



Full wwPDB EM Validation Report ⓘ

Mar 14, 2026 – 01:40 AM UTC

PDB ID : 8OH4 / pdb_00008oh4
EMDB ID : EMD-16877
Title : Subtomogram averaging structure of cofilactin filament inside microtubule lumen of *Drosophila* S2 cell protrusion.
Authors : Ventura Santos, C.; Carter, A.P.
Deposited on : 2023-03-20
Resolution : 16.50 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:

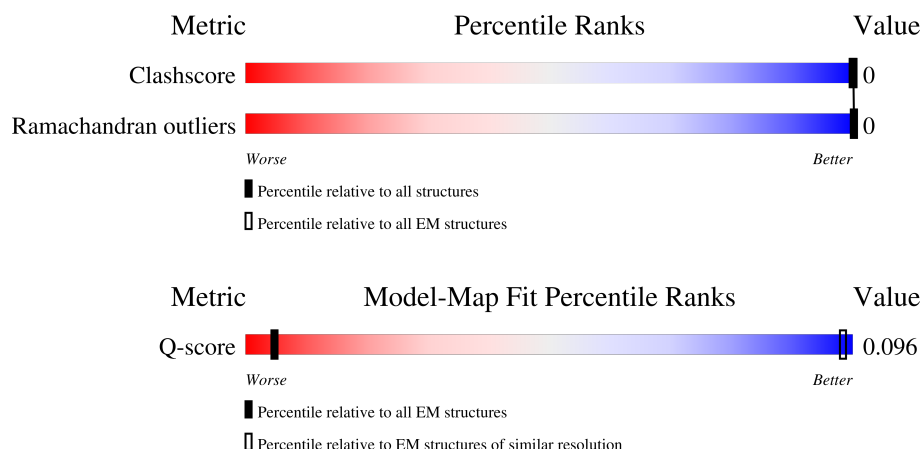
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & 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

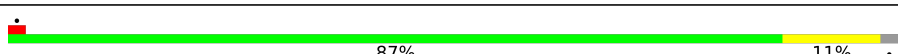
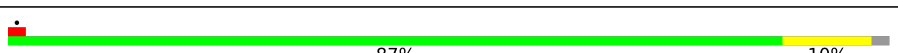
The reported resolution of this entry is 16.50 Å.

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.



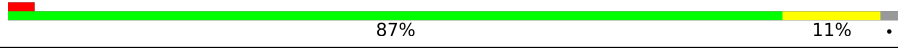
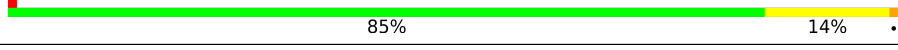
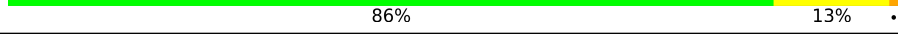
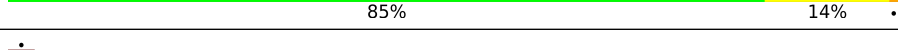
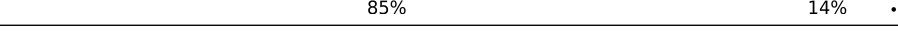
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Q-score	-	25397	55 (16.00 - 17.00)

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	370	 87% 11% .
1	B	370	 87% 11% .
1	C	370	 87% 10% .
1	D	370	 87% 11% .
1	E	370	 87% 10% .

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Mol	Chain	Length	Quality of chain
1	F	370	 87%10%
1	G	370	 87%11%
1	H	370	 87%11%
2	I	148	 85%14%
2	J	148	 85%14%
2	K	148	 86%14%
2	L	148	 86%13%
2	M	148	 85%14%
2	N	148	 85%14%

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 15104 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 Actin-5C.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	A	361	Total	C	N	O	0	0
			1444	722	361	361		
1	B	361	Total	C	N	O	0	0
			1444	722	361	361		
1	C	361	Total	C	N	O	0	0
			1444	722	361	361		
1	D	361	Total	C	N	O	0	0
			1444	722	361	361		
1	E	361	Total	C	N	O	0	0
			1444	722	361	361		
1	F	361	Total	C	N	O	0	0
			1444	722	361	361		
1	G	361	Total	C	N	O	0	0
			1444	722	361	361		
1	H	361	Total	C	N	O	0	0
			1444	722	361	361		

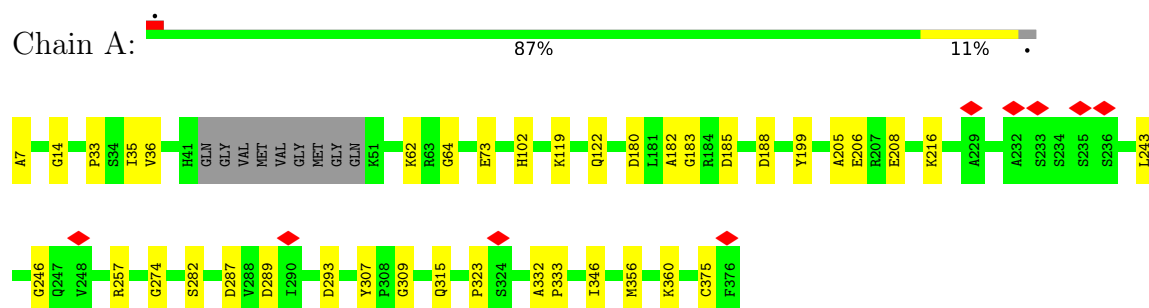
- Molecule 2 is a protein called Cofilin/actin-depolymerizing factor homolog.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	I	148	Total	C	N	O	0	0
			592	296	148	148		
2	J	148	Total	C	N	O	0	0
			592	296	148	148		
2	K	148	Total	C	N	O	0	0
			592	296	148	148		
2	L	148	Total	C	N	O	0	0
			592	296	148	148		
2	M	148	Total	C	N	O	0	0
			592	296	148	148		
2	N	148	Total	C	N	O	0	0
			592	296	148	148		

