



## Full wwPDB EM Validation Report ⓘ

Oct 13, 2024 – 08:57 PM EDT

PDB ID : 7S3I  
EMDB ID : EMD-24825  
Title : Ex4-D-Ala bound to the glucagon-like peptide-1 receptor/g protein complex (conformer 2)  
Authors : Belousoff, M.J.; Piper, S.J.; Danev, R.  
Deposited on : 2021-09-07  
Resolution : 2.51 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.dev113  
MolProbity : 4.02b-467  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.39

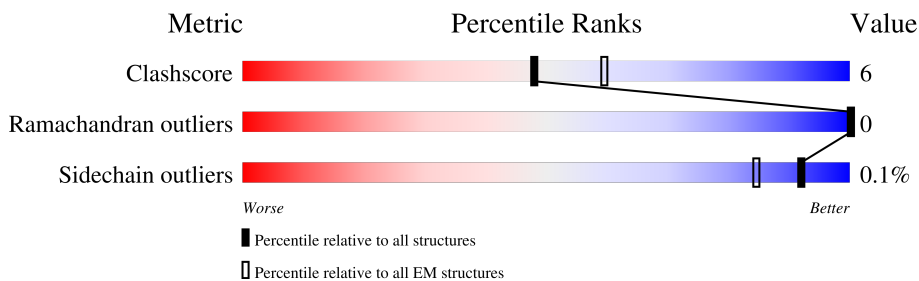
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.51 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	394	
2	B	340	
3	G	58	
4	N	128	
5	R	491	

## 2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 8094 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 Guanine nucleotide-binding protein G(s) subunit alpha isoforms short.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	233	1929	1216	348	358	7	0	0

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	54	ASN	SER	conflict	UNP P63092
A	226	ALA	GLY	conflict	UNP P63092
A	268	ALA	GLU	conflict	UNP P63092
A	271	LYS	ASN	conflict	UNP P63092
A	274	ASP	LYS	conflict	UNP P63092
A	280	LYS	ARG	conflict	UNP P63092
A	284	ASP	THR	conflict	UNP P63092
A	285	THR	ILE	conflict	UNP P63092
A	366	SER	ALA	engineered mutation	UNP P63092

- Molecule 2 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	340	2615	1612	470	512	21	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	1	GLN	-	expression tag	UNP P62873

- Molecule 3 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	58	Total	C	N	O	S	0	0
			444	277	79	85	3		

- Molecule 4 is a protein called Nb35.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	N	128	Total	C	N	O	S	0	0
			973	605	170	192	6		

- Molecule 5 is a protein called Glucagon-like peptide 1 receptor.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	R	264	Total	C	N	O	S	0	0
			2133	1437	336	349	11		

There are 52 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	-8	MET	-	expression tag	UNP P43220
R	-7	LYS	-	expression tag	UNP P43220
R	-6	THR	-	expression tag	UNP P43220
R	-5	ILE	-	expression tag	UNP P43220
R	-4	ILE	-	expression tag	UNP P43220
R	-3	ALA	-	expression tag	UNP P43220
R	-2	LEU	-	expression tag	UNP P43220
R	-1	SER	-	expression tag	UNP P43220
R	0	TYR	-	expression tag	UNP P43220
R	1	ILE	-	expression tag	UNP P43220
R	2	PHE	-	expression tag	UNP P43220
R	3	CYS	-	expression tag	UNP P43220
R	4	LEU	-	expression tag	UNP P43220
R	5	VAL	-	expression tag	UNP P43220
R	6	PHE	-	expression tag	UNP P43220
R	7	ALA	-	expression tag	UNP P43220
R	8	ASP	-	expression tag	UNP P43220
R	9	TYR	-	expression tag	UNP P43220
R	10	LYS	-	expression tag	UNP P43220
R	11	ASP	-	expression tag	UNP P43220
R	12	ASP	-	expression tag	UNP P43220
R	13	ASP	-	expression tag	UNP P43220
R	14	ASP	-	expression tag	UNP P43220
R	15	LEU	-	expression tag	UNP P43220
R	16	GLU	-	expression tag	UNP P43220

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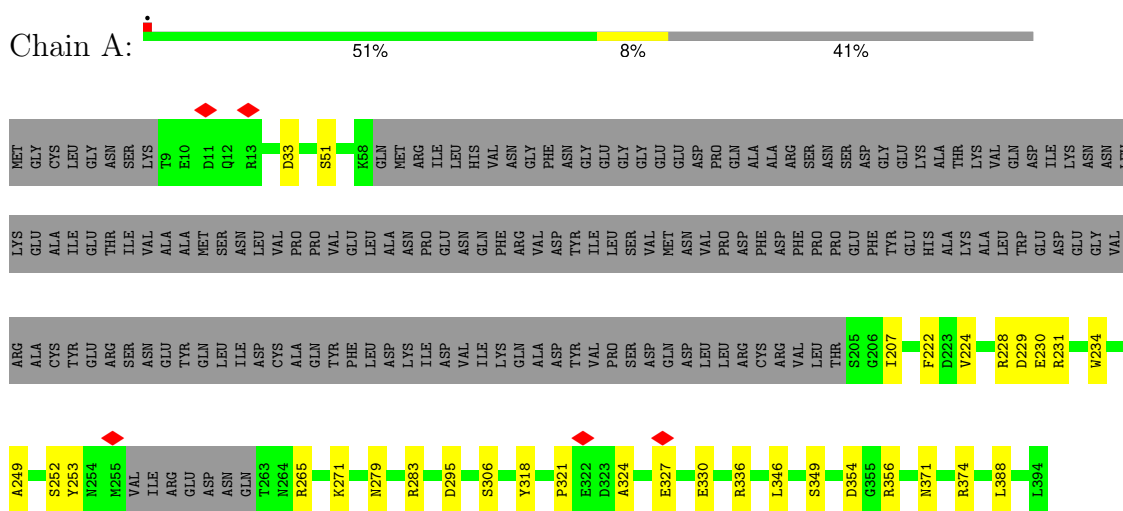
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Chain	Residue	Modelled	Actual	Comment	Reference
R	17	VAL	-	expression tag	UNP P43220
R	18	LEU	-	expression tag	UNP P43220
R	19	PHE	-	expression tag	UNP P43220
R	20	GLN	-	expression tag	UNP P43220
R	21	GLY	-	expression tag	UNP P43220
R	22	PRO	-	expression tag	UNP P43220
R	23	ALA	-	expression tag	UNP P43220
R	260	PHE	LEU	conflict	UNP P43220
R	464	PRO	-	expression tag	UNP P43220
R	465	ALA	-	expression tag	UNP P43220
R	466	GLY	-	expression tag	UNP P43220
R	467	LEU	-	expression tag	UNP P43220
R	468	GLU	-	expression tag	UNP P43220
R	469	VAL	-	expression tag	UNP P43220
R	470	LEU	-	expression tag	UNP P43220
R	471	PHE	-	expression tag	UNP P43220
R	472	GLN	-	expression tag	UNP P43220
R	473	GLY	-	expression tag	UNP P43220
R	474	PRO	-	expression tag	UNP P43220
R	475	HIS	-	expression tag	UNP P43220
R	476	HIS	-	expression tag	UNP P43220
R	477	HIS	-	expression tag	UNP P43220
R	478	HIS	-	expression tag	UNP P43220
R	479	HIS	-	expression tag	UNP P43220
R	480	HIS	-	expression tag	UNP P43220
R	481	HIS	-	expression tag	UNP P43220
R	482	HIS	-	expression tag	UNP P43220

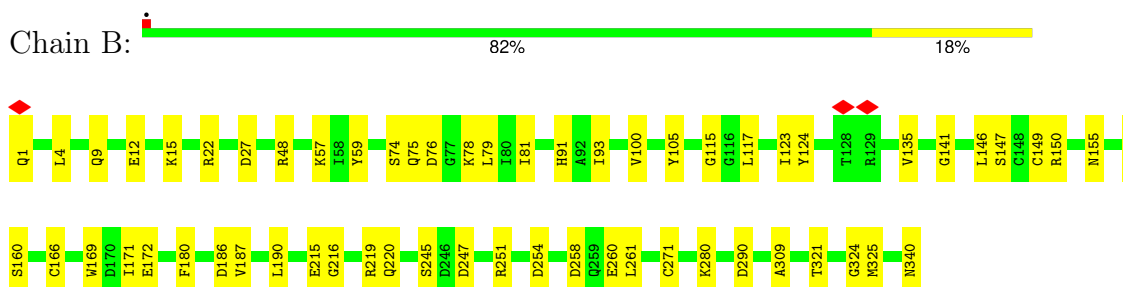
### 3 Residue-property plots [i](#)

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.

