Full wwPDB EM Validation Report ⓘ

May 25, 2025 – 01:11 PM EDT

PDB ID	:	7S9U / pdb_00007s9u
EMDB ID	:	EMD-24937
Title	:	44SR3C ribosomal particle
Authors	:	Ortega, J.; Seffouh, A.
Deposited on	:	2021-09-21
Resolution	:	3.20 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:

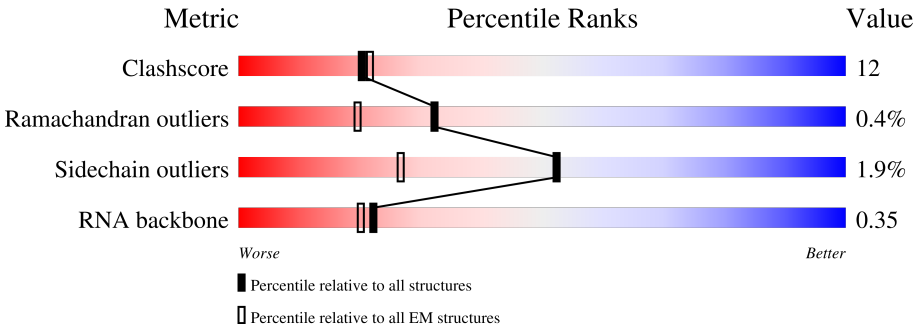
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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 <=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	2928	8% 43% 29% 11% 17%
2	C	277	22% 68% 27%
3	D	209	5% 72% 14% 14%
4	E	207	8% 77% 21%
5	J	145	71% 26%
6	K	122	16% 79% 21%
7	L	146	23% 64% 25% 11%

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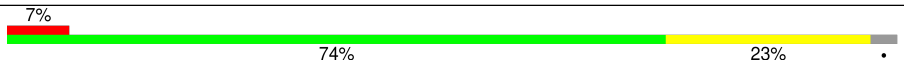
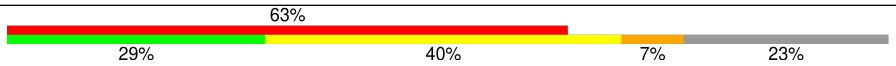
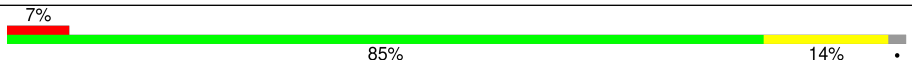
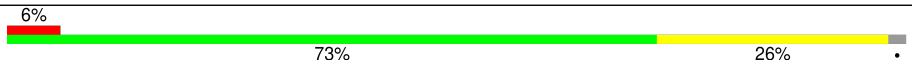
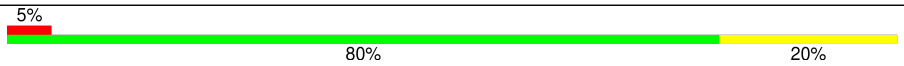
Mol	Chain	Length	Quality of chain
8	N	120	
9	P	115	
10	Q	119	
11	R	102	
12	S	113	
13	T	95	
14	U	103	
15	V	94	
16	Z	59	
17	b	59	
18	Y	66	
19	d	44	

2 Entry composition

There are 19 unique types of molecules in this entry. The entry contains 68620 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 RNA (2436-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A	2436	52346	23355	9704	16851	2436	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1558	C	G	conflict	GB 1864548803

- Molecule 2 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C	267	2052	1277	402	367	6	0	0

- Molecule 3 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	D	179	1354	854	241	256	3	0	0

- Molecule 4 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	E	205	1561	980	289	290	2	0	0

- Molecule 5 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	J	142	1123	710	206	202	5	0	0

- Molecule 6 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	K	122	Total	C	N	O	S	0	0
			920	571	173	172	4		

- Molecule 7 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	L	130	Total	C	N	O	S	0	0
			973	608	183	180	2		

- Molecule 8 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	N	119	Total	C	N	O	S	0	0
			953	583	186	180	4		

- Molecule 9 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	P	114	Total	C	N	O	0	0
			936	595	184	157		

- Molecule 10 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	Q	117	Total	C	N	O	S	0	0
			940	591	189	156	4		

- Molecule 11 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms				AltConf	Trace
11	R	101	Total	C	N	O	0	0
			786	501	139	146		

- Molecule 12 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	S	109	Total	C	N	O	S	0	0
			842	525	164	150	3		

- Molecule 13 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	T	92	Total	C	N	O	S	0	0
			741	463	136	138	4		

- Molecule 14 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	U	100	Total	C	N	O	S	0	0
			754	473	141	137	3		

- Molecule 15 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	V	72	Total	C	N	O	0	0
			561	349	109	103		

- Molecule 16 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Z	58	Total	C	N	O	S	0	0
			455	281	89	84	1		

- Molecule 17 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	b	54	Total	C	N	O	S	0	0
			426	262	86	71	7		

- Molecule 18 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Y	65	Total	C	N	O	S	0	0
			530	328	102	98	2		

- Molecule 19 is a protein called 50S ribosomal protein L34.

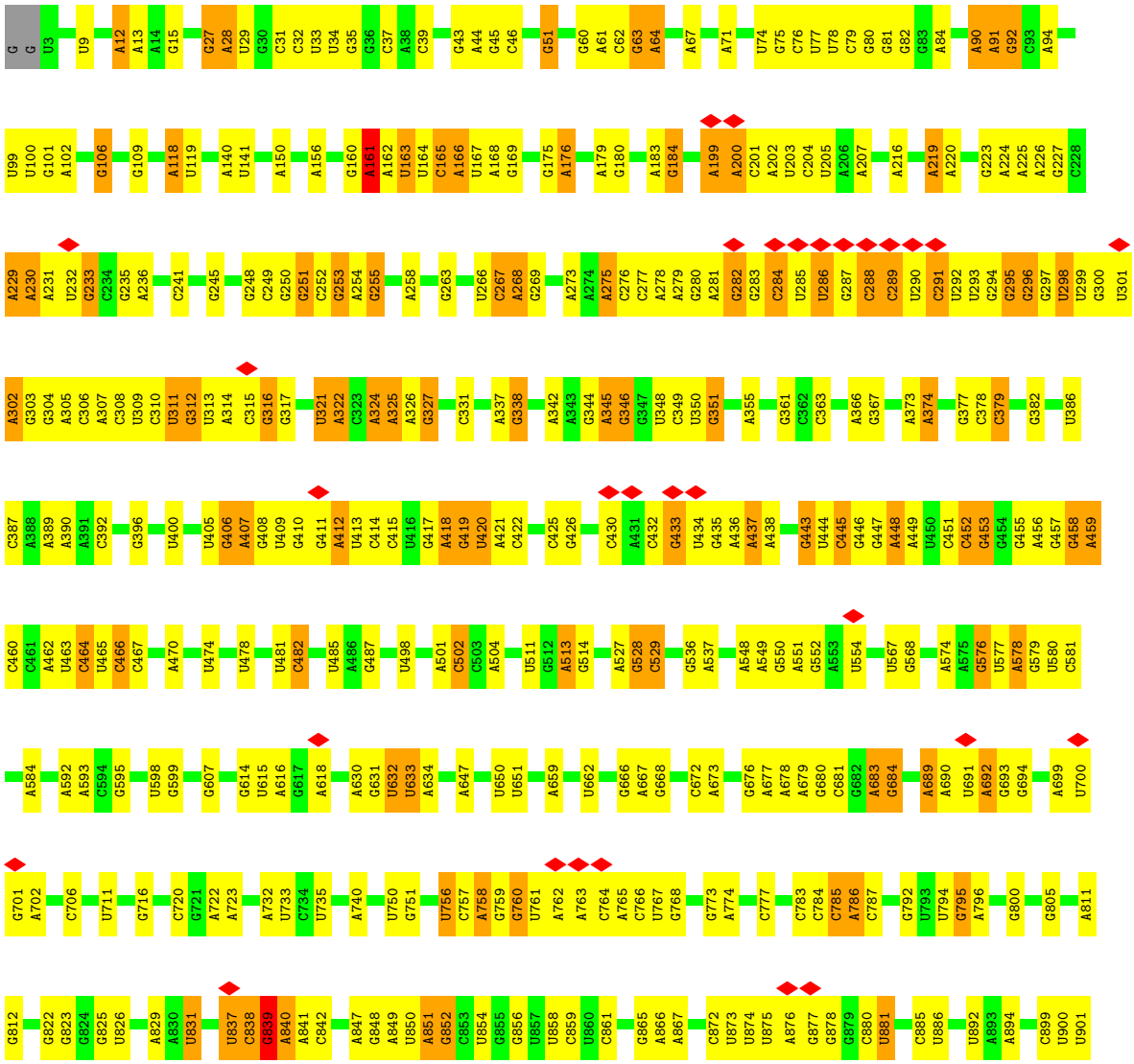
Mol	Chain	Residues	Atoms					AltConf	Trace
19	d	44	Total	C	N	O	S	0	0
			367	222	89	54	2		

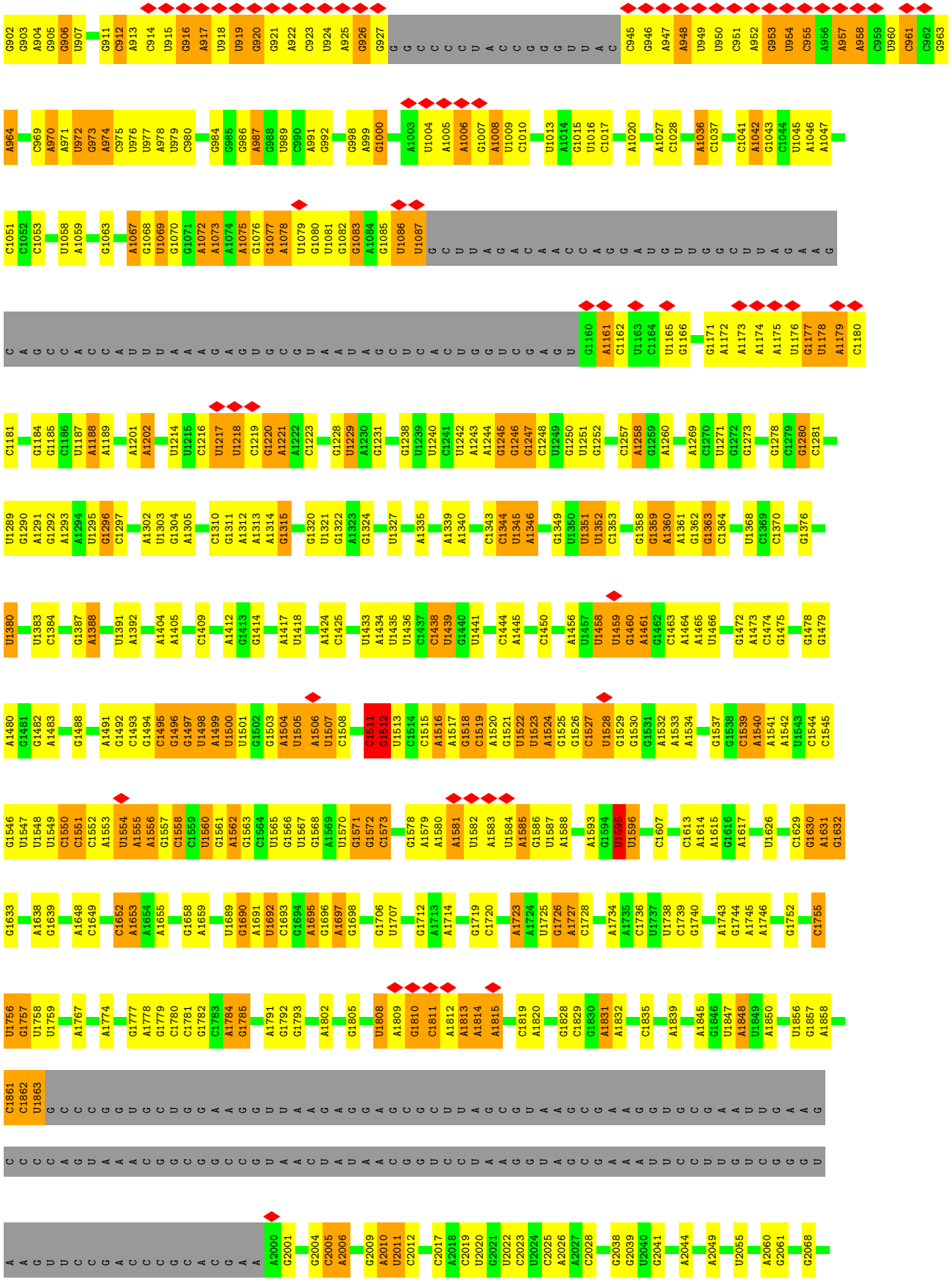
3 Residue-property plots (i)

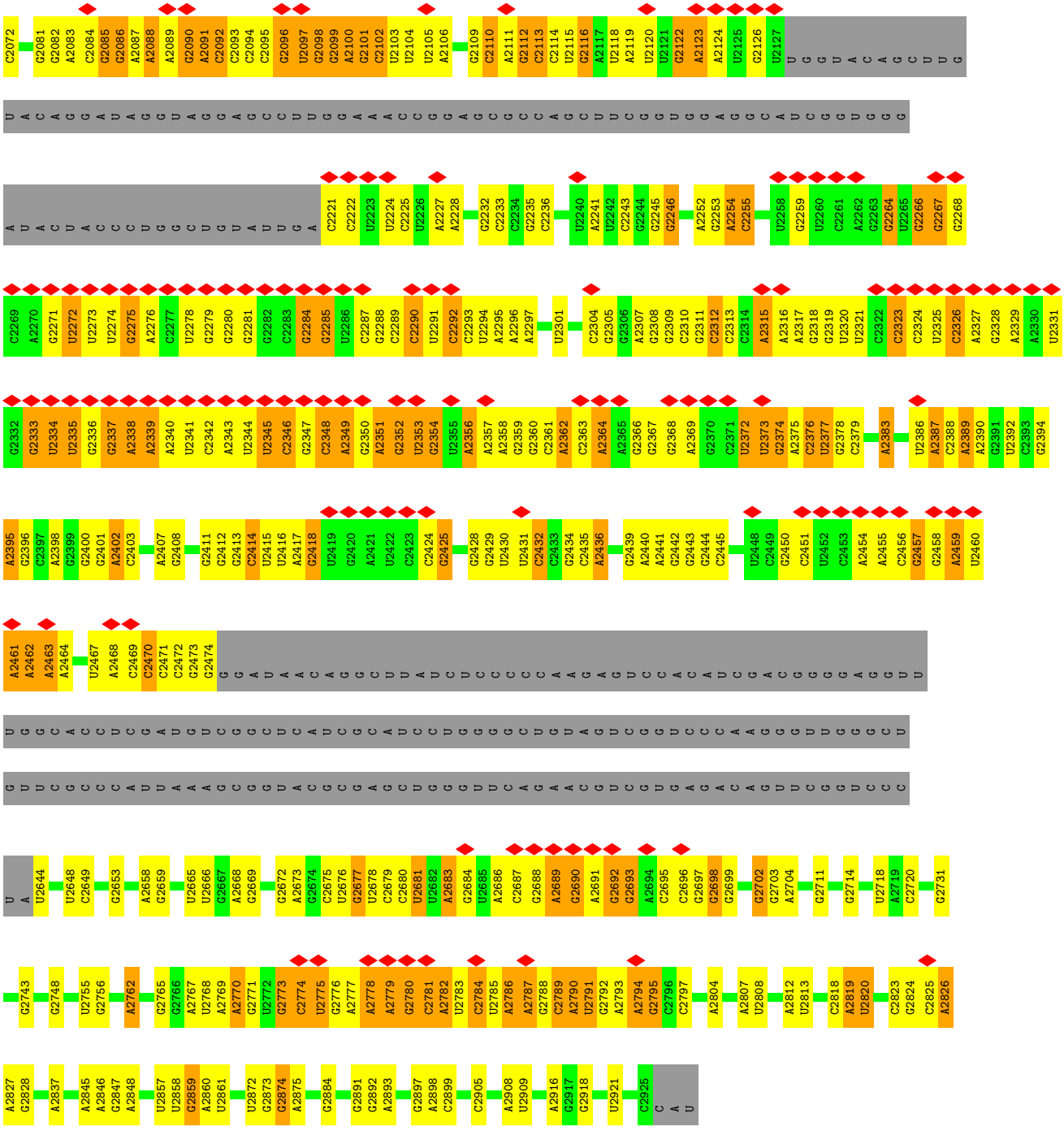
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: RNA (2436-MER)

Chain A:

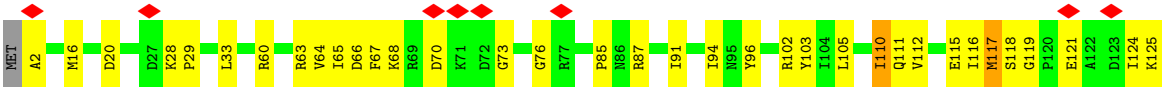


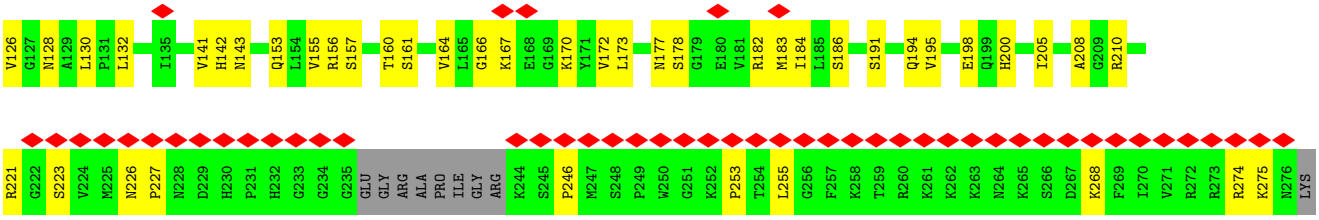




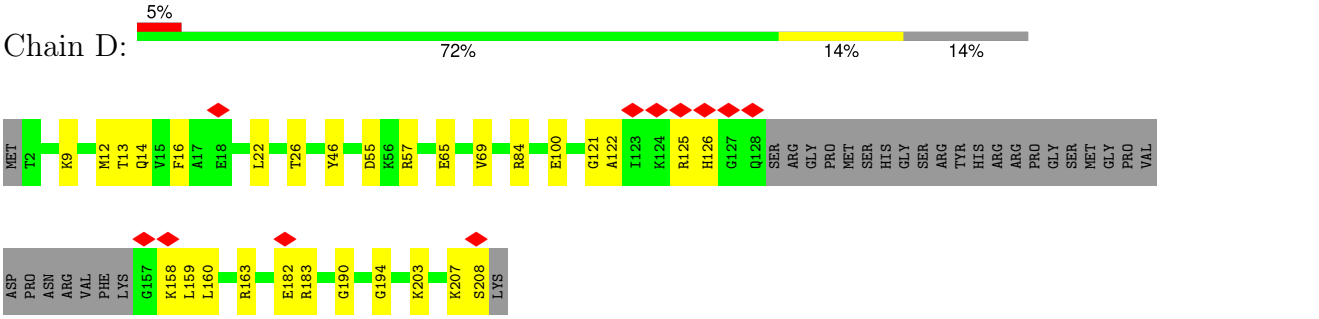
• Molecule 2: 50S ribosomal protein L2

Chain C:

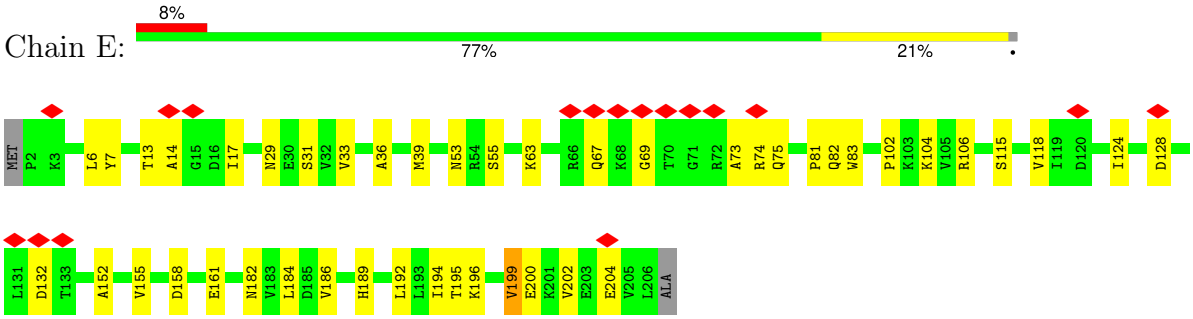




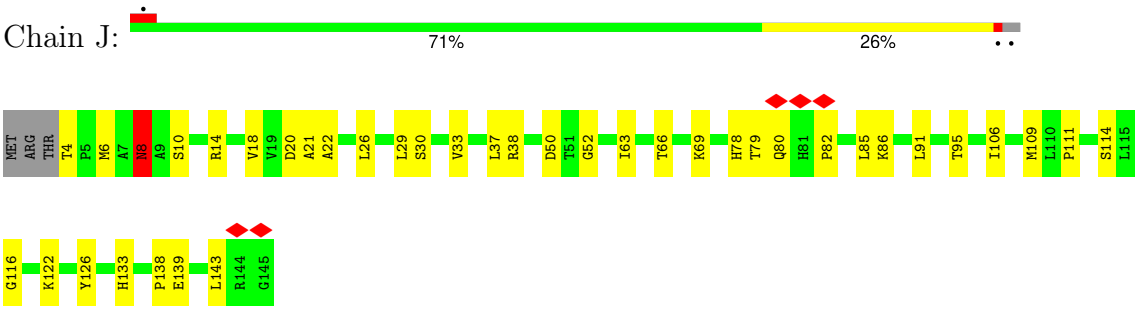
• Molecule 3: 50S ribosomal protein L3



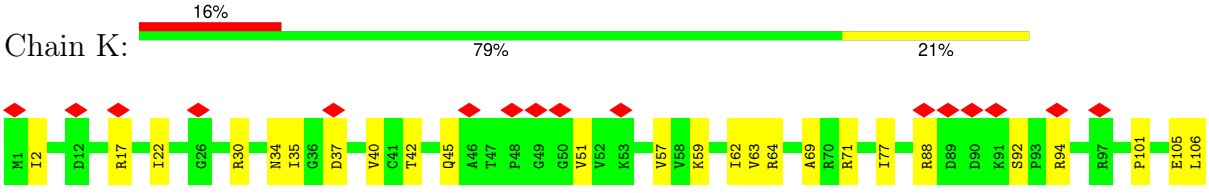
• Molecule 4: 50S ribosomal protein L4

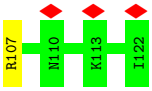


• Molecule 5: 50S ribosomal protein L13



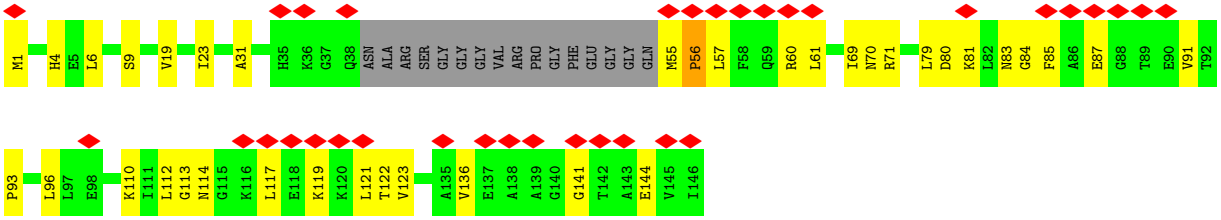
• Molecule 6: 50S ribosomal protein L14





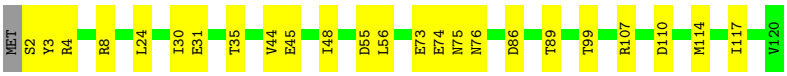
• Molecule 7: 50S ribosomal protein L15

Chain L:



