



Full wwPDB EM Validation Report ⓘ

Sep 14, 2026 – 04:52 PM EDT

PDB ID : 9YD5 / pdb_00009yd5
EMDB ID : EMD-72795
Title : RNA polymerase II on Super pause sequence in the pre-translocated state
Authors : Vazquez Nunez, R.; Vos, S.M.
Deposited on : 2025-09-21
Resolution : 2.80 Å(reported)
Based on initial model : 8A40

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:

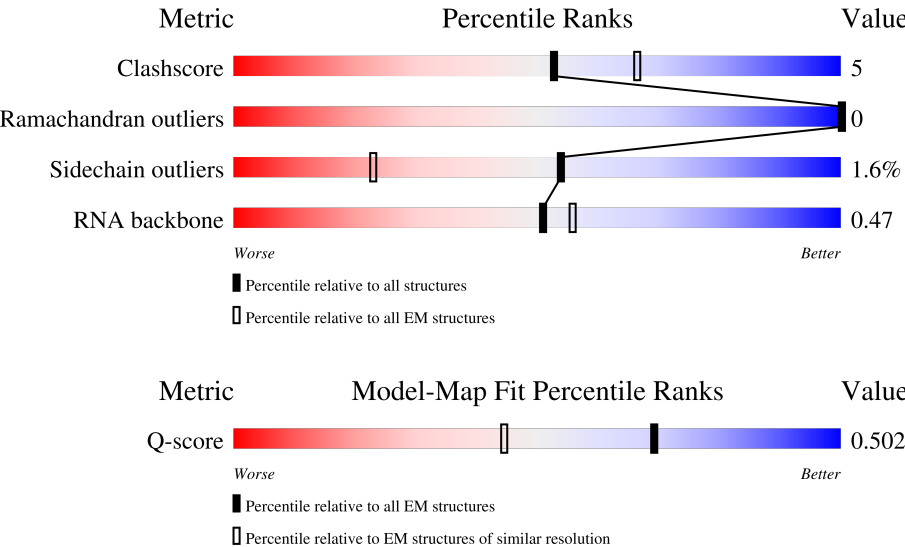
EMDB validation analysis : 0.0.1.dev133
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.50

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 2.80 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	11806 (2.30 - 3.30)

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

Mol	Chain	Length	Quality of chain
1	A	1474	
2	B	1158	
3	C	265	

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Mol	Chain	Length	Quality of chain
4	D	128	
5	E	209	
6	F	75	
7	G	171	
8	H	147	
9	I	125	
10	J	64	
11	K	115	
12	L	44	
13	N	36	
14	P	15	
15	T	36	

2 Entry composition

There are 17 unique types of molecules in this entry. The entry contains 31405 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 DNA-directed RNA polymerase subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1375	Total	C	N	O	S	0	0
			10910	6879	1952	2011	68		

- Molecule 2 is a protein called DNA-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	1072	Total	C	N	O	S	0	0
			8589	5445	1500	1580	64		

- Molecule 3 is a protein called DNA-directed RNA polymerase II subunit RPB3.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	251	Total	C	N	O	S	0	0
			2015	1268	344	397	6		

- Molecule 4 is a protein called DNA-directed RNA polymerase II subunit RPB4.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	128	Total	C	N	O	S	0	0
			1005	632	172	197	4		

- Molecule 5 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC1.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	204	Total	C	N	O	S	0	0
			1672	1062	295	307	8		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	32	GLY	GLU	conflict	UNP I3LSI7
E	46	GLY	ASP	conflict	UNP I3LSI7

- Molecule 6 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	73	Total	C	N	O	S	0	0
			590	381	100	104	5		

- Molecule 7 is a protein called DNA-directed RNA polymerase subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	171	Total	C	N	O	S	0	0
			1334	867	216	243	8		

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	147	Total	C	N	O	S	0	0
			1181	747	193	236	5		

- Molecule 9 is a protein called DNA-directed RNA polymerase II subunit RPB9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	92	Total	C	N	O	S	0	0
			751	466	132	142	11		

- Molecule 10 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	64	Total	C	N	O	S	0	0
			507	328	86	87	6		

- Molecule 11 is a protein called DNA-directed RNA polymerase II subunit RPB11-a.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	115	Total	C	N	O	S	0	0
			920	593	152	173	2		

- Molecule 12 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	42	Total	C	N	O	S	0	0
			354	221	70	57	6		

- Molecule 13 is a DNA chain called DNA non-template strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	N	25	Total	C	N	O	P	0	0
			510	242	94	149	25		

- Molecule 14 is a RNA chain called RNA transcript.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	P	15	Total	C	N	O	P	0	0
			320	142	54	109	15		

- Molecule 15 is a DNA chain called DNA template strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	T	36	Total	C	N	O	P	0	0
			738	349	137	216	36		

- Molecule 16 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
16	A	2	Total	Zn	0
			2	2	
16	B	1	Total	Zn	0
			1	1	
16	C	1	Total	Zn	0
			1	1	
16	I	2	Total	Zn	0
			2	2	
16	J	1	Total	Zn	0
			1	1	
16	L	1	Total	Zn	0
			1	1	

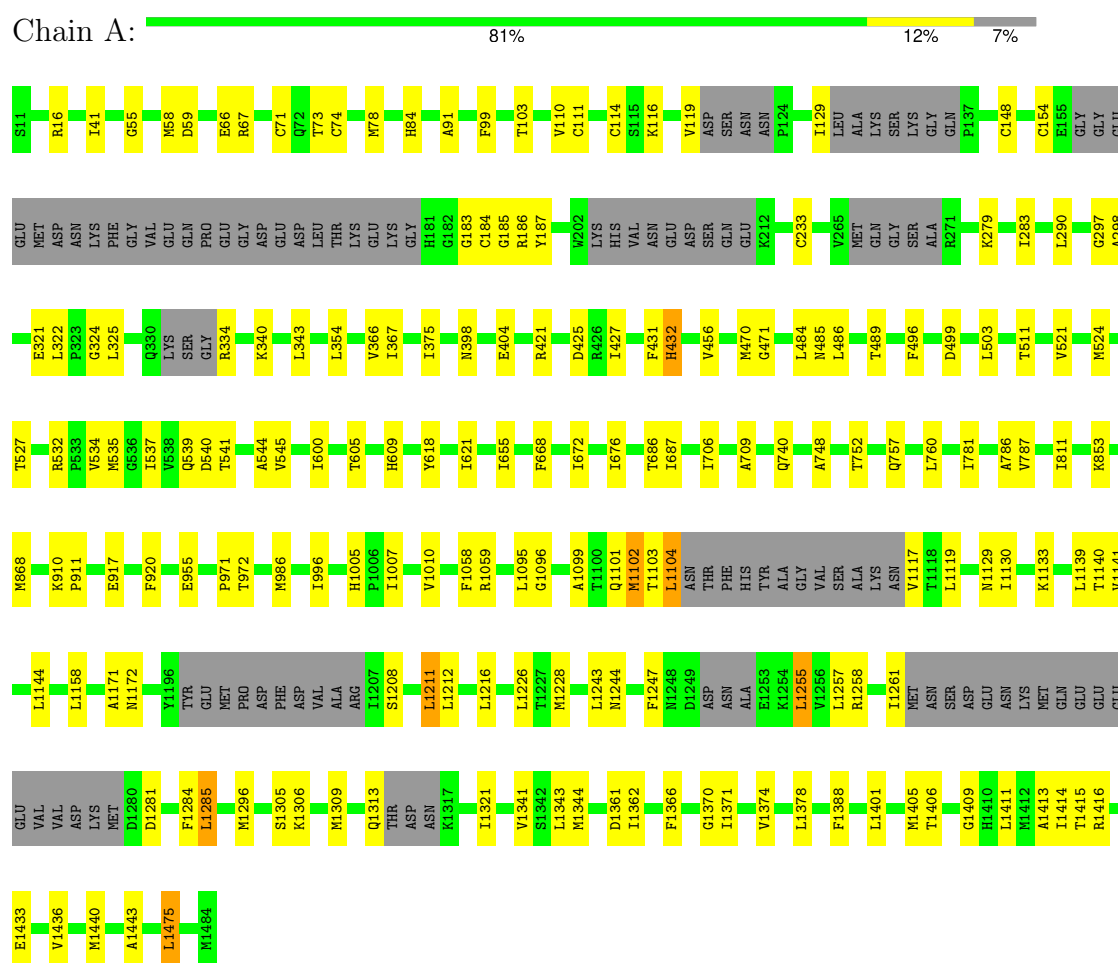
- Molecule 17 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
17	A	1	Total	Mg	0
			1	1	

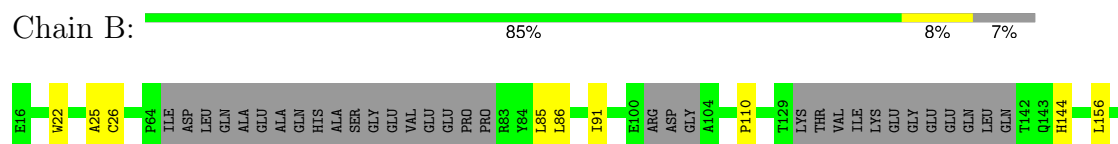
3 Residue-property plots [i](#)

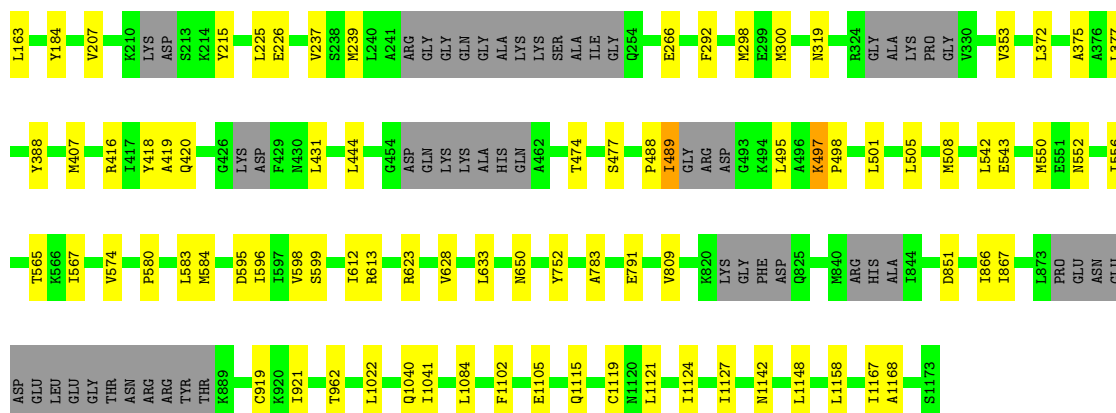
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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



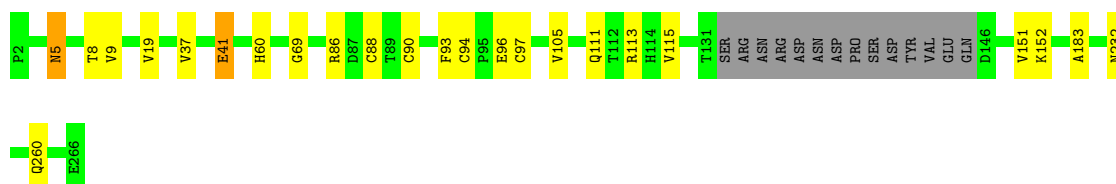
• Molecule 2: DNA-directed RNA polymerase subunit beta





