Full wwPDB EM Validation Report

May 4, 2025 – 02:58 PM EDT

PDB ID	:	9BF3 / pdb_00009bf3
EMDB ID	:	EMD-44489
Title	:	Cryo-EM Structure of GCN2 HRSL Domain
Authors	:	Solorio-Kirpichyan, K.M.; Golovenko, D.; Xiao, F.; Yan, N.; Korostelev, A.A.; Korennykh, A.V.
Deposited on	:	2024-04-16
Resolution	:	3.18 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ 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:

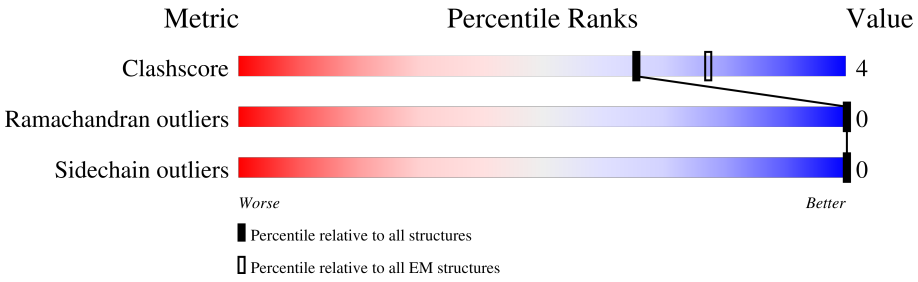
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.18 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	1673	26% 71%
1	B	1673	26% 71%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 7796 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 non-specific serine/threonine protein kinase.

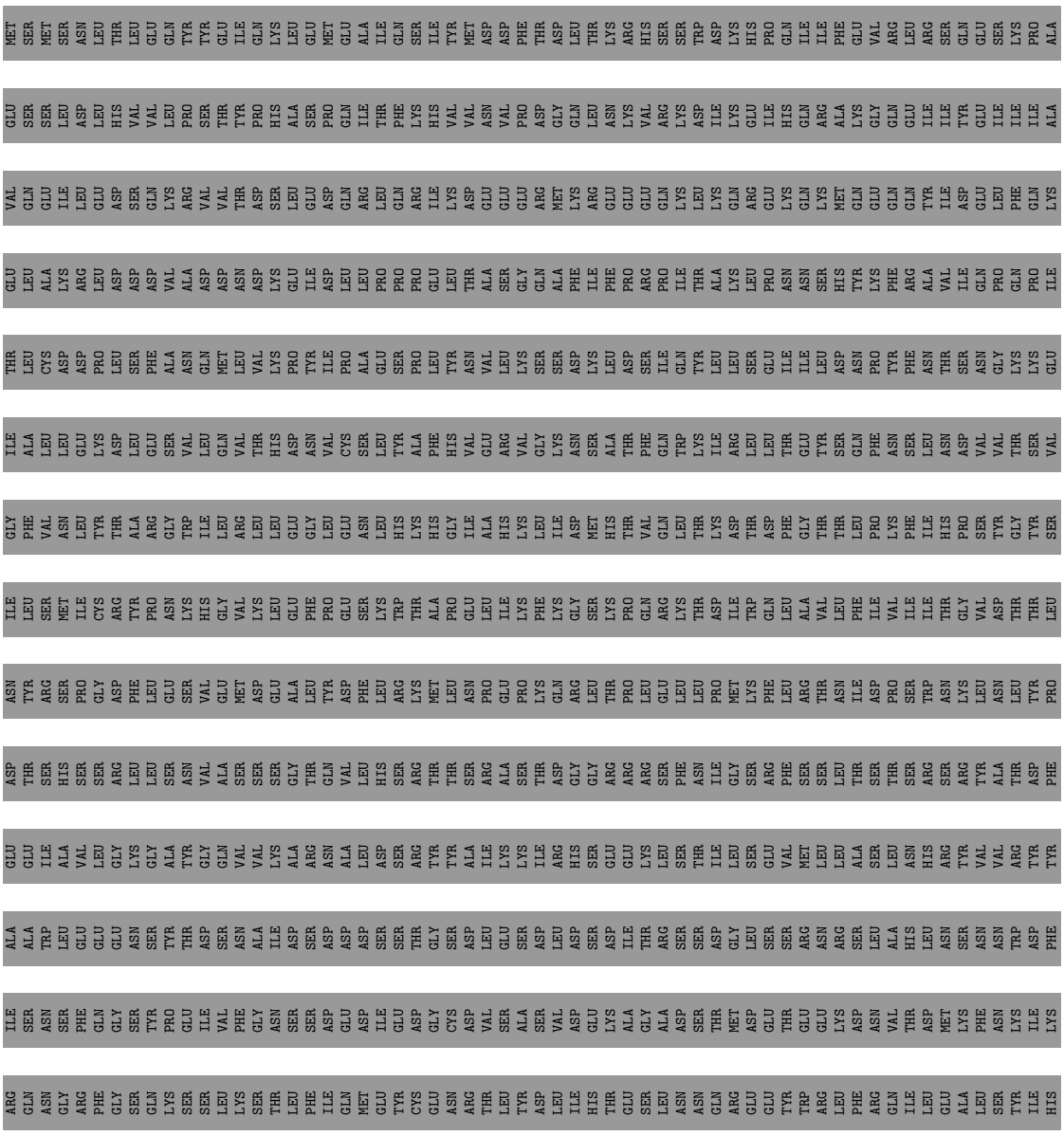
Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	486	Total	C	N	O	S	0	0
			3898	2492	652	741	13		
1	B	486	Total	C	N	O	S	0	0
			3898	2492	652	741	13		

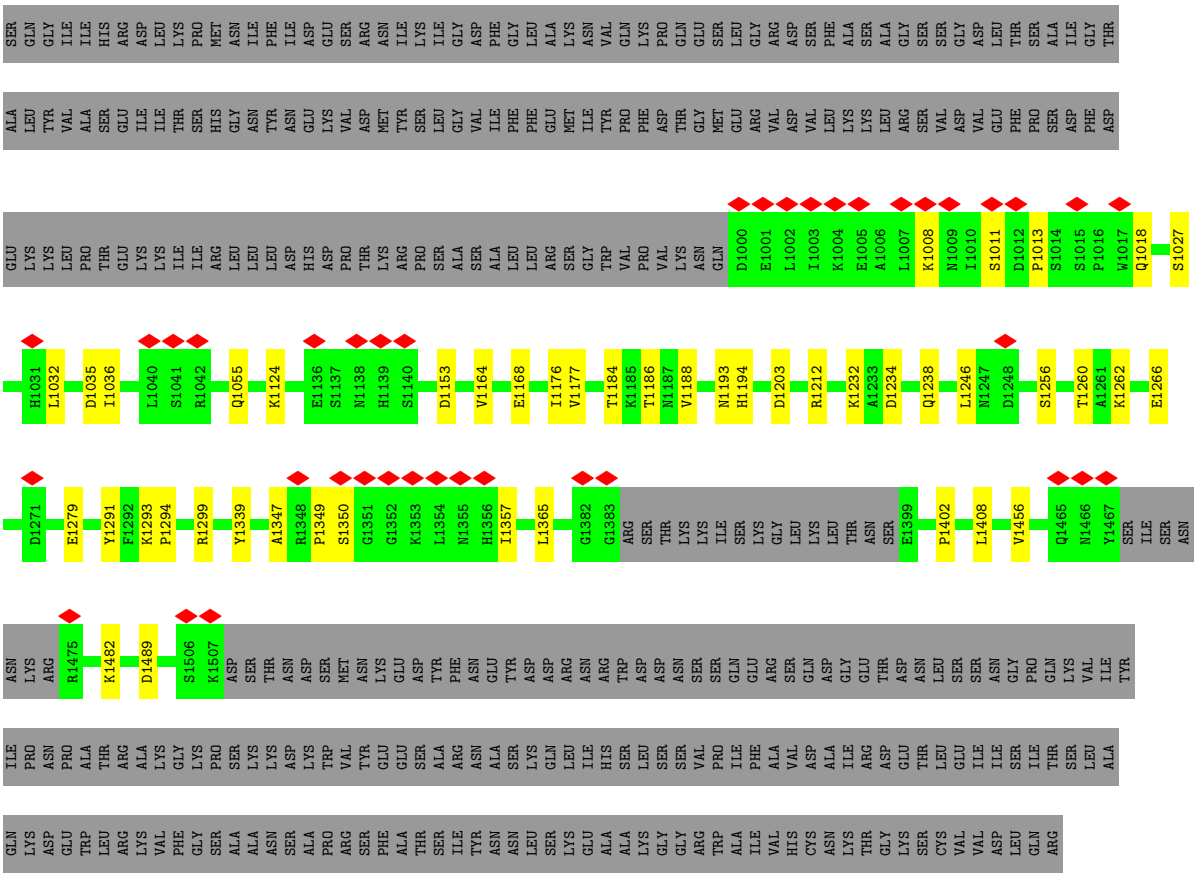
3 Residue-property plots (i)

