



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 01:38 AM UTC

PDB ID : 8EYQ / pdb_00008eyq
EMDB ID : EMD-28692
Title : 30S_delta_ksgA_h44_inactive_conformation
Authors : Ortega, J.; Sun, J.
Deposited on : 2022-10-28
Resolution : 3.30 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at 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>.

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

EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

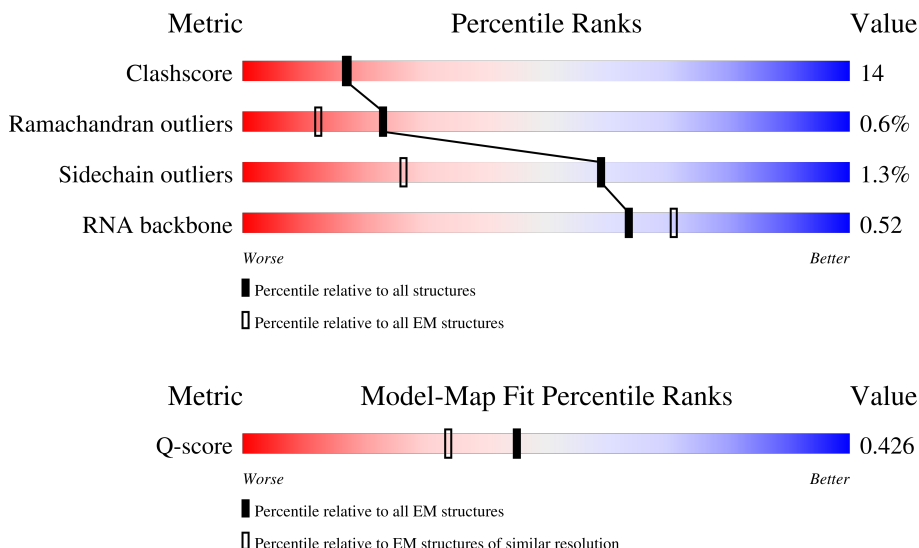
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.30 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.



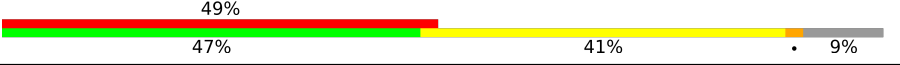
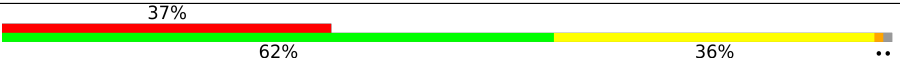
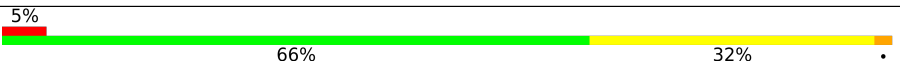
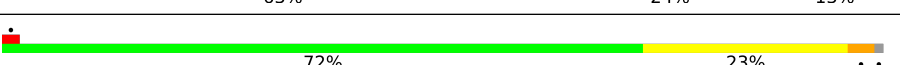
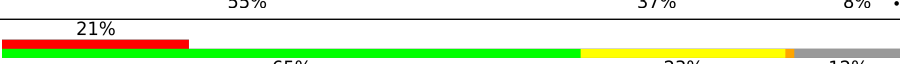
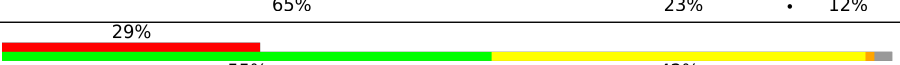
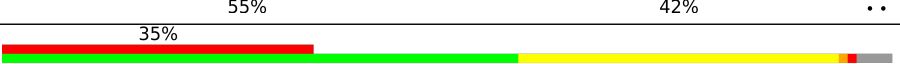
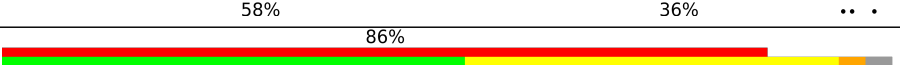
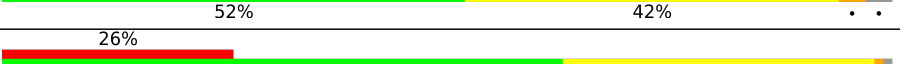
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	15087 (2.80 - 3.80)

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 ≥ 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	D	206	5% 78% 21%
2	E	167	68% 26% 6%
3	F	135	75% 52% 27% 21%

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Mol	Chain	Length	Quality of chain
4	H	130	
5	K	129	
6	L	124	
7	O	89	
8	P	82	
9	Q	84	
10	R	75	
11	T	87	
12	A	1540	
13	C	233	
14	I	130	
15	J	103	
16	M	118	
17	N	101	
18	S	92	

2 Entry composition

There are 18 unique types of molecules in this entry. The entry contains 48190 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 protein called 30S ribosomal protein S4.

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

- Molecule 2 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	E	157	Total	C	N	O	S	0	0
			1156	719	218	213	6		

- Molecule 3 is a protein called 30S ribosomal protein S6.

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

- Molecule 4 is a protein called 30S ribosomal protein S8.

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

- Molecule 5 is a protein called 30S ribosomal protein S11.

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

- Molecule 6 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	L	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 7 is a protein called 30S ribosomal protein S15.

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

- Molecule 8 is a protein called 30S ribosomal protein S16.

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

- Molecule 9 is a protein called 30S ribosomal protein S17.

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

- Molecule 10 is a protein called 30S ribosomal protein S18.

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

- Molecule 11 is a protein called 30S ribosomal protein S20.

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

- Molecule 12 is a RNA chain called 16S_rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	A	1525	Total	C	N	O	P	0	0
			32722	14595	6003	10599	1525		

- Molecule 13 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	C	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

- Molecule 14 is a protein called 30S ribosomal protein S9.

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

- Molecule 15 is a protein called 30S ribosomal protein S10.

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

- Molecule 16 is a protein called 30S ribosomal protein S13.

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

- Molecule 17 is a protein called 30S ribosomal protein S14.

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

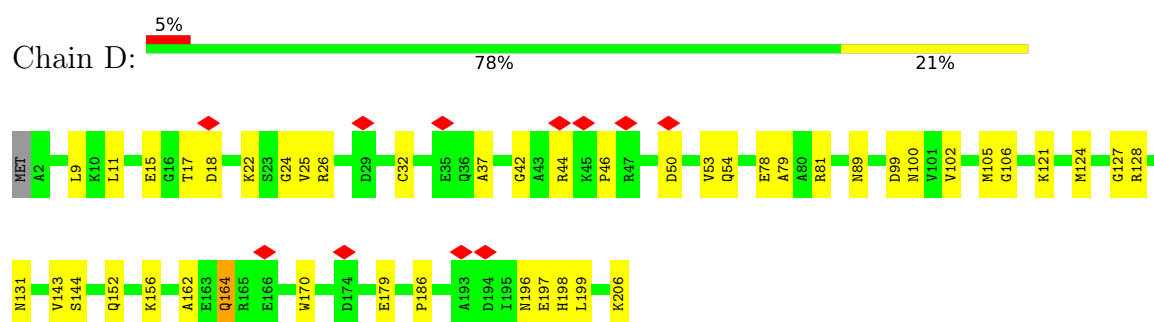
- Molecule 18 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	81	Total	C	N	O	S	0	0
			651	416	124	109	2		

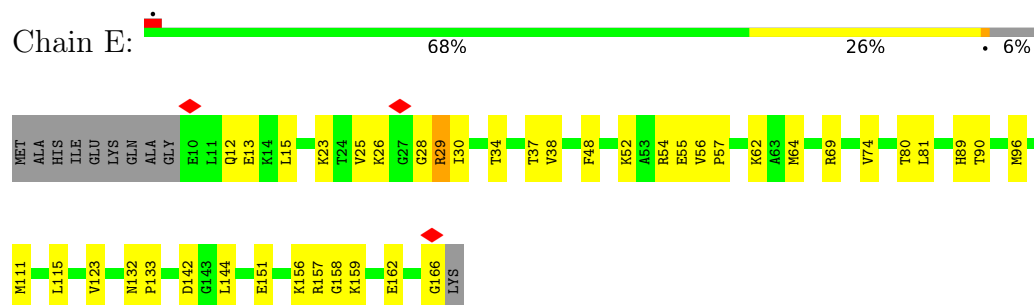
3 Residue-property plots [i](#)

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.

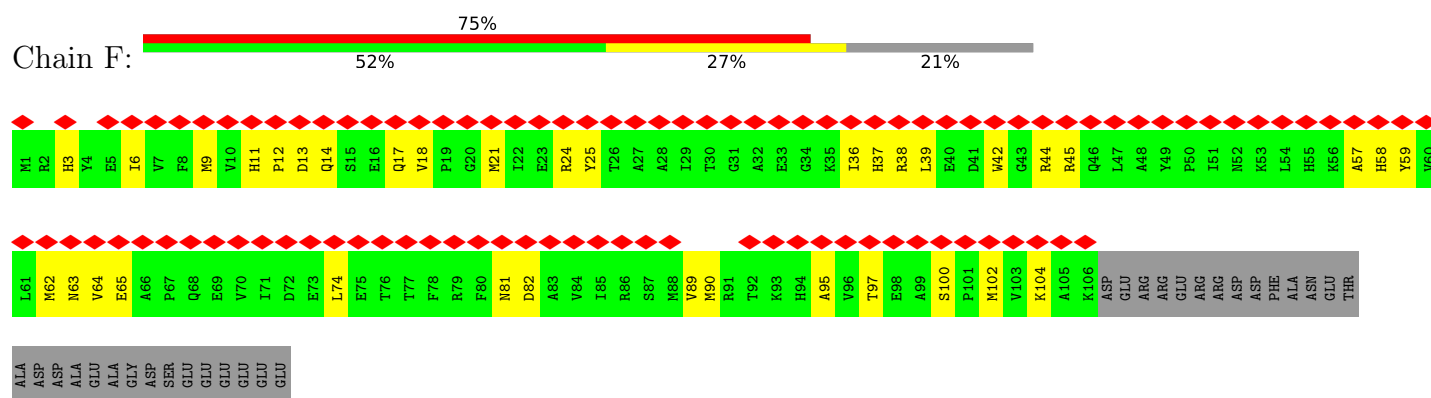
- Molecule 1: 30S ribosomal protein S4



- Molecule 2: 30S ribosomal protein S5



- Molecule 3: 30S ribosomal protein S6

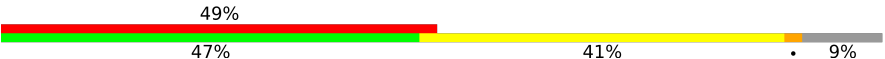


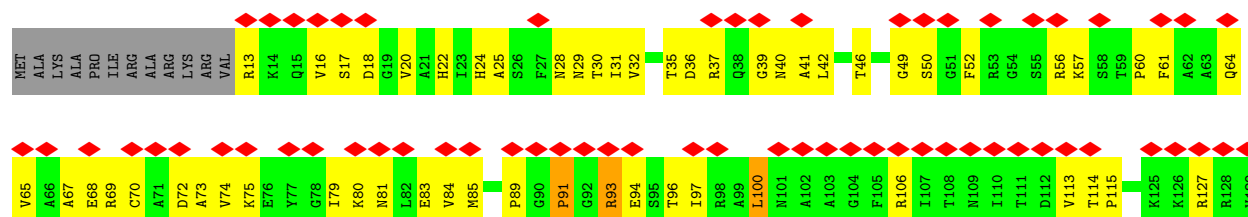
- Molecule 4: 30S ribosomal protein S8

Chain H:  76% 21% ..



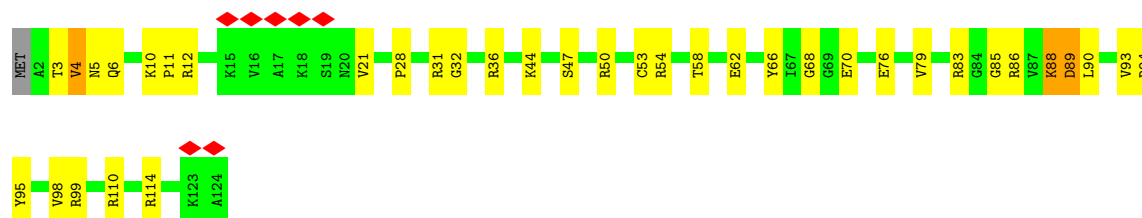
• Molecule 5: 30S ribosomal protein S11

Chain K:  49% 47% 41% 9%



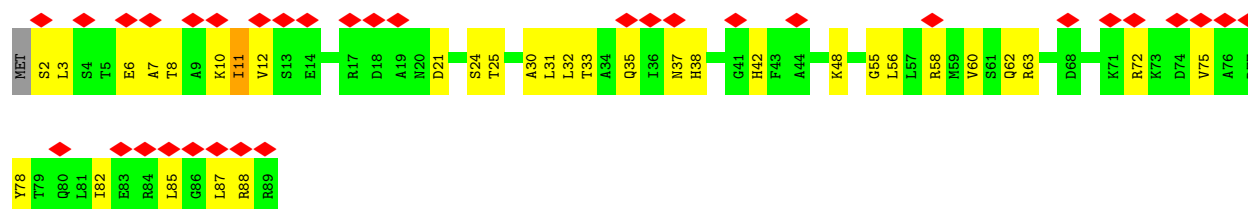
• Molecule 6: 30S ribosomal protein S12

Chain L:  6% 69% 27% ..



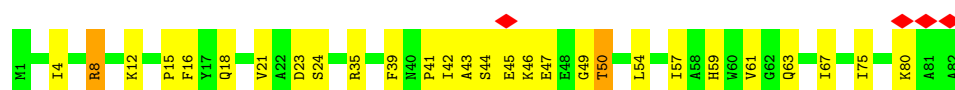
• Molecule 7: 30S ribosomal protein S15

Chain O:  37% 62% 36% ..



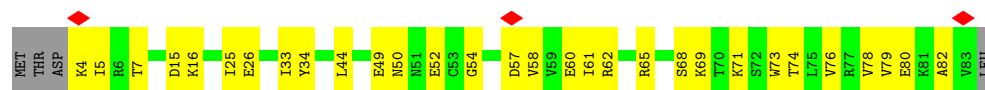
• Molecule 8: 30S ribosomal protein S16

Chain P:  5% 66% 32%

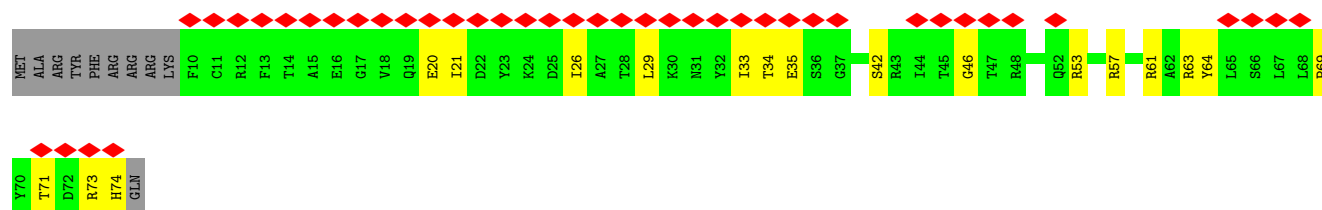


• Molecule 9: 30S ribosomal protein S17

Chain Q:  60% 36% 5%



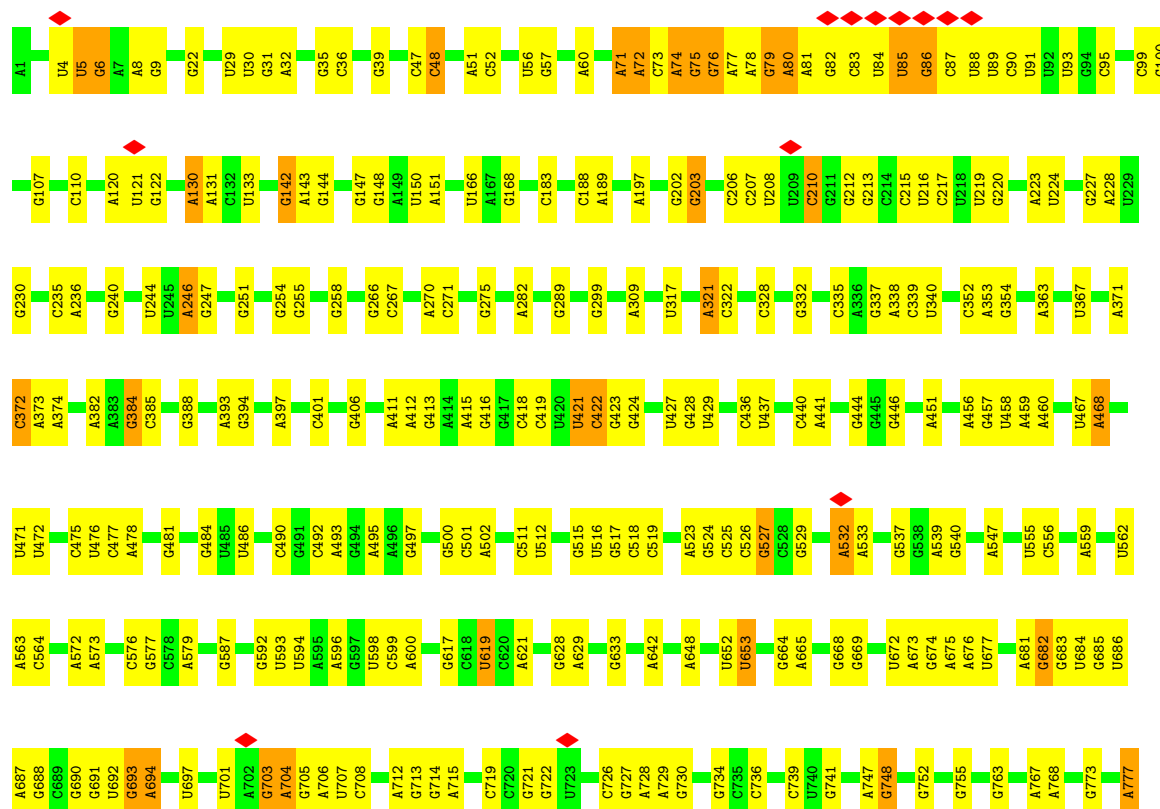
- Molecule 10: 30S ribosomal protein S18

