wwPDB EM Validation Summary Report

Apr 20, 2024 – 07:52 pm BST

PDB ID	:	6YBS
EMDB ID	:	EMD-10772
Title	:	Structure of a human 48S translational initiation complex - head
Authors	:	Brito Querido, J.; Sokabe, M.; Kraatz, S.; Gordiyenko, Y.; Skehel, M.; Fraser, C.; Ramakrishnan, V.
Deposited on	:	2020-03-17
Resolution	:	3.10 Å(reported)

This is a wwPDB EM Validation Summary 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:

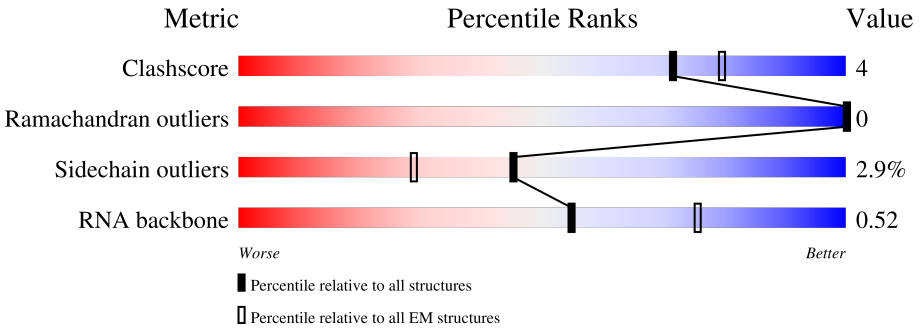
EMDB validation analysis	:	0.0.1.dev92
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.10 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=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	x	548	6%, 64%, 34%
2	c	317	96%
3	n	69	91%, 9%
4	X	135	51%, 6%, 42%
5	h	119	87%, 13%
6	o	320	23%, 76%
7	a	165	59%, 40%

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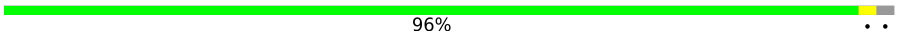
Mol	Chain	Length	Quality of chain
8	m	132	
9	i	56	
10	b	145	
11	Z	243	
12	d	145	
13	e	125	
14	f	152	
15	V	204	
16	k	156	
17	Y	146	
18	A	1869	

2 Entry composition (i)

There are 20 unique types of molecules in this entry. The entry contains 28732 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 Eukaryotic translation initiation factor 3 subunit D.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	x	360	2317	1421	435	453	8	0	0

- Molecule 2 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	c	313	2436	1535	424	465	12	0	0

- Molecule 3 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	n	63	498	302	101	93	2	0	0

- Molecule 4 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	X	78	641	403	127	109	2	0	0

- Molecule 5 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	h	103	817	511	155	147	4	0	0

- Molecule 6 is a protein called Eukaryotic translation initiation factor 3 subunit G.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	o	77	616	389	111	116	0	0

- Molecule 7 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	a	99	Total	C	N	O	S	0	0
			834	544	149	135	6		

- Molecule 8 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	m	122	Total	C	N	O	S	0	0
			950	596	168	177	9		

- Molecule 9 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	i	50	Total	C	N	O	S	0	0
			419	262	85	67	5		

- Molecule 10 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	b	110	Total	C	N	O	S	0	0
			913	580	168	158	7		

- Molecule 11 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	Z	227	Total	C	N	O	S	0	0
			1765	1125	317	315	8		

- Molecule 12 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	d	142	Total	C	N	O	S	0	0
			1105	692	213	197	3		

- Molecule 13 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	e	66	Total	C	N	O	S	0	0
			523	338	93	91	1		

- Molecule 14 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	f	142	Total	C	N	O	S	0	0
			1176	737	239	199	1		

- Molecule 15 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	V	184	Total	C	N	O	S	0	0
			1461	914	276	264	7		

- Molecule 16 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	k	53	Total	C	N	O	S	0	0
			435	276	82	70	7		

- Molecule 17 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Y	141	Total	C	N	O	S	0	0
			1124	715	212	194	3		

- Molecule 18 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	A	501	Total	C	N	O	P	0	0
			10672	4764	1893	3514	501		

- Molecule 19 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
19	f	1	Total	Mg	0
			1	1	
19	A	28	Total	Mg	0
			28	28	

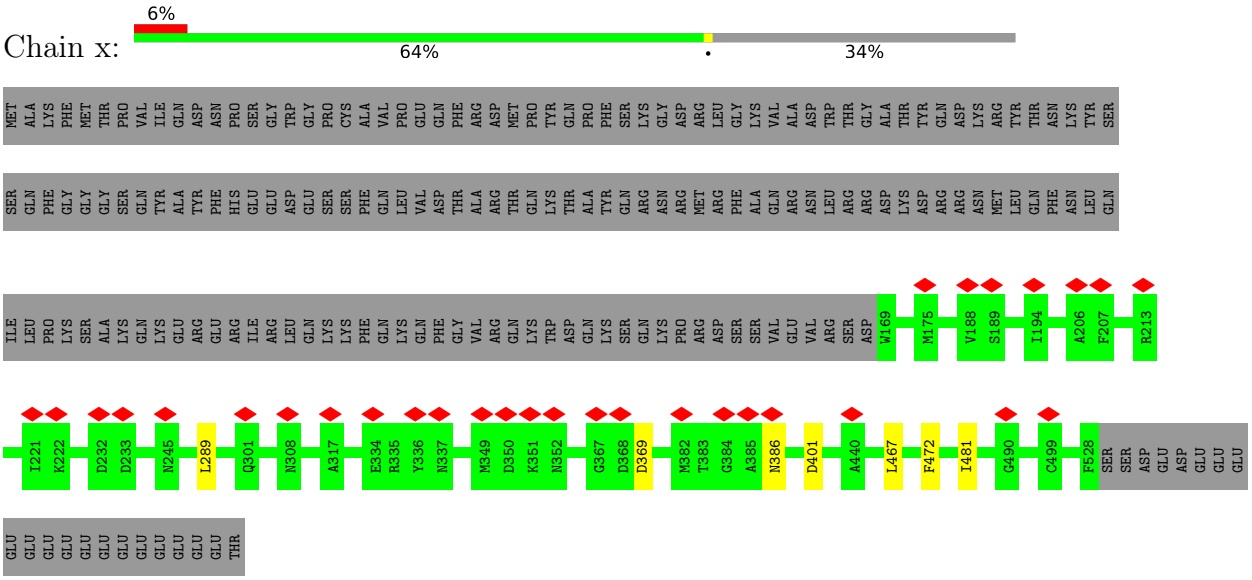
- Molecule 20 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
20	k	1	Total	Zn	0
			1	1	

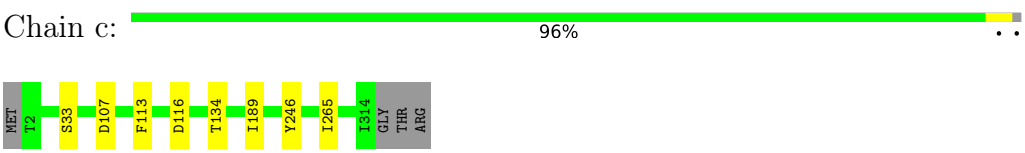
3 Residue-property plots (i)

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.

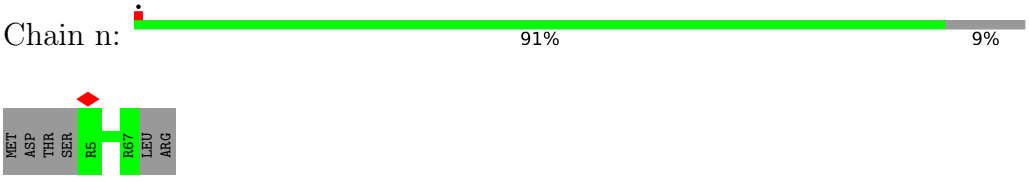
• Molecule 1: Eukaryotic translation initiation factor 3 subunit D



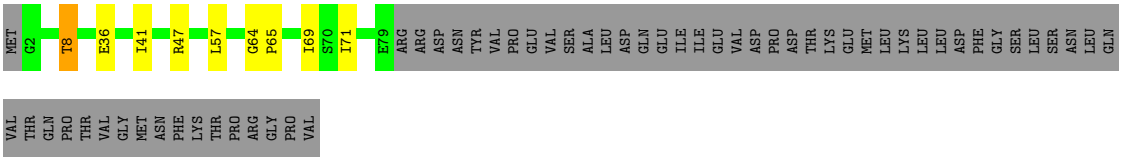
• Molecule 2: Receptor of activated protein C kinase 1



