



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 02:34 AM GMT

PDB ID : 2HHH
Title : Crystal structure of kasugamycin bound to the 30S ribosomal subunit
Authors : Schlutzen, F.
Deposited on : 2006-06-28
Resolution : 3.35 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

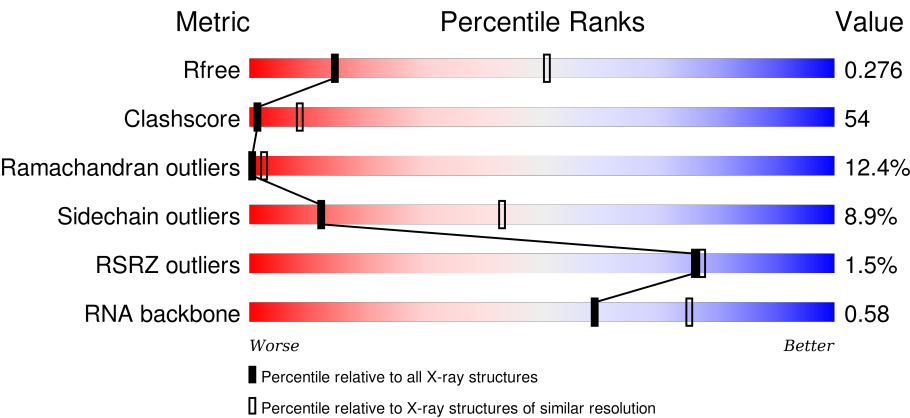
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.35 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.



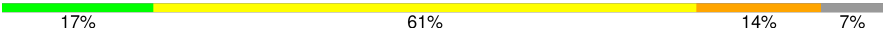
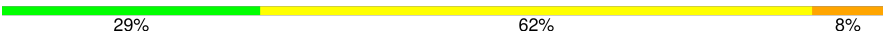
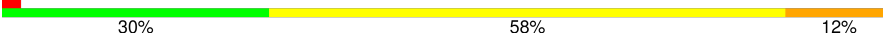

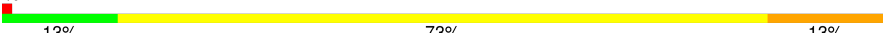
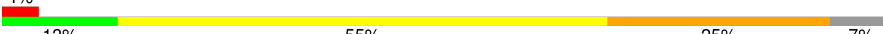
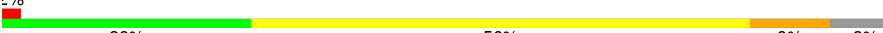




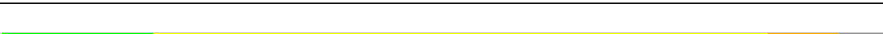



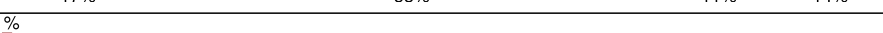

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R _{free}	91344	1005 (3.42-3.30)
Clashscore	102246	1076 (3.42-3.30)
Ramachandran outliers	100387	1059 (3.42-3.30)
Sidechain outliers	100360	1058 (3.42-3.30)
RSRZ outliers	91569	1010 (3.42-3.30)
RNA backbone	2183	1016 (3.92-2.80)

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	A	1522	<div><div>%</div><div><div></div><div>15%</div><div>60%</div><div>19%</div><div>5%</div><div>•</div></div></div>
2	B	256	<div><div>5%</div><div><div></div><div>16%</div><div>55%</div><div>17%</div><div>•</div><div>9%</div></div></div>
3	C	239	<div><div><div></div><div>14%</div><div>54%</div><div>16%</div><div>•</div><div>14%</div></div></div>
4	D	209	<div><div>%</div><div><div></div><div>19%</div><div>64%</div><div>15%</div><div>•</div></div></div>

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Mol	Chain	Length	Quality of chain
5	E	162	
6	F	101	
7	G	156	
8	H	138	
9	I	128	
10	J	105	
11	K	129	
12	L	135	
13	M	126	
14	N	61	
15	O	89	
16	P	88	
17	Q	105	
18	R	88	
19	S	93	
20	T	106	
21	U	27	

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
22	KSG	A	1523	-	-	-	X
22	KSG	A	1524	-	-	-	X

2 Entry composition

There are 22 unique types of molecules in this entry. The entry contains 51632 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 ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1505	Total	C	N	O	P	44	0	0
			32349	14399	5994	10452	1504			

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	234	Total	C	N	O	S	0	0	0
			1900	1213	341	341	5			

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	206	Total	C	N	O	S	0	0	0
			1612	1016	314	281	1			

- Molecule 4 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	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	E	150	Total	C	N	O	S	0	0	0
			1146	724	217	201	4			

- Molecule 6 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	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	G	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	H	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	I	127	Total	C	N	O	0	0	0
			1011	639	198	174			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	58	ARG	HIS	CONFLICT	UNP P80374

- Molecule 10 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	98	Total	C	N	O	S	0	0	0
			794	499	156	138	1			

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	K	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	L	124	Total	C	N	O	S	0	0	0
			970	611	195	163	1			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L	2	VAL	-	INSERTION	UNP P17293
L	3	ALA	-	INSERTION	UNP P17293
L	4	LEU	-	INSERTION	UNP P17293

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	M	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			

- Molecule 14 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	N	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	O	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	P	83	Total	C	N	O	S	0	0	0
			700	443	139	117	1			

- Molecule 17 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	Q	104	Total	C	N	O	S	0	0	0
			857	547	161	147	2			

- Molecule 18 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	R	73	Total	C	N	O	0	0	0
			597	380	118	99			

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	S	80	Total	C	N	O	S	0	0	0
			647	414	119	112	2			

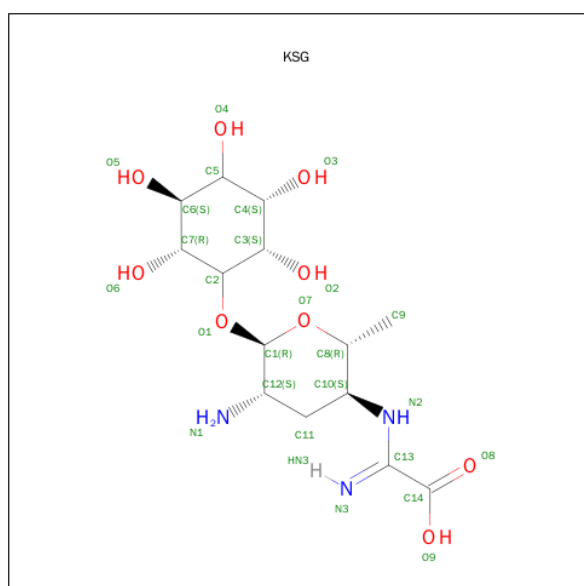
- Molecule 20 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	T	99	Total	C	N	O	S	0	0	0
			762	469	162	129	2			

- Molecule 21 is a protein called 30S ribosomal protein Thx.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
21	U	24	Total	C	N	O	0	0	0
			208	128	50	30			

- Molecule 22 is (1S,2R,3S,4R,5S,6S)-2,3,4,5,6-PENTAHYDROXYCYCLOHEXYL 2-AMINO-4-{{[CARBOXY(IMINO)METHYL]AMINO}}-2,3,4,6-TETRADEOXY-ALPHA-D-ARABINO-HEXOPYRANOSIDE (three-letter code: KSG) (formula: $C_{14}H_{25}N_3O_9$).

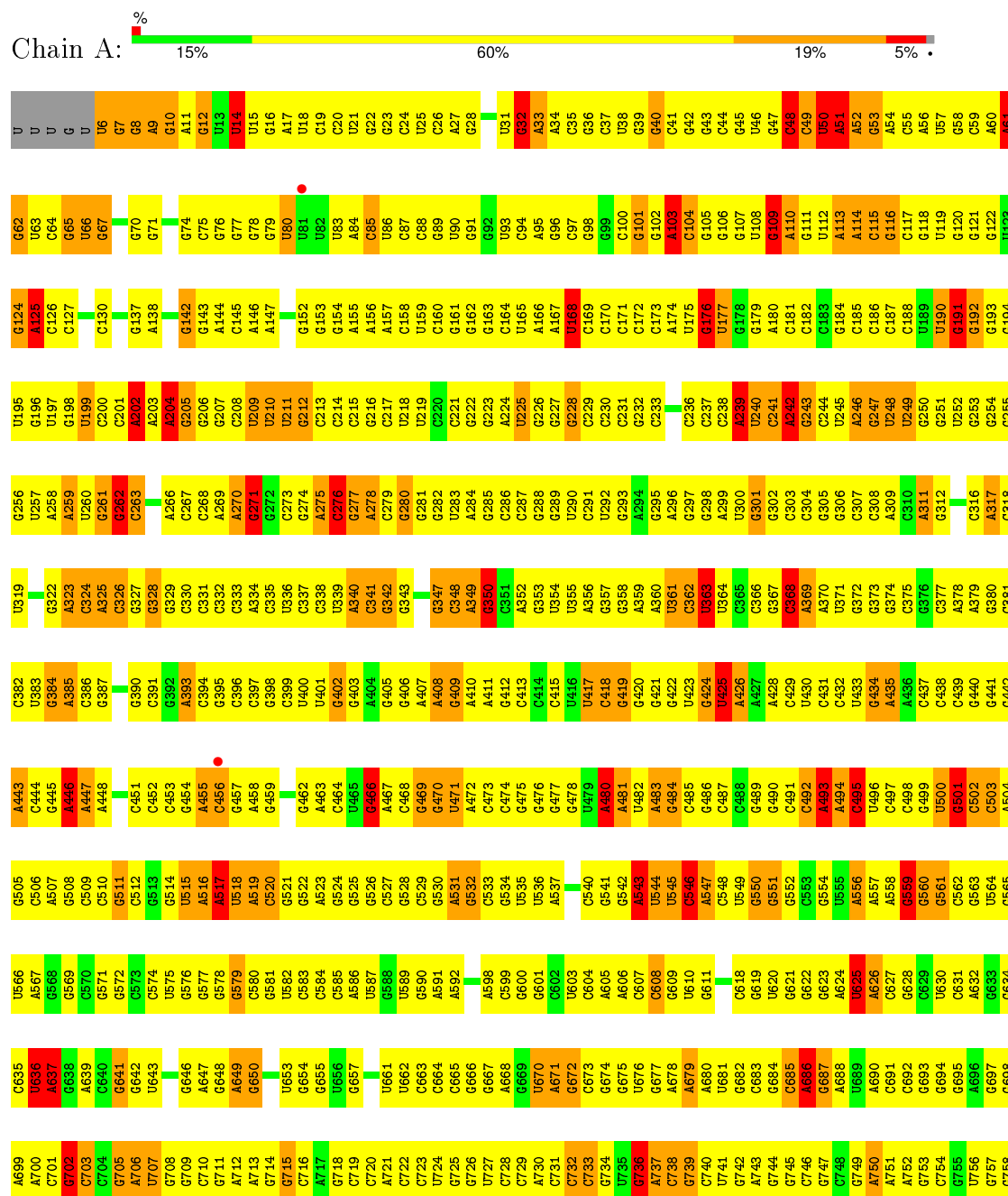


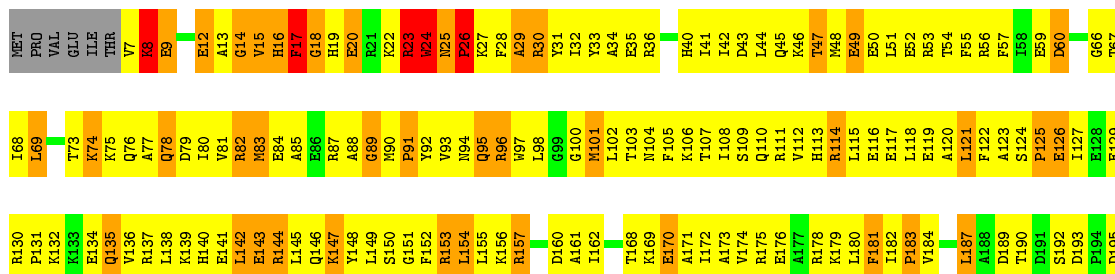
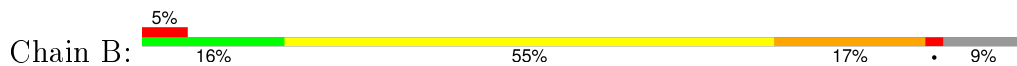
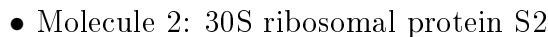
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
22	A	1	Total	C	N	O	0	0
			26	14	3	9		
22	A	1	Total	C	N	O	0	0
			26	14	3	9		

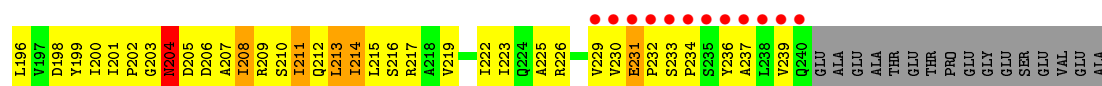
3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($\text{RSRZ} > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: 16S ribosomal RNA

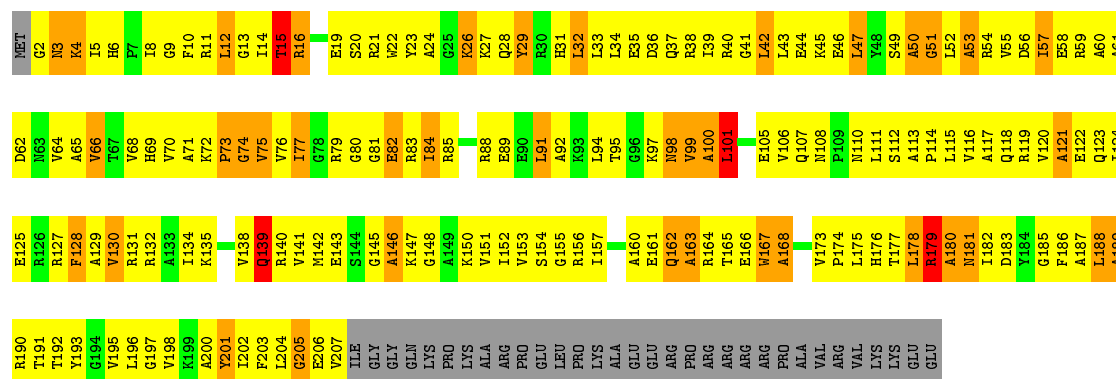






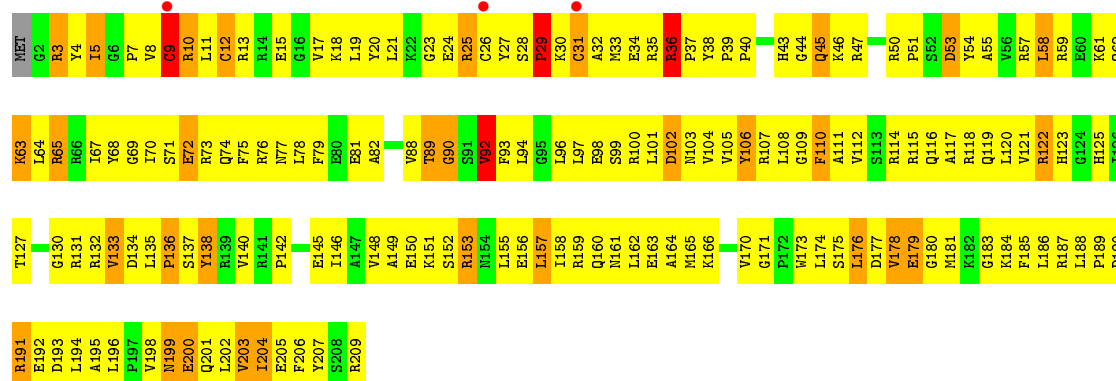
• Molecule 3: 30S ribosomal protein S3

Chain C: 14% 54% 16% 14%



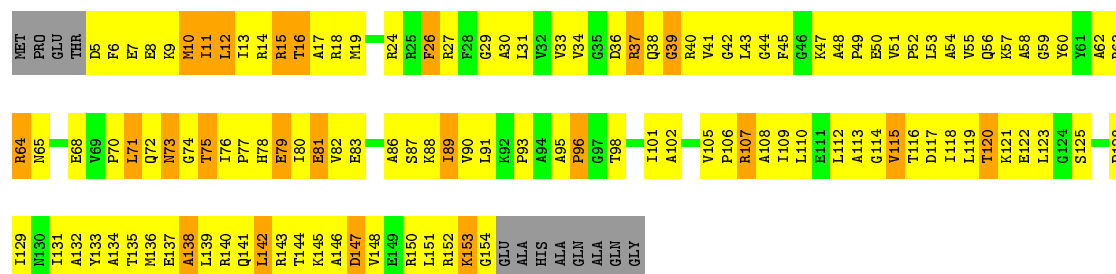
• Molecule 4: 30S ribosomal protein S4

Chain D: 19% 64% 15%



• Molecule 5: 30S ribosomal protein S5

Chain E: 17% 61% 14% 7%

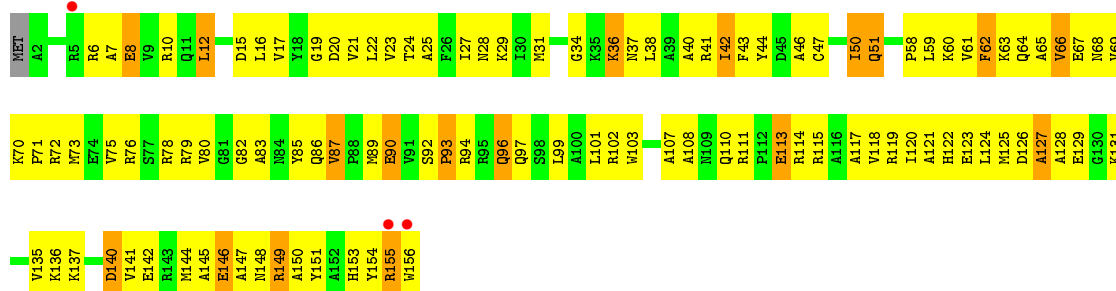


• Molecule 6: 30S ribosomal protein S6

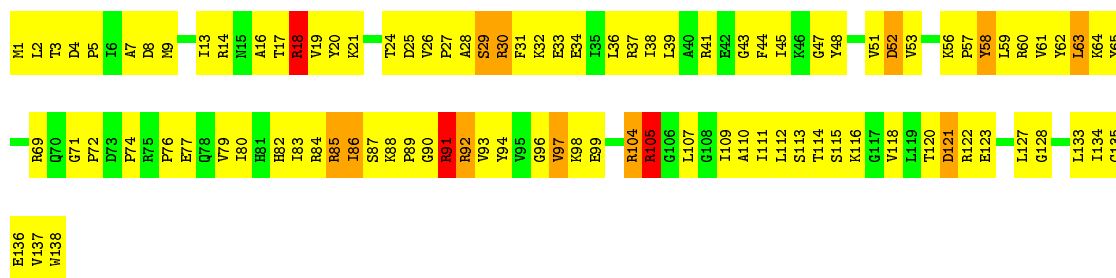
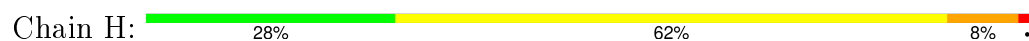
Chain F: 29% 62% 8%



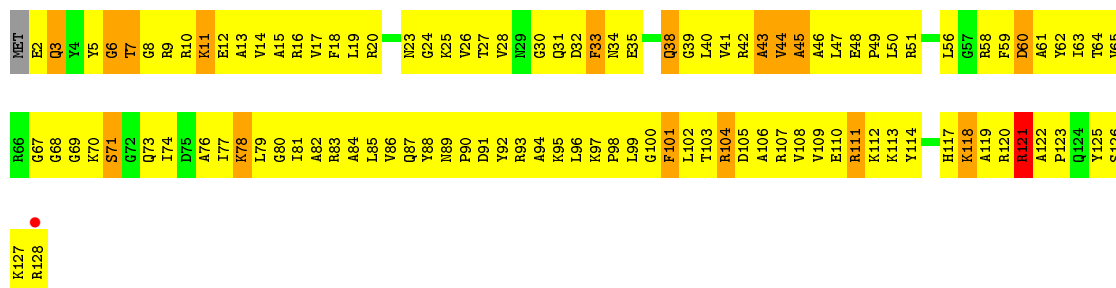
• Molecule 7: 30S ribosomal protein S7



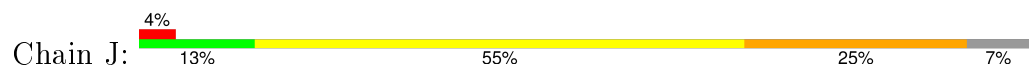
• Molecule 8: 30S ribosomal protein S8

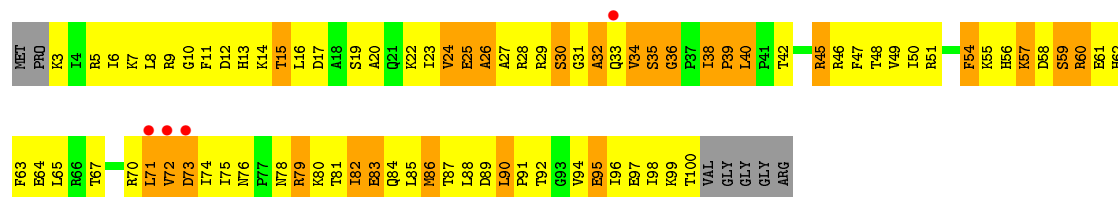


• Molecule 9: 30S ribosomal protein S9

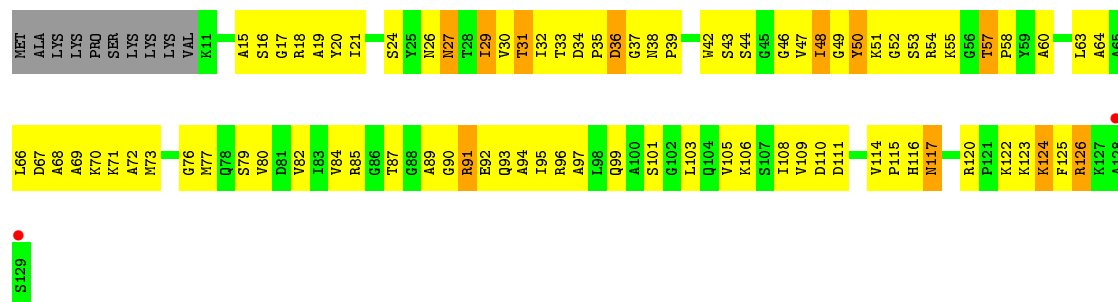


• Molecule 10: 30S ribosomal protein S10

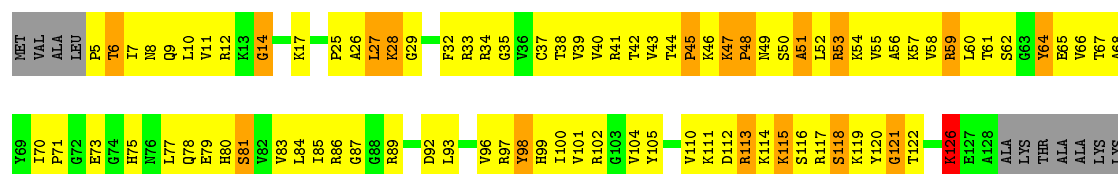




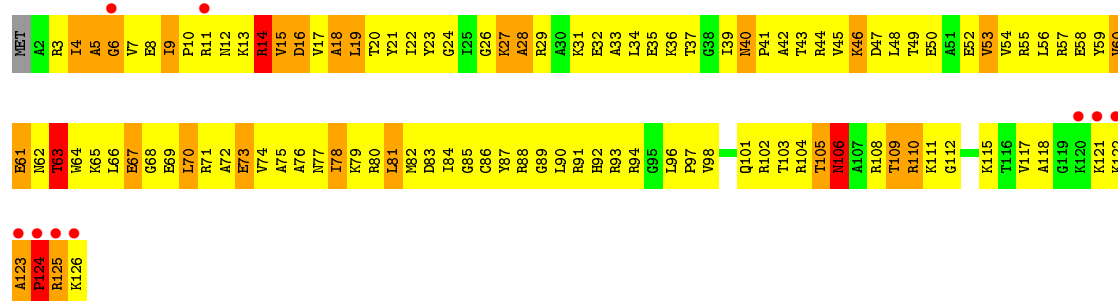
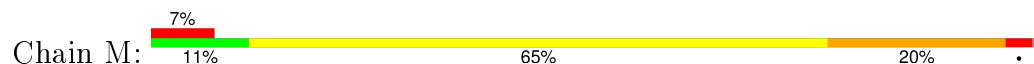
• Molecule 11: 30S ribosomal protein S11



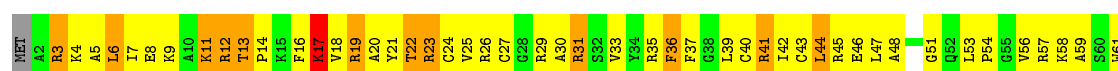
• Molecule 12: 30S ribosomal protein S12



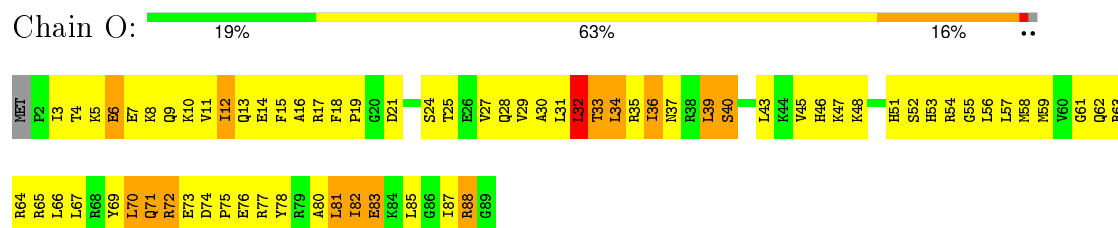
• Molecule 13: 30S ribosomal protein S13



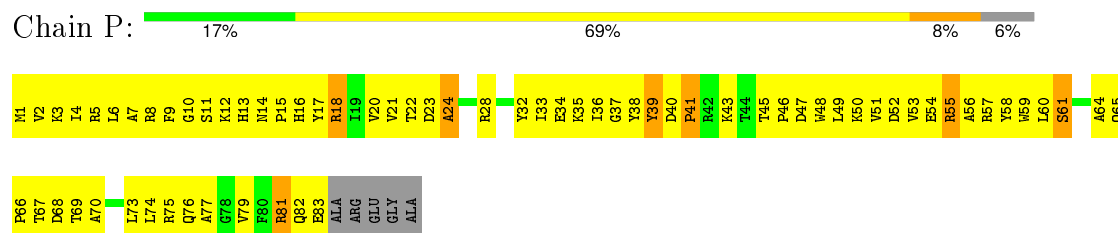
• Molecule 14: 30S ribosomal protein S14



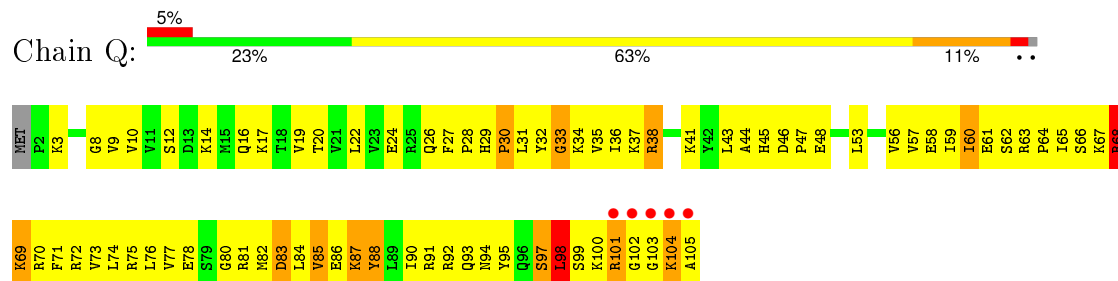
- Molecule 15: 30S ribosomal protein S15



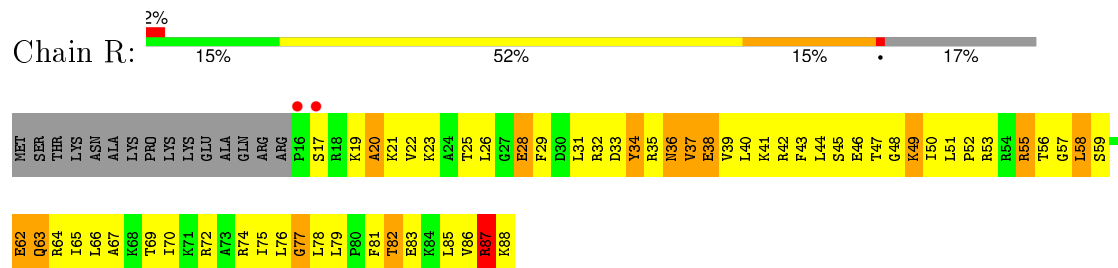
- Molecule 16: 30S ribosomal protein S16



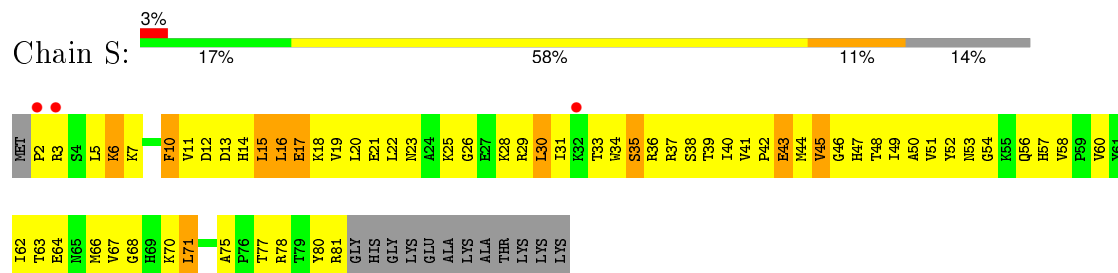
- Molecule 17: 30S ribosomal protein S17



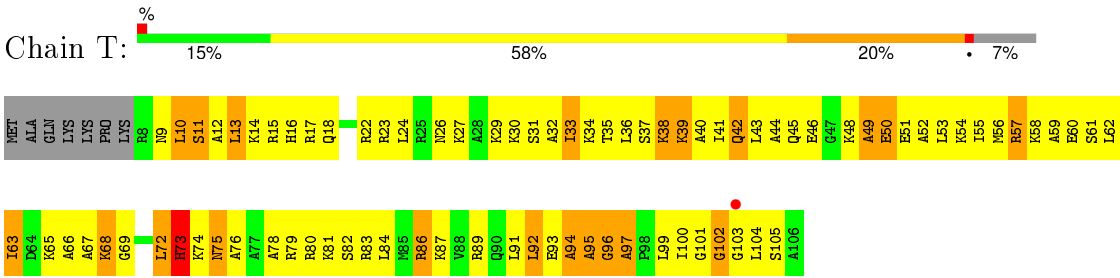
- Molecule 18: 30S ribosomal protein S18



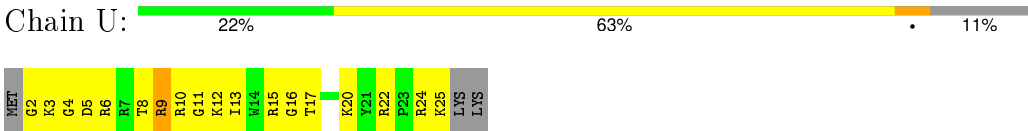
- Molecule 19: 30S ribosomal protein S19



- Molecule 20: 30S ribosomal protein S20



• Molecule 21: 30S ribosomal protein Thx



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	410.44Å 410.44Å 172.65Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.74 – 3.35 29.74 – 3.30	Depositor EDS
% Data completeness (in resolution range)	98.4 (29.74-3.35) 97.0 (29.74-3.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.55 (at 3.31Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.265 , 0.289 0.253 , 0.276	Depositor DCC
R_{free} test set	10101 reflections (4.95%)	DCC
Wilson B-factor (Å ²)	56.5	Xtriage
Anisotropy	0.534	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.16 , 19.6	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.36$, $\langle L^2 \rangle = 0.19$	Xtriage
Outliers	0 of 212423 reflections	Xtriage
F_o, F_c correlation	0.86	EDS
Total number of atoms	51632	wwPDB-VP
Average B, all atoms (Å ²)	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.65% 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: KSG

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	A	0.76	3/36212 (0.0%)	0.84	69/56520 (0.1%)
2	B	0.58	0/1935	0.77	1/2609 (0.0%)
3	C	0.56	0/1636	0.74	0/2205
4	D	0.64	1/1733 (0.1%)	0.79	2/2318 (0.1%)
5	E	0.76	0/1162	0.94	1/1564 (0.1%)
6	F	0.50	0/856	0.69	0/1154
7	G	0.48	0/1276	0.68	0/1709
8	H	0.69	0/1136	0.86	0/1527
9	I	0.51	0/1029	0.74	1/1378 (0.1%)
10	J	0.46	0/807	0.74	0/1085
11	K	0.53	0/900	0.76	0/1213
12	L	0.59	0/986	0.82	0/1320
13	M	0.48	0/1008	0.75	0/1347
14	N	0.59	0/501	0.84	0/664
15	O	0.58	0/745	0.77	0/992
16	P	0.59	0/716	0.81	0/963
17	Q	0.65	0/870	0.85	0/1159
18	R	0.50	0/603	0.74	0/799
19	S	0.43	0/661	0.70	0/890
20	T	0.52	0/764	0.76	0/1006
21	U	0.55	0/212	0.76	0/277
All	All	0.70	4/55748 (0.0%)	0.82	74/82699 (0.1%)

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	A	0	86
8	H	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
All	All	0	87

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	702	G	C5-C6	-6.16	1.36	1.42
4	D	12	CYS	CB-SG	6.00	1.92	1.82
1	A	1067	G	C5-C6	-5.41	1.36	1.42
1	A	1317	C	N1-C2	5.04	1.45	1.40

All (74) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	637	A	N9-C1'-C2'	9.39	126.21	114.00
1	A	242	A	N9-C1'-C2'	9.14	125.89	114.00
1	A	802	G	N9-C1'-C2'	9.02	125.72	114.00
1	A	938	U	N1-C1'-C2'	8.16	124.61	114.00
1	A	48	C	N1-C1'-C2'	7.85	124.20	114.00
4	D	12	CYS	CA-CB-SG	7.43	127.38	114.00
1	A	262	G	C2'-C3'-O3'	7.18	125.30	109.50
1	A	949	G	N9-C1'-C2'	7.02	123.13	114.00
1	A	176	G	C2'-C3'-O3'	6.80	124.58	113.70
1	A	311	A	N9-C1'-C2'	6.66	122.66	114.00
1	A	1304	C	N1-C1'-C2'	6.63	122.62	114.00
1	A	168	U	N1-C1'-C2'	6.54	122.50	114.00
1	A	850	A	O4'-C1'-N9	6.52	113.42	108.20
1	A	954	G	N9-C1'-C2'	6.50	122.44	114.00
1	A	705	G	N9-C1'-C2'	6.47	122.41	114.00
1	A	425	U	O4'-C1'-N1	6.42	113.34	108.20
1	A	32	G	N9-C1'-C2'	6.34	122.24	114.00
1	A	543	A	N9-C1'-C2'	6.26	122.14	114.00
1	A	368	C	C2'-C3'-O3'	6.19	123.61	113.70
1	A	1483	G	C2'-C3'-O3'	6.18	123.59	113.70
1	A	1482	G	OP2-P-O3'	6.16	118.74	105.20
1	A	361	U	N1-C1'-C2'	6.13	121.97	114.00
1	A	912	C	C1'-O4'-C4'	-6.04	105.07	109.90
1	A	949	G	O4'-C1'-N9	6.01	113.00	108.20
2	B	187	LEU	N-CA-C	-5.99	94.84	111.00
1	A	912	C	O4'-C1'-N1	5.97	112.98	108.20
1	A	1507	G	O4'-C1'-N9	5.94	112.95	108.20
1	A	262	G	O4'-C1'-N9	-5.92	103.47	108.20
9	I	6	GLY	N-CA-C	-5.91	98.31	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1477	A	O5'-P-OP1	-5.90	100.39	105.70
1	A	1480	A	N9-C1'-C2'	5.89	121.66	114.00
1	A	480	A	N9-C1'-C2'	5.84	121.59	114.00
1	A	862	U	N1-C1'-C2'	5.66	121.36	114.00
1	A	1091	G	C4'-C3'-C2'	-5.65	96.95	102.60
1	A	1262	A	C1'-O4'-C4'	-5.64	105.39	109.90
5	E	81	GLU	N-CA-C	-5.56	95.99	111.00
1	A	204	A	N9-C1'-C2'	5.55	121.22	114.00
1	A	103	A	N9-C1'-C2'	5.55	121.21	114.00
1	A	109	G	OP2-P-O3'	5.53	117.36	105.20
1	A	125	A	N9-C1'-C2'	5.53	121.19	114.00
1	A	1050	A	N9-C1'-C2'	5.46	121.10	114.00
1	A	849	U	N1-C1'-C2'	5.45	121.09	114.00
1	A	938	U	C2'-C3'-O3'	5.45	122.42	113.70
1	A	239	A	N9-C1'-C2'	5.44	121.07	114.00
1	A	1262	A	N9-C1'-C2'	5.42	121.05	114.00
1	A	625	U	N1-C1'-C2'	5.42	121.04	114.00
1	A	949	G	C1'-O4'-C4'	-5.37	105.61	109.90
1	A	168	U	O4'-C1'-N1	5.36	112.49	108.20
1	A	1077	G	N9-C1'-C2'	5.33	120.93	114.00
1	A	493	A	C2'-C3'-O3'	5.30	122.18	113.70
1	A	543	A	OP2-P-O3'	5.28	116.82	105.20
1	A	1262	A	O4'-C1'-N9	5.26	112.41	108.20
1	A	446	A	N9-C1'-C2'	5.25	120.82	114.00
1	A	1318	C	N1-C1'-C2'	5.24	120.81	114.00
1	A	301	G	N9-C1'-C2'	5.23	120.80	114.00
1	A	109	G	N9-C1'-C2'	5.21	120.77	114.00
1	A	191	G	N9-C1'-C2'	5.21	120.77	114.00
1	A	262	G	C5'-C4'-C3'	-5.20	107.68	116.00
1	A	546	C	O4'-C1'-N1	5.19	112.35	108.20
1	A	1134	A	N9-C1'-C2'	5.18	120.73	114.00
1	A	868	G	OP2-P-O3'	5.17	116.58	105.20
1	A	803	A	OP2-P-O3'	5.16	116.56	105.20
1	A	736	G	N9-C1'-C2'	5.16	120.71	114.00
1	A	1122	G	N9-C1'-C2'	5.15	120.69	114.00
1	A	954	G	C1'-O4'-C4'	-5.14	105.79	109.90
1	A	495	C	C1'-O4'-C4'	-5.12	105.81	109.90
1	A	777	U	N1-C1'-C2'	5.11	120.64	114.00
4	D	166	LYS	N-CA-C	-5.10	97.22	111.00
1	A	501	G	N9-C1'-C2'	5.10	120.62	114.00
1	A	1363	U	C2'-C3'-O3'	5.09	121.85	113.70
1	A	686	A	N9-C1'-C2'	5.08	120.60	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	51	A	O4'-C1'-N9	5.07	112.25	108.20
1	A	1280	C	N1-C1'-C2'	5.05	120.57	114.00
1	A	1480	A	O4'-C1'-N9	5.03	112.23	108.20

There are no chirality outliers.

All (87) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	101	G	Sidechain
1	A	1032	U	Sidechain
1	A	1038	A	Sidechain
1	A	1050	A	Sidechain
1	A	1056	U	Sidechain
1	A	1060	G	Sidechain
1	A	109	G	Sidechain
1	A	1091	G	Sidechain
1	A	112	U	Sidechain
1	A	1122	G	Sidechain
1	A	1163	G	Sidechain
1	A	1187	U	Sidechain
1	A	12	G	Sidechain
1	A	1202	G	Sidechain
1	A	1213	G	Sidechain
1	A	1238	A	Sidechain
1	A	125	A	Sidechain
1	A	1263	U	Sidechain
1	A	1283	U	Sidechain
1	A	1304	C	Sidechain
1	A	1353	G	Sidechain
1	A	1355	U	Sidechain
1	A	1376	U	Sidechain
1	A	1381	A	Sidechain
1	A	14	U	Sidechain
1	A	1419	U	Sidechain
1	A	142	G	Sidechain
1	A	1475	G	Sidechain
1	A	1503	G	Sidechain
1	A	199	U	Sidechain
1	A	202	A	Sidechain
1	A	204	A	Sidechain
1	A	225	U	Sidechain
1	A	228	G	Sidechain

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Mol	Chain	Res	Type	Group
1	A	249	U	Sidechain
1	A	259	A	Sidechain
1	A	261	G	Sidechain
1	A	262	G	Sidechain
1	A	271	G	Sidechain
1	A	276	C	Sidechain
1	A	280	G	Sidechain
1	A	295	G	Sidechain
1	A	317	A	Sidechain
1	A	350	G	Sidechain
1	A	363	U	Sidechain
1	A	408	A	Sidechain
1	A	443	A	Sidechain
1	A	466	G	Sidechain
1	A	480	A	Sidechain
1	A	50	U	Sidechain
1	A	500	U	Sidechain
1	A	501	G	Sidechain
1	A	517	A	Sidechain
1	A	52	A	Sidechain
1	A	554	G	Sidechain
1	A	559	G	Sidechain
1	A	608	C	Sidechain
1	A	61	A	Sidechain
1	A	636	U	Sidechain
1	A	641	G	Sidechain
1	A	650	G	Sidechain
1	A	703	C	Sidechain
1	A	711	G	Sidechain
1	A	736	G	Sidechain
1	A	747	G	Sidechain
1	A	750	A	Sidechain
1	A	777	U	Sidechain
1	A	796	C	Sidechain
1	A	803	A	Sidechain
1	A	811	U	Sidechain
1	A	819	U	Sidechain
1	A	820	G	Sidechain
1	A	842	A	Sidechain
1	A	846	C	Sidechain
1	A	847	G	Sidechain
1	A	848	U	Sidechain

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Mol	Chain	Res	Type	Group
1	A	85	C	Sidechain
1	A	850	A	Sidechain
1	A	856	G	Sidechain
1	A	858	C	Sidechain
1	A	898	U	Sidechain
1	A	924	A	Sidechain
1	A	925	G	Sidechain
1	A	933	U	Sidechain
1	A	941	G	Sidechain
1	A	952	A	Sidechain
8	H	58	TYR	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	A	32349	0	16328	2022	0
2	B	1900	0	1951	273	0
3	C	1612	0	1677	302	0
4	D	1703	0	1767	271	0
5	E	1146	0	1207	206	0
6	F	843	0	857	101	0
7	G	1257	0	1296	158	0
8	H	1116	0	1177	132	0
9	I	1011	0	1043	181	0
10	J	794	0	840	144	0
11	K	885	0	904	116	0
12	L	970	0	1057	170	0
13	M	997	0	1072	185	0
14	N	492	0	533	93	0
15	O	734	0	771	101	0
16	P	700	0	720	102	0
17	Q	857	0	930	147	0
18	R	597	0	668	120	0
19	S	647	0	673	111	0
20	T	762	0	856	132	0
21	U	208	0	221	28	0
22	A	52	0	46	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	51632	0	36594	4702	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 54.

