



Full wwPDB EM Validation Report ⓘ

Nov 23, 2022 – 01:38 AM EST

PDB ID : 7N8X
EMDB ID : EMD-24248
Title : Partial C. difficile TcdB and CSPG4 fragment
Authors : Jiang, M.; Zhang, J.
Deposited on : 2021-06-16
Resolution : 3.40 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.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

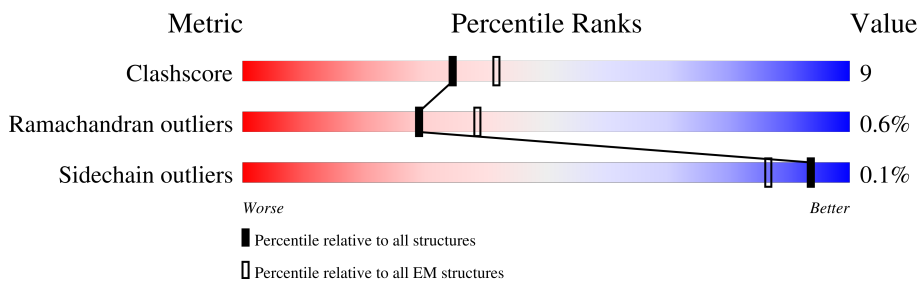
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.40 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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	B	140	
2	A	1503	

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 6617 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 Chondroitin sulfate proteoglycan 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	B	140	1093	696	192	200	5	0	0

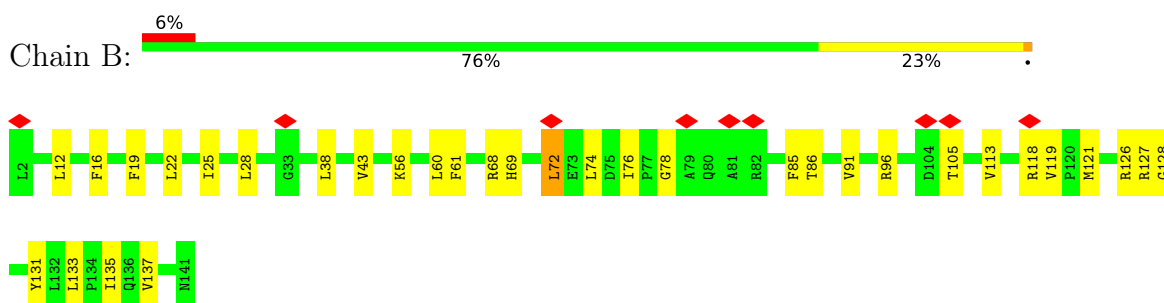
- Molecule 2 is a protein called Toxin B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	691	5524	3506	881	1119	18	0	0

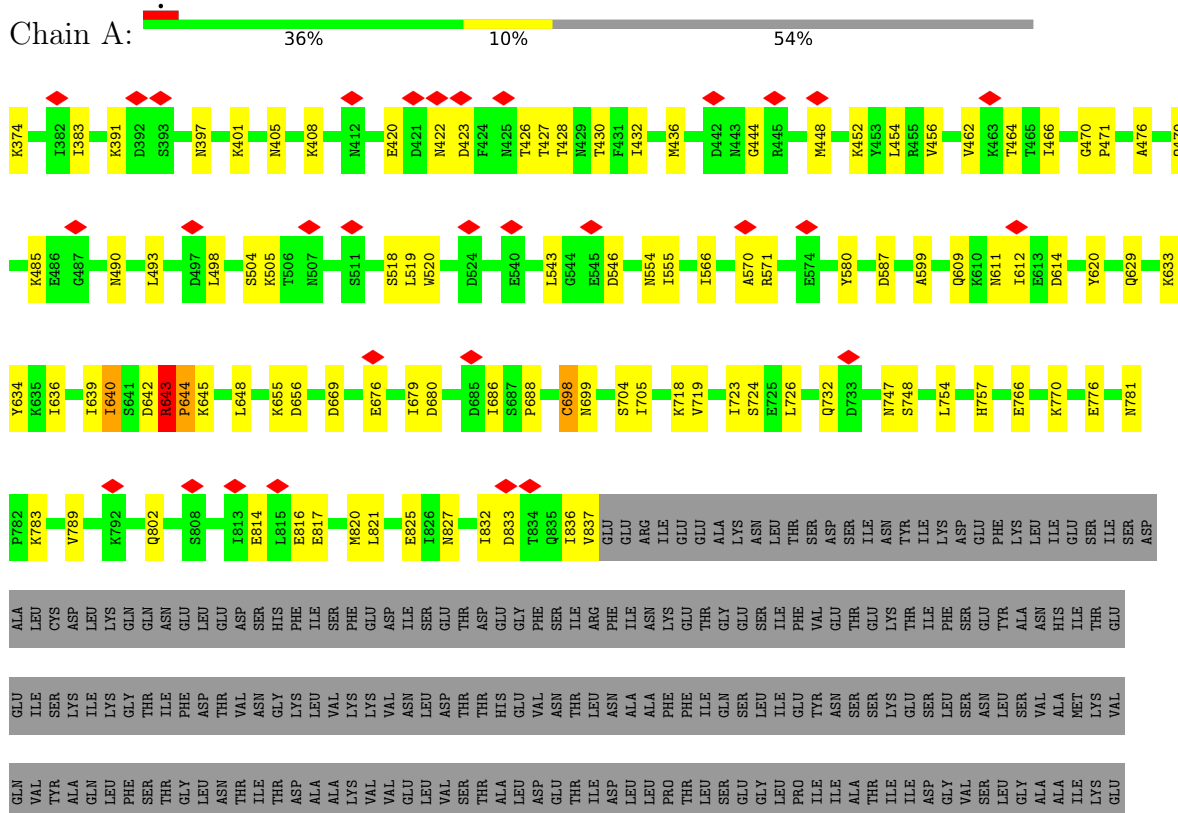
3 Residue-property plots

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: Chondroitin sulfate proteoglycan 4