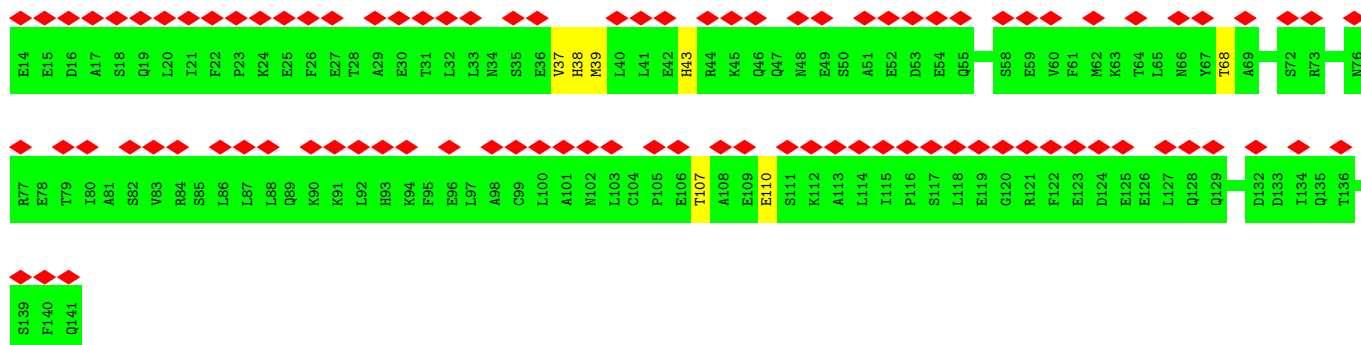
• Molecule 3: DNA-directed RNA polymerase II subunit RPB3

Chain C: 86% 8% 5%



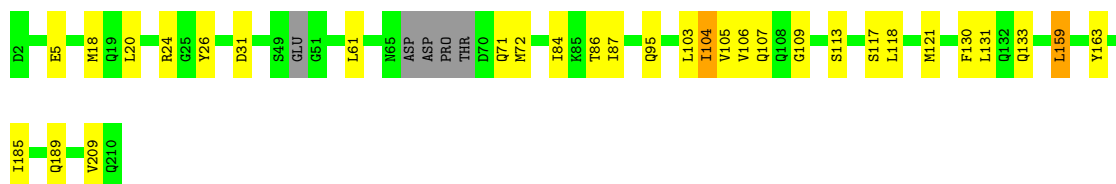
• Molecule 4: DNA-directed RNA polymerase II subunit RPB4

Chain D: 73% 95% 5%



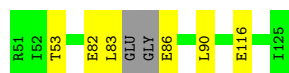
• Molecule 5: DNA-directed RNA polymerases I, II, and III subunit RPABC1

Chain E: 83% 14% 2%

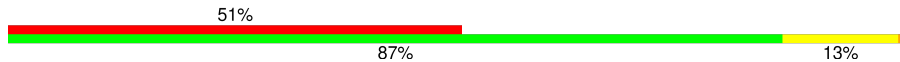


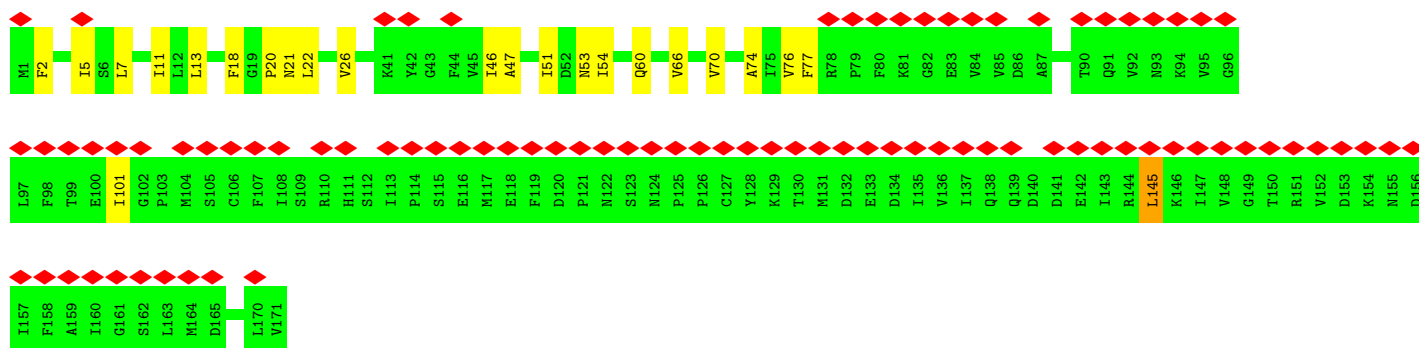
• Molecule 6: DNA-directed RNA polymerases I, II, and III subunit RPABC2

Chain F:  89% 8%

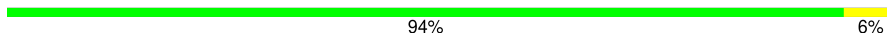


- Molecule 7: DNA-directed RNA polymerase subunit

Chain G:  51% 87% 13%



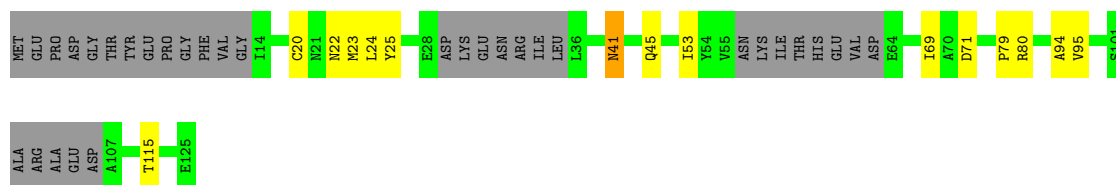
- Molecule 8: DNA-directed RNA polymerases I, II, and III subunit RPABC3

Chain H:  94% 6%



- Molecule 9: DNA-directed RNA polymerase II subunit RPB9

Chain I:  62% 11% 26%



- Molecule 10: DNA-directed RNA polymerases I, II, and III subunit RPABC5

Chain J:  88% 12%



- Molecule 11: DNA-directed RNA polymerase II subunit RPB11-a

Chain K:  91% 9%



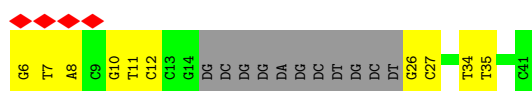
- Molecule 12: DNA-directed RNA polymerases I, II, and III subunit RPABC4

Chain L: 77% 18% 5%



- Molecule 13: DNA non-template strand

Chain N: 11% 42% 28% 31%



- Molecule 14: RNA transcript

Chain P: 53% 33% 13%



- Molecule 15: DNA template strand

Chain T: 11% 69% 31%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	23701	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 ($e^-/\text{\AA}^2$)	50.5	Depositor
Minimum defocus (nm)	250	Depositor
Maximum defocus (nm)	2250	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.414	Depositor
Minimum map value	-0.109	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.0261	Depositor
Map size (Å)	328.80002, 328.80002, 328.80002	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.822, 0.822, 0.822	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.18	0/11105	0.31	0/14982
2	B	0.19	0/8753	0.29	0/11809
3	C	0.19	0/2058	0.27	0/2797
4	D	0.08	0/1019	0.20	0/1374
5	E	0.14	0/1700	0.26	0/2291
6	F	0.18	0/599	0.30	0/809
7	G	0.12	0/1365	0.25	0/1853
8	H	0.17	0/1202	0.25	0/1621
9	I	0.19	0/768	0.33	0/1037
10	J	0.21	0/516	0.30	0/696
11	K	0.19	0/939	0.26	0/1271
12	L	0.17	0/357	0.34	0/470
13	N	0.51	0/570	0.69	0/874
14	P	0.19	0/356	0.26	0/553
15	T	0.33	0/827	0.44	0/1274
All	All	0.20	0/32134	0.31	0/43711

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	10910	0	11066	133	0
2	B	8589	0	8611	64	0
3	C	2015	0	1968	26	0
4	D	1005	0	964	5	0
5	E	1672	0	1703	22	0
6	F	590	0	625	3	0
7	G	1334	0	1333	20	0
8	H	1181	0	1142	5	0
9	I	751	0	684	12	0
10	J	507	0	523	7	0
11	K	920	0	942	8	0
12	L	354	0	365	9	0
13	N	510	0	282	22	0
14	P	320	0	161	3	0
15	T	738	0	404	19	0
16	A	2	0	0	0	0
16	B	1	0	0	0	0
16	C	1	0	0	0	0
16	I	2	0	0	0	0
16	J	1	0	0	0	0
16	L	1	0	0	0	0
17	A	1	0	0	0	0
All	All	31405	0	30773	329	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 5.

