35:DA:2774:C:C5 | 3.08 | 0.41 |
| 5:CE:9:LYS:CB | 5:CE:112:LEU:HD11 | 2.46 | 0.41 |
| 5:CE:8:GLU:CB | 5:CE:34:VAL:HG22 | 2.51 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:DT:3:ARG:C | 50:DT:5:ALA:N | 2.72 | 0.41 |
| 35:DA:2736:G:O2' | 35:DA:2737:G:H5' | 2.20 | 0.41 |
| 18:CR:58:LEU:HD13 | 18:CR:63:GLN:OE1 | 2.21 | 0.41 |
| 12:CL:104:VAL:O | 12:CL:105:TYR:HB2 | 2.20 | 0.41 |
| 47:BQ:30:GLY:N | 47:BQ:105:GLU:OE2 | 2.54 | 0.41 |
| 2:AB:23:ARG:HB3 | 2:AB:23:ARG:NH1 | 2.36 | 0.41 |
| 5:CE:75:THR:HA | 5:CE:115:VAL:HG13 | 2.03 | 0.41 |
| 1:CA:1239:A:H2' | 1:CA:1298:C:N4 | 2.35 | 0.41 |
| 7:AG:69:VAL:O | 7:AG:71:PRO:HD3 | 2.21 | 0.41 |
| 36:BB:91:C:H2' | 36:BB:92:C:C6 | 2.55 | 0.41 |
| 3:CC:28:GLN:HE21 | 3:CC:28:GLN:CA | 2.31 | 0.41 |
| 7:AG:120:ILE:HG22 | 7:AG:124:LEU:HD12 | 2.02 | 0.41 |
| 35:BA:1766:U:O2' | 35:BA:1767:C:H5' | 2.21 | 0.41 |
| 6:CF:12:PRO:HB3 | 6:CF:45:LEU:HD13 | 2.02 | 0.41 |
| 7:CG:6:ARG:HG2 | 7:CG:6:ARG:O | 2.19 | 0.41 |
| 35:BA:1925:C:C2' | 35:BA:1926:U:H5' | 2.50 | 0.41 |
| 35:DA:360:G:H2' | 35:DA:361:G:H8 | 1.84 | 0.41 |
| 38:BD:112:GLN:HB2 | 38:BD:115:GLN:NE2 | 2.35 | 0.41 |
| 35:DA:1766:U:H2' | 35:DA:1767:C:H6 | 1.85 | 0.41 |
| 1:AA:1434:A:H2' | 1:AA:1435:G:C5' | 2.50 | 0.41 |
| 35:DA:2517:C:N3 | 35:DA:2542:A:N6 | 2.69 | 0.41 |
| 35:BA:2703:C:C2' | 35:BA:2703:C:O2 | 2.68 | 0.41 |
| 35:BA:2663:G:H2' | 35:BA:2664:G:H8 | 1.84 | 0.41 |
| 11:AK:102:GLY:C | 11:AK:103:LEU:HD22 | 2.40 | 0.41 |
| 35:DA:2663:G:H2' | 35:DA:2664:G:H8 | 1.85 | 0.41 |
| 1:AA:1413:A:N1 | 1:AA:1488:G:C2 | 2.89 | 0.41 |
| 27:B2:33:MET:O | 27:B2:34:GLU:C | 2.57 | 0.41 |
| 27:B2:65:ASN:HB3 | 27:B2:69:ARG:HH22 | 1.85 | 0.41 |
| 51:BU:100:VAL:O | 51:BU:103:PRO:HD3 | 2.21 | 0.41 |
| 38:BD:2:ALA:C | 38:BD:3:VAL:HG23 | 2.40 | 0.41 |
| 35:DA:1968:G:O2' | 35:DA:1969:A:O4' | 2.34 | 0.41 |
| 35:DA:732:C:H2' | 35:DA:733:G:H5' | 2.02 | 0.41 |
| 1:CA:1421:G:C2 | 1:CA:1422:G:C4 | 3.09 | 0.41 |
| 35:DA:2165:G:H2' | 35:DA:2166:G:O4' | 2.20 | 0.41 |
| 2:AB:35:GLU:O | 2:AB:36:ARG:C | 2.59 | 0.41 |
| 35:BA:350:U:H2' | 35:BA:351:G:O4' | 2.19 | 0.41 |
| 3:CC:129:ALA:HB3 | 3:CC:132:ARG:HB3 | 2.01 | 0.41 |
| 35:DA:1629:U:O2 | 35:DA:2698:U:H5" | 2.20 | 0.41 |
| 32:D7:34:ARG:HB2 | 32:D7:42:LEU:HD22 | 2.02 | 0.41 |
| 1:CA:218:C:O2' | 1:CA:219:C:H5' | 2.21 | 0.41 |
| 32:D7:41:ARG:HD3 | 32:D7:45:ALA:HB2 | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:2239:G:H5' | 38:BD:251:GLY:HA3 | 2.03 | 0.41 |
| 1:CA:593:G:O2' | 1:CA:594:G:H5' | 2.21 | 0.41 |
| 3:CC:69:HIS:CD2 | 3:CC:69:HIS:N | 2.89 | 0.41 |
| 38:DD:68:LYS:O | 38:DD:68:LYS:HG3 | 2.21 | 0.41 |
| 56:DZ:23:LYS:HD2 | 56:DZ:23:LYS:N | 2.36 | 0.41 |
| 53:DW:71:VAL:HG12 | 53:DW:71:VAL:O | 2.20 | 0.41 |
| 35:BA:1299:G:O5' | 35:BA:1299:G:H8 | 2.03 | 0.41 |
| 10:AJ:12:ASP:HB3 | 10:AJ:15:THR:OG1 | 2.21 | 0.41 |
| 56:DZ:98:MET:O | 56:DZ:100:VAL:HG23 | 2.21 | 0.41 |
| 35:DA:2704:C:H2' | 35:DA:2705:A:O4' | 2.20 | 0.41 |
| 12:AL:27:LEU:C | 12:AL:29:GLY:H | 2.23 | 0.41 |
| 35:BA:569:U:C4 | 35:BA:570:G:C6 | 3.09 | 0.41 |
| 35:BA:1243:G:C6 | 35:BA:1244:G:C5 | 3.09 | 0.41 |
| 9:AI:65:VAL:HG11 | 9:AI:73:GLN:HB3 | 2.03 | 0.41 |
| 1:AA:955:U:H2' | 1:AA:956:U:O4' | 2.20 | 0.41 |
| 2:CB:74:LYS:NZ | 2:CB:76:GLN:HB2 | 2.35 | 0.41 |
| 33:B8:13:ARG:HB3 | 46:BP:63:PRO:CB | 2.29 | 0.41 |
| 46:BP:47:ASP:CB | 46:BP:51:PHE:HB2 | 2.50 | 0.41 |
| 10:CJ:54:PHE:CD2 | 10:CJ:55:LYS:HE3 | 2.55 | 0.41 |
| 56:BZ:99:TYR:HB3 | 56:BZ:123:ASP:OD1 | 2.21 | 0.41 |
| 3:CC:71:ALA:HB2 | 3:CC:106:VAL:HB | 2.02 | 0.41 |
| 1:AA:7:G:H2' | 5:AE:119:LEU:HD22 | 2.03 | 0.41 |
| 52:DV:6:LYS:HB3 | 52:DV:37:VAL:HB | 2.03 | 0.41 |
| 10:AJ:63:PHE:CZ | 14:AN:45:ARG:HG3 | 2.52 | 0.41 |
| 40:BF:157:VAL:HA | 40:BF:176:LEU:O | 2.20 | 0.41 |
| 33:D8:61:LEU:CD1 | 33:D8:62:LEU:N | 2.83 | 0.41 |
| 35:BA:1495:A:H3' | 35:BA:1496:A:C2 | 2.56 | 0.41 |
| 41:DG:125:PHE:HZ | 41:DG:180:PHE:CE1 | 2.38 | 0.41 |
| 3:AC:119:ARG:HE | 3:AC:140:ARG:NE | 2.18 | 0.41 |
| 37:DC:45:ALA:O | 37:DC:46:LYS:CB | 2.64 | 0.41 |
| 37:BC:36:LYS:CD | 37:BC:37:PHE:H | 2.33 | 0.41 |
| 35:DA:2732:G:H3' | 35:DA:2733:A:C5' | 2.50 | 0.41 |
| 45:DO:1:MET:CE | 45:DO:67:LYS:HE2 | 2.50 | 0.41 |
| 10:AJ:30:SER:CA | 10:AJ:80:LYS:HB3 | 2.51 | 0.41 |
| 37:DC:83:ILE:HD11 | 37:DC:95:GLY:O | 2.20 | 0.41 |
| 42:DH:85:LYS:HE2 | 42:DH:145:ALA:N | 2.36 | 0.41 |
| 17:AQ:68:ARG:CG | 17:AQ:68:ARG:NH1 | 2.84 | 0.41 |
| 27:D2:13:ALA:O | 27:D2:16:LEU:HB2 | 2.20 | 0.41 |
| 35:DA:142:A:H8 | 35:DA:1595:G:H21 | 1.64 | 0.41 |
| 43:DI:114:LEU:O | 43:DI:115:ALA:HB3 | 2.20 | 0.41 |
| 35:BA:513:A:N1 | 35:BA:514:A:C5 | 2.88 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 36:DB:15:A:H5' | 36:DB:16:G:C8 | 2.55 | 0.41 |
| 35:DA:2190:G:C8 | 35:DA:2190:G:H5' | 2.55 | 0.41 |
| 36:BB:114:C:H4' | 49:BS:46:VAL:HG22 | 2.02 | 0.41 |
| 46:DP:144:GLU:O | 46:DP:145:PRO:C | 2.58 | 0.41 |
| 3:AC:47:LEU:HD23 | 3:AC:52:LEU:HD13 | 2.03 | 0.41 |
| 42:DH:18:GLU:HG3 | 42:DH:25:LYS:CG | 2.50 | 0.41 |
| 16:AP:20:VAL:CG2 | 16:AP:32:TYR:HB3 | 2.51 | 0.41 |
| 35:BA:911:A:C6 | 47:BQ:9:TYR:CD1 | 3.09 | 0.41 |
| 47:DQ:72:LYS:HA | 47:DQ:73:PRO:HD3 | 1.78 | 0.41 |
| 25:B0:55:ARG:HB3 | 25:B0:55:ARG:HE | 1.50 | 0.41 |
| 33:B8:44:LYS:N | 33:B8:44:LYS:HD2 | 2.36 | 0.41 |
| 27:B2:45:SER:O | 27:B2:46:GLN:NE2 | 2.54 | 0.41 |
| 4:CD:170:VAL:CG2 | 4:CD:171:GLY:N | 2.79 | 0.41 |
| 47:DQ:111:GLU:OE2 | 47:DQ:133:ARG:NH2 | 2.54 | 0.41 |
| 35:BA:542:C:C2' | 35:BA:543:C:OP1 | 2.69 | 0.41 |
| 7:AG:54:THR:OG1 | 7:AG:56:GLN:CG | 2.63 | 0.41 |
| 15:AO:3:ILE:N | 15:AO:3:ILE:CD1 | 2.80 | 0.41 |
| 3:AC:5:ILE:C | 3:AC:5:ILE:HD12 | 2.40 | 0.41 |
| 1:AA:923:A:C2 | 1:AA:924:C:C2 | 3.08 | 0.41 |
| 34:B9:17:ILE:HG21 | 34:B9:19:ARG:HH21 | 1.84 | 0.41 |
| 38:BD:65:ILE:N | 38:BD:65:ILE:CD1 | 2.81 | 0.41 |
| 36:BB:54:G:O2' | 36:BB:55:U:H5' | 2.21 | 0.41 |
| 18:CR:56:THR:O | 18:CR:58:LEU:N | 2.53 | 0.41 |
| 1:AA:1298:C:H4' | 1:AA:1299:A:N9 | 2.35 | 0.41 |
| 55:BY:2:ARG:N | 55:BY:5:MET:CE | 2.83 | 0.41 |
| 4:CD:88:VAL:O | 4:CD:92:VAL:HG23 | 2.20 | 0.41 |
| 35:BA:2686:G:C2 | 35:BA:2724:C:O2 | 2.73 | 0.41 |
| 49:DS:71:ARG:O | 49:DS:74:ALA:HB3 | 2.20 | 0.41 |
| 1:AA:1004:A:H5'' | 1:AA:1025:U:H3 | 1.85 | 0.41 |
| 18:AR:85:LEU:CG | 18:AR:86:VAL:H | 2.33 | 0.41 |
| 41:DG:91:ARG:C | 41:DG:91:ARG:CD | 2.89 | 0.41 |
| 8:AH:120:THR:OG1 | 8:AH:123:GLU:HG3 | 2.21 | 0.41 |
| 35:BA:2281:C:O4' | 35:BA:2388:A:C2 | 2.74 | 0.41 |
| 35:DA:1509(B):A:H2' | 35:DA:1510:G:C8 | 2.55 | 0.41 |
| 35:BA:2593:U:C2 | 35:BA:2594:C:C5 | 3.08 | 0.41 |
| 36:BB:87:G:H3' | 36:BB:88:C:C5' | 2.48 | 0.41 |
| 35:DA:893:C:O2' | 35:DA:894:C:H5' | 2.21 | 0.41 |
| 51:DU:102:GLU:HG3 | 52:DV:2:PHE:HE1 | 1.81 | 0.41 |
| 38:BD:16:MET:HE2 | 38:BD:208:LYS:HD2 | 2.02 | 0.41 |
| 14:CN:9:LYS:HA | 14:CN:12:ARG:NH1 | 2.36 | 0.41 |
| 1:AA:1228:C:P | 13:AM:108:ARG:NH2 | 2.92 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:42:GLU:OE1 | 6:AF:59:TYR:HE2 | 2.03 | 0.41 |
| 13:CM:108:ARG:HG3 | 13:CM:108:ARG:HH11 | 1.84 | 0.41 |
| 35:BA:1719:G:C6 | 35:BA:1720:U:C4 | 3.09 | 0.41 |
| 15:AO:10:LYS:NZ | 15:AO:14:GLU:HG2 | 2.35 | 0.41 |
| 1:AA:189(I):G:H2' | 1:AA:189(J):G:H8 | 1.85 | 0.41 |
| 56:DZ:128:VAL:HG22 | 56:DZ:129:SER:H | 1.83 | 0.41 |
| 1:CA:59:A:H1' | 1:CA:354:G:C2 | 2.55 | 0.41 |
| 35:BA:601:C:O2 | 35:BA:605:C:H4' | 2.21 | 0.41 |
| 35:DA:443:A:OP1 | 40:DF:46:ARG:HB2 | 2.21 | 0.41 |
| 24:CX:16:U:H2' | 24:CX:17:U:O4' | 2.21 | 0.41 |
| 26:D1:5:CYS:O | 26:D1:9:GLY:HA2 | 2.21 | 0.41 |
| 35:DA:1336:A:O2' | 35:DA:1337:G:H5' | 2.21 | 0.41 |
| 35:DA:1448:G:H5' | 35:DA:1449:A:P | 2.61 | 0.41 |
| 5:CE:144:THR:C | 5:CE:146:ALA:N | 2.72 | 0.41 |
| 1:CA:590:C:H2' | 1:CA:591:U:C6 | 2.56 | 0.41 |
| 38:BD:105:ILE:O | 38:BD:107:ALA:N | 2.53 | 0.41 |
| 27:B2:28:LYS:NZ | 27:B2:56:GLN:OE1 | 2.52 | 0.41 |
| 53:DW:68:ARG:HA | 53:DW:68:ARG:HD3 | 1.93 | 0.41 |
| 1:AA:543:C:H2' | 1:AA:544:G:C8 | 2.55 | 0.41 |
| 19:AS:41:VAL:HG13 | 19:AS:42:PRO:HD2 | 2.01 | 0.41 |
| 1:CA:923:A:C2 | 1:CA:924:C:C2 | 3.09 | 0.41 |
| 1:AA:1184:G:O2' | 1:AA:1185:G:H5' | 2.21 | 0.41 |
| 35:DA:2770:G:H5' | 35:DA:2771:C:OP2 | 2.21 | 0.41 |
| 54:DX:64:LYS:HB2 | 54:DX:64:LYS:NZ | 2.36 | 0.41 |
| 51:DU:21:ALA:HB2 | 51:DU:35:ALA:HB1 | 2.03 | 0.41 |
| 35:DA:741:G:H2' | 35:DA:742:G:C8 | 2.56 | 0.41 |
| 52:DV:17:GLY:HA2 | 52:DV:96:ILE:O | 2.21 | 0.41 |
| 3:AC:164:ARG:CB | 3:AC:164:ARG:NH1 | 2.84 | 0.41 |
| 1:CA:689:C:H2' | 1:CA:690:G:O4' | 2.20 | 0.41 |
| 35:BA:2715:C:H2' | 35:BA:2716:U:C6 | 2.56 | 0.41 |
| 56:DZ:17:ALA:HA | 56:DZ:20:ARG:HB2 | 2.02 | 0.41 |
| 35:DA:594:U:H2' | 35:DA:595:C:C6 | 2.56 | 0.41 |
| 35:DA:1773:A:H2' | 35:DA:1774:C:H5' | 2.03 | 0.41 |
| 1:AA:1360:A:H2' | 1:AA:1361:G:O4' | 2.20 | 0.41 |
| 35:BA:1456:G:O2' | 35:BA:1457:A:H5' | 2.21 | 0.41 |
| 7:AG:97:GLN:HG2 | 7:AG:101:LEU:HD11 | 2.01 | 0.41 |
| 35:DA:2303:G:O2' | 41:DG:132:ASN:HB2 | 2.20 | 0.41 |
| 25:D0:70:GLN:HE21 | 25:D0:70:GLN:HB3 | 1.50 | 0.41 |
| 35:BA:1480:G:H2' | 35:BA:1480:G:N3 | 2.36 | 0.41 |
| 35:DA:2576:G:H3' | 35:DA:2576:G:OP1 | 2.21 | 0.41 |
| 46:DP:86:LYS:HG2 | 46:DP:86:LYS:O | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DA:949:C:O2' | 35:DA:950:G:H5' | 2.20 | 0.41 |
| 53:BW:62:HIS:O | 53:BW:63:ASP:C | 2.58 | 0.41 |
| 35:BA:251:A:C5 | 35:BA:252:G:H1' | 2.56 | 0.41 |
| 56:DZ:7:ALA:HB2 | 56:DZ:39:VAL:HG12 | 2.02 | 0.41 |
| 56:DZ:71:VAL:HA | 56:DZ:87:ASP:O | 2.20 | 0.41 |
| 56:DZ:96:VAL:HG12 | 56:DZ:97:GLU:N | 2.35 | 0.41 |
| 40:DF:117:ARG:HA | 40:DF:117:ARG:HD3 | 1.75 | 0.41 |
| 40:DF:28:ILE:HG12 | 40:DF:119:ARG:HH21 | 1.86 | 0.41 |
| 9:CI:48:GLU:HA | 9:CI:51:ARG:HD2 | 2.02 | 0.41 |
| 39:DE:15:PHE:CE2 | 50:DT:80:SER:HB2 | 2.56 | 0.41 |
| 49:BS:95:HIS:O | 49:BS:96:GLY:C | 2.59 | 0.41 |
| 42:BH:67:LEU:O | 42:BH:71:LEU:HB2 | 2.20 | 0.41 |
| 51:BU:83:LEU:CG | 51:BU:88:ILE:HD11 | 2.41 | 0.41 |
| 56:DZ:121:HIS:CG | 56:DZ:171:ILE:HA | 2.56 | 0.41 |
| 39:DE:48:GLN:O | 39:DE:48:GLN:HG2 | 2.21 | 0.41 |
| 39:BE:57:LYS:O | 39:BE:59:VAL:N | 2.53 | 0.41 |
| 38:DD:35:LYS:CA | 38:DD:63:ARG:HA | 2.46 | 0.41 |
| 3:CC:78:GLY:HA3 | 3:CC:83:ARG:HB3 | 2.02 | 0.41 |
| 13:CM:76:ALA:HA | 13:CM:79:LYS:NZ | 2.36 | 0.41 |
| 10:CJ:52:GLY:O | 14:CN:41:ARG:NH2 | 2.53 | 0.41 |
| 51:DU:92:ARG:CB | 51:DU:92:ARG:CZ | 2.95 | 0.41 |
| 12:AL:8:ASN:O | 12:AL:12:ARG:HG3 | 2.21 | 0.41 |
| 13:CM:7:VAL:HG21 | 41:DG:115:ARG:CG | 2.50 | 0.41 |
| 4:AD:16:GLY:O | 4:AD:18:LYS:N | 2.54 | 0.41 |
| 3:AC:113:ALA:CA | 3:AC:116:VAL:HG23 | 2.46 | 0.41 |
| 23:CW:28:G:H2' | 23:CW:29:G:H8 | 1.86 | 0.41 |
| 30:D5:49:CYS:O | 30:D5:50:GLY:C | 2.58 | 0.41 |
| 50:DT:57:PHE:CG | 50:DT:58:ASN:N | 2.88 | 0.41 |
| 35:BA:827:U:H2' | 35:BA:2068:U:C2 | 2.55 | 0.41 |
| 35:DA:2732:G:C3' | 35:DA:2733:A:C5' | 2.99 | 0.41 |
| 36:DB:6:C:C2 | 36:DB:116:G:N2 | 2.89 | 0.41 |
| 49:DS:54:LEU:CD2 | 49:DS:54:LEU:H | 2.32 | 0.41 |
| 49:DS:64:GLU:N | 49:DS:64:GLU:OE2 | 2.53 | 0.41 |
| 35:BA:271(D):G:C6 | 35:BA:271(E):U:C4 | 3.09 | 0.41 |
| 23:AW:56:C:C2 | 23:AW:57:G:H8 | 2.39 | 0.41 |
| 27:D2:61:LEU:O | 27:D2:62:THR:C | 2.59 | 0.41 |
| 4:AD:121:VAL:O | 4:AD:134:ASP:HA | 2.20 | 0.41 |
| 15:CO:74:ASP:O | 15:CO:76:GLU:N | 2.54 | 0.41 |
| 15:CO:82:ILE:HG23 | 15:CO:83:GLU:N | 2.35 | 0.41 |
| 1:CA:255:G:H2' | 1:CA:256:U:H6 | 1.83 | 0.41 |
| 35:BA:511:U:C5 | 35:BA:512:G:C5 | 3.08 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 26:D1:78:LYS:HB2 | 26:D1:78:LYS:HE3 | 1.80 | 0.41 |
| 40:BF:17:ARG:CG | 40:BF:17:ARG:NH1 | 2.78 | 0.41 |
| 53:DW:50:VAL:HG13 | 53:DW:51:LEU:N | 2.36 | 0.41 |
| 50:BT:108:ARG:O | 50:BT:112:ARG:HG3 | 2.21 | 0.41 |
| 47:DQ:45:GLN:O | 47:DQ:49:ALA:CB | 2.67 | 0.41 |
| 49:BS:46:VAL:HG12 | 49:BS:47:THR:N | 2.36 | 0.41 |
| 44:DN:3:THR:HG22 | 44:DN:5:VAL:HB | 2.03 | 0.41 |
| 54:BX:32:PRO:HA | 54:BX:77:LYS:CB | 2.50 | 0.41 |
| 22:AV:41:C:C3' | 22:AV:42:C:C5' | 2.93 | 0.41 |
| 12:CL:25:PRO:O | 12:CL:27:LEU:N | 2.53 | 0.41 |
| 1:AA:1071:C:H5'' | 5:AE:49:PRO:HG2 | 2.02 | 0.41 |
| 16:AP:2:VAL:HG22 | 16:AP:3:LYS:N | 2.36 | 0.41 |
| 35:BA:8:A:H2 | 35:BA:2896:C:O2 | 2.04 | 0.41 |
| 20:CT:13:LEU:CD1 | 20:CT:13:LEU:C | 2.88 | 0.41 |
| 35:DA:911:A:H2' | 47:DQ:9:TYR:OH | 2.20 | 0.41 |
| 35:DA:2198:A:OP1 | 43:DI:33:ARG:NH2 | 2.54 | 0.41 |
| 1:AA:884:U:H4' | 1:AA:885:G:H5'' | 2.03 | 0.41 |
| 26:B1:86:SER:O | 26:B1:90:ILE:HG12 | 2.20 | 0.41 |
| 13:AM:91:ARG:NH2 | 13:AM:103:THR:HG21 | 2.35 | 0.41 |
| 16:CP:4:ILE:CG2 | 16:CP:36:ILE:HD11 | 2.47 | 0.41 |
| 27:B2:47:ASN:ND2 | 35:BA:94(A):G:N3 | 2.69 | 0.41 |
| 4:AD:88:VAL:O | 4:AD:92:VAL:HG23 | 2.21 | 0.41 |
| 48:BR:74:LYS:CD | 48:BR:77:ARG:NH2 | 2.84 | 0.41 |
| 51:BU:5:LYS:O | 51:BU:6:THR:C | 2.59 | 0.41 |
| 29:D4:48:ILE:H | 29:D4:48:ILE:CD1 | 2.29 | 0.41 |
| 8:AH:45:ILE:HB | 8:AH:62:TYR:O | 2.21 | 0.41 |
| 18:CR:85:LEU:CG | 18:CR:86:VAL:N | 2.84 | 0.41 |
| 53:BW:19:LEU:CD1 | 53:BW:19:LEU:N | 2.84 | 0.41 |
| 28:D3:17:LYS:HA | 28:D3:17:LYS:HD2 | 1.79 | 0.41 |
| 7:CG:30:ILE:HD13 | 7:CG:105:VAL:HG22 | 2.02 | 0.41 |
| 15:CO:10:LYS:NZ | 15:CO:14:GLU:HG2 | 2.36 | 0.41 |
| 14:CN:26:ARG:HD2 | 14:CN:47:LEU:HD11 | 2.02 | 0.41 |
| 53:DW:12:ILE:HD13 | 53:DW:17:VAL:CG1 | 2.49 | 0.41 |
| 35:DA:2592:G:O5' | 35:DA:2592:G:H8 | 2.04 | 0.41 |
| 40:BF:45:ARG:NH1 | 40:BF:97:TYR:CE1 | 2.89 | 0.41 |
| 1:CA:1206:G:O4' | 3:CC:194:GLY:HA2 | 2.21 | 0.41 |
| 38:BD:159:ALA:HB1 | 38:BD:198:ASN:O | 2.20 | 0.41 |
| 26:D1:65:SER:O | 35:DA:372:G:H8 | 2.03 | 0.41 |
| 1:AA:1378:C:H5'' | 7:AG:6:ARG:HE | 1.85 | 0.41 |
| 35:DA:118:A:H1' | 35:DA:178:G:O4' | 2.21 | 0.41 |
| 1:CA:1351:U:H2' | 1:CA:1352:C:H6 | 1.86 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:DA:2516:G:C6 | 35:DA:2517:C:C4 | 3.08 | 0.41 |
| 35:DA:919:G:H5' | 36:DB:81:G:H1' | 2.02 | 0.41 |
| 1:AA:1288:A:O4' | 1:AA:1353:G:H4' | 2.21 | 0.41 |
| 19:AS:41:VAL:HB | 19:AS:44:MET:SD | 2.60 | 0.41 |
| 1:AA:586:C:H1' | 1:AA:878:G:O2' | 2.21 | 0.41 |
| 43:BI:78:THR:CB | 43:BI:141:LYS:HB2 | 2.51 | 0.41 |
| 41:DG:7:LEU:HD11 | 41:DG:104:GLU:N | 2.35 | 0.41 |
| 8:AH:97:VAL:HG13 | 8:AH:98:LYS:N | 2.36 | 0.41 |
| 50:BT:48:ILE:HD12 | 50:BT:48:ILE:H | 1.85 | 0.41 |
| 35:DA:2696:U:H2' | 35:DA:2697:G:H8 | 1.86 | 0.41 |
| 1:CA:1133:G:C4 | 1:CA:1142:G:N2 | 2.86 | 0.41 |
| 32:B7:31:LEU:HD23 | 32:B7:42:LEU:HB3 | 2.02 | 0.41 |
| 3:CC:101:LEU:HD23 | 3:CC:101:LEU:C | 2.41 | 0.41 |
| 17:CQ:91:ARG:O | 17:CQ:94:ASN:HB2 | 2.20 | 0.41 |
| 35:DA:703:U:H2' | 35:DA:704:G:H5' | 2.01 | 0.41 |
| 36:DB:39:A:N3 | 36:DB:39:A:H2' | 2.35 | 0.41 |
| 37:BC:24:GLU:OE1 | 37:BC:24:GLU:N | 2.54 | 0.41 |
| 35:BA:13:A:H61 | 35:BA:525:U:H3' | 1.85 | 0.41 |
| 37:DC:188:ASN:C | 37:DC:190:ARG:H | 2.23 | 0.41 |
| 38:DD:122:ASP:OD1 | 38:DD:123:ALA:N | 2.54 | 0.41 |
| 22:AV:44:G:O2' | 22:AV:45:U:H5' | 2.20 | 0.41 |
| 1:AA:696:A:O2' | 1:AA:697:U:H5' | 2.20 | 0.41 |
| 35:DA:462:C:O2' | 35:DA:463:G:H5' | 2.21 | 0.41 |
| 35:BA:1127:A:H2' | 35:BA:1128:A:H5'' | 2.03 | 0.41 |
| 11:AK:13:GLN:HG2 | 11:AK:75:TYR:HA | 2.02 | 0.41 |
| 56:DZ:30:ASN:CG | 56:DZ:33:LEU:HB3 | 2.39 | 0.41 |
| 46:DP:47:ASP:CB | 46:DP:51:PHE:HB2 | 2.50 | 0.41 |
| 35:DA:614(C):A:O2' | 35:DA:615:G:C4' | 2.69 | 0.41 |
| 40:DF:113:ALA:HB1 | 40:DF:186:ILE:HG21 | 2.02 | 0.41 |
| 40:DF:192:LEU:C | 40:DF:192:LEU:CD2 | 2.89 | 0.41 |
| 9:CI:33:PHE:CZ | 9:CI:47:LEU:HD11 | 2.55 | 0.41 |
| 35:BA:611:C:H2' | 35:BA:612:C:C6 | 2.56 | 0.41 |
| 50:BT:89:VAL:HB | 50:BT:91:ARG:CD | 2.50 | 0.41 |
| 33:B8:13:ARG:HD2 | 46:BP:61:ARG:NH1 | 2.34 | 0.41 |
| 12:AL:90:VAL:C | 12:AL:92:ASP:H | 2.17 | 0.41 |
| 35:BA:1568:G:H5'' | 38:BD:61:LEU:HB2 | 2.03 | 0.41 |
| 38:BD:64:ILE:HG13 | 38:BD:64:ILE:O | 2.21 | 0.41 |
| 52:BV:35:LEU:O | 52:BV:37:VAL:N | 2.54 | 0.41 |
| 38:BD:43:ARG:NH1 | 38:BD:49:ILE:HG22 | 2.35 | 0.41 |
| 39:DE:32:PRO:HB3 | 39:DE:69:LYS:HB3 | 2.01 | 0.41 |
| 39:DE:86:PRO:C | 39:DE:88:GLY:N | 2.74 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 49:DS:97:ARG:O | 49:DS:97:ARG:NE | 2.53 | 0.41 |
| 47:BQ:141:GLN:H | 56:BZ:99:TYR:CB | 2.29 | 0.41 |
| 56:BZ:128:VAL:HG22 | 56:BZ:129:SER:O | 2.20 | 0.41 |
| 36:BB:105:A:OP1 | 56:BZ:72:ARG:NH1 | 2.54 | 0.41 |
| 3:CC:72:LYS:O | 3:CC:72:LYS:HG2 | 2.20 | 0.41 |
| 5:AE:103:GLY:O | 5:AE:104:ALA:C | 2.58 | 0.41 |
| 3:CC:113:ALA:CA | 3:CC:116:VAL:HG23 | 2.47 | 0.41 |
| 35:DA:2309:A:C2 | 35:DA:2310:A:C2 | 3.09 | 0.41 |
| 33:D8:60:LEU:O | 33:D8:63:PRO:HG2 | 2.20 | 0.41 |
| 41:BG:41:GLN:OE1 | 41:BG:60:LEU:HD23 | 2.21 | 0.41 |
| 36:DB:56:G:H4' | 36:DB:57:A:C8 | 2.56 | 0.41 |
| 41:DG:111:LEU:N | 41:DG:112:PRO:CD | 2.84 | 0.41 |
| 35:BA:2491:U:C2' | 35:BA:2492:U:H5' | 2.50 | 0.41 |
| 52:DV:19:LYS:HZ3 | 52:DV:20:LEU:HB2 | 1.84 | 0.41 |
| 35:BA:1686:C:O2' | 35:BA:1687:G:H5' | 2.21 | 0.41 |
| 37:DC:56:GLN:NE2 | 37:DC:168:THR:CB | 2.84 | 0.41 |
| 29:B4:39:ARG:HG2 | 29:B4:39:ARG:HH11 | 1.86 | 0.41 |
| 3:CC:30:ARG:NH2 | 14:CN:35:ARG:C | 2.74 | 0.41 |
| 19:AS:5:LEU:HA | 19:AS:6:LYS:HZ2 | 1.85 | 0.41 |
| 46:BP:102:ARG:O | 46:BP:103:ALA:HB2 | 2.20 | 0.41 |
| 2:CB:116:GLU:HB3 | 2:CB:153:ARG:NH2 | 2.36 | 0.41 |
| 49:BS:101:LEU:C | 49:BS:101:LEU:HD22 | 2.41 | 0.41 |
| 2:AB:114:ARG:CG | 2:AB:114:ARG:HH11 | 2.34 | 0.41 |
| 46:DP:33:ARG:O | 46:DP:35:HIS:N | 2.52 | 0.41 |
| 45:BO:34:THR:HG23 | 45:BO:35:VAL:N | 2.35 | 0.41 |
| 13:CM:56:LEU:HD13 | 13:CM:60:VAL:HG21 | 2.02 | 0.41 |
| 55:DY:50:ARG:HG3 | 55:DY:58:GLY:CA | 2.51 | 0.41 |
| 1:CA:254:G:O2' | 1:CA:255:G:H5' | 2.20 | 0.41 |
| 17:CQ:67:LYS:HG2 | 17:CQ:68:ARG:N | 2.36 | 0.41 |
| 25:B0:18:ALA:O | 25:B0:20:ARG:HD3 | 2.21 | 0.41 |
| 37:DC:49:ILE:O | 37:DC:50:ASP:C | 2.59 | 0.41 |
| 32:B7:9:ARG:CZ | 35:BA:1310:G:OP2 | 2.69 | 0.41 |
| 35:DA:2632:A:N3 | 39:DE:61:ARG:HD3 | 2.35 | 0.41 |
| 35:BA:1503:U:C4 | 35:BA:1504:C:N4 | 2.86 | 0.41 |
| 55:DY:31:LEU:HD23 | 55:DY:36:ALA:C | 2.41 | 0.41 |
| 50:DT:125:ARG:HA | 50:DT:125:ARG:HH11 | 1.79 | 0.41 |
| 40:DF:62:ARG:HG2 | 40:DF:63:LYS:N | 2.36 | 0.41 |
| 35:BA:955:C:OP1 | 47:BQ:13:GLN:HA | 2.21 | 0.41 |
| 23:CW:59:U:H2' | 23:CW:60:U:H5' | 2.03 | 0.41 |
| 35:DA:955:C:OP1 | 47:DQ:13:GLN:HA | 2.19 | 0.41 |
| 35:DA:1051:G:N3 | 35:DA:1052:C:H5 | 2.19 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 38:BD:123:ALA:HB3 | 38:BD:131:LEU:HG | 2.03 | 0.41 |
| 27:B2:38:GLN:O | 27:B2:39:ALA:C | 2.58 | 0.41 |
| 35:BA:2884:U:C2' | 35:BA:2885:C:H5' | 2.50 | 0.41 |
| 16:CP:21:VAL:O | 16:CP:21:VAL:HG13 | 2.21 | 0.41 |
| 1:CA:327:A:C4 | 1:CA:329:A:C8 | 3.08 | 0.41 |
| 35:DA:2172:U:H1' | 35:DA:2173:A:OP1 | 2.21 | 0.41 |
| 38:BD:117:VAL:HG22 | 38:BD:118:VAL:N | 2.36 | 0.41 |
| 39:BE:4:ILE:C | 39:BE:5:LEU:HD23 | 2.41 | 0.41 |
| 1:AA:1065:U:H6 | 1:AA:1190:G:H21 | 1.67 | 0.41 |
| 1:AA:921:U:O2' | 5:AE:19:MET:O | 2.31 | 0.41 |
| 38:DD:65:ILE:CD1 | 38:DD:65:ILE:N | 2.79 | 0.41 |
| 45:DO:24:VAL:HG21 | 45:DO:32:TYR:O | 2.20 | 0.41 |
| 49:BS:71:ARG:O | 49:BS:74:ALA:HB3 | 2.21 | 0.41 |
| 47:BQ:39:PRO:HD3 | 47:BQ:99:PRO:HG3 | 2.02 | 0.41 |
| 1:CA:1172:C:H2' | 1:CA:1173:G:C8 | 2.43 | 0.41 |
| 11:AK:91:ARG:HG2 | 11:AK:91:ARG:HH11 | 1.85 | 0.41 |
| 56:BZ:15:PRO:O | 56:BZ:16:SER:C | 2.59 | 0.41 |
| 11:CK:29:ILE:HB | 11:CK:44:SER:CB | 2.48 | 0.41 |
| 11:CK:29:ILE:HD12 | 11:CK:30:VAL:N | 2.35 | 0.41 |
| 9:AI:20:ARG:HH11 | 9:AI:20:ARG:CG | 2.32 | 0.41 |
| 11:AK:124:LYS:HD2 | 11:AK:125:PHE:CE1 | 2.56 | 0.41 |
| 28:D3:46:ASN:O | 28:D3:49:LYS:N | 2.53 | 0.41 |
| 35:DA:1186:G:O5' | 35:DA:1186:G:H8 | 2.04 | 0.41 |
| 35:DA:271(K):U:N3 | 43:DI:50:ARG:NH1 | 2.68 | 0.41 |
| 44:DN:58:ASP:C | 44:DN:60:ILE:N | 2.72 | 0.41 |
| 44:DN:59:LYS:O | 44:DN:60:ILE:C | 2.59 | 0.41 |
| 35:DA:2281:C:O4' | 35:DA:2388:A:C2 | 2.74 | 0.41 |
| 43:BI:2:LYS:O | 43:BI:39:ALA:HB3 | 2.20 | 0.41 |
| 1:CA:130:A:H1' | 1:CA:263:A:HO2' | 1.85 | 0.41 |
| 2:AB:124:SER:C | 2:AB:126:GLU:H | 2.24 | 0.41 |
| 3:CC:33:LEU:HD21 | 14:CN:53:LEU:CD2 | 2.51 | 0.41 |
| 2:CB:121:LEU:HD23 | 2:CB:121:LEU:O | 2.21 | 0.41 |
| 13:CM:108:ARG:HH12 | 13:CM:112:GLY:CA | 2.33 | 0.41 |
| 11:CK:58:PRO:HG2 | 11:CK:59:TYR:H | 1.86 | 0.41 |
| 35:BA:2867:G:HO2' | 35:BA:2868:A:P | 2.44 | 0.41 |
| 43:DI:84:GLY:O | 43:DI:85:GLU:CB | 2.67 | 0.41 |
| 48:DR:7:GLY:O | 48:DR:8:ARG:HB2 | 2.21 | 0.41 |
| 38:BD:70:TRP:O | 38:BD:73:VAL:HG22 | 2.19 | 0.41 |
| 22:CV:36:A:C2 | 24:CX:17:U:O2 | 2.74 | 0.41 |
| 1:CA:321:A:C2 | 1:CA:333:G:C2 | 3.09 | 0.41 |
| 1:CA:333:G:N2 | 1:CA:334:C:C2 | 2.88 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:CK:74:ALA:C | 11:CK:76:GLY:N | 2.71 | 0.41 |
| 1:CA:835:U:OP1 | 18:CR:61:LYS:HB2 | 2.21 | 0.41 |
| 1:AA:161:A:H2' | 1:AA:162:A:O4' | 2.20 | 0.41 |
| 35:BA:741:G:O2' | 35:BA:742:G:H5' | 2.21 | 0.41 |
| 3:CC:22:TRP:CH2 | 3:CC:32:LEU:HB3 | 2.56 | 0.41 |
| 1:CA:189(C):C:C2' | 1:CA:189(D):C:H5' | 2.51 | 0.41 |
| 42:DH:38:SER:HA | 42:DH:39:PRO:HD3 | 1.91 | 0.41 |
| 35:BA:2619:C:O2' | 39:BE:156:MET:HE3 | 2.20 | 0.41 |
| 35:DA:741:G:H2' | 35:DA:742:G:H8 | 1.86 | 0.41 |
| 35:BA:2291:U:O2' | 35:BA:2374:C:O2 | 2.33 | 0.41 |
| 49:BS:80:LEU:CD1 | 49:BS:80:LEU:N | 2.84 | 0.41 |
| 38:DD:45:ASN:CG | 38:DD:46:GLN:H | 2.24 | 0.41 |
| 35:BA:1788:C:O2' | 35:BA:1789:A:H5' | 2.20 | 0.41 |
| 19:AS:27:GLU:HB3 | 19:AS:28:LYS:H | 1.69 | 0.41 |
| 35:BA:1127:A:C2' | 35:BA:1128:A:H5'' | 2.50 | 0.41 |
| 14:CN:55:GLY:O | 14:CN:56:VAL:C | 2.59 | 0.41 |
| 1:CA:283:C:H2' | 1:CA:284:G:H8 | 1.85 | 0.41 |
| 54:DX:32:PRO:HA | 54:DX:77:LYS:HB2 | 2.02 | 0.41 |
| 25:B0:46:LYS:HD2 | 25:B0:78:TYR:CE1 | 2.55 | 0.41 |
| 23:AW:43:C:H2' | 23:AW:43:C:O2 | 2.21 | 0.41 |
| 33:B8:5:LYS:HG2 | 35:BA:254:G:O6 | 2.20 | 0.41 |
| 47:DQ:135:ASP:CG | 47:DQ:136:ALA:H | 2.24 | 0.41 |
| 56:DZ:48:PHE:CD1 | 56:DZ:48:PHE:C | 2.94 | 0.41 |
| 49:BS:88:ASP:CG | 49:BS:89:ARG:N | 2.73 | 0.41 |
| 12:AL:27:LEU:HD11 | 12:AL:64:TYR:CE2 | 2.55 | 0.41 |
| 12:AL:37:CYS:CA | 12:AL:58:VAL:HG22 | 2.51 | 0.41 |
| 35:DA:2403:C:N3 | 35:DA:2415:G:C2 | 2.89 | 0.41 |
| 9:AI:83:ARG:O | 9:AI:86:VAL:HG12 | 2.21 | 0.41 |
| 1:CA:1347:G:H5'' | 9:CI:107:ARG:HB3 | 2.03 | 0.41 |
| 35:DA:614(C):A:C4 | 40:DF:180:GLY:HA2 | 2.55 | 0.41 |
| 40:DF:160:ASN:ND2 | 40:DF:162:LEU:H | 2.18 | 0.41 |
| 2:AB:46:LYS:O | 2:AB:50:GLU:HG2 | 2.21 | 0.41 |
| 2:AB:154:LEU:O | 2:AB:155:LEU:C | 2.58 | 0.41 |
| 2:AB:77:ALA:CB | 2:AB:211:ILE:HG21 | 2.51 | 0.41 |
| 2:AB:84:GLU:O | 2:AB:219:VAL:HG11 | 2.21 | 0.41 |
| 1:CA:1179:A:OP2 | 9:CI:93:ARG:NH2 | 2.54 | 0.41 |
| 9:CI:92:TYR:N | 9:CI:92:TYR:CD1 | 2.89 | 0.41 |
| 9:CI:63:ILE:CG2 | 9:CI:64:THR:N | 2.84 | 0.41 |
| 35:BA:613:G:H8 | 35:BA:613:G:C5' | 2.29 | 0.41 |
| 2:CB:154:LEU:O | 2:CB:155:LEU:C | 2.58 | 0.41 |
| 2:CB:77:ALA:CB | 2:CB:211:ILE:HG21 | 2.51 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 1:AA:1373:G:H5'' | 7:AG:36:LYS:HB3 | 2.03 | 0.41 |
| 35:DA:2862:G:H2' | 35:DA:2863:C:H6 | 1.84 | 0.41 |
| 35:BA:196:A:H61 | 35:BA:831:G:H21 | 1.69 | 0.41 |
| 36:BB:37:C:H2' | 36:BB:38:C:O4' | 2.21 | 0.41 |
| 1:CA:963:G:N2 | 10:CJ:55:LYS:HZ2 | 2.19 | 0.41 |
| 1:CA:1053:G:N7 | 1:CA:1200:C:C5' | 2.83 | 0.41 |
| 35:BA:1568:G:O5' | 38:BD:61:LEU:HB2 | 2.20 | 0.41 |
| 38:BD:30:GLU:CD | 38:BD:63:ARG:NE | 2.72 | 0.41 |
| 51:BU:91:ASP:O | 51:BU:95:LEU:HB2 | 2.21 | 0.41 |
| 52:BV:5:VAL:HG23 | 52:BV:37:VAL:O | 2.21 | 0.41 |
| 52:BV:6:LYS:HB3 | 52:BV:37:VAL:HB | 2.03 | 0.41 |
| 39:DE:161:GLY:O | 39:DE:162:ALA:C | 2.58 | 0.41 |
| 28:D3:39:ASP:OD2 | 28:D3:44:ARG:NH2 | 2.47 | 0.41 |
| 47:BQ:141:GLN:HB2 | 56:BZ:99:TYR:HD2 | 1.82 | 0.41 |
| 56:BZ:95:PRO:O | 56:BZ:127:LYS:HG3 | 2.20 | 0.41 |
| 35:BA:2821:A:OP2 | 39:BE:110:GLY:O | 2.39 | 0.41 |
| 35:DA:1568:G:C5' | 38:DD:61:LEU:HB2 | 2.51 | 0.41 |
| 44:BN:115:ARG:O | 44:BN:118:LYS:HB2 | 2.21 | 0.41 |
| 5:AE:110:LEU:HA | 5:AE:113:ALA:HB3 | 2.03 | 0.41 |
| 39:DE:186:GLY:C | 39:DE:188:VAL:N | 2.73 | 0.41 |
| 13:CM:65:LYS:HG2 | 13:CM:66:LEU:N | 2.35 | 0.41 |
| 13:CM:73:GLU:C | 13:CM:76:ALA:H | 2.23 | 0.41 |
| 1:CA:1060:C:H2' | 1:CA:1061:G:C8 | 2.50 | 0.41 |
| 42:BH:46:GLU:HG3 | 42:BH:50:VAL:HG13 | 2.03 | 0.41 |
| 37:DC:66:HIS:NE2 | 37:DC:187:ASP:HA | 2.36 | 0.41 |
| 35:BA:1593:G:C3' | 35:BA:1594:G:C5' | 2.96 | 0.41 |
| 40:BF:192:LEU:C | 40:BF:192:LEU:CD2 | 2.89 | 0.41 |
| 35:BA:614(C):A:HO2' | 35:BA:615:G:P | 2.42 | 0.41 |
| 1:AA:192:U:O2' | 1:AA:193:C:H5' | 2.21 | 0.41 |
| 29:B4:50:THR:C | 29:B4:51:TYR:CG | 2.94 | 0.41 |
| 29:B4:37:PRO:O | 29:B4:55:PRO:HG3 | 2.21 | 0.41 |
| 35:BA:1493:C:C2' | 35:BA:1493:C:O2 | 2.68 | 0.41 |
| 35:DA:2177:C:O2' | 35:DA:2178:C:H5' | 2.21 | 0.41 |
| 38:DD:176:ARG:HA | 38:DD:182:LEU:HD23 | 2.01 | 0.41 |
| 38:DD:270:ILE:C | 38:DD:271:ILE:CG1 | 2.85 | 0.41 |
| 38:DD:270:ILE:O | 38:DD:270:ILE:HD12 | 2.20 | 0.41 |
| 3:CC:30:ARG:NH2 | 14:CN:35:ARG:CA | 2.83 | 0.41 |
| 3:CC:152:ILE:CG1 | 3:CC:199:LYS:HB2 | 2.51 | 0.41 |
| 19:AS:5:LEU:C | 19:AS:6:LYS:HE3 | 2.41 | 0.41 |
| 10:CJ:24:VAL:CG2 | 10:CJ:37:PRO:HG3 | 2.51 | 0.41 |
| 4:CD:22:LYS:CB | 4:CD:26:CYS:HB2 | 2.47 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AJ:4:ILE:HD11 | 10:AJ:77:PRO:HB3 | 2.03 | 0.41 |
| 35:BA:2306:C:H5 | 35:BA:2307:G:H1' | 1.83 | 0.41 |
| 35:BA:2310:A:O2' | 35:BA:2311:A:H5' | 2.20 | 0.41 |
| 41:BG:133:LEU:CD1 | 41:BG:135:LEU:CD1 | 2.98 | 0.41 |
| 46:DP:113:LYS:HE2 | 46:DP:115:LEU:HD13 | 2.02 | 0.41 |
| 22:AV:67:C:H2' | 22:AV:68:C:H6 | 1.81 | 0.41 |
| 48:DR:24:GLN:HB2 | 48:DR:44:LEU:HD23 | 2.03 | 0.41 |
| 49:DS:99:LYS:O | 49:DS:101:LEU:N | 2.45 | 0.41 |
| 49:DS:101:LEU:HD22 | 49:DS:101:LEU:C | 2.41 | 0.41 |
| 35:BA:1614:A:H61 | 53:BW:88:ARG:H | 1.67 | 0.41 |
| 43:BI:76:THR:O | 43:BI:77:LEU:HB2 | 2.21 | 0.41 |
| 54:DX:37:THR:O | 54:DX:38:GLU:C | 2.59 | 0.41 |
| 20:AT:28:ALA:C | 20:AT:30:LYS:H | 2.24 | 0.41 |
| 31:B6:51:GLU:O | 31:B6:52:VAL:CG2 | 2.68 | 0.41 |
| 44:DN:19:GLU:HG3 | 44:DN:20:GLY:H | 1.85 | 0.41 |
| 13:AM:89:GLY:C | 13:AM:90:LEU:O | 2.57 | 0.41 |
| 8:AH:137:VAL:CG1 | 8:AH:138:TRP:N | 2.84 | 0.41 |
| 1:CA:1320:C:O4' | 19:CS:73:GLU:HG3 | 2.20 | 0.41 |
| 39:BE:52:LEU:HD12 | 39:BE:52:LEU:HA | 1.95 | 0.41 |
| 31:D6:10:LEU:C | 31:D6:11:LEU:HD22 | 2.42 | 0.41 |
| 25:D0:43:THR:CG2 | 35:DA:2336:A:H61 | 2.34 | 0.41 |
| 26:D1:80:LEU:HA | 26:D1:80:LEU:HD23 | 1.85 | 0.41 |
| 26:D1:86:SER:HB2 | 26:D1:89:GLU:CG | 2.50 | 0.41 |
| 30:D5:6:VAL:HG22 | 30:D5:7:PRO:CD | 2.49 | 0.41 |
| 35:BA:2632:A:N3 | 39:BE:61:ARG:HD3 | 2.36 | 0.41 |
| 43:BI:130:TYR:O | 43:BI:135:GLU:HG2 | 2.21 | 0.41 |
| 1:CA:737:A:H2' | 1:CA:738:C:H6 | 1.81 | 0.41 |
| 8:AH:134:ILE:O | 8:AH:135:CYS:CB | 2.62 | 0.41 |
| 46:DP:146:VAL:O | 46:DP:148:LEU:N | 2.54 | 0.41 |
| 26:D1:57:GLU:O | 26:D1:58:ILE:O | 2.38 | 0.41 |
| 1:AA:127:G:N2 | 17:AQ:61:GLU:OE1 | 2.53 | 0.41 |
| 51:DU:27:LEU:HD23 | 51:DU:27:LEU:HA | 1.71 | 0.41 |
| 51:DU:31:SER:HB3 | 51:DU:34:LYS:HB2 | 2.03 | 0.41 |
| 25:B0:23:VAL:HG12 | 25:B0:25:ARG:O | 2.21 | 0.41 |
| 54:BX:31:HIS:HA | 54:BX:32:PRO:HD2 | 1.81 | 0.41 |
| 54:DX:12:VAL:HB | 54:DX:17:ALA:CB | 2.50 | 0.41 |
| 1:CA:728:A:H2' | 1:CA:729:A:H8 | 1.82 | 0.41 |
| 35:BA:1286:A:N6 | 35:BA:1289:C:C2 | 2.89 | 0.41 |
| 4:CD:30:LYS:O | 4:CD:32:ALA:N | 2.53 | 0.41 |
| 2:AB:167:PRO:HG2 | 2:AB:168:THR:H | 1.83 | 0.41 |
| 39:DE:101:ARG:HB3 | 39:DE:201:THR:HG21 | 2.01 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 15:AO:19:PRO:C | 15:AO:21:ASP:H | 2.23 | 0.41 |
| 1:AA:80:G:N7 | 1:AA:81:U:H5 | 2.19 | 0.41 |
| 56:BZ:124:ILE:O | 56:BZ:126:VAL:HG13 | 2.21 | 0.41 |
| 8:CH:75:ARG:HA | 8:CH:76:PRO:HD2 | 1.86 | 0.41 |
| 40:BF:57:VAL:CG1 | 40:BF:59:TYR:CD1 | 3.04 | 0.41 |
| 27:B2:38:GLN:HB3 | 27:B2:44:LEU:O | 2.21 | 0.41 |
| 47:DQ:30:GLY:N | 47:DQ:105:GLU:OE2 | 2.53 | 0.41 |
| 47:DQ:26:TYR:CE1 | 47:DQ:28:ALA:HB3 | 2.56 | 0.41 |
| 56:DZ:80:ARG:NH1 | 56:DZ:80:ARG:HG3 | 2.34 | 0.41 |
| 50:DT:98:LYS:HB3 | 50:DT:100:TYR:CE1 | 2.56 | 0.41 |
| 12:AL:6:THR:HG22 | 12:AL:9:GLN:CD | 2.41 | 0.41 |
| 1:AA:327:A:C4 | 1:AA:329:A:C8 | 3.09 | 0.41 |
| 35:BA:543:C:O2 | 35:BA:549:G:N2 | 2.53 | 0.41 |
| 27:D2:4:SER:HA | 27:D2:7:ARG:HH11 | 1.86 | 0.41 |
| 16:CP:4:ILE:O | 16:CP:66:PRO:HA | 2.20 | 0.41 |
| 1:CA:186:C:H2' | 1:CA:187:C:H6 | 1.85 | 0.41 |
| 35:DA:2816:C:O2' | 35:DA:2817:G:H5' | 2.20 | 0.41 |
| 35:DA:1332:G:N1 | 35:DA:1609:A:C4 | 2.89 | 0.41 |
| 35:BA:2171:A:O2' | 35:BA:2172:U:H6 | 2.04 | 0.41 |
| 1:AA:149:A:O2' | 1:AA:150:C:C6 | 2.74 | 0.41 |
| 24:AX:13:A:N3 | 24:AX:13:A:H2' | 2.35 | 0.41 |
| 27:B2:47:ASN:OD1 | 35:BA:61:G:C4 | 2.73 | 0.41 |
| 34:B9:26:ILE:HD12 | 34:B9:26:ILE:N | 2.26 | 0.41 |
| 36:DB:37:C:H2' | 36:DB:38:C:O4' | 2.20 | 0.41 |
| 9:AI:116:LYS:HZ2 | 9:AI:116:LYS:HB3 | 1.81 | 0.41 |
| 43:DI:12:LEU:HB2 | 43:DI:19:VAL:HG11 | 2.01 | 0.41 |
| 18:AR:53:ARG:C | 18:AR:55:ARG:H | 2.25 | 0.41 |
| 35:DA:962:G:O2' | 35:DA:963:U:H5' | 2.20 | 0.41 |
| 18:CR:53:ARG:C | 18:CR:55:ARG:H | 2.24 | 0.41 |
| 11:AK:29:ILE:HB | 11:AK:44:SER:CB | 2.47 | 0.41 |
| 56:BZ:13:GLU:HA | 56:BZ:13:GLU:OE2 | 2.21 | 0.41 |
| 35:BA:962:G:O2' | 35:BA:963:U:H5' | 2.20 | 0.41 |
| 50:BT:101:PHE:HE2 | 50:BT:113:LYS:HG2 | 1.85 | 0.41 |
| 41:BG:139:LEU:HB3 | 41:BG:149:VAL:HG11 | 2.03 | 0.41 |
| 3:CC:150:LYS:CG | 3:CC:169:ALA:HB2 | 2.46 | 0.41 |
| 7:CG:145:ALA:O | 7:CG:146:GLU:HB2 | 2.19 | 0.41 |
| 2:CB:178:ARG:HA | 2:CB:178:ARG:HD3 | 1.93 | 0.41 |
| 2:AB:19:HIS:CD2 | 2:AB:20:GLU:H | 2.38 | 0.41 |
| 6:AF:50:TYR:HE2 | 6:AF:52:ILE:HD11 | 1.86 | 0.41 |
| 41:BG:94:LEU:HD23 | 41:BG:94:LEU:HA | 1.90 | 0.41 |
| 37:DC:71:GLN:HG2 | 37:DC:73:ARG:NH2 | 2.34 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 42:DH:41:MET:SD | 42:DH:55:PRO:HG3 | 2.61 | 0.41 |
| 1:CA:542:G:P | 4:CD:10:ARG:NH2 | 2.93 | 0.41 |
| 16:AP:25:ARG:NH1 | 16:AP:25:ARG:HG3 | 2.35 | 0.41 |
| 1:AA:262:A:C6 | 1:AA:263:A:C6 | 3.09 | 0.41 |
| 1:CA:1280:A:C8 | 10:CJ:41:PRO:HD2 | 2.56 | 0.41 |
| 35:DA:1876:A:H2' | 35:DA:1877:A:H8 | 1.82 | 0.41 |
| 56:BZ:18:LEU:HB3 | 56:BZ:23:LYS:HB2 | 2.02 | 0.41 |
| 38:BD:205:VAL:O | 38:BD:206:LEU:C | 2.59 | 0.41 |
| 50:DT:128:GLU:OE1 | 50:DT:128:GLU:C | 2.59 | 0.41 |
| 38:BD:206:LEU:HD22 | 38:BD:211:ARG:HG3 | 2.03 | 0.41 |
| 1:AA:542:G:P | 4:AD:10:ARG:NH2 | 2.94 | 0.41 |
| 35:BA:315:G:H2' | 35:BA:316:C:H6 | 1.86 | 0.41 |
| 35:DA:1854:A:C2 | 35:DA:2087:G:N3 | 2.88 | 0.41 |
| 35:BA:1188:U:HO2' | 35:BA:1189:A:H5' | 1.84 | 0.41 |
| 22:CY:11:C:H2' | 22:CY:12:U:C6 | 2.55 | 0.41 |
| 1:AA:986:A:H2' | 1:AA:987:G:H8 | 1.85 | 0.41 |
| 42:BH:150:ALA:O | 42:BH:151:ILE:C | 2.59 | 0.41 |
| 56:BZ:9:TYR:HE2 | 56:BZ:35:ARG:NE | 2.16 | 0.41 |
| 1:CA:1228:C:H4' | 13:CM:116:THR:HA | 2.03 | 0.41 |
| 3:AC:178:LEU:N | 3:AC:178:LEU:HD22 | 2.36 | 0.41 |
| 1:CA:302:G:O2' | 1:CA:556:C:H5'' | 2.20 | 0.41 |
| 2:CB:20:GLU:OE2 | 2:CB:23:ARG:NH2 | 2.53 | 0.41 |
| 35:BA:523:C:C5 | 35:BA:524:U:C5 | 3.09 | 0.41 |
| 35:DA:466:A:H2' | 35:DA:467:G:H5' | 2.03 | 0.41 |
| 35:BA:530:G:C5 | 35:BA:2022:U:H5'' | 2.56 | 0.41 |
| 1:CA:123:C:H5'' | 1:CA:311:C:O2' | 2.21 | 0.41 |
| 1:CA:311:C:O2' | 1:CA:312:C:H5' | 2.21 | 0.41 |
| 48:DR:100:LEU:HD22 | 48:DR:100:LEU:N | 2.33 | 0.41 |
| 35:DA:709:U:C2 | 35:DA:723:G:N2 | 2.89 | 0.41 |
| 35:BA:1357:U:H2' | 35:BA:1358:G:O4' | 2.21 | 0.41 |
| 4:CD:65:ARG:HD2 | 4:CD:72:GLU:HA | 2.03 | 0.41 |
| 17:AQ:83:ASP:CG | 17:AQ:84:LEU:N | 2.74 | 0.41 |
| 6:AF:12:PRO:HB3 | 6:AF:45:LEU:HD13 | 2.03 | 0.41 |
| 27:D2:55:ARG:HH21 | 27:D2:55:ARG:HG3 | 1.86 | 0.41 |
| 1:CA:658:G:O2' | 1:CA:659:U:H5' | 2.21 | 0.41 |
| 35:DA:1824:G:OP1 | 38:DD:52:ARG:HD3 | 2.21 | 0.41 |
| 35:BA:1756:G:H4' | 35:BA:1758:G:O4' | 2.21 | 0.41 |
| 1:CA:947:G:H2' | 1:CA:948:C:C6 | 2.55 | 0.41 |
| 1:CA:1403:C:O2 | 1:CA:1403:C:H2' | 2.20 | 0.41 |
| 1:AA:5:U:C2 | 4:AD:86:LYS:HE2 | 2.56 | 0.41 |
| 42:BH:137:ASP:O | 42:BH:138:LYS:HB2 | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:BA:869:G:C2' | 35:BA:870:A:H5' | 2.50 | 0.41 |
| 1:CA:644:G:H2' | 1:CA:645:C:C5' | 2.49 | 0.41 |
| 35:DA:320:A:C8 | 40:DF:136:THR:HG21 | 2.56 | 0.41 |
| 13:AM:99:ARG:C | 13:AM:101:GLN:HE21 | 2.24 | 0.41 |
| 1:AA:1100:C:HO2' | 1:AA:1102:A:P | 2.43 | 0.41 |
| 43:BI:28:ASN:HA | 43:BI:32:PRO:HG2 | 2.03 | 0.41 |
| 15:CO:41:GLU:O | 15:CO:45:VAL:HG23 | 2.21 | 0.41 |
| 35:BA:1313:U:C2' | 35:BA:1313:U:O2 | 2.68 | 0.41 |
| 35:DA:917:A:N1 | 36:DB:80:U:H4' | 2.35 | 0.41 |
| 43:DI:78:THR:CB | 43:DI:141:LYS:HB2 | 2.51 | 0.41 |
| 35:BA:564:C:C2' | 35:BA:565:C:H5' | 2.51 | 0.41 |
| 1:AA:189(C):C:C2' | 1:AA:189(D):C:H5' | 2.51 | 0.41 |
| 35:DA:32:C:H2' | 35:DA:33:U:H5' | 2.02 | 0.41 |
| 35:DA:2880:C:H1' | 48:DR:92:GLY:O | 2.20 | 0.41 |
| 1:CA:779:C:C2' | 1:CA:780:A:H5' | 2.50 | 0.41 |
| 1:AA:232:G:H2' | 1:AA:233:C:O4' | 2.20 | 0.41 |
| 4:AD:108:LEU:CB | 4:AD:110:PHE:CE1 | 3.04 | 0.41 |
| 35:DA:1790:C:H5'' | 35:DA:1791:A:OP1 | 2.20 | 0.41 |
| 35:BA:2065:C:O2' | 35:BA:2066:C:H5' | 2.20 | 0.41 |
| 51:DU:100:VAL:O | 51:DU:103:PRO:HD3 | 2.21 | 0.41 |
| 51:DU:108:GLU:OE2 | 52:DV:44:LYS:HG2 | 2.20 | 0.41 |
| 44:DN:32:THR:HG22 | 44:DN:37:LYS:HB3 | 2.01 | 0.41 |
| 1:CA:1522:U:H2' | 1:CA:1523:G:C8 | 2.56 | 0.41 |
| 52:BV:17:GLY:HA2 | 52:BV:96:ILE:O | 2.20 | 0.41 |
| 35:DA:2081:C:H2' | 35:DA:2082:A:H8 | 1.86 | 0.41 |
| 35:BA:1204:A:C2 | 35:BA:1206:G:C2 | 3.09 | 0.41 |
| 22:CY:35:A:O2' | 22:CY:36:A:H5' | 2.20 | 0.41 |
| 48:BR:99:LYS:N | 48:BR:99:LYS:CD | 2.84 | 0.41 |
| 35:DA:2584:U:O5' | 35:DA:2584:U:H6 | 2.04 | 0.41 |
| 16:AP:76:GLN:O | 16:AP:76:GLN:HG2 | 2.20 | 0.41 |
| 1:CA:271:C:H2' | 1:CA:272:C:H6 | 1.86 | 0.41 |
| 35:DA:292:C:H2' | 35:DA:293:U:H5' | 2.03 | 0.41 |
| 1:AA:959:A:H2' | 1:AA:960:U:H4' | 2.02 | 0.41 |
| 35:DA:149:A:H2' | 35:DA:150:C:C6 | 2.56 | 0.41 |
| 37:BC:188:ASN:C | 37:BC:190:ARG:H | 2.23 | 0.41 |
| 35:DA:721:C:H3' | 35:DA:722:A:H8 | 1.85 | 0.41 |
| 1:AA:316:G:H2' | 1:AA:317:G:H8 | 1.85 | 0.41 |
| 38:BD:6:PHE:CD1 | 38:BD:6:PHE:N | 2.88 | 0.41 |
| 3:AC:69:HIS:CD2 | 3:AC:69:HIS:N | 2.88 | 0.41 |
| 40:DF:96:ASP:C | 40:DF:96:ASP:OD1 | 2.59 | 0.41 |
| 35:DA:1161:C:H1' | 52:DV:8:GLY:O | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BA:2019:A:N6 | 35:BA:2020:A:C5 | 2.88 | 0.41 |
| 1:AA:19:C:O2 | 1:AA:572:A:H2 | 2.03 | 0.41 |
| 1:AA:1396:A:O4' | 1:AA:1398:A:H1' | 2.21 | 0.41 |
| 35:DA:2641:G:P | 44:DN:74:ARG:HE | 2.43 | 0.41 |
| 6:AF:53:ALA:O | 6:AF:54:LYS:HB2 | 2.21 | 0.41 |
| 35:DA:640:C:H2' | 35:DA:641:C:C6 | 2.56 | 0.41 |
| 22:AY:71:G:N3 | 22:AY:71:G:H2' | 2.36 | 0.41 |
| 35:DA:1299:G:O5' | 35:DA:1299:G:H8 | 2.03 | 0.41 |
| 11:CK:104:GLN:C | 11:CK:106:LYS:H | 2.24 | 0.41 |
| 35:BA:1515:G:O2' | 35:BA:1516:C:H5' | 2.21 | 0.41 |
| 56:BZ:25:PRO:O | 56:BZ:85:HIS:HA | 2.21 | 0.41 |
| 56:DZ:102:LEU:HD12 | 56:DZ:123:ASP:HA | 2.01 | 0.41 |
| 56:DZ:99:TYR:HA | 56:DZ:124:ILE:O | 2.21 | 0.41 |
| 12:AL:60:LEU:HD21 | 12:AL:66:VAL:HG22 | 2.02 | 0.41 |
| 35:DA:611:C:H2' | 35:DA:612:C:C6 | 2.55 | 0.41 |
| 40:DF:192:LEU:HD21 | 40:DF:194:MET:CE | 2.50 | 0.41 |
| 9:CI:103:THR:HG22 | 9:CI:105:ASP:N | 2.36 | 0.41 |
| 1:AA:1346:A:N6 | 1:AA:1375:A:OP2 | 2.53 | 0.41 |
| 50:DT:28:VAL:HG21 | 50:DT:88:ILE:HD11 | 2.03 | 0.41 |
| 50:DT:91:ARG:C | 50:DT:93:ARG:N | 2.74 | 0.41 |
| 1:CA:1053:G:O2' | 1:CA:1199:U:H5 | 2.03 | 0.41 |
| 48:DR:17:ARG:O | 48:DR:20:LEU:HB3 | 2.21 | 0.41 |
| 48:BR:10:LEU:HD13 | 48:BR:17:ARG:CZ | 2.51 | 0.41 |
| 48:BR:17:ARG:O | 48:BR:20:LEU:HB3 | 2.21 | 0.41 |
| 35:DA:2492:U:H2' | 35:DA:2493:U:H6 | 1.86 | 0.41 |
| 52:BV:95:LEU:C | 52:BV:95:LEU:CD2 | 2.90 | 0.41 |
| 51:DU:92:ARG:NH1 | 52:DV:11:GLN:HB2 | 2.32 | 0.41 |
| 40:BF:8:GLN:CB | 40:BF:126:VAL:HA | 2.49 | 0.41 |
| 40:BF:129:PHE:HE1 | 40:BF:142:TRP:CH2 | 2.39 | 0.41 |
| 41:DG:115:ARG:CZ | 41:DG:136:ARG:HB2 | 2.51 | 0.41 |
| 48:DR:101:ALA:O | 48:DR:102:GLU:CB | 2.69 | 0.41 |
| 55:DY:23:ARG:NH2 | 55:DY:41:GLY:HA2 | 2.36 | 0.41 |
| 19:AS:5:LEU:N | 19:AS:6:LYS:NZ | 2.69 | 0.41 |
| 22:AY:43:C:C2' | 22:AY:44:G:H5' | 2.50 | 0.41 |
| 55:BY:23:ARG:NH2 | 55:BY:41:GLY:HA2 | 2.36 | 0.41 |
| 46:DP:115:LEU:HD23 | 46:DP:115:LEU:O | 2.20 | 0.41 |
| 49:DS:33:LYS:HA | 49:DS:33:LYS:HD3 | 1.83 | 0.41 |
| 44:BN:68:GLU:HG2 | 44:BN:88:GLU:OE1 | 2.21 | 0.41 |
| 35:DA:27:G:O2' | 35:DA:28:A:P | 2.79 | 0.41 |
| 35:DA:511:U:O4 | 35:DA:512:G:C2 | 2.74 | 0.41 |
| 13:AM:51:ALA:O | 13:AM:55:ARG:N | 2.51 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:B8:32:LEU:HB2 | 33:B8:36:LYS:HZ1 | 1.84 | 0.41 |
| 27:D2:69:ARG:HH21 | 35:DA:111:A:H4' | 1.86 | 0.41 |
| 13:CM:93:ARG:C | 13:CM:94:ARG:HD2 | 2.42 | 0.41 |
| 35:DA:153:C:H42 | 35:DA:173:G:H1 | 1.69 | 0.41 |
| 26:D1:92:LYS:NZ | 35:DA:153:C:H5' | 2.36 | 0.41 |
| 11:CK:127:LYS:CE | 11:CK:127:LYS:HA | 2.39 | 0.41 |
| 1:CA:623:C:C4 | 1:CA:624:C:C5 | 3.09 | 0.41 |
| 1:AA:137:C:H1' | 16:AP:62:VAL:O | 2.21 | 0.41 |
| 1:CA:1203:C:OP1 | 14:CN:3:ARG:CD | 2.69 | 0.41 |
| 35:BA:1485:G:C8 | 35:BA:1486:A:N7 | 2.88 | 0.41 |
| 35:BA:858:U:O2 | 35:BA:2268:A:N3 | 2.54 | 0.41 |
| 39:BE:179:GLU:O | 39:BE:180:ASN:CB | 2.69 | 0.41 |
| 46:BP:126:VAL:O | 46:BP:127:ALA:HB2 | 2.21 | 0.41 |
| 15:CO:19:PRO:C | 15:CO:21:ASP:H | 2.25 | 0.41 |
| 35:BA:1286:A:O2' | 35:BA:1288:U:OP2 | 2.35 | 0.41 |
| 2:CB:97:TRP:HH2 | 2:CB:176:GLU:CD | 2.24 | 0.41 |
| 1:CA:191:G:N3 | 20:CT:105:SER:HB3 | 2.35 | 0.41 |
| 1:AA:328:C:O2' | 1:AA:329:A:P | 2.79 | 0.41 |
| 27:D2:7:ARG:HH11 | 27:D2:7:ARG:CG | 2.30 | 0.41 |
| 3:CC:3:ASN:CG | 3:CC:4:LYS:H | 2.25 | 0.41 |
| 50:DT:3:ARG:HB2 | 50:DT:6:LEU:HB3 | 1.98 | 0.41 |
| 9:CI:116:LYS:O | 9:CI:117:HIS:C | 2.59 | 0.41 |
| 13:AM:54:VAL:O | 13:AM:58:GLU:HG2 | 2.20 | 0.41 |
| 1:CA:1310:G:C2' | 1:CA:1311:G:H5' | 2.51 | 0.41 |
| 12:CL:18:VAL:CG2 | 12:CL:19:ARG:N | 2.82 | 0.41 |
| 35:DA:1987:G:C8 | 35:DA:1987:G:C5' | 3.00 | 0.41 |
| 47:BQ:111:GLU:CD | 47:BQ:133:ARG:NH2 | 2.74 | 0.41 |
| 36:DB:111:G:HO2' | 36:DB:112:U:H5' | 1.86 | 0.41 |
| 17:AQ:63:ARG:HG2 | 17:AQ:64:PRO:CD | 2.47 | 0.41 |
| 35:BA:572:A:H2' | 35:BA:573:G:O4' | 2.21 | 0.41 |
| 2:AB:59:GLU:HB2 | 2:AB:221:LEU:HD11 | 2.00 | 0.41 |
| 22:AV:75:C:OP1 | 35:BA:2602:A:O5' | 2.39 | 0.41 |
| 50:DT:129:ARG:NH2 | 50:DT:131:ALA:HB3 | 2.35 | 0.41 |
| 35:BA:2652:C:H42 | 35:BA:2668:G:H1 | 1.69 | 0.41 |
| 47:BQ:79:LEU:O | 47:BQ:80:GLU:HB3 | 2.20 | 0.41 |
| 38:DD:126:GLN:HG3 | 38:DD:129:ASN:HD21 | 1.84 | 0.41 |
| 52:DV:2:PHE:CZ | 52:DV:13:ARG:HD2 | 2.55 | 0.41 |
| 1:CA:676:A:H2' | 1:CA:677:U:C6 | 2.55 | 0.41 |
| 42:DH:150:ALA:O | 42:DH:151:ILE:C | 2.59 | 0.41 |
| 15:AO:10:LYS:C | 15:AO:10:LYS:HD2 | 2.41 | 0.41 |
| 4:CD:58:LEU:HD23 | 4:CD:206:PHE:CE1 | 2.56 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:BA:604:G:O2' | 35:BA:605:C:H5' | 2.21 | 0.41 |
| 35:DA:1464:C:O2' | 35:DA:1528:A:H8 | 2.04 | 0.41 |
| 17:AQ:78:GLU:OE1 | 17:AQ:81:ARG:HD2 | 2.21 | 0.41 |
| 7:CG:22:LEU:HG | 7:CG:62:PHE:HE2 | 1.86 | 0.41 |
| 22:CV:74:C:H2' | 22:CV:75:C:H5' | 2.01 | 0.41 |
| 1:AA:895:G:H2' | 1:AA:896:C:H6 | 1.84 | 0.41 |
| 35:BA:2689:U:P | 35:BA:2719:G:H22 | 2.44 | 0.41 |
| 43:DI:28:ASN:HA | 43:DI:32:PRO:HG2 | 2.03 | 0.41 |
| 35:BA:58:G:H1 | 35:BA:69:C:H42 | 1.69 | 0.41 |
| 35:BA:2038:G:H2' | 35:BA:2039:C:O4' | 2.20 | 0.41 |
| 50:DT:48:ILE:HD12 | 50:DT:48:ILE:H | 1.85 | 0.41 |
| 18:AR:82:THR:OG1 | 18:AR:83:GLU:N | 2.52 | 0.41 |
| 50:BT:76:PHE:HA | 50:BT:77:PRO:HD3 | 1.78 | 0.41 |
| 35:BA:1669:A:H2' | 35:BA:1670:C:H5' | 2.03 | 0.41 |
| 35:BA:229:A:H3' | 35:BA:230:U:C5' | 2.50 | 0.41 |
| 34:D9:16:VAL:O | 35:DA:1033:U:H5 | 2.04 | 0.41 |
| 35:DA:2166:G:H2' | 35:DA:2167:U:C6 | 2.56 | 0.41 |
| 35:DA:2322:A:H2' | 35:DA:2323:G:O4' | 2.21 | 0.41 |
| 35:DA:2422:A:O2' | 35:DA:2423:U:H5'' | 2.21 | 0.41 |
| 35:BA:2532:G:H8 | 35:BA:2532:G:O5' | 2.04 | 0.41 |
| 1:AA:959:A:H2' | 1:AA:960:U:C4' | 2.51 | 0.41 |
| 35:DA:1896:G:O2' | 35:DA:1897:G:H5' | 2.21 | 0.41 |
| 1:CA:1261:A:H2' | 1:CA:1262:C:H5' | 2.02 | 0.41 |
| 35:BA:665:C:O2' | 35:BA:666:G:H5' | 2.20 | 0.41 |
| 35:BA:394:A:C6 | 35:BA:395:U:C4 | 3.09 | 0.41 |
| 35:DA:2131:G:H3' | 35:DA:2131:G:OP2 | 2.20 | 0.41 |
| 35:BA:2131:G:OP2 | 35:BA:2131:G:H3' | 2.21 | 0.41 |
| 6:AF:43:LEU:H | 6:AF:43:LEU:CD1 | 2.34 | 0.41 |
| 1:AA:1264:C:H2' | 1:AA:1265:G:H8 | 1.86 | 0.41 |
| 4:AD:98:GLU:HA | 4:AD:103:ASN:ND2 | 2.35 | 0.41 |
| 56:DZ:33:LEU:CG | 56:DZ:34:ASN:N | 2.84 | 0.40 |
| 49:BS:92:TYR:O | 49:BS:93:LYS:HB3 | 2.21 | 0.40 |
| 35:DA:1887:C:C3' | 35:DA:1888:G:C5' | 2.97 | 0.40 |
| 40:DF:117:ARG:HH21 | 40:DF:187:VAL:HA | 1.86 | 0.40 |
| 40:BF:2:LYS:H | 40:BF:2:LYS:HD3 | 1.87 | 0.40 |
| 31:B6:15:GLU:CG | 31:B6:41:PRO:HG3 | 2.52 | 0.40 |
| 1:CA:1376:U:H2' | 1:CA:1377:A:H8 | 1.85 | 0.40 |
| 40:DF:123:LEU:CD1 | 40:DF:124:LEU:N | 2.82 | 0.40 |
| 2:CB:17:PHE:HD1 | 2:CB:44:LEU:HG | 1.86 | 0.40 |
| 35:BA:828:U:H4' | 35:BA:831:G:N1 | 2.36 | 0.40 |
| 18:CR:36:ASN:HB2 | 18:CR:39:VAL:CG2 | 2.51 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 12:CL:37:CYS:CA | 12:CL:58:VAL:HG22 | 2.50 | 0.40 |
| 39:BE:75:VAL:C | 39:BE:77:ILE:H | 2.21 | 0.40 |
| 38:DD:34:VAL:C | 38:DD:36:PRO:HD2 | 2.42 | 0.40 |
| 38:DD:63:ARG:HD2 | 38:DD:86:PRO:HD2 | 2.03 | 0.40 |
| 5:AE:33:VAL:HG11 | 5:AE:109:ILE:HA | 2.03 | 0.40 |
| 5:AE:9:LYS:CB | 5:AE:112:LEU:HD11 | 2.46 | 0.40 |
| 35:DA:1164:G:C2 | 35:DA:1165:U:C2 | 3.09 | 0.40 |
| 41:DG:133:LEU:C | 41:DG:133:LEU:HD12 | 2.41 | 0.40 |
| 55:DY:42:VAL:HG11 | 55:DY:65:ALA:HB3 | 2.00 | 0.40 |
| 35:BA:907:U:O2' | 47:BQ:101:ARG:NH2 | 2.54 | 0.40 |
| 10:CJ:30:SER:CA | 10:CJ:80:LYS:HB3 | 2.51 | 0.40 |
| 10:CJ:3:LYS:HZ2 | 10:CJ:77:PRO:HD2 | 1.87 | 0.40 |
| 30:B5:36:CYS:HB3 | 30:B5:38:ALA:N | 2.34 | 0.40 |
| 35:DA:6:A:HO2' | 44:DN:130:HIS:HB3 | 1.81 | 0.40 |
| 22:CY:43:C:H2' | 22:CY:44:G:O4' | 2.22 | 0.40 |
| 42:BH:158:HIS:CE1 | 42:BH:169:VAL:O | 2.74 | 0.40 |
| 39:BE:186:GLY:C | 39:BE:188:VAL:N | 2.70 | 0.40 |
| 3:CC:180:ALA:O | 3:CC:181:ASN:HB3 | 2.22 | 0.40 |
| 27:B2:6:VAL:O | 27:B2:9:GLN:N | 2.54 | 0.40 |
| 20:CT:30:LYS:O | 20:CT:33:ILE:N | 2.53 | 0.40 |
| 31:B6:9:LEU:HD22 | 31:B6:11:LEU:HD22 | 2.03 | 0.40 |
| 42:BH:85:LYS:HD2 | 42:BH:141:VAL:CG2 | 2.49 | 0.40 |
| 55:DY:50:ARG:HB2 | 55:DY:53:PRO:HA | 2.03 | 0.40 |
| 25:D0:43:THR:CG2 | 25:D0:43:THR:O | 2.61 | 0.40 |
| 26:D1:82:LEU:N | 26:D1:83:GLU:OE2 | 2.53 | 0.40 |
| 56:BZ:117:LEU:HA | 56:BZ:174:VAL:CG2 | 2.48 | 0.40 |
| 1:AA:738:C:H2' | 1:AA:739:C:H6 | 1.86 | 0.40 |
| 8:CH:137:VAL:CG1 | 8:CH:138:TRP:N | 2.84 | 0.40 |
| 56:DZ:133:ILE:O | 56:DZ:133:ILE:HG22 | 2.21 | 0.40 |
| 20:AT:51:GLU:O | 20:AT:55:ILE:HG12 | 2.21 | 0.40 |
| 18:AR:44:LEU:O | 18:AR:45:SER:O | 2.39 | 0.40 |
| 38:BD:186:HIS:HD2 | 38:BD:188:GLU:N | 2.06 | 0.40 |
| 35:BA:1502:C:H6 | 35:BA:1502:C:H5'' | 1.86 | 0.40 |
| 27:B2:18:PRO:O | 27:B2:19:VAL:C | 2.59 | 0.40 |
| 35:DA:1485:G:N2 | 35:DA:1505:C:C6 | 2.87 | 0.40 |
| 12:CL:27:LEU:C | 12:CL:29:GLY:H | 2.25 | 0.40 |
| 26:B1:66:HIS:C | 26:B1:68:PRO:HD2 | 2.41 | 0.40 |
| 5:AE:18:ARG:HH21 | 5:AE:25:ARG:HD2 | 1.85 | 0.40 |
| 40:BF:66:PRO:O | 40:BF:67:GLN:CB | 2.57 | 0.40 |
| 35:DA:675:A:C4 | 35:DA:804:A:C2 | 3.10 | 0.40 |
| 40:DF:65:TRP:C | 40:DF:67:GLN:H | 2.24 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:825:G:O2' | 8:AH:12:ARG:NH2 | 2.52 | 0.40 |
| 1:AA:826:C:H2' | 1:AA:827:U:H6 | 1.86 | 0.40 |
| 5:CE:76:ILE:HD12 | 5:CE:118:ILE:HD13 | 2.02 | 0.40 |
| 35:BA:61:G:H1 | 35:BA:94:C:N4 | 2.12 | 0.40 |
| 47:BQ:62:GLY:HA3 | 47:BQ:107:ALA:O | 2.20 | 0.40 |
| 47:BQ:1:MET:O | 47:BQ:2:LEU:HB2 | 2.21 | 0.40 |
| 43:BI:12:LEU:HB2 | 43:BI:19:VAL:HG11 | 2.03 | 0.40 |
| 1:AA:15:G:H2' | 1:AA:16:A:H8 | 1.86 | 0.40 |
| 2:AB:170:GLU:O | 2:AB:173:ALA:HB3 | 2.22 | 0.40 |
| 35:BA:1441:G:H2' | 35:BA:1442:G:H8 | 1.86 | 0.40 |
| 13:CM:58:GLU:HA | 13:CM:58:GLU:OE1 | 2.21 | 0.40 |
| 12:AL:18:VAL:CG2 | 12:AL:19:ARG:H | 2.27 | 0.40 |
| 12:AL:18:VAL:CG2 | 12:AL:19:ARG:N | 2.81 | 0.40 |
| 1:CA:1004:A:H5'' | 1:CA:1025:U:H3 | 1.86 | 0.40 |
| 37:BC:71:GLN:HG2 | 37:BC:73:ARG:HE | 1.84 | 0.40 |
| 2:CB:141:GLU:C | 2:CB:143:GLU:H | 2.24 | 0.40 |
| 52:DV:1:MET:CE | 52:DV:43:GLU:OE2 | 2.69 | 0.40 |
| 31:B6:45:LYS:NZ | 35:BA:2370:G:H21 | 2.12 | 0.40 |
| 50:DT:96:ARG:CG | 50:DT:96:ARG:HH11 | 2.30 | 0.40 |
| 2:AB:141:GLU:C | 2:AB:143:GLU:H | 2.24 | 0.40 |
| 42:DH:149:ARG:HA | 42:DH:162:ILE:CG2 | 2.51 | 0.40 |
| 38:BD:9:TYR:CD2 | 38:BD:10:THR:HG22 | 2.57 | 0.40 |
| 2:AB:127:ILE:O | 2:AB:127:ILE:HG22 | 2.20 | 0.40 |
| 2:AB:129:GLU:HB2 | 2:AB:130:ARG:H | 1.66 | 0.40 |
| 11:CK:33:THR:HG22 | 11:CK:39:PRO:CA | 2.50 | 0.40 |
| 43:DI:85:GLU:OE2 | 43:DI:85:GLU:HA | 2.21 | 0.40 |
| 40:DF:68:LYS:HB3 | 40:DF:69:HIS:H | 1.66 | 0.40 |
| 42:BH:149:ARG:HA | 42:BH:162:ILE:CG2 | 2.51 | 0.40 |
| 35:DA:493:G:H2' | 35:DA:494:G:O4' | 2.22 | 0.40 |
| 38:DD:53:PHE:CD1 | 38:DD:219:PRO:O | 2.74 | 0.40 |
| 1:AA:606:G:H21 | 1:AA:631:G:H2' | 1.85 | 0.40 |
| 35:BA:2517:C:N3 | 35:BA:2542:A:N6 | 2.69 | 0.40 |
| 35:BA:2472:G:H2' | 35:BA:2475:C:H42 | 1.86 | 0.40 |
| 35:DA:2771:C:H2' | 35:DA:2772:C:H6 | 1.84 | 0.40 |
| 35:BA:643:A:H2' | 35:BA:644:A:C8 | 2.56 | 0.40 |
| 35:DA:1827:C:C2' | 35:DA:1828:G:H5' | 2.51 | 0.40 |
| 35:BA:2840:C:H5'' | 48:BR:53:HIS:CD2 | 2.56 | 0.40 |
| 51:BU:21:ALA:HB2 | 51:BU:35:ALA:HB1 | 2.02 | 0.40 |
| 51:DU:108:GLU:OE1 | 52:DV:44:LYS:HD3 | 2.20 | 0.40 |
| 6:CF:77:ARG:NH1 | 6:CF:77:ARG:CB | 2.84 | 0.40 |
| 1:AA:832:C:O2' | 1:AA:833:U:P | 2.79 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 17:AQ:27:PHE:HA | 17:AQ:28:PRO:HD3 | 1.95 | 0.40 |
| 24:AX:19:U:H3 | 22:AY:36:A:H2 | 1.67 | 0.40 |
| 1:CA:1507:A:C2 | 1:CA:1508:G:C4 | 3.09 | 0.40 |
| 16:AP:39:TYR:CD1 | 16:AP:73:LEU:HD13 | 2.56 | 0.40 |
| 54:DX:32:PRO:HA | 54:DX:77:LYS:CB | 2.51 | 0.40 |
| 35:BA:19:C:H2' | 35:BA:20:C:H6 | 1.86 | 0.40 |
| 2:AB:32:ILE:HD11 | 2:AB:40:HIS:HB3 | 2.02 | 0.40 |
| 1:AA:1236:A:O2' | 1:AA:1304:G:H4' | 2.22 | 0.40 |
| 1:CA:562:C:H5'' | 1:CA:563:A:C4 | 2.56 | 0.40 |
| 35:BA:826:U:OP1 | 35:BA:2428:G:H3' | 2.21 | 0.40 |
| 1:CA:757:U:O2' | 1:CA:758:G:H5' | 2.21 | 0.40 |
| 35:BA:1771:C:H2' | 35:BA:1772:G:C8 | 2.56 | 0.40 |
| 17:AQ:10:VAL:CG2 | 17:AQ:55:ASP:HB2 | 2.52 | 0.40 |
| 39:BE:199:ARG:HG3 | 39:BE:199:ARG:NH1 | 2.35 | 0.40 |
| 9:AI:23:ASN:N | 9:AI:23:ASN:HD22 | 2.19 | 0.40 |
| 22:CY:4:C:H6 | 22:CY:4:C:OP1 | 2.04 | 0.40 |
| 5:CE:15:ARG:HD2 | 5:CE:26:PHE:CD2 | 2.56 | 0.40 |
| 5:AE:107:ARG:O | 5:AE:111:GLU:HG3 | 2.21 | 0.40 |
| 56:DZ:99:TYR:HA | 56:DZ:124:ILE:C | 2.41 | 0.40 |
| 56:DZ:85:HIS:O | 56:DZ:86:VAL:HG13 | 2.21 | 0.40 |
| 53:BW:64:MET:O | 53:BW:65:LEU:CB | 2.68 | 0.40 |
| 40:DF:25:PRO:HG3 | 40:DF:119:ARG:CG | 2.51 | 0.40 |
| 9:AI:10:ARG:HG2 | 9:AI:104:ARG:O | 2.21 | 0.40 |
| 1:AA:1053:G:N7 | 1:AA:1200:C:C5' | 2.84 | 0.40 |
| 2:AB:89:GLY:O | 2:AB:154:LEU:HD13 | 2.20 | 0.40 |
| 9:CI:73:GLN:O | 9:CI:77:ILE:HG13 | 2.21 | 0.40 |
| 1:AA:1348:U:H4' | 9:AI:120:ARG:CD | 2.20 | 0.40 |
| 1:CA:1199:U:H4' | 10:CJ:54:PHE:CE2 | 2.56 | 0.40 |
| 52:DV:95:LEU:C | 52:DV:95:LEU:CD2 | 2.89 | 0.40 |
| 44:BN:39:ARG:C | 44:BN:41:ASP:H | 2.24 | 0.40 |
| 48:DR:2:ARG:HD2 | 48:DR:2:ARG:O | 2.20 | 0.40 |
| 56:DZ:150:LEU:CD2 | 56:DZ:172:ALA:HB3 | 2.48 | 0.40 |
| 3:AC:110:ASN:C | 3:AC:112:SER:N | 2.73 | 0.40 |
| 52:BV:95:LEU:C | 52:BV:95:LEU:HD23 | 2.40 | 0.40 |
| 35:DA:995:C:O2 | 44:DN:4:TYR:OH | 2.40 | 0.40 |
| 41:DG:9:ARG:C | 41:DG:11:TYR:N | 2.75 | 0.40 |
| 35:DA:2468:G:C2' | 35:DA:2469:A:OP2 | 2.69 | 0.40 |
| 1:CA:1125:U:H2' | 1:CA:1126:U:OP2 | 2.21 | 0.40 |
| 10:CJ:4:ILE:HD11 | 10:CJ:77:PRO:HB3 | 2.03 | 0.40 |
| 35:BA:2726:U:O2' | 35:BA:2727:G:H5' | 2.20 | 0.40 |
| 10:AJ:28:ARG:NH1 | 10:AJ:34:VAL:H | 2.15 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:BT:8:LYS:CA | 50:BT:11:GLU:OE1 | 2.64 | 0.40 |
| 22:CY:76:8AN:H2 | 35:DA:2583:G:N3 | 2.37 | 0.40 |
| 42:DH:158:HIS:CE1 | 42:DH:168:PRO:HB2 | 2.56 | 0.40 |
| 35:BA:2605:U:H2' | 35:BA:2606:C:C6 | 2.56 | 0.40 |
| 44:DN:25:ARG:HG3 | 44:DN:25:ARG:NH1 | 2.15 | 0.40 |
| 33:B8:37:SER:O | 33:B8:38:GLY:C | 2.58 | 0.40 |
| 15:CO:63:ARG:O | 15:CO:67:LEU:HB2 | 2.21 | 0.40 |
| 31:D6:9:LEU:HD22 | 31:D6:11:LEU:HD22 | 2.03 | 0.40 |
| 36:DB:69:G:H2' | 36:DB:70:C:H6 | 1.86 | 0.40 |
| 41:BG:125:PHE:HE2 | 41:BG:173:LEU:HD12 | 1.85 | 0.40 |
| 36:BB:15:A:H5' | 36:BB:16:G:C8 | 2.57 | 0.40 |
| 35:BA:2143:C:H2' | 35:BA:2144:U:O4' | 2.22 | 0.40 |
| 56:BZ:108:PRO:HB2 | 56:BZ:144:LEU:O | 2.21 | 0.40 |
| 4:CD:114:ARG:NH1 | 4:CD:114:ARG:CG | 2.78 | 0.40 |
| 22:AV:41:C:O2 | 22:AV:41:C:C2' | 2.69 | 0.40 |
| 54:DX:12:VAL:HG13 | 54:DX:27:THR:C | 2.41 | 0.40 |
| 40:BF:62:ARG:HG2 | 40:BF:63:LYS:N | 2.35 | 0.40 |
| 40:BF:65:TRP:C | 40:BF:67:GLN:H | 2.25 | 0.40 |
| 35:BA:2056:G:H2' | 35:BA:2056:G:N3 | 2.36 | 0.40 |
| 40:BF:21:ALA:C | 40:BF:23:ASP:N | 2.71 | 0.40 |
| 40:DF:200:GLU:O | 40:DF:203:GLN:HB2 | 2.22 | 0.40 |
| 40:DF:21:ALA:C | 40:DF:23:ASP:N | 2.71 | 0.40 |
| 35:BA:2175:C:O4' | 37:BC:215:THR:HA | 2.22 | 0.40 |
| 35:DA:1258:C:O2' | 35:DA:1259:G:H5' | 2.22 | 0.40 |
| 35:BA:1153:C:O2' | 35:BA:1154:G:H5' | 2.21 | 0.40 |
| 12:AL:100:ILE:CG2 | 12:AL:101:VAL:N | 2.84 | 0.40 |
| 1:AA:1367:C:OP1 | 9:AI:115:GLY:N | 2.41 | 0.40 |
| 3:AC:19:GLU:O | 3:AC:19:GLU:HG2 | 2.21 | 0.40 |
| 56:BZ:13:GLU:OE2 | 56:BZ:13:GLU:CA | 2.69 | 0.40 |
| 1:AA:634:C:H2' | 1:AA:635:G:C8 | 2.45 | 0.40 |
| 1:AA:406:G:C5' | 4:AD:5:ILE:HD13 | 2.51 | 0.40 |
| 1:AA:62:U:O2' | 1:AA:379:C:H1' | 2.21 | 0.40 |
| 47:BQ:26:TYR:CD1 | 47:BQ:26:TYR:C | 2.94 | 0.40 |
| 47:BQ:134:ARG:HE | 56:BZ:122:ARG:NH2 | 2.18 | 0.40 |
| 6:AF:55:ASP:CB | 6:AF:86:ARG:HH12 | 2.32 | 0.40 |
| 22:AY:69:G:N2 | 22:AY:70:G:C6 | 2.89 | 0.40 |
| 11:CK:124:LYS:HB3 | 11:CK:125:PHE:HD1 | 1.85 | 0.40 |
| 1:AA:942:G:C2 | 1:AA:943:U:C2 | 3.09 | 0.40 |
| 35:BA:2183:C:H2' | 35:BA:2184:G:H8 | 1.85 | 0.40 |
| 38:BD:8:PRO:HB3 | 38:BD:14:ARG:HB3 | 2.03 | 0.40 |
| 35:DA:1042:G:N2 | 35:DA:1043:C:H4' | 2.36 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AK:54:ARG:HH12 | 23:AW:40:C:C5' | 2.34 | 0.40 |
| 14:CN:12:ARG:HD3 | 14:CN:12:ARG:H | 1.85 | 0.40 |
| 5:AE:144:THR:C | 5:AE:146:ALA:N | 2.74 | 0.40 |
| 35:DA:1138:G:H2' | 35:DA:1139:G:O4' | 2.20 | 0.40 |
| 14:AN:27:CYS:O | 14:AN:29:ARG:N | 2.50 | 0.40 |
| 1:AA:243:A:C2 | 1:AA:246:A:C8 | 3.09 | 0.40 |
| 35:BA:1766:U:H2' | 35:BA:1767:C:H6 | 1.86 | 0.40 |
| 35:BA:2536:G:C6 | 35:BA:2537:U:C4 | 3.10 | 0.40 |
| 36:BB:60:C:H2' | 36:BB:61:G:C8 | 2.52 | 0.40 |
| 35:BA:1824:G:O2' | 35:BA:1825:A:H5' | 2.22 | 0.40 |
| 7:CG:46:ALA:O | 7:CG:49:ILE:N | 2.54 | 0.40 |
| 11:AK:106:LYS:O | 11:AK:107:SER:HB2 | 2.20 | 0.40 |
| 43:BI:28:ASN:C | 43:BI:32:PRO:HG2 | 2.41 | 0.40 |
| 11:AK:73:MET:SD | 11:AK:103:LEU:CD2 | 3.09 | 0.40 |
| 35:DA:633:A:C2' | 35:DA:634:C:H5' | 2.50 | 0.40 |
| 12:CL:127:GLU:HA | 12:CL:127:GLU:OE1 | 2.20 | 0.40 |
| 35:BA:2291:U:H1' | 35:BA:2374:C:H1' | 2.04 | 0.40 |
| 1:CA:1415:G:O2' | 1:CA:1416:G:H5' | 2.20 | 0.40 |
| 1:CA:1133:G:N3 | 1:CA:1142:G:N2 | 2.68 | 0.40 |
| 1:AA:1133:G:C4 | 1:AA:1142:G:N2 | 2.86 | 0.40 |
| 1:AA:1133:G:N2 | 1:AA:1143:G:H1' | 2.36 | 0.40 |
| 1:CA:418:C:H2' | 1:CA:419:C:C6 | 2.56 | 0.40 |
| 35:BA:296:C:H2' | 35:BA:297:C:H6 | 1.86 | 0.40 |
| 1:AA:1121:U:H2' | 1:AA:1122:U:C6 | 2.56 | 0.40 |
| 1:AA:1264:C:H2' | 1:AA:1265:G:C8 | 2.56 | 0.40 |
| 1:CA:893:C:O2' | 1:CA:894:G:H5' | 2.22 | 0.40 |
| 1:AA:655:A:H2' | 1:AA:656:C:C6 | 2.55 | 0.40 |
| 33:B8:18:ALA:HB3 | 35:BA:651:G:H4' | 2.03 | 0.40 |
| 1:AA:218:C:O2' | 1:AA:219:C:H5' | 2.21 | 0.40 |
| 35:DA:1554:A:H3' | 35:DA:1555:G:H8 | 1.86 | 0.40 |
| 35:BA:1316:U:O2' | 35:BA:1317:A:H5' | 2.21 | 0.40 |
| 2:AB:157:ARG:HE | 2:AB:157:ARG:HB3 | 1.70 | 0.40 |
| 2:CB:213:LEU:O | 2:CB:213:LEU:HD23 | 2.20 | 0.40 |
| 35:DA:1208:C:C4 | 35:DA:1209:G:N7 | 2.89 | 0.40 |
| 37:DC:54:SER:O | 37:DC:55:ASP:HB3 | 2.21 | 0.40 |
| 33:B8:12:LYS:HD3 | 46:BP:68:GLN:HE22 | 1.86 | 0.40 |
| 54:BX:72:LYS:N | 54:BX:72:LYS:HD2 | 2.37 | 0.40 |
| 56:DZ:99:TYR:HA | 56:DZ:125:LEU:CA | 2.47 | 0.40 |
| 40:BF:28:ILE:HG12 | 40:BF:119:ARG:HH21 | 1.86 | 0.40 |
| 9:AI:66:ARG:NH1 | 9:AI:66:ARG:CB | 2.83 | 0.40 |
| 9:AI:7:THR:HG21 | 9:AI:9:ARG:HH21 | 1.86 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1198:G:H2' | 1:AA:1199:U:O4' | 2.21 | 0.40 |
| 2:AB:223:ILE:H | 2:AB:223:ILE:HG12 | 1.66 | 0.40 |
| 2:CB:46:LYS:O | 2:CB:50:GLU:HG2 | 2.21 | 0.40 |
| 1:AA:1347:G:O2' | 1:AA:1348:U:OP2 | 2.39 | 0.40 |
| 51:BU:85:LYS:C | 51:BU:87:GLY:H | 2.25 | 0.40 |
| 39:DE:31:CYS:HA | 39:DE:32:PRO:HD3 | 1.90 | 0.40 |
| 56:BZ:131:ARG:CG | 56:BZ:132:ASN:N | 2.85 | 0.40 |
| 39:BE:181:LEU:HD13 | 39:BE:181:LEU:HA | 1.74 | 0.40 |
| 35:DA:1797:C:O3' | 38:DD:259:THR:HG22 | 2.21 | 0.40 |
| 42:BH:48:GLY:O | 42:BH:49:VAL:CG1 | 2.61 | 0.40 |
| 3:CC:119:ARG:HE | 3:CC:140:ARG:NE | 2.20 | 0.40 |
| 51:DU:92:ARG:HH21 | 51:DU:95:LEU:CD1 | 2.34 | 0.40 |
| 30:D5:44:THR:C | 30:D5:45:VAL:CG2 | 2.90 | 0.40 |
| 55:BY:29:GLU:HB2 | 55:BY:38:ILE:HG13 | 2.04 | 0.40 |
| 47:DQ:55:VAL:HG12 | 47:DQ:64:ILE:CD1 | 2.51 | 0.40 |
| 42:DH:70:THR:HA | 42:DH:73:ALA:HB3 | 2.04 | 0.40 |
| 22:AY:42:C:H3' | 22:AY:43:C:C5' | 2.50 | 0.40 |
| 43:DI:37:VAL:CG1 | 43:DI:38:LEU:N | 2.84 | 0.40 |
| 30:B5:40:LYS:NZ | 30:B5:46:CYS:O | 2.46 | 0.40 |
| 35:DA:1665:A:H2' | 35:DA:1666:G:O4' | 2.20 | 0.40 |
| 1:AA:1126:U:H6 | 1:AA:1126:U:P | 2.44 | 0.40 |
| 10:AJ:24:VAL:CG2 | 10:AJ:37:PRO:HG3 | 2.51 | 0.40 |
| 1:AA:1124:G:C5' | 10:AJ:35:SER:HB2 | 2.52 | 0.40 |
| 10:AJ:35:SER:O | 10:AJ:36:GLY:C | 2.58 | 0.40 |
| 1:AA:1358:U:H6 | 1:AA:1359:C:C5 | 2.40 | 0.40 |
| 52:BV:85:LYS:HB2 | 52:BV:85:LYS:NZ | 2.35 | 0.40 |
| 3:AC:131:ARG:NH1 | 5:AE:50:GLU:HG2 | 2.37 | 0.40 |
| 33:B8:60:LEU:O | 33:B8:63:PRO:HG2 | 2.22 | 0.40 |
| 1:AA:346:G:H5' | 50:BT:41:ARG:CG | 2.50 | 0.40 |
| 37:DC:158:ALA:C | 37:DC:160:ARG:H | 2.24 | 0.40 |
| 42:BH:85:LYS:CE | 42:BH:145:ALA:HB2 | 2.50 | 0.40 |
| 43:DI:69:LYS:HE3 | 43:DI:73:GLU:OE2 | 2.21 | 0.40 |
| 1:CA:1291:G:HO2' | 1:CA:1292:U:H5' | 1.84 | 0.40 |
| 35:BA:1301:A:C8 | 35:BA:1303:G:C8 | 3.09 | 0.40 |
| 29:D4:37:PRO:O | 29:D4:55:PRO:HG3 | 2.22 | 0.40 |
| 48:BR:38:VAL:HB | 48:BR:39:PRO:CD | 2.39 | 0.40 |
| 35:BA:832:G:N3 | 46:BP:53:GLY:HA2 | 2.36 | 0.40 |
| 56:DZ:93:ASP:CA | 56:DZ:130:PRO:HG2 | 2.40 | 0.40 |
| 26:D1:53:VAL:HB | 26:D1:58:ILE:HG21 | 2.03 | 0.40 |
| 35:BA:2160:G:C2' | 35:BA:2161:C:H5' | 2.52 | 0.40 |
| 17:AQ:21:VAL:HG11 | 17:AQ:59:ILE:HD11 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:AT:14:LYS:HB2 | 20:AT:17:ARG:NH2 | 2.37 | 0.40 |
| 3:AC:95:THR:C | 3:AC:97:LYS:H | 2.24 | 0.40 |
| 35:BA:675:A:C4 | 35:BA:804:A:C2 | 3.09 | 0.40 |
| 35:BA:675:A:C6 | 35:BA:676:A:C6 | 3.09 | 0.40 |
| 2:CB:168:THR:HG21 | 2:CB:192:SER:HA | 2.04 | 0.40 |
| 46:DP:85:LEU:CD2 | 46:DP:85:LEU:H | 2.15 | 0.40 |
| 1:CA:80:G:N7 | 1:CA:81:U:H5 | 2.19 | 0.40 |
| 38:BD:136:ILE:HA | 38:BD:137:PRO:HD3 | 1.78 | 0.40 |
| 19:AS:66:MET:H | 19:AS:66:MET:HG2 | 1.47 | 0.40 |
| 13:AM:110:ARG:NH1 | 13:AM:110:ARG:HG2 | 2.34 | 0.40 |
| 13:AM:3:ARG:HB3 | 13:AM:9:ILE:HD11 | 2.03 | 0.40 |
| 48:DR:87:TYR:O | 48:DR:89:ASP:N | 2.54 | 0.40 |
| 12:CL:100:ILE:CG2 | 12:CL:101:VAL:N | 2.85 | 0.40 |
| 9:AI:118:LYS:NZ | 9:AI:118:LYS:HB3 | 2.36 | 0.40 |
| 50:DT:35:LYS:NZ | 50:DT:41:ARG:HE | 2.19 | 0.40 |
| 36:BB:56:G:H4' | 36:BB:57:A:C8 | 2.56 | 0.40 |
| 11:AK:21:ILE:CG1 | 11:AK:94:ALA:HB1 | 2.50 | 0.40 |
| 11:CK:84:VAL:HG11 | 11:CK:95:ILE:HD12 | 2.04 | 0.40 |
| 7:AG:145:ALA:O | 7:AG:146:GLU:HB2 | 2.21 | 0.40 |
| 35:DA:2741:A:H2' | 35:DA:2742:C:O4' | 2.21 | 0.40 |
| 2:AB:175:ARG:O | 2:AB:176:GLU:C | 2.59 | 0.40 |
| 35:DA:1441:G:H2' | 35:DA:1442:G:H8 | 1.86 | 0.40 |
| 1:CA:406:G:H5'' | 4:CD:5:ILE:HD13 | 2.04 | 0.40 |
| 1:CA:1503:A:O2' | 24:CX:13:A:N6 | 2.54 | 0.40 |
| 1:AA:475:G:O2' | 1:AA:476:G:H5' | 2.20 | 0.40 |
| 7:AG:69:VAL:CA | 7:AG:138:LYS:HD2 | 2.51 | 0.40 |
| 56:BZ:4:ARG:NH1 | 56:BZ:58:VAL:HG11 | 2.36 | 0.40 |
| 26:B1:29:GLY:O | 26:B1:30:VAL:CG2 | 2.69 | 0.40 |
| 1:CA:264:U:H2' | 1:CA:265:G:O4' | 2.20 | 0.40 |
| 56:DZ:61:LEU:CB | 56:DZ:65:GLN:HB2 | 2.48 | 0.40 |
| 1:CA:491:G:C4 | 1:CA:492:G:C8 | 3.10 | 0.40 |
| 1:CA:867:G:O2' | 1:CA:868:C:H5' | 2.20 | 0.40 |
| 35:DA:604:G:O2' | 35:DA:605:C:H5' | 2.21 | 0.40 |
| 13:CM:107:ALA:O | 13:CM:109:THR:N | 2.55 | 0.40 |
| 22:CV:75:C:OP1 | 35:DA:2602:A:P | 2.80 | 0.40 |
| 35:BA:2770:G:H5' | 35:BA:2771:C:OP2 | 2.22 | 0.40 |
| 50:BT:78:LEU:CD2 | 50:BT:79:HIS:CE1 | 3.04 | 0.40 |
| 35:DA:523:C:C5 | 35:DA:524:U:C5 | 3.10 | 0.40 |
| 37:BC:128:GLY:O | 37:BC:130:ILE:N | 2.52 | 0.40 |
| 1:CA:403:C:H2' | 1:CA:404:U:C6 | 2.57 | 0.40 |
| 11:AK:67:ASP:CG | 11:AK:71:LYS:HE3 | 2.41 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DA:1048:A:P | 35:DA:1048:A:N3 | 2.94 | 0.40 |
| 48:BR:107:ASP:O | 48:BR:108:GLY:C | 2.59 | 0.40 |
| 19:AS:36:ARG:HB2 | 19:AS:72:GLY:HA2 | 2.03 | 0.40 |
| 1:CA:1181:G:O2' | 1:CA:1184:G:H5' | 2.22 | 0.40 |
| 35:BA:1968:G:H2' | 35:BA:1969:A:H5'' | 2.04 | 0.40 |
| 1:AA:403:C:H2' | 1:AA:404:U:C6 | 2.56 | 0.40 |
| 17:AQ:18:THR:HG23 | 17:AQ:44:ALA:O | 2.21 | 0.40 |
| 51:BU:108:GLU:HA | 51:BU:111:GLU:HG2 | 2.03 | 0.40 |
| 1:AA:35:G:H2' | 1:AA:36:C:H6 | 1.85 | 0.40 |
| 41:DG:137:GLU:HG2 | 41:DG:152:LEU:CD1 | 2.50 | 0.40 |
| 1:CA:425:G:O2' | 1:CA:426:G:H5' | 2.21 | 0.40 |
| 17:CQ:27:PHE:HA | 17:CQ:28:PRO:HD3 | 1.96 | 0.40 |
| 35:BA:2629:A:N3 | 35:BA:2629:A:H2' | 2.37 | 0.40 |
| 35:BA:1572:A:O2' | 35:BA:1573:G:H5' | 2.21 | 0.40 |
| 3:AC:33:LEU:HD21 | 14:AN:53:LEU:CD2 | 2.51 | 0.40 |
| 1:CA:594:G:C2' | 1:CA:595:G:H5' | 2.51 | 0.40 |
| 35:BA:2584:U:O2 | 35:BA:2585:U:C4 | 2.75 | 0.40 |
| 35:BA:1932:A:H2' | 35:BA:1933:G:O4' | 2.21 | 0.40 |
| 1:CA:1007:C:H2' | 1:CA:1008:C:C6 | 2.57 | 0.40 |
| 17:AQ:13:ASP:C | 17:AQ:15:MET:H | 2.24 | 0.40 |
| 1:AA:398:C:H6 | 1:AA:398:C:O5' | 2.03 | 0.40 |
| 32:B7:7:PRO:HG3 | 35:BA:1612:C:H5' | 2.02 | 0.40 |
| 1:AA:812:C:OP1 | 1:AA:903:G:H1' | 2.22 | 0.40 |
| 56:DZ:127:LYS:CD | 56:DZ:127:LYS:C | 2.90 | 0.40 |
| 35:DA:1242:A:C5' | 35:DA:1243:G:OP2 | 2.69 | 0.40 |
| 46:DP:6:LEU:HD21 | 46:DP:9:ASN:HB3 | 2.02 | 0.40 |
| 1:CA:1374:A:C4 | 1:CA:1375:A:C8 | 3.10 | 0.40 |
| 40:DF:157:VAL:HA | 40:DF:176:LEU:O | 2.22 | 0.40 |
| 2:CB:74:LYS:HZ1 | 2:CB:76:GLN:HB2 | 1.87 | 0.40 |
| 46:BP:46:LYS:O | 46:BP:47:ASP:HB2 | 2.20 | 0.40 |
| 55:DY:76:CYS:CB | 55:DY:96:ILE:HD11 | 2.23 | 0.40 |
| 1:CA:1053:G:H3' | 1:CA:1054:C:C5' | 2.50 | 0.40 |
| 40:BF:38:ARG:HH12 | 46:BP:16:ARG:NH2 | 2.19 | 0.40 |
| 46:BP:16:ARG:CB | 46:BP:16:ARG:NH1 | 2.83 | 0.40 |
| 39:DE:69:LYS:HE3 | 39:DE:90:THR:N | 2.37 | 0.40 |
| 56:BZ:127:LYS:O | 56:BZ:128:VAL:HB | 2.22 | 0.40 |
| 39:BE:93:VAL:C | 39:BE:95:ILE:H | 2.25 | 0.40 |
| 48:BR:41:ALA:O | 48:BR:44:LEU:N | 2.54 | 0.40 |
| 1:AA:1310:G:C2' | 1:AA:1311:G:H5' | 2.50 | 0.40 |
| 42:DH:17:VAL:O | 42:DH:45:VAL:HG22 | 2.22 | 0.40 |
| 41:DG:39:ILE:HD12 | 41:DG:40:ASN:N | 2.36 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|---------------------|--------------------------|-------------------|
| 10:CJ:33:GLN:HB2 | 10:CJ:75:ILE:HD13 | 2.03 | 0.40 |
| 35:BA:2228:G:C6 | 35:BA:2229:C:C4 | 3.10 | 0.40 |
| 37:DC:46:LYS:O | 37:DC:208:PHE:O | 2.39 | 0.40 |
| 35:BA:271(P):C:H5'' | 43:BI:45:LYS:HE3 | 2.02 | 0.40 |
| 47:DQ:56:ARG:NE | 47:DQ:56:ARG:HA | 2.23 | 0.40 |
| 42:DH:70:THR:HA | 42:DH:73:ALA:CB | 2.52 | 0.40 |
| 22:AY:28:G:N2 | 22:AY:43:C:C6 | 2.89 | 0.40 |
| 5:CE:10:MET:SD | 5:CE:13:ILE:HD11 | 2.62 | 0.40 |
| 30:B5:40:LYS:CE | 30:B5:46:CYS:N | 2.85 | 0.40 |
| 35:BA:1665:A:H5'' | 45:BO:66:LYS:HG3 | 2.03 | 0.40 |
| 10:AJ:28:ARG:CZ | 10:AJ:34:VAL:HB | 2.52 | 0.40 |
| 23:AW:67:C:C4 | 23:AW:68:C:N4 | 2.89 | 0.40 |
| 46:DP:83:VAL:HG13 | 46:DP:114:ILE:HA | 2.03 | 0.40 |
| 49:DS:57:LYS:HG2 | 49:DS:58:LEU:H | 1.85 | 0.40 |
| 49:DS:63:THR:O | 49:DS:66:ALA:HB3 | 2.21 | 0.40 |
| 53:BW:92:ARG:NH1 | 53:BW:94:ASP:OD2 | 2.53 | 0.40 |
| 49:BS:54:LEU:O | 49:BS:57:LYS:N | 2.40 | 0.40 |
| 33:B8:62:LEU:HD13 | 35:BA:242:G:C5' | 2.37 | 0.40 |
| 35:DA:143:G:H5'' | 35:DA:1598:C:O2' | 2.21 | 0.40 |
| 35:DA:271(S):G:C3' | 35:DA:271(T):C:H5'' | 2.49 | 0.40 |
| 4:AD:114:ARG:NH1 | 4:AD:114:ARG:CG | 2.76 | 0.40 |
| 15:CO:15:PHE:CE2 | 15:CO:85:LEU:HD21 | 2.56 | 0.40 |
| 36:BB:15:A:C3' | 36:BB:16:G:H5' | 2.51 | 0.40 |
| 35:DA:2160:G:C2' | 35:DA:2161:C:H5' | 2.52 | 0.40 |
| 50:BT:106:SER:HB2 | 50:BT:110:ILE:CD1 | 2.51 | 0.40 |
| 50:BT:112:ARG:HB2 | 50:BT:112:ARG:HH11 | 1.86 | 0.40 |
| 35:BA:832:G:H21 | 46:BP:53:GLY:CA | 2.35 | 0.40 |
| 1:AA:728:A:H2' | 1:AA:729:A:H8 | 1.86 | 0.40 |
| 41:BG:161:THR:CG2 | 41:BG:163:ALA:HB3 | 2.51 | 0.40 |
| 2:AB:168:THR:HG21 | 2:AB:192:SER:HA | 2.02 | 0.40 |
| 23:CW:39:U:O4' | 23:CW:39:U:O2 | 2.38 | 0.40 |
| 3:CC:20:SER:OG | 3:CC:36:ASP:OD1 | 2.40 | 0.40 |
| 47:DQ:50:ALA:HB3 | 47:DQ:104:PHE:HE1 | 1.86 | 0.40 |
| 50:DT:98:LYS:CG | 50:DT:100:TYR:HE1 | 2.34 | 0.40 |
| 13:AM:84:ILE:HG12 | 19:AS:66:MET:CE | 2.52 | 0.40 |
| 43:BI:55:ALA:O | 43:BI:58:LEU:HB3 | 2.21 | 0.40 |
| 35:DA:2172:U:O2' | 35:DA:2173:A:OP1 | 2.28 | 0.40 |
| 35:BA:2168:G:N2 | 35:BA:2171:A:C8 | 2.89 | 0.40 |
| 35:BA:2125:G:N2 | 35:BA:2172:U:H5' | 2.34 | 0.40 |
| 35:BA:2172:U:O3' | 35:BA:2173:A:H8 | 2.04 | 0.40 |
| 49:BS:85:VAL:HG22 | 49:BS:106:ARG:CG | 2.52 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:CA:1065:U:O2' | 1:CA:1066:C:P | 2.80 | 0.40 |
| 1:AA:1502:A:H2 | 1:AA:1505:G:N1 | 2.20 | 0.40 |
| 18:AR:53:ARG:CD | 18:AR:63:GLN:HB2 | 2.52 | 0.40 |
| 14:AN:36:PHE:C | 14:AN:36:PHE:CD1 | 2.95 | 0.40 |
| 35:DA:960:A:C4' | 35:DA:2457:U:H4' | 2.51 | 0.40 |
| 51:BU:13:LYS:O | 51:BU:16:LYS:HB3 | 2.21 | 0.40 |
| 40:DF:89:VAL:C | 40:DF:91:GLY:H | 2.25 | 0.40 |
| 1:CA:1003:G:N2 | 1:CA:1038:C:N3 | 2.70 | 0.40 |
| 2:CB:134:GLU:HA | 2:CB:137:ARG:HB3 | 2.02 | 0.40 |
| 2:AB:28:PHE:CZ | 2:AB:189:ASP:HA | 2.56 | 0.40 |
| 18:AR:85:LEU:CG | 18:AR:86:VAL:N | 2.84 | 0.40 |
| 44:BN:57:ALA:C | 44:BN:58:ASP:O | 2.60 | 0.40 |
| 1:AA:302:G:O2' | 1:AA:556:C:H5'' | 2.21 | 0.40 |
| 35:DA:829:A:C8 | 35:DA:2248:C:H5' | 2.57 | 0.40 |
| 35:BA:1719:G:H2' | 35:BA:1720:U:O4' | 2.21 | 0.40 |
| 35:DA:419:C:C2' | 35:DA:420:C:H5' | 2.52 | 0.40 |
| 45:DO:86:ILE:N | 45:DO:86:ILE:CD1 | 2.83 | 0.40 |
| 11:AK:33:THR:HA | 11:AK:40:ILE:HG12 | 2.02 | 0.40 |
| 35:BA:2681:C:C5 | 35:BA:2725:A:N6 | 2.82 | 0.40 |
| 35:BA:1412:A:H2' | 35:BA:1413:G:H8 | 1.86 | 0.40 |
| 13:AM:14:ARG:NH2 | 13:AM:42:ALA:HA | 2.36 | 0.40 |
| 1:CA:1402:C:H2' | 1:CA:1403:C:O4' | 2.21 | 0.40 |
| 10:AJ:90:LEU:H | 10:AJ:91:PRO:HD3 | 1.85 | 0.40 |
| 35:DA:449:A:H2' | 35:DA:450:G:C5' | 2.51 | 0.40 |
| 45:BO:43:VAL:H | 45:BO:43:VAL:HG23 | 1.66 | 0.40 |
| 42:DH:28:GLY:HA3 | 42:DH:79:VAL:CG2 | 2.52 | 0.40 |
| 1:AA:1072:G:O2' | 1:AA:1073:U:H5' | 2.21 | 0.40 |
| 34:D9:30:PRO:HB2 | 35:DA:2527:C:C5' | 2.52 | 0.40 |
| 35:BA:2165:G:H2' | 35:BA:2166:G:O4' | 2.21 | 0.40 |
| 35:BA:2241:A:H2' | 35:BA:2242:G:C8 | 2.56 | 0.40 |
| 35:BA:1789:A:P | 38:BD:222:ARG:HE | 2.45 | 0.40 |
| 1:CA:763:G:H2' | 1:CA:764:C:C6 | 2.56 | 0.40 |
| 38:DD:268:ARG:NH1 | 38:DD:268:ARG:HB3 | 2.37 | 0.40 |
| 45:DO:14:THR:O | 45:DO:14:THR:HG22 | 2.22 | 0.40 |
| 35:BA:746:A:H2' | 35:BA:2612:C:H5'' | 2.03 | 0.40 |
| 35:DA:2478:A:H2' | 35:DA:2479:G:O4' | 2.22 | 0.40 |
| 3:CC:173:VAL:HG12 | 3:CC:175:LEU:HD21 | 2.03 | 0.40 |
| 22:AV:48:C:H2' | 22:AV:59:U:C1' | 2.51 | 0.40 |
| 41:BG:165:THR:OG1 | 41:BG:168:GLU:HG3 | 2.21 | 0.40 |
| 44:BN:30:ILE:HG23 | 44:BN:52:VAL:HG11 | 2.04 | 0.40 |
| 35:BA:257:A:C2' | 35:BA:258:G:H5' | 2.51 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 49:BS:18:ILE:C | 49:BS:20:ARG:N | 2.74 | 0.40 |
| 40:DF:117:ARG:CZ | 46:DP:5:ASP:N | 2.84 | 0.40 |
| 40:BF:116:ASP:OD2 | 46:BP:5:ASP:HB2 | 2.22 | 0.40 |
| 35:DA:2402:C:C3' | 35:DA:2403:C:H5' | 2.51 | 0.40 |
| 9:AI:89:ASN:C | 9:AI:91:ASP:N | 2.73 | 0.40 |
| 1:CA:1346:A:N6 | 1:CA:1375:A:OP2 | 2.50 | 0.40 |
| 40:DF:160:ASN:C | 40:DF:160:ASN:HD22 | 2.24 | 0.40 |
| 9:CI:5:TYR:CG | 9:CI:6:GLY:N | 2.90 | 0.40 |
| 2:CB:84:GLU:O | 2:CB:219:VAL:HG11 | 2.21 | 0.40 |
| 2:CB:70:PHE:HA | 2:CB:163:PHE:O | 2.22 | 0.40 |
| 50:DT:89:VAL:HB | 50:DT:91:ARG:CD | 2.52 | 0.40 |
| 35:BA:2402:C:H5' | 35:BA:2403:C:OP2 | 2.22 | 0.40 |
| 41:DG:72:ARG:HG2 | 41:DG:86:MET:HA | 2.03 | 0.40 |
| 41:DG:80:PHE:O | 41:DG:81:LYS:C | 2.60 | 0.40 |
| 52:BV:39:LEU:HB3 | 52:BV:47:VAL:HG11 | 2.03 | 0.40 |
| 46:BP:16:ARG:HG3 | 46:BP:17:LYS:N | 2.37 | 0.40 |
| 56:DZ:120:ILE:O | 56:DZ:121:HIS:CB | 2.69 | 0.40 |
| 39:BE:33:VAL:HA | 39:BE:49:LEU:HA | 2.03 | 0.40 |
| 38:DD:35:LYS:HE3 | 38:DD:36:PRO:N | 2.35 | 0.40 |
| 38:DD:31:LYS:O | 38:DD:36:PRO:HD3 | 2.22 | 0.40 |
| 35:BA:1857:G:N2 | 35:BA:1886:C:N4 | 2.69 | 0.40 |
| 3:AC:78:GLY:HA3 | 3:AC:83:ARG:HB2 | 2.03 | 0.40 |
| 51:DU:89:GLU:HG2 | 52:DV:50:PRO:HG3 | 2.01 | 0.40 |
| 40:BF:113:ALA:HB1 | 40:BF:186:ILE:HG21 | 2.03 | 0.40 |
| 33:B8:50:LEU:CG | 33:B8:51:ALA:N | 2.85 | 0.40 |
| 35:BA:2313:C:C4' | 41:BG:40:ASN:ND2 | 2.84 | 0.40 |
| 47:BQ:55:VAL:O | 47:BQ:56:ARG:C | 2.60 | 0.40 |
| 41:DG:114:ILE:O | 41:DG:114:ILE:HG22 | 2.21 | 0.40 |
| 41:DG:15:VAL:HG22 | 41:DG:175:LEU:HB3 | 2.03 | 0.40 |
| 35:BA:2732:G:H3' | 35:BA:2733:A:C5' | 2.51 | 0.40 |
| 55:DY:17:SER:HB2 | 55:DY:71:LYS:HZ3 | 1.86 | 0.40 |
| 3:AC:30:ARG:NH2 | 14:AN:35:ARG:C | 2.75 | 0.40 |
| 2:CB:120:ALA:C | 2:CB:122:PHE:N | 2.75 | 0.40 |
| 35:BA:1786:A:H2 | 35:BA:2606:C:H1' | 1.83 | 0.40 |
| 5:AE:50:GLU:HG3 | 5:AE:52:PRO:HD2 | 2.02 | 0.40 |
| 20:CT:26:ASN:HB2 | 20:CT:71:THR:CG2 | 2.48 | 0.40 |
| 41:DG:63:ILE:HG22 | 41:DG:143:GLU:HB2 | 2.03 | 0.40 |
| 54:DX:35:THR:HB | 54:DX:38:GLU:H | 1.87 | 0.40 |
| 38:BD:25:THR:O | 38:BD:26:LYS:HB3 | 2.22 | 0.40 |
| 56:BZ:42:VAL:CG1 | 56:BZ:43:GLU:N | 2.84 | 0.40 |
| 43:DI:61:ARG:HB3 | 43:DI:133:HIS:CE1 | 2.56 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 55:DY:49:VAL:HG12 | 55:DY:53:PRO:HG3 | 2.03 | 0.40 |
| 37:BC:49:ILE:HG22 | 37:BC:50:ASP:N | 2.37 | 0.40 |
| 35:BA:2892:A:C3' | 35:BA:2893:G:H4' | 2.52 | 0.40 |
| 35:BA:809:G:H2' | 35:BA:810:U:C6 | 2.56 | 0.40 |
| 43:DI:83:ALA:HB1 | 43:DI:87:LYS:O | 2.21 | 0.40 |
| 51:DU:31:SER:C | 51:DU:33:ARG:N | 2.75 | 0.40 |
| 38:BD:177:LEU:O | 38:BD:180:GLY:N | 2.51 | 0.40 |
| 19:CS:15:LEU:O | 19:CS:18:LYS:N | 2.55 | 0.40 |
| 3:AC:37:GLN:C | 3:AC:39:ILE:N | 2.75 | 0.40 |
| 26:D1:3:LYS:HG3 | 26:D1:4:VAL:N | 2.24 | 0.40 |
| 38:DD:155:LEU:N | 38:DD:155:LEU:HD12 | 2.35 | 0.40 |
| 1:CA:1334:G:H3' | 1:CA:1335:C:H5'' | 2.03 | 0.40 |
| 19:AS:45:VAL:HA | 19:AS:62:ILE:CG2 | 2.47 | 0.40 |
| 37:BC:68:LEU:HD11 | 37:BC:179:SER:HA | 2.03 | 0.40 |
| 13:CM:97:PRO:C | 13:CM:98:VAL:HA | 2.42 | 0.40 |
| 16:CP:20:VAL:CG2 | 16:CP:32:TYR:HB3 | 2.51 | 0.40 |
| 7:CG:50:ILE:O | 7:CG:54:THR:CG2 | 2.70 | 0.40 |
| 1:CA:328:C:HO2' | 1:CA:329:A:P | 2.44 | 0.40 |
| 35:DA:542:C:C2' | 35:DA:543:C:OP1 | 2.69 | 0.40 |
| 35:BA:94:C:O2 | 35:BA:94:C:H2' | 2.21 | 0.40 |
| 28:B3:52:HIS:CD2 | 36:BB:83:G:H4' | 2.57 | 0.40 |
| 1:CA:1267:C:O2 | 21:CU:20:LYS:HD2 | 2.21 | 0.40 |
| 50:DT:106:SER:C | 50:DT:107:ASP:OD1 | 2.60 | 0.40 |
| 8:AH:11:THR:CG2 | 8:AH:14:ARG:HH12 | 2.29 | 0.40 |
| 11:AK:29:ILE:HD12 | 11:AK:30:VAL:N | 2.37 | 0.40 |
| 2:CB:14:GLY:O | 2:CB:15:VAL:CG1 | 2.66 | 0.40 |
| 11:CK:21:ILE:HG21 | 11:CK:94:ALA:CB | 2.52 | 0.40 |
| 11:CK:30:VAL:HG21 | 11:CK:65:ALA:HA | 2.03 | 0.40 |
| 48:BR:12:ARG:CG | 48:BR:12:ARG:NH1 | 2.83 | 0.40 |
| 3:CC:125:GLU:CD | 3:CC:189:ALA:HA | 2.41 | 0.40 |
| 12:CL:102:ARG:NH1 | 12:CL:102:ARG:CG | 2.81 | 0.40 |
| 39:DE:3:GLY:O | 39:DE:4:ILE:HB | 2.22 | 0.40 |
| 1:AA:197:A:C6 | 1:AA:221:C:H5' | 2.56 | 0.40 |
| 35:BA:876:C:H2' | 35:BA:877:U:O4' | 2.22 | 0.40 |
| 2:AB:19:HIS:CG | 2:AB:20:GLU:N | 2.84 | 0.40 |
| 6:AF:50:TYR:CE2 | 6:AF:52:ILE:HD11 | 2.57 | 0.40 |
| 22:AY:4:C:H42 | 22:AY:69:G:H1 | 1.68 | 0.40 |
| 35:DA:2850:A:N7 | 35:DA:2868:A:O2' | 2.48 | 0.40 |
| 38:BD:206:LEU:HA | 38:BD:206:LEU:HD23 | 1.84 | 0.40 |
| 7:CG:70:LYS:HB3 | 7:CG:96:GLN:HG2 | 2.03 | 0.40 |
| 1:CA:806:C:H2' | 1:CA:807:A:C8 | 2.56 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:BI:84:GLY:O | 43:BI:85:GLU:CB | 2.69 | 0.40 |
| 43:BI:2:LYS:N | 43:BI:2:LYS:HD2 | 2.36 | 0.40 |
| 17:CQ:63:ARG:HG2 | 17:CQ:64:PRO:CD | 2.48 | 0.40 |
| 23:CW:21:A:H2' | 23:CW:22:G:H8 | 1.87 | 0.40 |
| 1:CA:1248:A:C2' | 1:CA:1249:C:H5' | 2.50 | 0.40 |
| 11:AK:27:ASN:CG | 11:AK:28:THR:N | 2.75 | 0.40 |
| 35:BA:812:C:O2' | 35:BA:813:U:H5' | 2.22 | 0.40 |
| 35:BA:2845:G:OP1 | 50:BT:56:GLY:N | 2.54 | 0.40 |
| 41:DG:83:ARG:CZ | 41:DG:84:LYS:NZ | 2.84 | 0.40 |
| 7:CG:113:GLU:HG3 | 7:CG:119:ARG:HG2 | 2.04 | 0.40 |
| 26:D1:7:ILE:HB | 26:D1:62:VAL:HG21 | 2.04 | 0.40 |
| 4:AD:58:LEU:HD23 | 4:AD:206:PHE:CE1 | 2.56 | 0.40 |
| 10:CJ:90:LEU:H | 10:CJ:91:PRO:HD3 | 1.86 | 0.40 |
| 1:AA:333:G:N2 | 1:AA:334:C:C2 | 2.89 | 0.40 |
| 46:BP:124:LYS:HD2 | 46:BP:124:LYS:HA | 1.83 | 0.40 |
| 35:DA:78:A:O2' | 35:DA:79:G:H5' | 2.22 | 0.40 |
| 1:CA:1371:G:OP2 | 9:CI:11:LYS:HD2 | 2.22 | 0.40 |
| 35:DA:1669:A:O3' | 35:DA:2549:G:H5' | 2.20 | 0.40 |
| 35:DA:643:A:H2' | 35:DA:644:A:C8 | 2.57 | 0.40 |
| 38:DD:2:ALA:O | 38:DD:3:VAL:CB | 2.69 | 0.40 |
| 35:BA:2529:G:OP2 | 35:BA:2530:A:H5'' | 2.21 | 0.40 |
| 41:BG:67:LYS:H | 41:BG:67:LYS:HD2 | 1.87 | 0.40 |
| 1:AA:294:U:H2' | 1:AA:295:C:H6 | 1.85 | 0.40 |
| 35:BA:633:A:C2' | 35:BA:634:C:H5' | 2.51 | 0.40 |
| 1:CA:908:A:H2' | 1:CA:909:A:H8 | 1.85 | 0.40 |
| 35:BA:2765:A:H2 | 35:BA:2766:G:O4' | 2.04 | 0.40 |
| 35:BA:198:C:O5' | 35:BA:198:C:H6 | 2.05 | 0.40 |
| 1:CA:66:G:C4' | 1:CA:173:U:C4 | 3.05 | 0.40 |
| 45:DO:13:ASN:C | 45:DO:15:GLY:H | 2.25 | 0.40 |
| 35:DA:464:U:H2' | 35:DA:465:G:O4' | 2.22 | 0.40 |
| 32:D7:34:ARG:HD3 | 32:D7:42:LEU:HA | 2.03 | 0.40 |
| 22:AV:59:U:O2' | 22:AV:60:U:H5' | 2.21 | 0.40 |
| 35:DA:2531:A:H2' | 35:DA:2532:G:C8 | 2.57 | 0.40 |
| 48:DR:29:LEU:HB3 | 48:DR:75:LEU:HD11 | 2.03 | 0.40 |
| 7:AG:40:ALA:O | 7:AG:41:ARG:C | 2.59 | 0.40 |
| 27:B2:64:LEU:O | 27:B2:67:LYS:HB2 | 2.21 | 0.40 |
| 1:AA:1047:G:H5'' | 14:AN:4:LYS:HG2 | 2.03 | 0.40 |
| 11:CK:114:VAL:O | 11:CK:114:VAL:HG13 | 2.21 | 0.40 |
| 45:DO:9:GLU:HA | 45:DO:9:GLU:OE2 | 2.22 | 0.40 |
| 40:BF:96:ASP:OD1 | 40:BF:96:ASP:C | 2.59 | 0.40 |
| 4:CD:98:GLU:HA | 4:CD:103:ASN:ND2 | 2.37 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 2 | AB | 233/256 (91%) | 138 (59%) | 63 (27%) | 32 (14%) | 0 | 4 |
| 2 | CB | 233/256 (91%) | 138 (59%) | 62 (27%) | 33 (14%) | 0 | 4 |
| 3 | AC | 205/239 (86%) | 130 (63%) | 55 (27%) | 20 (10%) | 1 | 10 |
| 3 | CC | 205/239 (86%) | 128 (62%) | 56 (27%) | 21 (10%) | 1 | 9 |
| 4 | AD | 206/209 (99%) | 149 (72%) | 39 (19%) | 18 (9%) | 1 | 12 |
| 4 | CD | 206/209 (99%) | 150 (73%) | 38 (18%) | 18 (9%) | 1 | 12 |
| 5 | AE | 149/162 (92%) | 115 (77%) | 23 (15%) | 11 (7%) | 1 | 16 |
| 5 | CE | 149/162 (92%) | 115 (77%) | 22 (15%) | 12 (8%) | 1 | 13 |
| 6 | AF | 99/101 (98%) | 78 (79%) | 16 (16%) | 5 (5%) | 2 | 26 |
| 6 | CF | 99/101 (98%) | 79 (80%) | 15 (15%) | 5 (5%) | 2 | 26 |
| 7 | AG | 153/156 (98%) | 111 (72%) | 36 (24%) | 6 (4%) | 4 | 34 |
| 7 | CG | 153/156 (98%) | 111 (72%) | 36 (24%) | 6 (4%) | 4 | 34 |
| 8 | AH | 136/138 (99%) | 107 (79%) | 25 (18%) | 4 (3%) | 6 | 42 |
| 8 | CH | 136/138 (99%) | 108 (79%) | 24 (18%) | 4 (3%) | 6 | 42 |
| 9 | AI | 121/128 (94%) | 85 (70%) | 23 (19%) | 13 (11%) | 0 | 8 |
| 9 | CI | 121/128 (94%) | 83 (69%) | 26 (22%) | 12 (10%) | 1 | 10 |
| 10 | AJ | 97/105 (92%) | 62 (64%) | 25 (26%) | 10 (10%) | 1 | 9 |
| 10 | CJ | 97/105 (92%) | 63 (65%) | 24 (25%) | 10 (10%) | 1 | 9 |
| 11 | AK | 117/129 (91%) | 86 (74%) | 26 (22%) | 5 (4%) | 3 | 31 |
| 11 | CK | 117/129 (91%) | 88 (75%) | 24 (20%) | 5 (4%) | 3 | 31 |
| 12 | AL | 123/135 (91%) | 82 (67%) | 27 (22%) | 14 (11%) | 0 | 7 |
| 12 | CL | 123/135 (91%) | 83 (68%) | 26 (21%) | 14 (11%) | 0 | 7 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|----------|----------|----------|-------------|----|
| 13 | AM | 117/126 (93%) | 67 (57%) | 30 (26%) | 20 (17%) | 0 | 3 |
| 13 | CM | 117/126 (93%) | 67 (57%) | 31 (26%) | 19 (16%) | 0 | 3 |
| 14 | AN | 58/61 (95%) | 34 (59%) | 16 (28%) | 8 (14%) | 0 | 4 |
| 14 | CN | 58/61 (95%) | 34 (59%) | 16 (28%) | 8 (14%) | 0 | 4 |
| 15 | AO | 86/89 (97%) | 58 (67%) | 20 (23%) | 8 (9%) | 1 | 11 |
| 15 | CO | 86/89 (97%) | 57 (66%) | 21 (24%) | 8 (9%) | 1 | 11 |
| 16 | AP | 82/88 (93%) | 60 (73%) | 20 (24%) | 2 (2%) | 7 | 47 |
| 16 | CP | 82/88 (93%) | 59 (72%) | 21 (26%) | 2 (2%) | 7 | 47 |
| 17 | AQ | 98/105 (93%) | 74 (76%) | 20 (20%) | 4 (4%) | 3 | 33 |
| 17 | CQ | 98/105 (93%) | 76 (78%) | 19 (19%) | 3 (3%) | 5 | 41 |
| 18 | AR | 68/88 (77%) | 41 (60%) | 14 (21%) | 13 (19%) | 0 | 2 |
| 18 | CR | 68/88 (77%) | 41 (60%) | 13 (19%) | 14 (21%) | 0 | 1 |
| 19 | AS | 77/93 (83%) | 49 (64%) | 16 (21%) | 12 (16%) | 0 | 3 |
| 19 | CS | 77/93 (83%) | 49 (64%) | 15 (20%) | 13 (17%) | 0 | 3 |
| 20 | AT | 97/106 (92%) | 69 (71%) | 18 (19%) | 10 (10%) | 1 | 9 |
| 20 | CT | 97/106 (92%) | 71 (73%) | 16 (16%) | 10 (10%) | 1 | 9 |
| 21 | AU | 23/27 (85%) | 13 (56%) | 8 (35%) | 2 (9%) | 1 | 12 |
| 21 | CU | 23/27 (85%) | 13 (56%) | 8 (35%) | 2 (9%) | 1 | 12 |
| 25 | B0 | 82/85 (96%) | 65 (79%) | 14 (17%) | 3 (4%) | 4 | 36 |
| 25 | D0 | 82/85 (96%) | 61 (74%) | 17 (21%) | 4 (5%) | 3 | 27 |
| 26 | B1 | 92/98 (94%) | 65 (71%) | 17 (18%) | 10 (11%) | 0 | 8 |
| 26 | D1 | 92/98 (94%) | 66 (72%) | 18 (20%) | 8 (9%) | 1 | 12 |
| 27 | B2 | 69/72 (96%) | 43 (62%) | 19 (28%) | 7 (10%) | 1 | 9 |
| 27 | D2 | 69/72 (96%) | 37 (54%) | 23 (33%) | 9 (13%) | 0 | 5 |
| 28 | B3 | 58/60 (97%) | 48 (83%) | 7 (12%) | 3 (5%) | 2 | 25 |
| 28 | D3 | 58/60 (97%) | 48 (83%) | 7 (12%) | 3 (5%) | 2 | 25 |
| 29 | B4 | 29/71 (41%) | 16 (55%) | 7 (24%) | 6 (21%) | 0 | 1 |
| 29 | D4 | 29/71 (41%) | 16 (55%) | 7 (24%) | 6 (21%) | 0 | 1 |
| 30 | B5 | 57/60 (95%) | 38 (67%) | 8 (14%) | 11 (19%) | 0 | 2 |
| 30 | D5 | 57/60 (95%) | 39 (68%) | 6 (10%) | 12 (21%) | 0 | 1 |
| 31 | B6 | 41/54 (76%) | 17 (42%) | 15 (37%) | 9 (22%) | 0 | 1 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 31 | D6 | 41/54 (76%) | 17 (42%) | 15 (37%) | 9 (22%) | 0 | 1 |
| 32 | B7 | 47/49 (96%) | 44 (94%) | 3 (6%) | 0 | 100 | 100 |
| 32 | D7 | 47/49 (96%) | 44 (94%) | 3 (6%) | 0 | 100 | 100 |
| 33 | B8 | 62/65 (95%) | 44 (71%) | 9 (14%) | 9 (14%) | 0 | 4 |
| 33 | D8 | 62/65 (95%) | 43 (69%) | 10 (16%) | 9 (14%) | 0 | 4 |
| 34 | B9 | 34/37 (92%) | 29 (85%) | 5 (15%) | 0 | 100 | 100 |
| 34 | D9 | 34/37 (92%) | 29 (85%) | 5 (15%) | 0 | 100 | 100 |
| 37 | BC | 183/229 (80%) | 81 (44%) | 47 (26%) | 55 (30%) | 0 | 0 |
| 37 | DC | 183/229 (80%) | 82 (45%) | 47 (26%) | 54 (30%) | 0 | 0 |
| 38 | BD | 270/276 (98%) | 208 (77%) | 38 (14%) | 24 (9%) | 1 | 11 |
| 38 | DD | 270/276 (98%) | 205 (76%) | 38 (14%) | 27 (10%) | 1 | 9 |
| 39 | BE | 203/206 (98%) | 130 (64%) | 40 (20%) | 33 (16%) | 0 | 3 |
| 39 | DE | 203/206 (98%) | 127 (63%) | 44 (22%) | 32 (16%) | 0 | 3 |
| 40 | BF | 206/210 (98%) | 142 (69%) | 35 (17%) | 29 (14%) | 0 | 4 |
| 40 | DF | 206/210 (98%) | 143 (69%) | 35 (17%) | 28 (14%) | 0 | 4 |
| 41 | BG | 177/182 (97%) | 107 (60%) | 50 (28%) | 20 (11%) | 0 | 7 |
| 41 | DG | 177/182 (97%) | 108 (61%) | 45 (25%) | 24 (14%) | 0 | 4 |
| 42 | BH | 158/180 (88%) | 99 (63%) | 32 (20%) | 27 (17%) | 0 | 3 |
| 42 | DH | 158/180 (88%) | 99 (63%) | 32 (20%) | 27 (17%) | 0 | 3 |
| 43 | BI | 144/148 (97%) | 87 (60%) | 35 (24%) | 22 (15%) | 0 | 3 |
| 43 | DI | 144/148 (97%) | 85 (59%) | 37 (26%) | 22 (15%) | 0 | 3 |
| 44 | BN | 137/140 (98%) | 90 (66%) | 30 (22%) | 17 (12%) | 0 | 6 |
| 44 | DN | 137/140 (98%) | 91 (66%) | 29 (21%) | 17 (12%) | 0 | 6 |
| 45 | BO | 120/122 (98%) | 91 (76%) | 21 (18%) | 8 (7%) | 1 | 19 |
| 45 | DO | 120/122 (98%) | 88 (73%) | 24 (20%) | 8 (7%) | 1 | 19 |
| 46 | BP | 144/150 (96%) | 73 (51%) | 30 (21%) | 41 (28%) | 0 | 0 |
| 46 | DP | 144/150 (96%) | 73 (51%) | 30 (21%) | 41 (28%) | 0 | 0 |
| 47 | BQ | 139/141 (99%) | 107 (77%) | 24 (17%) | 8 (6%) | 2 | 23 |
| 47 | DQ | 139/141 (99%) | 106 (76%) | 23 (16%) | 10 (7%) | 1 | 17 |
| 48 | BR | 115/118 (98%) | 83 (72%) | 18 (16%) | 14 (12%) | 0 | 6 |
| 48 | DR | 115/118 (98%) | 83 (72%) | 18 (16%) | 14 (12%) | 0 | 6 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-------------------|------------|------------|------------|-------------|----|
| 49 | BS | 97/112 (87%) | 47 (48%) | 25 (26%) | 25 (26%) | 0 | 1 |
| 49 | DS | 97/112 (87%) | 47 (48%) | 25 (26%) | 25 (26%) | 0 | 1 |
| 50 | BT | 136/146 (93%) | 82 (60%) | 26 (19%) | 28 (21%) | 0 | 1 |
| 50 | DT | 136/146 (93%) | 81 (60%) | 27 (20%) | 28 (21%) | 0 | 1 |
| 51 | BU | 115/118 (98%) | 86 (75%) | 22 (19%) | 7 (6%) | 2 | 21 |
| 51 | DU | 115/118 (98%) | 86 (75%) | 20 (17%) | 9 (8%) | 1 | 14 |
| 52 | BV | 99/101 (98%) | 62 (63%) | 22 (22%) | 15 (15%) | 0 | 3 |
| 52 | DV | 99/101 (98%) | 63 (64%) | 21 (21%) | 15 (15%) | 0 | 3 |
| 53 | BW | 111/113 (98%) | 87 (78%) | 15 (14%) | 9 (8%) | 1 | 13 |
| 53 | DW | 111/113 (98%) | 88 (79%) | 15 (14%) | 8 (7%) | 1 | 17 |
| 54 | BX | 91/96 (95%) | 74 (81%) | 14 (15%) | 3 (3%) | 5 | 39 |
| 54 | DX | 91/96 (95%) | 74 (81%) | 13 (14%) | 4 (4%) | 3 | 30 |
| 55 | BY | 99/110 (90%) | 37 (37%) | 30 (30%) | 32 (32%) | 0 | 0 |
| 55 | DY | 99/110 (90%) | 35 (35%) | 32 (32%) | 32 (32%) | 0 | 0 |
| 56 | BZ | 175/206 (85%) | 113 (65%) | 38 (22%) | 24 (14%) | 0 | 4 |
| 56 | DZ | 175/206 (85%) | 103 (59%) | 45 (26%) | 27 (15%) | 0 | 3 |
| All | All | 11670/12592 (93%) | 7783 (67%) | 2440 (21%) | 1447 (12%) | 0 | 6 |