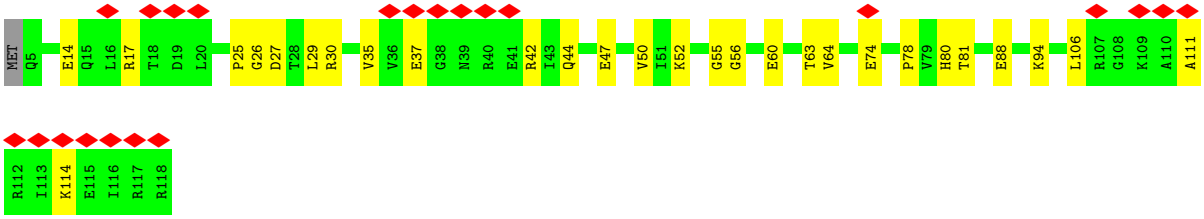
• Molecule 8: 50S ribosomal protein L17

Chain N:



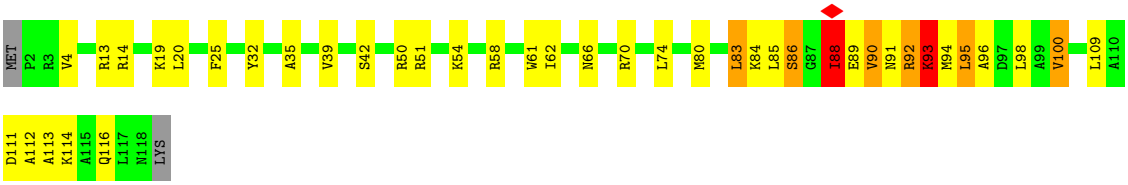
• Molecule 9: 50S ribosomal protein L19

Chain P:



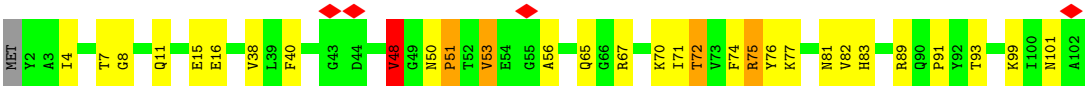
• Molecule 10: 50S ribosomal protein L20

Chain Q:



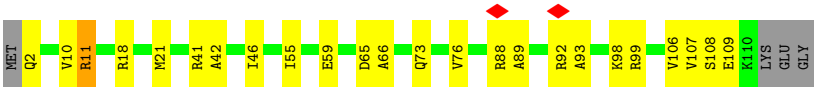
• Molecule 11: 50S ribosomal protein L21

Chain R:



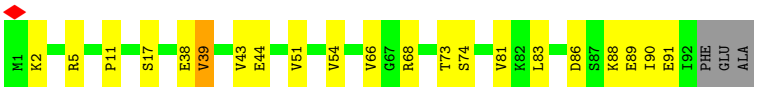
• Molecule 12: 50S ribosomal protein L22

Chain S:



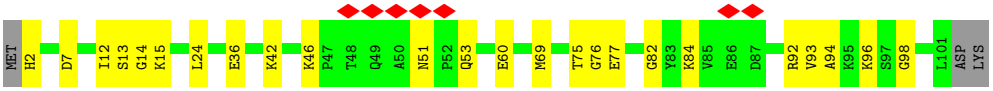
• Molecule 13: 50S ribosomal protein L23

Chain T:



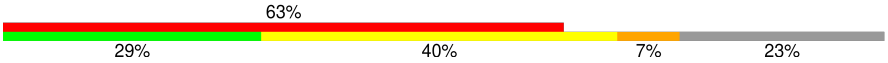
• Molecule 14: 50S ribosomal protein L24

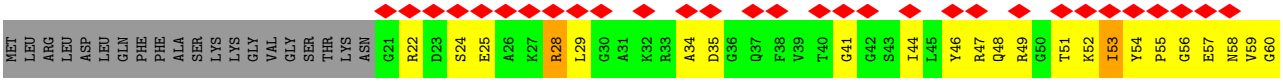
Chain U:

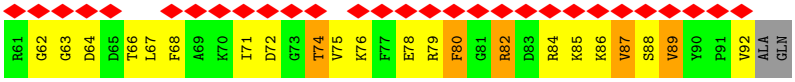


• Molecule 15: 50S ribosomal protein L27

Chain V:

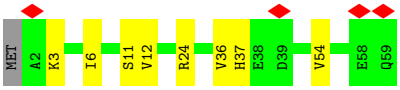






• Molecule 16: 50S ribosomal protein L30

Chain Z:

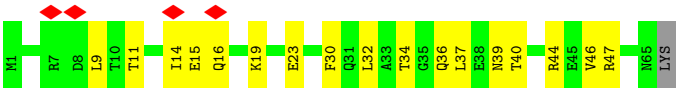


• Molecule 17: 50S ribosomal protein L32

Chain b:

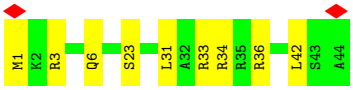
• Molecule 18: 50S ribosomal protein L29

Chain Y:



• Molecule 19: 50S ribosomal protein L34

Chain d:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	121252	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1250	Depositor
Maximum defocus (nm)	3250	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.040	Depositor
Minimum map value	-0.010	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.00983	Depositor
Map size (Å)	287.28, 287.28, 287.28	wwPDB
Map dimensions	336, 336, 336	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.855, 0.855, 0.855	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.56	0/58643	0.50	12/91483 (0.0%)
2	C	0.40	0/2087	0.53	0/2798
3	D	0.54	0/1367	0.54	0/1830
4	E	0.60	0/1580	0.59	0/2132
5	J	0.59	1/1146 (0.1%)	0.52	0/1542
6	K	0.42	0/927	0.51	0/1245
7	L	0.44	0/982	0.52	0/1308
8	N	0.64	0/960	0.60	0/1284
9	P	0.46	0/949	0.48	0/1269
10	Q	0.76	0/952	0.80	3/1266 (0.2%)
11	R	0.55	0/797	0.65	0/1070
12	S	0.59	0/851	0.58	0/1146
13	T	0.57	0/747	0.60	0/995
14	U	0.50	0/764	0.51	0/1022
15	V	0.35	0/569	0.81	0/757
16	Z	0.48	0/457	0.46	0/613
17	b	0.59	0/433	0.58	0/574
18	Y	0.51	0/531	0.62	1/707 (0.1%)
19	d	0.68	0/370	0.57	0/483
All	All	0.56	1/75112 (0.0%)	0.51	16/113524 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	J	8	ASN	CA-CB	-5.21	1.40	1.53

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1511	C	P-O3'-C3'	10.44	135.86	120.20
1	A	160	G	P-O3'-C3'	8.70	133.25	120.20
1	A	839	G	C2'-C3'-O3'	7.88	121.32	109.50
10	Q	90	VAL	N-CA-C	-7.63	97.90	108.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	161	A	C2'-C3'-O3'	-7.50	102.44	113.70
1	A	1595	U	C2'-C3'-O3'	6.97	124.16	113.70
1	A	161	A	O5'-P-OP2	-6.93	87.21	108.00
1	A	2774	C	C2'-C3'-O3'	-6.84	103.44	113.70
10	Q	93	LYS	N-CA-C	-6.41	101.95	111.81
1	A	1512	G	C2'-C3'-O3'	-6.36	104.17	113.70
1	A	1512	G	C4'-C3'-O3'	5.63	121.44	113.00
10	Q	98	LEU	N-CA-C	-5.49	106.09	112.89
1	A	880	C	O3'-P-O5'	5.29	111.94	104.00
1	A	27	G	C4'-C3'-O3'	5.24	117.27	109.40
1	A	161	A	C5'-C4'-C3'	5.20	123.80	116.00
18	Y	46	VAL	N-CA-C	-5.18	107.78	112.96

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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	52346	0	26332	892	0
2	C	2052	0	2138	79	0
3	D	1354	0	1425	22	0
4	E	1561	0	1647	36	0
5	J	1123	0	1162	28	0
6	K	920	0	977	14	0
7	L	973	0	1032	33	0
8	N	953	0	983	15	0
9	P	936	0	1008	20	0
10	Q	940	0	1005	53	0
11	R	786	0	826	40	0
12	S	842	0	899	18	0
13	T	741	0	793	17	0
14	U	754	0	809	18	0
15	V	561	0	567	89	0
16	Z	455	0	491	5	0
17	b	426	0	443	18	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	Y	530	0	568	13	0
19	d	367	0	410	8	0
All	All	68620	0	43515	1314	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 12.

