Full wwPDB EM Validation Report ⓘ

Oct 29, 2026 – 12:11 PM JST

PDB ID	:	9X9Y / pdb_00009x9y
EMDB ID	:	EMD-66672
Title	:	Cryo-EM Structure of the SCRIB-PP1 Complex
Authors	:	Alharbi, S.I.; Huntington, B.; Sandholu, A.; Arold, S.T.
Deposited on	:	2025-10-21
Resolution	:	3.80 Å(reported)
Based on initial model	:	.

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:

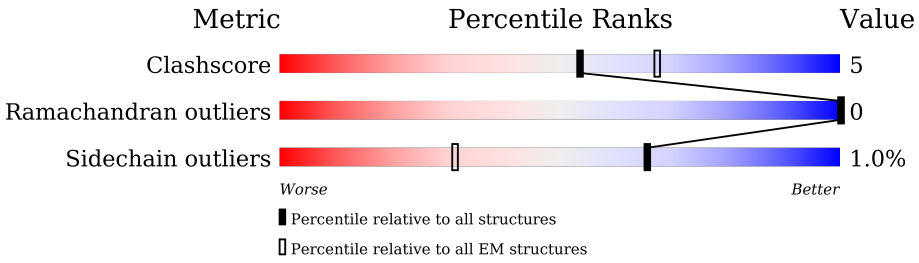
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.51

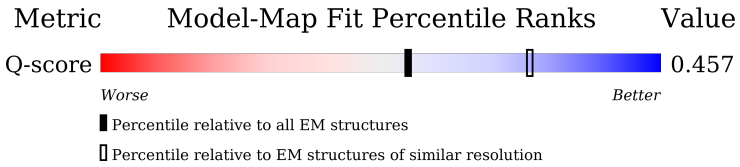
1 Overall quality at a glance

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

The reported resolution of this entry is 3.80 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	-
Q-score	-	25397	10198 (3.30 - 4.30)

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 <=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	B	340	
2	A	1531	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 13135 atoms, of which 6601 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 Serine/threonine-protein phosphatase PP1-alpha catalytic subunit.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	B	295	Total	C	H	N	O	S	0	0
			4709	1520	2336	398	437	18		

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	331	GLY	-	expression tag	UNP P62136
B	332	SER	-	expression tag	UNP P62136
B	333	GLY	-	expression tag	UNP P62136
B	334	SER	-	expression tag	UNP P62136
B	335	HIS	-	expression tag	UNP P62136
B	336	HIS	-	expression tag	UNP P62136
B	337	HIS	-	expression tag	UNP P62136
B	338	HIS	-	expression tag	UNP P62136
B	339	HIS	-	expression tag	UNP P62136
B	340	HIS	-	expression tag	UNP P62136

- Molecule 2 is a protein called Protein scribble homolog.

Mol	Chain	Residues	Atoms						AltConf	Trace
2	A	536	Total	C	H	N	O	S	0	0
			8424	2616	4265	734	797	12		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	12	MET	-	initiating methionine	UNP Q14160
A	1532	SER	-	expression tag	UNP Q14160
A	1533	GLY	-	expression tag	UNP Q14160
A	1534	SER	-	expression tag	UNP Q14160
A	1535	TRP	-	expression tag	UNP Q14160
A	1536	SER	-	expression tag	UNP Q14160

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
A	1537	HIS	-	expression tag	UNP Q14160
A	1538	PRO	-	expression tag	UNP Q14160
A	1539	GLN	-	expression tag	UNP Q14160
A	1540	PHE	-	expression tag	UNP Q14160
A	1541	GLU	-	expression tag	UNP Q14160
A	1542	LYS	-	expression tag	UNP Q14160

- Molecule 3 is MANGANESE (II) ION (CCD ID: MN) (formula: Mn) (labeled as "Ligand of Interest" by depositor).

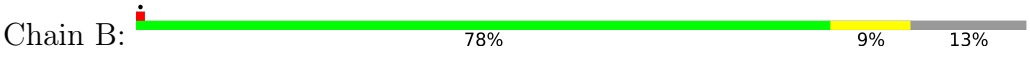
Mol	Chain	Residues	Atoms		AltConf
			Total	Mn	
3	B	2	2	2	0

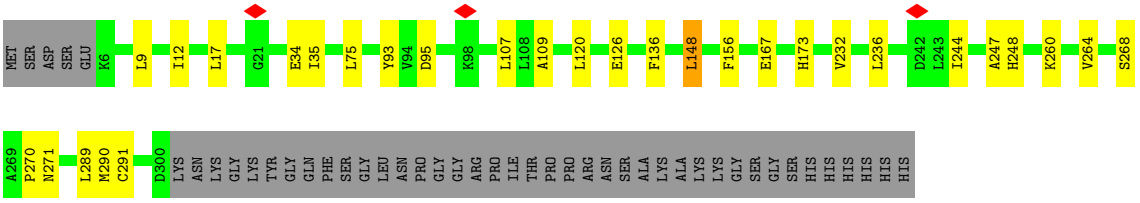
3 Residue-property plots (i)

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: Serine/threonine-protein phosphatase PP1-alpha catalytic subunit

Chain B:

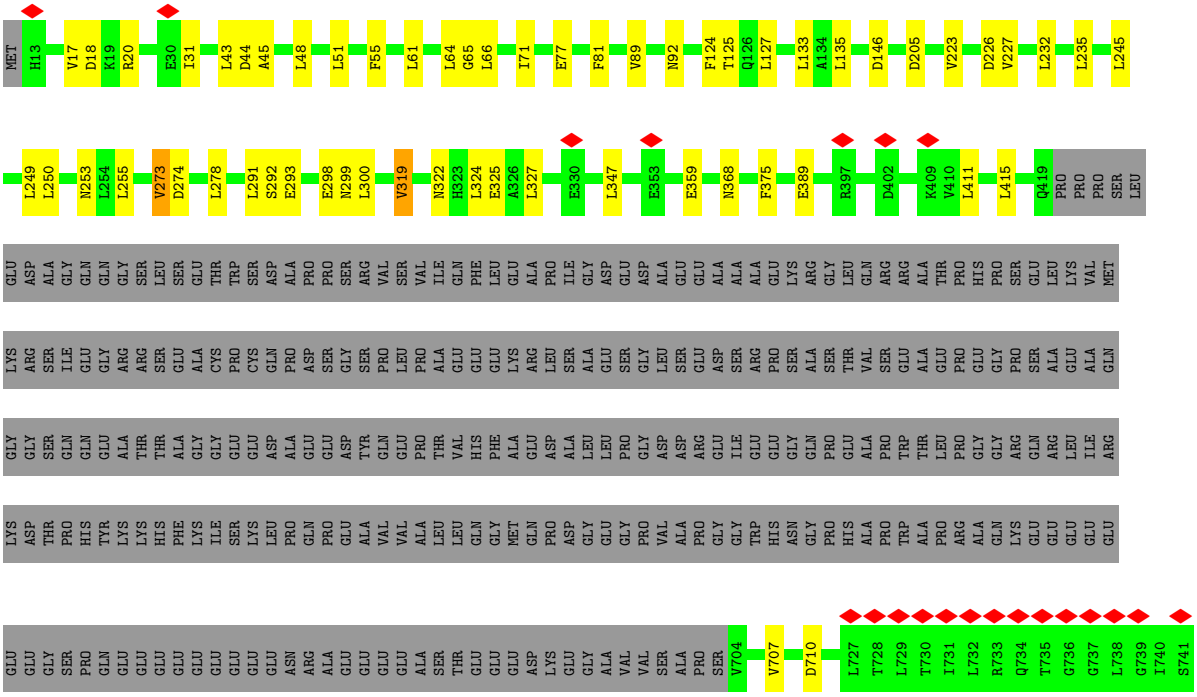


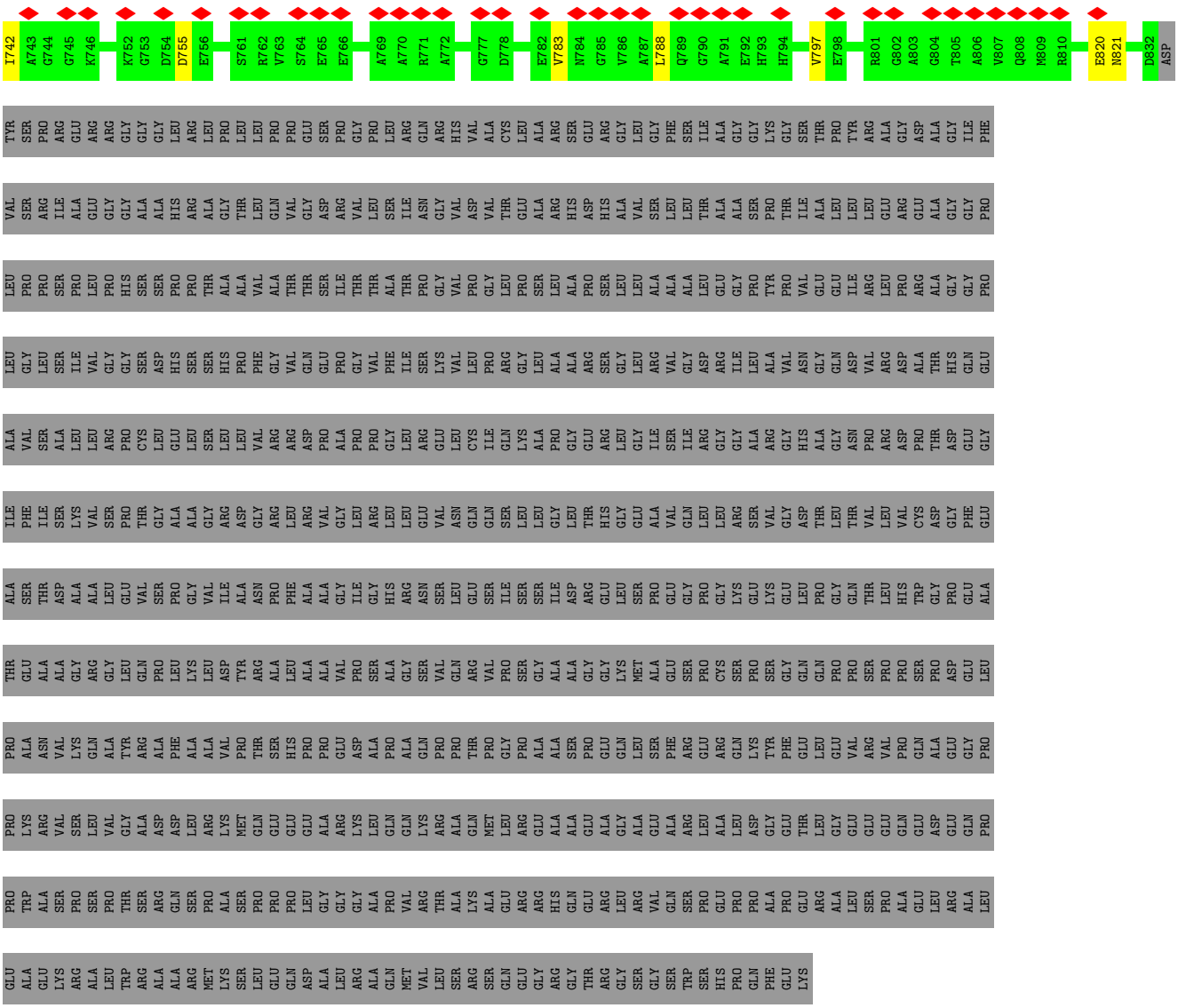


• Molecule 2: Protein scribble homolog

Chain A:






I742 A743 G744 G745 K746 K752 G753 D754 D755 E756 S761 R762 V763 S764 E765 E766 A769 A770 R771 A772 G777 D778 E782 V783 N784 G785 V786 A787 L788 Q789 G790 A791 E792 H793 H794 V797 E798 R801 G802 A803 G804 T805 A806 V807 Q808 M809 R810 E820 N821 D832 ASP
TYR SER PRO ARG GLU ARG ARG GLY GLY GLY LEU ARG LEU PRO LEU LEU PRO PRO GLU SER PRO GLY PRO LEU ARG GLN ARG HIS VAL ALA CYS LEU ALA ARG SER GLU ARG GLY LEU GLY PHE SER ILE ALA GLY GLY LYS GLY SER THR PRO TYR ARG ALA GLY ASP ALA GLY ILE PHE
VAL SER ARG ILE ALA GLU GLY GLY ALA ALA HIS ARG ALA GLY THR LEU GLN VAL GLY ASP ARG VAL LEU SER ILE ASN GLY VAL ASP VAL THR GLU ALA ARG HIS ASP HIS ALA VAL SER LEU LEU THR ALA ALA SER PRO THR ILE ALA LEU LEU LEU GLU ARG GLU ALA ALA GLY GLY PRO
LEU PRO PRO SER PRO LEU PRO HIS SER SER PRO PRO THR ALA ALA VAL ALA THR THR SER ILE THR THR ALA THR PRO GLY VAL PRO GLY LEU PRO SER LEU ALA ALA PRO SER LEU LEU ALA ALA LEU GLU GLY PRO TYR PRO VAL GLU GLU ILE ARG LEU PRO ARG ALA GLY GLY PRO
LEU GLY LEU SER ILE VAL GLY GLY SER ASP HIS SER SER HIS PRO PHE GLY VAL GLN GLU PRO VAL PHE ILE SER LYS VAL LEU PRO ARG GLY LEU SER GLY LEU ARG VAL GLY ASP ARG ILE LEU ALA VAL ASN GLY GLN ASP VAL ARG ASP ALA THR HIS GLN GLU
ALA VAL SER ALA LEU LEU ARG PRO CYS LEU GLU LEU SER LEU LEU VAL ARG ARG ASP PRO ALA PRO PRO GLY LEU ARG GLU LEU CYS ILE GLN LYS ALA PRO GLY GLU ARG SER GLY LEU ARG VAL GLY GLY ILE SER ILE ARG GLY GLY ALA ARG GLY HIS ALA GLY ASN PRO ARG ASP PRO THR ASP GLU GLY
ILE PHE ILE SER LYS VAL SER PRO THR GLY ALA ALA GLY ARG ASP GLY ARG LEU ARG VAL GLY LEU GLY LEU LEU GLU GLU VAL GLN GLN GLN SER LEU LEU LEU GLY LEU THR HIS GLY GLU ALA VAL GLN LEU LEU LEU ARG SER VAL GLY ASP THR LEU THR VAL LEU VAL CYS ASP GLY PHE GLU
ALA SER THR ASP ALA ALA LEU GLU VAL SER PRO GLY VAL PRO PHE ALA ALA GLY ILE GLY HIS ARG ASN SER LEU GLU SER ILE SER SER ILE ASP ARG GLU LEU SER PRO GLU GLY PRO GLY LYS GLU LYS GLU LEU PRO GLY GLN THR LEU HIS TRP GLY PRO GLU GLU ALA
THR GLU ALA ALA GLY ARG GLY LEU GLN PRO LEU LYS LEU ASP TYR ARG ALA LEU ALA ALA ALA VAL PRO SER ALA GLY SER ALA VAL GLN ARG VAL PRO SER GLY ALA ALA ASP GLY GLY LYS MET ALA GLU GLU SER PRO CYS SER PRO SER GLY GLN GLN PRO PRO SER PRO PRO SER GLU LEU
PRO ALA ASN VAL LYS GLN ALA TYR ARG ALA PHE ALA ARG THR SER HIS PRO PRO GLU ASP ALA PRO ALA GLN PRO PRO THR PRO GLY PRO ALA ALA SER PRO GLU GLN LEU SER PHE ARG GLU ARG GLN LYS TYR PHE GLU LEU GLU VAL ARG VAL PRO GLN LEU GLU GLY PRO
PRO LYS ARG VAL SER LEU VAL GLY ALA ASP ASP LEU ARG LYS MET GLN GLU GLU GLU ALA ARG LYS LEU GLN GLN MET LEU ARG GLU ALA ALA GLU ALA ARG LEU ALA LEU ASP GLY GLU THR LEU GLY GLU GLU GLU GLN GLN GLU ASP GLU GLN PRO
PRO TRP ALA SER PRO SER PRO THR SER ARG GLN SER PRO ALA SER PRO PRO PRO PRO LEU GLY GLY ALA PRO VAL ARG THR ALA LYS ALA GLU ARG ARG HIS GLN GLU ARG LEU ARG VAL GLN SER PRO GLU PRO PRO ALA PRO GLU ARG ALA LEU SER PRO ALA GLU LEU ARG ALA LEU
GLU ALA GLU LYS ARG ALA LEU TRP ARG ALA ALA ARG MET LYS SER LEU GLU GLN ASP ALA LEU ARG ALA GLN MET VAL LEU SER ARG SER GLN GLU GLY ARG GLY THR ARG GLY SER GLY SER TRP SER HIS PRO GLN PHE GLU LYS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	100498	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	36.40	Depositor
Minimum defocus (nm)	1600	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	130000	Depositor
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.504	Depositor
Minimum map value	-0.349	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.012	Depositor
Recommended contour level	0.054	Depositor
Map size (Å)	238.08, 238.08, 238.08	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.93, 0.93, 0.93	Depositor

