



## wwPDB EM Validation Summary Report ⓘ

Nov 3, 2024 – 09:46 pm GMT

PDB ID : 8AJM  
EMDB ID : EMD-15484  
Title : Structure of human DDB1-DCAF12 in complex with the C-terminus of CCT5  
Authors : Pla-Prats, C.; Cavadini, S.; Kempf, G.; Thoma, N.H.  
Deposited on : 2022-07-28  
Resolution : 2.83 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](mailto: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>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev113  
MolProbity : 4.02b-467  
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) : 2.39

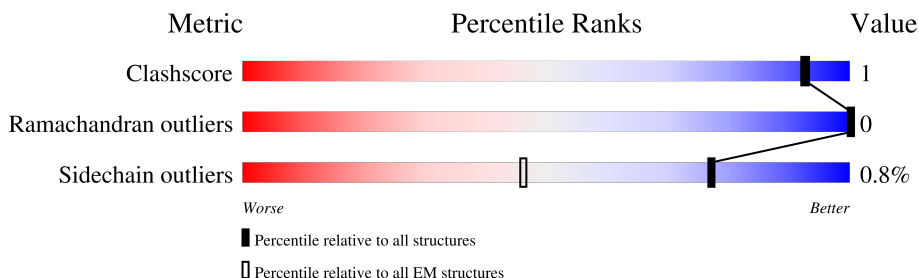
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.83 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  $\geq 3$ , 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	1164	<div> <div>9%</div> <div>96%</div> <div>••</div> </div>
2	B	477	<div> <div>7%</div> <div>78%</div> <div>••</div> <div>17%</div> </div>
3	C	565	<div> <div>•</div> <div>99%</div> </div>

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 12106 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 DNA damage-binding protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1140	Total	C	N	O	S	0	0
			8918	5642	1503	1724	49		

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-23	MET	-	initiating methionine	UNP Q16531
A	-22	GLY	-	expression tag	UNP Q16531
A	-21	SER	-	expression tag	UNP Q16531
A	-20	SER	-	expression tag	UNP Q16531
A	-19	HIS	-	expression tag	UNP Q16531
A	-18	HIS	-	expression tag	UNP Q16531
A	-17	HIS	-	expression tag	UNP Q16531
A	-16	HIS	-	expression tag	UNP Q16531
A	-15	HIS	-	expression tag	UNP Q16531
A	-14	HIS	-	expression tag	UNP Q16531
A	-13	SER	-	expression tag	UNP Q16531
A	-12	ALA	-	expression tag	UNP Q16531
A	-11	VAL	-	expression tag	UNP Q16531
A	-10	ASP	-	expression tag	UNP Q16531
A	-9	GLU	-	expression tag	UNP Q16531
A	-8	ASN	-	expression tag	UNP Q16531
A	-7	LEU	-	expression tag	UNP Q16531
A	-6	TYR	-	expression tag	UNP Q16531
A	-5	PHE	-	expression tag	UNP Q16531
A	-4	GLN	-	expression tag	UNP Q16531
A	-3	GLY	-	expression tag	UNP Q16531
A	-2	GLY	-	expression tag	UNP Q16531
A	-1	GLY	-	expression tag	UNP Q16531
A	0	ARG	-	expression tag	UNP Q16531

- Molecule 2 is a protein called DDB1- and CUL4-associated factor 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	395	Total	C	N	O	S	0	0
			3131	1984	553	583	11		

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-23	MET	-	initiating methionine	UNP Q5T6F0
B	-22	ASP	-	expression tag	UNP Q5T6F0
B	-21	TRP	-	expression tag	UNP Q5T6F0
B	-20	SER	-	expression tag	UNP Q5T6F0
B	-19	HIS	-	expression tag	UNP Q5T6F0
B	-18	PRO	-	expression tag	UNP Q5T6F0
B	-17	GLN	-	expression tag	UNP Q5T6F0
B	-16	PHE	-	expression tag	UNP Q5T6F0
B	-15	GLU	-	expression tag	UNP Q5T6F0
B	-14	LYS	-	expression tag	UNP Q5T6F0
B	-13	SER	-	expression tag	UNP Q5T6F0
B	-12	ALA	-	expression tag	UNP Q5T6F0
B	-11	VAL	-	expression tag	UNP Q5T6F0
B	-10	ASP	-	expression tag	UNP Q5T6F0
B	-9	GLU	-	expression tag	UNP Q5T6F0
B	-8	ASN	-	expression tag	UNP Q5T6F0
B	-7	LEU	-	expression tag	UNP Q5T6F0
B	-6	TYR	-	expression tag	UNP Q5T6F0
B	-5	PHE	-	expression tag	UNP Q5T6F0
B	-4	GLN	-	expression tag	UNP Q5T6F0
B	-3	GLY	-	expression tag	UNP Q5T6F0
B	-2	GLY	-	expression tag	UNP Q5T6F0
B	-1	GLY	-	expression tag	UNP Q5T6F0
B	0	ARG	-	expression tag	UNP Q5T6F0

- Molecule 3 is a protein called T-complex protein 1 subunit epsilon.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	C	5	Total	C	N	O	2	0
			57	30	7	20		

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	-23	MET	-	initiating methionine	UNP P48643
C	-22	GLY	-	expression tag	UNP P48643
C	-21	SER	-	expression tag	UNP P48643

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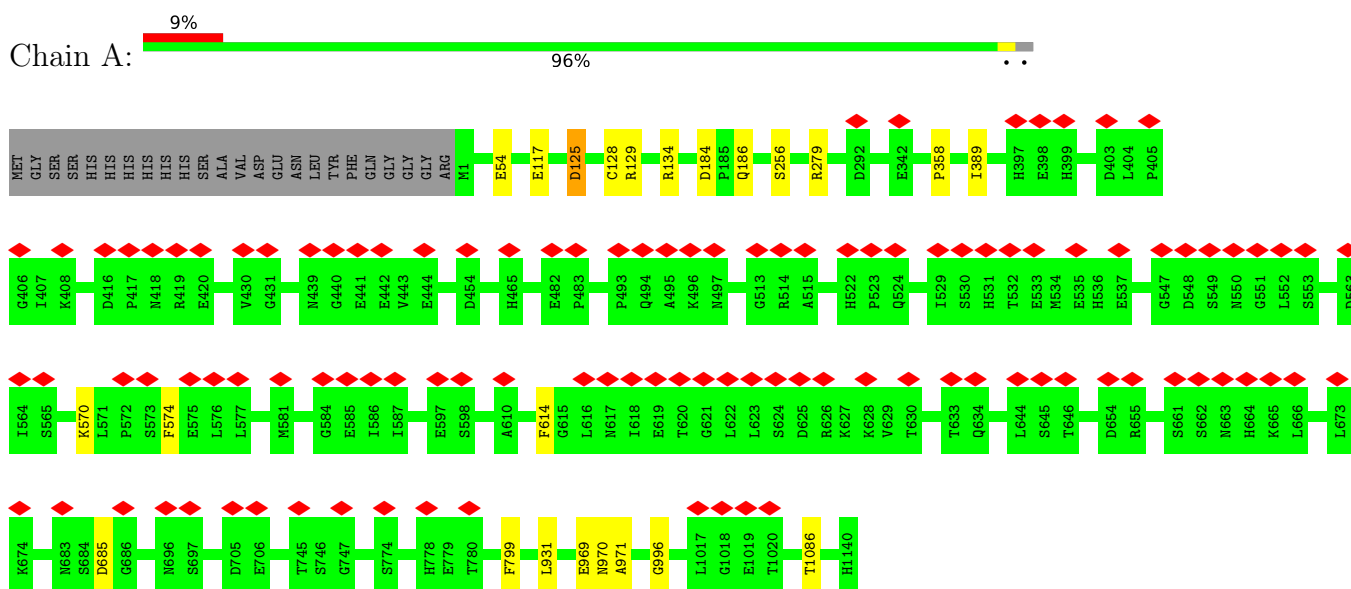
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Chain	Residue	Modelled	Actual	Comment	Reference
C	-20	SER	-	expression tag	UNP P48643
C	-19	HIS	-	expression tag	UNP P48643
C	-18	HIS	-	expression tag	UNP P48643
C	-17	HIS	-	expression tag	UNP P48643
C	-16	HIS	-	expression tag	UNP P48643
C	-15	HIS	-	expression tag	UNP P48643
C	-14	HIS	-	expression tag	UNP P48643
C	-13	SER	-	expression tag	UNP P48643
C	-12	ALA	-	expression tag	UNP P48643
C	-11	VAL	-	expression tag	UNP P48643
C	-10	ASP	-	expression tag	UNP P48643
C	-9	GLU	-	expression tag	UNP P48643
C	-8	ASN	-	expression tag	UNP P48643
C	-7	LEU	-	expression tag	UNP P48643
C	-6	TYR	-	expression tag	UNP P48643
C	-5	PHE	-	expression tag	UNP P48643
C	-4	GLN	-	expression tag	UNP P48643
C	-3	GLY	-	expression tag	UNP P48643
C	-2	GLY	-	expression tag	UNP P48643
C	-1	GLY	-	expression tag	UNP P48643
C	0	ARG	-	expression tag	UNP P48643