All (4702) 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)
8:H:89:PRO:HA	8:H:92:ARG:NH1	1.49	1.27
12:L:41:ARG:HG2	12:L:42:THR:H	1.05	1.13
3:C:156:ARG:H	3:C:163:ALA:HA	1.04	1.13
19:S:28:LYS:HG2	19:S:29:ARG:H	1.07	1.12
10:J:45:ARG:HB3	10:J:45:ARG:HH11	1.15	1.11
3:C:91:LEU:HD21	3:C:99:VAL:HG13	1.17	1.09
12:L:28:LYS:HD2	12:L:33:ARG:HH22	1.00	1.08
1:A:239:A:H4'	1:A:240:U:C5'	1.84	1.08
1:A:1132:C:H2'	1:A:1133:U:H6	1.12	1.07
1:A:181:C:O3'	20:T:82:SER:HB3	1.54	1.06
1:A:917:G:H5''	7:G:102:ARG:HH22	1.17	1.05
5:E:139:LEU:HD22	5:E:142:LEU:HD11	1.33	1.05
5:E:18:ARG:HG2	5:E:19:MET:H	0.98	1.05
2:B:68:ILE:H	2:B:90:MET:HE3	1.20	1.04
1:A:239:A:H4'	1:A:240:U:H5'	1.38	1.03
1:A:1030:G:H5''	14:N:4:LYS:HD2	1.38	1.03
19:S:20:LEU:HA	19:S:23:ASN:HD22	1.21	1.02
1:A:106:G:H21	1:A:350:G:H5'	1.20	1.02
16:P:74:LEU:HB3	16:P:79:VAL:HG21	1.42	1.01
1:A:1207:A:H5'	13:M:103:THR:OG1	1.61	1.01
9:I:26:VAL:HG22	9:I:61:ALA:HB3	1.39	1.01
1:A:917:G:H5''	7:G:102:ARG:NH2	1.75	1.01
7:G:113:GLU:HG2	7:G:119:ARG:HG2	1.43	1.01
8:H:87:SER:HA	8:H:93:VAL:HG23	1.40	1.00
9:I:93:ARG:HD3	9:I:97:LYS:HE3	1.40	1.00
1:A:1432:A:H5''	1:A:1433:C:H5	1.25	0.99
1:A:1426:G:H5''	1:A:1427:A:H5'	1.40	0.99
13:M:65:LYS:HE3	13:M:69:GLU:HG2	1.44	0.99
6:F:48:LEU:HD13	6:F:52:ILE:HG13	1.44	0.98
4:D:131:ARG:H	4:D:131:ARG:HD2	1.28	0.98
14:N:41:ARG:HG2	14:N:41:ARG:HH11	1.27	0.98
4:D:140:VAL:HG11	4:D:146:ILE:HD11	1.42	0.98
3:C:94:LEU:HD23	3:C:95:THR:HG23	1.45	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1425:G:N2	1:A:1427:A:H3'	1.78	0.97
12:L:41:ARG:HG2	12:L:42:THR:N	1.80	0.97
5:E:18:ARG:HG2	5:E:19:MET:N	1.78	0.97
1:A:1480:A:H2	1:A:1483:G:H1	1.03	0.97
1:A:563:G:H5'	1:A:712:A:H1'	1.46	0.97
9:I:28:VAL:HG22	9:I:63:ILE:HB	1.45	0.97
1:A:1135:A:H5''	10:J:13:HIS:CD2	1.99	0.96
1:A:1132:C:H2'	1:A:1133:U:C6	2.01	0.96
1:A:1331:A:H2'	1:A:1332:A:H8	1.30	0.96
1:A:791:A:H2'	1:A:792:C:H6	1.29	0.95
3:C:58:GLU:H	3:C:65:ALA:HB3	1.28	0.95
12:L:28:LYS:HD2	12:L:33:ARG:NH2	1.81	0.95
3:C:195:VAL:O	3:C:196:LEU:HD23	1.65	0.94
3:C:188:LEU:HD11	3:C:195:VAL:HG13	1.48	0.94
5:E:79:GLU:HG3	5:E:93:PRO:HD2	1.50	0.94
5:E:80:ILE:HD11	5:E:91:LEU:HD12	1.48	0.94
1:A:1467:G:C2'	1:A:1468:C:H5''	1.98	0.94
20:T:43:LEU:HD11	20:T:55:ILE:HD12	1.48	0.94
1:A:937:A:H3'	1:A:938:U:H5''	1.48	0.94
6:F:30:LEU:HD23	6:F:75:LEU:HD21	1.50	0.94
1:A:1418:G:H2'	1:A:1419:U:C6	2.03	0.93
3:C:58:GLU:HB3	10:J:92:THR:HG21	1.48	0.93
1:A:1467:G:H2'	1:A:1468:C:H5''	1.47	0.93
5:E:89:ILE:HD13	5:E:90:VAL:N	1.84	0.93
1:A:531:A:H4'	1:A:532:G:O5'	1.68	0.93
1:A:1325:G:H1'	9:I:121:ARG:HH12	1.31	0.92
3:C:70:VAL:HG21	3:C:76:VAL:HG21	1.49	0.92
1:A:246:A:H4'	1:A:247:G:O5'	1.68	0.92
9:I:26:VAL:HB	9:I:33:PHE:HB2	1.50	0.92
5:E:41:VAL:CG2	5:E:113:ALA:HA	2.00	0.92
1:A:1282:G:HO2'	1:A:1283:U:H6	1.13	0.91
9:I:108:VAL:HG12	9:I:109:VAL:H	1.34	0.91
5:E:43:LEU:HD23	5:E:44:GLY:N	1.85	0.91
3:C:91:LEU:HD21	3:C:99:VAL:CG1	1.99	0.91
1:A:347:G:H4'	1:A:348:C:OP1	1.71	0.91
1:A:1425:G:H21	1:A:1427:A:H3'	1.31	0.91
3:C:52:LEU:HD23	3:C:52:LEU:H	1.35	0.91
1:A:1218:A:H4'	1:A:1286:G:H4'	1.52	0.91
15:O:56:LEU:HA	15:O:59:MET:HE2	1.52	0.91
1:A:945:C:H4'	9:I:128:ARG:HG3	1.52	0.91
1:A:1486:G:H2'	1:A:1487:C:H6	1.36	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:13:LEU:HD12	20:T:13:LEU:H	1.35	0.91
2:B:204:ASN:HD22	2:B:206:ASP:H	1.19	0.90
1:A:1158:A:H2'	1:A:1159:G:C8	2.06	0.90
1:A:858:C:H5''	12:L:12:ARG:HH21	1.37	0.90
2:B:209:ARG:HE	2:B:239:VAL:CG1	1.84	0.90
3:C:3:ASN:HD22	3:C:3:ASN:N	1.69	0.90
6:F:9:VAL:HB	6:F:87:ARG:HB2	1.51	0.90
3:C:6:HIS:HD2	3:C:9:GLY:H	1.16	0.89
4:D:104:VAL:HG12	4:D:108:LEU:HD11	1.53	0.89
1:A:434:G:H4'	1:A:435:A:OP1	1.69	0.89
1:A:251:G:H1'	17:Q:16:GLN:NE2	1.87	0.89
3:C:26:LYS:HD3	3:C:26:LYS:H	1.37	0.89
1:A:1040:G:H5''	3:C:154:SER:HB2	1.53	0.89
12:L:67:THR:HG21	12:L:96:VAL:HG22	1.54	0.89
1:A:43:G:H2'	1:A:44:C:C6	2.06	0.89
1:A:791:A:H2'	1:A:792:C:C6	2.07	0.89
5:E:144:THR:HG22	5:E:145:LYS:N	1.87	0.89
20:T:57:ARG:HE	20:T:102:GLY:HA3	1.36	0.89
1:A:823:U:H5'	1:A:824:C:H5	1.38	0.89
1:A:584:C:OP1	8:H:97:VAL:HG12	1.73	0.89
10:J:34:VAL:HG22	10:J:74:ILE:HG12	1.55	0.89
1:A:1287:G:HO2'	1:A:1288:A:H8	0.93	0.88
1:A:1396:A:H2	1:A:1465:G:H22	1.10	0.88
11:K:54:ARG:O	11:K:57:THR:HG22	1.73	0.88
8:H:83:ILE:HG13	8:H:137:VAL:HG22	1.56	0.88
1:A:1433:C:H4'	1:A:1434:G:O5'	1.71	0.88
4:D:70:ILE:HD11	4:D:100:ARG:NE	1.87	0.88
10:J:12:ASP:HB3	10:J:15:THR:HB	1.56	0.88
19:S:28:LYS:HG2	19:S:29:ARG:N	1.89	0.88
11:K:48:ILE:HD13	11:K:63:LEU:HB2	1.54	0.88
1:A:1120:C:H4'	1:A:1121:G:C2	2.08	0.88
1:A:804:U:H4'	1:A:805:G:OP2	1.71	0.87
12:L:41:ARG:CG	12:L:42:THR:H	1.87	0.87
1:A:1328:A:H2'	7:G:10:ARG:HH22	1.39	0.87
7:G:51:GLN:HG2	7:G:58:PRO:HD3	1.56	0.87
1:A:1269:A:H2	1:A:1335:G:H1'	1.40	0.87
13:M:81:LEU:HA	13:M:84:ILE:HG12	1.57	0.87
14:N:27:CYS:SG	14:N:29:ARG:HB2	2.15	0.87
1:A:1140:A:H1'	1:A:1163:G:N2	1.90	0.87
2:B:142:LEU:HD22	2:B:146:GLN:NE2	1.90	0.87
1:A:648:G:H22	1:A:725:G:H1	1.20	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:97:LYS:HE2	9:I:102:LEU:HD12	1.55	0.87
3:C:156:ARG:N	3:C:163:ALA:HA	1.88	0.87
1:A:61:A:H4'	1:A:62:G:O5'	1.73	0.87
1:A:367:G:O2'	1:A:368:C:H5'	1.75	0.87
3:C:14:ILE:HG22	3:C:15:THR:H	1.39	0.87
1:A:1177:C:H3'	1:A:1178:U:C5'	2.05	0.86
4:D:28:SER:O	4:D:30:LYS:N	2.08	0.86
8:H:123:GLU:O	8:H:127:LEU:HD23	1.76	0.86
1:A:106:G:N2	1:A:350:G:H5'	1.90	0.86
3:C:84:ILE:O	3:C:88:ARG:HB2	1.74	0.86
2:B:98:LEU:HB2	2:B:101:MET:SD	2.14	0.86
13:M:6:GLY:O	13:M:7:VAL:HG22	1.74	0.86
3:C:188:LEU:CD1	3:C:189:ALA:H	1.88	0.86
1:A:1288:A:N6	1:A:1313:G:H1'	1.90	0.86
1:A:1432:A:H5''	1:A:1433:C:C5	2.09	0.86
1:A:43:G:H2'	1:A:44:C:H6	1.39	0.86
2:B:53:ARG:HA	2:B:56:ARG:NH1	1.91	0.86
3:C:188:LEU:HD12	3:C:189:ALA:H	1.41	0.86
1:A:191:G:H4'	1:A:192:G:OP2	1.76	0.86
1:A:603:U:H3	4:D:135:LEU:HD21	1.39	0.85
10:J:90:LEU:H	10:J:91:PRO:HD2	1.40	0.85
1:A:722:C:OP2	6:F:92:LYS:HE3	1.75	0.85
1:A:900:G:H2'	1:A:901:A:C8	2.10	0.85
1:A:661:U:H3	1:A:697:G:H22	1.20	0.85
1:A:550:G:H4'	1:A:551:G:OP1	1.73	0.85
4:D:125:HIS:HD1	4:D:152:SER:HG	1.25	0.85
1:A:485:C:H2'	1:A:486:G:H8	1.40	0.85
5:E:110:LEU:HD13	5:E:118:ILE:HD12	1.59	0.85
8:H:89:PRO:HA	8:H:92:ARG:HH12	1.36	0.85
7:G:59:LEU:HD11	7:G:63:LYS:HE3	1.56	0.85
5:E:139:LEU:CD2	5:E:142:LEU:HD11	2.06	0.85
15:O:25:THR:HG21	15:O:70:LEU:HD23	1.56	0.85
1:A:103:A:H2'	1:A:322:G:H21	1.41	0.85
1:A:1207:A:H5'	13:M:103:THR:HG1	1.37	0.85
4:D:150:GLU:H	4:D:150:GLU:CD	1.78	0.85
1:A:1233:A:H2'	1:A:1234:A:C8	2.12	0.84
1:A:1331:A:H2'	1:A:1332:A:C8	2.13	0.84
7:G:50:ILE:HD11	7:G:121:ALA:HA	1.57	0.84
1:A:1383:C:H4'	1:A:1384:G:OP2	1.78	0.84
9:I:17:VAL:HG11	9:I:81:ILE:HA	1.59	0.84
1:A:1099:C:H2'	1:A:1100:G:H5'	1.60	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:91:LEU:CD2	3:C:99:VAL:HG13	2.05	0.84
1:A:1172:G:OP1	3:C:4:LYS:HA	1.78	0.84
5:E:80:ILE:O	5:E:80:ILE:HD12	1.78	0.83
9:I:65:VAL:HG21	9:I:73:GLN:HB3	1.58	0.83
8:H:53:VAL:HB	8:H:58:TYR:CD1	2.12	0.83
3:C:64:VAL:HB	3:C:99:VAL:HB	1.58	0.83
13:M:81:LEU:HA	13:M:84:ILE:CG1	2.08	0.83
1:A:1216:C:H5'	1:A:1348:G:OP1	1.78	0.83
2:B:74:LYS:HZ1	2:B:206:ASP:HB2	1.44	0.83
17:Q:101:ARG:HE	17:Q:101:ARG:HA	1.42	0.83
13:M:62:ASN:O	13:M:63:THR:HB	1.76	0.83
1:A:1287:G:H5'	21:U:4:GLY:HA3	1.59	0.83
7:G:37:ASN:ND2	9:I:41:VAL:HG23	1.94	0.83
4:D:151:LYS:HD2	4:D:151:LYS:H	1.43	0.82
19:S:64:GLU:O	19:S:67:VAL:HG23	1.80	0.82
5:E:89:ILE:HD13	5:E:89:ILE:C	1.99	0.82
5:E:18:ARG:CG	5:E:19:MET:H	1.87	0.82
1:A:1282:G:O2'	1:A:1283:U:H6	1.62	0.82
11:K:48:ILE:HG22	11:K:49:GLY:H	1.44	0.82
1:A:130:C:O2	16:P:1:MET:HB2	1.80	0.82
3:C:130:VAL:HG21	3:C:157:ILE:HG23	1.58	0.82
1:A:182:C:N3	20:T:105:SER:HB3	1.95	0.82
13:M:98:VAL:HG23	13:M:110:ARG:HH12	1.44	0.82
13:M:4:ILE:HG22	13:M:5:ALA:H	1.45	0.82
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.62	0.82
2:B:30:ARG:HG3	2:B:31:TYR:CD2	2.15	0.82
1:A:397:C:H2'	1:A:398:G:H8	1.44	0.82
1:A:970:U:H4'	1:A:971:G:O5'	1.79	0.82
18:R:86:VAL:O	18:R:87:ARG:HG2	1.79	0.82
10:J:49:VAL:O	10:J:60:ARG:HA	1.79	0.82
4:D:127:THR:HG23	4:D:130:GLY:O	1.78	0.82
1:A:515:U:H4'	1:A:516:A:H5''	1.62	0.82
1:A:947:A:H61	13:M:126:LYS:HB2	1.43	0.81
1:A:823:U:H5'	1:A:824:C:C5	2.14	0.81
1:A:1009:C:H2'	1:A:1010:G:H8	1.45	0.81
4:D:121:VAL:O	4:D:134:ASP:HA	1.80	0.81
1:A:1238:A:H4'	1:A:1239:U:H5'	1.60	0.81
1:A:641:G:O2'	1:A:642:G:H5'	1.79	0.81
6:F:3:ARG:HH21	6:F:64:GLN:HE22	1.28	0.81
17:Q:9:VAL:HG22	17:Q:56:VAL:HG22	1.60	0.81
2:B:68:ILE:N	2:B:90:MET:HE3	1.95	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:75:HIS:HA	12:L:102:ARG:HH22	1.45	0.81
5:E:12:LEU:HD12	5:E:31:LEU:HB2	1.62	0.81
7:G:59:LEU:O	7:G:62:PHE:HB3	1.80	0.81
1:A:670:U:O4	1:A:687:G:H1'	1.80	0.81
13:M:57:ARG:HG3	13:M:61:GLU:OE2	1.80	0.81
2:B:204:ASN:ND2	2:B:206:ASP:H	1.78	0.81
10:J:3:LYS:HA	10:J:75:ILE:HA	1.63	0.81
1:A:1274:U:H5'	9:I:38:GLN:NE2	1.96	0.81
1:A:442:G:H2'	1:A:470:G:N2	1.96	0.81
13:M:75:ALA:HA	13:M:78:ILE:HD12	1.60	0.81
1:A:424:G:H4'	1:A:425:U:O5'	1.78	0.81
12:L:70:ILE:HD13	12:L:77:LEU:HD12	1.61	0.81
17:Q:67:LYS:O	17:Q:68:ARG:HB3	1.80	0.81
18:R:47:THR:HB	18:R:49:LYS:HE3	1.61	0.81
11:K:77:MET:HE1	11:K:80:VAL:HG22	1.62	0.81
1:A:1280:C:C2	7:G:114:ARG:NH1	2.49	0.81
10:J:3:LYS:HG2	10:J:75:ILE:HG23	1.63	0.80
2:B:130:ARG:NH2	3:C:207:VAL:HG22	1.95	0.80
1:A:609:G:H2'	1:A:610:U:C6	2.16	0.80
4:D:102:ASP:HB3	4:D:136:PRO:HA	1.62	0.80
11:K:66:LEU:HB3	11:K:70:LYS:HE3	1.62	0.80
20:T:79:ARG:HE	20:T:83:ARG:HH12	1.26	0.80
6:F:100:ASN:HD22	18:R:23:LYS:HG2	1.45	0.80
1:A:1124:C:H2'	1:A:1125:G:H8	1.43	0.80
1:A:1305:G:H2'	1:A:1306:A:C8	2.17	0.80
18:R:53:ARG:NH1	18:R:59:SER:HA	1.95	0.80
10:J:8:LEU:HB2	10:J:70:ARG:HB2	1.61	0.80
1:A:205:G:H2'	1:A:206:G:H8	1.47	0.80
16:P:39:TYR:CD2	16:P:73:LEU:HD11	2.17	0.80
13:M:79:LYS:O	13:M:82:MET:HB3	1.82	0.80
3:C:32:LEU:HD21	3:C:59:ARG:HD2	1.64	0.80
4:D:109:GLY:O	4:D:111:ALA:N	2.14	0.80
1:A:401:U:H3'	1:A:402:G:H5'	1.63	0.80
12:L:39:VAL:O	12:L:56:ALA:HA	1.81	0.80
11:K:21:ILE:HB	11:K:84:VAL:HG12	1.65	0.80
20:T:57:ARG:NE	20:T:102:GLY:HA3	1.97	0.79
1:A:603:U:N3	4:D:135:LEU:HD21	1.96	0.79
5:E:12:LEU:CD1	5:E:31:LEU:HB2	2.12	0.79
3:C:47:LEU:H	3:C:47:LEU:HD12	1.47	0.79
1:A:1177:C:H3'	1:A:1178:U:H5'	1.62	0.79
3:C:155:GLY:O	3:C:196:LEU:HD22	1.81	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1287:G:H22	1:A:1313:G:H2'	1.47	0.79
1:A:1274:U:P	7:G:41:ARG:HH22	2.04	0.79
1:A:954:G:OP2	1:A:1340:U:H1'	1.81	0.79
1:A:385:A:H2'	1:A:386:C:H5'	1.64	0.79
14:N:41:ARG:NH1	14:N:41:ARG:HG2	1.94	0.79
11:K:58:PRO:HB2	11:K:93:GLN:HG3	1.64	0.79
1:A:822:G:H2'	1:A:823:U:H5''	1.62	0.79
1:A:386:C:H2'	1:A:387:G:C8	2.18	0.79
1:A:1080:C:H2'	1:A:1081:C:C6	2.18	0.79
1:A:1462:C:H2'	1:A:1463:U:H6	1.48	0.79
1:A:1329:G:O2'	1:A:1330:U:OP2	1.98	0.79
13:M:65:LYS:HE3	13:M:69:GLU:CG	2.12	0.79
1:A:386:C:H2'	1:A:387:G:H8	1.46	0.79
6:F:22:GLU:OE1	6:F:82:ARG:HD3	1.83	0.79
1:A:65:G:H4'	1:A:66:U:H5''	1.64	0.79
13:M:4:ILE:HG22	13:M:5:ALA:N	1.98	0.79
7:G:75:VAL:HG21	7:G:144:MET:HB3	1.63	0.79
7:G:145:ALA:C	7:G:147:ALA:H	1.85	0.78
1:A:252:U:H2'	1:A:253:G:H8	1.48	0.78
13:M:96:LEU:HB3	13:M:97:PRO:HD2	1.64	0.78
4:D:64:LEU:HD23	4:D:198:VAL:HG11	1.63	0.78
1:A:323:A:H4'	1:A:324:C:OP1	1.84	0.78
4:D:131:ARG:H	4:D:131:ARG:CD	1.95	0.78
5:E:71:LEU:HD11	5:E:114:GLY:HA3	1.63	0.78
10:J:30:SER:OG	10:J:81:THR:HA	1.84	0.78
13:M:117:VAL:HG12	13:M:118:ALA:H	1.46	0.78
9:I:117:HIS:O	9:I:118:LYS:HG3	1.83	0.78
1:A:684:G:O3'	1:A:687:G:H5'	1.83	0.78
14:N:14:PRO:C	14:N:16:PHE:H	1.85	0.78
13:M:52:GLU:HG2	13:M:55:ARG:HH21	1.49	0.78
5:E:144:THR:HG22	5:E:145:LYS:H	1.43	0.78
1:A:25:U:H2'	1:A:26:C:H6	1.49	0.78
11:K:91:ARG:HD3	18:R:88:LYS:HE2	1.64	0.78
3:C:155:GLY:HA3	3:C:163:ALA:HB1	1.65	0.78
1:A:1419:U:H2'	1:A:1420:C:C6	2.19	0.78
1:A:94:C:H2'	1:A:95:A:C8	2.19	0.78
1:A:802:G:H3'	1:A:803:A:C5'	2.14	0.78
8:H:7:ALA:HB2	8:H:85:ARG:HD2	1.66	0.78
9:I:9:ARG:HG2	9:I:14:VAL:HG22	1.66	0.78
1:A:1200:C:H2'	1:A:1201:U:C6	2.18	0.78
9:I:125:TYR:CE1	9:I:128:ARG:HD2	2.19	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:51:VAL:O	5:E:55:VAL:HG23	1.84	0.78
1:A:824:C:H5'	1:A:825:U:OP1	1.84	0.78
16:P:9:PHE:CE2	16:P:18:ARG:HD2	2.19	0.78
5:E:144:THR:O	5:E:148:VAL:HG23	1.84	0.78
1:A:1080:C:H2'	1:A:1081:C:H6	1.46	0.78
8:H:86:ILE:HD11	8:H:136:GLU:HB2	1.66	0.77
13:M:108:ARG:NH1	13:M:111:LYS:HD2	1.97	0.77
18:R:45:SER:C	18:R:47:THR:H	1.86	0.77
8:H:34:GLU:O	8:H:37:ARG:HB3	1.84	0.77
9:I:19:LEU:O	9:I:20:ARG:HG3	1.83	0.77
1:A:850:A:H4'	1:A:851:A:OP1	1.83	0.77
1:A:489:G:H5'	1:A:518:U:H2'	1.66	0.77
3:C:110:ASN:O	3:C:111:LEU:HD23	1.83	0.77
13:M:78:ILE:O	13:M:81:LEU:HD23	1.85	0.77
1:A:400:U:H2'	1:A:401:U:C6	2.19	0.77
1:A:1047:G:H4'	1:A:1048:U:C5'	2.14	0.77
4:D:70:ILE:HD11	4:D:100:ARG:CD	2.14	0.77
17:Q:12:SER:HB3	17:Q:20:THR:HB	1.65	0.77
17:Q:67:LYS:HA	17:Q:70:ARG:HH12	1.49	0.77
12:L:120:TYR:O	12:L:122:THR:HG23	1.84	0.77
18:R:39:VAL:HG13	18:R:40:LEU:N	1.99	0.77
17:Q:9:VAL:HG21	17:Q:84:LEU:HD13	1.66	0.77
6:F:80:ARG:NH1	6:F:88:VAL:HB	1.99	0.77
13:M:98:VAL:HG23	13:M:110:ARG:NH1	1.98	0.77
19:S:12:ASP:HB2	19:S:35:SER:OG	1.84	0.77
18:R:47:THR:CB	18:R:49:LYS:HE3	2.14	0.77
1:A:1498:G:H2'	1:A:1499:G:H8	1.48	0.77
12:L:115:LYS:O	12:L:117:ARG:N	2.16	0.77
1:A:190:U:O4	17:Q:62:SER:HB3	1.84	0.77
6:F:18:GLN:O	6:F:21:LEU:HB3	1.85	0.77
19:S:25:LYS:HD2	19:S:25:LYS:H	1.50	0.77
16:P:21:VAL:HG21	16:P:59:TRP:CD1	2.19	0.77
1:A:1142:U:H5'	1:A:1143:G:OP1	1.85	0.77
1:A:11:A:H2'	1:A:12:G:H8	1.50	0.77
3:C:141:VAL:HG11	3:C:202:ILE:HG12	1.66	0.77
19:S:12:ASP:H	19:S:38:SER:HB3	1.49	0.77
1:A:496:U:H2'	1:A:497:C:C6	2.19	0.77
2:B:187:LEU:HD21	2:B:214:ILE:HG13	1.66	0.77
1:A:737:A:H4'	1:A:738:C:O5'	1.83	0.77
3:C:14:ILE:HG22	3:C:15:THR:N	2.00	0.76
14:N:27:CYS:SG	14:N:29:ARG:CB	2.73	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:83:VAL:HG21	12:L:100:ILE:HD13	1.67	0.76
18:R:17:SER:HA	18:R:19:LYS:NZ	2.00	0.76
7:G:148:ASN:C	7:G:150:ALA:H	1.85	0.76
1:A:1014:G:H2'	1:A:1015:G:H8	1.49	0.76
1:A:425:U:H4'	1:A:426:A:O5'	1.84	0.76
1:A:474:C:H2'	1:A:475:G:H8	1.49	0.76
7:G:93:PRO:HG2	7:G:94:ARG:H	1.51	0.76
1:A:1468:C:H6	1:A:1468:C:H5'	1.51	0.76
1:A:1352:C:H2'	1:A:1353:G:C8	2.20	0.76
1:A:1419:U:H2'	1:A:1420:C:H6	1.49	0.76
5:E:151:LEU:HD11	8:H:77:GLU:OE2	1.83	0.76
1:A:1009:C:H2'	1:A:1010:G:C8	2.19	0.76
1:A:1107:G:H5'	10:J:35:SER:O	1.85	0.76
3:C:123:GLN:O	3:C:128:PHE:HB2	1.85	0.76
9:I:7:THR:HG22	9:I:8:GLY:N	2.01	0.76
1:A:486:G:H4'	1:A:534:G:H4'	1.67	0.76
1:A:1232:A:H4'	9:I:68:GLY:H	1.50	0.76
2:B:142:LEU:HD22	2:B:146:GLN:HE22	1.47	0.76
1:A:290:U:H2'	1:A:291:C:H6	1.49	0.76
1:A:1010:G:N2	1:A:1012:G:H3'	2.00	0.76
1:A:1269:A:C2	1:A:1335:G:H1'	2.20	0.76
2:B:112:VAL:O	2:B:115:LEU:HB3	1.85	0.76
6:F:46:ARG:HB2	6:F:60:PHE:HE1	1.51	0.76
15:O:17:ARG:HH11	15:O:17:ARG:HG3	1.51	0.76
1:A:1429:C:H2'	1:A:1430:C:H6	1.50	0.76
7:G:145:ALA:O	7:G:147:ALA:N	2.19	0.76
8:H:19:VAL:HG23	8:H:21:LYS:HG2	1.66	0.76
10:J:84:GLN:O	10:J:88:LEU:HD12	1.86	0.76
1:A:1108:U:H3	10:J:5:ARG:NH2	1.84	0.76
4:D:104:VAL:HG11	4:D:146:ILE:HD12	1.67	0.75
15:O:39:LEU:HD13	15:O:56:LEU:HB2	1.68	0.75
18:R:56:THR:HG21	18:R:63:GLN:OE1	1.87	0.75
2:B:53:ARG:HA	2:B:56:ARG:CZ	2.15	0.75
1:A:333:C:H2'	1:A:334:A:H8	1.51	0.75
7:G:37:ASN:HD21	9:I:41:VAL:H	1.34	0.75
1:A:502:C:O2'	12:L:50:SER:HB3	1.85	0.75
2:B:88:ALA:C	2:B:90:MET:H	1.90	0.75
18:R:87:ARG:HH11	18:R:87:ARG:HG2	1.48	0.75
1:A:858:C:H5''	12:L:12:ARG:NH2	2.01	0.75
1:A:721:A:H2'	1:A:722:C:C6	2.22	0.75
20:T:10:LEU:O	20:T:12:ALA:N	2.19	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:84:GLU:HB3	2:B:219:VAL:HG21	1.68	0.75
1:A:775:G:H2'	1:A:776:A:H5'	1.68	0.75
18:R:26:LEU:HD13	18:R:42:ARG:HH12	1.49	0.75
1:A:1329:G:H3'	9:I:108:VAL:O	1.87	0.75
1:A:646:G:H2'	1:A:647:A:H8	1.52	0.75
2:B:100:GLY:N	2:B:176:GLU:OE2	2.16	0.75
12:L:10:LEU:O	12:L:14:GLY:N	2.16	0.75
1:A:938:U:O2'	1:A:1205:C:H4'	1.86	0.75
9:I:7:THR:HG22	9:I:8:GLY:H	1.50	0.75
3:C:47:LEU:N	3:C:47:LEU:HD12	2.02	0.74
7:G:85:TYR:HD1	7:G:154:TYR:HE1	1.31	0.74
1:A:472:A:H2'	1:A:473:C:O4'	1.88	0.74
19:S:62:ILE:HD12	19:S:66:MET:HG3	1.69	0.74
11:K:69:ALA:O	11:K:73:MET:HG2	1.86	0.74
2:B:88:ALA:O	2:B:90:MET:N	2.20	0.74
4:D:8:VAL:O	4:D:10:ARG:N	2.19	0.74
6:F:3:ARG:HH21	6:F:64:GLN:NE2	1.84	0.74
2:B:209:ARG:HE	2:B:239:VAL:HG11	1.52	0.74
3:C:3:ASN:N	3:C:3:ASN:ND2	2.30	0.74
2:B:139:LYS:O	2:B:143:GLU:HG2	1.87	0.74
18:R:55:ARG:HB3	18:R:55:ARG:HH11	1.51	0.74
7:G:37:ASN:HD21	9:I:41:VAL:HG23	1.51	0.74
1:A:1201:U:H2'	1:A:1202:G:H8	1.52	0.74
4:D:24:GLU:O	4:D:25:ARG:HB3	1.88	0.74
1:A:1124:C:H2'	1:A:1125:G:C8	2.22	0.74
1:A:802:G:H3'	1:A:803:A:H5'	1.70	0.74
1:A:1044:G:N2	1:A:1179:G:H1'	2.03	0.74
3:C:131:ARG:HG2	3:C:135:LYS:HE3	1.69	0.74
8:H:13:ILE:O	8:H:17:THR:HG23	1.88	0.74
19:S:33:THR:HG22	19:S:35:SER:H	1.51	0.74
1:A:103:A:H2'	1:A:322:G:N2	2.02	0.74
17:Q:60:ILE:HB	17:Q:74:LEU:HD12	1.70	0.74
5:E:82:VAL:HG21	5:E:138:ALA:HA	1.70	0.74
1:A:224:A:H2'	1:A:225:U:C6	2.22	0.74
7:G:42:ILE:HG22	7:G:120:ILE:HD12	1.69	0.74
20:T:46:GLU:HB3	20:T:48:LYS:NZ	2.02	0.74
1:A:676:U:O2	1:A:678:A:H5''	1.88	0.74
5:E:12:LEU:O	5:E:12:LEU:HD13	1.88	0.74
1:A:515:U:H5''	1:A:516:A:OP1	1.88	0.74
1:A:9:A:N6	4:D:209:ARG:HB2	2.02	0.74
16:P:67:THR:HG22	16:P:68:ASP:N	2.01	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:89:ARG:HG2	12:L:97:ARG:HA	1.69	0.74
1:A:1475:G:H2'	1:A:1476:U:H6	1.53	0.73
12:L:71:PRO:O	12:L:102:ARG:HD2	1.88	0.73
1:A:1238:A:H8	3:C:27:LYS:HZ1	1.36	0.73
1:A:1467:G:C3'	1:A:1468:C:H5''	2.17	0.73
18:R:64:ARG:O	18:R:67:ALA:HB3	1.89	0.73
2:B:124:SER:HB2	2:B:125:PRO:HD2	1.69	0.73
14:N:23:ARG:HD3	14:N:30:ALA:HB2	1.69	0.73
1:A:95:A:O2'	1:A:96:G:H5'	1.88	0.73
2:B:187:LEU:CD2	2:B:214:ILE:HG13	2.17	0.73
10:J:30:SER:HB3	10:J:80:LYS:HG3	1.70	0.73
16:P:81:ARG:HG3	16:P:83:GLU:HG2	1.68	0.73
1:A:984:A:H2'	1:A:985:C:H5'	1.70	0.73
8:H:91:ARG:HG3	12:L:7:ILE:HG13	1.69	0.73
1:A:1250:A:H2'	1:A:1251:A:C8	2.22	0.73
1:A:1084:A:H4'	1:A:1085:A:O5'	1.88	0.73
1:A:1238:A:N6	1:A:1260:U:H1'	2.03	0.73
1:A:496:U:H2'	1:A:497:C:H6	1.54	0.73
2:B:206:ASP:CG	2:B:207:ALA:N	2.42	0.73
18:R:53:ARG:HG2	18:R:63:GLN:HG2	1.71	0.73
8:H:86:ILE:HD12	8:H:133:LEU:CD2	2.19	0.73
9:I:121:ARG:HH11	9:I:121:ARG:HG2	1.54	0.73
1:A:446:A:H1'	1:A:447:A:C8	2.23	0.73
18:R:44:LEU:HD22	18:R:48:GLY:O	1.87	0.73
5:E:72:GLN:OE1	5:E:77:PRO:HB3	1.89	0.73
1:A:242:A:N6	1:A:277:G:H1'	2.04	0.72
8:H:83:ILE:O	8:H:83:ILE:HG23	1.89	0.72
1:A:1050:A:O2'	1:A:1051:G:H8	1.71	0.72
19:S:42:PRO:HA	19:S:45:VAL:HG23	1.70	0.72
10:J:19:SER:OG	10:J:91:PRO:HG3	1.89	0.72
9:I:47:LEU:C	9:I:49:PRO:HD2	2.08	0.72
8:H:36:LEU:HD13	8:H:61:VAL:HG22	1.71	0.72
1:A:1202:G:H2'	1:A:1203:G:H8	1.55	0.72
1:A:932:G:N2	1:A:1209:A:H62	1.86	0.72
12:L:113:ARG:HB2	12:L:122:THR:HG21	1.71	0.72
1:A:943:A:C2	1:A:947:A:C2	2.78	0.72
1:A:331:C:H2'	1:A:332:C:C6	2.24	0.72
1:A:1178:U:H5''	1:A:1179:G:H5'	1.71	0.72
1:A:1483:G:H3'	1:A:1483:G:C8	2.25	0.72
1:A:896:A:H2'	1:A:897:A:C8	2.24	0.72
13:M:15:VAL:HG23	13:M:43:THR:O	1.89	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:77:MET:CE	11:K:80:VAL:HG22	2.19	0.72
17:Q:90:ILE:O	17:Q:93:GLN:HB3	1.89	0.72
3:C:15:THR:O	3:C:16:ARG:HB2	1.89	0.72
1:A:1380:C:H4'	1:A:1381:A:OP2	1.90	0.72
1:A:584:C:H4'	8:H:128:GLY:O	1.90	0.72
17:Q:101:ARG:NE	17:Q:101:ARG:HA	2.04	0.72
11:K:109:VAL:HG13	18:R:85:LEU:O	1.89	0.72
12:L:126:LYS:N	12:L:126:LYS:HD2	2.04	0.72
1:A:197:U:H3	20:T:105:SER:HG	1.38	0.72
1:A:251:G:H1'	17:Q:16:GLN:HE22	1.51	0.72
5:E:11:ILE:HG22	5:E:12:LEU:HD12	1.72	0.72
11:K:96:ARG:HA	11:K:99:GLN:OE1	1.89	0.72
16:P:6:LEU:HD23	16:P:17:TYR:CG	2.24	0.72
7:G:85:TYR:HD1	7:G:154:TYR:CE1	2.08	0.72
1:A:627:C:H2'	1:A:628:G:H8	1.55	0.72
5:E:40:ARG:HG2	5:E:40:ARG:HH11	1.54	0.72
8:H:110:ALA:HB3	8:H:121:ASP:HB3	1.69	0.72
1:A:1216:C:H1'	1:A:1347:U:O2	1.89	0.72
1:A:1045:U:H2'	1:A:1046:C:C6	2.24	0.72
1:A:1359:U:H2'	1:A:1360:A:C8	2.25	0.72
10:J:49:VAL:HG12	10:J:50:ILE:O	1.89	0.72
6:F:48:LEU:HD13	6:F:52:ILE:CG1	2.20	0.72
1:A:1347:U:O2'	1:A:1348:G:OP1	2.08	0.72
1:A:888:C:H2'	1:A:889:U:H6	1.55	0.72
1:A:575:U:H2'	1:A:576:G:H8	1.55	0.72
19:S:20:LEU:HA	19:S:23:ASN:ND2	2.02	0.72
1:A:1069:U:H3	1:A:1082:G:H22	1.36	0.72
1:A:23:G:H2'	1:A:24:C:C6	2.25	0.71
13:M:23:TYR:CE2	13:M:70:LEU:HB3	2.25	0.71
1:A:546:C:H41	1:A:862:U:H2'	1.55	0.71
1:A:811:U:H2'	1:A:848:U:O4	1.89	0.71
1:A:544:U:H4'	1:A:545:U:H5''	1.72	0.71
1:A:50:U:H1'	12:L:28:LYS:HZ3	1.53	0.71
2:B:23:ARG:C	2:B:23:ARG:HH11	1.92	0.71
18:R:39:VAL:HG13	18:R:40:LEU:HD23	1.72	0.71
16:P:1:MET:O	16:P:24:ALA:HB2	1.90	0.71
3:C:94:LEU:CD2	3:C:95:THR:HG23	2.19	0.71
1:A:1232:A:H4'	9:I:68:GLY:N	2.04	0.71
1:A:179:G:H2'	1:A:180:A:H8	1.55	0.71
9:I:100:GLY:O	9:I:102:LEU:N	2.24	0.71
1:A:1113:A:OP2	1:A:1113:A:H3'	1.89	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:3:GLN:HG3	9:I:20:ARG:HE	1.54	0.71
18:R:26:LEU:HD13	18:R:42:ARG:NH1	2.05	0.71
7:G:15:ASP:OD2	7:G:23:VAL:HG11	1.91	0.71
1:A:1287:G:H22	1:A:1313:G:C2'	2.03	0.71
1:A:543:A:H4'	1:A:544:U:O5'	1.91	0.71
13:M:52:GLU:HG2	13:M:55:ARG:NH2	2.05	0.71
1:A:1480:A:H5''	1:A:1481:A:OP2	1.89	0.71
12:L:47:LYS:CB	12:L:48:PRO:HD3	2.20	0.71
3:C:56:ASP:O	3:C:57:ILE:HG13	1.91	0.71
7:G:99:LEU:HD22	7:G:103:TRP:CZ2	2.25	0.71
7:G:70:LYS:HB3	7:G:96:GLN:OE1	1.90	0.71
16:P:22:THR:HA	16:P:33:ILE:HG13	1.72	0.71
1:A:1374:U:H2'	1:A:1375:G:C8	2.25	0.71
14:N:14:PRO:HG3	14:N:17:LYS:HA	1.73	0.71
11:K:34:ASP:O	11:K:36:ASP:N	2.23	0.71
1:A:438:C:H2'	1:A:439:C:H6	1.56	0.71
5:E:9:LYS:HG3	5:E:112:LEU:HD11	1.72	0.71
1:A:1208:C:H4'	1:A:1209:A:OP1	1.91	0.71
18:R:36:ASN:O	18:R:39:VAL:HG12	1.90	0.71
1:A:366:C:O2'	1:A:367:G:H5'	1.91	0.71
9:I:108:VAL:HG12	9:I:109:VAL:N	2.03	0.71
12:L:55:VAL:CG1	12:L:67:THR:HG23	2.19	0.71
18:R:36:ASN:ND2	18:R:38:GLU:HG2	2.06	0.71
1:A:1111:C:H5'	9:I:16:ARG:NH2	2.05	0.71
8:H:1:MET:HG2	8:H:2:LEU:N	2.03	0.71
1:A:483:A:O2'	1:A:484:G:C8	2.42	0.71
4:D:102:ASP:HB3	4:D:136:PRO:CA	2.21	0.71
1:A:385:A:H2'	1:A:386:C:C5'	2.21	0.71
7:G:126:ASP:HA	7:G:129:GLU:HB2	1.71	0.71
1:A:1399:G:N2	1:A:1463:U:H1'	2.05	0.70
8:H:89:PRO:HA	8:H:92:ARG:CZ	2.19	0.70
1:A:1230:A:H1'	9:I:70:LYS:NZ	2.06	0.70
20:T:30:LYS:HB3	20:T:34:LYS:HE3	1.71	0.70
5:E:80:ILE:HD13	5:E:138:ALA:HB1	1.73	0.70
19:S:40:ILE:HB	19:S:67:VAL:O	1.90	0.70
1:A:673:C:P	11:K:46:GLY:HA3	2.31	0.70
2:B:209:ARG:HE	2:B:239:VAL:HG13	1.54	0.70
1:A:1222:U:H4'	1:A:1223:G:OP2	1.89	0.70
1:A:244:C:O2'	1:A:245:U:H5'	1.91	0.70
1:A:454:G:H3'	1:A:455:A:H5''	1.74	0.70
3:C:188:LEU:CD1	3:C:189:ALA:N	2.55	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:73:MET:SD	7:G:90:GLU:HA	2.32	0.70
1:A:252:U:H2'	1:A:253:G:C8	2.26	0.70
1:A:333:C:H2'	1:A:334:A:C8	2.27	0.70
7:G:83:ALA:HB3	7:G:85:TYR:CE2	2.26	0.70
3:C:54:ARG:HB3	3:C:69:HIS:HD2	1.57	0.70
2:B:91:PRO:HB3	2:B:154:LEU:HB2	1.73	0.70
15:O:25:THR:CG2	15:O:70:LEU:HD23	2.21	0.70
1:A:324:C:H4'	1:A:325:A:O5'	1.90	0.70
1:A:1184:G:C2	14:N:42:ILE:HG21	2.27	0.70
17:Q:24:GLU:OE2	17:Q:37:LYS:HD3	1.91	0.70
3:C:6:HIS:CD2	3:C:8:ILE:HB	2.27	0.70
4:D:112:VAL:N	4:D:116:GLN:OE1	2.19	0.70
5:E:144:THR:HG22	5:E:146:ALA:H	1.57	0.70
1:A:1037:C:O2'	1:A:1038:A:H5''	1.91	0.70
1:A:1349:C:H2'	1:A:1350:C:C6	2.26	0.70
14:N:26:ARG:HH12	14:N:47:LEU:HG	1.56	0.70
1:A:1216:C:H2'	1:A:1217:U:H6	1.57	0.70
1:A:1221:A:H62	1:A:1281:A:H62	1.39	0.70
12:L:55:VAL:HG11	12:L:67:THR:HG23	1.73	0.70
11:K:95:ILE:O	11:K:99:GLN:HG3	1.91	0.70
11:K:91:ARG:HD2	11:K:92:GLU:OE1	1.92	0.70
8:H:111:ILE:O	8:H:134:ILE:HD12	1.92	0.70
1:A:801:C:H1'	1:A:803:A:H5'	1.74	0.70
15:O:31:LEU:HD12	15:O:31:LEU:H	1.56	0.70
2:B:206:ASP:CG	2:B:207:ALA:H	1.95	0.70
1:A:397:C:H2'	1:A:398:G:C8	2.27	0.70
3:C:11:ARG:O	3:C:14:ILE:N	2.19	0.70
3:C:110:ASN:HD21	3:C:140:ARG:HB3	1.57	0.70
1:A:378:A:H2'	1:A:379:A:C8	2.25	0.70
1:A:1440:G:H2'	1:A:1441:C:C6	2.27	0.69
9:I:8:GLY:HA2	9:I:79:LEU:HD12	1.72	0.69
10:J:16:LEU:HD23	10:J:94:VAL:HG22	1.73	0.69
4:D:120:LEU:O	4:D:125:HIS:HB2	1.92	0.69
1:A:823:U:C5'	1:A:824:C:H5	2.04	0.69
15:O:17:ARG:NH1	15:O:77:ARG:NH1	2.39	0.69
8:H:20:TYR:HA	8:H:65:TYR:CE2	2.27	0.69
17:Q:68:ARG:O	17:Q:69:LYS:HB2	1.93	0.69
12:L:67:THR:CG2	12:L:96:VAL:HG22	2.23	0.69
1:A:380:G:H2'	1:A:381:C:H6	1.57	0.69
1:A:1350:C:H4'	10:J:48:THR:HG21	1.73	0.69
20:T:79:ARG:HE	20:T:83:ARG:NH1	1.91	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:110:LEU:O	5:E:113:ALA:HB3	1.93	0.69
10:J:12:ASP:O	10:J:15:THR:HG22	1.93	0.69
4:D:192:GLU:OE1	4:D:192:GLU:N	2.25	0.69
20:T:54:LYS:HG3	20:T:100:ILE:HD13	1.74	0.69
1:A:419:G:N2	1:A:420:G:C8	2.61	0.69
1:A:1280:C:C5	7:G:114:ARG:HD3	2.28	0.69
10:J:32:ALA:HB2	10:J:76:ASN:HB2	1.74	0.69
1:A:1507:G:H5''	1:A:1508:G:OP2	1.93	0.69
1:A:1204:G:P	19:S:77:THR:HG21	2.33	0.69
14:N:22:THR:HB	14:N:33:VAL:HG21	1.74	0.69
3:C:8:ILE:HG23	3:C:16:ARG:HG2	1.73	0.69
10:J:61:GLU:OE1	14:N:45:ARG:NH1	2.25	0.69
5:E:109:ILE:HD12	5:E:135:THR:HG21	1.74	0.69
1:A:932:G:H21	1:A:1209:A:H62	1.40	0.69
19:S:36:ARG:HH21	19:S:75:ALA:HB3	1.56	0.69
18:R:36:ASN:O	18:R:36:ASN:ND2	2.26	0.69
1:A:452:C:H2'	1:A:453:C:H6	1.56	0.69
1:A:749:G:H1	1:A:796:C:H2'	1.58	0.69
5:E:15:ARG:O	5:E:16:THR:HG22	1.93	0.69
3:C:139:GLN:NE2	3:C:143:GLU:HB2	2.07	0.69
1:A:1355:U:H2'	1:A:1356:G:O4'	1.93	0.69
1:A:522:G:OP2	12:L:115:LYS:HG3	1.93	0.69
12:L:75:HIS:HA	12:L:102:ARG:NH2	2.06	0.69
6:F:11:ASN:OD1	6:F:13:ASN:N	2.22	0.69
2:B:31:TYR:HE1	2:B:200:ILE:HD12	1.56	0.69
2:B:77:ALA:HB2	2:B:211:ILE:HD13	1.75	0.69
11:K:73:MET:O	11:K:76:GLY:N	2.26	0.69
1:A:65:G:H4'	1:A:66:U:C5'	2.21	0.69
5:E:15:ARG:O	5:E:27:ARG:O	2.11	0.69
3:C:173:VAL:O	3:C:173:VAL:HG12	1.94	0.68
5:E:43:LEU:C	5:E:43:LEU:HD23	2.13	0.68
1:A:1260:U:C5'	1:A:1261:A:O4'	2.41	0.68
18:R:36:ASN:C	18:R:36:ASN:HD22	1.94	0.68
4:D:111:ALA:HB2	4:D:120:LEU:HD12	1.75	0.68
5:E:26:PHE:CD1	5:E:26:PHE:N	2.60	0.68
9:I:32:ASP:O	9:I:35:GLU:N	2.22	0.68
20:T:33:ILE:CD1	20:T:63:ILE:HA	2.24	0.68
1:A:371:U:OP1	16:P:69:THR:HG21	1.94	0.68
1:A:407:A:N9	1:A:409:G:H1'	2.08	0.68
1:A:247:G:H4'	1:A:248:U:O5'	1.92	0.68
1:A:822:G:C2'	1:A:823:U:H5''	2.22	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:177:THR:O	3:C:177:THR:HG23	1.92	0.68
1:A:1355:U:H5''	9:I:71:SER:HB3	1.76	0.68
1:A:1099:C:H2'	1:A:1100:G:C5'	2.23	0.68
5:E:105:VAL:HB	5:E:106:PRO:HD3	1.75	0.68
13:M:5:ALA:HB2	13:M:22:ILE:HD13	1.76	0.68
1:A:1385:C:H2'	1:A:1386:C:O4'	1.94	0.68
4:D:70:ILE:CG2	4:D:71:SER:N	2.57	0.68
6:F:10:LEU:HB3	6:F:85:VAL:HA	1.74	0.68
7:G:141:VAL:O	7:G:144:MET:HB2	1.94	0.68
21:U:12:LYS:O	21:U:16:GLY:N	2.26	0.68
1:A:955:A:H2'	1:A:956:A:H5''	1.74	0.68
1:A:1201:U:H2'	1:A:1202:G:C8	2.29	0.68
1:A:608:C:O2'	1:A:609:G:H5'	1.93	0.68
1:A:1506:U:O2'	1:A:1507:G:H3'	1.94	0.68
1:A:964:A:H2'	1:A:965:G:C8	2.29	0.68
9:I:17:VAL:HG21	9:I:81:ILE:N	2.07	0.68
1:A:769:G:C2	1:A:770:G:C8	2.82	0.68
10:J:81:THR:C	10:J:83:GLU:H	1.98	0.68
1:A:168:U:H5'	1:A:204:A:O4'	1.93	0.68
7:G:24:THR:HA	7:G:27:ILE:HD12	1.76	0.68
10:J:45:ARG:CB	10:J:45:ARG:HH11	2.00	0.68
4:D:179:GLU:O	4:D:181:MET:HG3	1.94	0.68
4:D:70:ILE:HD11	4:D:100:ARG:CZ	2.24	0.68
1:A:53:G:O2'	1:A:54:A:H5'	1.93	0.68
1:A:585:C:H2'	1:A:586:A:H8	1.59	0.68
2:B:181:PHE:N	2:B:181:PHE:HD1	1.92	0.68
20:T:42:GLN:O	20:T:45:GLN:HB3	1.95	0.68
1:A:1207:A:C5'	13:M:103:THR:OG1	2.41	0.68
13:M:24:GLY:HA3	13:M:66:LEU:HD22	1.75	0.68
4:D:35:ARG:O	4:D:36:ARG:HB2	1.94	0.68
1:A:97:C:OP1	20:T:17:ARG:HD2	1.94	0.68
8:H:65:TYR:HA	8:H:79:VAL:HG23	1.76	0.68
10:J:71:LEU:O	10:J:72:VAL:HB	1.93	0.68
1:A:745:G:C5	1:A:746:C:C4	2.82	0.67
1:A:897:A:O2'	1:A:898:U:H5'	1.94	0.67
4:D:36:ARG:H	4:D:37:PRO:HD3	1.59	0.67
9:I:48:GLU:OE1	9:I:51:ARG:HD2	1.93	0.67
2:B:181:PHE:N	2:B:181:PHE:CD1	2.60	0.67
2:B:104:ASN:OD1	2:B:107:THR:HB	1.94	0.67
1:A:1325:G:H1'	9:I:121:ARG:NH1	2.08	0.67
5:E:36:ASP:O	5:E:38:GLN:N	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:943:A:C2	13:M:124:PRO:HB2	2.29	0.67
2:B:155:LEU:HD22	2:B:157:ARG:O	1.95	0.67
5:E:15:ARG:NE	5:E:26:PHE:CD2	2.62	0.67
17:Q:27:PHE:O	17:Q:36:ILE:HG12	1.94	0.67
9:I:33:PHE:HZ	9:I:46:ALA:HB3	1.59	0.67
5:E:41:VAL:HG23	5:E:113:ALA:HA	1.76	0.67
1:A:1287:G:O2'	1:A:1288:A:H8	1.72	0.67
7:G:146:GLU:HA	7:G:149:ARG:HB2	1.75	0.67
1:A:18:U:H2'	1:A:19:C:C6	2.29	0.67
1:A:1269:A:H2'	1:A:1270:A:C8	2.30	0.67
5:E:91:LEU:HD12	5:E:138:ALA:HB1	1.76	0.67
5:E:80:ILE:CD1	5:E:91:LEU:HD12	2.24	0.67
1:A:960:U:H4'	1:A:961:A:O5'	1.93	0.67
3:C:26:LYS:CD	3:C:26:LYS:H	2.00	0.67
4:D:103:ASN:O	4:D:106:TYR:N	2.27	0.67
1:A:1211:A:H2'	1:A:1212:C:H6	1.59	0.67
2:B:28:PHE:CD2	2:B:190:THR:HA	2.30	0.67
1:A:647:A:H2'	1:A:648:G:C8	2.29	0.67
1:A:799:A:H5''	1:A:801:C:N4	2.10	0.67
1:A:1040:G:C5'	3:C:154:SER:HB2	2.24	0.67
12:L:28:LYS:CD	12:L:33:ARG:HH22	1.92	0.67
9:I:118:LYS:O	9:I:119:ALA:HB3	1.94	0.67
1:A:1486:G:H2'	1:A:1487:C:C6	2.26	0.67
1:A:386:C:O3'	16:P:28:ARG:NH2	2.28	0.67
20:T:56:MET:O	20:T:59:ALA:HB3	1.94	0.67
10:J:29:ARG:HB2	10:J:84:GLN:HE22	1.60	0.67
2:B:52:GLU:HG2	2:B:56:ARG:NH2	2.09	0.67
11:K:82:VAL:HB	11:K:108:ILE:HA	1.77	0.67
11:K:36:ASP:N	11:K:36:ASP:OD2	2.28	0.67
1:A:243:G:OP2	17:Q:99:SER:HB2	1.94	0.67
1:A:1338:G:H2'	1:A:1339:A:C8	2.30	0.67
1:A:930:U:O2'	1:A:931:G:H5'	1.94	0.67
1:A:1482:G:O2'	1:A:1483:G:OP2	2.12	0.67
17:Q:20:THR:HG23	17:Q:43:LEU:HD21	1.77	0.67
16:P:8:ARG:HG2	16:P:17:TYR:CE2	2.30	0.67
19:S:42:PRO:O	19:S:45:VAL:HG23	1.95	0.67
1:A:1496:A:H2'	1:A:1497:A:C8	2.30	0.67
4:D:61:LYS:HD2	4:D:207:TYR:OH	1.95	0.67
15:O:27:VAL:HG12	15:O:31:LEU:HD11	1.77	0.67
15:O:7:GLU:O	15:O:11:VAL:HG23	1.94	0.67
2:B:152:PHE:CE1	2:B:155:LEU:HD12	2.30	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1274:U:H5'	9:I:38:GLN:HE22	1.59	0.67
17:Q:56:VAL:HG12	17:Q:77:VAL:HB	1.77	0.67
3:C:13:GLY:O	3:C:14:ILE:HD13	1.95	0.67
1:A:1329:G:HO2'	1:A:1330:U:P	2.17	0.67
2:B:88:ALA:HB1	2:B:90:MET:HG2	1.77	0.67
9:I:79:LEU:O	9:I:82:ALA:HB3	1.95	0.67
13:M:36:LYS:HD2	13:M:59:TYR:CZ	2.30	0.67
4:D:190:ASP:O	4:D:192:GLU:N	2.28	0.67
2:B:134:GLU:C	2:B:136:VAL:H	1.97	0.67
15:O:87:ILE:HG22	15:O:88:ARG:N	2.10	0.67
1:A:283:U:H2'	1:A:284:A:H8	1.60	0.67
1:A:1377:A:N6	1:A:1479:C:H5'	2.10	0.67
5:E:75:THR:HG23	5:E:76:ILE:N	2.08	0.66
1:A:529:C:O2'	1:A:530:G:H5'	1.95	0.66
1:A:1047:G:H4'	1:A:1048:U:H5''	1.76	0.66
10:J:94:VAL:HG12	10:J:95:GLU:N	2.08	0.66
2:B:100:GLY:O	2:B:102:LEU:N	2.28	0.66
1:A:720:C:H2'	1:A:721:A:C8	2.30	0.66
10:J:45:ARG:HB3	10:J:45:ARG:NH1	1.99	0.66
6:F:46:ARG:HB2	6:F:60:PHE:CE1	2.30	0.66
2:B:121:LEU:O	2:B:127:ILE:HG12	1.94	0.66
1:A:1020:C:H2'	1:A:1021:C:C6	2.30	0.66
1:A:1263:U:H5'	1:A:1264:C:H5	1.59	0.66
1:A:1477:A:P	22:A:1523:KSG:H12	2.35	0.66
1:A:250:G:OP1	17:Q:67:LYS:O	2.13	0.66
2:B:142:LEU:CA	2:B:146:GLN:HE22	2.08	0.66
1:A:721:A:H2'	1:A:722:C:H6	1.60	0.66
5:E:121:LYS:HE3	5:E:122:GLU:O	1.95	0.66
1:A:1135:A:H5''	10:J:13:HIS:HD2	1.59	0.66
1:A:1260:U:H5''	1:A:1261:A:O4'	1.95	0.66
2:B:156:LYS:O	2:B:156:LYS:HD3	1.95	0.66
1:A:75:C:H2'	1:A:76:G:H8	1.61	0.66
1:A:1403:C:H2'	1:A:1404:G:H8	1.61	0.66
1:A:1225:C:H2'	1:A:1226:C:H6	1.61	0.66
1:A:501:G:HO2'	1:A:514:G:H4'	1.60	0.66
3:C:100:ALA:O	3:C:101:LEU:HB2	1.94	0.66
1:A:1351:G:OP1	10:J:62:HIS:HE1	1.78	0.66
1:A:474:C:H2'	1:A:475:G:C8	2.31	0.66
7:G:75:VAL:HG11	7:G:86:GLN:HB3	1.77	0.66
19:S:28:LYS:CG	19:S:29:ARG:H	1.92	0.66
20:T:66:ALA:HB1	20:T:72:LEU:HB2	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:107:ARG:HH12	4:D:114:ARG:HH22	1.43	0.66
4:D:13:ARG:NH1	4:D:38:TYR:O	2.29	0.66
1:A:1225:C:H2'	1:A:1226:C:C6	2.30	0.66
9:I:43:ALA:HA	9:I:74:ILE:HD13	1.77	0.66
20:T:46:GLU:HB3	20:T:48:LYS:HZ2	1.61	0.66
1:A:522:G:H4'	12:L:114:LYS:HD3	1.78	0.66
2:B:93:VAL:HG11	2:B:97:TRP:CD1	2.31	0.66
1:A:385:A:C2'	1:A:386:C:H5'	2.26	0.66
17:Q:74:LEU:HD23	17:Q:74:LEU:O	1.96	0.66
21:U:12:LYS:HG3	21:U:17:THR:OG1	1.95	0.66
1:A:579:G:H2'	1:A:625:U:O4	1.96	0.66
16:P:22:THR:HA	16:P:33:ILE:CD1	2.26	0.66
16:P:55:ARG:O	16:P:58:TYR:HB3	1.95	0.66
1:A:758:G:H1	1:A:789:C:H42	1.42	0.66
3:C:82:GLU:O	3:C:85:ARG:HB3	1.94	0.66
1:A:540:C:H2'	1:A:541:G:H5'	1.78	0.66
1:A:380:G:H2'	1:A:381:C:C6	2.31	0.66
1:A:802:G:O2'	1:A:804:U:C5	2.48	0.66
8:H:86:ILE:HD12	8:H:133:LEU:HD22	1.78	0.66
17:Q:92:ARG:O	17:Q:95:TYR:HB2	1.96	0.66
16:P:20:VAL:HG13	16:P:21:VAL:N	2.09	0.66
1:A:1373:U:H2'	1:A:1374:U:H6	1.61	0.66
4:D:36:ARG:N	4:D:37:PRO:HD3	2.10	0.66
1:A:271:G:H5'	17:Q:14:LYS:HD3	1.76	0.66
11:K:57:THR:HG23	11:K:60:ALA:CB	2.26	0.66
18:R:39:VAL:HG13	18:R:40:LEU:H	1.60	0.66
3:C:23:TYR:CD2	3:C:24:ALA:N	2.64	0.66
7:G:64:GLN:O	7:G:67:GLU:HB3	1.96	0.66
7:G:12:LEU:HD12	7:G:12:LEU:N	2.11	0.66
1:A:964:A:H1'	19:S:54:GLY:O	1.95	0.66
1:A:767:C:O2'	1:A:768:C:H5'	1.94	0.66
4:D:31:CYS:SG	4:D:31:CYS:O	2.54	0.66
1:A:1489:G:O2'	1:A:1490:U:H5'	1.96	0.66
11:K:67:ASP:HA	11:K:70:LYS:HD2	1.77	0.66
1:A:749:G:N1	1:A:796:C:H2'	2.10	0.66
3:C:174:PRO:HB2	3:C:177:THR:HG22	1.77	0.65
19:S:16:LEU:O	19:S:19:VAL:HG12	1.96	0.65
1:A:1488:U:H2'	1:A:1489:G:C8	2.31	0.65
5:E:144:THR:CG2	5:E:145:LYS:N	2.57	0.65
1:A:609:G:H2'	1:A:610:U:H6	1.57	0.65
7:G:148:ASN:O	7:G:150:ALA:N	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:266:A:H2'	1:A:267:C:C6	2.31	0.65
15:O:73:GLU:HA	15:O:73:GLU:OE1	1.95	0.65
