



Full wwPDB EM Validation Report ⓘ

Mar 28, 2026 – 03:36 PM UTC

PDB ID : 6V6D / pdb_00006v6d
EMDB ID : EMD-21071
Title : Cryo-EM structure of human pannexin 1
Authors : Deng, Z.; He, Z.; Yuan, P.
Deposited on : 2019-12-05
Resolution : 3.77 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:

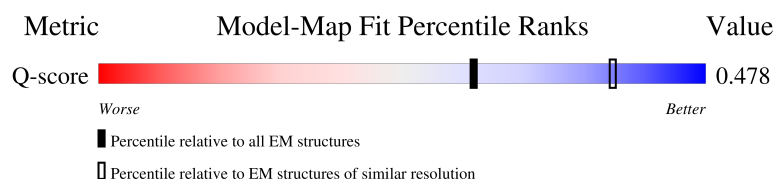
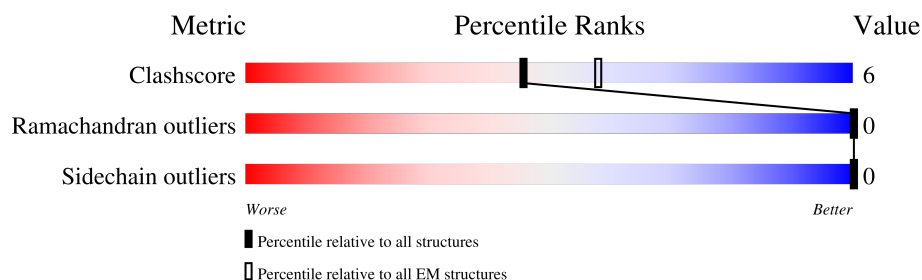
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

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 3.77 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	10146 (3.27 - 4.27)

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	435	
1	B	435	
1	C	435	
1	D	435	

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Mol	Chain	Length	Quality of chain
1	E	435	41%7%52%
1	F	435	41%7%52%
1	G	435	41%7%52%

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 11739 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 Pannexin-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	209	Total 1677	C 1132	N 254	O 282	S 9	0	0
1	B	209	Total 1677	C 1132	N 254	O 282	S 9	0	0
1	C	209	Total 1677	C 1132	N 254	O 282	S 9	0	0
1	D	209	Total 1677	C 1132	N 254	O 282	S 9	0	0
1	E	209	Total 1677	C 1132	N 254	O 282	S 9	0	0
1	F	209	Total 1677	C 1132	N 254	O 282	S 9	0	0
1	G	209	Total 1677	C 1132	N 254	O 282	S 9	0	0

There are 63 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	427	SER	-	expression tag	UNP Q96RD7
A	428	ASN	-	expression tag	UNP Q96RD7
A	429	SER	-	expression tag	UNP Q96RD7
A	430	LEU	-	expression tag	UNP Q96RD7
A	431	GLU	-	expression tag	UNP Q96RD7
A	432	VAL	-	expression tag	UNP Q96RD7
A	433	LEU	-	expression tag	UNP Q96RD7
A	434	PHE	-	expression tag	UNP Q96RD7
A	435	GLN	-	expression tag	UNP Q96RD7
B	427	SER	-	expression tag	UNP Q96RD7
B	428	ASN	-	expression tag	UNP Q96RD7
B	429	SER	-	expression tag	UNP Q96RD7
B	430	LEU	-	expression tag	UNP Q96RD7
B	431	GLU	-	expression tag	UNP Q96RD7
B	432	VAL	-	expression tag	UNP Q96RD7
B	433	LEU	-	expression tag	UNP Q96RD7

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Chain	Residue	Modelled	Actual	Comment	Reference
B	434	PHE	-	expression tag	UNP Q96RD7
B	435	GLN	-	expression tag	UNP Q96RD7
C	427	SER	-	expression tag	UNP Q96RD7
C	428	ASN	-	expression tag	UNP Q96RD7
C	429	SER	-	expression tag	UNP Q96RD7
C	430	LEU	-	expression tag	UNP Q96RD7
C	431	GLU	-	expression tag	UNP Q96RD7
C	432	VAL	-	expression tag	UNP Q96RD7
C	433	LEU	-	expression tag	UNP Q96RD7
C	434	PHE	-	expression tag	UNP Q96RD7
C	435	GLN	-	expression tag	UNP Q96RD7
D	427	SER	-	expression tag	UNP Q96RD7
D	428	ASN	-	expression tag	UNP Q96RD7
D	429	SER	-	expression tag	UNP Q96RD7
D	430	LEU	-	expression tag	UNP Q96RD7
D	431	GLU	-	expression tag	UNP Q96RD7
D	432	VAL	-	expression tag	UNP Q96RD7
D	433	LEU	-	expression tag	UNP Q96RD7
D	434	PHE	-	expression tag	UNP Q96RD7
D	435	GLN	-	expression tag	UNP Q96RD7
E	427	SER	-	expression tag	UNP Q96RD7
E	428	ASN	-	expression tag	UNP Q96RD7
E	429	SER	-	expression tag	UNP Q96RD7
E	430	LEU	-	expression tag	UNP Q96RD7
E	431	GLU	-	expression tag	UNP Q96RD7
E	432	VAL	-	expression tag	UNP Q96RD7
E	433	LEU	-	expression tag	UNP Q96RD7
E	434	PHE	-	expression tag	UNP Q96RD7
E	435	GLN	-	expression tag	UNP Q96RD7
F	427	SER	-	expression tag	UNP Q96RD7
F	428	ASN	-	expression tag	UNP Q96RD7
F	429	SER	-	expression tag	UNP Q96RD7
F	430	LEU	-	expression tag	UNP Q96RD7
F	431	GLU	-	expression tag	UNP Q96RD7
F	432	VAL	-	expression tag	UNP Q96RD7
F	433	LEU	-	expression tag	UNP Q96RD7
F	434	PHE	-	expression tag	UNP Q96RD7
F	435	GLN	-	expression tag	UNP Q96RD7
G	427	SER	-	expression tag	UNP Q96RD7
G	428	ASN	-	expression tag	UNP Q96RD7
G	429	SER	-	expression tag	UNP Q96RD7
G	430	LEU	-	expression tag	UNP Q96RD7

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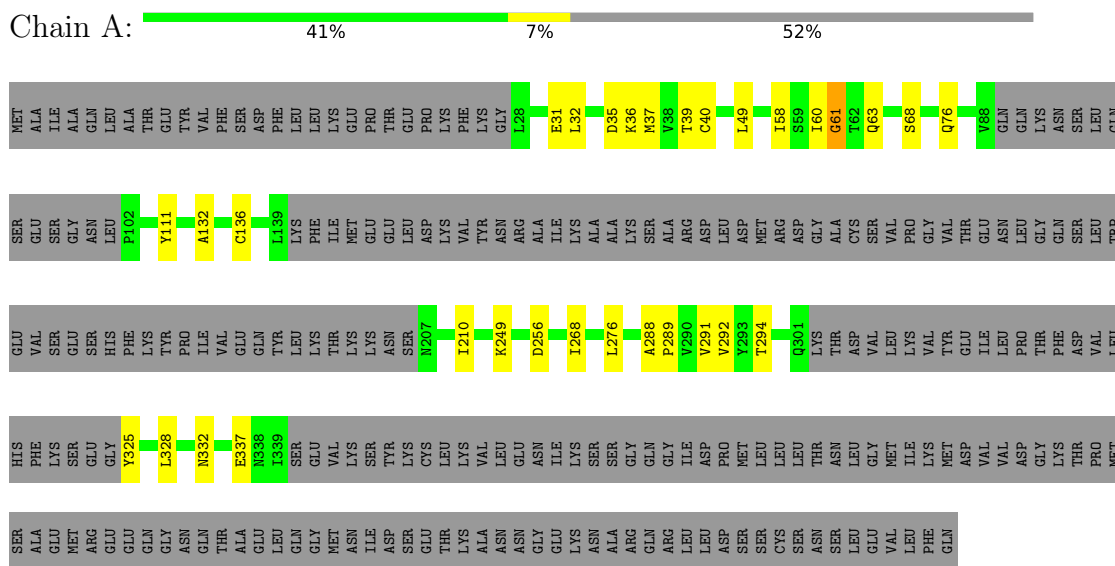
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Chain	Residue	Modelled	Actual	Comment	Reference
G	431	GLU	-	expression tag	UNP Q96RD7
G	432	VAL	-	expression tag	UNP Q96RD7
G	433	LEU	-	expression tag	UNP Q96RD7
G	434	PHE	-	expression tag	UNP Q96RD7
G	435	GLN	-	expression tag	UNP Q96RD7

