Full wwPDB EM Validation Report ⓘ

Jan 16, 2025 – 12:39 am GMT

PDB ID	:	9H3Q
EMDB ID	:	EMD-51834
Title	:	50S subunit precursor C-CP_YjgA_(L22)- H61
Authors	:	Lauer, S.; Nikolay, R.; Spahn, C.M.T.
Deposited on	:	2024-10-17
Resolution	:	4.02 Å(reported)
Based on initial model	:	8RPY

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:

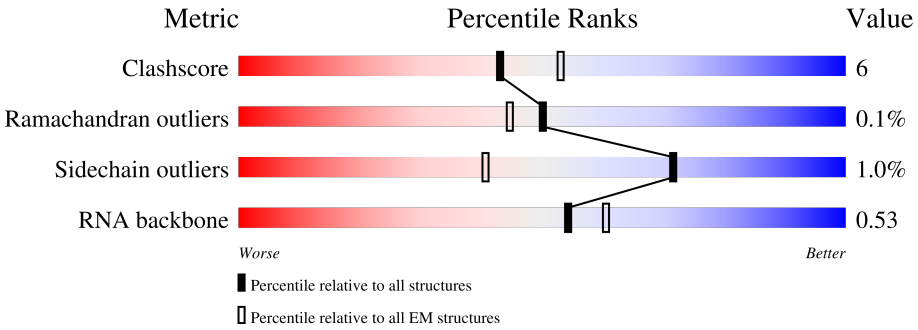
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.02 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	2	46	67% 15% 17%
2	4	38	42% 84% 16%
3	A	2903	6% 53% 29% 6% 12%
4	B	120	60% 36%
5	D	209	9% 69% 13% 17%
6	E	201	64% 24% 12%
7	F	177	16% 66% 32%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
8	G	176	31% 86% 14%
9	H	149	11% 30% 5% 65%
10	J	142	82% 17%
11	L	143	10% 80% 20%
12	N	120	7% 73% 27%
13	O	116	81% 19%
14	Q	117	83% 17%
15	R	103	77% 22%
16	T	93	86% 14%
17	U	102	5% 83% 16%
18	V	94	10% 77% 23%
19	W	75	84% 16%
20	X	77	87% 13%
21	Y	63	5% 89% 11%
22	Z	58	81% 19%
23	C	183	15% 76% 10% 14%

2 Entry composition

There are 23 unique types of molecules in this entry. The entry contains 75644 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Large ribosomal subunit protein bL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	2	38	309	185	77	46	1	0	0

- Molecule 2 is a protein called Large ribosomal subunit protein bL36A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	4	38	302	185	65	48	4	0	0

- Molecule 3 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	A	2569	55164	24607	10158	17830	2569	0	0

- Molecule 4 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	B	120	2572	1145	471	836	120	0	0

- Molecule 5 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	D	173	1284	805	231	244	4	0	0

- Molecule 6 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	E	176	1368	862	243	258	5	0	0

- Molecule 7 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	F	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 8 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	G	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 9 is a protein called Large ribosomal subunit protein bL9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	H	52	Total	C	N	O	S	0	0
			400	256	73	70	1		

- Molecule 10 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 11 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 12 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	N	120	Total	C	N	O	S	0	0
			957	592	196	164	5		

- Molecule 13 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	O	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 14 is a protein called Large ribosomal subunit protein bL20.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	Q	117	Total 947	C 604	N 192	O 151	0	0

- Molecule 15 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	R	103	Total 816	C 516	N 153	O 145	S 2	0	0

- Molecule 16 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	T	93	Total 738	C 466	N 139	O 131	S 2	0	0

- Molecule 17 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	U	102	Total 779	C 492	N 146	O 141	0	0

- Molecule 18 is a protein called Large ribosomal subunit protein bL25.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	V	94	Total 753	C 479	N 137	O 134	S 3	0	0

- Molecule 19 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	W	75	Total 575	C 356	N 116	O 102	S 1	0	0

- Molecule 20 is a protein called Large ribosomal subunit protein bL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	X	77	Total 625	C 388	N 129	O 106	S 2	0	0

- Molecule 21 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	Y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 22 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Z	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 23 is a protein called UPF0307 protein YjgA.

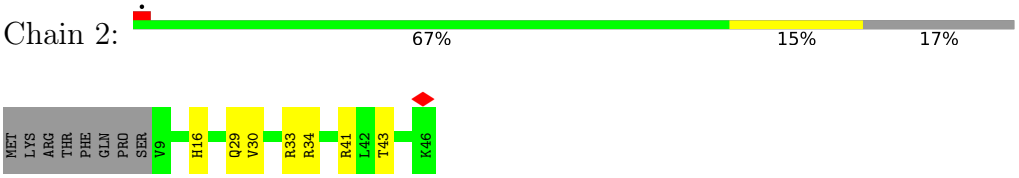
Mol	Chain	Residues	Atoms					AltConf	Trace
23	C	158	Total	C	N	O	S	0	0
			1298	805	253	238	2		

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.

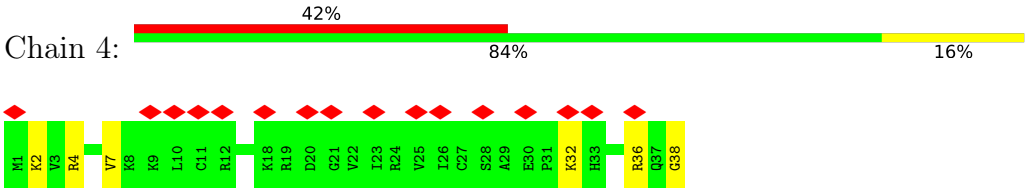
• Molecule 1: Large ribosomal subunit protein bL34

Chain 2:



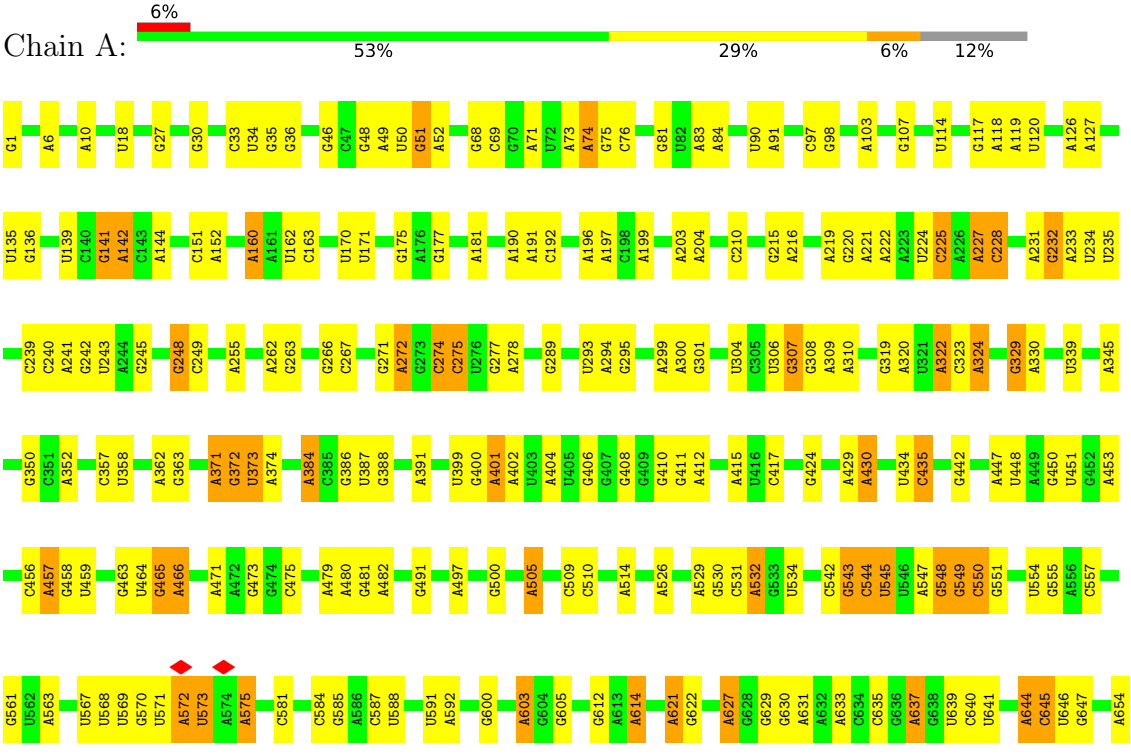
• Molecule 2: Large ribosomal subunit protein bL36A

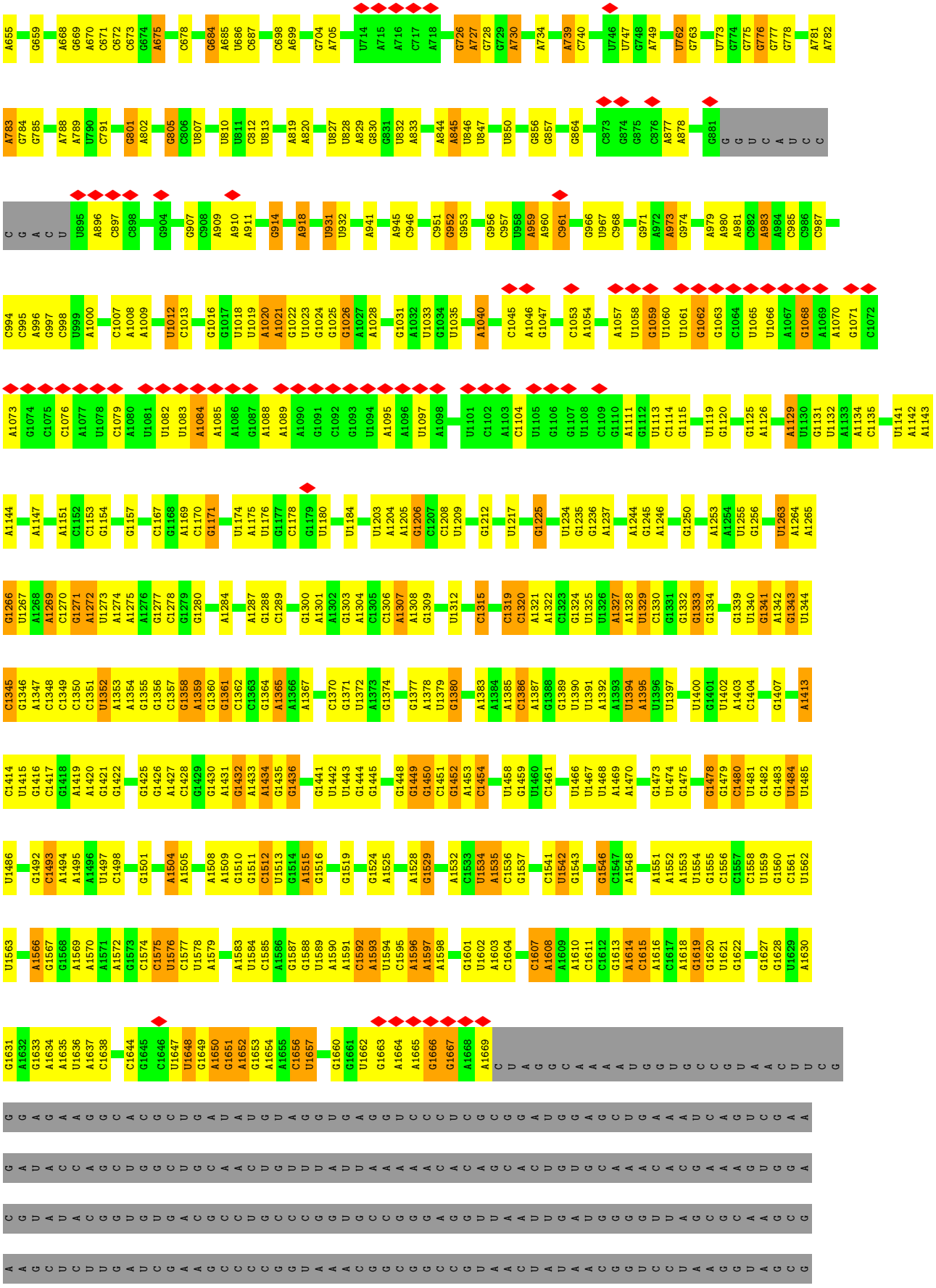
Chain 4:

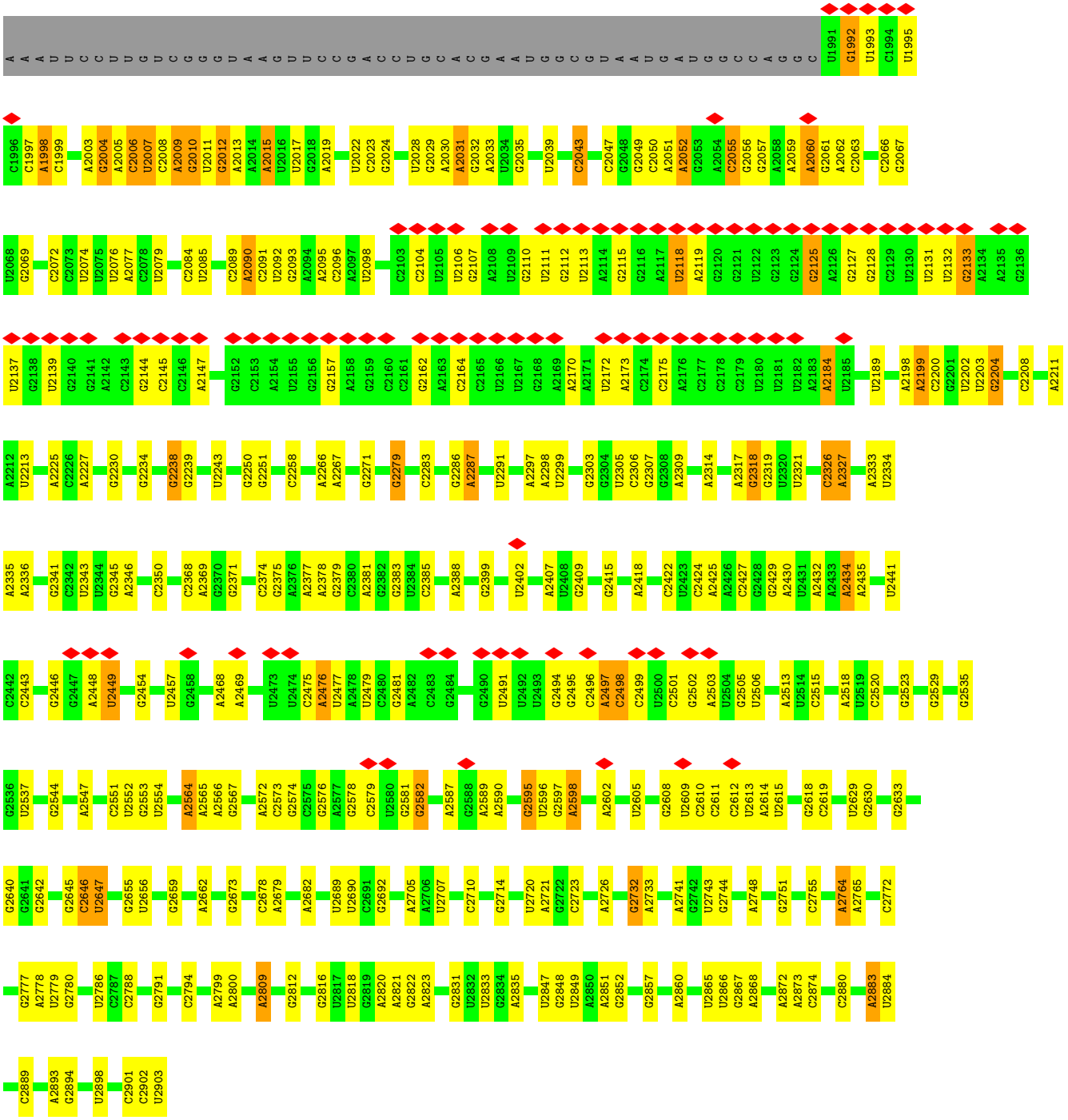


• Molecule 3: 23S ribosomal RNA

Chain A:

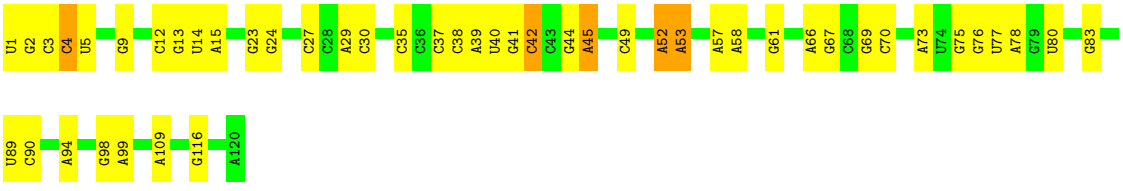






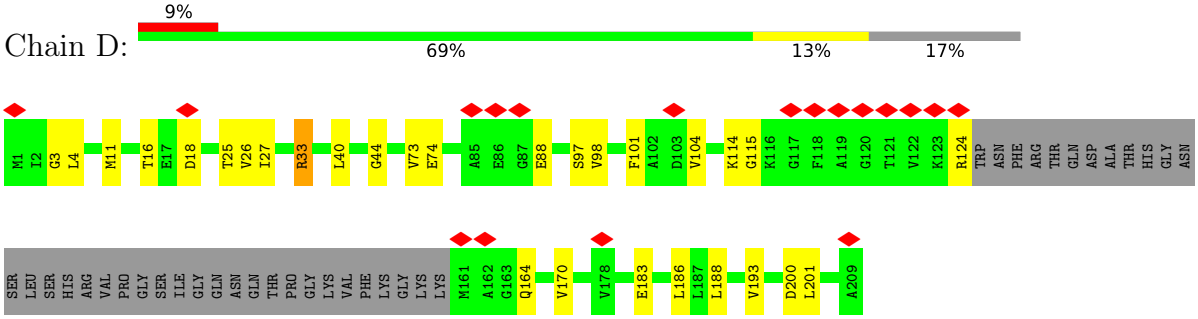
• Molecule 4: 5S ribosomal RNA

Chain B:



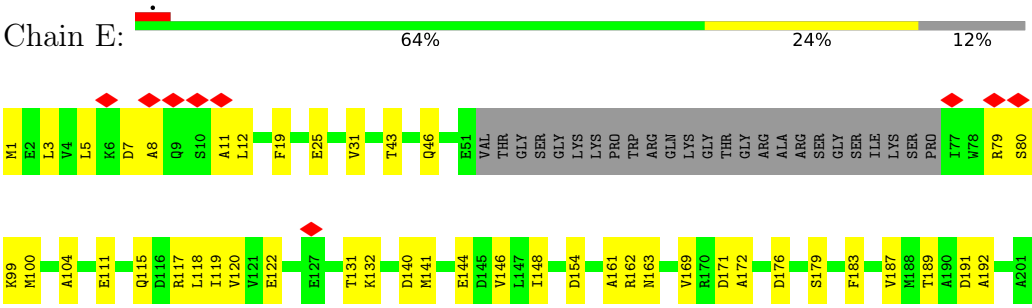
• Molecule 5: 50S ribosomal protein L3

Chain D:



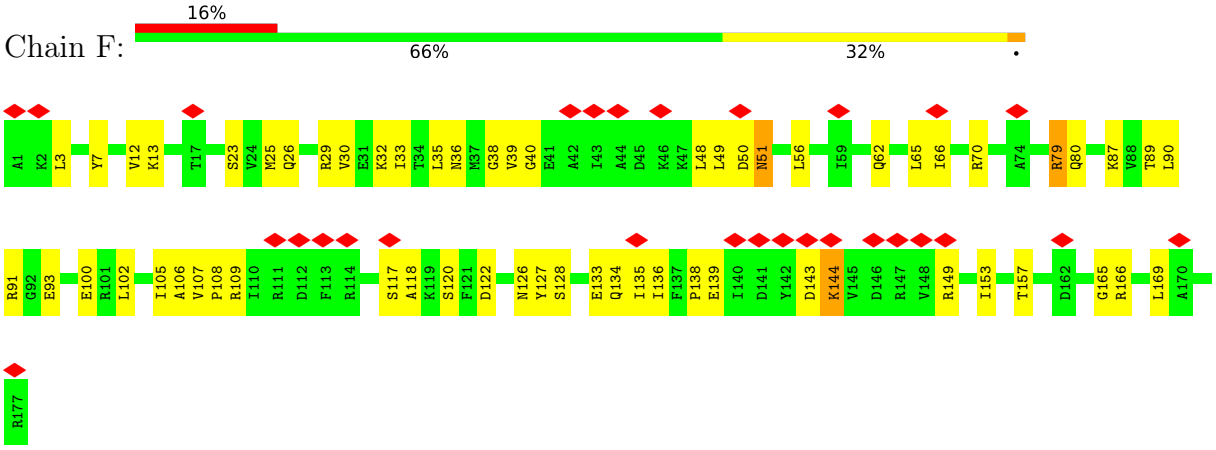
• Molecule 6: Large ribosomal subunit protein uL4

Chain E:



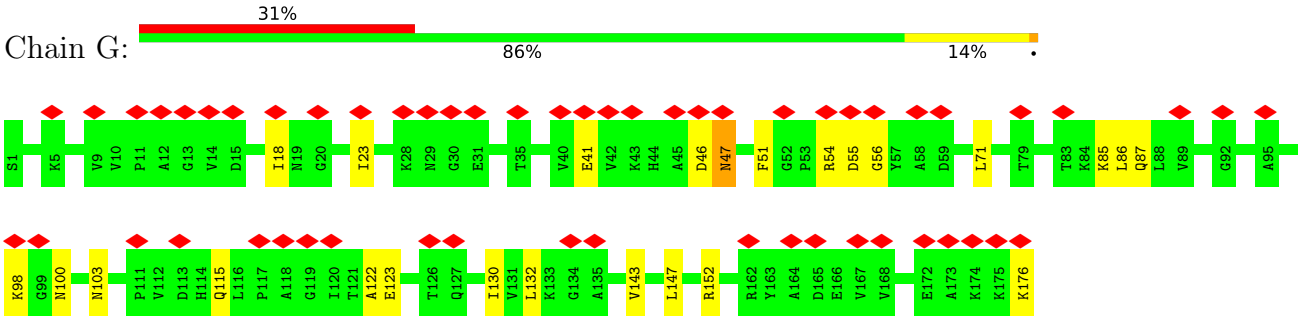
• Molecule 7: Large ribosomal subunit protein uL5

Chain F:



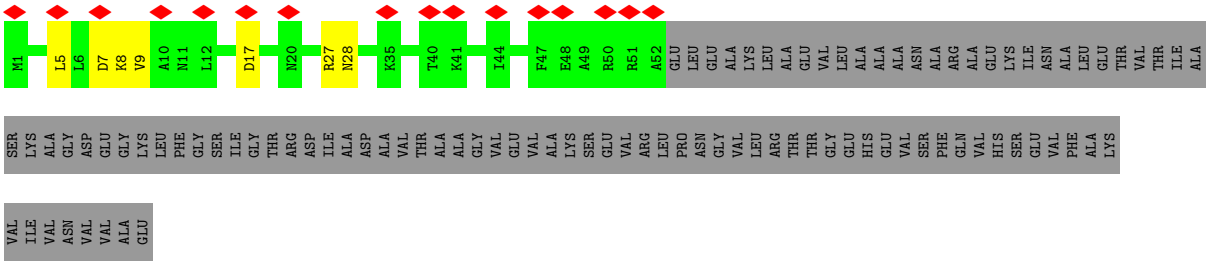
• Molecule 8: Large ribosomal subunit protein uL6

Chain G:



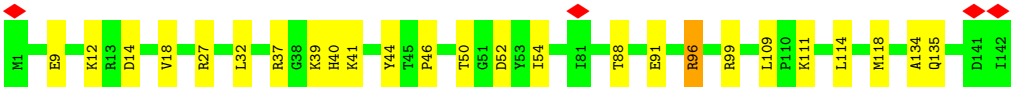
• Molecule 9: Large ribosomal subunit protein bL9

Chain H:



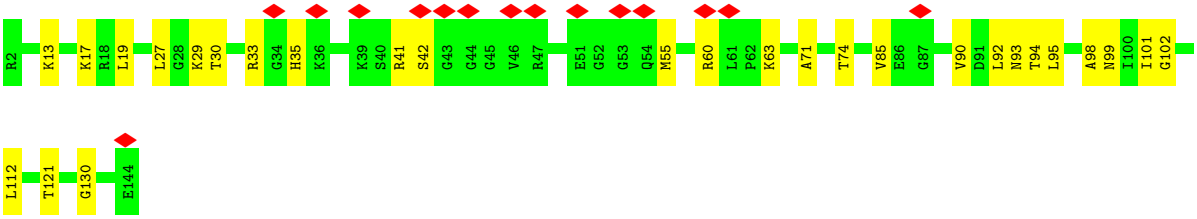
• Molecule 10: Large ribosomal subunit protein uL13

Chain J:



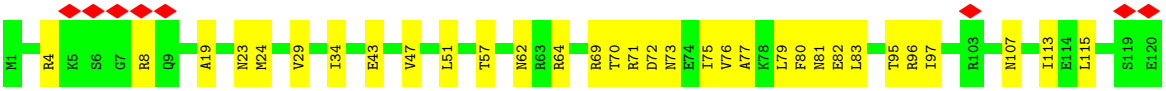
• Molecule 11: Large ribosomal subunit protein uL15

Chain L:



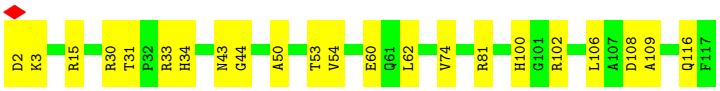
• Molecule 12: Large ribosomal subunit protein bL17

Chain N:



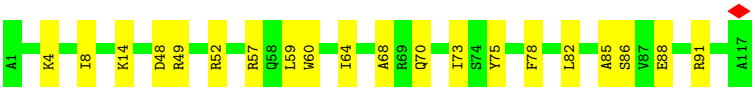
• Molecule 13: Large ribosomal subunit protein uL18

Chain O:

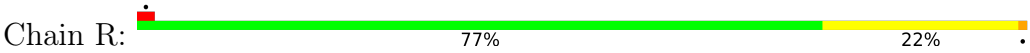


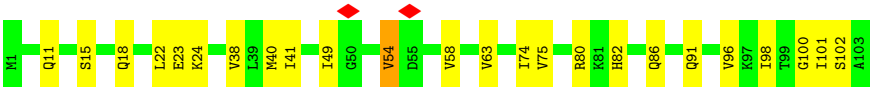
• Molecule 14: Large ribosomal subunit protein bL20

Chain Q:

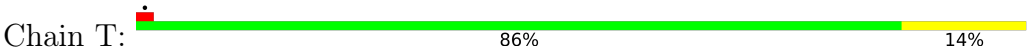


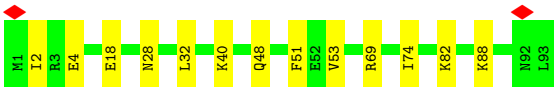
• Molecule 15: Large ribosomal subunit protein bL21



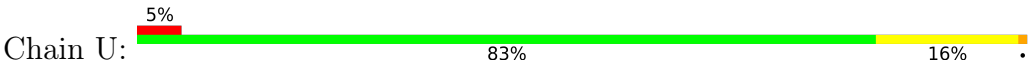


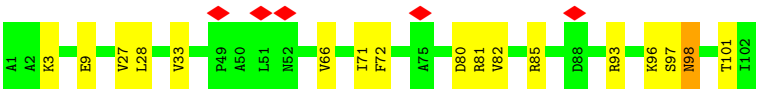
• Molecule 16: Large ribosomal subunit protein uL23



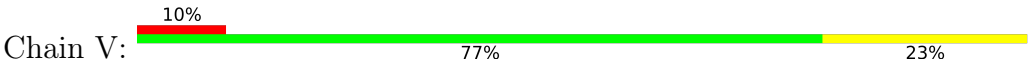


• Molecule 17: Large ribosomal subunit protein uL24

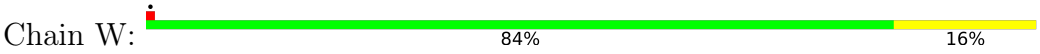


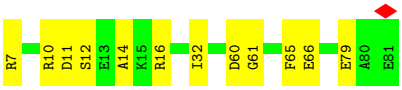


• Molecule 18: Large ribosomal subunit protein bL25

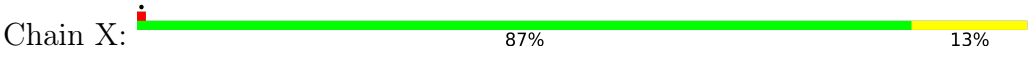


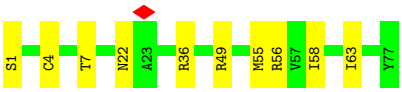
• Molecule 19: Large ribosomal subunit protein bL27





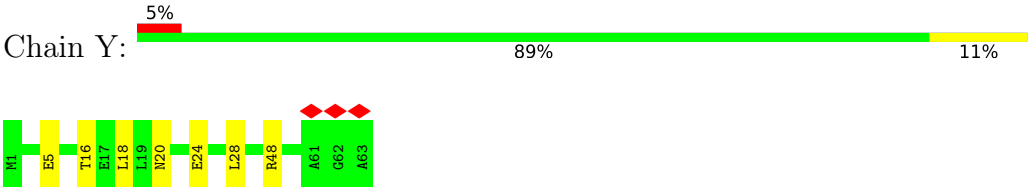
• Molecule 20: Large ribosomal subunit protein bL28





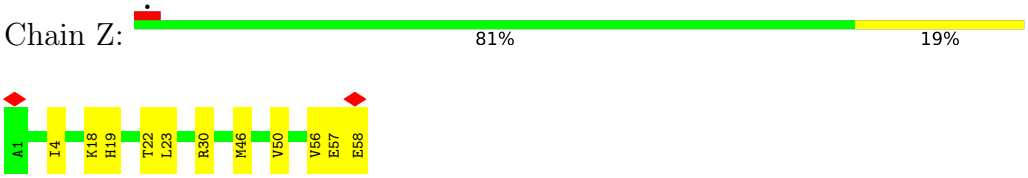
• Molecule 21: Large ribosomal subunit protein uL29

Chain Y:



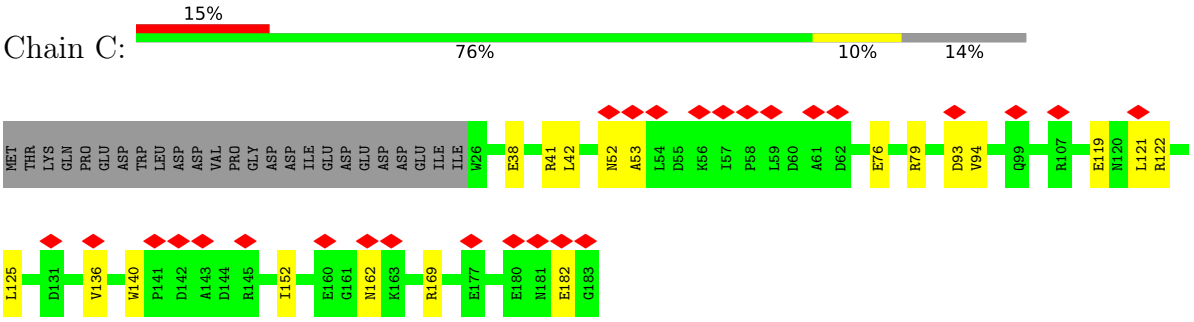
• Molecule 22: Large ribosomal subunit protein uL30

Chain Z:



• Molecule 23: UPF0307 protein YjgA

Chain C:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	4678	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	45	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.566	Depositor
Minimum map value	-0.398	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.089	Depositor
Recommended contour level	0.344	Depositor
Map size (Å)	424.0, 424.0, 424.0	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.4133333, 1.4133333, 1.4133333	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	2	0.23	0/310	0.65	0/405
2	4	0.25	0/303	0.55	0/397
3	A	0.15	1/61785 (0.0%)	0.71	9/96386 (0.0%)
4	B	0.24	1/2876 (0.0%)	0.69	0/4483
5	D	0.25	0/1296	0.52	0/1742
6	E	0.24	0/1382	0.47	0/1860
7	F	0.25	0/1434	0.52	0/1926
8	G	0.24	0/1343	0.49	0/1816
9	H	0.26	0/405	0.48	0/544
10	J	0.24	0/1152	0.48	0/1551
11	L	0.25	0/1054	0.57	0/1403
12	N	0.24	0/970	0.58	0/1297
13	O	0.24	0/902	0.54	0/1209
14	Q	0.24	0/960	0.52	0/1278
15	R	0.25	0/829	0.53	0/1107
16	T	0.24	0/744	0.50	0/994
17	U	0.25	0/787	0.51	0/1051
18	V	0.25	0/766	0.49	0/1025
19	W	0.25	0/582	0.53	0/769
20	X	0.24	0/635	0.57	0/848
21	Y	0.24	0/510	0.49	0/677
22	Z	0.24	0/453	0.54	0/605
23	C	0.23	0/1311	0.48	0/1753
All	All	0.18	2/82789 (0.0%)	0.68	9/125126 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1	G	OP3-P	-10.62	1.48	1.61
4	B	1	U	OP3-P	-10.54	1.48	1.61

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	1541	C	N3-C2-O2	-7.02	116.98	121.90
3	A	1541	C	N1-C2-O2	6.80	122.98	118.90
3	A	1512	C	N3-C2-O2	-5.58	117.99	121.90
3	A	363	G	N1-C2-N2	-5.51	111.24	116.20
3	A	2496	C	N3-C2-O2	-5.50	118.05	121.90
3	A	1529	G	N3-C4-N9	5.31	129.19	126.00
3	A	1512	C	N1-C2-O2	5.22	122.03	118.90
3	A	2496	C	N1-C2-O2	5.18	122.01	118.90
3	A	274	C	N1-C2-O2	5.01	121.91	118.90

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	2	309	0	344	5	0
2	4	302	0	343	5	0
3	A	55164	0	27741	458	0
4	B	2572	0	1302	33	0
5	D	1284	0	1339	24	0
6	E	1368	0	1421	36	0
7	F	1410	0	1447	47	0
8	G	1323	0	1374	15	0
9	H	400	0	423	4	0
10	J	1129	0	1162	21	0
11	L	1045	0	1117	22	0
12	N	957	0	998	22	0
13	O	892	0	923	17	0
14	Q	947	0	1022	18	0
15	R	816	0	839	15	0
16	T	738	0	807	10	0
17	U	779	0	834	14	0
18	V	753	0	780	17	0
19	W	575	0	592	8	0
20	X	625	0	655	10	0
21	Y	509	0	543	5	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
22	Z	449	0	491	11	0
23	C	1298	0	1352	12	0
All	All	75644	0	47849	733	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 6.

All (733) 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)
3:A:1007:C:OP2	3:A:1008:A:O2'	1.90	0.88
3:A:2898:U:O2'	10:J:134:ALA:O	1.94	0.86
3:A:1667:G:N2	3:A:1669:A:N6	2.24	0.86
3:A:239:C:HO2'	3:A:622:G:HO2'	1.18	0.85
3:A:959:A:N3	3:A:2457:U:O2'	2.08	0.85
3:A:951:C:N4	3:A:952:G:O6	2.10	0.84
3:A:909:A:O2'	3:A:911:A:OP2	1.95	0.84
3:A:2085:U:O2	3:A:2234:G:O6	1.96	0.84
3:A:514:A:N3	3:A:581:C:O2'	2.08	0.84
3:A:2642:G:N2	3:A:2772:C:O2	2.11	0.84
3:A:2865:U:OP2	3:A:2866:U:O2'	1.95	0.84
3:A:542:C:N4	3:A:543:G:O6	2.11	0.83
3:A:1068:G:N2	3:A:1095:A:O2'	2.11	0.83
3:A:1378:A:O2'	3:A:1380:G:N7	2.12	0.83
3:A:1287:A:N1	3:A:1648:U:O2'	2.11	0.83
3:A:1492:G:OP2	3:A:1493:C:O2'	1.96	0.83
3:A:571:U:O2'	3:A:573:U:OP2	1.97	0.82
3:A:83:A:O2'	3:A:103:A:N6	2.11	0.82
3:A:126:A:O2'	3:A:127:A:O4'	1.96	0.82
3:A:1315:C:O2'	3:A:1392:A:N3	2.11	0.82
4:B:39:A:O2'	4:B:40:U:O4'	1.99	0.81
3:A:1414:C:O2'	3:A:1415:U:O4'	1.98	0.81
3:A:177:G:OP2	3:A:177:G:N2	2.13	0.81
3:A:1667:G:H21	3:A:1669:A:N6	1.77	0.81
7:F:109:ARG:NH2	7:F:136:ILE:O	2.14	0.81
6:E:46:GLN:O	6:E:88:ARG:NH2	2.13	0.81
3:A:239:C:O2'	3:A:622:G:O2'	1.96	0.81
3:A:1667:G:N2	3:A:1669:A:H62	1.80	0.80
3:A:2306:C:N4	7:F:38:GLY:O	2.15	0.80
3:A:2049:G:N2	3:A:2619:C:O2	2.13	0.80
3:A:675:A:N3	3:A:2443:C:O2'	2.13	0.80

