



## Full wwPDB EM Validation Report ⓘ

Mar 31, 2024 – 12:22 AM JST

PDB ID : 8J5R  
EMDB ID : EMD-35991  
Title : Cryo-EM structure of Mycobacterium tuberculosis OppABCD in the resting state  
Authors : Yang, X.; Hu, T.; Zhang, B.; Rao, Z.  
Deposited on : 2023-04-24  
Resolution : 3.28 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](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.dev70  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

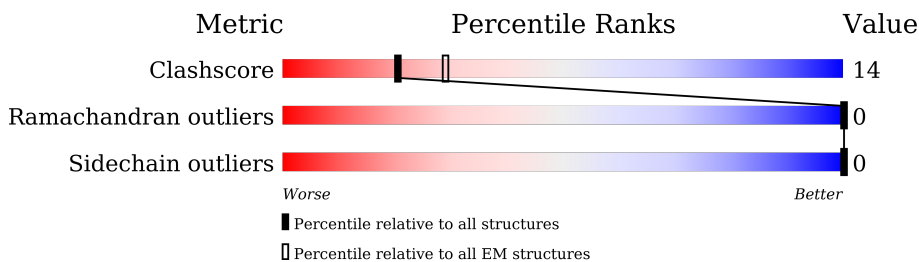
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.28 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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	599	
2	B	325	
3	C	291	
4	D	612	

## 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 13050 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 Uncharacterized protein Rv1280c.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	519	3938	2477	697	758	6	0	0

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	VAL	MET	conflict	UNP P9WGU5
A	491	ALA	TRP	engineered mutation	UNP P9WGU5
A	592	ASP	-	expression tag	UNP P9WGU5
A	593	TYR	-	expression tag	UNP P9WGU5
A	594	LYS	-	expression tag	UNP P9WGU5
A	595	ASP	-	expression tag	UNP P9WGU5
A	596	ASP	-	expression tag	UNP P9WGU5
A	597	ASP	-	expression tag	UNP P9WGU5
A	598	ASP	-	expression tag	UNP P9WGU5
A	599	LYS	-	expression tag	UNP P9WGU5

- Molecule 2 is a protein called Putative peptide transport permease protein Rv1283c.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	325	2476	1598	444	426	8	0	0

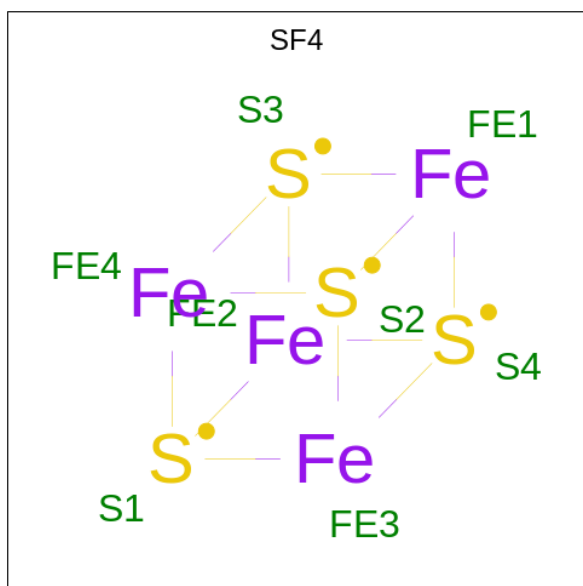
- Molecule 3 is a protein called Putative peptide transport permease protein Rv1282c.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	273	2063	1346	352	354	11	0	0

- Molecule 4 is a protein called Uncharacterized ABC transporter ATP-binding protein Rv1281c.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	609	4565	2863	829	860	13	0	0

- Molecule 5 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula:  $\text{Fe}_4\text{S}_4$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
5	D	1	8	4	4	0

### 3 Residue-property plots

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

- Molecule 1: Uncharacterized protein Rv1280c

Chain A: 

VAL  
ALA  
ASP  
ARG  
GLY  
GLN  
ARG  
ARG  
GLY  
CYS  
ALA  
PRO  
GLY  
ILE  
ALA  
SER  
LEU  
ALA  
ARG  
ALA  
SER  
SER  
PHE  
GLN  
THR  
ARG  
TRP  
ALA  
PHE  
ALA  
LEU  
LEU  
THR  
VAL  
VAL  
MET  
VAL  
LEU  
THR  
GLY  
CYS  
SER  
ALA  
SER  
GLY  
THR  
GLN  
LEU  
GLU

LEU  
ALA  
PRO  
THR  
ALA  
ASP  
ARG  
ARG  
ARG  
ALA  
ALA  
VAL  
VAL  
GLY  
T73  
D76  
I77  
N78  
Q79  
R82  
L93  
S94  
L95  
T96  
D97  
M101  
H106  
T110  
D108  
G109  
A115  
K119  
A120  
T121  
L122  
P123  
P130  
Y140  
F141  
I144  
E145  
L146  
T147  
T148  
T149  
A150  
P151  
Q152  
V153  
V154  
T155  
Y156  
T157

I158  
M159  
P160  
W164  
I170  
T171  
W172  
R173  
D174  
I175  
I179  
I182  
E190  
G196  
A197  
S202  
R205  
G206  
V207  
D208  
Q211  
A212  
V213  
V214  
T215  
F216  
Y220  
A221  
E222  
W223  
R224  
M226  
F227  
A228  
L233  
L234  
P235  
M238  
P242  
N246  
K247  
L250  
P253


G258  
P259  
F260  
V261  
V262  
L265  
D266  
R267  
T268  
A269  
Q270  
V273  
L274  
T275  
R276  
N277  
P278  
W280  
A283  
R284  
P285  
D288  
S289  
I290  
T291  
Y292  
L293  
V294  
L295  
L304  
N307  
D310  
L317  
R325  
I329  
L332  
R333  
W339  
F342  
T343  
I344  
N345  
S350  
I351

I365  
D366  
R367  
T368  
T369  
V373  
A374  
Q375  
P382  
N386  
Y397  
Q398  
D399  
M400  
S401  
V404  
A405  
Y406  
M407  
P408  
E409  
Q410  
A411  
K412  
R413  
E414  
L415  
D416  
A417  
L418  
G419  
W420  
R421  
R422  
R427  
L434  
D438  
L439  
F440  
Y441  
R447  
Q451  
L457  
A550  
L466  
K469  
S470

G471  
F475  
Y478  
M480  
V481  
G482  
A483  
F484  
D485  
I486  
A487  
Q488  
F496  
S499  
S500  
L501  
T502  
Q503  
I504  
Y505  
E510  
S511  
N512  
F513  
G514  
K515  
I516  
G517  
S518  
P519  
Q520  
I521  
D522  
I525  
L529  
K536  
L540  
A541  
N542  
D545  
E546  
L547  
I548  
W549  
A550  
E551  
S554  
L555

P556  
P561  
G562  
T563  
R567  
A579  
R591  
ASP  
TVR  
LYS  
ASP  
ASP  
ASP  
ASP  
LYS

- Molecule 2: Putative peptide transport permease protein Rv1283c

Chain B: 

H1  
T2  
L16  
A19  
C28  
L26  
T27  
S28  
L29  
E35  
M38  
Q39  
R40  
I49  
H54  
D59  
R60  
R65  
V87  
R94  
I95  
S106  
T110  
R123  
R126  
L127  
S128  
D129  
R130  
T133  
T134  
L138  
T142  
F145  
A148  
N149  
I152  
L156

W160  
D168  
Y169  
S174  
D187  
Q190  
H191  
A203  
T224  
R225  
R228  
R235  
R236  
G242  
M250  
L253  
L261  
F267  
T271  
G276  
M277  
W280  
M281  
V282  
R283  
T290  
R291  
I292  
V293  
T297  
S300  
V304  
L305  
Y315  
V322  
S325

- Molecule 3: Putative peptide transport permease protein Rv1282c



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	95101	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 ( $e^-/\text{\AA}^2$ )	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	3.183	Depositor
Minimum map value	-1.237	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.051	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	291.2, 291.2, 291.2	wwPDB
Map dimensions	350, 350, 350	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.832, 0.832, 0.832	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: SF4

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	0.43	0/4022	0.69	0/5480
2	B	0.35	0/2524	0.50	0/3435
3	C	0.35	0/2104	0.51	0/2869
4	D	0.40	0/4635	0.53	0/6303
All	All	0.39	0/13285	0.58	0/18087

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	3938	0	3867	170	0
2	B	2476	0	2592	49	0
3	C	2063	0	2171	47	0
4	D	4565	0	4682	100	0
5	D	8	0	0	0	0
All	All	13050	0	13312	356	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 14.



