Full wwPDB EM Validation Report

Nov 15, 2025 – 06:12 am GMT

PDB ID	:	9QTB / pdb_00009qtb
EMDB ID	:	EMD-53349
Title	:	Apo form of the L protein from Rift Valley Fever Virus
Authors	:	Kral, M.; Das, A.R.; Kotacka, T.; Blahosova, A.; Hodek, J.; Konvalinka, J.; Demo, G.; Kozisek, M.
Deposited on	:	2025-04-08
Resolution	:	3.50 Å(reported)
Based on initial models	:	., 7EEI

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:

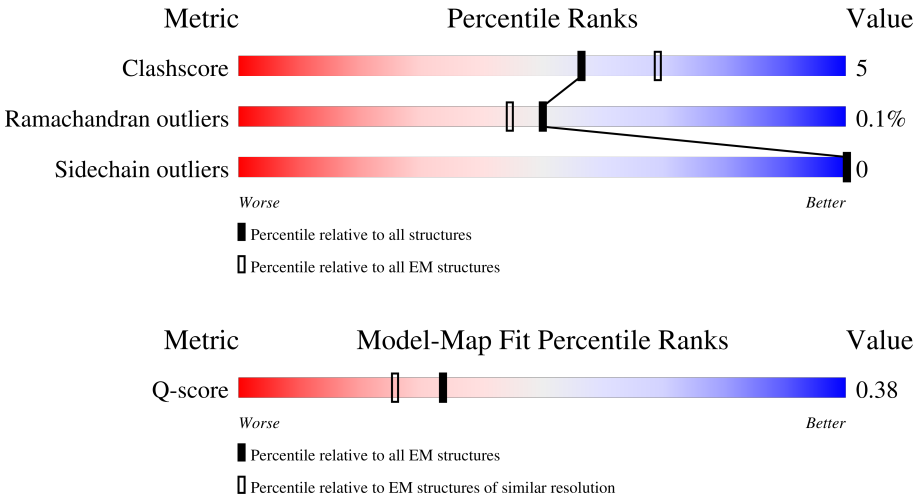
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & 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 3.50 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	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	13950 (3.00 - 4.00)

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	2123	54% 7% 40%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 10289 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 RNA-directed RNA polymerase L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1283	10289	6568	1755	1890	76	0	0

There are 32 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	103	ALA	ASP	variant	UNP A2SZS1
A	2093	GLY	-	expression tag	UNP A2SZS1
A	2094	SER	-	expression tag	UNP A2SZS1
A	2095	ALA	-	expression tag	UNP A2SZS1
A	2096	TRP	-	expression tag	UNP A2SZS1
A	2097	SER	-	expression tag	UNP A2SZS1
A	2098	HIS	-	expression tag	UNP A2SZS1
A	2099	PRO	-	expression tag	UNP A2SZS1
A	2100	GLN	-	expression tag	UNP A2SZS1
A	2101	PHE	-	expression tag	UNP A2SZS1
A	2102	GLU	-	expression tag	UNP A2SZS1
A	2103	LYS	-	expression tag	UNP A2SZS1
A	2104	GLY	-	expression tag	UNP A2SZS1
A	2105	GLY	-	expression tag	UNP A2SZS1
A	2106	GLY	-	expression tag	UNP A2SZS1
A	2107	SER	-	expression tag	UNP A2SZS1
A	2108	GLY	-	expression tag	UNP A2SZS1
A	2109	GLY	-	expression tag	UNP A2SZS1
A	2110	GLY	-	expression tag	UNP A2SZS1
A	2111	SER	-	expression tag	UNP A2SZS1
A	2112	GLY	-	expression tag	UNP A2SZS1
A	2113	GLY	-	expression tag	UNP A2SZS1
A	2114	SER	-	expression tag	UNP A2SZS1
A	2115	ALA	-	expression tag	UNP A2SZS1
A	2116	TRP	-	expression tag	UNP A2SZS1
A	2117	SER	-	expression tag	UNP A2SZS1
A	2118	HIS	-	expression tag	UNP A2SZS1
A	2119	PRO	-	expression tag	UNP A2SZS1

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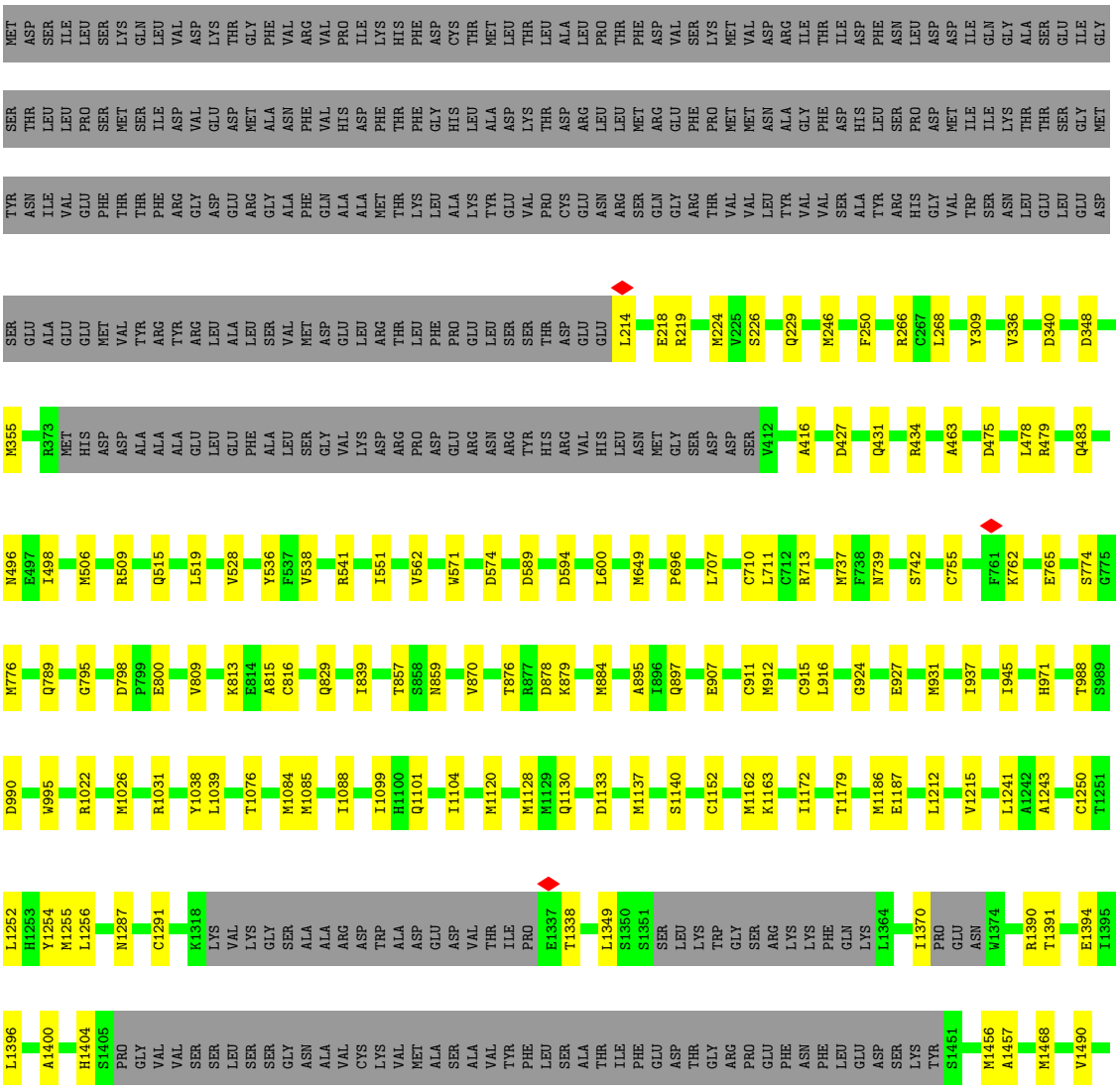
Chain	Residue	Modelled	Actual	Comment	Reference
A	2120	GLN	-	expression tag	UNP A2SZS1
A	2121	PHE	-	expression tag	UNP A2SZS1
A	2122	GLU	-	expression tag	UNP A2SZS1
A	2123	LYS	-	expression tag	UNP A2SZS1

