



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 02:12 AM GMT

PDB ID : 2G34  
Title : Human hepatitis B virus T=4 capsid strain adyw complexed with assembly effector HAP1  
Authors : Bourne, C.R.; Zlotnick, A.  
Deposited on : 2006-02-17  
Resolution : 5.05 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](mailto: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.

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

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

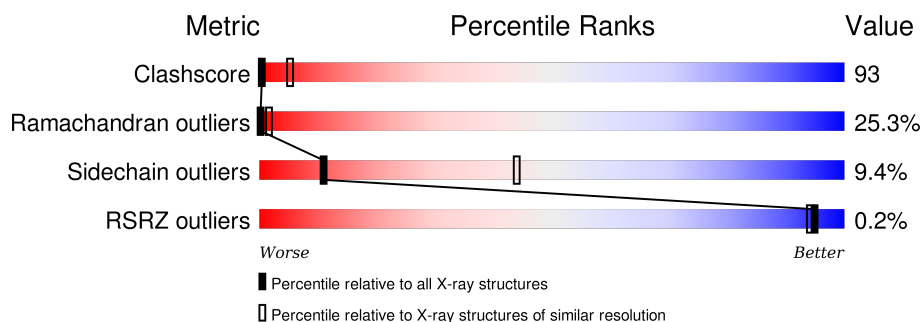
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 5.05 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))
Clashscore	102246	1020 (6.46-3.66)
Ramachandran outliers	100387	1002 (6.50-3.62)
Sidechain outliers	100360	1148 (6.50-3.60)
RSRZ outliers	91569	1134 (6.50-3.60)

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  $\geq 3$ , 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	150	 21% 55% 18% . .
1	B	150	 13% 62% 21% . .
1	C	150	 19% 47% 29% . .
1	D	150	 17% 52% 23% . .

## 2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 4622 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 protein called Core antigen.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	C	147	Total	C	N	O	S	0	0	0
			1167	759	191	215	2			
1	D	144	Total	C	N	O	S	0	0	0
			1144	746	188	208	2			
1	B	147	Total	C	N	O	S	0	0	0
			1167	759	191	215	2			
1	A	144	Total	C	N	O	S	0	0	0
			1144	746	188	208	2			

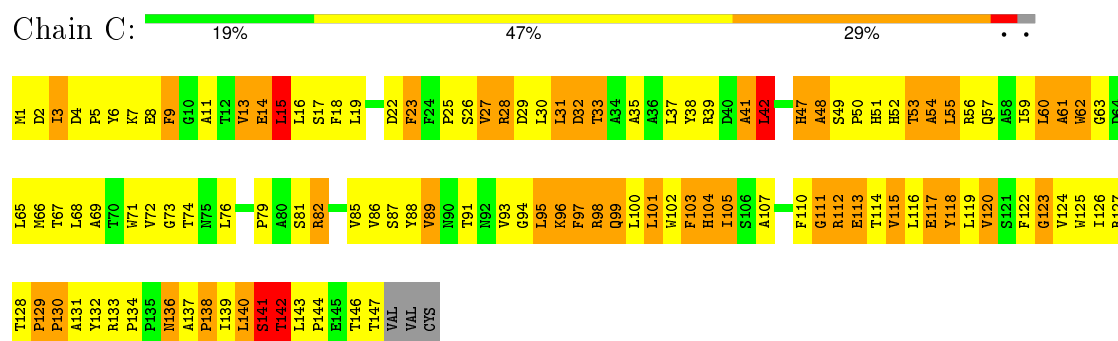
There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	48	ALA	CYS	ENGINEERED	UNP P03147
C	61	ALA	CYS	ENGINEERED	UNP P03147
C	107	ALA	CYS	ENGINEERED	UNP P03147
C	150	CYS	-	INSERTION	UNP P03147
D	48	ALA	CYS	ENGINEERED	UNP P03147
D	61	ALA	CYS	ENGINEERED	UNP P03147
D	107	ALA	CYS	ENGINEERED	UNP P03147
D	150	CYS	-	INSERTION	UNP P03147
B	48	ALA	CYS	ENGINEERED	UNP P03147
B	61	ALA	CYS	ENGINEERED	UNP P03147
B	107	ALA	CYS	ENGINEERED	UNP P03147
B	150	CYS	-	INSERTION	UNP P03147
A	48	ALA	CYS	ENGINEERED	UNP P03147
A	61	ALA	CYS	ENGINEERED	UNP P03147
A	107	ALA	CYS	ENGINEERED	UNP P03147
A	150	CYS	-	INSERTION	UNP P03147

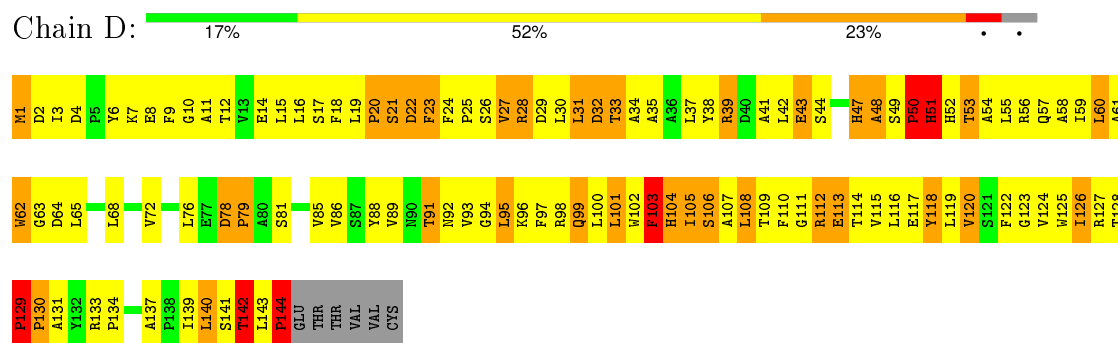
### 3 Residue-property plots

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 ( $RSRZ > 2$ ). 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.

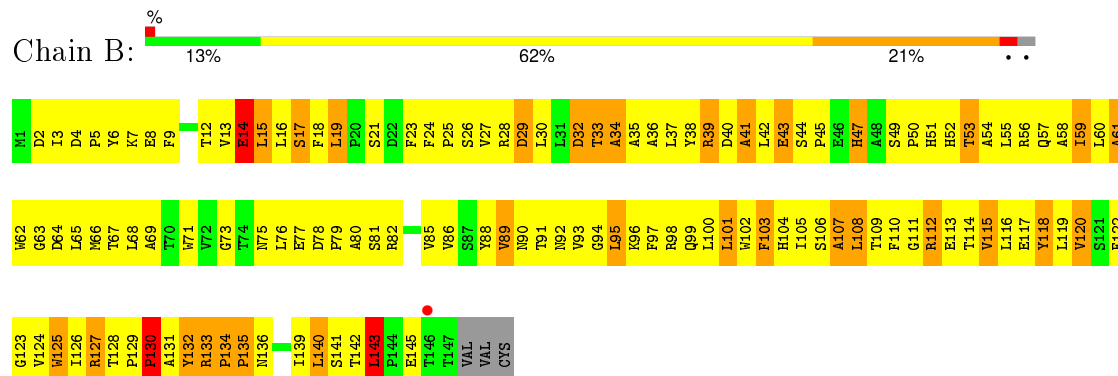
#### • Molecule 1: Core antigen



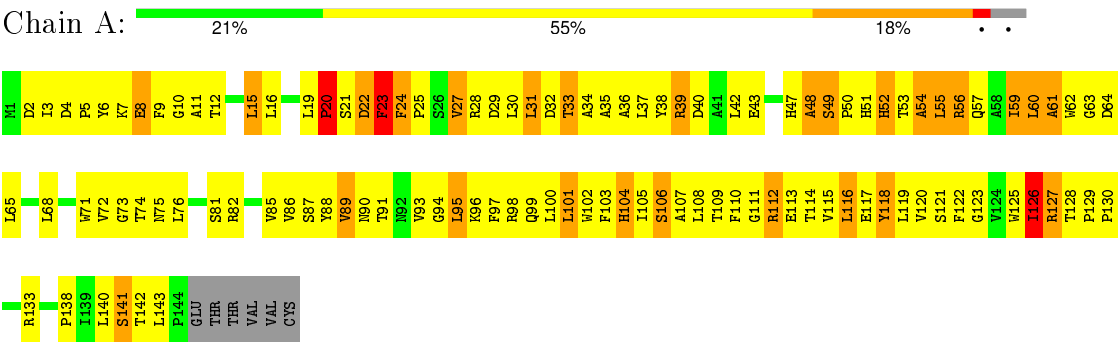
#### • Molecule 1: Core antigen



#### • Molecule 1: Core antigen



● Molecule 1: Core antigen



## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	528.53Å 366.47Å 540.07Å 90.00° 104.83° 90.00°	Depositor
Resolution (Å)	25.03 – 5.05 25.00 – 5.05	Depositor EDS
% Data completeness (in resolution range)	96.8 (25.03-5.05) 96.8 (25.00-5.05)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.07 (at 5.03Å)	Xtriage
Refinement program	CNS	Depositor
R, $R_{free}$	0.365 , (Not available) (Not available) , (Not available)	Depositor DCC
$R_{free}$ test set	NotAvailable	DCC
Wilson B-factor (Å <sup>2</sup> )	187.5	Xtriage
Anisotropy	0.175	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.12 , 92.7	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.46$ , $\langle L^2 \rangle = 0.29$	Xtriage
Outliers	2 of 397911 reflections (0.001%)	Xtriage
$F_o, F_c$ correlation	0.86	EDS
Total number of atoms	4622	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	135.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.49% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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

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	0.38	0/1180	0.67	1/1620 (0.1%)
1	B	0.33	0/1203	0.66	0/1652
1	C	0.32	0/1203	0.66	0/1652
1	D	0.36	0/1180	0.77	4/1620 (0.2%)
All	All	0.35	0/4766	0.69	5/6544 (0.1%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	142	THR	C-N-CA	-8.62	100.16	121.70
1	D	144	PRO	N-CA-C	7.75	132.25	112.10
1	D	142	THR	N-CA-C	-7.33	91.21	111.00
1	D	144	PRO	CA-N-CD	-6.79	102.00	111.50
1	A	141	SER	N-CA-C	6.32	128.06	111.00

There are no chirality outliers.

There are no planarity outliers.

### 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	1144	0	1128	211	0
1	B	1167	0	1148	207	0
1	C	1167	0	1148	239	0
1	D	1144	0	1128	238	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	4622	0	4552	851	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 93.