1:A:552:G:N2	1:A:861:C:C2	2.65	0.65
14:N:22:THR:HB	14:N:33:VAL:CG2	2.25	0.65
1:A:424:G:C2	1:A:426:A:N6	2.63	0.65
2:B:32:ILE:HD13	2:B:40:HIS:CD2	2.31	0.65
1:A:671:A:H4'	1:A:672:G:O5'	1.95	0.65
6:F:10:LEU:HA	6:F:86:ARG:HG2	1.78	0.65
7:G:25:ALA:HA	7:G:28:ASN:HD22	1.60	0.65
1:A:1151:A:H8	1:A:1151:A:O5'	1.79	0.65
4:D:140:VAL:CG1	4:D:146:ILE:HD11	2.21	0.65
5:E:115:VAL:HG21	5:E:118:ILE:HD11	1.78	0.65
18:R:87:ARG:HG2	18:R:87:ARG:NH1	2.11	0.65
17:Q:81:ARG:HG3	17:Q:81:ARG:O	1.96	0.65
17:Q:82:MET:O	17:Q:84:LEU:N	2.29	0.65
20:T:67:ALA:HA	20:T:73:HIS:H	1.61	0.65
1:A:867:A:H4'	1:A:868:G:OP1	1.96	0.65
4:D:104:VAL:HG21	4:D:140:VAL:HG21	1.77	0.65
4:D:96:LEU:O	4:D:99:SER:N	2.28	0.65
12:L:53:ARG:H	12:L:53:ARG:HD2	1.61	0.65
12:L:55:VAL:HG12	12:L:56:ALA:N	2.11	0.65
6:F:82:ARG:HE	6:F:82:ARG:HA	1.61	0.65
1:A:799:A:O2'	1:A:800:A:P	2.54	0.65
14:N:6:LEU:HB3	14:N:23:ARG:NH2	2.11	0.65
1:A:1295:U:OP2	19:S:6:LYS:HA	1.96	0.65
1:A:483:A:H4'	1:A:484:G:OP1	1.96	0.65
3:C:188:LEU:HD11	3:C:195:VAL:CG1	2.23	0.65
1:A:622:G:O2'	1:A:623:G:H5'	1.96	0.65
18:R:58:LEU:HD11	18:R:66:LEU:HD13	1.77	0.65
1:A:501:G:O2'	1:A:514:G:H4'	1.95	0.65
1:A:1251:A:C2	1:A:1295:U:O4'	2.50	0.65
15:O:36:ILE:HA	15:O:59:MET:CE	2.27	0.65
12:L:53:ARG:HD2	12:L:53:ARG:N	2.11	0.65
10:J:78:ASN:O	10:J:80:LYS:N	2.30	0.65
2:B:142:LEU:CD2	2:B:146:GLN:HE22	2.09	0.65
1:A:724:U:O2'	1:A:725:G:H5'	1.95	0.65
7:G:38:LEU:O	7:G:42:ILE:HG13	1.96	0.65
10:J:38:ILE:HG13	10:J:71:LEU:HB3	1.79	0.65
18:R:29:PHE:HE1	18:R:31:LEU:CD2	2.10	0.65
1:A:860:C:O2'	1:A:861:C:H5'	1.96	0.65
3:C:6:HIS:CD2	3:C:9:GLY:H	2.07	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:64:VAL:HB	3:C:99:VAL:CB	2.27	0.65
1:A:994:A:H2'	1:A:995:A:C8	2.32	0.65
1:A:903:G:C6	1:A:905:G:N7	2.64	0.65
1:A:1220:A:N7	1:A:1285:C:H1'	2.11	0.65
19:S:22:LEU:HD11	19:S:31:ILE:HD11	1.79	0.65
1:A:199:U:H2'	1:A:200:C:C6	2.31	0.65
7:G:46:ALA:O	7:G:50:ILE:HG13	1.97	0.65
1:A:1482:G:H4'	1:A:1483:G:O5'	1.97	0.65
1:A:670:U:H1'	11:K:42:TRP:HE1	1.62	0.65
3:C:54:ARG:HB3	3:C:69:HIS:CD2	2.32	0.65
12:L:5:PRO:HA	12:L:9:GLN:OE1	1.97	0.65
3:C:112:SER:HB2	3:C:115:LEU:HB2	1.78	0.65
1:A:1435:G:O2'	1:A:1436:G:H5'	1.98	0.65
1:A:106:G:H21	1:A:350:G:C5'	2.03	0.65
13:M:5:ALA:HB3	13:M:8:GLU:HG3	1.78	0.65
6:F:1:MET:SD	6:F:67:MET:HA	2.37	0.65
4:D:203:VAL:O	4:D:206:PHE:N	2.30	0.65
10:J:6:ILE:O	10:J:71:LEU:O	2.14	0.65
20:T:66:ALA:CB	20:T:72:LEU:HB2	2.27	0.64
1:A:1198:G:H5''	14:N:5:ALA:HB2	1.79	0.64
1:A:400:U:H2'	1:A:401:U:H6	1.59	0.64
1:A:943:A:O2'	1:A:944:G:H5'	1.98	0.64
2:B:204:ASN:C	2:B:204:ASN:HD22	2.00	0.64
1:A:40:G:O2'	1:A:41:C:H5'	1.97	0.64
19:S:30:LEU:HD23	19:S:48:THR:O	1.97	0.64
16:P:21:VAL:HG12	16:P:33:ILE:HD12	1.79	0.64
14:N:26:ARG:NH1	14:N:47:LEU:HG	2.11	0.64
1:A:698:G:H2'	1:A:699:A:C8	2.31	0.64
13:M:108:ARG:O	13:M:112:GLY:N	2.24	0.64
1:A:1108:U:H3	10:J:5:ARG:HH21	1.44	0.64
1:A:142:G:O2'	1:A:143:G:H5'	1.97	0.64
11:K:44:SER:OG	11:K:47:VAL:HG23	1.97	0.64
13:M:65:LYS:CE	13:M:69:GLU:HG2	2.25	0.64
1:A:1480:A:H2	1:A:1483:G:N1	1.85	0.64
17:Q:76:LEU:C	17:Q:76:LEU:HD23	2.17	0.64
5:E:88:LYS:HB3	5:E:123:LEU:HB2	1.79	0.64
1:A:1465:G:H2'	1:A:1466:G:H8	1.62	0.64
3:C:113:ALA:HB3	3:C:114:PRO:HD3	1.77	0.64
9:I:28:VAL:HA	9:I:63:ILE:O	1.97	0.64
4:D:203:VAL:HG12	4:D:204:ILE:N	2.11	0.64
2:B:97:TRP:HH2	2:B:176:GLU:CD	2.00	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:953:A:H4'	1:A:954:G:OP2	1.96	0.64
1:A:1491:A:H2'	1:A:1492:C:C6	2.32	0.64
3:C:52:LEU:HD21	3:C:118:GLN:HE22	1.62	0.64
1:A:1335:G:H2'	1:A:1336:C:H6	1.61	0.64
1:A:1354:G:O3'	9:I:69:GLY:HA3	1.97	0.64
19:S:5:LEU:O	19:S:6:LYS:HB2	1.97	0.64
19:S:47:HIS:O	19:S:62:ILE:HG22	1.98	0.64
4:D:104:VAL:HG11	4:D:146:ILE:CD1	2.27	0.64
5:E:39:GLY:HA2	5:E:113:ALA:O	1.97	0.64
1:A:1211:A:H2'	1:A:1212:C:C6	2.32	0.64
12:L:55:VAL:HG13	12:L:68:ALA:O	1.97	0.64
10:J:12:ASP:HB3	10:J:15:THR:CB	2.27	0.64
1:A:647:A:H2'	1:A:648:G:H8	1.63	0.64
17:Q:10:VAL:O	17:Q:53:LEU:HD12	1.97	0.64
1:A:900:G:H2'	1:A:901:A:H8	1.62	0.64
3:C:83:ARG:C	3:C:85:ARG:H	2.00	0.64
1:A:646:G:H2'	1:A:647:A:C8	2.32	0.64
1:A:926:C:O2'	1:A:927:A:H5'	1.96	0.64
1:A:776:A:H4'	1:A:777:U:H5''	1.79	0.64
1:A:678:A:H5'	11:K:53:SER:HB2	1.77	0.64
1:A:271:G:H5'	17:Q:14:LYS:HB3	1.80	0.64
3:C:26:LYS:HD3	3:C:26:LYS:N	2.11	0.64
1:A:1288:A:H62	1:A:1313:G:H1'	1.59	0.64
11:K:19:ALA:HB2	11:K:80:VAL:HG11	1.78	0.64
9:I:48:GLU:N	9:I:49:PRO:HD2	2.11	0.64
7:G:24:THR:O	7:G:28:ASN:ND2	2.31	0.64
1:A:1403:C:H2'	1:A:1404:G:C8	2.32	0.64
1:A:1246:C:H2'	1:A:1247:G:C8	2.32	0.64
9:I:17:VAL:HG22	9:I:63:ILE:HD13	1.79	0.64
12:L:117:ARG:O	12:L:119:LYS:O	2.16	0.64
18:R:66:LEU:HD21	18:R:70:ILE:HD11	1.79	0.64
1:A:634:G:C2'	1:A:635:C:H5'	2.27	0.64
1:A:1109:U:H2'	1:A:1110:G:O4'	1.98	0.64
7:G:92:SER:HB2	7:G:93:PRO:HD2	1.80	0.64
19:S:11:VAL:HG13	19:S:38:SER:HB2	1.80	0.64
4:D:70:ILE:HG22	4:D:71:SER:N	2.11	0.64
1:A:1172:G:HO2'	1:A:1173:A:P	2.21	0.64
2:B:130:ARG:HH21	3:C:207:VAL:HG22	1.63	0.64
1:A:831:G:O2'	1:A:832:G:H5'	1.98	0.64
1:A:858:C:O2'	1:A:859:G:H5'	1.97	0.64
4:D:9:CYS:O	4:D:13:ARG:HG3	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1489:G:H2'	1:A:1490:U:O4'	1.97	0.64
12:L:93:LEU:HB3	12:L:96:VAL:HG21	1.80	0.64
1:A:540:C:C2'	1:A:541:G:H5'	2.27	0.64
1:A:95:A:H2'	1:A:96:G:H8	1.63	0.64
1:A:739:G:OP2	15:O:65:ARG:HG2	1.97	0.64
13:M:84:ILE:C	13:M:86:CYS:H	2.01	0.63
15:O:31:LEU:O	15:O:34:LEU:HB3	1.98	0.63
1:A:947:A:N6	13:M:126:LYS:HB2	2.13	0.63
10:J:19:SER:CB	10:J:91:PRO:HG3	2.28	0.63
1:A:719:C:O2'	1:A:720:C:H5'	1.97	0.63
1:A:340:A:H5''	1:A:341:C:H5	1.63	0.63
4:D:119:GLN:HG2	4:D:123:HIS:CD2	2.32	0.63
2:B:178:ARG:NH2	8:H:74:PRO:HG3	2.12	0.63
5:E:76:ILE:O	5:E:93:PRO:HB3	1.98	0.63
1:A:952:A:P	14:N:29:ARG:HH22	2.20	0.63
6:F:48:LEU:HD22	18:R:77:GLY:HA3	1.80	0.63
4:D:82:ALA:HB1	4:D:92:VAL:HB	1.79	0.63
1:A:506:C:H41	12:L:53:ARG:HH22	1.45	0.63
1:A:25:U:H2'	1:A:26:C:C6	2.32	0.63
1:A:835:C:H2'	1:A:836:G:O4'	1.98	0.63
1:A:999:U:H2'	1:A:1000:G:H8	1.62	0.63
12:L:86:ARG:HG3	12:L:86:ARG:HH11	1.62	0.63
1:A:1465:G:O2'	1:A:1466:G:H5'	1.97	0.63
1:A:50:U:H1'	12:L:28:LYS:NZ	2.13	0.63
20:T:43:LEU:HD12	20:T:52:ALA:HA	1.79	0.63
1:A:1383:C:C4'	1:A:1384:G:OP2	2.47	0.63
3:C:177:THR:O	3:C:179:ARG:N	2.31	0.63
1:A:1385:C:O2	1:A:1478:A:N1	2.31	0.63
1:A:781:C:OP1	11:K:124:LYS:HG3	1.99	0.63
12:L:119:LYS:O	12:L:120:TYR:HB2	1.99	0.63
15:O:36:ILE:HA	15:O:59:MET:HE3	1.80	0.63
2:B:29:ALA:O	2:B:31:TYR:N	2.31	0.63
11:K:17:GLY:O	11:K:80:VAL:HA	1.99	0.63
11:K:87:THR:HA	11:K:91:ARG:HH21	1.63	0.63
1:A:750:A:C8	1:A:798:A:N6	2.67	0.63
1:A:745:G:H4'	17:Q:102:GLY:C	2.19	0.63
1:A:181:C:H2'	1:A:182:C:H6	1.63	0.63
20:T:26:ASN:O	20:T:29:LYS:HB2	1.98	0.63
12:L:75:HIS:HD2	12:L:77:LEU:HB2	1.63	0.63
1:A:654:G:H2'	1:A:655:G:O4'	1.99	0.63
1:A:545:U:O2'	1:A:546:C:OP2	2.16	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:65:ARG:HD2	4:D:75:PHE:HB2	1.81	0.63
11:K:57:THR:HG23	11:K:60:ALA:HB2	1.80	0.63
17:Q:44:ALA:HB1	17:Q:73:VAL:HG22	1.79	0.63
2:B:89:GLY:H	2:B:226:ARG:HH22	1.45	0.63
1:A:33:A:H2'	1:A:34:A:C8	2.34	0.63
18:R:37:VAL:CG2	18:R:78:LEU:HB3	2.27	0.63
3:C:105:GLU:O	3:C:107:GLN:NE2	2.31	0.63
12:L:25:PRO:C	12:L:27:LEU:H	1.99	0.63
1:A:1482:G:HO2'	1:A:1483:G:P	2.21	0.63
1:A:675:G:O2'	1:A:781:C:H4'	1.99	0.63
6:F:3:ARG:NH2	6:F:64:GLN:HE22	1.95	0.63
12:L:47:LYS:CB	12:L:48:PRO:CD	2.75	0.63
1:A:452:C:H2'	1:A:453:C:C6	2.34	0.63
2:B:89:GLY:H	2:B:226:ARG:NH2	1.97	0.63
1:A:677:G:H1'	22:A:1524:KSG:H6	1.79	0.63
10:J:82:ILE:O	10:J:86:MET:HB2	1.99	0.63
1:A:1120:C:H4'	1:A:1121:G:N2	2.14	0.63
7:G:23:VAL:HG13	7:G:43:PHE:CE2	2.34	0.63
10:J:54:PHE:HD2	10:J:55:LYS:HG2	1.64	0.63
19:S:20:LEU:HD12	19:S:21:GLU:N	2.14	0.63
1:A:176:G:O2'	1:A:177:U:OP2	2.10	0.63
1:A:199:U:H2'	1:A:200:C:H6	1.64	0.63
13:M:23:TYR:HB3	13:M:67:GLU:HA	1.80	0.63
3:C:83:ARG:C	3:C:85:ARG:N	2.51	0.63
10:J:12:ASP:CB	10:J:15:THR:HB	2.28	0.63
1:A:372:G:H5''	16:P:5:ARG:HD2	1.81	0.63
12:L:60:LEU:HD21	12:L:66:VAL:HG22	1.80	0.63
6:F:40:VAL:HG23	6:F:62:TRP:O	1.99	0.63
3:C:83:ARG:O	3:C:85:ARG:N	2.31	0.62
3:C:47:LEU:CD1	3:C:47:LEU:H	2.11	0.62
1:A:889:U:O2'	1:A:890:C:H5'	1.99	0.62
17:Q:17:LYS:HA	17:Q:46:ASP:O	1.99	0.62
1:A:146:A:H2'	1:A:147:A:O4'	1.99	0.62
1:A:1364:U:O2'	1:A:1365:C:H5'	1.98	0.62
11:K:120:ARG:NH1	11:K:126:ARG:HD2	2.14	0.62
3:C:174:PRO:O	3:C:177:THR:HG22	1.98	0.62
5:E:71:LEU:CD1	5:E:114:GLY:HA3	2.28	0.62
1:A:42:G:H2'	1:A:43:G:H8	1.63	0.62
1:A:287:C:O2'	1:A:288:G:H5'	1.98	0.62
4:D:150:GLU:HA	4:D:153:ARG:HG3	1.81	0.62
1:A:170:C:H2'	1:A:171:C:H6	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1453:G:H2'	1:A:1454:G:C8	2.34	0.62
1:A:20:C:H2'	1:A:21:U:H6	1.63	0.62
1:A:552:G:O6	12:L:5:PRO:HG3	1.99	0.62
3:C:92:ALA:C	3:C:94:LEU:H	2.03	0.62
1:A:773:U:H2'	1:A:775:G:OP2	1.99	0.62
1:A:673:C:H42	1:A:682:G:H1	1.45	0.62
17:Q:43:LEU:CD1	17:Q:68:ARG:NH1	2.62	0.62
15:O:32:LEU:HD13	15:O:63:ARG:HB2	1.82	0.62
18:R:39:VAL:CG1	18:R:40:LEU:N	2.62	0.62
1:A:733:C:H2'	1:A:734:G:H8	1.64	0.62
12:L:47:LYS:HB3	12:L:48:PRO:HD3	1.81	0.62
1:A:1373:U:H2'	1:A:1374:U:C6	2.35	0.62
17:Q:12:SER:HB3	17:Q:20:THR:CB	2.29	0.62
2:B:23:ARG:HH11	2:B:24:TRP:N	1.97	0.62
18:R:39:VAL:CG1	18:R:40:LEU:H	2.12	0.62
1:A:1012:G:O2'	1:A:1013:A:H5'	1.99	0.62
11:K:34:ASP:OD2	11:K:38:ASN:HB2	2.00	0.62
1:A:1020:C:H2'	1:A:1021:C:H6	1.63	0.62
20:T:69:GLY:O	20:T:73:HIS:ND1	2.33	0.62
1:A:1396:A:H2	1:A:1465:G:N2	1.91	0.62
1:A:1466:G:H2'	1:A:1467:G:C8	2.35	0.62
1:A:1329:G:N2	1:A:1356:G:H2'	2.13	0.62
16:P:20:VAL:CG2	16:P:35:LYS:HA	2.30	0.62
5:E:11:ILE:O	5:E:12:LEU:HB3	1.99	0.62
1:A:1320:G:H2'	1:A:1321:A:C8	2.33	0.62
2:B:25:ASN:HD22	2:B:26:PRO:HD2	1.65	0.62
5:E:144:THR:CG2	5:E:145:LYS:H	2.11	0.62
12:L:126:LYS:H	12:L:126:LYS:HD2	1.64	0.62
15:O:87:ILE:O	15:O:88:ARG:HB2	1.99	0.62
1:A:925:G:H2'	1:A:926:C:C6	2.35	0.62
7:G:108:ALA:O	7:G:111:ARG:HG3	2.00	0.62
13:M:8:GLU:OE1	13:M:22:ILE:HA	1.99	0.62
1:A:762:G:H8	1:A:762:G:O5'	1.82	0.62
11:K:48:ILE:HD11	11:K:64:ALA:N	2.15	0.62
1:A:1437:C:H5"	20:T:27:LYS:NZ	2.14	0.62
14:N:37:PHE:HB3	14:N:39:LEU:HD12	1.79	0.62
3:C:3:ASN:C	3:C:4:LYS:HG2	2.19	0.62
2:B:109:SER:HA	2:B:112:VAL:HG23	1.82	0.62
1:A:984:A:C2'	1:A:985:C:H5'	2.30	0.62
1:A:1192:C:H4'	1:A:1196:C:C4	2.34	0.62
3:C:119:ARG:O	3:C:123:GLN:HG3	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:5:ALA:CB	13:M:22:ILE:HD13	2.29	0.62
13:M:23:TYR:HE2	13:M:70:LEU:HB3	1.62	0.62
2:B:25:ASN:C	2:B:25:ASN:HD22	2.03	0.62
2:B:93:VAL:HG11	2:B:97:TRP:HD1	1.63	0.62
4:D:149:ALA:O	4:D:150:GLU:C	2.38	0.62
3:C:125:GLU:C	3:C:127:ARG:H	2.02	0.62
3:C:68:VAL:HG12	3:C:70:VAL:CG2	2.30	0.62
1:A:101:G:H2'	1:A:102:G:H5'	1.82	0.62
6:F:10:LEU:HD12	6:F:59:TYR:HB3	1.82	0.62
1:A:847:G:H4'	1:A:850:A:C8	2.35	0.62
1:A:373:G:OP1	16:P:3:LYS:HD2	2.00	0.62
2:B:230:VAL:HG13	2:B:231:GLU:OE2	2.00	0.62
19:S:13:ASP:HA	19:S:16:LEU:HB3	1.82	0.62
20:T:31:SER:HA	20:T:34:LYS:HD2	1.82	0.62
4:D:175:SER:O	4:D:183:GLY:HA2	2.00	0.62
1:A:251:G:C1'	17:Q:16:GLN:NE2	2.61	0.62
13:M:15:VAL:HG11	13:M:34:LEU:HD21	1.81	0.62
1:A:286:C:O2'	1:A:287:C:H5'	2.00	0.62
12:L:47:LYS:HB2	12:L:48:PRO:CD	2.30	0.62
19:S:43:GLU:H	19:S:43:GLU:CD	2.04	0.62
1:A:564:U:H2'	1:A:565:G:O4'	2.00	0.61
3:C:201:TYR:N	3:C:201:TYR:CD1	2.68	0.61
1:A:1421:G:H2'	1:A:1422:C:C6	2.35	0.61
13:M:80:ARG:C	13:M:82:MET:H	2.03	0.61
4:D:105:VAL:HA	4:D:108:LEU:HD12	1.82	0.61
1:A:423:U:OP2	4:D:36:ARG:NH2	2.33	0.61
5:E:36:ASP:C	5:E:38:GLN:H	2.03	0.61
2:B:76:GLN:HG3	2:B:206:ASP:OD1	1.99	0.61
2:B:114:ARG:NH1	2:B:118:LEU:HD21	2.14	0.61
1:A:620:U:H2'	1:A:621:G:H8	1.65	0.61
6:F:69:GLU:HA	6:F:72:VAL:HG23	1.82	0.61
3:C:161:GLU:HG2	3:C:161:GLU:O	2.00	0.61
1:A:1267:A:H4'	1:A:1268:A:O5'	1.98	0.61
9:I:42:ARG:O	9:I:43:ALA:C	2.39	0.61
5:E:80:ILE:HD11	5:E:91:LEU:CD1	2.28	0.61
1:A:1161:A:O3'	9:I:103:THR:HG23	2.00	0.61
1:A:407:A:C1'	1:A:409:G:H1'	2.30	0.61
11:K:48:ILE:CD1	11:K:63:LEU:HB2	2.28	0.61
1:A:212:G:H2'	1:A:213:C:C6	2.34	0.61
3:C:5:ILE:HD12	3:C:5:ILE:O	2.00	0.61
1:A:38:U:O2'	1:A:484:G:H4'	1.99	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:11:ILE:HG22	5:E:31:LEU:HB2	1.81	0.61
1:A:398:G:O2'	1:A:399:C:H5'	1.99	0.61
1:A:443:A:H2'	1:A:444:C:C6	2.35	0.61
1:A:1127:G:N2	1:A:1129:A:H62	1.97	0.61
16:P:8:ARG:HB2	16:P:28:ARG:NH1	2.15	0.61
14:N:11:LYS:O	14:N:12:ARG:C	2.38	0.61
1:A:1050:A:O2'	1:A:1051:G:P	2.59	0.61
19:S:31:ILE:O	19:S:50:ALA:N	2.30	0.61
19:S:49:ILE:HD12	19:S:71:LEU:HD21	1.83	0.61
5:E:42:GLY:HA3	5:E:62:ALA:O	1.99	0.61
1:A:290:U:H2'	1:A:291:C:C6	2.34	0.61
1:A:454:G:H3'	1:A:455:A:C5'	2.31	0.61
1:A:1169:G:C2	1:A:1170:A:C4	2.89	0.61
9:I:111:ARG:HD2	9:I:113:LYS:HG3	1.83	0.61
1:A:262:G:H5''	1:A:262:G:C8	2.36	0.61
18:R:47:THR:HG22	18:R:48:GLY:N	2.15	0.61
2:B:121:LEU:HD23	2:B:121:LEU:N	2.14	0.61
2:B:178:ARG:O	8:H:71:GLY:HA2	2.01	0.61
1:A:706:A:H4'	1:A:707:U:C5	2.35	0.61
8:H:88:LYS:HB3	8:H:89:PRO:HD2	1.83	0.61
12:L:6:THR:OG1	12:L:9:GLN:HG3	2.00	0.61
17:Q:97:SER:HB2	17:Q:102:GLY:C	2.20	0.61
19:S:16:LEU:C	19:S:18:LYS:H	2.04	0.61
1:A:945:C:C4'	9:I:128:ARG:HG3	2.28	0.61
2:B:22:LYS:O	2:B:23:ARG:HG3	2.00	0.61
2:B:30:ARG:HG3	2:B:31:TYR:CE2	2.35	0.61
19:S:22:LEU:HD22	19:S:28:LYS:HB2	1.81	0.61
1:A:775:G:C2'	1:A:776:A:H5'	2.29	0.61
4:D:65:ARG:HE	4:D:72:GLU:N	1.97	0.61
17:Q:43:LEU:HD11	17:Q:68:ARG:NH1	2.16	0.61
1:A:7:G:C4	5:E:119:LEU:HD11	2.36	0.61
2:B:149:LEU:O	2:B:151:GLY:N	2.34	0.61
1:A:603:U:C2	4:D:135:LEU:HD11	2.36	0.61
4:D:26:CYS:HA	4:D:31:CYS:HB2	1.82	0.61
5:E:41:VAL:HG21	5:E:113:ALA:HA	1.79	0.61
7:G:83:ALA:HB3	7:G:85:TYR:HE2	1.65	0.61
1:A:576:G:O2'	1:A:577:G:H5'	2.01	0.61
1:A:268:C:O2'	1:A:269:A:H5'	2.00	0.61
1:A:359:A:OP1	12:L:33:ARG:HG3	2.00	0.61
5:E:139:LEU:HD22	5:E:142:LEU:CD1	2.22	0.61
1:A:402:G:H5''	4:D:5:ILE:HG21	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:407:A:C4	1:A:409:G:H1'	2.36	0.61
4:D:194:LEU:HB3	4:D:196:LEU:HD12	1.82	0.61
4:D:61:LYS:HD3	4:D:206:PHE:CE2	2.36	0.61
2:B:23:ARG:C	2:B:23:ARG:NH1	2.55	0.61
1:A:737:A:H5'	1:A:738:C:C6	2.36	0.61
1:A:1403:C:O5'	1:A:1403:C:H6	1.83	0.61
8:H:44:PHE:HB3	8:H:80:ILE:HG12	1.83	0.61
1:A:964:A:H2'	1:A:965:G:H8	1.66	0.61
4:D:30:LYS:C	4:D:32:ALA:H	2.04	0.61
2:B:17:PHE:HD1	2:B:18:GLY:N	1.99	0.61
11:K:80:VAL:HG21	11:K:103:LEU:HD13	1.82	0.61
1:A:372:G:O2'	1:A:373:G:H5'	2.00	0.61
4:D:190:ASP:N	4:D:193:ASP:OD2	2.34	0.61
9:I:5:TYR:CG	9:I:6:GLY:N	2.68	0.61
1:A:745:G:H1'	17:Q:103:GLY:O	2.01	0.60
10:J:92:THR:O	10:J:92:THR:HG22	2.01	0.60
5:E:13:ILE:HG22	5:E:30:ALA:CB	2.31	0.60
5:E:44:GLY:N	5:E:62:ALA:HB2	2.16	0.60
2:B:20:GLU:HG3	2:B:189:ASP:OD2	2.01	0.60
16:P:39:TYR:HB2	16:P:49:LEU:HD12	1.83	0.60
14:N:9:LYS:C	14:N:9:LYS:HD3	2.22	0.60
1:A:1203:G:OP1	1:A:1303:C:N3	2.33	0.60
13:M:87:TYR:CE1	13:M:91:ARG:HD3	2.35	0.60
7:G:111:ARG:HB3	7:G:113:GLU:OE2	2.00	0.60
4:D:5:ILE:HA	4:D:115:ARG:NH2	2.16	0.60
4:D:151:LYS:N	4:D:151:LYS:HD2	2.13	0.60
1:A:51:A:O2'	1:A:53:G:C8	2.54	0.60
7:G:12:LEU:HD12	7:G:12:LEU:H	1.63	0.60
20:T:44:ALA:HB1	20:T:92:LEU:HG	1.83	0.60
3:C:179:ARG:C	3:C:179:ARG:HD2	2.21	0.60
1:A:1350:C:H5'	10:J:60:ARG:NH1	2.16	0.60
1:A:1302:C:O2'	1:A:1303:C:H5'	2.01	0.60
1:A:993:A:H2'	1:A:994:A:C8	2.36	0.60
18:R:62:GLU:O	18:R:65:ILE:N	2.34	0.60
1:A:332:C:H2'	1:A:333:C:H6	1.65	0.60
12:L:98:TYR:N	12:L:98:TYR:CD1	2.69	0.60
1:A:980:G:H2'	1:A:981:G:C8	2.36	0.60
14:N:9:LYS:HD3	14:N:9:LYS:O	2.01	0.60
3:C:132:ARG:HH22	4:D:47:ARG:NH1	1.97	0.60
12:L:45:PRO:HG2	12:L:51:ALA:N	2.16	0.60
3:C:177:THR:HG23	3:C:180:ALA:HB2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:96:LEU:O	13:M:110:ARG:NH1	2.34	0.60
8:H:87:SER:HA	8:H:93:VAL:CG2	2.22	0.60
1:A:42:G:H2'	1:A:43:G:C8	2.37	0.60
6:F:100:ASN:HD22	18:R:23:LYS:CG	2.14	0.60
1:A:60:A:H3'	1:A:327:G:H22	1.66	0.60
1:A:1342:A:H2'	1:A:1343:G:O4'	2.01	0.60
4:D:187:ARG:HD2	4:D:188:LEU:H	1.66	0.60
3:C:188:LEU:O	3:C:189:ALA:HB2	2.00	0.60
3:C:97:LYS:O	3:C:98:ASN:HB3	2.01	0.60
1:A:199:U:H1'	20:T:103:GLY:HA2	1.83	0.60
1:A:205:G:H2'	1:A:206:G:C8	2.35	0.60
14:N:44:LEU:O	14:N:44:LEU:HD12	2.02	0.60
1:A:745:G:C2	17:Q:105:ALA:HB3	2.37	0.60
1:A:1333:U:H2'	1:A:1334:C:H6	1.67	0.60
20:T:33:ILE:HD11	20:T:63:ILE:HA	1.84	0.60
16:P:74:LEU:O	16:P:79:VAL:HG23	2.00	0.60
14:N:3:ARG:NH1	14:N:6:LEU:HD11	2.17	0.60
1:A:1205:C:P	19:S:78:ARG:HH12	2.24	0.60
1:A:190:U:O4	17:Q:63:ARG:N	2.31	0.60
1:A:1050:A:HO2'	1:A:1051:G:H8	1.48	0.60
7:G:68:ASN:ND2	7:G:128:ALA:HA	2.17	0.60
3:C:107:GLN:CD	3:C:107:GLN:H	2.05	0.60
1:A:702:G:H5'	1:A:703:C:OP2	2.01	0.60
20:T:39:LYS:HD2	20:T:55:ILE:HD13	1.82	0.60
16:P:74:LEU:CB	16:P:79:VAL:HG21	2.25	0.60
1:A:1140:A:H5''	1:A:1141:C:OP1	2.01	0.60
1:A:1498:G:O2'	1:A:1499:G:H5'	2.01	0.60
1:A:1500:U:O2'	1:A:1501:G:H5'	2.01	0.60
1:A:521:G:H2'	1:A:522:G:C8	2.36	0.60
4:D:12:CYS:HA	4:D:19:LEU:HD12	1.83	0.60
5:E:70:PRO:O	5:E:71:LEU:C	2.39	0.60
1:A:923:G:N2	1:A:1316:G:H4'	2.16	0.60
13:M:13:LYS:O	13:M:14:ARG:C	2.39	0.60
1:A:1175:G:O2'	1:A:1176:U:H5'	2.01	0.60
10:J:30:SER:O	10:J:78:ASN:HB2	2.02	0.60
7:G:25:ALA:CA	7:G:28:ASN:HD22	2.14	0.60
1:A:1245:C:H2'	1:A:1246:C:H6	1.66	0.60
8:H:91:ARG:NH1	17:Q:33:GLY:HA3	2.16	0.60
5:E:79:GLU:O	5:E:80:ILE:HG23	2.02	0.60
1:A:757:G:C6	1:A:791:A:N6	2.69	0.60
4:D:90:GLY:N	4:D:204:ILE:HD11	2.16	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:27:VAL:HG12	15:O:31:LEU:CD1	2.31	0.60
1:A:1172:G:C2'	1:A:1173:A:OP2	2.50	0.60
1:A:469:G:H4'	1:A:470:G:O5'	2.01	0.60
7:G:148:ASN:C	7:G:150:ALA:N	2.55	0.60
16:P:67:THR:HG22	16:P:68:ASP:H	1.65	0.60
7:G:96:GLN:O	7:G:99:LEU:N	2.35	0.60
1:A:1245:C:H2'	1:A:1246:C:C6	2.37	0.60
2:B:137:ARG:HB3	2:B:137:ARG:NH1	2.15	0.60
1:A:79:G:H3'	1:A:80:U:H5''	1.83	0.60
1:A:763:C:H2'	1:A:764:A:O4'	2.01	0.60
1:A:486:G:C2	1:A:487:C:C2	2.89	0.60
4:D:8:VAL:HG13	4:D:21:LEU:HD13	1.83	0.60
10:J:30:SER:HB2	10:J:81:THR:N	2.16	0.60
18:R:65:ILE:C	18:R:67:ALA:N	2.55	0.60
3:C:134:ILE:O	3:C:138:VAL:HG23	2.02	0.60
18:R:45:SER:C	18:R:47:THR:N	2.52	0.60
14:N:14:PRO:C	14:N:16:PHE:N	2.55	0.60
1:A:999:U:H2'	1:A:1000:G:C8	2.36	0.60
1:A:1000:G:H2'	1:A:1001:G:O4'	2.02	0.60
1:A:1153:G:H2'	1:A:1154:C:H6	1.67	0.60
1:A:47:G:O2'	1:A:361:U:H1'	2.02	0.60
19:S:51:VAL:HG12	19:S:52:TYR:N	2.17	0.60
1:A:1439:G:H2'	1:A:1440:G:H8	1.67	0.60
6:F:75:LEU:HD13	6:F:75:LEU:O	2.02	0.60
18:R:47:THR:HG22	18:R:48:GLY:H	1.65	0.60
1:A:214:C:H4'	1:A:456:C:N4	2.16	0.60
15:O:3:ILE:N	15:O:3:ILE:HD12	2.17	0.60
3:C:110:ASN:ND2	3:C:140:ARG:HB3	2.17	0.59
1:A:1336:C:O2'	1:A:1337:G:H5'	2.02	0.59
1:A:776:A:O2'	1:A:777:U:P	2.59	0.59
4:D:150:GLU:CD	4:D:150:GLU:N	2.53	0.59
7:G:20:ASP:O	7:G:23:VAL:HB	2.01	0.59
1:A:159:U:O2'	1:A:160:C:H5'	2.01	0.59
1:A:778:A:O2'	1:A:779:C:H5'	2.02	0.59
1:A:802:G:C3'	1:A:803:A:C5'	2.79	0.59
1:A:1324:C:O2'	1:A:1325:G:H5'	2.02	0.59
4:D:64:LEU:HD23	4:D:198:VAL:CG1	2.31	0.59
5:E:144:THR:HB	5:E:147:ASP:OD2	2.02	0.59
11:K:99:GLN:HG2	11:K:105:VAL:HG21	1.84	0.59
1:A:378:A:H2'	1:A:379:A:H8	1.67	0.59
1:A:1232:A:H2'	1:A:1233:A:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:115:ARG:HB2	7:G:118:VAL:HG23	1.84	0.59
1:A:1280:C:N4	7:G:114:ARG:HB3	2.17	0.59
15:O:9:GLN:HA	15:O:12:ILE:HD12	1.84	0.59
2:B:22:LYS:C	2:B:23:ARG:HG3	2.23	0.59
1:A:634:G:H2'	1:A:635:C:H5'	1.84	0.59
1:A:1128:C:O2'	1:A:1129:A:H8	1.84	0.59
7:G:25:ALA:HA	7:G:28:ASN:ND2	2.16	0.59
1:A:110:A:H61	1:A:309:A:H1'	1.66	0.59
16:P:45:THR:HB	16:P:46:PRO:HD2	1.83	0.59
1:A:1103:G:H8	1:A:1103:G:O5'	1.85	0.59
20:T:93:GLU:OE2	20:T:93:GLU:HA	2.01	0.59
1:A:1208:C:H5''	13:M:103:THR:HB	1.83	0.59
1:A:1302:C:H2'	1:A:1303:C:O4'	2.03	0.59
1:A:1220:A:H5'	1:A:1318:C:H41	1.67	0.59
5:E:145:LYS:O	5:E:145:LYS:HG2	2.02	0.59
1:A:540:C:H2'	1:A:541:G:C5'	2.31	0.59
1:A:545:U:HO2'	1:A:546:C:P	2.24	0.59
1:A:548:C:C6	17:Q:31:LEU:HD11	2.37	0.59
20:T:53:LEU:HD21	20:T:104:LEU:HD12	1.85	0.59
13:M:65:LYS:O	13:M:66:LEU:HD23	2.02	0.59
1:A:902:C:O2'	1:A:903:G:H5'	2.02	0.59
1:A:908:C:O2'	1:A:909:C:H5'	2.01	0.59
1:A:1219:C:H4'	1:A:1316:G:N2	2.15	0.59
1:A:1022:C:O2'	1:A:1023:U:H5'	2.03	0.59
1:A:1263:U:H5'	1:A:1264:C:C5	2.36	0.59
3:C:10:PHE:CZ	3:C:178:LEU:HD13	2.38	0.59
3:C:32:LEU:O	3:C:35:GLU:HB3	2.02	0.59
3:C:33:LEU:HD11	14:N:53:LEU:HD22	1.84	0.59
12:L:27:LEU:O	12:L:29:GLY:N	2.34	0.59
1:A:1233:A:H2'	1:A:1234:A:H8	1.66	0.59
20:T:66:ALA:HB3	20:T:72:LEU:HD12	1.84	0.59
1:A:1164:G:O2'	1:A:1165:A:OP2	2.20	0.59
12:L:117:ARG:O	12:L:119:LYS:N	2.35	0.59
5:E:36:ASP:C	5:E:38:GLN:N	2.55	0.59
10:J:85:LEU:O	10:J:87:THR:N	2.36	0.59
1:A:443:A:OP2	1:A:470:G:N2	2.32	0.59
1:A:9:A:C6	4:D:209:ARG:HB2	2.36	0.59
1:A:1183:A:H4'	1:A:1184:G:O5'	2.02	0.59
18:R:29:PHE:HE1	18:R:31:LEU:HD23	1.68	0.59
7:G:151:TYR:HA	7:G:153:HIS:CE1	2.36	0.59
4:D:176:LEU:HD23	4:D:176:LEU:O	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1135:A:C5'	10:J:13:HIS:CD2	2.82	0.59
5:E:41:VAL:HG21	5:E:113:ALA:CA	2.33	0.59
12:L:83:VAL:CG2	12:L:100:ILE:HG23	2.33	0.59
1:A:41:C:H2'	1:A:42:G:C8	2.38	0.59
1:A:727:U:H2'	1:A:728:C:C6	2.38	0.59
4:D:109:GLY:C	4:D:111:ALA:H	2.05	0.59
3:C:150:LYS:O	3:C:200:ALA:HA	2.02	0.59
5:E:122:GLU:OE1	5:E:131:ILE:HG21	2.03	0.59
1:A:924:A:H2'	1:A:925:G:C8	2.38	0.59
1:A:85:C:H2'	1:A:86:U:O4'	2.02	0.59
1:A:1423:C:H2'	1:A:1424:G:O4'	2.03	0.59
8:H:83:ILE:CG2	8:H:83:ILE:O	2.50	0.59
2:B:88:ALA:CB	2:B:90:MET:HG2	2.32	0.59
1:A:1203:G:O3'	19:S:77:THR:HG21	2.03	0.59
18:R:88:LYS:HG2	18:R:88:LYS:OXT	2.02	0.59
6:F:82:ARG:HB2	6:F:85:VAL:HB	1.84	0.59
3:C:154:SER:CB	3:C:197:GLY:H	2.16	0.59
1:A:1436:G:O2'	1:A:1437:C:H5'	2.03	0.59
13:M:87:TYR:CZ	13:M:91:ARG:HD3	2.37	0.59
15:O:10:LYS:HG3	15:O:11:VAL:N	2.17	0.59
12:L:47:LYS:HB2	12:L:48:PRO:HD3	1.84	0.59
10:J:67:THR:HG22	10:J:67:THR:O	2.03	0.59
20:T:43:LEU:CD1	20:T:55:ILE:HD12	2.27	0.59
20:T:91:LEU:C	20:T:93:GLU:H	2.06	0.59
5:E:78:HIS:CD2	8:H:107:LEU:HD12	2.38	0.59
1:A:270:A:HO2'	1:A:271:G:H8	1.50	0.59
1:A:732:C:H1'	1:A:733:C:H5	1.67	0.59
1:A:796:C:O2'	1:A:797:U:P	2.60	0.59
1:A:1390:C:H2'	1:A:1391:A:H8	1.67	0.59
1:A:277:G:O2'	1:A:278:A:P	2.61	0.58
1:A:563:G:C5'	1:A:712:A:H1'	2.27	0.58
3:C:113:ALA:HB1	3:C:185:GLY:N	2.17	0.58
1:A:1440:G:H2'	1:A:1441:C:H6	1.68	0.58
4:D:53:ASP:O	4:D:57:ARG:HD3	2.03	0.58
16:P:20:VAL:HG11	16:P:32:TYR:HB3	1.84	0.58
16:P:20:VAL:HG22	16:P:35:LYS:HA	1.85	0.58
16:P:58:TYR:O	16:P:61:SER:HB3	2.02	0.58
1:A:787:G:H2'	1:A:788:U:C6	2.38	0.58
12:L:110:VAL:O	12:L:122:THR:HG22	2.03	0.58
5:E:13:ILE:HA	5:E:29:GLY:O	2.03	0.58
2:B:77:ALA:O	2:B:78:GLN:C	2.41	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1111:C:H4'	9:I:16:ARG:NH1	2.19	0.58
1:A:283:U:H2'	1:A:284:A:C8	2.38	0.58
1:A:155:A:H2'	1:A:156:A:O4'	2.02	0.58
2:B:87:ARG:HD3	2:B:234:PRO:CD	2.33	0.58
3:C:167:TRP:O	3:C:168:ALA:CB	2.51	0.58
17:Q:8:GLY:HA3	17:Q:22:LEU:O	2.03	0.58
9:I:26:VAL:CB	9:I:33:PHE:HB2	2.30	0.58
20:T:55:ILE:O	20:T:56:MET:C	2.41	0.58
1:A:1305:G:H2'	1:A:1306:A:H8	1.68	0.58
1:A:1311:A:P	13:M:28:ALA:HB3	2.43	0.58
4:D:191:ARG:HD2	4:D:191:ARG:O	2.02	0.58
18:R:55:ARG:O	18:R:56:THR:C	2.42	0.58
2:B:46:LYS:O	2:B:47:THR:C	2.42	0.58
1:A:635:C:N3	1:A:636:U:C4	2.71	0.58
1:A:454:G:C3'	1:A:455:A:H5''	2.33	0.58
16:P:22:THR:HA	16:P:33:ILE:CG1	2.33	0.58
4:D:59:ARG:NH2	4:D:62:GLN:HG3	2.17	0.58
13:M:10:PRO:O	13:M:45:VAL:HG11	2.04	0.58
15:O:56:LEU:HG	15:O:57:LEU:N	2.18	0.58
4:D:152:SER:HB3	4:D:155:LEU:HD12	1.85	0.58
10:J:5:ARG:HB3	10:J:99:LYS:O	2.03	0.58
1:A:1308:C:OP1	21:U:12:LYS:NZ	2.36	0.58
1:A:362:C:O2'	1:A:390:G:N2	2.36	0.58
1:A:1070:G:H2'	1:A:1071:G:H8	1.67	0.58
8:H:27:PRO:O	8:H:32:LYS:HE3	2.03	0.58
1:A:1395:C:H2'	1:A:1396:A:C8	2.39	0.58
12:L:50:SER:O	12:L:51:ALA:HB2	2.04	0.58
3:C:33:LEU:C	3:C:33:LEU:HD23	2.23	0.58
1:A:1329:G:HO2'	1:A:1356:G:H1	1.51	0.58
1:A:1329:G:O2'	1:A:1330:U:P	2.61	0.58
4:D:177:ASP:O	4:D:178:VAL:C	2.40	0.58
7:G:145:ALA:C	7:G:147:ALA:N	2.51	0.58
8:H:120:THR:O	8:H:121:ASP:C	2.42	0.58
15:O:87:ILE:HG22	15:O:88:ARG:H	1.68	0.58
1:A:88:C:H2'	1:A:89:G:C8	2.38	0.58
1:A:708:G:C2	1:A:709:G:C8	2.91	0.58
2:B:193:ASP:OD1	2:B:195:ASP:HB2	2.03	0.58
16:P:57:ARG:NH1	16:P:79:VAL:O	2.37	0.58
1:A:787:G:H2'	1:A:788:U:H6	1.67	0.58
4:D:39:PRO:HG2	4:D:44:GLY:HA2	1.85	0.58
1:A:1287:G:C5'	21:U:4:GLY:HA3	2.32	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:151:LYS:H	4:D:151:LYS:CD	2.15	0.58
6:F:3:ARG:NH2	6:F:64:GLN:NE2	2.52	0.58
1:A:536:U:O2'	1:A:537:A:H5'	2.02	0.58
1:A:185:C:H2'	1:A:186:C:C6	2.38	0.58
1:A:566:U:C2	1:A:744:G:C6	2.91	0.58
3:C:20:SER:HB3	3:C:22:TRP:HE1	1.68	0.58
8:H:44:PHE:CE1	8:H:137:VAL:HG12	2.38	0.58
1:A:485:C:OP1	12:L:117:ARG:NH2	2.36	0.58
5:E:110:LEU:HD13	5:E:118:ILE:CD1	2.33	0.58
2:B:25:ASN:ND2	2:B:25:ASN:C	2.56	0.58
12:L:54:LYS:HD2	12:L:54:LYS:N	2.19	0.58
16:P:67:THR:CG2	16:P:68:ASP:N	2.67	0.58
12:L:60:LEU:HD11	12:L:85:ILE:HD12	1.84	0.58
11:K:33:THR:HA	11:K:39:PRO:HA	1.86	0.58
8:H:111:ILE:HB	8:H:135:CYS:SG	2.44	0.58
1:A:1021:C:H2'	1:A:1022:C:H6	1.67	0.58
1:A:1065:G:H2'	1:A:1066:U:O4'	2.04	0.58
13:M:94:ARG:HH12	19:S:81:ARG:HD3	1.68	0.58
4:D:122:ARG:NH2	4:D:134:ASP:OD2	2.36	0.58
4:D:8:VAL:HG11	4:D:21:LEU:CB	2.33	0.58
3:C:74:GLY:O	3:C:76:VAL:N	2.36	0.58
1:A:398:G:H1'	1:A:604:C:H42	1.69	0.58
16:P:39:TYR:HB2	16:P:49:LEU:CD1	2.34	0.58
1:A:707:U:H2'	1:A:707:U:O2	2.03	0.58
1:A:20:C:H2'	1:A:21:U:C6	2.39	0.58
5:E:135:THR:O	5:E:136:MET:C	2.41	0.58
13:M:79:LYS:HD3	13:M:83:ASP:OD2	2.04	0.58
7:G:122:HIS:HD2	7:G:125:MET:HE3	1.69	0.58
13:M:33:ALA:HA	13:M:59:TYR:HE2	1.68	0.58
1:A:757:G:O2'	1:A:758:G:H5'	2.03	0.58
4:D:8:VAL:HG11	4:D:21:LEU:HB3	1.84	0.58
2:B:209:ARG:NE	2:B:239:VAL:HG11	2.18	0.58
1:A:1287:G:OP1	21:U:2:GLY:N	2.37	0.58
4:D:149:ALA:O	4:D:152:SER:N	2.37	0.58
1:A:1099:C:C2'	1:A:1100:G:C5'	2.82	0.58
1:A:1340:U:H3'	1:A:1341:C:C6	2.38	0.58
4:D:209:ARG:HG2	4:D:209:ARG:HH11	1.68	0.58
1:A:1001:G:H2'	1:A:1002:G:H8	1.67	0.58
1:A:1064:G:H5''	5:E:27:ARG:NH1	2.18	0.58
1:A:925:G:C5	1:A:926:C:C4	2.92	0.58
6:F:40:VAL:HG22	6:F:41:GLU:N	2.19	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:702:G:H4'	11:K:117:ASN:HD21	1.67	0.58
1:A:745:G:H2'	1:A:746:C:C6	2.39	0.58
1:A:1131:U:H4'	9:I:14:VAL:HG11	1.85	0.58
13:M:80:ARG:HG2	13:M:81:LEU:N	2.18	0.58
4:D:33:MET:SD	4:D:37:PRO:HA	2.44	0.58
4:D:64:LEU:O	4:D:64:LEU:HD13	2.03	0.58
7:G:114:ARG:HG2	7:G:114:ARG:HH11	1.69	0.58
1:A:584:C:H42	1:A:622:G:H1	1.52	0.58
21:U:2:GLY:O	21:U:4:GLY:N	2.36	0.58
14:N:11:LYS:O	14:N:13:THR:N	2.37	0.58
1:A:575:U:H2'	1:A:576:G:C8	2.38	0.58
1:A:379:A:H2'	1:A:380:G:H5'	1.85	0.58
2:B:134:GLU:C	2:B:136:VAL:N	2.57	0.58
1:A:950:C:H4'	10:J:57:LYS:HB3	1.86	0.58
1:A:228:G:O2'	1:A:229:C:H5'	2.03	0.58
1:A:241:C:O2'	1:A:242:A:H5'	2.03	0.58
20:T:57:ARG:HH21	20:T:100:ILE:CG2	2.17	0.58
16:P:57:ARG:O	16:P:61:SER:HB3	2.03	0.58
1:A:422:G:O2'	1:A:423:U:H5'	2.04	0.58
1:A:485:C:H2'	1:A:486:G:C8	2.29	0.58
1:A:1274:U:C5'	9:I:38:GLN:HE22	2.16	0.58
1:A:1111:C:O2'	1:A:1113:A:C8	2.54	0.58
7:G:85:TYR:CD1	7:G:154:TYR:HE1	2.19	0.58
1:A:340:A:H5''	1:A:341:C:C5	2.38	0.58
1:A:187:C:H2'	1:A:188:C:O4'	2.03	0.58
17:Q:87:LYS:O	17:Q:88:TYR:C	2.41	0.58
1:A:1137:G:O2'	1:A:1138:G:H5'	2.03	0.58
3:C:35:GLU:OE2	3:C:97:LYS:HG3	2.04	0.57
20:T:50:GLU:HG3	20:T:99:LEU:HD12	1.84	0.57
1:A:931:G:H2'	1:A:932:G:O4'	2.04	0.57
13:M:65:LYS:HG3	13:M:69:GLU:OE2	2.02	0.57
4:D:106:TYR:C	4:D:106:TYR:CD2	2.76	0.57
4:D:36:ARG:HG3	4:D:38:TYR:CZ	2.39	0.57
1:A:262:G:O3'	17:Q:67:LYS:HB2	2.04	0.57
2:B:124:SER:O	2:B:127:ILE:HG13	2.04	0.57
1:A:715:G:O2'	1:A:716:C:H5'	2.03	0.57
5:E:8:GLU:HG2	5:E:8:GLU:O	2.04	0.57
3:C:188:LEU:HD11	3:C:195:VAL:HG22	1.86	0.57
1:A:50:U:O2	1:A:358:G:H1'	2.04	0.57
20:T:75:ASN:O	20:T:78:ALA:HB3	2.04	0.57
1:A:421:G:O2'	1:A:422:G:H5'	2.02	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:8:VAL:C	4:D:10:ARG:H	2.08	0.57
4:D:10:ARG:HG3	4:D:10:ARG:HH11	1.69	0.57
2:B:100:GLY:C	2:B:102:LEU:N	2.57	0.57
10:J:3:LYS:C	10:J:100:THR:HG23	2.24	0.57
16:P:39:TYR:CE1	16:P:41:PRO:HA	2.39	0.57
8:H:17:THR:HG22	8:H:63:LEU:HG	1.86	0.57
17:Q:60:ILE:HD13	17:Q:61:GLU:O	2.05	0.57
10:J:51:ARG:H	10:J:59:SER:HB2	1.68	0.57
3:C:195:VAL:C	3:C:196:LEU:HD23	2.23	0.57
2:B:68:ILE:HD12	2:B:222:ILE:HD11	1.86	0.57
1:A:41:C:H2'	1:A:42:G:H8	1.69	0.57
9:I:86:VAL:O	9:I:87:GLN:C	2.41	0.57
1:A:276:C:O2	17:Q:38:ARG:HG3	2.04	0.57
1:A:855:C:O2'	8:H:4:ASP:HB2	2.03	0.57
1:A:1102:C:O2'	1:A:1103:G:H5'	2.03	0.57
1:A:1483:G:H3'	1:A:1483:G:H8	1.69	0.57
4:D:107:ARG:NH1	4:D:114:ARG:NH2	2.53	0.57
17:Q:67:LYS:CA	17:Q:70:ARG:HH12	2.15	0.57
13:M:37:THR:CG2	13:M:39:ILE:HD11	2.35	0.57
2:B:80:ILE:HD11	2:B:208:ILE:HG23	1.86	0.57
10:J:20:ALA:O	10:J:24:VAL:HG23	2.03	0.57
2:B:140:HIS:O	2:B:141:GLU:C	2.41	0.57
18:R:40:LEU:HB2	18:R:79:LEU:HD11	1.87	0.57
3:C:180:ALA:O	3:C:181:ASN:HB3	2.04	0.57
3:C:5:ILE:HD13	3:C:10:PHE:HB2	1.85	0.57
3:C:94:LEU:HD23	3:C:95:THR:CG2	2.28	0.57
5:E:78:HIS:O	5:E:78:HIS:ND1	2.38	0.57
5:E:80:ILE:CD1	5:E:91:LEU:HB2	2.34	0.57
13:M:77:ASN:O	13:M:80:ARG:HB3	2.04	0.57
4:D:160:GLN:O	4:D:163:GLU:HB3	2.04	0.57
12:L:39:VAL:HB	12:L:57:LYS:CG	2.34	0.57
3:C:150:LYS:HE2	3:C:152:ILE:HD11	1.85	0.57
8:H:113:SER:N	8:H:134:ILE:HD11	2.19	0.57
1:A:390:G:H2'	1:A:391:C:C6	2.40	0.57
9:I:27:THR:HG23	9:I:30:GLY:O	2.03	0.57
4:D:145:GLU:HG2	4:D:184:LYS:HE2	1.86	0.57
1:A:1408:U:H2'	1:A:1409:C:H6	1.69	0.57
1:A:1270:A:O4'	1:A:1335:G:H4'	2.05	0.57
1:A:1132:C:OP1	9:I:9:ARG:HD3	2.03	0.57
13:M:84:ILE:HG13	13:M:86:CYS:HB2	1.86	0.57
1:A:1291:G:P	13:M:88:ARG:HH21	2.27	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:906:G:O2'	1:A:907:G:H5'	2.05	0.57
3:C:72:LYS:O	3:C:74:GLY:N	2.38	0.57
12:L:53:ARG:CB	12:L:93:LEU:HD11	2.35	0.57
12:L:92:ASP:O	12:L:93:LEU:HD23	2.03	0.57
18:R:59:SER:H	18:R:62:GLU:HB2	1.69	0.57
1:A:1085:A:O2'	1:A:1086:C:H5'	2.04	0.57
1:A:291:C:C4	1:A:292:U:C4	2.92	0.57
1:A:850:A:C2	1:A:852:G:C6	2.92	0.57
1:A:888:C:H2'	1:A:889:U:C6	2.39	0.57
1:A:342:G:H2'	1:A:343:G:O4'	2.05	0.57
5:E:5:ASP:CG	5:E:6:PHE:H	2.07	0.57
6:F:95:GLU:CD	6:F:95:GLU:H	2.06	0.57
3:C:14:ILE:CG2	3:C:15:THR:H	2.15	0.57
3:C:33:LEU:HD23	3:C:34:LEU:N	2.19	0.57
1:A:1335:G:O2'	1:A:1336:C:H5'	2.03	0.57
1:A:1202:G:H2'	1:A:1203:G:C8	2.36	0.57
2:B:74:LYS:NZ	2:B:206:ASP:HB2	2.17	0.57
12:L:85:ILE:HA	12:L:99:HIS:O	2.05	0.57
3:C:201:TYR:N	3:C:201:TYR:HD1	2.03	0.57
1:A:1437:C:H5''	20:T:27:LYS:HZ3	1.70	0.57
1:A:1291:G:O2'	1:A:1292:G:H5'	2.05	0.57
1:A:902:C:H5'	1:A:1382:C:OP2	2.04	0.57
12:L:83:VAL:HG22	12:L:84:LEU:N	2.20	0.57
1:A:623:G:O2'	1:A:624:A:H5'	2.05	0.57
18:R:17:SER:HA	18:R:19:LYS:HZ1	1.69	0.57
1:A:190:U:H2'	17:Q:63:ARG:NH2	2.20	0.57
4:D:150:GLU:O	4:D:153:ARG:HB2	2.04	0.57
1:A:515:U:H4'	1:A:516:A:C5'	2.33	0.57
16:P:81:ARG:CG	16:P:83:GLU:HG2	2.35	0.57
8:H:36:LEU:CD1	8:H:61:VAL:HG22	2.34	0.57
7:G:21:VAL:HG23	7:G:22:LEU:N	2.19	0.57
1:A:453:C:C2	1:A:454:G:C8	2.93	0.57
20:T:50:GLU:O	20:T:100:ILE:HD12	2.05	0.57
1:A:410:A:C2	1:A:411:A:C4	2.93	0.57
13:M:17:VAL:O	13:M:20:THR:HB	2.05	0.57
2:B:28:PHE:O	2:B:29:ALA:C	2.43	0.57
5:E:7:GLU:OE2	5:E:37:ARG:NE	2.23	0.57
1:A:744:G:H2'	1:A:745:G:H5'	1.87	0.57
1:A:1330:U:H4'	9:I:120:ARG:HD2	1.87	0.57
2:B:85:ALA:O	2:B:88:ALA:O	2.22	0.57
3:C:77:ILE:O	3:C:83:ARG:HB3	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:15:VAL:HB	13:M:34:LEU:HD11	1.86	0.57
18:R:59:SER:OG	18:R:62:GLU:HG3	2.05	0.57
8:H:86:ILE:O	8:H:88:LYS:HG3	2.05	0.56
13:M:9:ILE:N	13:M:9:ILE:HD12	2.19	0.56
6:F:67:MET:HB2	6:F:68:PRO:CD	2.34	0.56
1:A:1280:C:H4'	1:A:1281:A:C8	2.40	0.56
1:A:812:A:H2'	1:A:813:G:O4'	2.05	0.56
2:B:31:TYR:CE1	2:B:200:ILE:HD12	2.37	0.56
5:E:144:THR:CG2	5:E:146:ALA:H	2.17	0.56
1:A:444:C:H3'	1:A:445:G:H8	1.69	0.56
1:A:446:A:H1'	1:A:447:A:N7	2.20	0.56
6:F:82:ARG:HA	6:F:82:ARG:NE	2.20	0.56
1:A:1050:A:H1'	1:A:1051:G:O4'	2.04	0.56
1:A:702:G:C4'	11:K:117:ASN:HD21	2.18	0.56
1:A:1331:A:C2'	1:A:1332:A:H8	2.10	0.56
1:A:1332:A:C2	1:A:1333:U:C2	2.92	0.56
13:M:29:ARG:O	13:M:32:GLU:HB3	2.05	0.56
2:B:18:GLY:HA3	2:B:41:ILE:HA	1.86	0.56
3:C:3:ASN:O	3:C:4:LYS:HG2	2.04	0.56
1:A:778:A:H2'	1:A:779:C:C6	2.40	0.56
1:A:239:A:H4'	1:A:240:U:O5'	2.04	0.56
3:C:188:LEU:HD13	3:C:189:ALA:N	2.20	0.56
1:A:1096:C:O5'	1:A:1096:C:H6	1.87	0.56
1:A:1328:A:H1'	1:A:1330:U:C5	2.39	0.56
1:A:1333:U:O2'	1:A:1334:C:H5'	2.05	0.56
5:E:82:VAL:HG11	5:E:137:GLU:HB3	1.87	0.56
5:E:80:ILE:CD1	5:E:138:ALA:HB1	2.35	0.56
1:A:1301:A:H2'	1:A:1305:G:N7	2.20	0.56
1:A:995:A:H2'	1:A:996:G:O4'	2.04	0.56
14:N:37:PHE:HB3	14:N:39:LEU:CD1	2.36	0.56
4:D:156:GLU:HG2	4:D:160:GLN:HE21	1.70	0.56
1:A:1382:C:O2	1:A:1384:G:C5	2.59	0.56
4:D:114:ARG:O	4:D:117:ALA:HB3	2.05	0.56
1:A:353:G:O2'	1:A:354:U:H5'	2.03	0.56
2:B:106:LYS:O	2:B:110:GLN:HG3	2.04	0.56
1:A:442:G:H2'	1:A:470:G:H22	1.69	0.56
17:Q:44:ALA:HA	17:Q:71:PHE:O	2.04	0.56
5:E:48:ALA:HB1	5:E:49:PRO:HD2	1.86	0.56
1:A:1473:U:H2'	1:A:1474:C:C6	2.40	0.56
2:B:161:ALA:HA	2:B:182:ILE:HG22	1.87	0.56
1:A:562:C:O2'	1:A:712:A:N3	2.33	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:745:G:C6	1:A:746:C:C4	2.94	0.56
1:A:857:C:H2'	1:A:858:C:H6	1.69	0.56
1:A:870:A:H2'	1:A:871:C:C6	2.40	0.56
1:A:1178:U:H5''	1:A:1179:G:C5'	2.36	0.56
3:C:35:GLU:O	3:C:38:ARG:HB2	2.05	0.56
1:A:938:U:C2	1:A:1207:A:N7	2.74	0.56
1:A:1302:C:N3	19:S:36:ARG:NH1	2.54	0.56