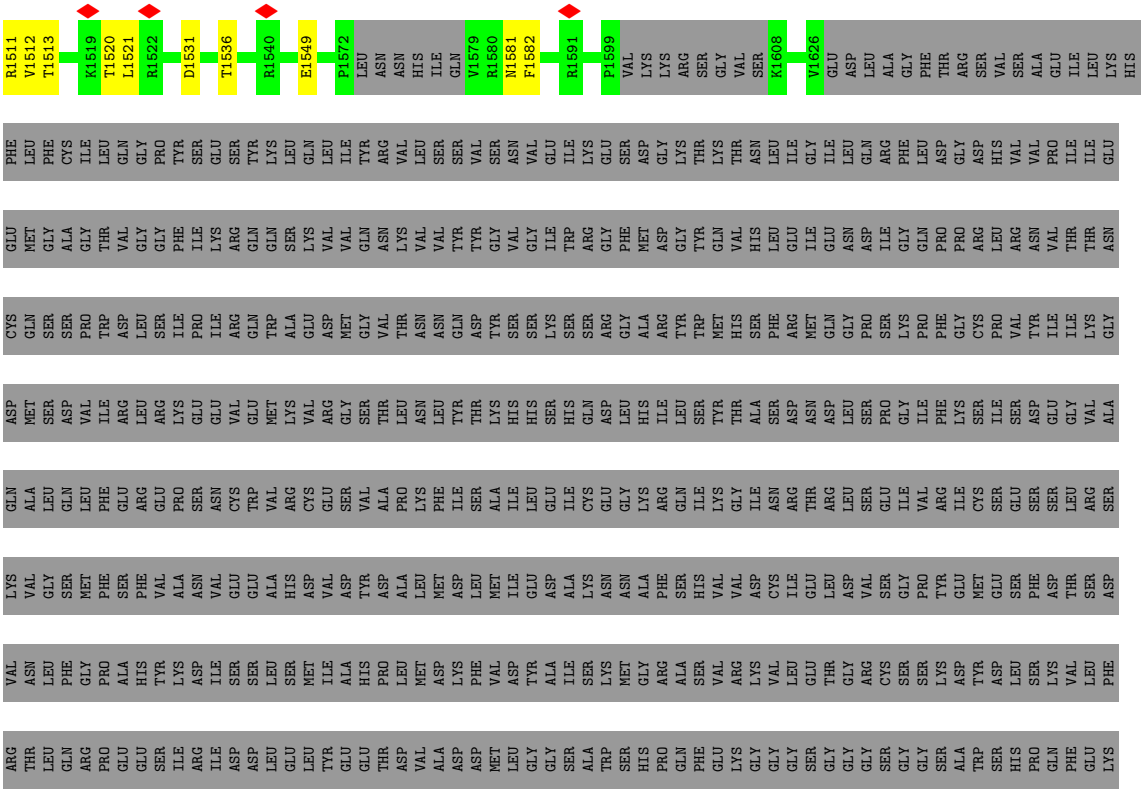
3 Residue-property plots (i)

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: RNA-directed RNA polymerase L

Chain A:




R1511 V1512 T1513 K1519 T1520 L1521 R1522 D1531 T1536 R1540 E1549 P1572 LEU ASN ASN HIS ILE GLN V1579 R1580 N1581 F1582 R1591 P1599 VAL LYS LYS ARG SER GLY VAL SER K1608 V1626 GLU ASP LEU ALA GLY PHE THR ARG SER VAL SER ALA GLU ILE LEU LYS HIS
PHE LEU PHE CYS ILE LEU GLN GLY PRO TYR SER GLU SER TYR LYS LEU GLN LEU ILE TYR ARG VAL LEU SER SER VAL SER ASN VAL GLU ILE LYS GLU SER ASP GLY LYS THR LYS THR ASN LEU ILE GLY ILE LEU GLN ARG PHE LEU ASP GLY ASP HIS VAL VAL PRO ILE ILE GLU
GLU MET GLY ALA GLY THR VAL GLY GLY PHE ILE LYS ARG GLN GLN SER LYS VAL VAL GLN ASN LYS VAL VAL TYR TYR GLY VAL GLY ILE TRP ARG GLY PHE MET ASP GLY TYR GLN VAL HIS LEU GLU GLU ILE GLU ASN ASP ILE GLY GLN PRO PRO ARG LEU ARG ASN VAL THR THR ASN
CYS GLN SER SER PRO TRP ASP LEU SER ILE PRO ILE ARG GLN TRP ALA GLU ASP MET GLY VAL THR ASN ASN GLN ASP TYR SER SER LYS SER SER ARG GLY ALA ARG TYR TRP MET HIS SER PHE ARG MET GLN GLY PRO SER LYS PRO PHE GLY CYS PRO VAL TYR ILE ILE LYS GLY
ASP MET SER ASP VAL ILE ARG LEU ARG LYS GLU GLU VAL GLU MET LYS VAL ARG GLY SER THR LEU ASN ASN LEU TYR THR LYS HIS HIS SER HIS GLN ASP LEU HIS ILE LEU SER TYR THR ALA SER ASP ASN ASP LEU SER PRO GLY ILE PHE LYS SER ILE SER ASP GLU GLY VAL ALA
GLN ALA LEU GLN LEU PHE GLU ARG GLU PRO SER ASN CYS TRP VAL ARG CYS GLU SER VAL ALA PRO LYS PHE ILE SER ALA ILE LEU GLU ILE CYS GLU GLY LYS ARG GLN ILE LYS GLY ILE ASN ARG THR ARG LEU SER GLU ILE LYS VAL LEU PHE ILE CYS SER GLU SER SER ARG LEU GLU ALA
LYS VAL GLY SER MET PHE SER PHE VAL ALA ASN VAL GLU GLU GLY ALA HIS ASP VAL ASP TYR ASP ALA LEU MET ASP LEU MET ILE GLU ASP ALA LYS ASN ASN ALA PHE SER HIS VAL VAL ASP CYS ILE GLU LEU ASP VAL SER GLY PRO TYR GLU MET GLU SER PHE ASP THR SER ASP
VAL ASN LEU PHE GLY PRO ALA HIS TYR LYS ASP ILE SER SER LEU SER MET ILE ALA HIS PRO LEU MET ASP LYS PHE VAL ASP TYR ALA ILE SER LYS MET GLY ARG ALA SER VAL ARG LYS VAL LEU GLU THR GLY ARG CYS SER SER LYS ASP TYR ASP LEU SER ARG LYS VAL LEU PHE
ARG THR LEU GLN ARG PRO GLU GLU SER ILE ARG ILE ASP ASP LEU GLU LEU TYR GLU GLU THR ASP VAL ALA ASP ASP MET LEU GLY GLY SER ALA TRP SER HIS PRO GLN PHE GLU LYS GLY GLY GLY SER GLY GLY GLY SER GLY GLY SER ALA TRP SER HIS PRO GLN PHE GLU LYS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	185424	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 ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	1300	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.633	Depositor
Minimum map value	-0.251	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.031	Depositor
Recommended contour level	0.12	Depositor
Map size (Å)	213.504, 213.504, 213.504	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.834, 0.834, 0.834	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	0.16	0/10517	0.34	0/14182