All (1314) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2351:A:N6	1:A:2362:A:N6	1.62	1.42
1:A:2434:G:N2	1:A:2442:G:C6	1.94	1.35
1:A:2292:C:N4	1:A:2307:A:C6	1.96	1.34
1:A:1525:G:C2	1:A:1560:U:O2	1.81	1.33
1:A:2328:G:O6	1:A:2347:G:N2	1.63	1.32
1:A:251:G:O2'	1:A:2461:A:OP1	1.57	1.20
1:A:2434:G:N2	1:A:2442:G:O6	1.74	1.19
1:A:2292:C:N4	1:A:2307:A:N1	1.89	1.18
10:Q:61:TRP:CH2	10:Q:94:MET:HG3	1.80	1.16
2:C:33:LEU:O	2:C:64:VAL:HG23	1.42	1.15
1:A:1525:G:N2	1:A:1560:U:O2	1.79	1.15
15:V:53:ILE:HG21	15:V:87:VAL:CG2	1.78	1.14
15:V:53:ILE:HG21	15:V:87:VAL:HG23	1.31	1.12
1:A:2774:C:N4	1:A:2788:G:H1	1.47	1.11
1:A:839:G:H22	1:A:2101:G:C4'	1.64	1.09
15:V:54:TYR:O	15:V:86:LYS:HG3	1.54	1.08
2:C:94:ILE:HD13	2:C:116:ILE:CD1	1.84	1.07
1:A:2292:C:C4	1:A:2307:A:C2	2.43	1.06
7:L:57:LEU:HD13	7:L:61:LEU:HD12	1.36	1.06
1:A:1579:A:N7	1:A:1588:A:C6	2.24	1.05
1:A:2328:G:O6	1:A:2347:G:C2	2.09	1.05
10:Q:61:TRP:CZ2	10:Q:94:MET:HG2	1.90	1.05
2:C:94:ILE:HD13	2:C:116:ILE:HD13	1.34	1.05
1:A:2351:A:C6	1:A:2362:A:N6	2.24	1.04
15:V:28:ARG:H	15:V:28:ARG:HD2	1.21	1.03
1:A:2328:G:C6	1:A:2347:G:N2	2.20	1.03
1:A:2352:G:H5"	1:A:2352:G:H8	1.21	1.03
15:V:78:GLU:HG3	15:V:79:ARG:H	0.87	1.01
7:L:55:MET:N	7:L:56:PRO:HD3	1.75	1.00
1:A:199:A:N6	1:A:878:G:N3	2.10	1.00
1:A:2094:C:H5'	1:A:2280:G:H21	1.23	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:61:TRP:CZ2	10:Q:94:MET:CG	2.46	0.99
10:Q:61:TRP:CH2	10:Q:94:MET:CG	2.46	0.98
15:V:78:GLU:CG	15:V:79:ARG:H	1.74	0.98
1:A:2099:G:N1	1:A:2471:C:N3	1.75	0.98
1:A:1433:U:H4'	1:A:1648:A:H4'	1.45	0.98
15:V:53:ILE:CG2	15:V:87:VAL:HG23	1.93	0.97
15:V:56:GLY:HA2	15:V:86:LYS:HE2	1.44	0.97
7:L:55:MET:N	7:L:56:PRO:CD	2.27	0.97
1:A:1492:G:H1	1:A:1511:C:H42	1.13	0.97
15:V:78:GLU:HG3	15:V:79:ARG:N	1.70	0.97
1:A:1496:G:H1	1:A:1507:U:H3	1.10	0.95
15:V:56:GLY:HA2	15:V:86:LYS:CE	1.96	0.95
15:V:35:ASP:OD1	15:V:76:LYS:HA	1.66	0.94
1:A:2292:C:C4	1:A:2307:A:N1	2.36	0.91
1:A:2352:G:H5"	1:A:2352:G:C8	2.06	0.91
1:A:2328:G:O6	1:A:2347:G:N1	2.03	0.91
1:A:2351:A:H62	1:A:2362:A:N6	1.68	0.91
1:A:2779:A:HO2'	1:A:2782:A:H2	0.98	0.90
1:A:2324:C:N3	1:A:2367:G:N1	2.20	0.90
2:C:94:ILE:CD1	2:C:116:ILE:HD13	2.02	0.89
15:V:58:ASN:HB3	15:V:71:ILE:HG22	1.53	0.89
1:A:839:G:H22	1:A:2101:G:H4'	1.39	0.88
1:A:1579:A:C5	1:A:1588:A:N1	2.42	0.87
1:A:2348:C:H4'	1:A:2349:A:H5"	1.57	0.87
1:A:2774:C:H42	1:A:2788:G:H1	1.14	0.87
1:A:2096:G:C8	1:A:2098:G:N7	2.43	0.87
1:A:2309:G:H4'	1:A:2356:A:H5'	1.57	0.87
1:A:2360:G:O2'	15:V:51:THR:HG22	1.76	0.86
15:V:56:GLY:CA	15:V:86:LYS:HE2	2.04	0.86
1:A:2287:C:C5'	15:V:22:ARG:HH22	1.88	0.86
1:A:2085:G:H22	17:b:2:ALA:HB1	1.41	0.85
1:A:2290:C:H2'	15:V:24:SER:OG	1.76	0.84
7:L:136:VAL:HG22	7:L:141:GLY:HA3	1.60	0.84
10:Q:86:SER:HB3	10:Q:116:GLN:HG3	1.59	0.84
1:A:1036:A:H8	11:R:75:ARG:HH12	1.23	0.84
10:Q:61:TRP:CZ3	10:Q:94:MET:HB2	2.12	0.84
5:J:6:MET:SD	5:J:6:MET:N	2.51	0.83
1:A:2324:C:C4	1:A:2367:G:N1	2.47	0.83
1:A:2328:G:N1	1:A:2347:G:N2	2.25	0.83
1:A:411:G:O2'	1:A:412:A:N7	2.11	0.83
10:Q:61:TRP:CE3	10:Q:94:MET:HB2	2.13	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2774:C:N4	1:A:2788:G:N1	2.19	0.82
1:A:1579:A:N6	1:A:1588:A:C4	2.47	0.82
1:A:2415:U:O2'	15:V:49:ARG:NH1	2.12	0.81
1:A:1579:A:C6	1:A:1588:A:C2	2.69	0.81
1:A:2287:C:H5"	15:V:22:ARG:HH22	1.45	0.81
10:Q:61:TRP:CE2	10:Q:94:MET:HG2	2.16	0.81
1:A:255:G:H8	1:A:255:G:H5"	1.45	0.81
1:A:2090:G:O2'	1:A:2092:C:H5'	1.80	0.80
11:R:50:ASN:HB2	11:R:51:PRO:HD2	1.62	0.80
1:A:805:G:H21	1:A:2010:A:H62	1.29	0.80
1:A:2094:C:H5'	1:A:2280:G:N2	1.97	0.80
1:A:1579:A:C5	1:A:1588:A:C2	2.69	0.79
1:A:839:G:N2	1:A:2101:G:H4'	1.97	0.79
1:A:2328:G:H1	1:A:2347:G:N2	1.80	0.79
1:A:2773:G:H5"	1:A:2784:C:C2	2.18	0.79
2:C:63:ARG:HH21	2:C:63:ARG:HG3	1.47	0.79
1:A:419:G:H22	1:A:447:G:H2'	1.47	0.79
1:A:1380:U:H5"	1:A:1436:U:O2	1.83	0.79
1:A:1579:A:C5	1:A:1588:A:C6	2.71	0.79
7:L:57:LEU:CD1	7:L:61:LEU:HD12	2.12	0.79
1:A:2434:G:N2	1:A:2442:G:N1	2.32	0.78
1:A:690:A:H61	1:A:2378:G:H21	1.31	0.78
10:Q:61:TRP:HB3	10:Q:93:LYS:O	1.83	0.77
1:A:90:A:H4'	1:A:91:A:H5'	1.67	0.77
2:C:67:PHE:CZ	2:C:156:ARG:HD2	2.19	0.77
11:R:50:ASN:OD1	11:R:50:ASN:O	2.03	0.77
1:A:2312:C:C5	1:A:2418:G:C4	2.73	0.77
2:C:66:ASP:OD2	2:C:102:ARG:NH1	2.18	0.77
2:C:94:ILE:HD13	2:C:116:ILE:HD11	1.67	0.76
10:Q:95:LEU:HD13	10:Q:95:LEU:O	1.85	0.76
1:A:311:U:O2'	1:A:312:G:O5'	2.03	0.76
1:A:2794:A:N3	1:A:2794:A:H2'	2.00	0.76
1:A:2773:G:H3'	1:A:2784:C:O2	1.85	0.76
5:J:8:ASN:OD1	5:J:8:ASN:N	2.15	0.76
1:A:200:A:C5	1:A:2459:A:C5	2.65	0.76
1:A:2776:G:H21	1:A:2786:A:H62	1.33	0.76
1:A:2779:A:O2'	1:A:2782:A:H2	1.68	0.75
1:A:2386:U:H5"	1:A:2386:U:C6	2.21	0.75
2:C:143:ASN:H	2:C:155:VAL:HG23	1.52	0.75
15:V:55:PRO:HB3	15:V:59:VAL:HG12	1.67	0.74
1:A:2765:G:H5"	1:A:2765:G:H8	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:V:29:LEU:HD22	15:V:48:GLN:O	1.87	0.74
1:A:2099:G:H1	1:A:2471:C:N4	1.83	0.74
1:A:1247:G:N1	1:A:1280:G:C2	2.55	0.74
1:A:2440:A:H2'	1:A:2441:A:H8	1.52	0.74
6:K:2:ILE:HD13	6:K:62:ILE:HD13	1.69	0.74
15:V:58:ASN:CB	15:V:71:ILE:HG22	2.17	0.74
1:A:1244:A:H8	7:L:4:HIS:HB3	1.52	0.74
1:A:840:A:N6	1:A:2102:C:OP1	2.21	0.74
1:A:287:G:OP2	1:A:288:C:N4	2.19	0.74
1:A:2351:A:H5"	1:A:2351:A:H8	1.53	0.74
1:A:2773:G:H5"	1:A:2784:C:O2	1.87	0.74
4:E:152:ALA:O	4:E:189:HIS:ND1	2.20	0.74
1:A:2324:C:C2	1:A:2367:G:C2	2.76	0.73
1:A:2459:A:N3	1:A:2459:A:H3'	2.03	0.73
14:U:51:ASN:OD1	14:U:53:GLN:NE2	2.21	0.73
1:A:680:G:H2'	1:A:681:C:C6	2.24	0.73
1:A:630:A:H62	1:A:1291:A:H2	1.36	0.73
1:A:960:U:O2	1:A:961:C:N4	2.21	0.73
11:R:99:LYS:HE3	11:R:101:ASN:HB3	1.71	0.73
1:A:678:A:H2'	1:A:679:A:H8	1.53	0.73
1:A:1579:A:N7	1:A:1588:A:N6	2.37	0.73
1:A:1516:A:H62	1:A:1568:G:H8	1.38	0.72
1:A:1696:G:HO2'	1:A:1697:A:H8	1.35	0.72
1:A:2113:C:H2'	1:A:2114:C:C6	2.24	0.72
1:A:2470:C:OP1	1:A:2470:C:H4'	1.90	0.72
2:C:105:LEU:HD21	2:C:156:ARG:HG3	1.70	0.72
2:C:157:SER:O	2:C:195:VAL:HG21	1.90	0.72
1:A:275:A:H62	1:A:296:G:H21	1.38	0.72
1:A:2857:U:O2	1:A:2859:G:N1	2.22	0.72
1:A:1579:A:C8	1:A:1588:A:N6	2.58	0.72
1:A:417:G:OP2	1:A:470:A:N6	2.22	0.72
1:A:513:A:OP1	19:d:34:ARG:NH1	2.23	0.71
1:A:2049:A:OP2	17:b:6:ARG:NH1	2.23	0.71
1:A:839:G:H1	1:A:2101:G:H1'	1.55	0.71
2:C:94:ILE:CD1	2:C:116:ILE:CD1	2.65	0.71
1:A:1808:U:H5	1:A:1812:A:H62	1.39	0.71
1:A:311:U:H2'	1:A:312:G:C4	2.26	0.71
2:C:115:GLU:OE2	2:C:115:GLU:N	2.16	0.71
1:A:1847:U:OP2	2:C:156:ARG:NE	2.22	0.71
6:K:22:ILE:HD11	6:K:42:THR:HG23	1.71	0.70
1:A:425:C:N4	1:A:426:G:O6	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:911:G:HO2'	1:A:912:C:H6	1.38	0.70
3:D:13:THR:HG22	3:D:14:GLN:H	1.56	0.70
1:A:2352:G:H8	1:A:2352:G:C5'	2.02	0.70
1:A:865:G:N1	1:A:1228:G:O2'	2.18	0.69
1:A:1053:C:OP1	5:J:38:ARG:NH1	2.26	0.69
1:A:200:A:N6	1:A:2459:A:C4	2.61	0.69
1:A:1359:G:H22	1:A:1370:C:N4	1.90	0.69
15:V:28:ARG:H	15:V:28:ARG:CD	1.98	0.69
1:A:250:G:O2'	1:A:253:G:O6	2.11	0.69
1:A:650:U:OP2	4:E:104:LYS:NZ	2.26	0.69
1:A:2360:G:O2'	15:V:51:THR:CG2	2.41	0.69
1:A:1652:C:H4'	1:A:1653:A:O5'	1.91	0.69
1:A:2689:A:H3'	1:A:2690:G:H8	1.57	0.69
1:A:277:C:H2'	1:A:278:A:C8	2.28	0.69
1:A:784:C:H2'	1:A:785:C:H5"	1.74	0.68
1:A:200:A:H62	1:A:2459:A:H2'	1.56	0.68
1:A:337:A:O2'	1:A:338:G:O4'	2.10	0.68
1:A:732:A:H8	1:A:735:U:H3	1.40	0.68
1:A:1497:G:H22	1:A:1505:U:H3	1.41	0.68
1:A:200:A:H62	1:A:2459:A:C2'	2.06	0.68
15:V:56:GLY:HA2	15:V:86:LYS:HE3	1.76	0.68
1:A:2767:A:O5'	1:A:2767:A:H8	1.77	0.68
1:A:2769:A:C8	1:A:2792:G:N2	2.62	0.68
1:A:456:A:H2'	1:A:457:G:C8	2.29	0.68
1:A:2096:G:N1	1:A:2473:G:N2	2.40	0.67
1:A:2362:A:N7	1:A:2364:A:N1	2.42	0.67
1:A:2909:U:H5	17:b:40:HIS:CD2	2.11	0.67
1:A:1579:A:H4'	1:A:1579:A:OP1	1.93	0.67
1:A:2415:U:HO2'	15:V:49:ARG:HH11	1.41	0.67
10:Q:86:SER:CB	10:Q:116:GLN:HG3	2.24	0.67
15:V:53:ILE:HG21	15:V:87:VAL:HG22	1.74	0.67
1:A:831:U:O4'	2:C:226:ASN:ND2	2.27	0.67
1:A:1532:A:H2'	1:A:1533:A:H8	1.58	0.67
1:A:2114:C:O2	1:A:2264:G:N2	2.28	0.67
1:A:2688:G:N1	1:A:2691:A:OP2	2.19	0.67
1:A:678:A:H2'	1:A:679:A:C8	2.30	0.67
1:A:1387:G:H2'	1:A:1388:A:H5"	1.74	0.67
1:A:1529:G:H2'	1:A:1530:G:C8	2.29	0.67
1:A:200:A:N6	1:A:2459:A:N3	2.43	0.67
9:P:30:ARG:NH1	9:P:88:GLU:OE2	2.28	0.67
1:A:839:G:N2	1:A:2101:G:O4'	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1583:A:N3	1:A:1583:A:H2'	2.08	0.67
1:A:2292:C:N4	1:A:2307:A:C2	2.51	0.67
1:A:266:U:H2'	1:A:267:C:O4'	1.94	0.66
1:A:711:U:O3'	1:A:987:A:OP1	2.13	0.66
1:A:839:G:N2	1:A:2101:G:C4'	2.46	0.66
1:A:1380:U:OP2	1:A:1380:U:H6	1.78	0.66
15:V:41:GLY:H	15:V:72:ASP:HB3	1.60	0.66
1:A:1482:G:H21	1:A:1562:A:H8	1.42	0.66
4:E:6:LEU:HD21	4:E:17:ILE:HB	1.77	0.66
1:A:1828:G:O2'	2:C:182:ARG:NH1	2.29	0.66
1:A:922:A:O2'	1:A:949:U:N3	2.28	0.66
1:A:2440:A:H2'	1:A:2441:A:C8	2.30	0.66
2:C:198:GLU:OE1	2:C:198:GLU:N	2.29	0.66
1:A:894:A:H62	1:A:979:U:H3	1.44	0.66
1:A:199:A:H61	1:A:878:G:H1'	1.59	0.66
3:D:100:GLU:N	3:D:100:GLU:OE1	2.26	0.66
11:R:76:TYR:HB2	11:R:83:HIS:HD2	1.60	0.66
1:A:2362:A:C8	1:A:2364:A:N1	2.64	0.65
1:A:2357:A:H2'	1:A:2358:A:H8	1.62	0.65
1:A:1512:G:H8	1:A:1512:G:H5"	1.61	0.65
1:A:2678:U:H6	1:A:2678:U:O5'	1.80	0.65
1:A:288:C:O2'	1:A:289:C:OP1	2.12	0.65
2:C:115:GLU:H	2:C:115:GLU:CD	2.04	0.65
2:C:226:ASN:OD1	2:C:227:PRO:HD2	1.96	0.65
13:T:90:ILE:HG22	13:T:91:GLU:H	1.60	0.65
1:A:1631:A:H4'	1:A:1632:G:H4'	1.78	0.65
1:A:2086:G:H2'	1:A:2087:A:C8	2.32	0.65
2:C:65:ILE:HD12	2:C:87:ARG:HH21	1.62	0.65
1:A:1517:A:H61	1:A:1567:U:H3	1.44	0.65
10:Q:109:LEU:CD2	11:R:48:VAL:HG21	2.26	0.65
14:U:7:ASP:OD2	14:U:92:ARG:NH2	2.30	0.65
18:Y:37:LEU:HD23	18:Y:40:THR:HG22	1.79	0.65
1:A:875:U:H4'	1:A:878:G:C6	2.32	0.64
1:A:1496:G:N2	1:A:1508:C:C2	2.65	0.64
1:A:1831:A:H2'	1:A:1832:A:C8	2.32	0.64
3:D:125:ARG:NH1	3:D:160:LEU:O	2.30	0.64
15:V:46:TYR:CG	15:V:53:ILE:CD1	2.80	0.64
2:C:28:LYS:NZ	2:C:29:PRO:O	2.24	0.64
2:C:200:HIS:O	2:C:200:HIS:ND1	2.29	0.64
7:L:23:ILE:HD12	11:R:81:ASN:HB3	1.79	0.64
1:A:276:C:O2	1:A:295:G:N2	2.21	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:33:LEU:O	2:C:64:VAL:CG2	2.35	0.64
3:D:9:LYS:NZ	3:D:194:GLY:O	2.27	0.64
8:N:2:SER:OG	8:N:3:TYR:N	2.30	0.64
15:V:58:ASN:CG	15:V:71:ILE:CG2	2.71	0.64
1:A:1304:G:OP1	17:b:16:ARG:NH2	2.20	0.64
1:A:1540:A:H2'	1:A:1541:A:H8	1.63	0.64
1:A:1726:G:O2'	1:A:1727:A:OP1	2.15	0.64
1:A:2253:G:OP1	2:C:268:LYS:NZ	2.29	0.64
1:A:2323:C:N3	1:A:2324:C:N4	2.45	0.64
1:A:457:G:N2	1:A:465:U:O2	2.31	0.64
1:A:969:C:O2'	15:V:34:ALA:HB2	1.97	0.64
15:V:29:LEU:CD2	15:V:48:GLN:O	2.45	0.64
1:A:2383:A:O2'	15:V:44:ILE:HG22	1.96	0.64
1:A:1532:A:H2'	1:A:1533:A:C8	2.33	0.64
1:A:2354:G:H8	1:A:2354:G:OP1	1.80	0.64
15:V:74:THR:HG23	15:V:92:VAL:CG2	2.28	0.64
2:C:117:MET:HE3	2:C:119:GLY:H	1.63	0.64
14:U:2:HIS:O	14:U:92:ARG:NH1	2.30	0.64
1:A:905:G:OP1	15:V:52:LYS:HE3	1.97	0.63
1:A:1433:U:C4'	1:A:1648:A:H4'	2.24	0.63
1:A:1579:A:C8	1:A:1588:A:C6	2.86	0.63
1:A:1492:G:H1	1:A:1511:C:N4	1.93	0.63
3:D:208:SER:OG	3:D:208:SER:O	2.16	0.63
1:A:1526:G:O5'	1:A:1526:G:H8	1.82	0.63
2:C:161:SER:HB3	2:C:194:GLN:HG3	1.80	0.63
13:T:88:LYS:HB2	13:T:90:ILE:HD11	1.79	0.63
1:A:2324:C:N3	1:A:2367:G:C2	2.67	0.63
1:A:2467:U:H2'	1:A:2470:C:C5	2.34	0.63
1:A:1579:A:C6	1:A:1588:A:N3	2.67	0.63
1:A:283:G:O6	1:A:288:C:N4	2.32	0.63
1:A:1847:U:C6	2:C:156:ARG:NH2	2.66	0.63
8:N:55:ASP:OD1	8:N:56:LEU:N	2.32	0.63
9:P:56:GLY:H	9:P:60:GLU:HG2	1.64	0.63
7:L:83:ASN:HD22	7:L:117:LEU:HA	1.63	0.63
10:Q:61:TRP:CZ2	10:Q:94:MET:HG3	2.19	0.63
1:A:312:G:O2'	1:A:313:U:O4'	2.17	0.62
13:T:86:ASP:OD1	13:T:86:ASP:N	2.31	0.62
1:A:2666:U:OP1	3:D:84:ARG:NH1	2.33	0.62
1:A:2789:C:H6	1:A:2789:C:OP2	1.81	0.62
1:A:1585:A:H3'	1:A:1585:A:H8	1.65	0.62
15:V:78:GLU:CG	15:V:79:ARG:N	2.45	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:200:A:C5	1:A:2459:A:C4	2.86	0.62
1:A:277:C:H2'	1:A:278:A:H8	1.64	0.62
1:A:2362:A:C8	1:A:2364:A:C6	2.88	0.62
4:E:182:ASN:OD1	4:E:182:ASN:N	2.30	0.62
1:A:2112:G:N7	1:A:2266:G:N2	2.47	0.62
2:C:117:MET:N	2:C:128:ASN:OD1	2.29	0.62
1:A:304:G:N2	1:A:415:C:O2	2.33	0.62
1:A:852:G:H22	1:A:2473:G:H1'	1.65	0.62
1:A:881:U:OP1	1:A:881:U:H6	1.83	0.62
1:A:1691:A:H5"	1:A:1692:U:H5"	1.81	0.62
2:C:33:LEU:C	2:C:64:VAL:HG23	2.23	0.61
12:S:10:VAL:HG11	12:S:46:ILE:HG21	1.81	0.61
15:V:80:PHE:HB3	15:V:84:ARG:HB2	1.81	0.61
1:A:250:G:N2	1:A:254:A:OP2	2.31	0.61
1:A:351:G:H21	1:A:374:A:N6	1.98	0.61
1:A:1560:U:C5'	1:A:1560:U:H6	2.13	0.61
15:V:58:ASN:CG	15:V:71:ILE:HG22	2.25	0.61
1:A:231:A:O2'	1:A:233:G:OP2	2.18	0.61
1:A:2324:C:N4	1:A:2367:G:H1	1.99	0.61
1:A:689:A:N6	1:A:2398:A:O2'	2.31	0.61
1:A:1247:G:C2	1:A:1280:G:N2	2.68	0.61
1:A:2292:C:H41	1:A:2307:A:N6	1.98	0.61
7:L:144:GLU:OE2	7:L:144:GLU:N	2.31	0.61
8:N:73:GLU:O	8:N:76:ASN:ND2	2.33	0.61
12:S:65:ASP:OD2	12:S:66:ALA:N	2.33	0.61
1:A:1005:A:H2'	1:A:1006:A:N3	2.16	0.61
15:V:57:GLU:HB2	15:V:88:SER:OG	2.00	0.61
1:A:2386:U:H5"	1:A:2386:U:H6	1.66	0.61
1:A:2909:U:C5	17:b:40:HIS:HD2	2.18	0.61
10:Q:92:ARG:HD3	11:R:11:GLN:HE21	1.66	0.61
1:A:576:G:O2'	1:A:578:A:N7	2.33	0.61
1:A:1245:G:HO2'	1:A:1246:G:P	2.23	0.61
1:A:1696:G:O2'	1:A:1697:A:H8	1.84	0.61
1:A:2273:U:H4'	1:A:2463:A:N6	2.15	0.61
1:A:1345:U:O2'	1:A:1346:A:O5'	2.18	0.61
1:A:1529:G:H1'	1:A:1555:A:H61	1.66	0.61
1:A:2386:U:O2	1:A:2388:C:OP2	2.18	0.61
2:C:167:LYS:HA	2:C:172:VAL:HA	1.83	0.61
10:Q:66:ASN:OD1	10:Q:70:ARG:NH1	2.33	0.61
15:V:28:ARG:HD2	15:V:28:ARG:N	2.04	0.61
1:A:1555:A:HO2'	1:A:1556:A:H8	1.47	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:61:TRP:CB	10:Q:93:LYS:O	2.48	0.60
15:V:51:THR:HG23	15:V:51:THR:O	2.01	0.60
1:A:632:U:O2'	1:A:633:U:OP1	2.18	0.60
1:A:2317:A:H2	1:A:2413:G:H21	1.50	0.60
1:A:2824:G:O2'	1:A:2827:A:N6	2.34	0.60
10:Q:90:VAL:HG23	10:Q:90:VAL:O	2.01	0.60
15:V:74:THR:CG2	15:V:92:VAL:CG2	2.79	0.60
1:A:960:U:H1'	1:A:961:C:H5	1.66	0.60
1:A:60:G:O6	1:A:63:G:N1	2.26	0.60
1:A:200:A:N3	1:A:200:A:H2'	2.15	0.60
1:A:1579:A:C6	1:A:1588:A:C4	2.90	0.60
4:E:161:GLU:OE1	4:E:161:GLU:N	2.28	0.60
1:A:1814:A:O2'	1:A:1815:A:OP2	2.16	0.60
5:J:80:GLN:C	5:J:82:PRO:HD3	2.27	0.60
1:A:1460:G:O2'	1:A:1631:A:N6	2.30	0.60
1:A:1497:G:H8	1:A:1497:G:OP2	1.85	0.60
1:A:2287:C:C5'	15:V:22:ARG:NH2	2.62	0.60
2:C:105:LEU:CD2	2:C:156:ARG:HG3	2.32	0.60
1:A:1461:A:H62	1:A:1630:G:H21	1.49	0.60
1:A:331:C:H6	1:A:331:C:O5'	1.84	0.60
1:A:692:A:H2'	1:A:693:G:O4'	2.02	0.60
1:A:902:G:H2'	1:A:903:G:H8	1.67	0.60
1:A:2462:A:H3'	1:A:2462:A:H8	1.65	0.60
11:R:72:THR:HG22	11:R:72:THR:O	2.00	0.60
14:U:75:THR:OG1	14:U:76:GLY:N	2.34	0.60
1:A:907:U:O2	1:A:964:A:N7	2.35	0.60
10:Q:100:VAL:HG23	10:Q:100:VAL:O	2.01	0.60
1:A:760:G:O2'	1:A:765:A:N1	2.33	0.59
1:A:2099:G:N1	1:A:2471:C:C4	2.47	0.59
10:Q:92:ARG:HB2	11:R:11:GLN:HE21	1.66	0.59
15:V:29:LEU:HD22	15:V:48:GLN:C	2.27	0.59
15:V:46:TYR:CD1	15:V:53:ILE:HD11	2.37	0.59
1:A:1695:A:H2'	1:A:1696:G:H5'	1.84	0.59
2:C:155:VAL:HG23	2:C:155:VAL:O	2.01	0.59
14:U:77:GLU:OE2	14:U:96:LYS:NZ	2.31	0.59
1:A:760:G:H2'	1:A:761:U:C4	2.37	0.59
1:A:1492:G:N2	1:A:1511:C:N3	2.36	0.59
2:C:67:PHE:HZ	2:C:156:ARG:HD2	1.66	0.59
2:C:246:PRO:HG2	2:C:255:LEU:HB2	1.85	0.59
10:Q:92:ARG:HB3	10:Q:95:LEU:H	1.68	0.59
1:A:2765:G:H5"	1:A:2765:G:C8	2.34	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:117:MET:HE3	2:C:118:SER:H	1.68	0.59
3:D:122:ALA:O	3:D:126:HIS:N	2.29	0.59
11:R:48:VAL:O	11:R:48:VAL:HG22	2.02	0.59
1:A:452:C:O2'	1:A:453:G:O5'	2.20	0.59
1:A:2312:C:C4	1:A:2418:G:C5	2.90	0.59
1:A:1540:A:H2'	1:A:1541:A:C8	2.38	0.59
1:A:2296:A:N6	1:A:2301:U:H3	2.00	0.59
6:K:30:ARG:NH2	6:K:37:ASP:OD2	2.36	0.59
7:L:85:PHE:O	7:L:119:LYS:NZ	2.35	0.59
10:Q:83:LEU:HD23	10:Q:113:ALA:HB2	1.85	0.59
1:A:2094:C:H3'	1:A:2094:C:H6	1.67	0.59
1:A:2795:G:H5"	1:A:2795:G:N3	2.18	0.59
1:A:1548:U:H2'	1:A:1549:U:C6	2.38	0.58
1:A:2357:A:H2'	1:A:2358:A:C8	2.37	0.58
1:A:276:C:O2'	1:A:306:C:OP1	2.20	0.58
1:A:839:G:H1	1:A:2101:G:C1'	2.16	0.58
1:A:1551:C:H2'	1:A:1552:C:C6	2.38	0.58
15:V:55:PRO:HG3	15:V:67:LEU:CD2	2.33	0.58
1:A:1322:G:H1'	1:A:1368:U:H5	1.69	0.58
1:A:1520:A:H2	1:A:1565:U:H3	1.50	0.58
1:A:2039:G:H5"	12:S:42:ALA:HB2	1.86	0.58
1:A:2786:A:H3'	1:A:2787:A:H5"	1.85	0.58
1:A:2776:G:C6	1:A:2783:U:C5	2.91	0.58
1:A:2118:U:O2	1:A:2259:G:O6	2.21	0.58
9:P:78:PRO:HG2	9:P:81:THR:HB	1.86	0.58
1:A:254:A:O5'	1:A:254:A:H8	1.87	0.58
1:A:881:U:H1'	1:A:2387:A:N3	2.18	0.58
1:A:1247:G:C2	1:A:1280:G:C2	2.92	0.58
1:A:1292:G:OP2	10:Q:13:ARG:NH2	2.33	0.58
2:C:63:ARG:HG3	2:C:63:ARG:NH2	2.13	0.58
2:C:156:ARG:O	2:C:156:ARG:HG2	2.03	0.58
19:d:3:ARG:O	19:d:6:GLN:NE2	2.36	0.58
1:A:1313:A:HO2'	1:A:1691:A:H2	1.47	0.58
1:A:412:A:H2'	1:A:413:U:C6	2.39	0.58
1:A:2665:U:O2'	3:D:46:TYR:OH	2.21	0.58
2:C:221:ARG:HE	2:C:223:SER:HG	1.51	0.58
1:A:1518:G:N2	1:A:1566:G:H22	2.00	0.58
1:A:291:C:H2'	1:A:292:U:C6	2.39	0.57
1:A:307:A:H2'	1:A:308:C:H6	1.68	0.57
1:A:2087:A:H3'	1:A:2088:A:H5"	1.87	0.57
9:P:30:ARG:HG2	9:P:47:GLU:HG2	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:V:57:GLU:H	15:V:88:SER:HB2	1.69	0.57
1:A:618:A:N1	1:A:2083:A:H5"	2.19	0.57
10:Q:83:LEU:CD2	10:Q:113:ALA:HB2	2.34	0.57
1:A:306:C:H2'	1:A:307:A:H8	1.68	0.57
1:A:973:G:H2'	1:A:974:A:H8	1.69	0.57
1:A:2312:C:C5	1:A:2418:G:N9	2.72	0.57
15:V:46:TYR:CG	15:V:53:ILE:HD11	2.40	0.57
1:A:455:G:H2'	1:A:456:A:C8	2.40	0.57
1:A:1515:C:H2'	1:A:1516:A:C8	2.39	0.57
1:A:2312:C:N4	1:A:2418:G:C5	2.72	0.57
1:A:2360:G:O3'	15:V:51:THR:CG2	2.52	0.57
1:A:307:A:H2'	1:A:308:C:C6	2.40	0.57
1:A:2085:G:N2	17:b:2:ALA:HB1	2.18	0.57
1:A:2267:G:H4'	1:A:2268:G:H5'	1.85	0.57
12:S:18:ARG:NH1	12:S:76:VAL:O	2.37	0.57
14:U:12:ILE:HG13	14:U:69:MET:HE3	1.87	0.57
1:A:321:U:O2'	1:A:322:A:OP2	2.21	0.57
1:A:1541:A:H2'	1:A:1542:A:C8	2.39	0.57
10:Q:88:ILE:HB	11:R:51:PRO:HD3	1.86	0.57
15:V:46:TYR:CD2	15:V:53:ILE:HD12	2.40	0.57
19:d:31:LEU:HD22	19:d:42:LEU:HD23	1.86	0.57
1:A:200:A:N6	1:A:2459:A:H2'	2.20	0.57
1:A:1512:G:C8	1:A:1512:G:H3'	2.40	0.57
1:A:2776:G:N2	1:A:2786:A:H62	2.03	0.57
1:A:2005:C:O2'	1:A:2006:A:O5'	2.23	0.56
7:L:91:VAL:HG23	7:L:123:VAL:HA	1.85	0.56
12:S:108:SER:OG	12:S:109:GLU:N	2.34	0.56
1:A:268:A:H2'	1:A:269:G:H4'	1.87	0.56
1:A:2328:G:H1	1:A:2347:G:H21	1.49	0.56
10:Q:95:LEU:HD11	11:R:4:ILE:CG2	2.35	0.56
15:V:60:GLY:O	15:V:68:PHE:CD2	2.58	0.56
1:A:255:G:H5"	1:A:255:G:C8	2.35	0.56
1:A:800:G:H5"	19:d:1:MET:HE2	1.86	0.56
1:A:1343:C:O2'	1:A:1344:C:O5'	2.24	0.56
1:A:2351:A:H5"	1:A:2351:A:C8	2.36	0.56
2:C:73:GLY:H	2:C:117:MET:HE1	1.70	0.56
10:Q:50:ARG:NH1	11:R:71:ILE:HG21	2.21	0.56
1:A:275:A:H2	1:A:304:G:H21	1.52	0.56
3:D:182:GLU:OE2	3:D:183:ARG:NH2	2.38	0.56