All (851) 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)
1:A:19:LEU:HD13	1:A:122:PHE:CE2	1.31	1.65
1:A:19:LEU:CD1	1:A:122:PHE:CE2	2.14	1.27
1:A:73:GLY:HA2	1:A:82:ARG:HD2	1.23	1.11
1:A:19:LEU:CD1	1:A:122:PHE:CZ	2.37	1.06
1:C:110:PHE:CE1	1:C:141:SER:HA	1.92	1.04
1:D:21:SER:O	1:D:23:PHE:N	1.91	1.03
1:A:142:THR:HG22	1:A:143:LEU:H	1.22	1.03
1:B:108:LEU:H	1:B:108:LEU:HD12	1.22	1.03
1:A:19:LEU:HD13	1:A:122:PHE:CZ	1.95	0.98
1:C:60:LEU:HD23	1:C:61:ALA:N	1.79	0.96
1:C:73:GLY:HA3	1:C:82:ARG:HD2	1.46	0.96
1:D:4:ASP:HB3	1:D:7:LYS:HG3	1.48	0.95
1:A:108:LEU:HD12	1:A:109:THR:N	1.82	0.94
1:D:58:ALA:O	1:D:62:TRP:HB2	1.67	0.93
1:D:27:VAL:HG23	1:D:28:ARG:H	1.35	0.91
1:C:146:THR:HG22	1:C:147:THR:H	1.34	0.91
1:C:119:LEU:HD12	1:C:120:VAL:N	1.85	0.91
1:A:60:LEU:HD23	1:A:61:ALA:N	1.86	0.90
1:C:116:LEU:O	1:C:119:LEU:HG	1.70	0.90
1:A:110:PHE:CE2	1:A:140:LEU:HB3	2.07	0.90
1:A:15:LEU:HD11	1:A:119:LEU:HD13	1.55	0.89
1:A:19:LEU:HD11	1:A:122:PHE:CZ	2.06	0.89
1:C:110:PHE:HE1	1:C:141:SER:HA	1.30	0.88
1:B:64:ASP:HA	1:B:67:THR:HB	1.55	0.88
1:C:100:LEU:HD12	1:C:101:LEU:N	1.88	0.87
1:C:1:MET:HG2	1:C:2:ASP:H	1.38	0.87
1:D:20:PRO:O	1:D:22:ASP:OD1	1.91	0.87
1:D:118:TYR:CE1	1:D:139:ILE:HA	2.10	0.86
1:C:127:ARG:HG3	1:B:29:ASP:HB3	1.56	0.86
1:D:99:GLN:HG3	1:D:100:LEU:H	1.38	0.86
1:C:27:VAL:HG23	1:C:28:ARG:H	1.40	0.85
1:B:50:PRO:HG2	1:A:47:HIS:HD2	1.39	0.85
1:B:61:ALA:O	1:B:65:LEU:HG	1.75	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:49:SER:HB3	1:B:52:HIS:CE1	2.12	0.84
1:C:54:ALA:HA	1:D:57:GLN:HG3	1.59	0.84
1:C:6:TYR:OH	1:C:100:LEU:HB3	1.77	0.84
1:A:98:ARG:HG3	1:A:99:GLN:H	1.41	0.83
1:D:100:LEU:HD12	1:D:101:LEU:N	1.94	0.83
1:C:13:VAL:HG13	1:C:14:GLU:H	1.42	0.83
1:B:38:TYR:HB2	1:B:42:LEU:HD21	1.61	0.82
1:C:125:TRP:HE3	1:C:126:ILE:HA	1.44	0.82
1:C:143:LEU:HG	1:C:144:PRO:HD3	1.60	0.82
1:D:142:THR:O	1:D:143:LEU:C	2.14	0.82
1:A:128:THR:O	1:A:133:ARG:HD3	1.79	0.82
1:A:19:LEU:HD13	1:A:122:PHE:HE2	0.99	0.82
1:C:53:THR:O	1:C:56:ARG:HG2	1.79	0.82
1:D:125:TRP:CE3	1:D:133:ARG:HD3	2.15	0.81
1:C:107:ALA:HA	1:C:115:VAL:HG21	1.62	0.81
1:D:23:PHE:CD2	1:D:23:PHE:C	2.52	0.81
1:D:38:TYR:HB3	1:D:41:ALA:HB3	1.62	0.80
1:A:111:GLY:O	1:A:115:VAL:HG23	1.81	0.80
1:D:130:PRO:HG3	1:D:133:ARG:HH12	1.47	0.80
1:B:16:LEU:O	1:B:19:LEU:HG	1.83	0.79
1:C:56:ARG:HA	1:C:59:ILE:HD12	1.63	0.79
1:C:125:TRP:CE3	1:C:126:ILE:HA	2.18	0.79
1:B:12:THR:HG23	1:B:15:LEU:HB2	1.65	0.79
1:C:53:THR:HG21	1:D:54:ALA:HB2	1.64	0.79
1:A:73:GLY:CA	1:A:82:ARG:HD2	2.12	0.78
1:D:56:ARG:HA	1:D:59:ILE:HD12	1.64	0.78
1:A:125:TRP:CE3	1:A:126:ILE:HA	2.18	0.78
1:C:15:LEU:HD23	1:C:16:LEU:N	1.98	0.78
1:D:102:TRP:HA	1:D:105:ILE:HD12	1.65	0.78
1:A:73:GLY:HA2	1:A:82:ARG:CD	2.10	0.78
1:C:125:TRP:HE3	1:C:126:ILE:CA	1.96	0.78
1:B:126:ILE:C	1:B:128:THR:H	1.86	0.78
1:A:125:TRP:HE3	1:A:126:ILE:HA	1.48	0.77
1:B:52:HIS:O	1:B:55:LEU:HB3	1.84	0.77
1:C:125:TRP:HE3	1:C:126:ILE:N	1.82	0.77
1:C:52:HIS:HB3	1:C:56:ARG:NH2	1.99	0.77
1:C:62:TRP:HA	1:C:65:LEU:CG	2.15	0.77
1:A:56:ARG:HA	1:A:59:ILE:HD12	1.67	0.77
1:D:26:SER:HA	1:D:98:ARG:HH11	1.50	0.77
1:A:33:THR:O	1:A:37:LEU:HG	1.85	0.76
1:C:61:ALA:O	1:C:65:LEU:HG	1.85	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:94:GLY:O	1:C:97:PHE:HB2	1.85	0.76
1:C:3:ILE:CG2	1:D:43:GLU:HG2	2.15	0.76
1:A:110:PHE:CZ	1:A:140:LEU:HB3	2.21	0.75
1:C:6:TYR:HB3	1:C:11:ALA:HB3	1.68	0.75
1:B:111:GLY:O	1:B:115:VAL:HG23	1.87	0.75
1:A:3:ILE:HD12	1:A:3:ILE:O	1.87	0.75
1:D:3:ILE:O	1:D:3:ILE:HD12	1.87	0.75
1:C:110:PHE:O	1:C:114:THR:OG1	2.05	0.75
1:B:68:LEU:HD12	1:B:71:TRP:HB3	1.68	0.74
1:D:6:TYR:HB3	1:D:11:ALA:HB3	1.67	0.74
1:A:53:THR:O	1:A:56:ARG:HG2	1.88	0.74
1:C:52:HIS:O	1:C:55:LEU:HB3	1.88	0.73
1:D:118:TYR:HE1	1:D:139:ILE:HA	1.51	0.73
1:D:18:PHE:CZ	1:D:127:ARG:HG3	2.23	0.73
1:B:132:TYR:O	1:B:134:PRO:HD3	1.88	0.73
1:C:129:PRO:HD3	1:B:25:PRO:HG3	1.70	0.73
1:A:126:ILE:HG23	1:A:127:ARG:H	1.53	0.73
1:A:125:TRP:HE3	1:A:126:ILE:CA	2.01	0.73
1:B:125:TRP:CZ3	1:B:133:ARG:NE	2.57	0.72
1:D:107:ALA:HA	1:D:115:VAL:HG21	1.72	0.72
1:C:110:PHE:HE1	1:C:142:THR:H	1.38	0.72
1:A:27:VAL:HG23	1:A:28:ARG:H	1.53	0.72
1:A:142:THR:HG22	1:A:143:LEU:N	2.02	0.71
1:B:54:ALA:HB2	1:A:53:THR:HG22	1.72	0.71
1:A:38:TYR:CZ	1:A:108:LEU:HD13	2.26	0.71
1:A:125:TRP:HE3	1:A:126:ILE:N	1.87	0.71
1:D:118:TYR:HE1	1:D:139:ILE:CA	2.03	0.71
1:A:72:VAL:HG12	1:A:82:ARG:HG3	1.71	0.71
1:B:100:LEU:HD12	1:B:101:LEU:N	2.05	0.70
1:D:93:VAL:HG13	1:D:94:GLY:H	1.55	0.70
1:B:3:ILE:HG22	1:A:43:GLU:HG2	1.72	0.70
1:D:16:LEU:HD12	1:D:99:GLN:NE2	2.07	0.70
1:B:56:ARG:HA	1:B:59:ILE:HD12	1.73	0.70
1:D:61:ALA:O	1:D:65:LEU:HG	1.91	0.70
1:C:146:THR:HG22	1:C:147:THR:N	2.07	0.70
1:B:50:PRO:HG2	1:A:47:HIS:CD2	2.25	0.70
1:C:138:PRO:O	1:C:139:ILE:HD12	1.92	0.70
1:A:9:PHE:CA	1:A:112:ARG:HH12	2.03	0.70
1:D:23:PHE:HD2	1:D:23:PHE:O	1.74	0.69
1:C:60:LEU:HD23	1:C:61:ALA:CA	2.22	0.69
1:A:126:ILE:HG13	1:A:127:ARG:N	2.07	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:60:LEU:HD21	1:D:97:PHE:CE2	2.27	0.69
1:D:52:HIS:O	1:D:56:ARG:HG3	1.92	0.69
1:A:96:LYS:HA	1:A:99:GLN:HE22	1.58	0.69
1:A:38:TYR:HB2	1:A:42:LEU:HD21	1.74	0.69
1:A:51:HIS:HA	1:A:104:HIS:NE2	2.07	0.69
1:D:30:LEU:HD13	1:D:101:LEU:HD23	1.74	0.69
1:B:124:VAL:N	1:B:127:ARG:HH21	1.89	0.69
1:D:99:GLN:HG3	1:D:100:LEU:N	2.08	0.68
1:B:13:VAL:HG13	1:B:14:GLU:H	1.58	0.68
1:B:57:GLN:NE2	1:A:54:ALA:HB1	2.08	0.68
1:B:17:SER:O	1:B:18:PHE:C	2.30	0.68
1:C:69:ALA:HA	1:C:72:VAL:HG23	1.76	0.68
1:C:71:TRP:HA	1:C:74:THR:OG1	1.93	0.68
1:B:8:GLU:HB2	1:A:47:HIS:ND1	2.10	0.67
1:C:95:LEU:O	1:C:99:GLN:HG3	1.93	0.67
1:C:2:ASP:O	1:D:43:GLU:OE2	2.12	0.67
1:D:12:THR:HG23	1:D:15:LEU:H	1.56	0.67
1:D:104:HIS:O	1:D:108:LEU:HD13	1.94	0.67
1:A:98:ARG:HG3	1:A:99:GLN:N	2.09	0.67
1:D:141:SER:C	1:D:142:THR:O	2.23	0.67
1:B:26:SER:HB3	1:B:29:ASP:OD1	1.93	0.67
1:D:85:VAL:O	1:D:89:VAL:HG23	1.94	0.67
1:B:57:GLN:OE1	1:A:57:GLN:HB2	1.94	0.66
1:A:52:HIS:O	1:A:55:LEU:HB3	1.95	0.66
1:A:27:VAL:HA	1:A:30:LEU:HD12	1.76	0.66
1:C:62:TRP:HA	1:C:65:LEU:HD12	1.75	0.66
1:B:3:ILE:O	1:B:3:ILE:HD12	1.95	0.66
1:D:126:ILE:O	1:D:126:ILE:HD13	1.95	0.66
1:C:96:LYS:HA	1:C:99:GLN:OE1	1.94	0.66
1:C:62:TRP:HB2	1:C:97:PHE:CZ	2.31	0.66
1:D:48:ALA:HB3	1:D:52:HIS:NE2	2.11	0.66
1:A:23:PHE:CD2	1:A:23:PHE:C	2.69	0.66
1:D:62:TRP:CD1	1:D:97:PHE:HD1	2.14	0.66
1:A:38:TYR:C	1:A:42:LEU:HG	2.16	0.66
1:C:73:GLY:CA	1:C:82:ARG:HD2	2.21	0.66
1:A:59:ILE:O	1:A:63:GLY:N	2.28	0.65
1:D:21:SER:C	1:D:23:PHE:H	2.00	0.65
1:A:51:HIS:HA	1:A:104:HIS:CD2	2.31	0.65
1:C:62:TRP:HA	1:C:65:LEU:HG	1.78	0.65
1:A:71:TRP:HE1	1:A:75:ASN:CG	1.99	0.65
1:C:107:ALA:HA	1:C:115:VAL:CG2	2.25	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:39:ARG:HA	1:B:42:LEU:HD12	1.77	0.65
1:C:62:TRP:CD1	1:C:65:LEU:HD12	2.31	0.65
1:B:16:LEU:CD2	1:B:119:LEU:HD21	2.27	0.65
1:A:61:ALA:O	1:A:65:LEU:HB2	1.97	0.65
1:B:68:LEU:O	1:B:71:TRP:HB3	1.96	0.65
1:C:100:LEU:HA	1:C:103:PHE:HD2	1.61	0.65
1:A:105:ILE:O	1:A:108:LEU:HG	1.96	0.65
1:A:38:TYR:O	1:A:42:LEU:HG	1.97	0.65
1:D:125:TRP:CD2	1:D:133:ARG:HD3	2.31	0.65
1:C:8:GLU:CD	1:D:47:HIS:HB3	2.17	0.65
1:C:27:VAL:HG23	1:C:28:ARG:N	2.10	0.65
1:D:118:TYR:OH	1:D:139:ILE:HA	1.97	0.65
1:C:59:ILE:O	1:C:63:GLY:N	2.26	0.64
1:C:62:TRP:HA	1:C:65:LEU:CD1	2.27	0.64
1:D:60:LEU:HG	1:D:61:ALA:N	2.12	0.64
1:C:42:LEU:HD23	1:C:42:LEU:H	1.62	0.64
1:A:102:TRP:HA	1:A:105:ILE:HD12	1.78	0.64
1:D:68:LEU:O	1:D:72:VAL:HG23	1.96	0.64
1:C:53:THR:CG2	1:D:54:ALA:HB2	2.28	0.64
1:C:104:HIS:O	1:C:107:ALA:HB3	1.97	0.64
1:D:99:GLN:CG	1:D:100:LEU:H	2.10	0.64
1:D:62:TRP:CD1	1:D:97:PHE:CD1	2.86	0.64
1:A:2:ASP:O	1:A:3:ILE:HG23	1.96	0.64
1:A:12:THR:HG23	1:A:15:LEU:HB3	1.80	0.64
1:B:76:LEU:HD11	1:A:81:SER:OG	1.98	0.64
1:C:97:PHE:O	1:C:100:LEU:HG	1.98	0.64
1:B:85:VAL:O	1:B:89:VAL:HG23	1.97	0.64
1:D:2:ASP:O	1:D:3:ILE:HG23	1.98	0.64
1:C:51:HIS:HA	1:C:104:HIS:NE2	2.13	0.63
1:A:116:LEU:O	1:A:119:LEU:HB2	1.98	0.63
1:B:45:PRO:O	1:A:8:GLU:HA	1.99	0.63
1:B:26:SER:O	1:B:30:LEU:HG	1.98	0.63
1:A:62:TRP:HA	1:A:65:LEU:HB3	1.80	0.63
1:C:143:LEU:CG	1:C:144:PRO:HD3	2.29	0.63
1:A:27:VAL:HG23	1:A:28:ARG:N	2.12	0.63
1:D:23:PHE:CD2	1:D:23:PHE:O	2.50	0.63
1:A:89:VAL:O	1:A:93:VAL:HB	1.99	0.63
1:C:35:ALA:O	1:C:39:ARG:HB2	1.99	0.63
1:C:102:TRP:HA	1:C:105:ILE:HD12	1.80	0.63
1:C:110:PHE:O	1:C:111:GLY:O	2.17	0.63
1:C:85:VAL:O	1:C:89:VAL:HG23	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:118:TYR:CZ	1:D:139:ILE:HA	2.33	0.62
1:B:107:ALA:HA	1:B:115:VAL:HG21	1.79	0.62
1:B:73:GLY:CA	1:B:82:ARG:HH21	2.12	0.62
1:B:56:ARG:O	1:B:59:ILE:HB	1.99	0.62
1:D:130:PRO:CG	1:D:133:ARG:HH12	2.11	0.62
1:A:123:GLY:O	1:A:127:ARG:HG3	2.00	0.62
1:B:62:TRP:HA	1:B:65:LEU:HD12	1.81	0.62
1:C:129:PRO:HG2	1:B:23:PHE:O	1.99	0.62
1:C:110:PHE:HE1	1:C:142:THR:N	1.96	0.62
1:C:130:PRO:O	1:C:133:ARG:HG2	1.98	0.62
1:A:129:PRO:O	1:A:133:ARG:HG2	1.99	0.62
1:A:94:GLY:O	1:A:98:ARG:N	2.33	0.62
1:D:107:ALA:CA	1:D:115:VAL:HG21	2.30	0.62