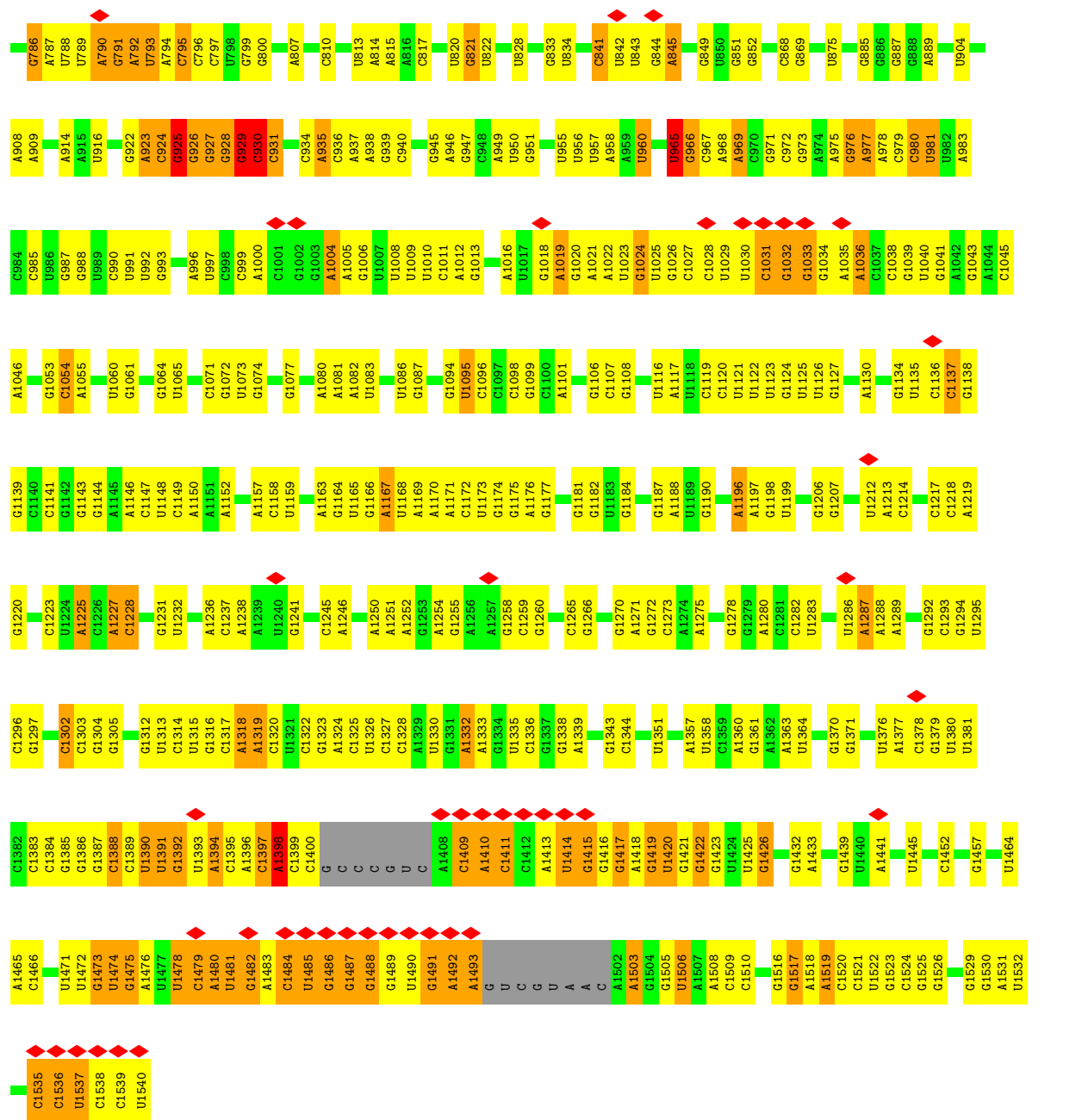


- Molecule 11: 30S ribosomal protein S20



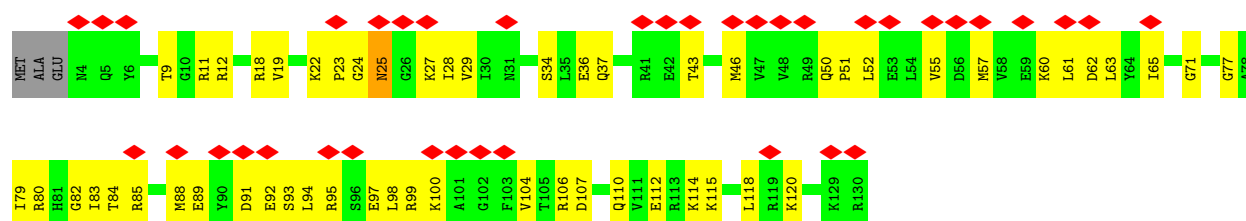
- Molecule 12: 16S_rRNA



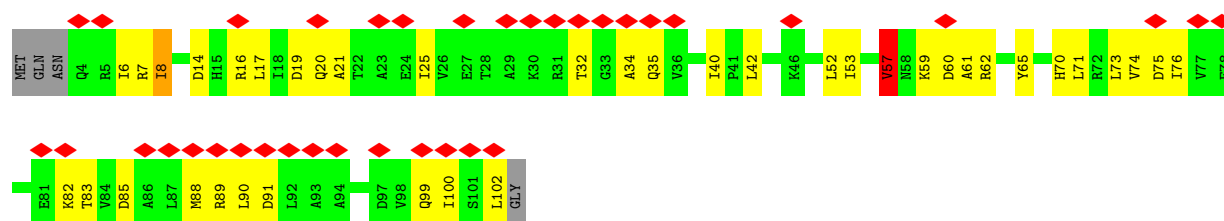




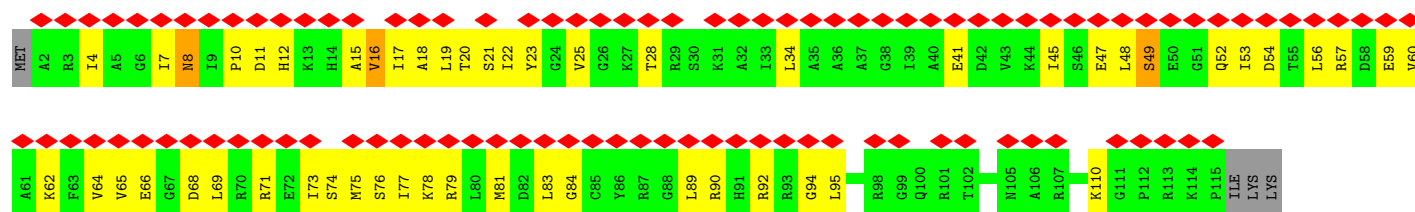
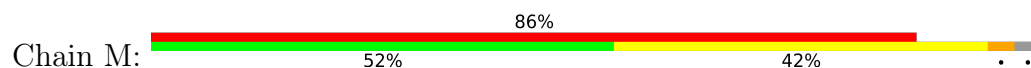
• Molecule 14: 30S ribosomal protein S9



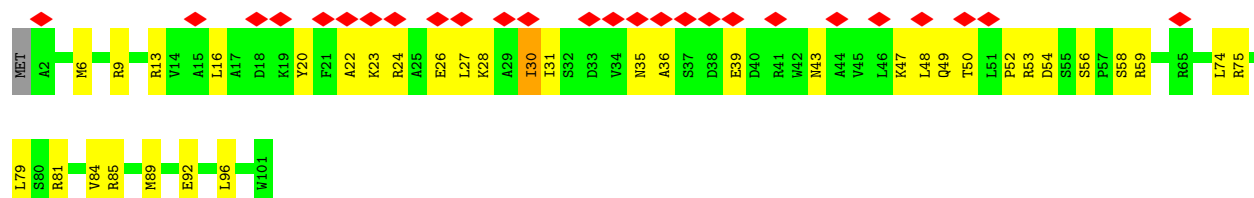
• Molecule 15: 30S ribosomal protein S10



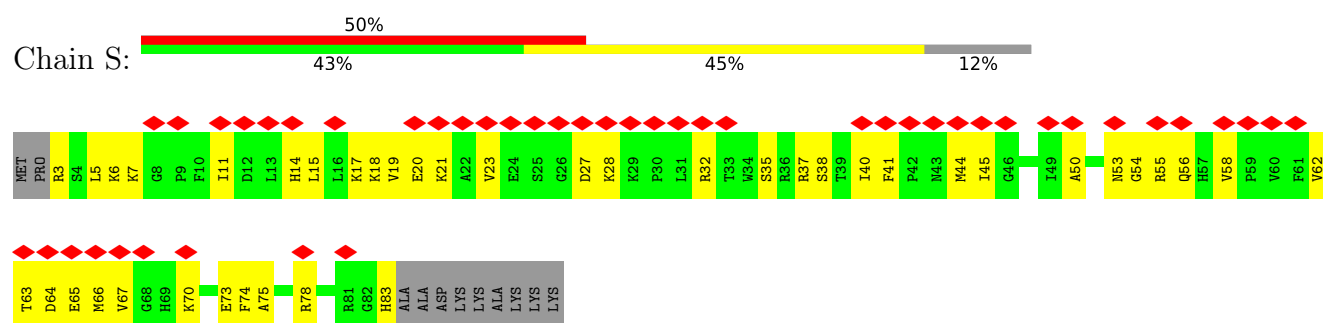
• Molecule 16: 30S ribosomal protein S13



• Molecule 17: 30S ribosomal protein S14



• Molecule 18: 30S ribosomal protein S19



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	316895	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 ($e^-/\text{\AA}^2$)	45	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.043	Depositor
Minimum map value	-0.016	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0072	Depositor
Map size ($\text{\AA}$)	326.61002, 326.61002, 326.61002	wwPDB
Map dimensions	382, 382, 382	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.855, 0.855, 0.855	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 2MG

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	D	0.30	0/1665	0.51	0/2227
2	E	0.33	0/1169	0.71	2/1573 (0.1%)
3	F	0.21	0/881	0.62	0/1189
4	H	0.53	1/989 (0.1%)	0.69	2/1326 (0.2%)
5	K	0.24	0/893	0.78	2/1205 (0.2%)
6	L	0.38	0/969	0.67	0/1300
7	O	0.31	0/722	0.64	0/964
8	P	0.67	0/659	0.86	3/884 (0.3%)
9	Q	0.42	0/657	0.73	0/881
10	R	0.19	0/544	0.54	1/731 (0.1%)
11	T	0.38	0/676	0.77	2/895 (0.2%)
12	A	0.24	0/36611	0.39	15/57108 (0.0%)
13	C	0.39	0/1651	0.54	2/2225 (0.1%)
14	I	0.23	0/1034	0.55	0/1375
15	J	0.33	0/805	0.57	0/1089
16	M	0.36	0/892	0.77	1/1193 (0.1%)
17	N	0.41	0/817	0.57	0/1088
18	S	0.53	1/667 (0.1%)	0.70	1/897 (0.1%)
All	All	0.29	2/52301 (0.0%)	0.47	31/78150 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	H	4	GLN	CA-C	-6.11	1.45	1.52
18	S	75	ALA	CA-C	-5.57	1.45	1.52

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	A	930	C	O3'-P-O5'	9.96	118.95	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	A	925	G	C2'-C3'-O3'	9.57	123.85	109.50
4	H	68	GLY	N-CA-C	-8.62	100.95	115.08
13	C	130	PHE	N-CA-C	7.40	120.22	111.71
5	K	24	HIS	N-CA-C	-6.86	99.66	109.96
12	A	930	C	P-O3'-C3'	6.79	130.38	120.20
12	A	1398	A	C2'-C3'-O3'	6.77	123.86	113.70
4	H	7	ILE	N-CA-C	6.68	116.78	110.30
5	K	91	PRO	N-CA-C	-6.50	99.08	112.47
12	A	965	U	C4'-C3'-O3'	-6.33	99.91	109.40
12	A	929	G	C2'-C3'-O3'	-6.32	104.22	113.70
12	A	1398	A	C3'-C2'-O2'	6.23	120.04	110.70
12	A	1392	G	C2'-C3'-O3'	6.16	122.94	113.70
11	T	15	GLU	N-CA-C	-6.15	104.51	112.68
12	A	925	G	P-O3'-C3'	6.03	129.25	120.20
11	T	6	SER	N-CA-C	-6.01	104.42	110.97
12	A	1392	G	C5'-C4'-O4'	5.93	118.70	109.80
2	E	29	ARG	N-CA-C	5.87	118.76	109.96
12	A	930	C	O4'-C1'-N1	5.79	117.18	108.50
12	A	1392	G	C3'-C2'-C1'	-5.70	95.60	101.30
8	P	50	THR	N-CA-CB	5.62	120.00	110.49
13	C	163	ALA	N-CA-C	5.42	117.72	110.35
10	R	69	PRO	CA-N-CD	-5.40	104.44	112.00
12	A	1392	G	C4'-C3'-O3'	5.39	121.09	113.00
18	S	54	GLY	N-CA-C	-5.23	100.78	113.18
12	A	930	C	C1'-C2'-O2'	-5.21	100.59	108.40
8	P	49	GLY	CA-C-N	5.18	131.43	121.54
8	P	49	GLY	C-N-CA	5.18	131.43	121.54
2	E	12	GLN	N-CA-C	5.13	117.98	109.46
16	M	49	SER	N-CA-C	5.12	116.54	110.19
12	A	925	G	C4'-C3'-O3'	5.08	117.02	109.40

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	D	1643	0	1707	29	0
2	E	1156	0	1199	40	0
3	F	862	0	864	37	0
4	H	979	0	1031	27	0
5	K	877	0	887	64	0
6	L	955	0	1016	26	0
7	O	714	0	734	37	0
8	P	649	0	666	23	0
9	Q	648	0	691	24	0
10	R	535	0	552	18	0
11	T	670	0	719	26	0
12	A	32722	0	16469	540	0
13	C	1624	0	1696	53	0
14	I	1022	0	1070	55	0
15	J	795	0	836	32	0
16	M	883	0	941	61	0
17	N	805	0	844	38	0
18	S	651	0	675	52	0
All	All	48190	0	32597	1090	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 14.

