



wwPDB EM Validation Summary Report ⓘ

Jul 14, 2025 – 02:30 PM JST

PDB ID : 9KNZ / pdb_00009knz
EMDB ID : EMD-62467
Title : ERDRP-0519-bound Nipah virus L-P complex
Authors : Wang, Y.R.; Zhang, H.Q.
Deposited on : 2024-11-19
Resolution : 3.00 Å(reported)

This is a wwPDB EM Validation Summary 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
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
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) : 2.44

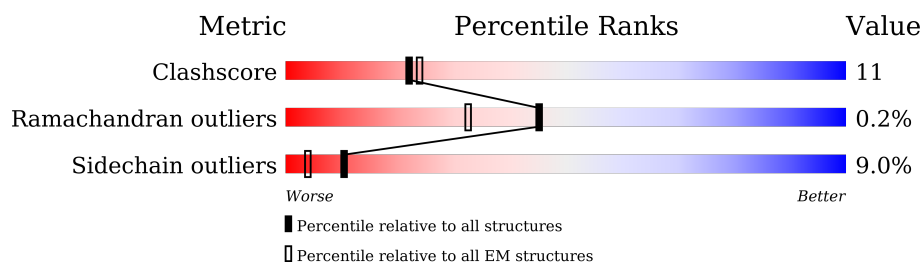
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.00 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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	2244	
2	B	709	
2	C	709	
2	D	709	
2	E	709	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 12436 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.

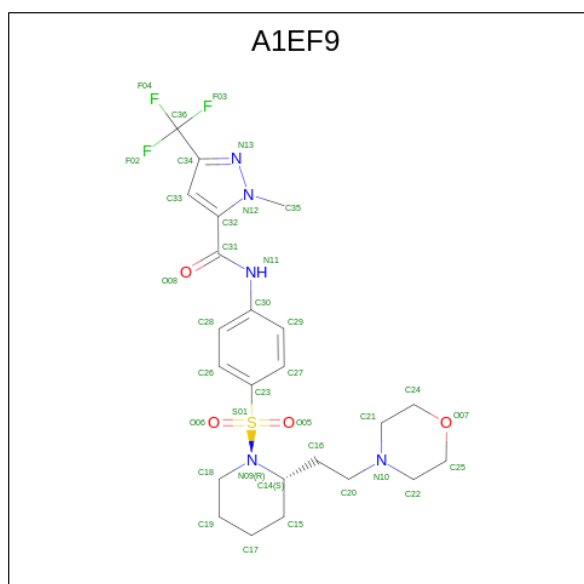
- Molecule 1 is a protein called RNA-directed RNA polymerase L.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1272	Total	C	N	O	S	0	0
			10233	6514	1754	1899	66		

- Molecule 2 is a protein called Phosphoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	51	Total	C	N	O	S	0	0
			400	252	70	77	1		
2	C	53	Total	C	N	O	S	0	0
			418	264	74	79	1		
2	D	117	Total	C	N	O	S	0	0
			922	573	161	183	5		
2	E	54	Total	C	N	O	S	0	0
			425	269	75	80	1		

- Molecule 3 is 2-methyl- {N}-[4-[(2 {S})-2-(2-morpholin-4-ylethyl)piperidin-1-yl]sulfonylphenyl]-5-(trifluoromethyl)pyrazole-3-carboxamide (CCD ID: A1EF9) (formula: C₂₃H₃₀F₃N₅O₄S).



Mol	Chain	Residues	Atoms						AltConf
3	A	1	Total	C	F	N	O	S	0
			36	23	3	5	4	1	

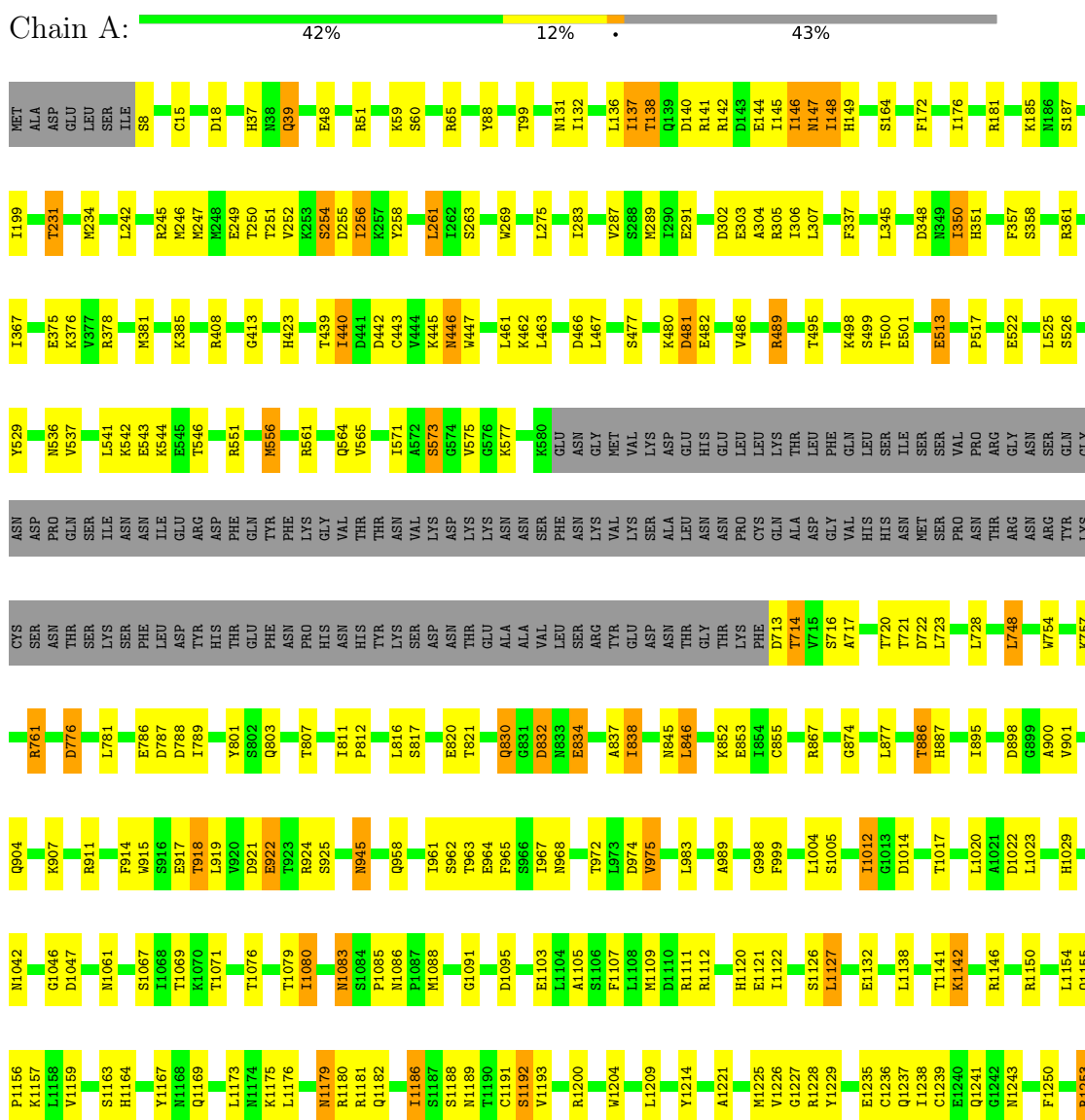
- Molecule 4 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
4	A	2	Total	Zn	0
			2	2	