- Molecule 2: Toxin B



E1757	Tyr	Val	Met	Thr	Gly	Glu	Ile	Val	Asp	Val	Arg	Arg	Arg	Glu	Asn	Asn	Leu
V1763	Glu	Val	Asn	Gly	Tyr	Lys	Ile	Val	Asn	Val	Val	Val	Val	Trp	Asn	Asn	Ser
K1764	Lys	Val	Ile	Tyr	Tyr	Glu	Gly	Val	Asn	Val	Phe	Val	Val	Trp	Glu	Glu	Thr
F1767	Lys	Val	Ile	Lys	Lys	Gly	Phe	Ala	Asn	Arg	Ser	Thr	Thr	Glu	Arg	Pro	Leu
D1773	Val	Val	Phe	Asp	Asp	Ile	Ile	Asn	Asp	Asn	Thr	Thr	Thr	Gly	Arg	Pro	Leu
K1779	Val	Val	Asn	Ile	Ile	Glu	Glu	Val	Thr	Arg	Thr	Thr	Thr	Ser	Ala	Arg	Leu
F1782	Gln	Leu	Ser	Ser	Ser	Leu	Lys	Leu	Leu	Leu	Arg	Arg	Val	Val	Val	Ile	Glu
Q1788	Asn	Glu	Asn	Ser	Ser	Glu	Lys	Leu	Leu	Lys	Pro	Arg	Thr	Asp	Ala	Ala	Leu
D1789	Ile	Gly	Ile	Thr	Thr	Gly	Lys	Lys	Lys	Lys	Ile	Ser	Thr	Thr	Tyr	Tyr	Leu
V1790	Phe	Leu	Phe	Leu	Leu	Phe	Lys	Val	Ser	Val	Glu	Glu	His	Thr	Ala	Ala	Arg
E1794	Ile	Leu	Ile	Gln	Val	Val	Lys	Val	Asp	Val	Gly	Thr	Thr	Lys	Lys	Lys	Glu
I1795	Asp	Glu	Asp	Glu	Asp	Ser	Leu	Leu	Ser	Leu	Gly	Thr	Thr	Met	Ile	Ile	Leu
F1799	Ala	Lys	Ala	Lys	Lys	Leu	Lys	Leu	Leu	Leu	Phe	Thr	Thr	Ser	Ser	Ala	Leu
T1800	Phe	Asn	Phe	Thr	Thr	Leu	Ile	Leu	Ser	Leu	Val	Val	Val	Val	Val	Val	Val
P1801	Ile	Leu	Ile	Ile	Asp	Val	Lys	Val	Gly	Glu	Leu	Leu	Leu	Ala	Val	Val	Val
S1802	Ile	Leu	Ile	Lys	Leu	Val	Lys	Val	Leu	Leu	Leu	Leu	Leu	Pro	Glu	Leu	Leu
Y1804	Ser	Gly	Ser	Ser	Val	Val	Lys	Val	Thr	Thr	Thr	Thr	Thr	Thr	Val	Val	Val
E1805	Thr	Thr	Thr	His	His	Lys	Met	Ile	Ser	Ser	Phe	Arg	Arg	Thr	Thr	Thr	Thr
D1806	Ser	Leu	Ser	Leu	Leu	Val	Leu	Val	Leu	Leu	Leu	Leu	Leu	Glu	Ala	Ala	Ala
G1807	Ile	Leu	Ile	Asp	Asp	Tyr	Met	Ile	Leu	Leu	Gly	Gly	Gly	Pro	Leu	Ile	Ile
L1808	Glu	Ser	Glu	Glu	Met	Met	Asn	Glu	Asn	Asn	Ser	Ser	Ser	Leu	Leu	Leu	Leu
G1814	Phe	Gly	Phe	Gly	Gly	Val	Lys	Val	Asp	Asp	Gly	Gly	Gly	Leu	Leu	Leu	Leu
L1815	Phe	Val	Phe	Ala	Ala	Lys	Ile	Ile	Ile	Ile	Thr	Thr	Thr	Ile	Ile	Ile	Ile
V1816	Ile	Leu	Ile	Leu	Leu	Pro	Gln	Gln	Leu	Leu	Ala	Trp	Arg	Val	Val	Ile	Ile
Y1819	Cys	Ile	Cys	Ile	Ile	Ser	Gln	Gln	Leu	Leu	Trp	Arg	Arg	Val	Val	Ile	Ile
N1820	Asp	Leu	Asp	Leu	Leu	Phe	Lys	Lys	Leu	Leu	Phe	Thr	Thr	Leu	Leu	Leu	Leu
E1821	Lys	Gly	Lys	Lys	Lys	Met	Lys	Lys	Leu	Leu	Met	Arg	Arg	Val	Val	Val	Val
Y1824	Asn	Asn	Asn	Asn	Asn	Asn	Ile	Ile	Leu	Leu	Asn	Asn	Asn	Leu	Leu	Leu	Leu
I1825	Ile	Ile	Ile	Ile	Ile	Ile	Lys	Lys	Leu	Leu	Arg	Arg	Arg	Val	Val	Val	Val
K1846	Gln	Pro	Gln	Lys	Lys	Gly	Gln	Gln	Leu	Leu	Lys	Lys	Lys	Glu	Glu	Glu	Glu
M1851	Tyr	Tyr	Tyr	Tyr	Tyr	Thr	Phe	Phe	Leu	Leu	Val	Val	Val	Leu	Leu	Leu	Leu
L1852	Ile	Ile	Ile	Ile	Ile	Thr	Asn	Asn	Leu	Leu	Val	Val	Val	Leu	Leu	Leu	Leu
I1853	Lys	Lys	Lys	Lys	Lys	Thr	Lys	Lys	Leu	Leu	Val	Val	Val	Leu	Leu	Leu	Leu
G1872	Phe	Val	Phe	Val	Val	Thr	Lys	Lys	Ser	Ser	Thr	Thr	Thr	Lys	Lys	Lys	Lys
I1876	Asn	Asn	Asn	Asn	Asn	Thr	Ile	Ile	Leu	Leu	Lys	Lys	Lys	Leu	Leu	Leu	Leu
Y1740	Thr	Thr	Thr	Thr	Thr	Leu	Lys	Lys	Leu	Leu	Pro	Pro	Pro	Pro	Pro	Pro	Pro
V1741	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Val	Val	Val	Val	Val	Val	Val
W1742	Glu	Glu	Glu	Glu	Glu	Met	Met	Met	Met	Met	Asp	Asp	Asp	Asp	Asp	Asp	Asp
D1748	Thr	Thr	Thr	Thr	Thr	Phe	Phe	Phe	Phe	Phe	Ser	Ser	Ser	Ser	Ser	Ser	Ser
L1751	Asn	Asn	Asn	Asn	Asn	Thr	Thr	Thr	Thr	Thr	Val	Val	Val	Val	Val	Val	Val
M1752	Thr	Thr	Thr	Thr	Thr	Leu	Leu	Leu	Leu	Leu	Val	Val	Val	Val	Val	Val	Val
S1753	Leu	Leu	Leu	Leu	Leu	Glu	Glu	Glu	Glu	Glu	Ile	Ile	Ile	Ile	Ile	Ile	Ile
E1756	Leu	Leu	Leu	Leu	Leu	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	470301	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	37.407	Depositor
Minimum map value	-14.997	Depositor
Average map value	0.023	Depositor
Map value standard deviation	0.773	Depositor
Recommended contour level	3.0	Depositor
Map size (Å)	203.4, 203.4, 203.4	wwPDB
Map dimensions	180, 180, 180	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.13, 1.13, 1.13	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	B	0.27	0/1118	0.57	1/1527 (0.1%)
2	A	0.27	0/5623	0.50	1/7609 (0.0%)
All	All	0.27	0/6741	0.51	2/9136 (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
2	A	0	1

