



Full wwPDB EM Validation Report ⓘ

Aug 31, 2026 – 06:19 PM JST

PDB ID : 9WNS / pdb_00009wns
EMDB ID : EMD-66123
Title : Cryo-EM structure of TtCoAT-ADLP complex in ligand-free form
Authors : Yoshida, A.; Miyata, T.; Namba, K.; Nishiyama, M.
Deposited on : 2025-09-05
Resolution : 2.69 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.dev133
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) : 2.50

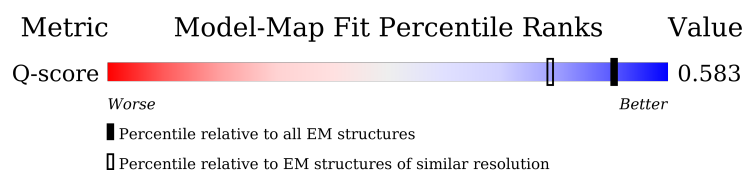
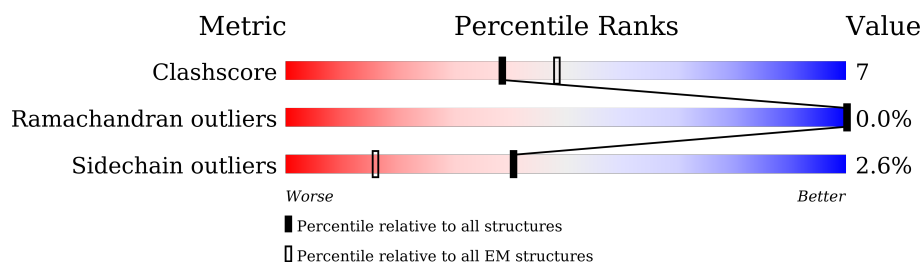
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.69 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.



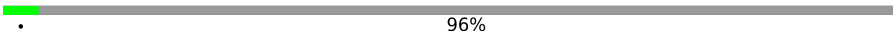
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	9309 (2.19 - 3.19)

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	A	358	
1	B	358	
1	C	358	
1	D	358	

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Mol	Chain	Length	Quality of chain
1	E	358	 76%13%10%
1	F	358	 73%15%11%
2	G	450	 74%20%6%
2	H	450	 74%19%6%
2	K	450	 18%80%
2	L	450	 96%

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 20946 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 alanine dehydrogenase.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	316	Total	C	N	O	S	0	0
			2282	1461	411	402	8		
1	B	333	Total	C	N	O	S	0	0
			2453	1562	446	436	9		
1	C	320	Total	C	N	O	S	0	0
			2295	1469	415	403	8		
1	D	321	Total	C	N	O	S	1	0
			2361	1507	431	414	9		
1	E	323	Total	C	N	O	S	0	0
			2309	1476	412	413	8		
1	F	320	Total	C	N	O	S	0	0
			2318	1481	416	412	9		

There are 78 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-12	MET	-	initiating methionine	UNP Q72IQ0
A	-11	ALA	-	expression tag	UNP Q72IQ0
A	-10	SER	-	expression tag	UNP Q72IQ0
A	-9	TRP	-	expression tag	UNP Q72IQ0
A	-8	SER	-	expression tag	UNP Q72IQ0
A	-7	HIS	-	expression tag	UNP Q72IQ0
A	-6	PRO	-	expression tag	UNP Q72IQ0
A	-5	GLN	-	expression tag	UNP Q72IQ0
A	-4	PHE	-	expression tag	UNP Q72IQ0
A	-3	GLU	-	expression tag	UNP Q72IQ0
A	-2	LYS	-	expression tag	UNP Q72IQ0
A	-1	GLY	-	expression tag	UNP Q72IQ0
A	0	GLY	-	expression tag	UNP Q72IQ0
B	-12	MET	-	initiating methionine	UNP Q72IQ0
B	-11	ALA	-	expression tag	UNP Q72IQ0
B	-10	SER	-	expression tag	UNP Q72IQ0
B	-9	TRP	-	expression tag	UNP Q72IQ0
B	-8	SER	-	expression tag	UNP Q72IQ0

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-7	HIS	-	expression tag	UNP Q72IQ0
B	-6	PRO	-	expression tag	UNP Q72IQ0
B	-5	GLN	-	expression tag	UNP Q72IQ0
B	-4	PHE	-	expression tag	UNP Q72IQ0
B	-3	GLU	-	expression tag	UNP Q72IQ0
B	-2	LYS	-	expression tag	UNP Q72IQ0
B	-1	GLY	-	expression tag	UNP Q72IQ0
B	0	GLY	-	expression tag	UNP Q72IQ0
C	-12	MET	-	initiating methionine	UNP Q72IQ0
C	-11	ALA	-	expression tag	UNP Q72IQ0
C	-10	SER	-	expression tag	UNP Q72IQ0
C	-9	TRP	-	expression tag	UNP Q72IQ0
C	-8	SER	-	expression tag	UNP Q72IQ0
C	-7	HIS	-	expression tag	UNP Q72IQ0
C	-6	PRO	-	expression tag	UNP Q72IQ0
C	-5	GLN	-	expression tag	UNP Q72IQ0
C	-4	PHE	-	expression tag	UNP Q72IQ0
C	-3	GLU	-	expression tag	UNP Q72IQ0
C	-2	LYS	-	expression tag	UNP Q72IQ0
C	-1	GLY	-	expression tag	UNP Q72IQ0
C	0	GLY	-	expression tag	UNP Q72IQ0
D	-12	MET	-	initiating methionine	UNP Q72IQ0
D	-11	ALA	-	expression tag	UNP Q72IQ0
D	-10	SER	-	expression tag	UNP Q72IQ0
D	-9	TRP	-	expression tag	UNP Q72IQ0
D	-8	SER	-	expression tag	UNP Q72IQ0
D	-7	HIS	-	expression tag	UNP Q72IQ0
D	-6	PRO	-	expression tag	UNP Q72IQ0
D	-5	GLN	-	expression tag	UNP Q72IQ0
D	-4	PHE	-	expression tag	UNP Q72IQ0
D	-3	GLU	-	expression tag	UNP Q72IQ0
D	-2	LYS	-	expression tag	UNP Q72IQ0
D	-1	GLY	-	expression tag	UNP Q72IQ0
D	0	GLY	-	expression tag	UNP Q72IQ0
E	-12	MET	-	initiating methionine	UNP Q72IQ0
E	-11	ALA	-	expression tag	UNP Q72IQ0
E	-10	SER	-	expression tag	UNP Q72IQ0
E	-9	TRP	-	expression tag	UNP Q72IQ0
E	-8	SER	-	expression tag	UNP Q72IQ0
E	-7	HIS	-	expression tag	UNP Q72IQ0
E	-6	PRO	-	expression tag	UNP Q72IQ0
E	-5	GLN	-	expression tag	UNP Q72IQ0

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Chain	Residue	Modelled	Actual	Comment	Reference
E	-4	PHE	-	expression tag	UNP Q72IQ0
E	-3	GLU	-	expression tag	UNP Q72IQ0
E	-2	LYS	-	expression tag	UNP Q72IQ0
E	-1	GLY	-	expression tag	UNP Q72IQ0
E	0	GLY	-	expression tag	UNP Q72IQ0
F	-12	MET	-	initiating methionine	UNP Q72IQ0
F	-11	ALA	-	expression tag	UNP Q72IQ0
F	-10	SER	-	expression tag	UNP Q72IQ0
F	-9	TRP	-	expression tag	UNP Q72IQ0
F	-8	SER	-	expression tag	UNP Q72IQ0
F	-7	HIS	-	expression tag	UNP Q72IQ0
F	-6	PRO	-	expression tag	UNP Q72IQ0
F	-5	GLN	-	expression tag	UNP Q72IQ0
F	-4	PHE	-	expression tag	UNP Q72IQ0
F	-3	GLU	-	expression tag	UNP Q72IQ0
F	-2	LYS	-	expression tag	UNP Q72IQ0
F	-1	GLY	-	expression tag	UNP Q72IQ0
F	0	GLY	-	expression tag	UNP Q72IQ0

- Molecule 2 is a protein called 4-hydroxybutyrate coenzyme A transferase.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	G	425	Total	C	N	O	S	1	0
			3158	2022	563	563	10		
2	H	424	Total	C	N	O	S	0	0
			3095	1986	554	545	10		
2	K	88	Total	C	N	O	S	0	0
			569	363	103	102	1		
2	L	17	Total	C	N	O		0	0
			106	66	21	19			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	445	HIS	-	expression tag	UNP Q72IP9
G	446	HIS	-	expression tag	UNP Q72IP9
G	447	HIS	-	expression tag	UNP Q72IP9
G	448	HIS	-	expression tag	UNP Q72IP9
G	449	HIS	-	expression tag	UNP Q72IP9
G	450	HIS	-	expression tag	UNP Q72IP9
H	445	HIS	-	expression tag	UNP Q72IP9
H	446	HIS	-	expression tag	UNP Q72IP9

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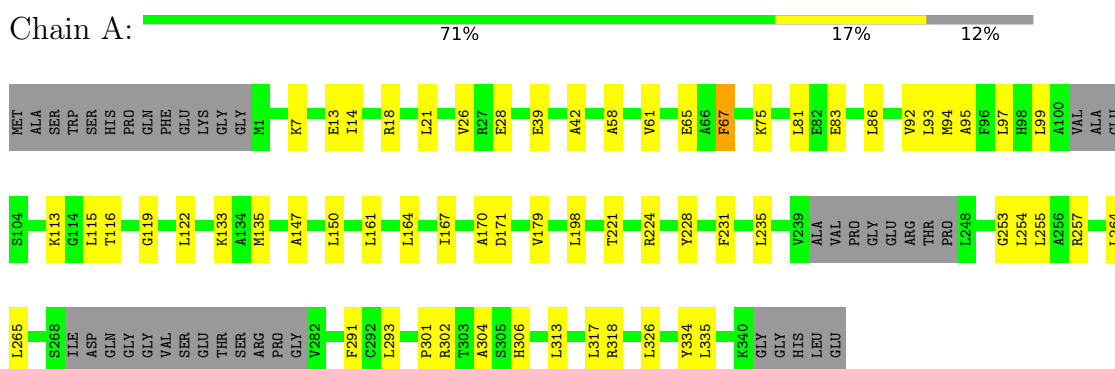
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Chain	Residue	Modelled	Actual	Comment	Reference
H	447	HIS	-	expression tag	UNP Q72IP9
H	448	HIS	-	expression tag	UNP Q72IP9
H	449	HIS	-	expression tag	UNP Q72IP9
H	450	HIS	-	expression tag	UNP Q72IP9
K	445	HIS	-	expression tag	UNP Q72IP9
K	446	HIS	-	expression tag	UNP Q72IP9
K	447	HIS	-	expression tag	UNP Q72IP9
K	448	HIS	-	expression tag	UNP Q72IP9
K	449	HIS	-	expression tag	UNP Q72IP9
K	450	HIS	-	expression tag	UNP Q72IP9
L	445	HIS	-	expression tag	UNP Q72IP9
L	446	HIS	-	expression tag	UNP Q72IP9
L	447	HIS	-	expression tag	UNP Q72IP9
L	448	HIS	-	expression tag	UNP Q72IP9
L	449	HIS	-	expression tag	UNP Q72IP9
L	450	HIS	-	expression tag	UNP Q72IP9

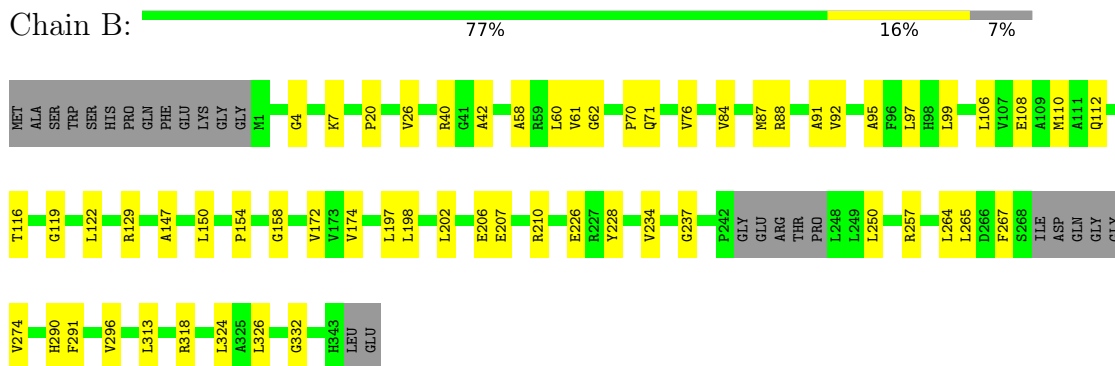
3 Residue-property plots [i](#)

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.