All (1447) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 9 | GLU |
| 2 | AB | 15 | VAL |
| 2 | AB | 88 | ALA |
| 2 | AB | 154 | LEU |
| 2 | AB | 165 | VAL |
| 2 | AB | 195 | ASP |
| 2 | AB | 236 | TYR |
| 2 | AB | 240 | GLN |
| 3 | AC | 12 | LEU |
| 3 | AC | 15 | THR |
| 3 | AC | 20 | SER |
| 3 | AC | 207 | VAL |
| 4 | AD | 3 | ARG |
| 4 | AD | 17 | VAL |
| 4 | AD | 40 | PRO |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5 | AE | 8 | GLU |
| 5 | AE | 104 | ALA |
| 6 | AF | 40 | VAL |
| 6 | AF | 43 | LEU |
| 7 | AG | 7 | ALA |
| 7 | AG | 54 | THR |
| 7 | AG | 155 | ARG |
| 8 | AH | 82 | HIS |
| 9 | AI | 89 | ASN |
| 9 | AI | 103 | THR |
| 9 | AI | 117 | HIS |
| 10 | AJ | 32 | ALA |
| 10 | AJ | 51 | ARG |
| 10 | AJ | 52 | GLY |
| 10 | AJ | 57 | LYS |
| 11 | AK | 106 | LYS |
| 12 | AL | 23 | LYS |
| 12 | AL | 47 | LYS |
| 12 | AL | 91 | LYS |
| 13 | AM | 12 | ASN |
| 13 | AM | 83 | ASP |
| 13 | AM | 107 | ALA |
| 13 | AM | 117 | VAL |
| 14 | AN | 56 | VAL |
| 17 | AQ | 34 | LYS |
| 18 | AR | 20 | ALA |
| 18 | AR | 37 | VAL |
| 18 | AR | 45 | SER |
| 18 | AR | 83 | GLU |
| 18 | AR | 87 | ARG |
| 19 | AS | 10 | PHE |
| 19 | AS | 14 | HIS |
| 19 | AS | 28 | LYS |
| 19 | AS | 30 | LEU |
| 19 | AS | 80 | TYR |
| 20 | AT | 9 | ASN |
| 21 | AU | 6 | ARG |
| 21 | AU | 7 | ARG |
| 25 | B0 | 9 | SER |
| 26 | B1 | 58 | ILE |
| 27 | B2 | 47 | ASN |
| 28 | B3 | 3 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29 | B4 | 46 | ASN |
| 29 | B4 | 52 | SER |
| 29 | B4 | 64 | LYS |
| 30 | B5 | 4 | HIS |
| 30 | B5 | 36 | CYS |
| 30 | B5 | 38 | ALA |
| 30 | B5 | 47 | PRO |
| 30 | B5 | 49 | CYS |
| 30 | B5 | 56 | LYS |
| 30 | B5 | 58 | LEU |
| 31 | B6 | 17 | LYS |
| 31 | B6 | 20 | ASN |
| 31 | B6 | 31 | PRO |
| 31 | B6 | 52 | VAL |
| 33 | B8 | 31 | HIS |
| 33 | B8 | 34 | TRP |
| 33 | B8 | 35 | GLN |
| 33 | B8 | 61 | LEU |
| 37 | BC | 19 | VAL |
| 37 | BC | 55 | ASP |
| 37 | BC | 58 | VAL |
| 37 | BC | 63 | SER |
| 37 | BC | 125 | SER |
| 37 | BC | 140 | PRO |
| 37 | BC | 148 | ASN |
| 37 | BC | 153 | ILE |
| 37 | BC | 172 | HIS |
| 37 | BC | 173 | ALA |
| 37 | BC | 174 | PRO |
| 37 | BC | 182 | PRO |
| 37 | BC | 183 | GLU |
| 37 | BC | 201 | PRO |
| 37 | BC | 216 | THR |
| 37 | BC | 220 | PRO |
| 37 | BC | 222 | VAL |
| 38 | BD | 25 | THR |
| 38 | BD | 26 | LYS |
| 38 | BD | 127 | VAL |
| 38 | BD | 169 | GLU |
| 38 | BD | 225 | ALA |
| 38 | BD | 271 | ILE |
| 38 | BD | 272 | ALA |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 39 | BE | 4 | ILE |
| 39 | BE | 18 | ASP |
| 39 | BE | 40 | GLU |
| 39 | BE | 53 | PRO |
| 39 | BE | 54 | GLN |
| 39 | BE | 71 | GLY |
| 39 | BE | 77 | ILE |
| 39 | BE | 88 | GLY |
| 39 | BE | 132 | HIS |
| 39 | BE | 187 | ALA |
| 39 | BE | 201 | THR |
| 40 | BF | 2 | LYS |
| 40 | BF | 11 | VAL |
| 40 | BF | 14 | PRO |
| 40 | BF | 21 | ALA |
| 40 | BF | 22 | ALA |
| 40 | BF | 26 | ALA |
| 40 | BF | 69 | HIS |
| 41 | BG | 14 | GLU |
| 41 | BG | 47 | LYS |
| 41 | BG | 81 | LYS |
| 41 | BG | 82 | LEU |
| 41 | BG | 86 | MET |
| 41 | BG | 87 | PRO |
| 41 | BG | 110 | ALA |
| 41 | BG | 115 | ARG |
| 42 | BH | 46 | GLU |
| 42 | BH | 49 | VAL |
| 42 | BH | 83 | TYR |
| 42 | BH | 89 | ILE |
| 42 | BH | 98 | LEU |
| 42 | BH | 127 | GLU |
| 42 | BH | 137 | ASP |
| 42 | BH | 138 | LYS |
| 42 | BH | 155 | SER |
| 42 | BH | 156 | ALA |
| 42 | BH | 159 | GLU |
| 42 | BH | 160 | LYS |
| 43 | BI | 15 | VAL |
| 43 | BI | 81 | VAL |
| 43 | BI | 82 | ARG |
| 43 | BI | 93 | THR |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 43 | BI | 120 | ILE |
| 43 | BI | 121 | LYS |
| 43 | BI | 133 | HIS |
| 43 | BI | 145 | VAL |
| 44 | BN | 4 | TYR |
| 44 | BN | 19 | GLU |
| 44 | BN | 42 | TRP |
| 44 | BN | 57 | ALA |
| 44 | BN | 58 | ASP |
| 44 | BN | 134 | ARG |
| 45 | BO | 48 | PRO |
| 46 | BP | 9 | ASN |
| 46 | BP | 14 | LYS |
| 46 | BP | 17 | LYS |
| 46 | BP | 31 | ALA |
| 46 | BP | 34 | GLY |
| 46 | BP | 35 | HIS |
| 46 | BP | 47 | ASP |
| 46 | BP | 48 | PRO |
| 46 | BP | 83 | VAL |
| 46 | BP | 103 | ALA |
| 46 | BP | 104 | GLY |
| 46 | BP | 107 | LYS |
| 46 | BP | 108 | LYS |
| 46 | BP | 111 | ARG |
| 47 | BQ | 21 | THR |
| 48 | BR | 4 | LEU |
| 48 | BR | 8 | ARG |
| 48 | BR | 14 | SER |
| 48 | BR | 82 | GLU |
| 48 | BR | 107 | ASP |
| 49 | BS | 23 | ARG |
| 49 | BS | 53 | SER |
| 49 | BS | 54 | LEU |
| 49 | BS | 56 | LEU |
| 49 | BS | 59 | LYS |
| 49 | BS | 62 | LYS |
| 49 | BS | 88 | ASP |
| 49 | BS | 94 | TYR |
| 49 | BS | 97 | ARG |
| 49 | BS | 102 | ALA |
| 50 | BT | 24 | PRO |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 50 | BT | 28 | VAL |
| 50 | BT | 29 | ARG |
| 50 | BT | 30 | VAL |
| 50 | BT | 33 | LYS |
| 50 | BT | 55 | ASN |
| 50 | BT | 58 | ASN |
| 50 | BT | 80 | SER |
| 50 | BT | 83 | ILE |
| 50 | BT | 84 | GLN |
| 50 | BT | 85 | LYS |
| 50 | BT | 88 | ILE |
| 50 | BT | 103 | ARG |
| 50 | BT | 107 | ASP |
| 50 | BT | 115 | ARG |
| 50 | BT | 129 | ARG |
| 51 | BU | 9 | VAL |
| 51 | BU | 32 | PHE |
| 51 | BU | 90 | VAL |
| 51 | BU | 91 | ASP |
| 51 | BU | 93 | LYS |
| 52 | BV | 19 | LYS |
| 52 | BV | 49 | THR |
| 52 | BV | 53 | GLU |
| 53 | BW | 11 | ARG |
| 55 | BY | 7 | VAL |
| 55 | BY | 17 | SER |
| 55 | BY | 27 | VAL |
| 55 | BY | 30 | VAL |
| 55 | BY | 44 | ILE |
| 55 | BY | 48 | ALA |
| 55 | BY | 52 | SER |
| 55 | BY | 53 | PRO |
| 55 | BY | 56 | PRO |
| 55 | BY | 66 | PRO |
| 55 | BY | 77 | PRO |
| 55 | BY | 78 | ALA |
| 55 | BY | 81 | LYS |
| 55 | BY | 90 | LEU |
| 55 | BY | 96 | ILE |
| 55 | BY | 101 | LYS |
| 56 | BZ | 51 | ALA |
| 56 | BZ | 53 | ILE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 56 | BZ | 93 | ASP |
| 56 | BZ | 96 | VAL |
| 56 | BZ | 108 | PRO |
| 56 | BZ | 118 | GLN |
| 56 | BZ | 166 | SER |
| 56 | BZ | 168 | GLU |
| 56 | BZ | 177 | PRO |
| 2 | CB | 9 | GLU |
| 2 | CB | 15 | VAL |
| 2 | CB | 88 | ALA |
| 2 | CB | 154 | LEU |
| 2 | CB | 165 | VAL |
| 2 | CB | 195 | ASP |
| 2 | CB | 236 | TYR |
| 2 | CB | 240 | GLN |
| 3 | CC | 12 | LEU |
| 3 | CC | 15 | THR |
| 3 | CC | 20 | SER |
| 3 | CC | 111 | LEU |
| 3 | CC | 207 | VAL |
| 4 | CD | 3 | ARG |
| 4 | CD | 17 | VAL |
| 4 | CD | 40 | PRO |
| 5 | CE | 8 | GLU |
| 5 | CE | 104 | ALA |
| 6 | CF | 40 | VAL |
| 6 | CF | 43 | LEU |
| 7 | CG | 7 | ALA |
| 7 | CG | 54 | THR |
| 7 | CG | 155 | ARG |
| 8 | CH | 82 | HIS |
| 9 | CI | 89 | ASN |
| 9 | CI | 103 | THR |
| 9 | CI | 117 | HIS |
| 10 | CJ | 32 | ALA |
| 10 | CJ | 51 | ARG |
| 10 | CJ | 52 | GLY |
| 10 | CJ | 57 | LYS |
| 11 | CK | 106 | LYS |
| 12 | CL | 23 | LYS |
| 12 | CL | 47 | LYS |
| 12 | CL | 91 | LYS |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12 | CL | 115 | LYS |
| 13 | CM | 12 | ASN |
| 13 | CM | 83 | ASP |
| 13 | CM | 95 | GLY |
| 13 | CM | 107 | ALA |
| 13 | CM | 117 | VAL |
| 14 | CN | 56 | VAL |
| 17 | CQ | 34 | LYS |
| 18 | CR | 20 | ALA |
| 18 | CR | 37 | VAL |
| 18 | CR | 45 | SER |
| 18 | CR | 83 | GLU |
| 18 | CR | 87 | ARG |
| 19 | CS | 10 | PHE |
| 19 | CS | 14 | HIS |
| 19 | CS | 28 | LYS |
| 19 | CS | 30 | LEU |
| 19 | CS | 80 | TYR |
| 20 | CT | 9 | ASN |
| 21 | CU | 6 | ARG |
| 21 | CU | 7 | ARG |
| 25 | D0 | 9 | SER |
| 26 | D1 | 58 | ILE |
| 27 | D2 | 18 | PRO |
| 27 | D2 | 44 | LEU |
| 27 | D2 | 47 | ASN |
| 27 | D2 | 70 | GLN |
| 28 | D3 | 3 | ARG |
| 29 | D4 | 46 | ASN |
| 29 | D4 | 52 | SER |
| 29 | D4 | 64 | LYS |
| 30 | D5 | 4 | HIS |
| 30 | D5 | 36 | CYS |
| 30 | D5 | 38 | ALA |
| 30 | D5 | 47 | PRO |
| 30 | D5 | 49 | CYS |
| 30 | D5 | 56 | LYS |
| 30 | D5 | 58 | LEU |
| 31 | D6 | 17 | LYS |
| 31 | D6 | 20 | ASN |
| 31 | D6 | 31 | PRO |
| 31 | D6 | 52 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 33 | D8 | 31 | HIS |
| 33 | D8 | 34 | TRP |
| 33 | D8 | 35 | GLN |
| 33 | D8 | 61 | LEU |
| 37 | DC | 19 | VAL |
| 37 | DC | 55 | ASP |
| 37 | DC | 58 | VAL |
| 37 | DC | 63 | SER |
| 37 | DC | 125 | SER |
| 37 | DC | 140 | PRO |
| 37 | DC | 148 | ASN |
| 37 | DC | 153 | ILE |
| 37 | DC | 172 | HIS |
| 37 | DC | 173 | ALA |
| 37 | DC | 174 | PRO |
| 37 | DC | 182 | PRO |
| 37 | DC | 183 | GLU |
| 37 | DC | 201 | PRO |
| 37 | DC | 216 | THR |
| 37 | DC | 220 | PRO |
| 37 | DC | 222 | VAL |
| 38 | DD | 25 | THR |
| 38 | DD | 26 | LYS |
| 38 | DD | 127 | VAL |
| 38 | DD | 169 | GLU |
| 38 | DD | 225 | ALA |
| 38 | DD | 271 | ILE |
| 38 | DD | 272 | ALA |
| 39 | DE | 4 | ILE |
| 39 | DE | 18 | ASP |
| 39 | DE | 40 | GLU |
| 39 | DE | 53 | PRO |
| 39 | DE | 54 | GLN |
| 39 | DE | 57 | LYS |
| 39 | DE | 71 | GLY |
| 39 | DE | 77 | ILE |
| 39 | DE | 88 | GLY |
| 39 | DE | 132 | HIS |
| 39 | DE | 187 | ALA |
| 39 | DE | 201 | THR |
| 40 | DF | 2 | LYS |
| 40 | DF | 11 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 40 | DF | 21 | ALA |
| 40 | DF | 22 | ALA |
| 40 | DF | 26 | ALA |
| 40 | DF | 69 | HIS |
| 41 | DG | 14 | GLU |
| 41 | DG | 81 | LYS |
| 41 | DG | 82 | LEU |
| 41 | DG | 87 | PRO |
| 41 | DG | 115 | ARG |
| 42 | DH | 46 | GLU |
| 42 | DH | 49 | VAL |
| 42 | DH | 83 | TYR |
| 42 | DH | 89 | ILE |
| 42 | DH | 98 | LEU |
| 42 | DH | 127 | GLU |
| 42 | DH | 137 | ASP |
| 42 | DH | 138 | LYS |
| 42 | DH | 155 | SER |
| 42 | DH | 156 | ALA |
| 42 | DH | 159 | GLU |
| 42 | DH | 160 | LYS |
| 43 | DI | 15 | VAL |
| 43 | DI | 81 | VAL |
| 43 | DI | 82 | ARG |
| 43 | DI | 93 | THR |
| 43 | DI | 120 | ILE |
| 43 | DI | 121 | LYS |
| 43 | DI | 133 | HIS |
| 43 | DI | 145 | VAL |
| 44 | DN | 4 | TYR |
| 44 | DN | 19 | GLU |
| 44 | DN | 42 | TRP |
| 44 | DN | 57 | ALA |
| 44 | DN | 58 | ASP |
| 44 | DN | 134 | ARG |
| 45 | DO | 48 | PRO |
| 46 | DP | 9 | ASN |
| 46 | DP | 14 | LYS |
| 46 | DP | 17 | LYS |
| 46 | DP | 31 | ALA |
| 46 | DP | 34 | GLY |
| 46 | DP | 35 | HIS |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 46 | DP | 47 | ASP |
| 46 | DP | 48 | PRO |
| 46 | DP | 83 | VAL |
| 46 | DP | 103 | ALA |
| 46 | DP | 104 | GLY |
| 46 | DP | 107 | LYS |
| 46 | DP | 108 | LYS |
| 46 | DP | 111 | ARG |
| 47 | DQ | 21 | THR |
| 48 | DR | 4 | LEU |
| 48 | DR | 8 | ARG |
| 48 | DR | 14 | SER |
| 48 | DR | 82 | GLU |
| 48 | DR | 107 | ASP |
| 49 | DS | 23 | ARG |
| 49 | DS | 53 | SER |
| 49 | DS | 54 | LEU |
| 49 | DS | 56 | LEU |
| 49 | DS | 59 | LYS |
| 49 | DS | 62 | LYS |
| 49 | DS | 88 | ASP |
| 49 | DS | 94 | TYR |
| 49 | DS | 97 | ARG |
| 49 | DS | 102 | ALA |
| 50 | DT | 24 | PRO |
| 50 | DT | 28 | VAL |
| 50 | DT | 30 | VAL |
| 50 | DT | 33 | LYS |
| 50 | DT | 55 | ASN |
| 50 | DT | 58 | ASN |
| 50 | DT | 80 | SER |
| 50 | DT | 83 | ILE |
| 50 | DT | 84 | GLN |
| 50 | DT | 85 | LYS |
| 50 | DT | 88 | ILE |
| 50 | DT | 103 | ARG |
| 50 | DT | 107 | ASP |
| 50 | DT | 115 | ARG |
| 50 | DT | 129 | ARG |
| 51 | DU | 9 | VAL |
| 51 | DU | 90 | VAL |
| 51 | DU | 91 | ASP |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 51 | DU | 93 | LYS |
| 52 | DV | 19 | LYS |
| 52 | DV | 49 | THR |
| 52 | DV | 53 | GLU |
| 53 | DW | 6 | ILE |
| 53 | DW | 11 | ARG |
| 55 | DY | 7 | VAL |
| 55 | DY | 17 | SER |
| 55 | DY | 27 | VAL |
| 55 | DY | 30 | VAL |
| 55 | DY | 44 | ILE |
| 55 | DY | 48 | ALA |
| 55 | DY | 52 | SER |
| 55 | DY | 53 | PRO |
| 55 | DY | 56 | PRO |
| 55 | DY | 66 | PRO |
| 55 | DY | 77 | PRO |
| 55 | DY | 78 | ALA |
| 55 | DY | 81 | LYS |
| 55 | DY | 90 | LEU |
| 55 | DY | 96 | ILE |
| 55 | DY | 101 | LYS |
| 56 | DZ | 9 | TYR |
| 56 | DZ | 107 | THR |
| 56 | DZ | 109 | ALA |
| 56 | DZ | 149 | SER |
| 56 | DZ | 151 | HIS |
| 56 | DZ | 163 | LEU |
| 56 | DZ | 165 | VAL |
| 2 | AB | 83 | MET |
| 2 | AB | 150 | SER |
| 2 | AB | 230 | VAL |
| 2 | AB | 239 | VAL |
| 3 | AC | 4 | LYS |
| 3 | AC | 29 | TYR |
| 3 | AC | 47 | LEU |
| 3 | AC | 61 | ALA |
| 3 | AC | 81 | GLY |
| 3 | AC | 111 | LEU |
| 3 | AC | 145 | GLY |
| 3 | AC | 189 | ALA |
| 4 | AD | 4 | TYR |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4 | AD | 5 | ILE |
| 4 | AD | 7 | PRO |
| 4 | AD | 41 | GLY |
| 4 | AD | 43 | HIS |
| 4 | AD | 44 | GLY |
| 4 | AD | 109 | GLY |
| 4 | AD | 129 | ASN |
| 5 | AE | 21 | ALA |
| 5 | AE | 146 | ALA |
| 5 | AE | 153 | LYS |
| 6 | AF | 71 | ARG |
| 7 | AG | 19 | GLY |
| 7 | AG | 131 | LYS |
| 8 | AH | 133 | LEU |
| 8 | AH | 135 | CYS |
| 9 | AI | 100 | GLY |
| 10 | AJ | 36 | GLY |
| 10 | AJ | 86 | MET |
| 12 | AL | 28 | LYS |
| 12 | AL | 64 | TYR |
| 12 | AL | 76 | ASN |
| 12 | AL | 115 | LYS |
| 12 | AL | 121 | GLY |
| 13 | AM | 46 | LYS |
| 13 | AM | 81 | LEU |
| 13 | AM | 95 | GLY |
| 13 | AM | 100 | GLY |
| 13 | AM | 108 | ARG |
| 14 | AN | 16 | PHE |
| 15 | AO | 77 | ARG |
| 16 | AP | 52 | ASP |
| 18 | AR | 25 | THR |
| 18 | AR | 38 | GLU |
| 18 | AR | 51 | LEU |
| 18 | AR | 57 | GLY |
| 19 | AS | 6 | LYS |
| 19 | AS | 27 | GLU |
| 19 | AS | 67 | VAL |
| 20 | AT | 47 | GLY |
| 20 | AT | 71 | THR |
| 26 | B1 | 28 | GLY |
| 26 | B1 | 53 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 26 | B1 | 69 | LYS |
| 26 | B1 | 84 | GLY |
| 26 | B1 | 85 | LEU |
| 27 | B2 | 44 | LEU |
| 27 | B2 | 45 | SER |
| 27 | B2 | 70 | GLN |
| 30 | B5 | 32 | PRO |
| 31 | B6 | 23 | THR |
| 31 | B6 | 49 | HIS |
| 37 | BC | 35 | ALA |
| 37 | BC | 46 | LYS |
| 37 | BC | 57 | ASN |
| 37 | BC | 89 | ALA |
| 37 | BC | 129 | ARG |
| 37 | BC | 142 | ALA |
| 37 | BC | 154 | ARG |
| 37 | BC | 162 | GLU |
| 37 | BC | 167 | LYS |
| 37 | BC | 207 | THR |
| 37 | BC | 213 | TYR |
| 38 | BD | 3 | VAL |
| 38 | BD | 58 | HIS |
| 38 | BD | 237 | GLU |
| 38 | BD | 239 | ARG |
| 38 | BD | 246 | PRO |
| 39 | BE | 2 | LYS |
| 39 | BE | 57 | LYS |
| 39 | BE | 60 | ASN |
| 39 | BE | 69 | LYS |
| 39 | BE | 76 | ARG |
| 39 | BE | 90 | THR |
| 39 | BE | 131 | ALA |
| 40 | BF | 10 | PRO |
| 40 | BF | 84 | VAL |
| 40 | BF | 89 | VAL |
| 40 | BF | 165 | ARG |
| 41 | BG | 117 | PHE |
| 41 | BG | 146 | TYR |
| 41 | BG | 172 | LEU |
| 42 | BH | 14 | GLY |
| 42 | BH | 24 | VAL |
| 42 | BH | 55 | PRO |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 42 | BH | 81 | GLU |
| 42 | BH | 84 | SER |
| 42 | BH | 97 | ARG |
| 42 | BH | 165 | ALA |
| 43 | BI | 51 | ILE |
| 43 | BI | 53 | ALA |
| 43 | BI | 59 | ALA |
| 43 | BI | 85 | GLU |
| 43 | BI | 92 | VAL |
| 43 | BI | 117 | GLU |
| 43 | BI | 144 | VAL |
| 44 | BN | 17 | ASP |
| 44 | BN | 77 | GLY |
| 45 | BO | 5 | GLN |
| 45 | BO | 27 | GLY |
| 46 | BP | 11 | GLY |
| 46 | BP | 19 | VAL |
| 46 | BP | 52 | GLU |
| 46 | BP | 140 | ALA |
| 46 | BP | 147 | LEU |
| 47 | BQ | 20 | ALA |
| 47 | BQ | 29 | PHE |
| 47 | BQ | 135 | ASP |
| 48 | BR | 3 | HIS |
| 48 | BR | 6 | SER |
| 48 | BR | 42 | LYS |
| 48 | BR | 88 | ARG |
| 49 | BS | 14 | VAL |
| 49 | BS | 24 | LEU |
| 49 | BS | 57 | LYS |
| 49 | BS | 66 | ALA |
| 49 | BS | 87 | PHE |
| 49 | BS | 90 | GLY |
| 49 | BS | 96 | GLY |
| 49 | BS | 107 | GLU |
| 50 | BT | 131 | ALA |
| 52 | BV | 16 | PRO |
| 52 | BV | 18 | LEU |
| 52 | BV | 24 | LYS |
| 52 | BV | 46 | VAL |
| 52 | BV | 48 | GLY |
| 52 | BV | 79 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53 | BW | 6 | ILE |
| 53 | BW | 63 | ASP |
| 55 | BY | 22 | GLY |
| 55 | BY | 23 | ARG |
| 55 | BY | 42 | VAL |
| 55 | BY | 58 | GLY |
| 55 | BY | 91 | GLU |
| 56 | BZ | 16 | SER |
| 56 | BZ | 31 | ARG |
| 56 | BZ | 146 | ILE |
| 56 | BZ | 152 | ALA |
| 2 | CB | 83 | MET |
| 2 | CB | 150 | SER |
| 2 | CB | 230 | VAL |
| 2 | CB | 239 | VAL |
| 3 | CC | 4 | LYS |
| 3 | CC | 29 | TYR |
| 3 | CC | 47 | LEU |
| 3 | CC | 61 | ALA |
| 3 | CC | 81 | GLY |
| 3 | CC | 145 | GLY |
| 3 | CC | 189 | ALA |
| 4 | CD | 4 | TYR |
| 4 | CD | 5 | ILE |
| 4 | CD | 7 | PRO |
| 4 | CD | 41 | GLY |
| 4 | CD | 43 | HIS |
| 4 | CD | 44 | GLY |
| 4 | CD | 109 | GLY |
| 4 | CD | 129 | ASN |
| 5 | CE | 21 | ALA |
| 5 | CE | 146 | ALA |
| 5 | CE | 153 | LYS |
| 6 | CF | 69 | GLU |
| 6 | CF | 71 | ARG |
| 7 | CG | 19 | GLY |
| 7 | CG | 131 | LYS |
| 8 | CH | 133 | LEU |
| 8 | CH | 135 | CYS |
| 9 | CI | 100 | GLY |
| 10 | CJ | 36 | GLY |
| 10 | CJ | 86 | MET |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12 | CL | 28 | LYS |
| 12 | CL | 64 | TYR |
| 12 | CL | 76 | ASN |
| 12 | CL | 121 | GLY |
| 13 | CM | 46 | LYS |
| 13 | CM | 81 | LEU |
| 13 | CM | 100 | GLY |
| 13 | CM | 108 | ARG |
| 14 | CN | 16 | PHE |
| 15 | CO | 77 | ARG |
| 16 | CP | 52 | ASP |
| 18 | CR | 38 | GLU |
| 18 | CR | 51 | LEU |
| 18 | CR | 57 | GLY |
| 19 | CS | 6 | LYS |
| 19 | CS | 27 | GLU |
| 19 | CS | 67 | VAL |
| 20 | CT | 47 | GLY |
| 20 | CT | 71 | THR |
| 26 | D1 | 24 | ALA |
| 26 | D1 | 28 | GLY |
| 26 | D1 | 30 | VAL |
| 26 | D1 | 84 | GLY |
| 26 | D1 | 85 | LEU |
| 27 | D2 | 17 | SER |
| 27 | D2 | 51 | ARG |
| 30 | D5 | 32 | PRO |
| 31 | D6 | 23 | THR |
| 31 | D6 | 49 | HIS |
| 37 | DC | 35 | ALA |
| 37 | DC | 46 | LYS |
| 37 | DC | 57 | ASN |
| 37 | DC | 89 | ALA |
| 37 | DC | 129 | ARG |
| 37 | DC | 142 | ALA |
| 37 | DC | 151 | GLU |
| 37 | DC | 154 | ARG |
| 37 | DC | 162 | GLU |
| 37 | DC | 167 | LYS |
| 37 | DC | 207 | THR |
| 37 | DC | 213 | TYR |
| 38 | DD | 3 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 38 | DD | 51 | VAL |
| 38 | DD | 237 | GLU |
| 38 | DD | 239 | ARG |
| 39 | DE | 2 | LYS |
| 39 | DE | 60 | ASN |
| 39 | DE | 69 | LYS |
| 39 | DE | 76 | ARG |
| 39 | DE | 90 | THR |
| 39 | DE | 131 | ALA |
| 40 | DF | 10 | PRO |
| 40 | DF | 14 | PRO |
| 40 | DF | 84 | VAL |
| 40 | DF | 89 | VAL |
| 40 | DF | 165 | ARG |
| 41 | DG | 3 | LEU |
| 41 | DG | 50 | ALA |
| 41 | DG | 52 | ILE |
| 41 | DG | 84 | LYS |
| 41 | DG | 96 | ARG |
| 41 | DG | 145 | THR |
| 41 | DG | 147 | ASP |
| 41 | DG | 179 | PRO |
| 42 | DH | 14 | GLY |
| 42 | DH | 24 | VAL |
| 42 | DH | 55 | PRO |
| 42 | DH | 81 | GLU |
| 42 | DH | 84 | SER |
| 42 | DH | 97 | ARG |
| 43 | DI | 51 | ILE |
| 43 | DI | 53 | ALA |
| 43 | DI | 59 | ALA |
| 43 | DI | 85 | GLU |
| 43 | DI | 92 | VAL |
| 43 | DI | 117 | GLU |
| 44 | DN | 5 | VAL |
| 44 | DN | 17 | ASP |
| 44 | DN | 77 | GLY |
| 44 | DN | 127 | ASP |
| 44 | DN | 136 | GLU |
| 45 | DO | 5 | GLN |
| 45 | DO | 27 | GLY |
| 46 | DP | 11 | GLY |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 46 | DP | 19 | VAL |
| 46 | DP | 52 | GLU |
| 46 | DP | 140 | ALA |
| 46 | DP | 147 | LEU |
| 47 | DQ | 20 | ALA |
| 47 | DQ | 29 | PHE |
| 48 | DR | 3 | HIS |
| 48 | DR | 6 | SER |
| 48 | DR | 42 | LYS |
| 48 | DR | 88 | ARG |
| 49 | DS | 14 | VAL |
| 49 | DS | 24 | LEU |
| 49 | DS | 57 | LYS |
| 49 | DS | 66 | ALA |
| 49 | DS | 83 | LYS |
| 49 | DS | 87 | PHE |
| 49 | DS | 90 | GLY |
| 49 | DS | 96 | GLY |
| 49 | DS | 107 | GLU |
| 50 | DT | 29 | ARG |
| 50 | DT | 131 | ALA |
| 51 | DU | 32 | PHE |
| 52 | DV | 16 | PRO |
| 52 | DV | 18 | LEU |
| 52 | DV | 24 | LYS |
| 52 | DV | 46 | VAL |
| 52 | DV | 48 | GLY |
| 52 | DV | 79 | VAL |
| 53 | DW | 63 | ASP |
| 55 | DY | 22 | GLY |
| 55 | DY | 23 | ARG |
| 55 | DY | 42 | VAL |
| 55 | DY | 58 | GLY |
| 55 | DY | 91 | GLU |
| 56 | DZ | 34 | ASN |
| 56 | DZ | 65 | GLN |
| 56 | DZ | 112 | ARG |
| 56 | DZ | 117 | LEU |
| 56 | DZ | 121 | HIS |
| 2 | AB | 20 | GLU |
| 2 | AB | 36 | ARG |
| 2 | AB | 98 | LEU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 132 | LYS |
| 2 | AB | 155 | LEU |
| 2 | AB | 161 | ALA |
| 2 | AB | 204 | ASN |
| 3 | AC | 3 | ASN |
| 3 | AC | 24 | ALA |
| 3 | AC | 154 | SER |
| 3 | AC | 168 | ALA |
| 3 | AC | 191 | THR |
| 4 | AD | 32 | ALA |
| 4 | AD | 47 | ARG |
| 4 | AD | 155 | LEU |
| 5 | AE | 17 | ALA |
| 5 | AE | 137 | GLU |
| 6 | AF | 69 | GLU |
| 6 | AF | 70 | ASP |
| 8 | AH | 41 | ARG |
| 9 | AI | 34 | ASN |
| 11 | AK | 39 | PRO |
| 11 | AK | 101 | SER |
| 11 | AK | 117 | ASN |
| 12 | AL | 12 | ARG |
| 12 | AL | 19 | ARG |
| 12 | AL | 65 | GLU |
| 13 | AM | 3 | ARG |
| 13 | AM | 28 | ALA |
| 13 | AM | 29 | ARG |
| 13 | AM | 90 | LEU |
| 13 | AM | 119 | GLY |
| 14 | AN | 50 | LYS |
| 14 | AN | 51 | GLY |
| 14 | AN | 58 | LYS |
| 18 | AR | 41 | LYS |
| 18 | AR | 49 | LYS |
| 18 | AR | 52 | PRO |
| 20 | AT | 11 | SER |
| 20 | AT | 99 | LEU |
| 26 | B1 | 24 | ALA |
| 26 | B1 | 27 | GLU |
| 26 | B1 | 95 | LEU |
| 28 | B3 | 38 | GLU |
| 30 | B5 | 34 | PRO |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 31 | B6 | 33 | LYS |
| 31 | B6 | 44 | ARG |
| 33 | B8 | 43 | GLN |
| 33 | B8 | 46 | ARG |
| 33 | B8 | 47 | LYS |
| 33 | B8 | 64 | TYR |
| 37 | BC | 20 | TYR |
| 37 | BC | 52 | ARG |
| 37 | BC | 67 | GLY |
| 37 | BC | 151 | GLU |
| 37 | BC | 161 | ILE |
| 38 | BD | 27 | THR |
| 38 | BD | 51 | VAL |
| 38 | BD | 268 | ARG |
| 39 | BE | 39 | PRO |
| 39 | BE | 89 | ASP |
| 39 | BE | 169 | ASN |
| 39 | BE | 186 | GLY |
| 40 | BF | 16 | GLY |
| 40 | BF | 24 | LEU |
| 40 | BF | 28 | ILE |
| 40 | BF | 66 | PRO |
| 40 | BF | 71 | GLY |
| 40 | BF | 128 | ALA |
| 40 | BF | 133 | ASN |
| 41 | BG | 43 | LEU |
| 41 | BG | 49 | ASP |
| 41 | BG | 98 | ARG |
| 41 | BG | 147 | ASP |
| 42 | BH | 45 | VAL |
| 42 | BH | 119 | GLU |
| 42 | BH | 153 | LYS |
| 42 | BH | 154 | PRO |
| 43 | BI | 6 | LEU |
| 43 | BI | 75 | LEU |
| 43 | BI | 78 | THR |
| 44 | BN | 5 | VAL |
| 44 | BN | 127 | ASP |
| 44 | BN | 135 | PRO |
| 44 | BN | 136 | GLU |
| 45 | BO | 13 | ASN |
| 46 | BP | 18 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 46 | BP | 25 | SER |
| 46 | BP | 39 | LYS |
| 46 | BP | 40 | SER |
| 46 | BP | 49 | ARG |
| 46 | BP | 55 | ARG |
| 46 | BP | 58 | THR |
| 46 | BP | 76 | LYS |
| 46 | BP | 106 | LEU |
| 47 | BQ | 40 | ALA |
| 47 | BQ | 105 | GLU |
| 47 | BQ | 134 | ARG |
| 48 | BR | 45 | ARG |
| 49 | BS | 58 | LEU |
| 49 | BS | 74 | ALA |
| 49 | BS | 83 | LYS |
| 50 | BT | 17 | THR |
| 50 | BT | 27 | THR |
| 50 | BT | 36 | GLU |
| 50 | BT | 42 | ILE |
| 50 | BT | 90 | GLN |
| 50 | BT | 94 | ALA |
| 50 | BT | 104 | ASN |
| 52 | BV | 3 | ALA |
| 52 | BV | 35 | LEU |
| 55 | BY | 3 | VAL |
| 55 | BY | 31 | LEU |
| 55 | BY | 37 | VAL |
| 55 | BY | 38 | ILE |
| 55 | BY | 99 | CYS |
| 56 | BZ | 149 | SER |
| 2 | CB | 20 | GLU |
| 2 | CB | 36 | ARG |
| 2 | CB | 98 | LEU |
| 2 | CB | 132 | LYS |
| 2 | CB | 155 | LEU |
| 2 | CB | 161 | ALA |
| 2 | CB | 167 | PRO |
| 2 | CB | 177 | ALA |
| 2 | CB | 204 | ASN |
| 3 | CC | 3 | ASN |
| 3 | CC | 24 | ALA |
| 3 | CC | 154 | SER |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | CC | 168 | ALA |
| 3 | CC | 191 | THR |
| 4 | CD | 32 | ALA |
| 4 | CD | 47 | ARG |
| 4 | CD | 155 | LEU |
| 6 | CF | 70 | ASP |
| 9 | CI | 34 | ASN |
| 11 | CK | 39 | PRO |
| 11 | CK | 101 | SER |
| 11 | CK | 117 | ASN |
| 12 | CL | 12 | ARG |
| 12 | CL | 19 | ARG |
| 12 | CL | 65 | GLU |
| 13 | CM | 3 | ARG |
| 13 | CM | 28 | ALA |
| 13 | CM | 29 | ARG |
| 13 | CM | 90 | LEU |
| 13 | CM | 119 | GLY |
| 14 | CN | 50 | LYS |
| 14 | CN | 51 | GLY |
| 14 | CN | 58 | LYS |
| 18 | CR | 25 | THR |
| 18 | CR | 41 | LYS |
| 18 | CR | 49 | LYS |
| 18 | CR | 52 | PRO |
| 20 | CT | 11 | SER |
| 20 | CT | 99 | LEU |
| 28 | D3 | 38 | GLU |
| 30 | D5 | 34 | PRO |
| 31 | D6 | 33 | LYS |
| 31 | D6 | 44 | ARG |
| 33 | D8 | 43 | GLN |
| 33 | D8 | 46 | ARG |
| 33 | D8 | 47 | LYS |
| 33 | D8 | 64 | TYR |
| 37 | DC | 20 | TYR |
| 37 | DC | 49 | ILE |
| 37 | DC | 52 | ARG |
| 37 | DC | 67 | GLY |
| 37 | DC | 161 | ILE |
| 38 | DD | 27 | THR |
| 38 | DD | 32 | SER |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 38 | DD | 52 | ARG |
| 38 | DD | 58 | HIS |
| 38 | DD | 246 | PRO |
| 38 | DD | 268 | ARG |
| 39 | DE | 39 | PRO |
| 39 | DE | 66 | HIS |
| 39 | DE | 135 | HIS |
| 39 | DE | 169 | ASN |
| 39 | DE | 186 | GLY |
| 40 | DF | 16 | GLY |
| 40 | DF | 24 | LEU |
| 40 | DF | 28 | ILE |
| 40 | DF | 66 | PRO |
| 40 | DF | 71 | GLY |
| 40 | DF | 128 | ALA |
| 40 | DF | 133 | ASN |
| 41 | DG | 10 | LYS |
| 41 | DG | 18 | GLU |
| 41 | DG | 22 | ARG |
| 41 | DG | 117 | PHE |
| 41 | DG | 153 | ARG |
| 42 | DH | 45 | VAL |
| 42 | DH | 153 | LYS |
| 42 | DH | 154 | PRO |
| 42 | DH | 165 | ALA |
| 43 | DI | 6 | LEU |
| 43 | DI | 78 | THR |
| 43 | DI | 144 | VAL |
| 44 | DN | 129 | PRO |
| 44 | DN | 135 | PRO |
| 46 | DP | 25 | SER |
| 46 | DP | 39 | LYS |
| 46 | DP | 40 | SER |
| 46 | DP | 42 | SER |
| 46 | DP | 49 | ARG |
| 46 | DP | 55 | ARG |
| 46 | DP | 76 | LYS |
| 46 | DP | 106 | LEU |
| 47 | DQ | 40 | ALA |
| 47 | DQ | 105 | GLU |
| 47 | DQ | 134 | ARG |
| 47 | DQ | 135 | ASP |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 48 | DR | 45 | ARG |
| 49 | DS | 42 | ASP |
| 49 | DS | 58 | LEU |
| 49 | DS | 74 | ALA |
| 50 | DT | 17 | THR |
| 50 | DT | 27 | THR |
| 50 | DT | 36 | GLU |
| 50 | DT | 104 | ASN |
| 51 | DU | 77 | SER |
| 52 | DV | 3 | ALA |
| 55 | DY | 3 | VAL |
| 55 | DY | 31 | LEU |
| 55 | DY | 38 | ILE |
| 55 | DY | 99 | CYS |
| 56 | DZ | 21 | ALA |
| 56 | DZ | 66 | SER |
| 56 | DZ | 81 | ARG |
| 56 | DZ | 95 | PRO |
| 56 | DZ | 146 | ILE |
| 56 | DZ | 177 | PRO |
| 2 | AB | 66 | GLY |
| 2 | AB | 159 | PRO |
| 2 | AB | 167 | PRO |
| 2 | AB | 174 | VAL |
| 2 | AB | 177 | ALA |
| 2 | AB | 178 | ARG |
| 2 | AB | 229 | VAL |
| 2 | AB | 237 | ALA |
| 4 | AD | 30 | LYS |
| 5 | AE | 20 | GLN |
| 5 | AE | 140 | ARG |
| 9 | AI | 11 | LYS |
| 9 | AI | 12 | GLU |
| 10 | AJ | 46 | ARG |
| 10 | AJ | 47 | PHE |
| 10 | AJ | 60 | ARG |
| 11 | AK | 105 | VAL |
| 12 | AL | 27 | LEU |
| 13 | AM | 5 | ALA |
| 13 | AM | 21 | TYR |
| 13 | AM | 43 | THR |
| 14 | AN | 52 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14 | AN | 60 | SER |
| 20 | AT | 46 | GLU |
| 27 | B2 | 17 | SER |
| 29 | B4 | 55 | PRO |
| 29 | B4 | 61 | VAL |
| 31 | B6 | 19 | ARG |
| 37 | BC | 49 | ILE |
| 37 | BC | 64 | LEU |
| 37 | BC | 79 | LYS |
| 37 | BC | 175 | VAL |
| 37 | BC | 198 | ALA |
| 38 | BD | 34 | VAL |
| 39 | BE | 45 | THR |
| 39 | BE | 66 | HIS |
| 39 | BE | 68 | ALA |
| 39 | BE | 72 | VAL |
| 40 | BF | 67 | GLN |
| 40 | BF | 127 | GLU |
| 40 | BF | 132 | VAL |
| 41 | BG | 97 | ASP |
| 42 | BH | 158 | HIS |
| 43 | BI | 14 | ASP |
| 43 | BI | 112 | LYS |
| 44 | BN | 56 | ASN |
| 44 | BN | 129 | PRO |
| 46 | BP | 33 | ARG |
| 46 | BP | 42 | SER |
| 46 | BP | 98 | GLU |
| 46 | BP | 110 | TYR |
| 46 | BP | 141 | ALA |
| 46 | BP | 146 | VAL |
| 47 | BQ | 28 | ALA |
| 48 | BR | 86 | ARG |
| 49 | BS | 42 | ASP |
| 49 | BS | 72 | ALA |
| 50 | BT | 31 | SER |
| 50 | BT | 35 | LYS |
| 51 | BU | 77 | SER |
| 51 | BU | 92 | ARG |
| 52 | BV | 23 | GLU |
| 53 | BW | 66 | GLU |
| 55 | BY | 39 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 55 | BY | 51 | VAL |
| 55 | BY | 67 | LEU |
| 56 | BZ | 80 | ARG |
| 56 | BZ | 142 | SER |
| 56 | BZ | 157 | LEU |
| 2 | CB | 66 | GLY |
| 2 | CB | 159 | PRO |
| 2 | CB | 174 | VAL |
| 2 | CB | 178 | ARG |
| 2 | CB | 229 | VAL |
| 2 | CB | 237 | ALA |
| 4 | CD | 30 | LYS |
| 5 | CE | 17 | ALA |
| 5 | CE | 20 | GLN |
| 5 | CE | 137 | GLU |
| 8 | CH | 41 | ARG |
| 9 | CI | 11 | LYS |
| 10 | CJ | 47 | PHE |
| 10 | CJ | 60 | ARG |
| 11 | CK | 105 | VAL |
| 12 | CL | 26 | ALA |
| 12 | CL | 27 | LEU |
| 13 | CM | 5 | ALA |
| 13 | CM | 21 | TYR |
| 13 | CM | 43 | THR |
| 14 | CN | 52 | GLN |
| 14 | CN | 60 | SER |
| 15 | CO | 13 | GLN |
| 15 | CO | 26 | GLU |
| 18 | CR | 28 | GLU |
| 20 | CT | 46 | GLU |
| 29 | D4 | 55 | PRO |
| 29 | D4 | 61 | VAL |
| 31 | D6 | 19 | ARG |
| 37 | DC | 64 | LEU |
| 37 | DC | 79 | LYS |
| 37 | DC | 175 | VAL |
| 37 | DC | 198 | ALA |
| 38 | DD | 202 | LYS |
| 39 | DE | 45 | THR |
| 39 | DE | 68 | ALA |
| 39 | DE | 89 | ASP |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 39 | DE | 144 | ARG |
| 40 | DF | 67 | GLN |
| 40 | DF | 127 | GLU |
| 40 | DF | 132 | VAL |
| 41 | DG | 43 | LEU |
| 41 | DG | 86 | MET |
| 41 | DG | 97 | ASP |
| 42 | DH | 119 | GLU |
| 42 | DH | 158 | HIS |
| 43 | DI | 14 | ASP |
| 43 | DI | 75 | LEU |
| 43 | DI | 112 | LYS |
| 45 | DO | 13 | ASN |
| 46 | DP | 33 | ARG |
| 46 | DP | 58 | THR |
| 46 | DP | 98 | GLU |
| 46 | DP | 110 | TYR |
| 46 | DP | 141 | ALA |
| 46 | DP | 146 | VAL |
| 49 | DS | 72 | ALA |
| 49 | DS | 77 | ALA |
| 50 | DT | 31 | SER |
| 50 | DT | 35 | LYS |
| 50 | DT | 42 | ILE |
| 50 | DT | 90 | GLN |
| 50 | DT | 94 | ALA |
| 51 | DU | 92 | ARG |
| 52 | DV | 23 | GLU |
| 52 | DV | 35 | LEU |
| 53 | DW | 93 | ALA |
| 54 | DX | 21 | PHE |
| 55 | DY | 37 | VAL |
| 55 | DY | 39 | VAL |
| 55 | DY | 51 | VAL |
| 55 | DY | 67 | LEU |
| 56 | DZ | 78 | LYS |
| 56 | DZ | 106 | GLY |
| 56 | DZ | 142 | SER |
| 56 | DZ | 154 | ASP |
| 2 | AB | 26 | PRO |
| 3 | AC | 55 | VAL |
| 3 | AC | 71 | ALA |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5 | AE | 128 | PRO |
| 9 | AI | 46 | ALA |
| 12 | AL | 26 | ALA |
| 14 | AN | 59 | ALA |
| 15 | AO | 17 | ARG |
| 15 | AO | 26 | GLU |
| 15 | AO | 86 | GLY |
| 17 | AQ | 14 | LYS |
| 17 | AQ | 73 | VAL |
| 18 | AR | 28 | GLU |
| 19 | AS | 53 | ASN |
| 20 | AT | 28 | ALA |
| 20 | AT | 29 | LYS |
| 25 | B0 | 5 | LYS |
| 25 | B0 | 57 | PHE |
| 28 | B3 | 2 | PRO |
| 30 | B5 | 50 | GLY |
| 33 | B8 | 3 | LYS |
| 37 | BC | 133 | PRO |
| 37 | BC | 188 | ASN |
| 37 | BC | 204 | ALA |
| 37 | BC | 209 | LEU |
| 38 | BD | 32 | SER |
| 38 | BD | 202 | LYS |
| 38 | BD | 244 | ARG |
| 39 | BE | 29 | GLY |
| 39 | BE | 30 | PRO |
| 39 | BE | 49 | LEU |
| 39 | BE | 135 | HIS |
| 39 | BE | 144 | ARG |
| 40 | BF | 102 | PRO |
| 41 | BG | 6 | ALA |
| 41 | BG | 171 | ALA |
| 42 | BH | 13 | LYS |
| 43 | BI | 55 | ALA |
| 44 | BN | 8 | GLN |
| 45 | BO | 72 | PRO |
| 45 | BO | 113 | LYS |
| 46 | BP | 118 | GLY |
| 46 | BP | 149 | GLU |
| 48 | BR | 117 | VAL |
| 49 | BS | 77 | ALA |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 52 | BV | 26 | ASP |
| 53 | BW | 71 | VAL |
| 53 | BW | 93 | ALA |
| 54 | BX | 21 | PHE |
| 55 | BY | 55 | TYR |
| 56 | BZ | 15 | PRO |
| 2 | CB | 26 | PRO |
| 2 | CB | 39 | ILE |
| 2 | CB | 217 | ARG |
| 3 | CC | 55 | VAL |
| 3 | CC | 70 | VAL |
| 3 | CC | 71 | ALA |
| 5 | CE | 128 | PRO |
| 5 | CE | 140 | ARG |
| 9 | CI | 12 | GLU |
| 10 | CJ | 46 | ARG |
| 13 | CM | 60 | VAL |
| 14 | CN | 59 | ALA |
| 15 | CO | 17 | ARG |
| 15 | CO | 86 | GLY |
| 17 | CQ | 73 | VAL |
| 18 | CR | 36 | ASN |
| 20 | CT | 28 | ALA |
| 25 | D0 | 5 | LYS |
| 25 | D0 | 57 | PHE |
| 25 | D0 | 74 | ARG |
| 26 | D1 | 76 | ARG |
| 27 | D2 | 43 | GLN |
| 28 | D3 | 2 | PRO |
| 30 | D5 | 48 | GLU |
| 37 | DC | 133 | PRO |
| 37 | DC | 188 | ASN |
| 37 | DC | 204 | ALA |
| 37 | DC | 209 | LEU |
| 38 | DD | 34 | VAL |
| 38 | DD | 244 | ARG |
| 39 | DE | 29 | GLY |
| 39 | DE | 30 | PRO |
| 39 | DE | 72 | VAL |
| 40 | DF | 78 | ILE |
| 41 | DG | 126 | ASP |
| 42 | DH | 13 | LYS |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 43 | DI | 55 | ALA |
| 44 | DN | 8 | GLN |
| 44 | DN | 56 | ASN |
| 44 | DN | 64 | GLY |
| 45 | DO | 72 | PRO |
| 46 | DP | 18 | ARG |
| 46 | DP | 63 | PRO |
| 46 | DP | 118 | GLY |
| 46 | DP | 149 | GLU |
| 47 | DQ | 28 | ALA |
| 48 | DR | 86 | ARG |
| 48 | DR | 117 | VAL |
| 52 | DV | 26 | ASP |
| 53 | DW | 66 | GLU |
| 54 | DX | 87 | GLN |
| 55 | DY | 55 | TYR |
| 2 | AB | 39 | ILE |
| 2 | AB | 217 | ARG |
| 2 | AB | 234 | PRO |
| 3 | AC | 70 | VAL |
| 4 | AD | 63 | LYS |
| 9 | AI | 40 | LEU |
| 9 | AI | 44 | VAL |
| 9 | AI | 98 | PRO |
| 12 | AL | 48 | PRO |
| 13 | AM | 42 | ALA |
| 13 | AM | 60 | VAL |
| 15 | AO | 13 | GLN |
| 15 | AO | 19 | PRO |
| 20 | AT | 96 | GLY |
| 27 | B2 | 19 | VAL |
| 30 | B5 | 48 | GLU |
| 37 | BC | 26 | ALA |
| 37 | BC | 50 | ASP |
| 37 | BC | 90 | GLY |
| 37 | BC | 150 | GLY |
| 37 | BC | 152 | ILE |
| 37 | BC | 170 | ALA |
| 37 | BC | 217 | THR |
| 40 | BF | 9 | ILE |
| 40 | BF | 13 | SER |
| 40 | BF | 56 | GLU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 40 | BF | 78 | ILE |
| 42 | BH | 47 | GLU |
| 44 | BN | 64 | GLY |
| 46 | BP | 36 | LYS |
| 48 | BR | 102 | GLU |
| 48 | BR | 106 | GLY |
| 56 | BZ | 73 | GLN |
| 2 | CB | 175 | ARG |
| 4 | CD | 14 | ARG |
| 9 | CI | 44 | VAL |
| 9 | CI | 46 | ALA |
| 9 | CI | 98 | PRO |
| 12 | CL | 48 | PRO |
| 19 | CS | 5 | LEU |
| 19 | CS | 53 | ASN |
| 20 | CT | 29 | LYS |
| 20 | CT | 96 | GLY |
| 26 | D1 | 53 | VAL |
| 27 | D2 | 6 | VAL |
| 29 | D4 | 45 | GLY |
| 30 | D5 | 14 | ALA |
| 33 | D8 | 3 | LYS |
| 37 | DC | 26 | ALA |
| 37 | DC | 90 | GLY |
| 37 | DC | 150 | GLY |
| 37 | DC | 152 | ILE |
| 37 | DC | 170 | ALA |
| 37 | DC | 217 | THR |
| 38 | DD | 106 | ILE |
| 40 | DF | 9 | ILE |
| 40 | DF | 13 | SER |
| 40 | DF | 102 | PRO |
| 42 | DH | 47 | GLU |
| 45 | DO | 4 | PRO |
| 45 | DO | 98 | VAL |
| 45 | DO | 113 | LYS |
| 46 | DP | 23 | PRO |
| 48 | DR | 102 | GLU |
| 48 | DR | 106 | GLY |
| 51 | DU | 33 | ARG |
| 52 | DV | 29 | PRO |
| 53 | DW | 71 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 56 | DZ | 62 | PRO |
| 5 | AE | 70 | PRO |
| 13 | AM | 4 | ILE |
| 17 | AQ | 64 | PRO |
| 20 | AT | 97 | ALA |
| 27 | B2 | 18 | PRO |
| 29 | B4 | 45 | GLY |
| 38 | BD | 106 | ILE |
| 40 | BF | 126 | VAL |
| 45 | BO | 98 | VAL |
| 46 | BP | 23 | PRO |
| 46 | BP | 63 | PRO |
| 52 | BV | 28 | GLU |
| 52 | BV | 29 | PRO |
| 53 | BW | 112 | GLY |
| 56 | BZ | 101 | PRO |
| 56 | BZ | 115 | GLY |
| 56 | BZ | 159 | PRO |
| 2 | CB | 234 | PRO |
| 13 | CM | 4 | ILE |
| 15 | CO | 19 | PRO |
| 20 | CT | 97 | ALA |
| 37 | DC | 50 | ASP |
| 46 | DP | 122 | PRO |
| 50 | DT | 86 | ILE |
| 52 | DV | 28 | GLU |
| 53 | DW | 59 | VAL |
| 53 | DW | 112 | GLY |
| 56 | DZ | 174 | VAL |
| 4 | AD | 28 | SER |
| 7 | AG | 61 | VAL |
| 15 | AO | 74 | ASP |
| 15 | AO | 75 | PRO |
| 16 | AP | 51 | VAL |
| 26 | B1 | 30 | VAL |
| 37 | BC | 123 | VAL |
| 37 | BC | 130 | ILE |
| 38 | BD | 228 | PRO |
| 38 | BD | 238 | GLY |
| 39 | BE | 75 | VAL |
| 42 | BH | 44 | VAL |
| 45 | BO | 4 | PRO |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 46 | BP | 122 | PRO |
| 49 | BS | 108 | GLY |
| 50 | BT | 56 | GLY |
| 53 | BW | 59 | VAL |
| 56 | BZ | 105 | VAL |
| 4 | CD | 178 | VAL |
| 5 | CE | 70 | PRO |
| 7 | CG | 61 | VAL |
| 15 | CO | 74 | ASP |
| 30 | D5 | 50 | GLY |
| 37 | DC | 22 | ILE |
| 37 | DC | 123 | VAL |
| 37 | DC | 130 | ILE |
| 38 | DD | 243 | GLY |
| 40 | DF | 126 | VAL |
| 41 | DG | 101 | ILE |
| 42 | DH | 44 | VAL |
| 50 | DT | 56 | GLY |
| 56 | DZ | 39 | VAL |
| 56 | DZ | 137 | ILE |
| 2 | AB | 130 | ARG |
| 4 | AD | 178 | VAL |
| 10 | AJ | 90 | LEU |
| 19 | AS | 9 | VAL |
| 19 | AS | 45 | VAL |
| 37 | BC | 22 | ILE |
| 37 | BC | 135 | GLY |
| 38 | BD | 243 | GLY |
| 43 | BI | 137 | PRO |
| 50 | BT | 86 | ILE |
| 54 | BX | 85 | PRO |
| 56 | BZ | 147 | GLY |
| 2 | CB | 130 | ARG |
| 15 | CO | 75 | PRO |
| 16 | CP | 51 | VAL |
| 19 | CS | 45 | VAL |
| 37 | DC | 135 | GLY |
| 39 | DE | 75 | VAL |
| 41 | DG | 17 | PRO |
| 43 | DI | 137 | PRO |
| 49 | DS | 108 | GLY |
| 51 | DU | 105 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 54 | DX | 12 | VAL |
| 54 | DX | 85 | PRO |
| 9 | AI | 41 | VAL |
| 19 | AS | 26 | GLY |
| 40 | BF | 206 | ILE |
| 41 | BG | 24 | GLY |
| 46 | BP | 10 | PRO |
| 54 | BX | 12 | VAL |
| 55 | BY | 15 | VAL |
| 3 | CC | 157 | ILE |
| 4 | CD | 28 | SER |
| 9 | CI | 41 | VAL |
| 10 | CJ | 90 | LEU |
| 17 | CQ | 64 | PRO |
| 19 | CS | 9 | VAL |
| 27 | D2 | 41 | ILE |
| 38 | DD | 10 | THR |
| 38 | DD | 228 | PRO |
| 38 | DD | 238 | GLY |
| 40 | DF | 206 | ILE |
| 46 | DP | 10 | PRO |
| 47 | DQ | 15 | GLY |
| 55 | DY | 15 | VAL |
| 9 | AI | 90 | PRO |
| 37 | BC | 65 | PRO |
| 37 | BC | 143 | GLY |
| 39 | BE | 52 | LEU |
| 40 | BF | 81 | PRO |
| 41 | BG | 179 | PRO |
| 53 | BW | 10 | VAL |
| 55 | BY | 98 | VAL |
| 5 | CE | 51 | VAL |
| 9 | CI | 90 | PRO |
| 19 | CS | 26 | GLY |
| 37 | DC | 143 | GLY |
| 38 | DD | 123 | ALA |
| 39 | DE | 52 | LEU |
| 40 | DF | 25 | PRO |
| 46 | DP | 144 | GLU |
| 47 | DQ | 126 | PRO |
| 55 | DY | 98 | VAL |
| 38 | BD | 245 | PRO |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 38 | DD | 245 | PRO |
| 56 | DZ | 167 | PRO |
| 44 | BN | 126 | PRO |
| 44 | DN | 126 | PRO |

