W O R L D W I D E

wwPDB

P R O T E I N   D A T A   B A N K

wwPDB EM Validation Summary Report (i)

Nov 19, 2022 – 11:59 am GMT

PDB ID	:	5MG3
EMDB ID	:	EMD-3506
Title	:	EM fitted model of bacterial holo-translocon
Authors	:	Schaffitzel, C.; Botte, M.
Deposited on	:	2016-11-20
Resolution	:	14.00 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*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

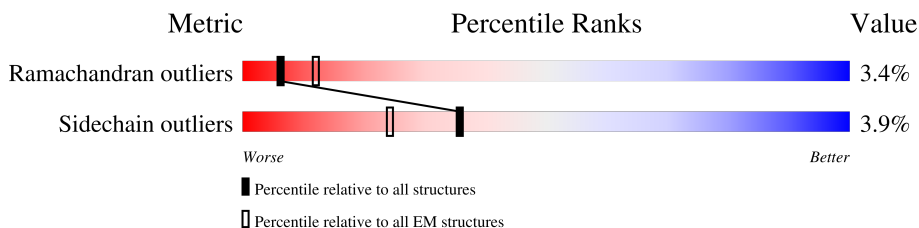|		
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

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 14.00 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	Percentile Ranks	Value
Ramachandran outliers		3.4%
Sidechain outliers		3.9%

Worse *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	Y	458	17% · 70% · 22% · · ·
2	E	140	11% · 33% · 11% · · 54%
3	G	136	20% · · 76%
4	D	622	· 53% · 11% · 33%
5	F	323	· 68% · 17% · 5% · 11%
6	C	559	· 63% · 16% · 19%

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 26650 atoms, of which 13553 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 Protein translocase subunit SecY.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	Y	443	Total 7004	C 2259	H 3581	N 566	O 580	S 18	0	0

There are 15 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y	-14	VAL	-	expression tag	UNP P0AGA2
Y	-13	TRP	-	expression tag	UNP P0AGA2
Y	-12	ASN	-	expression tag	UNP P0AGA2
Y	-11	CYS	-	expression tag	UNP P0AGA2
Y	-10	GLU	-	expression tag	UNP P0AGA2
Y	-9	ARG	-	expression tag	UNP P0AGA2
Y	-8	ILE	-	expression tag	UNP P0AGA2
Y	-7	THR	-	expression tag	UNP P0AGA2
Y	-6	ILE	-	expression tag	UNP P0AGA2
Y	-5	SER	-	expression tag	UNP P0AGA2
Y	-4	HIS	-	expression tag	UNP P0AGA2
Y	-3	ARG	-	expression tag	UNP P0AGA2
Y	-2	LYS	-	expression tag	UNP P0AGA2
Y	-1	GLN	-	expression tag	UNP P0AGA2
Y	0	THR	-	expression tag	UNP P0AGA2

- Molecule 2 is a protein called Protein translocase subunit SecE.

Mol	Chain	Residues	Atoms						AltConf	Trace
2	E	65	Total 1062	C 332	H 552	N 91	O 86	S 1	0	0

There are 15 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	369	MET	-	initiating methionine	UNP P0AG96
E	370	HIS	-	expression tag	UNP P0AG96

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WORLDWIDE
wwPDB
PROTEIN DATA BANK

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Chain	Residue	Modelled	Actual	Comment	Reference
E	371	HIS	-	expression tag	UNP P0AG96
E	372	HIS	-	expression tag	UNP P0AG96
E	373	HIS	-	expression tag	UNP P0AG96
E	374	HIS	-	expression tag	UNP P0AG96
E	375	HIS	-	expression tag	UNP P0AG96
E	376	ASP	-	expression tag	UNP P0AG96
E	377	ASP	-	expression tag	UNP P0AG96
E	378	ASP	-	expression tag	UNP P0AG96
E	379	ASP	-	expression tag	UNP P0AG96
E	380	LYS	-	expression tag	UNP P0AG96
E	381	ALA	-	expression tag	UNP P0AG96
E	382	MET	-	expression tag	UNP P0AG96
E	383	GLY	-	expression tag	UNP P0AG96

- Molecule 3 is a protein called Protein-export membrane protein SecG.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
3	G	32	480	151	244	39	44	2	0	0

There are 26 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	439	VAL	-	expression tag	UNP P0AG99
G	440	GLY	-	expression tag	UNP P0AG99
G	441	THR	-	expression tag	UNP P0AG99
G	442	GLY	-	expression tag	UNP P0AG99
G	443	TRP	-	expression tag	UNP P0AG99
G	444	TYR	-	expression tag	UNP P0AG99
G	445	SER	-	expression tag	UNP P0AG99
G	446	GLY	-	expression tag	UNP P0AG99
G	447	SER	-	expression tag	UNP P0AG99
G	448	PRO	-	expression tag	UNP P0AG99
G	449	GLY	-	expression tag	UNP P0AG99
G	450	ILE	-	expression tag	UNP P0AG99
G	451	LEU	-	expression tag	UNP P0AG99
G	452	TYR	-	expression tag	UNP P0AG99
G	453	HIS	-	expression tag	UNP P0AG99
G	454	TRP	-	expression tag	UNP P0AG99
G	455	PRO	-	expression tag	UNP P0AG99
G	456	GLU	-	expression tag	UNP P0AG99
G	457	VAL	-	expression tag	UNP P0AG99

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Chain	Residue	Modelled	Actual	Comment	Reference
G	458	LEU	-	expression tag	UNP P0AG99
G	459	ARG	-	expression tag	UNP P0AG99
G	460	ILE	-	expression tag	UNP P0AG99
G	461	GLN	-	expression tag	UNP P0AG99
G	462	GLU	-	expression tag	UNP P0AG99
G	463	LEU	-	expression tag	UNP P0AG99
G	464	ILE	-	expression tag	UNP P0AG99

- Molecule 4 is a protein called Protein translocase subunit SecD.

Mol	Chain	Residues	Atoms						AltConf	Trace
4	D	414	Total 6419	C 1991	H 3291	N 545	O 582	S 10	0	0

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	-6	MET	-	initiating methionine	UNP P0AG90
D	-5	HIS	-	expression tag	UNP P0AG90
D	-4	HIS	-	expression tag	UNP P0AG90
D	-3	HIS	-	expression tag	UNP P0AG90
D	-2	HIS	-	expression tag	UNP P0AG90
D	-1	HIS	-	expression tag	UNP P0AG90
D	0	HIS	-	expression tag	UNP P0AG90
D	1	MET	-	expression tag	UNP P0AG90
D	142	VAL	ALA	conflict	UNP P0AG90

- Molecule 5 is a protein called Protein translocase subunit SecF.