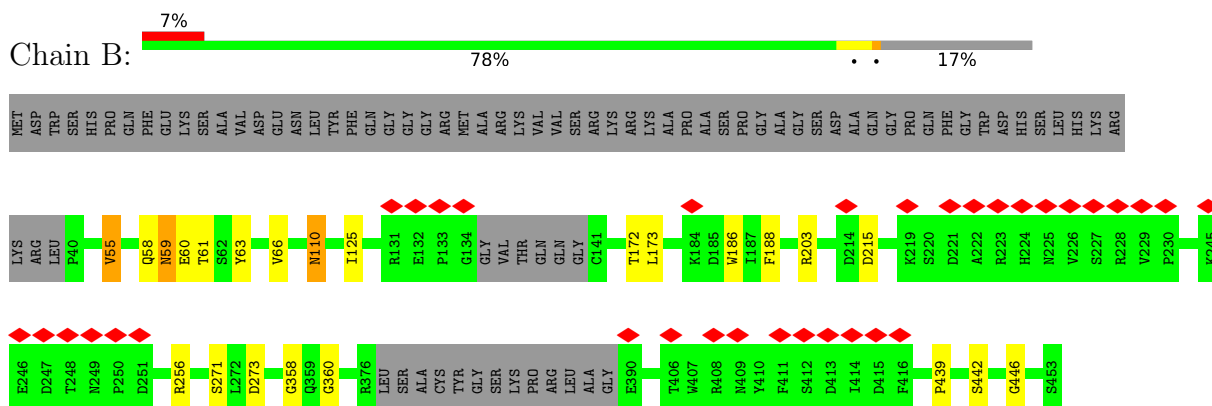
### 3 Residue-property plots

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.

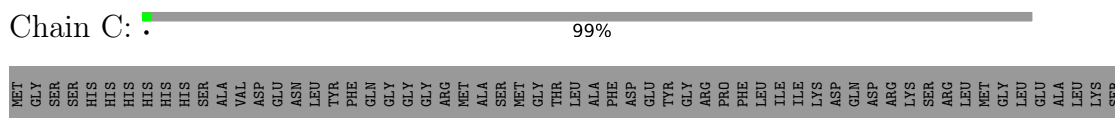
- Molecule 1: DNA damage-binding protein 1



- Molecule 2: DDB1- and CUL4-associated factor 12



- Molecule 3: T-complex protein 1 subunit epsilon



ILE	ILE	VAL	GLU	THR	LEU	GLY	VAL	GLY	VAL	SER	HIS
SER	SER	ILE	ALA	GLY	GLN	ARG	ASP	ARG	ASP	GLN	ILE
LEU	LEU	PRO	LYS	GLY	LYS	LEU	ILE	LEU	ILE	ASP	MET
ALA	ALA	MET	ARG	ARG	TYR	GLU	ASP	GLU	ASP	ALA	ALA
THR	THR	THR	SER	ILE	VAL	LYS	THR	THR	THR	ILE	LYS
GLN	GLN	LEU	LEU	VAL	GLU	LYS	PRO	GLU	GLY	ALA	VAL
MET	MET	SER	HIS	PRO	GLU	LYS	THR	LEU	THR	ALA	LYS
VAL	VAL	GLU	ASP	ARG	ARG	LYS	ASP	PRO	ASP	VAL	VAL
ARG	ARG	ASN	ALA	PHE	PHE	PHE	ILE	LEU	GLY	ALA	ASN
MET	MET	SER	LEU	SER	GLU	GLY	LEU	GLY	ILE	THR	THR
ILE	ILE	GLY	CYS	GLU	GLU	MET	VAL	VAL	GLN	THR	MET
LEU	LEU	MET	VAL	LEU	MET	GLY	ILE	ILE	THR	GLY	ARG
LYS	LYS	ASN	ILE	THR	ILE	THR	ILE	ILE	VAL	VAL	ARG
ILE	ILE	PRO	ARG	ALA	GLN	GLN	GLN	VAL	ASP	THR	VAL
ASP	ASP	ILE	ASN	GLU	ILE	ASP	LYS	LYS	THR	LEU	SER
ASN	ASN	GLN	LEU	LEU	LYS	ILE	ILE	GLN	THR	ALA	GLY
ILE	ILE	THR	ILE	LEU	LYS	ASP	ILE	ASP	THR	VAL	ASN
ARG	ARG	MET	ARG	GLY	GLU	PHE	THR	PHE	GLY	THR	PRO
PRO	PRO	THR	ASP	PHE	THR	THR	GLY	GLY	GLY	VAL	ASN
G537	G537	ARG	ASN	ALA	GLY	ILE	VAL	VAL	GLY	ALA	MET
E540	E540	VAL	VAL	GLY	GLY	ILE	ILE	CYS	VAL	VAL	ASN
E541	E541	ARG	GLN	TYR	GLY	GLU	GLN	ALA	ASP	GLY	LYS
		ILE	GLY	GLY	ALA	ASN	LYS	ALA	ILE	VAL	THR
		ILE	ILE	LEU	LEU	LEU	MET	ASN	THR	ILE	THR
		ASP	ASP	THR	THR	THR	ASP	GLY	THR	THR	THR
		LYS	ILE	ILE	LYS	ILE	CYS	ASN	ASN	GLN	ASN
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
		VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
		GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
		ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
		GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
		LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
		ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
		ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	451315	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 ( $e^-/\text{\AA}^2$ )	51.8	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.877	Depositor
Minimum map value	-0.339	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.022	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	240.8, 240.8, 240.8	wwPDB
Map dimensions	280, 280, 280	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.86, 0.86, 0.86	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	0.44	0/9083	0.56	0/12306
2	B	0.38	0/3209	0.58	0/4355
3	C	0.43	0/55	0.63	0/67
All	All	0.42	0/12347	0.57	0/16728

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [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	8918	0	8879	13	0
2	B	3131	0	3067	17	0
3	C	57	0	37	3	0
All	All	12106	0	11983	27	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 1.