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	B	72	LEU	CA-CB-CG	6.38	129.98	115.30
2	A	640	ILE	CG1-CB-CG2	-5.38	99.57	111.40

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A	643	ARG	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	1093	0	1108	20	0
2	A	5524	0	5395	98	0
All	All	6617	0	6503	116	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 9.

All (116) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:698:CYS:SG	2:A:699:ASN:N	2.54	0.81
2:A:1739:ARG:O	2:A:1764:LYS:NZ	2.15	0.79
2:A:1714:TYR:HE2	2:A:1763:VAL:HG22	1.59	0.67
2:A:699:ASN:O	2:A:699:ASN:ND2	2.27	0.67
2:A:426:THR:O	2:A:430:THR:HG23	1.95	0.65
2:A:1691:VAL:HB	2:A:1717:VAL:HG12	1.80	0.64
2:A:686:ILE:HG22	2:A:688:PRO:HD3	1.79	0.63
2:A:570:ALA:C	2:A:571:ARG:HE	2.01	0.62
1:B:68:ARG:HG3	1:B:69:HIS:CD2	2.34	0.62
2:A:1725:ILE:HD12	2:A:1779:LYS:HD3	1.82	0.62
2:A:479:GLN:HB3	2:A:493:LEU:HD22	1.82	0.61
1:B:28:LEU:HB3	1:B:135:ILE:HG12	1.83	0.61
2:A:1753:SER:HB3	2:A:1763:VAL:HB	1.81	0.61
2:A:1814:GLY:N	2:A:1824:TYR:O	2.23	0.61
1:B:72:LEU:HD12	1:B:74:LEU:HD21	1.83	0.61
2:A:1742:TRP:HB2	2:A:1800:THR:HG23	1.82	0.60
2:A:555:ILE:O	2:A:609:GLN:NE2	2.35	0.60
2:A:383:ILE:HD11	2:A:498:LEU:HD13	1.85	0.59
2:A:724:SER:HB2	2:A:732:GLN:HG3	1.85	0.59
1:B:60:LEU:HD23	1:B:86:THR:HG22	1.86	0.58
2:A:1741:VAL:HG12	2:A:1803:TYR:HD1	1.69	0.58
2:A:643:ARG:O	2:A:645:LYS:N	2.36	0.58
2:A:420:GLU:HG3	2:A:422:ASN:H	1.69	0.57
2:A:679:ILE:HG13	2:A:723:ILE:HD12	1.87	0.57
2:A:1731:VAL:HB	2:A:1782:PHE:HA	1.88	0.56
2:A:420:GLU:OE2	2:A:422:ASN:ND2	2.30	0.56
2:A:832:ILE:O	2:A:836:ILE:HB	2.07	0.55
2:A:462:VAL:O	2:A:464:THR:N	2.40	0.55
2:A:640:ILE:O	2:A:640:ILE:HG22	2.07	0.55
2:A:1763:VAL:HG12	2:A:1764:LYS:HG3	1.89	0.55
2:A:1795:ILE:HA	2:A:1799:PHE:HB3	1.90	0.54
2:A:639:ILE:HG23	2:A:640:ILE:HG13	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:655:LYS:HD3	2:A:656:ASP:H	1.73	0.54
2:A:669:ASP:OD1	2:A:718:LYS:NZ	2.36	0.54
2:A:642:ASP:O	2:A:644:PRO:HD2	2.08	0.54
2:A:781:ASN:OD1	2:A:783:LYS:HG2	2.08	0.53
2:A:1672:THR:HB	2:A:1700:ASP:H	1.73	0.53
2:A:423:ASP:OD1	2:A:426:THR:OG1	2.24	0.53
2:A:655:LYS:HA	2:A:655:LYS:HE2	1.91	0.53
1:B:43:VAL:O	1:B:43:VAL:HG12	2.09	0.52
2:A:426:THR:HG22	2:A:816:GLU:HB2	1.91	0.52
2:A:554:ASN:HB3	2:A:612:ILE:HG12	1.92	0.51
2:A:1740:TYR:HD1	2:A:1751:LEU:HD11	1.75	0.51
1:B:118:ARG:HH22	2:A:1808:LEU:HD21	1.77	0.50
2:A:580:TYR:CZ	2:A:636:ILE:HD11	2.46	0.50
2:A:405:ASN:HA	2:A:408:LYS:HG2	1.94	0.50
2:A:1741:VAL:HG12	2:A:1803:TYR:CD1	2.46	0.50
2:A:432:ILE:O	2:A:436:MET:HG2	2.11	0.50
2:A:776:GLU:OE1	2:A:789:VAL:HG11	2.12	0.50
2:A:493:LEU:HG	2:A:498:LEU:HD23	1.93	0.49
1:B:19:PHE:HZ	1:B:22:LEU:HB2	1.77	0.49
2:A:633:LYS:HG3	2:A:634:TYR:N	2.28	0.49
2:A:580:TYR:CE1	2:A:636:ILE:HD11	2.48	0.49
2:A:620:TYR:CZ	2:A:629:GLN:HB2	2.48	0.48
2:A:1657:VAL:HG22	2:A:1676:PHE:HD2	1.78	0.48
1:B:12:LEU:HB3	1:B:16:PHE:HB2	1.94	0.48
2:A:476:ALA:HA	2:A:479:GLN:HG2	1.95	0.48
2:A:680:ASP:HB3	2:A:726:LEU:HD13	1.96	0.48
1:B:28:LEU:HD13	1:B:38:LEU:HD23	1.95	0.47
2:A:1846:LYS:HE2	2:A:1853:ILE:HD11	1.97	0.47
2:A:1678:GLN:HG3	2:A:1707:VAL:HA	1.96	0.47
2:A:566:ILE:HG12	2:A:599:ALA:HA	1.95	0.47
1:B:25:ILE:HG22	1:B:131:TYR:CD1	2.50	0.47
2:A:1725:ILE:HG23	2:A:1779:LYS:HE3	1.97	0.47