Mol	Chain	Residues	Atoms						AltConf	Trace
5	F	289	Total 4502	C 1434	H 2291	N 366	O 398	S 13	0	0

- Molecule 6 is a protein called Membrane protein insertase YidC.

Mol	Chain	Residues	Atoms						AltConf	Trace
6	C	455	Total 7183	C 2336	H 3594	N 582	O 650	S 21	0	0

There are 17 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	-4	MET	-	initiating methionine	UNP P25714
C	-3	ASP	-	expression tag	UNP P25714
C	-2	PRO	-	expression tag	UNP P25714
C	-1	SER	-	expression tag	UNP P25714
C	0	SER	-	expression tag	UNP P25714
C	1	ARG	-	expression tag	UNP P25714
C	228	ALA	GLU	conflict	UNP P25714
C	229	ALA	LYS	conflict	UNP P25714
C	231	ALA	GLU	conflict	UNP P25714
C	232	ALA	LYS	conflict	UNP P25714
C	234	ALA	LYS	conflict	UNP P25714
C	549	HIS	-	expression tag	UNP P25714
C	550	HIS	-	expression tag	UNP P25714
C	551	HIS	-	expression tag	UNP P25714
C	552	HIS	-	expression tag	UNP P25714
C	553	HIS	-	expression tag	UNP P25714
C	554	HIS	-	expression tag	UNP P25714

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: Protein translocase subunit SecY

Chain Y:

17%
70%
22%

VAL TRP ASN CYS GLU ARG ILE THR ILE SER HIS ARG LYS GLN THR M1 A2 K3 G6 L7 D8 F9 Q10 S11 A12 K13 G14 G15 L16 G17 E18 L19 K20 R21 R22 L23 L24 F25 R34 S37 F38 I39 P40 I41 P42 A46 A47 V48 K51 Q56 R57 S68

A71 L72 S73 R74 A75 S76 I77 F78 M83 P84 Y85 I86 S87 V98 H99 P100 T101 I105 K106 K107 E108 G109 E110 S111 G112 R113 Y119 T120 R121 Y122 V126 I133 G134 I135 A136 T137 G138 L139 P140 N141 M142 Q146 G147 L148 V149 I150 N151 P152 G153 F154 A155 F156 Y157

F158 T159 A160 V161 V162 S163 T166 F170 G175 I178 T179 E180 R181 G186 F192 L199 P200 H205 T206 A210 R211 H216 V219 F233 V234 V235 F236 V237 E238 R239 R242 R243 Y248 A249 K250 R251 R255 R256 V257 Y258 M271 A291

G295 G296 W300 N301 W302 L303 T304 T305 I306 S307 L308 Y309 L310 Q311 P312 G313 Q314 Y317 V318 L319 L320 Y321 I325 I326 F327 F328 C329 F330 F331 Y332 T333 A334 L335 V336 F337 N338 P339 E340 E341 T342 A343 D344 I356 R357 E360 Q361 Y365 I366 D367 M370 T371 R372

L375 V376 Y380 F383 I384 C385 F390 M391 R392 M395 K396 F399 Y400 T422 L423 M424 M425 S426 S427 Q428 Y429 E430 S431 A432 L433 A436 Y441 G442 R443

- Molecule 2: Protein translocase subunit SecE

Chain E:

11%
33%
11%
54%

MET HIS HIS HIS HIS HIS HIS ASP ASP ASP ASP LYS ALA MET GLY ALA ASN THR GLU ALA GLN GLY SER GLY ARG GLY LEU GLU ALA MET LYS TRP VAL VAL VAL ALA LEU LEU LEU VAL ALA ILE VAL GLY ASN TYR LEU TYR ARG ASP ILE MET LEU PRO LEU ARG ALA LEU ALA

VAL VAL ILE LEU ILE ALA ALA ALA GLY GLY VAL ALA LEU LEU THR T444 K445 G446 K447 A448 T449 V450 A451 R454 E455 A456 R457 T458 R461 W465 R468 T471 T475 M485 W490 G491 L492 D493 G494 I495 L496 V497 R498 S501 F502 G505 L506 R507 F508

- Molecule 3: Protein-export membrane protein SecG

Chain G:

20%
76%

VAL GLY THR GLY TRP TYR SER GLY SER PRO GLY ILE ILE LEU TYR HIS TRP PRO GLU VAL LEU ARG GLN ILE GLN GLU ILE LEU MET TYR GLU ALA LEU LEU VAL VAL PHE LEU ILE LEU VAL ALA ILE GLY LEU VAL LEU GLU ILE MET LEU GLN GLN GLY LYS GLY ALA ASP MET GLY ALA SER PHE
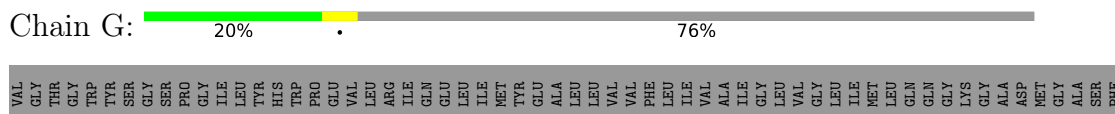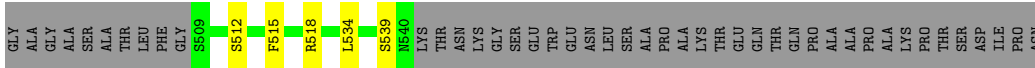
• Molecule 4: Protein translocase subunit SecD

