WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Dec 3, 2025 – 12:18 PM EST

PDB ID	:	9YFN / pdb_00009yfn
EMDB ID	:	EMD-72902
Title	:	insect H/ACA snoRNP class III
Authors	:	Panwar, H.S.; Worden, E.W.
Deposited on	:	2025-09-26
Resolution	:	3.14 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the (i) 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 (i)) were used in the production of this report:

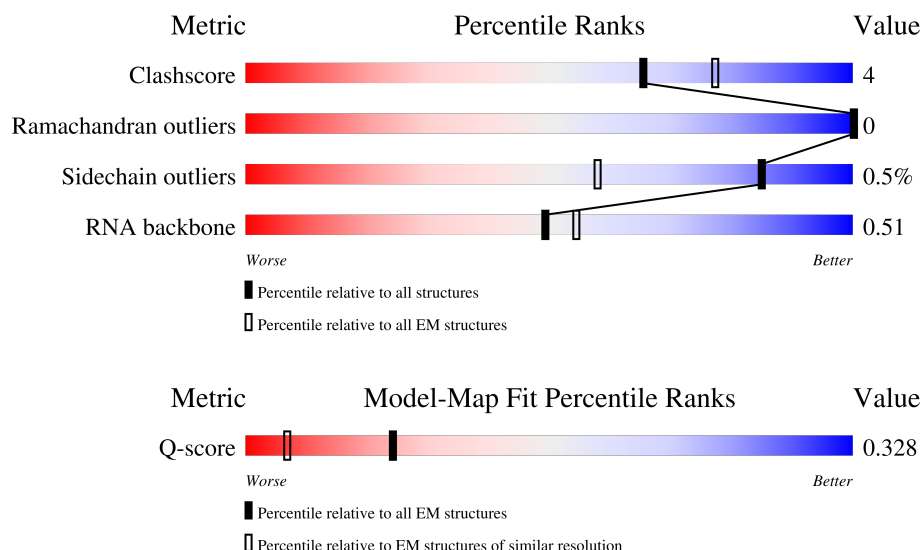|		
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.14 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	Percentile Ranks	Value
Clashscore		4
Ramachandran outliers		0
Sidechain outliers		0.5%
RNA backbone		0.51

Worse — *Better*

▌ Percentile relative to all structures
▯ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.328

Worse — *Better*

▌ Percentile relative to all EM structures
▯ Percentile relative to EM structures of similar resolution

Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	14483 (2.64 - 3.64)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	514	58% 7% 35%
1	D	514	7% 58% 6% 36%
2	B	233	15% 33% 6% 61%

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Mol	Chain	Length	Quality of chain
2	E	233	6% / 34% / 5% / 61%
3	F	64	81% / 14% / 5%
3	H	64	22% / 69% / 5% / 27%
4	G	156	76% / 6% / 18%
5	J	76	22% / 68% / 29%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 19883 atoms, of which 9640 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 H/ACA ribonucleoprotein complex subunit 4-like.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	335	Total 5363	C 1681	H 2724	N 474	O 470	S 14	0	0
1	D	328	Total 5242	C 1639	H 2669	N 462	O 458	S 14	0	0

- Molecule 2 is a protein called H/ACA ribonucleoprotein complex subunit.

Mol	Chain	Residues	Atoms						AltConf	Trace
2	B	91	Total 1475	C 489	H 731	N 117	O 136	S 2	0	0
2	E	90	Total 1460	C 484	H 723	N 116	O 135	S 2	0	0

- Molecule 3 is a protein called H/ACA ribonucleoprotein complex subunit 3.

Mol	Chain	Residues	Atoms						AltConf	Trace
3	F	61	Total 1030	C 330	H 516	N 92	O 91	S 1	0	0
3	H	47	Total 782	C 253	H 385	N 71	O 72	S 1	0	0

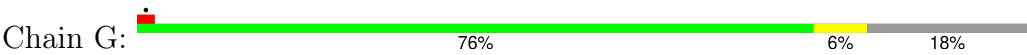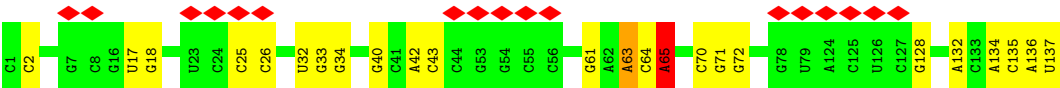- Molecule 4 is a protein called H/ACA ribonucleoprotein complex subunit 2-like protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
4	G	128	Total 2080	C 651	H 1064	N 173	O 182	S 10	0	0

- Molecule 5 is a RNA chain called RNA (76-MER).

Mol	Chain	Residues	Atoms						AltConf	Trace
5	J	76	Total 2451	C 724	H 828	N 299	O 524	P 76	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: H/ACA ribonucleoprotein complex subunit 4-like

Chain A:

• Molecule 1: H/ACA ribonucleoprotein complex subunit 4-like

Chain D:

ARG ASP SER GLU ALA ALA ASP ALA VAL PRO GLU ASP GLY SER GLY ASP ALA THR MET GLU ALA GLU THR THR THR GLU ALA ASP SER SER ILE ARG LYS GLU LYS LYS LYS LYS LYS LYS ASP ARG GLU GLN GLU GLU ARG VAL ASP GLU

• Molecule 2: H/ACA ribonucleoprotein complex subunit

Chain B:

15%
33% 6% 61%

MET SER PHE ARG GLY ARG GLY GLY GLY GLY GLY ARG GLY TYR GLY GLY GLY GLY GLY GLY ARG GLY PHE GLY ARG GLY GLY GLY ARG GLY PHE GLY ARG GLY GLY GLY ARG GLY ARG GLY GLY GLY GLY PHE GLN GLN ASP

GLN GLY P63 P64 E65 S66 V67 I68 P69 L70 G71 H72 W75 T76 V77 Q78 D79 D80 L81 I82 D86 D89 Y92 F93 N94 E100 I105 G106 K107 I108 D117 V122 D126 N127 F128 K129 A130 N131 S132 F133 K134 D135 G136 Q137 Q138 F139 Y140 I141 D142 P148

R151 F152 L153 PRO GLN PRO PRO GLY ALA LYS ARG GLY GLY GLY ARG GLY ARG GLY ARG GLY PRO ARG GLY ARG GLY GLY GLY GLY PHE GLY ARG GLY GLY GLY GLY ARG GLY GLY ARG GLY GLY GLY PHE GLY ARG GLY GLY GLY GLY

GLY GLY TYR GLY GLY GLY GLY GLY PHE ASN ARG GLY GLY GLY PHE ARG GLY GLY ARG GLY GLY ARG

• Molecule 2: H/ACA ribonucleoprotein complex subunit

Chain E:

6%
34% 5% 61%

MET SER PHE ARG ARG GLY ARG GLY GLY GLY GLY GLY ARG GLY ARG GLY GLY TYR GLY GLY GLY GLY GLY GLY ARG GLY PHE GLY ARG GLY GLY GLY ARG GLY ARG GLY GLY GLY PHE GLY ARG ARG GLY GLY GLY ARG GLY ARG GLY GLY GLY GLY GLY PHE ARG GLN GLN ASP

GLN GLY PRO PRO E65 S66 V67 Q78 D79 D86 I87 E88 F93 N94 A95 P96 I97 E103 G106 N114 L115 R116 D117 Y118 M124 G125 D126 A130 Y140 K145 L149 K150 P154 GLN PRO PRO GLY ALA LYS ARG GLY GLY GLY ARG GLY ARG GLY GLY