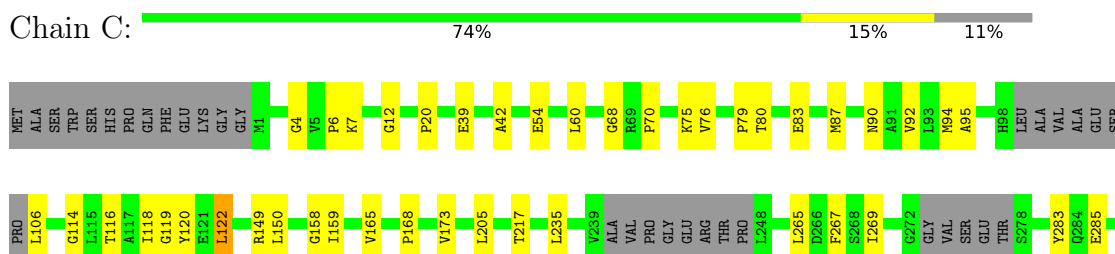
- Molecule 1: alanine dehydrogenase



- Molecule 1: alanine dehydrogenase



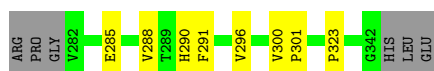
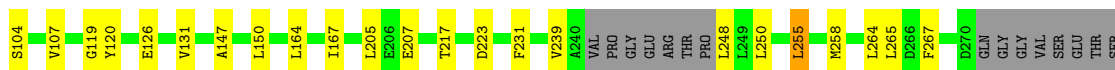
- Molecule 1: alanine dehydrogenase





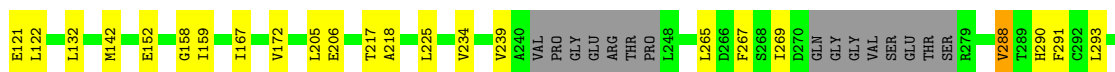
- Molecule 1: alanine dehydrogenase

Chain D: 75% 15% 10%



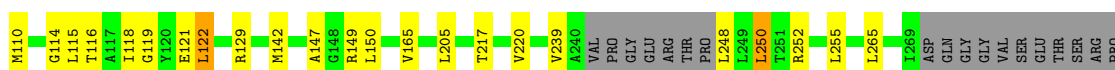
- Molecule 1: alanine dehydrogenase

Chain E: 76% 13% 10%



- Molecule 1: alanine dehydrogenase

Chain F: 73% 15% 11%



- Molecule 2: 4-hydroxybutyrate coenzyme A transferase

Chain G: 74% 20% 6%





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	281272	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	80	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	60000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.135	Depositor
Minimum map value	-1.195	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.042	Depositor
Recommended contour level	0.125	Depositor
Map size (Å)	348.12, 348.12, 348.12	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.967, 0.967, 0.967	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	0.14	0/2322	0.28	0/3158
1	B	0.15	0/2498	0.30	0/3392
1	C	0.14	0/2336	0.29	0/3178
1	D	0.16	0/2405	0.32	1/3262 (0.0%)
1	E	0.15	0/2351	0.32	0/3203
1	F	0.15	0/2359	0.32	0/3206
2	G	0.15	0/3230	0.32	0/4401
2	H	0.14	0/3165	0.32	0/4315
2	K	0.10	0/581	0.25	0/800
2	L	0.08	0/108	0.24	0/150
All	All	0.15	0/21355	0.31	1/29065 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	126	GLU	CB-CA-C	-5.12	110.69	116.63

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	2282	0	2332	39	0
1	B	2453	0	2530	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	2295	0	2327	34	0
1	D	2361	0	2438	34	0
1	E	2309	0	2323	30	0
1	F	2318	0	2365	34	0
2	G	3158	0	3136	56	0
2	H	3095	0	3043	56	0
2	K	569	0	463	3	0
2	L	106	0	80	0	0
All	All	20946	0	21037	307	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 7.

