



## Full wwPDB EM Validation Report ⓘ

May 26, 2026 – 10:10 AM JST

PDB ID : 9VAW / pdb\_00009vaw  
EMDB ID : EMD-64907  
Title : Cryo-EM structure of human Neurotensin Receptor 1 (hNTR1)-Gq (delipidated) complex in nucleotide-free C state  
Authors : Matsui, T.E.; Kobayashi, K.; Fukuda, M.; Kawakami, K.; Yamashita, K.; Kato, H.E.  
Deposited on : 2025-06-04  
Resolution : 2.24 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.dev132  
MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

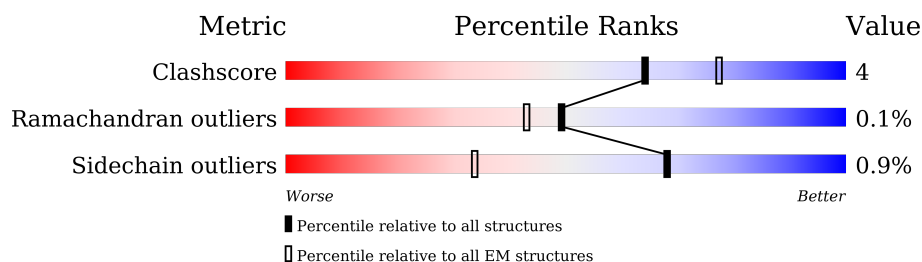
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.24 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	229148	23984
Ramachandran outliers	224038	23583
Sidechain outliers	223484	23102

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	R	436	
2	L	6	
3	A	353	
4	B	358	
5	C	71	
6	D	259	

## 2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 9335 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 Neurotensin receptor type 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	R	316	Total	C	N	O	S	0	0
			2478	1628	410	423	17		

There are 38 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	-11	MET	-	initiating methionine	UNP P30989
R	-10	GLY	-	expression tag	UNP P30989
R	-9	GLN	-	expression tag	UNP P30989
R	-8	PRO	-	expression tag	UNP P30989
R	-7	GLY	-	expression tag	UNP P30989
R	-6	ASN	-	expression tag	UNP P30989
R	-5	GLY	-	expression tag	UNP P30989
R	-4	SER	-	expression tag	UNP P30989
R	-3	ALA	-	expression tag	UNP P30989
R	-2	PHE	-	expression tag	UNP P30989
R	-1	LEU	-	expression tag	UNP P30989
R	0	LEU	-	expression tag	UNP P30989
R	1	ALA	-	expression tag	UNP P30989
R	2	PRO	-	expression tag	UNP P30989
R	3	ASN	-	expression tag	UNP P30989
R	4	ARG	-	expression tag	UNP P30989
R	5	SER	-	expression tag	UNP P30989
R	6	HIS	-	expression tag	UNP P30989
R	7	ALA	-	expression tag	UNP P30989
R	8	PRO	-	expression tag	UNP P30989
R	9	ASP	-	expression tag	UNP P30989
R	10	HIS	-	expression tag	UNP P30989
R	11	ASP	-	expression tag	UNP P30989
R	12	VAL	-	expression tag	UNP P30989
R	13	GLU	-	expression tag	UNP P30989
R	14	ASN	-	expression tag	UNP P30989
R	15	LEU	-	expression tag	UNP P30989
R	16	TYR	-	expression tag	UNP P30989

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Chain	Residue	Modelled	Actual	Comment	Reference
R	17	PHE	-	expression tag	UNP P30989
R	18	GLN	-	expression tag	UNP P30989
R	19	GLY	-	expression tag	UNP P30989
R	85	LEU	ALA	engineered mutation	UNP P30989
R	419	LEU	-	expression tag	UNP P30989
R	420	GLU	-	expression tag	UNP P30989
R	421	VAL	-	expression tag	UNP P30989
R	422	LEU	-	expression tag	UNP P30989
R	423	PHE	-	expression tag	UNP P30989
R	424	GLN	-	expression tag	UNP P30989

- Molecule 2 is a protein called JMV449.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	L	6	Total	C	N	O	0	0
			53	38	8	7		

- Molecule 3 is a protein called Guanine nucleotide-binding protein G(q) subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	A	222	Total	C	N	O	S	0	0
			1836	1173	315	339	9		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	8	GLY	ALA	engineered mutation	UNP P50148
A	9	SER	CYS	engineered mutation	UNP P50148
A	10	THR	CYS	engineered mutation	UNP P50148
A	13	ALA	GLU	engineered mutation	UNP P50148
A	15	ASP	ALA	engineered mutation	UNP P50148
A	17	ALA	GLU	engineered mutation	UNP P50148
A	19	VAL	ARG	engineered mutation	UNP P50148
A	20	GLU	ARG	engineered mutation	UNP P50148
A	21	ARG	ILE	engineered mutation	UNP P50148
A	22	SER	ASN	engineered mutation	UNP P50148
A	23	LYS	ASP	engineered mutation	UNP P50148
A	24	MET	GLU	engineered mutation	UNP P50148

- Molecule 4 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	B	338	Total	C	N	O	S	2	0
			2583	1598	462	500	23		

There are 20 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-17	MET	-	initiating methionine	UNP P62873
B	-16	HIS	-	expression tag	UNP P62873
B	-15	HIS	-	expression tag	UNP P62873
B	-14	HIS	-	expression tag	UNP P62873
B	-13	HIS	-	expression tag	UNP P62873
B	-12	HIS	-	expression tag	UNP P62873
B	-11	HIS	-	expression tag	UNP P62873
B	-10	LEU	-	expression tag	UNP P62873
B	-9	GLU	-	expression tag	UNP P62873
B	-8	VAL	-	expression tag	UNP P62873
B	-7	LEU	-	expression tag	UNP P62873
B	-6	PHE	-	expression tag	UNP P62873
B	-5	GLN	-	expression tag	UNP P62873
B	-4	GLY	-	expression tag	UNP P62873
B	-3	PRO	-	expression tag	UNP P62873
B	-2	GLY	-	expression tag	UNP P62873
B	-1	SER	-	expression tag	UNP P62873
B	0	SER	-	expression tag	UNP P62873
B	1	GLY	-	expression tag	UNP P62873
B	159	ILE	THR	engineered mutation	UNP P62873

- Molecule 5 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	C	57	Total	C	N	O	S	0	0
			405	254	68	80	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	68	SER	CYS	engineered mutation	UNP P59768

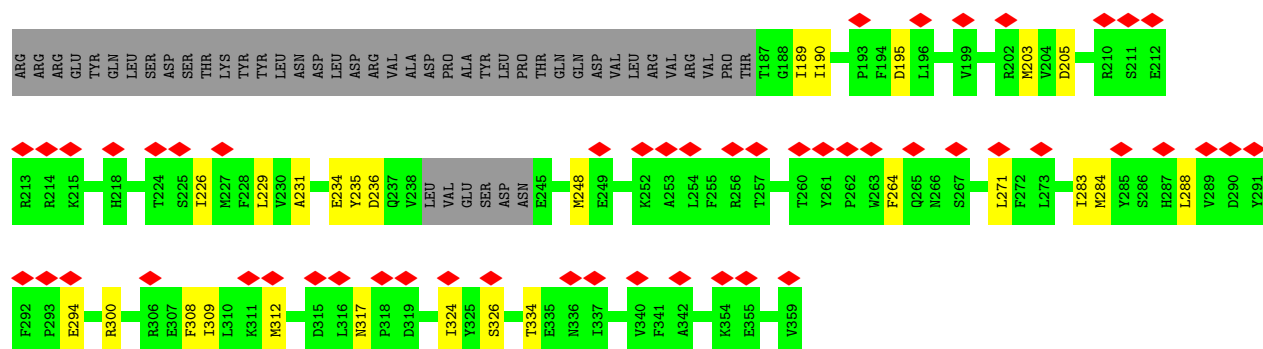
- Molecule 6 is a protein called scFv16.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	D	232	Total 1775	C 1127	N 292	O 346	S 10	0	0