All (356) 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)
3:C:109:PHE:HD2	3:C:113:ARG:CD	1.52	1.22
3:C:109:PHE:CD2	3:C:113:ARG:HD2	1.77	1.18
3:C:109:PHE:CD2	3:C:113:ARG:CD	2.30	1.12
3:C:109:PHE:HD2	3:C:113:ARG:HD2	0.85	1.01
1:A:148:ARG:HB2	1:A:153:VAL:HG12	1.55	0.87
1:A:159:ASN:OD1	1:A:160:PRO:HD2	1.77	0.84
1:A:247:LYS:O	1:A:250:LEU:HD23	1.77	0.84
1:A:375:GLN:HE21	1:A:382:PRO:HB3	1.43	0.84
1:A:408:PRO:O	1:A:412:LYS:HG2	1.78	0.83
1:A:478:TYR:O	1:A:483:ALA:HB3	1.79	0.83
1:A:325:ARG:NH1	2:B:160:TRP:CZ3	2.50	0.78
1:A:158:ILE:HG21	1:A:170:ILE:HG22	1.65	0.78
1:A:226:MET:HE2	1:A:227:PHE:CE1	2.19	0.77
1:A:121:THR:HA	1:A:258:GLY:HA3	1.65	0.77
1:A:141:PHE:CD1	1:A:144:ILE:HD11	2.21	0.75
3:C:109:PHE:CD2	3:C:113:ARG:HD3	2.18	0.75
4:D:432:GLU:N	4:D:432:GLU:OE2	2.18	0.74
1:A:408:PRO:O	1:A:412:LYS:HE3	1.88	0.73
1:A:277:ASN:OD1	1:A:279:ARG:N	2.22	0.72
1:A:325:ARG:NH1	2:B:160:TRP:HZ3	1.89	0.70
2:B:145:PHE:O	2:B:149:ASN:ND2	2.24	0.70
1:A:266:ASP:O	1:A:269:ALA:N	2.23	0.70
1:A:373:VAL:HG13	3:C:54:LEU:HD21	1.72	0.70
1:A:325:ARG:HH11	2:B:160:TRP:HZ3	1.35	0.69
1:A:419:GLY:HA2	1:A:421:ARG:HH12	1.57	0.69
1:A:222:GLU:OE2	1:A:496:PHE:HB3	1.93	0.69
1:A:123:PRO:HG2	1:A:233:LEU:HB3	1.76	0.68
1:A:182:ILE:HG22	1:A:197:ALA:HB3	1.77	0.66
4:D:146:ARG:HB2	4:D:146:ARG:NH1	2.09	0.66
4:D:548:GLN:NE2	4:D:549:PHE:CE2	2.64	0.66
1:A:280:TRP:CD1	1:A:283:ALA:O	2.49	0.66
1:A:367:ARG:HH12	1:A:386:ASN:HB3	1.62	0.65
1:A:407:ASN:OD1	1:A:407:ASN:O	2.14	0.65
4:D:247:ARG:HG3	4:D:309:VAL:HG11	1.79	0.65
1:A:242:PRO:O	1:A:246:ASN:ND2	2.29	0.64
1:A:155:THR:HG22	1:A:213:VAL:HG12	1.79	0.64
2:B:280:TRP:HE1	2:B:292:ILE:HD13	1.62	0.64
2:B:280:TRP:NE1	2:B:292:ILE:HD13	2.11	0.64
1:A:224:ARG:O	1:A:228:ALA:HB3	1.96	0.64
1:A:130:PRO:HA	1:A:579:ALA:HB2	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:137:THR:HG21	3:C:227:PHE:HB3	1.80	0.64
1:A:350:SER:HB2	1:A:485:ASP:OD1	1.98	0.63
1:A:375:GLN:O	1:A:375:GLN:HG3	1.99	0.63
1:A:407:ASN:OD1	1:A:410:GLN:HB3	1.98	0.63
1:A:158:ILE:HD12	1:A:171:THR:HA	1.81	0.63
1:A:146:LEU:HD11	1:A:152:GLN:HE22	1.63	0.62
1:A:416:ASP:OD2	1:A:417:ALA:N	2.33	0.62
1:A:121:THR:O	1:A:122:LEU:HG	1.99	0.62
2:B:106:SER:O	2:B:110:THR:HG23	2.00	0.62
3:C:206:ILE:HG12	3:C:275:LEU:HD22	1.81	0.62
1:A:501:LEU:HD12	1:A:502:THR:HG23	1.82	0.61
2:B:87:VAL:HG13	2:B:280:TRP:HH2	1.66	0.61
1:A:158:ILE:HD13	1:A:170:ILE:HG22	1.82	0.61
1:A:159:ASN:OD1	1:A:160:PRO:CD	2.47	0.61
2:B:293:VAL:O	2:B:297:THR:HG23	2.01	0.60
3:C:240:ILE:O	3:C:244:THR:HG23	2.02	0.60
1:A:148:ARG:HG3	1:A:148:ARG:HH21	1.67	0.60
1:A:386:ASN:ND2	1:A:399:ASP:OD1	2.35	0.59
3:C:172:LEU:HD21	3:C:196:VAL:HG12	1.84	0.59
1:A:144:ILE:HD12	1:A:156:TYR:HA	1.83	0.59
4:D:143:GLN:HE22	4:D:146:ARG:HB3	1.68	0.59
1:A:409:GLU:OE2	1:A:413:ARG:NH2	2.36	0.58
2:B:2:THR:O	2:B:2:THR:HG22	2.02	0.58
4:D:388:ARG:HH11	4:D:388:ARG:HG2	1.68	0.58
1:A:397:TYR:CG	1:A:397:TYR:O	2.56	0.58
4:D:525:GLU:HG2	4:D:557:SER:HA	1.84	0.58
1:A:427:ARG:HG3	1:A:434:LEU:HD12	1.85	0.58
1:A:247:LYS:HZ3	1:A:250:LEU:HD11	1.67	0.58
1:A:481:VAL:O	1:A:481:VAL:HG13	2.04	0.58
2:B:267:PHE:O	2:B:271:ILE:HG13	2.04	0.57
4:D:69:ARG:HG2	4:D:69:ARG:HH11	1.67	0.57
4:D:308:ASP:OD1	4:D:314:ARG:NH1	2.37	0.57
3:C:168:MET:HE1	3:C:203:ILE:HG21	1.85	0.57
4:D:268:ARG:NH1	4:D:339:ARG:NH1	2.52	0.57
4:D:586:GLU:OE2	4:D:592:LYS:NZ	2.25	0.57
1:A:420:TRP:CZ3	1:A:434:LEU:HG	2.40	0.57
1:A:121:THR:O	1:A:121:THR:HG23	2.05	0.57
1:A:247:LYS:HE2	1:A:247:LYS:HA	1.85	0.57
3:C:236:LEU:O	3:C:240:ILE:HG13	2.05	0.56
1:A:171:THR:HG23	1:A:173:ARG:H	1.70	0.56
1:A:276:ARG:NH2	1:A:288:ASP:OD1	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:253:PRO:HD2	1:A:262:VAL:HG11	1.88	0.56
2:B:87:VAL:HG13	2:B:280:TRP:CH2	2.40	0.56
2:B:305:LEU:HD21	3:C:126:VAL:HG23	1.87	0.56
1:A:504:ILE:O	1:A:512:ASN:ND2	2.38	0.55
2:B:168:ASP:OD2	2:B:190:GLN:NE2	2.33	0.55
1:A:260:PHE:HE2	1:A:285:PRO:HB3	1.73	0.55
1:A:333:ARG:HB3	1:A:563:THR:HG22	1.88	0.55
4:D:517:GLN:HA	4:D:517:GLN:OE1	2.07	0.54
4:D:492:ASP:OD1	4:D:495:ARG:NH1	2.40	0.54
1:A:190:GLU:N	1:A:190:GLU:OE2	2.40	0.54
3:C:101:THR:O	3:C:105:ILE:HG13	2.07	0.54
1:A:262:VAL:HG13	1:A:262:VAL:O	2.05	0.54
1:A:115:ALA:O	1:A:119:LYS:HG2	2.08	0.54
4:D:51:ALA:HB2	4:D:211:ILE:CD1	2.38	0.54
1:A:295:LEU:HD12	1:A:295:LEU:H	1.72	0.54
1:A:420:TRP:CE3	1:A:434:LEU:HG	2.43	0.54
2:B:224:ILE:HD11	2:B:242:GLY:HA3	1.90	0.54
4:D:245:ASP:OD1	4:D:245:ASP:O	2.26	0.54
4:D:484:ASP:OD1	4:D:490:HIS:NE2	2.41	0.53
4:D:489:ARG:O	4:D:492:ASP:OD2	2.27	0.53
1:A:141:PHE:HD1	1:A:144:ILE:HD11	1.72	0.53
1:A:158:ILE:CD1	1:A:171:THR:HA	2.39	0.53
1:A:405:ALA:O	1:A:406:TYR:HB3	2.08	0.53
4:D:279:LEU:HD23	4:D:282:LEU:HD11	1.90	0.53
1:A:226:MET:CE	1:A:227:PHE:CE1	2.89	0.53
1:A:291:THR:O	1:A:291:THR:OG1	2.27	0.53
1:A:520:GLN:HG3	1:A:521:ILE:N	2.23	0.53
2:B:60:ARG:O	2:B:65:ARG:NH1	2.42	0.53
1:A:152:GLN:HG3	1:A:216:PHE:HD1	1.74	0.52
1:A:499:SER:O	1:A:501:LEU:O	2.27	0.52
2:B:126:ARG:HG2	2:B:127:LEU:H	1.73	0.52
4:D:591:PRO:HB2	4:D:596:THR:HG23	1.91	0.52
2:B:126:ARG:HD3	2:B:128:SER:H	1.75	0.52
1:A:120:ALA:O	1:A:259:PRO:HD2	2.10	0.52
1:A:406:TYR:O	1:A:406:TYR:CG	2.62	0.52
2:B:283:ARG:HG2	2:B:283:ARG:HH11	1.73	0.52
3:C:134:ALA:O	3:C:137:THR:HG22	2.10	0.52
4:D:186:ASP:OD2	4:D:395:GLU:HB3	2.10	0.52
1:A:222:GLU:HG3	1:A:222:GLU:O	2.10	0.52
1:A:542:ASN:O	1:A:546:GLU:HG2	2.10	0.51
4:D:30:ARG:NH1	4:D:30:ARG:HB2	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:310:ASP:HB2	1:A:567:ARG:HB2	1.92	0.51
3:C:53:ALA:HB1	3:C:56:GLN:HG3	1.93	0.51
3:C:206:ILE:HD13	3:C:276:ARG:HA	1.92	0.51
4:D:268:ARG:HH12	4:D:339:ARG:CZ	2.24	0.51
4:D:501:SER:O	4:D:503:GLY:N	2.43	0.51
3:C:175:ARG:HG3	3:C:175:ARG:HH11	1.75	0.51
4:D:345:ASP:OD2	4:D:347:SER:OG	2.28	0.51
2:B:35:GLU:HA	2:B:35:GLU:OE1	2.11	0.51
4:D:261:LEU:HD11	4:D:603:VAL:HG11	1.92	0.51
1:A:310:ASP:HB3	1:A:567:ARG:HE	1.75	0.51
3:C:256:PHE:HB3	3:C:257:PRO:HD3	1.93	0.51
1:A:294:VAL:HG12	1:A:294:VAL:O	2.10	0.51
3:C:15:PHE:O	3:C:18:ASN:N	2.44	0.51
2:B:228:ARG:HG2	2:B:228:ARG:HH11	1.75	0.51
1:A:536:LYS:O	1:A:540:LEU:HD23	2.12	0.50
1:A:141:PHE:HB3	1:A:144:ILE:HD11	1.93	0.50
1:A:342:PHE:CD2	1:A:488:GLN:HB3	2.46	0.50
1:A:439:LEU:HD23	1:A:469:LYS:HG2	1.93	0.50
1:A:545:ASP:HA	1:A:548:ILE:HG22	1.94	0.50
2:B:148:ALA:O	2:B:152:ILE:HG13	2.11	0.50
3:C:226:GLY:O	3:C:230:GLN:NE2	2.45	0.50
4:D:574:LEU:HD22	4:D:595:TYR:CD2	2.46	0.50
1:A:247:LYS:O	1:A:247:LYS:HD3	2.12	0.50
1:A:342:PHE:O	1:A:554:SER:HB2	2.12	0.50
1:A:78:ASN:HB2	1:A:332:ARG:HH12	1.76	0.49
1:A:164:TRP:CZ2	1:A:235:PRO:HA	2.47	0.49
4:D:143:GLN:NE2	4:D:146:ARG:HB3	2.26	0.49
2:B:40:ARG:HH11	2:B:40:ARG:HB3	1.77	0.49
4:D:103:THR:CG2	4:D:111:GLN:OE1	2.61	0.49
4:D:155:LEU:HB3	4:D:159:GLU:HB2	1.92	0.49
1:A:152:GLN:HG3	1:A:152:GLN:O	2.13	0.49
1:A:410:GLN:O	1:A:414:GLU:HG2	2.12	0.49
4:D:523:LEU:HB3	4:D:526:PRO:HG3	1.94	0.49
4:D:528:SER:O	4:D:529:ALA:HB3	2.12	0.49
3:C:229:ILE:HD12	3:C:235:SER:HB3	1.94	0.49
4:D:356:VAL:HG22	4:D:379:GLY:H	1.77	0.49
1:A:514:GLY:O	1:A:516:ILE:HG13	2.12	0.49
1:A:518:SER:OG	1:A:521:ILE:HG22	2.13	0.49
1:A:369:THR:O	1:A:373:VAL:HG23	2.12	0.49
4:D:460:LEU:HD11	4:D:497:PRO:HG3	1.95	0.49
1:A:202:SER:HG	1:A:215:THR:HG1	1.59	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:339:TRP:CZ3	1:A:556:PRO:HB3	2.47	0.49
4:D:583:ASP:OD2	4:D:583:ASP:N	2.44	0.48
1:A:146:LEU:HA	1:A:154:VAL:HA	1.94	0.48
2:B:156:LEU:HD21	2:B:169:TYR:OH	2.13	0.48
4:D:351:ARG:HD3	4:D:353:ARG:NH2	2.28	0.48
3:C:72:ASP:OD2	3:C:73:LEU:N	2.47	0.48
3:C:49:LEU:HD23	3:C:51:PHE:CZ	2.49	0.48
1:A:106:HIS:CE1	1:A:108:ASP:HB3	2.49	0.48
1:A:122:LEU:HD22	1:A:233:LEU:O	2.14	0.48
1:A:274:LEU:HD13	1:A:292:TYR:HE2	1.79	0.48
1:A:404:VAL:HG23	1:A:404:VAL:O	2.11	0.48
1:A:522:ASP:HA	1:A:525:ILE:HG22	1.94	0.48
4:D:30:ARG:CB	4:D:30:ARG:HH11	2.27	0.48
4:D:122:ARG:HE	4:D:122:ARG:HA	1.79	0.48
4:D:521:LEU:HD13	4:D:551:LEU:HD13	1.94	0.48
4:D:35:GLU:OE1	4:D:224:ARG:HD3	2.14	0.48
4:D:146:ARG:HB2	4:D:146:ARG:CZ	2.42	0.48
1:A:438:ASP:HA	1:A:486:ILE:O	2.13	0.47
1:A:475:PHE:O	1:A:480:ASN:HB2	2.14	0.47
3:C:192:ILE:HA	3:C:196:VAL:HG22	1.96	0.47
1:A:233:LEU:HD23	1:A:234:LEU:N	2.29	0.47
4:D:404:LEU:HD11	4:D:522:ALA:HB1	1.96	0.47