3 Residue-property plots

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

• Molecule 1: RNA-directed RNA polymerase L





HIS	PHE	I543	SER	PRO	GLN	ASN	ASP	LEU	GLY	MET
ILE	ASN	P544	ASP	GLY	PRO	LYS	GLU	SER	GLY	GLY
ASP	VAL	K545	ASP	SER	PRO	SER	ASP	THR	CYS	MET
ARG	LYS	I546	PHE	LYS	TYR	THR	GLU	THR	THR	SER
GLU	ASN	I547	SER	GLY	TRP	VAL	ALA	GLY	GLY	LYS
LEU	ASN	H548	ASN	GLY	TRP	VAL	ASP	LEU	TYR	ASP
ARG	PHE	K949	THR	ALA	SER	PRO	GLN	ASN	GLY	VAL
ARG	ARG	L550	PHE	THR	ILE	GLY	LEU	PRO	PHE	ASP
SER	ASP	E551	PHE	ARG	GLU	ALA	PHE	THR	THR	ASP
GLY	GLY	S552	PRO	HIS	ARG	GLY	GLU	ALA	SER	VAL
LEU	SER	I553	HIS	VAL	SER	PRO	GLU	VAL	SER	GLY
ILE	LEU		ASP	ARG	ILE	LYS	ASP	PRO	PRO	ASN
GLY	THR	V556	THR	GLY	ILE	GLY	GLU	PHE	GLU	ARG
TYR	ASN	L557	ASP	SER	PRO	SER	PHE	THR	ARG	ILE
LEU	GLU	A558	ARG	PRO	ASP	ALA	ALA	GLY	GLY	ASP
ASN	PRO	K559	LEU	PRO	LYS	VAL	GLY	ARG	TRP	PHE
LYS	TYR		ASN	TYR	THR	LYS	SER	ASN	ILE	GLN
ALA	GLY	E568	TYR	GLN	GLU	GLY	SER	LEU	ASP	LEU
GLU	ALA	G569	HIS	GLU	ILE	GLU	SER	SER	TYR	SER
ASN	ALA	H570	ALA	GLY	VAL	PRO	GLU	ASP	THR	ASN
ASP	GLN	L571	ASP	LYS	ASN	PRO	VAL	PRO	SER	THR
GLU	VAL	V572	HIS	SER	GLY	GLN	ILE	ALA	GLY	LYS
LEU	LEU	SER	LEU	VAL	ALA	LYS	VAL	LYS	ALA	GLU
ILE	ARG	MET	GLY	ASN	VAL	ARG	GLY	ASP	THR	ILE
GLN	GLU	MET	ASP	GLN	GLN	LEU	GLU	HIS	VAL	ASN
GLU	ASP	ILE	TYR	GLU	THR	PRO	GLU	SER	GLY	GLY
ILE	LEU	ILE	ASP	ASN	ALA	MET	PRO	VAL	ASP	THR
ALA	ILE	ILE	LEU	VAL	ASP	LEU	ASP	ILE	VAL	GLY
ASN	LEU	PRO	GLU	GLN	ARG	ALA	ASP	ALA	CYS	GLY
THR	PRO	GLY	THR	LEU	GLN	GLU	GLU	GLU	LEU	LYS
VAL	GLU	LYS	LEU	ASN	ARG	GLU	GLU	HIS	VAL	ARG
ASN	LEU	GLY	CYS	PRO	PRO	PHE	PRO	TYR	VAL	SER
ASP	ASN	LYS	GLU	SER	GLY	GLU	SER	GLY	ASP	ILE
ILE	PHE	GLY	GLU	THR	THR	CYS	SER	GLY	ALA	ASN
ILE	GLU	GLJ	SER	ALA	PRO	SER	VAL	LEU	LYS	GLN
ASP	GLJ	ARG	VAL	VAL	MET	GLY	GLY	GLY	MET	PRO
GLY	THR	LYS	LEU	LYS	PRO	SER	GLY	VAL	LEU	ASP
ASN	ASN	GLY	MET	GLU	LYS	GLU	LYS	TRP	ASP	TRP
ILE	ALA	LYS	G519	THR	SER	ASP	PRO	GLY	ALA	LYS
			V520	GLU	GLY	ASN	GLN	GLU	GLY	GLN
				LYS	ILE	ILE	GLU	VAL	PRO	THR
				SER	ILE	ILE	SER	GLY	ILE	LYS
				VAL	PRO	ARG	ILE	ILE	ARG	ASP
				VAL	GLU	GLU	ILE	GLY	ILE	ASP
				ASN	LYS	GLY	GLU	SER	VAL	GLY
				PRO	GLY	ILE	GLU	ASN	PRO	GLY
				GLU	THR	GLN	ASP	VAL	GLU	LEU
				LEU	VAL	ALA	GLY	ARG	ASP	PHE
				LEU	GLN	GLN	ASP	ASN	GLU	THR
				GLU	ARG	ALA	GLY	ASN	ARG	GLY
				GLY	ILE	GLU	GLY	ASN	VAL	GLY
				VAL	THR	LYS	GLY	GLY	GLY	GLY
				GLU	GLY	GLY	GLY	GLY	GLY	GLY
				GLY	GLY	GLY	GLY	GLY	GLY	GLY
				GLY	GLY	GLY	GLY	GLY	GLY	GLY
				GLY	GLY	GLY	GLY	GLY	GLY	GLY
				GLY	GLY	GLY	GLY			

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	162836	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.622	Depositor
Minimum map value	-0.315	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.016	Depositor
Recommended contour level	0.0419	Depositor
Map size (Å)	270.004, 270.004, 270.004	wwPDB
Map dimensions	280, 280, 280	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.9643, 0.9643, 0.9643	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, A1EF9

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.18	1/10442 (0.0%)	0.42	2/14115 (0.0%)
2	B	0.19	0/401	0.66	1/539 (0.2%)
2	C	0.18	0/420	0.47	0/565
2	D	0.19	0/926	0.51	0/1245
2	E	0.22	0/427	0.61	0/575
All	All	0.18	1/12616 (0.0%)	0.45	3/17039 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
2	B	0	1
All	All	0	2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1175	LYS	C-O	-5.28	1.17	1.24

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	A	1179	ASN	CB-CA-C	-5.74	97.91	109.68
1	A	486	VAL	N-CA-C	-5.25	107.64	112.83
2	B	520	VAL	N-CA-C	-5.15	106.43	111.88

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	147	ASN	Peptide
2	B	536	ILE	Peptide

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	10233	0	10273	192	0
2	B	400	0	433	24	0
2	C	418	0	451	20	0
2	D	922	0	959	40	0
2	E	425	0	460	26	0
3	A	36	0	0	0	0
4	A	2	0	0	0	0
All	All	12436	0	12576	282	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 11.

The worst 5 of 282 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:B:557:LEU:O	2:B:561:ASN:HB2	1.72	0.88
1:A:1042:ASN:HD22	1:A:1181:ARG:HB3	1.41	0.85
1:A:1176:LEU:HD23	1:A:1176:LEU:O	1.81	0.79
2:B:532:ARG:HG3	2:C:533:LEU:HB2	1.66	0.77
1:A:463:LEU:HD13	1:A:517:PRO:HB2	1.69	0.73

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1264/2244 (56%)	1181 (93%)	81 (6%)	2 (0%)	44	77
2	B	49/709 (7%)	43 (88%)	6 (12%)	0	100	100
2	C	51/709 (7%)	43 (84%)	8 (16%)	0	100	100
2	D	113/709 (16%)	108 (96%)	4 (4%)	1 (1%)	14	49
2	E	52/709 (7%)	47 (90%)	5 (10%)	0	100	100
All	All	1529/5080 (30%)	1422 (93%)	104 (7%)	3 (0%)	45	77

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	148	ILE
2	D	552	SER
1	A	922	GLU

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	1141/2046 (56%)	1048 (92%)	93 (8%)	9	34
2	B	47/625 (8%)	40 (85%)	7 (15%)	2	12
2	C	49/625 (8%)	41 (84%)	8 (16%)	2	9
2	D	107/625 (17%)	95 (89%)	12 (11%)	5	21
2	E	50/625 (8%)	45 (90%)	5 (10%)	6	25

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
All	All	1394/4546 (31%)	1269 (91%)	125 (9%)	10	30

5 of 125 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	917	GLU
2	D	550	LEU
1	A	1132	GLU
2	D	545	LYS
2	D	695	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 29 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1038	GLN
2	E	528	ASN
1	A	1327	ASN
2	D	534	ASN
1	A	1169	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](#)