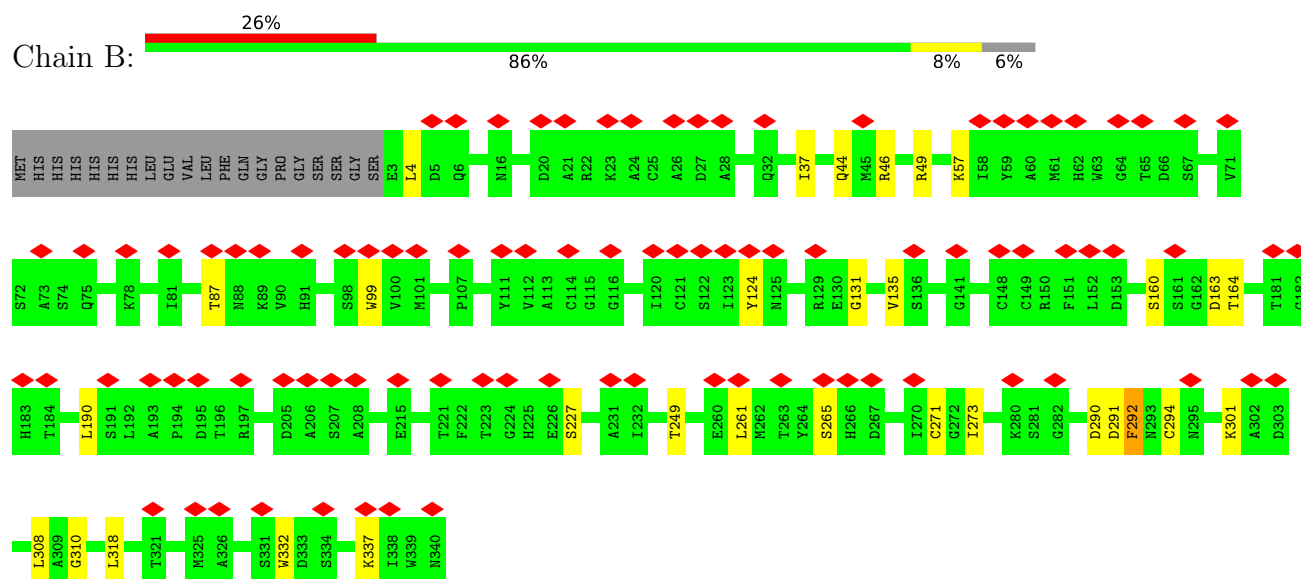
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		AltConf
7	R	11	Total 11	O 11	0
7	A	31	Total 31	O 31	0
7	B	109	Total 109	O 109	0
7	C	4	Total 4	O 4	0
7	D	50	Total 50	O 50	0

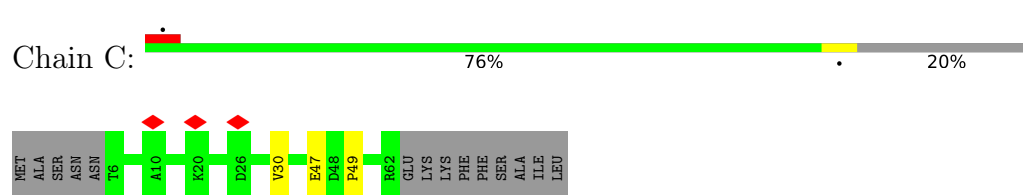




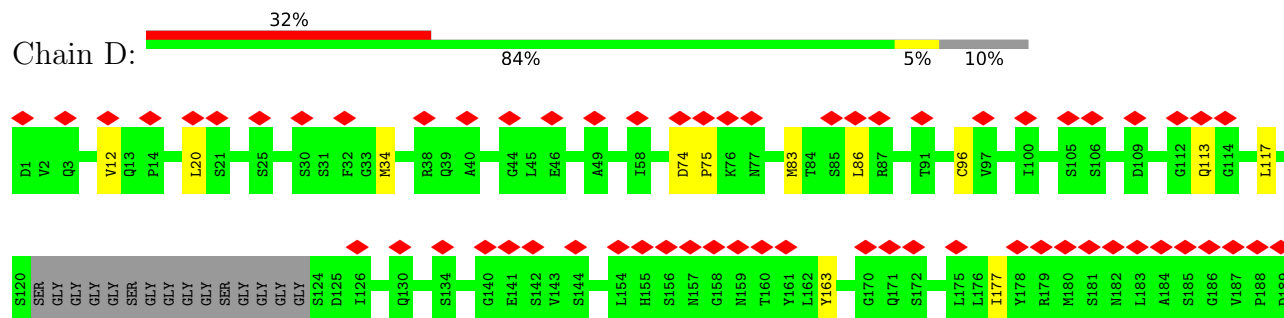
- Molecule 4: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1



- Molecule 5: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2



- Molecule 6: scFv16





R190	F191	S192	G193	S194	G195	S196	G197	T198	A199	F200	T201	L202	T203	I204	S205	R206	L207	E208	A209	E210	V214	P224	G230	L235	LYS	ALA	ALA	ALA	HIS	HIS	HIS	HIS	HIS	HIS	HIS
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## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	1092577	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	55	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.095	Depositor
Minimum map value	-0.035	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.0025	Depositor
Map size ( $\text{\AA}$ )	173.84, 173.84, 173.84	wwPDB
Map dimensions	164, 164, 164	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.06, 1.06, 1.06	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	R	0.45	0/2543	0.86	1/3472 (0.0%)
2	L	0.49	0/54	0.92	0/69
3	A	0.47	0/1868	0.81	0/2510
4	B	0.54	0/2636	0.84	0/3575
5	C	0.50	0/411	0.84	0/561
6	D	0.51	0/1819	0.79	0/2468
All	All	0.49	0/9331	0.83	1/12655 (0.0%)

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	R	0	1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	R	142	ARG	CG-CD-NE	-7.46	95.60	112.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	R	142	ARG	Sidechain

## 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	R	2478	0	2488	23	0
2	L	53	0	63	2	0
3	A	1836	0	1845	21	0
4	B	2583	0	2486	21	0
5	C	405	0	385	2	0
6	D	1775	0	1706	10	0
7	A	31	0	0	1	0
7	B	109	0	0	3	0
7	C	4	0	0	0	0
7	D	50	0	0	1	0
7	R	11	0	0	0	0
All	All	9335	0	8973	74	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 4.

