



## Full wwPDB EM Validation Report ⓘ

Dec 18, 2022 – 03:12 pm GMT

PDB ID : 7NAV  
EMDB ID : EMD-12249  
Title : Bacterial 30S ribosomal subunit assembly complex state D (Consensus refinement)  
Authors : Schedlbauer, A.; Iturrioz, I.; Ochoa-Lizarralde, B.; Diercks, T.; Kaminishi, T.; Capuni, R.; Astigarraga, E.; Gil-Carton, D.; Fucini, P.; Connell, S.  
Deposited on : 2021-01-25  
Resolution : 4.80 Å (reported)  
Based on initial model : 4YBB

This is a Full wwPDB EM 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

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev43  
Mogul : 1.8.4, CSD as541be (2020)  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.3

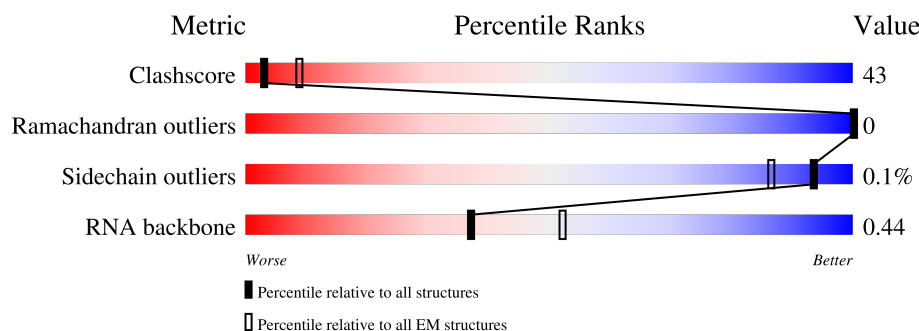
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 4.80 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)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. 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 EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1542	<div> <div>10%</div> <div>63%</div> <div>25%</div> <div>.</div> </div>
2	B	241	<div> <div>34%</div> <div>78%</div> <div>15%</div> <div>7%</div> </div>
3	C	233	<div> <div>33%</div> <div>57%</div> <div>9%</div> </div>
4	D	206	<div> <div>57%</div> <div>42%</div> </div>
5	E	167	<div> <div>49%</div> <div>44%</div> <div>7%</div> </div>
6	F	135	<div> <div>34%</div> <div>44%</div> <div>21%</div> </div>
7	G	179	<div> <div>61%</div> <div>34%</div> <div>50%</div> <div>16%</div> </div>

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Mol	Chain	Length	Quality of chain
8	H	130	
9	I	130	
10	J	103	
11	K	129	
12	L	124	
13	M	118	
14	N	101	
15	O	89	
16	P	82	
17	Q	84	
18	R	75	
19	S	92	
20	T	87	
21	V	133	
22	X	151	

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
1	2MG	A	1207	-	-	X	-

## 2 Entry composition

There are 24 unique types of molecules in this entry. The entry contains 52843 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1510	Total	C	N	O	P	0	0
			32412	14460	5945	10497	1510		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	224	Total	C	N	O	S	0	0
			1753	1109	315	321	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	211	Total	C	N	O	S	0	0
			1653	1046	310	293	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 5 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	156	Total	C	N	O	S	0	0
			1152	717	217	212	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	106	Total	C	N	O	S	0	0
			862	545	156	154	7		

- Molecule 7 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 8 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	99	Total	C	N	O	S	0	0
			795	498	152	144	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	123	Total	C	N	O	S	0	0
			957	591	196	165	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 16 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	R	65	Total	C	N	O	S	0	0
			535	339	100	95	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
19	S	82	Total	C	N	O	S	0	0
			658	421	125	110	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	86	Total	C	N	O	S	0	0
			670	414	138	115	3		

- Molecule 21 is a protein called 30S ribosome-binding factor.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	99	Total	C	N	O	S	0	0
			783	497	137	144	5		

- Molecule 22 is a protein called Ribosome maturation factor RimP.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	X	151	Total	C	N	O	S	0	0
			1174	742	197	230	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	151	ALA	-	expression tag	UNP P0A8A8

- Molecule 23 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
23	A	37	Total	Mg	0
			37	37	

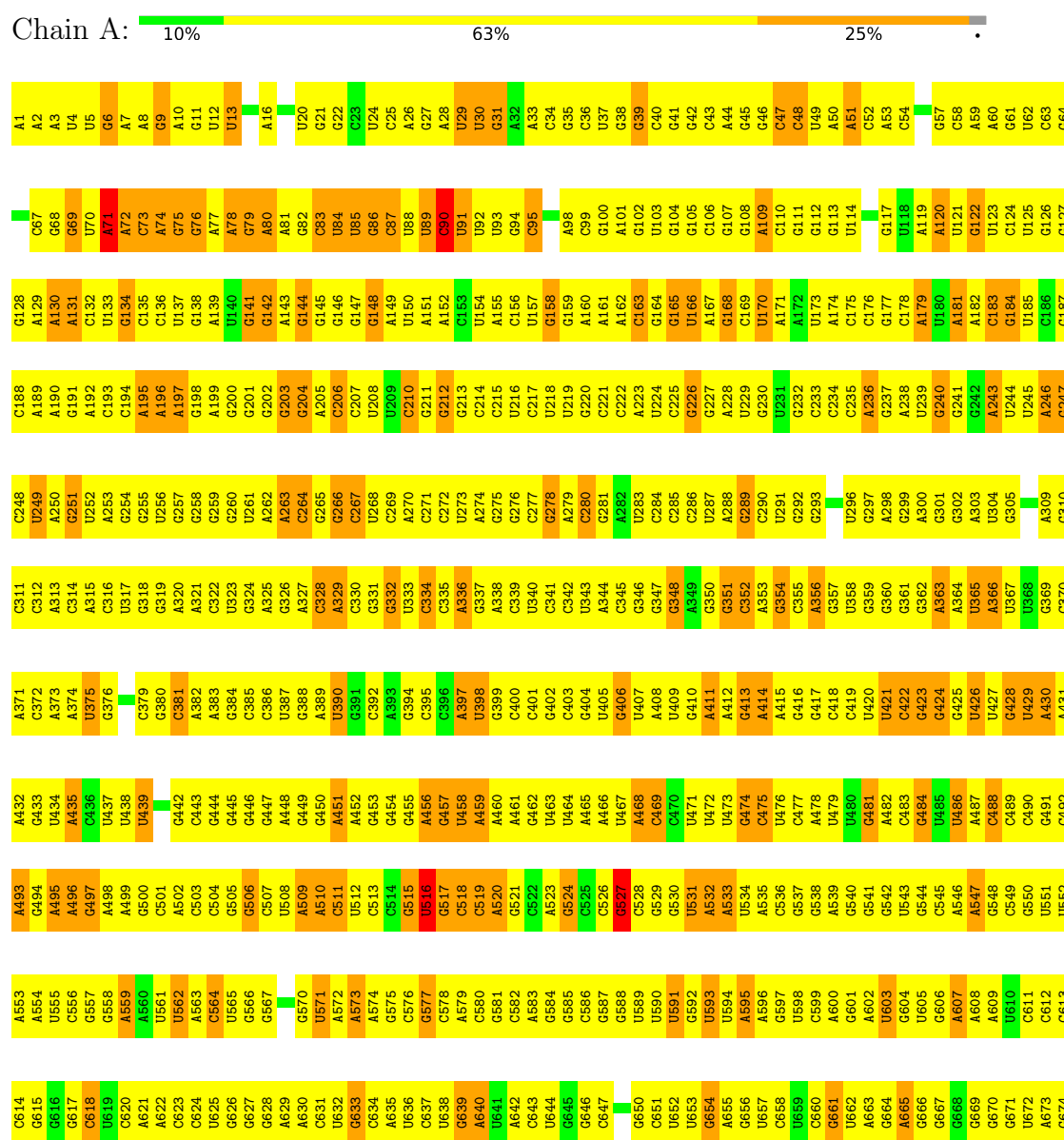
- Molecule 24 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
24	B	1	Total	Zn	0
			1	1	

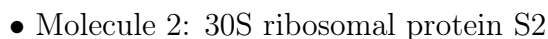
### 3 Residue-property plots

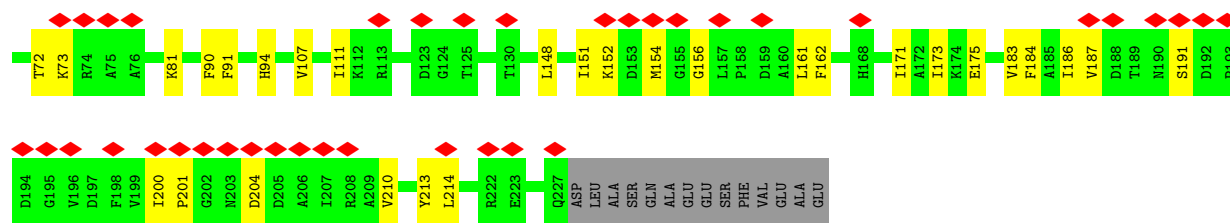
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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 rRNA



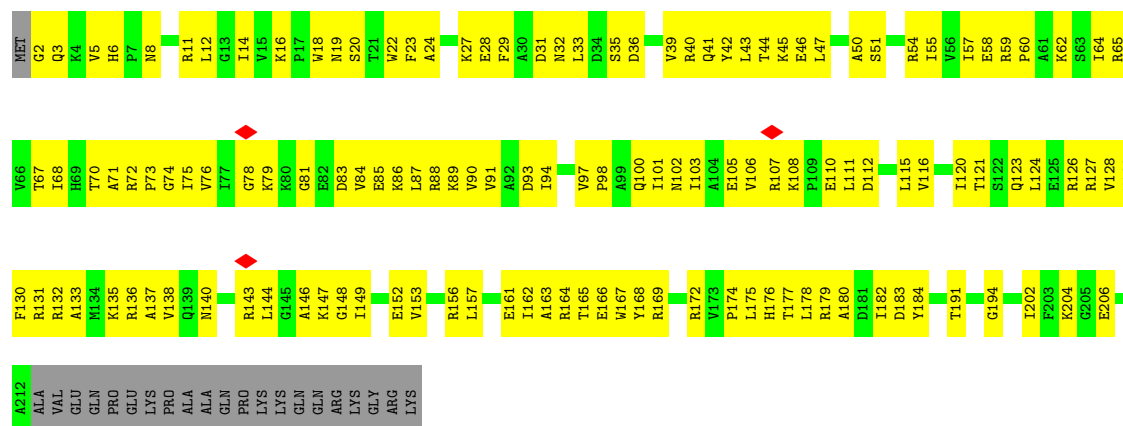






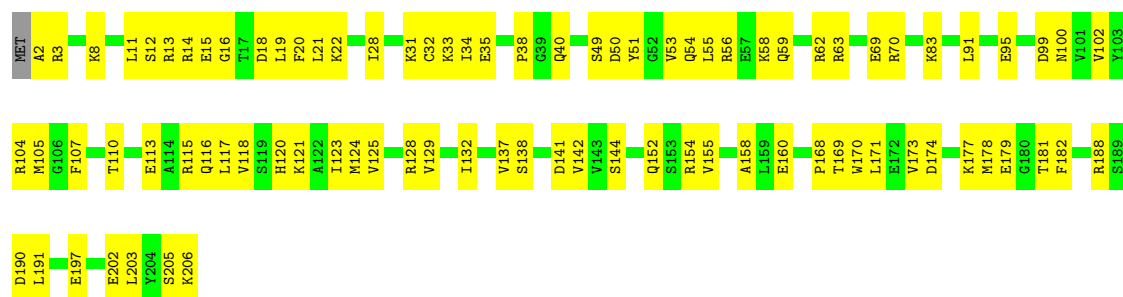
• Molecule 3: 30S ribosomal protein S3

Chain C: 33% 57% 9%



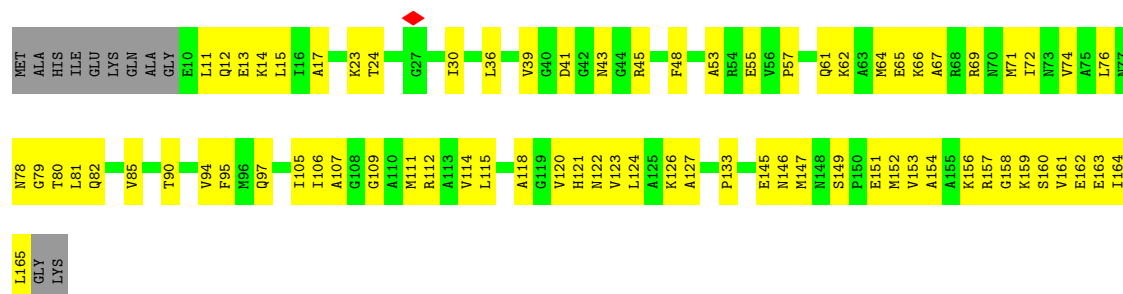
• Molecule 4: 30S ribosomal protein S4

Chain D: 57% 42%



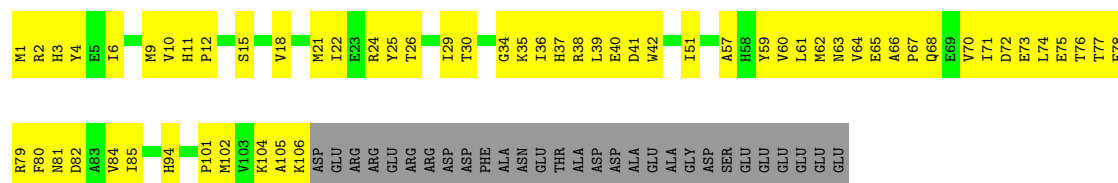
• Molecule 5: 30S ribosomal protein S5

Chain E: 49% 44% 7%



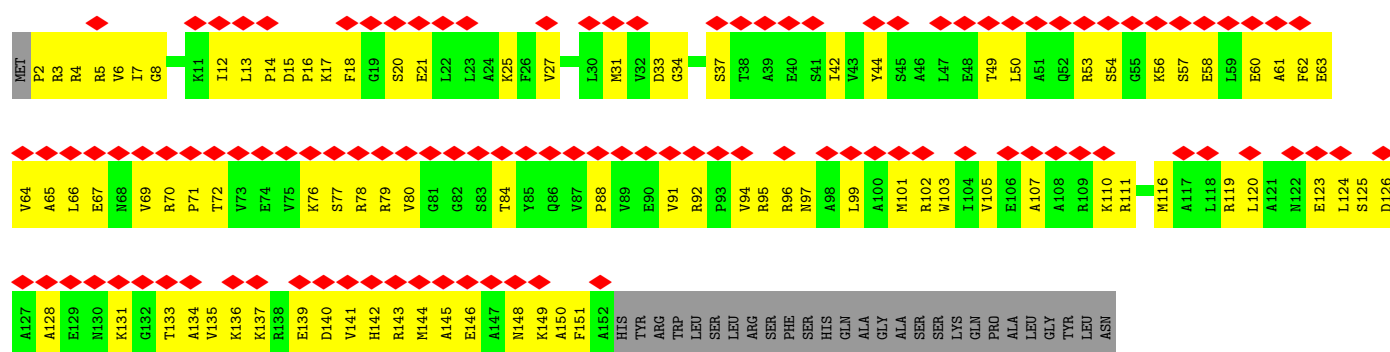
- Molecule 6: 30S ribosomal protein S6

Chain F: 



- Molecule 7: 30S ribosomal protein S7

Chain G: 



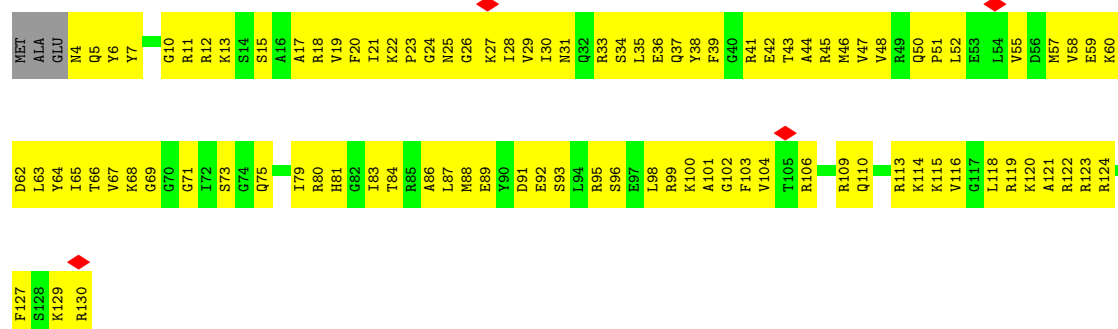
- Molecule 8: 30S ribosomal protein S8

Chain H: 

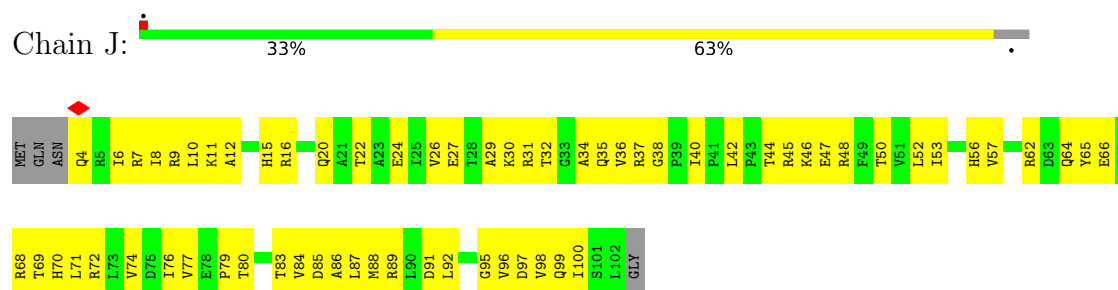


- Molecule 9: 30S ribosomal protein S9

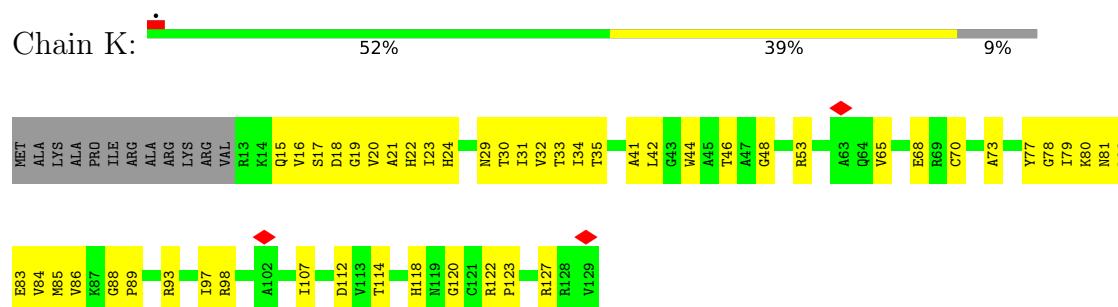
Chain I: 



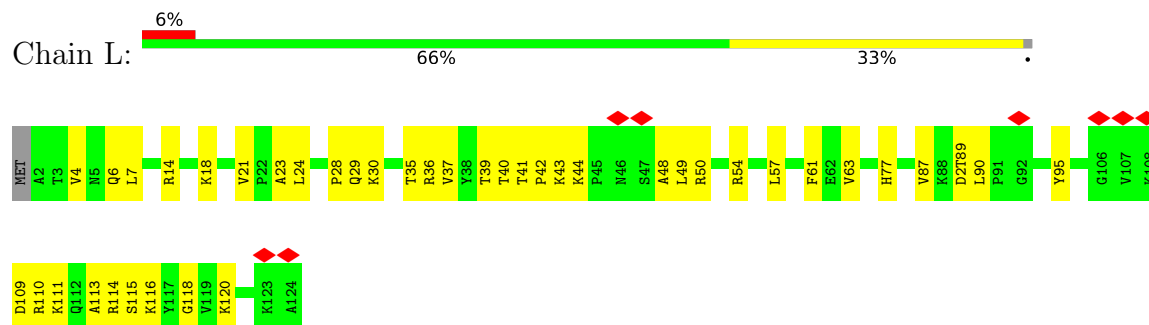
- Molecule 10: 30S ribosomal protein S10



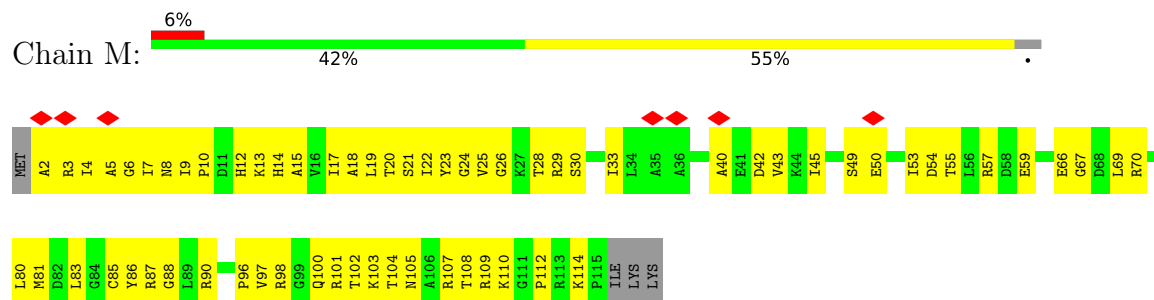
- Molecule 11: 30S ribosomal protein S11



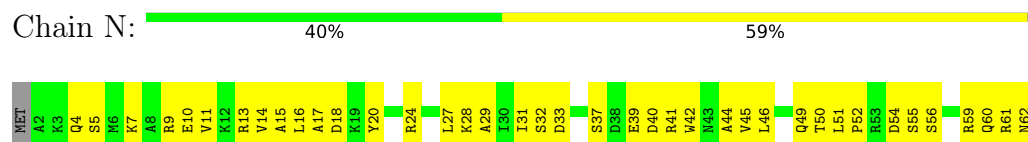
- Molecule 12: 30S ribosomal protein S12

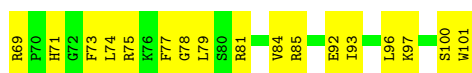


- Molecule 13: 30S ribosomal protein S13

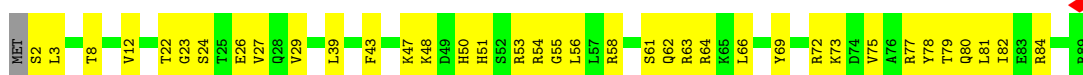


- Molecule 14: 30S ribosomal protein S14





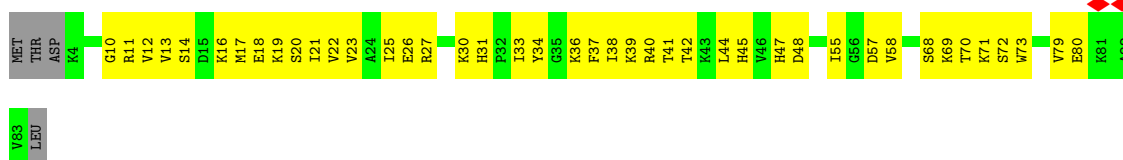
- Molecule 15: 30S ribosomal protein S15



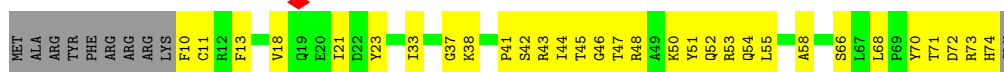
- Molecule 16: 30S ribosomal protein S16



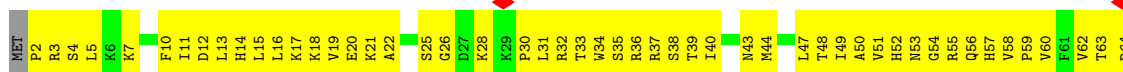
- Molecule 17: 30S ribosomal protein S17



- Molecule 18: 30S ribosomal protein S18



- Molecule 19: 30S ribosomal protein S19



- Molecule 20: 30S ribosomal protein S20





## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	4573	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	46.1	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.093	Depositor
Minimum map value	-0.030	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.016	Depositor
Map size (Å)	416.64, 416.64, 416.64	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.085, 1.085, 1.085	Depositor

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 5MC, ZN, 2MG, MA6, D2T, PSU, G7M, MG

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	0.95	2/36082 (0.0%)	1.00	9/56281 (0.0%)
2	B	0.40	0/1784	0.50	0/2403
3	C	0.37	0/1680	0.51	0/2263
4	D	0.56	0/1665	0.62	0/2227
5	E	0.57	0/1165	0.64	0/1568
6	F	0.51	0/881	0.63	0/1189
7	G	0.41	0/1195	0.54	0/1602
8	H	0.58	0/989	0.67	0/1326
9	I	0.39	0/1034	0.52	0/1375
10	J	0.43	0/805	0.55	0/1089
11	K	0.58	0/893	0.70	0/1205
12	L	0.58	0/960	0.66	0/1286
13	M	0.48	0/892	0.57	0/1193
14	N	0.41	0/817	0.49	0/1088
15	O	0.52	0/722	0.59	0/964
16	P	0.61	0/659	0.64	0/884
17	Q	0.59	0/657	0.65	0/881
18	R	0.56	0/544	0.64	0/731
19	S	0.36	0/675	0.50	0/908
20	T	0.54	0/676	0.61	0/895
21	V	0.57	0/792	0.68	1/1062 (0.1%)
22	X	0.50	0/1192	0.62	0/1619
All	All	0.81	2/56759 (0.0%)	0.89	10/84039 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	571	U	O3'-P	-11.49	1.47	1.61
1	A	495	A	N9-C4	-5.03	1.34	1.37

All (10) bond angle outliers are listed below:



Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1431	A	C8-N9-C4	5.84	108.14	105.80
21	V	30	PRO	CA-N-CD	-5.78	103.41	111.50
1	A	90	C	O4'-C1'-N1	5.47	112.58	108.20
1	A	799	G	N3-C4-C5	5.37	131.28	128.60
1	A	439	U	N3-C2-O2	-5.35	118.45	122.20
1	A	165	G	N3-C4-C5	5.31	131.26	128.60
1	A	71	A	C8-N9-C4	5.25	107.90	105.80
1	A	840	C	C2-N1-C1'	-5.13	113.16	118.80
1	A	506	G	C8-N9-C4	5.06	108.42	106.40
1	A	845	A	C4-C5-C6	5.02	119.51	117.00

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	32412	0	16320	2256	0
2	B	1753	0	1780	27	0
3	C	1653	0	1727	150	0
4	D	1643	0	1707	89	0
5	E	1152	0	1196	85	0
6	F	862	0	864	60	0
7	G	1181	0	1238	104	0
8	H	979	0	1031	72	0
9	I	1022	0	1070	122	0
10	J	795	0	836	78	0
11	K	877	0	887	64	0
12	L	957	0	1017	58	0
13	M	883	0	941	69	0
14	N	805	0	844	68	0
15	O	714	0	734	39	0
16	P	649	0	666	36	0
17	Q	648	0	691	44	0
18	R	535	0	552	36	0
19	S	658	0	683	76	0
20	T	670	0	719	33	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
21	V	783	0	816	82	0
22	X	1174	0	1174	95	0
23	A	37	0	0	0	0
24	B	1	0	0	0	0
All	All	52843	0	37493	3373	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 43.