5 Model quality

5.1 Standard geometry

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

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	B	0.13	0/2427	0.35	0/3278
2	A	0.13	0/4218	0.37	0/5728
All	All	0.13	0/6645	0.36	0/9006

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	B	2373	2336	2335	18	0
2	A	4159	4265	4263	52	0
3	B	2	0	0	0	0
All	All	6534	6601	6598	68	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 (68) 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)
2:A:61:LEU:HD13	2:A:64:LEU:HD12	1.70	0.71
2:A:89:VAL:O	2:A:89:VAL:HG12	1.97	0.65
1:B:107:LEU:HB3	1:B:120:LEU:HD21	1.80	0.64
2:A:124:PHE:O	2:A:127:LEU:HD12	1.98	0.63
1:B:93:TYR:CE2	1:B:120:LEU:HD23	2.34	0.62
2:A:61:LEU:HD12	2:A:81:PHE:CE1	2.35	0.61
2:A:77:GLU:O	2:A:77:GLU:OE1	2.21	0.59
2:A:319:VAL:HG12	2:A:322:ASN:HD22	1.69	0.58
2:A:64:LEU:HD21	2:A:66:LEU:HD13	1.86	0.58
2:A:17:VAL:HG11	2:A:31:ILE:HD11	1.84	0.57
2:A:327:LEU:HD22	2:A:347:LEU:HD21	1.87	0.57
2:A:66:LEU:HD23	2:A:71:ILE:CD1	2.35	0.57
2:A:783:VAL:HG23	2:A:788:LEU:HD11	1.87	0.56
2:A:51:LEU:HD12	2:A:55:PHE:CD2	2.41	0.54
2:A:291:LEU:HD23	2:A:292:SER:N	2.22	0.54
2:A:65:GLY:C	2:A:66:LEU:HD12	2.32	0.54
2:A:324:LEU:HD23	2:A:325:GLU:N	2.22	0.54
2:A:226:ASP:CG	2:A:249:LEU:HD12	2.34	0.53
1:B:260:LYS:O	1:B:260:LYS:HG3	2.09	0.53
2:A:274:ASP:OD2	2:A:274:ASP:C	2.52	0.52
1:B:75:LEU:HD11	1:B:268:SER:OG	2.11	0.51
2:A:299:ASN:C	2:A:300:LEU:HD23	2.36	0.51
1:B:260:LYS:O	1:B:260:LYS:CG	2.60	0.49
2:A:44:ASP:OD1	2:A:44:ASP:C	2.55	0.49
2:A:235:LEU:HD13	2:A:255:LEU:HD21	1.95	0.49
2:A:227:VAL:CG2	2:A:250:LEU:HD23	2.43	0.48
2:A:273:VAL:HG11	2:A:278:LEU:HD11	1.94	0.48
2:A:232:LEU:HD12	2:A:253:ASN:ND2	2.28	0.48
2:A:43:LEU:HB3	2:A:48:LEU:HD11	1.96	0.47
2:A:65:GLY:O	2:A:66:LEU:HD12	2.14	0.47
1:B:290:MET:HE3	2:A:710:ASP:OD1	2.15	0.47
1:B:126:GLU:OE1	1:B:156:PHE:CG	2.68	0.46
2:A:223:VAL:O	2:A:245:LEU:HD12	2.15	0.46
2:A:291:LEU:HD21	2:A:293:GLU:O	2.15	0.46
2:A:298:GLU:O	2:A:298:GLU:CG	2.64	0.46
1:B:9:LEU:HD11	1:B:109:ALA:HB1	1.98	0.45
1:B:247:ALA:O	1:B:248:HIS:HB3	2.16	0.45
2:A:375:PHE:HA	2:A:411:LEU:HD21	1.98	0.45
2:A:324:LEU:HD23	2:A:325:GLU:H	1.82	0.44
2:A:347:LEU:HD12	2:A:368:ASN:HD21	1.82	0.44
1:B:270:PRO:O	1:B:271:ASN:OD1	2.35	0.44
2:A:347:LEU:HD12	2:A:368:ASN:ND2	2.32	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:227:VAL:HG23	2:A:250:LEU:HD23	2.00	0.44
2:A:389:GLU:N	2:A:389:GLU:OE2	2.49	0.44
2:A:43:LEU:HD13	2:A:48:LEU:CD1	2.47	0.44
2:A:821:ASN:OD1	2:A:821:ASN:C	2.61	0.44
1:B:35:ILE:HG21	1:B:148:LEU:HD11	2.01	0.43
2:A:18:ASP:OD1	2:A:20:ARG:HG3	2.19	0.43
1:B:289:LEU:HD21	2:A:707:VAL:HG22	2.00	0.43
2:A:411:LEU:HD23	2:A:411:LEU:N	2.34	0.43
2:A:133:LEU:HD21	2:A:135:LEU:HD11	2.01	0.42
1:B:264:VAL:O	1:B:264:VAL:HG13	2.19	0.42
2:A:742:ILE:HD11	2:A:797:VAL:N	2.35	0.42
2:A:298:GLU:O	2:A:298:GLU:HG3	2.20	0.42
2:A:327:LEU:CD2	2:A:347:LEU:HD21	2.50	0.42
1:B:95:ASP:OD1	1:B:136:PHE:HB2	2.19	0.42
2:A:125:THR:HG21	2:A:146:ASP:CG	2.44	0.42
2:A:44:ASP:OD1	2:A:45:ALA:N	2.53	0.42
1:B:232:VAL:HG13	1:B:244:ILE:HD12	2.02	0.41
2:A:89:VAL:O	2:A:92:ASN:OD1	2.38	0.41
1:B:167:GLU:O	1:B:167:GLU:CG	2.67	0.41
2:A:359:GLU:HG3	2:A:359:GLU:O	2.20	0.41
1:B:12:ILE:HD11	1:B:34:GLU:HB3	2.02	0.41
2:A:205:ASP:OD1	2:A:205:ASP:N	2.53	0.41
2:A:820:GLU:O	2:A:821:ASN:OD1	2.38	0.41
2:A:298:GLU:O	2:A:298:GLU:OE1	2.39	0.41
2:A:755:ASP:OD2	2:A:755:ASP:O	2.39	0.41
1:B:173:HIS:CE1	1:B:248:HIS:HB2	2.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	293/340 (86%)	277 (94%)	16 (6%)	0	100	100
2	A	532/1531 (35%)	505 (95%)	27 (5%)	0	100	100
All	All	825/1871 (44%)	782 (95%)	43 (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	B	260/296 (88%)	256 (98%)	4 (2%)	57	69
2	A	463/1241 (37%)	460 (99%)	3 (1%)	78	79
All	All	723/1537 (47%)	716 (99%)	7 (1%)	65	74

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	17	LEU
1	B	148	LEU
1	B	236	LEU
1	B	291	CYS
2	A	273	VAL
2	A	319	VAL
2	A	415	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	131	ASN
1	B	237	HIS
2	A	13	HIS
2	A	714	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

Of 2 ligands modelled in this entry, 2 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

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

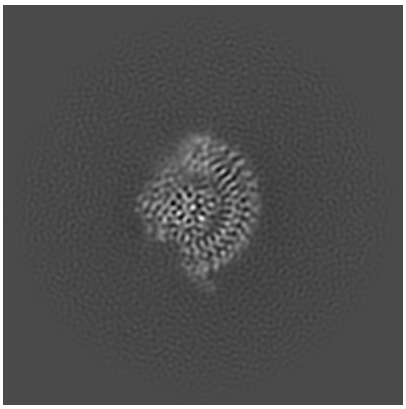
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-66672. These allow visual inspection of the internal detail of the map and identification of artifacts.