The worst 5 of 27 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:358:PRO:HG3	2:B:55:VAL:HG12	1.62	0.81

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:117:GLU:HB3	2:B:61:THR:HG21	1.71	0.72
2:B:188:PHE:CE2	2:B:203:ARG:HG2	2.26	0.70
1:A:256:SER:OG	1:A:279:ARG:NH2	2.38	0.57
2:B:58:GLN:O	2:B:60:GLU:HG3	2.08	0.53

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	1138/1164 (98%)	1113 (98%)	25 (2%)	0	100	100
2	B	389/477 (82%)	380 (98%)	9 (2%)	0	100	100
3	C	4/565 (1%)	4 (100%)	0	0	100	100
All	All	1531/2206 (69%)	1497 (98%)	34 (2%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	999/1018 (98%)	992 (99%)	7 (1%)	81	91
2	B	344/407 (84%)	340 (99%)	4 (1%)	67	85
3	C	6/475 (1%)	6 (100%)	0	100	100

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	1349/1900 (71%)	1338 (99%)	11 (1%)	77 90

5 of 11 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	55	VAL
2	B	59	ASN
2	B	215	ASP
2	B	110	ASN
1	A	614	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	4	ASN
2	B	59	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 ⓘ

There are no chain breaks in this entry.

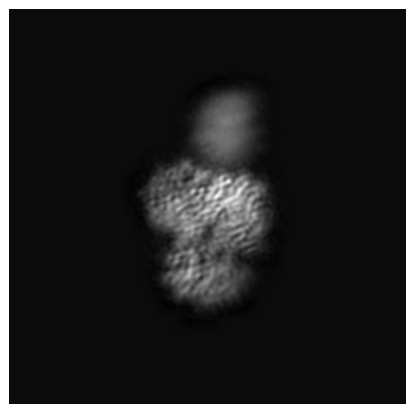
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-15484. These allow visual inspection of the internal detail of the map and identification of artifacts.

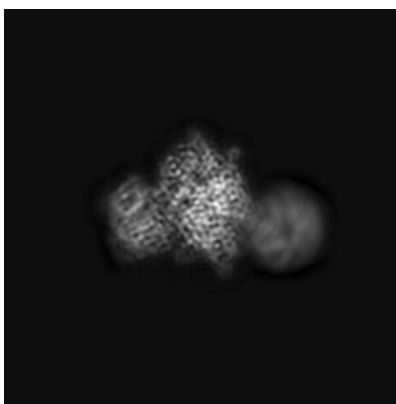
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

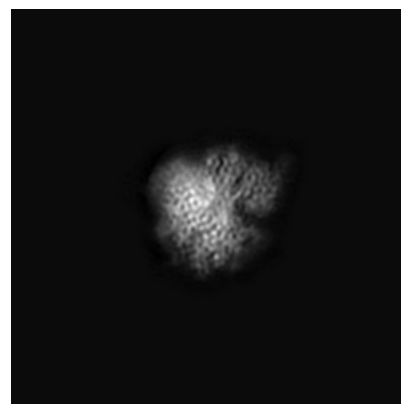
#### 6.1.1 Primary map



X

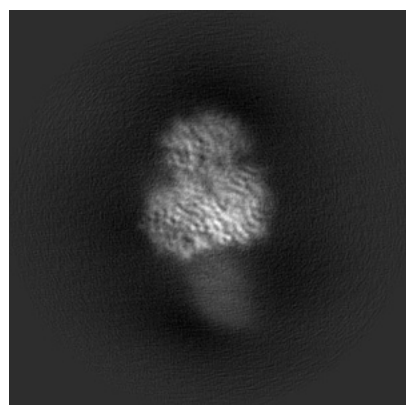


Y

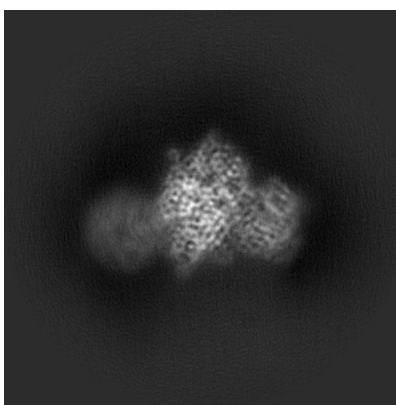


Z

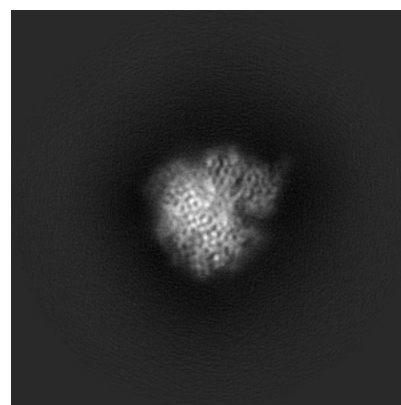
#### 6.1.2 Raw map



X



Y

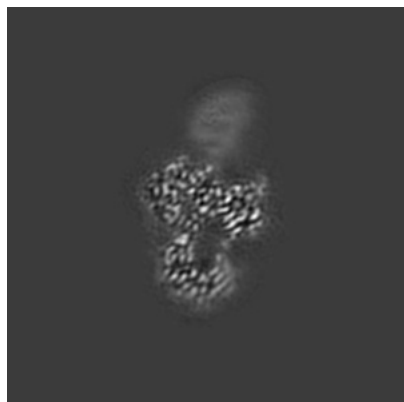


Z

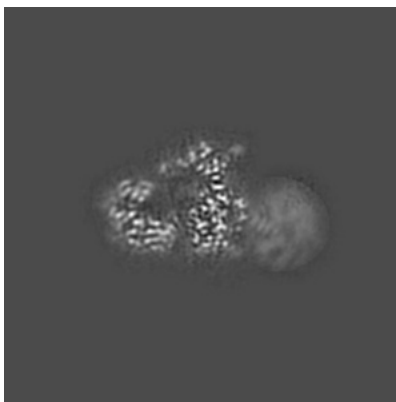
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