• Molecule 3: 40S ribosomal protein S28

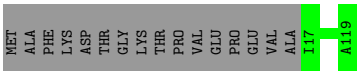


• Molecule 4: 40S ribosomal protein S17



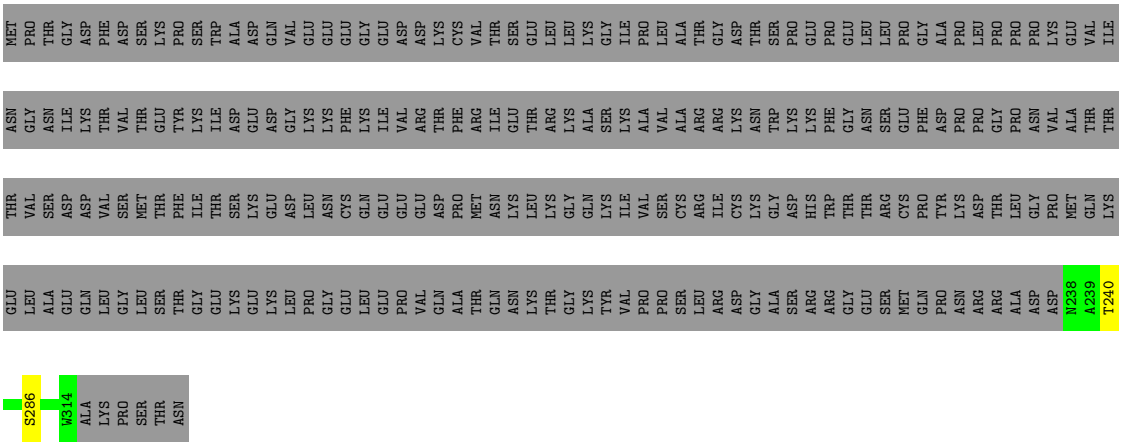
• Molecule 5: 40S ribosomal protein S20

Chain h:



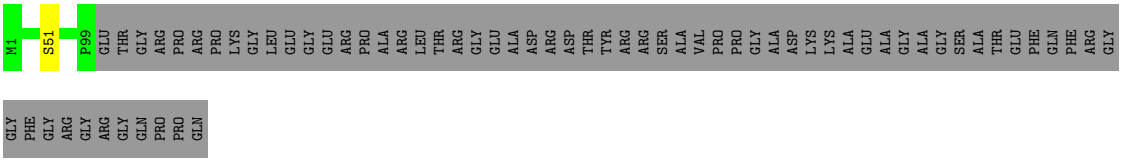
• Molecule 6: Eukaryotic translation initiation factor 3 subunit G

Chain o:



• Molecule 7: 40S ribosomal protein S10

Chain a:



• Molecule 8: 40S ribosomal protein S12

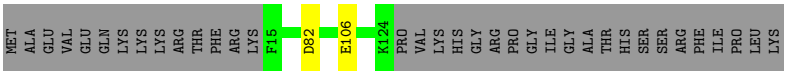
Chain m:

• Molecule 9: 40S ribosomal protein S29

Chain i:

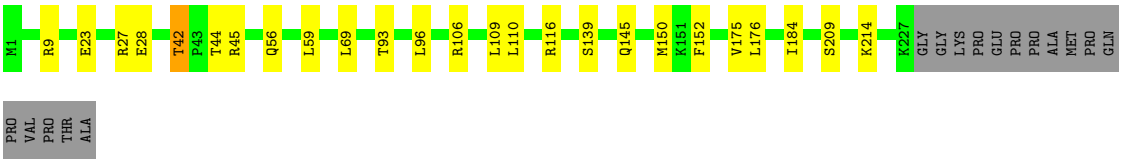
• Molecule 10: 40S ribosomal protein S15

Chain b:



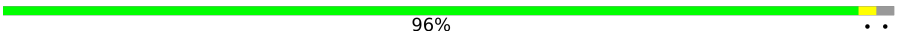
• Molecule 11: 40S ribosomal protein S3

Chain Z:



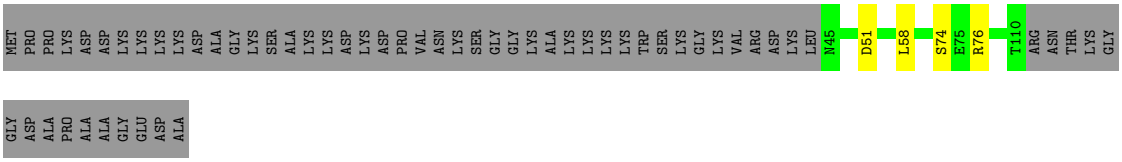
• Molecule 12: 40S ribosomal protein S19

Chain d:



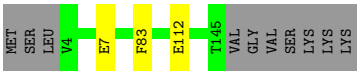
• Molecule 13: 40S ribosomal protein S25

Chain e:



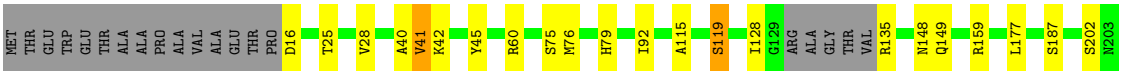
• Molecule 14: 40S ribosomal protein S18

Chain f:



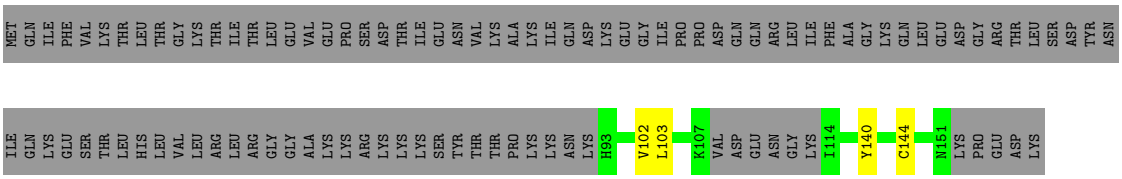
• Molecule 15: 40S ribosomal protein S5

Chain V:



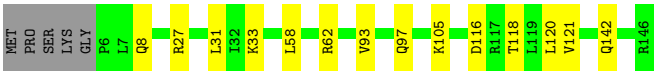
• Molecule 16: Ubiquitin-40S ribosomal protein S27a

Chain k:



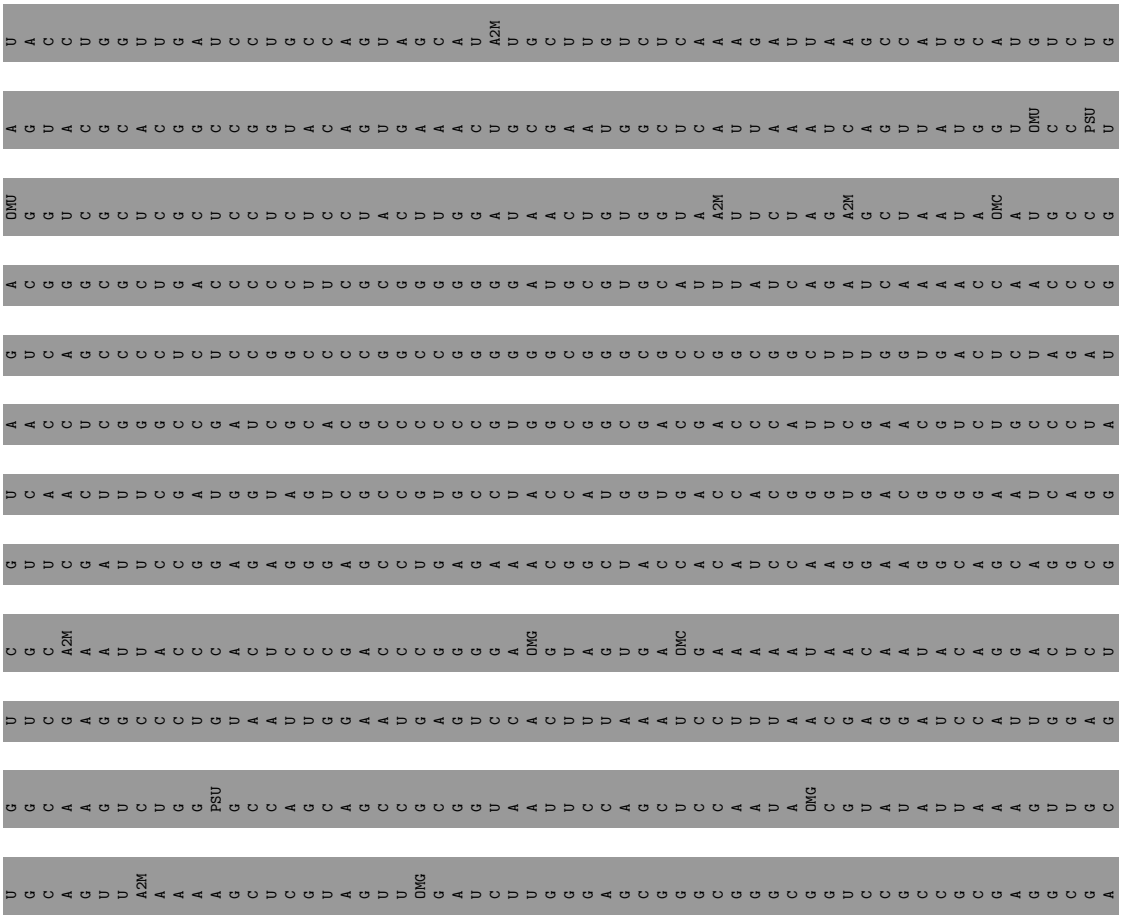
• Molecule 17: 40S ribosomal protein S16