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:1604:C:O2'	3:A:1610:A:N1	2.13	0.79
3:A:2115:G:N2	3:A:2118:U:OP2	2.15	0.79
3:A:2743:U:OP2	3:A:2755:C:N4	2.15	0.79
4:B:14:U:OP2	4:B:70:C:O2'	2.01	0.79
13:O:50:ALA:O	13:O:81:ARG:NH1	2.15	0.79
3:A:548:G:O2'	3:A:549:G:O4'	1.98	0.79
3:A:2298:A:OP1	7:F:70:ARG:NH1	2.16	0.78
4:B:5:U:OP1	4:B:61:G:O2'	2.00	0.78
3:A:2085:U:OP1	23:C:169:ARG:NH1	2.16	0.78
3:A:2314:A:OP1	7:F:87:LYS:NZ	2.16	0.78
3:A:2678:C:OP1	5:D:124:ARG:NH2	2.16	0.78
17:U:3:LYS:O	17:U:93:ARG:NH1	2.16	0.77
3:A:807:U:OP2	11:L:41:ARG:NH2	2.18	0.77
18:V:58:SER:OG	18:V:59:GLU:OE1	2.01	0.77
3:A:532:A:N1	3:A:2035:G:N2	2.33	0.77
3:A:966:G:O4'	3:A:2267:A:N6	2.18	0.77
3:A:2326:C:O2'	3:A:2327:A:OP1	2.02	0.77
8:G:46:ASP:O	8:G:47:ASN:ND2	2.18	0.77
3:A:463:G:N2	3:A:466:A:OP2	2.16	0.76
3:A:234:U:O4	3:A:263:G:N2	2.19	0.76
3:A:117:G:OP2	3:A:119:A:O2'	2.03	0.76
3:A:2645:G:OP2	3:A:2645:G:N2	2.17	0.76
7:F:133:GLU:OE1	7:F:133:GLU:N	2.19	0.76
3:A:629:G:N3	3:A:639:U:O2'	2.19	0.76
3:A:2646:C:OP2	3:A:2732:G:O2'	2.02	0.76
3:A:569:U:OP1	3:A:945:A:O2'	2.03	0.76
12:N:77:ALA:O	12:N:81:ASN:ND2	2.18	0.75
3:A:2050:C:O2	3:A:2618:G:N2	2.16	0.75
3:A:2816:G:N3	3:A:2883:A:O2'	2.18	0.75
3:A:805:G:N2	3:A:829:A:OP1	2.20	0.75
3:A:1588:G:O2'	3:A:1589:U:O4'	2.05	0.75
7:F:120:SER:OG	7:F:128:SER:O	2.03	0.75
3:A:220:G:O2'	3:A:233:A:O2'	2.05	0.75
3:A:789:A:N6	3:A:1614:A:OP1	2.19	0.75
3:A:850:U:OP1	22:Z:18:LYS:NZ	2.19	0.75
5:D:16:THR:OG1	5:D:18:ASP:OD1	2.03	0.75
4:B:75:G:O2'	18:V:88:HIS:NE2	2.20	0.75
3:A:2202:U:O2'	3:A:2204:G:OP1	2.05	0.75
3:A:570:G:O2'	3:A:983:A:N1	2.20	0.75
3:A:1322:A:N1	3:A:1333:G:O2'	2.20	0.75
3:A:1018:U:O2'	3:A:1120:G:N2	2.19	0.74