All (329) 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)
13:N:6:DG:C2'	13:N:7:DT:H72	1.71	1.21
13:N:6:DG:H2'	13:N:7:DT:H72	1.25	1.14
3:C:90:CYS:SG	3:C:94:CYS:N	2.22	1.13
13:N:6:DG:C2'	13:N:7:DT:C7	2.36	1.03
3:C:94:CYS:SG	3:C:97:CYS:SG	2.58	1.02
3:C:90:CYS:HB2	3:C:94:CYS:SG	2.03	0.97
13:N:6:DG:H2'	13:N:7:DT:C7	1.95	0.94
13:N:6:DG:H2''	13:N:7:DT:C7	2.03	0.89
1:A:183:GLY:O	1:A:184:CYS:SG	2.31	0.88
1:A:1216:LEU:HD11	1:A:1257:LEU:HD12	1.59	0.85
13:N:8:DA:C2	15:T:42:DA:C2	2.67	0.83
1:A:154:CYS:SG	1:A:184:CYS:SG	2.78	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:94:CYS:SG	3:C:96:GLU:HG2	2.22	0.79
15:T:40:DG:C2'	15:T:41:DT:H72	2.14	0.78
15:T:37:DG:C6	15:T:38:DA:C6	2.72	0.77
5:E:185:ILE:HG21	5:E:209:VAL:HG21	1.67	0.77
9:I:20:CYS:SG	9:I:22:ASN:HB2	2.24	0.77
3:C:94:CYS:O	3:C:97:CYS:SG	2.43	0.76
7:G:51:ILE:HD12	7:G:51:ILE:O	1.86	0.76
15:T:37:DG:C6	15:T:38:DA:N6	2.53	0.75
5:E:104:ILE:HG22	5:E:104:ILE:O	1.86	0.74
13:N:10:DG:H2''	13:N:11:DT:C7	2.18	0.73
1:A:71:CYS:SG	1:A:73:THR:OG1	2.46	0.73
12:L:19:CYS:SG	12:L:39:CYS:SG	2.86	0.73
10:J:40:LEU:HD11	10:J:49:LEU:HD12	1.70	0.73
13:N:26:DG:H1'	13:N:27:DC:OP2	1.89	0.73
1:A:1133:LYS:HD2	1:A:1133:LYS:O	1.89	0.73
9:I:95:VAL:HG13	9:I:115:THR:HG22	1.70	0.72
4:D:37:VAL:HG11	7:G:2:PHE:CD1	2.25	0.71
3:C:94:CYS:N	3:C:97:CYS:SG	2.65	0.70
10:J:14:VAL:CG2	10:J:45:CYS:SG	2.80	0.70
1:A:456:VAL:HG21	1:A:503:LEU:HD11	1.75	0.69
1:A:114:CYS:O	1:A:116:LYS:HG3	1.93	0.69
1:A:1216:LEU:HD13	1:A:1255:LEU:HD22	1.73	0.69
1:A:111:CYS:SG	1:A:114:CYS:HB2	2.34	0.68
2:B:91:ILE:HD12	2:B:91:ILE:O	1.92	0.68
15:T:37:DG:N1	15:T:38:DA:C6	2.62	0.67
2:B:612:ILE:O	2:B:612:ILE:HG22	1.95	0.67
13:N:10:DG:H2''	13:N:11:DT:H72	1.76	0.67
15:T:37:DG:O6	15:T:38:DA:N6	2.28	0.66
1:A:343:LEU:HD12	1:A:343:LEU:O	1.95	0.66
1:A:686:THR:HG21	2:B:1040:GLN:O	1.97	0.65
13:N:10:DG:C2'	13:N:11:DT:H72	2.27	0.65
15:T:40:DG:C2'	15:T:41:DT:C7	2.75	0.64
3:C:5:ASN:ND2	11:K:97:GLU:OE1	2.30	0.63
3:C:90:CYS:SG	3:C:93:PHE:N	2.72	0.63
3:C:88:CYS:SG	3:C:94:CYS:SG	2.96	0.62
15:T:40:DG:H2'	15:T:41:DT:H72	1.79	0.62
10:J:40:LEU:CD1	10:J:49:LEU:HD12	2.29	0.62
10:J:14:VAL:HG21	10:J:45:CYS:SG	2.41	0.61
4:D:37:VAL:HG11	7:G:2:PHE:HD1	1.64	0.61
15:T:40:DG:C8	15:T:41:DT:H72	2.35	0.61
1:A:1475:LEU:HD12	7:G:66:VAL:HG21	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:T:40:DG:N9	15:T:41:DT:H72	2.15	0.61
13:N:6:DG:H2''	13:N:7:DT:H73	1.82	0.60
13:N:6:DG:C2'	13:N:7:DT:H73	2.31	0.60
1:A:668:PHE:CE1	1:A:672:ILE:HD11	2.37	0.60
7:G:46:ILE:N	7:G:46:ILE:HD12	2.17	0.59
1:A:471:GLY:O	1:A:521:VAL:HG23	2.03	0.59
5:E:185:ILE:CG2	5:E:209:VAL:HG21	2.32	0.59
1:A:1344:MET:HE3	1:A:1344:MET:O	2.03	0.59
2:B:488:PRO:O	2:B:489:ILE:C	2.45	0.59
2:B:292:PHE:HA	2:B:298:MET:HE1	1.85	0.59
1:A:1443:ALA:HB2	2:B:1167:ILE:HG23	1.84	0.58
1:A:1313:GLN:OE1	1:A:1313:GLN:N	2.37	0.58
5:E:104:ILE:O	5:E:104:ILE:CG2	2.52	0.58
1:A:1130:ILE:O	1:A:1130:ILE:HD12	2.04	0.57
1:A:706:ILE:CD1	1:A:752:THR:HG21	2.36	0.56
1:A:996:ILE:HG21	1:A:1059:ARG:O	2.06	0.56
1:A:1171:ALA:O	1:A:1172:ASN:ND2	2.34	0.56
4:D:107:THR:HG23	4:D:110:GLU:H	1.70	0.56
15:T:40:DG:H2''	15:T:41:DT:C7	2.36	0.56
1:A:1414:ILE:O	1:A:1414:ILE:HG22	2.04	0.56
1:A:1371:ILE:HD11	1:A:1406:THR:HB	1.88	0.56
6:F:86:GLU:OE2	6:F:86:GLU:N	2.39	0.56
6:F:82:GLU:C	6:F:82:GLU:OE1	2.49	0.56
9:I:20:CYS:SG	9:I:22:ASN:CG	2.88	0.56
1:A:324:GLY:O	1:A:325:LEU:HD22	2.07	0.55
1:A:605:THR:HG23	1:A:609:HIS:ND1	2.21	0.55
1:A:1378:LEU:HD21	1:A:1405:MET:SD	2.46	0.55
9:I:20:CYS:SG	9:I:22:ASN:CB	2.95	0.55
5:E:106:VAL:HG12	5:E:107:GLN:H	1.71	0.54
1:A:470:MET:HE3	1:A:521:VAL:HG22	1.88	0.54
1:A:668:PHE:CZ	1:A:672:ILE:HD11	2.42	0.54
1:A:955:GLU:OE1	1:A:1010:VAL:HG22	2.08	0.54
3:C:94:CYS:SG	3:C:97:CYS:CB	2.95	0.54
1:A:1415:THR:HG22	1:A:1416:ARG:H	1.73	0.53
9:I:69:ILE:HG22	9:I:71:ASP:H	1.73	0.53
1:A:99:PHE:O	1:A:103:THR:HG23	2.08	0.53
11:K:111:ASP:OD2	11:K:111:ASP:C	2.52	0.53
7:G:76:VAL:HG12	7:G:77:PHE:H	1.74	0.53
7:G:101:ILE:HD11	7:G:145:LEU:HD21	1.90	0.53
5:E:131:LEU:HD23	5:E:133:GLN:H	1.73	0.52
13:N:6:DG:C1'	13:N:7:DT:H72	2.37	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1371:ILE:HD13	1:A:1409:GLY:O	2.10	0.52
8:H:143:LEU:C	8:H:143:LEU:HD23	2.34	0.52
1:A:321:GLU:OE2	1:A:321:GLU:C	2.53	0.52
2:B:550:MET:HE1	2:B:574:VAL:HG23	1.92	0.52
3:C:183:ALA:HB3	3:C:232:ASN:HB3	1.92	0.51
8:H:12:VAL:HG11	8:H:15:ILE:HD11	1.91	0.51
1:A:114:CYS:SG	1:A:184:CYS:HB2	2.50	0.51
1:A:470:MET:CE	1:A:521:VAL:HG22	2.40	0.51
1:A:1443:ALA:CB	2:B:1167:ILE:HD12	2.41	0.51
3:C:86:ARG:CD	11:K:11:LEU:HD11	2.40	0.51
3:C:90:CYS:CB	3:C:94:CYS:SG	2.89	0.51
3:C:94:CYS:SG	3:C:97:CYS:HB3	2.50	0.51
12:L:56:ASP:OD2	12:L:56:ASP:C	2.53	0.51
1:A:1102:MET:HG2	1:A:1104:LEU:HD21	1.91	0.51
2:B:550:MET:O	2:B:550:MET:HG3	2.10	0.51
1:A:84:HIS:CE1	2:B:1127:ILE:HG13	2.46	0.51
2:B:319:ASN:OD1	2:B:319:ASN:C	2.54	0.50
5:E:84:ILE:HD11	5:E:113:SER:OG	2.11	0.50
1:A:1095:LEU:HD13	1:A:1401:LEU:HD22	1.91	0.50
2:B:1115:GLN:HB3	2:B:1148:LEU:HD11	1.93	0.50
1:A:78:MET:O	1:A:78:MET:HG3	2.11	0.50
1:A:1243:LEU:HD13	1:A:1244:ASN:N	2.27	0.50
1:A:786:ALA:O	1:A:787:VAL:HG23	2.12	0.50
1:A:1139:LEU:HD12	1:A:1341:VAL:HA	1.94	0.50
7:G:11:ILE:HG21	7:G:26:VAL:HG23	1.93	0.50
1:A:183:GLY:C	1:A:184:CYS:SG	2.94	0.49
1:A:1296:MET:HE2	1:A:1296:MET:HA	1.93	0.49
1:A:340:LYS:HD2	1:A:1436:VAL:HG11	1.95	0.49
7:G:47:ALA:O	7:G:74:ALA:HB1	2.13	0.49
1:A:1361:ASP:C	1:A:1361:ASP:OD2	2.55	0.49
3:C:260:GLN:HB2	11:K:91:ILE:HG21	1.95	0.49
1:A:1102:MET:HG2	1:A:1104:LEU:HD11	1.95	0.49
1:A:1374:VAL:HG11	1:A:1411:LEU:HD21	1.95	0.49
2:B:225:LEU:HD12	2:B:226:GLU:OE2	2.13	0.49
2:B:867:ILE:HD11	2:B:921:ILE:CD1	2.43	0.49
3:C:37:VAL:HG13	3:C:41:GLU:HB3	1.95	0.49
5:E:106:VAL:HG11	5:E:109:GLY:O	2.12	0.49
7:G:13:LEU:HD21	7:G:22:LEU:HD11	1.95	0.49
2:B:226:GLU:OE2	2:B:226:GLU:N	2.47	0.48
1:A:366:VAL:HG12	1:A:367:ILE:N	2.29	0.48
1:A:489:THR:HG21	2:B:791:GLU:OE2	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:5:ILE:C	7:G:5:ILE:HD12	2.39	0.48
13:N:6:DG:N9	13:N:7:DT:H72	2.27	0.48
7:G:5:ILE:HD11	7:G:76:VAL:HG21	1.96	0.48
9:I:94:ALA:HA	9:I:115:THR:HG23	1.96	0.48
1:A:421:ARG:CZ	1:A:427:ILE:HD11	2.44	0.48
8:H:58:LEU:HD12	8:H:145:MET:HG3	1.95	0.48
1:A:1058:PHE:O	1:A:1059:ARG:C	2.57	0.48
2:B:25:ALA:O	2:B:26:CYS:C	2.56	0.48
2:B:867:ILE:HD11	2:B:921:ILE:HD12	1.95	0.48
1:A:545:VAL:HG22	1:A:676:ILE:HG12	1.95	0.47
5:E:20:LEU:HD21	5:E:24:ARG:NE	2.29	0.47
2:B:542:LEU:HD21	2:B:574:VAL:HG11	1.96	0.47
5:E:130:PHE:O	5:E:131:LEU:C	2.57	0.47
9:I:23:MET:HE3	9:I:24:LEU:H	1.79	0.47
1:A:1228:MET:C	1:A:1228:MET:SD	2.97	0.47
1:A:1139:LEU:HD11	1:A:1343:LEU:HA	1.95	0.47
7:G:20:PRO:O	7:G:21:ASN:OD1	2.33	0.47
1:A:1211:LEU:HD12	1:A:1212:LEU:N	2.29	0.47
1:A:1440:MET:SD	2:B:1167:ILE:HD11	2.55	0.47
1:A:154:CYS:CB	1:A:184:CYS:O	2.63	0.47
5:E:104:ILE:O	5:E:105:VAL:C	2.57	0.47
1:A:1362:ILE:HG22	1:A:1411:LEU:HD11	1.96	0.47
9:I:80:ARG:HG2	9:I:95:VAL:HG12	1.96	0.47
1:A:16:ARG:HG3	1:A:16:ARG:HH11	1.79	0.47
1:A:66:GLU:HG2	1:A:67:ARG:H	1.80	0.47
1:A:1139:LEU:O	1:A:1141:VAL:HG23	2.14	0.47
15:T:33:DG:H2''	15:T:34:DC:O5'	2.15	0.47
2:B:207:VAL:HG21	2:B:375:ALA:CB	2.45	0.47
1:A:1401:LEU:HD11	1:A:1405:MET:HE2	1.96	0.47
1:A:297:GLY:O	1:A:298:ALA:HB3	2.14	0.46
2:B:565:THR:HG21	2:B:580:PRO:HB3	1.97	0.46
2:B:752:TYR:HE1	2:B:809:VAL:HG22	1.79	0.46
9:I:53:ILE:HD13	9:I:53:ILE:N	2.30	0.46
2:B:156:LEU:HD22	2:B:184:TYR:CE2	2.50	0.46
2:B:1121:LEU:HD22	2:B:1121:LEU:H	1.80	0.46
1:A:1261:ILE:C	1:A:1261:ILE:HD12	2.40	0.46
1:A:1285:LEU:HD13	1:A:1285:LEU:O	2.16	0.46
2:B:650:ASN:C	2:B:650:ASN:OD1	2.58	0.46
15:T:16:DT:H2'	15:T:17:DT:H72	1.96	0.46
13:N:8:DA:N1	15:T:42:DA:C2	2.84	0.46