1:B:53:THR:HA	1:B:56:ARG:HH11	1.65	0.62
1:B:38:TYR:O	1:B:42:LEU:HG	2.00	0.62
1:B:45:PRO:HG3	1:A:7:LYS:HE2	1.82	0.62
1:D:19:LEU:HD22	1:D:122:PHE:CE2	2.34	0.62
1:A:62:TRP:O	1:A:65:LEU:HB3	1.99	0.62
1:C:38:TYR:O	1:C:42:LEU:HG	2.00	0.61
1:B:114:THR:O	1:B:117:GLU:HB3	2.00	0.61
1:B:134:PRO:C	1:B:136:ASN:H	2.03	0.61
1:C:88:TYR:HE2	1:D:68:LEU:HD13	1.65	0.61
1:D:125:TRP:CZ3	1:D:133:ARG:HD3	2.35	0.61
1:D:38:TYR:O	1:D:42:LEU:HG	2.00	0.61
1:B:125:TRP:O	1:B:128:THR:HB	2.00	0.61
1:D:62:TRP:HA	1:D:65:LEU:HG	1.81	0.61
1:C:128:THR:O	1:C:133:ARG:NH1	2.34	0.61
1:B:130:PRO:O	1:B:132:TYR:N	2.34	0.61
1:B:108:LEU:CD1	1:B:108:LEU:H	2.02	0.61
1:D:125:TRP:CE3	1:D:126:ILE:HA	2.36	0.61
1:D:139:ILE:HG22	1:D:140:LEU:N	2.15	0.61
1:C:56:ARG:O	1:C:59:ILE:HB	2.01	0.61
1:D:62:TRP:HD1	1:D:97:PHE:CD1	2.19	0.61
1:A:19:LEU:HD22	1:A:122:PHE:CD2	2.36	0.61
1:B:60:LEU:C	1:B:60:LEU:HD23	2.21	0.61
1:A:15:LEU:HD23	1:A:16:LEU:N	2.16	0.60
1:C:102:TRP:CE3	1:C:103:PHE:N	2.69	0.60
1:D:125:TRP:HE3	1:D:126:ILE:N	1.99	0.60
1:C:116:LEU:O	1:C:120:VAL:HG23	2.00	0.60
1:A:39:ARG:HA	1:A:42:LEU:HD12	1.81	0.60
1:C:110:PHE:CE1	1:C:142:THR:N	2.69	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:62:TRP:HB2	1:C:97:PHE:CE2	2.37	0.60
1:B:116:LEU:O	1:B:120:VAL:HG23	2.01	0.60
1:C:17:SER:O	1:C:18:PHE:C	2.40	0.60
1:A:53:THR:HA	1:A:56:ARG:HE	1.66	0.60
1:C:117:GLU:O	1:C:120:VAL:N	2.34	0.60
1:D:128:THR:O	1:D:133:ARG:HB2	2.01	0.60
1:A:24:PHE:CE2	1:A:99:GLN:HB2	2.37	0.60
1:D:62:TRP:O	1:D:65:LEU:N	2.35	0.60
1:C:111:GLY:O	1:C:115:VAL:HG23	2.02	0.60
1:B:126:ILE:C	1:B:128:THR:N	2.53	0.60
1:D:104:HIS:C	1:D:108:LEU:HD13	2.22	0.59
1:C:3:ILE:HG23	1:D:43:GLU:HG2	1.84	0.59
1:A:82:ARG:O	1:A:85:VAL:HG22	2.02	0.59
1:D:27:VAL:HA	1:D:30:LEU:HD12	1.83	0.59
1:B:4:ASP:HB3	1:B:7:LYS:HG2	1.84	0.59
1:C:38:TYR:HB2	1:C:42:LEU:HD21	1.84	0.59
1:C:18:PHE:HE2	1:C:123:GLY:HA2	1.68	0.59
1:C:13:VAL:HG13	1:C:14:GLU:N	2.16	0.59
1:C:2:ASP:O	1:C:3:ILE:HG23	2.02	0.59
1:D:97:PHE:HA	1:D:100:LEU:HG	1.83	0.59
1:C:8:GLU:HG2	1:D:53:THR:HG23	1.85	0.59
1:A:21:SER:HB3	1:A:95:LEU:HD13	1.84	0.59
1:C:140:LEU:O	1:C:141:SER:O	2.20	0.59
1:C:100:LEU:HA	1:C:103:PHE:CD2	2.37	0.59
1:C:60:LEU:CD2	1:C:61:ALA:N	2.63	0.59
1:D:122:PHE:O	1:D:125:TRP:HB3	2.03	0.59
1:B:126:ILE:O	1:B:128:THR:N	2.36	0.59
1:B:9:PHE:HA	1:B:112:ARG:HH12	1.68	0.58
1:C:125:TRP:CE3	1:C:126:ILE:N	2.69	0.58
1:C:130:PRO:C	1:C:132:TYR:H	2.06	0.58
1:C:8:GLU:HB3	1:C:9:PHE:CE1	2.37	0.58
1:D:56:ARG:O	1:D:59:ILE:HB	2.03	0.58
1:A:56:ARG:O	1:A:59:ILE:HB	2.03	0.58
1:C:125:TRP:CD1	1:C:137:ALA:HA	2.38	0.58
1:D:107:ALA:C	1:D:109:THR:H	2.07	0.58
1:B:128:THR:O	1:B:133:ARG:CD	2.51	0.58
1:C:62:TRP:CZ3	1:C:66:MET:HG3	2.38	0.58
1:D:105:ILE:HA	1:D:108:LEU:HD22	1.84	0.58
1:D:125:TRP:HE3	1:D:126:ILE:CA	2.16	0.58
1:B:125:TRP:HE3	1:B:126:ILE:N	2.00	0.58
1:D:97:PHE:HA	1:D:100:LEU:CG	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:100:LEU:O	1:C:101:LEU:C	2.41	0.58
1:A:60:LEU:CD2	1:A:61:ALA:N	2.62	0.58
1:A:68:LEU:CD1	1:A:71:TRP:HE3	2.17	0.58
1:A:97:PHE:O	1:A:101:LEU:HB2	2.04	0.58
1:B:61:ALA:C	1:B:65:LEU:HG	2.24	0.58
1:B:125:TRP:HE3	1:B:126:ILE:HA	1.69	0.58
1:B:13:VAL:HG13	1:B:14:GLU:N	2.17	0.58
1:A:9:PHE:HA	1:A:112:ARG:HH22	1.69	0.57
1:A:60:LEU:HD23	1:A:61:ALA:CA	2.32	0.57
1:C:100:LEU:CA	1:C:103:PHE:HD2	2.17	0.57
1:C:14:GLU:OE1	1:B:39:ARG:NH1	2.37	0.57
1:C:53:THR:O	1:C:54:ALA:C	2.41	0.57
1:D:128:THR:O	1:D:133:ARG:NE	2.37	0.57
1:A:98:ARG:O	1:A:101:LEU:HB3	2.04	0.57
1:C:103:PHE:CG	1:C:104:HIS:N	2.72	0.57
1:C:25:PRO:HD2	1:C:30:LEU:HD21	1.86	0.57
1:C:125:TRP:CE3	1:C:125:TRP:C	2.77	0.57
1:D:111:GLY:O	1:D:115:VAL:HG23	2.03	0.57
1:D:119:LEU:HD12	1:D:120:VAL:N	2.18	0.57
1:D:55:LEU:O	1:D:59:ILE:HG13	2.04	0.57
1:B:133:ARG:HH11	1:B:133:ARG:HG2	1.69	0.57
1:A:9:PHE:CD2	1:A:112:ARG:NH2	2.72	0.57
1:A:122:PHE:O	1:A:126:ILE:HG22	2.04	0.57
1:B:88:TYR:HA	1:B:92:ASN:OD1	2.04	0.57
1:C:18:PHE:HE2	1:C:123:GLY:CA	2.17	0.57
1:C:13:VAL:O	1:C:14:GLU:C	2.42	0.57
1:C:6:TYR:OH	1:C:16:LEU:HD11	2.05	0.57
1:D:125:TRP:CE3	1:D:126:ILE:N	2.73	0.57
1:A:125:TRP:CE3	1:A:126:ILE:N	2.72	0.57
1:A:105:ILE:O	1:A:109:THR:HG23	2.04	0.57
1:C:130:PRO:O	1:C:132:TYR:N	2.38	0.57
1:D:60:LEU:O	1:D:61:ALA:C	2.42	0.57
1:C:25:PRO:O	1:C:30:LEU:HD11	2.04	0.56
1:D:31:LEU:O	1:D:32:ASP:C	2.44	0.56
1:A:49:SER:H	1:A:52:HIS:CE1	2.23	0.56
1:D:38:TYR:OH	1:D:109:THR:HG23	2.05	0.56
1:D:118:TYR:CE1	1:D:139:ILE:CA	2.82	0.56
1:B:2:ASP:O	1:A:43:GLU:OE2	2.23	0.56
1:C:138:PRO:C	1:C:139:ILE:HD12	2.26	0.56
1:C:13:VAL:O	1:C:16:LEU:N	2.32	0.56
1:B:41:ALA:O	1:B:44:SER:HB3	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:97:PHE:O	1:D:98:ARG:C	2.43	0.56
1:A:133:ARG:HG3	1:A:133:ARG:O	2.03	0.56
1:D:18:PHE:HZ	1:D:127:ARG:HG3	1.66	0.56
1:A:23:PHE:HD2	1:A:23:PHE:C	2.09	0.56
1:C:27:VAL:HA	1:C:30:LEU:HD12	1.86	0.56
1:B:38:TYR:OH	1:B:109:THR:HG23	2.05	0.56
1:B:110:PHE:CE1	1:B:140:LEU:HD21	2.41	0.56
1:D:105:ILE:O	1:D:108:LEU:HB2	2.05	0.56
1:B:53:THR:HG23	1:A:8:GLU:OE2	2.05	0.56
1:C:98:ARG:HA	1:C:101:LEU:HB3	1.88	0.56
1:D:117:GLU:HA	1:D:120:VAL:HB	1.88	0.56
1:C:60:LEU:HD21	1:D:97:PHE:HE2	1.68	0.56
1:B:124:VAL:HG23	1:B:127:ARG:HH21	1.71	0.56
1:B:53:THR:O	1:B:56:ARG:N	2.38	0.56
1:B:9:PHE:HA	1:B:112:ARG:NH1	2.21	0.56
1:C:25:PRO:HB2	1:C:30:LEU:HD21	1.88	0.56
1:C:57:GLN:HG3	1:D:54:ALA:HA	1.88	0.55
1:B:125:TRP:HE3	1:B:126:ILE:CA	2.19	0.55
1:B:16:LEU:N	1:B:16:LEU:HD23	2.20	0.55
1:D:19:LEU:HD22	1:D:122:PHE:HE2	1.70	0.55
1:A:9:PHE:C	1:A:112:ARG:HH12	2.10	0.55
1:B:103:PHE:CG	1:B:104:HIS:N	2.73	0.55
1:D:112:ARG:O	1:D:115:VAL:HB	2.06	0.55
1:A:95:LEU:O	1:A:98:ARG:HG2	2.06	0.55
1:C:102:TRP:O	1:C:103:PHE:C	2.44	0.55
1:D:117:GLU:HA	1:D:120:VAL:CG2	2.36	0.55
1:D:42:LEU:C	1:D:44:SER:H	2.10	0.55
1:B:128:THR:O	1:B:133:ARG:HD3	2.07	0.55
1:D:52:HIS:O	1:D:55:LEU:HB3	2.07	0.55
1:D:137:ALA:O	1:D:139:ILE:HG13	2.06	0.55
1:A:85:VAL:O	1:A:89:VAL:HG23	2.06	0.55
1:B:102:TRP:HA	1:B:105:ILE:HD12	1.89	0.55
1:C:28:ARG:HD3	1:C:32:ASP:OD1	2.06	0.55
1:D:117:GLU:O	1:D:120:VAL:HB	2.07	0.55
1:A:130:PRO:N	1:A:133:ARG:NH1	2.55	0.55
1:A:115:VAL:O	1:A:116:LEU:C	2.44	0.55
1:C:62:TRP:HD1	1:C:65:LEU:HD12	1.72	0.55
1:D:126:ILE:C	1:D:126:ILE:HD13	2.27	0.55
1:C:38:TYR:CB	1:C:42:LEU:HD21	2.37	0.55
1:A:9:PHE:HB3	1:A:112:ARG:HH12	1.71	0.55
1:B:47:HIS:HB3	1:A:8:GLU:OE1	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:61:ALA:C	1:C:65:LEU:HG	2.27	0.55
1:D:96:LYS:O	1:D:100:LEU:HG	2.08	0.55
1:D:102:TRP:O	1:D:103:PHE:C	2.45	0.55
1:D:38:TYR:O	1:D:39:ARG:C	2.45	0.55
1:A:61:ALA:O	1:A:65:LEU:CB	2.55	0.54
1:A:99:GLN:HG2	1:A:100:LEU:N	2.22	0.54
1:B:85:VAL:HG23	1:B:86:VAL:N	2.21	0.54
1:B:60:LEU:HD23	1:B:61:ALA:N	2.22	0.54
1:D:96:LYS:O	1:D:99:GLN:HG2	2.08	0.54
1:D:62:TRP:HA	1:D:65:LEU:CG	2.37	0.54
1:D:106:SER:O	1:D:110:PHE:HD1	1.90	0.54
1:B:82:ARG:O	1:B:85:VAL:HG22	2.06	0.54
1:A:100:LEU:O	1:A:103:PHE:HB3	2.08	0.54
1:C:47:HIS:O	1:C:48:ALA:C	2.46	0.54
1:C:6:TYR:HB3	1:C:11:ALA:CB	2.37	0.54
1:D:47:HIS:O	1:D:48:ALA:C	2.45	0.54
1:D:104:HIS:O	1:D:105:ILE:C	2.46	0.54
1:B:124:VAL:HA	1:B:127:ARG:HE	1.73	0.54
1:A:56:ARG:HD3	1:A:56:ARG:H	1.72	0.54
1:A:48:ALA:HB3	1:A:52:HIS:HE1	1.73	0.54
1:A:9:PHE:HD2	1:A:112:ARG:NH2	2.06	0.54
1:D:23:PHE:HD2	1:D:23:PHE:C	2.02	0.54
1:C:117:GLU:O	1:C:118:TYR:C	2.46	0.53
1:D:26:SER:O	1:D:30:LEU:HG	2.08	0.53
1:B:122:PHE:O	1:B:125:TRP:N	2.42	0.53
1:D:1:MET:CG	1:D:2:ASP:H	2.21	0.53
1:B:78:ASP:H	1:B:82:ARG:HD2	1.72	0.53
1:C:93:VAL:C	1:C:95:LEU:N	2.60	0.53
1:B:139:ILE:HG22	1:B:140:LEU:N	2.23	0.53
1:D:97:PHE:O	1:D:100:LEU:HG	2.08	0.53
1:A:52:HIS:H	1:A:52:HIS:CD2	2.27	0.53
1:B:62:TRP:HA	1:B:65:LEU:CG	2.38	0.53
1:D:125:TRP:CE3	1:D:126:ILE:CA	2.91	0.53
1:D:139:ILE:O	1:D:141:SER:N	2.35	0.53
1:D:143:LEU:O	1:D:144:PRO:C	2.44	0.53
1:A:15:LEU:C	1:A:15:LEU:HD23	2.29	0.53
1:A:96:LYS:HA	1:A:99:GLN:NE2	2.22	0.53
1:B:125:TRP:CE3	1:B:126:ILE:HA	2.44	0.53
1:A:126:ILE:CG1	1:A:127:ARG:N	2.71	0.53
1:C:14:GLU:O	1:C:15:LEU:C	2.48	0.53
1:D:27:VAL:HG11	1:D:62:TRP:CZ2	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:50:PRO:O	1:D:51:HIS:C	2.47	0.53
1:D:59:ILE:O	1:D:63:GLY:N	2.25	0.53
1:A:122:PHE:CZ	1:A:126:ILE:HB	2.44	0.53
1:B:25:PRO:HD2	1:B:30:LEU:HD21	1.90	0.53
1:B:56:ARG:HA	1:B:59:ILE:CD1	2.38	0.53
1:B:71:TRP:CZ3	1:B:75:ASN:ND2	2.77	0.53
1:C:17:SER:O	1:C:19:LEU:O	2.26	0.53
1:C:122:PHE:C	1:C:122:PHE:CD1	2.82	0.52
1:D:103:PHE:CG	1:D:104:HIS:N	2.76	0.52
1:D:116:LEU:O	1:D:120:VAL:HG23	2.09	0.52
1:B:64:ASP:O	1:B:68:LEU:N	2.42	0.52
1:B:100:LEU:O	1:B:101:LEU:C	2.47	0.52
1:D:89:VAL:O	1:D:93:VAL:HG13	2.10	0.52
1:C:1:MET:HG2	1:C:2:ASP:N	2.16	0.52
1:A:21:SER:HA	1:A:24:PHE:CE1	2.45	0.52
1:C:139:ILE:CG2	1:C:140:LEU:N	2.72	0.52
1:D:16:LEU:C	1:D:18:PHE:H	2.12	0.52
1:A:9:PHE:O	1:A:112:ARG:NH1	2.43	0.52
1:D:49:SER:O	1:D:50:PRO:C	2.47	0.52
1:B:59:ILE:O	1:B:60:LEU:C	2.48	0.52
1:C:101:LEU:O	1:C:105:ILE:HG13	2.10	0.52
1:A:60:LEU:O	1:A:61:ALA:C	2.47	0.52