All (3373) 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)
7:G:151:PHE:HZ	21:V:101:ASN:OD1	1.07	1.27
1:A:532:A:N6	3:C:161:GLU:OE2	1.73	1.19
7:G:151:PHE:CZ	21:V:101:ASN:CG	2.16	1.19
7:G:151:PHE:CZ	21:V:101:ASN:OD1	1.96	1.18
1:A:1073:U:OP1	5:E:62:LYS:HD3	1.49	1.11
1:A:1081:A:H5'	5:E:23:LYS:HE2	1.30	1.09
21:V:32:LEU:CD1	21:V:34:MET:H	1.67	1.08
12:L:37:VAL:HG22	22:X:48:VAL:CG2	1.84	1.07
7:G:151:PHE:CZ	21:V:101:ASN:ND2	2.25	1.05
21:V:32:LEU:HD12	21:V:33:GLY:N	1.78	0.97
21:V:32:LEU:HD12	21:V:34:MET:H	1.24	0.97
1:A:1138:G:H2'	1:A:1140:C:H5'	1.45	0.95
21:V:11:VAL:HG23	21:V:43:MET:CE	1.95	0.95
1:A:1081:A:C5'	5:E:23:LYS:HE2	1.97	0.95
12:L:37:VAL:CG2	22:X:48:VAL:CG2	2.46	0.94
7:G:151:PHE:CD1	21:V:104:VAL:HG11	2.01	0.94
1:A:1073:U:OP1	5:E:62:LYS:CD	2.14	0.94
11:K:127:ARG:CZ	21:V:14:GLU:HG2	1.98	0.93
18:R:33:ILE:HD13	18:R:68:LEU:CD1	1.98	0.93
1:A:1489:G:O2'	22:X:32:ARG:HG3	1.68	0.93
1:A:79:G:N3	1:A:90:C:N4	2.15	0.93
1:A:1410:A:N6	1:A:1490:U:O2	2.03	0.92
18:R:33:ILE:HD13	18:R:68:LEU:HD12	1.50	0.92
16:P:20:VAL:HG12	16:P:35:ARG:HB3	1.51	0.91
1:A:438:U:N3	1:A:496:A:N7	2.17	0.91
1:A:1055:A:N7	1:A:1200:C:N4	2.17	0.91
1:A:447:G:N2	1:A:487:A:N7	2.18	0.91
3:C:156:ARG:H	3:C:163:ALA:HA	1.35	0.91
1:A:448:A:N7	1:A:486:U:N3	2.18	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:50:THR:HG22	10:J:62:ARG:HE	1.35	0.90
21:V:11:VAL:HG23	21:V:43:MET:HE1	1.55	0.89
1:A:141:G:N1	1:A:222:C:N3	2.21	0.89
2:B:73:LYS:HE3	2:B:204:ASP:O	1.74	0.88
1:A:664:G:H2	1:A:741:G:H1	1.20	0.88
7:G:151:PHE:HD1	21:V:104:VAL:HG11	1.35	0.88
1:A:680:C:O2	1:A:710:G:N2	2.07	0.87
7:G:151:PHE:HZ	21:V:101:ASN:CG	1.63	0.87
6:F:36:ILE:HD11	6:F:39:LEU:HB2	1.56	0.87
12:L:37:VAL:HG22	22:X:48:VAL:HG22	1.54	0.87
1:A:682:G:O6	1:A:708:C:N4	2.08	0.87
1:A:93:U:H2'	1:A:95:C:H5	1.40	0.86
8:H:78:VAL:HG21	8:H:125:ILE:HG22	1.57	0.86
8:H:15:ARG:HB2	8:H:75:ILE:HD11	1.55	0.86
20:T:36:TYR:O	20:T:39:ILE:HG22	1.74	0.86
1:A:658:C:N3	1:A:748:G:N1	2.24	0.86
7:G:53:ARG:HE	7:G:125:SER:HB3	1.40	0.86
1:A:686:U:H1'	11:K:44:TRP:HE1	1.40	0.86
7:G:151:PHE:CE1	21:V:101:ASN:CG	2.48	0.86
1:A:25:C:H2'	1:A:26:A:H8	1.41	0.85
1:A:835:U:O2	1:A:851:G:N1	2.08	0.85
1:A:948:C:N3	1:A:1233:G:N1	2.24	0.85
1:A:437:U:O2	1:A:495:A:N6	2.10	0.85
1:A:833:G:N2	1:A:853:C:O2	2.10	0.85
1:A:1178:G:N2	1:A:1181:G:OP2	2.10	0.85
9:I:7:TYR:HA	9:I:19:VAL:O	1.75	0.85
1:A:947:G:N1	1:A:1234:C:N3	2.24	0.85
8:H:104:VAL:HG12	8:H:125:ILE:HG12	1.57	0.85
10:J:40:ILE:HG22	10:J:40:ILE:O	1.75	0.85
1:A:71:A:N6	1:A:99:C:O2	2.09	0.85
1:A:1535:C:O2'	21:V:29:ASP:HB3	1.77	0.84
1:A:1237:C:O2'	1:A:1300:G:N2	2.09	0.84
11:K:23:ILE:HG22	11:K:85:MET:O	1.76	0.84
1:A:940:C:O2	1:A:1343:G:N2	2.11	0.84
1:A:988:G:N2	1:A:1217:C:O2	2.09	0.84
22:X:26:ILE:HG23	22:X:36:LEU:HD21	1.58	0.84
1:A:1433:A:N6	1:A:1467:C:O2'	2.11	0.83
11:K:19:GLY:HA2	11:K:79:ILE:HG21	1.59	0.83
1:A:419:C:N3	1:A:424:G:N1	2.26	0.83
1:A:1489:G:H4'	22:X:32:ARG:HE	1.44	0.83
1:A:670:G:N1	1:A:736:C:N3	2.23	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1114:C:N3	1:A:1186:G:N1	2.24	0.83
1:A:83:C:O2	1:A:86:G:N2	2.12	0.83
5:E:13:GLU:CB	5:E:39:VAL:HG12	2.08	0.83
9:I:6:TYR:HB2	9:I:21:ILE:HB	1.59	0.83
1:A:1177:G:H3'	1:A:1178:G:H8	1.42	0.83
1:A:296:U:N3	1:A:301:G:O6	2.12	0.82
1:A:458:U:O2	1:A:474:G:N1	2.12	0.82
4:D:12:SER:O	4:D:16:GLY:N	2.12	0.82
11:K:127:ARG:NH2	21:V:14:GLU:HG2	1.94	0.82
21:V:32:LEU:HD12	21:V:34:MET:N	1.92	0.82
1:A:444:G:N1	1:A:490:C:N3	2.27	0.82
9:I:19:VAL:HA	9:I:65:ILE:HG22	1.61	0.82
18:R:33:ILE:CD1	18:R:68:LEU:HD11	2.08	0.82
19:S:50:ALA:HA	19:S:58:VAL:O	1.80	0.82
1:A:86:G:N3	1:A:87:C:N4	2.27	0.82
1:A:996:A:N1	1:A:1045:C:O2'	2.13	0.82
1:A:156:C:O2	1:A:165:G:N2	2.12	0.82
1:A:673:A:N6	1:A:717:U:O4	2.13	0.82
3:C:40:ARG:NH1	3:C:55:ILE:O	2.12	0.82
5:E:13:GLU:HB2	5:E:39:VAL:HG12	1.60	0.82
1:A:448:A:H3'	1:A:449:G:H8	1.43	0.82
1:A:517:G:O2'	1:A:531:U:O4	1.98	0.82
1:A:156:C:N3	1:A:165:G:N1	2.28	0.81
1:A:265:G:H4'	17:Q:68:SER:H	1.42	0.81
1:A:897:C:N3	1:A:902:G:N1	2.25	0.81
1:A:1074:G:N1	1:A:1083:U:O2	2.11	0.81
10:J:50:THR:OG1	10:J:64:GLN:HG3	1.80	0.81
1:A:593:U:O2	1:A:646:G:N1	2.12	0.81
1:A:601:G:N1	1:A:637:C:N3	2.23	0.81
1:A:691:G:HO2'	1:A:797:C:HO2'	1.26	0.81
1:A:686:U:H2'	1:A:703:G:H21	1.45	0.81
1:A:266:G:O6	1:A:271:C:N4	2.13	0.81
8:H:29:SER:HB3	8:H:59:LEU:HB2	1.62	0.81
12:L:24:LEU:HG	12:L:95:TYR:OH	1.79	0.81
1:A:680:C:N3	1:A:710:G:N1	2.25	0.81
18:R:70:TYR:O	18:R:71:THR:HG23	1.78	0.81
1:A:1244:G:N1	1:A:1293:C:N3	2.27	0.81
10:J:47:GLU:O	10:J:66:GLU:HA	1.81	0.81
1:A:75:G:N1	1:A:95:C:N3	2.27	0.81
1:A:127:G:N1	1:A:234:C:N3	2.29	0.81
13:M:3:ARG:NH2	13:M:7:ILE:O	2.14	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1162:C:O2	1:A:1174:G:N2	2.13	0.81
6:F:15:SER:HA	6:F:18:VAL:HG23	1.62	0.81
18:R:33:ILE:CD1	18:R:68:LEU:CD1	2.58	0.81
1:A:987:G:N1	1:A:1218:C:N3	2.28	0.80
22:X:104:ARG:HB2	22:X:142:GLN:HB3	1.63	0.80
1:A:42:G:N2	1:A:400:C:O2	2.13	0.80
1:A:1133:G:N1	1:A:1141:C:N3	2.27	0.80
3:C:58:GLU:HG2	3:C:60:PRO:HD3	1.62	0.80
1:A:601:G:N2	1:A:637:C:O2	2.11	0.80
1:A:992:U:O2	1:A:1044:A:N6	2.11	0.80
1:A:159:G:N2	1:A:162:A:OP2	2.12	0.80
1:A:680:C:H2'	1:A:681:A:H8	1.47	0.80
1:A:415:A:N6	1:A:428:G:O6	2.11	0.80
5:E:145:GLU:OE1	5:E:145:GLU:N	2.12	0.80
1:A:512:U:O4	1:A:539:A:N6	2.12	0.80
1:A:890:G:O2'	1:A:906:A:N6	2.13	0.80
8:H:49:PHE:HA	8:H:61:LEU:HA	1.64	0.80
1:A:1314:C:N4	19:S:2:PRO:O	2.15	0.80
12:L:21:VAL:HG21	12:L:24:LEU:HD12	1.64	0.80
1:A:1048:G:N1	1:A:1209:C:O2	2.15	0.80
3:C:129:MET:HB2	3:C:132:ARG:HE	1.46	0.80
6:F:76:THR:O	6:F:80:PHE:N	2.13	0.80
9:I:47:VAL:HA	9:I:50:GLN:HG2	1.62	0.80
11:K:35:THR:HA	11:K:41:ALA:HA	1.63	0.80
1:A:501:C:OP1	12:L:114:ARG:NH2	2.15	0.80
1:A:771:G:N1	1:A:808:C:N3	2.26	0.80
16:P:77:GLU:O	16:P:81:ALA:N	2.11	0.80
1:A:80:A:H2'	1:A:81:A:C8	2.17	0.79
1:A:1426:G:O6	1:A:1474:U:O2	2.01	0.79
6:F:12:PRO:HD3	6:F:57:ALA:HA	1.61	0.79
1:A:955:U:O2'	19:S:83:HIS:ND1	2.14	0.79
1:A:587:G:OP1	8:H:84:ARG:NH2	2.15	0.79
1:A:777:A:H3'	1:A:778:G:H8	1.48	0.79
5:E:85:VAL:HG21	5:E:147:MET:HB2	1.63	0.79
3:C:91:VAL:HG21	3:C:101:ILE:HD11	1.65	0.79
12:L:44:LYS:HA	22:X:72:TYR:CD2	2.17	0.79
1:A:606:G:N2	1:A:632:U:OP1	2.15	0.79
1:A:863:U:O2	1:A:866:C:N4	2.13	0.79
6:F:41:ASP:OD2	6:F:60:VAL:HG22	1.82	0.79
1:A:537:G:OP1	12:L:110:ARG:NH2	2.16	0.79
1:A:1113:C:N3	1:A:1187:G:N1	2.27	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1245:C:N3	1:A:1292:G:N1	2.28	0.79
1:A:1284:C:H3'	1:A:1285:A:H2'	1.65	0.79
1:A:1353:G:N2	1:A:1369:C:O2	2.13	0.79
6:F:102:MET:O	6:F:106:LYS:NZ	2.14	0.79
1:A:575:G:N2	1:A:880:C:O2	2.12	0.79
6:F:26:THR:O	6:F:30:THR:N	2.16	0.79
1:A:157:U:O2	1:A:164:G:N1	2.16	0.79
1:A:511:C:N3	1:A:540:G:N1	2.29	0.79
1:A:666:G:H5'	1:A:726:C:H1'	1.65	0.79
1:A:834:U:O2	1:A:852:G:N1	2.13	0.79
1:A:1077:G:N2	1:A:1080:A:OP2	2.16	0.79
1:A:1178:G:O2'	1:A:1180:A:N7	2.15	0.79
11:K:42:LEU:HD13	11:K:77:TYR:HE2	1.49	0.78
1:A:1233:G:OP1	9:I:119:ARG:NH1	2.15	0.78
3:C:41:GLN:HG2	3:C:45:LYS:HZ2	1.48	0.78
5:E:11:LEU:HB3	5:E:41:ASP:OD1	1.84	0.78
1:A:419:C:N4	1:A:424:G:O6	2.16	0.78
1:A:589:U:O2	1:A:650:G:N1	2.14	0.78
1:A:987:G:N2	1:A:1218:C:O2	2.15	0.78
2:B:23:TRP:HZ3	2:B:25:PRO:HA	1.48	0.78
1:A:82:G:C5	1:A:83:C:H1'	2.19	0.78
1:A:181:A:O2'	1:A:194:C:N4	2.17	0.78
1:A:1000:A:N6	1:A:1040:U:O4	2.15	0.78
1:A:122:G:N1	1:A:239:U:O2	2.17	0.78
1:A:447:G:N1	1:A:486:U:OP2	2.16	0.77
1:A:1015:G:H21	1:A:1218:C:H1'	1.47	0.77
1:A:1162:C:N3	1:A:1174:G:N1	2.25	0.77
3:C:60:PRO:HD2	3:C:64:ILE:HA	1.63	0.77
1:A:67:C:O2	1:A:102:G:N2	2.17	0.77
1:A:865:A:H5'	1:A:1078:U:O4	1.84	0.77
1:A:444:G:N2	1:A:490:C:O2	2.16	0.77
1:A:774:G:O6	1:A:805:C:N4	2.17	0.77
1:A:8:A:H62	4:D:206:LYS:H	1.31	0.77
1:A:318:G:O6	1:A:335:C:N4	2.17	0.77
1:A:1006:G:N1	1:A:1023:U:O2	2.16	0.77
9:I:39:PHE:O	9:I:45:ARG:NH2	2.17	0.77
9:I:116:VAL:HG21	10:J:64:GLN:NE2	1.99	0.77
1:A:35:G:O6	1:A:549:C:N4	2.15	0.77
1:A:255:G:N2	1:A:271:C:O2	2.16	0.77
1:A:297:G:N2	1:A:300:A:OP2	2.18	0.77
1:A:1244:G:N2	1:A:1293:C:O2	2.15	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:249:U:N3	1:A:275:G:O6	2.18	0.77
1:A:256:U:OP1	17:Q:19:LYS:NZ	2.18	0.76
11:K:127:ARG:NE	21:V:14:GLU:OE2	2.18	0.76
1:A:35:G:N1	1:A:549:C:N3	2.27	0.76
1:A:822:U:H2'	1:A:823:C:H6	1.48	0.76
1:A:859:G:OP2	1:A:869:G:N1	2.14	0.76
1:A:604:G:O6	1:A:634:C:N4	2.18	0.76
3:C:12:LEU:HA	3:C:16:LYS:HB2	1.66	0.76
4:D:28:ILE:HD11	4:D:34:ILE:HD13	1.66	0.76
9:I:28:ILE:HG22	9:I:63:LEU:HB2	1.67	0.76
1:A:1051:C:N3	1:A:1207:2MG:N1	2.27	0.76
3:C:64:ILE:HG23	3:C:97:VAL:HG11	1.67	0.76
1:A:52:C:N4	1:A:359:G:O6	2.17	0.76
7:G:13:LEU:HD12	7:G:14:PRO:HD2	1.67	0.76
1:A:150:U:O2	1:A:171:A:N6	2.17	0.76
11:K:122:ARG:HD2	11:K:123:PRO:HD2	1.67	0.76
9:I:114:LYS:HA	9:I:121:ALA:HA	1.66	0.76
1:A:75:G:O6	1:A:95:C:N4	2.17	0.76
1:A:418:C:N3	1:A:425:G:N1	2.29	0.76
1:A:600:A:N6	1:A:638:U:O4	2.16	0.76
1:A:449:G:O6	1:A:484:G:N1	2.16	0.75
1:A:502:A:N6	1:A:543:U:O4	2.20	0.75
9:I:25:ASN:O	9:I:61:LEU:N	2.19	0.75
1:A:837:U:N3	1:A:849:G:O6	2.16	0.75
1:A:1124:G:N1	1:A:1149:C:N3	2.32	0.75
7:G:141:VAL:HG13	7:G:142:HIS:HD1	1.51	0.75
21:V:11:VAL:HG23	21:V:43:MET:HE3	1.67	0.75
1:A:1376:U:H2'	1:A:1377:A:C8	2.21	0.75
11:K:88:GLY:H	11:K:114:THR:HG22	1.52	0.75
1:A:660:C:O2	1:A:745:G:N2	2.18	0.75
1:A:1081:A:H5'	5:E:23:LYS:CE	2.14	0.75
1:A:1119:C:N3	1:A:1154:G:N1	2.32	0.75
7:G:77:SER:HG	7:G:84:THR:HG1	1.31	0.75
8:H:34:VAL:HG22	8:H:59:LEU:HD13	1.69	0.75
10:J:32:THR:HG21	10:J:83:THR:HA	1.69	0.75
1:A:42:G:N1	1:A:400:C:N3	2.35	0.75
1:A:511:C:N4	1:A:540:G:O6	2.17	0.75
1:A:1038:C:H2'	1:A:1039:G:H8	1.51	0.75
21:V:73:GLN:NE2	21:V:97:PHE:HD2	1.84	0.75
1:A:448:A:N6	1:A:486:U:O2	2.12	0.75
1:A:1309:G:OP1	13:M:87:ARG:NH2	2.20	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:41:ASP:HB2	5:E:45:ARG:HB2	1.68	0.75
1:A:679:C:N3	1:A:711:G:N1	2.30	0.75
1:A:658:C:O2	1:A:748:G:N2	2.20	0.75
1:A:671:G:O3'	6:F:79:ARG:NH2	2.20	0.74
1:A:682:G:N1	1:A:708:C:N3	2.29	0.74
1:A:897:C:O2	1:A:902:G:N2	2.17	0.74
1:A:961:U:O2	1:A:1201:A:N6	2.17	0.74
1:A:993:G:O6	1:A:1045:C:N4	2.19	0.74
1:A:1052:U:N3	1:A:1206:G:O6	2.19	0.74
4:D:138:SER:N	4:D:141:ASP:OD2	2.19	0.74
1:A:269:C:H2'	1:A:270:A:H8	1.52	0.74
1:A:669:G:O6	1:A:737:C:N4	2.18	0.74
2:B:111:ILE:HD12	2:B:152:LYS:HA	1.68	0.74
1:A:141:G:N2	1:A:222:C:O2	2.19	0.74
1:A:458:U:H2'	1:A:459:A:C8	2.23	0.74
4:D:118:VAL:HG12	4:D:123:ILE:HG13	1.70	0.74
14:N:50:THR:HG22	19:S:13:LEU:HD13	1.70	0.74
1:A:27:G:O6	1:A:556:C:N4	2.17	0.74
1:A:993:G:N1	1:A:1045:C:N3	2.35	0.74
3:C:11:ARG:NH2	3:C:177:THR:O	2.13	0.74
7:G:101:MET:O	7:G:105:VAL:HG23	1.87	0.74
1:A:597:G:N2	1:A:643:C:O2	2.15	0.74
1:A:823:C:O2	1:A:877:G:N2	2.17	0.74
1:A:1125:U:OP1	10:J:37:ARG:NH2	2.19	0.74
10:J:50:THR:CG2	10:J:62:ARG:HB3	2.18	0.74
1:A:199:A:H2'	1:A:200:G:H8	1.51	0.74
7:G:5:ARG:NH1	7:G:6:VAL:O	2.21	0.74
1:A:418:C:O2	1:A:425:G:N2	2.20	0.74
13:M:2:ALA:HA	13:M:9:ILE:HG23	1.68	0.74
1:A:446:G:N2	1:A:488:C:O2	2.20	0.74
1:A:931:C:O2	1:A:1386:G:N2	2.15	0.74
6:F:15:SER:HA	6:F:18:VAL:CG2	2.16	0.74
1:A:27:G:N1	1:A:556:C:N3	2.34	0.74
1:A:261:U:OP2	20:T:71:LYS:NZ	2.20	0.74
1:A:309:A:O2'	1:A:607:A:N1	2.21	0.74
1:A:79:G:H21	1:A:90:C:H5	1.36	0.73
1:A:131:A:H2'	1:A:132:C:H6	1.53	0.73
1:A:532:A:H61	3:C:161:GLU:CD	1.90	0.73
12:L:44:LYS:HB2	22:X:72:TYR:HB3	1.68	0.73
1:A:199:A:H2'	1:A:200:G:C8	2.23	0.73
1:A:454:G:O6	1:A:478:A:N6	2.20	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1353:G:N1	1:A:1369:C:N3	2.36	0.73
13:M:107:ARG:HA	13:M:110:LYS:HB3	1.68	0.73
1:A:597:G:N1	1:A:643:C:N3	2.36	0.73
1:A:670:G:N2	1:A:736:C:O2	2.16	0.73
1:A:893:C:H2'	1:A:894:G:H8	1.52	0.73
1:A:947:G:N2	1:A:1234:C:O2	2.15	0.73
1:A:1418:A:OP2	1:A:1482:G:N2	2.22	0.73
3:C:50:ALA:O	3:C:70:THR:OG1	2.05	0.73
1:A:454:G:N1	1:A:478:A:N1	2.36	0.73
22:X:120:VAL:HA	22:X:125:ILE:HG23	1.71	0.73
1:A:249:U:O2	1:A:275:G:N1	2.20	0.73
1:A:265:G:N2	1:A:267:C:O4'	2.21	0.73
1:A:457:G:N1	1:A:475:C:N3	2.32	0.73
1:A:474:G:OP1	16:P:76:LYS:NZ	2.19	0.73
1:A:651:C:N4	1:A:753:A:OP2	2.22	0.73
7:G:57:SER:O	7:G:61:ALA:N	2.21	0.73
12:L:44:LYS:HA	22:X:72:TYR:HD2	1.53	0.73
1:A:200:G:N2	1:A:217:C:O2	2.16	0.73
9:I:120:LYS:HB2	9:I:123:ARG:HB3	1.71	0.73
17:Q:45:HIS:CG	17:Q:70:THR:HG22	2.24	0.73
19:S:47:LEU:O	19:S:62:VAL:N	2.22	0.73
1:A:2:A:N3	1:A:613:C:O2'	2.21	0.73
1:A:188:C:H2'	1:A:189:A:O4'	1.89	0.73
1:A:1287:A:H2'	1:A:1288:A:C8	2.24	0.73
3:C:72:ARG:HB3	3:C:75:ILE:HB	1.68	0.73
13:M:5:ALA:H	13:M:57:ARG:HG2	1.52	0.73
1:A:126:G:OP1	1:A:605:U:O2'	2.07	0.73
1:A:544:G:OP1	4:D:59:GLN:NE2	2.22	0.73
1:A:1114:C:N4	1:A:1186:G:O6	2.18	0.73
1:A:1333:A:H3'	1:A:1334:G:H8	1.53	0.73
1:A:213:G:OP2	1:A:214:C:N4	2.21	0.73
1:A:785:G:H2'	1:A:786:G:C8	2.23	0.73
4:D:15:GLU:OE2	4:D:56:ARG:NH2	2.22	0.73
9:I:41:ARG:NH2	9:I:73:SER:OG	2.22	0.73
1:A:660:C:N3	1:A:745:G:N1	2.36	0.72
1:A:1133:G:O6	1:A:1141:C:N4	2.18	0.72
1:A:139:A:N6	1:A:224:U:O4	2.17	0.72
1:A:176:C:H3'	1:A:177:G:H21	1.53	0.72
1:A:503:C:O2'	1:A:510:A:N1	2.22	0.72
1:A:1166:G:N1	1:A:1169:A:OP2	2.20	0.72
13:M:107:ARG:NH1	13:M:112:PRO:O	2.22	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:V:73:GLN:CD	21:V:97:PHE:HD2	1.92	0.72
1:A:333:U:H2'	1:A:334:C:H6	1.54	0.72
1:A:451:A:OP2	16:P:70:ARG:NH2	2.22	0.72
9:I:52:LEU:HD21	9:I:58:VAL:HA	1.71	0.72
1:A:446:G:N1	1:A:488:C:N3	2.34	0.72
1:A:1518:MA6:H2'	1:A:1519:MA6:O4'	1.89	0.72
16:P:56:ARG:HH21	16:P:59:HIS:CG	2.07	0.72
1:A:375:U:OP1	16:P:70:ARG:NH1	2.23	0.72
1:A:663:A:O3'	18:R:53:ARG:NH2	2.22	0.72
1:A:1524:C:H2'	1:A:1525:G:C8	2.25	0.72
4:D:177:LYS:HG3	4:D:179:GLU:HB3	1.70	0.72
22:X:28:PHE:HB2	22:X:36:LEU:HD12	1.69	0.72
3:C:121:THR:HA	3:C:124:LEU:HD12	1.70	0.72
10:J:50:THR:HG22	10:J:62:ARG:NE	2.04	0.72
1:A:844:G:H3'	1:A:845:A:H8	1.53	0.72
1:A:939:G:O3'	7:G:102:ARG:NH2	2.22	0.72
8:H:78:VAL:CG2	8:H:125:ILE:HG22	2.20	0.72
1:A:101:A:OP1	20:T:5:LYS:NZ	2.23	0.71
1:A:617:G:N1	1:A:623:C:N3	2.31	0.71
12:L:21:VAL:CG2	12:L:24:LEU:HD12	2.20	0.71
12:L:23:ALA:HB1	12:L:57:LEU:HD11	1.72	0.71
22:X:98:GLU:HA	22:X:116:VAL:HA	1.70	0.71
1:A:450:G:H2'	1:A:481:G:H22	1.54	0.71
1:A:1190:G:HO2'	3:C:2:GLY:N	1.86	0.71
5:E:154:ALA:O	5:E:158:GLY:N	2.22	0.71
1:A:316:C:N4	1:A:337:G:O6	2.18	0.71
3:C:19:ASN:O	3:C:40:ARG:NH2	2.22	0.71
22:X:58:VAL:HA	22:X:61:VAL:HG22	1.72	0.71
22:X:119:ALA:H	22:X:126:THR:HG1	1.36	0.71
1:A:708:C:OP1	11:K:22:HIS:NE2	2.23	0.71
9:I:25:ASN:HB3	9:I:62:ASP:HB3	1.72	0.71
18:R:33:ILE:HD12	18:R:68:LEU:HD11	1.71	0.71
20:T:15:GLU:OE1	20:T:18:ARG:NH2	2.24	0.71
1:A:1165:U:H3'	1:A:1166:G:H8	1.56	0.71
14:N:63:ARG:NH1	14:N:68:GLY:O	2.23	0.71
1:A:687:A:H61	1:A:703:G:H5'	1.56	0.71
1:A:714:G:H2'	1:A:715:A:C8	2.25	0.71
1:A:861:G:N2	1:A:868:C:O2	2.17	0.71
1:A:1426:G:C6	1:A:1474:U:O2	2.44	0.71
9:I:84:THR:HG21	9:I:103:PHE:HB3	1.71	0.71
1:A:107:G:N7	20:T:10:ARG:NH2	2.39	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:919:A:O2'	1:A:1080:A:N1	2.20	0.70
7:G:151:PHE:CE1	21:V:101:ASN:ND2	2.59	0.70
9:I:17:ALA:HA	9:I:66:THR:O	1.91	0.70
1:A:427:U:O2'	1:A:541:G:OP1	2.09	0.70
1:A:981:U:O2'	14:N:61:ARG:NH1	2.25	0.70
1:A:142:G:H3'	1:A:143:A:H8	1.54	0.70
1:A:354:G:O2'	1:A:389:A:OP1	2.09	0.70
1:A:1257:A:OP1	3:C:27:LYS:NZ	2.23	0.70
3:C:11:ARG:NH1	3:C:180:ALA:O	2.24	0.70
1:A:210:C:O2	1:A:211:G:N1	2.24	0.70
1:A:933:G:N7	7:G:3:ARG:NH1	2.38	0.70
1:A:1113:C:O2	1:A:1187:G:N2	2.19	0.70
1:A:1051:C:O2	1:A:1207:2MG:N2	2.20	0.70
13:M:8:ASN:HD21	13:M:22:ILE:HA	1.54	0.70
13:M:103:LYS:HG2	13:M:104:THR:HG23	1.73	0.70
1:A:532:A:C6	3:C:161:GLU:OE2	2.44	0.70
1:A:971:G:OP2	1:A:1231:G:N2	2.22	0.70
1:A:523:A:H61	12:L:50:ARG:HH22	1.39	0.70
1:A:1307:U:O2'	13:M:109:ARG:NH2	2.24	0.70
5:E:154:ALA:HB2	5:E:164:ILE:HG12	1.72	0.70
8:H:78:VAL:HG21	8:H:125:ILE:CG2	2.22	0.70
16:P:42:ILE:HG22	16:P:42:ILE:O	1.91	0.70
1:A:893:C:H2'	1:A:894:G:C8	2.27	0.70
1:A:957:U:OP1	19:S:81:ARG:NH2	2.25	0.70
1:A:578:C:N4	1:A:763:G:O6	2.17	0.70
1:A:735:C:H2'	1:A:736:C:H6	1.57	0.70
1:A:1043:G:H2'	1:A:1044:A:C8	2.27	0.70
1:A:1346:A:N6	1:A:1374:A:N7	2.40	0.70
13:M:20:THR:HG23	13:M:26:GLY:HA2	1.72	0.70
1:A:80:A:H2'	1:A:81:A:H8	1.56	0.69
1:A:106:C:H2'	1:A:107:G:H8	1.56	0.69
1:A:160:A:N6	1:A:347:G:O2'	2.24	0.69
1:A:701:U:O2	1:A:703:G:N1	2.24	0.69
1:A:30:U:O4	1:A:553:A:N6	2.18	0.69
1:A:900:A:H3'	1:A:901:A:H8	1.55	0.69
1:A:1112:C:N4	3:C:176:HIS:O	2.24	0.69
1:A:236:A:H2'	1:A:237:G:C8	2.27	0.69
1:A:84:U:OP2	1:A:85:U:N3	2.25	0.69
1:A:771:G:N2	1:A:808:C:O2	2.13	0.69
1:A:3:A:HO2'	1:A:612:C:HO2'	1.40	0.69
1:A:421:U:O2	3:C:127:ARG:CZ	2.40	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1112:C:N3	3:C:178:LEU:N	2.37	0.69
7:G:151:PHE:CD1	21:V:104:VAL:CG1	2.76	0.69
1:A:448:A:H3'	1:A:449:G:C8	2.26	0.69
1:A:517:G:O2'	1:A:530:G:N7	2.26	0.69
1:A:612:C:O2	1:A:628:G:N2	2.19	0.69
1:A:617:G:O6	1:A:623:C:N4	2.17	0.69
1:A:666:G:OP2	1:A:725:G:N2	2.24	0.69
1:A:963:G:O2'	10:J:56:HIS:HE1	1.76	0.69
1:A:1119:C:N4	1:A:1154:G:O6	2.20	0.69
11:K:16:VAL:HB	11:K:79:ILE:HG12	1.73	0.69
1:A:148:G:O6	1:A:174:A:N6	2.18	0.69
1:A:215:C:H2'	1:A:216:U:O4'	1.93	0.69
1:A:318:G:N1	1:A:335:C:N3	2.35	0.69
1:A:555:U:H2'	1:A:556:C:C6	2.28	0.69
9:I:67:VAL:O	9:I:68:LYS:NZ	2.25	0.69
1:A:136:C:O2	1:A:227:G:N2	2.18	0.69
1:A:380:G:N2	1:A:383:A:OP2	2.25	0.69
1:A:414:A:H2'	1:A:415:A:O4'	1.92	0.69
1:A:1059:C:H2'	1:A:1060:U:C6	2.28	0.69
1:A:1512:U:O2	1:A:1523:G:N1	2.18	0.69
1:A:200:G:N1	1:A:217:C:N3	2.34	0.69
1:A:1512:U:H2'	1:A:1513:A:H8	1.57	0.69
1:A:154:U:H2'	1:A:155:A:C8	2.29	0.68
1:A:837:U:H2'	1:A:838:G:H8	1.59	0.68
1:A:949:A:OP2	13:M:105:ASN:ND2	2.26	0.68
2:B:187:VAL:HG13	2:B:191:SER:HB2	1.75	0.68
19:S:30:PRO:HB3	19:S:48:THR:HG23	1.76	0.68
19:S:53:ASN:OD1	19:S:56:GLN:N	2.23	0.68
5:E:14:LYS:NZ	5:E:15:LEU:O	2.25	0.68
14:N:74:LEU:O	14:N:78:GLY:N	2.20	0.68
1:A:178:C:OP1	20:T:60:ARG:NH2	2.27	0.68
1:A:257:G:H2'	1:A:258:G:H8	1.57	0.68
1:A:1124:G:O6	1:A:1149:C:N4	2.20	0.68
1:A:1380:U:C5	7:G:3:ARG:HA	2.28	0.68
14:N:40:ASP:O	14:N:44:ALA:HB2	1.93	0.68
1:A:52:C:N3	1:A:359:G:N1	2.39	0.68
1:A:1130:A:H2'	1:A:1131:G:H8	1.59	0.68
11:K:127:ARG:HG3	21:V:14:GLU:OE2	1.93	0.68
1:A:1310:G:N2	1:A:1327:C:O2	2.16	0.68
8:H:15:ARG:HH21	8:H:75:ILE:HG13	1.57	0.68
9:I:34:SER:O	9:I:38:TYR:N	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1279:G:OP2	1:A:1279:G:N2	2.26	0.68
1:A:1199:U:H4'	10:J:56:HIS:ND1	2.09	0.68
1:A:1221:G:OP1	19:S:36:ARG:NH2	2.22	0.68
7:G:66:LEU:O	7:G:70:ARG:N	2.23	0.68
8:H:81:PRO:O	8:H:84:ARG:NH2	2.26	0.68
11:K:127:ARG:CD	21:V:14:GLU:OE2	2.41	0.68
16:P:36:VAL:HG21	16:P:57:ILE:HG13	1.76	0.68
1:A:136:C:N3	1:A:227:G:N1	2.37	0.68
1:A:571:U:OP1	1:A:819:A:O2'	2.12	0.68
1:A:822:U:H2'	1:A:823:C:C6	2.29	0.68
1:A:1206:G:H5'	3:C:194:GLY:HA2	1.75	0.68
1:A:1316:G:N2	1:A:1319:A:OP2	2.25	0.68
4:D:8:LYS:HB3	4:D:21:LEU:HD13	1.76	0.68
1:A:439:U:O3'	4:D:121:LYS:NZ	2.26	0.68
1:A:457:G:O6	1:A:475:C:N4	2.20	0.68
1:A:691:G:O2'	1:A:797:C:O2'	2.08	0.67
1:A:1038:C:H2'	1:A:1039:G:C8	2.29	0.67
1:A:1308:U:H3'	13:M:98:ARG:HH21	1.60	0.67
17:Q:21:ILE:HG12	17:Q:48:ASP:HB2	1.76	0.67
1:A:141:G:O6	1:A:222:C:N4	2.16	0.67
1:A:405:U:O4	4:D:2:ALA:N	2.27	0.67
1:A:563:A:P	12:L:14:ARG:HH22	2.17	0.67
1:A:877:G:H2'	1:A:878:A:H8	1.60	0.67
12:L:36:ARG:HH12	12:L:54:ARG:HH11	1.39	0.67
15:O:75:VAL:HA	15:O:78:TYR:HB3	1.75	0.67
1:A:604:G:N1	1:A:634:C:N3	2.37	0.67
1:A:1213:A:O2'	1:A:1215:G:N7	2.21	0.67
1:A:1466:C:H3'	1:A:1467:C:H6	1.59	0.67
2:B:68:LEU:HB3	2:B:161:LEU:HD23	1.76	0.67
3:C:81:GLY:O	3:C:85:GLU:N	2.27	0.67
21:V:15:MET:CE	21:V:43:MET:SD	2.81	0.67
1:A:811:C:O2'	1:A:901:A:N1	2.26	0.67
1:A:808:C:OP1	15:O:48:LYS:NZ	2.24	0.67
1:A:922:G:H1'	5:E:24:THR:HB	1.75	0.67
1:A:1328:C:O2'	13:M:29:ARG:NH2	2.24	0.67
10:J:57:VAL:O	10:J:57:VAL:HG22	1.95	0.67
1:A:1280:A:OP2	10:J:9:ARG:NH2	2.25	0.67
1:A:1471:U:H2'	1:A:1472:U:C6	2.30	0.67
12:L:37:VAL:CG2	22:X:48:VAL:HG23	2.24	0.67
8:H:48:ASP:O	8:H:62:THR:N	2.26	0.67
22:X:4:LEU:HB3	22:X:7:LYS:HB3	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:219:U:H2'	1:A:220:G:C8	2.28	0.67
1:A:1217:C:OP2	14:N:9:ARG:NH2	2.28	0.67
1:A:1271:A:H2'	1:A:1272:G:H8	1.60	0.67
13:M:80:LEU:HD21	13:M:87:ARG:HG3	1.76	0.67
14:N:17:ALA:HA	14:N:55:SER:HA	1.76	0.67
1:A:206:C:H2'	1:A:207:C:C6	2.29	0.67
1:A:515:G:N1	1:A:536:C:N3	2.37	0.67
1:A:785:G:H2'	1:A:786:G:H8	1.59	0.67
1:A:612:C:N3	1:A:628:G:N1	2.40	0.66
5:E:164:ILE:HG22	8:H:99:LEU:HG	1.77	0.66
14:N:37:SER:OG	14:N:40:ASP:N	2.26	0.66
1:A:1255:G:N1	1:A:1282:C:N3	2.41	0.66
1:A:1286:U:O2'	1:A:1287:A:OP1	2.13	0.66
1:A:1347:G:C8	9:I:109:ARG:HB3	2.30	0.66
7:G:144:MET:O	7:G:148:ASN:ND2	2.28	0.66
8:H:11:LEU:HA	8:H:14:ILE:HD12	1.76	0.66
1:A:501:C:H2'	1:A:502:A:C8	2.29	0.66
1:A:898:G:N2	1:A:901:A:OP2	2.29	0.66
1:A:963:G:O2'	10:J:56:HIS:CE1	2.47	0.66
1:A:1177:G:H3'	1:A:1178:G:C8	2.27	0.66
3:C:83:ASP:OD1	3:C:84:VAL:N	2.28	0.66
9:I:10:GLY:HA2	9:I:81:HIS:HD2	1.59	0.66
1:A:344:A:O2'	1:A:346:G:N7	2.29	0.66
1:A:854:U:H3'	1:A:871:U:H3	1.59	0.66
17:Q:26:GLU:OE2	17:Q:40:ARG:N	2.27	0.66
18:R:70:TYR:O	18:R:71:THR:CG2	2.43	0.66
1:A:401:C:H2'	1:A:402:G:H8	1.60	0.66
1:A:767:A:H2'	1:A:768:A:C8	2.30	0.66
1:A:1381:U:O2'	7:G:79:ARG:O	2.07	0.66
1:A:1489:G:O2'	22:X:32:ARG:CG	2.43	0.66
1:A:64:G:OP1	1:A:382:A:N6	2.29	0.66
1:A:670:G:O6	1:A:736:C:N4	2.21	0.66
1:A:1410:A:H61	1:A:1490:U:H1'	1.59	0.66
9:I:69:GLY:O	9:I:75:GLN:NE2	2.28	0.66
1:A:137:U:O2	1:A:226:G:N1	2.20	0.66
1:A:1014:A:H4'	19:S:14:HIS:CE1	2.31	0.66
1:A:1095:U:OP1	1:A:1108:G:N1	2.25	0.66
1:A:1525:G:H2'	1:A:1526:G:H8	1.60	0.66
1:A:269:C:H2'	1:A:270:A:C8	2.31	0.66
1:A:673:A:H2'	1:A:674:G:C8	2.31	0.66
1:A:1425:U:H2'	1:A:1426:G:H8	1.59	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:49:LEU:HD22	22:X:52:ALA:HB1	1.76	0.66
1:A:830:G:H2'	1:A:831:A:H8	1.60	0.66
1:A:842:U:H2'	1:A:843:U:O4'	1.96	0.66
1:A:1254:A:P	10:J:45:ARG:HH21	2.20	0.66
1:A:1409:C:H2'	1:A:1410:A:C8	2.30	0.66
1:A:1474:U:H2'	1:A:1475:G:C8	2.31	0.66
6:F:68:GLN:OE1	6:F:68:GLN:N	2.29	0.66
19:S:32:ARG:HA	19:S:50:ALA:O	1.94	0.66
1:A:79:G:H1'	1:A:90:C:H42	1.61	0.65
1:A:206:C:H2'	1:A:207:C:H6	1.60	0.65
1:A:675:A:O5'	18:R:74:HIS:NE2	2.29	0.65
1:A:1113:C:N4	1:A:1187:G:O6	2.25	0.65
17:Q:18:GLU:N	17:Q:18:GLU:OE1	2.29	0.65
22:X:124:MET:HB3	22:X:135:VAL:HB	1.77	0.65
1:A:994:A:N7	1:A:1216:A:H4'	2.11	0.65
1:A:1086:U:H2'	1:A:1087:G:C8	2.31	0.65
1:A:1323:G:H2'	1:A:1324:A:H8	1.60	0.65
1:A:802:A:H3'	1:A:803:G:H8	1.62	0.65
1:A:982:U:O2	1:A:1222:G:N2	2.25	0.65
1:A:1108:G:OP2	3:C:175:LEU:N	2.24	0.65
1:A:1255:G:O6	1:A:1282:C:N4	2.17	0.65
7:G:139:GLU:OE2	7:G:143:ARG:HD2	1.96	0.65
9:I:36:GLU:HA	9:I:45:ARG:NE	2.11	0.65
16:P:20:VAL:HA	16:P:35:ARG:HA	1.78	0.65
1:A:125:U:H2'	1:A:126:G:H8	1.60	0.65
1:A:1126:U:OP1	10:J:7:ARG:NH2	2.29	0.65
1:A:1140:C:O2'	1:A:1141:C:O5'	2.11	0.65
1:A:1245:C:O2	1:A:1292:G:N2	2.18	0.65
1:A:1510:C:H2'	1:A:1511:G:H8	1.61	0.65
3:C:22:TRP:HB3	3:C:59:ARG:H	1.61	0.65
1:A:500:G:H2'	1:A:501:C:C6	2.31	0.65
1:A:663:A:H2'	1:A:664:G:C8	2.31	0.65
4:D:105:MET:HA	4:D:173:VAL:HG21	1.78	0.65
1:A:204:G:H2'	1:A:205:A:O4'	1.96	0.65
1:A:297:G:N2	1:A:301:G:N7	2.44	0.65
1:A:321:A:H3'	1:A:328:C:H41	1.60	0.65
5:E:107:ALA:O	5:E:112:ARG:NH2	2.29	0.65
5:E:151:GLU:HA	5:E:154:ALA:HB3	1.77	0.65
6:F:42:TRP:HE3	6:F:59:TYR:HB3	1.60	0.65
9:I:30:ILE:HD11	9:I:67:VAL:HG12	1.79	0.65
10:J:85:ASP:OD1	10:J:86:ALA:N	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:127:ARG:NE	21:V:14:GLU:HG2	2.11	0.65
1:A:337:G:H2'	1:A:338:A:H8	1.61	0.65
1:A:680:C:H2'	1:A:681:A:C8	2.32	0.65
1:A:767:A:H2'	1:A:768:A:H8	1.62	0.65
1:A:979:C:O2	14:N:59:ARG:NE	2.28	0.65
1:A:982:U:H4'	1:A:983:A:H5'	1.78	0.65
1:A:265:G:H4'	17:Q:68:SER:N	2.12	0.65
7:G:91:VAL:O	7:G:96:ARG:NH1	2.23	0.65
1:A:581:G:N1	1:A:759:A:OP2	2.30	0.65
1:A:703:G:H4'	1:A:704:A:H8	1.61	0.65
1:A:728:A:H2'	1:A:729:A:C8	2.31	0.65
10:J:44:THR:O	10:J:46:LYS:NZ	2.28	0.65
21:V:32:LEU:HD13	21:V:34:MET:H	1.60	0.65
22:X:8:LEU:HA	22:X:11:MET:HE2	1.79	0.65
1:A:399:G:H2'	1:A:400:C:C6	2.32	0.65
1:A:449:G:N1	1:A:484:G:O6	2.19	0.65
1:A:518:C:C4	1:A:529:G:H2'	2.32	0.65
1:A:1066:C:H2'	1:A:1067:A:H8	1.62	0.65
1:A:1360:A:OP2	14:N:75:ARG:NH2	2.27	0.65
1:A:1376:U:O3'	7:G:95:ARG:NH1	2.30	0.65
9:I:75:GLN:O	9:I:79:ILE:HG12	1.97	0.65
11:K:15:GLN:OE1	11:K:17:SER:N	2.30	0.64
1:A:628:G:H2'	1:A:629:A:C8	2.32	0.64
1:A:687:A:N6	1:A:701:U:O4'	2.30	0.64
9:I:42:GLU:OE1	9:I:45:ARG:NH1	2.28	0.64
10:J:12:ALA:O	10:J:69:THR:HA	1.98	0.64
1:A:1:A:H3'	1:A:2:A:H8	1.62	0.64
1:A:665:A:N7	1:A:724:G:N2	2.39	0.64
1:A:1151:A:HO2'	1:A:1152:A:H8	1.44	0.64
1:A:1179:A:OP2	9:I:95:ARG:NH2	2.28	0.64
20:T:58:VAL:HA	20:T:61:GLN:HG2	1.79	0.64
1:A:427:U:OP2	1:A:428:G:O2'	2.15	0.64
1:A:1278:G:H4'	1:A:1279:G:C4	2.33	0.64
5:E:74:VAL:HG13	5:E:145:GLU:HA	1.79	0.64
1:A:131:A:H2'	1:A:132:C:C6	2.32	0.64
1:A:509:A:N3	1:A:543:U:O2'	2.30	0.64
8:H:87:LYS:HG3	8:H:125:ILE:HD11	1.79	0.64
9:I:25:ASN:OD1	9:I:26:GLY:N	2.30	0.64
1:A:974:A:P	14:N:69:ARG:HH22	2.21	0.64
14:N:92:GLU:OE1	14:N:92:GLU:N	2.31	0.64
16:P:58:ALA:O	16:P:62:GLY:N	2.29	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:362:G:N2	1:A:365:U:OP2	2.24	0.64
1:A:1245:C:N4	1:A:1292:G:O6	2.26	0.64
5:E:61:GLN:HA	5:E:64:MET:HE2	1.80	0.64
9:I:10:GLY:HA2	9:I:81:HIS:CD2	2.33	0.64
12:L:41:THR:O	22:X:73:ASN:OD1	2.15	0.64
16:P:34:GLU:OE2	16:P:60:TRP:NE1	2.30	0.64
1:A:1124:G:H4'	10:J:40:ILE:HD11	1.79	0.64
1:A:602:A:H2'	1:A:603:U:C6	2.31	0.64
1:A:1271:A:H2'	1:A:1272:G:C8	2.32	0.64
1:A:1315:U:O2'	1:A:1360:A:N3	2.29	0.64
14:N:31:ILE:HA	14:N:41:ARG:HG3	1.80	0.64
1:A:11:G:H2'	1:A:12:U:C6	2.33	0.63
1:A:337:G:H2'	1:A:338:A:C8	2.34	0.63
1:A:404:G:OP2	4:D:115:ARG:NH2	2.32	0.63
1:A:679:C:O2	1:A:711:G:N2	2.17	0.63
1:A:734:G:H2'	1:A:735:C:C6	2.33	0.63
1:A:1132:C:N4	1:A:1133:G:O6	2.31	0.63
1:A:1165:U:O4	1:A:1171:A:N6	2.19	0.63
4:D:154:ARG:O	4:D:158:ALA:N	2.31	0.63
14:N:16:LEU:HD21	14:N:52:PRO:HB2	1.80	0.63
1:A:1016:A:C5	1:A:1017:U:H1'	2.33	0.63
1:A:1277:C:H1'	1:A:1282:C:H1'	1.80	0.63
9:I:35:LEU:HD21	9:I:45:ARG:HB3	1.80	0.63
19:S:17:LYS:O	19:S:20:GLU:HG2	1.98	0.63
22:X:23:LEU:HD11	22:X:26:ILE:HG13	1.80	0.63
1:A:73:C:O2'	1:A:74:A:H5''	1.98	0.63
1:A:93:U:H2'	1:A:95:C:C5	2.29	0.63
1:A:823:C:N3	1:A:877:G:N1	2.44	0.63
10:J:27:GLU:O	10:J:31:ARG:HG2	1.99	0.63
1:A:515:G:O6	1:A:536:C:N4	2.18	0.63
1:A:679:C:H2'	1:A:680:C:C6	2.33	0.63
3:C:28:GLU:N	3:C:28:GLU:OE1	2.28	0.63
3:C:93:ASP:OD1	3:C:94:ILE:N	2.32	0.63
7:G:120:LEU:O	7:G:124:LEU:HG	1.98	0.63
9:I:98:LEU:HA	9:I:101:ALA:HB3	1.80	0.63
19:S:33:THR:HG22	19:S:35:SER:H	1.64	0.63
22:X:22:GLU:OE1	22:X:22:GLU:N	2.29	0.63
1:A:203:G:N2	1:A:204:G:N7	2.46	0.63
1:A:476:U:H2'	1:A:477:C:H6	1.63	0.63
1:A:824:G:H2'	1:A:825:A:H8	1.63	0.63
1:A:1130:A:H5''	9:I:64:TYR:HE2	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:16:ARG:O	10:J:20:GLN:NE2	2.32	0.63
19:S:51:VAL:O	19:S:57:HIS:HA	1.99	0.63
1:A:475:C:H2'	1:A:476:U:C6	2.34	0.63
1:A:979:C:OP1	1:A:1223:C:N4	2.32	0.63
18:R:72:ASP:N	18:R:72:ASP:OD1	2.31	0.63
1:A:162:A:C5	1:A:163:C:H1'	2.34	0.63
1:A:334:C:H2'	1:A:335:C:C6	2.34	0.63
1:A:370:C:O2	1:A:482:A:O2'	2.17	0.63
1:A:701:U:OP1	1:A:702:A:O2'	2.13	0.63
1:A:1162:C:H2'	1:A:1163:A:C8	2.34	0.63
1:A:1376:U:H5'	7:G:102:ARG:NH2	2.14	0.63
3:C:91:VAL:HA	3:C:94:ILE:HG22	1.81	0.63
3:C:153:VAL:HG22	3:C:166:GLU:HG3	1.81	0.63
8:H:96:MET:HB2	8:H:100:GLY:H	1.63	0.63
22:X:13:THR:HA	22:X:16:VAL:HB	1.81	0.63
1:A:53:A:H2'	1:A:54:C:O4'	1.99	0.63
16:P:68:SER:HB3	16:P:71:VAL:HG23	1.81	0.63
1:A:127:G:O6	1:A:234:C:N4	2.19	0.63
1:A:724:G:H2'	1:A:725:G:H8	1.62	0.63
1:A:1013:G:N2	1:A:1015:G:H3'	2.13	0.63
7:G:57:SER:HB2	7:G:60:GLU:HB2	1.81	0.63
17:Q:20:SER:HA	17:Q:48:ASP:H	1.63	0.63
19:S:25:SER:O	19:S:28:LYS:NZ	2.32	0.63
1:A:399:G:H2'	1:A:400:C:H6	1.64	0.62
1:A:722:G:O2'	1:A:723:U:O3'	2.15	0.62
1:A:754:C:O5'	15:O:72:ARG:NH2	2.32	0.62
6:F:42:TRP:CE3	6:F:59:TYR:HB3	2.34	0.62
15:O:8:THR:O	15:O:12:VAL:HG23	1.99	0.62
8:H:75:ILE:HA	8:H:128:TYR:O	1.99	0.62
9:I:55:VAL:HG13	9:I:57:MET:HG2	1.80	0.62
13:M:18:ALA:O	13:M:21:SER:OG	2.17	0.62
1:A:340:U:H2'	1:A:341:C:H6	1.64	0.62
