



## Full wwPDB EM Validation Report ⓘ

Sep 8, 2025 – 12:13 PM JST

PDB ID : 8YNF / pdb\_00008ynf  
EMDB ID : EMD-39423  
Title : Structure of Duffy Antigen Receptor for Chemokines (DARC)/ACKR1 in complex with the chemokine, CXCL8  
Authors : Banerjee, R.; Khanppnavar, B.; Maharana, J.; Saha, S.; Korkhov, V.M.; Shukla, A.K.  
Deposited on : 2024-03-11  
Resolution : 3.65 Å(reported)  
Based on initial model : 8JPS

This is a Full wwPDB EM Validation 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.dev126  
MolProbity : 4-5-2 with Phenix2.0rc1  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.45.1

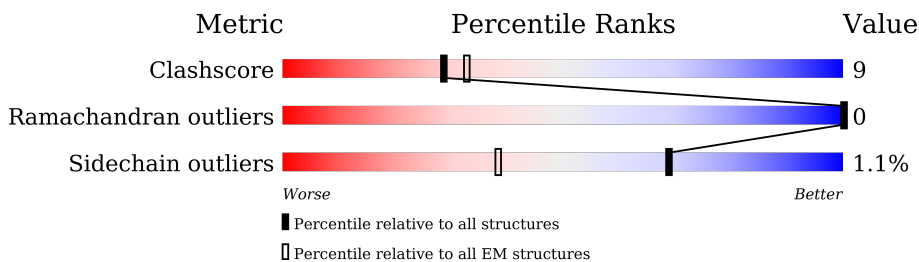
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.65 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	392	
1	B	392	
2	D	79	
2	E	79	
2	G	79	
2	H	79	

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 4636 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 Atypical chemokine receptor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	B	249	Total	C	N	O	S	0	0
			1606	1034	274	288	10		
1	A	249	Total	C	N	O	S	0	0
			1612	1040	274	288	10		

There are 114 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-55	MET	-	initiating methionine	UNP Q16570
B	-54	GLY	-	expression tag	UNP Q16570
B	-53	LYS	-	expression tag	UNP Q16570
B	-52	THR	-	expression tag	UNP Q16570
B	-51	ILE	-	expression tag	UNP Q16570
B	-50	ILE	-	expression tag	UNP Q16570
B	-49	ALA	-	expression tag	UNP Q16570
B	-48	LEU	-	expression tag	UNP Q16570
B	-47	SER	-	expression tag	UNP Q16570
B	-46	TYR	-	expression tag	UNP Q16570
B	-45	ILE	-	expression tag	UNP Q16570
B	-44	PHE	-	expression tag	UNP Q16570
B	-43	CYS	-	expression tag	UNP Q16570
B	-42	LEU	-	expression tag	UNP Q16570
B	-41	VAL	-	expression tag	UNP Q16570
B	-40	PHE	-	expression tag	UNP Q16570
B	-39	ALA	-	expression tag	UNP Q16570
B	-38	ASP	-	expression tag	UNP Q16570
B	-37	TYR	-	expression tag	UNP Q16570
B	-36	LYS	-	expression tag	UNP Q16570
B	-35	ASP	-	expression tag	UNP Q16570
B	-34	ASP	-	expression tag	UNP Q16570
B	-33	ASP	-	expression tag	UNP Q16570
B	-32	TYR	-	expression tag	UNP Q16570
B	-31	ALA	-	expression tag	UNP Q16570
B	-30	ALA	-	expression tag	UNP Q16570

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-29	ASN	-	expression tag	UNP Q16570
B	-28	PHE	-	expression tag	UNP Q16570
B	-27	THR	-	expression tag	UNP Q16570
B	-26	PRO	-	expression tag	UNP Q16570
B	-25	VAL	-	expression tag	UNP Q16570
B	-24	ASN	-	expression tag	UNP Q16570
B	-23	GLY	-	expression tag	UNP Q16570
B	-22	SER	-	expression tag	UNP Q16570
B	-21	SER	-	expression tag	UNP Q16570
B	-20	GLY	-	expression tag	UNP Q16570
B	-19	ASN	-	expression tag	UNP Q16570
B	-18	GLN	-	expression tag	UNP Q16570
B	-17	SER	-	expression tag	UNP Q16570
B	-16	VAL	-	expression tag	UNP Q16570
B	-15	ARG	-	expression tag	UNP Q16570
B	-14	LEU	-	expression tag	UNP Q16570
B	-13	VAL	-	expression tag	UNP Q16570
B	-12	THR	-	expression tag	UNP Q16570
B	-11	SER	-	expression tag	UNP Q16570
B	-10	SER	-	expression tag	UNP Q16570
B	-9	SER	-	expression tag	UNP Q16570
B	-8	LEU	-	expression tag	UNP Q16570
B	-7	GLU	-	expression tag	UNP Q16570
B	-6	VAL	-	expression tag	UNP Q16570
B	-5	LEU	-	expression tag	UNP Q16570
B	-4	PHE	-	expression tag	UNP Q16570
B	-3	GLN	-	expression tag	UNP Q16570
B	-2	GLY	-	expression tag	UNP Q16570
B	-1	PRO	-	expression tag	UNP Q16570
B	0	GLY	-	expression tag	UNP Q16570
B	1	SER	-	expression tag	UNP Q16570
A	-55	MET	-	initiating methionine	UNP Q16570
A	-54	GLY	-	expression tag	UNP Q16570
A	-53	LYS	-	expression tag	UNP Q16570
A	-52	THR	-	expression tag	UNP Q16570
A	-51	ILE	-	expression tag	UNP Q16570
A	-50	ILE	-	expression tag	UNP Q16570
A	-49	ALA	-	expression tag	UNP Q16570
A	-48	LEU	-	expression tag	UNP Q16570
A	-47	SER	-	expression tag	UNP Q16570
A	-46	TYR	-	expression tag	UNP Q16570
A	-45	ILE	-	expression tag	UNP Q16570

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-44	PHE	-	expression tag	UNP Q16570
A	-43	CYS	-	expression tag	UNP Q16570
A	-42	LEU	-	expression tag	UNP Q16570
A	-41	VAL	-	expression tag	UNP Q16570
A	-40	PHE	-	expression tag	UNP Q16570
A	-39	ALA	-	expression tag	UNP Q16570
A	-38	ASP	-	expression tag	UNP Q16570
A	-37	TYR	-	expression tag	UNP Q16570
A	-36	LYS	-	expression tag	UNP Q16570
A	-35	ASP	-	expression tag	UNP Q16570
A	-34	ASP	-	expression tag	UNP Q16570
A	-33	ASP	-	expression tag	UNP Q16570
A	-32	TYR	-	expression tag	UNP Q16570
A	-31	ALA	-	expression tag	UNP Q16570
A	-30	ALA	-	expression tag	UNP Q16570
A	-29	ASN	-	expression tag	UNP Q16570
A	-28	PHE	-	expression tag	UNP Q16570
A	-27	THR	-	expression tag	UNP Q16570
A	-26	PRO	-	expression tag	UNP Q16570
A	-25	VAL	-	expression tag	UNP Q16570
A	-24	ASN	-	expression tag	UNP Q16570
A	-23	GLY	-	expression tag	UNP Q16570
A	-22	SER	-	expression tag	UNP Q16570
A	-21	SER	-	expression tag	UNP Q16570
A	-20	GLY	-	expression tag	UNP Q16570
A	-19	ASN	-	expression tag	UNP Q16570
A	-18	GLN	-	expression tag	UNP Q16570
A	-17	SER	-	expression tag	UNP Q16570
A	-16	VAL	-	expression tag	UNP Q16570
A	-15	ARG	-	expression tag	UNP Q16570
A	-14	LEU	-	expression tag	UNP Q16570
A	-13	VAL	-	expression tag	UNP Q16570
A	-12	THR	-	expression tag	UNP Q16570
A	-11	SER	-	expression tag	UNP Q16570
A	-10	SER	-	expression tag	UNP Q16570
A	-9	SER	-	expression tag	UNP Q16570
A	-8	LEU	-	expression tag	UNP Q16570
A	-7	GLU	-	expression tag	UNP Q16570
A	-6	VAL	-	expression tag	UNP Q16570
A	-5	LEU	-	expression tag	UNP Q16570
A	-4	PHE	-	expression tag	UNP Q16570
A	-3	GLN	-	expression tag	UNP Q16570

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	GLY	-	expression tag	UNP Q16570
A	-1	PRO	-	expression tag	UNP Q16570
A	0	GLY	-	expression tag	UNP Q16570
A	1	SER	-	expression tag	UNP Q16570

- Molecule 2 is a protein called IL-8(9-77).