All (307) 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)
1:E:116:THR:HG21	1:E:324:LEU:HD11	1.61	0.83
2:G:183:LYS:H	2:G:183:LYS:HD3	1.49	0.77
1:A:61:VAL:HB	1:A:65:GLU:HG3	1.68	0.75
1:F:252:ARG:HA	1:F:255:LEU:HB2	1.68	0.75
1:E:87:MET:HE2	1:E:115:LEU:HD22	1.71	0.73
1:F:14:ILE:HD11	1:F:293:LEU:HD21	1.69	0.73
1:E:122:LEU:HB2	1:E:332:GLY:HA2	1.70	0.72
1:E:14:ILE:HD11	1:E:293:LEU:HD23	1.72	0.71
2:G:235:MET:HE2	2:G:237:SER:HB3	1.73	0.69
2:G:232:HIS:HB3	2:G:302:MET:HE1	1.74	0.69
1:B:154:PRO:HB3	1:D:17[B]:ARG:HH12	1.57	0.69
2:H:21:MET:HG2	2:H:113:ASP:HB2	1.73	0.68
2:G:412:ARG:HA	2:G:415:LEU:HD12	1.76	0.67
1:E:87:MET:HE1	1:E:93:LEU:HB2	1.77	0.67
1:B:88:ARG:HG3	1:B:91:ALA:HB2	1.78	0.66
1:C:94:MET:HG3	1:C:118:ILE:HB	1.78	0.65
1:C:92:VAL:HG22	1:C:116:THR:HB	1.78	0.65
1:E:121:GLU:HG2	1:E:122:LEU:HG	1.79	0.65
1:A:150:LEU:HD11	1:A:291:PHE:HB2	1.79	0.65
1:A:301:PRO:HD2	1:E:158:GLY:HA3	1.80	0.64
2:G:285:HIS:HB2	2:G:290:VAL:HG23	1.79	0.64
1:F:220:VAL:HG21	1:F:248:LEU:HD13	1.80	0.64
2:G:313:LEU:HD12	2:G:364:PRO:HB3	1.78	0.64
2:H:317:VAL:HB	2:H:374:THR:HB	1.81	0.63
1:D:4:GLY:HA3	1:D:70:PRO:HG3	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:18:ARG:HH11	1:A:135:MET:HE2	1.61	0.63
1:A:255:LEU:HD21	1:A:264:LEU:HD22	1.81	0.63
1:A:7:LYS:HG2	1:A:42:ALA:HA	1.80	0.62
2:H:62:PHE:HA	2:H:67:MET:HE3	1.82	0.61
1:C:150:LEU:HD11	1:C:291:PHE:HB2	1.82	0.61
1:F:205:LEU:HD22	1:F:217:THR:HB	1.81	0.61
2:G:292:ASP:HB2	2:H:342:ARG:HH21	1.65	0.61
1:C:7:LYS:HG2	1:C:42:ALA:HA	1.83	0.60
2:G:198:VAL:HG23	2:G:383:VAL:HG11	1.82	0.60
1:C:319:ILE:HG12	1:C:323:PRO:HA	1.84	0.60
2:G:389:ALA:HB2	2:G:406:ILE:HG13	1.82	0.60
2:G:192:ARG:O	2:G:196:GLU:HG3	2.01	0.60
1:B:226:GLU:HG2	1:B:257:ARG:HH21	1.67	0.59
1:D:26:VAL:HG11	1:D:58:ALA:HB2	1.83	0.59
1:F:2:GLU:HG3	1:F:71:GLN:H	1.66	0.59
1:F:122:LEU:HA	1:F:129:ARG:HH11	1.67	0.59
1:D:40:ARG:HG2	1:D:60:LEU:HD12	1.84	0.58
1:C:326:LEU:HD12	1:C:329:LEU:HD12	1.84	0.58
1:D:267:PHE:HD2	1:D:296:VAL:HG21	1.69	0.58
1:D:2:GLU:HB2	1:D:71:GLN:HG3	1.84	0.58
1:B:265:LEU:HD23	1:B:291:PHE:HB3	1.86	0.57
1:D:61:VAL:HB	1:D:65:GLU:HB2	1.86	0.57
2:H:5:LYS:HD3	2:H:6:LYS:N	2.18	0.57
1:B:4:GLY:HA3	1:B:70:PRO:HG3	1.87	0.57
2:G:235:MET:HB2	2:G:265:PHE:CZ	2.39	0.57
1:A:306:HIS:HB3	1:E:167:ILE:HG12	1.85	0.57
1:E:113:LYS:HB3	1:E:115:LEU:HG	1.87	0.57
1:F:94:MET:HG3	1:F:118:ILE:HB	1.86	0.57
1:F:92:VAL:HG21	1:F:323:PRO:HG3	1.86	0.57
2:H:34:PRO:HD2	2:H:150:MET:HE1	1.85	0.57
1:D:285:GLU:HB3	1:D:290:HIS:CE1	2.40	0.57
2:H:23:VAL:HG22	2:H:114:ALA:HB3	1.86	0.57
1:B:108:GLU:O	1:B:112:GLN:HG2	2.04	0.57
1:F:61:VAL:HB	1:F:65:GLU:HB2	1.87	0.57
1:A:92:VAL:HG22	1:A:116:THR:HB	1.87	0.56
1:A:198:LEU:HD11	1:A:228:TYR:HD2	1.70	0.56
1:C:159:ILE:HD11	1:F:302:ARG:HH11	1.69	0.56
2:G:21:MET:HG2	2:G:113:ASP:HB2	1.87	0.56
2:H:285:HIS:HB2	2:H:290:VAL:HG23	1.87	0.56
1:B:150:LEU:HD11	1:B:291:PHE:HB2	1.88	0.56
1:B:84:VAL:HA	1:B:87:MET:HE3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:110:MET:HG3	1:F:115:LEU:HB2	1.87	0.56
2:H:311:VAL:HG22	2:H:317:VAL:HG22	1.87	0.56
2:H:350:ILE:HD13	2:H:379:VAL:HG23	1.86	0.56
2:K:156:PRO:HB3	2:K:277:HIS:HB2	1.86	0.56
1:D:92:VAL:HG21	1:D:323:PRO:HG2	1.88	0.55
2:G:210:MET:HE3	2:G:220:LEU:HD21	1.89	0.55
1:C:283:TYR:HD2	1:C:285:GLU:HG3	1.70	0.55
1:C:68:GLY:HA2	1:C:87:MET:HA	1.87	0.55
1:B:7:LYS:HG3	1:B:42:ALA:HA	1.88	0.55
1:D:265:LEU:HD23	1:D:291:PHE:HB3	1.88	0.55
2:H:130:LEU:HB2	2:H:134:VAL:HG22	1.89	0.55
1:F:27:ARG:HG3	1:F:56:ALA:HA	1.89	0.54
2:H:161:ASP:HB3	2:H:286:PRO:HD3	1.89	0.54
1:F:122:LEU:HB2	1:F:332:GLY:HA2	1.89	0.54
1:A:135:MET:HE1	1:A:304:ALA:HB1	1.88	0.54
1:E:172:VAL:HG22	1:E:234:VAL:HB	1.89	0.54
1:B:92:VAL:HG22	1:B:116:THR:HB	1.89	0.53
2:G:54:LEU:HD13	2:G:76:LEU:HB2	1.89	0.53
1:A:235:LEU:HD23	1:A:264:LEU:HD13	1.90	0.53
1:D:87:MET:HE1	1:D:93:LEU:HD22	1.90	0.53
1:D:205:LEU:HD22	1:D:217:THR:HB	1.89	0.53
1:B:250:LEU:HD12	1:B:274:VAL:HG13	1.91	0.53
2:G:311:VAL:HG22	2:G:317:VAL:HG22	1.90	0.53
2:H:353:PRO:HG2	2:H:361:ARG:HE	1.72	0.53
2:H:99:HIS:HB3	2:H:291:ASN:HB3	1.90	0.53
2:H:409:PRO:HA	2:H:412:ARG:HB2	1.90	0.53
1:A:254:LEU:HD23	1:A:257:ARG:HD3	1.90	0.53
1:D:17[B]:ARG:HB3	1:D:45:GLY:HA3	1.91	0.52
2:G:334:LEU:HD21	2:G:338:ARG:HH21	1.74	0.52
2:H:202:ILE:HG23	2:H:303:VAL:HG21	1.90	0.52
1:C:54:GLU:HG2	1:C:60:LEU:HD23	1.90	0.52
1:D:79:PRO:HG3	1:D:93:LEU:HD21	1.91	0.52
1:A:253:GLY:O	1:A:257:ARG:HG3	2.09	0.52
1:F:104:SER:HB2	1:F:107:VAL:HG12	1.90	0.52
1:D:65:GLU:O	1:D:69:ARG:HB3	2.09	0.52
1:A:161:LEU:HD23	1:A:170:ALA:HB3	1.92	0.52
1:F:95:ALA:O	1:F:119:GLY:HA2	2.10	0.52
1:B:264:LEU:HD23	1:B:290:HIS:CD2	2.45	0.52
1:B:267:PHE:HE1	1:B:296:VAL:HG21	1.74	0.52
2:G:23:VAL:HB	2:G:51:LEU:HD23	1.91	0.52
2:H:256:LEU:HB3	2:H:299:ASN:OD1	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:347:ARG:HD2	2:G:381:TYR:CE2	2.45	0.51
2:H:152:ASN:HD21	2:H:154:ARG:HB2	1.75	0.51
1:C:12:GLY:HA2	2:K:159:LEU:HD21	1.93	0.51
1:B:95:ALA:O	1:B:119:GLY:HA2	2.11	0.51
1:E:319:ILE:HD13	1:E:323:PRO:HB3	1.93	0.51
1:D:7:LYS:HB2	1:D:42:ALA:HA	1.91	0.51
2:H:314:THR:HG21	2:H:376:ARG:HE	1.75	0.51
1:A:113:LYS:HB3	1:A:115:LEU:HG	1.92	0.51
1:C:95:ALA:O	1:C:119:GLY:HA2	2.11	0.51
1:C:75:LYS:HE2	1:C:79:PRO:HB3	1.91	0.50
1:C:114:GLY:HA2	1:C:338:GLY:HA3	1.92	0.50
2:G:315:GLY:O	2:G:379:VAL:HG21	2.11	0.50
2:G:161:ASP:HB3	2:G:286:PRO:HD3	1.92	0.50
1:D:147:ALA:HB2	1:D:265:LEU:HD11	1.93	0.50
2:G:342:ARG:HG2	2:H:103:TRP:HH2	1.77	0.50
2:H:383:VAL:HG22	2:H:388:VAL:HG13	1.91	0.50
1:F:116:THR:HG21	1:F:324:LEU:HD21	1.92	0.50
2:G:4[A]:ARG:HA	2:G:7:LEU:HD22	1.92	0.50
2:G:391:LEU:HG	2:G:399:ARG:HG2	1.92	0.50
2:H:29:ALA:HB3	2:H:132:VAL:HG21	1.94	0.50
2:H:254:LYS:HB2	2:H:258:PRO:HA	1.93	0.50
1:C:173:VAL:HB	1:C:235:LEU:HD12	1.94	0.50
1:A:18:ARG:NH1	1:A:135:MET:HE2	2.25	0.49
2:G:132:VAL:HA	2:G:266:VAL:HG13	1.94	0.49
1:B:147:ALA:HB2	1:B:265:LEU:HD11	1.93	0.49
1:B:26:VAL:HG11	1:B:58:ALA:HB2	1.93	0.49
1:D:288:VAL:HG12	1:D:290:HIS:HD2	1.78	0.49
2:H:5:LYS:HD3	2:H:6:LYS:HG3	1.95	0.49
1:D:104:SER:HB3	1:D:107:VAL:HG23	1.93	0.49
1:D:150:LEU:HD11	1:D:291:PHE:HB2	1.94	0.49
1:D:239:VAL:HG21	1:D:248:LEU:HA	1.94	0.49
1:E:37:TYR:HD2	1:E:61:VAL:HG11	1.77	0.48
1:F:20:PRO:HA	1:F:308:LEU:HD13	1.95	0.48
2:G:190:VAL:O	2:G:194:ILE:HG13	2.13	0.48
1:D:17[A]:ARG:HB3	1:D:45:GLY:HA3	1.95	0.48
1:A:95:ALA:O	1:A:119:GLY:HA2	2.13	0.48
1:B:318:ARG:HB2	1:B:326:LEU:HD21	1.94	0.48
1:A:7:LYS:HG3	1:A:39:GLU:HG2	1.96	0.48
2:H:22:ARG:HD2	2:H:112:LEU:HD23	1.96	0.48
1:E:121:GLU:HA	1:E:132:LEU:HD13	1.94	0.48
1:E:267:PHE:HE1	1:E:296:VAL:HG21	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:17:ILE:HA	2:H:21:MET:HE1	1.95	0.48
1:A:133:LYS:HG3	1:A:179:VAL:HG21	1.96	0.48
1:E:89:LYS:HA	1:E:113:LYS:HD3	1.96	0.48
2:G:103:TRP:O	2:G:107:ARG:HB2	2.13	0.48
2:G:4[B]:ARG:HA	2:G:7:LEU:HD22	1.94	0.48
1:C:79:PRO:HB2	1:C:83:GLU:HG3	1.96	0.47
1:F:121:GLU:HG2	1:F:122:LEU:HD22	1.96	0.47
2:G:6:LYS:HB2	2:G:172:ILE:HD12	1.96	0.47
1:B:20:PRO:HD3	1:B:76:VAL:HG23	1.96	0.47
1:F:142:MET:HE3	1:F:142:MET:HB3	1.76	0.47
1:A:28:GLU:HG2	1:A:317:LEU:HD11	1.95	0.47
1:B:106:LEU:O	1:B:110:MET:HG3	2.14	0.47
1:B:172:VAL:HG22	1:B:234:VAL:HB	1.96	0.47
1:E:142:MET:HE3	1:E:142:MET:HB3	1.79	0.47
1:F:17:ARG:HB3	1:F:45:GLY:HA3	1.97	0.47
2:G:374:THR:HG23	2:G:378:ASP:HB2	1.95	0.47
1:B:313:LEU:HD12	1:B:313:LEU:HA	1.79	0.47
1:D:258:MET:HE1	1:D:288:VAL:HG11	1.96	0.47
2:G:23:VAL:HA	2:G:114:ALA:O	2.15	0.47
2:G:173:VAL:HG12	2:G:175:VAL:HG23	1.96	0.47
2:G:402:ALA:O	2:G:406:ILE:HG12	2.15	0.47
1:D:164:LEU:HD12	1:D:167:ILE:HD13	1.97	0.46
1:B:116:THR:HG21	1:B:324:LEU:HD11	1.96	0.46
1:C:205:LEU:HD22	1:C:217:THR:HB	1.98	0.46
1:E:95:ALA:O	1:E:119:GLY:HA2	2.15	0.46
1:C:20:PRO:HD3	1:C:76:VAL:HG23	1.97	0.46
1:B:71:GLN:HG3	1:B:88:ARG:HH11	1.79	0.46
1:C:4:GLY:HA3	1:C:70:PRO:HG3	1.97	0.46
1:A:7:LYS:HE2	1:A:7:LYS:HB3	1.80	0.46
1:C:269:ILE:HG13	1:C:292:CYS:HB3	1.98	0.46
2:G:23:VAL:HG22	2:G:114:ALA:HB3	1.97	0.46
2:G:408:HIS:O	2:G:412:ARG:HG3	2.16	0.46
2:H:353:PRO:HG2	2:H:361:ARG:NE	2.31	0.46
2:H:408:HIS:ND1	2:H:409:PRO:HD2	2.30	0.46
1:A:122:LEU:HD12	1:A:334:TYR:CE1	2.51	0.46
1:B:198:LEU:HD11	1:B:228:TYR:HD2	1.79	0.46
2:H:389:ALA:HB2	2:H:406:ILE:HD12	1.98	0.46
1:A:99:LEU:HB2	1:A:334:TYR:CD2	2.51	0.46
1:A:116:THR:HA	1:A:335:LEU:O	2.15	0.46
2:G:184:ARG:HH11	2:G:238:ASP:HB3	1.81	0.46
1:D:95:ALA:O	1:D:119:GLY:HA2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:265:LEU:HD23	1:C:291:PHE:HB3	1.98	0.45
1:D:29:LEU:HD23	1:D:29:LEU:HA	1.87	0.45
1:E:2:GLU:HB2	1:E:71:GLN:H	1.81	0.45
2:G:422:ARG:HG3	2:G:424:LEU:HD23	1.98	0.45
1:A:13:GLU:HB3	1:A:14:ILE:H	1.59	0.45
1:F:41:GLY:HA2	1:F:44:GLU:HG3	1.96	0.45
1:B:174:VAL:HB	1:B:197:LEU:HD13	1.97	0.45
1:C:168:PRO:HG3	1:E:218:ALA:HB2	1.98	0.45
2:H:194:ILE:HD11	2:H:353:PRO:HA	1.97	0.45
1:E:288:VAL:HG22	1:E:290:HIS:CE1	2.51	0.45
1:A:26:VAL:HG11	1:A:58:ALA:HB2	1.99	0.45
1:F:3:PHE:HA	1:F:72:VAL:O	2.17	0.45
1:F:265:LEU:HD23	1:F:291:PHE:HB3	1.98	0.45
2:H:213:GLY:N	2:H:216:PRO:HG2	2.32	0.45
1:A:122:LEU:HD12	1:A:334:TYR:HE1	1.82	0.45
1:D:267:PHE:CD2	1:D:296:VAL:HG21	2.51	0.45
1:B:158:GLY:HA3	1:D:301:PRO:HD2	1.98	0.45
1:B:206:GLU:HG3	1:F:165:VAL:HG11	1.99	0.45
2:H:313:LEU:HD11	2:H:404:ILE:HG13	1.98	0.45
1:C:122:LEU:HB2	1:C:332:GLY:HA2	1.99	0.44
1:E:205:LEU:HD22	1:E:217:THR:HB	1.99	0.44
2:G:4[B]:ARG:H	2:G:7:LEU:HD13	1.82	0.44
2:H:98:LEU:HD12	2:H:98:LEU:HA	1.85	0.44
2:H:132:VAL:O	2:H:265:PHE:HB2	2.18	0.44
1:B:40:ARG:HA	1:B:60:LEU:HD12	2.00	0.44
1:C:267:PHE:CE1	1:C:296:VAL:HG21	2.53	0.44
1:A:94:MET:HE2	1:A:94:MET:HB3	1.79	0.44
1:A:147:ALA:HB2	1:A:265:LEU:HD11	1.98	0.44
2:G:121:PRO:HA	2:G:122:PRO:HD3	1.91	0.44
2:G:291:ASN:O	2:G:335:ASP:HB3	2.17	0.44
1:B:97:LEU:HB3	1:B:99:LEU:HG	2.00	0.44
2:G:184:ARG:HH12	2:G:242:GLU:CD	2.25	0.44
1:F:114:GLY:HA2	1:F:338:GLY:HA3	1.99	0.44
2:G:183:LYS:H	2:G:183:LYS:CD	2.26	0.44
2:H:266:VAL:HG23	2:H:284:LEU:HD21	2.00	0.44
2:H:309:ILE:HG22	2:H:310:GLU:HG3	1.99	0.44
1:A:221:THR:HB	1:A:224:ARG:HB2	1.98	0.44
2:G:32:PRO:HA	2:G:150:MET:HE1	2.00	0.44
2:G:62:PHE:HA	2:G:67:MET:HE3	2.00	0.44
2:H:235:MET:HB3	2:H:265:PHE:CZ	2.53	0.44
1:B:237:GLY:HA3	1:B:274:VAL:HG11	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:61:VAL:HG23	1:B:62:GLY:O	2.18	0.43
2:G:4[A]:ARG:H	2:G:7:LEU:HD13	1.83	0.43
2:G:15:GLY:HA2	2:G:42:ARG:NE	2.32	0.43
1:F:313:LEU:HD12	1:F:313:LEU:HA	1.86	0.43
2:H:208:LEU:HB3	2:H:210:MET:HE2	2.00	0.43
2:H:384:THR:HG22	2:H:385:GLU:H	1.83	0.43
2:K:159:LEU:HD12	2:K:280:PRO:HA	2.00	0.43
1:D:255:LEU:HD21	1:D:264:LEU:HD22	2.00	0.43
1:E:265:LEU:HD23	1:E:291:PHE:HB3	1.99	0.43
1:F:47:GLY:HA3	1:F:302:ARG:HH21	1.82	0.43
2:H:181:GLU:OE1	2:H:269:SER:HA	2.19	0.43
2:G:306:ASN:HB2	2:G:333:GLN:HG3	2.01	0.43
1:C:6:PRO:HA	1:C:39:GLU:HB2	2.00	0.43
1:D:120:TYR:HB3	1:D:131:VAL:HG11	2.00	0.43
2:G:353:PRO:O	2:G:361:ARG:HD2	2.18	0.43
1:C:80:THR:HG22	1:C:83:GLU:HG2	2.00	0.43
1:E:152:GLU:HA	1:E:158:GLY:HA2	2.00	0.43
2:G:93:TYR:CD2	2:G:326:ILE:HG12	2.53	0.43
2:H:156:PRO:HB3	2:H:277:HIS:HB2	2.00	0.43
2:G:220:LEU:HD13	2:G:239:GLY:HA3	2.01	0.43
1:A:21:LEU:HD23	1:A:21:LEU:HA	1.84	0.42
1:A:67:PHE:CZ	1:A:83:GLU:HB3	2.54	0.42
1:A:302:ARG:HH11	1:E:159:ILE:HD11	1.84	0.42
1:D:250:LEU:HG	1:D:255:LEU:HD23	2.01	0.42
1:C:149:ARG:NE	1:F:149:ARG:HD3	2.35	0.42
1:F:250:LEU:HD12	1:F:255:LEU:HD11	2.00	0.42
2:G:234:GLU:O	2:G:264:THR:HG22	2.19	0.42
1:E:20:PRO:O	1:E:21:LEU:HD23	2.19	0.42
2:H:299:ASN:HD22	2:H:302:MET:CE	2.32	0.42
2:H:337:ILE:HD13	2:H:337:ILE:HA	1.89	0.42
2:H:384:THR:HG22	2:H:385:GLU:N	2.34	0.42
1:C:158:GLY:HA3	1:F:301:PRO:HD2	2.01	0.42
1:E:5:VAL:HG13	1:E:20:PRO:HG2	2.01	0.42
2:G:347:ARG:HD2	2:G:381:TYR:HE2	1.84	0.42
1:A:231:PHE:C	1:A:231:PHE:CD2	2.97	0.42
1:C:94:MET:HE3	1:C:94:MET:HB2	1.91	0.42
2:H:61:PRO:HG2	2:H:62:PHE:CD1	2.55	0.42
2:H:155:MET:HE3	2:H:155:MET:HA	2.02	0.42
1:C:283:TYR:CD2	1:C:285:GLU:HG3	2.53	0.42
1:F:147:ALA:HB2	1:F:265:LEU:HD11	2.01	0.42
2:H:102:PRO:HG2	2:H:288:ASP:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:299:ASN:HB2	2:H:302:MET:HE2	2.02	0.41
1:B:202:LEU:HD23	1:B:202:LEU:HA	1.88	0.41
1:E:99:LEU:HD23	1:E:99:LEU:HA	1.82	0.41
1:E:97:LEU:HB3	1:E:99:LEU:HG	2.03	0.41
2:H:135:ILE:HG12	2:H:264:THR:HG23	2.02	0.41
1:F:76:VAL:O	1:F:96:PHE:HB2	2.19	0.41
2:H:17:ILE:HG22	2:H:46:LEU:HD13	2.03	0.41
2:G:18:ARG:HA	2:G:18:ARG:HD3	1.86	0.41
2:G:55:LEU:HD13	2:G:79:GLY:HA3	2.02	0.41
1:D:231:PHE:CD1	1:D:231:PHE:C	2.99	0.41
2:G:238:ASP:O	2:G:242:GLU:HG3	2.20	0.41
1:B:207:GLU:HG2	1:B:210:ARG:HH21	1.85	0.41
2:H:132:VAL:HG22	2:H:155:MET:HE1	2.02	0.41
1:A:318:ARG:HB2	1:A:326:LEU:HD21	2.03	0.41
1:C:120:TYR:CE1	1:C:312:LEU:HD11	2.56	0.41
1:F:29:LEU:HD12	1:F:29:LEU:HA	1.93	0.41
1:A:28:GLU:HB3	1:A:313:LEU:HD21	2.02	0.41
1:B:84:VAL:HG11	1:B:110:MET:HG2	2.02	0.41
1:C:90:ASN:HA	1:C:114:GLY:O	2.21	0.41
2:H:103:TRP:N	2:H:103:TRP:CD1	2.88	0.41
2:H:210:MET:HB3	2:H:216:PRO:HB3	2.03	0.41
2:H:383:VAL:HG13	2:H:388:VAL:HG22	2.03	0.41
1:A:97:LEU:HB3	1:A:99:LEU:HG	2.02	0.40
1:F:150:LEU:HD11	1:F:291:PHE:HB2	2.03	0.40
2:H:408:HIS:HB3	2:H:411:PHE:HD2	1.84	0.40
1:C:318:ARG:HH21	1:C:326:LEU:HB3	1.86	0.40
1:C:165:VAL:HG11	1:E:206:GLU:HG3	2.04	0.40
2:H:334:LEU:O	2:H:338:ARG:HG3	2.21	0.40
1:B:122:LEU:HB2	1:B:332:GLY:HA2	2.03	0.40
1:A:81:LEU:HD13	1:A:81:LEU:HA	1.97	0.40
1:A:164:LEU:HD12	1:A:167:ILE:HD13	2.04	0.40
1:D:51:GLU:H	1:D:51:GLU:CD	2.29	0.40
1:D:290:HIS:CD2	1:D:290:HIS:N	2.89	0.40
1:E:17:ARG:HB3	1:E:45:GLY:HA3	2.04	0.40
2:G:99:HIS:HB3	2:G:291:ASN:HB3	2.03	0.40
2:G:235:MET:HE3	2:G:267:LEU:HB3	2.04	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	A	308/358 (86%)	296 (96%)	12 (4%)	0	100	100
1	B	327/358 (91%)	319 (98%)	8 (2%)	0	100	100
1	C	312/358 (87%)	301 (96%)	11 (4%)	0	100	100
1	D	314/358 (88%)	307 (98%)	7 (2%)	0	100	100
1	E	315/358 (88%)	304 (96%)	11 (4%)	0	100	100
1	F	312/358 (87%)	302 (97%)	10 (3%)	0	100	100
2	G	424/450 (94%)	407 (96%)	17 (4%)	0	100	100
2	H	422/450 (94%)	406 (96%)	15 (4%)	1 (0%)	43	68
2	K	80/450 (18%)	75 (94%)	5 (6%)	0	100	100
2	L	15/450 (3%)	14 (93%)	1 (7%)	0	100	100
All	All	2829/3948 (72%)	2731 (96%)	97 (3%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	H	212	ILE