All (1090) 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)
12:A:789:U:H5	12:A:791:G:C1'	0.98	1.41
12:A:789:U:N3	12:A:792:A:N7	1.68	1.35
12:A:789:U:N3	12:A:792:A:C8	2.04	1.25
12:A:789:U:C5	12:A:791:G:H1'	1.23	1.24
12:A:789:U:O4	12:A:791:G:N3	1.71	1.23
16:M:8:ASN:CG	16:M:22:ILE:CD1	2.14	1.19
12:A:789:U:C5	12:A:791:G:C1'	1.87	1.16
12:A:1225:A:H4'	18:S:78:ARG:NH2	1.60	1.15
16:M:8:ASN:ND2	16:M:22:ILE:HD11	1.59	1.15
12:A:1413:A:N6	12:A:1487:G:H21	1.44	1.14
12:A:1413:A:H62	12:A:1487:G:N2	1.47	1.12
16:M:8:ASN:ND2	16:M:22:ILE:CD1	2.14	1.10
16:M:15:ALA:O	16:M:19:LEU:CD1	1.98	1.10
16:M:15:ALA:O	16:M:19:LEU:HD12	1.50	1.10
16:M:8:ASN:OD1	16:M:22:ILE:HD13	1.52	1.09
18:S:11:ILE:HD11	18:S:15:LEU:HD12	1.05	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:789:U:C4	12:A:792:A:C8	2.47	1.02
12:A:789:U:H5	12:A:791:G:N9	1.56	1.02
18:S:53:ASN:HB3	18:S:56:GLN:O	1.59	1.02
12:A:1225:A:H4'	18:S:78:ARG:HH21	1.15	1.02
14:I:19:VAL:HG12	14:I:65:ILE:HD12	1.40	1.01
7:O:11:ILE:HD11	7:O:30:ALA:HB1	1.40	0.99
18:S:11:ILE:CD1	18:S:15:LEU:HD12	1.94	0.97
12:A:789:U:C4	12:A:791:G:H1'	2.00	0.95
7:O:11:ILE:HD11	7:O:30:ALA:CB	1.97	0.94
16:M:8:ASN:CG	16:M:22:ILE:HD13	1.89	0.93
12:A:789:U:C2	12:A:792:A:N7	2.36	0.92
5:K:81:ASN:HD21	5:K:106:ARG:NE	1.68	0.92
18:S:14:HIS:HE1	18:S:35:SER:OG	1.54	0.91
12:A:1419:G:H1	12:A:1481:U:H3	1.10	0.91
5:K:93:ARG:NH2	5:K:97:ILE:HD13	1.84	0.91
12:A:789:U:C5	12:A:791:G:N9	2.32	0.91
18:S:11:ILE:HD11	18:S:15:LEU:CD1	1.99	0.90
11:T:79:LEU:O	11:T:83:ILE:HG12	1.71	0.89
12:A:1398:A:C6	12:A:1505:G:N1	2.40	0.89
12:A:1225:A:C4'	18:S:78:ARG:HH21	1.86	0.88
12:A:457:G:N2	12:A:475:C:O2	2.05	0.87
5:K:81:ASN:ND2	5:K:106:ARG:CG	2.40	0.84
12:A:1225:A:C4'	18:S:78:ARG:NH2	2.39	0.84
10:R:64:TYR:OH	12:A:672:U:O2'	1.95	0.83
12:A:75:G:N1	12:A:95:C:N3	2.27	0.83
12:A:75:G:N2	12:A:95:C:O2	2.10	0.83
12:A:1425:U:O2	12:A:1475:G:N2	2.11	0.83
5:K:93:ARG:O	5:K:96:THR:HG22	1.79	0.82
18:S:53:ASN:CB	18:S:56:GLN:O	2.27	0.81
16:M:8:ASN:CG	16:M:22:ILE:HD12	2.03	0.81
12:A:789:U:C4	12:A:791:G:N3	2.47	0.81
18:S:15:LEU:HD13	18:S:15:LEU:O	1.81	0.81
12:A:1206:G:O4'	13:C:193:TYR:O	1.98	0.81
13:C:162:ILE:O	13:C:162:ILE:HD12	1.80	0.81
12:A:457:G:N1	12:A:475:C:N3	2.27	0.81
7:O:8:THR:O	7:O:12:VAL:HG23	1.82	0.80
11:T:35:VAL:O	11:T:39:ILE:HG22	1.82	0.80
12:A:60:A:H62	12:A:110:C:N4	1.79	0.80
11:T:36:TYR:HA	11:T:39:ILE:CG2	2.11	0.80
8:P:59:HIS:CE1	8:P:63:GLN:OE1	2.34	0.80
12:A:1304:G:H21	12:A:1333:A:H62	1.30	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:8:ASN:HD21	16:M:22:ILE:HD11	1.42	0.78
12:A:683:G:H1	12:A:707:U:H3	1.31	0.78
12:A:1225:A:H5''	18:S:78:ARG:NH2	1.99	0.78
18:S:14:HIS:CE1	18:S:35:SER:OG	2.36	0.77
12:A:1425:U:H3	12:A:1475:G:H1	1.28	0.77
12:A:1411:C:N4	12:A:1487:G:O6	2.17	0.77
12:A:71:A:N6	12:A:99:C:O2	2.17	0.77
12:A:1028:C:H5	12:A:1033:G:H1	1.33	0.77
12:A:1510:C:C2	12:A:1526:G:N2	2.54	0.76
7:O:11:ILE:CD1	7:O:30:ALA:HB1	2.15	0.76
12:A:929:G:O6	12:A:1388:C:N4	2.19	0.76
12:A:1421:G:H21	12:A:1480:A:H3'	1.51	0.75
12:A:1398:A:N6	12:A:1505:G:O6	2.19	0.75
12:A:965:U:O2	12:A:969:A:C4	2.39	0.74
10:R:53:ARG:NH1	12:A:664:G:OP1	2.14	0.74
12:A:930:C:O2'	12:A:931:C:H5'	1.86	0.74
12:A:1485:U:H2'	12:A:1486:G:C8	2.22	0.74
12:A:71:A:H61	12:A:99:C:H1'	1.53	0.73
13:C:136:ARG:HD2	13:C:140:ASN:HD21	1.53	0.73
10:R:63:ARG:HH22	12:A:719:C:H42	1.37	0.73
12:A:924:C:H5''	12:A:925:G:H5''	1.71	0.73
14:I:97:GLU:OE1	14:I:97:GLU:N	2.21	0.73
12:A:1287:A:H2'	12:A:1288:A:C8	2.23	0.72
13:C:121:THR:HG23	13:C:189:ALA:HB2	1.69	0.72
12:A:1378:C:N4	12:A:1379:G:N3	2.37	0.72
12:A:928:G:C6	12:A:1390:U:N3	2.57	0.72
6:L:85:GLY:O	6:L:94:ARG:O	2.07	0.72
12:A:85:U:O2	12:A:86:G:N2	2.22	0.72
12:A:697:U:O4'	12:A:786:G:O2'	2.06	0.72
8:P:46:LYS:NZ	12:A:617:G:OP1	2.22	0.72
16:M:12:HIS:O	16:M:12:HIS:ND1	2.23	0.72
7:O:10:LYS:C	7:O:10:LYS:HD3	2.15	0.71
18:S:53:ASN:HB2	18:S:58:VAL:HG23	1.71	0.71
5:K:81:ASN:HD22	5:K:106:ARG:CG	2.03	0.71
8:P:44:SER:OG	8:P:47:GLU:HG2	1.90	0.71
12:A:1218:C:H2'	12:A:1219:A:H8	1.55	0.71
14:I:88:MET:HE1	14:I:95:ARG:HG3	1.73	0.70
12:A:1077:G:N2	12:A:1080:A:OP2	2.18	0.70
12:A:1314:C:H2'	12:A:1315:U:H6	1.55	0.70
12:A:1206:G:C4'	13:C:193:TYR:O	2.40	0.70
12:A:1011:C:H2'	12:A:1012:A:C8	2.27	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:K:81:ASN:ND2	5:K:106:ARG:HG2	2.07	0.70
14:I:19:VAL:CG1	14:I:65:ILE:HD12	2.19	0.70
12:A:1510:C:C2	12:A:1526:G:C2	2.79	0.69
8:P:39:PHE:HD1	8:P:50:THR:HG22	1.57	0.69
6:L:3:THR:HB	6:L:6:GLN:HG3	1.74	0.69
6:L:83:ARG:HB2	6:L:98:VAL:HG23	1.74	0.69
12:A:1360:A:N6	17:N:58:SER:OG	2.24	0.69
13:C:154:SER:HB2	13:C:164:ARG:O	1.91	0.69
12:A:1228:C:OP2	16:M:110:LYS:NZ	2.23	0.69
7:O:42:HIS:ND1	12:A:739:C:O2'	2.25	0.69
2:E:29:ARG:N	2:E:29:ARG:HD2	2.08	0.69
9:Q:5:ILE:HD11	9:Q:62:ARG:HH11	1.56	0.69
7:O:8:THR:O	7:O:11:ILE:HG23	1.91	0.69
5:K:65:VAL:HB	5:K:69:ARG:HH12	1.59	0.68
14:I:19:VAL:HA	14:I:65:ILE:CD1	2.23	0.68
16:M:47:GLU:OE2	16:M:47:GLU:N	2.25	0.68
17:N:26:GLU:H	17:N:26:GLU:CD	2.01	0.68
5:K:81:ASN:ND2	5:K:106:ARG:HG3	2.07	0.68
12:A:1510:C:O2	12:A:1526:G:C2	2.46	0.68
17:N:92:GLU:N	17:N:92:GLU:OE1	2.26	0.68
1:D:197:GLU:OE1	1:D:197:GLU:N	2.20	0.68
13:C:136:ARG:O	13:C:140:ASN:ND2	2.22	0.68
17:N:6:MET:HE1	17:N:9:ARG:NH1	2.08	0.68
12:A:792:A:N6	12:A:1503:A:H62	1.92	0.67
3:F:18:VAL:HG21	3:F:58:HIS:HE1	1.58	0.67
12:A:1398:A:C6	12:A:1505:G:C6	2.82	0.67
17:N:28:LYS:HZ2	17:N:47:LYS:HD2	1.58	0.67
7:O:38:HIS:O	7:O:38:HIS:ND1	2.28	0.67
12:A:1029:U:H2'	12:A:1031:C:H5	1.59	0.67
12:A:1225:A:C5'	18:S:78:ARG:HH21	2.07	0.67
16:M:4:ILE:HD11	16:M:60:VAL:HG11	1.76	0.67
12:A:789:U:C5	12:A:791:G:C4	2.82	0.67
12:A:1225:A:C5'	18:S:78:ARG:NH2	2.57	0.67
12:A:1116:U:O2'	14:I:110:GLN:OE1	2.12	0.67
5:K:93:ARG:NH2	5:K:97:ILE:CD1	2.57	0.67
6:L:50:ARG:HG3	6:L:90:LEU:HD21	1.76	0.67
12:A:1478:U:O2'	12:A:1479:C:OP1	2.12	0.67
12:A:1478:U:H2'	12:A:1479:C:H6	1.60	0.67
14:I:12:ARG:NH1	14:I:107:ASP:OD2	2.27	0.67
14:I:24:GLY:O	14:I:60:LYS:C	2.37	0.67
5:K:81:ASN:HD22	5:K:106:ARG:HG3	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:K:84:VAL:C	5:K:85:MET:HE2	2.20	0.66
12:A:1016:A:O2'	12:A:1217:C:O2'	2.11	0.66
2:E:26:LYS:NZ	12:A:923:A:O5'	2.28	0.66
16:M:41:GLU:OE2	16:M:41:GLU:N	2.24	0.66
2:E:29:ARG:HD2	2:E:29:ARG:H	1.60	0.66
15:J:32:THR:CG2	15:J:83:THR:HG22	2.26	0.66
2:E:52:LYS:O	2:E:62:LYS:NZ	2.28	0.66
12:A:1517:G:H2'	12:A:1518:A:C8	2.30	0.66
15:J:19:ASP:OD1	15:J:19:ASP:N	2.28	0.66
7:O:3:LEU:HD11	7:O:35:GLN:HG2	1.78	0.65
12:A:1126:U:OP1	15:J:7:ARG:NH2	2.26	0.65
14:I:114:LYS:NZ	14:I:118:LEU:O	2.24	0.65
12:A:1130:A:OP1	14:I:18:ARG:NH2	2.30	0.65
16:M:54:ASP:OD1	16:M:57:ARG:NH1	2.30	0.65
1:D:121:LYS:HG2	1:D:131:ASN:HD21	1.63	0.64
12:A:60:A:N6	12:A:110:C:N4	2.45	0.64
14:I:97:GLU:HA	14:I:100:LYS:HG2	1.79	0.64
12:A:1422:G:H2'	12:A:1423:G:H8	1.62	0.64
12:A:77:A:H2'	12:A:78:A:C8	2.32	0.64
8:P:43:ALA:HA	8:P:47:GLU:OE2	1.98	0.64
3:F:42:TRP:CE3	3:F:102:MET:HE1	2.33	0.64
5:K:16:VAL:HG12	5:K:18:ASP:H	1.63	0.64
15:J:34:ALA:HB2	15:J:83:THR:HG21	1.80	0.64
16:M:17:ILE:O	16:M:20:THR:OG1	2.15	0.64
12:A:1016:A:HO2'	12:A:1217:C:HO2'	1.45	0.64
12:A:1147:C:O2	14:I:18:ARG:NH1	2.31	0.64
14:I:112:GLU:N	14:I:112:GLU:OE2	2.31	0.64
5:K:93:ARG:HH22	5:K:97:ILE:HD13	1.59	0.64
16:M:23:TYR:CE2	16:M:69:LEU:HD22	2.32	0.64
12:A:1009:U:H3	12:A:1020:G:H1	1.44	0.64
12:A:789:U:O4	12:A:792:A:C8	2.51	0.63
12:A:444:G:N2	12:A:490:C:O2	2.20	0.63
12:A:1038:C:H2'	12:A:1039:G:H8	1.62	0.63
13:C:129:MET:HE1	13:C:131:ARG:HB3	1.80	0.63
18:S:32:ARG:HA	18:S:50:ALA:HB3	1.79	0.63
2:E:25:VAL:HG12	2:E:28:GLY:O	1.98	0.63
4:H:52:GLU:O	4:H:57:PRO:HA	1.98	0.63
2:E:69:ARG:NH2	12:A:1074:G:OP1	2.32	0.63
12:A:841:C:N4	12:A:845:A:H62	1.97	0.63
5:K:93:ARG:O	5:K:96:THR:CG2	2.46	0.63
14:I:25:ASN:O	14:I:62:ASP:HB3	1.97	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:967:C:O5'	12:A:967:C:H6	1.81	0.63
6:L:47:SER:OG	12:A:519:C:OP2	2.15	0.62
4:H:18:GLN:HE21	4:H:70:ALA:HA	1.64	0.62
11:T:36:TYR:HA	11:T:39:ILE:HG22	1.80	0.62
2:E:74:VAL:HG11	2:E:144:LEU:HB3	1.80	0.62
12:A:928:G:C2	12:A:1390:U:O2	2.52	0.62
12:A:1398:A:C4	12:A:1505:G:N2	2.68	0.62
15:J:32:THR:HG21	15:J:83:THR:HG22	1.82	0.62
9:Q:57:ASP:HA	9:Q:82:ALA:HB2	1.80	0.62
1:D:25:VAL:HG12	1:D:26:ARG:HG3	1.81	0.62
2:E:25:VAL:HB	2:E:30:ILE:HD11	1.81	0.62
12:A:1413:A:H62	12:A:1487:G:H21	0.71	0.62
12:A:1419:G:O6	12:A:1481:U:O4	2.18	0.62
16:M:73:ILE:O	16:M:77:ILE:HG13	1.99	0.62
12:A:83:C:H2'	12:A:85:U:H3	1.65	0.61
12:A:979:C:O2	17:N:59:ARG:NH1	2.32	0.61
8:P:42:ILE:HG13	8:P:42:ILE:O	2.00	0.61
13:C:102:ASN:OD1	13:C:103:ILE:N	2.33	0.61
4:H:67:GLN:O	4:H:67:GLN:HG3	2.01	0.61
12:A:515:G:H2'	12:A:516:U:H6	1.65	0.61
12:A:673:A:H2'	12:A:674:G:C8	2.35	0.61
12:A:841:C:H42	12:A:845:A:H62	1.48	0.61
16:M:15:ALA:O	16:M:19:LEU:HD11	1.94	0.61
16:M:59:GLU:O	16:M:62:LYS:HG2	2.01	0.61
17:N:13:ARG:O	17:N:16:LEU:HG	2.00	0.61
18:S:27:ASP:OD1	18:S:28:LYS:N	2.34	0.61
12:A:841:C:N4	12:A:844:G:OP2	2.29	0.61
12:A:1398:A:C2	12:A:1505:G:C2	2.89	0.61
2:E:34:THR:HG22	2:E:52:LYS:HB3	1.83	0.60
12:A:968:A:H8	12:A:968:A:OP1	1.84	0.60
12:A:1304:G:N2	12:A:1333:A:H62	1.98	0.60
2:E:52:LYS:NZ	12:A:1081:A:OP2	2.35	0.60
11:T:9:LYS:HE2	11:T:13:GLN:HE21	1.66	0.60
16:M:52:GLN:OE1	16:M:52:GLN:N	2.20	0.60
9:Q:5:ILE:HG23	9:Q:5:ILE:O	2.01	0.60
12:A:75:G:O6	12:A:95:C:N4	2.28	0.60
16:M:19:LEU:HD12	16:M:19:LEU:H	1.67	0.60
2:E:158:GLY:O	2:E:159:LYS:HD2	2.00	0.60
12:A:713:G:H2'	12:A:714:G:C8	2.37	0.60
1:D:44:ARG:HH22	12:A:512:U:P	2.25	0.60
12:A:924:C:H5''	12:A:925:G:C5'	2.31	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1379:G:H2'	12:A:1380:U:C6	2.36	0.60
4:H:15:ARG:NH1	12:A:875:U:O2'	2.34	0.60
12:A:1389:C:H6	12:A:1389:C:O5'	1.85	0.59
12:A:1414:U:O2	12:A:1486:G:N2	2.35	0.59
4:H:10:MET:HG3	4:H:27:MET:SD	2.42	0.59
6:L:4:VAL:O	6:L:4:VAL:HG22	2.00	0.59
11:T:35:VAL:HG11	11:T:79:LEU:HD13	1.84	0.59
6:L:54:ARG:HD3	6:L:62:GLU:OE1	2.02	0.59
12:A:966:G:H8	12:A:966:G:C5'	2.15	0.59
13:C:185:ASN:OD1	13:C:186:THR:N	2.35	0.59
12:A:459:A:H2'	12:A:460:A:H8	1.68	0.59
12:A:936:C:N3	12:A:1379:G:N2	2.51	0.59
6:L:3:THR:C	6:L:5:ASN:H	2.10	0.59
12:A:928:G:C6	12:A:1390:U:C2	2.90	0.59
9:Q:5:ILE:O	9:Q:7:THR:HG23	2.03	0.59
12:A:492:C:H2'	12:A:493:A:C8	2.38	0.59
12:A:701:U:O2	12:A:703:G:N1	2.35	0.59
7:O:72:ARG:O	7:O:72:ARG:HG2	2.02	0.59
12:A:976:G:OP2	12:A:1358:U:O2'	2.19	0.59
3:F:42:TRP:CE3	3:F:102:MET:CE	2.85	0.59
9:Q:71:LYS:NZ	12:A:255:G:OP1	2.33	0.59
18:S:5:LEU:HD23	18:S:6:LYS:N	2.18	0.59
5:K:93:ARG:C	5:K:96:THR:HG22	2.27	0.58
7:O:8:THR:O	7:O:11:ILE:CG2	2.51	0.58
12:A:523:A:C2	12:A:527:G:O6	2.56	0.58
12:A:693:G:O2'	12:A:694:A:OP1	2.21	0.58
12:A:712:A:H2'	12:A:713:G:C8	2.37	0.58
12:A:1319:A:OP1	18:S:3:ARG:N	2.36	0.58
7:O:11:ILE:HD11	7:O:30:ALA:HB3	1.85	0.58
12:A:958:A:C2	18:S:55:ARG:HB2	2.39	0.58
12:A:1227:A:H8	12:A:1227:A:H5'	1.67	0.58
13:C:28:GLU:N	13:C:28:GLU:OE1	2.36	0.58
12:A:1518:A:H2'	12:A:1519:A:C8	2.38	0.58
15:J:59:LYS:HG3	15:J:62:ARG:HH21	1.67	0.58
3:F:42:TRP:CE3	3:F:102:MET:SD	2.97	0.58
12:A:1398:A:N1	12:A:1505:G:N1	2.51	0.58
12:A:1484:C:H2'	12:A:1485:U:O4'	2.03	0.58
17:N:28:LYS:HZ1	17:N:47:LYS:C	2.11	0.58
12:A:1471:U:H2'	12:A:1472:U:C6	2.38	0.58
16:M:64:VAL:HG22	16:M:69:LEU:HB2	1.86	0.58
12:A:1415:G:O6	12:A:1485:U:O2	2.21	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:S:41:PHE:H	18:S:44:MET:HE2	1.68	0.58
2:E:56:VAL:HG22	2:E:57:PRO:HD3	1.83	0.57
12:A:1481:U:H2'	12:A:1482:G:O4'	2.03	0.57
14:I:62:ASP:OD1	14:I:62:ASP:N	2.37	0.57
11:T:9:LYS:HE2	11:T:13:GLN:NE2	2.18	0.57
12:A:792:A:H61	12:A:1503:A:H62	1.50	0.57
13:C:105:GLU:OE1	13:C:106:VAL:N	2.37	0.57
12:A:1175:G:H2'	12:A:1176:A:H8	1.68	0.57
13:C:40:ARG:NH1	13:C:55:ILE:O	2.37	0.57
14:I:22:LYS:HG3	14:I:23:PRO:HD2	1.87	0.57
1:D:170:TRP:CE2	1:D:186:PRO:HB3	2.38	0.57
12:A:1225:A:H5''	18:S:78:ARG:HH21	1.62	0.57
10:R:42:SER:O	10:R:46:GLY:N	2.37	0.57
14:I:19:VAL:HA	14:I:65:ILE:HD12	1.85	0.57
5:K:22:HIS:HD2	12:A:707:U:H4'	1.69	0.57
8:P:35:ARG:HG2	8:P:35:ARG:HH11	1.70	0.57
13:C:122:SER:HB2	13:C:126:ARG:HH12	1.70	0.57
17:N:43:ASN:N	17:N:43:ASN:OD1	2.38	0.57
18:S:53:ASN:N	18:S:56:GLN:O	2.33	0.57
12:A:1149:C:H2'	12:A:1150:A:C8	2.39	0.57
16:M:23:TYR:HE2	16:M:69:LEU:HD22	1.68	0.57
5:K:17:SER:HA	5:K:79:ILE:HA	1.86	0.57
12:A:966:G:H8	12:A:966:G:H5'	1.70	0.57
10:R:26:ILE:HA	10:R:29:LEU:HD12	1.87	0.57
11:T:36:TYR:O	11:T:39:ILE:HG23	2.04	0.56
12:A:1384:C:H2'	12:A:1385:G:C8	2.40	0.56
12:A:1482:G:N2	12:A:1483:A:H62	2.03	0.56
15:J:8:ILE:HG12	15:J:74:VAL:O	2.05	0.56
2:E:29:ARG:H	2:E:29:ARG:CD	2.19	0.56
3:F:45:ARG:HD3	3:F:59:TYR:CE2	2.40	0.56
12:A:77:A:H2'	12:A:78:A:H8	1.70	0.56
1:D:99:ASP:OD1	1:D:100:ASN:N	2.39	0.56
18:S:5:LEU:HD22	18:S:7:LYS:HG3	1.86	0.56
5:K:65:VAL:O	5:K:69:ARG:HG2	2.05	0.56
12:A:628:G:H2'	12:A:629:A:C8	2.40	0.56
12:A:789:U:O4	12:A:792:A:N9	2.39	0.56
12:A:1398:A:N3	12:A:1505:G:N2	2.54	0.56
12:A:1351:U:O4	14:I:120:LYS:NZ	2.36	0.56
12:A:1409:C:O2'	12:A:1410:A:N7	2.39	0.56
17:N:24:ARG:HD2	17:N:24:ARG:N	2.19	0.56
7:O:37:ASN:OD1	7:O:38:HIS:N	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:216:U:H2'	12:A:217:C:C6	2.40	0.56
12:A:793:U:H3	12:A:1503:A:H61	1.52	0.56
3:F:17:GLN:O	3:F:21:MET:HG2	2.05	0.56
9:Q:52:GLU:OE1	9:Q:78:VAL:HG21	2.06	0.56
12:A:1236:A:H4'	12:A:1304:G:H4'	1.86	0.56
15:J:42:LEU:HB2	15:J:71:LEU:HB2	1.87	0.56
7:O:75:VAL:HG12	7:O:75:VAL:O	2.06	0.56
12:A:924:C:H4'	12:A:925:G:OP2	2.06	0.56
12:A:956:U:H2'	12:A:957:U:C6	2.41	0.56
2:E:89:HIS:ND1	2:E:90:THR:HG23	2.21	0.56
13:C:157:LEU:N	13:C:157:LEU:HD22	2.21	0.56
2:E:23:LYS:NZ	12:A:1082:A:OP2	2.31	0.56
12:A:930:C:O2'	12:A:931:C:C5'	2.54	0.56
12:A:1516:G:H21	12:A:1519:A:H62	1.53	0.55
12:A:1519:A:OP2	12:A:1519:A:H8	1.89	0.55
13:C:181:ASP:OD1	13:C:205:GLY:O	2.24	0.55
17:N:74:LEU:N	17:N:74:LEU:HD22	2.22	0.55
2:E:157:ARG:NH2	4:H:43:GLU:OE1	2.40	0.55
5:K:28:ASN:O	5:K:57:LYS:NZ	2.38	0.55
1:D:164:GLN:OE1	1:D:164:GLN:HA	2.06	0.55
6:L:68:GLY:O	6:L:99:ARG:NH1	2.39	0.55
5:K:17:SER:H	5:K:79:ILE:HG12	1.72	0.55
7:O:21:ASP:OD2	7:O:24:SER:OG	2.20	0.55
12:A:946:A:H2'	12:A:947:G:C8	2.42	0.55
18:S:66:MET:HE2	18:S:66:MET:HA	1.88	0.55
9:Q:4:LYS:O	9:Q:4:LYS:HG3	2.07	0.55
12:A:459:A:H2'	12:A:460:A:C8	2.42	0.55
16:M:11:ASP:OD1	16:M:12:HIS:N	2.39	0.55
2:E:15:LEU:HA	2:E:37:THR:HG22	1.89	0.55
3:F:17:GLN:HE21	3:F:17:GLN:HA	1.72	0.55
4:H:107:SER:HA	12:A:642:A:N7	2.21	0.55
5:K:127:ARG:NE	12:A:797:C:OP1	2.39	0.55
5:K:72:ASP:OD1	5:K:73:ALA:N	2.40	0.55
12:A:978:A:C5	12:A:1319:A:C2	2.95	0.55
16:M:52:GLN:H	16:M:52:GLN:CD	2.10	0.55
7:O:7:ALA:O	7:O:11:ILE:HG22	2.07	0.54
12:A:1420:U:H2'	12:A:1421:G:H5''	1.88	0.54
2:E:151:GLU:OE2	2:E:151:GLU:N	2.32	0.54
5:K:93:ARG:HA	5:K:96:THR:HG22	1.88	0.54
11:T:82:GLN:HE21	11:T:82:GLN:HA	1.72	0.54
12:A:524:G:H2'	12:A:525:C:C6	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1181:G:O2'	12:A:1182:G:N7	2.35	0.54
12:A:1482:G:H21	12:A:1483:A:H62	1.55	0.54
13:C:32:ASN:OD1	13:C:59:ARG:NE	2.41	0.54
15:J:53:ILE:HG22	17:N:85:ARG:HD2	1.90	0.54
15:J:65:TYR:HB3	17:N:96:LEU:HD22	1.90	0.54
1:D:78:GLU:OE2	1:D:81:ARG:NH2	2.37	0.54
12:A:147:G:H2'	12:A:148:G:C8	2.42	0.54
12:A:1394:A:H2'	12:A:1395:C:O4'	2.08	0.54
18:S:45:ILE:HD12	18:S:62:VAL:HG12	1.89	0.54
12:A:1510:C:N3	12:A:1526:G:C2	2.76	0.54
7:O:8:THR:HG23	7:O:31:LEU:HD21	1.88	0.54
12:A:1011:C:H2'	12:A:1012:A:H8	1.73	0.54
12:A:1071:C:H2'	12:A:1072:G:H8	1.72	0.54
12:A:1187:G:H2'	12:A:1188:A:C8	2.42	0.54
2:E:156:LYS:NZ	4:H:71:VAL:HA	2.22	0.54
4:H:96:MET:O	4:H:96:MET:HG2	2.08	0.54
9:Q:25:ILE:HG22	9:Q:26:GLU:H	1.72	0.54
9:Q:68:SER:OG	12:A:254:G:OP1	2.21	0.54
12:A:789:U:C4	12:A:791:G:C4	2.96	0.54
12:A:927:G:C8	12:A:1391:U:O2'	2.61	0.54
12:A:1031:C:H4'	12:A:1032:G:O5'	2.08	0.54
12:A:1490:U:H2'	12:A:1490:U:O2	2.06	0.54
8:P:12:LYS:NZ	12:A:393:A:OP2	2.28	0.53
11:T:82:GLN:HA	11:T:82:GLN:NE2	2.22	0.53
12:A:1218:C:H2'	12:A:1219:A:C8	2.40	0.53