1:B:15:LEU:HD23	1:B:18:PHE:CE2	2.45	0.52
1:C:60:LEU:HD23	1:C:61:ALA:HA	1.90	0.52
1:C:95:LEU:O	1:C:98:ARG:HG2	2.10	0.52
1:B:116:LEU:O	1:B:119:LEU:HB3	2.09	0.52
1:A:71:TRP:NE1	1:A:75:ASN:HB2	2.24	0.51
1:D:27:VAL:HG11	1:D:62:TRP:HZ2	1.75	0.51
1:C:88:TYR:O	1:C:91:THR:HB	2.09	0.51
1:C:136:ASN:N	1:C:136:ASN:HD22	2.08	0.51
1:B:71:TRP:CH2	1:B:75:ASN:ND2	2.78	0.51
1:C:143:LEU:HD23	1:C:143:LEU:H	1.76	0.51
1:D:27:VAL:HG23	1:D:28:ARG:N	2.14	0.51
1:A:112:ARG:O	1:A:115:VAL:HB	2.11	0.51
1:B:88:TYR:CG	1:A:71:TRP:CZ3	2.98	0.51
1:C:124:VAL:O	1:C:125:TRP:C	2.47	0.51
1:A:9:PHE:HA	1:A:112:ARG:NH2	2.25	0.51
1:B:38:TYR:OH	1:B:109:THR:CG2	2.58	0.51
1:D:130:PRO:HD3	1:D:133:ARG:HH22	1.76	0.51
1:A:9:PHE:CB	1:A:112:ARG:HH12	2.23	0.51
1:A:56:ARG:O	1:A:60:LEU:N	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:73:GLY:HA2	1:B:82:ARG:HH21	1.75	0.51
1:B:13:VAL:O	1:B:15:LEU:N	2.43	0.51
1:A:28:ARG:O	1:A:29:ASP:C	2.49	0.51
1:A:48:ALA:HB3	1:A:52:HIS:CE1	2.45	0.51
1:B:88:TYR:CE2	1:A:68:LEU:HD13	2.45	0.51
1:A:34:ALA:HA	1:A:37:LEU:HD12	1.91	0.51
1:C:146:THR:CG2	1:C:147:THR:H	2.14	0.51
1:C:102:TRP:CD2	1:C:103:PHE:N	2.79	0.51
1:C:4:ASP:OD1	1:C:6:TYR:HB2	2.11	0.51
1:C:2:ASP:C	1:C:3:ILE:HG13	2.29	0.51
1:A:129:PRO:C	1:A:133:ARG:NH1	2.64	0.50
1:A:54:ALA:O	1:A:55:LEU:C	2.48	0.50
1:C:129:PRO:HB2	1:C:132:TYR:HD2	1.76	0.50
1:C:30:LEU:HD13	1:C:101:LEU:HD23	1.92	0.50
1:B:12:THR:CG2	1:B:15:LEU:HB2	2.39	0.50
1:D:95:LEU:O	1:D:96:LYS:C	2.49	0.50
1:D:99:GLN:O	1:D:103:PHE:N	2.40	0.50
1:A:8:GLU:C	1:A:10:GLY:H	2.14	0.50
1:B:59:ILE:O	1:B:63:GLY:N	2.29	0.50
1:D:38:TYR:HB2	1:D:42:LEU:CD2	2.42	0.50
1:B:125:TRP:CH2	1:B:133:ARG:NE	2.78	0.50
1:D:76:LEU:HG	1:D:78:ASP:OD1	2.12	0.50
1:A:123:GLY:O	1:A:126:ILE:HG23	2.10	0.50
1:D:18:PHE:O	1:D:19:LEU:HD23	2.11	0.50
1:D:32:ASP:O	1:D:33:THR:C	2.50	0.50
1:A:102:TRP:O	1:A:103:PHE:C	2.49	0.50
1:A:60:LEU:O	1:A:64:ASP:N	2.43	0.50
1:B:60:LEU:O	1:B:61:ALA:C	2.48	0.50
1:C:129:PRO:HB3	1:C:130:PRO:HD2	1.93	0.50
1:C:26:SER:O	1:C:30:LEU:HG	2.12	0.50
1:D:19:LEU:O	1:D:20:PRO:C	2.49	0.50
1:D:49:SER:H	1:D:52:HIS:CD2	2.28	0.50
1:A:118:TYR:HE1	1:A:138:PRO:C	2.15	0.50
1:A:95:LEU:HG	1:A:96:LYS:N	2.26	0.50
1:C:82:ARG:HB3	1:C:82:ARG:HH11	1.75	0.50
1:B:4:ASP:OD1	1:B:6:TYR:HB2	2.12	0.50
1:C:37:LEU:HD23	1:C:38:TYR:CE2	2.47	0.50
1:A:85:VAL:HG23	1:A:86:VAL:N	2.27	0.50
1:D:79:PRO:C	1:D:81:SER:H	2.15	0.50
1:B:73:GLY:HA3	1:B:82:ARG:HH21	1.77	0.49
1:C:115:VAL:O	1:C:116:LEU:C	2.50	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:28:ARG:O	1:D:29:ASP:C	2.50	0.49
1:B:35:ALA:C	1:B:39:ARG:HD3	2.32	0.49
1:C:119:LEU:CD1	1:C:120:VAL:N	2.68	0.49
1:C:60:LEU:HD21	1:D:97:PHE:CZ	2.47	0.49
1:C:85:VAL:HG23	1:C:86:VAL:N	2.26	0.49
1:A:55:LEU:HG	1:A:59:ILE:HD11	1.92	0.49
1:A:105:ILE:HG22	1:A:109:THR:CG2	2.43	0.49
1:B:60:LEU:O	1:B:63:GLY:N	2.46	0.49
1:C:100:LEU:CD1	1:C:101:LEU:N	2.68	0.49
1:C:95:LEU:O	1:C:96:LYS:C	2.49	0.49
1:C:18:PHE:CZ	1:B:33:THR:HG22	2.47	0.49
1:B:53:THR:N	1:B:56:ARG:NH1	2.60	0.49
1:D:141:SER:O	1:D:142:THR:C	2.50	0.49
1:D:142:THR:O	1:D:143:LEU:O	2.30	0.49
1:B:16:LEU:H	1:B:16:LEU:HD23	1.77	0.49
1:A:125:TRP:CD1	1:A:138:PRO:HD3	2.48	0.49
1:A:68:LEU:HD12	1:A:68:LEU:O	2.11	0.49
1:B:38:TYR:C	1:B:42:LEU:HG	2.32	0.49
1:B:50:PRO:O	1:B:51:HIS:C	2.50	0.49
1:A:38:TYR:O	1:A:39:ARG:C	2.51	0.49
1:A:56:ARG:HA	1:A:59:ILE:CD1	2.42	0.49
1:B:32:ASP:O	1:B:33:THR:C	2.51	0.49
1:B:55:LEU:O	1:B:58:ALA:HB3	2.13	0.49
1:A:6:TYR:CZ	1:A:100:LEU:HD12	2.48	0.49
1:B:102:TRP:O	1:B:103:PHE:C	2.51	0.49
1:C:32:ASP:O	1:C:33:THR:C	2.51	0.49
1:D:35:ALA:HA	1:D:42:LEU:HD11	1.95	0.49
1:D:50:PRO:O	1:D:52:HIS:N	2.45	0.49
1:A:5:PRO:HG2	1:A:6:TYR:CD1	2.48	0.48
1:B:42:LEU:C	1:B:44:SER:H	2.15	0.48
1:B:78:ASP:O	1:B:82:ARG:HG3	2.12	0.48
1:B:6:TYR:CE2	1:B:13:VAL:HB	2.47	0.48
1:C:94:GLY:O	1:C:97:PHE:CB	2.60	0.48
1:C:94:GLY:O	1:C:98:ARG:HG2	2.14	0.48
1:B:126:ILE:HD12	1:B:126:ILE:O	2.12	0.48
1:B:4:ASP:C	1:B:6:TYR:H	2.17	0.48
1:C:93:VAL:O	1:C:95:LEU:N	2.46	0.48
1:D:62:TRP:CA	1:D:65:LEU:HG	2.44	0.48
1:A:33:THR:HG22	1:A:37:LEU:HD11	1.96	0.48
1:B:124:VAL:HG23	1:B:127:ARG:NH2	2.27	0.48
1:A:99:GLN:CG	1:A:100:LEU:N	2.76	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:89:VAL:HA	1:A:93:VAL:CG2	2.44	0.48
1:A:50:PRO:O	1:A:51:HIS:C	2.51	0.48
1:A:106:SER:O	1:A:109:THR:OG1	2.31	0.48
1:C:4:ASP:C	1:C:6:TYR:H	2.17	0.48
1:D:47:HIS:O	1:D:49:SER:N	2.47	0.48
1:C:85:VAL:C	1:C:87:SER:N	2.64	0.48
1:B:81:SER:OG	1:A:76:LEU:HD11	2.13	0.48
1:C:114:THR:O	1:C:117:GLU:HB2	2.14	0.48
1:C:51:HIS:O	1:C:52:HIS:C	2.51	0.48
1:B:89:VAL:O	1:B:91:THR:N	2.47	0.48
1:C:102:TRP:O	1:C:105:ILE:N	2.47	0.48
1:D:119:LEU:HD12	1:D:119:LEU:C	2.35	0.47
1:B:62:TRP:HA	1:B:65:LEU:CD1	2.42	0.47
1:B:97:PHE:O	1:B:101:LEU:N	2.43	0.47
1:B:68:LEU:HD13	1:A:88:TYR:CE2	2.49	0.47
1:A:6:TYR:HB3	1:A:11:ALA:HB3	1.96	0.47
1:A:89:VAL:O	1:A:91:THR:N	2.47	0.47
1:B:16:LEU:HD22	1:B:119:LEU:HD21	1.95	0.47
1:A:125:TRP:CZ3	1:A:133:ARG:NE	2.82	0.47
1:B:97:PHE:O	1:B:98:ARG:C	2.53	0.47
1:C:47:HIS:HB3	1:D:8:GLU:OE2	2.14	0.47
1:C:55:LEU:HB2	1:C:104:HIS:HD2	1.79	0.47
1:C:55:LEU:O	1:C:59:ILE:HG13	2.15	0.47
1:A:98:ARG:CG	1:A:99:GLN:H	2.20	0.47
1:B:39:ARG:O	1:B:42:LEU:HB2	2.14	0.47
1:C:112:ARG:O	1:C:115:VAL:HB	2.14	0.47
1:D:60:LEU:HG	1:D:64:ASP:OD2	2.14	0.47
1:D:7:LYS:C	1:D:9:PHE:H	2.16	0.47
1:A:71:TRP:O	1:A:72:VAL:C	2.53	0.47
1:A:72:VAL:O	1:A:76:LEU:HB3	2.14	0.47
1:B:53:THR:O	1:B:54:ALA:C	2.52	0.47
1:D:62:TRP:HA	1:D:65:LEU:CD1	2.44	0.47
1:A:108:LEU:C	1:A:108:LEU:HD12	2.34	0.47
1:A:117:GLU:O	1:A:119:LEU:N	2.48	0.47
1:C:56:ARG:HA	1:C:59:ILE:CD1	2.39	0.47
1:D:50:PRO:O	1:D:53:THR:N	2.47	0.47
1:D:51:HIS:N	1:D:51:HIS:ND1	2.63	0.47
1:C:82:ARG:NH1	1:C:82:ARG:HB3	2.30	0.47
1:C:23:PHE:C	1:C:23:PHE:CD1	2.87	0.47
1:A:24:PHE:HB2	1:A:98:ARG:HD3	1.97	0.47
1:C:133:ARG:HA	1:B:139:ILE:HD13	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:139:ILE:HG23	1:C:140:LEU:N	2.30	0.47
1:C:28:ARG:O	1:C:29:ASP:C	2.54	0.47
1:C:62:TRP:HA	1:C:65:LEU:HB2	1.96	0.47
1:D:27:VAL:O	1:D:28:ARG:C	2.53	0.47
1:D:118:TYR:HH	1:D:139:ILE:HA	1.78	0.47
1:A:65:LEU:O	1:A:68:LEU:HB3	2.15	0.47
1:B:68:LEU:O	1:B:71:TRP:N	2.48	0.47
1:C:88:TYR:CE2	1:D:68:LEU:HD13	2.47	0.47
1:A:47:HIS:O	1:A:48:ALA:C	2.53	0.46
1:D:123:GLY:O	1:D:126:ILE:HG22	2.15	0.46
1:D:139:ILE:CG2	1:D:140:LEU:N	2.77	0.46
1:B:120:VAL:O	1:B:123:GLY:N	2.47	0.46
1:A:38:TYR:CE2	1:A:108:LEU:HD13	2.50	0.46
1:C:122:PHE:O	1:C:123:GLY:C	2.53	0.46
1:C:6:TYR:CE1	1:C:16:LEU:HD11	2.50	0.46
1:B:134:PRO:C	1:B:136:ASN:N	2.69	0.46
1:A:71:TRP:O	1:A:74:THR:N	2.49	0.46
1:D:98:ARG:O	1:D:101:LEU:HB3	2.14	0.46
1:D:93:VAL:HG13	1:D:94:GLY:N	2.29	0.46
1:C:41:ALA:O	1:C:42:LEU:C	2.53	0.46
1:B:38:TYR:HB2	1:B:42:LEU:CD2	2.41	0.46
1:D:62:TRP:HA	1:D:65:LEU:HD12	1.98	0.46
1:B:122:PHE:O	1:B:123:GLY:C	2.53	0.46
1:A:103:PHE:O	1:A:106:SER:HB2	2.16	0.46
1:B:35:ALA:HB1	1:B:39:ARG:HD3	1.97	0.46
1:C:22:ASP:O	1:C:23:PHE:C	2.53	0.46
1:A:62:TRP:CA	1:A:65:LEU:HB3	2.45	0.46
1:C:62:TRP:HA	1:C:65:LEU:CB	2.46	0.46
1:B:130:PRO:HA	1:B:133:ARG:NH1	2.31	0.46
1:C:27:VAL:O	1:C:28:ARG:C	2.53	0.46
1:C:62:TRP:CA	1:C:65:LEU:HG	2.43	0.46
1:D:130:PRO:CD	1:D:133:ARG:HH12	2.29	0.46
1:D:47:HIS:N	1:D:47:HIS:ND1	2.64	0.46
1:B:89:VAL:C	1:B:91:THR:H	2.20	0.46
1:C:95:LEU:O	1:C:97:PHE:N	2.48	0.46
1:D:61:ALA:C	1:D:65:LEU:HG	2.36	0.46
1:B:117:GLU:O	1:B:120:VAL:HB	2.16	0.46
1:A:52:HIS:HB3	1:A:56:ARG:NH2	2.31	0.46
1:B:35:ALA:O	1:B:37:LEU:N	2.48	0.46
1:D:107:ALA:HA	1:D:115:VAL:CG2	2.43	0.46
1:B:130:PRO:C	1:B:132:TYR:H	2.19	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:6:TYR:OH	1:A:100:LEU:HD12	2.16	0.45
1:A:89:VAL:C	1:A:91:THR:H	2.19	0.45
1:B:52:HIS:CB	1:B:56:ARG:HH12	2.29	0.45
1:C:55:LEU:HG	1:C:56:ARG:N	2.31	0.45
1:D:24:PHE:CE1	1:D:99:GLN:HB3	2.51	0.45
1:B:116:LEU:O	1:B:117:GLU:C	2.54	0.45
1:A:6:TYR:OH	1:A:100:LEU:HB2	2.16	0.45
1:A:96:LYS:CA	1:A:99:GLN:HE22	2.28	0.45
1:B:106:SER:HA	1:B:109:THR:OG1	2.17	0.45
1:D:108:LEU:N	1:D:108:LEU:CD1	2.79	0.45
1:D:94:GLY:O	1:D:97:PHE:HB2	2.15	0.45
1:A:125:TRP:CE3	1:A:126:ILE:CA	2.87	0.45
1:C:51:HIS:CA	1:C:104:HIS:NE2	2.77	0.45
1:D:108:LEU:N	1:D:108:LEU:HD12	2.32	0.45
1:D:117:GLU:HA	1:D:120:VAL:CB	2.47	0.45
1:D:88:TYR:CE1	1:D:92:ASN:HB3	2.51	0.45
1:A:31:LEU:O	1:A:32:ASP:C	2.55	0.45
1:A:130:PRO:CD	1:A:133:ARG:HH12	2.30	0.45
1:A:52:HIS:N	1:A:52:HIS:CD2	2.82	0.45
1:B:93:VAL:HG12	1:B:97:PHE:CE2	2.51	0.45
1:C:31:LEU:O	1:C:32:ASP:C	2.54	0.45
1:B:66:MET:C	1:B:68:LEU:N	2.70	0.45
1:B:134:PRO:HA	1:B:135:PRO:HD3	1.80	0.45
1:B:15:LEU:O	1:B:16:LEU:C	2.55	0.45
1:A:60:LEU:HD23	1:A:61:ALA:HA	1.97	0.45
1:B:21:SER:C	1:B:23:PHE:H	2.20	0.45
1:C:25:PRO:HB2	1:C:30:LEU:CD2	2.46	0.45
1:A:126:ILE:O	1:A:127:ARG:C	2.55	0.45
1:A:110:PHE:HE1	1:A:141:SER:O	2.00	0.45
1:C:119:LEU:HD12	1:C:120:VAL:CA	2.47	0.45
1:C:125:TRP:CZ3	1:C:133:ARG:NH1	2.85	0.45
1:D:60:LEU:CG	1:D:61:ALA:N	2.75	0.45
1:D:7:LYS:C	1:D:9:PHE:N	2.70	0.45
1:A:68:LEU:O	1:A:71:TRP:HB3	2.17	0.45