Of 3 ligands modelled in this entry, 2 are monoatomic - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The

Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
3	A1EF9	A	2301	-	38,39,39	4.05	19 (50%)	50,57,57	2.53	14 (28%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	A1EF9	A	2301	-	-	6/28/50/50	0/4/4/4

The worst 5 of 19 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	2301	A1EF9	C26-C23	9.00	1.53	1.38
3	A	2301	A1EF9	C20-N10	-8.93	1.26	1.47
3	A	2301	A1EF9	C27-C23	8.71	1.52	1.38
3	A	2301	A1EF9	C28-C30	8.12	1.53	1.39
3	A	2301	A1EF9	C29-C30	8.02	1.52	1.39

The worst 5 of 14 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	2301	A1EF9	O06-S01-O05	-10.85	101.94	119.52
3	A	2301	A1EF9	C36-C34-N13	6.64	127.52	119.72
3	A	2301	A1EF9	C18-N09-C14	-6.36	107.95	116.10
3	A	2301	A1EF9	C34-N13-N12	5.05	108.16	104.37
3	A	2301	A1EF9	O05-S01-C23	3.16	112.05	108.05

There are no chirality outliers.

5 of 6 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	2301	A1EF9	C14-C16-C20-N10
3	A	2301	A1EF9	C18-N09-S01-C23
3	A	2301	A1EF9	C18-N09-S01-O06
3	A	2301	A1EF9	N09-C14-C16-C20

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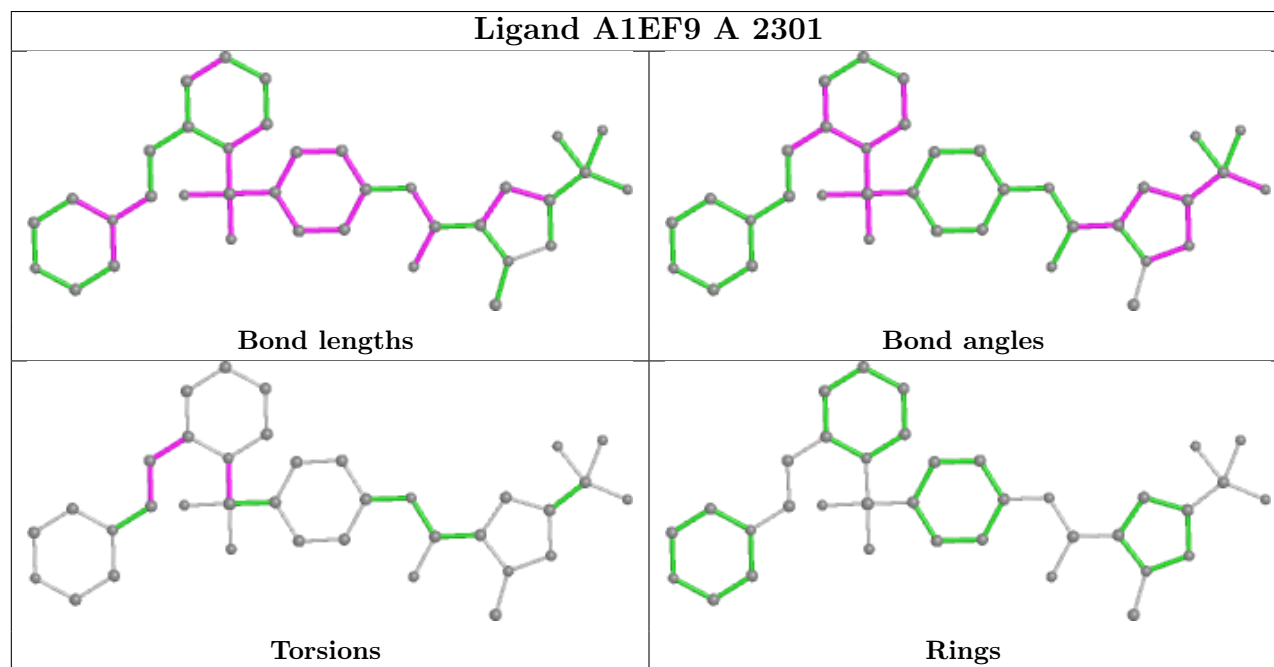
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Mol	Chain	Res	Type	Atoms
3	A	2301	A1EF9	C15-C14-C16-C20

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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.

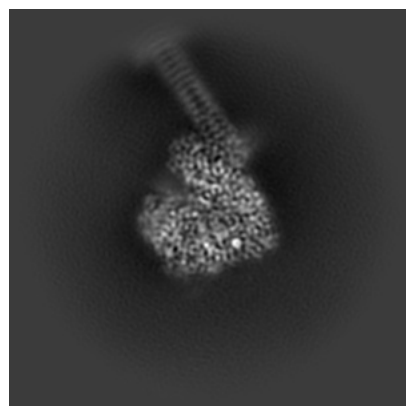
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-62467. These allow visual inspection of the internal detail of the map and identification of artifacts.

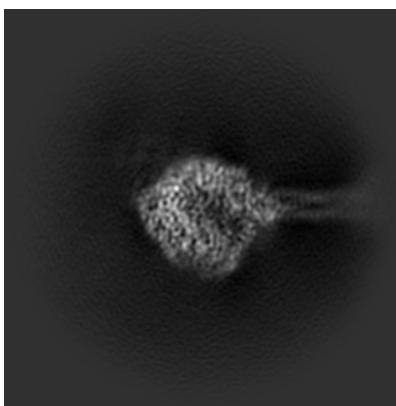
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

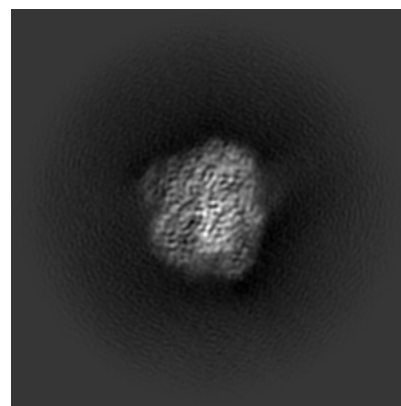
6.1.1 Primary map



X

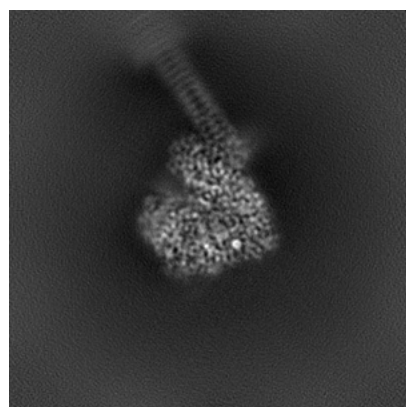


Y

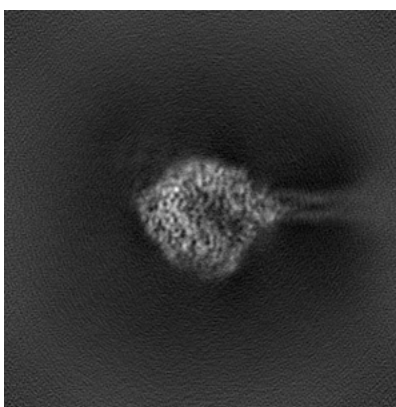


Z

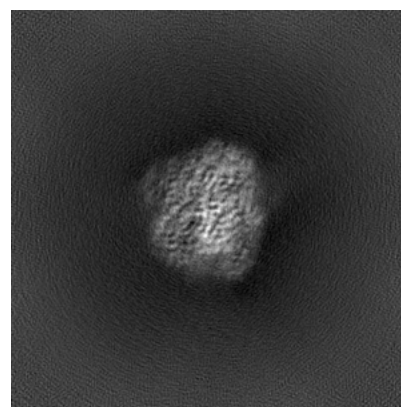
6.1.2 Raw map



X



Y

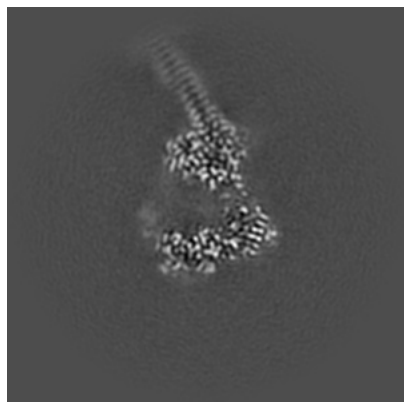


Z

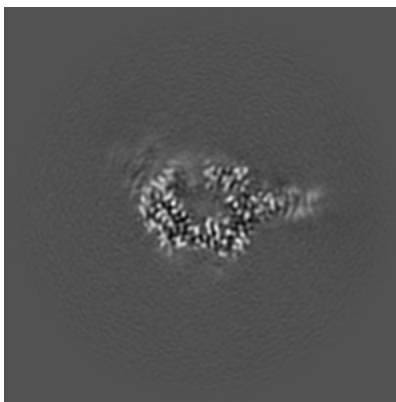
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