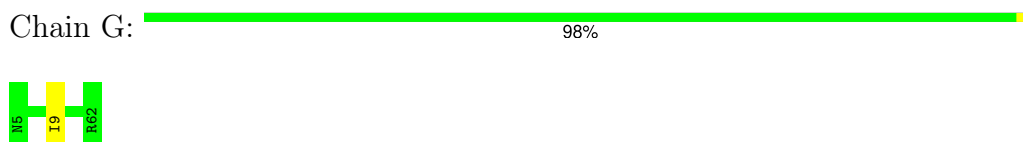
- Molecule 1: Guanine nucleotide-binding protein G(s) subunit alpha isoforms short



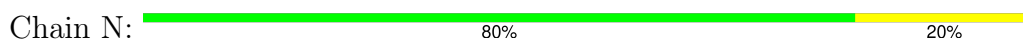
- Molecule 2: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1



- Molecule 3: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2



- Molecule 4: Nb35





● Molecule 5: Glucagon-like peptide 1 receptor



MET	LYS	THR	ILE	ALA	LEU	TYR	ASP	PHE	ILE	CYS	ASN	LEU	VAL	ALA	ASP	TYR	LYS	ASP	ASP	ASP	GLU	GLY	VAL	VAL	LEU	PHE	GLN	GLY	PRO	ALA	ARG	PRO	GLN	GLY	ALA	ALA	TRP	TRP	GLU	THR	VAL	GLN	LYS	TRP	ARG	GLY	TYR	ARG	ARG	CYS	GLN	CYS	GLN	ARG	LEU	TRP	LEU	THR
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GLU	ASP	PRO	PRO	ALA	THR	ASP	PHE	CYS	ASN	ARG	THR	PHE	GLU	GLY	TYR	ALA	CYS	TRP	TRP	ASP	ASP	GLY	PRO	PRO	GLY	GLY	PHE	SER	VAL	ASN	VAL	SER	VAL	CYS	PRO	PRO	TRP	TRP	TYR	LEU	PRO	TRP	ALA	SER	SER	VAL	VAL	PRO	PRO	GLN	GLY	HIS	VAL	TYR	ARG	PHE	CYS	THR	ALA	GLU	GLY	GLY	TRP	LEU
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GLN	LYS	ASN	SER	LEU	PRO	TRP	ASP	LEU	SER	GLU	GLY	LYS	ARG	GLY	ARG	GLY	ARG	SER	PRO	E138	E139	L144	R170	H171	L172	H173	M177	K197	D198	A199	A200	L201	M204	TYR	SER	THR	ALA	ALA	GLN	HIS	HIS	GLN	TRP	ASP	GLY	LEU	LEU	SER
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TYR	GLN	D222	F230	Y241	L244	T253	L254	L255	A256	F257	S258	W259	F260	I265	F266	F277	F280	Y289	D293	W297	N320	F324	N338	LEU	MET	CYS	LYS	T343	R348	L359	L360	I366	V370	M371	D372	E373	H374	F385	T386	E387	L388
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T391	Y402	M407	L411	E412	R419	L422	GLU	HIS	LEU	HIS	ILE	GLN	ARG	ASP	SER	SER	MET	LYS	PRO	LEU	LYS	CYS	PRO	THR	SER	SER	LEU	SER	GLY	ALA	ALA	THR	ALA	GLY	SER	SER	MET	TYR	THR	THR	ALA	CYS	GLN	ALA	SER	CYS	SER	SER	PRO	ALA	GLY	LEU	LEU	VAL
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LEU	PHE	GLN	GLY	PRO	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	221995	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 ( $e^-/\text{\AA}^2$ )	49.8	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.079	Depositor
Minimum map value	-0.039	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.0091	Depositor
Map size ( $\text{\AA}$ )	239.04, 239.04, 239.04	wwPDB
Map dimensions	288, 288, 288	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.83, 0.83, 0.83	Depositor



## 5 Model quality [i](#)

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.25	0/1965	0.47	0/2642
2	B	0.26	0/2662	0.53	0/3609
3	G	0.24	0/450	0.45	0/608
4	N	0.28	0/993	0.50	0/1345
5	R	0.25	0/2190	0.41	0/2980
All	All	0.25	0/8260	0.48	0/11184

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	1929	0	1905	23	0
2	B	2615	0	2521	37	0
3	G	444	0	454	1	0
4	N	973	0	938	15	0
5	R	2133	0	2147	23	0
All	All	8094	0	7965	91	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 (91) 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)
2:B:146:LEU:HD11	2:B:159:THR:HB	1.67	0.75
2:B:245:SER:OG	2:B:247:ASP:OD1	2.09	0.70
5:R:320:ASN:ND2	5:R:360:LEU:O	2.25	0.69
2:B:271:CYS:HB2	2:B:290:ASP:HB2	1.74	0.68
4:N:112:SER:HB2	4:N:115:TYR:HB2	1.75	0.68
4:N:39:GLN:HB2	4:N:45:LEU:HD23	1.76	0.67
1:A:252:SER:HB3	1:A:265:ARG:HB3	1.78	0.66
2:B:75:GLN:NE2	2:B:100:VAL:O	2.30	0.65
1:A:318:TYR:O	1:A:336:ARG:NH1	2.30	0.64
5:R:197:LYS:HZ1	5:R:230:PHE:HD1	1.46	0.61
1:A:279:ASN:ND2	4:N:106:ASP:OD2	2.34	0.60
2:B:220:GLN:NE2	2:B:258:ASP:OD1	2.34	0.59
4:N:3:GLN:HB3	4:N:5:GLN:HE22	1.67	0.59
2:B:57:LYS:HE2	2:B:59:TYR:HE1	1.67	0.59
2:B:74:SER:OG	2:B:76:ASP:OD1	2.22	0.57
2:B:81:ILE:HD13	2:B:91:HIS:HB2	1.87	0.56
5:R:370:VAL:HG13	5:R:371:MET:SD	2.45	0.56
2:B:9:GLN:NE2	2:B:12:GLU:OE2	2.37	0.56
5:R:387:GLU:O	5:R:391:THR:HG23	2.05	0.56
2:B:1:GLN:HG3	2:B:4:LEU:H	1.71	0.55
2:B:155:ASN:OD1	2:B:172:GLU:HG2	2.07	0.54
4:N:110:VAL:HG13	4:N:111:THR:HG23	1.89	0.54
1:A:234:TRP:HB2	2:B:117:LEU:HD21	1.90	0.54
5:R:260:PHE:HB2	5:R:265:ILE:HG21	1.89	0.54
4:N:61:THR:HG22	4:N:64:VAL:HG22	1.91	0.53
2:B:160:SER:HB3	2:B:190:LEU:HD23	1.92	0.52
1:A:231:ARG:HG2	1:A:234:TRP:CZ2	2.45	0.51
5:R:241:TYR:HA	5:R:244:LEU:HD12	1.92	0.50
2:B:22:ARG:NE	2:B:258:ASP:O	2.45	0.49
1:A:295:ASP:N	1:A:295:ASP:OD1	2.45	0.49
4:N:67:ARG:NH1	4:N:85:SER:O	2.40	0.49
2:B:141:GLY:H	2:B:169:TRP:HH2	1.60	0.49
2:B:254:ASP:HB2	2:B:261:LEU:HD11	1.94	0.49
1:A:283:ARG:NH1	4:N:105:ARG:HH21	2.11	0.49
2:B:4:LEU:HD13	3:G:9:ILE:HD13	1.94	0.49
5:R:144:LEU:HD11	5:R:385:PHE:HA	1.94	0.49
2:B:12:GLU:HA	2:B:15:LYS:HE3	1.94	0.48
5:R:171:HIS:ND1	5:R:412:GLU:OE1	2.33	0.48
1:A:321:PRO:HG2	1:A:324:ALA:HB2	1.95	0.48
4:N:52:SER:O	4:N:72:ARG:NH1	2.46	0.48
2:B:57:LYS:HE2	2:B:59:TYR:CE1	2.48	0.48
1:A:253:TYR:OH	1:A:306:SER:OG	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:N:83:MET:HB3	4:N:86:LEU:HD21	1.96	0.48
5:R:172:LEU:O	5:R:177:ASN:ND2	2.42	0.48
4:N:69:THR:HB	4:N:82:GLN:HB3	1.96	0.48
1:A:253:TYR:HH	1:A:306:SER:HG	1.60	0.47
5:R:348:ARG:HA	5:R:348:ARG:HD2	1.71	0.47
5:R:366:ILE:O	5:R:370:VAL:HG12	2.14	0.47
2:B:251:ARG:HG2	2:B:260:GLU:OE2	2.13	0.47
1:A:224:VAL:HG21	1:A:234:TRP:CZ3	2.49	0.47
4:N:53:GLN:OE1	4:N:53:GLN:N	2.46	0.47
1:A:51:SER:HA	1:A:249:ALA:HB2	1.97	0.46
5:R:289:TYR:HB2	5:R:297:TRP:CZ2	2.51	0.46
1:A:327:GLU:HB2	1:A:330:GLU:HG3	1.98	0.46
1:A:371:ASN:HA	1:A:374:ARG:HD2	1.98	0.46
1:A:228:ARG:NH2	2:B:186:ASP:OD1	2.29	0.46
2:B:149:CYS:O	2:B:150:ARG:NH1	2.49	0.46
5:R:359:LEU:HD13	5:R:402:TYR:CZ	2.51	0.45
2:B:115:GLY:HA3	2:B:146:LEU:HD23	1.98	0.45
5:R:277:PRO:HA	5:R:280:PHE:CE2	2.51	0.45
1:A:346:LEU:HA	1:A:349:SER:HB3	1.97	0.45
1:A:354:ASP:OD2	1:A:356:ARG:NH1	2.49	0.45
2:B:280:LYS:HB2	2:B:324:GLY:HA3	2.00	0.44
5:R:265:ILE:HG13	5:R:266:PHE:N	2.32	0.44
2:B:48:ARG:HE	2:B:340:ASN:HB3	1.83	0.43
2:B:79:LEU:HB2	2:B:93:ILE:HB	1.99	0.43
2:B:9:GLN:O	2:B:12:GLU:HG3	2.17	0.43
2:B:180:PHE:CE1	2:B:216:GLY:HA2	2.52	0.43
2:B:124:TYR:CE1	2:B:135:VAL:HG22	2.54	0.43
4:N:52:SER:OG	4:N:57:SER:HB3	2.19	0.43
5:R:144:LEU:HD12	5:R:388:LEU:HD12	2.01	0.43
1:A:229:ASP:N	1:A:229:ASP:OD1	2.52	0.43
1:A:271:LYS:HA	1:A:271:LYS:HD2	1.73	0.43
2:B:166:CYS:HB2	2:B:180:PHE:HB2	1.99	0.43
1:A:207:ILE:HD11	1:A:222:PHE:HB3	2.01	0.43
2:B:27:ASP:N	2:B:27:ASP:OD1	2.52	0.43
5:R:289:TYR:HB2	5:R:297:TRP:HZ2	1.84	0.42
5:R:324:PHE:HB2	5:R:360:LEU:HD12	2.01	0.42
1:A:228:ARG:NH2	1:A:230:GLU:OE1	2.53	0.41
2:B:147:SER:OG	2:B:187:VAL:O	2.32	0.41
4:N:33:LYS:HG3	4:N:51:ILE:O	2.21	0.41
4:N:65:LYS:HE3	4:N:65:LYS:HB2	1.67	0.41
5:R:170:ARG:HA	5:R:173:HIS:ND1	2.36	0.41