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 2 | AB | 202/220 (92%) | 181 (90%) | 21 (10%) | 9 | 39 |
| 2 | CB | 202/220 (92%) | 181 (90%) | 21 (10%) | 9 | 39 |
| 3 | AC | 160/188 (85%) | 152 (95%) | 8 (5%) | 30 | 69 |
| 3 | CC | 160/188 (85%) | 151 (94%) | 9 (6%) | 26 | 66 |
| 4 | AD | 180/181 (99%) | 161 (89%) | 19 (11%) | 8 | 38 |
| 4 | CD | 180/181 (99%) | 159 (88%) | 21 (12%) | 7 | 32 |
| 5 | AE | 115/123 (94%) | 106 (92%) | 9 (8%) | 16 | 53 |
| 5 | CE | 115/123 (94%) | 107 (93%) | 8 (7%) | 19 | 59 |
| 6 | AF | 90/90 (100%) | 85 (94%) | 5 (6%) | 26 | 66 |
| 6 | CF | 90/90 (100%) | 85 (94%) | 5 (6%) | 26 | 66 |
| 7 | AG | 126/127 (99%) | 118 (94%) | 8 (6%) | 22 | 63 |
| 7 | CG | 126/127 (99%) | 117 (93%) | 9 (7%) | 18 | 58 |
| 8 | AH | 119/119 (100%) | 111 (93%) | 8 (7%) | 20 | 61 |
| 8 | CH | 119/119 (100%) | 111 (93%) | 8 (7%) | 20 | 61 |
| 9 | AI | 98/99 (99%) | 88 (90%) | 10 (10%) | 9 | 40 |
| 9 | CI | 98/99 (99%) | 88 (90%) | 10 (10%) | 9 | 40 |
| 10 | AJ | 88/92 (96%) | 76 (86%) | 12 (14%) | 5 | 26 |
| 10 | CJ | 88/92 (96%) | 77 (88%) | 11 (12%) | 6 | 29 |
| 11 | AK | 90/99 (91%) | 84 (93%) | 6 (7%) | 20 | 61 |
| 11 | CK | 90/99 (91%) | 84 (93%) | 6 (7%) | 20 | 61 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|-------------|----|
| 12 | AL | 104/111 (94%) | 93 (89%) | 11 (11%) | 8 | 38 |
| 12 | CL | 104/111 (94%) | 92 (88%) | 12 (12%) | 7 | 33 |
| 13 | AM | 99/101 (98%) | 90 (91%) | 9 (9%) | 12 | 46 |
| 13 | CM | 99/101 (98%) | 90 (91%) | 9 (9%) | 12 | 46 |
| 14 | AN | 49/50 (98%) | 46 (94%) | 3 (6%) | 23 | 64 |
| 14 | CN | 49/50 (98%) | 46 (94%) | 3 (6%) | 23 | 64 |
| 15 | AO | 79/80 (99%) | 70 (89%) | 9 (11%) | 7 | 33 |
| 15 | CO | 79/80 (99%) | 70 (89%) | 9 (11%) | 7 | 33 |
| 16 | AP | 72/74 (97%) | 61 (85%) | 11 (15%) | 3 | 21 |
| 16 | CP | 72/74 (97%) | 61 (85%) | 11 (15%) | 3 | 21 |
| 17 | AQ | 94/97 (97%) | 89 (95%) | 5 (5%) | 28 | 67 |
| 17 | CQ | 94/97 (97%) | 89 (95%) | 5 (5%) | 28 | 67 |
| 18 | AR | 61/77 (79%) | 53 (87%) | 8 (13%) | 5 | 27 |
| 18 | CR | 61/77 (79%) | 52 (85%) | 9 (15%) | 4 | 22 |
| 19 | AS | 69/80 (86%) | 60 (87%) | 9 (13%) | 5 | 27 |
| 19 | CS | 69/80 (86%) | 60 (87%) | 9 (13%) | 5 | 27 |
| 20 | AT | 76/82 (93%) | 71 (93%) | 5 (7%) | 21 | 61 |
| 20 | CT | 76/82 (93%) | 71 (93%) | 5 (7%) | 21 | 61 |
| 21 | AU | 19/22 (86%) | 18 (95%) | 1 (5%) | 28 | 67 |
| 21 | CU | 19/22 (86%) | 18 (95%) | 1 (5%) | 28 | 67 |
| 25 | B0 | 66/67 (98%) | 59 (89%) | 7 (11%) | 8 | 38 |
| 25 | D0 | 66/67 (98%) | 59 (89%) | 7 (11%) | 8 | 38 |
| 26 | B1 | 78/83 (94%) | 65 (83%) | 13 (17%) | 3 | 16 |
| 26 | D1 | 78/83 (94%) | 66 (85%) | 12 (15%) | 3 | 20 |
| 27 | B2 | 66/67 (98%) | 57 (86%) | 9 (14%) | 5 | 26 |
| 27 | D2 | 66/67 (98%) | 57 (86%) | 9 (14%) | 5 | 26 |
| 28 | B3 | 51/52 (98%) | 49 (96%) | 2 (4%) | 39 | 76 |
| 28 | D3 | 51/52 (98%) | 49 (96%) | 2 (4%) | 39 | 76 |
| 29 | B4 | 27/63 (43%) | 23 (85%) | 4 (15%) | 4 | 22 |
| 29 | D4 | 27/63 (43%) | 23 (85%) | 4 (15%) | 4 | 22 |
| 30 | B5 | 51/52 (98%) | 42 (82%) | 9 (18%) | 2 | 13 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 30 | D5 | 51/52 (98%) | 41 (80%) | 10 (20%) | 1 | 9 |
| 31 | B6 | 43/52 (83%) | 34 (79%) | 9 (21%) | 1 | 8 |
| 31 | D6 | 43/52 (83%) | 34 (79%) | 9 (21%) | 1 | 8 |
| 32 | B7 | 41/42 (98%) | 36 (88%) | 5 (12%) | 6 | 29 |
| 32 | D7 | 41/42 (98%) | 36 (88%) | 5 (12%) | 6 | 29 |
| 33 | B8 | 53/55 (96%) | 42 (79%) | 11 (21%) | 1 | 8 |
| 33 | D8 | 53/55 (96%) | 42 (79%) | 11 (21%) | 1 | 8 |
| 34 | B9 | 33/34 (97%) | 30 (91%) | 3 (9%) | 12 | 46 |
| 34 | D9 | 33/34 (97%) | 30 (91%) | 3 (9%) | 12 | 46 |
| 37 | BC | 61/181 (34%) | 53 (87%) | 8 (13%) | 5 | 27 |
| 37 | DC | 61/181 (34%) | 53 (87%) | 8 (13%) | 5 | 27 |
| 38 | BD | 213/218 (98%) | 183 (86%) | 30 (14%) | 4 | 24 |
| 38 | DD | 213/218 (98%) | 183 (86%) | 30 (14%) | 4 | 24 |
| 39 | BE | 165/166 (99%) | 142 (86%) | 23 (14%) | 4 | 25 |
| 39 | DE | 165/166 (99%) | 143 (87%) | 22 (13%) | 5 | 26 |
| 40 | BF | 165/166 (99%) | 150 (91%) | 15 (9%) | 12 | 46 |
| 40 | DF | 165/166 (99%) | 151 (92%) | 14 (8%) | 13 | 49 |
| 41 | BG | 155/156 (99%) | 133 (86%) | 22 (14%) | 4 | 24 |
| 41 | DG | 155/156 (99%) | 129 (83%) | 26 (17%) | 2 | 15 |
| 42 | BH | 132/148 (89%) | 119 (90%) | 13 (10%) | 10 | 42 |
| 42 | DH | 132/148 (89%) | 119 (90%) | 13 (10%) | 10 | 42 |
| 43 | BI | 122/124 (98%) | 113 (93%) | 9 (7%) | 17 | 56 |
| 43 | DI | 122/124 (98%) | 113 (93%) | 9 (7%) | 17 | 56 |
| 44 | BN | 117/119 (98%) | 98 (84%) | 19 (16%) | 3 | 17 |
| 44 | DN | 117/119 (98%) | 100 (86%) | 17 (14%) | 4 | 23 |
| 45 | BO | 100/100 (100%) | 90 (90%) | 10 (10%) | 9 | 41 |
| 45 | DO | 100/100 (100%) | 92 (92%) | 8 (8%) | 15 | 52 |
| 46 | BP | 112/116 (97%) | 92 (82%) | 20 (18%) | 2 | 13 |
| 46 | DP | 112/116 (97%) | 93 (83%) | 19 (17%) | 2 | 15 |
| 47 | BQ | 111/111 (100%) | 94 (85%) | 17 (15%) | 3 | 21 |
| 47 | DQ | 111/111 (100%) | 94 (85%) | 17 (15%) | 3 | 21 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|------------------|------------|------------|-------------|----|
| 48 | BR | 100/101 (99%) | 88 (88%) | 12 (12%) | 6 | 30 |
| 48 | DR | 100/101 (99%) | 88 (88%) | 12 (12%) | 6 | 30 |
| 49 | BS | 77/88 (88%) | 68 (88%) | 9 (12%) | 7 | 32 |
| 49 | DS | 77/88 (88%) | 67 (87%) | 10 (13%) | 5 | 27 |
| 50 | BT | 120/127 (94%) | 101 (84%) | 19 (16%) | 3 | 19 |
| 50 | DT | 120/127 (94%) | 101 (84%) | 19 (16%) | 3 | 19 |
| 51 | BU | 92/94 (98%) | 80 (87%) | 12 (13%) | 5 | 27 |
| 51 | DU | 92/94 (98%) | 80 (87%) | 12 (13%) | 5 | 27 |
| 52 | BV | 82/82 (100%) | 68 (83%) | 14 (17%) | 2 | 15 |
| 52 | DV | 82/82 (100%) | 69 (84%) | 13 (16%) | 3 | 18 |
| 53 | BW | 91/92 (99%) | 83 (91%) | 8 (9%) | 12 | 48 |
| 53 | DW | 91/92 (99%) | 83 (91%) | 8 (9%) | 12 | 48 |
| 54 | BX | 74/78 (95%) | 67 (90%) | 7 (10%) | 11 | 43 |
| 54 | DX | 74/78 (95%) | 67 (90%) | 7 (10%) | 11 | 43 |
| 55 | BY | 84/91 (92%) | 70 (83%) | 14 (17%) | 3 | 16 |
| 55 | DY | 84/91 (92%) | 70 (83%) | 14 (17%) | 3 | 16 |
| 56 | BZ | 155/179 (87%) | 133 (86%) | 22 (14%) | 4 | 24 |
| 56 | DZ | 155/179 (87%) | 131 (84%) | 24 (16%) | 3 | 20 |
| All | All | 9654/10432 (92%) | 8547 (88%) | 1107 (12%) | 7 | 33 |