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	219/268 (82%)	213 (97%)	6 (3%)	39	69
1	B	243/268 (91%)	242 (100%)	1 (0%)	84	93

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	217/268 (81%)	214 (99%)	3 (1%)	59	82
1	D	230/268 (86%)	225 (98%)	5 (2%)	45	74
1	E	219/268 (82%)	211 (96%)	8 (4%)	30	59
1	F	224/268 (84%)	219 (98%)	5 (2%)	45	74
2	G	313/362 (86%)	305 (97%)	8 (3%)	40	70
2	H	299/362 (83%)	285 (95%)	14 (5%)	23	51
2	K	44/362 (12%)	42 (96%)	2 (4%)	24	52
2	L	7/362 (2%)	7 (100%)	0	100	100
All	All	2015/3056 (66%)	1963 (97%)	52 (3%)	41	70

All (52) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	67	PHE
1	A	75	LYS
1	A	86	LEU
1	A	93	LEU
1	A	171	ASP
1	A	293	LEU
1	B	129	ARG
1	C	106	LEU
1	C	122	LEU
1	C	336	LEU
1	D	10	SER
1	D	207	GLU
1	D	223	ASP
1	D	255	LEU
1	D	300	VAL
1	E	27	ARG
1	E	92	VAL
1	E	113	LYS
1	E	225	LEU
1	E	239	VAL
1	E	269	ILE
1	E	288	VAL
1	E	296	VAL
1	F	14	ILE
1	F	122	LEU
1	F	239	VAL

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Mol	Chain	Res	Type
1	F	250	LEU
1	F	300	VAL
2	G	14	VAL
2	G	52	VAL
2	G	217	ASP
2	G	266	VAL
2	G	284	LEU
2	G	306	ASN
2	G	337	ILE
2	G	390	GLU
2	H	43	LYS
2	H	54	LEU
2	H	260	LYS
2	H	264	THR
2	H	290	VAL
2	H	291	ASN
2	H	310	GLU
2	H	312	ASP
2	H	313	LEU
2	H	318	VAL
2	H	330	PHE
2	H	347	ARG
2	H	397	ARG
2	H	406	ILE
2	K	158	THR
2	K	284	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	98	HIS
1	B	145	GLN
1	B	196	HIS
1	C	145	GLN
1	C	222	GLN
1	D	290	HIS
1	D	306	HIS
1	E	196	HIS
1	F	90	ASN
2	G	28	ASN
2	G	209	GLN
2	H	232	HIS

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Mol	Chain	Res	Type
2	H	299	ASN
2	H	306	ASN
2	K	257	HIS
2	K	285	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no 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.