2:A:1741:VAL:HG13	2:A:1801:PRO:O	2.15	0.46
2:A:633:LYS:HG3	2:A:634:TYR:H	1.80	0.46
1:B:61:PHE:N	1:B:85:PHE:O	2.38	0.46
2:A:456:VAL:HG21	2:A:466:ILE:HB	1.97	0.46
2:A:802:GLN:NE2	2:A:1800:THR:O	2.45	0.46
2:A:520:TRP:HA	2:A:705:ILE:HG21	1.98	0.45
2:A:427:THR:OG1	2:A:428:THR:N	2.50	0.45
2:A:719:VAL:O	2:A:723:ILE:HG12	2.16	0.45
2:A:1790:VAL:HG12	2:A:1795:ILE:HG13	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:648:LEU:HD11	2:A:679:ILE:HD11	1.99	0.44
2:A:1692:VAL:HA	2:A:1718:ILE:HG23	1.99	0.44
1:B:56:LYS:HZ3	1:B:91:VAL:HG11	1.81	0.44
2:A:479:GLN:NE2	2:A:490:ASN:O	2.47	0.44
2:A:814:GLU:OE2	2:A:817:GLU:N	2.45	0.43
2:A:456:VAL:HA	2:A:462:VAL:HB	2.00	0.43
1:B:76:ILE:HD12	1:B:96:ARG:HH21	1.83	0.43
2:A:587:ASP:OD1	2:A:587:ASP:N	2.45	0.43
2:A:680:ASP:HB3	2:A:726:LEU:HD22	2.00	0.43
1:B:126:ARG:HB2	1:B:127:ARG:HD2	2.00	0.43
2:A:676:GLU:HG3	2:A:726:LEU:HD11	2.00	0.43
2:A:554:ASN:ND2	2:A:611:ASN:O	2.52	0.43
1:B:78:GLY:H	2:A:1819:TYR:HB3	1.83	0.43
2:A:397:ASN:O	2:A:401:LYS:NZ	2.29	0.43
2:A:643:ARG:HB3	2:A:644:PRO:CD	2.49	0.43
2:A:1674:ILE:O	2:A:1703:ASN:HB3	2.19	0.42
1:B:113:VAL:O	1:B:128:GLY:HA2	2.19	0.42
2:A:546:ASP:HB3	2:A:757:HIS:ND1	2.34	0.42
2:A:374:LYS:N	2:A:391:LYS:HZ3	2.16	0.42
2:A:747:ASN:OD1	2:A:748:SER:N	2.46	0.42
2:A:1714:TYR:CE2	2:A:1763:VAL:HG22	2.47	0.42
2:A:754:LEU:H	2:A:754:LEU:HD23	1.85	0.42
1:B:119:VAL:O	1:B:121:MET:HG3	2.20	0.42
2:A:504:SER:OG	2:A:505:LYS:N	2.52	0.42
2:A:444:GLY:O	2:A:448:MET:HE2	2.19	0.42
2:A:1748:ASP:HB3	2:A:1767:PHE:O	2.19	0.42
2:A:770:LYS:HE3	2:A:827:ASN:HD22	1.85	0.41
2:A:833:ASP:O	2:A:836:ILE:HG22	2.20	0.41
2:A:518:SER:O	2:A:519:LEU:HB2	2.20	0.41
2:A:470:GLY:HA3	2:A:471:PRO:HD3	1.92	0.41
2:A:821:LEU:O	2:A:825:GLU:HG3	2.20	0.41
1:B:133:LEU:O	1:B:135:ILE:N	2.52	0.41
1:B:105:THR:HA	1:B:137:VAL:HB	2.02	0.41
2:A:432:ILE:HD13	2:A:454:LEU:HD21	2.02	0.41
2:A:1852:LEU:HD21	2:A:1872:GLY:HA3	2.01	0.41
2:A:452:LYS:O	2:A:462:VAL:HG11	2.21	0.41
2:A:543:LEU:H	2:A:543:LEU:HD23	1.85	0.41
2:A:704:SER:HB2	2:A:776:GLU:OE2	2.21	0.40
2:A:766:GLU:HG2	2:A:820:MET:SD	2.61	0.40
2:A:836:ILE:HG23	2:A:837:VAL:HG22	2.03	0.40
1:B:76:ILE:HD12	1:B:96:ARG:NH2	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1726:ASN:C	2:A:1728:LYS:H	2.24	0.40
2:A:1821:GLU:OE2	2:A:1851:ASN:ND2	2.54	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	138/140 (99%)	118 (86%)	20 (14%)	0	100	100
2	A	687/1503 (46%)	619 (90%)	63 (9%)	5 (1%)	22	55
All	All	825/1643 (50%)	737 (89%)	83 (10%)	5 (1%)	29	57

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	A	643	ARG
2	A	644	PRO
2	A	698	CYS
2	A	614	ASP
2	A	1825	ILE

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	123/123 (100%)	123 (100%)	0	100	100
2	A	630/1367 (46%)	629 (100%)	1 (0%)	93	98
All	All	753/1490 (50%)	752 (100%)	1 (0%)	93	98

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	485	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	492	HIS

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 monosaccharides 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.

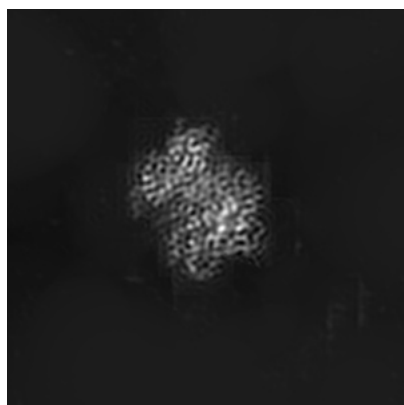
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24248. These allow visual inspection of the internal detail of the map and identification of artifacts.