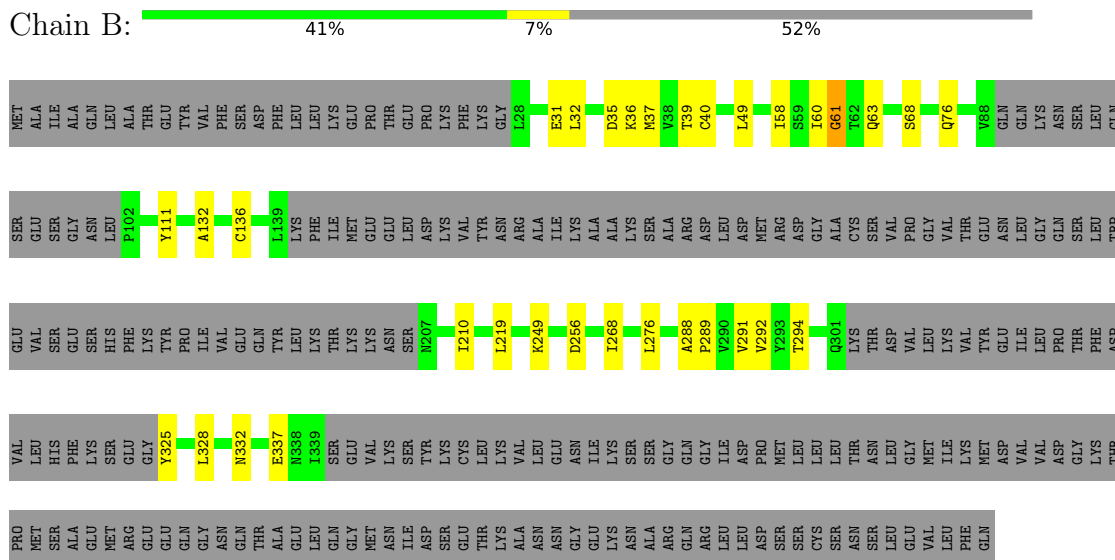
3 Residue-property plots

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.

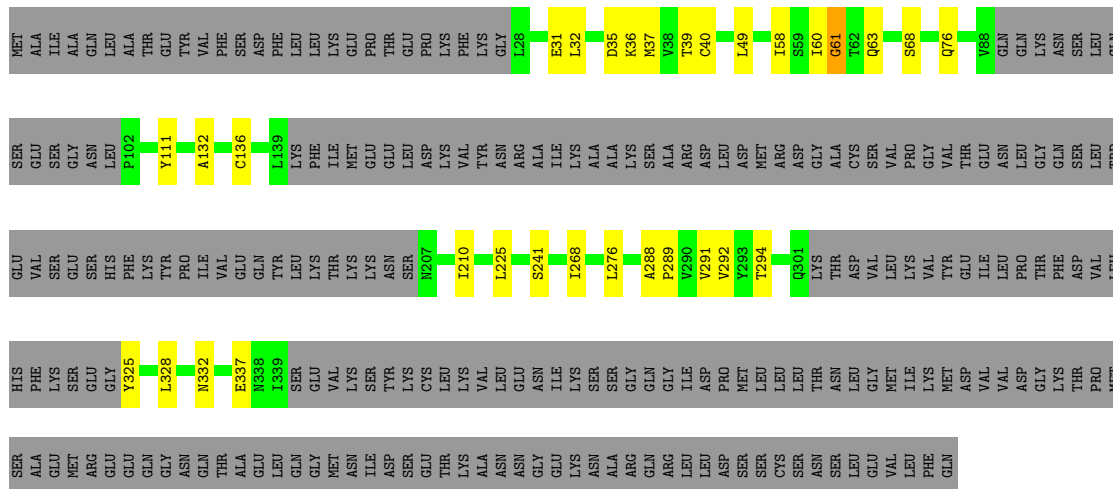
• Molecule 1: Pannexin-1



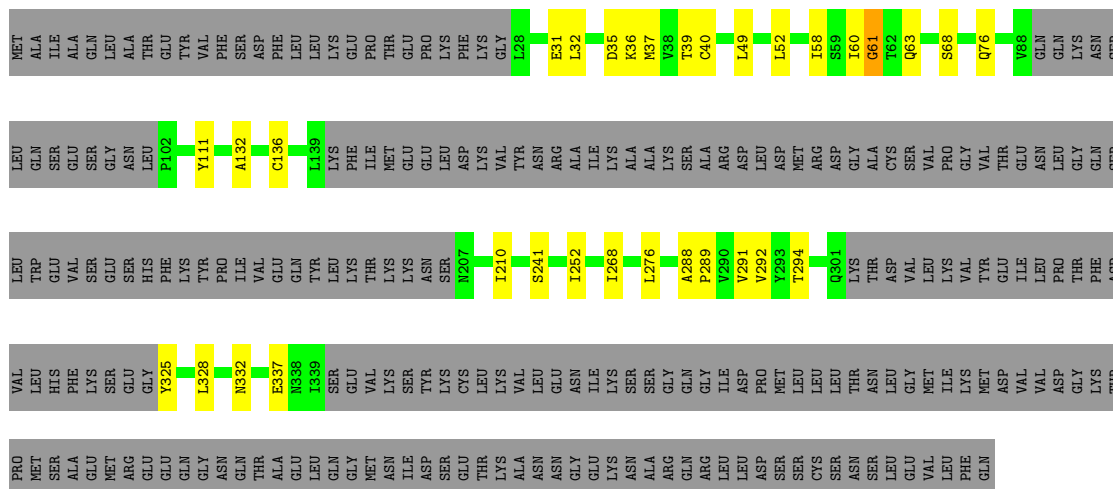
• Molecule 1: Pannexin-1



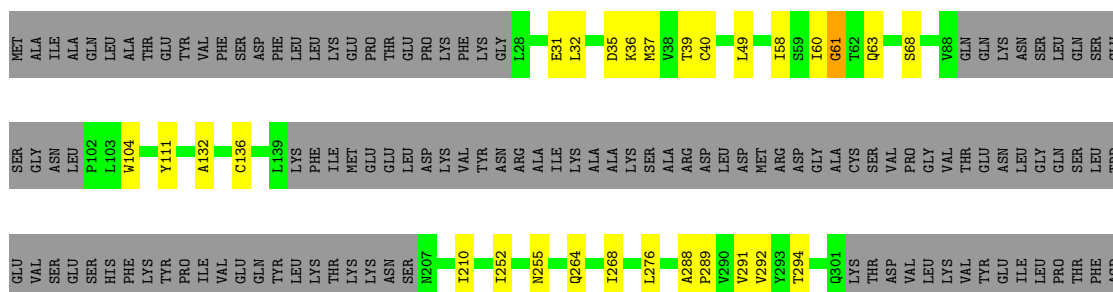
Chain C:



Chain D:



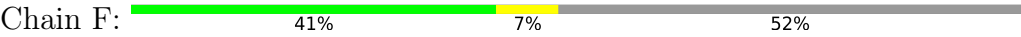
Chain E:



VAL	LEU	PHE	LYS	SER	GLU	GLY	Y325	L328	N332	E337	N338	I339	SER	GLU	VAL	LYS	LYS	SER	TYR	ASP	GLY	THR	CYS	LEU	LYS	VAL	LEU	GLU	ASN	ILE	LYS	SER	ALA	ARG	GLY	GLN	GLY	ILE	ASP	PRO	MET	SER	LEU	LEU	THR	ASN	LEU	GLY	GLY	THR	ASP	VAL	VAL	ASP	GLY	LYS	THR
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PRO	MET	SER	ALA	GLU	MET	ARG	GLU	GLY	GLN	ASN	GLN	THR	ALA	GLU	LEU	GLN	GLY	MET	ASN	PRO	THR	GLY	GLU	LEU	LYS	VAL	ASP	PRO	LYS	TYR	ASP	GLY	THR	LEU	LYS	ALA	ASN	GLY	GLU	LYS	ASN	ALA	ARG	GLY	GLN	ARG	LEU	ASP	LEU	SER	SER	LEU	GLY	THR	VAL	LEU	PHE	GLN
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● Molecule 1: Pannexin-1