1:A:664:G:OP1	18:R:53:ARG:NE	2.27	0.62
1:A:713:G:N2	1:A:777:A:O2'	2.32	0.62
1:A:799:G:H2'	1:A:800:G:O4'	1.99	0.62
1:A:947:G:O6	1:A:1234:C:N4	2.29	0.62
11:K:18:ASP:HA	11:K:81:ASN:HD22	1.64	0.62
21:V:79:ILE:HA	21:V:82:LEU:HG	1.79	0.62
1:A:690:G:O5'	11:K:29:ASN:ND2	2.32	0.62
1:A:692:U:O2	1:A:694:A:H3'	1.98	0.62
12:L:87:VAL:HG23	12:L:90:LEU:HB2	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:X:24:VAL:HG23	22:X:90:HIS:CE1	2.35	0.62
1:A:340:U:H2'	1:A:341:C:C6	2.34	0.62
1:A:665:A:H1'	1:A:733:G:O4'	2.00	0.62
1:A:783:C:OP1	1:A:1515:G:O2'	2.15	0.62
1:A:987:G:H2'	1:A:988:G:H8	1.64	0.62
1:A:1119:C:H2'	1:A:1120:C:H6	1.64	0.62
3:C:18:TRP:O	3:C:54:ARG:NH2	2.31	0.62
1:A:674:G:H2'	1:A:675:A:H8	1.65	0.62
1:A:957:U:H2'	1:A:959:A:OP2	1.99	0.62
1:A:1043:G:H2'	1:A:1044:A:H8	1.65	0.62
1:A:1178:G:H3'	9:I:99:ARG:HH22	1.63	0.62
1:A:1516:2MG:C2	1:A:1518:MA6:H5''	2.35	0.62
6:F:101:PRO:HA	6:F:104:LYS:HG2	1.81	0.62
9:I:116:VAL:HG21	10:J:64:GLN:HE22	1.64	0.62
20:T:60:ARG:O	20:T:64:LYS:N	2.25	0.62
21:V:32:LEU:CD1	21:V:34:MET:N	2.51	0.62
1:A:76:G:H1	1:A:93:U:H3	1.48	0.62
3:C:50:ALA:HB1	3:C:76:VAL:HG22	1.82	0.62
1:A:142:G:H3'	1:A:143:A:C8	2.35	0.62
1:A:688:G:H2'	1:A:689:C:O4'	2.00	0.62
1:A:772:U:O4	1:A:807:A:N6	2.20	0.62
1:A:786:G:H2'	1:A:787:A:C8	2.35	0.62
1:A:1111:A:N6	3:C:176:HIS:O	2.33	0.62
9:I:52:LEU:HA	9:I:55:VAL:HG12	1.82	0.62
12:L:37:VAL:HG21	22:X:48:VAL:HG23	1.82	0.62
22:X:137:ALA:O	22:X:140:ASN:ND2	2.33	0.62
1:A:255:G:H2'	1:A:256:U:C6	2.34	0.61
1:A:481:G:O2'	1:A:483:C:N4	2.33	0.61
1:A:1512:U:H2'	1:A:1513:A:C8	2.35	0.61
9:I:123:ARG:NH1	9:I:124:ARG:O	2.32	0.61
22:X:5:GLU:O	22:X:9:THR:OG1	2.11	0.61
1:A:35:G:H2'	1:A:36:C:C6	2.34	0.61
1:A:127:G:N2	1:A:234:C:O2	2.32	0.61
1:A:415:A:C4	1:A:416:G:C8	2.88	0.61
1:A:774:G:N1	1:A:805:C:N3	2.36	0.61
1:A:1107:C:H5'	3:C:169:ARG:HH21	1.65	0.61
1:A:1129:C:O2'	1:A:1139:G:N7	2.26	0.61
1:A:1165:U:H3'	1:A:1166:G:C8	2.35	0.61
7:G:151:PHE:HD1	21:V:104:VAL:CG1	2.10	0.61
19:S:44:MET:HG3	19:S:62:VAL:HG11	1.82	0.61
22:X:126:THR:HG22	22:X:135:VAL:HG12	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:419:C:O2	1:A:424:G:N2	2.26	0.61
1:A:1328:C:H5''	13:M:28:THR:HG21	1.82	0.61
4:D:124:MET:HB2	4:D:144:SER:HB3	1.83	0.61
1:A:91:U:H2'	1:A:92:U:C6	2.35	0.61
1:A:657:U:H2'	1:A:658:C:C6	2.36	0.61
1:A:705:G:H2'	1:A:706:A:H5'	1.83	0.61
1:A:1071:C:H2'	1:A:1072:G:H8	1.66	0.61
4:D:28:ILE:CD1	4:D:34:ILE:HD13	2.31	0.61
6:F:77:THR:O	6:F:81:ASN:N	2.23	0.61
9:I:5:GLN:OE1	9:I:21:ILE:N	2.33	0.61
22:X:51:CYS:O	22:X:55:SER:OG	2.08	0.61
1:A:255:G:P	17:Q:71:LYS:HZ1	2.24	0.61
1:A:504:C:H42	1:A:541:G:H1	1.48	0.61
14:N:64:CYS:HB3	14:N:69:ARG:H	1.65	0.61
15:O:48:LYS:O	15:O:50:HIS:ND1	2.26	0.61
19:S:13:LEU:HG	19:S:14:HIS:H	1.66	0.61
1:A:10:A:H2'	1:A:11:G:H8	1.64	0.61
1:A:54:C:H2'	1:A:352:C:H41	1.66	0.61
1:A:657:U:H2'	1:A:658:C:H6	1.66	0.61
1:A:1152:A:OP1	10:J:72:ARG:NH2	2.20	0.61
15:O:24:SER:O	15:O:27:VAL:HG12	2.00	0.61
1:A:69:G:O6	1:A:98:A:N6	2.34	0.61
1:A:401:C:O2'	1:A:621:A:N3	2.30	0.61
1:A:1369:C:H2'	1:A:1370:G:C8	2.36	0.61
1:A:1489:G:C4'	22:X:32:ARG:HE	2.13	0.61
3:C:32:ASN:O	3:C:35:SER:OG	2.17	0.61
19:S:64:ASP:OD1	19:S:64:ASP:N	2.30	0.61
1:A:35:G:N2	1:A:549:C:O2	2.31	0.61
1:A:868:C:H2'	1:A:869:G:O4'	2.01	0.61
1:A:950:U:H3'	13:M:101:ARG:HH12	1.66	0.61
1:A:1280:A:H5''	10:J:42:LEU:HD23	1.83	0.61
1:A:1359:C:O5'	14:N:75:ARG:NH2	2.34	0.61
1:A:1429:A:H3'	1:A:1430:A:H8	1.66	0.61
3:C:147:LYS:HG2	3:C:204:LYS:HA	1.82	0.61
13:M:3:ARG:O	13:M:57:ARG:NH1	2.34	0.61
21:V:16:GLN:HA	21:V:19:ILE:HG12	1.83	0.61
21:V:73:GLN:NE2	21:V:97:PHE:CD2	2.67	0.61
1:A:189:A:H3'	1:A:190:A:H8	1.65	0.60
1:A:666:G:H2'	1:A:667:G:H8	1.66	0.60
1:A:771:G:O6	1:A:808:C:N4	2.27	0.60
1:A:944:G:N1	1:A:1338:G:OP2	2.30	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:410:G:N1	1:A:431:A:OP2	2.32	0.60
1:A:579:A:H5'	1:A:728:A:H1'	1.83	0.60
1:A:627:G:H5'	16:P:51:ARG:HH12	1.66	0.60
1:A:876:C:O5'	8:H:15:ARG:NH1	2.34	0.60
1:A:1251:A:H2'	1:A:1252:A:C8	2.36	0.60
3:C:156:ARG:N	3:C:163:ALA:HA	2.13	0.60
11:K:15:GLN:OE1	11:K:16:VAL:N	2.33	0.60
13:M:50:GLU:OE1	13:M:50:GLU:N	2.26	0.60
18:R:10:PHE:N	18:R:46:GLY:O	2.34	0.60
1:A:855:U:OP2	1:A:871:U:N3	2.35	0.60
1:A:1054:C:O5'	1:A:1196:A:O2'	2.18	0.60
5:E:107:ALA:H	5:E:112:ARG:NH2	1.98	0.60
5:E:153:VAL:HA	5:E:156:LYS:HB2	1.83	0.60
1:A:75:G:H3'	1:A:76:G:H8	1.66	0.60
1:A:713:G:H2'	1:A:714:G:C8	2.36	0.60
1:A:1174:G:H2'	1:A:1175:G:C8	2.37	0.60
5:E:95:PHE:N	5:E:126:LYS:O	2.34	0.60
1:A:333:U:H2'	1:A:334:C:C6	2.35	0.60
1:A:586:C:O2'	8:H:4:GLN:OE1	2.11	0.60
1:A:825:A:O2'	8:H:9:ASP:OD2	2.19	0.60
1:A:1244:G:O6	1:A:1293:C:N4	2.27	0.60
1:A:1391:U:H2'	1:A:1392:G:C8	2.36	0.60
6:F:21:MET:O	6:F:25:TYR:N	2.33	0.60
8:H:77:ARG:HE	8:H:81:PRO:HD3	1.67	0.60
19:S:33:THR:O	19:S:51:VAL:HA	2.01	0.60
1:A:154:U:H2'	1:A:155:A:H8	1.66	0.60
1:A:265:G:H2'	1:A:267:C:H5	1.67	0.60
1:A:427:U:OP1	4:D:13:ARG:NH2	2.34	0.60
1:A:523:A:N6	12:L:50:ARG:HH22	1.99	0.60
1:A:781:A:H62	1:A:801:U:H3	1.49	0.60
4:D:125:VAL:N	4:D:128:ARG:O	2.34	0.60
5:E:162:GLU:OE1	5:E:162:GLU:N	2.33	0.60
8:H:13:ARG:O	8:H:17:GLY:N	2.34	0.60
11:K:19:GLY:CA	11:K:79:ILE:CG2	2.80	0.60
12:L:37:VAL:HG21	22:X:48:VAL:CG2	2.31	0.60
13:M:83:LEU:HD11	19:S:65:GLU:HG3	1.83	0.60
1:A:816:A:OP1	1:A:1526:G:O2'	2.18	0.60
1:A:1366:C:H2'	1:A:1367:C:C6	2.37	0.60
1:A:1472:U:H2'	1:A:1473:G:C8	2.36	0.60
6:F:29:ILE:HD12	6:F:64:VAL:HG11	1.82	0.60
21:V:16:GLN:O	21:V:19:ILE:HG12	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:129:A:H1'	1:A:130:A:C8	2.37	0.60
1:A:143:A:H5''	1:A:144:G:H5'	1.84	0.60
1:A:1251:A:N1	1:A:1354:U:O2'	2.32	0.60
10:J:40:ILE:O	10:J:40:ILE:CG2	2.48	0.60
11:K:34:ILE:HD11	11:K:70:CYS:HA	1.82	0.60
11:K:127:ARG:HH22	21:V:17:LYS:CE	2.15	0.60
1:A:384:G:H2'	1:A:385:C:C6	2.37	0.60
1:A:736:C:H2'	1:A:737:C:C6	2.37	0.60
1:A:746:A:H2'	1:A:747:A:C8	2.37	0.60
1:A:980:C:O3'	14:N:13:ARG:NH2	2.34	0.60
1:A:1175:G:H2'	1:A:1176:A:H8	1.67	0.60
1:A:1223:C:OP2	19:S:78:ARG:NH2	2.23	0.60
1:A:45:G:H2'	1:A:46:G:H8	1.67	0.60
1:A:181:A:H62	1:A:195:A:P	2.25	0.60
1:A:1291:U:H2'	1:A:1292:G:H8	1.67	0.60
14:N:37:SER:HG	14:N:40:ASP:H	1.50	0.60
19:S:63:THR:OG1	19:S:64:ASP:OD1	2.20	0.60
1:A:184:G:H2'	1:A:185:U:C6	2.37	0.59
1:A:312:C:H2'	1:A:313:A:C8	2.36	0.59
1:A:907:A:H3'	1:A:908:A:H8	1.66	0.59
1:A:1055:A:C6	1:A:1206:G:C5	2.90	0.59
1:A:1327:C:H2'	1:A:1328:C:C6	2.37	0.59
1:A:1410:A:N6	1:A:1490:U:O2'	2.35	0.59
1:A:1536:C:OP2	18:R:43:ARG:NH2	2.25	0.59
3:C:180:ALA:HA	3:C:206:GLU:HG2	1.83	0.59
6:F:36:ILE:HA	6:F:64:VAL:HG22	1.84	0.59
15:O:47:LYS:HA	15:O:53:ARG:HH21	1.67	0.59
20:T:5:LYS:HA	20:T:8:LYS:HE3	1.83	0.59
22:X:54:VAL:HG13	22:X:76:VAL:HG21	1.84	0.59
1:A:471:U:H2'	1:A:472:U:H6	1.67	0.59
1:A:571:U:H5''	1:A:819:A:C2	2.37	0.59
1:A:629:A:H2'	1:A:630:A:O4'	2.02	0.59
1:A:1070:U:H2'	1:A:1071:C:H6	1.67	0.59
1:A:1209:C:O2'	1:A:1214:C:N3	2.35	0.59
15:O:75:VAL:O	15:O:79:THR:N	2.24	0.59
1:A:1012:A:H2'	1:A:1013:G:C8	2.37	0.59
1:A:1056:U:H5'	3:C:163:ALA:HB2	1.83	0.59
3:C:70:THR:HG21	3:C:76:VAL:HG21	1.84	0.59
6:F:35:LYS:HB3	6:F:37:HIS:CE1	2.37	0.59
11:K:23:ILE:HA	11:K:32:VAL:HA	1.83	0.59
12:L:37:VAL:CG2	22:X:48:VAL:HG21	2.29	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:29:ALA:O	14:N:33:ASP:N	2.35	0.59
1:A:59:A:H5''	1:A:387:U:H5''	1.84	0.59
1:A:1385:G:H2'	1:A:1386:G:C8	2.37	0.59
1:A:1509:C:H42	1:A:1526:G:H1	1.49	0.59
3:C:105:GLU:OE2	3:C:107:ARG:NH1	2.35	0.59
4:D:14:ARG:HE	4:D:38:PRO:HD2	1.67	0.59
22:X:102:VAL:HG12	22:X:143:LYS:HB3	1.83	0.59
1:A:123:U:H2'	1:A:124:C:H6	1.67	0.59
1:A:182:A:O2'	1:A:183:C:H5'	2.03	0.59
1:A:674:G:O6	1:A:716:A:N6	2.20	0.59
1:A:1147:C:O2	9:I:18:ARG:NH1	2.35	0.59
1:A:1245:C:H2'	1:A:1246:A:H8	1.68	0.59
1:A:1466:C:H3'	1:A:1467:C:C6	2.37	0.59
3:C:19:ASN:HA	3:C:54:ARG:HH21	1.67	0.59
8:H:48:ASP:HB3	8:H:62:THR:HB	1.85	0.59
1:A:444:G:O6	1:A:490:C:N4	2.29	0.59
1:A:738:C:OP1	6:F:2:ARG:NH2	2.36	0.59
1:A:939:G:O6	1:A:1344:C:N4	2.34	0.59
1:A:1212:U:H5'	1:A:1213:A:C4	2.38	0.59
11:K:89:PRO:HG3	21:V:24:GLN:HE22	1.68	0.59
1:A:123:U:H2'	1:A:124:C:C6	2.37	0.59
1:A:831:A:N6	1:A:855:U:O4	2.19	0.59
1:A:980:C:O2'	14:N:13:ARG:NH1	2.35	0.59
1:A:1073:U:P	5:E:62:LYS:HD3	2.42	0.59
1:A:1174:G:H2'	1:A:1175:G:H8	1.68	0.59
9:I:80:ARG:HA	9:I:83:ILE:HD12	1.84	0.59
1:A:289:G:H2'	1:A:290:C:H6	1.67	0.59
1:A:454:G:H2'	1:A:455:G:H8	1.67	0.59
1:A:1029:U:H4'	1:A:1030:U:C5	2.37	0.59
1:A:1275:A:H2'	1:A:1276:G:O4'	2.02	0.59
3:C:40:ARG:O	3:C:44:THR:HG23	2.02	0.59
1:A:34:C:H2'	1:A:35:G:C8	2.38	0.59
1:A:77:A:H3'	1:A:78:A:H8	1.67	0.59
1:A:176:C:H2'	1:A:177:G:N3	2.17	0.59
1:A:499:A:H4'	1:A:500:G:H5'	1.84	0.59
1:A:1040:U:H2'	1:A:1041:G:C8	2.38	0.59
1:A:1070:U:H2'	1:A:1071:C:C6	2.38	0.59
1:A:1118:U:H2'	1:A:1119:C:C6	2.38	0.59
4:D:22:LYS:HE3	4:D:31:LYS:CD	2.33	0.59
1:A:194:C:O2'	1:A:195:A:H5'	2.02	0.59
1:A:287:U:H2'	1:A:288:A:C8	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:578:C:N3	1:A:763:G:N1	2.48	0.59
1:A:779:C:H2'	1:A:780:A:C8	2.38	0.59
11:K:19:GLY:HA2	11:K:79:ILE:CG2	2.30	0.59
1:A:531:U:H5'	1:A:532:A:N1	2.18	0.58
1:A:593:U:H2'	1:A:594:U:C6	2.37	0.58
1:A:794:A:H2'	1:A:795:C:C2	2.38	0.58
1:A:881:G:OP2	12:L:6:GLN:NE2	2.36	0.58
1:A:949:A:H1'	1:A:1364:U:H3	1.68	0.58
1:A:1218:C:H2'	1:A:1219:A:C8	2.37	0.58
3:C:106:VAL:HG22	3:C:108:LYS:H	1.66	0.58
5:E:79:GLY:HA3	5:E:121:HIS:HB2	1.86	0.58
21:V:80:ARG:HH12	21:V:94:GLU:HA	1.68	0.58
1:A:91:U:H2'	1:A:92:U:H6	1.69	0.58
1:A:246:A:C4	1:A:279:A:C6	2.92	0.58
1:A:400:C:H2'	1:A:401:C:C6	2.37	0.58
1:A:996:A:H2'	1:A:997:U:C6	2.38	0.58
1:A:1064:G:O6	1:A:1192:C:N4	2.32	0.58
1:A:1519:MA6:OP2	1:A:1519:MA6:H8	2.03	0.58
16:P:42:ILE:O	16:P:42:ILE:CG2	2.51	0.58
1:A:877:G:H2'	1:A:878:A:C8	2.37	0.58
1:A:948:C:O2	1:A:1233:G:N2	2.19	0.58
1:A:1013:G:N2	1:A:1016:A:OP2	2.33	0.58
1:A:1069:C:N3	1:A:1070:U:N3	2.50	0.58
1:A:1191:A:H2'	1:A:1192:C:O4'	2.03	0.58
1:A:1193:G:OP1	3:C:167:TRP:NE1	2.34	0.58
1:A:1317:C:O5'	14:N:24:ARG:NH2	2.37	0.58
1:A:1410:A:N6	1:A:1490:U:HO2'	2.01	0.58
3:C:183:ASP:H	3:C:204:LYS:NZ	2.01	0.58
9:I:58:VAL:HG23	9:I:59:GLU:H	1.69	0.58
12:L:87:VAL:CG2	12:L:90:LEU:HB2	2.34	0.58
22:X:97:GLU:O	22:X:117:ILE:N	2.28	0.58
1:A:389:A:H3'	1:A:390:U:C6	2.39	0.58
9:I:22:LYS:HD3	9:I:23:PRO:HD2	1.85	0.58
11:K:31:ILE:HG12	11:K:46:THR:HG22	1.85	0.58
1:A:677:U:H2'	1:A:678:U:C6	2.38	0.58
1:A:715:A:H1'	1:A:777:A:C2	2.38	0.58
1:A:1520:C:H2'	1:A:1521:C:C6	2.38	0.58
1:A:160:A:H1'	1:A:344:A:N7	2.18	0.58
1:A:716:A:H1'	11:K:120:GLY:HA2	1.84	0.58
1:A:808:C:H2'	1:A:809:G:O4'	2.04	0.58
1:A:826:C:H2'	1:A:827:U:C6	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1377:A:N7	7:G:8:GLY:HA2	2.18	0.58
1:A:1385:G:H2'	1:A:1386:G:H8	1.69	0.58
7:G:95:ARG:O	7:G:99:LEU:HG	2.04	0.58
1:A:88:U:O2'	1:A:89:U:O5'	2.22	0.58
1:A:160:A:H1'	1:A:344:A:C5	2.39	0.58
1:A:1317:C:OP2	14:N:28:LYS:NZ	2.19	0.58
1:A:1384:C:H2'	1:A:1385:G:C8	2.38	0.58
9:I:6:TYR:O	9:I:21:ILE:N	2.35	0.58
14:N:24:ARG:HD3	14:N:51:LEU:HD23	1.86	0.58
20:T:17:ALA:O	20:T:21:ASN:N	2.32	0.58
1:A:7:A:H5''	5:E:124:LEU:HD11	1.85	0.58
1:A:125:U:H2'	1:A:126:G:C8	2.39	0.58
1:A:398:U:H2'	1:A:399:G:H8	1.69	0.58
1:A:481:G:N3	1:A:482:A:N6	2.51	0.58
1:A:846:G:H2'	1:A:847:G:H8	1.69	0.58
1:A:1267:C:N3	1:A:1268:G:N2	2.51	0.58
6:F:25:TYR:HE2	6:F:77:THR:HG21	1.69	0.58
9:I:22:LYS:HB3	9:I:62:ASP:OD1	2.04	0.58
11:K:127:ARG:NH2	21:V:14:GLU:CG	2.67	0.58
19:S:13:LEU:HG	19:S:14:HIS:N	2.19	0.58
1:A:44:A:H2'	1:A:45:G:H8	1.69	0.58
1:A:1073:U:OP1	5:E:62:LYS:CG	2.52	0.58
1:A:1317:C:O2	19:S:37:ARG:NH2	2.29	0.58
17:Q:44:LEU:HD21	17:Q:73:TRP:CG	2.39	0.58
20:T:79:LEU:HD21	20:T:83:ILE:HD11	1.86	0.58
22:X:128:THR:HA	22:X:133:ASP:HA	1.84	0.58
1:A:75:G:N2	1:A:95:C:O2	2.33	0.58
1:A:418:C:H2'	1:A:419:C:C6	2.39	0.58
1:A:993:G:N2	1:A:996:A:H62	2.01	0.58
1:A:1052:U:O2	1:A:1206:G:N1	2.24	0.58
1:A:1130:A:H2'	1:A:1131:G:C8	2.39	0.58
1:A:1314:C:H2'	1:A:1315:U:C6	2.38	0.58
10:J:52:LEU:HB2	14:N:81:ARG:HD2	1.85	0.58
1:A:517:G:H4'	1:A:519:C:C2	2.39	0.57
1:A:635:A:H2'	1:A:636:U:C6	2.39	0.57
1:A:977:A:N6	1:A:1224:U:O4'	2.37	0.57
1:A:1393:U:O3'	1:A:1394:A:H2'	2.04	0.57
3:C:123:GLN:HA	3:C:126:ARG:HB2	1.86	0.57
19:S:12:ASP:OD1	19:S:14:HIS:N	2.36	0.57
1:A:891:U:H2'	1:A:892:A:C8	2.38	0.57
1:A:935:A:H2'	1:A:936:C:C6	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1356:G:H2'	1:A:1357:A:C8	2.39	0.57
16:P:2:VAL:CG1	16:P:65:ALA:HA	2.32	0.57
1:A:31:G:O2'	1:A:48:C:N4	2.34	0.57
1:A:692:U:N3	1:A:695:A:OP2	2.38	0.57
1:A:741:G:H5'	15:O:39:LEU:HD21	1.85	0.57
1:A:921:U:H2'	1:A:922:G:C8	2.39	0.57
1:A:1341:U:OP1	9:I:130:ARG:NH2	2.38	0.57
9:I:33:ARG:HB2	9:I:38:TYR:HD1	1.68	0.57
1:A:147:G:H2'	1:A:148:G:C8	2.40	0.57
1:A:492:C:H2'	1:A:493:A:C8	2.39	0.57
1:A:1167:A:H2'	1:A:1169:A:C8	2.39	0.57
1:A:1427:C:H2'	1:A:1428:A:C8	2.40	0.57
13:M:4:ILE:HG13	13:M:6:GLY:O	2.04	0.57
14:N:20:TYR:HB3	14:N:51:LEU:HD21	1.86	0.57
1:A:257:G:H2'	1:A:258:G:C8	2.39	0.57
1:A:489:C:H2'	1:A:490:C:C6	2.40	0.57
1:A:802:A:H2'	1:A:803:G:O4'	2.05	0.57
1:A:992:U:O2'	1:A:1043:G:N7	2.34	0.57
1:A:1014:A:H2'	1:A:1015:G:C8	2.40	0.57
6:F:76:THR:HA	6:F:79:ARG:HB3	1.85	0.57
7:G:63:GLU:OE1	7:G:63:GLU:N	2.31	0.57
10:J:65:TYR:HB3	14:N:96:LEU:HD11	1.87	0.57
10:J:80:THR:O	10:J:83:THR:OG1	2.17	0.57
1:A:366:A:O2'	1:A:394:G:N2	2.28	0.57
1:A:591:U:H2'	1:A:592:G:C8	2.39	0.57
1:A:671:G:H4'	6:F:79:ARG:HH12	1.70	0.57
1:A:954:G:O6	13:M:103:LYS:NZ	2.37	0.57
1:A:1328:C:OP1	13:M:28:THR:OG1	2.20	0.57
1:A:1471:U:H2'	1:A:1472:U:H6	1.69	0.57
1:A:1489:G:H4'	22:X:32:ARG:NE	2.17	0.57
3:C:175:LEU:O	3:C:176:HIS:ND1	2.37	0.57
5:E:160:SER:O	5:E:164:ILE:HG13	2.05	0.57
1:A:68:G:C5	1:A:69:G:H1'	2.40	0.57
1:A:109:A:C6	1:A:326:G:C6	2.93	0.57
1:A:312:C:H2'	1:A:313:A:H8	1.70	0.57
1:A:425:G:H2'	1:A:426:U:O4'	2.04	0.57
1:A:530:G:H2'	1:A:531:U:C2	2.40	0.57
1:A:643:C:H2'	1:A:644:U:C6	2.38	0.57
1:A:830:G:H2'	1:A:831:A:C8	2.39	0.57
1:A:921:U:H2'	1:A:922:G:H8	1.70	0.57
1:A:1070:U:O4	1:A:1094:G:N1	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1250:A:H2'	1:A:1251:A:C8	2.39	0.57
6:F:51:ILE:HD11	18:R:66:SER:HB2	1.86	0.57
9:I:84:THR:HA	9:I:87:LEU:HD12	1.87	0.57
16:P:2:VAL:HG11	16:P:65:ALA:HA	1.85	0.57
17:Q:30:LYS:HA	17:Q:37:PHE:HA	1.87	0.57
1:A:8:A:C5	4:D:206:LYS:HB3	2.40	0.57
1:A:130:A:N6	1:A:233:C:O2	2.38	0.57
1:A:323:U:OP1	20:T:21:ASN:ND2	2.25	0.57
1:A:724:G:H2'	1:A:725:G:C8	2.39	0.57
1:A:841:C:H2'	1:A:843:U:C5	2.39	0.57
1:A:1207:2MG:HM23	1:A:1208:C:H1'	1.87	0.57
1:A:1418:A:C2	1:A:1419:G:H1'	2.39	0.57
10:J:6:ILE:HG23	10:J:79:PRO:HG3	1.87	0.57
22:X:84:PRO:HA	22:X:145:ASN:HA	1.87	0.57
1:A:691:G:H22	1:A:695:A:H5''	1.70	0.57
1:A:1097:C:H2'	1:A:1098:C:C6	2.39	0.57
1:A:1432:G:N2	1:A:1468:A:OP2	2.37	0.57
9:I:88:MET:HG2	9:I:95:ARG:HA	1.86	0.57
11:K:127:ARG:HH22	21:V:17:LYS:HE2	1.69	0.57
12:L:21:VAL:HG23	12:L:21:VAL:O	2.03	0.57
1:A:625:U:H2'	1:A:626:G:H8	1.69	0.57
1:A:735:C:O2'	1:A:736:C:H5'	2.05	0.57
1:A:875:U:O2'	8:H:16:ASN:OD1	2.20	0.57
1:A:1256:A:O2'	1:A:1278:G:O6	2.23	0.57
1:A:1333:A:H2'	1:A:1334:G:O4'	2.05	0.57
1:A:1340:A:O3'	9:I:130:ARG:NH1	2.38	0.57
1:A:1378:C:H5''	7:G:92:ARG:HH22	1.69	0.57
3:C:31:ASP:HA	14:N:65:ARG:HH12	1.70	0.57
17:Q:17:MET:N	17:Q:17:MET:SD	2.78	0.57
1:A:90:C:O2'	1:A:91:U:O5'	2.23	0.56
1:A:451:A:N6	1:A:481:G:OP2	2.36	0.56
1:A:501:C:H2'	1:A:502:A:H8	1.70	0.56
1:A:777:A:H3'	1:A:778:G:C8	2.34	0.56
1:A:815:A:N6	1:A:1509:C:O2'	2.38	0.56
1:A:904:U:H2'	1:A:905:U:C6	2.40	0.56
6:F:38:ARG:NE	6:F:63:ASN:OD1	2.28	0.56
9:I:12:ARG:HG3	9:I:13:LYS:H	1.68	0.56
18:R:23:TYR:HB2	18:R:58:ALA:HB1	1.87	0.56
1:A:191:G:H2'	1:A:192:A:C8	2.40	0.56
1:A:195:A:H2'	1:A:196:A:C8	2.40	0.56
1:A:1371:G:O3'	9:I:71:GLY:HA3	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:59:ARG:HE	3:C:64:ILE:HG21	1.69	0.56
21:V:68:GLY:O	21:V:72:LEU:N	2.29	0.56
1:A:107:G:H3'	1:A:108:G:H21	1.70	0.56
1:A:339:C:H2'	1:A:340:U:C6	2.40	0.56
1:A:727:G:N2	1:A:730:G:OP2	2.35	0.56
1:A:823:C:H2'	1:A:824:G:C8	2.41	0.56
1:A:837:U:H2'	1:A:838:G:C8	2.41	0.56
1:A:880:C:H2'	1:A:881:G:H8	1.70	0.56
1:A:897:C:N4	1:A:902:G:O6	2.26	0.56
1:A:1320:C:C2	19:S:72:GLY:HA3	2.41	0.56
1:A:1525:G:H2'	1:A:1526:G:C8	2.40	0.56
7:G:107:ALA:HA	7:G:110:LYS:HE2	1.86	0.56
9:I:96:SER:C	9:I:100:LYS:HZ2	2.09	0.56
13:M:2:ALA:N	13:M:10:PRO:HD2	2.19	0.56
21:V:32:LEU:HD13	21:V:34:MET:O	2.06	0.56
1:A:581:G:O6	1:A:758:C:H3'	2.06	0.56
1:A:689:C:H4'	1:A:705:G:O2'	2.04	0.56
1:A:712:A:H2'	1:A:713:G:C8	2.40	0.56
1:A:1031:C:O2	1:A:1032:G:N2	2.38	0.56
1:A:1359:C:OP1	14:N:62:ASN:OD1	2.24	0.56
3:C:133:ALA:HA	3:C:136:ARG:HH11	1.70	0.56
4:D:160:GLU:N	4:D:160:GLU:OE1	2.38	0.56
8:H:87:LYS:CG	8:H:125:ILE:HD11	2.34	0.56
11:K:33:THR:HA	11:K:44:TRP:HA	1.87	0.56
1:A:107:G:N1	20:T:6:SER:OG	2.37	0.56
1:A:401:C:H2'	1:A:402:G:C8	2.40	0.56
1:A:608:A:H2'	1:A:609:A:O4'	2.05	0.56
1:A:775:G:C2	1:A:776:G:C4	2.94	0.56
1:A:782:A:H3'	1:A:783:C:H6	1.70	0.56
1:A:789:U:H3	1:A:792:A:H5''	1.69	0.56
1:A:1119:C:H2'	1:A:1120:C:C6	2.40	0.56
1:A:197:A:N1	1:A:220:G:O2'	2.25	0.56
1:A:324:G:N2	1:A:326:G:H3'	2.21	0.56
1:A:426:U:O2'	4:D:40:GLN:HG3	2.05	0.56
1:A:935:A:O2'	1:A:1383:C:N3	2.37	0.56
1:A:1157:A:C2	1:A:1180:A:H2'	2.41	0.56
1:A:1280:A:OP1	10:J:9:ARG:NH1	2.31	0.56
1:A:1323:G:H2'	1:A:1324:A:C8	2.39	0.56
1:A:1532:U:H4'	21:V:80:ARG:HE	1.70	0.56
12:L:42:PRO:HD3	12:L:50:ARG:HD3	1.86	0.56
1:A:932:C:O2	1:A:1385:G:N1	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:954:G:H2'	1:A:1227:A:H61	1.70	0.56
2:B:23:TRP:CZ3	2:B:25:PRO:HA	2.34	0.56
9:I:116:VAL:CG2	10:J:64:GLN:NE2	2.68	0.56
1:A:90:C:O2'	1:A:91:U:H6	1.89	0.56
1:A:343:U:O2'	1:A:346:G:O6	2.18	0.56
1:A:606:G:N2	1:A:633:G:N7	2.53	0.56
1:A:744:C:H2'	1:A:745:G:C8	2.41	0.56
9:I:41:ARG:HG2	9:I:44:ALA:H	1.70	0.56
14:N:20:TYR:HD2	14:N:55:SER:HB2	1.69	0.56
15:O:26:GLU:H	15:O:26:GLU:CD	2.08	0.56
21:V:73:GLN:HE22	21:V:97:PHE:N	2.02	0.56
1:A:517:G:O2'	1:A:518:C:OP2	2.24	0.56
4:D:55:LEU:O	4:D:59:GLN:HG2	2.06	0.56
7:G:17:LYS:HZ1	9:I:42:GLU:HG3	1.71	0.56
11:K:127:ARG:CG	21:V:14:GLU:OE2	2.53	0.56
19:S:18:LYS:NZ	19:S:32:ARG:O	2.39	0.56
21:V:34:MET:HB3	21:V:57:LEU:HB3	1.87	0.56
1:A:71:A:C4	1:A:72:A:C8	2.94	0.56
1:A:507:C:H3'	1:A:508:U:H2'	1.88	0.56
1:A:584:G:H2'	1:A:585:G:H8	1.71	0.56
7:G:103:TRP:CG	7:G:137:LYS:HD3	2.41	0.56
13:M:25:VAL:HG13	13:M:29:ARG:HB2	1.87	0.56
18:R:42:SER:HA	18:R:45:THR:OG1	2.06	0.56
1:A:10:A:H2'	1:A:11:G:C8	2.40	0.55
1:A:280:C:C2	17:Q:41:THR:HG22	2.40	0.55
1:A:459:A:C6	1:A:474:G:C6	2.94	0.55
1:A:564:C:H2'	1:A:565:U:O4'	2.06	0.55
3:C:6:HIS:HE1	3:C:8:ASN:HB2	1.70	0.55
1:A:229:U:C2	1:A:230:G:C8	2.93	0.55
1:A:714:G:H2'	1:A:715:A:H8	1.70	0.55
1:A:810:C:N4	1:A:811:C:N3	2.54	0.55
1:A:901:A:C8	1:A:902:G:H1'	2.40	0.55
1:A:1308:U:H3'	13:M:98:ARG:NH2	2.21	0.55
1:A:1312:G:H5'	19:S:5:LEU:HD11	1.88	0.55
1:A:1333:A:H3'	1:A:1334:G:C8	2.39	0.55
3:C:41:GLN:HG2	3:C:45:LYS:NZ	2.21	0.55
3:C:130:PHE:CD1	3:C:157:LEU:HD12	2.40	0.55
16:P:40:ASN:HB3	16:P:43:ALA:HB2	1.86	0.55
21:V:77:GLY:HA2	21:V:80:ARG:HD3	1.89	0.55
1:A:31:G:N2	1:A:47:C:O5'	2.40	0.55
1:A:424:G:H2'	1:A:425:G:O4'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:846:G:H2'	1:A:847:G:C8	2.42	0.55
4:D:104:ARG:HB3	4:D:168:PRO:HG2	1.89	0.55
4:D:110:THR:O	4:D:113:GLU:HG2	2.06	0.55
4:D:168:PRO:HB3	4:D:170:TRP:CH2	2.40	0.55
4:D:174:ASP:OD2	4:D:177:LYS:N	2.35	0.55
9:I:45:ARG:O	9:I:48:VAL:HG12	2.07	0.55
22:X:117:ILE:HA	22:X:127:VAL:HG22	1.88	0.55
1:A:224:U:H2'	1:A:225:C:C6	2.41	0.55
1:A:724:G:O2'	1:A:725:G:O4'	2.19	0.55
1:A:782:A:H3'	1:A:783:C:C6	2.41	0.55
1:A:1031:C:H4'	1:A:1032:G:O4'	2.07	0.55
1:A:1170:A:H3'	1:A:1171:A:H8	1.71	0.55
1:A:1300:G:O6	1:A:1334:G:H3'	2.07	0.55
2:B:68:LEU:HD23	2:B:161:LEU:CD2	2.36	0.55
3:C:112:ASP:OD2	3:C:115:LEU:HG	2.06	0.55
7:G:60:GLU:OE1	7:G:60:GLU:N	2.37	0.55
8:H:87:LYS:HG3	8:H:93:PRO:HD3	1.87	0.55
1:A:124:C:H2'	1:A:125:U:C6	2.41	0.55
1:A:229:U:H2'	1:A:230:G:H8	1.70	0.55
1:A:721:G:H4'	1:A:722:G:O4'	2.06	0.55
9:I:83:ILE:O	9:I:87:LEU:HG	2.06	0.55
1:A:255:G:OP1	17:Q:71:LYS:NZ	2.31	0.55
1:A:502:A:O3'	12:L:116:LYS:NZ	2.38	0.55
1:A:507:C:P	1:A:508:U:HO2'	2.29	0.55
1:A:948:C:N4	1:A:1233:G:O6	2.25	0.55
1:A:959:A:N1	1:A:1221:G:O2'	2.35	0.55
1:A:988:G:O2'	1:A:1014:A:N6	2.39	0.55
1:A:1283:U:H2'	1:A:1284:C:H6	1.72	0.55
1:A:1527:U:H2'	1:A:1528:U:C6	2.41	0.55
3:C:132:ARG:O	3:C:136:ARG:HG3	2.06	0.55
9:I:5:GLN:OE1	9:I:6:TYR:N	2.39	0.55
22:X:36:LEU:HB3	22:X:74:LEU:HG	1.87	0.55
1:A:456:A:H2'	1:A:457:G:C8	2.42	0.55
1:A:664:G:N2	1:A:741:G:H1	1.97	0.55
1:A:921:U:H5''	1:A:1081:A:O3'	2.07	0.55
1:A:984:C:H2'	1:A:985:C:C6	2.42	0.55
1:A:1283:U:H2'	1:A:1284:C:C6	2.42	0.55
11:K:127:ARG:NE	21:V:14:GLU:CG	2.70	0.55
18:R:72:ASP:OD1	18:R:73:ARG:NH1	2.37	0.55
21:V:65:VAL:HG11	21:V:99:TYR:HB2	1.89	0.55
1:A:108:G:OP1	1:A:326:G:N2	2.32	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:483:C:H3'	1:A:484:G:H8	1.72	0.55
1:A:590:U:H2'	1:A:591:U:C6	2.41	0.55
1:A:1071:C:H2'	1:A:1072:G:C8	2.41	0.55
1:A:1381:U:C4	7:G:78:ARG:HD2	2.41	0.55
4:D:188:ARG:NH1	4:D:197:GLU:OE2	2.39	0.55
6:F:2:ARG:O	6:F:66:ALA:N	2.31	0.55
7:G:56:LYS:HD3	7:G:57:SER:N	2.21	0.55
13:M:40:ALA:O	13:M:43:VAL:HG12	2.06	0.55
1:A:13:U:H1'	1:A:914:A:H5''	1.88	0.55
1:A:33:A:O2'	12:L:29:GLN:OE1	2.19	0.55
1:A:316:C:N3	1:A:337:G:N1	2.39	0.55
1:A:1409:C:H2'	1:A:1410:A:H8	1.70	0.55
3:C:157:LEU:HD23	3:C:164:ARG:O	2.06	0.55
4:D:35:GLU:OE1	4:D:35:GLU:N	2.39	0.55
7:G:61:ALA:HA	7:G:64:VAL:HB	1.89	0.55
21:V:69:ILE:O	21:V:73:GLN:HG2	2.06	0.55
22:X:53:ASP:HA	22:X:56:HIS:NE2	2.22	0.55
1:A:1228:C:H41	13:M:103:LYS:HG3	1.72	0.55
1:A:1243:C:H2'	1:A:1244:G:C8	2.42	0.55
1:A:1342:C:N4	1:A:1343:G:O6	2.40	0.55
1:A:1349:A:H1'	1:A:1374:A:N6	2.22	0.55
1:A:1356:G:H2'	1:A:1357:A:H8	1.72	0.55
3:C:23:PHE:HB2	10:J:95:GLY:O	2.07	0.55
4:D:138:SER:OG	4:D:141:ASP:OD1	2.22	0.55
5:E:149:SER:N	5:E:152:MET:SD	2.75	0.55
7:G:31:MET:SD	7:G:34:GLY:HA2	2.46	0.55
7:G:69:VAL:HG11	7:G:134:ALA:HB1	1.88	0.55
1:A:25:C:H2'	1:A:26:A:C8	2.33	0.54
1:A:322:C:H2'	1:A:323:U:O4'	2.08	0.54
1:A:1091:U:H2'	1:A:1093:A:OP2	2.07	0.54
1:A:1143:G:C2	1:A:1144:G:C4	2.95	0.54
1:A:1346:A:C5	1:A:1348:U:C2	2.95	0.54
4:D:13:ARG:HD2	4:D:32:CYS:HB2	1.88	0.54
5:E:13:GLU:N	5:E:13:GLU:OE1	2.40	0.54
5:E:17:ALA:HB3	5:E:36:LEU:HD12	1.88	0.54
13:M:90:ARG:HB2	13:M:97:VAL:HG12	1.88	0.54
1:A:355:C:O2'	1:A:388:G:N3	2.23	0.54
1:A:794:A:N7	1:A:795:C:N4	2.54	0.54
1:A:1002:G:H3'	1:A:1003:G:H8	1.73	0.54
1:A:1040:U:H2'	1:A:1041:G:H8	1.72	0.54
1:A:1263:C:H2'	1:A:1264:U:C6	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:784:A:H2'	1:A:785:G:C8	2.42	0.54
1:A:939:G:N1	1:A:1344:C:N3	2.54	0.54
5:E:160:SER:OG	5:E:162:GLU:OE1	2.22	0.54
1:A:33:A:N3	12:L:29:GLN:NE2	2.54	0.54
1:A:298:A:H2'	1:A:299:G:O4'	2.07	0.54
1:A:329:A:O2'	1:A:332:G:N7	2.36	0.54
1:A:410:G:H1'	1:A:433:G:N1	2.22	0.54
1:A:675:A:C4	1:A:676:A:C8	2.95	0.54
1:A:977:A:O3'	1:A:980:C:N4	2.41	0.54
3:C:24:ALA:HB3	3:C:29:PHE:HD1	1.71	0.54
9:I:51:PRO:HG3	9:I:80:ARG:HG3	1.89	0.54
12:L:113:ALA:HB1	12:L:116:LYS:HZ3	1.72	0.54
21:V:32:LEU:CD1	21:V:33:GLY:N	2.63	0.54
1:A:321:A:H2'	1:A:322:C:C6	2.42	0.54
1:A:669:G:N1	1:A:737:C:N3	2.45	0.54
1:A:860:A:H2'	1:A:861:G:O4'	2.07	0.54
1:A:864:A:H5''	5:E:90:THR:HB	1.90	0.54
1:A:899:C:H2'	1:A:900:A:O4'	2.07	0.54
1:A:1206:G:H2'	1:A:1207:2MG:H8	1.72	0.54
1:A:1263:C:H2'	1:A:1264:U:H6	1.73	0.54
1:A:1346:A:H62	1:A:1375:A:H62	1.56	0.54
1:A:1381:U:H1'	7:G:80:VAL:HA	1.90	0.54
1:A:1433:A:H2'	1:A:1434:A:C8	2.43	0.54
5:E:13:GLU:HB3	5:E:39:VAL:HG12	1.87	0.54
7:G:150:ALA:O	21:V:104:VAL:HG21	2.08	0.54
18:R:42:SER:OG	18:R:47:THR:N	2.41	0.54
1:A:236:A:H2'	1:A:237:G:H8	1.70	0.54
1:A:422:C:H4'	1:A:423:G:C4	2.42	0.54
1:A:604:G:H2'	1:A:605:U:O4'	2.08	0.54
1:A:719:C:H1'	18:R:38:LYS:HE2	1.89	0.54
1:A:841:C:H42	1:A:844:G:P	2.31	0.54
1:A:1386:G:H2'	1:A:1387:G:C8	2.42	0.54
1:A:1488:G:O2'	22:X:32:ARG:NH2	2.40	0.54
3:C:72:ARG:CZ	3:C:75:ILE:HG13	2.38	0.54
8:H:75:ILE:O	8:H:76:GLN:NE2	2.40	0.54
1:A:211:G:C2	1:A:212:G:C8	2.95	0.54
1:A:690:G:H2'	1:A:691:G:C8	2.43	0.54
1:A:939:G:O2'	1:A:1376:U:O4'	2.19	0.54
1:A:1303:C:H2'	1:A:1304:G:O4'	2.08	0.54
1:A:1342:C:H5''	9:I:129:LYS:HE2	1.88	0.54
7:G:133:THR:HA	7:G:136:LYS:HB3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:5:ASP:OD2	8:H:8:ALA:N	2.26	0.54
10:J:91:ASP:OD1	10:J:91:ASP:N	2.33	0.54
14:N:40:ASP:O	14:N:44:ALA:CB	2.56	0.54
22:X:36:LEU:H	22:X:74:LEU:HG	1.71	0.54
1:A:379:C:H2'	1:A:380:G:C8	2.43	0.54
1:A:487:A:H3'	1:A:488:C:H6	1.72	0.54
1:A:680:C:N4	1:A:710:G:O6	2.34	0.54
1:A:706:A:H2'	1:A:707:U:O4'	2.08	0.54
1:A:737:C:H2'	1:A:738:C:H6	1.72	0.54
1:A:882:C:H2'	1:A:883:C:C6	2.42	0.54
1:A:891:U:H2'	1:A:892:A:H8	1.73	0.54
1:A:1118:U:OP1	9:I:11:ARG:NH1	2.41	0.54
1:A:71:A:HO2'	1:A:72:A:H8	1.54	0.54
1:A:117:G:N2	1:A:313:A:O2'	2.41	0.54
1:A:155:A:H2'	1:A:156:C:C6	2.43	0.54
1:A:289:G:H2'	1:A:290:C:C6	2.43	0.54
1:A:371:A:O2'	1:A:373:A:N7	2.32	0.54
1:A:445:G:C2	1:A:490:C:C2	2.96	0.54
1:A:939:G:H4'	7:G:102:ARG:HH22	1.73	0.54
1:A:1084:G:H1'	1:A:1103:C:H41	1.72	0.54
2:B:173:ILE:HG23	2:B:183:VAL:HG21	1.89	0.54
6:F:4:TYR:N	6:F:64:VAL:O	2.41	0.54
1:A:27:G:H2'	1:A:28:A:O4'	2.08	0.54
1:A:94:G:H5'	1:A:95:C:C5	2.43	0.54
1:A:781:A:N7	1:A:801:U:O4	2.40	0.54
1:A:845:A:C5	1:A:846:G:C8	2.95	0.54
1:A:878:A:P	8:H:80:ARG:HH21	2.31	0.54
1:A:1179:A:H2'	1:A:1180:A:O4'	2.08	0.54
3:C:129:MET:HB2	3:C:132:ARG:NE	2.19	0.54
5:E:94:VAL:HA	5:E:127:ALA:HA	1.89	0.54
1:A:6:G:O2'	1:A:7:A:H8	1.91	0.53
1:A:27:G:C6	1:A:28:A:C5	2.97	0.53
1:A:290:C:H2'	1:A:291:U:H6	1.72	0.53
1:A:510:A:O2'	1:A:542:G:O2'	2.20	0.53
4:D:22:LYS:NZ	4:D:31:LYS:HE3	2.22	0.53
9:I:7:TYR:CA	9:I:19:VAL:O	2.51	0.53
9:I:21:ILE:HD12	9:I:61:LEU:HD12	1.88	0.53
16:P:56:ARG:HH21	16:P:59:HIS:CD2	2.25	0.53
1:A:167:A:N6	1:A:168:G:O6	2.41	0.53
1:A:251:G:N1	1:A:266:G:C6	2.77	0.53
1:A:1015:G:H2'	1:A:1016:A:C8	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1076:U:H2'	1:A:1077:G:C8	2.42	0.53
1:A:1187:G:N3	14:N:100:SER:OG	2.40	0.53
7:G:20:SER:OG	7:G:21:GLU:N	2.39	0.53
12:L:42:PRO:HD2	12:L:48:ALA:H	1.72	0.53
1:A:690:G:H2'	1:A:691:G:H8	1.72	0.53
1:A:1090:U:H2'	1:A:1091:U:H6	1.74	0.53
4:D:99:ASP:OD1	4:D:100:ASN:N	2.40	0.53
5:E:111:MET:O	5:E:115:LEU:HG	2.08	0.53
14:N:31:ILE:O	14:N:41:ARG:NE	2.36	0.53
21:V:24:GLN:HG3	21:V:25:ARG:HG3	1.89	0.53
22:X:37:ARG:HA	22:X:75:GLU:HG2	1.90	0.53
1:A:4:U:H2'	1:A:5:U:H2'	1.88	0.53
1:A:671:G:O2'	6:F:79:ARG:NH2	2.41	0.53
1:A:824:G:C6	1:A:877:G:C6	2.97	0.53
1:A:843:U:H2'	1:A:844:G:H8	1.73	0.53
1:A:1014:A:C6	1:A:1015:G:C6	2.96	0.53
1:A:1516:2MG:O2'	1:A:1518:MA6:N7	2.40	0.53
6:F:82:ASP:OD1	6:F:82:ASP:N	2.41	0.53
14:N:64:CYS:HB3	14:N:69:ARG:N	2.23	0.53
7:G:15:ASP:OD2	7:G:18:PHE:N	2.42	0.53
15:O:2:SER:OG	15:O:3:LEU:N	2.42	0.53
1:A:150:U:C4	1:A:170:U:C4	2.97	0.53
1:A:410:G:H2'	1:A:429:U:C5	2.43	0.53
1:A:424:G:C2	1:A:425:G:C4	2.96	0.53
1:A:471:U:H2'	1:A:472:U:C6	2.43	0.53
1:A:693:G:H2'	1:A:694:A:H8	1.74	0.53
1:A:1068:G:H1'	1:A:1191:A:H2	1.74	0.53
1:A:1096:C:H2'	1:A:1097:C:C6	2.43	0.53
1:A:1486:G:H3'	1:A:1487:G:H8	1.74	0.53
14:N:96:LEU:HD12	14:N:97:LYS:H	1.74	0.53
1:A:664:G:P	18:R:53:ARG:HH21	2.32	0.53
1:A:1288:A:H2'	1:A:1289:A:C8	2.44	0.53
7:G:42:ILE:HD13	7:G:116:MET:HG2	1.90	0.53
7:G:56:LYS:HD3	7:G:57:SER:H	1.74	0.53
7:G:137:LYS:HA	7:G:140:ASP:OD2	2.07	0.53
10:J:45:ARG:O	10:J:68:ARG:HA	2.09	0.53
1:A:381:C:H2'	1:A:382:A:O4'	2.09	0.53
1:A:879:C:H2'	1:A:880:C:H6	1.73	0.53
1:A:1027:C:H2'	1:A:1028:C:C6	2.43	0.53
12:L:44:LYS:CB	22:X:72:TYR:HB3	2.38	0.53
14:N:33:ASP:O	14:N:41:ARG:NH2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:43:PHE:HE2	15:O:56:LEU:HD13	1.74	0.53
1:A:122:G:H2'	1:A:123:U:C6	2.44	0.53
1:A:499:A:C6	1:A:547:A:C8	2.97	0.53
1:A:620:C:H1'	4:D:132:ILE:HG21	1.91	0.53
1:A:844:G:H3'	1:A:845:A:C8	2.39	0.53
7:G:63:GLU:HA	7:G:66:LEU:HG	1.90	0.53
8:H:34:VAL:HG13	8:H:49:PHE:HE2	1.74	0.53
9:I:98:LEU:HD12	9:I:103:PHE:HB2	1.90	0.53
10:J:92:LEU:HB3	10:J:96:VAL:HG11	1.90	0.53
1:A:35:G:O3'	12:L:118:GLY:HA2	2.09	0.53
1:A:86:G:H1'	1:A:88:U:O4	2.09	0.53