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2788:C:O2'	3:A:2809:A:N3	2.17	0.74
3:A:2258:C:O2'	3:A:2427:C:OP2	2.05	0.74
3:A:192:C:O2'	3:A:802:A:N3	2.20	0.74
3:A:227:A:O2'	3:A:228:C:O5'	2.02	0.74
3:A:2576:G:O2'	3:A:2579:C:OP2	2.04	0.74
3:A:2009:A:O2'	3:A:2010:G:O4'	2.01	0.74
3:A:1359:A:OP2	3:A:1371:G:N2	2.21	0.73
20:X:4:CYS:HG	20:X:7:THR:HG1	1.35	0.73
3:A:322:A:OP1	6:E:162:ARG:NE	2.21	0.73
1:2:16:HIS:NE2	3:A:464:U:O2	2.21	0.73
3:A:1024:G:OP2	3:A:1025:G:O2'	2.03	0.72
3:A:18:U:O2'	3:A:554:U:OP1	2.07	0.72
3:A:1272:A:N6	3:A:1619:G:OP2	2.24	0.71
8:G:100:ASN:ND2	8:G:115:GLN:OE1	2.24	0.71
10:J:88:THR:OG1	10:J:91:GLU:OE1	2.09	0.71
3:A:2581:G:N2	3:A:2581:G:OP2	2.23	0.71
11:L:55:MET:O	11:L:60:ARG:NH1	2.23	0.71
3:A:931:U:O2	3:A:1167:C:O2'	2.08	0.71
10:J:46:PRO:HD3	14:Q:59:LEU:HD11	1.74	0.70
3:A:2077:A:N3	3:A:2434:A:O2'	2.24	0.70
12:N:95:THR:HB	12:N:113:ILE:HD11	1.72	0.70
18:V:48:MET:SD	18:V:51:GLN:NE2	2.64	0.70
2:4:7:VAL:O	3:A:1031:G:O2'	2.08	0.70
3:A:575:A:OP2	3:A:2499:C:O2'	2.10	0.70
6:E:122:GLU:N	6:E:122:GLU:OE1	2.25	0.69
3:A:76:C:OP1	21:Y:48:ARG:NH1	2.25	0.69
3:A:2043:C:OP1	3:A:2777:G:O2'	2.07	0.69
3:A:550:C:N4	3:A:551:G:O6	2.25	0.69
3:A:572:A:OP2	15:R:80:ARG:NH1	2.25	0.69
3:A:2032:G:OP2	3:A:2454:G:O2'	2.11	0.69
7:F:117:SER:O	7:F:127:TYR:OH	2.09	0.69
11:L:95:LEU:HD23	11:L:101:ILE:HD13	1.75	0.69
3:A:464:U:O4	3:A:684:G:O2'	2.11	0.68
3:A:2326:C:HO2'	3:A:2327:A:P	2.17	0.68
8:G:41:GLU:OE2	8:G:54:ARG:NH2	2.26	0.68
3:A:612:G:N2	3:A:614:A:HO2'	1.91	0.68
3:A:1125:G:OP2	3:A:1126:A:O2'	2.08	0.68
22:Z:4:ILE:HD11	22:Z:56:VAL:CG2	2.22	0.68
1:2:29:GLN:NE2	3:A:210:C:OP1	2.26	0.68
3:A:372:G:O2'	3:A:373:U:O5'	2.12	0.68
3:A:961:C:O2	3:A:2031:A:N6	2.26	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:475:C:O2	3:A:479:A:N6	2.27	0.67
18:V:45:ASP:OD1	18:V:46:LYS:N	2.27	0.67
7:F:89:THR:OG1	7:F:91:ARG:NH2	2.27	0.67
8:G:98:LYS:NZ	8:G:103:ASN:OD1	2.27	0.67
2:4:38:GLY:O	3:A:1031:G:N2	2.27	0.67
3:A:48:G:N2	3:A:177:G:OP1	2.22	0.67
16:T:48:GLN:NE2	16:T:53:VAL:O	2.27	0.67
13:O:60:GLU:OE1	13:O:60:GLU:N	2.26	0.67
3:A:612:G:N2	3:A:614:A:O2'	2.27	0.67
3:A:1638:C:OP1	3:A:2710:C:O2'	2.13	0.67
3:A:2017:U:O2'	3:A:2019:A:OP2	2.10	0.67
3:A:2144:G:O2'	3:A:2147:A:N1	2.27	0.67
3:A:227:A:HO2'	3:A:228:C:P	2.18	0.67
3:A:631:A:N3	3:A:2415:G:O2'	2.27	0.67
3:A:1415:U:O2	3:A:1587:G:N2	2.28	0.67
18:V:64:VAL:HG22	18:V:69:GLU:OE1	1.93	0.67
3:A:659:G:O3'	6:E:94:GLN:NE2	2.27	0.67
4:B:9:G:OP2	13:O:15:ARG:NH2	2.28	0.67
3:A:248:G:O2'	3:A:2432:A:OP1	2.09	0.67
3:A:1343:G:OP1	16:T:40:LYS:NZ	2.28	0.67
3:A:2085:U:OP1	23:C:122:ARG:NH1	2.28	0.67
3:A:453:A:N3	3:A:457:A:O2'	2.28	0.66
3:A:224:U:OP2	3:A:408:G:N2	2.27	0.66
3:A:1341:G:OP1	3:A:1602:U:O2'	2.10	0.66
3:A:627:A:O4'	3:A:637:A:N6	2.29	0.66
3:A:2469:A:N6	3:A:2481:G:O2'	2.28	0.66
3:A:2564:A:O2'	3:A:2565:A:O4'	2.10	0.66
3:A:1184:U:OP2	22:Z:30:ARG:NH2	2.28	0.66
3:A:1319:C:O2'	3:A:1320:C:OP1	2.12	0.66
3:A:1651:G:O5'	3:A:2006:C:N4	2.29	0.66
4:B:42:C:H5	7:F:65:LEU:HD13	1.61	0.66
3:A:605:G:OP1	6:E:99:LYS:NZ	2.29	0.65
3:A:1245:G:OP1	11:L:13:LYS:NZ	2.29	0.65
3:A:2090:A:N6	3:A:2230:G:O6	2.29	0.65
4:B:75:G:HO2'	18:V:88:HIS:CE1	2.12	0.65
15:R:23:GLU:OE2	15:R:91:GLN:NE2	2.29	0.65
3:A:191:A:O2'	3:A:678:C:O2	2.13	0.65
3:A:2091:C:OP2	3:A:2092:U:O2'	2.08	0.65
4:B:37:C:O2	13:O:100:HIS:NE2	2.28	0.65
13:O:2:ASP:OD1	13:O:3:LYS:N	2.29	0.65
3:A:2822:G:OP1	5:D:164:GLN:NE2	2.30	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2751:G:N2	3:A:2751:G:OP1	2.26	0.65
7:F:23:SER:OG	7:F:25:MET:SD	2.54	0.65
3:A:1413:A:O2'	3:A:1414:C:O4'	2.13	0.64
3:A:1390:U:O2	3:A:1395:A:N7	2.30	0.64
3:A:2084:C:O2'	23:C:119:GLU:OE2	2.14	0.64
3:A:2050:C:N3	3:A:2618:G:N1	2.45	0.64
7:F:50:ASP:OD1	7:F:51:ASN:N	2.30	0.64
14:Q:88:GLU:N	14:Q:88:GLU:OE1	2.31	0.64
3:A:2851:A:O2'	12:N:64:ARG:NH1	2.31	0.64
3:A:1024:G:O2'	3:A:1144:A:O2'	2.16	0.64
11:L:93:ASN:O	11:L:94:THR:OG1	2.09	0.64
3:A:2659:G:N2	3:A:2662:A:OP2	2.31	0.64
12:N:8:ARG:N	12:N:43:GLU:OE2	2.29	0.64
3:A:994:C:OP1	14:Q:52:ARG:NH2	2.30	0.63
3:A:783:A:O2'	3:A:2589:A:OP1	2.14	0.63
3:A:2291:U:O2'	3:A:2374:C:O2	2.16	0.63
3:A:301:G:OP2	17:U:81:ARG:NH2	2.32	0.63
3:A:2199:A:OP1	20:X:36:ARG:NH2	2.31	0.63
10:J:109:LEU:HD13	10:J:118:MET:HG3	1.81	0.63
3:A:569:U:O2'	3:A:971:G:N2	2.31	0.62
22:Z:4:ILE:HD11	22:Z:56:VAL:HG23	1.81	0.62
3:A:1319:C:HO2'	3:A:1320:C:P	2.21	0.62
3:A:2633:G:N2	3:A:2786:U:O2	2.32	0.62
10:J:91:GLU:OE1	10:J:91:GLU:N	2.31	0.62
3:A:1007:C:OP1	10:J:39:LYS:NZ	2.32	0.62
3:A:1650:A:O2'	3:A:1652:A:OP1	2.14	0.62
4:B:77:U:OP1	18:V:21:ARG:NH1	2.32	0.62
17:U:9:GLU:OE1	17:U:9:GLU:N	2.33	0.62
3:A:1651:G:N2	3:A:2006:C:OP2	2.31	0.62
11:L:27:LEU:HD23	11:L:27:LEU:H	1.64	0.62
3:A:1451:C:O2'	3:A:1452:G:O4'	2.17	0.62
3:A:1277:G:O2'	12:N:24:MET:SD	2.56	0.62
3:A:1270:C:O2	3:A:2010:G:N1	2.32	0.62
3:A:1422:G:O2'	3:A:1492:G:N2	2.32	0.62
3:A:97:C:O2	3:A:103:A:O2'	2.17	0.61
3:A:2446:G:N2	3:A:2449:U:O2	2.30	0.61
6:E:111:GLU:OE2	6:E:115:GLN:NE2	2.32	0.61
3:A:788:A:OP1	3:A:791:C:N4	2.33	0.61
3:A:844:A:N1	3:A:845:A:N6	2.48	0.61
3:A:448:U:O4'	6:E:79:ARG:NE	2.31	0.61
3:A:704:G:O2'	3:A:726:G:N2	2.33	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:1209:U:O2'	3:A:1237:A:N1	2.25	0.61
1:2:34:ARG:NH2	1:2:41:ARG:O	2.34	0.61
3:A:399:U:OP2	20:X:56:ARG:NH1	2.34	0.61
3:A:2479:U:OP1	3:A:2537:U:O2'	2.15	0.61
3:A:2551:C:N4	3:A:2552:U:O4	2.33	0.61
3:A:2723:C:OP1	5:D:114:LYS:NZ	2.28	0.61
3:A:203:A:OP2	3:A:204:A:O2'	2.14	0.60
4:B:27:C:OP1	13:O:34:HIS:NE2	2.34	0.60
6:E:117:ARG:NH2	6:E:183:PHE:O	2.34	0.60
20:X:58:ILE:HD11	20:X:63:ILE:CD1	2.32	0.60
17:U:80:ASP:OD1	17:U:81:ARG:N	2.33	0.60
5:D:26:VAL:CG1	5:D:186:LEU:HD12	2.30	0.60
7:F:35:LEU:HG	7:F:56:LEU:HD11	1.82	0.60
3:A:1062:G:O2'	3:A:1063:G:O4'	2.11	0.60
5:D:33:ARG:HG3	5:D:73:VAL:HG13	1.83	0.60
3:A:1652:A:OP2	12:N:107:ASN:ND2	2.34	0.60
3:A:69:C:O2	3:A:73:A:O2'	2.18	0.60
15:R:58:VAL:N	15:R:102:SER:OG	2.35	0.60
7:F:133:GLU:HG2	7:F:135:ILE:HG22	1.84	0.60
3:A:68:G:N2	3:A:74:A:O4'	2.35	0.59
3:A:532:A:OP1	3:A:561:G:N2	2.33	0.59
3:A:1414:C:HO2'	3:A:1415:U:C4'	2.15	0.59
10:J:135:GLN:N	10:J:135:GLN:OE1	2.36	0.59
3:A:152:A:N6	3:A:175:G:O6	2.36	0.59
3:A:1339:G:OP1	16:T:82:LYS:NZ	2.36	0.59
7:F:93:GLU:OE1	7:F:93:GLU:N	2.35	0.59
3:A:442:G:N2	6:E:43:THR:O	2.33	0.59
3:A:249:C:O2'	11:L:63:LYS:NZ	2.24	0.59
3:A:998:C:OP2	14:Q:57:ARG:NH2	2.36	0.59
3:A:1271:G:N2	3:A:1615:C:H42	2.01	0.59
3:A:1651:G:H22	3:A:2006:C:P	2.26	0.58
5:D:25:THR:HG21	5:D:193:VAL:HG22	1.83	0.58
3:A:30:G:OP2	14:Q:4:LYS:NZ	2.27	0.58
3:A:160:A:N3	3:A:2208:C:O2'	2.34	0.58
3:A:644:A:O2'	3:A:645:C:O5'	2.20	0.58
3:A:2341:G:N2	3:A:2374:C:O3'	2.35	0.58
7:F:134:GLN:N	7:F:134:GLN:OE1	2.37	0.58
13:O:116:GLN:N	13:O:116:GLN:OE1	2.36	0.58
6:E:46:GLN:N	6:E:46:GLN:OE1	2.37	0.58
3:A:621:A:OP2	11:L:99:ASN:ND2	2.37	0.58
3:A:1589:U:O4	3:A:1590:A:N6	2.37	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:918:A:N3	4:B:80:U:O2'	2.36	0.58
3:A:2007:U:O2'	3:A:2009:A:OP2	2.17	0.58
3:A:2399:G:O6	3:A:2418:A:N6	2.35	0.58
3:A:587:C:O2	11:L:33:ARG:NH2	2.36	0.58
12:N:96:ARG:O	12:N:113:ILE:HD12	2.04	0.58
3:A:603:A:N6	3:A:655:A:O4'	2.37	0.57
3:A:2375:G:O2'	3:A:2377:A:N6	2.37	0.57
20:X:1:SER:O	20:X:49:ARG:NH2	2.37	0.57
3:A:224:U:O4	3:A:232:G:N2	2.36	0.57
3:A:324:A:N6	3:A:339:U:O4'	2.37	0.57
3:A:2015:A:O2'	3:A:2057:G:O2'	2.06	0.57
16:T:28:ASN:ND2	16:T:88:LYS:O	2.37	0.57
3:A:2595:G:N1	3:A:2598:A:OP2	2.38	0.57
12:N:82:GLU:HG2	12:N:83:LEU:HD22	1.86	0.57
3:A:1040:A:N1	3:A:1115:G:O6	2.37	0.57
4:B:15:A:OP2	4:B:69:G:N2	2.37	0.57
3:A:2375:G:N2	3:A:2378:A:OP2	2.38	0.57
5:D:88:GLU:N	5:D:88:GLU:OE1	2.37	0.57
11:L:19:LEU:HD23	11:L:27:LEU:HD12	1.87	0.57
23:C:140:TRP:NE1	23:C:182:GLU:OE1	2.37	0.57
3:A:526:A:O2'	3:A:2043:C:O2	2.22	0.57
3:A:2066:C:N4	3:A:2067:G:O6	2.38	0.57
3:A:548:G:O2'	3:A:549:G:O5'	2.21	0.56
23:C:52:ASN:OD1	23:C:53:ALA:N	2.38	0.56
3:A:2279:G:N7	19:W:10:ARG:NH2	2.52	0.56
3:A:2692:G:N3	3:A:2847:U:O2'	2.34	0.56
13:O:31:THR:OG1	13:O:33:ARG:O	2.22	0.56
3:A:685:A:O2'	3:A:773:U:O4	2.17	0.56
3:A:1271:G:H22	3:A:1615:C:N4	2.04	0.56
11:L:93:ASN:OD1	11:L:94:THR:N	2.38	0.56
1:2:43:THR:OG1	3:A:126:A:N6	2.39	0.56
4:B:38:C:O4'	13:O:100:HIS:NE2	2.39	0.56
3:A:2133:G:N2	3:A:2157:G:O6	2.39	0.56
4:B:42:C:C5	7:F:65:LEU:HD13	2.40	0.55
6:E:171:ASP:OD1	6:E:172:ALA:N	2.39	0.55
3:A:1515:A:O2'	3:A:1556:C:O2	2.23	0.55
5:D:3:GLY:C	5:D:4:LEU:HD12	2.27	0.55
3:A:534:U:O2'	14:Q:48:ASP:OD2	2.17	0.55
3:A:864:G:O2'	3:A:914:G:O6	2.23	0.55
7:F:30:VAL:HG22	7:F:157:THR:HG22	1.88	0.55
8:G:87:GLN:OE1	8:G:87:GLN:N	2.40	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:644:A:O2'	3:A:645:C:O4'	2.23	0.55
6:E:144:GLU:N	6:E:144:GLU:OE1	2.40	0.55
3:A:813:U:HO2'	3:A:1225:G:HO2'	1.53	0.55
3:A:371:A:N6	3:A:402:A:OP2	2.38	0.55
3:A:727:A:O2'	3:A:728:G:O4'	2.20	0.55
6:E:176:ASP:OD1	6:E:179:SER:OG	2.15	0.55
3:A:271:G:O2'	3:A:272:A:OP2	2.22	0.55
3:A:673:C:P	3:A:801:G:H21	2.29	0.55
7:F:62:GLN:OE1	7:F:62:GLN:N	2.40	0.55
3:A:2049:G:N1	3:A:2619:C:N3	2.44	0.54
7:F:134:GLN:NE2	7:F:149:ARG:O	2.40	0.54
3:A:1352:U:O2'	3:A:1570:A:N3	2.39	0.54
6:E:1:MET:SD	6:E:1:MET:N	2.79	0.54
9:H:7:ASP:OD1	9:H:8:LYS:N	2.39	0.54
3:A:698:C:O3'	3:A:734:A:N6	2.41	0.54
3:A:987:C:O2'	3:A:1000:A:N3	2.34	0.54
4:B:76:G:OP2	18:V:12:GLN:NE2	2.39	0.54
3:A:465:G:O6	3:A:788:A:O2'	2.23	0.54
3:A:549:G:HO2'	3:A:550:C:P	2.31	0.54
3:A:2523:G:O2'	3:A:2764:A:O2'	2.12	0.54
3:A:549:G:O2'	3:A:550:C:OP1	2.26	0.54
3:A:2857:G:N2	3:A:2860:A:OP2	2.36	0.54
8:G:51:PHE:CZ	8:G:71:LEU:HD22	2.43	0.53
3:A:684:G:N2	3:A:788:A:OP2	2.38	0.53
3:A:1432:G:H2'	3:A:1433:A:C8	2.43	0.53
3:A:2640:G:OP1	10:J:96:ARG:NH1	2.42	0.53
8:G:132:LEU:H	8:G:132:LEU:HD23	1.74	0.53
10:J:37:ARG:NH1	10:J:44:TYR:OH	2.41	0.53
20:X:4:CYS:SG	20:X:7:THR:OG1	2.53	0.53
3:A:2821:A:OP2	5:D:115:GLY:N	2.40	0.53
14:Q:48:ASP:OD1	14:Q:49:ARG:N	2.42	0.53
12:N:69:ARG:O	12:N:70:THR:OG1	2.19	0.53
3:A:299:A:N3	3:A:319:G:O2'	2.25	0.53
3:A:659:G:O2'	6:E:94:GLN:NE2	2.41	0.53
3:A:810:U:O4	11:L:30:THR:HG22	2.08	0.53
3:A:2092:U:OP2	9:H:28:ASN:ND2	2.39	0.53
18:V:62:THR:OG1	18:V:69:GLU:OE2	2.19	0.53
3:A:1358:G:O2'	3:A:1359:A:O5'	2.25	0.53
7:F:143:ASP:OD1	7:F:144:LYS:N	2.42	0.53
3:A:2076:U:OP2	3:A:2238:G:N2	2.40	0.52
3:A:1596:A:H2'	3:A:1597:A:H5'	1.92	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2705:A:O2'	3:A:2852:G:OP1	2.25	0.52
3:A:289:G:O6	3:A:352:A:N6	2.42	0.52
3:A:308:G:O2'	3:A:329:G:N2	2.43	0.52
3:A:1021:A:N6	3:A:1142:A:H61	2.08	0.52
15:R:15:SER:OG	15:R:18:GLN:NE2	2.43	0.52
17:U:71:ILE:HD12	17:U:82:VAL:HG21	1.91	0.52
19:W:7:ARG:O	19:W:10:ARG:NH1	2.42	0.52
19:W:14:ALA:O	19:W:16:ARG:NH1	2.39	0.52
3:A:728:G:OP1	3:A:762:U:O2'	2.28	0.52
3:A:1329:U:OP2	3:A:1330:C:N4	2.42	0.52
3:A:584:C:N4	3:A:585:G:O6	2.43	0.52
3:A:1271:G:H22	3:A:1615:C:H42	1.56	0.52
2:4:36:ARG:NH2	3:A:2741:A:O3'	2.43	0.52
3:A:1454:C:N4	12:N:73:ASN:OD1	2.43	0.51
10:J:40:HIS:O	14:Q:70:GLN:NE2	2.43	0.51
10:J:114:LEU:HD12	10:J:114:LEU:H	1.75	0.51
3:A:2874:C:OP1	12:N:4:ARG:NH2	2.43	0.51
15:R:49:ILE:HG21	15:R:54:VAL:HG12	1.92	0.51
3:A:274:C:H2'	3:A:275:C:C1'	2.39	0.51
3:A:1534:U:O2'	3:A:1535:A:OP1	2.20	0.51
5:D:200:ASP:C	5:D:201:LEU:HD12	2.30	0.51
15:R:38:VAL:O	15:R:54:VAL:HG13	2.11	0.51
16:T:32:LEU:HD12	16:T:32:LEU:O	2.10	0.51
3:A:373:U:O4	3:A:401:A:N7	2.44	0.51
3:A:1656:C:N4	3:A:1657:U:O4	2.43	0.51
3:A:1028:A:OP2	3:A:1126:A:N6	2.44	0.51
3:A:2303:G:O2'	7:F:120:SER:OG	2.29	0.51
3:A:2743:U:O2'	8:G:152:ARG:NH2	2.44	0.51
21:Y:16:THR:O	21:Y:20:ASN:ND2	2.41	0.51
23:C:76:GLU:OE2	23:C:79:ARG:NH2	2.44	0.51
3:A:1244:A:N6	3:A:1245:G:O6	2.44	0.51
3:A:2106:U:H1'	3:A:2184:A:H61	1.76	0.51
3:A:320:A:N7	6:E:132:LYS:NZ	2.59	0.51
3:A:2317:A:H2'	3:A:2318:G:O4'	2.11	0.51
4:B:52:A:O2'	4:B:53:A:P	2.68	0.51
13:O:53:THR:HG23	13:O:74:VAL:CG2	2.40	0.51
3:A:245:G:O2'	3:A:384:A:N1	2.42	0.51
3:A:776:G:N1	3:A:2072:C:OP1	2.40	0.51
3:A:1303:G:O6	3:A:1304:A:N6	2.44	0.51
7:F:35:LEU:HD12	7:F:36:ASN:N	2.26	0.51
18:V:26:PHE:HZ	18:V:47:VAL:HG11	1.76	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:68:G:N2	3:A:74:A:O5'	2.44	0.51
3:A:144:A:H4'	16:T:2:ILE:HD11	1.93	0.51
3:A:673:C:OP1	3:A:801:G:N2	2.39	0.51
3:A:1012:U:O2	10:J:27:ARG:NH1	2.44	0.51
3:A:2299:U:O4	3:A:2318:G:N2	2.44	0.51
3:A:2707:U:O2	12:N:71:ARG:NH1	2.44	0.51
3:A:1016:G:O6	3:A:1147:A:N6	2.44	0.50
4:B:75:G:HO2'	18:V:88:HIS:CD2	2.25	0.50
6:E:25:GLU:OE1	6:E:25:GLU:N	2.40	0.50
8:G:123:GLU:O	8:G:130:ILE:HD12	2.11	0.50
17:U:33:VAL:HG13	17:U:66:VAL:HG22	1.93	0.50
3:A:807:U:O2'	3:A:2060:A:N1	2.35	0.50
10:J:41:LYS:NZ	10:J:52:ASP:OD1	2.25	0.50
18:V:29:ILE:HD12	18:V:38:LEU:O	2.11	0.50
3:A:1084:A:N6	3:A:1085:A:N1	2.59	0.50
15:R:100:GLY:O	15:R:101:ILE:HD13	2.11	0.50
3:A:1413:A:H2'	3:A:1414:C:C6	2.47	0.50
6:E:140:ASP:OD1	6:E:141:MET:N	2.43	0.50
8:G:85:LYS:C	8:G:86:LEU:HD12	2.32	0.50
3:A:1205:A:O2'	3:A:1206:G:OP1	2.29	0.50
3:A:2572:A:OP1	3:A:2574:G:O2'	2.21	0.50
12:N:57:THR:HG23	12:N:62:ASN:ND2	2.27	0.50
16:T:51:PHE:O	16:T:53:VAL:HG13	2.11	0.50
3:A:6:A:N3	10:J:135:GLN:NE2	2.60	0.50
3:A:141:G:N2	3:A:142:A:N3	2.60	0.50
3:A:1266:G:N2	3:A:2012:G:HO2'	2.10	0.50
3:A:1992:G:N1	3:A:1995:U:O4	2.45	0.50
3:A:2063:C:N4	3:A:2501:C:O2	2.45	0.50
8:G:122:ALA:HB1	8:G:130:ILE:HD11	1.93	0.50
22:Z:57:GLU:N	22:Z:57:GLU:OE1	2.44	0.50
3:A:591:U:O4	3:A:592:A:N6	2.43	0.49
3:A:728:G:O2'	3:A:730:A:O4'	2.30	0.49
3:A:2497:A:N3	3:A:2498:C:N4	2.57	0.49
4:B:49:C:OP2	13:O:30:ARG:NH1	2.46	0.49
6:E:148:ILE:HB	6:E:169:VAL:HG22	1.93	0.49
18:V:35:GLU:N	18:V:35:GLU:OE1	2.45	0.49
6:E:3:LEU:HD13	6:E:120:VAL:HG21	1.94	0.49
7:F:3:LEU:HD22	7:F:100:GLU:HG2	1.93	0.49
3:A:434:U:O2	3:A:435:C:N4	2.41	0.49
3:A:549:G:O2'	3:A:550:C:P	2.70	0.49
3:A:1512:C:H2'	3:A:1513:U:N1	2.27	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:T:18:GLU:OE1	16:T:18:GLU:N	2.41	0.49
3:A:1386:C:H2'	3:A:1387:A:C8	2.47	0.49
3:A:2553:G:O2'	3:A:2582:G:N3	2.41	0.49
3:A:554:U:H2'	3:A:555:G:O4'	2.13	0.49
3:A:1020:A:H4'	3:A:1021:A:O5'	2.12	0.49
3:A:1402:U:O2'	3:A:1470:A:N1	2.29	0.49
3:A:2200:C:O2'	3:A:2227:A:N1	2.42	0.49
4:B:3:C:H3'	4:B:4:C:H5"	1.94	0.49
3:A:231:A:H2'	3:A:232:G:O4'	2.12	0.49
3:A:640:C:N4	3:A:641:U:O4	2.45	0.49
11:L:112:LEU:HD22	11:L:130:GLY:HA3	1.95	0.49
4:B:78:A:H62	4:B:98:G:H21	1.61	0.49
3:A:2647:U:O2	3:A:2673:G:O6	2.31	0.48
4:B:42:C:C5	7:F:65:LEU:HD22	2.48	0.48
5:D:40:LEU:HD13	5:D:44:GLY:O	2.12	0.48
7:F:32:LYS:C	7:F:33:ILE:HD12	2.33	0.48