1:C:7:LYS:C	1:C:9:PHE:N	2.70	0.45
1:C:94:GLY:C	1:C:97:PHE:HB2	2.36	0.45
1:D:62:TRP:HD1	1:D:97:PHE:CE1	2.33	0.45
1:B:13:VAL:C	1:B:15:LEU:N	2.70	0.45
1:D:6:TYR:OH	1:D:100:LEU:HB3	2.17	0.45
1:B:43:GLU:HG2	1:A:3:ILE:HG22	1.99	0.45
1:B:103:PHE:CD1	1:B:103:PHE:C	2.90	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:107:ALA:CB	1:D:115:VAL:HG21	2.46	0.44
1:D:129:PRO:HA	1:D:130:PRO:HD3	1.68	0.44
1:D:52:HIS:O	1:D:53:THR:C	2.55	0.44
1:D:99:GLN:O	1:D:100:LEU:C	2.54	0.44
1:D:107:ALA:C	1:D:109:THR:N	2.71	0.44
1:B:134:PRO:O	1:B:136:ASN:N	2.50	0.44
1:C:85:VAL:C	1:C:87:SER:H	2.20	0.44
1:C:100:LEU:HD12	1:C:101:LEU:CA	2.46	0.44
1:C:110:PHE:CE2	1:C:140:LEU:HD21	2.52	0.44
1:C:14:GLU:O	1:C:16:LEU:N	2.50	0.44
1:C:65:LEU:O	1:C:68:LEU:HB3	2.17	0.44
1:D:53:THR:O	1:D:54:ALA:C	2.55	0.44
1:D:97:PHE:CA	1:D:100:LEU:HG	2.46	0.44
1:D:57:GLN:O	1:D:58:ALA:C	2.55	0.44
1:A:71:TRP:HE1	1:A:75:ASN:CB	2.30	0.44
1:B:28:ARG:HG3	1:B:32:ASP:OD2	2.17	0.44
1:B:52:HIS:HB3	1:B:56:ARG:HH12	1.82	0.44
1:B:9:PHE:CD1	1:B:51:HIS:CE1	3.06	0.44
1:C:47:HIS:O	1:C:49:SER:N	2.51	0.44
1:B:118:TYR:O	1:B:119:LEU:C	2.56	0.44
1:B:24:PHE:HA	1:B:25:PRO:HD3	1.91	0.44
1:B:39:ARG:HD2	1:B:39:ARG:HA	1.72	0.44
1:B:60:LEU:O	1:B:64:ASP:N	2.47	0.44
1:C:123:GLY:O	1:C:126:ILE:HG22	2.17	0.44
1:C:54:ALA:O	1:C:57:GLN:HB2	2.18	0.44
1:D:107:ALA:O	1:D:109:THR:N	2.51	0.44
1:D:120:VAL:O	1:D:123:GLY:N	2.50	0.44
1:A:125:TRP:C	1:A:125:TRP:CE3	2.91	0.44
1:B:62:TRP:O	1:B:65:LEU:HB2	2.18	0.44
1:B:132:TYR:CD2	1:B:132:TYR:N	2.84	0.44
1:B:13:VAL:O	1:B:14:GLU:C	2.56	0.44
1:B:142:THR:O	1:B:143:LEU:C	2.55	0.44
1:A:113:GLU:O	1:A:114:THR:C	2.55	0.44
1:A:6:TYR:CE2	1:A:16:LEU:HD11	2.53	0.44
1:D:100:LEU:O	1:D:103:PHE:HB3	2.18	0.44
1:D:9:PHE:HA	1:D:112:ARG:HH22	1.83	0.44
1:A:54:ALA:O	1:A:57:GLN:N	2.51	0.44
1:D:30:LEU:CD1	1:D:101:LEU:HD23	2.45	0.44
1:D:30:LEU:O	1:D:33:THR:HB	2.18	0.44
1:B:122:PHE:CD1	1:B:122:PHE:C	2.91	0.44
1:A:109:THR:HG1	1:A:110:PHE:HD2	1.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:59:ILE:O	1:A:60:LEU:C	2.57	0.43
1:A:95:LEU:O	1:A:99:GLN:OE1	2.35	0.43
1:B:94:GLY:O	1:B:98:ARG:HG3	2.17	0.43
1:D:93:VAL:O	1:D:94:GLY:C	2.57	0.43
1:B:124:VAL:N	1:B:127:ARG:NH2	2.63	0.43
1:D:14:GLU:O	1:D:17:SER:HB3	2.17	0.43
1:D:85:VAL:HG23	1:D:86:VAL:N	2.33	0.43
1:D:16:LEU:CD1	1:D:99:GLN:NE2	2.79	0.43
1:B:125:TRP:CH2	1:B:133:ARG:CZ	3.01	0.43
1:A:100:LEU:O	1:A:101:LEU:C	2.57	0.43
1:C:51:HIS:CD2	1:C:51:HIS:H	2.36	0.43
1:D:60:LEU:O	1:D:63:GLY:N	2.50	0.43
1:B:132:TYR:O	1:B:133:ARG:C	2.56	0.43
1:C:65:LEU:O	1:C:69:ALA:N	2.47	0.43
1:C:93:VAL:C	1:C:95:LEU:H	2.21	0.43
1:D:129:PRO:O	1:D:133:ARG:N	2.48	0.43
1:D:78:ASP:HA	1:D:79:PRO:HD3	1.61	0.43
1:A:112:ARG:O	1:A:113:GLU:C	2.56	0.43
1:C:110:PHE:CE1	1:C:141:SER:CA	2.84	0.43
1:B:93:VAL:O	1:B:94:GLY:C	2.57	0.43
1:B:13:VAL:HG21	1:B:96:LYS:NZ	2.33	0.43
1:A:62:TRP:O	1:A:65:LEU:N	2.52	0.43
1:A:9:PHE:CA	1:A:112:ARG:NH1	2.78	0.43
1:C:18:PHE:CE1	1:B:33:THR:HG22	2.54	0.43
1:C:107:ALA:CA	1:C:115:VAL:HG21	2.43	0.43
1:D:116:LEU:O	1:D:119:LEU:HG	2.19	0.43
1:D:53:THR:O	1:D:57:GLN:HG2	2.19	0.43
1:B:25:PRO:HB2	1:B:30:LEU:CD2	2.49	0.43
1:C:118:TYR:HE1	1:C:138:PRO:O	2.02	0.43
1:D:100:LEU:CA	1:D:103:PHE:HB3	2.49	0.43
1:D:20:PRO:O	1:D:21:SER:C	2.56	0.43
1:D:51:HIS:O	1:D:52:HIS:C	2.56	0.43
1:D:61:ALA:O	1:D:64:ASP:HB2	2.19	0.43
1:D:79:PRO:O	1:D:81:SER:N	2.44	0.43
1:D:108:LEU:O	1:D:109:THR:HG23	2.19	0.43
1:D:112:ARG:O	1:D:116:LEU:HG	2.19	0.43
1:D:16:LEU:C	1:D:18:PHE:N	2.72	0.43
1:B:118:TYR:CD2	1:B:118:TYR:C	2.92	0.43
1:B:3:ILE:HG22	1:A:43:GLU:CG	2.43	0.43
1:A:120:VAL:O	1:A:123:GLY:N	2.52	0.42
1:A:7:LYS:O	1:A:10:GLY:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:8:GLU:HG3	1:B:9:PHE:CD1	2.53	0.42
1:D:21:SER:OG	1:D:95:LEU:HD22	2.19	0.42
1:D:122:PHE:O	1:D:123:GLY:C	2.58	0.42
1:D:38:TYR:N	1:D:38:TYR:CD1	2.87	0.42
1:A:126:ILE:O	1:A:128:THR:N	2.52	0.42
1:A:105:ILE:HG13	1:A:105:ILE:H	1.66	0.42
1:C:1:MET:HE2	1:C:2:ASP:O	2.18	0.42
1:A:21:SER:O	1:A:22:ASP:C	2.57	0.42
1:A:21:SER:O	1:A:23:PHE:N	2.52	0.42
1:D:24:PHE:CE1	1:D:99:GLN:CB	3.03	0.42
1:B:143:LEU:HD23	1:B:143:LEU:N	2.34	0.42
1:A:93:VAL:O	1:A:94:GLY:C	2.58	0.42
1:B:27:VAL:HA	1:B:30:LEU:HD12	2.00	0.42
1:B:44:SER:HA	1:B:45:PRO:HD3	1.85	0.42
1:B:8:GLU:OE2	1:B:9:PHE:CZ	2.72	0.42
1:C:113:GLU:O	1:C:114:THR:C	2.57	0.42
1:C:140:LEU:O	1:C:141:SER:C	2.57	0.42
1:C:7:LYS:C	1:C:9:PHE:H	2.23	0.42
1:D:6:TYR:CE1	1:D:100:LEU:HB3	2.55	0.42
1:D:111:GLY:O	1:D:112:ARG:C	2.56	0.42
1:A:120:VAL:O	1:A:121:SER:C	2.58	0.42
1:A:52:HIS:O	1:A:53:THR:C	2.57	0.42
1:B:103:PHE:O	1:B:106:SER:HB2	2.20	0.42
1:C:130:PRO:C	1:C:132:TYR:N	2.73	0.42
1:C:52:HIS:HB3	1:C:56:ARG:CZ	2.50	0.42
1:C:54:ALA:HA	1:D:57:GLN:CG	2.41	0.42
1:D:18:PHE:C	1:D:19:LEU:HD23	2.40	0.42
1:D:42:LEU:O	1:D:56:ARG:NH2	2.52	0.42
1:B:16:LEU:O	1:B:18:PHE:N	2.52	0.42
1:C:25:PRO:C	1:C:98:ARG:HH21	2.23	0.42
1:C:143:LEU:N	1:C:144:PRO:CD	2.82	0.42
1:B:125:TRP:CE3	1:B:126:ILE:N	2.84	0.42
1:C:100:LEU:HA	1:C:103:PHE:HB3	2.01	0.42
1:C:50:PRO:O	1:C:51:HIS:C	2.58	0.42
1:D:124:VAL:O	1:D:125:TRP:C	2.56	0.42
1:D:128:THR:O	1:D:133:ARG:CZ	2.68	0.42
1:D:24:PHE:O	1:D:25:PRO:C	2.56	0.42
1:A:24:PHE:CD2	1:A:99:GLN:CB	3.03	0.42
1:B:139:ILE:O	1:B:141:SER:N	2.53	0.42
1:C:98:ARG:CA	1:C:101:LEU:HB3	2.50	0.42
1:C:128:THR:O	1:C:133:ARG:HD3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:15:LEU:O	1:C:18:PHE:HB3	2.19	0.42
1:D:30:LEU:O	1:D:31:LEU:C	2.58	0.42
1:D:62:TRP:C	1:D:64:ASP:N	2.74	0.42
1:B:132:TYR:O	1:B:134:PRO:CD	2.63	0.42
1:D:79:PRO:C	1:D:81:SER:N	2.72	0.42
1:A:19:LEU:HA	1:A:19:LEU:HD12	1.80	0.42
1:D:101:LEU:O	1:D:102:TRP:C	2.58	0.42
1:D:9:PHE:HA	1:D:112:ARG:NH2	2.34	0.42
1:D:37:LEU:HD12	1:D:37:LEU:O	2.19	0.42
1:B:104:HIS:O	1:B:105:ILE:C	2.57	0.41
1:C:119:LEU:HD12	1:C:119:LEU:C	2.37	0.41
1:A:28:ARG:HG3	1:A:28:ARG:HH11	1.85	0.41
1:A:19:LEU:N	1:A:20:PRO:CD	2.83	0.41
1:B:107:ALA:O	1:B:111:GLY:N	2.34	0.41
1:C:112:ARG:O	1:C:113:GLU:C	2.59	0.41
1:D:99:GLN:O	1:D:103:PHE:HB3	2.20	0.41
1:C:1:MET:CG	1:C:2:ASP:H	2.15	0.41
1:C:38:TYR:O	1:C:39:ARG:C	2.58	0.41
1:A:126:ILE:HG23	1:A:127:ARG:HG3	2.01	0.41
1:A:81:SER:O	1:A:85:VAL:HG13	2.19	0.41
1:B:55:LEU:O	1:B:59:ILE:HG13	2.20	0.41
1:B:89:VAL:HA	1:B:93:VAL:CG2	2.50	0.41
1:C:102:TRP:CE3	1:C:103:PHE:CA	3.03	0.41
1:C:60:LEU:O	1:C:61:ALA:C	2.58	0.41
1:D:129:PRO:O	1:D:133:ARG:HB2	2.20	0.41
1:A:4:ASP:OD1	1:A:6:TYR:HD1	2.03	0.41
1:B:23:PHE:HD2	1:B:24:PHE:CD1	2.38	0.41
1:C:53:THR:O	1:C:55:LEU:N	2.53	0.41
1:D:1:MET:CG	1:D:2:ASP:N	2.83	0.41
1:A:141:SER:HB2	1:A:142:THR:H	1.49	0.41
1:A:98:ARG:O	1:A:99:GLN:C	2.59	0.41
1:C:62:TRP:CD1	1:C:97:PHE:CZ	3.08	0.41
1:C:27:VAL:CG2	1:C:28:ARG:N	2.81	0.41
1:B:16:LEU:O	1:B:17:SER:C	2.59	0.41
1:B:110:PHE:CE2	1:B:140:LEU:HG	2.55	0.41
1:A:56:ARG:HA	1:A:59:ILE:HB	2.03	0.41
1:B:66:MET:HA	1:B:69:ALA:CB	2.51	0.41
1:B:78:ASP:O	1:B:80:ALA:N	2.54	0.41
1:B:104:HIS:O	1:B:107:ALA:N	2.53	0.41
1:C:15:LEU:HD23	1:C:15:LEU:C	2.39	0.41
1:D:107:ALA:HB2	1:D:115:VAL:HG21	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:4:ASP:OD1	1:D:6:TYR:N	2.53	0.41
1:A:117:GLU:C	1:A:119:LEU:N	2.73	0.41
1:A:55:LEU:HG	1:A:59:ILE:CD1	2.50	0.41
1:C:59:ILE:O	1:C:60:LEU:C	2.58	0.41
1:D:97:PHE:O	1:D:101:LEU:N	2.34	0.41
1:B:116:LEU:HD22	1:B:119:LEU:HD23	2.03	0.41
1:C:136:ASN:ND2	1:C:136:ASN:N	2.68	0.41
1:C:76:LEU:CD2	1:D:81:SER:OG	2.69	0.41
1:C:22:ASP:OD1	1:C:23:PHE:N	2.54	0.41
1:B:64:ASP:CA	1:B:67:THR:HB	2.40	0.41
1:B:94:GLY:HA2	1:B:97:PHE:HD2	1.86	0.41
1:B:133:ARG:NH1	1:B:133:ARG:HG2	2.35	0.41
1:C:111:GLY:O	1:C:112:ARG:C	2.58	0.40
1:C:125:TRP:CD1	1:C:137:ALA:CA	3.03	0.40
1:C:49:SER:HG	1:C:52:HIS:CE1	2.38	0.40
1:D:117:GLU:HA	1:D:120:VAL:HG21	2.03	0.40
1:D:49:SER:HB2	1:D:51:HIS:CE1	2.56	0.40
1:C:3:ILE:HG22	1:D:43:GLU:HG2	2.01	0.40
1:D:113:GLU:O	1:D:114:THR:C	2.60	0.40
1:C:67:THR:HG22	1:C:67:THR:O	2.22	0.40
1:B:33:THR:OG1	1:B:34:ALA:N	2.54	0.40
1:B:62:TRP:HD1	1:B:97:PHE:CE2	2.39	0.40
1:C:17:SER:O	1:C:19:LEU:N	2.55	0.40
1:C:30:LEU:O	1:C:33:THR:HB	2.21	0.40
1:D:119:LEU:O	1:D:123:GLY:N	2.53	0.40
1:D:95:LEU:O	1:D:97:PHE:N	2.54	0.40
1:B:109:THR:OG1	1:B:110:PHE:HD1	2.04	0.40
1:C:13:VAL:CG1	1:C:14:GLU:H	2.24	0.40
1:C:98:ARG:O	1:C:99:GLN:C	2.57	0.40
1:D:42:LEU:C	1:D:44:SER:N	2.75	0.40
1:D:86:VAL:HA	1:D:89:VAL:CG2	2.51	0.40
1:A:129:PRO:HA	1:A:130:PRO:HD3	1.72	0.40
1:A:24:PHE:CE2	1:A:99:GLN:CB	3.05	0.40
1:B:94:GLY:O	1:B:95:LEU:C	2.59	0.40
1:B:27:VAL:HG22	1:B:98:ARG:HD3	2.03	0.40
1:C:95:LEU:C	1:C:97:PHE:N	2.75	0.40
1:D:15:LEU:HD11	1:D:119:LEU:HD11	2.03	0.40
1:B:88:TYR:CD1	1:B:92:ASN:HB2	2.56	0.40
1:D:38:TYR:C	1:D:42:LEU:HG	2.41	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	
1	A	142/150 (95%)	63 (44%)	49 (34%)	30 (21%)	0	3
1	B	145/150 (97%)	65 (45%)	44 (30%)	36 (25%)	0	2
1	C	145/150 (97%)	72 (50%)	29 (20%)	44 (30%)	0	0
1	D	142/150 (95%)	60 (42%)	47 (33%)	35 (25%)	0	2
All	All	574/600 (96%)	260 (45%)	169 (29%)	145 (25%)	0	1