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	48	Total	C	N	O	S	0	0
			327	208	60	57	2		
2	E	59	Total	C	N	O	S	0	0
			382	236	70	73	3		
2	G	59	Total	C	N	O	S	0	0
			382	236	70	73	3		
2	H	48	Total	C	N	O	S	0	0
			327	208	60	57	2		



GLU  
GLY  
TRP  
SER  
SER  
HIS  
LEU  
ASP  
THR  
GLY  
LEU  
SER  
LYS  
SER

• Molecule 2: IL-8(9-77)



GLU  
GLY  
ALA  
VAL  
LEU  
PRO  
ARG  
SER  
ALA  
LYS  
GLU  
LEU  
ARG  
CYS  
GLN  
ILE  
LYS  
THR  
TYR  
SER  
LYS  
P16  
P19  
K20  
F21  
R28  
V27  
I28  
A35  
N36  
T37  
E38  
I39  
I40  
L43  
SER  
ASP  
GLY  
R47  
D52  
PRO  
LYS  
E55  
R60  
V61  
V62  
E63  
K64  
F65  
L66  
K67  
R68  
ALA

GLU  
ASN  
SER

• Molecule 2: IL-8(9-77)



GLU  
GLY  
ALA  
VAL  
LEU  
PRO  
ARG  
SER  
ALA  
LYS  
GLU  
L5  
R6  
C7  
Q8  
K11  
K15  
PRO  
PHE  
H18  
P19  
I22  
K23  
E24  
L25  
S30  
H33  
C34  
A35  
E38  
ILE  
I40  
V41  
K42  
L43  
R47  
GLU  
LEU  
CYS  
D52  
P53  
R54  
E55  
N56  
Q59  
ARG  
VAL  
V62  
E63  
K64  
F65

L66  
K67  
S72

• Molecule 2: IL-8(9-77)



GLU  
GLY  
ALA  
VAL  
LEU  
PRO  
ARG  
SER  
ALA  
LYS  
GLU  
L5  
R6  
C7  
K11  
S14  
K15  
PRO  
PHE  
H18  
P19  
I22  
K23  
E24  
L25  
S30  
H33  
C34  
E38  
ILE  
I40  
V41  
K42  
L43  
R47  
GLU  
LEU  
CYS  
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R54  
E55  
N56  
Q59  
ARG  
VAL  
V62  
E63  
K64  
F65  
L66

K67  
S72

• Molecule 2: IL-8(9-77)



GLU  
GLY  
ALA  
VAL  
LEU  
PRO  
ARG  
SER  
ALA  
LYS  
GLU  
LEU  
ARG  
CYS  
GLN  
ILE  
LYS  
THR  
TYR  
SER  
LYS  
P16  
P19  
K20  
F21  
R28  
V27  
I28  
A35  
N36  
T37  
E38  
I39  
I40  
V41  
K42  
L43  
SER  
ASP  
GLY  
R47  
D52  
PRO  
LYS  
E55  
R60  
V61  
V62  
E63  
K64  
F65  
L66  
K67  
R68

ALA  
GLU  
ASN  
SER



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	473012	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	57.20	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	3.074	Depositor
Minimum map value	-2.644	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.052	Depositor
Recommended contour level	0.289	Depositor
Map size ( $\text{\AA}$ )	270.40033, 270.40033, 270.40033	wwPDB
Map dimensions	288, 288, 288	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.93889004, 0.93889004, 0.93889004	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	0.23	0/1646	0.54	4/2272 (0.2%)
1	B	0.27	0/1639	0.53	1/2263 (0.0%)
2	D	0.27	0/333	0.48	0/454
2	E	0.11	0/386	0.34	0/520
2	G	0.12	0/386	0.36	0/520
2	H	0.31	0/333	0.53	0/454
All	All	0.24	0/4723	0.51	5/6483 (0.1%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	61	ALA	CB-CA-C	-5.80	109.33	117.23
1	B	61	ALA	CB-CA-C	-5.80	109.35	117.23
1	A	81	PHE	CB-CA-C	5.04	119.34	110.37
1	A	173	ILE	CA-C-N	-5.01	113.92	120.44
1	A	173	ILE	C-N-CA	-5.01	113.92	120.44