13:C:136:ARG:HD2	13:C:140:ASN:ND2	2.22	0.53
13:C:157:LEU:HD22	13:C:157:LEU:H	1.72	0.53
12:A:337:G:H2'	12:A:338:A:H8	1.73	0.53
12:A:726:C:H2'	12:A:727:G:H8	1.74	0.53
12:A:978:A:C6	12:A:1318:A:C6	2.96	0.53
12:A:1206:G:H4'	13:C:193:TYR:O	2.09	0.53
12:A:1384:C:H2'	12:A:1385:G:H8	1.72	0.53
12:A:427:U:OP2	12:A:428:G:O2'	2.15	0.53
12:A:1420:U:H2'	12:A:1420:U:O2	2.07	0.53
17:N:49:GLN:OE1	17:N:49:GLN:N	2.42	0.53
3:F:17:GLN:HA	3:F:17:GLN:NE2	2.22	0.53
12:A:789:U:O4	12:A:791:G:C2	2.55	0.53
12:A:1143:G:H2'	12:A:1144:G:H8	1.73	0.53
16:M:75:MET:HE1	16:M:79:ARG:NH1	2.23	0.53
5:K:17:SER:N	5:K:79:ILE:HG12	2.24	0.53
12:A:1166:G:C6	12:A:1168:U:H5''	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:22:ALA:N	17:N:26:GLU:OE2	2.42	0.53
4:H:32:LEU:O	4:H:36:ILE:HG13	2.09	0.53
12:A:1010:U:H2'	12:A:1011:C:H6	1.72	0.53
12:A:1287:A:H2'	12:A:1288:A:H8	1.72	0.53
2:E:96:MET:HE1	2:E:144:LEU:HD22	1.91	0.53
10:R:20:GLU:OE2	10:R:21:ILE:N	2.42	0.53
12:A:500:G:H2'	12:A:501:C:C6	2.44	0.53
12:A:628:G:H2'	12:A:629:A:H8	1.73	0.53
12:A:1009:U:O2	12:A:1020:G:N2	2.38	0.53
12:A:1227:A:H5'	12:A:1227:A:C8	2.44	0.53
12:A:1478:U:H2'	12:A:1479:C:C6	2.41	0.53
5:K:61:PHE:O	5:K:65:VAL:HG22	2.08	0.53
12:A:80:A:H2'	12:A:81:A:C8	2.43	0.53
16:M:11:ASP:CG	16:M:12:HIS:H	2.17	0.53
3:F:11:HIS:ND1	3:F:13:ASP:OD1	2.42	0.53
12:A:444:G:N1	12:A:490:C:N3	2.38	0.53
12:A:674:G:H2'	12:A:675:A:H8	1.74	0.53
12:A:1419:G:N1	12:A:1421:G:N7	2.56	0.53
12:A:727:G:N2	12:A:730:G:OP2	2.34	0.52
15:J:32:THR:HG23	15:J:32:THR:O	2.08	0.52
17:N:16:LEU:HD11	17:N:54:ASP:O	2.09	0.52
5:K:70:CYS:O	5:K:74:VAL:HG12	2.10	0.52
5:K:93:ARG:HA	5:K:96:THR:CG2	2.39	0.52
14:I:25:ASN:O	14:I:25:ASN:ND2	2.42	0.52
18:S:11:ILE:HD12	18:S:38:SER:OG	2.09	0.52
1:D:105:MET:HE1	1:D:143:VAL:HG23	1.91	0.52
3:F:38:ARG:NE	3:F:63:ASN:OD1	2.30	0.52
12:A:529:G:H4'	12:A:533:A:C2	2.45	0.52
12:A:1028:C:H2'	12:A:1029:U:C6	2.44	0.52
5:K:17:SER:C	5:K:79:ILE:HG23	2.35	0.52
12:A:1143:G:H2'	12:A:1144:G:C8	2.45	0.52
18:S:5:LEU:HD23	18:S:6:LYS:H	1.75	0.52
5:K:81:ASN:HD22	5:K:106:ARG:HG2	1.71	0.52
8:P:4:ILE:HG12	8:P:21:VAL:HG22	1.91	0.52
12:A:1386:G:H2'	12:A:1387:G:C8	2.45	0.52
3:F:37:HIS:ND1	3:F:65:GLU:HG3	2.25	0.52
12:A:868:C:H2'	12:A:869:G:O4'	2.10	0.52
14:I:34:SER:HB3	14:I:37:GLN:OE1	2.10	0.52
5:K:72:ASP:O	5:K:75:LYS:NZ	2.27	0.52
7:O:2:SER:OG	7:O:3:LEU:N	2.43	0.52
7:O:48:LYS:HZ1	12:A:669:G:P	2.32	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1038:C:H2'	12:A:1039:G:C8	2.44	0.52
12:A:1095:U:OP1	12:A:1108:G:N2	2.36	0.52
12:A:1176:A:H2'	12:A:1177:G:C8	2.44	0.52
13:C:129:MET:SD	13:C:129:MET:C	2.93	0.52
13:C:155:GLY:HA2	13:C:163:ALA:HB1	1.90	0.52
1:D:196:ASN:HB3	1:D:198:HIS:CE1	2.45	0.52
2:E:56:VAL:CG2	2:E:57:PRO:HD3	2.40	0.52
8:P:57:ILE:O	8:P:61:VAL:HG23	2.09	0.52
11:T:4:ILE:HG22	11:T:6:SER:H	1.75	0.51
12:A:526:C:H6	12:A:526:C:O5'	1.93	0.51
12:A:664:G:H22	12:A:741:G:H1	1.59	0.51
12:A:1314:C:H2'	12:A:1315:U:C6	2.42	0.51
17:N:28:LYS:HZ3	17:N:48:LEU:HA	1.75	0.51
12:A:1119:C:OP1	14:I:85:ARG:NH1	2.25	0.51
9:Q:80:GLU:CD	9:Q:82:ALA:H	2.18	0.51
9:Q:49:GLU:OE2	9:Q:50:ASN:N	2.43	0.51
12:A:685:G:N2	12:A:704:A:OP2	2.42	0.51
12:A:965:U:O2	12:A:969:A:C2	2.63	0.51
12:A:1492:A:H2'	12:A:1493:A:H4'	1.92	0.51
13:C:70:THR:OG1	13:C:71:ALA:N	2.43	0.51
15:J:99:GLN:OE1	15:J:99:GLN:HA	2.11	0.51
14:I:28:ILE:HA	14:I:63:LEU:HB2	1.92	0.51
15:J:35:GLN:O	15:J:76:ILE:HG23	2.11	0.51
3:F:6:ILE:HG13	3:F:89:VAL:HG23	1.92	0.51
5:K:35:THR:OG1	5:K:41:ALA:HA	2.11	0.51
14:I:22:LYS:CG	14:I:23:PRO:HD2	2.41	0.51
2:E:25:VAL:HG22	2:E:26:LYS:H	1.75	0.51
3:F:65:GLU:OE2	3:F:95:ALA:HB2	2.10	0.51
12:A:684:U:H2'	12:A:685:G:O4'	2.11	0.51
12:A:728:A:H2'	12:A:729:A:C8	2.45	0.51
15:J:53:ILE:HD11	15:J:61:ALA:HB1	1.91	0.51
16:M:16:VAL:CG2	16:M:41:GLU:HB2	2.41	0.51
12:A:335:C:O2'	12:A:1433:A:N3	2.38	0.51
12:A:843:U:H2'	12:A:844:G:C8	2.46	0.51
12:A:951:G:C6	12:A:1231:G:C6	2.99	0.51
12:A:1231:G:H2'	12:A:1232:U:C6	2.45	0.51
16:M:17:ILE:O	16:M:20:THR:N	2.44	0.51
3:F:18:VAL:HG21	3:F:58:HIS:CE1	2.42	0.51
12:A:337:G:H2'	12:A:338:A:C8	2.46	0.51
12:A:787:A:O5'	12:A:787:A:H8	1.94	0.51
12:A:980:C:O2'	17:N:13:ARG:NH2	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1167:A:O2'	12:A:1168:U:O2	2.29	0.51
12:A:1170:A:H2'	12:A:1171:A:O4'	2.10	0.51
12:A:1386:G:O5'	12:A:1386:G:H8	1.94	0.51
15:J:52:LEU:O	17:N:81:ARG:NH1	2.44	0.51
3:F:100:SER:O	3:F:104:LYS:HG2	2.10	0.50
8:P:23:ASP:OD1	8:P:24:SER:N	2.44	0.50
12:A:219:U:H2'	12:A:220:G:H8	1.76	0.50
12:A:713:G:H21	12:A:777:A:H1'	1.76	0.50
12:A:965:U:O2	12:A:969:A:C5	2.63	0.50
12:A:1120:C:H2'	12:A:1121:U:H6	1.76	0.50
12:A:1319:A:N7	12:A:1323:G:C5	2.79	0.50
13:C:20:SER:OG	13:C:22:TRP:NE1	2.44	0.50
15:J:82:LYS:HA	15:J:85:ASP:OD2	2.10	0.50
16:M:22:ILE:O	16:M:25:VAL:HG12	2.11	0.50
5:K:49:GLY:HA2	12:A:688:G:H5'	1.92	0.50
10:R:61:ARG:HH12	12:A:736:C:H5''	1.76	0.50
12:A:1397:C:N4	12:A:1506:U:C4	2.79	0.50
13:C:150:LYS:HB2	13:C:168:TYR:O	2.11	0.50
14:I:94:LEU:O	14:I:98:LEU:HB2	2.10	0.50
18:S:64:ASP:OD1	18:S:65:GLU:N	2.44	0.50
5:K:80:LYS:O	5:K:106:ARG:HG2	2.12	0.50
5:K:52:PHE:HA	5:K:56:ARG:NH2	2.26	0.50
12:A:935:A:H2'	12:A:936:C:H6	1.77	0.50
12:A:1343:G:H2'	12:A:1344:C:C6	2.47	0.50
12:A:1475:G:H2'	12:A:1476:A:C8	2.45	0.50
3:F:37:HIS:CE1	3:F:65:GLU:HG3	2.47	0.50
5:K:35:THR:HA	5:K:42:LEU:HG	1.93	0.50
16:M:65:VAL:HG12	16:M:66:GLU:HG2	1.92	0.50
12:A:202:G:O2'	12:A:468:A:H8	1.95	0.50
12:A:1371:G:O3'	14:I:71:GLY:HA3	2.12	0.50
13:C:154:SER:HA	13:C:157:LEU:HD21	1.92	0.50
14:I:46:MET:SD	14:I:46:MET:N	2.85	0.50
14:I:60:LYS:O	14:I:61:LEU:HD23	2.11	0.50
18:S:40:ILE:H	18:S:40:ILE:HD12	1.77	0.50
5:K:93:ARG:C	5:K:93:ARG:HE	2.17	0.50
12:A:78:A:H3'	12:A:79:G:C8	2.46	0.50
12:A:82:G:C5	12:A:83:C:H1'	2.47	0.50
12:A:939:G:H2'	12:A:940:C:C6	2.47	0.50
4:H:5:ASP:OD2	4:H:81:PRO:HD3	2.11	0.50
12:A:788:U:H5''	12:A:788:U:C6	2.47	0.50
12:A:925:G:O6	12:A:1391:U:O2'	2.24	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:74:SER:O	16:M:78:LYS:HG2	2.12	0.50
6:L:21:VAL:HG23	6:L:95:TYR:CE2	2.47	0.50
11:T:39:ILE:HD12	11:T:82:GLN:HB3	1.94	0.50
13:C:31:ASP:OD1	13:C:32:ASN:N	2.45	0.50
13:C:150:LYS:HE3	13:C:201:TRP:CE3	2.47	0.50
12:A:945:G:C2	12:A:946:A:C8	3.00	0.49
12:A:946:A:H2'	12:A:947:G:H8	1.77	0.49
13:C:114:LYS:NZ	13:C:185:ASN:HD21	2.09	0.49
17:N:30:ILE:HG13	17:N:31:ILE:N	2.27	0.49
2:E:81:LEU:H	2:E:81:LEU:HD12	1.77	0.49
12:A:926:G:H21	12:A:927:G:H4'	1.77	0.49
12:A:1040:U:H2'	12:A:1041:G:C8	2.47	0.49
14:I:43:THR:HA	14:I:46:MET:HE1	1.95	0.49
1:D:124:MET:SD	1:D:127:GLY:HA2	2.52	0.49
7:O:10:LYS:C	7:O:10:LYS:CD	2.86	0.49
13:C:134:MET:HE3	13:C:168:TYR:HB2	1.95	0.49
14:I:19:VAL:HA	14:I:65:ILE:HD13	1.94	0.49
6:L:70:GLU:O	6:L:70:GLU:HG2	2.10	0.49
12:A:935:A:H2'	12:A:936:C:C6	2.47	0.49
15:J:32:THR:HG23	15:J:83:THR:HG22	1.94	0.49
16:M:10:PRO:HB3	16:M:18:ALA:HB1	1.94	0.49
12:A:1316:G:N2	12:A:1319:A:OP2	2.45	0.49
12:A:1421:G:H21	12:A:1480:A:C3'	2.21	0.49
14:I:55:VAL:HG13	14:I:57:MET:H	1.77	0.49
4:H:95:VAL:HG12	4:H:100:GLY:HA3	1.95	0.49
12:A:83:C:H2'	12:A:85:U:N3	2.26	0.49
12:A:1328:C:H5''	16:M:28:THR:HG21	1.94	0.49
12:A:1536:C:O2'	12:A:1537:U:OP2	2.29	0.49
14:I:27:LYS:O	14:I:29:VAL:HG23	2.12	0.49
6:L:66:TYR:HB2	6:L:93:VAL:HG11	1.93	0.49
3:F:12:PRO:HD3	3:F:57:ALA:HA	1.95	0.49
12:A:1524:C:H2'	12:A:1525:G:C8	2.48	0.49
5:K:65:VAL:HB	5:K:69:ARG:NH1	2.25	0.49
6:L:89:ASP:OD2	12:A:523:A:N6	2.44	0.49
12:A:593:U:H2'	12:A:594:U:C6	2.48	0.49
12:A:926:G:H2'	12:A:926:G:N3	2.28	0.49
12:A:936:C:H2'	12:A:937:A:H8	1.78	0.49
12:A:787:A:H2'	12:A:788:U:H6	1.78	0.49
12:A:1137:C:O2	12:A:1138:G:N2	2.45	0.49
12:A:1386:G:H2'	12:A:1387:G:H8	1.78	0.49
12:A:1420:U:O2	12:A:1421:G:H5''	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1422:G:C5	12:A:1480:A:C5	3.00	0.49
9:Q:68:SER:OG	9:Q:69:LYS:N	2.46	0.48
12:A:477:C:H2'	12:A:478:A:C8	2.48	0.48
12:A:492:C:H2'	12:A:493:A:H8	1.76	0.48
12:A:1010:U:H3	12:A:1019:A:H62	1.60	0.48
12:A:1071:C:H2'	12:A:1072:G:C8	2.48	0.48
12:A:1236:A:H2'	12:A:1237:C:C6	2.48	0.48
14:I:12:ARG:HG2	14:I:77:GLY:HA3	1.94	0.48
15:J:40:ILE:HG23	15:J:73:LEU:HB3	1.94	0.48
16:M:45:ILE:HD12	16:M:48:LEU:HD23	1.95	0.48
18:S:73:GLU:N	18:S:73:GLU:OE1	2.45	0.48
10:R:71:THR:HG22	10:R:73:ARG:H	1.77	0.48
12:A:1316:G:N2	12:A:1318:A:H3'	2.28	0.48
12:A:1318:A:O2'	18:S:37:ARG:HD2	2.13	0.48
12:A:1417:G:N2	12:A:1418:A:H62	2.10	0.48
14:I:25:ASN:HD22	14:I:25:ASN:N	2.10	0.48
17:N:26:GLU:CD	17:N:26:GLU:N	2.70	0.48
1:D:50:ASP:OD1	1:D:50:ASP:N	2.45	0.48
7:O:42:HIS:CE1	12:A:739:C:HO2'	2.30	0.48
7:O:48:LYS:NZ	12:A:668:G:O3'	2.45	0.48
8:P:44:SER:HG	8:P:47:GLU:HG2	1.75	0.48
9:Q:58:VAL:HG13	9:Q:79:VAL:HB	1.95	0.48
12:A:714:G:H2'	12:A:715:A:C8	2.48	0.48
12:A:1004:A:H2'	12:A:1005:A:O4'	2.13	0.48
12:A:1292:G:H2'	12:A:1293:C:H6	1.78	0.48
5:K:22:HIS:CD2	12:A:707:U:H4'	2.49	0.48
9:Q:5:ILE:HD11	9:Q:62:ARG:NH1	2.27	0.48
12:A:60:A:N6	12:A:110:C:H42	2.10	0.48
3:F:36:ILE:HG23	3:F:62:MET:HE1	1.95	0.48
7:O:8:THR:HA	7:O:11:ILE:CG2	2.43	0.48
12:A:820:U:H4'	12:A:821:G:OP2	2.12	0.48
12:A:966:G:H5'	12:A:966:G:C8	2.48	0.48
12:A:987:G:H2'	12:A:988:G:H8	1.79	0.48
13:C:189:ALA:HB3	13:C:196:ILE:HG22	1.95	0.48
3:F:81:ASN:OD1	3:F:82:ASP:N	2.46	0.48
5:K:93:ARG:HH22	5:K:97:ILE:CD1	2.23	0.48
12:A:1149:C:P	14:I:11:ARG:HH21	2.37	0.48
12:A:1312:G:H2'	12:A:1313:U:C6	2.48	0.48
13:C:122:SER:HA	13:C:125:GLU:OE2	2.14	0.48
17:N:47:LYS:O	17:N:50:THR:HG22	2.13	0.48
12:A:676:A:H2'	12:A:677:U:H6	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1034:G:C2	12:A:1035:A:C8	3.01	0.48
16:M:18:ALA:O	16:M:21:SER:OG	2.30	0.48
2:E:132:ASN:OD1	2:E:133:PRO:HD2	2.14	0.48
9:Q:44:LEU:HD22	9:Q:73:TRP:CD1	2.48	0.48
12:A:1272:G:H2'	12:A:1273:C:C6	2.48	0.48
12:A:1360:A:N1	12:A:1361:G:N1	2.62	0.48
15:J:90:LEU:HD12	15:J:91:ASP:N	2.29	0.48
5:K:35:THR:HG22	5:K:36:ASP:N	2.28	0.48
12:A:773:G:O6	12:A:807:A:N6	2.46	0.48
13:C:129:MET:SD	13:C:130:PHE:N	2.86	0.48
1:D:152:GLN:O	1:D:156:LYS:HD2	2.14	0.48
12:A:814:A:O2'	12:A:1510:C:O2'	2.30	0.48
12:A:928:G:N1	12:A:1390:U:C2	2.82	0.48
12:A:1422:G:H2'	12:A:1423:G:C8	2.44	0.48
3:F:12:PRO:O	3:F:44:ARG:NH2	2.47	0.47
5:K:32:VAL:HG13	5:K:70:CYS:SG	2.53	0.47
14:I:80:ARG:O	14:I:84:THR:OG1	2.30	0.47
12:A:208:U:H2'	12:A:210:C:C5	2.49	0.47
12:A:1219:A:H2'	12:A:1220:G:H8	1.79	0.47
12:A:35:G:H2'	12:A:36:C:H6	1.79	0.47
18:S:19:VAL:HG11	18:S:44:MET:SD	2.54	0.47
15:J:25:ILE:HD13	15:J:90:LEU:HD23	1.97	0.47
5:K:20:VAL:HG12	5:K:83:GLU:CG	2.45	0.47
12:A:1134:G:H2'	12:A:1135:U:O4'	2.14	0.47
12:A:1144:G:H21	12:A:1146:A:H62	1.61	0.47
12:A:1319:A:N7	12:A:1323:G:C6	2.83	0.47
18:S:63:THR:H	18:S:66:MET:HG3	1.78	0.47
3:F:17:GLN:HB3	3:F:21:MET:HE3	1.97	0.47
5:K:64:GLN:O	5:K:68:GLU:HG2	2.14	0.47
5:K:113:VAL:HG23	10:R:73:ARG:NH1	2.29	0.47
6:L:3:THR:C	6:L:5:ASN:N	2.73	0.47
12:A:1426:G:O6	12:A:1474:U:O2	2.32	0.47
1:D:17:THR:OG1	1:D:18:ASP:N	2.48	0.47
7:O:33:THR:HA	7:O:63:ARG:NH2	2.29	0.47
8:P:39:PHE:CD1	8:P:50:THR:HG22	2.44	0.47
9:Q:16:LYS:HD2	12:A:275:G:H5'	1.96	0.47
12:A:681:A:H2'	12:A:682:G:O4'	2.15	0.47
12:A:791:G:H2'	12:A:791:G:O5'	2.14	0.47
12:A:977:A:O2'	12:A:979:C:OP2	2.32	0.47
14:I:34:SER:OG	14:I:36:GLU:HG3	2.14	0.47
16:M:81:MET:HE2	16:M:81:MET:HA	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:28:LYS:HZ1	17:N:48:LEU:N	2.13	0.47
5:K:93:ARG:C	5:K:93:ARG:NE	2.73	0.47
12:A:966:G:C5'	12:A:966:G:C8	2.95	0.47
12:A:1313:U:H2'	12:A:1314:C:C6	2.50	0.47
12:A:1398:A:N6	12:A:1505:G:C6	2.83	0.47
12:A:704:A:C4	12:A:705:G:C8	3.03	0.47
12:A:965:U:O2	12:A:969:A:N3	2.48	0.47
12:A:1029:U:H2'	12:A:1031:C:C5	2.44	0.47
14:I:24:GLY:O	14:I:60:LYS:O	2.32	0.47
1:D:9:LEU:HD13	1:D:32:CYS:SG	2.54	0.47
12:A:1117:A:H4'	14:I:106:ARG:NH1	2.30	0.47
13:C:35:SER:OG	13:C:59:ARG:NH2	2.48	0.47
17:N:53:ARG:HH21	18:S:37:ARG:NH2	2.13	0.47
1:D:144:SER:CB	1:D:179:GLU:HG2	2.45	0.46
5:K:60:PRO:O	5:K:64:GLN:HG2	2.16	0.46
7:O:10:LYS:HD3	7:O:10:LYS:O	2.15	0.46
12:A:1245:C:H2'	12:A:1246:A:C8	2.50	0.46
12:A:1479:C:H2'	12:A:1480:A:H8	1.80	0.46
17:N:89:MET:HE2	17:N:89:MET:HA	1.95	0.46
1:D:53:VAL:HG13	1:D:54:GLN:H	1.80	0.46
3:F:17:GLN:HE21	3:F:17:GLN:CA	2.27	0.46
5:K:57:LYS:O	5:K:57:LYS:HG2	2.16	0.46
7:O:78:TYR:O	7:O:82:ILE:HG23	2.16	0.46
12:A:71:A:C6	12:A:100:G:C8	3.04	0.46
12:A:980:C:O2'	12:A:981:U:OP1	2.32	0.46
12:A:1410:A:N7	12:A:1492:A:N6	2.62	0.46
14:I:46:MET:O	14:I:50:GLN:HG3	2.16	0.46
1:D:124:MET:HE3	1:D:124:MET:HB2	1.82	0.46
8:P:8:ARG:NH2	8:P:15:PRO:HB3	2.30	0.46
14:I:91:ASP:OD1	14:I:93:SER:N	2.40	0.46
12:A:5:U:H4'	12:A:6:G:H5'	1.97	0.46
12:A:1012:A:H2'	12:A:1013:G:C8	2.51	0.46
2:E:162:GLU:OE1	2:E:162:GLU:N	2.36	0.46
3:F:21:MET:O	3:F:25:TYR:CD2	2.68	0.46
10:R:57:ARG:O	10:R:61:ARG:HG3	2.15	0.46
12:A:936:C:H42	12:A:1379:G:H1	1.64	0.46
13:C:157:LEU:H	13:C:157:LEU:CD2	2.29	0.46
12:A:339:C:H2'	12:A:340:U:C6	2.51	0.46
12:A:384:G:H2'	12:A:385:C:C6	2.50	0.46
12:A:973:G:OP1	15:J:59:LYS:NZ	2.31	0.46
12:A:1319:A:C8	12:A:1323:G:C5	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1464:U:H2'	12:A:1465:A:H8	1.81	0.46
18:S:11:ILE:HG23	18:S:11:ILE:O	2.15	0.46
4:H:107:SER:HA	12:A:642:A:C5	2.51	0.46
5:K:29:ASN:OD1	5:K:30:THR:N	2.47	0.46
5:K:39:GLY:O	12:A:683:G:N2	2.49	0.46
12:A:56:U:H2'	12:A:57:G:H8	1.80	0.46
12:A:1028:C:H2'	12:A:1029:U:H6	1.80	0.46
12:A:1415:G:H2'	12:A:1416:G:O4'	2.15	0.46
13:C:114:LYS:HD3	13:C:185:ASN:ND2	2.31	0.46
4:H:18:GLN:HE21	4:H:70:ALA:CA	2.27	0.46
6:L:12:ARG:HG2	6:L:12:ARG:HH11	1.81	0.46
9:Q:15:ASP:OD2	9:Q:54:GLY:HA2	2.16	0.46
12:A:133:U:H1'	12:A:230:G:N2	2.30	0.46
12:A:707:U:H2'	12:A:708:C:C6	2.51	0.46
13:C:168:TYR:HE2	13:C:170:GLU:HG3	1.80	0.46
16:M:11:ASP:CG	16:M:12:HIS:N	2.74	0.46
6:L:36:ARG:HA	6:L:76:GLU:OE1	2.16	0.46
12:A:150:U:H2'	12:A:151:A:H8	1.80	0.46
12:A:955:U:H1'	12:A:1227:A:N6	2.31	0.46
12:A:1187:G:H5''	14:I:115:LYS:HE3	1.98	0.46
12:A:1258:G:H2'	12:A:1259:C:C6	2.51	0.46
12:A:1325:C:H2'	12:A:1326:U:H6	1.79	0.46
12:A:1421:G:C2	12:A:1480:A:C4	3.04	0.46
8:P:44:SER:C	8:P:46:LYS:H	2.24	0.46
7:O:85:LEU:HD12	7:O:87:LEU:HD11	1.98	0.45
12:A:1421:G:C5	12:A:1481:U:C4	3.04	0.45
2:E:108:GLY:H	2:E:111:MET:HE2	1.81	0.45
5:K:74:VAL:HG22	5:K:74:VAL:O	2.17	0.45
5:K:93:ARG:CA	5:K:96:THR:HG22	2.46	0.45
12:A:71:A:O2'	12:A:72:A:H8	1.99	0.45
12:A:475:C:H2'	12:A:476:U:C6	2.52	0.45
12:A:1135:U:H3'	12:A:1137:C:N4	2.30	0.45
12:A:1172:C:H2'	12:A:1173:U:C6	2.51	0.45
12:A:1246:A:N1	12:A:1292:G:C6	2.85	0.45
12:A:1479:C:H2'	12:A:1480:A:C8	2.52	0.45
13:C:129:MET:HB3	13:C:129:MET:HE3	1.65	0.45
3:F:42:TRP:CZ3	3:F:102:MET:SD	3.08	0.45
12:A:1294:G:H2'	12:A:1295:U:C6	2.51	0.45
12:A:1484:C:C4	12:A:1485:U:C4	3.04	0.45
12:A:60:A:N6	12:A:110:C:C4	2.84	0.45
12:A:1166:G:N1	12:A:1169:A:OP2	2.36	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1187:G:C5'	14:I:115:LYS:HE3	2.47	0.45
2:E:158:GLY:C	2:E:159:LYS:HD2	2.42	0.45
3:F:21:MET:HA	3:F:24:ARG:NH1	2.32	0.45
7:O:32:LEU:HD11	7:O:62:GLN:HG2	1.97	0.45
12:A:421:U:H5''	12:A:422:C:H5	1.82	0.45
12:A:990:C:H2'	12:A:991:U:C6	2.51	0.45
12:A:1517:G:H8	12:A:1517:G:OP1	1.99	0.45
14:I:51:PRO:HG2	14:I:83:ILE:HD11	1.97	0.45
12:A:747:A:H2'	12:A:748:G:O4'	2.17	0.45
12:A:1388:C:H6	12:A:1388:C:H5''	1.80	0.45
12:A:1465:A:H2'	12:A:1466:C:C6	2.51	0.45
15:J:17:LEU:O	15:J:20:GLN:HG3	2.16	0.45
15:J:75:ASP:C	15:J:76:ILE:HD13	2.42	0.45
5:K:35:THR:CG2	5:K:36:ASP:N	2.80	0.45
12:A:999:C:H2'	12:A:1000:A:C8	2.52	0.45
12:A:1149:C:H2'	12:A:1150:A:H8	1.80	0.45
12:A:1265:C:H2'	12:A:1266:G:C8	2.52	0.45
7:O:3:LEU:HD12	7:O:3:LEU:H	1.82	0.45
11:T:49:LYS:O	11:T:50:ALA:C	2.60	0.45
12:A:76:G:H1	12:A:93:U:H3	1.64	0.45
15:J:21:ALA:O	15:J:25:ILE:HG22	2.17	0.45
17:N:96:LEU:HD23	17:N:96:LEU:HA	1.71	0.45
6:L:5:ASN:O	6:L:5:ASN:OD1	2.35	0.45
12:A:339:C:H2'	12:A:340:U:H6	1.80	0.45
12:A:705:G:C4	12:A:706:A:C8	3.04	0.45
12:A:1018:G:C5	12:A:1019:A:C2	3.05	0.45
12:A:1420:U:C2	12:A:1421:G:N7	2.85	0.45
13:C:154:SER:HB3	13:C:165:THR:HA	1.99	0.45