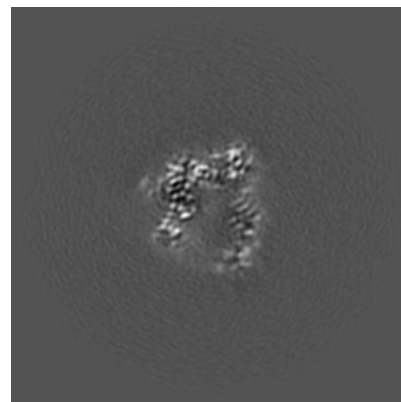
6.2.1 Primary map



X Index: 140

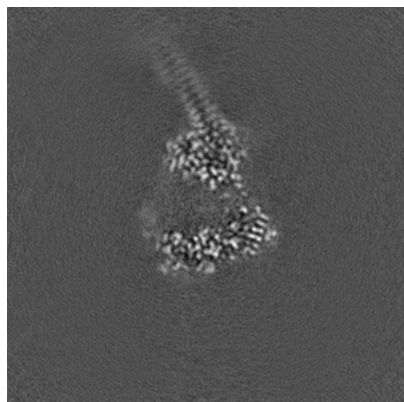


Y Index: 140

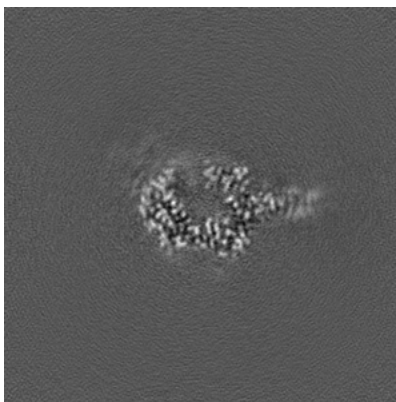


Z Index: 140

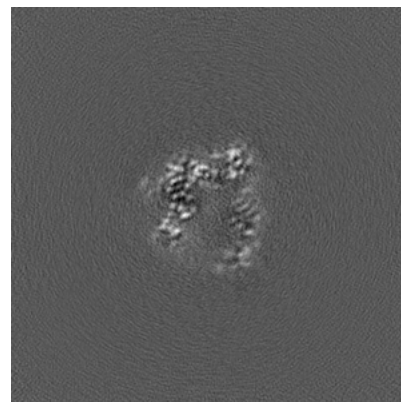
6.2.2 Raw map



X Index: 140



Y Index: 140

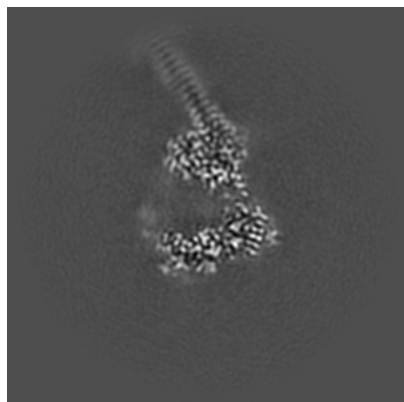


Z Index: 140

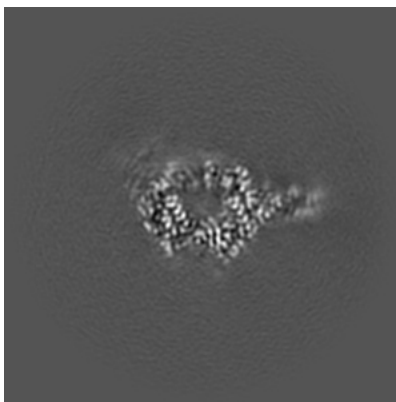
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

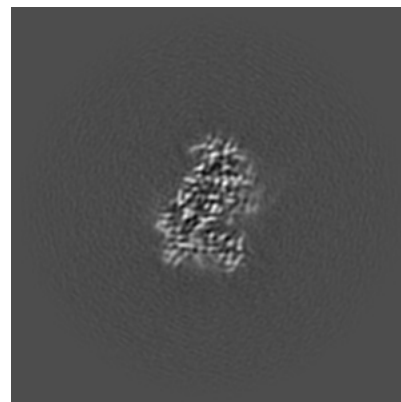
6.3.1 Primary map



X Index: 141

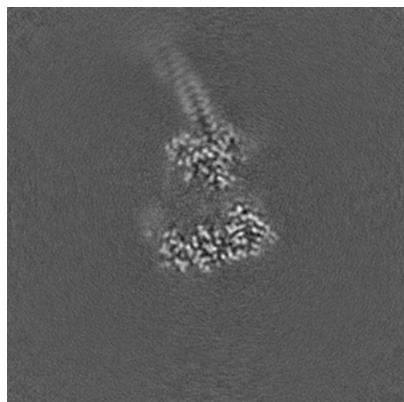


Y Index: 138

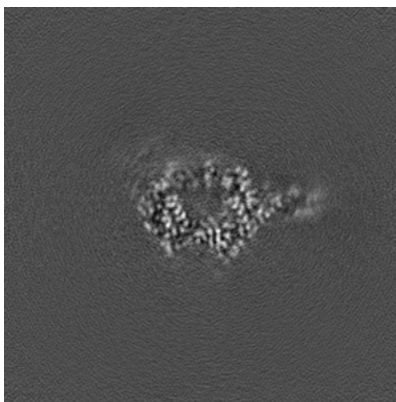


Z Index: 118

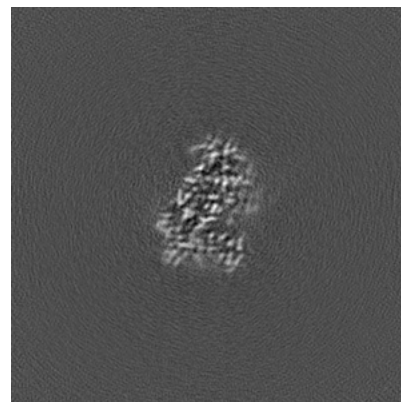
6.3.2 Raw map



X Index: 137



Y Index: 138

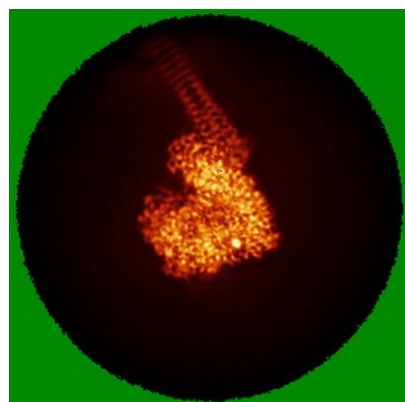


Z Index: 118

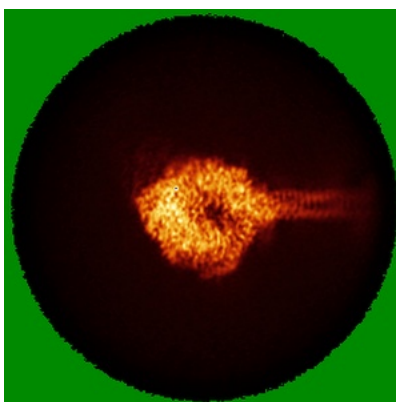
The images above show the largest variance slices of the map in three orthogonal directions.