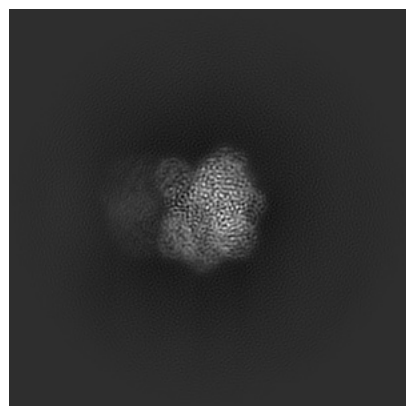
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-66123. 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](#)

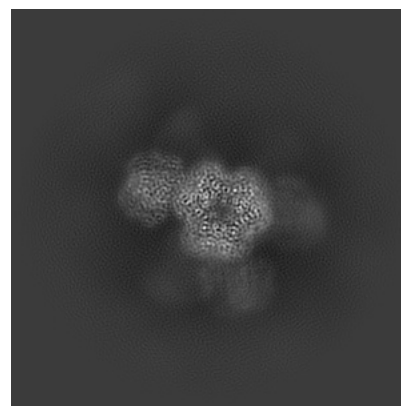
6.1.1 Primary map



X

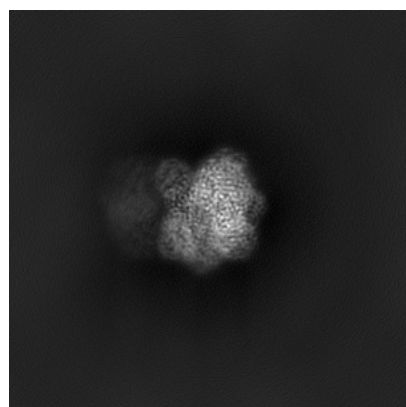


Y

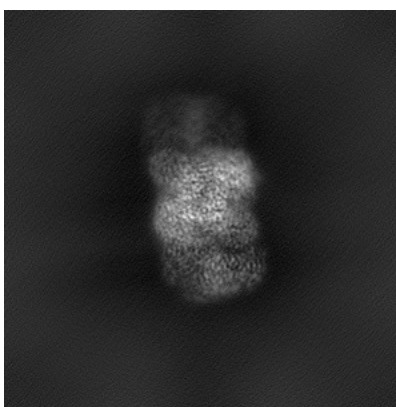


Z

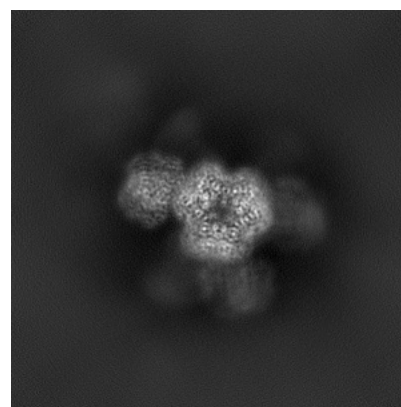
6.1.2 Raw map



X



Y

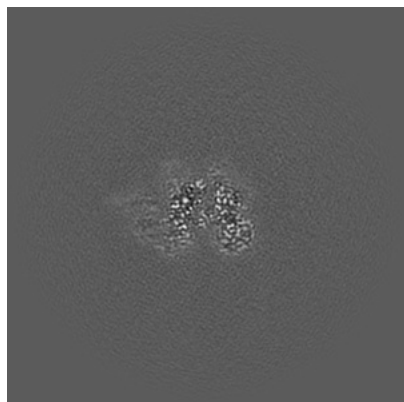


Z

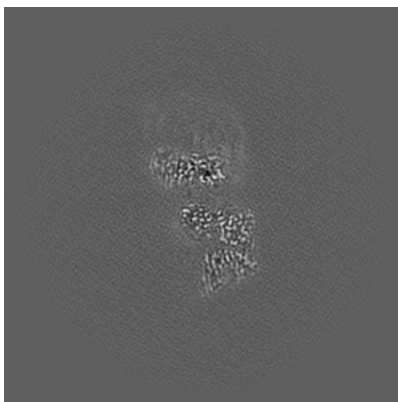
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

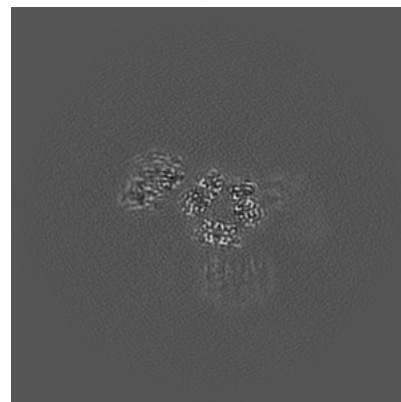
6.2.1 Primary map



X Index: 180

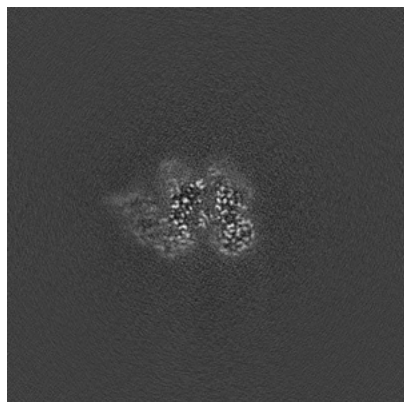


Y Index: 180

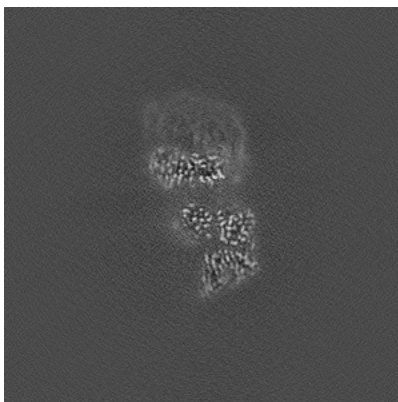


Z Index: 180

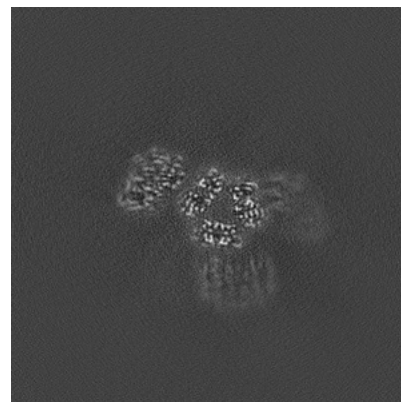
6.2.2 Raw map



X Index: 180



Y Index: 180

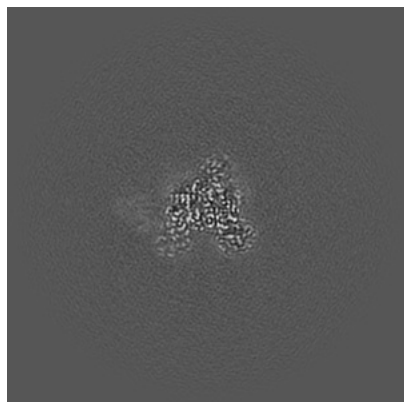


Z Index: 180

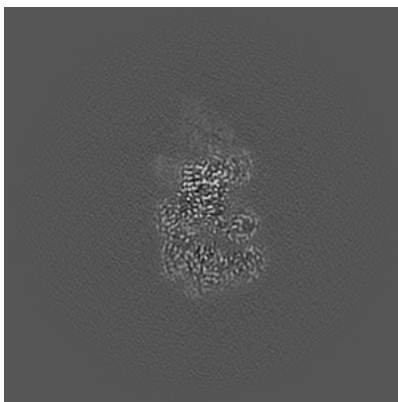
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

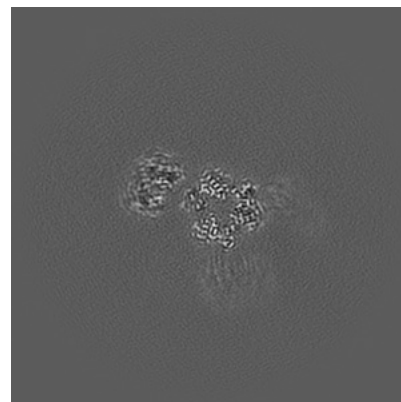
6.3.1 Primary map



X Index: 173

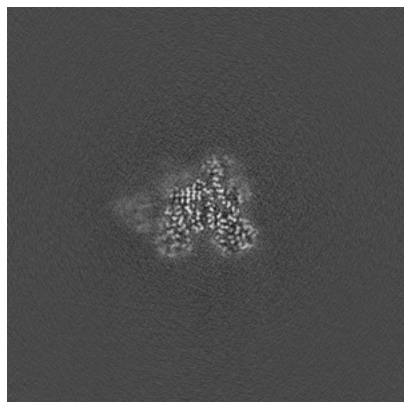


Y Index: 196

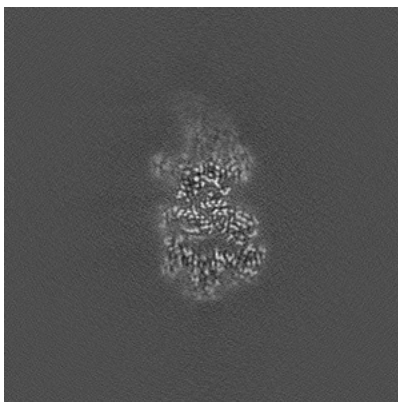


Z Index: 184

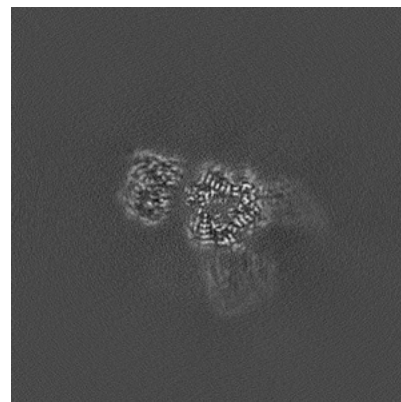
6.3.2 Raw map



X Index: 174



Y Index: 191

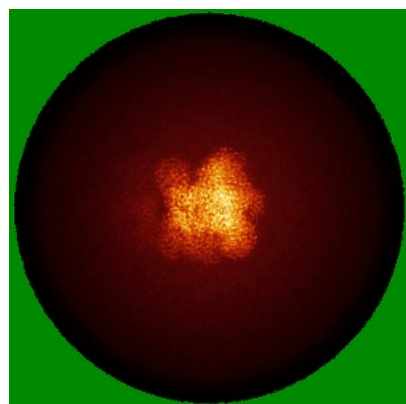


Z Index: 190

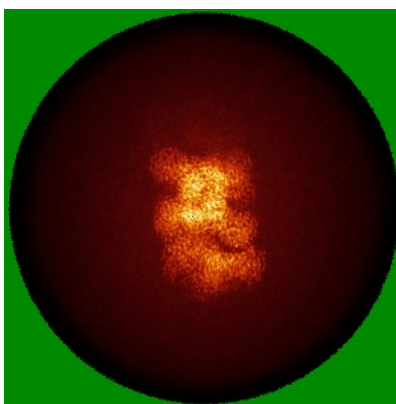
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) ⓘ