MET	ALA	ILE	ALA	GLN	LEU	ALA	THR	GLU	THR	GLY	Y111	A132	C136	E337	N338	I339	SER	GLU	PRO	THR	GLY	L28	E31	L32	D35	K36	M37	V38	T39	C40	L49	I58	S59	I60	G61	T62	Q63	V68	GLN	GLN	LYS	ASN	SER	ASP	VAL	SER	GLN	SER	GLY	THR
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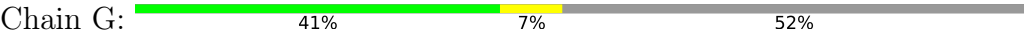
ASN	LEU	P102	I103	W104	Y111	A132	C136	E337	N338	I339	LYS	PHE	ILE	GLU	MET	LYS	GLU	GLU	LEU	ASP	THR	LYS	VAL	VAL	ASN	ARG	ALA	LYS	ALA	LYS	SER	ALA	GLY	ALA	CYS	SER	VAL	PRO	GLY	VAL	VAL	THR	GLU	ASN	LEU	GLY	GLN	SER	LEU	TRP	VAL
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SER	GLU	SER	HIS	PHE	LYS	TYR	PRO	ILE	VAL	GLU	GLN	THR	TYR	LEU	LYS	LYS	ASN	SER	SER	I207	I210	I252	Q264	I268	L275	L276	A288	P289	V290	V291	V292	T293	Q301	LYS	THR	ASP	VAL	LEU	LYS	VAL	VAL	THR	GLU	ILE	PRO	GLY	THR	PHE	ASP	VAL	HIS
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PHE	LYS	GLU	ARG	GLY	Y325	L328	N332	E337	N338	I339	SER	GLU	SER	VAL	LYS	LYS	SER	ILE	ASP	TYR	LYS	CYS	LEU	LYS	VAL	LEU	GLU	ASN	LYS	SER	GLY	GLN	ARG	GLN	GLY	LEU	ILE	THR	GLY	GLY	GLY	ILE	MET	LYS	ASP	VAL	PRO	MET	SER
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ALA	GLU	MET	ARG	GLY	GLN	GLY	ASN	GLN	THR	ALA	GLU	LEU	GLN	LEU	ASN	ILE	ASP	SER	SER	GLU	THR	THR	LYS	ALA	ASN	ASN	GLY	GLU	LYS	ALA	ASN	ALA	ARG	GLN	ARG	ARG	LEU	LEU	ASP	SER	CYS	SER	ASN	SER	LEU	GLU	VAL	VAL	PHE	GLN
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● Molecule 1: Pannexin-1



MET	ALA	ILE	ALA	GLN	LEU	ALA	THR	GLU	THR	GLY	Y111	A132	C136	E337	N338	I339	SER	GLU	PRO	THR	GLY	L28	E31	L32	D35	K36	M37	V38	T39	C40	L49	I58	S59	I60	G61	T62	Q63	Q76	V68	GLN	GLN	LYS	ASN	SER	GLY	THR	ASP	VAL	GLU
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SER	GLY	ASN	LEU	P102	Y111	A132	C136	E337	N338	I339	LYS	PHE	ILE	GLU	MET	LYS	GLU	GLU	LEU	ASP	THR	LYS	VAL	VAL	ASN	ARG	ALA	LYS	ALA	LYS	SER	ALA	GLY	ALA	CYS	SER	VAL	LEU	LYS	VAL	VAL	THR	GLU	ASN	LEU	GLY	GLN	SER	LEU	TRP	VAL
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SER	GLU	SER	HIS	PHE	LYS	TYR	PRO	ILE	VAL	GLU	GLN	THR	TYR	LEU	LYS	LYS	ASN	SER	SER	I207	I210	Q264	I268	L275	L276	A288	P289	V290	V291	V292	V293	T294	Q301	LYS	THR	ASP	VAL	LEU	LYS	VAL	VAL	THR	GLU	ILE	PRO	GLY	THR	PHE	ASP	VAL	HIS	LYS
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SER	GLU	GLY	Y325	L328	N332	E337	N338	I339	SER	GLU	VAL	LYS	SER	ILE	ASP	TYR	LYS	CYS	GLU	THR	LEU	LYS	VAL	VAL	ASN	GLY	ILE	SER	GLY	GLN	ARG	GLN	GLY	ILE	ASP	PRO	MET	LEU	LEU	THR	ASN	SER	LEU	GLY	MET	VAL	VAL	ASP	ALA	GLN
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MET	ARG	GLU	GLU	GLN	GLY	ASN	GLN	THR	ALA	GLU	LEU	GLN	GLY	MET	ASN	ILE	ASP	SER	GLY	THR	THR	ALA	ALA	ASN	GLY	LYS	ASN	ALA	ALA	ARG	GLN	ARG	GLY	ILE	LEU	LEU	ASP	SER	MET	LEU	LEU	CYS	SER	SER	ASN	LEU	GLY	VAL	PHE	GLN
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15796	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 ($e^-/\text{\AA}^2$)	62	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	0.106	Depositor
Minimum map value	-0.052	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	264.0, 264.0, 264.0	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	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	A	0.31	0/1720	0.58	1/2346 (0.0%)
1	B	0.31	0/1720	0.58	1/2346 (0.0%)
1	C	0.31	0/1720	0.58	1/2346 (0.0%)
1	D	0.31	0/1720	0.58	1/2346 (0.0%)
1	E	0.31	0/1720	0.58	1/2346 (0.0%)
1	F	0.31	0/1720	0.58	1/2346 (0.0%)
1	G	0.31	0/1720	0.58	1/2346 (0.0%)
All	All	0.31	0/12040	0.58	7/16422 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	61	GLY	N-CA-C	10.11	124.86	112.73
1	G	61	GLY	N-CA-C	10.10	124.86	112.73
1	E	61	GLY	N-CA-C	10.10	124.85	112.73
1	F	61	GLY	N-CA-C	10.09	124.83	112.73
1	D	61	GLY	N-CA-C	10.08	124.83	112.73
1	A	61	GLY	N-CA-C	10.08	124.82	112.73
1	B	61	GLY	N-CA-C	10.07	124.81	112.73

There are no chirality outliers.

There are no planarity outliers.

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	A	1677	0	1732	25	0
1	B	1677	0	1732	26	0
1	C	1677	0	1732	26	0
1	D	1677	0	1732	26	0
1	E	1677	0	1732	27	0
1	F	1677	0	1732	25	0
1	G	1677	0	1732	24	0
All	All	11739	0	12124	147	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 6.