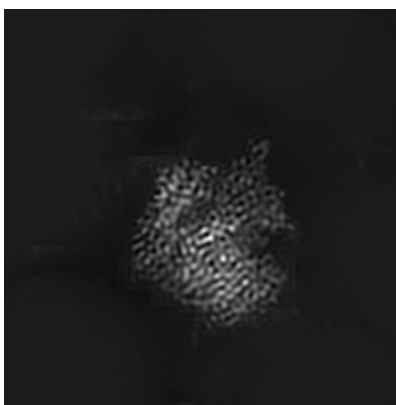
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

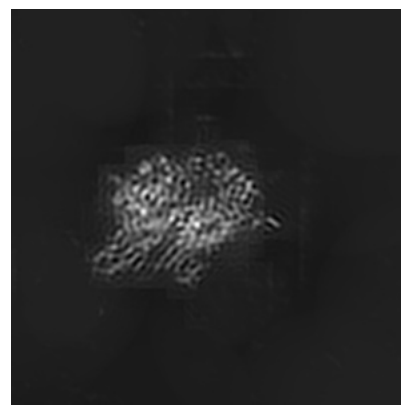
6.1.1 Primary map



X



Y

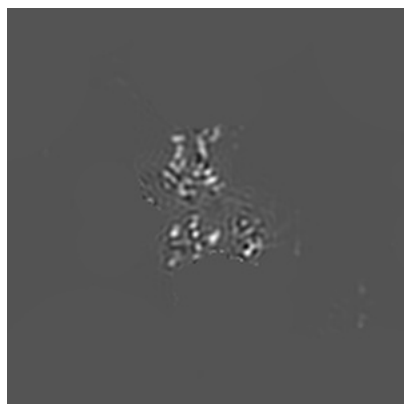


Z

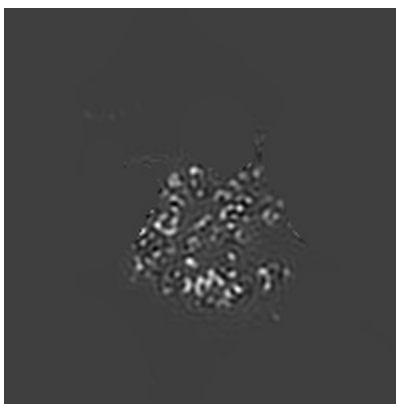
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 90



Y Index: 90



Z Index: 90

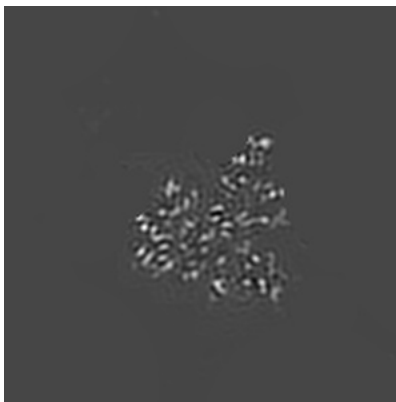
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

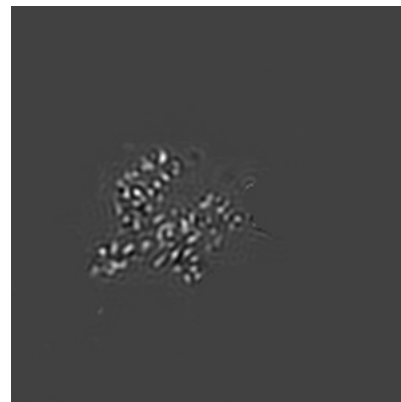
6.3.1 Primary map



X Index: 59



Y Index: 83



Z Index: 98

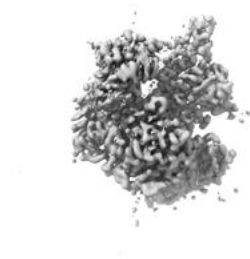
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 3.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