1:A:78:ASN:CB	1:A:332:ARG:HH12	2.26	0.47
2:B:130:ARG:O	2:B:134:THR:HG23	2.14	0.47
1:A:79:GLN:OE1	1:A:79:GLN:HA	2.14	0.47
2:B:225:ARG:NH1	4:D:95:PHE:CD1	2.83	0.47
1:A:422:ARG:HA	1:A:427:ARG:HB3	1.96	0.47
2:B:54:HIS:ND1	2:B:59:ASP:OD2	2.46	0.47
3:C:189:ARG:O	3:C:193:VAL:HG12	2.15	0.47
4:D:22:THR:HG23	4:D:22:THR:O	2.15	0.47
4:D:259:PRO:HB2	4:D:561:SER:HB3	1.96	0.47
1:A:351:ILE:HD12	1:A:351:ILE:H	1.78	0.47
2:B:38:MET:HG2	2:B:49:ILE:HD13	1.96	0.47
2:B:138:LEU:O	2:B:142:THR:HG23	2.14	0.47
2:B:250:MET:HA	2:B:250:MET:CE	2.45	0.47
3:C:126:VAL:HG13	3:C:127:VAL:HG23	1.96	0.47
4:D:482:LEU:HD11	4:D:515:ALA:HA	1.96	0.47
4:D:326:ARG:NH1	4:D:330:ASP:OD2	2.47	0.47
4:D:345:ASP:CG	4:D:347:SER:HG	2.17	0.47
4:D:358:THR:HG22	4:D:375:ARG:NE	2.29	0.47
2:B:174:SER:HB3	2:B:191:HIS:NE2	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:98:PRO:HB3	4:D:161:GLN:HG2	1.96	0.47
4:D:130:ARG:O	4:D:134:GLU:HG2	2.14	0.47
1:A:502:THR:N	1:A:525:ILE:HD11	2.29	0.46
1:A:502:THR:HG21	1:A:529:LEU:HD21	1.98	0.46
3:C:188:SER:O	3:C:192:ILE:HG12	2.15	0.46
1:A:158:ILE:HG21	1:A:170:ILE:CG2	2.41	0.46
1:A:466:LEU:H	1:A:466:LEU:HD23	1.80	0.46
4:D:51:ALA:HB2	4:D:211:ILE:HD12	1.97	0.46
4:D:246:ARG:HG2	4:D:246:ARG:HH11	1.81	0.46
4:D:327:SER:O	4:D:331:ILE:HD12	2.15	0.46
4:D:495:ARG:HG2	4:D:499:GLU:OE1	2.16	0.46
1:A:501:LEU:HD13	1:A:525:ILE:HG13	1.97	0.46
3:C:15:PHE:O	3:C:16:LEU:C	2.53	0.46
1:A:502:THR:H	1:A:525:ILE:HD11	1.80	0.46
3:C:87:ILE:HG21	3:C:219:GLU:HG3	1.98	0.46
4:D:269:LEU:HD12	4:D:536:ALA:HA	1.98	0.46
1:A:150:ALA:HB3	1:A:151:PRO:HD3	1.98	0.46
1:A:280:TRP:HD1	1:A:283:ALA:O	1.94	0.46
4:D:438:ARG:HH11	4:D:438:ARG:HB2	1.81	0.46
4:D:103:THR:HG22	4:D:111:GLN:OE1	2.16	0.45
4:D:116:ILE:O	4:D:116:ILE:HG13	2.17	0.45
1:A:205:ARG:NH2	1:A:206:GLY:O	2.49	0.45
1:A:510:GLU:OE1	1:A:510:GLU:HA	2.16	0.45
3:C:64:LEU:HD23	3:C:74:LEU:HD22	1.98	0.45
1:A:92:ARG:NH1	1:A:307:ASN:O	2.49	0.45
1:A:175:ILE:O	1:A:179:ILE:HG13	2.15	0.45
3:C:46:TYR:CE2	3:C:79:ARG:NH1	2.85	0.45
1:A:408:PRO:O	1:A:412:LYS:CG	2.56	0.45
4:D:189:VAL:O	4:D:193:ILE:HG12	2.17	0.45
4:D:246:ARG:O	4:D:247:ARG:HD3	2.16	0.45
4:D:484:ASP:CG	4:D:490:HIS:HE2	2.20	0.45
1:A:261:VAL:HG23	1:A:277:ASN:HB2	1.99	0.45
2:B:315:TYR:HE2	2:B:322:VAL:HG11	1.81	0.45
1:A:266:ASP:HB3	1:A:269:ALA:HB3	1.99	0.45
1:A:545:ASP:OD1	1:A:549:TRP:HD1	2.00	0.45
1:A:123:PRO:HB3	1:A:140:TYR:CD1	2.52	0.44
1:A:440:PHE:HE1	1:A:466:LEU:HB2	1.81	0.44
1:A:207:VAL:HG12	1:A:211:GLN:OE1	2.16	0.44
2:B:283:ARG:HG2	2:B:283:ARG:NH1	2.31	0.44
4:D:30:ARG:NH1	4:D:30:ARG:CB	2.80	0.44
2:B:95:ILE:HG13	2:B:277:MET:CE	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:414:GLN:OE1	4:D:414:GLN:N	2.44	0.44
1:A:375:GLN:O	1:A:375:GLN:CG	2.64	0.44
1:A:514:GLY:O	1:A:516:ILE:N	2.51	0.44
1:A:551:GLU:O	1:A:551:GLU:CG	2.66	0.44
4:D:377:VAL:HG13	4:D:380:ILE:HD11	2.00	0.44
1:A:101:ASN:HB3	1:A:109:GLY:HA2	1.99	0.44
2:B:300:SER:O	2:B:304:VAL:HG23	2.17	0.44
4:D:580:GLU:OE1	4:D:596:THR:HG21	2.18	0.44
1:A:97:ASP:OD1	1:A:97:ASP:C	2.56	0.44
4:D:216:GLY:HA3	4:D:604:PRO:HB2	2.00	0.44
2:B:145:PHE:HZ	3:C:220:THR:HG22	1.83	0.43
2:B:187:ASP:OD2	2:B:191:HIS:CD2	2.71	0.43
1:A:76:ASP:OD1	1:A:332:ARG:HB3	2.18	0.43
1:A:78:ASN:HB2	1:A:332:ARG:NH1	2.32	0.43
1:A:310:ASP:O	1:A:310:ASP:OD2	2.36	0.43
1:A:205:ARG:NH1	1:A:208:ASP:O	2.34	0.43
4:D:159:GLU:O	4:D:163:VAL:HG23	2.17	0.43
4:D:585:GLU:HG3	4:D:586:GLU:N	2.32	0.43
4:D:270:VAL:HG22	4:D:334:VAL:HG21	1.99	0.43
4:D:482:LEU:HD23	4:D:482:LEU:HA	1.78	0.43
1:A:441:TYR:CE1	1:A:471:GLY:N	2.86	0.43
3:C:109:PHE:CE2	3:C:113:ARG:CD	2.97	0.43
1:A:439:LEU:HD13	1:A:484:PHE:HB3	2.01	0.43
3:C:24:SER:OG	3:C:271:THR:OG1	2.26	0.43
4:D:428:LEU:HD23	4:D:433:ARG:HD3	1.99	0.43
1:A:304:LEU:HG	1:A:329:ILE:HD11	2.00	0.43
1:A:439:LEU:HD13	1:A:484:PHE:CB	2.48	0.43
4:D:294:LEU:HB3	4:D:319:ARG:HH21	1.84	0.43
1:A:481:VAL:O	1:A:482:GLY:C	2.57	0.42
1:A:152:GLN:O	1:A:152:GLN:CG	2.66	0.42
1:A:196:GLY:HA2	1:A:220:TYR:CE1	2.54	0.42
4:D:30:ARG:HH11	4:D:30:ARG:HB3	1.84	0.42
4:D:559:ASP:OD2	4:D:559:ASP:C	2.58	0.42
4:D:40:VAL:HG22	4:D:218:VAL:HG21	2.00	0.42
4:D:485:ILE:HD13	4:D:549:PHE:HZ	1.83	0.42
1:A:238:MET:O	1:A:238:MET:SD	2.77	0.42
1:A:351:ILE:HD12	1:A:485:ASP:OD2	2.19	0.42
2:B:25:CYS:O	2:B:29:LEU:HG	2.18	0.42
3:C:220:THR:HG21	3:C:261:LEU:HD21	2.00	0.42
1:A:401:SER:O	1:A:401:SER:OG	2.38	0.42
1:A:561:PRO:O	1:A:563:THR:HG23	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:235:ARG:HG3	2:B:236:ARG:N	2.34	0.42
2:B:27:THR:HG22	2:B:290:THR:HG23	2.01	0.42
2:B:129:ASP:O	2:B:133:THR:HG22	2.19	0.42
3:C:219:GLU:OE2	3:C:220:THR:N	2.53	0.42
1:A:220:TYR:CZ	1:A:222:GLU:HB3	2.55	0.42
1:A:247:LYS:NZ	1:A:250:LEU:HD11	2.33	0.42
1:A:333:ARG:HG2	1:A:333:ARG:HH21	1.84	0.42
1:A:343:THR:HG22	1:A:487:ALA:O	2.20	0.42
4:D:268:ARG:NH1	4:D:339:ARG:CZ	2.82	0.42
1:A:294:VAL:O	1:A:294:VAL:CG1	2.67	0.42
2:B:203:ALA:HB2	2:B:261:LEU:HD11	2.01	0.42
2:B:225:ARG:HG2	2:B:225:ARG:HH11	1.84	0.42
3:C:90:CYS:O	3:C:94:ILE:HG13	2.20	0.42
3:C:128:PRO:HB2	3:C:131:ILE:HG12	2.02	0.42
3:C:250:PHE:CZ	3:C:252:TRP:HB3	2.55	0.42
4:D:108:VAL:O	4:D:112:ILE:HG13	2.19	0.42
4:D:406:GLU:C	4:D:406:GLU:OE1	2.58	0.42
1:A:94:SER:O	1:A:95:LEU:HD23	2.20	0.42
1:A:270:GLN:HB3	1:A:294:VAL:HB	2.02	0.41
1:A:416:ASP:HB3	1:A:427:ARG:HH12	1.84	0.41
1:A:505:TYR:CD2	1:A:548:ILE:CD1	3.03	0.41
2:B:250:MET:HE3	2:B:253:LEU:HD12	2.01	0.41
4:D:23:ALA:HA	4:D:279:LEU:HD13	2.01	0.41
4:D:356:VAL:HG11	4:D:375:ARG:NH1	2.35	0.41
4:D:437:ARG:HH11	4:D:437:ARG:HG3	1.85	0.41
1:A:140:TYR:HH	1:A:280:TRP:HH2	1.64	0.41
1:A:253:PRO:CD	1:A:262:VAL:HG11	2.50	0.41
1:A:273:VAL:HG22	1:A:291:THR:HG22	2.02	0.41
1:A:342:PHE:HD2	1:A:488:GLN:HB3	1.85	0.41
1:A:469:LYS:HD3	1:A:469:LYS:HA	1.28	0.41
1:A:345:ASN:HB2	1:A:484:PHE:CE2	2.55	0.41
1:A:365:ILE:HD11	1:A:457:LEU:HD11	2.02	0.41
2:B:19:ALA:HB2	3:C:126:VAL:HG11	2.02	0.41
4:D:112:ILE:O	4:D:116:ILE:HG22	2.19	0.41
4:D:182:THR:HG21	4:D:194:LEU:CD1	2.51	0.41
1:A:266:ASP:O	1:A:268:THR:N	2.54	0.41
3:C:168:MET:HE1	3:C:203:ILE:CG2	2.49	0.41
1:A:140:TYR:OH	1:A:280:TRP:HH2	2.03	0.41
1:A:317:LEU:O	1:A:317:LEU:HD12	2.20	0.41
2:B:281:MET:SD	3:C:131:ILE:HD12	2.60	0.41
4:D:420:VAL:HG12	4:D:421:LEU:HD23	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:559:ASP:OD2	4:D:559:ASP:O	2.38	0.41
3:C:108:TYR:CD2	3:C:173:ARG:NH1	2.89	0.41
4:D:321:GLU:HG3	4:D:322:LEU:HG	2.02	0.41
1:A:290:ILE:O	1:A:290:ILE:HG22	2.20	0.41
1:A:420:TRP:O	1:A:427:ARG:HB2	2.21	0.41
3:C:49:LEU:HD23	3:C:51:PHE:CE1	2.55	0.41
4:D:47:LYS:HB2	4:D:47:LYS:HE2	1.87	0.41
4:D:353:ARG:O	4:D:416:GLY:HA3	2.20	0.41
4:D:384:LEU:HD22	4:D:554:LEU:HD13	2.03	0.41
4:D:445:GLN:HG2	4:D:525:GLU:O	2.21	0.41
4:D:489:ARG:HB2	4:D:492:ASP:OD2	2.21	0.41
1:A:106:HIS:CE1	1:A:108:ASP:H	2.38	0.41
1:A:265:LEU:O	1:A:265:LEU:HG	2.21	0.41
2:B:94:ARG:HD2	2:B:276:GLY:O	2.21	0.41
1:A:515:LYS:H	1:A:515:LYS:HG2	1.67	0.40
2:B:16:LEU:O	2:B:16:LEU:HD12	2.20	0.40
4:D:261:LEU:CD1	4:D:603:VAL:HG11	2.51	0.40
4:D:272:ILE:CG2	4:D:291:ARG:HH21	2.34	0.40
4:D:334:VAL:C	4:D:335:LYS:HE2	2.42	0.40
4:D:433:ARG:HG2	4:D:433:ARG:HH11	1.86	0.40
4:D:454:ARG:HB3	4:D:454:ARG:NH1	2.35	0.40
4:D:388:ARG:HG2	4:D:388:ARG:NH1	2.35	0.40
1:A:365:ILE:HG13	1:A:457:LEU:HD21	2.03	0.40
1:A:373:VAL:HG13	3:C:54:LEU:CD2	2.47	0.40
4:D:69:ARG:HG2	4:D:69:ARG:NH1	2.32	0.40
1:A:447:ARG:O	1:A:451:GLN:HG3	2.22	0.40
2:B:123:ARG:HA	2:B:123:ARG:HD3	1.81	0.40
3:C:109:PHE:CD2	3:C:113:ARG:NE	2.87	0.40
4:D:353:ARG:O	4:D:416:GLY:CA	2.70	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	517/599 (86%)	464 (90%)	53 (10%)	0	100	100
2	B	323/325 (99%)	317 (98%)	6 (2%)	0	100	100
3	C	271/291 (93%)	258 (95%)	13 (5%)	0	100	100
4	D	607/612 (99%)	573 (94%)	34 (6%)	0	100	100
All	All	1718/1827 (94%)	1612 (94%)	106 (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	406/466 (87%)	406 (100%)	0	100	100
2	B	255/255 (100%)	255 (100%)	0	100	100
3	C	218/233 (94%)	218 (100%)	0	100	100
4	D	483/485 (100%)	483 (100%)	0	100	100
All	All	1362/1439 (95%)	1362 (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 (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	375	GLN
4	D	558	HIS