All (147) 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:E:111:TYR:OH	1:F:58:ILE:HG21	1.72	0.89
1:F:111:TYR:OH	1:G:58:ILE:HG21	1.72	0.88
1:C:111:TYR:OH	1:D:58:ILE:HG21	1.77	0.84
1:A:58:ILE:HG21	1:G:111:TYR:OH	1.77	0.83
1:D:111:TYR:OH	1:E:58:ILE:HG21	1.78	0.83
1:A:111:TYR:OH	1:B:58:ILE:HG21	1.81	0.81
1:B:111:TYR:OH	1:C:58:ILE:HG21	1.81	0.80
1:E:36:LYS:O	1:E:39:THR:HG22	1.82	0.80
1:F:36:LYS:O	1:F:39:THR:HG22	1.82	0.80
1:G:36:LYS:O	1:G:39:THR:HG22	1.82	0.79
1:D:36:LYS:O	1:D:39:THR:HG22	1.82	0.79
1:A:36:LYS:O	1:A:39:THR:HG22	1.82	0.79
1:C:36:LYS:O	1:C:39:THR:HG22	1.82	0.78
1:B:36:LYS:O	1:B:39:THR:HG22	1.82	0.78
1:E:111:TYR:OH	1:F:58:ILE:CG2	2.42	0.68
1:F:111:TYR:OH	1:G:58:ILE:CG2	2.43	0.65
1:G:49:LEU:HD22	1:G:276:LEU:HD22	1.83	0.60
1:F:49:LEU:HD22	1:F:276:LEU:HD22	1.84	0.60
1:E:49:LEU:HD22	1:E:276:LEU:HD22	1.84	0.60
1:A:210:ILE:HG21	1:A:325:TYR:HB3	1.84	0.60
1:B:210:ILE:HG21	1:B:325:TYR:HB3	1.84	0.59
1:C:49:LEU:HD22	1:C:276:LEU:HD22	1.84	0.59
1:E:111:TYR:CE2	1:F:58:ILE:HG12	2.37	0.59
1:G:210:ILE:HG21	1:G:325:TYR:HB3	1.84	0.59
1:B:49:LEU:HD22	1:B:276:LEU:HD22	1.84	0.59
1:A:49:LEU:HD22	1:A:276:LEU:HD22	1.84	0.59
1:C:210:ILE:HG21	1:C:325:TYR:HB3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:210:ILE:HG21	1:D:325:TYR:HB3	1.84	0.59
1:A:60:ILE:HG22	1:A:61:GLY:N	2.18	0.59
1:D:49:LEU:HD22	1:D:276:LEU:HD22	1.84	0.59
1:E:210:ILE:HG21	1:E:325:TYR:HB3	1.84	0.59
1:F:210:ILE:HG21	1:F:325:TYR:HB3	1.84	0.59
1:E:60:ILE:HG22	1:E:61:GLY:N	2.18	0.59
1:F:111:TYR:CE2	1:G:58:ILE:HG12	2.38	0.59
1:C:60:ILE:HG22	1:C:61:GLY:N	2.18	0.58
1:D:111:TYR:OH	1:E:58:ILE:CG2	2.49	0.58
1:F:60:ILE:HG22	1:F:61:GLY:N	2.18	0.58
1:B:60:ILE:HG22	1:B:61:GLY:N	2.18	0.58
1:C:111:TYR:OH	1:D:58:ILE:CG2	2.50	0.58
1:G:60:ILE:HG22	1:G:61:GLY:N	2.18	0.57
1:A:111:TYR:OH	1:B:58:ILE:CG2	2.52	0.57
1:D:60:ILE:HG22	1:D:61:GLY:N	2.18	0.57
1:A:58:ILE:CG2	1:G:111:TYR:OH	2.51	0.56
1:B:111:TYR:OH	1:C:58:ILE:CG2	2.54	0.53
1:D:111:TYR:CE2	1:E:58:ILE:HG12	2.43	0.52
1:A:58:ILE:HG12	1:G:111:TYR:CE2	2.45	0.52
1:C:111:TYR:CE2	1:D:58:ILE:HG12	2.44	0.52
1:A:111:TYR:CE2	1:B:58:ILE:HG12	2.45	0.51
1:B:37:MET:C	1:B:37:MET:SD	2.95	0.50
1:C:37:MET:SD	1:C:37:MET:C	2.95	0.50
1:E:37:MET:C	1:E:37:MET:SD	2.95	0.50
1:E:252:ILE:HG22	1:F:264:GLN:HB2	1.94	0.50
1:A:37:MET:C	1:A:37:MET:SD	2.95	0.50
1:F:37:MET:C	1:F:37:MET:SD	2.95	0.50
1:G:37:MET:SD	1:G:37:MET:C	2.95	0.50
1:B:111:TYR:CE2	1:C:58:ILE:HG12	2.47	0.49
1:F:32:LEU:HD23	1:F:337:GLU:OE2	2.12	0.49
1:E:32:LEU:HD23	1:E:337:GLU:OE2	2.12	0.49
1:D:32:LEU:HD23	1:D:337:GLU:OE2	2.12	0.49
1:D:37:MET:C	1:D:37:MET:SD	2.95	0.49
1:B:32:LEU:HD23	1:B:337:GLU:OE2	2.12	0.49
1:G:32:LEU:HD23	1:G:337:GLU:OE2	2.12	0.49
1:F:252:ILE:HG22	1:G:264:GLN:HB2	1.95	0.49
1:C:32:LEU:HD23	1:C:337:GLU:OE2	2.12	0.48
1:A:32:LEU:HD23	1:A:337:GLU:OE2	2.12	0.48
1:A:76:GLN:NE2	1:B:68:SER:O	2.48	0.47
1:D:252:ILE:HG22	1:E:264:GLN:HB2	1.97	0.46
1:C:132:ALA:O	1:C:136:CYS:HB3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:132:ALA:O	1:B:136:CYS:HB3	2.16	0.46
1:D:132:ALA:O	1:D:136:CYS:HB3	2.16	0.46
1:B:76:GLN:NE2	1:C:68:SER:O	2.48	0.46
1:G:132:ALA:O	1:G:136:CYS:HB3	2.16	0.46
1:B:289:PRO:HA	1:B:292:VAL:HG12	1.99	0.45
1:C:289:PRO:HA	1:C:292:VAL:HG12	1.99	0.45
1:D:289:PRO:HA	1:D:292:VAL:HG12	1.99	0.45
1:E:132:ALA:O	1:E:136:CYS:HB3	2.16	0.45
1:A:289:PRO:HA	1:A:292:VAL:HG12	1.99	0.45
1:F:132:ALA:O	1:F:136:CYS:HB3	2.16	0.45
1:B:328:LEU:HD23	1:B:332:ASN:HD21	1.82	0.45
1:A:132:ALA:O	1:A:136:CYS:HB3	2.16	0.45
1:C:328:LEU:HD23	1:C:332:ASN:HD21	1.82	0.45
1:D:328:LEU:HD23	1:D:332:ASN:HD21	1.82	0.45
1:E:35:ASP:OD1	1:E:294:THR:HG21	2.17	0.45
1:E:289:PRO:HA	1:E:292:VAL:HG12	1.99	0.45
1:G:289:PRO:HA	1:G:292:VAL:HG12	1.99	0.44
1:F:35:ASP:OD1	1:F:294:THR:HG21	2.18	0.44
1:D:35:ASP:OD1	1:D:294:THR:HG21	2.18	0.44
1:G:35:ASP:OD1	1:G:294:THR:HG21	2.17	0.44
1:E:60:ILE:CG2	1:E:61:GLY:N	2.81	0.44
1:F:60:ILE:CG2	1:F:61:GLY:N	2.81	0.44
1:B:60:ILE:CG2	1:B:61:GLY:N	2.81	0.44
1:F:328:LEU:HD23	1:F:332:ASN:HD21	1.82	0.44
1:F:289:PRO:HA	1:F:292:VAL:HG12	1.99	0.44
1:A:328:LEU:HD23	1:A:332:ASN:HD21	1.82	0.44
1:E:328:LEU:HD23	1:E:332:ASN:HD21	1.82	0.44
1:G:328:LEU:HD23	1:G:332:ASN:HD21	1.82	0.44
1:A:68:SER:O	1:G:76:GLN:NE2	2.51	0.43
1:A:36:LYS:O	1:A:39:THR:CG2	2.62	0.43
1:C:35:ASP:OD1	1:C:294:THR:HG21	2.18	0.43
1:E:104:TRP:HZ3	1:F:275:LEU:HD12	1.83	0.43
1:C:39:THR:HG23	1:C:40:CYS:N	2.34	0.43
1:D:60:ILE:CG2	1:D:61:GLY:N	2.81	0.43
1:A:35:ASP:OD1	1:A:294:THR:HG21	2.18	0.43
1:C:60:ILE:CG2	1:C:61:GLY:N	2.80	0.43
1:F:104:TRP:HZ3	1:G:275:LEU:HD12	1.83	0.43
1:A:60:ILE:CG2	1:A:61:GLY:N	2.81	0.43
1:E:288:ALA:HA	1:E:291:VAL:HG12	2.01	0.43
1:E:36:LYS:O	1:E:39:THR:CG2	2.62	0.43
1:B:39:THR:HG23	1:B:40:CYS:N	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:39:THR:HG23	1:D:40:CYS:N	2.33	0.43
1:F:288:ALA:HA	1:F:291:VAL:HG12	2.01	0.42
1:A:249:LYS:NZ	1:A:256:ASP:O	2.44	0.42
1:B:35:ASP:OD1	1:B:294:THR:HG21	2.18	0.42
1:D:288:ALA:HA	1:D:291:VAL:HG12	2.01	0.42
1:A:63:GLN:O	1:A:268:ILE:HG12	2.19	0.42
1:G:60:ILE:CG2	1:G:61:GLY:N	2.81	0.42
1:C:31:GLU:OE1	1:C:31:GLU:HA	2.20	0.42
1:E:39:THR:HG23	1:E:40:CYS:N	2.34	0.42
1:E:255:ASN:OD1	1:E:255:ASN:N	2.53	0.42
1:F:31:GLU:HA	1:F:31:GLU:OE1	2.20	0.42
1:F:39:THR:HG23	1:F:40:CYS:N	2.34	0.42
1:A:39:THR:HG23	1:A:40:CYS:N	2.34	0.42
1:B:288:ALA:HA	1:B:291:VAL:HG12	2.01	0.42
1:E:31:GLU:HA	1:E:31:GLU:OE1	2.20	0.42
1:D:31:GLU:HA	1:D:31:GLU:OE1	2.20	0.42
1:D:76:GLN:NE2	1:E:68:SER:O	2.53	0.42
1:G:39:THR:HG23	1:G:40:CYS:N	2.34	0.42
1:G:31:GLU:HA	1:G:31:GLU:OE1	2.20	0.42
1:D:241:SER:O	1:D:241:SER:OG	2.35	0.41
1:A:288:ALA:HA	1:A:291:VAL:HG12	2.01	0.41
1:E:63:GLN:O	1:E:268:ILE:HG12	2.21	0.41
1:A:31:GLU:HA	1:A:31:GLU:OE1	2.20	0.41
1:B:31:GLU:OE1	1:B:31:GLU:HA	2.20	0.41
1:B:36:LYS:O	1:B:39:THR:CG2	2.62	0.41
1:G:288:ALA:HA	1:G:291:VAL:HG12	2.01	0.41
1:C:288:ALA:HA	1:C:291:VAL:HG12	2.01	0.41
1:D:63:GLN:O	1:D:268:ILE:HG12	2.21	0.41
1:B:63:GLN:O	1:B:268:ILE:HG12	2.21	0.41
1:C:63:GLN:O	1:C:268:ILE:HG12	2.20	0.41
1:B:219:LEU:HD23	1:B:219:LEU:HA	1.94	0.41
1:G:63:GLN:O	1:G:268:ILE:HG12	2.20	0.41
1:C:76:GLN:NE2	1:D:68:SER:O	2.53	0.40
1:B:249:LYS:NZ	1:B:256:ASP:O	2.45	0.40
1:C:225:LEU:HD23	1:C:225:LEU:HA	1.93	0.40
1:C:241:SER:O	1:C:241:SER:OG	2.35	0.40
1:C:111:TYR:OH	1:D:52:LEU:O	2.32	0.40
1:F:63:GLN:O	1:F:268:ILE:HG12	2.21	0.40