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

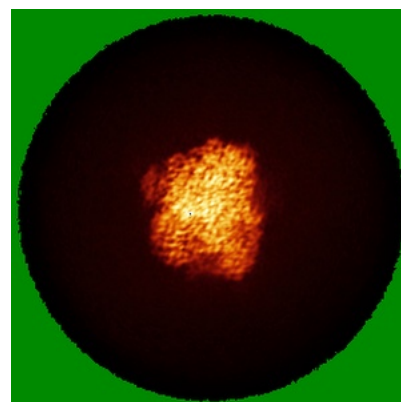
6.4.1 Primary map



X

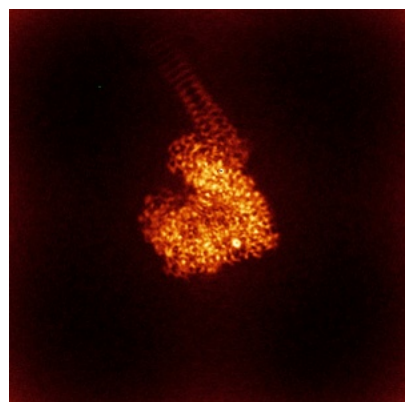


Y

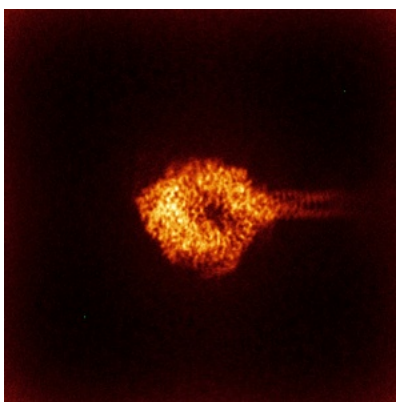


Z

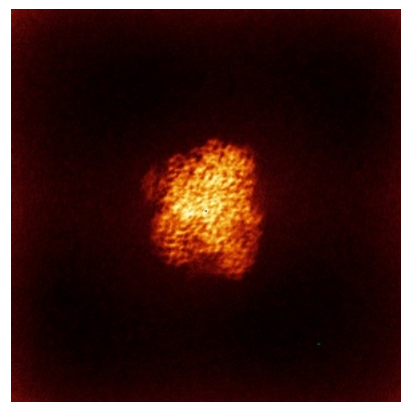
6.4.2 Raw map



X



Y

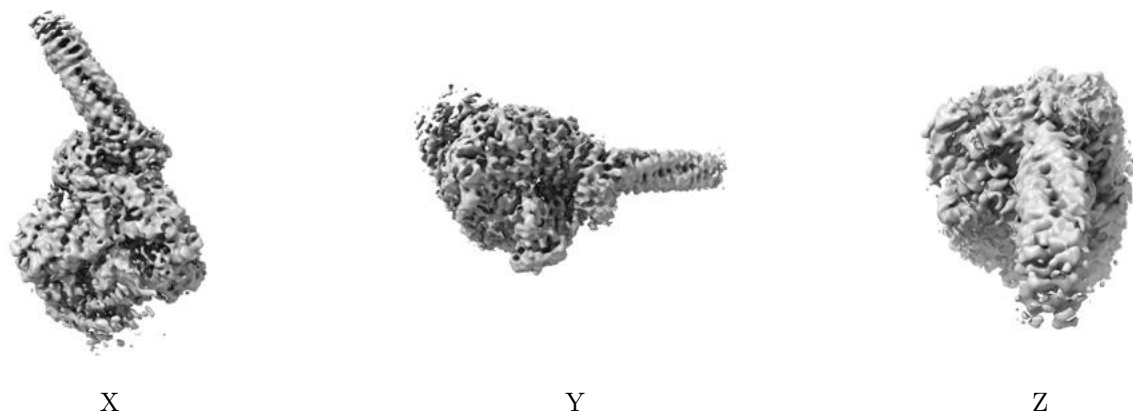


Z

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

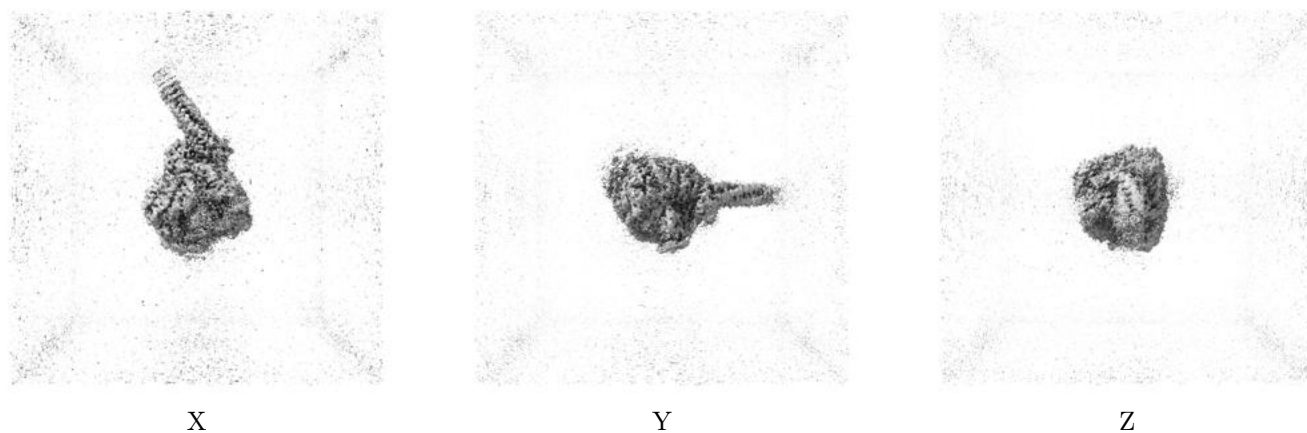
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0419. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