All (145) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	14	GLU
1	C	31	LEU
1	C	41	ALA
1	C	42	LEU
1	C	48	ALA
1	C	53	THR
1	C	79	PRO
1	C	97	PHE
1	C	105	ILE
1	C	111	GLY
1	C	117	GLU
1	C	130	PRO
1	C	131	ALA
1	C	141	SER
1	C	142	THR
1	D	21	SER
1	D	22	ASP
1	D	27	VAL
1	D	48	ALA
1	D	51	HIS
1	D	60	LEU
1	D	79	PRO

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Mol	Chain	Res	Type
1	D	91	THR
1	D	105	ILE
1	D	129	PRO
1	B	17	SER
1	B	39	ARG
1	B	113	GLU
1	B	120	VAL
1	B	130	PRO
1	B	131	ALA
1	B	145	GLU
1	A	35	ALA
1	A	55	LEU
1	A	95	LEU
1	A	112	ARG
1	A	126	ILE
1	C	23	PHE
1	C	27	VAL
1	C	81	SER
1	C	82	ARG
1	C	89	VAL
1	C	113	GLU
1	C	118	TYR
1	C	120	VAL
1	D	28	ARG
1	D	34	ALA
1	D	39	ARG
1	D	101	LEU
1	D	103	PHE
1	D	104	HIS
1	D	108	LEU
1	D	113	GLU
1	D	120	VAL
1	D	130	PRO
1	D	140	LEU
1	B	14	GLU
1	B	32	ASP
1	B	36	ALA
1	B	53	THR
1	B	59	ILE
1	B	89	VAL
1	B	90	ASN
1	B	99	GLN