3:A:300:A:O5'	17:U:81:ARG:NH2	2.46	0.48
3:A:307:G:N1	3:A:309:A:O5'	2.46	0.48
12:N:97:ILE:CD1	12:N:113:ILE:HD13	2.43	0.48
3:A:1324:G:O2'	3:A:1328:A:N6	2.46	0.48
3:A:997:G:OP2	14:Q:57:ARG:NH1	2.45	0.48
3:A:1441:G:H2'	3:A:1442:U:C6	2.48	0.48
12:N:19:ALA:O	12:N:23:ASN:ND2	2.42	0.48
22:Z:4:ILE:HD12	22:Z:58:GLU:OE2	2.13	0.48
3:A:107:G:O3'	3:A:293:U:O2'	2.26	0.48
3:A:1129:A:O2'	3:A:2515:C:O2	2.26	0.48
3:A:1448:G:H2'	3:A:1449:G:O4'	2.14	0.48
3:A:1608:A:N7	3:A:1621:U:O2	2.46	0.48
4:B:42:C:N3	7:F:89:THR:HG22	2.28	0.48
6:E:7:ASP:OD1	6:E:8:ALA:N	2.46	0.48
3:A:1170:C:N4	3:A:1171:G:O6	2.47	0.48
3:A:1386:C:H2'	3:A:1387:A:H8	1.79	0.48
3:A:1266:G:N2	3:A:2012:G:O2'	2.47	0.48
3:A:1466:U:O2'	3:A:1546:G:O2'	1.93	0.48
15:R:63:VAL:HA	15:R:96:VAL:HG12	1.94	0.48
18:V:7:GLU:N	18:V:7:GLU:OE1	2.47	0.48
3:A:391:A:O2'	3:A:410:G:OP1	2.32	0.48
3:A:956:G:O2'	3:A:960:A:N6	2.47	0.48
3:A:1435:G:H2'	3:A:1436:G:C8	2.49	0.48
6:E:191:ASP:OD1	6:E:192:ALA:N	2.46	0.48
13:O:43:ASN:OD1	13:O:44:GLY:N	2.47	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:749:A:H5'	3:A:1615:C:H41	1.79	0.47
3:A:1449:G:H3'	3:A:1450:G:O4'	2.14	0.47
5:D:26:VAL:HG12	5:D:186:LEU:HD12	1.97	0.47
6:E:161:ALA:CB	6:E:169:VAL:HG23	2.43	0.47
18:V:61:LEU:HD12	18:V:61:LEU:N	2.30	0.47
3:A:2243:U:O2'	3:A:2434:A:N1	2.38	0.47
3:A:2468:A:OP2	3:A:2476:A:N6	2.41	0.47
5:D:33:ARG:NH2	5:D:74:GLU:OE1	2.48	0.47
8:G:51:PHE:CE2	8:G:71:LEU:HD22	2.48	0.47
22:Z:18:LYS:O	22:Z:22:THR:HG23	2.14	0.47
3:A:415:A:N6	3:A:2409:G:O6	2.48	0.47
3:A:850:U:O2'	22:Z:22:THR:HG22	2.14	0.47
3:A:2079:U:O2'	20:X:22:ASN:ND2	2.47	0.47
6:E:189:THR:OG1	6:E:191:ASP:OD1	2.18	0.47
7:F:102:LEU:HD12	7:F:106:ALA:CB	2.45	0.47
22:Z:4:ILE:HD11	22:Z:56:VAL:HG21	1.96	0.47
3:A:36:G:N3	3:A:450:G:O2'	2.48	0.47
3:A:1113:U:C2	3:A:1114:C:C5	3.03	0.47
3:A:1217:U:OP2	14:Q:14:LYS:NZ	2.35	0.47
3:A:2047:C:O2'	3:A:2823:A:N1	2.46	0.47
3:A:2085:U:O2	3:A:2234:G:C6	2.67	0.47
6:E:31:VAL:HG21	6:E:104:ALA:HB2	1.96	0.47
12:N:72:ASP:O	12:N:76:VAL:HG23	2.14	0.47
3:A:575:A:OP2	3:A:2055:C:N4	2.46	0.47
3:A:699:A:H2	3:A:1633:G:HO2'	1.63	0.47
3:A:1131:G:O6	3:A:2024:G:O2'	2.26	0.47
3:A:1434:A:H2'	3:A:1435:G:C8	2.50	0.47
3:A:1588:G:H2'	3:A:1589:U:C6	2.49	0.47
6:E:154:ASP:OD1	6:E:154:ASP:N	2.48	0.47
8:G:55:ASP:OD1	8:G:56:GLY:N	2.48	0.47
18:V:38:LEU:HD23	18:V:39:ALA:N	2.30	0.47
23:C:162:ASN:O	23:C:162:ASN:ND2	2.47	0.47
15:R:11:GLN:N	15:R:11:GLN:OE1	2.48	0.47
3:A:2375:G:N1	3:A:2379:G:O6	2.48	0.47
4:B:39:A:H2'	4:B:40:U:C6	2.49	0.47
11:L:85:VAL:HG13	11:L:98:ALA:HB2	1.97	0.47
3:A:1019:U:OP1	3:A:1035:U:O2'	2.21	0.47
16:T:69:ARG:HG2	16:T:74:ILE:HG22	1.97	0.46
22:Z:19:HIS:O	22:Z:23:LEU:HD23	2.15	0.46
3:A:357:C:C2	3:A:358:U:C5	3.03	0.46
3:A:567:U:OP1	11:L:35:HIS:NE2	2.48	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:600:G:H1'	6:E:100:MET:HE3	1.97	0.46
4:B:116:G:H4'	13:O:54:VAL:HG12	1.97	0.46
3:A:90:U:OP2	3:A:91:A:O2'	2.27	0.46
3:A:1345:C:N4	3:A:1346:G:O6	2.48	0.46
19:W:32:ILE:N	19:W:32:ILE:HD12	2.30	0.46
3:A:549:G:C2'	3:A:550:C:O5'	2.64	0.46
3:A:1422:G:HO2'	3:A:1492:G:N2	2.14	0.46
3:A:2127:G:O2'	3:A:2128:G:O4'	2.33	0.46
3:A:2587:A:OP2	3:A:2608:G:N2	2.48	0.46
3:A:224:U:H2'	3:A:225:C:O4'	2.15	0.46
3:A:1360:G:C8	3:A:1361:G:C8	3.04	0.46
3:A:1510:G:H2'	3:A:1511:G:C8	2.50	0.46
5:D:27:ILE:N	5:D:27:ILE:HD12	2.31	0.46
3:A:451:U:C4	3:A:453:A:C8	3.03	0.46
3:A:1058:U:H2'	3:A:1059:G:C4	2.51	0.46
9:H:5:LEU:HD21	9:H:9:VAL:HG23	1.96	0.46
2:4:2:LYS:NZ	2:4:32:LYS:O	2.47	0.46
3:A:1344:U:H3'	3:A:1345:C:H5'	1.98	0.46
11:L:17:LYS:CE	11:L:27:LEU:HD13	2.46	0.46
3:A:739:A:N3	3:A:740:C:N4	2.64	0.46
3:A:1551:A:H2'	3:A:1552:A:O4'	2.16	0.46
10:J:50:THR:O	10:J:50:THR:HG22	2.15	0.46
3:A:2679:A:H5'	5:D:170:VAL:HG21	1.98	0.45
8:G:143:VAL:O	8:G:147:LEU:HD23	2.16	0.45
3:A:1263:U:H2'	3:A:1264:A:N9	2.31	0.45
3:A:2848:G:O2'	3:A:2868:A:N6	2.46	0.45
6:E:79:ARG:O	6:E:80:SER:OG	2.32	0.45
23:C:93:ASP:OD1	23:C:94:VAL:N	2.49	0.45
3:A:557:C:O2'	10:J:114:LEU:HD11	2.17	0.45
3:A:1278:C:O3'	12:N:34:ILE:HD11	2.16	0.45
3:A:1524:G:H2'	3:A:1525:A:C8	2.51	0.45
7:F:35:LEU:HD13	7:F:153:ILE:HD13	1.97	0.45
14:Q:75:TYR:OH	14:Q:91:ARG:NH1	2.48	0.45
19:W:79:GLU:OE1	19:W:79:GLU:N	2.49	0.45
3:A:573:U:O4	3:A:2029:G:O2'	2.20	0.45
3:A:1269:A:H2'	3:A:1270:C:O4'	2.16	0.45
4:B:29:A:O2'	4:B:58:A:N1	2.49	0.45
3:A:2345:G:O2'	3:A:2381:A:N3	2.38	0.45
12:N:79:LEU:HD13	12:N:83:LEU:HB2	1.99	0.45
19:W:60:ASP:OD1	19:W:61:GLY:N	2.49	0.45
3:A:240:C:OP2	3:A:241:A:O2'	2.20	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:543:G:O6	3:A:551:G:O6	2.34	0.45
3:A:820:A:OP2	3:A:973:A:N6	2.42	0.45
2:4:4:ARG:NH2	3:A:2477:U:O2	2.43	0.45
7:F:39:VAL:HG11	7:F:149:ARG:HH21	1.82	0.45
9:H:27:ARG:NE	20:X:55:MET:SD	2.90	0.45
3:A:500:G:O2'	3:A:505:A:N6	2.50	0.45
3:A:1000:A:OP2	3:A:1154:G:N1	2.43	0.45
3:A:1351:C:H2'	3:A:1352:U:O4'	2.16	0.45
3:A:2106:U:N3	3:A:2107:G:N7	2.64	0.45
6:E:146:VAL:HG21	6:E:187:VAL:HG13	1.99	0.45
3:A:219:A:N3	3:A:234:U:O2'	2.50	0.45
15:R:74:ILE:N	15:R:74:ILE:HD12	2.31	0.45
3:A:307:G:H22	3:A:309:A:H3'	1.82	0.45
3:A:1342:A:O2'	3:A:1345:C:N4	2.50	0.45
3:A:1484:U:H2'	3:A:1485:U:O4'	2.16	0.45
6:E:176:ASP:OD1	6:E:176:ASP:N	2.50	0.45
11:L:90:VAL:N	11:L:121:THR:O	2.46	0.45
3:A:471:A:OP1	6:E:79:ARG:NH1	2.47	0.44
23:C:121:LEU:HD21	23:C:136:VAL:HG22	1.99	0.44
3:A:960:A:N3	3:A:2495:G:N2	2.66	0.44
3:A:1413:A:C2'	3:A:1414:C:O4'	2.65	0.44
4:B:2:G:H2'	4:B:3:C:C6	2.52	0.44
3:A:1026:G:OP2	3:A:1134:A:O2'	2.11	0.44
5:D:183:GLU:OE1	5:D:183:GLU:N	2.43	0.44
3:A:543:G:H2'	3:A:544:C:C6	2.52	0.44
3:A:1542:U:H2'	3:A:1543:G:C8	2.53	0.44
3:A:81:G:O2'	3:A:295:G:O2'	2.33	0.44
3:A:1601:G:H2'	3:A:1602:U:O4'	2.17	0.44
4:B:23:G:O2'	4:B:24:G:O4'	2.35	0.44
4:B:30:C:H1'	4:B:57:A:H61	1.83	0.44
7:F:33:ILE:O	7:F:90:LEU:HD23	2.17	0.44
19:W:11:ASP:OD1	19:W:12:SER:N	2.51	0.44
21:Y:5:GLU:OE1	21:Y:5:GLU:N	2.47	0.44
3:A:548:G:C2'	3:A:549:G:O4'	2.65	0.44
3:A:1346:G:H2'	3:A:1347:A:O4'	2.17	0.44
3:A:2598:A:N3	3:A:2598:A:H2'	2.33	0.44
5:D:26:VAL:C	5:D:27:ILE:HD12	2.38	0.44
13:O:31:THR:O	13:O:102:ARG:NH2	2.49	0.44
3:A:49:A:N1	3:A:177:G:N2	2.66	0.44
3:A:320:A:H2'	6:E:131:THR:HG21	1.99	0.44
3:A:1443:U:C2	3:A:1444:G:C8	3.05	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:48:LEU:HD12	7:F:49:LEU:N	2.32	0.44
13:O:106:LEU:HD23	13:O:106:LEU:O	2.17	0.44
15:R:40:MET:SD	15:R:41:ILE:N	2.91	0.44
23:C:38:GLU:O	23:C:42:LEU:HD23	2.17	0.44
3:A:374:A:N6	3:A:400:G:O2'	2.51	0.44
3:A:1425:G:H2'	3:A:1426:G:O4'	2.18	0.44
3:A:2009:A:C2'	3:A:2010:G:O4'	2.66	0.44
3:A:51:G:HO2'	3:A:52:A:P	2.40	0.43
3:A:151:C:N4	3:A:152:A:H62	2.16	0.43
3:A:630:G:N2	3:A:633:A:OP2	2.43	0.43
3:A:1478:G:H2'	3:A:1479:G:C1'	2.48	0.43
5:D:188:LEU:HD12	5:D:188:LEU:N	2.33	0.43
7:F:118:ALA:O	7:F:166:ARG:NH1	2.48	0.43
8:G:18:ILE:HD12	8:G:23:ILE:HD12	2.00	0.43
14:Q:68:ALA:HB1	14:Q:73:ILE:HG23	1.99	0.43
15:R:98:ILE:HG21	15:R:101:ILE:HD11	2.00	0.43
20:X:58:ILE:HD11	20:X:63:ILE:HD13	1.98	0.43
3:A:2004:G:H2'	3:A:2005:A:O4'	2.18	0.43
4:B:77:U:O2	4:B:99:A:N7	2.51	0.43
6:E:118:LEU:HD23	6:E:119:ILE:N	2.33	0.43
7:F:139:GLU:OE1	7:F:139:GLU:N	2.45	0.43
10:J:32:LEU:HD23	10:J:54:ILE:HD13	2.00	0.43
12:N:115:LEU:HD12	12:N:115:LEU:H	1.83	0.43
3:A:1307:A:H2'	3:A:1308:A:O4'	2.17	0.43
3:A:1309:G:N2	3:A:1611:C:O4'	2.43	0.43
17:U:97:SER:O	17:U:98:ASN:OD1	2.36	0.43
3:A:84:A:N1	3:A:98:G:O2'	2.47	0.43
3:A:235:U:O4	3:A:263:G:N2	2.52	0.43
3:A:544:C:H2'	3:A:545:U:C2	2.53	0.43
3:A:1348:C:C2	3:A:1349:C:C6	3.07	0.43
3:A:1417:C:HO2'	3:A:1587:G:HO2'	1.64	0.43
17:U:27:VAL:HG12	17:U:33:VAL:HG12	2.00	0.43
3:A:672:C:OP2	11:L:42:SER:OG	2.32	0.43
3:A:1566:A:H2'	3:A:1566:A:N3	2.34	0.43
3:A:1591:A:H2'	3:A:1592:C:O4'	2.18	0.43
3:A:2015:A:HO2'	3:A:2057:G:C2'	2.21	0.43
3:A:2321:U:O2	3:A:2321:U:H2'	2.19	0.43
3:A:549:G:H2'	3:A:550:C:O4'	2.18	0.43
3:A:966:G:H4'	3:A:2271:G:H22	1.83	0.43
3:A:1349:C:C2	3:A:1350:C:C5	3.05	0.43
3:A:1494:A:N3	3:A:1494:A:H2'	2.34	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2089:C:N4	3:A:2090:A:H62	2.16	0.43
5:D:97:SER:OG	5:D:98:VAL:N	2.52	0.43
6:E:11:ALA:C	6:E:12:LEU:HD22	2.39	0.43
7:F:39:VAL:HG23	7:F:40:GLY:N	2.34	0.43
12:N:47:VAL:O	12:N:51:LEU:HD23	2.19	0.43
1:2:30:VAL:HG22	1:2:33:ARG:NH2	2.34	0.43
3:A:545:U:O4	3:A:548:G:O6	2.36	0.43
4:B:52:A:O2'	4:B:53:A:O5'	2.27	0.43
3:A:372:G:HO2'	3:A:373:U:P	2.42	0.43
12:N:29:VAL:HG11	12:N:75:ILE:HG23	2.00	0.43
10:J:9:GLU:OE1	10:J:9:GLU:N	2.46	0.43
3:A:170:U:C2	3:A:171:U:C5	3.07	0.42
14:Q:85:ALA:O	14:Q:86:SER:OG	2.25	0.42
15:R:75:VAL:HG22	15:R:86:GLN:OE1	2.19	0.42
3:A:1203:U:OP2	3:A:1204:A:O2'	2.07	0.42
3:A:1480:C:H2'	3:A:1481:U:O4'	2.19	0.42
3:A:2287:A:N6	3:A:2346:A:N7	2.68	0.42
14:Q:8:ILE:HD12	14:Q:8:ILE:H	1.84	0.42
18:V:35:GLU:OE2	18:V:93:ARG:NH1	2.53	0.42
19:W:66:GLU:N	19:W:66:GLU:OE1	2.52	0.42
23:C:125:LEU:HD22	23:C:152:ILE:HD11	2.00	0.42
3:A:1208:C:H2'	3:A:1209:U:O4'	2.19	0.42
3:A:1576:U:H2'	3:A:1577:C:C6	2.55	0.42
6:E:31:VAL:HG21	6:E:104:ALA:CB	2.48	0.42
7:F:165:GLY:O	7:F:169:LEU:HD13	2.19	0.42
10:J:12:LYS:NZ	10:J:14:ASP:OD1	2.50	0.42
11:L:92:LEU:O	11:L:92:LEU:HD23	2.20	0.42
3:A:465:G:H21	3:A:684:G:H1'	1.84	0.42
3:A:2028:U:O4	3:A:2033:A:N7	2.52	0.42
3:A:2074:U:O4'	3:A:2597:G:O2'	2.38	0.42
7:F:122:ASP:OD2	7:F:126:ASN:ND2	2.44	0.42
3:A:1245:G:H2'	3:A:1246:A:C8	2.55	0.42
3:A:1364:G:O2'	3:A:1367:A:N6	2.53	0.42
3:A:1504:A:N1	3:A:1505:A:N6	2.67	0.42
3:A:2125:G:N2	3:A:2170:A:O3'	2.48	0.42
7:F:66:ILE:N	7:F:66:ILE:HD12	2.33	0.42
3:A:2051:A:N3	3:A:2052:A:N6	2.67	0.42
4:B:73:A:N3	4:B:73:A:H2'	2.35	0.42
3:A:33:C:O2	3:A:447:A:N6	2.51	0.42
21:Y:24:GLU:O	21:Y:28:LEU:HD12	2.20	0.42
3:A:306:U:H2'	3:A:307:G:O4'	2.20	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:832:U:O2	3:A:833:A:C8	2.73	0.42
5:D:101:PHE:HA	5:D:104:VAL:HG12	2.01	0.42
11:L:29:LYS:O	11:L:30:THR:OG1	2.30	0.42
3:A:1358:G:N1	3:A:1372:U:OP2	2.45	0.42
12:N:79:LEU:O	12:N:80:PHE:HB2	2.19	0.42
3:A:1141:U:H4'	3:A:1142:A:O4'	2.19	0.42
3:A:1370:C:H2'	3:A:1371:G:O4'	2.20	0.42
3:A:1430:G:C4	3:A:1431:A:C8	3.08	0.42
3:A:2595:G:N2	3:A:2598:A:OP2	2.52	0.42
11:L:71:ALA:HA	11:L:74:THR:HG22	2.01	0.42
17:U:98:ASN:O	17:U:98:ASN:CG	2.58	0.42
3:A:2544:G:H4'	3:A:2645:G:P	2.59	0.41
7:F:133:GLU:CG	7:F:135:ILE:HG22	2.50	0.41
3:A:1346:G:N1	3:A:1601:G:C6	2.88	0.41
3:A:2468:A:O2'	3:A:2469:A:O4'	2.38	0.41
3:A:2831:G:N2	3:A:2884:U:OP2	2.53	0.41
16:T:4:GLU:CD	21:Y:18:LEU:HD13	2.41	0.41
23:C:38:GLU:OE1	23:C:41:ARG:NH2	2.53	0.41
3:A:1353:A:N7	3:A:1377:G:N2	2.68	0.41
3:A:1451:C:C2'	3:A:1452:G:OP2	2.69	0.41
3:A:1561:C:H2'	3:A:1562:U:O4'	2.20	0.41
3:A:2399:G:C6	3:A:2418:A:C6	3.08	0.41
7:F:48:LEU:O	7:F:51:ASN:ND2	2.53	0.41
14:Q:8:ILE:HD12	14:Q:8:ILE:N	2.35	0.41
15:R:23:GLU:OE1	15:R:24:LYS:N	2.50	0.41
3:A:1327:A:H2'	3:A:1328:A:O4'	2.21	0.41
3:A:1665:A:C2'	3:A:1666:G:O5'	2.69	0.41
17:U:85:ARG:NH2	17:U:101:THR:OG1	2.54	0.41
3:A:1021:A:H61	3:A:1142:A:H61	1.68	0.41
3:A:1385:A:H1'	3:A:1386:C:C6	2.55	0.41
3:A:1607:C:O4'	3:A:1621:U:N3	2.53	0.41
3:A:1998:A:H2'	3:A:1999:C:C6	2.55	0.41
3:A:2720:U:C2	3:A:2721:A:C8	3.09	0.41
7:F:33:ILE:HD12	7:F:33:ILE:N	2.36	0.41
7:F:107:VAL:N	7:F:108:PRO:CD	2.84	0.41
13:O:108:ASP:OD1	13:O:109:ALA:N	2.54	0.41
17:U:9:GLU:O	17:U:72:PHE:N	2.46	0.41
3:A:262:A:N3	3:A:430:A:O2'	2.41	0.41
3:A:482:A:O2'	3:A:497:A:N1	2.51	0.41
3:A:967:U:H2'	3:A:968:C:C6	2.56	0.41
3:A:1234:U:H2'	3:A:1235:G:O4'	2.21	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:1357:C:H2'	3:A:1358:G:O4'	2.19	0.41
3:A:1630:A:H2'	3:A:1631:G:O4'	2.20	0.41
4:B:83:G:O6	4:B:94:A:N6	2.53	0.41
3:A:1354:A:H62	3:A:1377:G:H21	1.68	0.41
3:A:1593:A:H2'	3:A:1594:U:O4'	2.21	0.41
3:A:2590:A:N6	3:A:2605:U:O4	2.53	0.41
14:Q:60:TRP:O	14:Q:64:ILE:HG12	2.20	0.41
3:A:1389:G:H2'	3:A:1390:U:O4'	2.20	0.41
3:A:2812:G:N2	3:A:2889:C:C2	2.89	0.41
22:Z:46:MET:O	22:Z:50:VAL:HG22	2.20	0.41
3:A:1153:C:OP1	14:Q:91:ARG:NH1	2.47	0.41
3:A:1574:C:H2'	3:A:1575:C:O4'	2.21	0.41
3:A:1595:C:H2'	3:A:1596:A:O4'	2.20	0.41
3:A:2345:G:O6	3:A:2371:G:O6	2.39	0.41
7:F:65:LEU:HD23	7:F:65:LEU:H	1.86	0.41
15:R:82:HIS:ND1	15:R:82:HIS:O	2.53	0.41
3:A:1425:G:N2	3:A:1574:C:N4	2.69	0.41
5:D:33:ARG:CG	5:D:73:VAL:HG13	2.48	0.41
7:F:23:SER:N	7:F:26:GLN:OE1	2.54	0.41
10:J:18:VAL:CG2	10:J:54:ILE:HD11	2.51	0.41
17:U:28:LEU:N	17:U:28:LEU:HD22	2.36	0.41
3:A:1114:C:O2	3:A:1115:G:N7	2.54	0.40
3:A:2306:C:OP2	3:A:2307:G:O2'	2.29	0.40
3:A:773:U:H2'	3:A:778:G:O2'	2.21	0.40
3:A:1351:C:H1'	3:A:1572:A:H1'	2.02	0.40
3:A:1394:U:H2'	3:A:1395:A:O4'	2.22	0.40
3:A:1433:A:C4	3:A:1434:A:H1'	2.56	0.40
3:A:2368:C:O2	3:A:2369:A:C8	2.74	0.40
7:F:105:ILE:HD12	7:F:138:PRO:HG2	2.03	0.40
3:A:979:A:H3'	3:A:980:A:C5'	2.52	0.40
3:A:1347:A:C5	3:A:1348:C:C6	3.09	0.40
3:A:1414:C:C2'	3:A:1415:U:O4'	2.68	0.40
3:A:1431:A:H2'	3:A:1432:G:C8	2.56	0.40
6:E:5:LEU:N	6:E:5:LEU:HD12	2.36	0.40
7:F:12:VAL:HG13	7:F:13:LYS:N	2.36	0.40
7:F:79:ARG:NH1	7:F:80:GLN:O	2.54	0.40
11:L:101:ILE:HG13	11:L:102:GLY:N	2.37	0.40
17:U:96:LYS:O	17:U:97:SER:OG	2.39	0.40
3:A:635:C:O2'	3:A:639:U:OP1	2.40	0.40
3:A:1365:A:OP2	20:X:1:SER:OG	2.16	0.40
4:B:45:A:O4'	7:F:91:ARG:NH1	2.55	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:25:THR:HG21	5:D:193:VAL:CG2	2.50	0.40
13:O:62:LEU:N	13:O:62:LEU:HD22	2.37	0.40
3:A:2039:U:OP1	10:J:111:LYS:NZ	2.37	0.40
5:D:98:VAL:HG22	5:D:98:VAL:O	2.21	0.40
14:Q:78:PHE:CZ	14:Q:82:LEU:HD11	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	2	36/46 (78%)	36 (100%)	0	0	100	100
2	4	36/38 (95%)	35 (97%)	1 (3%)	0	100	100
5	D	169/209 (81%)	163 (96%)	6 (4%)	0	100	100
6	E	172/201 (86%)	168 (98%)	3 (2%)	1 (1%)	22	58
7	F	175/177 (99%)	169 (97%)	6 (3%)	0	100	100
8	G	174/176 (99%)	169 (97%)	5 (3%)	0	100	100
9	H	50/149 (34%)	47 (94%)	3 (6%)	0	100	100
10	J	140/142 (99%)	139 (99%)	1 (1%)	0	100	100
11	L	141/143 (99%)	129 (92%)	12 (8%)	0	100	100
12	N	118/120 (98%)	107 (91%)	11 (9%)	0	100	100
13	O	114/116 (98%)	111 (97%)	3 (3%)	0	100	100
14	Q	115/117 (98%)	113 (98%)	2 (2%)	0	100	100
15	R	101/103 (98%)	97 (96%)	3 (3%)	1 (1%)	13	47
16	T	91/93 (98%)	86 (94%)	5 (6%)	0	100	100
17	U	100/102 (98%)	89 (89%)	11 (11%)	0	100	100
18	V	92/94 (98%)	89 (97%)	3 (3%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	W	73/75 (97%)	71 (97%)	2 (3%)	0	100	100
20	X	75/77 (97%)	75 (100%)	0	0	100	100
21	Y	61/63 (97%)	59 (97%)	2 (3%)	0	100	100
22	Z	56/58 (97%)	55 (98%)	1 (2%)	0	100	100
23	C	156/183 (85%)	152 (97%)	4 (3%)	0	100	100
All	All	2245/2482 (90%)	2159 (96%)	84 (4%)	2 (0%)	50	81