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	201/435 (46%)	197 (98%)	4 (2%)	0	100	100
1	B	201/435 (46%)	197 (98%)	4 (2%)	0	100	100
1	C	201/435 (46%)	197 (98%)	4 (2%)	0	100	100
1	D	201/435 (46%)	197 (98%)	4 (2%)	0	100	100
1	E	201/435 (46%)	197 (98%)	4 (2%)	0	100	100
1	F	201/435 (46%)	197 (98%)	4 (2%)	0	100	100
1	G	201/435 (46%)	197 (98%)	4 (2%)	0	100	100
All	All	1407/3045 (46%)	1379 (98%)	28 (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	189/390 (48%)	189 (100%)	0	100	100
1	B	189/390 (48%)	189 (100%)	0	100	100
1	C	189/390 (48%)	189 (100%)	0	100	100
1	D	189/390 (48%)	189 (100%)	0	100	100
1	E	189/390 (48%)	189 (100%)	0	100	100
1	F	189/390 (48%)	189 (100%)	0	100	100
1	G	189/390 (48%)	189 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
All	All	1323/2730 (48%)	1323 (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 (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	106	HIS
1	A	332	ASN
1	B	106	HIS
1	B	332	ASN
1	C	106	HIS
1	C	332	ASN
1	D	106	HIS
1	D	332	ASN
1	E	106	HIS
1	E	332	ASN
1	F	106	HIS
1	F	332	ASN
1	G	106	HIS
1	G	332	ASN

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.

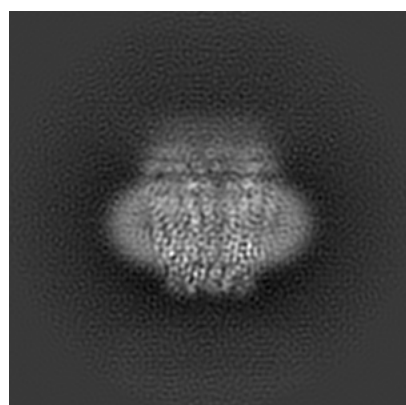
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-21071. These allow visual inspection of the internal detail of the map and identification of artifacts.

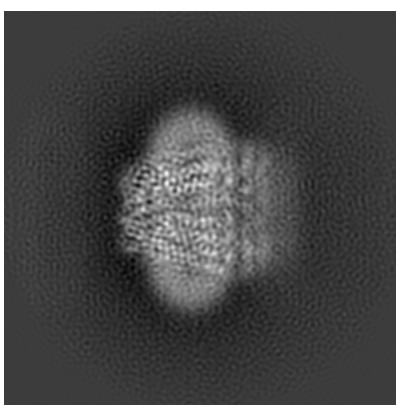
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

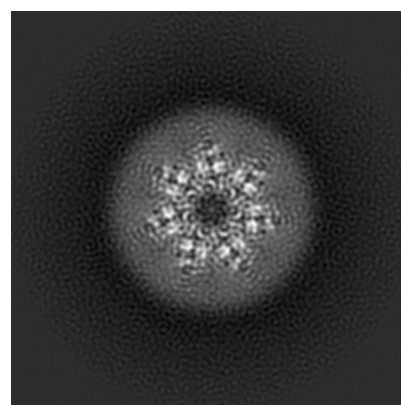
6.1.1 Primary map



X



Y

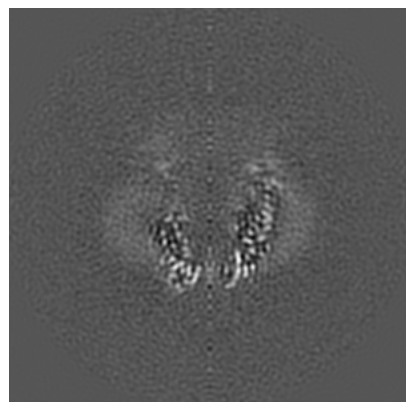


Z

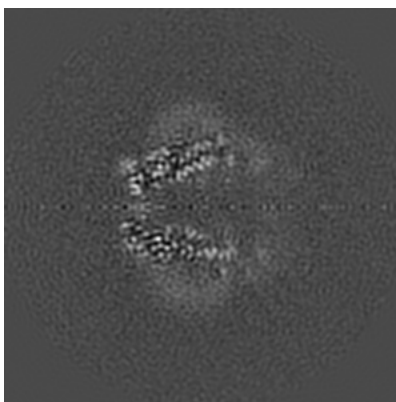
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

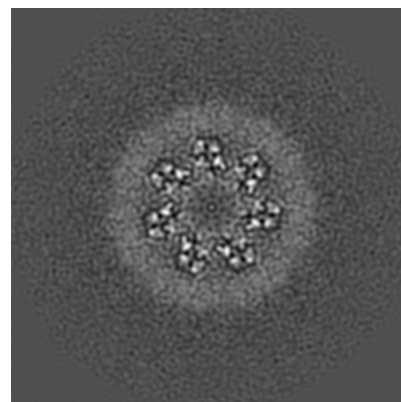
6.2.1 Primary map



X Index: 120



Y Index: 120

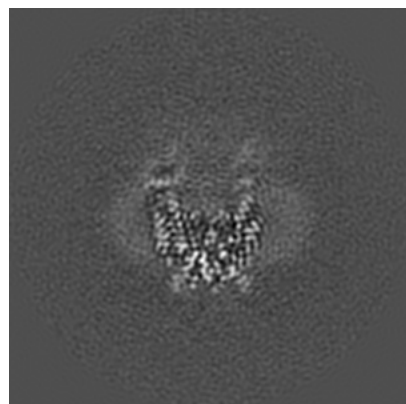


Z Index: 120

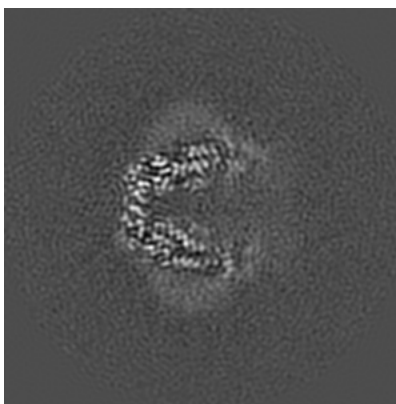
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