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: non-specific serine/threonine protein kinase

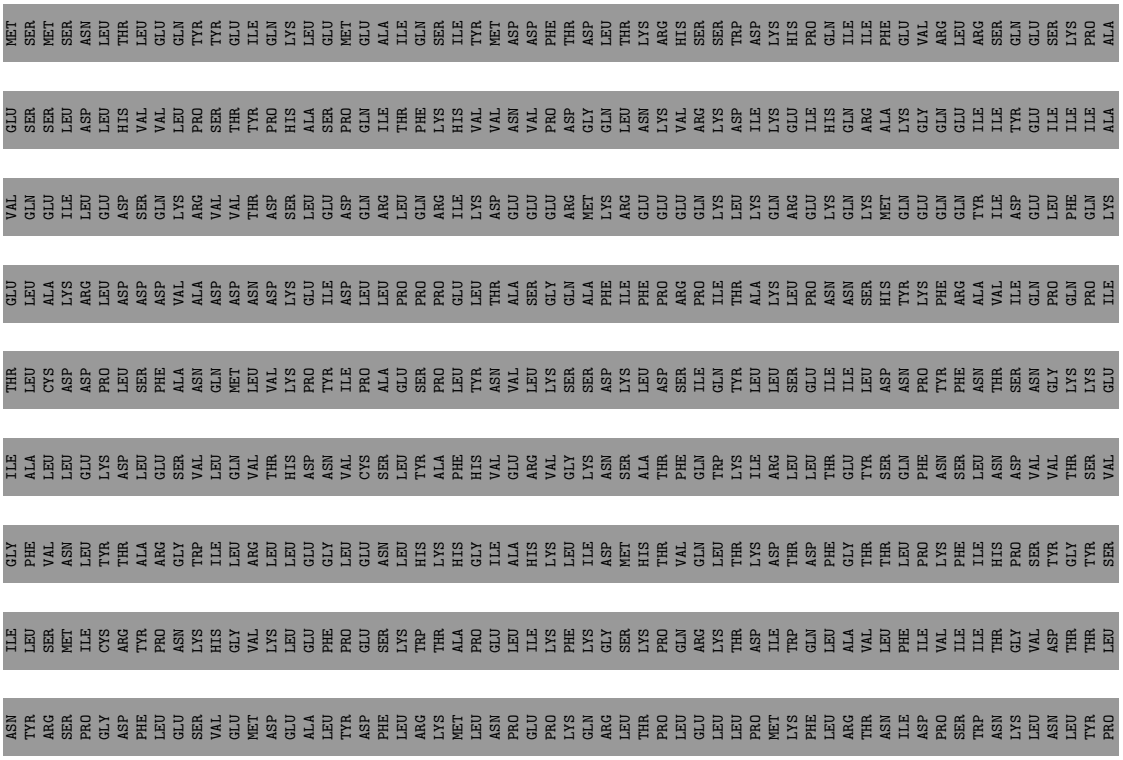
Chain A:

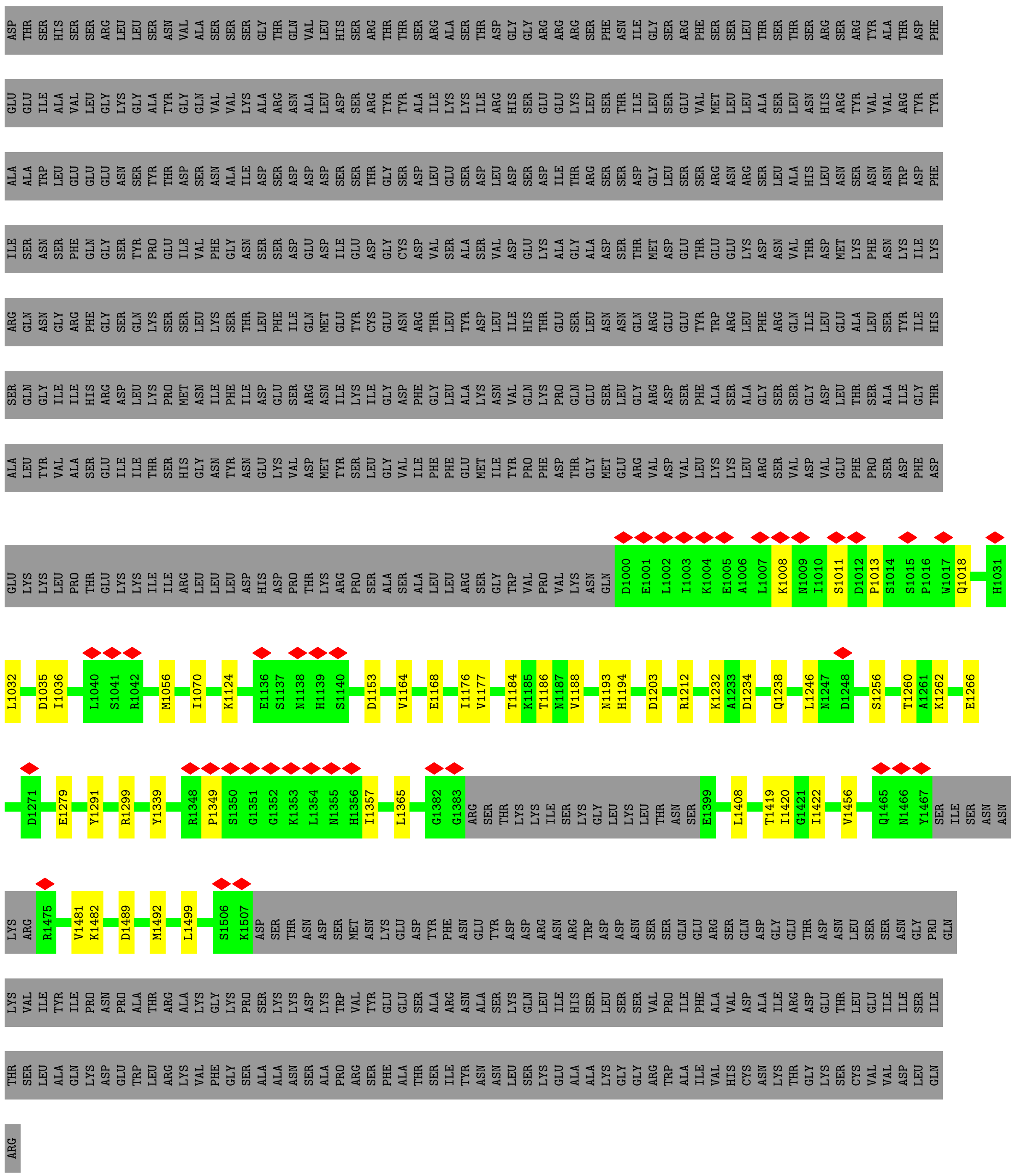




• Molecule 1: non-specific serine/threonine protein kinase

Chain B:




ASP THR SER HIS SER SER ARG LEU LEU SER ASN VAL ALA SER SER SER GLY THR GLN VAL LEU HIS SER ARG THR THR SER ARG ALA SER THR ASP GLY GLY ARG ARG ARG SER PHE ASN ILE GLY SER ARG PHE SER SER LEU THR SER THR SER ARG SER ARG TYR ALA THR ASP PHE
GLU GLU ILE ALA VAL LEU GLY LYS GLY ALA TYR GLY GLN VAL VAL LYS ALA ARG ASN ALA LEU ASP SER ARG TYR TYR ALA ILE LYS LYS ILE ARG HIS SER GLU GLU LYS LEU SER THR ILE LEU SER GLU VAL MET LEU LEU ALA SER LEU ASN HIS ARG TYR VAL VAL ARG TYR TYR
ALA ALA TRP LEU GLU GLU GLU ASN SER TYR THR ASP SER ASN ALA ILE ASP SER ASP ASP SER SER THR GLY SER ASP LEU GLU SER ASP LEU ASP SER ASP ILE THR ARG SER SER ASP GLY LEU SER SER ARG ASN ARG SER LEU ALA HIS LEU ASN SER ASN ASN TRP ASP PHE
ILE SER ASN SER PHE GLN GLY SER TYR PRO GLU ILE VAL PHE GLY ASN SER SER ASP GLU ASP ILE GLU ASP GLY CYS ASP VAL SER ALA SER VAL ASP GLU LYS ALA GLY ALA ASP SER THR MET ASP GLU THR GLU GLU LYS ASP ASN VAL THR ASP MET LYS PHE ASN LYS ILE LYS
ARG GLN ASN GLY ARG PHE GLY SER GLN LYS SER SER LEU LYS SER THR LEU PHE ILE GLN MET GLU TYR CYS GLU ASN ARG THR LEU TYR ASP LEU ILE HIS THR GLU SER LEU ASN ASN GLN ARG GLU GLU TYR TRP ARG LEU PHE ARG GLN ILE LEU GLU ALA LEU SER TYR ILE HIS
SER GLN GLY ILE ILE HIS ARG ASP LEU LYS PRO MET ASN ILE PHE ILE ASP GLU SER ARG ASN ILE LYS ILE GLY ASP PHE GLY LEU ALA LYS ASN VAL GLN LYS PRO GLN GLU SER LEU GLY ARG ASP SER PHE ALA SER ALA GLY SER SER GLY ASP LEU THR SER ALA ILE GLY THR
ALA LEU TYR VAL ALA SER GLU ILE ILE THR SER HIS GLY ASN TYR ASN GLU LYS VAL ASP MET TYR SER LEU GLY VAL ILE PHE PHE GLU MET ILE TYR PRO PHE ASP THR GLY MET GLU ARG VAL ASP VAL LEU LYS LYS LEU ARG SER VAL ASP VAL GLU PHE PRO SER ASP PHE ASP
GLU LYS LYS LEU PRO THR GLU LYS LYS ILE ILE ARG LEU LEU LEU ASP HIS ASP PRO THR LYS ARG PRO SER ALA SER ALA LEU LEU ARG SER GLY TRP VAL PRO VAL LYS ASN GLN D1000 E1001 L1002 I1003 K1004 E1005 A1006 L1007 K1008 N1009 I1010 S1011 D1012 P1013 S1014 S1015 P1016 W1017 Q1018 H1031
L1032 D1035 I1036 L1040 S1041 R1042 M1056 I1070 K1124 E1136 S1137 N1138 H1139 S1140 D1153 V1164 E1168 I1176 V1177 T1184 K1185 T1186 N1187 V1188 N1193 H1194 D1203 R1212 K1232 A1233 D1234 Q1238 L1246 N1247 D1248 S1256 T1260 A1261 K1262 E1266
D1271 E1279 Y1291 R1299 Y1339 R1348 P1349 S1350 G1351 G1352 K1353 L1354 N1355 H1356 I1357 L1365 G1382 G1383 ARG SER THR LYS LYS ILE SER LYS GLY LEU LYS LEU THR ASN SER E1399 L1408 T1419 I1420 G1421 I1422 V1456 Q1465 N1466 Y1467 SER ILE SER ASN ASN
LYS ARG R1475 V1481 K1482 D1489 M1492 L1499 S1506 K1507 ASP SER THR ASN ASP SER MET ASN LYS GLU ASP TYR PHE ASN GLU TYR ASP ASP ARG ASN ARG TRP ASP ASP ASN SER SER GLN GLU ARG SER GLN ASP GLY GLU THR ASP ASN LEU SER SER ASN GLY PRO GLN
LYS VAL ILE TYR ILE PRO ASN PRO ALA THR ARG ALA LYS GLY LYS PRO SER LYS LYS ASP LYS TRP VAL TYR GLU GLU SER ALA ARG ASN ALA SER LYS GLN LEU ILE HIS SER LEU SER SER VAL PRO ILE PHE ALA VAL ASP ALA ILE ARG ASP GLU THR LEU GLU ILE ILE SER ILE
THR SER LEU ALA GLN LYS ASP GLU TRP LEU ARG LYS VAL PHE GLY SER ALA ALA ASN SER ALA PRO ARG SER PHE ALA THR SER ILE TYR ASN ASN LEU SER LYS GLU ALA ALA LYS GLY GLY ARG TRP ALA ILE VAL HIS CYS ASN LYS THR GLY LYS SER CYS VAL VAL ASP LEU GLN
ARG

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	215101	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.453	Depositor
Minimum map value	-0.170	Depositor
Average map value	0.004	Depositor
Map value standard deviation	0.018	Depositor
Recommended contour level	0.111	Depositor
Map size (Å)	208.0, 208.0, 208.0	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.04, 1.04, 1.04	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	0.09	0/3979	0.24	1/5380 (0.0%)
1	B	0.09	0/3979	0.24	1/5380 (0.0%)
All	All	0.09	0/7958	0.24	2/10760 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1349	PRO	CA-N-CD	-5.43	104.39	112.00
1	B	1349	PRO	CA-N-CD	-5.40	104.43	112.00

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	3898	0	3882	28	0
1	B	3898	0	3882	31	0
All	All	7796	0	7764	59	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

All (59) 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:B:1234:ASP:O	1:B:1238:GLN:HB2	1.86	0.76
1:A:1234:ASP:O	1:A:1238:GLN:HB2	1.86	0.76
1:A:1184:THR:HG23	1:A:1186:THR:H	1.62	0.64
1:B:1184:THR:HG23	1:B:1186:THR:H	1.62	0.63
1:B:1013:PRO:HA	1:B:1018:GLN:HE22	1.64	0.62
1:A:1153:ASP:OD2	1:A:1339:TYR:OH	2.17	0.62
1:A:1232:LYS:HG3	1:A:1246:LEU:HD23	1.82	0.62
1:A:1013:PRO:HA	1:A:1018:GLN:HE22	1.64	0.61
1:B:1153:ASP:OD2	1:B:1339:TYR:OH	2.17	0.61
1:B:1232:LYS:HG3	1:B:1246:LEU:HD23	1.82	0.61
1:B:1032:LEU:O	1:B:1036:ILE:HD12	2.02	0.60
1:A:1177:VAL:HG11	1:A:1188:VAL:HG11	1.85	0.59
1:A:1032:LEU:O	1:A:1036:ILE:HD12	2.01	0.59
1:B:1203:ASP:OD1	1:B:1212:ARG:NH2	2.32	0.58
1:A:1203:ASP:OD1	1:A:1212:ARG:NH2	2.32	0.58
1:B:1177:VAL:HG11	1:B:1188:VAL:HG11	1.85	0.58
1:A:1176:ILE:HG21	1:A:1365:LEU:HD11	1.88	0.55
1:B:1176:ILE:HG21	1:B:1365:LEU:HD11	1.88	0.54
1:A:1262:LYS:NZ	1:A:1279:GLU:OE1	2.41	0.53
1:A:1032:LEU:HG	1:A:1036:ILE:HD11	1.90	0.53
1:B:1032:LEU:HG	1:B:1036:ILE:HD11	1.90	0.53
1:A:1262:LYS:NZ	1:A:1266:GLU:OE2	2.42	0.52
1:A:1013:PRO:HA	1:A:1018:GLN:NE2	2.25	0.52
1:B:1262:LYS:NZ	1:B:1266:GLU:OE2	2.42	0.51
1:A:1124:LYS:NZ	1:A:1168:GLU:OE2	2.34	0.50
1:B:1262:LYS:NZ	1:B:1279:GLU:OE1	2.41	0.50
1:B:1013:PRO:HA	1:B:1018:GLN:NE2	2.25	0.50
1:B:1193:ASN:OD1	1:B:1194:HIS:N	2.45	0.50
1:A:1193:ASN:OD1	1:A:1194:HIS:N	2.45	0.49
1:A:1008:LYS:O	1:A:1011:SER:OG	2.31	0.48
1:B:1124:LYS:NZ	1:B:1168:GLU:OE2	2.34	0.47
1:A:1347:ALA:O	1:A:1350:SER:OG	2.31	0.47
1:A:1177:VAL:HG12	1:A:1299:ARG:HH21	1.79	0.47
1:B:1177:VAL:HG12	1:B:1299:ARG:HH21	1.79	0.46
1:B:1036:ILE:HD12	1:B:1036:ILE:H	1.81	0.45
1:A:1036:ILE:HD12	1:A:1036:ILE:H	1.81	0.45
1:A:1027:SER:O	1:A:1027:SER:OG	2.30	0.45
1:A:1164:VAL:HG22	1:A:1291:TYR:CZ	2.53	0.44
1:A:1408:LEU:HG	1:A:1456:VAL:HG11	2.00	0.44
1:B:1164:VAL:HG22	1:B:1291:TYR:CZ	2.53	0.43
1:A:1357:ILE:HD13	1:A:1357:ILE:HA	1.88	0.43
1:B:1499:LEU:HD12	1:B:1499:LEU:HA	1.80	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1408:LEU:HG	1:B:1456:VAL:HG11	2.00	0.43
1:B:1008:LYS:O	1:B:1011:SER:OG	2.31	0.43
1:B:1357:ILE:HD13	1:B:1357:ILE:HA	1.88	0.43
1:B:1256:SER:HB3	1:B:1260:THR:HB	2.01	0.43
1:B:1070:ILE:HD13	1:B:1070:ILE:HA	1.84	0.43
1:A:1032:LEU:O	1:A:1035:ASP:N	2.53	0.42
1:B:1032:LEU:O	1:B:1035:ASP:N	2.52	0.42
1:B:1482:LYS:NZ	1:B:1489:ASP:OD2	2.38	0.42
1:A:1256:SER:HB3	1:A:1260:THR:HB	2.01	0.41
1:A:1482:LYS:NZ	1:A:1489:ASP:OD2	2.38	0.41
1:B:1056:MET:HE3	1:B:1056:MET:HB3	1.88	0.41
1:B:1408:LEU:HD23	1:B:1408:LEU:HA	1.81	0.41
1:A:1293:LYS:HB3	1:A:1294:PRO:HD3	2.03	0.41
1:A:1055:GLN:HG3	1:A:1402:PRO:HA	2.03	0.40
1:B:1422:ILE:HD13	1:B:1422:ILE:HA	1.95	0.40
1:B:1419:THR:OG1	1:B:1420:ILE:N	2.54	0.40
1:B:1481:VAL:HB	1:B:1492:MET:HE3	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	480/1673 (29%)	470 (98%)	10 (2%)	0	100	100
1	B	480/1673 (29%)	470 (98%)	10 (2%)	0	100	100
All	All	960/3346 (29%)	940 (98%)	20 (2%)	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	441/1519 (29%)	441 (100%)	0	100	100
1	B	441/1519 (29%)	441 (100%)	0	100	100
All	All	882/3038 (29%)	882 (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 (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1104	GLN
1	A	1358	GLN
1	B	1104	GLN
1	B	1118	ASN
1	B	1358	GLN