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
15	R	54	VAL
6	E	83	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	
1	2	30/38 (79%)	30 (100%)	0	100	100
2	4	34/34 (100%)	34 (100%)	0	100	100
5	D	134/164 (82%)	132 (98%)	2 (2%)	60	75
6	E	146/165 (88%)	144 (99%)	2 (1%)	62	76
7	F	148/148 (100%)	143 (97%)	5 (3%)	32	54
8	G	137/137 (100%)	135 (98%)	2 (2%)	60	75
9	H	41/114 (36%)	40 (98%)	1 (2%)	44	63
10	J	116/116 (100%)	114 (98%)	2 (2%)	56	73
11	L	102/102 (100%)	102 (100%)	0	100	100
12	N	99/100 (99%)	99 (100%)	0	100	100
13	O	86/86 (100%)	86 (100%)	0	100	100
14	Q	89/89 (100%)	89 (100%)	0	100	100
15	R	84/84 (100%)	83 (99%)	1 (1%)	67	79

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
16	T	80/80 (100%)	80 (100%)	0	100 100
17	U	83/83 (100%)	82 (99%)	1 (1%)	67 79
18	V	78/78 (100%)	77 (99%)	1 (1%)	65 77
19	W	57/57 (100%)	56 (98%)	1 (2%)	54 71
20	X	67/67 (100%)	67 (100%)	0	100 100
21	Y	55/55 (100%)	55 (100%)	0	100 100
22	Z	48/48 (100%)	48 (100%)	0	100 100
23	C	137/161 (85%)	137 (100%)	0	100 100
All	All	1851/2006 (92%)	1833 (99%)	18 (1%)	71 81

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	D	11	MET
5	D	33	ARG
6	E	19	PHE
6	E	163	ASN
7	F	7	TYR
7	F	29	ARG
7	F	51	ASN
7	F	79	ARG
7	F	144	LYS
8	G	47	ASN
8	G	176	LYS
9	H	17	ASP
10	J	96	ARG
10	J	99	ARG
15	R	22	LEU
17	U	98	ASN
18	V	42	LEU
19	W	65	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
6	E	94	GLN
10	J	80	HIS
11	L	99	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
12	N	107	ASN
14	Q	70	GLN
15	R	18	GLN
23	C	108	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
3	A	2566/2903 (88%)	555 (21%)	18 (0%)
4	B	119/120 (99%)	14 (11%)	2 (1%)
All	All	2685/3023 (88%)	569 (21%)	20 (0%)

All (569) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
3	A	10	A
3	A	27	G
3	A	34	U
3	A	35	G
3	A	46	G
3	A	50	U
3	A	51	G
3	A	71	A
3	A	74	A
3	A	75	G
3	A	114	U
3	A	118	A
3	A	120	U
3	A	135	U
3	A	136	G
3	A	139	U
3	A	141	G
3	A	142	A
3	A	160	A
3	A	162	U
3	A	163	C
3	A	181	A
3	A	190	A
3	A	196	A
3	A	197	A
3	A	199	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	215	G
3	A	216	A
3	A	221	A
3	A	222	A
3	A	225	C
3	A	228	C
3	A	232	G
3	A	242	G
3	A	243	U
3	A	248	G
3	A	255	A
3	A	266	G
3	A	267	C
3	A	272	A
3	A	275	C
3	A	277	G
3	A	278	A
3	A	294	A
3	A	304	U
3	A	307	G
3	A	310	A
3	A	322	A
3	A	323	C
3	A	324	A
3	A	329	G
3	A	330	A
3	A	345	A
3	A	350	G
3	A	362	A
3	A	371	A
3	A	372	G
3	A	373	U
3	A	384	A
3	A	386	G
3	A	387	U
3	A	388	G
3	A	401	A
3	A	404	A
3	A	406	G
3	A	411	G
3	A	412	A
3	A	417	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	424	G
3	A	429	A
3	A	430	A
3	A	435	C
3	A	456	C
3	A	457	A
3	A	458	G
3	A	459	U
3	A	465	G
3	A	466	A
3	A	473	G
3	A	480	A
3	A	481	G
3	A	491	G
3	A	505	A
3	A	509	C
3	A	510	C
3	A	529	A
3	A	530	G
3	A	531	C
3	A	532	A
3	A	543	G
3	A	544	C
3	A	545	U
3	A	547	A
3	A	549	G
3	A	550	C
3	A	563	A
3	A	568	U
3	A	572	A
3	A	573	U
3	A	575	A
3	A	588	U
3	A	603	A
3	A	614	A
3	A	621	A
3	A	627	A
3	A	637	A
3	A	645	C
3	A	646	U
3	A	647	G
3	A	654	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	668	A
3	A	669	G
3	A	670	A
3	A	671	C
3	A	675	A
3	A	684	G
3	A	686	U
3	A	687	C
3	A	705	A
3	A	726	G
3	A	727	A
3	A	730	A
3	A	739	A
3	A	747	U
3	A	762	U
3	A	763	G
3	A	775	G
3	A	776	G
3	A	777	G
3	A	781	A
3	A	782	A
3	A	783	A
3	A	784	G
3	A	785	G
3	A	801	G
3	A	805	G
3	A	812	C
3	A	819	A
3	A	827	U
3	A	828	U
3	A	830	G
3	A	845	A
3	A	846	U
3	A	847	U
3	A	856	G
3	A	857	G
3	A	877	A
3	A	878	A
3	A	896	A
3	A	897	C
3	A	907	G
3	A	910	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	914	G
3	A	918	A
3	A	931	U
3	A	932	U
3	A	941	A
3	A	946	C
3	A	952	G
3	A	953	G
3	A	957	C
3	A	959	A
3	A	961	C
3	A	973	A
3	A	974	G
3	A	981	A
3	A	983	A
3	A	985	C
3	A	995	C
3	A	996	A
3	A	1009	A
3	A	1012	U
3	A	1013	C
3	A	1021	A
3	A	1022	G
3	A	1023	U
3	A	1026	G
3	A	1033	U
3	A	1040	A
3	A	1045	C
3	A	1046	A
3	A	1047	G
3	A	1053	C
3	A	1054	A
3	A	1057	A
3	A	1059	G
3	A	1060	U
3	A	1061	U
3	A	1062	G
3	A	1065	U
3	A	1066	U
3	A	1068	G
3	A	1070	A
3	A	1071	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	1073	A
3	A	1076	C
3	A	1079	C
3	A	1082	U
3	A	1083	U
3	A	1084	A
3	A	1088	A
3	A	1089	A
3	A	1097	U
3	A	1104	C
3	A	1111	A
3	A	1119	U
3	A	1129	A
3	A	1132	U
3	A	1135	C
3	A	1143	A
3	A	1151	A
3	A	1157	G
3	A	1169	A
3	A	1171	G
3	A	1174	U
3	A	1175	A
3	A	1176	U
3	A	1178	C
3	A	1180	U
3	A	1206	G
3	A	1212	G
3	A	1225	G
3	A	1236	G
3	A	1250	G
3	A	1253	A
3	A	1255	U
3	A	1256	G
3	A	1263	U
3	A	1265	A
3	A	1266	G
3	A	1267	U
3	A	1269	A
3	A	1271	G
3	A	1272	A
3	A	1273	U
3	A	1274	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	1275	A
3	A	1280	G
3	A	1284	A
3	A	1288	G
3	A	1289	C
3	A	1300	G
3	A	1301	A
3	A	1306	C
3	A	1307	A
3	A	1312	U
3	A	1315	C
3	A	1320	C
3	A	1321	A
3	A	1325	U
3	A	1327	A
3	A	1329	U
3	A	1332	G
3	A	1333	G
3	A	1334	G
3	A	1340	U
3	A	1341	G
3	A	1343	G
3	A	1345	C
3	A	1352	U
3	A	1355	G
3	A	1356	G
3	A	1359	A
3	A	1361	G
3	A	1362	C
3	A	1365	A
3	A	1374	G
3	A	1379	U
3	A	1380	G
3	A	1383	A
3	A	1386	C
3	A	1391	U
3	A	1394	U
3	A	1395	A
3	A	1397	U
3	A	1400	U
3	A	1403	A
3	A	1404	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	1407	G
3	A	1413	A
3	A	1416	G
3	A	1419	A
3	A	1420	A
3	A	1421	G
3	A	1427	A
3	A	1428	C
3	A	1432	G
3	A	1434	A
3	A	1436	G
3	A	1445	G
3	A	1449	G
3	A	1450	G
3	A	1452	G
3	A	1453	A
3	A	1454	C
3	A	1458	U
3	A	1459	G
3	A	1461	C
3	A	1467	U
3	A	1468	U
3	A	1469	A
3	A	1473	G
3	A	1474	U
3	A	1475	G
3	A	1478	G
3	A	1480	C
3	A	1482	G
3	A	1483	G
3	A	1484	U
3	A	1486	U
3	A	1493	C
3	A	1495	A
3	A	1497	U
3	A	1498	C
3	A	1501	G
3	A	1504	A
3	A	1508	A
3	A	1509	A
3	A	1515	A
3	A	1516	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	1519	G
3	A	1528	A
3	A	1529	G
3	A	1532	A
3	A	1535	A
3	A	1536	C
3	A	1537	G
3	A	1542	U
3	A	1546	G
3	A	1548	A
3	A	1553	A
3	A	1554	U
3	A	1555	G
3	A	1558	C
3	A	1559	U
3	A	1560	G
3	A	1563	U
3	A	1566	A
3	A	1567	G
3	A	1569	A
3	A	1575	C
3	A	1576	U
3	A	1578	U
3	A	1579	A
3	A	1583	A
3	A	1584	U
3	A	1585	C
3	A	1592	C
3	A	1593	A
3	A	1596	A
3	A	1597	A
3	A	1598	A
3	A	1603	A
3	A	1607	C
3	A	1608	A
3	A	1613	G
3	A	1614	A
3	A	1615	C
3	A	1616	A
3	A	1618	A
3	A	1619	G
3	A	1620	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	1622	G
3	A	1627	G
3	A	1628	G
3	A	1634	A
3	A	1635	A
3	A	1636	U
3	A	1637	A
3	A	1644	C
3	A	1647	U
3	A	1648	U
3	A	1649	G
3	A	1650	A
3	A	1651	G
3	A	1652	A
3	A	1653	G
3	A	1654	A
3	A	1656	C
3	A	1657	U
3	A	1660	G
3	A	1662	U
3	A	1663	G
3	A	1664	A
3	A	1666	G
3	A	1667	G
3	A	1992	G
3	A	1993	U
3	A	1997	C
3	A	1998	A
3	A	2003	A
3	A	2004	G
3	A	2006	C
3	A	2007	U
3	A	2008	C
3	A	2009	A
3	A	2011	U
3	A	2012	G
3	A	2013	A
3	A	2015	A
3	A	2022	U
3	A	2023	C
3	A	2030	A
3	A	2031	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	2043	C
3	A	2052	A
3	A	2055	C
3	A	2056	G
3	A	2059	A
3	A	2060	A
3	A	2061	G
3	A	2062	A
3	A	2069	G
3	A	2090	A
3	A	2093	G
3	A	2095	A
3	A	2096	C
3	A	2098	U
3	A	2104	C
3	A	2110	G
3	A	2111	U
3	A	2112	G
3	A	2113	U
3	A	2118	U
3	A	2119	A
3	A	2125	G
3	A	2131	U
3	A	2132	U
3	A	2133	G
3	A	2137	U
3	A	2139	U
3	A	2145	C
3	A	2162	G
3	A	2164	C
3	A	2172	U
3	A	2173	A
3	A	2175	C
3	A	2184	A
3	A	2189	U
3	A	2198	A
3	A	2199	A
3	A	2203	U
3	A	2204	G
3	A	2211	A
3	A	2213	U
3	A	2225	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	2238	G
3	A	2239	G
3	A	2250	G
3	A	2251	G
3	A	2266	A
3	A	2279	G
3	A	2283	C
3	A	2286	G
3	A	2287	A
3	A	2297	A
3	A	2305	U
3	A	2309	A
3	A	2319	G
3	A	2327	A
3	A	2333	A
3	A	2334	U
3	A	2335	A
3	A	2336	A
3	A	2343	U
3	A	2350	C
3	A	2383	G
3	A	2385	C
3	A	2388	A
3	A	2402	U
3	A	2407	A
3	A	2422	C
3	A	2424	C
3	A	2425	A
3	A	2429	G
3	A	2430	A
3	A	2434	A
3	A	2435	A
3	A	2441	U
3	A	2448	A
3	A	2449	U
3	A	2475	C
3	A	2476	A
3	A	2491	U
3	A	2494	G
3	A	2497	A
3	A	2498	C
3	A	2502	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	2503	A
3	A	2505	G
3	A	2506	U
3	A	2513	A
3	A	2518	A
3	A	2520	C
3	A	2529	G
3	A	2535	G
3	A	2547	A
3	A	2554	U
3	A	2564	A
3	A	2566	A
3	A	2567	G
3	A	2573	C
3	A	2578	G
3	A	2582	G
3	A	2595	G
3	A	2596	U
3	A	2598	A
3	A	2602	A
3	A	2609	U
3	A	2610	C
3	A	2611	C
3	A	2612	C
3	A	2613	U
3	A	2614	A
3	A	2615	U
3	A	2629	U
3	A	2630	G
3	A	2646	C
3	A	2647	U
3	A	2655	G
3	A	2656	U
3	A	2682	A
3	A	2689	U
3	A	2690	U
3	A	2714	G
3	A	2726	A
3	A	2732	G
3	A	2733	A
3	A	2744	G
3	A	2748	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	A	2764	A
3	A	2765	A
3	A	2778	A
3	A	2779	U
3	A	2780	G
3	A	2791	G
3	A	2794	C
3	A	2799	A
3	A	2800	A
3	A	2809	A
3	A	2818	U
3	A	2820	A
3	A	2833	U
3	A	2835	A
3	A	2849	U
3	A	2867	G
3	A	2872	A
3	A	2873	A
3	A	2880	C
3	A	2883	A
3	A	2893	A
3	A	2894	G
3	A	2901	C
3	A	2902	C
3	A	2903	U
4	B	4	C
4	B	12	C
4	B	13	G
4	B	35	C
4	B	41	G
4	B	42	C
4	B	44	G
4	B	45	A
4	B	53	A
4	B	66	A
4	B	67	G
4	B	89	U
4	B	90	C
4	B	109	A

All (20) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	A	227	A
3	A	242	G
3	A	372	G
3	A	458	G
3	A	548	G
3	A	549	G
3	A	644	A
3	A	784	G
3	A	1020	A
3	A	1022	G
3	A	1319	C
3	A	1358	G
3	A	1427	A
3	A	1534	U
3	A	2010	G
3	A	2318	G
3	A	2326	C
3	A	2655	G
4	B	52	A
4	B	66	A

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 (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

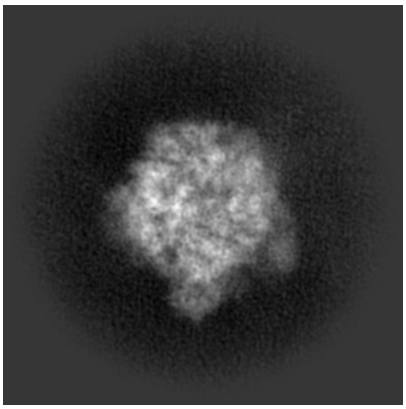
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-51834. These allow visual inspection of the internal detail of the map and identification of artifacts.

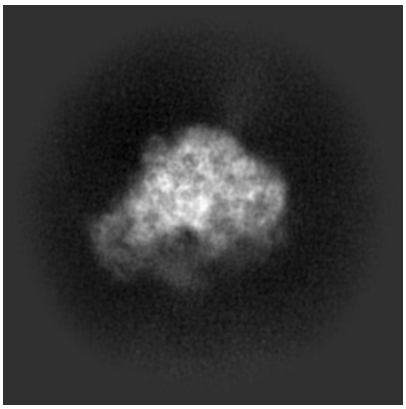
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

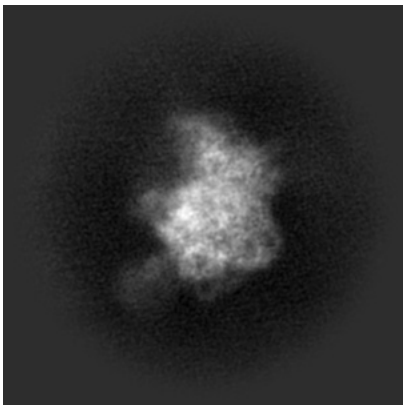
6.1.1 Primary map



X

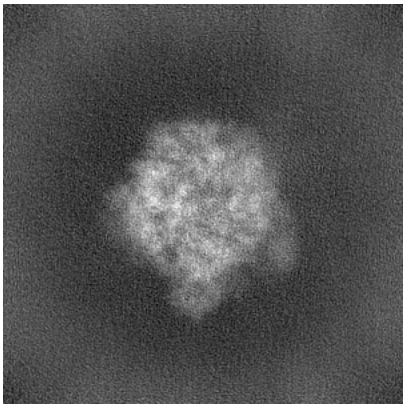


Y

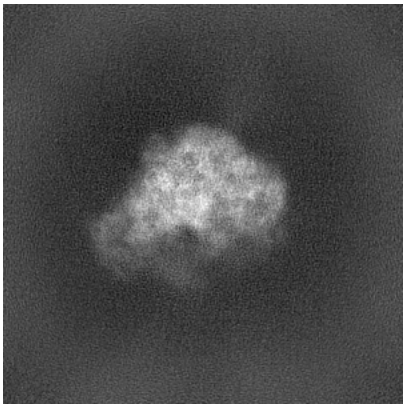


Z

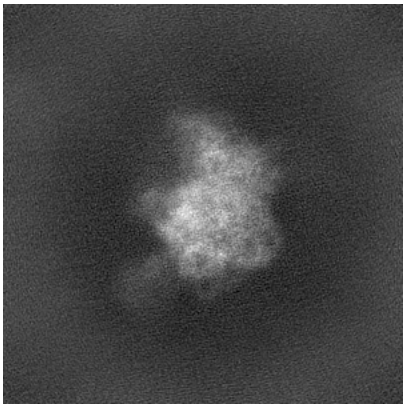
6.1.2 Raw map



X



Y

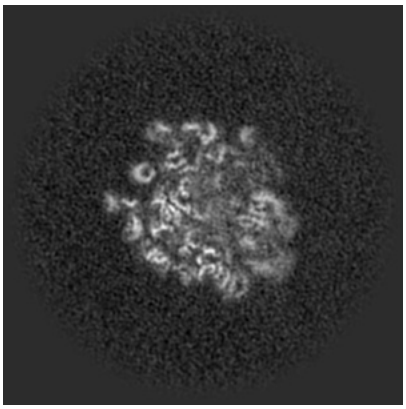


Z

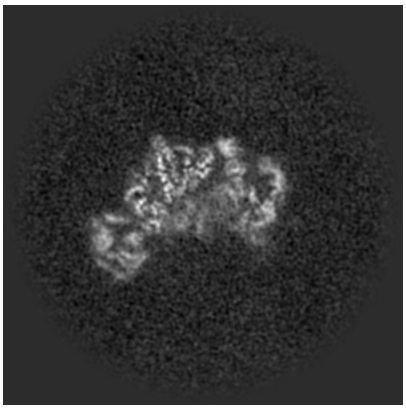
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