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	10289	0	10284	97	0
All	All	10289	0	10284	97	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 (97) 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:309:TYR:OH	1:A:696:PRO:O	1.98	0.80
1:A:250:PHE:O	1:A:813:LYS:NZ	2.21	0.73
1:A:1531:ASP:OD1	1:A:1536:THR:OG1	2.13	0.67
1:A:971:HIS:HE2	1:A:1140:SER:HG	1.42	0.66
1:A:214:LEU:O	1:A:219:ARG:NH1	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:528:VAL:HG21	1:A:600:LEU:HD11	1.79	0.65
1:A:1581:ASN:OD1	1:A:1582:PHE:N	2.29	0.65
1:A:340:ASP:O	1:A:541:ARG:NH1	2.30	0.64
1:A:1391:THR:N	1:A:1394:GLU:OE2	2.30	0.63
1:A:789:GLN:OE1	1:A:789:GLN:N	2.34	0.60
1:A:538:VAL:HG13	1:A:551:ILE:HB	1.85	0.59
1:A:895:ALA:O	1:A:937:ILE:HD11	2.02	0.59
1:A:478:LEU:HD13	1:A:1254:TYR:CE1	2.38	0.58
1:A:246:MET:HE1	1:A:795:GLY:HA3	1.85	0.58
1:A:427:ASP:O	1:A:431:GLN:NE2	2.37	0.57
1:A:1128:MET:HE1	1:A:1137:MET:SD	2.45	0.57
1:A:266:ARG:NH2	1:A:800:GLU:O	2.39	0.56
1:A:931:MET:HE3	1:A:1088:ILE:HD11	1.86	0.55
1:A:1468:MET:SD	1:A:1468:MET:N	2.80	0.55
1:A:1039:LEU:HD22	1:A:1076:THR:HG23	1.87	0.55
1:A:1400:ALA:O	1:A:1404:HIS:ND1	2.39	0.55
1:A:1101:GLN:HA	1:A:1104:ILE:HG22	1.90	0.54
1:A:815:ALA:C	1:A:1099:ILE:HD11	2.31	0.54
1:A:1287:ASN:ND2	1:A:1490:VAL:O	2.40	0.54
1:A:348:ASP:N	1:A:589:ASP:OD2	2.40	0.54
1:A:1120:MET:HE1	1:A:1152:CYS:SG	2.49	0.52
1:A:336:VAL:O	1:A:541:ARG:NH2	2.42	0.52
1:A:1521:LEU:HD12	1:A:1549:GLU:OE1	2.09	0.52
1:A:551:ILE:CD1	1:A:562:VAL:HG23	2.40	0.52
1:A:1212:LEU:O	1:A:1212:LEU:HD12	2.10	0.51
1:A:829:GLN:N	1:A:829:GLN:OE1	2.44	0.51
1:A:737:MET:SD	1:A:737:MET:N	2.84	0.51
1:A:907:GLU:OE2	1:A:1022:ARG:NH2	2.44	0.50
1:A:1085:MET:SD	1:A:1085:MET:N	2.84	0.50
1:A:762:LYS:NZ	1:A:924:GLY:O	2.45	0.49
1:A:1130:GLN:OE1	1:A:1130:GLN:N	2.46	0.49
1:A:776:MET:HE2	1:A:927:GLU:OE1	2.12	0.49
1:A:1133:ASP:N	1:A:1133:ASP:OD1	2.45	0.49
1:A:496:ASN:OD1	1:A:498:ILE:N	2.41	0.49
1:A:1511:ARG:NH1	1:A:1513:THR:O	2.46	0.49
1:A:218:GLU:N	1:A:218:GLU:OE1	2.43	0.48
1:A:515:GLN:O	1:A:519:LEU:HD23	2.13	0.48
1:A:1512:VAL:HG13	1:A:1513:THR:N	2.28	0.48
1:A:224:MET:HE1	1:A:897:GLN:HA	1.96	0.48
1:A:649:MET:HE3	1:A:755:CYS:SG	2.53	0.47
1:A:995:TRP:HZ3	1:A:1172:ILE:HG23	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:483:GLN:OE1	1:A:496:ASN:ND2	2.45	0.47
1:A:765:GLU:N	1:A:765:GLU:OE1	2.48	0.47
1:A:990:ASP:OD2	1:A:1163:LYS:NZ	2.43	0.47
1:A:1511:ARG:NH2	1:A:1513:THR:O	2.49	0.46
1:A:355:MET:HE2	1:A:594:ASP:HA	1.96	0.46
1:A:707:LEU:O	1:A:711:LEU:HD23	2.16	0.46
1:A:859:ASN:ND2	1:A:876:THR:O	2.49	0.46
1:A:1456:MET:SD	1:A:1457:ALA:N	2.89	0.45
1:A:1338:THR:HA	1:A:1349:LEU:HD11	1.99	0.45
1:A:268:LEU:HA	1:A:1162:MET:HE1	1.98	0.45
1:A:710:CYS:SG	1:A:713:ARG:NH2	2.90	0.45
1:A:463:ALA:HB3	1:A:509:ARG:HH12	1.80	0.45
1:A:798:ASP:OD1	1:A:809:VAL:N	2.50	0.44
1:A:226:SER:O	1:A:229:GLN:NE2	2.50	0.44
1:A:776:MET:HE2	1:A:927:GLU:CD	2.43	0.43
1:A:870:VAL:HG13	1:A:870:VAL:O	2.18	0.43
1:A:739:ASN:OD1	1:A:742:SER:N	2.47	0.43
1:A:988:THR:OG1	1:A:1179:THR:O	2.27	0.43
1:A:912:MET:SD	1:A:1026:MET:HE2	2.58	0.43
1:A:1039:LEU:CD2	1:A:1076:THR:HG23	2.49	0.43
1:A:739:ASN:ND2	1:A:755:CYS:SG	2.92	0.43
1:A:815:ALA:O	1:A:1099:ILE:HD11	2.19	0.43
1:A:931:MET:CE	1:A:1088:ILE:HD11	2.49	0.43
1:A:1186:MET:SD	1:A:1187:GLU:N	2.92	0.43
1:A:1370:ILE:HB	1:A:1396:LEU:HD13	2.00	0.43
1:A:427:ASP:O	1:A:427:ASP:OD1	2.36	0.43
1:A:878:ASP:OD1	1:A:879:LYS:N	2.51	0.42
1:A:1084:MET:O	1:A:1088:ILE:HG22	2.19	0.42
1:A:416:ALA:HB2	1:A:536:TYR:CD2	2.54	0.42
1:A:911:CYS:SG	1:A:1031:ARG:NH1	2.93	0.42
1:A:839:ILE:HD13	1:A:945:ILE:HA	2.01	0.42
1:A:475:ASP:OD2	1:A:479:ARG:NH2	2.53	0.42
1:A:1128:MET:SD	1:A:1137:MET:HE1	2.60	0.42
1:A:268:LEU:CA	1:A:1162:MET:HE1	2.50	0.41
1:A:506:MET:SD	1:A:515:GLN:NE2	2.93	0.41
1:A:571:TRP:NE1	1:A:574:ASP:OD1	2.51	0.41
1:A:431:GLN:O	1:A:434:ARG:NH1	2.54	0.41
1:A:498:ILE:HD12	1:A:498:ILE:H	1.84	0.41
1:A:774:SER:OG	1:A:1038:TYR:OH	2.35	0.41
1:A:884:MET:HA	1:A:884:MET:HE3	2.01	0.41
1:A:912:MET:HE1	1:A:1026:MET:HE2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1241:LEU:HD23	1:A:1241:LEU:O	2.21	0.41
1:A:1252:LEU:HD12	1:A:1255:MET:SD	2.61	0.41
1:A:479:ARG:NH1	1:A:1250:CYS:SG	2.94	0.41
1:A:1243:ALA:N	1:A:1291:CYS:SG	2.94	0.41
1:A:1520:THR:HG22	1:A:1520:THR:O	2.20	0.41
1:A:1390:ARG:N	1:A:1394:GLU:OE2	2.44	0.40
1:A:857:THR:N	1:A:878:ASP:O	2.53	0.40
1:A:915:CYS:SG	1:A:916:LEU:N	2.94	0.40
1:A:1256:LEU:HD23	1:A:1256:LEU:C	2.46	0.40
1:A:816:CYS:HA	1:A:1099:ILE:HD11	2.03	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	A	1267/2123 (60%)	1213 (96%)	53 (4%)	1 (0%)	48 79

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1215	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	1140/1878 (61%)	1140 (100%)	0	100 100

There are no protein residues with a non-rotameric sidechain to report.