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

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.

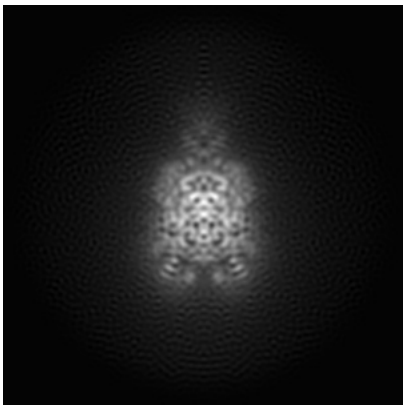
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-44489. These allow visual inspection of the internal detail of the map and identification of artifacts.

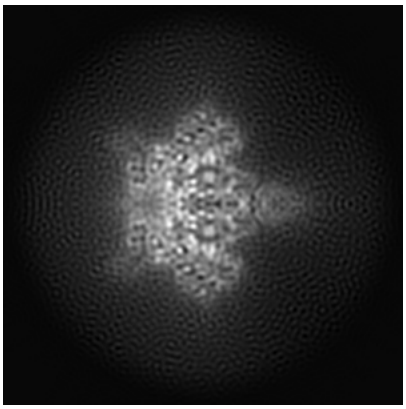
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

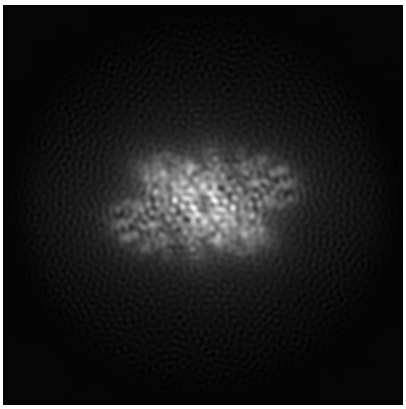
6.1.1 Primary map



X

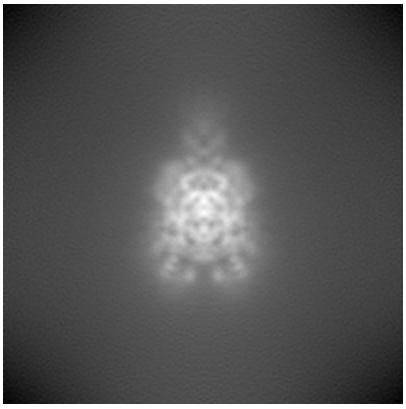


Y

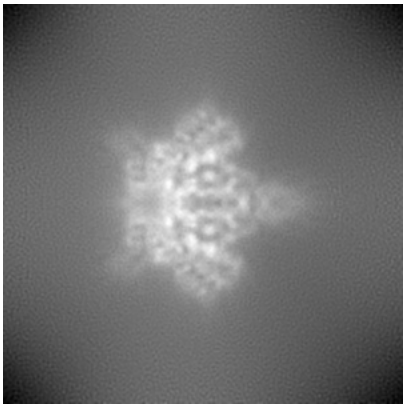


Z

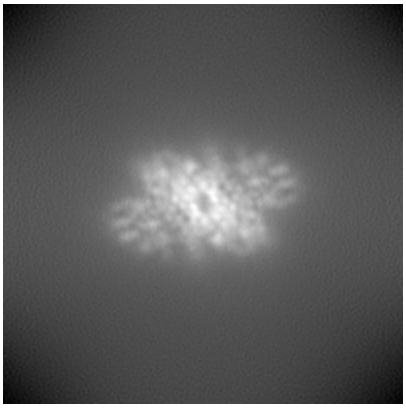
6.1.2 Raw map



X



Y

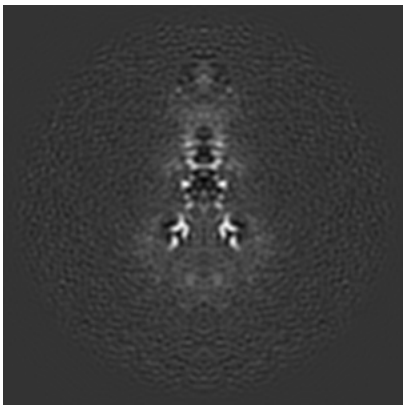


Z

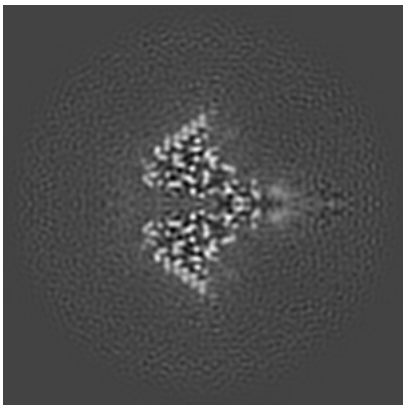
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

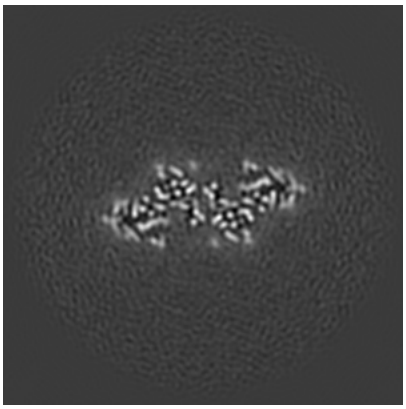
6.2.1 Primary map



X Index: 100

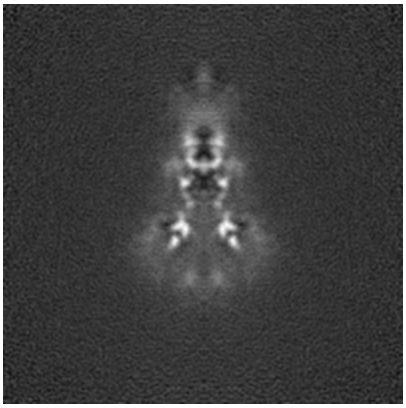


Y Index: 100

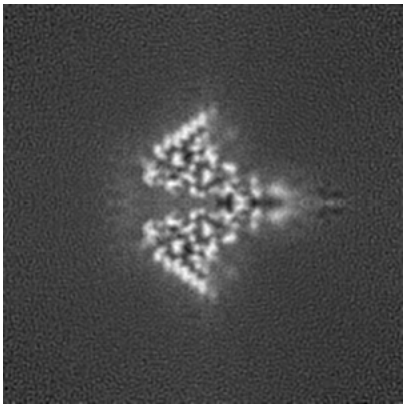


Z Index: 100

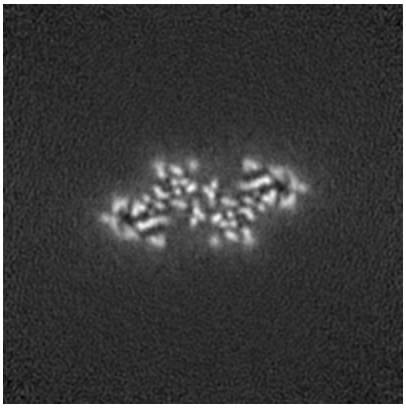
6.2.2 Raw map



X Index: 100



Y Index: 100

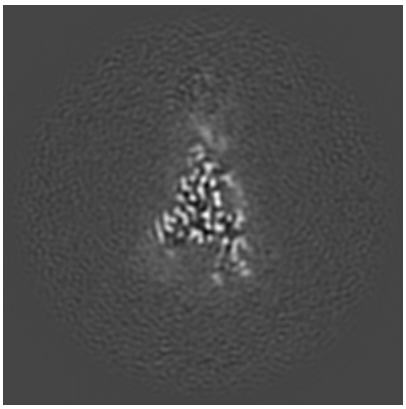


Z Index: 100

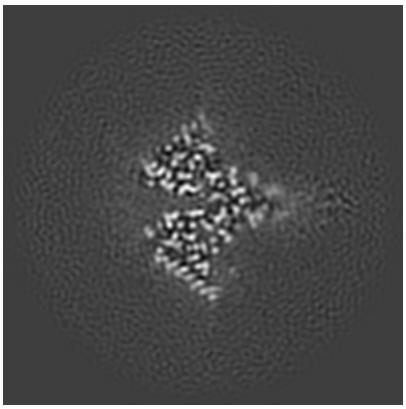
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