All (74) 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:A:62:ILE:HD13	3:A:334:THR:HA	1.75	0.67
4:B:124:TYR:OH	7:B:401:HOH:O	2.11	0.66
4:B:131:GLY:O	7:B:402:HOH:O	2.13	0.66
4:B:160:SER:HB3	4:B:190:LEU:HD23	1.79	0.64
1:R:322:ARG:NH1	2:L:13:LEU:OXT	2.31	0.60
3:A:231:ALA:HB3	3:A:234:GLU:HG3	1.82	0.60
6:D:83:MET:HE1	6:D:117:LEU:HD22	1.84	0.60
6:D:113:GLN:NE2	7:D:301:HOH:O	2.33	0.59
6:D:83:MET:HB3	6:D:86:LEU:HD21	1.84	0.58
6:D:207:LEU:HD13	6:D:208:GLU:N	2.19	0.57
3:A:309:ILE:HA	3:A:312:MET:HE2	1.87	0.57
3:A:62:ILE:CD1	3:A:334:THR:HA	2.35	0.56
3:A:284:MET:HA	3:A:300:ARG:HG3	1.88	0.55
1:R:67:THR:HG23	1:R:124:LEU:HD21	1.89	0.55
3:A:226:ILE:HD11	3:A:264:PHE:CG	2.42	0.54
6:D:34:MET:CE	6:D:96:CYS:SG	2.96	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:57:LYS:HD2	4:B:332:TRP:CG	2.42	0.54
1:R:87:THR:HG23	1:R:374:ILE:HG22	1.89	0.53
4:B:124:TYR:CE2	4:B:135:VAL:HG22	2.43	0.53
3:A:38:ARG:NH2	3:A:195:ASP:OD1	2.42	0.52
1:R:115:THR:O	1:R:119:ALA:HB3	2.09	0.52
4:B:318:LEU:C	4:B:318:LEU:HD12	2.34	0.52
4:B:44:GLN:HE21	4:B:46:ARG:HD2	1.75	0.51
4:B:337:LYS:NZ	7:B:410:HOH:O	2.44	0.50
6:D:12:VAL:HG11	6:D:86:LEU:HD12	1.93	0.49
1:R:247:PHE:HB3	1:R:248:PRO:HD3	1.95	0.49
1:R:203:MET:HE3	1:R:207:MET:CG	2.42	0.49
1:R:329:ILE:HG23	1:R:333:GLN:HB3	1.93	0.49
3:A:9:SER:O	3:A:10:THR:HG22	2.14	0.48
3:A:14:GLU:OE2	6:D:163:TYR:OH	2.24	0.48
3:A:235:TYR:O	3:A:236:ASP:CG	2.56	0.48
4:B:271:CYS:HB2	4:B:290:ASP:HB2	1.96	0.48
3:A:288:LEU:HD21	3:A:308:PHE:HD2	1.79	0.47
4:B:294[A]:CYS:HB3	4:B:308:LEU:HB2	1.97	0.47
1:R:103:TYR:HB3	1:R:189:ILE:HD12	1.98	0.46
1:R:66:VAL:HG21	1:R:347:MET:HG2	1.98	0.46
4:B:292:PHE:CD1	4:B:292:PHE:N	2.83	0.46
4:B:49:ARG:HD2	4:B:87:THR:CG2	2.46	0.46
1:R:84:THR:O	1:R:88:LEU:HG	2.16	0.46
1:R:345:PHE:O	1:R:349:THR:HG23	2.17	0.45
4:B:261:LEU:CD2	5:C:30:VAL:HG13	2.46	0.45
4:B:294[B]:CYS:HB2	4:B:308:LEU:HB2	1.98	0.45
3:A:190:ILE:HG23	3:A:205:ASP:HB3	1.98	0.45
4:B:37:ILE:HG12	4:B:301:LYS:HE2	1.99	0.45
6:D:207:LEU:HD13	6:D:207:LEU:C	2.41	0.45
4:B:291:ASP:OD1	4:B:291:ASP:C	2.61	0.44
4:B:249:THR:HG22	4:B:265:SER:HB3	1.99	0.44
1:R:330:SER:HB2	1:R:333:GLN:HB2	2.00	0.44
3:A:50:SER:HB2	3:A:229:LEU:HG	2.00	0.44
5:C:47:GLU:O	5:C:49:PRO:HD3	2.18	0.43
6:D:20:LEU:HG	6:D:83:MET:HE2	2.00	0.43
3:A:189:ILE:HD13	4:B:99:TRP:CD1	2.53	0.43
3:A:28:GLN:HB3	7:A:422:HOH:O	2.17	0.43
1:R:267:VAL:HG13	1:R:295:VAL:HG13	2.01	0.43
3:A:271:LEU:O	3:A:326:SER:HA	2.19	0.43
1:R:339:TYR:CG	2:L:8:LYS:HD3	2.54	0.43
1:R:80:GLY:O	1:R:84:THR:HG23	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:R:362:ILE:HA	1:R:366:LEU:HB2	2.01	0.42
3:A:248:MET:HE3	3:A:248:MET:HB2	1.99	0.42
6:D:74:ASP:N	6:D:75:PRO:HD2	2.34	0.42
1:R:360:ASN:N	1:R:361:PRO:HD2	2.35	0.42
1:R:159:VAL:HG12	1:R:252:ILE:HG21	2.02	0.42
3:A:203:MET:HE3	3:A:203:MET:HB2	1.81	0.41
3:A:294:GLU:N	3:A:294:GLU:OE1	2.53	0.41
1:R:359:ILE:O	1:R:363:LEU:HG	2.21	0.41
1:R:58:THR:HG21	1:R:347:MET:CE	2.51	0.41
1:R:120:MET:HB3	1:R:121:PRO:HD3	2.03	0.41
4:B:163:ASP:O	4:B:164:THR:OG1	2.28	0.41
3:A:317:ASN:HB2	3:A:324:ILE:HD11	2.02	0.41
1:R:127:PHE:HE2	1:R:144:TYR:CE2	2.39	0.41
1:R:249:MET:HG2	1:R:312:PHE:CD2	2.56	0.41
4:B:273:ILE:HD12	4:B:273:ILE:N	2.36	0.40
3:A:283:ILE:HG23	3:A:284:MET:HE2	2.03	0.40
4:B:4:LEU:C	4:B:4:LEU:HD23	2.47	0.40

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	R	310/436 (71%)	296 (96%)	14 (4%)	0	100	100
2	L	4/6 (67%)	4 (100%)	0	0	100	100
3	A	216/353 (61%)	211 (98%)	5 (2%)	0	100	100
4	B	338/358 (94%)	326 (96%)	11 (3%)	1 (0%)	36	38
5	C	55/71 (78%)	54 (98%)	1 (2%)	0	100	100
6	D	228/259 (88%)	223 (98%)	5 (2%)	0	100	100
All	All	1151/1483 (78%)	1114 (97%)	36 (3%)	1 (0%)	49	54

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	B	310	GLY

### 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	R	266/368 (72%)	262 (98%)	4 (2%)	57	66
2	L	6/6 (100%)	5 (83%)	1 (17%)	2	0
3	A	203/320 (63%)	202 (100%)	1 (0%)	81	86
4	B	277/298 (93%)	275 (99%)	2 (1%)	76	81
5	C	39/58 (67%)	39 (100%)	0	100	100
6	D	195/209 (93%)	194 (100%)	1 (0%)	81	86
All	All	986/1259 (78%)	977 (99%)	9 (1%)	68	78

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	R	60	ILE
1	R	159	VAL
1	R	308	VAL
1	R	329	ILE
2	L	8	LYS
3	A	10	THR
4	B	227	SER
4	B	292	PHE
6	D	177	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	R	81	ASN
1	R	102	HIS

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	R	126	ASN
1	R	172	HIS
1	R	229	HIS
1	R	240	ASN
1	R	261	ASN
1	R	269	GLN
1	R	343	HIS
1	R	350	ASN
3	A	218	HIS
3	A	299	GLN
3	A	350	GLN
4	B	32	GLN
4	B	44	GLN
4	B	91	HIS
4	B	175	GLN
4	B	176	GLN
4	B	220	GLN
4	B	259	GLN
4	B	268	ASN
4	B	293	ASN
6	D	182	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.



## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

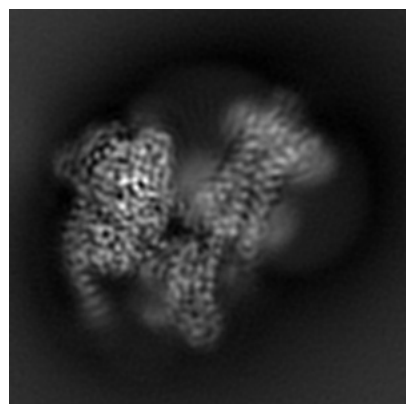
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-64907. These allow visual inspection of the internal detail of the map and identification of artifacts.

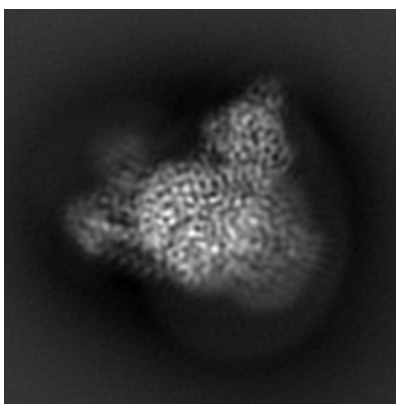
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