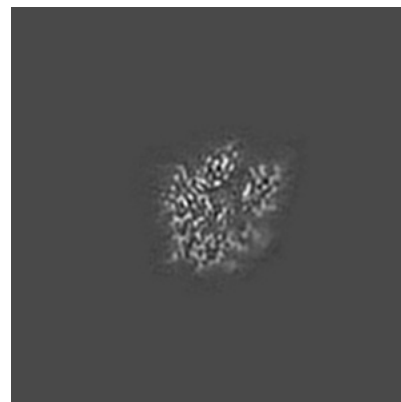
### 6.2.1 Primary map



X Index: 140

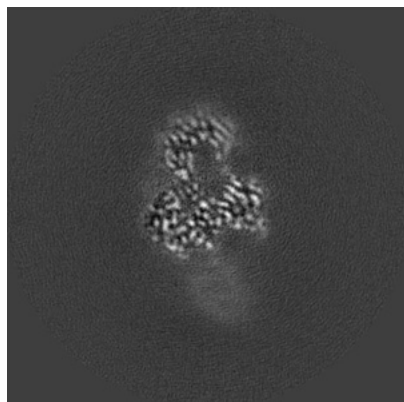


Y Index: 140

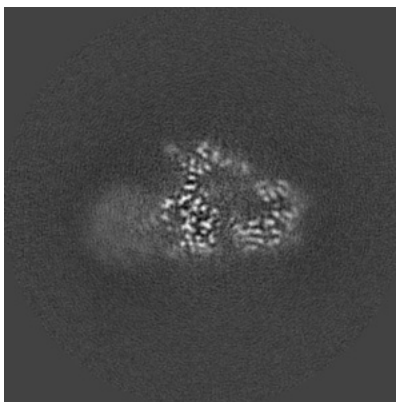


Z Index: 140

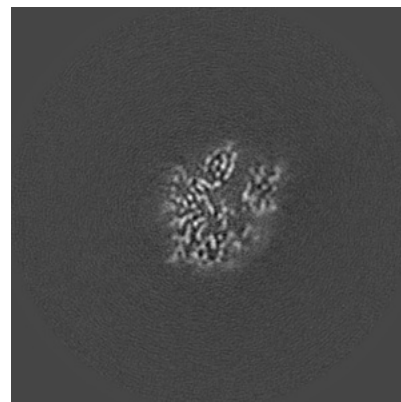
### 6.2.2 Raw map



X Index: 140



Y Index: 140

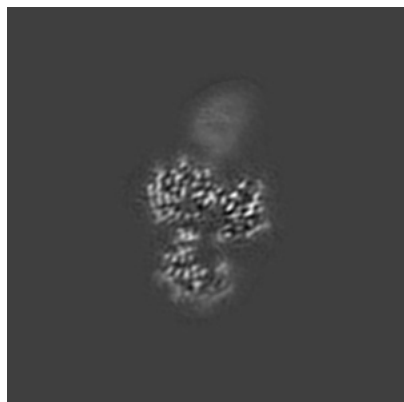


Z Index: 140

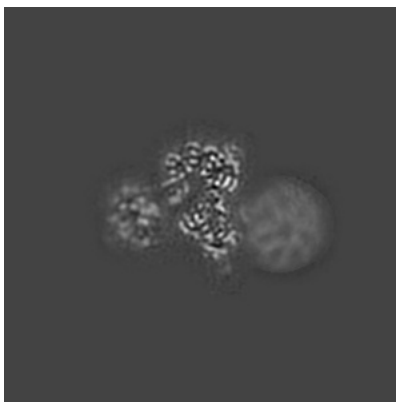
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

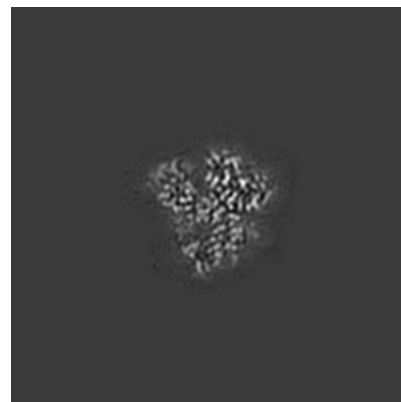
### 6.3.1 Primary map



X Index: 143

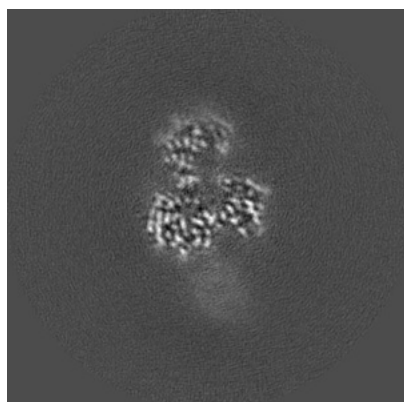


Y Index: 148

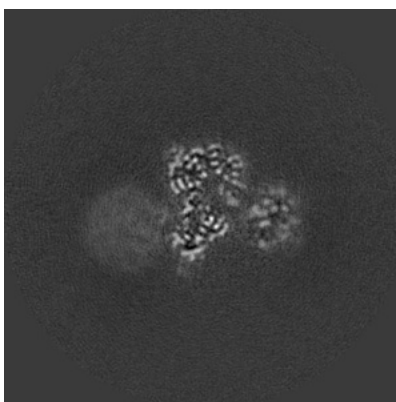


Z Index: 148

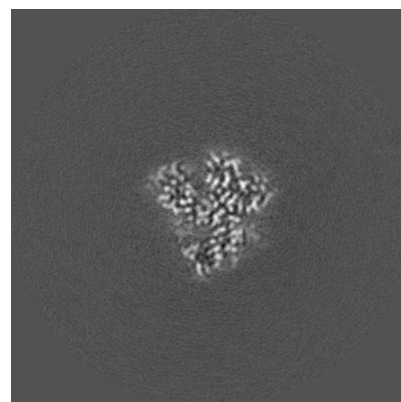
### 6.3.2 Raw map



X Index: 143



Y Index: 148

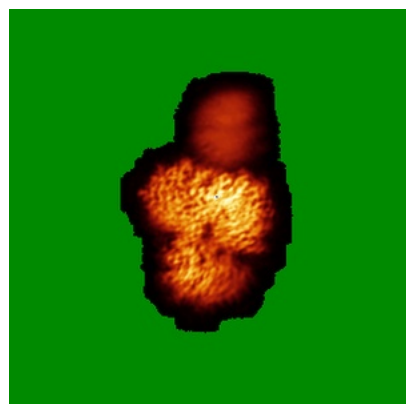


Z Index: 131

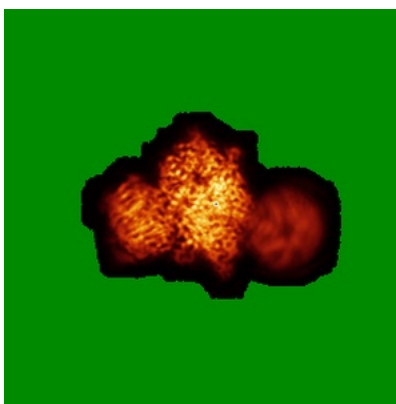
The images above show the largest variance slices of the map in three orthogonal directions.