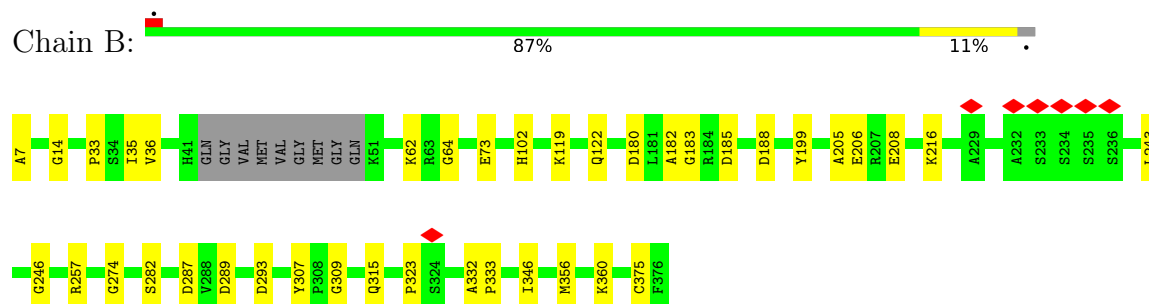
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

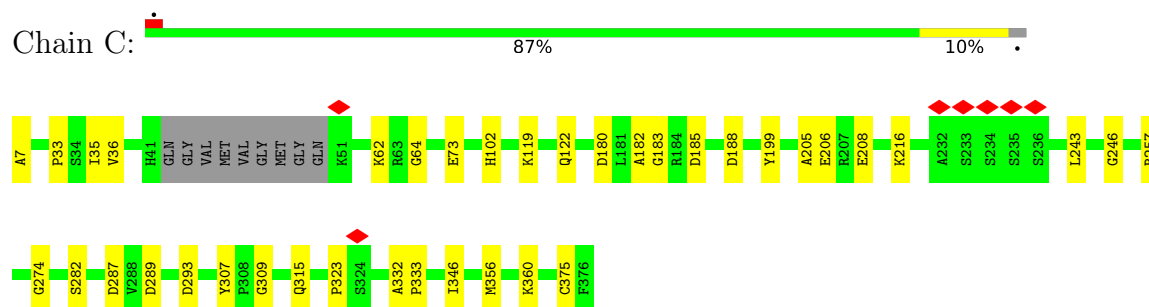
• Molecule 1: Actin-5C



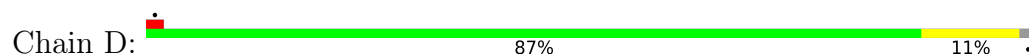
• Molecule 1: Actin-5C

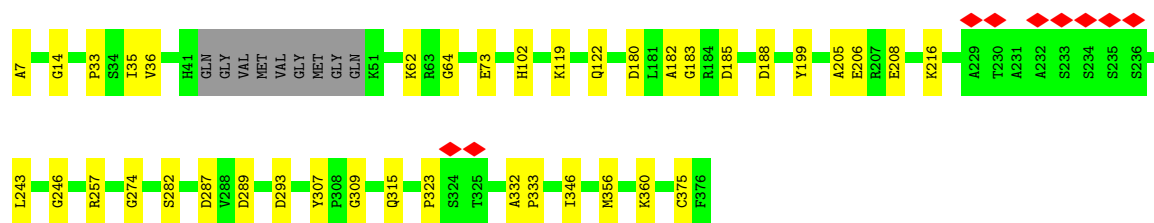


• Molecule 1: Actin-5C

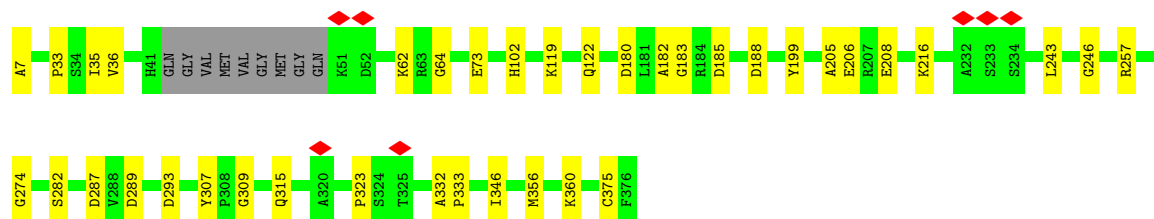
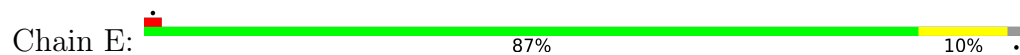


• Molecule 1: Actin-5C

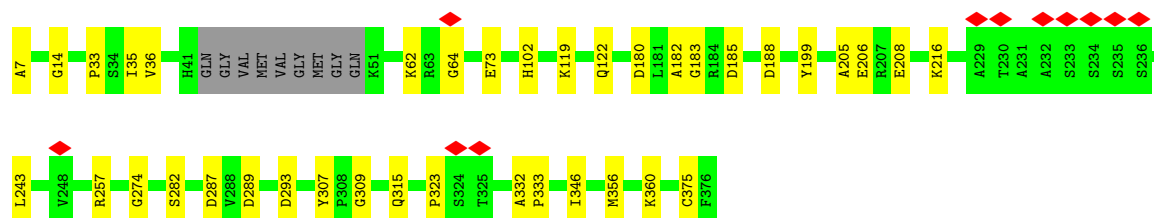
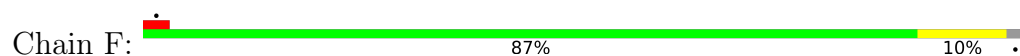




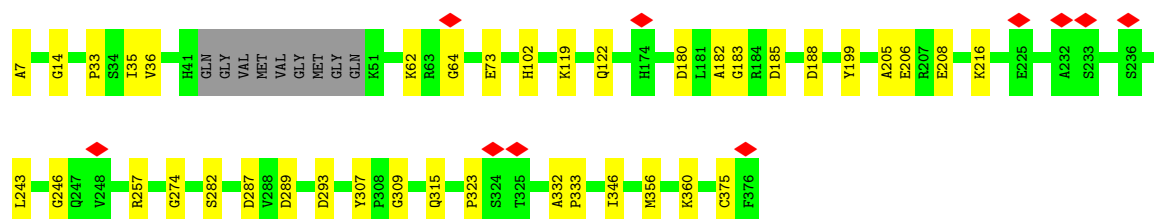
• Molecule 1: Actin-5C



• Molecule 1: Actin-5C



• Molecule 1: Actin-5C

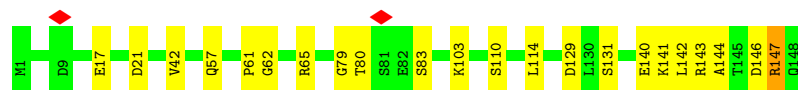
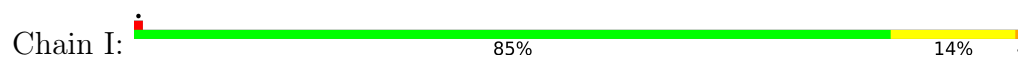