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:309:ALA:O	5:R:419:ARG:HD3	2.21	0.41
5:R:253:THR:O	5:R:257:PHE:HB2	2.21	0.41
2:B:321:THR:HG1	2:B:325:MET:H	1.70	0.40
1:A:33:ASP:OD2	2:B:78:LYS:NZ	2.51	0.40
1:A:388:LEU:HG	5:R:255:LEU:HD21	2.03	0.40
2:B:123:ILE:HG13	2:B:171:ILE:HD12	2.03	0.40
2:B:215:GLU:OE1	2:B:219:ARG:NH2	2.54	0.40
5:R:407:ASN:O	5:R:411:LEU:HD23	2.22	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	227/394 (58%)	221 (97%)	6 (3%)	0	100	100
2	B	338/340 (99%)	328 (97%)	10 (3%)	0	100	100
3	G	56/58 (97%)	55 (98%)	1 (2%)	0	100	100
4	N	126/128 (98%)	126 (100%)	0	0	100	100
5	R	258/491 (52%)	254 (98%)	4 (2%)	0	100	100
All	All	1005/1411 (71%)	984 (98%)	21 (2%)	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	209/350 (60%)	209 (100%)	0	100	100
2	B	283/283 (100%)	282 (100%)	1 (0%)	89	96
3	G	47/47 (100%)	47 (100%)	0	100	100
4	N	106/106 (100%)	106 (100%)	0	100	100
5	R	224/436 (51%)	224 (100%)	0	100	100
All	All	869/1222 (71%)	868 (100%)	1 (0%)	92	97

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

Mol	Chain	Res	Type
2	B	105	TYR

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

Mol	Chain	Res	Type
2	B	6	GLN
4	N	5	GLN

### 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.

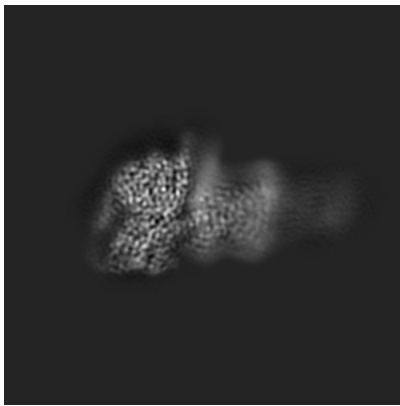
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24825. These allow visual inspection of the internal detail of the map and identification of artifacts.

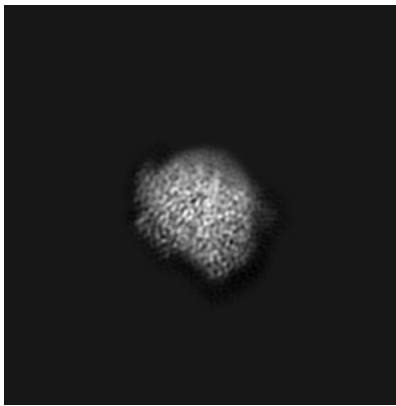
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