12:S:73:GLN:HB2	12:S:106:VAL:HB	1.88	0.56
1:A:90:A:H4'	1:A:91:A:C5'	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:200:A:C6	1:A:2459:A:C4	2.93	0.56
10:Q:92:ARG:HG2	10:Q:94:MET:HB3	1.87	0.56
11:R:7:THR:OG1	11:R:8:GLY:N	2.39	0.56
1:A:1525:G:N2	1:A:1560:U:C2	2.67	0.56
1:A:2049:A:P	17:b:6:ARG:HH12	2.28	0.56
1:A:2312:C:N4	1:A:2418:G:C6	2.74	0.56
1:A:2324:C:C6	1:A:2367:G:N2	2.74	0.56
15:V:29:LEU:HD23	15:V:47:ARG:HG2	1.88	0.56
1:A:379:C:H4'	14:U:69:MET:HE2	1.87	0.56
1:A:1522:U:O2'	1:A:1523:U:O5'	2.23	0.56
1:A:1578:G:O5'	1:A:1578:G:H8	1.88	0.56
1:A:2254:A:H4'	1:A:2255:C:O5'	2.04	0.56
1:A:1613:C:O2'	1:A:1614:A:H2'	2.06	0.56
1:A:2462:A:H3'	1:A:2462:A:C8	2.40	0.56
1:A:1083:G:C6	1:A:1165:U:O2	2.59	0.56
1:A:1187:U:OP2	5:J:66:THR:OG1	2.24	0.56
1:A:1545:C:H2'	1:A:1546:G:H8	1.71	0.56
15:V:75:VAL:HG12	15:V:76:LYS:N	2.19	0.56
1:A:63:G:P	1:A:63:G:H3'	2.46	0.56
1:A:1585:A:H3'	1:A:1585:A:C8	2.40	0.56
1:A:2909:U:C5	17:b:40:HIS:CD2	2.93	0.56
1:A:2099:G:N1	1:A:2471:C:N4	2.51	0.55
3:D:121:GLY:O	3:D:125:ARG:N	2.37	0.55
1:A:419:G:N2	1:A:447:G:H2'	2.18	0.55
5:J:78:HIS:CD2	5:J:85:LEU:HB3	2.41	0.55
1:A:911:G:O2'	1:A:912:C:H5'	2.07	0.55
15:V:74:THR:HG23	15:V:92:VAL:HG23	1.87	0.55
1:A:293:U:H2'	1:A:294:G:C8	2.42	0.55
1:A:1228:G:O2'	1:A:1229:U:OP2	2.24	0.55
5:J:20:ASP:OD1	5:J:21:ALA:N	2.40	0.55
1:A:873:U:O2	1:A:878:G:O6	2.25	0.55
1:A:998:G:H21	1:A:2296:A:H2	1.53	0.55
1:A:2280:G:H2'	1:A:2281:G:O4'	2.07	0.55
1:A:2875:A:N7	1:A:2893:A:O2'	2.37	0.55
1:A:2105:U:OP2	1:A:2267:G:N2	2.38	0.55
2:C:110:ILE:HD12	2:C:111:GLN:H	1.71	0.55
7:L:69:ILE:HG13	7:L:70:ASN:H	1.72	0.55
11:R:15:GLU:OE2	11:R:16:GLU:N	2.34	0.55
1:A:913:A:H2	1:A:914:C:H5	1.55	0.55
1:A:2110:C:N4	1:A:2268:G:O6	2.40	0.55
1:A:1820:A:N6	1:A:1857:G:O2'	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:S:11:ARG:HH21	12:S:98:LYS:HD2	1.72	0.55
1:A:2126:G:H22	1:A:2221:C:H1'	1.72	0.55
7:L:57:LEU:O	7:L:61:LEU:HB2	2.06	0.55
13:T:44:GLU:OE2	13:T:51:VAL:N	2.40	0.55
15:V:46:TYR:CD2	15:V:53:ILE:CD1	2.90	0.55
1:A:2351:A:H61	1:A:2362:A:N6	1.89	0.54
1:A:2415:U:H3'	1:A:2415:U:H6	1.72	0.54
6:K:64:ARG:NH1	6:K:101:PRO:O	2.40	0.54
7:L:79:LEU:HB2	7:L:114:ASN:O	2.07	0.54
15:V:75:VAL:O	15:V:76:LYS:HD3	2.07	0.54
1:A:711:U:H4'	1:A:987:A:P	2.46	0.54
1:A:2086:G:H5'	17:b:3:VAL:HG21	1.88	0.54
1:A:920:G:H5"	1:A:922:A:H62	1.71	0.54
1:A:1362:G:H2'	1:A:1363:G:H5"	1.89	0.54
7:L:1:MET:HE2	7:L:6:LEU:HA	1.88	0.54
1:A:351:G:H21	1:A:374:A:H62	1.54	0.54
1:A:1533:A:H2'	1:A:1534:A:H8	1.73	0.54
1:A:2360:G:O3'	15:V:51:THR:HG23	2.07	0.54
10:Q:61:TRP:CZ3	10:Q:94:MET:CB	2.89	0.54
12:S:88:ARG:HB2	12:S:92:ARG:HB2	1.89	0.54
1:A:1578:G:H21	1:A:1588:A:H62	1.53	0.54
1:A:2909:U:H5	17:b:40:HIS:HD2	1.49	0.54
13:T:39:VAL:O	13:T:43:VAL:HG23	2.08	0.54
1:A:1848:A:H5"	2:C:160:THR:HG21	1.90	0.54
1:A:2290:C:H2'	15:V:24:SER:CB	2.37	0.54
1:A:2389:A:H8	1:A:2389:A:OP2	1.90	0.54
2:C:64:VAL:O	2:C:103:TYR:HB2	2.08	0.54
1:A:926:G:N1	1:A:945:C:O2'	2.38	0.54
1:A:954:U:H2'	1:A:955:C:C6	2.42	0.54
1:A:1499:A:O2'	1:A:1500:U:H5"	2.07	0.54
1:A:2292:C:H2'	1:A:2292:C:O2	2.08	0.54
1:A:2696:C:H2'	1:A:2697:G:O4'	2.06	0.54
1:A:433:G:OP2	1:A:435:G:N2	2.34	0.54
1:A:1560:U:H6	1:A:1560:U:H5"	1.72	0.54
1:A:1815:A:H61	1:A:2012:C:H5'	1.72	0.54
13:T:2:LYS:NZ	13:T:38:GLU:OE1	2.35	0.54
1:A:1359:G:H22	1:A:1370:C:H41	1.54	0.54
1:A:2318:G:O6	1:A:2372:U:O2	2.25	0.54
1:A:1257:C:H2'	1:A:1258:A:H5"	1.88	0.53
1:A:1571:G:H2'	1:A:1572:G:H5'	1.90	0.53
1:A:1075:A:N6	1:A:1171:G:H1'	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1244:A:C8	7:L:4:HIS:HB3	2.38	0.53
1:A:1245:G:O2'	1:A:1246:G:O5'	2.11	0.53
1:A:2692:G:H2'	1:A:2693:G:C8	2.43	0.53
6:K:51:VAL:HG11	6:K:94:ARG:HH21	1.74	0.53
15:V:56:GLY:HA3	15:V:86:LYS:HE2	1.88	0.53
15:V:58:ASN:CG	15:V:71:ILE:HG21	2.34	0.53
1:A:291:C:H2'	1:A:292:U:H6	1.73	0.53
1:A:759:G:H3'	1:A:760:G:C8	2.44	0.53
1:A:1042:A:H4'	10:Q:92:ARG:HD2	1.90	0.53
9:P:74:GLU:OE1	9:P:74:GLU:N	2.41	0.53
1:A:458:G:H8	1:A:458:G:H5"	1.73	0.53
1:A:916:G:H3'	1:A:917:A:H8	1.73	0.53
1:A:2362:A:C8	1:A:2364:A:C2	2.96	0.53
1:A:2776:G:H21	1:A:2786:A:N6	2.04	0.53
11:R:50:ASN:CB	11:R:51:PRO:HD2	2.30	0.53
11:R:74:PHE:C	11:R:74:PHE:CD2	2.85	0.53
2:C:2:ALA:N	2:C:20:ASP:OD2	2.42	0.53
9:P:25:PRO:HA	9:P:50:VAL:HG23	1.91	0.53
1:A:325:A:H2'	1:A:326:A:H8	1.74	0.53
1:A:373:A:N6	14:U:15:LYS:H	2.06	0.53
1:A:2780:G:H4'	1:A:2780:G:OP2	2.08	0.53
15:V:62:GLY:N	15:V:66:THR:O	2.39	0.53
1:A:302:A:N6	1:A:451:C:O2	2.42	0.53
1:A:2875:A:OP2	1:A:2891:G:N2	2.32	0.53
2:C:126:VAL:O	2:C:126:VAL:HG13	2.09	0.53
1:A:78:U:H2'	1:A:79:C:C6	2.44	0.53
1:A:954:U:O2'	1:A:955:C:H5'	2.09	0.53
1:A:1008:A:H2'	1:A:1009:U:C6	2.44	0.53
1:A:1525:G:C2	1:A:1560:U:C2	2.85	0.53
1:A:1585:A:C8	1:A:1585:A:C3'	2.92	0.53
4:E:158:ASP:N	4:E:158:ASP:OD1	2.39	0.53
9:P:29:LEU:HD21	9:P:50:VAL:HG13	1.91	0.53
13:T:11:PRO:HD3	18:Y:30:PHE:CE1	2.43	0.53
1:A:345:A:O2'	1:A:346:G:O5'	2.17	0.52
1:A:1526:G:H2'	1:A:1527:C:H5'	1.89	0.52
1:A:2099:G:H4'	1:A:2099:G:OP1	2.07	0.52
8:N:110:ASP:OD1	8:N:110:ASP:N	2.39	0.52
15:V:56:GLY:CA	15:V:86:LYS:CE	2.75	0.52
1:A:325:A:C6	1:A:326:A:C5	2.97	0.52
1:A:850:U:O2'	1:A:851:A:H5'	2.09	0.52
4:E:128:ASP:OD1	4:E:128:ASP:N	2.38	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:481:U:O2'	1:A:482:C:O2	2.27	0.52
1:A:952:A:H2'	1:A:954:U:C6	2.45	0.52
1:A:1579:A:C4	1:A:1588:A:N1	2.76	0.52
4:E:192:LEU:HD21	4:E:194:ILE:HG13	1.91	0.52
1:A:199:A:H61	1:A:878:G:C1'	2.23	0.52
1:A:2114:C:H2'	1:A:2115:U:H6	1.75	0.52
1:A:2318:G:N3	1:A:2319:G:C8	2.78	0.52
4:E:13:THR:OG1	4:E:14:ALA:N	2.43	0.52
14:U:13:SER:OG	14:U:14:GLY:N	2.42	0.52
1:A:1512:G:C8	1:A:1512:G:C3'	2.92	0.52
6:K:17:ARG:NH1	6:K:45:GLN:OE1	2.42	0.52
1:A:2292:C:N4	1:A:2307:A:C5	2.66	0.52
1:A:2457:G:H21	7:L:60:ARG:HH22	1.58	0.52
1:A:248:G:H2'	1:A:249:C:C6	2.44	0.52
1:A:1463:C:H2'	1:A:1464:A:O4'	2.10	0.52
1:A:1495:C:H42	1:A:1508:C:H42	1.56	0.52
1:A:1581:A:N3	1:A:1581:A:H2'	2.24	0.52
1:A:2779:A:H1'	1:A:2781:C:H41	1.74	0.52
8:N:86:ASP:O	8:N:89:THR:HG22	2.10	0.52
11:R:53:VAL:HG12	11:R:53:VAL:O	2.09	0.52
1:A:1184:G:N3	5:J:109:MET:HE2	2.24	0.52
1:A:2459:A:N3	1:A:2459:A:C3'	2.73	0.52
1:A:2678:U:H2'	1:A:2679:C:H6	1.74	0.52
11:R:50:ASN:OD1	11:R:50:ASN:C	2.53	0.52
1:A:766:C:H2'	1:A:767:U:C6	2.45	0.52
1:A:2470:C:H2'	1:A:2470:C:O2	2.09	0.52
5:J:10:SER:O	5:J:10:SER:OG	2.28	0.52
1:A:74:U:OP1	18:Y:47:ARG:NH2	2.43	0.52
1:A:2085:G:H21	17:b:3:VAL:HG22	1.73	0.52
1:A:298:U:H4'	1:A:298:U:OP1	2.09	0.51
1:A:2096:G:N9	1:A:2098:G:N7	2.58	0.51
1:A:219:A:N7	1:A:478:U:H5	2.08	0.51
1:A:418:A:H1'	1:A:420:U:C6	2.45	0.51
1:A:796:A:H4'	1:A:1311:G:N3	2.26	0.51
10:Q:94:MET:SD	10:Q:94:MET:C	2.94	0.51
1:A:163:U:O2'	1:A:166:A:N1	2.36	0.51
1:A:1527:C:O2'	1:A:1528:U:OP1	2.29	0.51
6:K:40:VAL:HG12	6:K:59:LYS:HG2	1.91	0.51
10:Q:58:ARG:O	10:Q:62:ILE:HG12	2.10	0.51
10:Q:109:LEU:HD21	11:R:48:VAL:CG2	2.41	0.51
1:A:1815:A:N1	1:A:2011:U:O2'	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2666:U:H5”	3:D:84:ARG:NH1	2.25	0.51
1:A:1505:U:H2’	1:A:1506:A:H5”	1.93	0.51
1:A:2315:A:H4’	1:A:2316:A:O4’	2.11	0.51
15:V:53:ILE:HG22	15:V:87:VAL:HG23	1.88	0.51
1:A:229:A:O2’	1:A:230:A:OP1	2.28	0.51
1:A:899:C:N4	1:A:900:U:O4	2.44	0.51
1:A:1075:A:H61	1:A:1171:G:H1’	1.76	0.51
1:A:1187:U:H4’	1:A:1188:A:O4’	2.10	0.51
1:A:1518:G:N2	1:A:1566:G:H1	2.09	0.51
1:A:2094:C:C5’	1:A:2280:G:N2	2.72	0.51
1:A:2794:A:N3	1:A:2794:A:C2’	2.73	0.51
10:Q:109:LEU:HD21	11:R:48:VAL:HG21	1.93	0.51
15:V:46:TYR:CG	15:V:53:ILE:HD12	2.46	0.51
1:A:306:C:C2	1:A:307:A:C8	2.99	0.51
1:A:1000:G:O6	1:A:1010:C:N4	2.44	0.51
1:A:2044:A:C2	17:b:3:VAL:HG12	2.45	0.51
1:A:168:A:H3’	1:A:169:G:H8	1.76	0.51
1:A:275:A:H62	1:A:296:G:N2	2.09	0.51
1:A:2099:G:H1	1:A:2471:C:H42	1.58	0.51
1:A:2414:C:H2’	1:A:2414:C:O2	2.10	0.51
2:C:274:ARG:HG3	2:C:275:LYS:H	1.75	0.51
4:E:31:SER:HG	7:L:9:SER:HG	1.59	0.51
1:A:740:A:O2’	1:A:1392:A:N3	2.42	0.50
1:A:1179:A:O2’	1:A:2055:U:O2’	2.27	0.50
1:A:1310:C:H5”	1:A:1311:G:H5’	1.92	0.50
1:A:2777:A:C2	1:A:2778:A:H2’	2.47	0.50
5:J:126:TYR:OH	5:J:133:HIS:NE2	2.40	0.50
10:Q:14:ARG:HG2	10:Q:32:TYR:CE1	2.45	0.50
1:A:973:G:H2’	1:A:974:A:C8	2.44	0.50
1:A:1087:U:H4’	1:A:1161:A:N1	2.26	0.50
1:A:1549:U:H2’	1:A:1550:C:C6	2.46	0.50
1:A:2441:A:H2’	1:A:2442:G:O4’	2.10	0.50
1:A:2462:A:C8	1:A:2462:A:C3’	2.94	0.50
14:U:24:LEU:HD11	14:U:36:GLU:HB3	1.92	0.50
1:A:1246:G:H1’	1:A:1247:G:H5’	1.93	0.50
1:A:1322:G:H1’	1:A:1368:U:C5	2.45	0.50
1:A:1555:A:O2’	1:A:1556:A:H8	1.94	0.50
9:P:35:VAL:HG13	9:P:42:ARG:HG3	1.93	0.50
1:A:2111:A:H3’	1:A:2112:G:H8	1.75	0.50
1:A:2394:G:OP1	15:V:63:GLY:N	2.45	0.50
3:D:26:THR:OG1	3:D:190:GLY:O	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:18:VAL:HG23	5:J:138:PRO:HB2	1.93	0.50
7:L:93:PRO:HA	7:L:96:LEU:HD12	1.94	0.50
12:S:11:ARG:HD2	12:S:99:ARG:O	2.11	0.50
13:T:11:PRO:HD3	18:Y:30:PHE:CD1	2.46	0.50
18:Y:34:THR:HG23	18:Y:36:GLN:HG2	1.93	0.50
1:A:311:U:H2'	1:A:312:G:N3	2.27	0.50
1:A:785:C:O2'	1:A:786:A:OP1	2.29	0.50
1:A:901:U:H2'	1:A:902:G:H8	1.77	0.50
1:A:902:G:H2'	1:A:903:G:C8	2.46	0.50
1:A:2096:G:HO2'	1:A:2098:G:H8	1.57	0.50
14:U:82:GLY:O	14:U:93:VAL:HG22	2.11	0.50
18:Y:19:LYS:O	18:Y:23:GLU:HG2	2.11	0.50
1:A:304:G:N7	1:A:411:G:N2	2.59	0.50
1:A:693:G:H2'	1:A:694:G:O4'	2.12	0.50
1:A:913:A:C2	1:A:914:C:H5	2.29	0.50
1:A:1351:U:H6	1:A:1351:U:H5'	1.76	0.50
1:A:2874:G:O2'	1:A:2891:G:N2	2.45	0.50
1:A:2119:A:H2'	1:A:2120:U:C6	2.47	0.50
4:E:155:VAL:CG2	4:E:194:ILE:HG12	2.42	0.50
5:J:66:THR:O	5:J:69:LYS:NZ	2.42	0.50
10:Q:50:ARG:O	10:Q:54:LYS:NZ	2.45	0.50
10:Q:80:MET:HE2	10:Q:93:LYS:NZ	2.26	0.50
1:A:37:C:H4'	1:A:498:U:OP1	2.11	0.50
1:A:902:G:C6	1:A:970:A:N1	2.79	0.50
1:A:1504:A:H4'	1:A:1505:U:H5'	1.93	0.50
2:C:67:PHE:CE1	2:C:105:LEU:HD13	2.47	0.50
4:E:63:LYS:NZ	4:E:75:GLN:HG3	2.27	0.50
1:A:881:U:P	1:A:881:U:O4'	2.70	0.50
1:A:1726:G:HO2'	1:A:1727:A:P	2.33	0.50
1:A:2292:C:N4	1:A:2307:A:N6	2.53	0.50
1:A:1072:A:C4	1:A:1073:A:H2	2.30	0.49
1:A:2096:G:C5	1:A:2098:G:C5	2.93	0.49
1:A:2678:U:H2'	1:A:2679:C:C6	2.47	0.49
18:Y:9:LEU:O	18:Y:11:THR:N	2.45	0.49
1:A:919:U:C4	1:A:920:G:C8	3.00	0.49
1:A:1545:C:H2'	1:A:1546:G:C8	2.47	0.49
1:A:1861:C:O2'	1:A:1862:C:OP1	2.28	0.49
1:A:2687:C:N4	1:A:2688:G:O6	2.45	0.49
2:C:76:GLY:HA3	2:C:96:TYR:HD2	1.76	0.49
5:J:78:HIS:HD2	5:J:85:LEU:HB3	1.75	0.49
13:T:17:SER:O	13:T:17:SER:OG	2.25	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:683:A:H4'	1:A:684:G:O5'	2.12	0.49
1:A:2294:U:H2'	1:A:2295:A:C8	2.48	0.49
1:A:850:U:C2'	1:A:851:A:H5'	2.42	0.49
1:A:1171:G:O6	1:A:1172:A:N6	2.45	0.49
1:A:2104:U:H3'	1:A:2267:G:N2	2.28	0.49
1:A:2310:C:H2'	1:A:2311:G:C8	2.47	0.49
1:A:953:G:H3'	1:A:954:U:C5'	2.43	0.49
1:A:1819:C:H2'	1:A:1820:A:C8	2.47	0.49
1:A:2345:U:H2'	1:A:2346:C:C6	2.48	0.49
1:A:2819:A:H4'	1:A:2820:U:H5"	1.94	0.49
9:P:52:LYS:HG2	9:P:63:THR:HG23	1.94	0.49
16:Z:36:VAL:O	16:Z:37:HIS:ND1	2.45	0.49
1:A:164:U:H2'	1:A:165:C:C6	2.48	0.49
1:A:1296:G:H21	4:E:82:GLN:HB2	1.78	0.49
1:A:1547:U:H2'	1:A:1548:U:C6	2.48	0.49
9:P:26:GLY:H	9:P:50:VAL:HG23	1.76	0.49
1:A:183:A:H5"	1:A:482:C:H1'	1.93	0.49
1:A:2352:G:C8	1:A:2352:G:C5'	2.85	0.49
7:L:79:LEU:O	7:L:83:ASN:N	2.38	0.49
1:A:61:A:OP1	18:Y:44:ARG:NH1	2.46	0.48
1:A:948:A:H3'	1:A:948:A:N3	2.28	0.48
1:A:953:G:H2'	1:A:953:G:N3	2.26	0.48
1:A:977:U:O2'	1:A:978:A:H5'	2.13	0.48
1:A:1000:G:N1	1:A:1010:C:N3	2.61	0.48
1:A:1077:G:H2'	1:A:1078:A:O4'	2.13	0.48
1:A:2094:C:C3'	1:A:2094:C:C6	2.96	0.48
1:A:805:G:N2	1:A:2010:A:H62	2.05	0.48
1:A:2009:G:H3'	1:A:2010:A:H5"	1.95	0.48
1:A:2312:C:C5	1:A:2418:G:C8	3.02	0.48
13:T:88:LYS:HB2	13:T:90:ILE:CD1	2.42	0.48
1:A:12:A:OP2	1:A:12:A:H8	1.97	0.48
1:A:292:U:H2'	1:A:293:U:H6	1.77	0.48
1:A:1041:C:N3	5:J:4:THR:HG22	2.28	0.48
4:E:196:LYS:O	4:E:199:VAL:HG12	2.13	0.48
1:A:1217:U:O2'	1:A:1218:U:H3'	2.14	0.48
1:A:1512:G:H1'	1:A:1593:A:C2	2.49	0.48
1:A:2245:G:HO2'	1:A:2246:G:H8	1.59	0.48
1:A:2273:U:H2'	1:A:2274:U:H6	1.78	0.48
1:A:2334:U:O2'	1:A:2335:U:OP1	2.25	0.48
1:A:2768:U:H5"	1:A:2792:G:O6	2.13	0.48
2:C:67:PHE:CZ	2:C:156:ARG:CD	2.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:K:63:VAL:HG23	6:K:106:LEU:HD11	1.94	0.48
15:V:75:VAL:CG1	15:V:76:LYS:N	2.76	0.48
1:A:63:G:H1'	1:A:64:A:C5'	2.44	0.48
1:A:64:A:OP1	13:T:73:THR:HB	2.13	0.48
1:A:527:A:O2'	14:U:42:LYS:O	2.30	0.48
1:A:1280:G:H2'	1:A:1281:C:O2	2.13	0.48
1:A:1506:A:N3	1:A:1506:A:H2'	2.28	0.48
1:A:2284:G:H2'	1:A:2285:G:H8	1.79	0.48
2:C:124:ILE:O	2:C:124:ILE:HG13	2.12	0.48
2:C:177:ASN:OD1	2:C:178:SER:N	2.47	0.48
1:A:2415:U:HO2'	15:V:49:ARG:NH1	2.05	0.48
2:C:132:LEU:HB3	2:C:172:VAL:HG11	1.96	0.48
11:R:77:LYS:HB2	11:R:82:VAL:HB	1.96	0.48
1:A:275:A:O2'	1:A:414:C:O2'	2.29	0.48
1:A:2702:G:H2'	1:A:2703:G:C8	2.48	0.48
1:A:2769:A:H2'	1:A:2770:A:C8	2.49	0.48
1:A:268:A:H2'	1:A:269:G:C4'	2.43	0.48
1:A:419:G:N2	1:A:447:G:N3	2.62	0.48
1:A:1358:G:H2'	1:A:1359:G:C8	2.48	0.48
15:V:79:ARG:NH1	15:V:82:ARG:HD3	2.28	0.48
1:A:760:G:H2'	1:A:761:U:C5	2.49	0.48
1:A:1658:G:O2'	19:d:3:ARG:HD2	2.14	0.48
1:A:2353:U:H5'	1:A:2354:G:H5'	1.94	0.48
1:A:306:C:H2'	1:A:307:A:C8	2.48	0.48
1:A:2312:C:C5	1:A:2418:G:C5	3.02	0.48
8:N:45:GLU:OE1	8:N:99:THR:OG1	2.30	0.48
14:U:46:LYS:HE3	14:U:46:LYS:HB2	1.63	0.48
1:A:711:U:H4'	1:A:986:G:O3'	2.14	0.47
1:A:1073:A:N6	1:A:1172:A:N3	2.62	0.47
1:A:2702:G:H2'	1:A:2703:G:H8	1.79	0.47
1:A:2789:C:O2	1:A:2789:C:H2'	2.13	0.47
1:A:325:A:C4	1:A:326:A:C8	3.02	0.47
1:A:1083:G:C6	1:A:1165:U:C2	3.01	0.47
1:A:1083:G:O6	1:A:1165:U:C2	2.66	0.47
1:A:1405:A:O5'	1:A:1405:A:H8	1.98	0.47
2:C:246:PRO:O	2:C:253:PRO:HA	2.14	0.47
1:A:1491:A:H62	1:A:1512:G:H22	1.62	0.47
2:C:67:PHE:HE1	2:C:105:LEU:HD13	1.79	0.47
13:T:83:LEU:HD11	13:T:89:GLU:HB2	1.96	0.47
1:A:911:G:O2'	1:A:912:C:H6	1.97	0.47
1:A:1572:G:OP2	1:A:1572:G:H2'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:140:A:H2'	1:A:141:U:C6	2.50	0.47
1:A:906:G:O2'	1:A:907:U:OP2	2.32	0.47
1:A:2292:C:N3	1:A:2307:A:C2	2.81	0.47
1:A:2320:U:H2'	1:A:2321:U:C6	2.50	0.47
1:A:2350:G:H3'	1:A:2350:G:N3	2.30	0.47
1:A:2374:G:H4'	1:A:2375:A:H5"	1.96	0.47
1:A:1478:G:H2'	1:A:1479:G:C8	2.49	0.47
1:A:1525:G:N1	1:A:1560:U:C2	2.82	0.47
1:A:2284:G:H1	1:A:2304:C:H42	1.62	0.47
1:A:2394:G:H5'	1:A:2395:A:OP1	2.15	0.47
2:C:205:ILE:HG22	2:C:210:ARG:HB3	1.97	0.47
1:A:795:G:H5"	12:S:89:ALA:HB2	1.96	0.47
1:A:872:C:H4'	1:A:2457:G:C5	2.50	0.47
1:A:2096:G:C2	1:A:2473:G:N2	2.82	0.47
1:A:2273:U:H2'	1:A:2274:U:C6	2.50	0.47
1:A:2324:C:C2	1:A:2367:G:N2	2.83	0.47
1:A:2688:G:H22	1:A:2691:A:P	2.37	0.47
1:A:2691:A:N3	1:A:2691:A:H2'	2.30	0.47
3:D:14:GLN:NE2	3:D:22:LEU:HD11	2.30	0.47
10:Q:61:TRP:CZ3	10:Q:94:MET:CG	2.96	0.47
10:Q:91:ASN:O	10:Q:96:ALA:HB2	2.15	0.47
15:V:64:ASP:OD1	15:V:66:THR:OG1	2.30	0.47
19:d:33:ARG:O	19:d:36:ARG:N	2.48	0.47
1:A:451:C:O2'	1:A:452:C:OP2	2.32	0.47
1:A:720:C:H5"	4:E:81:PRO:HD2	1.95	0.47
1:A:756:U:H2'	1:A:757:C:C6	2.50	0.47
1:A:926:G:O6	1:A:946:G:H4'	2.15	0.47
1:A:2287:C:H5'	15:V:22:ARG:NH2	2.29	0.47
5:J:14:ARG:NH2	5:J:50:ASP:O	2.48	0.47
1:A:78:U:H2'	1:A:79:C:H6	1.80	0.47
1:A:293:U:H2'	1:A:294:G:H8	1.77	0.47
1:A:302:A:H2'	1:A:303:G:C8	2.50	0.47
1:A:1533:A:H2'	1:A:1534:A:C8	2.50	0.47
1:A:2096:G:C6	1:A:2098:G:C6	2.99	0.47
1:A:2872:U:H2'	1:A:2873:G:O4'	2.14	0.47
2:C:141:VAL:CG2	2:C:191:SER:O	2.63	0.47
9:P:55:GLY:HA3	9:P:60:GLU:HA	1.97	0.47
1:A:311:U:HO2'	1:A:312:G:P	2.34	0.47
1:A:325:A:H2'	1:A:326:A:C8	2.50	0.47
1:A:1659:A:C2	12:S:93:ALA:HB2	2.50	0.47
1:A:2113:C:H2'	1:A:2114:C:H6	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:163:ARG:HE	3:D:163:ARG:HB2	1.54	0.47
4:E:194:ILE:HG22	4:E:195:THR:O	2.15	0.47
1:A:916:G:H2'	1:A:917:A:C8	2.50	0.46
1:A:2224:U:H2'	1:A:2225:C:C6	2.49	0.46
1:A:408:G:C6	1:A:409:U:C4	3.03	0.46
1:A:1349:G:N2	1:A:1352:U:C4	2.84	0.46
1:A:1360:A:C4	1:A:1361:A:C8	3.03	0.46
1:A:1458:U:H4'	1:A:1459:U:H5"	1.96	0.46
15:V:29:LEU:HD22	15:V:48:GLN:CA	2.46	0.46
1:A:166:A:H2'	1:A:167:U:N1	2.31	0.46
1:A:166:A:H2'	1:A:167:U:C2	2.50	0.46
1:A:1725:U:O2'	1:A:1726:G:H5'	2.15	0.46
2:C:170:LYS:O	2:C:186:SER:HB2	2.16	0.46
5:J:30:SER:HB2	5:J:106:ILE:HG12	1.98	0.46
8:N:75:ASN:C	8:N:75:ASN:OD1	2.58	0.46
1:A:278:A:H2'	1:A:279:A:H8	1.81	0.46
1:A:699:A:O5'	1:A:699:A:H8	1.99	0.46
1:A:732:A:H8	1:A:735:U:N3	2.10	0.46
1:A:848:G:H8	4:E:55:SER:HB3	1.81	0.46
1:A:1320:G:H2'	1:A:1321:U:C6	2.51	0.46
1:A:2083:A:H2	17:b:5:PHE:HB2	1.81	0.46
1:A:2098:G:N2	1:A:2472:C:C2	2.84	0.46
1:A:2112:G:N3	1:A:2112:G:H2'	2.31	0.46
1:A:2439:G:C5	1:A:2440:A:C8	3.04	0.46
2:C:116:ILE:O	2:C:116:ILE:HG13	2.15	0.46
1:A:63:G:H1'	1:A:64:A:H5"	1.96	0.46
1:A:278:A:H2'	1:A:279:A:C8	2.51	0.46
1:A:1565:U:C2	1:A:1566:G:C8	3.03	0.46
6:K:34:ASN:OD1	6:K:35:ILE:N	2.42	0.46
8:N:30:ILE:HG22	8:N:117:ILE:HG23	1.97	0.46
11:R:53:VAL:HG12	11:R:56:ALA:HB3	1.97	0.46
1:A:852:G:N2	1:A:2473:G:H1'	2.30	0.46
1:A:1240:U:H1'	10:Q:4:VAL:HG22	1.98	0.46
5:J:26:LEU:HA	5:J:63:ILE:HD11	1.97	0.46
5:J:29:LEU:O	5:J:33:VAL:HG23	2.16	0.46
6:K:42:THR:HG22	6:K:57:VAL:HG22	1.96	0.46
13:T:66:VAL:O	13:T:68:ARG:N	2.48	0.46
1:A:305:A:C5	1:A:306:C:C5	3.03	0.46
1:A:1313:A:O2'	1:A:1691:A:H2	1.98	0.46
1:A:2090:G:O3'	1:A:2091:A:H3'	2.16	0.46
1:A:2312:C:C4	1:A:2418:G:C4	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2432:C:OP2	1:A:2432:C:H6	1.99	0.46
1:A:2775:U:O4	1:A:2784:C:H5"	2.16	0.46
1:A:459:A:OP1	1:A:460:C:N4	2.49	0.46
1:A:758:A:H2'	1:A:759:G:C8	2.51	0.46
4:E:155:VAL:HG22	4:E:194:ILE:HG12	1.98	0.46
1:A:345:A:HO2'	1:A:346:G:C5'	2.25	0.46
1:A:580:U:H2'	1:A:581:C:C6	2.51	0.46
1:A:680:G:H2'	1:A:681:C:H6	1.79	0.46
1:A:1246:G:H2'	1:A:1246:G:N3	2.31	0.46
1:A:2224:U:H2'	1:A:2225:C:C5	2.51	0.46
2:C:70:ASP:OD1	2:C:70:ASP:O	2.33	0.46
3:D:12:MET:HE2	3:D:12:MET:HB3	1.77	0.46
11:R:74:PHE:HD2	11:R:74:PHE:O	1.99	0.46
15:V:74:THR:O	15:V:89:VAL:HA	2.16	0.46
1:A:1495:C:N4	1:A:1508:C:H42	2.14	0.45
1:A:2096:G:C8	1:A:2098:G:C5	3.03	0.45
7:L:19:VAL:HB	7:L:31:ALA:HB1	1.98	0.45
7:L:57:LEU:HD13	7:L:61:LEU:CD1	2.27	0.45
1:A:1554:U:H4'	1:A:1555:A:C8	2.52	0.45
1:A:2425:G:C2	1:A:2450:G:C2	3.04	0.45
1:A:2783:U:H6	1:A:2783:U:O5'	1.99	0.45
14:U:60:GLU:N	14:U:60:GLU:OE2	2.49	0.45
19:d:23:SER:O	19:d:23:SER:OG	2.30	0.45
1:A:1015:G:H2'	1:A:1016:U:C6	2.50	0.45
4:E:102:PRO:O	4:E:106:ARG:HG3	2.17	0.45
4:E:200:GLU:O	4:E:204:GLU:HG2	2.16	0.45
6:K:69:ALA:HB1	6:K:105:GLU:OE2	2.17	0.45
15:V:75:VAL:O	15:V:76:LYS:CD	2.65	0.45
1:A:419:G:H4'	1:A:420:U:O5'	2.15	0.45
1:A:750:U:H2'	1:A:751:G:O4'	2.17	0.45
1:A:881:U:O2	1:A:2387:A:H1'	2.17	0.45