2:E:26:LYS:NZ	12:A:923:A:P	2.90	0.45
2:E:115:LEU:HD13	2:E:123:VAL:HG11	1.99	0.45
3:F:90:MET:SD	10:R:61:ARG:NH1	2.90	0.45
12:A:928:G:C6	12:A:1390:U:O2	2.70	0.45
12:A:958:A:N1	18:S:55:ARG:HB2	2.31	0.45
12:A:1064:G:O2'	12:A:1190:G:N2	2.50	0.45
12:A:1288:A:H2'	12:A:1289:A:C8	2.52	0.45
16:M:90:ARG:HA	16:M:90:ARG:HD2	1.79	0.45
3:F:39:LEU:HD12	3:F:62:MET:HE3	1.98	0.44
7:O:33:THR:HA	7:O:63:ARG:HH22	1.82	0.44
8:P:44:SER:O	8:P:46:LYS:N	2.50	0.44
12:A:1013:G:OP1	18:S:18:LYS:NZ	2.47	0.44
12:A:1254:A:H2'	12:A:1255:G:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1266:G:N1	12:A:1270:G:C6	2.86	0.44
12:A:1419:G:C8	12:A:1483:A:C6	3.05	0.44
13:C:161:GLU:HA	13:C:161:GLU:OE2	2.18	0.44
15:J:14:ASP:OD1	15:J:16:ARG:N	2.48	0.44
16:M:64:VAL:HG23	16:M:68:ASP:CG	2.42	0.44
17:N:79:LEU:HB2	17:N:84:VAL:HG23	1.99	0.44
3:F:64:VAL:HG22	3:F:65:GLU:N	2.33	0.44
7:O:32:LEU:HD23	7:O:32:LEU:HA	1.85	0.44
18:S:17:LYS:O	18:S:21:LYS:HG2	2.16	0.44
6:L:50:ARG:CG	6:L:90:LEU:HD21	2.45	0.44
12:A:795:C:H2'	12:A:796:C:H6	1.82	0.44
12:A:799:G:H2'	12:A:800:G:O4'	2.17	0.44
12:A:908:A:H2'	12:A:909:A:H8	1.82	0.44
12:A:1482:G:O2'	12:A:1483:A:H8	1.99	0.44
12:A:1521:C:H2'	12:A:1522:U:C6	2.52	0.44
14:I:9:THR:O	14:I:85:ARG:HD2	2.17	0.44
2:E:54:ARG:C	2:E:55:GLU:HG3	2.43	0.44
6:L:28:PRO:HD2	12:A:363:A:C6	2.53	0.44
12:A:691:G:H2'	12:A:692:U:C6	2.52	0.44
12:A:1426:G:C8	12:A:1475:G:N2	2.85	0.44
12:A:1472:U:C2	12:A:1473:G:H1'	2.53	0.44
13:C:162:ILE:HD12	13:C:162:ILE:C	2.42	0.44
17:N:56:SER:C	17:N:58:SER:H	2.26	0.44
1:D:206:LYS:HB3	12:A:8:A:N6	2.32	0.44
11:T:33:LYS:NZ	12:A:1439:G:OP2	2.51	0.44
12:A:789:U:O2	12:A:792:A:N7	2.47	0.44
12:A:1033:G:C4	12:A:1034:G:C8	3.05	0.44
4:H:113:ASP:N	4:H:113:ASP:OD1	2.50	0.44
9:Q:62:ARG:HG2	9:Q:74:THR:CG2	2.48	0.44
10:R:64:TYR:O	10:R:64:TYR:CD2	2.70	0.44
11:T:39:ILE:CD1	11:T:82:GLN:HB3	2.48	0.44
12:A:1360:A:C6	12:A:1361:G:C6	3.06	0.44
12:A:1521:C:H2'	12:A:1522:U:H6	1.81	0.44
18:S:45:ILE:HD11	18:S:64:ASP:HA	1.99	0.44
2:E:38:VAL:HG12	2:E:48:PHE:HB2	2.00	0.44
10:R:63:ARG:HH22	12:A:719:C:N4	2.10	0.44
12:A:598:U:H2'	12:A:599:C:H6	1.83	0.44
16:M:48:LEU:HG	16:M:53:ILE:HD11	2.00	0.44
2:E:29:ARG:N	2:E:29:ARG:CD	2.73	0.44
5:K:94:GLU:OE2	5:K:94:GLU:HA	2.18	0.44
6:L:10:LYS:HA	6:L:11:PRO:HD3	1.87	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:515:G:H2'	12:A:516:U:C6	2.48	0.44
12:A:949:A:H2'	12:A:950:U:C6	2.53	0.44
12:A:1010:U:H2'	12:A:1011:C:C6	2.51	0.44
12:A:1411:C:H1'	12:A:1491:G:H1	1.82	0.44
15:J:34:ALA:HB2	15:J:83:THR:CG2	2.47	0.44
6:L:31:ARG:O	6:L:58:THR:HG23	2.18	0.44
12:A:1303:C:H2'	12:A:1304:G:C8	2.53	0.44
12:A:1479:C:C2	12:A:1480:A:N7	2.86	0.44
2:E:166:GLY:HA2	4:H:114:ARG:HH22	1.83	0.43
4:H:48:ASP:OD1	4:H:49:PHE:N	2.51	0.43
12:A:501:C:H2'	12:A:502:A:H8	1.83	0.43
12:A:592:G:C6	12:A:648:A:C6	3.06	0.43
12:A:978:A:C4	12:A:1319:A:H2	2.35	0.43
12:A:1282:C:H2'	12:A:1283:U:C6	2.52	0.43
4:H:7:ILE:HD13	4:H:7:ILE:HA	1.57	0.43
8:P:35:ARG:HG2	8:P:35:ARG:NH1	2.33	0.43
10:R:61:ARG:NH1	12:A:736:C:OP1	2.51	0.43
12:A:35:G:H2'	12:A:36:C:C6	2.52	0.43
4:H:63:LEU:HD12	4:H:63:LEU:H	1.83	0.43
8:P:57:ILE:HG21	8:P:75:ILE:HD11	2.01	0.43
11:T:66:LEU:HD22	11:T:67:ILE:HG23	1.99	0.43
12:A:475:C:H2'	12:A:476:U:H6	1.83	0.43
12:A:713:G:H2'	12:A:714:G:H8	1.81	0.43
12:A:1040:U:H2'	12:A:1041:G:H8	1.83	0.43
12:A:1271:A:H2'	12:A:1272:G:H8	1.84	0.43
12:A:1398:A:N1	12:A:1505:G:C6	2.86	0.43
13:C:140:ASN:O	13:C:144:LEU:HD13	2.18	0.43
14:I:19:VAL:HG21	14:I:82:GLY:C	2.43	0.43
15:J:6:ILE:HG22	15:J:102:LEU:HB3	2.01	0.43
12:A:73:C:O2'	12:A:74:A:H8	2.01	0.43
12:A:227:G:H2'	12:A:228:A:C8	2.53	0.43
12:A:833:G:H2'	12:A:834:U:C6	2.53	0.43
12:A:978:A:C5	12:A:1319:A:H2	2.35	0.43
12:A:1173:U:H2'	12:A:1174:G:H8	1.84	0.43
9:Q:65:ARG:HD3	12:A:130:A:OP1	2.19	0.43
12:A:1219:A:H2'	12:A:1220:G:C8	2.54	0.43
14:I:52:LEU:HD23	14:I:52:LEU:HA	1.78	0.43
16:M:89:LEU:HD12	16:M:89:LEU:H	1.83	0.43
7:O:55:GLY:O	7:O:58:ARG:HB3	2.18	0.43
12:A:652:U:O4	12:A:752:G:O2'	2.20	0.43
12:A:1060:U:H2'	12:A:1061:G:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1087:G:C6	12:A:1099:G:N1	2.86	0.43
15:J:8:ILE:HG22	15:J:100:ILE:HD13	2.00	0.43
4:H:94:LYS:HE3	4:H:94:LYS:HB3	1.92	0.43
11:T:36:TYR:CA	11:T:39:ILE:HG22	2.48	0.43
12:A:821:G:H2'	12:A:822:U:C6	2.53	0.43
12:A:1398:A:C8	12:A:1398:A:H3'	2.53	0.43
15:J:60:ASP:OD1	15:J:60:ASP:C	2.62	0.43
2:E:151:GLU:H	2:E:151:GLU:CD	2.23	0.43
4:H:7:ILE:HD12	4:H:7:ILE:HG23	1.67	0.43
7:O:56:LEU:O	7:O:60:VAL:HG23	2.18	0.43
12:A:936:C:H2'	12:A:937:A:C8	2.53	0.43
12:A:1206:G:C4	12:A:1207:2MG:C8	3.07	0.43
12:A:1326:U:H2'	12:A:1327:C:H6	1.84	0.43
16:M:79:ARG:O	16:M:83:LEU:HB2	2.19	0.43
17:N:20:TYR:HE2	17:N:52:PRO:HD2	1.83	0.43
18:S:40:ILE:HB	18:S:67:VAL:HA	2.01	0.43
11:T:57:ILE:HD13	11:T:57:ILE:HA	1.84	0.43
12:A:978:A:C4	12:A:1319:A:C2	3.06	0.43
12:A:1535:C:H5''	12:A:1535:C:C6	2.54	0.43
2:E:13:GLU:N	2:E:13:GLU:OE2	2.52	0.43
5:K:81:ASN:HD21	5:K:106:ARG:CG	2.20	0.43
12:A:904:U:H6	12:A:904:U:O5'	2.01	0.43
12:A:972:C:O2'	15:J:57:VAL:HG13	2.19	0.43
12:A:1251:A:H2'	12:A:1252:A:C8	2.54	0.43
12:A:1327:C:H2'	12:A:1328:C:H6	1.83	0.43
13:C:168:TYR:HE2	13:C:170:GLU:CG	2.32	0.43
7:O:88:ARG:HH11	7:O:88:ARG:HA	1.83	0.42
8:P:4:ILE:HD12	8:P:67:ILE:HG12	2.00	0.42
12:A:188:C:H2'	12:A:189:A:O4'	2.19	0.42
12:A:436:C:H2'	12:A:437:U:C6	2.54	0.42
12:A:1163:A:H2'	12:A:1164:G:C8	2.54	0.42
12:A:1398:A:H3'	12:A:1398:A:H8	1.84	0.42
13:C:22:TRP:HB3	13:C:59:ARG:H	1.84	0.42
14:I:62:ASP:C	14:I:63:LEU:HD23	2.44	0.42
3:F:38:ARG:HB3	3:F:63:ASN:HB2	2.00	0.42
11:T:36:TYR:HA	11:T:39:ILE:HG21	1.97	0.42
12:A:1217:C:P	17:N:9:ARG:HH21	2.41	0.42
12:A:1295:U:H2'	12:A:1296:C:C6	2.54	0.42
9:Q:7:THR:HB	9:Q:61:ILE:O	2.20	0.42
12:A:1008:U:C4	12:A:1022:A:C2	3.07	0.42
12:A:1398:A:H2	12:A:1506:U:H3	1.65	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:C:41:GLN:OE1	13:C:42:TYR:N	2.53	0.42
13:C:175:LEU:HD23	13:C:175:LEU:HA	1.86	0.42
17:N:28:LYS:NZ	17:N:48:LEU:HA	2.33	0.42
2:E:105:ILE:O	2:E:106:ILE:HD13	2.19	0.42
8:P:44:SER:C	8:P:46:LYS:N	2.78	0.42
10:R:71:THR:O	10:R:74:HIS:ND1	2.52	0.42
11:T:43:ASP:OD1	11:T:43:ASP:C	2.63	0.42
12:A:1026:G:C6	12:A:1027:C:C4	3.07	0.42
12:A:1304:G:H21	12:A:1333:A:N6	2.05	0.42
12:A:1360:A:C6	12:A:1361:G:N1	2.88	0.42
12:A:1360:A:C2	12:A:1361:G:C2	3.07	0.42
12:A:1481:U:C4	12:A:1482:G:C4	3.08	0.42
12:A:1522:U:H2'	12:A:1523:G:H8	1.84	0.42
16:M:94:GLY:O	16:M:95:LEU:HD23	2.20	0.42
17:N:6:MET:HE1	17:N:9:ARG:CZ	2.48	0.42
1:D:206:LYS:HB3	12:A:8:A:H62	1.84	0.42
3:F:3:HIS:CD2	3:F:65:GLU:OE1	2.72	0.42
3:F:36:ILE:CG2	3:F:62:MET:HE1	2.49	0.42
3:F:62:MET:HE2	3:F:62:MET:HA	2.01	0.42
8:P:80:LYS:HE3	8:P:80:LYS:HB3	1.87	0.42
11:T:33:LYS:NZ	12:A:1439:G:P	2.93	0.42
12:A:1163:A:H2'	12:A:1164:G:H8	1.84	0.42
12:A:1376:U:H2'	12:A:1377:A:H8	1.84	0.42
1:D:22:LYS:C	1:D:24:GLY:H	2.28	0.42
5:K:25:ALA:O	5:K:89:PRO:O	2.37	0.42
5:K:67:ALA:HB1	5:K:100:LEU:HD22	2.02	0.42
12:A:1106:G:H2'	12:A:1107:C:C6	2.54	0.42
12:A:1125:U:C4	12:A:1127:G:C4	3.08	0.42
12:A:1324:A:H2'	12:A:1325:C:H6	1.85	0.42
13:C:153:VAL:HG12	13:C:157:LEU:HD11	2.02	0.42
13:C:157:LEU:HD13	13:C:196:ILE:HD11	2.02	0.42
14:I:24:GLY:O	14:I:61:LEU:N	2.53	0.42
3:F:25:TYR:CD1	3:F:74:LEU:HD11	2.54	0.42
5:K:50:SER:OG	5:K:69:ARG:CZ	2.68	0.42
9:Q:60:GLU:O	9:Q:76:VAL:HG12	2.20	0.42
12:A:1039:G:H2'	12:A:1040:U:C6	2.54	0.42
12:A:1420:U:O2	12:A:1421:G:C8	2.73	0.42
13:C:134:MET:CE	13:C:168:TYR:HB2	2.49	0.42
13:C:156:ARG:H	13:C:163:ALA:HA	1.85	0.42
1:D:170:TRP:CD2	1:D:186:PRO:HB3	2.55	0.42
6:L:44:LYS:HD3	6:L:44:LYS:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:401:C:O2'	12:A:621:A:N3	2.44	0.42
12:A:960:U:O2'	12:A:1223:C:H4'	2.19	0.42
12:A:1028:C:H5	12:A:1033:G:N1	2.10	0.42
12:A:1250:A:H2'	12:A:1251:A:H8	1.85	0.42
14:I:79:ILE:O	14:I:83:ILE:HG23	2.20	0.42
3:F:97:THR:O	3:F:97:THR:OG1	2.35	0.42
4:H:46:ILE:HD12	4:H:46:ILE:HA	1.79	0.42
5:K:31:ILE:HG12	5:K:46:THR:HB	2.02	0.42
12:A:223:A:H2'	12:A:224:U:C6	2.55	0.42
12:A:1324:A:H2'	12:A:1325:C:C6	2.55	0.42
14:I:55:VAL:HG13	14:I:57:MET:HB2	2.02	0.42
16:M:49:SER:HB2	16:M:52:GLN:CD	2.45	0.42
18:S:21:LYS:HE3	18:S:21:LYS:HA	2.01	0.42
1:D:37:ALA:HB3	1:D:42:GLY:HA2	2.02	0.41
12:A:142:G:H2'	12:A:143:A:O4'	2.20	0.41
12:A:1206:G:C6	12:A:1207:2MG:C5	3.08	0.41
12:A:1465:A:H2'	12:A:1466:C:H6	1.84	0.41
15:J:85:ASP:HB3	15:J:89:ARG:HH12	1.85	0.41
16:M:48:LEU:HD11	16:M:52:GLN:HB2	2.00	0.41
16:M:68:ASP:OD1	16:M:68:ASP:N	2.52	0.41
16:M:71:ARG:O	16:M:75:MET:HG3	2.20	0.41
3:F:13:ASP:OD1	3:F:14:GLN:HG2	2.20	0.41
8:P:54:LEU:H	8:P:54:LEU:HD22	1.84	0.41
12:A:925:G:O2'	12:A:926:G:H5''	2.19	0.41
12:A:958:A:H1'	12:A:985:C:O2'	2.20	0.41
12:A:1054:C:O2	12:A:1196:A:N6	2.53	0.41
12:A:1516:G:O2'	12:A:1517:G:O5'	2.34	0.41
13:C:185:ASN:OD1	13:C:185:ASN:C	2.63	0.41
14:I:89:GLU:HA	14:I:92:GLU:OE2	2.20	0.41
18:S:3:ARG:HD2	18:S:7:LYS:HD3	2.02	0.41
5:K:40:ASN:OD1	12:A:684:U:H4'	2.20	0.41
10:R:35:GLU:OE1	10:R:35:GLU:N	2.53	0.41
12:A:693:G:HO2'	12:A:694:A:P	2.43	0.41
12:A:1357:A:N6	12:A:1358:U:O4	2.53	0.41
14:I:89:GLU:CD	14:I:89:GLU:C	2.88	0.41
17:N:39:GLU:OE1	17:N:39:GLU:HA	2.19	0.41
2:E:13:GLU:HB3	2:E:64:MET:HE1	2.02	0.41
2:E:80:THR:HG22	2:E:81:LEU:N	2.36	0.41
10:R:33:ILE:HG22	10:R:34:THR:O	2.21	0.41
12:A:235:C:H2'	12:A:236:A:H8	1.85	0.41
12:A:599:C:H2'	12:A:600:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:701:U:H1'	12:A:703:G:C6	2.55	0.41
12:A:1330:U:H4'	16:M:23:TYR:CE1	2.56	0.41
12:A:1419:G:C6	12:A:1421:G:N7	2.89	0.41
12:A:1445:U:H3	12:A:1457:G:H1	1.68	0.41
16:M:7:ILE:O	16:M:7:ILE:HG23	2.20	0.41
17:N:27:LEU:O	17:N:31:ILE:HG12	2.19	0.41
18:S:5:LEU:HD13	18:S:7:LYS:HD3	2.03	0.41
18:S:19:VAL:O	18:S:23:VAL:HG22	2.20	0.41
1:D:128:ARG:HH21	12:A:619:U:H4'	1.84	0.41
5:K:81:ASN:HD21	5:K:106:ARG:CD	2.32	0.41
7:O:6:GLU:H	7:O:6:GLU:CD	2.25	0.41
12:A:203:G:N2	12:A:215:C:C2	2.88	0.41
12:A:471:U:H2'	12:A:472:U:C6	2.56	0.41
12:A:517:G:N1	12:A:533:A:OP1	2.47	0.41
12:A:845:A:H8	12:A:845:A:OP2	2.03	0.41
12:A:1332:A:H2'	12:A:1333:A:O4'	2.21	0.41
1:D:54:GLN:HG2	1:D:199:LEU:HD22	2.03	0.41
4:H:52:GLU:HA	4:H:52:GLU:OE2	2.20	0.41
11:T:10:ARG:NE	12:A:107:G:O6	2.53	0.41
12:A:321:A:H2'	12:A:322:C:C6	2.56	0.41
12:A:373:A:C2	12:A:374:A:C8	3.08	0.41
12:A:500:G:H2'	12:A:501:C:H6	1.84	0.41
12:A:922:G:C4	12:A:923:A:C8	3.08	0.41
12:A:1035:A:H2'	12:A:1036:A:H8	1.86	0.41
12:A:1107:C:C4	12:A:1108:G:C8	3.08	0.41
3:F:17:GLN:O	3:F:21:MET:HE3	2.20	0.41
5:K:35:THR:CG2	5:K:36:ASP:H	2.34	0.41
7:O:3:LEU:HD11	7:O:35:GLN:CG	2.48	0.41
12:A:721:G:H4'	12:A:722:G:O4'	2.20	0.41
12:A:790:A:H8	12:A:791:G:C8	2.38	0.41
13:C:16:LYS:NZ	13:C:182:ILE:O	2.52	0.41
14:I:19:VAL:CB	14:I:65:ILE:HD12	2.50	0.41
14:I:99:ARG:HA	14:I:104:VAL:HG12	2.02	0.41
16:M:34:LEU:N	16:M:34:LEU:CD1	2.79	0.41
4:H:56:LYS:NZ	12:A:653:U:O5'	2.53	0.41
12:A:71:A:N3	12:A:72:A:C8	2.88	0.41
12:A:270:A:H2'	12:A:271:C:C6	2.56	0.41
12:A:532:A:N3	12:A:532:A:C2'	2.84	0.41
12:A:539:A:H2'	12:A:540:G:C8	2.55	0.41
12:A:1095:U:H2'	12:A:1096:C:C6	2.56	0.41
12:A:1270:G:H2'	12:A:1271:A:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:34:LEU:HA	16:M:34:LEU:HD12	1.75	0.41
16:M:56:LEU:HA	16:M:59:GLU:OE1	2.21	0.41
6:L:53:CYS:SG	6:L:54:ARG:N	2.94	0.41
6:L:110:ARG:NH2	12:A:537:G:OP1	2.54	0.41
11:T:82:GLN:HE21	11:T:82:GLN:CA	2.31	0.41
12:A:29:U:O2'	12:A:30:U:H5'	2.21	0.41
12:A:227:G:H2'	12:A:228:A:H8	1.86	0.41
12:A:246:A:C2	12:A:282:A:C5	3.09	0.41
12:A:371:A:H2'	12:A:372:C:O4'	2.21	0.41
12:A:393:A:C2	12:A:394:G:C8	3.09	0.41
12:A:415:A:C4	12:A:416:G:C8	3.08	0.41
12:A:440:C:C2	12:A:441:A:C8	3.09	0.41
12:A:592:G:H2'	12:A:593:U:C6	2.55	0.41
12:A:978:A:O2'	12:A:1322:C:N3	2.52	0.41
12:A:1006:G:C6	12:A:1024:G:N3	2.89	0.41
12:A:1250:A:H2'	12:A:1251:A:C8	2.55	0.41
12:A:1302:C:C2	16:M:17:ILE:HD11	2.55	0.41
12:A:1338:G:H2'	12:A:1339:A:C8	2.56	0.41
12:A:1487:G:H4'	12:A:1488:G:OP1	2.21	0.41
13:C:33:LEU:HA	13:C:33:LEU:HD23	1.86	0.41
16:M:84:GLY:O	18:S:74:PHE:HD1	2.03	0.41
1:D:106:GLY:HA3	1:D:162:ALA:CB	2.51	0.41
5:K:20:VAL:HG22	5:K:37:ARG:H	1.86	0.41
12:A:788:U:H5''	12:A:788:U:H6	1.86	0.41
12:A:1231:G:H2'	12:A:1232:U:H6	1.86	0.41
12:A:1487:G:C2	12:A:1488:G:C6	3.09	0.41
18:S:17:LYS:HA	18:S:20:GLU:OE1	2.21	0.41
1:D:11:LEU:O	1:D:15:GLU:HG2	2.22	0.40
1:D:106:GLY:HA3	1:D:162:ALA:HB2	2.03	0.40
5:K:114:THR:HA	5:K:115:PRO:HD3	1.92	0.40
9:Q:34:TYR:N	9:Q:34:TYR:CD1	2.88	0.40
9:Q:61:ILE:HA	9:Q:61:ILE:HD13	1.69	0.40
11:T:36:TYR:CA	11:T:39:ILE:CG2	2.93	0.40
11:T:40:GLU:OE2	11:T:40:GLU:HA	2.20	0.40
12:A:31:G:O2'	12:A:48:C:N4	2.54	0.40
12:A:212:G:C4	12:A:213:G:C8	3.09	0.40
12:A:690:G:H2'	12:A:691:G:C8	2.56	0.40
12:A:767:A:H2'	12:A:768:A:O4'	2.20	0.40
12:A:795:C:H2'	12:A:796:C:C6	2.56	0.40
12:A:1120:C:H2'	12:A:1121:U:C6	2.56	0.40
12:A:1157:A:C2	12:A:1181:G:C5	3.08	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:1165:U:H2'	12:A:1166:G:O4'	2.21	0.40
15:J:70:HIS:C	15:J:71:LEU:HD23	2.47	0.40
3:F:9:MET:SD	3:F:59:TYR:CE1	3.14	0.40
6:L:32:GLY:O	6:L:79:VAL:HA	2.21	0.40
12:A:693:G:H2'	12:A:694:A:C8	2.56	0.40
12:A:726:C:H2'	12:A:727:G:C8	2.54	0.40
12:A:1031:C:H5'	12:A:1032:G:C4	2.56	0.40
12:A:1360:A:OP2	17:N:75:ARG:NH2	2.55	0.40
16:M:73:ILE:O	16:M:76:SER:OG	2.33	0.40
16:M:81:MET:HE1	16:M:92:ARG:HB2	2.02	0.40
17:N:31:ILE:HD13	17:N:31:ILE:HA	1.88	0.40
18:S:70:LYS:HB2	18:S:73:GLU:OE2	2.22	0.40
1:D:79:ALA:HB1	1:D:89:ASN:OD1	2.22	0.40
4:H:56:LYS:HA	4:H:57:PRO:HD3	1.92	0.40
5:K:13:ARG:HA	5:K:13:ARG:NE	2.36	0.40
7:O:48:LYS:O	7:O:48:LYS:HG2	2.20	0.40
10:R:64:TYR:HE1	12:A:673:A:O4'	2.05	0.40
11:T:43:ASP:OD1	11:T:45:ALA:N	2.54	0.40
12:A:206:C:C2	12:A:207:C:C5	3.10	0.40
12:A:501:C:H2'	12:A:502:A:C8	2.55	0.40
12:A:555:U:H2'	12:A:556:C:C6	2.56	0.40
12:A:1004:A:C6	12:A:1026:G:H1'	2.56	0.40
12:A:1072:G:H2'	12:A:1073:U:C6	2.56	0.40
12:A:1082:A:H2'	12:A:1083:U:H6	1.86	0.40
12:A:1148:U:H2'	12:A:1149:C:O4'	2.22	0.40
12:A:1258:G:H2'	12:A:1259:C:H6	1.87	0.40
12:A:1304:G:O5'	12:A:1304:G:H8	2.05	0.40
16:M:45:ILE:HD12	16:M:45:ILE:HA	1.91	0.40
18:S:45:ILE:HD12	18:S:45:ILE:HA	1.86	0.40
2:E:69:ARG:H	2:E:69:ARG:HG2	1.60	0.40
2:E:142:ASP:OD1	2:E:142:ASP:C	2.64	0.40
4:H:36:ILE:HG13	4:H:36:ILE:H	1.68	0.40
4:H:54:ASP:OD1	4:H:54:ASP:N	2.54	0.40
8:P:16:PHE:HE1	8:P:18:GLN:NE2	2.19	0.40
9:Q:57:ASP:HA	9:Q:82:ALA:CB	2.48	0.40
12:A:418:C:H2'	12:A:419:C:C6	2.56	0.40
12:A:996:A:H2'	12:A:997:U:H6	1.87	0.40
12:A:1122:U:H2'	12:A:1123:U:C6	2.57	0.40
14:I:98:LEU:HD23	14:I:98:LEU:HA	1.66	0.40
17:N:35:ASN:OD1	17:N:36:ALA:N	2.55	0.40
6:L:114:ARG:NH1	6:L:114:ARG:HG3	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:A:977:A:H2'	12:A:978:A:H5''	2.02	0.40
12:A:1198:G:H2'	12:A:1199:U:C6	2.56	0.40
12:A:1227:A:N7	18:S:83:HIS:HB2	2.36	0.40
12:A:1383:C:H2'	12:A:1384:C:H6	1.87	0.40
16:M:11:ASP:O	16:M:45:ILE:HG21	2.21	0.40
16:M:49:SER:HB2	16:M:52:GLN:NE2	2.36	0.40
17:N:23:LYS:O	17:N:26:GLU:OE1	2.39	0.40
18:S:20:GLU:H	18:S:20:GLU:HG2	1.68	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	
1	D	203/206 (98%)	190 (94%)	12 (6%)	1 (0%)	24	55
2	E	155/167 (93%)	143 (92%)	12 (8%)	0	100	100
3	F	104/135 (77%)	94 (90%)	10 (10%)	0	100	100
4	H	127/130 (98%)	119 (94%)	7 (6%)	1 (1%)	16	45
5	K	115/129 (89%)	104 (90%)	10 (9%)	1 (1%)	14	43
6	L	121/124 (98%)	108 (89%)	11 (9%)	2 (2%)	7	30
7	O	86/89 (97%)	78 (91%)	7 (8%)	1 (1%)	10	37
8	P	80/82 (98%)	68 (85%)	10 (12%)	2 (2%)	4	23
9	Q	78/84 (93%)	74 (95%)	4 (5%)	0	100	100
10	R	63/75 (84%)	61 (97%)	2 (3%)	0	100	100
11	T	84/87 (97%)	79 (94%)	4 (5%)	1 (1%)	10	37
13	C	204/233 (88%)	198 (97%)	6 (3%)	0	100	100
14	I	125/130 (96%)	118 (94%)	7 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
15	J	97/103 (94%)	94 (97%)	1 (1%)	2 (2%)	5	26
16	M	112/118 (95%)	101 (90%)	11 (10%)	0	100	100
17	N	98/101 (97%)	88 (90%)	10 (10%)	0	100	100
18	S	79/92 (86%)	69 (87%)	10 (13%)	0	100	100
All	All	1931/2085 (93%)	1786 (92%)	134 (7%)	11 (1%)	23	52