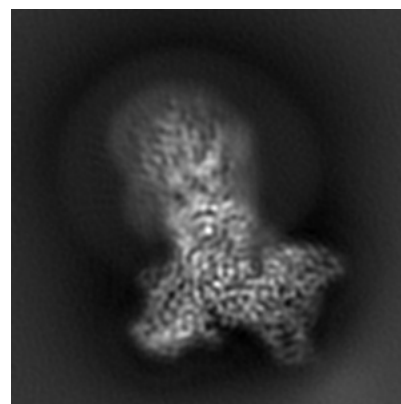
#### 6.1.1 Primary map



X

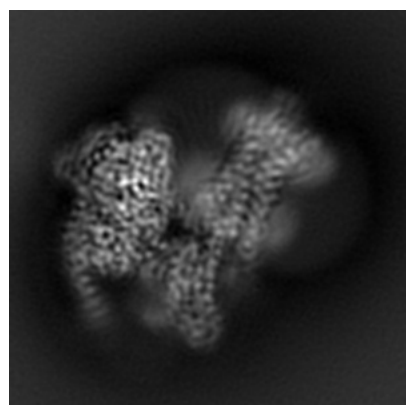


Y

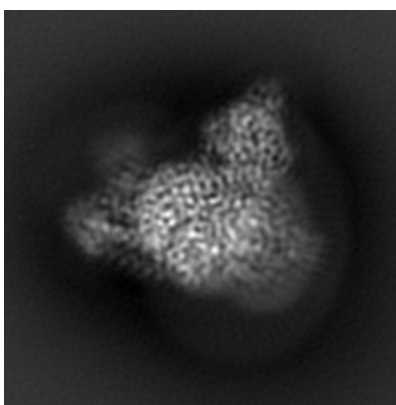


Z

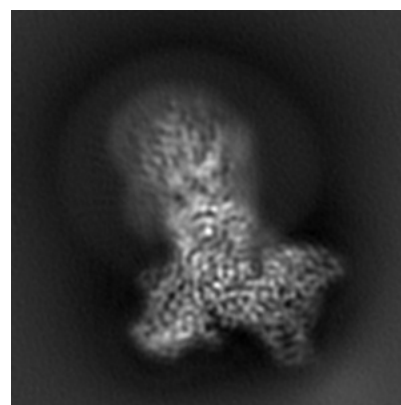
#### 6.1.2 Raw map



X



Y

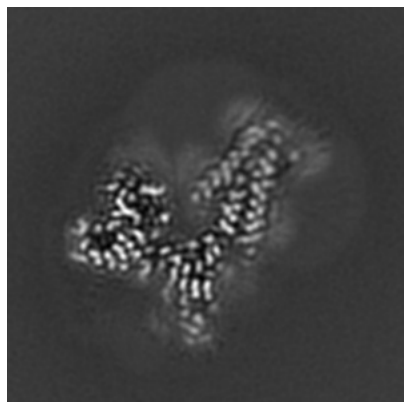


Z

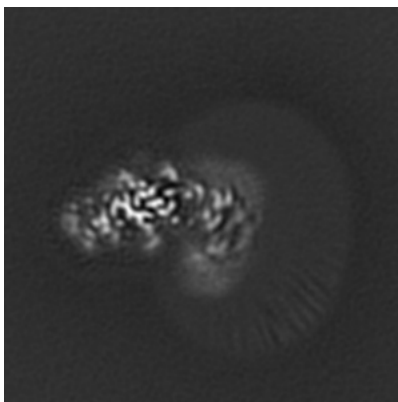
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

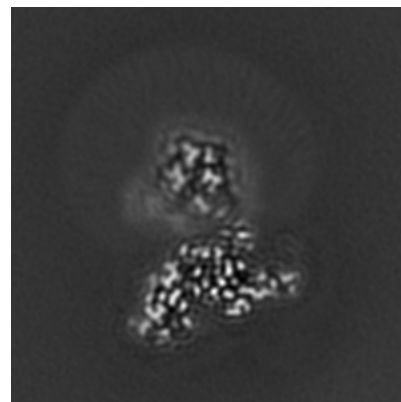
### 6.2.1 Primary map



X Index: 82

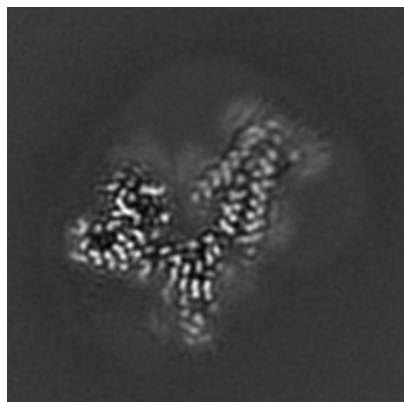


Y Index: 82

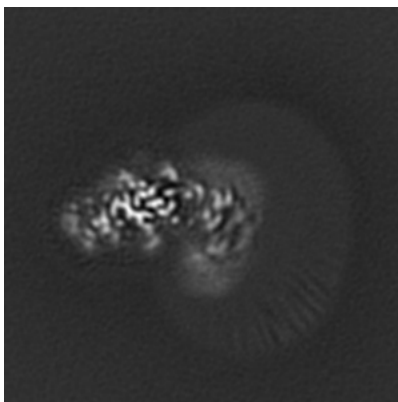


Z Index: 82

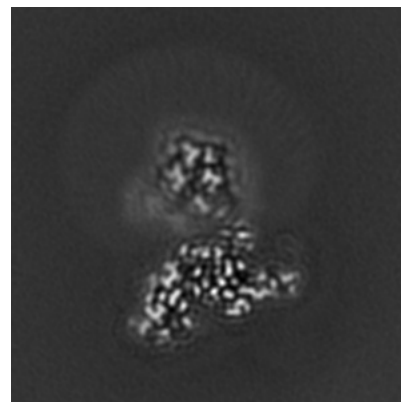
### 6.2.2 Raw map



X Index: 82



Y Index: 82

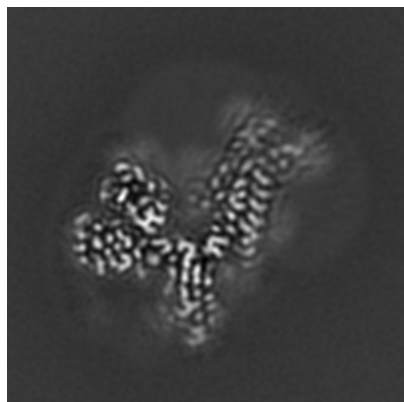


Z Index: 82

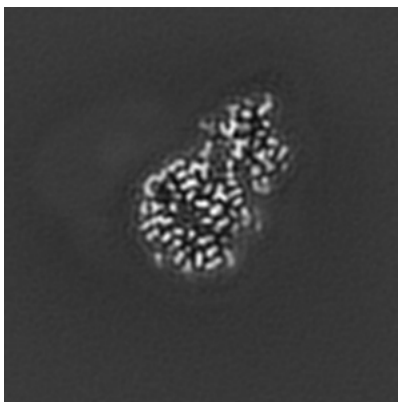
The images above show central slices of the map in three orthogonal directions.