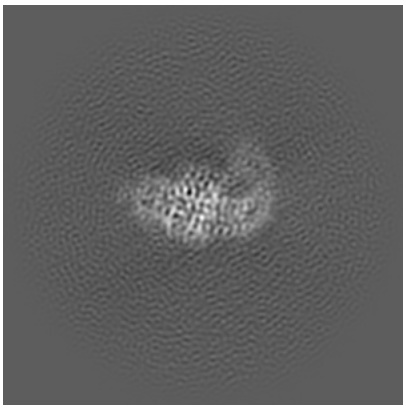
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

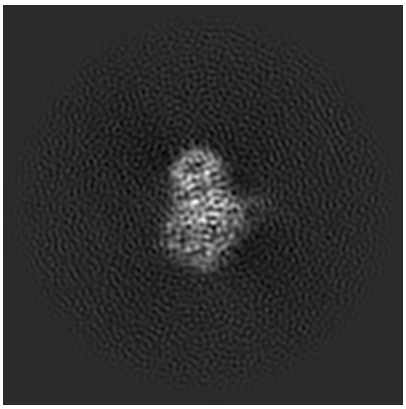
6.1.1 Primary map



X

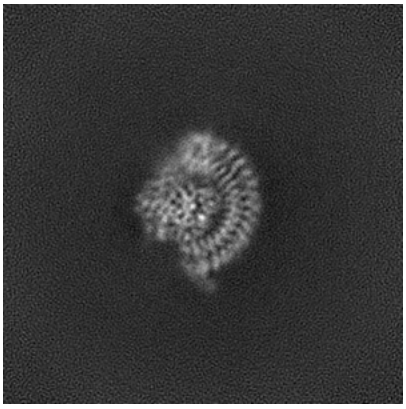


Y

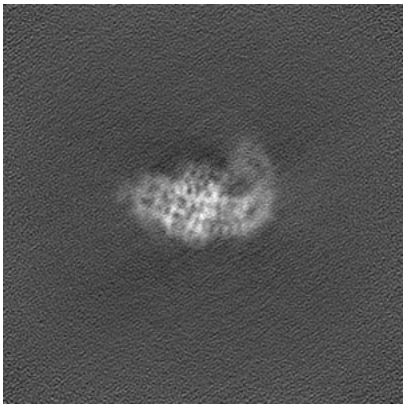


Z

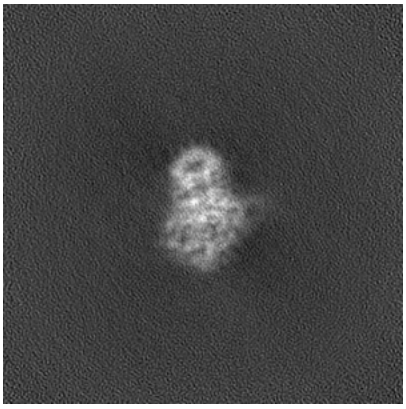
6.1.2 Raw map



X



Y

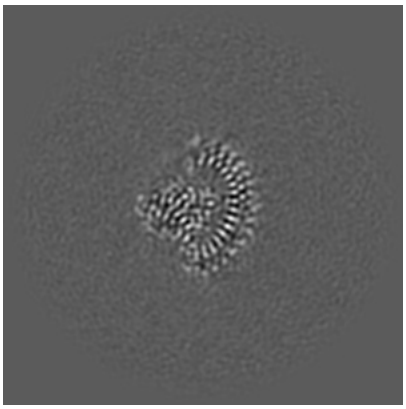


Z

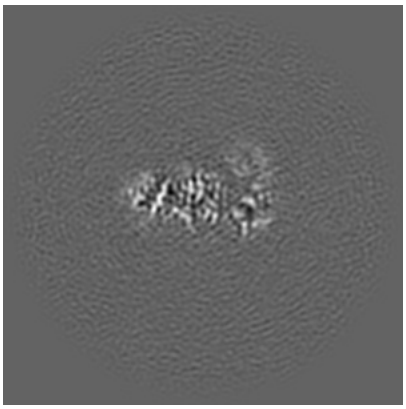
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

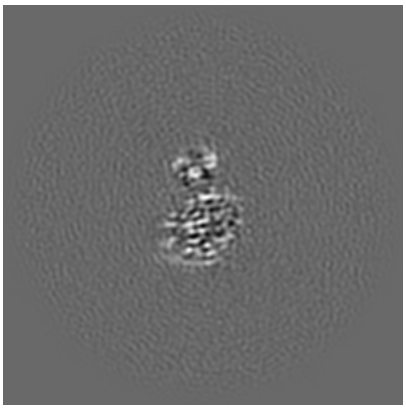
6.2.1 Primary map



X Index: 128

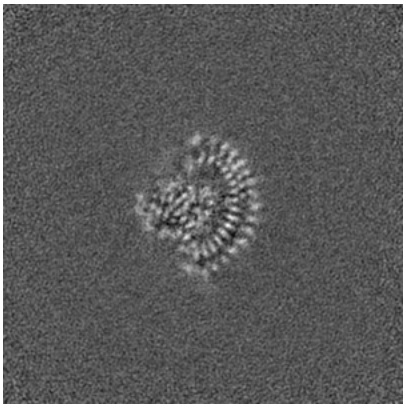


Y Index: 128

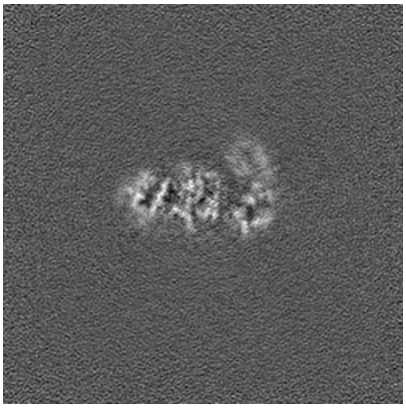


Z Index: 128

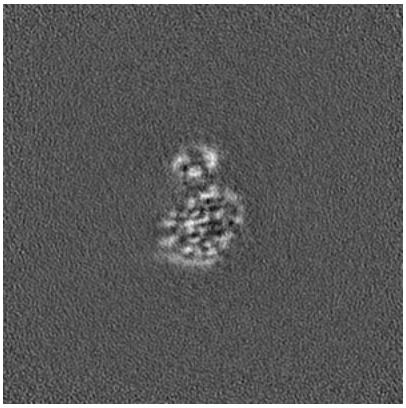
6.2.2 Raw map



X Index: 128



Y Index: 128

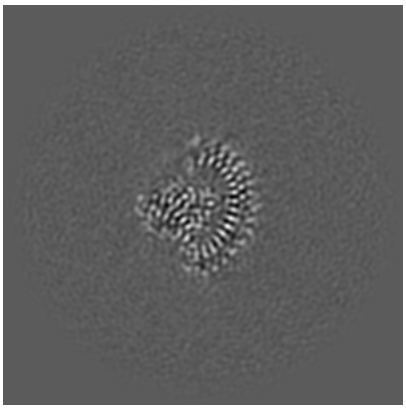


Z Index: 128

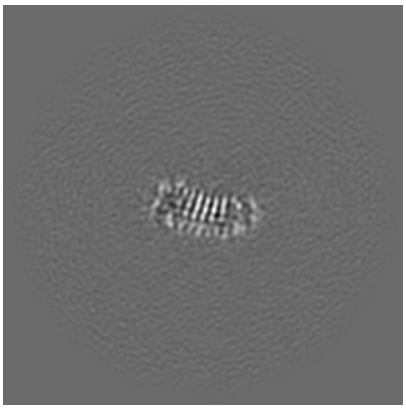
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

