



Full wwPDB EM Validation Report ⓘ

Nov 13, 2022 – 08:39 PM EST

PDB ID : 6WW2
EMDB ID : EMD-21927
Title : Structure of human Frizzled5 by fiducial-assisted cryo-EM
Authors : Tsutsumi, N.; Jude, K.M.; Gati, C.; Garcia, K.C.
Deposited on : 2020-05-07
Resolution : 3.70 Å (reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.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

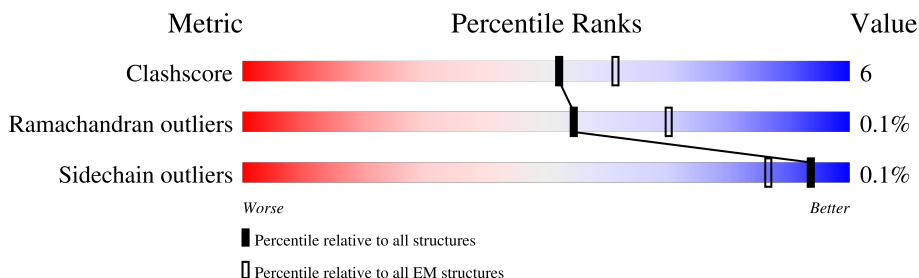
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.70 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 ≥ 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	H	229	
2	K	123	
3	L	214	
4	R	667	

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 7594 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 anti-BRIL Fab Heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	H	225	1682	1069	279	329	5	0	0

- Molecule 2 is a protein called anti-Fab Nanobody.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	K	120	921	571	162	184	4	0	0

- Molecule 3 is a protein called anti-BRIL Fab Light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	L	212	1624	1019	270	330	5	0	0

- Molecule 4 is a protein called Frizzled-5,Soluble cytochrome b562.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	R	425	3367	2198	562	589	18	0	0

There are 56 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	20	ASP	-	expression tag	UNP Q13467
R	21	TYR	-	expression tag	UNP Q13467
R	22	LYS	-	expression tag	UNP Q13467
R	23	ASP	-	expression tag	UNP Q13467
R	24	ASP	-	expression tag	UNP Q13467
R	25	ASP	-	expression tag	UNP Q13467
R	26	ASP	-	expression tag	UNP Q13467
R	1001	ALA	-	linker	UNP Q13467
R	1002	ARG	-	linker	UNP Q13467

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Chain	Residue	Modelled	Actual	Comment	Reference
R	1003	ARG	-	linker	UNP Q13467
R	1004	GLN	-	linker	UNP Q13467
R	1005	LEU	-	linker	UNP Q13467
R	1012	TRP	MET	conflict	UNP P0ABE7
R	1107	ILE	HIS	conflict	UNP P0ABE7
R	1111	LEU	-	linker	UNP P0ABE7
R	1112	GLU	-	linker	UNP P0ABE7
R	1113	ARG	-	linker	UNP P0ABE7
R	1114	ALA	-	linker	UNP P0ABE7
R	1115	ARG	-	linker	UNP P0ABE7
R	1116	SER	-	linker	UNP P0ABE7
R	1117	THR	-	linker	UNP P0ABE7
R	1118	LEU	-	linker	UNP P0ABE7
R	547	ALA	-	expression tag	UNP Q13467
R	548	ALA	-	expression tag	UNP Q13467
R	549	ALA	-	expression tag	UNP Q13467
R	550	LEU	-	expression tag	UNP Q13467
R	551	GLU	-	expression tag	UNP Q13467
R	552	VAL	-	expression tag	UNP Q13467
R	553	LEU	-	expression tag	UNP Q13467
R	554	PHE	-	expression tag	UNP Q13467
R	555	GLN	-	expression tag	UNP Q13467
R	556	GLY	-	expression tag	UNP Q13467
R	557	PRO	-	expression tag	UNP Q13467
R	558	GLY	-	expression tag	UNP Q13467
R	559	ALA	-	expression tag	UNP Q13467
R	560	ALA	-	expression tag	UNP Q13467
R	561	GLU	-	expression tag	UNP Q13467
R	562	ASP	-	expression tag	UNP Q13467
R	563	GLN	-	expression tag	UNP Q13467
R	564	VAL	-	expression tag	UNP Q13467
R	565	ASP	-	expression tag	UNP Q13467
R	566	PRO	-	expression tag	UNP Q13467
R	567	ARG	-	expression tag	UNP Q13467
R	568	LEU	-	expression tag	UNP Q13467
R	569	ILE	-	expression tag	UNP Q13467
R	570	ASP	-	expression tag	UNP Q13467
R	571	GLY	-	expression tag	UNP Q13467
R	572	LYS	-	expression tag	UNP Q13467
R	573	HIS	-	expression tag	UNP Q13467
R	574	HIS	-	expression tag	UNP Q13467
R	575	HIS	-	expression tag	UNP Q13467

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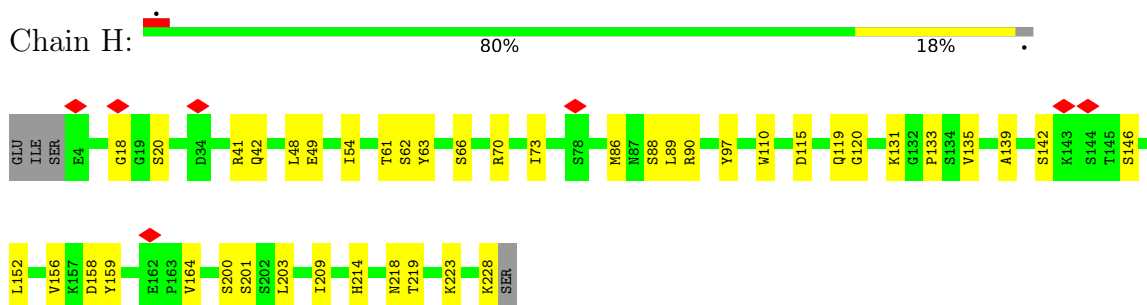
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Chain	Residue	Modelled	Actual	Comment	Reference
R	576	HIS	-	expression tag	UNP Q13467
R	577	HIS	-	expression tag	UNP Q13467
R	578	HIS	-	expression tag	UNP Q13467
R	579	HIS	-	expression tag	UNP Q13467
R	580	HIS	-	expression tag	UNP Q13467