1:A:781:C:O2'	1:A:782:G:H5'	2.06	0.56
1:A:483:A:H1'	1:A:531:A:N6	2.20	0.56
4:D:25:ARG:HA	4:D:28:SER:OG	2.05	0.56
1:A:949:G:O2'	1:A:1348:G:O2'	2.22	0.56
1:A:204:A:H4'	1:A:205:G:O5'	2.05	0.56
1:A:845:G:O2'	1:A:851:A:N6	2.38	0.56
19:S:80:TYR:CG	19:S:81:ARG:N	2.73	0.56
12:L:34:ARG:O	12:L:61:THR:HG23	2.06	0.56
17:Q:26:GLN:O	17:Q:27:PHE:HB3	2.05	0.56
1:A:1207:A:H5'	1:A:1208:C:OP2	2.05	0.56
13:M:52:GLU:HA	13:M:55:ARG:HE	1.70	0.56
1:A:1475:G:H1'	1:A:1496:A:H2	1.71	0.56
17:Q:66:SER:O	17:Q:67:LYS:C	2.44	0.56
1:A:367:G:C2'	1:A:368:C:H5'	2.35	0.56
2:B:47:THR:HA	2:B:202:PRO:HG2	1.88	0.56
2:B:48:MET:O	2:B:51:LEU:N	2.38	0.56
1:A:211:U:H4'	1:A:212:G:O5'	2.04	0.56
18:R:34:TYR:HA	18:R:69:THR:HG23	1.88	0.56
1:A:561:G:H1'	1:A:800:A:N3	2.20	0.56
1:A:1351:G:H4'	14:N:61:TRP:HZ2	1.70	0.56
20:T:54:LYS:HE2	20:T:100:ILE:HD11	1.87	0.56
1:A:1309:C:H2'	1:A:1310:C:C6	2.40	0.56
1:A:674:G:N2	1:A:682:G:C6	2.74	0.56
1:A:251:G:C1'	17:Q:16:GLN:HE21	2.19	0.56
18:R:38:GLU:OE1	18:R:38:GLU:N	2.38	0.56
12:L:126:LYS:H	12:L:126:LYS:CD	2.17	0.56
18:R:76:LEU:O	18:R:78:LEU:N	2.39	0.56
1:A:208:C:H42	1:A:212:G:H1	1.53	0.56
6:F:36:ARG:HH12	6:F:38:GLU:HG2	1.68	0.56
1:A:1464:G:H2'	1:A:1465:G:C8	2.40	0.56
1:A:23:G:H4'	1:A:863:G:C8	2.41	0.56
1:A:994:A:H2'	1:A:995:A:H8	1.70	0.56
1:A:1163:G:O2'	1:A:1164:G:O4'	2.24	0.56
4:D:90:GLY:CA	4:D:204:ILE:HD11	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:101:G:C2'	1:A:102:G:H5'	2.35	0.56
2:B:100:GLY:C	2:B:102:LEU:H	2.06	0.56
1:A:334:A:H2'	1:A:335:C:H6	1.70	0.56
7:G:15:ASP:HB3	7:G:19:GLY:H	1.70	0.56
1:A:438:C:H2'	1:A:439:C:C6	2.40	0.56
6:F:38:GLU:O	6:F:39:LYS:HB3	2.06	0.56
19:S:10:PHE:C	19:S:10:PHE:CD2	2.79	0.56
1:A:745:G:N2	17:Q:105:ALA:HB3	2.20	0.56
1:A:1103:G:O2'	1:A:1104:U:H5'	2.05	0.56
19:S:62:ILE:CD1	19:S:66:MET:HG3	2.34	0.56
7:G:113:GLU:H	7:G:113:GLU:CD	2.08	0.56
5:E:41:VAL:CG2	5:E:113:ALA:CA	2.80	0.56
2:B:17:PHE:HD1	2:B:17:PHE:C	2.09	0.56
8:H:97:VAL:HG13	8:H:98:LYS:N	2.21	0.56
17:Q:19:VAL:HG23	17:Q:44:ALA:HB3	1.88	0.56
7:G:69:VAL:O	7:G:71:PRO:HD3	2.06	0.56
7:G:64:GLN:HG2	7:G:128:ALA:HB1	1.88	0.56
1:A:1195:A:N1	1:A:1197:G:H1'	2.20	0.56
1:A:273:C:O2'	1:A:274:G:H5'	2.06	0.56
3:C:116:VAL:HG21	3:C:202:ILE:HD11	1.88	0.56
20:T:76:ALA:HA	20:T:79:ARG:NH1	2.21	0.56
5:E:139:LEU:HA	5:E:142:LEU:HG	1.88	0.56
16:P:21:VAL:HG11	16:P:59:TRP:CE2	2.40	0.56
1:A:905:G:C2	1:A:906:G:C8	2.93	0.56
1:A:485:C:H1'	1:A:533:C:H1'	1.88	0.56
1:A:1318:C:H1'	1:A:1319:G:N1	2.21	0.56
2:B:98:LEU:HB2	2:B:101:MET:CG	2.36	0.56
6:F:3:ARG:HE	6:F:64:GLN:HE21	1.53	0.56
1:A:639:A:C2	1:A:738:C:N3	2.74	0.56
1:A:1002:G:N3	1:A:1002:G:H2'	2.20	0.56
3:C:132:ARG:HH22	4:D:47:ARG:HH12	1.52	0.56
1:A:79:G:C3'	1:A:80:U:H5''	2.36	0.56
1:A:258:A:C6	1:A:259:A:C6	2.94	0.56
3:C:188:LEU:CD1	3:C:195:VAL:HG13	2.30	0.56
4:D:170:VAL:HG12	4:D:171:GLY:N	2.21	0.56
1:A:896:A:H2'	1:A:897:A:H8	1.70	0.56
6:F:75:LEU:O	6:F:79:LEU:HG	2.06	0.56
1:A:1486:G:C5	1:A:1487:C:C5	2.93	0.56
2:B:17:PHE:CD1	2:B:17:PHE:C	2.78	0.56
18:R:19:LYS:O	18:R:20:ALA:HB2	2.06	0.56
1:A:1069:U:H3	1:A:1082:G:N2	2.03	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:25:ILE:HD12	6:F:82:ARG:HD2	1.88	0.56
1:A:9:A:H1'	5:E:102:ALA:C	2.27	0.56
1:A:879:A:N7	1:A:880:G:H1'	2.22	0.56
1:A:277:G:HO2'	1:A:278:A:P	2.28	0.55
6:F:8:ILE:HB	6:F:61:LEU:HB2	1.89	0.55
1:A:405:G:OP1	4:D:24:GLU:O	2.24	0.55
1:A:231:C:H5'	17:Q:70:ARG:HG2	1.88	0.55
15:O:70:LEU:HD12	15:O:78:TYR:HB2	1.86	0.55
11:K:19:ALA:CB	11:K:80:VAL:HG11	2.37	0.55
1:A:1109:U:P	1:A:1109:U:H6	2.29	0.55
1:A:243:G:OP1	17:Q:100:LYS:HE2	2.06	0.55
17:Q:94:ASN:O	17:Q:97:SER:OG	2.20	0.55
1:A:1328:A:C2'	7:G:10:ARG:HH22	2.16	0.55
9:I:59:PHE:O	9:I:60:ASP:HB2	2.06	0.55
4:D:38:TYR:HB2	4:D:39:PRO:HD2	1.88	0.55
5:E:38:GLN:O	5:E:71:LEU:HD12	2.06	0.55
2:B:17:PHE:CD1	2:B:18:GLY:N	2.74	0.55
2:B:26:PRO:O	2:B:28:PHE:N	2.39	0.55
8:H:96:GLY:O	8:H:99:GLU:N	2.26	0.55
10:J:15:THR:HG23	10:J:94:VAL:HG22	1.87	0.55
1:A:891:A:P	12:L:47:LYS:HZ2	2.29	0.55
2:B:174:VAL:O	2:B:178:ARG:HB2	2.07	0.55
1:A:70:G:H2'	1:A:71:G:H8	1.70	0.55
7:G:78:ARG:HB2	7:G:156:TRP:CZ3	2.41	0.55
13:M:4:ILE:O	13:M:5:ALA:O	2.25	0.55
4:D:118:ARG:O	4:D:121:VAL:HB	2.06	0.55
2:B:25:ASN:HD22	2:B:26:PRO:CD	2.18	0.55
1:A:1173:A:H2'	1:A:1174:C:C6	2.42	0.55
18:R:86:VAL:O	18:R:87:ARG:CG	2.52	0.55
1:A:67:G:H4'	1:A:168:U:C5	2.42	0.55
1:A:1307:C:H2'	1:A:1308:C:C6	2.41	0.55
1:A:75:C:O2'	1:A:76:G:H5'	2.06	0.55
7:G:155:ARG:O	7:G:156:TRP:CB	2.54	0.55
13:M:11:ARG:HG2	13:M:12:ASN:N	2.22	0.55
3:C:180:ALA:O	3:C:181:ASN:CB	2.54	0.55
3:C:35:GLU:CG	3:C:59:ARG:HH22	2.19	0.55
1:A:1290:U:H2'	1:A:1291:G:H8	1.71	0.55
4:D:177:ASP:OD1	4:D:177:ASP:O	2.25	0.55
5:E:24:ARG:HG2	5:E:24:ARG:HH11	1.70	0.55
11:K:123:LYS:O	11:K:125:PHE:N	2.39	0.55
1:A:412:G:C5	1:A:413:C:C4	2.95	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:263:C:OP2	17:Q:67:LYS:HD2	2.06	0.55
11:K:66:LEU:HB3	11:K:70:LYS:CE	2.34	0.55
14:N:14:PRO:HB2	14:N:16:PHE:O	2.05	0.55
5:E:83:GLU:HG2	5:E:88:LYS:HG3	1.88	0.55
1:A:1453:G:H2'	1:A:1454:G:H8	1.70	0.55
6:F:101:ALA:HA	18:R:28:GLU:HG3	1.89	0.55
2:B:35:GLU:O	2:B:36:ARG:HG3	2.05	0.55
16:P:36:ILE:HG13	16:P:37:GLY:H	1.72	0.55
1:A:858:C:C5'	12:L:12:ARG:HH21	2.15	0.55
12:L:33:ARG:HD2	12:L:62:SER:HB3	1.87	0.55
7:G:36:LYS:O	7:G:36:LYS:HD3	2.06	0.55
1:A:959:U:H4'	14:N:21:TYR:CE2	2.42	0.55
4:D:110:PHE:CD1	4:D:162:LEU:HD21	2.41	0.55
1:A:486:G:H2'	1:A:487:C:H6	1.72	0.55
5:E:42:GLY:C	5:E:62:ALA:HB1	2.26	0.55
1:A:545:U:O2'	1:A:546:C:P	2.64	0.55
1:A:634:G:O2'	1:A:635:C:H5'	2.07	0.55
11:K:95:ILE:HG21	11:K:108:ILE:HD13	1.87	0.55
16:P:53:VAL:HG23	16:P:54:GLU:N	2.22	0.55
1:A:826:C:H2'	1:A:827:C:H6	1.71	0.55
1:A:317:A:O2'	1:A:318:C:H5'	2.07	0.55
1:A:566:U:H2'	1:A:567:A:O4'	2.06	0.55
20:T:42:GLN:O	20:T:46:GLU:HG3	2.05	0.55
1:A:958:C:H2'	1:A:959:U:H5'	1.88	0.55
9:I:92:TYR:O	9:I:93:ARG:C	2.45	0.55
9:I:93:ARG:CD	9:I:97:LYS:HE3	2.27	0.55
4:D:71:SER:O	4:D:73:ARG:N	2.40	0.55
13:M:14:ARG:CZ	13:M:42:ALA:HA	2.37	0.55
1:A:836:G:O6	1:A:847:G:C8	2.60	0.55
1:A:738:C:O2	1:A:738:C:C2'	2.54	0.55
1:A:88:C:H2'	1:A:89:G:H8	1.70	0.55
1:A:257:U:O2	1:A:259:A:C8	2.59	0.55
1:A:463:A:O2'	1:A:464:C:H5'	2.06	0.55
3:C:5:ILE:CD1	3:C:10:PHE:HB2	2.36	0.55
9:I:108:VAL:CG1	9:I:109:VAL:H	2.15	0.55
5:E:89:ILE:C	5:E:89:ILE:CD1	2.68	0.55
13:M:81:LEU:HA	13:M:84:ILE:CD1	2.36	0.55
1:A:959:U:H5''	14:N:21:TYR:CZ	2.41	0.55
1:A:792:C:OP1	15:O:48:LYS:HE2	2.06	0.55
4:D:201:GLN:O	4:D:205:GLU:HG3	2.06	0.55
4:D:23:GLY:HA3	4:D:112:VAL:CG1	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:70:ILE:HD11	4:D:100:ARG:HD2	1.89	0.55
1:A:270:A:O2'	1:A:271:G:H8	1.90	0.55
17:Q:43:LEU:HD11	17:Q:68:ARG:HH12	1.72	0.55
2:B:43:ASP:OD1	2:B:43:ASP:C	2.45	0.55
1:A:1128:C:O2'	1:A:1129:A:C8	2.60	0.55
1:A:846:C:O2'	1:A:851:A:H2'	2.07	0.55
3:C:29:TYR:OH	14:N:54:PRO:HG2	2.06	0.55
3:C:112:SER:O	3:C:113:ALA:C	2.45	0.55
3:C:15:THR:HG21	3:C:179:ARG:O	2.07	0.55
3:C:64:VAL:O	3:C:99:VAL:HG23	2.06	0.55
8:H:137:VAL:HG12	8:H:138:TRP:N	2.21	0.55
15:O:45:VAL:HG12	15:O:46:HIS:H	1.71	0.55
1:A:410:A:C2	1:A:411:A:N9	2.75	0.55
4:D:10:ARG:HG3	4:D:10:ARG:NH1	2.21	0.55
17:Q:67:LYS:O	17:Q:68:ARG:CB	2.50	0.55
13:M:39:ILE:O	13:M:41:PRO:HD3	2.07	0.55
10:J:25:GLU:O	10:J:28:ARG:HB2	2.07	0.55
10:J:81:THR:O	10:J:83:GLU:N	2.39	0.55
11:K:43:SER:HB3	11:K:68:ALA:HB2	1.89	0.55
1:A:491:C:H2'	1:A:492:C:C5	2.42	0.55
2:B:120:ALA:O	2:B:122:PHE:N	2.40	0.55
3:C:108:ASN:OD1	3:C:110:ASN:HB2	2.07	0.55
3:C:58:GLU:HB3	10:J:92:THR:CG2	2.29	0.55
9:I:33:PHE:CZ	9:I:46:ALA:HB3	2.40	0.55
1:A:939:U:C2'	1:A:940:C:H5'	2.37	0.55
1:A:1475:G:H2'	1:A:1476:U:C6	2.37	0.55
1:A:407:A:H1'	1:A:409:G:H1'	1.89	0.55
4:D:32:ALA:C	4:D:34:GLU:N	2.56	0.55
1:A:1287:G:OP1	21:U:2:GLY:CA	2.54	0.55
6:F:94:GLN:NE2	18:R:32:ARG:HD3	2.22	0.55
2:B:120:ALA:C	2:B:122:PHE:H	2.09	0.55
3:C:142:MET:HE1	3:C:148:GLY:N	2.22	0.55
20:T:49:ALA:O	20:T:50:GLU:C	2.44	0.55
5:E:107:ARG:O	5:E:108:ALA:C	2.44	0.55
16:P:20:VAL:HG11	16:P:32:TYR:CB	2.38	0.55
10:J:47:PHE:CE2	14:N:37:PHE:CE1	2.95	0.55
13:M:3:ARG:HA	13:M:8:GLU:O	2.07	0.55
15:O:53:HIS:O	15:O:56:LEU:HB3	2.07	0.55
1:A:1485:A:H2'	1:A:1486:G:C8	2.41	0.55
1:A:1287:G:N2	1:A:1313:G:C2'	2.69	0.55
2:B:142:LEU:O	2:B:143:GLU:C	2.44	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:124:G:O2'	1:A:125:A:OP2	2.23	0.55
16:P:9:PHE:HE2	16:P:18:ARG:HD2	1.70	0.55
7:G:96:GLN:O	7:G:97:GLN:C	2.45	0.55
1:A:417:U:H5'	1:A:418:C:OP2	2.07	0.55
1:A:142:G:C2	1:A:143:G:C8	2.95	0.55
4:D:18:LYS:HB3	4:D:20:TYR:HE2	1.72	0.55
5:E:141:GLN:O	5:E:143:ARG:HG2	2.07	0.54
11:K:124:LYS:HB3	11:K:125:PHE:CD1	2.43	0.54
2:B:98:LEU:HB2	2:B:101:MET:HG3	1.90	0.54
1:A:1050:A:O2'	1:A:1051:G:C8	2.56	0.54
1:A:691:C:O2	11:K:39:PRO:HD3	2.07	0.54
7:G:67:GLU:HA	7:G:67:GLU:OE2	2.07	0.54
12:L:35:GLY:HA3	12:L:58:VAL:HG12	1.87	0.54
1:A:195:U:H2'	1:A:196:G:C8	2.42	0.54
1:A:856:G:OP1	8:H:89:PRO:O	2.25	0.54
3:C:35:GLU:HG2	3:C:59:ARG:HH22	1.71	0.54
1:A:1355:U:OP1	9:I:71:SER:HB3	2.06	0.54
1:A:1439:G:O2'	1:A:1440:G:H5'	2.07	0.54
16:P:74:LEU:HB3	16:P:79:VAL:CG2	2.27	0.54
1:A:475:G:H2'	1:A:476:G:H8	1.72	0.54
4:D:90:GLY:H	4:D:204:ILE:HD11	1.72	0.54
1:A:1172:G:O2'	1:A:1173:A:P	2.64	0.54
11:K:48:ILE:HD13	11:K:63:LEU:CB	2.32	0.54
9:I:38:GLN:OE1	9:I:39:GLY:N	2.40	0.54
1:A:11:A:O2'	1:A:12:G:H5'	2.07	0.54
1:A:736:G:O2'	1:A:737:A:P	2.65	0.54
11:K:33:THR:OG1	11:K:37:GLY:C	2.46	0.54
1:A:1035:U:H2'	1:A:1182:C:H41	1.72	0.54
1:A:591:A:C2'	1:A:592:A:H5'	2.37	0.54
10:J:47:PHE:CE2	14:N:37:PHE:HE1	2.25	0.54
1:A:486:G:H2'	1:A:487:C:O4'	2.07	0.54
4:D:29:PRO:C	4:D:30:LYS:HG3	2.28	0.54
13:M:40:ASN:HB3	13:M:43:THR:HG23	1.89	0.54
15:O:32:LEU:O	15:O:33:THR:C	2.44	0.54
1:A:642:G:O2'	1:A:643:U:H5'	2.07	0.54
8:H:16:ALA:HB3	8:H:63:LEU:HD21	1.89	0.54
1:A:378:A:C2	1:A:379:A:C4	2.95	0.54
17:Q:97:SER:O	17:Q:98:LEU:HD12	2.07	0.54
3:C:8:ILE:O	3:C:11:ARG:N	2.40	0.54
19:S:15:LEU:HD12	19:S:16:LEU:N	2.22	0.54
1:A:1438:A:C2	1:A:1439:G:H1'	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:182:C:C2	20:T:105:SER:HB3	2.42	0.54
20:T:57:ARG:HB2	20:T:57:ARG:HH11	1.72	0.54
1:A:937:A:C3'	1:A:938:U:H5''	2.29	0.54
1:A:904:G:H1	22:A:1523:KSG:H6	1.73	0.54
4:D:107:ARG:HH12	4:D:114:ARG:NH2	2.05	0.54
4:D:8:VAL:O	4:D:11:LEU:HG	2.07	0.54
15:O:24:SER:O	15:O:25:THR:C	2.46	0.54
2:B:200:ILE:HG22	2:B:201:ILE:N	2.22	0.54
10:J:94:VAL:CG1	10:J:95:GLU:N	2.71	0.54
6:F:24:GLU:HG3	6:F:25:ILE:N	2.20	0.54
14:N:12:ARG:O	14:N:14:PRO:N	2.40	0.54
15:O:66:LEU:O	15:O:69:TYR:HB3	2.08	0.54
2:B:137:ARG:HB3	2:B:137:ARG:HH11	1.71	0.54
1:A:1188:G:C6	1:A:1189:G:C5	2.96	0.54
2:B:59:GLU:O	2:B:60:ASP:C	2.45	0.54
1:A:1401:A:H3'	1:A:1402:G:C8	2.42	0.54
1:A:855:C:O2'	8:H:3:THR:HG23	2.07	0.54
1:A:1329:G:C4	9:I:107:ARG:NH1	2.75	0.54
9:I:69:GLY:O	9:I:73:GLN:HG3	2.08	0.54
1:A:923:G:H21	1:A:1316:G:H4'	1.71	0.54
2:B:16:HIS:O	2:B:17:PHE:O	2.26	0.54
2:B:52:GLU:HG2	2:B:56:ARG:HH21	1.72	0.54
1:A:544:U:H4'	1:A:545:U:C5'	2.38	0.54
1:A:969:U:O2'	1:A:970:U:H5'	2.08	0.54
6:F:80:ARG:CZ	6:F:88:VAL:HB	2.38	0.54
1:A:626:A:N7	8:H:115:SER:HA	2.23	0.54
1:A:585:C:H2'	1:A:586:A:C8	2.41	0.54
1:A:980:G:H2'	1:A:981:G:O4'	2.07	0.54
5:E:37:ARG:HG2	5:E:37:ARG:HH11	1.72	0.54
1:A:1464:G:H2'	1:A:1465:G:O4'	2.08	0.54
1:A:275:A:H5'	1:A:277:G:O4'	2.08	0.54
1:A:870:A:O2'	1:A:1398:G:H4'	2.07	0.54
3:C:14:ILE:CG2	3:C:15:THR:N	2.71	0.54
3:C:38:ARG:HH11	3:C:38:ARG:HG3	1.72	0.54
1:A:1428:G:N2	1:A:1438:A:H1'	2.22	0.54
1:A:1430:C:O2'	1:A:1431:U:H5'	2.08	0.54
1:A:319:U:OP1	20:T:23:ARG:HA	2.07	0.54
8:H:137:VAL:O	8:H:138:TRP:HB3	2.07	0.54
16:P:22:THR:OG1	16:P:23:ASP:N	2.40	0.54
7:G:122:HIS:HD2	7:G:125:MET:CE	2.20	0.54
9:I:93:ARG:HD3	9:I:97:LYS:CE	2.28	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:10:ARG:NH1	4:D:40:PRO:HB2	2.21	0.54
10:J:90:LEU:N	10:J:91:PRO:HD2	2.13	0.54
14:N:16:PHE:O	14:N:18:VAL:N	2.41	0.54
12:L:60:LEU:HD22	12:L:60:LEU:N	2.23	0.54
2:B:87:ARG:NH2	2:B:233:SER:HB2	2.22	0.54
2:B:148:TYR:N	2:B:148:TYR:CD2	2.75	0.54
18:R:25:THR:O	18:R:25:THR:HG22	2.08	0.54
1:A:740:C:H2'	1:A:741:U:O4'	2.06	0.54
9:I:120:ARG:O	9:I:122:ALA:N	2.40	0.54
1:A:1325:G:C1'	9:I:121:ARG:HH12	2.11	0.54
1:A:522:G:O2'	1:A:523:A:H5'	2.07	0.54
4:D:8:VAL:HG13	4:D:21:LEU:CD1	2.38	0.54
12:L:119:LYS:O	12:L:120:TYR:CB	2.56	0.54
2:B:187:LEU:HD13	2:B:205:ASP:HA	1.90	0.54
10:J:10:GLY:N	10:J:16:LEU:HD11	2.23	0.54
1:A:214:C:C4'	1:A:456:C:N4	2.70	0.54
3:C:167:TRP:O	3:C:168:ALA:HB2	2.06	0.54
1:A:1415:G:H1'	1:A:1447:G:N2	2.22	0.54
5:E:86:ALA:HB3	5:E:125:SER:HB2	1.90	0.54
19:S:7:LYS:O	19:S:7:LYS:HG3	2.08	0.54
17:Q:24:GLU:CD	17:Q:37:LYS:HD3	2.28	0.54
3:C:52:LEU:CD2	3:C:52:LEU:H	2.14	0.54
9:I:44:VAL:O	9:I:46:ALA:N	2.41	0.54
20:T:57:ARG:O	20:T:58:LYS:C	2.45	0.54
20:T:72:LEU:CD2	20:T:76:ALA:HB3	2.38	0.54
13:M:79:LYS:C	13:M:82:MET:HB3	2.27	0.54
1:A:698:G:N3	1:A:761:A:H1'	2.23	0.54
10:J:12:ASP:HB3	10:J:15:THR:CG2	2.37	0.54
1:A:124:G:H4'	1:A:125:A:O5'	2.08	0.54
4:D:150:GLU:O	4:D:153:ARG:N	2.40	0.54
1:A:1125:G:H2'	1:A:1126:G:O4'	2.07	0.54
1:A:893:A:H2'	1:A:894:G:H5'	1.90	0.54
2:B:134:GLU:O	2:B:136:VAL:N	2.41	0.54
17:Q:97:SER:HB2	17:Q:103:GLY:N	2.23	0.54
19:S:15:LEU:O	19:S:19:VAL:N	2.33	0.54
14:N:36:PHE:O	14:N:36:PHE:CD1	2.61	0.54
1:A:1359:U:H2'	1:A:1360:A:H8	1.70	0.54
1:A:1422:C:P	20:T:38:LYS:HZ3	2.31	0.54
14:N:24:CYS:SG	14:N:26:ARG:HB3	2.48	0.54
13:M:4:ILE:CG2	13:M:5:ALA:H	2.11	0.54
4:D:179:GLU:O	4:D:181:MET:N	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:474:C:O2'	1:A:475:G:H5'	2.08	0.54
4:D:5:ILE:HA	4:D:115:ARG:HH22	1.71	0.54
5:E:10:MET:HE1	5:E:13:ILE:HD13	1.89	0.54
1:A:1219:C:C4'	1:A:1316:G:H21	2.21	0.54
2:B:80:ILE:HG21	2:B:212:GLN:HA	1.90	0.54
10:J:19:SER:HB2	10:J:91:PRO:HG3	1.88	0.54
1:A:58:G:H2'	1:A:59:C:C6	2.42	0.54
1:A:542:G:C8	1:A:543:A:C2	2.96	0.54
1:A:637:A:P	8:H:56:LYS:HZ1	2.31	0.54
11:K:34:ASP:C	11:K:36:ASP:H	2.11	0.54
1:A:1195:A:C2	1:A:1197:G:H1'	2.43	0.54
1:A:803:A:H4'	1:A:804:U:OP2	2.08	0.54
1:A:1096:C:H2'	1:A:1097:C:H6	1.73	0.54
1:A:434:G:C4'	1:A:435:A:OP1	2.50	0.54
7:G:20:ASP:OD1	7:G:23:VAL:N	2.38	0.54
7:G:76:ARG:HB2	7:G:89:MET:SD	2.48	0.54
1:A:219:U:H5''	20:T:68:LYS:NZ	2.23	0.54
1:A:1465:G:H2'	1:A:1466:G:C8	2.43	0.53
1:A:802:G:O2'	1:A:804:U:H5	1.90	0.53
1:A:918:C:H2'	1:A:919:G:H8	1.71	0.53
9:I:97:LYS:CE	9:I:102:LEU:HD12	2.34	0.53
1:A:1135:A:C5'	10:J:13:HIS:HD2	2.19	0.53
1:A:699:A:H2'	1:A:700:A:O4'	2.08	0.53
13:M:14:ARG:HB3	13:M:16:ASP:OD1	2.08	0.53
1:A:55:C:H2'	1:A:348:C:H41	1.73	0.53
1:A:1488:U:H2'	1:A:1489:G:N7	2.22	0.53
9:I:47:LEU:HB3	9:I:50:LEU:HD12	1.90	0.53
8:H:120:THR:O	8:H:122:ARG:N	2.41	0.53
19:S:81:ARG:O	19:S:81:ARG:HG2	2.07	0.53
10:J:56:HIS:O	10:J:59:SER:OG	2.23	0.53
1:A:826:C:H2'	1:A:827:C:C6	2.43	0.53
1:A:1358:A:H2'	1:A:1359:U:O4'	2.07	0.53
1:A:1294:G:O2'	1:A:1295:U:H5'	2.09	0.53
9:I:79:LEU:HD13	9:I:83:ARG:HG3	1.90	0.53
9:I:95:LYS:C	9:I:98:PRO:HD2	2.28	0.53
1:A:1048:U:H4'	1:A:1049:C:O5'	2.09	0.53
18:R:17:SER:HA	18:R:19:LYS:HZ2	1.71	0.53
1:A:1100:G:O3'	9:I:104:ARG:NH1	2.28	0.53
1:A:444:C:H3'	1:A:445:G:C8	2.43	0.53
1:A:447:A:O2'	1:A:448:A:O4'	2.27	0.53
10:J:8:LEU:HD21	10:J:96:ILE:HG12	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:80:VAL:HB	7:G:85:TYR:CD1	2.43	0.53
3:C:40:ARG:O	3:C:44:GLU:HG3	2.08	0.53
7:G:76:ARG:O	7:G:156:TRP:HZ3	1.90	0.53
3:C:62:ASP:O	3:C:97:LYS:O	2.26	0.53
13:M:56:LEU:O	13:M:60:VAL:HG23	2.07	0.53
1:A:232:G:C5	1:A:233:C:C5	2.96	0.53
2:B:18:GLY:CA	2:B:41:ILE:HA	2.38	0.53
1:A:1010:G:H21	1:A:1012:G:H3'	1.71	0.53
16:P:73:LEU:O	16:P:76:GLN:N	2.38	0.53
1:A:508:G:H2'	1:A:509:C:C6	2.43	0.53
1:A:803:A:H5''	1:A:804:U:OP2	2.08	0.53
12:L:27:LEU:C	12:L:29:GLY:N	2.60	0.53
2:B:88:ALA:C	2:B:90:MET:N	2.55	0.53
16:P:32:TYR:CE2	16:P:35:LYS:HB2	2.43	0.53
4:D:162:LEU:HD12	4:D:181:MET:HE2	1.89	0.53
1:A:334:A:H2'	1:A:335:C:C6	2.43	0.53
1:A:472:A:C2	1:A:473:C:H1'	2.44	0.53
2:B:125:PRO:C	2:B:127:ILE:H	2.12	0.53
1:A:887:A:H2'	1:A:888:C:O4'	2.09	0.53
7:G:155:ARG:O	7:G:156:TRP:HB2	2.07	0.53
5:E:53:LEU:O	5:E:54:ALA:C	2.46	0.53
1:A:730:A:O2'	1:A:731:C:H5'	2.09	0.53
1:A:278:A:H3'	1:A:279:C:C5	2.43	0.53
3:C:99:VAL:CG2	3:C:100:ALA:N	2.72	0.53
12:L:28:LYS:O	12:L:29:GLY:C	2.46	0.53
19:S:5:LEU:O	19:S:6:LYS:CB	2.57	0.53
1:A:1475:G:O2'	1:A:1476:U:H5'	2.09	0.53
15:O:45:VAL:HB	15:O:46:HIS:ND1	2.23	0.53
4:D:70:ILE:CD1	4:D:100:ARG:CZ	2.86	0.53
4:D:88:VAL:O	4:D:92:VAL:HG23	2.08	0.53
9:I:126:SER:C	9:I:128:ARG:H	2.12	0.53
7:G:41:ARG:O	7:G:44:TYR:N	2.42	0.53
1:A:369:A:C2	1:A:467:A:C6	2.96	0.53
7:G:80:VAL:HG11	7:G:154:TYR:CZ	2.44	0.53
1:A:418:C:H4'	1:A:419:G:C4	2.44	0.53
1:A:1377:A:C5	1:A:1479:C:H4'	2.44	0.53
1:A:45:G:H2'	1:A:46:U:C6	2.43	0.53
1:A:1070:G:H2'	1:A:1071:G:C8	2.43	0.53
12:L:59:ARG:NH1	12:L:65:GLU:HG2	2.22	0.53
12:L:111:LYS:O	12:L:112:ASP:HB2	2.08	0.53
5:E:152:ARG:HB3	8:H:43:GLY:HA3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:8:GLU:OE1	7:G:8:GLU:O	2.26	0.53
9:I:43:ALA:HA	9:I:74:ILE:CD1	2.38	0.53
20:T:26:ASN:O	20:T:29:LYS:N	2.39	0.53
20:T:60:GLU:HA	20:T:63:ILE:HD12	1.89	0.53
8:H:104:ARG:O	8:H:107:LEU:N	2.42	0.53
19:S:33:THR:HG22	19:S:35:SER:N	2.22	0.53
7:G:113:GLU:CD	7:G:113:GLU:N	2.62	0.53
4:D:156:GLU:O	4:D:160:GLN:HG3	2.09	0.53
4:D:200:GLU:HG2	4:D:201:GLN:H	1.73	0.53
1:A:466:G:O2'	1:A:467:A:C8	2.60	0.53
1:A:206:G:O2'	1:A:207:G:H5'	2.09	0.53
10:J:51:ARG:HB2	10:J:59:SER:HB3	1.89	0.53
2:B:170:GLU:O	2:B:172:ILE:N	2.42	0.53
8:H:90:GLY:O	8:H:91:ARG:HB2	2.09	0.53
1:A:181:C:H2'	1:A:182:C:C6	2.43	0.53
1:A:198:G:H2'	1:A:199:U:H6	1.74	0.53
5:E:128:PRO:O	5:E:129:ILE:C	2.44	0.53
14:N:24:CYS:SG	14:N:39:LEU:HA	2.47	0.53
19:S:35:SER:C	19:S:37:ARG:H	2.10	0.53
19:S:42:PRO:HA	19:S:45:VAL:CG2	2.37	0.53
1:A:1481:A:O2'	1:A:1482:G:OP1	2.20	0.53
1:A:531:A:C4'	1:A:532:G:O5'	2.50	0.53
17:Q:20:THR:HG23	17:Q:43:LEU:CD2	2.38	0.53
1:A:1099:C:O2'	1:A:1100:G:H5''	2.09	0.53
11:K:67:ASP:O	11:K:70:LYS:HB2	2.09	0.53
5:E:72:GLN:O	5:E:73:ASN:HB3	2.09	0.53
16:P:82:GLN:O	16:P:82:GLN:HG3	2.07	0.53
10:J:7:LYS:HG3	10:J:71:LEU:HD22	1.91	0.53
12:L:45:PRO:HG2	12:L:50:SER:C	2.29	0.53
19:S:16:LEU:O	19:S:18:LYS:N	2.42	0.53
5:E:132:ALA:O	5:E:135:THR:HB	2.08	0.53
5:E:141:GLN:O	5:E:142:LEU:C	2.47	0.53
6:F:52:ILE:HD11	18:R:77:GLY:HA3	1.91	0.53
1:A:899:U:H2'	1:A:900:G:O4'	2.08	0.53
2:B:24:TRP:CG	2:B:25:ASN:N	2.74	0.53
1:A:59:C:H1'	1:A:384:G:O6	2.09	0.53
2:B:101:MET:HA	2:B:108:ILE:CD1	2.39	0.53
1:A:687:G:H3'	1:A:687:G:OP2	2.09	0.53
1:A:1111:C:H2'	1:A:1112:C:H5''	1.90	0.53
10:J:98:ILE:O	10:J:99:LYS:HG3	2.08	0.53
1:A:51:A:N6	1:A:357:G:H4'	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:117:C:OP1	1:A:308:C:H5'	2.09	0.53
1:A:328:G:O2'	1:A:329:G:H5'	2.08	0.53
3:C:140:ARG:HA	3:C:143:GLU:HB3	1.91	0.53
3:C:33:LEU:O	3:C:34:LEU:C	2.44	0.53
9:I:31:GLN:NE2	9:I:35:GLU:HG3	2.23	0.53
16:P:20:VAL:CG1	16:P:21:VAL:N	2.71	0.53
1:A:18:U:H4'	1:A:1063:A:O4'	2.09	0.53
1:A:709:G:H2'	1:A:710:C:H6	1.74	0.53
5:E:57:LYS:O	5:E:60:TYR:N	2.42	0.53
1:A:872:G:H2'	1:A:873:G:C8	2.44	0.53
1:A:21:U:H2'	1:A:22:G:C8	2.44	0.53
12:L:10:LEU:HD23	12:L:10:LEU:N	2.24	0.53
1:A:1036:G:H2'	1:A:1181:U:H5	1.74	0.53
1:A:1338:G:H2'	1:A:1339:A:H8	1.72	0.53
7:G:31:MET:SD	7:G:34:GLY:HA2	2.49	0.53
7:G:113:GLU:OE2	7:G:113:GLU:N	2.42	0.53
4:D:179:GLU:C	4:D:181:MET:H	2.13	0.53
1:A:673:C:N4	1:A:682:G:H1	2.07	0.53
4:D:68:TYR:OH	4:D:98:GLU:OE1	2.21	0.53
13:M:14:ARG:HG2	13:M:42:ALA:HA	1.90	0.53
1:A:546:C:N4	1:A:862:U:H2'	2.23	0.53
12:L:32:PHE:HB3	12:L:85:ILE:O	2.10	0.53
1:A:18:U:O4'	1:A:1063:A:H1'	2.09	0.53
10:J:38:ILE:HG13	10:J:71:LEU:CB	2.39	0.53
1:A:1041:G:C5	1:A:1042:C:C4	2.96	0.53
17:Q:29:HIS:CE1	17:Q:32:TYR:H	2.25	0.52
14:N:3:ARG:O	14:N:7:ILE:HG13	2.09	0.52
5:E:24:ARG:HG2	5:E:24:ARG:NH1	2.23	0.52
4:D:199:ASN:O	4:D:200:GLU:C	2.47	0.52
1:A:1219:C:O3'	1:A:1282:G:N2	2.41	0.52
15:O:11:VAL:HG21	15:O:34:LEU:HD12	1.90	0.52
11:K:49:GLY:O	11:K:50:TYR:O	2.27	0.52
1:A:670:U:O4	1:A:687:G:O2'	2.19	0.52
14:N:14:PRO:CG	14:N:17:LYS:HA	2.38	0.52
16:P:67:THR:CG2	16:P:68:ASP:H	2.23	0.52
19:S:80:TYR:CD1	19:S:81:ARG:N	2.77	0.52
12:L:59:ARG:CZ	12:L:65:GLU:HG2	2.39	0.52
8:H:48:TYR:HA	8:H:60:ARG:O	2.09	0.52
1:A:561:G:H1'	1:A:800:A:C4	2.43	0.52
1:A:1431:U:HO2'	1:A:1432:A:H8	1.57	0.52
1:A:200:C:H2'	1:A:201:C:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:528:G:C5	1:A:529:C:C5	2.96	0.52
1:A:35:C:H42	1:A:534:G:H1	1.57	0.52
10:J:26:ALA:HB1	10:J:84:GLN:HB3	1.91	0.52
2:B:53:ARG:HG3	2:B:56:ARG:HH12	1.73	0.52
18:R:85:LEU:HD12	18:R:86:VAL:N	2.24	0.52
18:R:29:PHE:CE1	18:R:31:LEU:HD23	2.45	0.52
2:B:234:PRO:O	2:B:237:ALA:HB3	2.09	0.52
1:A:1473:U:H2'	1:A:1474:C:H6	1.74	0.52
1:A:1458:G:O2'	1:A:1459:U:H5'	2.09	0.52
10:J:39:PRO:O	10:J:40:LEU:HB2	2.08	0.52
17:Q:29:HIS:C	17:Q:29:HIS:ND1	2.62	0.52
3:C:91:LEU:HD23	3:C:92:ALA:N	2.24	0.52
5:E:9:LYS:CG	5:E:112:LEU:HD11	2.39	0.52
1:A:1293:G:O6	19:S:2:PRO:HB2	2.09	0.52
13:M:58:GLU:O	13:M:62:ASN:HB2	2.08	0.52
1:A:480:A:H1'	1:A:481:A:C8	2.44	0.52
1:A:486:G:OP1	12:L:118:SER:CB	2.57	0.52
4:D:25:ARG:NH2	4:D:30:LYS:HB3	2.24	0.52
2:B:75:LYS:HE3	2:B:78:GLN:OE1	2.09	0.52
6:F:36:ARG:NH1	6:F:38:GLU:HG2	2.25	0.52
3:C:6:HIS:NE2	3:C:8:ILE:HB	2.22	0.52
3:C:34:LEU:HD23	3:C:34:LEU:O	2.09	0.52
3:C:33:LEU:HD11	14:N:53:LEU:CD2	2.40	0.52
1:A:1325:G:H2'	1:A:1326:C:C6	2.44	0.52
9:I:71:SER:O	9:I:74:ILE:N	2.42	0.52
1:A:1436:G:H8	1:A:1436:G:O5'	1.92	0.52
13:M:33:ALA:HA	13:M:59:TYR:CE2	2.44	0.52
3:C:68:VAL:HG12	3:C:70:VAL:HG22	1.90	0.52
1:A:1048:U:O2'	1:A:1049:C:OP2	2.25	0.52
1:A:542:G:C4	1:A:543:A:C2	2.97	0.52
1:A:335:C:H2'	1:A:336:U:C6	2.44	0.52
21:U:5:ASP:OD1	21:U:8:THR:HG23	2.09	0.52
1:A:1228:C:H2'	1:A:1229:U:H6	1.75	0.52
1:A:962:C:O2'	1:A:963:C:H5'	2.09	0.52
1:A:1325:G:H2'	1:A:1326:C:O4'	2.09	0.52
1:A:1422:C:P	20:T:38:LYS:NZ	2.83	0.52
1:A:1141:C:H42	1:A:1163:G:H1	1.56	0.52
1:A:1382:C:C2	1:A:1480:A:N6	2.78	0.52
1:A:529:C:H5'	4:D:72:GLU:HG2	1.92	0.52
1:A:1282:G:O2'	1:A:1283:U:P	2.67	0.52
13:M:18:ALA:O	13:M:20:THR:N	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:39:LEU:HD13	15:O:56:LEU:CB	2.37	0.52
1:A:657:G:O3'	6:F:87:ARG:NH2	2.43	0.52
12:L:84:LEU:O	12:L:101:VAL:N	2.33	0.52
18:R:38:GLU:HA	18:R:41:LYS:HE3	1.92	0.52
1:A:9:A:H1'	5:E:102:ALA:O	2.10	0.52
1:A:9:A:H4'	1:A:10:G:OP1	2.09	0.52
5:E:87:SER:HB3	5:E:131:ILE:CD1	2.39	0.52
1:A:737:A:H4'	1:A:738:C:C5'	2.39	0.52
1:A:600:G:O2'	1:A:601:G:H5'	2.08	0.52
8:H:28:ALA:O	8:H:29:SER:HB3	2.09	0.52
1:A:745:G:C1'	17:Q:103:GLY:O	2.58	0.52
20:T:36:LEU:HD12	20:T:62:LEU:HD11	1.90	0.52
16:P:20:VAL:HG21	16:P:32:TYR:CD2	2.45	0.52
1:A:271:G:H5'	17:Q:14:LYS:CB	2.40	0.52
17:Q:66:SER:O	17:Q:70:ARG:NH1	2.42	0.52
8:H:53:VAL:HB	8:H:58:TYR:CE1	2.45	0.52
11:K:109:VAL:HG22	18:R:86:VAL:HA	1.91	0.52
1:A:732:C:H1'	1:A:733:C:C5	2.43	0.52
5:E:102:ALA:HB1	5:E:120:THR:HG21	1.91	0.52
1:A:1263:U:H4'	1:A:1264:C:OP2	2.10	0.52
1:A:1151:A:H2'	1:A:1152:A:C8	2.44	0.52
1:A:715:G:H5'	1:A:750:A:H4'	1.90	0.52
12:L:59:ARG:HD3	12:L:65:GLU:OE2	2.10	0.52
1:A:751:A:H2'	1:A:752:A:C8	2.44	0.52
3:C:112:SER:O	3:C:116:VAL:HG23	2.09	0.52
3:C:91:LEU:C	3:C:91:LEU:HD23	2.30	0.52
1:A:197:U:O2'	1:A:198:G:H5'	2.10	0.52
1:A:224:A:H2'	1:A:225:U:H6	1.73	0.52
14:N:35:ARG:O	14:N:37:PHE:N	2.43	0.52
1:A:681:U:O4'	1:A:770:G:H4'	2.10	0.52
4:D:118:ARG:HG3	4:D:136:PRO:HB3	1.92	0.52
18:R:56:THR:OG1	18:R:57:GLY:N	2.43	0.52
17:Q:62:SER:HB2	17:Q:72:ARG:HG3	1.92	0.52
1:A:444:C:C5	1:A:445:G:C5	2.98	0.52
6:F:10:LEU:CD1	6:F:59:TYR:HB3	2.40	0.52
1:A:984:A:H2'	1:A:985:C:C5'	2.39	0.52
7:G:123:GLU:O	7:G:127:ALA:HB2	2.10	0.52
12:L:59:ARG:CZ	12:L:65:GLU:CG	2.87	0.52
1:A:838:A:H2'	1:A:839:G:O4'	2.09	0.52
21:U:24:ARG:HH11	21:U:24:ARG:HG3	1.75	0.52
1:A:582:U:H4'	8:H:94:TYR:CG	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:114:PRO:O	3:C:117:ALA:HB3	2.10	0.52
3:C:22:TRP:O	3:C:22:TRP:CE3	2.63	0.52
1:A:1334:C:H1'	1:A:1354:G:N2	2.23	0.52
9:I:121:ARG:C	9:I:121:ARG:HD3	2.30	0.52
9:I:122:ALA:HB1	9:I:123:PRO:HD2	1.92	0.52
1:A:1425:G:H2'	1:A:1425:G:N3	2.25	0.52
20:T:46:GLU:HB3	20:T:48:LYS:HZ3	1.75	0.52
11:K:122:LYS:O	11:K:123:LYS:C	2.47	0.52
4:D:25:ARG:C	4:D:27:TYR:H	2.12	0.52
10:J:39:PRO:O	10:J:40:LEU:CB	2.57	0.52
1:A:751:A:H2'	1:A:752:A:H8	1.74	0.52
1:A:837:A:H2'	1:A:838:A:H8	1.73	0.52
13:M:31:LYS:O	13:M:35:GLU:HB2	2.09	0.52
2:B:12:GLU:OE1	2:B:12:GLU:HA	2.09	0.52
6:F:56:PRO:C	6:F:57:GLN:HG3	2.30	0.52
16:P:11:SER:OG	16:P:14:ASN:HB3	2.10	0.52
9:I:10:ARG:HD3	9:I:105:ASP:HB3	1.92	0.52
1:A:801:C:H4'	1:A:802:G:O5'	2.09	0.52
3:C:34:LEU:CD1	14:N:25:VAL:HG21	2.39	0.52
1:A:1358:A:H4'	7:G:29:LYS:HE2	1.91	0.52
9:I:121:ARG:NH1	9:I:121:ARG:HG2	2.22	0.52
20:T:76:ALA:O	20:T:80:ARG:HG2	2.10	0.52
1:A:270:A:O2'	1:A:271:G:P	2.68	0.52
2:B:46:LYS:O	2:B:48:MET:N	2.43	0.52
17:Q:78:GLU:OE1	17:Q:81:ARG:HD2	2.09	0.52
10:J:8:LEU:CD2	10:J:96:ILE:HG12	2.40	0.52
1:A:1299:C:O2'	1:A:1300:A:H5'	2.10	0.52
1:A:121:G:N2	17:Q:61:GLU:OE1	2.42	0.52
1:A:1308:C:OP2	21:U:6:ARG:CZ	2.58	0.52
1:A:1021:C:H2'	1:A:1022:C:C6	2.45	0.52
13:M:11:ARG:CG	13:M:12:ASN:N	2.73	0.52
2:B:147:LYS:HB3	2:B:148:TYR:CD2	2.45	0.52
1:A:1077:G:H5''	1:A:1078:U:H5	1.75	0.52
3:C:33:LEU:CD1	14:N:53:LEU:HD22	2.40	0.52
1:A:1328:A:H5'	9:I:120:ARG:HH12	1.75	0.52
1:A:1355:U:O2'	1:A:1356:G:H5'	2.10	0.52
2:B:78:GLN:O	2:B:94:ASN:OD1	2.28	0.52
12:L:53:ARG:HB2	12:L:93:LEU:HD11	1.92	0.52
1:A:823:U:H2'	1:A:823:U:O2	2.09	0.52
2:B:132:LYS:HA	2:B:135:GLN:HB3	1.92	0.52
1:A:366:C:C2'	1:A:367:G:H5'	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:67:THR:HB	16:P:70:ALA:HB2	1.92	0.52
8:H:111:ILE:HD12	8:H:135:CYS:SG	2.50	0.52
2:B:182:ILE:O	2:B:183:PRO:C	2.47	0.52
1:A:239:A:C4'	1:A:240:U:H5'	2.27	0.51
1:A:1331:A:C4	1:A:1332:A:C8	2.98	0.51
1:A:1422:C:OP1	20:T:38:LYS:NZ	2.43	0.51
20:T:45:GLN:HA	20:T:91:LEU:HD22	1.92	0.51
20:T:49:ALA:O	20:T:52:ALA:N	2.43	0.51
1:A:959:U:H4'	14:N:21:TYR:CD2	2.46	0.51
14:N:23:ARG:HA	14:N:30:ALA:HA	1.92	0.51
4:D:158:ILE:CG2	4:D:181:MET:HE2	2.40	0.51
4:D:110:PHE:HD1	4:D:162:LEU:HD21	1.75	0.51
4:D:170:VAL:HG21	4:D:176:LEU:HD22	1.92	0.51
4:D:61:LYS:HD3	4:D:206:PHE:CD2	2.46	0.51
1:A:1220:A:C8	1:A:1285:C:H1'	2.44	0.51
15:O:34:LEU:HD23	15:O:34:LEU:C	2.31	0.51
1:A:366:C:C2	1:A:367:G:C8	2.99	0.51
7:G:44:TYR:O	7:G:47:CYS:HB2	2.10	0.51
17:Q:76:LEU:HD23	17:Q:77:VAL:N	2.25	0.51
1:A:574:C:C2	1:A:575:U:C5	2.99	0.51
4:D:18:LYS:HB3	4:D:20:TYR:CE2	2.46	0.51
14:N:57:ARG:HG2	14:N:58:LYS:H	1.75	0.51
6:F:6:VAL:HG22	6:F:90:VAL:HG22	1.92	0.51
2:B:126:GLU:O	2:B:129:GLU:HB2	2.11	0.51
3:C:52:LEU:O	3:C:53:ALA:HB2	2.10	0.51
9:I:26:VAL:HA	9:I:61:ALA:O	2.10	0.51
13:M:84:ILE:O	13:M:86:CYS:N	2.43	0.51
7:G:110:GLN:OE1	7:G:110:GLN:HA	2.10	0.51
1:A:1417:A:H2'	1:A:1418:G:O4'	2.09	0.51
20:T:14:LYS:O	20:T:18:GLN:HG3	2.09	0.51
1:A:850:A:C2	1:A:852:G:C5	2.99	0.51
1:A:307:C:O2'	1:A:308:C:H5'	2.09	0.51
1:A:23:G:H2'	1:A:24:C:H6	1.72	0.51
1:A:857:C:H2'	1:A:858:C:C6	2.45	0.51
3:C:11:ARG:O	3:C:12:LEU:C	2.49	0.51
14:N:41:ARG:CG	14:N:41:ARG:NH1	2.66	0.51
20:T:33:ILE:HD13	20:T:63:ILE:HA	1.91	0.51
2:B:222:ILE:HG22	2:B:223:ILE:N	2.24	0.51
13:M:60:VAL:O	13:M:62:ASN:N	2.43	0.51
13:M:10:PRO:HB2	13:M:18:ALA:CB	2.38	0.51
13:M:17:VAL:O	13:M:20:THR:CB	2.58	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:75:PRO:O	15:O:78:TYR:HB3	2.09	0.51
9:I:127:LYS:HD2	9:I:127:LYS:N	2.26	0.51
20:T:15:ARG:O	20:T:18:GLN:N	2.42	0.51
1:A:1287:G:N2	1:A:1313:G:O2'	2.42	0.51
2:B:98:LEU:CB	2:B:101:MET:SD	2.93	0.51
1:A:541:G:H2'	1:A:542:G:O4'	2.11	0.51
18:R:37:VAL:HG21	18:R:78:LEU:HB3	1.92	0.51
1:A:45:G:H2'	1:A:46:U:O4'	2.10	0.51
2:B:87:ARG:HD3	2:B:234:PRO:HD2	1.93	0.51
1:A:462:G:H2'	1:A:463:A:H8	1.75	0.51
1:A:276:C:H4'	1:A:277:G:OP2	2.10	0.51
3:C:147:LYS:O	3:C:203:PHE:CD2	2.63	0.51
1:A:1328:A:H61	1:A:1357:A:H3'	1.75	0.51
9:I:26:VAL:HB	9:I:33:PHE:CB	2.33	0.51
20:T:39:LYS:O	20:T:43:LEU:HG	2.11	0.51
5:E:136:MET:O	5:E:139:LEU:N	2.36	0.51
4:D:78:LEU:HB3	4:D:93:PHE:HE2	1.75	0.51
2:B:23:ARG:O	2:B:24:TRP:O	2.28	0.51
12:L:92:ASP:C	12:L:93:LEU:HD23	2.30	0.51
1:A:43:G:C4	1:A:44:C:C5	2.98	0.51
18:R:48:GLY:H	18:R:82:THR:HA	1.75	0.51
1:A:983:A:N7	1:A:1020:C:N3	2.59	0.51
1:A:982:G:C2	1:A:983:A:H1'	2.44	0.51
1:A:1149:G:N2	1:A:1151:A:H3'	2.25	0.51
1:A:163:G:O2'	1:A:164:C:H5'	2.11	0.51
9:I:84:ALA:O	9:I:86:VAL:N	2.44	0.51
21:U:5:ASP:O	21:U:11:GLY:HA3	2.10	0.51
8:H:24:THR:HG23	8:H:24:THR:O	2.10	0.51
3:C:155:GLY:HA3	3:C:163:ALA:CB	2.36	0.51
1:A:937:A:H3'	1:A:938:U:C5'	2.32	0.51
13:M:26:GLY:O	13:M:28:ALA:N	2.43	0.51
13:M:6:GLY:O	13:M:7:VAL:CG2	2.53	0.51
4:D:25:ARG:CZ	4:D:30:LYS:HB3	2.40	0.51
4:D:3:ARG:NH2	4:D:74:GLN:OE1	2.43	0.51
12:L:117:ARG:O	12:L:118:SER:C	2.47	0.51
1:A:263:C:P	17:Q:67:LYS:HB2	2.50	0.51
5:E:43:LEU:C	5:E:43:LEU:CD2	2.78	0.51
10:J:15:THR:CG2	10:J:16:LEU:N	2.73	0.51
10:J:96:ILE:HG22	10:J:97:GLU:N	2.25	0.51
1:A:74:G:O2'	1:A:75:C:H5'	2.10	0.51
1:A:211:U:H5'	1:A:212:G:OP1	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:115:PRO:C	11:K:117:ASN:H	2.14	0.51
10:J:42:THR:HG23	10:J:67:THR:C	2.30	0.51
16:P:36:ILE:HG13	16:P:37:GLY:N	2.26	0.51
8:H:47:GLY:O	8:H:62:TYR:HB2	2.11	0.51
17:Q:29:HIS:CE1	17:Q:31:LEU:H	2.29	0.51
3:C:12:LEU:HD21	14:N:51:GLY:HA3	1.92	0.51
9:I:118:LYS:O	9:I:119:ALA:CB	2.58	0.51
1:A:198:G:C4	20:T:105:SER:HB2	2.45	0.51
1:A:896:A:C6	1:A:897:A:C6	2.98	0.51
1:A:673:C:OP2	11:K:46:GLY:HA3	2.10	0.51
4:D:76:ARG:O	4:D:79:PHE:HB3	2.10	0.51
5:E:34:VAL:N	5:E:42:GLY:O	2.44	0.51
15:O:24:SER:O	15:O:27:VAL:N	2.43	0.51
1:A:470:G:HO2'	1:A:471:U:H6	1.57	0.51
6:F:100:ASN:ND2	18:R:23:LYS:O	2.44	0.51
1:A:1114:G:H1	1:A:1126:G:H21	1.59	0.51
1:A:1143:G:O2'	1:A:1144:C:H5'	2.11	0.51
5:E:65:ASN:CG	5:E:65:ASN:O	2.49	0.51
8:H:31:PHE:HE1	8:H:118:VAL:CG2	2.24	0.51
5:E:133:TYR:O	5:E:134:ALA:C	2.49	0.51
12:L:78:GLN:N	12:L:81:SER:OG	2.39	0.51
1:A:804:U:C4'	1:A:805:G:OP2	2.54	0.51
17:Q:97:SER:O	17:Q:99:SER:N	2.43	0.51
3:C:120:VAL:O	3:C:121:ALA:C	2.49	0.51
1:A:917:G:C6	1:A:918:C:N4	2.79	0.51
20:T:57:ARG:NH2	20:T:100:ILE:HG21	2.26	0.51
20:T:82:SER:O	20:T:86:ARG:HB2	2.11	0.51
5:E:129:ILE:O	5:E:132:ALA:HB3	2.10	0.51
1:A:1208:C:H5''	13:M:103:THR:CB	2.40	0.51
13:M:86:CYS:O	13:M:89:GLY:N	2.40	0.51
1:A:676:U:H1'	1:A:679:A:N7	2.25	0.51
15:O:67:LEU:O	15:O:70:LEU:N	2.44	0.51
15:O:17:ARG:HH11	15:O:17:ARG:CG	2.22	0.51
1:A:170:C:O2'	1:A:171:C:H5'	2.11	0.51
1:A:703:C:O2	18:R:50:ILE:HG13	2.10	0.51
1:A:864:G:C6	1:A:865:G:C5	2.99	0.51
14:N:27:CYS:SG	14:N:29:ARG:HB3	2.49	0.51
13:M:23:TYR:O	13:M:23:TYR:CG	2.64	0.51
1:A:1380:C:OP2	5:E:24:ARG:NH2	2.44	0.51
1:A:679:A:H2'	1:A:680:A:C8	2.45	0.51
1:A:36:G:H2'	1:A:37:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:480:A:H5'	1:A:481:A:OP1	2.11	0.51
4:D:194:LEU:HD22	4:D:194:LEU:N	2.25	0.51
4:D:64:LEU:HD21	4:D:94:LEU:HD21	1.93	0.51
4:D:77:ASN:O	4:D:78:LEU:C	2.49	0.51
4:D:78:LEU:CD1	4:D:97:LEU:HD23	2.41	0.51
15:O:55:GLY:O	15:O:58:MET:HB2	2.11	0.51
15:O:76:GLU:OE2	15:O:80:ALA:HB2	2.10	0.51
2:B:200:ILE:HG22	2:B:201:ILE:H	1.75	0.51
18:R:66:LEU:HD21	18:R:70:ILE:CD1	2.41	0.51
1:A:549:U:C4	1:A:550:G:C5	2.98	0.51
1:A:547:A:HO2'	1:A:550:G:HO2'	1.57	0.51
10:J:75:ILE:HG22	10:J:76:ASN:N	2.25	0.51
1:A:76:G:O2'	1:A:77:G:H5'	2.11	0.51
1:A:154:G:H2'	1:A:156:A:OP2	2.11	0.51
1:A:209:U:O2'	1:A:210:U:OP1	2.24	0.51
1:A:591:A:O2'	1:A:592:A:H5'	2.11	0.51
1:A:126:C:H2'	1:A:127:C:C6	2.46	0.51
1:A:1397:U:H2'	1:A:1398:G:H8	1.76	0.51
1:A:517:A:O2'	1:A:519:A:OP2	2.27	0.51
3:C:162:GLN:O	3:C:163:ALA:C	2.47	0.51
1:A:1309:C:H2'	1:A:1310:C:H6	1.76	0.51
1:A:959:U:H2'	1:A:960:U:C5	2.46	0.51
19:S:35:SER:C	19:S:37:ARG:N	2.61	0.51
21:U:20:LYS:HG2	21:U:20:LYS:O	2.10	0.51
15:O:4:THR:O	15:O:5:LYS:C	2.49	0.51
2:B:74:LYS:NZ	2:B:205:ASP:O	2.42	0.51
1:A:1172:G:H2'	1:A:1173:A:OP2	2.11	0.51
2:B:93:VAL:HG22	2:B:101:MET:HE1	1.93	0.51
4:D:109:GLY:C	4:D:111:ALA:N	2.63	0.51
1:A:732:C:O2'	1:A:733:C:OP2	2.28	0.51
1:A:1299:C:H2'	1:A:1300:A:O4'	2.11	0.51
1:A:736:G:H4'	1:A:738:C:H5	1.75	0.51
11:K:18:ARG:NH1	11:K:36:ASP:HA	2.25	0.51
8:H:1:MET:CG	8:H:2:LEU:N	2.73	0.51
1:A:649:A:N3	1:A:716:C:H2'	2.26	0.51
1:A:618:C:O2'	1:A:619:G:H5'	2.11	0.51
1:A:1072:G:N2	1:A:1073:U:H1'	2.26	0.51
1:A:1443:C:H2'	1:A:1444:C:O4'	2.11	0.51
1:A:805:G:N1	1:A:858:C:C4	2.79	0.51
17:Q:27:PHE:HB2	17:Q:28:PRO:HD2	1.92	0.51
1:A:1231:C:O2'	9:I:73:GLN:NE2	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1270:A:C2	1:A:1271:A:C4	2.99	0.51
1:A:1329:G:C2'	1:A:1330:U:OP2	2.58	0.51
1:A:1301:A:H5'	1:A:1302:C:OP1	2.11	0.51
1:A:521:G:H2'	1:A:522:G:H8	1.75	0.51
1:A:522:G:O3'	12:L:114:LYS:HD3	2.11	0.51
1:A:271:G:C5'	17:Q:14:LYS:HD3	2.41	0.51
18:R:53:ARG:CG	18:R:63:GLN:HG2	2.37	0.51
1:A:104:C:C4	1:A:105:G:C5	2.99	0.51
18:R:47:THR:HA	18:R:83:GLU:HB2	1.92	0.51
11:K:91:ARG:CD	18:R:88:LYS:HE2	2.38	0.51
7:G:79:ARG:HA	7:G:83:ALA:O	2.09	0.51
1:A:1032:U:H1'	1:A:1183:A:N7	2.25	0.51
1:A:981:G:N2	1:A:1022:C:C2	2.79	0.51
1:A:1408:U:H2'	1:A:1409:C:C6	2.45	0.51
5:E:98:THR:N	5:E:117:ASP:OD1	2.41	0.51
19:S:16:LEU:C	19:S:18:LYS:N	2.64	0.50
14:N:41:ARG:CG	14:N:41:ARG:HH11	2.08	0.50
20:T:51:GLU:HA	20:T:54:LYS:HB2	1.93	0.50
5:E:128:PRO:HG2	5:E:129:ILE:H	1.76	0.50