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	1612	0	1424	28	0
1	B	1606	0	1417	30	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	327	0	256	6	0
2	E	382	0	281	6	0
2	G	382	0	281	8	0
2	H	327	0	256	5	0
All	All	4636	0	3915	79	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 (79) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:145:LEU:HD13	1:B:176:VAL:HG13	1.72	0.70
2:G:42:LYS:NZ	2:G:43:LEU:O	2.25	0.67
2:E:42:LYS:NZ	2:E:43:LEU:O	2.26	0.67
2:G:14:SER:O	2:G:15:LYS:HG2	1.96	0.64
1:A:296:HIS:O	1:A:300:THR:HG23	1.99	0.61
1:B:216:ALA:O	1:B:221:LEU:N	2.32	0.61
1:B:279:GLN:NE2	1:B:283:ASP:OD2	2.34	0.61
1:B:296:HIS:O	1:B:300:THR:HG23	2.00	0.61
1:A:145:LEU:HD13	1:A:176:VAL:HG13	1.83	0.59
2:D:43:LEU:H	2:D:43:LEU:HD23	1.71	0.56
2:H:43:LEU:H	2:H:43:LEU:HD23	1.71	0.55
2:E:63:GLU:OE1	2:E:63:GLU:N	2.37	0.55
1:B:131:LEU:O	1:B:135:VAL:HG12	2.07	0.54
1:A:279:GLN:NE2	1:A:283:ASP:OD2	2.40	0.54
2:D:26:ARG:N	2:D:40:ILE:O	2.40	0.54
1:A:174:TRP:O	1:A:175:GLY:C	2.50	0.54
1:A:264:PHE:O	1:A:268:SER:OG	2.26	0.54
1:A:49:ALA:HB2	2:G:11:LYS:HB2	1.90	0.53
1:A:109:PHE:O	1:A:113:VAL:HG23	2.08	0.53
1:A:131:LEU:O	1:A:135:VAL:HG12	2.08	0.53
1:A:99:LEU:HB3	1:A:304:LEU:HD21	1.90	0.53
2:H:26:ARG:N	2:H:40:ILE:O	2.42	0.53
2:G:14:SER:O	2:G:15:LYS:CG	2.56	0.52
1:B:207:GLN:O	1:B:207:GLN:NE2	2.42	0.52
1:B:208:ALA:O	1:B:212:VAL:HG12	2.08	0.52
1:A:208:ALA:O	1:A:212:VAL:HG12	2.08	0.52
1:A:207:GLN:O	1:A:207:GLN:NE2	2.42	0.51
1:B:145:LEU:HD12	1:B:177:ALA:HB2	1.93	0.51
1:B:174:TRP:O	1:B:175:GLY:C	2.51	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:46:GLU:N	1:B:46:GLU:OE1	2.45	0.50
2:H:64:LYS:O	2:H:68:ARG:N	2.44	0.49
1:B:109:PHE:O	1:B:113:VAL:HG23	2.13	0.48
1:B:181:THR:O	1:B:185:THR:HG22	2.14	0.48
1:A:74:LEU:O	1:A:78:THR:OG1	2.31	0.48
2:H:19:PRO:HG3	2:H:60:ARG:HH22	1.78	0.48
2:D:64:LYS:O	2:D:68:ARG:N	2.45	0.48
1:B:74:LEU:O	1:B:78:THR:OG1	2.31	0.47
1:A:181:THR:O	1:A:185:THR:HG22	2.14	0.47
1:B:178:ALA:HB1	1:A:171:VAL:HG22	1.96	0.47
1:A:170:THR:O	1:A:174:TRP:HD1	1.97	0.47
1:A:243:MET:HE2	1:A:243:MET:HB2	1.81	0.47
1:B:171:VAL:HG22	1:A:178:ALA:HB1	1.96	0.47
1:B:104:VAL:O	1:B:108:LEU:HG	2.15	0.47
2:G:7:CYS:H	2:G:34:CYS:HA	1.79	0.46
1:B:167:LEU:O	1:B:167:LEU:HD12	2.15	0.46
2:E:67:LYS:HA	2:E:67:LYS:HD3	1.77	0.46
1:A:137:TYR:CD2	1:A:184:VAL:HG21	2.51	0.46
1:B:170:THR:O	1:B:174:TRP:HD1	1.99	0.45
1:A:104:VAL:O	1:A:108:LEU:HG	2.16	0.45
2:E:63:GLU:O	2:E:67:LYS:NZ	2.49	0.45
1:B:65:PHE:CD2	1:B:118:PRO:HD2	2.52	0.44
1:A:207:GLN:O	1:A:211:THR:HG22	2.18	0.44
2:H:19:PRO:HG3	2:H:60:ARG:NH2	2.33	0.44
1:A:46:GLU:HG3	1:A:47:ALA:H	1.83	0.44
2:D:19:PRO:HG3	2:D:60:ARG:HH22	1.82	0.44
1:A:304:LEU:HD23	1:A:304:LEU:HA	1.78	0.44
1:B:49:ALA:HB2	2:E:11:LYS:HB2	1.99	0.43
1:A:69:SER:CB	1:A:114:PRO:HD3	2.48	0.43
1:A:129:CYS:SG	1:A:190:ALA:HB2	2.58	0.43
2:G:63:GLU:O	2:G:67:LYS:NZ	2.49	0.43
1:B:179:LEU:HA	1:B:182:LEU:HD13	2.00	0.43
1:A:109:PHE:HA	1:A:112:VAL:HG12	2.00	0.43
1:B:69:SER:CB	1:B:114:PRO:HD3	2.49	0.43
2:G:42:LYS:HE3	2:G:42:LYS:HB3	1.86	0.43
2:D:28:ILE:HD13	2:D:28:ILE:HA	1.89	0.43
2:D:19:PRO:HG3	2:D:60:ARG:NH2	2.34	0.42
1:B:129:CYS:SG	1:B:190:ALA:HB2	2.59	0.42
1:A:179:LEU:HA	1:A:182:LEU:HD13	2.00	0.42
2:G:67:LYS:HA	2:G:67:LYS:HD3	1.77	0.42
1:B:109:PHE:HA	1:B:112:VAL:HG12	2.02	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:7:CYS:O	2:E:8:GLN:NE2	2.54	0.41
1:A:177:ALA:O	1:A:181:THR:HG22	2.21	0.41
1:B:65:PHE:HD2	1:B:118:PRO:HD2	1.85	0.40
1:B:137:TYR:CD2	1:B:184:VAL:HG21	2.57	0.40
1:B:177:ALA:O	1:B:181:THR:HG22	2.21	0.40
1:B:182:LEU:N	1:B:183:PRO:HD2	2.36	0.40
1:B:76:SER:HA	1:B:79:VAL:HG22	2.04	0.40
1:A:103:ALA:HB2	1:A:304:LEU:HD12	2.03	0.40
1:B:167:LEU:HA	1:B:170:THR:HG22	2.03	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	241/392 (62%)	231 (96%)	10 (4%)	0	100	100
1	B	241/392 (62%)	233 (97%)	8 (3%)	0	100	100
2	D	42/79 (53%)	37 (88%)	5 (12%)	0	100	100
2	E	49/79 (62%)	42 (86%)	7 (14%)	0	100	100
2	G	49/79 (62%)	42 (86%)	7 (14%)	0	100	100
2	H	42/79 (53%)	37 (88%)	5 (12%)	0	100	100
All	All	664/1100 (60%)	622 (94%)	42 (6%)	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	128/315 (41%)	125 (98%)	3 (2%)	45	64
1	B	127/315 (40%)	126 (99%)	1 (1%)	79	86
2	D	25/72 (35%)	25 (100%)	0	100	100
2	E	28/72 (39%)	28 (100%)	0	100	100
2	G	28/72 (39%)	28 (100%)	0	100	100
2	H	25/72 (35%)	25 (100%)	0	100	100
All	All	361/918 (39%)	357 (99%)	4 (1%)	69	81

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	166	THR
1	A	55	ASN
1	A	166	THR
1	A	275	THR

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

Mol	Chain	Res	Type
2	E	8	GLN
2	G	8	GLN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry

There are no ligands in this entry.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

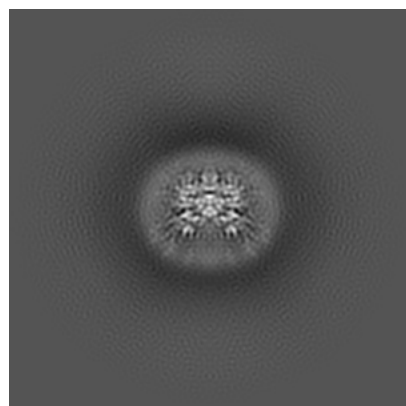
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-39423. These allow visual inspection of the internal detail of the map and identification of artifacts.

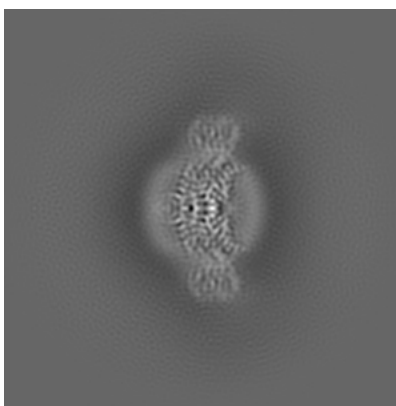
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