PRO ARG GLY GLY ARG GLY GLY GLY GLY GLY PHE GLY ARG GLY GLY GLY GLY GLY ARG GLY GLY ARG GLY GLY GLY PHE GLY ARG GLY GLY GLY GLY GLY PHE GLY ARG GLY GLY GLY GLY TYR GLY GLY GLY GLY GLY PHE ASN ARG GLY GLY GLY PHE ARG GLY GLY ARG GLY GLY

ARG GLY GLY ARG

• Molecule 3: H/ACA ribonucleoprotein complex subunit 3

Chain F:

81% 14% 5%

M1 R4 N8 D12 D21 P22 T27 R34 K49 L54 E61 PRO ILE LEU

• Molecule 3: H/ACA ribonucleoprotein complex subunit 3

Chain H:

22%
69% 5% 27%

M1 N10 L17 D21 G24 K25 A30 R34 F35 S36 K40 Y41 S42 R43 H44 R45 I46 I47 ILE LYS LYS ARG PHE GLY LEU LEU LEU THR GLN GLN PRO GLU PRO ILE LEU

• Molecule 4: H/ACA ribonucleoprotein complex subunit 2-like protein

Chain G:

76%   6%   18%

MET GLY LYS ILE LYS GLN GLU PRO VAL GLU GLN GLU ASP GLN ALA ASP VAL SER VAL LYS ASN GLU PRO GLN S25 Y26 D27 E28 K60 G80 L97 P98 P112 E134 F142 D143 E144 L152 GLY HIS PRO ILE

• Molecule 5: RNA (76-MER)

Chain J:

22%

68%   29%

C1 C2 G7 C8 G16 U17 G18 U23 C24 C25 C26 U32 G33 G34 G40 C41 A42 C43 C44 G53 G54 C55 C56 G61 A62 A63 C64 A65 C70 G71 G72 G78 U79 A124 C125 U126 C127 G128 A132 C133 A134 C135 A136 U137

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	134862	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 $(e^-/\text{Å}^2)$	50	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.739	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.028	Depositor
Recommended contour level	0.0652	Depositor
Map size (Å)	248.40001, 248.40001, 248.40001	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.828, 0.828, 0.828	Depositor

5   Model quality ⓘ

5.1   Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$|Z|$ >5	RMSZ	#$|Z|$ >5
1	A	0.17	0/2690	0.37	0/3633
1	D	0.23	0/2621	0.46	0/3537
2	B	0.29	0/765	0.61	2/1035 (0.2%)
2	E	0.22	0/757	0.53	1/1024 (0.1%)
3	F	0.18	0/528	0.44	0/713
3	H	0.12	0/409	0.33	0/554
4	G	0.36	0/1034	0.54	2/1384 (0.1%)
5	J	0.22	0/1810	0.44	1/2810 (0.0%)
All	All	0.23	0/10614	0.46	6/14690 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	4
2	B	0	1
3	F	0	1
All	All	0	6

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	126	ASP	N-CA-C	-8.88	101.71	112.54
4	G	80	GLY	CA-C-O	-6.15	115.50	120.79
2	B	128	PHE	CA-CB-CG	-5.46	108.34	113.80
4	G	143	ASP	N-CA-C	-5.13	107.15	113.41
2	B	106	GLY	CA-C-O	-5.06	116.60	121.41
5	J	65	A	O3'-P-O5'	-5.02	96.47	104.00

There are no chirality outliers.

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All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	179	ARG	Sidechain
1	A	185	ARG	Sidechain
1	A	194	ARG	Sidechain
1	A	197	ARG	Sidechain
2	B	151	ARG	Sidechain
3	F	34	ARG	Sidechain

5.2　Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2639	2724	2724	24	0
1	D	2573	2669	2669	26	0
2	B	744	731	731	8	0
2	E	737	723	723	5	0
3	F	514	516	516	4	0
3	H	397	385	385	3	0
4	G	1016	1064	1064	4	0
5	J	1623	828	832	7	0
All	All	10243	9640	9644	75	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.