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	334	HIS
1	A	978	GLN
1	A	1063	HIS
1	A	1100	HIS
1	A	1247	GLN
1	A	1310	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

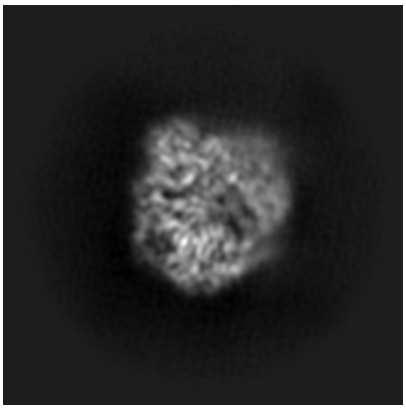
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53349. These allow visual inspection of the internal detail of the map and identification of artifacts.

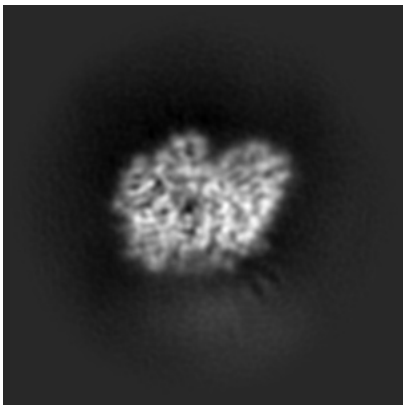
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

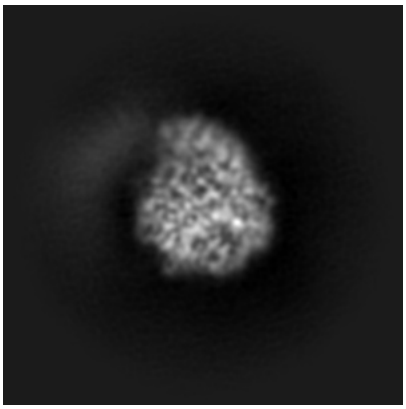
6.1.1 Primary map



X

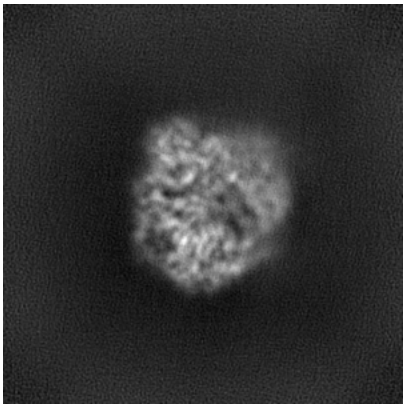


Y

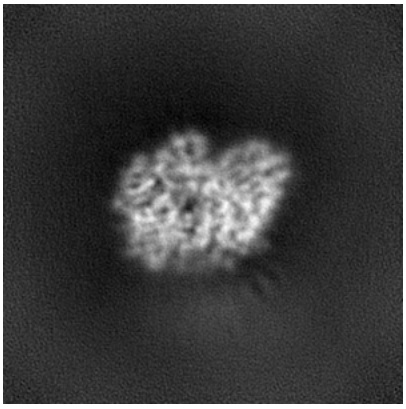


Z

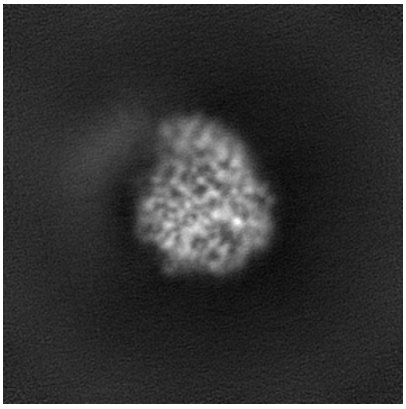
6.1.2 Raw map



X



Y

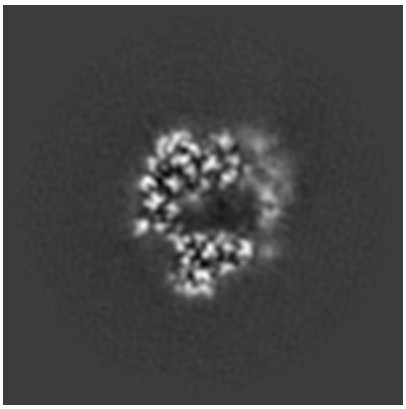


Z

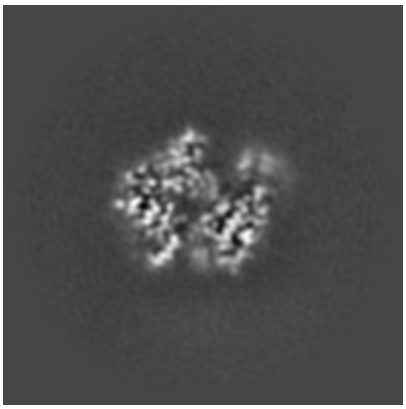
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

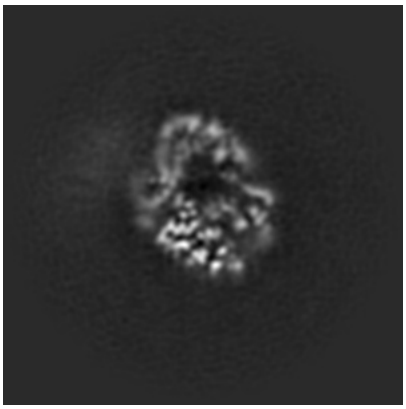
6.2.1 Primary map



X Index: 128

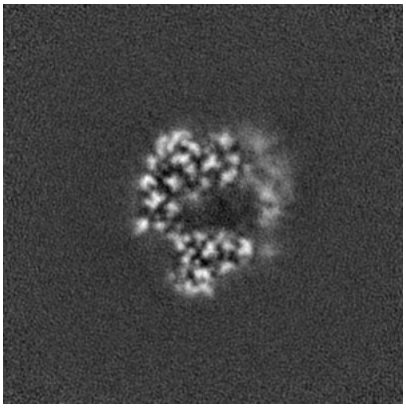


Y Index: 128

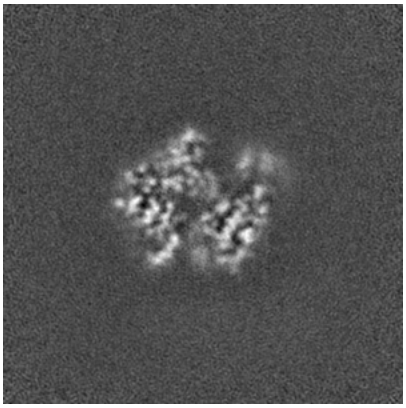


Z Index: 128

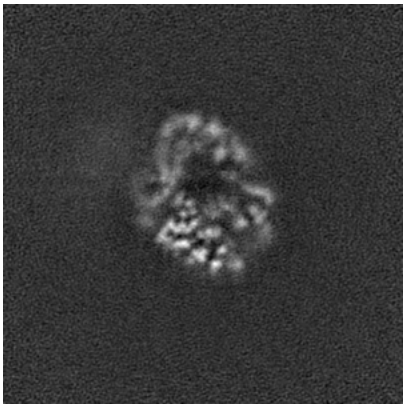
6.2.2 Raw map



X Index: 128



Y Index: 128

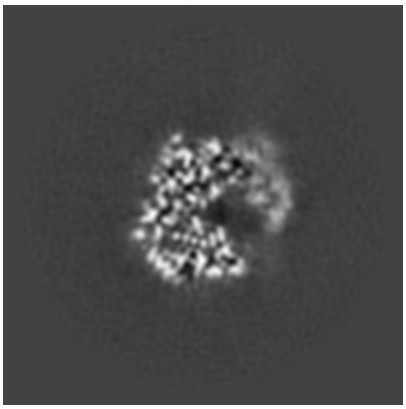


Z Index: 128

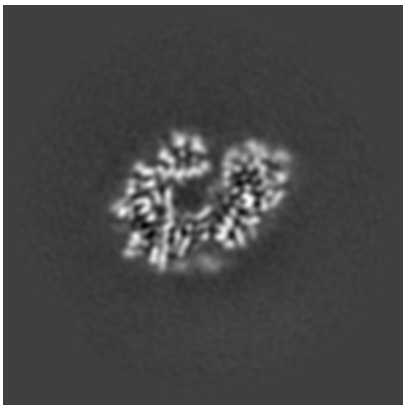
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