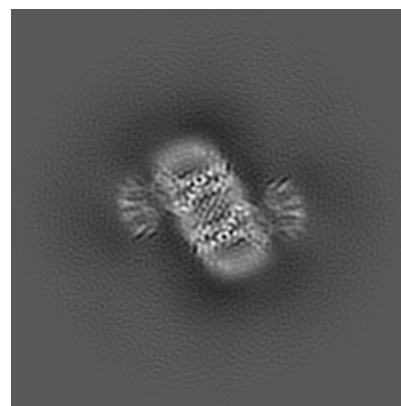
#### 6.1.1 Primary map



X

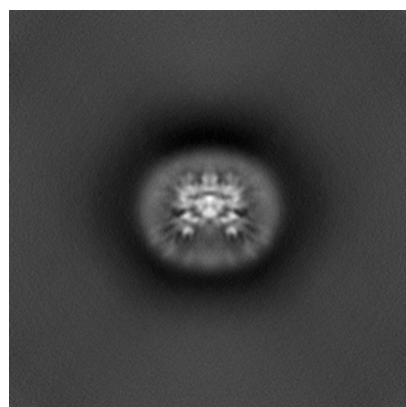


Y

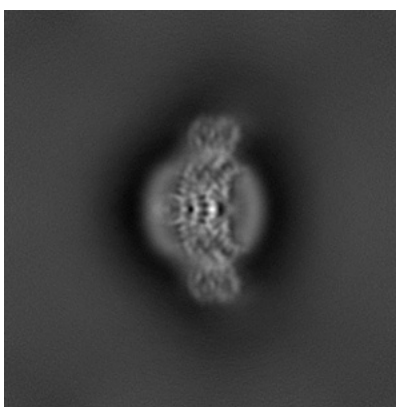


Z

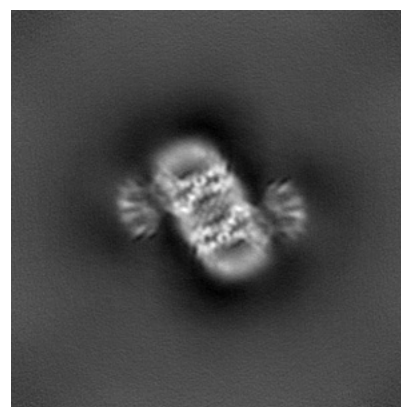
#### 6.1.2 Raw map



X



Y



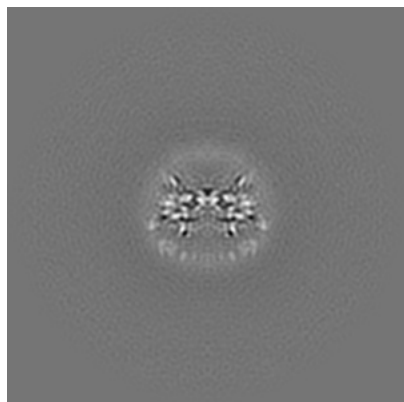
Z

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

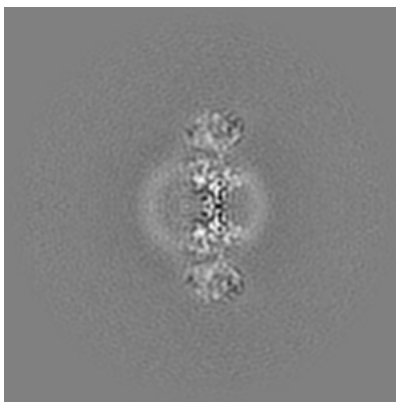


## 6.2 Central slices [i](#)

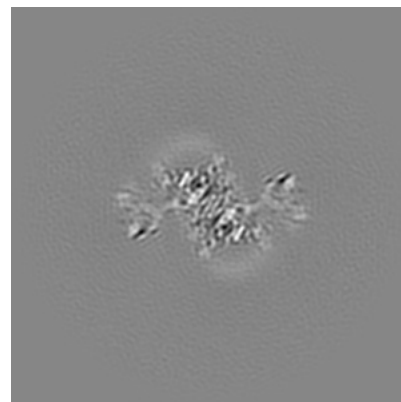
### 6.2.1 Primary map



X Index: 144

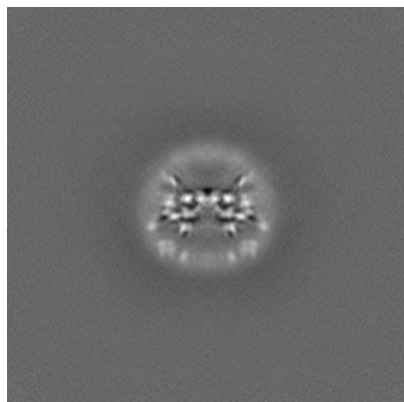


Y Index: 144

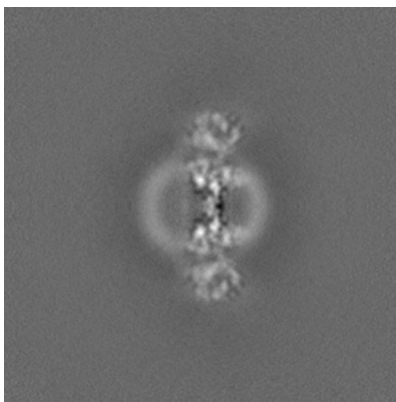


Z Index: 144

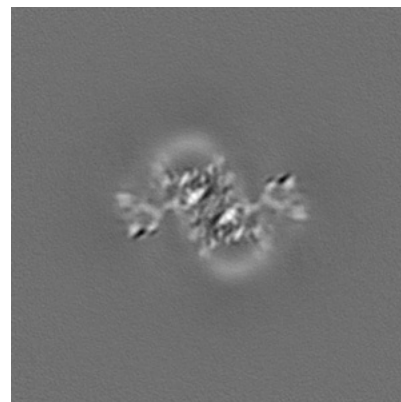
### 6.2.2 Raw map



X Index: 144



Y Index: 144

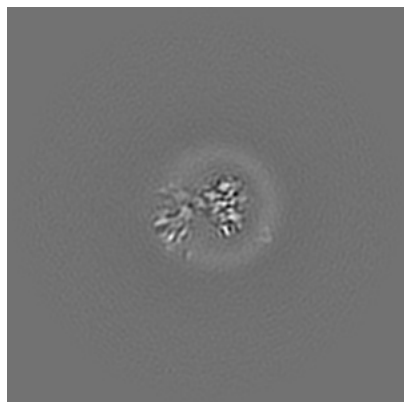


Z Index: 144

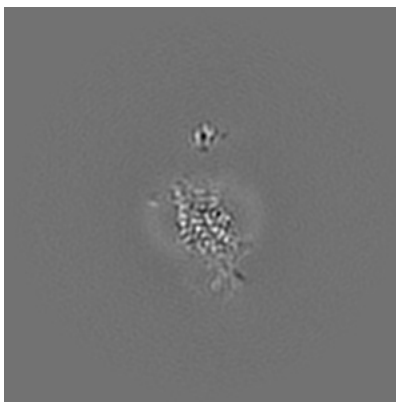
The images above show central slices of the map in three orthogonal directions.

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

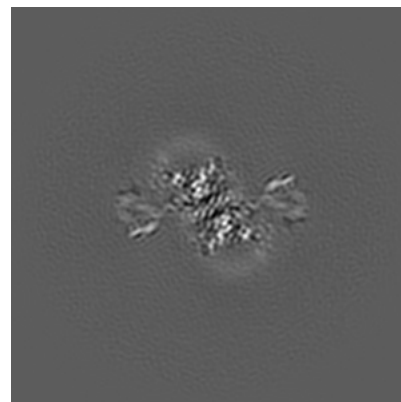
### 6.3.1 Primary map



X Index: 134

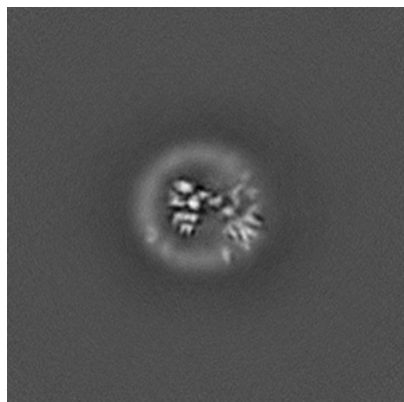


Y Index: 162

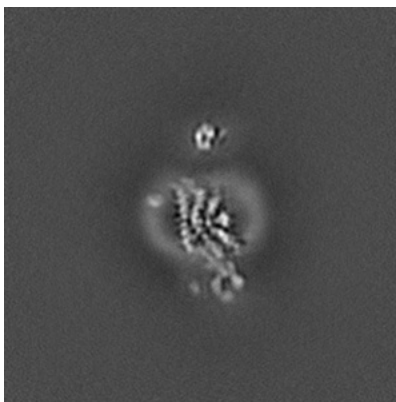


Z Index: 146

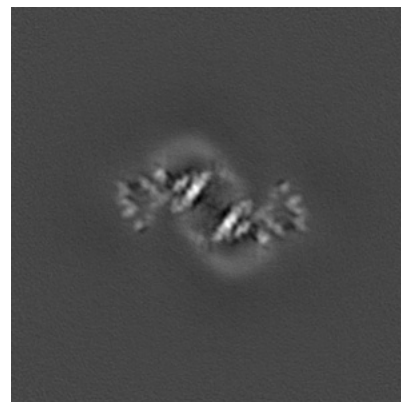
### 6.3.2 Raw map



X Index: 152



Y Index: 160

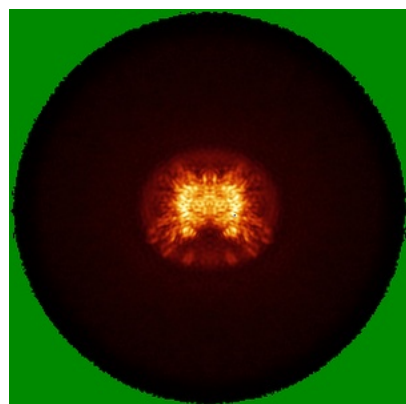


Z Index: 158

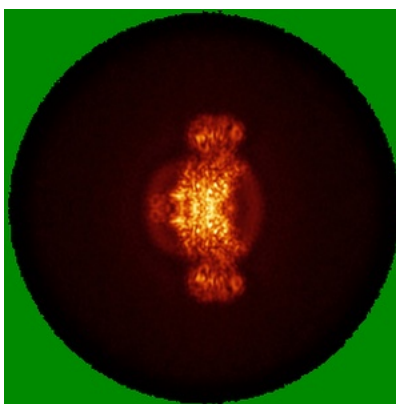
The images above show the largest variance slices of the map in three orthogonal directions.