All (75) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:340:THR:HG21	1:D:356:THR:HG23	1.77	0.66
1:D:319:LEU:HD21	1:D:352:MET:SD	2.42	0.59
1:D:352:MET:HE2	1:D:357:MET:CG	2.33	0.59
2:B:75:TRP:NE1	2:B:82:ILE:HD12	2.20	0.56
5:J:61:G:O2'	5:J:63:A:N7	2.39	0.55
1:D:352:MET:HE2	1:D:357:MET:HG3	1.94	0.50
1:D:319:LEU:HD21	1:D:352:MET:HE1	1.93	0.50
2:B:75:TRP:CD1	2:B:82:ILE:HD12	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:228:ILE:HD12	1:D:228:ILE:H	1.77	0.48
1:D:352:MET:HE2	1:D:357:MET:HG2	1.95	0.48
1:A:337:ILE:O	1:A:345:VAL:HG22	2.13	0.47
1:D:158:VAL:HG22	1:D:217:VAL:HG22	1.95	0.46
1:D:319:LEU:HD21	1:D:352:MET:CE	2.45	0.46
1:D:338:VAL:HG12	1:D:339:THR:O	2.16	0.46
2:E:67:VAL:HB	2:E:140:TYR:HB3	1.98	0.45
1:A:318:LEU:HB3	1:A:320:PRO:HD2	1.98	0.45
5:J:25:C:H2'	5:J:26:C:C6	2.51	0.45
1:D:353:THR:HG22	1:D:354:THR:N	2.32	0.45
1:D:301:ILE:O	1:D:301:ILE:HG22	2.17	0.45
1:D:217:VAL:HG23	3:H:17:LEU:HD11	1.98	0.45
3:F:8:ASN:HD21	3:F:12:ASP:HB2	1.82	0.45
2:B:70:LEU:N	2:B:139:PHE:O	2.50	0.44
3:F:4:ARG:HB3	3:F:27:THR:OG1	2.17	0.44
1:A:137:CYS:HB3	1:A:141:ALA:HB3	2.00	0.44
1:D:198:VAL:C	1:D:199:ARG:HD3	2.43	0.44
2:B:93:PHE:O	2:B:94:ASN:C	2.61	0.44
1:A:339:THR:HG23	1:A:345:VAL:CG1	2.47	0.44
1:A:94:ILE:HD11	1:A:138:ILE:HD11	2.00	0.43
1:A:198:VAL:O	1:A:199:ARG:HD3	2.18	0.43
2:B:94:ASN:N	2:B:108:ILE:HG22	2.33	0.43
1:A:58:LEU:HD11	1:A:342:GLY:HA3	2.00	0.43
1:A:179:ARG:HG3	1:A:179:ARG:O	2.18	0.43
2:B:77:VAL:HG13	2:B:77:VAL:O	2.18	0.43
3:H:21:ASP:OD1	3:H:24:GLY:N	2.51	0.43
1:D:154:GLU:OE2	1:D:219:TRP:NE1	2.50	0.43
1:D:158:VAL:HB	1:D:247:GLU:HB3	2.01	0.43
4:G:144:GLU:C	4:G:144:GLU:CD	2.87	0.43
1:A:314:GLY:O	5:J:2:C:O2'	2.36	0.43
1:D:143:ARG:HB3	1:D:370:ARG:NH1	2.35	0.42
1:A:109:SER:OG	5:J:42:A:H5"	2.19	0.42
1:D:207:LEU:N	1:D:217:VAL:O	2.51	0.42
1:A:158:VAL:HG22	1:A:217:VAL:HG22	2.01	0.42
2:E:114:ASN:O	2:E:118:TYR:HB3	2.19	0.42
1:A:353:THR:CG2	1:A:354:THR:N	2.82	0.42
2:B:126:ASP:O	2:B:127:ASN:C	2.62	0.42
1:D:131:THR:OG1	1:D:132:GLY:N	2.53	0.42
1:A:56:LEU:O	1:A:59:LYS:HG3	2.20	0.42
1:A:100:SER:O	1:A:128:PRO:O	2.37	0.42
1:A:353:THR:HG22	1:A:354:THR:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:75:TRP:NE1	2:B:82:ILE:CD1	2.83	0.42
2:E:78:GLN:O	2:E:79:ASP:C	2.63	0.42
4:G:97:LEU:N	4:G:98:PRO:CD	2.82	0.42
1:A:54:TRP:O	1:A:59:LYS:HG2	2.20	0.41
3:F:49:LYS:HE3	3:F:54:LEU:HB3	2.02	0.41
1:A:255:ILE:O	1:A:255:ILE:HG13	2.19	0.41
1:D:228:ILE:HD12	1:D:228:ILE:N	2.35	0.41
1:D:299:LYS:HB2	1:D:335:ILE:HG22	2.02	0.41
1:A:135:ILE:HG21	1:A:294:LEU:HD21	2.02	0.41
1:D:197:ARG:NH2	1:D:225:GLY:O	2.53	0.41
1:D:215:ILE:HG13	3:H:17:LEU:CD2	2.50	0.41
2:E:124:MET:HE1	2:E:130:ALA:N	2.35	0.41
4:G:134:GLU:HB2	4:G:142:PHE:CE2	2.55	0.41
1:A:353:THR:HG22	1:A:355:SER:H	1.86	0.41
1:A:100:SER:O	1:A:129:LYS:HA	2.21	0.41
1:A:106:GLU:OE2	5:J:18:G:N2	2.43	0.41
1:D:55:PRO:HD2	1:D:58:LEU:HB2	2.03	0.41
1:D:198:VAL:O	1:D:199:ARG:HD2	2.21	0.41
2:E:88:GLU:O	2:E:149:LEU:HB2	2.21	0.41
4:G:26:TYR:CZ	4:G:112:PRO:HG3	2.56	0.41
5:J:65:A:H2'	5:J:65:A:N3	2.36	0.41
1:A:99:PRO:HG2	1:A:102:PRO:CG	2.50	0.40
1:D:340:THR:O	1:D:340:THR:HG22	2.22	0.40
3:F:21:ASP:HB2	3:F:22:PRO:HD2	2.02	0.40
5:J:25:C:H2'	5:J:26:C:O4'	2.21	0.40
1:A:251:VAL:O	1:A:251:VAL:CG1	2.69	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	A	331/514 (64%)	319 (96%)	12 (4%)	0	100	100
1	D	324/514 (63%)	312 (96%)	12 (4%)	0	100	100
2	B	89/233 (38%)	85 (96%)	4 (4%)	0	100	100
2	E	88/233 (38%)	82 (93%)	6 (7%)	0	100	100
3	F	59/64 (92%)	59 (100%)	0	0	100	100
3	H	45/64 (70%)	44 (98%)	1 (2%)	0	100	100
4	G	126/156 (81%)	124 (98%)	2 (2%)	0	100	100
All	All	1062/1778 (60%)	1025 (96%)	37 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2   Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	287/444 (65%)	286 (100%)	1 (0%)	91	95
1	D	281/444 (63%)	279 (99%)	2 (1%)	81	89
2	B	82/130 (63%)	80 (98%)	2 (2%)	44	67
2	E	81/130 (62%)	81 (100%)	0	100	100
3	F	55/58 (95%)	55 (100%)	0	100	100
3	H	42/58 (72%)	42 (100%)	0	100	100
4	G	114/139 (82%)	114 (100%)	0	100	100
All	All	942/1403 (67%)	937 (100%)	5 (0%)	85	92

All (5) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	246	ILE
2	B	108	ILE
2	B	129	LYS
1	D	231	MET
1	D	269	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	60	ASN
1	A	70	HIS
1	A	272	GLN
1	A	277	ASN
2	E	131	ASN
3	F	14	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
5	J	71/76 (93%)	18 (25%)	2 (2%)

All (18) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
5	J	17	U
5	J	32	U
5	J	33	G
5	J	34	G
5	J	40	G
5	J	43	C
5	J	63	A
5	J	64	C
5	J	65	A
5	J	70	C
5	J	71	G
5	J	72	G
5	J	128	G
5	J	132	A
5	J	134	A
5	J	135	C
5	J	136	A
5	J	137	U

All (2) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
5	J	32	U
5	J	64	C

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
5	J	4

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	J	8:C	O3'	16:G	P	23.86
1	J	44:C	O3'	53:G	P	19.50
1	J	79:U	O3'	124:A	P	17.16
1	J	27:A	O3'	30:A	P	9.63

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-72902. 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 ⓘ
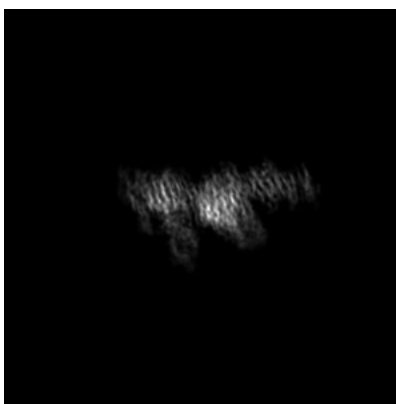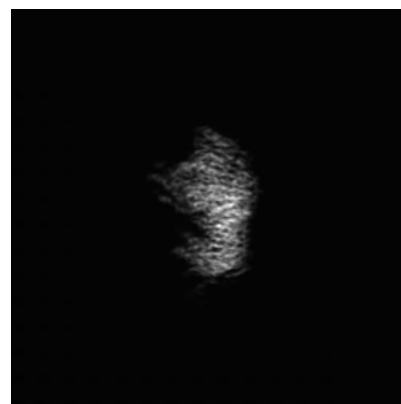
6.1.1 Primary map

| X | Y | Z |

6.1.2 Raw map

| X | Y | Z |
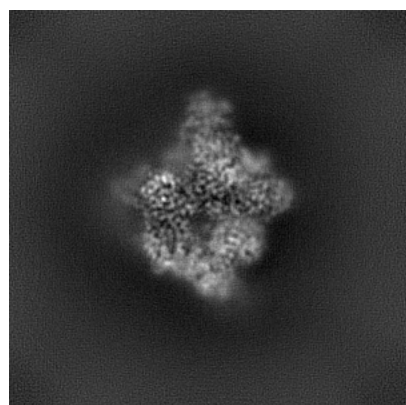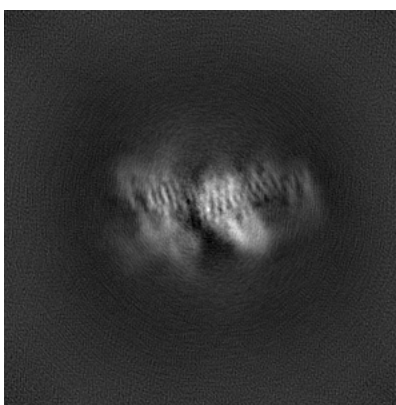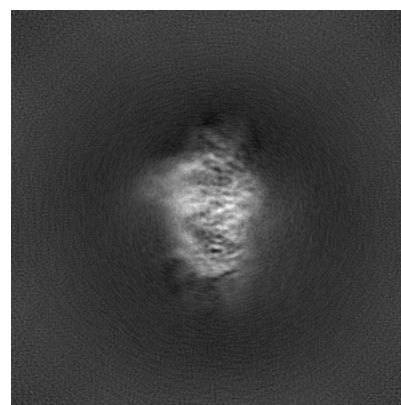
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ

6.2.1 Primary map

X Index: 150 Y Index: 150 Z Index: 150

6.2.2 Raw map
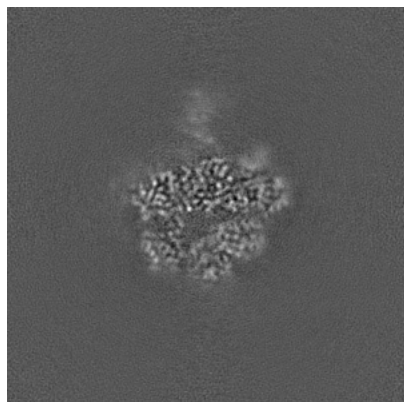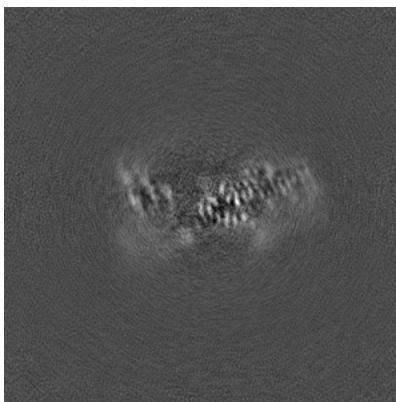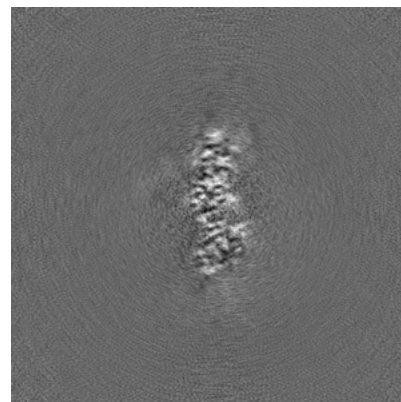
X Index: 150 Y Index: 150 Z Index: 150

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

6.3 Largest variance slices ⓘ

6.3.1 Primary map

X Index: 153   Y Index: 158   Z Index: 171
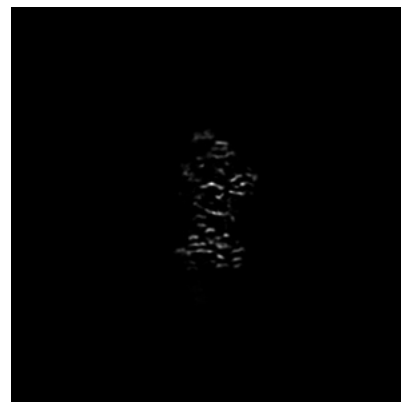
6.3.2 Raw map
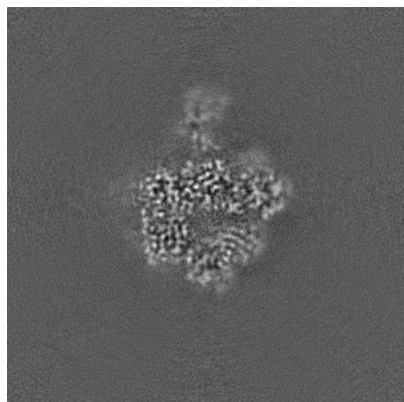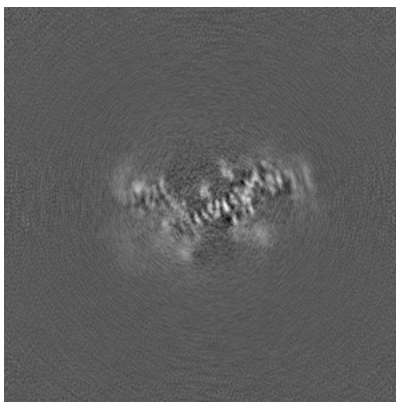
X Index: 155   Y Index: 158   Z Index: 171
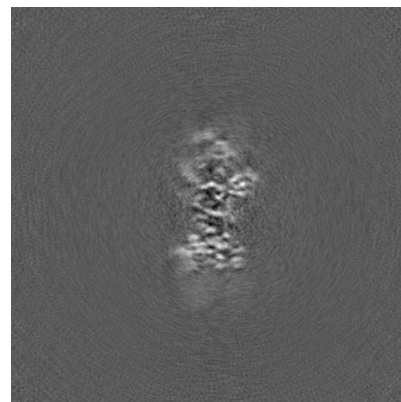
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map
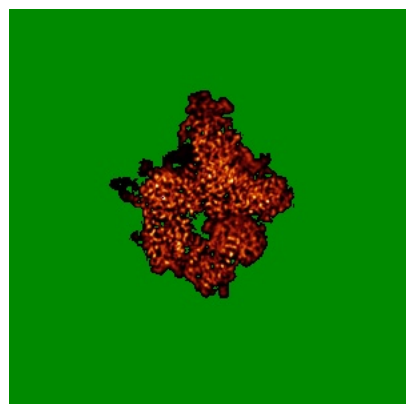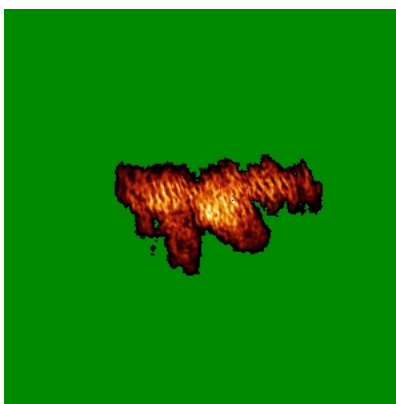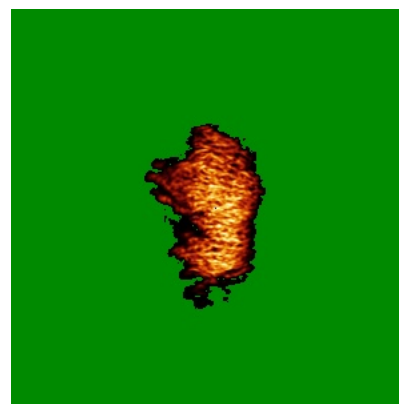
X	Y	Z