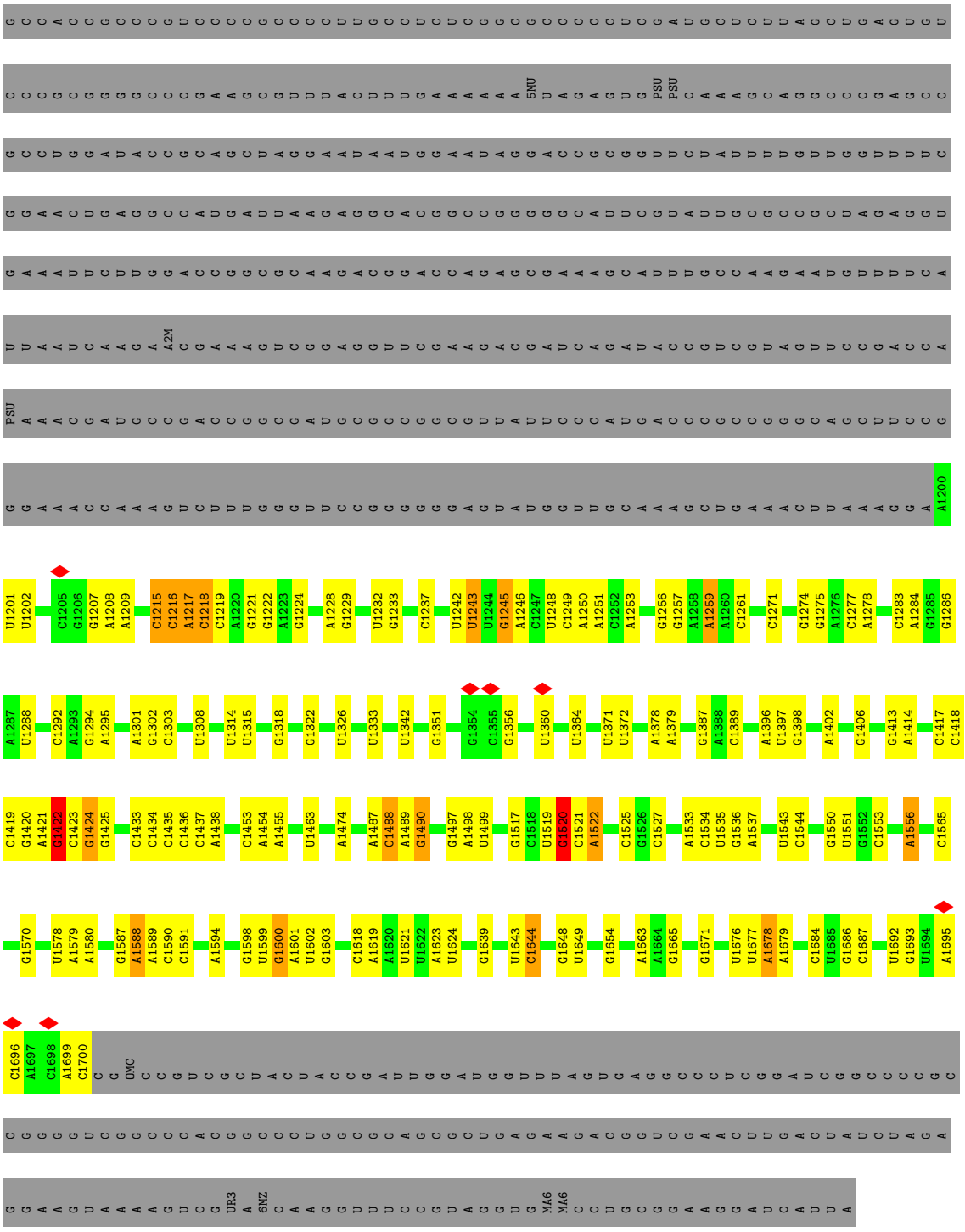
Chain Y:



• Molecule 18: 18S rRNA

Chain A:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	144882	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 ($e^-/Å^2$)	107	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.408	Depositor
Minimum map value	-0.201	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	537.0, 537.0, 537.0	wwPDB
Map dimensions	500, 500, 500	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.074, 1.074, 1.074	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, 5MC, A2M, PSU, JMH, ZN

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	x	0.28	0/2346	0.60	1/3213 (0.0%)
2	c	0.33	0/2493	0.62	1/3394 (0.0%)
3	n	0.36	0/500	0.60	0/669
4	X	0.35	0/648	0.54	0/863
5	h	0.36	0/827	0.62	0/1110
6	o	0.36	0/628	0.68	0/846
7	a	0.35	0/859	0.51	0/1159
8	m	0.33	0/960	0.61	0/1286
9	i	0.40	0/429	0.52	0/568
10	b	0.38	0/929	0.58	1/1241 (0.1%)
11	Z	0.34	0/1793	0.56	0/2414
12	d	0.37	0/1123	0.49	0/1504
13	e	0.34	0/529	0.58	0/712
14	f	0.33	0/1194	0.56	0/1599
15	V	0.33	0/1481	0.59	1/1988 (0.1%)
16	k	0.33	0/444	0.64	0/588
17	Y	0.37	0/1142	0.59	0/1528
18	A	0.66	1/11830 (0.0%)	1.14	76/18435 (0.4%)
All	All	0.49	1/30155 (0.0%)	0.87	80/43117 (0.2%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	A	1556	A	N9-C4	5.38	1.41	1.37

The worst 5 of 80 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	A	1453	C	C2-N1-C1'	10.14	129.96	118.80
18	A	1520	G	C2-N3-C4	9.82	116.81	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	A	1453	C	N1-C2-O2	9.69	124.72	118.90
18	A	1520	G	N3-C4-C5	-9.50	123.85	128.60
18	A	1578	U	N3-C2-O2	-9.03	115.88	122.20

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	x	2317	0	1733	0	0
2	c	2436	0	2393	0	0
3	n	498	0	525	0	0
4	X	641	0	694	5	0
5	h	817	0	882	0	0
6	o	616	0	600	0	0
7	a	834	0	861	0	0
8	m	950	0	987	0	0
9	i	419	0	415	0	0
10	b	913	0	951	0	0
11	Z	1765	0	1865	15	0
12	d	1105	0	1138	0	0
13	e	523	0	573	0	0
14	f	1176	0	1233	0	0
15	V	1461	0	1511	11	0
16	k	435	0	434	0	0
17	Y	1124	0	1193	8	0
18	A	10672	0	5391	35	0
19	A	28	0	0	0	0
19	f	1	0	0	0	0
20	k	1	0	0	0	0
All	All	28732	0	23379	66	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 4.

The worst 5 of 66 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)
18:A:1351:G:H1	18:A:1360:U:H3	1.11	0.92
18:A:1488:C:O2'	18:A:1490:G:OP2	2.14	0.66
11:Z:116:ARG:NH2	11:Z:150:MET:SD	2.75	0.59
18:A:1396:A:O2'	18:A:1398:G:N7	2.34	0.58
11:Z:42:THR:HG22	11:Z:45:ARG:H	1.67	0.58

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	x	358/548 (65%)	328 (92%)	30 (8%)	0	100	100
2	c	311/317 (98%)	294 (94%)	17 (6%)	0	100	100
3	n	61/69 (88%)	57 (93%)	4 (7%)	0	100	100
4	X	76/135 (56%)	73 (96%)	3 (4%)	0	100	100
5	h	101/119 (85%)	95 (94%)	6 (6%)	0	100	100
6	o	75/320 (23%)	73 (97%)	2 (3%)	0	100	100
7	a	97/165 (59%)	93 (96%)	4 (4%)	0	100	100
8	m	120/132 (91%)	116 (97%)	4 (3%)	0	100	100
9	i	48/56 (86%)	45 (94%)	3 (6%)	0	100	100
10	b	108/145 (74%)	105 (97%)	3 (3%)	0	100	100
11	Z	225/243 (93%)	219 (97%)	6 (3%)	0	100	100
12	d	140/145 (97%)	133 (95%)	7 (5%)	0	100	100
13	e	64/125 (51%)	60 (94%)	4 (6%)	0	100	100
14	f	140/152 (92%)	136 (97%)	4 (3%)	0	100	100
15	V	180/204 (88%)	169 (94%)	11 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	k	49/156 (31%)	42 (86%)	7 (14%)	0	100	100
17	Y	139/146 (95%)	133 (96%)	6 (4%)	0	100	100
All	All	2292/3177 (72%)	2171 (95%)	121 (5%)	0	100	100

There are no Ramachandran outliers to report.