1:A:212:G:C6	1:A:213:G:C5	2.97	0.53
1:A:363:A:H2'	1:A:364:A:C8	2.43	0.53
1:A:454:G:H2'	1:A:455:G:C8	2.44	0.53
1:A:526:C:C4	1:A:527:G7M:H1'	2.44	0.53
1:A:1077:G:N2	1:A:1079:G:H3'	2.24	0.53
1:A:1218:C:H2'	1:A:1219:A:H8	1.72	0.53
8:H:106:THR:HA	8:H:123:GLY:HA3	1.90	0.53
13:M:15:ALA:O	13:M:19:LEU:HG	2.09	0.53
1:A:901:A:C5	1:A:902:G:H1'	2.43	0.52
1:A:938:A:O3'	7:G:95:ARG:NH2	2.42	0.52
1:A:1255:G:OP2	10:J:45:ARG:NH2	2.39	0.52
6:F:2:ARG:N	6:F:66:ALA:O	2.31	0.52
21:V:32:LEU:HD12	21:V:33:GLY:CA	2.38	0.52
1:A:1:A:H3'	1:A:2:A:C8	2.43	0.52
1:A:161:A:N1	1:A:347:G:O2'	2.33	0.52
1:A:542:G:H2'	1:A:543:U:C6	2.45	0.52
1:A:617:G:N2	1:A:623:C:O2	2.36	0.52
1:A:665:A:N3	1:A:732:C:H2'	2.23	0.52
1:A:701:U:H5''	1:A:702:A:H3'	1.92	0.52
1:A:897:C:H2'	1:A:898:G:H8	1.74	0.52
11:K:42:LEU:CD1	11:K:77:TYR:HE2	2.19	0.52
1:A:417:G:H2'	1:A:418:C:C6	2.44	0.52
1:A:716:A:C6	1:A:717:U:C4	2.97	0.52
1:A:1112:C:O2'	3:C:179:ARG:NE	2.42	0.52
1:A:1124:G:N2	1:A:1149:C:O2	2.42	0.52
1:A:1489:G:C6	1:A:1490:U:C2	2.98	0.52
10:J:24:GLU:O	10:J:27:GLU:HG3	2.09	0.52
14:N:4:GLN:HA	14:N:7:LYS:HE2	1.91	0.52
16:P:71:VAL:O	16:P:75:ILE:HD12	2.09	0.52
16:P:74:LEU:O	16:P:77:GLU:HG3	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:58:VAL:HG12	17:Q:79:VAL:HG23	1.91	0.52
1:A:75:G:H3'	1:A:76:G:C8	2.45	0.52
1:A:151:A:H3'	1:A:152:A:H8	1.74	0.52
1:A:160:A:H8	1:A:160:A:OP1	1.93	0.52
1:A:540:G:C4	1:A:541:G:C8	2.97	0.52
1:A:1130:A:H5''	9:I:64:TYR:CE2	2.44	0.52
1:A:1178:G:H21	1:A:1180:A:H3'	1.74	0.52
1:A:1349:A:H3'	1:A:1350:A:H8	1.75	0.52
2:B:23:TRP:HB3	2:B:39:HIS:CD2	2.45	0.52
5:E:61:GLN:O	5:E:65:GLU:N	2.29	0.52
6:F:22:ILE:O	6:F:26:THR:HG23	2.09	0.52
7:G:12:ILE:HD11	7:G:21:GLU:HB3	1.91	0.52
21:V:58:ASN:HB3	21:V:64:ALA:CB	2.40	0.52
1:A:227:G:H2'	1:A:228:A:O4'	2.10	0.52
1:A:264:C:H2'	1:A:265:G:H8	1.74	0.52
1:A:459:A:H2'	1:A:460:A:C8	2.45	0.52
1:A:620:C:H2'	1:A:621:A:O4'	2.09	0.52
1:A:680:C:C2	1:A:711:G:C2	2.98	0.52
1:A:1113:C:H2'	1:A:1114:C:C6	2.44	0.52
1:A:1225:A:O5'	13:M:102:THR:OG1	2.20	0.52
1:A:1230:C:H2'	1:A:1231:G:H8	1.74	0.52
1:A:1268:G:O6	1:A:1269:A:N6	2.43	0.52
1:A:113:G:H2'	1:A:114:U:C6	2.45	0.52
1:A:342:C:C2	1:A:348:G:C2	2.97	0.52
1:A:716:A:H2'	1:A:717:U:C6	2.45	0.52
1:A:827:U:H2'	1:A:870:U:O4	2.10	0.52
1:A:1141:C:O2'	1:A:1142:G:H8	1.93	0.52
1:A:1161:C:H2'	1:A:1162:C:C6	2.44	0.52
1:A:1246:A:C6	1:A:1292:G:C6	2.98	0.52
1:A:1291:U:OP1	7:G:37:SER:OG	2.24	0.52
1:A:1347:G:H22	1:A:1373:G:H3'	1.74	0.52
12:L:40:THR:HG22	12:L:41:THR:H	1.74	0.52
17:Q:14:SER:HA	17:Q:55:ILE:HG22	1.92	0.52
22:X:136:PHE:HB3	22:X:141:ILE:HD11	1.91	0.52
1:A:122:G:C2	1:A:123:U:C2	2.97	0.52
1:A:404:G:O2'	1:A:498:A:N1	2.32	0.52
1:A:855:U:H2'	1:A:856:C:H6	1.74	0.52
1:A:895:G:H2'	1:A:896:C:C6	2.44	0.52
1:A:955:U:O4'	1:A:1227:A:N6	2.43	0.52
3:C:102:ASN:OD1	3:C:103:ILE:N	2.43	0.52
7:G:67:GLU:OE1	7:G:70:ARG:NE	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:115:LYS:HB2	9:I:118:LEU:HD12	1.92	0.52
10:J:6:ILE:HD13	10:J:79:PRO:HB3	1.90	0.52
12:L:35:THR:N	12:L:54:ARG:O	2.43	0.52
14:N:39:GLU:HA	14:N:42:TRP:HB3	1.90	0.52
14:N:63:ARG:HD2	14:N:68:GLY:C	2.29	0.52
18:R:18:VAL:HG23	18:R:18:VAL:O	2.09	0.52
19:S:10:PHE:O	19:S:39:THR:OG1	2.22	0.52
20:T:60:ARG:HA	20:T:63:ALA:HB3	1.91	0.52
1:A:484:G:C6	1:A:486:U:H1'	2.45	0.52
1:A:833:G:H2'	1:A:834:U:O4'	2.10	0.52
1:A:836:G:C5	1:A:851:G:C6	2.98	0.52
1:A:1248:A:C6	1:A:1290:G:C4	2.98	0.52
1:A:1301:U:OP2	1:A:1303:C:N4	2.40	0.52
1:A:1308:U:P	13:M:109:ARG:HH12	2.33	0.52
3:C:167:TRP:HZ3	3:C:169:ARG:HB2	1.75	0.52
7:G:65:ALA:HA	7:G:128:ALA:HA	1.91	0.52
10:J:4:GLN:HG3	10:J:77:VAL:O	2.10	0.52
10:J:15:HIS:HB3	10:J:70:HIS:CD2	2.45	0.52
11:K:89:PRO:HG3	21:V:24:GLN:NE2	2.24	0.52
1:A:219:U:H2'	1:A:220:G:H8	1.73	0.52
1:A:463:U:H2'	1:A:464:U:C2	2.44	0.52
1:A:476:U:H2'	1:A:477:C:C6	2.43	0.52
1:A:624:C:H4'	16:P:10:GLY:HA2	1.90	0.52
1:A:624:C:H2'	1:A:625:U:C6	2.44	0.52
1:A:631:C:H3'	1:A:632:U:H5'	1.90	0.52
1:A:958:A:C2	19:S:55:ARG:HB3	2.44	0.52
1:A:958:A:O2'	1:A:959:A:H5'	2.09	0.52
2:B:31:ILE:HD13	2:B:39:HIS:CE1	2.44	0.52
7:G:88:PRO:HB3	7:G:145:ALA:HB1	1.90	0.52
11:K:93:ARG:NH1	11:K:97:ILE:HG13	2.24	0.52
19:S:4:SER:OG	19:S:5:LEU:N	2.43	0.52
22:X:89:GLU:O	22:X:93:ARG:HG3	2.10	0.52
1:A:7:A:H2'	5:E:124:LEU:HD11	1.91	0.52
1:A:127:G:C2	1:A:128:G:H1'	2.44	0.52
1:A:137:U:H2'	1:A:138:G:H8	1.75	0.52
1:A:155:A:H2'	1:A:156:C:H6	1.74	0.52
1:A:455:G:N1	1:A:477:C:O2	2.39	0.52
1:A:520:A:H5'	12:L:49:LEU:HG	1.92	0.52
1:A:789:U:N3	1:A:792:A:H5''	2.25	0.52
1:A:843:U:C2'	1:A:844:G:H8	2.23	0.52
1:A:983:A:OP2	1:A:984:C:N4	2.37	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1175:G:H2'	1:A:1176:A:C8	2.45	0.52
1:A:1264:U:H2'	1:A:1265:C:C6	2.45	0.52
2:B:72:THR:HG22	2:B:94:HIS:O	2.10	0.52
3:C:129:MET:O	3:C:132:ARG:HG2	2.09	0.52
9:I:11:ARG:HB2	9:I:106:ARG:HE	1.75	0.52
22:X:102:VAL:CG1	22:X:143:LYS:HB3	2.40	0.52
1:A:181:A:N6	1:A:195:A:C8	2.77	0.51
1:A:206:C:C2	1:A:207:C:C5	2.97	0.51
1:A:419:C:C4	1:A:420:U:C4	2.98	0.51
1:A:638:U:H2'	1:A:639:G:O4'	2.09	0.51
1:A:652:U:O4	1:A:752:G:O2'	2.17	0.51
1:A:904:U:H2'	1:A:905:U:H6	1.74	0.51
1:A:978:A:C6	1:A:1318:A:C6	2.98	0.51
1:A:1312:G:N1	1:A:1325:C:O2	2.37	0.51
1:A:1348:U:C2	1:A:1349:A:C8	2.97	0.51
5:E:11:LEU:HD13	5:E:39:VAL:HB	1.93	0.51
5:E:111:MET:HA	5:E:114:VAL:HG12	1.91	0.51
14:N:74:LEU:O	14:N:77:PHE:N	2.39	0.51
1:A:51:A:N7	1:A:114:U:O2'	2.42	0.51
1:A:203:G:C6	1:A:215:C:C4	2.98	0.51
1:A:284:C:H2'	1:A:285:C:C6	2.45	0.51
1:A:483:C:C2	1:A:484:G:N7	2.78	0.51
1:A:666:G:C4	1:A:667:G:C8	2.98	0.51
1:A:676:A:H2'	1:A:677:U:C6	2.45	0.51
1:A:878:A:P	8:H:80:ARG:HE	2.33	0.51
1:A:1034:G:H2'	1:A:1035:A:C8	2.45	0.51
1:A:1178:G:O5'	9:I:95:ARG:NH2	2.44	0.51
1:A:1255:G:O2'	1:A:1258:G:H1'	2.10	0.51
1:A:1427:C:H2'	1:A:1428:A:H8	1.76	0.51
3:C:33:LEU:HD22	14:N:93:ILE:HD11	1.91	0.51
8:H:85:ILE:O	8:H:124:GLU:HG3	2.10	0.51
11:K:88:GLY:N	11:K:114:THR:HG22	2.21	0.51
14:N:5:SER:HB3	14:N:9:ARG:HH21	1.76	0.51
1:A:419:C:H2'	1:A:420:U:C6	2.46	0.51
1:A:987:G:H2'	1:A:988:G:C8	2.44	0.51
2:B:81:LYS:HG3	2:B:91:PHE:CZ	2.45	0.51
3:C:62:LYS:NZ	3:C:97:VAL:HG13	2.26	0.51
4:D:22:LYS:HE3	4:D:31:LYS:HD2	1.92	0.51
5:E:162:GLU:HA	5:E:165:LEU:HG	1.92	0.51
7:G:63:GLU:O	7:G:67:GLU:HG2	2.10	0.51
16:P:60:TRP:HB3	16:P:65:ALA:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:V:76:SER:O	21:V:80:ARG:HG3	2.11	0.51
21:V:77:GLY:O	21:V:80:ARG:HB2	2.09	0.51
22:X:24:VAL:HG11	22:X:79:PRO:HG3	1.92	0.51
1:A:287:U:H2'	1:A:288:A:H8	1.74	0.51
1:A:332:G:O3'	20:T:2:ALA:N	2.44	0.51
1:A:665:A:C5	1:A:733:G:C5	2.98	0.51
1:A:861:G:H2'	1:A:862:C:C6	2.45	0.51
5:E:81:LEU:HB3	5:E:147:MET:SD	2.51	0.51
1:A:208:U:C2	1:A:210:C:N3	2.78	0.51
1:A:302:G:H2'	1:A:303:A:H8	1.75	0.51
1:A:364:A:H8	1:A:364:A:O5'	1.93	0.51
1:A:703:G:H5''	1:A:704:A:O4'	2.11	0.51
1:A:821:G:O6	1:A:880:C:N4	2.44	0.51
1:A:852:G:C6	1:A:853:C:C4	2.98	0.51
1:A:893:C:H42	1:A:906:A:H2	1.56	0.51
3:C:47:LEU:HB3	3:C:50:ALA:HB3	1.92	0.51
3:C:74:GLY:O	3:C:78:GLY:N	2.44	0.51
17:Q:12:VAL:HA	17:Q:23:VAL:HG23	1.93	0.51
1:A:24:U:H2'	1:A:25:C:C6	2.45	0.51
1:A:459:A:H2'	1:A:460:A:H8	1.76	0.51
1:A:465:A:H3'	1:A:466:A:H8	1.75	0.51
1:A:542:G:H2'	1:A:543:U:H6	1.76	0.51
1:A:701:U:H1'	1:A:703:G:C6	2.45	0.51
1:A:765:G:C6	1:A:812:G:C4	2.99	0.51
1:A:843:U:HO2'	1:A:844:G:H8	1.59	0.51
1:A:939:G:OP1	7:G:102:ARG:NH1	2.35	0.51
1:A:949:A:O2'	1:A:971:G:O6	2.19	0.51
1:A:1213:A:C8	1:A:1215:G:C5	2.99	0.51
1:A:1238:A:H5'	1:A:1336:C:H41	1.75	0.51
1:A:1248:A:H2'	1:A:1249:C:C6	2.46	0.51
1:A:1269:A:N3	1:A:1326:U:H1'	2.25	0.51
4:D:50:ASP:OD1	4:D:50:ASP:N	2.43	0.51
7:G:67:GLU:HA	7:G:70:ARG:HG2	1.91	0.51
7:G:92:ARG:HG3	7:G:94:VAL:HG22	1.92	0.51
1:A:375:U:H2'	1:A:376:G:O4'	2.10	0.51
1:A:674:G:C2	1:A:675:A:C5	2.99	0.51
1:A:1014:A:H2'	1:A:1015:G:O4'	2.11	0.51
1:A:1041:G:H2'	1:A:1042:A:C8	2.46	0.51
1:A:1068:G:C2	1:A:1069:C:C2	2.98	0.51
1:A:1144:G:H21	1:A:1146:A:H62	1.58	0.51
1:A:1190:G:OP1	3:C:5:VAL:N	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1394:A:O2'	1:A:1395:C:O5'	2.26	0.51
4:D:50:ASP:HA	4:D:53:VAL:HG22	1.93	0.51
10:J:48:ARG:HH11	10:J:66:GLU:HG3	1.76	0.51
21:V:15:MET:SD	21:V:43:MET:SD	3.08	0.51
1:A:71:A:H61	1:A:99:C:H1'	1.76	0.51
1:A:190:A:C2	1:A:191:G:H1'	2.46	0.51
1:A:563:A:HO2'	1:A:566:G:HO2'	1.56	0.51
1:A:646:G:C2	1:A:647:C:C2	2.99	0.51
1:A:781:A:OP2	1:A:800:G:N1	2.31	0.51
1:A:1008:U:H2'	1:A:1009:U:C6	2.46	0.51
1:A:1339:A:H2'	1:A:1340:A:O4'	2.11	0.51
3:C:51:SER:OG	3:C:72:ARG:HG2	2.11	0.51
1:A:45:G:H2'	1:A:46:G:C8	2.44	0.51
1:A:71:A:O2'	1:A:72:A:H8	1.94	0.51
1:A:268:U:H2'	1:A:269:C:C6	2.46	0.51
1:A:607:A:C2	1:A:608:A:C4	2.99	0.51
1:A:826:C:H1'	8:H:16:ASN:HD22	1.76	0.51
1:A:900:A:H2'	1:A:901:A:O4'	2.11	0.51
1:A:1112:C:O2	3:C:179:ARG:N	2.40	0.51
1:A:1143:G:H2'	1:A:1144:G:C8	2.46	0.51
1:A:1238:A:H5'	1:A:1336:C:N4	2.25	0.51
6:F:1:MET:HA	6:F:67:PRO:HA	1.93	0.51
10:J:9:ARG:HB2	10:J:99:GLN:HB3	1.92	0.51
13:M:12:HIS:HA	13:M:45:ILE:HB	1.91	0.51
18:R:13:PHE:CE2	18:R:55:LEU:HD11	2.45	0.51
1:A:132:C:C4	1:A:133:U:C4	2.98	0.51
1:A:434:U:H2'	1:A:435:A:C8	2.46	0.51
1:A:612:C:H2'	1:A:613:C:H6	1.74	0.51
1:A:807:A:H2'	1:A:808:C:C6	2.45	0.51
1:A:861:G:N1	1:A:868:C:N3	2.55	0.51
1:A:1250:A:H2'	1:A:1251:A:H8	1.76	0.51
1:A:1418:A:C5	1:A:1419:G:C8	2.99	0.51
2:B:111:ILE:HD13	2:B:148:LEU:HD13	1.92	0.51
3:C:116:VAL:O	3:C:120:ILE:HG12	2.11	0.51
4:D:50:ASP:O	4:D:53:VAL:N	2.44	0.51
5:E:61:GLN:OE1	5:E:65:GLU:HB2	2.11	0.51
19:S:47:LEU:H	19:S:62:VAL:HG12	1.76	0.51
1:A:39:G:H2'	1:A:40:C:C6	2.46	0.50
1:A:120:A:C4	1:A:122:G:C5	2.99	0.50
1:A:193:C:C2	1:A:194:C:H5	2.30	0.50
1:A:232:G:H1'	1:A:262:A:N1	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:706:A:H2'	1:A:707:U:C6	2.45	0.50
1:A:1114:C:O2	1:A:1186:G:N2	2.19	0.50
3:C:70:THR:OG1	3:C:71:ALA:N	2.39	0.50
3:C:132:ARG:HG3	3:C:136:ARG:NH1	2.26	0.50
7:G:139:GLU:OE2	7:G:143:ARG:CD	2.59	0.50
8:H:10:MET:HG3	8:H:27:MET:SD	2.51	0.50
10:J:29:ALA:HB1	10:J:34:ALA:HB3	1.93	0.50
11:K:82:LEU:HB2	11:K:107:ILE:HA	1.93	0.50
19:S:32:ARG:HG2	19:S:33:THR:N	2.26	0.50
20:T:11:ALA:O	20:T:14:SER:OG	2.23	0.50
1:A:42:G:C6	1:A:43:C:C4	2.99	0.50
1:A:510:A:N3	1:A:543:U:H1'	2.26	0.50
1:A:583:A:C5	1:A:584:G:C8	2.99	0.50
1:A:833:G:N1	1:A:853:C:N3	2.42	0.50
1:A:1198:G:H2'	1:A:1199:U:C6	2.46	0.50
1:A:1254:A:N6	1:A:1255:G:O6	2.44	0.50
1:A:1343:G:OP1	9:I:124:ARG:NH1	2.43	0.50
1:A:1344:C:P	9:I:124:ARG:HH21	2.35	0.50
1:A:1376:U:OP2	7:G:25:LYS:NZ	2.27	0.50
3:C:177:THR:OG1	3:C:206:GLU:OE2	2.29	0.50
5:E:105:ILE:HD12	5:E:123:VAL:HG12	1.93	0.50
12:L:43:LYS:NZ	22:X:71:ALA:HB1	2.26	0.50
17:Q:36:LYS:O	17:Q:38:ILE:HG12	2.11	0.50
22:X:121:ASP:HB2	22:X:124:MET:O	2.11	0.50
1:A:31:G:HO2'	1:A:48:C:H5	1.58	0.50
1:A:801:U:H2'	1:A:802:A:O4'	2.11	0.50
1:A:1379:G:C5	1:A:1380:U:C4	3.00	0.50
6:F:11:HIS:HA	6:F:85:ILE:HD13	1.92	0.50
13:M:4:ILE:HA	13:M:57:ARG:HH11	1.76	0.50
13:M:26:GLY:H	13:M:29:ARG:HG2	1.76	0.50
1:A:300:A:H2'	1:A:301:G:O4'	2.10	0.50
1:A:499:A:H1'	1:A:500:G:C8	2.46	0.50
1:A:602:A:H2'	1:A:603:U:H6	1.75	0.50
1:A:1075:U:H2'	1:A:1076:U:H6	1.74	0.50
1:A:1345:U:H5''	9:I:122:ARG:NH1	2.27	0.50
1:A:1377:A:C6	7:G:7:ILE:HG13	2.46	0.50
3:C:183:ASP:H	3:C:204:LYS:HZ2	1.59	0.50
4:D:123:ILE:O	4:D:129:VAL:HA	2.12	0.50
7:G:146:GLU:HA	7:G:149:LYS:HG3	1.92	0.50
8:H:73:GLU:H	8:H:130:ALA:HB3	1.77	0.50
11:K:17:SER:O	11:K:81:ASN:ND2	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:57:LEU:HD12	12:L:61:PHE:HB2	1.93	0.50
21:V:16:GLN:O	21:V:19:ILE:CG1	2.60	0.50
1:A:207:C:H2'	1:A:208:U:O4'	2.12	0.50
1:A:384:G:C2	1:A:385:C:C2	3.00	0.50
1:A:466:A:H2'	1:A:468:A:N3	2.27	0.50
1:A:658:C:N4	1:A:748:G:O6	2.32	0.50
1:A:750:C:O2'	15:O:22:THR:N	2.43	0.50
1:A:1003:G:H2'	1:A:1003:G:N3	2.27	0.50
1:A:1119:C:OP1	9:I:11:ARG:NH2	2.45	0.50
1:A:1151:A:H5''	10:J:44:THR:HG23	1.93	0.50
1:A:1152:A:O3'	10:J:15:HIS:NE2	2.45	0.50
1:A:1297:G:H1'	1:A:1298:U:C5	2.47	0.50
4:D:102:VAL:HG13	4:D:107:PHE:HB2	1.93	0.50
7:G:126:ASP:OD1	7:G:131:LYS:NZ	2.36	0.50
10:J:40:ILE:O	10:J:42:LEU:HD12	2.11	0.50
13:M:33:ILE:HD12	13:M:59:GLU:HB3	1.94	0.50
13:M:54:ASP:OD1	13:M:55:THR:N	2.44	0.50
18:R:11:CYS:HB3	18:R:48:ARG:NH2	2.26	0.50
1:A:359:G:H2'	1:A:360:G:C8	2.47	0.50
1:A:582:C:C2	1:A:759:A:N6	2.79	0.50
1:A:977:A:H1'	1:A:982:U:O4	2.11	0.50
3:C:8:ASN:HD21	3:C:184:TYR:HB3	1.75	0.50
3:C:172:ARG:NH1	3:C:174:PRO:HG3	2.25	0.50
3:C:191:THR:N	3:C:194:GLY:O	2.45	0.50
4:D:116:GLN:HE22	4:D:154:ARG:HH22	1.59	0.50
4:D:142:VAL:HG22	4:D:181:THR:HG23	1.93	0.50
4:D:205:SER:HB2	5:E:106:ILE:HD13	1.93	0.50
1:A:401:C:OP2	4:D:70:ARG:NE	2.38	0.50
1:A:636:U:H2'	1:A:637:C:H6	1.77	0.50
1:A:654:G:H2'	1:A:655:A:O4'	2.12	0.50
1:A:748:G:C2	1:A:749:A:C4	2.99	0.50
1:A:988:G:O2'	1:A:1015:G:N1	2.43	0.50
1:A:1410:A:H61	1:A:1490:U:C1'	2.25	0.50
4:D:14:ARG:HH21	4:D:38:PRO:HG2	1.76	0.50
15:O:77:ARG:HA	15:O:80:GLN:HG2	1.94	0.50
21:V:58:ASN:HB3	21:V:64:ALA:HB1	1.93	0.50
22:X:124:MET:HA	22:X:136:PHE:O	2.11	0.50
1:A:68:G:H22	1:A:101:A:H2	1.58	0.50
1:A:373:A:O2'	1:A:451:A:N7	2.45	0.50
1:A:553:A:N6	1:A:554:A:C6	2.79	0.50
1:A:824:G:H2'	1:A:825:A:C8	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:933:G:OP1	7:G:4:ARG:NH2	2.40	0.50
1:A:1170:A:H3'	1:A:1171:A:C8	2.46	0.50
3:C:72:ARG:O	3:C:76:VAL:N	2.28	0.50
8:H:17:GLY:O	8:H:21:ASN:N	2.45	0.50
8:H:30:SER:H	8:H:33:LYS:HE3	1.76	0.50
9:I:23:PRO:HA	9:I:61:LEU:HA	1.94	0.50
13:M:14:HIS:HB2	13:M:17:ILE:HG12	1.93	0.50
1:A:327:A:C5	1:A:329:A:C5	2.99	0.50
1:A:499:A:O4'	1:A:547:A:N6	2.45	0.50
1:A:598:U:H2'	1:A:599:C:C6	2.47	0.50
1:A:720:C:OP2	1:A:721:G:O2'	2.27	0.50
1:A:765:G:C5	1:A:812:G:C2	3.00	0.50
1:A:936:C:H2'	1:A:937:A:O4'	2.11	0.50
1:A:1141:C:O2'	1:A:1142:G:H5''	2.12	0.50
1:A:1316:G:H1	1:A:1319:A:P	2.35	0.50
1:A:1360:A:H3'	1:A:1361:G:H8	1.77	0.50
6:F:105:ALA:C	6:F:106:LYS:HD3	2.32	0.50
8:H:95:VAL:HG12	8:H:100:GLY:HA3	1.93	0.50
12:L:7:LEU:HD12	17:Q:34:TYR:CZ	2.46	0.50
1:A:429:U:H1'	1:A:430:A:H5''	1.93	0.49
1:A:621:A:H2'	1:A:622:A:C8	2.47	0.49
1:A:663:A:H2'	1:A:664:G:H8	1.76	0.49
1:A:706:A:H2'	1:A:707:U:H6	1.78	0.49
1:A:767:A:C2	1:A:768:A:C4	2.99	0.49
1:A:815:A:C4	1:A:1529:G:C6	3.00	0.49
1:A:898:G:C6	1:A:902:G:C6	2.99	0.49
1:A:946:A:C6	1:A:947:G:C6	3.00	0.49
1:A:1254:A:C6	1:A:1255:G:C6	3.00	0.49
3:C:83:ASP:O	3:C:87:LEU:HG	2.12	0.49
3:C:85:GLU:OE2	3:C:88:ARG:NH2	2.46	0.49
4:D:11:LEU:O	4:D:15:GLU:N	2.44	0.49
17:Q:11:ARG:C	17:Q:23:VAL:HG23	2.32	0.49
21:V:38:VAL:HA	21:V:54:VAL:HA	1.94	0.49
1:A:201:G:H2'	1:A:202:G:C8	2.47	0.49
1:A:275:G:P	17:Q:16:LYS:HD3	2.52	0.49
1:A:477:C:H2'	1:A:478:A:C8	2.47	0.49
1:A:497:G:H2'	1:A:498:A:C8	2.47	0.49
1:A:626:G:C2	1:A:627:G:C4	3.00	0.49
1:A:674:G:H2'	1:A:675:A:C8	2.44	0.49
1:A:694:A:H2'	1:A:695:A:O4'	2.12	0.49
1:A:799:G:C2	1:A:800:G:H1'	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:939:G:O2'	1:A:1375:A:N3	2.45	0.49
1:A:946:A:H2'	1:A:947:G:C8	2.46	0.49
1:A:1073:U:H3	1:A:1102:A:H61	1.60	0.49
3:C:62:LYS:NZ	3:C:98:PRO:HD2	2.27	0.49
11:K:18:ASP:HA	11:K:81:ASN:HB2	1.94	0.49
14:N:15:ALA:O	14:N:18:ASP:HB3	2.12	0.49
14:N:24:ARG:NH2	14:N:56:SER:HB2	2.27	0.49
15:O:80:GLN:O	15:O:84:ARG:N	2.35	0.49
1:A:107:G:C8	1:A:108:G:N2	2.80	0.49
1:A:262:A:C6	1:A:263:A:C6	3.00	0.49
1:A:931:C:N3	1:A:1386:G:N1	2.43	0.49
1:A:1216:A:H5''	14:N:5:SER:OG	2.12	0.49
1:A:1244:G:C6	1:A:1245:C:C4	3.01	0.49
1:A:1256:A:C6	1:A:1278:G:C2	3.00	0.49
5:E:12:GLN:OE1	5:E:12:GLN:N	2.45	0.49
9:I:43:THR:HA	9:I:46:MET:HG2	1.93	0.49
11:K:24:HIS:N	11:K:31:ILE:O	2.42	0.49
1:A:516:PSU:H2'	1:A:517:G:C4	2.47	0.49
1:A:766:A:C8	1:A:814:A:C6	3.00	0.49
1:A:986:U:H2'	1:A:987:G:C8	2.47	0.49
1:A:1059:C:H2'	1:A:1060:U:H6	1.73	0.49
1:A:1088:G:H21	1:A:1167:A:H62	1.59	0.49
1:A:1230:C:H2'	1:A:1231:G:C8	2.47	0.49
1:A:1373:G:OP2	9:I:73:SER:OG	2.19	0.49
10:J:34:ALA:HB1	10:J:76:ILE:HG21	1.94	0.49
16:P:69:ASP:O	16:P:73:ALA:N	2.29	0.49
20:T:44:LYS:HG3	20:T:87:ALA:HB3	1.95	0.49
22:X:6:GLN:CD	22:X:6:GLN:H	2.16	0.49
1:A:189:A:H3'	1:A:190:A:C8	2.45	0.49
1:A:324:G:N1	1:A:327:A:OP2	2.40	0.49
1:A:437:U:H5''	4:D:152:GLN:HG2	1.94	0.49
1:A:450:G:H5''	1:A:451:A:H5''	1.93	0.49
1:A:598:U:H4'	8:H:86:TYR:CE2	2.47	0.49
1:A:646:G:C6	1:A:647:C:C4	3.00	0.49
1:A:1091:U:O2'	1:A:1093:A:N7	2.30	0.49
1:A:1133:G:N2	1:A:1141:C:O2	2.29	0.49
1:A:1179:A:O5'	9:I:99:ARG:NH2	2.46	0.49
1:A:1181:G:O2'	1:A:1182:G:N7	2.35	0.49
1:A:1265:C:H2'	1:A:1266:G:C8	2.48	0.49
3:C:8:ASN:ND2	3:C:184:TYR:HB3	2.28	0.49
4:D:22:LYS:CE	4:D:31:LYS:HE3	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:15:SER:HA	9:I:68:LYS:O	2.13	0.49
9:I:20:PHE:O	9:I:63:LEU:HA	2.13	0.49
1:A:379:C:H2'	1:A:380:G:H8	1.78	0.49
1:A:531:U:H4'	1:A:532:A:OP1	2.12	0.49
1:A:771:G:H2'	1:A:772:U:C6	2.47	0.49
1:A:974:A:H4'	1:A:975:A:H3'	1.94	0.49
1:A:993:G:H22	1:A:996:A:H62	1.59	0.49
1:A:1015:G:C6	1:A:1016:A:C6	3.00	0.49
1:A:1108:G:O2'	1:A:1191:A:O4'	2.31	0.49
1:A:1442:G:H2'	1:A:1443:C:C6	2.48	0.49
10:J:50:THR:HG22	10:J:62:ARG:HB3	1.90	0.49
11:K:22:HIS:NE2	11:K:85:MET:SD	2.85	0.49
13:M:86:TYR:CZ	13:M:90:ARG:HD2	2.48	0.49
14:N:10:GLU:O	14:N:14:VAL:HG23	2.11	0.49
22:X:38:ILE:O	22:X:77:SER:N	2.27	0.49
1:A:374:A:H4'	1:A:451:A:OP2	2.13	0.49
1:A:667:G:H4'	15:O:51:HIS:CE1	2.48	0.49
1:A:979:C:H3'	1:A:980:C:C6	2.48	0.49
4:D:169:THR:HG21	4:D:190:ASP:OD2	2.13	0.49
11:K:21:ALA:H	11:K:84:VAL:HG22	1.78	0.49
12:L:43:LYS:HZ2	22:X:71:ALA:HB1	1.78	0.49
19:S:43:ASN:OD1	19:S:44:MET:N	2.40	0.49
1:A:71:A:N1	1:A:99:C:O2'	2.46	0.49
1:A:184:G:O6	1:A:192:A:N6	2.46	0.49
1:A:252:U:O4	1:A:253:A:N6	2.45	0.49
1:A:254:G:OP1	17:Q:70:THR:HB	2.13	0.49
1:A:256:U:H2'	1:A:257:G:C8	2.48	0.49
1:A:806:C:O2'	1:A:807:A:H5'	2.13	0.49
1:A:840:C:C2	1:A:847:G:C2	3.01	0.49
1:A:841:C:C2	1:A:846:G:C2	2.99	0.49
1:A:1308:U:H5''	13:M:97:VAL:HG22	1.94	0.49
1:A:1328:C:H2'	1:A:1329:A:C8	2.48	0.49
11:K:22:HIS:O	11:K:33:THR:N	2.44	0.49
20:T:61:GLN:O	20:T:66:LEU:N	2.45	0.49
1:A:37:U:O2'	1:A:547:A:N1	2.33	0.49
1:A:122:G:H2'	1:A:123:U:H6	1.77	0.49
1:A:247:G:C5	1:A:278:G:C2	3.01	0.49
1:A:473:U:H2'	1:A:474:G:O4'	2.13	0.49
1:A:775:G:H2'	1:A:776:G:C8	2.48	0.49
3:C:87:LEU:O	3:C:91:VAL:HG13	2.13	0.49
3:C:110:GLU:CD	3:C:110:GLU:H	2.16	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:146:ALA:HB3	3:C:149:ILE:HD11	1.95	0.49
7:G:69:VAL:HG22	7:G:135:VAL:HB	1.93	0.49
10:J:48:ARG:HD3	10:J:66:GLU:HG3	1.93	0.49
19:S:21:LYS:O	19:S:25:SER:OG	2.16	0.49
20:T:39:ILE:HD12	20:T:44:LYS:HZ2	1.77	0.49
1:A:264:C:H2'	1:A:265:G:C8	2.48	0.49
1:A:760:G:H2'	1:A:761:G:H5'	1.95	0.49
1:A:938:A:H5'	7:G:76:LYS:HZ3	1.78	0.49
1:A:1126:U:O2'	1:A:1127:G:O5'	2.31	0.49
1:A:1269:A:HO2'	1:A:1325:C:HO2'	1.59	0.49
1:A:1391:U:H2'	1:A:1392:G:H8	1.78	0.49
3:C:55:ILE:HD13	3:C:68:ILE:HG12	1.95	0.49
6:F:21:MET:HA	6:F:24:ARG:HB3	1.94	0.49
8:H:79:SER:HB2	8:H:125:ILE:O	2.13	0.49
10:J:50:THR:HG23	10:J:62:ARG:HB3	1.94	0.49
16:P:57:ILE:O	16:P:61:VAL:HG23	2.13	0.49
1:A:68:G:H1'	1:A:151:A:H61	1.77	0.48
1:A:105:G:C6	1:A:106:C:C4	3.00	0.48
1:A:259:G:H2'	1:A:260:G:O4'	2.13	0.48
1:A:409:U:H2'	1:A:410:G:O4'	2.13	0.48
1:A:551:U:H2'	1:A:552:U:C6	2.48	0.48
1:A:652:U:O2'	1:A:752:G:N1	2.39	0.48
1:A:745:G:H2'	1:A:746:A:C8	2.48	0.48
1:A:841:C:H2'	1:A:843:U:H5	1.77	0.48
1:A:1221:G:H2'	1:A:1222:G:C8	2.48	0.48
1:A:1455:G:H2'	1:A:1456:A:C8	2.48	0.48
5:E:157:ARG:O	5:E:159:LYS:HG3	2.13	0.48
1:A:71:A:O4'	1:A:100:G:N2	2.46	0.48
1:A:110:C:H2'	1:A:111:G:O4'	2.12	0.48
1:A:158:G:C5	1:A:164:G:C2	3.01	0.48
1:A:161:A:H2'	1:A:162:A:C8	2.48	0.48
1:A:178:C:H2'	1:A:179:A:H8	1.78	0.48
1:A:358:U:H2'	1:A:359:G:C8	2.49	0.48
1:A:491:G:H2'	1:A:492:C:C6	2.48	0.48
1:A:722:G:H1'	1:A:724:G:OP1	2.13	0.48
1:A:823:C:H2'	1:A:824:G:H8	1.75	0.48
1:A:841:C:H3'	1:A:843:U:OP2	2.13	0.48
1:A:858:G:H1	1:A:870:U:P	2.36	0.48
1:A:895:G:H2'	1:A:896:C:H6	1.78	0.48
1:A:920:U:O4'	1:A:1080:A:C6	2.66	0.48
1:A:1023:U:H2'	1:A:1024:G:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1124:G:O2'	1:A:1145:A:N1	2.38	0.48
1:A:1448:C:H2'	1:A:1449:C:C6	2.48	0.48
16:P:75:ILE:HA	16:P:78:VAL:HG12	1.94	0.48
19:S:11:ILE:HG13	19:S:38:SER:HB3	1.94	0.48
22:X:50:ASP:O	22:X:54:VAL:HG12	2.14	0.48
1:A:11:G:C5	1:A:12:U:C4	3.01	0.48
1:A:134:G:C6	1:A:135:C:C2	3.01	0.48
1:A:318:G:C6	1:A:336:A:C6	3.02	0.48
1:A:654:G:C4	1:A:655:A:C8	3.02	0.48
1:A:695:A:C4	1:A:696:A:C8	3.01	0.48
1:A:865:A:H2'	1:A:866:C:O4'	2.13	0.48
1:A:1243:C:H2'	1:A:1244:G:H8	1.77	0.48
1:A:1246:A:C6	1:A:1247:U:C4	3.01	0.48
1:A:1285:A:H5''	1:A:1286:U:C4	2.48	0.48
1:A:1307:U:O3'	13:M:109:ARG:NH1	2.29	0.48
1:A:1347:G:HO2'	1:A:1373:G:H1	1.60	0.48
1:A:1378:C:H2'	1:A:1379:G:O4'	2.13	0.48
1:A:1420:U:H2'	1:A:1421:G:C8	2.48	0.48
5:E:55:GLU:OE1	5:E:55:GLU:N	2.46	0.48
8:H:61:LEU:HD23	8:H:61:LEU:H	1.78	0.48
8:H:74:SER:OG	8:H:130:ALA:HB2	2.14	0.48
1:A:62:U:H2'	1:A:63:C:C6	2.48	0.48
1:A:216:U:H2'	1:A:217:C:C6	2.48	0.48
1:A:292:G:C6	1:A:309:A:C6	3.01	0.48
1:A:461:A:C6	1:A:462:G:C6	3.01	0.48
1:A:1000:A:C6	1:A:1041:G:C6	3.02	0.48
1:A:1244:G:C6	1:A:1294:G:C6	3.02	0.48
1:A:1381:U:N3	7:G:78:ARG:HD2	2.28	0.48
1:A:181:A:N1	1:A:195:A:C4	2.81	0.48
1:A:620:C:C4	1:A:621:A:C5	3.01	0.48
1:A:723:U:O4	1:A:855:U:H1'	2.14	0.48
1:A:749:A:H2'	1:A:750:C:C6	2.48	0.48
1:A:838:G:C4	1:A:849:G:C2	3.02	0.48
1:A:935:A:H2'	1:A:936:C:H6	1.77	0.48
1:A:1130:A:N1	1:A:1144:G:O2'	2.37	0.48
1:A:1140:C:HO2'	1:A:1141:C:C5'	2.23	0.48
1:A:1265:C:H2'	1:A:1266:G:H8	1.77	0.48
1:A:1348:U:H2'	1:A:1349:A:H8	1.79	0.48
3:C:84:VAL:HA	3:C:87:LEU:HD12	1.96	0.48
6:F:1:MET:HA	6:F:67:PRO:CA	2.43	0.48
20:T:18:ARG:CZ	20:T:19:LYS:HG3	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:78:A:O2'	1:A:79:G:OP1	2.27	0.48
1:A:112:G:H22	1:A:315:A:H2	1.61	0.48
1:A:247:G:C6	1:A:278:G:C2	3.02	0.48
1:A:254:G:C2	1:A:273:U:C2	3.01	0.48
1:A:590:U:C4	1:A:650:G:C6	3.02	0.48
1:A:660:C:N4	1:A:745:G:O6	2.38	0.48
1:A:757:U:O2'	1:A:879:C:O2	2.27	0.48
1:A:1319:A:OP1	19:S:3:ARG:NE	2.45	0.48
4:D:58:LYS:HD2	4:D:62:ARG:HB2	1.96	0.48
13:M:96:PRO:HB2	13:M:100:GLN:OE1	2.12	0.48
1:A:109:A:C6	1:A:327:A:C6	3.02	0.48
1:A:252:U:O2'	1:A:275:G:N2	2.46	0.48
1:A:579:A:C5	1:A:763:G:N1	2.82	0.48
1:A:1284:C:OP2	1:A:1285:A:O2'	2.28	0.48
1:A:1534:A:H3'	1:A:1535:C:C6	2.48	0.48
3:C:11:ARG:NH1	3:C:178:LEU:O	2.44	0.48
3:C:152:GLU:OE2	3:C:165:THR:OG1	2.31	0.48
3:C:153:VAL:HG22	3:C:166:GLU:CG	2.42	0.48
6:F:29:ILE:HG23	6:F:34:GLY:HA3	1.96	0.48
9:I:47:VAL:HA	9:I:50:GLN:CG	2.39	0.48
19:S:63:THR:CG2	19:S:66:MET:HG3	2.44	0.48
22:X:81:LEU:HD21	22:X:150:PHE:HB3	1.95	0.48
1:A:210:C:H1'	1:A:211:G:C2	2.49	0.48
1:A:501:C:O3'	12:L:115:SER:OG	2.28	0.48
1:A:771:G:N2	1:A:809:G:H1'	2.28	0.48
1:A:862:C:H2'	1:A:863:U:C6	2.48	0.48
1:A:948:C:OP1	13:M:108:THR:OG1	2.25	0.48
1:A:1220:G:N2	19:S:54:GLY:O	2.43	0.48
1:A:1248:A:C5	1:A:1290:G:C2	3.02	0.48
1:A:1304:G:H1'	1:A:1334:G:N2	2.28	0.48
5:E:43:ASN:HA	5:E:118:ALA:O	2.13	0.48
5:E:80:THR:HG22	5:E:122:ASN:HB2	1.96	0.48
9:I:89:GLU:HA	9:I:92:GLU:OE2	2.14	0.48
15:O:75:VAL:O	15:O:79:THR:OG1	2.32	0.48
21:V:15:MET:HE1	21:V:43:MET:SD	2.53	0.48
21:V:55:THR:HG22	21:V:100:ASP:HB3	1.95	0.48
1:A:37:U:H2'	1:A:38:G:C8	2.49	0.48
1:A:79:G:H1'	1:A:90:C:N4	2.27	0.48
1:A:145:G:N2	1:A:146:G:C4	2.82	0.48
1:A:215:C:C4	1:A:216:U:C4	3.02	0.48
1:A:343:U:H3'	1:A:345:C:N4	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:537:G:H2'	1:A:538:G:H8	1.78	0.48
1:A:805:C:H2'	1:A:806:C:H6	1.78	0.48
1:A:940:C:H4'	1:A:1374:A:H2	1.79	0.48
1:A:957:U:N3	1:A:960:U:OP2	2.47	0.48
1:A:1058:G:C6	1:A:1059:C:C4	3.01	0.48
1:A:1312:G:C2	1:A:1313:U:C2	3.02	0.48
1:A:1426:G:C6	1:A:1427:C:C4	3.01	0.48
2:B:187:VAL:O	2:B:201:PRO:HA	2.14	0.48
11:K:93:ARG:NH1	11:K:97:ILE:CG1	2.77	0.48
21:V:62:GLU:HA	21:V:65:VAL:HB	1.96	0.48
22:X:19:LEU:HD12	22:X:54:VAL:HB	1.96	0.48
1:A:381:C:H3'	1:A:382:A:H8	1.78	0.48
1:A:426:U:O2'	4:D:40:GLN:CG	2.62	0.48
1:A:549:C:C2	1:A:550:G:C8	3.02	0.48
1:A:672:U:H5'	6:F:79:ARG:NH2	2.29	0.48
1:A:719:C:OP2	1:A:720:C:N4	2.47	0.48
1:A:897:C:H2'	1:A:898:G:C8	2.48	0.48
1:A:1206:G:H2'	1:A:1207:2MG:C8	2.49	0.48
1:A:1458:G:H2'	1:A:1459:G:C8	2.49	0.48
6:F:10:VAL:HA	6:F:84:VAL:HA	1.96	0.48
13:M:81:MET:HA	13:M:88:GLY:HA3	1.96	0.48
17:Q:20:SER:HB3	17:Q:71:LYS:HD3	1.95	0.48
17:Q:25:ILE:O	17:Q:42:THR:N	2.47	0.48
22:X:57:GLN:O	22:X:61:VAL:HG13	2.14	0.48
1:A:255:G:H2'	1:A:256:U:H6	1.79	0.47
1:A:557:G:O6	1:A:558:G:N1	2.47	0.47
1:A:919:A:N3	1:A:1080:A:H2	2.12	0.47
1:A:1013:G:H2'	1:A:1015:G:OP2	2.13	0.47
1:A:1130:A:OP1	9:I:64:TYR:OH	2.27	0.47
1:A:1144:G:N2	1:A:1146:A:H62	2.11	0.47
1:A:1151:A:O2'	1:A:1152:A:H8	1.96	0.47
1:A:1231:G:H2'	1:A:1232:U:C6	2.49	0.47
1:A:1246:A:H2'	1:A:1247:U:C6	2.49	0.47
1:A:1305:G:H21	1:A:1332:A:H2	1.62	0.47
1:A:1395:C:H2'	1:A:1396:A:C8	2.49	0.47
7:G:49:THR:HG23	7:G:53:ARG:NH1	2.29	0.47
13:M:19:LEU:HB2	13:M:30:SER:HB3	1.96	0.47
20:T:45:ALA:O	20:T:49:LYS:HG3	2.14	0.47
1:A:87:C:H2'	1:A:88:U:C6	2.49	0.47
1:A:359:G:H2'	1:A:360:G:H8	1.78	0.47
1:A:437:U:O2'	4:D:120:HIS:ND1	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:537:G:C4	1:A:538:G:C8	3.02	0.47
1:A:545:C:H3'	1:A:546:A:H8	1.79	0.47
1:A:618:C:C2	1:A:622:A:N6	2.82	0.47
1:A:1181:G:H4'	1:A:1182:G:H5'	1.96	0.47
1:A:1256:A:H62	1:A:1278:G:H5'	1.79	0.47
1:A:1433:A:H2'	1:A:1434:A:H8	1.79	0.47
1:A:1434:A:H2'	1:A:1435:G:O4'	2.14	0.47
8:H:80:ARG:NH2	8:H:82:GLY:HA3	2.28	0.47
9:I:33:ARG:HD3	9:I:37:GLN:NE2	2.29	0.47
9:I:127:PHE:CE2	9:I:129:LYS:HG2	2.49	0.47
20:T:18:ARG:NH2	20:T:19:LYS:HG3	2.29	0.47
20:T:36:TYR:HA	20:T:39:ILE:HG22	1.96	0.47
1:A:518:C:H5'	1:A:530:G:N7	2.29	0.47
1:A:754:C:P	15:O:72:ARG:HH22	2.37	0.47
1:A:780:A:N6	1:A:801:U:OP2	2.40	0.47
1:A:933:G:OP2	7:G:3:ARG:HB3	2.14	0.47
1:A:987:G:C4	1:A:988:G:C8	3.03	0.47
1:A:1141:C:C2	1:A:1142:G:C8	3.02	0.47
1:A:1166:G:C6	1:A:1168:U:H5''	2.50	0.47
1:A:1222:G:C6	1:A:1223:C:C4	3.02	0.47
1:A:1318:A:H1'	19:S:37:ARG:NH1	2.30	0.47
1:A:1426:G:C6	1:A:1475:G:C5	3.02	0.47
1:A:1469:C:H2'	1:A:1470:U:H6	1.78	0.47
4:D:18:ASP:OD1	4:D:20:PHE:N	2.28	0.47
5:E:153:VAL:O	5:E:157:ARG:N	2.47	0.47
8:H:104:VAL:HA	8:H:125:ILE:HA	1.96	0.47
15:O:61:SER:O	15:O:64:ARG:HB3	2.14	0.47
17:Q:57:ASP:HB3	17:Q:80:GLU:HG2	1.96	0.47
22:X:94:PHE:HB3	22:X:97:GLU:HB2	1.96	0.47
1:A:286:C:H2'	1:A:287:U:C6	2.49	0.47
1:A:303:A:H2'	1:A:304:U:O4'	2.13	0.47
1:A:420:U:C2	1:A:422:C:N3	2.83	0.47
1:A:442:G:C6	1:A:443:C:C4	3.02	0.47
1:A:728:A:H2'	1:A:729:A:H8	1.74	0.47
1:A:985:C:C2	1:A:1221:G:C2	3.02	0.47
1:A:994:A:C5	1:A:1216:A:H4'	2.50	0.47
1:A:1478:U:H3'	1:A:1479:C:H5''	1.96	0.47
1:A:1534:A:H2'	1:A:1535:C:O4'	2.14	0.47
8:H:12:THR:O	8:H:16:ASN:N	2.33	0.47
9:I:81:HIS:O	9:I:84:THR:OG1	2.24	0.47
11:K:82:LEU:HD22	11:K:107:ILE:HG22	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:3:ARG:HH12	19:S:70:LYS:HE2	1.79	0.47
1:A:384:G:C6	1:A:385:C:C4	3.02	0.47
1:A:494:G:O2'	1:A:496:A:H1'	2.15	0.47
1:A:577:G:H2'	1:A:578:C:H6	1.79	0.47
1:A:601:G:C4	1:A:602:A:C8	3.02	0.47
1:A:614:C:H2'	1:A:615:G:O4'	2.14	0.47
1:A:661:G:C5	1:A:662:U:C4	3.02	0.47
1:A:716:A:H2'	1:A:717:U:H6	1.79	0.47
1:A:743:A:C6	1:A:744:C:C4	3.03	0.47
1:A:757:U:OP1	1:A:822:U:O2'	2.31	0.47
1:A:938:A:O2'	7:G:95:ARG:NH2	2.36	0.47
1:A:1208:C:HO2'	1:A:1209:C:P	2.37	0.47
1:A:1449:C:C4	1:A:1450:U:C4	3.03	0.47
10:J:16:ARG:HD3	10:J:16:ARG:HA	1.61	0.47
12:L:109:ASP:HA	12:L:111:LYS:NZ	2.30	0.47
17:Q:39:LYS:O	17:Q:40:ARG:HD2	2.14	0.47
1:A:1:A:C5	1:A:2:A:C5	3.02	0.47
1:A:59:A:H3'	1:A:331:G:H22	1.80	0.47
1:A:475:C:H2'	1:A:476:U:H6	1.78	0.47
1:A:792:A:H4'	1:A:793:U:H5'	1.96	0.47
1:A:1377:A:H4'	1:A:1378:C:H5	1.79	0.47
1:A:1514:G:C2	1:A:1515:G:C4	3.03	0.47
3:C:22:TRP:CB	3:C:59:ARG:HB2	2.45	0.47
3:C:43:LEU:HD13	3:C:68:ILE:HD11	1.97	0.47
14:N:42:TRP:O	14:N:45:VAL:HG12	2.15	0.47
15:O:26:GLU:OE1	15:O:26:GLU:N	2.42	0.47
20:T:9:LYS:O	20:T:12:ILE:N	2.48	0.47
22:X:119:ALA:N	22:X:126:THR:OG1	2.41	0.47
1:A:113:G:H2'	1:A:114:U:H6	1.79	0.47
1:A:218:U:H2'	1:A:219:U:C6	2.50	0.47
1:A:250:A:H5''	1:A:252:U:O4'	2.15	0.47
1:A:265:G:H2'	1:A:267:C:C5	2.49	0.47
1:A:283:U:H2'	1:A:284:C:C6	2.49	0.47
1:A:447:G:H1'	1:A:487:A:H61	1.80	0.47
1:A:517:G:N2	1:A:533:A:OP1	2.48	0.47
1:A:613:C:H2'	1:A:614:C:C6	2.49	0.47