• Molecule 1: Actin-5C

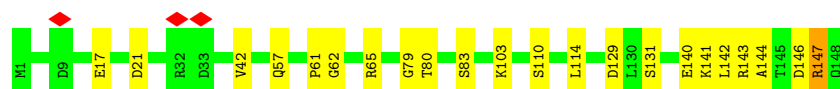
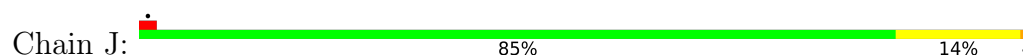




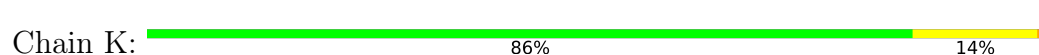
- Molecule 2: Cofilin/actin-depolymerizing factor homolog



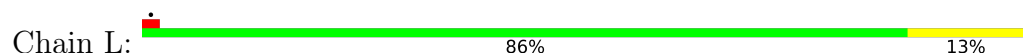
- Molecule 2: Cofilin/actin-depolymerizing factor homolog



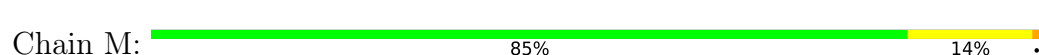
- Molecule 2: Cofilin/actin-depolymerizing factor homolog



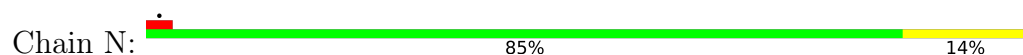
- Molecule 2: Cofilin/actin-depolymerizing factor homolog



- Molecule 2: Cofilin/actin-depolymerizing factor homolog



- Molecule 2: Cofilin/actin-depolymerizing factor homolog



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	3801	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; CTF estimation was performed in WARP. CTF correction was performed in Relion 3.1.	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	120	Depositor
Minimum defocus (nm)	2500	Depositor
Maximum defocus (nm)	6000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.011	Depositor
Minimum map value	-0.009	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.000	Depositor
Recommended contour level	0.00337	Depositor
Map size ($\text{\AA}$)	724.48, 724.48, 724.48	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	2.83, 2.83, 2.83	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	1.47	33/1442 (2.3%)	1.50	14/1799 (0.8%)
1	B	1.47	33/1442 (2.3%)	1.50	15/1799 (0.8%)
1	C	1.47	32/1442 (2.2%)	1.50	15/1799 (0.8%)
1	D	1.47	33/1442 (2.3%)	1.50	15/1799 (0.8%)
1	E	1.47	32/1442 (2.2%)	1.50	14/1799 (0.8%)
1	F	1.47	32/1442 (2.2%)	1.50	14/1799 (0.8%)
1	G	1.47	33/1442 (2.3%)	1.50	14/1799 (0.8%)
1	H	1.47	33/1442 (2.3%)	1.50	14/1799 (0.8%)
2	I	1.63	17/591 (2.9%)	1.48	4/737 (0.5%)
2	J	1.63	17/591 (2.9%)	1.48	4/737 (0.5%)
2	K	1.62	16/591 (2.7%)	1.48	4/737 (0.5%)
2	L	1.63	15/591 (2.5%)	1.48	4/737 (0.5%)
2	M	1.63	17/591 (2.9%)	1.48	4/737 (0.5%)
2	N	1.63	17/591 (2.9%)	1.48	4/737 (0.5%)
All	All	1.51	360/15082 (2.4%)	1.50	139/18814 (0.7%)

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
2	I	0	3
2	J	0	3
2	K	0	3
2	L	0	3
2	M	0	3
2	N	0	3
All	All	0	18