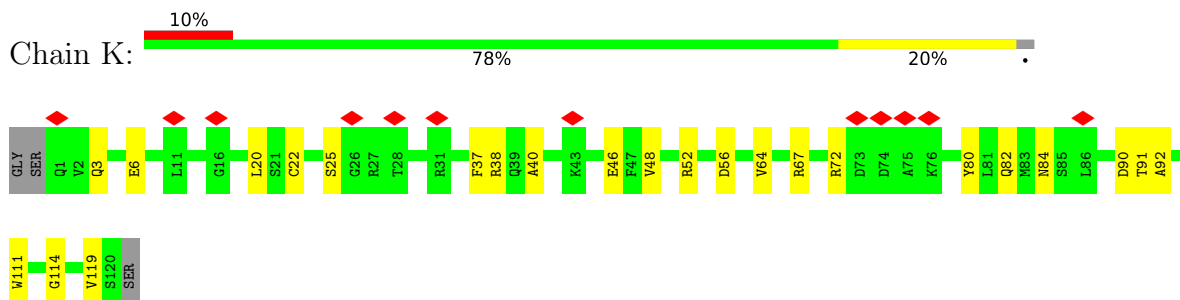
3 Residue-property plots

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.

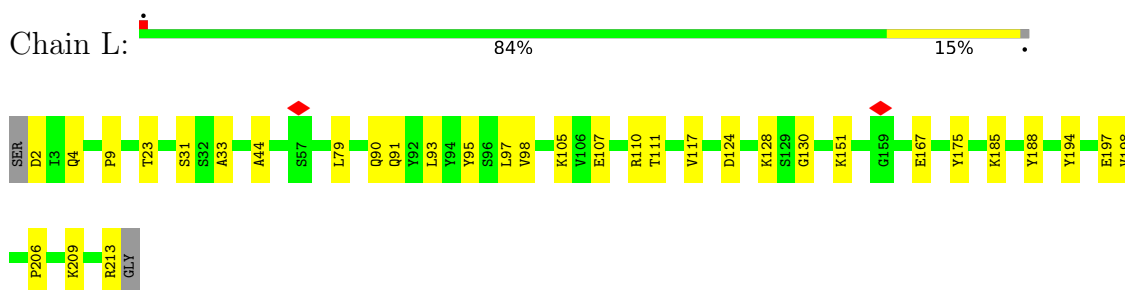
- Molecule 1: anti-BRIL Fab Heavy chain



- Molecule 2: anti-Fab Nanobody



- Molecule 3: anti-BRIL Fab Light chain



- Molecule 4: Frizzled-5,Soluble cytochrome b562



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

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

GLY ARG
 ASP ASP
 ALA ALA
 GLU VAL
 VAL VAL
 LEU LEU
 CYS CYS
 MET MET
 ASP ASP
 TYR TYR
 ASN ASN
 ARG ARG
 SER SER
 LEU LEU
 THR THR
 THR THR
 ALA ALA
 PRO PRO
 PRO PRO
 ARG ARG
 PHE PHE
 ALA ALA
 LYS LYS
 THR THR
 LEU LEU
 THR THR
 PRO PRO
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 PRO PRO
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 PHE PHE
 GLY GLY
 LEU LEU
 CYS CYS
 PRO PRO
 ALA ALA
 GLY GLY
 LEU LEU
 TRP TRP
 VAL VAL
 HIS HIS
 VAL VAL
 CYS CYS
 LYS LYS
 R193
 F196
 L200
 K201
 E202

S203
 H204
 P205
 L206
 Y007
 N208
 R211
 Q214
 C222
 S228
 E231
 A235
 W238
 L241
 L245
 C246
 F247
 I248
 S249
 T250
 S251
 A255
 L258
 M261
 E262
 R265
 L279
 L286
 V287
 R288
 L289
 V290
 C298
 S299
 R300
 I305
 E308
 G311
 P312
 C315

W332
 W333
 V334
 I335
 W340
 I353
 Y356
 A357
 Q358
 Y359
 L376
 S379
 D382
 Q396
 R396
 S399
 L400
 R401
 L405
 Y411
 V414
 L420
 R428
 A1001
 R1002
 R1003
 L1019
 I1022
 D1026
 D1033
 K1037
 M1038
 D1044
 T1049
 PRO
 PRO
 LYS
 LEU
 ASP

LYS SER
 PRO ASP
 ASP SER
 PRO GLU
 M1063
 F1066
 L1083
 K1088
 A1092
 Q1093
 A1094
 E1097
 E444
 M447
 L456
 A461
 S462
 I463
 A466
 Y470
 E471
 Y474
 R475
 E476
 S477
 W478
 E479
 A480
 C486
 PRO GLY
 HIS ASP
 THR THR
 GLY GLY
 PRO PRO
 ARG ARG
 ALA ALA
 LYS LYS
 PRO PRO
 E499
 F508

M509
 V512
 I515
 G518
 V519
 W522
 R531
 T534
 S535
 R536
 CYS
 CYS
 ARG
 PRO
 ARG
 ARG
 GLY
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 ALA
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	207021	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	-800	Depositor
Maximum defocus (nm)	-2000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.653	Depositor
Minimum map value	-0.884	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.039	Depositor
Recommended contour level	0.4	Depositor
Map size (Å)	344.96, 344.96, 344.96	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.078, 1.078, 1.078	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	H	0.62	0/1730	0.64	0/2365
2	K	0.49	0/940	0.61	0/1272
3	L	0.63	0/1659	0.62	0/2256
4	R	0.40	0/3452	0.61	0/4697
All	All	0.52	0/7781	0.62	0/10590