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

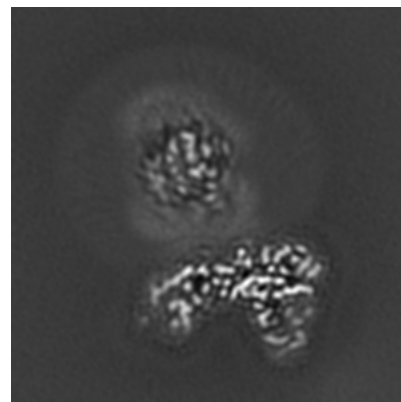
### 6.3.1 Primary map



X Index: 80

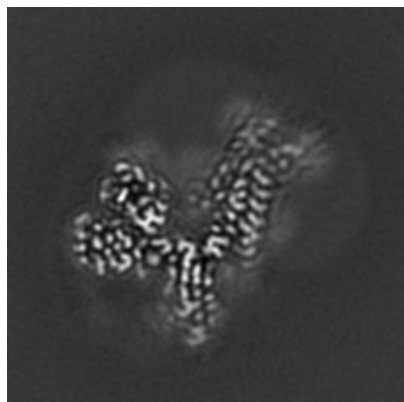


Y Index: 47

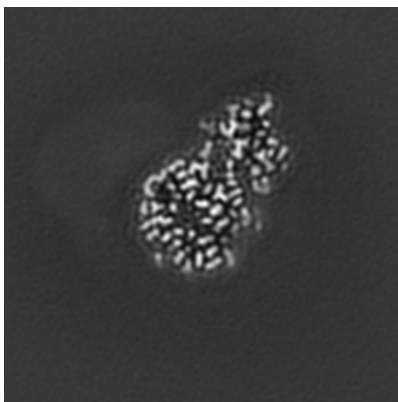


Z Index: 93

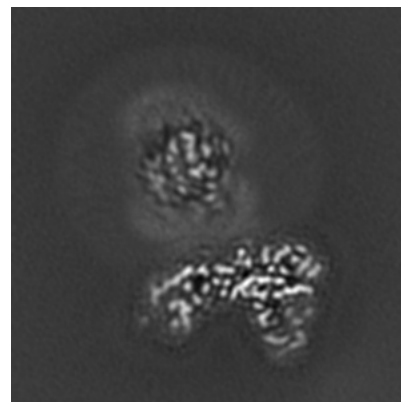
### 6.3.2 Raw map



X Index: 80



Y Index: 47

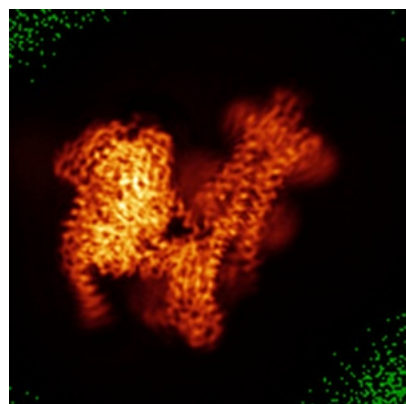


Z Index: 93

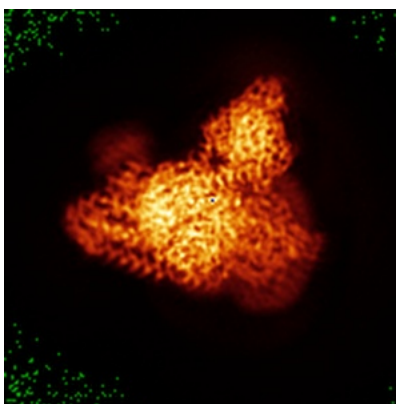
The images above show the largest variance slices of the map in three orthogonal directions.

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

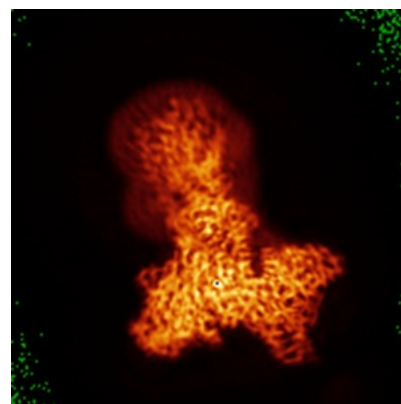
### 6.4.1 Primary map



X

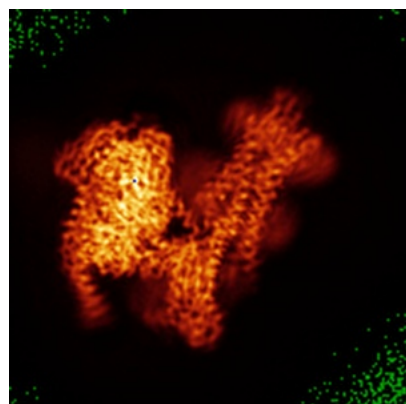


Y

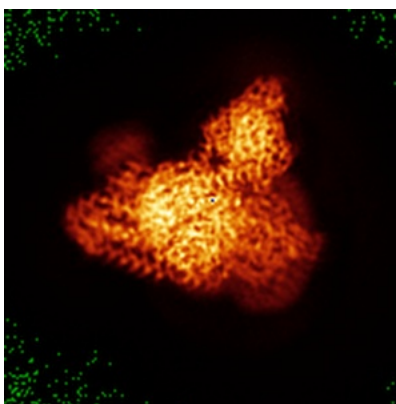


Z

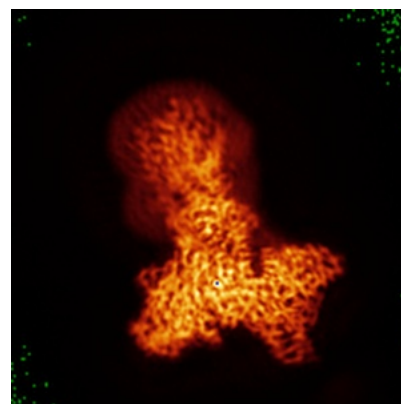
### 6.4.2 Raw map



X



Y

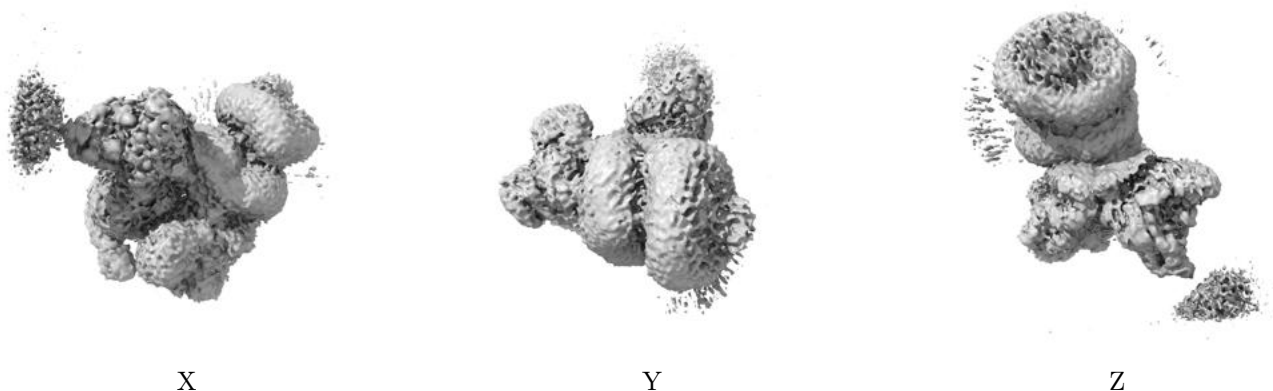


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

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

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0025. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

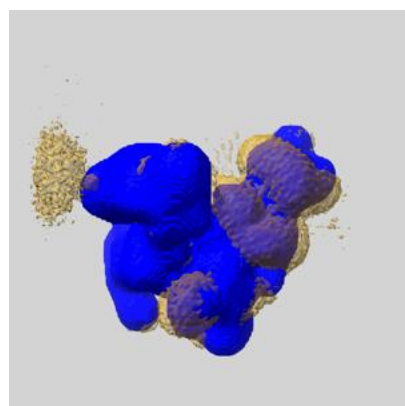
## 6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

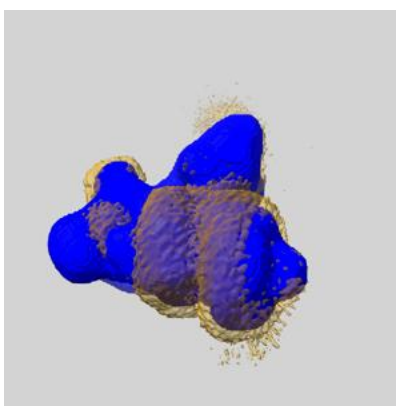
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

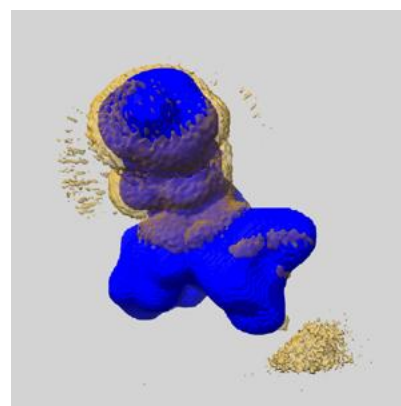
### 6.6.1 emd\_64907\_msk\_1.map [i](#)