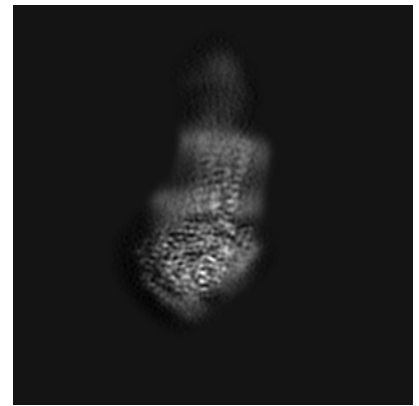
#### 6.1.1 Primary map



X

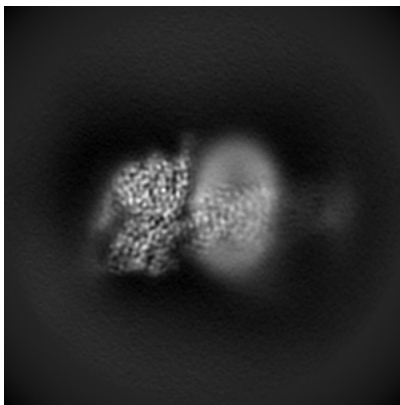


Y

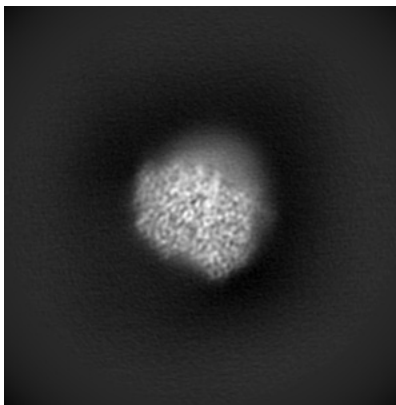


Z

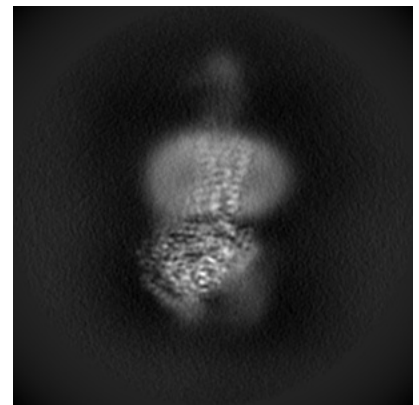
#### 6.1.2 Raw map



X



Y

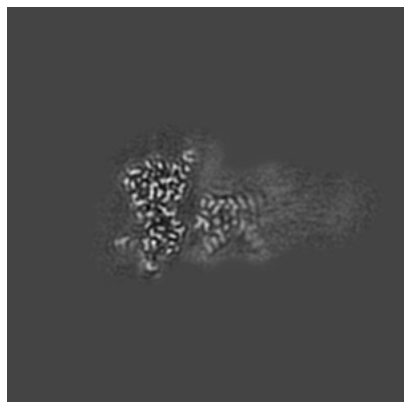


Z

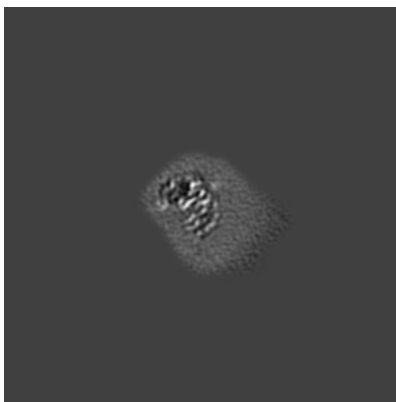
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

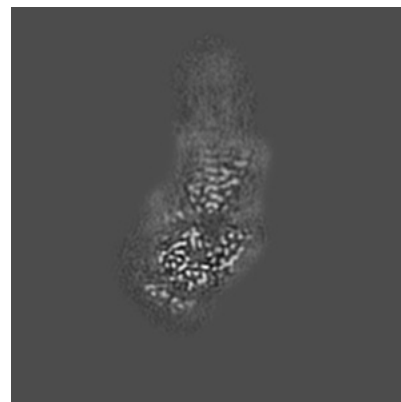
### 6.2.1 Primary map



X Index: 144

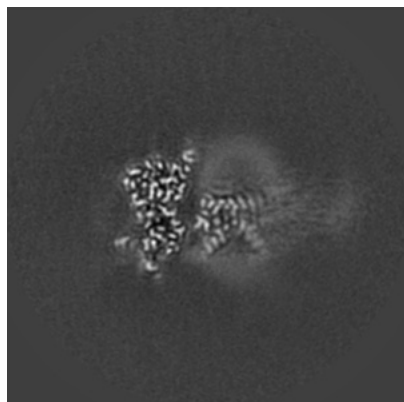


Y Index: 144

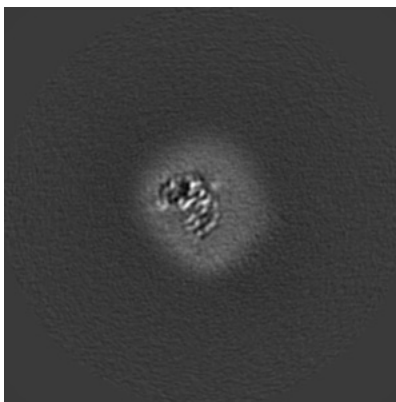


Z Index: 144

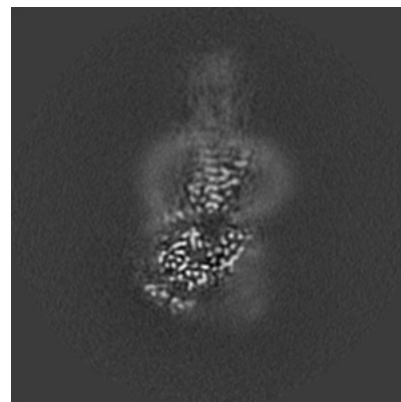
### 6.2.2 Raw map



X Index: 144



Y Index: 144



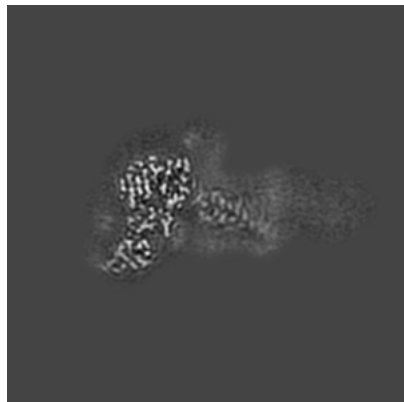
Z Index: 144

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

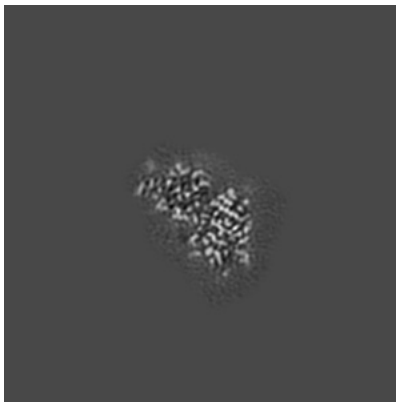


## 6.3 Largest variance slices [i](#)

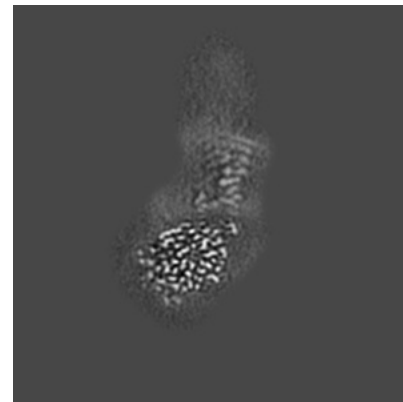
### 6.3.1 Primary map



X Index: 135

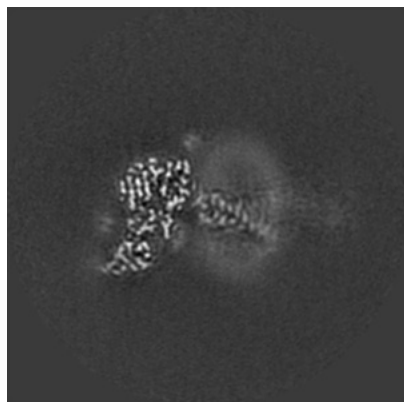


Y Index: 115

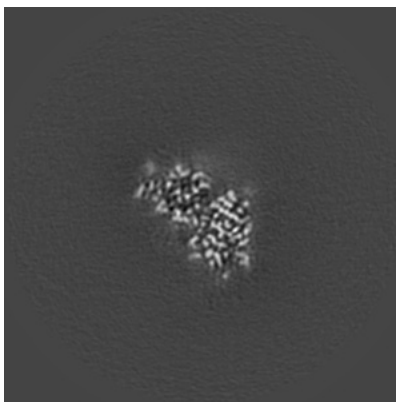


Z Index: 152

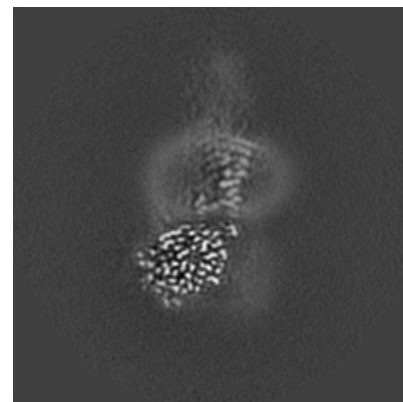
### 6.3.2 Raw map



X Index: 135



Y Index: 115

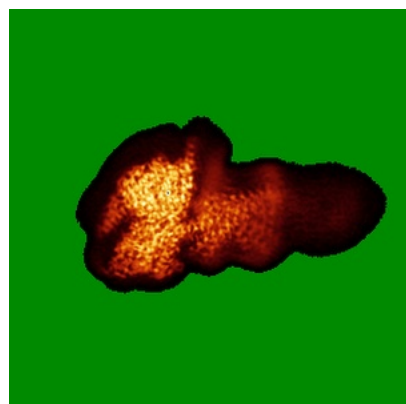


Z Index: 152

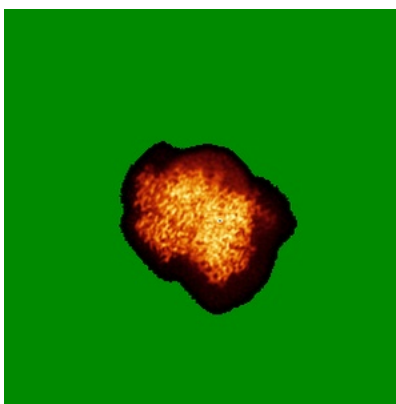
The images above show the largest variance slices of the map in three orthogonal directions.