16:P:34:GLU:OE2	16:P:55:ARG:HD3	2.10	0.50
19:S:34:TRP:O	19:S:36:ARG:N	2.41	0.50
2:B:19:HIS:NE2	2:B:206:ASP:HB3	2.26	0.50
3:C:84:ILE:O	3:C:84:ILE:HG12	2.10	0.50
2:B:53:ARG:O	2:B:56:ARG:HB3	2.10	0.50
4:D:150:GLU:O	4:D:151:LYS:C	2.49	0.50
8:H:26:VAL:HG22	8:H:59:LEU:HB2	1.93	0.50
7:G:144:MET:O	7:G:147:ALA:HB3	2.11	0.50
1:A:10:G:N2	1:A:11:A:C4	2.79	0.50
1:A:738:C:H2'	1:A:738:C:O2	2.11	0.50
7:G:23:VAL:O	7:G:24:THR:C	2.49	0.50
1:A:796:C:O2'	1:A:797:U:OP2	2.28	0.50
1:A:1307:C:H2'	1:A:1308:C:H6	1.76	0.50
18:R:28:GLU:OE1	18:R:28:GLU:N	2.44	0.50
16:P:13:HIS:O	16:P:15:PRO:HD2	2.12	0.50
17:Q:104:LYS:O	17:Q:105:ALA:HB2	2.11	0.50
4:D:57:ARG:HH22	5:E:107:ARG:HD3	1.77	0.50
8:H:83:ILE:HG13	8:H:137:VAL:CG2	2.35	0.50
4:D:203:VAL:O	4:D:206:PHE:HB3	2.10	0.50
12:L:55:VAL:HG12	12:L:56:ALA:H	1.76	0.50
1:A:368:C:N4	1:A:384:G:OP2	2.44	0.50
2:B:101:MET:HA	2:B:108:ILE:HD12	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:51:VAL:O	8:H:58:TYR:N	2.43	0.50
1:A:324:C:O2'	1:A:325:A:P	2.68	0.50
8:H:63:LEU:HB3	8:H:65:TYR:CE1	2.46	0.50
1:A:892:A:O2'	1:A:893:A:H5'	2.11	0.50
1:A:170:C:H2'	1:A:171:C:C6	2.44	0.50
19:S:22:LEU:HD21	19:S:28:LYS:HD2	1.93	0.50
19:S:11:VAL:HA	19:S:38:SER:HB2	1.92	0.50
13:M:4:ILE:O	13:M:5:ALA:C	2.49	0.50
1:A:63:U:H2'	1:A:64:C:C6	2.47	0.50
2:B:204:ASN:ND2	2:B:206:ASP:N	2.56	0.50
2:B:213:LEU:HD23	2:B:213:LEU:C	2.31	0.50
2:B:142:LEU:HA	2:B:146:GLN:HE22	1.74	0.50
1:A:720:C:H2'	1:A:721:A:H8	1.73	0.50
17:Q:74:LEU:HD23	17:Q:74:LEU:C	2.31	0.50
1:A:281:G:O2'	1:A:282:G:H5'	2.11	0.50
1:A:172:C:P	20:T:65:LYS:NZ	2.85	0.50
1:A:390:G:H2'	1:A:391:C:H6	1.75	0.50
1:A:1408:U:O2'	1:A:1409:C:H5'	2.10	0.50
1:A:493:A:O5'	1:A:493:A:H8	1.94	0.50
11:K:85:ARG:HE	11:K:111:ASP:HB3	1.77	0.50
1:A:868:G:O2'	1:A:869:U:OP2	2.29	0.50
12:L:49:ASN:N	12:L:49:ASN:HD22	2.08	0.50
5:E:93:PRO:CG	8:H:105:ARG:HE	2.25	0.50
1:A:1290:U:OP1	13:M:98:VAL:N	2.43	0.50
19:S:39:THR:HA	19:S:70:LYS:HG2	1.94	0.50
9:I:100:GLY:C	9:I:102:LEU:N	2.65	0.50
1:A:763:C:N4	1:A:764:A:C6	2.79	0.50
6:F:8:ILE:HD11	6:F:79:LEU:HD13	1.92	0.50
4:D:10:ARG:CG	4:D:10:ARG:HH11	2.25	0.50
4:D:64:LEU:HD12	4:D:75:PHE:CE1	2.47	0.50
13:M:15:VAL:O	13:M:18:ALA:HB3	2.12	0.50
2:B:20:GLU:CG	2:B:189:ASP:OD2	2.60	0.50
1:A:536:U:H2'	1:A:537:A:H8	1.77	0.50
16:P:11:SER:O	16:P:14:ASN:N	2.39	0.50
1:A:741:U:O2'	1:A:857:C:H1'	2.11	0.50
1:A:1249:C:O2	21:U:20:LYS:HD3	2.12	0.50
13:M:26:GLY:O	13:M:27:LYS:C	2.49	0.50
4:D:161:ASN:O	4:D:162:LEU:C	2.49	0.50
1:A:484:G:N2	1:A:530:G:H1'	2.27	0.50
1:A:485:C:O3'	12:L:118:SER:HB2	2.12	0.50
4:D:64:LEU:HD23	4:D:198:VAL:CB	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1280:C:C4	7:G:114:ARG:HD3	2.46	0.50
13:M:40:ASN:O	13:M:43:THR:HG23	2.12	0.50
21:U:17:THR:O	21:U:22:ARG:HD3	2.12	0.50
1:A:982:G:C6	1:A:983:A:N3	2.79	0.50
18:R:34:TYR:CD2	18:R:34:TYR:N	2.78	0.50
2:B:33:TYR:O	2:B:34:ALA:HB2	2.11	0.50
2:B:196:LEU:N	2:B:196:LEU:HD23	2.27	0.50
14:N:24:CYS:N	14:N:33:VAL:HG11	2.27	0.50
15:O:46:HIS:O	15:O:48:LYS:N	2.45	0.50
4:D:200:GLU:HG2	4:D:201:GLN:N	2.27	0.50
1:A:232:G:C6	1:A:233:C:C4	2.99	0.50
15:O:32:LEU:CD1	15:O:63:ARG:HB2	2.42	0.50
14:N:18:VAL:O	14:N:20:ALA:N	2.39	0.50
2:B:178:ARG:HH21	8:H:74:PRO:HG3	1.77	0.50
2:B:126:GLU:HG2	2:B:129:GLU:OE1	2.11	0.50
1:A:866:G:N1	1:A:867:A:N6	2.60	0.50
15:O:32:LEU:O	15:O:34:LEU:N	2.45	0.50
10:J:81:THR:C	10:J:83:GLU:N	2.65	0.50
2:B:97:TRP:CH2	2:B:176:GLU:CD	2.83	0.50
1:A:1298:G:N2	1:A:1300:A:H3'	2.27	0.50
1:A:736:G:O2'	1:A:737:A:O5'	2.30	0.50
5:E:15:ARG:O	5:E:16:THR:CG2	2.58	0.50
1:A:723:C:P	6:F:2:ARG:HH22	2.35	0.50
1:A:976:G:O2'	1:A:977:C:H5'	2.11	0.50
1:A:745:G:O2'	17:Q:104:LYS:HA	2.11	0.50
20:T:57:ARG:HD2	20:T:103:GLY:H	1.77	0.50
13:M:81:LEU:HA	13:M:84:ILE:HD11	1.94	0.50
1:A:528:G:H2'	1:A:529:C:H6	1.77	0.50
3:C:79:ARG:HG3	3:C:82:GLU:HB3	1.94	0.50
1:A:231:C:H2'	1:A:232:G:H8	1.77	0.50
13:M:34:LEU:HD13	13:M:41:PRO:HA	1.93	0.50
7:G:42:ILE:CG2	7:G:120:ILE:HD12	2.40	0.50
3:C:130:VAL:O	3:C:134:ILE:HG13	2.12	0.50
1:A:609:G:C4	1:A:610:U:C5	2.99	0.50
6:F:22:GLU:OE2	6:F:84:ASN:HB2	2.11	0.50
11:K:34:ASP:CG	11:K:38:ASN:HB2	2.32	0.50
1:A:1062:G:H2'	1:A:1063:A:C8	2.47	0.50
1:A:536:U:H2'	1:A:537:A:C8	2.46	0.50
15:O:82:ILE:O	15:O:85:LEU:N	2.36	0.50
4:D:137:SER:O	4:D:138:TYR:C	2.48	0.50
3:C:10:PHE:CE2	3:C:178:LEU:HD13	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:178:LEU:O	3:C:179:ARG:HB2	2.12	0.50
12:L:27:LEU:C	12:L:29:GLY:H	2.15	0.50
19:S:47:HIS:H	19:S:62:ILE:CG2	2.25	0.50
9:I:93:ARG:O	9:I:96:LEU:N	2.45	0.50
4:D:103:ASN:O	4:D:106:TYR:HB3	2.12	0.50
2:B:142:LEU:CB	2:B:146:GLN:HE22	2.25	0.50
18:R:65:ILE:O	18:R:67:ALA:N	2.45	0.50
1:A:289:G:C6	1:A:290:U:C4	3.00	0.50
1:A:298:G:N3	1:A:540:C:H4'	2.27	0.50
16:P:8:ARG:HG2	16:P:17:TYR:HE2	1.75	0.50
7:G:65:ALA:HB1	7:G:127:ALA:CB	2.42	0.50
1:A:212:G:H2'	1:A:213:C:H6	1.77	0.50
1:A:1342:A:H2'	1:A:1343:G:C8	2.46	0.50
9:I:86:VAL:HG13	9:I:90:PRO:HA	1.94	0.50
1:A:856:G:C5'	8:H:89:PRO:HG2	2.42	0.49
3:C:201:TYR:O	3:C:202:ILE:HG13	2.13	0.49
1:A:1230:A:H1'	9:I:70:LYS:HZ3	1.76	0.49
1:A:1292:G:C2	1:A:1310:C:N3	2.80	0.49
13:M:62:ASN:O	13:M:63:THR:CB	2.52	0.49
2:B:80:ILE:HD13	2:B:212:GLN:HB2	1.94	0.49
12:L:39:VAL:HB	12:L:57:LYS:HG2	1.93	0.49
1:A:654:G:C2	1:A:721:A:C2	3.00	0.49
1:A:1099:C:C2'	1:A:1100:G:H5''	2.42	0.49
1:A:639:A:C2	1:A:738:C:N4	2.80	0.49
1:A:84:A:H2'	1:A:85:C:O4'	2.12	0.49
17:Q:86:GLU:O	17:Q:87:LYS:C	2.49	0.49
1:A:238:C:H2'	1:A:239:A:H5'	1.94	0.49
17:Q:91:ARG:O	17:Q:92:ARG:C	2.49	0.49
3:C:119:ARG:HG2	3:C:140:ARG:HH12	1.76	0.49
1:A:311:A:H4'	1:A:349:A:N1	2.27	0.49
1:A:1205:C:OP1	1:A:1206:G:H3'	2.12	0.49
4:D:162:LEU:O	4:D:165:MET:HB2	2.12	0.49
4:D:62:GLN:O	4:D:63:LYS:C	2.50	0.49
5:E:11:ILE:HG22	5:E:31:LEU:CB	2.42	0.49
18:R:53:ARG:HH12	18:R:59:SER:HA	1.76	0.49
1:A:1087:G:OP1	2:B:111:ARG:HD2	2.11	0.49
1:A:540:C:O2'	1:A:541:G:H5'	2.11	0.49
1:A:385:A:C6	1:A:386:C:H1'	2.47	0.49
8:H:20:TYR:HA	8:H:65:TYR:CZ	2.48	0.49
1:A:338:C:H2'	1:A:339:U:O4'	2.12	0.49
1:A:341:C:H4'	1:A:342:G:C5'	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:A:1524:KSG:O6	22:A:1524:KSG:H1	2.13	0.49
1:A:1227:A:H2'	1:A:1228:C:C6	2.47	0.49
1:A:820:G:C6	1:A:829:G:C6	3.00	0.49
1:A:222:G:C6	1:A:223:G:N7	2.80	0.49
1:A:90:U:H2'	1:A:91:G:H8	1.77	0.49
1:A:918:C:H2'	1:A:919:G:C8	2.47	0.49
1:A:434:G:O3'	1:A:478:G:N1	2.45	0.49
4:D:78:LEU:HD13	4:D:97:LEU:HD23	1.94	0.49
13:M:15:VAL:CG1	13:M:34:LEU:HD11	2.42	0.49
1:A:1047:G:O2'	1:A:1172:G:N2	2.45	0.49
5:E:144:THR:HG22	5:E:146:ALA:N	2.26	0.49
17:Q:82:MET:C	17:Q:84:LEU:N	2.65	0.49
18:R:45:SER:OG	18:R:49:LYS:HB2	2.12	0.49
16:P:48:TRP:CE3	16:P:49:LEU:HB2	2.47	0.49
1:A:850:A:C4'	1:A:851:A:OP1	2.58	0.49
20:T:10:LEU:C	20:T:12:ALA:H	2.15	0.49
3:C:42:LEU:O	3:C:45:LYS:N	2.44	0.49
1:A:1258:G:O5'	1:A:1258:G:H8	1.96	0.49
12:L:9:GLN:O	12:L:10:LEU:C	2.50	0.49
8:H:91:ARG:CG	12:L:7:ILE:HG13	2.39	0.49
1:A:202:A:H2'	1:A:203:A:C8	2.47	0.49
1:A:39:G:C2	1:A:393:A:C2	3.00	0.49
12:L:117:ARG:C	12:L:119:LYS:N	2.66	0.49
1:A:246:A:C2	1:A:270:A:C6	3.00	0.49
2:B:46:LYS:O	2:B:49:GLU:N	2.46	0.49
1:A:605:A:O5'	1:A:605:A:H8	1.95	0.49
5:E:40:ARG:CG	5:E:40:ARG:HH11	2.23	0.49
1:A:341:C:H4'	1:A:342:G:H5''	1.94	0.49
12:L:111:LYS:O	12:L:112:ASP:CB	2.60	0.49
2:B:126:GLU:HA	2:B:129:GLU:HG3	1.94	0.49
1:A:296:A:H2'	1:A:297:G:O4'	2.12	0.49
8:H:5:PRO:O	8:H:8:ASP:HB3	2.11	0.49
3:C:118:GLN:O	3:C:121:ALA:HB3	2.12	0.49
3:C:119:ARG:CG	3:C:140:ARG:HH12	2.26	0.49
13:M:80:ARG:C	13:M:82:MET:N	2.65	0.49
1:A:952:A:C4	14:N:31:ARG:NH2	2.81	0.49
2:B:44:LEU:O	2:B:45:GLN:C	2.50	0.49
8:H:52:ASP:HA	8:H:56:LYS:O	2.12	0.49
1:A:470:G:C2'	1:A:471:U:OP2	2.60	0.49
1:A:382:C:C2'	1:A:383:U:H5'	2.42	0.49
1:A:510:C:OP1	1:A:891:A:H3'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:795:C:H4'	1:A:878:A:N6	2.27	0.49
6:F:56:PRO:O	6:F:57:GLN:HG3	2.11	0.49
1:A:1078:U:H2'	1:A:1079:C:O4'	2.12	0.49
3:C:38:ARG:HG3	3:C:38:ARG:NH1	2.27	0.49
1:A:1429:C:C2	1:A:1430:C:C5	3.01	0.49
20:T:63:ILE:O	20:T:66:ALA:N	2.35	0.49
7:G:107:ALA:O	7:G:108:ALA:C	2.50	0.49
9:I:80:GLY:O	9:I:81:ILE:C	2.50	0.49
13:M:54:VAL:O	13:M:55:ARG:C	2.51	0.49
4:D:194:LEU:H	4:D:194:LEU:HD22	1.77	0.49
4:D:65:ARG:NE	4:D:72:GLU:HA	2.27	0.49
12:L:113:ARG:CB	12:L:122:THR:HG21	2.43	0.49
2:B:15:VAL:HG11	2:B:209:ARG:C	2.33	0.49
1:A:823:U:O2	1:A:823:U:C2'	2.61	0.49
1:A:397:C:O2'	1:A:398:G:H5'	2.13	0.49
1:A:970:U:O2'	1:A:971:G:OP2	2.28	0.49
1:A:670:U:H2'	1:A:671:A:C8	2.47	0.49
1:A:1110:G:N1	1:A:1128:C:N3	2.59	0.49
1:A:324:C:H4'	1:A:325:A:C5'	2.41	0.49
5:E:102:ALA:CB	5:E:120:THR:HG21	2.42	0.49
1:A:739:G:OP2	15:O:65:ARG:CG	2.61	0.49
1:A:1192:C:H5'	1:A:1196:C:N4	2.28	0.49
1:A:208:C:N4	1:A:210:U:H1'	2.27	0.49
1:A:702:G:O4'	11:K:117:ASN:ND2	2.45	0.49
4:D:54:TYR:O	4:D:55:ALA:C	2.50	0.49
9:I:18:PHE:HB2	9:I:62:TYR:O	2.12	0.49
1:A:21:U:H2'	1:A:22:G:H8	1.77	0.49
1:A:581:G:C8	1:A:582:U:C5	3.00	0.49
3:C:155:GLY:HA2	3:C:164:ARG:H	1.77	0.49
3:C:147:LYS:HE2	3:C:205:GLY:HA2	1.94	0.49
19:S:16:LEU:HA	19:S:19:VAL:HG12	1.94	0.49
1:A:199:U:H4'	20:T:102:GLY:C	2.33	0.49
1:A:1204:G:O2'	1:A:1205:C:H5'	2.13	0.49
1:A:768:C:C2	1:A:769:G:C8	3.01	0.49
1:A:791:A:C4	1:A:792:C:C5	3.00	0.49
4:D:191:ARG:NH2	4:D:198:VAL:O	2.44	0.49
4:D:61:LYS:HD2	4:D:207:TYR:CZ	2.48	0.49
4:D:88:VAL:O	4:D:89:THR:C	2.50	0.49
3:C:70:VAL:O	3:C:106:VAL:HG23	2.12	0.49
1:A:1313:G:C2'	1:A:1314:A:OP2	2.60	0.49
1:A:1113:A:P	1:A:1114:G:OP2	2.71	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:117:VAL:HG12	13:M:118:ALA:N	2.23	0.49
1:A:373:G:P	16:P:5:ARG:HH11	2.36	0.49
1:A:981:G:C2	1:A:982:G:C6	3.01	0.49
2:B:120:ALA:C	2:B:122:PHE:N	2.66	0.49
3:C:145:GLY:O	3:C:146:ALA:HB3	2.12	0.49
2:B:12:GLU:C	2:B:14:GLY:N	2.64	0.49
3:C:186:PHE:CD1	3:C:187:ALA:N	2.80	0.49
12:L:79:GLU:HB3	12:L:80:HIS:CE1	2.48	0.49
1:A:1044:G:C2	1:A:1179:G:N3	2.81	0.49
1:A:1358:A:C6	1:A:1359:U:N3	2.81	0.49
9:I:73:GLN:O	9:I:76:ALA:HB3	2.13	0.49
5:E:141:GLN:O	5:E:142:LEU:O	2.30	0.49
5:E:89:ILE:HD12	5:E:91:LEU:HG	1.95	0.49
1:A:762:G:C2'	1:A:763:C:H5'	2.43	0.49
1:A:497:C:O2'	1:A:498:C:H5'	2.12	0.49
1:A:1173:A:H2'	1:A:1174:C:H6	1.78	0.49
3:C:3:ASN:O	3:C:4:LYS:CG	2.61	0.49
1:A:166:A:O2'	1:A:167:A:H5'	2.13	0.49
8:H:14:ARG:O	8:H:17:THR:OG1	2.30	0.49
16:P:67:THR:HB	16:P:70:ALA:CB	2.42	0.49
1:A:620:U:H2'	1:A:621:G:C8	2.46	0.49
6:F:38:GLU:OE1	6:F:66:GLU:HB2	2.13	0.49
3:C:191:THR:HG22	3:C:192:THR:N	2.27	0.49
1:A:667:G:H2'	1:A:668:A:C8	2.48	0.49
3:C:139:GLN:C	3:C:139:GLN:HE21	2.15	0.49
20:T:32:ALA:O	20:T:35:THR:HB	2.13	0.49
1:A:182:C:P	20:T:82:SER:HB3	2.52	0.49
1:A:961:A:OP1	14:N:6:LEU:HD21	2.12	0.49
13:M:104:ARG:O	13:M:105:THR:HG23	2.13	0.49
19:S:44:MET:O	19:S:47:HIS:CD2	2.65	0.49
19:S:44:MET:HA	19:S:47:HIS:HD2	1.78	0.49
4:D:101:LEU:C	4:D:103:ASN:H	2.14	0.49
4:D:199:ASN:O	4:D:202:LEU:N	2.44	0.49
1:A:1221:A:H2'	1:A:1280:C:N4	2.28	0.49
10:J:30:SER:HB3	10:J:84:GLN:HE21	1.78	0.49
1:A:1000:G:C2	1:A:1001:G:H1'	2.48	0.49
11:K:34:ASP:OD1	11:K:38:ASN:N	2.46	0.49
18:R:37:VAL:HG21	18:R:78:LEU:HD22	1.95	0.49
3:C:42:LEU:O	3:C:43:LEU:C	2.51	0.49
11:K:97:ALA:O	11:K:101:SER:HB3	2.13	0.49
1:A:1396:A:O2'	1:A:1397:U:H5'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:745:G:H4'	17:Q:102:GLY:CA	2.42	0.49
1:A:744:G:C2'	1:A:745:G:H5'	2.43	0.49
1:A:856:G:C6	1:A:857:C:C4	3.01	0.49
20:T:55:ILE:O	20:T:58:LYS:N	2.46	0.49
1:A:1199:C:C4	1:A:1200:C:C5	3.01	0.49
1:A:1141:C:C2'	1:A:1141:C:O2	2.61	0.49
6:F:67:MET:HB2	6:F:68:PRO:HD2	1.94	0.49
4:D:34:GLU:O	4:D:35:ARG:HB2	2.12	0.49
4:D:76:ARG:HH11	4:D:76:ARG:HG2	1.77	0.49
3:C:79:ARG:HG2	3:C:82:GLU:HG2	1.94	0.49
10:J:29:ARG:CB	10:J:84:GLN:HE22	2.25	0.49
18:R:43:PHE:CG	18:R:66:LEU:HD11	2.48	0.49
1:A:542:G:C5	1:A:543:A:C2	3.00	0.49
1:A:685:C:H5''	1:A:687:G:O4'	2.12	0.49
1:A:445:G:N7	1:A:466:G:O6	2.46	0.49
1:A:215:C:H2'	1:A:216:G:O4'	2.13	0.49
1:A:853:C:O2'	8:H:14:ARG:NH1	2.43	0.49
1:A:76:G:H2'	1:A:77:G:O4'	2.12	0.49
5:E:57:LYS:O	5:E:60:TYR:HB3	2.13	0.49
1:A:751:A:H2'	1:A:752:A:O4'	2.12	0.49
5:E:64:ARG:O	5:E:65:ASN:HB3	2.12	0.49
1:A:21:U:O2'	1:A:22:G:H5'	2.12	0.48
3:C:177:THR:CG2	3:C:180:ALA:HB2	2.42	0.48
19:S:51:VAL:O	19:S:57:HIS:HA	2.13	0.48
19:S:53:ASN:N	19:S:56:GLN:O	2.42	0.48
12:L:25:PRO:C	12:L:27:LEU:N	2.64	0.48
1:A:1435:G:O5'	1:A:1435:G:H8	1.96	0.48
1:A:1030:G:OP1	14:N:4:LYS:NZ	2.44	0.48
19:S:42:PRO:O	19:S:45:VAL:N	2.46	0.48
9:I:15:ALA:HA	9:I:64:THR:O	2.13	0.48
9:I:79:LEU:HD13	9:I:79:LEU:C	2.33	0.48
4:D:195:ALA:O	4:D:196:LEU:C	2.50	0.48
12:L:75:HIS:CD2	12:L:77:LEU:HB2	2.46	0.48
2:B:29:ALA:O	2:B:32:ILE:N	2.34	0.48
17:Q:84:LEU:O	17:Q:85:VAL:C	2.51	0.48
1:A:886:A:O2'	1:A:887:A:H5'	2.12	0.48
1:A:649:A:H2'	1:A:709:G:N2	2.28	0.48
18:R:76:LEU:O	18:R:78:LEU:HG	2.12	0.48
5:E:50:GLU:O	5:E:53:LEU:HB2	2.13	0.48
16:P:14:ASN:OD1	16:P:16:HIS:HE1	1.96	0.48
1:A:305:G:H2'	1:A:306:G:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:5:PRO:HB2	12:L:10:LEU:HD21	1.94	0.48
12:L:45:PRO:HB2	12:L:49:ASN:O	2.12	0.48
3:C:125:GLU:C	3:C:127:ARG:N	2.65	0.48
1:A:1230:A:H1'	9:I:70:LYS:HZ1	1.73	0.48
1:A:1270:A:H1'	1:A:1334:C:O2'	2.12	0.48
5:E:33:VAL:HB	5:E:112:LEU:HD12	1.95	0.48
13:M:98:VAL:CG2	13:M:110:ARG:HH12	2.19	0.48
19:S:49:ILE:O	19:S:60:VAL:N	2.45	0.48
9:I:79:LEU:HD23	9:I:101:PHE:O	2.12	0.48
1:A:1160:G:P	9:I:97:LYS:HZ3	2.36	0.48
1:A:469:G:O2'	1:A:470:G:OP2	2.29	0.48
1:A:627:C:H2'	1:A:628:G:C8	2.41	0.48
1:A:576:G:H2'	1:A:577:G:H8	1.77	0.48
1:A:811:U:C4	1:A:848:U:C2	3.02	0.48
4:D:185:PHE:HE2	4:D:188:LEU:HD23	1.78	0.48
12:L:34:ARG:HG3	12:L:61:THR:CG2	2.43	0.48
17:Q:97:SER:OG	17:Q:103:GLY:CA	2.61	0.48
3:C:94:LEU:HD23	3:C:94:LEU:O	2.13	0.48
1:A:1169:G:OP1	9:I:113:LYS:HE2	2.12	0.48
1:A:1357:A:O2'	1:A:1358:A:H5'	2.13	0.48
1:A:1422:C:H2'	1:A:1423:C:C6	2.49	0.48
1:A:1483:G:C3'	1:A:1483:G:C8	2.89	0.48
1:A:1216:C:H4'	1:A:1347:U:H1'	1.95	0.48
15:O:27:VAL:O	15:O:31:LEU:CD1	2.61	0.48
15:O:6:GLU:O	15:O:7:GLU:C	2.52	0.48
12:L:84:LEU:HB3	12:L:101:VAL:HB	1.96	0.48
1:A:725:G:O2'	1:A:726:G:H5'	2.13	0.48
1:A:125:A:H5''	1:A:191:G:H2'	1.96	0.48
11:K:58:PRO:HA	11:K:90:GLY:HA3	1.95	0.48
6:F:3:ARG:HE	6:F:64:GLN:NE2	2.10	0.48
15:O:18:PHE:HB2	15:O:19:PRO:CD	2.43	0.48
7:G:22:LEU:HD11	7:G:101:LEU:HD21	1.95	0.48
1:A:1192:C:H5'	1:A:1196:C:H42	1.78	0.48
1:A:1450:U:O2'	1:A:1451:A:H5'	2.12	0.48
1:A:865:G:H2'	1:A:866:G:O4'	2.12	0.48
3:C:202:ILE:CG2	3:C:204:LEU:HD21	2.44	0.48
10:J:49:VAL:HG12	10:J:50:ILE:N	2.27	0.48
1:A:198:G:H2'	1:A:199:U:C6	2.49	0.48
20:T:53:LEU:HD13	20:T:101:GLY:H	1.77	0.48
1:A:406:G:H2'	1:A:425:U:C4	2.49	0.48
1:A:486:G:H2'	1:A:487:C:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:5:ILE:O	4:D:5:ILE:HG22	2.12	0.48
2:B:31:TYR:HE1	2:B:200:ILE:CD1	2.26	0.48
1:A:1299:C:C6	14:N:16:PHE:CD2	3.01	0.48
1:A:1001:G:H2'	1:A:1002:G:C8	2.47	0.48
1:A:1245:C:O2'	1:A:1246:C:H5'	2.13	0.48
2:B:230:VAL:HG12	2:B:231:GLU:O	2.13	0.48
1:A:975:U:O2'	1:A:976:G:H5'	2.14	0.48
16:P:38:TYR:CE2	16:P:50:LYS:HD3	2.49	0.48
1:A:582:U:H2'	1:A:583:C:C6	2.48	0.48
17:Q:103:GLY:O	17:Q:104:LYS:O	2.30	0.48
3:C:154:SER:OG	3:C:196:LEU:HB3	2.14	0.48
3:C:58:GLU:HB2	3:C:65:ALA:HB2	1.96	0.48
14:N:41:ARG:C	14:N:41:ARG:HD2	2.34	0.48
19:S:11:VAL:HG22	19:S:39:THR:O	2.13	0.48
19:S:36:ARG:NH2	19:S:75:ALA:HB3	2.25	0.48
12:L:75:HIS:HD2	12:L:77:LEU:CB	2.24	0.48
1:A:352:A:C5	1:A:353:G:C8	3.01	0.48
10:J:27:ALA:HB1	10:J:74:ILE:HD13	1.96	0.48
1:A:542:G:H2'	1:A:543:A:H2	1.78	0.48
3:C:46:GLU:HB2	3:C:47:LEU:HD12	1.95	0.48
1:A:1340:U:H3'	1:A:1341:C:C5	2.48	0.48
14:N:18:VAL:HG23	14:N:19:ARG:N	2.29	0.48
7:G:93:PRO:CG	7:G:94:ARG:H	2.24	0.48
17:Q:61:GLU:HA	17:Q:71:PHE:CD1	2.49	0.48
2:B:125:PRO:C	2:B:127:ILE:N	2.65	0.48
1:A:208:C:N3	1:A:212:G:N2	2.51	0.48
1:A:193:G:O2'	1:A:194:G:H5'	2.14	0.48
1:A:254:G:O2'	1:A:255:G:H5'	2.14	0.48
3:C:139:GLN:HE22	3:C:143:GLU:HB2	1.78	0.48
19:S:23:ASN:HA	19:S:26:GLY:O	2.12	0.48
5:E:12:LEU:O	5:E:30:ALA:HA	2.14	0.48
2:B:213:LEU:O	2:B:214:ILE:C	2.51	0.48
2:B:25:ASN:HD22	2:B:26:PRO:N	2.11	0.48
1:A:190:U:O4	17:Q:62:SER:CB	2.58	0.48
1:A:168:U:C2	1:A:204:A:C2	3.01	0.48
11:K:110:ASP:C	11:K:110:ASP:OD1	2.51	0.48
9:I:48:GLU:HA	9:I:48:GLU:OE1	2.14	0.48
4:D:187:ARG:CD	4:D:188:LEU:H	2.26	0.48
14:N:44:LEU:C	14:N:44:LEU:HD12	2.33	0.48
1:A:1322:A:O2'	1:A:1323:U:H5'	2.14	0.48
20:T:94:ALA:O	20:T:95:ALA:CB	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1361:C:C5	1:A:1362:G:C8	3.01	0.48
1:A:1089:G:O2'	1:A:1090:C:H5'	2.13	0.48
9:I:13:ALA:HA	9:I:67:GLY:O	2.13	0.48
9:I:99:LEU:N	9:I:99:LEU:HD22	2.29	0.48
1:A:275:A:OP2	17:Q:95:TYR:CE2	2.67	0.48
1:A:1096:C:H1'	3:C:178:LEU:HD21	1.95	0.48
1:A:1236:C:OP1	10:J:45:ARG:HD2	2.14	0.48
3:C:34:LEU:HD23	3:C:34:LEU:C	2.33	0.48
9:I:111:ARG:HH11	9:I:111:ARG:HG3	1.78	0.48
1:A:1311:A:O2'	1:A:1312:U:H5'	2.14	0.48
1:A:1374:U:H2'	1:A:1375:G:H8	1.76	0.48
1:A:682:G:H2'	1:A:683:C:C6	2.49	0.48
5:E:115:VAL:HG11	5:E:118:ILE:HD12	1.96	0.48
5:E:45:PHE:CE2	5:E:47:LYS:HE3	2.49	0.48
1:A:1280:C:O2	1:A:1280:C:H2'	2.13	0.48
13:M:18:ALA:O	13:M:21:TYR:N	2.38	0.48
15:O:10:LYS:HD2	15:O:10:LYS:C	2.34	0.48
15:O:25:THR:O	15:O:28:GLN:HB2	2.13	0.48
2:B:115:LEU:O	2:B:118:LEU:N	2.44	0.48
2:B:48:MET:O	2:B:50:GLU:N	2.47	0.48
1:A:446:A:C1'	1:A:447:A:C8	2.97	0.48
1:A:447:A:O2'	1:A:448:A:P	2.72	0.48
1:A:844:C:H2'	1:A:845:G:O4'	2.14	0.48
3:C:21:ARG:NH2	3:C:56:ASP:OD2	2.46	0.48
5:E:81:GLU:HB3	5:E:88:LYS:NZ	2.29	0.48
1:A:620:U:O2'	1:A:621:G:H5'	2.13	0.48
2:B:172:ILE:O	2:B:175:ARG:HB3	2.14	0.48
2:B:82:ARG:O	2:B:83:MET:C	2.52	0.48
1:A:928:U:H2'	1:A:929:G:H8	1.78	0.48
7:G:72:ARG:HG2	7:G:142:GLU:OE1	2.14	0.48
1:A:799:A:HO2'	1:A:800:A:P	2.35	0.48
1:A:855:C:O2	8:H:3:THR:HG21	2.14	0.48
1:A:501:G:O2'	1:A:514:G:C4'	2.62	0.48
1:A:1036:G:H2'	1:A:1181:U:C5	2.47	0.48
1:A:1291:G:C6	1:A:1311:A:C2	3.02	0.48
1:A:1310:C:O2'	1:A:1311:A:H5'	2.14	0.48
13:M:68:GLY:O	13:M:72:ALA:N	2.41	0.48
15:O:46:HIS:C	15:O:48:LYS:N	2.66	0.48
1:A:409:G:H2'	1:A:424:G:N2	2.28	0.48
4:D:8:VAL:CG2	4:D:115:ARG:NH1	2.76	0.48
1:A:1218:A:H2'	1:A:1219:C:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1219:C:C4'	1:A:1316:G:N2	2.77	0.48
1:A:354:U:H2'	1:A:355:U:C6	2.49	0.48
1:A:97:C:P	20:T:17:ARG:HH11	2.36	0.48
2:B:19:HIS:CD2	2:B:204:ASN:ND2	2.82	0.48
10:J:12:ASP:OD1	10:J:14:LYS:N	2.47	0.48
1:A:1274:U:P	7:G:41:ARG:NH2	2.81	0.48
7:G:41:ARG:O	7:G:42:ILE:C	2.52	0.48
1:A:210:U:H5''	1:A:211:U:OP1	2.14	0.48
3:C:129:ALA:CB	3:C:132:ARG:HD2	2.43	0.48
1:A:46:U:H2'	1:A:47:G:C8	2.49	0.48
11:K:85:ARG:NE	11:K:111:ASP:OD2	2.47	0.48
1:A:254:G:H2'	1:A:255:G:H8	1.79	0.48
1:A:818:C:O5'	1:A:818:C:H6	1.97	0.48
1:A:1181:U:H4'	10:J:54:PHE:CD1	2.49	0.48
1:A:1429:C:H2'	1:A:1430:C:C6	2.40	0.48
8:H:104:ARG:O	8:H:105:ARG:C	2.52	0.48
1:A:1301:A:H5'	19:S:70:LYS:HZ2	1.78	0.48
13:M:49:THR:O	13:M:53:VAL:HG23	2.14	0.48
4:D:131:ARG:HD2	4:D:131:ARG:N	2.11	0.48
1:A:698:G:C2	1:A:761:A:H1'	2.48	0.48
4:D:96:LEU:O	4:D:99:SER:HB2	2.13	0.48
15:O:5:LYS:O	15:O:9:GLN:HG3	2.12	0.48
2:B:75:LYS:O	2:B:75:LYS:HD3	2.12	0.48
11:K:48:ILE:HG22	11:K:49:GLY:N	2.21	0.48
18:R:70:ILE:HG22	18:R:70:ILE:O	2.13	0.48
1:A:298:G:O5'	1:A:298:G:H8	1.97	0.48
3:C:130:VAL:HG11	3:C:157:ILE:HD13	1.95	0.48
1:A:95:A:H2'	1:A:96:G:C8	2.46	0.48
10:J:71:LEU:O	10:J:72:VAL:CB	2.58	0.48
1:A:490:G:C6	1:A:491:C:C4	3.02	0.48
1:A:1459:U:H2'	1:A:1460:G:O4'	2.13	0.48
1:A:1088:A:O2'	1:A:1089:G:H5'	2.14	0.48
16:P:52:ASP:O	16:P:52:ASP:OD1	2.31	0.48
1:A:1506:U:HO2'	1:A:1507:G:P	2.37	0.48
1:A:567:A:H1'	1:A:743:A:N6	2.28	0.48
12:L:7:ILE:O	12:L:8:ASN:C	2.52	0.48
1:A:1349:C:H2'	1:A:1350:C:H6	1.75	0.48
19:S:62:ILE:HD12	19:S:66:MET:CG	2.41	0.48
9:I:97:LYS:C	9:I:100:GLY:H	2.16	0.48
6:F:30:LEU:HB3	6:F:35:ALA:HB3	1.96	0.48
15:O:27:VAL:O	15:O:31:LEU:HD12	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:91:PRO:HB2	10:J:94:VAL:CG2	2.44	0.48
18:R:74:ARG:HB3	18:R:81:PHE:CZ	2.48	0.48
1:A:191:G:H1	1:A:260:U:P	2.37	0.48
1:A:1112:C:O2'	1:A:1113:A:OP2	2.24	0.48
3:C:19:GLU:O	3:C:56:ASP:HA	2.14	0.48
15:O:87:ILE:O	15:O:88:ARG:CB	2.61	0.48
1:A:981:G:H2'	1:A:982:G:C8	2.49	0.48
1:A:317:A:H2	1:A:328:G:H22	1.59	0.48
1:A:113:A:C5	1:A:236:C:C4	3.02	0.48
1:A:713:A:H2'	1:A:714:G:H8	1.79	0.48
8:H:38:ILE:HG22	8:H:39:LEU:N	2.28	0.48
13:M:121:LYS:N	13:M:121:LYS:HD2	2.29	0.48
1:A:20:C:O2'	1:A:21:U:H5'	2.15	0.47
19:S:52:TYR:HA	19:S:56:GLN:O	2.14	0.47
1:A:1102:C:OP2	9:I:9:ARG:NH2	2.46	0.47
9:I:110:GLU:OE2	9:I:113:LYS:NZ	2.45	0.47
9:I:114:TYR:CD1	9:I:114:TYR:C	2.87	0.47
20:T:53:LEU:O	20:T:57:ARG:HD3	2.14	0.47
5:E:89:ILE:HD13	5:E:90:VAL:CA	2.44	0.47
8:H:82:HIS:HD2	8:H:138:TRP:NE1	2.11	0.47
1:A:225:U:H2'	1:A:226:G:H8	1.78	0.47
1:A:1296:C:OP2	19:S:6:LYS:CD	2.62	0.47
1:A:1280:C:H1'	1:A:1281:A:C6	2.49	0.47
2:B:187:LEU:HA	2:B:201:ILE:HB	1.96	0.47
3:C:152:ILE:HG22	3:C:153:VAL:N	2.28	0.47
16:P:6:LEU:N	16:P:6:LEU:HD12	2.29	0.47
1:A:332:C:H2'	1:A:333:C:C6	2.48	0.47
1:A:982:G:N1	1:A:983:A:H1'	2.29	0.47
1:A:715:G:OP1	1:A:750:A:H1'	2.14	0.47
1:A:589:U:H2'	1:A:590:G:C8	2.48	0.47
16:P:11:SER:O	16:P:12:LYS:C	2.51	0.47
7:G:60:LYS:O	7:G:61:VAL:C	2.52	0.47
1:A:868:G:H2'	1:A:884:G:O6	2.15	0.47
17:Q:26:GLN:HG2	17:Q:37:LYS:HG3	1.96	0.47
3:C:5:ILE:HD12	3:C:5:ILE:C	2.34	0.47
20:T:91:LEU:O	20:T:93:GLU:N	2.46	0.47
5:E:9:LYS:HB2	5:E:112:LEU:HD11	1.96	0.47
19:S:33:THR:CG2	19:S:35:SER:H	2.22	0.47
1:A:1204:G:C5'	19:S:77:THR:HG21	2.44	0.47
9:I:89:ASN:HB3	9:I:92:TYR:CD1	2.49	0.47
1:A:903:G:C2	1:A:905:G:C8	3.01	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:78:GLU:HA	6:F:81:ILE:CD1	2.44	0.47
1:A:487:C:OP1	12:L:119:LYS:NZ	2.47	0.47
1:A:486:G:C4'	1:A:534:G:H4'	2.43	0.47
18:R:36:ASN:O	18:R:38:GLU:N	2.47	0.47
1:A:1055:G:H2'	1:A:1056:U:C6	2.49	0.47
2:B:176:GLU:O	2:B:180:LEU:HG	2.14	0.47
1:A:369:A:H1'	1:A:466:G:H1'	1.95	0.47
1:A:472:A:C2'	1:A:473:C:H5'	2.45	0.47
5:E:105:VAL:HB	5:E:106:PRO:CD	2.44	0.47
7:G:65:ALA:O	7:G:66:VAL:C	2.52	0.47
1:A:143:G:H2'	1:A:144:A:H8	1.79	0.47
1:A:1363:U:O2'	1:A:1364:U:OP2	2.27	0.47
1:A:45:G:H2'	1:A:46:U:H6	1.79	0.47
6:F:97:PHE:HB2	18:R:32:ARG:HH21	1.79	0.47
1:A:1186:A:H2'	1:A:1187:U:H6	1.78	0.47
2:B:54:THR:O	2:B:57:PHE:N	2.45	0.47
1:A:176:G:H4'	1:A:177:U:C5'	2.44	0.47
20:T:78:ALA:O	20:T:79:ARG:C	2.52	0.47
1:A:1163:G:O2'	1:A:1164:G:O5'	2.31	0.47
9:I:63:ILE:HG21	9:I:77:ILE:HG12	1.97	0.47
22:A:1523:KSG:O6	22:A:1523:KSG:H1	2.13	0.47
1:A:776:A:O2'	1:A:777:U:OP2	2.33	0.47
1:A:682:G:H2'	1:A:683:C:H6	1.78	0.47
1:A:765:A:H2'	1:A:766:A:O4'	2.14	0.47
1:A:424:G:HO2'	1:A:425:U:P	2.37	0.47
5:E:12:LEU:C	5:E:12:LEU:HD22	2.34	0.47
15:O:32:LEU:O	15:O:35:ARG:N	2.47	0.47
1:A:943:A:C2	1:A:947:A:N1	2.82	0.47
1:A:814:G:H4'	2:B:23:ARG:HA	1.95	0.47
18:R:29:PHE:HE1	18:R:31:LEU:HD21	1.80	0.47
19:S:41:VAL:HG23	19:S:43:GLU:HG2	1.97	0.47
11:K:30:VAL:N	11:K:43:SER:O	2.48	0.47
1:A:275:A:OP2	17:Q:95:TYR:HE2	1.98	0.47
12:L:6:THR:O	12:L:7:ILE:C	2.53	0.47
20:T:37:SER:O	20:T:38:LYS:C	2.53	0.47
1:A:938:U:O2	1:A:938:U:H2'	2.13	0.47
13:M:125:ARG:C	13:M:125:ARG:HD2	2.33	0.47
13:M:71:ARG:HG2	13:M:71:ARG:HH11	1.79	0.47
4:D:156:GLU:HG2	4:D:160:GLN:NE2	2.28	0.47
4:D:161:ASN:O	4:D:163:GLU:N	2.47	0.47
1:A:288:G:N7	1:A:289:G:H1'	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1238:A:H2	1:A:1240:G:N1	2.13	0.47
1:A:1260:U:H5'	1:A:1261:A:O4'	2.13	0.47
17:Q:57:VAL:HA	17:Q:77:VAL:HG23	1.97	0.47
2:B:184:VAL:HG23	2:B:198:ASP:OD2	2.13	0.47
5:E:153:LYS:HD2	5:E:154:GLY:O	2.15	0.47
8:H:86:ILE:HD12	8:H:133:LEU:HD21	1.92	0.47
8:H:91:ARG:HG2	12:L:7:ILE:HG21	1.97	0.47
1:A:1094:A:H61	3:C:177:THR:HA	1.79	0.47
1:A:1104:U:O2'	1:A:1105:U:H5'	2.14	0.47
1:A:1351:G:H5''	9:I:112:LYS:O	2.15	0.47
5:E:137:GLU:O	5:E:139:LEU:N	2.47	0.47
13:M:89:GLY:O	13:M:92:HIS:HB2	2.14	0.47
1:A:1476:U:O2'	1:A:1477:A:P	2.71	0.47
1:A:522:G:C4'	12:L:114:LYS:HD3	2.44	0.47
4:D:102:ASP:OD1	4:D:136:PRO:O	2.31	0.47
13:M:37:THR:HG21	13:M:39:ILE:HD11	1.97	0.47
2:B:84:GLU:OE1	2:B:216:SER:HA	2.14	0.47
2:B:105:PHE:HE2	2:B:157:ARG:HA	1.78	0.47
1:A:971:G:O2'	1:A:972:A:OP1	2.30	0.47
10:J:3:LYS:O	10:J:100:THR:HG23	2.14	0.47
11:K:72:ALA:HB1	11:K:77:MET:HG3	1.97	0.47
1:A:736:G:C4'	1:A:738:C:H5	2.27	0.47
8:H:64:LYS:C	8:H:65:TYR:CD1	2.87	0.47
22:A:1524:KSG:H5	7:G:82:GLY:HA3	1.96	0.47
1:A:170:C:C2	1:A:171:C:C5	3.02	0.47
1:A:462:G:O2'	1:A:463:A:H5'	2.13	0.47
3:C:29:TYR:C	3:C:29:TYR:CD2	2.88	0.47
8:H:41:ARG:HG2	8:H:41:ARG:O	2.12	0.47
1:A:98:G:H4'	1:A:169:C:O4'	2.15	0.47
1:A:805:G:C6	1:A:858:C:N4	2.83	0.47
17:Q:29:HIS:O	17:Q:29:HIS:ND1	2.47	0.47
3:C:179:ARG:HG3	3:C:179:ARG:HH11	1.79	0.47
20:T:23:ARG:HG2	20:T:23:ARG:NH1	2.28	0.47
8:H:137:VAL:CG1	8:H:138:TRP:N	2.77	0.47
13:M:59:TYR:O	13:M:60:VAL:O	2.32	0.47
1:A:765:A:H2'	1:A:766:A:C5'	2.45	0.47
6:F:76:ALA:O	6:F:77:ARG:C	2.53	0.47
1:A:1213:G:O2'	1:A:1214:U:H5'	2.15	0.47
12:L:55:VAL:CG1	12:L:56:ALA:N	2.77	0.47
17:Q:63:ARG:HG2	17:Q:64:PRO:O	2.14	0.47
11:K:93:GLN:NE2	11:K:96:ARG:NH2	2.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:110:ASP:HB2	18:R:88:LYS:HD2	1.96	0.47
1:A:340:A:O2'	1:A:341:C:P	2.73	0.47
10:J:56:HIS:HB2	10:J:59:SER:OG	2.15	0.47
6:F:91:VAL:HG13	18:R:72:ARG:NH2	2.29	0.47
11:K:114:VAL:HG13	11:K:114:VAL:O	2.14	0.47
12:L:33:ARG:CD	12:L:62:SER:HB3	2.45	0.47
1:A:1328:A:H4'	1:A:1329:G:O5'	2.14	0.47
1:A:1333:U:H2'	1:A:1334:C:C6	2.46	0.47
20:T:33:ILE:O	20:T:34:LYS:C	2.52	0.47
1:A:1303:C:H2'	1:A:1304:C:C5	2.50	0.47
19:S:12:ASP:H	19:S:38:SER:CB	2.24	0.47
1:A:1209:A:O3'	13:M:115:LYS:HD3	2.14	0.47
13:M:84:ILE:C	13:M:86:CYS:N	2.66	0.47
14:N:33:VAL:O	14:N:33:VAL:HG23	2.15	0.47
7:G:107:ALA:O	7:G:110:GLN:HB2	2.14	0.47
1:A:1161:A:O2'	1:A:1162:A:H5'	2.15	0.47
4:D:162:LEU:HD12	4:D:181:MET:CE	2.44	0.47
4:D:103:ASN:O	4:D:104:VAL:C	2.50	0.47
1:A:768:C:H2'	1:A:769:G:H8	1.80	0.47
1:A:674:G:O5'	1:A:674:G:H8	1.97	0.47
1:A:765:A:H2'	1:A:766:A:H5'	1.96	0.47
4:D:12:CYS:CA	4:D:19:LEU:HD12	2.45	0.47
4:D:76:ARG:HD3	4:D:207:TYR:CE2	2.49	0.47
1:A:36:G:N2	12:L:118:SER:OG	2.44	0.47
1:A:251:G:O6	1:A:262:G:O6	2.33	0.47
13:M:37:THR:O	13:M:37:THR:HG22	2.15	0.47
15:O:24:SER:HB2	15:O:27:VAL:HG23	1.96	0.47
2:B:212:GLN:C	2:B:212:GLN:CD	2.74	0.47
2:B:239:VAL:O	2:B:239:VAL:HG12	2.15	0.47
6:F:9:VAL:HG22	6:F:60:PHE:CD2	2.50	0.47
1:A:505:G:O2'	1:A:506:C:H5'	2.14	0.47
2:B:157:ARG:HG3	2:B:157:ARG:HH11	1.80	0.47
1:A:1099:C:C2'	1:A:1100:G:H5'	2.36	0.47
1:A:1239:U:O2'	1:A:1240:G:OP2	2.28	0.47
1:A:470:G:O2'	1:A:471:U:P	2.73	0.47
8:H:16:ALA:HB1	8:H:21:LYS:HB2	1.97	0.47
1:A:574:C:N3	1:A:575:U:C5	2.83	0.47
3:C:56:ASP:O	3:C:57:ILE:CG1	2.62	0.47
11:K:120:ARG:NH2	11:K:126:ARG:NH1	2.63	0.47
1:A:172:C:O2'	1:A:173:C:H5'	2.15	0.47
2:B:149:LEU:C	2:B:151:GLY:N	2.68	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:492:C:H5'	1:A:493:A:OP1	2.15	0.47
12:L:65:GLU:CD	12:L:65:GLU:N	2.68	0.47
15:O:81:LEU:O	15:O:82:ILE:C	2.51	0.47
1:A:665:C:H2'	1:A:666:G:C8	2.50	0.47
1:A:437:C:H6	1:A:437:C:O5'	1.97	0.47
1:A:1467:G:H2'	1:A:1468:C:C5'	2.34	0.47
1:A:278:A:H3'	1:A:279:C:C6	2.49	0.47
1:A:1094:A:N6	3:C:177:THR:HA	2.30	0.47
3:C:182:ILE:HG22	3:C:183:ASP:O	2.15	0.47
1:A:1230:A:H2'	1:A:1231:C:H6	1.80	0.47
5:E:91:LEU:HA	5:E:91:LEU:HD23	1.60	0.47
1:A:1203:G:O2'	19:S:77:THR:HG23	2.15	0.47
4:D:179:GLU:C	4:D:181:MET:N	2.68	0.47
1:A:526:G:P	4:D:10:ARG:HH22	2.37	0.47
5:E:13:ILE:HD12	5:E:51:VAL:CG1	2.45	0.47
1:A:1221:A:H1'	1:A:1223:G:C4	2.50	0.47
1:A:1318:C:H1'	1:A:1319:G:C6	2.50	0.47
15:O:25:THR:O	15:O:29:VAL:HG23	2.15	0.47
15:O:36:ILE:HA	15:O:59:MET:HE1	1.97	0.47
2:B:203:GLY:O	2:B:205:ASP:N	2.47	0.47
2:B:16:HIS:CE1	2:B:210:SER:HA	2.50	0.47
2:B:155:LEU:HA	2:B:155:LEU:HD23	1.76	0.47
17:Q:9:VAL:CG2	17:Q:56:VAL:HG22	2.39	0.47
14:N:17:LYS:C	14:N:17:LYS:HD3	2.35	0.47
1:A:1246:C:H2'	1:A:1247:G:H8	1.78	0.47
1:A:342:G:C2'	1:A:343:G:H5'	2.44	0.47
1:A:342:G:O2'	1:A:343:G:H5'	2.14	0.47
1:A:709:G:C4	1:A:710:C:C5	3.03	0.47
3:C:186:PHE:HA	3:C:198:VAL:O	2.14	0.47
10:J:11:PHE:CZ	10:J:65:LEU:HD21	2.50	0.47
1:A:161:G:H2'	1:A:162:G:H8	1.79	0.47
1:A:1463:U:H2'	1:A:1463:U:O2	2.14	0.47
1:A:1329:G:C8	9:I:107:ARG:HB3	2.50	0.47
1:A:1439:G:H2'	1:A:1440:G:C8	2.48	0.47
1:A:1204:G:OP1	19:S:77:THR:HG21	2.13	0.47
14:N:47:LEU:O	14:N:48:ALA:C	2.53	0.47
19:S:70:LYS:O	19:S:71:LEU:C	2.53	0.47
7:G:113:GLU:CG	7:G:119:ARG:HG2	2.30	0.47
1:A:400:U:C2	1:A:401:U:C5	3.02	0.47
1:A:524:G:H2'	1:A:525:G:O4'	2.15	0.47
4:D:65:ARG:HD2	4:D:75:PHE:CB	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:8:VAL:HG12	4:D:9:CYS:N	2.29	0.47
7:G:51:GLN:OE1	7:G:51:GLN:HA	2.14	0.47
2:B:142:LEU:HA	2:B:142:LEU:HD23	1.79	0.47
6:F:64:GLN:HG2	6:F:64:GLN:O	2.15	0.47
1:A:1128:C:O2'	1:A:1129:A:O5'	2.32	0.47
17:Q:19:VAL:O	17:Q:19:VAL:HG23	2.15	0.47
1:A:458:A:C4'	16:P:82:GLN:HE21	2.27	0.47
8:H:112:LEU:CA	8:H:134:ILE:HD12	2.45	0.47
1:A:339:U:H2'	1:A:341:C:C5	2.49	0.47
1:A:706:A:C6	1:A:708:G:C5	3.02	0.47
22:A:1524:KSG:O2	22:A:1524:KSG:H8	2.15	0.47
1:A:950:C:OP1	10:J:57:LYS:NZ	2.40	0.47
1:A:1058:C:OP1	2:B:103:THR:HG21	2.14	0.47
6:F:19:LEU:HD23	6:F:23:LYS:HG3	1.97	0.47
12:L:43:VAL:HG12	12:L:44:THR:N	2.30	0.47
12:L:104:VAL:O	12:L:105:TYR:HB2	2.14	0.47
1:A:199:U:C1'	20:T:103:GLY:HA2	2.45	0.47
20:T:59:ALA:C	20:T:63:ILE:HD12	2.36	0.47
5:E:9:LYS:HG3	5:E:112:LEU:HD21	1.96	0.47
14:N:3:ARG:HD3	14:N:6:LEU:HD12	1.96	0.47
4:D:161:ASN:O	4:D:164:ALA:N	2.48	0.47
1:A:661:U:H3	1:A:697:G:N2	2.01	0.47
4:D:10:ARG:HH12	4:D:40:PRO:HB2	1.80	0.47
5:E:13:ILE:HG22	5:E:30:ALA:HA	1.96	0.47
1:A:1485:A:H2'	1:A:1486:G:H8	1.78	0.47
18:R:87:ARG:CG	18:R:87:ARG:NH1	2.75	0.47
1:A:1260:U:H5''	1:A:1261:A:C5'	2.45	0.47
11:K:84:VAL:HG23	11:K:110:ASP:HA	1.97	0.47
9:I:3:GLN:HG3	9:I:20:ARG:NE	2.27	0.47
8:H:45:ILE:HD13	8:H:61:VAL:HG13	1.97	0.47
1:A:510:C:H2'	1:A:511:G:O4'	2.15	0.47
1:A:453:C:H2'	1:A:454:G:O4'	2.15	0.47
1:A:1363:U:O2'	1:A:1364:U:P	2.73	0.47
9:I:10:ARG:O	9:I:11:LYS:C	2.54	0.47
1:A:1253:G:H8	1:A:1253:G:O5'	1.98	0.47
1:A:502:C:O2'	1:A:503:C:OP2	2.26	0.46
1:A:1352:C:H2'	1:A:1353:G:H8	1.76	0.46
5:E:137:GLU:C	5:E:139:LEU:N	2.68	0.46
16:P:59:TRP:O	16:P:60:LEU:C	2.52	0.46
1:A:951:G:H2'	1:A:952:A:H8	1.79	0.46
1:A:1140:A:C6	1:A:1162:A:C6	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:A:1523:KSG:O2	22:A:1523:KSG:H8	2.15	0.46
1:A:17:A:H4'	5:E:17:ALA:H	1.80	0.46
1:A:432:C:O2'	1:A:433:U:H5'	2.14	0.46
4:D:43:HIS:O	4:D:44:GLY:C	2.51	0.46
4:D:65:ARG:O	4:D:69:GLY:N	2.47	0.46
17:Q:45:HIS:HB2	17:Q:69:LYS:HE2	1.96	0.46
1:A:1280:C:O2	1:A:1280:C:C2'	2.62	0.46
13:M:37:THR:HG22	13:M:39:ILE:HD11	1.97	0.46
15:O:9:GLN:O	15:O:12:ILE:HB	2.15	0.46
2:B:212:GLN:NE2	2:B:216:SER:HB3	2.30	0.46
1:A:507:A:H61	12:L:53:ARG:NH1	2.14	0.46
2:B:119:GLU:OE2	2:B:153:ARG:NH2	2.47	0.46
1:A:609:G:C5	1:A:610:U:C4	3.02	0.46
1:A:850:A:C4	1:A:852:G:C8	3.03	0.46
8:H:17:THR:OG1	8:H:18:ARG:N	2.47	0.46
1:A:1050:A:O2'	1:A:1051:G:OP2	2.33	0.46
1:A:1032:U:H4'	1:A:1033:G:OP2	2.14	0.46
2:B:134:GLU:O	2:B:138:LEU:N	2.41	0.46
1:A:1149:G:H22	1:A:1151:A:H3'	1.80	0.46
12:L:65:GLU:N	12:L:65:GLU:OE1	2.48	0.46
19:S:7:LYS:CG	19:S:7:LYS:O	2.63	0.46
1:A:23:G:O2'	1:A:24:C:H5'	2.16	0.46
1:A:803:A:N7	1:A:1507:G:C2	2.83	0.46
17:Q:90:ILE:O	17:Q:93:GLN:CB	2.61	0.46
3:C:112:SER:CB	3:C:115:LEU:HD12	2.45	0.46
3:C:174:PRO:HB2	3:C:177:THR:CG2	2.43	0.46
1:A:1169:G:H3'	1:A:1170:A:H8	1.80	0.46
20:T:42:GLN:NE2	20:T:46:GLU:OE2	2.48	0.46
20:T:79:ARG:O	20:T:80:ARG:C	2.52	0.46
8:H:44:PHE:HD1	8:H:80:ILE:HG12	1.80	0.46
1:A:311:A:H1'	1:A:349:A:C2	2.50	0.46
7:G:50:ILE:HG12	7:G:125:MET:HE2	1.95	0.46
9:I:79:LEU:CD1	9:I:83:ARG:HD2	2.45	0.46
1:A:783:G:O2'	1:A:784:G:H5'	2.15	0.46
1:A:525:G:O2'	1:A:526:G:H5'	2.15	0.46
5:E:115:VAL:CG1	5:E:116:THR:N	2.75	0.46
5:E:31:LEU:HD23	5:E:44:GLY:O	2.15	0.46
2:B:216:SER:OG	2:B:217:ARG:N	2.48	0.46
1:A:728:C:H2'	1:A:729:C:C6	2.50	0.46
18:R:65:ILE:C	18:R:67:ALA:H	2.17	0.46
2:B:108:ILE:O	2:B:111:ARG:N	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1014:G:H2'	1:A:1015:G:C8	2.39	0.46
1:A:341:C:H1'	1:A:342:G:N2	2.31	0.46
6:F:69:GLU:HA	6:F:72:VAL:CG2	2.45	0.46
1:A:161:G:O2'	1:A:162:G:H5'	2.15	0.46
1:A:1145:C:N3	1:A:1157:G:C2	2.83	0.46
1:A:1248:G:N2	1:A:1252:C:C2	2.84	0.46
1:A:997:C:O5'	1:A:997:C:H6	1.98	0.46
4:D:173:TRP:O	4:D:186:LEU:HB2	2.14	0.46
1:A:803:A:C4'	1:A:804:U:OP2	2.63	0.46
19:S:50:ALA:HA	19:S:58:VAL:O	2.15	0.46
3:C:32:LEU:HD21	3:C:59:ARG:CD	2.40	0.46
9:I:111:ARG:HD3	9:I:112:LYS:C	2.35	0.46
20:T:96:GLY:O	20:T:97:ALA:HB3	2.16	0.46
2:B:90:MET:HB3	2:B:91:PRO:HD2	1.98	0.46
1:A:225:U:O2'	16:P:23:ASP:OD2	2.33	0.46
13:M:23:TYR:CD2	13:M:70:LEU:HB3	2.51	0.46
1:A:1385:C:H2'	1:A:1386:C:C6	2.50	0.46
1:A:1494:G:H2'	1:A:1496:A:OP2	2.15	0.46
1:A:406:G:C2	1:A:425:U:C2	3.04	0.46
1:A:429:C:H2'	1:A:430:U:H6	1.80	0.46
3:C:49:SER:O	3:C:51:GLY:N	2.49	0.46
1:A:1280:C:H3'	7:G:114:ARG:HH22	1.79	0.46
1:A:355:U:O2'	1:A:356:A:H5'	2.16	0.46
1:A:604:C:H2'	1:A:605:A:O4'	2.15	0.46
17:Q:82:MET:O	17:Q:83:ASP:C	2.54	0.46
1:A:370:A:C6	1:A:371:U:C4	3.04	0.46
8:H:18:ARG:HG3	8:H:18:ARG:NH1	2.31	0.46
7:G:87:VAL:HG22	7:G:154:TYR:HD1	1.79	0.46
1:A:377:C:H2'	1:A:378:A:O4'	2.15	0.46
21:U:6:ARG:HD2	21:U:15:ARG:NH1	2.30	0.46
1:A:873:G:C6	1:A:874:C:N4	2.82	0.46