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	H	1682	0	1619	26	0
2	K	921	0	862	13	0
3	L	1624	0	1573	20	0
4	R	3367	0	3368	28	0
All	All	7594	0	7422	85	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (85) 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)
4:R:201:LYS:HG2	4:R:203:SER:H	1.59	0.67
4:R:1033:ASP:O	4:R:1037:LYS:NZ	2.32	0.62
4:R:340:TRP:HZ3	4:R:447:MET:HB3	1.65	0.62
2:K:67:ARG:NH2	2:K:90:ASP:OD2	2.34	0.60
3:L:2:ASP:O	3:L:4:GLN:NE2	2.35	0.60
1:H:139:ALA:HB3	1:H:228:LYS:HE2	1.85	0.59
4:R:222:CYS:HA	4:R:305:ILE:HG22	1.87	0.57
3:L:91:GLN:NE2	3:L:97:LEU:O	2.37	0.56
1:H:66:SER:O	1:H:90:ARG:NH2	2.39	0.56
2:K:3:GLN:O	2:K:25:SER:OG	2.24	0.55
1:H:135:VAL:HG22	1:H:156:VAL:HG12	1.88	0.55
2:K:56:ASP:OD1	2:K:56:ASP:N	2.39	0.55
2:K:82:GLN:NE2	2:K:84:ASN:OD1	2.38	0.55
4:R:334:VAL:HG21	4:R:414:VAL:HG23	1.89	0.55
2:K:52:ARG:O	2:K:72:ARG:NH1	2.40	0.54
4:R:396:ASN:OD1	4:R:399:SER:N	2.38	0.54
3:L:188:TYR:OH	3:L:213:ARG:NH1	2.39	0.54
4:R:205:PRO:HB2	4:R:206:LEU:HD12	1.90	0.54
3:L:117:VAL:HG21	3:L:198:VAL:HG11	1.89	0.54
1:H:209:ILE:HA	1:H:223:LYS:O	2.08	0.53
3:L:188:TYR:O	3:L:194:TYR:OH	2.26	0.53
1:H:142:SER:O	1:H:146:SER:OG	2.27	0.52
2:K:48:VAL:HG13	2:K:64:VAL:HG21	1.91	0.52
3:L:110:ARG:NH1	3:L:111:THR:O	2.41	0.52
4:R:251:SER:HA	4:R:279:LEU:HD21	1.93	0.51
4:R:262:GLU:HB2	4:R:265:ARG:HE	1.75	0.51
4:R:401:ARG:HA	4:R:405:LEU:HB2	1.92	0.51
3:L:198:VAL:O	3:L:206:PRO:HA	2.11	0.51
4:R:235:ALA:HA	4:R:238:TRP:HB3	1.93	0.51
1:H:54:ILE:HG13	1:H:61:THR:HG22	1.94	0.50
2:K:91:THR:HG22	2:K:119:VAL:H	1.75	0.50
3:L:124:ASP:O	3:L:128:LYS:NZ	2.44	0.49
1:H:131:LYS:NZ	1:H:158:ASP:O	2.46	0.49
3:L:151:LYS:NZ	3:L:197:GLU:OE1	2.38	0.48
1:H:70:ARG:HH21	1:H:89:LEU:HA	1.77	0.48
1:H:115:ASP:OD1	1:H:115:ASP:N	2.45	0.48
1:H:119:GLN:HA	3:L:44:ALA:HB2	1.96	0.47
2:K:6:GLU:OE2	2:K:114:GLY:N	2.47	0.47
4:R:1026:ASP:N	4:R:1026:ASP:OD1	2.47	0.47
1:H:18:GLY:HA2	1:H:88:SER:HA	1.97	0.47
1:H:97:TYR:O	1:H:120:GLY:CA	2.63	0.47
4:R:1094:ALA:O	4:R:1097:GLU:HG3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:R:193:ARG:HH21	4:R:196:PHE:HE2	1.61	0.46
4:R:1002:ARG:NH1	4:R:444:GLU:OE1	2.43	0.46
1:H:20:SER:HA	1:H:86:MET:O	2.15	0.46
2:K:6:GLU:HA	2:K:22:CYS:HA	1.97	0.46
1:H:152:LEU:HD22	1:H:203:LEU:HD13	1.98	0.46
1:H:164:VAL:HG23	1:H:214:HIS:HB2	1.98	0.46
2:K:37:PHE:HD2	2:K:111:TRP:HZ3	1.64	0.46
4:R:208:ASN:N	4:R:208:ASN:OD1	2.48	0.46
3:L:9:PRO:HD3	3:L:23:THR:HG22	1.98	0.45
1:H:133:PRO:HD2	1:H:219:THR:HG21	1.98	0.45
1:H:97:TYR:O	1:H:120:GLY:HA3	2.17	0.45
3:L:130:GLY:HA2	3:L:185:LYS:HE3	1.99	0.45
4:R:308:GLU:OE1	4:R:379:SER:OG	2.28	0.45
4:R:1083:LEU:HD22	4:R:1088:LYS:HD2	1.99	0.44
1:H:200:SER:OG	1:H:201:SER:N	2.47	0.44
1:H:54:ILE:HD12	1:H:73:ILE:HG23	2.00	0.44
3:L:93:LEU:HD12	3:L:93:LEU:HA	1.86	0.44
4:R:287:VAL:HA	4:R:290:VAL:HG12	2.00	0.43
3:L:105:LYS:NZ	3:L:167:GLU:OE2	2.51	0.43
1:H:110:TRP:HE1	3:L:95:TYR:HE1	1.67	0.43
3:L:31:SER:O	3:L:33:ALA:N	2.52	0.43
3:L:90:GLN:HE21	3:L:98:VAL:HG13	1.84	0.43
4:R:1019:LEU:HA	4:R:1022:ILE:HD12	2.00	0.43
1:H:41:ARG:NH2	1:H:49:GLU:OE2	2.35	0.42
2:K:38:ARG:NE	2:K:46:GLU:OE2	2.48	0.42
1:H:62:SER:OG	1:H:63:TYR:N	2.52	0.42
3:L:209:LYS:HD2	3:L:209:LYS:HA	1.82	0.42
1:H:42:GLN:HB2	1:H:48:LEU:HD23	2.02	0.42
4:R:400:LEU:HD23	4:R:405:LEU:HD11	2.01	0.42
1:H:70:ARG:NE	1:H:88:SER:O	2.47	0.42
1:H:133:PRO:HB3	1:H:159:TYR:HB3	2.02	0.42
3:L:79:LEU:HD12	3:L:79:LEU:HA	1.84	0.42
4:R:382:ASP:N	4:R:382:ASP:OD1	2.50	0.41
3:L:107:GLU:OE2	3:L:175:TYR:OH	2.35	0.41
4:R:332:TRP:CE3	4:R:335:ILE:HD11	2.55	0.41
4:R:1038:MET:HE3	4:R:1038:MET:HB3	1.98	0.41
4:R:509:MET:HA	4:R:512:VAL:HG23	2.02	0.41
2:K:20:LEU:O	2:K:80:TYR:HA	2.21	0.41
1:H:214:HIS:O	1:H:218:ASN:N	2.54	0.41
2:K:40:ALA:HB2	2:K:92:ALA:HB2	2.03	0.41
4:R:536:ARG:HA	4:R:536:ARG:HD3	1.96	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:R:228:SER:HB2	4:R:231:GLU:HB2	2.03	0.40
4:R:474:TYR:HB3	4:R:478:TRP:CZ3	2.57	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	H	223/229 (97%)	195 (87%)	28 (13%)	0	100	100
2	K	118/123 (96%)	102 (86%)	16 (14%)	0	100	100
3	L	210/214 (98%)	188 (90%)	22 (10%)	0	100	100
4	R	419/667 (63%)	384 (92%)	34 (8%)	1 (0%)	47	78
All	All	970/1233 (79%)	869 (90%)	100 (10%)	1 (0%)	54	83