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

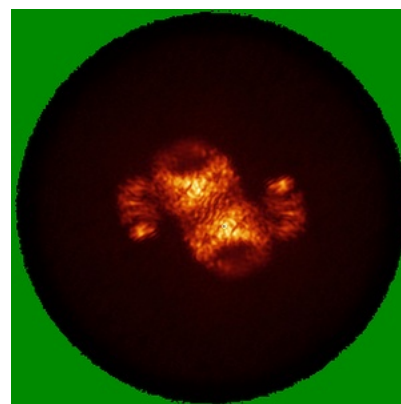
### 6.4.1 Primary map



X



Y

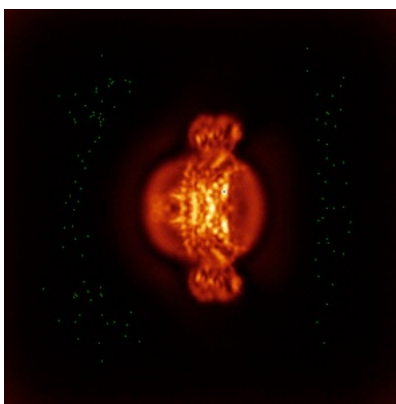


Z

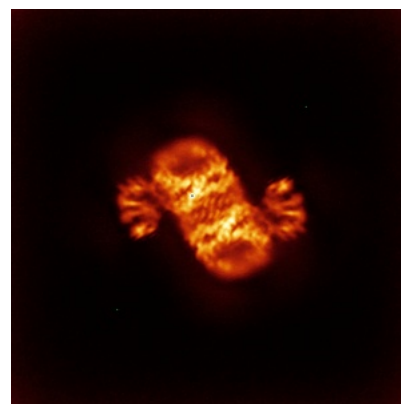
### 6.4.2 Raw map



X



Y

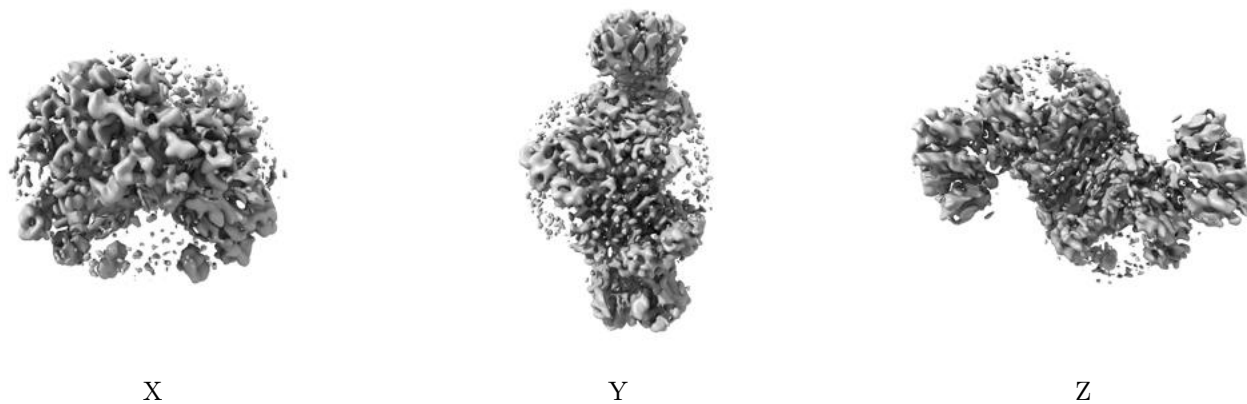


Z

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.

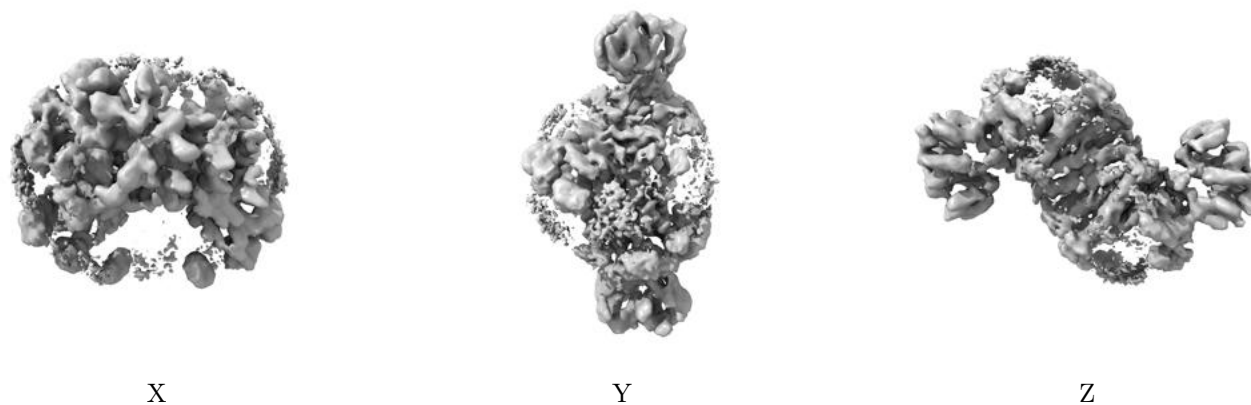
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.289. 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.