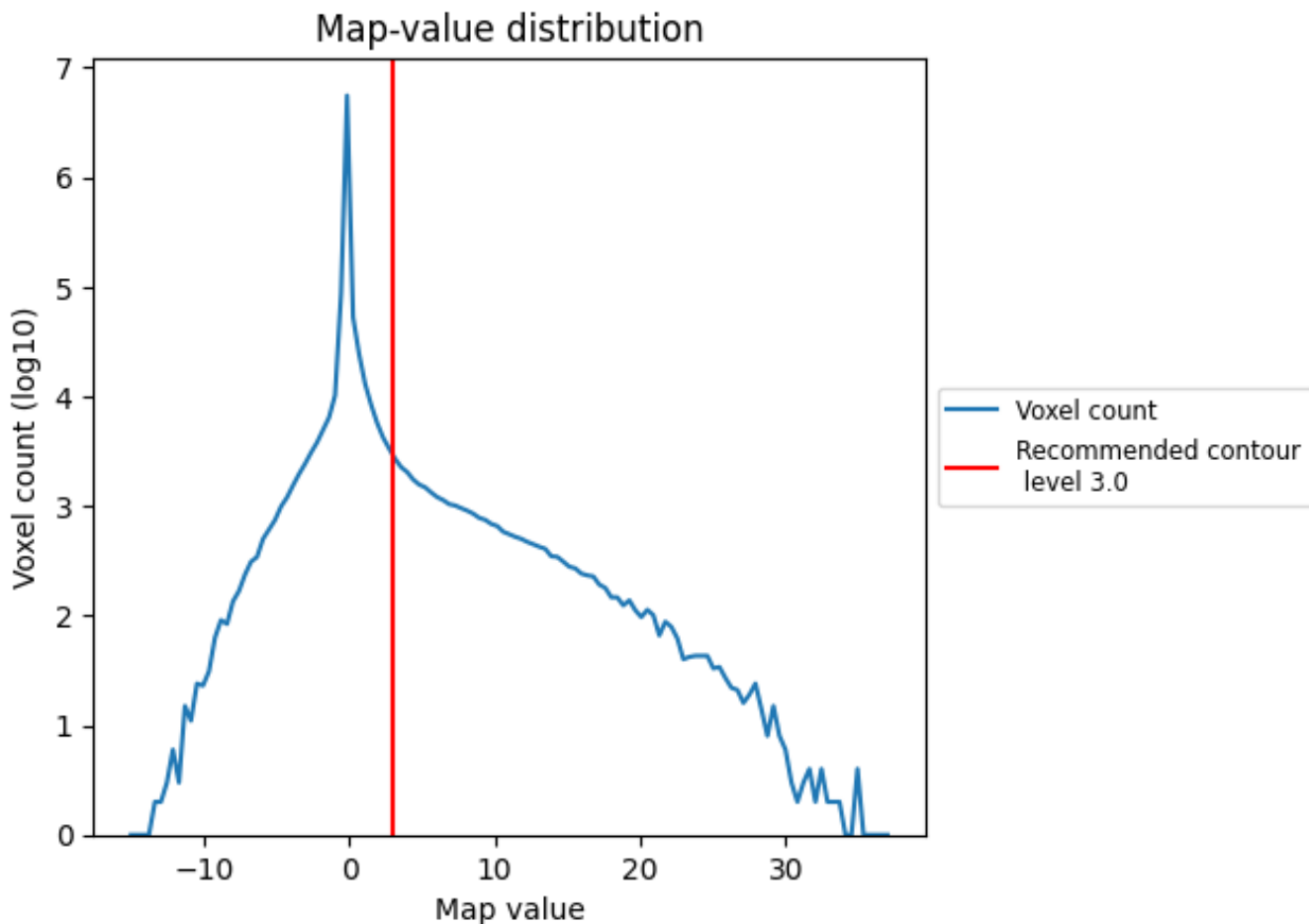
6.5 Mask visualisation

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

7 Map analysis [i](#)

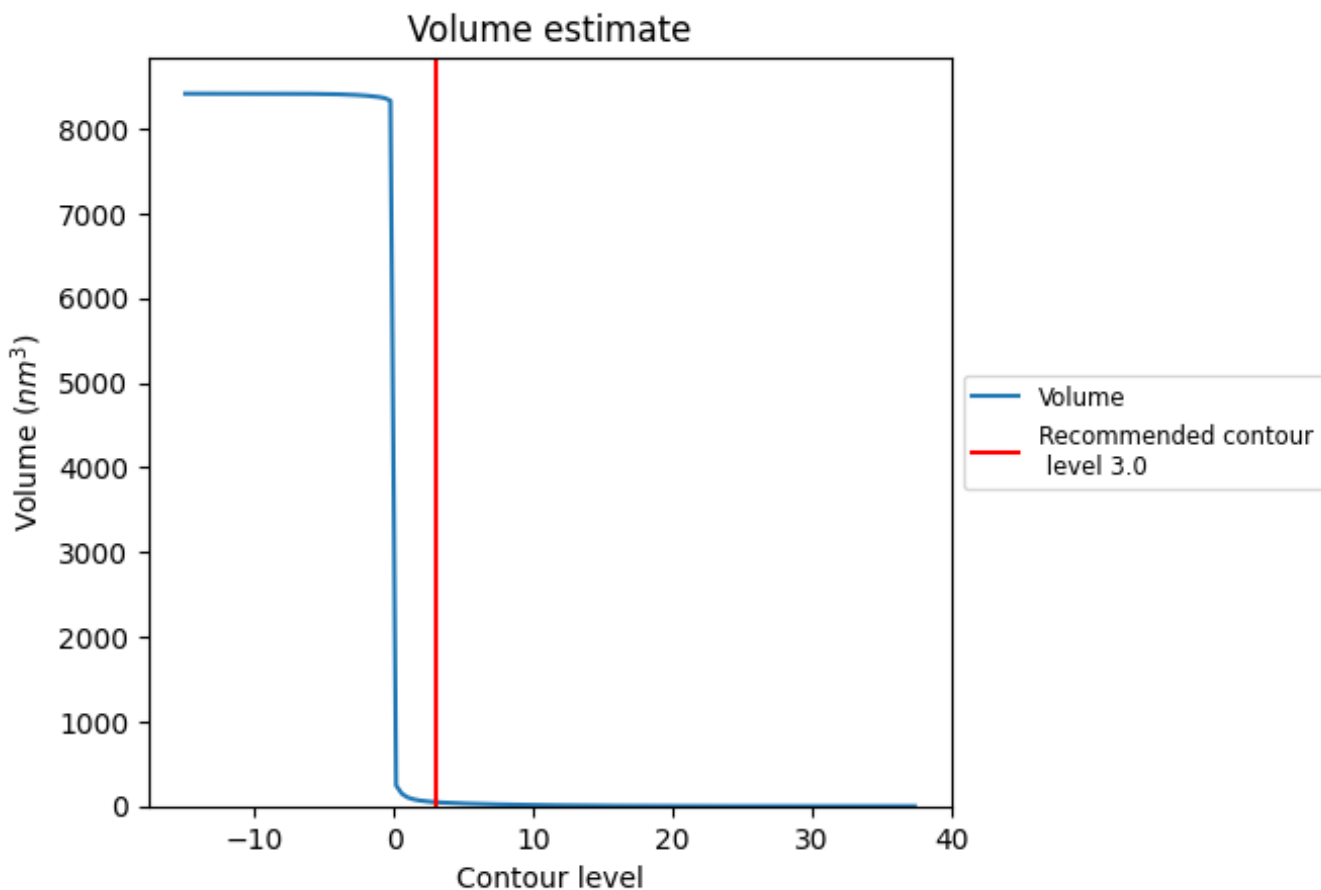
This section contains the results of statistical analysis of the map.

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.