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	x	152/494 (31%)	146 (96%)	6 (4%)	32	65
2	c	272/275 (99%)	265 (97%)	7 (3%)	46	74
3	n	56/62 (90%)	56 (100%)	0	100	100
4	X	69/122 (57%)	67 (97%)	2 (3%)	42	72
5	h	94/107 (88%)	94 (100%)	0	100	100
6	o	64/277 (23%)	62 (97%)	2 (3%)	40	70
7	a	90/136 (66%)	89 (99%)	1 (1%)	73	89
8	m	104/108 (96%)	93 (89%)	11 (11%)	6	26
9	i	44/49 (90%)	44 (100%)	0	100	100
10	b	100/130 (77%)	99 (99%)	1 (1%)	76	90
11	Z	190/202 (94%)	187 (98%)	3 (2%)	62	84
12	d	112/115 (97%)	109 (97%)	3 (3%)	44	74
13	e	58/103 (56%)	54 (93%)	4 (7%)	15	45
14	f	123/132 (93%)	120 (98%)	3 (2%)	49	76
15	V	156/170 (92%)	150 (96%)	6 (4%)	33	66
16	k	47/140 (34%)	43 (92%)	4 (8%)	10	37
17	Y	117/121 (97%)	117 (100%)	0	100	100
All	All	1848/2743 (67%)	1795 (97%)	53 (3%)	45	72

5 of 53 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
8	m	132	LYS
12	d	130	ASP
16	k	102	VAL
10	b	106	GLU
11	Z	139	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 30 such sidechains are listed below:

Mol	Chain	Res	Type
10	b	103	ASN
15	V	179	ASN
11	Z	145	GLN
17	Y	35	ASN
15	V	82	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
18	A	499/1869 (26%)	97 (19%)	10 (2%)

5 of 97 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
18	A	1207	G
18	A	1208	A
18	A	1209	A
18	A	1215	C
18	A	1216	C

5 of 10 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
18	A	1600	G
18	A	1601	A
18	A	1603	G
18	A	1520	G
18	A	1521	C

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
18	PSU	A	1243	18	18,21,22	1.07	2 (11%)	22,30,33	0.68	0
18	5MC	A	1374	18	18,22,23	0.40	0	26,32,35	0.55	0
18	JMH	A	1219	19,18	18,22,23	0.68	1 (5%)	21,32,35	0.64	0
18	A2M	A	1678	18	18,25,26	0.60	0	18,36,39	0.82	1 (5%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	PSU	A	1243	18	-	0/7/25/26	0/2/2/2
18	5MC	A	1374	18	-	0/7/25/26	0/2/2/2
18	JMH	A	1219	19,18	-	0/7/25/26	0/2/2/2
18	A2M	A	1678	18	-	0/5/27/28	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	A	1243	PSU	C6-C5	3.23	1.39	1.35
18	A	1219	JMH	C5-C4	-2.25	1.37	1.42
18	A	1243	PSU	O4'-C1'	-2.10	1.40	1.43

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	A	1678	A2M	C5-C6-N6	2.21	123.71	120.35

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
18	A	1678	A2M	1	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 30 ligands modelled in this entry, 30 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

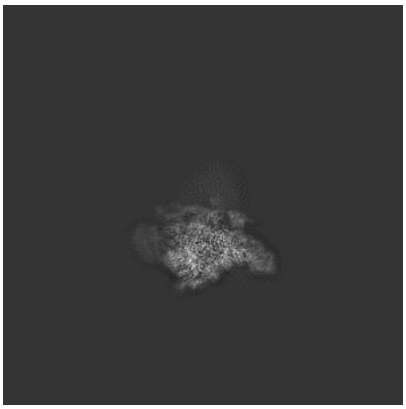
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-10772. These allow visual inspection of the internal detail of the map and identification of artifacts.

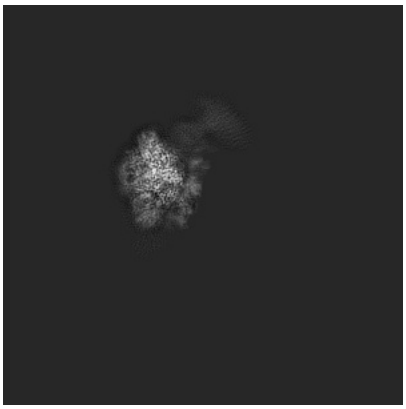
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

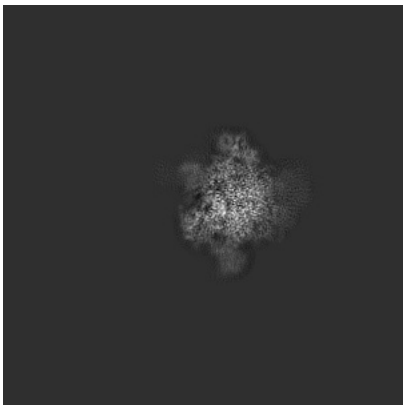
6.1.1 Primary map



X

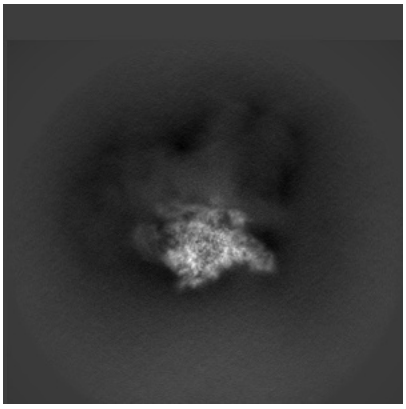


Y

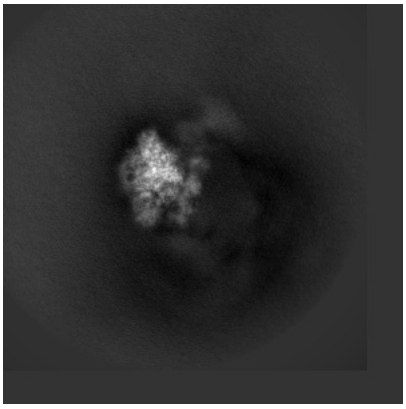


Z

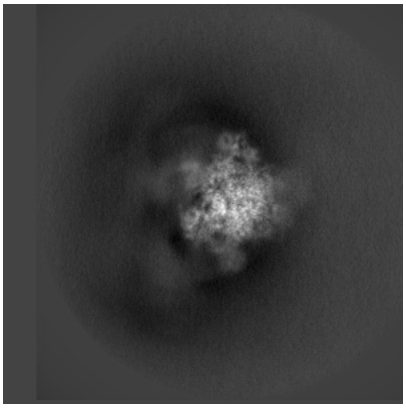
6.1.2 Raw map



X



Y

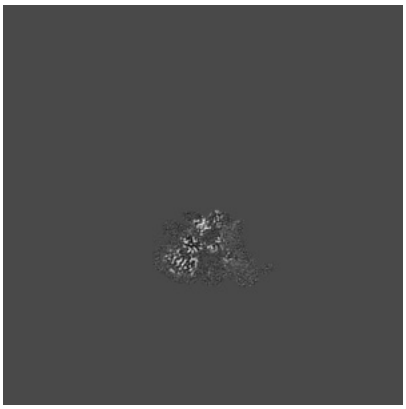


Z

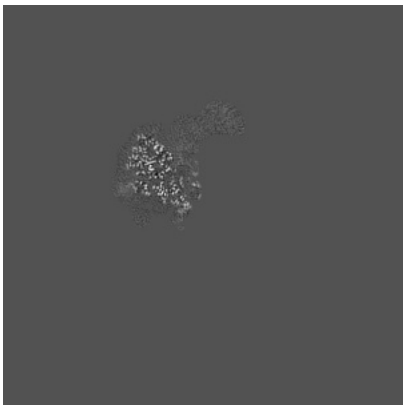
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