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
5	SF4	D	701	4	0,12,12	-	-	-		

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	SF4	D	701	4	-	-	0/6/5/5

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

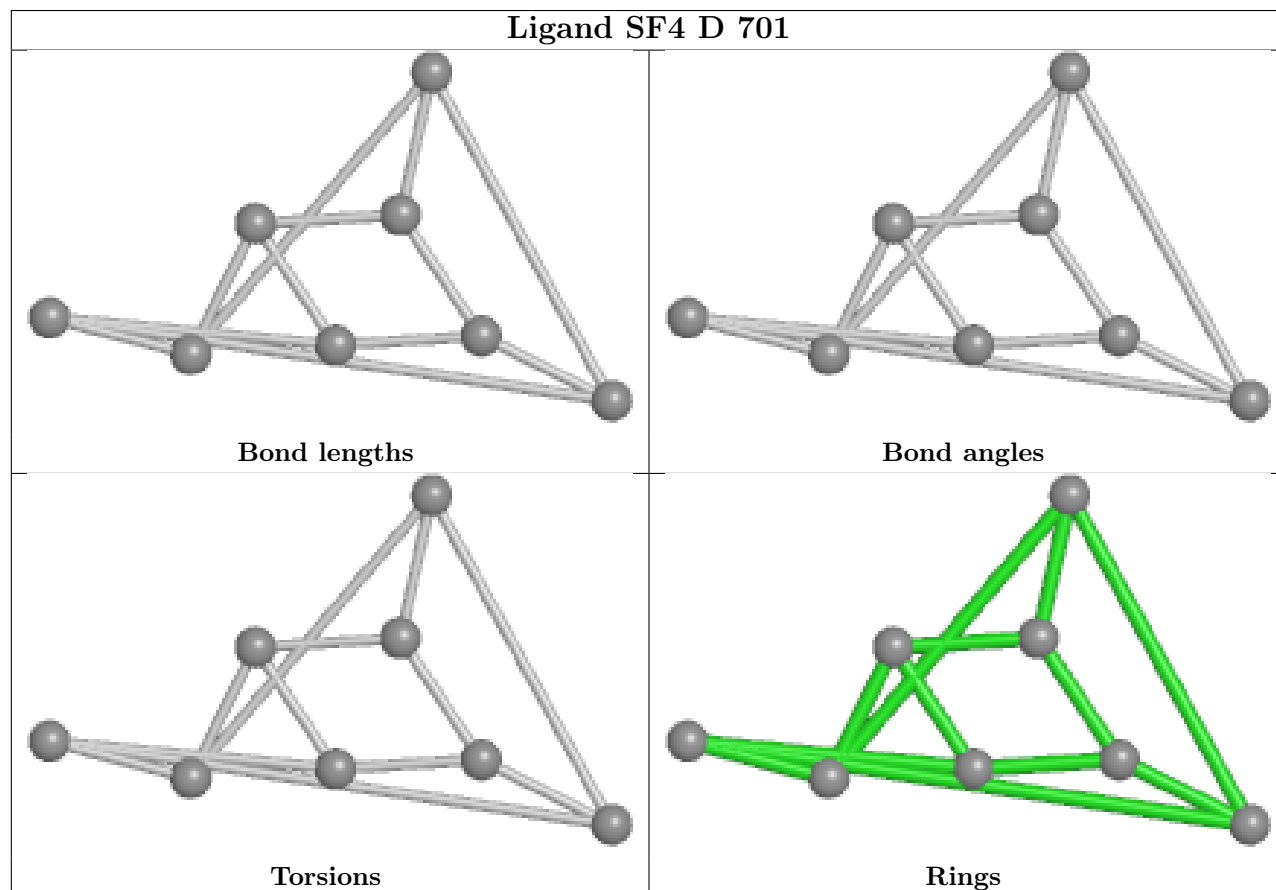
There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight  $> 250$  and outliers as shown on the validation Tables will

also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

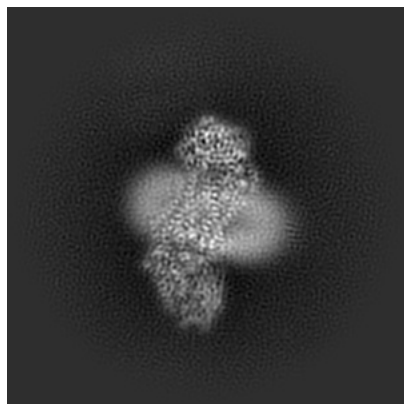
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-35991. These allow visual inspection of the internal detail of the map and identification of artifacts.