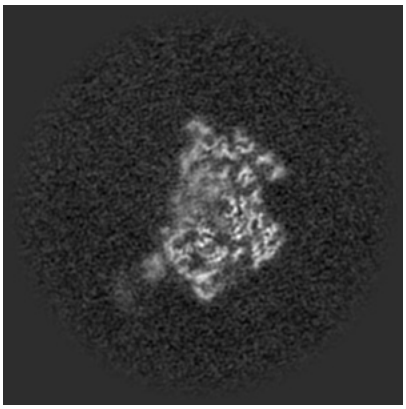
6.2.1 Primary map



X Index: 150

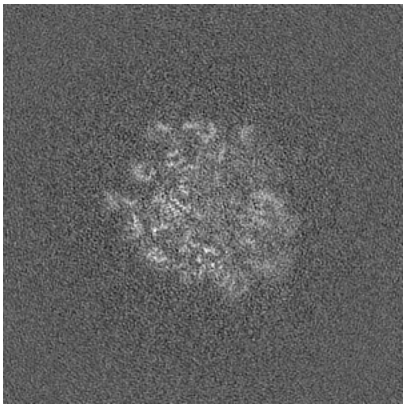


Y Index: 150

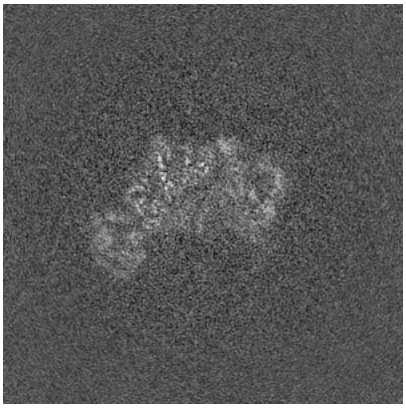


Z Index: 150

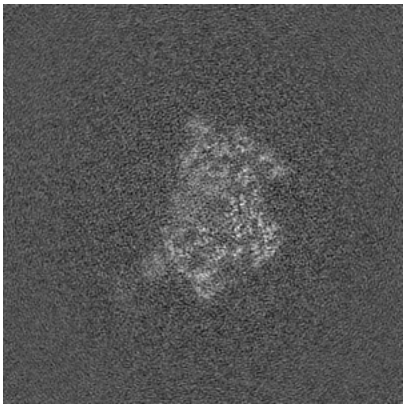
6.2.2 Raw map



X Index: 150



Y Index: 150

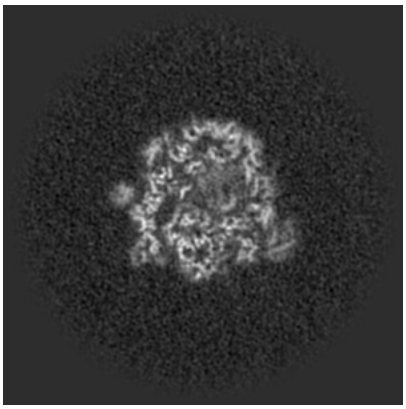


Z Index: 150

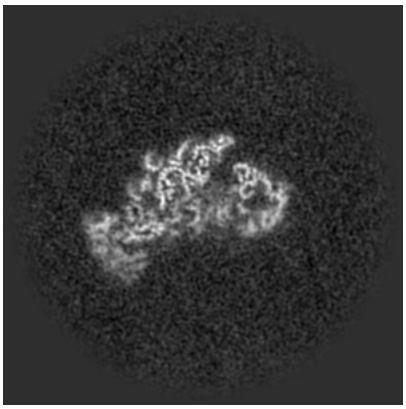
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

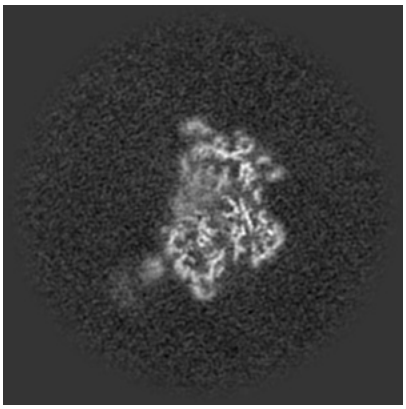
6.3.1 Primary map



X Index: 163

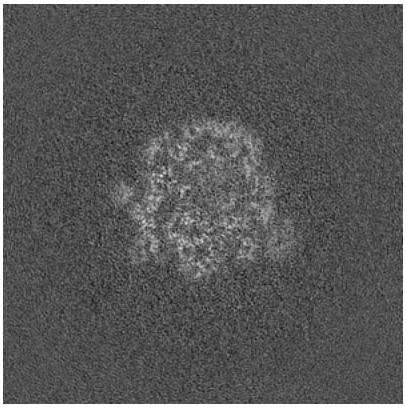


Y Index: 142

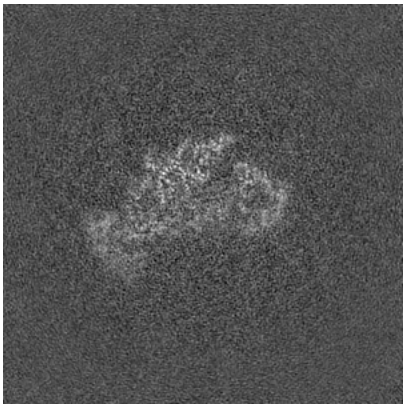


Z Index: 148

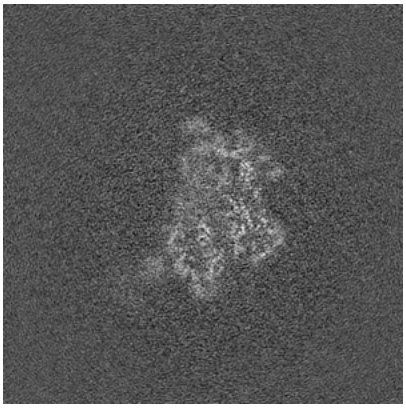
6.3.2 Raw map



X Index: 163



Y Index: 142

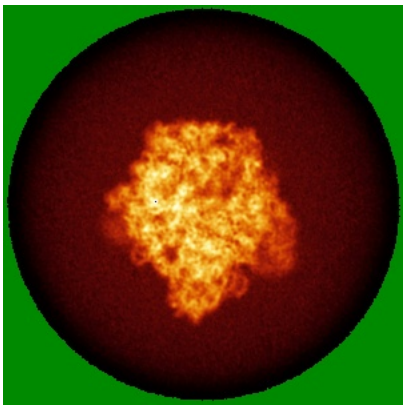


Z Index: 148

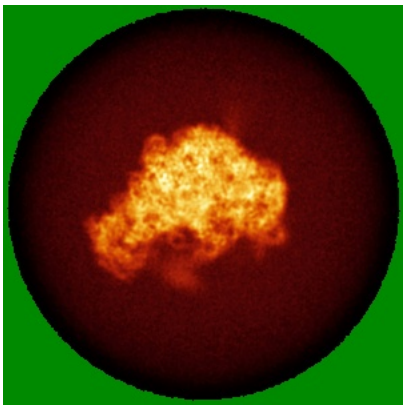
The images above show the largest variance slices of the map in three orthogonal directions.

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

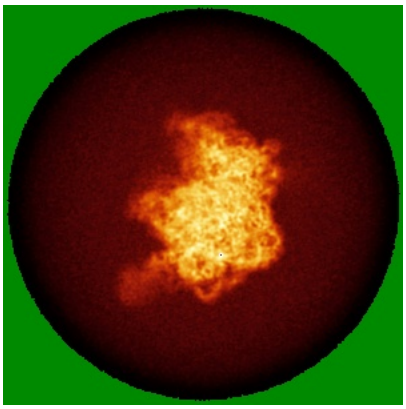
6.4.1 Primary map



X

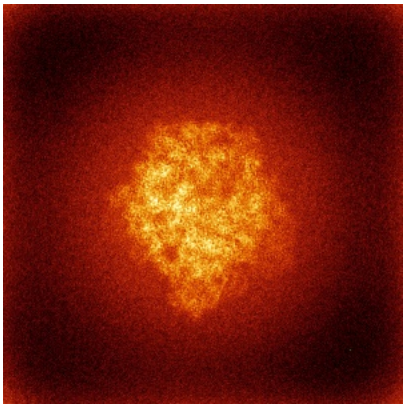


Y

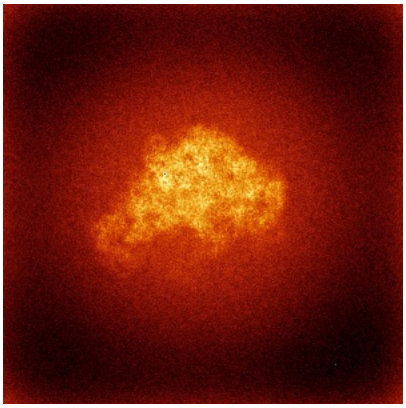


Z

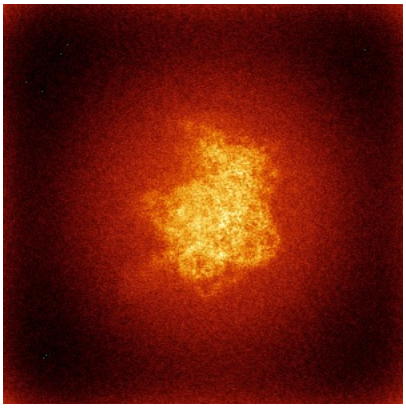
6.4.2 Raw map



X



Y

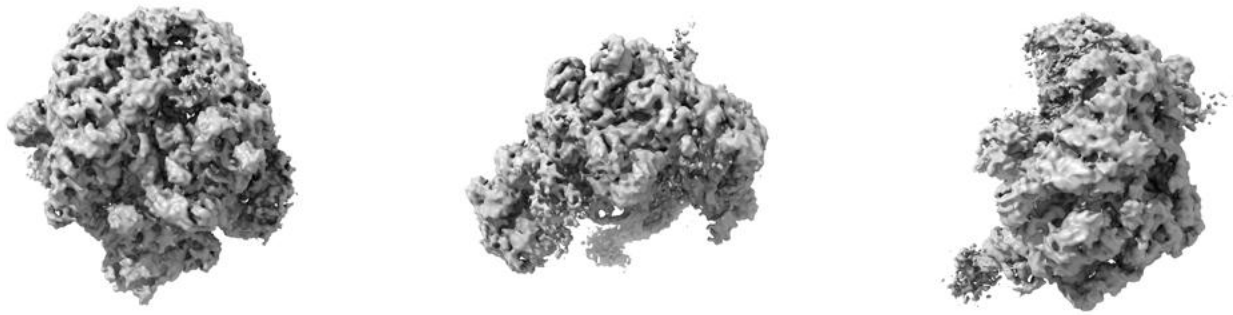


Z

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

6.5 Orthogonal surface views (i)

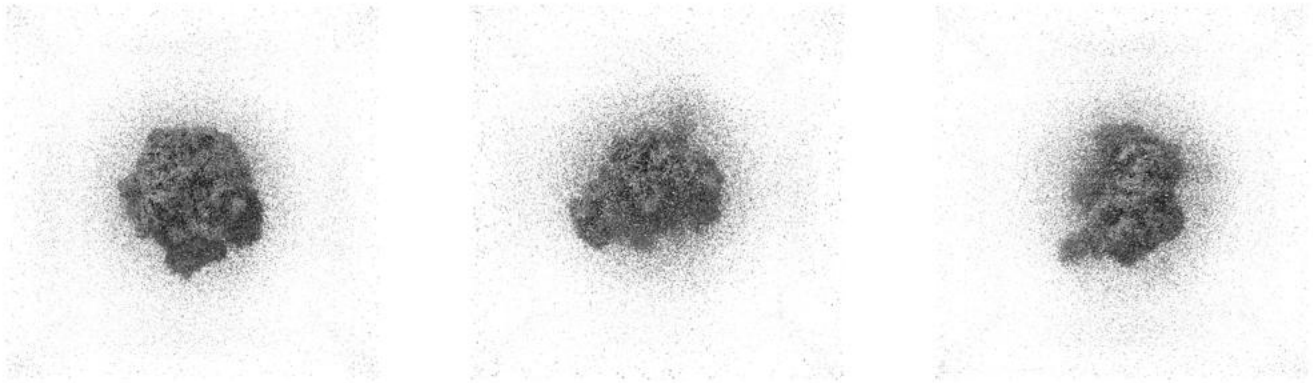
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.344. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

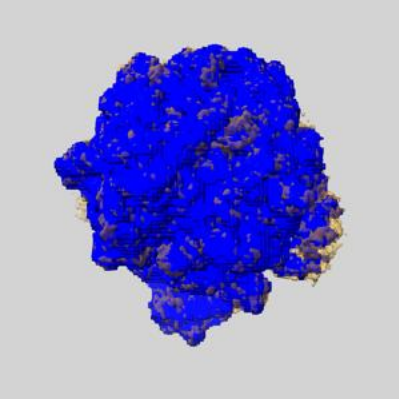
6.6 Mask visualisation

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

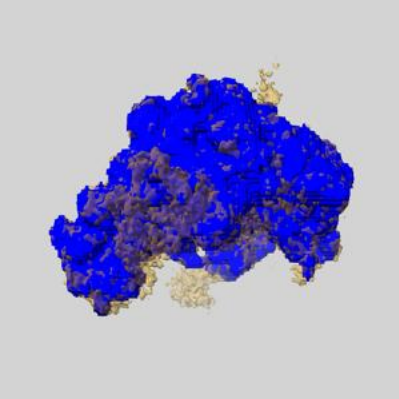
A mask typically either:

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

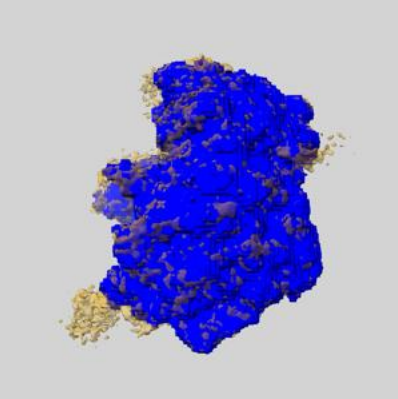
6.6.1 emd_51834_msk_1.map



X



Y

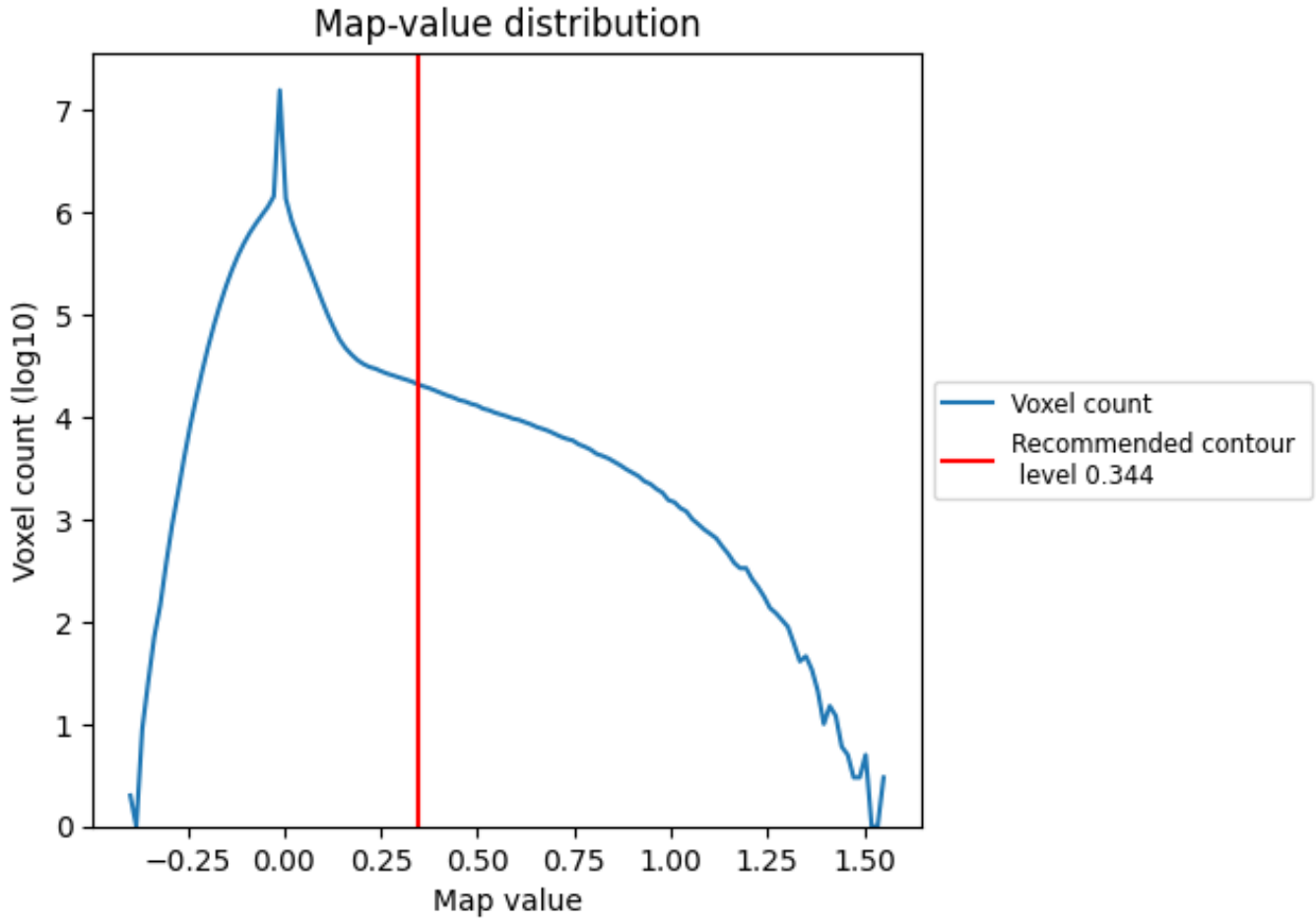


Z

7 Map analysis

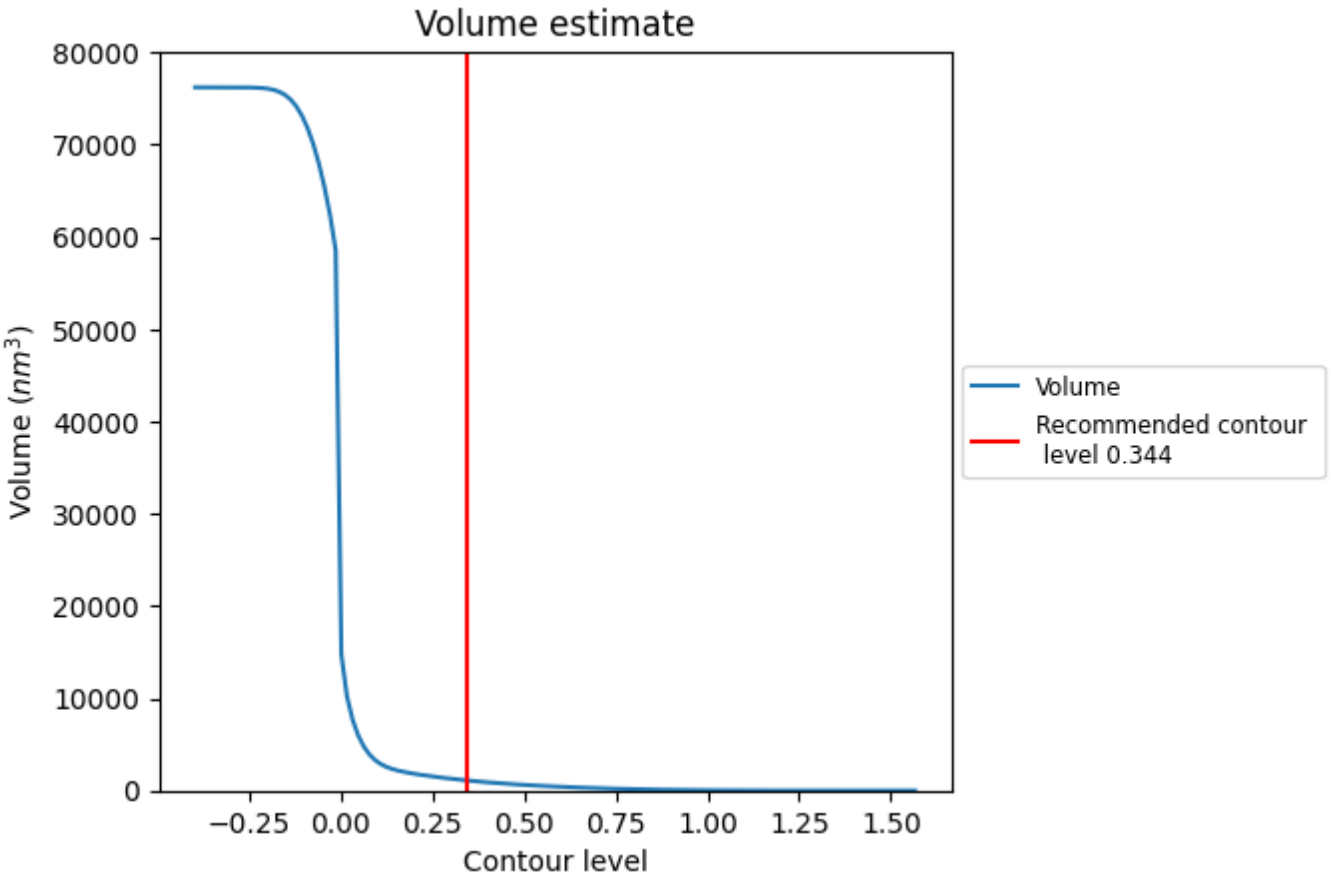
This section contains the results of statistical analysis of the map.