1:A:663:A:C6	1:A:664:G:C6	3.03	0.47
1:A:681:A:C6	1:A:710:G:C6	3.03	0.47
1:A:691:G:H2'	1:A:692:U:C6	2.50	0.47
1:A:695:A:H3'	1:A:696:A:H8	1.79	0.47
1:A:810:C:C4	1:A:811:C:C2	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:938:A:C2	1:A:1376:U:H1'	2.50	0.47
1:A:1072:G:H2'	1:A:1073:U:O4'	2.14	0.47
1:A:1186:G:C2	1:A:1187:G:C4	3.03	0.47
1:A:1252:A:H2'	1:A:1253:G:O4'	2.14	0.47
1:A:1321:U:O2	19:S:36:ARG:NH2	2.45	0.47
1:A:1453:G:N1	1:A:1454:G:C4	2.82	0.47
1:A:1535:C:O5'	1:A:1535:C:H6	1.97	0.47
3:C:120:ILE:HD11	3:C:137:ALA:HB2	1.95	0.47
8:H:87:LYS:CG	8:H:125:ILE:CD1	2.92	0.47
9:I:24:GLY:H	9:I:60:LYS:C	2.15	0.47
10:J:84:VAL:O	10:J:87:LEU:HG	2.15	0.47
13:M:67:GLY:HA2	13:M:70:ARG:HD2	1.96	0.47
14:N:46:LEU:O	14:N:50:THR:HG23	2.14	0.47
19:S:16:LEU:HA	19:S:19:VAL:HG12	1.96	0.47
22:X:98:GLU:HB2	22:X:116:VAL:HG22	1.95	0.47
1:A:88:U:O2'	1:A:89:U:O4'	2.33	0.47
1:A:109:A:C8	1:A:327:A:O4'	2.68	0.47
1:A:420:U:C2	1:A:422:C:C2	3.03	0.47
1:A:517:G:N2	1:A:529:G:O2'	2.48	0.47
1:A:671:G:C5	1:A:672:U:C4	3.03	0.47
1:A:747:A:H2'	1:A:748:G:C8	2.50	0.47
1:A:823:C:HO2'	8:H:2:SER:N	2.13	0.47
1:A:842:U:H3'	1:A:843:U:C6	2.50	0.47
1:A:1051:C:N4	1:A:1207:2MG:O6	2.34	0.47
1:A:1114:C:H2'	1:A:1115:U:O4'	2.14	0.47
1:A:1180:A:OP2	9:I:99:ARG:NH2	2.48	0.47
1:A:1312:G:N7	19:S:2:PRO:HG2	2.30	0.47
3:C:148:GLY:HA3	3:C:172:ARG:O	2.14	0.47
3:C:169:ARG:NH2	3:C:172:ARG:HA	2.30	0.47
7:G:134:ALA:O	7:G:137:LYS:HG2	2.15	0.47
9:I:11:ARG:HB2	9:I:106:ARG:NE	2.29	0.47
13:M:24:GLY:HA3	13:M:69:LEU:HD23	1.96	0.47
21:V:31:ARG:HB3	21:V:67:ALA:HB1	1.95	0.47
22:X:38:ILE:HD12	22:X:75:GLU:O	2.14	0.47
1:A:62:U:OP1	1:A:385:C:O2'	2.32	0.47
1:A:148:G:H1'	1:A:1447:A:H1'	1.97	0.47
1:A:584:G:H2'	1:A:585:G:C8	2.48	0.47
1:A:937:A:H1'	1:A:1379:G:N2	2.30	0.47
1:A:1091:U:C2	1:A:1095:U:C4	3.03	0.47
1:A:1289:A:H2'	1:A:1290:G:H5'	1.97	0.47
6:F:4:TYR:CZ	6:F:71:ILE:HD13	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:151:PHE:CE1	21:V:104:VAL:CG1	2.98	0.47
10:J:22:THR:O	10:J:26:VAL:HG22	2.15	0.47
10:J:44:THR:HB	10:J:70:HIS:HA	1.97	0.47
21:V:51:LYS:HA	21:V:96:THR:OG1	2.15	0.47
1:A:7:A:C8	5:E:124:LEU:HD21	2.50	0.47
1:A:220:G:H2'	1:A:221:C:H6	1.78	0.47
1:A:253:A:N6	1:A:274:A:N1	2.62	0.47
1:A:323:U:H2'	1:A:324:G:O4'	2.14	0.47
1:A:360:G:H2'	1:A:361:G:C8	2.50	0.47
1:A:384:G:H2'	1:A:385:C:H6	1.80	0.47
1:A:489:C:H2'	1:A:490:C:H6	1.78	0.47
1:A:529:G:H5''	1:A:533:A:H5'	1.97	0.47
1:A:728:A:C6	1:A:729:A:C6	3.03	0.47
1:A:782:A:O3'	1:A:1515:G:H4'	2.15	0.47
1:A:944:G:H1'	1:A:1339:A:H61	1.80	0.47
1:A:1245:C:C2	1:A:1246:A:C8	3.03	0.47
1:A:1379:G:H2'	1:A:1380:U:C6	2.50	0.47
3:C:31:ASP:OD1	3:C:32:ASN:N	2.47	0.47
4:D:50:ASP:O	4:D:53:VAL:HG22	2.15	0.47
10:J:53:ILE:HG22	14:N:85:ARG:HD2	1.97	0.47
13:M:49:SER:O	13:M:53:ILE:HG12	2.15	0.47
1:A:155:A:C6	1:A:156:C:C4	3.03	0.46
1:A:157:U:H2'	1:A:158:G:C8	2.50	0.46
1:A:190:A:H2'	1:A:191:G:O4'	2.14	0.46
1:A:191:G:H2'	1:A:192:A:H8	1.79	0.46
1:A:426:U:OP1	4:D:33:LYS:NZ	2.46	0.46
1:A:523:A:OP2	1:A:523:A:H8	1.98	0.46
1:A:592:G:C6	1:A:593:U:N3	2.83	0.46
1:A:771:G:C6	1:A:809:G:C4	3.04	0.46
1:A:789:U:O2'	1:A:790:A:O5'	2.29	0.46
1:A:842:U:C4	1:A:843:U:C2	3.03	0.46
1:A:1486:G:H3'	1:A:1487:G:C8	2.50	0.46
1:A:43:C:H2'	1:A:44:A:C8	2.50	0.46
1:A:187:G:O2'	1:A:189:A:N7	2.35	0.46
1:A:532:A:H3'	1:A:532:A:N3	2.30	0.46
1:A:577:G:H2'	1:A:578:C:C6	2.51	0.46
1:A:682:G:C2	1:A:709:U:C2	3.03	0.46
1:A:721:G:N1	1:A:733:G:C4	2.84	0.46
1:A:735:C:H2'	1:A:736:C:C6	2.43	0.46
1:A:745:G:H2'	1:A:746:A:H8	1.78	0.46
1:A:861:G:C6	1:A:862:C:C4	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:921:U:C2	1:A:922:G:C8	3.03	0.46
1:A:987:G:O6	1:A:1218:C:N4	2.31	0.46
1:A:1177:G:C3'	1:A:1178:G:H8	2.20	0.46
1:A:1248:A:H4'	9:I:33:ARG:HH22	1.80	0.46
1:A:1278:G:H4'	1:A:1279:G:C2	2.50	0.46
2:B:148:LEU:CD2	2:B:151:ILE:HD11	2.44	0.46
3:C:42:TYR:O	3:C:46:GLU:HG2	2.15	0.46
5:E:159:LYS:HD3	5:E:163:GLU:HG2	1.96	0.46
8:H:10:MET:O	8:H:13:ARG:HB2	2.16	0.46
17:Q:27:ARG:HG2	17:Q:40:ARG:O	2.15	0.46
20:T:36:TYR:O	20:T:39:ILE:CG2	2.56	0.46
1:A:277:C:H2'	1:A:278:G:C8	2.51	0.46
1:A:325:A:H2'	1:A:326:G:O4'	2.15	0.46
1:A:577:G:C8	1:A:816:A:N1	2.83	0.46
1:A:636:U:H2'	1:A:637:C:C6	2.50	0.46
1:A:674:G:H22	1:A:716:A:H2	1.63	0.46
1:A:769:G:H2'	1:A:770:C:C6	2.51	0.46
1:A:858:G:O6	1:A:869:G:H3'	2.15	0.46
1:A:922:G:C6	1:A:1396:A:C6	3.04	0.46
1:A:949:A:H61	1:A:1232:U:H3	1.63	0.46
1:A:953:G:C6	1:A:1229:A:C6	3.04	0.46
3:C:31:ASP:OD1	3:C:31:ASP:N	2.47	0.46
5:E:151:GLU:OE1	5:E:151:GLU:N	2.29	0.46
1:A:302:G:H2'	1:A:303:A:C8	2.51	0.46
1:A:639:G:C6	1:A:640:A:C5	3.04	0.46
1:A:656:G:N2	1:A:750:C:N3	2.61	0.46
1:A:711:G:H2'	1:A:712:A:C8	2.50	0.46
1:A:741:G:C2	1:A:742:G:C4	3.03	0.46
1:A:881:G:C2	1:A:882:C:C2	3.04	0.46
1:A:881:G:C6	1:A:882:C:C4	3.04	0.46
1:A:1296:C:H3'	1:A:1297:G:C8	2.50	0.46
1:A:1470:U:H2'	1:A:1471:U:C6	2.50	0.46
1:A:1516:2MG:H2'	1:A:1518:MA6:OP2	2.15	0.46
5:E:161:VAL:HG23	5:E:162:GLU:N	2.30	0.46
9:I:21:ILE:HG12	9:I:86:ALA:HB1	1.95	0.46
13:M:100:GLN:OE1	13:M:100:GLN:N	2.48	0.46
19:S:48:THR:HA	19:S:60:VAL:O	2.15	0.46
21:V:56:PHE:C	21:V:58:ASN:H	2.18	0.46
1:A:3:A:H1'	1:A:613:C:O4'	2.16	0.46
1:A:71:A:C5	1:A:100:G:C5	3.04	0.46
1:A:131:A:OP1	1:A:263:A:H4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:505:G:C4	1:A:535:A:C5	3.04	0.46
1:A:594:U:C4	1:A:595:A:C6	3.03	0.46
1:A:688:G:C6	1:A:700:G:C5	3.03	0.46
1:A:714:G:C2	1:A:715:A:C4	3.03	0.46
1:A:721:G:OP1	18:R:52:GLN:NE2	2.48	0.46
1:A:1207:2MG:H2'	1:A:1208:C:C6	2.50	0.46
1:A:1219:A:H2'	1:A:1220:G:C8	2.51	0.46
1:A:1328:C:H2'	1:A:1329:A:H8	1.78	0.46
1:A:1516:2MG:HM23	1:A:1519:MA6:N7	2.31	0.46
4:D:169:THR:CG2	4:D:190:ASP:OD2	2.64	0.46
4:D:178:MET:N	4:D:178:MET:SD	2.89	0.46
6:F:38:ARG:HB3	6:F:63:ASN:OD1	2.15	0.46
8:H:11:LEU:HB3	8:H:75:ILE:HD12	1.96	0.46
11:K:23:ILE:CG2	11:K:86:VAL:HA	2.46	0.46
13:M:4:ILE:HD12	13:M:22:ILE:HD11	1.97	0.46
20:T:59:ASP:O	20:T:63:ALA:N	2.35	0.46
1:A:202:G:O2'	1:A:468:A:H8	1.99	0.46
1:A:236:A:N6	1:A:237:G:O6	2.49	0.46
1:A:319:G:C2	1:A:320:A:C8	3.04	0.46
1:A:558:G:H2'	1:A:559:A:H2	1.80	0.46
1:A:607:A:H2'	1:A:608:A:C8	2.51	0.46
1:A:830:G:N1	1:A:857:C:N3	2.64	0.46
1:A:1151:A:O2'	1:A:1152:A:H5''	2.16	0.46
1:A:1292:G:C6	1:A:1293:C:C4	3.04	0.46
1:A:1312:G:H2'	1:A:1313:U:C6	2.50	0.46
3:C:111:LEU:HD21	3:C:144:LEU:HB3	1.97	0.46
5:E:95:PHE:CZ	5:E:97:GLN:HB2	2.50	0.46
1:A:43:C:O2	1:A:399:G:N1	2.45	0.46
1:A:205:A:H3'	1:A:206:C:C6	2.50	0.46
1:A:254:G:C2	1:A:255:G:C8	3.04	0.46
1:A:283:U:H2'	1:A:284:C:H6	1.81	0.46
1:A:582:C:H2'	1:A:583:A:O4'	2.15	0.46
1:A:689:C:H3'	1:A:690:G:C8	2.51	0.46
1:A:759:A:C2	1:A:760:G:H1'	2.51	0.46
1:A:771:G:C6	1:A:809:G:C5	3.04	0.46
1:A:844:G:N7	1:A:845:A:C4	2.84	0.46
1:A:939:G:C6	1:A:940:C:N3	2.83	0.46
1:A:1048:G:O2'	1:A:1050:G:O5'	2.34	0.46
1:A:1081:A:OP2	1:A:1081:A:H8	1.99	0.46
1:A:1163:A:C6	1:A:1174:G:C6	3.03	0.46
1:A:1260:G:O2'	1:A:1275:A:N6	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1321:U:H3'	1:A:1322:C:H6	1.80	0.46
1:A:1350:A:H2'	1:A:1351:U:C6	2.51	0.46
9:I:33:ARG:HD3	9:I:37:GLN:HE22	1.81	0.46
16:P:67:ILE:HG22	16:P:68:SER:O	2.15	0.46
19:S:74:PHE:O	19:S:76:PRO:HD3	2.16	0.46
1:A:70:U:C4	1:A:94:G:C4	3.04	0.46
1:A:447:G:H1	1:A:486:U:P	2.39	0.46
1:A:519:C:C2	1:A:520:A:H1'	2.51	0.46
1:A:621:A:C6	1:A:622:A:C6	3.03	0.46
1:A:698:G:C5	1:A:699:C:N3	2.83	0.46
1:A:794:A:C5	1:A:795:C:N4	2.84	0.46
1:A:864:A:H3'	1:A:865:A:C8	2.50	0.46
1:A:957:U:H5''	19:S:81:ARG:HH22	1.81	0.46
1:A:1105:A:N1	1:A:1106:G:N1	2.64	0.46
1:A:1119:C:P	9:I:11:ARG:HH22	2.39	0.46
1:A:1378:C:OP2	7:G:6:VAL:HG11	2.15	0.46
3:C:131:ARG:O	3:C:135:LYS:HG3	2.15	0.46
5:E:36:LEU:HD13	5:E:133:PRO:HB2	1.98	0.46
14:N:14:VAL:HA	14:N:60:GLN:NE2	2.31	0.46
18:R:51:TYR:O	18:R:55:LEU:HG	2.16	0.46
20:T:16:LYS:HE2	20:T:19:LYS:HZ1	1.80	0.46
21:V:73:GLN:OE1	21:V:73:GLN:HA	2.15	0.46
1:A:9:G:C6	1:A:10:A:C5	3.04	0.46
1:A:113:G:H1'	1:A:354:G:H5'	1.97	0.46
1:A:192:A:H2'	1:A:193:C:O4'	2.16	0.46
1:A:200:G:C2	1:A:201:G:C8	3.04	0.46
1:A:321:A:H2'	1:A:322:C:H6	1.80	0.46
1:A:343:U:N3	1:A:345:C:O2	2.49	0.46
1:A:688:G:C8	1:A:700:G:C2	3.03	0.46
1:A:801:U:H2'	1:A:802:A:C8	2.50	0.46
1:A:857:C:H3'	1:A:858:G:H8	1.81	0.46
1:A:1347:G:C6	9:I:109:ARG:NH2	2.84	0.46
1:A:1479:C:H2'	1:A:1480:A:C8	2.51	0.46
1:A:1511:G:C2	1:A:1512:U:C2	3.03	0.46
4:D:152:GLN:O	4:D:155:VAL:HG22	2.15	0.46
7:G:58:GLU:OE1	7:G:58:GLU:N	2.40	0.46
10:J:27:GLU:O	10:J:31:ARG:NH1	2.48	0.46
12:L:77:HIS:CG	12:L:77:HIS:O	2.68	0.46
1:A:91:U:O2'	1:A:92:U:O5'	2.33	0.46
1:A:260:G:H2'	1:A:261:U:C6	2.51	0.46
1:A:313:A:H2'	1:A:314:C:H6	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:465:A:H3'	1:A:466:A:C8	2.50	0.46
1:A:491:G:H2'	1:A:492:C:H6	1.81	0.46
1:A:505:G:N1	1:A:506:G:C5	2.83	0.46
1:A:642:A:C5	1:A:643:C:C5	3.04	0.46
1:A:900:A:C6	1:A:901:A:C5	3.03	0.46
1:A:945:G:H22	1:A:1236:A:H2	1.64	0.46
1:A:959:A:N3	1:A:985:C:H1'	2.31	0.46
1:A:988:G:C2	1:A:1218:C:C2	3.04	0.46
1:A:1092:A:C5	1:A:1093:A:C6	3.04	0.46
1:A:1182:G:H4'	1:A:1183:U:H5''	1.98	0.46
1:A:1228:C:P	13:M:114:LYS:HB2	2.55	0.46
1:A:1248:A:H5''	9:I:33:ARG:HH22	1.81	0.46
1:A:1386:G:H2'	1:A:1387:G:H8	1.79	0.46
1:A:1428:A:C6	1:A:1473:G:C6	3.04	0.46
1:A:1510:C:H2'	1:A:1511:G:C8	2.47	0.46
3:C:169:ARG:HH22	3:C:172:ARG:HA	1.81	0.46
5:E:48:PHE:O	5:E:67:ALA:HA	2.16	0.46
15:O:47:LYS:HA	15:O:53:ARG:NH2	2.30	0.46
1:A:126:G:H1	1:A:235:C:N4	2.14	0.45
1:A:198:G:N2	1:A:220:G:H1'	2.31	0.45
1:A:314:C:H2'	1:A:315:A:C8	2.51	0.45
1:A:474:G:C2'	1:A:475:C:H5'	2.46	0.45
1:A:505:G:OP2	1:A:535:A:H5'	2.17	0.45
1:A:671:G:C6	1:A:736:C:C4	3.04	0.45
1:A:676:A:H2	1:A:714:G:H22	1.62	0.45
1:A:829:G:C2	1:A:830:G:C4	3.04	0.45
1:A:947:G:C6	1:A:948:C:C4	3.04	0.45
1:A:1071:C:C2	1:A:1105:A:C2	3.04	0.45
1:A:1162:C:H2'	1:A:1163:A:H8	1.81	0.45
4:D:54:GLN:O	4:D:58:LYS:N	2.42	0.45
5:E:72:ILE:HD12	5:E:145:GLU:HB3	1.98	0.45
6:F:35:LYS:HD2	6:F:35:LYS:N	2.31	0.45
9:I:36:GLU:HA	9:I:45:ARG:HE	1.81	0.45
14:N:46:LEU:O	14:N:49:GLN:HG2	2.16	0.45
1:A:417:G:C2	1:A:418:C:C2	3.04	0.45
1:A:505:G:C6	1:A:535:A:C2	3.04	0.45
1:A:591:U:H2'	1:A:592:G:H8	1.79	0.45
1:A:1161:C:H2'	1:A:1162:C:H6	1.81	0.45
1:A:1221:G:H2'	1:A:1222:G:H8	1.81	0.45
1:A:1371:G:H5''	9:I:71:GLY:N	2.31	0.45
1:A:1448:C:H2'	1:A:1449:C:H6	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1511:G:H2'	1:A:1512:U:C6	2.52	0.45
1:A:1520:C:H2'	1:A:1521:C:H6	1.79	0.45
3:C:20:SER:OG	3:C:22:TRP:NE1	2.49	0.45
3:C:131:ARG:HG3	3:C:135:LYS:NZ	2.32	0.45
5:E:45:ARG:HB3	5:E:71:MET:HE2	1.98	0.45
7:G:14:PRO:HB3	7:G:21:GLU:HG3	1.97	0.45
22:X:4:LEU:HB3	22:X:7:LYS:CB	2.45	0.45
22:X:90:HIS:HA	22:X:93:ARG:NE	2.31	0.45
1:A:156:C:C4	1:A:157:U:C4	3.05	0.45
1:A:168:G:H2'	1:A:169:C:C6	2.51	0.45
1:A:267:C:H2'	1:A:268:U:C6	2.52	0.45
1:A:300:A:C5	1:A:301:G:H1'	2.51	0.45
1:A:324:G:H22	1:A:327:A:P	2.39	0.45
1:A:577:G:C2	1:A:578:C:C2	3.05	0.45
1:A:604:G:C6	1:A:635:A:C6	3.05	0.45
1:A:756:C:H2'	1:A:757:U:H6	1.81	0.45
1:A:872:A:C8	1:A:874:G:C8	3.05	0.45
1:A:1015:G:C6	1:A:1016:A:C5	3.05	0.45
1:A:1279:G:H4'	1:A:1281:C:H5	1.80	0.45
1:A:1425:U:H2'	1:A:1426:G:C8	2.47	0.45
5:E:55:GLU:HG2	5:E:57:PRO:HD2	1.98	0.45
7:G:27:VAL:O	7:G:31:MET:N	2.49	0.45
9:I:4:ASN:CG	9:I:5:GLN:H	2.18	0.45
10:J:30:LYS:HD3	10:J:30:LYS:HA	1.64	0.45
11:K:20:VAL:HA	11:K:83:GLU:O	2.15	0.45
17:Q:30:LYS:HB2	17:Q:37:PHE:CZ	2.51	0.45
21:V:73:GLN:NE2	21:V:97:PHE:N	2.64	0.45
1:A:310:G:H2'	1:A:311:C:H6	1.81	0.45
1:A:414:A:H2'	1:A:415:A:C8	2.52	0.45
1:A:429:U:O4'	1:A:430:A:H8	2.00	0.45
1:A:487:A:H3'	1:A:488:C:C6	2.49	0.45
1:A:654:G:C5	1:A:753:A:C5	3.04	0.45
1:A:661:G:C6	1:A:745:G:C6	3.05	0.45
1:A:693:G:H2'	1:A:694:A:C8	2.51	0.45
1:A:1228:C:P	13:M:107:ARG:HH22	2.40	0.45
1:A:1245:C:H2'	1:A:1246:A:C8	2.50	0.45
1:A:1318:A:O3'	19:S:3:ARG:NH2	2.44	0.45
1:A:1526:G:C2	1:A:1527:U:C4	3.05	0.45
5:E:62:LYS:HA	5:E:65:GLU:HB3	1.99	0.45
5:E:161:VAL:HG23	5:E:162:GLU:H	1.82	0.45
10:J:84:VAL:O	10:J:88:MET:HG2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:13:LYS:HD3	13:M:13:LYS:HA	1.71	0.45
16:P:52:LEU:HD13	16:P:75:ILE:HG13	1.97	0.45
22:X:124:MET:SD	22:X:137:ALA:HB2	2.56	0.45
1:A:119:A:H4'	1:A:120:A:C8	2.52	0.45
1:A:266:G:OP2	1:A:267:C:N4	2.50	0.45
1:A:280:C:N3	17:Q:40:ARG:HA	2.31	0.45
1:A:693:G:H8	21:V:10:ARG:HD3	1.81	0.45
1:A:773:G:H2'	1:A:774:G:O4'	2.16	0.45
1:A:1288:A:H2'	1:A:1289:A:H8	1.82	0.45
1:A:1297:G:H1'	1:A:1298:U:H5	1.82	0.45
1:A:1347:G:C4	1:A:1373:G:C6	3.04	0.45
7:G:111:ARG:HD3	7:G:123:GLU:HG2	1.99	0.45
8:H:12:THR:HA	8:H:15:ARG:HB3	1.98	0.45
9:I:12:ARG:HA	9:I:12:ARG:HD2	1.64	0.45
9:I:29:VAL:HG13	9:I:64:TYR:HA	1.99	0.45
9:I:36:GLU:H	9:I:36:GLU:CD	2.19	0.45
11:K:81:ASN:O	11:K:82:LEU:HD12	2.16	0.45
13:M:85:CYS:SG	19:S:73:GLU:HB3	2.56	0.45
15:O:69:TYR:HA	15:O:72:ARG:HE	1.82	0.45
17:Q:38:ILE:HD13	17:Q:38:ILE:HA	1.84	0.45
1:A:41:G:H2'	1:A:42:G:H8	1.81	0.45
1:A:131:A:C6	1:A:232:G:C6	3.05	0.45
1:A:191:G:C2	1:A:192:A:C4	3.04	0.45
1:A:453:G:H2'	1:A:454:G:O4'	2.16	0.45
1:A:602:A:C6	1:A:603:U:C4	3.04	0.45
1:A:685:G:H5'	11:K:42:LEU:HG	1.98	0.45
1:A:834:U:H2'	1:A:835:U:C6	2.52	0.45
1:A:898:G:H1'	1:A:901:A:H62	1.81	0.45
1:A:984:C:O5'	1:A:984:C:H6	1.97	0.45
1:A:1273:C:H3'	1:A:1274:A:H8	1.80	0.45
1:A:1284:C:H2'	1:A:1285:A:C8	2.52	0.45
1:A:1349:A:P	9:I:120:LYS:HZ3	2.39	0.45
6:F:37:HIS:N	6:F:63:ASN:O	2.50	0.45
6:F:40:GLU:HB2	6:F:61:LEU:HB3	1.99	0.45
8:H:77:ARG:NH2	8:H:79:SER:O	2.50	0.45
9:I:31:ASN:OD1	9:I:68:LYS:NZ	2.46	0.45
12:L:28:PRO:HB2	12:L:29:GLN:NE2	2.31	0.45
19:S:49:ILE:O	19:S:59:PRO:HA	2.17	0.45
1:A:11:G:H2'	1:A:12:U:H6	1.82	0.45
1:A:374:A:N1	1:A:390:U:O2'	2.39	0.45
1:A:507:C:H3'	1:A:508:U:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:580:C:H2'	1:A:581:G:O4'	2.17	0.45
1:A:666:G:H2'	1:A:667:G:C8	2.50	0.45
1:A:739:C:C4	1:A:740:U:C4	3.05	0.45
1:A:801:U:C2	1:A:802:A:C8	3.04	0.45
1:A:901:A:N7	1:A:902:G:H1'	2.32	0.45
1:A:934:C:O2	1:A:937:A:N6	2.47	0.45
1:A:959:A:N6	19:S:77:THR:O	2.46	0.45
1:A:996:A:C6	1:A:997:U:C4	3.05	0.45
1:A:1451:U:O2'	1:A:1452:C:OP1	2.33	0.45
5:E:66:LYS:HG2	5:E:69:ARG:HH12	1.82	0.45
8:H:49:PHE:HD2	8:H:59:LEU:HD11	1.82	0.45
1:A:111:G:H8	1:A:111:G:O5'	2.00	0.45
1:A:204:G:C6	1:A:205:A:C4	3.05	0.45
1:A:676:A:C6	1:A:677:U:C4	3.05	0.45
1:A:716:A:C2	1:A:717:U:C2	3.05	0.45
1:A:728:A:C8	15:O:54:ARG:CZ	2.99	0.45
1:A:761:G:C2	1:A:762:U:C2	3.04	0.45
1:A:945:G:C2	1:A:1337:G:C2	3.05	0.45
1:A:976:G:N7	1:A:1362:A:N6	2.64	0.45
1:A:1012:A:H2'	1:A:1013:G:H8	1.81	0.45
1:A:1063:C:H3'	1:A:1064:G:H8	1.81	0.45
1:A:1153:G:C2	1:A:1154:G:H1'	2.52	0.45
1:A:1174:G:C2	1:A:1175:G:C4	3.04	0.45
1:A:1379:G:N7	7:G:2:PRO:HG2	2.32	0.45
1:A:1479:C:H2'	1:A:1480:A:H8	1.81	0.45
4:D:113:GLU:O	4:D:117:LEU:N	2.50	0.45
8:H:77:ARG:HA	8:H:127:CYS:HA	1.99	0.45
14:N:79:LEU:HB2	14:N:84:VAL:HG13	1.99	0.45
22:X:37:ARG:HG2	22:X:75:GLU:CD	2.36	0.45
1:A:128:G:O6	1:A:129:A:N6	2.50	0.45
1:A:160:A:H2'	1:A:161:A:O4'	2.16	0.45
1:A:442:G:H22	1:A:491:G:H22	1.65	0.45
1:A:445:G:C4	1:A:446:G:C8	3.05	0.45
1:A:580:C:N4	1:A:761:G:C6	2.85	0.45
1:A:683:G:C5	1:A:684:U:C4	3.05	0.45
1:A:711:G:H2'	1:A:712:A:H8	1.82	0.45
1:A:749:A:C6	1:A:750:C:C4	3.04	0.45
1:A:828:U:C4	1:A:829:G:C8	3.05	0.45
1:A:836:G:H3'	1:A:837:U:C6	2.52	0.45
1:A:1002:G:C6	1:A:1039:G:C6	3.05	0.45
1:A:1077:G:C2	1:A:1079:G:H3'	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1136:C:O2'	1:A:1137:C:H5'	2.17	0.45
1:A:1225:A:H2'	1:A:1226:C:C5	2.51	0.45
1:A:1350:A:OP2	9:I:120:LYS:NZ	2.29	0.45
3:C:127:ARG:HE	3:C:127:ARG:HB2	1.59	0.45
17:Q:72:SER:O	17:Q:72:SER:OG	2.30	0.45
22:X:123:GLU:OE1	22:X:123:GLU:N	2.38	0.45
1:A:207:C:N3	1:A:213:G:C2	2.85	0.45
1:A:1106:G:H2'	1:A:1107:C:H6	1.82	0.45
1:A:1253:G:C6	1:A:1254:A:C5	3.04	0.45
1:A:1316:G:N2	1:A:1318:A:H3'	2.32	0.45
1:A:1348:U:H2'	1:A:1349:A:C8	2.52	0.45
1:A:1350:A:O2'	7:G:33:ASP:OD1	2.23	0.45
3:C:108:LYS:HB3	3:C:111:LEU:HG	1.99	0.45
3:C:123:GLN:HB3	3:C:128:VAL:HG11	1.98	0.45
3:C:140:ASN:HA	3:C:143:ARG:NH2	2.32	0.45
4:D:62:ARG:NH2	4:D:69:GLU:H	2.14	0.45
19:S:47:LEU:O	19:S:62:VAL:HG12	2.17	0.45
20:T:79:LEU:CD2	20:T:83:ILE:HD11	2.46	0.45
1:A:9:G:C2	1:A:26:A:C5	3.05	0.44
1:A:144:G:C2	1:A:145:G:C4	3.05	0.44
1:A:181:A:C6	1:A:194:C:H2'	2.52	0.44
1:A:410:G:H1'	1:A:433:G:C2	2.52	0.44
1:A:562:U:O2'	12:L:14:ARG:NH2	2.50	0.44
1:A:674:G:H21	11:K:118:HIS:CG	2.34	0.44
1:A:771:G:C5	1:A:809:G:C2	3.05	0.44
1:A:974:A:C4	14:N:71:HIS:HE1	2.34	0.44
1:A:1067:A:H1'	1:A:1068:G:O4'	2.17	0.44
1:A:1306:A:C6	1:A:1307:U:C2	3.05	0.44
1:A:1464:U:H2'	1:A:1465:A:C8	2.51	0.44
1:A:1518:MA6:H8	1:A:1518:MA6:O5'	2.17	0.44
2:B:107:VAL:O	2:B:111:ILE:HG12	2.16	0.44
8:H:18:GLN:HE22	8:H:71:VAL:H	1.66	0.44
13:M:6:GLY:HA2	13:M:66:GLU:HG3	1.98	0.44
16:P:4:ILE:HA	16:P:20:VAL:O	2.17	0.44
1:A:147:G:C2	1:A:148:G:C5	3.05	0.44
1:A:188:C:C4	1:A:189:A:C5	3.05	0.44
1:A:250:A:N1	1:A:275:G:C6	2.85	0.44
1:A:279:A:P	1:A:281:G:H5'	2.57	0.44
1:A:398:U:H2'	1:A:399:G:C8	2.51	0.44
1:A:417:G:C6	1:A:418:C:C4	3.05	0.44
1:A:518:C:C5	1:A:529:G:H2'	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:801:U:H2'	1:A:802:A:H8	1.83	0.44
1:A:836:G:C6	1:A:837:U:N3	2.85	0.44
1:A:933:G:C2	1:A:935:A:O4'	2.71	0.44
1:A:953:G:C2	1:A:954:G:H1'	2.53	0.44
1:A:1051:C:C4	1:A:1052:U:C4	3.04	0.44
1:A:1286:U:HO2'	1:A:1287:A:P	2.39	0.44
1:A:1526:G:H2'	1:A:1527:U:C6	2.52	0.44
15:O:80:GLN:HG3	15:O:81:LEU:N	2.32	0.44
17:Q:30:LYS:HB2	17:Q:37:PHE:CE1	2.52	0.44
20:T:9:LYS:HB3	20:T:13:GLN:OE1	2.17	0.44
1:A:182:A:C4	1:A:184:G:C8	3.06	0.44
1:A:414:A:C4	1:A:415:A:C8	3.05	0.44
1:A:431:A:C4	1:A:432:A:C8	3.05	0.44
1:A:575:G:HO2'	1:A:821:G:H5'	1.82	0.44
1:A:769:G:H2'	1:A:770:C:H6	1.82	0.44
1:A:912:C:H2'	1:A:913:A:C8	2.53	0.44
1:A:1133:G:C4	1:A:1134:G:C8	3.06	0.44
1:A:1489:G:N7	1:A:1490:U:C4	2.85	0.44
1:A:1518:MA6:H3'	1:A:1519:MA6:H8	1.99	0.44
9:I:58:VAL:HG23	9:I:59:GLU:N	2.31	0.44
17:Q:31:HIS:CE1	17:Q:33:ILE:H	2.36	0.44
1:A:90:C:HO2'	1:A:91:U:C5'	2.31	0.44
1:A:175:C:H2'	1:A:176:C:H6	1.81	0.44
1:A:181:A:N6	1:A:195:A:OP2	2.35	0.44
1:A:300:A:C8	1:A:301:G:C8	3.05	0.44
1:A:339:C:H2'	1:A:340:U:H6	1.82	0.44
1:A:382:A:H2'	1:A:383:A:C8	2.52	0.44
1:A:575:G:C6	1:A:821:G:N7	2.85	0.44
1:A:588:G:C5	1:A:753:A:C4	3.06	0.44
1:A:687:A:H4'	1:A:688:G:OP1	2.17	0.44
1:A:836:G:C5	1:A:837:U:C4	3.06	0.44
1:A:859:G:H2'	1:A:860:A:C8	2.52	0.44
1:A:986:U:H1'	19:S:55:ARG:HA	2.00	0.44
1:A:993:G:N2	1:A:1045:C:O2	2.44	0.44
1:A:1143:G:H2'	1:A:1144:G:O4'	2.17	0.44
1:A:1511:G:H2'	1:A:1512:U:H6	1.82	0.44
1:A:1535:C:H3'	18:R:43:ARG:NH2	2.33	0.44
9:I:5:GLN:HA	9:I:21:ILE:O	2.18	0.44
9:I:113:ARG:NE	14:N:101:TRP:OXT	2.47	0.44
19:S:21:LYS:HD3	19:S:21:LYS:HA	1.64	0.44
20:T:3:ASN:OD1	20:T:3:ASN:N	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:164:G:C2	1:A:165:G:C8	3.06	0.44
1:A:627:G:N2	1:A:628:G:H1'	2.33	0.44
1:A:750:C:H1'	15:O:22:THR:OG1	2.18	0.44
1:A:765:G:N7	1:A:812:G:N1	2.65	0.44
1:A:838:G:H2'	1:A:839:C:O4'	2.18	0.44
1:A:872:A:C6	1:A:874:G:C4	3.05	0.44
1:A:936:C:C2	1:A:937:A:C8	3.05	0.44
1:A:1147:C:O2'	9:I:18:ARG:NE	2.51	0.44
1:A:1179:A:H5''	9:I:104:VAL:HG12	2.00	0.44
1:A:1193:G:C2	1:A:1194:U:C2	3.06	0.44
3:C:14:ILE:H	3:C:14:ILE:HD12	1.82	0.44
3:C:156:ARG:HA	3:C:162:ILE:O	2.18	0.44
6:F:71:ILE:O	6:F:75:GLU:HG3	2.16	0.44
17:Q:47:HIS:HA	17:Q:71:LYS:HD2	1.99	0.44
1:A:35:G:C5	1:A:36:C:C4	3.06	0.44
1:A:216:U:H2'	1:A:217:C:H6	1.82	0.44
1:A:402:G:C6	1:A:403:C:C4	3.06	0.44
1:A:544:G:C5	1:A:545:C:C4	3.05	0.44
1:A:784:A:N6	1:A:799:G:C6	2.86	0.44
1:A:786:G:H2'	1:A:787:A:H8	1.79	0.44
1:A:979:C:H3'	1:A:980:C:H6	1.83	0.44
1:A:1137:C:O2	1:A:1138:G:N2	2.51	0.44
1:A:1266:G:H2'	1:A:1268:G:OP2	2.16	0.44
3:C:138:VAL:HG21	3:C:168:TYR:CE2	2.53	0.44
4:D:54:GLN:HB2	4:D:203:LEU:HD13	1.99	0.44
7:G:17:LYS:HD2	7:G:44:TYR:CE2	2.53	0.44
8:H:10:MET:HG3	8:H:27:MET:CE	2.48	0.44
16:P:56:ARG:O	16:P:59:HIS:HB3	2.17	0.44
17:Q:20:SER:OG	17:Q:71:LYS:NZ	2.25	0.44
19:S:10:PHE:O	19:S:39:THR:N	2.51	0.44
19:S:40:ILE:HG13	19:S:69:HIS:O	2.18	0.44
21:V:11:VAL:CG2	21:V:43:MET:HE3	2.43	0.44
21:V:16:GLN:CA	21:V:19:ILE:HG12	2.46	0.44
1:A:29:U:H2'	1:A:30:U:C6	2.53	0.44
1:A:235:C:O2'	1:A:236:A:H5'	2.17	0.44
1:A:424:G:C6	1:A:425:G:C5	3.06	0.44
1:A:453:G:C4	1:A:454:G:C8	3.06	0.44
1:A:530:G:H2'	1:A:531:U:C6	2.53	0.44
1:A:553:A:H2'	1:A:554:A:O4'	2.18	0.44
1:A:703:G:H4'	1:A:704:A:C8	2.48	0.44
1:A:727:G:C2	1:A:731:G:C4	3.05	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:774:G:C2	1:A:806:C:C2	3.06	0.44
1:A:845:A:H2'	1:A:846:G:H5'	2.00	0.44
1:A:1047:G:O2'	1:A:1215:G:O2'	2.21	0.44
1:A:1126:U:P	10:J:7:ARG:HH22	2.39	0.44
1:A:1291:U:H2'	1:A:1292:G:C8	2.51	0.44
1:A:1425:U:O2'	1:A:1426:G:H5'	2.18	0.44
2:B:154:MET:HG2	2:B:156:GLY:O	2.18	0.44
4:D:171:LEU:HD23	4:D:182:PHE:HA	1.99	0.44
7:G:58:GLU:HA	7:G:61:ALA:HB3	2.00	0.44
8:H:87:LYS:HG2	8:H:125:ILE:HD12	1.99	0.44
17:Q:10:GLY:HA3	17:Q:25:ILE:HG13	1.99	0.44
19:S:17:LYS:HA	19:S:20:GLU:OE2	2.18	0.44
1:A:105:G:C5	1:A:106:C:C4	3.05	0.44
1:A:157:U:H2'	1:A:158:G:H8	1.83	0.44
1:A:332:G:C6	1:A:333:U:C4	3.06	0.44
1:A:421:U:O2	3:C:127:ARG:NH2	2.51	0.44
1:A:451:A:H4'	1:A:452:A:O4'	2.17	0.44
1:A:608:A:C6	1:A:609:A:C4	3.06	0.44
1:A:847:G:C6	1:A:848:C:C4	3.06	0.44
1:A:981:U:P	14:N:13:ARG:HH22	2.40	0.44
1:A:1128:C:N3	1:A:1145:A:N6	2.66	0.44
1:A:1166:G:O2'	1:A:1169:A:N6	2.51	0.44
1:A:1256:A:H8	1:A:1256:A:O5'	2.01	0.44
1:A:1349:A:H2'	1:A:1350:A:O4'	2.18	0.44
1:A:1433:A:C8	1:A:1468:A:C6	3.06	0.44
3:C:55:ILE:HG13	3:C:57:ILE:HD11	2.00	0.44
6:F:3:HIS:HA	6:F:65:GLU:HA	1.99	0.44
6:F:78:PHE:N	6:F:78:PHE:CD1	2.84	0.44
7:G:88:PRO:HD3	7:G:148:ASN:OD1	2.18	0.44
10:J:7:ARG:O	10:J:100:ILE:HD12	2.18	0.44
11:K:98:ARG:HH12	21:V:57:LEU:HD12	1.82	0.44
12:L:41:THR:HA	12:L:48:ALA:O	2.18	0.44
14:N:63:ARG:HD2	14:N:68:GLY:O	2.17	0.44
15:O:55:GLY:O	15:O:58:ARG:N	2.51	0.44
21:V:32:LEU:HD12	21:V:32:LEU:C	2.34	0.44
22:X:87:THR:O	22:X:90:HIS:N	2.49	0.44
1:A:3:A:O2'	1:A:612:C:O2'	2.10	0.44
1:A:257:G:C6	1:A:270:A:C6	3.05	0.44
1:A:429:U:O2	1:A:430:A:C8	2.70	0.44
1:A:504:C:C2	1:A:542:G:C2	3.06	0.44
1:A:544:G:C6	1:A:545:C:C4	3.05	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:635:A:C6	1:A:636:U:C4	3.05	0.44
1:A:802:A:C8	1:A:803:G:C8	3.06	0.44
1:A:818:G:O2'	1:A:820:U:H6	2.00	0.44
1:A:1095:U:H2'	1:A:1096:C:C6	2.53	0.44
1:A:1105:A:O2'	1:A:1106:G:H5'	2.18	0.44
1:A:1228:C:OP1	13:M:114:LYS:HB2	2.18	0.44
1:A:1237:C:O2'	1:A:1335:U:O4'	2.26	0.44
1:A:1261:A:H4'	1:A:1284:C:OP1	2.18	0.44
3:C:58:GLU:OE2	3:C:65:ARG:NE	2.50	0.44
4:D:28:ILE:CD1	4:D:34:ILE:CD1	2.95	0.44
8:H:77:ARG:HH21	8:H:81:PRO:N	2.16	0.44
8:H:94:LYS:HB3	8:H:94:LYS:HE3	1.82	0.44
9:I:96:SER:O	9:I:100:LYS:HG2	2.18	0.44
15:O:26:GLU:OE2	15:O:77:ARG:HD2	2.18	0.44
15:O:73:LYS:HD3	15:O:73:LYS:HA	1.72	0.44
21:V:87:MET:HB2	21:V:89:LEU:HG	1.98	0.44
22:X:40:ILE:O	22:X:40:ILE:HG13	2.18	0.44
1:A:120:A:C5	1:A:122:G:C6	3.06	0.43
1:A:144:G:H2'	1:A:145:G:C8	2.53	0.43
1:A:202:G:HO2'	1:A:468:A:H8	1.65	0.43
1:A:363:A:P	12:L:30:LYS:HZ2	2.39	0.43
1:A:465:A:C2	1:A:466:A:C4	3.05	0.43
1:A:515:G:C6	1:A:537:G:C6	3.06	0.43
1:A:520:A:C5'	12:L:49:LEU:H	2.31	0.43
1:A:540:G:H2'	1:A:541:G:C8	2.53	0.43
1:A:600:A:C5	1:A:639:G:C2	3.06	0.43
1:A:1057:G:C5	1:A:1058:G:C5	3.06	0.43
1:A:1073:U:H2'	1:A:1074:G:O4'	2.17	0.43
1:A:1166:G:C5	1:A:1168:U:H5''	2.52	0.43
1:A:1179:A:N6	1:A:1180:A:N1	2.66	0.43
1:A:1233:G:H2'	1:A:1234:C:C6	2.53	0.43
1:A:1306:A:H2'	1:A:1307:U:O4'	2.17	0.43
1:A:1375:A:H5''	7:G:25:LYS:HE3	1.99	0.43
1:A:1426:G:C4	1:A:1475:G:C2	3.05	0.43
3:C:32:ASN:OD1	3:C:59:ARG:HD2	2.18	0.43
3:C:148:GLY:CA	3:C:172:ARG:H	2.31	0.43
4:D:58:LYS:NZ	4:D:62:ARG:HD2	2.33	0.43
5:E:109:GLY:O	5:E:112:ARG:HB3	2.18	0.43
8:H:127:CYS:SG	8:H:128:TYR:N	2.91	0.43
11:K:19:GLY:HA3	11:K:81:ASN:O	2.17	0.43
18:R:70:TYR:C	18:R:71:THR:HG23	2.38	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:22:ALA:O	19:S:26:GLY:N	2.36	0.43
22:X:88:ALA:HA	22:X:91:TYR:HD1	1.83	0.43
1:A:46:G:H2'	1:A:366:A:N7	2.32	0.43
1:A:126:G:C6	1:A:236:A:N1	2.86	0.43
1:A:197:A:C2	1:A:220:G:N3	2.86	0.43
1:A:234:C:H2'	1:A:235:C:C6	2.53	0.43
1:A:236:A:H8	1:A:236:A:OP2	2.01	0.43
1:A:251:G:C2	1:A:266:G:C5	3.05	0.43
1:A:358:U:H2'	1:A:359:G:H8	1.82	0.43
1:A:464:U:O2'	1:A:466:A:N7	2.47	0.43
1:A:517:G:N3	1:A:530:G:H8	2.16	0.43
1:A:588:G:C6	1:A:753:A:C8	3.06	0.43
1:A:667:G:H4'	15:O:51:HIS:CG	2.54	0.43
1:A:730:G:H2'	1:A:766:A:H5'	2.00	0.43
1:A:859:G:C2	1:A:860:A:C4	3.06	0.43
1:A:1133:G:C2	1:A:1142:G:C2	3.06	0.43
1:A:1484:C:OP2	22:X:112:LYS:HD3	2.18	0.43
1:A:1491:G:H3'	22:X:30:ARG:HD2	1.99	0.43
1:A:1526:G:H2'	1:A:1527:U:H6	1.83	0.43
2:B:171:ILE:O	2:B:175:GLU:HG3	2.18	0.43
9:I:42:GLU:OE1	9:I:45:ARG:HD2	2.17	0.43
9:I:98:LEU:O	9:I:102:GLY:N	2.51	0.43
22:X:29:ILE:HD11	22:X:37:ARG:NH2	2.32	0.43
22:X:100:THR:HA	22:X:114:GLN:HA	1.99	0.43
1:A:39:G:C4	1:A:404:G:C2	3.06	0.43
1:A:223:A:H2'	1:A:224:U:C6	2.54	0.43
1:A:355:C:H2'	1:A:356:A:O4'	2.18	0.43
1:A:504:C:N4	1:A:541:G:H1	2.12	0.43
1:A:517:G:C4	1:A:530:G:H8	2.36	0.43
1:A:646:G:H2'	1:A:647:C:C6	2.53	0.43
1:A:667:G:O2'	15:O:51:HIS:ND1	2.39	0.43
1:A:766:A:C4	1:A:767:A:C8	3.07	0.43
1:A:779:C:C4	1:A:780:A:C6	3.06	0.43
1:A:899:C:P	1:A:899:C:H6	2.41	0.43
1:A:1145:A:O4'	1:A:1146:A:H8	2.00	0.43
2:B:68:LEU:HA	2:B:90:PHE:O	2.19	0.43
3:C:148:GLY:HA3	3:C:172:ARG:H	1.82	0.43
4:D:50:ASP:O	4:D:54:GLN:HG3	2.18	0.43
5:E:95:PHE:CE2	5:E:97:GLN:HB2	2.53	0.43
12:L:18:LYS:HB2	12:L:18:LYS:HE3	1.86	0.43
22:X:13:THR:OG1	22:X:17:GLU:HG2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:46:G:H2'	1:A:366:A:C5	2.53	0.43
1:A:246:A:N1	1:A:278:G:O2'	2.42	0.43
1:A:292:G:OP2	1:A:305:G:N1	2.34	0.43
1:A:500:G:H2'	1:A:501:C:H6	1.81	0.43
1:A:512:U:H2'	1:A:513:C:C6	2.52	0.43
1:A:611:C:H2'	1:A:612:C:C6	2.54	0.43
1:A:1103:C:H2'	1:A:1104:G:O4'	2.18	0.43
3:C:32:ASN:ND2	3:C:59:ARG:HD2	2.33	0.43
7:G:17:LYS:HE2	7:G:17:LYS:HB2	1.86	0.43
10:J:10:LEU:HA	10:J:97:ASP:O	2.19	0.43
10:J:11:LYS:HG2	10:J:71:LEU:HD13	2.01	0.43
14:N:9:ARG:O	14:N:13:ARG:HG3	2.18	0.43
15:O:62:GLN:O	15:O:66:LEU:HG	2.18	0.43
1:A:107:G:N2	1:A:108:G:H1'	2.34	0.43
1:A:122:G:C6	1:A:123:U:C4	3.06	0.43
1:A:134:G:C6	1:A:135:C:N3	2.86	0.43
1:A:431:A:C5	1:A:432:A:C8	3.07	0.43
1:A:558:G:C4	1:A:559:A:C2	3.07	0.43
1:A:604:G:C6	1:A:605:U:C2	3.06	0.43
1:A:711:G:C2	1:A:712:A:C4	3.06	0.43
1:A:843:U:O2	1:A:844:G:N7	2.52	0.43
1:A:1127:G:C6	1:A:1128:C:C4	3.06	0.43
1:A:1140:C:HO2'	1:A:1141:C:P	2.38	0.43
1:A:1227:A:OP1	19:S:80:TYR:OH	2.31	0.43
1:A:1338:G:N2	1:A:1339:A:H1'	2.32	0.43
1:A:1433:A:C6	1:A:1434:A:C5	3.06	0.43
6:F:1:MET:HA	6:F:67:PRO:N	2.33	0.43
9:I:31:ASN:HB2	9:I:38:TYR:HE1	1.84	0.43
12:L:39:THR:CG2	22:X:55:SER:OG	2.66	0.43
1:A:106:C:H2'	1:A:107:G:C8	2.46	0.43
1:A:182:A:P	1:A:182:A:H8	2.41	0.43
1:A:379:C:H2'	1:A:380:G:O4'	2.18	0.43
1:A:414:A:C6	1:A:415:A:C5	3.07	0.43
1:A:453:G:C6	1:A:454:G:C5	3.07	0.43
1:A:725:G:C6	1:A:726:C:C4	3.07	0.43
1:A:757:U:H2'	1:A:758:C:H6	1.84	0.43
1:A:1014:A:C5	1:A:1015:G:C5	3.07	0.43
1:A:1134:G:N1	1:A:1141:C:C4	2.87	0.43
1:A:1338:G:H2'	1:A:1339:A:C8	2.54	0.43
1:A:1433:A:H2'	1:A:1434:A:O4'	2.18	0.43
10:J:44:THR:HB	10:J:69:THR:O	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:42:LEU:HD13	11:K:77:TYR:CE2	2.40	0.43
18:R:50:LYS:O	18:R:54:GLN:N	2.40	0.43
19:S:35:SER:O	19:S:71:LEU:HD12	2.19	0.43
1:A:57:G:H2'	1:A:58:C:C6	2.54	0.43
1:A:106:C:O2'	1:A:379:C:H5''	2.19	0.43
1:A:203:G:C2	1:A:215:C:C2	3.07	0.43
1:A:255:G:C6	1:A:272:C:N3	2.87	0.43
1:A:265:G:O2'	1:A:267:C:OP1	2.25	0.43
1:A:500:G:C5	1:A:546:A:C2	3.07	0.43
1:A:520:A:H5'	12:L:49:LEU:H	1.83	0.43
1:A:675:A:H1'	11:K:118:HIS:CD2	2.54	0.43
1:A:719:C:H3'	1:A:720:C:C6	2.53	0.43
1:A:799:G:C6	1:A:800:G:C4	3.06	0.43
1:A:841:C:N3	1:A:846:G:N1	2.66	0.43
1:A:844:G:C4	1:A:845:A:H1'	2.52	0.43
1:A:933:G:C5	1:A:935:A:C8	3.07	0.43
1:A:958:A:N3	1:A:985:C:O2'	2.40	0.43
1:A:999:C:O2'	1:A:1000:A:OP1	2.36	0.43
1:A:1014:A:N6	1:A:1015:G:C6	2.86	0.43
1:A:1105:A:N1	1:A:1106:G:C6	2.87	0.43
1:A:1149:C:H2'	1:A:1150:A:C8	2.54	0.43
1:A:1178:G:C8	9:I:99:ARG:NH1	2.87	0.43
1:A:1237:C:H3'	1:A:1336:C:H41	1.83	0.43