6.4.2 Raw map

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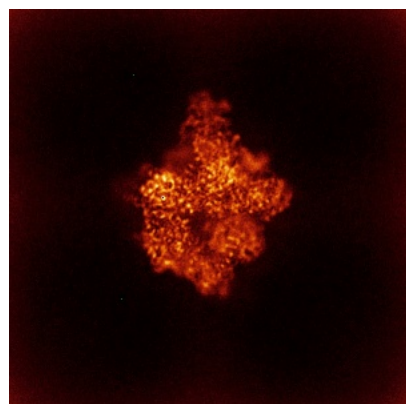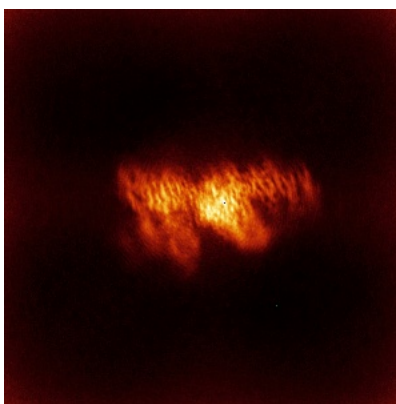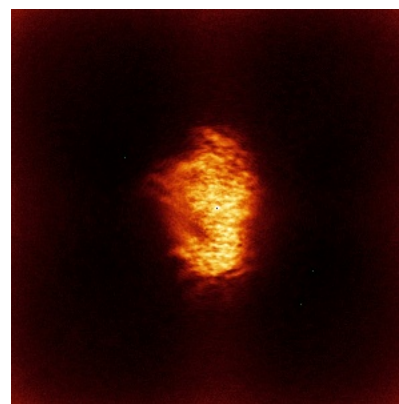
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.
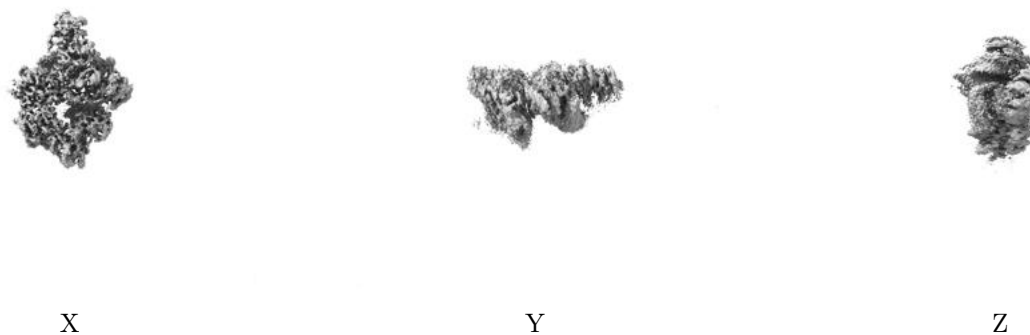
6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

| X | Y | Z |
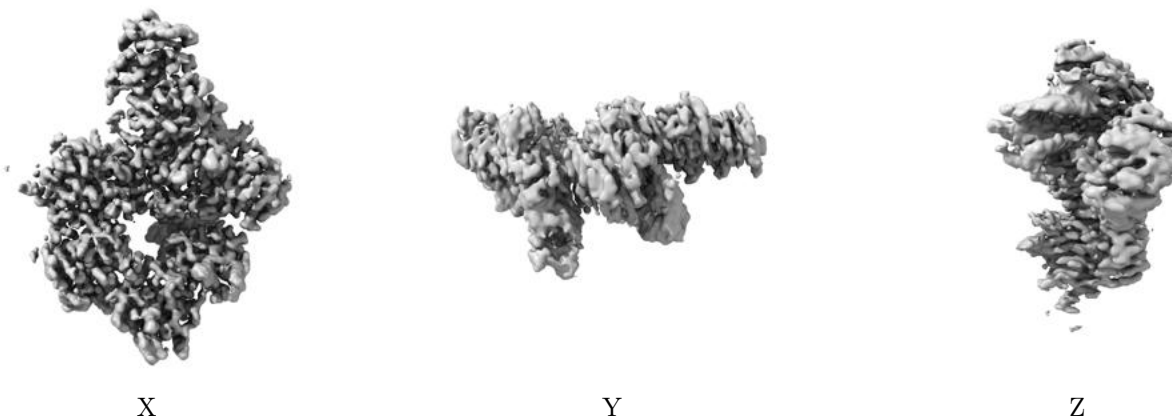
The images above show the 3D surface view of the map at the recommended contour level 0.0652. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

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 was not generated. No masks/segmentation were deposited.