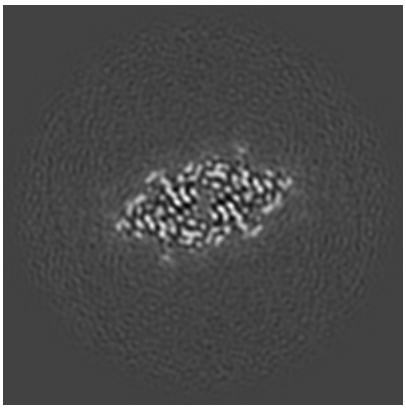
6.3.1 Primary map



X Index: 93

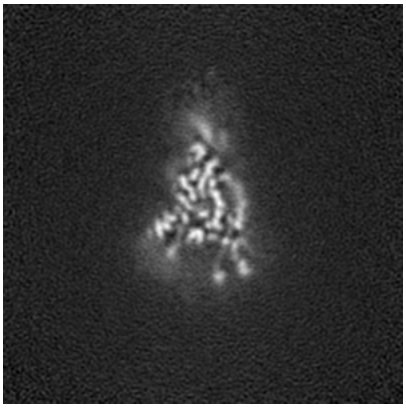


Y Index: 98

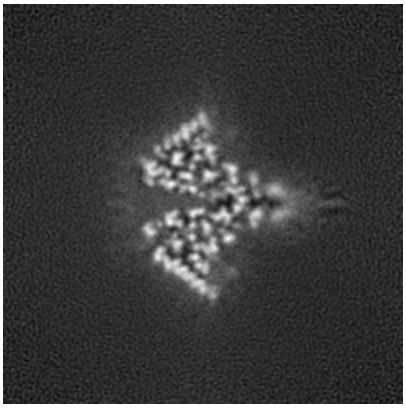


Z Index: 92

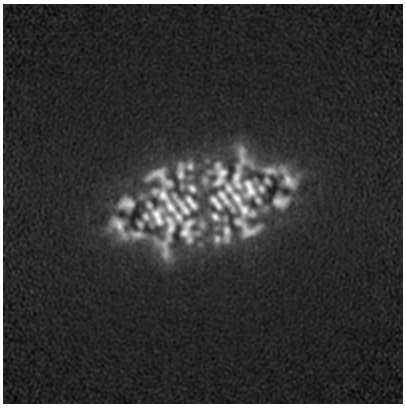
6.3.2 Raw map



X Index: 94



Y Index: 99

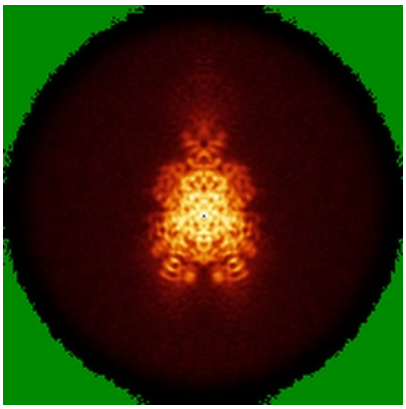


Z Index: 94

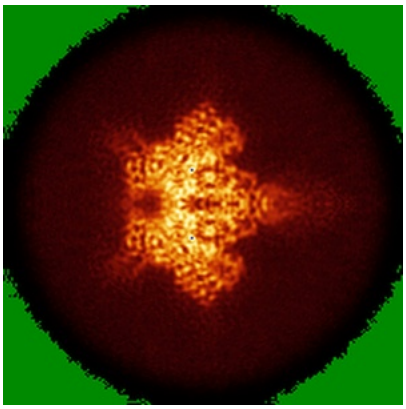
The images above show the largest variance slices of the map in three orthogonal directions.

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

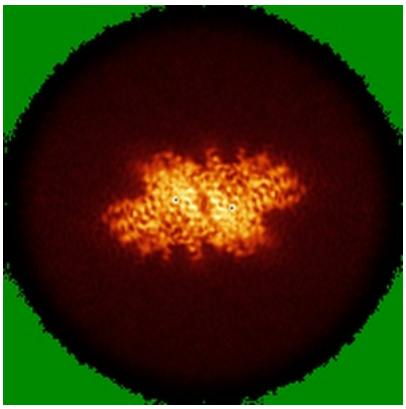
6.4.1 Primary map



X

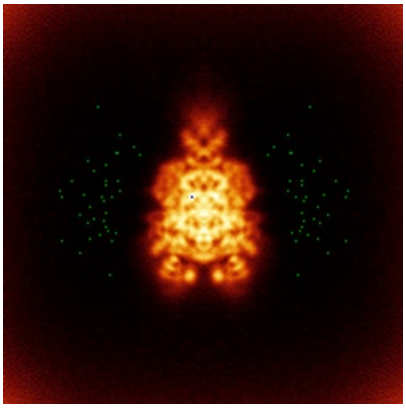


Y

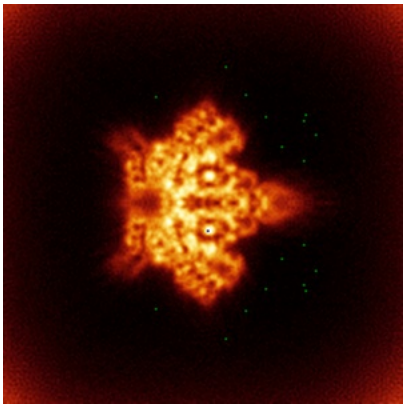


Z

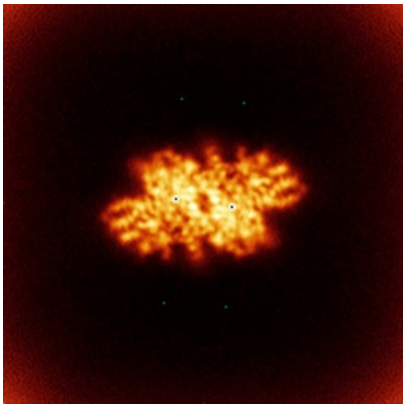
6.4.2 Raw map



X



Y

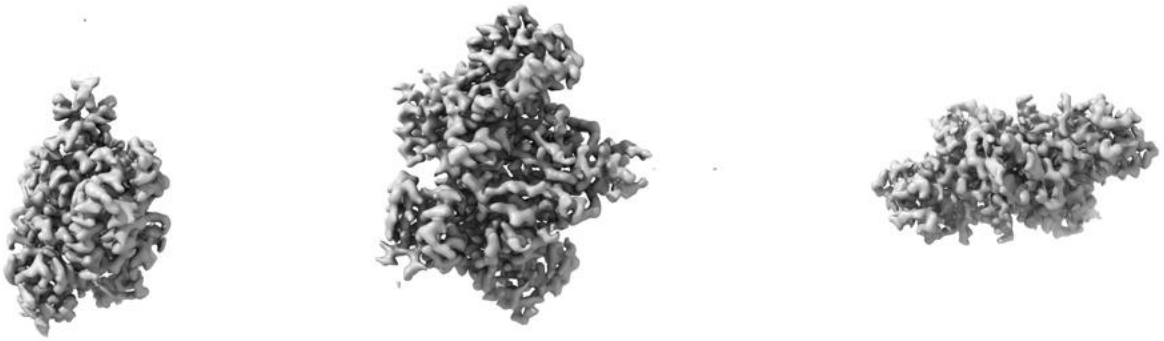


Z

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)

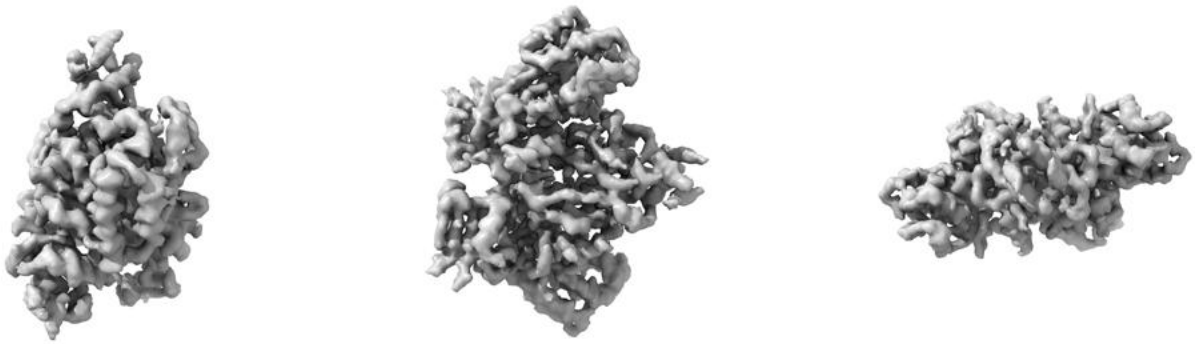
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.111. 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.