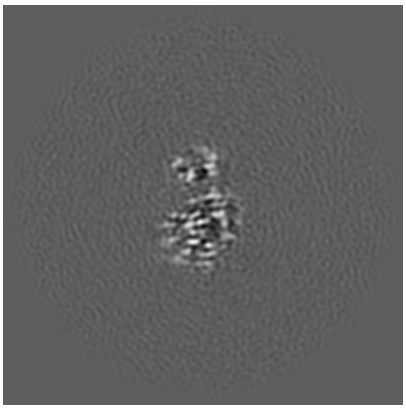
6.3.1 Primary map



X Index: 128

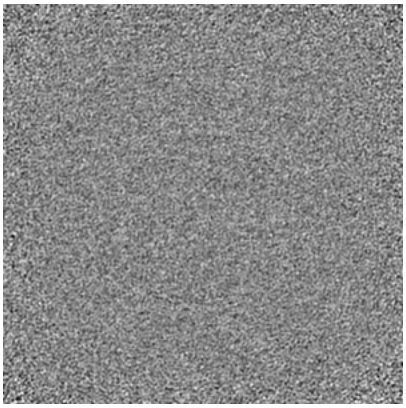


Y Index: 147

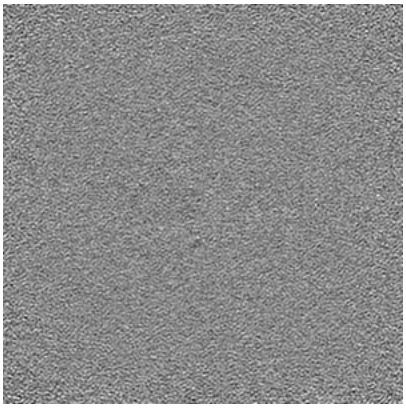


Z Index: 127

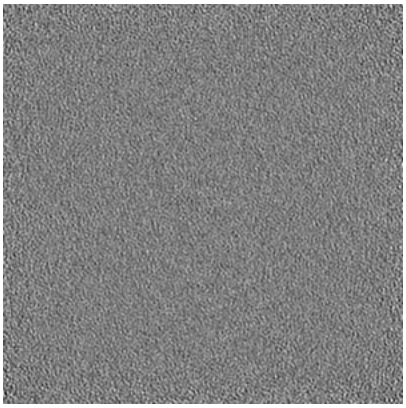
6.3.2 Raw map



X Index: 0



Y Index: 0

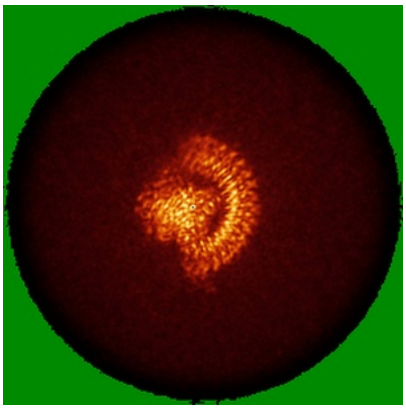


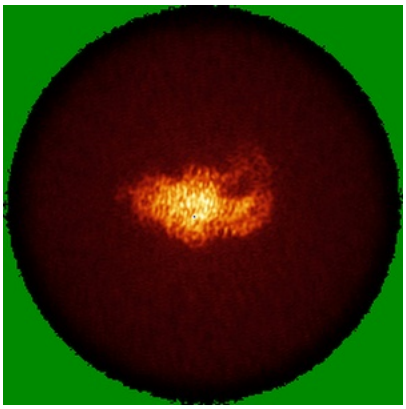
Z Index: 0

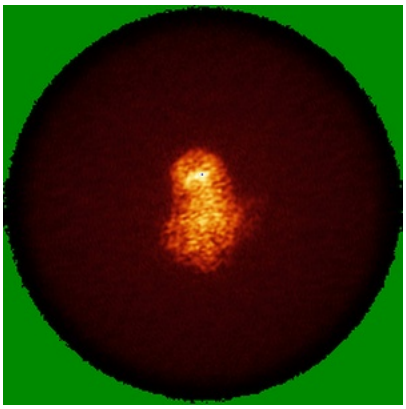
The images above show the largest variance slices of the map in three orthogonal directions.

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

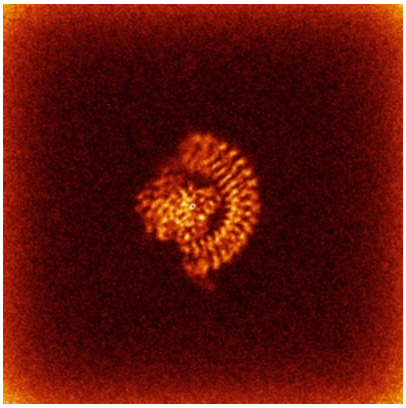
6.4.1 Primary map

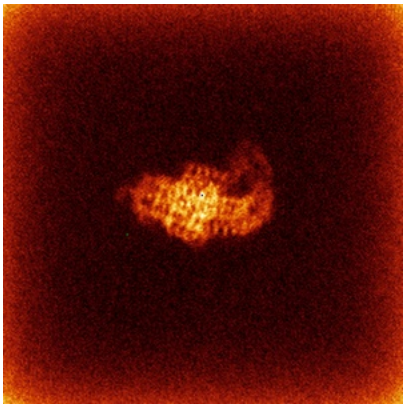

X

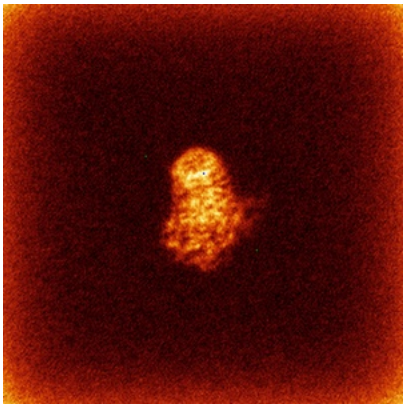

Y


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



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.054. 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.

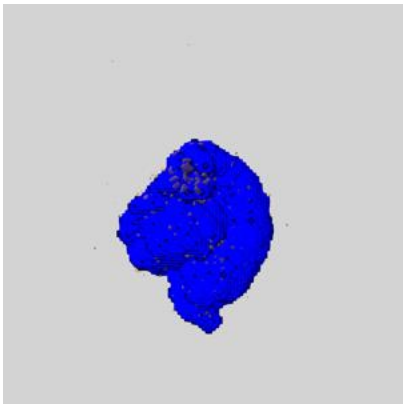
6.6 Mask visualisation (i)

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

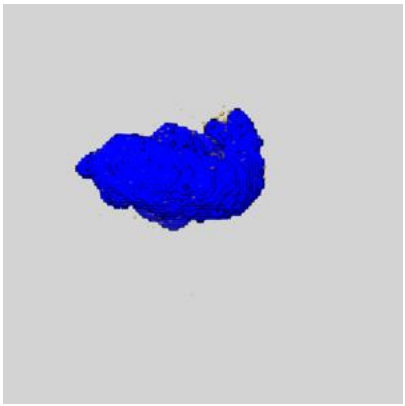
A mask typically either:

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

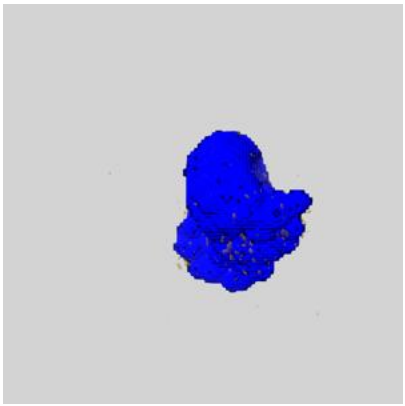
6.6.1 emd_66672_msk_1.map (i)