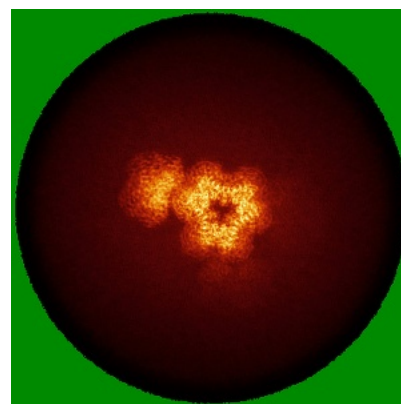
6.4.1 Primary map



X

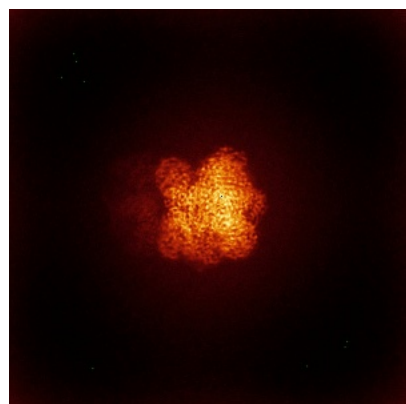


Y

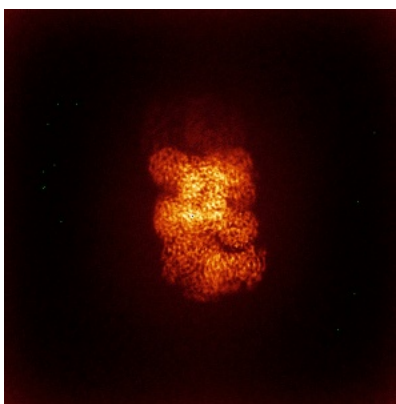


Z

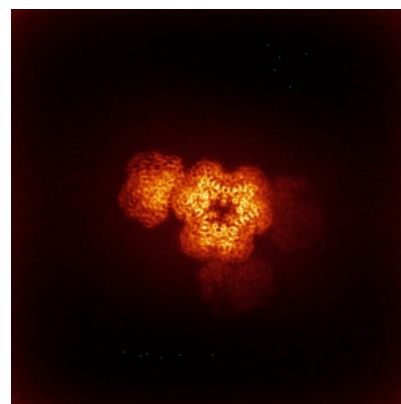
6.4.2 Raw map



X



Y

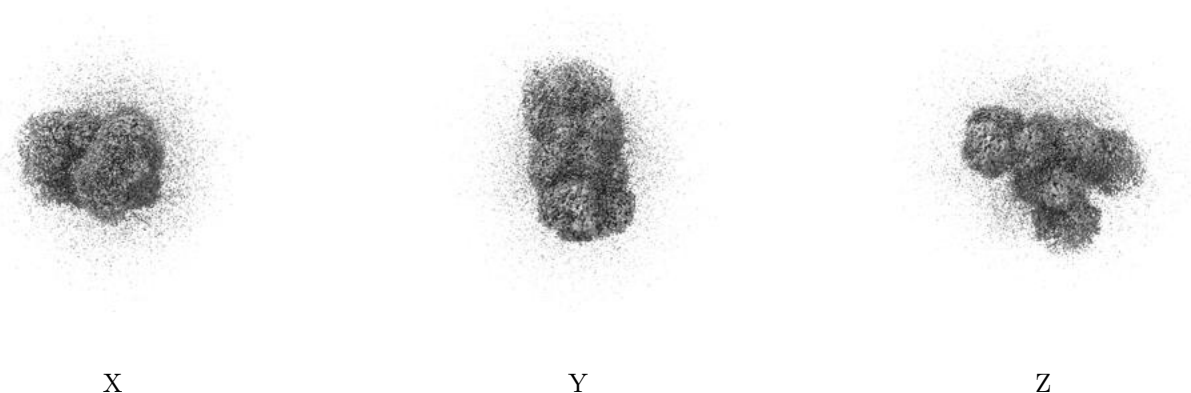


Z

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.

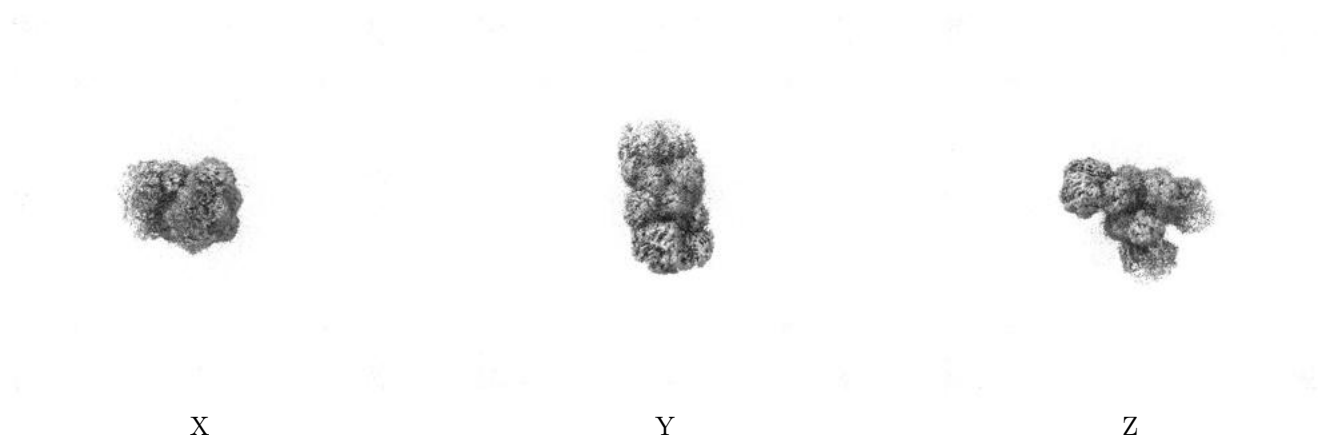
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.125. 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.

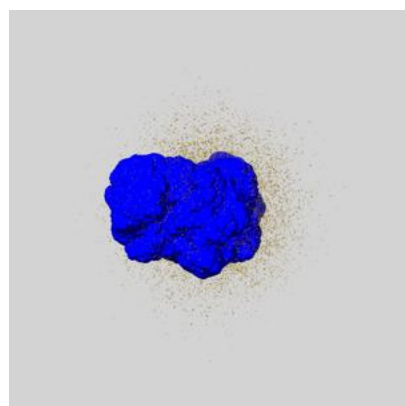
6.6 Mask visualisation [i](#)

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

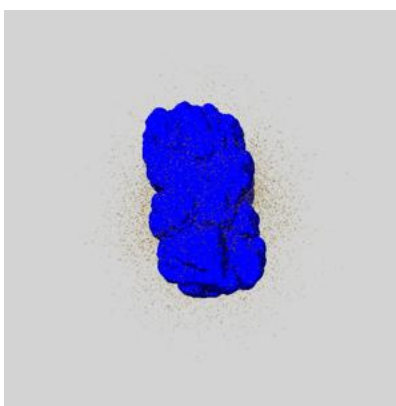
A mask typically either:

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

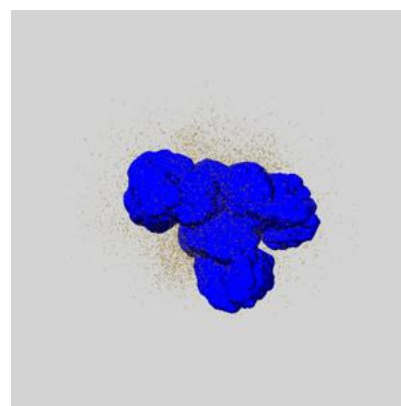
6.6.1 emd_66123_msk_1.map [i](#)