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.

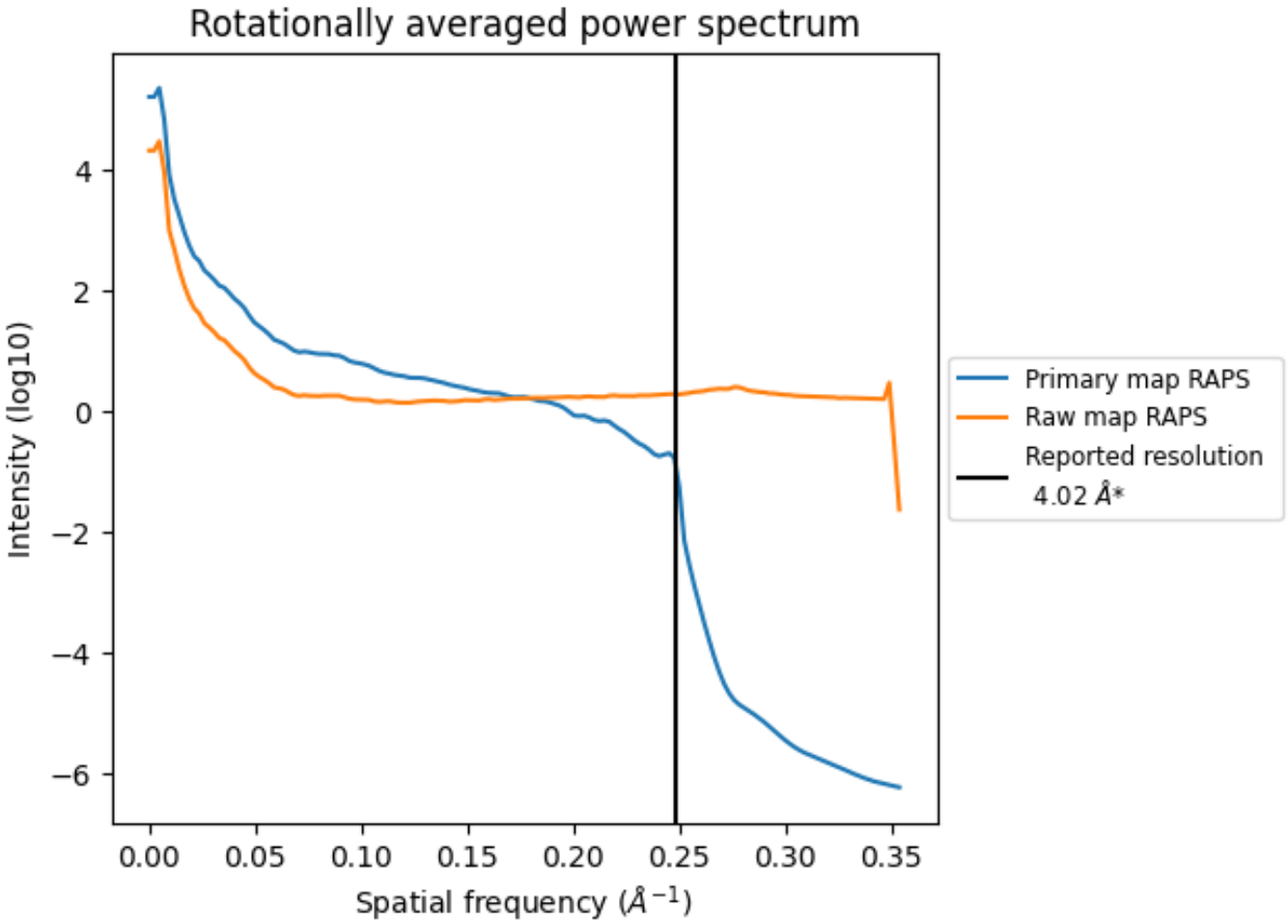
7.2 Volume estimate



The volume at the recommended contour level is 1097 nm^3; this corresponds to an approximate mass of 991 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)

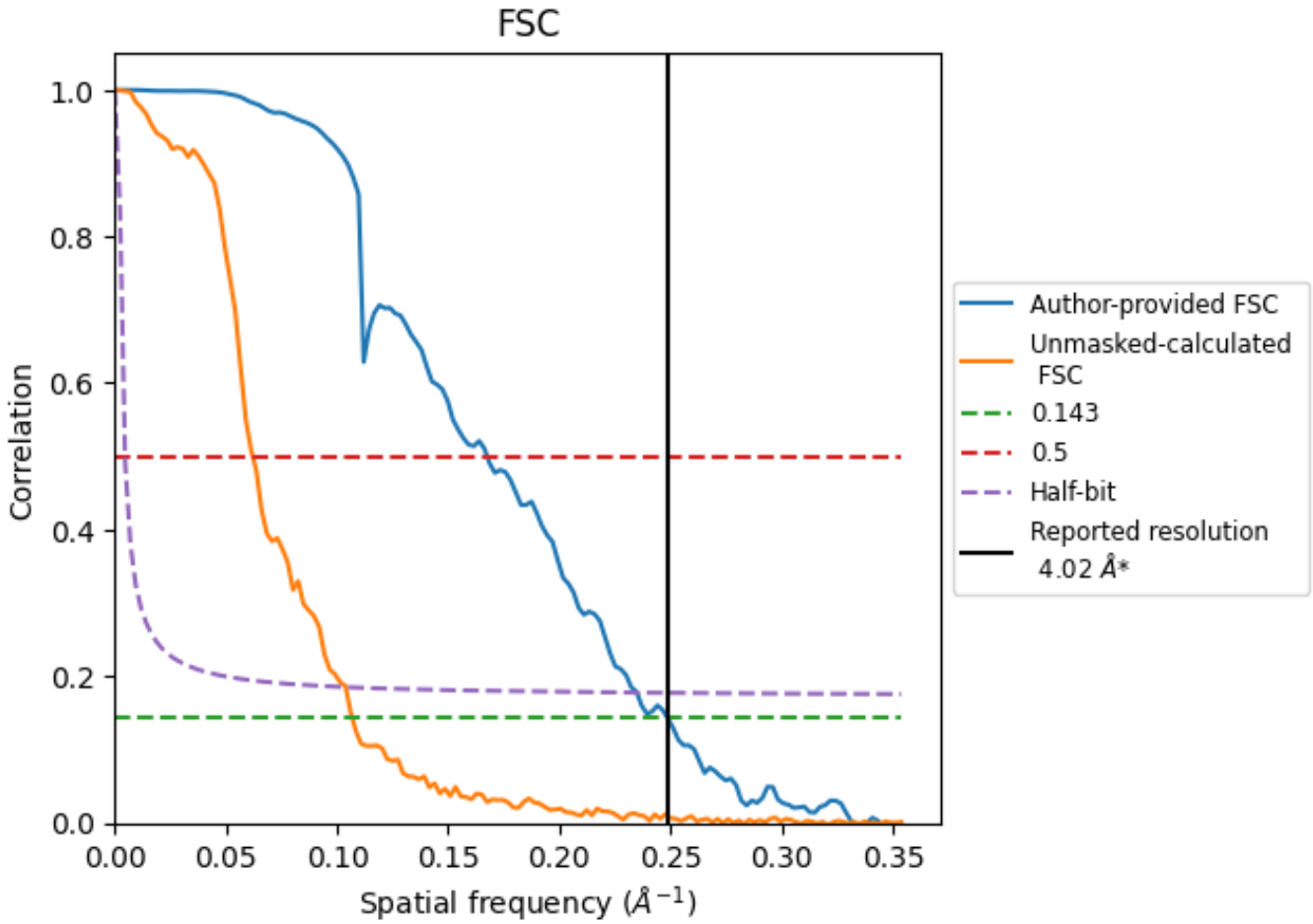


*Reported resolution corresponds to spatial frequency of 0.249 Å^{-1}

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 0.249 Å^{-1}

8.2 Resolution estimates (i)

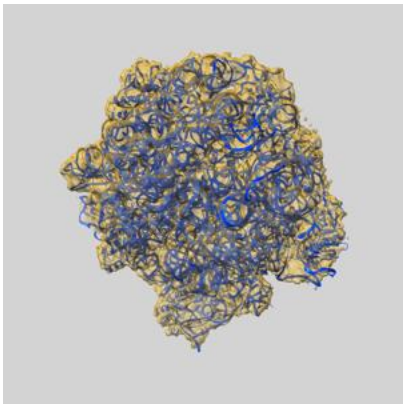
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.02	-	-
Author-provided FSC curve	4.02	5.97	4.26
Unmasked-calculated*	9.36	16.10	9.62

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 9.36 differs from the reported value 4.02 by more than 10 %

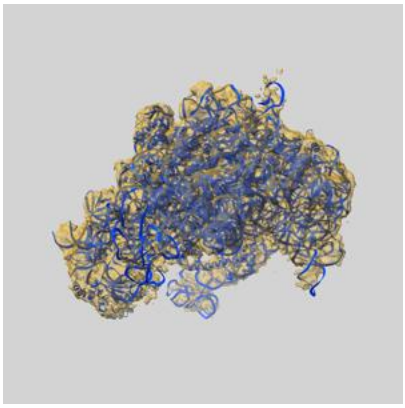
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-51834 and PDB model 9H3Q. Per-residue inclusion information can be found in section 3 on page 8.

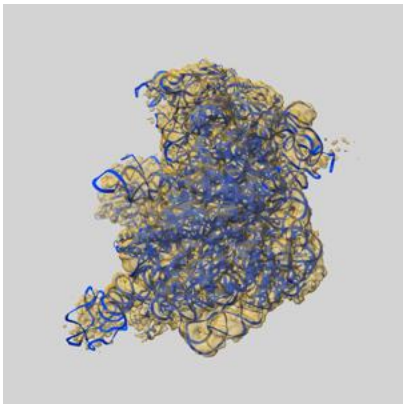
9.1 Map-model overlay



X



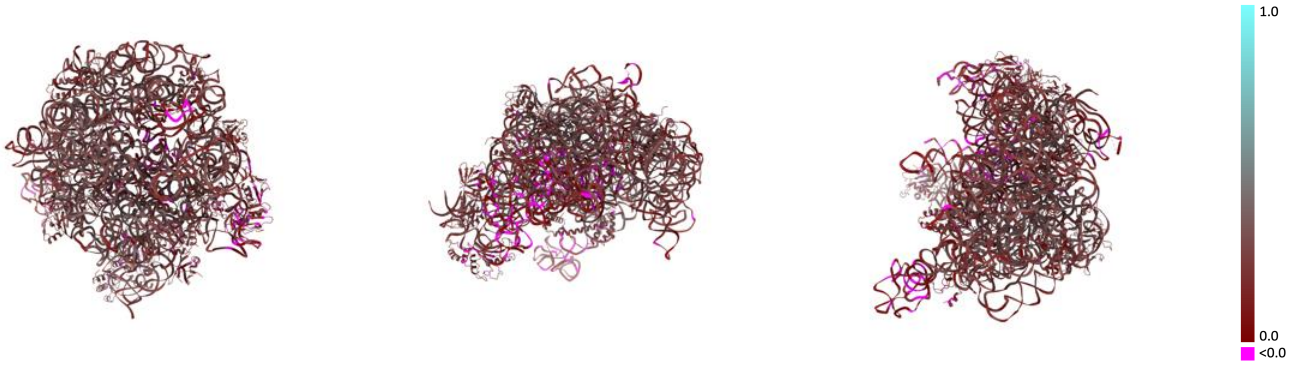
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.344 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.

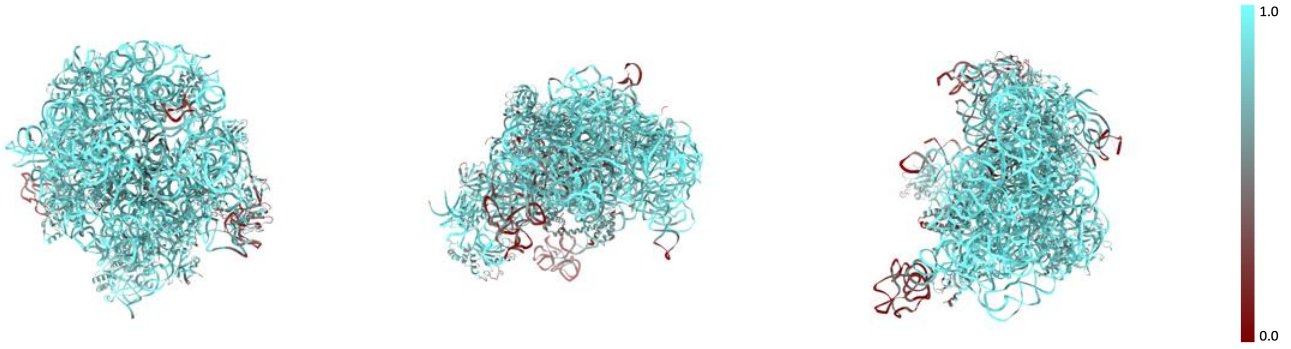
9.2 Q-score mapped to coordinate model



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.

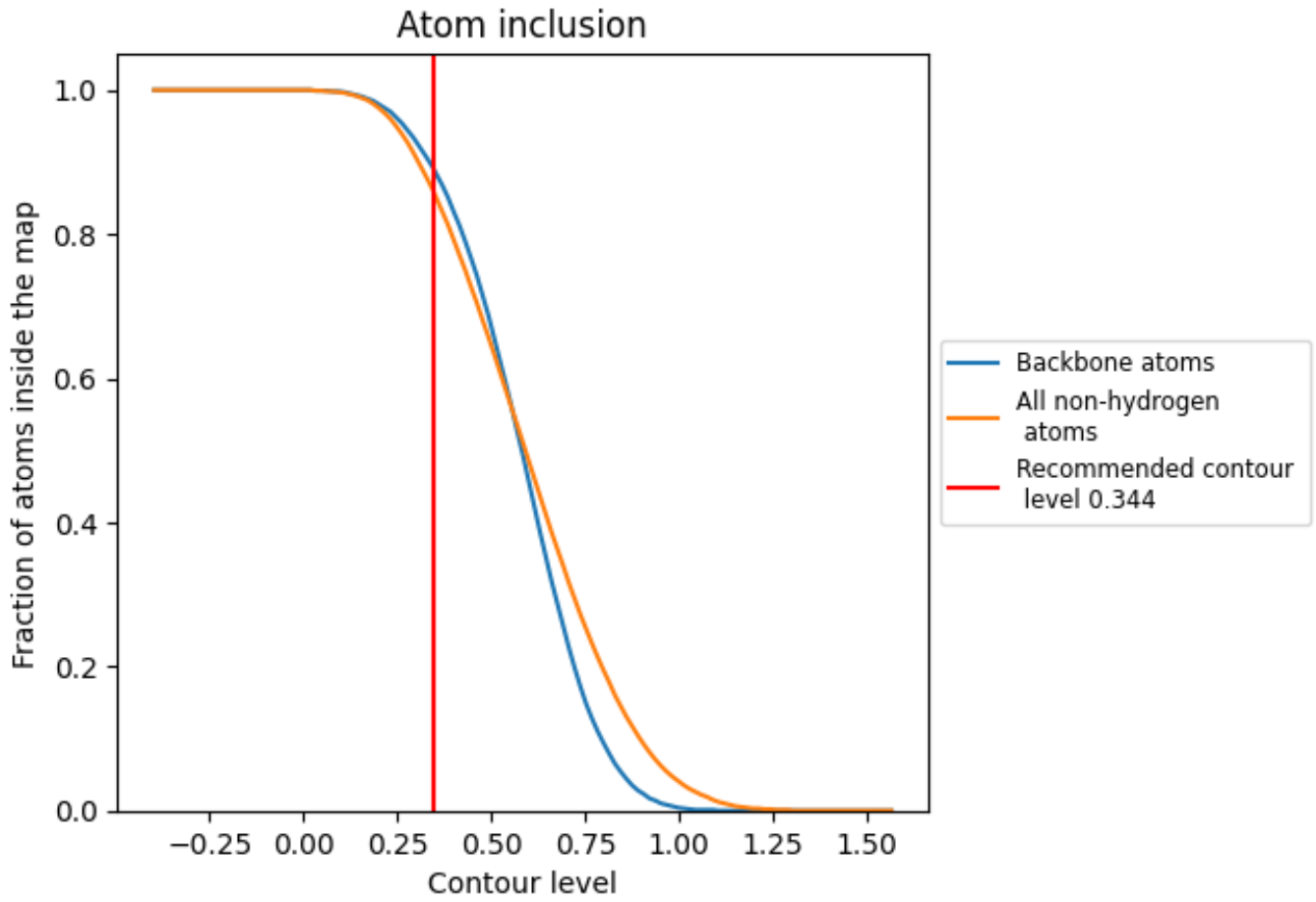
9.3 Atom inclusion mapped to coordinate model



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 (0.344).

9.4 Atom inclusion (i)



At the recommended contour level, 89% of all backbone atoms, 86% 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 (0.344) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8620	0.2370
2	0.8370	0.2650
4	0.5170	0.1320
A	0.8900	0.2390
B	0.9610	0.2500
C	0.6140	0.1980
D	0.7750	0.2140
E	0.7930	0.2530
F	0.7070	0.1690
G	0.5490	0.1650
H	0.6310	0.1530
J	0.8440	0.2790
L	0.7510	0.2050
N	0.8100	0.2300
O	0.8770	0.2180
Q	0.8430	0.2850
R	0.8220	0.2960
T	0.8270	0.2710
U	0.8070	0.2660
V	0.7390	0.2170
W	0.8500	0.2710
X	0.8050	0.2490
Y	0.7810	0.2380
Z	0.8260	0.2720