7 Map analysis ⓘ

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

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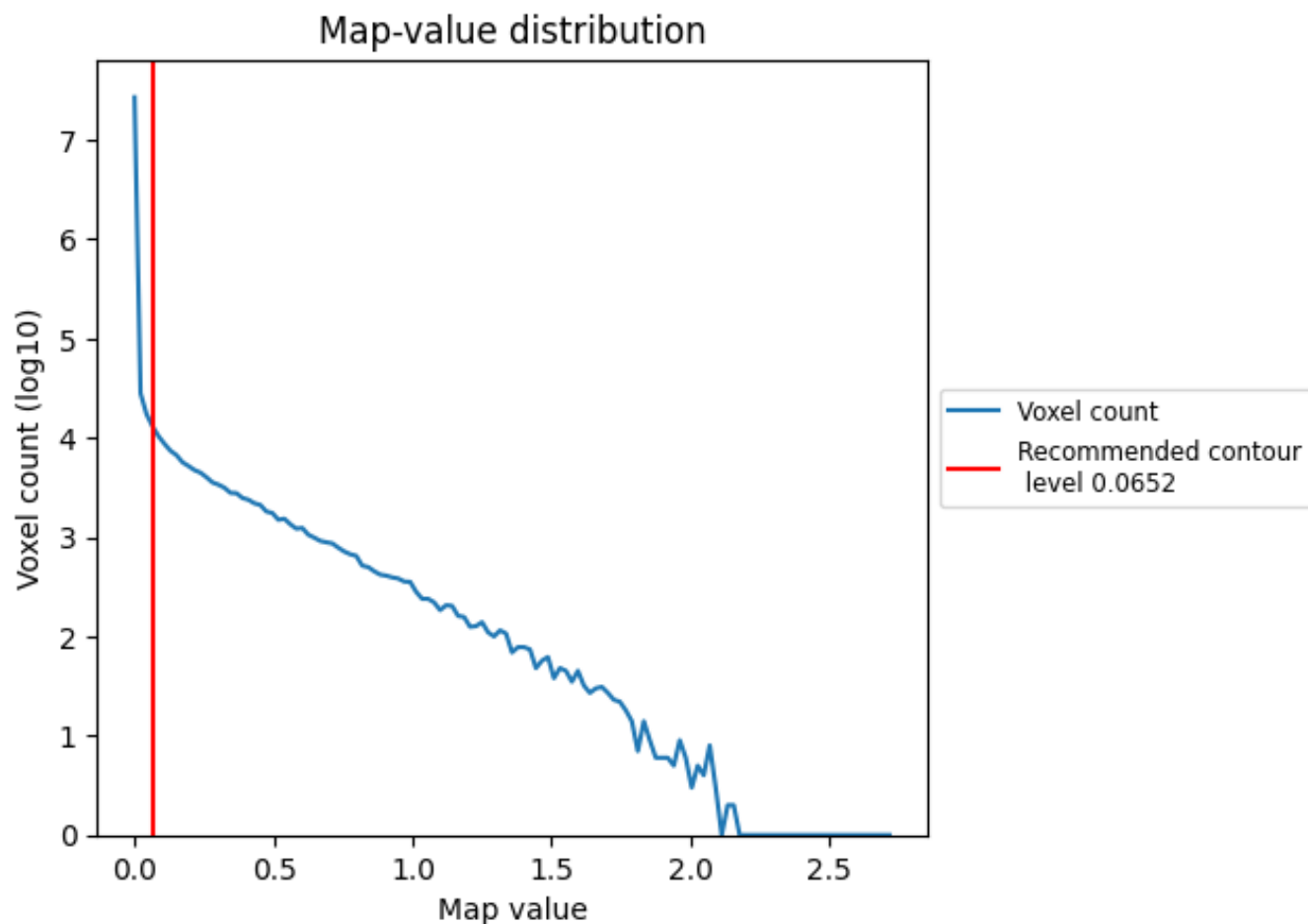
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2　Volume estimate ⓘ
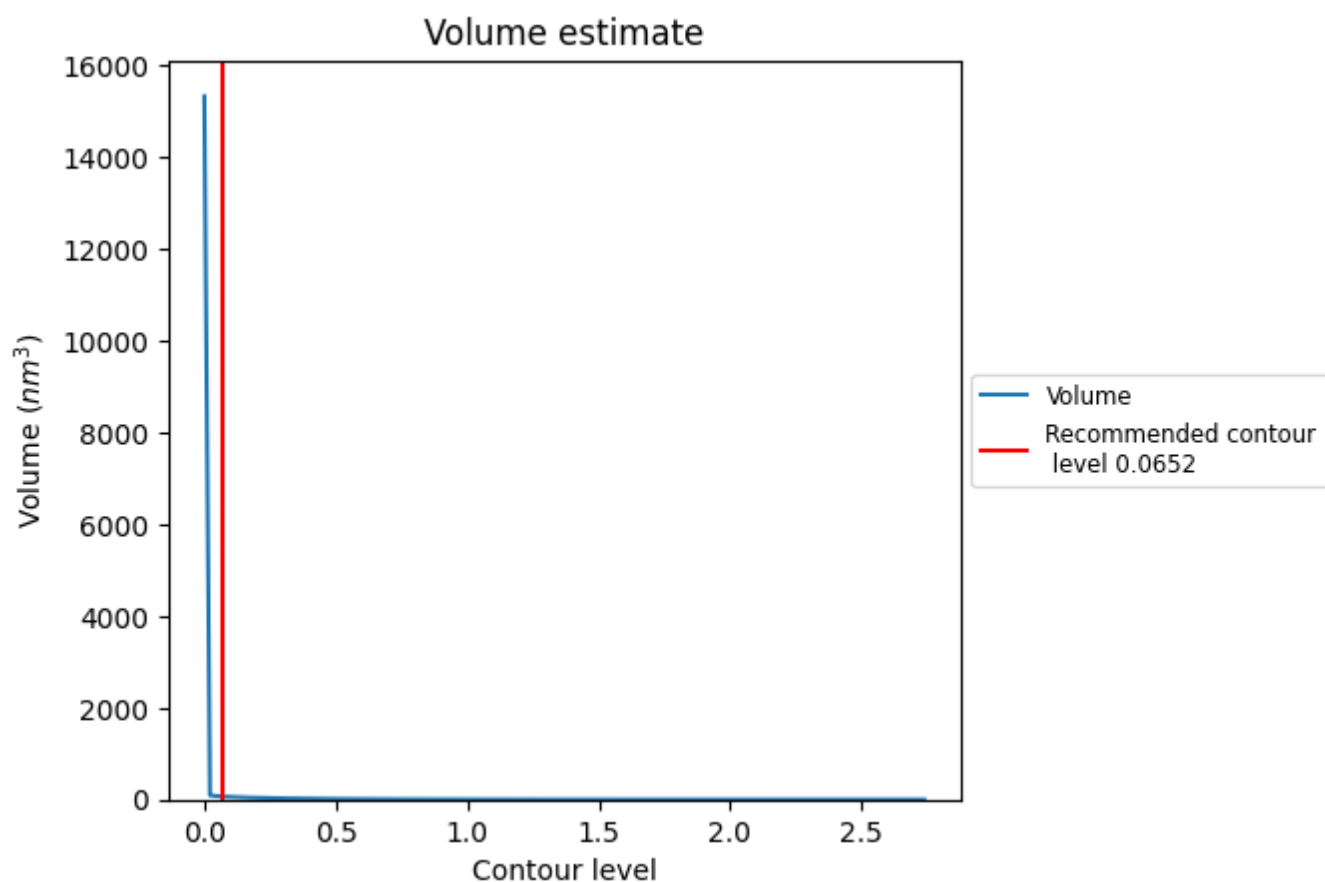
The volume at the recommended contour level is 68 nm^3; this corresponds to an approximate mass of 61 kDa.

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

7.3　Rotationally averaged power spectrum ⓘ
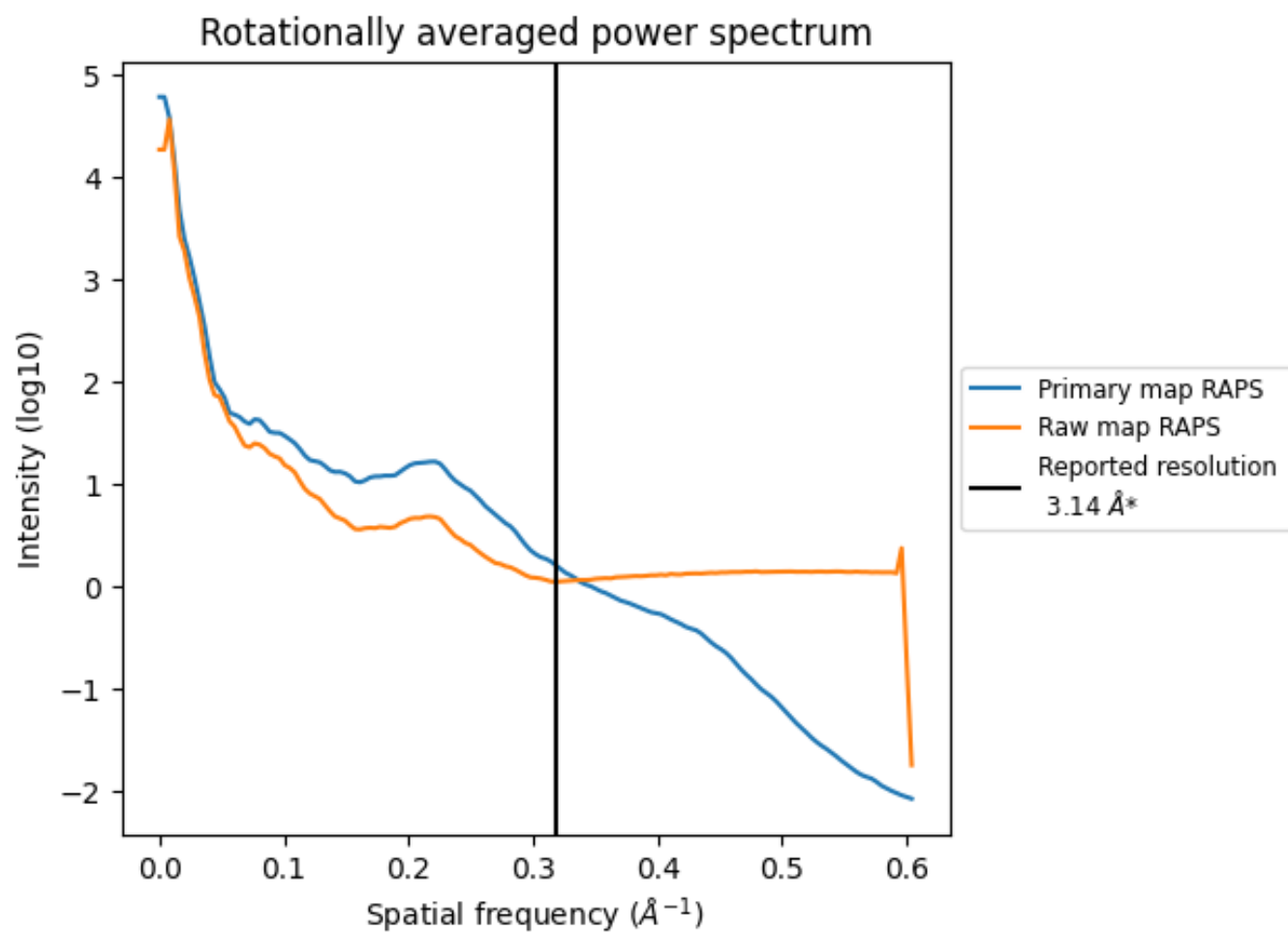
*Reported resolution corresponds to spatial frequency of 0.318 Å^{-1}