All (360) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	M	61	PRO	C-N	-9.02	1.24	1.33
2	J	61	PRO	C-N	-8.96	1.24	1.33
2	N	61	PRO	C-N	-8.89	1.24	1.33
2	L	61	PRO	C-N	-8.86	1.24	1.33
1	D	375	CYS	C-N	8.83	1.45	1.33
2	I	61	PRO	C-N	-8.81	1.24	1.33
2	K	61	PRO	C-N	-8.81	1.24	1.33
1	G	375	CYS	C-N	8.78	1.45	1.33
1	B	375	CYS	C-N	8.75	1.45	1.33
1	F	375	CYS	C-N	8.73	1.45	1.33
1	A	375	CYS	C-N	8.72	1.45	1.33
1	H	375	CYS	C-N	8.72	1.45	1.33
1	E	375	CYS	C-N	8.66	1.45	1.33
1	C	375	CYS	C-N	8.65	1.45	1.33
2	J	57	GLN	C-N	-8.42	1.22	1.33
2	L	57	GLN	C-N	-8.41	1.22	1.33
2	I	57	GLN	C-N	-8.40	1.22	1.33
2	K	57	GLN	C-N	-8.34	1.22	1.33
2	N	57	GLN	C-N	-8.33	1.22	1.33
2	M	57	GLN	C-N	-8.30	1.22	1.33
1	E	180	ASP	C-N	-8.06	1.23	1.33
1	G	180	ASP	C-N	-8.03	1.23	1.33
1	C	180	ASP	C-N	-7.99	1.23	1.33
1	B	180	ASP	C-N	-7.96	1.23	1.33
1	D	180	ASP	C-N	-7.96	1.23	1.33
1	H	180	ASP	C-N	-7.93	1.23	1.33
1	A	180	ASP	C-N	-7.88	1.23	1.33
1	F	180	ASP	C-N	-7.86	1.23	1.33
2	I	131	SER	C-N	-7.63	1.22	1.33
2	J	131	SER	C-N	-7.62	1.22	1.33
2	L	131	SER	C-N	-7.62	1.22	1.33
2	K	131	SER	C-N	-7.57	1.23	1.33
2	N	131	SER	C-N	-7.57	1.23	1.33
2	M	131	SER	C-N	-7.54	1.23	1.33
2	I	21	ASP	C-N	-7.41	1.23	1.33
2	J	21	ASP	C-N	-7.38	1.23	1.33
2	K	21	ASP	C-N	-7.38	1.23	1.33
2	L	21	ASP	C-N	-7.38	1.23	1.33
2	N	21	ASP	C-N	-7.35	1.23	1.33
2	M	21	ASP	C-N	-7.32	1.23	1.33
1	H	205	ALA	C-N	-7.11	1.24	1.34
1	D	205	ALA	C-N	-7.10	1.24	1.34
1	F	205	ALA	C-N	-7.10	1.24	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	N	17	GLU	C-N	-7.09	1.25	1.33
2	J	17	GLU	C-N	-7.07	1.25	1.33
1	B	182	ALA	C-N	-7.07	1.24	1.33
1	A	205	ALA	C-N	-7.06	1.24	1.34
1	E	205	ALA	C-N	-7.06	1.24	1.34
1	E	182	ALA	C-N	-7.05	1.24	1.33
1	H	182	ALA	C-N	-7.02	1.24	1.33
1	D	208	GLU	C-N	-7.02	1.25	1.33
1	G	205	ALA	C-N	-7.02	1.24	1.34
1	B	205	ALA	C-N	-7.01	1.24	1.34
2	L	17	GLU	C-N	-7.01	1.25	1.33
1	B	208	GLU	C-N	-6.99	1.25	1.33
2	M	17	GLU	C-N	-6.98	1.25	1.33
1	A	182	ALA	C-N	-6.96	1.24	1.33
1	E	208	GLU	C-N	-6.96	1.25	1.33
1	C	205	ALA	C-N	-6.95	1.24	1.34
2	K	17	GLU	C-N	-6.95	1.25	1.33
1	A	208	GLU	C-N	-6.95	1.25	1.33
1	D	182	ALA	C-N	-6.95	1.24	1.33
1	G	182	ALA	C-N	-6.93	1.24	1.33
1	H	208	GLU	C-N	-6.93	1.25	1.33
2	I	17	GLU	C-N	-6.92	1.25	1.33
1	F	208	GLU	C-N	-6.92	1.25	1.33
1	C	208	GLU	C-N	-6.91	1.25	1.33
1	C	182	ALA	C-N	-6.91	1.24	1.33
2	M	141	LYS	C-N	-6.90	1.24	1.33
1	F	182	ALA	C-N	-6.89	1.24	1.33
1	G	208	GLU	C-N	-6.84	1.25	1.33
2	J	141	LYS	C-N	-6.83	1.24	1.33
2	L	141	LYS	C-N	-6.83	1.24	1.33
2	I	141	LYS	C-N	-6.82	1.24	1.33
2	N	141	LYS	C-N	-6.79	1.24	1.33
2	K	141	LYS	C-N	-6.75	1.24	1.33
1	C	62	LYS	C-N	-6.75	1.25	1.34
1	A	62	LYS	C-N	-6.69	1.25	1.34
1	D	62	LYS	C-N	-6.69	1.25	1.34
1	B	62	LYS	C-N	-6.68	1.25	1.34
1	F	62	LYS	C-N	-6.65	1.25	1.34
1	G	62	LYS	C-N	-6.63	1.25	1.34
1	H	62	LYS	C-N	-6.59	1.25	1.34
2	L	143	ARG	C-N	-6.56	1.25	1.33
1	E	62	LYS	C-N	-6.55	1.25	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	315	GLN	C-N	-6.55	1.25	1.33
1	D	315	GLN	C-N	-6.53	1.25	1.33
2	I	143	ARG	C-N	-6.53	1.25	1.33
2	M	143	ARG	C-N	-6.50	1.25	1.33