1:A:971:PRO:C	1:A:972:THR:HG23	2.41	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1305:SER:O	1:A:1306:LYS:C	2.59	0.46
9:I:20:CYS:SG	9:I:41:ASN:ND2	2.87	0.46
1:A:760:LEU:HD11	1:A:781:ILE:HG21	1.97	0.45
2:B:809:VAL:HG21	3:C:60:HIS:CE1	2.51	0.45
1:A:186:ARG:O	1:A:187:TYR:C	2.59	0.45
1:A:811:ILE:HD12	9:I:79:PRO:HB3	1.98	0.45
1:A:1281:ASP:OD1	1:A:1281:ASP:C	2.60	0.45
5:E:61:LEU:HD11	5:E:71:GLN:HB3	1.97	0.45
5:E:61:LEU:HD12	5:E:72:MET:O	2.16	0.45
1:A:1284:PHE:HD1	1:A:1284:PHE:O	1.99	0.45
3:C:9:VAL:HG21	11:K:105:PHE:HD1	1.82	0.45
8:H:37:MET:CE	8:H:132:LEU:HD21	2.47	0.45
12:L:42:ARG:HH11	12:L:42:ARG:HG2	1.82	0.45
1:A:340:LYS:HG3	1:A:1436:VAL:HG21	1.99	0.45
1:A:537:ILE:HG12	1:A:672:ILE:HG21	1.97	0.45
2:B:628:VAL:HG22	2:B:633:LEU:HD12	1.98	0.45
13:N:8:DA:N1	15:T:42:DA:N1	2.63	0.45
1:A:110:VAL:HG12	1:A:111:CYS:N	2.32	0.45
2:B:353:VAL:HG23	2:B:353:VAL:O	2.17	0.45
14:P:38:C:O2'	14:P:39:G:P	2.73	0.45
1:A:600:ILE:HG23	1:A:655:ILE:HG22	1.99	0.45
1:A:1321:ILE:HD12	1:A:1321:ILE:O	2.17	0.45
5:E:106:VAL:HG12	5:E:107:GLN:N	2.31	0.45
1:A:484:LEU:HD11	1:A:496:PHE:CE1	2.52	0.45
1:A:706:ILE:HD11	1:A:752:THR:HG21	1.98	0.45
1:A:1208:SER:HB2	1:A:1261:ILE:HD11	1.99	0.45
1:A:499:ASP:OD1	14:P:46:C:H4'	2.16	0.44
1:A:1101:GLN:O	1:A:1102:MET:C	2.59	0.44
1:A:1433:GLU:HG2	15:T:22:DG:H5''	1.99	0.44
2:B:552:ASN:O	2:B:556:ILE:HG23	2.18	0.44
3:C:69:GLY:HA3	12:L:57:ALA:HB1	1.99	0.44
1:A:600:ILE:HG23	1:A:655:ILE:CG2	2.47	0.44
2:B:1119:CYS:SG	2:B:1142:ASN:ND2	2.86	0.44
13:N:6:DG:H2''	13:N:7:DT:C5	2.52	0.44
1:A:539:GLN:O	1:A:540:ASP:C	2.61	0.44
2:B:1124:ILE:N	2:B:1124:ILE:HD13	2.33	0.44
5:E:26:TYR:CE2	5:E:72:MET:HE2	2.53	0.44
1:A:484:LEU:HD11	1:A:496:PHE:HE1	1.83	0.44
1:A:540:ASP:O	1:A:541:THR:C	2.60	0.44
13:N:10:DG:C2	15:T:40:DG:N2	2.86	0.44
2:B:508:MET:HE1	2:B:623:ARG:HG2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:105:VAL:HG11	3:C:115:VAL:HG22	2.00	0.44
2:B:22:TRP:CE2	2:B:26:CYS:SG	3.11	0.43
2:B:1084:LEU:HD22	2:B:1084:LEU:H	1.82	0.43
5:E:103:LEU:C	5:E:104:ILE:HD12	2.43	0.43
5:E:159:LEU:HD12	5:E:163:TYR:HD2	1.83	0.43
7:G:60:GLN:HA	7:G:60:GLN:OE1	2.17	0.43
1:A:71:CYS:HB3	1:A:74:CYS:O	2.18	0.43
2:B:418:TYR:C	2:B:418:TYR:CD2	2.96	0.43
2:B:595:ASP:O	2:B:596:ILE:C	2.61	0.43
1:A:185:GLY:O	1:A:186:ARG:C	2.62	0.43
1:A:456:VAL:HG21	1:A:503:LEU:CD1	2.46	0.43
5:E:87:ILE:HG13	5:E:118:LEU:HD21	2.00	0.43
2:B:567:ILE:HD11	2:B:583:LEU:HD22	1.99	0.43
12:L:15:MET:SD	12:L:15:MET:N	2.92	0.43
1:A:544:ALA:HB3	1:A:676:ILE:HG23	2.00	0.43
2:B:110:PRO:HG2	2:B:163:LEU:HD11	2.01	0.43
2:B:501:LEU:HD12	2:B:505:LEU:HD22	2.00	0.43
7:G:18:PHE:HZ	7:G:66:VAL:HG23	1.83	0.43
5:E:31:ASP:C	5:E:31:ASP:OD2	2.61	0.43
1:A:687:ILE:O	1:A:687:ILE:HG23	2.19	0.43
2:B:419:ALA:O	2:B:420:GLN:C	2.62	0.43
2:B:612:ILE:O	2:B:613:ARG:C	2.61	0.43
5:E:84:ILE:HD12	5:E:84:ILE:H	1.84	0.43
12:L:19:CYS:SG	12:L:39:CYS:CB	3.06	0.43
13:N:8:DA:C6	15:T:42:DA:N1	2.87	0.43
1:A:1139:LEU:O	1:A:1140:THR:C	2.62	0.43
2:B:783:ALA:HB2	2:B:1041:ILE:HG23	2.01	0.43
3:C:111:GLN:N	3:C:111:GLN:CD	2.75	0.43
4:D:39:MET:O	4:D:43:HIS:CD2	2.72	0.43
7:G:46:ILE:HD12	7:G:46:ILE:H	1.83	0.43
13:N:34:DT:H2'	13:N:35:DT:H71	2.00	0.43
1:A:484:LEU:HD12	1:A:484:LEU:O	2.19	0.42
2:B:85:LEU:HD23	2:B:85:LEU:H	1.84	0.42
2:B:919:CYS:SG	2:B:921:ILE:HD11	2.60	0.42
1:A:1216:LEU:N	1:A:1216:LEU:HD12	2.33	0.42
2:B:501:LEU:CD1	2:B:505:LEU:HD22	2.49	0.42
5:E:117:SER:O	5:E:121:MET:SD	2.77	0.42
7:G:54:ILE:HD13	7:G:70:VAL:HG12	2.01	0.42
2:B:612:ILE:O	2:B:612:ILE:CG2	2.66	0.42
11:K:40:HIS:CE1	11:K:63:VAL:HG21	2.54	0.42
12:L:31:ARG:O	12:L:31:ARG:HG2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:534:VAL:HG13	1:A:535:MET:HG3	2.02	0.42
3:C:90:CYS:SG	3:C:94:CYS:CB	3.08	0.42
1:A:1117:VAL:HG23	1:A:1119:LEU:HD23	2.01	0.42
7:G:5:ILE:HD11	7:G:76:VAL:CG2	2.50	0.42
12:L:19:CYS:HA	12:L:44:MET:HG2	2.01	0.42
4:D:38:HIS:HA	4:D:68:THR:HG21	2.02	0.42
8:H:37:MET:HE2	8:H:132:LEU:HD21	2.02	0.42
1:A:527:THR:HG22	1:A:532:ARG:O	2.20	0.42
1:A:544:ALA:HB3	1:A:676:ILE:CG2	2.50	0.42
1:A:398:ASN:C	1:A:398:ASN:OD1	2.63	0.41
1:A:431:PHE:O	1:A:432:HIS:C	2.62	0.41
1:A:1366:PHE:HA	1:A:1374:VAL:CG2	2.50	0.41
1:A:1443:ALA:HB2	2:B:1167:ILE:HD12	2.02	0.41
2:B:1167:ILE:HG22	2:B:1168:ALA:N	2.35	0.41
13:N:6:DG:H2''	13:N:7:DT:C6	2.55	0.41
13:N:11:DT:C4	13:N:12:DC:C4	3.08	0.41
1:A:709:ALA:HB2	1:A:748:ALA:HB2	2.02	0.41
1:A:1370:GLY:O	1:A:1374:VAL:HG23	2.20	0.41
2:B:866:ILE:HG22	2:B:921:ILE:HD13	2.03	0.41
9:I:25:TYR:N	9:I:25:TYR:CD2	2.89	0.41
1:A:511:THR:HG22	2:B:1102:PHE:HA	2.01	0.41
1:A:868:MET:HG3	1:A:868:MET:O	2.21	0.41
1:A:618:TYR:HA	1:A:621:ILE:HG22	2.03	0.41
14:P:38:C:H2'	14:P:39:G:C8	2.55	0.41
1:A:868:MET:HE1	1:A:1401:LEU:HA	2.03	0.41
1:A:1005:HIS:CD2	1:A:1007:ILE:HG22	2.55	0.41
1:A:1129:ASN:O	1:A:1130:ILE:C	2.63	0.41
2:B:407:MET:HE1	2:B:444:LEU:HG	2.02	0.41
3:C:86:ARG:HD2	11:K:11:LEU:HD11	2.02	0.41
3:C:105:VAL:HG13	3:C:113:ARG:HE	1.86	0.41
3:C:151:VAL:HG22	3:C:152:LYS:N	2.35	0.41
1:A:421:ARG:NE	1:A:427:ILE:HD11	2.35	0.41
1:A:1211:LEU:HD11	1:A:1258:ARG:HG2	2.03	0.41
2:B:598:VAL:HG12	2:B:599:SER:N	2.35	0.41
1:A:1309:MET:O	1:A:1309:MET:SD	2.79	0.41
1:A:1411:LEU:HD23	1:A:1411:LEU:HA	1.96	0.41
5:E:189:GLN:O	5:E:209:VAL:HG23	2.21	0.41
1:A:1243:LEU:HD13	1:A:1243:LEU:C	2.46	0.41
2:B:239:MET:HE1	2:B:300:MET:SD	2.61	0.41
2:B:266:GLU:OE2	2:B:266:GLU:C	2.64	0.41
3:C:19:VAL:O	3:C:19:VAL:HG13	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:53:THR:HG23	6:F:116:GLU:OE1	2.20	0.41
1:A:1096:GLY:O	1:A:1099:ALA:HB3	2.20	0.41
1:A:1130:ILE:HD11	1:A:1413:ALA:HB2	2.02	0.41
2:B:237:VAL:HG12	2:B:372:LEU:HD22	2.03	0.41
2:B:584:MET:SD	2:B:612:ILE:HG23	2.61	0.41
2:B:1022:LEU:HD23	2:B:1022:LEU:H	1.86	0.41
7:G:5:ILE:HD13	7:G:7:LEU:HG	2.02	0.41
7:G:53:ASN:OD1	7:G:53:ASN:C	2.64	0.40
10:J:30:THR:HB	10:J:33:ASP:OD1	2.21	0.40
15:T:35:DC:H5'	15:T:35:DC:H6	1.86	0.40
1:A:41:ILE:HG23	1:A:55:GLY:O	2.21	0.40
1:A:334:ARG:N	1:A:334:ARG:NE	2.69	0.40
1:A:910:LYS:N	1:A:911:PRO:HD2	2.36	0.40
2:B:851:ASP:CG	12:L:15:MET:HE1	2.46	0.40
1:A:1133:LYS:HD2	1:A:1133:LYS:C	2.45	0.40
1:A:1158:LEU:C	1:A:1158:LEU:HD23	2.46	0.40
2:B:144:HIS:ND1	2:B:431:LEU:HD12	2.36	0.40
10:J:14:VAL:O	10:J:14:VAL:HG12	2.21	0.40
1:A:279:LYS:O	1:A:283:ILE:HD13	2.21	0.40
2:B:474:THR:HG23	2:B:477:SER:H	1.87	0.40
2:B:497:LYS:N	2:B:498:PRO:CD	2.83	0.40
11:K:42:LEU:HD12	11:K:45:ILE:HD11	2.03	0.40
1:A:58:MET:O	1:A:59:ASP:C	2.64	0.40
1:A:91:ALA:HB3	1:A:290:LEU:HD23	2.04	0.40
1:A:114:CYS:SG	1:A:184:CYS:CB	3.10	0.40
1:A:119:VAL:HG22	1:A:148:CYS:SG	2.61	0.40
1:A:354:LEU:CD1	2:B:1158:LEU:HD22	2.52	0.40
1:A:375:ILE:HG22	1:A:485:ASN:HD22	1.87	0.40
1:A:1388:PHE:CD1	1:A:1388:PHE:C	3.00	0.40
2:B:962:THR:O	10:J:9:THR:HG23	2.22	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	1351/1474 (92%)	1251 (93%)	100 (7%)	0	100	100
2	B	1046/1158 (90%)	952 (91%)	94 (9%)	0	100	100
3	C	247/265 (93%)	229 (93%)	18 (7%)	0	100	100
4	D	126/128 (98%)	123 (98%)	3 (2%)	0	100	100
5	E	198/209 (95%)	188 (95%)	10 (5%)	0	100	100
6	F	69/75 (92%)	67 (97%)	2 (3%)	0	100	100
7	G	169/171 (99%)	162 (96%)	7 (4%)	0	100	100
8	H	145/147 (99%)	135 (93%)	10 (7%)	0	100	100
9	I	84/125 (67%)	82 (98%)	2 (2%)	0	100	100
10	J	62/64 (97%)	60 (97%)	2 (3%)	0	100	100
11	K	113/115 (98%)	110 (97%)	3 (3%)	0	100	100
12	L	36/44 (82%)	35 (97%)	1 (3%)	0	100	100
All	All	3646/3975 (92%)	3394 (93%)	252 (7%)	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	1213/1297 (94%)	1189 (98%)	24 (2%)	48	80
2	B	945/1012 (93%)	935 (99%)	10 (1%)	65	87
3	C	228/242 (94%)	225 (99%)	3 (1%)	61	86
4	D	106/118 (90%)	106 (100%)	0	100	100
5	E	184/189 (97%)	178 (97%)	6 (3%)	33	69
6	F	64/65 (98%)	62 (97%)	2 (3%)	35	70
7	G	147/152 (97%)	146 (99%)	1 (1%)	76	91