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

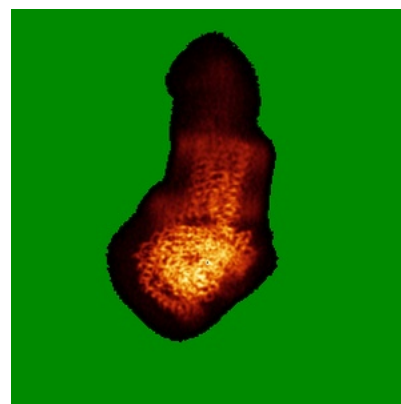
### 6.4.1 Primary map



X

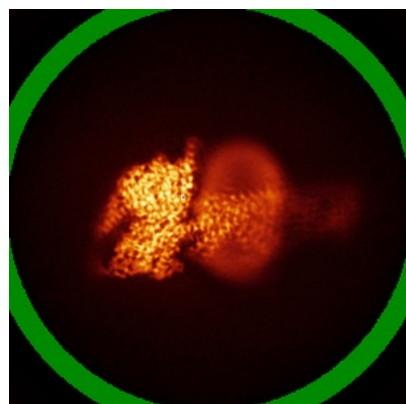


Y

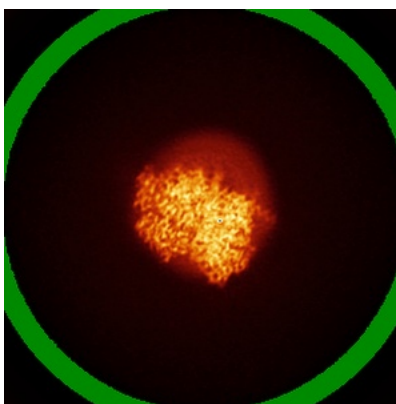


Z

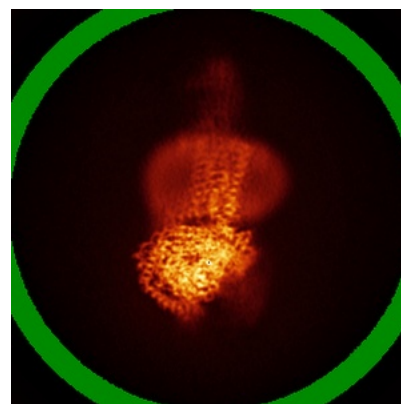
### 6.4.2 Raw map



X



Y

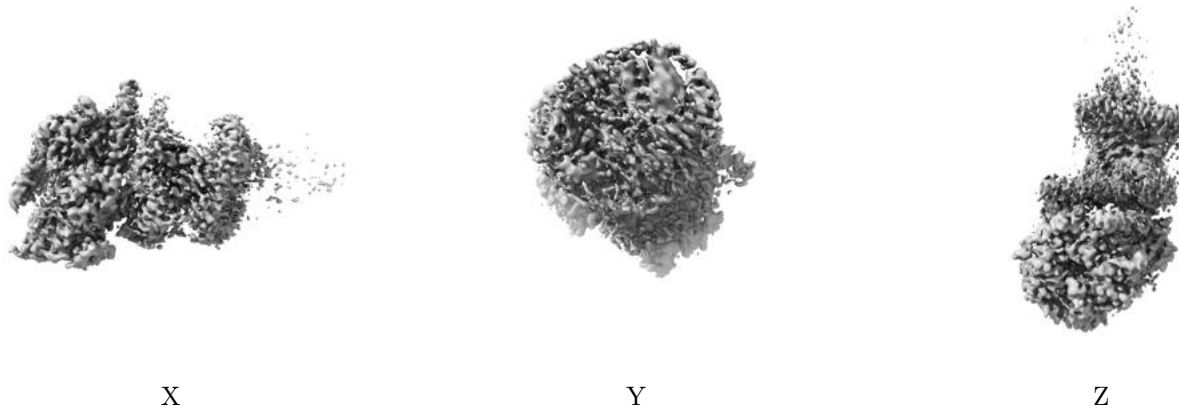


Z

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.

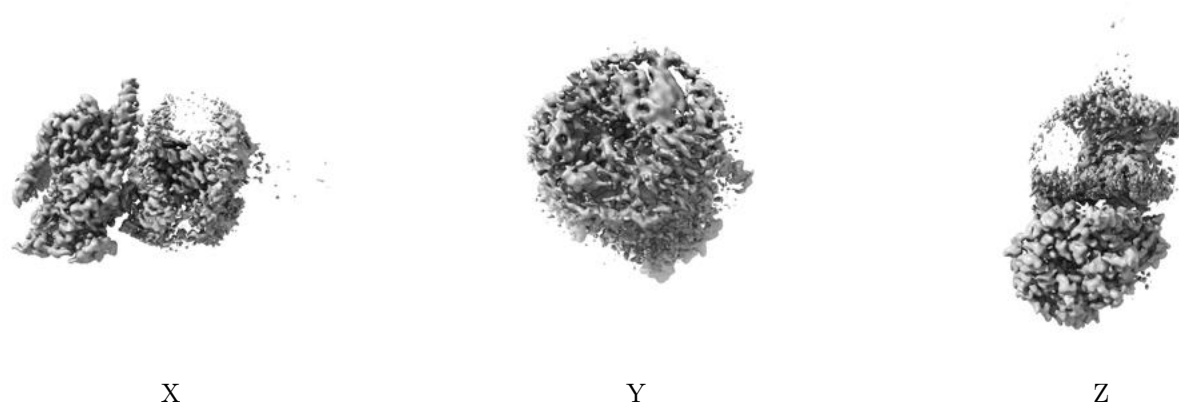
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0091. 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.

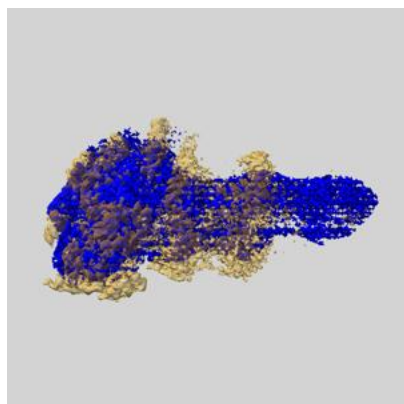
## 6.6 Mask visualisation [i](#)

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

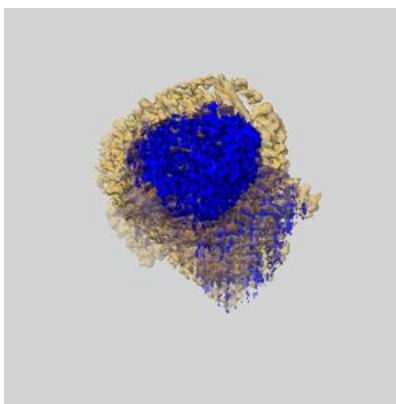
A mask typically either:

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

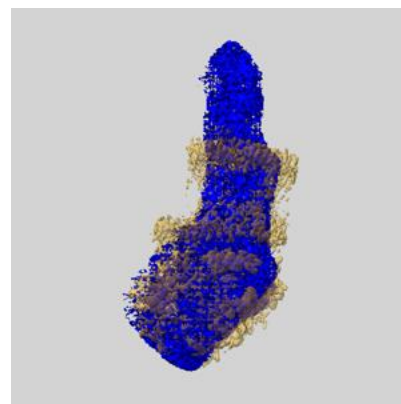
### 6.6.1 emd\_24825\_msk\_1.map [i](#)