X



Y

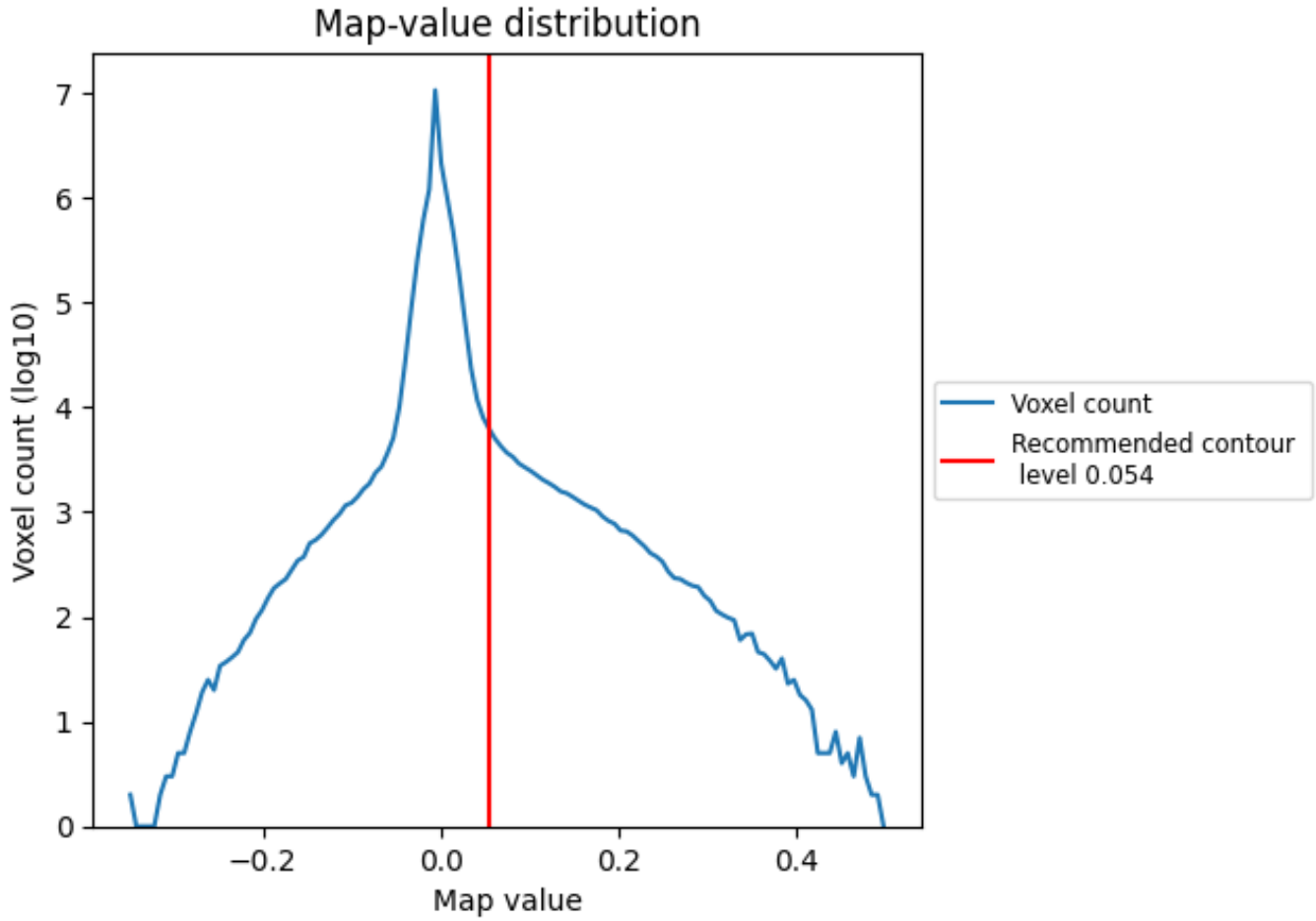


Z

7 Map analysis

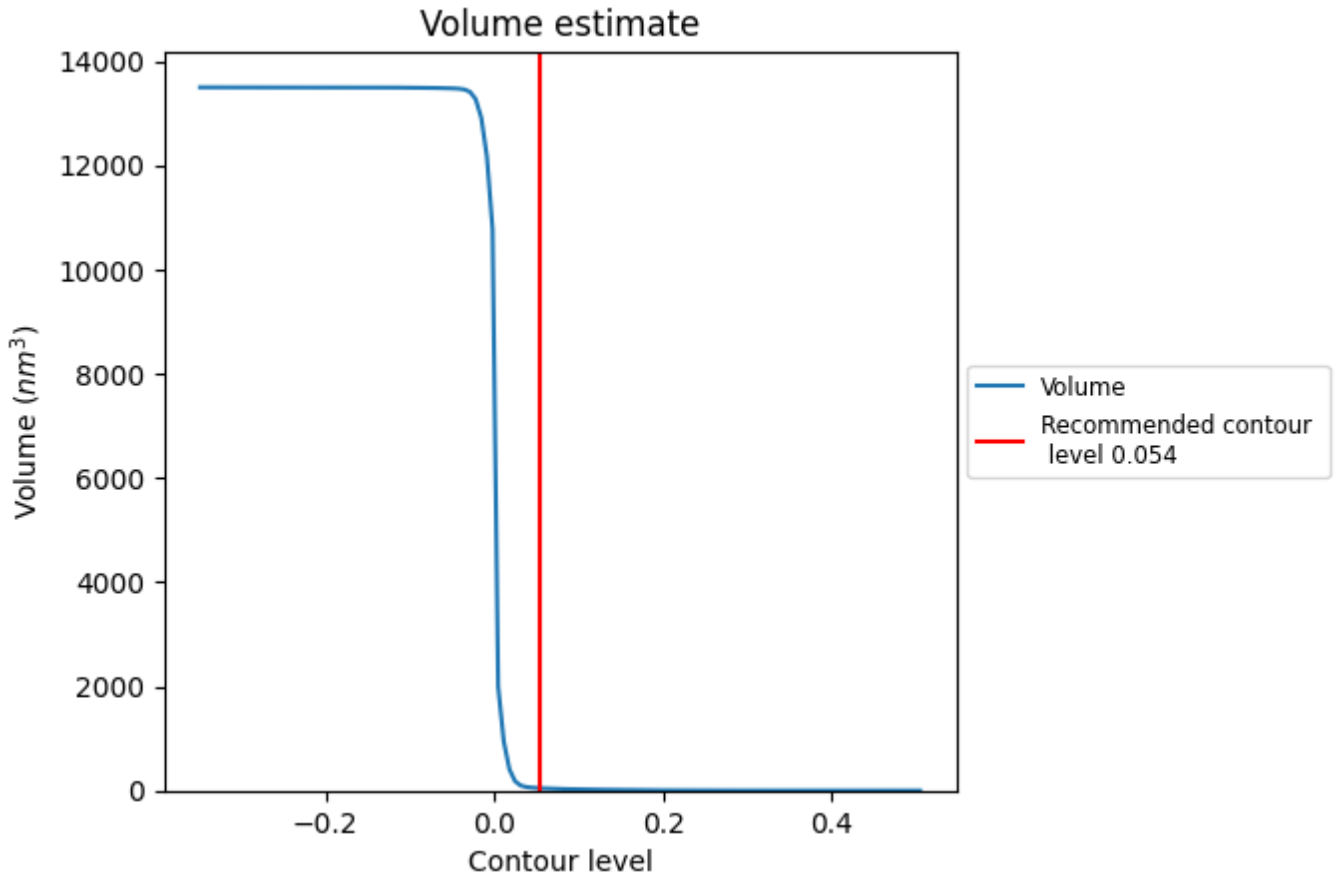
This section contains the results of statistical analysis of the map.

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.