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	R	228	SER

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	H	185/190 (97%)	185 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	K	95/98 (97%)	95 (100%)	0	100	100
3	L	186/189 (98%)	186 (100%)	0	100	100
4	R	353/563 (63%)	352 (100%)	1 (0%)	92	96
All	All	819/1040 (79%)	818 (100%)	1 (0%)	93	98

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	R	288	ARG

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

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](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

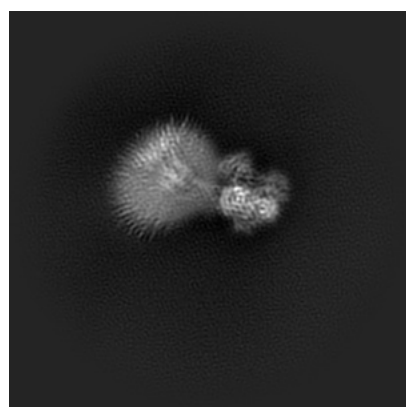
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-21927. These allow visual inspection of the internal detail of the map and identification of artifacts.

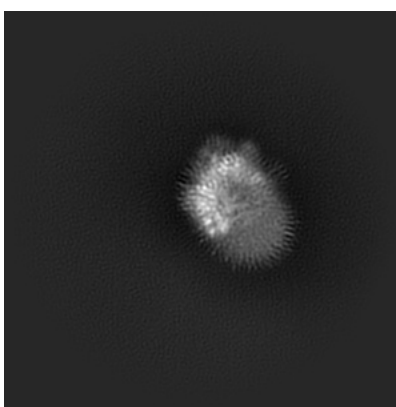
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

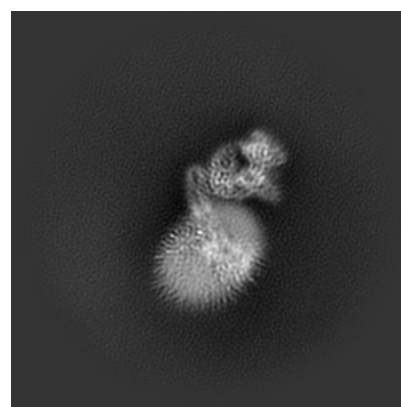
6.1.1 Primary map



X



Y

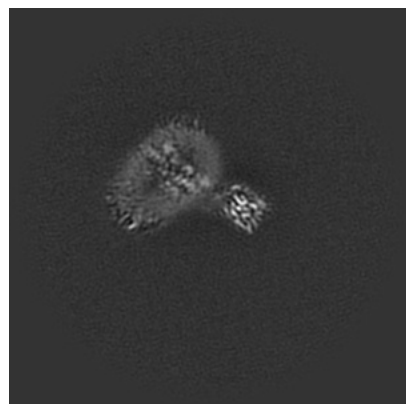


Z

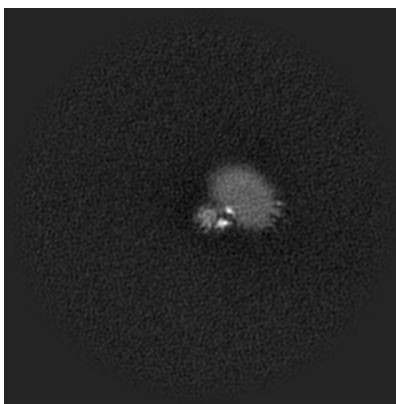
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