X



Y

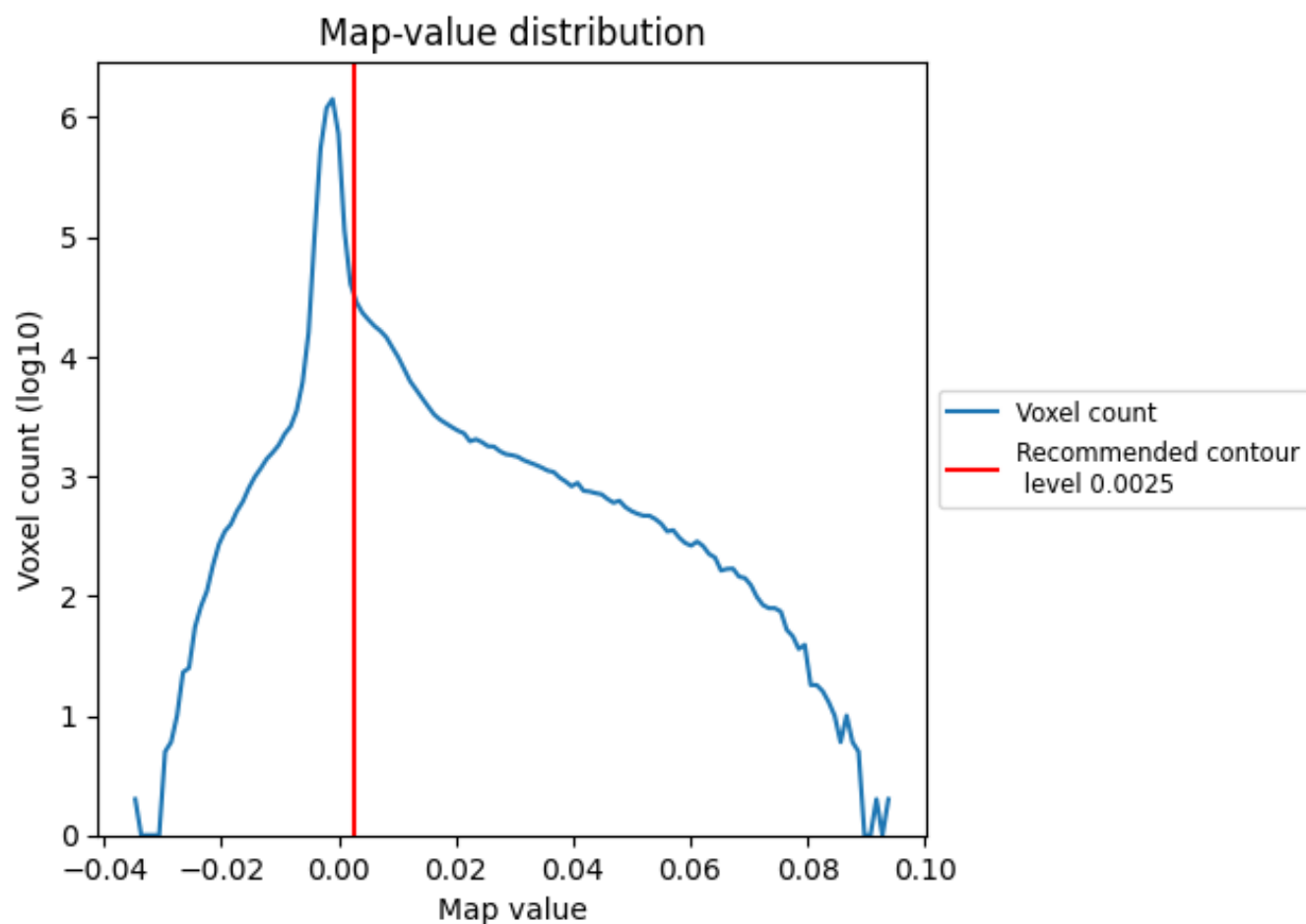


Z

## 7 Map analysis [i](#)

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

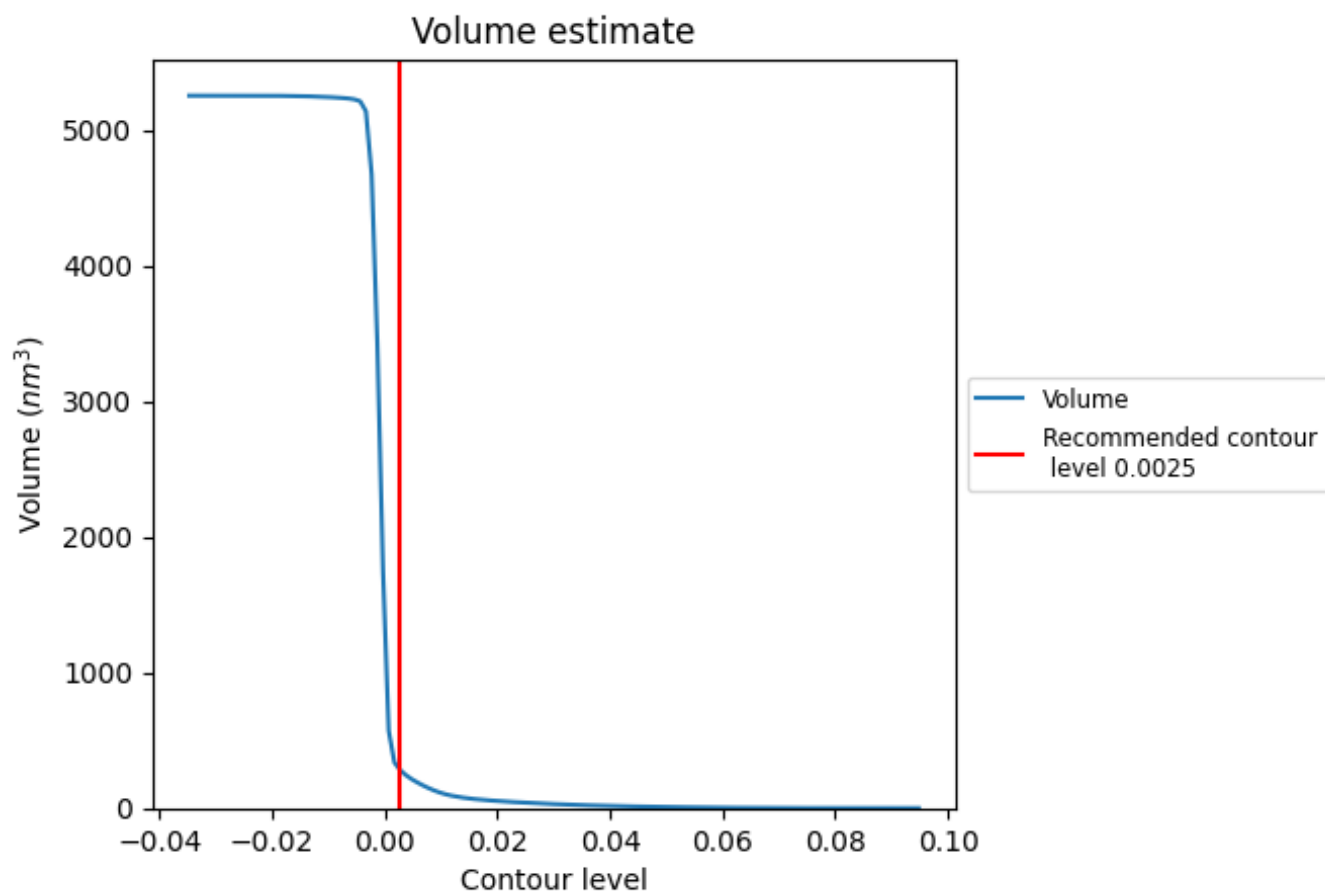
### 7.1 Map-value distribution [i](#)



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.