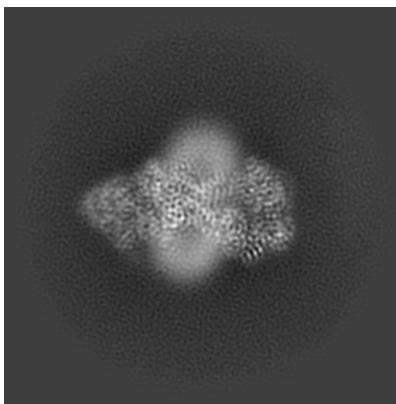
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

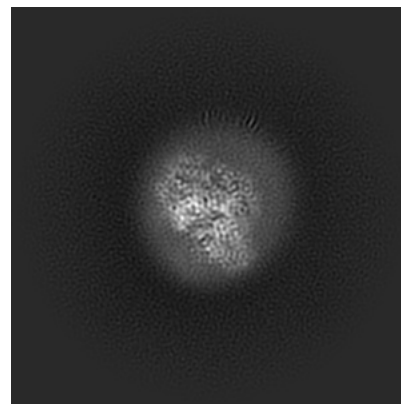
#### 6.1.1 Primary map



X

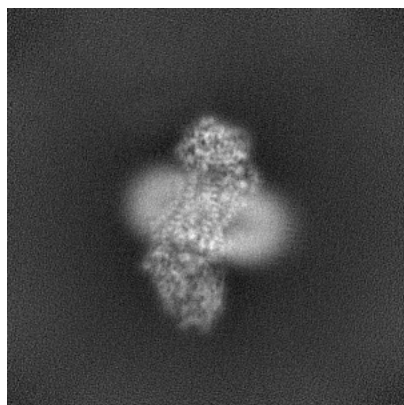


Y

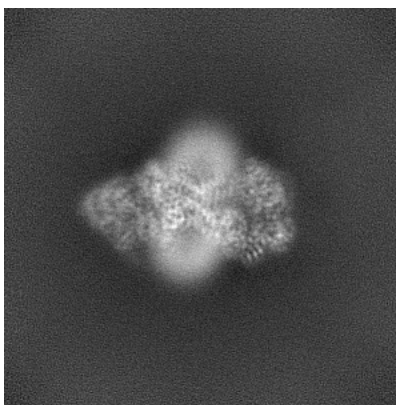


Z

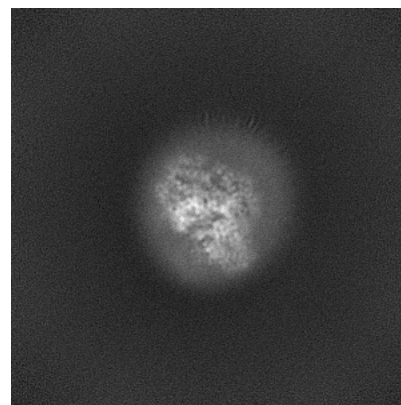
#### 6.1.2 Raw map



X



Y

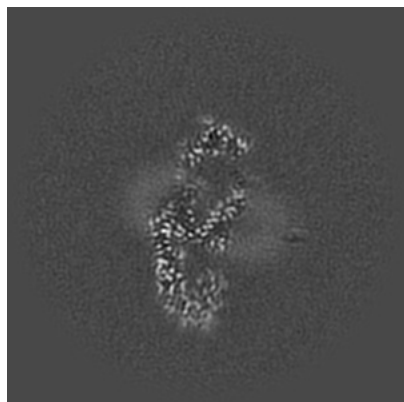


Z

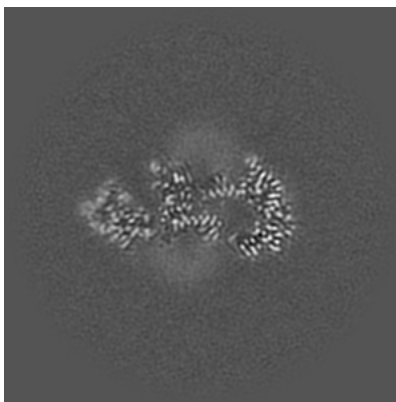
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

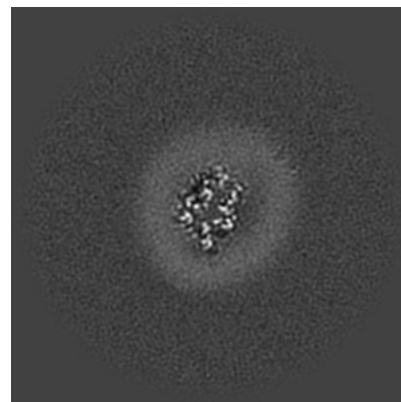
### 6.2.1 Primary map



X Index: 175

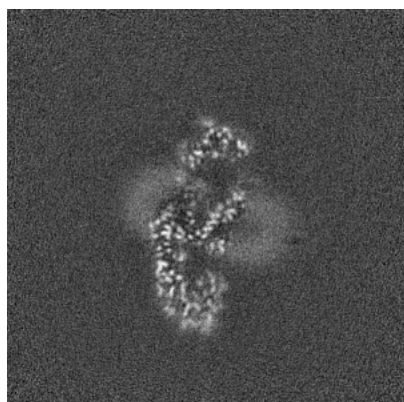


Y Index: 175

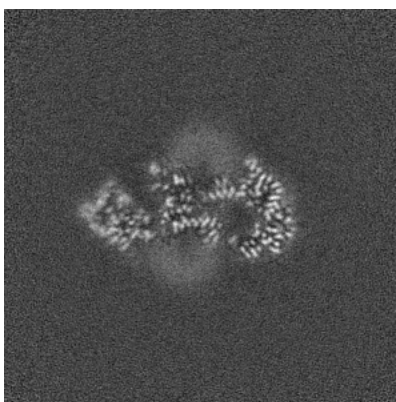


Z Index: 175

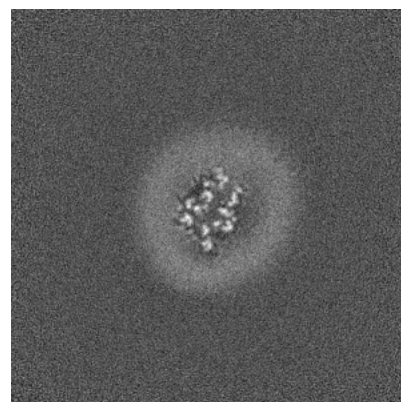
### 6.2.2 Raw map



X Index: 175



Y Index: 175

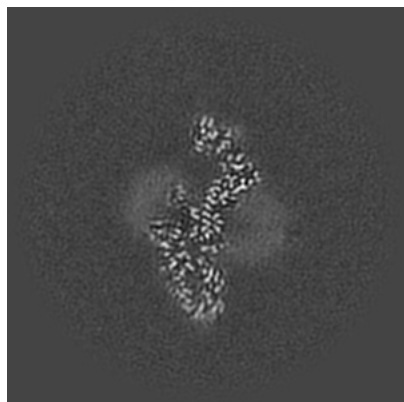


Z Index: 175

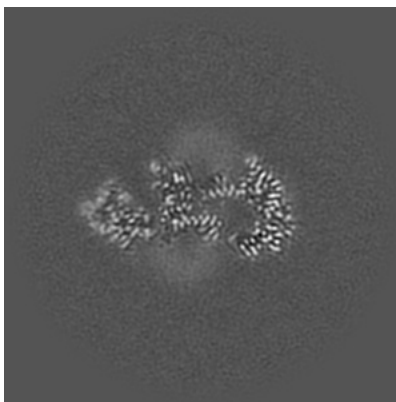
The images above show central slices of the map in three orthogonal directions.