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

### 6.4.1 Primary map



X

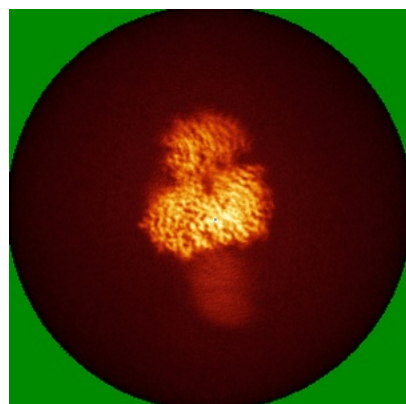


Y

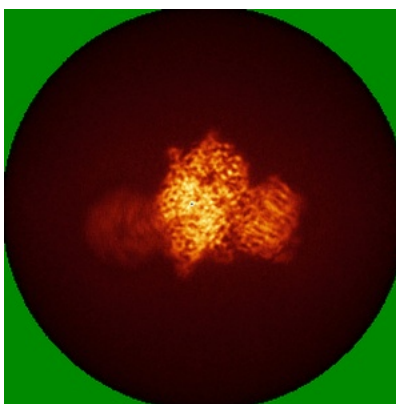


Z

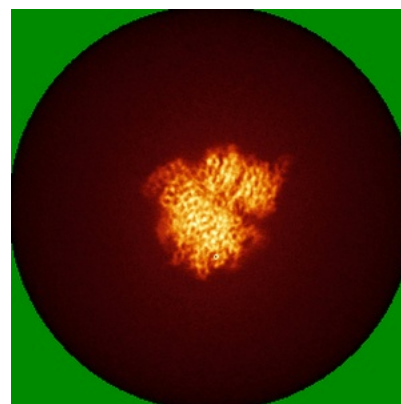
### 6.4.2 Raw map



X



Y



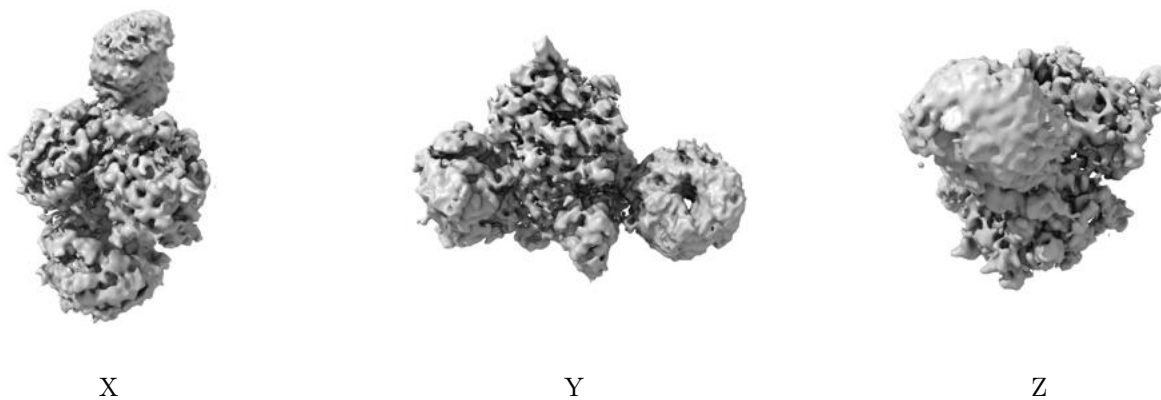
Z

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.



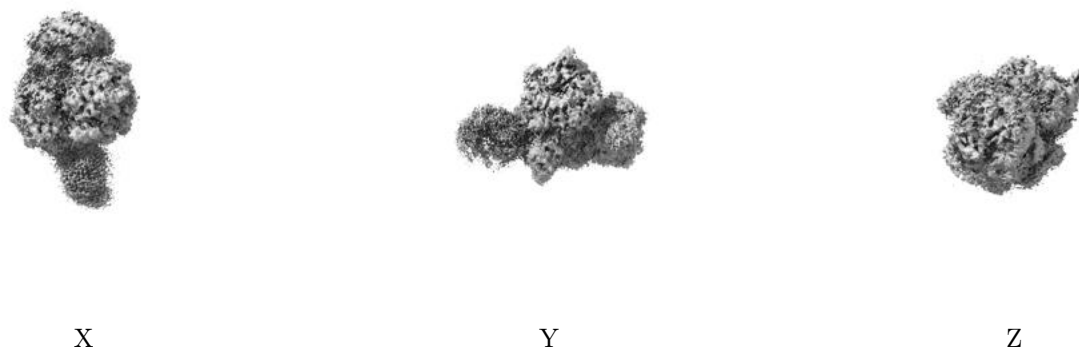
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.1. 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.

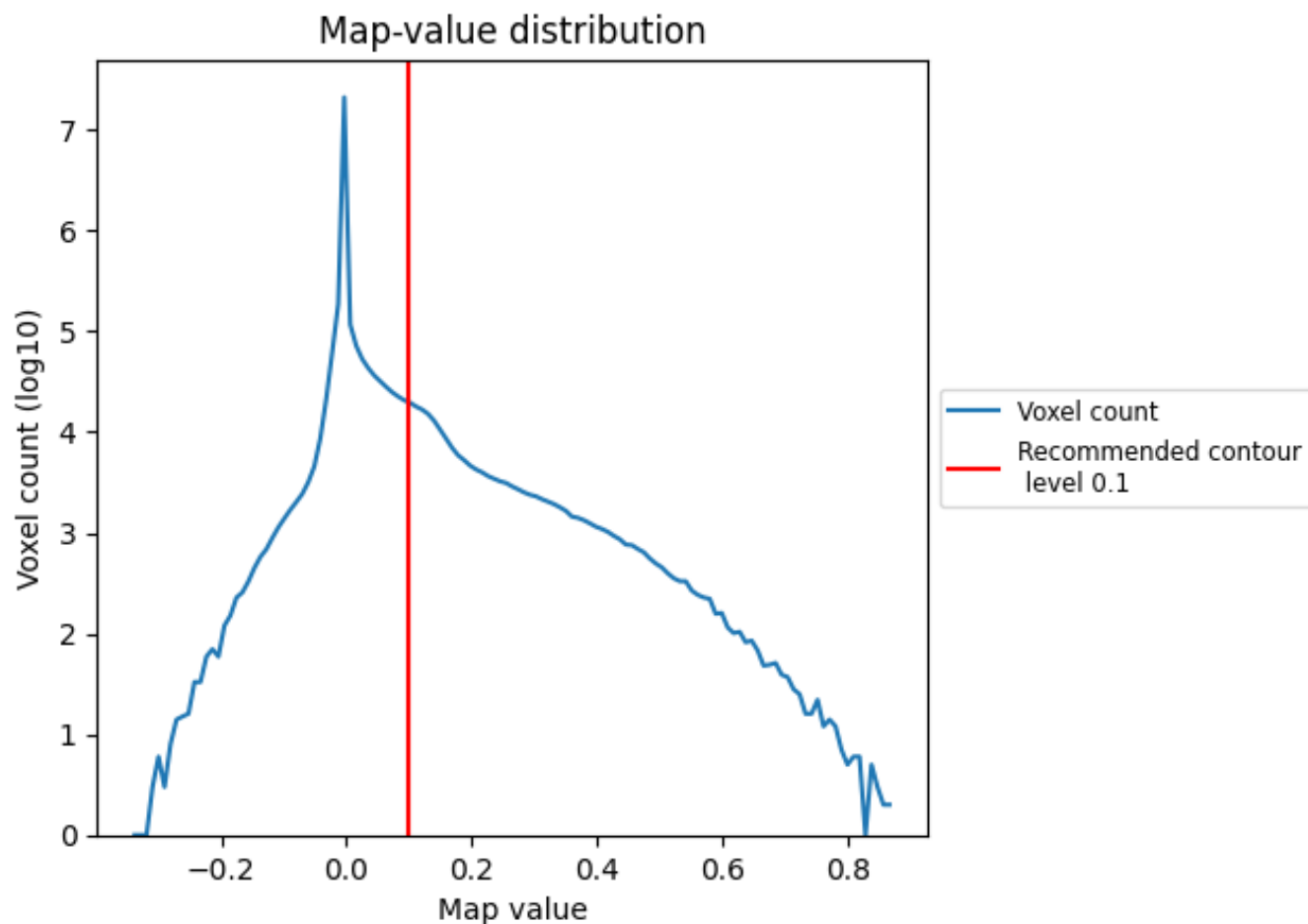
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