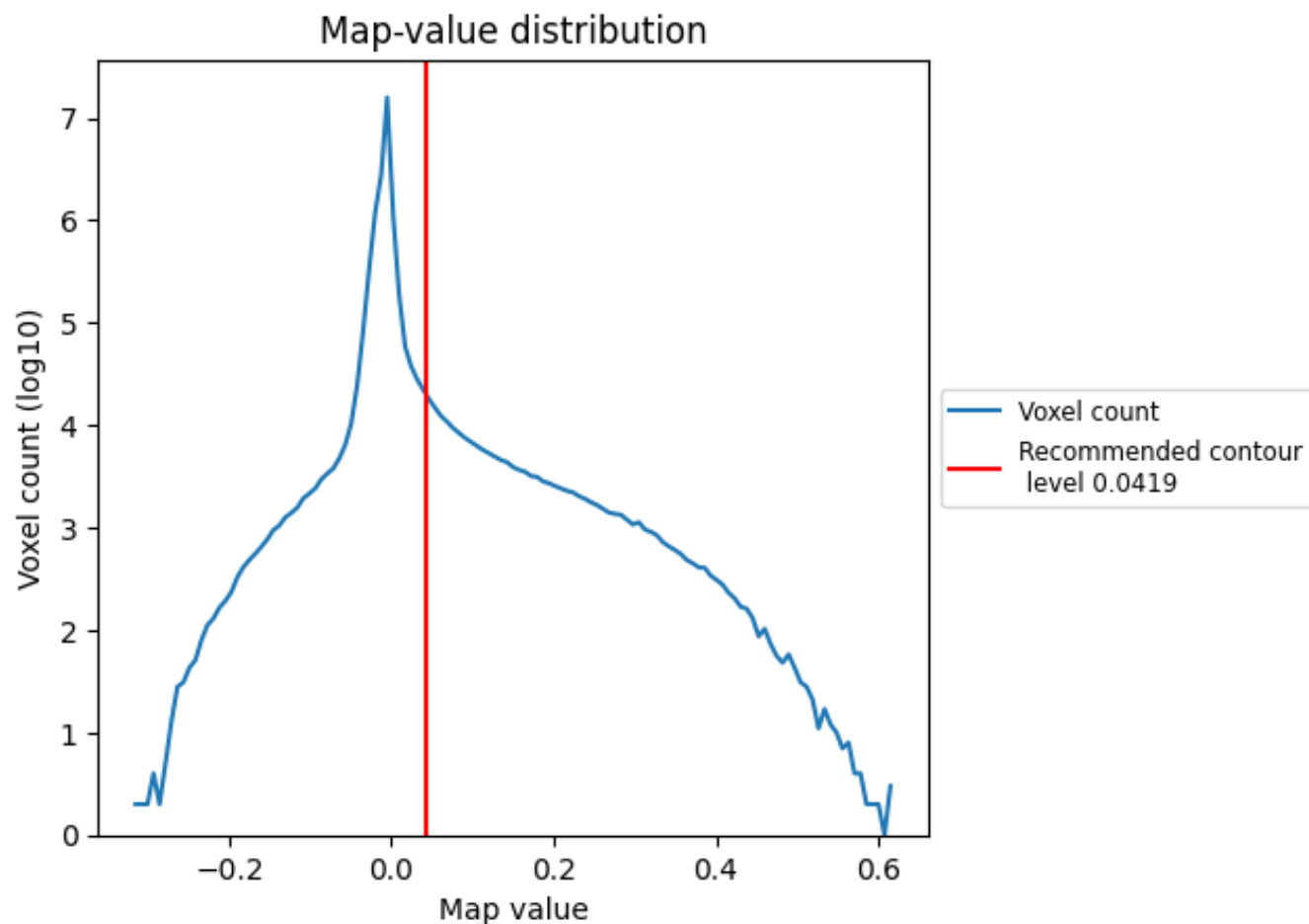
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

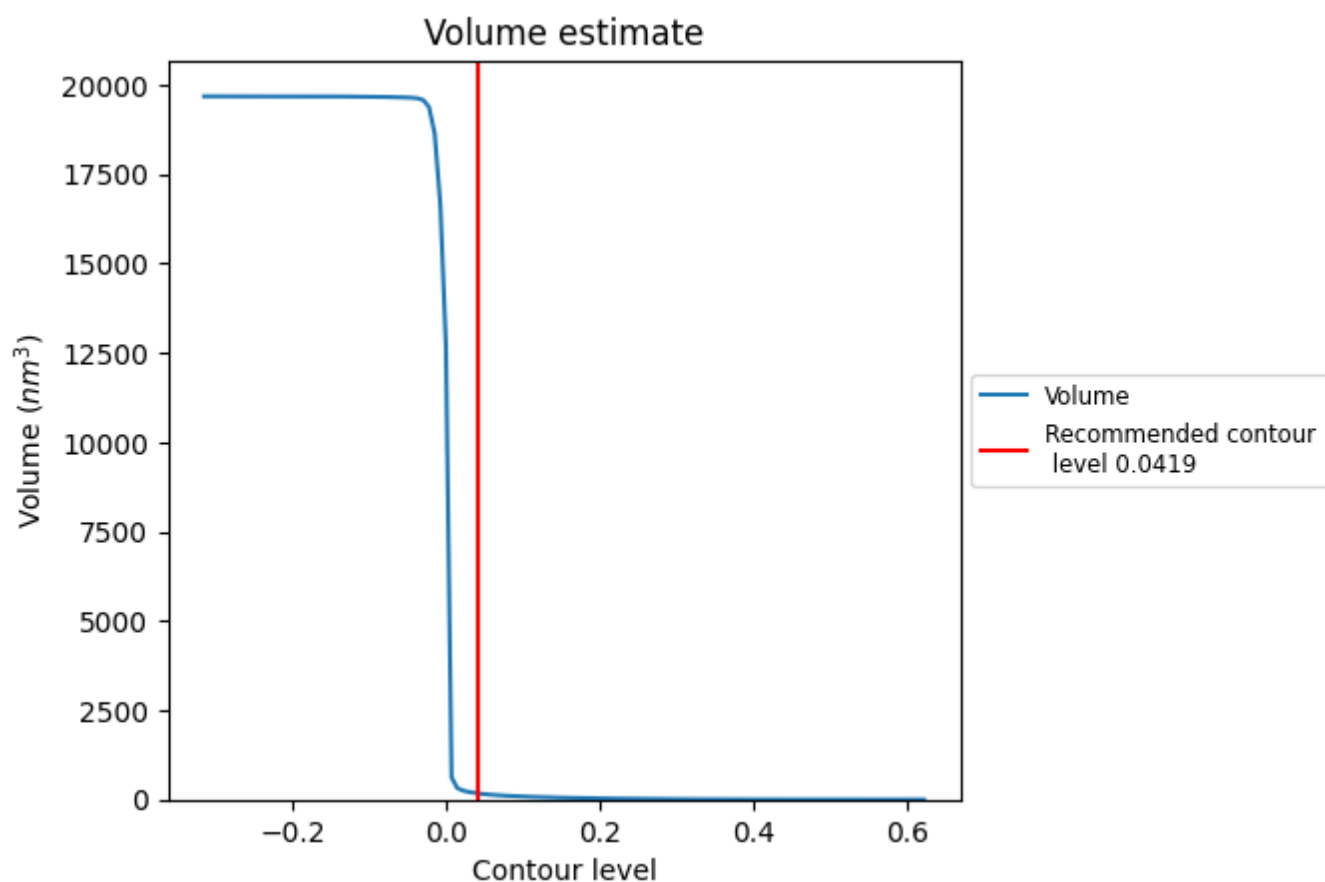
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

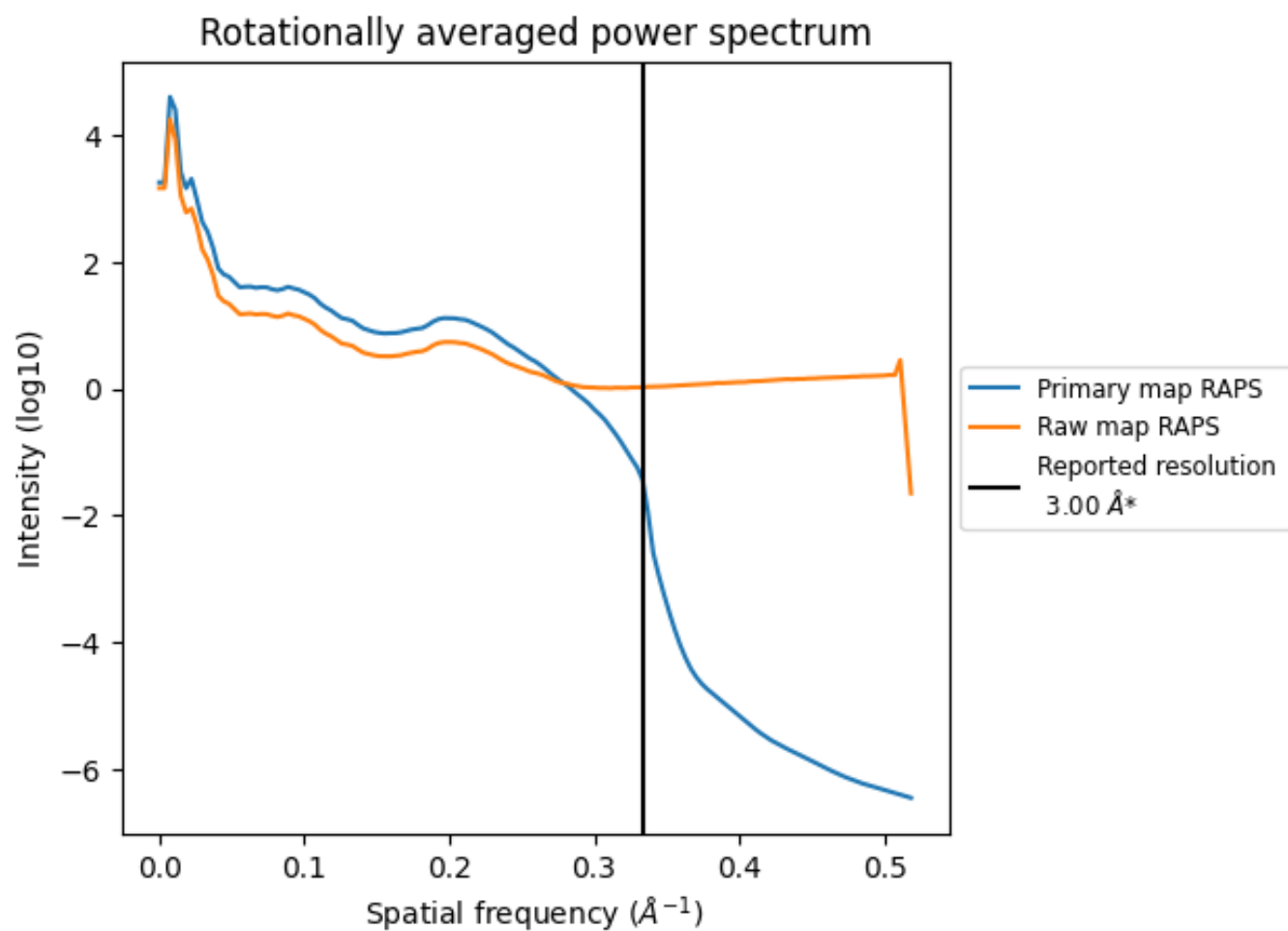
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 172 nm³; this corresponds to an approximate mass of 155 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