9:I:10:ARG:HE	9:I:11:LYS:HB2	1.80	0.46
1:A:1177:C:H2'	1:A:1179:G:H5'	1.97	0.46
1:A:1335:G:N2	1:A:1353:G:C4	2.84	0.46
1:A:1337:G:O2'	1:A:1338:G:H5'	2.16	0.46
9:I:108:VAL:CG1	9:I:109:VAL:N	2.74	0.46
1:A:1349:C:O2'	10:J:60:ARG:NH2	2.48	0.46
1:A:198:G:O2'	1:A:199:U:H5'	2.15	0.46
20:T:23:ARG:HH11	20:T:23:ARG:HG2	1.81	0.46
4:D:53:ASP:O	4:D:57:ARG:CD	2.62	0.46
1:A:1293:G:N7	19:S:2:PRO:HA	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:757:G:C4	1:A:758:G:C8	3.04	0.46
1:A:424:G:C4	1:A:426:A:C6	3.04	0.46
4:D:11:LEU:C	4:D:13:ARG:N	2.66	0.46
4:D:203:VAL:O	4:D:204:ILE:C	2.54	0.46
13:M:40:ASN:HD22	13:M:41:PRO:HD2	1.81	0.46
13:M:45:VAL:O	13:M:48:LEU:HB2	2.15	0.46
1:A:10:G:H5'	5:E:122:GLU:OE2	2.14	0.46
2:B:125:PRO:O	2:B:127:ILE:N	2.48	0.46
1:A:626:A:H2'	1:A:627:C:C6	2.50	0.46
1:A:458:A:H2'	1:A:459:G:O4'	2.15	0.46
7:G:65:ALA:HB1	7:G:127:ALA:HB1	1.96	0.46
1:A:1152:A:O5'	1:A:1152:A:H8	1.97	0.46
6:F:53:ALA:O	6:F:55:ASP:N	2.48	0.46
5:E:95:ALA:HB1	5:E:96:PRO:HD2	1.97	0.46
15:O:51:HIS:N	15:O:51:HIS:ND1	2.61	0.46
1:A:501:G:HO2'	1:A:514:G:C4'	2.26	0.46
19:S:30:LEU:CD2	19:S:31:ILE:H	2.29	0.46
9:I:9:ARG:CG	9:I:14:VAL:HG22	2.43	0.46
4:D:57:ARG:NH2	5:E:107:ARG:HD3	2.30	0.46
1:A:936:A:C6	1:A:937:A:N1	2.84	0.46
1:A:1160:G:P	9:I:97:LYS:NZ	2.88	0.46
13:M:59:TYR:O	13:M:63:THR:HB	2.15	0.46
4:D:100:ARG:HB3	4:D:102:ASP:OD1	2.15	0.46
1:A:1283:U:HO2'	1:A:1284:U:P	2.38	0.46
15:O:36:ILE:HG12	15:O:59:MET:HE3	1.98	0.46
15:O:75:PRO:HG2	15:O:76:GLU:H	1.81	0.46
1:A:62:G:H2'	1:A:63:U:O4'	2.15	0.46
10:J:29:ARG:HB2	10:J:84:GLN:NE2	2.26	0.46
10:J:15:THR:HG23	10:J:94:VAL:CG2	2.45	0.46
18:R:40:LEU:CB	18:R:79:LEU:HD11	2.45	0.46
7:G:23:VAL:O	7:G:27:ILE:HG13	2.15	0.46
7:G:103:TRP:CD1	7:G:137:LYS:HD3	2.50	0.46
7:G:64:GLN:HG3	7:G:68:ASN:HD21	1.80	0.46
2:B:69:LEU:HB3	2:B:162:ILE:HG12	1.98	0.46
1:A:32:G:N1	1:A:49:C:H5''	2.30	0.46
19:S:19:VAL:O	19:S:22:LEU:HB2	2.16	0.46
1:A:1231:C:H2'	1:A:1232:A:H5'	1.97	0.46
9:I:43:ALA:O	9:I:44:VAL:C	2.53	0.46
1:A:1438:A:H2'	1:A:1439:G:O4'	2.15	0.46
1:A:198:G:C6	1:A:199:U:C4	3.04	0.46
5:E:109:ILE:HD12	5:E:135:THR:CG2	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:29:ARG:O	13:M:32:GLU:N	2.49	0.46
1:A:776:A:H4'	1:A:777:U:C5'	2.44	0.46
1:A:902:C:C6	1:A:902:C:H3'	2.51	0.46
1:A:905:G:O2'	1:A:906:G:H5'	2.16	0.46
1:A:676:U:H2'	1:A:678:A:OP2	2.16	0.46
3:C:70:VAL:HG12	3:C:71:ALA:N	2.31	0.46
3:C:76:VAL:O	3:C:83:ARG:HB3	2.16	0.46
1:A:6:U:O2'	1:A:7:G:N3	2.47	0.46
1:A:1486:G:C4	1:A:1487:C:C5	3.03	0.46
18:R:19:LYS:HD2	18:R:19:LYS:N	2.31	0.46
1:A:542:G:H2'	1:A:543:A:C2	2.51	0.46
1:A:609:G:C6	1:A:610:U:C4	3.04	0.46
11:K:91:ARG:NH1	18:R:88:LYS:HE3	2.31	0.46
7:G:69:VAL:O	7:G:69:VAL:HG12	2.15	0.46
1:A:691:C:H4'	11:K:20:TYR:CD1	2.51	0.46
5:E:59:GLY:O	5:E:63:ARG:HB2	2.14	0.46
3:C:147:LYS:O	3:C:203:PHE:HD2	1.99	0.46
1:A:1169:G:C6	1:A:1170:A:C5	3.04	0.46
10:J:61:GLU:OE1	10:J:63:PHE:CZ	2.69	0.46
1:A:1438:A:C6	1:A:1439:G:C4	3.03	0.46
16:P:57:ARG:CZ	16:P:79:VAL:O	2.63	0.46
1:A:905:G:H4'	1:A:1481:A:N7	2.30	0.46
1:A:1282:G:O2'	1:A:1283:U:O5'	2.34	0.46
5:E:147:ASP:OD2	5:E:147:ASP:N	2.35	0.46
10:J:33:GLN:HG2	10:J:33:GLN:O	2.16	0.46
18:R:74:ARG:HA	18:R:79:LEU:O	2.15	0.46
2:B:101:MET:HG3	2:B:108:ILE:HD13	1.98	0.46
7:G:42:ILE:HG23	7:G:117:ALA:HA	1.98	0.46
1:A:441:G:H2'	1:A:442:G:C5'	2.46	0.46
1:A:1004:U:H2'	1:A:1005:G:C8	2.50	0.46
4:D:18:LYS:HD3	4:D:20:TYR:HE2	1.81	0.46
8:H:4:ASP:OD2	8:H:89:PRO:HD3	2.16	0.46
3:C:65:ALA:O	3:C:66:VAL:HB	2.16	0.46
1:A:1199:C:H2'	1:A:1200:C:O4'	2.16	0.46
13:M:52:GLU:O	13:M:53:VAL:C	2.54	0.46
4:D:105:VAL:HG13	4:D:110:PHE:HB2	1.98	0.46
1:A:431:C:H2'	1:A:432:C:H6	1.81	0.46
1:A:523:A:OP1	12:L:114:LYS:HE2	2.15	0.46
3:C:72:LYS:C	3:C:74:GLY:N	2.68	0.46
1:A:100:C:C5	20:T:15:ARG:NH2	2.84	0.46
11:K:48:ILE:HD11	11:K:64:ALA:CA	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:23:VAL:CG1	7:G:43:PHE:CE2	2.99	0.46
22:A:1524:KSG:H91	22:A:1524:KSG:C13	2.46	0.46
1:A:79:G:H3'	1:A:80:U:C5'	2.45	0.46
1:A:1361:C:OP1	7:G:6:ARG:O	2.34	0.46
1:A:559:G:O2'	1:A:560:G:P	2.74	0.46
8:H:85:ARG:HD3	8:H:88:LYS:HG2	1.97	0.46
1:A:517:A:O2'	1:A:518:U:P	2.74	0.46
9:I:32:ASP:O	9:I:34:ASN:N	2.49	0.46
1:A:1421:G:C2	1:A:1442:G:N3	2.84	0.46
1:A:179:G:H2'	1:A:180:A:C8	2.44	0.46
5:E:80:ILE:HD11	5:E:91:LEU:HB2	1.96	0.46
4:D:165:MET:HE2	4:D:176:LEU:HD11	1.98	0.46
6:F:1:MET:HG2	6:F:68:PRO:HA	1.97	0.46
1:A:435:A:C4	1:A:481:A:C2	3.03	0.46
1:A:495:C:HO2'	1:A:496:U:P	2.38	0.46
4:D:64:LEU:HB2	4:D:198:VAL:HG11	1.98	0.46
4:D:63:LYS:HG2	4:D:64:LEU:N	2.31	0.46
4:D:67:ILE:HG22	4:D:68:TYR:CD1	2.51	0.46
3:C:68:VAL:HG12	3:C:70:VAL:HG23	1.98	0.46
10:J:33:GLN:O	10:J:34:VAL:O	2.33	0.46
8:H:58:TYR:O	8:H:59:LEU:HD23	2.16	0.46
11:K:18:ARG:HB2	11:K:33:THR:CG2	2.46	0.46
1:A:982:G:C5	1:A:983:A:N3	2.84	0.46
8:H:69:ARG:HB2	8:H:74:PRO:HA	1.98	0.46
12:L:59:ARG:CZ	12:L:65:GLU:HG3	2.45	0.46
1:A:744:G:H2'	1:A:745:G:C5'	2.46	0.46
1:A:805:G:H2'	1:A:806:C:C6	2.51	0.46
1:A:863:G:C2	1:A:864:G:C8	3.04	0.46
1:A:868:G:O2'	1:A:869:U:P	2.73	0.46
1:A:859:G:P	12:L:12:ARG:HH22	2.38	0.46
19:S:17:GLU:HA	19:S:20:LEU:HG	1.98	0.46
19:S:17:GLU:O	19:S:21:GLU:HG3	2.16	0.46
19:S:51:VAL:HG12	19:S:52:TYR:H	1.80	0.46
3:C:35:GLU:OE2	3:C:59:ARG:NH1	2.47	0.46
20:T:61:SER:O	20:T:62:LEU:C	2.54	0.46
16:P:58:TYR:CD1	16:P:59:TRP:N	2.84	0.46
1:A:1291:G:C5	1:A:1311:A:C2	3.03	0.46
1:A:1302:C:N4	19:S:36:ARG:HG3	2.31	0.46
18:R:75:ILE:O	18:R:77:GLY:N	2.44	0.46
1:A:1501:G:O2'	1:A:1502:C:H5'	2.16	0.46
1:A:402:G:H1'	1:A:480:A:N1	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:194:LEU:CD2	4:D:194:LEU:H	2.28	0.46
4:D:64:LEU:HD12	4:D:75:PHE:HE1	1.80	0.46
1:A:1319:G:H5''	1:A:1320:G:OP1	2.15	0.46
1:A:100:C:H2'	1:A:101:G:H8	1.81	0.46
18:R:53:ARG:HG2	18:R:63:GLN:CG	2.44	0.46
8:H:111:ILE:C	8:H:134:ILE:HD12	2.36	0.46
11:K:29:ILE:HA	11:K:44:SER:HA	1.98	0.46
1:A:86:U:H2'	1:A:87:C:C6	2.50	0.46
20:T:68:LYS:HA	20:T:68:LYS:HD2	1.72	0.46
1:A:242:A:O3'	1:A:243:G:H4'	2.16	0.45
1:A:274:G:OP2	17:Q:41:LYS:NZ	2.46	0.45
9:I:69:GLY:C	9:I:73:GLN:HG3	2.36	0.45
1:A:1424:G:H4'	1:A:1425:G:N7	2.31	0.45
1:A:1302:C:H42	19:S:36:ARG:HG3	1.81	0.45
15:O:45:VAL:HG12	15:O:46:HIS:N	2.31	0.45
1:A:1315:A:C5	1:A:1316:G:C8	3.03	0.45
18:R:40:LEU:O	18:R:43:PHE:N	2.48	0.45
1:A:1055:G:C6	1:A:1087:G:C2	3.04	0.45
2:B:119:GLU:CD	2:B:153:ARG:HH22	2.20	0.45
1:A:686:A:H5''	1:A:687:G:C8	2.51	0.45
1:A:685:C:O2'	1:A:686:A:OP2	2.24	0.45
1:A:1107:G:C8	1:A:1128:C:C5	3.04	0.45
1:A:850:A:C4	1:A:852:G:N7	2.84	0.45
1:A:244:C:C2'	1:A:245:U:H5'	2.46	0.45
10:J:38:ILE:CG1	10:J:71:LEU:HB3	2.46	0.45
4:D:50:ARG:HA	4:D:51:PRO:HD3	1.82	0.45
9:I:65:VAL:HG13	9:I:65:VAL:O	2.15	0.45
10:J:61:GLU:CD	14:N:45:ARG:NH1	2.69	0.45
20:T:58:LYS:O	20:T:62:LEU:HG	2.15	0.45
7:G:111:ARG:NH1	7:G:122:HIS:HB3	2.32	0.45
7:G:113:GLU:O	7:G:119:ARG:NH1	2.45	0.45
7:G:122:HIS:HA	7:G:125:MET:HE3	1.98	0.45
1:A:16:G:C2	1:A:17:A:C4	3.05	0.45
1:A:405:G:H2'	1:A:406:G:O4'	2.16	0.45
12:L:68:ALA:HB1	12:L:100:ILE:HG13	1.98	0.45
18:R:48:GLY:HA3	18:R:82:THR:HA	1.99	0.45
1:A:953:A:O2'	1:A:954:G:P	2.74	0.45
6:F:24:GLU:O	6:F:25:ILE:C	2.53	0.45
1:A:846:C:H5'	1:A:851:A:N6	2.32	0.45
4:D:209:ARG:NH1	4:D:209:ARG:HG2	2.30	0.45
8:H:18:ARG:HG3	8:H:18:ARG:HH11	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:123:ALA:N	2:B:127:ILE:HD11	2.31	0.45
7:G:20:ASP:OD1	7:G:22:LEU:HB3	2.15	0.45
3:C:165:THR:CG2	3:C:166:GLU:N	2.79	0.45
1:A:56:A:C2	1:A:57:U:C1'	2.99	0.45
1:A:56:A:C2'	1:A:57:U:H5'	2.47	0.45
5:E:101:ILE:HG22	5:E:101:ILE:O	2.16	0.45
19:S:17:GLU:HA	19:S:20:LEU:CD2	2.47	0.45
1:A:1169:G:C6	1:A:1170:A:C6	3.04	0.45
1:A:1332:A:H2'	1:A:1333:U:C6	2.52	0.45
1:A:1350:C:H5''	9:I:114:TYR:HB2	1.99	0.45
7:G:31:MET:SD	7:G:36:LYS:HB2	2.56	0.45
5:E:89:ILE:HD13	5:E:90:VAL:C	2.36	0.45
16:P:20:VAL:HG23	16:P:35:LYS:HA	1.99	0.45
1:A:964:A:C6	1:A:1202:G:C6	3.04	0.45
14:N:22:THR:O	14:N:23:ARG:HB2	2.16	0.45
19:S:42:PRO:O	19:S:44:MET:N	2.49	0.45
19:S:44:MET:O	19:S:45:VAL:C	2.54	0.45
9:I:63:ILE:CD1	9:I:77:ILE:HG23	2.46	0.45
4:D:176:LEU:HA	4:D:183:GLY:HA2	1.96	0.45
1:A:764:A:C2	1:A:787:G:C6	3.04	0.45
1:A:787:G:H2'	1:A:788:U:O4'	2.16	0.45
4:D:23:GLY:HA3	4:D:112:VAL:HG12	1.97	0.45
5:E:115:VAL:HG11	5:E:118:ILE:CD1	2.46	0.45
6:F:45:LEU:O	6:F:46:ARG:HG2	2.16	0.45
12:L:37:CYS:HA	12:L:57:LYS:O	2.17	0.45
1:A:382:C:O2'	1:A:383:U:H5'	2.16	0.45
10:J:7:LYS:HG3	10:J:71:LEU:CD2	2.46	0.45
15:O:87:ILE:CG2	15:O:88:ARG:N	2.77	0.45
1:A:879:A:C5	1:A:880:G:H1'	2.52	0.45
12:L:59:ARG:NE	12:L:65:GLU:HG3	2.31	0.45
11:K:94:ALA:O	11:K:97:ALA:HB3	2.16	0.45
1:A:241:C:C2	1:A:280:G:C2	3.04	0.45
12:L:6:THR:O	12:L:9:GLN:HB2	2.16	0.45
1:A:1043:C:OP1	14:N:45:ARG:NH2	2.50	0.45
1:A:1331:A:H5''	9:I:121:ARG:HB2	1.99	0.45
1:A:1356:G:H5''	7:G:36:LYS:HB3	1.98	0.45
9:I:63:ILE:HG22	9:I:64:THR:N	2.32	0.45
9:I:95:LYS:O	9:I:98:PRO:HD2	2.17	0.45
1:A:718:G:H21	18:R:75:ILE:HD11	1.81	0.45
1:A:1499:G:H2'	1:A:1500:U:C6	2.51	0.45
13:M:10:PRO:HG2	13:M:10:PRO:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:24:VAL:HG12	10:J:28:ARG:HD2	1.98	0.45
1:A:1287:G:H5''	21:U:4:GLY:C	2.36	0.45
2:B:93:VAL:HG21	2:B:97:TRP:CD1	2.51	0.45
1:A:1100:G:H4'	9:I:104:ARG:NH1	2.32	0.45
7:G:42:ILE:CG2	7:G:117:ALA:HA	2.47	0.45
1:A:120:G:H2'	1:A:121:G:O4'	2.16	0.45
1:A:626:A:H2'	1:A:627:C:H6	1.82	0.45
1:A:891:A:O5'	12:L:47:LYS:NZ	2.50	0.45
6:F:4:TYR:CZ	6:F:72:VAL:HG21	2.51	0.45
1:A:820:G:C6	1:A:829:G:C5	3.05	0.45
6:F:32:ASN:HD22	6:F:32:ASN:N	2.14	0.45
15:O:61:GLY:O	15:O:64:ARG:HG2	2.16	0.45
1:A:1395:C:H2'	1:A:1396:A:H8	1.80	0.45
1:A:237:C:O2'	1:A:238:C:H5'	2.16	0.45
1:A:744:G:C2	17:Q:103:GLY:O	2.70	0.45
17:Q:29:HIS:HB2	17:Q:36:ILE:CG2	2.47	0.45
1:A:503:C:H2'	1:A:504:A:C8	2.51	0.45
3:C:173:VAL:N	3:C:174:PRO:CD	2.80	0.45
20:T:38:LYS:O	20:T:41:ILE:N	2.49	0.45
1:A:1301:A:P	19:S:5:LEU:HD21	2.57	0.45
13:M:84:ILE:HG13	13:M:86:CYS:CB	2.46	0.45
1:A:1379:A:H4'	1:A:1380:C:H5''	1.98	0.45
6:F:75:LEU:HD13	6:F:75:LEU:C	2.36	0.45
1:A:58:G:C5	1:A:59:C:C4	3.05	0.45
2:B:114:ARG:HD2	2:B:114:ARG:O	2.16	0.45
1:A:398:G:C2'	1:A:399:C:H5'	2.47	0.45
1:A:641:G:N2	1:A:734:G:C8	2.85	0.45
1:A:441:G:O2'	1:A:442:G:H5'	2.17	0.45
1:A:1127:G:N2	1:A:1129:A:N6	2.61	0.45
1:A:453:C:H2'	1:A:454:G:H8	1.81	0.45
1:A:1063:A:O3'	5:E:16:THR:OG1	2.35	0.45
5:E:16:THR:HG23	5:E:16:THR:O	2.17	0.45
1:A:281:G:C2'	1:A:282:G:H5'	2.45	0.45
1:A:79:G:H2'	1:A:80:U:H5''	1.99	0.45
1:A:491:C:H2'	1:A:492:C:H5	1.81	0.45
6:F:23:LYS:HE2	6:F:23:LYS:HB3	1.75	0.45
15:O:61:GLY:O	15:O:62:GLN:C	2.54	0.45
11:K:106:LYS:HD3	11:K:106:LYS:HA	1.84	0.45
1:A:1387:C:H2'	1:A:1388:G:C8	2.52	0.45
1:A:548:C:N1	17:Q:31:LEU:HD11	2.31	0.45
3:C:113:ALA:N	3:C:114:PRO:CD	2.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:160:ALA:C	3:C:162:GLN:H	2.19	0.45
10:J:92:THR:O	10:J:92:THR:CG2	2.65	0.45
9:I:69:GLY:O	9:I:70:LYS:C	2.53	0.45
1:A:757:G:C6	1:A:791:A:C6	3.05	0.45
1:A:758:G:O2'	1:A:759:G:H5'	2.15	0.45
4:D:68:TYR:CD2	4:D:97:LEU:HB3	2.51	0.45
17:Q:68:ARG:O	17:Q:69:LYS:CB	2.63	0.45
5:E:74:GLY:HA3	5:E:116:THR:HG22	1.99	0.45
1:A:1284:U:O2'	1:A:1285:C:OP1	2.30	0.45
1:A:1216:C:H5'	1:A:1347:U:HO2'	1.82	0.45
13:M:18:ALA:O	13:M:19:LEU:C	2.54	0.45
1:A:100:C:H2'	1:A:101:G:C8	2.52	0.45
2:B:206:ASP:O	2:B:207:ALA:HB3	2.17	0.45
1:A:190:U:C5	17:Q:72:ARG:NH2	2.85	0.45
1:A:1259:C:HO2'	1:A:1261:A:H8	1.60	0.45
11:K:66:LEU:O	11:K:67:ASP:C	2.54	0.45
9:I:3:GLN:HB3	9:I:3:GLN:HE21	1.53	0.45
1:A:845:G:HO2'	1:A:851:A:N6	2.15	0.45
8:H:63:LEU:HD23	8:H:65:TYR:OH	2.17	0.45
1:A:985:C:O2	1:A:1003:G:H1'	2.17	0.45
1:A:172:C:H2'	1:A:173:C:H6	1.82	0.45
1:A:535:U:C2	1:A:536:U:C5	3.05	0.45
1:A:1410:U:H2'	1:A:1411:A:C8	2.51	0.45
5:E:37:ARG:NH1	5:E:37:ARG:HG2	2.31	0.45
4:D:173:TRP:CD1	4:D:174:LEU:HD21	2.52	0.45
18:R:51:LEU:HA	18:R:52:PRO:HD3	1.76	0.45
1:A:802:G:H3'	1:A:803:A:H5''	1.96	0.45
1:A:803:A:C5'	1:A:804:U:OP2	2.64	0.45
1:A:1178:U:H4'	1:A:1179:G:OP2	2.16	0.45
3:C:154:SER:OG	3:C:197:GLY:N	2.47	0.45
3:C:182:ILE:HA	3:C:202:ILE:O	2.15	0.45
1:A:1335:G:N2	1:A:1353:G:N3	2.65	0.45
20:T:56:MET:O	20:T:57:ARG:C	2.55	0.45
8:H:104:ARG:NH2	8:H:138:TRP:CZ3	2.84	0.45
13:M:81:LEU:O	13:M:86:CYS:HB3	2.17	0.45
1:A:411:A:H2'	1:A:412:G:O4'	2.17	0.45
1:A:428:A:C8	1:A:429:C:C5	3.04	0.45
4:D:71:SER:O	4:D:72:GLU:C	2.54	0.45
15:O:10:LYS:CG	15:O:11:VAL:N	2.80	0.45
1:A:293:G:H4'	1:A:541:G:H4'	1.99	0.45
7:G:37:ASN:O	7:G:40:ALA:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:152:ILE:CG2	3:C:153:VAL:N	2.80	0.45
1:A:971:G:H4'	1:A:972:A:OP2	2.16	0.45
16:P:69:THR:O	16:P:73:LEU:HG	2.16	0.45
1:A:985:C:N3	1:A:1002:G:O6	2.50	0.45
1:A:702:G:C4'	11:K:117:ASN:ND2	2.78	0.45
1:A:816:C:H2'	1:A:817:U:O4'	2.17	0.45
3:C:39:ILE:C	3:C:41:GLY:N	2.69	0.45
1:A:856:G:H5'	8:H:89:PRO:HG2	1.98	0.45
1:A:805:G:C2	1:A:858:C:N3	2.85	0.45
1:A:1232:A:H5'	9:I:68:GLY:O	2.17	0.45
13:M:86:CYS:SG	13:M:88:ARG:HB3	2.57	0.45
13:M:96:LEU:HB3	13:M:97:PRO:CD	2.40	0.45
19:S:40:ILE:HG23	19:S:44:MET:SD	2.57	0.45
9:I:78:LYS:O	9:I:79:LEU:C	2.53	0.45
9:I:89:ASN:O	9:I:92:TYR:HB2	2.17	0.45
13:M:71:ARG:O	13:M:72:ALA:C	2.55	0.45
1:A:410:A:OP2	1:A:424:G:N2	2.50	0.45
1:A:413:C:H6	1:A:413:C:O5'	2.00	0.45
1:A:483:A:H4'	1:A:484:G:H5'	1.98	0.45
17:Q:43:LEU:CD1	17:Q:68:ARG:HH12	2.28	0.45
5:E:115:VAL:HG13	5:E:116:THR:N	2.32	0.45
1:A:1281:A:C5	1:A:1283:U:O2	2.70	0.45
1:A:1315:A:H2'	1:A:1316:G:O4'	2.16	0.45
1:A:61:A:H1'	1:A:62:G:O4'	2.17	0.45
10:J:29:ARG:C	10:J:84:GLN:HE22	2.19	0.45
10:J:85:LEU:O	10:J:86:MET:C	2.55	0.45
3:C:151:VAL:CG1	3:C:152:ILE:N	2.80	0.45
1:A:469:G:O2'	1:A:470:G:P	2.75	0.45
1:A:1110:G:N2	1:A:1129:A:H62	2.15	0.45
1:A:459:G:OP2	16:P:75:ARG:NH1	2.50	0.45
1:A:360:A:H2'	1:A:361:U:O2	2.16	0.45
1:A:317:A:H2'	1:A:318:C:C6	2.51	0.45
1:A:1401:A:H3'	1:A:1402:G:H8	1.82	0.45
2:B:148:TYR:N	2:B:148:TYR:HD2	2.13	0.45
1:A:753:G:C2	1:A:754:C:C6	3.05	0.45
2:B:73:THR:CG2	2:B:96:ARG:CZ	2.95	0.45
1:A:502:C:H5''	1:A:503:C:C6	2.52	0.45
12:L:42:THR:CG2	12:L:52:LEU:HB3	2.47	0.45
3:C:108:ASN:ND2	3:C:111:LEU:HG	2.31	0.45
3:C:92:ALA:C	3:C:94:LEU:N	2.70	0.45
1:A:1423:C:O2'	1:A:1424:G:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1437:C:O2'	1:A:1438:A:H5'	2.17	0.45
1:A:198:G:C5	1:A:199:U:C5	3.04	0.45
20:T:29:LYS:O	20:T:32:ALA:HB3	2.17	0.45
15:O:46:HIS:C	15:O:48:LYS:H	2.20	0.45
3:C:51:GLY:O	3:C:71:ALA:N	2.42	0.45
15:O:39:LEU:HD13	15:O:56:LEU:CA	2.46	0.45
1:A:1174:C:H2'	1:A:1175:G:O4'	2.17	0.45
1:A:1273:G:H4'	9:I:38:GLN:O	2.17	0.45
1:A:1239:U:H4'	1:A:1240:G:O5'	2.16	0.45
1:A:641:G:H2'	1:A:642:G:H8	1.81	0.45
1:A:168:U:H6	1:A:205:G:HO2'	1.62	0.45
1:A:954:G:C8	1:A:1340:U:O2	2.70	0.45
7:G:27:ILE:HG13	7:G:27:ILE:H	1.64	0.45
1:A:418:C:O2'	1:A:419:G:H5''	2.17	0.45
1:A:51:A:N6	1:A:357:G:C4'	2.80	0.45
1:A:586:A:C2	1:A:587:U:C2	3.05	0.45
2:B:89:GLY:N	2:B:226:ARG:HH22	2.14	0.45
1:A:186:C:O2'	1:A:187:C:H5'	2.17	0.45
6:F:37:VAL:HG12	6:F:39:LYS:H	1.82	0.45
21:U:5:ASP:O	21:U:8:THR:HG23	2.16	0.45
2:B:229:VAL:HG12	2:B:229:VAL:O	2.16	0.45
12:L:51:ALA:C	12:L:52:LEU:HG	2.37	0.45
3:C:101:LEU:O	3:C:101:LEU:HD22	2.17	0.45
1:A:1030:G:O2'	1:A:1031:G:H5'	2.17	0.45
14:N:29:ARG:HB3	14:N:40:CYS:HB3	1.98	0.45
19:S:36:ARG:NH2	19:S:75:ALA:O	2.50	0.45
1:A:1216:C:C2	1:A:1217:U:C5	3.05	0.45
15:O:32:LEU:HA	15:O:32:LEU:HD23	1.69	0.45
1:A:1287:G:N2	1:A:1313:G:HO2'	2.15	0.45
2:B:135:GLN:O	2:B:139:LYS:HB2	2.17	0.45
2:B:108:ILE:C	2:B:110:GLN:N	2.70	0.45
2:B:115:LEU:O	2:B:116:GLU:C	2.55	0.45
1:A:970:U:HO2'	1:A:971:G:P	2.38	0.45
13:M:57:ARG:CG	13:M:61:GLU:OE2	2.59	0.45
1:A:468:C:H2'	1:A:469:G:N7	2.32	0.45
15:O:17:ARG:NH1	15:O:17:ARG:HG3	2.27	0.45
1:A:750:A:C8	1:A:798:A:C6	3.05	0.45
17:Q:17:LYS:CA	17:Q:46:ASP:O	2.63	0.45
6:F:38:GLU:O	6:F:39:LYS:CB	2.65	0.45
4:D:173:TRP:CD2	4:D:189:PRO:HB3	2.52	0.45
1:A:561:G:C2	1:A:562:C:C6	3.05	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:7:ILE:O	12:L:11:VAL:HG23	2.17	0.44
1:A:1177:C:C3'	1:A:1178:U:C5'	2.87	0.44
10:J:49:VAL:CG1	10:J:50:ILE:N	2.79	0.44
5:E:93:PRO:HG3	8:H:105:ARG:HE	1.80	0.44
1:A:951:G:H2'	1:A:952:A:OP1	2.16	0.44
13:M:70:LEU:O	13:M:71:ARG:C	2.56	0.44
4:D:130:GLY:O	4:D:131:ARG:C	2.55	0.44
1:A:1484:U:OP1	22:A:1523:KSG:N3	2.50	0.44
4:D:10:ARG:NH1	4:D:40:PRO:CB	2.79	0.44
2:B:26:PRO:C	2:B:28:PHE:N	2.70	0.44
10:J:25:GLU:O	10:J:26:ALA:C	2.54	0.44
1:A:1313:G:HO2'	1:A:1314:A:P	2.40	0.44
1:A:726:G:H2'	1:A:727:U:H5'	1.98	0.44
18:R:19:LYS:H	18:R:19:LYS:HD2	1.82	0.44
18:R:53:ARG:NH1	18:R:58:LEU:O	2.50	0.44
2:B:44:LEU:C	2:B:46:LYS:N	2.67	0.44
1:A:653:U:H2'	1:A:654:G:C8	2.52	0.44
4:D:111:ALA:HB2	4:D:120:LEU:CD1	2.43	0.44
4:D:148:VAL:HG12	4:D:149:ALA:N	2.31	0.44
1:A:447:A:C2	1:A:448:A:C4	3.05	0.44
1:A:1122:G:HO2'	1:A:1123:C:P	2.40	0.44
1:A:10:G:OP2	5:E:121:LYS:HD2	2.16	0.44
7:G:71:PRO:O	7:G:96:GLN:HG2	2.17	0.44
6:F:40:VAL:HG22	6:F:41:GLU:H	1.80	0.44
1:A:1067:G:C5	1:A:1068:U:C4	3.05	0.44
1:A:499:G:C6	1:A:500:U:N3	2.85	0.44
1:A:548:C:O4'	17:Q:32:TYR:CD2	2.70	0.44
17:Q:97:SER:C	17:Q:98:LEU:HD12	2.37	0.44
1:A:502:C:C5	1:A:514:G:C4	3.05	0.44
3:C:154:SER:HB3	3:C:197:GLY:H	1.81	0.44
20:T:49:ALA:O	20:T:52:ALA:HB3	2.18	0.44
4:D:158:ILE:HG22	4:D:159:ARG:N	2.32	0.44
15:O:36:ILE:HD12	15:O:63:ARG:HD3	1.98	0.44
10:J:25:GLU:O	10:J:28:ARG:N	2.48	0.44
10:J:81:THR:O	10:J:85:LEU:HG	2.17	0.44
18:R:53:ARG:HD3	18:R:63:GLN:CB	2.47	0.44
3:C:131:ARG:O	3:C:134:ILE:HB	2.17	0.44
6:F:17:SER:O	6:F:18:GLN:C	2.55	0.44
5:E:87:SER:HB3	5:E:131:ILE:HD13	1.99	0.44
1:A:1308:C:H5''	21:U:12:LYS:HZ2	1.82	0.44
1:A:585:C:O2'	1:A:586:A:H5'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:164:C:O2'	1:A:165:U:H5'	2.16	0.44
1:A:174:A:H2'	1:A:175:U:C6	2.52	0.44
1:A:1196:C:H4'	1:A:1197:G:OP1	2.18	0.44
1:A:329:G:C6	1:A:330:C:N4	2.86	0.44
1:A:1401:A:H2'	1:A:1402:G:O4'	2.17	0.44
1:A:606:A:C8	1:A:607:C:C6	3.05	0.44
1:A:563:G:H2'	1:A:564:U:H6	1.83	0.44
20:T:60:GLU:CA	20:T:63:ILE:HD12	2.47	0.44
8:H:44:PHE:CE2	8:H:109:ILE:HD13	2.51	0.44
16:P:21:VAL:HG21	16:P:59:TRP:NE1	2.31	0.44
6:F:77:ARG:O	6:F:81:ILE:HG13	2.16	0.44
3:C:82:GLU:HG3	3:C:83:ARG:N	2.33	0.44
13:M:10:PRO:CB	13:M:18:ALA:HB1	2.42	0.44
1:A:353:G:C2	1:A:354:U:C6	3.05	0.44
12:L:54:LYS:C	12:L:55:VAL:HG23	2.38	0.44
1:A:447:A:HO2'	1:A:448:A:H8	1.61	0.44
1:A:204:A:C5	1:A:217:C:H4'	2.52	0.44
1:A:891:A:H4'	1:A:892:A:O5'	2.16	0.44
1:A:490:G:C5	1:A:491:C:C4	3.05	0.44
9:I:100:GLY:C	9:I:102:LEU:H	2.20	0.44
1:A:1495:G:H2'	1:A:1496:A:O4'	2.17	0.44
1:A:762:G:O2'	1:A:763:C:H5'	2.18	0.44
4:D:8:VAL:CG1	4:D:21:LEU:CB	2.96	0.44
3:C:50:ALA:O	3:C:70:VAL:CG1	2.65	0.44
9:I:126:SER:OG	9:I:127:LYS:N	2.48	0.44
1:A:1487:C:N3	1:A:1488:U:C4	2.85	0.44
2:B:13:ALA:C	2:B:15:VAL:H	2.21	0.44
1:A:1288:A:C2	1:A:1289:U:N1	2.86	0.44
2:B:115:LEU:HD21	2:B:153:ARG:CZ	2.48	0.44
1:A:550:G:C4'	1:A:551:G:OP1	2.55	0.44
18:R:45:SER:O	18:R:47:THR:N	2.51	0.44
16:P:43:LYS:HB3	16:P:48:TRP:CD1	2.51	0.44
6:F:44:GLY:O	6:F:59:TYR:HA	2.17	0.44
1:A:373:G:C2	1:A:383:U:O2	2.70	0.44
1:A:576:G:C2	1:A:577:G:C5	3.05	0.44
7:G:20:ASP:OD1	7:G:22:LEU:N	2.51	0.44
1:A:48:C:H1'	1:A:361:U:C4	2.52	0.44
3:C:29:TYR:HD2	3:C:29:TYR:C	2.20	0.44
12:L:58:VAL:O	12:L:65:GLU:HA	2.17	0.44
1:A:1268:A:H2'	1:A:1269:A:H4'	1.99	0.44
1:A:1335:G:H2'	1:A:1336:C:C6	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:176:G:N2	1:A:202:A:C4	2.86	0.44
20:T:43:LEU:O	20:T:46:GLU:N	2.49	0.44
20:T:46:GLU:CB	20:T:48:LYS:HZ2	2.28	0.44
20:T:43:LEU:CD1	20:T:52:ALA:HA	2.46	0.44
16:P:20:VAL:CG2	16:P:32:TYR:CD2	3.01	0.44
14:N:24:CYS:N	14:N:29:ARG:O	2.44	0.44
9:I:17:VAL:HG22	9:I:63:ILE:CD1	2.47	0.44
13:M:67:GLU:O	13:M:70:LEU:HB2	2.17	0.44
6:F:48:LEU:HD22	6:F:52:ILE:HD11	1.99	0.44
4:D:107:ARG:NH1	4:D:114:ARG:HH22	2.11	0.44
13:M:108:ARG:O	13:M:109:THR:C	2.54	0.44
2:B:157:ARG:HG3	2:B:157:ARG:NH1	2.33	0.44
1:A:125:A:H1'	1:A:260:U:H5'	1.99	0.44
1:A:299:A:C5	1:A:300:U:C5	3.06	0.44
1:A:636:U:O2'	1:A:637:A:H5''	2.17	0.44
1:A:637:A:P	8:H:56:LYS:NZ	2.91	0.44
1:A:1128:C:H1'	1:A:1129:A:C8	2.53	0.44
7:G:20:ASP:HB3	7:G:23:VAL:CG2	2.47	0.44
1:A:341:C:H4'	1:A:342:G:O5'	2.18	0.44
16:P:45:THR:C	16:P:47:ASP:N	2.71	0.44
1:A:78:G:C2	1:A:87:C:C2	3.06	0.44
16:P:53:VAL:O	16:P:54:GLU:C	2.56	0.44
16:P:13:HIS:C	16:P:15:PRO:CD	2.85	0.44
1:A:1079:C:O5'	1:A:1079:C:H6	2.01	0.44
1:A:1443:C:O2'	1:A:1444:C:H5'	2.17	0.44
1:A:221:C:H6	1:A:221:C:O5'	2.00	0.44
3:C:120:VAL:HG12	3:C:124:ILE:HD11	2.00	0.44
3:C:120:VAL:O	3:C:123:GLN:N	2.50	0.44
19:S:51:VAL:O	19:S:58:VAL:N	2.50	0.44
1:A:1268:A:C8	1:A:1269:A:H4'	2.53	0.44
1:A:1328:A:N1	1:A:1357:A:H5''	2.32	0.44
5:E:89:ILE:CD1	5:E:91:LEU:HG	2.47	0.44
1:A:1309:C:OP1	21:U:20:LYS:N	2.50	0.44
1:A:938:U:HO2'	1:A:939:U:P	2.40	0.44
13:M:88:ARG:HG3	13:M:98:VAL:HG13	2.00	0.44
19:S:40:ILE:O	19:S:67:VAL:HG12	2.18	0.44
9:I:17:VAL:HG11	9:I:81:ILE:HG12	2.00	0.44
13:M:8:GLU:C	13:M:9:ILE:HG13	2.38	0.44
1:A:901:A:H1'	1:A:1381:A:C2	2.53	0.44
1:A:784:G:H2'	1:A:785:U:C5	2.53	0.44
4:D:61:LYS:HD2	4:D:207:TYR:HH	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:54:ARG:HG2	15:O:58:MET:HE2	1.99	0.44
2:B:153:ARG:O	2:B:155:LEU:N	2.50	0.44
1:A:972:A:C2	1:A:973:C:C6	3.05	0.44
1:A:1192:C:C4'	1:A:1196:C:C4	3.00	0.44
1:A:186:C:C2'	1:A:187:C:H5'	2.47	0.44
6:F:65:VAL:HG23	6:F:66:GLU:N	2.31	0.44
1:A:838:A:H3'	1:A:839:G:H8	1.83	0.44
1:A:829:G:H2'	1:A:830:G:H8	1.81	0.44
11:K:79:SER:OG	11:K:106:LYS:HG2	2.18	0.44
2:B:8:LYS:HD3	2:B:9:GLU:H	1.82	0.44
1:A:240:U:H5'	1:A:241:C:OP1	2.18	0.44
1:A:741:U:H2'	1:A:742:G:O4'	2.17	0.44
1:A:745:G:H4'	17:Q:102:GLY:HA3	1.98	0.44
1:A:276:C:H1'	17:Q:38:ARG:HG3	2.00	0.44
3:C:162:GLN:O	3:C:163:ALA:O	2.36	0.44
14:N:25:VAL:HG22	14:N:25:VAL:O	2.18	0.44
1:A:1168:G:N2	1:A:1169:G:H1'	2.33	0.44
10:J:49:VAL:HG13	14:N:41:ARG:HB2	1.98	0.44
19:S:44:MET:O	19:S:47:HIS:HB2	2.17	0.44
13:M:73:GLU:O	13:M:76:ALA:HB3	2.17	0.44
12:L:102:ARG:O	12:L:121:GLY:HA3	2.18	0.44
17:Q:20:THR:HA	17:Q:43:LEU:CD2	2.48	0.44
10:J:27:ALA:C	10:J:29:ARG:H	2.20	0.44
4:D:148:VAL:CG1	4:D:149:ALA:N	2.81	0.44
1:A:972:A:N3	1:A:972:A:H2'	2.32	0.44
11:K:99:GLN:HA	11:K:105:VAL:CG2	2.48	0.44
1:A:1240:G:O2'	1:A:1241:C:H5'	2.18	0.44
10:J:32:ALA:HB2	10:J:76:ASN:HD22	1.82	0.44
1:A:447:A:O2'	1:A:448:A:H8	2.00	0.44
1:A:1051:G:C2	1:A:1052:C:C6	3.06	0.44
1:A:14:U:O2	1:A:892:A:H3'	2.18	0.44
2:B:104:ASN:OD1	2:B:107:THR:CB	2.65	0.44
1:A:982:G:C6	1:A:983:A:H1'	2.52	0.44
1:A:308:C:O2'	1:A:309:A:H5'	2.17	0.44
1:A:227:G:H2'	1:A:228:G:H8	1.81	0.44
6:F:97:PHE:HB2	18:R:32:ARG:NH2	2.33	0.44
1:A:794:C:O2'	1:A:795:C:H5'	2.18	0.44
7:G:76:ARG:HD2	7:G:89:MET:SD	2.58	0.44
4:D:55:ALA:O	4:D:58:LEU:N	2.51	0.44
5:E:53:LEU:O	5:E:56:GLN:HB2	2.18	0.44
18:R:21:LYS:O	18:R:22:VAL:C	2.56	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:664:C:O2	1:A:695:G:C2	2.70	0.44
11:K:26:ASN:O	11:K:27:ASN:HB2	2.17	0.44
1:A:240:U:O4	1:A:884:G:H1'	2.18	0.44
3:C:174:PRO:O	3:C:175:LEU:C	2.56	0.44
3:C:175:LEU:HD23	3:C:182:ILE:CD1	2.48	0.44
1:A:1168:G:H21	14:N:61:TRP:C	2.20	0.44
1:A:1330:U:H2'	1:A:1331:A:H8	1.83	0.44
1:A:180:A:N3	20:T:81:LYS:NZ	2.63	0.44
8:H:82:HIS:HB3	8:H:138:TRP:CD2	2.52	0.44
14:N:5:ALA:O	14:N:7:ILE:N	2.51	0.44
1:A:1140:A:N6	1:A:1160:G:H1'	2.32	0.44
4:D:92:VAL:O	4:D:96:LEU:HD13	2.17	0.44
12:L:110:VAL:O	12:L:122:THR:CG2	2.66	0.44
1:A:486:G:OP1	12:L:118:SER:N	2.50	0.44
3:C:74:GLY:O	3:C:75:VAL:C	2.56	0.44
5:E:11:ILE:CG2	5:E:31:LEU:HB3	2.48	0.44
15:O:11:VAL:O	15:O:15:PHE:HD1	2.01	0.44
1:A:943:A:O2'	1:A:944:G:C5'	2.64	0.44
1:A:947:A:N6	13:M:126:LYS:HD2	2.33	0.44
3:C:3:ASN:HD22	3:C:3:ASN:H	1.58	0.44
1:A:1274:U:OP1	7:G:41:ARG:NH2	2.51	0.44
1:A:441:G:C2'	1:A:442:G:H5'	2.48	0.44
19:S:25:LYS:N	19:S:25:LYS:HD2	2.25	0.44
1:A:853:C:O2'	8:H:14:ARG:HD2	2.17	0.44
1:A:631:C:O2'	1:A:632:A:H5'	2.18	0.44
7:G:23:VAL:HG12	7:G:27:ILE:HD11	1.99	0.44
18:R:35:ARG:O	18:R:37:VAL:N	2.46	0.44
1:A:158:C:O2'	1:A:159:U:H5'	2.18	0.44
1:A:491:C:C4	1:A:492:C:C4	3.06	0.44
3:C:165:THR:HG22	3:C:166:GLU:N	2.33	0.44
1:A:1388:G:O2'	1:A:1389:U:H5'	2.18	0.44
3:C:89:GLU:O	3:C:92:ALA:N	2.48	0.44
9:I:70:LYS:O	9:I:74:ILE:HG13	2.18	0.44
1:A:1140:A:C2	1:A:1163:G:C4	3.06	0.44
13:M:23:TYR:HB2	13:M:67:GLU:OE2	2.17	0.44
1:A:1212:C:O2'	1:A:1213:G:H5'	2.18	0.44
10:J:27:ALA:HB2	10:J:85:LEU:HD21	2.00	0.44
1:A:1313:G:O2'	1:A:1314:A:P	2.76	0.44
1:A:27:A:N6	1:A:542:G:O2'	2.41	0.44
17:Q:9:VAL:HG12	17:Q:10:VAL:N	2.32	0.44
14:N:14:PRO:O	14:N:16:PHE:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:6:ILE:O	10:J:71:LEU:HD13	2.17	0.44
10:J:9:ARG:HB3	10:J:9:ARG:NH1	2.33	0.44
7:G:66:VAL:HG12	7:G:67:GLU:N	2.33	0.44
2:B:149:LEU:C	2:B:151:GLY:H	2.21	0.44
1:A:928:U:H2'	1:A:929:G:C8	2.52	0.44
1:A:1194:U:O4'	1:A:1194:U:OP2	2.36	0.44
1:A:566:U:H2'	1:A:567:A:C8	2.53	0.43
3:C:121:ALA:O	3:C:122:GLU:C	2.56	0.43
3:C:179:ARG:O	3:C:180:ALA:C	2.56	0.43
19:S:30:LEU:HD23	19:S:31:ILE:H	1.83	0.43
10:J:45:ARG:NH2	14:N:36:PHE:HD2	2.15	0.43
3:C:34:LEU:CD2	3:C:34:LEU:C	2.87	0.43
9:I:32:ASP:O	9:I:33:PHE:C	2.56	0.43
5:E:9:LYS:CB	5:E:112:LEU:HD11	2.48	0.43
13:M:91:ARG:HB3	13:M:97:PRO:O	2.18	0.43
13:M:5:ALA:O	13:M:8:GLU:N	2.50	0.43
6:F:30:LEU:CD2	6:F:75:LEU:HD21	2.36	0.43
1:A:440:G:C2	1:A:475:G:C2	3.06	0.43
12:L:113:ARG:NH2	12:L:120:TYR:CE1	2.86	0.43
5:E:74:GLY:CA	5:E:116:THR:HG22	2.48	0.43
1:A:1220:A:C4	1:A:1285:C:O2'	2.71	0.43
20:T:16:HIS:O	20:T:17:ARG:C	2.55	0.43
1:A:641:G:C2	1:A:734:G:C5	3.05	0.43
14:N:17:LYS:HD3	14:N:17:LYS:O	2.17	0.43
15:O:18:PHE:CE1	15:O:21:ASP:HB2	2.53	0.43
5:E:105:VAL:O	5:E:106:PRO:C	2.54	0.43
1:A:989:G:O2'	1:A:990:G:H5'	2.18	0.43
1:A:989:G:H2'	1:A:990:G:H8	1.83	0.43
1:A:137:G:H2'	1:A:138:A:H8	1.82	0.43
1:A:1503:G:O2'	1:A:1504:G:H5'	2.17	0.43
1:A:519:A:H5''	1:A:520:C:OP2	2.18	0.43
3:C:139:GLN:CA	3:C:139:GLN:NE2	2.80	0.43
19:S:19:VAL:HG13	19:S:20:LEU:N	2.33	0.43
20:T:101:GLY:O	20:T:102:GLY:O	2.35	0.43
20:T:57:ARG:CB	20:T:57:ARG:HH11	2.31	0.43
13:M:105:THR:HB	13:M:106:ASN:H	1.47	0.43
13:M:28:ALA:O	13:M:29:ARG:C	2.55	0.43
1:A:1301:A:H5'	19:S:70:LYS:NZ	2.33	0.43
1:A:1140:A:N3	1:A:1163:G:C2	2.86	0.43
13:M:54:VAL:HG12	13:M:58:GLU:HG2	2.00	0.43
4:D:3:ARG:O	4:D:5:ILE:HG13	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:249:U:H2'	1:A:250:G:H8	1.84	0.43
15:O:15:PHE:O	15:O:16:ALA:C	2.57	0.43
20:T:15:ARG:O	20:T:16:HIS:C	2.56	0.43
2:B:16:HIS:NE2	2:B:214:ILE:HG12	2.34	0.43
3:C:3:ASN:O	3:C:4:LYS:O	2.36	0.43
1:A:635:C:N4	1:A:636:U:O4	2.51	0.43
10:J:31:GLY:O	10:J:32:ALA:O	2.35	0.43
1:A:736:G:H1'	1:A:738:C:H41	1.82	0.43
1:A:891:A:P	12:L:47:LYS:NZ	2.90	0.43
7:G:69:VAL:HG22	7:G:135:VAL:HG22	1.99	0.43
11:K:33:THR:OG1	11:K:38:ASN:N	2.52	0.43
1:A:1414:C:C2	1:A:1448:G:C2	3.06	0.43
11:K:26:ASN:O	11:K:27:ASN:CB	2.65	0.43
1:A:137:G:O2'	1:A:138:A:H5'	2.18	0.43
13:M:46:LYS:HG3	13:M:47:ASP:H	1.83	0.43
12:L:45:PRO:HG2	12:L:50:SER:CA	2.48	0.43
3:C:5:ILE:C	3:C:5:ILE:CD1	2.87	0.43
1:A:1169:G:C4	1:A:1170:A:C8	3.06	0.43
1:A:1329:G:H22	1:A:1356:G:H2'	1.83	0.43
9:I:24:GLY:CA	9:I:60:ASP:HA	2.48	0.43
16:P:74:LEU:O	16:P:79:VAL:CG2	2.65	0.43
1:A:1302:C:C4	1:A:1303:C:C4	3.06	0.43
1:A:932:G:H21	1:A:1209:A:N6	2.10	0.43
9:I:7:THR:CG2	9:I:8:GLY:H	2.21	0.43
13:M:66:LEU:C	13:M:70:LEU:HB2	2.37	0.43
6:F:35:ALA:HA	6:F:67:MET:HB3	2.00	0.43
6:F:78:GLU:CD	6:F:81:ILE:HD12	2.39	0.43
1:A:393:A:N7	1:A:531:A:O2'	2.47	0.43
4:D:98:GLU:HG2	4:D:194:LEU:HD11	1.99	0.43
1:A:248:U:H2'	1:A:249:U:C6	2.54	0.43
5:E:31:LEU:HA	5:E:31:LEU:HD23	1.78	0.43
1:A:125:A:OP2	1:A:190:U:H2'	2.18	0.43
17:Q:19:VAL:CG2	17:Q:44:ALA:HB3	2.48	0.43
1:A:1063:A:H5'	5:E:14:ARG:NH2	2.33	0.43
9:I:10:ARG:HD2	9:I:11:LYS:H	1.82	0.43
8:H:24:THR:CG2	8:H:24:THR:O	2.66	0.43
11:K:111:ASP:CG	11:K:111:ASP:O	2.57	0.43
1:A:56:A:O2'	1:A:57:U:H5'	2.17	0.43
17:Q:58:GLU:HG3	17:Q:75:ARG:HG2	2.00	0.43
1:A:1276:G:O2'	1:A:1277:G:H5'	2.18	0.43
18:R:46:GLU:H	18:R:46:GLU:CD	2.22	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:274:G:H1'	1:A:278:A:H1'	2.01	0.43
1:A:1328:A:C4	7:G:10:ARG:NH2	2.87	0.43
1:A:1334:C:H2'	1:A:1335:G:C8	2.54	0.43
9:I:44:VAL:O	9:I:45:ALA:C	2.57	0.43
5:E:78:HIS:HD2	8:H:107:LEU:HD12	1.82	0.43
1:A:1251:A:C2	1:A:1295:U:C1'	3.02	0.43
13:M:87:TYR:O	13:M:90:LEU:N	2.51	0.43
13:M:90:LEU:O	13:M:93:ARG:N	2.51	0.43
4:D:178:VAL:O	4:D:179:GLU:C	2.57	0.43
1:A:435:A:H5''	1:A:478:G:H22	1.83	0.43
1:A:1347:U:HO2'	1:A:1348:G:P	2.33	0.43
15:O:55:GLY:O	15:O:56:LEU:C	2.56	0.43
2:B:46:LYS:C	2:B:48:MET:N	2.70	0.43
17:Q:63:ARG:HG2	17:Q:64:PRO:N	2.33	0.43
11:K:108:ILE:O	11:K:109:VAL:HG23	2.18	0.43
16:P:39:TYR:CZ	16:P:41:PRO:HA	2.53	0.43
3:C:23:TYR:CG	3:C:24:ALA:N	2.87	0.43
1:A:155:A:H1'	1:A:340:A:C5	2.54	0.43
1:A:690:A:N3	11:K:31:THR:OG1	2.49	0.43
1:A:194:G:H2'	1:A:195:U:O4'	2.17	0.43
1:A:1077:G:OP2	1:A:1078:U:C5	2.71	0.43
5:E:65:ASN:O	5:E:65:ASN:OD1	2.36	0.43
11:K:24:SER:HB3	11:K:27:ASN:O	2.19	0.43
2:B:168:THR:OG1	2:B:192:SER:HB3	2.18	0.43
2:B:117:GLU:O	2:B:117:GLU:HG2	2.19	0.43
15:O:14:GLU:HA	15:O:14:GLU:OE2	2.18	0.43
17:Q:97:SER:CB	17:Q:103:GLY:N	2.82	0.43
14:N:53:LEU:HB3	14:N:56:VAL:HG21	1.99	0.43
1:A:1208:C:H5'	13:M:96:LEU:HD13	2.00	0.43
19:S:46:GLY:N	19:S:62:ILE:HG23	2.33	0.43
13:M:5:ALA:O	13:M:6:GLY:C	2.56	0.43
18:R:75:ILE:C	18:R:77:GLY:H	2.21	0.43
1:A:1136:C:P	10:J:13:HIS:HE2	2.41	0.43
1:A:674:G:C6	1:A:675:G:N1	2.86	0.43
4:D:115:ARG:O	4:D:116:GLN:C	2.56	0.43
4:D:200:GLU:O	4:D:203:VAL:HB	2.18	0.43
4:D:30:LYS:C	4:D:32:ALA:N	2.71	0.43
10:J:22:LYS:HE2	10:J:90:LEU:HD12	2.00	0.43
1:A:646:G:O2'	1:A:647:A:H5'	2.18	0.43
17:Q:81:ARG:HB2	17:Q:81:ARG:HE	1.68	0.43
1:A:8:G:O2'	1:A:9:A:OP1	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:20:TYR:CD1	8:H:65:TYR:CD2	3.06	0.43
6:F:11:ASN:C	6:F:11:ASN:OD1	2.56	0.43
15:O:87:ILE:CG2	15:O:88:ARG:H	2.30	0.43
1:A:172:C:H2'	1:A:173:C:C6	2.53	0.43
1:A:173:C:H2'	1:A:174:A:H8	1.83	0.43
6:F:2:ARG:NE	6:F:69:GLU:HG2	2.33	0.43
1:A:1409:C:H2'	1:A:1410:U:C6	2.53	0.43
6:F:27:GLN:HE21	6:F:27:GLN:HA	1.83	0.43
1:A:802:G:H2'	1:A:803:A:H5''	2.01	0.43
1:A:1180:G:H2'	1:A:1181:U:O4'	2.18	0.43
3:C:12:LEU:O	3:C:16:ARG:O	2.36	0.43
3:C:11:ARG:HG2	3:C:15:THR:OG1	2.19	0.43
3:C:179:ARG:HG3	3:C:179:ARG:NH1	2.34	0.43
3:C:35:GLU:O	3:C:36:ASP:C	2.55	0.43
1:A:912:C:C4	1:A:1327:U:C5	3.07	0.43
1:A:1331:A:P	9:I:118:LYS:NZ	2.92	0.43
10:J:48:THR:OG1	10:J:62:HIS:CD2	2.71	0.43
20:T:50:GLU:HG3	20:T:99:LEU:CD1	2.48	0.43
20:T:54:LYS:HG3	20:T:100:ILE:CD1	2.45	0.43
1:A:934:U:O2'	1:A:935:U:H5'	2.18	0.43
1:A:939:U:H2'	1:A:940:C:H5'	2.00	0.43
13:M:79:LYS:CD	13:M:83:ASP:OD2	2.66	0.43
7:G:118:VAL:O	7:G:121:ALA:N	2.51	0.43
4:D:104:VAL:HG12	4:D:108:LEU:CD1	2.35	0.43
1:A:902:C:C6	1:A:902:C:C3'	3.01	0.43
1:A:662:U:H2'	1:A:663:C:O4'	2.19	0.43
1:A:764:A:P	11:K:122:LYS:HB2	2.59	0.43
6:F:74:ASP:O	6:F:75:LEU:C	2.56	0.43
1:A:36:G:H2'	1:A:37:C:H6	1.84	0.43
1:A:400:U:H5'	4:D:122:ARG:HD2	1.99	0.43
15:O:27:VAL:CG1	15:O:31:LEU:HD11	2.48	0.43
2:B:132:LYS:HG2	2:B:135:GLN:OE1	2.19	0.43
18:R:62:GLU:O	18:R:64:ARG:N	2.52	0.43
1:A:1086:C:H5''	2:B:98:LEU:HD22	1.99	0.43
17:Q:56:VAL:O	17:Q:77:VAL:HB	2.18	0.43
9:I:47:LEU:C	9:I:49:PRO:CD	2.84	0.43
1:A:282:G:O2'	1:A:283:U:H5'	2.18	0.43
1:A:340:A:HO2'	1:A:341:C:P	2.41	0.43
1:A:79:G:C2'	1:A:80:U:H5''	2.49	0.43
1:A:258:A:H5'	20:T:74:LYS:HG3	2.01	0.43
15:O:82:ILE:O	15:O:83:GLU:C	2.55	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1507:G:C5'	1:A:1508:G:OP2	2.64	0.43
1:A:741:U:H4'	1:A:806:C:O2	2.19	0.43
3:C:122:GLU:O	3:C:125:GLU:N	2.51	0.43
19:S:39:THR:HG22	19:S:40:ILE:H	1.84	0.43
19:S:63:THR:O	19:S:66:MET:HG2	2.18	0.43
13:M:67:GLU:O	13:M:70:LEU:N	2.50	0.43
1:A:902:C:H3'	1:A:902:C:H6	1.84	0.43
1:A:762:G:H2'	1:A:763:C:H5'	2.00	0.43
1:A:676:U:H5'	1:A:781:C:C5'	2.49	0.43
4:D:78:LEU:HA	4:D:78:LEU:HD23	1.75	0.43
3:C:70:VAL:C	3:C:106:VAL:HG23	2.39	0.43
3:C:72:LYS:C	3:C:74:GLY:H	2.22	0.43
5:E:11:ILE:CG2	5:E:31:LEU:CB	2.96	0.43
13:M:15:VAL:O	13:M:16:ASP:C	2.57	0.43
15:O:12:ILE:O	15:O:13:GLN:C	2.56	0.43
1:A:945:C:OP1	1:A:947:A:H5'	2.18	0.43
20:T:11:SER:HA	20:T:13:LEU:CD1	2.49	0.43
2:B:26:PRO:C	2:B:28:PHE:H	2.22	0.43
2:B:84:GLU:HB3	2:B:219:VAL:CG2	2.44	0.43
10:J:78:ASN:O	10:J:79:ARG:C	2.57	0.43
1:A:1287:G:C2	1:A:1313:G:N3	2.87	0.43
13:M:108:ARG:O	13:M:111:LYS:N	2.50	0.43
10:J:91:PRO:HB2	10:J:94:VAL:HG23	2.01	0.43
1:A:648:G:OP1	18:R:64:ARG:HD2	2.19	0.43
2:B:113:HIS:O	2:B:114:ARG:C	2.56	0.43
2:B:51:LEU:O	2:B:55:PHE:N	2.45	0.43
1:A:458:A:C6	1:A:459:G:C4	3.07	0.43
1:A:1184:G:C4	14:N:42:ILE:HD13	2.53	0.43
9:I:84:ALA:O	9:I:87:GLN:N	2.52	0.43
3:C:142:MET:HE1	3:C:146:ALA:O	2.19	0.43
16:P:51:VAL:O	16:P:52:ASP:HB3	2.19	0.43
1:A:113:A:O2'	1:A:114:A:OP2	2.28	0.43
15:O:51:HIS:O	15:O:52:SER:C	2.56	0.43
8:H:4:ASP:OD2	8:H:89:PRO:CD	2.67	0.43
12:L:41:ARG:HB2	12:L:41:ARG:NH1	2.34	0.43
3:C:117:ALA:O	3:C:118:GLN:C	2.56	0.43
3:C:33:LEU:O	3:C:36:ASP:N	2.52	0.43
3:C:64:VAL:HB	3:C:99:VAL:CG2	2.48	0.43
9:I:14:VAL:O	9:I:65:VAL:HA	2.18	0.43
5:E:135:THR:HG22	5:E:136:MET:N	2.34	0.43
13:M:58:GLU:O	13:M:62:ASN:CB	2.67	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:393:A:N6	1:A:532:G:C5	2.87	0.43
15:O:39:LEU:O	15:O:40:SER:C	2.57	0.43
7:G:62:PHE:O	7:G:63:LYS:C	2.56	0.43
1:A:1100:G:N1	1:A:1166:G:C6	2.87	0.43
1:A:1239:U:O2'	1:A:1240:G:P	2.76	0.43