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	H	129/129 (100%)	127 (98%)	2 (2%)	55	83
9	I	84/112 (75%)	82 (98%)	2 (2%)	43	77
10	J	53/53 (100%)	52 (98%)	1 (2%)	50	81
11	K	104/104 (100%)	103 (99%)	1 (1%)	68	88
12	L	39/41 (95%)	39 (100%)	0	100	100
All	All	3296/3514 (94%)	3244 (98%)	52 (2%)	54	83

All (52) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	129	ILE
1	A	233	CYS
1	A	322	LEU
1	A	404	GLU
1	A	425	ASP
1	A	432	HIS
1	A	486	LEU
1	A	524	MET
1	A	740	GLN
1	A	757	GLN
1	A	853	LYS
1	A	917	GLU
1	A	920	PHE
1	A	986	MET
1	A	1102	MET
1	A	1103	THR
1	A	1104	LEU
1	A	1144	LEU
1	A	1211	LEU
1	A	1226	LEU
1	A	1247	PHE
1	A	1255	LEU
1	A	1285	LEU
1	A	1475	LEU
2	B	86	LEU
2	B	215	TYR
2	B	377	LEU
2	B	388	TYR
2	B	416	ARG
2	B	489	ILE

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Mol	Chain	Res	Type
2	B	495	LEU
2	B	497	LYS
2	B	543	GLU
2	B	1105	GLU
3	C	5	ASN
3	C	8	THR
3	C	41	GLU
5	E	5	GLU
5	E	18	MET
5	E	86	THR
5	E	95	GLN
5	E	104	ILE
5	E	159	LEU
6	F	83	LEU
6	F	90	LEU
7	G	145	LEU
8	H	66	GLU
8	H	136	GLU
9	I	41	ASN
9	I	45	GLN
10	J	55	LEU
11	K	81	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (31) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	330	GLN
1	A	341	GLN
1	A	432	HIS
1	A	472	HIS
1	A	516	GLN
1	A	539	GLN
1	A	599	HIS
1	A	620	HIS
1	A	678	ASN
1	A	685	HIS
1	A	945	ASN
1	A	1163	HIS
1	A	1417	HIS
2	B	23	GLN
2	B	265	GLN
2	B	312	GLN

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Continued from previous page...

Mol	Chain	Res	Type
2	B	452	ASN
2	B	585	ASN
2	B	739	ASN
2	B	992	ASN
2	B	1009	GLN
2	B	1071	ASN
2	B	1097	HIS
3	C	217	GLN
4	D	34	ASN
4	D	38	HIS
4	D	43	HIS
5	E	22	HIS
5	E	35	GLN
7	G	21	ASN
9	I	118	HIS

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
14	P	14/15 (93%)	5 (35%)	1 (7%)

All (5) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
14	P	35	U
14	P	36	G
14	P	37	G
14	P	39	G
14	P	47	U

All (1) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
14	P	38	C

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](#)

Of 9 ligands modelled in this entry, 9 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.

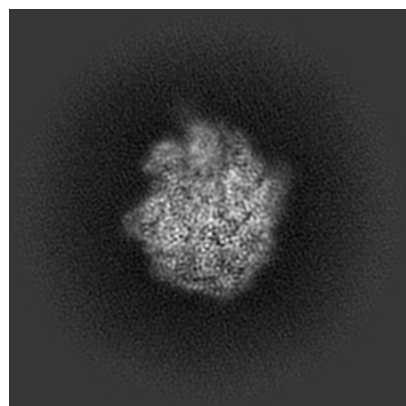
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-72795. These allow visual inspection of the internal detail of the map and identification of artifacts.

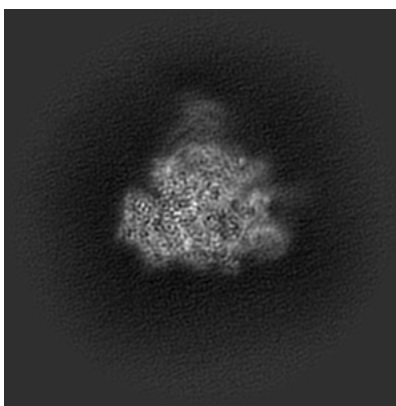
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

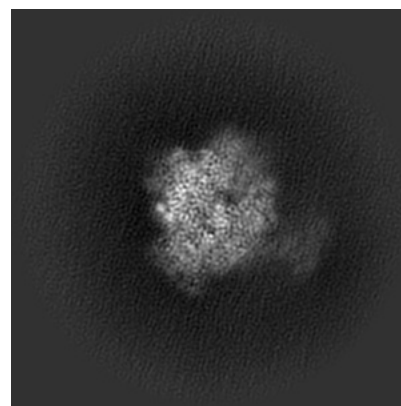
6.1.1 Primary map



X

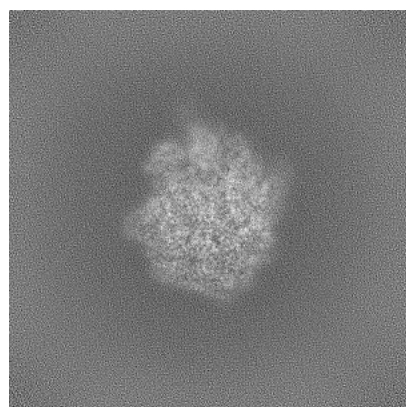


Y

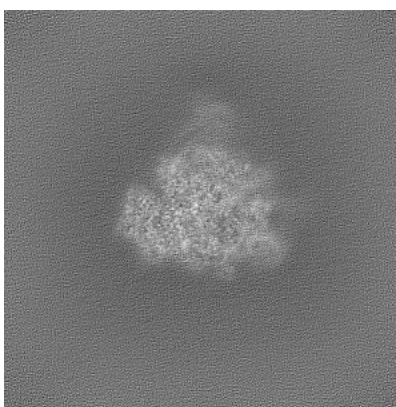


Z

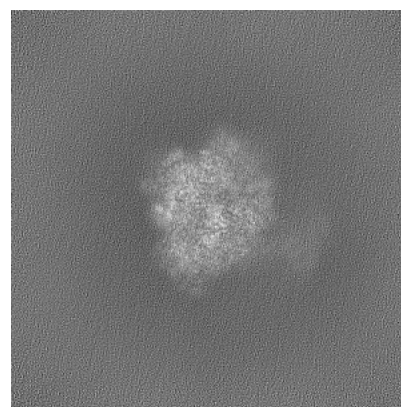
6.1.2 Raw map



X



Y

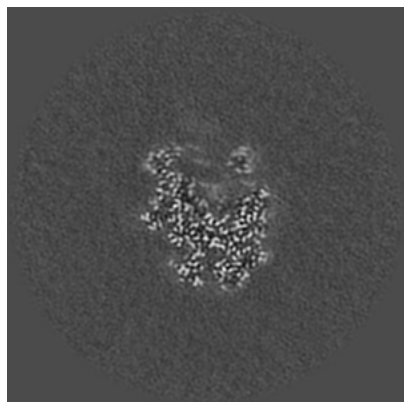


Z

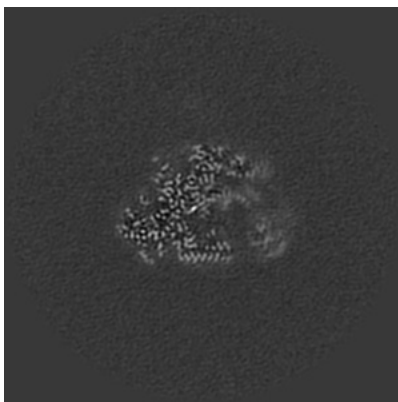
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

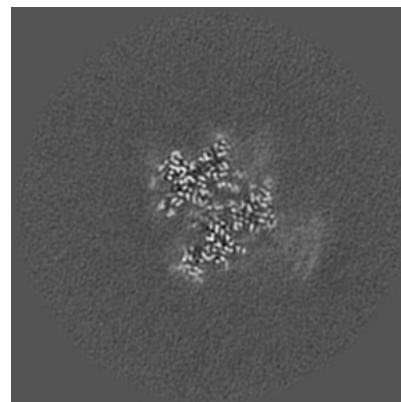
6.2.1 Primary map



X Index: 200

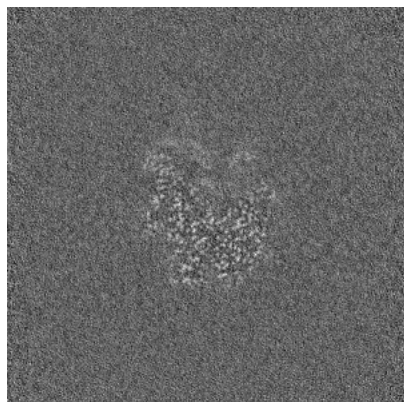


Y Index: 200

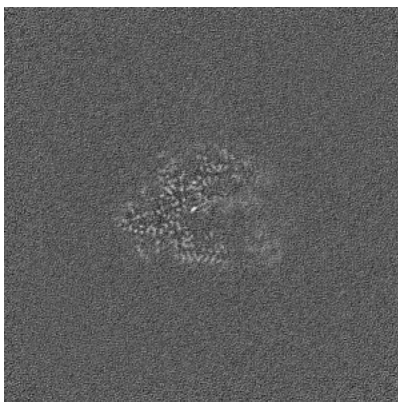


Z Index: 200

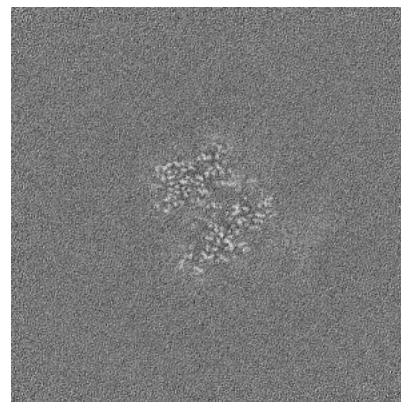
6.2.2 Raw map



X Index: 200



Y Index: 200

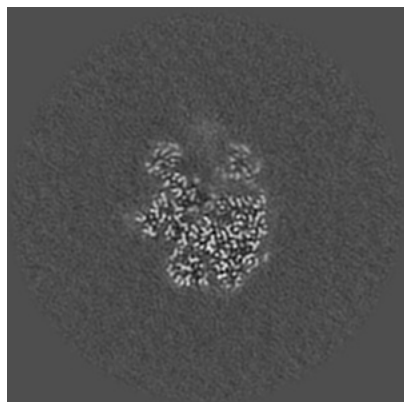


Z Index: 200

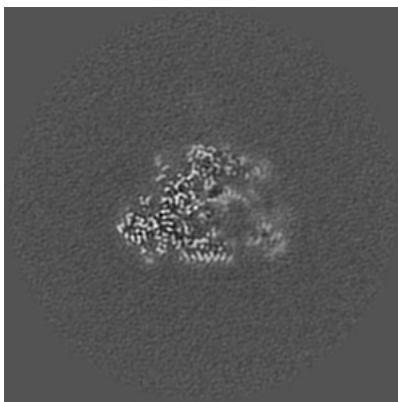
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