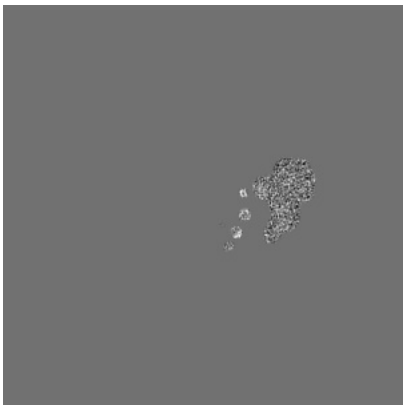
6.2.1 Primary map



X Index: 250

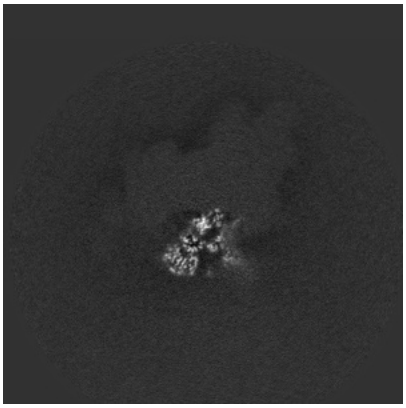


Y Index: 250

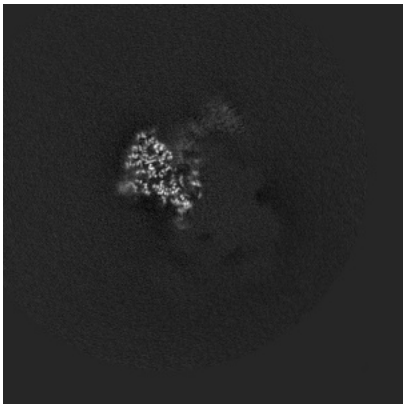


Z Index: 250

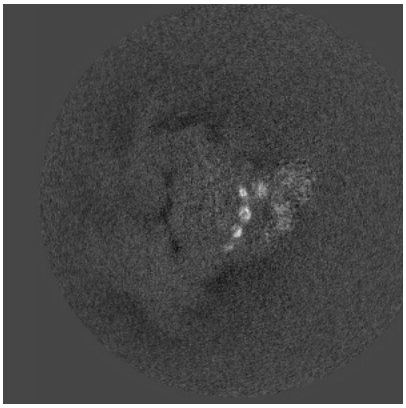
6.2.2 Raw map



X Index: 250



Y Index: 250



Z Index: 250

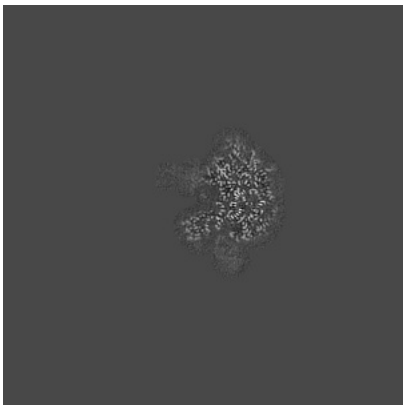
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

6.3.1 Primary map

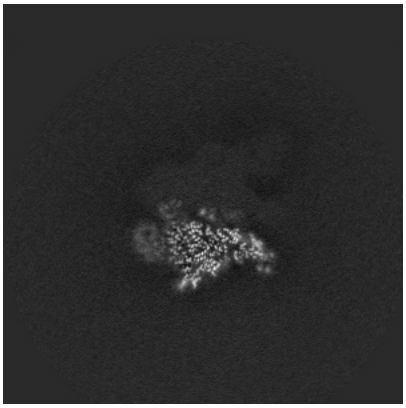
X Index: 288

Y Index: 240

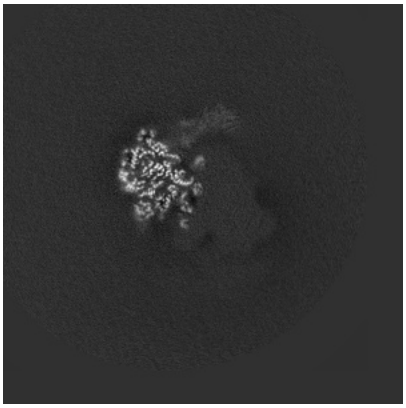


Z Index: 190

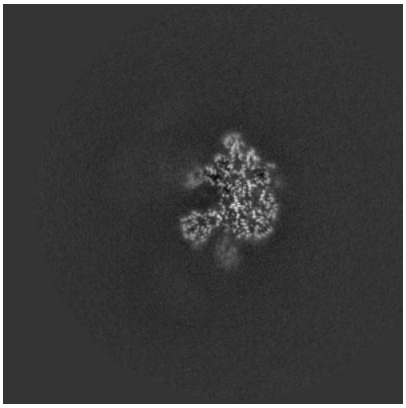
6.3.2 Raw map



X Index: 288



Y Index: 240

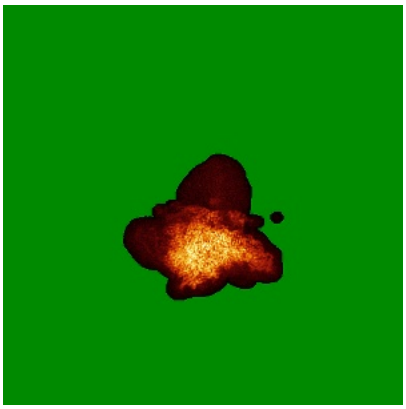


Z Index: 187

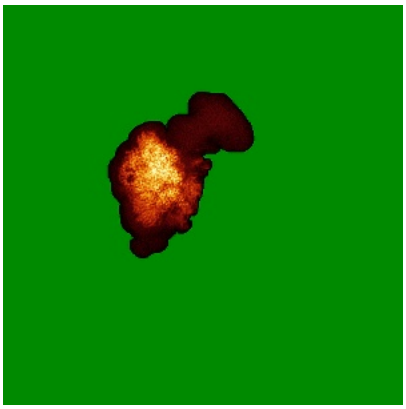
The images above show the largest variance slices of the map in three orthogonal directions.

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

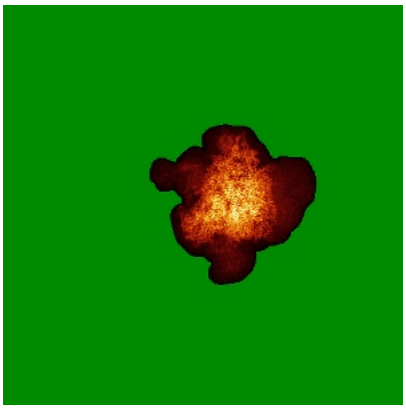
6.4.1 Primary map



X

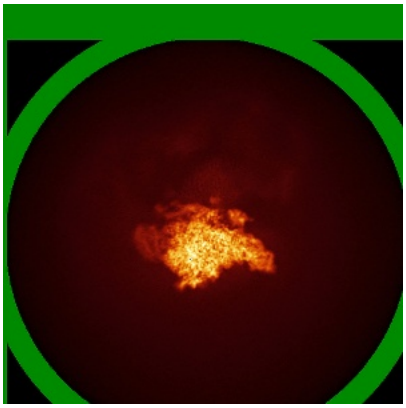


Y

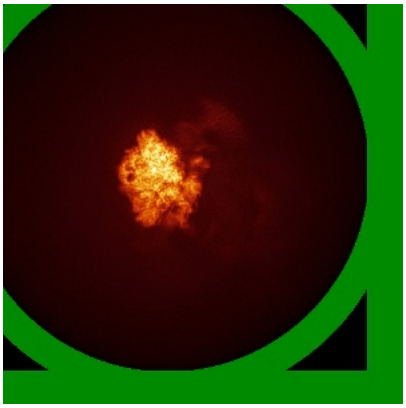


Z

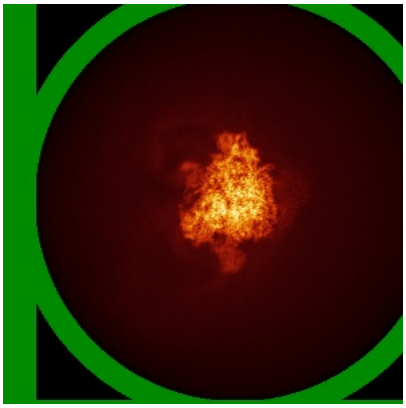
6.4.2 Raw map



X



Y

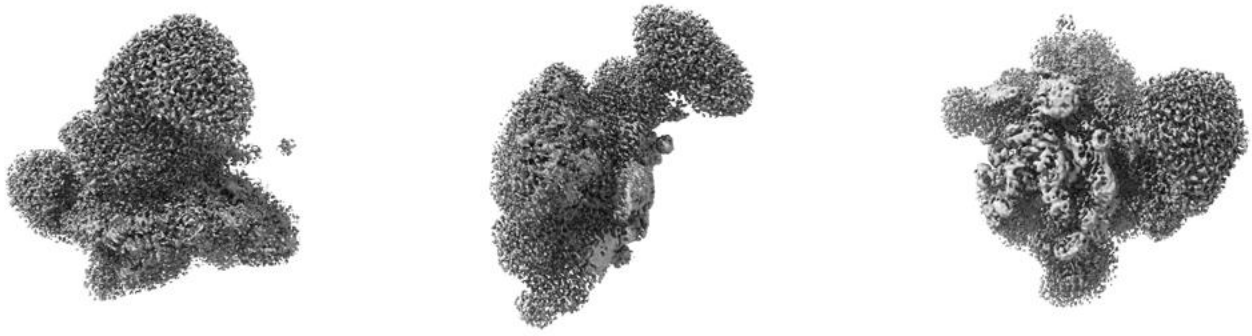


Z

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 0.02. 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.