17:Q:81:ARG:HG3	17:Q:84:LEU:HD12	2.00	0.43
1:A:441:G:H2'	1:A:442:G:H5'	2.00	0.43
1:A:1113:A:C2	1:A:1129:A:C4	3.07	0.43
7:G:146:GLU:CA	7:G:149:ARG:HB2	2.45	0.43
1:A:574:C:H2'	1:A:575:U:H6	1.84	0.43
1:A:630:U:H2'	1:A:631:C:C6	2.54	0.43
7:G:23:VAL:HG13	7:G:43:PHE:CZ	2.54	0.43
1:A:419:G:C2'	1:A:420:G:H5'	2.49	0.43
1:A:419:G:N3	1:A:419:G:H3'	2.34	0.43
1:A:1024:A:H2'	1:A:1025:G:C8	2.54	0.43
1:A:1137:G:H2'	1:A:1138:G:H8	1.82	0.43
6:F:94:GLN:O	6:F:95:GLU:C	2.54	0.43
1:A:878:A:N1	1:A:879:A:C2	2.87	0.43
16:P:14:ASN:N	16:P:15:PRO:CD	2.81	0.43
2:B:95:GLN:O	2:B:96:ARG:HD2	2.18	0.43
1:A:1254:G:C4	1:A:1255:G:C8	3.07	0.43
1:A:556:A:N3	1:A:895:G:H1'	2.34	0.43
1:A:277:G:C2'	1:A:278:A:OP2	2.67	0.43
1:A:868:G:C2'	1:A:869:U:OP2	2.66	0.43
3:C:33:LEU:CD2	3:C:34:LEU:N	2.81	0.43
1:A:1267:A:O2'	1:A:1268:A:OP2	2.34	0.43
20:T:53:LEU:O	20:T:54:LYS:C	2.57	0.43
9:I:63:ILE:HD13	9:I:77:ILE:HG23	2.01	0.43
13:M:64:TRP:CB	13:M:66:LEU:HD21	2.49	0.43
1:A:698:G:H1'	1:A:761:A:C8	2.54	0.43
1:A:758:G:C2	1:A:790:C:N3	2.87	0.43
1:A:476:G:O2'	1:A:477:G:H5'	2.19	0.43
4:D:61:LYS:NZ	4:D:72:GLU:OE2	2.51	0.43
3:C:71:ALA:HA	3:C:106:VAL:HB	2.00	0.43
5:E:12:LEU:HD13	5:E:31:LEU:HB2	1.99	0.43
1:A:1222:U:C4'	1:A:1223:G:OP2	2.62	0.43
1:A:947:A:H2'	1:A:948:C:H5'	1.99	0.43
9:I:126:SER:O	9:I:128:ARG:N	2.40	0.43
10:J:34:VAL:C	10:J:36:GLY:H	2.21	0.43
18:R:53:ARG:NH1	18:R:59:SER:CA	2.75	0.43
2:B:97:TRP:CH2	2:B:176:GLU:OE2	2.71	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:47:THR:HG23	18:R:83:GLU:H	1.83	0.43
11:K:87:THR:HA	11:K:91:ARG:NH2	2.31	0.43
1:A:844:C:C5	1:A:845:G:H1'	2.53	0.43
12:L:85:ILE:HG23	12:L:98:TYR:HB3	1.99	0.43
2:B:124:SER:HB2	2:B:125:PRO:CD	2.43	0.43
1:A:1050:A:H1'	1:A:1051:G:C1'	2.49	0.43
7:G:24:THR:C	7:G:28:ASN:ND2	2.73	0.43
1:A:1184:G:C2	14:N:42:ILE:CG2	3.01	0.43
18:R:28:GLU:H	18:R:28:GLU:CD	2.21	0.43
2:B:126:GLU:HA	2:B:129:GLU:OE1	2.19	0.43
1:A:98:G:O2'	1:A:169:C:H5'	2.18	0.43
1:A:56:A:C2	1:A:57:U:N1	2.87	0.43
2:B:179:LYS:HA	8:H:72:PRO:HD3	2.01	0.43
1:A:1328:A:N9	7:G:10:ARG:NH2	2.67	0.43
9:I:42:ARG:O	9:I:44:VAL:N	2.52	0.43
16:P:20:VAL:HG22	16:P:34:GLU:O	2.19	0.43
1:A:1208:C:O2'	1:A:1209:A:P	2.77	0.43
1:A:1293:G:N2	1:A:1309:C:C2	2.87	0.43
1:A:960:U:H1'	1:A:961:A:C6	2.53	0.43
4:D:23:GLY:O	4:D:26:CYS:HB2	2.19	0.43
4:D:78:LEU:HD22	4:D:96:LEU:HD23	2.00	0.43
15:O:54:ARG:O	15:O:55:GLY:C	2.56	0.43
1:A:814:G:H2'	1:A:815:U:O4'	2.19	0.43
2:B:44:LEU:O	2:B:46:LYS:N	2.51	0.43
1:A:292:U:O2'	1:A:293:G:H5'	2.19	0.43
1:A:1111:C:H2'	1:A:1112:C:C5'	2.48	0.43
6:F:85:VAL:O	6:F:85:VAL:HG12	2.18	0.43
1:A:845:G:HO2'	1:A:851:A:H61	1.65	0.43
7:G:21:VAL:CG2	7:G:22:LEU:N	2.81	0.43
18:R:29:PHE:CE1	18:R:31:LEU:CD2	2.97	0.43
4:D:142:PRO:HA	4:D:185:PHE:HD2	1.84	0.43
1:A:109:G:H4'	1:A:110:A:O5'	2.19	0.43
12:L:59:ARG:HE	12:L:59:ARG:HB2	1.52	0.43
2:B:144:ARG:HG3	2:B:145:LEU:N	2.33	0.43
1:A:914:C:O2'	1:A:915:A:H5'	2.18	0.42
1:A:1425:G:C2'	1:A:1425:G:N3	2.82	0.42
1:A:1421:G:N2	1:A:1442:G:H1'	2.34	0.42
1:A:1208:C:H5'	13:M:96:LEU:CD1	2.49	0.42
14:N:26:ARG:HD3	14:N:43:CYS:SG	2.59	0.42
14:N:31:ARG:HA	14:N:31:ARG:HD2	1.72	0.42
13:M:65:LYS:HE2	13:M:73:GLU:HB2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:676:U:OP1	11:K:124:LYS:HE3	2.18	0.42
1:A:426:A:OP2	4:D:7:PRO:HA	2.19	0.42
1:A:526:G:O2'	1:A:527:C:H5'	2.19	0.42
3:C:50:ALA:HB1	3:C:70:VAL:CG1	2.47	0.42
5:E:12:LEU:C	5:E:12:LEU:HD13	2.38	0.42
1:A:813:G:N2	1:A:814:G:C4	2.87	0.42
2:B:187:LEU:CD1	2:B:205:ASP:HA	2.48	0.42
2:B:207:ALA:O	2:B:208:ILE:C	2.56	0.42
10:J:79:ARG:C	10:J:81:THR:N	2.71	0.42
1:A:299:A:C6	1:A:300:U:C4	3.07	0.42
17:Q:78:GLU:HG3	17:Q:78:GLU:O	2.18	0.42
11:K:21:ILE:CB	11:K:84:VAL:HG12	2.42	0.42
3:C:19:GLU:HB3	3:C:40:ARG:HH21	1.83	0.42
7:G:126:ASP:HB3	7:G:131:LYS:HG3	2.01	0.42
1:A:493:A:O4'	4:D:58:LEU:HD12	2.19	0.42
1:A:751:A:C4	1:A:752:A:C8	3.07	0.42
3:C:101:LEU:CD2	3:C:101:LEU:C	2.87	0.42
1:A:1335:G:C4	1:A:1336:C:C5	3.07	0.42
20:T:38:LYS:O	20:T:40:ALA:N	2.52	0.42
13:M:63:THR:CG2	13:M:64:TRP:N	2.82	0.42
1:A:1498:G:C4	1:A:1499:G:N7	2.87	0.42
11:K:123:LYS:O	11:K:124:LYS:C	2.57	0.42
1:A:483:A:C1'	1:A:531:A:N6	2.81	0.42
4:D:8:VAL:HG11	4:D:21:LEU:HB2	2.00	0.42
17:Q:68:ARG:HH11	17:Q:68:ARG:HG2	1.84	0.42
1:A:43:G:C6	1:A:44:C:N4	2.87	0.42
1:A:635:C:C4	1:A:636:U:O4	2.72	0.42
1:A:672:G:C5	1:A:684:G:C2	3.07	0.42
3:C:23:TYR:OH	10:J:9:ARG:HD3	2.18	0.42
1:A:1145:C:H2'	1:A:1146:C:C6	2.54	0.42
1:A:1255:G:C2	1:A:1256:G:H1'	2.54	0.42
3:C:95:THR:C	3:C:97:LYS:N	2.71	0.42
20:T:57:ARG:O	20:T:60:GLU:N	2.52	0.42
1:A:107:G:H1'	1:A:350:G:H5''	2.01	0.42
1:A:934:U:H2'	1:A:935:U:O4'	2.18	0.42
9:I:7:THR:HB	9:I:83:ARG:HH11	1.84	0.42
13:M:64:TRP:O	13:M:66:LEU:HG	2.19	0.42
13:M:67:GLU:HB3	13:M:68:GLY:H	1.51	0.42
5:E:118:ILE:HG22	5:E:119:LEU:N	2.34	0.42
1:A:1218:A:C2	1:A:1219:C:N3	2.87	0.42
1:A:1318:C:O2'	1:A:1319:G:C5	2.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:947:A:H62	13:M:126:LYS:HD2	1.84	0.42
1:A:1048:U:O5'	1:A:1172:G:N2	2.51	0.42
21:U:2:GLY:C	21:U:4:GLY:N	2.72	0.42
1:A:1101:C:OP1	9:I:104:ARG:HD2	2.19	0.42
1:A:1260:U:H5''	1:A:1261:A:H5'	2.01	0.42
1:A:446:A:N6	1:A:466:G:N9	2.68	0.42
11:K:73:MET:SD	11:K:103:LEU:HD23	2.59	0.42
11:K:91:ARG:CZ	18:R:88:LYS:CE	2.97	0.42
1:A:10:G:C2	1:A:11:A:C4	3.07	0.42
3:C:40:ARG:HG2	3:C:55:VAL:HG11	2.00	0.42
1:A:60:A:C3'	1:A:327:G:H22	2.31	0.42
1:A:109:G:H1'	1:A:110:A:N7	2.34	0.42
13:M:94:ARG:NH1	19:S:81:ARG:HD3	2.32	0.42
8:H:8:ASP:O	8:H:9:MET:C	2.56	0.42
11:K:52:GLY:HA2	11:K:55:LYS:HE2	2.01	0.42
1:A:122:G:C2	1:A:230:C:C2	3.07	0.42
12:L:64:TYR:N	12:L:64:TYR:CD1	2.87	0.42
13:M:101:GLN:OE1	13:M:101:GLN:N	2.51	0.42
12:L:41:ARG:HH11	12:L:41:ARG:CB	2.32	0.42
1:A:1094:A:N1	3:C:177:THR:CB	2.82	0.42
3:C:204:LEU:O	3:C:205:GLY:C	2.58	0.42
12:L:27:LEU:HG	12:L:28:LYS:H	1.84	0.42
9:I:111:ARG:O	9:I:119:ALA:HB2	2.19	0.42
9:I:31:GLN:HB3	9:I:35:GLU:HB3	2.00	0.42
16:P:32:TYR:HE2	16:P:35:LYS:HB2	1.83	0.42
1:A:1476:U:O2'	1:A:1477:A:N7	2.52	0.42
1:A:896:A:C2	1:A:897:A:C4	3.08	0.42
1:A:661:U:O2'	1:A:662:U:H5'	2.19	0.42
1:A:699:A:H5''	1:A:789:C:H1'	2.01	0.42
1:A:495:C:O2'	1:A:496:U:C5'	2.67	0.42
1:A:486:G:H1'	1:A:534:G:H5'	2.01	0.42
4:D:32:ALA:C	4:D:34:GLU:H	2.21	0.42
4:D:78:LEU:O	4:D:81:GLU:HB3	2.19	0.42
3:C:70:VAL:HG12	3:C:72:LYS:H	1.84	0.42
1:A:1284:U:OP2	13:M:17:VAL:HG13	2.19	0.42
2:B:13:ALA:O	2:B:15:VAL:N	2.52	0.42
1:A:1287:G:C8	1:A:1287:G:OP2	2.72	0.42
8:H:26:VAL:O	8:H:58:TYR:HD2	2.03	0.42
1:A:1274:U:O2'	1:A:1275:G:H5'	2.19	0.42
17:Q:56:VAL:CG1	17:Q:77:VAL:HB	2.47	0.42
11:K:73:MET:SD	11:K:103:LEU:CD2	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:266:A:H2'	1:A:267:C:H6	1.81	0.42
1:A:833:G:H8	1:A:849:U:O4	2.03	0.42
1:A:706:A:O3'	1:A:707:U:C6	2.72	0.42
4:D:142:PRO:HG2	4:D:187:ARG:HH11	1.84	0.42
3:C:28:GLN:O	3:C:29:TYR:C	2.57	0.42
16:P:38:TYR:HE2	16:P:50:LYS:HD3	1.84	0.42
10:J:23:ILE:N	10:J:23:ILE:HD12	2.35	0.42
1:A:1468:C:C6	1:A:1468:C:H5'	2.41	0.42
1:A:869:U:H2'	1:A:870:A:H8	1.84	0.42
8:H:92:ARG:HB3	8:H:94:TYR:CE1	2.55	0.42
12:L:8:ASN:O	12:L:9:GLN:C	2.58	0.42
3:C:188:LEU:O	3:C:189:ALA:CB	2.63	0.42
20:T:83:ARG:O	20:T:87:LYS:HG3	2.19	0.42
5:E:136:MET:O	5:E:137:GLU:C	2.56	0.42
1:A:939:U:C2	1:A:961:A:C5	3.07	0.42
1:A:898:U:O2	1:A:899:U:C2	2.73	0.42
4:D:8:VAL:HG23	4:D:115:ARG:NH1	2.34	0.42
12:L:71:PRO:HB2	12:L:120:TYR:HE2	1.84	0.42
5:E:118:ILE:CG2	5:E:119:LEU:N	2.83	0.42
9:I:126:SER:C	9:I:128:ARG:N	2.73	0.42
11:K:84:VAL:HG21	18:R:88:LYS:HD3	2.01	0.42
16:P:7:ALA:HB3	16:P:18:ARG:HB3	2.02	0.42
12:L:87:GLY:HA2	12:L:98:TYR:HA	2.01	0.42
12:L:97:ARG:HB2	12:L:98:TYR:CE1	2.55	0.42
5:E:72:GLN:O	5:E:73:ASN:CB	2.67	0.42
9:I:47:LEU:O	9:I:48:GLU:C	2.58	0.42
8:H:45:ILE:O	8:H:45:ILE:HG13	2.19	0.42
7:G:12:LEU:CD1	7:G:12:LEU:N	2.82	0.42
6:F:2:ARG:CD	6:F:69:GLU:HG2	2.50	0.42
1:A:209:U:H4'	1:A:210:U:OP2	2.19	0.42
1:A:213:C:O2'	1:A:214:C:H5'	2.20	0.42
1:A:390:G:C4	1:A:391:C:C5	3.08	0.42
1:A:184:G:O2'	1:A:185:C:H5'	2.19	0.42
6:F:37:VAL:HG12	6:F:38:GLU:N	2.35	0.42
5:E:52:PRO:O	5:E:53:LEU:C	2.56	0.42
1:A:1041:G:C6	1:A:1042:C:N3	2.87	0.42
2:B:126:GLU:HA	2:B:129:GLU:CG	2.50	0.42
3:C:190:ARG:HB3	3:C:190:ARG:CZ	2.49	0.42
3:C:139:GLN:CA	3:C:139:GLN:HE21	2.32	0.42
3:C:58:GLU:HB2	3:C:65:ALA:CB	2.50	0.42
3:C:98:ASN:OD1	3:C:98:ASN:O	2.36	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:40:LEU:O	9:I:43:ALA:HB2	2.20	0.42
20:T:32:ALA:O	20:T:33:ILE:C	2.57	0.42
1:A:440:G:N1	1:A:475:G:C6	2.87	0.42
4:D:117:ALA:O	4:D:118:ARG:C	2.58	0.42
4:D:96:LEU:O	4:D:97:LEU:C	2.57	0.42
12:L:75:HIS:CD2	12:L:77:LEU:H	2.37	0.42
1:A:246:A:H2	1:A:270:A:C6	2.38	0.42
2:B:77:ALA:O	2:B:79:ASP:N	2.52	0.42
1:A:1288:A:C2	1:A:1289:U:C2	3.08	0.42
1:A:648:G:H2'	1:A:650:G:OP1	2.19	0.42
18:R:17:SER:OG	18:R:55:ARG:HD3	2.19	0.42
3:C:134:ILE:HG23	3:C:151:VAL:CG1	2.50	0.42
1:A:671:A:HO2'	1:A:672:G:P	2.42	0.42
1:A:598:A:C2	1:A:611:G:C2	3.08	0.42
8:H:17:THR:O	8:H:20:TYR:N	2.39	0.42
11:K:33:THR:OG1	11:K:38:ASN:C	2.58	0.42
1:A:1492:C:O2'	1:A:1493:C:H5'	2.20	0.42
1:A:832:G:H3'	1:A:849:U:C4	2.55	0.42
6:F:2:ARG:O	6:F:4:TYR:CE2	2.72	0.42
8:H:60:ARG:HG3	8:H:60:ARG:NH1	2.35	0.42
14:N:57:ARG:HG2	14:N:58:LYS:N	2.34	0.42
15:O:71:GLN:O	15:O:72:ARG:C	2.56	0.42
2:B:67:THR:N	2:B:160:ASP:OD2	2.53	0.42
1:A:571:G:O2'	1:A:572:G:H5'	2.19	0.42
8:H:114:THR:C	8:H:116:LYS:N	2.72	0.42
1:A:242:A:C4	1:A:275:A:C6	3.08	0.42
1:A:558:A:N3	1:A:861:C:H1'	2.34	0.42
1:A:1179:G:OP1	1:A:1180:G:OP2	2.37	0.42
1:A:1332:A:O2'	1:A:1333:U:H5'	2.19	0.42
1:A:1208:C:N4	13:M:104:ARG:HG3	2.35	0.42
1:A:931:G:H1'	13:M:125:ARG:CB	2.50	0.42
9:I:97:LYS:N	9:I:98:PRO:CD	2.83	0.42
1:A:409:G:H22	1:A:424:G:H1'	1.85	0.42
1:A:1217:U:O2'	1:A:1218:A:H5'	2.20	0.42
2:B:43:ASP:OD1	2:B:45:GLN:N	2.53	0.42
8:H:51:VAL:CG1	8:H:52:ASP:N	2.83	0.42
18:R:85:LEU:HD12	18:R:86:VAL:H	1.85	0.42
1:A:610:U:H2'	1:A:611:G:H8	1.84	0.42
6:F:14:LEU:HA	6:F:18:GLN:NE2	2.34	0.42
7:G:75:VAL:CG2	7:G:144:MET:HB3	2.42	0.42
1:A:332:C:O2'	1:A:333:C:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:89:ARG:HG2	12:L:97:ARG:CA	2.45	0.42
1:A:282:G:H2'	1:A:283:U:H6	1.85	0.42
7:G:76:ARG:O	7:G:156:TRP:CZ3	2.71	0.42
1:A:882:C:H2'	1:A:883:U:O4'	2.20	0.42
1:A:1237:G:C2	1:A:1265:G:C2	3.07	0.42
7:G:16:LEU:HD22	7:G:16:LEU:N	2.35	0.42
1:A:1412:C:H2'	1:A:1413:C:C6	2.54	0.42
1:A:745:G:C5	1:A:746:C:C5	3.08	0.42
17:Q:29:HIS:HE1	17:Q:31:LEU:HB3	1.84	0.42
3:C:139:GLN:HE21	3:C:143:GLU:HB2	1.83	0.42
3:C:188:LEU:CD1	3:C:195:VAL:HG22	2.49	0.42
10:J:61:GLU:CD	14:N:45:ARG:HH12	2.23	0.42
13:M:8:GLU:HG3	13:M:22:ILE:HG12	2.02	0.42
1:A:1482:G:H4'	1:A:1483:G:C5'	2.50	0.42
3:C:73:PRO:O	3:C:74:GLY:O	2.38	0.42
5:E:13:ILE:HG22	5:E:30:ALA:CA	2.50	0.42
10:J:27:ALA:CB	10:J:74:ILE:HD13	2.49	0.42
18:R:55:ARG:HB3	18:R:55:ARG:NH1	2.27	0.42
1:A:1274:U:C5'	9:I:38:GLN:NE2	2.73	0.42
2:B:123:ALA:CA	2:B:127:ILE:HD11	2.50	0.42
5:E:8:GLU:OE2	5:E:63:ARG:NH2	2.52	0.42
14:N:58:LYS:HE3	14:N:58:LYS:HB3	1.81	0.42
1:A:337:C:H6	1:A:337:C:O5'	2.03	0.42
12:L:73:GLU:OE2	12:L:73:GLU:HA	2.20	0.42
1:A:1506:U:O2'	1:A:1507:G:P	2.77	0.42
1:A:569:G:O2'	1:A:857:C:OP1	2.30	0.42
1:A:1103:G:C8	1:A:1103:G:O5'	2.69	0.42
14:N:41:ARG:O	14:N:41:ARG:HD2	2.20	0.42
1:A:1432:A:O2'	1:A:1433:C:P	2.77	0.42
20:T:103:GLY:O	20:T:104:LEU:HG	2.19	0.42
1:A:1207:A:N3	1:A:1207:A:H2'	2.35	0.42
1:A:951:G:H2'	1:A:952:A:C8	2.55	0.42
1:A:1477:A:O2'	1:A:1478:A:H5'	2.20	0.42
1:A:762:G:H2'	1:A:763:C:C5'	2.50	0.42
6:F:78:GLU:OE2	6:F:81:ILE:HD12	2.20	0.42
1:A:486:G:C1'	1:A:534:G:H5'	2.50	0.42
1:A:403:G:O2'	4:D:116:GLN:HG3	2.20	0.42
1:A:7:G:C5	5:E:119:LEU:HD11	2.55	0.42
12:L:84:LEU:HA	12:L:84:LEU:HD12	1.87	0.42
2:B:108:ILE:O	2:B:110:GLN:N	2.52	0.42
6:F:21:LEU:O	6:F:24:GLU:HB3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:10:G:OP1	5:E:122:GLU:HG3	2.20	0.42
12:L:46:LYS:HG2	12:L:47:LYS:HG3	2.02	0.42
1:A:691:C:H4'	11:K:20:TYR:CE1	2.54	0.42
14:N:42:ILE:O	14:N:46:GLU:HG3	2.20	0.42
1:A:144:A:H2'	1:A:145:C:H6	1.84	0.42
11:K:29:ILE:HB	11:K:44:SER:CB	2.50	0.42
2:B:231:GLU:HB2	2:B:232:PRO:HD2	2.00	0.42
20:T:94:ALA:O	20:T:95:ALA:HB3	2.19	0.42
2:B:73:THR:CG2	2:B:169:LYS:HE3	2.50	0.42
2:B:7:VAL:C	2:B:8:LYS:HG3	2.40	0.42
1:A:1398:G:C4	1:A:1399:G:C8	3.08	0.42
1:A:745:G:H2'	1:A:746:C:H6	1.83	0.42
3:C:108:ASN:C	3:C:110:ASN:H	2.24	0.42
3:C:116:VAL:O	3:C:119:ARG:HB3	2.20	0.42
9:I:25:LYS:O	9:I:60:ASP:OD1	2.38	0.42
20:T:30:LYS:O	20:T:34:LYS:HG3	2.20	0.42
5:E:137:GLU:O	5:E:140:ARG:N	2.53	0.42
13:M:9:ILE:HD12	13:M:9:ILE:H	1.84	0.42
13:M:3:ARG:HA	13:M:9:ILE:HG23	2.01	0.42
1:A:477:G:H2'	1:A:478:G:C8	2.55	0.42
1:A:533:C:C2	1:A:534:G:C8	3.08	0.42
1:A:261:G:H2'	1:A:263:C:H5	1.85	0.42
2:B:215:LEU:O	2:B:216:SER:C	2.58	0.42
2:B:140:HIS:O	2:B:143:GLU:N	2.53	0.42
1:A:1056:U:O2'	1:A:1057:G:H5'	2.20	0.42
1:A:720:C:O2'	1:A:721:A:H5'	2.20	0.42
1:A:1101:C:P	9:I:104:ARG:HH11	2.40	0.42
7:G:42:ILE:HG23	7:G:117:ALA:CA	2.50	0.42
11:K:58:PRO:HB2	11:K:93:GLN:CG	2.43	0.42
1:A:610:U:H2'	1:A:611:G:C8	2.55	0.42
1:A:1111:C:C2	1:A:1127:G:N2	2.87	0.42
1:A:1341:C:H6	1:A:1341:C:O5'	2.03	0.42
1:A:324:C:HO2'	1:A:325:A:P	2.43	0.42
8:H:19:VAL:CG2	8:H:21:LYS:HG2	2.42	0.42
1:A:576:G:N2	1:A:577:G:C4	2.88	0.42
1:A:691:C:H2'	1:A:692:C:C6	2.55	0.42
1:A:157:A:H8	1:A:157:A:O5'	2.03	0.42
21:U:10:ARG:HA	21:U:13:ILE:HB	2.02	0.42
1:A:255:G:H2'	1:A:256:G:O4'	2.19	0.42
1:A:606:A:N7	1:A:607:C:C6	2.88	0.42
10:J:46:ARG:NH1	10:J:64:GLU:OE2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:84:ARG:HD2	8:H:85:ARG:O	2.20	0.41
12:L:26:ALA:O	12:L:27:LEU:O	2.37	0.41
2:B:222:ILE:O	2:B:225:ALA:HB3	2.20	0.41
16:P:2:VAL:HA	16:P:23:ASP:HA	2.01	0.41
9:I:100:GLY:O	9:I:101:PHE:C	2.57	0.41
1:A:1382:C:H4'	1:A:1383:C:H5''	2.01	0.41
1:A:769:G:C6	1:A:782:G:O6	2.73	0.41
1:A:415:C:C2	1:A:421:G:C2	3.08	0.41
3:C:70:VAL:HG12	3:C:72:LYS:N	2.35	0.41
1:A:1216:C:C4'	1:A:1347:U:H1'	2.50	0.41
13:M:15:VAL:CB	13:M:34:LEU:HD11	2.50	0.41
12:L:54:LYS:C	12:L:55:VAL:CG2	2.89	0.41
10:J:89:ASP:O	10:J:90:LEU:HD23	2.20	0.41
1:A:298:G:O2'	1:A:299:A:H5'	2.20	0.41
7:G:62:PHE:HD1	7:G:124:LEU:HD22	1.84	0.41
1:A:103:A:H4'	1:A:104:C:OP2	2.20	0.41
7:G:37:ASN:O	7:G:38:LEU:C	2.58	0.41
6:F:22:GLU:O	6:F:24:GLU:N	2.53	0.41
1:A:372:G:O3'	16:P:5:ARG:NH1	2.50	0.41
2:B:121:LEU:HD23	2:B:121:LEU:H	1.85	0.41
1:A:458:A:O2'	1:A:459:G:H5'	2.20	0.41
1:A:1032:U:H1'	1:A:1183:A:C8	2.55	0.41
1:A:171:C:H2'	1:A:172:C:C6	2.55	0.41
1:A:1188:G:C5	1:A:1189:G:N7	2.88	0.41
5:E:57:LYS:O	5:E:58:ALA:C	2.57	0.41
2:B:172:ILE:O	2:B:173:ALA:C	2.58	0.41
4:D:138:TYR:CD2	4:D:138:TYR:C	2.94	0.41
1:A:1387:C:O5'	1:A:1387:C:H6	2.03	0.41
3:C:190:ARG:NH1	3:C:190:ARG:HB3	2.35	0.41
1:A:1368:G:H2'	1:A:1369:G:O4'	2.20	0.41
17:Q:29:HIS:HA	17:Q:30:PRO:HD2	1.63	0.41
17:Q:90:ILE:O	17:Q:93:GLN:N	2.53	0.41
3:C:99:VAL:HG23	3:C:100:ALA:N	2.35	0.41
1:A:201:C:H2'	1:A:202:A:H5''	2.01	0.41
5:E:33:VAL:HG11	5:E:109:ILE:HA	2.02	0.41
1:A:1030:G:C2'	1:A:1031:G:H5'	2.50	0.41
1:A:107:G:H2'	1:A:108:U:O4'	2.20	0.41
1:A:1207:A:C2'	1:A:1207:A:N3	2.84	0.41
13:M:87:TYR:C	13:M:89:GLY:N	2.73	0.41
1:A:1475:G:H1'	1:A:1496:A:C2	2.54	0.41
1:A:904:G:C6	1:A:1483:G:C5	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:661:U:O2	1:A:761:A:O2'	2.32	0.41
4:D:134:ASP:C	4:D:135:LEU:HD23	2.39	0.41
5:E:31:LEU:HG	5:E:45:PHE:HD1	1.85	0.41
1:A:1175:G:N2	1:A:1176:U:C2	2.88	0.41
2:B:53:ARG:HG3	2:B:56:ARG:NH1	2.34	0.41
1:A:9:A:H5'	5:E:120:THR:O	2.20	0.41
8:H:20:TYR:HA	8:H:65:TYR:HE2	1.82	0.41
7:G:25:ALA:CA	7:G:28:ASN:ND2	2.79	0.41
1:A:18:U:C4	1:A:19:C:N4	2.88	0.41
1:A:340:A:OP2	1:A:341:C:N4	2.43	0.41
11:K:116:HIS:O	11:K:117:ASN:HB2	2.20	0.41
4:D:132:ARG:C	4:D:133:VAL:HG23	2.39	0.41
1:A:1462:C:H2'	1:A:1463:U:C6	2.39	0.41
1:A:1465:G:H2'	1:A:1466:G:O4'	2.20	0.41
19:S:28:LYS:CG	19:S:29:ARG:N	2.63	0.41
3:C:34:LEU:O	3:C:35:GLU:C	2.59	0.41
9:I:7:THR:O	9:I:80:GLY:HA2	2.21	0.41
1:A:524:G:O2'	1:A:525:G:H5'	2.19	0.41
4:D:70:ILE:HG21	4:D:74:GLN:HB2	2.03	0.41
1:A:249:U:H2'	1:A:250:G:C8	2.55	0.41
1:A:1486:G:C4	1:A:1487:C:C6	3.09	0.41
2:B:18:GLY:HA2	2:B:42:ILE:H	1.84	0.41
3:C:2:GLY:C	3:C:3:ASN:ND2	2.73	0.41
12:L:54:LYS:CD	12:L:54:LYS:N	2.82	0.41
1:A:1287:G:H8	1:A:1287:G:OP2	2.03	0.41
10:J:16:LEU:O	10:J:17:ASP:C	2.58	0.41
8:H:53:VAL:CB	8:H:58:TYR:CD1	2.96	0.41
7:G:44:TYR:O	7:G:47:CYS:N	2.54	0.41
17:Q:56:VAL:HG12	17:Q:77:VAL:CB	2.49	0.41
1:A:204:A:H1'	1:A:205:G:O4'	2.20	0.41
11:K:21:ILE:HB	11:K:84:VAL:CG1	2.44	0.41
7:G:145:ALA:O	7:G:146:GLU:HB2	2.20	0.41
1:A:451:C:H2'	1:A:452:C:C6	2.55	0.41
21:U:6:ARG:O	21:U:12:LYS:HE2	2.20	0.41
1:A:157:A:H2'	1:A:158:C:H5'	2.02	0.41
7:G:151:TYR:C	7:G:153:HIS:H	2.22	0.41
1:A:1369:G:H2'	1:A:1370:G:H8	1.85	0.41
16:P:65:GLN:HA	16:P:66:PRO:HD2	1.84	0.41
1:A:303:C:C5	1:A:304:C:H5	2.38	0.41
1:A:22:G:N2	1:A:23:G:C2	2.89	0.41
1:A:1355:U:H5''	9:I:71:SER:CB	2.48	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:51:GLU:HA	20:T:54:LYS:HE3	2.02	0.41
5:E:80:ILE:HD12	5:E:91:LEU:HB2	2.03	0.41
1:A:106:G:C2	1:A:107:G:C8	3.08	0.41
13:M:50:GLU:O	13:M:53:VAL:HB	2.21	0.41
1:A:777:U:O4	1:A:1495:G:H5'	2.19	0.41
1:A:777:U:O4	1:A:1495:G:H8	2.03	0.41
1:A:494:A:O2'	1:A:526:G:H1'	2.21	0.41
4:D:64:LEU:HD23	4:D:198:VAL:HG21	2.00	0.41
4:D:76:ARG:HG2	4:D:76:ARG:NH1	2.35	0.41
3:C:82:GLU:CG	3:C:83:ARG:N	2.83	0.41
15:O:39:LEU:HD22	15:O:43:LEU:HD11	2.02	0.41
20:T:13:LEU:C	20:T:15:ARG:N	2.72	0.41
2:B:211:ILE:O	2:B:212:GLN:C	2.58	0.41
1:A:324:C:H2'	1:A:324:C:O2	2.21	0.41
2:B:124:SER:CB	2:B:125:PRO:CD	2.98	0.41
15:O:65:ARG:O	15:O:66:LEU:C	2.57	0.41
1:A:801:C:C4	1:A:803:A:H1'	2.56	0.41
17:Q:104:LYS:HB3	17:Q:105:ALA:H	1.44	0.41
1:A:502:C:HO2'	12:L:50:SER:HB3	1.81	0.41
14:N:36:PHE:C	14:N:36:PHE:CD1	2.94	0.41
3:C:22:TRP:CH2	3:C:32:LEU:HB3	2.55	0.41
1:A:1327:U:O2	1:A:1360:A:C6	2.73	0.41
9:I:25:LYS:O	9:I:61:ALA:N	2.48	0.41
1:A:199:U:C2	1:A:200:C:C5	3.08	0.41
20:T:97:ALA:O	20:T:99:LEU:HD23	2.20	0.41
5:E:79:GLU:N	5:E:79:GLU:OE1	2.46	0.41
1:A:938:U:HO2'	1:A:1205:C:H4'	1.84	0.41
13:M:78:ILE:HA	13:M:81:LEU:HD21	2.03	0.41
13:M:81:LEU:CD2	13:M:81:LEU:H	2.33	0.41
13:M:6:GLY:O	13:M:67:GLU:HG3	2.20	0.41
1:A:1500:U:H2'	1:A:1501:G:H8	1.85	0.41
4:D:43:HIS:O	4:D:46:LYS:HB2	2.21	0.41
4:D:64:LEU:CD2	4:D:198:VAL:HG21	2.51	0.41
5:E:34:VAL:O	5:E:41:VAL:HA	2.20	0.41
15:O:36:ILE:HG22	15:O:37:ASN:N	2.36	0.41
15:O:70:LEU:HD12	15:O:78:TYR:CA	2.51	0.41
1:A:374:G:H2'	1:A:375:C:C6	2.55	0.41
5:E:144:THR:C	5:E:146:ALA:H	2.23	0.41
1:A:1083:C:O2'	1:A:1084:A:H5'	2.21	0.41
10:J:3:LYS:HG2	10:J:75:ILE:CG2	2.42	0.41
10:J:3:LYS:CG	10:J:75:ILE:HG23	2.42	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:8:GLU:O	14:N:11:LYS:HB2	2.20	0.41
1:A:985:C:O2'	1:A:986:C:H5'	2.20	0.41
11:K:38:ASN:HA	11:K:39:PRO:HD2	1.89	0.41
15:O:3:ILE:N	15:O:3:ILE:CD1	2.81	0.41
1:A:1446:A:H2'	1:A:1447:G:H5'	2.03	0.41
1:A:1397:U:H2'	1:A:1398:G:C8	2.54	0.41
1:A:552:G:N7	12:L:5:PRO:HD3	2.36	0.41
19:S:20:LEU:C	19:S:20:LEU:HD12	2.41	0.41
1:A:917:G:C5'	7:G:102:ARG:HH22	2.08	0.41
1:A:1441:C:O2'	1:A:1442:G:H5'	2.20	0.41
16:P:58:TYR:HE1	16:P:59:TRP:CZ3	2.38	0.41
14:N:27:CYS:HB3	14:N:43:CYS:SG	2.60	0.41
19:S:39:THR:HG22	19:S:40:ILE:N	2.36	0.41
13:M:64:TRP:HB2	13:M:66:LEU:HD21	2.01	0.41
1:A:758:G:N2	1:A:759:G:H1'	2.34	0.41
1:A:496:U:OP1	4:D:46:LYS:NZ	2.51	0.41
4:D:17:VAL:O	4:D:19:LEU:HG	2.21	0.41
15:O:6:GLU:CD	15:O:6:GLU:H	2.23	0.41
15:O:5:LYS:HB2	15:O:6:GLU:OE2	2.20	0.41
1:A:62:G:C5	1:A:101:G:N2	2.89	0.41
2:B:51:LEU:O	2:B:52:GLU:C	2.58	0.41
1:A:542:G:C4	1:A:543:A:H2	2.38	0.41
17:Q:81:ARG:HB2	17:Q:83:ASP:OD1	2.20	0.41
16:P:6:LEU:HD23	16:P:17:TYR:CD1	2.56	0.41
15:O:17:ARG:O	15:O:18:PHE:HB3	2.19	0.41
1:A:577:G:C6	1:A:578:G:C5	3.08	0.41
1:A:591:A:H2'	1:A:592:A:H5'	2.01	0.41
1:A:1414:C:H2'	1:A:1415:G:O4'	2.21	0.41
1:A:1448:G:O2'	1:A:1449:G:H5'	2.20	0.41
6:F:47:ARG:HH11	6:F:57:GLN:HG2	1.84	0.41
16:P:51:VAL:HG21	16:P:77:ALA:HB2	2.02	0.41
1:A:137:G:H2'	1:A:138:A:C8	2.55	0.41
13:M:46:LYS:HG3	13:M:47:ASP:N	2.36	0.41
1:A:118:G:H2'	1:A:119:U:C6	2.56	0.41
1:A:552:G:C2	1:A:861:C:N3	2.89	0.41
1:A:1095:C:O2	3:C:179:ARG:HB3	2.19	0.41
3:C:154:SER:OG	3:C:196:LEU:HA	2.20	0.41
9:I:111:ARG:O	9:I:113:LYS:HD2	2.20	0.41
1:A:1290:U:H2'	1:A:1291:G:C8	2.53	0.41
1:A:1303:C:H2'	1:A:1304:C:C6	2.56	0.41
1:A:1135:A:H5''	10:J:13:HIS:CG	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:764:A:N6	1:A:785:U:OP2	2.51	0.41
1:A:430:U:H2'	1:A:431:C:C6	2.55	0.41
4:D:202:LEU:HA	4:D:202:LEU:HD23	1.86	0.41
5:E:43:LEU:C	5:E:62:ALA:HB2	2.40	0.41
1:A:1215:G:H2'	1:A:1216:C:C6	2.56	0.41
1:A:1313:G:O2'	1:A:1314:A:H8	2.02	0.41
10:J:94:VAL:HG12	10:J:95:GLU:H	1.84	0.41
18:R:33:ASP:OD2	18:R:36:ASN:HB2	2.20	0.41
1:A:58:G:C6	1:A:59:C:N4	2.89	0.41
1:A:1239:U:H4'	1:A:1240:G:C5'	2.51	0.41
1:A:446:A:N6	1:A:466:G:C1'	2.84	0.41
11:K:70:LYS:O	11:K:71:LYS:C	2.59	0.41
1:A:418:C:H4'	1:A:419:G:C5	2.55	0.41
1:A:419:G:H2'	1:A:420:G:H5'	2.02	0.41
1:A:53:G:H2'	1:A:54:A:O4'	2.21	0.41
1:A:76:G:C4	1:A:89:G:N2	2.89	0.41
11:K:30:VAL:HG12	11:K:31:THR:N	2.34	0.41
15:O:81:LEU:C	15:O:81:LEU:CD2	2.89	0.41
2:B:8:LYS:HD3	2:B:9:GLU:N	2.36	0.41
8:H:30:ARG:O	8:H:33:GLU:HB3	2.21	0.41
1:A:275:A:H5''	1:A:276:C:H3'	2.02	0.41
1:A:1131:U:H2'	1:A:1132:C:O4'	2.21	0.41
1:A:1334:C:C1'	1:A:1354:G:N2	2.84	0.41
20:T:81:LYS:C	20:T:83:ARG:H	2.24	0.41
5:E:137:GLU:O	5:E:138:ALA:C	2.59	0.41
1:A:1476:U:H1'	1:A:1477:A:N7	2.36	0.41
1:A:768:C:H2'	1:A:769:G:C8	2.56	0.41
1:A:412:G:C6	1:A:413:C:N3	2.89	0.41
3:C:49:SER:C	3:C:51:GLY:H	2.23	0.41
17:Q:66:SER:OG	17:Q:69:LYS:HD3	2.20	0.41
1:A:923:G:N3	1:A:923:G:H2'	2.36	0.41
20:T:14:LYS:O	20:T:17:ARG:HB3	2.21	0.41
1:A:1238:A:O2'	1:A:1239:U:P	2.79	0.41
1:A:443:A:H2'	1:A:444:C:H6	1.84	0.41
11:K:32:ILE:CG2	11:K:77:MET:HE2	2.50	0.41
16:P:39:TYR:CD1	16:P:40:ASP:N	2.89	0.41
1:A:93:U:N3	1:A:94:C:C5	2.88	0.41
12:L:87:GLY:H	12:L:99:HIS:H	1.69	0.41
1:A:110:A:H2'	1:A:111:G:O4'	2.20	0.41
10:J:51:ARG:H	10:J:59:SER:CB	2.34	0.41
6:F:37:VAL:HG12	6:F:39:LYS:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:53:VAL:HG23	16:P:54:GLU:H	1.83	0.41
4:D:20:TYR:N	4:D:20:TYR:CD2	2.87	0.41
1:A:873:G:H2'	1:A:874:C:C6	2.55	0.41
21:U:10:ARG:O	21:U:11:GLY:C	2.57	0.41
2:B:81:VAL:O	2:B:82:ARG:C	2.58	0.41
1:A:1369:G:O2'	1:A:1370:G:H5'	2.21	0.41
13:M:122:LYS:O	13:M:123:ALA:HB2	2.20	0.41
12:L:11:VAL:HG13	17:Q:29:HIS:HD2	1.86	0.41
17:Q:91:ARG:O	17:Q:93:GLN:N	2.54	0.41
1:A:1036:G:N7	1:A:1181:U:H2'	2.36	0.41
3:C:154:SER:OG	3:C:196:LEU:CA	2.69	0.41
3:C:65:ALA:O	3:C:66:VAL:O	2.38	0.41
3:C:64:VAL:HG12	3:C:66:VAL:HG23	2.02	0.41
12:L:27:LEU:HG	12:L:28:LYS:N	2.36	0.41
9:I:106:ALA:O	9:I:108:VAL:HG23	2.21	0.41
10:J:62:HIS:HB3	14:N:59:ALA:HB3	2.03	0.41
20:T:42:GLN:HE22	20:T:46:GLU:CG	2.34	0.41
8:H:44:PHE:CD1	8:H:80:ILE:HG12	2.56	0.41
16:P:56:ALA:O	16:P:58:TYR:N	2.54	0.41
1:A:939:U:H2'	1:A:940:C:O4'	2.21	0.41
19:S:5:LEU:HA	19:S:5:LEU:HD23	1.80	0.41
13:M:66:LEU:O	13:M:70:LEU:N	2.54	0.41
1:A:1497:A:H2'	1:A:1498:G:H5'	2.02	0.41
11:K:124:LYS:HB3	11:K:125:PHE:HD1	1.85	0.41
6:F:74:ASP:O	6:F:76:ALA:N	2.54	0.41
4:D:64:LEU:CD2	4:D:198:VAL:HG11	2.41	0.41
3:C:79:ARG:O	3:C:81:GLY:N	2.54	0.41
1:A:248:U:C2	1:A:249:U:C5	3.08	0.41
1:A:261:G:H4'	17:Q:65:ILE:O	2.21	0.41
1:A:1282:G:C2'	1:A:1283:U:OP2	2.68	0.41
2:B:189:ASP:HB3	2:B:203:GLY:O	2.21	0.41
1:A:1047:G:H4'	1:A:1048:U:OP1	2.20	0.41
1:A:1289:U:H5'	13:M:109:THR:HG21	2.03	0.41
18:R:36:ASN:HD22	18:R:38:GLU:HG2	1.82	0.41
16:P:1:MET:O	16:P:24:ALA:CB	2.65	0.41
1:A:732:C:H4'	1:A:733:C:O5'	2.21	0.41
1:A:67:G:H4'	1:A:168:U:C4	2.56	0.41
1:A:168:U:H1'	1:A:204:A:C6	2.56	0.41
1:A:216:G:O2'	1:A:217:C:H5'	2.21	0.41
14:N:12:ARG:O	14:N:14:PRO:HD3	2.21	0.41
1:A:53:G:H2'	1:A:54:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1023:U:H2'	1:A:1024:A:C8	2.56	0.41
1:A:982:G:H8	1:A:982:G:O5'	2.03	0.41
1:A:677:G:H1'	22:A:1524:KSG:C6	2.50	0.41
1:A:362:C:HO2'	1:A:363:U:P	2.44	0.41
17:Q:86:GLU:O	17:Q:87:LYS:O	2.39	0.41
7:G:76:ARG:HD2	7:G:89:MET:CE	2.51	0.41
15:O:82:ILE:HG22	15:O:83:GLU:N	2.36	0.41
1:A:754:C:H1'	1:A:877:C:H42	1.86	0.41
1:A:137:G:C2	1:A:218:U:C2	3.09	0.41
1:A:395:G:H2'	1:A:396:C:C6	2.55	0.41
1:A:115:C:H5'	1:A:116:G:OP1	2.21	0.41
17:Q:97:SER:O	17:Q:98:LEU:C	2.59	0.41
1:A:512:C:H41	12:L:49:ASN:CG	2.24	0.41
1:A:1179:G:C2'	1:A:1180:G:H5'	2.51	0.41
3:C:121:ALA:O	3:C:124:ILE:N	2.54	0.41
3:C:188:LEU:HD11	3:C:195:VAL:CG2	2.49	0.41
5:E:33:VAL:HG21	5:E:108:ALA:HB1	2.03	0.41
5:E:78:HIS:CD2	5:E:143:ARG:O	2.74	0.41
16:P:56:ALA:O	16:P:57:ARG:C	2.60	0.41
1:A:1140:A:H4'	1:A:1141:C:O5'	2.21	0.41
1:A:905:G:N3	1:A:906:G:C8	2.89	0.41
1:A:1135:A:C4'	10:J:13:HIS:HD2	2.34	0.41
17:Q:68:ARG:H	17:Q:70:ARG:NH1	2.19	0.41
9:I:127:LYS:CD	9:I:127:LYS:N	2.84	0.41
2:B:236:TYR:HD2	2:B:239:VAL:HG21	1.86	0.41
5:E:144:THR:CB	5:E:146:ALA:H	2.34	0.41
5:E:148:VAL:O	5:E:151:LEU:N	2.45	0.41
1:A:466:G:H2'	1:A:467:A:N7	2.36	0.41
1:A:639:A:C2	1:A:738:C:C4	3.09	0.41
8:H:20:TYR:N	8:H:20:TYR:CD2	2.89	0.41
1:A:372:G:OP2	16:P:67:THR:HG21	2.21	0.41
1:A:626:A:C5	8:H:115:SER:HA	2.56	0.41
1:A:80:U:O2	1:A:83:U:H5	2.04	0.41
17:Q:8:GLY:CA	17:Q:22:LEU:O	2.69	0.41
1:A:1228:C:H2'	1:A:1229:U:C6	2.53	0.41
2:B:12:GLU:OE1	2:B:12:GLU:CA	2.67	0.41
6:F:55:ASP:HA	6:F:56:PRO:HD2	1.83	0.41
2:B:57:PHE:CE1	2:B:199:TYR:CE1	3.09	0.41
1:A:606:A:C8	1:A:607:C:C5	3.08	0.41
16:P:64:ALA:O	16:P:66:PRO:HD3	2.20	0.41
1:A:1092:C:H2'	1:A:1093:A:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:855:C:O2	8:H:3:THR:CG2	2.69	0.40
3:C:174:PRO:CB	3:C:177:THR:HG22	2.47	0.40
3:C:188:LEU:HD22	3:C:188:LEU:HA	1.91	0.40
10:J:54:PHE:CD2	10:J:55:LYS:HG2	2.51	0.40
1:A:917:G:N3	1:A:1358:A:H2	2.20	0.40
1:A:1327:U:OP1	9:I:120:ARG:HD3	2.22	0.40
9:I:121:ARG:O	9:I:121:ARG:HD3	2.21	0.40
20:T:89:ARG:HE	20:T:104:LEU:HD22	1.86	0.40
20:T:91:LEU:C	20:T:93:GLU:N	2.72	0.40
1:A:932:G:H2'	1:A:933:U:H6	1.87	0.40
1:A:961:A:N3	1:A:961:A:H3'	2.35	0.40
13:M:53:VAL:O	13:M:56:LEU:HB2	2.21	0.40
1:A:907:G:O2'	1:A:908:C:H5'	2.22	0.40
11:K:125:PHE:CD1	11:K:125:PHE:N	2.88	0.40
4:D:200:GLU:O	4:D:203:VAL:N	2.54	0.40
3:C:70:VAL:HG11	3:C:76:VAL:CG2	2.51	0.40
5:E:12:LEU:HD22	5:E:13:ILE:N	2.35	0.40
13:M:13:LYS:O	13:M:14:ARG:O	2.39	0.40
1:A:1212:C:O2	13:M:126:LYS:O	2.39	0.40
1:A:100:C:O2	1:A:375:C:H4'	2.21	0.40
2:B:25:ASN:O	2:B:26:PRO:C	2.59	0.40
1:A:1174:C:H2'	1:A:1175:G:O5'	2.21	0.40
12:L:38:THR:HB	12:L:57:LYS:HB2	2.03	0.40
2:B:132:LYS:HA	2:B:135:GLN:CB	2.51	0.40
1:A:28:G:C5	1:A:541:G:C2	3.09	0.40
1:A:470:G:O2'	1:A:471:U:H6	2.04	0.40
18:R:47:THR:CG2	18:R:48:GLY:N	2.84	0.40
18:R:47:THR:OG1	18:R:49:LYS:HE3	2.20	0.40
1:A:331:C:H2'	1:A:332:C:H6	1.81	0.40
1:A:692:C:O2'	1:A:693:G:H5'	2.21	0.40
22:A:1524:KSG:C9	22:A:1524:KSG:N3	2.84	0.40
2:B:231:GLU:HB2	2:B:232:PRO:CD	2.51	0.40
10:J:56:HIS:O	10:J:58:ASP:N	2.54	0.40
1:A:878:A:C6	1:A:879:A:C6	3.09	0.40
1:A:70:G:H2'	1:A:71:G:C8	2.54	0.40
2:B:170:GLU:O	2:B:173:ALA:N	2.54	0.40
4:D:173:TRP:CD1	4:D:174:LEU:CD2	3.04	0.40
1:A:152:G:H2'	1:A:153:G:H8	1.85	0.40
1:A:1091:G:H5''	3:C:176:HIS:CE1	2.56	0.40
19:S:22:LEU:CD2	19:S:28:LYS:HD2	2.50	0.40
1:A:1432:A:O2'	1:A:1433:C:OP1	2.32	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:319:U:OP1	20:T:26:ASN:ND2	2.48	0.40
8:H:104:ARG:NH1	8:H:138:TRP:CH2	2.89	0.40
1:A:1200:C:H2'	1:A:1201:U:C5	2.54	0.40
1:A:964:A:N1	1:A:1202:G:C6	2.89	0.40
1:A:1482:G:O2'	1:A:1483:G:P	2.79	0.40
1:A:776:A:O2'	1:A:777:U:O5'	2.39	0.40
1:A:898:U:O2'	1:A:899:U:H5'	2.21	0.40
1:A:1213:G:C5	1:A:1214:U:C5	3.09	0.40
2:B:204:ASN:C	2:B:206:ASP:H	2.24	0.40
10:J:80:LYS:HA	10:J:83:GLU:HB2	2.03	0.40
1:A:549:U:C5	1:A:550:G:H2'	2.55	0.40
7:G:75:VAL:CG1	7:G:86:GLN:HB3	2.45	0.40
17:Q:61:GLU:HA	17:Q:71:PHE:CE1	2.56	0.40
7:G:15:ASP:OD1	7:G:17:VAL:N	2.39	0.40
1:A:709:G:N3	1:A:710:C:C6	2.89	0.40
1:A:316:C:H2'	1:A:317:A:C8	2.56	0.40
3:C:186:PHE:HE1	3:C:198:VAL:H	1.68	0.40
17:Q:29:HIS:O	17:Q:31:LEU:N	2.55	0.40
1:A:276:C:C2	17:Q:38:ARG:HG3	2.56	0.40
1:A:504:A:N1	1:A:520:C:H1'	2.36	0.40
3:C:125:GLU:HG3	3:C:189:ALA:HB1	2.04	0.40
1:A:1132:C:C2	1:A:1133:U:C5	3.09	0.40
9:I:24:GLY:HA2	9:I:60:ASP:HA	2.02	0.40
10:J:49:VAL:O	10:J:61:GLU:N	2.54	0.40
8:H:44:PHE:HB3	8:H:80:ILE:CG1	2.51	0.40
9:I:93:ARG:O	9:I:95:LYS:N	2.55	0.40
1:A:901:A:N6	1:A:1375:G:O6	2.54	0.40
1:A:901:A:C6	1:A:902:C:N3	2.89	0.40
1:A:756:U:C4	1:A:757:G:N7	2.90	0.40
1:A:791:A:C5	1:A:792:C:C5	3.09	0.40
4:D:19:LEU:O	4:D:21:LEU:N	2.52	0.40
4:D:64:LEU:C	4:D:64:LEU:HD13	2.41	0.40
5:E:71:LEU:HD21	5:E:115:VAL:N	2.36	0.40
1:A:352:A:C2	1:A:353:G:H1'	2.56	0.40
15:O:6:GLU:O	15:O:8:LYS:N	2.54	0.40
8:H:96:GLY:O	8:H:97:VAL:C	2.59	0.40
1:A:1287:G:C5'	21:U:4:GLY:CA	2.99	0.40
10:J:12:ASP:OD1	10:J:14:LYS:HB2	2.21	0.40
2:B:118:LEU:HA	2:B:118:LEU:HD23	1.92	0.40
8:H:51:VAL:HG12	8:H:52:ASP:N	2.36	0.40
1:A:598:A:H2'	1:A:599:C:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1111:C:C4	1:A:1122:G:C6	3.08	0.40
1:A:1081:C:O2'	1:A:1082:G:H5'	2.22	0.40
1:A:325:A:H4'	1:A:326:C:OP1	2.21	0.40
17:Q:59:ILE:HG23	17:Q:71:PHE:HB3	2.03	0.40
1:A:147:A:C6	1:A:165:U:O2	2.74	0.40
1:A:268:C:C2'	1:A:269:A:H5'	2.51	0.40
1:A:117:C:H6	1:A:117:C:O5'	2.04	0.40
1:A:1228:C:O2'	1:A:1229:U:H5'	2.21	0.40
21:U:24:ARG:O	21:U:25:LYS:CB	2.69	0.40
11:K:16:SER:HA	11:K:79:SER:HB3	2.03	0.40
3:C:190:ARG:NH1	3:C:190:ARG:CB	2.85	0.40
2:B:92:TYR:N	2:B:92:TYR:CD2	2.89	0.40
1:A:242:A:H62	1:A:277:G:H1'	1.83	0.40
1:A:858:C:OP1	12:L:8:ASN:ND2	2.54	0.40
17:Q:90:ILE:O	17:Q:91:ARG:C	2.59	0.40
1:A:275:A:C6	17:Q:98:LEU:HD13	2.56	0.40
20:T:22:ARG:O	20:T:23:ARG:C	2.59	0.40
16:P:4:ILE:HA	16:P:20:VAL:O	2.21	0.40
1:A:964:A:C6	1:A:965:G:C6	3.08	0.40
10:J:47:PHE:CZ	14:N:37:PHE:CE1	3.10	0.40
13:M:65:LYS:CG	13:M:69:GLU:HG2	2.52	0.40
1:A:761:A:C2	1:A:762:G:H1'	2.57	0.40
1:A:393:A:H5''	1:A:393:A:N3	2.37	0.40
4:D:32:ALA:O	4:D:34:GLU:N	2.54	0.40
1:A:421:G:H4'	4:D:45:GLN:HE22	1.87	0.40
1:A:271:G:H5'	17:Q:14:LYS:CD	2.47	0.40
1:A:348:C:N3	1:A:352:A:N6	2.69	0.40
15:O:74:ASP:HA	15:O:75:PRO:HD2	1.85	0.40
15:O:5:LYS:O	15:O:8:LYS:HB3	2.21	0.40
10:J:87:THR:O	10:J:88:LEU:HD23	2.21	0.40
2:B:141:GLU:O	2:B:142:LEU:C	2.57	0.40
2:B:111:ARG:O	2:B:114:ARG:HB3	2.21	0.40
1:A:732:C:O2'	1:A:733:C:P	2.79	0.40
11:K:87:THR:HG23	11:K:91:ARG:NH2	2.36	0.40
1:A:65:G:H4'	1:A:66:U:O5'	2.21	0.40
17:Q:3:LYS:HB3	17:Q:61:GLU:HB3	2.04	0.40
1:A:1308:C:OP2	21:U:6:ARG:NH1	2.55	0.40
1:A:983:A:H3'	1:A:1004:U:O4	2.22	0.40
1:A:981:G:H8	1:A:981:G:O5'	2.04	0.40
7:G:68:ASN:HD21	7:G:128:ALA:HA	1.85	0.40
1:A:1192:C:C5'	1:A:1196:C:N4	2.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1342:A:O2'	1:A:1343:G:H5'	2.22	0.40
3:C:28:GLN:HA	3:C:31:HIS:HD2	1.85	0.40
9:I:11:LYS:O	9:I:11:LYS:HG2	2.22	0.40
1:A:974:A:H2'	1:A:975:U:C6	2.56	0.40
7:G:136:LYS:O	7:G:140:ASP:N	2.39	0.40
1:A:559:G:C6	1:A:805:G:N7	2.89	0.40
1:A:802:G:C3'	1:A:803:A:H5''	2.49	0.40
12:L:11:VAL:HG13	17:Q:29:HIS:CD2	2.57	0.40
3:C:11:ARG:O	3:C:13:GLY:N	2.54	0.40
1:A:1421:G:C5	1:A:1422:C:C4	3.09	0.40
1:A:1435:G:H5'	20:T:36:LEU:HD21	2.03	0.40
16:P:33:ILE:H	16:P:33:ILE:HG13	1.73	0.40
1:A:1296:C:H2'	1:A:1297:U:C6	2.57	0.40
1:A:939:U:N3	1:A:961:A:C5	2.90	0.40
1:A:993:A:C2	19:S:34:TRP:CE2	3.10	0.40
9:I:7:THR:CG2	9:I:8:GLY:N	2.71	0.40
4:D:178:VAL:O	4:D:179:GLU:O	2.39	0.40
1:A:1481:A:O2'	1:A:1482:G:P	2.80	0.40
1:A:757:G:H2'	1:A:758:G:H8	1.87	0.40
4:D:98:GLU:OE2	4:D:107:ARG:NE	2.55	0.40
7:G:114:ARG:HG2	7:G:114:ARG:NH1	2.35	0.40
12:L:40:VAL:HA	12:L:55:VAL:O	2.22	0.40
5:E:144:THR:C	5:E:146:ALA:N	2.72	0.40
11:K:49:GLY:O	11:K:50:TYR:C	2.60	0.40
1:A:547:A:C8	1:A:551:G:O4'	2.75	0.40
16:P:43:LYS:HA	16:P:48:TRP:HB3	2.03	0.40
1:A:11:A:H2'	1:A:12:G:C8	2.42	0.40
1:A:458:A:C2'	1:A:459:G:H5'	2.51	0.40
18:R:78:LEU:HD23	18:R:78:LEU:HA	1.64	0.40
1:A:208:C:N4	1:A:212:G:H1	2.19	0.40
11:K:30:VAL:CG1	11:K:31:THR:N	2.85	0.40
5:E:56:GLN:O	5:E:57:LYS:C	2.60	0.40
1:A:1074:U:C2	1:A:1078:U:C4	3.10	0.40
1:A:694:G:H2'	1:A:695:G:O4'	2.21	0.40
1:A:1255:G:N2	1:A:1256:G:H1'	2.37	0.40
21:U:9:ARG:HD2	21:U:9:ARG:HA	1.79	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	B	232/256 (91%)	134 (58%)	57 (25%)	41 (18%)	0	1
3	C	204/239 (85%)	114 (56%)	55 (27%)	35 (17%)	0	1
4	D	206/209 (99%)	131 (64%)	49 (24%)	26 (13%)	0	2
5	E	148/162 (91%)	99 (67%)	38 (26%)	11 (7%)	1	11
6	F	99/101 (98%)	73 (74%)	22 (22%)	4 (4%)	4	28
7	G	153/156 (98%)	103 (67%)	37 (24%)	13 (8%)	1	8
8	H	136/138 (99%)	108 (79%)	19 (14%)	9 (7%)	1	13
9	I	125/128 (98%)	80 (64%)	29 (23%)	16 (13%)	0	2
10	J	96/105 (91%)	56 (58%)	20 (21%)	20 (21%)	0	1
11	K	117/129 (91%)	78 (67%)	29 (25%)	10 (8%)	1	8
12	L	122/135 (90%)	89 (73%)	20 (16%)	13 (11%)	0	4
13	M	123/126 (98%)	69 (56%)	33 (27%)	21 (17%)	0	1
14	N	58/61 (95%)	35 (60%)	14 (24%)	9 (16%)	0	1
15	O	86/89 (97%)	47 (55%)	28 (33%)	11 (13%)	0	2
16	P	81/88 (92%)	57 (70%)	20 (25%)	4 (5%)	3	22
17	Q	102/105 (97%)	73 (72%)	15 (15%)	14 (14%)	0	2
18	R	71/88 (81%)	46 (65%)	16 (22%)	9 (13%)	0	2
19	S	78/93 (84%)	50 (64%)	18 (23%)	10 (13%)	0	2
20	T	97/106 (92%)	44 (45%)	38 (39%)	15 (16%)	0	1
21	U	22/27 (82%)	18 (82%)	2 (9%)	2 (9%)	1	6
All	All	2356/2541 (93%)	1504 (64%)	559 (24%)	293 (12%)	0	2