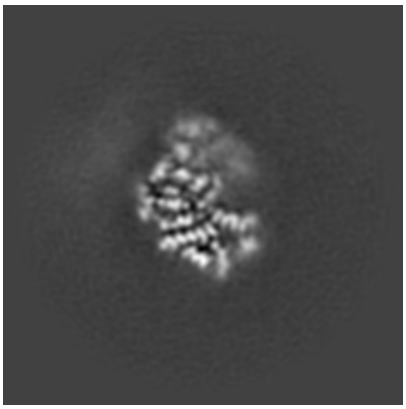
6.3.1 Primary map



X Index: 118

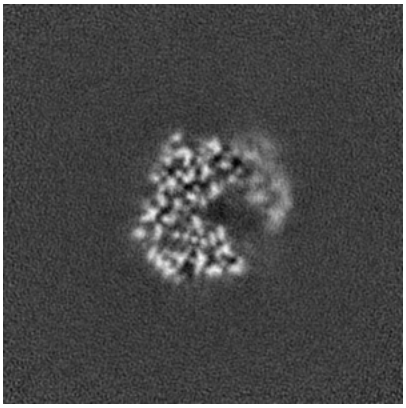


Y Index: 116

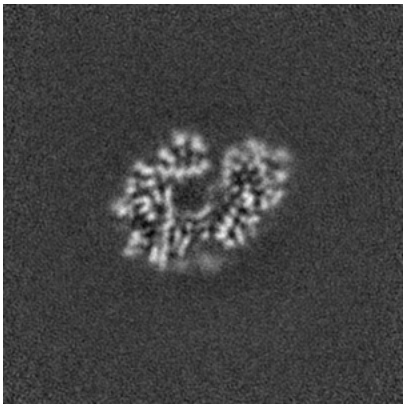


Z Index: 143

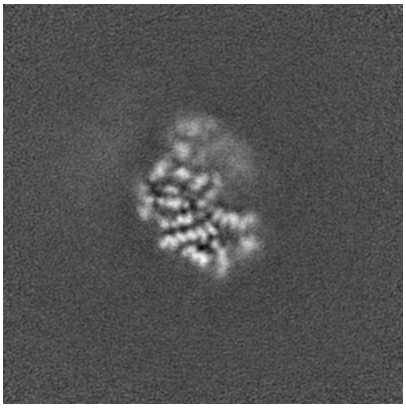
6.3.2 Raw map



X Index: 118



Y Index: 116

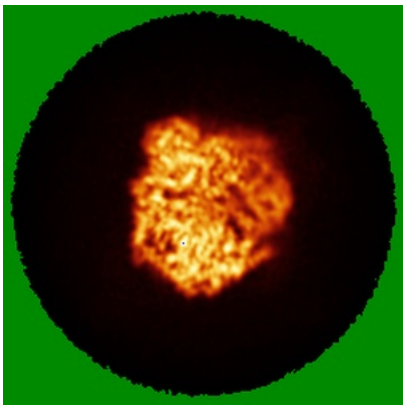


Z Index: 143

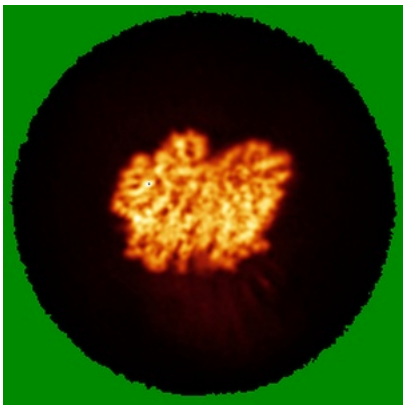
The images above show the largest variance slices of the map in three orthogonal directions.

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

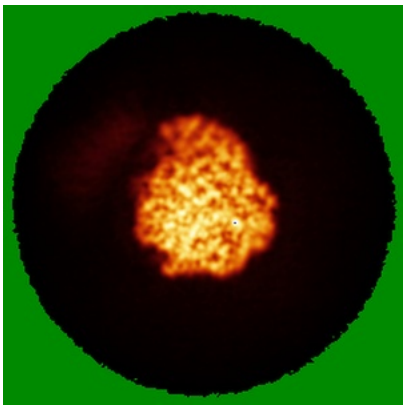
6.4.1 Primary map



X

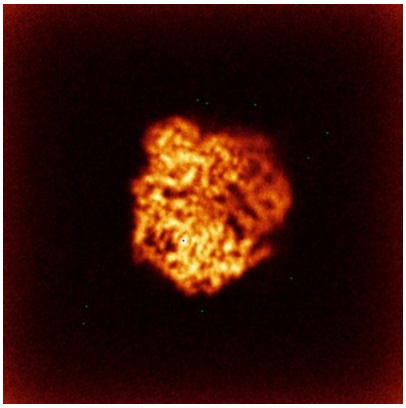


Y

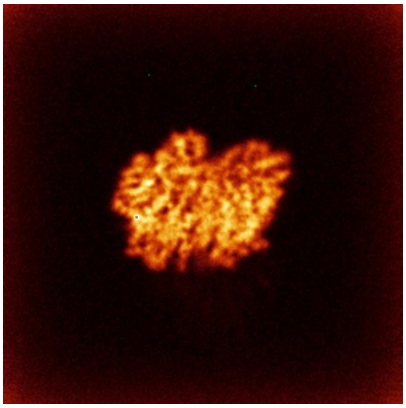


Z

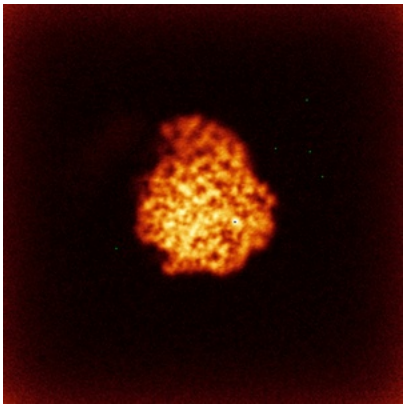
6.4.2 Raw map



X



Y

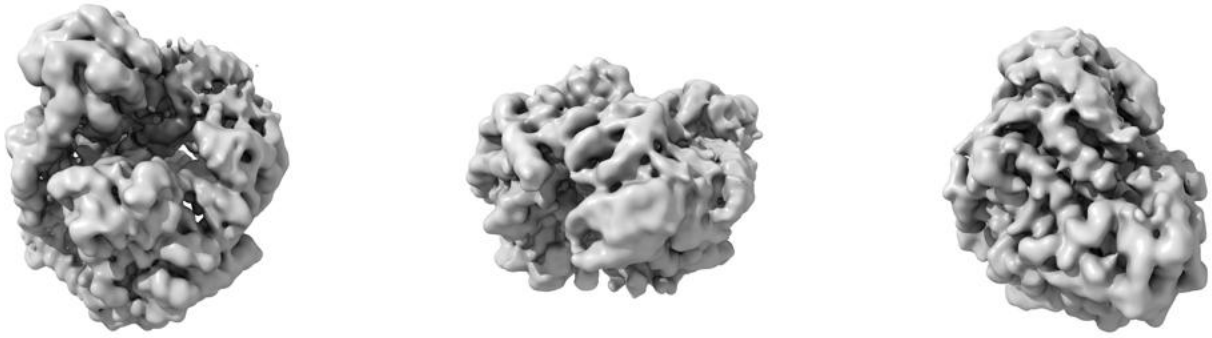


Z

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 0.12. 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.