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 ⓘ
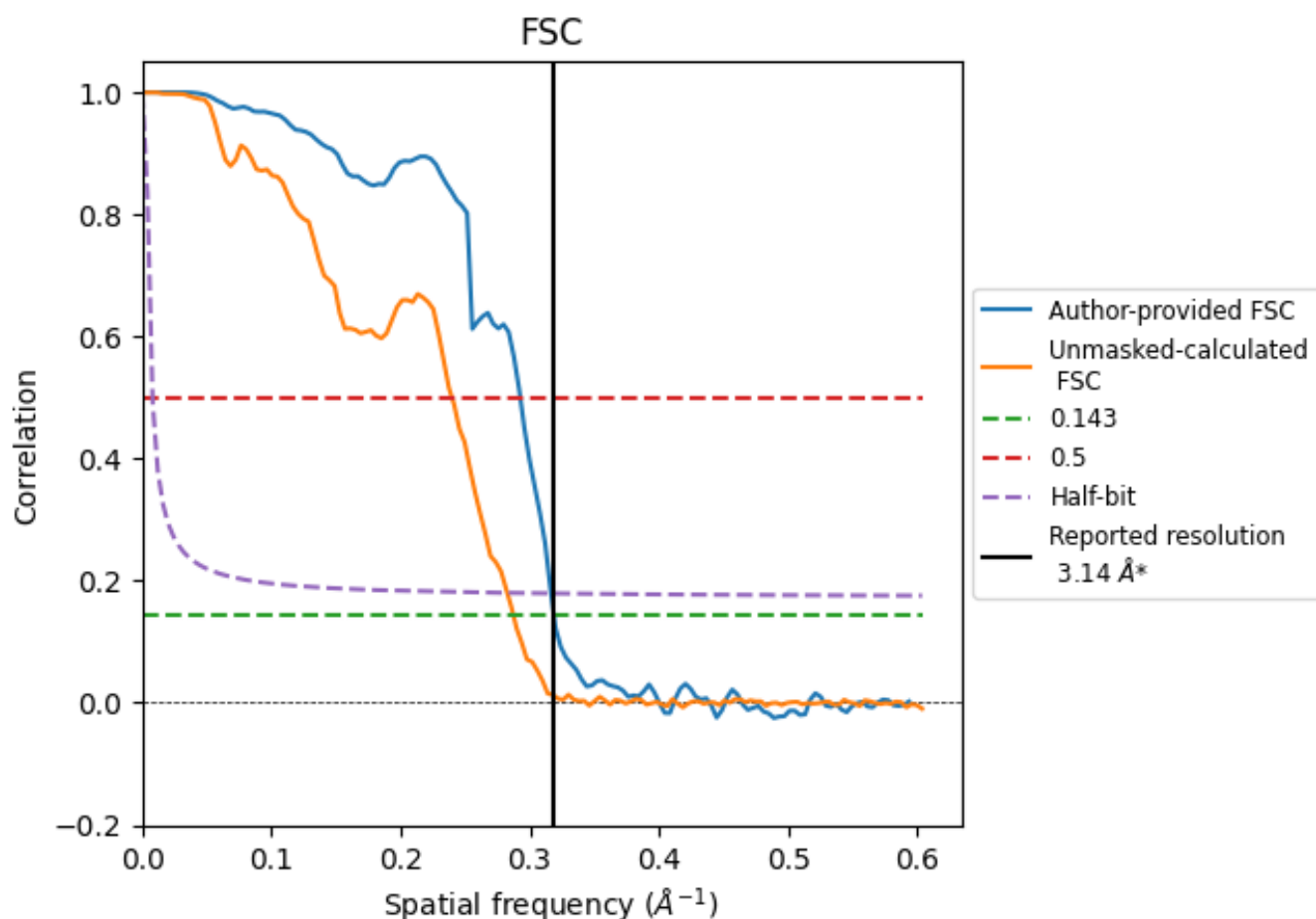
*Reported resolution corresponds to spatial frequency of 0.318 Å^{-1}

8.2   Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.14	-	-
Author-provided FSC curve	3.14	3.42	3.16
Unmasked-calculated*	3.48	4.17	3.54

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.48 differs from the reported value 3.14 by more than 10 %
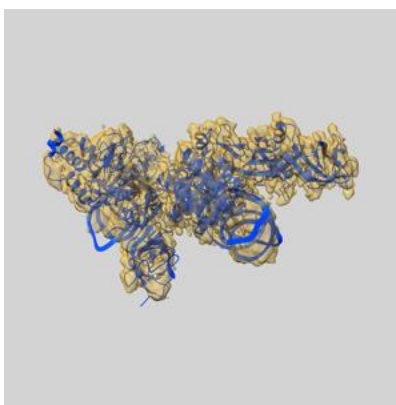
9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-72902 and PDB model 9YFN. Per-residue inclusion information can be found in section 3 on page 5.
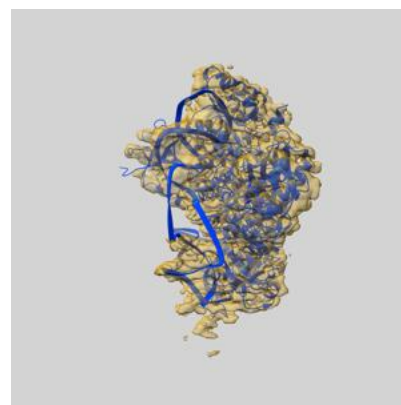
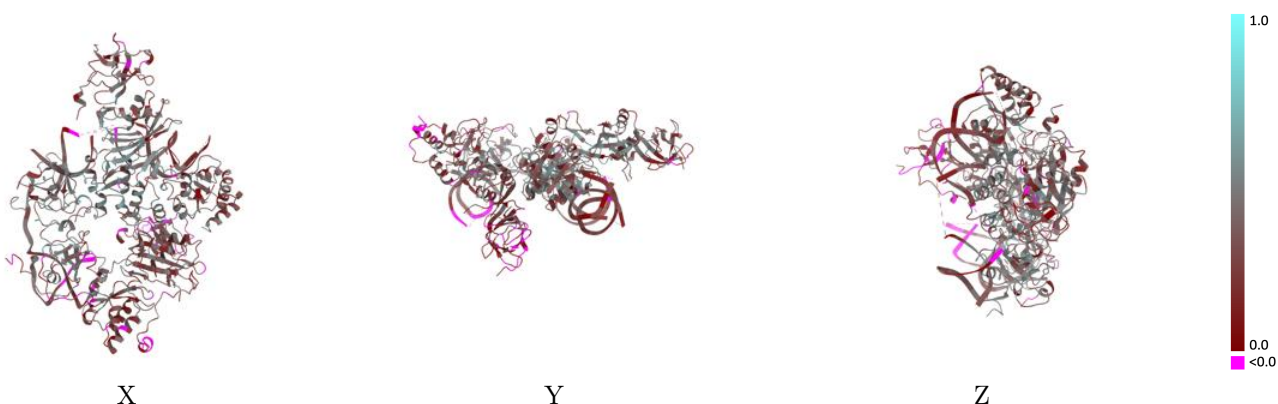## 9.1 Map-model overlay ⓘ
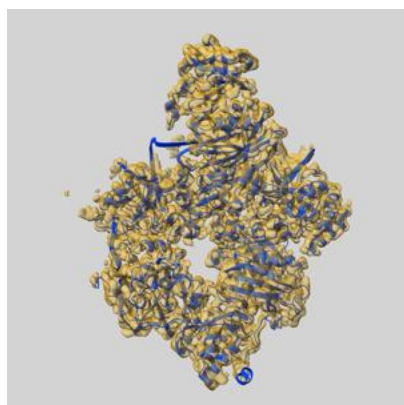
X   Y   Z