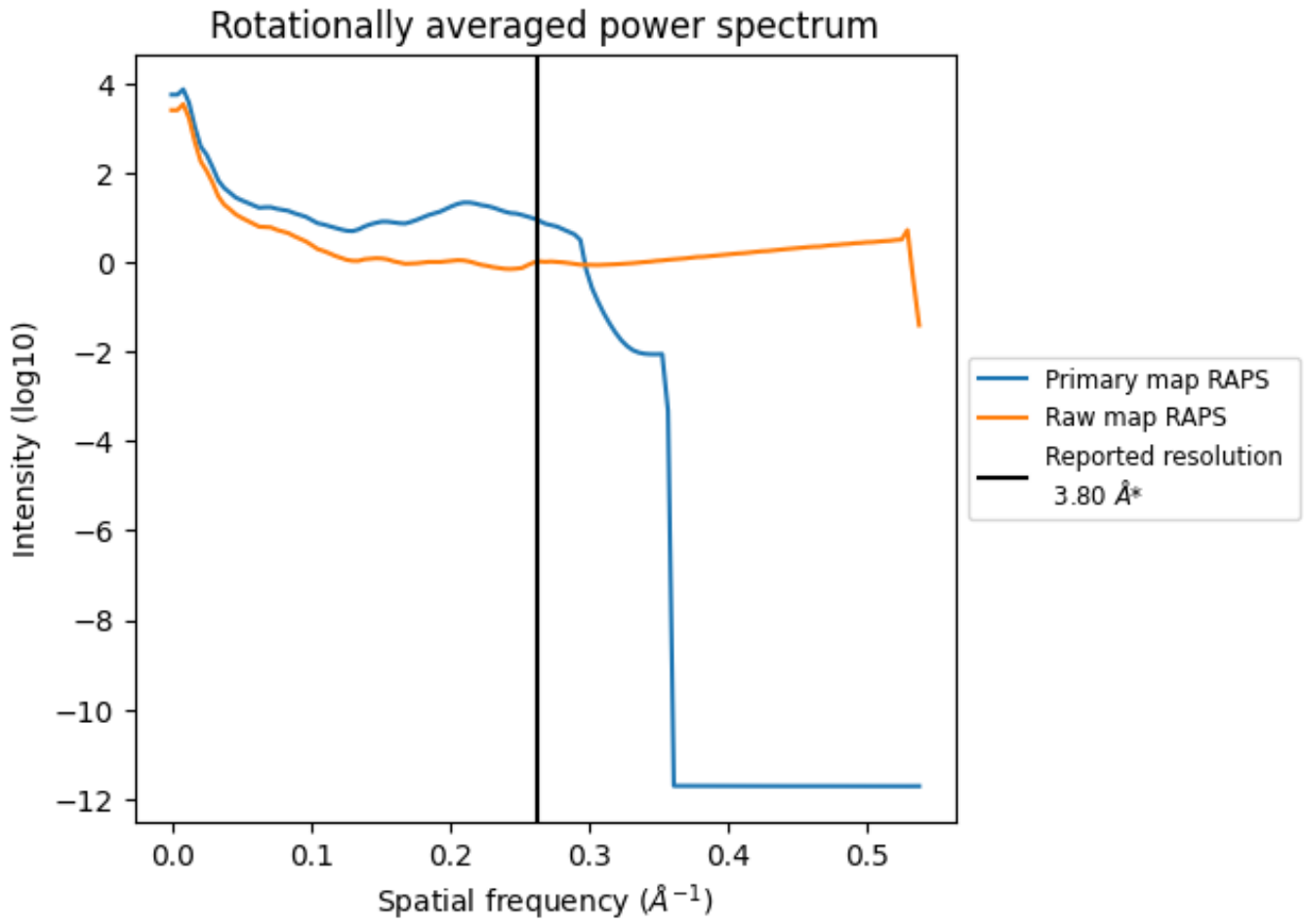
7.2 Volume estimate (i)



The volume at the recommended contour level is 46 nm^3; this corresponds to an approximate mass of 42 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)

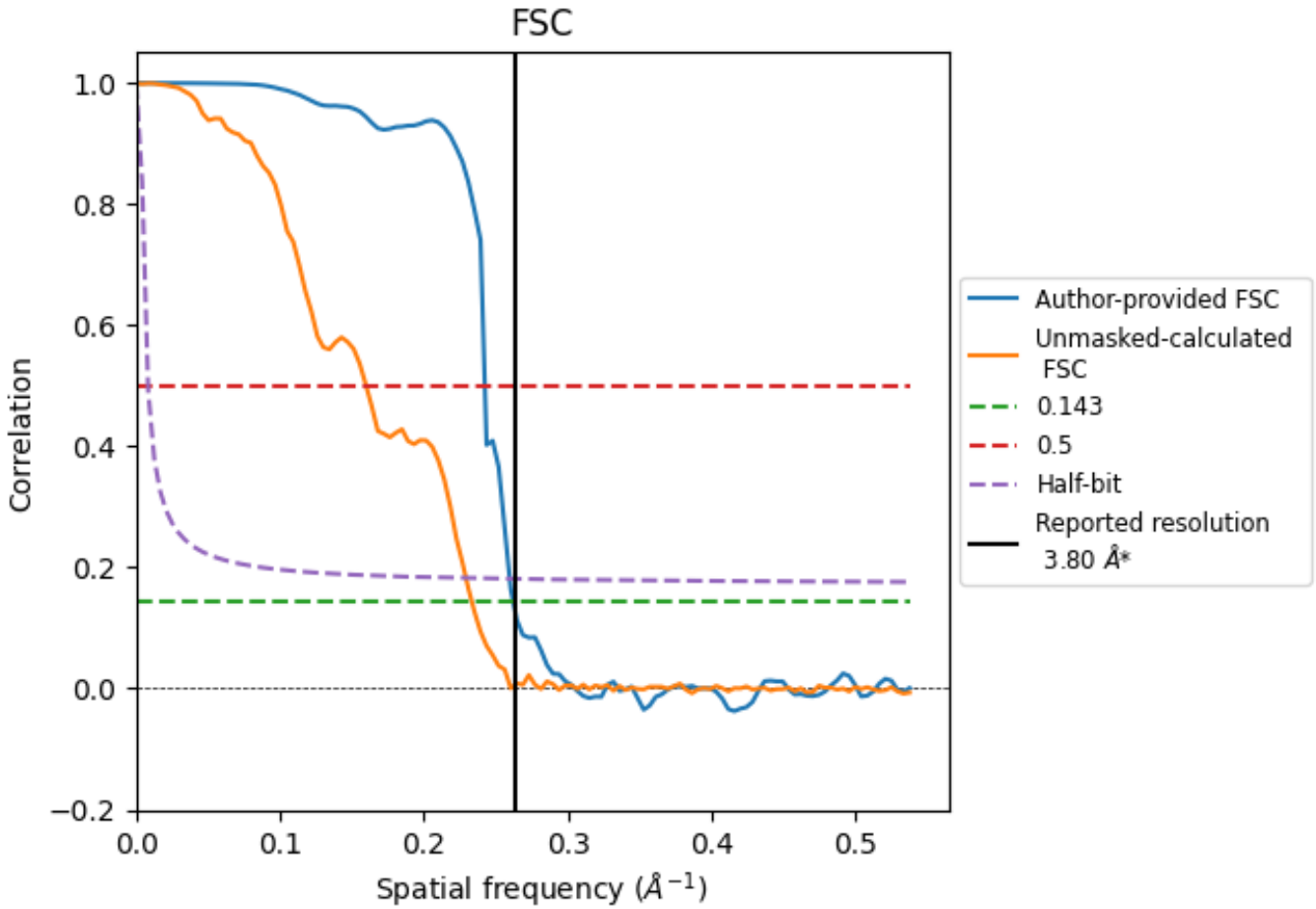


*Reported resolution corresponds to spatial frequency of 0.263 Å^{-1}

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 0.263 Å^{-1}

8.2 Resolution estimates (i)

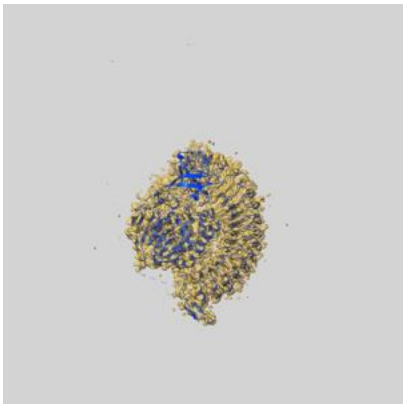
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.80	-	-
Author-provided FSC curve	3.82	4.13	3.85
Unmasked-calculated*	4.28	6.25	4.36

*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 4.28 differs from the reported value 3.8 by more than 10 %

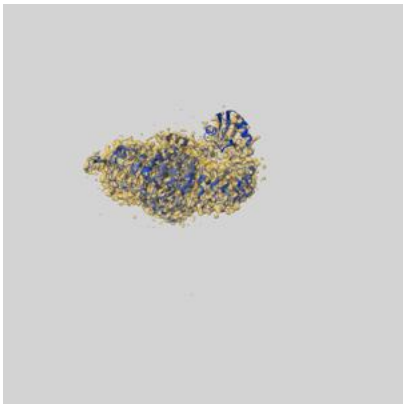
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-66672 and PDB model 9X9Y. Per-residue inclusion information can be found in section 3 on page 5.