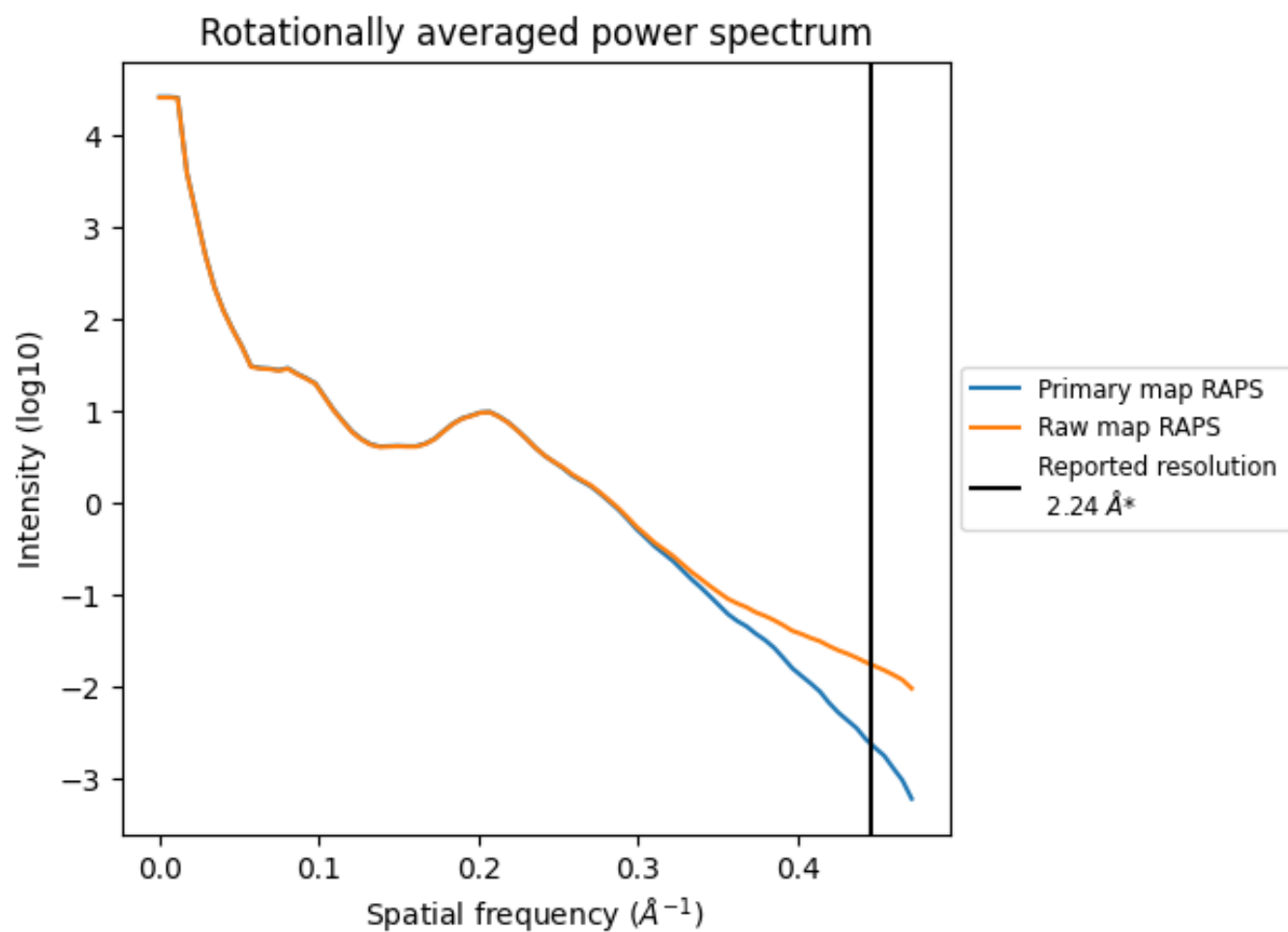
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 296  $\text{nm}^3$ ; this corresponds to an approximate mass of 267 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](#)

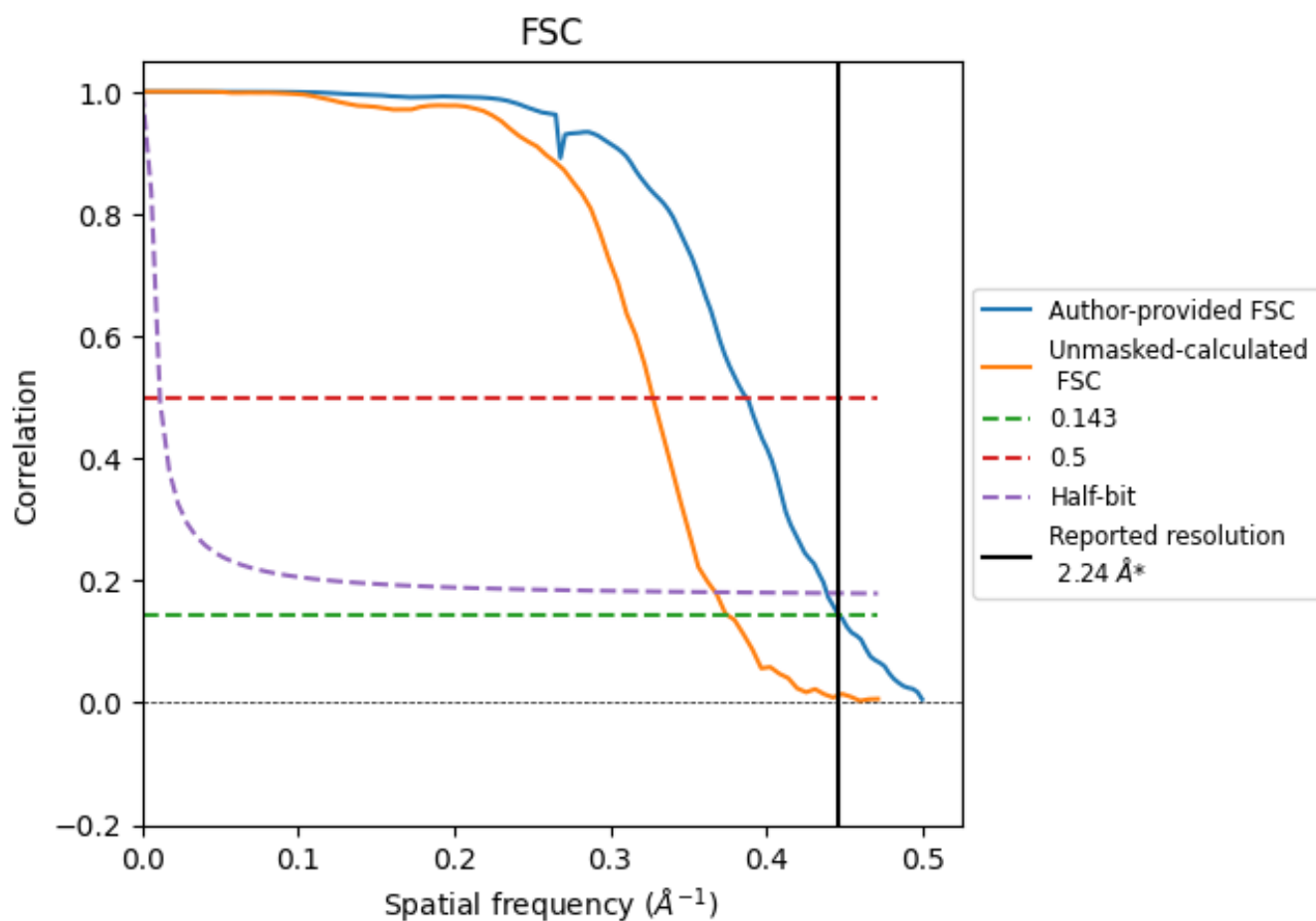


\*Reported resolution corresponds to spatial frequency of  $0.446 \text{ \AA}^{-1}$

## 8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.446  $\text{\AA}^{-1}$

## 8.2 Resolution estimates [i](#)

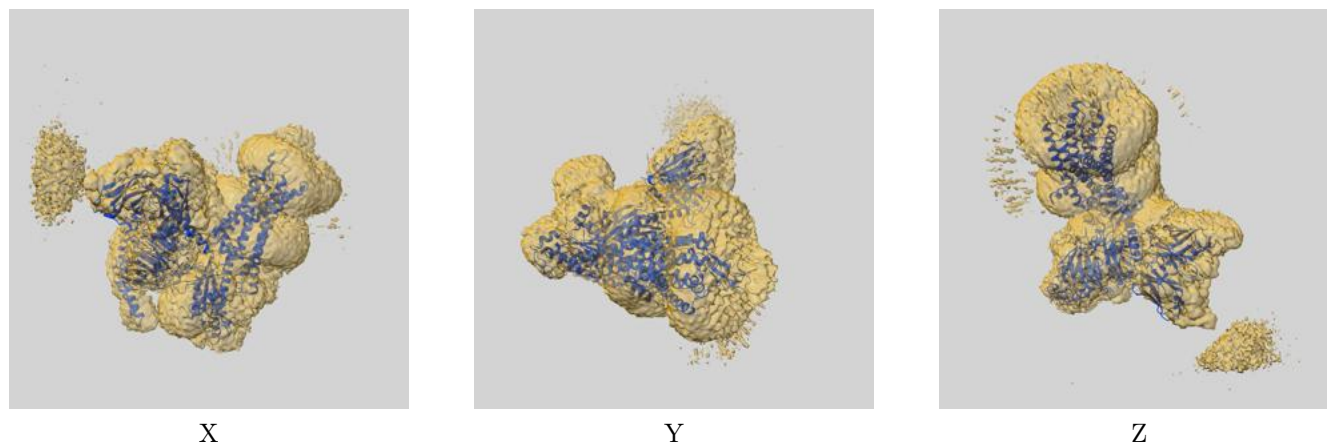
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.24	-	-
Author-provided FSC curve	2.24	2.58	2.28
Unmasked-calculated*	2.66	3.06	2.72