2	K	143	ARG	C-N	-6.49	1.25	1.33
2	N	143	ARG	C-N	-6.46	1.25	1.33
2	J	143	ARG	C-N	-6.46	1.25	1.33
1	C	315	GLN	C-N	-6.43	1.25	1.33
1	F	315	GLN	C-N	-6.43	1.25	1.33
1	A	315	GLN	C-N	-6.42	1.25	1.33
1	B	315	GLN	C-N	-6.34	1.25	1.33
1	A	289	ASP	C-N	-6.34	1.26	1.33
1	H	315	GLN	C-N	-6.34	1.25	1.33
1	B	289	ASP	C-N	-6.31	1.26	1.33
1	E	289	ASP	C-N	-6.30	1.26	1.33
1	F	289	ASP	C-N	-6.29	1.26	1.33
1	G	315	GLN	C-N	-6.28	1.25	1.33
1	C	289	ASP	C-N	-6.26	1.26	1.33
1	D	289	ASP	C-N	-6.25	1.26	1.33
1	G	289	ASP	C-N	-6.25	1.26	1.33
2	L	114	LEU	C-N	-6.22	1.25	1.33
1	H	289	ASP	C-N	-6.21	1.26	1.33
2	K	110	SER	C-N	-6.21	1.25	1.33
2	M	110	SER	C-N	-6.20	1.25	1.33
2	J	110	SER	C-N	-6.20	1.25	1.33
1	F	183	GLY	C-N	-6.20	1.25	1.33
2	L	110	SER	C-N	-6.19	1.25	1.33
1	G	122	GLN	C-N	-6.17	1.26	1.33
1	H	122	GLN	C-N	-6.17	1.26	1.33
2	N	110	SER	C-N	-6.17	1.25	1.33
1	B	293	ASP	C-N	-6.16	1.25	1.33
2	N	114	LEU	C-N	-6.16	1.25	1.33
2	J	114	LEU	C-N	-6.15	1.25	1.33
1	A	293	ASP	C-N	-6.15	1.25	1.33
1	C	122	GLN	C-N	-6.15	1.26	1.33
1	B	183	GLY	C-N	-6.15	1.25	1.33
1	E	183	GLY	C-N	-6.14	1.25	1.33
1	D	122	GLN	C-N	-6.14	1.26	1.33
1	A	183	GLY	C-N	-6.14	1.25	1.33
1	C	293	ASP	C-N	-6.14	1.25	1.33
1	D	293	ASP	C-N	-6.13	1.25	1.33
1	D	183	GLY	C-N	-6.13	1.25	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	293	ASP	C-N	-6.12	1.25	1.33
2	M	114	LEU	C-N	-6.12	1.25	1.33
1	E	293	ASP	C-N	-6.11	1.25	1.33
2	K	114	LEU	C-N	-6.10	1.25	1.33
1	H	183	GLY	C-N	-6.10	1.25	1.33
2	I	110	SER	C-N	-6.09	1.25	1.33
2	I	114	LEU	C-N	-6.09	1.25	1.33
1	C	183	GLY	C-N	-6.08	1.25	1.33
1	E	122	GLN	C-N	-6.07	1.26	1.33
1	H	293	ASP	C-N	-6.05	1.25	1.33
1	G	183	GLY	C-N	-6.05	1.26	1.33
1	G	293	ASP	C-N	-6.04	1.25	1.33
1	E	257	ARG	C-N	-6.04	1.25	1.34
1	D	257	ARG	C-N	-6.03	1.25	1.34
1	F	122	GLN	C-N	-6.03	1.26	1.33
1	C	257	ARG	C-N	-6.03	1.25	1.34
1	B	122	GLN	C-N	-6.02	1.26	1.33
1	E	282	SER	C-N	-6.00	1.26	1.33
2	N	42	VAL	C-N	-6.00	1.25	1.33
1	H	360	LYS	C-N	-6.00	1.26	1.33
1	D	282	SER	C-N	-5.98	1.26	1.33
1	A	122	GLN	C-N	-5.98	1.26	1.33
1	C	73	GLU	C-N	-5.96	1.25	1.33
1	G	73	GLU	C-N	-5.96	1.25	1.33
1	G	257	ARG	C-N	-5.96	1.25	1.34
1	H	257	ARG	C-N	-5.96	1.25	1.34
1	E	73	GLU	C-N	-5.96	1.25	1.33
1	F	73	GLU	C-N	-5.96	1.25	1.33
1	G	282	SER	C-N	-5.96	1.26	1.33
1	G	360	LYS	C-N	-5.95	1.26	1.33
1	A	33	PRO	C-N	-5.95	1.26	1.33
1	C	33	PRO	C-N	-5.94	1.26	1.33
2	J	42	VAL	C-N	-5.94	1.25	1.33
1	C	119	LYS	C-N	-5.94	1.26	1.33
1	H	282	SER	C-N	-5.93	1.26	1.33
1	D	33	PRO	C-N	-5.93	1.26	1.33
1	A	282	SER	C-N	-5.93	1.26	1.33
1	F	257	ARG	C-N	-5.92	1.25	1.34
1	G	119	LYS	C-N	-5.92	1.26	1.33
1	A	257	ARG	C-N	-5.92	1.25	1.34
2	K	42	VAL	C-N	-5.91	1.25	1.33
1	B	282	SER	C-N	-5.91	1.26	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	282	SER	C-N	-5.90	1.26	1.33
1	H	119	LYS	C-N	-5.90	1.26	1.33
2	L	42	VAL	C-N	-5.89	1.25	1.33
1	H	33	PRO	C-N	-5.89	1.26	1.33
1	C	282	SER	C-N	-5.88	1.26	1.33
2	L	144	ALA	C-N	-5.88	1.25	1.33
1	F	33	PRO	C-N	-5.88	1.26	1.33
1	G	33	PRO	C-N	-5.88	1.26	1.33
1	B	257	ARG	C-N	-5.88	1.25	1.34
1	D	73	GLU	C-N	-5.88	1.25	1.33