The images above show the 3D surface view of the map at the recommended contour level 0.0652 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
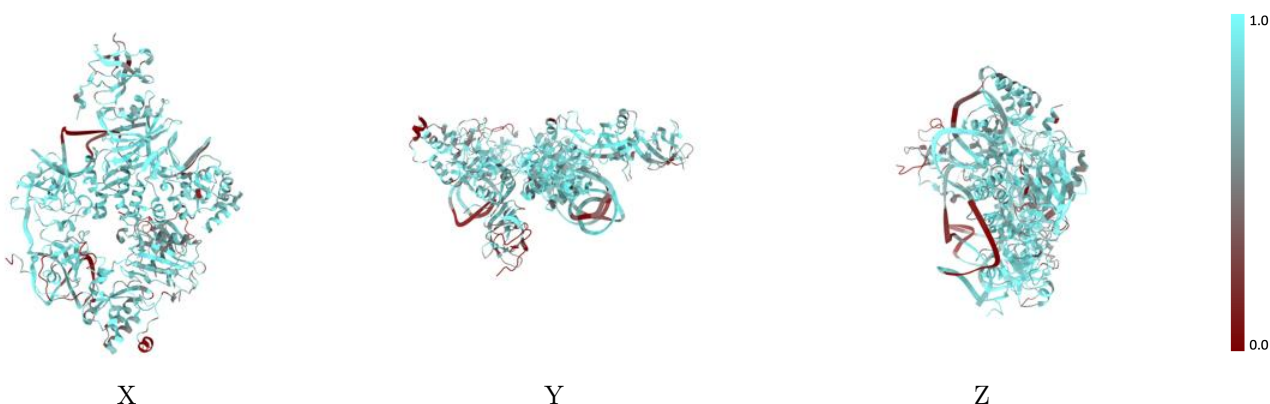
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0652).

9.4 Atom inclusion ⓘ
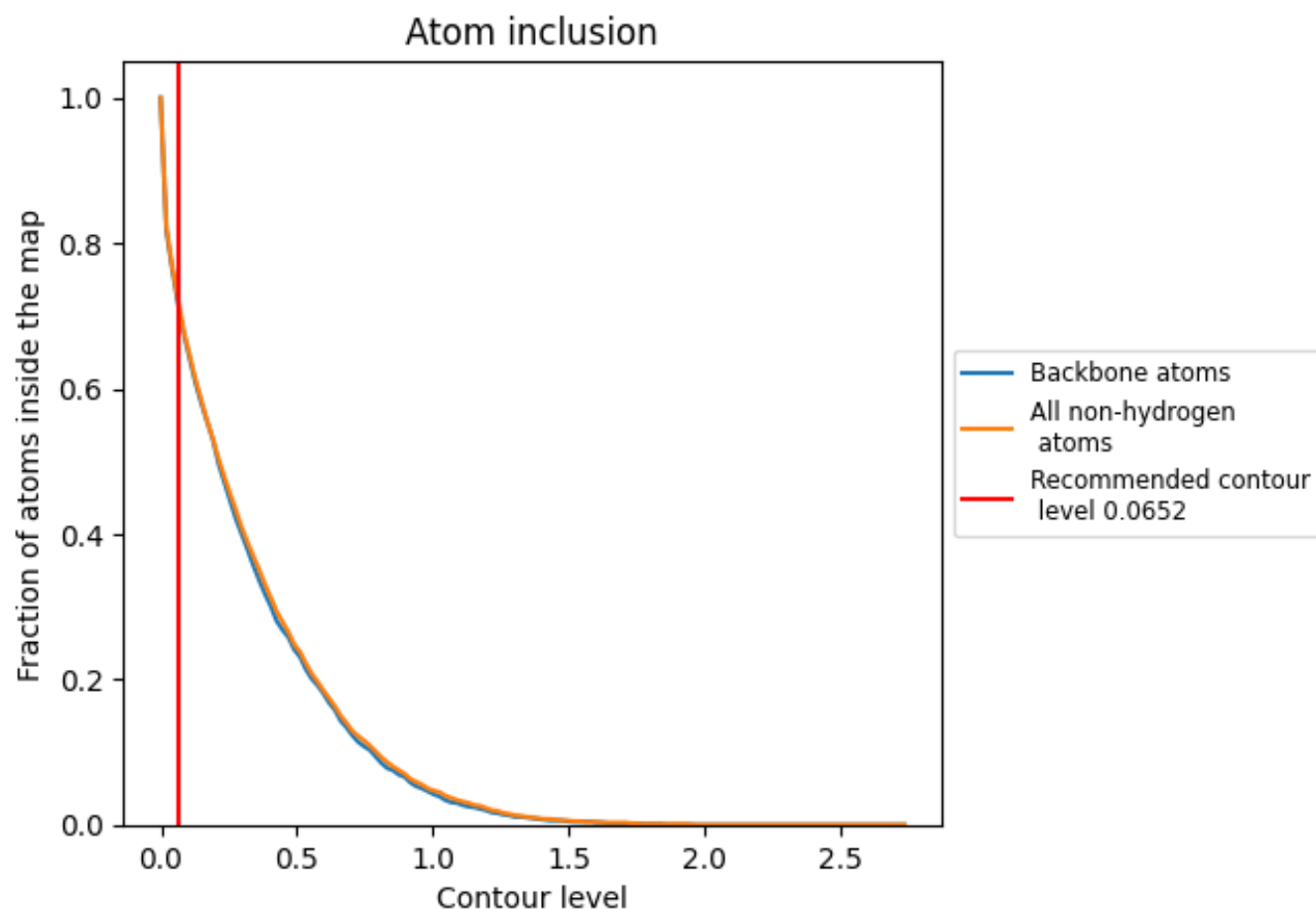
At the recommended contour level, 71% of all backbone atoms, 72% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0652) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7170	0.3280
A	0.8440	0.4270
B	0.4990	0.1260
D	0.7430	0.3290
E	0.6870	0.2890
F	0.8250	0.4050
G	0.7850	0.3590
H	0.5510	0.2220
J	0.6520	0.2570

1.0

0.0
<0.0