X



Y

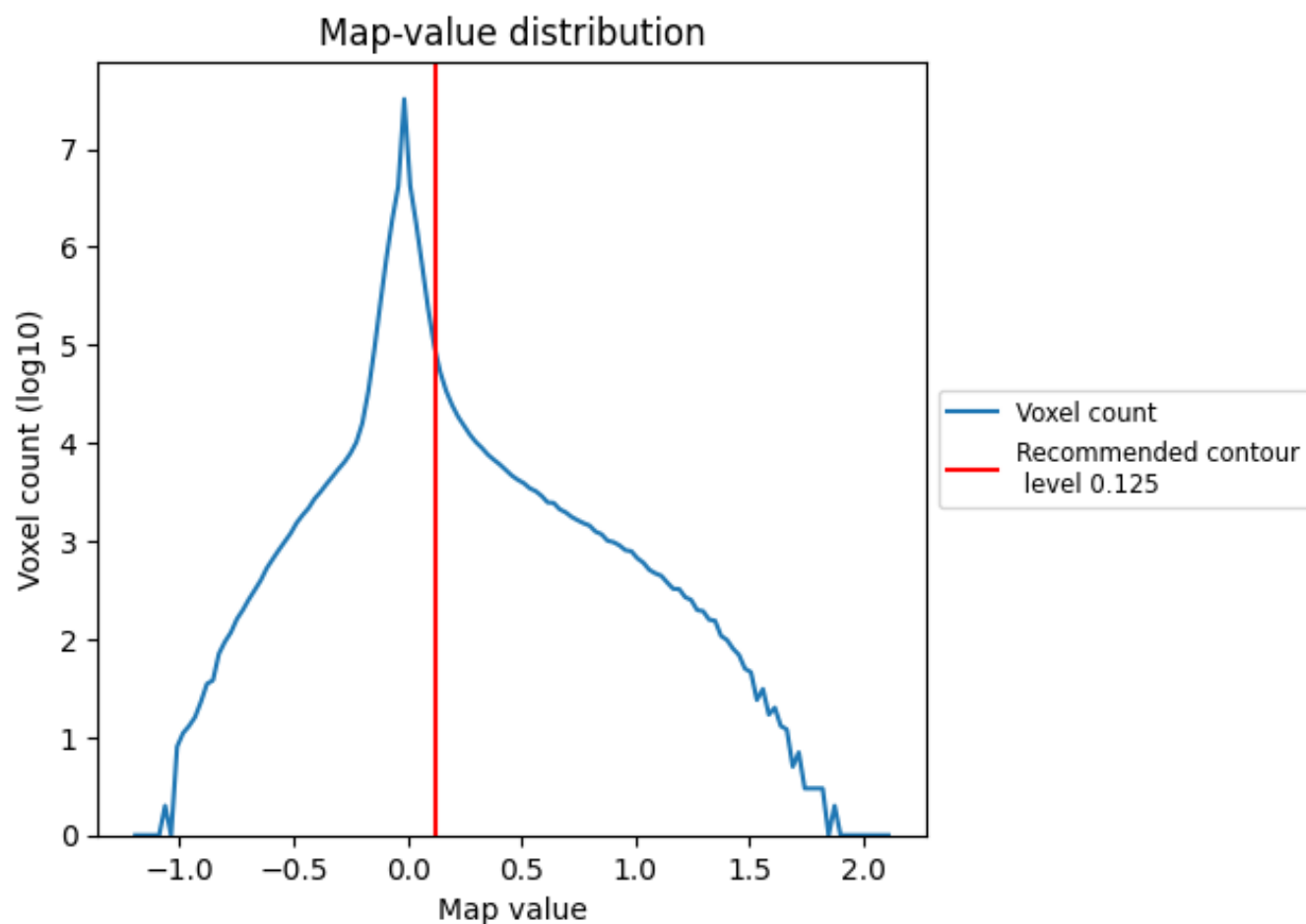


Z

7 Map analysis [i](#)

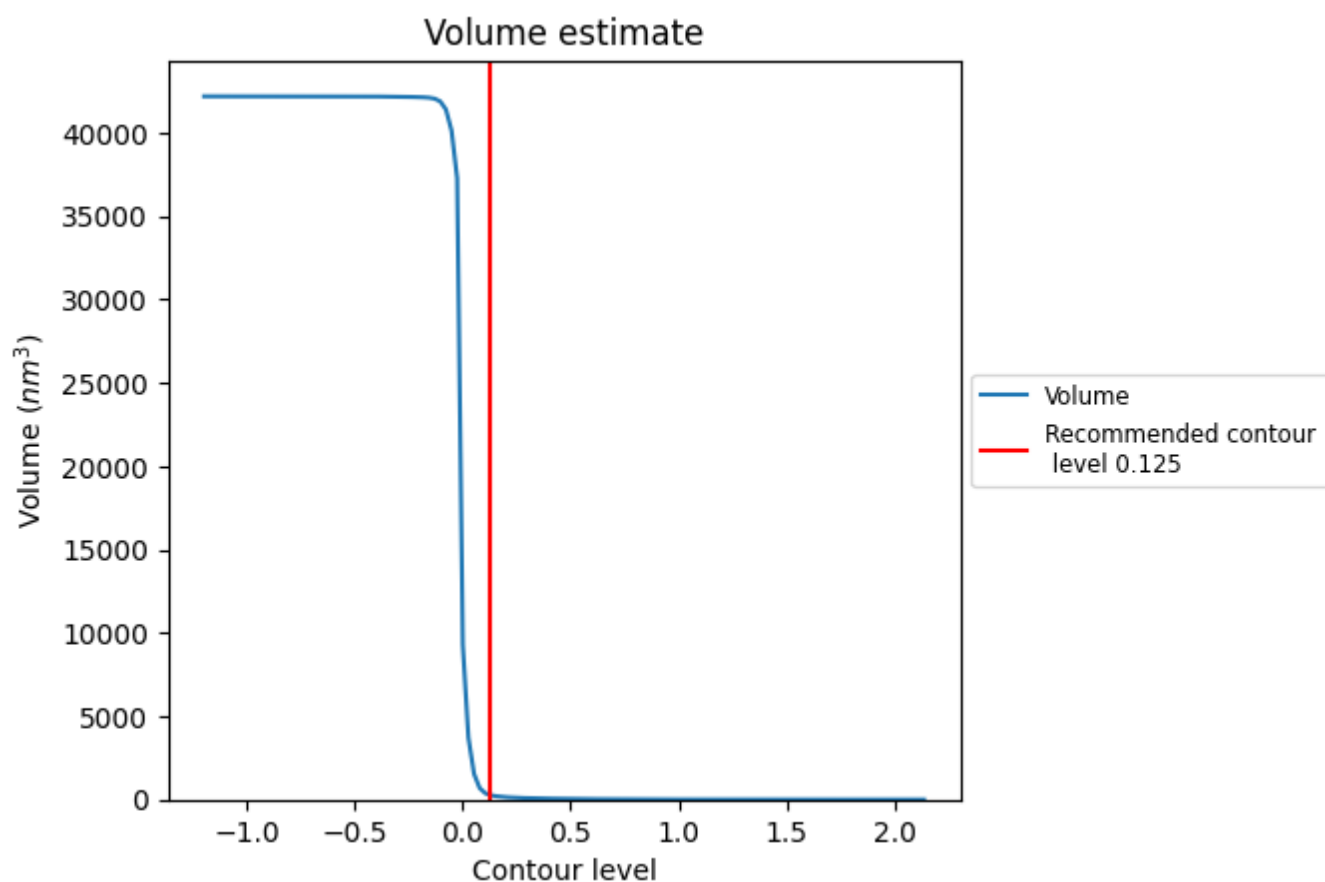
This section contains the results of statistical analysis of the map.

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.

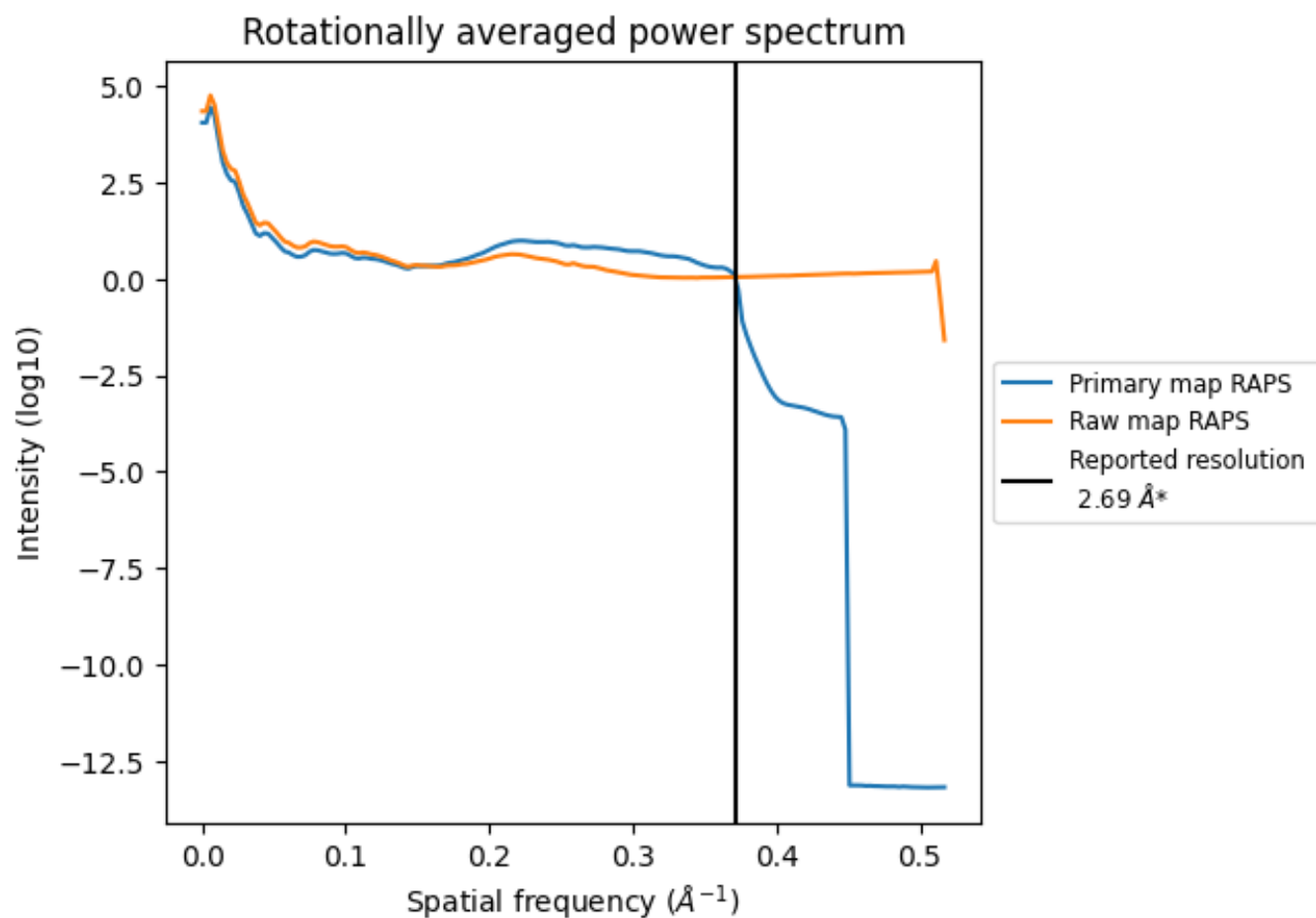
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 289 nm³; this corresponds to an approximate mass of 261 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

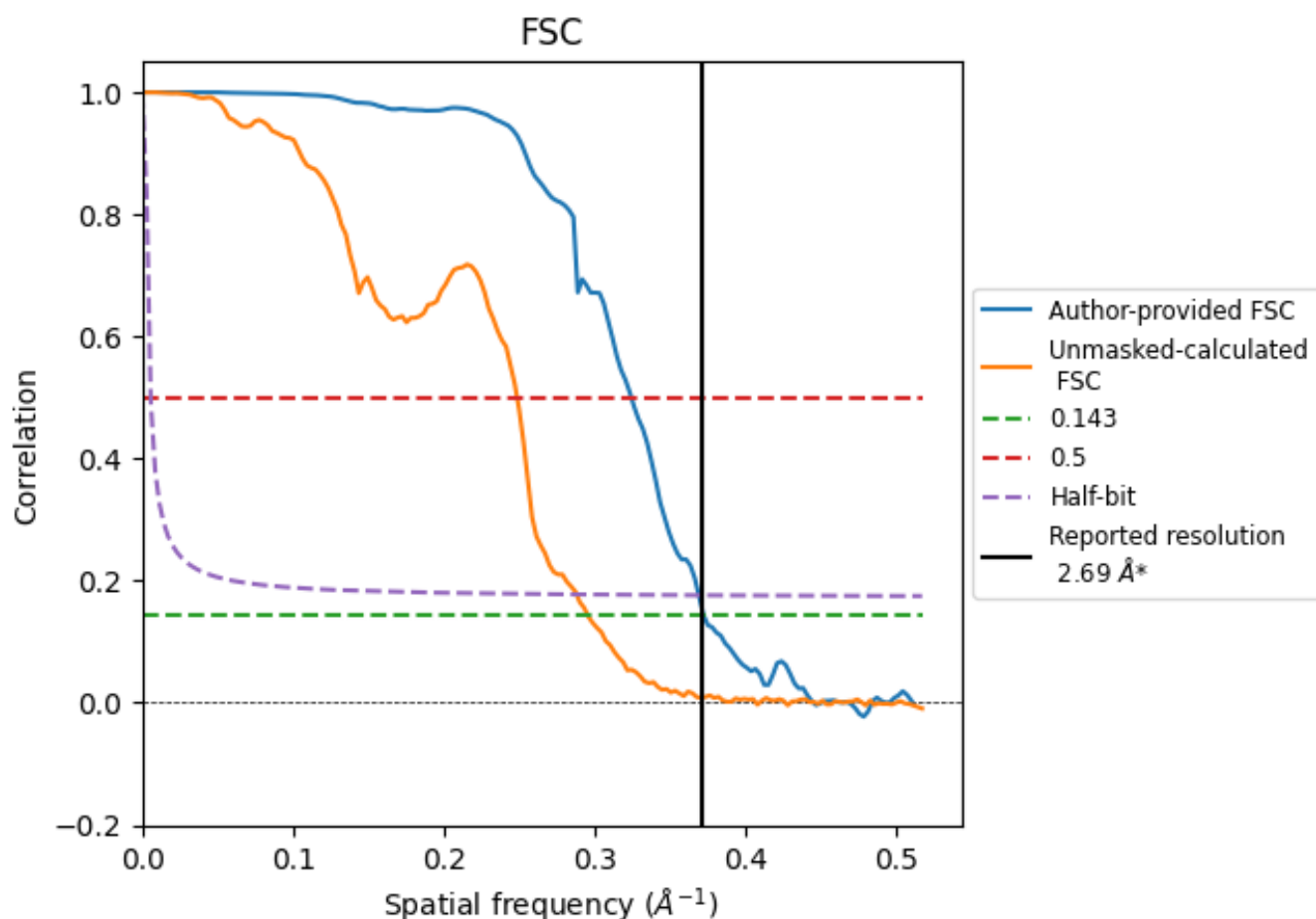


*Reported resolution corresponds to spatial frequency of 0.372 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of $0.372 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