All (1107) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 15 | VAL |
| 2 | AB | 16 | HIS |
| 2 | AB | 17 | PHE |
| 2 | AB | 24 | TRP |
| 2 | AB | 36 | ARG |
| 2 | AB | 44 | LEU |
| 2 | AB | 48 | MET |
| 2 | AB | 51 | LEU |
| 2 | AB | 69 | LEU |
| 2 | AB | 80 | ILE |
| 2 | AB | 94 | ASN |
| 2 | AB | 130 | ARG |
| 2 | AB | 137 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 154 | LEU |
| 2 | AB | 172 | ILE |
| 2 | AB | 178 | ARG |
| 2 | AB | 196 | LEU |
| 2 | AB | 212 | GLN |
| 2 | AB | 217 | ARG |
| 2 | AB | 221 | LEU |
| 2 | AB | 238 | LEU |
| 3 | AC | 16 | ARG |
| 3 | AC | 18 | TRP |
| 3 | AC | 29 | TYR |
| 3 | AC | 34 | LEU |
| 3 | AC | 52 | LEU |
| 3 | AC | 127 | ARG |
| 3 | AC | 190 | ARG |
| 3 | AC | 198 | VAL |
| 4 | AD | 3 | ARG |
| 4 | AD | 7 | PRO |
| 4 | AD | 9 | CYS |
| 4 | AD | 11 | LEU |
| 4 | AD | 12 | CYS |
| 4 | AD | 19 | LEU |
| 4 | AD | 26 | CYS |
| 4 | AD | 36 | ARG |
| 4 | AD | 38 | TYR |
| 4 | AD | 49 | ARG |
| 4 | AD | 96 | LEU |
| 4 | AD | 122 | ARG |
| 4 | AD | 127 | THR |
| 4 | AD | 131 | ARG |
| 4 | AD | 132 | ARG |
| 4 | AD | 138 | TYR |
| 4 | AD | 144 | ASP |
| 4 | AD | 150 | GLU |
| 4 | AD | 162 | LEU |
| 5 | AE | 10 | MET |
| 5 | AE | 20 | GLN |
| 5 | AE | 41 | VAL |
| 5 | AE | 51 | VAL |
| 5 | AE | 73 | ASN |
| 5 | AE | 79 | GLU |
| 5 | AE | 101 | ILE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5 | AE | 116 | THR |
| 5 | AE | 131 | ILE |
| 6 | AF | 16 | GLN |
| 6 | AF | 69 | GLU |
| 6 | AF | 80 | ARG |
| 6 | AF | 94 | GLN |
| 6 | AF | 98 | LEU |
| 7 | AG | 79 | ARG |
| 7 | AG | 111 | ARG |
| 7 | AG | 113 | GLU |
| 7 | AG | 114 | ARG |
| 7 | AG | 124 | LEU |
| 7 | AG | 137 | LYS |
| 7 | AG | 148 | ASN |
| 7 | AG | 151 | TYR |
| 8 | AH | 1 | MET |
| 8 | AH | 34 | GLU |
| 8 | AH | 52 | ASP |
| 8 | AH | 81 | HIS |
| 8 | AH | 84 | ARG |
| 8 | AH | 85 | ARG |
| 8 | AH | 105 | ARG |
| 8 | AH | 119 | LEU |
| 9 | AI | 4 | TYR |
| 9 | AI | 10 | ARG |
| 9 | AI | 20 | ARG |
| 9 | AI | 79 | LEU |
| 9 | AI | 95 | LYS |
| 9 | AI | 99 | LEU |
| 9 | AI | 114 | TYR |
| 9 | AI | 116 | LYS |
| 9 | AI | 121 | ARG |
| 9 | AI | 128 | ARG |
| 10 | AJ | 8 | LEU |
| 10 | AJ | 16 | LEU |
| 10 | AJ | 22 | LYS |
| 10 | AJ | 45 | ARG |
| 10 | AJ | 50 | ILE |
| 10 | AJ | 57 | LYS |
| 10 | AJ | 60 | ARG |
| 10 | AJ | 62 | HIS |
| 10 | AJ | 67 | THR |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10 | AJ | 80 | LYS |
| 10 | AJ | 90 | LEU |
| 10 | AJ | 96 | ILE |
| 11 | AK | 29 | ILE |
| 11 | AK | 39 | PRO |
| 11 | AK | 81 | ASP |
| 11 | AK | 91 | ARG |
| 11 | AK | 95 | ILE |
| 11 | AK | 125 | PHE |
| 12 | AL | 6 | THR |
| 12 | AL | 33 | ARG |
| 12 | AL | 41 | ARG |
| 12 | AL | 42 | THR |
| 12 | AL | 43 | VAL |
| 12 | AL | 62 | SER |
| 12 | AL | 73 | GLU |
| 12 | AL | 83 | VAL |
| 12 | AL | 84 | LEU |
| 12 | AL | 89 | ARG |
| 12 | AL | 102 | ARG |
| 13 | AM | 48 | LEU |
| 13 | AM | 50 | GLU |
| 13 | AM | 64 | TRP |
| 13 | AM | 82 | MET |
| 13 | AM | 93 | ARG |
| 13 | AM | 102 | ARG |
| 13 | AM | 108 | ARG |
| 13 | AM | 115 | LYS |
| 13 | AM | 120 | LYS |
| 14 | AN | 3 | ARG |
| 14 | AN | 12 | ARG |
| 14 | AN | 44 | LEU |
| 15 | AO | 3 | ILE |
| 15 | AO | 39 | LEU |
| 15 | AO | 41 | GLU |
| 15 | AO | 46 | HIS |
| 15 | AO | 47 | LYS |
| 15 | AO | 65 | ARG |
| 15 | AO | 71 | GLN |
| 15 | AO | 82 | ILE |
| 15 | AO | 85 | LEU |
| 16 | AP | 1 | MET |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16 | AP | 16 | HIS |
| 16 | AP | 20 | VAL |
| 16 | AP | 27 | LYS |
| 16 | AP | 32 | TYR |
| 16 | AP | 45 | THR |
| 16 | AP | 54 | GLU |
| 16 | AP | 58 | TYR |
| 16 | AP | 69 | THR |
| 16 | AP | 80 | PHE |
| 16 | AP | 82 | GLN |
| 17 | AQ | 52 | LYS |
| 17 | AQ | 55 | ASP |
| 17 | AQ | 59 | ILE |
| 17 | AQ | 60 | ILE |
| 17 | AQ | 74 | LEU |
| 18 | AR | 31 | LEU |
| 18 | AR | 40 | LEU |
| 18 | AR | 53 | ARG |
| 18 | AR | 58 | LEU |
| 18 | AR | 65 | ILE |
| 18 | AR | 86 | VAL |
| 18 | AR | 87 | ARG |
| 18 | AR | 88 | LYS |
| 19 | AS | 6 | LYS |
| 19 | AS | 7 | LYS |
| 19 | AS | 27 | GLU |
| 19 | AS | 29 | ARG |
| 19 | AS | 37 | ARG |
| 19 | AS | 43 | GLU |
| 19 | AS | 44 | MET |
| 19 | AS | 67 | VAL |
| 19 | AS | 79 | THR |
| 20 | AT | 24 | LEU |
| 20 | AT | 26 | ASN |
| 20 | AT | 36 | LEU |
| 20 | AT | 73 | HIS |
| 20 | AT | 93 | GLU |
| 21 | AU | 15 | ARG |
| 25 | B0 | 10 | THR |
| 25 | B0 | 20 | ARG |
| 25 | B0 | 36 | ILE |
| 25 | B0 | 41 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 25 | B0 | 64 | ASP |
| 25 | B0 | 70 | GLN |
| 25 | B0 | 75 | LEU |
| 26 | B1 | 14 | VAL |
| 26 | B1 | 39 | LYS |
| 26 | B1 | 40 | ARG |
| 26 | B1 | 41 | ARG |
| 26 | B1 | 45 | ASN |
| 26 | B1 | 46 | LEU |
| 26 | B1 | 51 | VAL |
| 26 | B1 | 58 | ILE |
| 26 | B1 | 61 | ARG |
| 26 | B1 | 72 | GLU |
| 26 | B1 | 73 | LEU |
| 26 | B1 | 82 | LEU |
| 26 | B1 | 92 | LYS |
| 27 | B2 | 2 | LYS |
| 27 | B2 | 3 | LEU |
| 27 | B2 | 7 | ARG |
| 27 | B2 | 9 | GLN |
| 27 | B2 | 17 | SER |
| 27 | B2 | 34 | GLU |
| 27 | B2 | 52 | ASP |
| 27 | B2 | 56 | GLN |
| 27 | B2 | 64 | LEU |
| 28 | B3 | 17 | LYS |
| 28 | B3 | 58 | VAL |
| 29 | B4 | 46 | ASN |
| 29 | B4 | 51 | TYR |
| 29 | B4 | 53 | THR |
| 29 | B4 | 56 | GLU |
| 30 | B5 | 4 | HIS |
| 30 | B5 | 25 | LEU |
| 30 | B5 | 29 | THR |
| 30 | B5 | 36 | CYS |
| 30 | B5 | 44 | THR |
| 30 | B5 | 47 | PRO |
| 30 | B5 | 51 | TYR |
| 30 | B5 | 52 | TYR |
| 30 | B5 | 56 | LYS |
| 31 | B6 | 9 | LEU |
| 31 | B6 | 18 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 31 | B6 | 19 | ARG |
| 31 | B6 | 28 | ARG |
| 31 | B6 | 31 | PRO |
| 31 | B6 | 37 | ARG |
| 31 | B6 | 41 | PRO |
| 31 | B6 | 42 | TRP |
| 31 | B6 | 48 | VAL |
| 32 | B7 | 1 | MET |
| 32 | B7 | 4 | THR |
| 32 | B7 | 36 | GLN |
| 32 | B7 | 41 | ARG |
| 32 | B7 | 43 | THR |
| 33 | B8 | 6 | THR |
| 33 | B8 | 8 | LYS |
| 33 | B8 | 30 | ARG |
| 33 | B8 | 31 | HIS |
| 33 | B8 | 32 | LEU |
| 33 | B8 | 34 | TRP |
| 33 | B8 | 44 | LYS |
| 33 | B8 | 47 | LYS |
| 33 | B8 | 49 | VAL |
| 33 | B8 | 54 | GLU |
| 33 | B8 | 61 | LEU |
| 34 | B9 | 2 | LYS |
| 34 | B9 | 26 | ILE |
| 34 | B9 | 28 | GLU |
| 37 | BC | 24 | GLU |
| 37 | BC | 36 | LYS |
| 37 | BC | 37 | PHE |
| 37 | BC | 47 | LEU |
| 37 | BC | 49 | ILE |
| 37 | BC | 56 | GLN |
| 37 | BC | 92 | ASP |
| 37 | BC | 94 | VAL |
| 38 | BD | 10 | THR |
| 38 | BD | 20 | ASP |
| 38 | BD | 24 | ILE |
| 38 | BD | 26 | LYS |
| 38 | BD | 35 | LYS |
| 38 | BD | 37 | LEU |
| 38 | BD | 48 | ARG |
| 38 | BD | 49 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 38 | BD | 52 | ARG |
| 38 | BD | 61 | LEU |
| 38 | BD | 64 | ILE |
| 38 | BD | 65 | ILE |
| 38 | BD | 87 | ASN |
| 38 | BD | 92 | ILE |
| 38 | BD | 94 | LEU |
| 38 | BD | 103 | ARG |
| 38 | BD | 106 | ILE |
| 38 | BD | 116 | GLN |
| 38 | BD | 122 | ASP |
| 38 | BD | 133 | LEU |
| 38 | BD | 147 | LEU |
| 38 | BD | 166 | GLN |
| 38 | BD | 192 | THR |
| 38 | BD | 198 | ASN |
| 38 | BD | 221 | VAL |
| 38 | BD | 228 | PRO |
| 38 | BD | 229 | VAL |
| 38 | BD | 257 | LEU |
| 38 | BD | 260 | ARG |
| 38 | BD | 271 | ILE |
| 39 | BE | 33 | VAL |
| 39 | BE | 34 | VAL |
| 39 | BE | 36 | ARG |
| 39 | BE | 54 | GLN |
| 39 | BE | 67 | PHE |
| 39 | BE | 73 | GLU |
| 39 | BE | 76 | ARG |
| 39 | BE | 78 | LEU |
| 39 | BE | 79 | ARG |
| 39 | BE | 86 | PRO |
| 39 | BE | 113 | PHE |
| 39 | BE | 118 | LYS |
| 39 | BE | 119 | ARG |
| 39 | BE | 132 | HIS |
| 39 | BE | 134 | ILE |
| 39 | BE | 144 | ARG |
| 39 | BE | 165 | VAL |
| 39 | BE | 180 | ASN |
| 39 | BE | 181 | LEU |
| 39 | BE | 183 | LEU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 39 | BE | 184 | VAL |
| 39 | BE | 197 | ILE |
| 39 | BE | 203 | LYS |
| 40 | BF | 2 | LYS |
| 40 | BF | 23 | ASP |
| 40 | BF | 24 | LEU |
| 40 | BF | 38 | ARG |
| 40 | BF | 64 | ILE |
| 40 | BF | 66 | PRO |
| 40 | BF | 78 | ILE |
| 40 | BF | 83 | PHE |
| 40 | BF | 88 | VAL |
| 40 | BF | 102 | PRO |
| 40 | BF | 110 | LEU |
| 40 | BF | 160 | ASN |
| 40 | BF | 170 | LEU |
| 40 | BF | 183 | VAL |
| 40 | BF | 197 | ASP |
| 41 | BG | 4 | ASP |
| 41 | BG | 16 | ARG |
| 41 | BG | 21 | ARG |
| 41 | BG | 28 | VAL |
| 41 | BG | 33 | ARG |
| 41 | BG | 39 | ILE |
| 41 | BG | 43 | LEU |
| 41 | BG | 60 | LEU |
| 41 | BG | 80 | PHE |
| 41 | BG | 87 | PRO |
| 41 | BG | 88 | ILE |
| 41 | BG | 91 | ARG |
| 41 | BG | 96 | ARG |
| 41 | BG | 101 | ILE |
| 41 | BG | 113 | ARG |
| 41 | BG | 115 | ARG |
| 41 | BG | 121 | ASN |
| 41 | BG | 125 | PHE |
| 41 | BG | 128 | ARG |
| 41 | BG | 138 | GLN |
| 41 | BG | 139 | LEU |
| 41 | BG | 164 | GLU |
| 42 | BH | 13 | LYS |
| 42 | BH | 34 | GLU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 42 | BH | 41 | MET |
| 42 | BH | 52 | VAL |
| 42 | BH | 89 | ILE |
| 42 | BH | 105 | LEU |
| 42 | BH | 111 | HIS |
| 42 | BH | 123 | PHE |
| 42 | BH | 141 | VAL |
| 42 | BH | 153 | LYS |
| 42 | BH | 157 | TYR |
| 42 | BH | 163 | TYR |
| 42 | BH | 170 | ARG |
| 43 | BI | 3 | VAL |
| 43 | BI | 12 | LEU |
| 43 | BI | 15 | VAL |
| 43 | BI | 38 | LEU |
| 43 | BI | 79 | ILE |
| 43 | BI | 99 | GLU |
| 43 | BI | 118 | LYS |
| 43 | BI | 130 | TYR |
| 43 | BI | 135 | GLU |
| 44 | BN | 4 | TYR |
| 44 | BN | 22 | THR |
| 44 | BN | 23 | LEU |
| 44 | BN | 25 | ARG |
| 44 | BN | 34 | LEU |
| 44 | BN | 39 | ARG |
| 44 | BN | 41 | ASP |
| 44 | BN | 48 | MET |
| 44 | BN | 56 | ASN |
| 44 | BN | 60 | ILE |
| 44 | BN | 63 | THR |
| 44 | BN | 78 | TYR |
| 44 | BN | 87 | LEU |
| 44 | BN | 93 | THR |
| 44 | BN | 99 | LEU |
| 44 | BN | 101 | HIS |
| 44 | BN | 108 | PRO |
| 44 | BN | 119 | ARG |
| 44 | BN | 121 | LYS |
| 45 | BO | 7 | TYR |
| 45 | BO | 17 | ARG |
| 45 | BO | 24 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 45 | BO | 32 | TYR |
| 45 | BO | 47 | ILE |
| 45 | BO | 48 | PRO |
| 45 | BO | 69 | ILE |
| 45 | BO | 80 | ASP |
| 45 | BO | 105 | GLU |
| 45 | BO | 117 | LEU |
| 46 | BP | 6 | LEU |
| 46 | BP | 13 | ASN |
| 46 | BP | 16 | ARG |
| 46 | BP | 18 | ARG |
| 46 | BP | 21 | ARG |
| 46 | BP | 35 | HIS |
| 46 | BP | 39 | LYS |
| 46 | BP | 40 | SER |
| 46 | BP | 41 | ARG |
| 46 | BP | 61 | ARG |
| 46 | BP | 64 | LYS |
| 46 | BP | 70 | GLN |
| 46 | BP | 81 | GLN |
| 46 | BP | 85 | LEU |
| 46 | BP | 90 | ARG |
| 46 | BP | 91 | PHE |
| 46 | BP | 98 | GLU |
| 46 | BP | 105 | LEU |
| 46 | BP | 108 | LYS |
| 46 | BP | 130 | PHE |
| 47 | BQ | 1 | MET |
| 47 | BQ | 5 | ARG |
| 47 | BQ | 17 | LEU |
| 47 | BQ | 26 | TYR |
| 47 | BQ | 29 | PHE |
| 47 | BQ | 45 | GLN |
| 47 | BQ | 56 | ARG |
| 47 | BQ | 58 | PHE |
| 47 | BQ | 63 | LYS |
| 47 | BQ | 66 | ILE |
| 47 | BQ | 81 | VAL |
| 47 | BQ | 89 | ASN |
| 47 | BQ | 103 | MET |
| 47 | BQ | 110 | THR |
| 47 | BQ | 111 | GLU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 47 | BQ | 137 | TYR |
| 47 | BQ | 139 | GLU |
| 48 | BR | 2 | ARG |
| 48 | BR | 4 | LEU |
| 48 | BR | 18 | LEU |
| 48 | BR | 35 | THR |
| 48 | BR | 54 | LEU |
| 48 | BR | 60 | LEU |
| 48 | BR | 79 | LEU |
| 48 | BR | 81 | ASP |
| 48 | BR | 99 | LYS |
| 48 | BR | 100 | LEU |
| 48 | BR | 104 | ARG |
| 48 | BR | 113 | LEU |
| 49 | BS | 36 | TYR |
| 49 | BS | 56 | LEU |
| 49 | BS | 73 | LEU |
| 49 | BS | 85 | VAL |
| 49 | BS | 89 | ARG |
| 49 | BS | 92 | TYR |
| 49 | BS | 93 | LYS |
| 49 | BS | 97 | ARG |
| 49 | BS | 101 | LEU |
| 50 | BT | 13 | ARG |
| 50 | BT | 14 | TYR |
| 50 | BT | 17 | THR |
| 50 | BT | 24 | PRO |
| 50 | BT | 32 | TYR |
| 50 | BT | 42 | ILE |
| 50 | BT | 44 | ASP |
| 50 | BT | 51 | ARG |
| 50 | BT | 53 | ARG |
| 50 | BT | 58 | ASN |
| 50 | BT | 59 | THR |
| 50 | BT | 93 | ARG |
| 50 | BT | 96 | ARG |
| 50 | BT | 99 | LEU |
| 50 | BT | 113 | LYS |
| 50 | BT | 115 | ARG |
| 50 | BT | 124 | ASP |
| 50 | BT | 125 | ARG |
| 50 | BT | 128 | GLU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 51 | BU | 9 | VAL |
| 51 | BU | 15 | LYS |
| 51 | BU | 27 | LEU |
| 51 | BU | 56 | ASP |
| 51 | BU | 64 | ARG |
| 51 | BU | 74 | LEU |
| 51 | BU | 79 | PHE |
| 51 | BU | 92 | ARG |
| 51 | BU | 102 | GLU |
| 51 | BU | 104 | GLN |
| 51 | BU | 112 | ARG |
| 51 | BU | 114 | LYS |
| 52 | BV | 13 | ARG |
| 52 | BV | 16 | PRO |
| 52 | BV | 18 | LEU |
| 52 | BV | 19 | LYS |
| 52 | BV | 21 | ARG |
| 52 | BV | 39 | LEU |
| 52 | BV | 40 | LEU |
| 52 | BV | 68 | LYS |
| 52 | BV | 79 | VAL |
| 52 | BV | 82 | ARG |
| 52 | BV | 85 | LYS |
| 52 | BV | 91 | TYR |
| 52 | BV | 95 | LEU |
| 52 | BV | 99 | ILE |
| 53 | BW | 11 | ARG |
| 53 | BW | 30 | GLU |
| 53 | BW | 51 | LEU |
| 53 | BW | 65 | LEU |
| 53 | BW | 75 | TYR |
| 53 | BW | 82 | LEU |
| 53 | BW | 99 | ARG |
| 53 | BW | 107 | LEU |
| 54 | BX | 12 | VAL |
| 54 | BX | 27 | THR |
| 54 | BX | 28 | PHE |
| 54 | BX | 57 | LEU |
| 54 | BX | 68 | ARG |
| 54 | BX | 76 | ARG |
| 54 | BX | 80 | ILE |
| 55 | BY | 2 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 55 | BY | 6 | HIS |
| 55 | BY | 7 | VAL |
| 55 | BY | 8 | LYS |
| 55 | BY | 28 | LYS |
| 55 | BY | 29 | GLU |
| 55 | BY | 32 | PRO |
| 55 | BY | 39 | VAL |
| 55 | BY | 47 | LYS |
| 55 | BY | 56 | PRO |
| 55 | BY | 62 | GLU |
| 55 | BY | 66 | PRO |
| 55 | BY | 76 | CYS |
| 55 | BY | 77 | PRO |
| 56 | BZ | 5 | LEU |
| 56 | BZ | 11 | GLU |
| 56 | BZ | 15 | PRO |
| 56 | BZ | 20 | ARG |
| 56 | BZ | 31 | ARG |
| 56 | BZ | 32 | HIS |
| 56 | BZ | 43 | GLU |
| 56 | BZ | 47 | VAL |
| 56 | BZ | 53 | ILE |
| 56 | BZ | 63 | ASP |
| 56 | BZ | 67 | LEU |
| 56 | BZ | 74 | VAL |
| 56 | BZ | 81 | ARG |
| 56 | BZ | 87 | ASP |
| 56 | BZ | 88 | PHE |
| 56 | BZ | 93 | ASP |
| 56 | BZ | 99 | TYR |
| 56 | BZ | 121 | HIS |
| 56 | BZ | 144 | LEU |
| 56 | BZ | 146 | ILE |
| 56 | BZ | 150 | LEU |
| 56 | BZ | 157 | LEU |
| 2 | CB | 15 | VAL |
| 2 | CB | 16 | HIS |
| 2 | CB | 17 | PHE |
| 2 | CB | 24 | TRP |
| 2 | CB | 36 | ARG |
| 2 | CB | 44 | LEU |
| 2 | CB | 48 | MET |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | CB | 51 | LEU |
| 2 | CB | 69 | LEU |
| 2 | CB | 80 | ILE |
| 2 | CB | 94 | ASN |
| 2 | CB | 130 | ARG |
| 2 | CB | 137 | ARG |
| 2 | CB | 154 | LEU |
| 2 | CB | 172 | ILE |
| 2 | CB | 178 | ARG |
| 2 | CB | 196 | LEU |
| 2 | CB | 212 | GLN |
| 2 | CB | 217 | ARG |
| 2 | CB | 221 | LEU |
| 2 | CB | 238 | LEU |
| 3 | CC | 16 | ARG |
| 3 | CC | 18 | TRP |
| 3 | CC | 29 | TYR |
| 3 | CC | 34 | LEU |
| 3 | CC | 52 | LEU |
| 3 | CC | 62 | ASP |
| 3 | CC | 127 | ARG |
| 3 | CC | 190 | ARG |
| 3 | CC | 198 | VAL |
| 4 | CD | 3 | ARG |
| 4 | CD | 7 | PRO |
| 4 | CD | 9 | CYS |
| 4 | CD | 11 | LEU |
| 4 | CD | 12 | CYS |
| 4 | CD | 19 | LEU |
| 4 | CD | 26 | CYS |
| 4 | CD | 31 | CYS |
| 4 | CD | 36 | ARG |
| 4 | CD | 38 | TYR |
| 4 | CD | 49 | ARG |
| 4 | CD | 96 | LEU |
| 4 | CD | 97 | LEU |
| 4 | CD | 122 | ARG |
| 4 | CD | 127 | THR |
| 4 | CD | 131 | ARG |
| 4 | CD | 132 | ARG |
| 4 | CD | 138 | TYR |
| 4 | CD | 144 | ASP |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4 | CD | 150 | GLU |
| 4 | CD | 162 | LEU |
| 5 | CE | 10 | MET |
| 5 | CE | 20 | GLN |
| 5 | CE | 41 | VAL |
| 5 | CE | 73 | ASN |
| 5 | CE | 79 | GLU |
| 5 | CE | 101 | ILE |
| 5 | CE | 116 | THR |
| 5 | CE | 131 | ILE |
| 6 | CF | 16 | GLN |
| 6 | CF | 69 | GLU |
| 6 | CF | 80 | ARG |
| 6 | CF | 94 | GLN |
| 6 | CF | 98 | LEU |
| 7 | CG | 58 | PRO |
| 7 | CG | 79 | ARG |
| 7 | CG | 111 | ARG |
| 7 | CG | 113 | GLU |
| 7 | CG | 114 | ARG |
| 7 | CG | 124 | LEU |
| 7 | CG | 137 | LYS |
| 7 | CG | 148 | ASN |
| 7 | CG | 151 | TYR |
| 8 | CH | 1 | MET |
| 8 | CH | 34 | GLU |
| 8 | CH | 52 | ASP |
| 8 | CH | 81 | HIS |
| 8 | CH | 84 | ARG |
| 8 | CH | 85 | ARG |
| 8 | CH | 105 | ARG |
| 8 | CH | 119 | LEU |
| 9 | CI | 4 | TYR |
| 9 | CI | 10 | ARG |
| 9 | CI | 20 | ARG |
| 9 | CI | 79 | LEU |
| 9 | CI | 95 | LYS |
| 9 | CI | 99 | LEU |
| 9 | CI | 114 | TYR |
| 9 | CI | 116 | LYS |
| 9 | CI | 121 | ARG |
| 9 | CI | 128 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10 | CJ | 8 | LEU |
| 10 | CJ | 16 | LEU |
| 10 | CJ | 22 | LYS |
| 10 | CJ | 45 | ARG |
| 10 | CJ | 50 | ILE |
| 10 | CJ | 60 | ARG |
| 10 | CJ | 62 | HIS |
| 10 | CJ | 67 | THR |
| 10 | CJ | 80 | LYS |
| 10 | CJ | 90 | LEU |
| 10 | CJ | 96 | ILE |
| 11 | CK | 29 | ILE |
| 11 | CK | 39 | PRO |
| 11 | CK | 81 | ASP |
| 11 | CK | 91 | ARG |
| 11 | CK | 95 | ILE |
| 11 | CK | 125 | PHE |
| 12 | CL | 6 | THR |
| 12 | CL | 33 | ARG |
| 12 | CL | 41 | ARG |
| 12 | CL | 42 | THR |
| 12 | CL | 43 | VAL |
| 12 | CL | 53 | ARG |
| 12 | CL | 62 | SER |
| 12 | CL | 73 | GLU |
| 12 | CL | 83 | VAL |
| 12 | CL | 84 | LEU |
| 12 | CL | 89 | ARG |
| 12 | CL | 102 | ARG |
| 13 | CM | 48 | LEU |
| 13 | CM | 50 | GLU |
| 13 | CM | 64 | TRP |
| 13 | CM | 82 | MET |
| 13 | CM | 93 | ARG |
| 13 | CM | 102 | ARG |
| 13 | CM | 108 | ARG |
| 13 | CM | 115 | LYS |
| 13 | CM | 120 | LYS |
| 14 | CN | 3 | ARG |
| 14 | CN | 12 | ARG |
| 14 | CN | 44 | LEU |
| 15 | CO | 3 | ILE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 15 | CO | 39 | LEU |
| 15 | CO | 41 | GLU |
| 15 | CO | 46 | HIS |
| 15 | CO | 47 | LYS |
| 15 | CO | 65 | ARG |
| 15 | CO | 71 | GLN |
| 15 | CO | 82 | ILE |
| 15 | CO | 85 | LEU |
| 16 | CP | 1 | MET |
| 16 | CP | 16 | HIS |
| 16 | CP | 20 | VAL |
| 16 | CP | 27 | LYS |
| 16 | CP | 32 | TYR |
| 16 | CP | 45 | THR |
| 16 | CP | 54 | GLU |
| 16 | CP | 58 | TYR |
| 16 | CP | 69 | THR |
| 16 | CP | 80 | PHE |
| 16 | CP | 82 | GLN |
| 17 | CQ | 52 | LYS |
| 17 | CQ | 55 | ASP |
| 17 | CQ | 59 | ILE |
| 17 | CQ | 60 | ILE |
| 17 | CQ | 74 | LEU |
| 18 | CR | 31 | LEU |
| 18 | CR | 40 | LEU |
| 18 | CR | 47 | THR |
| 18 | CR | 53 | ARG |
| 18 | CR | 58 | LEU |
| 18 | CR | 65 | ILE |
| 18 | CR | 86 | VAL |
| 18 | CR | 87 | ARG |
| 18 | CR | 88 | LYS |
| 19 | CS | 6 | LYS |
| 19 | CS | 7 | LYS |
| 19 | CS | 27 | GLU |
| 19 | CS | 29 | ARG |
| 19 | CS | 37 | ARG |
| 19 | CS | 43 | GLU |
| 19 | CS | 44 | MET |
| 19 | CS | 67 | VAL |
| 19 | CS | 79 | THR |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20 | CT | 24 | LEU |
| 20 | CT | 26 | ASN |
| 20 | CT | 36 | LEU |
| 20 | CT | 73 | HIS |
| 20 | CT | 93 | GLU |
| 21 | CU | 15 | ARG |
| 25 | D0 | 10 | THR |
| 25 | D0 | 20 | ARG |
| 25 | D0 | 36 | ILE |
| 25 | D0 | 41 | ARG |
| 25 | D0 | 64 | ASP |
| 25 | D0 | 70 | GLN |
| 25 | D0 | 75 | LEU |
| 26 | D1 | 40 | ARG |
| 26 | D1 | 41 | ARG |
| 26 | D1 | 43 | TYR |
| 26 | D1 | 45 | ASN |
| 26 | D1 | 46 | LEU |
| 26 | D1 | 52 | ARG |
| 26 | D1 | 56 | GLN |
| 26 | D1 | 61 | ARG |
| 26 | D1 | 72 | GLU |
| 26 | D1 | 80 | LEU |
| 26 | D1 | 82 | LEU |
| 26 | D1 | 92 | LYS |
| 27 | D2 | 2 | LYS |
| 27 | D2 | 3 | LEU |
| 27 | D2 | 7 | ARG |
| 27 | D2 | 32 | LEU |
| 27 | D2 | 35 | LEU |
| 27 | D2 | 44 | LEU |
| 27 | D2 | 47 | ASN |
| 27 | D2 | 53 | LEU |
| 27 | D2 | 64 | LEU |
| 28 | D3 | 17 | LYS |
| 28 | D3 | 58 | VAL |
| 29 | D4 | 46 | ASN |
| 29 | D4 | 51 | TYR |
| 29 | D4 | 53 | THR |
| 29 | D4 | 56 | GLU |
| 30 | D5 | 4 | HIS |
| 30 | D5 | 25 | LEU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 30 | D5 | 29 | THR |
| 30 | D5 | 36 | CYS |
| 30 | D5 | 44 | THR |
| 30 | D5 | 47 | PRO |
| 30 | D5 | 49 | CYS |
| 30 | D5 | 51 | TYR |
| 30 | D5 | 52 | TYR |
| 30 | D5 | 56 | LYS |
| 31 | D6 | 9 | LEU |
| 31 | D6 | 18 | ARG |
| 31 | D6 | 19 | ARG |
| 31 | D6 | 28 | ARG |
| 31 | D6 | 31 | PRO |
| 31 | D6 | 37 | ARG |
| 31 | D6 | 41 | PRO |
| 31 | D6 | 42 | TRP |
| 31 | D6 | 48 | VAL |
| 32 | D7 | 1 | MET |
| 32 | D7 | 4 | THR |
| 32 | D7 | 36 | GLN |
| 32 | D7 | 41 | ARG |
| 32 | D7 | 43 | THR |
| 33 | D8 | 6 | THR |
| 33 | D8 | 8 | LYS |
| 33 | D8 | 30 | ARG |
| 33 | D8 | 31 | HIS |
| 33 | D8 | 32 | LEU |
| 33 | D8 | 34 | TRP |
| 33 | D8 | 44 | LYS |
| 33 | D8 | 47 | LYS |
| 33 | D8 | 49 | VAL |
| 33 | D8 | 54 | GLU |
| 33 | D8 | 61 | LEU |
| 34 | D9 | 2 | LYS |
| 34 | D9 | 26 | ILE |
| 34 | D9 | 28 | GLU |
| 37 | DC | 24 | GLU |
| 37 | DC | 36 | LYS |
| 37 | DC | 37 | PHE |
| 37 | DC | 47 | LEU |
| 37 | DC | 49 | ILE |
| 37 | DC | 56 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 37 | DC | 92 | ASP |
| 37 | DC | 94 | VAL |
| 38 | DD | 10 | THR |
| 38 | DD | 20 | ASP |
| 38 | DD | 24 | ILE |
| 38 | DD | 26 | LYS |
| 38 | DD | 35 | LYS |
| 38 | DD | 37 | LEU |
| 38 | DD | 48 | ARG |
| 38 | DD | 49 | ILE |
| 38 | DD | 52 | ARG |
| 38 | DD | 61 | LEU |
| 38 | DD | 64 | ILE |
| 38 | DD | 65 | ILE |
| 38 | DD | 87 | ASN |
| 38 | DD | 92 | ILE |
| 38 | DD | 94 | LEU |
| 38 | DD | 103 | ARG |
| 38 | DD | 106 | ILE |
| 38 | DD | 116 | GLN |
| 38 | DD | 122 | ASP |
| 38 | DD | 133 | LEU |
| 38 | DD | 147 | LEU |
| 38 | DD | 166 | GLN |
| 38 | DD | 192 | THR |
| 38 | DD | 198 | ASN |
| 38 | DD | 221 | VAL |
| 38 | DD | 228 | PRO |
| 38 | DD | 229 | VAL |
| 38 | DD | 257 | LEU |
| 38 | DD | 260 | ARG |
| 38 | DD | 271 | ILE |
| 39 | DE | 33 | VAL |
| 39 | DE | 34 | VAL |
| 39 | DE | 36 | ARG |
| 39 | DE | 54 | GLN |
| 39 | DE | 67 | PHE |
| 39 | DE | 73 | GLU |
| 39 | DE | 76 | ARG |
| 39 | DE | 78 | LEU |
| 39 | DE | 79 | ARG |
| 39 | DE | 86 | PRO |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 39 | DE | 113 | PHE |
| 39 | DE | 118 | LYS |
| 39 | DE | 119 | ARG |
| 39 | DE | 132 | HIS |
| 39 | DE | 134 | ILE |
| 39 | DE | 144 | ARG |
| 39 | DE | 165 | VAL |
| 39 | DE | 181 | LEU |
| 39 | DE | 183 | LEU |
| 39 | DE | 184 | VAL |
| 39 | DE | 197 | ILE |
| 39 | DE | 203 | LYS |
| 40 | DF | 2 | LYS |
| 40 | DF | 23 | ASP |
| 40 | DF | 24 | LEU |
| 40 | DF | 38 | ARG |
| 40 | DF | 64 | ILE |
| 40 | DF | 66 | PRO |
| 40 | DF | 78 | ILE |
| 40 | DF | 83 | PHE |
| 40 | DF | 88 | VAL |
| 40 | DF | 110 | LEU |
| 40 | DF | 160 | ASN |
| 40 | DF | 170 | LEU |
| 40 | DF | 183 | VAL |
| 40 | DF | 197 | ASP |
| 41 | DG | 3 | LEU |
| 41 | DG | 16 | ARG |
| 41 | DG | 21 | ARG |
| 41 | DG | 33 | ARG |
| 41 | DG | 36 | LYS |
| 41 | DG | 39 | ILE |
| 41 | DG | 45 | GLU |
| 41 | DG | 49 | ASP |
| 41 | DG | 53 | LEU |
| 41 | DG | 70 | VAL |
| 41 | DG | 72 | ARG |
| 41 | DG | 80 | PHE |
| 41 | DG | 88 | ILE |
| 41 | DG | 91 | ARG |
| 41 | DG | 101 | ILE |
| 41 | DG | 113 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 41 | DG | 115 | ARG |
| 41 | DG | 123 | ASN |
| 41 | DG | 125 | PHE |
| 41 | DG | 128 | ARG |
| 41 | DG | 130 | ASN |
| 41 | DG | 139 | LEU |
| 41 | DG | 155 | MET |
| 41 | DG | 159 | VAL |
| 41 | DG | 161 | THR |
| 41 | DG | 164 | GLU |
| 42 | DH | 13 | LYS |
| 42 | DH | 34 | GLU |
| 42 | DH | 41 | MET |
| 42 | DH | 52 | VAL |
| 42 | DH | 89 | ILE |
| 42 | DH | 105 | LEU |
| 42 | DH | 111 | HIS |
| 42 | DH | 123 | PHE |
| 42 | DH | 141 | VAL |
| 42 | DH | 153 | LYS |
| 42 | DH | 157 | TYR |
| 42 | DH | 163 | TYR |
| 42 | DH | 170 | ARG |
| 43 | DI | 3 | VAL |
| 43 | DI | 12 | LEU |
| 43 | DI | 15 | VAL |
| 43 | DI | 38 | LEU |
| 43 | DI | 79 | ILE |
| 43 | DI | 99 | GLU |
| 43 | DI | 118 | LYS |
| 43 | DI | 130 | TYR |
| 43 | DI | 135 | GLU |
| 44 | DN | 4 | TYR |
| 44 | DN | 22 | THR |
| 44 | DN | 23 | LEU |
| 44 | DN | 25 | ARG |
| 44 | DN | 34 | LEU |
| 44 | DN | 39 | ARG |
| 44 | DN | 41 | ASP |
| 44 | DN | 48 | MET |
| 44 | DN | 56 | ASN |
| 44 | DN | 60 | ILE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 44 | DN | 63 | THR |
| 44 | DN | 87 | LEU |
| 44 | DN | 93 | THR |
| 44 | DN | 101 | HIS |
| 44 | DN | 108 | PRO |
| 44 | DN | 119 | ARG |
| 44 | DN | 121 | LYS |
| 45 | DO | 7 | TYR |
| 45 | DO | 17 | ARG |
| 45 | DO | 32 | TYR |
| 45 | DO | 47 | ILE |
| 45 | DO | 69 | ILE |
| 45 | DO | 80 | ASP |
| 45 | DO | 105 | GLU |
| 45 | DO | 117 | LEU |
| 46 | DP | 6 | LEU |
| 46 | DP | 13 | ASN |
| 46 | DP | 16 | ARG |
| 46 | DP | 18 | ARG |
| 46 | DP | 21 | ARG |
| 46 | DP | 35 | HIS |
| 46 | DP | 39 | LYS |
| 46 | DP | 41 | ARG |
| 46 | DP | 61 | ARG |
| 46 | DP | 64 | LYS |
| 46 | DP | 70 | GLN |
| 46 | DP | 81 | GLN |
| 46 | DP | 85 | LEU |
| 46 | DP | 90 | ARG |
| 46 | DP | 91 | PHE |
| 46 | DP | 98 | GLU |
| 46 | DP | 105 | LEU |
| 46 | DP | 108 | LYS |
| 46 | DP | 130 | PHE |
| 47 | DQ | 1 | MET |
| 47 | DQ | 5 | ARG |
| 47 | DQ | 17 | LEU |
| 47 | DQ | 26 | TYR |
| 47 | DQ | 29 | PHE |
| 47 | DQ | 45 | GLN |
| 47 | DQ | 56 | ARG |
| 47 | DQ | 58 | PHE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 47 | DQ | 63 | LYS |
| 47 | DQ | 66 | ILE |
| 47 | DQ | 81 | VAL |
| 47 | DQ | 89 | ASN |
| 47 | DQ | 103 | MET |
| 47 | DQ | 110 | THR |
| 47 | DQ | 111 | GLU |
| 47 | DQ | 137 | TYR |
| 47 | DQ | 139 | GLU |
| 48 | DR | 2 | ARG |
| 48 | DR | 4 | LEU |
| 48 | DR | 18 | LEU |
| 48 | DR | 35 | THR |
| 48 | DR | 54 | LEU |
| 48 | DR | 60 | LEU |
| 48 | DR | 79 | LEU |
| 48 | DR | 81 | ASP |
| 48 | DR | 99 | LYS |
| 48 | DR | 100 | LEU |
| 48 | DR | 104 | ARG |
| 48 | DR | 113 | LEU |
| 49 | DS | 36 | TYR |
| 49 | DS | 56 | LEU |
| 49 | DS | 73 | LEU |
| 49 | DS | 85 | VAL |
| 49 | DS | 89 | ARG |
| 49 | DS | 92 | TYR |
| 49 | DS | 93 | LYS |
| 49 | DS | 97 | ARG |
| 49 | DS | 101 | LEU |
| 49 | DS | 106 | ARG |
| 50 | DT | 13 | ARG |
| 50 | DT | 14 | TYR |
| 50 | DT | 17 | THR |
| 50 | DT | 24 | PRO |
| 50 | DT | 32 | TYR |
| 50 | DT | 42 | ILE |
| 50 | DT | 44 | ASP |
| 50 | DT | 51 | ARG |
| 50 | DT | 53 | ARG |
| 50 | DT | 58 | ASN |
| 50 | DT | 59 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 50 | DT | 93 | ARG |
| 50 | DT | 96 | ARG |
| 50 | DT | 99 | LEU |
| 50 | DT | 113 | LYS |
| 50 | DT | 115 | ARG |
| 50 | DT | 124 | ASP |
| 50 | DT | 125 | ARG |
| 50 | DT | 128 | GLU |
| 51 | DU | 9 | VAL |
| 51 | DU | 15 | LYS |
| 51 | DU | 27 | LEU |
| 51 | DU | 56 | ASP |
| 51 | DU | 64 | ARG |
| 51 | DU | 74 | LEU |
| 51 | DU | 79 | PHE |
| 51 | DU | 92 | ARG |
| 51 | DU | 102 | GLU |
| 51 | DU | 104 | GLN |
| 51 | DU | 112 | ARG |
| 51 | DU | 114 | LYS |
| 52 | DV | 13 | ARG |
| 52 | DV | 16 | PRO |
| 52 | DV | 18 | LEU |
| 52 | DV | 19 | LYS |
| 52 | DV | 21 | ARG |
| 52 | DV | 39 | LEU |
| 52 | DV | 40 | LEU |
| 52 | DV | 68 | LYS |
| 52 | DV | 79 | VAL |
| 52 | DV | 82 | ARG |
| 52 | DV | 85 | LYS |
| 52 | DV | 91 | TYR |
| 52 | DV | 99 | ILE |
| 53 | DW | 11 | ARG |
| 53 | DW | 30 | GLU |
| 53 | DW | 51 | LEU |
| 53 | DW | 65 | LEU |
| 53 | DW | 75 | TYR |
| 53 | DW | 82 | LEU |
| 53 | DW | 99 | ARG |
| 53 | DW | 107 | LEU |
| 54 | DX | 12 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 54 | DX | 27 | THR |
| 54 | DX | 28 | PHE |
| 54 | DX | 57 | LEU |
| 54 | DX | 68 | ARG |
| 54 | DX | 76 | ARG |
| 54 | DX | 80 | ILE |
| 55 | DY | 2 | ARG |
| 55 | DY | 6 | HIS |
| 55 | DY | 7 | VAL |
| 55 | DY | 8 | LYS |
| 55 | DY | 28 | LYS |
| 55 | DY | 29 | GLU |
| 55 | DY | 32 | PRO |
| 55 | DY | 39 | VAL |
| 55 | DY | 47 | LYS |
| 55 | DY | 56 | PRO |
| 55 | DY | 62 | GLU |
| 55 | DY | 66 | PRO |
| 55 | DY | 76 | CYS |
| 55 | DY | 77 | PRO |
| 56 | DZ | 8 | TYR |
| 56 | DZ | 11 | GLU |
| 56 | DZ | 23 | LYS |
| 56 | DZ | 29 | TYR |
| 56 | DZ | 44 | PHE |
| 56 | DZ | 53 | ILE |
| 56 | DZ | 70 | LEU |
| 56 | DZ | 74 | VAL |
| 56 | DZ | 79 | ARG |
| 56 | DZ | 87 | ASP |
| 56 | DZ | 93 | ASP |
| 56 | DZ | 117 | LEU |
| 56 | DZ | 119 | GLU |
| 56 | DZ | 127 | LYS |
| 56 | DZ | 129 | SER |
| 56 | DZ | 136 | PHE |
| 56 | DZ | 144 | LEU |
| 56 | DZ | 145 | GLU |
| 56 | DZ | 146 | ILE |
| 56 | DZ | 150 | LEU |
| 56 | DZ | 154 | ASP |
| 56 | DZ | 157 | LEU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 56 | DZ | 163 | LEU |
| 56 | DZ | 168 | GLU |

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (306) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 40 | HIS |
| 2 | AB | 110 | GLN |
| 2 | AB | 135 | GLN |
| 2 | AB | 146 | GLN |
| 2 | AB | 212 | GLN |
| 2 | AB | 224 | GLN |
| 3 | AC | 28 | GLN |
| 3 | AC | 37 | GLN |
| 3 | AC | 69 | HIS |
| 3 | AC | 98 | ASN |
| 3 | AC | 170 | GLN |
| 3 | AC | 181 | ASN |
| 4 | AD | 62 | GLN |
| 4 | AD | 74 | GLN |
| 4 | AD | 119 | GLN |
| 5 | AE | 20 | GLN |
| 5 | AE | 72 | GLN |
| 5 | AE | 73 | ASN |
| 5 | AE | 78 | HIS |
| 6 | AF | 7 | ASN |
| 6 | AF | 27 | GLN |
| 6 | AF | 32 | ASN |
| 6 | AF | 100 | ASN |
| 7 | AG | 13 | GLN |
| 7 | AG | 28 | ASN |
| 7 | AG | 37 | ASN |
| 7 | AG | 64 | GLN |
| 7 | AG | 68 | ASN |
| 7 | AG | 96 | GLN |
| 7 | AG | 106 | GLN |
| 7 | AG | 148 | ASN |
| 8 | AH | 15 | ASN |
| 8 | AH | 82 | HIS |
| 9 | AI | 23 | ASN |
| 9 | AI | 31 | GLN |
| 9 | AI | 124 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10 | AJ | 56 | HIS |
| 10 | AJ | 62 | HIS |
| 10 | AJ | 68 | HIS |
| 11 | AK | 13 | GLN |
| 11 | AK | 38 | ASN |
| 11 | AK | 93 | GLN |
| 12 | AL | 8 | ASN |
| 12 | AL | 9 | GLN |
| 12 | AL | 49 | ASN |
| 13 | AM | 12 | ASN |
| 13 | AM | 62 | ASN |
| 13 | AM | 77 | ASN |
| 13 | AM | 101 | GLN |
| 14 | AN | 49 | HIS |
| 15 | AO | 13 | GLN |
| 15 | AO | 37 | ASN |
| 15 | AO | 71 | GLN |
| 16 | AP | 16 | HIS |
| 16 | AP | 76 | GLN |
| 16 | AP | 82 | GLN |
| 17 | AQ | 16 | GLN |
| 17 | AQ | 93 | GLN |
| 17 | AQ | 94 | ASN |
| 20 | AT | 16 | HIS |
| 20 | AT | 26 | ASN |
| 20 | AT | 42 | GLN |
| 25 | B0 | 29 | GLN |
| 25 | B0 | 35 | ASN |
| 25 | B0 | 70 | GLN |
| 25 | B0 | 80 | HIS |
| 26 | B1 | 45 | ASN |
| 26 | B1 | 47 | GLN |
| 27 | B2 | 65 | ASN |
| 28 | B3 | 19 | GLN |
| 28 | B3 | 46 | ASN |
| 28 | B3 | 52 | HIS |
| 29 | B4 | 46 | ASN |
| 30 | B5 | 43 | HIS |
| 31 | B6 | 20 | ASN |
| 32 | B7 | 8 | ASN |
| 33 | B8 | 31 | HIS |
| 33 | B8 | 33 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 34 | B9 | 34 | GLN |
| 38 | BD | 58 | HIS |
| 38 | BD | 115 | GLN |
| 38 | BD | 116 | GLN |
| 38 | BD | 126 | GLN |
| 38 | BD | 166 | GLN |
| 38 | BD | 186 | HIS |
| 38 | BD | 198 | ASN |
| 38 | BD | 220 | HIS |
| 38 | BD | 253 | GLN |
| 39 | BE | 48 | GLN |
| 39 | BE | 54 | GLN |
| 39 | BE | 55 | ASN |
| 39 | BE | 129 | HIS |
| 39 | BE | 169 | ASN |
| 39 | BE | 180 | ASN |
| 39 | BE | 192 | ASN |
| 40 | BF | 69 | HIS |
| 40 | BF | 160 | ASN |
| 40 | BF | 169 | ASN |
| 41 | BG | 40 | ASN |
| 41 | BG | 66 | GLN |
| 41 | BG | 121 | ASN |
| 41 | BG | 123 | ASN |
| 42 | BH | 65 | HIS |
| 42 | BH | 74 | ASN |
| 42 | BH | 143 | GLN |
| 42 | BH | 147 | ASN |
| 43 | BI | 43 | ASN |
| 43 | BI | 139 | GLN |
| 44 | BN | 45 | ASN |
| 44 | BN | 56 | ASN |
| 45 | BO | 3 | GLN |
| 45 | BO | 5 | GLN |
| 45 | BO | 29 | ASN |
| 45 | BO | 82 | ASN |
| 45 | BO | 88 | ASN |
| 46 | BP | 13 | ASN |
| 46 | BP | 81 | GLN |
| 47 | BQ | 12 | GLN |
| 47 | BQ | 45 | GLN |
| 47 | BQ | 141 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 48 | BR | 16 | HIS |
| 48 | BR | 23 | ASN |
| 48 | BR | 24 | GLN |
| 48 | BR | 53 | HIS |
| 48 | BR | 71 | GLN |
| 49 | BS | 34 | HIS |
| 50 | BT | 38 | ASN |
| 50 | BT | 43 | GLN |
| 50 | BT | 58 | ASN |
| 50 | BT | 90 | GLN |
| 50 | BT | 123 | GLN |
| 51 | BU | 44 | ASN |
| 51 | BU | 49 | HIS |
| 51 | BU | 81 | HIS |
| 52 | BV | 11 | GLN |
| 53 | BW | 57 | ASN |
| 53 | BW | 60 | ASN |
| 53 | BW | 61 | ASN |
| 53 | BW | 62 | HIS |
| 53 | BW | 102 | HIS |
| 54 | BX | 31 | HIS |
| 54 | BX | 41 | ASN |
| 54 | BX | 55 | ASN |
| 56 | BZ | 73 | GLN |
| 56 | BZ | 118 | GLN |
| 56 | BZ | 121 | HIS |
| 56 | BZ | 132 | ASN |
| 56 | BZ | 151 | HIS |
| 2 | CB | 40 | HIS |
| 2 | CB | 110 | GLN |
| 2 | CB | 135 | GLN |
| 2 | CB | 146 | GLN |
| 2 | CB | 212 | GLN |
| 2 | CB | 224 | GLN |
| 3 | CC | 28 | GLN |
| 3 | CC | 37 | GLN |
| 3 | CC | 69 | HIS |
| 3 | CC | 98 | ASN |
| 3 | CC | 170 | GLN |
| 3 | CC | 181 | ASN |
| 4 | CD | 62 | GLN |
| 4 | CD | 74 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 4 | CD | 119 | GLN |
| 5 | CE | 20 | GLN |
| 5 | CE | 72 | GLN |
| 5 | CE | 73 | ASN |
| 5 | CE | 78 | HIS |
| 6 | CF | 7 | ASN |
| 6 | CF | 18 | GLN |
| 6 | CF | 27 | GLN |
| 6 | CF | 32 | ASN |
| 6 | CF | 100 | ASN |
| 7 | CG | 13 | GLN |
| 7 | CG | 28 | ASN |
| 7 | CG | 37 | ASN |
| 7 | CG | 64 | GLN |
| 7 | CG | 68 | ASN |
| 7 | CG | 86 | GLN |
| 7 | CG | 96 | GLN |
| 7 | CG | 106 | GLN |
| 7 | CG | 148 | ASN |
| 8 | CH | 15 | ASN |
| 8 | CH | 82 | HIS |
| 9 | CI | 23 | ASN |
| 9 | CI | 31 | GLN |
| 9 | CI | 124 | GLN |
| 10 | CJ | 56 | HIS |
| 10 | CJ | 68 | HIS |
| 11 | CK | 13 | GLN |
| 11 | CK | 38 | ASN |
| 11 | CK | 93 | GLN |
| 12 | CL | 8 | ASN |
| 12 | CL | 9 | GLN |
| 12 | CL | 49 | ASN |
| 13 | CM | 12 | ASN |
| 13 | CM | 62 | ASN |
| 13 | CM | 77 | ASN |
| 13 | CM | 101 | GLN |
| 14 | CN | 49 | HIS |
| 15 | CO | 13 | GLN |
| 15 | CO | 37 | ASN |
| 15 | CO | 71 | GLN |
| 16 | CP | 16 | HIS |
| 16 | CP | 76 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16 | CP | 82 | GLN |
| 17 | CQ | 16 | GLN |
| 17 | CQ | 93 | GLN |
| 17 | CQ | 94 | ASN |
| 20 | CT | 16 | HIS |
| 20 | CT | 26 | ASN |
| 20 | CT | 42 | GLN |
| 25 | D0 | 29 | GLN |
| 25 | D0 | 35 | ASN |
| 25 | D0 | 70 | GLN |
| 25 | D0 | 80 | HIS |
| 26 | D1 | 45 | ASN |
| 26 | D1 | 47 | GLN |
| 26 | D1 | 56 | GLN |
| 27 | D2 | 9 | GLN |
| 27 | D2 | 38 | GLN |
| 27 | D2 | 43 | GLN |
| 27 | D2 | 46 | GLN |
| 27 | D2 | 47 | ASN |
| 27 | D2 | 65 | ASN |
| 27 | D2 | 71 | ASN |
| 28 | D3 | 19 | GLN |
| 28 | D3 | 46 | ASN |
| 28 | D3 | 52 | HIS |
| 29 | D4 | 46 | ASN |
| 30 | D5 | 4 | HIS |
| 30 | D5 | 43 | HIS |
| 31 | D6 | 20 | ASN |
| 32 | D7 | 8 | ASN |
| 33 | D8 | 31 | HIS |
| 33 | D8 | 33 | ASN |
| 34 | D9 | 34 | GLN |
| 37 | DC | 56 | GLN |
| 38 | DD | 58 | HIS |
| 38 | DD | 115 | GLN |
| 38 | DD | 116 | GLN |
| 38 | DD | 126 | GLN |
| 38 | DD | 166 | GLN |
| 38 | DD | 186 | HIS |
| 38 | DD | 198 | ASN |
| 38 | DD | 220 | HIS |
| 38 | DD | 253 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 39 | DE | 48 | GLN |
| 39 | DE | 54 | GLN |
| 39 | DE | 55 | ASN |
| 39 | DE | 129 | HIS |
| 39 | DE | 169 | ASN |
| 39 | DE | 180 | ASN |
| 39 | DE | 192 | ASN |
| 40 | DF | 8 | GLN |
| 40 | DF | 69 | HIS |
| 40 | DF | 160 | ASN |
| 40 | DF | 169 | ASN |
| 41 | DG | 40 | ASN |
| 41 | DG | 41 | GLN |
| 41 | DG | 66 | GLN |
| 41 | DG | 79 | ASN |
| 41 | DG | 121 | ASN |
| 42 | DH | 65 | HIS |
| 42 | DH | 74 | ASN |
| 42 | DH | 143 | GLN |
| 42 | DH | 147 | ASN |
| 43 | DI | 43 | ASN |
| 43 | DI | 139 | GLN |
| 44 | DN | 45 | ASN |
| 44 | DN | 56 | ASN |
| 45 | DO | 3 | GLN |
| 45 | DO | 5 | GLN |
| 45 | DO | 82 | ASN |
| 45 | DO | 88 | ASN |
| 46 | DP | 13 | ASN |
| 46 | DP | 81 | GLN |
| 47 | DQ | 12 | GLN |
| 47 | DQ | 45 | GLN |
| 47 | DQ | 141 | GLN |
| 48 | DR | 16 | HIS |
| 48 | DR | 23 | ASN |
| 48 | DR | 24 | GLN |
| 48 | DR | 53 | HIS |
| 48 | DR | 71 | GLN |
| 49 | DS | 34 | HIS |
| 50 | DT | 38 | ASN |
| 50 | DT | 43 | GLN |
| 50 | DT | 58 | ASN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 50 | DT | 90 | GLN |
| 50 | DT | 123 | GLN |
| 51 | DU | 44 | ASN |
| 51 | DU | 49 | HIS |
| 51 | DU | 72 | HIS |
| 51 | DU | 81 | HIS |
| 52 | DV | 11 | GLN |
| 53 | DW | 34 | ASN |
| 53 | DW | 57 | ASN |
| 53 | DW | 60 | ASN |
| 53 | DW | 61 | ASN |
| 53 | DW | 62 | HIS |
| 53 | DW | 102 | HIS |
| 54 | DX | 31 | HIS |
| 54 | DX | 41 | ASN |
| 54 | DX | 55 | ASN |
| 56 | DZ | 32 | HIS |
| 56 | DZ | 73 | GLN |

5.3.3 RNA ⓘ

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1 | AA | 1503/1522 (98%) | 215 (14%) | 29 (1%) |
| 1 | CA | 1503/1522 (98%) | 216 (14%) | 29 (1%) |
| 22 | AV | 74/77 (96%) | 15 (20%) | 0 |
| 22 | AY | 74/77 (96%) | 20 (27%) | 1 (1%) |
| 22 | CV | 74/77 (96%) | 19 (25%) | 1 (1%) |
| 22 | CY | 74/77 (96%) | 20 (27%) | 1 (1%) |
| 23 | AW | 75/76 (98%) | 13 (17%) | 0 |
| 23 | CW | 75/76 (98%) | 15 (20%) | 0 |
| 24 | AX | 10/11 (90%) | 1 (10%) | 0 |
| 24 | CX | 10/11 (90%) | 2 (20%) | 0 |
| 35 | BA | 2806/2822 (99%) | 516 (18%) | 55 (1%) |
| 35 | DA | 2806/2822 (99%) | 515 (18%) | 53 (1%) |
| 36 | BB | 118/122 (96%) | 13 (11%) | 1 (0%) |
| 36 | DB | 118/122 (96%) | 13 (11%) | 1 (0%) |
| All | All | 9320/9414 (99%) | 1593 (17%) | 171 (1%) |

All (1593) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|--------|------|
| 1 | AA | 9 | G |
| 1 | AA | 31 | G |
| 1 | AA | 32 | A |
| 1 | AA | 39 | G |
| 1 | AA | 48 | C |
| 1 | AA | 51 | A |
| 1 | AA | 61 | G |
| 1 | AA | 79 | G |
| 1 | AA | 80 | G |
| 1 | AA | 81 | U |
| 1 | AA | 84 | U |
| 1 | AA | 89 | C |
| 1 | AA | 90 | U |
| 1 | AA | 97 | G |
| 1 | AA | 98 | G |
| 1 | AA | 110 | C |
| 1 | AA | 116 | A |
| 1 | AA | 120 | A |
| 1 | AA | 121 | C |
| 1 | AA | 131 | C |
| 1 | AA | 144 | G |
| 1 | AA | 146 | G |
| 1 | AA | 150 | C |
| 1 | AA | 163 | C |
| 1 | AA | 189(H) | G |
| 1 | AA | 195 | A |
| 1 | AA | 197 | A |
| 1 | AA | 203 | U |
| 1 | AA | 244 | U |
| 1 | AA | 247 | G |
| 1 | AA | 251 | G |
| 1 | AA | 266 | G |
| 1 | AA | 267 | C |
| 1 | AA | 289 | G |
| 1 | AA | 316 | G |
| 1 | AA | 321 | A |
| 1 | AA | 328 | C |
| 1 | AA | 329 | A |
| 1 | AA | 332 | G |
| 1 | AA | 345 | C |
| 1 | AA | 352 | C |
| 1 | AA | 353 | A |
| 1 | AA | 354 | G |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 367 | U |
| 1 | AA | 372 | C |
| 1 | AA | 373 | A |
| 1 | AA | 390 | C |
| 1 | AA | 397 | A |
| 1 | AA | 412 | A |
| 1 | AA | 413 | G |
| 1 | AA | 414 | A |
| 1 | AA | 422 | C |
| 1 | AA | 429 | U |
| 1 | AA | 430 | A |
| 1 | AA | 435 | C |
| 1 | AA | 436 | C |
| 1 | AA | 437 | U |
| 1 | AA | 439 | A |
| 1 | AA | 452 | A |
| 1 | AA | 484 | G |
| 1 | AA | 485 | G |
| 1 | AA | 496 | A |
| 1 | AA | 498 | U |
| 1 | AA | 509 | A |
| 1 | AA | 510 | A |
| 1 | AA | 511 | C |
| 1 | AA | 518 | C |
| 1 | AA | 524 | G |
| 1 | AA | 527 | G |
| 1 | AA | 531 | U |
| 1 | AA | 532 | A |
| 1 | AA | 533 | A |
| 1 | AA | 534 | U |
| 1 | AA | 547 | A |
| 1 | AA | 559 | A |
| 1 | AA | 561 | U |
| 1 | AA | 562 | C |
| 1 | AA | 572 | A |
| 1 | AA | 573 | A |
| 1 | AA | 575 | G |
| 1 | AA | 576 | G |
| 1 | AA | 577 | G |
| 1 | AA | 596 | C |
| 1 | AA | 607 | A |
| 1 | AA | 630 | G |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 631 | G |
| 1 | AA | 632 | A |
| 1 | AA | 653 | A |
| 1 | AA | 665 | A |
| 1 | AA | 687 | A |
| 1 | AA | 688 | G |
| 1 | AA | 723 | U |
| 1 | AA | 731 | G |
| 1 | AA | 749 | C |
| 1 | AA | 755 | G |
| 1 | AA | 793 | U |
| 1 | AA | 794 | A |
| 1 | AA | 817 | C |
| 1 | AA | 818 | G |
| 1 | AA | 819 | A |
| 1 | AA | 828 | A |
| 1 | AA | 833 | U |
| 1 | AA | 839 | U |
| 1 | AA | 840 | C |
| 1 | AA | 841 | U |
| 1 | AA | 848 | C |
| 1 | AA | 859 | A |
| 1 | AA | 885 | G |
| 1 | AA | 902 | G |
| 1 | AA | 914 | A |
| 1 | AA | 926 | G |
| 1 | AA | 927 | G |
| 1 | AA | 934 | C |
| 1 | AA | 935 | A |
| 1 | AA | 960 | U |
| 1 | AA | 961 | U |
| 1 | AA | 968 | A |
| 1 | AA | 969 | A |
| 1 | AA | 971 | G |
| 1 | AA | 972 | C |
| 1 | AA | 974 | A |
| 1 | AA | 975 | A |
| 1 | AA | 976 | G |
| 1 | AA | 977 | A |
| 1 | AA | 978 | A |
| 1 | AA | 980 | C |
| 1 | AA | 991 | U |

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| Mol | Chain | Res | Type |
|-----|-------|---------|------|
| 1 | AA | 992 | U |
| 1 | AA | 993 | G |
| 1 | AA | 994 | A |
| 1 | AA | 1001(A) | G |
| 1 | AA | 1009 | G |
| 1 | AA | 1022 | G |
| 1 | AA | 1026 | G |
| 1 | AA | 1030 | C |
| 1 | AA | 1036 | G |
| 1 | AA | 1050 | G |
| 1 | AA | 1054 | C |
| 1 | AA | 1055 | A |
| 1 | AA | 1065 | U |
| 1 | AA | 1066 | C |
| 1 | AA | 1068 | G |
| 1 | AA | 1094 | G |
| 1 | AA | 1095 | U |
| 1 | AA | 1101 | A |
| 1 | AA | 1117 | G |
| 1 | AA | 1118 | C |
| 1 | AA | 1124 | G |
| 1 | AA | 1125 | U |
| 1 | AA | 1126 | U |
| 1 | AA | 1129 | C |
| 1 | AA | 1130 | A |
| 1 | AA | 1131 | G |
| 1 | AA | 1137 | C |
| 1 | AA | 1139 | G |
| 1 | AA | 1140 | C |
| 1 | AA | 1145 | C |
| 1 | AA | 1146 | A |
| 1 | AA | 1147 | C |
| 1 | AA | 1152 | A |
| 1 | AA | 1159 | U |
| 1 | AA | 1196 | U |
| 1 | AA | 1197 | G |
| 1 | AA | 1201 | A |
| 1 | AA | 1202 | G |
| 1 | AA | 1212 | U |
| 1 | AA | 1213 | A |
| 1 | AA | 1225 | A |
| 1 | AA | 1227 | A |

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| Mol | Chain | Res | Type |
|-----|-------|---------|------|
| 1 | AA | 1238 | A |
| 1 | AA | 1249 | C |
| 1 | AA | 1255 | G |
| 1 | AA | 1256 | A |
| 1 | AA | 1257 | U |
| 1 | AA | 1280 | A |
| 1 | AA | 1281 | U |
| 1 | AA | 1282 | C |
| 1 | AA | 1286 | A |
| 1 | AA | 1287 | A |
| 1 | AA | 1294 | G |
| 1 | AA | 1299 | A |
| 1 | AA | 1300 | G |
| 1 | AA | 1301 | U |
| 1 | AA | 1302 | U |
| 1 | AA | 1305 | G |
| 1 | AA | 1317 | C |
| 1 | AA | 1322 | C |
| 1 | AA | 1323 | G |
| 1 | AA | 1331 | G |
| 1 | AA | 1335 | C |
| 1 | AA | 1338 | G |
| 1 | AA | 1347 | G |
| 1 | AA | 1363 | C |
| 1 | AA | 1363(A) | A |
| 1 | AA | 1364 | U |
| 1 | AA | 1370 | G |
| 1 | AA | 1419 | G |
| 1 | AA | 1442 | G |
| 1 | AA | 1442(A) | G |
| 1 | AA | 1447 | A |
| 1 | AA | 1452 | C |
| 1 | AA | 1487 | G |
| 1 | AA | 1492 | A |
| 1 | AA | 1497 | G |
| 1 | AA | 1499 | A |
| 1 | AA | 1503 | A |
| 1 | AA | 1504 | G |
| 1 | AA | 1505 | G |
| 1 | AA | 1506 | U |
| 1 | AA | 1517 | G |
| 1 | AA | 1519 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 1520 | G |
| 1 | AA | 1529 | G |
| 1 | AA | 1530 | G |
| 1 | AA | 1531 | A |
| 22 | AV | 8 | U |
| 22 | AV | 17 | C |
| 22 | AV | 18 | G |
| 22 | AV | 19 | G |
| 22 | AV | 20 | U |
| 22 | AV | 21 | A |
| 22 | AV | 22 | G |
| 22 | AV | 42 | C |
| 22 | AV | 46 | G |
| 22 | AV | 47 | U |
| 22 | AV | 48 | C |
| 22 | AV | 52 | G |
| 22 | AV | 61 | C |
| 22 | AV | 69 | G |
| 22 | AV | 75 | C |
| 23 | AW | 16 | U |
| 23 | AW | 17 | C |
| 23 | AW | 18 | G |
| 23 | AW | 19 | G |
| 23 | AW | 21 | A |
| 23 | AW | 39 | U |
| 23 | AW | 43 | C |
| 23 | AW | 47 | U |
| 23 | AW | 57 | G |
| 23 | AW | 58 | A |
| 23 | AW | 61 | C |
| 23 | AW | 70 | G |
| 23 | AW | 76 | A |
| 24 | AX | 14 | A |
| 22 | AY | 2 | C |
| 22 | AY | 9 | A |
| 22 | AY | 16 | U |
| 22 | AY | 17 | C |
| 22 | AY | 18 | G |
| 22 | AY | 19 | G |
| 22 | AY | 21 | A |
| 22 | AY | 23 | A |
| 22 | AY | 34 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | AY | 42 | C |
| 22 | AY | 43 | C |
| 22 | AY | 47 | U |
| 22 | AY | 48 | C |
| 22 | AY | 52 | G |
| 22 | AY | 53 | G |
| 22 | AY | 70 | G |
| 22 | AY | 71 | G |
| 22 | AY | 72 | C |
| 22 | AY | 73 | A |
| 22 | AY | 74 | C |
| 35 | BA | 10 | G |
| 35 | BA | 35 | G |
| 35 | BA | 45 | C |
| 35 | BA | 69 | C |
| 35 | BA | 71 | A |
| 35 | BA | 72 | U |
| 35 | BA | 74 | A |
| 35 | BA | 75 | G |
| 35 | BA | 84 | A |
| 35 | BA | 85 | G |
| 35 | BA | 88 | G |
| 35 | BA | 90 | U |
| 35 | BA | 92 | A |
| 35 | BA | 94 | C |
| 35 | BA | 95 | G |
| 35 | BA | 102 | G |
| 35 | BA | 118 | A |
| 35 | BA | 119 | A |
| 35 | BA | 120 | U |
| 35 | BA | 129 | C |
| 35 | BA | 139(A) | G |
| 35 | BA | 141 | A |
| 35 | BA | 143(A) | C |
| 35 | BA | 153 | C |
| 35 | BA | 154(A) | C |
| 35 | BA | 157 | U |
| 35 | BA | 158 | U |
| 35 | BA | 174 | C |
| 35 | BA | 181 | A |
| 35 | BA | 196 | A |
| 35 | BA | 197 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 204 | A |
| 35 | BA | 205 | G |
| 35 | BA | 215 | G |
| 35 | BA | 216 | A |
| 35 | BA | 221 | A |
| 35 | BA | 222 | A |
| 35 | BA | 228 | A |
| 35 | BA | 229 | A |
| 35 | BA | 230 | U |
| 35 | BA | 233 | A |
| 35 | BA | 248 | G |
| 35 | BA | 252 | G |
| 35 | BA | 261 | G |
| 35 | BA | 265 | A |
| 35 | BA | 271(I) | G |
| 35 | BA | 271(K) | U |
| 35 | BA | 271(L) | U |
| 35 | BA | 271(O) | C |
| 35 | BA | 271(R) | G |
| 35 | BA | 271(T) | C |
| 35 | BA | 271(Y) | U |
| 35 | BA | 272(B) | G |
| 35 | BA | 272(H) | C |
| 35 | BA | 275 | G |
| 35 | BA | 283 | A |
| 35 | BA | 284 | U |
| 35 | BA | 286 | C |
| 35 | BA | 287 | C |
| 35 | BA | 311 | A |
| 35 | BA | 329 | G |
| 35 | BA | 330 | A |
| 35 | BA | 332 | A |
| 35 | BA | 333 | G |
| 35 | BA | 352 | G |
| 35 | BA | 358 | U |
| 35 | BA | 362 | U |
| 35 | BA | 363(B) | G |
| 35 | BA | 363(E) | U |
| 35 | BA | 363(F) | A |
| 35 | BA | 365 | C |
| 35 | BA | 372 | G |
| 35 | BA | 386 | G |