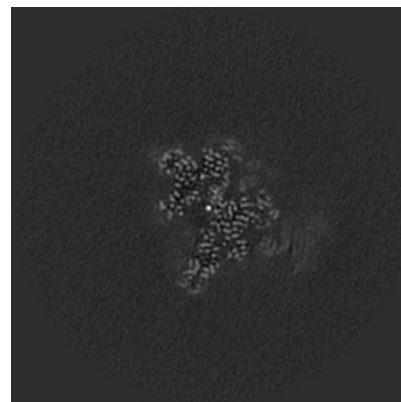
6.3.1 Primary map



X Index: 195

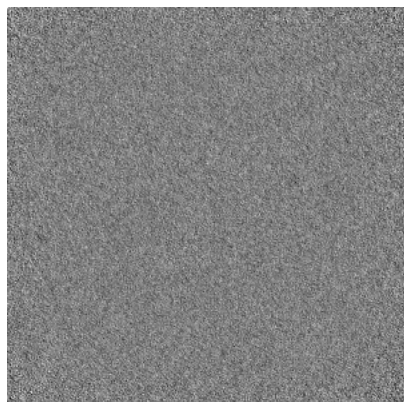


Y Index: 202

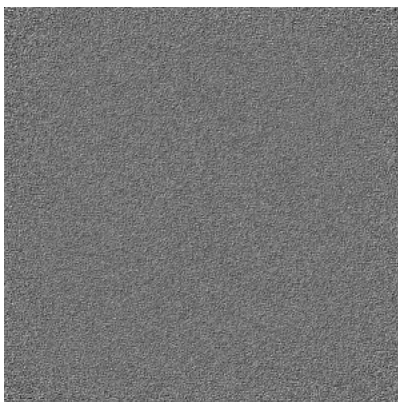


Z Index: 188

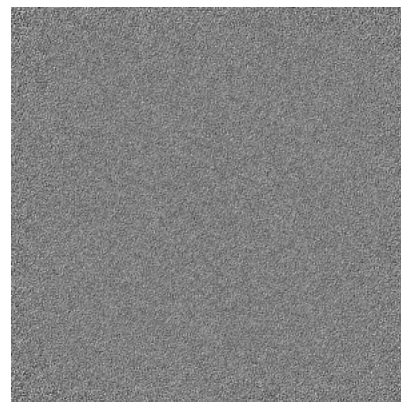
6.3.2 Raw map



X Index: 0



Y Index: 0

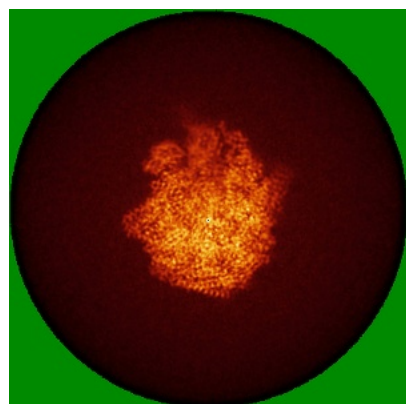


Z Index: 0

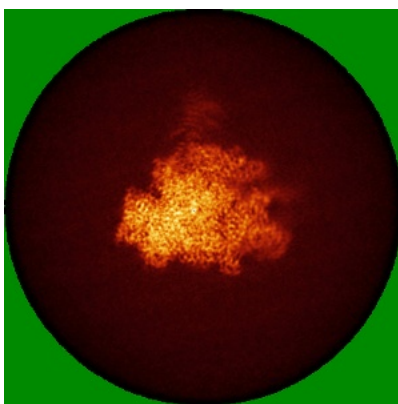
The images above show the largest variance slices of the map in three orthogonal directions.

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

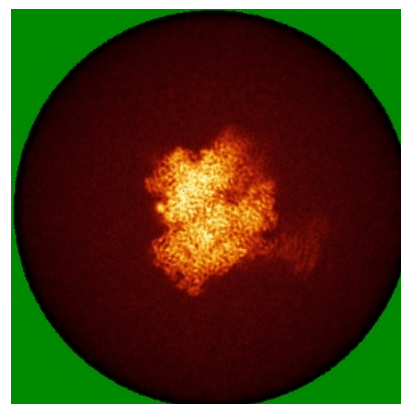
6.4.1 Primary map



X

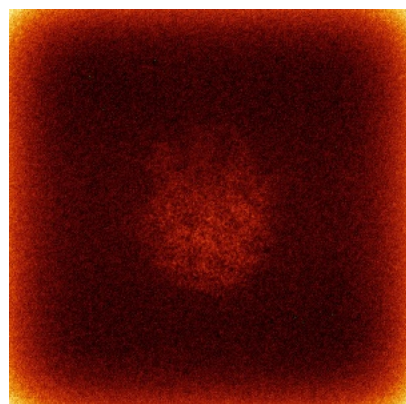


Y

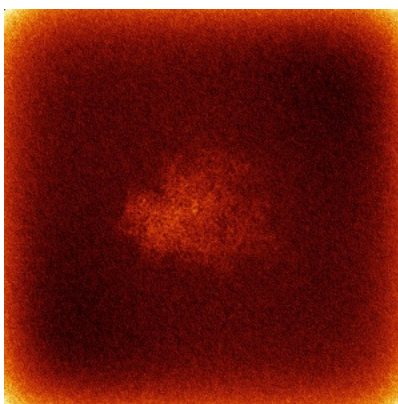


Z

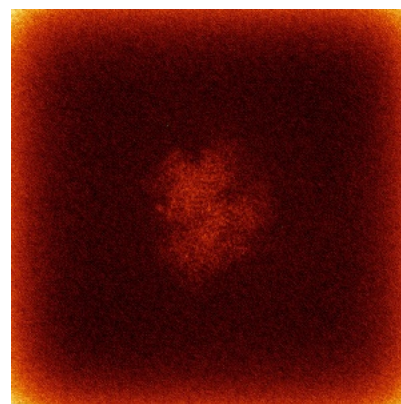
6.4.2 Raw map



X



Y

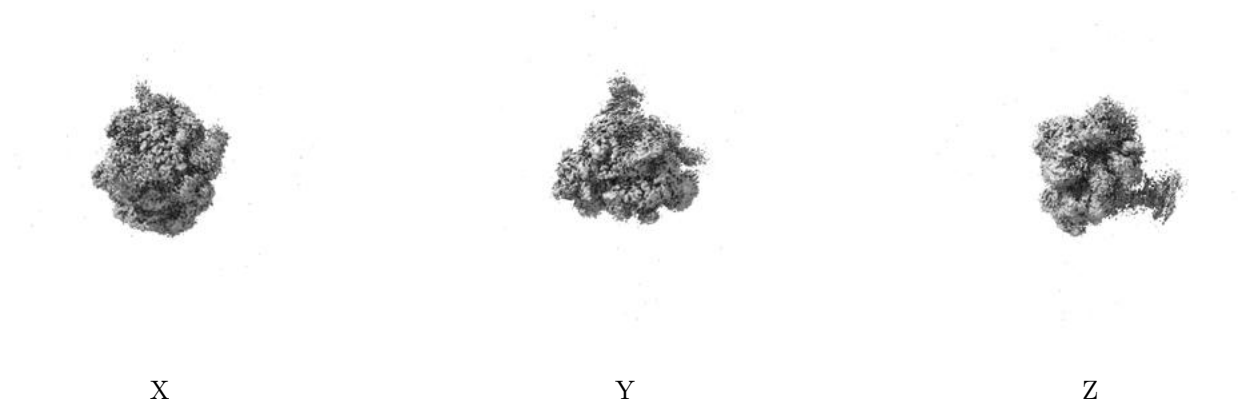


Z

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

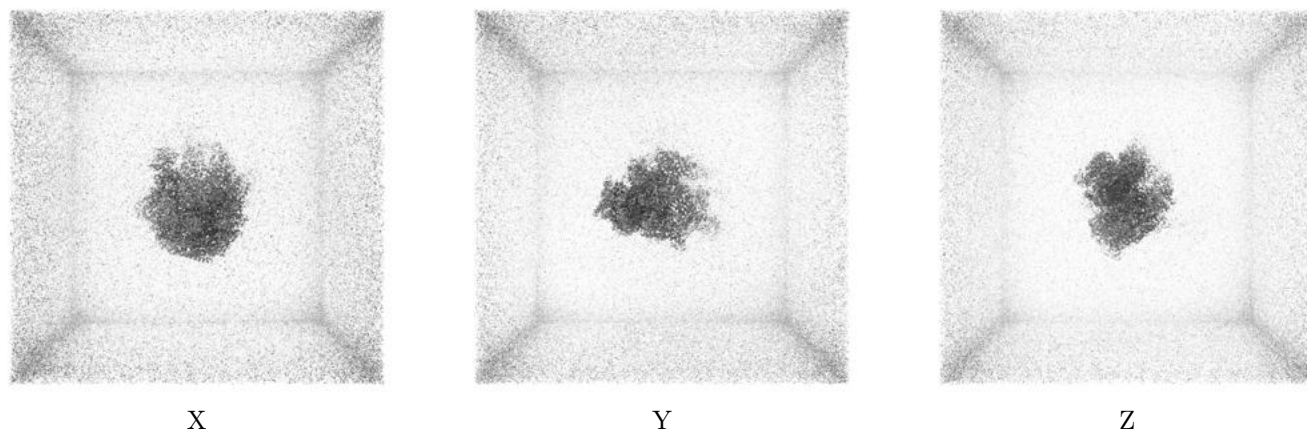
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0261. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

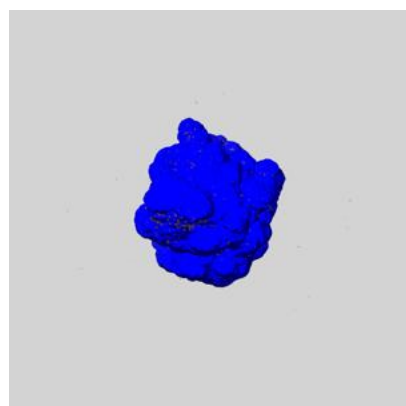
6.6 Mask visualisation [i](#)

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

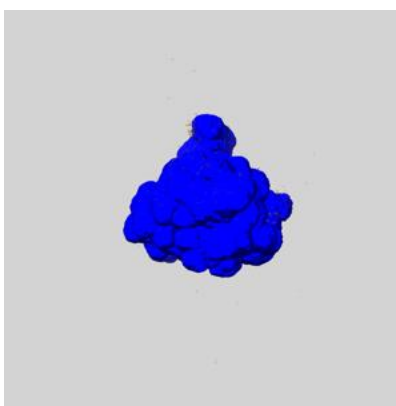
A mask typically either:

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

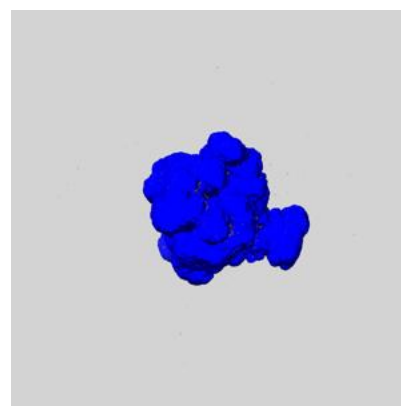
6.6.1 emd_72795_msk_1.map [i](#)