Chain D: 53%   11%   33%
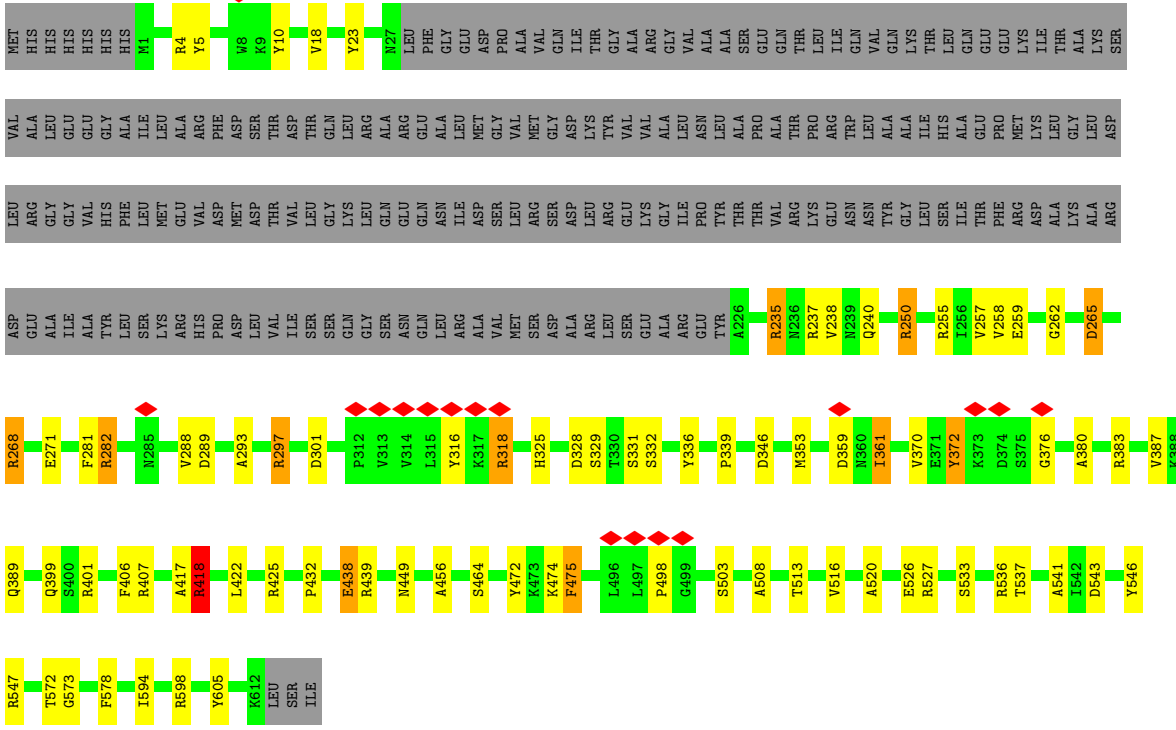
• Molecule 5: Protein translocase subunit SecF

Chain F: 68%   17%   5%   11%
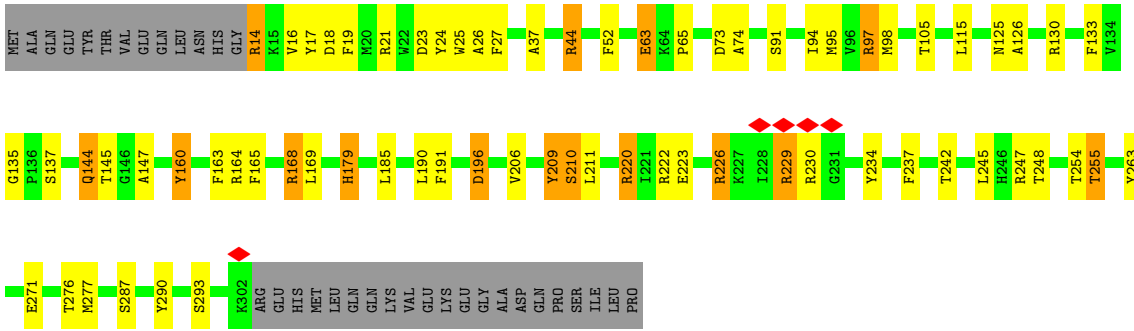
• Molecule 6: Membrane protein insertase YidC

Chain C: 63%   16%   19%
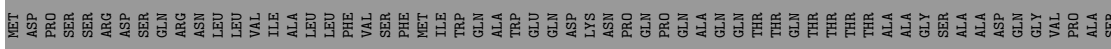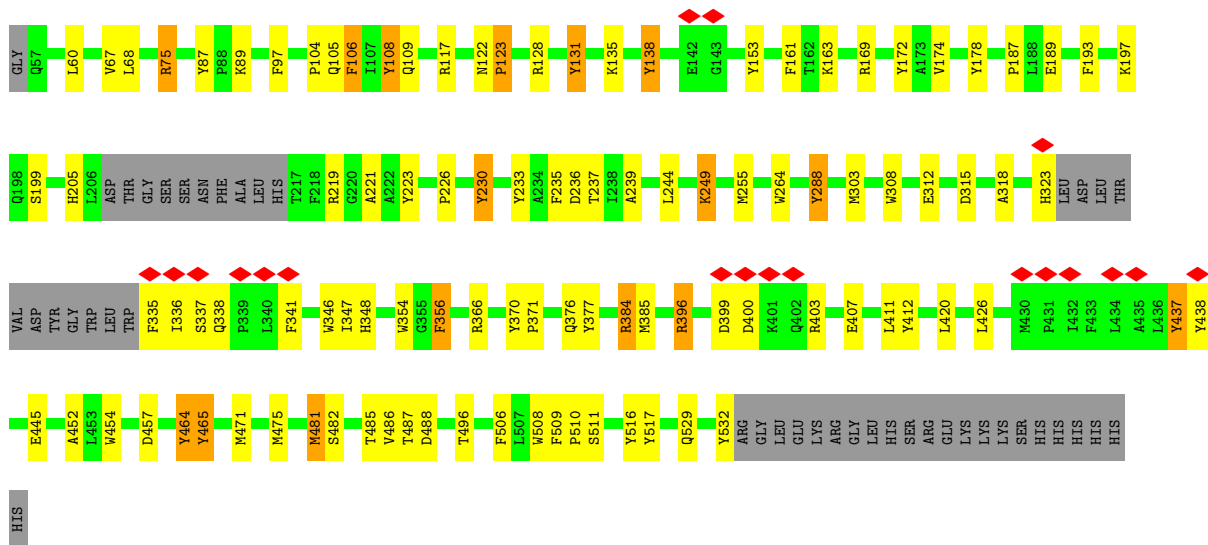
4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	53648	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	100	Depositor
Electron dose $(e^-/\text{Å}^2)$	10	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON I (4k x 4k)	Depositor
Maximum map value	153.928	Depositor
Minimum map value	-63.993	Depositor
Average map value	1.728	Depositor
Map value standard deviation	15.464	Depositor
Recommended contour level	8.5	Depositor
Map size (Å)	190.40001, 190.40001, 190.40001	wwPDB
Map dimensions	140, 140, 140	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.36, 1.36, 1.36	Depositor

5   Model quality ⓘ

5.1   Standard geometry ⓘ

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	Y	2.09	27/3501 (0.8%)	2.13	116/4744 (2.4%)
2	E	1.78	6/518 (1.2%)	2.24	19/702 (2.7%)
3	G	1.72	3/238 (1.3%)	1.91	5/320 (1.6%)
4	D	1.62	20/3163 (0.6%)	2.06	82/4288 (1.9%)
5	F	1.59	4/2250 (0.2%)	2.18	77/3049 (2.5%)
6	C	1.62	16/3683 (0.4%)	1.99	97/5013 (1.9%)
All	All	1.76	76/13353 (0.6%)	2.09	396/18116 (2.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	Y	0	11
2	E	0	3
4	D	0	9
5	F	0	13
6	C	0	21
All	All	0	57

The worst 5 of 76 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	Y	317	TYR	CG-CD2	35.73	1.85	1.39
1	Y	317	TYR	CG-CD1	34.43	1.83	1.39
1	Y	317	TYR	CE2-CZ	33.58	1.82	1.38
1	Y	317	TYR	CE1-CZ	33.16	1.81	1.38
1	Y	317	TYR	CD1-CE1	23.16	1.74	1.39

The worst 5 of 396 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	F	226	ARG	NE-CZ-NH1	28.99	134.80	120.30
4	D	297	ARG	NE-CZ-NH1	22.63	131.61	120.30
1	Y	392	ARG	NE-CZ-NH1	18.04	129.32	120.30
4	D	268	ARG	NE-CZ-NH1	17.26	128.93	120.30
5	F	168	ARG	NE-CZ-NH1	17.14	128.87	120.30

There are no chirality outliers.