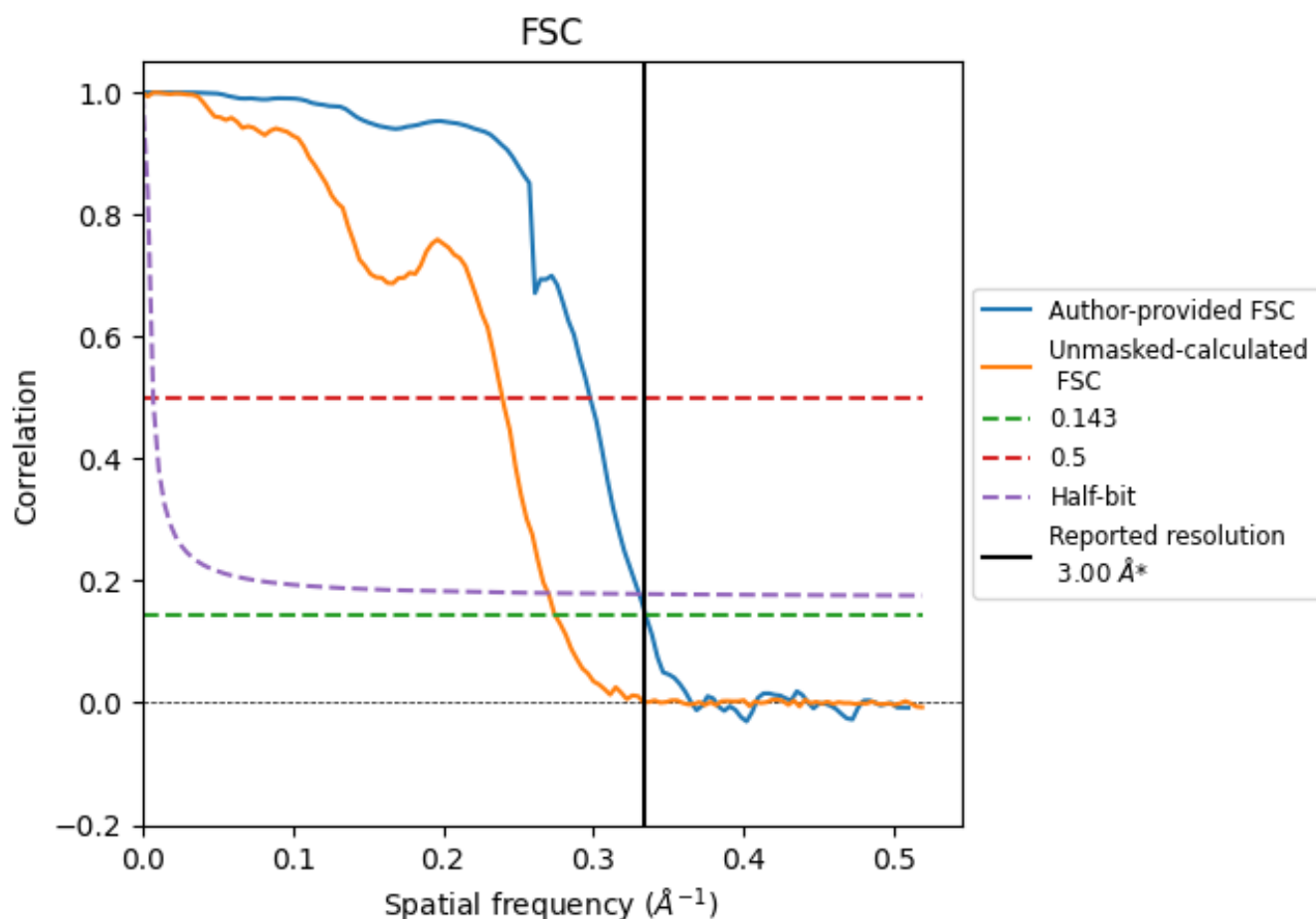


*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

8.2 Resolution estimates [i](#)

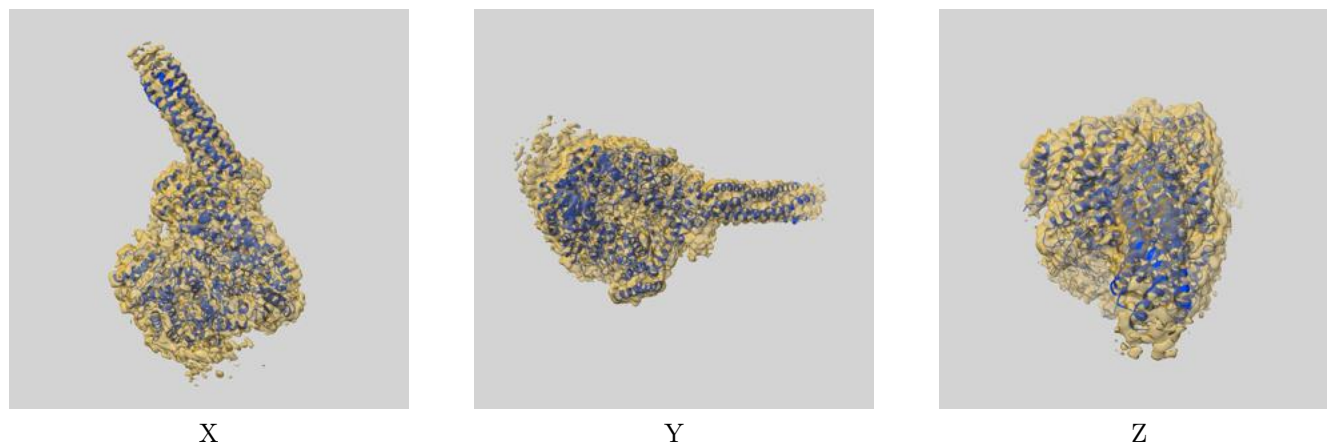
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.00	-	-
Author-provided FSC curve	2.99	3.36	3.03
Unmasked-calculated*	3.64	4.18	3.71

*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 3.64 differs from the reported value 3.0 by more than 10 %