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| Mol | Chain | Res | Type |
|-----|-------|--------|------|
| 35 | BA | 388 | G |
| 35 | BA | 405 | U |
| 35 | BA | 406 | G |
| 35 | BA | 411 | G |
| 35 | BA | 412 | A |
| 35 | BA | 416 | C |
| 35 | BA | 428 | A |
| 35 | BA | 444 | C |
| 35 | BA | 448 | U |
| 35 | BA | 456 | C |
| 35 | BA | 457 | A |
| 35 | BA | 470 | A |
| 35 | BA | 475 | U |
| 35 | BA | 481 | G |
| 35 | BA | 482 | A |
| 35 | BA | 494 | G |
| 35 | BA | 505 | A |
| 35 | BA | 508 | G |
| 35 | BA | 509 | C |
| 35 | BA | 530 | G |
| 35 | BA | 531 | C |
| 35 | BA | 532 | A |
| 35 | BA | 533 | G |
| 35 | BA | 543 | C |
| 35 | BA | 547 | A |
| 35 | BA | 548 | A |
| 35 | BA | 549 | G |
| 35 | BA | 551 | G |
| 35 | BA | 556 | G |
| 35 | BA | 563 | G |
| 35 | BA | 572 | A |
| 35 | BA | 573 | G |
| 35 | BA | 588 | U |
| 35 | BA | 604 | G |
| 35 | BA | 607 | U |
| 35 | BA | 613 | G |
| 35 | BA | 614(A) | U |
| 35 | BA | 614(B) | G |
| 35 | BA | 615 | G |
| 35 | BA | 621 | A |
| 35 | BA | 627 | A |
| 35 | BA | 637 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 645 | C |
| 35 | BA | 646 | A |
| 35 | BA | 651 | G |
| 35 | BA | 652 | C |
| 35 | BA | 656 | G |
| 35 | BA | 668 | G |
| 35 | BA | 686 | G |
| 35 | BA | 695 | G |
| 35 | BA | 708 | C |
| 35 | BA | 717 | G |
| 35 | BA | 722 | A |
| 35 | BA | 730 | C |
| 35 | BA | 753 | C |
| 35 | BA | 764 | A |
| 35 | BA | 765 | G |
| 35 | BA | 776 | G |
| 35 | BA | 782 | A |
| 35 | BA | 784 | A |
| 35 | BA | 785 | G |
| 35 | BA | 790 | C |
| 35 | BA | 791 | C |
| 35 | BA | 805 | G |
| 35 | BA | 812 | C |
| 35 | BA | 819 | A |
| 35 | BA | 827 | U |
| 35 | BA | 828 | U |
| 35 | BA | 830 | G |
| 35 | BA | 832 | G |
| 35 | BA | 848 | G |
| 35 | BA | 856 | C |
| 35 | BA | 857 | C |
| 35 | BA | 859 | G |
| 35 | BA | 866 | A |
| 35 | BA | 878 | A |
| 35 | BA | 886 | C |
| 35 | BA | 890 | A |
| 35 | BA | 896 | A |
| 35 | BA | 897 | C |
| 35 | BA | 900 | A |
| 35 | BA | 910 | A |
| 35 | BA | 917 | A |
| 35 | BA | 926 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 932 | G |
| 35 | BA | 941 | A |
| 35 | BA | 945 | A |
| 35 | BA | 946 | G |
| 35 | BA | 958 | U |
| 35 | BA | 959 | A |
| 35 | BA | 961 | C |
| 35 | BA | 973 | A |
| 35 | BA | 974 | G |
| 35 | BA | 975 | C |
| 35 | BA | 975(A) | G |
| 35 | BA | 983 | A |
| 35 | BA | 991 | C |
| 35 | BA | 996 | A |
| 35 | BA | 1000 | A |
| 35 | BA | 1012 | U |
| 35 | BA | 1013 | C |
| 35 | BA | 1022 | G |
| 35 | BA | 1023 | U |
| 35 | BA | 1025 | G |
| 35 | BA | 1026 | U |
| 35 | BA | 1040 | C |
| 35 | BA | 1041 | C |
| 35 | BA | 1043 | C |
| 35 | BA | 1044 | G |
| 35 | BA | 1045 | A |
| 35 | BA | 1047 | G |
| 35 | BA | 1049 | C |
| 35 | BA | 1053 | C |
| 35 | BA | 1106 | A |
| 35 | BA | 1110 | G |
| 35 | BA | 1112 | G |
| 35 | BA | 1113 | U |
| 35 | BA | 1114 | G |
| 35 | BA | 1116 | C |
| 35 | BA | 1135 | C |
| 35 | BA | 1136 | G |
| 35 | BA | 1142 | U |
| 35 | BA | 1143 | A |
| 35 | BA | 1155 | A |
| 35 | BA | 1171 | G |
| 35 | BA | 1173 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 1174 | A |
| 35 | BA | 1175 | U |
| 35 | BA | 1176 | G |
| 35 | BA | 1178 | C |
| 35 | BA | 1183 | G |
| 35 | BA | 1195 | G |
| 35 | BA | 1205 | U |
| 35 | BA | 1210 | A |
| 35 | BA | 1211 | U |
| 35 | BA | 1212 | G |
| 35 | BA | 1220 | A |
| 35 | BA | 1221 | C |
| 35 | BA | 1248 | G |
| 35 | BA | 1253 | A |
| 35 | BA | 1256 | G |
| 35 | BA | 1265 | A |
| 35 | BA | 1271 | G |
| 35 | BA | 1272 | A |
| 35 | BA | 1281 | G |
| 35 | BA | 1300 | U |
| 35 | BA | 1301 | A |
| 35 | BA | 1302 | A |
| 35 | BA | 1314 | C |
| 35 | BA | 1319 | G |
| 35 | BA | 1329 | U |
| 35 | BA | 1330 | C |
| 35 | BA | 1332 | G |
| 35 | BA | 1345 | C |
| 35 | BA | 1349 | A |
| 35 | BA | 1359 | A |
| 35 | BA | 1368 | G |
| 35 | BA | 1379 | A |
| 35 | BA | 1380 | G |
| 35 | BA | 1384 | A |
| 35 | BA | 1385 | G |
| 35 | BA | 1386 | C |
| 35 | BA | 1395 | A |
| 35 | BA | 1407 | C |
| 35 | BA | 1416 | G |
| 35 | BA | 1417 | C |
| 35 | BA | 1419 | A |
| 35 | BA | 1420 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 1421 | G |
| 35 | BA | 1428 | C |
| 35 | BA | 1437 | C |
| 35 | BA | 1445 | A |
| 35 | BA | 1449 | A |
| 35 | BA | 1450 | G |
| 35 | BA | 1460 | A |
| 35 | BA | 1461 | G |
| 35 | BA | 1467 | C |
| 35 | BA | 1471 | A |
| 35 | BA | 1478 | G |
| 35 | BA | 1480 | G |
| 35 | BA | 1481 | U |
| 35 | BA | 1482 | G |
| 35 | BA | 1484 | G |
| 35 | BA | 1485 | G |
| 35 | BA | 1488 | G |
| 35 | BA | 1490 | A |
| 35 | BA | 1493 | C |
| 35 | BA | 1494 | A |
| 35 | BA | 1495 | A |
| 35 | BA | 1496 | A |
| 35 | BA | 1497 | U |
| 35 | BA | 1498 | C |
| 35 | BA | 1501 | C |
| 35 | BA | 1502 | C |
| 35 | BA | 1505 | C |
| 35 | BA | 1509 | C |
| 35 | BA | 1509(A) | A |
| 35 | BA | 1520 | G |
| 35 | BA | 1528(A) | A |
| 35 | BA | 1529 | G |
| 35 | BA | 1530 | C |
| 35 | BA | 1531 | C |
| 35 | BA | 1532 | C |
| 35 | BA | 1543 | C |
| 35 | BA | 1544 | A |
| 35 | BA | 1547 | C |
| 35 | BA | 1554 | A |
| 35 | BA | 1558 | A |
| 35 | BA | 1559 | G |
| 35 | BA | 1569 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 1578 | U |
| 35 | BA | 1579 | A |
| 35 | BA | 1581 | G |
| 35 | BA | 1584 | C |
| 35 | BA | 1586 | A |
| 35 | BA | 1588 | C |
| 35 | BA | 1591 | G |
| 35 | BA | 1594 | G |
| 35 | BA | 1598 | C |
| 35 | BA | 1603 | A |
| 35 | BA | 1608 | A |
| 35 | BA | 1610 | A |
| 35 | BA | 1617 | C |
| 35 | BA | 1618 | A |
| 35 | BA | 1640 | C |
| 35 | BA | 1648 | C |
| 35 | BA | 1653 | G |
| 35 | BA | 1654 | A |
| 35 | BA | 1674 | G |
| 35 | BA | 1681 | G |
| 35 | BA | 1686 | C |
| 35 | BA | 1696 | G |
| 35 | BA | 1700 | A |
| 35 | BA | 1722 | A |
| 35 | BA | 1739 | U |
| 35 | BA | 1744 | C |
| 35 | BA | 1748 | G |
| 35 | BA | 1763 | G |
| 35 | BA | 1764 | G |
| 35 | BA | 1773 | A |
| 35 | BA | 1780 | A |
| 35 | BA | 1787 | A |
| 35 | BA | 1791 | A |
| 35 | BA | 1799 | G |
| 35 | BA | 1800 | C |
| 35 | BA | 1816 | G |
| 35 | BA | 1820 | U |
| 35 | BA | 1829 | A |
| 35 | BA | 1835 | G |
| 35 | BA | 1838 | C |
| 35 | BA | 1847 | A |
| 35 | BA | 1858 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 1865 | G |
| 35 | BA | 1866 | C |
| 35 | BA | 1878 | G |
| 35 | BA | 1880 | C |
| 35 | BA | 1882 | C |
| 35 | BA | 1885 | A |
| 35 | BA | 1888 | G |
| 35 | BA | 1889 | A |
| 35 | BA | 1900 | A |
| 35 | BA | 1906 | G |
| 35 | BA | 1912 | A |
| 35 | BA | 1913 | A |
| 35 | BA | 1929 | G |
| 35 | BA | 1936 | A |
| 35 | BA | 1938 | A |
| 35 | BA | 1944 | U |
| 35 | BA | 1947 | C |
| 35 | BA | 1955 | U |
| 35 | BA | 1963 | U |
| 35 | BA | 1967 | C |
| 35 | BA | 1969 | A |
| 35 | BA | 1970 | A |
| 35 | BA | 1971 | A |
| 35 | BA | 1972 | A |
| 35 | BA | 1982 | C |
| 35 | BA | 1987 | G |
| 35 | BA | 1991 | U |
| 35 | BA | 1993 | U |
| 35 | BA | 1997 | G |
| 35 | BA | 2020 | A |
| 35 | BA | 2023 | G |
| 35 | BA | 2031 | A |
| 35 | BA | 2032 | G |
| 35 | BA | 2033 | A |
| 35 | BA | 2034 | U |
| 35 | BA | 2036 | C |
| 35 | BA | 2043 | C |
| 35 | BA | 2055 | C |
| 35 | BA | 2056 | G |
| 35 | BA | 2059 | A |
| 35 | BA | 2060 | A |
| 35 | BA | 2061 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 2062 | A |
| 35 | BA | 2069 | G |
| 35 | BA | 2093 | G |
| 35 | BA | 2099 | U |
| 35 | BA | 2103 | C |
| 35 | BA | 2104 | G |
| 35 | BA | 2108 | C |
| 35 | BA | 2110 | G |
| 35 | BA | 2112 | G |
| 35 | BA | 2116 | G |
| 35 | BA | 2117 | A |
| 35 | BA | 2118 | U |
| 35 | BA | 2123 | G |
| 35 | BA | 2124 | G |
| 35 | BA | 2126 | A |
| 35 | BA | 2127 | G |
| 35 | BA | 2131 | G |
| 35 | BA | 2133 | G |
| 35 | BA | 2136 | C |
| 35 | BA | 2147 | G |
| 35 | BA | 2170 | A |
| 35 | BA | 2172 | U |
| 35 | BA | 2173 | A |
| 35 | BA | 2174 | C |
| 35 | BA | 2179 | C |
| 35 | BA | 2185 | C |
| 35 | BA | 2187 | G |
| 35 | BA | 2190 | G |
| 35 | BA | 2192 | G |
| 35 | BA | 2193 | G |
| 35 | BA | 2198 | A |
| 35 | BA | 2199 | A |
| 35 | BA | 2200 | C |
| 35 | BA | 2207 | G |
| 35 | BA | 2208 | A |
| 35 | BA | 2219 | G |
| 35 | BA | 2225 | A |
| 35 | BA | 2226 | C |
| 35 | BA | 2238 | G |
| 35 | BA | 2239 | G |
| 35 | BA | 2263 | C |
| 35 | BA | 2275 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 2283 | C |
| 35 | BA | 2287 | A |
| 35 | BA | 2288 | A |
| 35 | BA | 2289 | G |
| 35 | BA | 2290 | G |
| 35 | BA | 2305 | A |
| 35 | BA | 2307 | G |
| 35 | BA | 2308 | G |
| 35 | BA | 2309 | A |
| 35 | BA | 2311 | A |
| 35 | BA | 2313 | C |
| 35 | BA | 2319 | G |
| 35 | BA | 2320 | A |
| 35 | BA | 2325 | G |
| 35 | BA | 2334 | G |
| 35 | BA | 2336 | A |
| 35 | BA | 2345 | G |
| 35 | BA | 2347 | C |
| 35 | BA | 2349 | G |
| 35 | BA | 2383 | G |
| 35 | BA | 2385 | C |
| 35 | BA | 2399 | G |
| 35 | BA | 2400 | G |
| 35 | BA | 2402 | C |
| 35 | BA | 2423 | U |
| 35 | BA | 2425 | A |
| 35 | BA | 2429 | G |
| 35 | BA | 2430 | A |
| 35 | BA | 2435 | A |
| 35 | BA | 2439 | A |
| 35 | BA | 2441 | C |
| 35 | BA | 2448 | A |
| 35 | BA | 2465 | C |
| 35 | BA | 2469 | A |
| 35 | BA | 2470 | G |
| 35 | BA | 2476 | A |
| 35 | BA | 2477 | C |
| 35 | BA | 2478 | A |
| 35 | BA | 2482 | G |
| 35 | BA | 2484 | G |
| 35 | BA | 2502 | G |
| 35 | BA | 2505 | G |

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| Mol | Chain | Res | Type |
|-----|-------|---------|------|
| 35 | BA | 2506 | U |
| 35 | BA | 2507 | C |
| 35 | BA | 2518 | A |
| 35 | BA | 2520 | C |
| 35 | BA | 2523 | G |
| 35 | BA | 2529 | G |
| 35 | BA | 2534 | A |
| 35 | BA | 2542 | A |
| 35 | BA | 2543 | G |
| 35 | BA | 2554 | U |
| 35 | BA | 2559 | C |
| 35 | BA | 2566 | A |
| 35 | BA | 2567 | G |
| 35 | BA | 2573 | C |
| 35 | BA | 2582 | G |
| 35 | BA | 2602 | A |
| 35 | BA | 2611 | U |
| 35 | BA | 2612 | C |
| 35 | BA | 2615 | U |
| 35 | BA | 2630 | G |
| 35 | BA | 2673 | G |
| 35 | BA | 2682 | U |
| 35 | BA | 2690 | C |
| 35 | BA | 2691 | C |
| 35 | BA | 2702 | U |
| 35 | BA | 2703 | C |
| 35 | BA | 2712 | U |
| 35 | BA | 2712(A) | A |
| 35 | BA | 2713 | A |
| 35 | BA | 2714 | G |
| 35 | BA | 2720 | U |
| 35 | BA | 2726 | U |
| 35 | BA | 2733 | A |
| 35 | BA | 2736 | G |
| 35 | BA | 2744 | G |
| 35 | BA | 2752 | C |
| 35 | BA | 2754 | U |
| 35 | BA | 2757 | A |
| 35 | BA | 2759 | G |
| 35 | BA | 2762 | G |
| 35 | BA | 2765 | A |
| 35 | BA | 2766 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 2778 | A |
| 35 | BA | 2780 | G |
| 35 | BA | 2787 | C |
| 35 | BA | 2790 | A |
| 35 | BA | 2794 | C |
| 35 | BA | 2802 | G |
| 35 | BA | 2803 | C |
| 35 | BA | 2804 | C |
| 35 | BA | 2808 | U |
| 35 | BA | 2820 | A |
| 35 | BA | 2821 | A |
| 35 | BA | 2823 | A |
| 35 | BA | 2827 | C |
| 35 | BA | 2833 | G |
| 35 | BA | 2834 | G |
| 35 | BA | 2835 | A |
| 35 | BA | 2836 | U |
| 35 | BA | 2849 | U |
| 35 | BA | 2864 | G |
| 35 | BA | 2865 | U |
| 35 | BA | 2872 | G |
| 35 | BA | 2892 | A |
| 35 | BA | 2893 | G |
| 36 | BB | 15 | A |
| 36 | BB | 16 | G |
| 36 | BB | 22 | U |
| 36 | BB | 27 | C |
| 36 | BB | 40 | U |
| 36 | BB | 42 | C |
| 36 | BB | 45 | A |
| 36 | BB | 52 | A |
| 36 | BB | 53 | A |
| 36 | BB | 67 | G |
| 36 | BB | 73 | A |
| 36 | BB | 88 | C |
| 36 | BB | 110 | G |
| 1 | CA | 9 | G |
| 1 | CA | 31 | G |
| 1 | CA | 32 | A |
| 1 | CA | 39 | G |
| 1 | CA | 48 | C |
| 1 | CA | 51 | A |

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| Mol | Chain | Res | Type |
|-----|-------|--------|------|
| 1 | CA | 61 | G |
| 1 | CA | 79 | G |
| 1 | CA | 80 | G |
| 1 | CA | 81 | U |
| 1 | CA | 84 | U |
| 1 | CA | 89 | C |
| 1 | CA | 90 | U |
| 1 | CA | 97 | G |
| 1 | CA | 98 | G |
| 1 | CA | 110 | C |
| 1 | CA | 116 | A |
| 1 | CA | 120 | A |
| 1 | CA | 121 | C |
| 1 | CA | 131 | C |
| 1 | CA | 144 | G |
| 1 | CA | 146 | G |
| 1 | CA | 150 | C |
| 1 | CA | 163 | C |
| 1 | CA | 189(H) | G |
| 1 | CA | 195 | A |
| 1 | CA | 197 | A |
| 1 | CA | 203 | U |
| 1 | CA | 244 | U |
| 1 | CA | 247 | G |
| 1 | CA | 251 | G |
| 1 | CA | 266 | G |
| 1 | CA | 267 | C |
| 1 | CA | 289 | G |
| 1 | CA | 316 | G |
| 1 | CA | 321 | A |
| 1 | CA | 328 | C |
| 1 | CA | 329 | A |
| 1 | CA | 332 | G |
| 1 | CA | 345 | C |
| 1 | CA | 352 | C |
| 1 | CA | 353 | A |
| 1 | CA | 354 | G |
| 1 | CA | 367 | U |
| 1 | CA | 372 | C |
| 1 | CA | 373 | A |
| 1 | CA | 390 | C |
| 1 | CA | 397 | A |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | CA | 412 | A |
| 1 | CA | 413 | G |
| 1 | CA | 414 | A |
| 1 | CA | 422 | C |
| 1 | CA | 429 | U |
| 1 | CA | 430 | A |
| 1 | CA | 435 | C |
| 1 | CA | 436 | C |
| 1 | CA | 437 | U |
| 1 | CA | 439 | A |
| 1 | CA | 452 | A |
| 1 | CA | 484 | G |
| 1 | CA | 485 | G |
| 1 | CA | 496 | A |
| 1 | CA | 498 | U |
| 1 | CA | 509 | A |
| 1 | CA | 510 | A |
| 1 | CA | 511 | C |
| 1 | CA | 518 | C |
| 1 | CA | 524 | G |
| 1 | CA | 527 | G |
| 1 | CA | 531 | U |
| 1 | CA | 532 | A |
| 1 | CA | 533 | A |
| 1 | CA | 534 | U |
| 1 | CA | 547 | A |
| 1 | CA | 559 | A |
| 1 | CA | 561 | U |
| 1 | CA | 562 | C |
| 1 | CA | 572 | A |
| 1 | CA | 573 | A |
| 1 | CA | 575 | G |
| 1 | CA | 576 | G |
| 1 | CA | 577 | G |
| 1 | CA | 596 | C |
| 1 | CA | 607 | A |
| 1 | CA | 630 | G |
| 1 | CA | 631 | G |
| 1 | CA | 632 | A |
| 1 | CA | 653 | A |
| 1 | CA | 665 | A |
| 1 | CA | 687 | A |

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| Mol | Chain | Res | Type |
|-----|-------|---------|------|
| 1 | CA | 688 | G |
| 1 | CA | 723 | U |
| 1 | CA | 731 | G |
| 1 | CA | 749 | C |
| 1 | CA | 755 | G |
| 1 | CA | 793 | U |
| 1 | CA | 794 | A |
| 1 | CA | 817 | C |
| 1 | CA | 818 | G |
| 1 | CA | 819 | A |
| 1 | CA | 828 | A |
| 1 | CA | 833 | U |
| 1 | CA | 839 | U |
| 1 | CA | 840 | C |
| 1 | CA | 841 | U |
| 1 | CA | 848 | C |
| 1 | CA | 859 | A |
| 1 | CA | 885 | G |
| 1 | CA | 902 | G |
| 1 | CA | 914 | A |
| 1 | CA | 926 | G |
| 1 | CA | 927 | G |
| 1 | CA | 934 | C |
| 1 | CA | 935 | A |
| 1 | CA | 960 | U |
| 1 | CA | 961 | U |
| 1 | CA | 968 | A |
| 1 | CA | 969 | A |
| 1 | CA | 971 | G |
| 1 | CA | 972 | C |
| 1 | CA | 974 | A |
| 1 | CA | 975 | A |
| 1 | CA | 976 | G |
| 1 | CA | 977 | A |
| 1 | CA | 978 | A |
| 1 | CA | 980 | C |
| 1 | CA | 991 | U |
| 1 | CA | 992 | U |
| 1 | CA | 993 | G |
| 1 | CA | 994 | A |
| 1 | CA | 1001(A) | G |
| 1 | CA | 1009 | G |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | CA | 1022 | G |
| 1 | CA | 1026 | G |
| 1 | CA | 1030 | C |
| 1 | CA | 1036 | G |
| 1 | CA | 1050 | G |
| 1 | CA | 1054 | C |
| 1 | CA | 1055 | A |
| 1 | CA | 1065 | U |
| 1 | CA | 1066 | C |
| 1 | CA | 1068 | G |
| 1 | CA | 1081 | G |
| 1 | CA | 1094 | G |
| 1 | CA | 1095 | U |
| 1 | CA | 1101 | A |
| 1 | CA | 1117 | G |
| 1 | CA | 1118 | C |
| 1 | CA | 1124 | G |
| 1 | CA | 1125 | U |
| 1 | CA | 1126 | U |
| 1 | CA | 1129 | C |
| 1 | CA | 1130 | A |
| 1 | CA | 1131 | G |
| 1 | CA | 1137 | C |
| 1 | CA | 1139 | G |
| 1 | CA | 1140 | C |
| 1 | CA | 1145 | C |
| 1 | CA | 1146 | A |
| 1 | CA | 1147 | C |
| 1 | CA | 1152 | A |
| 1 | CA | 1159 | U |
| 1 | CA | 1196 | U |
| 1 | CA | 1197 | G |
| 1 | CA | 1201 | A |
| 1 | CA | 1202 | G |
| 1 | CA | 1212 | U |
| 1 | CA | 1213 | A |
| 1 | CA | 1225 | A |
| 1 | CA | 1227 | A |
| 1 | CA | 1238 | A |
| 1 | CA | 1249 | C |
| 1 | CA | 1255 | G |
| 1 | CA | 1256 | A |

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| Mol | Chain | Res | Type |
|-----|-------|---------|------|
| 1 | CA | 1257 | U |
| 1 | CA | 1280 | A |
| 1 | CA | 1281 | U |
| 1 | CA | 1282 | C |
| 1 | CA | 1286 | A |
| 1 | CA | 1287 | A |
| 1 | CA | 1294 | G |
| 1 | CA | 1299 | A |
| 1 | CA | 1300 | G |
| 1 | CA | 1301 | U |
| 1 | CA | 1302 | U |
| 1 | CA | 1305 | G |
| 1 | CA | 1317 | C |
| 1 | CA | 1322 | C |
| 1 | CA | 1323 | G |
| 1 | CA | 1331 | G |
| 1 | CA | 1334 | G |
| 1 | CA | 1335 | C |
| 1 | CA | 1338 | G |
| 1 | CA | 1347 | G |
| 1 | CA | 1363 | C |
| 1 | CA | 1363(A) | A |
| 1 | CA | 1364 | U |
| 1 | CA | 1370 | G |
| 1 | CA | 1419 | G |
| 1 | CA | 1442(A) | G |
| 1 | CA | 1442(B) | A |
| 1 | CA | 1443 | G |
| 1 | CA | 1447 | A |
| 1 | CA | 1452 | C |
| 1 | CA | 1487 | G |
| 1 | CA | 1492 | A |
| 1 | CA | 1497 | G |
| 1 | CA | 1499 | A |
| 1 | CA | 1503 | A |
| 1 | CA | 1504 | G |
| 1 | CA | 1505 | G |
| 1 | CA | 1506 | U |
| 1 | CA | 1507 | A |
| 1 | CA | 1517 | G |
| 1 | CA | 1529 | G |
| 1 | CA | 1530 | G |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 22 | CV | 17 | C |
| 22 | CV | 18 | G |
| 22 | CV | 19 | G |
| 22 | CV | 20 | U |
| 22 | CV | 21 | A |
| 22 | CV | 22 | G |
| 22 | CV | 23 | A |
| 22 | CV | 32 | U |
| 22 | CV | 34 | G |
| 22 | CV | 35 | A |
| 22 | CV | 41 | C |
| 22 | CV | 42 | C |
| 22 | CV | 46 | G |
| 22 | CV | 47 | U |
| 22 | CV | 48 | C |
| 22 | CV | 52 | G |
| 22 | CV | 61 | C |
| 22 | CV | 69 | G |
| 22 | CV | 75 | C |
| 23 | CW | 16 | U |
| 23 | CW | 17 | C |
| 23 | CW | 18 | G |
| 23 | CW | 19 | G |
| 23 | CW | 21 | A |
| 23 | CW | 22 | G |
| 23 | CW | 39 | U |
| 23 | CW | 41 | C |
| 23 | CW | 43 | C |
| 23 | CW | 47 | U |
| 23 | CW | 57 | G |
| 23 | CW | 58 | A |
| 23 | CW | 59 | U |
| 23 | CW | 61 | C |
| 23 | CW | 70 | G |
| 24 | CX | 13 | A |
| 24 | CX | 14 | A |
| 22 | CY | 2 | C |
| 22 | CY | 4 | C |
| 22 | CY | 9 | A |
| 22 | CY | 16 | U |
| 22 | CY | 17 | C |
| 22 | CY | 18 | G |

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| Mol | Chain | Res | Type |
|-----|-------|--------|------|
| 22 | CY | 19 | G |
| 22 | CY | 21 | A |
| 22 | CY | 23 | A |
| 22 | CY | 34 | G |
| 22 | CY | 42 | C |
| 22 | CY | 43 | C |
| 22 | CY | 47 | U |
| 22 | CY | 48 | C |
| 22 | CY | 52 | G |
| 22 | CY | 53 | G |
| 22 | CY | 57 | G |
| 22 | CY | 61 | C |
| 22 | CY | 74 | C |
| 22 | CY | 75 | C |
| 35 | DA | 10 | G |
| 35 | DA | 35 | G |
| 35 | DA | 45 | C |
| 35 | DA | 69 | C |
| 35 | DA | 71 | A |
| 35 | DA | 72 | U |
| 35 | DA | 74 | A |
| 35 | DA | 75 | G |
| 35 | DA | 84 | A |
| 35 | DA | 85 | G |
| 35 | DA | 88 | G |
| 35 | DA | 90 | U |
| 35 | DA | 92 | A |
| 35 | DA | 94 | C |
| 35 | DA | 95 | G |
| 35 | DA | 102 | G |
| 35 | DA | 118 | A |
| 35 | DA | 119 | A |
| 35 | DA | 120 | U |
| 35 | DA | 129 | C |
| 35 | DA | 139(A) | G |
| 35 | DA | 141 | A |
| 35 | DA | 143(A) | C |
| 35 | DA | 153 | C |
| 35 | DA | 154(A) | C |
| 35 | DA | 157 | U |
| 35 | DA | 158 | U |
| 35 | DA | 174 | C |

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| Mol | Chain | Res | Type |
|-----|-------|--------|------|
| 35 | DA | 196 | A |
| 35 | DA | 197 | A |
| 35 | DA | 204 | A |
| 35 | DA | 205 | G |
| 35 | DA | 215 | G |
| 35 | DA | 216 | A |
| 35 | DA | 221 | A |
| 35 | DA | 222 | A |
| 35 | DA | 228 | A |
| 35 | DA | 229 | A |
| 35 | DA | 230 | U |
| 35 | DA | 233 | A |
| 35 | DA | 248 | G |
| 35 | DA | 252 | G |
| 35 | DA | 261 | G |
| 35 | DA | 265 | A |
| 35 | DA | 271(I) | G |
| 35 | DA | 271(K) | U |
| 35 | DA | 271(L) | U |
| 35 | DA | 271(O) | C |
| 35 | DA | 271(R) | G |
| 35 | DA | 271(T) | C |
| 35 | DA | 271(Y) | U |
| 35 | DA | 272(B) | G |
| 35 | DA | 272(H) | C |
| 35 | DA | 275 | G |
| 35 | DA | 283 | A |
| 35 | DA | 284 | U |
| 35 | DA | 286 | C |
| 35 | DA | 287 | C |
| 35 | DA | 311 | A |
| 35 | DA | 329 | G |
| 35 | DA | 330 | A |
| 35 | DA | 332 | A |
| 35 | DA | 333 | G |
| 35 | DA | 352 | G |
| 35 | DA | 358 | U |
| 35 | DA | 362 | U |
| 35 | DA | 363(B) | G |
| 35 | DA | 363(E) | U |
| 35 | DA | 363(F) | A |
| 35 | DA | 365 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 372 | G |
| 35 | DA | 386 | G |
| 35 | DA | 388 | G |
| 35 | DA | 405 | U |
| 35 | DA | 406 | G |
| 35 | DA | 411 | G |
| 35 | DA | 412 | A |
| 35 | DA | 416 | C |
| 35 | DA | 428 | A |
| 35 | DA | 444 | C |
| 35 | DA | 448 | U |
| 35 | DA | 456 | C |
| 35 | DA | 457 | A |
| 35 | DA | 470 | A |
| 35 | DA | 475 | U |
| 35 | DA | 481 | G |
| 35 | DA | 482 | A |
| 35 | DA | 494 | G |
| 35 | DA | 505 | A |
| 35 | DA | 508 | G |
| 35 | DA | 509 | C |
| 35 | DA | 530 | G |
| 35 | DA | 531 | C |
| 35 | DA | 532 | A |
| 35 | DA | 533 | G |
| 35 | DA | 543 | C |
| 35 | DA | 547 | A |
| 35 | DA | 548 | A |
| 35 | DA | 549 | G |
| 35 | DA | 551 | G |
| 35 | DA | 563 | G |
| 35 | DA | 573 | G |
| 35 | DA | 588 | U |
| 35 | DA | 604 | G |
| 35 | DA | 607 | U |
| 35 | DA | 613 | G |
| 35 | DA | 614(A) | U |
| 35 | DA | 614(B) | G |
| 35 | DA | 615 | G |
| 35 | DA | 621 | A |
| 35 | DA | 627 | A |
| 35 | DA | 637 | A |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 35 | DA | 645 | C |
| 35 | DA | 646 | A |
| 35 | DA | 651 | G |
| 35 | DA | 652 | C |
| 35 | DA | 656 | G |
| 35 | DA | 668 | G |
| 35 | DA | 686 | G |
| 35 | DA | 695 | G |
| 35 | DA | 708 | C |
| 35 | DA | 717 | G |
| 35 | DA | 722 | A |
| 35 | DA | 730 | C |
| 35 | DA | 753 | C |
| 35 | DA | 764 | A |
| 35 | DA | 765 | G |
| 35 | DA | 776 | G |
| 35 | DA | 782 | A |
| 35 | DA | 784 | A |
| 35 | DA | 785 | G |
| 35 | DA | 790 | C |
| 35 | DA | 791 | C |
| 35 | DA | 805 | G |
| 35 | DA | 812 | C |
| 35 | DA | 819 | A |
| 35 | DA | 827 | U |
| 35 | DA | 828 | U |
| 35 | DA | 830 | G |
| 35 | DA | 832 | G |
| 35 | DA | 848 | G |
| 35 | DA | 856 | C |
| 35 | DA | 857 | C |
| 35 | DA | 859 | G |
| 35 | DA | 866 | A |
| 35 | DA | 878 | A |
| 35 | DA | 886 | C |
| 35 | DA | 890 | A |
| 35 | DA | 896 | A |
| 35 | DA | 897 | C |
| 35 | DA | 900 | A |
| 35 | DA | 910 | A |
| 35 | DA | 917 | A |
| 35 | DA | 926 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 932 | G |
| 35 | DA | 941 | A |
| 35 | DA | 945 | A |
| 35 | DA | 946 | G |
| 35 | DA | 958 | U |
| 35 | DA | 959 | A |
| 35 | DA | 961 | C |
| 35 | DA | 973 | A |
| 35 | DA | 974 | G |
| 35 | DA | 975 | C |
| 35 | DA | 975(A) | G |
| 35 | DA | 983 | A |
| 35 | DA | 991 | C |
| 35 | DA | 996 | A |
| 35 | DA | 1000 | A |
| 35 | DA | 1012 | U |
| 35 | DA | 1013 | C |
| 35 | DA | 1022 | G |
| 35 | DA | 1023 | U |
| 35 | DA | 1025 | G |
| 35 | DA | 1026 | U |
| 35 | DA | 1040 | C |
| 35 | DA | 1041 | C |
| 35 | DA | 1043 | C |
| 35 | DA | 1044 | G |
| 35 | DA | 1045 | A |
| 35 | DA | 1047 | G |
| 35 | DA | 1049 | C |
| 35 | DA | 1053 | C |
| 35 | DA | 1106 | A |
| 35 | DA | 1110 | G |
| 35 | DA | 1112 | G |
| 35 | DA | 1113 | U |
| 35 | DA | 1114 | G |
| 35 | DA | 1116 | C |
| 35 | DA | 1135 | C |
| 35 | DA | 1136 | G |
| 35 | DA | 1142 | U |
| 35 | DA | 1143 | A |
| 35 | DA | 1155 | A |
| 35 | DA | 1171 | G |
| 35 | DA | 1173 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 1174 | A |
| 35 | DA | 1175 | U |
| 35 | DA | 1176 | G |
| 35 | DA | 1178 | C |
| 35 | DA | 1183 | G |
| 35 | DA | 1195 | G |
| 35 | DA | 1205 | U |
| 35 | DA | 1210 | A |
| 35 | DA | 1211 | U |
| 35 | DA | 1212 | G |
| 35 | DA | 1220 | A |
| 35 | DA | 1221 | C |
| 35 | DA | 1248 | G |
| 35 | DA | 1253 | A |
| 35 | DA | 1256 | G |
| 35 | DA | 1265 | A |
| 35 | DA | 1271 | G |
| 35 | DA | 1272 | A |
| 35 | DA | 1281 | G |
| 35 | DA | 1300 | U |
| 35 | DA | 1301 | A |
| 35 | DA | 1302 | A |
| 35 | DA | 1314 | C |
| 35 | DA | 1319 | G |
| 35 | DA | 1329 | U |
| 35 | DA | 1330 | C |
| 35 | DA | 1332 | G |
| 35 | DA | 1345 | C |
| 35 | DA | 1349 | A |
| 35 | DA | 1359 | A |
| 35 | DA | 1368 | G |
| 35 | DA | 1379 | A |
| 35 | DA | 1380 | G |
| 35 | DA | 1384 | A |
| 35 | DA | 1385 | G |
| 35 | DA | 1386 | C |
| 35 | DA | 1395 | A |
| 35 | DA | 1407 | C |
| 35 | DA | 1416 | G |
| 35 | DA | 1417 | C |
| 35 | DA | 1419 | A |
| 35 | DA | 1420 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 1421 | G |
| 35 | DA | 1428 | C |
| 35 | DA | 1437 | C |
| 35 | DA | 1445 | A |
| 35 | DA | 1449 | A |
| 35 | DA | 1450 | G |
| 35 | DA | 1460 | A |
| 35 | DA | 1461 | G |
| 35 | DA | 1467 | C |
| 35 | DA | 1471 | A |
| 35 | DA | 1478 | G |
| 35 | DA | 1480 | G |
| 35 | DA | 1481 | U |
| 35 | DA | 1482 | G |
| 35 | DA | 1484 | G |
| 35 | DA | 1485 | G |
| 35 | DA | 1488 | G |
| 35 | DA | 1490 | A |
| 35 | DA | 1493 | C |
| 35 | DA | 1494 | A |
| 35 | DA | 1495 | A |
| 35 | DA | 1496 | A |
| 35 | DA | 1497 | U |
| 35 | DA | 1498 | C |
| 35 | DA | 1501 | C |
| 35 | DA | 1502 | C |
| 35 | DA | 1505 | C |
| 35 | DA | 1509 | C |
| 35 | DA | 1509(A) | A |
| 35 | DA | 1520 | G |
| 35 | DA | 1528(A) | A |
| 35 | DA | 1529 | G |
| 35 | DA | 1530 | C |
| 35 | DA | 1531 | C |
| 35 | DA | 1532 | C |
| 35 | DA | 1543 | C |
| 35 | DA | 1544 | A |
| 35 | DA | 1547 | C |
| 35 | DA | 1554 | A |
| 35 | DA | 1558 | A |
| 35 | DA | 1559 | G |
| 35 | DA | 1569 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 1578 | U |
| 35 | DA | 1579 | A |
| 35 | DA | 1581 | G |
| 35 | DA | 1584 | C |
| 35 | DA | 1586 | A |
| 35 | DA | 1588 | C |
| 35 | DA | 1591 | G |
| 35 | DA | 1594 | G |
| 35 | DA | 1598 | C |
| 35 | DA | 1603 | A |
| 35 | DA | 1608 | A |
| 35 | DA | 1610 | A |
| 35 | DA | 1617 | C |
| 35 | DA | 1618 | A |
| 35 | DA | 1640 | C |
| 35 | DA | 1648 | C |
| 35 | DA | 1653 | G |
| 35 | DA | 1654 | A |
| 35 | DA | 1674 | G |
| 35 | DA | 1681 | G |
| 35 | DA | 1686 | C |
| 35 | DA | 1696 | G |
| 35 | DA | 1700 | A |
| 35 | DA | 1722 | A |
| 35 | DA | 1739 | U |
| 35 | DA | 1744 | C |
| 35 | DA | 1748 | G |
| 35 | DA | 1763 | G |
| 35 | DA | 1764 | G |
| 35 | DA | 1773 | A |
| 35 | DA | 1780 | A |
| 35 | DA | 1787 | A |
| 35 | DA | 1791 | A |
| 35 | DA | 1799 | G |
| 35 | DA | 1800 | C |
| 35 | DA | 1816 | G |
| 35 | DA | 1820 | U |
| 35 | DA | 1829 | A |
| 35 | DA | 1835 | G |
| 35 | DA | 1838 | C |
| 35 | DA | 1847 | A |
| 35 | DA | 1858 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 1865 | G |
| 35 | DA | 1866 | C |
| 35 | DA | 1878 | G |
| 35 | DA | 1880 | C |
| 35 | DA | 1882 | C |
| 35 | DA | 1885 | A |
| 35 | DA | 1888 | G |
| 35 | DA | 1889 | A |
| 35 | DA | 1900 | A |
| 35 | DA | 1906 | G |
| 35 | DA | 1912 | A |
| 35 | DA | 1913 | A |
| 35 | DA | 1929 | G |
| 35 | DA | 1936 | A |
| 35 | DA | 1938 | A |
| 35 | DA | 1944 | U |
| 35 | DA | 1947 | C |
| 35 | DA | 1955 | U |
| 35 | DA | 1963 | U |
| 35 | DA | 1967 | C |
| 35 | DA | 1969 | A |
| 35 | DA | 1970 | A |
| 35 | DA | 1971 | A |
| 35 | DA | 1972 | A |
| 35 | DA | 1982 | C |
| 35 | DA | 1987 | G |
| 35 | DA | 1991 | U |
| 35 | DA | 1993 | U |
| 35 | DA | 1997 | G |
| 35 | DA | 2020 | A |
| 35 | DA | 2023 | G |
| 35 | DA | 2031 | A |
| 35 | DA | 2032 | G |
| 35 | DA | 2033 | A |
| 35 | DA | 2034 | U |
| 35 | DA | 2036 | C |
| 35 | DA | 2043 | C |
| 35 | DA | 2055 | C |
| 35 | DA | 2056 | G |
| 35 | DA | 2059 | A |
| 35 | DA | 2060 | A |
| 35 | DA | 2061 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 2062 | A |
| 35 | DA | 2069 | G |
| 35 | DA | 2093 | G |
| 35 | DA | 2099 | U |
| 35 | DA | 2103 | C |
| 35 | DA | 2104 | G |
| 35 | DA | 2108 | C |
| 35 | DA | 2110 | G |
| 35 | DA | 2112 | G |
| 35 | DA | 2116 | G |
| 35 | DA | 2117 | A |
| 35 | DA | 2118 | U |
| 35 | DA | 2123 | G |
| 35 | DA | 2124 | G |
| 35 | DA | 2126 | A |
| 35 | DA | 2127 | G |
| 35 | DA | 2131 | G |
| 35 | DA | 2133 | G |
| 35 | DA | 2136 | C |
| 35 | DA | 2147 | G |
| 35 | DA | 2166 | G |
| 35 | DA | 2170 | A |
| 35 | DA | 2172 | U |
| 35 | DA | 2173 | A |
| 35 | DA | 2174 | C |
| 35 | DA | 2179 | C |
| 35 | DA | 2185 | C |
| 35 | DA | 2187 | G |
| 35 | DA | 2190 | G |
| 35 | DA | 2192 | G |
| 35 | DA | 2193 | G |
| 35 | DA | 2198 | A |
| 35 | DA | 2199 | A |
| 35 | DA | 2200 | C |
| 35 | DA | 2207 | G |
| 35 | DA | 2208 | A |
| 35 | DA | 2219 | G |
| 35 | DA | 2225 | A |
| 35 | DA | 2226 | C |
| 35 | DA | 2238 | G |
| 35 | DA | 2239 | G |
| 35 | DA | 2263 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 2275 | C |
| 35 | DA | 2283 | C |
| 35 | DA | 2287 | A |
| 35 | DA | 2288 | A |
| 35 | DA | 2289 | G |
| 35 | DA | 2290 | G |
| 35 | DA | 2305 | A |
| 35 | DA | 2307 | G |
| 35 | DA | 2308 | G |
| 35 | DA | 2309 | A |
| 35 | DA | 2311 | A |
| 35 | DA | 2313 | C |
| 35 | DA | 2319 | G |
| 35 | DA | 2320 | A |
| 35 | DA | 2325 | G |
| 35 | DA | 2334 | G |
| 35 | DA | 2336 | A |
| 35 | DA | 2345 | G |
| 35 | DA | 2347 | C |
| 35 | DA | 2349 | G |
| 35 | DA | 2383 | G |
| 35 | DA | 2385 | C |
| 35 | DA | 2399 | G |
| 35 | DA | 2400 | G |
| 35 | DA | 2402 | C |
| 35 | DA | 2423 | U |
| 35 | DA | 2425 | A |
| 35 | DA | 2429 | G |
| 35 | DA | 2430 | A |
| 35 | DA | 2435 | A |
| 35 | DA | 2439 | A |
| 35 | DA | 2441 | C |
| 35 | DA | 2448 | A |
| 35 | DA | 2465 | C |
| 35 | DA | 2469 | A |
| 35 | DA | 2470 | G |
| 35 | DA | 2476 | A |
| 35 | DA | 2477 | C |
| 35 | DA | 2478 | A |
| 35 | DA | 2482 | G |
| 35 | DA | 2484 | G |
| 35 | DA | 2502 | G |

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| Mol | Chain | Res | Type |
|-----|-------|---------|------|
| 35 | DA | 2505 | G |
| 35 | DA | 2506 | U |
| 35 | DA | 2507 | C |
| 35 | DA | 2518 | A |
| 35 | DA | 2520 | C |
| 35 | DA | 2523 | G |
| 35 | DA | 2529 | G |
| 35 | DA | 2534 | A |
| 35 | DA | 2542 | A |
| 35 | DA | 2543 | G |
| 35 | DA | 2554 | U |
| 35 | DA | 2559 | C |
| 35 | DA | 2566 | A |
| 35 | DA | 2567 | G |
| 35 | DA | 2573 | C |
| 35 | DA | 2574 | G |
| 35 | DA | 2582 | G |
| 35 | DA | 2602 | A |
| 35 | DA | 2611 | U |
| 35 | DA | 2612 | C |
| 35 | DA | 2615 | U |
| 35 | DA | 2630 | G |
| 35 | DA | 2673 | G |
| 35 | DA | 2682 | U |
| 35 | DA | 2690 | C |
| 35 | DA | 2691 | C |
| 35 | DA | 2702 | U |
| 35 | DA | 2703 | C |
| 35 | DA | 2712 | U |
| 35 | DA | 2712(A) | A |
| 35 | DA | 2713 | A |
| 35 | DA | 2714 | G |
| 35 | DA | 2720 | U |
| 35 | DA | 2726 | U |
| 35 | DA | 2733 | A |
| 35 | DA | 2736 | G |
| 35 | DA | 2744 | G |
| 35 | DA | 2752 | C |
| 35 | DA | 2754 | U |
| 35 | DA | 2757 | A |
| 35 | DA | 2759 | G |
| 35 | DA | 2762 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DA | 2765 | A |
| 35 | DA | 2766 | G |
| 35 | DA | 2778 | A |
| 35 | DA | 2780 | G |
| 35 | DA | 2787 | C |
| 35 | DA | 2790 | A |
| 35 | DA | 2794 | C |
| 35 | DA | 2802 | G |
| 35 | DA | 2803 | C |
| 35 | DA | 2804 | C |
| 35 | DA | 2808 | U |
| 35 | DA | 2820 | A |
| 35 | DA | 2821 | A |
| 35 | DA | 2823 | A |
| 35 | DA | 2827 | C |
| 35 | DA | 2833 | G |
| 35 | DA | 2834 | G |
| 35 | DA | 2835 | A |
| 35 | DA | 2836 | U |
| 35 | DA | 2849 | U |
| 35 | DA | 2864 | G |
| 35 | DA | 2865 | U |
| 35 | DA | 2872 | G |
| 35 | DA | 2892 | A |
| 35 | DA | 2893 | G |
| 36 | DB | 15 | A |
| 36 | DB | 16 | G |
| 36 | DB | 22 | U |
| 36 | DB | 27 | C |
| 36 | DB | 40 | U |
| 36 | DB | 42 | C |
| 36 | DB | 45 | A |
| 36 | DB | 52 | A |
| 36 | DB | 53 | A |
| 36 | DB | 67 | G |
| 36 | DB | 73 | A |
| 36 | DB | 88 | C |
| 36 | DB | 110 | G |

All (171) RNA pucker outliers are listed below:

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
|-----|-------|-----|------|

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 30 | U |
| 1 | AA | 60 | A |
| 1 | AA | 79 | G |
| 1 | AA | 115 | G |
| 1 | AA | 119 | A |
| 1 | AA | 243 | A |
| 1 | AA | 250 | A |
| 1 | AA | 266 | G |
| 1 | AA | 328 | C |
| 1 | AA | 366 | C |
| 1 | AA | 428 | G |
| 1 | AA | 429 | U |
| 1 | AA | 484 | G |
| 1 | AA | 509 | A |
| 1 | AA | 533 | A |
| 1 | AA | 560 | U |
| 1 | AA | 575 | G |
| 1 | AA | 687 | A |
| 1 | AA | 748 | C |
| 1 | AA | 913 | A |
| 1 | AA | 992 | U |
| 1 | AA | 1049 | U |
| 1 | AA | 1064 | G |
| 1 | AA | 1065 | U |
| 1 | AA | 1067 | A |
| 1 | AA | 1201 | A |
| 1 | AA | 1285 | A |
| 1 | AA | 1300 | G |
| 1 | AA | 1504 | G |
| 22 | AY | 15 | G |
| 35 | BA | 71 | A |
| 35 | BA | 74 | A |
| 35 | BA | 128 | C |
| 35 | BA | 221 | A |
| 35 | BA | 272 | G |
| 35 | BA | 283 | A |
| 35 | BA | 331 | A |
| 35 | BA | 332 | A |
| 35 | BA | 387 | U |
| 35 | BA | 474 | G |
| 35 | BA | 481 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BA | 542 | C |
| 35 | BA | 587 | C |
| 35 | BA | 603 | A |
| 35 | BA | 614(C) | A |
| 35 | BA | 752 | A |
| 35 | BA | 790 | C |
| 35 | BA | 856 | C |
| 35 | BA | 1022 | G |
| 35 | BA | 1210 | A |
| 35 | BA | 1286 | A |
| 35 | BA | 1300 | U |
| 35 | BA | 1301 | A |
| 35 | BA | 1378 | A |
| 35 | BA | 1395 | A |
| 35 | BA | 1427 | A |
| 35 | BA | 1532 | C |
| 35 | BA | 1558 | A |
| 35 | BA | 1594 | G |
| 35 | BA | 1607 | C |
| 35 | BA | 1653 | G |
| 35 | BA | 1799 | G |
| 35 | BA | 1819 | A |
| 35 | BA | 1912 | A |
| 35 | BA | 1987 | G |
| 35 | BA | 1992 | G |
| 35 | BA | 2033 | A |
| 35 | BA | 2111 | C |
| 35 | BA | 2116 | G |
| 35 | BA | 2126 | A |
| 35 | BA | 2171 | A |
| 35 | BA | 2172 | U |
| 35 | BA | 2225 | A |
| 35 | BA | 2263 | C |
| 35 | BA | 2282 | G |
| 35 | BA | 2422 | A |
| 35 | BA | 2468 | G |
| 35 | BA | 2481 | G |
| 35 | BA | 2506 | U |
| 35 | BA | 2610 | C |
| 35 | BA | 2689 | U |
| 35 | BA | 2736 | G |
| 35 | BA | 2756 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 35 | BA | 2820 | A |
| 35 | BA | 2864 | G |
| 36 | BB | 66 | A |
| 1 | CA | 30 | U |
| 1 | CA | 60 | A |
| 1 | CA | 79 | G |
| 1 | CA | 115 | G |
| 1 | CA | 119 | A |
| 1 | CA | 243 | A |
| 1 | CA | 250 | A |
| 1 | CA | 266 | G |
| 1 | CA | 328 | C |
| 1 | CA | 366 | C |
| 1 | CA | 428 | G |
| 1 | CA | 429 | U |
| 1 | CA | 484 | G |
| 1 | CA | 509 | A |
| 1 | CA | 533 | A |
| 1 | CA | 560 | U |
| 1 | CA | 575 | G |
| 1 | CA | 687 | A |
| 1 | CA | 748 | C |
| 1 | CA | 913 | A |
| 1 | CA | 992 | U |
| 1 | CA | 1049 | U |
| 1 | CA | 1064 | G |
| 1 | CA | 1065 | U |
| 1 | CA | 1067 | A |
| 1 | CA | 1201 | A |
| 1 | CA | 1285 | A |
| 1 | CA | 1300 | G |
| 1 | CA | 1504 | G |
| 22 | CV | 34 | G |
| 22 | CY | 15 | G |
| 35 | DA | 71 | A |
| 35 | DA | 74 | A |
| 35 | DA | 128 | C |
| 35 | DA | 221 | A |
| 35 | DA | 272 | G |
| 35 | DA | 283 | A |
| 35 | DA | 331 | A |
| 35 | DA | 332 | A |

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| Mol | Chain | Res | Type |
|-----|-------|--------|------|
| 35 | DA | 387 | U |
| 35 | DA | 474 | G |
| 35 | DA | 481 | G |
| 35 | DA | 542 | C |
| 35 | DA | 587 | C |
| 35 | DA | 603 | A |
| 35 | DA | 614(C) | A |
| 35 | DA | 752 | A |
| 35 | DA | 790 | C |
| 35 | DA | 856 | C |
| 35 | DA | 1022 | G |
| 35 | DA | 1210 | A |
| 35 | DA | 1286 | A |
| 35 | DA | 1300 | U |
| 35 | DA | 1301 | A |
| 35 | DA | 1378 | A |
| 35 | DA | 1395 | A |
| 35 | DA | 1427 | A |
| 35 | DA | 1532 | C |
| 35 | DA | 1558 | A |
| 35 | DA | 1594 | G |
| 35 | DA | 1607 | C |
| 35 | DA | 1653 | G |
| 35 | DA | 1799 | G |
| 35 | DA | 1819 | A |
| 35 | DA | 1912 | A |
| 35 | DA | 1987 | G |
| 35 | DA | 1992 | G |
| 35 | DA | 2033 | A |
| 35 | DA | 2111 | C |
| 35 | DA | 2116 | G |
| 35 | DA | 2126 | A |
| 35 | DA | 2171 | A |
| 35 | DA | 2172 | U |
| 35 | DA | 2225 | A |
| 35 | DA | 2282 | G |
| 35 | DA | 2422 | A |
| 35 | DA | 2468 | G |
| 35 | DA | 2481 | G |
| 35 | DA | 2506 | U |
| 35 | DA | 2610 | C |
| 35 | DA | 2689 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 35 | DA | 2756 | U |
| 35 | DA | 2820 | A |
| 35 | DA | 2864 | G |
| 36 | DB | 66 | A |

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

8 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|-------|--------------|------|-------------|-------------|------|-------------|
| | | | | | Counts | RMSZ | # $ Z > 2$ | Counts | RMSZ | # $ Z > 2$ |
| 22 | 8AN | AV | 76 | 57,22 | 15,24,25 | 1.08 | 1 (6%) | 11,35,38 | 1.18 | 2 (18%) |
| 22 | PHA | AV | 77 | 22 | 10,11,11 | 0.63 | 0 | 10,13,13 | 0.65 | 0 |
| 22 | 8AN | AY | 76 | 22 | 15,24,25 | 1.17 | 1 (6%) | 11,35,38 | 0.59 | 0 |
| 22 | PHA | AY | 77 | 22 | 10,11,11 | 0.66 | 0 | 10,13,13 | 0.77 | 1 (10%) |
| 22 | 8AN | CV | 76 | 57,22 | 15,24,25 | 1.14 | 2 (13%) | 11,35,38 | 0.97 | 1 (9%) |
| 22 | PHA | CV | 77 | 22 | 10,11,11 | 0.64 | 0 | 10,13,13 | 0.58 | 0 |
| 22 | 8AN | CY | 76 | 22 | 15,24,25 | 0.95 | 1 (6%) | 11,35,38 | 0.69 | 0 |
| 22 | PHA | CY | 77 | 22 | 10,11,11 | 1.11 | 0 | 10,13,13 | 0.66 | 0 |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|-------|---------|-----------|---------|
| 22 | 8AN | AV | 76 | 57,22 | - | 0/3/25/26 | 0/3/3/3 |
| 22 | PHA | AV | 77 | 22 | - | 0/4/6/6 | 0/1/1/1 |
| 22 | 8AN | AY | 76 | 22 | - | 0/3/25/26 | 0/3/3/3 |
| 22 | PHA | AY | 77 | 22 | - | 0/4/6/6 | 0/1/1/1 |
| 22 | 8AN | CV | 76 | 57,22 | - | 0/3/25/26 | 0/3/3/3 |
| 22 | PHA | CV | 77 | 22 | - | 0/4/6/6 | 0/1/1/1 |
| 22 | 8AN | CY | 76 | 22 | - | 0/3/25/26 | 0/3/3/3 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|----------|---------|
| 22 | PHA | CY | 77 | 22 | - | 0/4/6/6 | 0/1/1/1 |

All (5) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 22 | AY | 76 | 8AN | C3'-N3' | -3.62 | 1.41 | 1.47 |
| 22 | AV | 76 | 8AN | C3'-N3' | -3.57 | 1.41 | 1.47 |
| 22 | CV | 76 | 8AN | C3'-N3' | -3.39 | 1.42 | 1.47 |
| 22 | CY | 76 | 8AN | C3'-N3' | -2.73 | 1.43 | 1.47 |
| 22 | CV | 76 | 8AN | C2-N3 | 2.07 | 1.35 | 1.32 |

All (4) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 22 | AV | 76 | 8AN | C2'-C1'-N9 | -2.47 | 110.51 | 114.29 |
| 22 | AY | 77 | PHA | O-C-CA | -2.14 | 119.92 | 125.49 |
| 22 | CV | 76 | 8AN | O4'-C4'-C3' | 2.15 | 107.31 | 104.09 |
| 22 | AV | 76 | 8AN | O4'-C4'-C3' | 2.18 | 107.35 | 104.09 |

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

8 monomers are involved in 17 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 22 | AV | 76 | 8AN | 1 | 0 |
| 22 | AV | 77 | PHA | 1 | 0 |
| 22 | AY | 76 | 8AN | 3 | 0 |
| 22 | AY | 77 | PHA | 5 | 0 |
| 22 | CV | 76 | 8AN | 2 | 0 |
| 22 | CV | 77 | PHA | 2 | 0 |
| 22 | CY | 76 | 8AN | 2 | 0 |
| 22 | CY | 77 | PHA | 4 | 0 |

5.5 Carbohydrates

There are no carbohydrates in this entry.

5.6 Ligand geometry

Of 1354 ligands modelled in this entry, 1352 are monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 58 | PAR | AA | 1799 | - | 45,45,45 | 1.93 | 14 (31%) | 59,67,67 | 1.36 | 7 (11%) |
| 58 | PAR | CA | 1800 | - | 45,45,45 | 1.68 | 11 (24%) | 59,67,67 | 1.29 | 8 (13%) |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|------|------|---------|------------|---------|
| 58 | PAR | AA | 1799 | - | - | 0/18/94/94 | 0/4/4/4 |
| 58 | PAR | CA | 1800 | - | - | 0/18/94/94 | 0/4/4/4 |

All (25) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|------|-------------|----------|
| 58 | CA | 1800 | PAR | C31-C21 | 2.03 | 1.56 | 1.53 |
| 58 | CA | 1800 | PAR | C62-C52 | 2.09 | 1.58 | 1.52 |
| 58 | AA | 1799 | PAR | O11-C42 | 2.10 | 1.49 | 1.43 |
| 58 | AA | 1799 | PAR | O11-C11 | 2.10 | 1.47 | 1.41 |
| 58 | AA | 1799 | PAR | C14-C24 | 2.18 | 1.56 | 1.52 |
| 58 | AA | 1799 | PAR | O33-C33 | 2.19 | 1.49 | 1.43 |
| 58 | AA | 1799 | PAR | O54-C54 | 2.22 | 1.49 | 1.44 |
| 58 | CA | 1800 | PAR | C14-C24 | 2.24 | 1.56 | 1.52 |
| 58 | CA | 1800 | PAR | C44-C54 | 2.36 | 1.58 | 1.53 |
| 58 | AA | 1799 | PAR | C42-C32 | 2.40 | 1.58 | 1.53 |
| 58 | AA | 1799 | PAR | O51-C11 | 2.50 | 1.48 | 1.41 |
| 58 | CA | 1800 | PAR | O54-C54 | 2.56 | 1.50 | 1.44 |
| 58 | CA | 1800 | PAR | O51-C11 | 2.80 | 1.49 | 1.41 |
| 58 | AA | 1799 | PAR | C62-C52 | 2.81 | 1.60 | 1.52 |
| 58 | CA | 1800 | PAR | C52-C42 | 2.85 | 1.58 | 1.52 |
| 58 | CA | 1800 | PAR | C64-C54 | 2.92 | 1.59 | 1.52 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|------|-------------|----------|
| 58 | AA | 1799 | PAR | C52-C42 | 2.94 | 1.58 | 1.52 |
| 58 | AA | 1799 | PAR | O54-C14 | 3.09 | 1.49 | 1.41 |
| 58 | CA | 1800 | PAR | C11-C21 | 3.14 | 1.58 | 1.52 |
| 58 | AA | 1799 | PAR | C64-C54 | 3.20 | 1.60 | 1.52 |
| 58 | CA | 1800 | PAR | C34-C24 | 3.29 | 1.57 | 1.53 |
| 58 | AA | 1799 | PAR | C34-C24 | 3.34 | 1.57 | 1.53 |
| 58 | CA | 1800 | PAR | O54-C14 | 3.57 | 1.51 | 1.41 |
| 58 | AA | 1799 | PAR | C11-C21 | 4.26 | 1.60 | 1.52 |
| 58 | AA | 1799 | PAR | C31-C21 | 5.13 | 1.60 | 1.53 |

All (15) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 58 | CA | 1800 | PAR | C22-C12-C62 | -2.25 | 106.66 | 110.11 |
| 58 | CA | 1800 | PAR | C11-O51-C51 | 2.24 | 118.10 | 113.75 |
| 58 | CA | 1800 | PAR | O11-C11-C21 | 2.28 | 112.19 | 107.96 |
| 58 | AA | 1799 | PAR | C22-C32-C42 | 2.47 | 116.11 | 109.53 |
| 58 | CA | 1800 | PAR | C22-C32-C42 | 2.57 | 116.39 | 109.53 |
| 58 | AA | 1799 | PAR | C11-O51-C51 | 2.67 | 118.92 | 113.75 |
| 58 | CA | 1800 | PAR | O33-C14-C24 | 3.15 | 113.79 | 107.96 |
| 58 | CA | 1800 | PAR | O52-C13-C23 | 3.32 | 114.65 | 107.75 |
| 58 | AA | 1799 | PAR | O52-C13-C23 | 3.42 | 114.86 | 107.75 |
| 58 | AA | 1799 | PAR | C14-O54-C54 | 3.48 | 120.50 | 113.75 |
| 58 | CA | 1800 | PAR | O54-C54-C64 | 3.58 | 113.09 | 106.10 |
| 58 | AA | 1799 | PAR | O54-C54-C64 | 3.63 | 113.19 | 106.10 |
| 58 | CA | 1800 | PAR | C14-O54-C54 | 3.73 | 120.99 | 113.75 |
| 58 | AA | 1799 | PAR | O11-C11-C21 | 3.74 | 114.89 | 107.96 |
| 58 | AA | 1799 | PAR | O33-C14-C24 | 3.80 | 115.00 | 107.96 |

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 4 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 58 | AA | 1799 | PAR | 2 | 0 |
| 58 | CA | 1800 | PAR | 2 | 0 |

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 13 | CM | 3 |
| 13 | AM | 3 |
| 9 | AI | 2 |
| 9 | CI | 2 |
| 41 | DG | 1 |
| 41 | BG | 1 |
| 31 | D6 | 1 |
| 31 | B6 | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | D6 | 46:HIS | C | 47:THR | N | 4.60 |
| 1 | B6 | 46:HIS | C | 47:THR | N | 4.59 |
| 1 | BG | 112:PRO | C | 113:ARG | N | 3.80 |
| 1 | DG | 112:PRO | C | 113:ARG | N | 3.77 |
| 1 | CM | 69:GLU | C | 70:LEU | N | 3.15 |
| 1 | AM | 69:GLU | C | 70:LEU | N | 3.14 |
| 1 | AM | 97:PRO | C | 98:VAL | N | 2.96 |
| 1 | CM | 97:PRO | C | 98:VAL | N | 2.95 |
| 1 | AI | 53:VAL | C | 54:ASP | N | 2.72 |
| 1 | CI | 53:VAL | C | 54:ASP | N | 2.71 |
| 1 | AI | 104:ARG | C | 105:ASP | N | 2.65 |
| 1 | CI | 104:ARG | C | 105:ASP | N | 2.65 |
| 1 | AM | 65:LYS | C | 66:LEU | N | 2.55 |
| 1 | CM | 65:LYS | C | 66:LEU | N | 2.55 |

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 1 | AA | 1504/1522 (98%) | -0.01 | 25 (1%) 73 64 | 47, 104, 183, 200 | 0 |
| 1 | CA | 1504/1522 (98%) | 0.11 | 34 (2%) 64 54 | 69, 117, 189, 200 | 0 |
| 2 | AB | 235/256 (91%) | 0.07 | 7 (2%) 54 43 | 73, 131, 181, 200 | 0 |
| 2 | CB | 235/256 (91%) | 0.20 | 5 (2%) 67 58 | 85, 154, 189, 200 | 0 |
| 3 | AC | 207/239 (86%) | -0.02 | 1 (0%) 91 88 | 71, 116, 160, 200 | 0 |
| 3 | CC | 207/239 (86%) | 0.23 | 7 (3%) 49 40 | 87, 139, 180, 200 | 0 |
| 4 | AD | 208/209 (99%) | -0.23 | 0 100 100 | 60, 110, 153, 185 | 0 |
| 4 | CD | 208/209 (99%) | -0.32 | 0 100 100 | 58, 101, 142, 181 | 0 |
| 5 | AE | 151/162 (93%) | -0.16 | 1 (0%) 89 82 | 52, 101, 144, 174 | 0 |
| 5 | CE | 151/162 (93%) | 0.21 | 5 (3%) 50 41 | 66, 119, 168, 200 | 0 |
| 6 | AF | 101/101 (100%) | -0.33 | 1 (0%) 84 76 | 56, 96, 142, 181 | 0 |
| 6 | CF | 101/101 (100%) | -0.23 | 1 (0%) 84 76 | 51, 107, 147, 196 | 0 |
| 7 | AG | 155/156 (99%) | 0.11 | 9 (5%) 26 21 | 65, 117, 166, 200 | 0 |
| 7 | CG | 155/156 (99%) | 0.20 | 8 (5%) 31 24 | 80, 129, 161, 182 | 0 |
| 8 | AH | 138/138 (100%) | -0.04 | 3 (2%) 65 55 | 62, 106, 140, 174 | 0 |
| 8 | CH | 138/138 (100%) | 0.25 | 6 (4%) 39 30 | 82, 122, 160, 195 | 0 |
| 9 | AI | 127/128 (99%) | 0.24 | 5 (3%) 43 35 | 79, 136, 176, 200 | 0 |
| 9 | CI | 127/128 (99%) | 0.53 | 13 (10%) 9 8 | 96, 145, 188, 200 | 0 |
| 10 | AJ | 99/105 (94%) | 0.65 | 17 (17%) 2 2 | 65, 140, 184, 200 | 0 |
| 10 | CJ | 99/105 (94%) | 0.79 | 17 (17%) 2 2 | 70, 153, 195, 200 | 0 |
| 11 | AK | 119/129 (92%) | 0.02 | 3 (2%) 61 50 | 62, 99, 159, 198 | 0 |
| 11 | CK | 119/129 (92%) | -0.13 | 4 (3%) 49 40 | 74, 111, 155, 184 | 0 |
| 12 | AL | 125/135 (92%) | -0.11 | 2 (1%) 74 65 | 51, 91, 144, 190 | 0 |
| 12 | CL | 125/135 (92%) | 0.29 | 5 (4%) 42 33 | 59, 113, 161, 200 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|---------------|--------|--------------|-----------------------|-------|
| 13 | AM | 125/126 (99%) | 0.17 | 7 (5%) 28 22 | 75, 120, 163, 200 | 0 |
| 13 | CM | 125/126 (99%) | 0.64 | 15 (12%) 6 6 | 77, 137, 184, 200 | 0 |
| 14 | AN | 60/61 (98%) | -0.25 | 0 100 100 | 50, 109, 147, 200 | 0 |
| 14 | CN | 60/61 (98%) | 0.58 | 4 (6%) 21 16 | 89, 135, 183, 200 | 0 |
| 15 | AO | 88/89 (98%) | -0.16 | 2 (2%) 64 54 | 55, 100, 144, 162 | 0 |
| 15 | CO | 88/89 (98%) | 0.01 | 2 (2%) 64 54 | 69, 108, 154, 182 | 0 |
| 16 | AP | 84/88 (95%) | 0.22 | 1 (1%) 81 72 | 78, 107, 147, 184 | 0 |
| 16 | CP | 84/88 (95%) | 0.19 | 0 100 100 | 61, 100, 150, 179 | 0 |
| 17 | AQ | 100/105 (95%) | 0.04 | 4 (4%) 42 33 | 82, 109, 150, 181 | 0 |
| 17 | CQ | 100/105 (95%) | 0.12 | 4 (4%) 42 33 | 71, 115, 153, 167 | 0 |
| 18 | AR | 70/88 (79%) | -0.15 | 1 (1%) 78 68 | 59, 96, 139, 169 | 0 |
| 18 | CR | 70/88 (79%) | 0.12 | 0 100 100 | 66, 111, 152, 173 | 0 |
| 19 | AS | 79/93 (84%) | 0.40 | 4 (5%) 32 24 | 82, 122, 176, 200 | 0 |
| 19 | CS | 79/93 (84%) | 0.81 | 9 (11%) 7 7 | 91, 145, 188, 200 | 0 |
| 20 | AT | 99/106 (93%) | 0.16 | 1 (1%) 84 76 | 77, 120, 170, 195 | 0 |
| 20 | CT | 99/106 (93%) | 0.21 | 5 (5%) 32 24 | 67, 116, 174, 200 | 0 |
| 21 | AU | 25/27 (92%) | 1.09 | 5 (20%) 1 2 | 80, 119, 154, 178 | 0 |
| 21 | CU | 25/27 (92%) | 1.71 | 9 (36%) 0 0 | 79, 141, 171, 185 | 0 |
| 22 | AV | 75/77 (97%) | 0.20 | 3 (4%) 42 33 | 55, 121, 158, 197 | 0 |
| 22 | AY | 75/77 (97%) | 0.78 | 8 (10%) 8 7 | 49, 162, 196, 200 | 0 |
| 22 | CV | 75/77 (97%) | 0.07 | 1 (1%) 79 70 | 64, 144, 178, 192 | 0 |
| 22 | CY | 75/77 (97%) | 1.17 | 11 (14%) 3 3 | 84, 181, 199, 200 | 0 |
| 23 | AW | 76/76 (100%) | 0.60 | 9 (11%) 6 6 | 99, 173, 199, 200 | 0 |
| 23 | CW | 76/76 (100%) | 0.60 | 7 (9%) 11 10 | 117, 178, 200, 200 | 0 |
| 24 | AX | 11/11 (100%) | 0.54 | 1 (9%) 11 10 | 68, 116, 146, 168 | 0 |
| 24 | CX | 11/11 (100%) | 0.79 | 2 (18%) 2 2 | 87, 126, 158, 159 | 0 |
| 25 | B0 | 84/85 (98%) | -0.23 | 0 100 100 | 30, 62, 111, 143 | 0 |
| 25 | D0 | 84/85 (98%) | 0.27 | 2 (2%) 62 52 | 58, 106, 148, 178 | 0 |
| 26 | B1 | 94/98 (95%) | -0.16 | 0 100 100 | 37, 68, 129, 162 | 0 |
| 26 | D1 | 94/98 (95%) | -0.03 | 1 (1%) 82 73 | 38, 79, 131, 166 | 0 |
| 27 | B2 | 71/72 (98%) | -0.24 | 1 (1%) 78 68 | 40, 80, 141, 188 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 27 | D2 | 71/72 (98%) | -0.21 | 0 100 100 | 62, 97, 150, 182 | 0 |
| 28 | B3 | 60/60 (100%) | -0.23 | 1 (1%) 73 64 | 31, 67, 112, 190 | 0 |
| 28 | D3 | 60/60 (100%) | 0.94 | 7 (11%) 6 6 | 65, 124, 163, 200 | 0 |
| 29 | B4 | 31/71 (43%) | -0.26 | 0 100 100 | 67, 132, 172, 182 | 0 |
| 29 | D4 | 31/71 (43%) | -0.30 | 0 100 100 | 105, 142, 184, 197 | 0 |
| 30 | B5 | 59/60 (98%) | -0.27 | 2 (3%) 49 40 | 37, 60, 164, 200 | 0 |
| 30 | D5 | 59/60 (98%) | -0.05 | 4 (6%) 20 16 | 52, 88, 175, 191 | 0 |
| 31 | B6 | 45/54 (83%) | 0.92 | 5 (11%) 7 7 | 57, 113, 166, 174 | 0 |
| 31 | D6 | 45/54 (83%) | 1.66 | 16 (35%) 0 0 | 92, 138, 175, 200 | 0 |
| 32 | B7 | 49/49 (100%) | -0.30 | 0 100 100 | 25, 53, 112, 194 | 0 |
| 32 | D7 | 49/49 (100%) | -0.05 | 0 100 100 | 41, 67, 119, 181 | 0 |
| 33 | B8 | 64/65 (98%) | -0.06 | 1 (1%) 74 65 | 25, 69, 131, 198 | 0 |
| 33 | D8 | 64/65 (98%) | 0.10 | 0 100 100 | 45, 92, 149, 183 | 0 |
| 34 | B9 | 36/37 (97%) | 1.63 | 11 (30%) 1 1 | 70, 99, 142, 153 | 0 |
| 34 | D9 | 36/37 (97%) | 3.27 | 27 (75%) 0 0 | 120, 159, 194, 200 | 0 |
| 35 | BA | 2807/2822 (99%) | -0.02 | 48 (1%) 73 64 | 35, 64, 176, 200 | 0 |
| 35 | DA | 2807/2822 (99%) | 0.06 | 61 (2%) 65 55 | 44, 93, 186, 200 | 0 |
| 36 | BB | 119/122 (97%) | -0.27 | 1 (0%) 87 80 | 57, 81, 135, 179 | 0 |
| 36 | DB | 119/122 (97%) | -0.00 | 2 (1%) 73 64 | 90, 129, 183, 197 | 0 |
| 37 | BC | 191/229 (83%) | 2.01 | 75 (39%) 0 0 | 115, 175, 200, 200 | 0 |
| 37 | DC | 191/229 (83%) | 1.75 | 80 (41%) 0 0 | 113, 172, 200, 200 | 0 |
| 38 | BD | 272/276 (98%) | -0.38 | 1 (0%) 93 90 | 33, 62, 106, 186 | 0 |
| 38 | DD | 272/276 (98%) | -0.26 | 0 100 100 | 40, 76, 114, 158 | 0 |
| 39 | BE | 205/206 (99%) | -0.20 | 2 (0%) 84 76 | 28, 65, 151, 200 | 0 |
| 39 | DE | 205/206 (99%) | 0.16 | 3 (1%) 76 67 | 53, 105, 162, 193 | 0 |
| 40 | BF | 208/210 (99%) | -0.40 | 5 (2%) 62 52 | 26, 65, 154, 194 | 0 |
| 40 | DF | 208/210 (99%) | -0.21 | 3 (1%) 78 68 | 41, 91, 166, 200 | 0 |
| 41 | BG | 181/182 (99%) | -0.12 | 4 (2%) 65 55 | 57, 99, 158, 197 | 0 |
| 41 | DG | 181/182 (99%) | 0.11 | 5 (2%) 56 46 | 78, 120, 160, 182 | 0 |
| 42 | BH | 160/180 (88%) | 0.02 | 7 (4%) 38 29 | 44, 94, 160, 199 | 0 |
| 42 | DH | 160/180 (88%) | 1.41 | 46 (28%) 1 1 | 107, 169, 200, 200 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-------------------|--------|----------------|-----------------------|-------|
| 43 | BI | 146/148 (98%) | 0.96 | 32 (21%) 1 1 | 48, 154, 200, 200 | 0 |
| 43 | DI | 146/148 (98%) | 0.39 | 10 (6%) 20 16 | 74, 126, 175, 200 | 0 |
| 44 | BN | 139/140 (99%) | -0.42 | 0 100 100 | 33, 68, 138, 187 | 0 |
| 44 | DN | 139/140 (99%) | 0.30 | 2 (1%) 78 68 | 75, 116, 173, 200 | 0 |
| 45 | BO | 122/122 (100%) | -0.37 | 0 100 100 | 30, 69, 107, 139 | 0 |
| 45 | DO | 122/122 (100%) | -0.17 | 0 100 100 | 59, 105, 137, 157 | 0 |
| 46 | BP | 146/150 (97%) | -0.05 | 2 (1%) 78 68 | 25, 84, 158, 188 | 0 |
| 46 | DP | 146/150 (97%) | 0.18 | 5 (3%) 49 40 | 51, 108, 169, 200 | 0 |
| 47 | BQ | 141/141 (100%) | -0.30 | 2 (1%) 78 68 | 41, 69, 130, 200 | 0 |
| 47 | DQ | 141/141 (100%) | 0.07 | 4 (2%) 56 46 | 66, 115, 166, 200 | 0 |
| 48 | BR | 117/118 (99%) | -0.36 | 0 100 100 | 21, 62, 114, 165 | 0 |
| 48 | DR | 117/118 (99%) | -0.13 | 1 (0%) 85 78 | 37, 89, 131, 173 | 0 |
| 49 | BS | 99/112 (88%) | 0.02 | 1 (1%) 84 76 | 43, 83, 138, 181 | 0 |
| 49 | DS | 99/112 (88%) | 0.56 | 9 (9%) 11 10 | 80, 128, 179, 200 | 0 |
| 50 | BT | 138/146 (94%) | -0.29 | 3 (2%) 65 55 | 40, 86, 164, 195 | 0 |
| 50 | DT | 138/146 (94%) | -0.02 | 3 (2%) 65 55 | 74, 116, 173, 200 | 0 |
| 51 | BU | 117/118 (99%) | -0.55 | 1 (0%) 85 78 | 23, 55, 106, 158 | 0 |
| 51 | DU | 117/118 (99%) | -0.12 | 4 (3%) 49 40 | 56, 101, 167, 200 | 0 |
| 52 | BV | 101/101 (100%) | -0.29 | 0 100 100 | 29, 76, 135, 200 | 0 |
| 52 | DV | 101/101 (100%) | 0.48 | 4 (3%) 42 33 | 55, 135, 177, 200 | 0 |
| 53 | BW | 113/113 (100%) | -0.30 | 2 (1%) 71 62 | 26, 55, 122, 200 | 0 |
| 53 | DW | 113/113 (100%) | -0.17 | 1 (0%) 85 78 | 50, 80, 140, 194 | 0 |
| 54 | BX | 93/96 (96%) | -0.50 | 0 100 100 | 41, 66, 106, 157 | 0 |
| 54 | DX | 93/96 (96%) | -0.23 | 0 100 100 | 42, 86, 118, 150 | 0 |
| 55 | BY | 101/110 (91%) | 0.31 | 9 (8%) 12 10 | 42, 88, 178, 200 | 0 |
| 55 | DY | 101/110 (91%) | 0.78 | 17 (16%) 2 2 | 49, 107, 181, 200 | 0 |
| 56 | BZ | 177/206 (85%) | 0.22 | 19 (10%) 8 7 | 40, 107, 185, 200 | 0 |
| 56 | DZ | 177/206 (85%) | 0.90 | 28 (15%) 3 3 | 96, 152, 198, 200 | 0 |
| All | All | 21244/22006 (96%) | 0.10 | 874 (4%) 41 32 | 21, 102, 183, 200 | 0 |