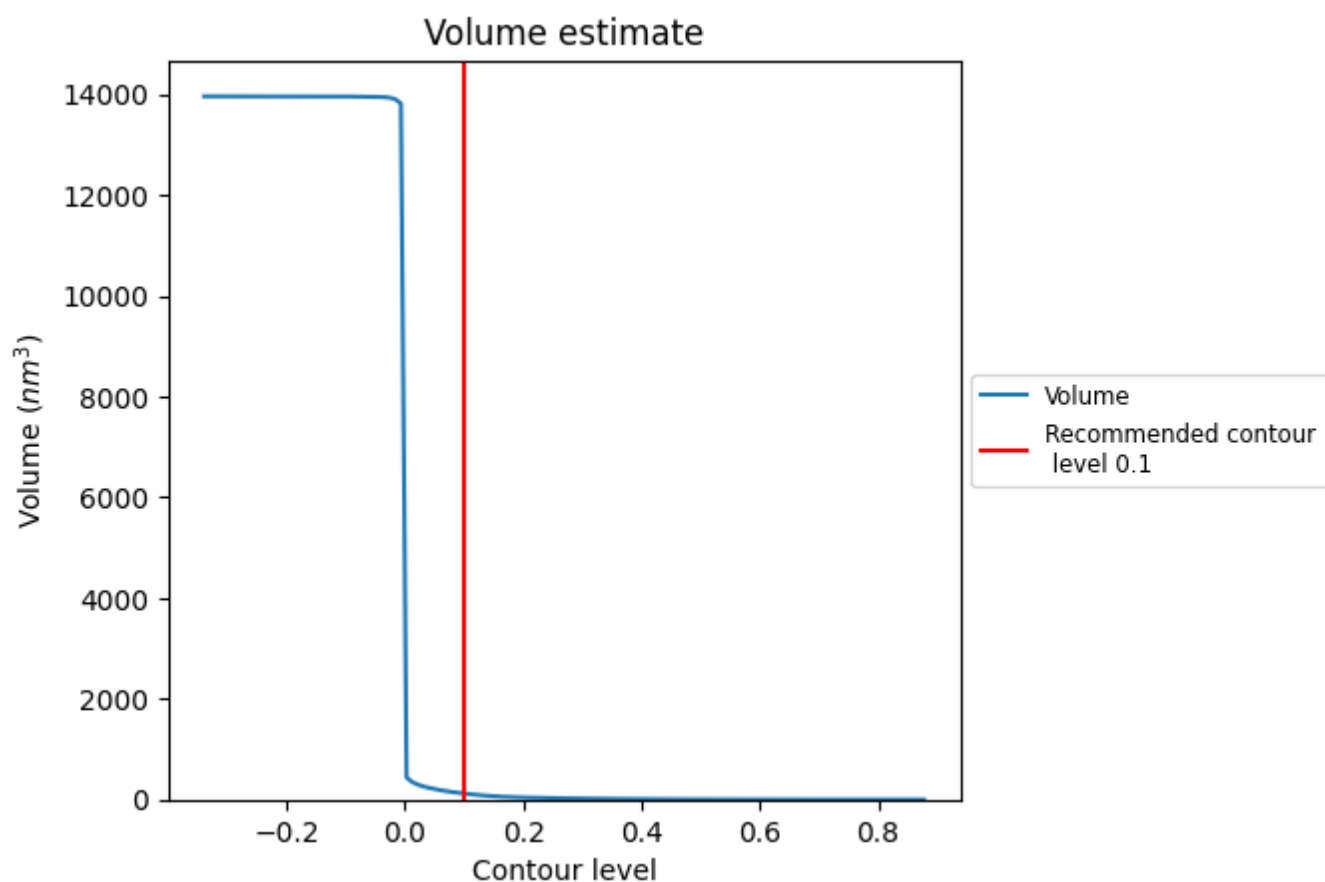
This section contains the results of statistical analysis of the map.

### 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.

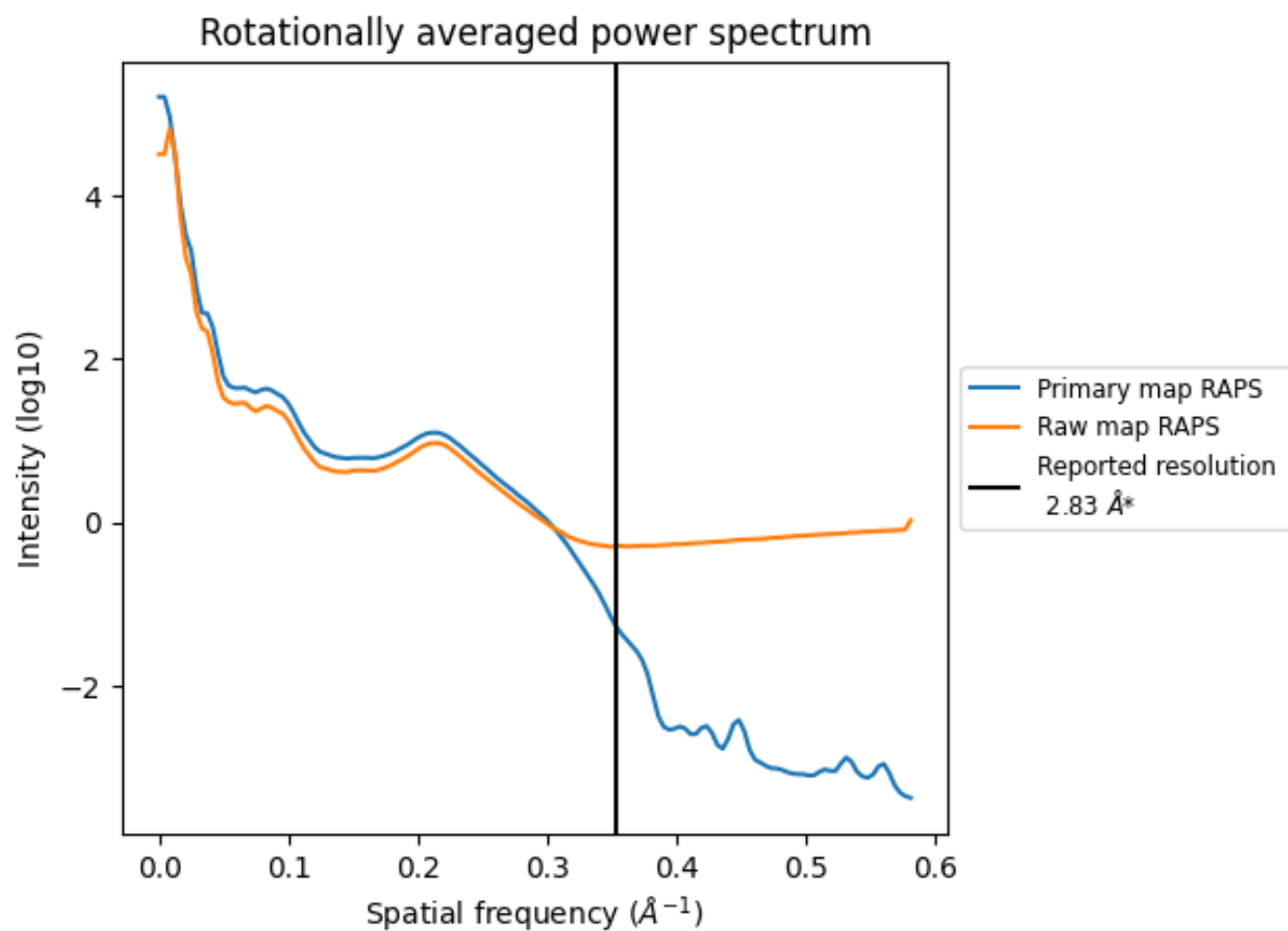
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 121 nm<sup>3</sup>; this corresponds to an approximate mass of 109 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 ⓘ