5 of 57 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	Y	113	ARG	Sidechain
1	Y	122	TYR	Sidechain
1	Y	22	ARG	Sidechain
1	Y	38	PHE	Sidechain
1	Y	7	LEU	Peptide

5.2 Too-close contacts ⓘ

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	Y	3423	3581	3583	0	0
2	E	510	552	551	0	0
3	G	236	244	243	0	0
4	D	3128	3291	3292	0	0
5	F	2211	2291	2290	0	0
6	C	3589	3594	3591	0	0
All	All	13097	13553	13550	0	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). Clashscore could not be calculated for this entry.

There are no clashes within the asymmetric unit.

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	Y	441/458 (96%)	367 (83%)	50 (11%)	24 (5%)	2	19
2	E	63/140 (45%)	57 (90%)	5 (8%)	1 (2%)	9	44
3	G	30/136 (22%)	29 (97%)	1 (3%)	0	100	100
4	D	410/622 (66%)	373 (91%)	25 (6%)	12 (3%)	4	29
5	F	287/323 (89%)	257 (90%)	24 (8%)	6 (2%)	7	36
6	C	449/559 (80%)	395 (88%)	40 (9%)	14 (3%)	4	27
All	All	1680/2238 (75%)	1478 (88%)	145 (9%)	57 (3%)	6	26

5 of 57 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	Y	48	VAL
1	Y	71	ALA
1	Y	113	ARG
1	Y	199	LEU
1	Y	305	THR

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	Y	359/374 (96%)	338 (94%)	21 (6%)	20	45
2	E	54/110 (49%)	52 (96%)	2 (4%)	34	58
3	G	27/106 (26%)	27 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	D	337/509 (66%)	328 (97%)	9 (3%)	44	65
5	F	237/267 (89%)	227 (96%)	10 (4%)	30	54
6	C	387/475 (82%)	375 (97%)	12 (3%)	40	62
All	All	1401/1841 (76%)	1347 (96%)	54 (4%)	36	56

5 of 54 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	D	432	PRO
5	F	98	MET
6	C	376	GLN
4	D	438	GLU
5	F	14	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 monosaccharides 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 ⓘ

This section contains visualisations of the EMDB entry EMD-3506. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1   Orthogonal projections ⓘ

6.1.1   Primary map

| X | Y | Z |
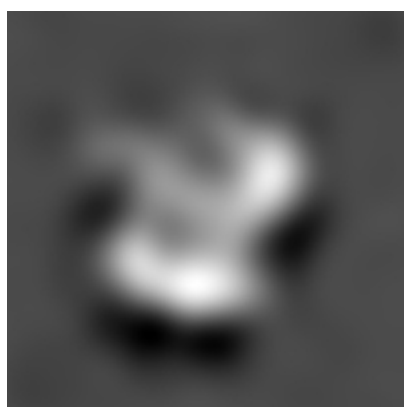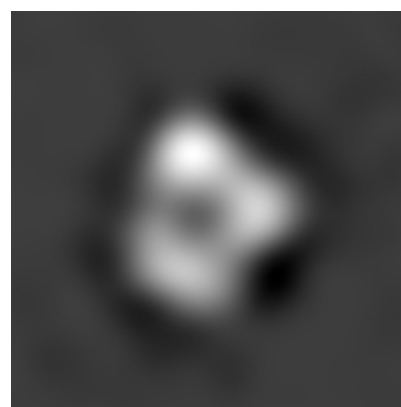
The images above show the map projected in three orthogonal directions.

6.2   Central slices ⓘ
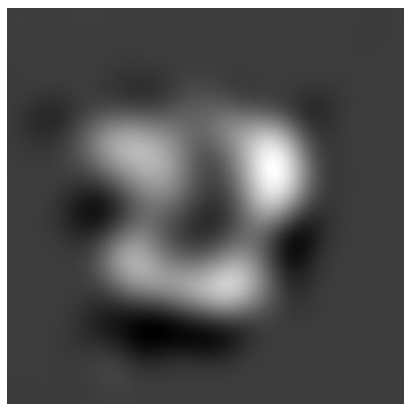
6.2.1   Primary map
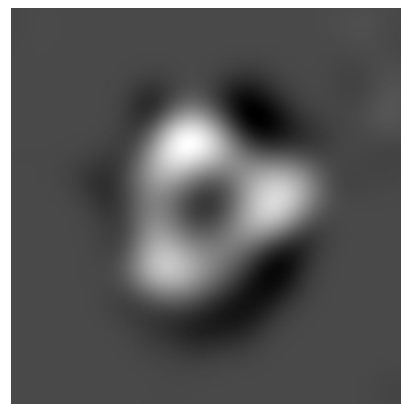
| X Index: 70 | Y Index: 70 | Z Index: 70 |

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

6.3 Largest variance slices ⓘ
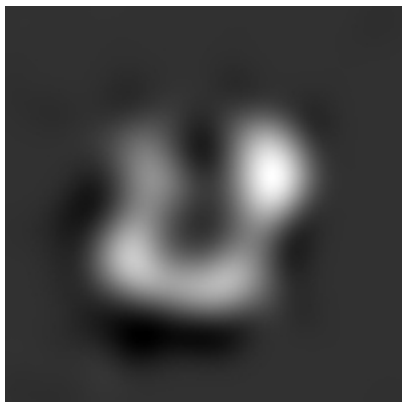
6.3.1 Primary map
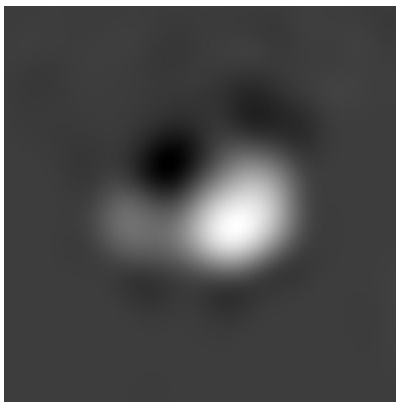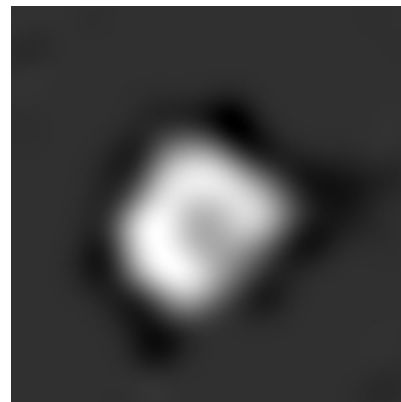
| X Index: 61 | Y Index: 91 | Z Index: 45 |