1:A:953:G:OP2	1:A:954:U:H5'	2.17	0.45
1:A:1363:G:H4'	1:A:1363:G:OP1	2.15	0.45
1:A:1630:G:H4'	1:A:1631:A:OP1	2.15	0.45
4:E:39:MET:HE2	4:E:39:MET:HB2	1.90	0.45
7:L:69:ILE:HG13	7:L:70:ASN:N	2.31	0.45
8:N:44:VAL:O	8:N:48:ILE:HG13	2.16	0.45
11:R:4:ILE:HG12	11:R:40:PHE:HB3	1.98	0.45
1:A:161:A:OP2	1:A:166:A:N6	2.49	0.45
1:A:580:U:H5'	10:Q:42:SER:HB2	1.98	0.45
1:A:1444:C:H2'	1:A:1445:A:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1557:G:C2'	1:A:1558:C:H5'	2.47	0.45
1:A:1819:C:O2'	2:C:208:ALA:HB2	2.17	0.45
1:A:2101:G:HO2'	1:A:2102:C:H6	1.63	0.45
1:A:2320:U:H2'	1:A:2321:U:H6	1.81	0.45
1:A:2324:C:N1	1:A:2367:G:N2	2.65	0.45
10:Q:95:LEU:CD1	11:R:4:ILE:HB	2.47	0.45
15:V:75:VAL:O	15:V:76:LYS:HG2	2.17	0.45
1:A:200:A:H62	1:A:2459:A:C3'	2.29	0.45
1:A:308:C:C2	1:A:309:U:C5	3.05	0.45
1:A:464:C:H1'	1:A:2436:A:H2	1.82	0.45
1:A:1345:U:O2'	1:A:1346:A:P	2.75	0.45
1:A:2096:G:H1	1:A:2473:G:H1	1.63	0.45
1:A:2099:G:C8	1:A:2099:G:H5"	2.51	0.45
1:A:2100:A:H2	1:A:2470:C:N3	2.15	0.45
13:T:73:THR:OG1	13:T:74:SER:N	2.50	0.45
1:A:308:C:H2'	1:A:309:U:C6	2.52	0.45
1:A:762:A:H2'	1:A:763:A:N9	2.32	0.45
1:A:957:A:O2'	1:A:958:A:O5'	2.34	0.45
1:A:2428:G:C6	1:A:2429:G:N7	2.84	0.45
1:A:2790:A:C2'	1:A:2791:U:H5'	2.47	0.45
3:D:203:LYS:HE2	3:D:203:LYS:HB3	1.79	0.45
8:N:30:ILE:HG12	8:N:31:GLU:H	1.81	0.45
10:Q:74:LEU:HG	10:Q:114:LYS:HE2	1.99	0.45
1:A:437:A:O2'	1:A:459:A:H4'	2.17	0.45
1:A:2415:U:C3'	1:A:2415:U:C6	3.00	0.45
1:A:2681:U:O2	1:A:2698:G:C2	2.70	0.45
2:C:132:LEU:HD11	2:C:184:ILE:HD11	1.98	0.45
4:E:182:ASN:O	4:E:186:VAL:HG23	2.17	0.45
1:A:448:A:H2'	1:A:449:A:C8	2.51	0.45
1:A:1046:A:H2'	1:A:1047:A:C8	2.51	0.45
1:A:1542:A:H2'	1:A:1544:C:N4	2.31	0.45
1:A:2680:C:N4	1:A:2699:G:N1	2.64	0.45
1:A:2692:G:H2'	1:A:2693:G:H8	1.80	0.45
1:A:2778:A:H3'	1:A:2779:A:H3'	1.98	0.45
16:Z:24:ARG:O	16:Z:24:ARG:NH1	2.50	0.45
1:A:51:G:O2'	1:A:118:A:N6	2.43	0.45
1:A:229:A:H1'	1:A:231:A:H61	1.82	0.45
1:A:349:C:H2'	1:A:350:U:C6	2.52	0.45
1:A:759:G:C5	1:A:760:G:C4	3.05	0.45
1:A:1008:A:H2'	1:A:1009:U:H6	1.80	0.45
1:A:1433:U:C5'	1:A:1648:A:H4'	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1438:C:HO2'	1:A:1439:U:P	2.39	0.45
1:A:2097:U:C2	1:A:2097:U:OP2	2.70	0.45
1:A:2376:C:C2	1:A:2377:U:C5	3.05	0.45
2:C:182:ARG:HG2	2:C:183:MET:H	1.82	0.45
8:N:24:LEU:HD23	8:N:44:VAL:HG21	1.99	0.45
1:A:293:U:C2	1:A:294:G:C8	3.05	0.44
1:A:672:C:O2	7:L:81:LYS:NZ	2.29	0.44
1:A:711:U:H1'	1:A:986:G:OP1	2.17	0.44
1:A:751:G:H1'	1:A:774:A:N6	2.32	0.44
1:A:903:G:H2'	1:A:904:A:C8	2.51	0.44
1:A:1579:A:N7	1:A:1588:A:N1	2.55	0.44
14:U:84:LYS:HD3	14:U:93:VAL:HG11	1.97	0.44
15:V:75:VAL:C	15:V:76:LYS:HG2	2.42	0.44
1:A:91:A:H8	1:A:92:G:H1'	1.81	0.44
1:A:1579:A:C4	1:A:1588:A:C2	3.04	0.44
1:A:2094:C:H3'	1:A:2094:C:C6	2.49	0.44
1:A:2228:A:N7	1:A:2254:A:N6	2.65	0.44
1:A:2327:A:H2'	1:A:2328:G:C8	2.53	0.44
1:A:2457:G:N2	7:L:60:ARG:HH22	2.14	0.44
1:A:2779:A:H1'	1:A:2781:C:N4	2.32	0.44
4:E:67:GLN:NE2	4:E:69:GLY:O	2.50	0.44
10:Q:80:MET:HE2	10:Q:93:LYS:HZ3	1.82	0.44
1:A:414:C:H2'	1:A:415:C:C6	2.53	0.44
1:A:1359:G:H8	1:A:1359:G:OP2	2.00	0.44
1:A:2094:C:C6	1:A:2094:C:O5'	2.70	0.44
10:Q:89:GLU:H	11:R:51:PRO:HD3	1.81	0.44
1:A:150:A:H61	1:A:179:A:H2	1.65	0.44
1:A:407:A:H2'	1:A:408:G:H8	1.83	0.44
1:A:662:U:OP1	4:E:106:ARG:HD2	2.17	0.44
1:A:920:G:N3	1:A:920:G:H2'	2.32	0.44
1:A:973:G:C4	1:A:974:A:C8	3.05	0.44
1:A:2106:A:OP1	1:A:2267:G:N1	2.40	0.44
1:A:2326:C:C5	1:A:2326:C:OP2	2.70	0.44
15:V:60:GLY:O	15:V:68:PHE:CE2	2.70	0.44
1:A:407:A:H2'	1:A:408:G:C8	2.52	0.44
1:A:792:G:O2'	1:A:795:G:O2'	2.24	0.44
1:A:1555:A:C4	1:A:1556:A:N7	2.86	0.44
1:A:1810:G:OP2	1:A:1811:C:H5'	2.18	0.44
2:C:60:ARG:HD3	2:C:85:PRO:HB2	1.99	0.44
1:A:446:G:C6	1:A:447:G:C5	3.05	0.44
1:A:1244:A:O2'	1:A:1245:G:H5'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2318:G:C2	1:A:2319:G:C8	3.06	0.44
1:A:2356:A:H1'	1:A:2357:A:C8	2.52	0.44
1:A:2389:A:OP2	1:A:2389:A:C8	2.69	0.44
1:A:2467:U:H3'	1:A:2467:U:C6	2.53	0.44
1:A:2791:U:H2'	1:A:2792:G:C8	2.53	0.44
2:C:65:ILE:HD11	2:C:91:ILE:HG21	1.99	0.44
6:K:107:ARG:HD3	9:P:37:GLU:OE2	2.18	0.44
1:A:63:G:H1'	1:A:64:A:P	2.58	0.44
1:A:84:A:C2	1:A:102:A:C5	3.06	0.44
1:A:325:A:C6	1:A:326:A:C6	3.06	0.44
1:A:432:C:O2'	1:A:435:G:N2	2.50	0.44
1:A:732:A:N6	1:A:825:G:H21	2.15	0.44
1:A:762:A:H2'	1:A:763:A:C8	2.53	0.44
1:A:839:G:N1	1:A:2101:G:H1'	2.27	0.44
1:A:1444:C:H2'	1:A:1445:A:C8	2.52	0.44
1:A:2318:G:N3	1:A:2318:G:H2'	2.33	0.44
1:A:2319:G:H2'	1:A:2320:U:C6	2.53	0.44
1:A:2415:U:H3'	1:A:2415:U:C6	2.53	0.44
2:C:115:GLU:N	2:C:115:GLU:CD	2.73	0.44
18:Y:15:GLU:OE2	18:Y:16:GLN:HG2	2.18	0.44
1:A:465:U:H2'	1:A:466:C:C6	2.52	0.44
1:A:1082:G:C6	1:A:1166:G:C6	3.05	0.44
1:A:1526:G:H8	1:A:1526:G:P	2.41	0.44
1:A:1560:U:H5"	1:A:1560:U:C6	2.52	0.44
1:A:2361:C:OP1	15:V:84:ARG:NH2	2.33	0.44
2:C:94:ILE:HG21	2:C:116:ILE:HD11	2.00	0.44
5:J:50:ASP:OD1	5:J:122:LYS:NZ	2.47	0.44
1:A:28:A:H2'	1:A:29:U:H5'	2.00	0.44
1:A:241:C:N3	1:A:263:G:N1	2.66	0.44
1:A:759:G:H3'	1:A:760:G:H8	1.82	0.44
1:A:922:A:H8	1:A:922:A:OP2	2.01	0.44
1:A:1314:A:H4'	1:A:1315:G:OP1	2.16	0.44
1:A:2103:U:H2'	1:A:2104:U:H6	1.83	0.44
1:A:62:C:H5'	1:A:63:G:OP2	2.18	0.43
1:A:316:G:H2'	1:A:317:G:C8	2.53	0.43
1:A:421:A:H1'	1:A:448:A:N6	2.33	0.43
1:A:690:A:N6	1:A:2378:G:H21	2.07	0.43
1:A:1497:G:N2	1:A:1505:U:H3	2.13	0.43
1:A:2416:U:H3'	1:A:2416:U:O2	2.18	0.43
4:E:7:TYR:CD2	4:E:124:ILE:HG23	2.53	0.43
1:A:288:C:H2'	1:A:289:C:C2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:598:U:H2'	1:A:599:G:O4'	2.18	0.43
4:E:199:VAL:HA	4:E:202:VAL:HG12	1.99	0.43
9:P:42:ARG:NH1	9:P:44:GLN:HE21	2.15	0.43
9:P:106:LEU:O	9:P:111:ALA:HB2	2.18	0.43
16:Z:3:LYS:HE2	16:Z:3:LYS:HB3	1.63	0.43
1:A:2271:G:H2'	1:A:2272:U:O4'	2.17	0.43
1:A:2321:U:OP1	1:A:2407:A:N6	2.42	0.43
11:R:74:PHE:CD2	11:R:74:PHE:O	2.70	0.43
15:V:55:PRO:HG3	15:V:67:LEU:HG	1.99	0.43
1:A:885:C:H2'	1:A:886:U:C6	2.54	0.43
1:A:1242:U:H2'	1:A:1243:A:H8	1.83	0.43
1:A:1755:C:H2'	1:A:1756:U:C6	2.54	0.43
2:C:65:ILE:CD1	2:C:87:ARG:HE	2.31	0.43
5:J:37:LEU:O	5:J:52:GLY:HA3	2.18	0.43
1:A:751:G:H2'	1:A:773:G:H22	1.83	0.43
1:A:1461:A:H62	1:A:1630:G:N2	2.15	0.43
1:A:2010:A:N3	1:A:2010:A:H2'	2.33	0.43
1:A:2096:G:C4	1:A:2098:G:N7	2.86	0.43
3:D:16:PHE:CE1	3:D:22:LEU:HD12	2.53	0.43
10:Q:92:ARG:HD3	11:R:11:GLN:NE2	2.30	0.43
17:b:39:SER:O	17:b:40:HIS:HB2	2.18	0.43
1:A:683:A:OP2	7:L:113:GLY:N	2.48	0.43
1:A:786:A:N3	1:A:787:C:N4	2.55	0.43
1:A:1456:A:C2	1:A:1632:G:C6	3.06	0.43
1:A:1498:U:O2	1:A:1498:U:H2'	2.19	0.43
1:A:1695:A:C2'	1:A:1696:G:H5'	2.49	0.43
1:A:2312:C:H5	1:A:2418:G:C8	2.36	0.43
1:A:2697:G:C2	1:A:2698:G:C8	3.07	0.43
2:C:132:LEU:CD1	2:C:184:ILE:HD11	2.48	0.43
15:V:72:ASP:OD1	15:V:72:ASP:O	2.36	0.43
1:A:839:G:H1'	1:A:840:A:H5"	2.01	0.43
1:A:1067:A:C2	1:A:1069:U:C2	3.06	0.43
1:A:1579:A:C8	1:A:1588:A:N1	2.86	0.43
1:A:1613:C:O2'	1:A:1614:A:H8	2.02	0.43
1:A:2090:G:O2'	1:A:2092:C:OP2	2.23	0.43
1:A:2292:C:C5	1:A:2307:A:C2	3.01	0.43
1:A:175:G:H5'	1:A:176:A:OP2	2.19	0.43
1:A:501:A:H3'	1:A:502:C:H5"	2.01	0.43
1:A:758:A:C6	1:A:768:G:C6	3.07	0.43
1:A:914:C:H2'	1:A:915:U:O4'	2.19	0.43
1:A:1053:C:H5"	5:J:38:ARG:NH1	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1863:U:O2	1:A:1863:U:H2'	2.19	0.43
1:A:2686:A:H3'	1:A:2687:C:H6	1.83	0.43
1:A:2776:G:H1'	1:A:2787:A:N6	2.34	0.43
1:A:2791:U:OP2	1:A:2791:U:C5	2.71	0.43
18:Y:11:THR:HA	18:Y:14:ILE:HG22	2.00	0.43
1:A:632:U:H5"	1:A:632:U:H6	1.83	0.43
1:A:1517:A:C6	1:A:1518:G:C6	3.06	0.43
1:A:2324:C:N3	1:A:2367:G:C6	2.87	0.43
1:A:2333:G:H1	1:A:2337:G:P	2.41	0.43
1:A:2703:G:H2'	1:A:2704:A:C8	2.53	0.43
2:C:126:VAL:O	2:C:126:VAL:HG22	2.18	0.43
2:C:142:HIS:HA	2:C:155:VAL:HG21	2.00	0.43
11:R:76:TYR:CB	11:R:83:HIS:HD2	2.30	0.43
1:A:106:G:H1'	1:A:337:A:H8	1.83	0.43
1:A:267:C:H2'	1:A:268:A:H5"	2.00	0.43
1:A:292:U:H2'	1:A:293:U:C6	2.53	0.43
1:A:618:A:C2	1:A:2083:A:H5"	2.54	0.43
1:A:899:C:C4	1:A:900:U:C5	3.07	0.43
1:A:923:C:O5'	1:A:946:G:N2	2.52	0.43
1:A:2094:C:H2'	1:A:2095:C:C2	2.54	0.43
2:C:153:GLN:HA	2:C:156:ARG:HH12	1.84	0.43
7:L:80:ASP:N	7:L:80:ASP:OD1	2.50	0.43
7:L:87:GLU:HA	7:L:121:LEU:HD21	2.00	0.43
11:R:76:TYR:HB2	11:R:82:VAL:O	2.18	0.43
1:A:711:U:H4'	1:A:987:A:OP1	2.19	0.42
1:A:1352:U:OP2	1:A:1353:C:N4	2.49	0.42
2:C:105:LEU:HD21	2:C:156:ARG:CG	2.42	0.42
9:P:42:ARG:HH12	9:P:44:GLN:HE21	1.66	0.42
11:R:99:LYS:HD2	11:R:99:LYS:HA	1.65	0.42
14:U:94:ALA:O	14:U:98:GLY:HA2	2.19	0.42
16:Z:11:SER:OG	16:Z:12:VAL:N	2.52	0.42
1:A:184:G:H2'	1:A:184:G:OP1	2.20	0.42
1:A:275:A:H5"	1:A:276:C:H5	1.84	0.42
1:A:278:A:C4	1:A:279:A:C8	3.08	0.42
1:A:417:G:H4'	1:A:418:A:OP2	2.18	0.42
1:A:632:U:HO2'	1:A:633:U:P	2.39	0.42
15:V:71:ILE:HG12	15:V:72:ASP:N	2.34	0.42
1:A:91:A:C8	1:A:92:G:H1'	2.54	0.42
1:A:307:A:C6	1:A:410:G:C6	3.07	0.42
1:A:327:G:O6	1:A:400:U:O2	2.37	0.42
1:A:1303:U:H5"	17:b:13:LYS:HD2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1380:U:C5'	1:A:1436:U:O2	2.60	0.42
1:A:1539:C:O2'	1:A:1540:A:H5'	2.19	0.42
1:A:1578:G:O5'	1:A:1578:G:C8	2.70	0.42
1:A:2096:G:C5	1:A:2098:G:N7	2.87	0.42
1:A:2235:G:H2'	1:A:2236:C:C6	2.55	0.42
1:A:2356:A:O2'	1:A:2357:A:OP2	2.38	0.42
1:A:2402:A:H2'	1:A:2403:C:O4'	2.19	0.42
1:A:2683:A:H62	1:A:2695:C:H41	1.66	0.42
2:C:117:MET:CB	2:C:128:ASN:OD1	2.68	0.42
2:C:183:MET:O	2:C:183:MET:HG3	2.19	0.42
4:E:132:ASP:N	4:E:132:ASP:OD1	2.52	0.42
9:P:27:ASP:N	9:P:27:ASP:OD1	2.52	0.42
17:b:33:CYS:HB3	17:b:46:CYS:HB3	1.71	0.42
1:A:273:A:OP2	1:A:297:G:N2	2.48	0.42
1:A:1161:A:H2'	1:A:1162:C:O4'	2.19	0.42
1:A:2415:U:H4'	15:V:64:ASP:HA	2.00	0.42
1:A:2434:G:H2'	1:A:2440:A:N6	2.35	0.42
5:J:91:LEU:O	5:J:95:THR:HG22	2.20	0.42
10:Q:20:LEU:HD23	10:Q:20:LEU:HA	1.83	0.42
1:A:311:U:N3	1:A:406:G:C2	2.88	0.42
1:A:765:A:H5"	1:A:766:C:H5	1.84	0.42
1:A:1557:G:O5'	1:A:1557:G:H8	2.02	0.42
1:A:1689:U:H2'	1:A:1690:G:H5'	2.01	0.42
5:J:143:LEU:HD23	5:J:143:LEU:HA	1.90	0.42
15:V:46:TYR:CE1	15:V:53:ILE:HD11	2.54	0.42
1:A:1000:G:H1	1:A:1009:U:H3	1.66	0.42
1:A:1202:A:O4'	10:Q:51:ARG:NH1	2.53	0.42
1:A:1515:C:H2'	1:A:1516:A:H8	1.83	0.42
1:A:1527:C:H6	1:A:1527:C:H2'	1.68	0.42
1:A:1812:A:C2'	1:A:1813:A:H5'	2.49	0.42
1:A:2292:C:C5	1:A:2307:A:N1	2.85	0.42
1:A:2338:A:H2'	1:A:2338:A:N3	2.34	0.42
1:A:2467:U:C6	1:A:2467:U:C3'	3.02	0.42
7:L:57:LEU:C	7:L:57:LEU:HD12	2.44	0.42
9:P:17:ARG:HD3	9:P:80:HIS:HA	2.01	0.42
11:R:70:LYS:HB2	11:R:89:ARG:HD3	2.01	0.42
15:V:55:PRO:HG3	15:V:67:LEU:HD23	2.02	0.42
1:A:2439:G:C2	1:A:2440:A:H1'	2.54	0.42
1:A:2771:G:OP2	1:A:2771:G:H8	2.03	0.42
1:A:2781:C:C4	1:A:2782:A:H1'	2.55	0.42
10:Q:35:ALA:O	10:Q:39:VAL:HG23	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:92:ARG:HB3	10:Q:94:MET:H	1.85	0.42
11:R:48:VAL:O	11:R:48:VAL:HG13	2.20	0.42
1:A:253:G:H2'	1:A:254:A:C8	2.55	0.42
1:A:1028:C:O2	1:A:1028:C:H2'	2.18	0.42
1:A:1080:G:H2'	1:A:1081:U:C6	2.55	0.42
1:A:1519:C:N4	1:A:1520:A:N1	2.68	0.42
1:A:1572:G:O2'	1:A:1573:C:P	2.77	0.42
1:A:2395:A:H5'	1:A:2396:G:OP2	2.20	0.42
1:A:2401:G:H2'	1:A:2402:A:H8	1.85	0.42
1:A:2780:G:H5'	1:A:2781:C:C6	2.55	0.42
1:A:2826:A:H2'	1:A:2827:A:O4'	2.20	0.42
1:A:2847:G:H2'	1:A:2848:A:H5"	2.01	0.42
3:D:65:GLU:O	3:D:69:VAL:HG22	2.20	0.42
6:K:88:ARG:HE	6:K:92:SER:HG	1.62	0.42
1:A:80:G:O2'	1:A:337:A:N6	2.52	0.42
1:A:205:U:H6	1:A:205:U:O5'	2.03	0.42
1:A:901:U:H2'	1:A:902:G:C8	2.55	0.42
1:A:1723:A:N3	1:A:2019:C:O2'	2.49	0.42
1:A:2126:G:N2	1:A:2221:C:O2	2.49	0.42
1:A:2777:A:H2	1:A:2778:A:H2'	1.85	0.42
5:J:111:PRO:O	5:J:116:GLY:HA3	2.20	0.42
11:R:38:VAL:HG12	11:R:38:VAL:O	2.19	0.42
1:A:2323:C:H1'	1:A:2368:G:N2	2.35	0.42
2:C:117:MET:CA	2:C:128:ASN:OD1	2.68	0.42
4:E:73:ALA:O	4:E:74:ARG:NE	2.37	0.42
5:J:86:LYS:HB2	5:J:86:LYS:HE2	1.88	0.42
8:N:4:ARG:HD3	8:N:35:THR:HG23	2.01	0.42
15:V:41:GLY:H	15:V:72:ASP:CB	2.29	0.42
15:V:75:VAL:O	15:V:76:LYS:CG	2.68	0.42
19:d:31:LEU:HD23	19:d:31:LEU:HA	1.86	0.42
1:A:267:C:H2'	1:A:268:A:C5'	2.50	0.41
1:A:1526:G:O5'	1:A:1526:G:C8	2.69	0.41
1:A:2669:G:C6	1:A:2804:A:C2	3.09	0.41
1:A:528:G:H1'	1:A:552:G:H21	1.85	0.41
1:A:2334:U:H2'	1:A:2335:U:C5	2.54	0.41
1:A:2467:U:H3'	1:A:2467:U:H6	1.85	0.41
4:E:36:ALA:O	4:E:39:MET:HG3	2.20	0.41
7:L:83:ASN:OD1	7:L:84:GLY:N	2.53	0.41
8:N:8:ARG:HD3	8:N:8:ARG:HA	1.71	0.41
10:Q:95:LEU:CD1	11:R:4:ILE:CG2	2.97	0.41
1:A:32:C:O2'	1:A:33:U:H5'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:61:A:N1	1:A:94:A:C2	2.89	0.41
1:A:406:G:C2	1:A:407:A:C4	3.08	0.41
1:A:2323:C:O2	1:A:2368:G:C6	2.73	0.41
4:E:82:GLN:HG2	4:E:83:TRP:N	2.34	0.41
1:A:81:G:H2'	1:A:82:G:O4'	2.21	0.41
1:A:84:A:N7	1:A:99:U:N3	2.68	0.41
1:A:251:G:N7	1:A:253:G:C2	2.88	0.41
1:A:325:A:C5	1:A:326:A:N7	2.88	0.41
1:A:1565:U:N3	1:A:1566:G:N7	2.69	0.41
1:A:1757:G:O4'	1:A:1759:U:H5'	2.20	0.41
1:A:2666:U:H5"	3:D:84:ARG:HH12	1.85	0.41
5:J:139:GLU:N	5:J:139:GLU:OE1	2.54	0.41
12:S:21:MET:HE2	12:S:76:VAL:HG23	2.02	0.41
12:S:55:ILE:O	12:S:59:GLU:HG3	2.20	0.41
15:V:46:TYR:CD2	15:V:53:ILE:HD11	2.55	0.41
1:A:241:C:C2	1:A:263:G:C2	3.09	0.41
1:A:444:U:H2'	1:A:445:C:C6	2.55	0.41
1:A:458:G:H5"	1:A:458:G:C8	2.55	0.41
1:A:676:G:O6	7:L:71:ARG:NH2	2.53	0.41
1:A:1177:G:O2'	1:A:2055:U:H5'	2.20	0.41
1:A:1638:A:H2'	1:A:1639:G:O4'	2.21	0.41
1:A:2374:G:H5'	1:A:2376:C:H5'	2.02	0.41
5:J:114:SER:O	5:J:114:SER:OG	2.38	0.41
8:N:74:GLU:C	8:N:76:ASN:H	2.29	0.41
8:N:107:ARG:HG3	8:N:114:MET:SD	2.60	0.41
13:T:54:VAL:HG22	13:T:81:VAL:HG22	2.01	0.41
1:A:632:U:H5"	1:A:632:U:C6	2.56	0.41
1:A:676:G:N2	1:A:679:A:OP2	2.50	0.41
1:A:732:A:H62	1:A:825:G:H21	1.68	0.41
1:A:756:U:H2'	1:A:757:C:H6	1.85	0.41
1:A:1659:A:N1	12:S:93:ALA:HB2	2.36	0.41
1:A:2115:U:C2	1:A:2116:G:C8	3.09	0.41
1:A:2360:G:H4'	15:V:51:THR:CG2	2.50	0.41
1:A:2644:U:H1'	17:b:4:PRO:HB3	2.02	0.41
1:A:2676:U:H2'	1:A:2677:G:H8	1.86	0.41
11:R:67:ARG:HA	11:R:91:PRO:HA	2.03	0.41
1:A:676:G:C2	1:A:680:G:C6	3.09	0.41
1:A:972:U:C2	1:A:973:G:C8	3.09	0.41
1:A:2126:G:N1	1:A:2221:C:O2	2.53	0.41
1:A:2315:A:H1'	1:A:2316:A:C5	2.55	0.41
1:A:2444:G:H2'	1:A:2445:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:111:ASP:OD2	10:Q:112:ALA:N	2.54	0.41
1:A:690:A:H61	1:A:2378:G:N2	2.08	0.41
1:A:875:U:H4'	1:A:878:G:O6	2.20	0.41
1:A:1518:G:O5'	1:A:1518:G:H8	2.03	0.41
1:A:1784:A:O2'	1:A:1785:G:OP1	2.36	0.41
1:A:2038:G:OP1	12:S:41:ARG:NH1	2.52	0.41
1:A:2100:A:C2	1:A:2470:C:N3	2.88	0.41
1:A:2337:G:H21	1:A:2339:A:H5"	1.86	0.41
2:C:65:ILE:HD12	2:C:87:ARG:HE	1.86	0.41
2:C:166:GLY:O	2:C:173:LEU:N	2.52	0.41
9:P:94:LYS:HB3	9:P:114:LYS:HB2	2.02	0.41
11:R:65:GLN:NE2	11:R:93:THR:OG1	2.54	0.41
1:A:342:A:N3	1:A:363:C:O2'	2.54	0.41
1:A:443:G:C6	1:A:444:U:C4	3.09	0.41
1:A:528:G:O2'	1:A:529:C:OP2	2.35	0.41
1:A:1280:G:O5'	1:A:1280:G:H8	2.03	0.41
1:A:1493:C:H2'	1:A:1494:G:C8	2.56	0.41
1:A:1613:C:HO2'	1:A:1614:A:P	2.44	0.41
1:A:1648:A:H2'	1:A:1649:C:H5'	2.02	0.41
1:A:1696:G:O2'	1:A:1697:A:P	2.79	0.41
1:A:2041:G:OP1	12:S:11:ARG:NH2	2.49	0.41
1:A:2096:G:N7	1:A:2098:G:N7	2.65	0.41
1:A:2372:U:H2'	1:A:2373:U:C6	2.55	0.41
2:C:16:MET:HE2	2:C:210:ARG:HD2	2.03	0.41
2:C:173:LEU:HA	2:C:183:MET:HA	2.03	0.41
4:E:53:ASN:OD1	4:E:53:ASN:N	2.52	0.41
4:E:75:GLN:OE1	4:E:75:GLN:N	2.50	0.41
5:J:20:ASP:OD1	5:J:22:ALA:N	2.53	0.41
10:Q:19:LYS:HA	10:Q:19:LYS:HD3	1.64	0.41
11:R:76:TYR:HB2	11:R:83:HIS:CD2	2.48	0.41
14:U:12:ILE:HA	14:U:12:ILE:HD13	1.85	0.41
14:U:75:THR:OG1	14:U:77:GLU:HG2	2.21	0.41
15:V:59:VAL:HG23	15:V:89:VAL:HG23	2.02	0.41
1:A:309:U:H2'	1:A:310:C:H6	1.86	0.41
1:A:751:G:H1'	1:A:774:A:H61	1.86	0.41
1:A:837:U:O2'	1:A:838:C:OP1	2.34	0.41
1:A:2122:G:C6	1:A:2123:A:C6	3.09	0.41
1:A:2273:U:H4'	1:A:2463:A:C6	2.56	0.41
4:E:115:SER:O	4:E:118:VAL:HG12	2.20	0.41
4:E:192:LEU:CD2	4:E:194:ILE:HG13	2.51	0.41
1:A:282:G:H1	1:A:290:U:H3	1.68	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:284:C:H2'	1:A:286:U:OP2	2.21	0.40
1:A:901:U:C2	1:A:971:A:C2	3.08	0.40
1:A:1178:U:OP2	1:A:1179:A:H8	2.04	0.40
1:A:1220:G:C2	1:A:1221:A:C5	3.09	0.40
1:A:1595:U:H6	1:A:1595:U:H5"	1.86	0.40
1:A:1706:G:H2'	1:A:1707:U:H6	1.87	0.40
1:A:2275:G:H2'	1:A:2276:A:C8	2.57	0.40
1:A:2672:G:H2'	1:A:2673:A:H8	1.85	0.40
4:E:184:LEU:HD12	4:E:184:LEU:HA	1.89	0.40
9:P:14:GLU:OE1	9:P:14:GLU:N	2.55	0.40
13:T:5:ARG:NH2	18:Y:23:GLU:OE1	2.54	0.40
16:Z:6:ILE:HG23	16:Z:54:VAL:CG1	2.52	0.40
18:Y:32:LEU:HB2	18:Y:37:LEU:HD22	2.03	0.40
1:A:406:G:N1	1:A:407:A:C5	2.89	0.40
1:A:455:G:C6	1:A:467:C:N3	2.89	0.40
1:A:2090:G:O2'	1:A:2092:C:C5'	2.62	0.40
1:A:2442:G:C2	1:A:2443:G:C8	3.09	0.40
3:D:158:LYS:HG2	3:D:159:LEU:H	1.86	0.40
4:E:29:ASN:O	4:E:33:VAL:HG23	2.21	0.40
6:K:71:ARG:HH21	6:K:77:ILE:HD12	1.85	0.40
7:L:56:PRO:HB2	7:L:57:LEU:H	1.70	0.40
12:S:2:GLN:N	12:S:107:VAL:O	2.54	0.40
15:V:71:ILE:HG12	15:V:72:ASP:H	1.86	0.40
17:b:43:CYS:SG	17:b:44:LYS:N	2.94	0.40
18:Y:15:GLU:CD	18:Y:16:GLN:HG2	2.46	0.40
1:A:165:C:O2'	1:A:166:A:OP1	2.35	0.40
1:A:324:A:N1	1:A:325:A:C6	2.89	0.40
1:A:430:C:H5"	1:A:432:C:OP2	2.22	0.40
1:A:633:U:H2'	1:A:634:A:H8	1.87	0.40
1:A:1523:U:H3'	1:A:1524:A:H5"	2.03	0.40
1:A:2346:C:O5'	1:A:2346:C:H6	2.05	0.40
1:A:2762:A:N1	3:D:207:LYS:O	2.54	0.40
1:A:2774:C:N3	1:A:2788:G:N2	2.69	0.40
9:P:64:VAL:O	9:P:74:GLU:HA	2.21	0.40
12:S:46:ILE:H	12:S:46:ILE:HG13	1.75	0.40
1:A:91:A:C4	1:A:91:A:OP2	2.75	0.40
1:A:223:G:C6	1:A:474:U:C5	3.09	0.40
1:A:867:A:N3	1:A:989:U:O2'	2.51	0.40
1:A:964:A:H5'	1:A:2297:A:N6	2.37	0.40
1:A:1327:U:O2	1:A:1327:U:H2'	2.20	0.40
1:A:2284:G:H2'	1:A:2285:G:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:226:ASN:O	2:C:227:PRO:C	2.65	0.40
1:A:278:A:C6	1:A:294:G:N1	2.90	0.40
1:A:446:G:C4	1:A:447:G:C8	3.10	0.40
1:A:455:G:H2'	1:A:456:A:H8	1.85	0.40
1:A:1085:G:C5	1:A:1086:U:N3	2.89	0.40
1:A:1595:U:H2'	1:A:1596:U:C6	2.56	0.40
1:A:2360:G:H4'	15:V:51:THR:HG22	2.02	0.40
1:A:2402:A:C5	1:A:2403:C:C5	3.09	0.40
3:D:57:ARG:HH11	3:D:57:ARG:HD2	1.76	0.40
7:L:110:LYS:HE2	7:L:112:LEU:HD21	2.03	0.40
10:Q:25:PHE:CD2	10:Q:25:PHE:C	3.00	0.40
13:T:2:LYS:HD2	13:T:2:LYS:HA	1.92	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	C	263/277 (95%)	219 (83%)	44 (17%)	0	100 100
3	D	175/209 (84%)	155 (89%)	20 (11%)	0	100 100
4	E	203/207 (98%)	165 (81%)	38 (19%)	0	100 100
5	J	140/145 (97%)	124 (89%)	16 (11%)	0	100 100
6	K	120/122 (98%)	101 (84%)	19 (16%)	0	100 100
7	L	126/146 (86%)	107 (85%)	18 (14%)	1 (1%)	16 51
8	N	117/120 (98%)	101 (86%)	16 (14%)	0	100 100
9	P	112/115 (97%)	101 (90%)	11 (10%)	0	100 100
10	Q	115/119 (97%)	94 (82%)	18 (16%)	3 (3%)	4 27
11	R	99/102 (97%)	81 (82%)	16 (16%)	2 (2%)	6 32