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

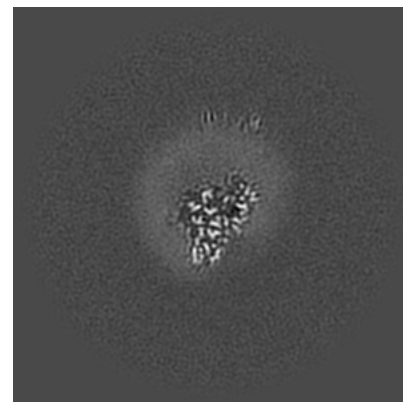
### 6.3.1 Primary map



X Index: 162

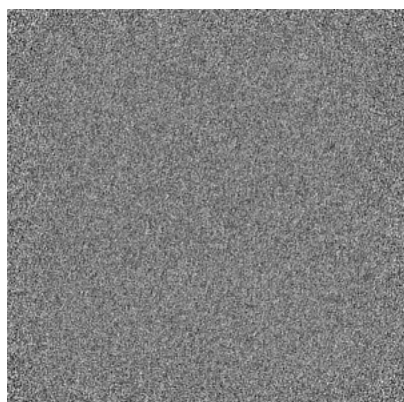


Y Index: 175

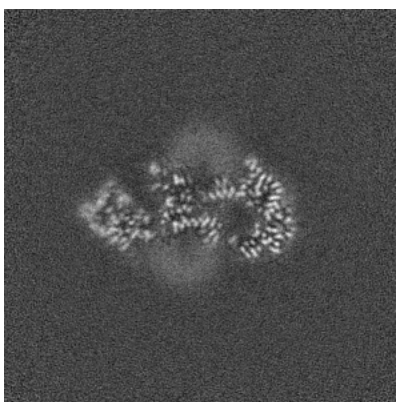


Z Index: 150

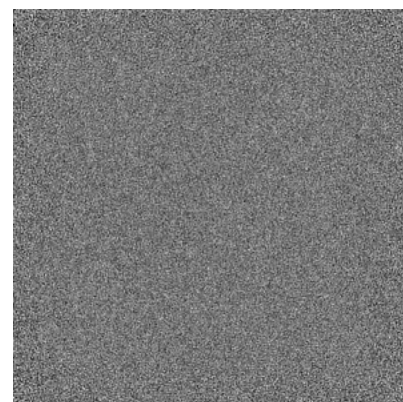
### 6.3.2 Raw map



X Index: 0



Y Index: 175

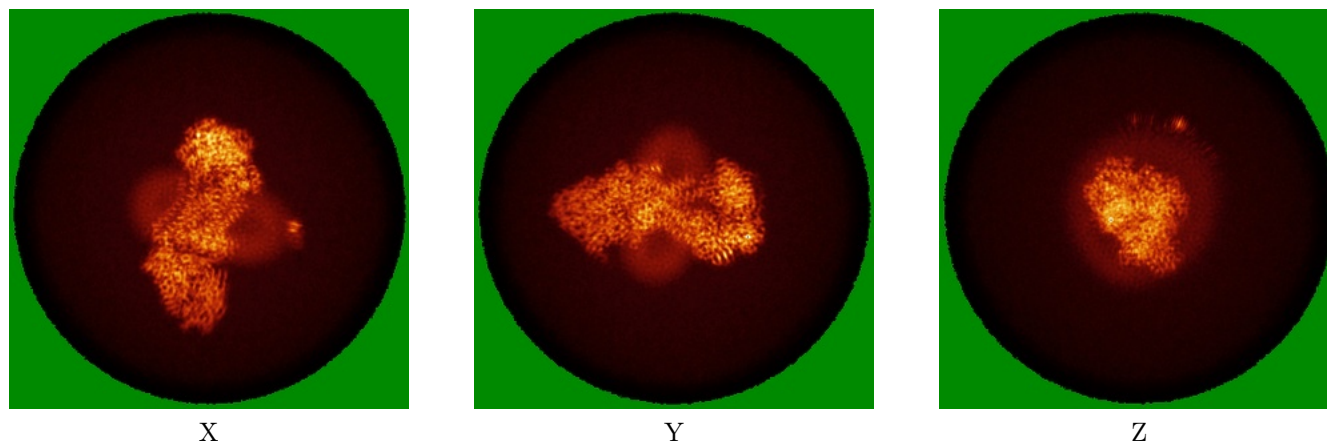


Z Index: 0

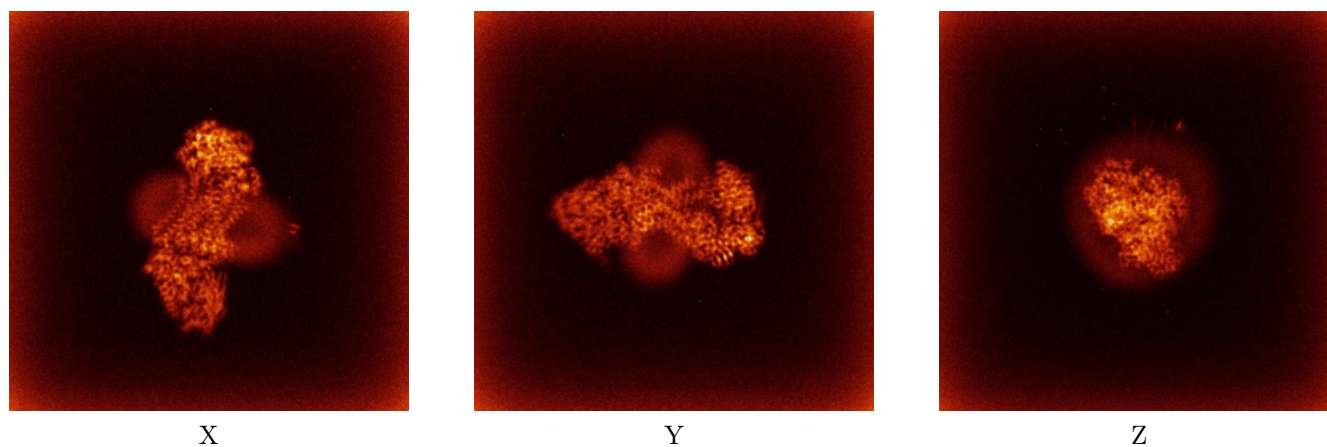
The images above show the largest variance slices of the map in three orthogonal directions.

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

### 6.4.1 Primary map



### 6.4.2 Raw map



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](#)

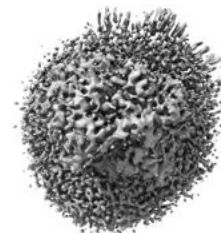
### 6.5.1 Primary map



X



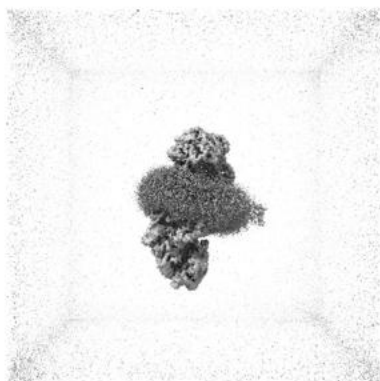
Y



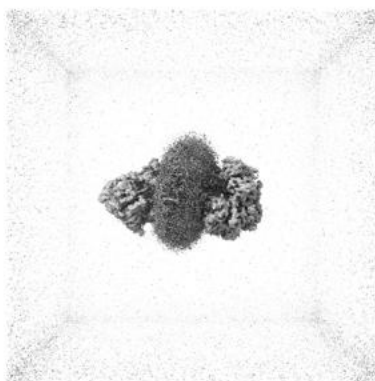
Z

The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

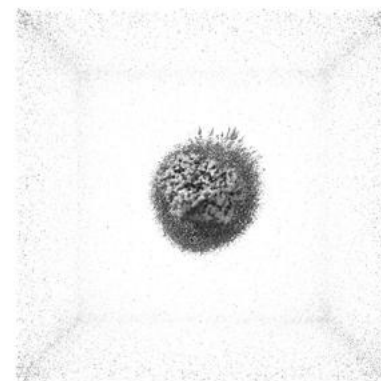
### 6.5.2 Raw map



X



Y



Z

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.

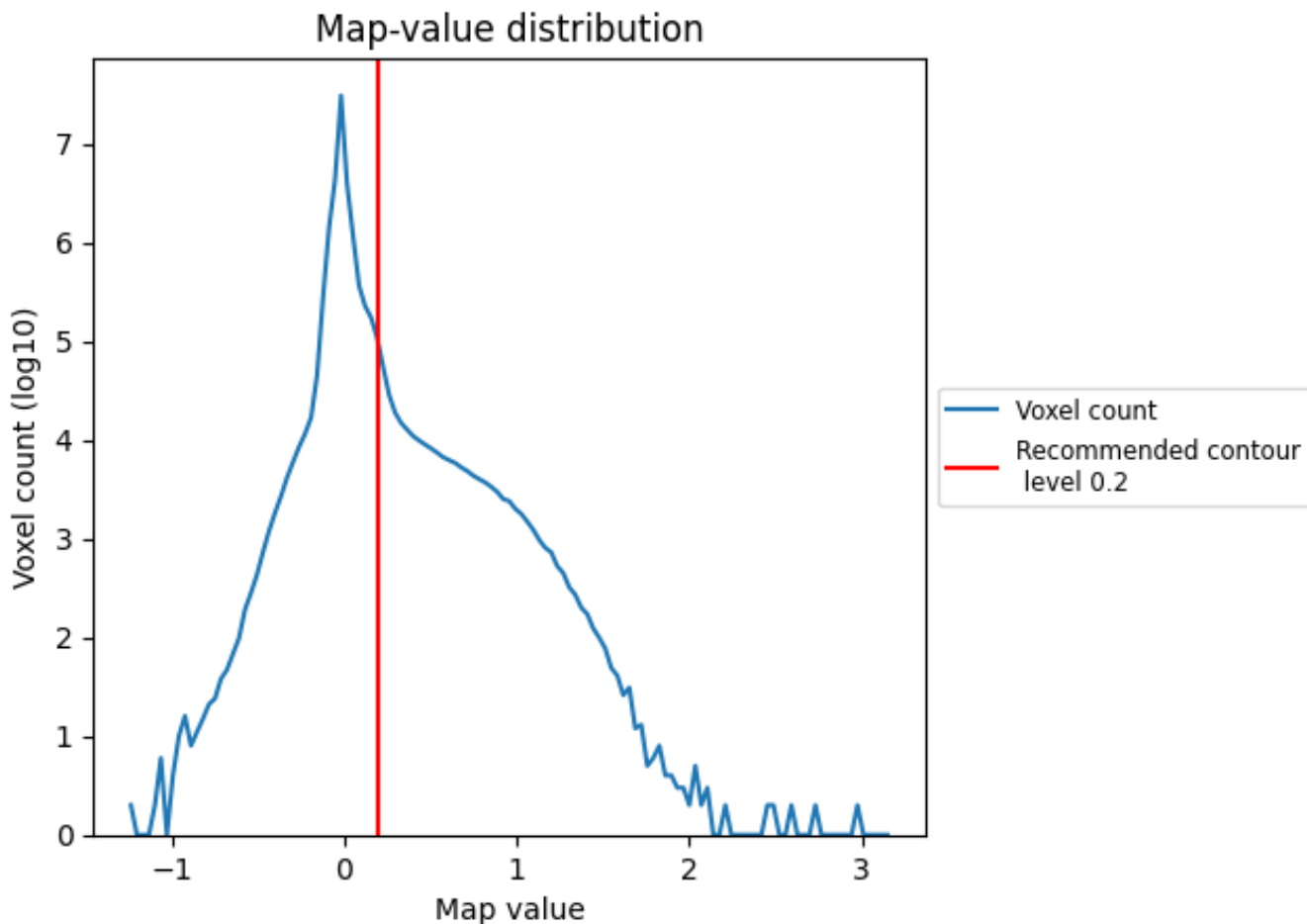
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