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

6.4 Orthogonal surface views ⓘ

6.4.1 Primary map

| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 8.5. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

WORLDWIDE
wwPDB
PROTEIN DATA BANK

6.5 Mask visualisation ⓘ

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

7 Map analysis ⓘ

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

7.1 Map-value distribution ⓘ
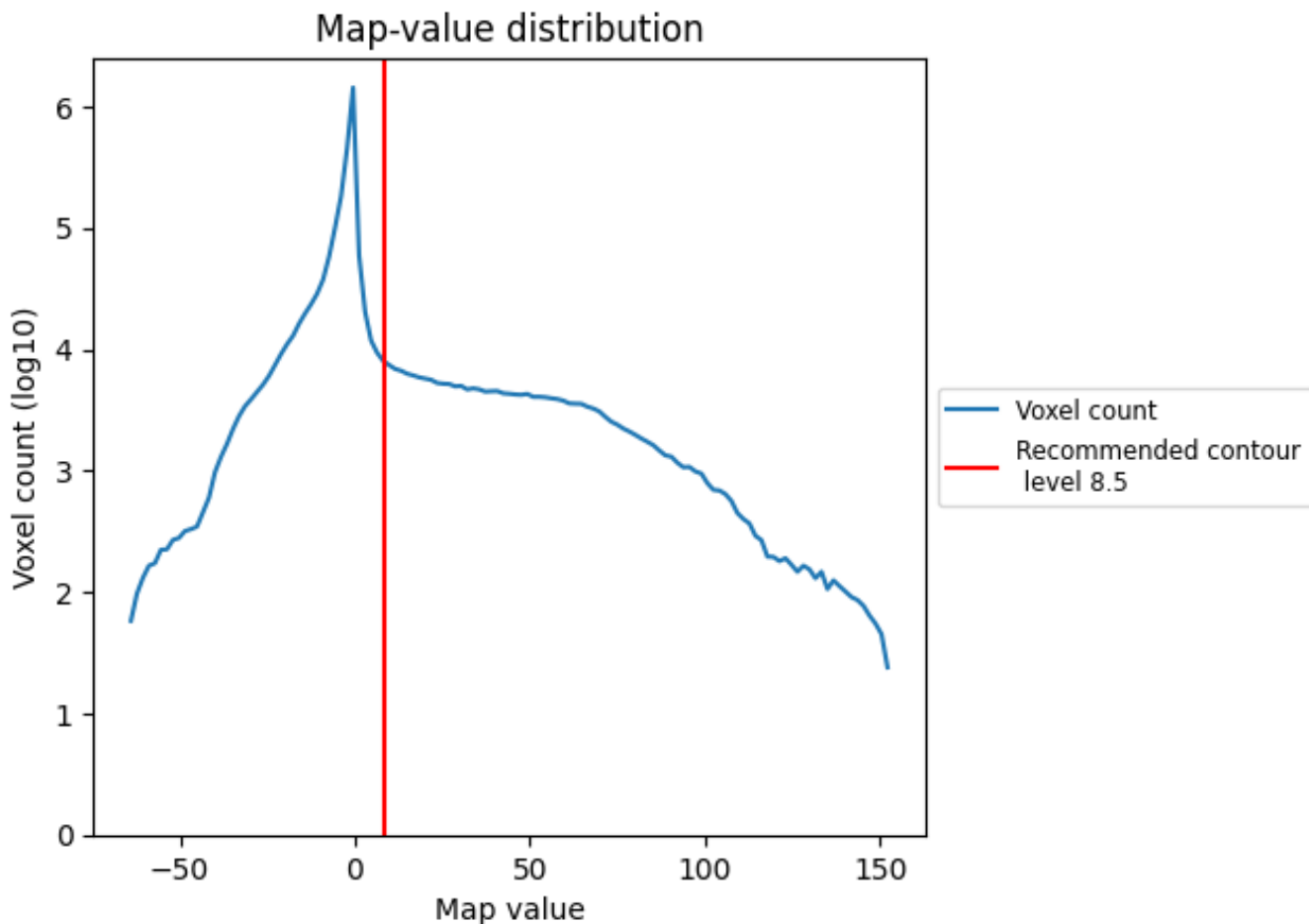
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2 Volume estimate ⓘ
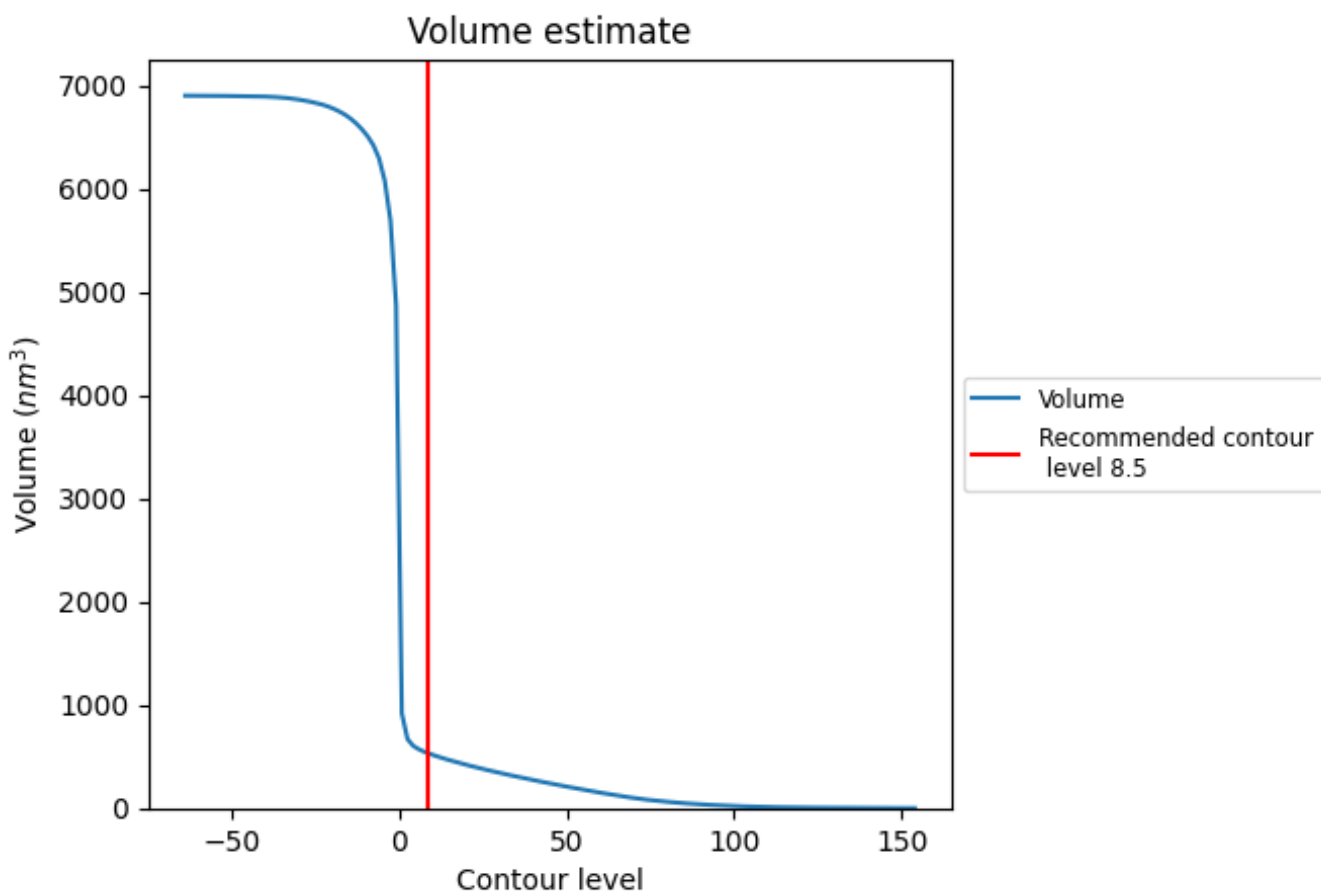
The volume at the recommended contour level is 533 nm^3; this corresponds to an approximate mass of 481 kDa.