X



Y

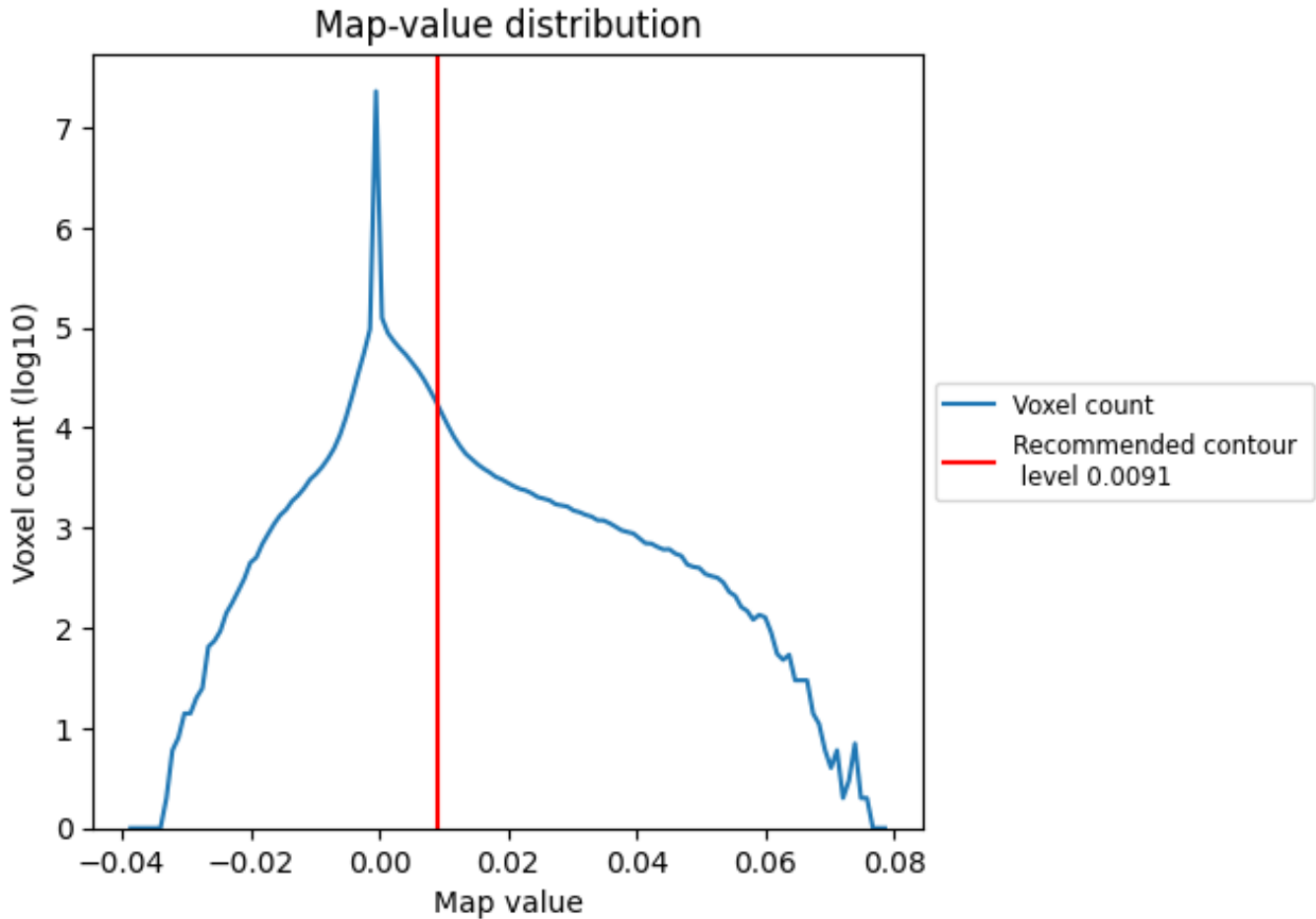


Z

## 7 Map analysis [i](#)

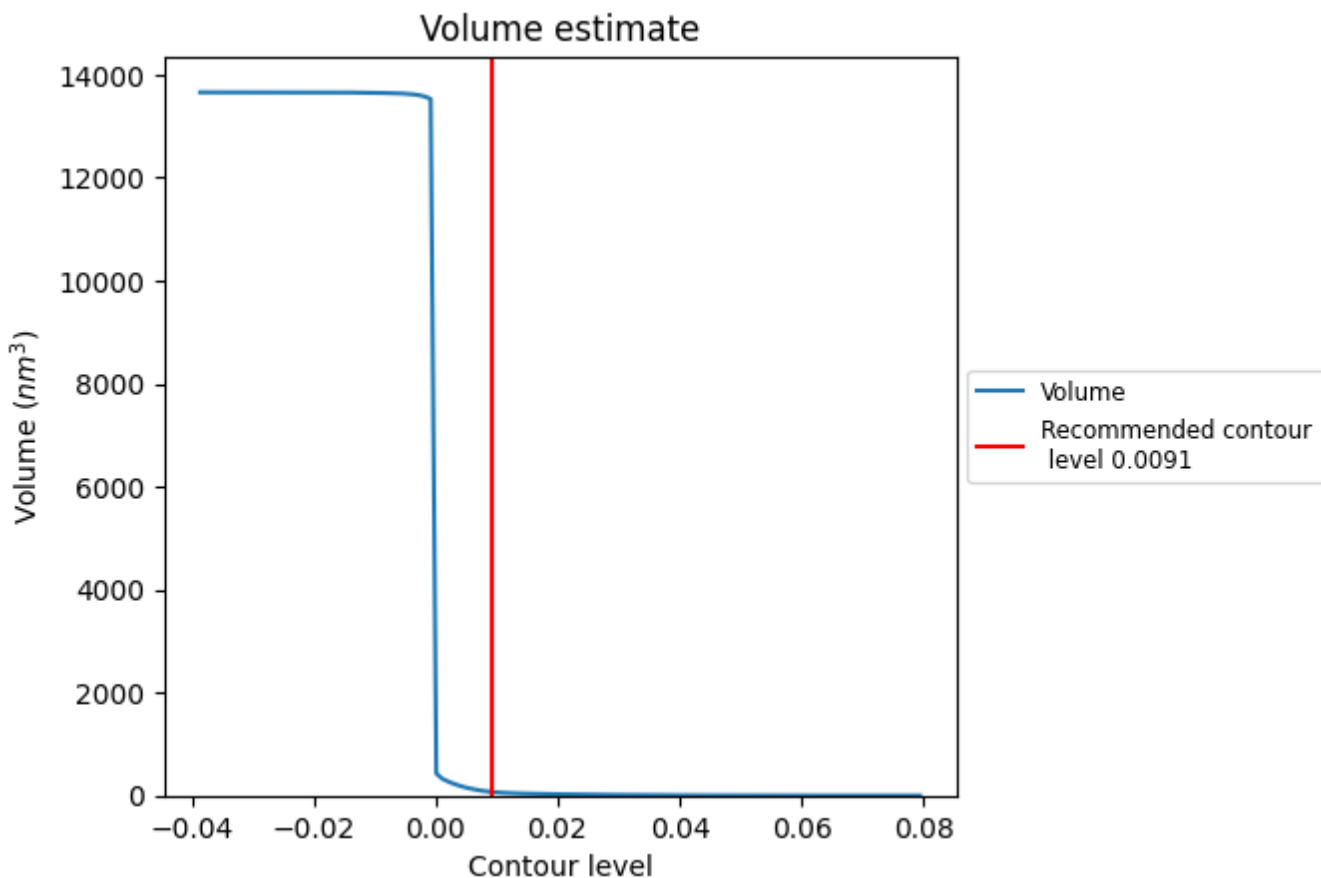
This section contains the results of statistical analysis of the map.