All (874) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 37 | BC | 179 | SER | 14.3 |
| 1 | CA | 83 | U | 13.1 |
| 56 | DZ | 112 | ARG | 11.2 |
| 35 | BA | 888 | C | 10.4 |
| 37 | BC | 51 | PRO | 10.2 |
| 37 | BC | 166 | ASP | 10.1 |
| 56 | DZ | 175 | VAL | 9.9 |
| 35 | DA | 888 | C | 9.8 |
| 22 | AY | 17 | C | 8.8 |
| 37 | BC | 106 | GLY | 8.7 |
| 22 | CY | 17 | C | 8.7 |
| 37 | BC | 120 | MET | 8.5 |
| 1 | CA | 82 | U | 8.3 |
| 1 | AA | 89 | C | 8.3 |
| 56 | DZ | 115 | GLY | 8.0 |
| 1 | CA | 81 | U | 7.8 |
| 13 | CM | 84 | ILE | 7.6 |
| 35 | DA | 2795 | G | 7.5 |
| 35 | DA | 652 | C | 7.4 |
| 1 | CA | 84 | U | 7.4 |
| 47 | DQ | 140 | ALA | 7.3 |
| 12 | CL | 129 | ALA | 7.2 |
| 1 | CA | 89 | C | 7.2 |
| 35 | DA | 2802 | G | 7.1 |
| 35 | BA | 896 | A | 7.1 |
| 37 | DC | 165 | ASN | 7.0 |
| 43 | BI | 88 | ILE | 6.8 |
| 35 | BA | 652 | C | 6.8 |
| 47 | BQ | 140 | ALA | 6.8 |
| 19 | CS | 82 | GLY | 6.8 |
| 1 | AA | 80 | G | 6.7 |
| 35 | BA | 2802 | G | 6.7 |
| 1 | CA | 80 | G | 6.6 |
| 13 | CM | 123 | ALA | 6.5 |
| 35 | DA | 2799 | C | 6.5 |
| 22 | CY | 16 | U | 6.4 |
| 35 | DA | 2796 | U | 6.4 |
| 56 | DZ | 176 | PRO | 6.3 |
| 37 | BC | 148 | ASN | 6.3 |
| 55 | BY | 59 | GLY | 6.3 |
| 21 | CU | 18 | TYR | 6.2 |
| 37 | DC | 56 | GLN | 6.2 |
| 1 | AA | 88 | A | 6.2 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|---------|------|------|
| 34 | D9 | 12 | ASP | 6.2 |
| 30 | D5 | 59 | GLU | 6.1 |
| 34 | D9 | 25 | VAL | 6.1 |
| 1 | AA | 1001(A) | G | 6.1 |
| 56 | BZ | 175 | VAL | 6.1 |
| 13 | CM | 119 | GLY | 6.1 |
| 7 | AG | 84 | ASN | 6.1 |
| 37 | BC | 176 | GLY | 6.1 |
| 42 | DH | 52 | VAL | 6.0 |
| 34 | D9 | 11 | CYS | 5.9 |
| 47 | DQ | 141 | GLN | 5.8 |
| 37 | DC | 166 | ASP | 5.8 |
| 35 | BA | 2116 | G | 5.8 |
| 37 | BC | 45 | ALA | 5.7 |
| 37 | BC | 178 | ALA | 5.7 |
| 42 | BH | 42 | ARG | 5.6 |
| 10 | CJ | 29 | ARG | 5.6 |
| 56 | BZ | 115 | GLY | 5.6 |
| 13 | CM | 124 | PRO | 5.5 |
| 37 | BC | 119 | VAL | 5.5 |
| 55 | BY | 51 | VAL | 5.5 |
| 1 | CA | 88 | A | 5.5 |
| 37 | DC | 176 | GLY | 5.5 |
| 43 | BI | 92 | VAL | 5.5 |
| 28 | D3 | 1 | MET | 5.5 |
| 37 | DC | 148 | ASN | 5.4 |
| 35 | BA | 2799 | C | 5.4 |
| 37 | BC | 44 | HIS | 5.4 |
| 42 | DH | 170 | ARG | 5.4 |
| 1 | CA | 1030(B) | C | 5.3 |
| 19 | CS | 81 | ARG | 5.3 |
| 34 | B9 | 29 | ASN | 5.2 |
| 37 | DC | 57 | ASN | 5.2 |
| 37 | DC | 72 | VAL | 5.2 |
| 13 | AM | 123 | ALA | 5.2 |
| 35 | BA | 886 | C | 5.2 |
| 22 | AY | 16 | U | 5.2 |
| 42 | DH | 56 | SER | 5.1 |
| 35 | BA | 884 | C | 5.1 |
| 13 | CM | 7 | VAL | 5.1 |
| 55 | BY | 52 | SER | 5.1 |
| 13 | AM | 124 | PRO | 5.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 55 | DY | 44 | ILE | 5.1 |
| 34 | D9 | 15 | LYS | 5.1 |
| 42 | DH | 57 | ASP | 5.1 |
| 42 | DH | 128 | PRO | 5.0 |
| 30 | B5 | 59 | GLU | 5.0 |
| 30 | B5 | 60 | VAL | 5.0 |
| 1 | AA | 81 | U | 5.0 |
| 37 | DC | 135 | GLY | 5.0 |
| 37 | BC | 121 | GLY | 5.0 |
| 42 | DH | 103 | LEU | 5.0 |
| 7 | AG | 156 | TRP | 5.0 |
| 13 | CM | 120 | LYS | 5.0 |
| 37 | BC | 53 | ARG | 4.9 |
| 34 | D9 | 37 | GLY | 4.9 |
| 17 | CQ | 101 | ARG | 4.9 |
| 37 | DC | 90 | GLY | 4.9 |
| 34 | D9 | 28 | GLU | 4.9 |
| 43 | BI | 130 | TYR | 4.9 |
| 11 | AK | 129 | SER | 4.8 |
| 35 | DA | 1046 | A | 4.8 |
| 46 | BP | 149 | GLU | 4.8 |
| 37 | BC | 109 | ASP | 4.8 |
| 34 | D9 | 24 | TYR | 4.8 |
| 1 | CA | 1002 | G | 4.8 |
| 28 | B3 | 1 | MET | 4.8 |
| 31 | D6 | 13 | CYS | 4.8 |
| 28 | D3 | 60 | GLU | 4.8 |
| 42 | DH | 24 | VAL | 4.8 |
| 34 | D9 | 34 | GLN | 4.8 |
| 19 | CS | 38 | SER | 4.7 |
| 35 | DA | 2803 | C | 4.7 |
| 37 | BC | 139 | ASN | 4.7 |
| 35 | DA | 885 | C | 4.7 |
| 35 | DA | 883 | G | 4.7 |
| 35 | BA | 885 | C | 4.6 |
| 10 | CJ | 34 | VAL | 4.6 |
| 37 | BC | 133 | PRO | 4.6 |
| 43 | BI | 120 | ILE | 4.6 |
| 12 | CL | 128 | ALA | 4.6 |
| 35 | BA | 883 | G | 4.6 |
| 37 | BC | 105 | ASP | 4.6 |
| 37 | BC | 163 | PHE | 4.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 35 | DA | 886 | C | 4.5 |
| 37 | DC | 163 | PHE | 4.5 |
| 17 | AQ | 101 | ARG | 4.5 |
| 1 | AA | 82 | U | 4.5 |
| 34 | B9 | 28 | GLU | 4.5 |
| 37 | BC | 69 | GLY | 4.5 |
| 55 | DY | 61 | ILE | 4.5 |
| 20 | CT | 101 | GLY | 4.5 |
| 35 | DA | 884 | C | 4.5 |
| 34 | D9 | 36 | GLN | 4.5 |
| 37 | DC | 80 | GLY | 4.4 |
| 55 | DY | 46 | LYS | 4.4 |
| 35 | DA | 2801 | A | 4.4 |
| 43 | DI | 72 | LEU | 4.3 |
| 35 | BA | 2795 | G | 4.3 |
| 56 | DZ | 170 | THR | 4.3 |
| 31 | D6 | 31 | PRO | 4.3 |
| 1 | AA | 202 | U | 4.2 |
| 23 | CW | 17 | C | 4.2 |
| 37 | DC | 106 | GLY | 4.2 |
| 1 | CA | 91 | C | 4.2 |
| 34 | D9 | 29 | ASN | 4.2 |
| 37 | DC | 133 | PRO | 4.2 |
| 10 | CJ | 33 | GLN | 4.2 |
| 42 | DH | 55 | PRO | 4.2 |
| 37 | BC | 52 | ARG | 4.2 |
| 13 | CM | 121 | LYS | 4.2 |
| 35 | BA | 1509 | C | 4.2 |
| 35 | BA | 275 | G | 4.2 |
| 42 | DH | 129 | THR | 4.1 |
| 43 | BI | 143 | SER | 4.1 |
| 34 | D9 | 16 | VAL | 4.1 |
| 47 | BQ | 141 | GLN | 4.1 |
| 35 | DA | 2146 | C | 4.1 |
| 37 | DC | 59 | ARG | 4.1 |
| 37 | DC | 140 | PRO | 4.1 |
| 37 | DC | 51 | PRO | 4.1 |
| 42 | DH | 38 | SER | 4.1 |
| 56 | BZ | 179 | ASP | 4.1 |
| 13 | AM | 84 | ILE | 4.1 |
| 56 | BZ | 114 | GLY | 4.1 |
| 43 | BI | 119 | PRO | 4.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 55 | DY | 56 | PRO | 4.1 |
| 1 | CA | 1030 | C | 4.1 |
| 34 | D9 | 13 | LYS | 4.1 |
| 34 | D9 | 23 | VAL | 4.1 |
| 37 | DC | 61 | THR | 4.0 |
| 37 | DC | 164 | ARG | 4.0 |
| 34 | D9 | 14 | CYS | 4.0 |
| 34 | D9 | 5 | ALA | 4.0 |
| 37 | DC | 63 | SER | 4.0 |
| 10 | AJ | 71 | LEU | 4.0 |
| 22 | CY | 73 | A | 4.0 |
| 37 | BC | 56 | GLN | 4.0 |
| 56 | BZ | 149 | SER | 4.0 |
| 19 | CS | 12 | ASP | 4.0 |
| 11 | AK | 128 | ALA | 4.0 |
| 11 | AK | 12 | ARG | 3.9 |
| 37 | BC | 107 | TRP | 3.9 |
| 56 | BZ | 111 | VAL | 3.9 |
| 42 | BH | 44 | VAL | 3.9 |
| 35 | DA | 275 | G | 3.9 |
| 37 | DC | 78 | ALA | 3.9 |
| 56 | DZ | 116 | VAL | 3.9 |
| 37 | BC | 140 | PRO | 3.9 |
| 37 | BC | 63 | SER | 3.9 |
| 35 | DA | 2794 | C | 3.9 |
| 43 | BI | 83 | ALA | 3.9 |
| 56 | DZ | 113 | ALA | 3.8 |
| 10 | AJ | 73 | ASP | 3.8 |
| 35 | DA | 2801(A) | A | 3.8 |
| 37 | BC | 135 | GLY | 3.8 |
| 30 | D5 | 58 | LEU | 3.8 |
| 55 | DY | 51 | VAL | 3.8 |
| 43 | BI | 56 | LYS | 3.8 |
| 35 | BA | 2796 | U | 3.8 |
| 46 | DP | 150 | ALA | 3.8 |
| 43 | BI | 125 | GLU | 3.8 |
| 43 | BI | 134 | PRO | 3.8 |
| 56 | BZ | 110 | GLY | 3.8 |
| 37 | DC | 87 | GLU | 3.8 |
| 1 | AA | 1030(B) | C | 3.7 |
| 2 | AB | 232 | PRO | 3.7 |
| 37 | BC | 37 | PHE | 3.7 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|---------|------|------|
| 34 | D9 | 19 | ARG | 3.7 |
| 15 | AO | 89 | GLY | 3.7 |
| 37 | DC | 60 | GLY | 3.7 |
| 36 | BB | 88 | C | 3.7 |
| 35 | BA | 2801 | A | 3.7 |
| 35 | DA | 2147 | G | 3.7 |
| 7 | AG | 78 | ARG | 3.7 |
| 1 | AA | 1002 | G | 3.7 |
| 22 | CY | 20 | U | 3.7 |
| 55 | BY | 48 | ALA | 3.7 |
| 3 | CC | 189 | ALA | 3.7 |
| 42 | DH | 67 | LEU | 3.7 |
| 53 | BW | 112 | GLY | 3.7 |
| 35 | DA | 1043 | C | 3.7 |
| 13 | CM | 6 | GLY | 3.7 |
| 46 | BP | 150 | ALA | 3.7 |
| 35 | DA | 1509 | C | 3.6 |
| 56 | BZ | 176 | PRO | 3.6 |
| 37 | DC | 52 | ARG | 3.6 |
| 56 | DZ | 174 | VAL | 3.6 |
| 37 | DC | 105 | ASP | 3.6 |
| 1 | AA | 83 | U | 3.6 |
| 37 | DC | 107 | TRP | 3.6 |
| 42 | DH | 30 | LYS | 3.6 |
| 37 | DC | 157 | LYS | 3.6 |
| 3 | CC | 206 | GLU | 3.6 |
| 11 | CK | 128 | ALA | 3.6 |
| 10 | AJ | 72 | VAL | 3.6 |
| 37 | DC | 110 | PHE | 3.6 |
| 43 | DI | 109 | ILE | 3.6 |
| 13 | CM | 125 | ARG | 3.6 |
| 42 | DH | 53 | GLU | 3.6 |
| 35 | DA | 896 | A | 3.6 |
| 31 | D6 | 29 | ASN | 3.6 |
| 7 | CG | 83 | ALA | 3.6 |
| 34 | D9 | 18 | ARG | 3.6 |
| 14 | CN | 8 | GLU | 3.5 |
| 37 | BC | 19 | VAL | 3.5 |
| 56 | DZ | 111 | VAL | 3.5 |
| 1 | AA | 1030(C) | G | 3.5 |
| 34 | D9 | 10 | ILE | 3.5 |
| 3 | AC | 208 | ILE | 3.5 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|---------|------|------|
| 35 | BA | 2141 | G | 3.5 |
| 10 | CJ | 10 | GLY | 3.5 |
| 56 | BZ | 177 | PRO | 3.5 |
| 37 | DC | 74 | VAL | 3.5 |
| 35 | DA | 2154 | G | 3.5 |
| 43 | BI | 114 | LEU | 3.5 |
| 35 | DA | 2894 | G | 3.5 |
| 39 | DE | 76 | ARG | 3.4 |
| 37 | BC | 92 | ASP | 3.4 |
| 35 | BA | 887 | A | 3.4 |
| 43 | BI | 116 | LEU | 3.4 |
| 43 | BI | 70 | GLU | 3.4 |
| 1 | CA | 1001(A) | G | 3.4 |
| 55 | DY | 58 | GLY | 3.4 |
| 28 | D3 | 5 | LYS | 3.4 |
| 37 | BC | 213 | TYR | 3.4 |
| 31 | D6 | 42 | TRP | 3.4 |
| 40 | DF | 1 | MET | 3.4 |
| 35 | DA | 1176 | G | 3.4 |
| 37 | DC | 77 | ILE | 3.4 |
| 30 | D5 | 60 | VAL | 3.4 |
| 37 | DC | 108 | MET | 3.4 |
| 7 | CG | 82 | GLY | 3.4 |
| 42 | DH | 33 | LEU | 3.4 |
| 3 | CC | 207 | VAL | 3.4 |
| 42 | BH | 45 | VAL | 3.4 |
| 43 | BI | 91 | SER | 3.4 |
| 42 | DH | 47 | GLU | 3.4 |
| 28 | D3 | 2 | PRO | 3.4 |
| 43 | BI | 108 | THR | 3.4 |
| 37 | DC | 38 | ASP | 3.4 |
| 23 | AW | 47 | U | 3.4 |
| 43 | BI | 85 | GLU | 3.4 |
| 51 | DU | 91 | ASP | 3.4 |
| 2 | AB | 133 | LYS | 3.4 |
| 24 | AX | 12 | A | 3.4 |
| 55 | DY | 48 | ALA | 3.4 |
| 37 | DC | 95 | GLY | 3.4 |
| 49 | DS | 41 | ASP | 3.3 |
| 33 | B8 | 65 | GLU | 3.3 |
| 37 | BC | 136 | LEU | 3.3 |
| 43 | BI | 117 | GLU | 3.3 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|---------|------|------|
| 31 | D6 | 12 | GLU | 3.3 |
| 37 | DC | 39 | GLU | 3.3 |
| 9 | CI | 127 | LYS | 3.3 |
| 1 | AA | 204 | U | 3.3 |
| 42 | DH | 34 | GLU | 3.3 |
| 50 | BT | 2 | ASN | 3.3 |
| 19 | AS | 81 | ARG | 3.3 |
| 6 | CF | 101 | ALA | 3.3 |
| 56 | DZ | 7 | ALA | 3.3 |
| 56 | DZ | 177 | PRO | 3.3 |
| 31 | D6 | 32 | ASN | 3.3 |
| 37 | DC | 69 | GLY | 3.3 |
| 31 | D6 | 46 | HIS | 3.3 |
| 9 | AI | 4 | TYR | 3.3 |
| 56 | DZ | 118 | GLN | 3.3 |
| 21 | CU | 9 | ARG | 3.3 |
| 1 | CA | 90 | U | 3.3 |
| 37 | DC | 174 | PRO | 3.2 |
| 35 | BA | 897 | C | 3.2 |
| 55 | DY | 65 | ALA | 3.2 |
| 24 | CX | 13 | A | 3.2 |
| 34 | D9 | 9 | ARG | 3.2 |
| 35 | BA | 2140 | C | 3.2 |
| 35 | BA | 2145 | C | 3.2 |
| 42 | DH | 43 | VAL | 3.2 |
| 42 | DH | 96 | ALA | 3.2 |
| 1 | AA | 91 | C | 3.2 |
| 14 | CN | 32 | SER | 3.2 |
| 55 | DY | 45 | VAL | 3.2 |
| 1 | CA | 723 | U | 3.2 |
| 35 | DA | 2793 | G | 3.2 |
| 42 | DH | 35 | VAL | 3.2 |
| 37 | BC | 150 | GLY | 3.2 |
| 37 | DC | 62 | VAL | 3.2 |
| 2 | CB | 163 | PHE | 3.2 |
| 1 | AA | 1030(D) | A | 3.1 |
| 34 | D9 | 4 | ARG | 3.1 |
| 37 | BC | 162 | GLU | 3.1 |
| 37 | BC | 71 | GLN | 3.1 |
| 35 | DA | 2474 | C | 3.1 |
| 37 | DC | 109 | ASP | 3.1 |
| 7 | CG | 156 | TRP | 3.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 46 | DP | 90 | ARG | 3.1 |
| 56 | BZ | 162 | GLU | 3.1 |
| 37 | DC | 103 | ILE | 3.1 |
| 55 | BY | 55 | TYR | 3.1 |
| 42 | DH | 44 | VAL | 3.1 |
| 37 | BC | 122 | ALA | 3.1 |
| 34 | D9 | 35 | ARG | 3.1 |
| 37 | BC | 43 | VAL | 3.1 |
| 37 | BC | 108 | MET | 3.1 |
| 23 | CW | 47 | U | 3.1 |
| 41 | BG | 182 | LYS | 3.1 |
| 42 | DH | 40 | GLU | 3.1 |
| 34 | B9 | 31 | LYS | 3.1 |
| 37 | BC | 25 | ALA | 3.1 |
| 35 | DA | 2893 | G | 3.1 |
| 9 | CI | 82 | ALA | 3.1 |
| 23 | AW | 20 | U | 3.1 |
| 22 | AY | 20 | U | 3.1 |
| 42 | BH | 171 | LEU | 3.1 |
| 1 | CA | 1027 | C | 3.0 |
| 31 | B6 | 13 | CYS | 3.0 |
| 37 | DC | 91 | ALA | 3.0 |
| 37 | DC | 53 | ARG | 3.0 |
| 37 | DC | 173 | ALA | 3.0 |
| 56 | DZ | 114 | GLY | 3.0 |
| 31 | D6 | 20 | ASN | 3.0 |
| 37 | DC | 37 | PHE | 3.0 |
| 46 | DP | 110 | TYR | 3.0 |
| 37 | BC | 180 | PHE | 3.0 |
| 42 | BH | 168 | PRO | 3.0 |
| 56 | BZ | 112 | ARG | 3.0 |
| 22 | CY | 19 | G | 3.0 |
| 1 | CA | 1007 | C | 3.0 |
| 7 | AG | 83 | ALA | 3.0 |
| 56 | BZ | 173 | ALA | 3.0 |
| 37 | BC | 49 | ILE | 3.0 |
| 19 | CS | 80 | TYR | 3.0 |
| 27 | B2 | 72 | ALA | 3.0 |
| 50 | DT | 2 | ASN | 3.0 |
| 43 | BI | 144 | VAL | 3.0 |
| 55 | DY | 47 | LYS | 3.0 |
| 1 | AA | 84 | U | 3.0 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 42 | DH | 97 | ARG | 3.0 |
| 50 | BT | 1 | MET | 3.0 |
| 35 | DA | 1173 | G | 3.0 |
| 42 | DH | 167 | GLU | 3.0 |
| 9 | AI | 30 | GLY | 3.0 |
| 42 | DH | 66 | GLY | 3.0 |
| 37 | DC | 58 | VAL | 3.0 |
| 43 | BI | 107 | VAL | 3.0 |
| 37 | DC | 94 | VAL | 2.9 |
| 28 | D3 | 57 | GLU | 2.9 |
| 35 | DA | 2139 | C | 2.9 |
| 37 | DC | 55 | ASP | 2.9 |
| 8 | CH | 27 | PRO | 2.9 |
| 31 | D6 | 40 | CYS | 2.9 |
| 37 | DC | 192 | PHE | 2.9 |
| 23 | CW | 56 | C | 2.9 |
| 42 | DH | 95 | ARG | 2.9 |
| 35 | DA | 887 | A | 2.9 |
| 21 | CU | 8 | THR | 2.9 |
| 11 | CK | 12 | ARG | 2.9 |
| 12 | CL | 28 | LYS | 2.9 |
| 10 | CJ | 32 | ALA | 2.9 |
| 31 | B6 | 44 | ARG | 2.9 |
| 51 | DU | 89 | GLU | 2.9 |
| 1 | AA | 1033 | G | 2.9 |
| 1 | CA | 1034 | G | 2.9 |
| 22 | AV | 47 | U | 2.9 |
| 35 | DA | 882 | G | 2.9 |
| 35 | BA | 1531 | C | 2.9 |
| 8 | CH | 54 | ASP | 2.9 |
| 37 | DC | 134 | ARG | 2.9 |
| 37 | BC | 158 | ALA | 2.9 |
| 37 | BC | 70 | LYS | 2.9 |
| 55 | DY | 59 | GLY | 2.9 |
| 23 | CW | 19 | G | 2.9 |
| 20 | CT | 98 | PRO | 2.9 |
| 35 | DA | 1174 | A | 2.9 |
| 20 | CT | 106 | ALA | 2.9 |
| 55 | BY | 61 | ILE | 2.9 |
| 42 | DH | 171 | LEU | 2.8 |
| 52 | DV | 46 | VAL | 2.8 |
| 10 | CJ | 6 | ILE | 2.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 22 | CY | 22 | G | 2.8 |
| 31 | D6 | 26 | ASN | 2.8 |
| 37 | BC | 57 | ASN | 2.8 |
| 39 | BE | 76 | ARG | 2.8 |
| 41 | BG | 2 | PRO | 2.8 |
| 37 | BC | 80 | GLY | 2.8 |
| 1 | CA | 1037 | C | 2.8 |
| 12 | AL | 128 | ALA | 2.8 |
| 23 | AW | 36 | A | 2.8 |
| 37 | BC | 89 | ALA | 2.8 |
| 56 | BZ | 113 | ALA | 2.8 |
| 56 | DZ | 107 | THR | 2.8 |
| 35 | BA | 2174 | C | 2.8 |
| 2 | AB | 240 | GLN | 2.8 |
| 6 | AF | 101 | ALA | 2.8 |
| 35 | DA | 1740 | G | 2.8 |
| 5 | CE | 154 | GLY | 2.8 |
| 37 | DC | 177 | LYS | 2.8 |
| 42 | DH | 85 | LYS | 2.8 |
| 30 | D5 | 2 | ALA | 2.8 |
| 7 | CG | 84 | ASN | 2.8 |
| 53 | BW | 113 | LYS | 2.8 |
| 31 | B6 | 42 | TRP | 2.8 |
| 49 | DS | 108 | GLY | 2.8 |
| 35 | BA | 2793 | G | 2.8 |
| 10 | AJ | 23 | ILE | 2.8 |
| 7 | AG | 82 | GLY | 2.8 |
| 37 | BC | 46 | LYS | 2.8 |
| 56 | DZ | 149 | SER | 2.8 |
| 1 | CA | 1030(A) | G | 2.8 |
| 35 | BA | 895 | U | 2.8 |
| 49 | DS | 58 | LEU | 2.8 |
| 19 | AS | 82 | GLY | 2.8 |
| 42 | DH | 158 | HIS | 2.8 |
| 37 | DC | 70 | LYS | 2.8 |
| 43 | DI | 118 | LYS | 2.8 |
| 17 | AQ | 98 | LEU | 2.8 |
| 37 | DC | 47 | LEU | 2.8 |
| 42 | DH | 45 | VAL | 2.8 |
| 55 | DY | 52 | SER | 2.8 |
| 37 | DC | 81 | GLU | 2.8 |
| 1 | CA | 1117 | G | 2.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 35 | BA | 1174 | A | 2.8 |
| 37 | BC | 134 | ARG | 2.7 |
| 15 | CO | 30 | ALA | 2.7 |
| 35 | DA | 2804 | C | 2.7 |
| 21 | AU | 18 | TYR | 2.7 |
| 37 | BC | 155 | GLU | 2.7 |
| 35 | BA | 2801(A) | A | 2.7 |
| 35 | DA | 1044 | G | 2.7 |
| 10 | CJ | 73 | ASP | 2.7 |
| 31 | D6 | 50 | ARG | 2.7 |
| 13 | CM | 85 | GLY | 2.7 |
| 35 | BA | 2132 | U | 2.7 |
| 56 | DZ | 117 | LEU | 2.7 |
| 1 | CA | 1003 | G | 2.7 |
| 21 | AU | 21 | TYR | 2.7 |
| 21 | AU | 24 | ARG | 2.7 |
| 56 | DZ | 96 | VAL | 2.7 |
| 46 | DP | 149 | GLU | 2.7 |
| 39 | DE | 204 | ALA | 2.7 |
| 35 | DA | 2145 | C | 2.7 |
| 37 | BC | 42 | GLU | 2.7 |
| 10 | AJ | 37 | PRO | 2.7 |
| 55 | BY | 56 | PRO | 2.7 |
| 56 | BZ | 116 | VAL | 2.7 |
| 37 | BC | 65 | PRO | 2.7 |
| 56 | DZ | 4 | ARG | 2.7 |
| 2 | AB | 70 | PHE | 2.7 |
| 5 | CE | 78 | HIS | 2.7 |
| 35 | BA | 2897 | U | 2.7 |
| 43 | BI | 63 | ALA | 2.7 |
| 10 | AJ | 35 | SER | 2.7 |
| 37 | DC | 187 | ASP | 2.7 |
| 9 | CI | 53 | VAL | 2.7 |
| 28 | D3 | 59 | VAL | 2.7 |
| 56 | BZ | 107 | THR | 2.7 |
| 37 | BC | 157 | LYS | 2.7 |
| 12 | AL | 129 | ALA | 2.7 |
| 23 | AW | 16 | U | 2.7 |
| 35 | DA | 2896 | C | 2.7 |
| 37 | BC | 95 | GLY | 2.7 |
| 56 | BZ | 145 | GLU | 2.6 |
| 31 | D6 | 21 | TYR | 2.6 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 49 | DS | 57 | LYS | 2.6 |
| 37 | DC | 154 | ARG | 2.6 |
| 34 | D9 | 2 | LYS | 2.6 |
| 37 | BC | 165 | ASN | 2.6 |
| 37 | DC | 86 | ALA | 2.6 |
| 49 | DS | 48 | LEU | 2.6 |
| 1 | CA | 204 | U | 2.6 |
| 35 | BA | 882 | G | 2.6 |
| 35 | BA | 2139 | C | 2.6 |
| 37 | DC | 178 | ALA | 2.6 |
| 43 | BI | 146 | ALA | 2.6 |
| 13 | AM | 125 | ARG | 2.6 |
| 21 | CU | 2 | GLY | 2.6 |
| 42 | DH | 26 | VAL | 2.6 |
| 35 | BA | 2115 | G | 2.6 |
| 14 | CN | 17 | LYS | 2.6 |
| 37 | DC | 158 | ALA | 2.6 |
| 7 | CG | 5 | ARG | 2.6 |
| 35 | DA | 1045 | A | 2.6 |
| 37 | DC | 68 | LEU | 2.6 |
| 8 | CH | 28 | ALA | 2.6 |
| 22 | AV | 44 | G | 2.6 |
| 34 | B9 | 12 | ASP | 2.6 |
| 23 | AW | 50 | U | 2.6 |
| 31 | B6 | 26 | ASN | 2.6 |
| 9 | AI | 2 | GLU | 2.6 |
| 43 | BI | 71 | ILE | 2.6 |
| 35 | DA | 508 | G | 2.6 |
| 1 | AA | 90 | U | 2.6 |
| 10 | CJ | 28 | ARG | 2.6 |
| 34 | B9 | 32 | HIS | 2.6 |
| 37 | DC | 41 | VAL | 2.6 |
| 11 | CK | 129 | SER | 2.6 |
| 23 | CW | 44 | G | 2.6 |
| 37 | BC | 167 | LYS | 2.6 |
| 37 | BC | 76 | ALA | 2.6 |
| 37 | DC | 71 | GLN | 2.6 |
| 35 | DA | 2892 | A | 2.6 |
| 37 | BC | 177 | LYS | 2.6 |
| 1 | AA | 1027 | C | 2.6 |
| 35 | BA | 2803 | C | 2.6 |
| 37 | BC | 203 | GLY | 2.6 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 34 | B9 | 30 | PRO | 2.5 |
| 10 | AJ | 98 | ILE | 2.5 |
| 39 | BE | 17 | ASP | 2.5 |
| 35 | DA | 2155 | G | 2.5 |
| 37 | BC | 67 | GLY | 2.5 |
| 42 | DH | 105 | LEU | 2.5 |
| 37 | DC | 64 | LEU | 2.5 |
| 2 | CB | 77 | ALA | 2.5 |
| 34 | D9 | 17 | ILE | 2.5 |
| 21 | CU | 25 | LYS | 2.5 |
| 37 | DC | 150 | GLY | 2.5 |
| 5 | CE | 11 | ILE | 2.5 |
| 22 | AY | 19 | G | 2.5 |
| 35 | BA | 877 | U | 2.5 |
| 10 | CJ | 39 | PRO | 2.5 |
| 9 | CI | 30 | GLY | 2.5 |
| 37 | BC | 74 | VAL | 2.5 |
| 21 | CU | 17 | THR | 2.5 |
| 37 | BC | 85 | GLU | 2.5 |
| 13 | CM | 126 | LYS | 2.5 |
| 12 | CL | 61 | THR | 2.5 |
| 42 | DH | 54 | ARG | 2.5 |
| 50 | DT | 115 | ARG | 2.5 |
| 9 | CI | 126 | SER | 2.5 |
| 5 | CE | 43 | LEU | 2.5 |
| 13 | CM | 8 | GLU | 2.5 |
| 43 | BI | 122 | GLU | 2.5 |
| 43 | BI | 90 | GLY | 2.5 |
| 35 | DA | 2310 | A | 2.5 |
| 35 | DA | 2792 | G | 2.5 |
| 37 | BC | 110 | PHE | 2.5 |
| 19 | AS | 40 | ILE | 2.4 |
| 1 | CA | 993 | G | 2.4 |
| 14 | CN | 39 | LEU | 2.4 |
| 22 | CY | 45 | U | 2.4 |
| 10 | AJ | 77 | PRO | 2.4 |
| 34 | D9 | 26 | ILE | 2.4 |
| 42 | DH | 124 | GLU | 2.4 |
| 37 | DC | 139 | ASN | 2.4 |
| 56 | DZ | 150 | LEU | 2.4 |
| 42 | DH | 81 | GLU | 2.4 |
| 35 | BA | 1176 | G | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 7 | AG | 79 | ARG | 2.4 |
| 37 | DC | 92 | ASP | 2.4 |
| 43 | DI | 111 | PRO | 2.4 |
| 35 | DA | 2790 | A | 2.4 |
| 8 | CH | 50 | ARG | 2.4 |
| 37 | BC | 75 | LEU | 2.4 |
| 56 | DZ | 67 | LEU | 2.4 |
| 8 | AH | 131 | GLY | 2.4 |
| 22 | CY | 44 | G | 2.4 |
| 35 | BA | 2807 | G | 2.4 |
| 7 | AG | 85 | TYR | 2.4 |
| 37 | DC | 179 | SER | 2.4 |
| 42 | DH | 29 | PRO | 2.4 |
| 43 | DI | 65 | ALA | 2.4 |
| 37 | BC | 77 | ILE | 2.4 |
| 31 | D6 | 51 | GLU | 2.4 |
| 35 | BA | 508 | G | 2.4 |
| 10 | AJ | 34 | VAL | 2.4 |
| 35 | BA | 2113 | U | 2.4 |
| 35 | DA | 895 | U | 2.4 |
| 56 | DZ | 62 | PRO | 2.4 |
| 10 | AJ | 38 | ILE | 2.4 |
| 1 | AA | 1031 | G | 2.4 |
| 52 | DV | 93 | GLU | 2.4 |
| 37 | BC | 38 | ASP | 2.4 |
| 39 | DE | 205 | ALA | 2.4 |
| 35 | DA | 2138 | C | 2.4 |
| 49 | DS | 49 | VAL | 2.4 |
| 52 | DV | 92 | THR | 2.4 |
| 13 | AM | 6 | GLY | 2.4 |
| 17 | CQ | 76 | LEU | 2.4 |
| 1 | CA | 344 | A | 2.4 |
| 20 | CT | 92 | LEU | 2.4 |
| 37 | BC | 93 | TYR | 2.4 |
| 55 | DY | 49 | VAL | 2.4 |
| 37 | BC | 61 | THR | 2.4 |
| 43 | DI | 68 | LEU | 2.4 |
| 37 | DC | 43 | VAL | 2.4 |
| 41 | DG | 2 | PRO | 2.4 |
| 1 | AA | 1030 | C | 2.4 |
| 21 | CU | 22 | ARG | 2.4 |
| 22 | AY | 71 | G | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|--------|------|------|
| 35 | BA | 1173 | G | 2.4 |
| 35 | DA | 1048 | A | 2.4 |
| 53 | DW | 113 | LYS | 2.4 |
| 56 | DZ | 97 | GLU | 2.4 |
| 2 | CB | 31 | TYR | 2.4 |
| 37 | DC | 93 | TYR | 2.4 |
| 42 | DH | 19 | VAL | 2.4 |
| 35 | BA | 2804 | C | 2.3 |
| 51 | DU | 118 | GLY | 2.3 |
| 10 | CJ | 74 | ILE | 2.3 |
| 35 | BA | 271(K) | U | 2.3 |
| 1 | CA | 1026 | G | 2.3 |
| 9 | CI | 128 | ARG | 2.3 |
| 21 | CU | 24 | ARG | 2.3 |
| 36 | DB | 69 | G | 2.3 |
| 41 | DG | 47 | LYS | 2.3 |
| 55 | DY | 2 | ARG | 2.3 |
| 43 | BI | 86 | THR | 2.3 |
| 7 | CG | 78 | ARG | 2.3 |
| 5 | CE | 155 | GLU | 2.3 |
| 35 | DA | 2895 | U | 2.3 |
| 37 | DC | 42 | GLU | 2.3 |
| 43 | DI | 20 | ASP | 2.3 |
| 49 | DS | 24 | LEU | 2.3 |
| 38 | BD | 25 | THR | 2.3 |
| 31 | B6 | 24 | GLU | 2.3 |
| 9 | CI | 4 | TYR | 2.3 |
| 1 | AA | 1531 | A | 2.3 |
| 1 | CA | 1286 | A | 2.3 |
| 13 | CM | 122 | LYS | 2.3 |
| 21 | AU | 26 | LYS | 2.3 |
| 37 | DC | 79 | LYS | 2.3 |
| 1 | CA | 1129 | C | 2.3 |
| 23 | CW | 55 | U | 2.3 |
| 34 | B9 | 25 | VAL | 2.3 |
| 37 | BC | 156 | ILE | 2.3 |
| 43 | BI | 105 | HIS | 2.3 |
| 26 | D1 | 85 | LEU | 2.3 |
| 35 | DA | 897 | C | 2.3 |
| 42 | DH | 168 | PRO | 2.3 |
| 44 | DN | 73 | THR | 2.3 |
| 40 | BF | 133 | ASN | 2.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 50 | BT | 92 | GLY | 2.3 |
| 10 | CJ | 59 | SER | 2.3 |
| 34 | D9 | 3 | VAL | 2.3 |
| 10 | AJ | 97 | GLU | 2.3 |
| 19 | CS | 13 | ASP | 2.3 |
| 41 | BG | 49 | ASP | 2.3 |
| 55 | BY | 2 | ARG | 2.3 |
| 56 | DZ | 173 | ALA | 2.3 |
| 34 | D9 | 22 | ARG | 2.3 |
| 47 | DQ | 60 | ARG | 2.3 |
| 49 | DS | 73 | LEU | 2.3 |
| 55 | DY | 50 | ARG | 2.3 |
| 8 | AH | 59 | LEU | 2.3 |
| 22 | AV | 20 | U | 2.3 |
| 34 | D9 | 8 | LYS | 2.3 |
| 37 | BC | 83 | ILE | 2.3 |
| 37 | DC | 200 | LYS | 2.3 |
| 35 | BA | 2896 | C | 2.3 |
| 42 | DH | 25 | LYS | 2.3 |
| 44 | DN | 72 | TYR | 2.3 |
| 43 | BI | 80 | PRO | 2.3 |
| 1 | CA | 1030(C) | G | 2.3 |
| 37 | BC | 145 | VAL | 2.3 |
| 41 | DG | 50 | ALA | 2.3 |
| 9 | CI | 102 | LEU | 2.3 |
| 36 | DB | 88 | C | 2.3 |
| 56 | BZ | 178 | GLU | 2.3 |
| 12 | CL | 33 | ARG | 2.3 |
| 1 | AA | 1030(A) | G | 2.2 |
| 22 | AY | 44 | G | 2.2 |
| 35 | DA | 2805 | G | 2.2 |
| 2 | CB | 114 | ARG | 2.2 |
| 10 | AJ | 6 | ILE | 2.2 |
| 17 | AQ | 99 | SER | 2.2 |
| 1 | AA | 1003 | G | 2.2 |
| 42 | DH | 51 | ARG | 2.2 |
| 43 | BI | 145 | VAL | 2.2 |
| 56 | DZ | 148 | ASP | 2.2 |
| 51 | DU | 117 | GLN | 2.2 |
| 35 | DA | 1762 | A | 2.2 |
| 37 | DC | 96 | GLY | 2.2 |
| 22 | CY | 3 | C | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 35 | BA | 2402 | C | 2.2 |
| 37 | DC | 73 | ARG | 2.2 |
| 42 | BH | 167 | GLU | 2.2 |
| 42 | DH | 64 | LEU | 2.2 |
| 7 | AG | 5 | ARG | 2.2 |
| 8 | AH | 25 | ASP | 2.2 |
| 10 | AJ | 5 | ARG | 2.2 |
| 42 | DH | 60 | ARG | 2.2 |
| 43 | DI | 4 | ILE | 2.2 |
| 23 | AW | 17 | C | 2.2 |
| 35 | BA | 2794 | C | 2.2 |
| 37 | BC | 55 | ASP | 2.2 |
| 40 | DF | 134 | GLY | 2.2 |
| 17 | CQ | 75 | ARG | 2.2 |
| 2 | AB | 7 | VAL | 2.2 |
| 22 | AY | 15 | G | 2.2 |
| 9 | CI | 61 | ALA | 2.2 |
| 10 | CJ | 9 | ARG | 2.2 |
| 43 | DI | 61 | ARG | 2.2 |
| 23 | AW | 51 | U | 2.2 |
| 37 | DC | 125 | SER | 2.2 |
| 7 | CG | 85 | TYR | 2.2 |
| 9 | AI | 96 | LEU | 2.2 |
| 37 | BC | 103 | ILE | 2.2 |
| 21 | AU | 22 | ARG | 2.2 |
| 25 | D0 | 76 | GLY | 2.2 |
| 55 | DY | 6 | HIS | 2.2 |
| 50 | DT | 91 | ARG | 2.2 |
| 1 | AA | 79 | G | 2.2 |
| 37 | BC | 125 | SER | 2.2 |
| 49 | DS | 39 | ILE | 2.2 |
| 3 | CC | 193 | TYR | 2.2 |
| 11 | CK | 127 | LYS | 2.2 |
| 34 | B9 | 11 | CYS | 2.2 |
| 35 | DA | 352 | G | 2.2 |
| 35 | DA | 1047 | G | 2.2 |
| 22 | CY | 21 | A | 2.2 |
| 37 | DC | 162 | GLU | 2.2 |
| 48 | DR | 118 | GLU | 2.2 |
| 9 | CI | 19 | LEU | 2.2 |
| 9 | CI | 96 | LEU | 2.2 |
| 10 | CJ | 5 | ARG | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 9 | AI | 21 | PRO | 2.2 |
| 10 | AJ | 7 | LYS | 2.2 |
| 41 | DG | 69 | ALA | 2.2 |
| 43 | BI | 106 | GLY | 2.2 |
| 56 | DZ | 108 | PRO | 2.2 |
| 19 | CS | 69 | HIS | 2.2 |
| 23 | AW | 52 | G | 2.2 |
| 56 | DZ | 41 | LEU | 2.2 |
| 34 | B9 | 13 | LYS | 2.2 |
| 52 | DV | 5 | VAL | 2.2 |
| 2 | CB | 240 | GLN | 2.2 |
| 35 | DA | 1049 | C | 2.1 |
| 37 | DC | 75 | LEU | 2.1 |
| 37 | DC | 83 | ILE | 2.1 |
| 19 | CS | 70 | LYS | 2.1 |
| 15 | CO | 26 | GLU | 2.1 |
| 19 | CS | 43 | GLU | 2.1 |
| 35 | DA | 2891 | G | 2.1 |
| 37 | BC | 172 | HIS | 2.1 |
| 1 | CA | 1006 | C | 2.1 |
| 42 | DH | 104 | GLU | 2.1 |
| 13 | AM | 126 | LYS | 2.1 |
| 17 | AQ | 100 | LYS | 2.1 |
| 1 | CA | 1033 | G | 2.1 |
| 34 | B9 | 23 | VAL | 2.1 |
| 1 | CA | 1035 | A | 2.1 |
| 40 | BF | 1 | MET | 2.1 |
| 10 | CJ | 35 | SER | 2.1 |
| 42 | DH | 94 | TYR | 2.1 |
| 55 | DY | 60 | PHE | 2.1 |
| 3 | CC | 205 | GLY | 2.1 |
| 51 | BU | 118 | GLY | 2.1 |
| 7 | AG | 8 | GLU | 2.1 |
| 10 | CJ | 8 | LEU | 2.1 |
| 40 | BF | 24 | LEU | 2.1 |
| 1 | CA | 994 | A | 2.1 |
| 1 | CA | 1160 | G | 2.1 |
| 18 | AR | 32 | ARG | 2.1 |
| 13 | CM | 27 | LYS | 2.1 |
| 37 | DC | 76 | ALA | 2.1 |
| 49 | BS | 54 | LEU | 2.1 |
| 42 | DH | 32 | GLU | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 9 | CI | 62 | TYR | 2.1 |
| 16 | AP | 7 | ALA | 2.1 |
| 25 | D0 | 85 | ALA | 2.1 |
| 37 | DC | 99 | ILE | 2.1 |
| 43 | BI | 94 | ALA | 2.1 |
| 13 | AM | 7 | VAL | 2.1 |
| 3 | CC | 51 | GLY | 2.1 |
| 5 | AE | 24 | ARG | 2.1 |
| 37 | DC | 19 | VAL | 2.1 |
| 56 | DZ | 68 | PRO | 2.1 |
| 1 | CA | 1225 | A | 2.1 |
| 35 | BA | 2173 | A | 2.1 |
| 35 | DA | 1042 | G | 2.1 |
| 35 | DA | 2156 | G | 2.1 |
| 47 | DQ | 139 | GLU | 2.1 |
| 8 | CH | 52 | ASP | 2.1 |
| 31 | D6 | 44 | ARG | 2.1 |
| 37 | BC | 72 | VAL | 2.1 |
| 35 | BA | 1509(A) | A | 2.1 |
| 40 | BF | 128 | ALA | 2.1 |
| 40 | DF | 12 | LEU | 2.1 |
| 56 | BZ | 170 | THR | 2.1 |
| 10 | CJ | 80 | LYS | 2.1 |
| 21 | CU | 5 | ASP | 2.1 |
| 2 | AB | 122 | PHE | 2.1 |
| 10 | AJ | 33 | GLN | 2.1 |
| 41 | DG | 86 | MET | 2.1 |
| 17 | CQ | 58 | GLU | 2.1 |
| 24 | CX | 12 | A | 2.1 |
| 37 | BC | 50 | ASP | 2.1 |
| 3 | CC | 180 | ALA | 2.1 |
| 1 | AA | 1129 | C | 2.1 |
| 10 | AJ | 70 | ARG | 2.1 |
| 23 | AW | 44 | G | 2.1 |
| 37 | BC | 78 | ALA | 2.1 |
| 41 | BG | 88 | ILE | 2.1 |
| 35 | DA | 1052 | C | 2.1 |
| 9 | CI | 46 | ALA | 2.1 |
| 20 | AT | 56 | MET | 2.1 |
| 31 | D6 | 22 | ALA | 2.1 |
| 35 | BA | 548 | A | 2.1 |
| 56 | DZ | 144 | LEU | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 37 | DC | 122 | ALA | 2.1 |
| 8 | CH | 107 | LEU | 2.0 |
| 43 | BI | 89 | TYR | 2.0 |
| 55 | BY | 50 | ARG | 2.0 |
| 7 | CG | 113 | GLU | 2.0 |
| 35 | DA | 2791 | C | 2.0 |
| 10 | AJ | 3 | LYS | 2.0 |
| 22 | CY | 71 | G | 2.0 |
| 35 | BA | 2123 | G | 2.0 |
| 23 | CW | 16 | U | 2.0 |
| 10 | CJ | 76 | ASN | 2.0 |
| 28 | D3 | 18 | ASP | 2.0 |
| 34 | B9 | 7 | VAL | 2.0 |
| 15 | AO | 2 | PRO | 2.0 |
| 19 | AS | 12 | ASP | 2.0 |
| 22 | AY | 70 | G | 2.0 |
| 56 | BZ | 174 | VAL | 2.0 |
| 13 | CM | 83 | ASP | 2.0 |
| 42 | DH | 159 | GLU | 2.0 |
| 43 | DI | 138 | ILE | 2.0 |
| 46 | DP | 109 | GLY | 2.0 |
| 31 | D6 | 23 | THR | 2.0 |
| 37 | DC | 89 | ALA | 2.0 |
| 35 | DA | 2131 | G | 2.0 |
| 2 | AB | 241 | GLU | 2.0 |
| 40 | BF | 25 | PRO | 2.0 |
| 35 | BA | 2135 | A | 2.0 |
| 20 | CT | 99 | LEU | 2.0 |
| 35 | DA | 2473 | U | 2.0 |
| 42 | BH | 124 | GLU | 2.0 |
| 22 | CV | 71 | G | 2.0 |
| 42 | DH | 149 | ARG | 2.0 |
| 43 | BI | 95 | LYS | 2.0 |

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|------|-----------------------------|-------|
| 22 | PHA | CY | 77 | 11/11 | 0.92 | 0.39 | - | 42,44,48,152 | 0 |
| 22 | 8AN | AY | 76 | 22/23 | 0.97 | 0.24 | - | 29,48,67,71 | 0 |
| 22 | 8AN | CV | 76 | 22/23 | 0.95 | 0.18 | - | 12,58,100,116 | 0 |
| 22 | 8AN | AV | 76 | 22/23 | 0.97 | 0.22 | - | 12,58,100,116 | 0 |
| 22 | PHA | AV | 77 | 11/11 | 0.90 | 0.37 | - | 121,125,131,132 | 0 |
| 22 | PHA | CV | 77 | 11/11 | 0.87 | 0.28 | - | 121,125,131,132 | 0 |
| 22 | 8AN | CY | 76 | 22/23 | 0.94 | 0.24 | - | 29,48,67,71 | 0 |
| 22 | PHA | AY | 77 | 11/11 | 0.97 | 0.39 | - | 42,44,47,48 | 0 |