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 ⓘ
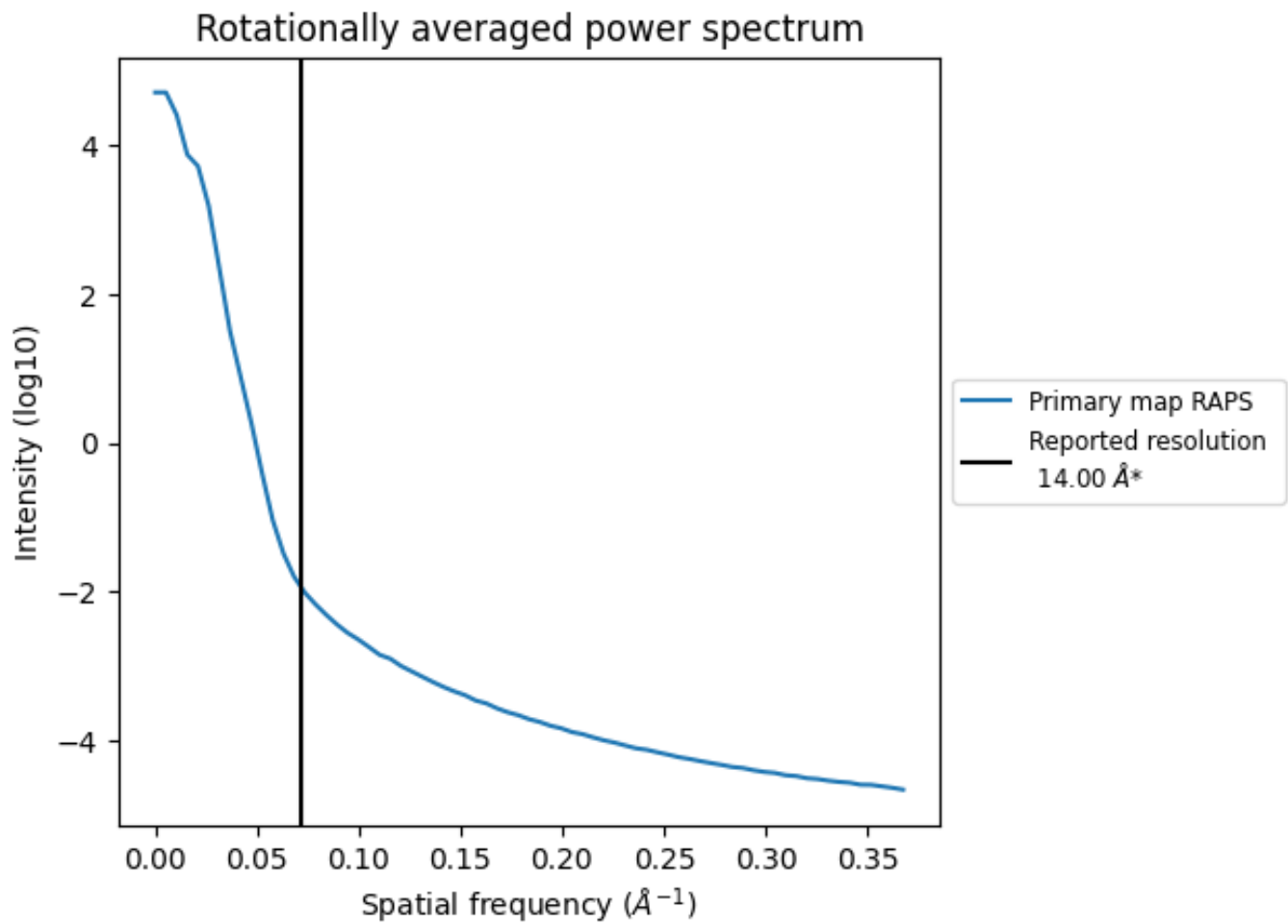
*Reported resolution corresponds to spatial frequency of 0.071 Å^{-1}