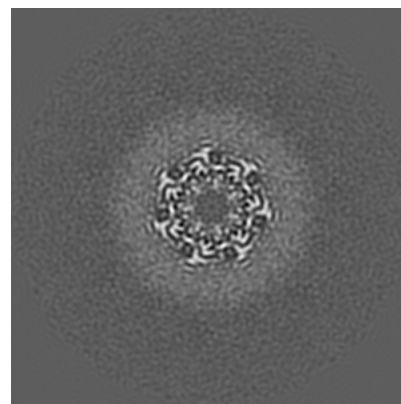
6.3.1 Primary map



X Index: 137



Y Index: 111

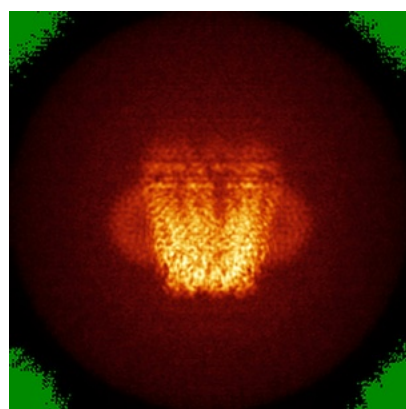


Z Index: 98

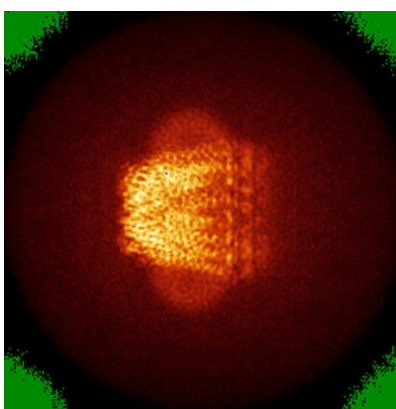
The images above show the largest variance slices of the map in three orthogonal directions.

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

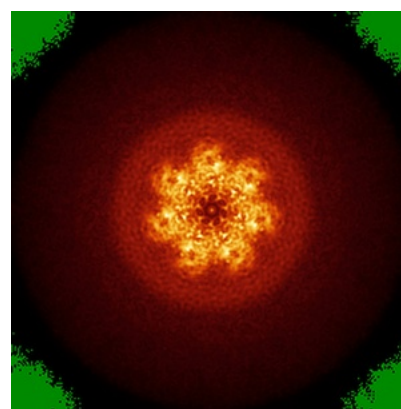
6.4.1 Primary map



X



Y

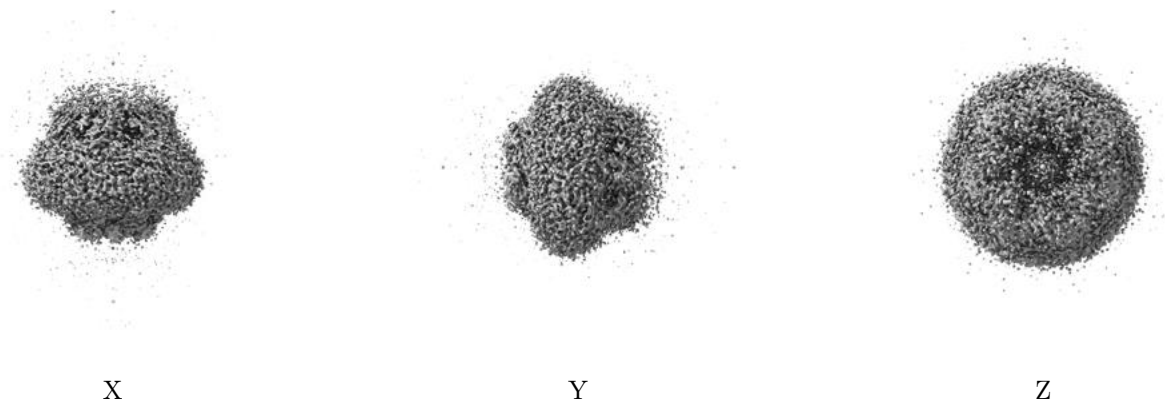


Z

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 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

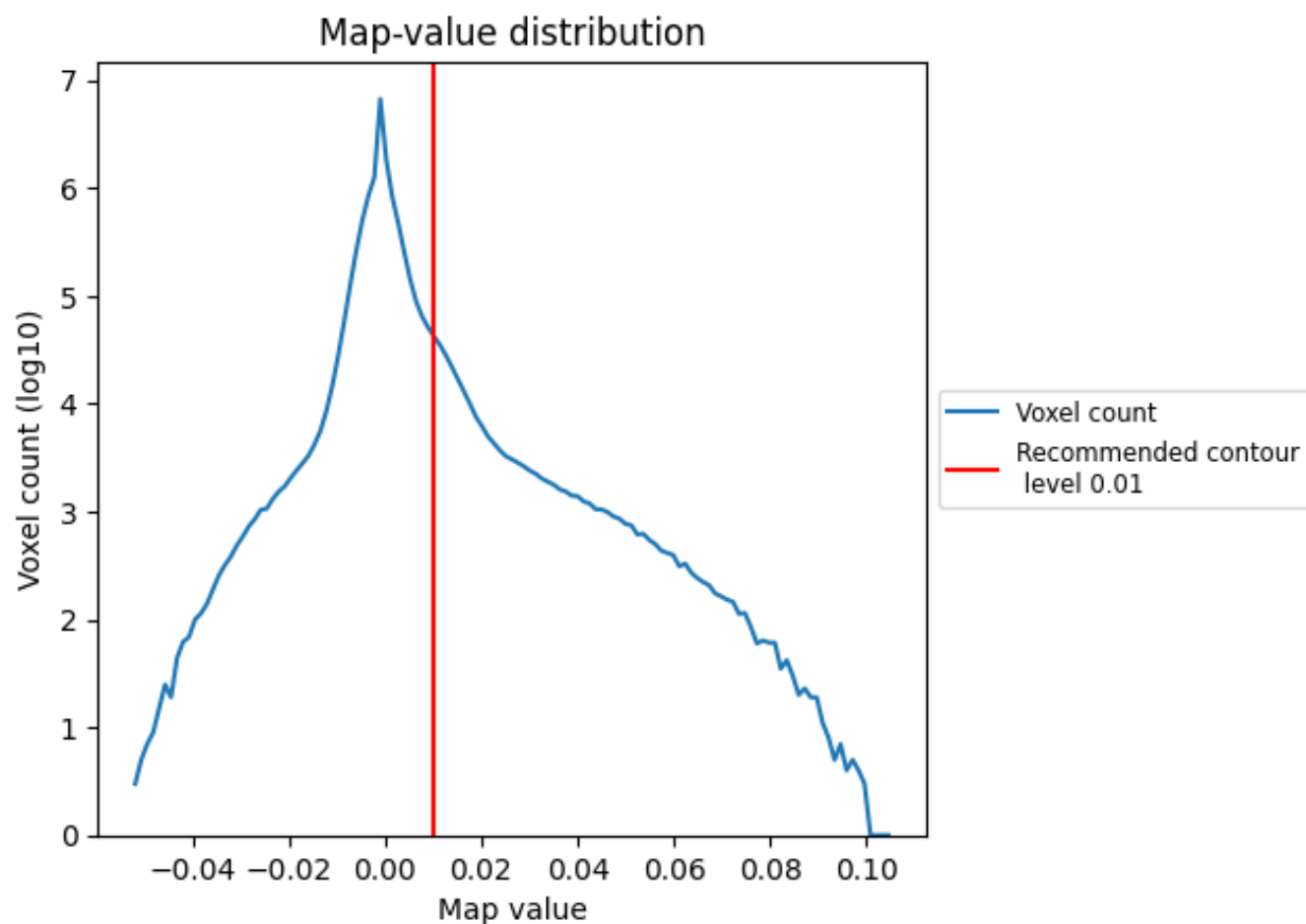
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