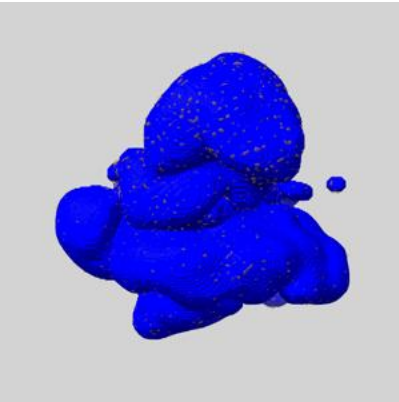
6.6 Mask visualisation (i)

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

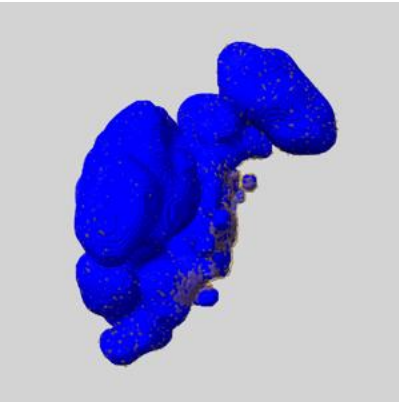
A mask typically either:

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

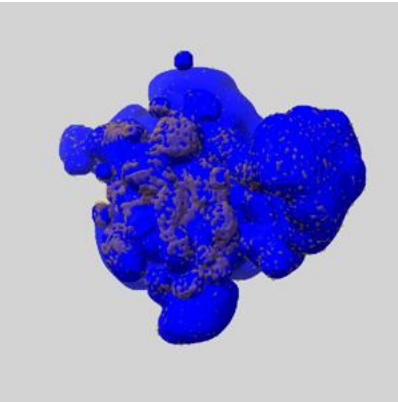
6.6.1 emd_10772_msk_1.map (i)



X



Y

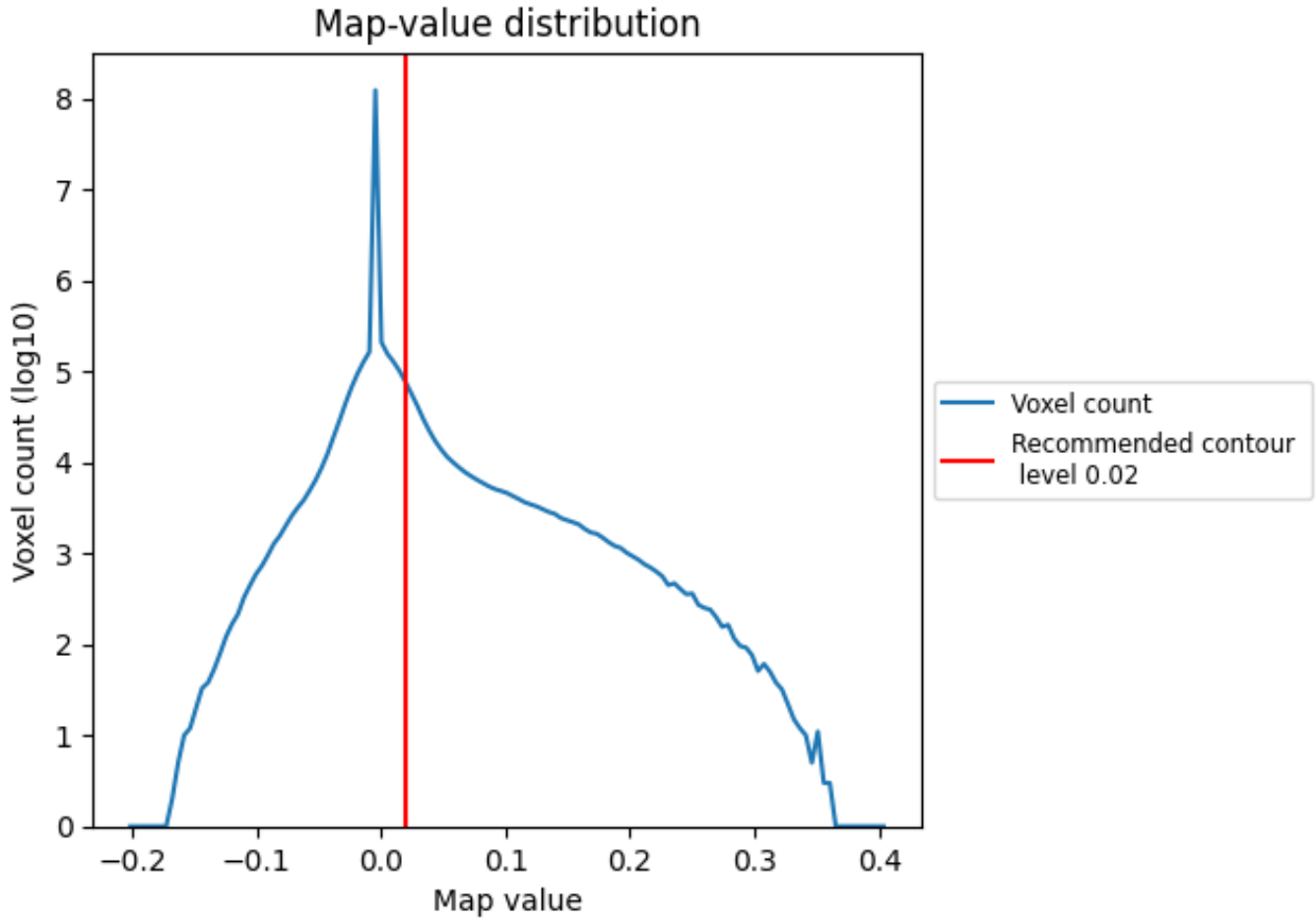


Z

7 Map analysis

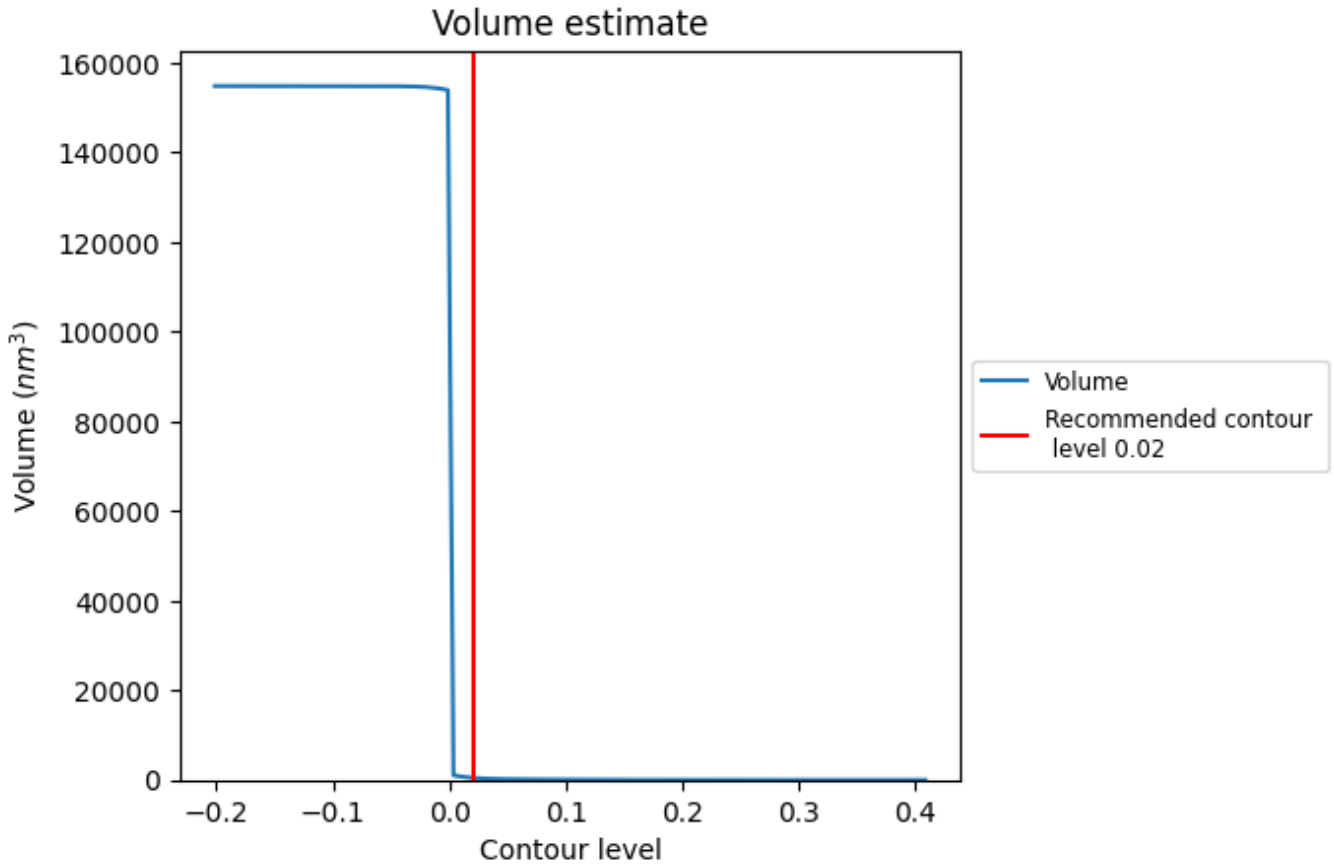
This section contains the results of statistical analysis of the map.