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-------|-----------------------------|-------|
| 57 | MG | BA | 3047 | 1/1 | 0.76 | 0.82 | 70.75 | 72,72,72,72 | 0 |
| 57 | MG | DA | 3202 | 1/1 | 0.59 | 1.01 | 42.14 | 73,73,73,73 | 0 |
| 57 | MG | DA | 3090 | 1/1 | 0.76 | 0.87 | 41.62 | 77,77,77,77 | 0 |
| 57 | MG | BA | 3117 | 1/1 | 0.97 | 0.56 | 38.03 | 59,59,59,59 | 0 |
| 57 | MG | DA | 3118 | 1/1 | 0.81 | 0.62 | 36.88 | 62,62,62,62 | 0 |
| 57 | MG | DA | 3070 | 1/1 | 0.81 | 0.72 | 32.03 | 94,94,94,94 | 0 |
| 57 | MG | DA | 3124 | 1/1 | 0.96 | 0.62 | 30.41 | 28,28,28,28 | 0 |
| 57 | MG | DA | 3152 | 1/1 | 0.38 | 0.81 | 29.48 | 82,82,82,82 | 0 |
| 57 | MG | CA | 1690 | 1/1 | 0.75 | 0.85 | 28.73 | 110,110,110,110 | 0 |
| 57 | MG | BA | 3067 | 1/1 | 0.78 | 0.76 | 28.13 | 53,53,53,53 | 0 |
| 57 | MG | AA | 1715 | 1/1 | 0.76 | 0.67 | 28.01 | 39,39,39,39 | 1 |
| 57 | MG | CA | 1652 | 1/1 | 0.77 | 0.72 | 27.73 | 52,52,52,52 | 0 |
| 57 | MG | AA | 1634 | 1/1 | 0.88 | 0.78 | 27.11 | 73,73,73,73 | 0 |
| 57 | MG | BA | 3091 | 1/1 | 0.93 | 0.46 | 26.50 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3340 | 1/1 | 0.76 | 0.61 | 26.46 | 90,90,90,90 | 1 |
| 57 | MG | DA | 3046 | 1/1 | 0.94 | 0.54 | 26.22 | 30,30,30,30 | 0 |
| 57 | MG | BA | 3123 | 1/1 | 0.97 | 0.57 | 25.07 | 29,29,29,29 | 0 |
| 57 | MG | DA | 3182 | 1/1 | 0.86 | 0.59 | 24.95 | 60,60,60,60 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-------|-----------------------------|-------|
| 57 | MG | BA | 3062 | 1/1 | 0.91 | 0.56 | 24.64 | 31,31,31,31 | 0 |
| 57 | MG | CA | 1721 | 1/1 | 0.17 | 0.46 | 24.02 | 97,97,97,97 | 0 |
| 57 | MG | BA | 3048 | 1/1 | 0.85 | 0.67 | 23.63 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3112 | 1/1 | 0.99 | 0.39 | 23.22 | 15,15,15,15 | 0 |
| 57 | MG | DA | 3048 | 1/1 | 0.94 | 0.67 | 23.07 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3241 | 1/1 | 0.79 | 0.51 | 22.85 | 70,70,70,70 | 0 |
| 57 | MG | BA | 3069 | 1/1 | 0.97 | 0.53 | 22.78 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3053 | 1/1 | 0.93 | 0.47 | 22.76 | 64,64,64,64 | 0 |
| 57 | MG | BA | 3410 | 1/1 | 0.98 | 0.45 | 22.62 | 120,120,120,120 | 0 |
| 57 | MG | BA | 3025 | 1/1 | 0.96 | 0.48 | 21.44 | 9,9,9,9 | 0 |
| 57 | MG | BA | 3114 | 1/1 | 0.97 | 0.43 | 21.33 | 3,3,3,3 | 0 |
| 57 | MG | BA | 3237 | 1/1 | 0.67 | 0.58 | 20.51 | 74,74,74,74 | 0 |
| 57 | MG | DA | 3409 | 1/1 | 0.98 | 0.55 | 20.37 | 121,121,121,121 | 0 |
| 57 | MG | BA | 3055 | 1/1 | 0.99 | 0.32 | 20.06 | 18,18,18,18 | 0 |
| 57 | MG | DA | 3049 | 1/1 | 0.75 | 0.77 | 19.66 | 71,71,71,71 | 0 |
| 57 | MG | DA | 3192 | 1/1 | 0.48 | 0.63 | 19.31 | 74,74,74,74 | 0 |
| 57 | MG | DA | 3066 | 1/1 | 0.96 | 0.42 | 19.23 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3271 | 1/1 | 0.93 | 0.49 | 19.20 | 43,43,43,43 | 0 |
| 57 | MG | AA | 1719 | 1/1 | 0.94 | 0.50 | 18.81 | 52,52,52,52 | 0 |
| 57 | MG | DA | 3158 | 1/1 | 0.94 | 0.53 | 18.75 | 48,48,48,48 | 0 |
| 57 | MG | CA | 1634 | 1/1 | 0.89 | 0.59 | 18.50 | 53,53,53,53 | 0 |
| 57 | MG | AA | 1694 | 1/1 | 0.95 | 0.46 | 18.45 | 84,84,84,84 | 0 |
| 57 | MG | BA | 3026 | 1/1 | 0.96 | 0.33 | 17.92 | 8,8,8,8 | 0 |
| 57 | MG | DA | 3196 | 1/1 | 0.58 | 0.29 | 17.70 | 96,96,96,96 | 0 |
| 57 | MG | BA | 3023 | 1/1 | 0.95 | 0.34 | 17.54 | 23,23,23,23 | 0 |
| 57 | MG | BA | 3150 | 1/1 | 0.81 | 0.42 | 17.07 | 64,64,64,64 | 0 |
| 57 | MG | BA | 3045 | 1/1 | 0.98 | 0.41 | 16.75 | 1,1,1,1 | 0 |
| 57 | MG | BA | 3398 | 1/1 | 0.96 | 0.36 | 16.56 | 84,84,84,84 | 0 |
| 57 | MG | DA | 3222 | 1/1 | 0.72 | 0.53 | 15.93 | 95,95,95,95 | 0 |
| 57 | MG | DA | 3054 | 1/1 | 0.90 | 0.46 | 15.76 | 90,90,90,90 | 0 |
| 57 | MG | CA | 1739 | 1/1 | 0.63 | 0.49 | 15.34 | 128,128,128,128 | 0 |
| 57 | MG | DA | 3098 | 1/1 | 0.81 | 0.59 | 15.27 | 38,38,38,38 | 0 |
| 57 | MG | DN | 201 | 1/1 | 0.69 | 2.50 | 14.91 | 129,129,129,129 | 0 |
| 57 | MG | CA | 1789 | 1/1 | 0.89 | 0.56 | 14.73 | 64,64,64,64 | 1 |
| 57 | MG | DA | 3006 | 1/1 | 0.78 | 0.42 | 14.48 | 23,23,23,23 | 0 |
| 57 | MG | DA | 3027 | 1/1 | 0.93 | 0.42 | 14.48 | 37,37,37,37 | 0 |
| 57 | MG | AA | 1705 | 1/1 | 0.82 | 0.51 | 14.00 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3005 | 1/1 | 0.92 | 0.41 | 13.79 | 7,7,7,7 | 0 |
| 57 | MG | BA | 3064 | 1/1 | 0.98 | 0.34 | 13.74 | 20,20,20,20 | 0 |
| 57 | MG | BA | 3011 | 1/1 | 0.96 | 0.30 | 13.59 | 32,32,32,32 | 0 |
| 57 | MG | BA | 3070 | 1/1 | 0.98 | 0.44 | 13.53 | 2,2,2,2 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-------|-----------------------------|-------|
| 57 | MG | CA | 1719 | 1/1 | 0.86 | 0.62 | 13.49 | 93,93,93,93 | 0 |
| 57 | MG | BA | 3233 | 1/1 | 0.99 | 0.40 | 13.47 | 24,24,24,24 | 0 |
| 57 | MG | CA | 1695 | 1/1 | 0.95 | 0.36 | 13.06 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3105 | 1/1 | 0.92 | 0.46 | 12.95 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3216 | 1/1 | 0.71 | 0.33 | 12.75 | 80,80,80,80 | 0 |
| 57 | MG | AA | 1623 | 1/1 | 0.84 | 0.54 | 12.72 | 70,70,70,70 | 0 |
| 57 | MG | BA | 3004 | 1/1 | 0.90 | 0.33 | 12.63 | 42,42,42,42 | 0 |
| 57 | MG | DA | 3239 | 1/1 | 0.77 | 0.98 | 12.61 | 79,79,79,79 | 0 |
| 57 | MG | AA | 1610 | 1/1 | 0.92 | 0.60 | 12.50 | 49,49,49,49 | 0 |
| 57 | MG | DA | 3071 | 1/1 | 0.93 | 0.55 | 12.26 | 23,23,23,23 | 0 |
| 57 | MG | AA | 1664 | 1/1 | 0.87 | 0.33 | 11.64 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3279 | 1/1 | 0.61 | 0.29 | 11.59 | 53,53,53,53 | 0 |
| 57 | MG | CA | 1716 | 1/1 | 0.68 | 0.76 | 11.58 | 68,68,68,68 | 1 |
| 57 | MG | DA | 3029 | 1/1 | 0.93 | 0.41 | 10.90 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3180 | 1/1 | 0.90 | 0.38 | 10.90 | 50,50,50,50 | 0 |
| 57 | MG | DA | 3148 | 1/1 | 0.91 | 0.55 | 10.57 | 46,46,46,46 | 0 |
| 57 | MG | CA | 1623 | 1/1 | 0.67 | 0.50 | 10.27 | 71,71,71,71 | 0 |
| 57 | MG | BA | 3065 | 1/1 | 0.98 | 0.24 | 10.21 | 1,1,1,1 | 0 |
| 57 | MG | BA | 3299 | 1/1 | 0.98 | 0.28 | 10.16 | 46,46,46,46 | 1 |
| 57 | MG | AA | 1781 | 1/1 | 0.71 | 0.25 | 10.04 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3291 | 1/1 | 0.73 | 0.37 | 10.03 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3301 | 1/1 | 0.90 | 0.37 | 10.02 | 57,57,57,57 | 0 |
| 57 | MG | BA | 3086 | 1/1 | 0.90 | 0.40 | 9.91 | 32,32,32,32 | 0 |
| 57 | MG | AA | 1721 | 1/1 | 0.74 | 0.49 | 9.90 | 90,90,90,90 | 0 |
| 57 | MG | CA | 1707 | 1/1 | 0.87 | 0.34 | 9.85 | 119,119,119,119 | 0 |
| 57 | MG | DA | 3012 | 1/1 | 0.69 | 0.28 | 9.73 | 45,45,45,45 | 0 |
| 57 | MG | D7 | 102 | 1/1 | 0.78 | 0.84 | 9.61 | 62,62,62,62 | 1 |
| 57 | MG | DA | 3106 | 1/1 | 0.64 | 0.45 | 9.59 | 78,78,78,78 | 0 |
| 57 | MG | DA | 3088 | 1/1 | 0.97 | 0.41 | 9.51 | 37,37,37,37 | 0 |
| 57 | MG | BA | 3009 | 1/1 | 0.97 | 0.35 | 9.49 | 17,17,17,17 | 0 |
| 57 | MG | BA | 3170 | 1/1 | 0.86 | 0.34 | 9.48 | 61,61,61,61 | 0 |
| 57 | MG | DA | 3380 | 1/1 | 0.92 | 0.41 | 9.44 | 52,52,52,52 | 0 |
| 57 | MG | AA | 1682 | 1/1 | 0.83 | 0.40 | 9.35 | 131,131,131,131 | 0 |
| 57 | MG | DA | 3063 | 1/1 | 0.89 | 0.49 | 9.28 | 32,32,32,32 | 0 |
| 57 | MG | BA | 3022 | 1/1 | 0.98 | 0.35 | 9.24 | 20,20,20,20 | 0 |
| 57 | MG | BA | 3295 | 1/1 | 0.76 | 0.44 | 9.02 | 64,64,64,64 | 0 |
| 57 | MG | DA | 3092 | 1/1 | 0.87 | 0.37 | 8.98 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3012 | 1/1 | 0.97 | 0.32 | 8.82 | 16,16,16,16 | 0 |
| 57 | MG | BA | 3229 | 1/1 | 0.99 | 0.35 | 8.60 | 20,20,20,20 | 0 |
| 57 | MG | BA | 3376 | 1/1 | 0.71 | 0.45 | 8.59 | 81,81,81,81 | 0 |
| 57 | MG | BA | 3275 | 1/1 | 0.84 | 0.57 | 8.38 | 98,98,98,98 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3241 | 1/1 | 0.99 | 0.37 | 8.34 | 32,32,32,32 | 0 |
| 57 | MG | DA | 3163 | 1/1 | 0.95 | 0.31 | 8.27 | 52,52,52,52 | 0 |
| 57 | MG | CA | 1783 | 1/1 | 0.87 | 0.37 | 8.26 | 105,105,105,105 | 0 |
| 57 | MG | AA | 1636 | 1/1 | 0.96 | 0.51 | 8.19 | 74,74,74,74 | 0 |
| 57 | MG | BA | 3268 | 1/1 | 0.91 | 0.30 | 8.14 | 34,34,34,34 | 0 |
| 57 | MG | BA | 3266 | 1/1 | 0.89 | 0.32 | 7.99 | 50,50,50,50 | 0 |
| 57 | MG | DA | 3297 | 1/1 | 0.82 | 0.45 | 7.95 | 71,71,71,71 | 0 |
| 57 | MG | BA | 3021 | 1/1 | 0.98 | 0.36 | 7.74 | 30,30,30,30 | 0 |
| 57 | MG | BA | 3409 | 1/1 | 0.91 | 0.35 | 7.69 | 20,20,20,20 | 0 |
| 57 | MG | BA | 3060 | 1/1 | 0.95 | 0.38 | 7.61 | 1,1,1,1 | 0 |
| 57 | MG | DA | 3056 | 1/1 | 0.98 | 0.34 | 7.58 | 49,49,49,49 | 0 |
| 57 | MG | DA | 3023 | 1/1 | 0.97 | 0.33 | 7.48 | 20,20,20,20 | 0 |
| 57 | MG | BA | 3194 | 1/1 | 0.86 | 0.27 | 7.37 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1706 | 1/1 | 0.73 | 0.44 | 7.33 | 108,108,108,108 | 0 |
| 57 | MG | CA | 1709 | 1/1 | 0.73 | 0.35 | 7.31 | 73,73,73,73 | 0 |
| 57 | MG | AA | 1666 | 1/1 | 0.70 | 0.42 | 7.24 | 93,93,93,93 | 0 |
| 57 | MG | CA | 1625 | 1/1 | 0.55 | 0.42 | 7.19 | 96,96,96,96 | 0 |
| 57 | MG | BA | 3381 | 1/1 | 0.97 | 0.39 | 7.13 | 29,29,29,29 | 0 |
| 57 | MG | DA | 3101 | 1/1 | 0.82 | 0.35 | 7.06 | 67,67,67,67 | 0 |
| 57 | MG | BA | 3118 | 1/1 | 0.88 | 0.24 | 6.99 | 68,68,68,68 | 0 |
| 57 | MG | AA | 1774 | 1/1 | 0.91 | 0.33 | 6.91 | 88,88,88,88 | 0 |
| 57 | MG | DA | 3121 | 1/1 | 0.87 | 0.40 | 6.76 | 83,83,83,83 | 0 |
| 57 | MG | CA | 1678 | 1/1 | 0.71 | 0.41 | 6.64 | 94,94,94,94 | 0 |
| 57 | MG | AA | 1773 | 1/1 | 0.75 | 0.37 | 6.63 | 72,72,72,72 | 0 |
| 57 | MG | BA | 3007 | 1/1 | 0.95 | 0.26 | 6.60 | 22,22,22,22 | 0 |
| 57 | MG | CA | 1686 | 1/1 | 0.86 | 0.33 | 6.53 | 43,43,43,43 | 0 |
| 57 | MG | DA | 3047 | 1/1 | 0.88 | 0.34 | 6.40 | 28,28,28,28 | 0 |
| 57 | MG | DA | 3024 | 1/1 | 0.96 | 0.21 | 6.30 | 49,49,49,49 | 0 |
| 57 | MG | BB | 203 | 1/1 | 0.95 | 0.48 | 6.26 | 14,14,14,14 | 1 |
| 57 | MG | B2 | 602 | 1/1 | 0.94 | 0.51 | 6.16 | 55,55,55,55 | 0 |
| 57 | MG | BA | 3161 | 1/1 | 0.90 | 0.23 | 6.09 | 86,86,86,86 | 0 |
| 57 | MG | BA | 3058 | 1/1 | 0.98 | 0.38 | 6.04 | 19,19,19,19 | 0 |
| 57 | MG | DA | 3231 | 1/1 | 0.95 | 0.35 | 5.82 | 31,31,31,31 | 0 |
| 57 | MG | BA | 3082 | 1/1 | 0.95 | 0.30 | 5.79 | 37,37,37,37 | 0 |
| 57 | MG | BA | 3255 | 1/1 | 0.90 | 0.32 | 5.72 | 37,37,37,37 | 0 |
| 57 | MG | BA | 3046 | 1/1 | 0.98 | 0.29 | 5.70 | 4,4,4,4 | 0 |
| 57 | MG | DA | 3235 | 1/1 | 0.96 | 0.29 | 5.57 | 30,30,30,30 | 0 |
| 57 | MG | DA | 3005 | 1/1 | 0.94 | 0.27 | 5.50 | 52,52,52,52 | 0 |
| 57 | MG | DA | 3010 | 1/1 | 0.99 | 0.35 | 5.50 | 18,18,18,18 | 0 |
| 57 | MG | BA | 3097 | 1/1 | 0.98 | 0.28 | 5.43 | 7,7,7,7 | 0 |
| 57 | MG | DF | 302 | 1/1 | 0.60 | 0.57 | 5.41 | 91,91,91,91 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | BN | 201 | 1/1 | 0.79 | 0.62 | 5.38 | 64,64,64,64 | 0 |
| 57 | MG | DA | 3144 | 1/1 | 0.83 | 0.38 | 5.32 | 63,63,63,63 | 1 |
| 57 | MG | DA | 3341 | 1/1 | 0.83 | 0.27 | 5.27 | 54,54,54,54 | 0 |
| 57 | MG | DA | 3013 | 1/1 | 0.96 | 0.36 | 5.24 | 31,31,31,31 | 0 |
| 57 | MG | DA | 3022 | 1/1 | 0.98 | 0.33 | 5.19 | 34,34,34,34 | 0 |
| 57 | MG | BA | 3178 | 1/1 | 0.96 | 0.24 | 5.19 | 24,24,24,24 | 0 |
| 57 | MG | DA | 3074 | 1/1 | 0.95 | 0.28 | 5.16 | 26,26,26,26 | 0 |
| 57 | MG | D7 | 101 | 1/1 | 0.65 | 0.40 | 5.05 | 73,73,73,73 | 0 |
| 57 | MG | DA | 3270 | 1/1 | 0.75 | 0.28 | 5.04 | 87,87,87,87 | 0 |
| 57 | MG | CA | 1609 | 1/1 | 0.73 | 0.65 | 5.02 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3120 | 1/1 | 0.88 | 0.32 | 5.00 | 90,90,90,90 | 0 |
| 57 | MG | DA | 3061 | 1/1 | 0.95 | 0.28 | 4.99 | 30,30,30,30 | 0 |
| 57 | MG | DA | 3399 | 1/1 | 0.59 | 0.29 | 4.92 | 119,119,119,119 | 0 |
| 57 | MG | BA | 3143 | 1/1 | 0.78 | 0.31 | 4.81 | 49,49,49,49 | 1 |
| 57 | MG | BA | 3239 | 1/1 | 0.99 | 0.31 | 4.81 | 20,20,20,20 | 0 |
| 57 | MG | DA | 3146 | 1/1 | 0.86 | 0.31 | 4.72 | 55,55,55,55 | 0 |
| 57 | MG | AA | 1739 | 1/1 | 0.90 | 0.29 | 4.68 | 115,115,115,115 | 0 |
| 57 | MG | BA | 3215 | 1/1 | 0.90 | 0.31 | 4.62 | 33,33,33,33 | 0 |
| 57 | MG | DA | 3119 | 1/1 | 0.76 | 0.36 | 4.60 | 86,86,86,86 | 0 |
| 57 | MG | DA | 3378 | 1/1 | 0.96 | 0.31 | 4.54 | 72,72,72,72 | 0 |
| 57 | MG | DA | 3178 | 1/1 | 0.86 | 0.21 | 4.52 | 88,88,88,88 | 0 |
| 57 | MG | AA | 1712 | 1/1 | 0.86 | 0.30 | 4.47 | 61,61,61,61 | 0 |
| 57 | MG | DB | 212 | 1/1 | 0.92 | 0.50 | 4.42 | 99,99,99,99 | 1 |
| 57 | MG | DA | 3036 | 1/1 | 0.95 | 0.32 | 4.38 | 32,32,32,32 | 0 |
| 57 | MG | BA | 3200 | 1/1 | 0.78 | 0.25 | 4.34 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3113 | 1/1 | 0.91 | 0.24 | 4.28 | 3,3,3,3 | 0 |
| 57 | MG | BA | 3092 | 1/1 | 0.96 | 0.27 | 4.24 | 28,28,28,28 | 0 |
| 57 | MG | BA | 3190 | 1/1 | 0.94 | 0.29 | 4.21 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3307 | 1/1 | 0.99 | 0.30 | 4.17 | 23,23,23,23 | 0 |
| 57 | MG | BA | 3366 | 1/1 | 0.82 | 0.45 | 4.16 | 112,112,112,112 | 0 |
| 57 | MG | BA | 3039 | 1/1 | 0.95 | 0.27 | 4.10 | 14,14,14,14 | 0 |
| 57 | MG | BB | 212 | 1/1 | 0.92 | 0.23 | 4.07 | 31,31,31,31 | 1 |
| 57 | MG | DA | 3172 | 1/1 | 0.82 | 0.27 | 4.02 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3300 | 1/1 | 0.97 | 0.31 | 4.02 | 3,3,3,3 | 0 |
| 57 | MG | BA | 3272 | 1/1 | 0.96 | 0.27 | 4.00 | 46,46,46,46 | 0 |
| 57 | MG | CA | 1636 | 1/1 | 0.97 | 0.49 | 3.94 | 50,50,50,50 | 0 |
| 57 | MG | AA | 1630 | 1/1 | 0.95 | 0.23 | 3.88 | 55,55,55,55 | 0 |
| 57 | MG | AA | 1788 | 1/1 | 0.96 | 0.23 | 3.86 | 73,73,73,73 | 0 |
| 57 | MG | BA | 3382 | 1/1 | 0.89 | 0.23 | 3.86 | 31,31,31,31 | 0 |
| 57 | MG | DA | 3258 | 1/1 | 0.95 | 0.38 | 3.81 | 37,37,37,37 | 0 |
| 57 | MG | DA | 3274 | 1/1 | 0.95 | 0.30 | 3.74 | 60,60,60,60 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | CA | 1785 | 1/1 | 0.85 | 0.30 | 3.63 | 95,95,95,95 | 0 |
| 57 | MG | BA | 3035 | 1/1 | 0.99 | 0.26 | 3.63 | 2,2,2,2 | 0 |
| 58 | PAR | CA | 1800 | 42/42 | 0.90 | 0.25 | 3.56 | 86,91,109,113 | 0 |
| 57 | MG | DA | 3130 | 1/1 | 0.96 | 0.33 | 3.56 | 41,41,41,41 | 0 |
| 57 | MG | BX | 102 | 1/1 | 0.95 | 0.32 | 3.51 | 104,104,104,104 | 0 |
| 57 | MG | BA | 3256 | 1/1 | 0.98 | 0.34 | 3.50 | 11,11,11,11 | 0 |
| 57 | MG | DA | 3018 | 1/1 | 0.96 | 0.31 | 3.41 | 31,31,31,31 | 0 |
| 57 | MG | DA | 3171 | 1/1 | 0.98 | 0.23 | 3.33 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3028 | 1/1 | 0.98 | 0.22 | 3.24 | 12,12,12,12 | 0 |
| 57 | MG | AA | 1786 | 1/1 | 0.91 | 0.27 | 3.20 | 108,108,108,108 | 0 |
| 57 | MG | BA | 3403 | 1/1 | 0.88 | 0.22 | 3.19 | 65,65,65,65 | 0 |
| 57 | MG | AA | 1688 | 1/1 | 0.96 | 0.25 | 3.17 | 35,35,35,35 | 0 |
| 57 | MG | DA | 3083 | 1/1 | 0.98 | 0.29 | 3.00 | 33,33,33,33 | 0 |
| 57 | MG | D2 | 601 | 1/1 | 0.84 | 0.30 | 2.92 | 35,35,35,35 | 1 |
| 57 | MG | DA | 3283 | 1/1 | 0.89 | 0.26 | 2.90 | 77,77,77,77 | 0 |
| 57 | MG | BB | 205 | 1/1 | 0.98 | 0.20 | 2.88 | 25,25,25,25 | 0 |
| 57 | MG | BB | 204 | 1/1 | 0.92 | 0.25 | 2.88 | 106,106,106,106 | 0 |
| 57 | MG | BA | 3375 | 1/1 | 0.90 | 0.22 | 2.87 | 21,21,21,21 | 1 |
| 57 | MG | BA | 3379 | 1/1 | 0.91 | 0.23 | 2.84 | 36,36,36,36 | 0 |
| 57 | MG | DA | 3293 | 1/1 | 0.49 | 0.24 | 2.77 | 74,74,74,74 | 0 |
| 57 | MG | CA | 1638 | 1/1 | 0.90 | 0.27 | 2.77 | 42,42,42,42 | 0 |
| 57 | MG | DA | 3217 | 1/1 | 0.78 | 0.26 | 2.75 | 62,62,62,62 | 0 |
| 57 | MG | DA | 3184 | 1/1 | 0.94 | 0.29 | 2.73 | 36,36,36,36 | 0 |
| 57 | MG | DA | 3093 | 1/1 | 0.95 | 0.23 | 2.59 | 36,36,36,36 | 0 |
| 57 | MG | DA | 3165 | 1/1 | 0.89 | 0.20 | 2.58 | 78,78,78,78 | 0 |
| 57 | MG | BA | 3001 | 1/1 | 0.86 | 0.22 | 2.52 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3129 | 1/1 | 0.99 | 0.27 | 2.50 | 10,10,10,10 | 0 |
| 57 | MG | B0 | 101 | 1/1 | 0.82 | 0.31 | 2.46 | 50,50,50,50 | 0 |
| 57 | MG | DA | 3364 | 1/1 | 1.00 | 0.22 | 2.42 | 52,52,52,52 | 0 |
| 57 | MG | B7 | 101 | 1/1 | 0.93 | 0.30 | 2.35 | 45,45,45,45 | 1 |
| 57 | MG | BA | 3169 | 1/1 | 0.99 | 0.23 | 2.29 | 18,18,18,18 | 0 |
| 57 | MG | BO | 201 | 1/1 | 0.89 | 0.23 | 2.24 | 29,29,29,29 | 0 |
| 57 | MG | DD | 301 | 1/1 | 0.94 | 0.26 | 2.20 | 38,38,38,38 | 0 |
| 57 | MG | DO | 201 | 1/1 | 0.87 | 0.37 | 2.18 | 85,85,85,85 | 0 |
| 58 | PAR | AA | 1799 | 42/42 | 0.94 | 0.23 | 2.18 | 60,65,83,87 | 0 |
| 57 | MG | BA | 3110 | 1/1 | 0.82 | 0.21 | 2.14 | 44,44,44,44 | 0 |
| 57 | MG | DA | 3281 | 1/1 | 0.66 | 0.23 | 1.96 | 52,52,52,52 | 0 |
| 57 | MG | DA | 3395 | 1/1 | 0.93 | 0.41 | 1.96 | 49,49,49,49 | 0 |
| 57 | MG | DA | 3303 | 1/1 | 0.97 | 0.30 | 1.87 | 30,30,30,30 | 0 |
| 57 | MG | BA | 3188 | 1/1 | 0.83 | 0.24 | 1.81 | 64,64,64,64 | 0 |
| 57 | MG | DA | 3114 | 1/1 | 0.81 | 0.28 | 1.78 | 29,29,29,29 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | BA | 3185 | 1/1 | 0.98 | 0.22 | 1.77 | 1,1,1,1 | 0 |
| 57 | MG | AA | 1777 | 1/1 | 0.73 | 0.29 | 1.72 | 141,141,141,141 | 0 |
| 57 | MG | BA | 3145 | 1/1 | 0.95 | 0.21 | 1.69 | 27,27,27,27 | 0 |
| 57 | MG | AA | 1638 | 1/1 | 0.96 | 0.23 | 1.64 | 36,36,36,36 | 0 |
| 57 | MG | DA | 3294 | 1/1 | 0.82 | 0.26 | 1.58 | 54,54,54,54 | 0 |
| 57 | MG | DA | 3200 | 1/1 | 0.91 | 0.20 | 1.54 | 59,59,59,59 | 0 |
| 57 | MG | DA | 3110 | 1/1 | 0.95 | 0.19 | 1.51 | 41,41,41,41 | 0 |
| 57 | MG | CW | 103 | 1/1 | 0.97 | 0.26 | 1.48 | 87,87,87,87 | 0 |
| 57 | MG | DA | 3115 | 1/1 | 0.94 | 0.26 | 1.48 | 22,22,22,22 | 0 |
| 57 | MG | AA | 1608 | 1/1 | 0.98 | 0.20 | 1.45 | 46,46,46,46 | 0 |
| 57 | MG | CA | 1692 | 1/1 | 0.90 | 0.19 | 1.40 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3163 | 1/1 | 0.71 | 0.18 | 1.39 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3137 | 1/1 | 0.89 | 0.18 | 1.38 | 33,33,33,33 | 0 |
| 57 | MG | DA | 3026 | 1/1 | 0.95 | 0.24 | 1.32 | 19,19,19,19 | 0 |
| 57 | MG | CA | 1620 | 1/1 | 0.94 | 0.28 | 1.30 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3079 | 1/1 | 0.97 | 0.21 | 1.26 | 31,31,31,31 | 0 |
| 57 | MG | CA | 1626 | 1/1 | 0.95 | 0.22 | 1.24 | 34,34,34,34 | 0 |
| 57 | MG | DA | 3273 | 1/1 | 0.73 | 0.19 | 1.24 | 59,59,59,59 | 0 |
| 57 | MG | BD | 301 | 1/1 | 0.99 | 0.21 | 1.19 | 16,16,16,16 | 0 |
| 57 | MG | AA | 1710 | 1/1 | 0.83 | 0.27 | 1.12 | 71,71,71,71 | 0 |
| 57 | MG | BA | 3034 | 1/1 | 0.96 | 0.19 | 1.12 | 40,40,40,40 | 0 |
| 57 | MG | CA | 1685 | 1/1 | 0.74 | 0.20 | 1.10 | 62,62,62,62 | 0 |
| 57 | MG | CA | 1704 | 1/1 | 0.91 | 0.34 | 1.07 | 114,114,114,114 | 0 |
| 57 | MG | BA | 3087 | 1/1 | 0.99 | 0.21 | 1.06 | 10,10,10,10 | 0 |
| 57 | MG | DA | 3040 | 1/1 | 0.94 | 0.20 | 1.01 | 25,25,25,25 | 0 |
| 57 | MG | BA | 3173 | 1/1 | 0.97 | 0.21 | 1.00 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3204 | 1/1 | 0.94 | 0.24 | 1.00 | 33,33,33,33 | 0 |
| 57 | MG | DA | 3175 | 1/1 | 0.87 | 0.20 | 0.93 | 63,63,63,63 | 0 |
| 57 | MG | DA | 3247 | 1/1 | 0.50 | 0.20 | 0.93 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3182 | 1/1 | 0.98 | 0.23 | 0.90 | 62,62,62,62 | 0 |
| 57 | MG | D2 | 603 | 1/1 | 0.96 | 0.29 | 0.88 | 95,95,95,95 | 0 |
| 57 | MG | BA | 3192 | 1/1 | 0.92 | 0.17 | 0.88 | 21,21,21,21 | 0 |
| 57 | MG | BA | 3076 | 1/1 | 0.96 | 0.20 | 0.82 | 25,25,25,25 | 0 |
| 57 | MG | CA | 1675 | 1/1 | 0.91 | 0.19 | 0.80 | 92,92,92,92 | 0 |
| 57 | MG | BA | 3396 | 1/1 | 0.97 | 0.28 | 0.78 | 11,11,11,11 | 0 |
| 57 | MG | BA | 3172 | 1/1 | 0.92 | 0.21 | 0.77 | 52,52,52,52 | 0 |
| 57 | MG | DA | 3073 | 1/1 | 0.88 | 0.19 | 0.75 | 36,36,36,36 | 0 |
| 57 | MG | DA | 3195 | 1/1 | 0.84 | 0.16 | 0.73 | 89,89,89,89 | 0 |
| 57 | MG | DA | 3396 | 1/1 | 0.91 | 0.20 | 0.73 | 145,145,145,145 | 0 |
| 57 | MG | DA | 3267 | 1/1 | 0.69 | 0.17 | 0.70 | 71,71,71,71 | 0 |
| 57 | MG | DA | 3322 | 1/1 | 0.97 | 0.22 | 0.66 | 62,62,62,62 | 0 |
| 57 | MG | CV | 101 | 1/1 | 0.99 | 0.21 | 0.63 | 20,20,20,20 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-------|-----------------------------|-------|
| 57 | MG | DA | 3365 | 1/1 | 0.83 | 0.25 | 0.62 | 19,19,19,19 | 0 |
| 57 | MG | CA | 1713 | 1/1 | 0.61 | 0.17 | 0.50 | 73,73,73,73 | 0 |
| 57 | MG | DA | 3100 | 1/1 | 0.94 | 0.20 | 0.46 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3193 | 1/1 | 0.92 | 0.18 | 0.44 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3341 | 1/1 | 0.91 | 0.20 | 0.40 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3236 | 1/1 | 0.90 | 0.19 | 0.36 | 44,44,44,44 | 0 |
| 57 | MG | DA | 3191 | 1/1 | 0.94 | 0.23 | 0.26 | 41,41,41,41 | 0 |
| 57 | MG | DA | 3075 | 1/1 | 0.97 | 0.21 | 0.24 | 37,37,37,37 | 0 |
| 57 | MG | CA | 1619 | 1/1 | 0.98 | 0.18 | 0.15 | 80,80,80,80 | 0 |
| 57 | MG | CA | 1608 | 1/1 | 0.93 | 0.19 | 0.11 | 39,39,39,39 | 0 |
| 57 | MG | BA | 3108 | 1/1 | 0.95 | 0.19 | 0.10 | 4,4,4,4 | 0 |
| 57 | MG | DA | 3078 | 1/1 | 0.97 | 0.21 | 0.09 | 20,20,20,20 | 0 |
| 57 | MG | CA | 1612 | 1/1 | 0.72 | 0.16 | 0.08 | 91,91,91,91 | 0 |
| 57 | MG | DA | 3001 | 1/1 | 0.87 | 0.18 | 0.04 | 42,42,42,42 | 0 |
| 57 | MG | AN | 101 | 1/1 | 0.86 | 0.24 | -0.00 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3367 | 1/1 | 0.81 | 0.37 | -0.00 | 1,1,1,1 | 1 |
| 57 | MG | BA | 3391 | 1/1 | 0.99 | 0.20 | -0.02 | 37,37,37,37 | 0 |
| 57 | MG | AA | 1674 | 1/1 | 0.97 | 0.16 | -0.07 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3265 | 1/1 | 0.92 | 0.18 | -0.13 | 30,30,30,30 | 0 |
| 57 | MG | BA | 3400 | 1/1 | 0.93 | 0.15 | -0.15 | 47,47,47,47 | 0 |
| 57 | MG | DA | 3209 | 1/1 | 0.97 | 0.14 | -0.16 | 73,73,73,73 | 0 |
| 57 | MG | BD | 302 | 1/1 | 0.98 | 0.22 | -0.16 | 22,22,22,22 | 0 |
| 57 | MG | BA | 3232 | 1/1 | 0.99 | 0.20 | -0.17 | 27,27,27,27 | 0 |
| 57 | MG | BA | 3164 | 1/1 | 0.90 | 0.18 | -0.19 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3084 | 1/1 | 0.99 | 0.18 | -0.19 | 12,12,12,12 | 0 |
| 57 | MG | BA | 3262 | 1/1 | 0.92 | 0.15 | -0.23 | 100,100,100,100 | 0 |
| 57 | MG | BA | 3365 | 1/1 | 0.91 | 0.19 | -0.24 | 1,1,1,1 | 0 |
| 57 | MG | BA | 3078 | 1/1 | 0.99 | 0.18 | -0.24 | 13,13,13,13 | 0 |
| 57 | MG | CA | 1603 | 1/1 | 0.89 | 0.20 | -0.24 | 68,68,68,68 | 0 |
| 59 | ZN | AD | 302 | 1/1 | 0.99 | 0.24 | -0.30 | 55,55,55,55 | 0 |
| 57 | MG | DA | 3333 | 1/1 | 0.97 | 0.16 | -0.31 | 108,108,108,108 | 0 |
| 57 | MG | DA | 3302 | 1/1 | 0.96 | 0.19 | -0.32 | 43,43,43,43 | 1 |
| 57 | MG | DA | 3309 | 1/1 | 0.98 | 0.21 | -0.32 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3051 | 1/1 | 0.99 | 0.17 | -0.37 | 5,5,5,5 | 0 |
| 57 | MG | DA | 3180 | 1/1 | 0.94 | 0.17 | -0.38 | 35,35,35,35 | 0 |
| 57 | MG | AA | 1684 | 1/1 | 0.85 | 0.19 | -0.43 | 74,74,74,74 | 0 |
| 57 | MG | DA | 3308 | 1/1 | 0.93 | 0.17 | -0.44 | 53,53,53,53 | 0 |
| 57 | MG | CA | 1790 | 1/1 | 0.98 | 0.18 | -0.49 | 48,48,48,48 | 0 |
| 59 | ZN | AN | 102 | 1/1 | 0.99 | 0.18 | -0.53 | 109,109,109,109 | 0 |
| 57 | MG | BF | 301 | 1/1 | 0.91 | 0.20 | -0.58 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3017 | 1/1 | 0.94 | 0.19 | -0.58 | 9,9,9,9 | 0 |
| 57 | MG | CA | 1776 | 1/1 | 0.88 | 0.18 | -0.59 | 46,46,46,46 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-------|-----------------------------|-------|
| 57 | MG | BA | 3198 | 1/1 | 0.97 | 0.17 | -0.60 | 51,51,51,51 | 0 |
| 57 | MG | DA | 3401 | 1/1 | 0.90 | 0.15 | -0.62 | 57,57,57,57 | 0 |
| 57 | MG | BA | 3109 | 1/1 | 0.96 | 0.18 | -0.65 | 39,39,39,39 | 0 |
| 57 | MG | DA | 3242 | 1/1 | 0.96 | 0.19 | -0.69 | 18,18,18,18 | 0 |
| 59 | ZN | CD | 301 | 1/1 | 0.99 | 0.23 | -0.74 | 55,55,55,55 | 0 |
| 57 | MG | CA | 1711 | 1/1 | 0.73 | 0.16 | -0.75 | 74,74,74,74 | 0 |
| 57 | MG | DA | 3035 | 1/1 | 0.88 | 0.11 | -0.76 | 55,55,55,55 | 0 |
| 57 | MG | DA | 3014 | 1/1 | 0.98 | 0.18 | -0.77 | 31,31,31,31 | 0 |
| 57 | MG | DA | 3065 | 1/1 | 0.98 | 0.18 | -0.78 | 17,17,17,17 | 0 |
| 57 | MG | DA | 3390 | 1/1 | 0.99 | 0.17 | -0.80 | 48,48,48,48 | 0 |
| 57 | MG | AA | 1626 | 1/1 | 0.95 | 0.17 | -0.83 | 37,37,37,37 | 0 |
| 57 | MG | DA | 3234 | 1/1 | 0.99 | 0.15 | -1.01 | 22,22,22,22 | 0 |
| 57 | MG | DA | 3264 | 1/1 | 0.60 | 0.13 | -1.02 | 96,96,96,96 | 0 |
| 57 | MG | BA | 3147 | 1/1 | 0.95 | 0.17 | -1.02 | 26,26,26,26 | 0 |
| 57 | MG | AA | 1703 | 1/1 | 0.89 | 0.14 | -1.09 | 38,38,38,38 | 0 |
| 57 | MG | DA | 3416 | 1/1 | 0.76 | 0.12 | -1.09 | 81,81,81,81 | 0 |
| 57 | MG | CA | 1714 | 1/1 | 0.85 | 0.12 | -1.15 | 62,62,62,62 | 0 |
| 57 | MG | CN | 101 | 1/1 | 0.91 | 0.15 | -1.16 | 57,57,57,57 | 0 |
| 57 | MG | BA | 3189 | 1/1 | 0.98 | 0.17 | -1.19 | 8,8,8,8 | 0 |
| 59 | ZN | CN | 102 | 1/1 | 0.99 | 0.12 | -1.20 | 120,120,120,120 | 0 |
| 57 | MG | CE | 201 | 1/1 | 0.91 | 0.15 | -1.30 | 90,90,90,90 | 0 |
| 57 | MG | AA | 1699 | 1/1 | 0.91 | 0.15 | -1.31 | 78,78,78,78 | 0 |
| 57 | MG | CA | 1699 | 1/1 | 0.93 | 0.14 | -1.35 | 50,50,50,50 | 0 |
| 57 | MG | CA | 1697 | 1/1 | 0.92 | 0.16 | -1.36 | 72,72,72,72 | 0 |
| 57 | MG | CA | 1607 | 1/1 | 0.96 | 0.16 | -1.38 | 30,30,30,30 | 0 |
| 57 | MG | CA | 1792 | 1/1 | 0.92 | 0.12 | -1.50 | 95,95,95,95 | 0 |
| 57 | MG | AA | 1790 | 1/1 | 0.85 | 0.13 | -1.52 | 63,63,63,63 | 0 |
| 57 | MG | CA | 1659 | 1/1 | 0.94 | 0.18 | -1.55 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1604 | 1/1 | 0.96 | 0.14 | -1.55 | 55,55,55,55 | 0 |
| 57 | MG | AA | 1692 | 1/1 | 0.99 | 0.13 | -1.80 | 72,72,72,72 | 0 |
| 57 | MG | DA | 3206 | 1/1 | 0.95 | 0.20 | -1.86 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3042 | 1/1 | 0.99 | 0.14 | -1.87 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3162 | 1/1 | 0.70 | 0.12 | -1.92 | 79,79,79,79 | 0 |
| 57 | MG | DA | 3085 | 1/1 | 0.93 | 0.14 | -1.94 | 32,32,32,32 | 0 |
| 57 | MG | DA | 3077 | 1/1 | 0.98 | 0.13 | -1.95 | 29,29,29,29 | 0 |
| 57 | MG | CI | 201 | 1/1 | 0.95 | 0.18 | -1.96 | 75,75,75,75 | 0 |
| 57 | MG | CA | 1779 | 1/1 | 0.82 | 0.26 | -2.03 | 115,115,115,115 | 0 |
| 57 | MG | BA | 3420 | 1/1 | 0.49 | 0.12 | -2.04 | 78,78,78,78 | 0 |
| 57 | MG | AA | 1620 | 1/1 | 0.90 | 0.15 | -2.07 | 54,54,54,54 | 0 |
| 57 | MG | AA | 1658 | 1/1 | 0.92 | 0.19 | -2.10 | 25,25,25,25 | 0 |
| 57 | MG | DA | 3080 | 1/1 | 0.93 | 0.14 | -2.12 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3361 | 1/1 | 0.92 | 0.13 | -2.12 | 28,28,28,28 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-------|-----------------------------|-------|
| 57 | MG | DA | 3381 | 1/1 | 0.90 | 0.14 | -2.22 | 45,45,45,45 | 0 |
| 57 | MG | BA | 3165 | 1/1 | 0.98 | 0.14 | -2.24 | 38,38,38,38 | 0 |
| 57 | MG | DA | 3257 | 1/1 | 0.92 | 0.14 | -2.25 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3073 | 1/1 | 0.98 | 0.15 | -2.28 | 5,5,5,5 | 0 |
| 57 | MG | BA | 3156 | 1/1 | 0.91 | 0.12 | -2.30 | 20,20,20,20 | 0 |
| 57 | MG | DF | 301 | 1/1 | 0.89 | 0.12 | -2.38 | 56,56,56,56 | 0 |
| 57 | MG | CA | 1710 | 1/1 | 0.96 | 0.07 | -2.43 | 54,54,54,54 | 0 |
| 57 | MG | CA | 1628 | 1/1 | 0.97 | 0.08 | -2.45 | 81,81,81,81 | 0 |
| 59 | ZN | D9 | 101 | 1/1 | 0.96 | 0.12 | -2.45 | 136,136,136,136 | 0 |
| 57 | MG | DA | 3419 | 1/1 | 0.65 | 0.11 | -2.46 | 115,115,115,115 | 0 |
| 57 | MG | BA | 3013 | 1/1 | 0.99 | 0.16 | -2.47 | 7,7,7,7 | 0 |
| 57 | MG | AA | 1628 | 1/1 | 0.92 | 0.10 | -2.48 | 37,37,37,37 | 0 |
| 57 | MG | AA | 1698 | 1/1 | 0.92 | 0.14 | -2.61 | 42,42,42,42 | 0 |
| 57 | MG | DB | 205 | 1/1 | 0.88 | 0.12 | -2.63 | 55,55,55,55 | 0 |
| 57 | MG | BA | 3364 | 1/1 | 1.00 | 0.17 | -2.64 | 35,35,35,35 | 0 |
| 57 | MG | CA | 1670 | 1/1 | 0.98 | 0.11 | -2.68 | 69,69,69,69 | 0 |
| 57 | MG | BA | 3054 | 1/1 | 0.99 | 0.15 | -2.69 | 1,1,1,1 | 0 |
| 59 | ZN | B9 | 101 | 1/1 | 0.99 | 0.04 | -2.70 | 94,94,94,94 | 0 |
| 57 | MG | BA | 3306 | 1/1 | 0.96 | 0.11 | -2.73 | 18,18,18,18 | 0 |
| 57 | MG | BA | 3201 | 1/1 | 0.90 | 0.11 | -2.78 | 35,35,35,35 | 0 |
| 57 | MG | CA | 1684 | 1/1 | 0.78 | 0.10 | -2.80 | 94,94,94,94 | 0 |
| 57 | MG | AA | 1691 | 1/1 | 0.98 | 0.11 | -2.82 | 27,27,27,27 | 0 |
| 57 | MG | BA | 3245 | 1/1 | 0.94 | 0.12 | -2.86 | 42,42,42,42 | 0 |
| 57 | MG | AV | 101 | 1/1 | 0.99 | 0.14 | -2.86 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3292 | 1/1 | 0.95 | 0.18 | -2.89 | 23,23,23,23 | 0 |
| 57 | MG | BA | 3240 | 1/1 | 0.95 | 0.12 | -3.02 | 11,11,11,11 | 0 |
| 57 | MG | DA | 3194 | 1/1 | 0.90 | 0.12 | -3.03 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3414 | 1/1 | 0.98 | 0.10 | -3.09 | 60,60,60,60 | 0 |
| 57 | MG | BA | 3402 | 1/1 | 0.91 | 0.11 | -3.10 | 63,63,63,63 | 0 |
| 57 | MG | DA | 3374 | 1/1 | 0.98 | 0.12 | -3.11 | 37,37,37,37 | 1 |
| 57 | MG | DA | 3079 | 1/1 | 0.98 | 0.14 | -3.19 | 37,37,37,37 | 0 |
| 57 | MG | BA | 3074 | 1/1 | 0.97 | 0.17 | -3.27 | 24,24,24,24 | 0 |
| 57 | MG | AA | 1662 | 1/1 | 0.91 | 0.08 | -3.36 | 95,95,95,95 | 0 |
| 57 | MG | AA | 1709 | 1/1 | 0.95 | 0.06 | -3.66 | 49,49,49,49 | 0 |
| 57 | MG | AA | 1637 | 1/1 | 0.98 | 0.11 | -3.79 | 58,58,58,58 | 0 |
| 57 | MG | DA | 3203 | 1/1 | 0.96 | 0.08 | -3.84 | 56,56,56,56 | 0 |
| 57 | MG | CA | 1689 | 1/1 | 0.98 | 0.16 | -4.07 | 40,40,40,40 | 0 |
| 57 | MG | DA | 3174 | 1/1 | 0.96 | 0.09 | -4.24 | 53,53,53,53 | 0 |
| 57 | MG | CA | 1637 | 1/1 | 0.94 | 0.12 | -4.56 | 83,83,83,83 | 0 |
| 57 | MG | CA | 1650 | 1/1 | 0.98 | 0.11 | -4.58 | 89,89,89,89 | 1 |
| 57 | MG | DA | 3117 | 1/1 | 0.98 | 0.09 | -4.65 | 16,16,16,16 | 0 |
| 57 | MG | AA | 1787 | 1/1 | 0.99 | 0.12 | -4.88 | 41,41,41,41 | 1 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|--------|-----------------------------|-------|
| 57 | MG | DA | 3268 | 1/1 | 0.99 | 0.08 | -4.95 | 41,41,41,41 | 0 |
| 57 | MG | DA | 3052 | 1/1 | 0.99 | 0.12 | -4.98 | 30,30,30,30 | 0 |
| 57 | MG | CA | 1693 | 1/1 | 0.93 | 0.12 | -5.24 | 87,87,87,87 | 0 |
| 57 | MG | CA | 1663 | 1/1 | 0.96 | 0.07 | -5.45 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3072 | 1/1 | 0.97 | 0.10 | -6.29 | 3,3,3,3 | 0 |
| 57 | MG | BA | 3077 | 1/1 | 0.99 | 0.15 | -6.48 | 1,1,1,1 | 0 |
| 57 | MG | BA | 3397 | 1/1 | 0.99 | 0.10 | -10.69 | 73,73,73,73 | 0 |
| 57 | MG | DA | 3289 | 1/1 | 0.61 | 1.12 | - | 74,74,74,74 | 0 |
| 57 | MG | BA | 3179 | 1/1 | 0.66 | 1.55 | - | 117,117,117,117 | 0 |
| 57 | MG | CA | 1775 | 1/1 | 0.81 | 0.22 | - | 79,79,79,79 | 0 |
| 57 | MG | BA | 3318 | 1/1 | 0.87 | 0.36 | - | 70,70,70,70 | 1 |
| 57 | MG | DA | 3298 | 1/1 | 0.93 | 0.17 | - | 56,56,56,56 | 0 |
| 57 | MG | DA | 3059 | 1/1 | 0.76 | 0.37 | - | 46,46,46,46 | 0 |
| 57 | MG | BA | 3102 | 1/1 | 0.95 | 0.38 | - | 13,13,13,13 | 0 |
| 57 | MG | DA | 3019 | 1/1 | 0.83 | 0.50 | - | 29,29,29,29 | 0 |
| 57 | MG | CA | 1740 | 1/1 | 0.80 | 0.44 | - | 61,61,61,61 | 1 |
| 57 | MG | BA | 3348 | 1/1 | 0.97 | 0.20 | - | 79,79,79,79 | 0 |
| 57 | MG | CA | 1761 | 1/1 | 0.54 | 0.61 | - | 74,74,74,74 | 0 |
| 57 | MG | BA | 3372 | 1/1 | 0.96 | 0.53 | - | 57,57,57,57 | 1 |
| 57 | MG | BA | 3154 | 1/1 | 0.96 | 0.33 | - | 13,13,13,13 | 0 |
| 57 | MG | CA | 1703 | 1/1 | 0.97 | 0.36 | - | 87,87,87,87 | 0 |
| 57 | MG | BA | 3224 | 1/1 | 0.76 | 0.34 | - | 91,91,91,91 | 0 |
| 57 | MG | DA | 3095 | 1/1 | 0.97 | 0.10 | - | 37,37,37,37 | 0 |
| 57 | MG | CA | 1795 | 1/1 | 0.67 | 0.59 | - | 78,78,78,78 | 0 |
| 57 | MG | AA | 1776 | 1/1 | 0.53 | 0.28 | - | 103,103,103,103 | 0 |
| 57 | MG | AA | 1642 | 1/1 | 0.98 | 0.19 | - | 45,45,45,45 | 0 |
| 57 | MG | BA | 3358 | 1/1 | 0.98 | 0.24 | - | 24,24,24,24 | 0 |
| 57 | MG | CA | 1705 | 1/1 | 0.61 | 0.40 | - | 150,150,150,150 | 0 |
| 57 | MG | DA | 3379 | 1/1 | 0.72 | 0.55 | - | 105,105,105,105 | 0 |
| 57 | MG | D2 | 602 | 1/1 | 0.75 | 0.32 | - | 99,99,99,99 | 0 |
| 57 | MG | CA | 1731 | 1/1 | 0.74 | 0.30 | - | 85,85,85,85 | 0 |
| 57 | MG | AV | 104 | 1/1 | 0.24 | 0.41 | - | 127,127,127,127 | 0 |
| 57 | MG | BA | 3334 | 1/1 | 0.89 | 0.35 | - | 79,79,79,79 | 0 |
| 57 | MG | AA | 1686 | 1/1 | 0.96 | 0.57 | - | 104,104,104,104 | 0 |
| 57 | MG | BA | 3353 | 1/1 | 0.78 | 0.46 | - | 79,79,79,79 | 0 |
| 57 | MG | BA | 3276 | 1/1 | 0.95 | 0.30 | - | 49,49,49,49 | 0 |
| 57 | MG | CA | 1610 | 1/1 | 0.91 | 0.10 | - | 88,88,88,88 | 0 |
| 57 | MG | DA | 3225 | 1/1 | 0.83 | 0.57 | - | 71,71,71,71 | 0 |
| 57 | MG | BA | 3125 | 1/1 | 0.92 | 0.26 | - | 62,62,62,62 | 0 |
| 57 | MG | CA | 1698 | 1/1 | 0.73 | 0.12 | - | 86,86,86,86 | 0 |
| 57 | MG | DA | 3249 | 1/1 | 0.86 | 0.37 | - | 60,60,60,60 | 0 |
| 57 | MG | CA | 1664 | 1/1 | 0.83 | 0.54 | - | 53,53,53,53 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | AA | 1716 | 1/1 | 0.93 | 0.18 | - | 86,86,86,86 | 0 |
| 57 | MG | DA | 3168 | 1/1 | 0.98 | 0.20 | - | 36,36,36,36 | 0 |
| 57 | MG | BA | 3100 | 1/1 | 0.82 | 0.47 | - | 49,49,49,49 | 0 |
| 57 | MG | DA | 3102 | 1/1 | 0.94 | 0.46 | - | 129,129,129,129 | 1 |
| 57 | MG | CA | 1778 | 1/1 | 0.84 | 0.36 | - | 66,66,66,66 | 0 |
| 57 | MG | BA | 3130 | 1/1 | 0.99 | 0.19 | - | 8,8,8,8 | 0 |
| 57 | MG | DA | 3043 | 1/1 | 0.97 | 0.19 | - | 51,51,51,51 | 0 |
| 57 | MG | DA | 3091 | 1/1 | 0.97 | 0.30 | - | 39,39,39,39 | 0 |
| 57 | MG | BA | 3411 | 1/1 | 0.97 | 0.12 | - | 51,51,51,51 | 1 |
| 57 | MG | BA | 3038 | 1/1 | 0.96 | 0.15 | - | 41,41,41,41 | 0 |
| 57 | MG | AA | 1758 | 1/1 | 0.82 | 0.30 | - | 97,97,97,97 | 0 |
| 57 | MG | CA | 1797 | 1/1 | 0.95 | 0.10 | - | 120,120,120,120 | 0 |
| 57 | MG | AA | 1737 | 1/1 | 0.21 | 1.74 | - | 136,136,136,136 | 0 |
| 57 | MG | DA | 3373 | 1/1 | 0.76 | 0.18 | - | 98,98,98,98 | 0 |
| 57 | MG | CA | 1666 | 1/1 | 0.73 | 0.67 | - | 87,87,87,87 | 0 |
| 57 | MG | BA | 3183 | 1/1 | 0.98 | 0.32 | - | 20,20,20,20 | 0 |
| 57 | MG | CA | 1677 | 1/1 | 0.87 | 0.14 | - | 48,48,48,48 | 0 |
| 57 | MG | DA | 3337 | 1/1 | 0.94 | 0.10 | - | 76,76,76,76 | 0 |
| 57 | MG | BA | 3324 | 1/1 | 0.71 | 0.44 | - | 39,39,39,39 | 1 |
| 57 | MG | BA | 3222 | 1/1 | 0.99 | 0.15 | - | 84,84,84,84 | 0 |
| 57 | MG | DA | 3252 | 1/1 | 0.87 | 0.12 | - | 95,95,95,95 | 0 |
| 57 | MG | AA | 1700 | 1/1 | 0.79 | 0.63 | - | 79,79,79,79 | 0 |
| 57 | MG | DA | 3243 | 1/1 | 0.79 | 0.73 | - | 76,76,76,76 | 0 |
| 57 | MG | BA | 3019 | 1/1 | 0.98 | 0.28 | - | 28,28,28,28 | 0 |
| 57 | MG | BA | 3212 | 1/1 | 0.84 | 0.35 | - | 88,88,88,88 | 0 |
| 57 | MG | DA | 3420 | 1/1 | 0.96 | 0.10 | - | 137,137,137,137 | 1 |
| 57 | MG | DB | 207 | 1/1 | 0.88 | 0.31 | - | 49,49,49,49 | 1 |
| 57 | MG | BA | 3030 | 1/1 | 0.99 | 0.23 | - | 18,18,18,18 | 0 |
| 57 | MG | BA | 3088 | 1/1 | 0.96 | 0.23 | - | 21,21,21,21 | 0 |
| 57 | MG | AA | 1618 | 1/1 | 0.93 | 0.32 | - | 38,38,38,38 | 0 |
| 57 | MG | DA | 3407 | 1/1 | 0.93 | 0.20 | - | 45,45,45,45 | 0 |
| 57 | MG | AA | 1685 | 1/1 | 0.91 | 0.23 | - | 42,42,42,42 | 0 |
| 57 | MG | DA | 3237 | 1/1 | 0.96 | 0.17 | - | 156,156,156,156 | 0 |
| 57 | MG | BA | 3246 | 1/1 | 0.88 | 0.21 | - | 74,74,74,74 | 0 |
| 57 | MG | DA | 3370 | 1/1 | 0.60 | 0.47 | - | 92,92,92,92 | 0 |
| 57 | MG | BA | 3006 | 1/1 | 0.80 | 0.91 | - | 66,66,66,66 | 0 |
| 57 | MG | BA | 3191 | 1/1 | 0.98 | 0.19 | - | 14,14,14,14 | 0 |
| 57 | MG | BA | 3308 | 1/1 | 0.96 | 0.21 | - | 114,114,114,114 | 1 |
| 57 | MG | BA | 3052 | 1/1 | 0.92 | 0.33 | - | 13,13,13,13 | 0 |
| 57 | MG | CA | 1767 | 1/1 | 0.84 | 0.23 | - | 97,97,97,97 | 0 |
| 57 | MG | DA | 3037 | 1/1 | 0.98 | 0.22 | - | 45,45,45,45 | 0 |
| 57 | MG | DA | 3255 | 1/1 | 0.86 | 0.27 | - | 61,61,61,61 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | AA | 1728 | 1/1 | 0.90 | 0.30 | - | 67,67,67,67 | 0 |
| 57 | MG | CA | 1672 | 1/1 | 0.93 | 0.23 | - | 59,59,59,59 | 0 |
| 57 | MG | BA | 3196 | 1/1 | 0.41 | 0.58 | - | 130,130,130,130 | 1 |
| 57 | MG | DA | 3138 | 1/1 | 0.82 | 0.28 | - | 68,68,68,68 | 0 |
| 57 | MG | DA | 3389 | 1/1 | 0.76 | 0.94 | - | 113,113,113,113 | 0 |
| 57 | MG | DA | 3307 | 1/1 | 0.78 | 0.44 | - | 51,51,51,51 | 0 |
| 57 | MG | BA | 3214 | 1/1 | 0.90 | 0.50 | - | 83,83,83,83 | 0 |
| 57 | MG | BA | 3297 | 1/1 | 0.74 | 0.75 | - | 77,77,77,77 | 0 |
| 57 | MG | CA | 1781 | 1/1 | 0.98 | 0.08 | - | 58,58,58,58 | 0 |
| 57 | MG | CW | 102 | 1/1 | 0.82 | 0.10 | - | 112,112,112,112 | 0 |
| 57 | MG | DA | 3320 | 1/1 | 0.94 | 0.30 | - | 34,34,34,34 | 1 |
| 57 | MG | CA | 1661 | 1/1 | 0.87 | 0.59 | - | 56,56,56,56 | 0 |
| 57 | MG | DA | 3363 | 1/1 | 0.99 | 0.14 | - | 68,68,68,68 | 0 |
| 57 | MG | AA | 1770 | 1/1 | 0.81 | 0.39 | - | 163,163,163,163 | 0 |
| 57 | MG | DA | 3233 | 1/1 | 0.92 | 0.45 | - | 36,36,36,36 | 0 |
| 57 | MG | AA | 1652 | 1/1 | 0.96 | 0.31 | - | 82,82,82,82 | 0 |
| 57 | MG | DE | 301 | 1/1 | 0.95 | 0.27 | - | 39,39,39,39 | 0 |
| 57 | MG | AA | 1690 | 1/1 | 0.77 | 0.38 | - | 81,81,81,81 | 0 |
| 57 | MG | BA | 3322 | 1/1 | 0.84 | 0.67 | - | 42,42,42,42 | 1 |
| 57 | MG | DA | 3062 | 1/1 | 0.98 | 0.32 | - | 33,33,33,33 | 0 |
| 57 | MG | DA | 3183 | 1/1 | 0.90 | 0.29 | - | 96,96,96,96 | 0 |
| 57 | MG | BA | 3138 | 1/1 | 0.66 | 1.02 | - | 124,124,124,124 | 0 |
| 57 | MG | DA | 3154 | 1/1 | 0.83 | 0.32 | - | 60,60,60,60 | 0 |
| 57 | MG | AA | 1747 | 1/1 | 0.97 | 0.13 | - | 135,135,135,135 | 0 |
| 57 | MG | DA | 3367 | 1/1 | 0.66 | 0.51 | - | 108,108,108,108 | 0 |
| 57 | MG | AA | 1725 | 1/1 | 0.97 | 0.13 | - | 104,104,104,104 | 0 |
| 57 | MG | BA | 3267 | 1/1 | 0.70 | 0.41 | - | 56,56,56,56 | 0 |
| 57 | MG | BV | 201 | 1/1 | 0.96 | 0.26 | - | 64,64,64,64 | 0 |
| 57 | MG | DA | 3385 | 1/1 | 0.96 | 0.26 | - | 79,79,79,79 | 0 |
| 57 | MG | CA | 1727 | 1/1 | 0.64 | 0.82 | - | 139,139,139,139 | 0 |
| 57 | MG | BB | 214 | 1/1 | 0.51 | 0.58 | - | 75,75,75,75 | 1 |
| 57 | MG | AA | 1656 | 1/1 | 0.86 | 0.75 | - | 97,97,97,97 | 0 |
| 57 | MG | DA | 3398 | 1/1 | 0.83 | 0.61 | - | 86,86,86,86 | 0 |
| 57 | MG | DA | 3132 | 1/1 | 0.87 | 0.34 | - | 41,41,41,41 | 0 |
| 57 | MG | CA | 1736 | 1/1 | 0.83 | 0.53 | - | 73,73,73,73 | 0 |
| 57 | MG | AA | 1795 | 1/1 | 0.79 | 0.51 | - | 128,128,128,128 | 0 |
| 57 | MG | CA | 1788 | 1/1 | 0.82 | 0.24 | - | 75,75,75,75 | 0 |
| 57 | MG | BA | 3059 | 1/1 | 0.97 | 0.24 | - | 9,9,9,9 | 0 |
| 57 | MG | AA | 1668 | 1/1 | 0.84 | 0.29 | - | 51,51,51,51 | 0 |
| 57 | MG | BA | 3416 | 1/1 | 0.65 | 0.30 | - | 93,93,93,93 | 0 |
| 57 | MG | DA | 3221 | 1/1 | 0.85 | 0.52 | - | 50,50,50,50 | 0 |
| 57 | MG | DA | 3096 | 1/1 | 0.94 | 0.23 | - | 24,24,24,24 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DX | 103 | 1/1 | 0.50 | 0.49 | - | 102,102,102,102 | 0 |
| 57 | MG | DA | 3033 | 1/1 | 0.78 | 0.40 | - | 70,70,70,70 | 0 |
| 57 | MG | BA | 3345 | 1/1 | 0.74 | 0.41 | - | 69,69,69,69 | 1 |
| 57 | MG | CA | 1762 | 1/1 | 0.91 | 0.41 | - | 84,84,84,84 | 0 |
| 57 | MG | BB | 213 | 1/1 | 0.85 | 0.32 | - | 87,87,87,87 | 0 |
| 57 | MG | AV | 105 | 1/1 | 0.82 | 0.77 | - | 89,89,89,89 | 0 |
| 57 | MG | DA | 3108 | 1/1 | 0.60 | 0.86 | - | 83,83,83,83 | 0 |
| 57 | MG | BB | 211 | 1/1 | 0.97 | 0.16 | - | 119,119,119,119 | 0 |
| 57 | MG | BA | 3040 | 1/1 | 0.98 | 0.33 | - | 20,20,20,20 | 0 |
| 57 | MG | AA | 1729 | 1/1 | 0.88 | 0.45 | - | 69,69,69,69 | 0 |
| 57 | MG | AA | 1727 | 1/1 | 0.80 | 0.44 | - | 54,54,54,54 | 1 |
| 57 | MG | BA | 3312 | 1/1 | 0.44 | 0.36 | - | 102,102,102,102 | 0 |
| 57 | MG | CA | 1752 | 1/1 | 0.71 | 0.19 | - | 112,112,112,112 | 1 |
| 57 | MG | AA | 1621 | 1/1 | 0.79 | 0.26 | - | 50,50,50,50 | 0 |
| 57 | MG | DA | 3342 | 1/1 | 0.80 | 0.27 | - | 90,90,90,90 | 0 |
| 57 | MG | CA | 1769 | 1/1 | 0.93 | 0.29 | - | 27,27,27,27 | 0 |
| 57 | MG | DA | 3141 | 1/1 | 0.88 | 0.43 | - | 67,67,67,67 | 0 |
| 57 | MG | DA | 3016 | 1/1 | 0.96 | 0.24 | - | 51,51,51,51 | 0 |
| 57 | MG | BA | 3380 | 1/1 | 0.90 | 0.68 | - | 54,54,54,54 | 0 |
| 57 | MG | AA | 1744 | 1/1 | 0.52 | 0.55 | - | 84,84,84,84 | 0 |
| 57 | MG | CA | 1772 | 1/1 | 0.94 | 0.24 | - | 77,77,77,77 | 0 |
| 57 | MG | BA | 3362 | 1/1 | 0.98 | 0.18 | - | 85,85,85,85 | 0 |
| 57 | MG | DA | 3272 | 1/1 | 0.87 | 0.53 | - | 108,108,108,108 | 0 |
| 57 | MG | CA | 1646 | 1/1 | 0.81 | 0.20 | - | 81,81,81,81 | 0 |
| 57 | MG | AA | 1743 | 1/1 | 0.51 | 0.61 | - | 86,86,86,86 | 0 |
| 57 | MG | BA | 3044 | 1/1 | 0.98 | 0.31 | - | 1,1,1,1 | 0 |
| 57 | MG | CA | 1676 | 1/1 | 0.68 | 0.45 | - | 71,71,71,71 | 0 |
| 57 | MG | BA | 3104 | 1/1 | 0.95 | 0.29 | - | 20,20,20,20 | 0 |
| 57 | MG | CA | 1729 | 1/1 | 0.78 | 0.20 | - | 70,70,70,70 | 1 |
| 57 | MG | DA | 3123 | 1/1 | 0.85 | 0.40 | - | 89,89,89,89 | 0 |
| 57 | MG | CA | 1679 | 1/1 | 0.98 | 0.12 | - | 86,86,86,86 | 0 |
| 57 | MG | CA | 1702 | 1/1 | 0.88 | 0.39 | - | 66,66,66,66 | 0 |
| 57 | MG | BA | 3389 | 1/1 | 0.86 | 0.35 | - | 62,62,62,62 | 0 |
| 57 | MG | DA | 3008 | 1/1 | 0.93 | 0.26 | - | 36,36,36,36 | 0 |
| 57 | MG | DA | 3328 | 1/1 | 0.73 | 0.54 | - | 50,50,50,50 | 0 |
| 57 | MG | CA | 1717 | 1/1 | 0.92 | 0.12 | - | 82,82,82,82 | 0 |
| 57 | MG | CA | 1753 | 1/1 | 0.85 | 0.35 | - | 130,130,130,130 | 1 |
| 57 | MG | BA | 3220 | 1/1 | 0.85 | 0.49 | - | 95,95,95,95 | 0 |
| 57 | MG | DA | 3021 | 1/1 | 0.89 | 0.17 | - | 35,35,35,35 | 0 |
| 57 | MG | BA | 3106 | 1/1 | 0.97 | 0.28 | - | 20,20,20,20 | 0 |
| 57 | MG | CA | 1687 | 1/1 | 0.88 | 0.44 | - | 84,84,84,84 | 0 |
| 57 | MG | DA | 3404 | 1/1 | 0.98 | 0.07 | - | 97,97,97,97 | 1 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | AA | 1625 | 1/1 | 0.71 | 0.46 | - | 65,65,65,65 | 0 |
| 57 | MG | BA | 3261 | 1/1 | 0.95 | 0.56 | - | 23,23,23,23 | 0 |
| 57 | MG | AE | 201 | 1/1 | 0.93 | 0.10 | - | 101,101,101,101 | 0 |
| 57 | MG | DA | 3384 | 1/1 | 0.93 | 0.23 | - | 115,115,115,115 | 0 |
| 57 | MG | AA | 1683 | 1/1 | 0.71 | 0.24 | - | 101,101,101,101 | 0 |
| 57 | MG | DA | 3167 | 1/1 | 0.96 | 0.13 | - | 37,37,37,37 | 0 |
| 57 | MG | CA | 1618 | 1/1 | 0.94 | 0.28 | - | 53,53,53,53 | 0 |
| 57 | MG | BA | 3273 | 1/1 | 0.93 | 0.11 | - | 75,75,75,75 | 0 |
| 57 | MG | AA | 1671 | 1/1 | 0.90 | 0.29 | - | 73,73,73,73 | 0 |
| 57 | MG | AW | 108 | 1/1 | 0.23 | 0.23 | - | 82,82,82,82 | 1 |
| 57 | MG | DA | 3162 | 1/1 | 0.85 | 0.27 | - | 77,77,77,77 | 0 |
| 57 | MG | CA | 1793 | 1/1 | 0.63 | 0.33 | - | 100,100,100,100 | 1 |
| 57 | MG | CA | 1723 | 1/1 | 0.97 | 0.35 | - | 86,86,86,86 | 0 |
| 57 | MG | BA | 3061 | 1/1 | 0.98 | 0.31 | - | 10,10,10,10 | 0 |
| 57 | MG | BA | 3294 | 1/1 | 0.96 | 0.37 | - | 33,33,33,33 | 0 |
| 57 | MG | BA | 3211 | 1/1 | 0.83 | 0.17 | - | 40,40,40,40 | 0 |
| 57 | MG | DA | 3326 | 1/1 | 0.96 | 0.15 | - | 78,78,78,78 | 1 |
| 57 | MG | DA | 3411 | 1/1 | 0.92 | 0.08 | - | 46,46,46,46 | 0 |
| 57 | MG | CA | 1602 | 1/1 | 0.12 | 0.75 | - | 101,101,101,101 | 0 |
| 57 | MG | AA | 1629 | 1/1 | 0.95 | 0.28 | - | 62,62,62,62 | 0 |
| 57 | MG | DA | 3109 | 1/1 | 0.91 | 0.21 | - | 29,29,29,29 | 0 |
| 57 | MG | DA | 3111 | 1/1 | 0.79 | 1.59 | - | 111,111,111,111 | 0 |
| 57 | MG | BA | 3024 | 1/1 | 0.98 | 0.42 | - | 11,11,11,11 | 0 |
| 57 | MG | DA | 3265 | 1/1 | 0.89 | 0.27 | - | 71,71,71,71 | 0 |
| 57 | MG | BA | 3186 | 1/1 | 0.65 | 0.28 | - | 144,144,144,144 | 0 |
| 57 | MG | BA | 3399 | 1/1 | 0.79 | 0.58 | - | 64,64,64,64 | 0 |
| 57 | MG | BA | 3384 | 1/1 | 0.86 | 0.35 | - | 53,53,53,53 | 0 |
| 57 | MG | BA | 3127 | 1/1 | 0.76 | 0.33 | - | 44,44,44,44 | 1 |
| 57 | MG | DA | 3064 | 1/1 | 0.97 | 0.16 | - | 32,32,32,32 | 0 |
| 57 | MG | BA | 3152 | 1/1 | 0.77 | 0.46 | - | 93,93,93,93 | 0 |
| 57 | MG | DA | 3250 | 1/1 | 0.98 | 0.40 | - | 63,63,63,63 | 1 |
| 57 | MG | BA | 3378 | 1/1 | 0.94 | 0.40 | - | 8,8,8,8 | 0 |
| 57 | MG | BA | 3421 | 1/1 | 0.98 | 0.15 | - | 110,110,110,110 | 1 |
| 57 | MG | DA | 3204 | 1/1 | 0.96 | 0.39 | - | 39,39,39,39 | 0 |
| 57 | MG | DA | 3245 | 1/1 | 0.96 | 0.20 | - | 69,69,69,69 | 0 |
| 57 | MG | AA | 1678 | 1/1 | 0.97 | 0.10 | - | 166,166,166,166 | 0 |
| 57 | MG | AA | 1606 | 1/1 | 0.97 | 0.12 | - | 34,34,34,34 | 0 |
| 57 | MG | BA | 3136 | 1/1 | 0.98 | 0.22 | - | 16,16,16,16 | 0 |
| 57 | MG | CA | 1701 | 1/1 | 0.50 | 0.99 | - | 93,93,93,93 | 0 |
| 57 | MG | DA | 3347 | 1/1 | 0.96 | 0.26 | - | 53,53,53,53 | 0 |
| 57 | MG | CA | 1671 | 1/1 | 0.81 | 0.30 | - | 58,58,58,58 | 0 |
| 57 | MG | DA | 3421 | 1/1 | 0.94 | 0.20 | - | 168,168,168,168 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3084 | 1/1 | 0.96 | 0.42 | - | 44,44,44,44 | 0 |
| 57 | MG | BA | 3405 | 1/1 | 0.97 | 0.34 | - | 164,164,164,164 | 1 |
| 57 | MG | DA | 3215 | 1/1 | 0.95 | 0.08 | - | 68,68,68,68 | 1 |
| 57 | MG | DA | 3173 | 1/1 | 0.97 | 0.10 | - | 50,50,50,50 | 0 |
| 57 | MG | CA | 1724 | 1/1 | 0.96 | 0.20 | - | 80,80,80,80 | 0 |
| 57 | MG | DA | 3284 | 1/1 | 0.65 | 0.38 | - | 74,74,74,74 | 0 |
| 57 | MG | DA | 3213 | 1/1 | 0.84 | 0.37 | - | 89,89,89,89 | 0 |
| 57 | MG | DA | 3081 | 1/1 | 0.95 | 0.32 | - | 38,38,38,38 | 0 |
| 57 | MG | DA | 3038 | 1/1 | 0.99 | 0.21 | - | 49,49,49,49 | 0 |
| 57 | MG | DA | 3126 | 1/1 | 0.95 | 0.14 | - | 59,59,59,59 | 0 |
| 57 | MG | AX | 101 | 1/1 | 0.99 | 0.08 | - | 118,118,118,118 | 0 |
| 57 | MG | DA | 3263 | 1/1 | 0.89 | 0.85 | - | 69,69,69,69 | 0 |
| 57 | MG | DA | 3296 | 1/1 | 0.67 | 0.57 | - | 138,138,138,138 | 0 |
| 57 | MG | BA | 3338 | 1/1 | 0.85 | 0.35 | - | 52,52,52,52 | 0 |
| 57 | MG | CA | 1662 | 1/1 | 0.92 | 0.69 | - | 80,80,80,80 | 0 |
| 57 | MG | BA | 3203 | 1/1 | 0.96 | 0.13 | - | 30,30,30,30 | 0 |
| 57 | MG | CA | 1616 | 1/1 | 0.88 | 0.41 | - | 43,43,43,43 | 0 |
| 57 | MG | DA | 3057 | 1/1 | 0.88 | 0.26 | - | 31,31,31,31 | 0 |
| 57 | MG | BA | 3393 | 1/1 | 0.82 | 0.37 | - | 74,74,74,74 | 0 |
| 57 | MG | BA | 3157 | 1/1 | 0.94 | 0.38 | - | 74,74,74,74 | 0 |
| 57 | MG | BA | 3202 | 1/1 | 0.97 | 0.41 | - | 16,16,16,16 | 0 |
| 57 | MG | CX | 101 | 1/1 | 0.90 | 0.59 | - | 123,123,123,123 | 0 |
| 57 | MG | DA | 3400 | 1/1 | 0.70 | 0.34 | - | 77,77,77,77 | 0 |
| 57 | MG | DA | 3122 | 1/1 | 0.78 | 0.67 | - | 77,77,77,77 | 0 |
| 57 | MG | BA | 3144 | 1/1 | 0.94 | 0.22 | - | 58,58,58,58 | 0 |
| 57 | MG | AA | 1765 | 1/1 | 0.93 | 0.21 | - | 94,94,94,94 | 0 |
| 57 | MG | DA | 3350 | 1/1 | 0.94 | 0.12 | - | 89,89,89,89 | 1 |
| 57 | MG | BB | 202 | 1/1 | 0.86 | 0.38 | - | 92,92,92,92 | 0 |
| 57 | MG | AA | 1651 | 1/1 | 0.54 | 0.68 | - | 70,70,70,70 | 0 |
| 57 | MG | AA | 1784 | 1/1 | 0.95 | 0.04 | - | 81,81,81,81 | 1 |
| 57 | MG | BA | 3244 | 1/1 | 0.86 | 0.36 | - | 88,88,88,88 | 0 |
| 57 | MG | DA | 3417 | 1/1 | 0.97 | 0.08 | - | 37,37,37,37 | 0 |
| 57 | MG | AA | 1697 | 1/1 | 0.96 | 0.30 | - | 78,78,78,78 | 0 |
| 57 | MG | AA | 1665 | 1/1 | 0.92 | 0.43 | - | 53,53,53,53 | 0 |
| 57 | MG | CA | 1780 | 1/1 | 0.74 | 0.55 | - | 32,32,32,32 | 1 |
| 57 | MG | CA | 1755 | 1/1 | 0.88 | 0.16 | - | 107,107,107,107 | 0 |
| 57 | MG | BA | 3168 | 1/1 | 0.94 | 0.49 | - | 87,87,87,87 | 0 |
| 57 | MG | DA | 3291 | 1/1 | 0.74 | 0.25 | - | 58,58,58,58 | 0 |
| 57 | MG | AA | 1768 | 1/1 | 0.94 | 0.43 | - | 71,71,71,71 | 0 |
| 57 | MG | BA | 3135 | 1/1 | 0.88 | 0.66 | - | 36,36,36,36 | 0 |
| 57 | MG | CW | 105 | 1/1 | 0.94 | 0.32 | - | 70,70,70,70 | 1 |
| 57 | MG | BA | 3350 | 1/1 | 0.98 | 0.18 | - | 81,81,81,81 | 1 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | AA | 1742 | 1/1 | 0.81 | 0.42 | - | 100,100,100,100 | 0 |
| 57 | MG | CA | 1760 | 1/1 | 0.92 | 0.32 | - | 145,145,145,145 | 0 |
| 57 | MG | DA | 3324 | 1/1 | 0.65 | 0.48 | - | 64,64,64,64 | 1 |
| 57 | MG | AA | 1741 | 1/1 | 0.46 | 0.73 | - | 124,124,124,124 | 0 |
| 57 | MG | CA | 1750 | 1/1 | 0.90 | 0.37 | - | 77,77,77,77 | 1 |
| 57 | MG | AA | 1657 | 1/1 | 0.28 | 0.56 | - | 121,121,121,121 | 0 |
| 57 | MG | CA | 1784 | 1/1 | 0.95 | 0.17 | - | 68,68,68,68 | 1 |
| 57 | MG | BA | 3377 | 1/1 | 0.99 | 0.14 | - | 126,126,126,126 | 0 |
| 57 | MG | DA | 3161 | 1/1 | 0.73 | 0.35 | - | 65,65,65,65 | 0 |
| 57 | MG | AA | 1720 | 1/1 | 0.88 | 0.28 | - | 137,137,137,137 | 0 |
| 57 | MG | AA | 1603 | 1/1 | 0.32 | 0.70 | - | 84,84,84,84 | 0 |
| 57 | MG | AA | 1757 | 1/1 | 0.31 | 0.85 | - | 87,87,87,87 | 1 |
| 57 | MG | BA | 3253 | 1/1 | 0.77 | 0.37 | - | 87,87,87,87 | 0 |
| 57 | MG | AA | 1745 | 1/1 | 0.92 | 0.47 | - | 62,62,62,62 | 0 |
| 57 | MG | CA | 1614 | 1/1 | 0.86 | 1.00 | - | 89,89,89,89 | 0 |
| 57 | MG | DA | 3271 | 1/1 | 0.95 | 0.34 | - | 47,47,47,47 | 0 |
| 57 | MG | BA | 3219 | 1/1 | 0.92 | 0.58 | - | 30,30,30,30 | 0 |
| 57 | MG | DA | 3190 | 1/1 | 0.81 | 0.26 | - | 67,67,67,67 | 0 |
| 57 | MG | BA | 3332 | 1/1 | 0.93 | 0.49 | - | 29,29,29,29 | 0 |
| 57 | MG | DA | 3186 | 1/1 | 0.99 | 0.21 | - | 48,48,48,48 | 0 |