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
12	S	107/113 (95%)	97 (91%)	9 (8%)	1 (1%)	14 49
13	T	90/95 (95%)	74 (82%)	16 (18%)	0	100 100
14	U	98/103 (95%)	75 (76%)	23 (24%)	0	100 100
15	V	70/94 (74%)	48 (69%)	21 (30%)	1 (1%)	9 40
16	Z	56/59 (95%)	50 (89%)	6 (11%)	0	100 100
17	b	52/59 (88%)	45 (86%)	7 (14%)	0	100 100
18	Y	63/66 (96%)	52 (82%)	10 (16%)	1 (2%)	8 37
19	d	42/44 (96%)	38 (90%)	4 (10%)	0	100 100
All	All	2048/2195 (93%)	1727 (84%)	312 (15%)	9 (0%)	32 64

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	L	56	PRO
10	Q	86	SER
11	R	51	PRO
10	Q	88	ILE
12	S	11	ARG
15	V	82	ARG
18	Y	39	ASN
10	Q	85	LEU
11	R	48	VAL

5.3.2 Protein sidechains (i)

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	C	218/225 (97%)	210 (96%)	8 (4%)	29 62
3	D	144/170 (85%)	143 (99%)	1 (1%)	81 92
4	E	169/170 (99%)	168 (99%)	1 (1%)	84 92
5	J	120/123 (98%)	118 (98%)	2 (2%)	56 78

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
6	K	101/101 (100%)	101 (100%)	0	100 100
7	L	101/110 (92%)	100 (99%)	1 (1%)	73 87
8	N	99/100 (99%)	99 (100%)	0	100 100
9	P	99/100 (99%)	99 (100%)	0	100 100
10	Q	96/98 (98%)	89 (93%)	7 (7%)	11 41
11	R	83/84 (99%)	79 (95%)	4 (5%)	21 55
12	S	90/93 (97%)	90 (100%)	0	100 100
13	T	83/85 (98%)	82 (99%)	1 (1%)	67 85
14	U	84/87 (97%)	84 (100%)	0	100 100
15	V	56/74 (76%)	48 (86%)	8 (14%)	2 13
16	Z	52/53 (98%)	52 (100%)	0	100 100
17	b	48/53 (91%)	48 (100%)	0	100 100
18	Y	56/57 (98%)	56 (100%)	0	100 100
19	d	39/39 (100%)	39 (100%)	0	100 100
All	All	1738/1822 (95%)	1705 (98%)	33 (2%)	52 76

All (33) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	C	68	LYS
2	C	110	ILE
2	C	112	VAL
2	C	117	MET
2	C	121	GLU
2	C	125	LYS
2	C	130	LEU
2	C	164	VAL
3	D	55	ASP
4	E	199	VAL
5	J	8	ASN
5	J	79	THR
7	L	122	THR
10	Q	83	LEU
10	Q	84	LYS
10	Q	88	ILE
10	Q	92	ARG
10	Q	93	LYS

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Mol	Chain	Res	Type
10	Q	95	LEU
10	Q	100	VAL
11	R	48	VAL
11	R	53	VAL
11	R	72	THR
11	R	75	ARG
13	T	39	VAL
15	V	25	GLU
15	V	28	ARG
15	V	53	ILE
15	V	74	THR
15	V	80	PHE
15	V	85	LYS
15	V	87	VAL
15	V	89	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (22) such sidechains are listed below:

Mol	Chain	Res	Type
2	C	38	HIS
2	C	53	HIS
2	C	86	ASN
2	C	143	ASN
2	C	204	ASN
3	D	33	ASN
3	D	50	GLN
3	D	128	GLN
6	K	82	ASN
8	N	76	ASN
9	P	44	GLN
10	Q	81	HIS
11	R	11	GLN
11	R	65	GLN
11	R	83	HIS
11	R	101	ASN
12	S	97	ASN
14	U	53	GLN
14	U	99	GLN
17	b	19	HIS
17	b	40	HIS
19	d	16	HIS

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	2430/2928 (82%)	730 (30%)	47 (1%)

All (730) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	9	U
1	A	12	A
1	A	13	A
1	A	15	G
1	A	28	A
1	A	31	C
1	A	34	U
1	A	35	G
1	A	39	C
1	A	43	G
1	A	44	A
1	A	45	G
1	A	46	C
1	A	51	G
1	A	63	G
1	A	64	A
1	A	67	A
1	A	71	A
1	A	75	G
1	A	76	C
1	A	77	U
1	A	91	A
1	A	92	G
1	A	100	U
1	A	101	G
1	A	106	G
1	A	109	G
1	A	118	A
1	A	119	U
1	A	156	A
1	A	161	A
1	A	162	A
1	A	163	U
1	A	166	A
1	A	176	A
1	A	180	G

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Mol	Chain	Res	Type
1	A	184	G
1	A	199	A
1	A	200	A
1	A	201	C
1	A	202	A
1	A	203	U
1	A	204	C
1	A	207	A
1	A	216	A
1	A	219	A
1	A	220	A
1	A	224	A
1	A	225	A
1	A	226	A
1	A	227	G
1	A	230	A
1	A	232	U
1	A	233	G
1	A	235	G
1	A	236	A
1	A	245	G
1	A	251	G
1	A	252	C
1	A	253	G
1	A	255	G
1	A	258	A
1	A	267	C
1	A	268	A
1	A	275	A
1	A	280	G
1	A	281	A
1	A	282	G
1	A	284	C
1	A	285	U
1	A	286	U
1	A	288	C
1	A	289	C
1	A	291	C
1	A	295	G
1	A	296	G
1	A	298	U
1	A	299	U