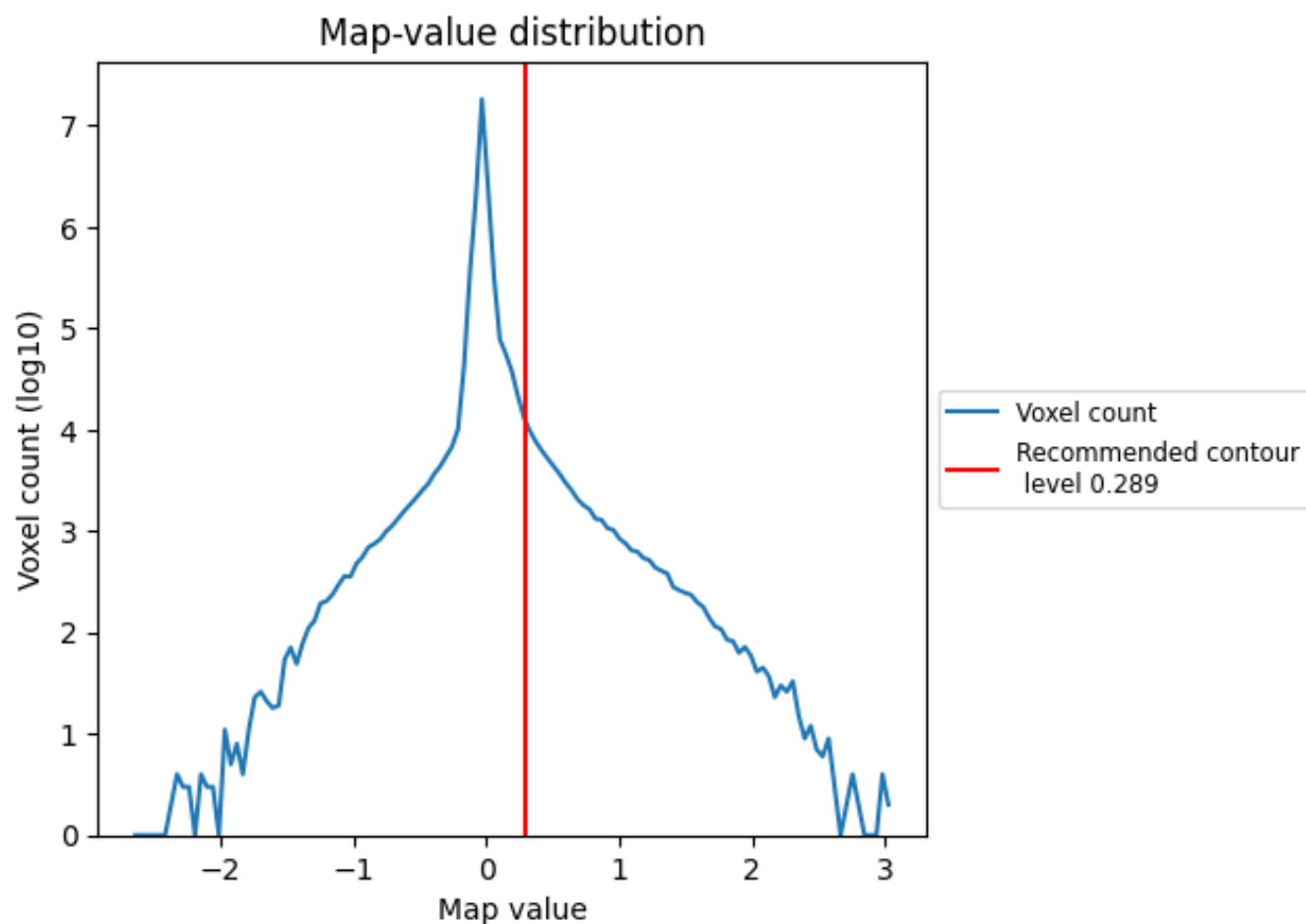
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

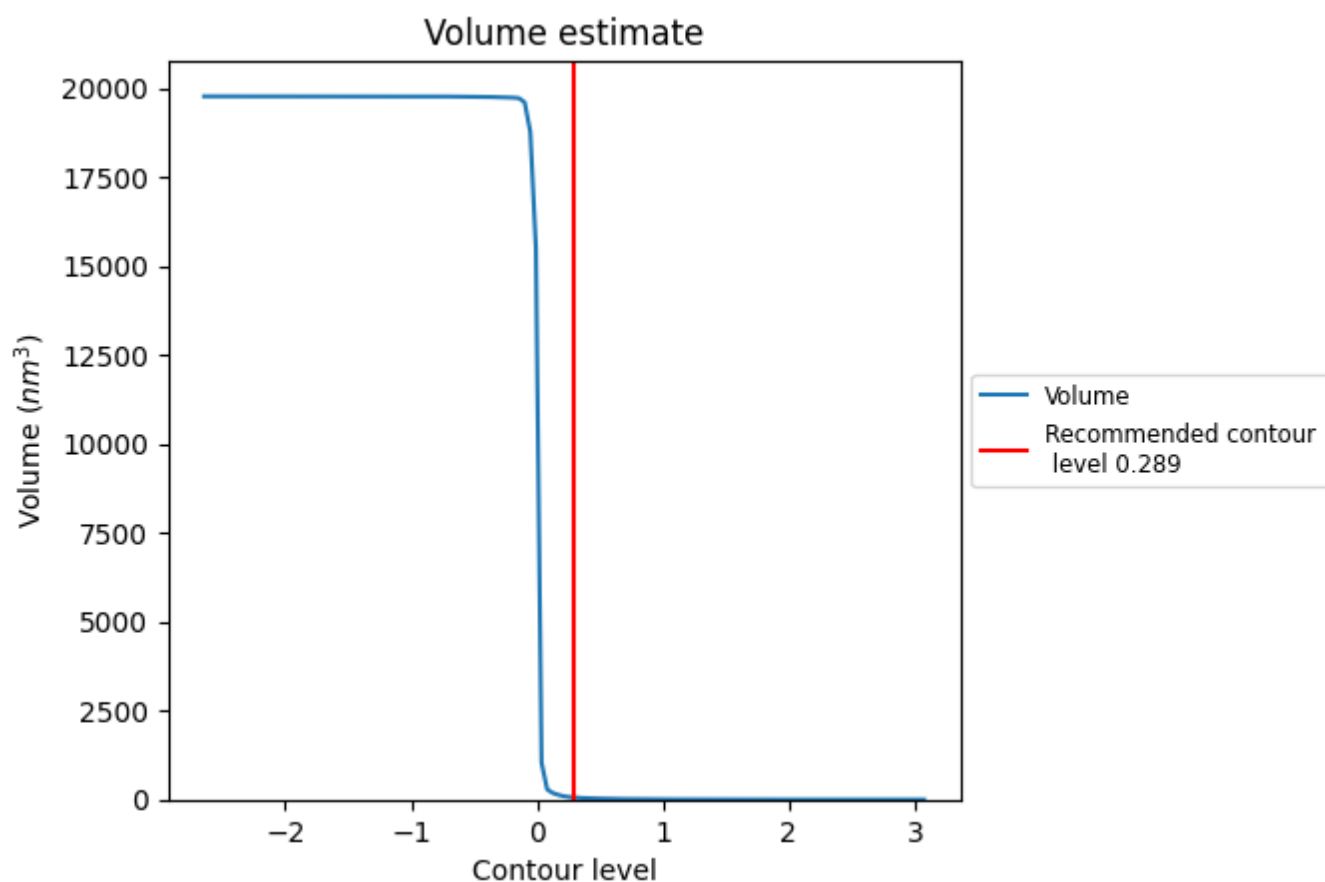
This section contains the results of statistical analysis of the map.

### 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.

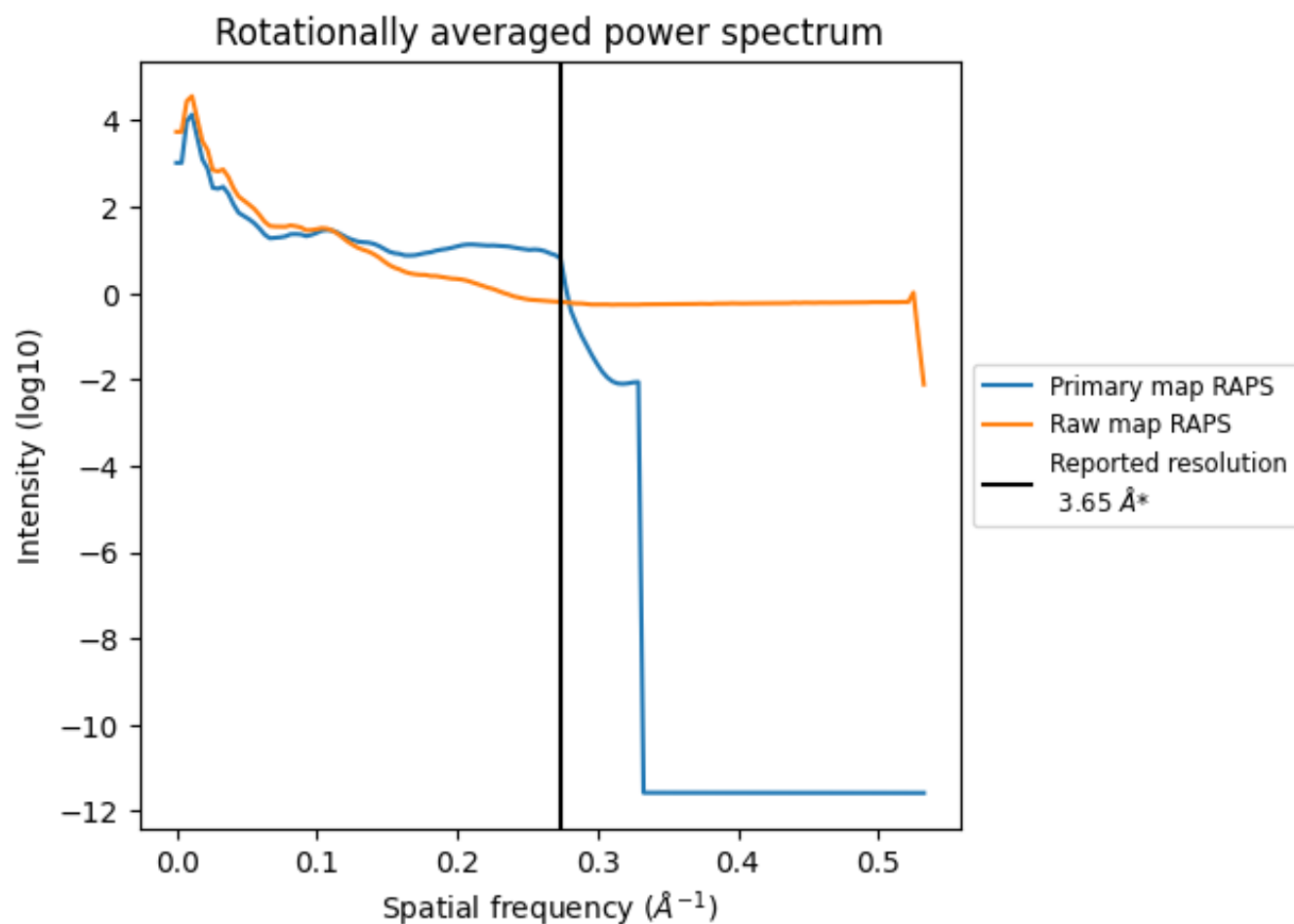
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 60 nm<sup>3</sup>; this corresponds to an approximate mass of 54 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 ⓘ