1:A:1300:G:C4	1:A:1334:G:C6	3.07	0.43
1:A:1326:U:H2'	1:A:1327:C:C6	2.54	0.43
1:A:1347:G:H5''	9:I:110:GLN:O	2.18	0.43
1:A:1351:U:H1'	7:G:33:ASP:HB3	2.01	0.43
1:A:1535:C:H4'	21:V:29:ASP:HB3	2.01	0.43
6:F:9:MET:HG3	6:F:59:TYR:HA	2.01	0.43
8:H:7:ILE:HG22	8:H:77:ARG:HD2	2.00	0.43
18:R:33:ILE:HG23	18:R:37:GLY:HA2	1.99	0.43
19:S:14:HIS:O	19:S:18:LYS:HG3	2.19	0.43
1:A:144:G:C6	1:A:145:G:C5	3.07	0.43
1:A:205:A:C5	1:A:206:C:C4	3.06	0.43
1:A:211:G:H3'	1:A:211:G:N3	2.34	0.43
1:A:293:G:C4	1:A:305:G:N2	2.87	0.43
1:A:318:G:H2'	1:A:319:G:H8	1.83	0.43
1:A:345:C:H5''	1:A:346:G:O4'	2.19	0.43
1:A:575:G:O2'	1:A:821:G:H5'	2.19	0.43
1:A:706:A:O2'	11:K:33:THR:HG21	2.18	0.43
1:A:742:G:C2	1:A:743:A:C8	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:938:A:N6	1:A:939:G:C5	2.87	0.43
1:A:1187:G:O5'	9:I:115:LYS:HE2	2.19	0.43
1:A:1213:A:C2	1:A:1215:G:HI'	2.54	0.43
1:A:1215:G:C6	1:A:1216:A:C5	3.07	0.43
1:A:1216:A:C6	1:A:1217:C:C4	3.06	0.43
1:A:1310:G:C2	1:A:1328:C:C2	3.06	0.43
1:A:1342:C:C5'	9:I:129:LYS:HE2	2.48	0.43
1:A:1410:A:H61	1:A:1490:U:HO2'	1.66	0.43
2:B:186:ILE:HG21	2:B:213:TYR:CE2	2.54	0.43
10:J:10:LEU:HD23	10:J:98:VAL:HA	2.01	0.43
11:K:48:GLY:HA3	11:K:53:ARG:HH21	1.84	0.43
17:Q:45:HIS:CG	17:Q:70:THR:CG2	3.00	0.43
19:S:28:LYS:HD3	19:S:28:LYS:HA	1.86	0.43
22:X:97:GLU:OE1	22:X:97:GLU:N	2.51	0.43
1:A:20:U:H2'	1:A:21:G:O4'	2.19	0.43
1:A:44:A:C4	1:A:45:G:C8	3.06	0.43
1:A:60:A:OP1	1:A:331:G:N1	2.43	0.43
1:A:61:G:C5	1:A:62:U:C4	3.07	0.43
1:A:176:C:C2	1:A:177:G:C2	3.06	0.43
1:A:192:A:C6	1:A:193:C:C4	3.07	0.43
1:A:213:G:H3'	1:A:214:C:C6	2.53	0.43
1:A:228:A:C6	1:A:229:U:C4	3.07	0.43
1:A:247:G:C6	1:A:248:C:C2	3.07	0.43
1:A:280:C:H4'	1:A:281:G:OP2	2.18	0.43
1:A:312:C:C2	1:A:313:A:C8	3.07	0.43
1:A:563:A:O2'	1:A:566:G:O2'	2.22	0.43
1:A:695:A:C6	1:A:696:A:C5	3.07	0.43
1:A:696:A:C5	1:A:697:U:C4	3.07	0.43
1:A:784:A:C6	1:A:799:G:C6	3.07	0.43
1:A:919:A:HO2'	1:A:1080:A:N6	2.16	0.43
1:A:1137:C:HI'	1:A:1138:G:N2	2.33	0.43
1:A:1347:G:HI'	1:A:1348:U:H5	1.84	0.43
1:A:1516:2MG:HN2	1:A:1519:MA6:P	2.41	0.43
1:A:1535:C:H3'	18:R:43:ARG:HH22	1.83	0.43
3:C:83:ASP:HA	3:C:86:LYS:HE3	2.00	0.43
3:C:131:ARG:HA	3:C:131:ARG:HD2	1.82	0.43
6:F:72:ASP:O	6:F:76:THR:HG23	2.19	0.43
7:G:62:PHE:O	7:G:66:LEU:HG	2.18	0.43
7:G:71:PRO:HA	7:G:142:HIS:HE1	1.84	0.43
13:M:54:ASP:OD1	13:M:54:ASP:N	2.51	0.43
18:R:43:ARG:HB3	18:R:44:ILE:HD12	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:70:U:C2	1:A:94:G:C5	3.07	0.43
1:A:165:G:H2'	1:A:166:U:C6	2.54	0.43
1:A:182:A:N7	1:A:194:C:N4	2.67	0.43
1:A:321:A:H2	1:A:332:G:H22	1.67	0.43
1:A:403:C:H2'	1:A:404:G:C8	2.54	0.43
1:A:406:G:C8	1:A:495:A:C4	3.06	0.43
1:A:621:A:H2'	1:A:622:A:O4'	2.18	0.43
1:A:683:G:C2	1:A:684:U:C2	3.07	0.43
1:A:703:G:H3'	1:A:703:G:OP2	2.19	0.43
1:A:720:C:H5''	18:R:41:PRO:HB3	2.01	0.43
1:A:725:G:C2	1:A:726:C:C2	3.07	0.43
1:A:744:C:H2'	1:A:745:G:H8	1.84	0.43
1:A:747:A:N1	1:A:748:G:C6	2.87	0.43
1:A:943:U:H3'	1:A:944:G:H8	1.84	0.43
1:A:1090:U:H2'	1:A:1091:U:C6	2.53	0.43
1:A:1146:A:H2	9:I:18:ARG:HH22	1.66	0.43
1:A:1251:A:HO2'	1:A:1369:C:HO2'	1.62	0.43
1:A:1257:A:H3'	1:A:1258:G:H5'	1.99	0.43
1:A:1304:G:C6	1:A:1305:G:C2	3.06	0.43
2:B:9:MET:HB3	2:B:14:VAL:HB	2.00	0.43
10:J:52:LEU:HD23	10:J:62:ARG:HG2	2.01	0.43
11:K:19:GLY:N	11:K:79:ILE:CG2	2.82	0.43
12:L:23:ALA:HB2	12:L:63:VAL:HG21	2.00	0.43
13:M:23:TYR:CB	13:M:70:ARG:HH21	2.32	0.43
14:N:28:LYS:O	14:N:32:SER:OG	2.17	0.43
15:O:77:ARG:O	15:O:81:LEU:N	2.34	0.43
1:A:205:A:C5	1:A:206:C:C5	3.07	0.42
1:A:389:A:H3'	1:A:390:U:H6	1.84	0.42
1:A:413:G:O2'	1:A:428:G:N2	2.52	0.42
1:A:656:G:C2	1:A:657:U:C4	3.07	0.42
1:A:855:U:H2'	1:A:856:C:C6	2.52	0.42
1:A:1063:C:C4	1:A:1064:G:C5	3.07	0.42
1:A:1074:G:OP2	5:E:66:LYS:CE	2.67	0.42
1:A:1074:G:OP2	5:E:66:LYS:HE2	2.19	0.42
1:A:1105:A:C2	1:A:1106:G:C2	3.07	0.42
1:A:1106:G:O2'	3:C:169:ARG:NH2	2.52	0.42
1:A:1524:C:H2'	1:A:1525:G:H8	1.80	0.42
10:J:36:VAL:HG22	10:J:38:GLY:H	1.84	0.42
18:R:73:ARG:N	18:R:73:ARG:HD2	2.33	0.42
22:X:19:LEU:HD21	22:X:57:GLN:HE22	1.84	0.42
1:A:39:G:N1	1:A:403:C:O2	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:44:A:H2'	1:A:45:G:C8	2.51	0.42
1:A:193:C:C2	1:A:194:C:C5	3.07	0.42
1:A:207:C:C4	1:A:208:U:C4	3.07	0.42
1:A:236:A:C6	1:A:237:G:C6	3.07	0.42
1:A:240:G:C4	1:A:241:G:C8	3.07	0.42
1:A:507:C:C4	1:A:508:U:C4	3.07	0.42
1:A:585:G:C6	1:A:586:C:C4	3.07	0.42
1:A:614:C:N3	1:A:615:G:C8	2.87	0.42
1:A:679:C:H2'	1:A:680:C:H6	1.80	0.42
1:A:761:G:H2'	1:A:762:U:C6	2.54	0.42
1:A:771:G:C2	1:A:772:U:C2	3.07	0.42
1:A:900:A:C4	1:A:901:A:C8	3.07	0.42
1:A:1003:G:C2	1:A:1038:C:C2	3.07	0.42
1:A:1008:U:H5	1:A:1021:A:H61	1.67	0.42
1:A:1181:G:H1'	1:A:1182:G:C4	2.54	0.42
1:A:1349:A:C5	1:A:1350:A:C5	3.07	0.42
1:A:1350:A:C6	1:A:1351:U:C4	3.06	0.42
3:C:175:LEU:HD23	3:C:175:LEU:HA	1.77	0.42
6:F:3:HIS:CE1	6:F:94:HIS:HA	2.54	0.42
6:F:35:LYS:HB3	6:F:37:HIS:HE1	1.84	0.42
7:G:16:PRO:HB2	9:I:46:MET:HB3	2.01	0.42
8:H:10:MET:SD	8:H:33:LYS:HG2	2.59	0.42
11:K:21:ALA:O	11:K:84:VAL:HG13	2.19	0.42
19:S:31:LEU:H	19:S:31:LEU:HD23	1.83	0.42
1:A:168:G:C5	1:A:169:C:C4	3.08	0.42
1:A:932:C:O2	1:A:1385:G:C2	2.72	0.42
1:A:1275:A:C6	1:A:1276:G:C4	3.08	0.42
1:A:1360:A:H3'	1:A:1361:G:C8	2.55	0.42
1:A:1377:A:H4'	1:A:1378:C:C5	2.55	0.42
1:A:1433:A:C4	1:A:1434:A:C8	3.07	0.42
1:A:1518:MA6:H102	1:A:1519:MA6:H103	2.00	0.42
4:D:95:GLU:HA	4:D:100:ASN:ND2	2.34	0.42
4:D:137:VAL:HG13	4:D:141:ASP:HB2	2.01	0.42
5:E:53:ALA:HB2	5:E:62:LYS:NZ	2.34	0.42
6:F:40:GLU:HB2	6:F:61:LEU:HD22	2.01	0.42
6:F:67:PRO:HD2	6:F:70:VAL:HG11	2.01	0.42
7:G:72:THR:H	7:G:142:HIS:CE1	2.37	0.42
7:G:116:MET:HA	7:G:119:ARG:HG2	2.02	0.42
15:O:78:TYR:CE2	15:O:82:ILE:HD13	2.55	0.42
17:Q:45:HIS:CD2	17:Q:70:THR:HG22	2.53	0.42
1:A:109:A:C6	1:A:327:A:C5	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:181:A:N6	1:A:194:C:H2'	2.34	0.42
1:A:253:A:H2'	1:A:254:G:O4'	2.20	0.42
1:A:411:A:N7	1:A:413:G:C4	2.87	0.42
1:A:724:G:P	1:A:724:G:H8	2.43	0.42
1:A:748:G:H2'	1:A:749:A:C8	2.54	0.42
1:A:952:U:H2'	1:A:953:G:C8	2.54	0.42
1:A:1014:A:H4'	19:S:14:HIS:ND1	2.34	0.42
1:A:1016:A:N7	1:A:1017:U:H1'	2.35	0.42
1:A:1055:A:C2	1:A:1056:U:H1'	2.53	0.42
1:A:1063:C:H5''	1:A:1064:G:OP2	2.20	0.42
1:A:1134:G:C2	1:A:1141:C:C2	3.07	0.42
1:A:1163:A:H2'	1:A:1164:G:H8	1.84	0.42
1:A:1206:G:C6	1:A:1207:2MG:C5	3.07	0.42
1:A:1379:G:N2	1:A:1382:C:H42	2.18	0.42
3:C:54:ARG:O	3:C:68:ILE:HA	2.19	0.42
4:D:174:ASP:OD2	4:D:177:LYS:HG2	2.19	0.42
9:I:7:TYR:N	9:I:89:GLU:OE2	2.53	0.42
10:J:72:ARG:HA	10:J:72:ARG:HD3	1.69	0.42
14:N:49:GLN:OE1	19:S:12:ASP:HA	2.20	0.42
15:O:29:VAL:HG23	15:O:63:ARG:HB2	2.01	0.42
18:R:42:SER:H	18:R:52:GLN:NE2	2.17	0.42
19:S:79:THR:OG1	19:S:81:ARG:NH1	2.53	0.42
1:A:49:U:O2	1:A:362:G:H1'	2.19	0.42
1:A:90:C:O2'	1:A:91:U:C6	2.71	0.42
1:A:102:G:C6	1:A:103:U:C4	3.08	0.42
1:A:240:G:C2	1:A:287:U:C2	3.07	0.42
1:A:265:G:C2	1:A:267:C:C6	3.07	0.42
1:A:289:G:C4	1:A:290:C:C5	3.07	0.42
1:A:345:C:H4'	1:A:346:G:H5''	2.01	0.42
1:A:397:A:C5	1:A:548:G:C8	3.07	0.42
1:A:628:G:C2	1:A:629:A:C4	3.07	0.42
1:A:663:A:C2	1:A:664:G:C4	3.07	0.42
1:A:666:G:C5	1:A:741:G:C6	3.07	0.42
1:A:670:G:N1	1:A:737:C:N3	2.67	0.42
1:A:908:A:H2'	1:A:909:A:C8	2.55	0.42
3:C:131:ARG:HG3	3:C:135:LYS:HZ3	1.83	0.42
3:C:175:LEU:HD21	3:C:182:ILE:HG21	2.00	0.42
4:D:91:LEU:HD21	4:D:191:LEU:HD12	2.01	0.42
6:F:70:VAL:O	6:F:74:LEU:HB2	2.19	0.42
7:G:141:VAL:HG13	7:G:142:HIS:ND1	2.26	0.42
8:H:34:VAL:HG13	8:H:49:PHE:CE2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:79:PRO:HA	10:J:83:THR:HG21	2.00	0.42
1:A:275:G:O5'	17:Q:16:LYS:HD3	2.19	0.42
1:A:389:A:C6	1:A:390:U:H1'	2.54	0.42
1:A:629:A:C4	1:A:630:A:C8	3.07	0.42
1:A:673:A:C6	1:A:734:G:C6	3.08	0.42
1:A:681:A:C2	1:A:710:G:C4	3.08	0.42
1:A:737:C:H2'	1:A:738:C:C6	2.53	0.42
1:A:741:G:H2'	1:A:742:G:O4'	2.19	0.42
1:A:776:G:O2'	1:A:777:A:O5'	2.33	0.42
1:A:843:U:O2'	1:A:844:G:O4'	2.34	0.42
1:A:933:G:N2	1:A:1385:G:C4	2.87	0.42
1:A:954:G:N2	1:A:1227:A:H62	2.18	0.42
1:A:1261:A:N7	1:A:1274:A:H2	2.16	0.42
1:A:1320:C:H2'	1:A:1321:U:O4'	2.19	0.42
1:A:1489:G:H3'	1:A:1490:U:C6	2.55	0.42
2:B:210:VAL:O	2:B:214:LEU:HG	2.19	0.42
3:C:67:THR:HA	3:C:102:ASN:O	2.19	0.42
1:A:72:A:C5	1:A:73:C:C4	3.08	0.42
1:A:104:G:C6	1:A:105:G:N7	2.87	0.42
1:A:267:C:OP1	17:Q:69:LYS:HB2	2.19	0.42
1:A:302:G:C4	1:A:303:A:C8	3.07	0.42
1:A:309:A:H2'	1:A:310:G:H8	1.85	0.42
1:A:313:A:H2'	1:A:314:C:C6	2.54	0.42
1:A:519:C:C4	1:A:520:A:H1'	2.54	0.42
1:A:580:C:C4	1:A:581:G:C5	3.08	0.42
1:A:750:C:O2	15:O:23:GLY:N	2.53	0.42
1:A:797:C:H2'	1:A:798:U:O4'	2.19	0.42
1:A:983:A:P	1:A:984:C:H41	2.41	0.42
1:A:1125:U:C2	1:A:1127:G:C8	3.08	0.42
1:A:1154:G:O6	1:A:1155:A:N6	2.53	0.42
1:A:1204:A:H2'	1:A:1205:U:O4'	2.18	0.42
1:A:1253:G:C2	1:A:1285:A:N6	2.88	0.42
1:A:1255:G:C6	1:A:1279:G:N7	2.87	0.42
1:A:1276:G:C2	1:A:1277:C:C2	3.08	0.42
3:C:85:GLU:HG3	3:C:89:LYS:HE3	2.02	0.42
4:D:18:ASP:OD1	4:D:19:LEU:N	2.53	0.42
4:D:205:SER:HB3	5:E:106:ILE:CD1	2.50	0.42
5:E:43:ASN:HB2	5:E:76:LEU:HD22	2.00	0.42
7:G:50:LEU:O	7:G:54:SER:OG	2.29	0.42
10:J:71:LEU:C	10:J:72:ARG:HH11	2.23	0.42
16:P:71:VAL:HG12	16:P:75:ILE:HD11	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:71:A:H61	1:A:99:C:C1'	2.32	0.42
1:A:110:C:H4'	16:P:25:ARG:HG3	2.02	0.42
1:A:299:G:H2'	1:A:300:A:C8	2.55	0.42
1:A:406:G:H2'	1:A:407:U:C6	2.55	0.42
1:A:630:A:H2'	1:A:631:C:C6	2.54	0.42
1:A:665:A:C5	1:A:733:G:C6	3.08	0.42
1:A:727:G:N2	1:A:731:G:C4	2.88	0.42
1:A:859:G:N7	1:A:869:G:C2	2.88	0.42
1:A:1068:G:N2	1:A:1191:A:H1'	2.34	0.42
1:A:1075:U:H2'	1:A:1076:U:C6	2.54	0.42
1:A:1098:C:H2'	1:A:1099:G:H8	1.84	0.42
1:A:1163:A:C4	1:A:1164:G:C8	3.07	0.42
1:A:1194:U:C4	1:A:1195:C:N4	2.87	0.42
1:A:1202:U:H2'	1:A:1203:C:O4'	2.20	0.42
1:A:1309:G:C6	1:A:1310:G:C5	3.08	0.42
1:A:1361:G:C2	1:A:1362:A:C4	3.08	0.42
1:A:1390:U:H2'	1:A:1391:U:C6	2.55	0.42
12:L:4:VAL:HA	12:L:7:LEU:HB2	2.00	0.42
20:T:16:LYS:HE2	20:T:16:LYS:HA	2.02	0.42
22:X:39:TYR:HA	22:X:77:SER:O	2.20	0.42
1:A:132:C:C2	1:A:133:U:C6	3.08	0.42
1:A:505:G:C5	1:A:535:A:C4	3.08	0.42
1:A:509:A:H2	1:A:544:G:O4'	2.03	0.42
1:A:540:G:N2	1:A:541:G:H1'	2.35	0.42
1:A:582:C:O2	1:A:759:A:N6	2.52	0.42
1:A:812:G:O2'	1:A:813:U:OP2	2.30	0.42
1:A:824:G:C4	1:A:825:A:C8	3.08	0.42
1:A:872:A:C4	1:A:874:G:N7	2.88	0.42
1:A:877:G:O6	1:A:878:A:N6	2.52	0.42
1:A:1015:G:C2	1:A:1016:A:C4	3.08	0.42
1:A:1266:G:C6	1:A:1270:G:C6	3.08	0.42
1:A:1513:A:C6	1:A:1523:G:C6	3.08	0.42
3:C:12:LEU:O	3:C:14:ILE:HD12	2.19	0.42
3:C:43:LEU:HD23	3:C:43:LEU:HA	1.77	0.42
3:C:72:ARG:NH1	3:C:75:ILE:HG13	2.34	0.42
4:D:28:ILE:HD11	4:D:34:ILE:CD1	2.44	0.42
6:F:73:GLU:O	6:F:77:THR:OG1	2.28	0.42
19:S:50:ALA:HB1	19:S:57:HIS:HB2	2.02	0.42
22:X:120:VAL:HG13	22:X:125:ILE:HG12	2.01	0.42
1:A:52:C:O2	1:A:359:G:N2	2.49	0.42
1:A:317:U:C2	1:A:337:G:C2	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:394:G:H2'	1:A:395:C:C6	2.54	0.42
1:A:410:G:OP2	4:D:31:LYS:NZ	2.52	0.42
1:A:428:G:H4'	1:A:429:U:OP1	2.19	0.42
1:A:650:G:C5	1:A:651:C:C5	3.07	0.42
1:A:685:G:N1	1:A:686:U:O4	2.53	0.42
1:A:721:G:N2	1:A:733:G:C5	2.87	0.42
1:A:796:C:H2'	1:A:797:C:C6	2.55	0.42
1:A:812:G:HO2'	1:A:813:U:P	2.42	0.42
1:A:813:U:H5	1:A:816:A:N1	2.18	0.42
1:A:903:G:H2'	1:A:904:U:C6	2.55	0.42
1:A:933:G:C2	1:A:1385:G:C2	3.08	0.42
1:A:948:C:H2'	1:A:949:A:H8	1.84	0.42
1:A:974:A:OP1	14:N:69:ARG:NH2	2.53	0.42
1:A:984:C:H2'	1:A:985:C:H6	1.84	0.42
1:A:1062:U:H2'	1:A:1063:C:C6	2.54	0.42
1:A:1086:U:H3	1:A:1099:G:H1	1.66	0.42
1:A:1111:A:H2'	1:A:1112:C:C6	2.55	0.42
1:A:1190:G:H5'	3:C:176:HIS:NE2	2.35	0.42
1:A:1246:A:C2	1:A:1247:U:C2	3.08	0.42
1:A:1286:U:O2'	1:A:1287:A:P	2.78	0.42
1:A:1352:C:H2'	1:A:1353:G:C8	2.55	0.42
1:A:1535:C:O2'	21:V:29:ASP:CB	2.58	0.42
9:I:91:ASP:C	9:I:93:SER:H	2.23	0.42
15:O:26:GLU:HG3	15:O:81:LEU:HD22	2.01	0.42
18:R:11:CYS:H	18:R:48:ARG:NH1	2.17	0.42
22:X:54:VAL:O	22:X:58:VAL:HG13	2.20	0.42
1:A:126:G:C6	1:A:236:A:C6	3.08	0.41
1:A:127:G:C2	1:A:235:C:N3	2.88	0.41
1:A:182:A:H8	1:A:182:A:OP2	2.03	0.41
1:A:247:G:C6	1:A:278:G:N1	2.88	0.41
1:A:298:A:C6	1:A:299:G:C4	3.08	0.41
1:A:333:U:C2	1:A:334:C:C5	3.08	0.41
1:A:457:G:N2	1:A:475:C:O2	2.32	0.41
1:A:500:G:C4	1:A:501:C:C5	3.07	0.41
1:A:579:A:N7	1:A:763:G:N1	2.68	0.41
1:A:763:G:H2'	1:A:764:C:C6	2.55	0.41
1:A:859:G:N7	1:A:869:G:N2	2.68	0.41
1:A:898:G:C2	1:A:902:G:C5	3.08	0.41
1:A:951:G:N1	1:A:1230:C:O2	2.41	0.41
1:A:993:G:H22	1:A:996:A:N6	2.18	0.41
1:A:1073:U:OP1	5:E:62:LYS:HG2	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1206:G:C4	1:A:1207:2MG:C8	3.08	0.41
1:A:1279:G:H5''	10:J:9:ARG:HH22	1.85	0.41
1:A:1417:G:N1	1:A:1482:G:C6	2.88	0.41
1:A:1453:G:N2	1:A:1454:G:C8	2.88	0.41
11:K:86:VAL:HG13	11:K:112:ASP:HA	2.01	0.41
12:L:7:LEU:HB3	17:Q:34:TYR:CD2	2.55	0.41
17:Q:19:LYS:O	17:Q:48:ASP:N	2.52	0.41
17:Q:31:HIS:CE1	17:Q:34:TYR:H	2.37	0.41
19:S:16:LEU:O	19:S:19:VAL:HG12	2.20	0.41
22:X:21:PHE:CD2	22:X:40:ILE:HD12	2.55	0.41
22:X:65:GLU:O	22:X:67:PRO:HD3	2.20	0.41
1:A:144:G:C6	1:A:179:A:C5	3.08	0.41
1:A:189:A:C5	1:A:190:A:C5	3.08	0.41
1:A:202:G:O2'	1:A:468:A:C8	2.73	0.41
1:A:202:G:H4'	1:A:469:C:H4'	2.01	0.41
1:A:205:A:H3'	1:A:206:C:H6	1.85	0.41
1:A:350:G:C2	1:A:351:G:C6	3.08	0.41
1:A:394:G:C5	1:A:395:C:C4	3.09	0.41
1:A:570:G:C8	1:A:873:A:C5	3.08	0.41
1:A:589:U:H2'	1:A:590:U:H6	1.85	0.41
1:A:681:A:C4	1:A:710:G:C2	3.08	0.41
1:A:690:G:C2	1:A:691:G:C4	3.08	0.41
1:A:749:A:H2'	1:A:750:C:H6	1.85	0.41
1:A:756:C:H2'	1:A:757:U:C6	2.54	0.41
1:A:849:G:C6	1:A:850:U:C2	3.08	0.41
1:A:956:U:H2'	1:A:957:U:C6	2.54	0.41
1:A:993:G:N2	1:A:1046:A:H1'	2.35	0.41
1:A:1228:C:OP1	13:M:114:LYS:HD3	2.20	0.41
2:B:187:VAL:N	2:B:200:ILE:O	2.45	0.41
3:C:87:LEU:HA	3:C:90:VAL:HG22	2.02	0.41
7:G:71:PRO:HA	7:G:142:HIS:CE1	2.55	0.41
9:I:25:ASN:OD1	9:I:27:LYS:N	2.36	0.41
11:K:78:GLY:O	11:K:80:LYS:NZ	2.48	0.41
14:N:73:PHE:CE2	14:N:75:ARG:HA	2.55	0.41
19:S:15:LEU:HD13	19:S:38:SER:HB2	2.02	0.41
22:X:35:THR:HG22	22:X:73:ASN:O	2.20	0.41
22:X:99:VAL:HA	22:X:146:LEU:HA	2.01	0.41
22:X:132:LYS:HE2	22:X:132:LYS:HB3	1.79	0.41
1:A:273:U:H2'	1:A:274:A:C8	2.56	0.41
1:A:299:G:N2	1:A:566:G:O6	2.53	0.41
1:A:320:A:H2'	1:A:321:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:345:C:H4'	1:A:346:G:C5'	2.51	0.41
1:A:499:A:C2	1:A:547:A:C4	3.08	0.41
1:A:693:G:N3	1:A:694:A:C8	2.88	0.41
1:A:713:G:N1	1:A:714:G:C6	2.88	0.41
1:A:922:G:N1	1:A:1396:A:C6	2.88	0.41
1:A:936:C:C4	1:A:937:A:C5	3.08	0.41
1:A:958:A:C6	1:A:959:A:N1	2.88	0.41
1:A:1165:U:C4	1:A:1166:G:C5	3.08	0.41
1:A:1296:C:H5'	13:M:14:HIS:NE2	2.35	0.41
1:A:1381:U:O2'	7:G:80:VAL:HA	2.20	0.41
1:A:1436:U:H2'	1:A:1437:A:C8	2.55	0.41
2:B:162:PHE:HA	2:B:184:PHE:O	2.20	0.41
4:D:28:ILE:HG12	4:D:34:ILE:HB	2.02	0.41
4:D:202:GLU:OE2	5:E:106:ILE:HG12	2.20	0.41
5:E:30:ILE:HD13	5:E:30:ILE:HA	1.95	0.41
5:E:146:ASN:N	5:E:146:ASN:OD1	2.52	0.41
8:H:87:LYS:HG3	8:H:125:ILE:CD1	2.50	0.41
8:H:96:MET:HB2	8:H:100:GLY:N	2.32	0.41
17:Q:13:VAL:HG22	17:Q:22:VAL:O	2.20	0.41
1:A:77:A:H3'	1:A:78:A:C8	2.51	0.41
1:A:138:G:C6	1:A:226:G:C5	3.09	0.41
1:A:162:A:O5'	1:A:162:A:H8	2.04	0.41
1:A:266:G:H1'	1:A:268:U:OP2	2.21	0.41
1:A:672:U:H5'	6:F:79:ARG:HH21	1.85	0.41
1:A:695:A:OP2	1:A:695:A:H8	2.02	0.41
1:A:720:C:C4	1:A:721:G:C5	3.08	0.41
1:A:833:G:C2	1:A:854:U:C2	3.08	0.41
1:A:859:G:C8	1:A:869:G:N2	2.88	0.41
1:A:1010:U:H2'	1:A:1011:C:C6	2.55	0.41
1:A:1130:A:H2'	1:A:1131:G:O4'	2.20	0.41
1:A:1193:G:C6	1:A:1194:U:C4	3.09	0.41
1:A:1234:C:C4	1:A:1235:U:C4	3.09	0.41
1:A:1449:C:H2'	1:A:1450:U:O4'	2.20	0.41
7:G:50:LEU:HD21	7:G:61:ALA:HB3	2.02	0.41
8:H:18:GLN:OE1	8:H:72:VAL:HG12	2.20	0.41
14:N:62:ASN:HB3	14:N:73:PHE:CE2	2.55	0.41
19:S:44:MET:SD	19:S:47:LEU:HB2	2.60	0.41
20:T:71:LYS:HA	20:T:74:ARG:HB2	2.01	0.41
1:A:211:G:C6	1:A:212:G:C4	3.09	0.41
1:A:232:G:HO2'	1:A:262:A:H61	1.59	0.41
1:A:274:A:H4'	1:A:275:G:OP1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:299:G:C6	1:A:300:A:C6	3.08	0.41
1:A:405:U:OP2	4:D:3:ARG:HD3	2.20	0.41
1:A:500:G:C2	1:A:501:C:C2	3.08	0.41
1:A:588:G:C6	1:A:589:U:C4	3.09	0.41
1:A:685:G:H2'	1:A:686:U:C6	2.55	0.41
1:A:693:G:C2	1:A:694:A:C4	3.09	0.41
1:A:701:U:H4'	1:A:702:A:O5'	2.21	0.41
1:A:729:A:C4	1:A:730:G:C8	3.08	0.41
1:A:872:A:C5	1:A:874:G:C8	3.08	0.41
1:A:901:A:OP2	1:A:901:A:C8	2.74	0.41
1:A:955:U:H2'	1:A:956:U:H6	1.85	0.41
1:A:999:C:C2	1:A:1000:A:C8	3.07	0.41
1:A:1043:G:C2	1:A:1044:A:C4	3.09	0.41
1:A:1228:C:H5'	1:A:1229:A:OP2	2.19	0.41
1:A:1237:C:H2'	1:A:1336:C:C5	2.55	0.41
1:A:1311:A:H2'	1:A:1312:G:O4'	2.20	0.41
1:A:1321:U:H3'	1:A:1322:C:C6	2.55	0.41
1:A:1338:G:C6	1:A:1339:A:C5	3.08	0.41
1:A:1371:G:H2'	1:A:1372:U:O4'	2.21	0.41
2:B:90:PHE:CE2	2:B:154:MET:HA	2.55	0.41
3:C:86:LYS:O	3:C:90:VAL:HG13	2.20	0.41
7:G:66:LEU:O	7:G:69:VAL:N	2.52	0.41
12:L:49:LEU:HD22	22:X:52:ALA:CB	2.46	0.41
13:M:90:ARG:CB	13:M:97:VAL:HG12	2.51	0.41
14:N:54:ASP:HA	14:N:59:ARG:HG3	2.02	0.41
16:P:6:LEU:HB3	16:P:17:TYR:CD1	2.55	0.41
18:R:18:VAL:HG23	18:R:21:ILE:HG12	2.01	0.41
1:A:7:A:O2'	5:E:126:LYS:HB2	2.20	0.41
1:A:51:A:C6	1:A:353:A:C2	3.08	0.41
1:A:451:A:H5'	16:P:70:ARG:HH22	1.86	0.41
1:A:662:U:H2'	1:A:663:A:C8	2.55	0.41
1:A:706:A:C6	1:A:707:U:N3	2.88	0.41
1:A:1106:G:H2'	1:A:1107:C:C6	2.55	0.41
1:A:1287:A:H2	1:A:1353:G:N3	2.19	0.41
1:A:1375:A:H2'	1:A:1376:U:H6	1.86	0.41
1:A:1384:C:H2'	1:A:1385:G:H8	1.84	0.41
1:A:1418:A:N6	1:A:1482:G:O2'	2.54	0.41
2:B:90:PHE:CZ	2:B:154:MET:HA	2.56	0.41
3:C:16:LYS:HA	3:C:16:LYS:HD2	1.86	0.41
3:C:35:SER:OG	3:C:59:ARG:NH1	2.49	0.41
4:D:13:ARG:HH21	4:D:38:PRO:HA	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:8:ILE:HG23	10:J:74:VAL:HB	2.03	0.41
11:K:34:ILE:HD13	11:K:73:ALA:HB3	2.01	0.41
12:L:120:LYS:HE2	12:L:120:LYS:HB2	1.96	0.41
19:S:16:LEU:HA	19:S:16:LEU:HD23	1.92	0.41
22:X:53:ASP:HA	22:X:56:HIS:CE1	2.56	0.41
1:A:253:A:C4	1:A:254:G:C8	3.09	0.41
1:A:359:G:C4	1:A:360:G:C8	3.09	0.41
1:A:385:C:H2'	1:A:386:C:C6	2.55	0.41
1:A:410:G:C2	1:A:429:U:C2	3.08	0.41
1:A:582:C:N3	1:A:760:G:C6	2.89	0.41
1:A:782:A:C2	1:A:783:C:H1'	2.56	0.41
1:A:1051:C:H2'	1:A:1052:U:O4'	2.20	0.41
1:A:1064:G:O2'	1:A:1190:G:N2	2.54	0.41
1:A:1066:C:H2'	1:A:1067:A:C8	2.49	0.41
1:A:1266:G:C2	1:A:1270:G:C4	3.09	0.41
1:A:1279:G:H5''	10:J:9:ARG:NH2	2.35	0.41
1:A:1375:A:C6	1:A:1376:U:C4	3.08	0.41
2:B:20:THR:O	2:B:23:TRP:HD1	2.04	0.41
4:D:49:SER:O	4:D:53:VAL:HG13	2.21	0.41
5:E:160:SER:OG	5:E:163:GLU:HB2	2.20	0.41
8:H:48:ASP:N	8:H:62:THR:O	2.46	0.41
8:H:73:GLU:OE1	8:H:73:GLU:N	2.53	0.41
8:H:76:GLN:O	8:H:78:VAL:HG13	2.21	0.41
9:I:42:GLU:OE2	9:I:45:ARG:HB2	2.20	0.41
13:M:81:MET:HA	13:M:88:GLY:CA	2.49	0.41
13:M:98:ARG:HB2	13:M:100:GLN:NE2	2.36	0.41
15:O:50:HIS:HD1	15:O:50:HIS:H	1.68	0.41
19:S:34:TRP:CD2	19:S:52:HIS:CE1	3.08	0.41
22:X:68:ILE:HG23	22:X:70:VAL:HG13	2.02	0.41
1:A:27:G:C2	1:A:28:A:C4	3.08	0.41
1:A:240:G:C2	1:A:241:G:C4	3.08	0.41
1:A:256:U:H2'	1:A:257:G:H8	1.86	0.41
1:A:296:U:O2'	1:A:556:C:O2	2.26	0.41
1:A:318:G:H2'	1:A:319:G:C8	2.56	0.41
1:A:362:G:N2	1:A:364:A:H3'	2.36	0.41
1:A:406:G:C2	1:A:437:U:C2	3.09	0.41
1:A:499:A:H1'	1:A:500:G:H8	1.86	0.41
1:A:721:G:C6	1:A:733:G:C2	3.09	0.41
1:A:819:A:C8	1:A:1529:G:C2	3.09	0.41
1:A:921:U:H2'	1:A:922:G:O4'	2.21	0.41
1:A:1015:G:OP2	1:A:1015:G:H8	2.04	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1329:A:OP1	13:M:29:ARG:HG2	2.21	0.41
1:A:1464:U:H2'	1:A:1465:A:H8	1.86	0.41
3:C:71:ALA:O	3:C:73:PRO:HD3	2.21	0.41
10:J:80:THR:H	10:J:83:THR:CG2	2.33	0.41
13:M:85:CYS:SG	13:M:86:TYR:N	2.93	0.41
14:N:51:LEU:HD12	14:N:51:LEU:HA	1.88	0.41
15:O:50:HIS:HA	15:O:53:ARG:HG3	2.02	0.41
19:S:11:ILE:HA	19:S:38:SER:HB3	2.02	0.41
21:V:66:LYS:HD2	21:V:70:LYS:HE3	2.02	0.41
22:X:4:LEU:HD13	22:X:6:GLN:OE1	2.20	0.41
22:X:85:LEU:HB2	22:X:90:HIS:HB3	2.02	0.41
1:A:90:C:O2'	1:A:91:U:P	2.79	0.41
1:A:90:C:H3'	1:A:90:C:OP2	2.21	0.41
1:A:107:G:H21	1:A:108:G:H1'	1.86	0.41
1:A:318:G:C2	1:A:336:A:C4	3.09	0.41
1:A:408:A:H2'	1:A:409:U:O4'	2.21	0.41
1:A:415:A:C5	1:A:416:G:N7	2.89	0.41
1:A:422:C:H4'	1:A:423:G:N3	2.36	0.41
1:A:437:U:H4'	4:D:154:ARG:NH2	2.35	0.41
1:A:448:A:C6	1:A:449:G:C4	3.09	0.41
1:A:472:U:H2'	1:A:473:U:C6	2.56	0.41
1:A:478:A:C6	1:A:479:U:C4	3.09	0.41
1:A:515:G:C6	1:A:516:PSU:C2	3.09	0.41
1:A:516:PSU:O3'	1:A:517:G:O4'	2.38	0.41
1:A:558:G:OP2	1:A:559:A:O2'	2.30	0.41
1:A:606:G:H5''	1:A:607:A:H5'	2.03	0.41
1:A:671:G:N1	1:A:736:C:C4	2.89	0.41
1:A:695:A:C3'	1:A:696:A:H8	2.34	0.41
1:A:846:G:C4	1:A:847:G:C8	3.09	0.41
1:A:979:C:H1'	1:A:1317:C:N4	2.36	0.41
1:A:1037:C:H2'	1:A:1038:C:C6	2.56	0.41
1:A:1130:A:H5'	9:I:20:PHE:CE2	2.56	0.41
1:A:1173:U:H2'	1:A:1174:G:O4'	2.21	0.41
1:A:1177:G:H2'	1:A:1178:G:O4'	2.19	0.41
1:A:1190:G:O5'	1:A:1190:G:H8	2.04	0.41
1:A:1197:A:C2'	1:A:1198:G:H5'	2.51	0.41
1:A:1316:G:H2'	1:A:1317:C:H5''	2.03	0.41
1:A:1318:A:H5''	19:S:7:LYS:NZ	2.36	0.41
1:A:1375:A:H2'	1:A:1376:U:C6	2.55	0.41
1:A:1382:C:H1'	7:G:79:ARG:HB2	2.02	0.41
1:A:1426:G:C5	1:A:1475:G:N1	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1432:G:C2	1:A:1467:C:C2	3.08	0.41
1:A:1453:G:H3'	1:A:1453:G:N3	2.36	0.41
1:A:1512:U:C2	1:A:1513:A:C8	3.09	0.41
3:C:121:THR:O	3:C:124:LEU:HB2	2.21	0.41
4:D:14:ARG:NE	4:D:38:PRO:HD2	2.34	0.41
4:D:116:GLN:HG2	4:D:120:HIS:CE1	2.56	0.41
5:E:156:LYS:HD2	8:H:71:VAL:HA	2.02	0.41
6:F:6:ILE:O	6:F:62:MET:N	2.52	0.41
6:F:106:LYS:HE2	6:F:106:LYS:HB2	1.92	0.41
8:H:101:ILE:HA	8:H:101:ILE:HD13	1.84	0.41
11:K:65:VAL:O	11:K:68:GLU:HG3	2.20	0.41
12:L:44:LYS:CA	22:X:72:TYR:HD2	2.29	0.41
14:N:7:LYS:O	14:N:11:VAL:HG23	2.20	0.41
14:N:63:ARG:HA	14:N:63:ARG:HD3	1.76	0.41
1:A:36:C:H2'	1:A:37:U:C6	2.55	0.41
1:A:81:A:N6	1:A:86:G:C4	2.88	0.41
1:A:105:G:C6	1:A:106:C:N3	2.89	0.41
1:A:142:G:H8	1:A:142:G:OP2	2.04	0.41
1:A:457:G:C6	1:A:458:U:C4	3.09	0.41
1:A:621:A:C6	1:A:622:A:C5	3.09	0.41
1:A:628:G:C6	1:A:629:A:C6	3.09	0.41
1:A:797:C:H2'	1:A:798:U:C6	2.55	0.41
1:A:823:C:N4	1:A:878:A:H61	2.19	0.41
1:A:1086:U:H2'	1:A:1087:G:H8	1.79	0.41
1:A:1106:G:O3'	3:C:172:ARG:HG3	2.21	0.41
1:A:1176:A:H3'	1:A:1177:G:H8	1.86	0.41
1:A:1534:A:H3'	1:A:1535:C:C5	2.55	0.41
3:C:79:LYS:HA	3:C:79:LYS:HD2	1.68	0.41
4:D:116:GLN:HE22	4:D:154:ARG:NH2	2.19	0.41
5:E:62:LYS:HE3	5:E:62:LYS:HB2	1.91	0.41
5:E:82:GLN:N	5:E:147:MET:SD	2.94	0.41
10:J:6:ILE:HG13	10:J:6:ILE:O	2.20	0.41
11:K:127:ARG:HH21	21:V:14:GLU:CG	2.34	0.41
13:M:10:PRO:HB3	13:M:21:SER:OG	2.21	0.41
14:N:27:LEU:HD23	14:N:27:LEU:HA	1.90	0.41
16:P:3:THR:HG22	16:P:22:ALA:O	2.21	0.41
20:T:36:TYR:C	20:T:39:ILE:HG22	2.39	0.41
1:A:217:C:H2'	1:A:218:U:C6	2.57	0.40
1:A:238:A:C5	1:A:239:U:C4	3.10	0.40
1:A:255:G:C2	1:A:272:C:C2	3.09	0.40
1:A:329:A:C5	1:A:332:G:C6	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:515:G:C5	1:A:516:PSU:C2	3.09	0.40
1:A:563:A:H4'	1:A:565:U:H5	1.87	0.40
1:A:856:C:H2'	1:A:857:C:C6	2.56	0.40
1:A:938:A:C5	1:A:939:G:C8	3.09	0.40
1:A:949:A:C4	1:A:1233:G:C2	3.09	0.40
1:A:1058:G:H1	1:A:1199:U:H3	1.69	0.40
1:A:1069:C:N4	1:A:1070:U:O4	2.54	0.40
1:A:1258:G:H2'	1:A:1259:C:C6	2.56	0.40
1:A:1295:U:H2'	1:A:1296:C:C6	2.56	0.40
3:C:83:ASP:HA	3:C:86:LYS:NZ	2.36	0.40
5:E:17:ALA:H	5:E:36:LEU:HB2	1.86	0.40
5:E:115:LEU:O	5:E:120:VAL:HG22	2.22	0.40
11:K:30:THR:C	11:K:31:ILE:HD12	2.42	0.40
14:N:93:ILE:HD13	14:N:93:ILE:HA	1.86	0.40
21:V:26:GLU:OE1	21:V:26:GLU:N	2.54	0.40
1:A:24:U:O2'	1:A:524:G:O2'	2.21	0.40
1:A:36:C:C4	1:A:37:U:C4	3.09	0.40
1:A:82:G:N1	1:A:88:U:N3	2.70	0.40
1:A:120:A:C6	1:A:122:G:C2	3.09	0.40
1:A:132:C:H2'	1:A:133:U:C6	2.56	0.40
1:A:232:G:O2'	1:A:262:A:N6	2.33	0.40
1:A:416:G:H2'	1:A:417:G:C8	2.56	0.40
1:A:539:A:C2	1:A:540:G:C4	3.08	0.40
1:A:624:C:C4	1:A:625:U:C4	3.08	0.40
1:A:776:G:N2	1:A:804:U:O4	2.53	0.40
1:A:838:G:C6	1:A:849:G:C4	3.09	0.40
1:A:1016:A:H3'	1:A:1017:U:O4'	2.22	0.40
1:A:1225:A:H3'	13:M:102:THR:OG1	2.22	0.40
1:A:1236:A:H4'	1:A:1304:G:H4'	2.02	0.40
1:A:1288:A:N1	1:A:1371:G:H1'	2.35	0.40
1:A:1309:G:C6	1:A:1329:A:C6	3.09	0.40
3:C:18:TRP:HE3	3:C:18:TRP:H	1.69	0.40
4:D:59:GLN:O	4:D:63:ARG:N	2.54	0.40
4:D:168:PRO:HB3	4:D:170:TRP:CZ3	2.56	0.40
5:E:149:SER:O	5:E:152:MET:HB2	2.20	0.40
10:J:34:ALA:HB2	10:J:83:THR:HG22	2.03	0.40
16:P:2:VAL:HG13	16:P:65:ALA:HA	2.02	0.40
19:S:31:LEU:O	19:S:49:ILE:HG13	2.21	0.40
1:A:34:C:H2'	1:A:35:G:H8	1.85	0.40
1:A:39:G:C6	1:A:404:G:C6	3.10	0.40
1:A:119:A:H4'	1:A:120:A:C4	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:168:G:C4	1:A:169:C:C5	3.09	0.40
1:A:243:A:C5	1:A:281:G:N2	2.89	0.40
1:A:499:A:HO2'	1:A:500:G:H8	1.69	0.40
1:A:520:A:C2	1:A:521:G:H1'	2.57	0.40
1:A:537:G:N3	1:A:538:G:C8	2.89	0.40
1:A:557:G:C6	1:A:558:G:C2	3.10	0.40
1:A:582:C:C2	1:A:583:A:C8	3.09	0.40
1:A:689:C:H3'	1:A:690:G:H8	1.87	0.40
1:A:773:G:N1	1:A:807:A:C6	2.90	0.40
1:A:1057:G:C6	1:A:1058:G:C4	3.10	0.40
1:A:1060:U:C6	3:C:3:GLN:HG2	2.56	0.40
1:A:1156:G:H5''	1:A:1156:G:C8	2.56	0.40
1:A:1278:G:H4'	1:A:1279:G:N3	2.36	0.40
1:A:1426:G:C6	1:A:1475:G:C6	3.09	0.40
1:A:1489:G:C8	1:A:1490:U:C5	3.10	0.40
3:C:36:ASP:O	3:C:39:VAL:HG22	2.22	0.40
3:C:65:ARG:HD3	3:C:100:GLN:HG3	2.03	0.40
3:C:148:GLY:O	3:C:202:ILE:HA	2.21	0.40
4:D:62:ARG:NH2	4:D:69:GLU:N	2.70	0.40
6:F:21:MET:HB2	6:F:24:ARG:NH2	2.36	0.40
14:N:51:LEU:HD12	14:N:52:PRO:HD2	2.03	0.40
15:O:3:LEU:HD23	15:O:3:LEU:HA	1.86	0.40
1:A:82:G:C2	1:A:88:U:C2	3.10	0.40
1:A:508:U:H4'	4:D:51:TYR:CE2	2.56	0.40
1:A:650:G:C6	1:A:651:C:C4	3.09	0.40
1:A:679:C:N4	1:A:711:G:O6	2.35	0.40
1:A:683:G:C2	1:A:708:C:C2	3.10	0.40
1:A:683:G:C6	1:A:708:C:N3	2.89	0.40
1:A:951:G:C6	1:A:1231:G:C6	3.10	0.40
1:A:1078:U:H3'	1:A:1079:G:H8	1.87	0.40
1:A:1165:U:H5'	1:A:1166:G:OP2	2.21	0.40
1:A:1268:G:H21	1:A:1327:C:C4'	2.35	0.40
1:A:1345:U:H5''	9:I:122:ARG:HH11	1.86	0.40
4:D:124:MET:SD	4:D:129:VAL:HG22	2.61	0.40
5:E:151:GLU:H	5:E:151:GLU:CD	2.17	0.40
7:G:94:VAL:O	7:G:97:ASN:HB2	2.21	0.40
10:J:85:ASP:O	10:J:89:ARG:N	2.46	0.40
21:V:80:ARG:NH1	21:V:94:GLU:HA	2.34	0.40
1:A:182:A:N7	1:A:184:G:C5	2.89	0.40
1:A:356:A:C5	1:A:357:G:C8	3.09	0.40
1:A:416:G:C6	1:A:417:G:C6	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:419:C:N3	1:A:425:G:C2	2.89	0.40
1:A:515:G:C4	1:A:516:PSU:C6	3.10	0.40
1:A:573:A:H2'	1:A:574:A:C8	2.56	0.40
1:A:628:G:C6	1:A:629:A:C5	3.10	0.40
1:A:656:G:H1	1:A:750:C:N4	2.20	0.40
1:A:736:C:N3	1:A:737:C:C4	2.90	0.40
1:A:779:C:N4	1:A:780:A:C6	2.89	0.40
1:A:932:C:H5'	7:G:4:ARG:CZ	2.51	0.40
1:A:977:A:O2'	1:A:981:U:N3	2.54	0.40
1:A:1091:U:H1'	1:A:1095:U:C2	2.56	0.40
1:A:1207:2MG:C6	1:A:1208:C:C4	3.10	0.40
1:A:1219:A:H2'	1:A:1220:G:H8	1.85	0.40
1:A:1226:C:H2'	13:M:102:THR:O	2.22	0.40
1:A:1251:A:H2'	1:A:1252:A:O4'	2.21	0.40
1:A:1253:G:N2	1:A:1356:G:OP1	2.49	0.40
1:A:1296:C:H3'	1:A:1297:G:H8	1.86	0.40
3:C:22:TRP:HB3	3:C:59:ARG:N	2.33	0.40
6:F:29:ILE:HA	6:F:29:ILE:HD13	1.88	0.40
8:H:11:LEU:O	8:H:15:ARG:N	2.35	0.40
10:J:35:GLN:O	10:J:76:ILE:HA	2.21	0.40
13:M:14:HIS:HB3	13:M:42:ASP:HA	2.03	0.40
16:P:20:VAL:HG12	16:P:35:ARG:CB	2.38	0.40
19:S:34:TRP:HE3	19:S:34:TRP:H	1.70	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	222/241 (92%)	217 (98%)	5 (2%)	0	100	100
3	C	209/233 (90%)	190 (91%)	19 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	D	203/206 (98%)	191 (94%)	12 (6%)	0	100	100
5	E	154/167 (92%)	145 (94%)	9 (6%)	0	100	100
6	F	104/135 (77%)	97 (93%)	7 (7%)	0	100	100
7	G	149/179 (83%)	137 (92%)	12 (8%)	0	100	100
8	H	127/130 (98%)	118 (93%)	9 (7%)	0	100	100
9	I	125/130 (96%)	109 (87%)	16 (13%)	0	100	100
10	J	97/103 (94%)	91 (94%)	6 (6%)	0	100	100
11	K	115/129 (89%)	107 (93%)	8 (7%)	0	100	100
12	L	120/124 (97%)	114 (95%)	6 (5%)	0	100	100
13	M	112/118 (95%)	97 (87%)	15 (13%)	0	100	100
14	N	98/101 (97%)	88 (90%)	10 (10%)	0	100	100
15	O	86/89 (97%)	82 (95%)	4 (5%)	0	100	100
16	P	80/82 (98%)	76 (95%)	4 (5%)	0	100	100
17	Q	78/84 (93%)	72 (92%)	6 (8%)	0	100	100
18	R	63/75 (84%)	60 (95%)	3 (5%)	0	100	100
19	S	80/92 (87%)	71 (89%)	9 (11%)	0	100	100
20	T	84/87 (97%)	78 (93%)	6 (7%)	0	100	100
21	V	97/133 (73%)	93 (96%)	4 (4%)	0	100	100
22	X	149/151 (99%)	140 (94%)	9 (6%)	0	100	100
All	All	2552/2789 (92%)	2373 (93%)	179 (7%)	0	100	100