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)
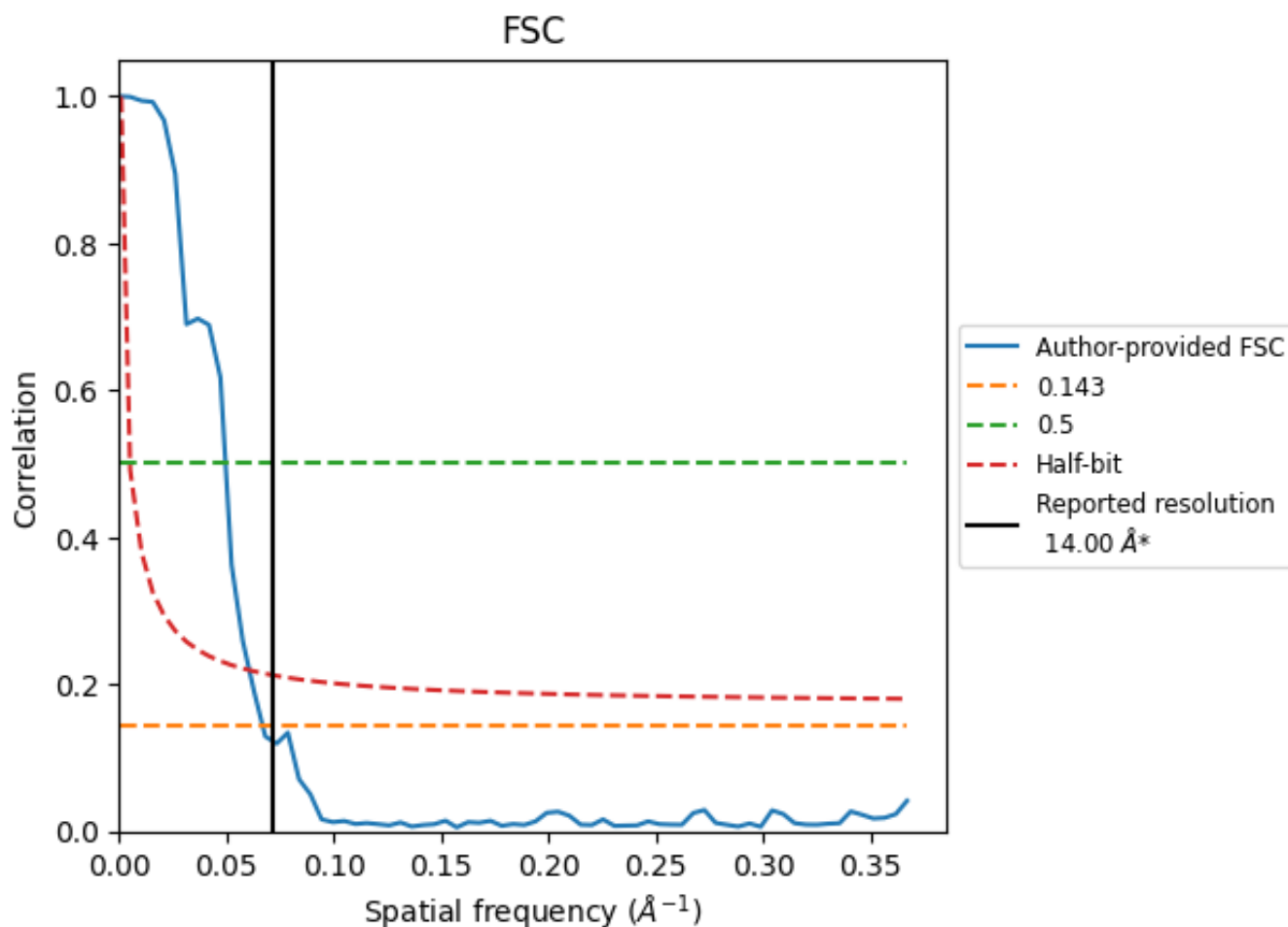
*Reported resolution corresponds to spatial frequency of 0.071 Å^{-1}

8.2   Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	14.00	-	-
Author-provided FSC curve	14.95	20.16	16.47
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-3506 and PDB model 5MG3. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay ⓘ

| X | Y | Z |
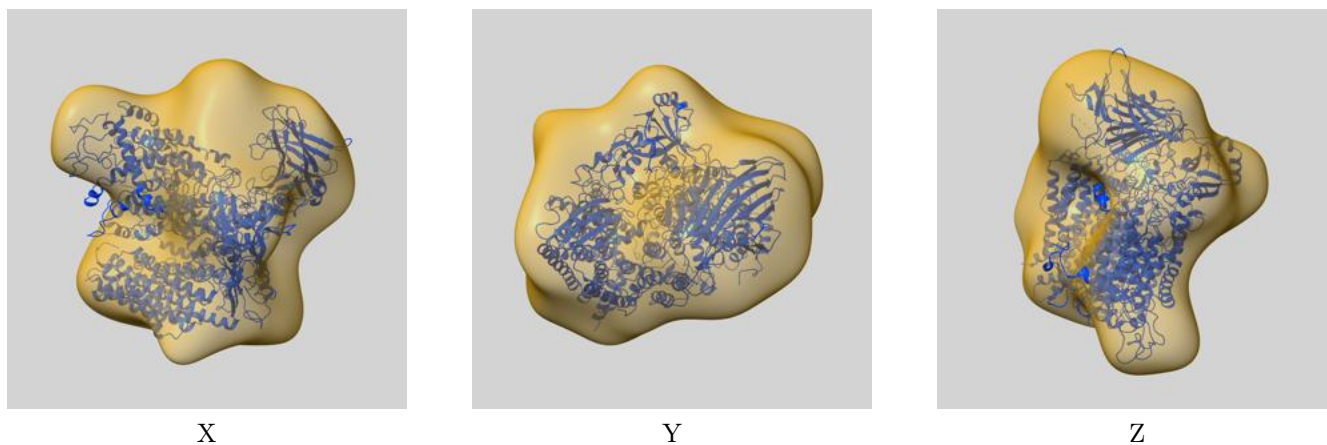
The images above show the 3D surface view of the map at the recommended contour level 8.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2   Q-score mapped to coordinate model ⓘ
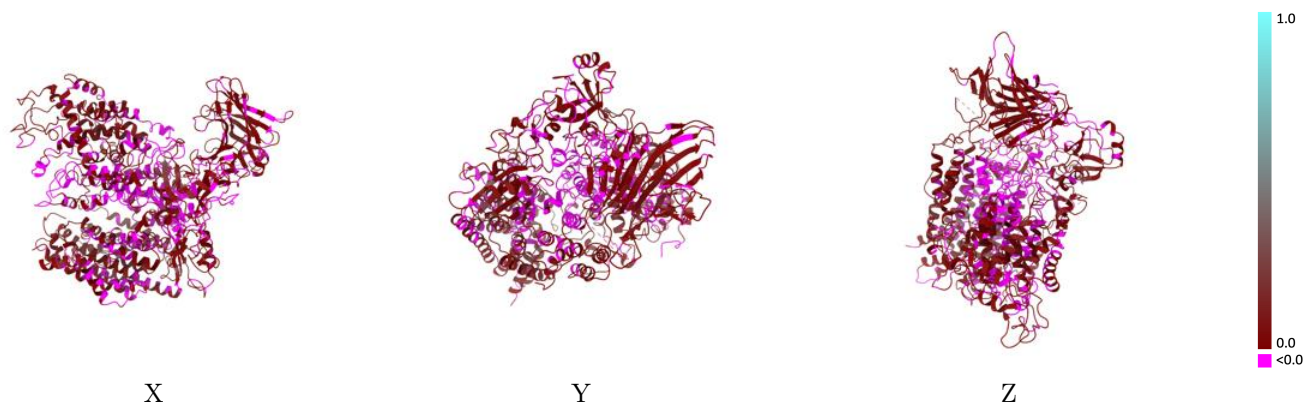
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 ⓘ
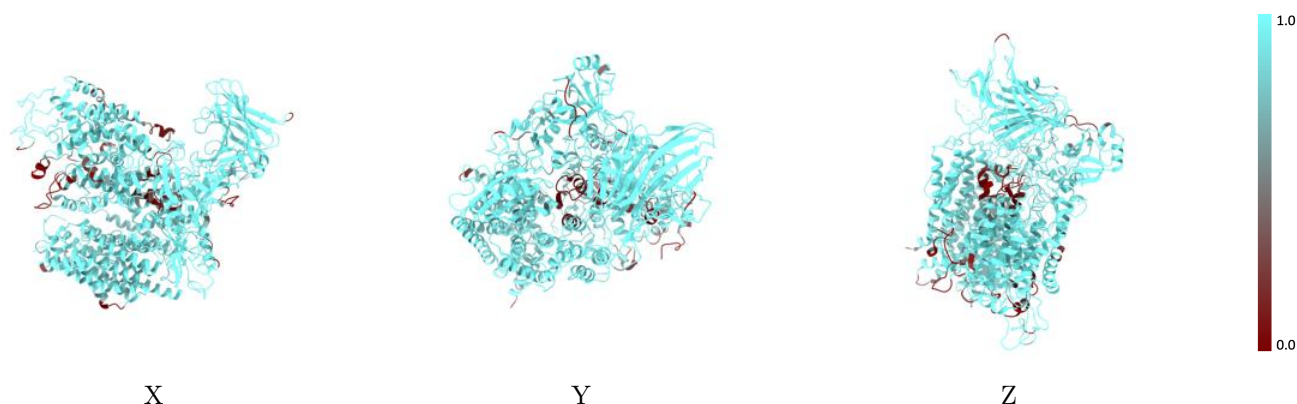
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (8.5).