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Mol	Chain	Res	Type
1	B	101	LEU
1	B	127	ARG
1	A	31	LEU
1	A	33	THR
1	A	60	LEU
1	A	89	VAL
1	A	90	ASN
1	C	55	LEU
1	C	95	LEU
1	C	98	ARG
1	C	99	GLN
1	C	112	ARG
1	C	129	PRO
1	D	20	PRO
1	D	31	LEU
1	D	50	PRO
1	D	106	SER
1	D	118	TYR
1	B	40	ASP
1	B	61	ALA
1	B	79	PRO
1	B	95	LEU
1	B	107	ALA
1	B	140	LEU
1	A	23	PHE
1	A	25	PRO
1	A	36	ALA
1	A	48	ALA
1	A	54	ALA
1	A	87	SER
1	A	116	LEU
1	A	127	ARG
1	C	15	LEU
1	C	28	ARG
1	C	33	THR
1	C	134	PRO
1	C	140	LEU
1	D	32	ASP
1	D	33	THR
1	D	43	GLU
1	D	95	LEU
1	D	112	ARG

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Mol	Chain	Res	Type
1	B	34	ALA
1	B	112	ARG
1	B	125	TRP
1	A	20	PRO
1	A	40	ASP
1	A	52	HIS
1	A	59	ILE
1	A	61	ALA
1	A	106	SER
1	A	118	TYR
1	C	5	PRO
1	C	54	ALA
1	C	61	ALA
1	C	96	LYS
1	C	101	LEU
1	D	99	GLN
1	D	131	ALA
1	B	33	THR
1	B	41	ALA
1	B	135	PRO
1	A	22	ASP
1	A	39	ARG
1	A	101	LEU
1	A	107	ALA
1	C	138	PRO
1	D	10	GLY
1	B	15	LEU
1	B	43	GLU
1	C	115	VAL
1	C	123	GLY
1	B	19	LEU
1	B	143	LEU
1	C	3	ILE
1	B	115	VAL
1	B	133	ARG
1	C	13	VAL
1	B	5	PRO
1	D	134	PRO
1	A	27	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	
1	A	124/130 (95%)	115 (93%)	9 (7%)	17	56
1	B	127/130 (98%)	115 (91%)	12 (9%)	11	44
1	C	127/130 (98%)	115 (91%)	12 (9%)	11	44
1	D	124/130 (95%)	110 (89%)	14 (11%)	7	35
All	All	502/520 (96%)	455 (91%)	47 (9%)	11	44