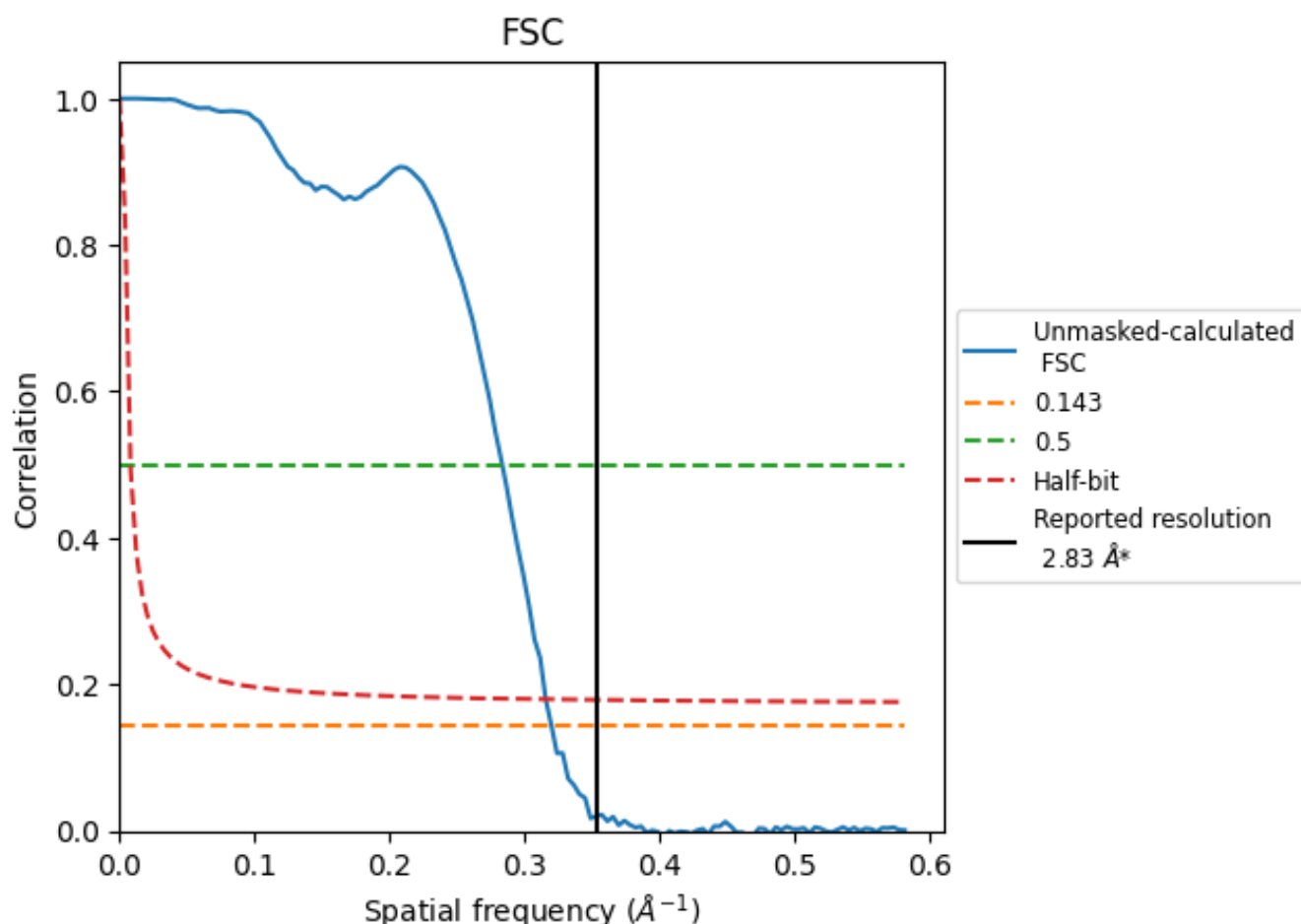


\*Reported resolution corresponds to spatial frequency of 0.353 Å<sup>-1</sup>

## 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 0.353 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

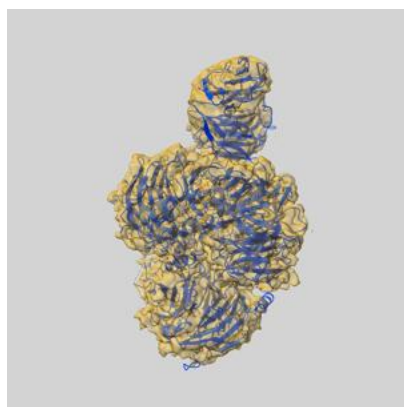
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.83	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.13	3.53	3.17

\*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 3.13 differs from the reported value 2.83 by more than 10 %

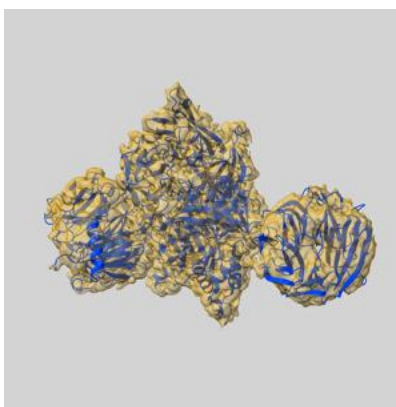
## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-15484 and PDB model 8AJM. Per-residue inclusion information can be found in section [3](#) on page [6](#).