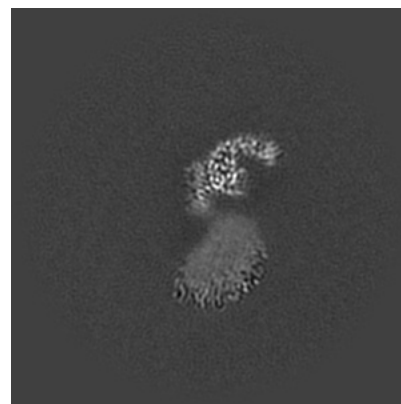
6.2.1 Primary map



X Index: 160



Y Index: 160

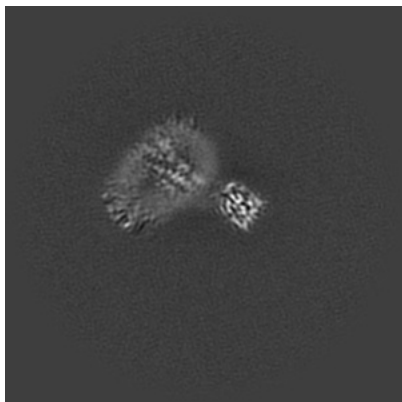


Z Index: 160

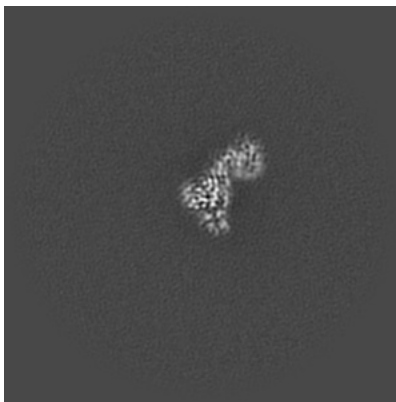
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

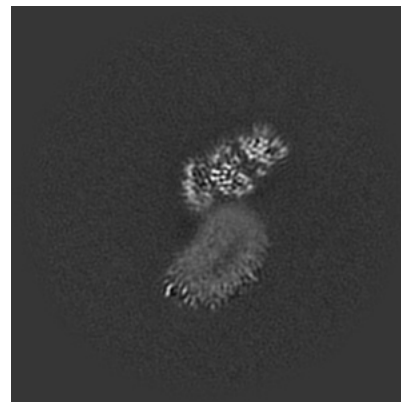
6.3.1 Primary map



X Index: 161



Y Index: 182

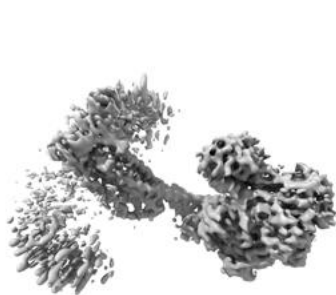


Z Index: 167

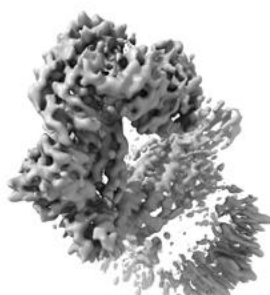
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

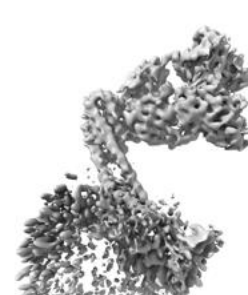
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.4. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