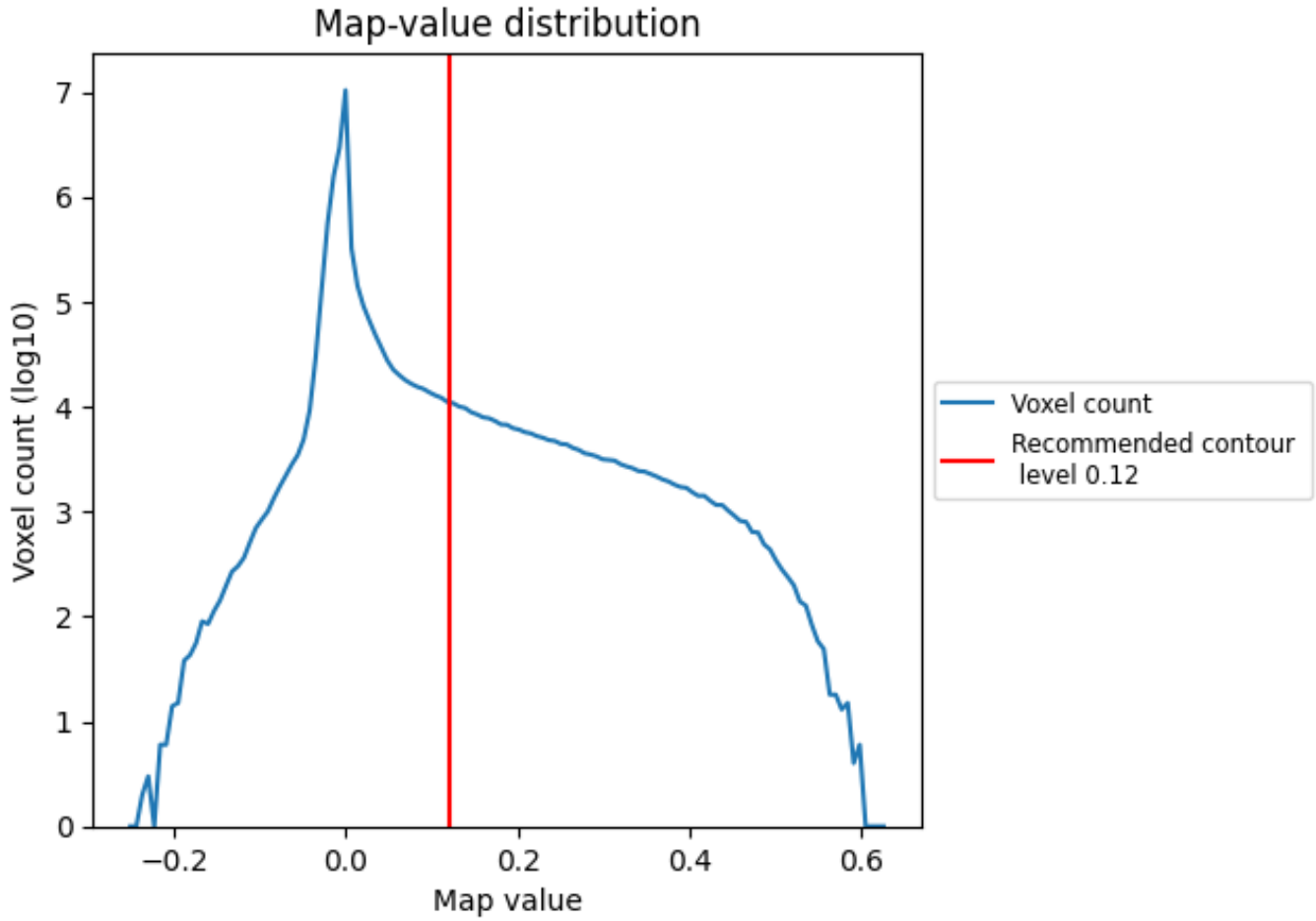
6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

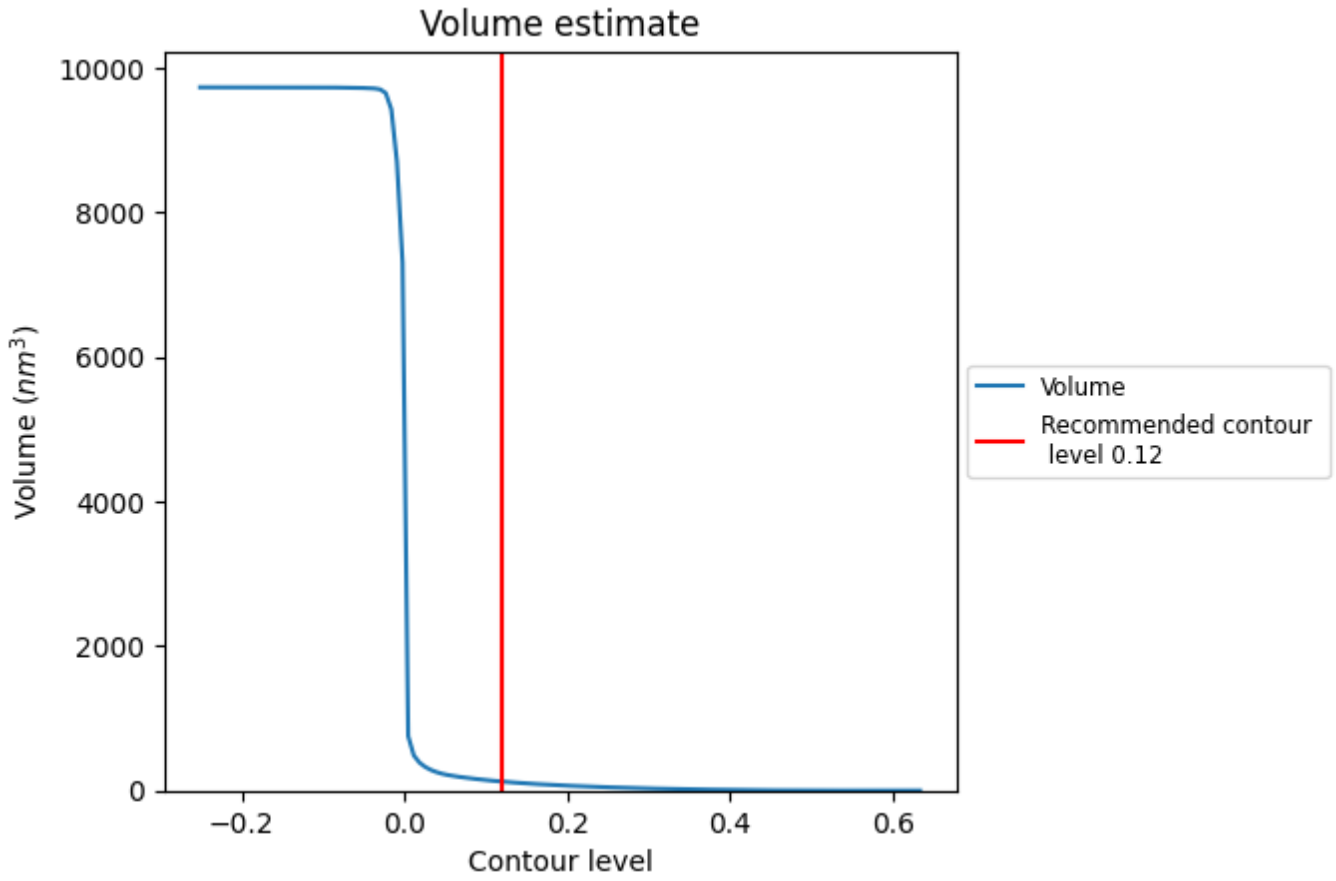
This section contains the results of statistical analysis of the map.

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.