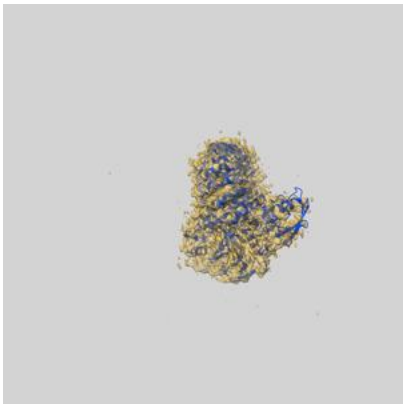
9.1 Map-model overlay



X



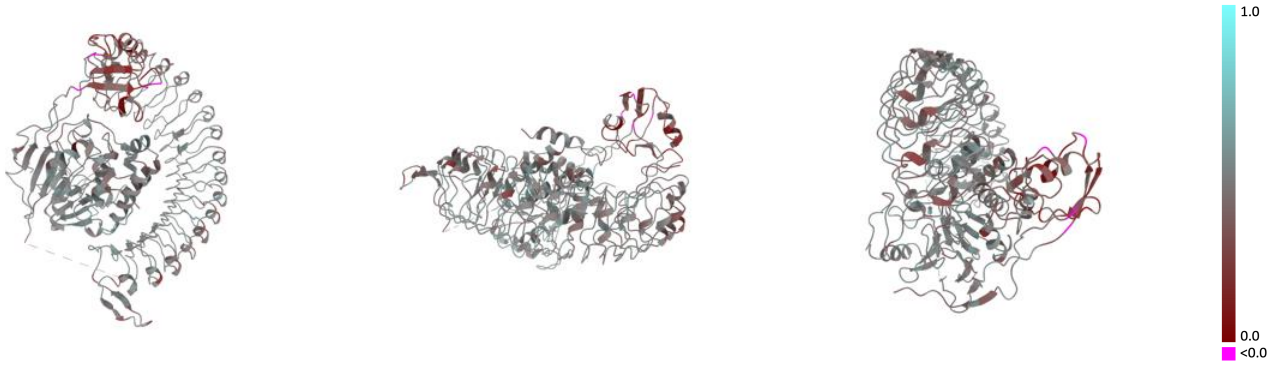
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.054 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

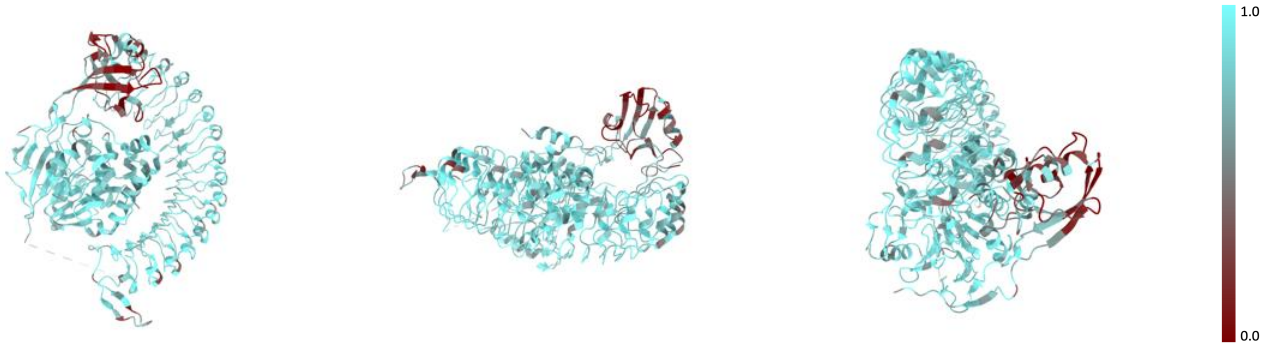
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

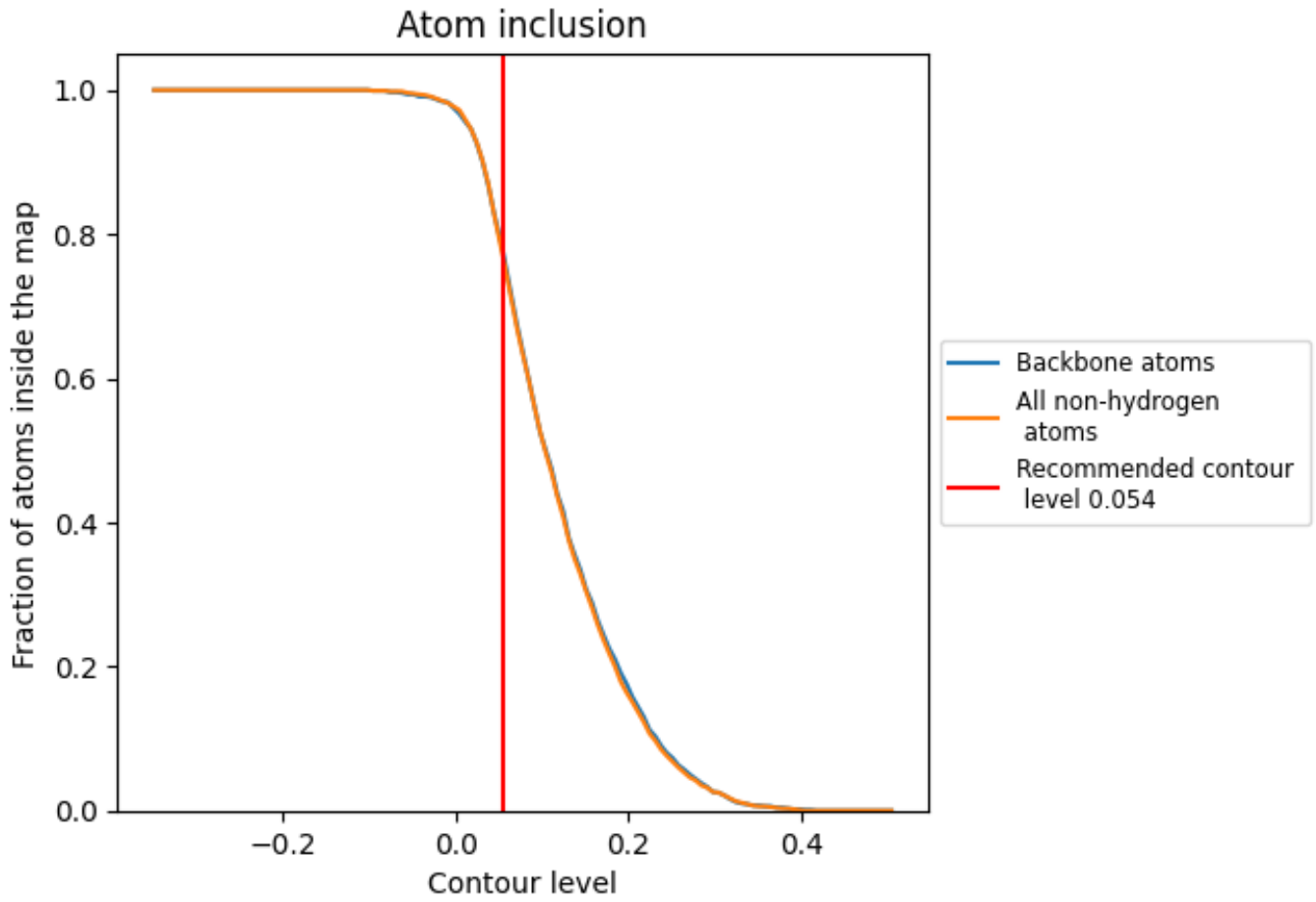
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.054).

9.4 Atom inclusion (i)



At the recommended contour level, 78% of all backbone atoms, 77% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.054) and Q-score for the entire model and for each chain.



Chain	Atom inclusion	Q-score
All	0.7740	0.4570
A	0.7390	0.4430
B	0.8390	0.4810