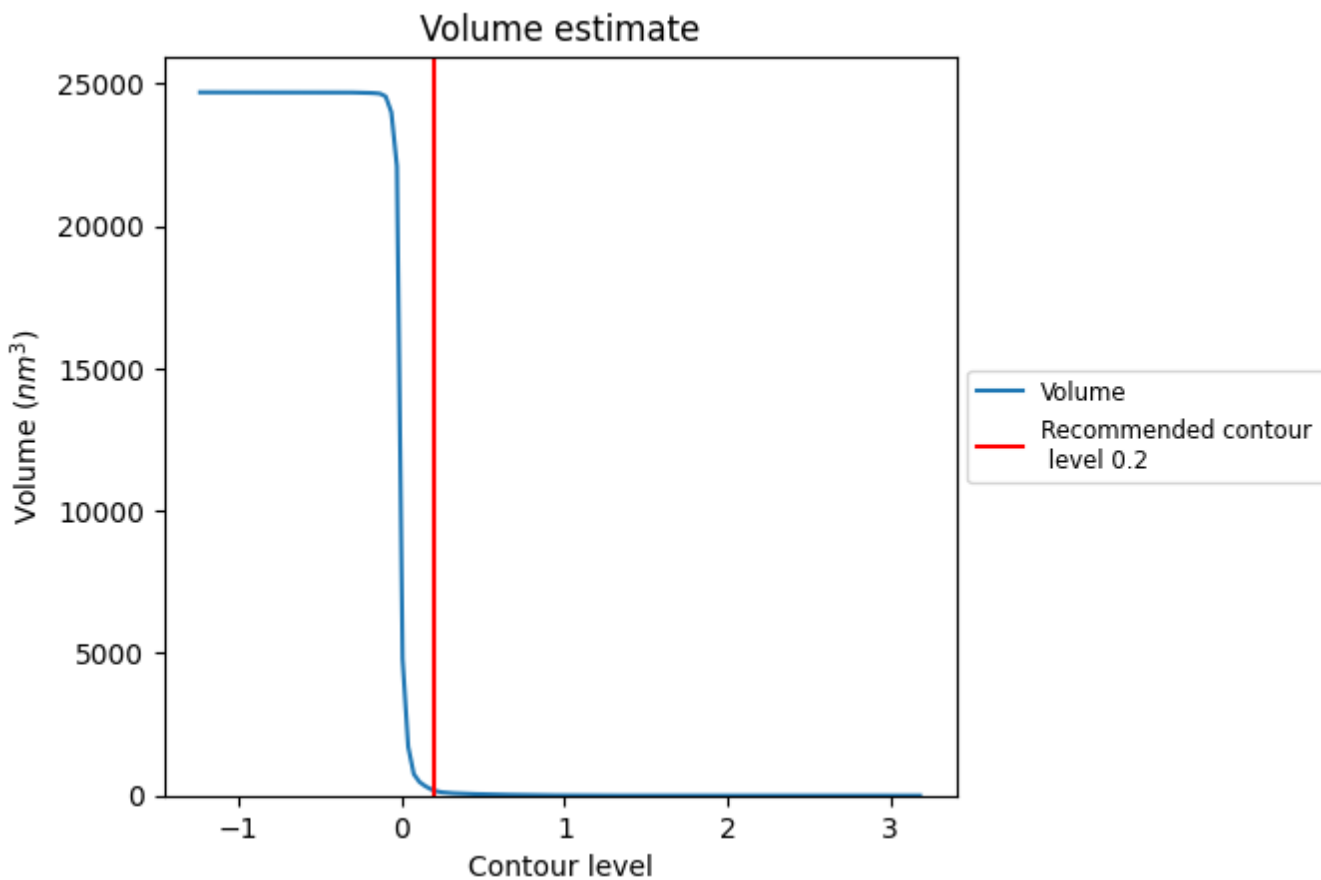
This section contains the results of statistical analysis of the map.

### 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.

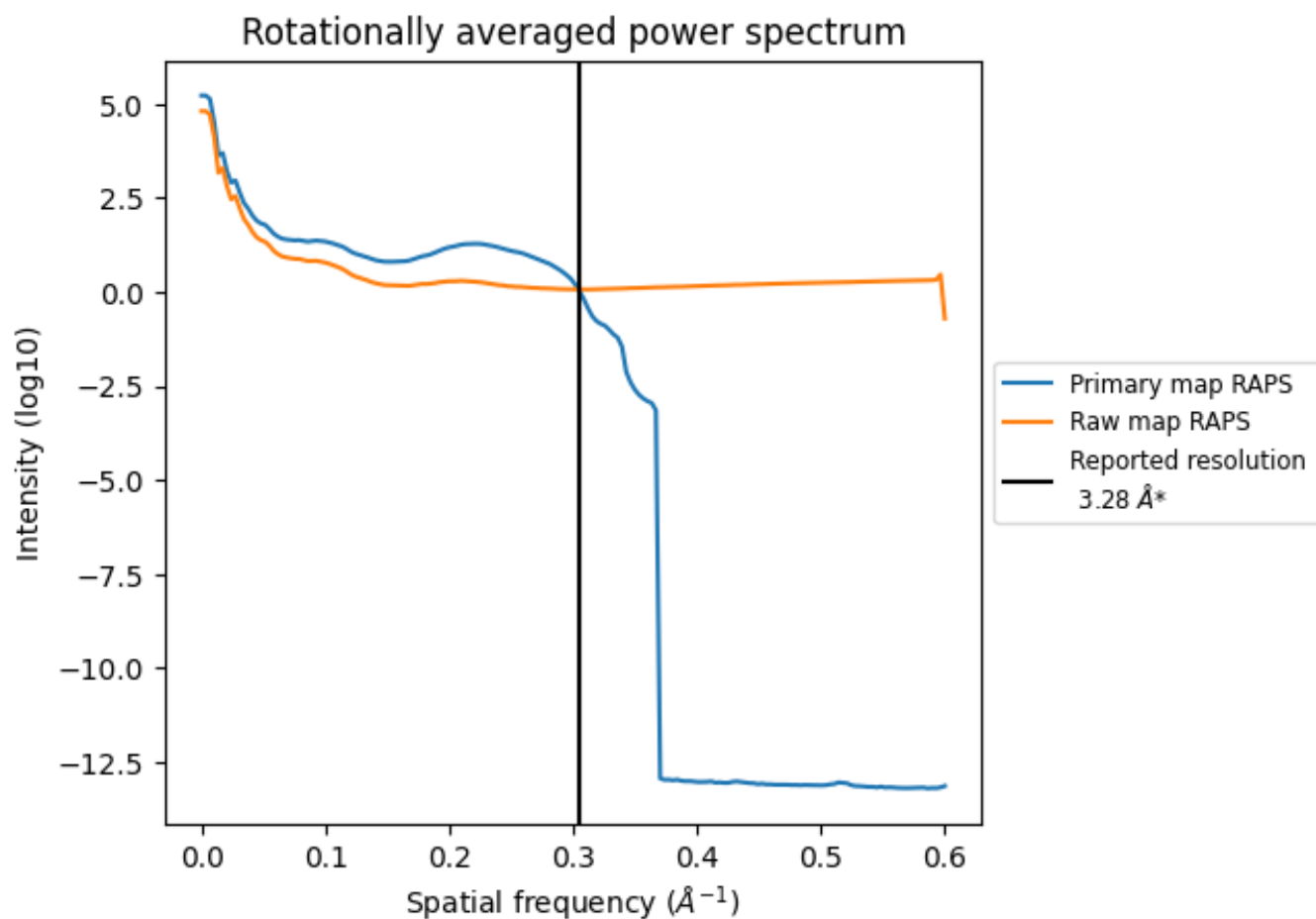
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 182 nm<sup>3</sup>; this corresponds to an approximate mass of 164 kDa.