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Mol	Chain	Res	Type
1	A	300	G
1	A	301	U
1	A	302	A
1	A	311	U
1	A	312	G
1	A	314	A
1	A	315	C
1	A	316	G
1	A	321	U
1	A	322	A
1	A	324	A
1	A	325	A
1	A	327	G
1	A	338	G
1	A	344	G
1	A	345	A
1	A	346	G
1	A	348	U
1	A	351	G
1	A	355	A
1	A	361	G
1	A	366	A
1	A	367	G
1	A	374	A
1	A	377	G
1	A	378	C
1	A	379	C
1	A	382	G
1	A	386	U
1	A	387	C
1	A	389	A
1	A	390	A
1	A	392	C
1	A	396	G
1	A	405	U
1	A	406	G
1	A	407	A
1	A	412	A
1	A	418	A
1	A	419	G
1	A	420	U
1	A	422	C

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Mol	Chain	Res	Type
1	A	433	G
1	A	434	U
1	A	436	A
1	A	437	A
1	A	438	A
1	A	443	G
1	A	445	C
1	A	448	A
1	A	452	C
1	A	453	G
1	A	458	G
1	A	459	A
1	A	462	A
1	A	463	U
1	A	464	C
1	A	466	C
1	A	482	C
1	A	485	U
1	A	487	G
1	A	502	C
1	A	504	A
1	A	511	U
1	A	513	A
1	A	514	G
1	A	528	G
1	A	529	C
1	A	536	G
1	A	537	A
1	A	548	A
1	A	550	G
1	A	551	A
1	A	554	U
1	A	567	U
1	A	568	G
1	A	574	A
1	A	576	G
1	A	577	U
1	A	578	A
1	A	579	G
1	A	584	A
1	A	592	A
1	A	593	A

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Mol	Chain	Res	Type
1	A	595	G
1	A	607	G
1	A	614	G
1	A	615	U
1	A	616	A
1	A	631	G
1	A	632	U
1	A	633	U
1	A	647	A
1	A	651	U
1	A	659	A
1	A	666	G
1	A	667	A
1	A	668	G
1	A	673	A
1	A	677	A
1	A	683	A
1	A	684	G
1	A	689	A
1	A	691	U
1	A	692	A
1	A	700	U
1	A	701	G
1	A	702	A
1	A	706	C
1	A	716	G
1	A	722	A
1	A	723	A
1	A	733	U
1	A	756	U
1	A	758	A
1	A	760	G
1	A	764	C
1	A	777	C
1	A	783	C
1	A	785	C
1	A	786	A
1	A	794	U
1	A	795	G
1	A	811	A
1	A	812	G
1	A	822	G

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Mol	Chain	Res	Type
1	A	823	G
1	A	826	U
1	A	829	A
1	A	831	U
1	A	837	U
1	A	838	C
1	A	839	G
1	A	840	A
1	A	841	A
1	A	842	C
1	A	847	A
1	A	849	A
1	A	851	A
1	A	852	G
1	A	854	U
1	A	856	G
1	A	858	U
1	A	859	C
1	A	861	C
1	A	866	A
1	A	874	U
1	A	876	A
1	A	877	G
1	A	881	U
1	A	892	U
1	A	906	G
1	A	912	C
1	A	916	G
1	A	917	A
1	A	918	U
1	A	919	U
1	A	920	G
1	A	921	G
1	A	924	U
1	A	925	A
1	A	926	G
1	A	927	G
1	A	947	A
1	A	948	A
1	A	950	U
1	A	951	C
1	A	953	G

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Mol	Chain	Res	Type
1	A	954	U
1	A	955	C
1	A	957	A
1	A	958	A
1	A	961	C
1	A	963	G
1	A	964	A
1	A	970	A
1	A	972	U
1	A	973	G
1	A	974	A
1	A	975	C
1	A	976	U
1	A	980	C
1	A	984	G
1	A	987	A
1	A	991	A
1	A	992	G
1	A	999	A
1	A	1000	G
1	A	1004	U
1	A	1006	A
1	A	1007	G
1	A	1008	A
1	A	1013	U
1	A	1017	C
1	A	1020	A
1	A	1027	A
1	A	1036	A
1	A	1037	C
1	A	1042	A
1	A	1043	G
1	A	1045	U
1	A	1051	C
1	A	1058	U
1	A	1059	A
1	A	1063	G
1	A	1067	A
1	A	1068	G
1	A	1069	U
1	A	1070	G
1	A	1072	A

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Mol	Chain	Res	Type
1	A	1073	A
1	A	1075	A
1	A	1076	G
1	A	1077	G
1	A	1078	A
1	A	1079	U
1	A	1083	G
1	A	1086	U
1	A	1087	U
1	A	1161	A
1	A	1173	A
1	A	1174	A
1	A	1175	A
1	A	1176	U
1	A	1177	G
1	A	1178	U
1	A	1179	A
1	A	1180	C
1	A	1181	C
1	A	1185	G
1	A	1188	A
1	A	1189	A
1	A	1201	A
1	A	1202	A
1	A	1214	U
1	A	1216	C
1	A	1217	U
1	A	1218	U
1	A	1219	C
1	A	1220	G
1	A	1221	A
1	A	1223	C
1	A	1229	U
1	A	1231	G
1	A	1238	G
1	A	1246	G
1	A	1247	G
1	A	1248	C
1	A	1250	G
1	A	1251	U
1	A	1252	G
1	A	1258	A

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Mol	Chain	Res	Type
1	A	1260	A
1	A	1269	A
1	A	1271	U
1	A	1273	G
1	A	1278	G
1	A	1280	G
1	A	1289	U
1	A	1290	G
1	A	1293	A
1	A	1295	U
1	A	1296	G
1	A	1297	C
1	A	1302	A
1	A	1305	A
1	A	1312	A
1	A	1315	G
1	A	1324	G
1	A	1335	A
1	A	1339	A
1	A	1340	A
1	A	1344	C
1	A	1345	U
1	A	1346	A
1	A	1351	U
1	A	1352	U
1	A	1359	G
1	A	1360	A
1	A	1363	G
1	A	1364	C
1	A	1376	G
1	A	1380	U
1	A	1383	U
1	A	1384	C
1	A	1388	A
1	A	1391	U
1	A	1404	A
1	A	1409	C
1	A	1412	A
1	A	1414	G
1	A	1417	A
1	A	1418	U
1	A	1424	A

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Mol	Chain	Res	Type
1	A	1425	C
1	A	1434	A
1	A	1435	U
1	A	1439	U
1	A	1441	U
1	A	1450	C
1	A	1458	U
1	A	1459	U
1	A	1460	G
1	A	1461	A
1	A	1465	A
1	A	1466	U
1	A	1472	G
1	A	1473	A
1	A	1474	C
1	A	1475	G
1	A	1480	A
1	A	1483	A
1	A	1488	G
1	A	1495	C
1	A	1496	G
1	A	1497	G
1	A	1498	U
1	A	1499	A
1	A	1500	U
1	A	1501	U
1	A	1503	G
1	A	1504	A
1	A	1505	U
1	A	1506	A
1	A	1507	U
1	A	1512	G
1	A	1513	U
1	A	1516	A
1	A	1519	C
1	A	1521	G
1	A	1523	U
1	A	1524	A
1	A	1527	C
1	A	1528	U
1	A	1537	G
1	A	1539	C

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Mol	Chain	Res	Type
1	A	1540	A
1	A	1550	C
1	A	1551	C
1	A	1553	A
1	A	1554	U
1	A	1555	A
1	A	1556	A
1	A	1558	C
1	A	1560	U
1	A	1561	G
1	A	1562	A
1	A	1563	G
1	A	1570	U
1	A	1571	G
1	A	1572	G
1	A	1573	C
1	A	1580	A
1	A	1581	A
1	A	1582	U
1	A	1584	U
1	A	1585	A
1	A	1586	G
1	A	1587	U
1	A	1596	U
1	A	1607	C
1	A	1615	A
1	A	1617	A
1	A	1626	U
1	A	1629	C
1	A	1630	G
1	A	1631	A
1	A	1632	G
1	A	1633	G
1	A	1652	C
1	A	1653	A
1	A	1655	A
1	A	1690	G
1	A	1692	U
1	A	1693	C
1	A	1695	A
1	A	1697	A
1	A	1698	G

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Mol	Chain	Res	Type
1	A	1712	G
1	A	1714	A
1	A	1719	G
1	A	1720	C
1	A	1723	A
1	A	1727	A
1	A	1728	C
1	A	1734	A
1	A	1736	C
1	A	1738	U
1	A	1739	C
1	A	1740	G
1	A	1743	A
1	A	1744	G
1	A	1745	A
1	A	1746	A
1	A	1752	G
1	A	1756	U
1	A	1757	G
1	A	1758	U
1	A	1767	A
1	A	1774	A
1	A	1777	G
1	A	1778	A
1	A	1779	G
1	A	1780	C
1	A	1781	C
1	A	1782	G
1	A	1785	G
1	A	1791	A
1	A	1792	G
1	A	1793	G
1	A	1802	A
1	A	1805	G
1	A	1808	U
1	A	1809	A
1	A	1810	G
1	A	1811	C
1	A	1813	A
1	A	1814	A
1	A	1815	A
1	A	1829	C

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Mol	Chain	Res	Type
1	A	1831	A
1	A	1835	C
1	A	1839	A
1	A	1845	A
1	A	1848	A
1	A	1850	A
1	A	1856	U
1	A	1858	A
1	A	1862	C
1	A	1863	U
1	A	2001	G
1	A	2004	G
1	A	2005	C
1	A	2006	A
1	A	2010	A
1	A	2011	U
1	A	2017	C
1	A	2020	U
1	A	2022	U
1	A	2023	C
1	A	2025	C
1	A	2026	A
1	A	2028	C
1	A	2060	A
1	A	2061	G
1	A	2068	G
1	A	2072	C
1	A	2081	G
1	A	2082	G
1	A	2084	C
1	A	2085	G
1	A	2086	G
1	A	2088	A
1	A	2089	A
1	A	2090	G
1	A	2091	A
1	A	2092	C
1	A	2093	C
1	A	2096	G
1	A	2097	U
1	A	2098	G
1	A	2099	G

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Mol	Chain	Res	Type
1	A	2100	A
1	A	2101	G
1	A	2102	C
1	A	2109	G
1	A	2110	C
1	A	2112	G
1	A	2113	C
1	A	2116	G
1	A	2122	G
1	A	2123	A
1	A	2124	A
1	A	2222	C
1	A	2227	A
1	A	2232	G
1	A	2233	C
1	A	2241	A
1	A	2243	C
1	A	2246	G
1	A	2252	A
1	A	2254	A
1	A	2255	C
1	A	2264	G
1	A	2266	G
1	A	2267	G
1	A	2272	U
1	A	2275	G
1	A	2278	U
1	A	2279	G
1	A	2284	G
1	A	2285	G
1	A	2288	G
1	A	2289	C
1	A	2290	C
1	A	2291	U
1	A	2292	C
1	A	2293	C
1	A	2305	G
1	A	2308	G
1	A	2312	C
1	A	2313	C
1	A	2315	A
1	A	2323	C

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Mol	Chain	Res	Type
1	A	2325	U
1	A	2326	C
1	A	2329	A
1	A	2331	U
1	A	2333	G
1	A	2334	U
1	A	2335	U
1	A	2336	G
1	A	2337	G
1	A	2338	A
1	A	2339	A
1	A	2340	A
1	A	2341	U
1	A	2342	C
1	A	2343	A
1	A	2344	U
1	A	2345	U
1	A	2346	C
1	A	2348	C
1	A	2349	A
1	A	2351	A
1	A	2352	G
1	A	2353	U
1	A	2354	G
1	A	2356	A
1	A	2359	G
1	A	2362	A
1	A	2363	C
1	A	2364	A
1	A	2366	G
1	A	2369	A
1	A	2372	U
1	A	2373	U
1	A	2374	G
1	A	2376	C
1	A	2377	U
1	A	2379	C
1	A	2383	A
1	A	2387	A
1	A	2389	A
1	A	2390	A
1	A	2392	U

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Mol	Chain	Res	Type
1	A	2395	A
1	A	2400	G
1	A	2402	A
1	A	2408	G
1	A	2411	G
1	A	2412	G
1	A	2414	C
1	A	2417	A
1	A	2418	G
1	A	2424	C
1	A	2425	G
1	A	2430	U
1	A	2431	U
1	A	2432	C
1	A	2435	C
1	A	2436	A
1	A	2451	C
1	A	2454	A
1	A	2455	A
1	A	2456	C
1	A	2457	G
1	A	2458	G
1	A	2459	A
1	A	2460	U
1	A	2461	A
1	A	2462	A
1	A	2463	A
1	A	2464	A
1	A	2468	A
1	A	2469	C
1	A	2470	C
1	A	2474	G
1	A	2648	U
1	A	2649	C
1	A	2653	G
1	A	2658	A
1	A	2659	G
1	A	2668	A
1	A	2675	C
1	A	2677	G
1	A	2681	U
1	A	2683	A

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Mol	Chain	Res	Type
1	A	2684	G
1	A	2689	A
1	A	2690	G
1	A	2692	G
1	A	2693	G
1	A	2698	G
1	A	2702	G
1	A	2711	G
1	A	2714	G
1	A	2718	U
1	A	2720	C
1	A	2731	G
1	A	2743	G
1	A	2748	G
1	A	2755	U
1	A	2756	G
1	A	2762	A
1	A	2770	A
1	A	2773	G
1	A	2775	U
1	A	2778	A
1	A	2779	A
1	A	2780	G
1	A	2781	C
1	A	2782	A
1	A	2784	C
1	A	2785	U
1	A	2786	A
1	A	2787	A
1	A	2789	C
1	A	2790	A
1	A	2791	U
1	A	2793	A
1	A	2794	A
1	A	2795	G
1	A	2797	C
1	A	2807	A
1	A	2808	U
1	A	2813	U
1	A	2818	C
1	A	2819	A
1	A	2820	U

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Mol	Chain	Res	Type
1	A	2823	C
1	A	2825	C
1	A	2826	A
1	A	2828	G
1	A	2837	A
1	A	2845	A
1	A	2846	A
1	A	2858	U
1	A	2859	G
1	A	2860	A
1	A	2861	U
1	A	2874	G
1	A	2884	G
1	A	2892	G
1	A	2897	G
1	A	2898	A
1	A	2899	C
1	A	2905	C
1	A	2908	A
1	A	2916	A
1	A	2918	G
1	A	2921	U

All (47) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	27	G
1	A	43	G
1	A	63	G
1	A	90	A
1	A	165	C
1	A	229	A
1	A	267	C
1	A	288	C
1	A	311	U
1	A	377	G
1	A	419	G
1	A	458	G
1	A	549	A
1	A	632	U
1	A	683	A
1	A	785	C

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Mol	Chain	Res	Type
1	A	837	U
1	A	839	G
1	A	1245	G
1	A	1339	A
1	A	1351	U
1	A	1438	C
1	A	1497	G
1	A	1511	C
1	A	1518	G
1	A	1522	U
1	A	1527	C
1	A	1560	U
1	A	1595	U
1	A	1630	G
1	A	1652	C
1	A	1726	G
1	A	1755	C
1	A	1779	G
1	A	1784	A
1	A	1861	C
1	A	2005	C
1	A	2099	G
1	A	2254	A
1	A	2292	C
1	A	2334	U
1	A	2338	A
1	A	2352	G
1	A	2454	A
1	A	2784	C
1	A	2812	A
1	A	2858	U

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry

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.

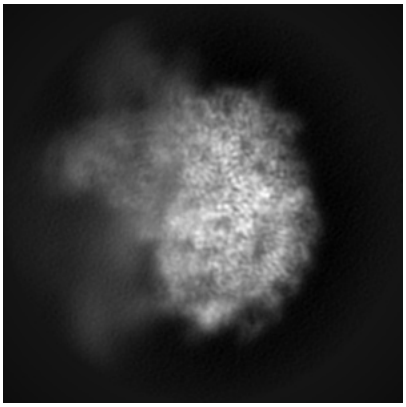
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-24937. These allow visual inspection of the internal detail of the map and identification of artifacts.

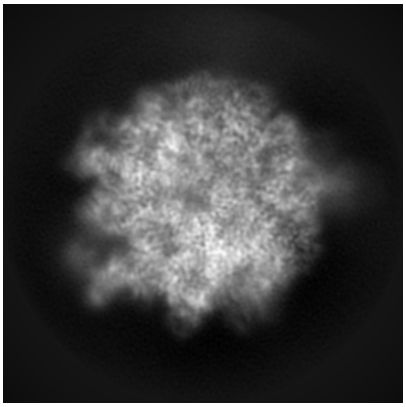
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

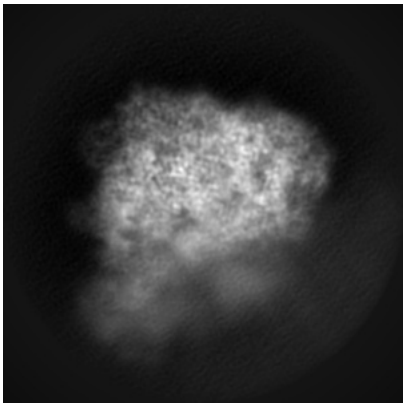
6.1.1 Primary map



X



Y

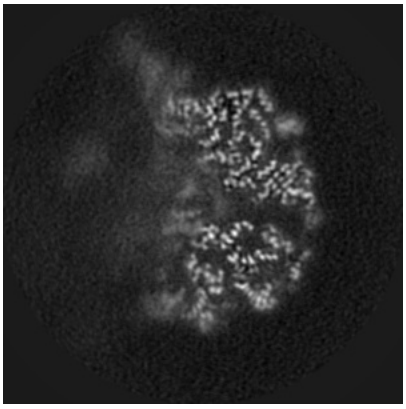


Z

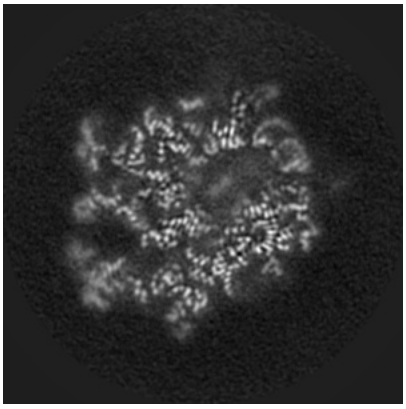
The images above show the map projected in three orthogonal directions.

6.2 Central slices

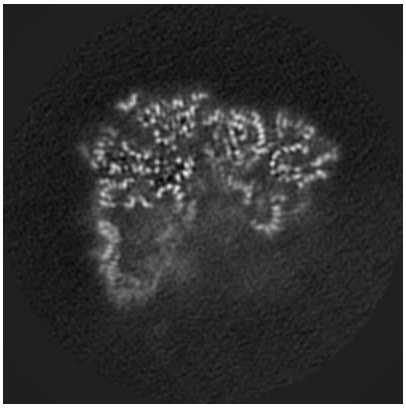
6.2.1 Primary map



X Index: 168



Y Index: 168

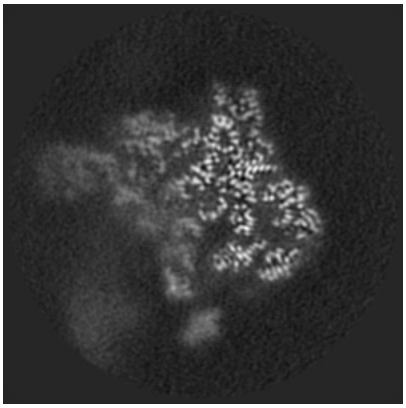


Z Index: 168

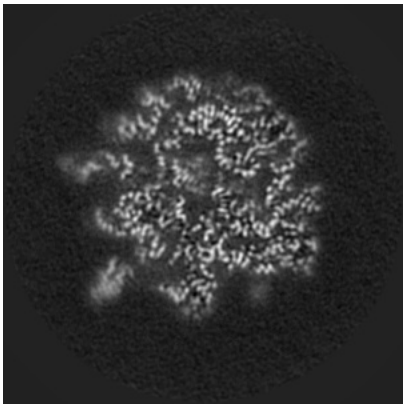
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

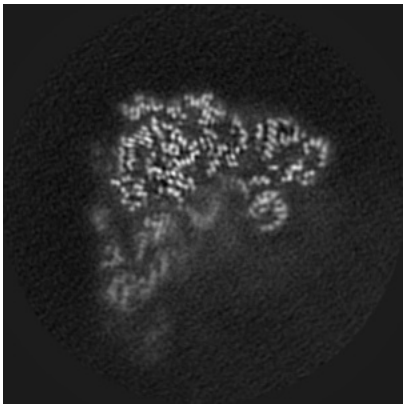
6.3.1 Primary map



X Index: 125



Y Index: 197

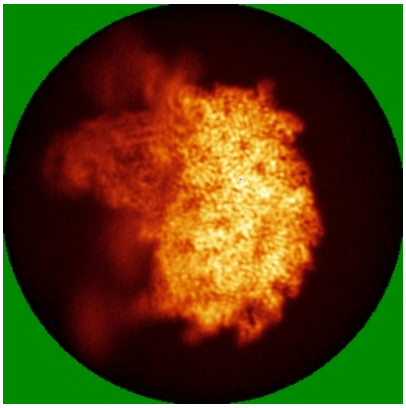


Z Index: 176

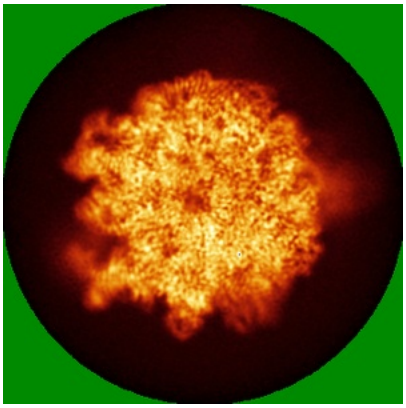
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

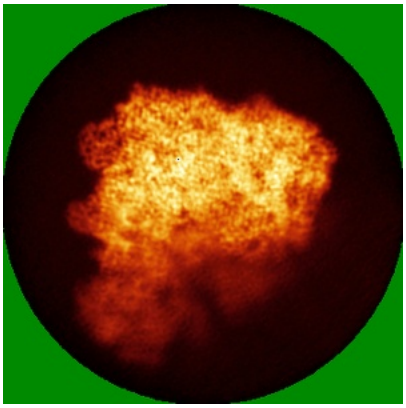
6.4.1 Primary map



X



Y

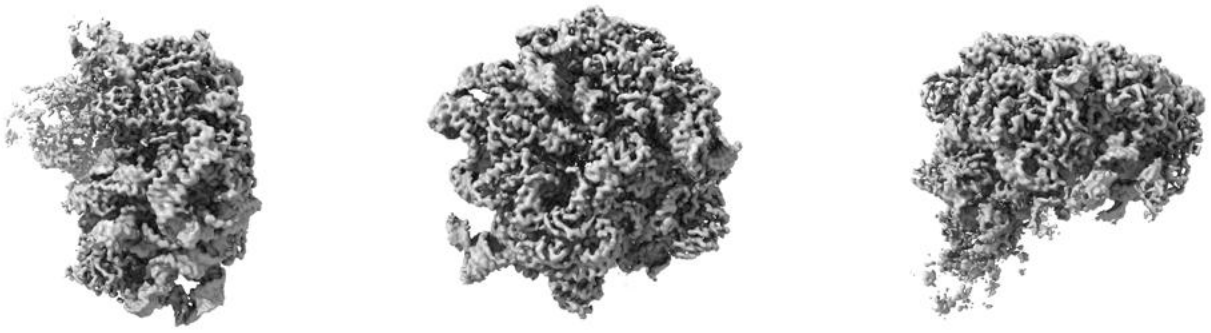


Z

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



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.00983. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