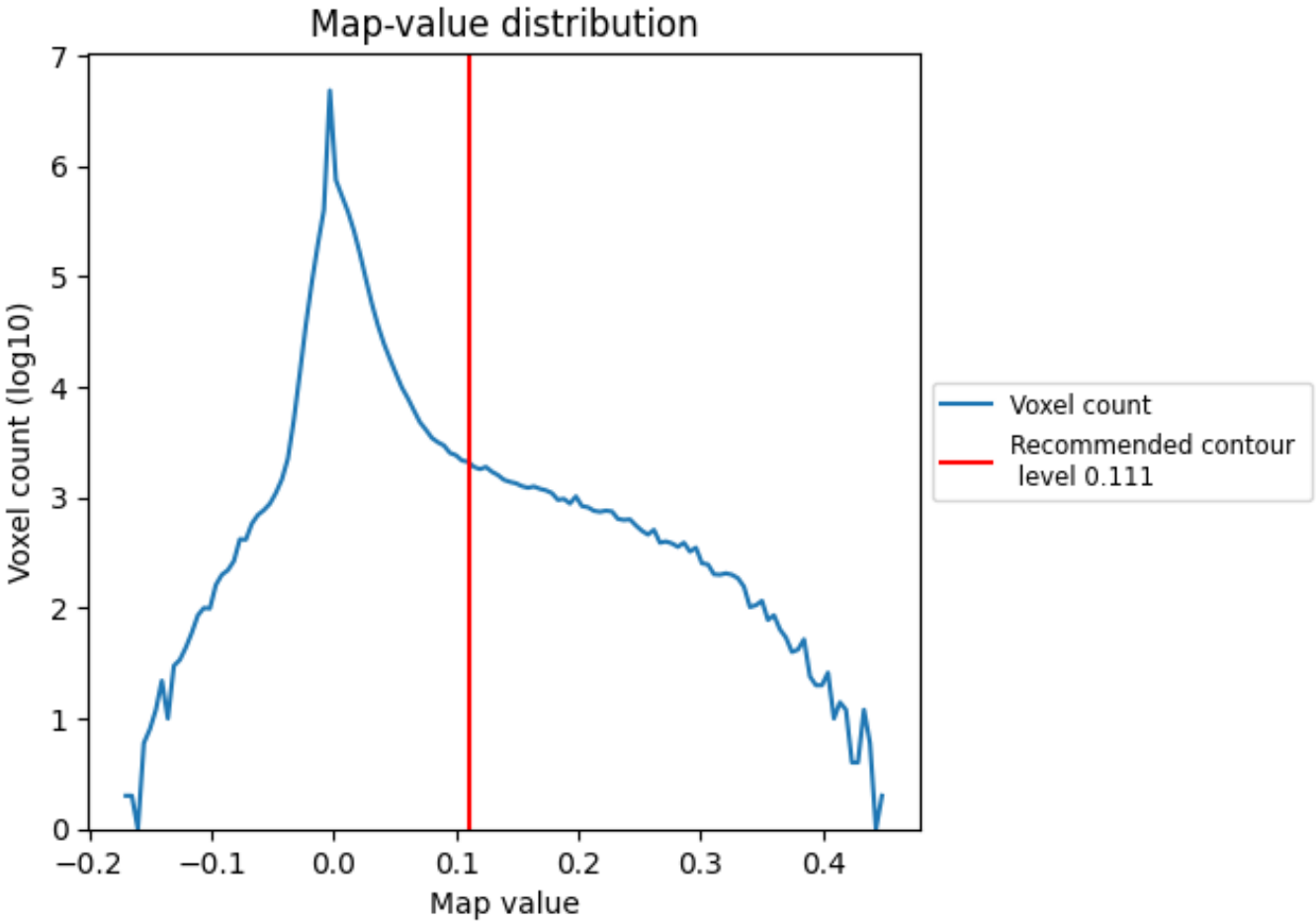
6.6 Mask visualisation (i)

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

7 Map analysis

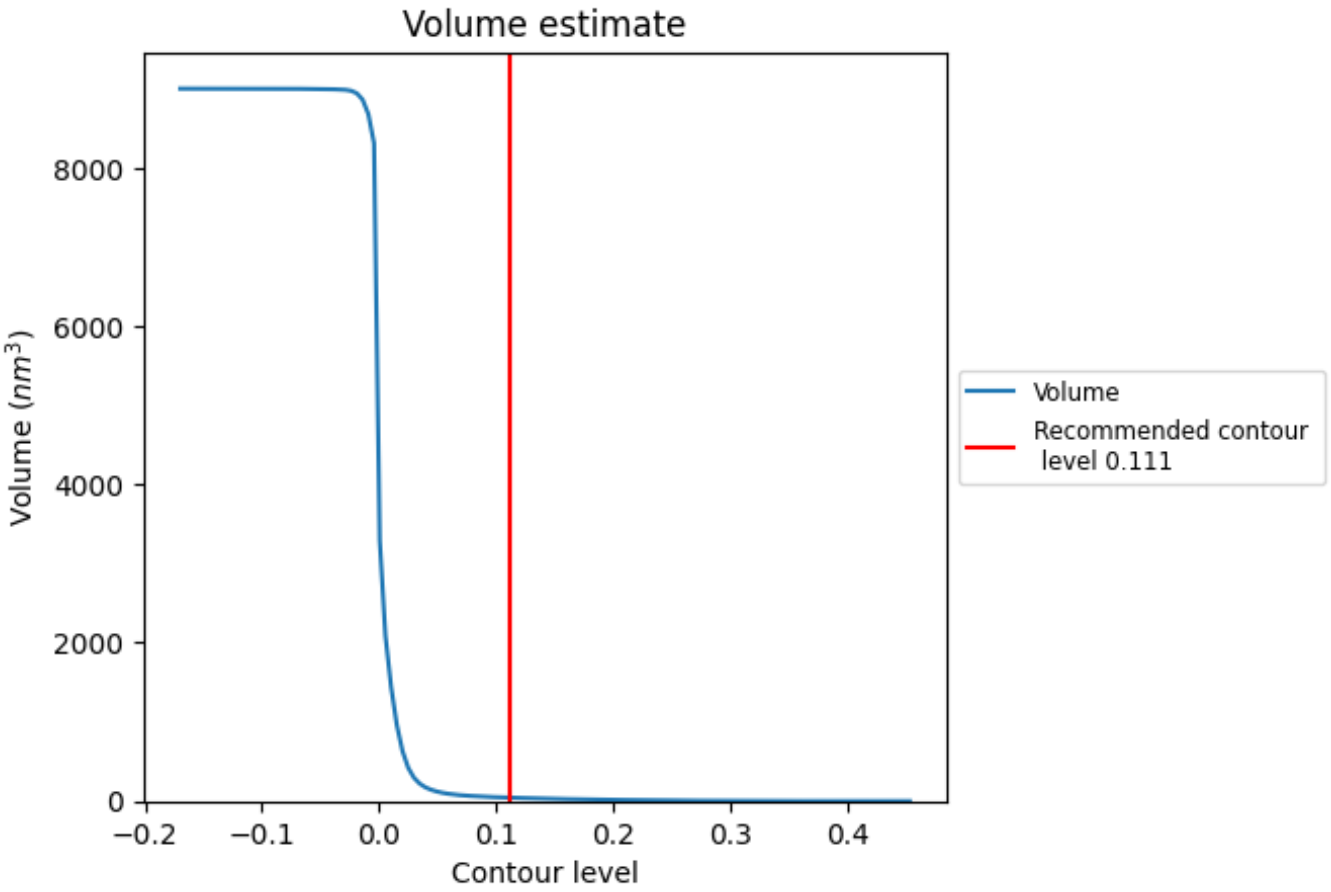
This section contains the results of statistical analysis of the map.