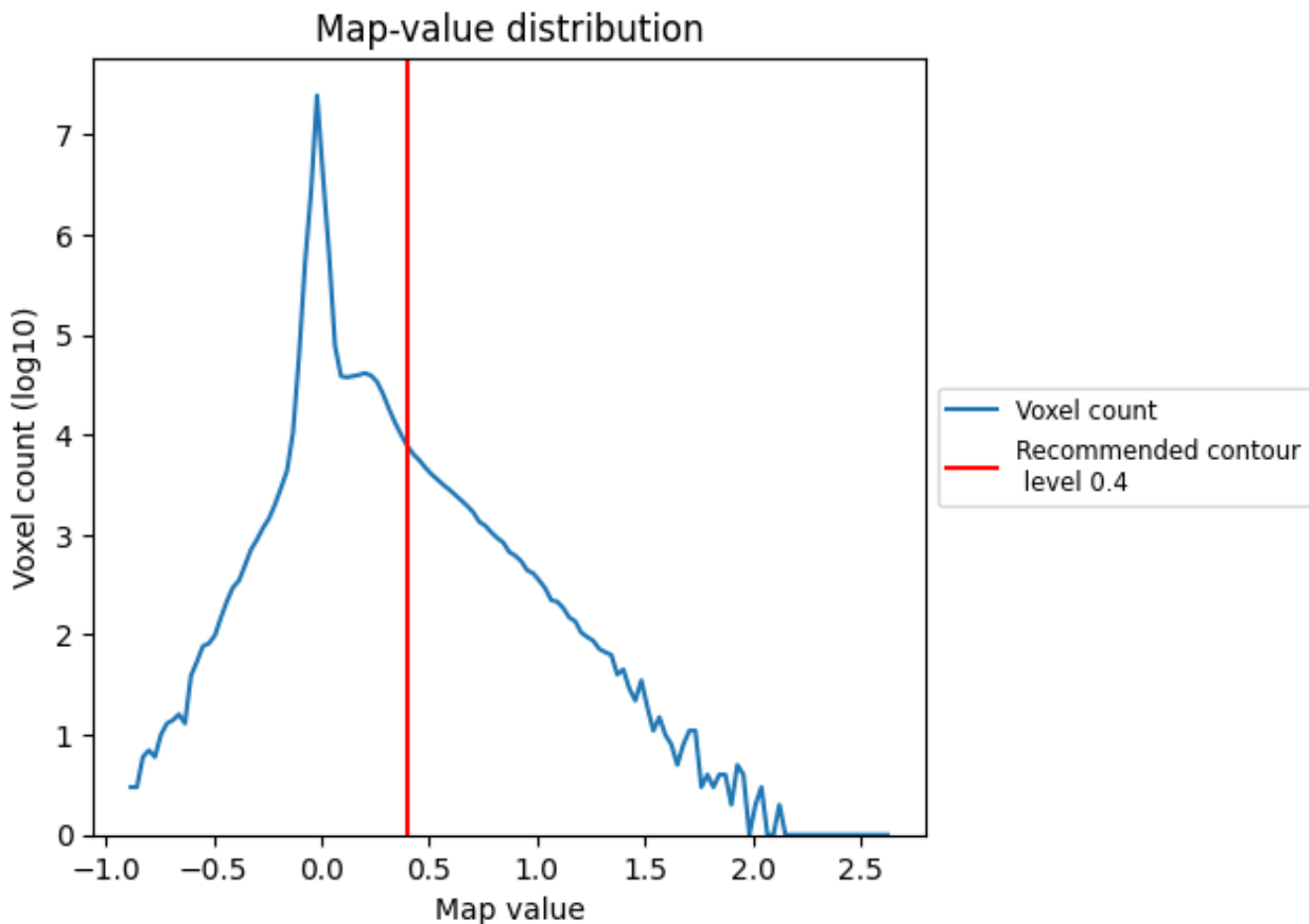
6.5 Mask visualisation

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

7 Map analysis [i](#)

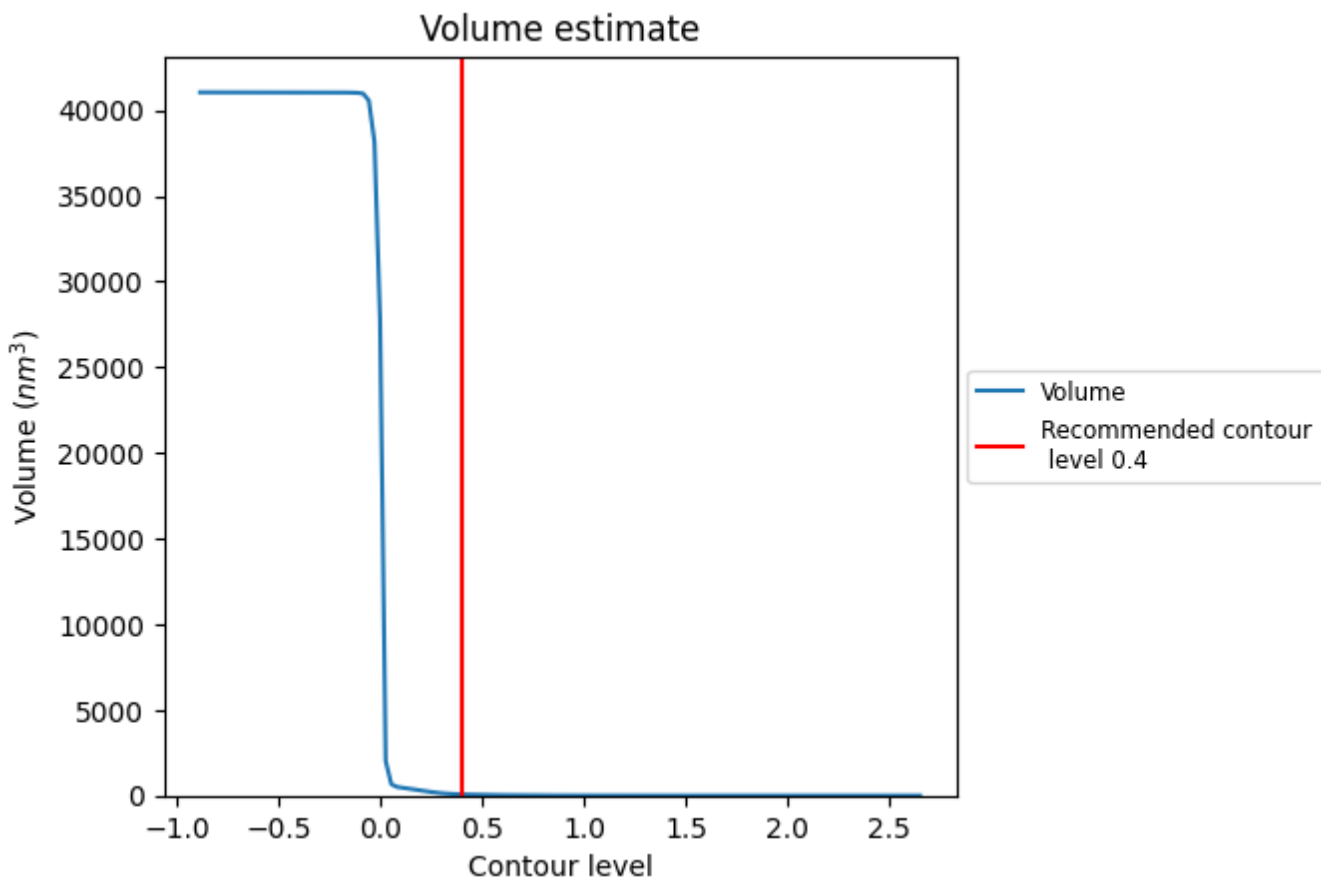
This section contains the results of statistical analysis of the map.

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.