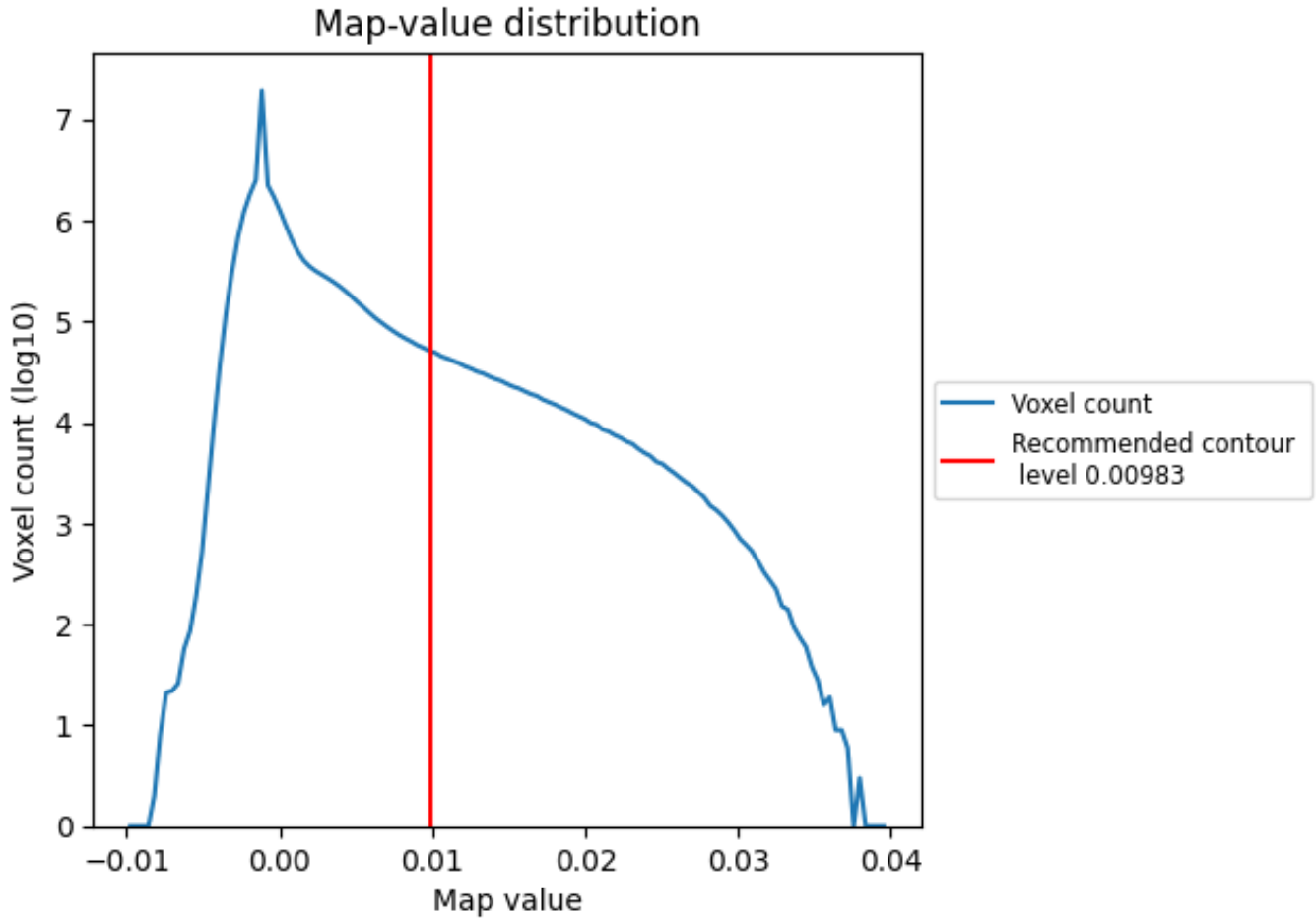
6.6 Mask visualisation (i)

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

7 Map analysis

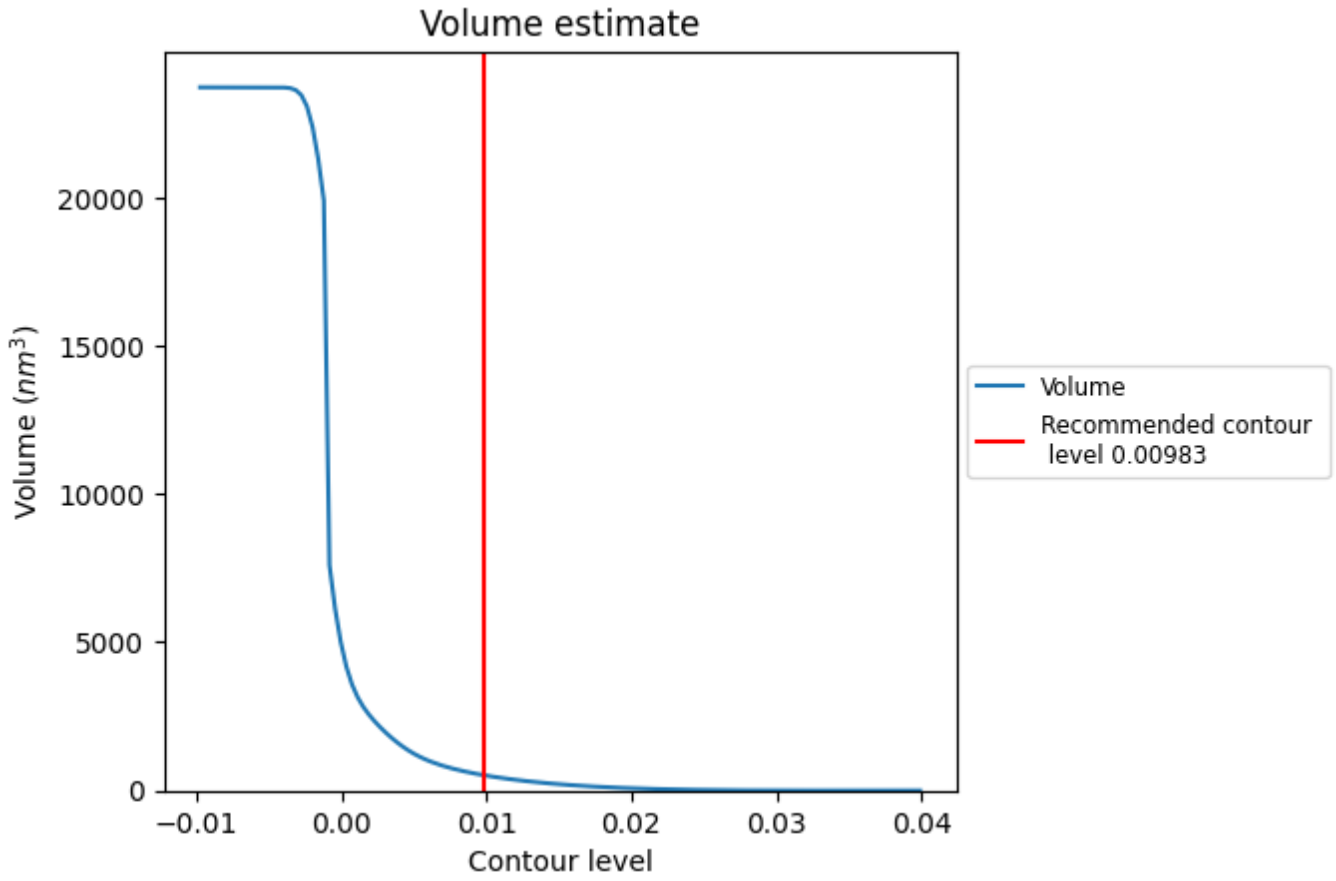
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

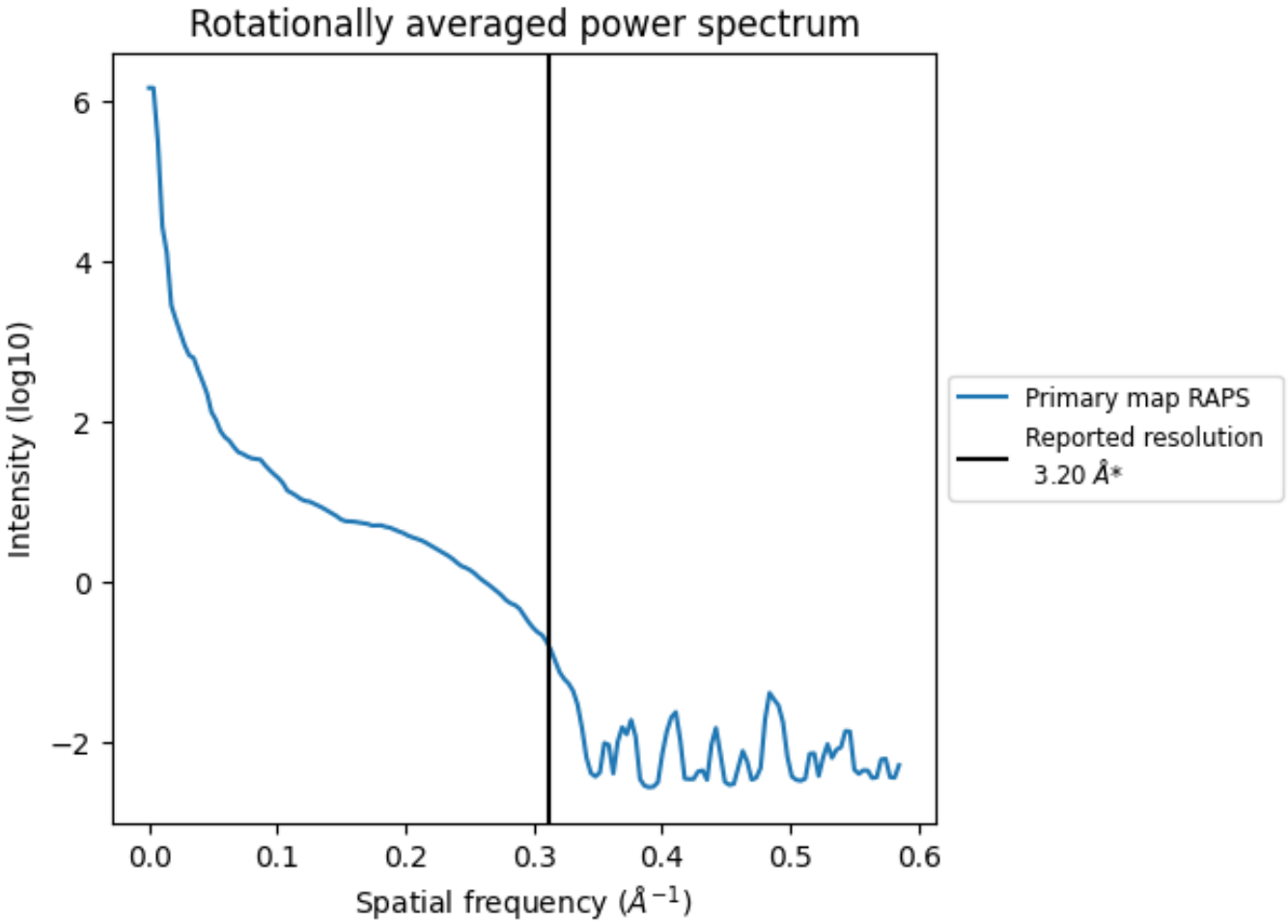
7.2 Volume estimate



The volume at the recommended contour level is 518 nm^3; this corresponds to an approximate mass of 468 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 (i)

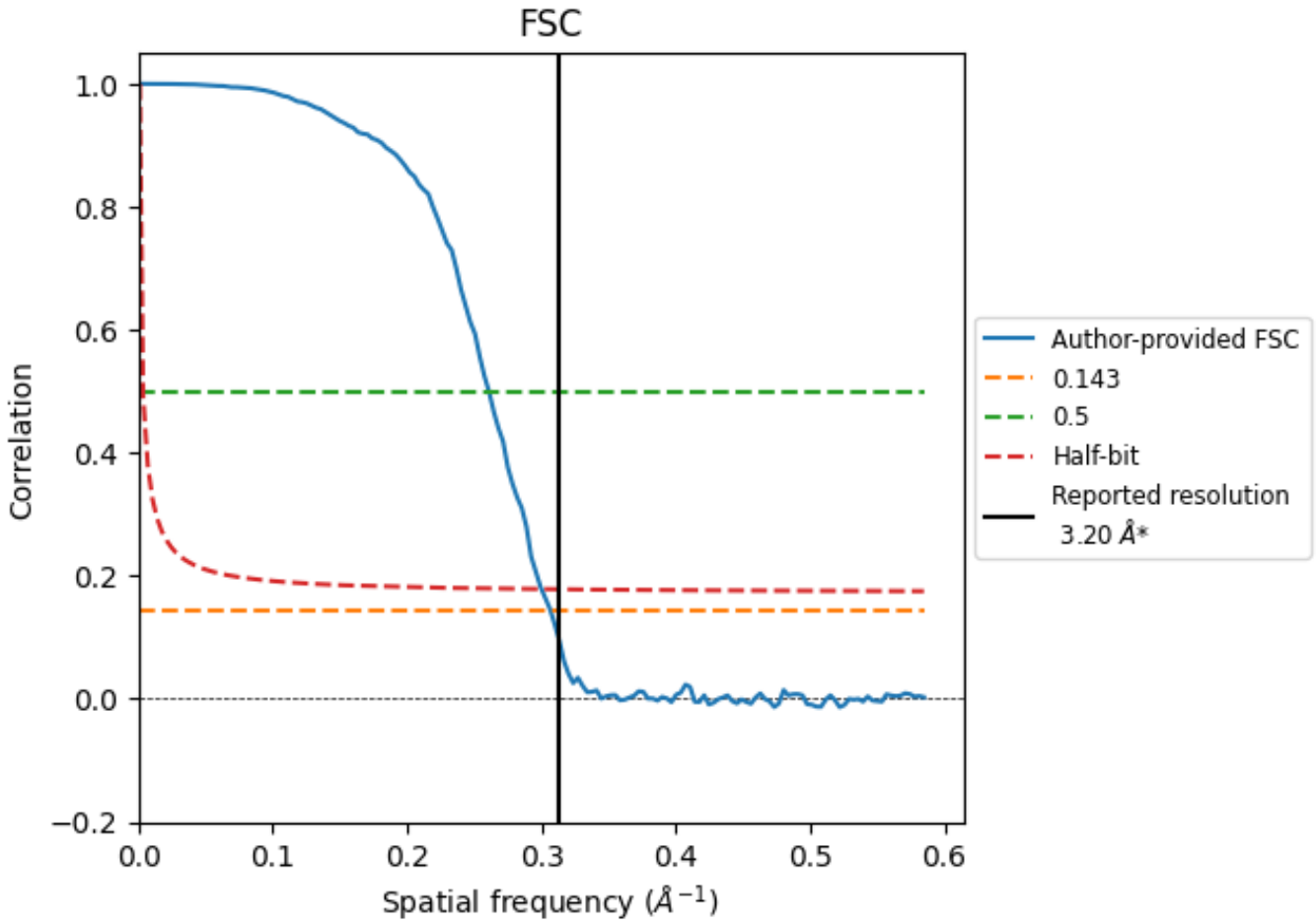


*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8.2 Resolution estimates (i)

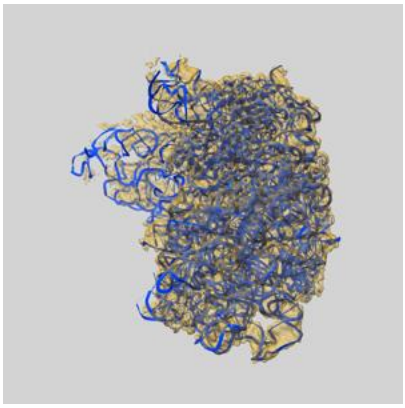
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	3.26	3.83	3.33
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

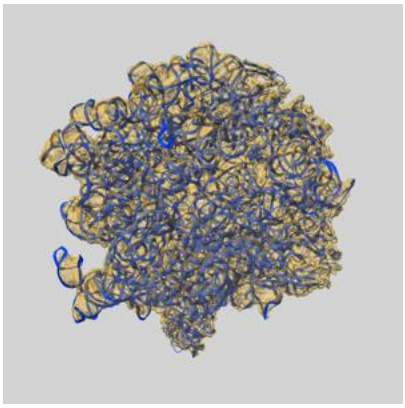
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-24937 and PDB model 7S9U. Per-residue inclusion information can be found in section 3 on page 7.

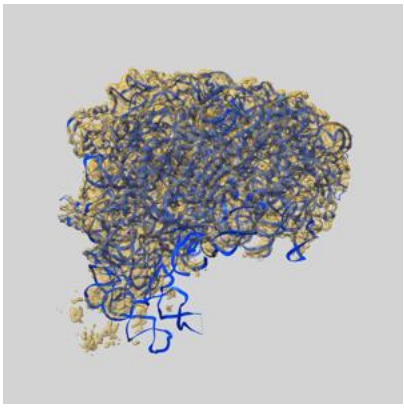
9.1 Map-model overlay



X



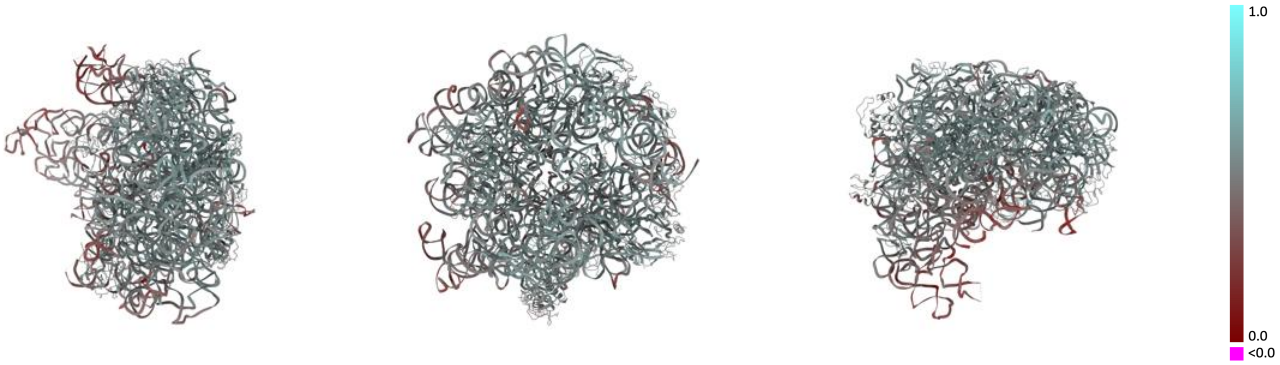
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.00983 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.

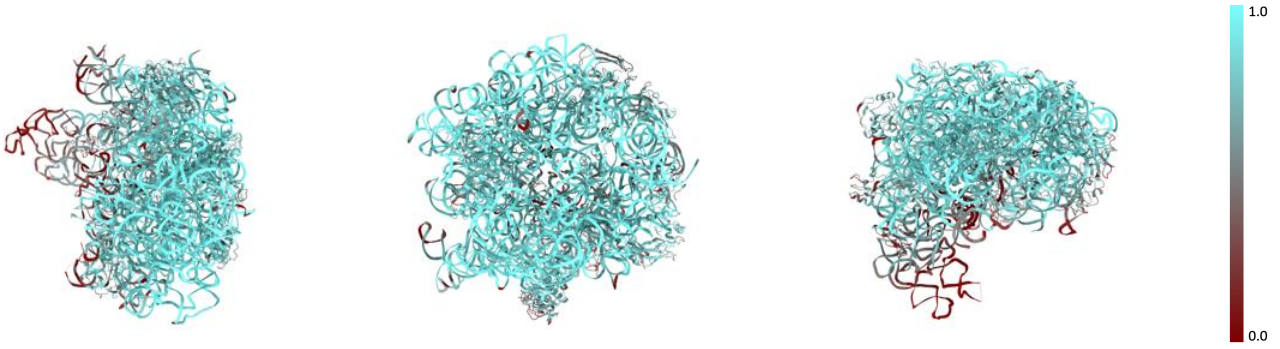
9.2 Q-score mapped to coordinate model (i)



X Y Z

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.

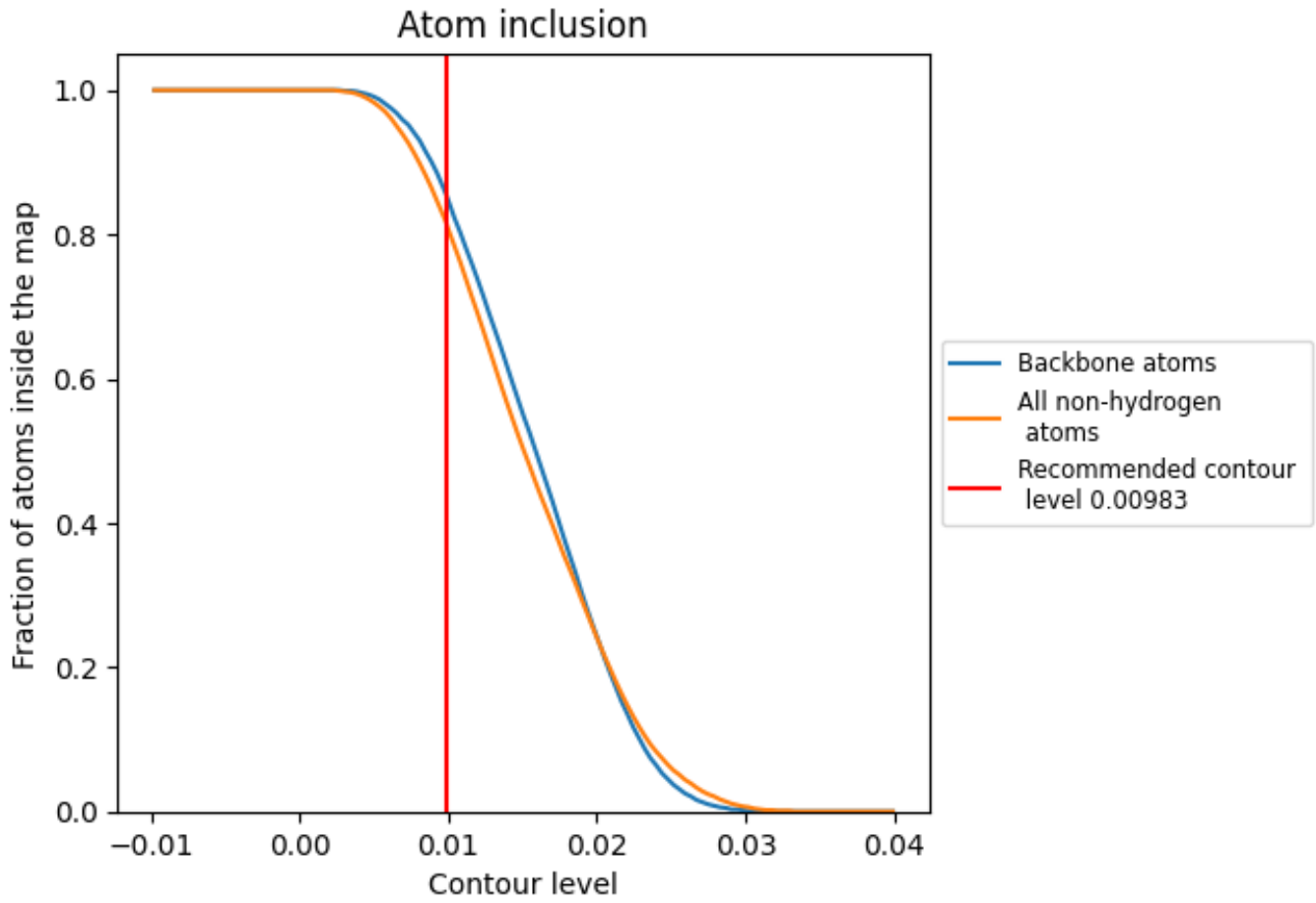
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.00983).

9.4 Atom inclusion (i)



At the recommended contour level, 86% of all backbone atoms, 82% 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 (0.00983) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8180	0.4950
A	0.8500	0.4870
C	0.5970	0.5060
D	0.7440	0.5350
E	0.7530	0.5240
J	0.8090	0.5250
K	0.5740	0.5140
L	0.5870	0.4750
N	0.8590	0.5480
P	0.6080	0.5190
Q	0.8610	0.5380
R	0.7800	0.5400
S	0.8220	0.5440
T	0.7970	0.5300
U	0.7390	0.5360
V	0.2440	0.4800
Y	0.7340	0.4860
Z	0.6990	0.5280
b	0.8330	0.5480
d	0.8580	0.5580