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.

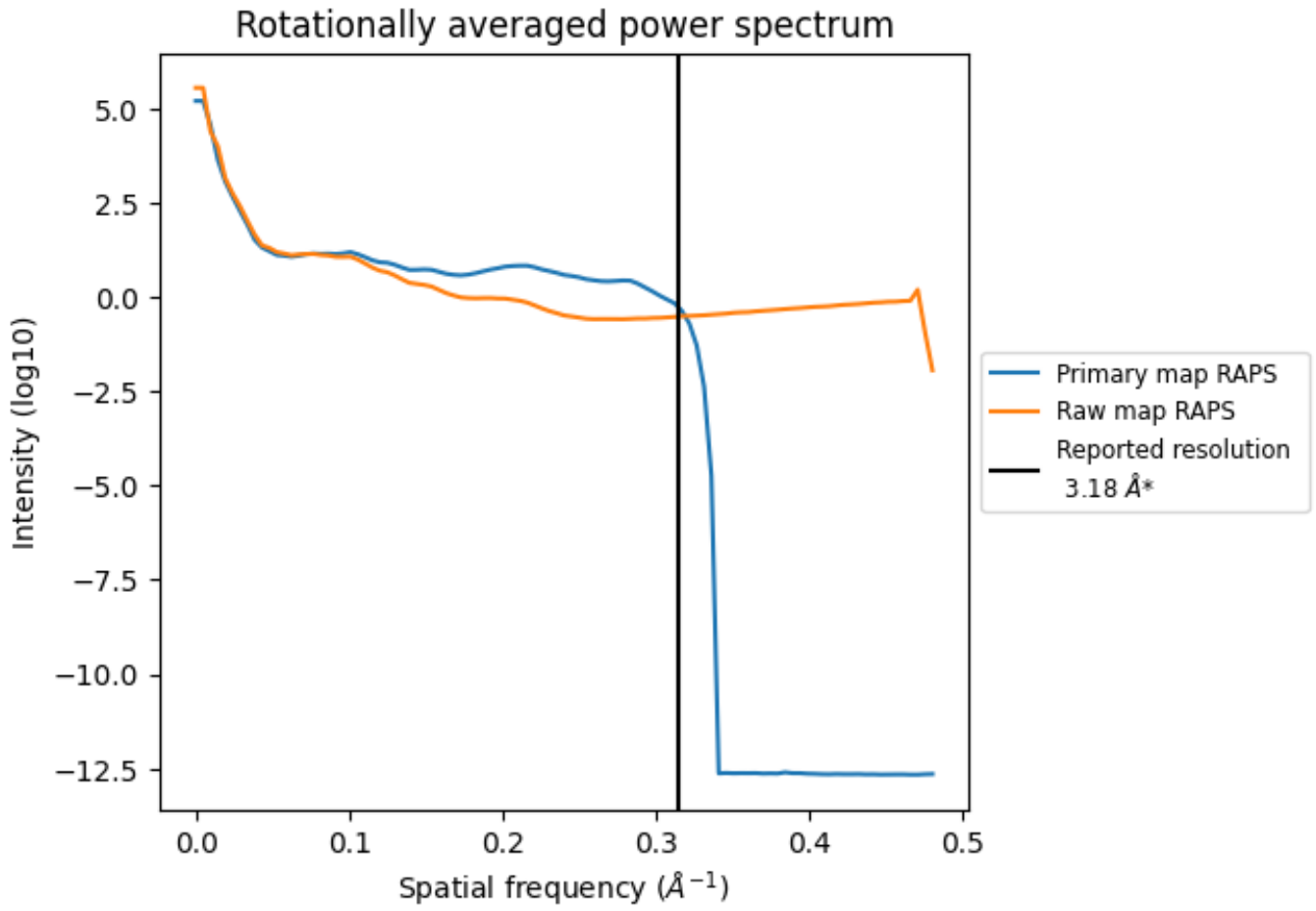
7.2 Volume estimate



The volume at the recommended contour level is 44 nm^3; this corresponds to an approximate mass of 40 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)

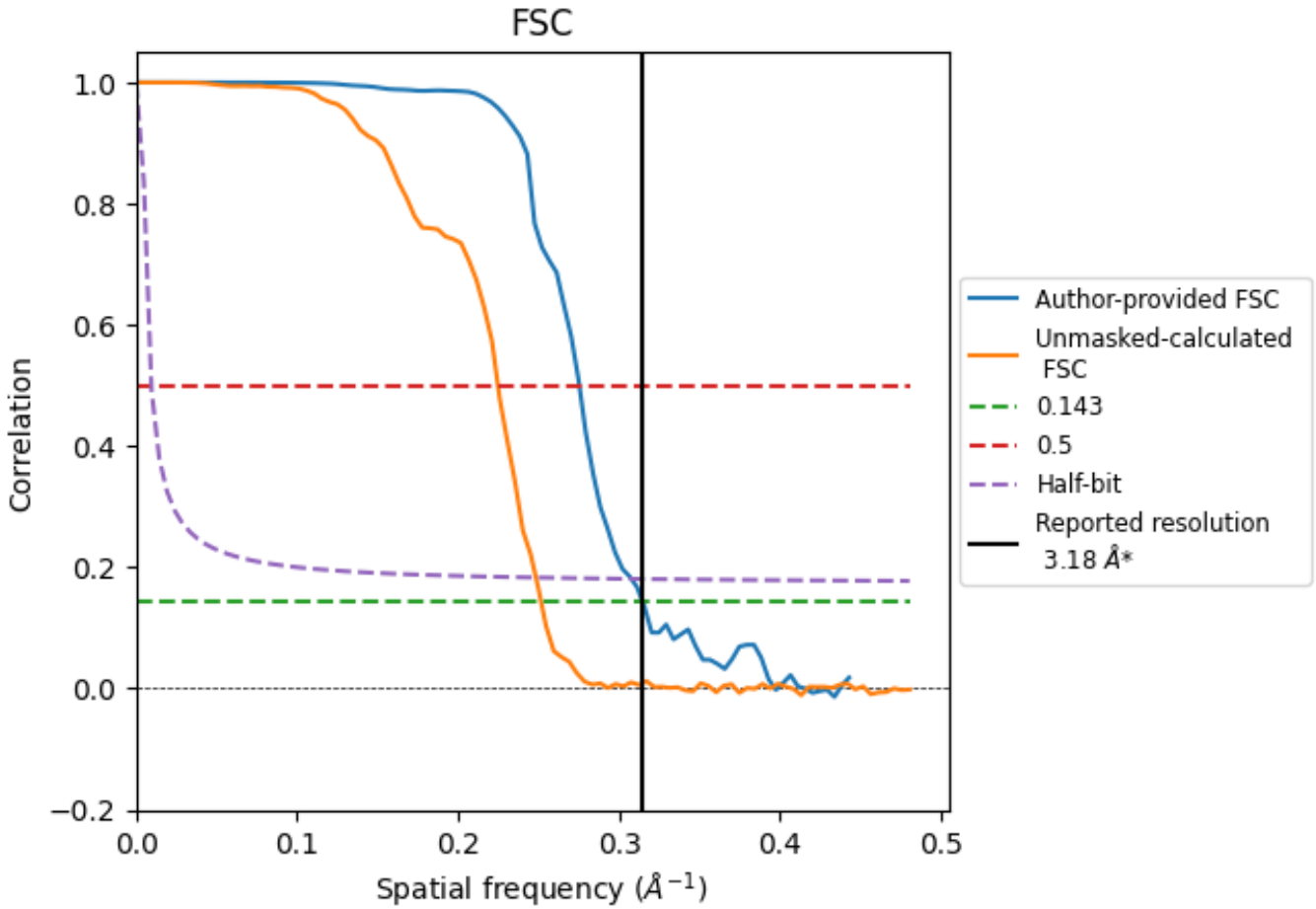


*Reported resolution corresponds to spatial frequency of 0.314 $Å^{-1}$

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 0.314 Å^{-1}

8.2 Resolution estimates (i)

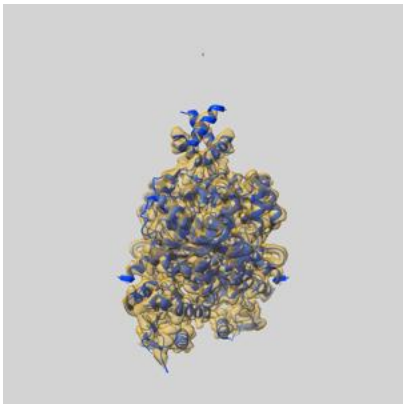
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.18	-	-
Author-provided FSC curve	3.18	3.63	3.25
Unmasked-calculated*	3.97	4.45	4.02

*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 3.97 differs from the reported value 3.18 by more than 10 %

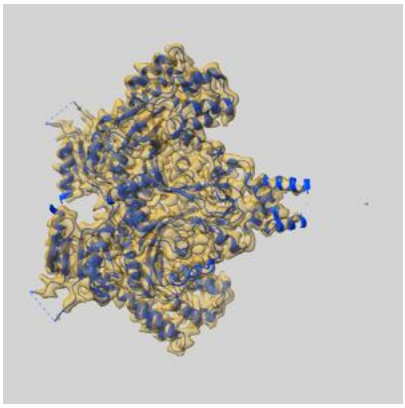
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-44489 and PDB model 9BF3. Per-residue inclusion information can be found in section 3 on page 4.