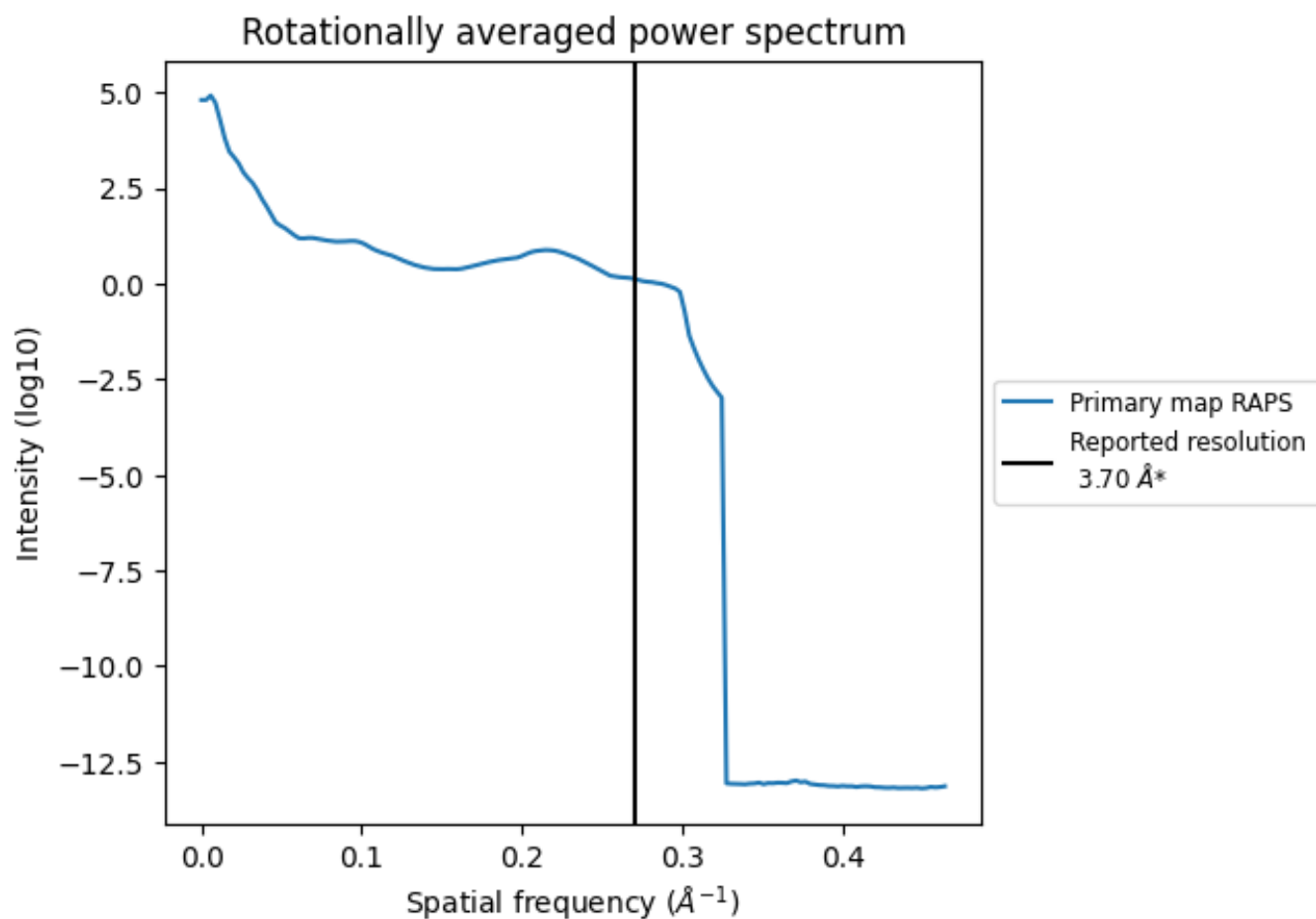
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 70 nm³; this corresponds to an approximate mass of 64 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 0.270 \AA^{-1}

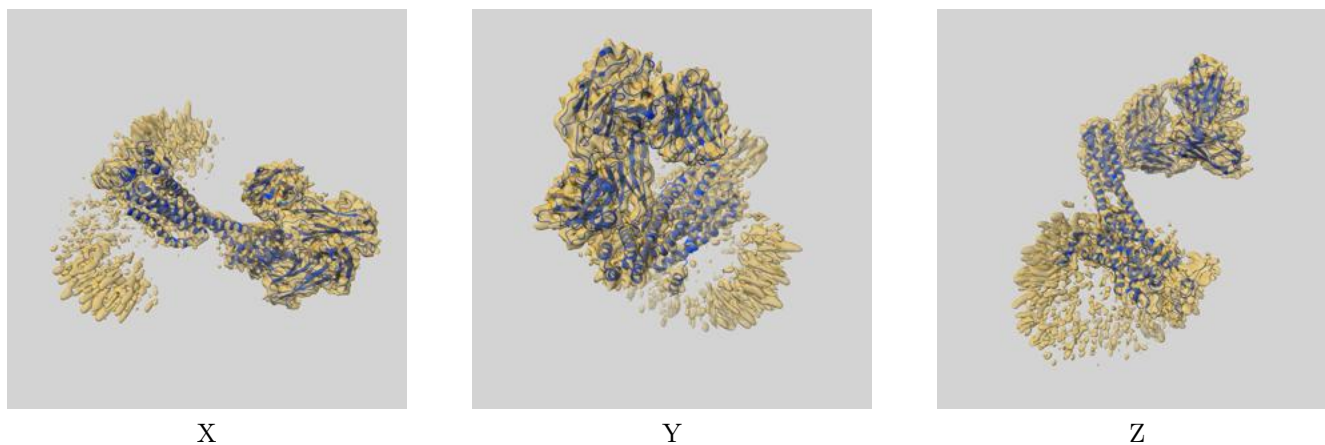
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

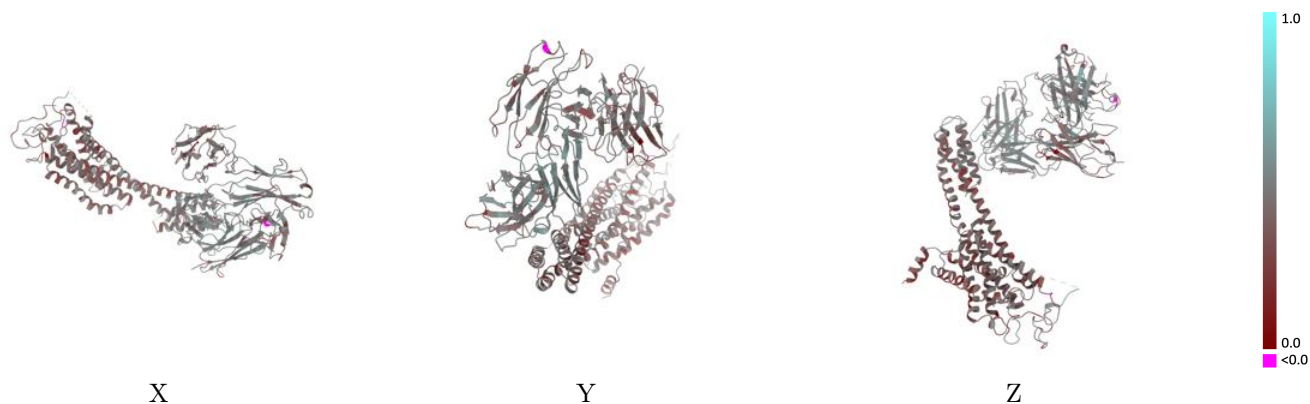
This section contains information regarding the fit between EMDB map EMD-21927 and PDB model 6WW2. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