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.

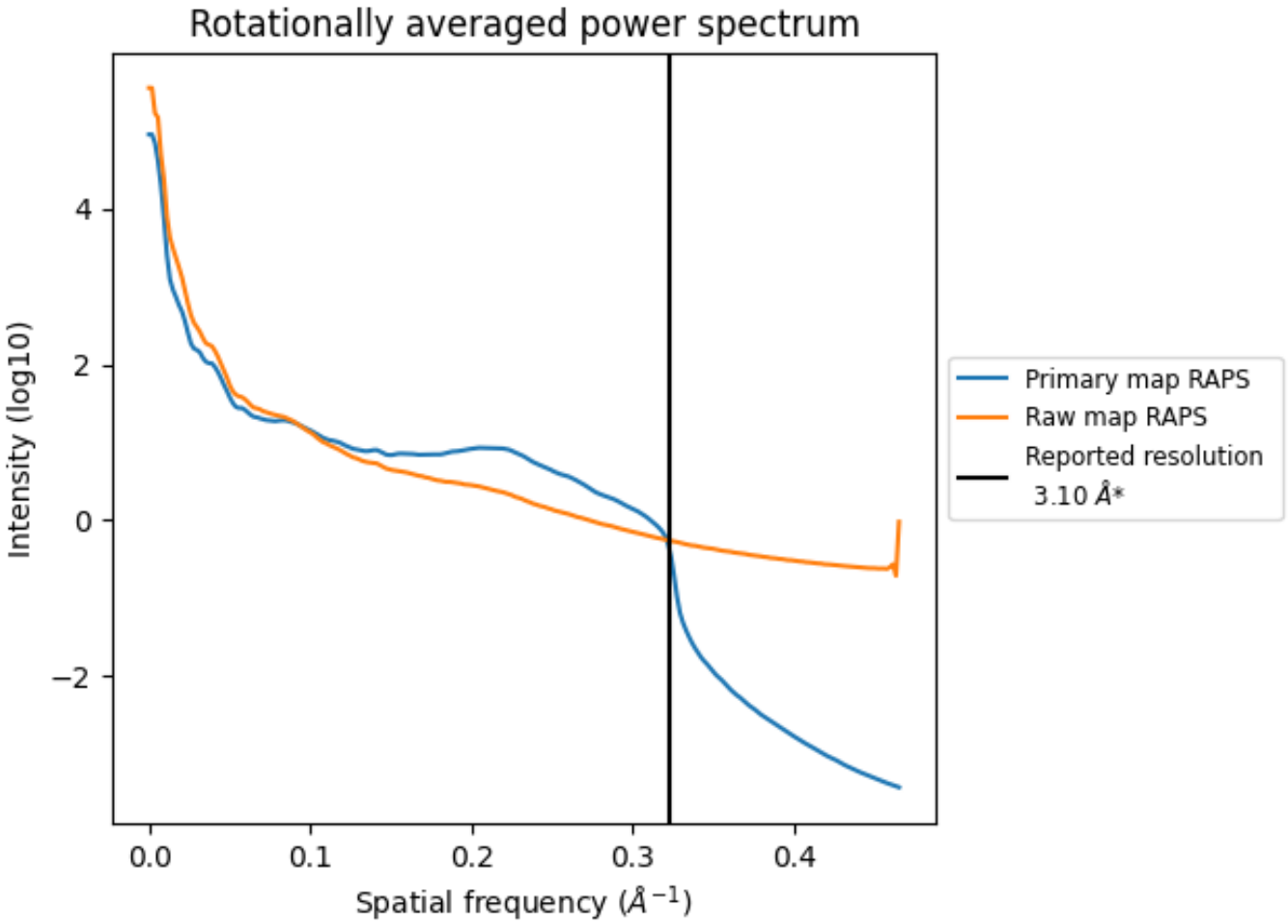
7.2 Volume estimate (i)



The volume at the recommended contour level is 483 nm^3; this corresponds to an approximate mass of 436 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)

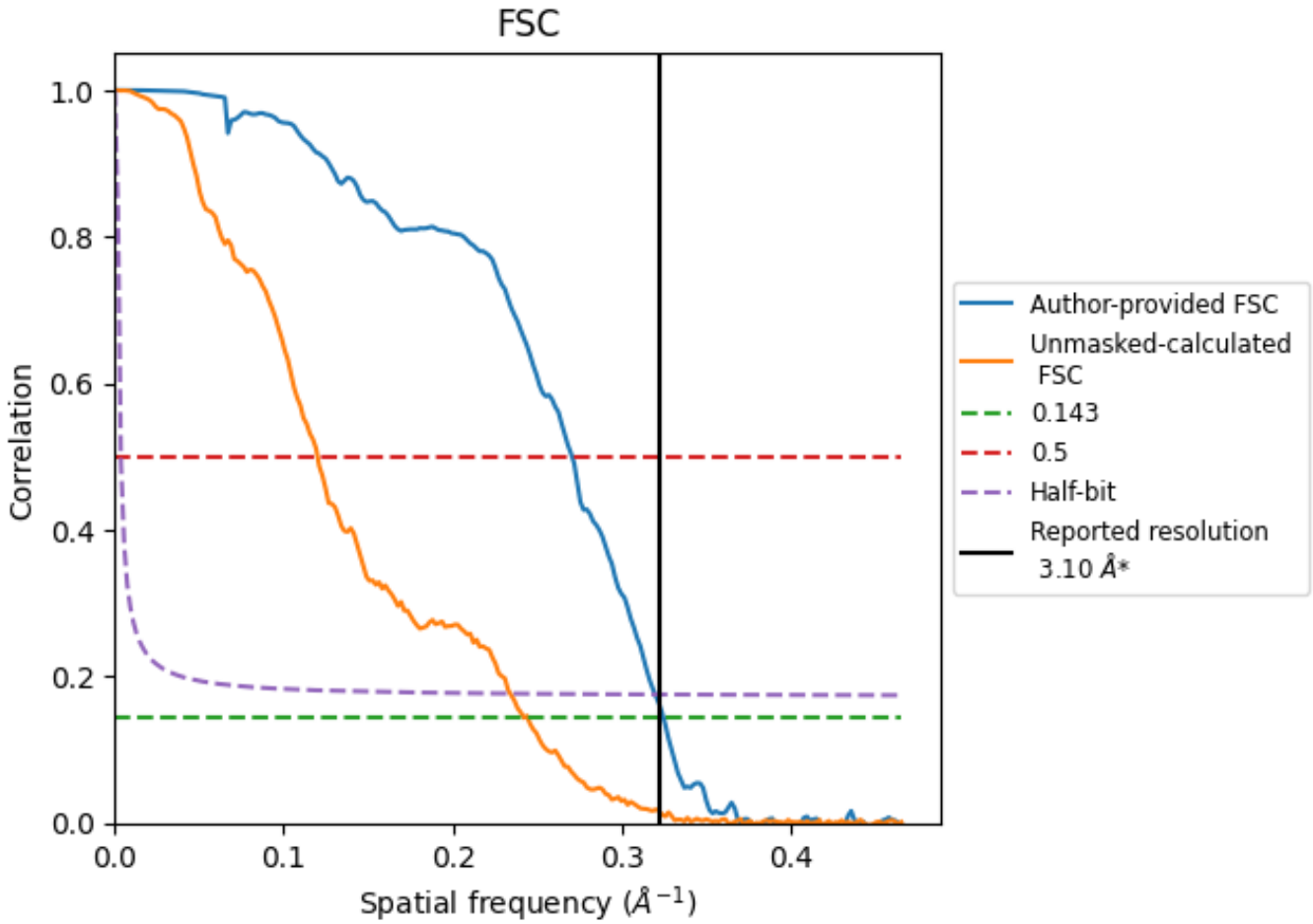


*Reported resolution corresponds to spatial frequency of 0.323 $Å^{-1}$

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 0.323 Å^{-1}

8.2 Resolution estimates (i)

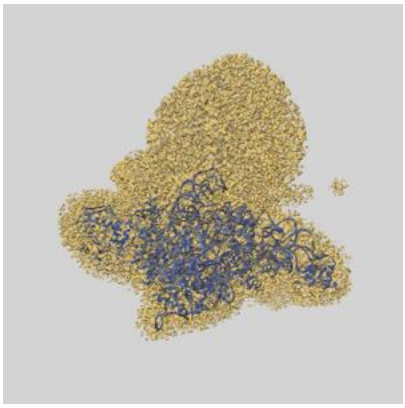
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.08	3.70	3.13
Unmasked-calculated*	4.13	8.33	4.27

*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 4.13 differs from the reported value 3.1 by more than 10 %

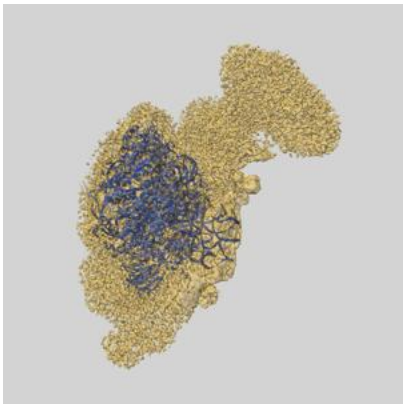
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-10772 and PDB model 6YBS. Per-residue inclusion information can be found in section 3 on page 7.