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
8	P	45	GLU
5	K	91	PRO
6	L	88	LYS
11	T	8	LYS
15	J	57	VAL
15	J	88	MET
1	D	46	PRO
4	H	57	PRO
6	L	4	VAL
8	P	41	PRO
7	O	25	THR

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	
1	D	172/173 (99%)	170 (99%)	2 (1%)	63	75
2	E	119/126 (94%)	119 (100%)	0	100	100
3	F	92/116 (79%)	92 (100%)	0	100	100
4	H	104/105 (99%)	103 (99%)	1 (1%)	68	76
5	K	90/99 (91%)	88 (98%)	2 (2%)	45	66
6	L	103/104 (99%)	100 (97%)	3 (3%)	37	62
7	O	76/77 (99%)	75 (99%)	1 (1%)	61	74

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	P	65/65 (100%)	64 (98%)	1 (2%)	57	72
9	Q	74/78 (95%)	73 (99%)	1 (1%)	59	73
10	R	56/65 (86%)	56 (100%)	0	100	100
11	T	65/66 (98%)	62 (95%)	3 (5%)	24	53
13	C	170/190 (90%)	169 (99%)	1 (1%)	78	81
14	I	105/107 (98%)	104 (99%)	1 (1%)	68	76
15	J	87/90 (97%)	85 (98%)	2 (2%)	44	66
16	M	92/96 (96%)	90 (98%)	2 (2%)	45	66
17	N	83/84 (99%)	82 (99%)	1 (1%)	63	75
18	S	71/79 (90%)	71 (100%)	0	100	100
All	All	1624/1720 (94%)	1603 (99%)	21 (1%)	59	74

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	102	VAL
1	D	164	GLN
4	H	36	ILE
5	K	93	ARG
5	K	100	LEU
6	L	86	ARG
6	L	88	LYS
6	L	89	ASP
7	O	11	ILE
8	P	8	ARG
9	Q	33	ILE
11	T	32	ILE
11	T	39	ILE
11	T	57	ILE
13	C	93	ASP
14	I	25	ASN
15	J	8	ILE
15	J	57	VAL
16	M	8	ASN
16	M	16	VAL
17	N	30	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	131	ASN
3	F	17	GLN
4	H	4	GLN
4	H	18	GLN
5	K	24	HIS
5	K	64	GLN
5	K	81	ASN
6	L	5	ASN
7	O	20	ASN
7	O	51	HIS
8	P	59	HIS
10	R	19	GLN
11	T	82	GLN
13	C	140	ASN
14	I	25	ASN
14	I	126	GLN
15	J	15	HIS
16	M	8	ASN
17	N	60	GLN
18	S	14	HIS
18	S	52	HIS
18	S	56	GLN
18	S	57	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
12	A	1522/1540 (98%)	278 (18%)	20 (1%)

All (278) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
12	A	4	U
12	A	5	U
12	A	6	G
12	A	9	G
12	A	22	G
12	A	32	A
12	A	39	G
12	A	47	C
12	A	48	C
12	A	51	A

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Mol	Chain	Res	Type
12	A	52	C
12	A	71	A
12	A	72	A
12	A	74	A
12	A	75	G
12	A	76	G
12	A	79	G
12	A	80	A
12	A	84	U
12	A	85	U
12	A	86	G
12	A	87	C
12	A	88	U
12	A	89	U
12	A	90	C
12	A	91	U
12	A	120	A
12	A	121	U
12	A	122	G
12	A	130	A
12	A	131	A
12	A	142	G
12	A	144	G
12	A	166	U
12	A	168	G
12	A	183	C
12	A	197	A
12	A	210	C
12	A	240	G
12	A	244	U
12	A	246	A
12	A	247	G
12	A	251	G
12	A	258	G
12	A	266	G
12	A	267	C
12	A	289	G
12	A	299	G
12	A	309	A
12	A	317	U
12	A	321	A
12	A	328	C

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Mol	Chain	Res	Type
12	A	332	G
12	A	352	C
12	A	353	A
12	A	354	G
12	A	367	U
12	A	372	C
12	A	382	A
12	A	384	G
12	A	388	G
12	A	397	A
12	A	406	G
12	A	411	A
12	A	412	A
12	A	413	G
12	A	421	U
12	A	422	C
12	A	423	G
12	A	424	G
12	A	429	U
12	A	446	G
12	A	451	A
12	A	456	A
12	A	458	U
12	A	467	U
12	A	468	A
12	A	481	G
12	A	484	G
12	A	486	U
12	A	495	A
12	A	497	G
12	A	511	C
12	A	518	C
12	A	527	G
12	A	532	A
12	A	547	A
12	A	559	A
12	A	562	U
12	A	563	A
12	A	564	C
12	A	572	A
12	A	573	A
12	A	576	C

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Mol	Chain	Res	Type
12	A	577	G
12	A	579	A
12	A	587	G
12	A	596	A
12	A	619	U
12	A	633	G
12	A	653	U
12	A	665	A
12	A	682	G
12	A	686	U
12	A	687	A
12	A	693	G
12	A	694	A
12	A	703	G
12	A	704	A
12	A	734	G
12	A	748	G
12	A	755	G
12	A	763	G
12	A	777	A
12	A	786	G
12	A	790	A
12	A	791	G
12	A	792	A
12	A	793	U
12	A	794	A
12	A	795	C
12	A	810	C
12	A	813	U
12	A	815	A
12	A	817	C
12	A	821	G
12	A	828	U
12	A	841	C
12	A	842	U
12	A	845	A
12	A	849	G
12	A	851	G
12	A	852	G
12	A	885	G
12	A	887	G
12	A	889	A

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Mol	Chain	Res	Type
12	A	914	A
12	A	916	U
12	A	923	A
12	A	925	G
12	A	926	G
12	A	927	G
12	A	928	G
12	A	929	G
12	A	931	C
12	A	934	C
12	A	935	A
12	A	938	A
12	A	960	U
12	A	966	G
12	A	969	A
12	A	971	G
12	A	975	A
12	A	976	G
12	A	977	A
12	A	981	U
12	A	983	A
12	A	992	U
12	A	993	G
12	A	1004	A
12	A	1019	A
12	A	1021	A
12	A	1023	U
12	A	1024	G
12	A	1025	U
12	A	1030	U
12	A	1031	C
12	A	1032	G
12	A	1033	G
12	A	1036	A
12	A	1043	G
12	A	1045	C
12	A	1046	A
12	A	1053	G
12	A	1054	C
12	A	1055	A
12	A	1065	U
12	A	1086	U

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Mol	Chain	Res	Type
12	A	1094	G
12	A	1095	U
12	A	1098	C
12	A	1101	A
12	A	1124	G
12	A	1136	C
12	A	1137	C
12	A	1139	G
12	A	1141	C
12	A	1152	A
12	A	1158	C
12	A	1159	U
12	A	1167	A
12	A	1184	G
12	A	1196	A
12	A	1197	A
12	A	1212	U
12	A	1213	A
12	A	1214	C
12	A	1225	A
12	A	1227	A
12	A	1228	C
12	A	1238	A
12	A	1241	G
12	A	1260	G
12	A	1275	A
12	A	1278	G
12	A	1280	A
12	A	1286	U
12	A	1287	A
12	A	1297	G
12	A	1302	C
12	A	1305	G
12	A	1317	C
12	A	1318	A
12	A	1319	A
12	A	1320	C
12	A	1332	A
12	A	1335	U
12	A	1336	C
12	A	1363	A
12	A	1364	U

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Mol	Chain	Res	Type
12	A	1370	G
12	A	1381	U
12	A	1388	C
12	A	1390	U
12	A	1391	U
12	A	1392	G
12	A	1393	U
12	A	1394	A
12	A	1396	A
12	A	1397	C
12	A	1399	C
12	A	1400	C
12	A	1409	C
12	A	1410	A
12	A	1411	C
12	A	1414	U
12	A	1415	G
12	A	1417	G
12	A	1419	G
12	A	1420	U
12	A	1422	G
12	A	1426	G
12	A	1432	G
12	A	1441	A
12	A	1452	C
12	A	1473	G
12	A	1474	U
12	A	1475	G
12	A	1479	C
12	A	1480	A
12	A	1481	U
12	A	1482	G
12	A	1484	C
12	A	1485	U
12	A	1486	G
12	A	1487	G
12	A	1488	G
12	A	1489	G
12	A	1491	G
12	A	1492	A
12	A	1493	A
12	A	1503	A

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Mol	Chain	Res	Type
12	A	1506	U
12	A	1508	A
12	A	1509	C
12	A	1517	G
12	A	1519	A
12	A	1520	C
12	A	1529	G
12	A	1530	G
12	A	1531	A
12	A	1532	U
12	A	1535	C
12	A	1536	C
12	A	1537	U
12	A	1538	C
12	A	1539	C
12	A	1540	U

All (20) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
12	A	203	G
12	A	693	G
12	A	790	A
12	A	791	G
12	A	924	C
12	A	925	G
12	A	930	C
12	A	965	U
12	A	980	C
12	A	1031	C
12	A	1227	A
12	A	1392	G
12	A	1398	A
12	A	1478	U
12	A	1531	A
12	A	1535	C
12	A	1536	C
12	A	1537	U
12	A	1538	C
12	A	1539	C

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

1 non-standard protein/DNA/RNA residue is 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	$\# Z > 2$
12	2MG	A	1207	12	23,26,27	0.49	0	33,38,41	0.44	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
12	2MG	A	1207	12	-	0/9/27/28	0/3/3/3

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.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
12	A	1207	2MG	2	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

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.