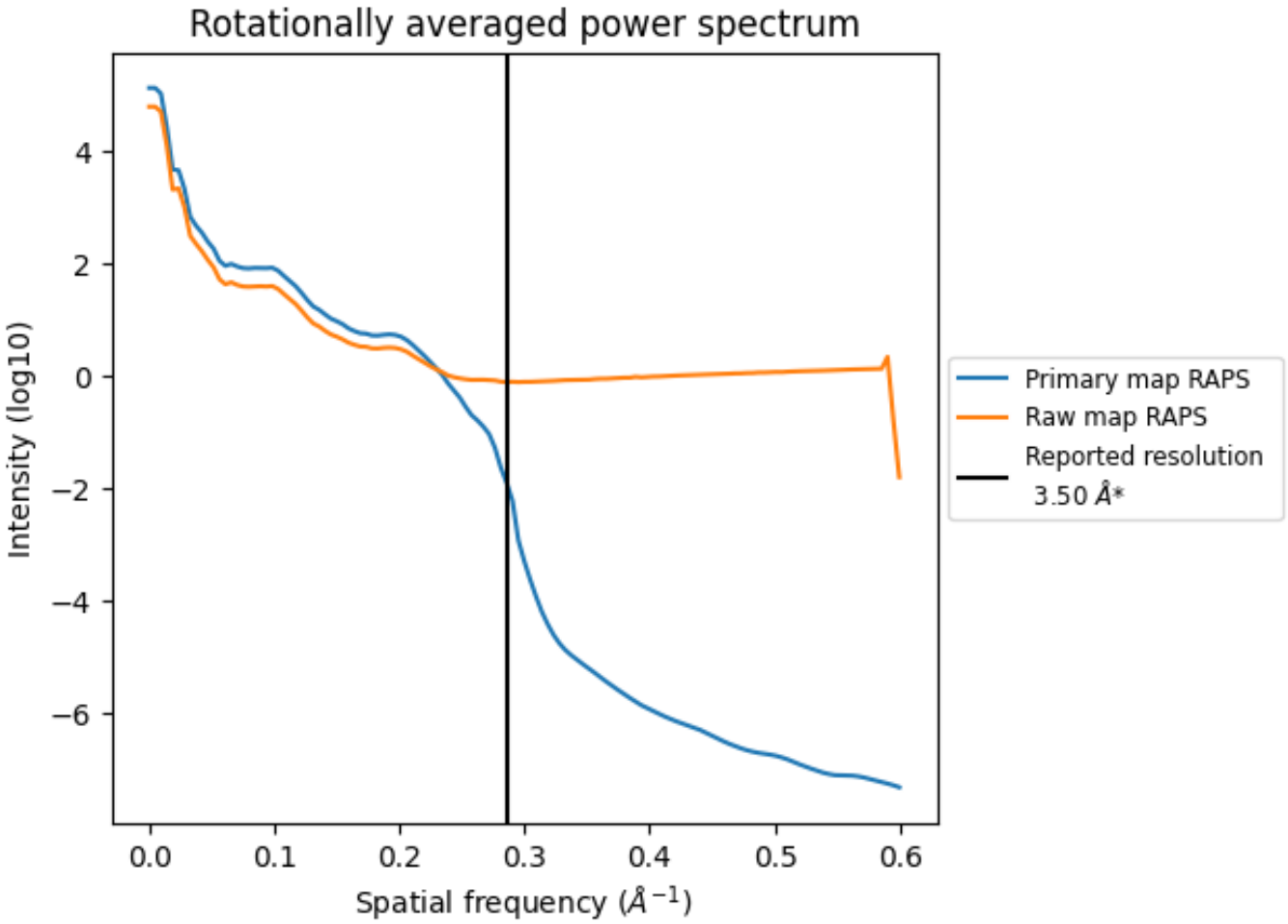
7.2 Volume estimate (i)



The volume at the recommended contour level is 124 nm^3; this corresponds to an approximate mass of 112 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)

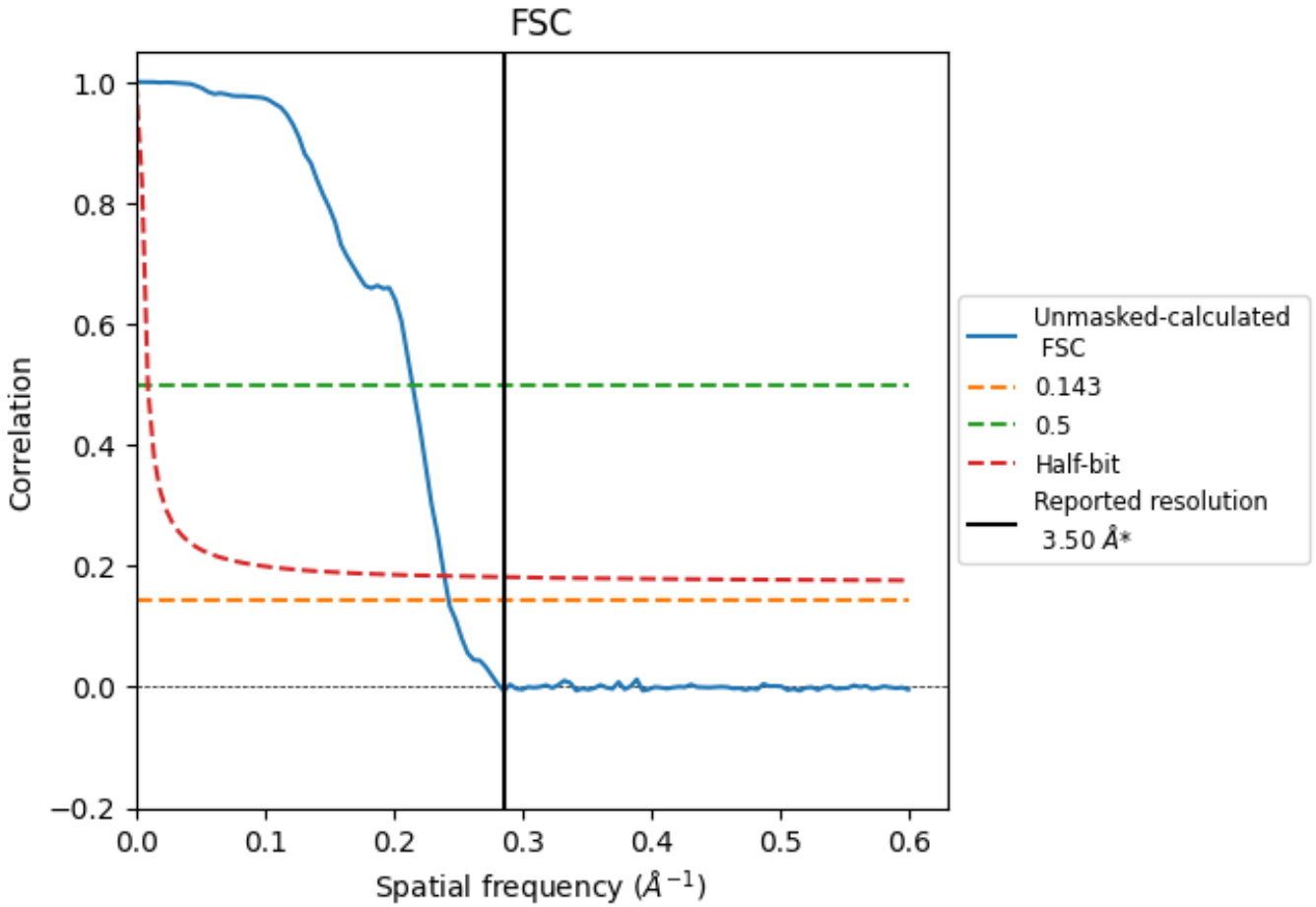


*Reported resolution corresponds to spatial frequency of 0.286 Å^{-1}

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 0.286 $Å^{-1}$

8.2 Resolution estimates (i)

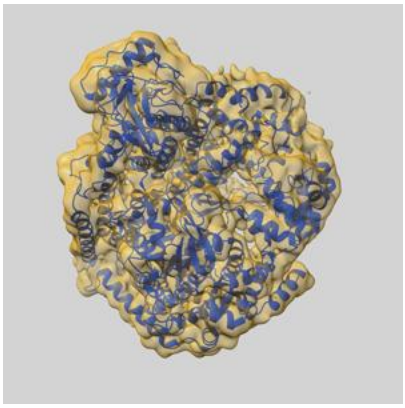
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.50	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.12	4.66	4.18

*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 4.12 differs from the reported value 3.5 by more than 10 %

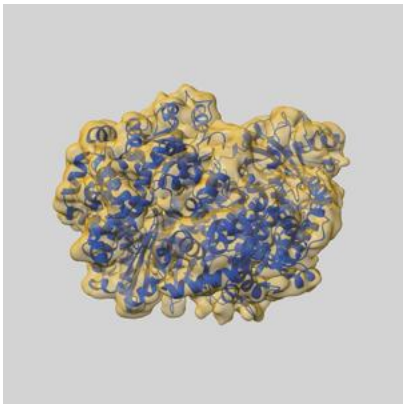
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53349 and PDB model 9QTB. Per-residue inclusion information can be found in section 3 on page 5.