2	M	42	VAL	C-N	-5.87	1.25	1.33
2	I	42	VAL	C-N	-5.87	1.25	1.33
1	B	33	PRO	C-N	-5.87	1.26	1.33
1	A	360	LYS	C-N	-5.86	1.26	1.33
1	B	73	GLU	C-N	-5.85	1.25	1.33
1	E	360	LYS	C-N	-5.84	1.26	1.33
1	F	360	LYS	C-N	-5.84	1.26	1.33
1	H	73	GLU	C-N	-5.84	1.25	1.33
1	D	360	LYS	C-N	-5.84	1.26	1.33
1	E	33	PRO	C-N	-5.83	1.26	1.33
1	E	119	LYS	C-N	-5.83	1.26	1.33
1	D	119	LYS	C-N	-5.83	1.26	1.33
1	F	119	LYS	C-N	-5.83	1.26	1.33
2	J	144	ALA	C-N	-5.82	1.25	1.33
1	A	119	LYS	C-N	-5.82	1.26	1.33
1	A	73	GLU	C-N	-5.81	1.25	1.33
1	B	119	LYS	C-N	-5.81	1.26	1.33
1	H	206	GLU	C-N	-5.80	1.26	1.33
1	C	360	LYS	C-N	-5.80	1.26	1.33
2	K	144	ALA	C-N	-5.79	1.25	1.33
1	B	360	LYS	C-N	-5.78	1.26	1.33
1	F	185	ASP	C-N	-5.76	1.26	1.33
2	N	144	ALA	C-N	-5.74	1.25	1.33
1	B	206	GLU	C-N	-5.74	1.26	1.33
1	C	185	ASP	C-N	-5.73	1.26	1.33
1	C	206	GLU	C-N	-5.72	1.26	1.33
1	G	206	GLU	C-N	-5.72	1.26	1.33
2	I	144	ALA	C-N	-5.71	1.25	1.33
1	E	206	GLU	C-N	-5.71	1.26	1.33
1	E	185	ASP	C-N	-5.70	1.26	1.33
1	F	206	GLU	C-N	-5.70	1.26	1.33
1	B	185	ASP	C-N	-5.68	1.26	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	185	ASP	C-N	-5.68	1.26	1.33
1	D	185	ASP	C-N	-5.66	1.26	1.33
1	G	185	ASP	C-N	-5.66	1.26	1.33
1	A	185	ASP	C-N	-5.65	1.26	1.33
1	D	206	GLU	C-N	-5.64	1.26	1.33
1	A	206	GLU	C-N	-5.63	1.26	1.33
1	H	188	ASP	C-N	-5.60	1.26	1.33
1	B	188	ASP	C-N	-5.59	1.26	1.33
1	A	188	ASP	C-N	-5.59	1.26	1.33
1	D	188	ASP	C-N	-5.59	1.26	1.33
2	I	129	ASP	C-N	-5.58	1.26	1.34
1	E	188	ASP	C-N	-5.57	1.26	1.33
1	A	356	MET	C-N	-5.56	1.26	1.33
1	C	356	MET	C-N	-5.56	1.26	1.33
2	M	129	ASP	C-N	-5.55	1.26	1.34
1	E	356	MET	C-N	-5.55	1.26	1.33
2	M	144	ALA	C-N	-5.54	1.25	1.33
1	C	188	ASP	C-N	-5.54	1.26	1.33
2	J	129	ASP	C-N	-5.54	1.26	1.34
1	E	7	ALA	C-N	-5.54	1.26	1.33
2	N	129	ASP	C-N	-5.53	1.26	1.34
1	F	7	ALA	C-N	-5.52	1.26	1.33
1	G	356	MET	C-N	-5.52	1.26	1.33
1	H	356	MET	C-N	-5.52	1.26	1.33
1	F	356	MET	C-N	-5.51	1.26	1.33
1	G	188	ASP	C-N	-5.49	1.26	1.33
1	B	356	MET	C-N	-5.48	1.26	1.33
1	F	188	ASP	C-N	-5.48	1.26	1.33
1	D	356	MET	C-N	-5.47	1.26	1.33
2	M	142	LEU	C-N	-5.47	1.26	1.34
2	K	129	ASP	C-N	-5.46	1.26	1.34
1	D	7	ALA	C-N	-5.44	1.26	1.33
1	H	7	ALA	C-N	-5.43	1.26	1.33
1	B	287	ASP	C-N	-5.42	1.27	1.34
1	A	199	TYR	C-N	-5.42	1.25	1.33
1	C	199	TYR	C-N	-5.42	1.25	1.33
1	G	287	ASP	C-N	-5.42	1.27	1.34
1	G	199	TYR	C-N	-5.42	1.25	1.33
2	L	129	ASP	C-N	-5.40	1.26	1.34
1	D	199	TYR	C-N	-5.39	1.25	1.33
1	A	7	ALA	C-N	-5.39	1.26	1.33
1	B	199	TYR	C-N	-5.39	1.25	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	199	TYR	C-N	-5.38	1.25	1.33
2	J	142	LEU	C-N	-5.38	1.26	1.34
1	D	287	ASP	C-N	-5.37	1.27	1.34
1	F	287	ASP	C-N	-5.36	1.27	1.34
1	E	199	TYR	C-N	-5.36	1.25	1.33
2	K	142	LEU	C-N	-5.36	1.26	1.34
1	B	7	ALA	C-N	-5.36	1.26	1.33
1	C	287	ASP	C-N	-5.35	1.27	1.34
1	E	287	ASP	C-N	-5.35	1.27	1.34
2	L	142	LEU	C-N	-5.35	1.26	1.34
1	C	7	ALA	C-N	-5.34	1.26	1.33
1	G	7	ALA	C-N	-5.34	1.26	1.33
1	H	287	ASP	C-N	-5.34	1.27	1.34
2	I	142	LEU	C-N	-5.33	1.26	1.34
1	H	199	TYR	C-N	-5.29	1.26	1.33
1	D	274	GLY	C-N	-5.28	1.27	1.33