### 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.

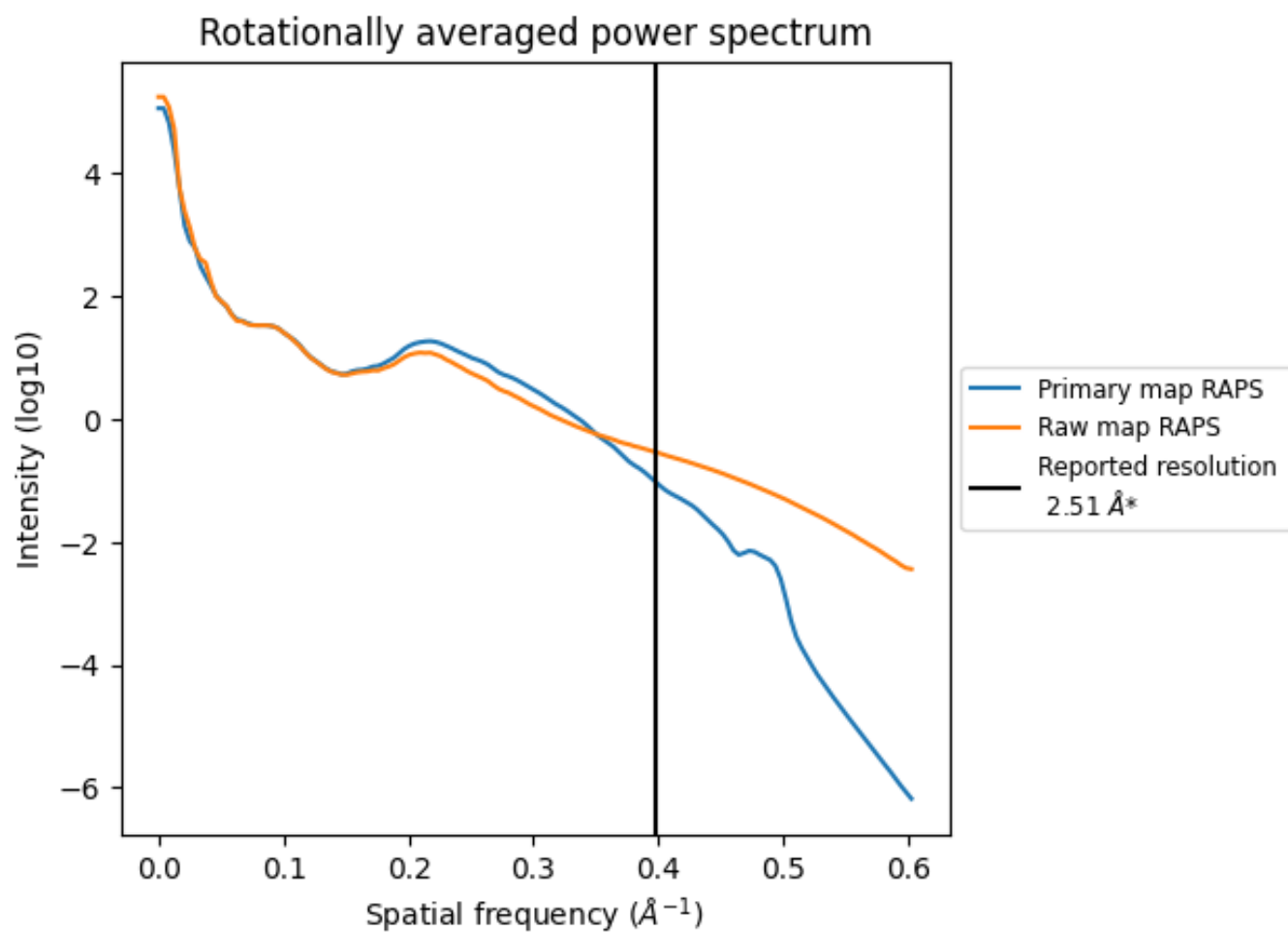
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 71 nm<sup>3</sup>; 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

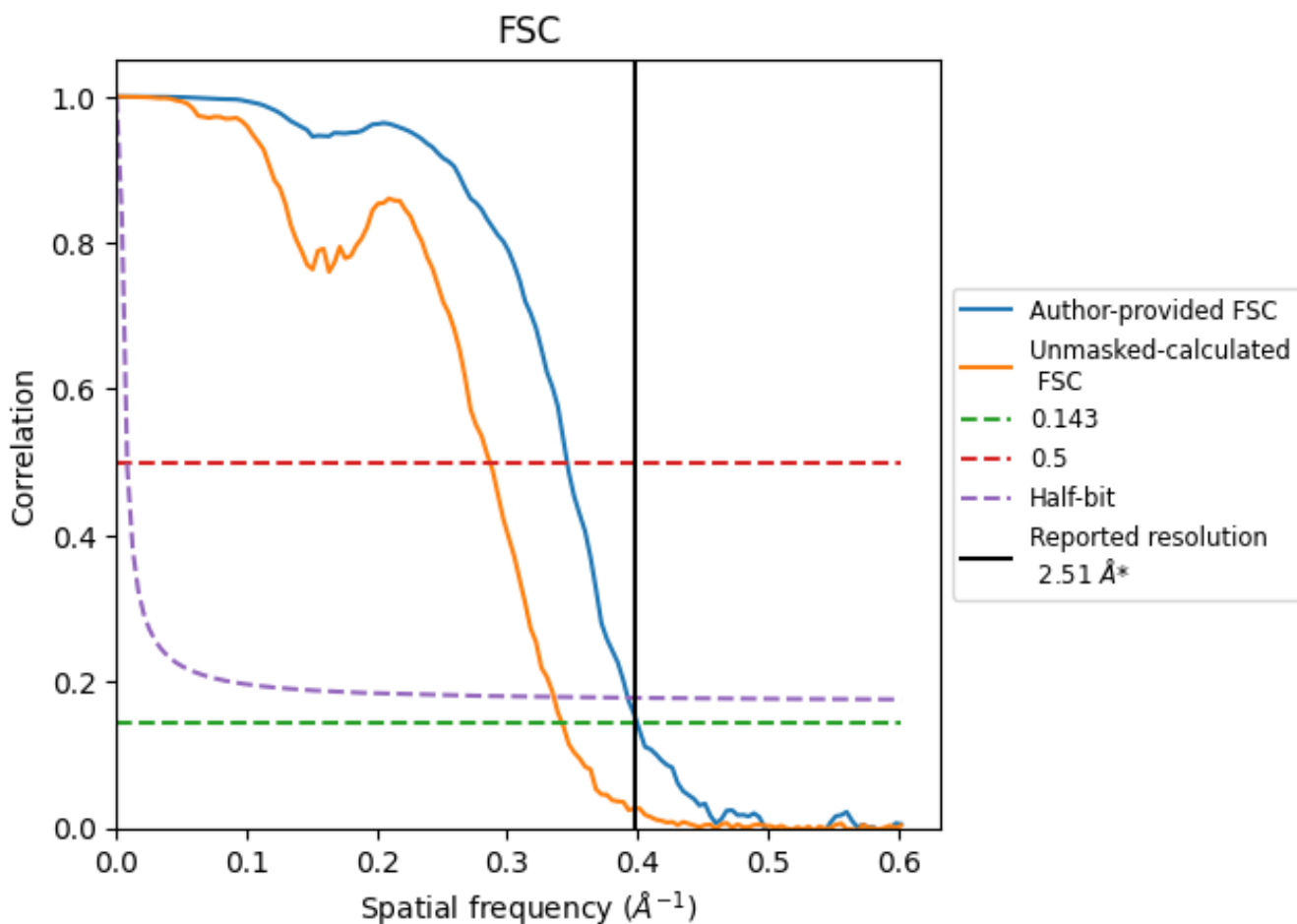


\*Reported resolution corresponds to spatial frequency of 0.398 Å<sup>-1</sup>

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



## 8.2 Resolution estimates [i](#)

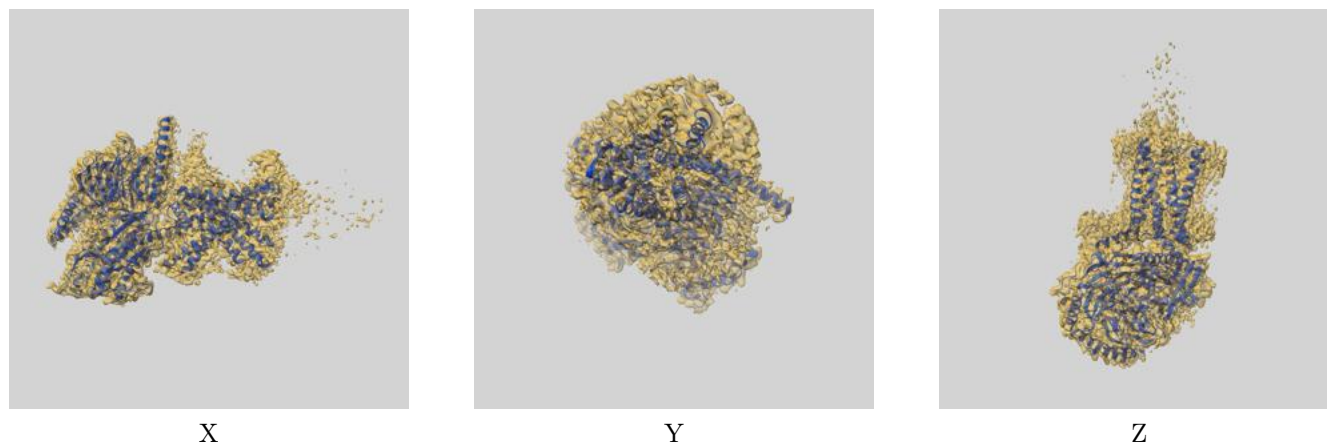
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.51	-	-
Author-provided FSC curve	2.50	2.89	2.55
Unmasked-calculated*	2.92	3.49	2.98