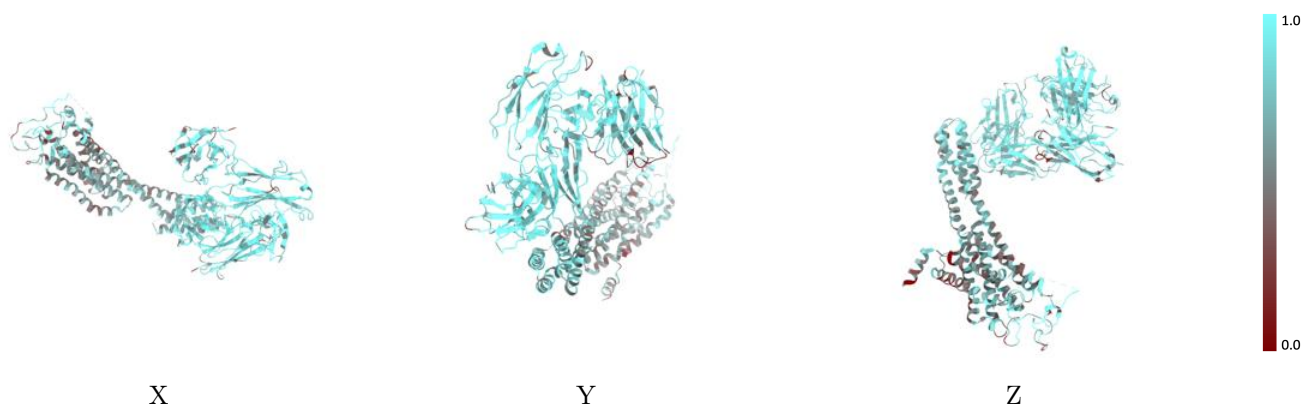
The images above show the 3D surface view of the map at the recommended contour level 0.4 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



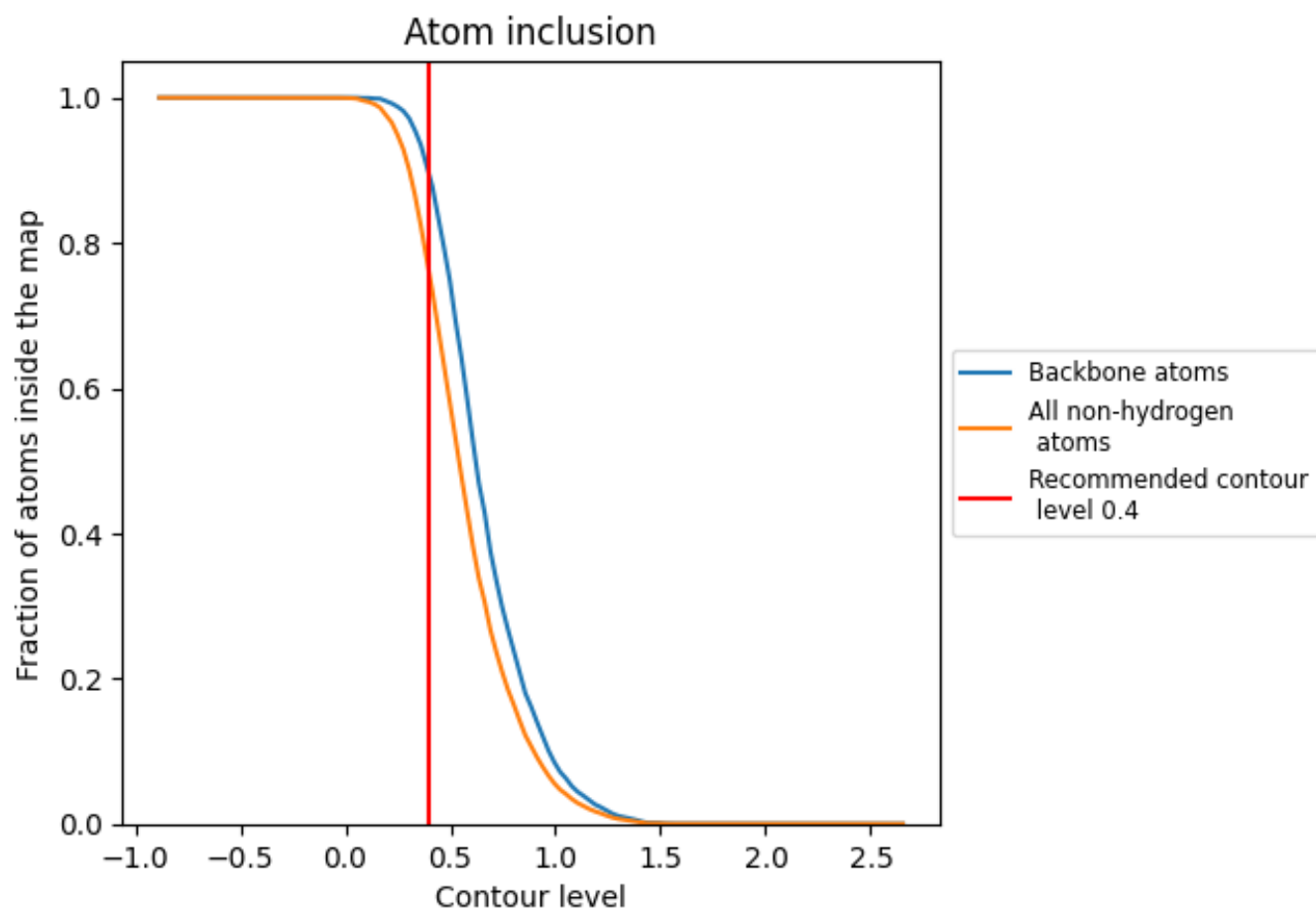
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.4).






9.4 Atom inclusion [i](#)



At the recommended contour level, 89% of all backbone atoms, 76% 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 (0.4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7579	 0.4200
H	 0.8700	 0.4530
K	 0.7749	 0.4140
L	 0.8634	 0.4840
R	 0.6458	 0.3740