All (293) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	8	LYS

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Mol	Chain	Res	Type
2	B	17	PHE
2	B	23	ARG
2	B	24	TRP
2	B	29	ALA
2	B	30	ARG
2	B	78	GLN
2	B	171	ALA
2	B	211	ILE
3	C	4	LYS
3	C	12	LEU
3	C	75	VAL
3	C	101	LEU
3	C	168	ALA
3	C	178	LEU
3	C	179	ARG
3	C	181	ASN
3	C	189	ALA
4	D	9	CYS
4	D	29	PRO
4	D	36	ARG
4	D	110	PHE
4	D	178	VAL
4	D	179	GLU
4	D	191	ARG
5	E	16	THR
5	E	37	ARG
7	G	155	ARG
8	H	91	ARG
9	I	7	THR
9	I	43	ALA
9	I	44	VAL
9	I	45	ALA
9	I	101	PHE
10	J	32	ALA
10	J	34	VAL
10	J	39	PRO
10	J	40	LEU
10	J	54	PHE
10	J	79	ARG
10	J	82	ILE
10	J	86	MET
11	K	50	TYR

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Mol	Chain	Res	Type
11	K	57	THR
11	K	126	ARG
12	L	45	PRO
12	L	47	LYS
12	L	116	SER
12	L	121	GLY
13	M	5	ALA
13	M	27	LYS
13	M	28	ALA
13	M	60	VAL
13	M	63	THR
13	M	67	GLU
13	M	106	ASN
13	M	123	ALA
13	M	124	PRO
14	N	12	ARG
14	N	22	THR
15	O	88	ARG
17	Q	69	LYS
17	Q	80	GLY
17	Q	83	ASP
17	Q	97	SER
17	Q	98	LEU
17	Q	104	LYS
18	R	49	LYS
18	R	58	LEU
18	R	77	GLY
18	R	87	ARG
19	S	3	ARG
19	S	6	LYS
20	T	11	SER
20	T	49	ALA
20	T	50	GLU
20	T	94	ALA
20	T	95	ALA
2	B	14	GLY
2	B	16	HIS
2	B	18	GLY
2	B	20	GLU
2	B	27	LYS
2	B	49	GLU
2	B	83	MET

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Mol	Chain	Res	Type
2	B	101	MET
2	B	121	LEU
2	B	143	GLU
2	B	150	SER
2	B	154	LEU
2	B	204	ASN
2	B	208	ILE
3	C	15	THR
3	C	16	ARG
3	C	50	ALA
3	C	53	ALA
3	C	57	ILE
3	C	66	VAL
3	C	74	GLY
3	C	100	ALA
3	C	128	PHE
3	C	130	VAL
3	C	163	ALA
3	C	180	ALA
3	C	205	GLY
4	D	3	ARG
4	D	72	GLU
5	E	96	PRO
5	E	142	LEU
5	E	153	LYS
6	F	35	ALA
6	F	39	LYS
6	F	65	VAL
7	G	7	ALA
7	G	42	ILE
7	G	90	GLU
7	G	149	ARG
8	H	29	SER
9	I	33	PHE
9	I	85	LEU
9	I	88	TYR
9	I	121	ARG
10	J	57	LYS
10	J	60	ARG
10	J	73	ASP
11	K	27	ASN
11	K	89	ALA

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Mol	Chain	Res	Type
11	K	124	LYS
12	L	27	LEU
12	L	28	LYS
12	L	51	ALA
12	L	118	SER
12	L	126	LYS
13	M	4	ILE
13	M	6	GLY
13	M	14	ARG
13	M	18	ALA
13	M	19	LEU
13	M	53	VAL
13	M	61	GLU
13	M	74	VAL
13	M	85	GLY
14	N	6	LEU
14	N	13	THR
14	N	17	LYS
14	N	19	ARG
14	N	36	PHE
15	O	32	LEU
16	P	24	ALA
17	Q	30	PRO
17	Q	87	LYS
18	R	20	ALA
18	R	37	VAL
18	R	62	GLU
19	S	17	GLU
19	S	35	SER
19	S	43	GLU
19	S	45	VAL
20	T	39	LYS
20	T	63	ILE
20	T	92	LEU
20	T	96	GLY
20	T	102	GLY
21	U	3	LYS
21	U	9	ARG
2	B	15	VAL
2	B	60	ASP
2	B	66	GLY
2	B	74	LYS

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Mol	Chain	Res	Type
2	B	135	GLN
2	B	214	ILE
3	C	47	LEU
3	C	61	ALA
3	C	121	ALA
3	C	139	GLN
3	C	206	GLU
4	D	4	TYR
4	D	92	VAL
4	D	180	GLY
5	E	71	LEU
5	E	138	ALA
7	G	66	VAL
7	G	96	GLN
7	G	146	GLU
8	H	76	PRO
8	H	121	ASP
9	I	60	ASP
9	I	71	SER
9	I	78	LYS
9	I	94	ALA
10	J	26	ALA
10	J	35	SER
10	J	59	SER
10	J	90	LEU
11	K	15	ALA
11	K	35	PRO
11	K	48	ILE
12	L	14	GLY
14	N	11	LYS
15	O	30	ALA
15	O	33	THR
15	O	71	GLN
17	Q	47	PRO
17	Q	88	TYR
18	R	34	TYR
18	R	63	GLN
19	S	68	GLY
19	S	71	LEU
2	B	95	GLN
2	B	142	LEU
3	C	77	ILE

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Mol	Chain	Res	Type
3	C	84	ILE
4	D	89	THR
4	D	90	GLY
4	D	102	ASP
4	D	153	ARG
4	D	157	LEU
5	E	39	GLY
5	E	79	GLU
8	H	105	ARG
9	I	56	LEU
9	I	118	LYS
10	J	25	GLU
10	J	72	VAL
11	K	117	ASN
12	L	6	THR
12	L	48	PRO
12	L	115	LYS
13	M	73	GLU
14	N	23	ARG
15	O	34	LEU
15	O	47	LYS
15	O	82	ILE
16	P	10	GLY
17	Q	33	GLY
17	Q	48	GLU
19	S	14	HIS
19	S	16	LEU
20	T	9	ASN
2	B	9	GLU
2	B	26	PRO
2	B	47	THR
2	B	82	ARG
2	B	89	GLY
2	B	131	PRO
2	B	183	PRO
2	B	213	LEU
3	C	60	ALA
3	C	146	ALA
4	D	31	CYS
4	D	45	GLN
4	D	204	ILE
6	F	23	LYS

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Mol	Chain	Res	Type
7	G	93	PRO
7	G	127	ALA
8	H	18	ARG
8	H	30	ARG
8	H	86	ILE
9	I	11	LYS
10	J	30	SER
15	O	12	ILE
17	Q	68	ARG
20	T	38	LYS
2	B	125	PRO
2	B	126	GLU
3	C	42	LEU
3	C	73	PRO
4	D	63	LYS
4	D	200	GLU
5	E	107	ARG
7	G	62	PHE
15	O	72	ARG
16	P	41	PRO
16	P	81	ARG
20	T	73	HIS
3	C	80	GLY
4	D	5	ILE
5	E	115	VAL
10	J	24	VAL
20	T	33	ILE
3	C	51	GLY
8	H	97	VAL
15	O	36	ILE
20	T	97	ALA
4	D	136	PRO
13	M	78	ILE
4	D	133	VAL
4	D	203	VAL
7	G	50	ILE
7	G	87	VAL
10	J	36	GLY
13	M	15	VAL
17	Q	85	VAL

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	B	202/220 (92%)	183 (91%)	19 (9%)	11	39
3	C	160/188 (85%)	142 (89%)	18 (11%)	7	29
4	D	180/181 (99%)	164 (91%)	16 (9%)	12	43
5	E	115/123 (94%)	102 (89%)	13 (11%)	7	29
6	F	90/90 (100%)	84 (93%)	6 (7%)	20	59
7	G	126/127 (99%)	120 (95%)	6 (5%)	31	70
8	H	119/119 (100%)	109 (92%)	10 (8%)	14	47
9	I	98/99 (99%)	88 (90%)	10 (10%)	9	35
10	J	88/92 (96%)	81 (92%)	7 (8%)	15	50
11	K	90/99 (91%)	85 (94%)	5 (6%)	26	65
12	L	104/111 (94%)	96 (92%)	8 (8%)	16	52
13	M	100/101 (99%)	84 (84%)	16 (16%)	3	14
14	N	49/50 (98%)	44 (90%)	5 (10%)	9	35
15	O	79/80 (99%)	72 (91%)	7 (9%)	12	43
16	P	72/74 (97%)	68 (94%)	4 (6%)	26	65
17	Q	96/97 (99%)	89 (93%)	7 (7%)	17	54
18	R	64/77 (83%)	58 (91%)	6 (9%)	11	39
19	S	71/80 (89%)	68 (96%)	3 (4%)	36	73
20	T	75/82 (92%)	64 (85%)	11 (15%)	4	18
21	U	19/22 (86%)	19 (100%)	0	100	100
All	All	1997/2112 (95%)	1820 (91%)	177 (9%)	12	43

All (177) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	8	LYS
2	B	12	GLU
2	B	17	PHE

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Mol	Chain	Res	Type
2	B	23	ARG
2	B	24	TRP
2	B	25	ASN
2	B	26	PRO
2	B	69	LEU
2	B	91	PRO
2	B	96	ARG
2	B	114	ARG
2	B	144	ARG
2	B	147	LYS
2	B	153	ARG
2	B	157	ARG
2	B	170	GLU
2	B	181	PHE
2	B	204	ASN
2	B	231	GLU
3	C	3	ASN
3	C	15	THR
3	C	26	LYS
3	C	29	TYR
3	C	32	LEU
3	C	37	GLN
3	C	82	GLU
3	C	91	LEU
3	C	98	ASN
3	C	99	VAL
3	C	101	LEU
3	C	139	GLN
3	C	162	GLN
3	C	167	TRP
3	C	179	ARG
3	C	188	LEU
3	C	193	TYR
3	C	201	TYR
4	D	9	CYS
4	D	10	ARG
4	D	15	GLU
4	D	25	ARG
4	D	29	PRO
4	D	36	ARG
4	D	53	ASP
4	D	58	LEU

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Mol	Chain	Res	Type
4	D	65	ARG
4	D	92	VAL
4	D	106	TYR
4	D	122	ARG
4	D	138	TYR
4	D	157	LEU
4	D	176	LEU
4	D	199	ASN
5	E	10	MET
5	E	11	ILE
5	E	12	LEU
5	E	15	ARG
5	E	26	PHE
5	E	64	ARG
5	E	68	GLU
5	E	73	ASN
5	E	75	THR
5	E	89	ILE
5	E	120	THR
5	E	147	ASP
5	E	150	ARG
6	F	10	LEU
6	F	24	GLU
6	F	32	ASN
6	F	65	VAL
6	F	69	GLU
6	F	95	GLU
7	G	8	GLU
7	G	12	LEU
7	G	36	LYS
7	G	51	GLN
7	G	113	GLU
7	G	140	ASP
8	H	18	ARG
8	H	25	ASP
8	H	52	ASP
8	H	57	PRO
8	H	63	LEU
8	H	85	ARG
8	H	91	ARG
8	H	92	ARG
8	H	104	ARG

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Mol	Chain	Res	Type
8	H	105	ARG
9	I	2	GLU
9	I	3	GLN
9	I	12	GLU
9	I	23	ASN
9	I	38	GLN
9	I	58	ARG
9	I	91	ASP
9	I	104	ARG
9	I	111	ARG
9	I	121	ARG
10	J	15	THR
10	J	38	ILE
10	J	45	ARG
10	J	71	LEU
10	J	73	ASP
10	J	83	GLU
10	J	95	GLU
11	K	29	ILE
11	K	31	THR
11	K	36	ASP
11	K	51	LYS
11	K	91	ARG
12	L	17	LYS
12	L	53	ARG
12	L	59	ARG
12	L	64	TYR
12	L	81	SER
12	L	98	TYR
12	L	113	ARG
12	L	126	LYS
13	M	9	ILE
13	M	14	ARG
13	M	16	ASP
13	M	40	ASN
13	M	44	ARG
13	M	46	LYS
13	M	63	THR
13	M	70	LEU
13	M	81	LEU
13	M	102	ARG
13	M	105	THR

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Mol	Chain	Res	Type
13	M	106	ASN
13	M	109	THR
13	M	110	ARG
13	M	124	PRO
13	M	125	ARG
14	N	3	ARG
14	N	17	LYS
14	N	31	ARG
14	N	41	ARG
14	N	44	LEU
15	O	6	GLU
15	O	32	LEU
15	O	39	LEU
15	O	40	SER
15	O	70	LEU
15	O	81	LEU
15	O	83	GLU
16	P	18	ARG
16	P	39	TYR
16	P	55	ARG
16	P	61	SER
17	Q	34	LYS
17	Q	35	VAL
17	Q	38	ARG
17	Q	60	ILE
17	Q	68	ARG
17	Q	98	LEU
17	Q	101	ARG
18	R	28	GLU
18	R	36	ASN
18	R	38	GLU
18	R	55	ARG
18	R	82	THR
18	R	87	ARG
19	S	10	PHE
19	S	15	LEU
19	S	30	LEU
20	T	10	LEU
20	T	13	LEU
20	T	24	LEU
20	T	42	GLN
20	T	57	ARG

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Mol	Chain	Res	Type
20	T	68	LYS
20	T	72	LEU
20	T	73	HIS
20	T	75	ASN
20	T	84	LEU
20	T	86	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (66) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	25	ASN
2	B	40	HIS
2	B	94	ASN
2	B	146	GLN
2	B	204	ASN
2	B	212	GLN
3	C	3	ASN
3	C	6	HIS
3	C	63	ASN
3	C	69	HIS
3	C	98	ASN
3	C	110	ASN
3	C	118	GLN
3	C	123	GLN
3	C	139	GLN
4	D	42	GLN
4	D	45	GLN
4	D	62	GLN
4	D	77	ASN
4	D	123	HIS
4	D	160	GLN
4	D	199	ASN
5	E	73	ASN
6	F	13	ASN
6	F	18	GLN
6	F	27	GLN
6	F	32	ASN
6	F	57	GLN
6	F	64	GLN
6	F	94	GLN
6	F	100	ASN
7	G	28	ASN

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Mol	Chain	Res	Type
7	G	37	ASN
7	G	64	GLN
7	G	68	ASN
7	G	86	GLN
7	G	106	GLN
7	G	122	HIS
8	H	82	HIS
9	I	3	GLN
9	I	23	ASN
9	I	31	GLN
9	I	73	GLN
10	J	62	HIS
10	J	76	ASN
10	J	84	GLN
11	K	13	GLN
11	K	93	GLN
11	K	117	ASN
12	L	49	ASN
12	L	75	HIS
13	M	12	ASN
13	M	40	ASN
13	M	62	ASN
15	O	13	GLN
15	O	37	ASN
16	P	16	HIS
16	P	82	GLN
17	Q	16	GLN
18	R	36	ASN
19	S	14	HIS
19	S	23	ASN
19	S	47	HIS
19	S	53	ASN
19	S	56	GLN
20	T	42	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1505/1522 (98%)	286 (19%)	164 (10%)

All (286) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	7	G
1	A	8	G
1	A	9	A
1	A	10	G
1	A	14	U
1	A	15	U
1	A	32	G
1	A	33	A
1	A	40	G
1	A	48	C
1	A	49	C
1	A	50	U
1	A	51	A
1	A	52	A
1	A	53	G
1	A	62	G
1	A	65	G
1	A	66	U
1	A	67	G
1	A	80	U
1	A	103	A
1	A	104	C
1	A	110	A
1	A	114	A
1	A	115	C
1	A	116	G
1	A	124	G
1	A	125	A
1	A	177	U
1	A	190	U
1	A	191	G
1	A	192	G
1	A	202	A
1	A	204	A
1	A	205	G
1	A	210	U
1	A	211	U
1	A	212	G
1	A	240	U
1	A	241	C
1	A	243	G
1	A	247	G
1	A	248	U

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Mol	Chain	Res	Type
1	A	262	G
1	A	263	C
1	A	271	G
1	A	275	A
1	A	276	C
1	A	277	G
1	A	278	A
1	A	285	G
1	A	301	G
1	A	302	G
1	A	312	G
1	A	324	C
1	A	325	A
1	A	326	C
1	A	328	G
1	A	340	A
1	A	341	C
1	A	342	G
1	A	348	C
1	A	349	A
1	A	350	G
1	A	363	U
1	A	364	U
1	A	369	A
1	A	385	A
1	A	393	A
1	A	394	C
1	A	402	G
1	A	408	A
1	A	409	G
1	A	417	U
1	A	418	C
1	A	419	G
1	A	424	G
1	A	425	U
1	A	426	A
1	A	435	A
1	A	446	A
1	A	447	A
1	A	455	A
1	A	456	C
1	A	457	G

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Mol	Chain	Res	Type
1	A	466	G
1	A	469	G
1	A	470	G
1	A	471	U
1	A	480	A
1	A	481	A
1	A	482	U
1	A	484	G
1	A	492	C
1	A	493	A
1	A	494	A
1	A	495	C
1	A	502	C
1	A	503	C
1	A	511	G
1	A	516	A
1	A	517	A
1	A	518	U
1	A	520	C
1	A	532	G
1	A	543	A
1	A	544	U
1	A	545	U
1	A	546	C
1	A	547	A
1	A	550	G
1	A	551	G
1	A	556	A
1	A	557	A
1	A	559	G
1	A	560	G
1	A	561	G
1	A	580	C
1	A	626	A
1	A	636	U
1	A	637	A
1	A	649	A
1	A	670	U
1	A	672	G
1	A	679	A
1	A	685	C
1	A	686	A

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Mol	Chain	Res	Type
1	A	687	G
1	A	688	A
1	A	701	C
1	A	702	G
1	A	705	G
1	A	706	A
1	A	707	U
1	A	715	G
1	A	733	C
1	A	737	A
1	A	738	C
1	A	739	G
1	A	761	A
1	A	765	A
1	A	776	A
1	A	777	U
1	A	796	C
1	A	797	U
1	A	799	A
1	A	800	A
1	A	801	C
1	A	802	G
1	A	803	A
1	A	804	U
1	A	805	G
1	A	812	A
1	A	823	U
1	A	824	C
1	A	825	U
1	A	849	U
1	A	850	A
1	A	851	A
1	A	852	G
1	A	862	U
1	A	863	G
1	A	867	A
1	A	868	G
1	A	869	U
1	A	880	G
1	A	892	A
1	A	904	G
1	A	905	G

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Mol	Chain	Res	Type
1	A	912	C
1	A	913	A
1	A	923	G
1	A	938	U
1	A	939	U
1	A	944	G
1	A	946	A
1	A	947	A
1	A	949	G
1	A	950	C
1	A	952	A
1	A	953	A
1	A	954	G
1	A	955	A
1	A	960	U
1	A	961	A
1	A	969	U
1	A	970	U
1	A	971	G
1	A	972	A
1	A	983	A
1	A	984	A
1	A	1002	G
1	A	1003	G
1	A	1005	G
1	A	1007	C
1	A	1033	G
1	A	1037	C
1	A	1047	G
1	A	1048	U
1	A	1049	C
1	A	1051	G
1	A	1068	U
1	A	1069	U
1	A	1077	G
1	A	1084	A
1	A	1085	A
1	A	1100	G
1	A	1107	G
1	A	1108	U
1	A	1109	U
1	A	1112	C

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Mol	Chain	Res	Type
1	A	1113	A
1	A	1114	G
1	A	1120	C
1	A	1121	G
1	A	1122	G
1	A	1128	C
1	A	1129	A
1	A	1141	C
1	A	1142	U
1	A	1143	G
1	A	1165	A
1	A	1166	G
1	A	1173	A
1	A	1174	C
1	A	1178	U
1	A	1179	G
1	A	1183	A
1	A	1184	G
1	A	1194	U
1	A	1197	G
1	A	1207	A
1	A	1208	C
1	A	1209	A
1	A	1220	A
1	A	1221	A
1	A	1222	U
1	A	1223	G
1	A	1239	U
1	A	1240	G
1	A	1261	A
1	A	1264	C
1	A	1267	A
1	A	1268	A
1	A	1269	A
1	A	1281	A
1	A	1282	G
1	A	1283	U
1	A	1285	C
1	A	1287	G
1	A	1302	C
1	A	1304	C
1	A	1314	A

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Mol	Chain	Res	Type
1	A	1319	G
1	A	1327	U
1	A	1328	A
1	A	1329	G
1	A	1330	U
1	A	1346	A
1	A	1347	U
1	A	1348	G
1	A	1353	G
1	A	1364	U
1	A	1378	C
1	A	1379	A
1	A	1380	C
1	A	1381	A
1	A	1383	C
1	A	1384	G
1	A	1425	G
1	A	1427	A
1	A	1428	G
1	A	1433	C
1	A	1434	G
1	A	1468	C
1	A	1477	A
1	A	1480	A
1	A	1481	A
1	A	1482	G
1	A	1483	G
1	A	1484	U
1	A	1485	A
1	A	1495	G
1	A	1498	G
1	A	1507	G
1	A	1508	G

All (164) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	6	U
1	A	8	G
1	A	9	A
1	A	14	U
1	A	31	U

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Mol	Chain	Res	Type
1	A	32	G
1	A	48	C
1	A	49	C
1	A	50	U
1	A	51	A
1	A	52	A
1	A	61	A
1	A	65	G
1	A	103	A
1	A	109	G
1	A	113	A
1	A	115	C
1	A	124	G
1	A	168	U
1	A	176	G
1	A	190	U
1	A	191	G
1	A	204	A
1	A	209	U
1	A	211	U
1	A	239	A
1	A	240	U
1	A	242	A
1	A	246	A
1	A	247	G
1	A	262	G
1	A	270	A
1	A	275	A
1	A	276	C
1	A	277	G
1	A	301	G
1	A	323	A
1	A	324	C
1	A	325	A
1	A	340	A
1	A	341	C
1	A	347	G
1	A	362	C
1	A	363	U
1	A	368	C
1	A	384	G
1	A	417	U

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Mol	Chain	Res	Type
1	A	424	G
1	A	425	U
1	A	434	G
1	A	446	A
1	A	469	G
1	A	470	G
1	A	480	A
1	A	481	A
1	A	483	A
1	A	492	C
1	A	493	A
1	A	495	C
1	A	502	C
1	A	515	U
1	A	517	A
1	A	519	A
1	A	531	A
1	A	543	A
1	A	544	U
1	A	545	U
1	A	546	C
1	A	550	G
1	A	559	G
1	A	560	G
1	A	579	G
1	A	625	U
1	A	636	U
1	A	637	A
1	A	671	A
1	A	685	C
1	A	687	G
1	A	701	C
1	A	705	G
1	A	732	C
1	A	736	G
1	A	737	A
1	A	776	A
1	A	796	C
1	A	799	A
1	A	801	C
1	A	802	G
1	A	803	A

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Mol	Chain	Res	Type
1	A	804	U
1	A	824	C
1	A	848	U
1	A	849	U
1	A	850	A
1	A	851	A
1	A	862	U
1	A	867	A
1	A	868	G
1	A	891	A
1	A	912	C
1	A	938	U
1	A	943	A
1	A	946	A
1	A	949	G
1	A	952	A
1	A	953	A
1	A	954	G
1	A	960	U
1	A	970	U
1	A	971	G
1	A	1032	U
1	A	1047	G
1	A	1048	U
1	A	1050	A
1	A	1068	U
1	A	1077	G
1	A	1084	A
1	A	1112	C
1	A	1128	C
1	A	1134	A
1	A	1140	A
1	A	1142	U
1	A	1164	G
1	A	1165	A
1	A	1172	G
1	A	1178	U
1	A	1183	A
1	A	1196	C
1	A	1206	G
1	A	1208	C
1	A	1221	A

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Mol	Chain	Res	Type
1	A	1222	U
1	A	1238	A
1	A	1239	U
1	A	1260	U
1	A	1262	A
1	A	1263	U
1	A	1267	A
1	A	1282	G
1	A	1284	U
1	A	1301	A
1	A	1304	C
1	A	1313	G
1	A	1327	U
1	A	1328	A
1	A	1329	G
1	A	1346	A
1	A	1347	U
1	A	1363	U
1	A	1377	A
1	A	1379	A
1	A	1380	C
1	A	1382	C
1	A	1383	C
1	A	1432	A
1	A	1433	C
1	A	1476	U
1	A	1480	A
1	A	1481	A
1	A	1482	G
1	A	1483	G
1	A	1484	U
1	A	1506	U
1	A	1507	G

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry

2 ligands 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	KSG	A	1523	-	24,27,27	2.08	1 (4%)	29,40,40	1.26	2 (6%)
22	KSG	A	1524	-	24,27,27	2.09	1 (4%)	29,40,40	1.26	2 (6%)

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	KSG	A	1523	-	-	0/8/52/52	0/2/2/2
22	KSG	A	1524	-	-	0/8/52/52	0/2/2/2

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	A	1524	KSG	C14-C13	-9.97	1.49	1.53
22	A	1523	KSG	C14-C13	-9.92	1.49	1.53

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	A	1524	KSG	C1-O1-C2	-4.29	106.80	118.01
22	A	1523	KSG	C1-O1-C2	-4.28	106.83	118.01
22	A	1524	KSG	C1-O7-C8	-3.57	107.55	113.64
22	A	1523	KSG	C1-O7-C8	-3.55	107.58	113.64

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	A	1523	KSG	5	0
22	A	1524	KSG	7	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

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	A	1503/1522 (98%)	-0.56	12 (0%) 87 88	1, 29, 110, 161	0
2	B	234/256 (91%)	-0.24	12 (5%) 32 31	4, 41, 109, 134	0
3	C	206/239 (86%)	-0.60	0 100 100	7, 46, 83, 93	0
4	D	208/209 (99%)	-0.56	3 (1%) 78 79	1, 27, 57, 70	0
5	E	150/162 (92%)	-0.78	0 100 100	1, 10, 35, 60	0
6	F	101/101 (100%)	-0.58	0 100 100	25, 52, 71, 80	0
7	G	155/156 (99%)	-0.45	3 (1%) 70 70	27, 54, 85, 102	0
8	H	138/138 (100%)	-0.83	0 100 100	1, 6, 34, 41	0
9	I	127/128 (99%)	-0.35	1 (0%) 87 88	9, 59, 87, 96	0
10	J	98/105 (93%)	-0.08	4 (4%) 41 40	15, 78, 118, 124	0
11	K	119/129 (92%)	-0.41	2 (1%) 73 73	18, 39, 66, 110	0
12	L	124/135 (91%)	-0.57	0 100 100	1, 32, 55, 98	0
13	M	125/126 (99%)	-0.02	9 (7%) 18 19	32, 53, 94, 133	0
14	N	60/61 (98%)	-0.42	0 100 100	15, 37, 78, 93	0
15	O	88/89 (98%)	-0.77	0 100 100	2, 30, 61, 95	0
16	P	83/88 (94%)	-0.75	0 100 100	3, 22, 42, 75	0
17	Q	104/105 (99%)	-0.53	5 (4%) 34 34	1, 22, 93, 153	0
18	R	73/88 (82%)	-0.42	2 (2%) 58 58	10, 33, 95, 136	0
19	S	80/93 (86%)	-0.06	3 (3%) 44 44	47, 64, 106, 120	0
20	T	99/106 (93%)	-0.51	1 (1%) 84 85	22, 37, 80, 87	0
21	U	24/27 (88%)	-0.14	0 100 100	27, 38, 62, 78	0
All	All	3899/4063 (95%)	-0.51	57 (1%) 76 77	1, 35, 95, 161	0

All (57) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
13	M	123	ALA	11.0
11	K	129	SER	9.1
2	B	234	PRO	8.6
13	M	124	PRO	8.5
13	M	121	LYS	7.6
17	Q	102	GLY	6.7
2	B	235	SER	6.2
13	M	122	LYS	5.8
2	B	233	SER	5.8
17	Q	104	LYS	5.7
17	Q	103	GLY	5.7
18	R	16	PRO	5.4
2	B	236	TYR	5.2
17	Q	105	ALA	5.1
19	S	2	PRO	5.0
18	R	17	SER	5.0
1	A	1013	A	4.9
7	G	156	TRP	4.8
19	S	3	ARG	4.7
2	B	231	GLU	4.6
11	K	128	ALA	4.5
1	A	1011	C	4.5
2	B	239	VAL	4.3
1	A	1112	C	4.2
13	M	120	LYS	4.2
2	B	230	VAL	3.8
2	B	232	PRO	3.8
1	A	982	G	3.5
10	J	73	ASP	3.4
1	A	456	C	3.2
2	B	238	LEU	3.1
2	B	237	ALA	3.1
7	G	5	ARG	3.1
9	I	128	ARG	3.0
1	A	1014	G	3.0
10	J	72	VAL	2.9
2	B	229	VAL	2.9
7	G	155	ARG	2.8
1	A	1006	C	2.8
4	D	26	CYS	2.7
1	A	1402	G	2.7
20	T	103	GLY	2.7
1	A	81	U	2.6

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Mol	Chain	Res	Type	RSRZ
4	D	31	CYS	2.6
2	B	240	GLN	2.5
10	J	33	GLN	2.4
13	M	126	LYS	2.4
13	M	125	ARG	2.4
10	J	71	LEU	2.3
1	A	1010	G	2.3
19	S	32	LYS	2.2
4	D	9	CYS	2.2
1	A	1009	C	2.2
1	A	1399	G	2.2
13	M	6	GLY	2.1
17	Q	101	ARG	2.0
13	M	11	ARG	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

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
22	KSG	A	1523	26/26	0.88	0.39	7.81	27,31,32,33	0
22	KSG	A	1524	26/26	0.80	0.63	3.88	28,32,34,36	0

6.5 Other polymers [i](#)

There are no such residues in this entry.