\*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 2.92 differs from the reported value 2.51 by more than 10 %

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

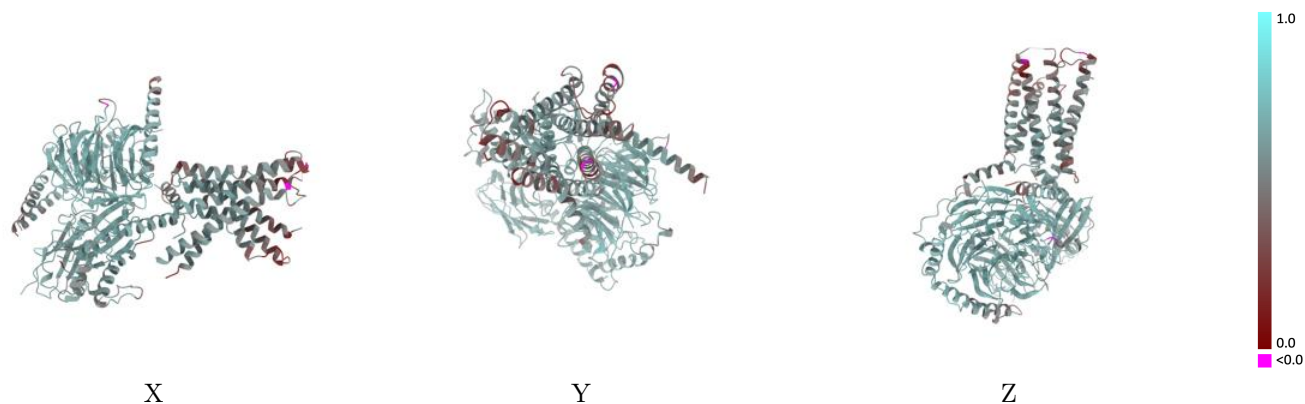
This section contains information regarding the fit between EMDB map EMD-24825 and PDB model 7S3I. Per-residue inclusion information can be found in section 3 on page 6.

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



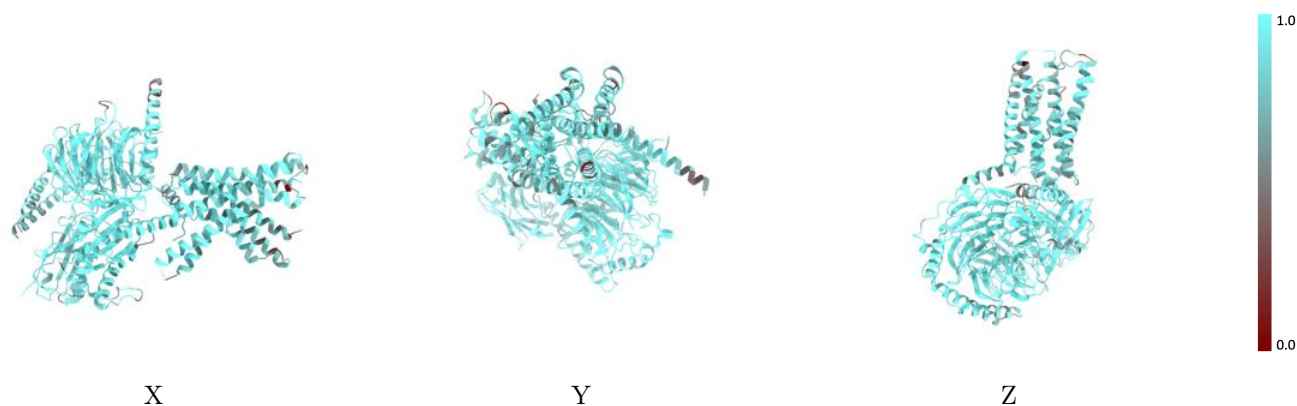
The images above show the 3D surface view of the map at the recommended contour level 0.0091 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



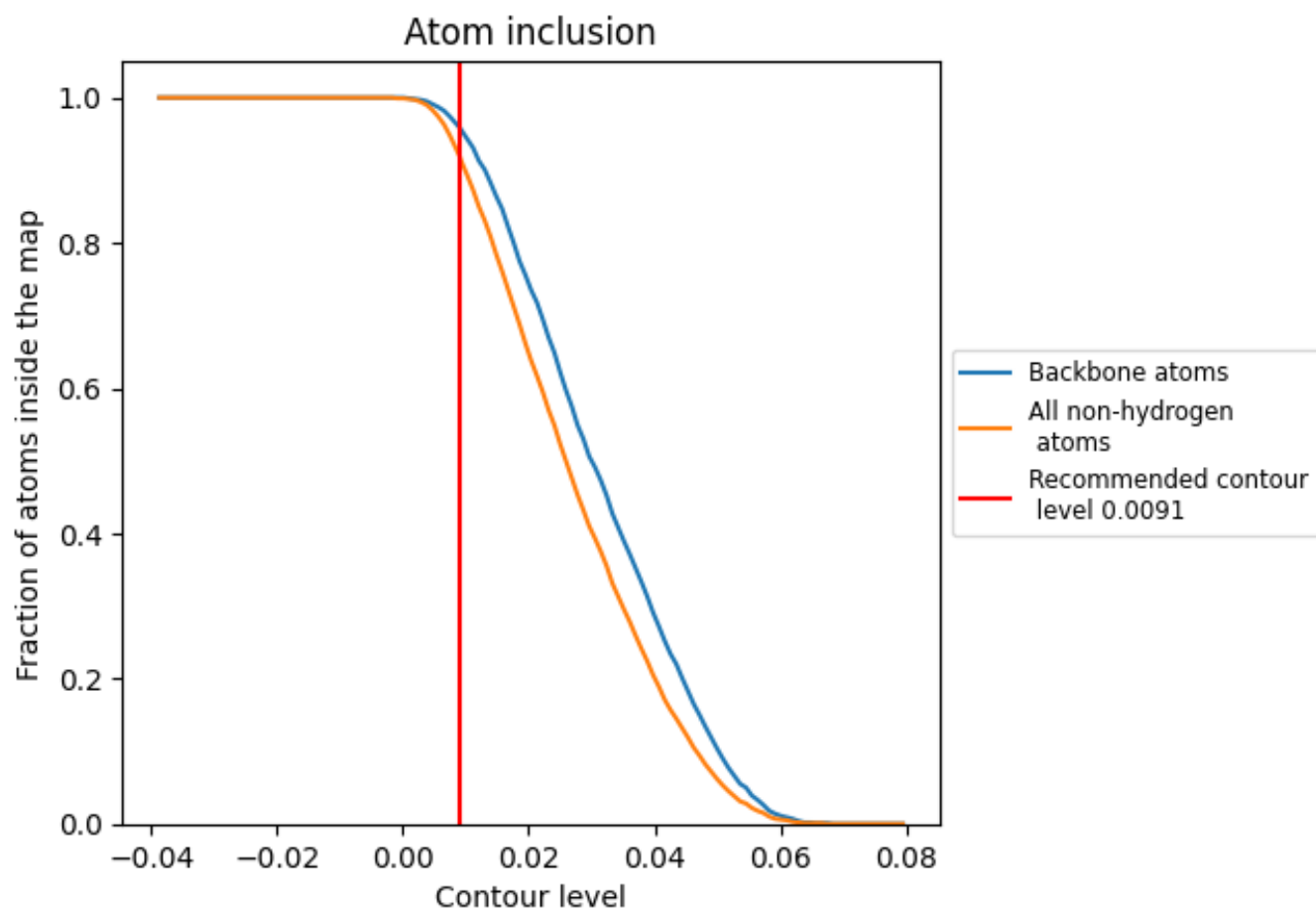
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0091).













## 9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 92% 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 (0.0091) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9180	 0.5800
A	 0.9120	 0.5840
B	 0.9610	 0.6370
G	 0.8950	 0.5710
N	 0.9650	 0.6280
R	 0.8540	 0.4880