9.4 Atom inclusion ⓘ
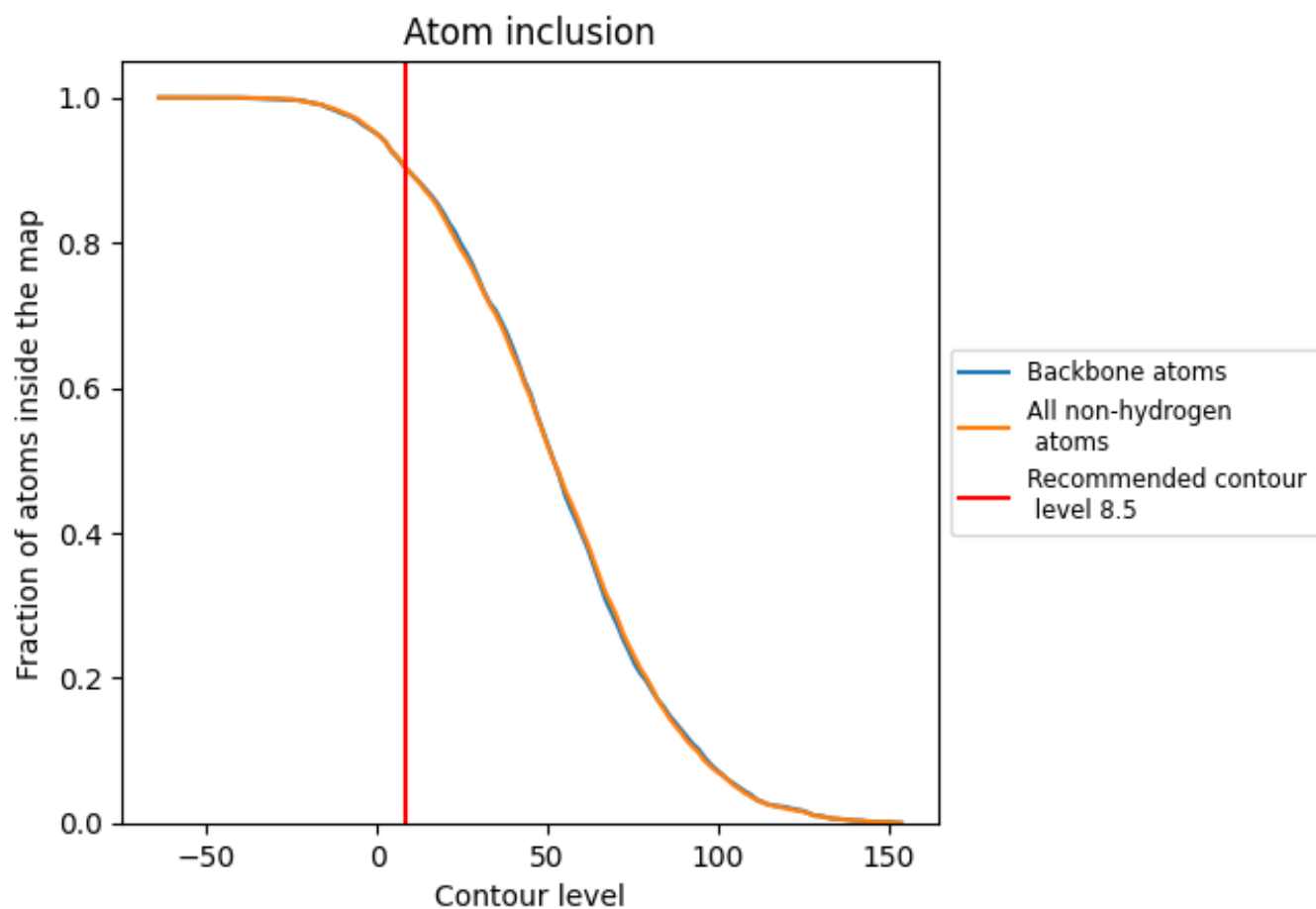
At the recommended contour level, 90% of all backbone atoms, 90% of all non-hydrogen atoms, are inside the map.

9.5   Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (8.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9023	0.0340
C	0.9494	0.0350
D	0.9389	0.0380
E	0.7702	0.0180
F	0.9761	0.0580
G	0.9915	-0.0030
Y	0.8099	0.0180

1.0

0.0
<0.0