All (47) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	9	PHE
1	C	15	LEU
1	C	32	ASP
1	C	42	LEU
1	C	47	HIS
1	C	60	LEU
1	C	62	TRP
1	C	103	PHE
1	C	104	HIS
1	C	136	ASN
1	C	141	SER
1	C	142	THR
1	D	1	MET
1	D	23	PHE
1	D	47	HIS
1	D	50	PRO
1	D	51	HIS
1	D	53	THR
1	D	62	TRP
1	D	78	ASP
1	D	91	THR
1	D	103	PHE
1	D	126	ILE
1	D	129	PRO

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Mol	Chain	Res	Type
1	D	142	THR
1	D	144	PRO
1	B	14	GLU
1	B	29	ASP
1	B	47	HIS
1	B	77	GLU
1	B	103	PHE
1	B	108	LEU
1	B	118	TYR
1	B	129	PRO
1	B	130	PRO
1	B	132	TYR
1	B	134	PRO
1	B	143	LEU
1	A	8	GLU
1	A	15	LEU
1	A	20	PRO
1	A	23	PHE
1	A	24	PHE
1	A	49	SER
1	A	56	ARG
1	A	104	HIS
1	A	126	ILE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	51	HIS
1	C	92	ASN
1	C	136	ASN
1	D	99	GLN
1	B	75	ASN
1	B	90	ASN
1	B	99	GLN
1	A	52	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 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 [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	144/150 (96%)	-0.58	0 <span>100</span> <span>100</span>	20, 116, 254, 300	0
1	B	147/150 (98%)	-0.64	1 (0%) <span>89</span> <span>84</span>	28, 117, 276, 300	0
1	C	147/150 (98%)	-0.69	0 <span>100</span> <span>100</span>	20, 121, 300, 300	0
1	D	144/150 (96%)	-0.59	0 <span>100</span> <span>100</span>	20, 124, 300, 300	0
All	All	582/600 (97%)	-0.63	1 (0%) <span>95</span> <span>94</span>	20, 120, 297, 300	0

All (1) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	146	THR	2.2

### 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](#)

There are no ligands in this entry.

### 6.5 Other polymers [i](#)

There are no such residues in this entry.