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

### 7.3 Rotationally averaged power spectrum [i](#)

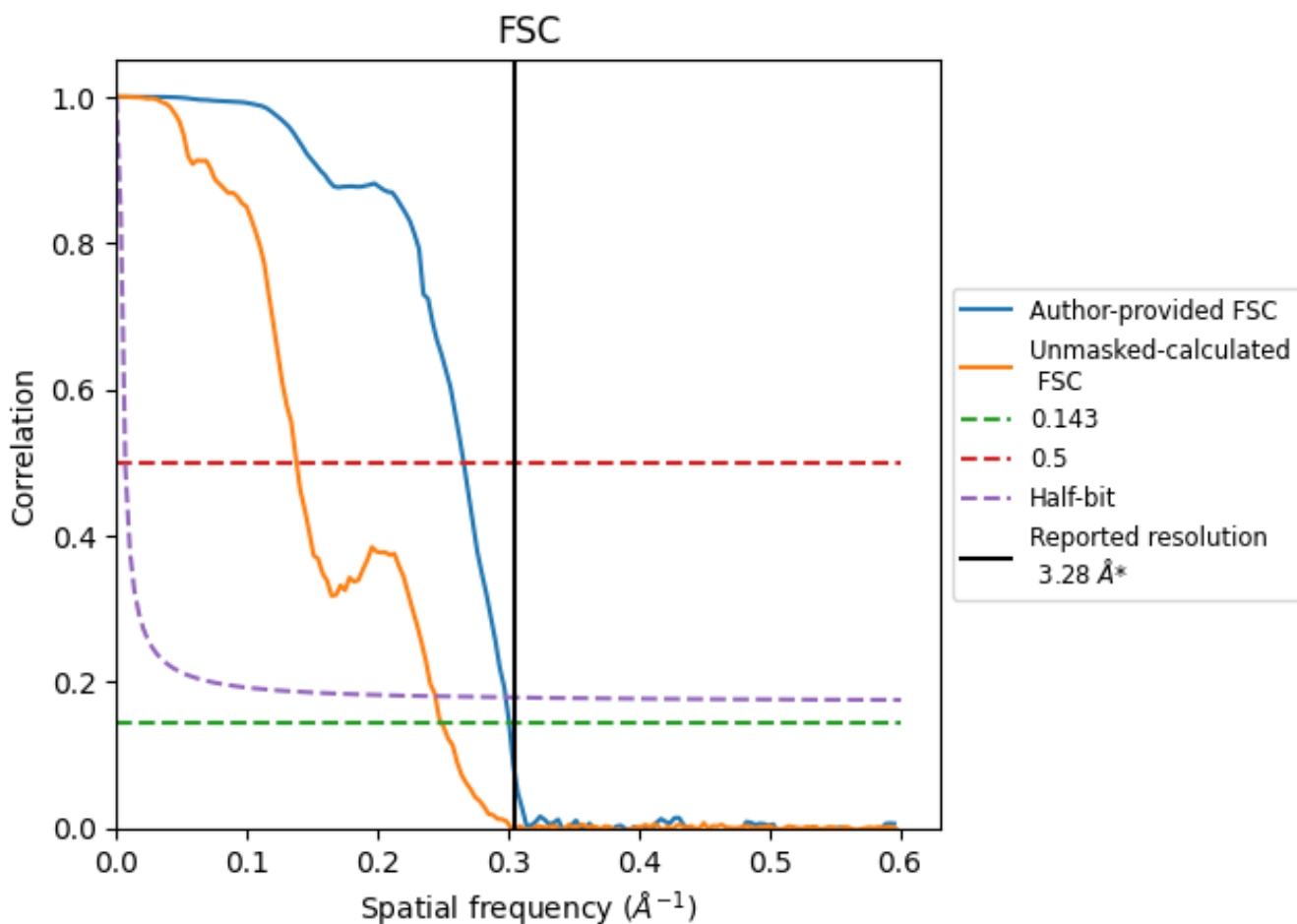


\*Reported resolution corresponds to spatial frequency of 0.305 Å<sup>-1</sup>

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

## 8.2 Resolution estimates [i](#)

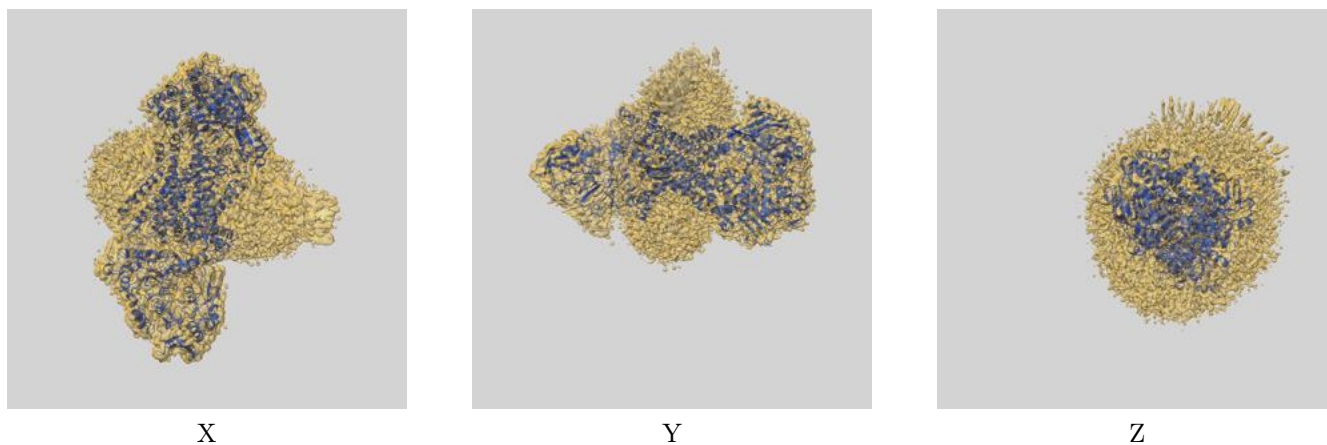
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.28	-	-
Author-provided FSC curve	3.32	3.76	3.35
Unmasked-calculated*	4.01	7.25	4.10

\*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 4.01 differs from the reported value 3.28 by more than 10 %

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

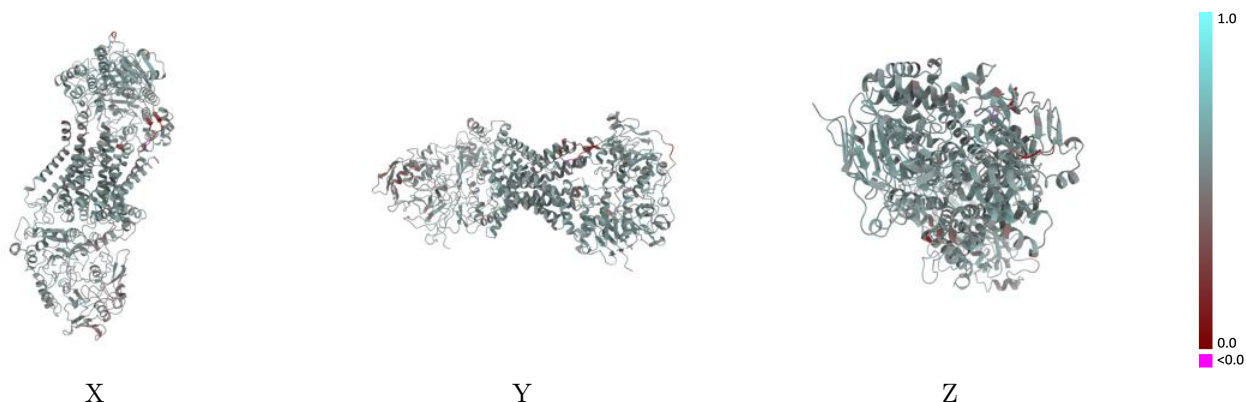
This section contains information regarding the fit between EMDB map EMD-35991 and PDB model 8J5R. Per-residue inclusion information can be found in section [3](#) on page [5](#).

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



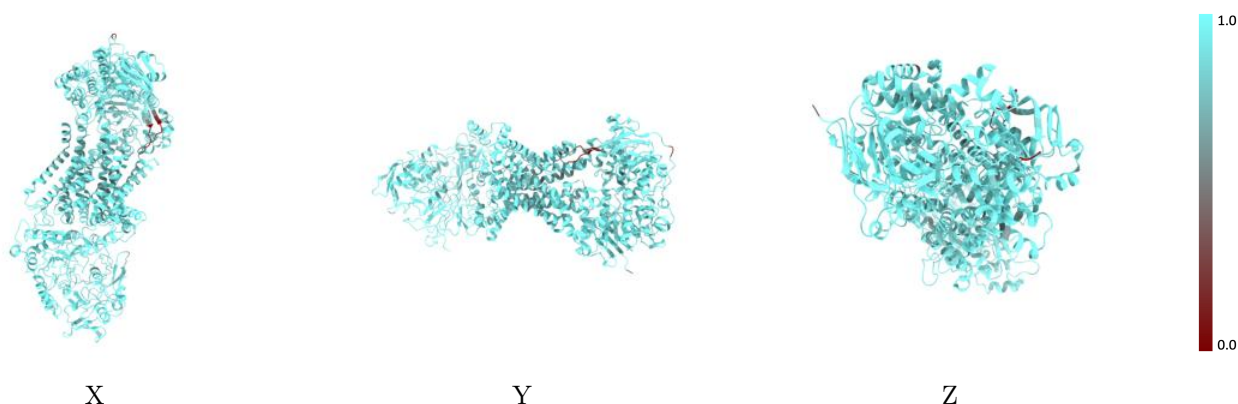
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 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.

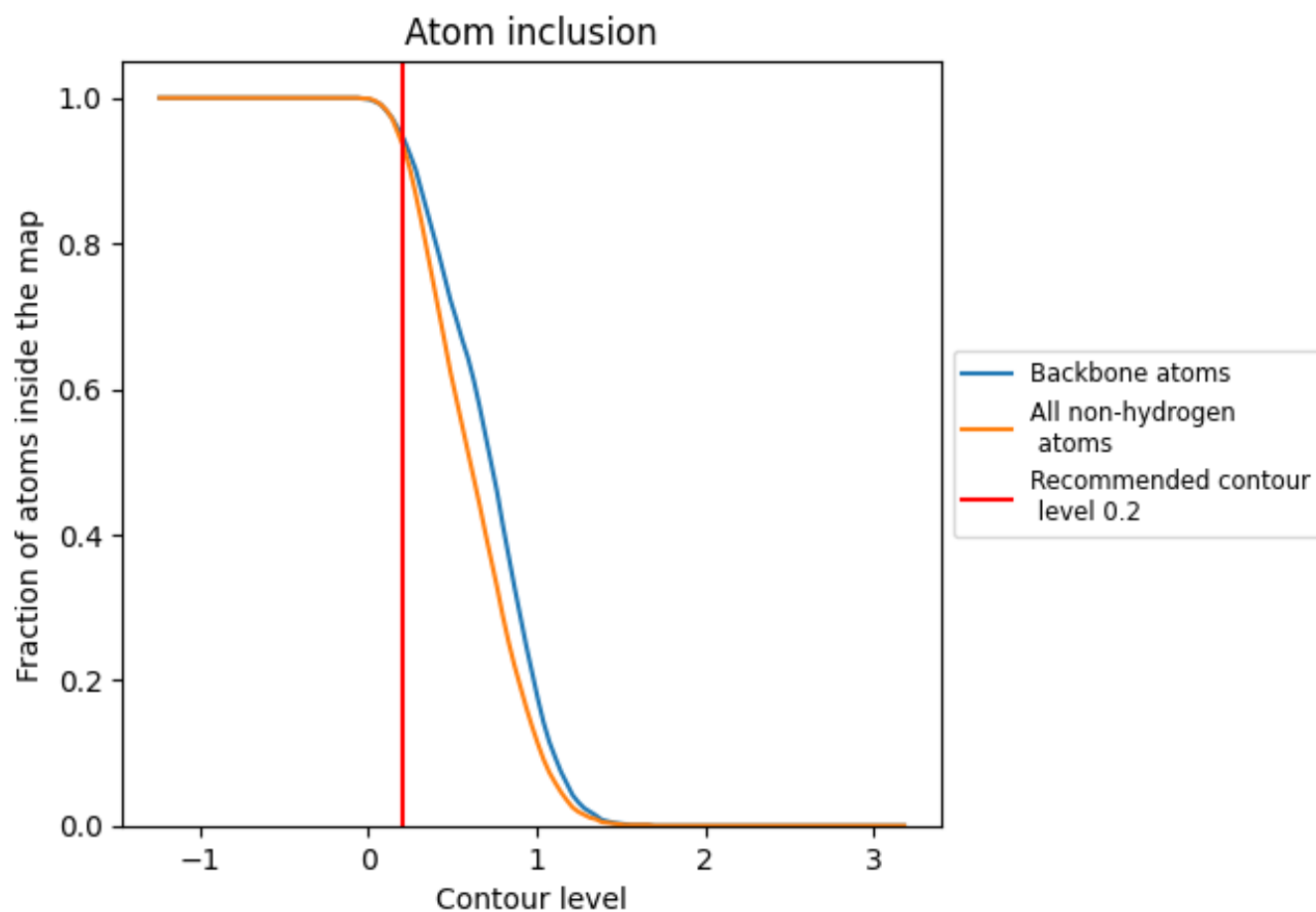
## 9.3 Atom inclusion mapped to coordinate model [i](#)



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 (0.2).













## 9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 94% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9380	 0.5340
A	 0.9540	 0.5210
B	 0.9370	 0.5440
C	 0.9230	 0.5320
D	 0.9330	 0.5400