9 Map-model fit [i](#)

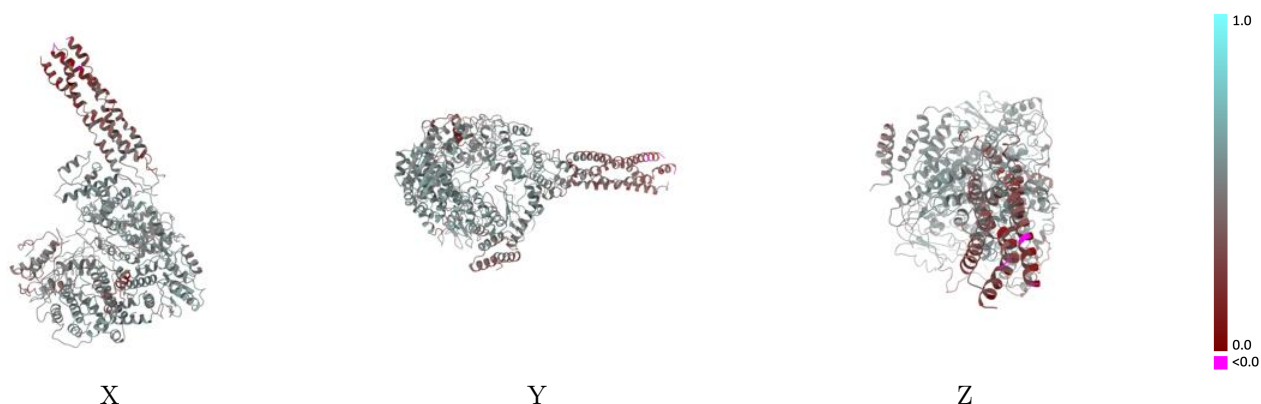
This section contains information regarding the fit between EMDB map EMD-62467 and PDB model 9KNZ. Per-residue inclusion information can be found in section [3](#) on page [5](#).

9.1 Map-model overlay [i](#)



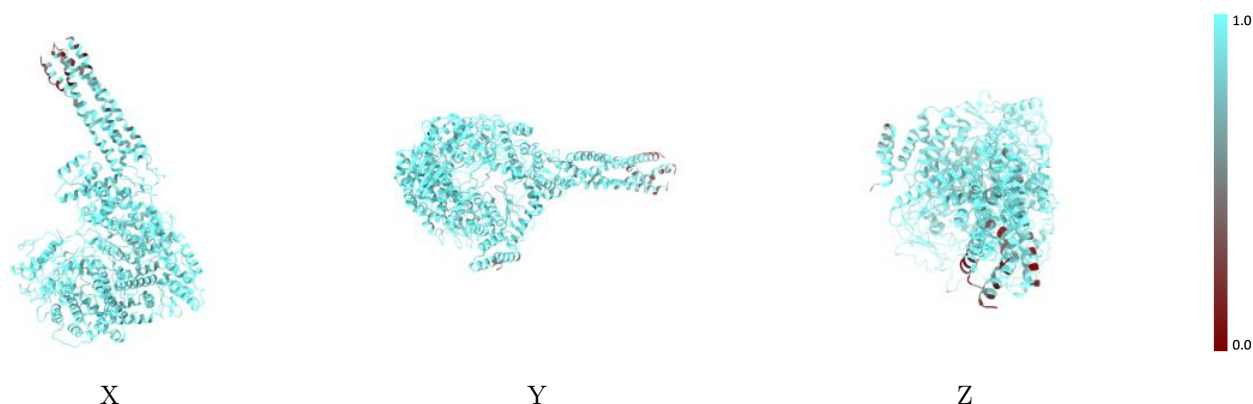
The images above show the 3D surface view of the map at the recommended contour level 0.0419 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



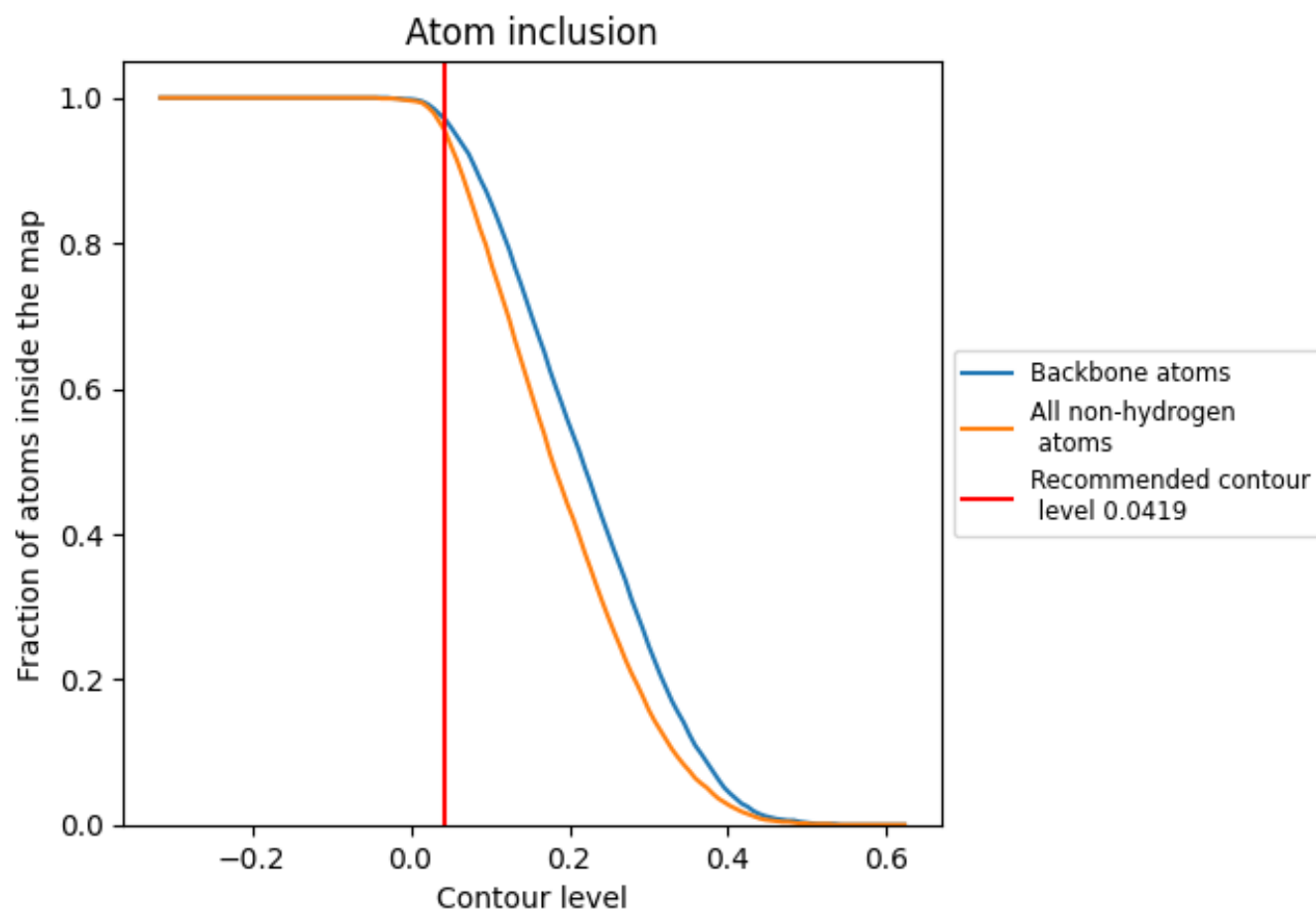
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0419).

9.4 Atom inclusion [i](#)



At the recommended contour level, 97% of all backbone atoms, 96% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0419) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div></div> 0.9570	<div></div> 0.4790
A	<div></div> 0.9810	<div></div> 0.5060
B	<div></div> 0.8030	<div></div> 0.3510
C	<div></div> 0.8600	<div></div> 0.3580
D	<div></div> 0.8810	<div></div> 0.3660
E	<div></div> 0.7910	<div></div> 0.3200