\*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 2.66 differs from the reported value 2.24 by more than 10 %

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

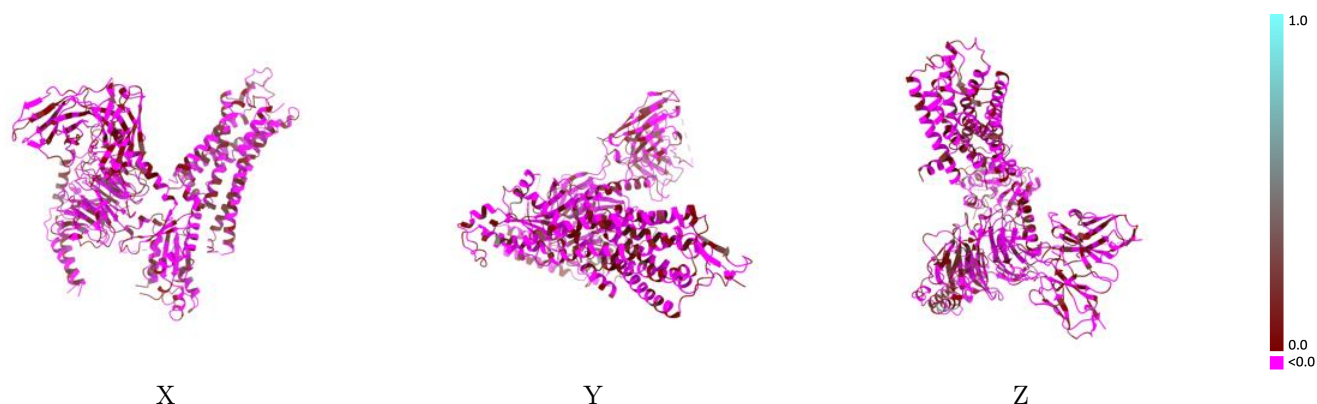
This section contains information regarding the fit between EMDB map EMD-64907 and PDB model 9VAW. Per-residue inclusion information can be found in section [3](#) on page [7](#).

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



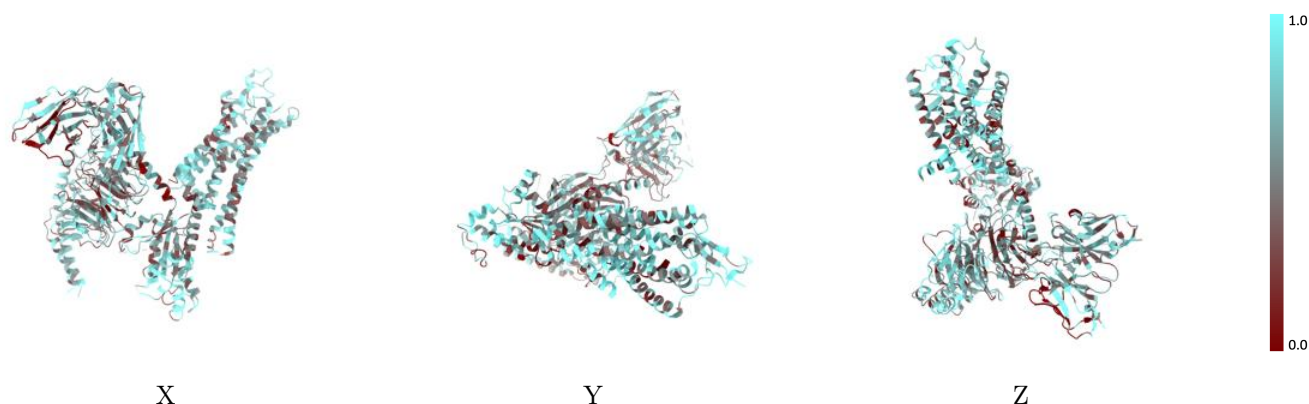
The images above show the 3D surface view of the map at the recommended contour level 0.0025 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



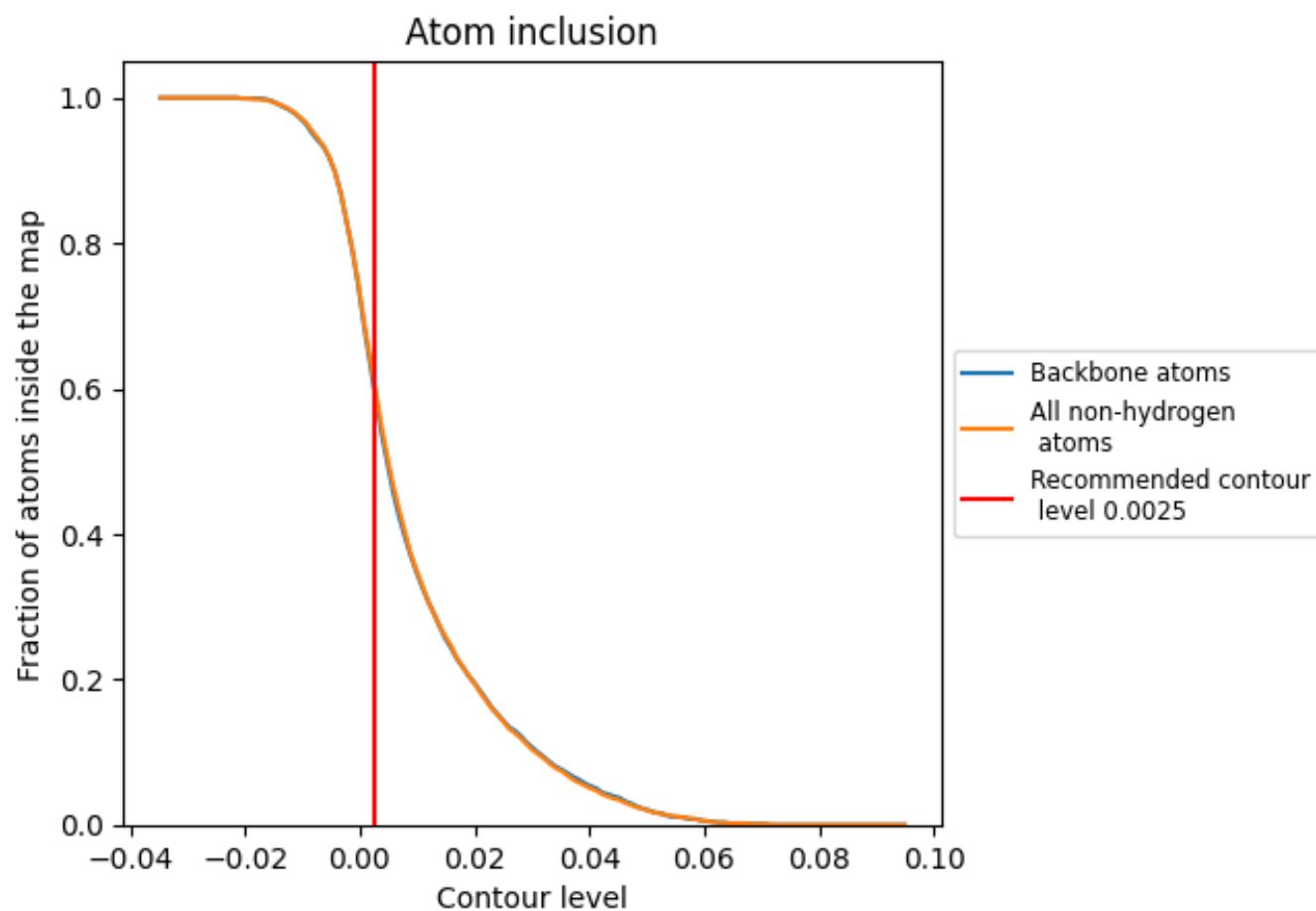
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0025).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 60% of all backbone atoms, 61% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0025) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div></div> 0.6090	<div></div> -0.0280
A	<div></div> 0.5890	<div></div> -0.0300
B	<div></div> 0.5900	<div></div> -0.0290
C	<div></div> 0.7390	<div></div> 0.0200
D	<div></div> 0.5190	<div></div> -0.0300
L	<div></div> 0.6920	<div></div> 0.0070
R	<div></div> 0.6780	<div></div> -0.0320

1.0  
0.0  
-0.0