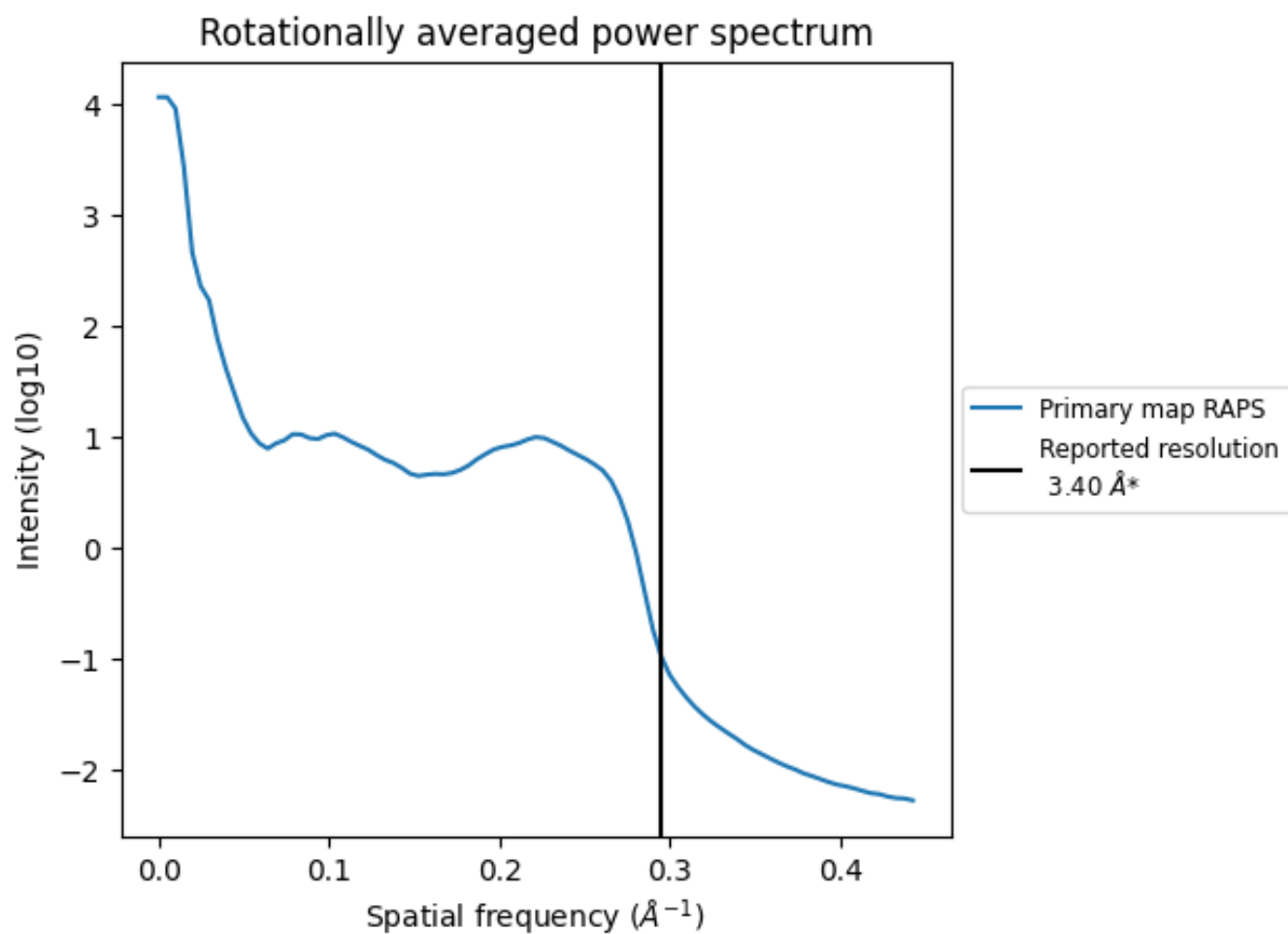
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 47 nm³; this corresponds to an approximate mass of 42 kDa.

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

7.3 Rotationally averaged power spectrum [i](#)



*Reported resolution corresponds to spatial frequency of 0.294 Å⁻¹

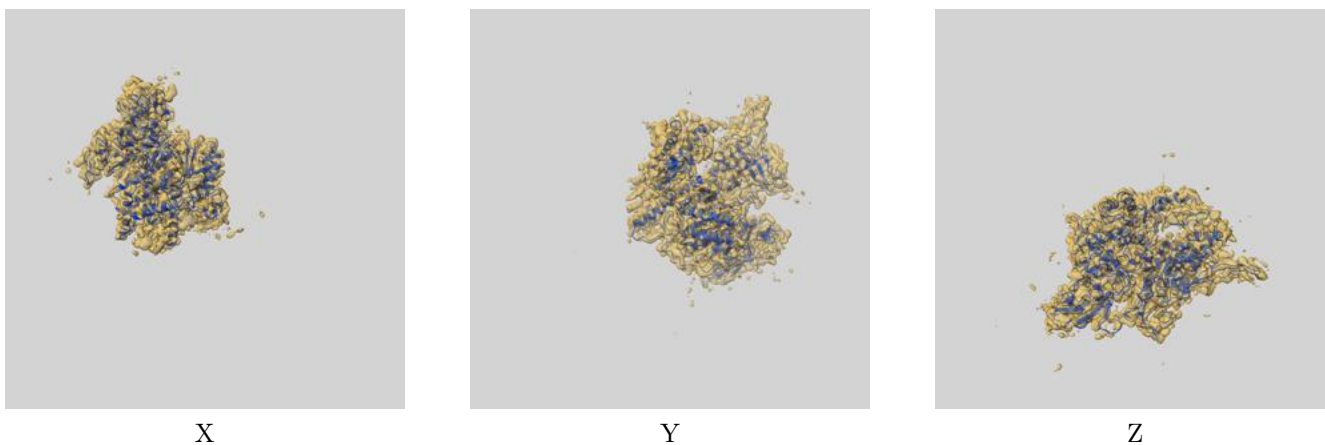
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

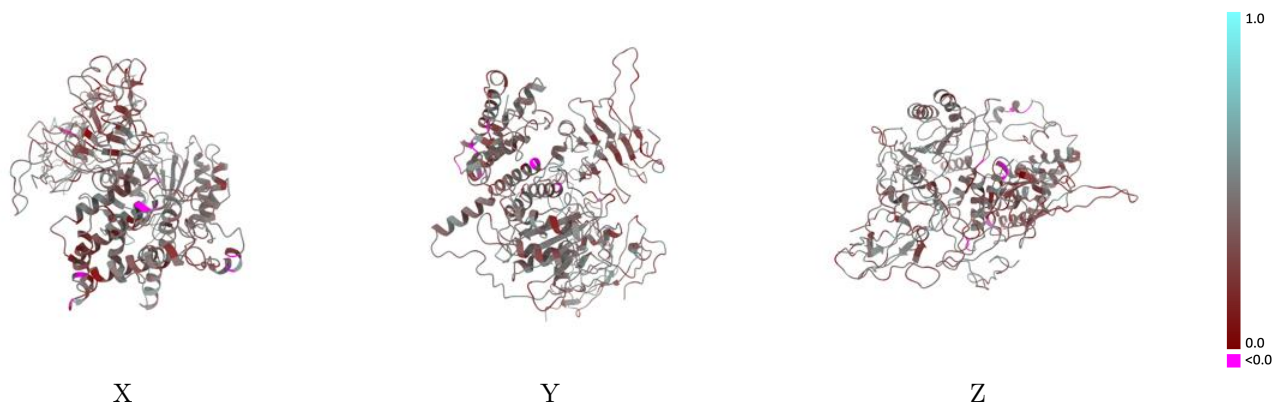
This section contains information regarding the fit between EMDB map EMD-24248 and PDB model 7N8X. Per-residue inclusion information can be found in section [3](#) on page [4](#).