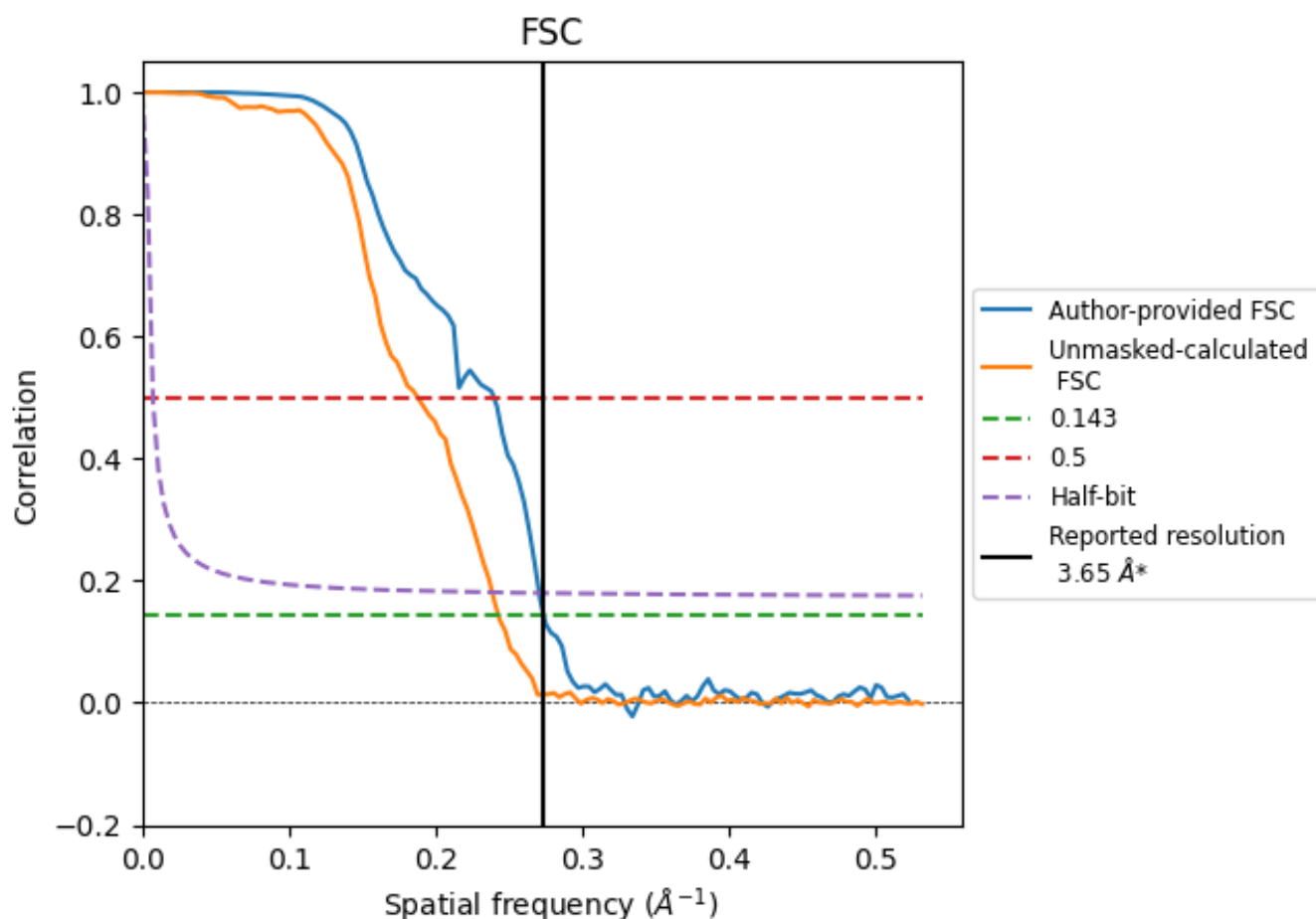


\*Reported resolution corresponds to spatial frequency of 0.274  $\text{\AA}^{-1}$

## 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 0.274  $\text{\AA}^{-1}$



## 8.2 Resolution estimates [i](#)

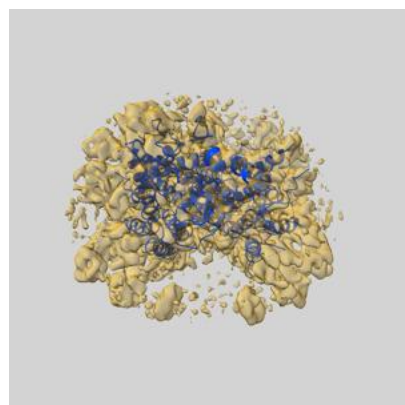
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.65	-	-
Author-provided FSC curve	3.65	4.16	3.69
Unmasked-calculated*	4.11	5.32	4.19

\*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 4.11 differs from the reported value 3.65 by more than 10 %

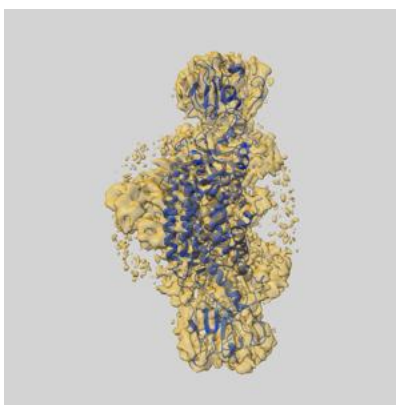
## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-39423 and PDB model 8YNF. Per-residue inclusion information can be found in section [3](#) on page [7](#).