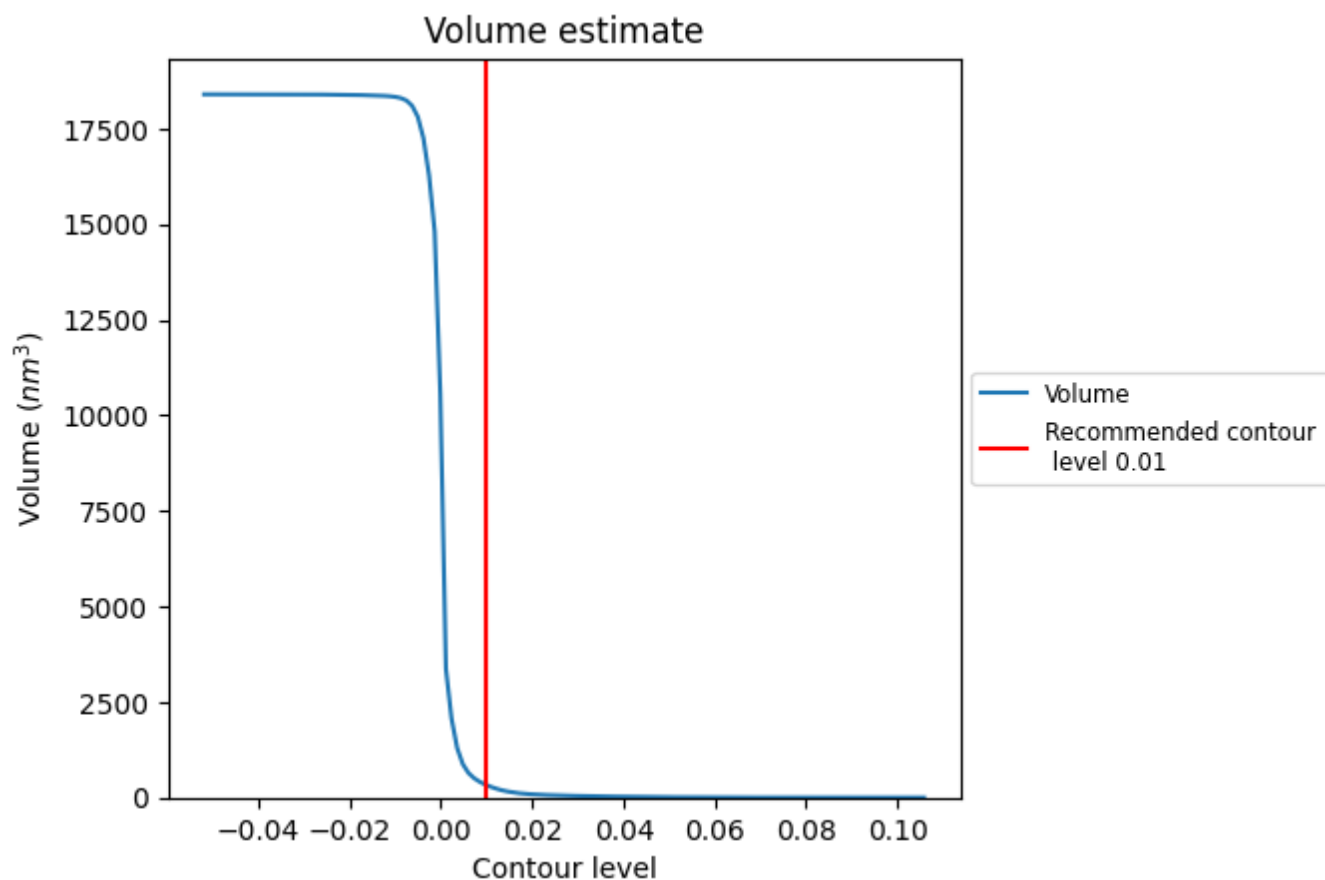
This section contains the results of statistical analysis of the map.

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.

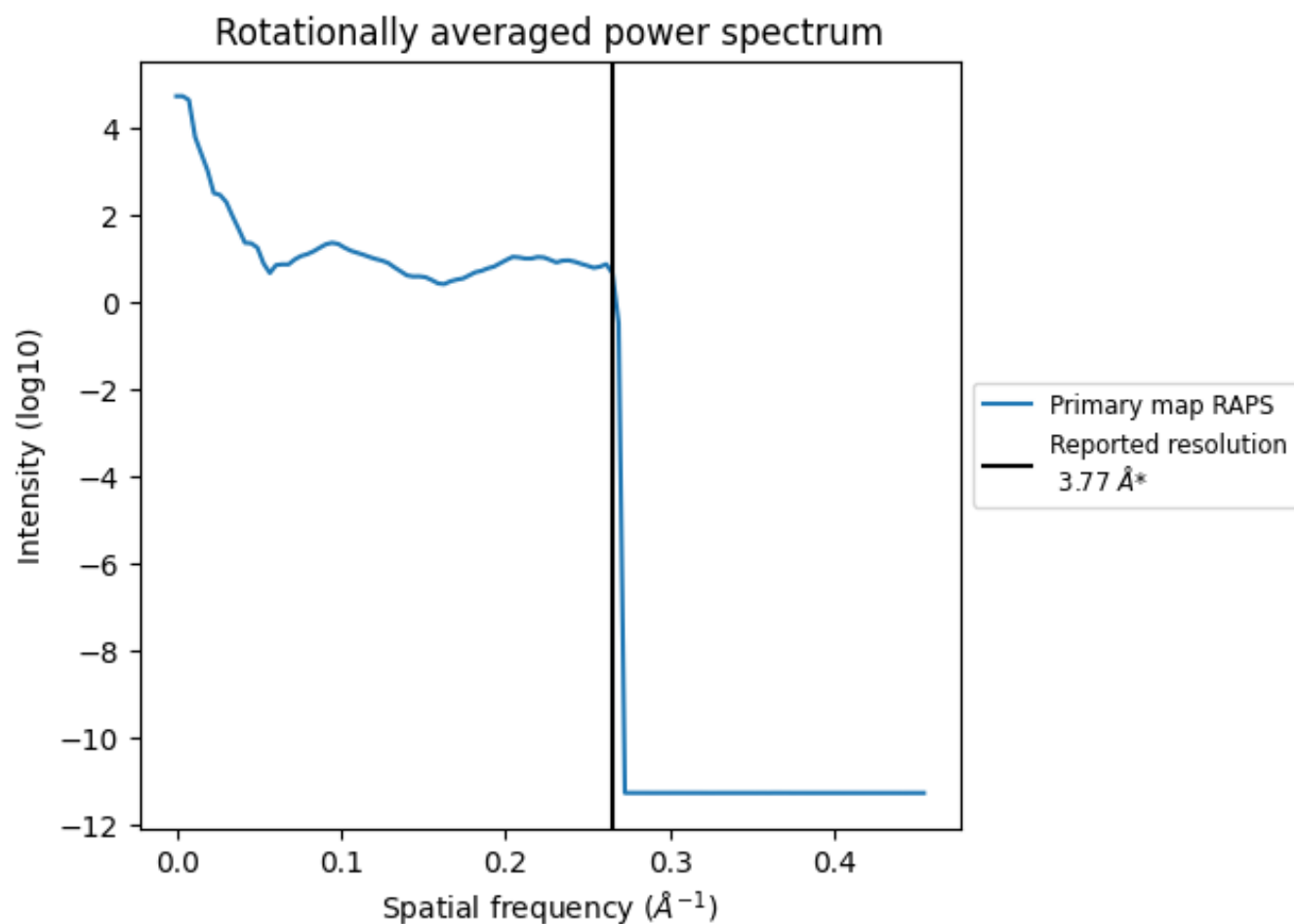
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 327 nm^3 ; this corresponds to an approximate mass of 296 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 0.265 Å⁻¹

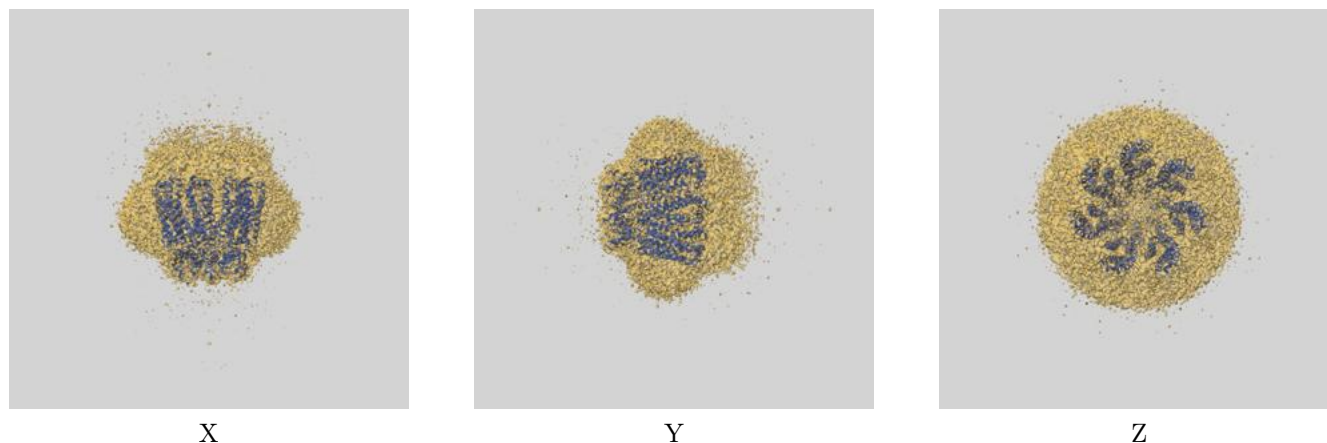
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