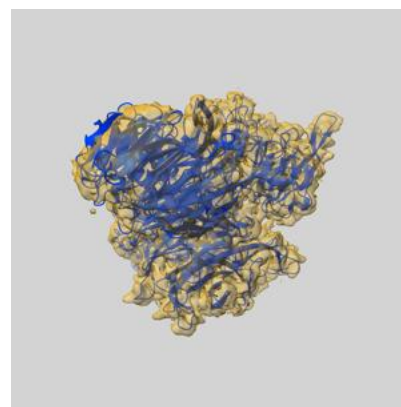
### 9.1 Map-model overlay [i](#)



X



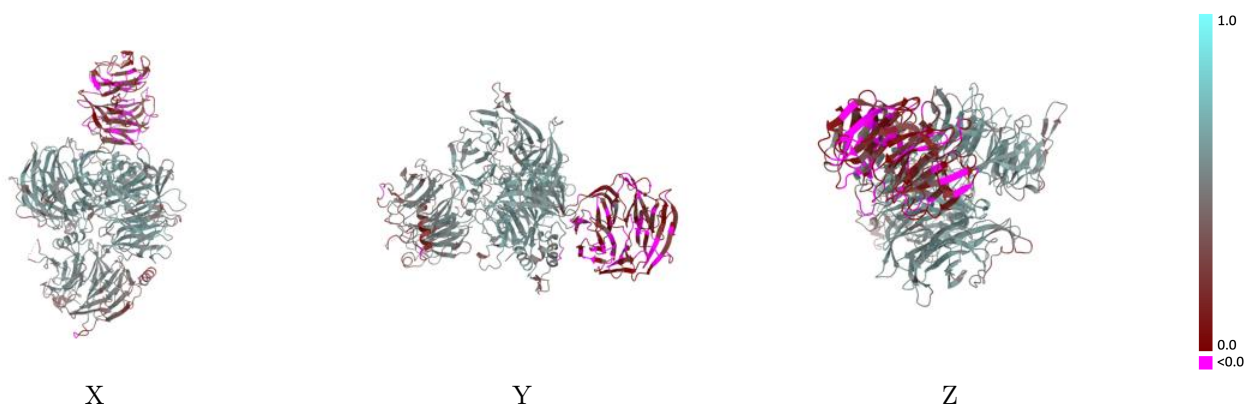
Y



Z

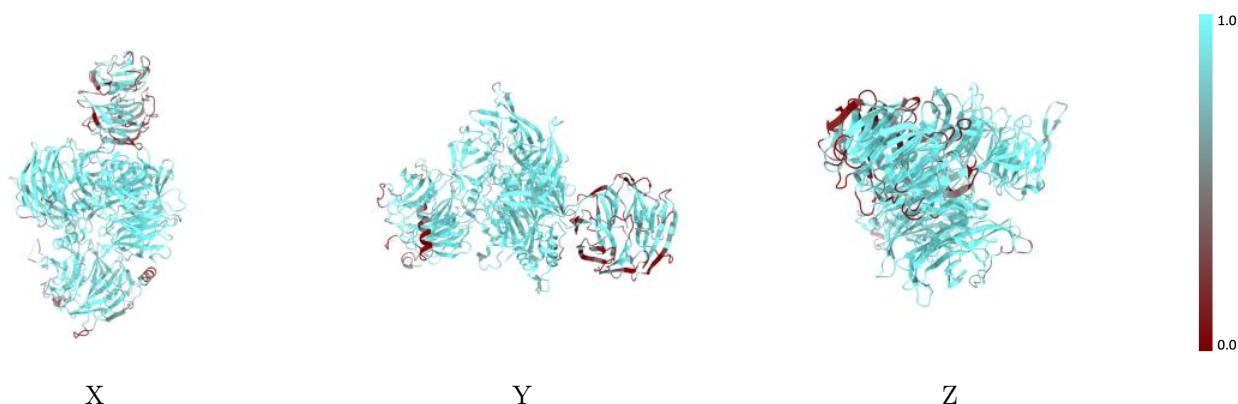
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 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.

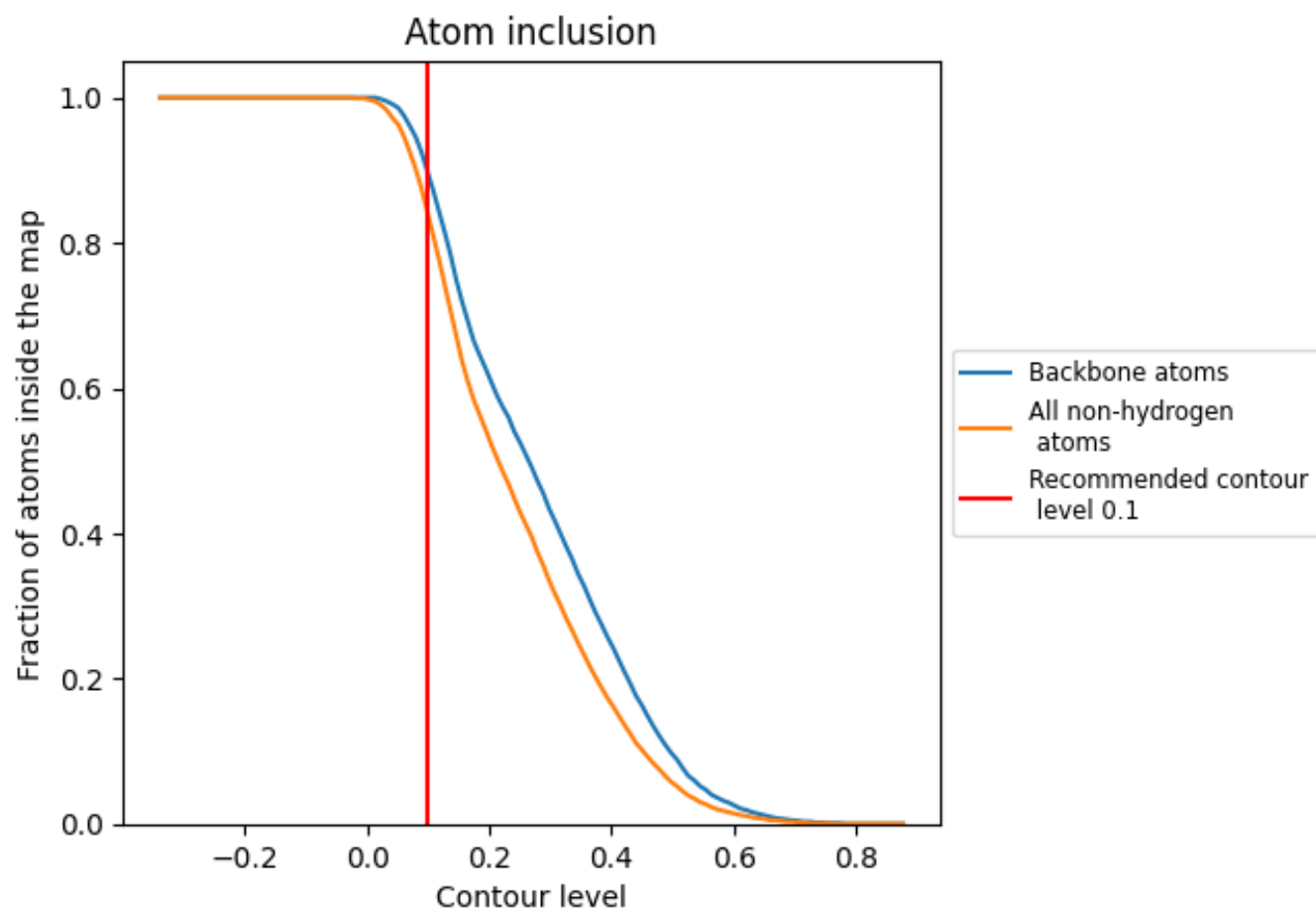
## 9.3 Atom inclusion mapped to coordinate model [i](#)



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 (0.1).



## 9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 84% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div><div></div></div> 0.8380	<div><div></div></div> 0.4250
A	<div><div></div></div> 0.8420	<div><div></div></div> 0.4150
B	<div><div></div></div> 0.8300	<div><div></div></div> 0.4510
C	<div><div></div></div> 0.7630	<div><div></div></div> 0.4350