| 57 | MG | BA | 3146 | 1/1 | 0.93 | 0.21 | - | 57,57,57,57 | 0 |
| 57 | MG | DA | 3359 | 1/1 | 0.99 | 0.07 | - | 62,62,62,62 | 1 |
| 57 | MG | BA | 3083 | 1/1 | 0.94 | 0.38 | - | 30,30,30,30 | 0 |
| 57 | MG | DA | 3413 | 1/1 | 0.86 | 0.21 | - | 84,84,84,84 | 0 |
| 57 | MG | DA | 3343 | 1/1 | 0.97 | 0.19 | - | 71,71,71,71 | 0 |
| 57 | MG | CA | 1770 | 1/1 | 0.91 | 0.41 | - | 94,94,94,94 | 0 |
| 57 | MG | AA | 1696 | 1/1 | 0.94 | 0.09 | - | 47,47,47,47 | 0 |
| 57 | MG | AA | 1644 | 1/1 | 0.88 | 0.32 | - | 110,110,110,110 | 0 |
| 57 | MG | CA | 1799 | 1/1 | 0.86 | 0.33 | - | 75,75,75,75 | 0 |
| 57 | MG | CA | 1622 | 1/1 | 0.76 | 0.46 | - | 117,117,117,117 | 0 |
| 57 | MG | CA | 1629 | 1/1 | 0.59 | 0.22 | - | 59,59,59,59 | 0 |
| 57 | MG | BA | 3228 | 1/1 | 0.84 | 0.41 | - | 51,51,51,51 | 0 |
| 57 | MG | DA | 3351 | 1/1 | 0.88 | 0.49 | - | 94,94,94,94 | 0 |
| 57 | MG | DA | 3278 | 1/1 | 0.91 | 0.29 | - | 54,54,54,54 | 0 |
| 57 | MG | BA | 3321 | 1/1 | 0.98 | 0.14 | - | 80,80,80,80 | 0 |
| 57 | MG | DA | 3193 | 1/1 | 0.99 | 0.33 | - | 48,48,48,48 | 0 |
| 57 | MG | CA | 1737 | 1/1 | 0.86 | 0.26 | - | 87,87,87,87 | 0 |
| 57 | MG | BA | 3020 | 1/1 | 0.97 | 0.25 | - | 28,28,28,28 | 0 |
| 57 | MG | DB | 202 | 1/1 | 0.69 | 0.29 | - | 113,113,113,113 | 0 |
| 57 | MG | BA | 3302 | 1/1 | 0.93 | 0.24 | - | 26,26,26,26 | 0 |
| 57 | MG | BA | 3014 | 1/1 | 0.83 | 0.23 | - | 61,61,61,61 | 0 |
| 57 | MG | BA | 3231 | 1/1 | 0.92 | 0.67 | - | 38,38,38,38 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3112 | 1/1 | 0.91 | 0.36 | - | 39,39,39,39 | 0 |
| 57 | MG | AA | 1735 | 1/1 | 0.85 | 0.29 | - | 108,108,108,108 | 0 |
| 57 | MG | DA | 3133 | 1/1 | 0.99 | 0.22 | - | 35,35,35,35 | 0 |
| 57 | MG | DA | 3262 | 1/1 | 0.80 | 0.55 | - | 73,73,73,73 | 0 |
| 57 | MG | CA | 1613 | 1/1 | 0.79 | 0.54 | - | 51,51,51,51 | 0 |
| 57 | MG | AA | 1793 | 1/1 | 0.76 | 0.34 | - | 91,91,91,91 | 0 |
| 57 | MG | CA | 1715 | 1/1 | 0.98 | 0.12 | - | 66,66,66,66 | 0 |
| 57 | MG | BB | 206 | 1/1 | 0.94 | 0.15 | - | 105,105,105,105 | 0 |
| 57 | MG | DA | 3189 | 1/1 | 0.93 | 0.31 | - | 69,69,69,69 | 0 |
| 57 | MG | AA | 1702 | 1/1 | 0.77 | 1.05 | - | 126,126,126,126 | 0 |
| 57 | MG | DA | 3406 | 1/1 | 0.83 | 0.18 | - | 51,51,51,51 | 0 |
| 57 | MG | AA | 1641 | 1/1 | 0.58 | 0.69 | - | 83,83,83,83 | 0 |
| 57 | MG | DA | 3050 | 1/1 | 0.91 | 0.17 | - | 69,69,69,69 | 1 |
| 57 | MG | DA | 3275 | 1/1 | 0.93 | 0.10 | - | 98,98,98,98 | 0 |
| 57 | MG | BA | 3404 | 1/1 | 0.92 | 0.19 | - | 56,56,56,56 | 0 |
| 57 | MG | AA | 1754 | 1/1 | 0.75 | 0.33 | - | 64,64,64,64 | 0 |
| 57 | MG | CA | 1645 | 1/1 | 0.75 | 0.72 | - | 66,66,66,66 | 0 |
| 57 | MG | BA | 3394 | 1/1 | 0.85 | 0.41 | - | 81,81,81,81 | 1 |
| 57 | MG | DA | 3226 | 1/1 | 0.82 | 0.32 | - | 88,88,88,88 | 0 |
| 57 | MG | DA | 3403 | 1/1 | 0.96 | 0.17 | - | 55,55,55,55 | 0 |
| 57 | MG | BA | 3089 | 1/1 | 0.96 | 0.63 | - | 43,43,43,43 | 0 |
| 57 | MG | BA | 3176 | 1/1 | 0.78 | 0.39 | - | 97,97,97,97 | 0 |
| 57 | MG | BA | 3018 | 1/1 | 0.96 | 0.48 | - | 9,9,9,9 | 0 |
| 57 | MG | AA | 1736 | 1/1 | 0.94 | 0.24 | - | 87,87,87,87 | 0 |
| 57 | MG | BA | 3234 | 1/1 | 0.97 | 0.54 | - | 56,56,56,56 | 0 |
| 57 | MG | AA | 1731 | 1/1 | 0.82 | 0.54 | - | 73,73,73,73 | 1 |
| 57 | MG | DA | 3208 | 1/1 | 0.97 | 0.18 | - | 32,32,32,32 | 0 |
| 57 | MG | DA | 3060 | 1/1 | 0.96 | 0.30 | - | 30,30,30,30 | 0 |
| 57 | MG | AA | 1753 | 1/1 | 0.78 | 0.16 | - | 103,103,103,103 | 0 |
| 57 | MG | BA | 3283 | 1/1 | 0.73 | 0.24 | - | 33,33,33,33 | 0 |
| 57 | MG | BA | 3116 | 1/1 | 0.98 | 0.12 | - | 4,4,4,4 | 0 |
| 57 | MG | CA | 1771 | 1/1 | 0.56 | 0.75 | - | 98,98,98,98 | 0 |
| 57 | MG | DA | 3147 | 1/1 | 0.82 | 0.31 | - | 59,59,59,59 | 0 |
| 57 | MG | BA | 3363 | 1/1 | 0.99 | 0.15 | - | 73,73,73,73 | 0 |
| 57 | MG | AA | 1782 | 1/1 | 0.97 | 0.17 | - | 96,96,96,96 | 1 |
| 57 | MG | BA | 3238 | 1/1 | 0.97 | 0.30 | - | 51,51,51,51 | 0 |
| 57 | MG | DA | 3340 | 1/1 | 0.65 | 0.59 | - | 98,98,98,98 | 1 |
| 57 | MG | DB | 201 | 1/1 | 0.97 | 0.24 | - | 74,74,74,74 | 0 |
| 57 | MG | DA | 3261 | 1/1 | 0.97 | 0.27 | - | 95,95,95,95 | 0 |
| 57 | MG | BA | 3033 | 1/1 | 0.92 | 0.37 | - | 33,33,33,33 | 0 |
| 57 | MG | DA | 3287 | 1/1 | 0.91 | 0.28 | - | 148,148,148,148 | 0 |
| 57 | MG | DA | 3331 | 1/1 | 0.66 | 0.32 | - | 155,155,155,155 | 1 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3185 | 1/1 | 0.96 | 0.30 | - | 33,33,33,33 | 0 |
| 57 | MG | BA | 3208 | 1/1 | 0.94 | 0.43 | - | 61,61,61,61 | 0 |
| 57 | MG | BA | 3016 | 1/1 | 0.94 | 0.46 | - | 28,28,28,28 | 0 |
| 57 | MG | DA | 3251 | 1/1 | 0.94 | 0.17 | - | 96,96,96,96 | 0 |
| 57 | MG | CA | 1751 | 1/1 | 0.97 | 0.16 | - | 66,66,66,66 | 1 |
| 57 | MG | DA | 3368 | 1/1 | 0.91 | 0.39 | - | 45,45,45,45 | 1 |
| 57 | MG | AA | 1675 | 1/1 | 0.96 | 0.59 | - | 63,63,63,63 | 0 |
| 57 | MG | BA | 3142 | 1/1 | 0.96 | 0.48 | - | 20,20,20,20 | 0 |
| 57 | MG | DA | 3352 | 1/1 | 0.88 | 0.49 | - | 20,20,20,20 | 1 |
| 57 | MG | CA | 1725 | 1/1 | 0.78 | 0.35 | - | 116,116,116,116 | 1 |
| 57 | MG | DA | 3025 | 1/1 | 0.92 | 0.48 | - | 13,13,13,13 | 0 |
| 57 | MG | BA | 3383 | 1/1 | 0.66 | 1.01 | - | 101,101,101,101 | 0 |
| 57 | MG | AA | 1778 | 1/1 | 0.96 | 0.57 | - | 65,65,65,65 | 1 |
| 57 | MG | CA | 1648 | 1/1 | 0.81 | 0.55 | - | 83,83,83,83 | 0 |
| 57 | MG | DA | 3415 | 1/1 | 0.65 | 0.31 | - | 96,96,96,96 | 0 |
| 57 | MG | BA | 3096 | 1/1 | 0.98 | 0.15 | - | 1,1,1,1 | 0 |
| 57 | MG | DA | 3004 | 1/1 | 0.71 | 0.69 | - | 86,86,86,86 | 0 |
| 57 | MG | CA | 1749 | 1/1 | 0.91 | 0.16 | - | 98,98,98,98 | 0 |
| 57 | MG | BA | 3314 | 1/1 | 0.89 | 0.43 | - | 92,92,92,92 | 1 |
| 57 | MG | BA | 3122 | 1/1 | 0.93 | 0.51 | - | 94,94,94,94 | 0 |
| 57 | MG | DA | 3285 | 1/1 | 0.81 | 0.21 | - | 71,71,71,71 | 0 |
| 57 | MG | DA | 3067 | 1/1 | 0.97 | 0.56 | - | 46,46,46,46 | 0 |
| 57 | MG | AA | 1726 | 1/1 | 0.77 | 0.26 | - | 71,71,71,71 | 0 |
| 57 | MG | AA | 1794 | 1/1 | 0.94 | 0.16 | - | 126,126,126,126 | 0 |
| 57 | MG | BA | 3343 | 1/1 | 0.97 | 0.13 | - | 37,37,37,37 | 0 |
| 57 | MG | B2 | 601 | 1/1 | 0.92 | 0.22 | - | 55,55,55,55 | 1 |
| 57 | MG | BA | 3235 | 1/1 | 0.14 | 0.61 | - | 156,156,156,156 | 0 |
| 57 | MG | DA | 3266 | 1/1 | 0.87 | 0.24 | - | 84,84,84,84 | 0 |
| 57 | MG | DA | 3149 | 1/1 | 0.93 | 0.29 | - | 57,57,57,57 | 0 |
| 57 | MG | AA | 1663 | 1/1 | 0.94 | 0.57 | - | 47,47,47,47 | 0 |
| 57 | MG | BA | 3132 | 1/1 | 0.98 | 0.21 | - | 14,14,14,14 | 0 |
| 57 | MG | DA | 3198 | 1/1 | 0.78 | 0.38 | - | 58,58,58,58 | 1 |
| 57 | MG | AA | 1785 | 1/1 | 0.98 | 0.18 | - | 105,105,105,105 | 0 |
| 57 | MG | DA | 3311 | 1/1 | 0.67 | 0.15 | - | 65,65,65,65 | 1 |
| 57 | MG | DA | 3246 | 1/1 | 0.60 | 0.48 | - | 97,97,97,97 | 0 |
| 57 | MG | BA | 3080 | 1/1 | 0.84 | 0.29 | - | 26,26,26,26 | 0 |
| 57 | MG | DA | 3015 | 1/1 | 0.84 | 0.45 | - | 79,79,79,79 | 0 |
| 57 | MG | DA | 3031 | 1/1 | 0.91 | 0.34 | - | 41,41,41,41 | 0 |
| 57 | MG | AA | 1707 | 1/1 | 0.75 | 0.31 | - | 116,116,116,116 | 0 |
| 57 | MG | DA | 3248 | 1/1 | 0.71 | 0.24 | - | 90,90,90,90 | 0 |
| 57 | MG | DA | 3288 | 1/1 | 0.92 | 0.66 | - | 37,37,37,37 | 0 |
| 57 | MG | BA | 3305 | 1/1 | 0.83 | 1.33 | - | 101,101,101,101 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | BA | 3418 | 1/1 | 0.78 | 0.08 | - | 59,59,59,59 | 0 |
| 57 | MG | DA | 3176 | 1/1 | 0.94 | 0.35 | - | 69,69,69,69 | 0 |
| 57 | MG | AX | 102 | 1/1 | 0.71 | 0.35 | - | 83,83,83,83 | 0 |
| 57 | MG | CA | 1708 | 1/1 | 0.87 | 0.11 | - | 89,89,89,89 | 0 |
| 57 | MG | DA | 3301 | 1/1 | 0.86 | 0.78 | - | 84,84,84,84 | 0 |
| 57 | MG | DA | 3230 | 1/1 | 0.90 | 0.68 | - | 71,71,71,71 | 0 |
| 57 | MG | CA | 1627 | 1/1 | 0.92 | 0.34 | - | 78,78,78,78 | 0 |
| 57 | MG | CA | 1748 | 1/1 | 0.99 | 0.24 | - | 63,63,63,63 | 0 |
| 57 | MG | AA | 1701 | 1/1 | 0.40 | 0.76 | - | 92,92,92,92 | 0 |
| 57 | MG | AA | 1733 | 1/1 | 0.23 | 0.87 | - | 141,141,141,141 | 0 |
| 57 | MG | DB | 209 | 1/1 | 0.80 | 0.56 | - | 7,7,7,7 | 1 |
| 57 | MG | BA | 3209 | 1/1 | 0.97 | 0.39 | - | 14,14,14,14 | 0 |
| 57 | MG | BA | 3151 | 1/1 | 0.76 | 0.44 | - | 45,45,45,45 | 1 |
| 57 | MG | DA | 3357 | 1/1 | 0.99 | 0.16 | - | 111,111,111,111 | 0 |
| 57 | MG | CA | 1630 | 1/1 | 0.84 | 0.29 | - | 84,84,84,84 | 0 |
| 57 | MG | BA | 3249 | 1/1 | 0.91 | 0.41 | - | 114,114,114,114 | 0 |
| 57 | MG | CA | 1791 | 1/1 | 0.95 | 0.11 | - | 85,85,85,85 | 1 |
| 57 | MG | BA | 3225 | 1/1 | 0.78 | 0.67 | - | 128,128,128,128 | 0 |
| 57 | MG | DA | 3306 | 1/1 | 0.90 | 0.17 | - | 51,51,51,51 | 0 |
| 57 | MG | AW | 107 | 1/1 | 0.61 | 0.40 | - | 101,101,101,101 | 0 |
| 57 | MG | BA | 3407 | 1/1 | 0.94 | 0.20 | - | 52,52,52,52 | 0 |
| 57 | MG | BA | 3320 | 1/1 | 0.89 | 0.25 | - | 141,141,141,141 | 0 |
| 57 | MG | BA | 3313 | 1/1 | 0.85 | 0.31 | - | 162,162,162,162 | 0 |
| 57 | MG | CA | 1605 | 1/1 | 0.95 | 0.14 | - | 47,47,47,47 | 0 |
| 57 | MG | DA | 3207 | 1/1 | 0.94 | 0.26 | - | 67,67,67,67 | 0 |
| 57 | MG | DA | 3386 | 1/1 | 0.93 | 0.76 | - | 115,115,115,115 | 0 |
| 57 | MG | DA | 3181 | 1/1 | 0.97 | 0.20 | - | 100,100,100,100 | 0 |
| 57 | MG | CL | 201 | 1/1 | 0.68 | 0.74 | - | 91,91,91,91 | 0 |
| 57 | MG | DA | 3032 | 1/1 | 0.61 | 0.52 | - | 66,66,66,66 | 0 |
| 57 | MG | DA | 3376 | 1/1 | 0.81 | 0.46 | - | 110,110,110,110 | 0 |
| 57 | MG | DC | 301 | 1/1 | 0.72 | 0.23 | - | 91,91,91,91 | 1 |
| 57 | MG | DA | 3055 | 1/1 | 0.98 | 0.15 | - | 31,31,31,31 | 0 |
| 57 | MG | BA | 3327 | 1/1 | 0.56 | 0.85 | - | 67,67,67,67 | 0 |
| 57 | MG | DS | 201 | 1/1 | 0.67 | 0.26 | - | 74,74,74,74 | 1 |
| 57 | MG | DA | 3366 | 1/1 | 0.98 | 0.08 | - | 29,29,29,29 | 1 |
| 57 | MG | BA | 3274 | 1/1 | 0.93 | 0.71 | - | 85,85,85,85 | 0 |
| 57 | MG | BA | 3412 | 1/1 | 0.98 | 0.10 | - | 30,30,30,30 | 0 |
| 57 | MG | DA | 3197 | 1/1 | 0.59 | 0.59 | - | 106,106,106,106 | 0 |
| 57 | MG | DA | 3051 | 1/1 | 0.82 | 0.26 | - | 75,75,75,75 | 0 |
| 57 | MG | BB | 209 | 1/1 | 0.95 | 0.51 | - | 1,1,1,1 | 1 |
| 57 | MG | DA | 3387 | 1/1 | 0.89 | 0.52 | - | 66,66,66,66 | 0 |
| 57 | MG | CA | 1763 | 1/1 | 0.70 | 0.24 | - | 98,98,98,98 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|-------|------|------|-----------------------------|-------|
| 57 | MG | BA | 3247 | 1/1 | 0.69 | 0.34 | - | 49,49,49,49 | 0 |
| 57 | MG | CA | 1624 | 1/1 | 0.96 | 0.25 | - | 55,55,55,55 | 0 |
| 57 | MG | D5 | 101 | 1/1 | 0.87 | 0.24 | - | 51,51,51,51 | 0 |
| 57 | MG | AW | 101 | 1/1 | 0.87 | 0.26 | - | 157,157,157,157 | 0 |
| 57 | MG | CA | 1728 | 1/1 | 0.41 | 0.64 | - | 101,101,101,101 | 0 |
| 57 | MG | AA | 1798 | 1/1 | 0.49 | 0.55 | - | 90,90,90,90 | 0 |
| 57 | MG | AA | 1759 | 1/1 | 0.82 | 0.36 | - | 96,96,96,96 | 0 |
| 57 | MG | BA | 3392 | 1/1 | 0.97 | 0.14 | - | 139,139,139,139 | 0 |
| 57 | MG | AA | 1673 | 1/1 | 0.79 | 1.32 | - | 76,76,76,76 | 1 |
| 57 | MG | CW | 106 | 1/1 | 0.81 | 0.17 | - | 86,86,86,86 | 1 |
| 57 | MG | DA | 3279 | 1/1 | 0.43 | 0.92 | - | 49,49,49,49 | 1 |
| 57 | MG | BA | 3155 | 1/1 | 0.69 | 0.85 | - | 116,116,116,116 | 0 |
| 57 | MG | AA | 1631 | 1/1 | 0.72 | 0.38 | - | 54,54,54,54 | 0 |
| 57 | MG | AA | 1724 | 1/1 | 0.81 | 0.29 | - | 68,68,68,68 | 1 |
| 57 | MG | DA | 3360 | 1/1 | 0.99 | 0.10 | - | 83,83,83,83 | 0 |
| 57 | MG | CA | 1766 | 1/1 | 0.88 | 0.15 | - | 96,96,96,96 | 0 |
| 57 | MG | CA | 1765 | 1/1 | 0.78 | 0.26 | - | 60,60,60,60 | 0 |
| 57 | MG | AA | 1750 | 1/1 | 0.87 | 0.30 | - | 62,62,62,62 | 1 |
| 57 | MG | CA | 1651 | 1/1 | 0.96 | 0.17 | - | 85,85,85,85 | 0 |
| 57 | MG | CA | 1746 | 1/1 | 0.50 | 0.46 | - | 91,91,91,91 | 0 |
| 57 | MG | BA | 3119 | 1/1 | 0.97 | 0.24 | - | 35,35,35,35 | 0 |
| 57 | MG | BA | 3071 | 1/1 | 0.89 | 0.30 | - | 52,52,52,52 | 0 |
| 57 | MG | B5 | 102 | 1/1 | 0.84 | 0.49 | - | 58,58,58,58 | 1 |
| 57 | MG | CA | 1745 | 1/1 | 0.41 | 0.87 | - | 115,115,115,115 | 0 |
| 57 | MG | DA | 3199 | 1/1 | 0.91 | 0.99 | - | 101,101,101,101 | 0 |
| 57 | MG | DA | 3290 | 1/1 | 0.71 | 1.14 | - | 73,73,73,73 | 0 |
| 57 | MG | BA | 3317 | 1/1 | 0.84 | 0.16 | - | 167,167,167,167 | 0 |
| 57 | MG | AA | 1797 | 1/1 | 0.88 | 0.53 | - | 53,53,53,53 | 0 |
| 57 | MG | DA | 3315 | 1/1 | 0.80 | 0.32 | - | 85,85,85,85 | 1 |
| 57 | MG | BA | 3095 | 1/1 | 0.96 | 0.34 | - | 27,27,27,27 | 0 |
| 57 | MG | DA | 3134 | 1/1 | 0.94 | 0.20 | - | 57,57,57,57 | 0 |
| 57 | MG | DA | 3042 | 1/1 | 0.65 | 0.30 | - | 89,89,89,89 | 0 |
| 57 | MG | BA | 3010 | 1/1 | 0.85 | 0.40 | - | 41,41,41,41 | 0 |
| 57 | MG | AA | 1752 | 1/1 | 0.89 | 0.32 | - | 120,120,120,120 | 1 |
| 57 | MG | DA | 3372 | 1/1 | 0.65 | 0.44 | - | 120,120,120,120 | 1 |
| 57 | MG | DA | 3394 | 1/1 | 0.96 | 0.13 | - | 103,103,103,103 | 0 |
| 57 | MG | BA | 3419 | 1/1 | 0.68 | 1.19 | - | 90,90,90,90 | 1 |
| 57 | MG | BA | 3103 | 1/1 | 0.95 | 0.21 | - | 31,31,31,31 | 0 |
| 57 | MG | DA | 3345 | 1/1 | 0.92 | 0.43 | - | 43,43,43,43 | 1 |
| 57 | MG | DA | 3327 | 1/1 | 0.82 | 0.98 | - | 64,64,64,64 | 1 |
| 57 | MG | AA | 1672 | 1/1 | -0.07 | 0.98 | - | 125,125,125,125 | 1 |
| 57 | MG | DA | 3003 | 1/1 | 0.94 | 0.22 | - | 91,91,91,91 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | AA | 1779 | 1/1 | 0.99 | 0.13 | - | 90,90,90,90 | 0 |
| 57 | MG | DA | 3325 | 1/1 | 0.86 | 0.30 | - | 83,83,83,83 | 1 |
| 57 | MG | DA | 3219 | 1/1 | 0.93 | 0.35 | - | 99,99,99,99 | 0 |
| 57 | MG | DA | 3229 | 1/1 | 0.74 | 0.62 | - | 92,92,92,92 | 0 |
| 57 | MG | CA | 1655 | 1/1 | 0.61 | 0.56 | - | 94,94,94,94 | 1 |
| 57 | MG | BA | 3158 | 1/1 | 0.57 | 0.71 | - | 55,55,55,55 | 0 |
| 57 | MG | AD | 301 | 1/1 | 0.54 | 0.45 | - | 155,155,155,155 | 0 |
| 57 | MG | DA | 3371 | 1/1 | 0.98 | 0.12 | - | 61,61,61,61 | 1 |
| 57 | MG | BA | 3329 | 1/1 | 0.97 | 0.15 | - | 126,126,126,126 | 0 |
| 57 | MG | BA | 3357 | 1/1 | 1.00 | 0.17 | - | 84,84,84,84 | 0 |
| 57 | MG | BA | 3270 | 1/1 | 0.50 | 0.46 | - | 76,76,76,76 | 0 |
| 57 | MG | AA | 1614 | 1/1 | 0.95 | 0.40 | - | 14,14,14,14 | 0 |
| 57 | MG | CA | 1611 | 1/1 | 0.89 | 0.35 | - | 110,110,110,110 | 0 |
| 57 | MG | BA | 3330 | 1/1 | 0.92 | 0.24 | - | 85,85,85,85 | 1 |
| 57 | MG | CA | 1644 | 1/1 | 0.40 | 0.45 | - | 102,102,102,102 | 0 |
| 57 | MG | DA | 3388 | 1/1 | 0.85 | 0.25 | - | 68,68,68,68 | 0 |
| 57 | MG | AA | 1740 | 1/1 | 0.70 | 0.30 | - | 87,87,87,87 | 0 |
| 57 | MG | DA | 3361 | 1/1 | 0.94 | 0.15 | - | 64,64,64,64 | 0 |
| 57 | MG | AA | 1677 | 1/1 | 0.65 | 0.29 | - | 89,89,89,89 | 0 |
| 57 | MG | DA | 3007 | 1/1 | 0.87 | 0.71 | - | 59,59,59,59 | 0 |
| 57 | MG | DA | 3205 | 1/1 | 0.81 | 0.25 | - | 37,37,37,37 | 0 |
| 57 | MG | BA | 3339 | 1/1 | 0.36 | 0.60 | - | 125,125,125,125 | 1 |
| 57 | MG | DA | 3072 | 1/1 | 0.58 | 0.47 | - | 94,94,94,94 | 0 |
| 57 | MG | DA | 3087 | 1/1 | 0.75 | 0.40 | - | 84,84,84,84 | 0 |
| 57 | MG | BA | 3107 | 1/1 | 0.81 | 0.45 | - | 44,44,44,44 | 0 |
| 57 | MG | BA | 3199 | 1/1 | 0.95 | 0.68 | - | 116,116,116,116 | 0 |
| 57 | MG | DA | 3143 | 1/1 | 0.94 | 0.41 | - | 18,18,18,18 | 0 |
| 57 | MG | BA | 3280 | 1/1 | 0.94 | 0.11 | - | 28,28,28,28 | 0 |
| 57 | MG | BA | 3344 | 1/1 | 0.96 | 0.14 | - | 57,57,57,57 | 0 |
| 57 | MG | BA | 3131 | 1/1 | 0.88 | 0.26 | - | 31,31,31,31 | 0 |
| 57 | MG | DA | 3286 | 1/1 | 0.95 | 0.82 | - | 75,75,75,75 | 0 |
| 57 | MG | BA | 3175 | 1/1 | 0.90 | 0.34 | - | 46,46,46,46 | 0 |
| 57 | MG | AA | 1713 | 1/1 | 0.87 | 0.15 | - | 53,53,53,53 | 0 |
| 57 | MG | DA | 3153 | 1/1 | 0.67 | 0.43 | - | 60,60,60,60 | 1 |
| 57 | MG | AA | 1796 | 1/1 | 0.62 | 0.56 | - | 121,121,121,121 | 0 |
| 57 | MG | AA | 1771 | 1/1 | 0.86 | 0.53 | - | 40,40,40,40 | 0 |
| 57 | MG | DA | 3299 | 1/1 | 0.78 | 0.52 | - | 93,93,93,93 | 0 |
| 57 | MG | AA | 1738 | 1/1 | 0.61 | 0.36 | - | 55,55,55,55 | 1 |
| 57 | MG | BA | 3149 | 1/1 | 0.96 | 0.25 | - | 13,13,13,13 | 1 |
| 57 | MG | BA | 3248 | 1/1 | 0.81 | 0.28 | - | 50,50,50,50 | 1 |
| 57 | MG | DB | 206 | 1/1 | 0.91 | 0.11 | - | 75,75,75,75 | 0 |
| 57 | MG | AA | 1605 | 1/1 | 0.96 | 0.12 | - | 120,120,120,120 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | BA | 3221 | 1/1 | 0.94 | 0.59 | - | 80,80,80,80 | 1 |
| 57 | MG | DA | 3053 | 1/1 | 0.93 | 0.17 | - | 26,26,26,26 | 0 |
| 57 | MG | AA | 1619 | 1/1 | 0.95 | 0.50 | - | 65,65,65,65 | 0 |
| 57 | MG | AA | 1780 | 1/1 | 0.99 | 0.35 | - | 115,115,115,115 | 0 |
| 57 | MG | BA | 3386 | 1/1 | 0.96 | 0.09 | - | 76,76,76,76 | 0 |
| 57 | MG | DD | 302 | 1/1 | 0.94 | 0.32 | - | 46,46,46,46 | 0 |
| 57 | MG | DA | 3408 | 1/1 | 0.85 | 0.38 | - | 44,44,44,44 | 0 |
| 57 | MG | DA | 3017 | 1/1 | 0.96 | 0.44 | - | 31,31,31,31 | 0 |
| 57 | MG | BA | 3335 | 1/1 | 0.98 | 0.10 | - | 62,62,62,62 | 0 |
| 57 | MG | DA | 3099 | 1/1 | 0.94 | 0.29 | - | 40,40,40,40 | 0 |
| 57 | MG | BA | 3081 | 1/1 | 0.99 | 0.20 | - | 7,7,7,7 | 0 |
| 57 | MG | BA | 3309 | 1/1 | 0.93 | 0.12 | - | 112,112,112,112 | 1 |
| 57 | MG | AA | 1767 | 1/1 | 0.99 | 0.29 | - | 44,44,44,44 | 0 |
| 57 | MG | BA | 3184 | 1/1 | 0.97 | 0.34 | - | 38,38,38,38 | 0 |
| 57 | MG | B1 | 101 | 1/1 | 0.94 | 0.11 | - | 41,41,41,41 | 1 |
| 57 | MG | BA | 3160 | 1/1 | 0.65 | 0.46 | - | 74,74,74,74 | 0 |
| 57 | MG | CA | 1741 | 1/1 | 0.94 | 0.20 | - | 53,53,53,53 | 0 |
| 57 | MG | CA | 1758 | 1/1 | 0.97 | 0.27 | - | 64,64,64,64 | 1 |
| 57 | MG | DA | 3170 | 1/1 | 0.68 | 0.62 | - | 60,60,60,60 | 0 |
| 57 | MG | DA | 3120 | 1/1 | 0.97 | 0.19 | - | 39,39,39,39 | 0 |
| 57 | MG | DA | 3160 | 1/1 | 0.72 | 0.44 | - | 67,67,67,67 | 0 |
| 57 | MG | BE | 301 | 1/1 | 0.91 | 0.21 | - | 30,30,30,30 | 0 |
| 57 | MG | AA | 1763 | 1/1 | 0.68 | 0.17 | - | 62,62,62,62 | 0 |
| 57 | MG | CA | 1688 | 1/1 | 0.41 | 0.67 | - | 15,15,15,15 | 1 |
| 57 | MG | DA | 3418 | 1/1 | 0.95 | 0.40 | - | 47,47,47,47 | 1 |
| 57 | MG | AG | 201 | 1/1 | 0.57 | 0.44 | - | 80,80,80,80 | 0 |
| 57 | MG | DA | 3177 | 1/1 | 0.84 | 0.48 | - | 77,77,77,77 | 0 |
| 57 | MG | AA | 1633 | 1/1 | 0.98 | 0.14 | - | 40,40,40,40 | 0 |
| 57 | MG | BA | 3230 | 1/1 | 0.67 | 0.48 | - | 97,97,97,97 | 0 |
| 57 | MG | BA | 3351 | 1/1 | 0.85 | 0.26 | - | 135,135,135,135 | 0 |
| 57 | MG | BA | 3347 | 1/1 | 0.98 | 0.29 | - | 42,42,42,42 | 0 |
| 57 | MG | AA | 1687 | 1/1 | 0.98 | 0.13 | - | 9,9,9,9 | 1 |
| 57 | MG | DA | 3355 | 1/1 | 0.95 | 0.17 | - | 95,95,95,95 | 0 |
| 57 | MG | AA | 1730 | 1/1 | 0.91 | 0.27 | - | 107,107,107,107 | 0 |
| 57 | MG | CA | 1668 | 1/1 | 0.61 | 0.98 | - | 99,99,99,99 | 0 |
| 57 | MG | BA | 3207 | 1/1 | 0.93 | 0.17 | - | 45,45,45,45 | 0 |
| 57 | MG | BA | 3063 | 1/1 | 0.96 | 0.15 | - | 1,1,1,1 | 0 |
| 57 | MG | AW | 103 | 1/1 | 0.94 | 0.10 | - | 106,106,106,106 | 0 |
| 57 | MG | BA | 3205 | 1/1 | 0.96 | 0.30 | - | 17,17,17,17 | 0 |
| 57 | MG | DA | 3319 | 1/1 | 0.76 | 0.54 | - | 102,102,102,102 | 1 |
| 57 | MG | AA | 1654 | 1/1 | 0.85 | 0.29 | - | 52,52,52,52 | 1 |
| 57 | MG | CA | 1643 | 1/1 | 0.73 | 0.19 | - | 157,157,157,157 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|-------|------|------|-----------------------------|-------|
| 57 | MG | BA | 3250 | 1/1 | 0.83 | 0.23 | - | 76,76,76,76 | 0 |
| 57 | MG | DA | 3044 | 1/1 | 0.95 | 0.20 | - | 40,40,40,40 | 0 |
| 57 | MG | CA | 1734 | 1/1 | 0.91 | 0.69 | - | 67,67,67,67 | 0 |
| 57 | MG | BA | 3075 | 1/1 | 0.98 | 0.36 | - | 31,31,31,31 | 0 |
| 57 | MG | CA | 1691 | 1/1 | 0.67 | 0.24 | - | 110,110,110,110 | 0 |
| 57 | MG | CA | 1667 | 1/1 | 0.88 | 0.48 | - | 55,55,55,55 | 0 |
| 57 | MG | BA | 3277 | 1/1 | 0.87 | 0.78 | - | 35,35,35,35 | 1 |
| 57 | MG | CX | 103 | 1/1 | 0.91 | 0.23 | - | 108,108,108,108 | 0 |
| 57 | MG | DA | 3232 | 1/1 | 0.93 | 0.27 | - | 93,93,93,93 | 0 |
| 57 | MG | CA | 1647 | 1/1 | 0.79 | 0.52 | - | 68,68,68,68 | 0 |
| 57 | MG | BA | 3269 | 1/1 | 0.92 | 0.27 | - | 38,38,38,38 | 0 |
| 57 | MG | DA | 3045 | 1/1 | 0.96 | 0.30 | - | 35,35,35,35 | 0 |
| 57 | MG | CA | 1732 | 1/1 | 0.96 | 0.09 | - | 82,82,82,82 | 0 |
| 57 | MG | AA | 1762 | 1/1 | 0.82 | 0.40 | - | 80,80,80,80 | 1 |
| 57 | MG | AA | 1648 | 1/1 | 0.80 | 0.32 | - | 87,87,87,87 | 0 |
| 57 | MG | BA | 3328 | 1/1 | 0.98 | 0.18 | - | 168,168,168,168 | 0 |
| 57 | MG | CA | 1798 | 1/1 | 0.73 | 0.23 | - | 55,55,55,55 | 0 |
| 57 | MG | DA | 3097 | 1/1 | 0.97 | 0.08 | - | 25,25,25,25 | 0 |
| 57 | MG | BA | 3388 | 1/1 | 0.97 | 0.36 | - | 12,12,12,12 | 0 |
| 57 | MG | BA | 3323 | 1/1 | 0.89 | 0.35 | - | 86,86,86,86 | 1 |
| 57 | MG | DA | 3142 | 1/1 | 0.91 | 0.46 | - | 65,65,65,65 | 0 |
| 57 | MG | BA | 3141 | 1/1 | 0.90 | 0.27 | - | 56,56,56,56 | 0 |
| 57 | MG | DA | 3356 | 1/1 | 0.95 | 0.15 | - | 57,57,57,57 | 0 |
| 57 | MG | CA | 1756 | 1/1 | 0.72 | 0.36 | - | 53,53,53,53 | 0 |
| 57 | MG | DA | 3335 | 1/1 | 0.90 | 0.26 | - | 80,80,80,80 | 0 |
| 57 | MG | CA | 1653 | 1/1 | 0.96 | 0.13 | - | 83,83,83,83 | 0 |
| 57 | MG | DA | 3104 | 1/1 | 0.96 | 0.47 | - | 37,37,37,37 | 0 |
| 57 | MG | CA | 1649 | 1/1 | 0.31 | 0.41 | - | 95,95,95,95 | 0 |
| 57 | MG | DA | 3317 | 1/1 | 0.80 | 0.33 | - | 55,55,55,55 | 1 |
| 57 | MG | BA | 3316 | 1/1 | 0.97 | 0.22 | - | 55,55,55,55 | 1 |
| 57 | MG | DA | 3254 | 1/1 | 0.95 | 0.13 | - | 99,99,99,99 | 0 |
| 57 | MG | AA | 1681 | 1/1 | 0.79 | 1.02 | - | 86,86,86,86 | 0 |
| 57 | MG | CA | 1606 | 1/1 | 0.77 | 0.32 | - | 78,78,78,78 | 0 |
| 57 | MG | BA | 3415 | 1/1 | 0.81 | 0.37 | - | 77,77,77,77 | 0 |
| 57 | MG | BA | 3094 | 1/1 | 0.98 | 0.18 | - | 24,24,24,24 | 0 |
| 57 | MG | AA | 1670 | 1/1 | 0.85 | 0.38 | - | 49,49,49,49 | 0 |
| 57 | MG | BA | 3315 | 1/1 | 0.98 | 0.06 | - | 83,83,83,83 | 0 |
| 57 | MG | BA | 3002 | 1/1 | 1.00 | 0.16 | - | 139,139,139,139 | 0 |
| 57 | MG | BA | 3252 | 1/1 | 0.86 | 0.27 | - | 79,79,79,79 | 0 |
| 57 | MG | BA | 3401 | 1/1 | 0.93 | 0.29 | - | 81,81,81,81 | 0 |
| 57 | MG | CA | 1673 | 1/1 | -0.08 | 0.63 | - | 128,128,128,128 | 1 |
| 57 | MG | DA | 3312 | 1/1 | 0.84 | 0.20 | - | 56,56,56,56 | 1 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3082 | 1/1 | 0.97 | 0.28 | - | 59,59,59,59 | 0 |
| 57 | MG | DA | 3145 | 1/1 | 0.95 | 0.44 | - | 90,90,90,90 | 0 |
| 57 | MG | CA | 1733 | 1/1 | 0.81 | 0.52 | - | 81,81,81,81 | 1 |
| 57 | MG | BA | 3093 | 1/1 | 0.99 | 0.07 | - | 7,7,7,7 | 0 |
| 57 | MG | CA | 1754 | 1/1 | 0.63 | 0.52 | - | 105,105,105,105 | 1 |
| 57 | MG | BA | 3213 | 1/1 | 0.98 | 0.09 | - | 93,93,93,93 | 1 |
| 57 | MG | AA | 1772 | 1/1 | 0.77 | 0.33 | - | 85,85,85,85 | 0 |
| 57 | MG | BA | 3325 | 1/1 | 0.98 | 0.13 | - | 88,88,88,88 | 1 |
| 57 | MG | DA | 3339 | 1/1 | 0.86 | 0.28 | - | 57,57,57,57 | 1 |
| 57 | MG | BA | 3333 | 1/1 | 0.96 | 0.21 | - | 40,40,40,40 | 0 |
| 57 | MG | DA | 3236 | 1/1 | 0.98 | 0.33 | - | 47,47,47,47 | 0 |
| 57 | MG | CA | 1720 | 1/1 | 0.80 | 0.23 | - | 89,89,89,89 | 0 |
| 57 | MG | BA | 3210 | 1/1 | 0.92 | 1.03 | - | 84,84,84,84 | 0 |
| 57 | MG | AA | 1711 | 1/1 | 0.96 | 0.13 | - | 73,73,73,73 | 0 |
| 57 | MG | BA | 3298 | 1/1 | 0.91 | 0.47 | - | 69,69,69,69 | 0 |
| 57 | MG | DA | 3318 | 1/1 | 0.91 | 0.19 | - | 138,138,138,138 | 0 |
| 57 | MG | CA | 1694 | 1/1 | 0.82 | 0.38 | - | 116,116,116,116 | 0 |
| 57 | MG | DA | 3346 | 1/1 | 0.88 | 0.22 | - | 54,54,54,54 | 0 |
| 57 | MG | DA | 3353 | 1/1 | 0.58 | 0.59 | - | 107,107,107,107 | 0 |
| 57 | MG | CA | 1683 | 1/1 | 0.47 | 0.47 | - | 110,110,110,110 | 0 |
| 57 | MG | AA | 1722 | 1/1 | 0.87 | 0.15 | - | 75,75,75,75 | 0 |
| 57 | MG | AA | 1659 | 1/1 | 0.88 | 0.36 | - | 42,42,42,42 | 0 |
| 57 | MG | BA | 3167 | 1/1 | 0.86 | 0.37 | - | 32,32,32,32 | 1 |
| 57 | MG | B5 | 101 | 1/1 | 0.97 | 0.17 | - | 42,42,42,42 | 0 |
| 57 | MG | AA | 1643 | 1/1 | 0.79 | 0.30 | - | 84,84,84,84 | 0 |
| 57 | MG | BA | 3282 | 1/1 | 0.84 | 0.51 | - | 23,23,23,23 | 0 |
| 57 | MG | AA | 1679 | 1/1 | 0.77 | 0.48 | - | 56,56,56,56 | 0 |
| 57 | MG | DA | 3334 | 1/1 | 0.93 | 0.24 | - | 72,72,72,72 | 0 |
| 57 | MG | CA | 1681 | 1/1 | 0.81 | 0.53 | - | 49,49,49,49 | 0 |
| 57 | MG | BA | 3134 | 1/1 | 0.91 | 0.19 | - | 10,10,10,10 | 0 |
| 57 | MG | BA | 3304 | 1/1 | 0.96 | 0.16 | - | 81,81,81,81 | 0 |
| 57 | MG | CA | 1777 | 1/1 | 0.86 | 1.29 | - | 135,135,135,135 | 0 |
| 57 | MG | DA | 3169 | 1/1 | 0.88 | 0.52 | - | 43,43,43,43 | 1 |
| 57 | MG | CA | 1744 | 1/1 | 0.93 | 0.66 | - | 63,63,63,63 | 0 |
| 57 | MG | BA | 3413 | 1/1 | 0.94 | 0.55 | - | 33,33,33,33 | 0 |
| 57 | MG | DB | 203 | 1/1 | 0.44 | 0.96 | - | 33,33,33,33 | 1 |
| 57 | MG | BA | 3258 | 1/1 | 0.95 | 0.35 | - | 32,32,32,32 | 0 |
| 57 | MG | BA | 3286 | 1/1 | 0.98 | 0.67 | - | 16,16,16,16 | 0 |
| 57 | MG | BB | 210 | 1/1 | 0.97 | 0.32 | - | 27,27,27,27 | 0 |
| 57 | MG | CA | 1764 | 1/1 | 0.71 | 0.23 | - | 68,68,68,68 | 1 |
| 57 | MG | CA | 1730 | 1/1 | 0.95 | 0.26 | - | 43,43,43,43 | 0 |
| 57 | MG | BA | 3206 | 1/1 | 0.97 | 0.25 | - | 22,22,22,22 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3397 | 1/1 | 0.94 | 0.74 | - | 101,101,101,101 | 0 |
| 57 | MG | AA | 1791 | 1/1 | 0.95 | 0.23 | - | 26,26,26,26 | 1 |
| 57 | MG | BA | 3115 | 1/1 | 0.98 | 0.32 | - | 27,27,27,27 | 0 |
| 57 | MG | DA | 3375 | 1/1 | 0.89 | 0.16 | - | 83,83,83,83 | 0 |
| 57 | MG | DA | 3240 | 1/1 | 0.82 | 0.46 | - | 56,56,56,56 | 0 |
| 57 | MG | AA | 1627 | 1/1 | 0.92 | 0.26 | - | 54,54,54,54 | 0 |
| 57 | MG | DA | 3344 | 1/1 | 0.97 | 0.46 | - | 64,64,64,64 | 0 |
| 57 | MG | DA | 3041 | 1/1 | 0.91 | 0.21 | - | 46,46,46,46 | 0 |
| 57 | MG | DA | 3223 | 1/1 | 0.84 | 0.64 | - | 46,46,46,46 | 1 |
| 57 | MG | DA | 3076 | 1/1 | 0.98 | 0.33 | - | 45,45,45,45 | 0 |
| 57 | MG | BA | 3349 | 1/1 | 0.61 | 0.70 | - | 94,94,94,94 | 1 |
| 57 | MG | CV | 104 | 1/1 | 0.10 | 0.41 | - | 163,163,163,163 | 0 |
| 57 | MG | BA | 3050 | 1/1 | 0.95 | 0.27 | - | 30,30,30,30 | 0 |
| 57 | MG | BA | 3254 | 1/1 | 0.66 | 0.19 | - | 44,44,44,44 | 0 |
| 57 | MG | AA | 1746 | 1/1 | 0.96 | 0.36 | - | 95,95,95,95 | 0 |
| 57 | MG | CA | 1682 | 1/1 | 0.73 | 0.73 | - | 90,90,90,90 | 0 |
| 57 | MG | AA | 1764 | 1/1 | 0.67 | 0.34 | - | 64,64,64,64 | 0 |
| 57 | MG | BA | 3278 | 1/1 | 0.98 | 0.09 | - | 127,127,127,127 | 0 |
| 57 | MG | BA | 3395 | 1/1 | 0.96 | 0.21 | - | 113,113,113,113 | 0 |
| 57 | MG | DA | 3414 | 1/1 | 0.64 | 0.39 | - | 84,84,84,84 | 0 |
| 57 | MG | AW | 102 | 1/1 | 0.33 | 0.21 | - | 135,135,135,135 | 0 |
| 57 | MG | CA | 1768 | 1/1 | 0.88 | 0.35 | - | 72,72,72,72 | 0 |
| 57 | MG | DA | 3128 | 1/1 | 0.21 | 1.30 | - | 73,73,73,73 | 1 |
| 57 | MG | DA | 3218 | 1/1 | 0.88 | 0.39 | - | 94,94,94,94 | 0 |
| 57 | MG | CV | 103 | 1/1 | 0.85 | 0.59 | - | 74,74,74,74 | 0 |
| 57 | MG | CA | 1615 | 1/1 | 0.82 | 1.51 | - | 70,70,70,70 | 0 |
| 57 | MG | DA | 3125 | 1/1 | 0.92 | 0.18 | - | 53,53,53,53 | 0 |
| 57 | MG | D1 | 101 | 1/1 | 0.90 | 0.21 | - | 29,29,29,29 | 1 |
| 57 | MG | AI | 201 | 1/1 | 0.93 | 0.24 | - | 109,109,109,109 | 0 |
| 57 | MG | BB | 201 | 1/1 | 0.73 | 0.38 | - | 87,87,87,87 | 0 |
| 57 | MG | BA | 3223 | 1/1 | 0.72 | 0.50 | - | 64,64,64,64 | 0 |
| 57 | MG | DA | 3349 | 1/1 | 0.82 | 0.32 | - | 41,41,41,41 | 1 |
| 57 | MG | DA | 3244 | 1/1 | 0.92 | 0.35 | - | 62,62,62,62 | 0 |
| 57 | MG | DA | 3220 | 1/1 | 0.98 | 0.38 | - | 26,26,26,26 | 0 |
| 57 | MG | DA | 3129 | 1/1 | 0.94 | 0.13 | - | 22,22,22,22 | 0 |
| 57 | MG | DA | 3094 | 1/1 | 0.94 | 0.14 | - | 22,22,22,22 | 0 |
| 57 | MG | AA | 1689 | 1/1 | 0.71 | 0.48 | - | 118,118,118,118 | 0 |
| 57 | MG | BA | 3285 | 1/1 | 0.82 | 0.54 | - | 89,89,89,89 | 0 |
| 57 | MG | BA | 3181 | 1/1 | 0.95 | 0.32 | - | 49,49,49,49 | 0 |
| 57 | MG | DA | 3210 | 1/1 | 0.70 | 0.54 | - | 96,96,96,96 | 0 |
| 57 | MG | DA | 3277 | 1/1 | 0.88 | 0.67 | - | 63,63,63,63 | 0 |
| 57 | MG | BA | 3422 | 1/1 | 0.92 | 0.30 | - | 120,120,120,120 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3260 | 1/1 | 0.78 | 0.98 | - | 81,81,81,81 | 0 |
| 57 | MG | AA | 1723 | 1/1 | 0.91 | 0.73 | - | 79,79,79,79 | 1 |
| 57 | MG | DA | 3227 | 1/1 | 0.77 | 1.36 | - | 136,136,136,136 | 0 |
| 57 | MG | DA | 3116 | 1/1 | 0.88 | 0.75 | - | 50,50,50,50 | 0 |
| 57 | MG | CA | 1712 | 1/1 | 0.98 | 0.12 | - | 81,81,81,81 | 0 |
| 57 | MG | BA | 3259 | 1/1 | 0.98 | 0.18 | - | 24,24,24,24 | 0 |
| 57 | MG | DA | 3113 | 1/1 | 0.93 | 0.40 | - | 27,27,27,27 | 0 |
| 57 | MG | DA | 3131 | 1/1 | 0.98 | 0.21 | - | 23,23,23,23 | 0 |
| 57 | MG | CV | 102 | 1/1 | 0.97 | 0.20 | - | 46,46,46,46 | 1 |
| 57 | MG | BA | 3355 | 1/1 | 0.97 | 0.16 | - | 92,92,92,92 | 0 |
| 57 | MG | DA | 3089 | 1/1 | 0.97 | 0.29 | - | 26,26,26,26 | 0 |
| 57 | MG | CA | 1633 | 1/1 | 0.98 | 0.14 | - | 42,42,42,42 | 0 |
| 57 | MG | AL | 201 | 1/1 | 0.91 | 0.38 | - | 81,81,81,81 | 0 |
| 57 | MG | DA | 3295 | 1/1 | 0.97 | 0.09 | - | 78,78,78,78 | 0 |
| 57 | MG | BU | 201 | 1/1 | 0.74 | 0.40 | - | 166,166,166,166 | 1 |
| 57 | MG | AA | 1676 | 1/1 | 0.97 | 0.13 | - | 48,48,48,48 | 0 |
| 57 | MG | AA | 1714 | 1/1 | 0.97 | 0.10 | - | 29,29,29,29 | 0 |
| 57 | MG | BA | 3374 | 1/1 | 0.93 | 0.07 | - | 92,92,92,92 | 0 |
| 57 | MG | BA | 3128 | 1/1 | 0.93 | 0.16 | - | 27,27,27,27 | 0 |
| 57 | MG | BA | 3068 | 1/1 | 0.96 | 0.15 | - | 38,38,38,38 | 0 |
| 57 | MG | BA | 3177 | 1/1 | 0.27 | 0.40 | - | 112,112,112,112 | 0 |
| 57 | MG | BA | 3174 | 1/1 | 0.92 | 0.25 | - | 55,55,55,55 | 0 |
| 57 | MG | AA | 1632 | 1/1 | 0.94 | 0.42 | - | 34,34,34,34 | 1 |
| 57 | MG | DA | 3151 | 1/1 | 0.96 | 0.33 | - | 57,57,57,57 | 1 |
| 57 | MG | BA | 3041 | 1/1 | 0.82 | 0.29 | - | 96,96,96,96 | 0 |
| 57 | MG | AA | 1640 | 1/1 | 0.71 | 0.34 | - | 76,76,76,76 | 0 |
| 57 | MG | BA | 3289 | 1/1 | 0.76 | 0.23 | - | 79,79,79,79 | 0 |
| 57 | MG | DA | 3214 | 1/1 | 0.84 | 0.26 | - | 129,129,129,129 | 0 |
| 57 | MG | BX | 101 | 1/1 | 0.97 | 0.39 | - | 58,58,58,58 | 0 |
| 57 | MG | DA | 3020 | 1/1 | 0.86 | 0.33 | - | 59,59,59,59 | 0 |
| 57 | MG | AA | 1669 | 1/1 | 0.93 | 0.28 | - | 57,57,57,57 | 0 |
| 57 | MG | DA | 3391 | 1/1 | 0.98 | 0.10 | - | 120,120,120,120 | 0 |
| 57 | MG | CA | 1631 | 1/1 | 0.97 | 0.30 | - | 65,65,65,65 | 0 |
| 57 | MG | DA | 3280 | 1/1 | 0.96 | 0.35 | - | 109,109,109,109 | 0 |
| 57 | MG | BA | 3360 | 1/1 | 0.77 | 0.39 | - | 140,140,140,140 | 0 |
| 57 | MG | DA | 3137 | 1/1 | 0.96 | 0.18 | - | 21,21,21,21 | 0 |
| 57 | MG | DA | 3002 | 1/1 | 0.84 | 0.23 | - | 69,69,69,69 | 0 |
| 57 | MG | BA | 3354 | 1/1 | 0.97 | 0.14 | - | 129,129,129,129 | 0 |
| 57 | MG | CW | 107 | 1/1 | 0.45 | 0.21 | - | 113,113,113,113 | 1 |
| 57 | MG | AV | 102 | 1/1 | 0.96 | 0.15 | - | 93,93,93,93 | 1 |
| 57 | MG | BA | 3099 | 1/1 | 0.98 | 0.20 | - | 37,37,37,37 | 0 |
| 57 | MG | DA | 3392 | 1/1 | 0.48 | 0.62 | - | 107,107,107,107 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|----------------------------|-------|
| 57 | MG | BA | 3251 | 1/1 | 0.46 | 0.37 | - | 136,136,136,136 | 1 |
| 57 | MG | BA | 3293 | 1/1 | 0.99 | 0.10 | - | 87,87,87,87 | 0 |
| 57 | MG | DB | 204 | 1/1 | 0.96 | 0.21 | - | 90,90,90,90 | 0 |
| 57 | MG | DA | 3329 | 1/1 | 0.85 | 0.42 | - | 140,140,140,140 | 0 |
| 57 | MG | DA | 3103 | 1/1 | 0.92 | 0.43 | - | 34,34,34,34 | 0 |
| 57 | MG | AA | 1615 | 1/1 | 0.96 | 0.57 | - | 65,65,65,65 | 0 |
| 57 | MG | BA | 3390 | 1/1 | 0.91 | 0.27 | - | 37,37,37,37 | 0 |
| 57 | MG | BA | 3406 | 1/1 | 0.82 | 0.27 | - | 38,38,38,38 | 1 |
| 57 | MG | DV | 201 | 1/1 | 0.87 | 0.28 | - | 70,70,70,70 | 0 |
| 57 | MG | DX | 101 | 1/1 | 0.90 | 0.34 | - | 45,45,45,45 | 0 |
| 57 | MG | BA | 3140 | 1/1 | 0.96 | 0.36 | - | 66,66,66,66 | 0 |
| 57 | MG | CA | 1669 | 1/1 | 0.83 | 0.33 | - | 81,81,81,81 | 0 |
| 57 | MG | DA | 3362 | 1/1 | 0.94 | 0.35 | - | 112,112,112,112 | 0 |
| 57 | MG | BA | 3257 | 1/1 | 0.87 | 0.58 | - | 61,61,61,61 | 0 |
| 57 | MG | DA | 3369 | 1/1 | 0.32 | 0.40 | - | 112,112,112,112 | 0 |
| 57 | MG | CW | 104 | 1/1 | 0.95 | 0.11 | - | 130,130,130,130 | 1 |
| 57 | MG | CA | 1782 | 1/1 | 0.84 | 0.33 | - | 77,77,77,77 | 0 |
| 57 | MG | AA | 1612 | 1/1 | 0.92 | 0.31 | - | 67,67,67,67 | 0 |
| 57 | MG | BA | 3090 | 1/1 | 0.99 | 0.36 | - | 29,29,29,29 | 0 |
| 57 | MG | DA | 3405 | 1/1 | 0.56 | 0.65 | - | 53,53,53,53 | 1 |
| 57 | MG | AA | 1639 | 1/1 | 0.95 | 0.29 | - | 99,99,99,99 | 0 |
| 57 | MG | DA | 3393 | 1/1 | 0.75 | 0.52 | - | 109,109,109,109 | 1 |
| 57 | MG | CA | 1657 | 1/1 | 0.74 | 0.35 | - | 86,86,86,86 | 0 |
| 57 | MG | AA | 1647 | 1/1 | 0.91 | 0.21 | - | 74,74,74,74 | 0 |
| 57 | MG | DA | 3348 | 1/1 | 0.96 | 0.10 | - | 64,64,64,64 | 0 |
| 57 | MG | D5 | 102 | 1/1 | 0.91 | 0.31 | - | 39,39,39,39 | 1 |
| 57 | MG | DA | 3410 | 1/1 | 0.98 | 0.31 | - | 87,87,87,87 | 1 |
| 57 | MG | AA | 1732 | 1/1 | 0.77 | 0.52 | - | 61,61,61,61 | 0 |
| 57 | MG | BA | 3371 | 1/1 | 0.60 | 0.70 | - | 101,101,101,101 | 0 |
| 57 | MG | BA | 3037 | 1/1 | 0.95 | 0.25 | - | 23,23,23,23 | 0 |
| 57 | MG | BA | 3057 | 1/1 | 0.91 | 0.47 | - | 85,85,85,85 | 0 |
| 57 | MG | BA | 3171 | 1/1 | 0.91 | 0.11 | - | 31,31,31,31 | 0 |
| 57 | MG | AA | 1789 | 1/1 | 0.98 | 0.32 | - | 81,81,81,81 | 1 |
| 57 | MG | AA | 1749 | 1/1 | 0.62 | 0.38 | - | 100,100,100,100 | 1 |
| 57 | MG | CA | 1786 | 1/1 | 0.71 | 0.12 | - | 71,71,71,71 | 1 |
| 57 | MG | CA | 1680 | 1/1 | 0.46 | 1.13 | - | 94,94,94,94 | 0 |
| 57 | MG | CA | 1654 | 1/1 | 0.79 | 0.58 | - | 69,69,69,69 | 0 |
| 57 | MG | DA | 3354 | 1/1 | 0.77 | 0.13 | - | 84,84,84,84 | 0 |
| 57 | MG | BA | 3159 | 1/1 | 0.80 | 0.32 | - | 37,37,37,37 | 0 |
| 57 | MG | AA | 1616 | 1/1 | 0.80 | 0.84 | - | 70,70,70,70 | 0 |
| 57 | MG | DA | 3058 | 1/1 | 0.97 | 0.37 | - | 88,88,88,88 | 0 |
| 57 | MG | BA | 3227 | 1/1 | 0.95 | 0.28 | - | 74,74,74,74 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | AA | 1646 | 1/1 | 0.76 | 0.64 | - | 82,82,82,82 | 0 |
| 57 | MG | BA | 3043 | 1/1 | 0.97 | 0.20 | - | 20,20,20,20 | 0 |
| 57 | MG | AA | 1617 | 1/1 | 0.82 | 0.71 | - | 51,51,51,51 | 0 |
| 57 | MG | CA | 1640 | 1/1 | 0.22 | 0.92 | - | 121,121,121,121 | 0 |
| 57 | MG | BA | 3031 | 1/1 | 0.95 | 0.45 | - | 44,44,44,44 | 0 |
| 57 | MG | DA | 3269 | 1/1 | 0.87 | 0.36 | - | 47,47,47,47 | 0 |
| 57 | MG | CA | 1674 | 1/1 | 0.65 | 0.47 | - | 63,63,63,63 | 1 |
| 57 | MG | CA | 1635 | 1/1 | 0.91 | 0.19 | - | 74,74,74,74 | 0 |
| 57 | MG | BB | 208 | 1/1 | 0.92 | 1.03 | - | 61,61,61,61 | 1 |
| 57 | MG | BA | 3008 | 1/1 | 0.98 | 0.26 | - | 3,3,3,3 | 0 |
| 57 | MG | DA | 3323 | 1/1 | 0.96 | 0.64 | - | 53,53,53,53 | 1 |
| 57 | MG | DA | 3256 | 1/1 | 0.84 | 0.26 | - | 79,79,79,79 | 0 |
| 57 | MG | AA | 1661 | 1/1 | 0.38 | 0.57 | - | 84,84,84,84 | 0 |
| 57 | MG | AA | 1650 | 1/1 | 0.94 | 0.22 | - | 99,99,99,99 | 0 |
| 57 | MG | BA | 3359 | 1/1 | 0.99 | 0.16 | - | 86,86,86,86 | 1 |
| 57 | MG | BA | 3126 | 1/1 | 0.93 | 0.27 | - | 39,39,39,39 | 0 |
| 57 | MG | CA | 1742 | 1/1 | 0.82 | 0.21 | - | 70,70,70,70 | 0 |
| 57 | MG | DA | 3187 | 1/1 | 0.91 | 0.17 | - | 55,55,55,55 | 0 |
| 57 | MG | AA | 1653 | 1/1 | 0.67 | 0.90 | - | 82,82,82,82 | 0 |
| 57 | MG | CA | 1601 | 1/1 | 0.92 | 0.29 | - | 140,140,140,140 | 0 |
| 57 | MG | AA | 1607 | 1/1 | 0.71 | 0.31 | - | 64,64,64,64 | 0 |
| 57 | MG | BA | 3352 | 1/1 | 0.93 | 0.73 | - | 23,23,23,23 | 1 |
| 57 | MG | DA | 3030 | 1/1 | 0.96 | 0.23 | - | 47,47,47,47 | 0 |
| 57 | MG | CA | 1642 | 1/1 | 0.97 | 0.26 | - | 74,74,74,74 | 0 |
| 57 | MG | AA | 1695 | 1/1 | 0.88 | 0.16 | - | 52,52,52,52 | 0 |
| 57 | MG | BA | 3264 | 1/1 | 0.75 | 0.27 | - | 58,58,58,58 | 0 |
| 57 | MG | DA | 3304 | 1/1 | 0.74 | 0.42 | - | 49,49,49,49 | 0 |
| 57 | MG | BA | 3373 | 1/1 | 0.57 | 0.61 | - | 83,83,83,83 | 1 |
| 57 | MG | BA | 3342 | 1/1 | 0.65 | 0.29 | - | 84,84,84,84 | 0 |
| 57 | MG | CA | 1665 | 1/1 | 0.76 | 0.35 | - | 68,68,68,68 | 0 |
| 57 | MG | BA | 3217 | 1/1 | 0.91 | 0.25 | - | 78,78,78,78 | 0 |
| 57 | MG | DA | 3140 | 1/1 | 0.92 | 0.26 | - | 90,90,90,90 | 0 |
| 57 | MG | AA | 1755 | 1/1 | 0.88 | 0.35 | - | 84,84,84,84 | 0 |
| 57 | MG | DA | 3300 | 1/1 | 0.58 | 0.29 | - | 95,95,95,95 | 0 |
| 57 | MG | CA | 1735 | 1/1 | 0.77 | 0.49 | - | 90,90,90,90 | 0 |
| 57 | MG | DA | 3321 | 1/1 | 0.64 | 0.62 | - | 126,126,126,126 | 0 |
| 57 | MG | DA | 3224 | 1/1 | 0.90 | 0.17 | - | 85,85,85,85 | 0 |
| 57 | MG | AA | 1751 | 1/1 | 0.78 | 0.42 | - | 72,72,72,72 | 1 |
| 57 | MG | BA | 3195 | 1/1 | 0.75 | 1.13 | - | 79,79,79,79 | 0 |
| 57 | MG | BA | 3263 | 1/1 | 0.93 | 0.63 | - | 77,77,77,77 | 0 |
| 57 | MG | DA | 3282 | 1/1 | 0.76 | 0.21 | - | 50,50,50,50 | 0 |
| 57 | MG | DA | 3009 | 1/1 | 0.96 | 0.15 | - | 45,45,45,45 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3253 | 1/1 | 0.81 | 0.53 | - | 86,86,86,86 | 1 |
| 57 | MG | DA | 3276 | 1/1 | 0.61 | 0.76 | - | 115,115,115,115 | 0 |
| 57 | MG | BA | 3049 | 1/1 | 0.98 | 0.28 | - | 84,84,84,84 | 1 |
| 57 | MG | DA | 3305 | 1/1 | 0.97 | 0.56 | - | 100,100,100,100 | 1 |
| 57 | MG | AA | 1704 | 1/1 | 0.57 | 0.29 | - | 103,103,103,103 | 0 |
| 57 | MG | AA | 1792 | 1/1 | 0.90 | 0.51 | - | 58,58,58,58 | 0 |
| 57 | MG | AV | 103 | 1/1 | 0.73 | 0.44 | - | 81,81,81,81 | 0 |
| 57 | MG | AA | 1775 | 1/1 | 0.80 | 0.57 | - | 92,92,92,92 | 0 |
| 57 | MG | DX | 102 | 1/1 | 0.30 | 1.07 | - | 126,126,126,126 | 0 |
| 57 | MG | BA | 3385 | 1/1 | 0.96 | 0.12 | - | 87,87,87,87 | 0 |
| 57 | MG | DA | 3188 | 1/1 | 0.74 | 1.99 | - | 111,111,111,111 | 0 |
| 57 | MG | CA | 1706 | 1/1 | 0.66 | 0.70 | - | 80,80,80,80 | 0 |
| 57 | MG | BA | 3218 | 1/1 | 0.97 | 0.35 | - | 6,6,6,6 | 0 |
| 57 | MG | DA | 3127 | 1/1 | 0.84 | 0.46 | - | 67,67,67,67 | 0 |
| 57 | MG | CA | 1641 | 1/1 | 0.95 | 0.42 | - | 64,64,64,64 | 0 |
| 57 | MG | DA | 3069 | 1/1 | 0.92 | 0.27 | - | 75,75,75,75 | 0 |
| 57 | MG | DA | 3179 | 1/1 | 0.87 | 0.18 | - | 80,80,80,80 | 0 |
| 57 | MG | BA | 3346 | 1/1 | 0.94 | 0.38 | - | 67,67,67,67 | 0 |
| 57 | MG | CW | 101 | 1/1 | 0.89 | 0.41 | - | 144,144,144,144 | 0 |
| 57 | MG | AA | 1756 | 1/1 | 0.93 | 0.27 | - | 47,47,47,47 | 1 |
| 57 | MG | BA | 3287 | 1/1 | 0.99 | 0.51 | - | 31,31,31,31 | 0 |
| 57 | MG | AA | 1667 | 1/1 | 0.44 | 0.49 | - | 72,72,72,72 | 0 |
| 57 | MG | AA | 1783 | 1/1 | 0.29 | 0.34 | - | 105,105,105,105 | 0 |
| 57 | MG | CA | 1718 | 1/1 | 0.93 | 0.15 | - | 67,67,67,67 | 0 |
| 57 | MG | BA | 3197 | 1/1 | 0.95 | 0.32 | - | 46,46,46,46 | 0 |
| 57 | MG | BA | 3226 | 1/1 | 0.80 | 0.17 | - | 58,58,58,58 | 0 |
| 57 | MG | AA | 1760 | 1/1 | 0.93 | 0.43 | - | 90,90,90,90 | 0 |
| 57 | MG | BA | 3310 | 1/1 | 0.67 | 0.19 | - | 102,102,102,102 | 1 |
| 57 | MG | BA | 3370 | 1/1 | 0.95 | 0.40 | - | 113,113,113,113 | 0 |
| 57 | MG | DA | 3402 | 1/1 | 0.91 | 0.41 | - | 125,125,125,125 | 0 |
| 57 | MG | BA | 3029 | 1/1 | 0.98 | 0.12 | - | 40,40,40,40 | 0 |
| 57 | MG | CA | 1794 | 1/1 | 0.92 | 0.60 | - | 81,81,81,81 | 0 |
| 57 | MG | BA | 3111 | 1/1 | 0.97 | 0.41 | - | 23,23,23,23 | 0 |
| 57 | MG | DA | 3314 | 1/1 | 0.92 | 0.20 | - | 141,141,141,141 | 0 |
| 57 | MG | AA | 1660 | 1/1 | 0.92 | 0.38 | - | 43,43,43,43 | 0 |
| 57 | MG | DA | 3039 | 1/1 | 0.98 | 0.05 | - | 70,70,70,70 | 0 |
| 57 | MG | BA | 3098 | 1/1 | 0.95 | 0.20 | - | 6,6,6,6 | 0 |
| 57 | MG | BA | 3243 | 1/1 | 0.90 | 0.16 | - | 65,65,65,65 | 0 |
| 57 | MG | AA | 1635 | 1/1 | 0.68 | 0.26 | - | 92,92,92,92 | 0 |
| 57 | MG | DA | 3028 | 1/1 | 0.92 | 0.44 | - | 47,47,47,47 | 0 |
| 57 | MG | AA | 1602 | 1/1 | 0.76 | 0.28 | - | 97,97,97,97 | 0 |
| 57 | MG | DA | 3164 | 1/1 | 0.85 | 0.21 | - | 84,84,84,84 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|-------|------|------|-----------------------------|-------|
| 57 | MG | DA | 3216 | 1/1 | 0.87 | 0.50 | - | 74,74,74,74 | 0 |
| 57 | MG | DA | 3336 | 1/1 | 0.93 | 0.17 | - | 77,77,77,77 | 1 |
| 57 | MG | CA | 1743 | 1/1 | 0.98 | 0.50 | - | 65,65,65,65 | 0 |
| 57 | MG | BA | 3153 | 1/1 | 0.89 | 0.40 | - | 20,20,20,20 | 1 |
| 57 | MG | AL | 202 | 1/1 | -0.37 | 0.33 | - | 165,165,165,165 | 0 |
| 57 | MG | DB | 210 | 1/1 | 0.93 | 0.27 | - | 74,74,74,74 | 0 |
| 57 | MG | AA | 1645 | 1/1 | 0.89 | 0.53 | - | 41,41,41,41 | 0 |
| 57 | MG | CA | 1639 | 1/1 | 0.97 | 0.16 | - | 62,62,62,62 | 0 |
| 57 | MG | DA | 3383 | 1/1 | 0.86 | 0.39 | - | 67,67,67,67 | 0 |
| 57 | MG | CA | 1604 | 1/1 | 0.90 | 0.18 | - | 63,63,63,63 | 0 |
| 57 | MG | BA | 3336 | 1/1 | 0.99 | 0.09 | - | 105,105,105,105 | 1 |
| 57 | MG | DA | 3159 | 1/1 | 0.95 | 0.58 | - | 70,70,70,70 | 0 |
| 57 | MG | CA | 1738 | 1/1 | 0.88 | 0.24 | - | 62,62,62,62 | 0 |
| 57 | MG | CA | 1621 | 1/1 | 0.97 | 0.08 | - | 58,58,58,58 | 0 |
| 57 | MG | DA | 3330 | 1/1 | 0.97 | 0.13 | - | 51,51,51,51 | 1 |
| 57 | MG | AA | 1748 | 1/1 | 0.80 | 0.35 | - | 144,144,144,144 | 1 |
| 57 | MG | BA | 3166 | 1/1 | 0.92 | 0.07 | - | 31,31,31,31 | 0 |
| 57 | MG | AW | 104 | 1/1 | 0.76 | 0.11 | - | 60,60,60,60 | 1 |
| 57 | MG | BA | 3133 | 1/1 | 0.93 | 0.22 | - | 19,19,19,19 | 0 |
| 57 | MG | DA | 3201 | 1/1 | 0.87 | 1.31 | - | 88,88,88,88 | 0 |
| 57 | MG | DA | 3211 | 1/1 | 0.90 | 0.30 | - | 45,45,45,45 | 0 |
| 57 | MG | DB | 213 | 1/1 | 0.78 | 0.51 | - | 93,93,93,93 | 0 |
| 57 | MG | AA | 1734 | 1/1 | 0.72 | 0.80 | - | 102,102,102,102 | 0 |
| 57 | MG | BB | 207 | 1/1 | 0.84 | 0.42 | - | 29,29,29,29 | 1 |
| 57 | MG | DA | 3157 | 1/1 | 0.51 | 0.61 | - | 79,79,79,79 | 0 |
| 57 | MG | DA | 3332 | 1/1 | 0.94 | 0.43 | - | 33,33,33,33 | 0 |
| 57 | MG | CA | 1747 | 1/1 | 0.92 | 0.49 | - | 62,62,62,62 | 0 |
| 57 | MG | AA | 1693 | 1/1 | 0.89 | 0.15 | - | 54,54,54,54 | 0 |
| 57 | MG | DA | 3150 | 1/1 | 0.89 | 0.31 | - | 65,65,65,65 | 1 |
| 57 | MG | AA | 1761 | 1/1 | 0.23 | 0.92 | - | 122,122,122,122 | 0 |
| 57 | MG | BA | 3260 | 1/1 | 0.97 | 0.50 | - | 30,30,30,30 | 0 |
| 57 | MG | CA | 1696 | 1/1 | 0.93 | 0.55 | - | 108,108,108,108 | 0 |
| 57 | MG | BA | 3296 | 1/1 | 0.89 | 0.21 | - | 66,66,66,66 | 0 |
| 57 | MG | AA | 1601 | 1/1 | 0.72 | 0.26 | - | 90,90,90,90 | 0 |
| 57 | MG | CX | 102 | 1/1 | 0.99 | 0.09 | - | 110,110,110,110 | 0 |
| 57 | MG | BA | 3284 | 1/1 | 0.94 | 0.65 | - | 53,53,53,53 | 0 |
| 57 | MG | BA | 3101 | 1/1 | 0.07 | 0.77 | - | 72,72,72,72 | 1 |
| 57 | MG | DA | 3156 | 1/1 | 0.95 | 0.49 | - | 38,38,38,38 | 0 |
| 57 | MG | AA | 1718 | 1/1 | 0.93 | 0.18 | - | 72,72,72,72 | 0 |
| 57 | MG | DA | 3068 | 1/1 | 0.90 | 0.35 | - | 98,98,98,98 | 0 |
| 57 | MG | BA | 3290 | 1/1 | 0.84 | 0.62 | - | 78,78,78,78 | 1 |
| 57 | MG | BA | 3288 | 1/1 | 0.90 | 0.74 | - | 59,59,59,59 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | BA | 3036 | 1/1 | 0.98 | 0.22 | - | 29,29,29,29 | 0 |
| 57 | MG | DA | 3338 | 1/1 | 0.77 | 0.30 | - | 74,74,74,74 | 0 |
| 57 | MG | BA | 3337 | 1/1 | 0.96 | 0.14 | - | 162,162,162,162 | 0 |
| 57 | MG | BA | 3139 | 1/1 | 0.99 | 0.16 | - | 85,85,85,85 | 0 |
| 57 | MG | DA | 3212 | 1/1 | 0.84 | 0.94 | - | 91,91,91,91 | 0 |
| 57 | MG | DB | 208 | 1/1 | 0.80 | 1.58 | - | 76,76,76,76 | 1 |
| 57 | MG | AA | 1766 | 1/1 | 0.91 | 0.27 | - | 67,67,67,67 | 0 |
| 57 | MG | DB | 211 | 1/1 | 0.87 | 0.25 | - | 119,119,119,119 | 0 |
| 57 | MG | DA | 3155 | 1/1 | 0.92 | 0.40 | - | 21,21,21,21 | 1 |
| 57 | MG | DA | 3238 | 1/1 | 0.83 | 0.33 | - | 56,56,56,56 | 0 |
| 57 | MG | AA | 1624 | 1/1 | 0.95 | 0.39 | - | 52,52,52,52 | 0 |
| 57 | MG | CA | 1660 | 1/1 | 0.75 | 0.35 | - | 59,59,59,59 | 0 |
| 57 | MG | BA | 3417 | 1/1 | 0.59 | 0.11 | - | 72,72,72,72 | 0 |
| 57 | MG | DA | 3259 | 1/1 | 0.78 | 0.34 | - | 56,56,56,56 | 0 |
| 57 | MG | CA | 1722 | 1/1 | 0.93 | 0.47 | - | 121,121,121,121 | 0 |
| 57 | MG | DA | 3292 | 1/1 | 0.90 | 0.89 | - | 51,51,51,51 | 1 |
| 57 | MG | CA | 1632 | 1/1 | 0.79 | 0.34 | - | 54,54,54,54 | 1 |
| 57 | MG | AA | 1609 | 1/1 | 0.96 | 0.20 | - | 36,36,36,36 | 0 |
| 57 | MG | BA | 3311 | 1/1 | 0.69 | 0.24 | - | 74,74,74,74 | 1 |
| 57 | MG | BA | 3326 | 1/1 | 0.85 | 0.28 | - | 46,46,46,46 | 1 |
| 57 | MG | DA | 3086 | 1/1 | 0.87 | 0.29 | - | 56,56,56,56 | 0 |
| 57 | MG | AA | 1622 | 1/1 | 0.36 | 0.55 | - | 135,135,135,135 | 0 |
| 57 | MG | CA | 1700 | 1/1 | 0.85 | 0.09 | - | 101,101,101,101 | 0 |
| 57 | MG | CV | 105 | 1/1 | 0.84 | 0.14 | - | 65,65,65,65 | 0 |
| 57 | MG | BA | 3319 | 1/1 | 0.91 | 0.24 | - | 3,3,3,3 | 1 |
| 57 | MG | BA | 3368 | 1/1 | 0.82 | 0.22 | - | 61,61,61,61 | 0 |
| 57 | MG | BA | 3032 | 1/1 | 0.93 | 0.23 | - | 45,45,45,45 | 0 |
| 57 | MG | BA | 3408 | 1/1 | 0.92 | 0.19 | - | 43,43,43,43 | 0 |
| 57 | MG | AA | 1649 | 1/1 | 0.98 | 0.13 | - | 56,56,56,56 | 1 |
| 57 | MG | DA | 3382 | 1/1 | 0.98 | 0.13 | - | 74,74,74,74 | 0 |
| 57 | MG | BA | 3303 | 1/1 | 0.98 | 0.18 | - | 49,49,49,49 | 1 |
| 57 | MG | DA | 3139 | 1/1 | 0.71 | 1.40 | - | 112,112,112,112 | 0 |
| 57 | MG | DA | 3011 | 1/1 | 0.97 | 0.48 | - | 52,52,52,52 | 0 |
| 57 | MG | CA | 1759 | 1/1 | 0.77 | 0.67 | - | 67,67,67,67 | 1 |
| 57 | MG | DA | 3412 | 1/1 | 0.81 | 0.36 | - | 74,74,74,74 | 0 |
| 57 | MG | CA | 1787 | 1/1 | 0.92 | 0.13 | - | 66,66,66,66 | 0 |
| 57 | MG | CA | 1617 | 1/1 | 0.72 | 0.55 | - | 81,81,81,81 | 0 |
| 57 | MG | BA | 3242 | 1/1 | 0.88 | 0.49 | - | 60,60,60,60 | 0 |
| 57 | MG | BA | 3369 | 1/1 | 0.95 | 0.33 | - | 53,53,53,53 | 1 |
| 57 | MG | AA | 1611 | 1/1 | 0.88 | 0.20 | - | 63,63,63,63 | 0 |
| 57 | MG | BA | 3085 | 1/1 | 0.94 | 0.24 | - | 21,21,21,21 | 0 |
| 57 | MG | CA | 1774 | 1/1 | 0.95 | 0.19 | - | 121,121,121,121 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|------|-----------------------------|-------|
| 57 | MG | BA | 3387 | 1/1 | 0.90 | 0.66 | - | 119,119,119,119 | 0 |
| 57 | MG | CA | 1757 | 1/1 | 0.84 | 0.49 | - | 128,128,128,128 | 0 |
| 57 | MG | DA | 3135 | 1/1 | 0.78 | 0.28 | - | 39,39,39,39 | 0 |
| 57 | MG | BA | 3066 | 1/1 | 0.95 | 0.33 | - | 26,26,26,26 | 0 |
| 57 | MG | BA | 3331 | 1/1 | 0.64 | 0.43 | - | 65,65,65,65 | 1 |
| 57 | MG | AA | 1717 | 1/1 | 0.95 | 0.32 | - | 61,61,61,61 | 0 |
| 57 | MG | DA | 3107 | 1/1 | 0.96 | 0.09 | - | 32,32,32,32 | 0 |
| 57 | MG | BA | 3015 | 1/1 | 0.95 | 0.35 | - | 33,33,33,33 | 0 |
| 57 | MG | BA | 3281 | 1/1 | 0.81 | 0.38 | - | 53,53,53,53 | 0 |
| 57 | MG | DA | 3310 | 1/1 | 0.92 | 0.41 | - | 54,54,54,54 | 1 |
| 57 | MG | CA | 1773 | 1/1 | 0.86 | 0.76 | - | 55,55,55,55 | 0 |
| 57 | MG | AA | 1680 | 1/1 | 0.92 | 0.58 | - | 53,53,53,53 | 0 |
| 57 | MG | AW | 106 | 1/1 | 0.72 | 0.27 | - | 102,102,102,102 | 1 |
| 57 | MG | AW | 105 | 1/1 | 0.72 | 0.41 | - | 154,154,154,154 | 1 |
| 57 | MG | CA | 1726 | 1/1 | 0.39 | 0.58 | - | 104,104,104,104 | 1 |
| 57 | MG | DA | 3377 | 1/1 | 0.96 | 0.33 | - | 24,24,24,24 | 0 |
| 57 | MG | BA | 3148 | 1/1 | 0.95 | 0.22 | - | 57,57,57,57 | 0 |
| 57 | MG | CA | 1658 | 1/1 | 0.92 | 0.23 | - | 78,78,78,78 | 0 |
| 57 | MG | BA | 3056 | 1/1 | 0.92 | 0.34 | - | 17,17,17,17 | 0 |
| 57 | MG | DA | 3228 | 1/1 | 0.53 | 0.28 | - | 83,83,83,83 | 0 |
| 57 | MG | AA | 1613 | 1/1 | 0.97 | 0.19 | - | 81,81,81,81 | 0 |
| 57 | MG | BA | 3121 | 1/1 | 0.87 | 0.34 | - | 40,40,40,40 | 0 |
| 57 | MG | BA | 3124 | 1/1 | 0.93 | 0.25 | - | 46,46,46,46 | 0 |
| 57 | MG | CA | 1656 | 1/1 | 0.65 | 0.54 | - | 120,120,120,120 | 0 |
| 57 | MG | AA | 1655 | 1/1 | 0.83 | 0.36 | - | 74,74,74,74 | 0 |
| 57 | MG | BA | 3187 | 1/1 | 0.85 | 0.41 | - | 108,108,108,108 | 0 |
| 57 | MG | BA | 3027 | 1/1 | 0.94 | 0.19 | - | 30,30,30,30 | 0 |
| 57 | MG | BA | 3003 | 1/1 | 0.88 | 0.88 | - | 85,85,85,85 | 0 |
| 57 | MG | DA | 3316 | 1/1 | 0.99 | 0.09 | - | 88,88,88,88 | 0 |
| 57 | MG | AA | 1769 | 1/1 | 0.65 | 0.52 | - | 80,80,80,80 | 0 |
| 57 | MG | DA | 3358 | 1/1 | 0.71 | 0.77 | - | 94,94,94,94 | 0 |
| 57 | MG | CA | 1796 | 1/1 | 0.95 | 0.25 | - | 119,119,119,119 | 0 |
| 57 | MG | AA | 1708 | 1/1 | 0.81 | 0.41 | - | 72,72,72,72 | 0 |
| 57 | MG | DA | 3034 | 1/1 | 0.90 | 0.51 | - | 52,52,52,52 | 0 |
| 57 | MG | DA | 3313 | 1/1 | 0.98 | 0.32 | - | 80,80,80,80 | 0 |
| 57 | MG | DA | 3136 | 1/1 | 0.61 | 0.88 | - | 63,63,63,63 | 0 |
| 57 | MG | DA | 3105 | 1/1 | 0.93 | 0.28 | - | 54,54,54,54 | 0 |
| 57 | MG | DA | 3166 | 1/1 | 0.69 | 0.41 | - | 75,75,75,75 | 0 |
| 57 | MG | BA | 3356 | 1/1 | 0.85 | 0.19 | - | 41,41,41,41 | 0 |

6.5 Other polymers [i](#)

There are no such residues in this entry.