1	A	287	ASP	C-N	-5.28	1.27	1.34
2	N	142	LEU	C-N	-5.27	1.26	1.34
1	D	64	GLY	C-N	-5.25	1.28	1.33
1	B	64	GLY	C-N	-5.25	1.28	1.33
1	E	274	GLY	C-N	-5.24	1.27	1.33
1	G	64	GLY	C-N	-5.24	1.28	1.33
1	B	274	GLY	C-N	-5.23	1.27	1.33
1	C	309	GLY	C-N	-5.23	1.27	1.33
1	A	35	ILE	C-N	-5.22	1.26	1.33
1	H	64	GLY	C-N	-5.22	1.28	1.33
1	B	323	PRO	C-N	-5.21	1.26	1.33
2	K	80	THR	C-N	-5.20	1.25	1.33
2	I	103	LYS	C-N	-5.19	1.27	1.33
1	F	309	GLY	C-N	-5.19	1.27	1.33
1	F	64	GLY	C-N	-5.19	1.28	1.33
1	C	243	LEU	C-N	-5.19	1.27	1.33
1	A	243	LEU	C-N	-5.18	1.27	1.33
1	C	274	GLY	C-N	-5.18	1.27	1.33
1	A	274	GLY	C-N	-5.17	1.27	1.33
2	L	80	THR	C-N	-5.17	1.25	1.33
1	C	35	ILE	C-N	-5.17	1.26	1.33
1	G	346	ILE	C-N	-5.17	1.27	1.33
1	H	35	ILE	C-N	-5.16	1.26	1.33
1	B	309	GLY	C-N	-5.16	1.27	1.33
2	J	80	THR	C-N	-5.16	1.25	1.33
1	D	309	GLY	C-N	-5.16	1.27	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	64	GLY	C-N	-5.16	1.28	1.33
1	F	274	GLY	C-N	-5.15	1.27	1.33
1	G	309	GLY	C-N	-5.15	1.27	1.33
2	N	80	THR	C-N	-5.15	1.25	1.33
1	H	243	LEU	C-N	-5.15	1.27	1.33
1	B	246	GLY	C-N	-5.14	1.26	1.33
2	J	65	ARG	C-N	-5.14	1.26	1.33
1	F	35	ILE	C-N	-5.14	1.26	1.33
1	G	243	LEU	C-N	-5.14	1.27	1.33
1	D	243	LEU	C-N	-5.14	1.27	1.33
1	D	346	ILE	C-N	-5.14	1.27	1.33
2	L	65	ARG	C-N	-5.14	1.26	1.33
1	G	323	PRO	C-N	-5.13	1.26	1.33
2	J	103	LYS	C-N	-5.13	1.27	1.33
2	I	80	THR	C-N	-5.12	1.25	1.33
1	F	14	GLY	C-N	-5.12	1.27	1.33
2	K	140	GLU	C-N	-5.12	1.26	1.33
1	C	346	ILE	C-N	-5.12	1.27	1.33
1	G	35	ILE	C-N	-5.12	1.26	1.33
1	B	14	GLY	C-N	-5.12	1.27	1.33
1	B	346	ILE	C-N	-5.12	1.27	1.33
1	G	274	GLY	C-N	-5.12	1.27	1.33
1	E	346	ILE	C-N	-5.11	1.27	1.33
1	A	14	GLY	C-N	-5.11	1.27	1.33
2	I	65	ARG	C-N	-5.11	1.26	1.33
1	G	14	GLY	C-N	-5.11	1.27	1.33
1	A	309	GLY	C-N	-5.10	1.27	1.33
1	F	346	ILE	C-N	-5.10	1.27	1.33
1	D	323	PRO	C-N	-5.10	1.26	1.33
1	F	323	PRO	C-N	-5.10	1.26	1.33
2	K	65	ARG	C-N	-5.09	1.26	1.33
1	H	309	GLY	C-N	-5.09	1.27	1.33
1	E	243	LEU	C-N	-5.09	1.27	1.33
1	H	274	GLY	C-N	-5.09	1.27	1.33
1	C	64	GLY	C-N	-5.09	1.28	1.33
1	H	323	PRO	C-N	-5.09	1.26	1.33
1	D	14	GLY	C-N	-5.08	1.27	1.33
2	M	103	LYS	C-N	-5.08	1.27	1.33
1	D	35	ILE	C-N	-5.08	1.27	1.33
2	M	80	THR	C-N	-5.08	1.25	1.33
1	E	309	GLY	C-N	-5.08	1.27	1.33
1	A	246	GLY	C-N	-5.07	1.26	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	35	ILE	C-N	-5.07	1.27	1.33
2	N	65	ARG	C-N	-5.07	1.26	1.33
2	I	140	GLU	C-N	-5.07	1.27	1.33
1	H	246	GLY	C-N	-5.07	1.26	1.33
1	A	346	ILE	C-N	-5.06	1.27	1.33
1	B	243	LEU	C-N	-5.06	1.27	1.33
1	D	246	GLY	C-N	-5.06	1.26	1.33
1	E	246	GLY	C-N	-5.05	1.26	1.33
1	F	243	LEU	C-N	-5.05	1.27	1.33
1	E	323	PRO	C-N	-5.05	1.26	1.33
2	N	140	GLU	C-N	-5.05	1.27	1.33
1	A	64	GLY	C-N	-5.04	1.28	1.33
1	A	323	PRO	C-N	-5.04	1.26	1.33
2	M	65	ARG	C-N	-5.04	1.26	1.33
1	E	35	ILE	C-N	-5.04	1.27	1.33
1	G	246	GLY	C-N	-5.03	1.26	1.33
2	J	140	GLU	C-N	-5.03	1.27	1.33
1	C	323	PRO	C-N	-5.02	1.27	1.33
1	H	346	ILE	C-N	-5.02	1.27	1.33
1	C	246	GLY	C-N	-5.02	1.26	1.33
1	H	14	GLY	C-N	-5.01	1.27	1.33
2	N	103	LYS	C-N	-5.01	1.27	1.33
2	M	140	GLU	C-N	-5.00	1.27	1.33