There are no Ramachandran outliers to report.

### 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 PDB entries followed by that with respect to all EM entries.

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	186/199 (94%)	186 (100%)	0	100	100
3	C	172/190 (90%)	172 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	D	172/173 (99%)	171 (99%)	1 (1%)	86	92
5	E	119/126 (94%)	118 (99%)	1 (1%)	81	89
6	F	92/116 (79%)	92 (100%)	0	100	100
7	G	124/147 (84%)	124 (100%)	0	100	100
8	H	104/105 (99%)	104 (100%)	0	100	100
9	I	105/107 (98%)	105 (100%)	0	100	100
10	J	87/90 (97%)	87 (100%)	0	100	100
11	K	90/99 (91%)	90 (100%)	0	100	100
12	L	102/103 (99%)	102 (100%)	0	100	100
13	M	92/96 (96%)	92 (100%)	0	100	100
14	N	83/84 (99%)	83 (100%)	0	100	100
15	O	76/77 (99%)	76 (100%)	0	100	100
16	P	65/65 (100%)	65 (100%)	0	100	100
17	Q	74/78 (95%)	74 (100%)	0	100	100
18	R	56/65 (86%)	56 (100%)	0	100	100
19	S	72/79 (91%)	72 (100%)	0	100	100
20	T	65/66 (98%)	65 (100%)	0	100	100
21	V	84/116 (72%)	84 (100%)	0	100	100
22	X	130/130 (100%)	130 (100%)	0	100	100
All	All	2150/2311 (93%)	2148 (100%)	2 (0%)	93	96

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	D	83	LYS
5	E	78	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	122	GLN
5	E	70	ASN
5	E	73	ASN
5	E	121	HIS

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Mol	Chain	Res	Type
5	E	135	ASN
7	G	122	ASN
8	H	21	ASN
8	H	76	GLN
10	J	56	HIS
11	K	24	HIS
11	K	29	ASN
11	K	81	ASN
11	K	118	HIS
12	L	5	ASN
15	O	37	ASN
15	O	40	GLN
15	O	42	HIS
16	P	29	ASN
16	P	79	ASN
18	R	52	GLN
20	T	20	HIS
20	T	84	ASN
21	V	16	GLN
21	V	24	GLN
21	V	58	ASN
21	V	73	GLN
22	X	140	ASN

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1505/1542 (97%)	438 (29%)	22 (1%)

All (438) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G
1	A	9	G
1	A	13	U
1	A	16	A
1	A	22	G
1	A	29	U
1	A	31	G
1	A	39	G
1	A	47	C

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Mol	Chain	Res	Type
1	A	48	C
1	A	50	A
1	A	51	A
1	A	69	G
1	A	71	A
1	A	72	A
1	A	73	C
1	A	74	A
1	A	75	G
1	A	76	G
1	A	79	G
1	A	80	A
1	A	83	C
1	A	84	U
1	A	85	U
1	A	86	G
1	A	87	C
1	A	89	U
1	A	90	C
1	A	91	U
1	A	95	C
1	A	109	A
1	A	120	A
1	A	121	U
1	A	122	G
1	A	130	A
1	A	131	A
1	A	134	G
1	A	141	G
1	A	142	G
1	A	144	G
1	A	148	G
1	A	149	A
1	A	158	G
1	A	163	C
1	A	166	U
1	A	168	G
1	A	170	U
1	A	173	U
1	A	179	A
1	A	181	A
1	A	183	C

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Mol	Chain	Res	Type
1	A	184	G
1	A	195	A
1	A	196	A
1	A	197	A
1	A	203	G
1	A	204	G
1	A	206	C
1	A	210	C
1	A	212	G
1	A	226	G
1	A	236	A
1	A	240	G
1	A	243	A
1	A	244	U
1	A	245	U
1	A	246	A
1	A	247	G
1	A	249	U
1	A	251	G
1	A	263	A
1	A	264	C
1	A	266	G
1	A	267	C
1	A	276	G
1	A	278	G
1	A	280	C
1	A	289	G
1	A	328	C
1	A	329	A
1	A	330	C
1	A	332	G
1	A	334	C
1	A	336	A
1	A	348	G
1	A	351	G
1	A	352	C
1	A	354	G
1	A	356	A
1	A	363	A
1	A	365	U
1	A	366	A
1	A	367	U

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Mol	Chain	Res	Type
1	A	369	G
1	A	372	C
1	A	375	U
1	A	381	C
1	A	390	U
1	A	392	C
1	A	397	A
1	A	398	U
1	A	406	G
1	A	411	A
1	A	412	A
1	A	413	G
1	A	414	A
1	A	421	U
1	A	422	C
1	A	423	G
1	A	424	G
1	A	426	U
1	A	429	U
1	A	430	A
1	A	435	A
1	A	451	A
1	A	456	A
1	A	457	G
1	A	458	U
1	A	459	A
1	A	467	U
1	A	468	A
1	A	469	C
1	A	474	G
1	A	475	C
1	A	481	G
1	A	484	G
1	A	486	U
1	A	488	C
1	A	493	A
1	A	496	A
1	A	497	G
1	A	509	A
1	A	510	A
1	A	511	C
1	A	515	G

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Mol	Chain	Res	Type
1	A	516	PSU
1	A	517	G
1	A	518	C
1	A	519	C
1	A	520	A
1	A	524	G
1	A	527	G7M
1	A	528	C
1	A	531	U
1	A	532	A
1	A	533	A
1	A	534	U
1	A	547	A
1	A	559	A
1	A	562	U
1	A	564	C
1	A	567	G
1	A	572	A
1	A	573	A
1	A	576	C
1	A	577	G
1	A	591	U
1	A	593	U
1	A	595	A
1	A	596	A
1	A	603	U
1	A	607	A
1	A	618	C
1	A	633	G
1	A	639	G
1	A	640	A
1	A	653	U
1	A	654	G
1	A	661	G
1	A	665	A
1	A	675	A
1	A	676	A
1	A	677	U
1	A	682	G
1	A	686	U
1	A	687	A
1	A	688	G

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Mol	Chain	Res	Type
1	A	693	G
1	A	696	A
1	A	697	U
1	A	698	G
1	A	700	G
1	A	701	U
1	A	702	A
1	A	703	G
1	A	704	A
1	A	708	C
1	A	709	U
1	A	714	G
1	A	720	C
1	A	721	G
1	A	722	G
1	A	723	U
1	A	727	G
1	A	731	G
1	A	735	C
1	A	736	C
1	A	755	G
1	A	763	G
1	A	774	G
1	A	777	A
1	A	785	G
1	A	788	U
1	A	790	A
1	A	792	A
1	A	793	U
1	A	794	A
1	A	807	A
1	A	809	G
1	A	810	C
1	A	813	U
1	A	814	A
1	A	815	A
1	A	817	C
1	A	818	G
1	A	819	A
1	A	820	U
1	A	821	G
1	A	828	U

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Mol	Chain	Res	Type
1	A	829	G
1	A	832	G
1	A	836	G
1	A	839	C
1	A	840	C
1	A	849	G
1	A	852	G
1	A	858	G
1	A	867	G
1	A	872	A
1	A	876	C
1	A	884	U
1	A	885	G
1	A	894	G
1	A	901	A
1	A	902	G
1	A	914	A
1	A	921	U
1	A	924	C
1	A	925	G
1	A	926	G
1	A	927	G
1	A	934	C
1	A	935	A
1	A	939	G
1	A	954	G
1	A	958	A
1	A	959	A
1	A	960	U
1	A	961	U
1	A	965	U
1	A	966	2MG
1	A	968	A
1	A	969	A
1	A	971	G
1	A	975	A
1	A	976	G
1	A	977	A
1	A	982	U
1	A	983	A
1	A	984	C
1	A	989	U

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Mol	Chain	Res	Type
1	A	992	U
1	A	993	G
1	A	994	A
1	A	995	C
1	A	999	C
1	A	1000	A
1	A	1001	C
1	A	1002	G
1	A	1003	G
1	A	1004	A
1	A	1014	A
1	A	1016	A
1	A	1017	U
1	A	1018	G
1	A	1020	G
1	A	1030	U
1	A	1031	C
1	A	1032	G
1	A	1037	C
1	A	1038	C
1	A	1042	A
1	A	1043	G
1	A	1044	A
1	A	1045	C
1	A	1053	G
1	A	1054	C
1	A	1064	G
1	A	1065	U
1	A	1067	A
1	A	1071	C
1	A	1076	U
1	A	1084	G
1	A	1086	U
1	A	1094	G
1	A	1095	U
1	A	1097	C
1	A	1101	A
1	A	1104	G
1	A	1106	G
1	A	1108	G
1	A	1112	C
1	A	1124	G

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Mol	Chain	Res	Type
1	A	1125	U
1	A	1127	G
1	A	1130	A
1	A	1132	C
1	A	1133	G
1	A	1134	G
1	A	1135	U
1	A	1136	C
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1141	C
1	A	1146	A
1	A	1150	A
1	A	1151	A
1	A	1152	A
1	A	1154	G
1	A	1155	A
1	A	1157	A
1	A	1158	C
1	A	1159	U
1	A	1160	G
1	A	1162	C
1	A	1165	U
1	A	1166	G
1	A	1168	U
1	A	1179	A
1	A	1182	G
1	A	1184	G
1	A	1191	A
1	A	1192	C
1	A	1193	G
1	A	1196	A
1	A	1197	A
1	A	1198	G
1	A	1200	C
1	A	1201	A
1	A	1209	C
1	A	1211	U
1	A	1212	U
1	A	1213	A

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Mol	Chain	Res	Type
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1228	C
1	A	1238	A
1	A	1239	A
1	A	1241	G
1	A	1250	A
1	A	1253	G
1	A	1257	A
1	A	1258	G
1	A	1260	G
1	A	1264	U
1	A	1270	G
1	A	1279	G
1	A	1280	A
1	A	1285	A
1	A	1286	U
1	A	1287	A
1	A	1288	A
1	A	1296	C
1	A	1297	G
1	A	1298	U
1	A	1299	A
1	A	1300	G
1	A	1302	C
1	A	1303	C
1	A	1305	G
1	A	1317	C
1	A	1319	A
1	A	1320	C
1	A	1322	C
1	A	1323	G
1	A	1331	G
1	A	1332	A
1	A	1333	A
1	A	1334	G
1	A	1336	C
1	A	1337	G
1	A	1342	C
1	A	1344	C
1	A	1346	A

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Mol	Chain	Res	Type
1	A	1347	G
1	A	1348	U
1	A	1350	A
1	A	1352	C
1	A	1363	A
1	A	1368	A
1	A	1370	G
1	A	1373	G
1	A	1378	C
1	A	1379	G
1	A	1381	U
1	A	1384	C
1	A	1394	A
1	A	1395	C
1	A	1412	C
1	A	1414	U
1	A	1415	G
1	A	1420	U
1	A	1426	G
1	A	1429	A
1	A	1430	A
1	A	1432	G
1	A	1433	A
1	A	1441	A
1	A	1443	C
1	A	1446	A
1	A	1448	C
1	A	1451	U
1	A	1452	C
1	A	1453	G
1	A	1454	G
1	A	1470	U
1	A	1471	U
1	A	1473	G
1	A	1475	G
1	A	1479	C
1	A	1486	G
1	A	1488	G
1	A	1489	G
1	A	1490	U
1	A	1491	G
1	A	1508	A

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Mol	Chain	Res	Type
1	A	1509	C
1	A	1520	C
1	A	1524	C
1	A	1529	G
1	A	1530	G
1	A	1532	U
1	A	1533	C
1	A	1534	A
1	A	1536	C

All (22) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	13	U
1	A	30	U
1	A	78	A
1	A	428	G
1	A	429	U
1	A	531	U
1	A	561	U
1	A	776	G
1	A	789	U
1	A	884	U
1	A	953	G
1	A	968	A
1	A	983	A
1	A	999	C
1	A	1103	C
1	A	1156	G
1	A	1158	C
1	A	1159	U
1	A	1208	C
1	A	1286	U
1	A	1297	G
1	A	1298	U

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

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

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	5MC	A	967	1	18,22,23	0.98	2 (11%)	26,32,35	1.24	3 (11%)
1	G7M	A	527	1	20,26,27	0.92	1 (5%)	17,39,42	1.10	1 (5%)
1	2MG	A	1207	1	18,26,27	1.05	1 (5%)	16,38,41	1.13	3 (18%)
1	MA6	A	1518	1	19,26,27	1.03	1 (5%)	18,38,41	1.77	5 (27%)
1	MA6	A	1519	1	19,26,27	0.99	1 (5%)	18,38,41	1.98	6 (33%)
1	2MG	A	966	1	18,26,27	1.03	1 (5%)	16,38,41	1.42	3 (18%)
1	PSU	A	516	1	18,21,22	1.42	4 (22%)	22,30,33	2.23	6 (27%)
12	D2T	L	89	12	7,9,10	1.04	1 (14%)	6,11,13	1.73	1 (16%)
1	2MG	A	1516	1	18,26,27	0.89	1 (5%)	16,38,41	1.46	4 (25%)

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
1	5MC	A	967	1	-	0/7/25/26	0/2/2/2
1	G7M	A	527	1	-	1/3/25/26	0/3/3/3
1	2MG	A	1207	1	-	1/5/27/28	0/3/3/3
1	MA6	A	1518	1	-	4/7/29/30	0/3/3/3
1	MA6	A	1519	1	-	4/7/29/30	0/3/3/3
1	2MG	A	966	1	-	0/5/27/28	0/3/3/3
1	PSU	A	516	1	-	2/7/25/26	0/2/2/2
12	D2T	L	89	12	-	3/7/12/14	-
1	2MG	A	1516	1	-	2/5/27/28	0/3/3/3

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	516	PSU	C4-N3	-3.23	1.32	1.38
1	A	1207	2MG	C6-N1	-3.11	1.33	1.37
1	A	527	G7M	C8-N9	2.91	1.38	1.33
1	A	967	5MC	C6-C5	2.69	1.39	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	L	89	D2T	O-C	2.68	1.30	1.19
1	A	1519	MA6	C5-C4	2.55	1.47	1.40
1	A	1518	MA6	C5-C4	2.53	1.47	1.40
1	A	1516	2MG	C6-N1	-2.43	1.34	1.37
1	A	966	2MG	C6-N1	-2.35	1.34	1.37
1	A	967	5MC	C6-N1	-2.33	1.34	1.38
1	A	516	PSU	C6-C5	2.03	1.37	1.35
1	A	516	PSU	C2-N3	-2.02	1.34	1.37
1	A	516	PSU	O4'-C1'	-2.01	1.41	1.43

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	516	PSU	N1-C2-N3	6.67	122.69	115.13
1	A	516	PSU	C4-N3-C2	-4.65	119.64	126.34
1	A	1519	MA6	N1-C6-N6	4.12	121.39	117.06
1	A	1516	2MG	CM2-N2-C2	-3.73	115.61	123.86
1	A	516	PSU	O2-C2-N1	-3.68	118.74	122.79
1	A	1518	MA6	C4-C5-N7	-3.47	105.78	109.40
1	A	1518	MA6	N3-C2-N1	-3.46	123.27	128.68
1	A	1519	MA6	C10-N6-C6	-3.32	109.45	119.51
1	A	1518	MA6	C9-N6-C6	-3.29	109.56	119.51
1	A	967	5MC	C5-C6-N1	-3.25	120.00	123.34
1	A	1519	MA6	C9-N6-C6	-3.24	109.72	119.51
1	A	1519	MA6	N3-C2-N1	-3.16	123.74	128.68
1	A	1519	MA6	C10-N6-C9	-3.14	106.01	116.12
12	L	89	D2T	O-C-CA	-3.12	116.59	124.78
1	A	516	PSU	C5-C6-N1	-3.10	117.46	122.11
1	A	966	2MG	C3'-C2'-C1'	3.03	105.54	100.98
1	A	1518	MA6	C10-N6-C6	-2.81	111.02	119.51
1	A	1519	MA6	C4-C5-N7	-2.55	106.74	109.40
1	A	1516	2MG	C5-C6-N1	2.51	118.38	113.95
1	A	967	5MC	C5-C4-N3	-2.44	119.04	121.67
1	A	966	2MG	C8-N7-C5	2.36	107.49	102.99
1	A	966	2MG	C5-C6-N1	2.36	118.11	113.95
1	A	1516	2MG	C8-N7-C5	2.29	107.36	102.99
1	A	516	PSU	C6-C5-C4	2.28	119.79	118.20
1	A	1207	2MG	C8-N7-C5	2.27	107.32	102.99
1	A	1207	2MG	CM2-N2-C2	-2.24	118.91	123.86
1	A	1207	2MG	C5-C6-N1	2.24	117.91	113.95
1	A	967	5MC	C3'-C2'-C1'	2.19	105.59	101.43
1	A	516	PSU	O4'-C1'-C2'	2.12	108.14	105.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1518	MA6	C10-N6-C9	-2.12	109.29	116.12
1	A	1516	2MG	O6-C6-C5	-2.07	120.32	124.37
1	A	527	G7M	C3'-C2'-C1'	-2.02	97.93	100.98

There are no chirality outliers.