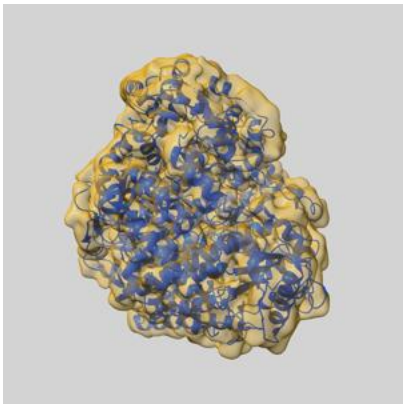
9.1 Map-model overlay



X



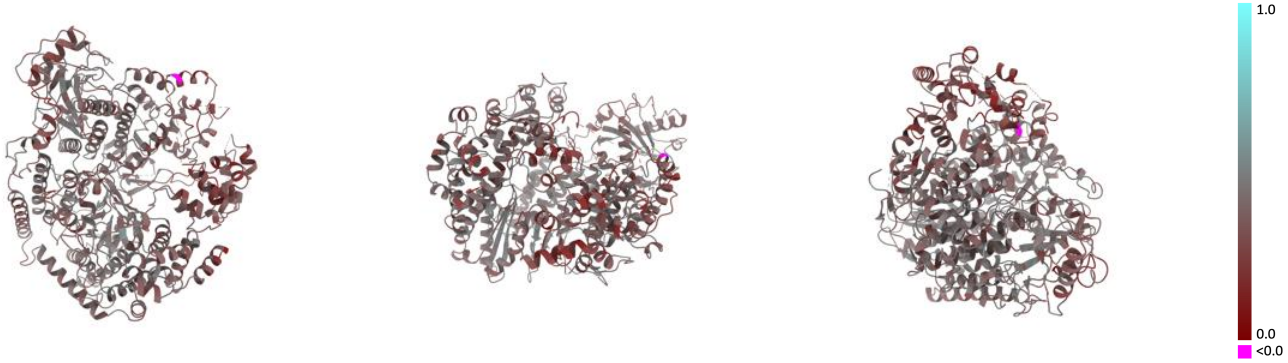
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.12 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.

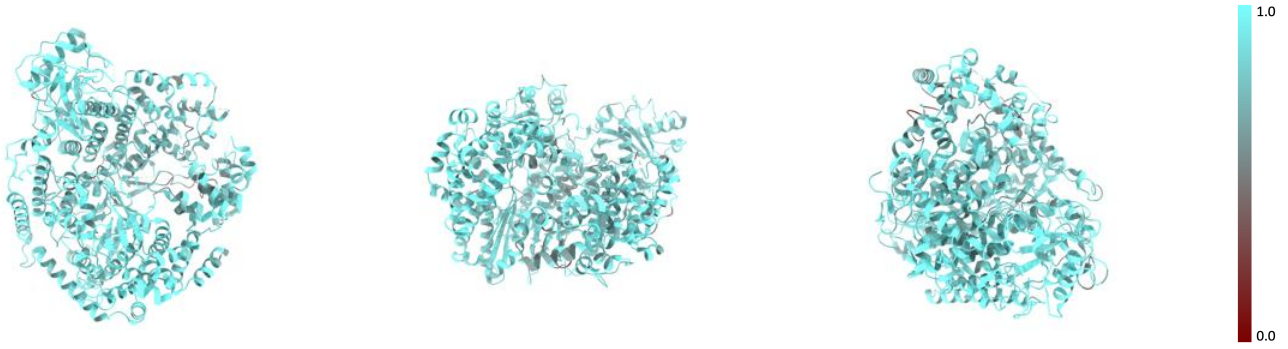
9.2 Q-score mapped to coordinate model (i)



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.

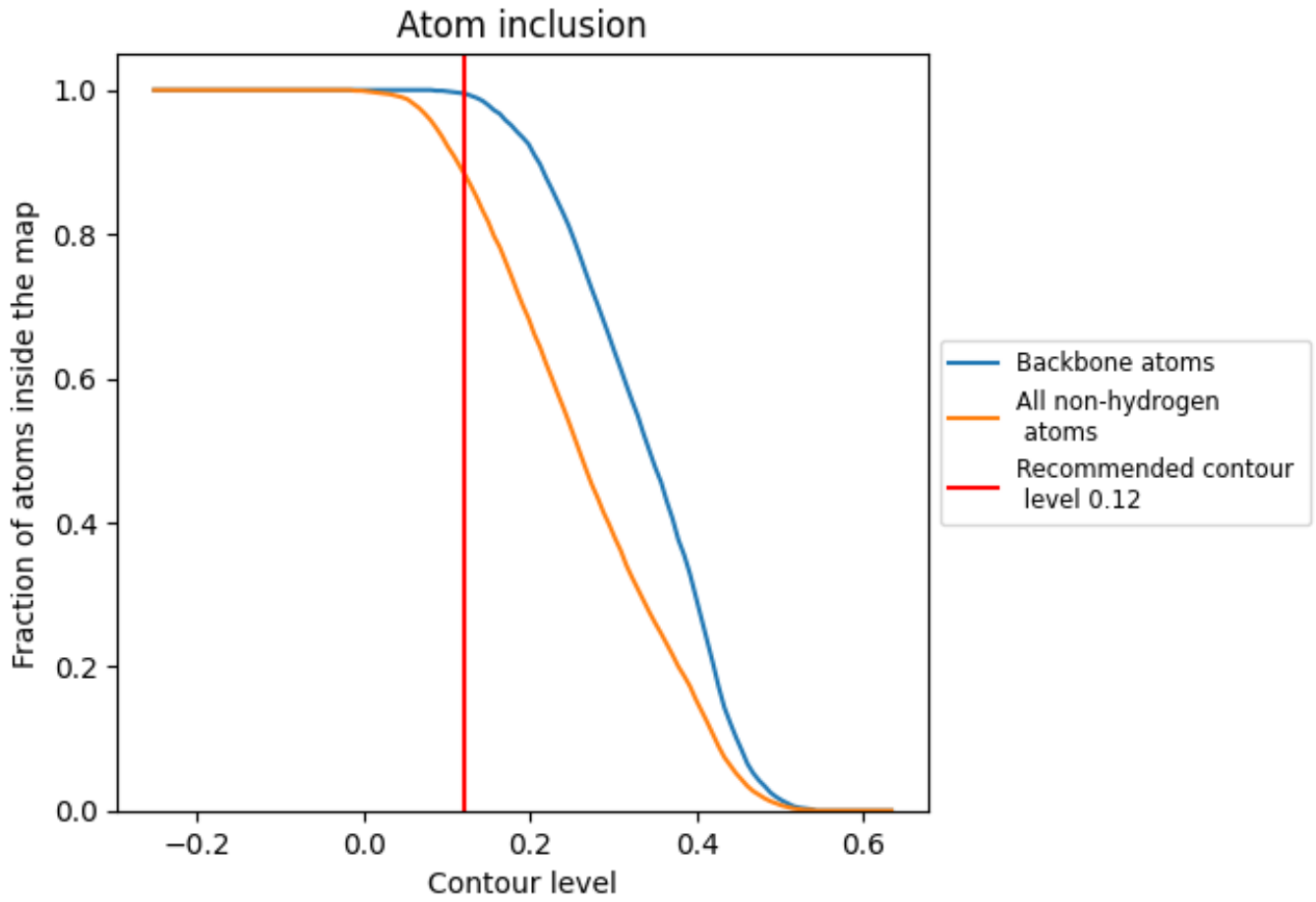
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.12).

9.4 Atom inclusion (i)



At the recommended contour level, 100% of all backbone atoms, 88% 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 (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8850	0.3800
A	0.8850	0.3800