X



Y

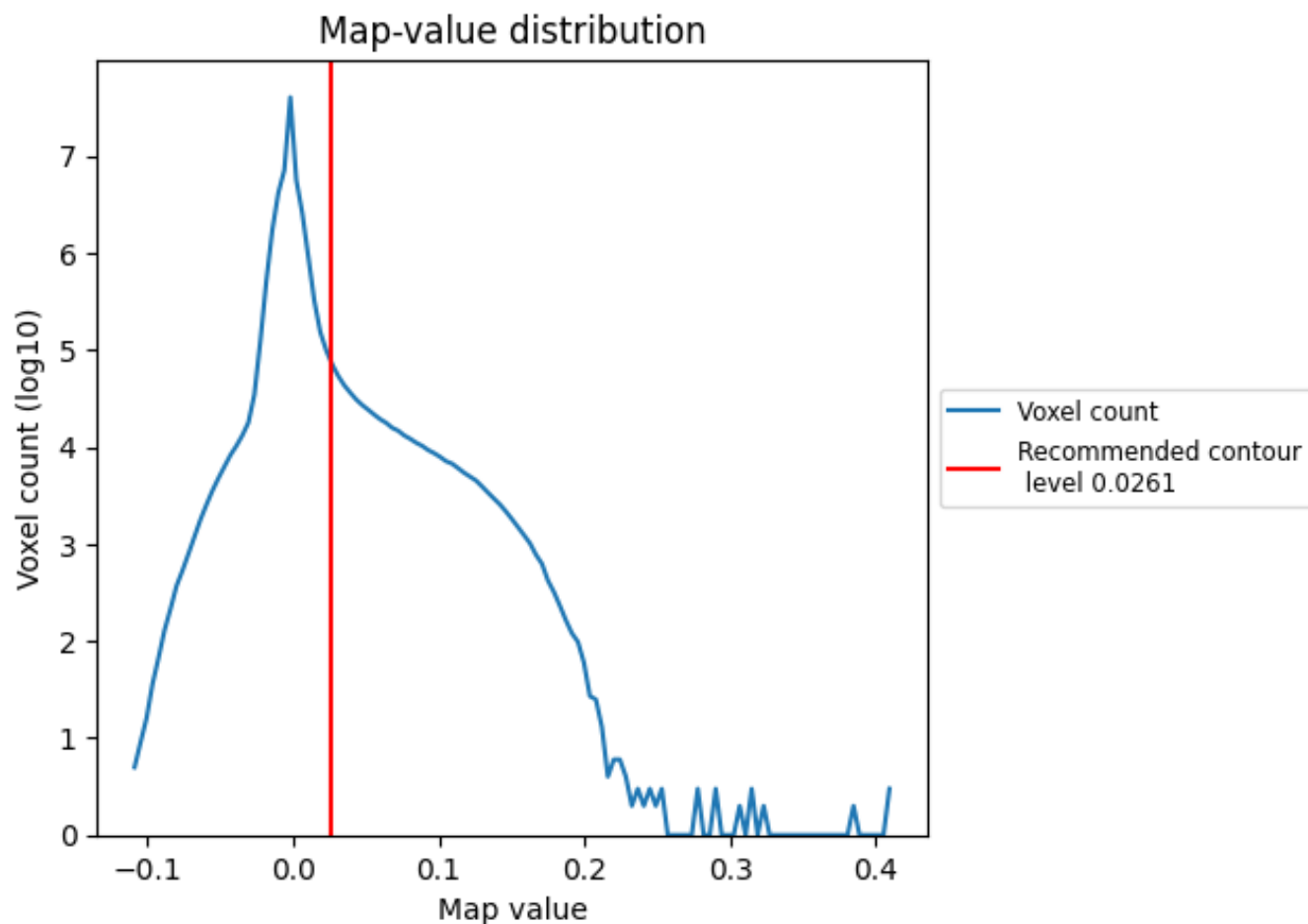


Z

7 Map analysis [i](#)

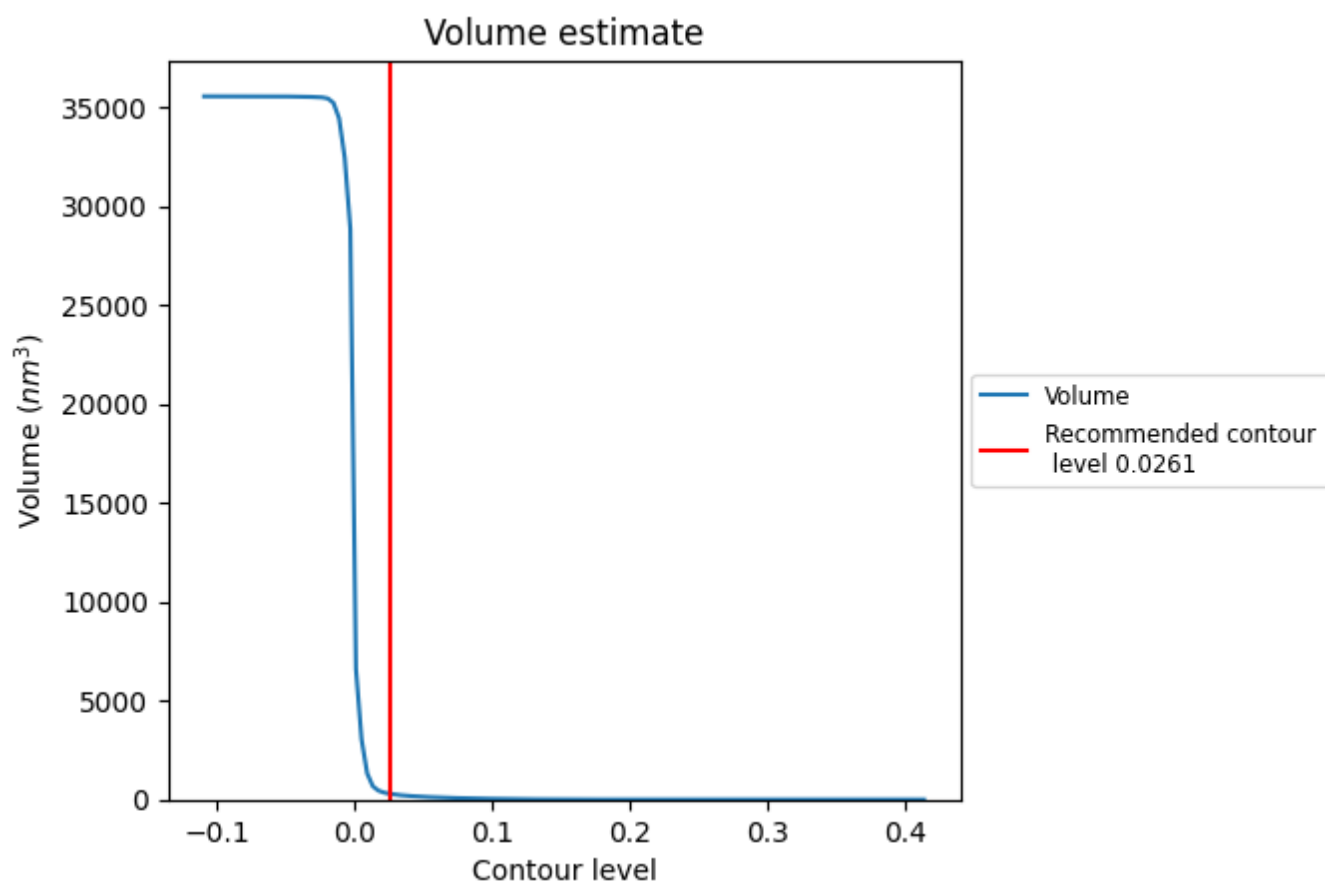
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

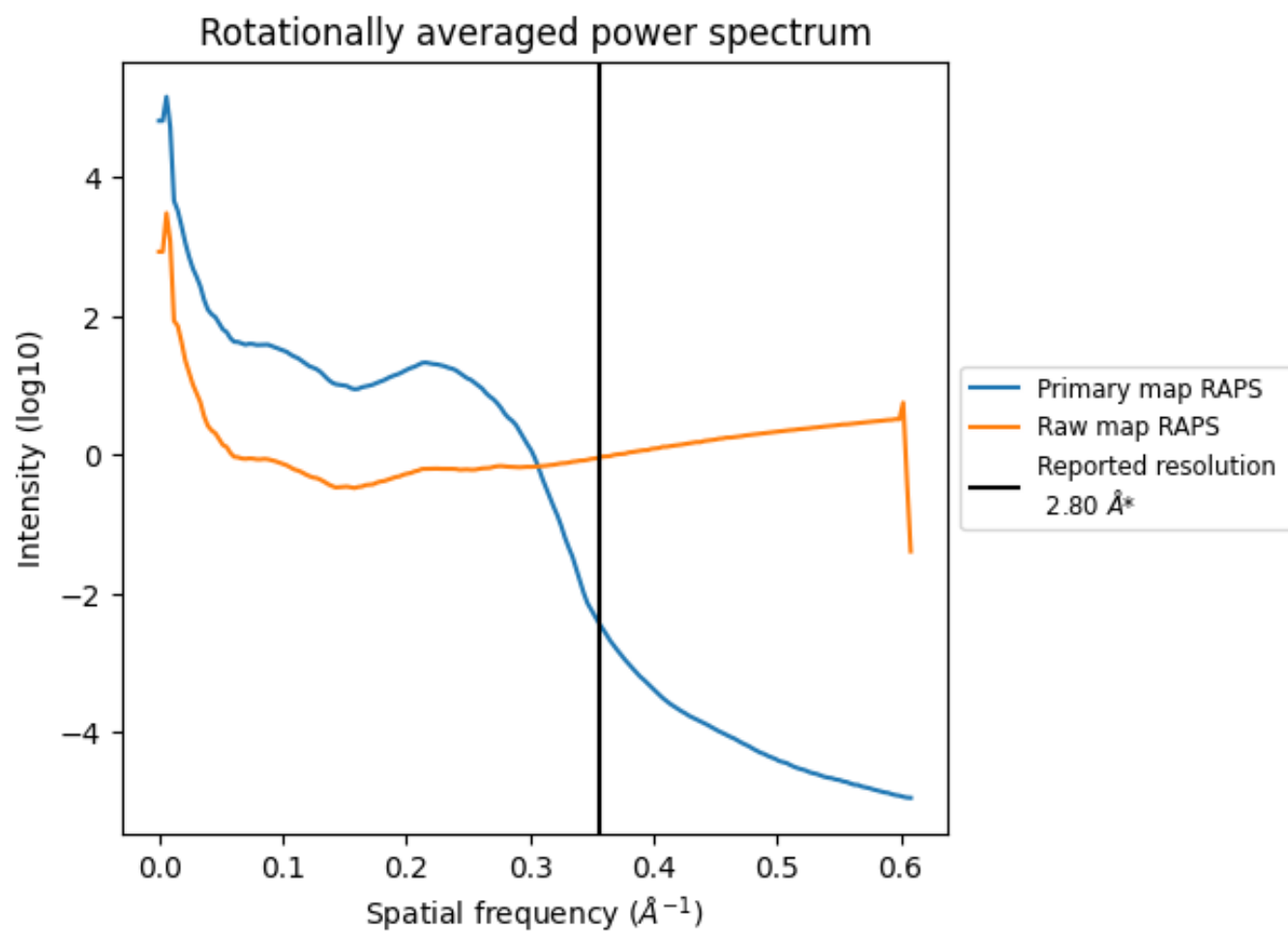
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 289 nm³; this corresponds to an approximate mass of 261 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 ⓘ