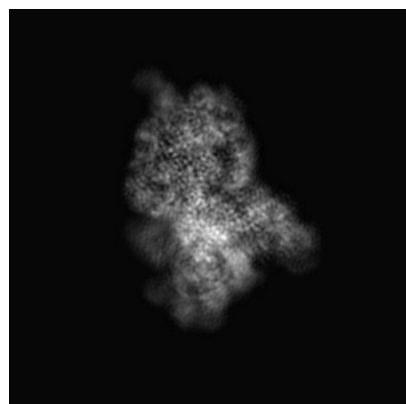
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-28692. These allow visual inspection of the internal detail of the map and identification of artifacts.

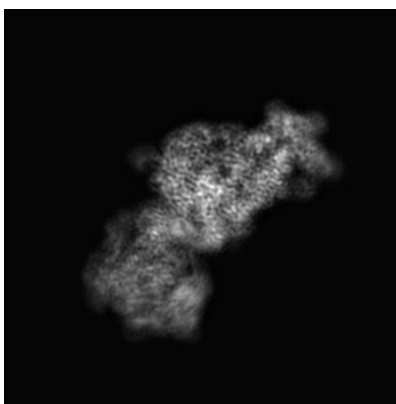
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

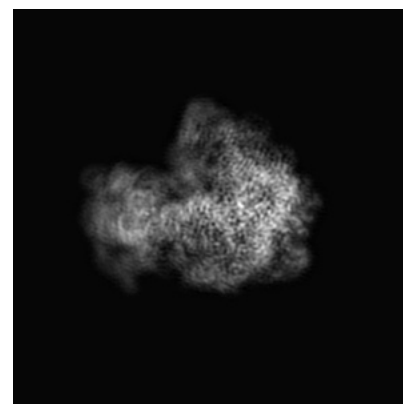
6.1.1 Primary map



X

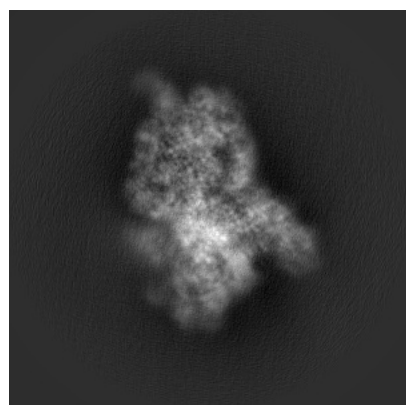


Y

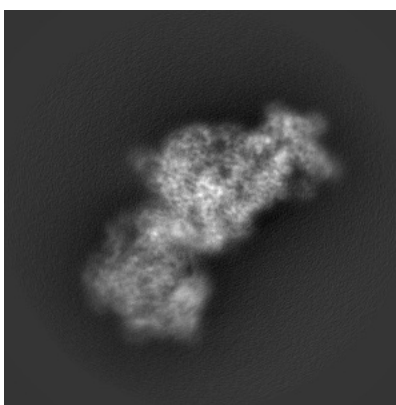


Z

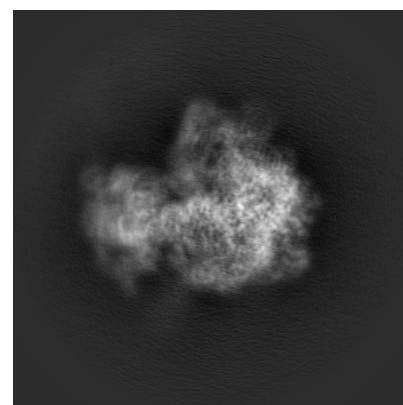
6.1.2 Raw map



X



Y

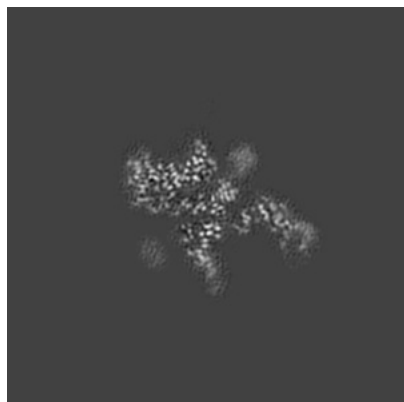


Z

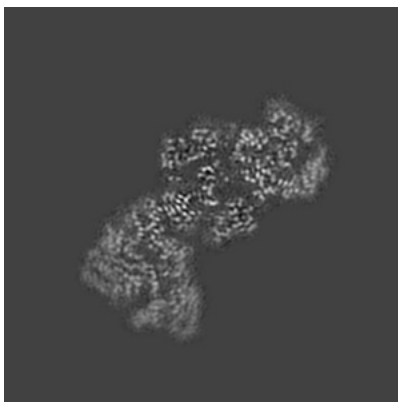
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

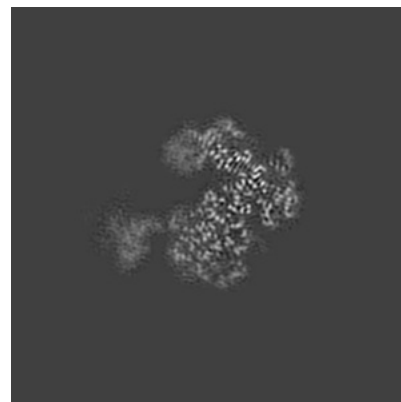
6.2.1 Primary map



X Index: 191

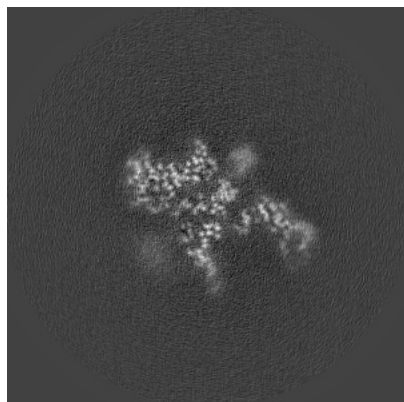


Y Index: 191

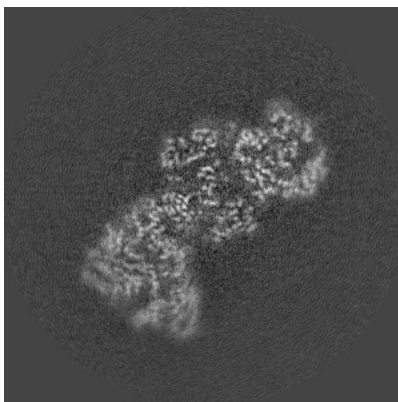


Z Index: 191

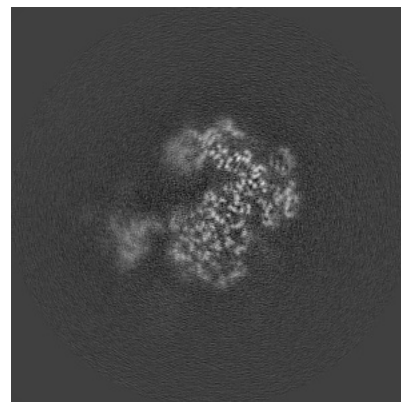
6.2.2 Raw map



X Index: 191



Y Index: 191

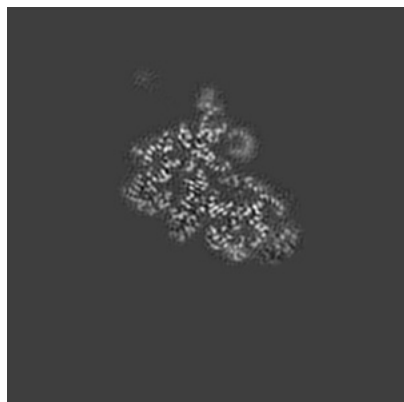


Z Index: 191

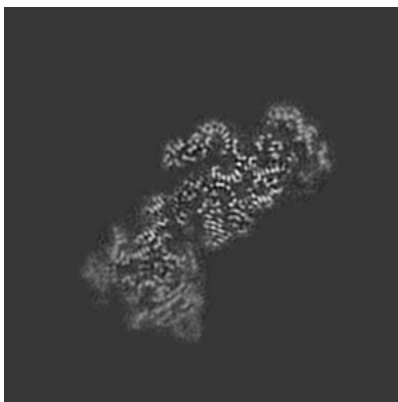
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

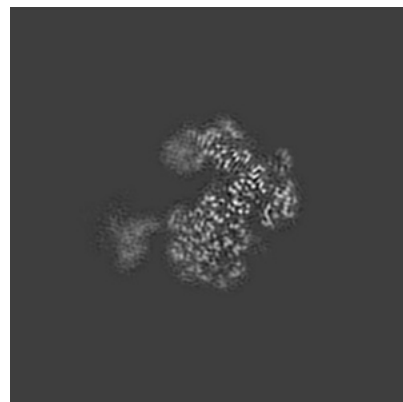
6.3.1 Primary map



X Index: 216

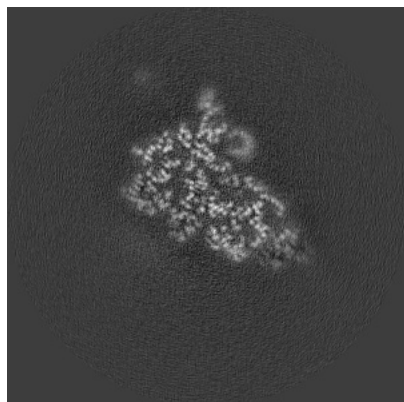


Y Index: 183

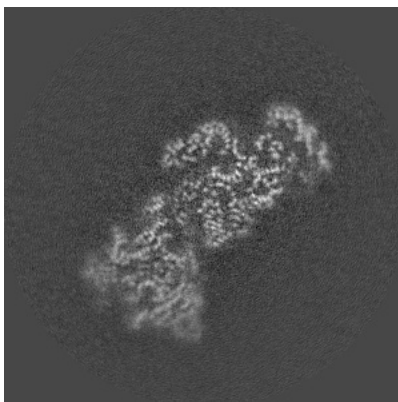


Z Index: 192

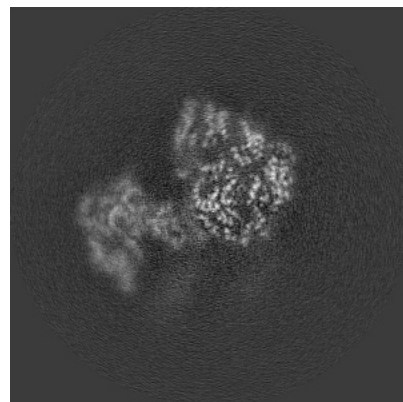
6.3.2 Raw map



X Index: 216



Y Index: 183

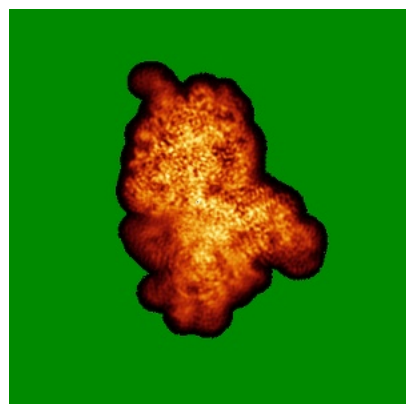


Z Index: 173

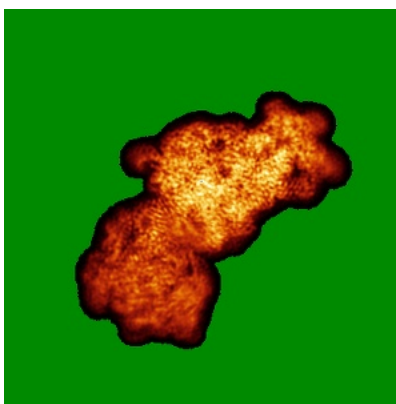
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

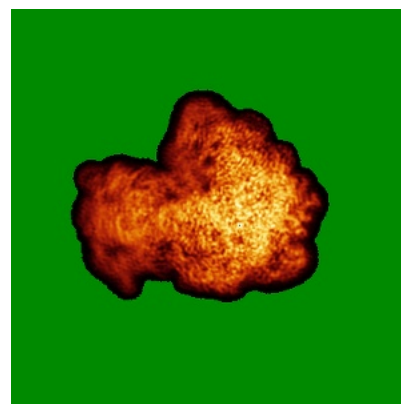
6.4.1 Primary map



X

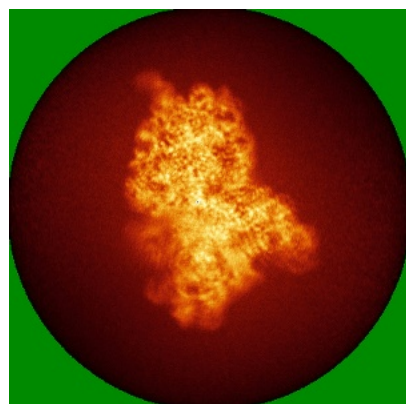


Y

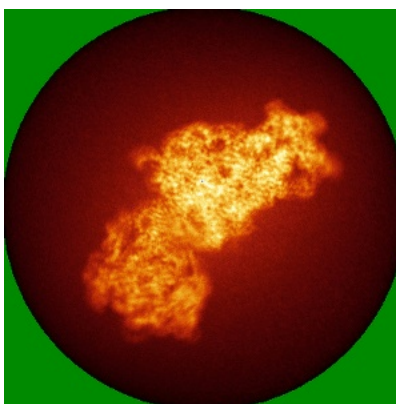


Z

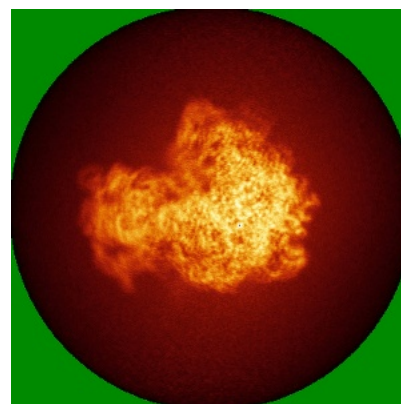
6.4.2 Raw map



X



Y

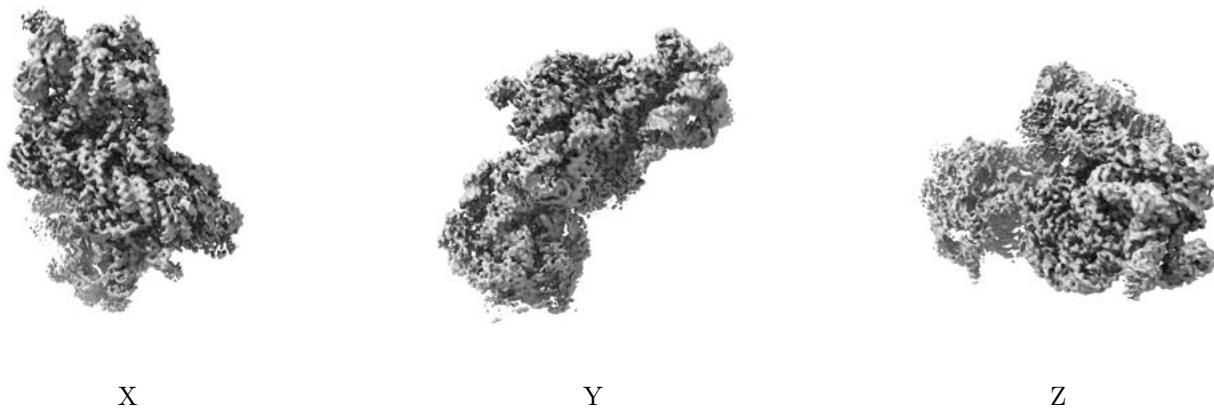


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

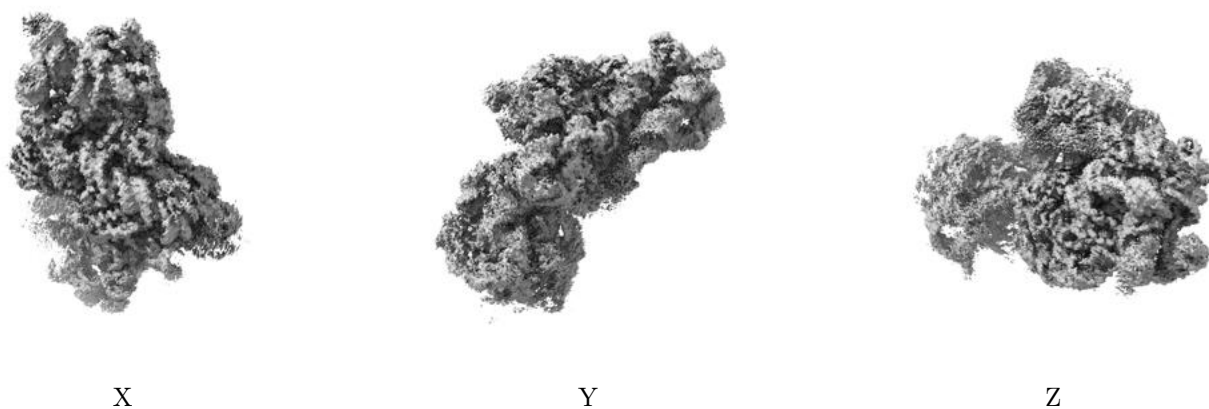
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0072. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 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.

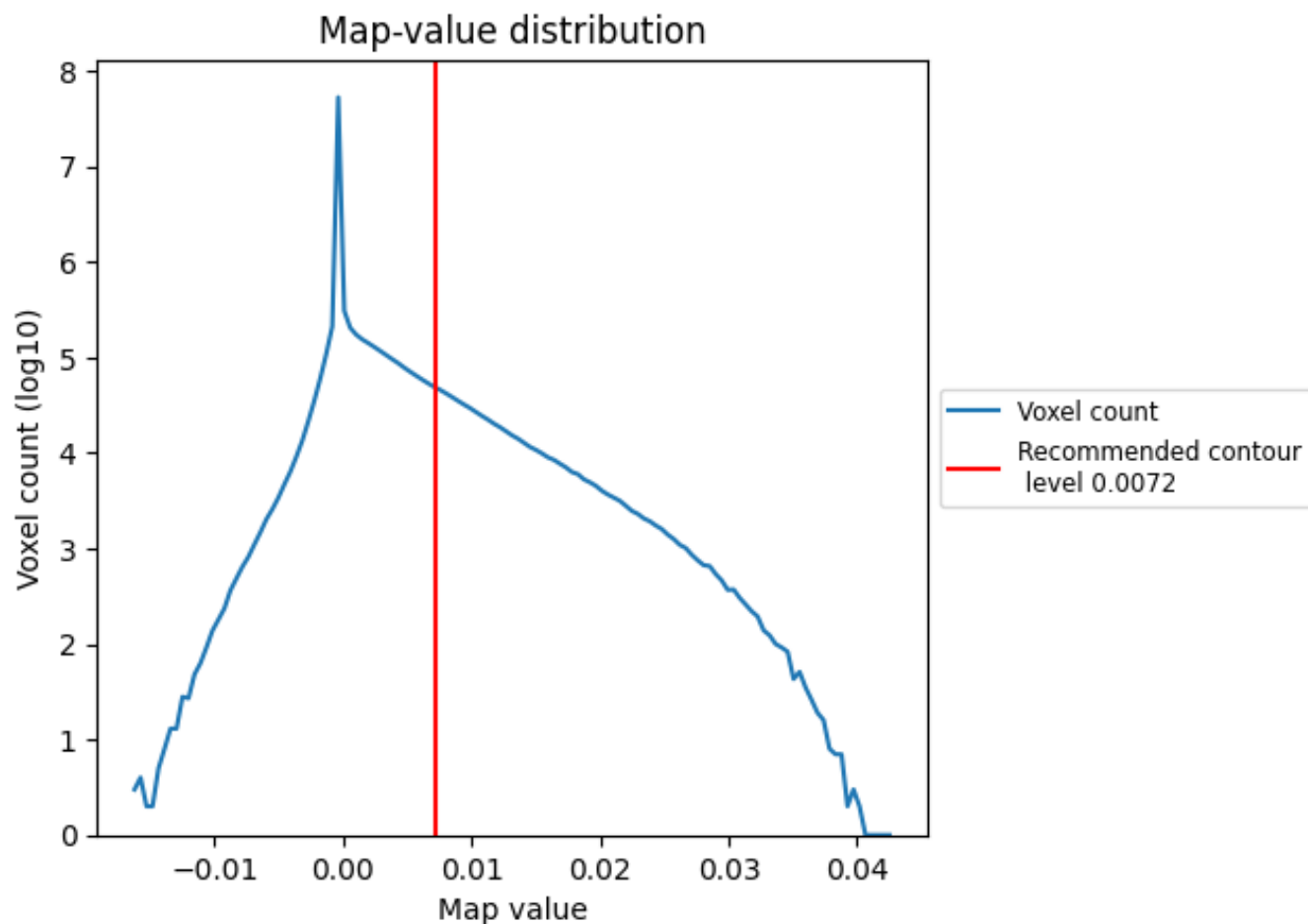
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