All (17) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1207	2MG	N3-C2-N2-CM2
1	A	1516	2MG	N1-C2-N2-CM2
1	A	1516	2MG	N3-C2-N2-CM2
1	A	1518	MA6	O4'-C4'-C5'-O5'
1	A	1519	MA6	O4'-C4'-C5'-O5'
1	A	1519	MA6	C3'-C4'-C5'-O5'
1	A	516	PSU	C3'-C4'-C5'-O5'
1	A	1518	MA6	C3'-C4'-C5'-O5'
1	A	516	PSU	O4'-C4'-C5'-O5'
1	A	1518	MA6	C5-C6-N6-C10
12	L	89	D2T	CG-CB-SB-CB1
1	A	1519	MA6	C4'-C5'-O5'-P
1	A	527	G7M	C4'-C5'-O5'-P
1	A	1519	MA6	C5-C6-N6-C10
1	A	1518	MA6	C4'-C5'-O5'-P
12	L	89	D2T	CA-CB-SB-CB1
12	L	89	D2T	SB-CB-CG-OD2

There are no ring outliers.

6 monomers are involved in 26 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	527	G7M	1	0
1	A	1207	2MG	10	0
1	A	1518	MA6	7	0
1	A	1519	MA6	6	0
1	A	516	PSU	5	0
1	A	1516	2MG	5	0

## 5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

## 5.6 Ligand geometry

Of 38 ligands modelled in this entry, 38 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

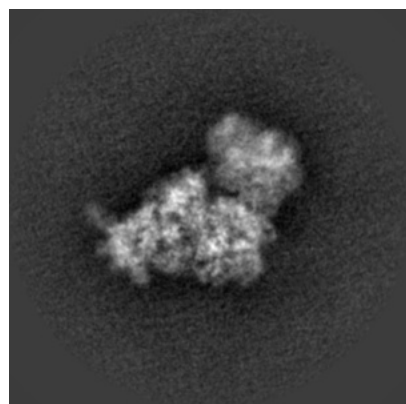
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-12249. These allow visual inspection of the internal detail of the map and identification of artifacts.

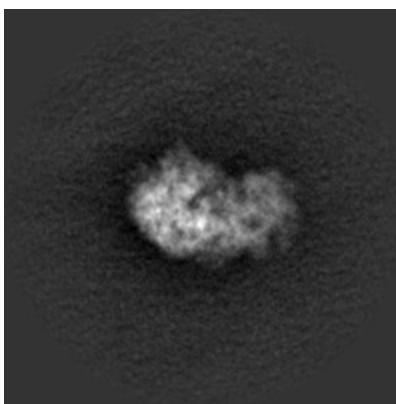
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

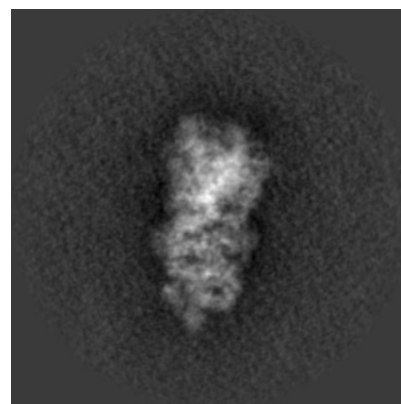
#### 6.1.1 Primary map



X

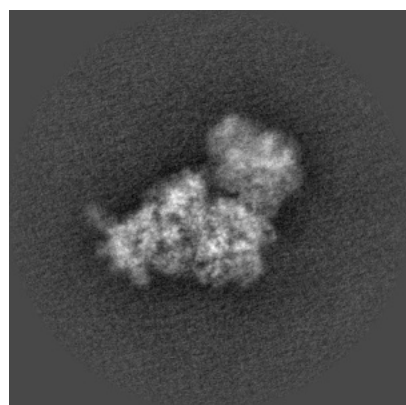


Y

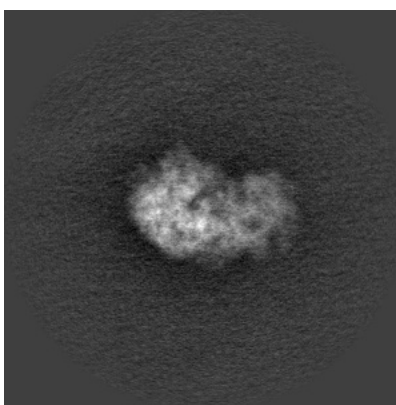


Z

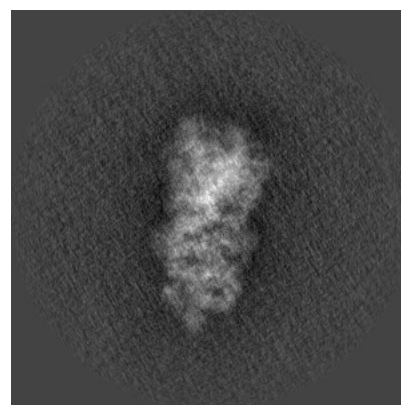
#### 6.1.2 Raw map



X



Y

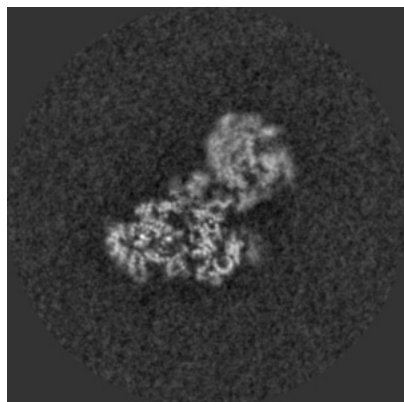


Z

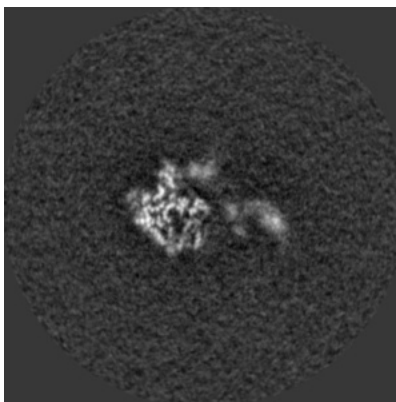
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

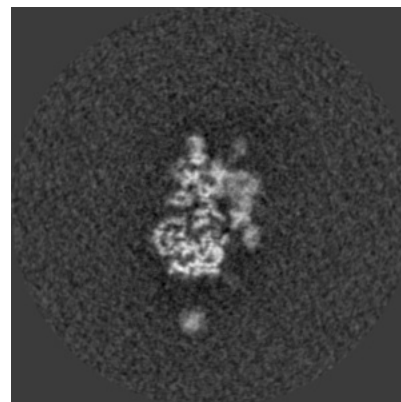
### 6.2.1 Primary map



X Index: 192

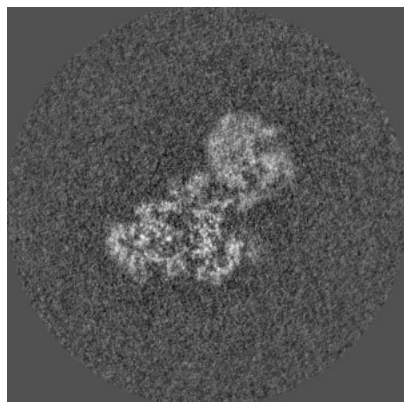


Y Index: 192

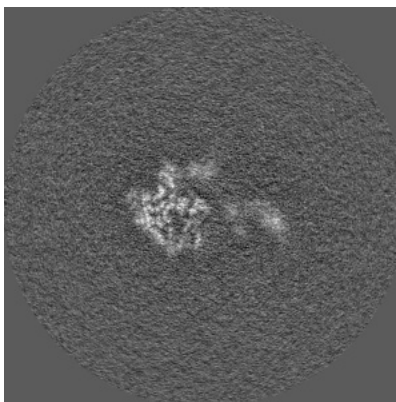


Z Index: 192

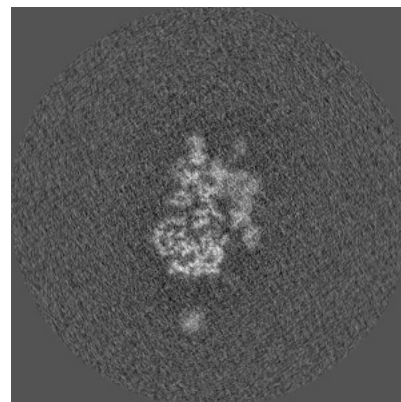
### 6.2.2 Raw map



X Index: 192



Y Index: 192



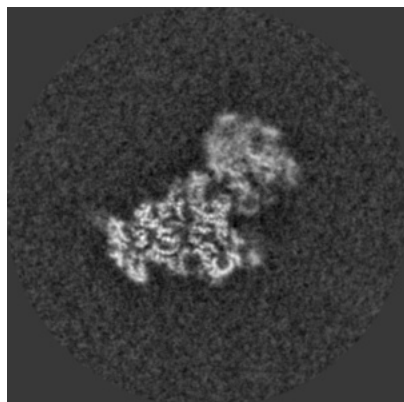
Z Index: 192

The images above show central slices of the map in three orthogonal directions.

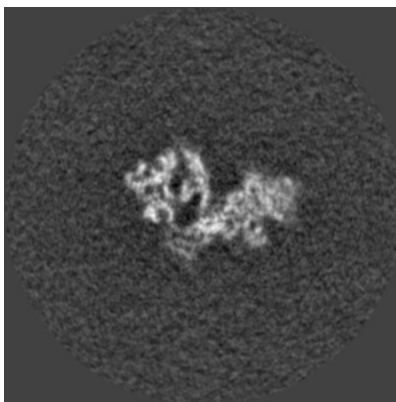


## 6.3 Largest variance slices [i](#)

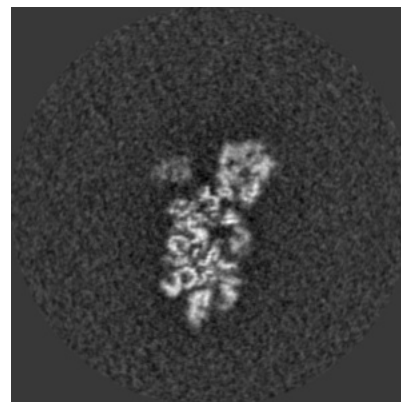
### 6.3.1 Primary map



X Index: 188

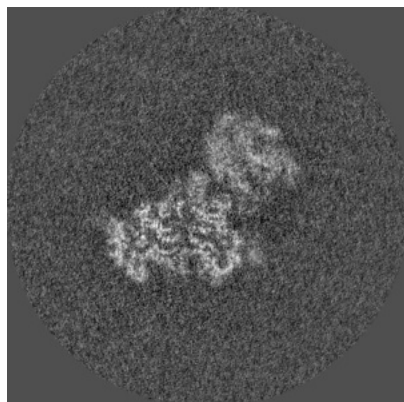


Y Index: 222

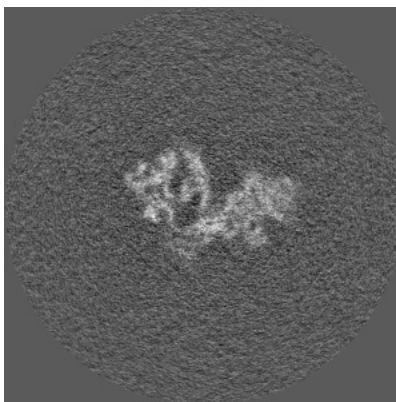


Z Index: 175

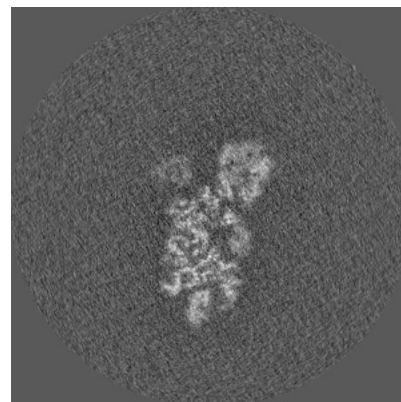
### 6.3.2 Raw map



X Index: 189



Y Index: 222

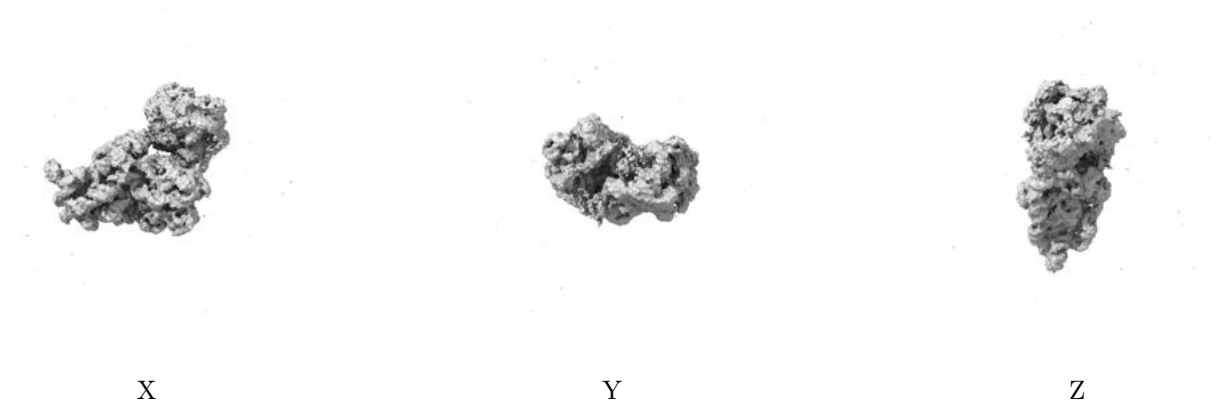


Z Index: 176

The images above show the largest variance slices of the map in three orthogonal directions.

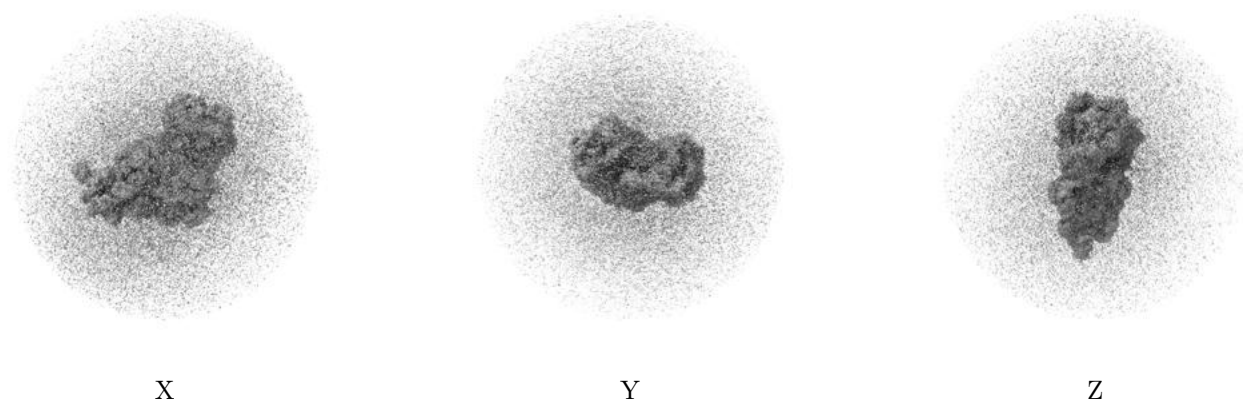
## 6.4 Orthogonal surface views [i](#)

### 6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.016. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.4.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

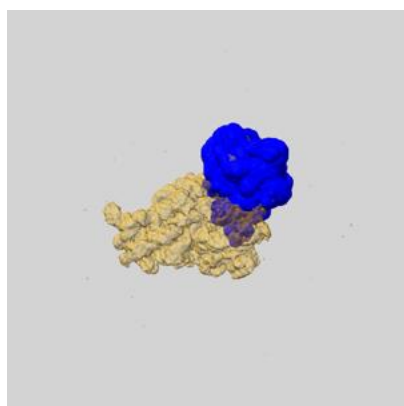
## 6.5 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

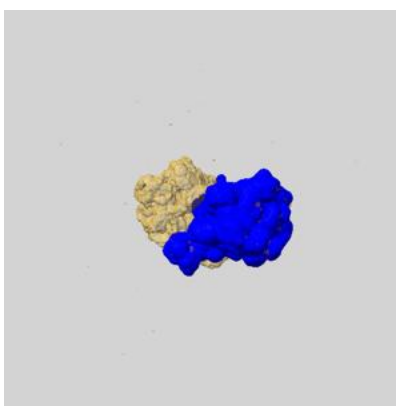
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

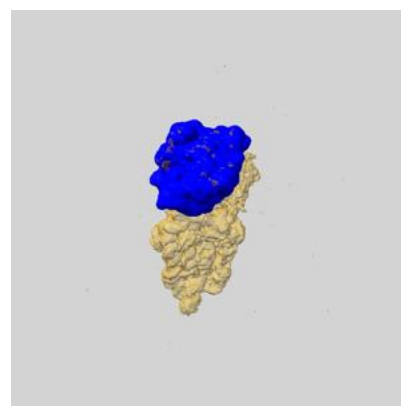
### 6.5.1 emd\_12249\_msk\_2.map [i](#)



X

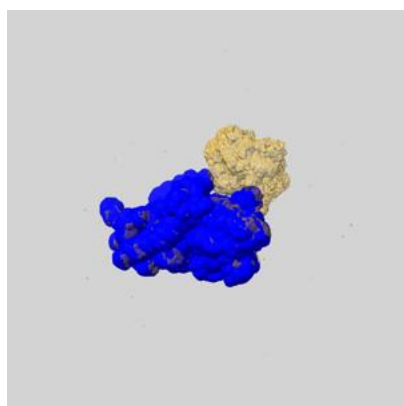


Y

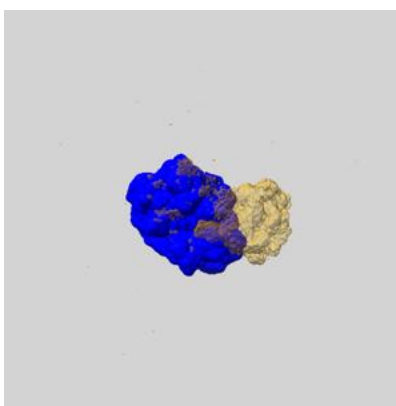


Z

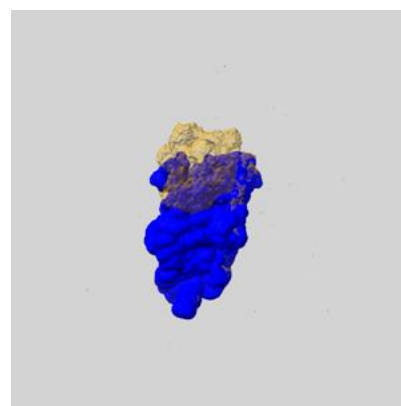
### 6.5.2 emd\_12249\_msk\_1.map [i](#)



X



Y

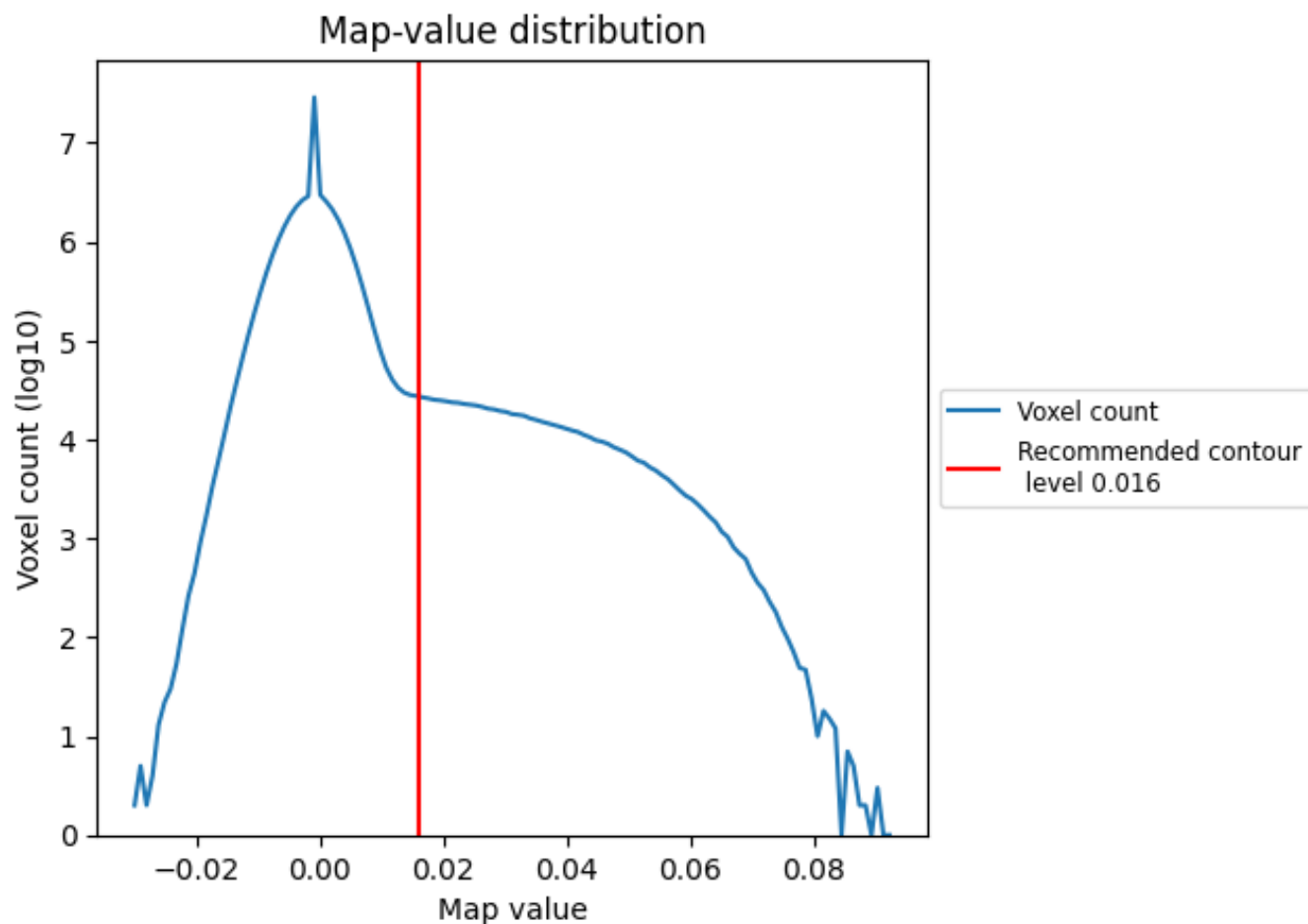


Z

## 7 Map analysis [i](#)

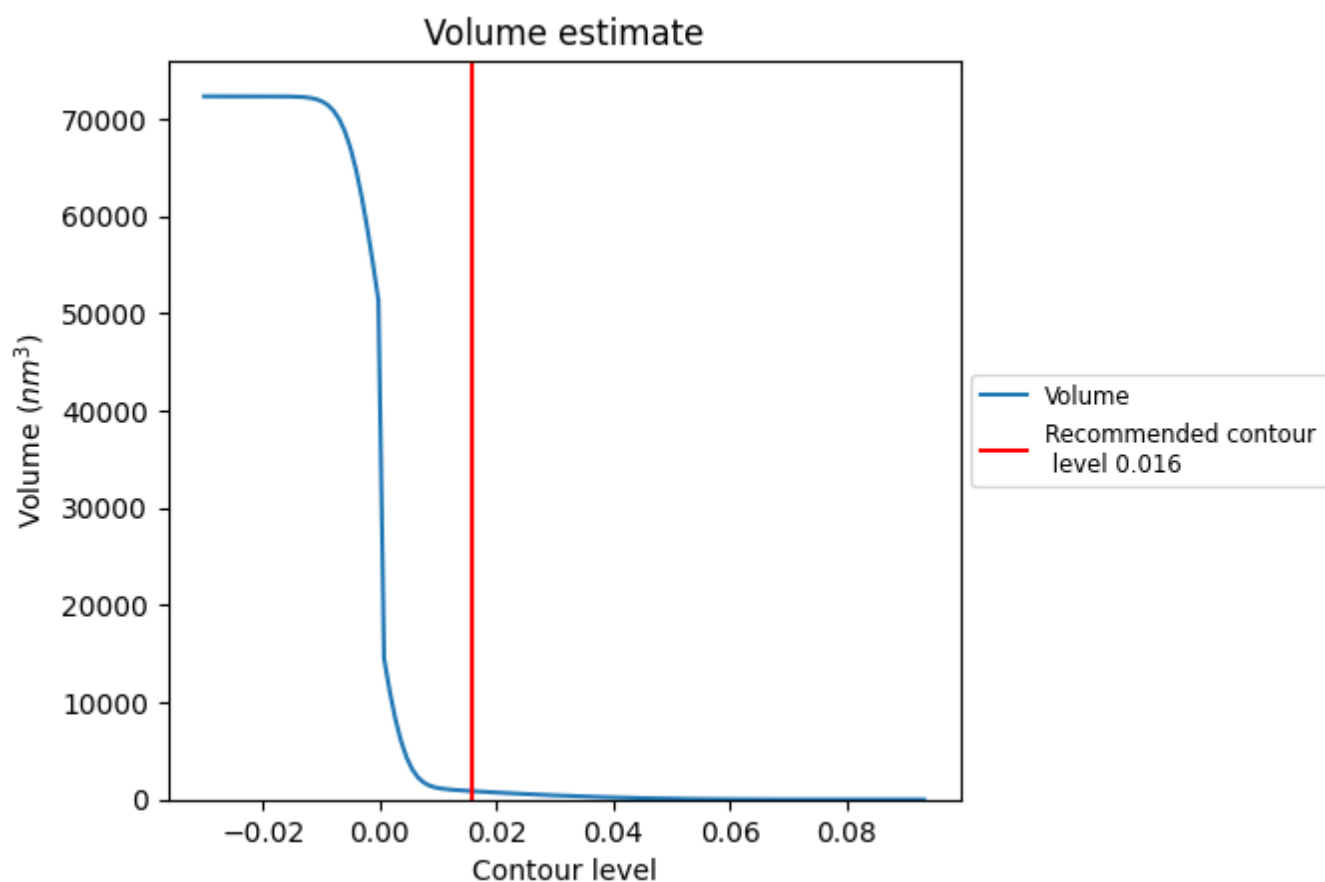
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

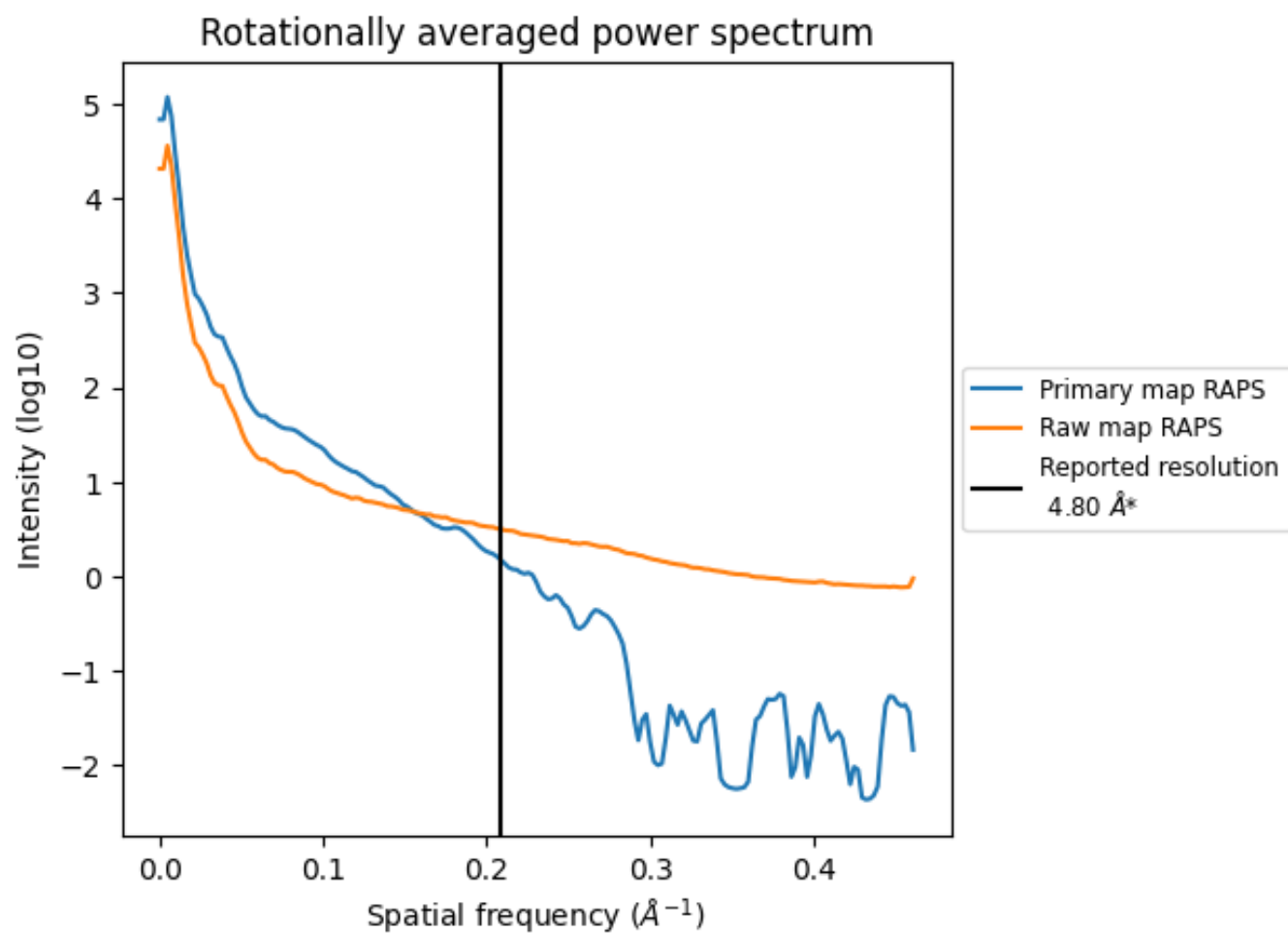
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 861 nm<sup>3</sup>; this corresponds to an approximate mass of 778 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

### 7.3 Rotationally averaged power spectrum ⓘ

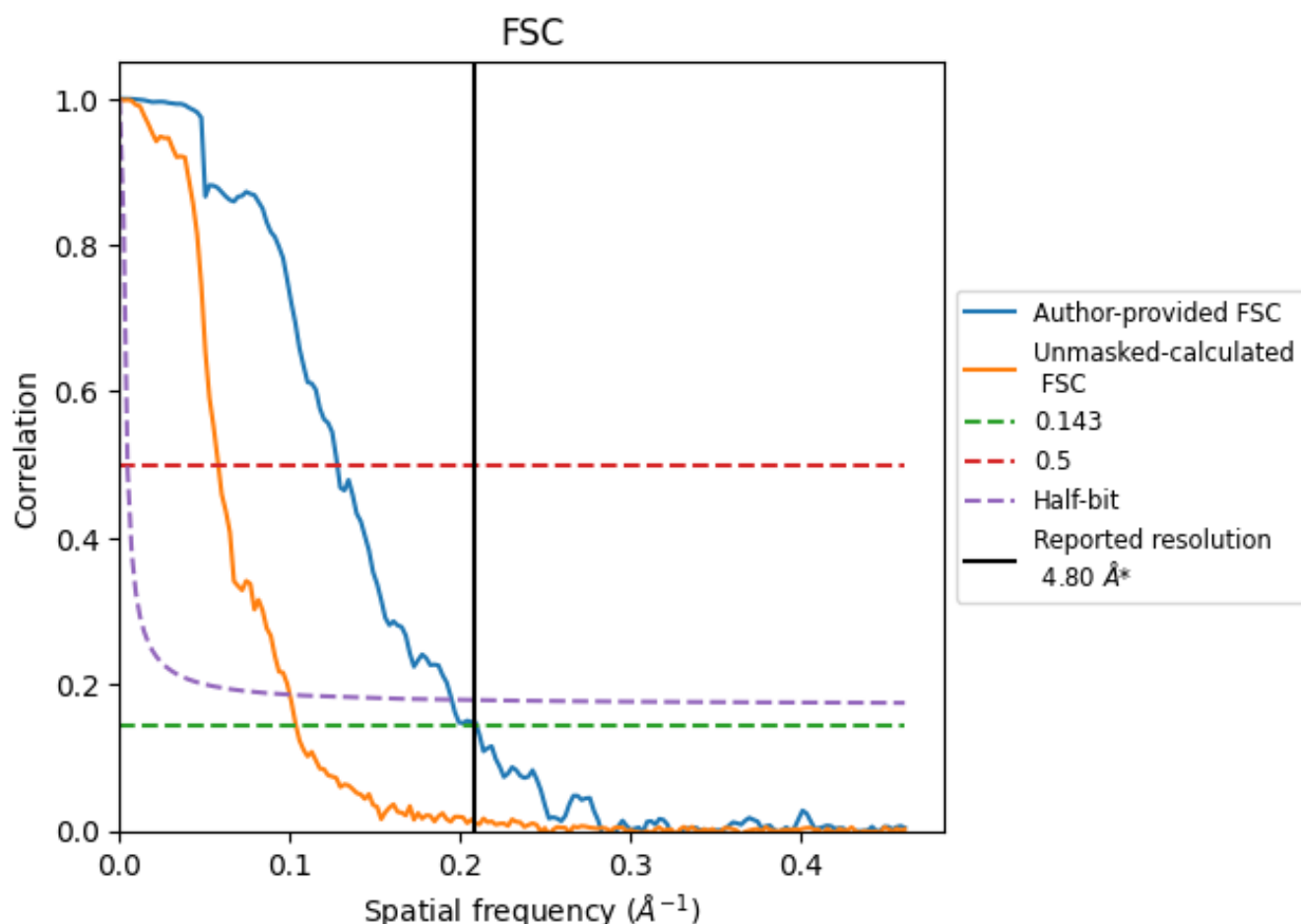


\*Reported resolution corresponds to spatial frequency of 0.208 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.208 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.80	-	-
Author-provided FSC curve	4.77	7.82	5.13
Unmasked-calculated*	9.65	17.24	10.01

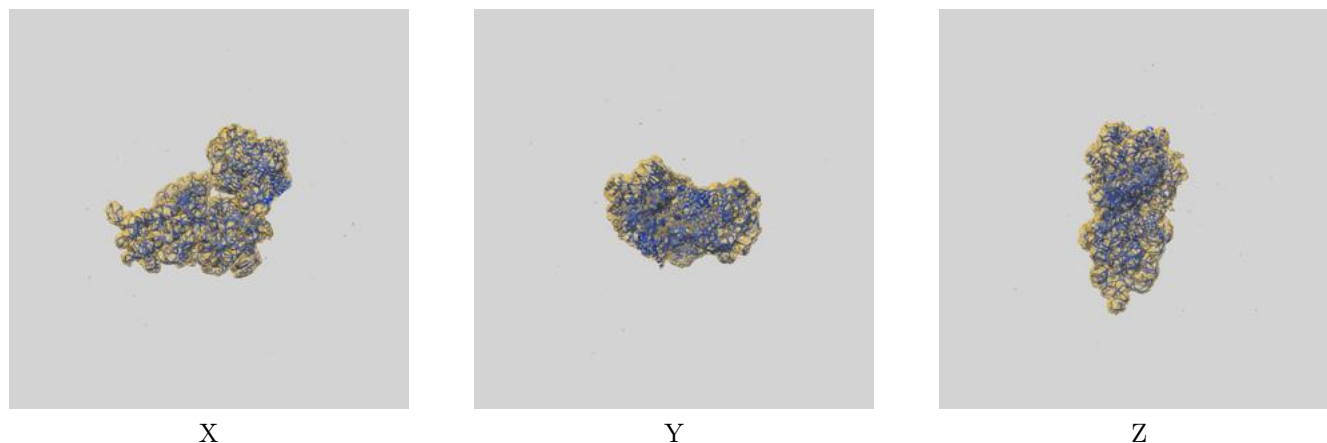
\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 9.65 differs from the reported value 4.8 by more than 10 %



## 9 Map-model fit [i](#)

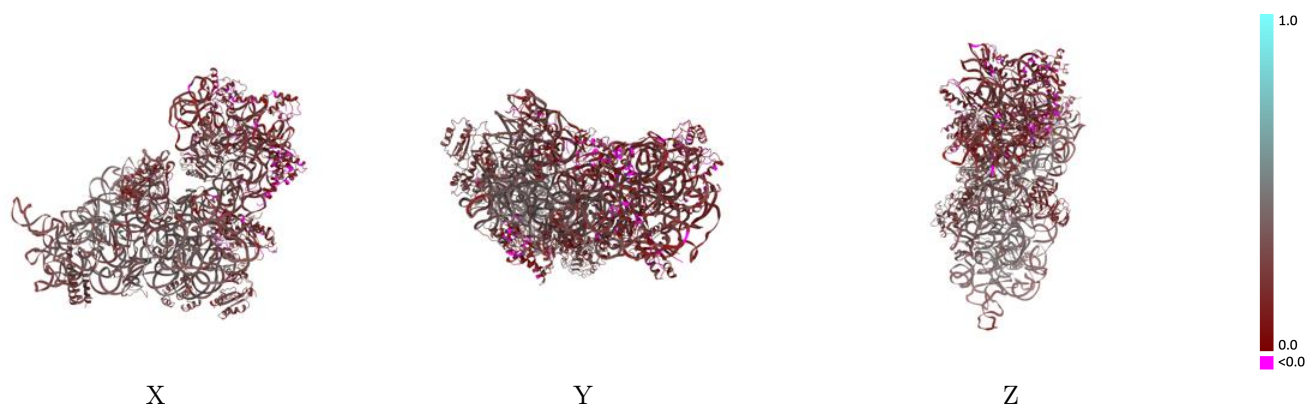
This section contains information regarding the fit between EMDB map EMD-12249 and PDB model 7NAV. Per-residue inclusion information can be found in section 3 on page 8.

### 9.1 Map-model overlay [i](#)



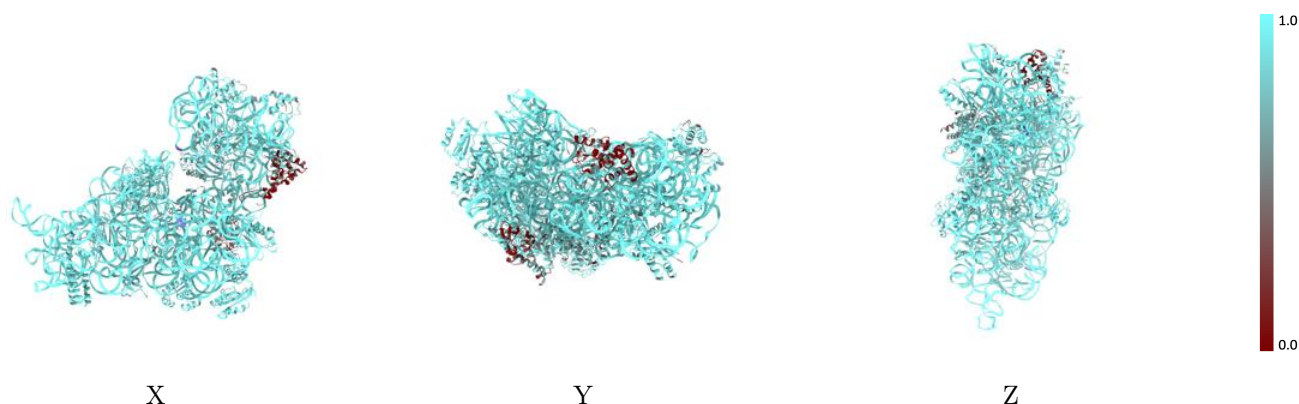
The images above show the 3D surface view of the map at the recommended contour level 0.016 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [i](#)



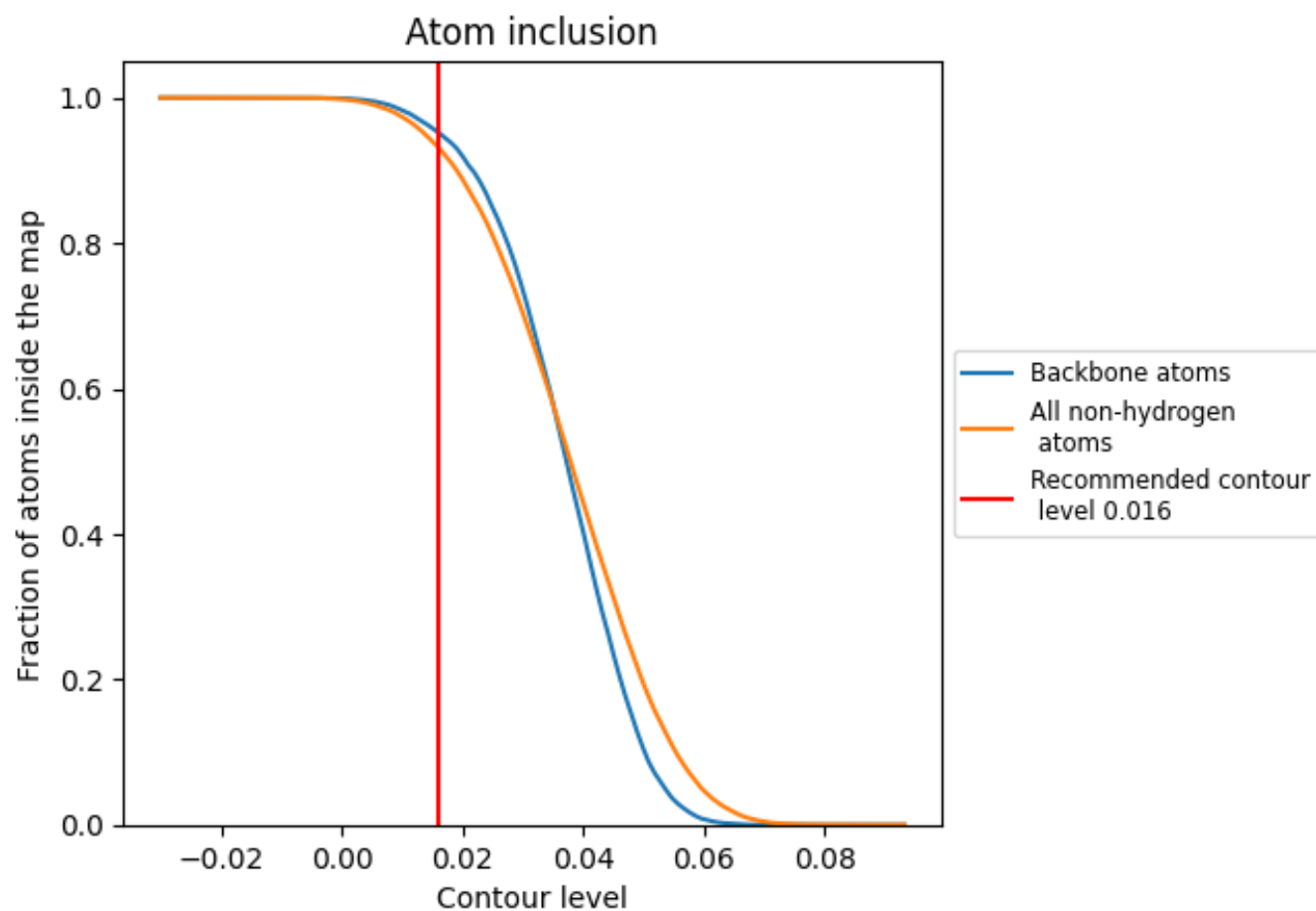
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.016).















































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 93% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.016) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9319	 0.2780
A	 0.9939	 0.3110
B	 0.4806	 0.1520
C	 0.8874	 0.2280
D	 0.9151	 0.2960
E	 0.8823	 0.3060
F	 0.9441	 0.2940
G	 0.2745	 0.0870
H	 0.9094	 0.2990
I	 0.9050	 0.1550
J	 0.8935	 0.1750
K	 0.9156	 0.2090
L	 0.8137	 0.2730
M	 0.8496	 0.1350
N	 0.9005	 0.2070
O	 0.9348	 0.2890
P	 0.9490	 0.3320
Q	 0.9177	 0.3360
R	 0.9008	 0.2510
S	 0.9143	 0.1330
T	 0.9511	 0.2850
V	 0.9215	 0.2080
X	 0.9133	 0.2050