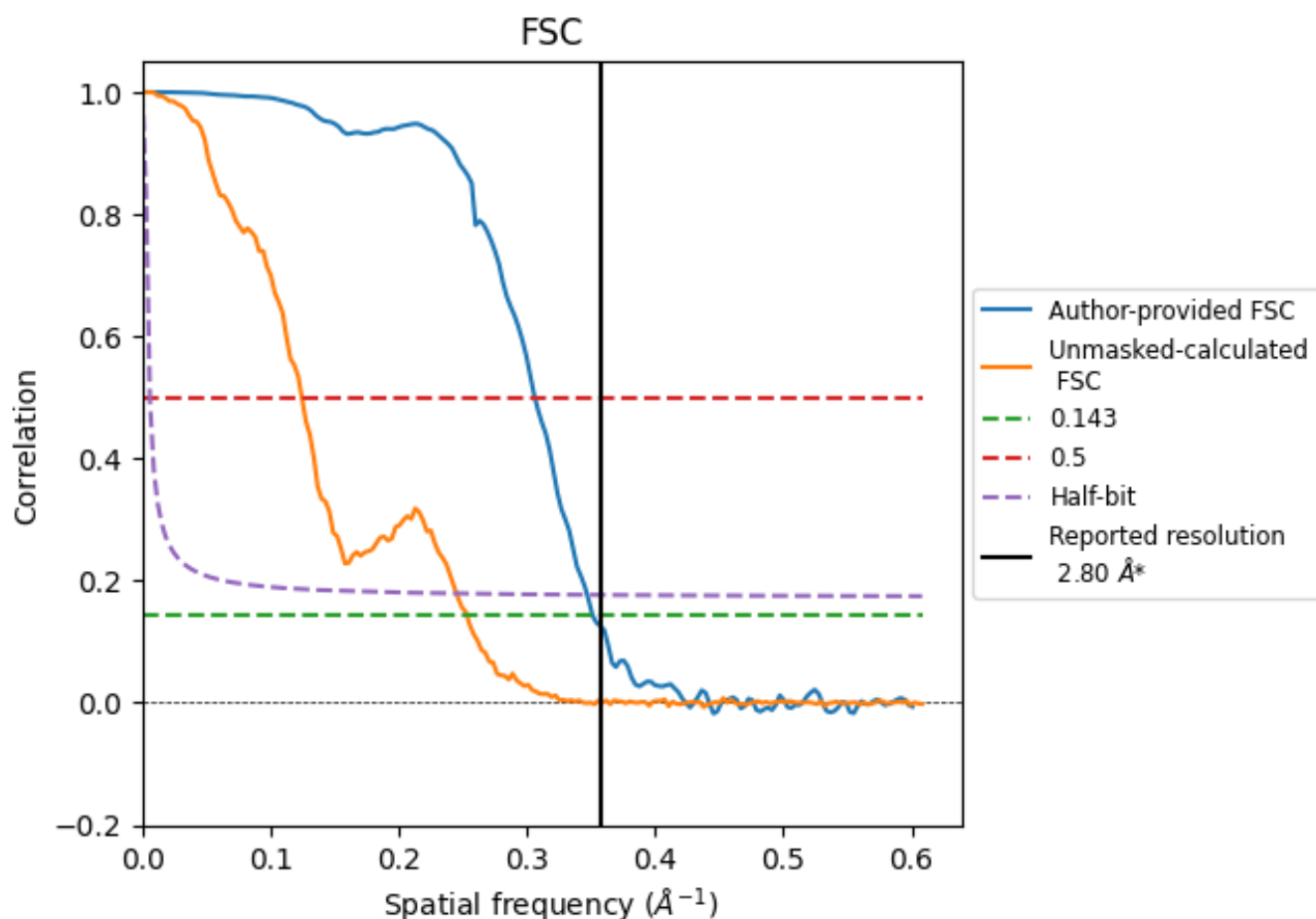


*Reported resolution corresponds to spatial frequency of 0.357 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.357 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

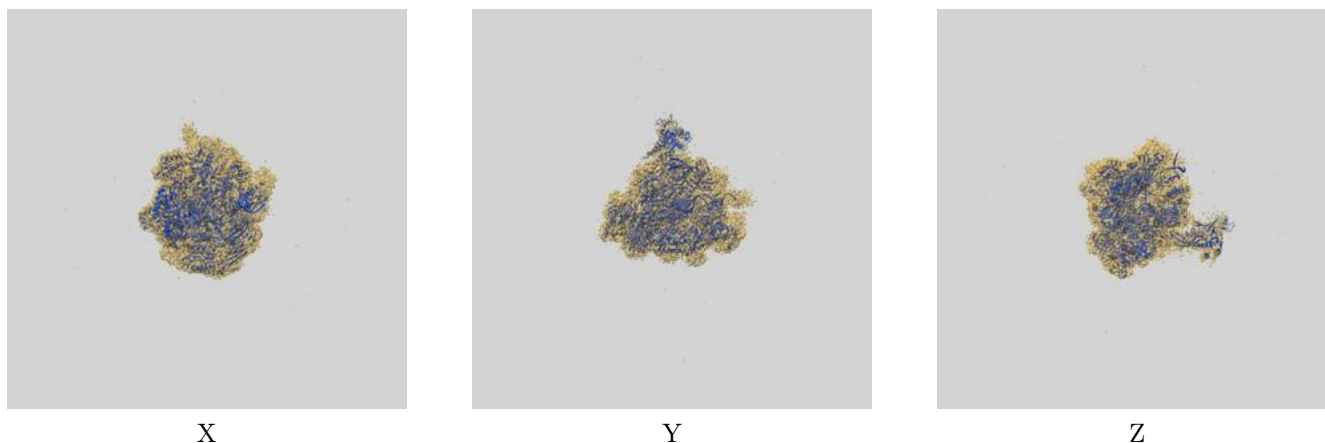
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.80	-	-
Author-provided FSC curve	2.85	3.27	2.88
Unmasked-calculated*	3.95	8.04	4.08

*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 3.95 differs from the reported value 2.8 by more than 10 %

9 Map-model fit [i](#)

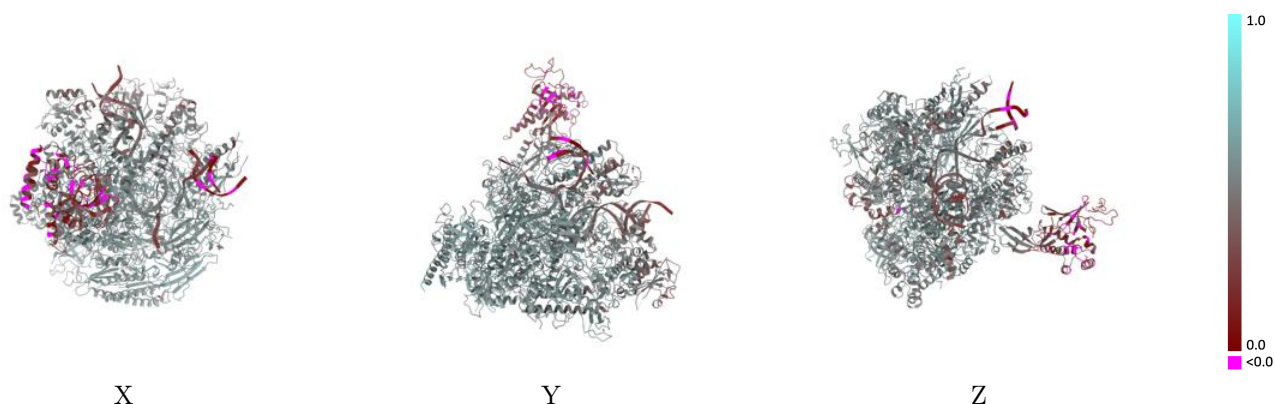
This section contains information regarding the fit between EMDB map EMD-72795 and PDB model 9YD5. Per-residue inclusion information can be found in [section 3](#) on [page 7](#).

9.1 Map-model overlay [i](#)



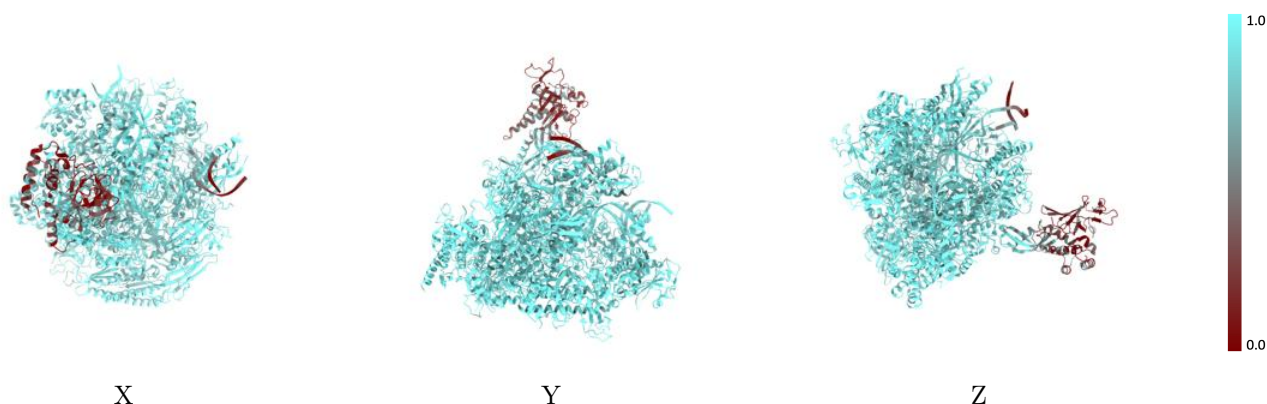
The images above show the 3D surface view of the map at the recommended contour level 0.0261 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



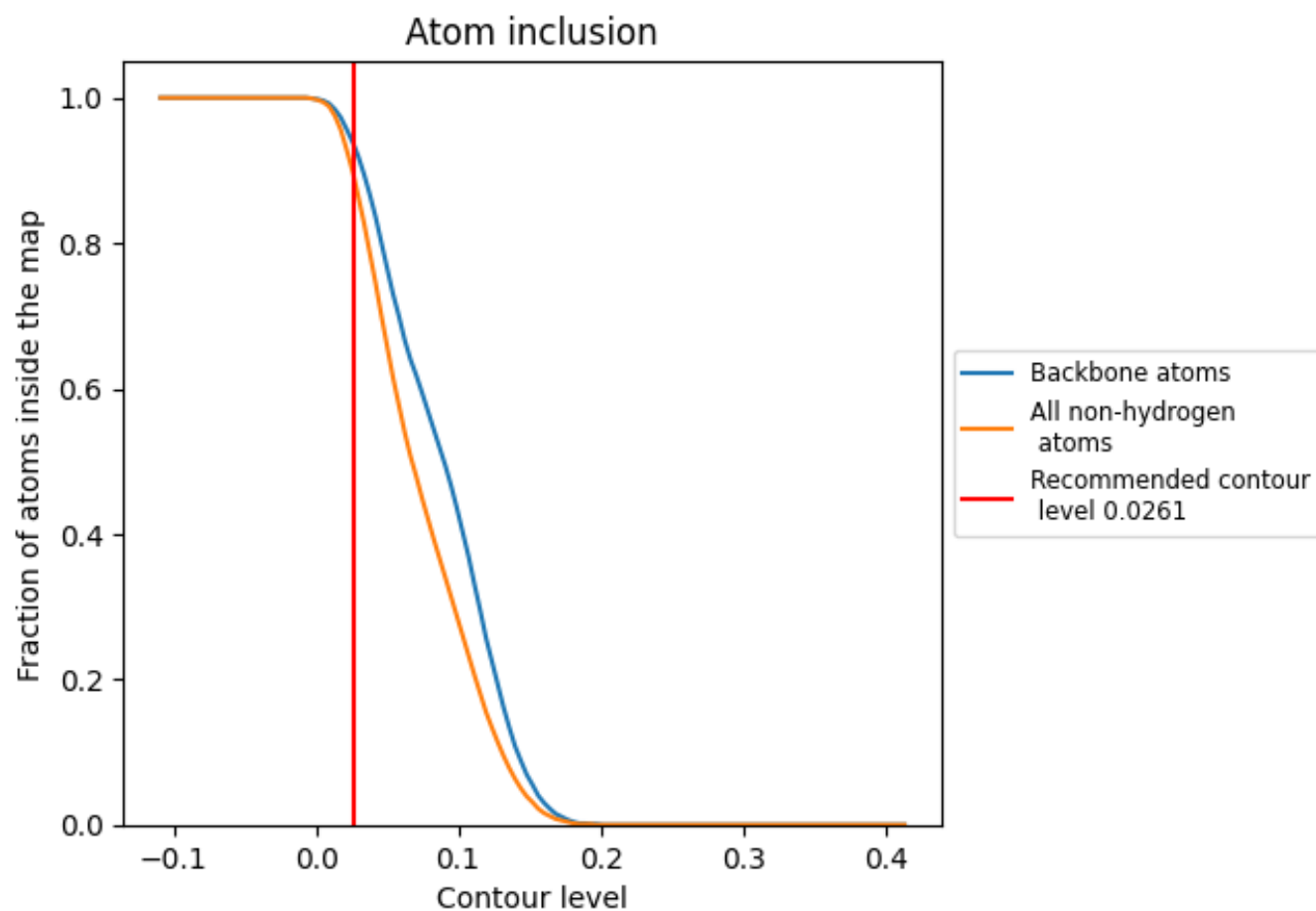
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0261).

9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 90% 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 (0.0261) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8970	0.5020
A	0.9360	0.5270
B	0.9450	0.5400
C	0.9700	0.5580
D	0.2940	0.1860
E	0.9420	0.5080
F	0.9700	0.5520
G	0.4550	0.2810
H	0.9420	0.5380
I	0.9540	0.5080
J	0.9800	0.5640
K	0.9700	0.5540
L	0.9730	0.5340
N	0.7180	0.2330
P	0.9220	0.4380
T	0.8280	0.3370

1.0

0.0

<0.0