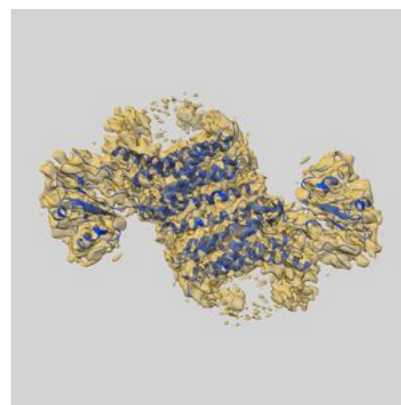
### 9.1 Map-model overlay [i](#)



X



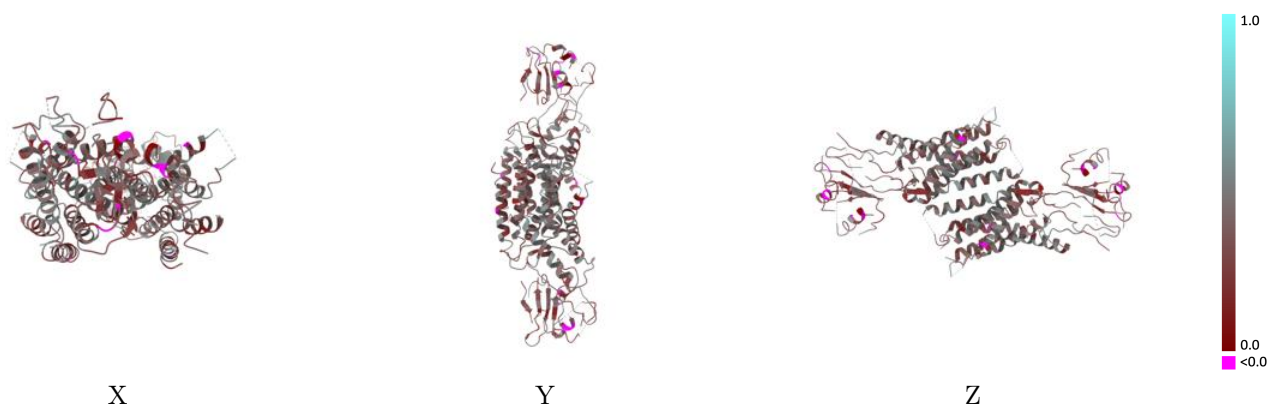
Y



Z

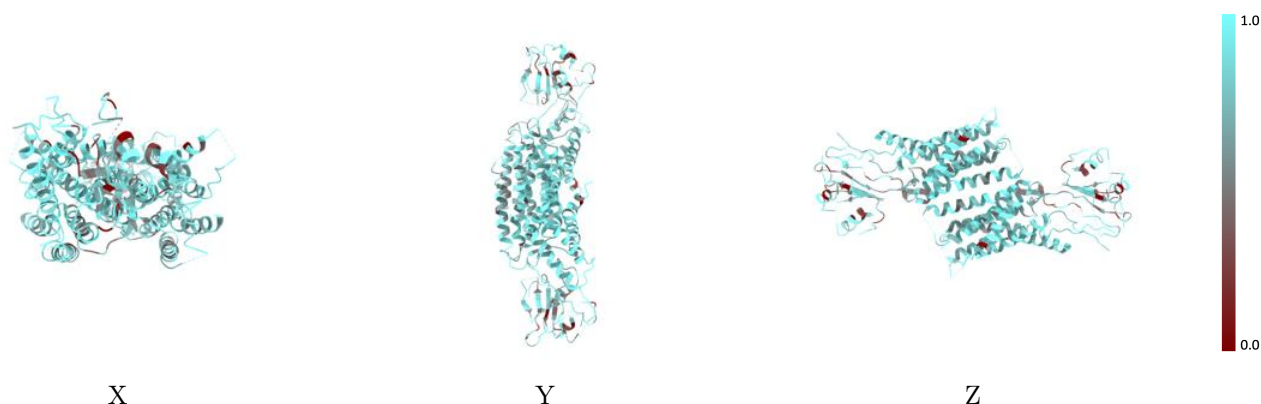
The images above show the 3D surface view of the map at the recommended contour level 0.289 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



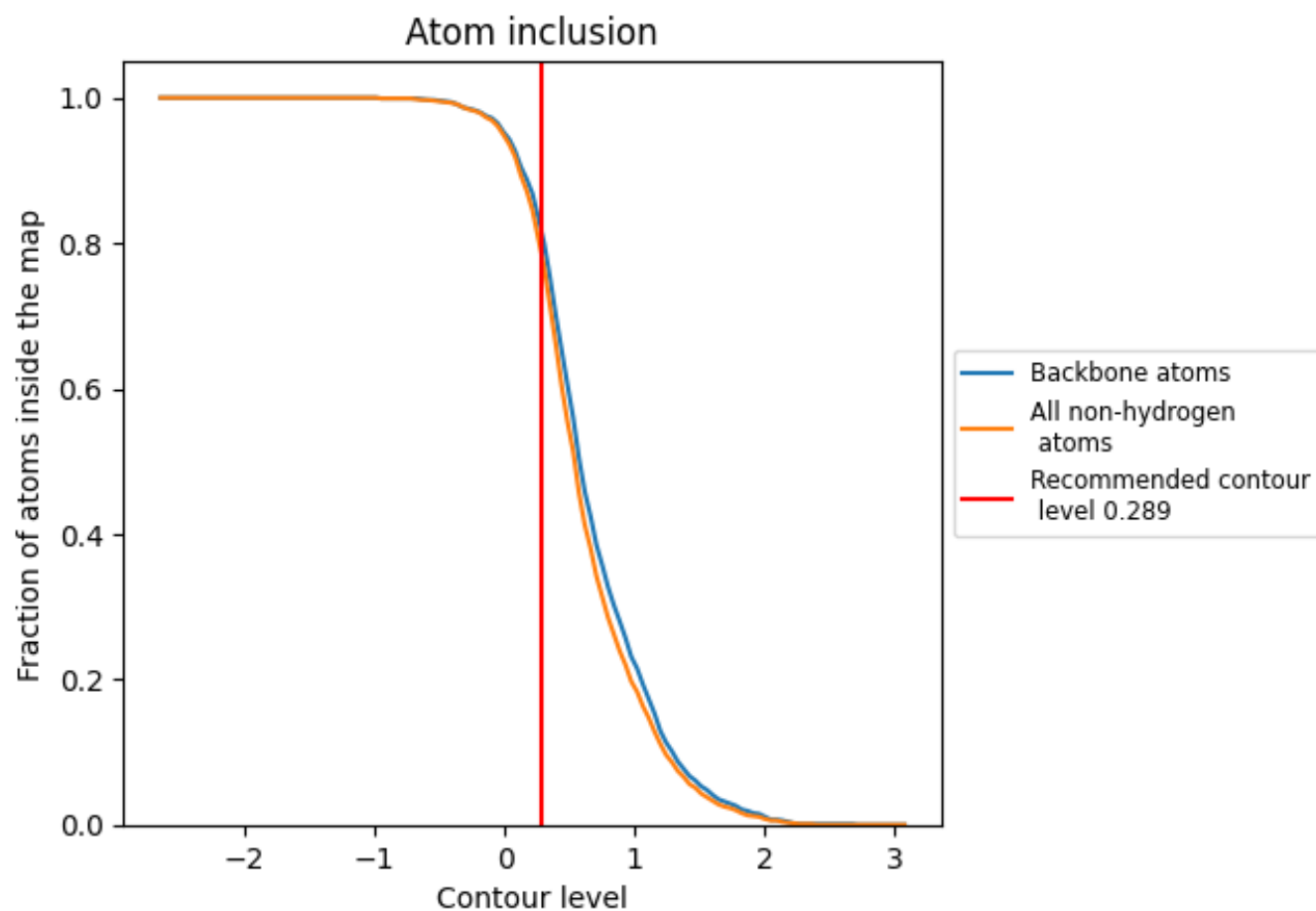
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.289).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 78% 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 (0.289) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div><div></div></div> 0.7800	<div><div></div></div> 0.3630
A	<div><div></div></div> 0.8220	<div><div></div></div> 0.3840
B	<div><div></div></div> 0.8230	<div><div></div></div> 0.3850
D	<div><div></div></div> 0.6960	<div><div></div></div> 0.3010
E	<div><div></div></div> 0.6800	<div><div></div></div> 0.3200
G	<div><div></div></div> 0.6770	<div><div></div></div> 0.3230
H	<div><div></div></div> 0.6890	<div><div></div></div> 0.3060

1.0

0.0

<0.0