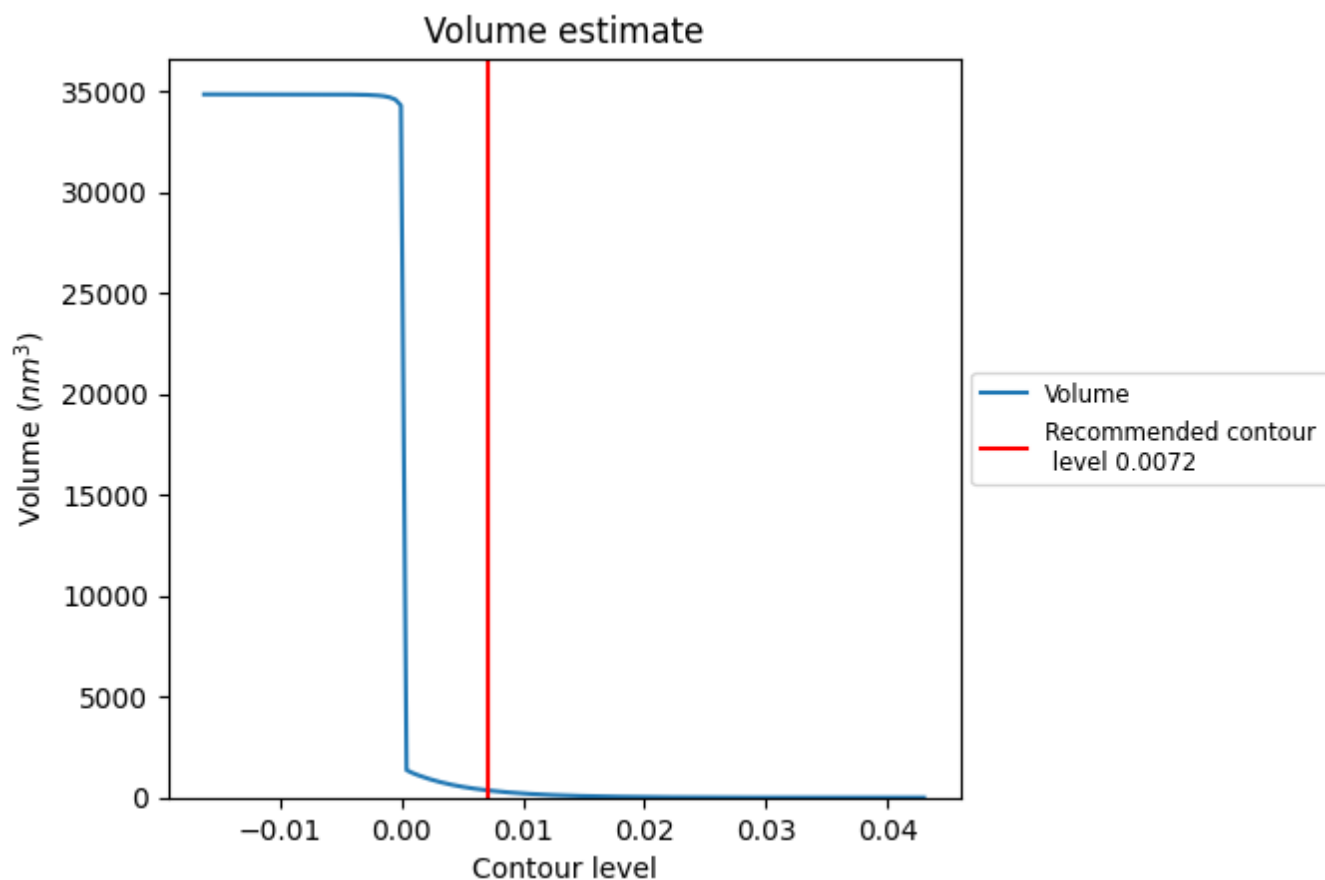
This section contains the results of statistical analysis of the map.

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.

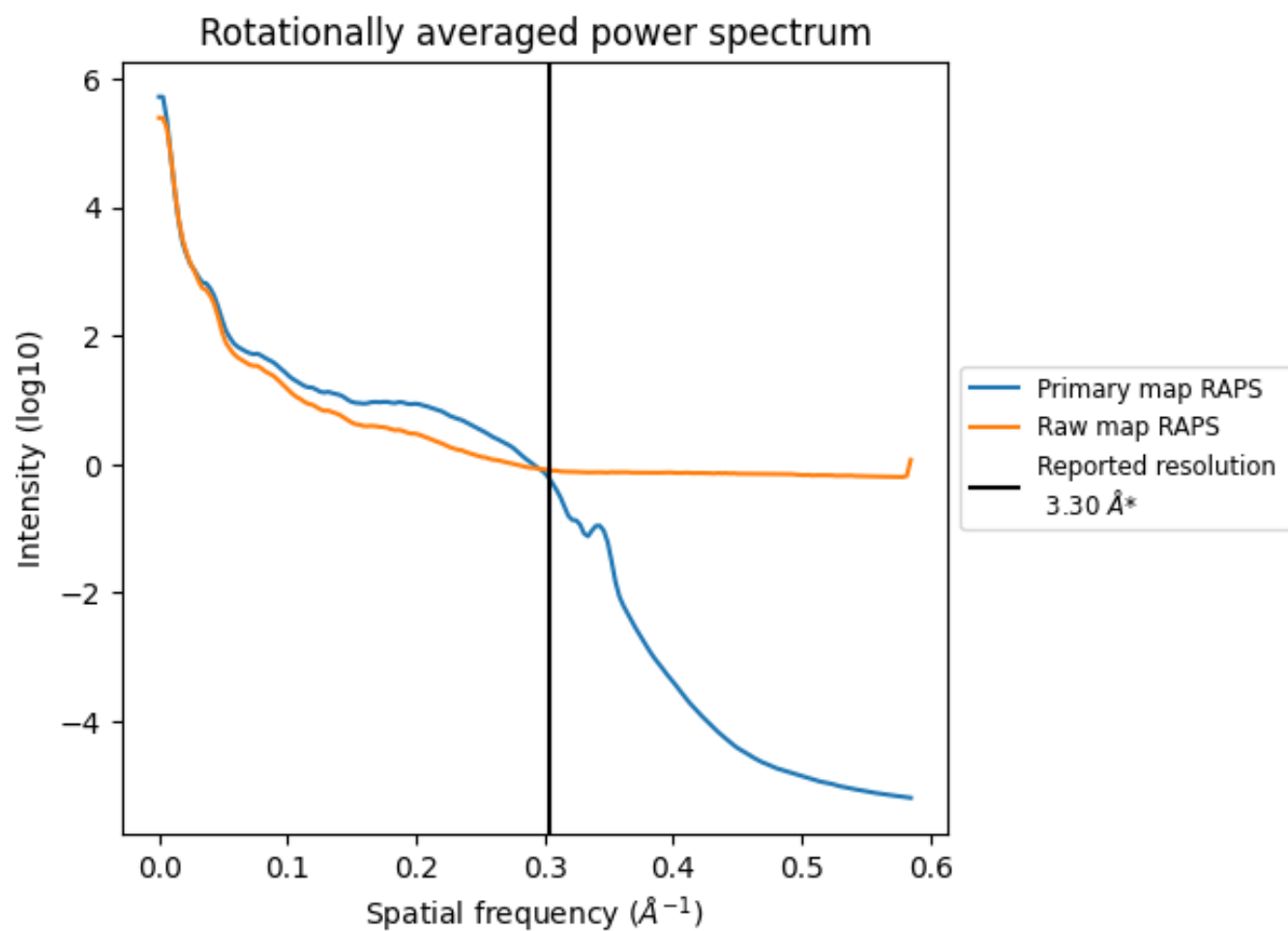
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 352 nm³; this corresponds to an approximate mass of 318 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 ⓘ

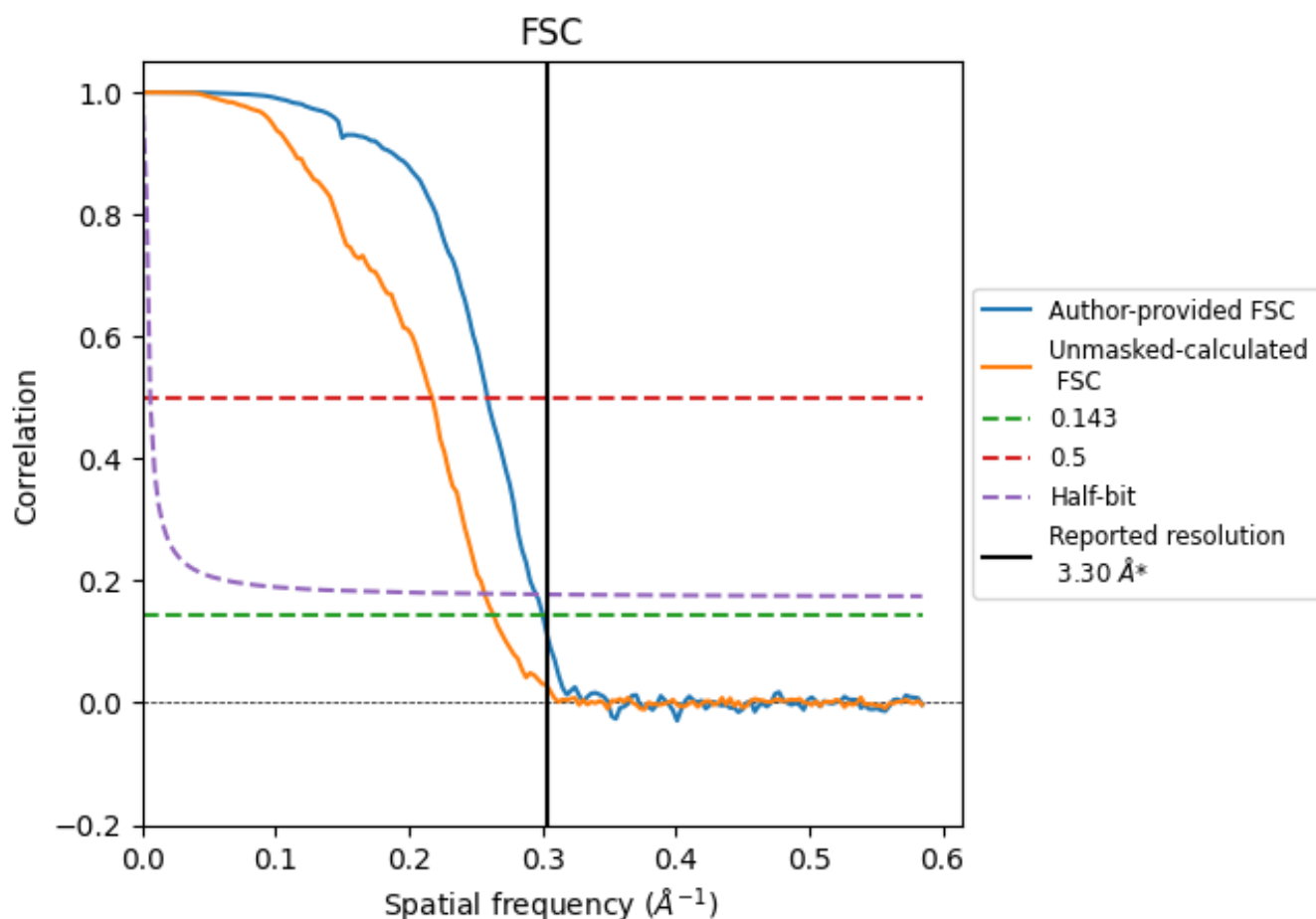


*Reported resolution corresponds to spatial frequency of 0.303 Å⁻¹

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 0.303 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

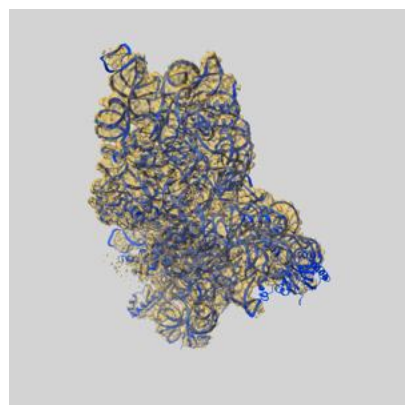
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	3.33	3.86	3.39
Unmasked-calculated*	3.79	4.60	3.89

*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 3.79 differs from the reported value 3.3 by more than 10 %

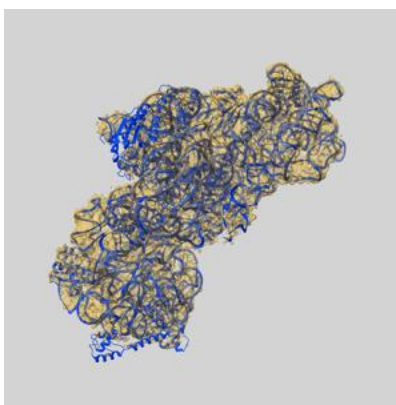
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-28692 and PDB model 8EYQ. Per-residue inclusion information can be found in [section 3](#) on [page 7](#).

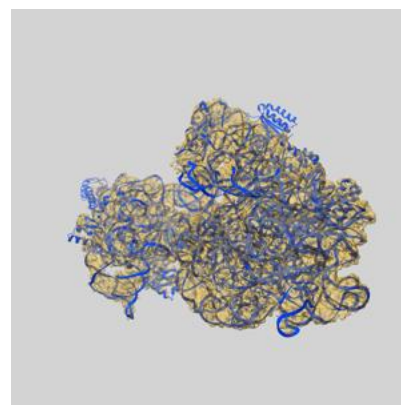
9.1 Map-model overlay [i](#)



X



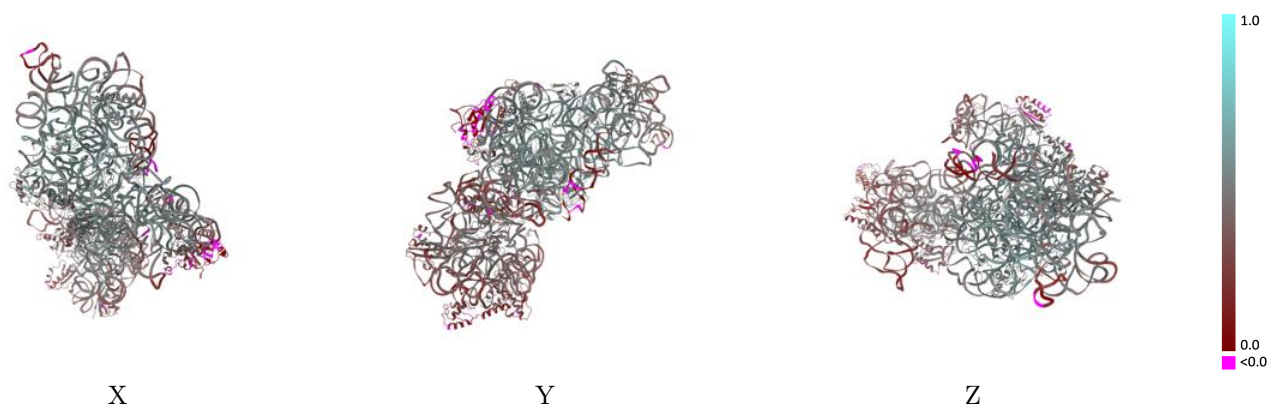
Y



Z

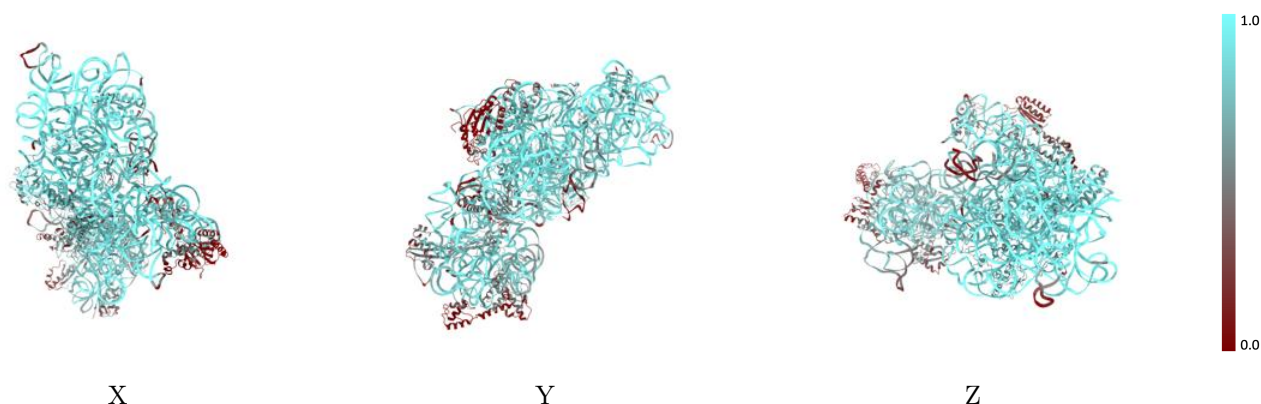
The images above show the 3D surface view of the map at the recommended contour level 0.0072 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



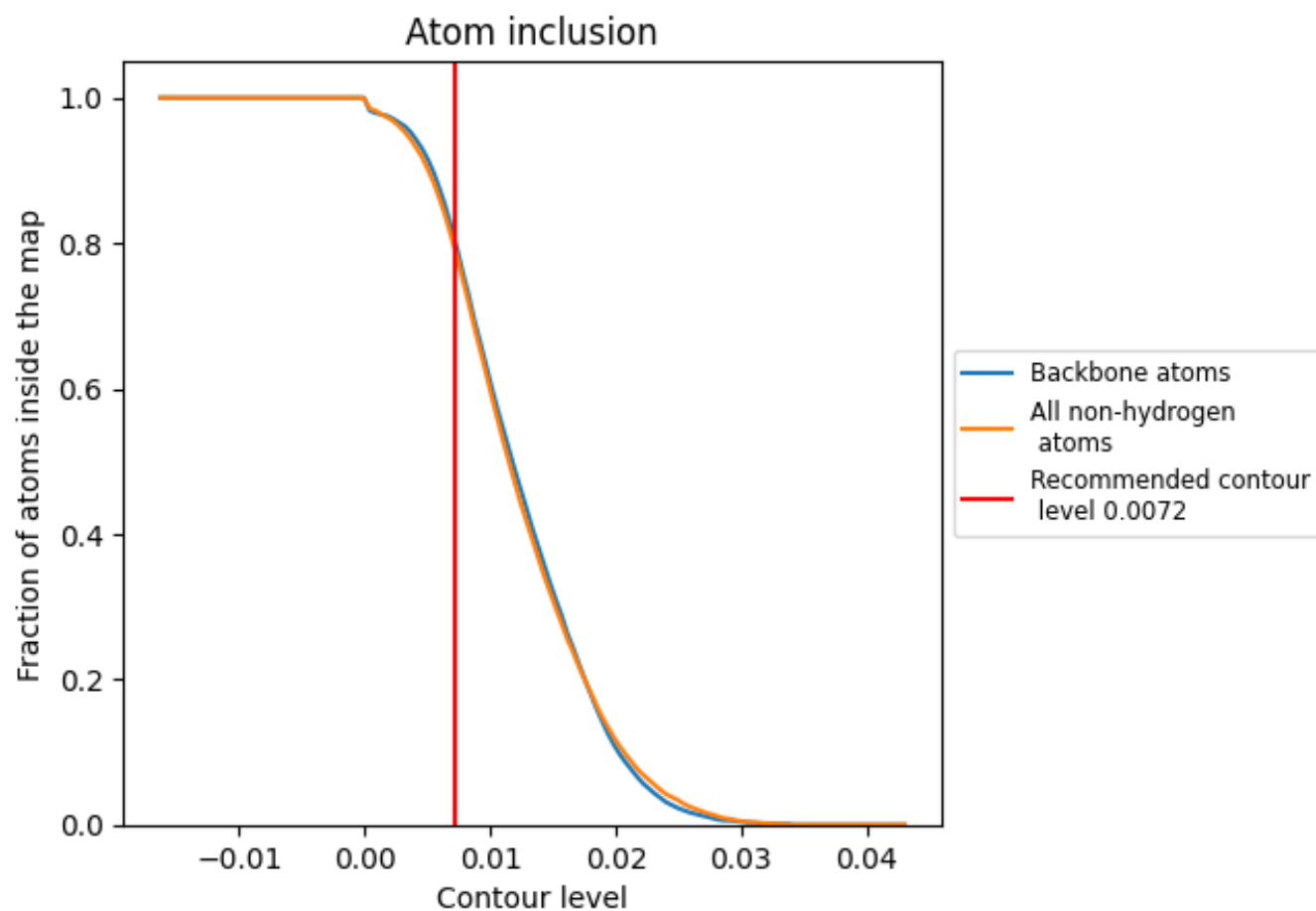
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0072).

9.4 Atom inclusion [i](#)



At the recommended contour level, 80% of all backbone atoms, 79% 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 (0.0072) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7920	 0.4260
A	 0.8870	 0.4440
C	 0.5720	 0.3720
D	 0.7790	 0.4910
E	 0.8060	 0.5120
F	 0.0640	 0.1040
H	 0.8350	 0.5220
I	 0.5290	 0.3330
J	 0.5040	 0.3320
K	 0.3740	 0.2690
L	 0.8060	 0.5120
M	 0.1340	 0.2040
N	 0.5900	 0.3640
O	 0.5300	 0.4380
P	 0.8570	 0.5320
Q	 0.8050	 0.5070
R	 0.2610	 0.2590
S	 0.3500	 0.2100
T	 0.8180	 0.4790