9.1 Map-model overlay [i](#)



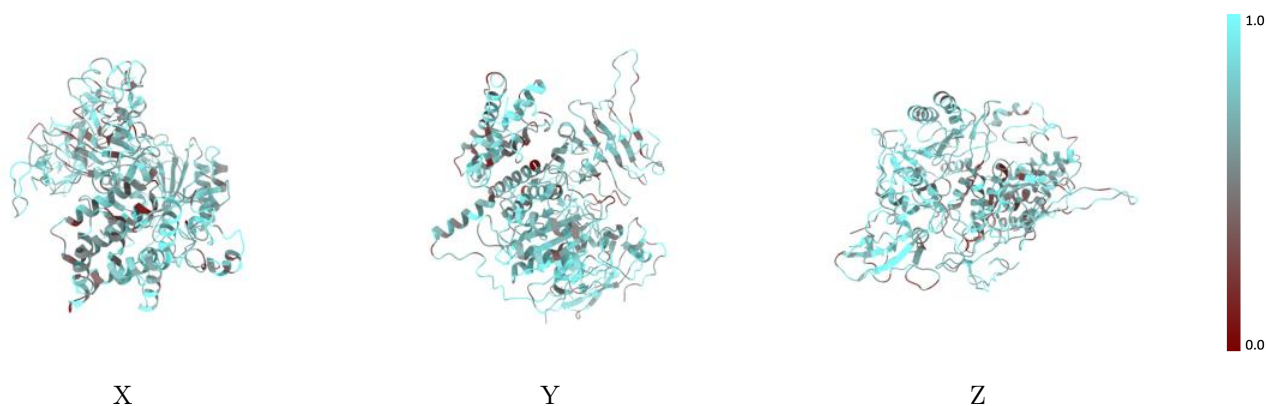
The images above show the 3D surface view of the map at the recommended contour level 3.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



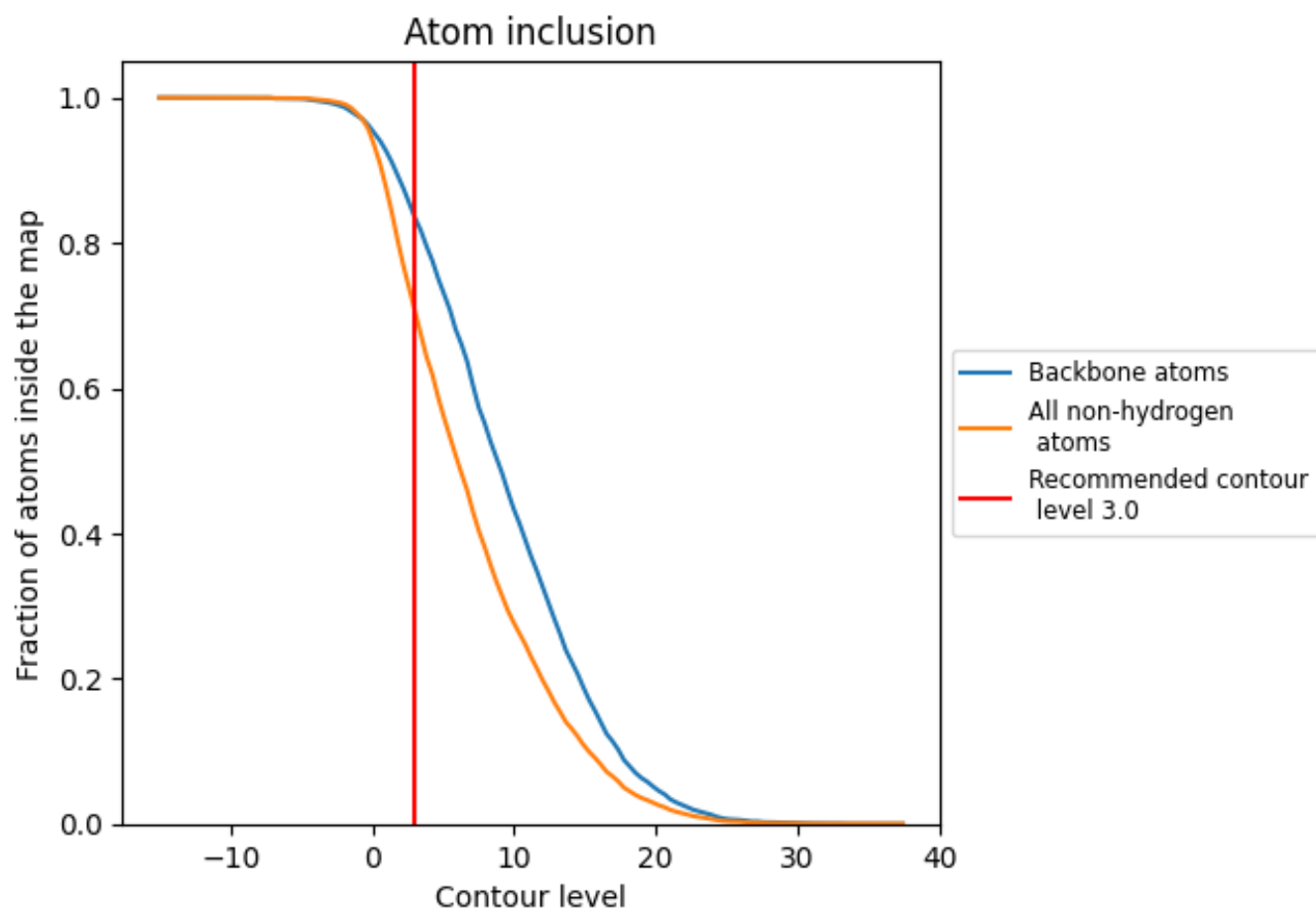
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (3.0).







9.4 Atom inclusion [i](#)



At the recommended contour level, 84% of all backbone atoms, 71% 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 (3.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7068	 0.3890
A	 0.7030	 0.3880
B	 0.7262	 0.3940