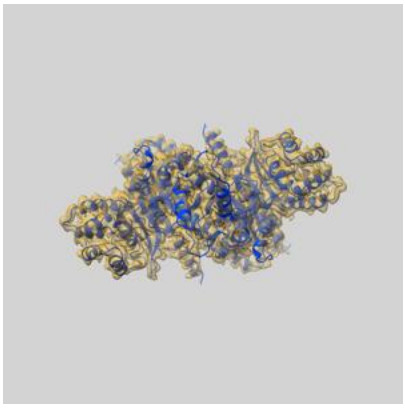
9.1 Map-model overlay



X



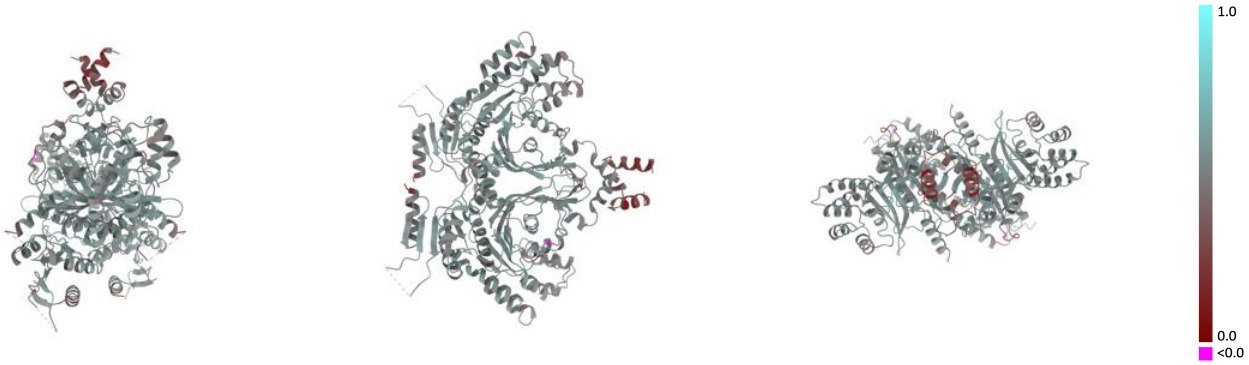
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.111 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.

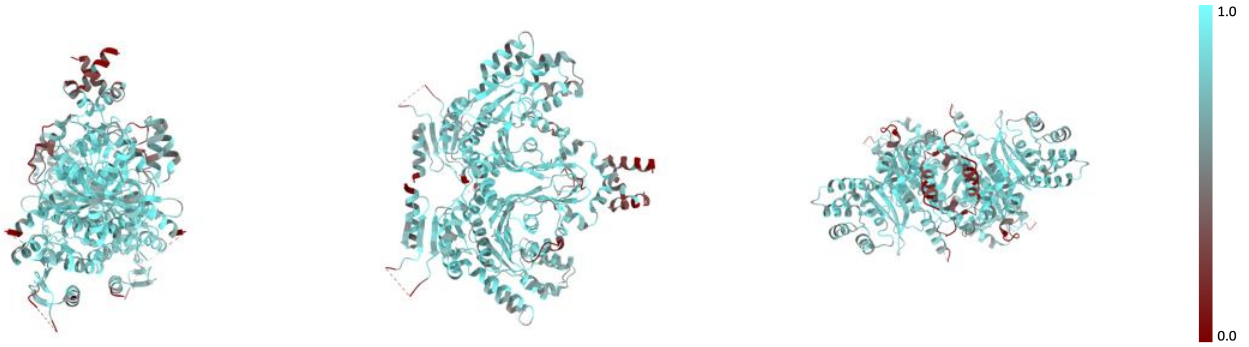
9.2 Q-score mapped to coordinate model (i)



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.

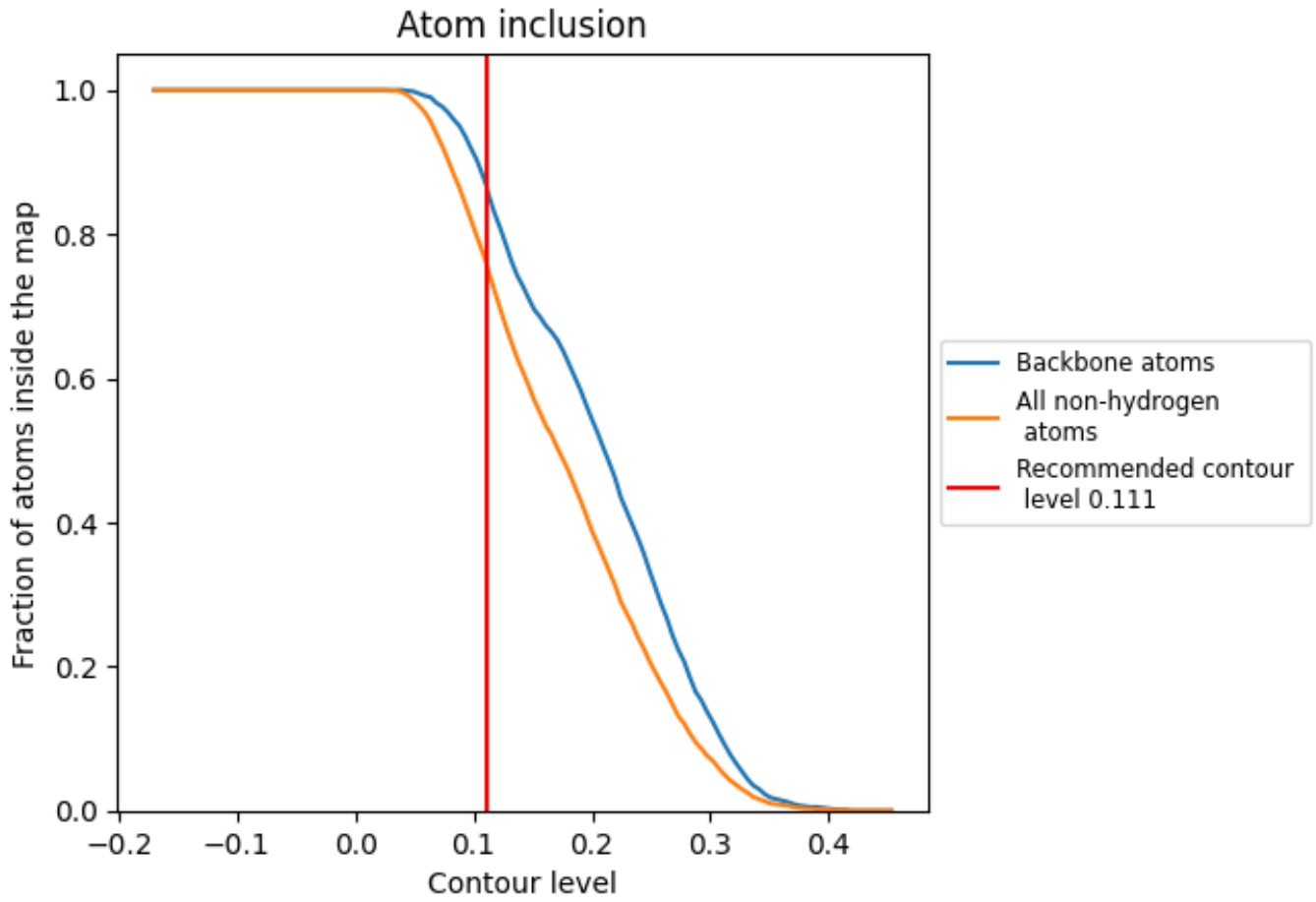
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.111).

9.4 Atom inclusion (i)



At the recommended contour level, 87% of all backbone atoms, 76% 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 (0.111) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7590	0.5170
A	0.7590	0.5170
B	0.7590	0.5160