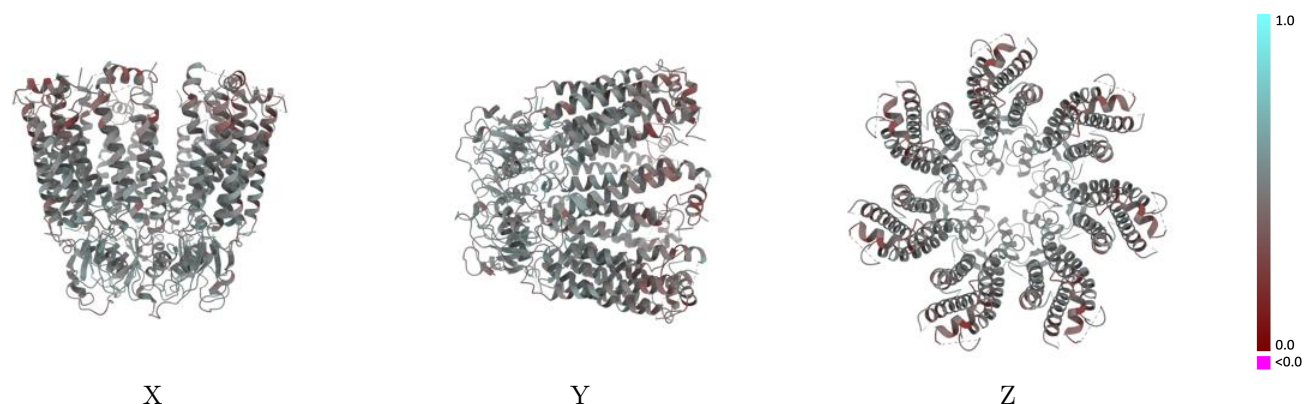
This section contains information regarding the fit between EMDB map EMD-21071 and PDB model 6V6D. Per-residue inclusion information can be found in section [3](#) on page [7](#).

9.1 Map-model overlay [i](#)



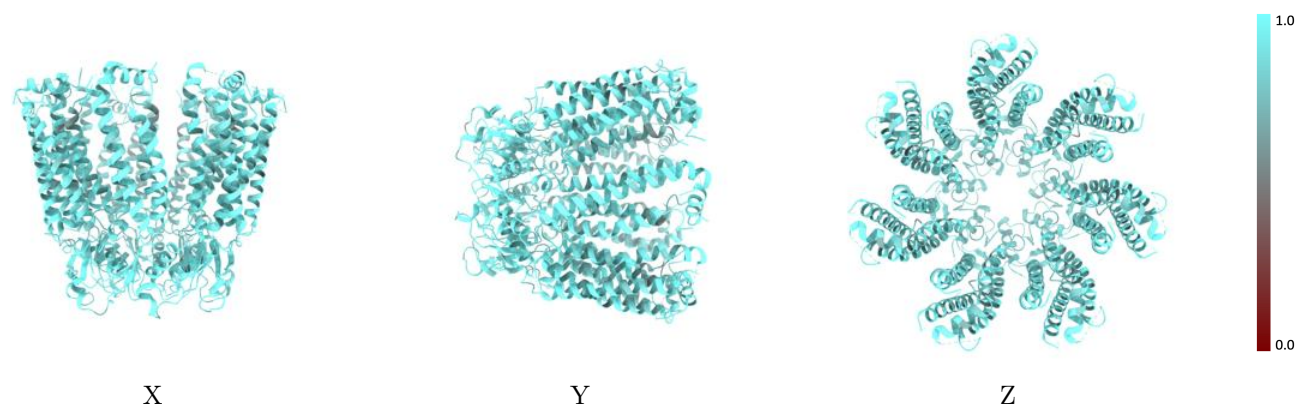
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



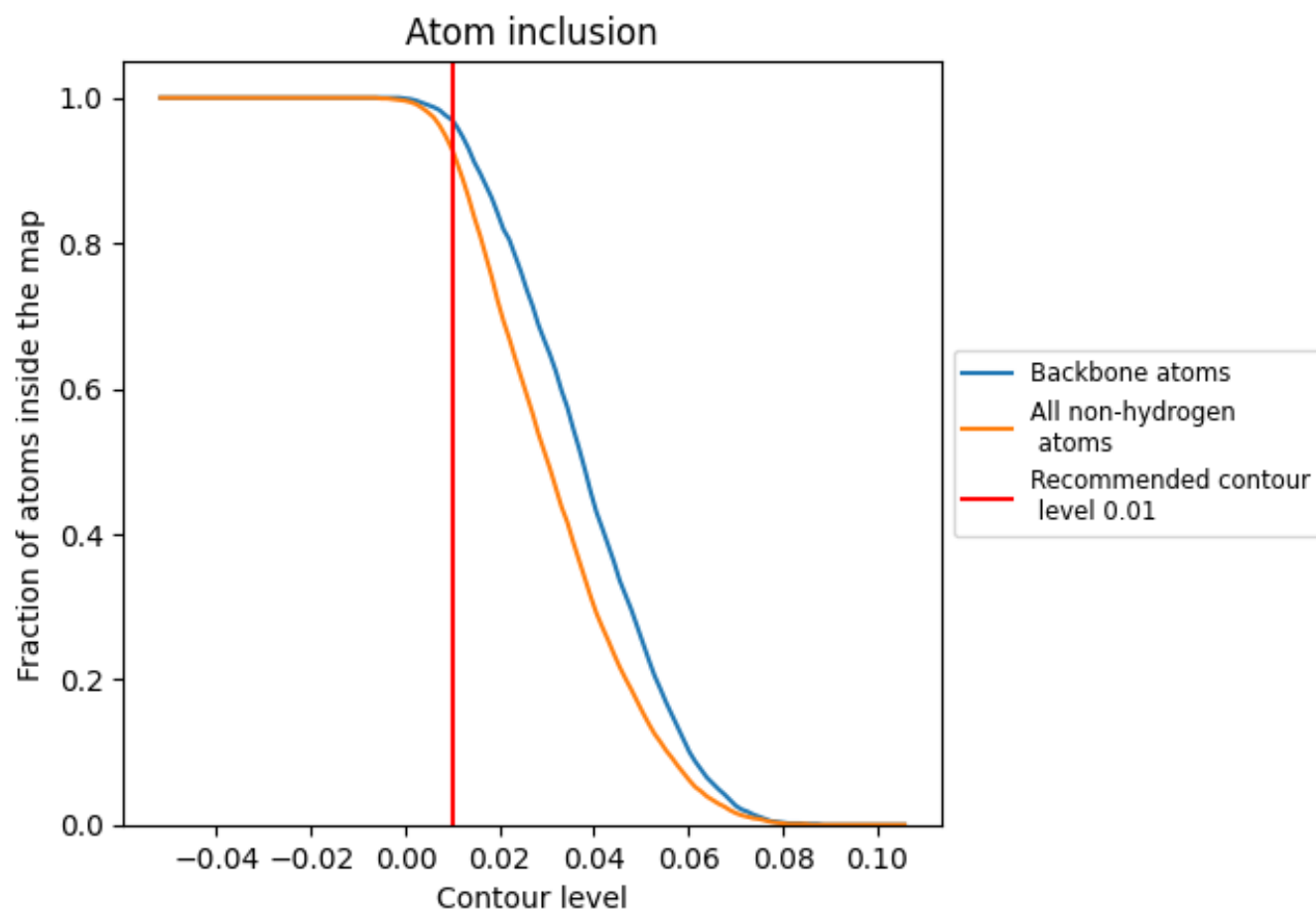
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.01).

9.4 Atom inclusion [i](#)



At the recommended contour level, 97% of all backbone atoms, 93% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9280	0.4780
A	0.9290	0.4780
B	0.9270	0.4780
C	0.9250	0.4790
D	0.9310	0.4780
E	0.9260	0.4770
F	0.9270	0.4780
G	0.9270	0.4770

1.0

0.0

<0.0