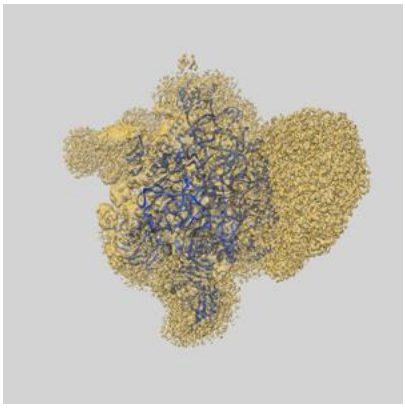
9.1 Map-model overlay



X



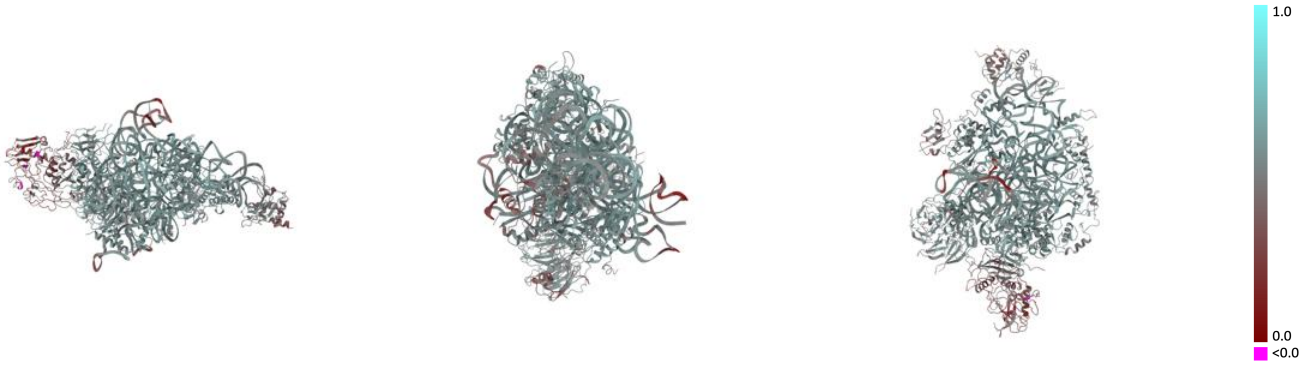
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.02 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.

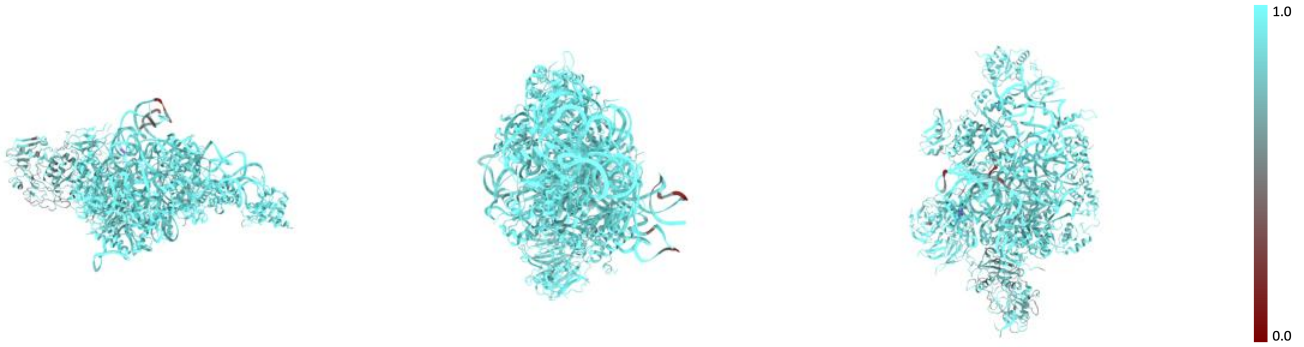
9.2 Q-score mapped to coordinate model



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.

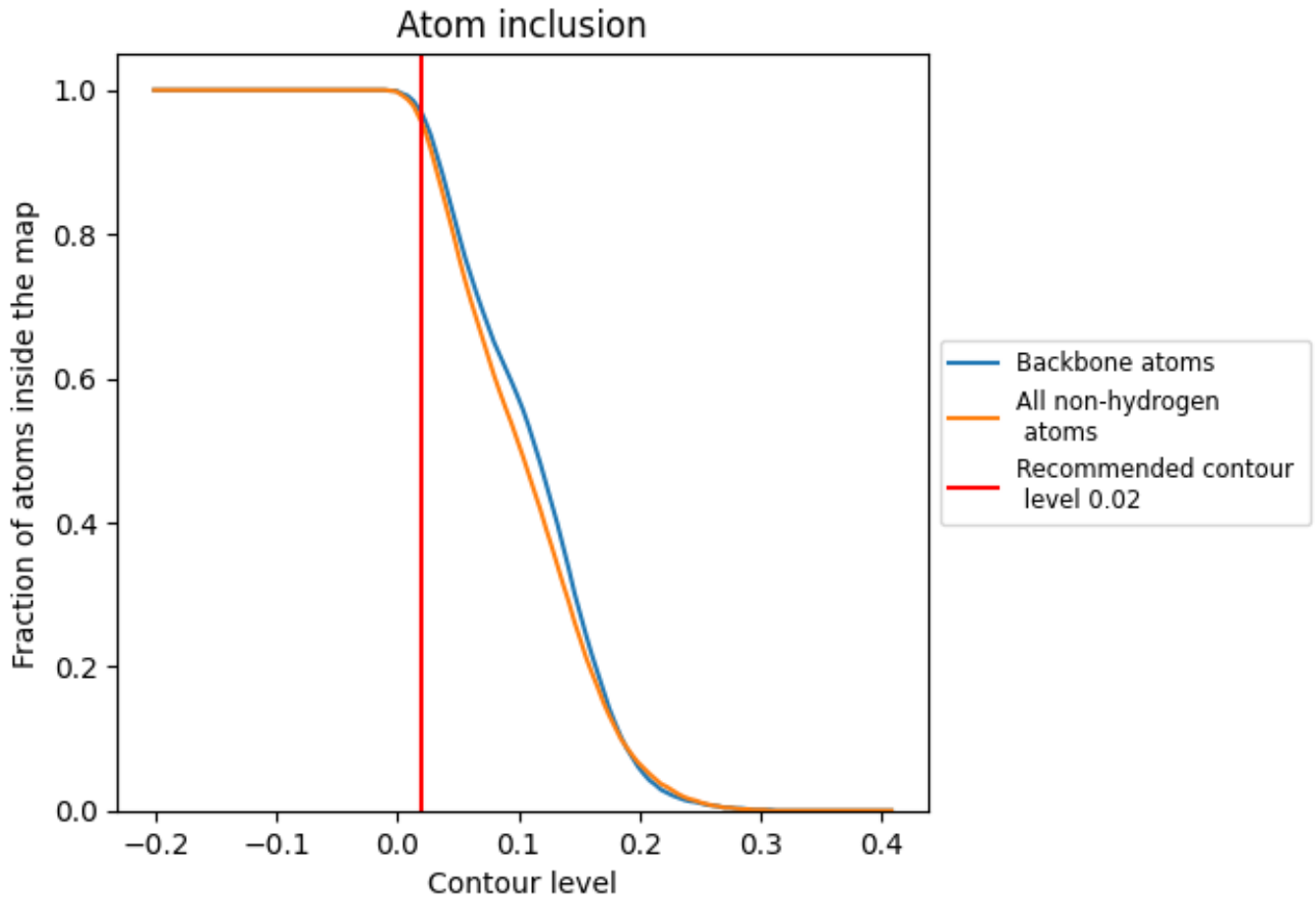
9.3 Atom inclusion mapped to coordinate model



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 (0.02).

9.4 Atom inclusion (i)



At the recommended contour level, 97% of all backbone atoms, 96% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9550	0.5290
A	0.9780	0.5500
V	0.9690	0.5590
X	0.9680	0.5450
Y	0.9760	0.5780
Z	0.9540	0.5530
a	0.9700	0.5610
b	0.9830	0.5620
c	0.9780	0.5340
d	0.9890	0.5750
e	0.9770	0.5470
f	0.9770	0.5510
h	0.9690	0.5470
i	0.9780	0.5970
k	0.9720	0.4830
m	0.9420	0.4300
n	0.9350	0.5340
o	0.9160	0.4210
x	0.7600	0.3600