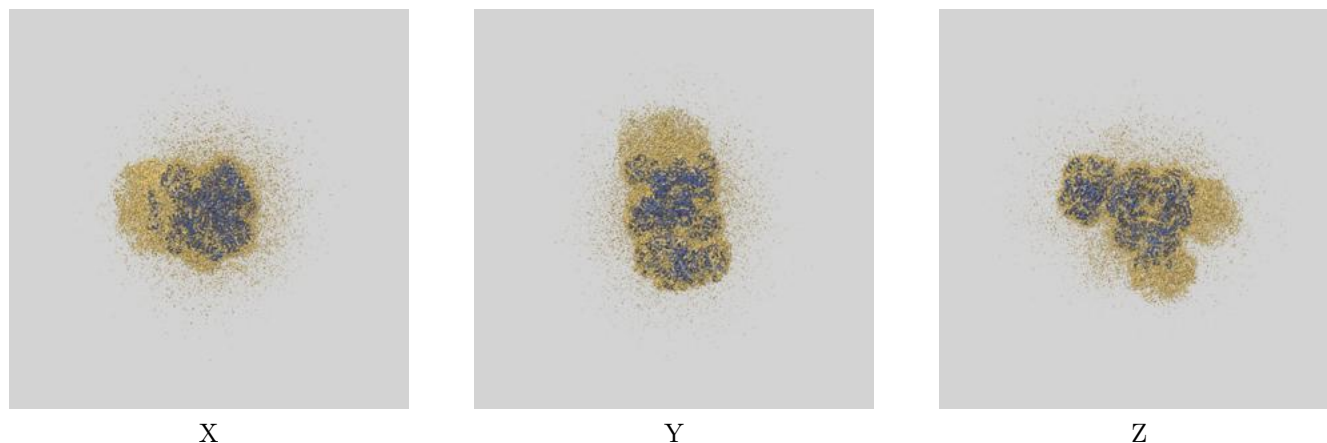
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.69	-	-
Author-provided FSC curve	2.69	3.08	2.71
Unmasked-calculated*	3.39	4.02	3.47

*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 3.39 differs from the reported value 2.69 by more than 10 %

9 Map-model fit [i](#)

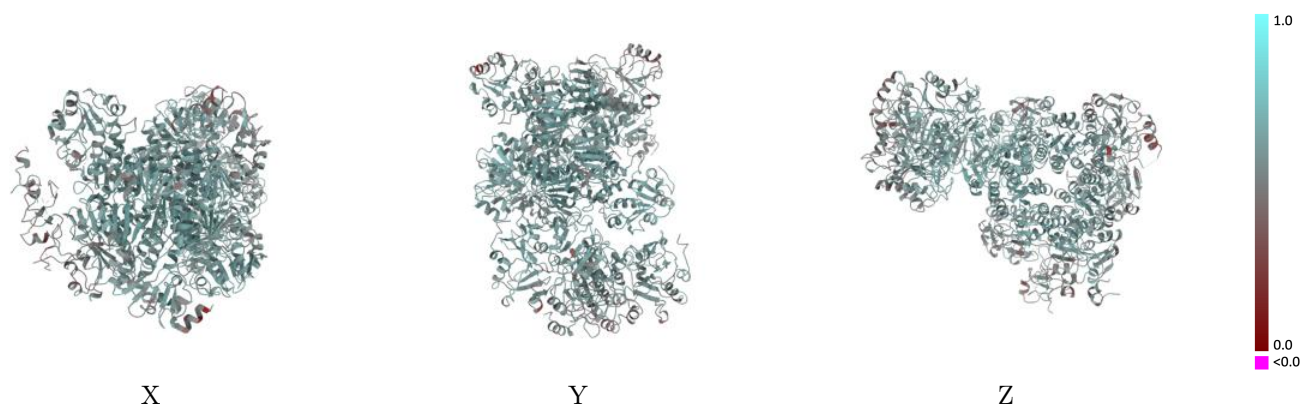
This section contains information regarding the fit between EMDB map EMD-66123 and PDB model 9WNS. Per-residue inclusion information can be found in [section 3](#) on [page 8](#).

9.1 Map-model overlay [i](#)



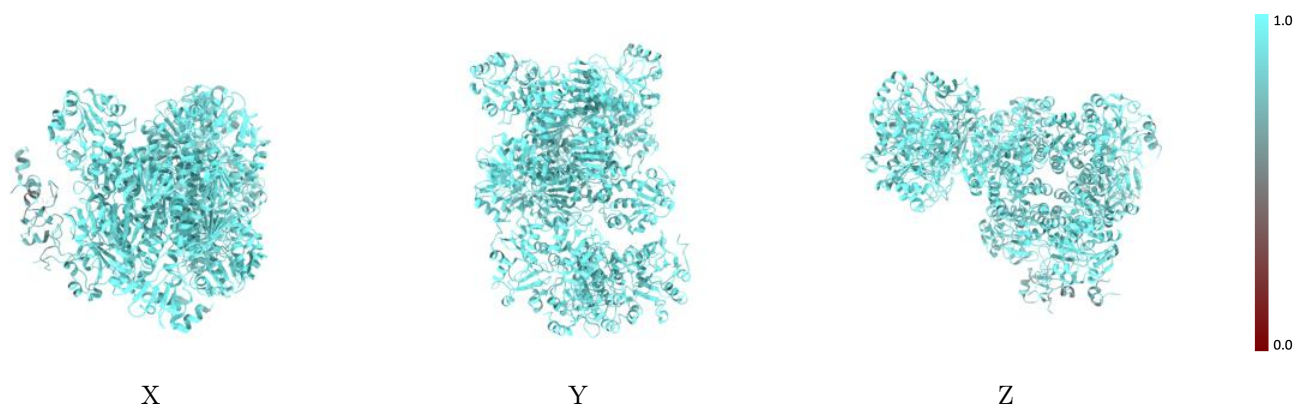
The images above show the 3D surface view of the map at the recommended contour level 0.125 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



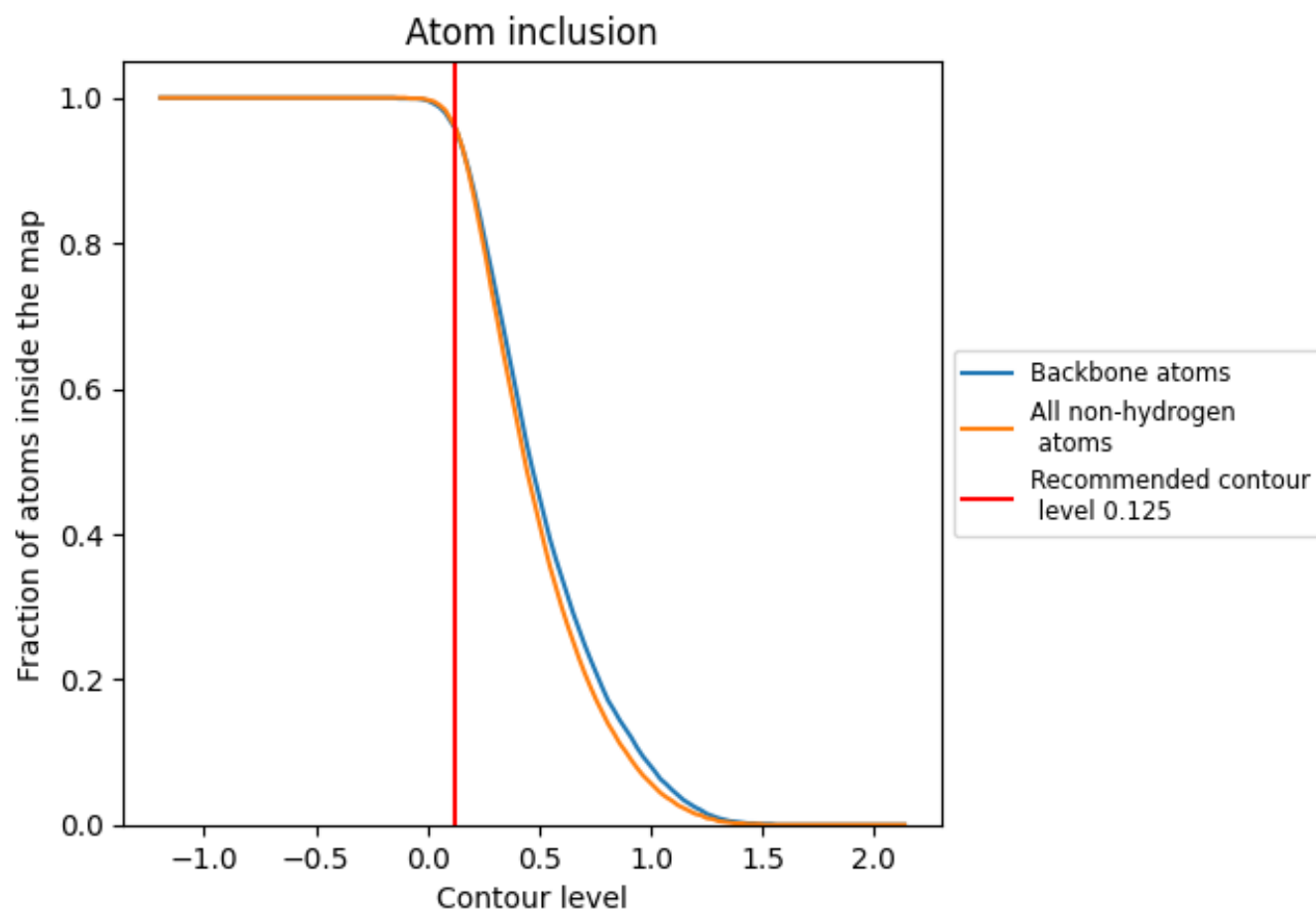
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.125).

9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 96% 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 (0.125) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9590	0.5830
A	0.9710	0.5870
B	0.9800	0.6150
C	0.9700	0.5820
D	0.9820	0.6180
E	0.9580	0.5600
F	0.9670	0.5910
G	0.9520	0.5800
H	0.9560	0.5660
K	0.7740	0.4870
L	0.7080	0.5000

1.0

0.0

<0.0