All (139) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	K	79	GLY	CA-C-N	-7.99	111.97	123.00
2	K	79	GLY	C-N-CA	-7.99	111.97	123.00
2	L	79	GLY	CA-C-N	-7.98	111.99	123.00
2	L	79	GLY	C-N-CA	-7.98	111.99	123.00
2	N	79	GLY	CA-C-N	-7.97	111.99	123.00
2	N	79	GLY	C-N-CA	-7.97	111.99	123.00
2	I	79	GLY	CA-C-N	-7.96	112.02	123.00
2	I	79	GLY	C-N-CA	-7.96	112.02	123.00
2	M	79	GLY	CA-C-N	-7.93	112.06	123.00
2	M	79	GLY	C-N-CA	-7.93	112.06	123.00
2	J	79	GLY	CA-C-N	-7.93	112.06	123.00
2	J	79	GLY	C-N-CA	-7.93	112.06	123.00
1	F	36	VAL	CA-C-N	-7.11	117.14	122.33
1	F	36	VAL	C-N-CA	-7.11	117.14	122.33
1	B	36	VAL	CA-C-N	-7.09	117.15	122.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	36	VAL	C-N-CA	-7.09	117.15	122.33
1	G	36	VAL	CA-C-N	-7.08	117.17	122.33
1	G	36	VAL	C-N-CA	-7.08	117.17	122.33
1	A	36	VAL	CA-C-N	-7.07	117.17	122.33
1	A	36	VAL	C-N-CA	-7.07	117.17	122.33
1	D	36	VAL	CA-C-N	-7.00	117.22	122.33
1	D	36	VAL	C-N-CA	-7.00	117.22	122.33
1	H	36	VAL	CA-C-N	-6.98	117.23	122.33
1	H	36	VAL	C-N-CA	-6.98	117.23	122.33
1	E	36	VAL	CA-C-N	-6.95	117.26	122.33
1	E	36	VAL	C-N-CA	-6.95	117.26	122.33
1	B	307	TYR	O-C-N	6.81	127.36	121.30
1	G	307	TYR	O-C-N	6.79	127.34	121.30
1	D	307	TYR	O-C-N	6.78	127.34	121.30
1	H	307	TYR	O-C-N	6.77	127.33	121.30
1	A	307	TYR	O-C-N	6.76	127.32	121.30
1	F	307	TYR	O-C-N	6.72	127.28	121.30
1	E	307	TYR	O-C-N	6.68	127.25	121.30
1	C	307	TYR	O-C-N	6.67	127.24	121.30
1	D	332	ALA	CA-C-N	-6.51	114.91	119.66
1	D	332	ALA	C-N-CA	-6.51	114.91	119.66
1	C	332	ALA	CA-C-N	-6.48	114.93	119.66
1	C	332	ALA	C-N-CA	-6.48	114.93	119.66
1	F	332	ALA	CA-C-N	-6.47	114.94	119.66
1	F	332	ALA	C-N-CA	-6.47	114.94	119.66
1	H	332	ALA	CA-C-N	-6.46	114.94	119.66
1	H	332	ALA	C-N-CA	-6.46	114.94	119.66
1	B	332	ALA	CA-C-N	-6.40	114.99	119.66
1	B	332	ALA	C-N-CA	-6.40	114.99	119.66
1	H	307	TYR	CA-C-N	-6.37	112.95	119.83
1	H	307	TYR	C-N-CA	-6.37	112.95	119.83
1	G	332	ALA	CA-C-N	-6.36	115.02	119.66
1	G	332	ALA	C-N-CA	-6.36	115.02	119.66
1	A	332	ALA	CA-C-N	-6.36	115.02	119.66
1	A	332	ALA	C-N-CA	-6.36	115.02	119.66
1	B	307	TYR	CA-C-N	-6.35	112.97	119.83
1	B	307	TYR	C-N-CA	-6.35	112.97	119.83
1	E	332	ALA	CA-C-N	-6.34	115.03	119.66
1	E	332	ALA	C-N-CA	-6.34	115.03	119.66
1	B	102	HIS	CA-C-N	-6.32	113.27	119.78
1	B	102	HIS	C-N-CA	-6.32	113.27	119.78
1	F	307	TYR	CA-C-N	-6.31	113.02	119.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	307	TYR	C-N-CA	-6.31	113.02	119.83
1	G	102	HIS	CA-C-N	-6.31	113.28	119.78
1	G	102	HIS	C-N-CA	-6.31	113.28	119.78
1	C	307	TYR	CA-C-N	-6.31	113.02	119.83
1	C	307	TYR	C-N-CA	-6.31	113.02	119.83
1	G	307	TYR	CA-C-N	-6.30	113.02	119.83
1	G	307	TYR	C-N-CA	-6.30	113.02	119.83
1	E	102	HIS	CA-C-N	-6.29	113.30	119.78
1	E	102	HIS	C-N-CA	-6.29	113.30	119.78
1	F	102	HIS	CA-C-N	-6.29	113.30	119.78
1	F	102	HIS	C-N-CA	-6.29	113.30	119.78
1	D	307	TYR	CA-C-N	-6.28	113.05	119.83
1	D	307	TYR	C-N-CA	-6.28	113.05	119.83
1	A	102	HIS	CA-C-N	-6.28	113.31	119.78
1	A	102	HIS	C-N-CA	-6.28	113.31	119.78
1	C	102	HIS	CA-C-N	-6.28	113.31	119.78
1	C	102	HIS	C-N-CA	-6.28	113.31	119.78
1	E	307	TYR	CA-C-N	-6.28	113.05	119.83
1	E	307	TYR	C-N-CA	-6.28	113.05	119.83
1	A	307	TYR	CA-C-N	-6.24	113.09	119.83
1	A	307	TYR	C-N-CA	-6.24	113.09	119.83
1	D	102	HIS	CA-C-N	-6.21	113.38	119.78
1	D	102	HIS	C-N-CA	-6.21	113.38	119.78
1	H	102	HIS	CA-C-N	-6.19	113.41	119.78
1	H	102	HIS	C-N-CA	-6.19	113.41	119.78
2	N	62	GLY	O-C-N	5.78	127.46	121.97
2	L	62	GLY	O-C-N	5.77	127.45	121.97
2	M	62	GLY	O-C-N	5.73	127.41	121.97
2	K	62	GLY	O-C-N	5.73	127.41	121.97
2	I	62	GLY	O-C-N	5.73	127.41	121.97
2	J	62	GLY	O-C-N	5.71	127.40	121.97
1	C	36	VAL	CA-C-N	-5.70	117.27	122.80
1	C	36	VAL	C-N-CA	-5.70	117.27	122.80
1	H	333	PRO	O-C-N	5.63	123.90	121.31
2	J	147	ARG	O-C-N	-5.58	115.59	123.01
2	M	147	ARG	O-C-N	-5.58	115.59	123.01
2	N	147	ARG	O-C-N	-5.57	115.60	123.01
2	L	147	ARG	O-C-N	-5.56	115.62	123.01
2	I	147	ARG	O-C-N	-5.54	115.64	123.01
2	K	147	ARG	O-C-N	-5.53	115.66	123.01
1	E	333	PRO	O-C-N	5.51	123.85	121.31
1	C	333	PRO	O-C-N	5.48	123.83	121.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	333	PRO	O-C-N	5.45	123.82	121.31
1	D	333	PRO	O-C-N	5.43	123.81	121.31
1	B	333	PRO	O-C-N	5.35	123.77	121.31
1	G	333	PRO	O-C-N	5.35	123.77	121.31
1	F	333	PRO	O-C-N	5.34	123.77	121.31
1	D	199	TYR	CA-C-N	-5.28	115.66	123.05
1	D	199	TYR	C-N-CA	-5.28	115.66	123.05
1	A	199	TYR	CA-C-N	-5.27	115.67	123.05
1	A	199	TYR	C-N-CA	-5.27	115.67	123.05
1	F	199	TYR	CA-C-N	-5.25	115.70	123.05
1	F	199	TYR	C-N-CA	-5.25	115.70	123.05
1	C	199	TYR	CA-C-N	-5.24	115.71	123.05
1	C	199	TYR	C-N-CA	-5.24	115.71	123.05
1	B	199	TYR	CA-C-N	-5.23	115.72	123.05
1	B	199	TYR	C-N-CA	-5.23	115.72	123.05
1	G	199	TYR	CA-C-N	-5.22	115.74	123.05
1	G	199	TYR	C-N-CA	-5.22	115.74	123.05
1	E	199	TYR	CA-C-N	-5.21	115.75	123.05
1	E	199	TYR	C-N-CA	-5.21	115.75	123.05
1	H	199	TYR	CA-C-N	-5.19	115.79	123.05
1	H	199	TYR	C-N-CA	-5.19	115.79	123.05
1	B	216	LYS	CA-C-N	-5.13	114.18	122.24
1	B	216	LYS	C-N-CA	-5.13	114.18	122.24
1	F	216	LYS	CA-C-N	-5.12	114.20	122.24
1	F	216	LYS	C-N-CA	-5.12	114.20	122.24
1	B	332	ALA	O-C-N	5.08	125.98	121.36
1	G	216	LYS	CA-C-N	-5.07	114.28	122.24
1	G	216	LYS	C-N-CA	-5.07	114.28	122.24
1	H	216	LYS	CA-C-N	-5.07	114.28	122.24
1	H	216	LYS	C-N-CA	-5.07	114.28	122.24
1	E	216	LYS	CA-C-N	-5.05	114.31	122.24
1	E	216	LYS	C-N-CA	-5.05	114.31	122.24
1	C	216	LYS	CA-C-N	-5.05	114.32	122.24
1	C	216	LYS	C-N-CA	-5.05	114.32	122.24
1	C	332	ALA	O-C-N	5.04	125.95	121.36
1	A	216	LYS	CA-C-N	-5.04	114.33	122.24
1	A	216	LYS	C-N-CA	-5.04	114.33	122.24
1	D	216	LYS	CA-C-N	-5.03	114.35	122.24
1	D	216	LYS	C-N-CA	-5.03	114.35	122.24
1	D	332	ALA	O-C-N	5.02	125.93	121.36

There are no chirality outliers.

All (18) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	I	146	ASP	Mainchain
2	I	147	ARG	Mainchain
2	I	83	SER	Mainchain
2	J	146	ASP	Mainchain
2	J	147	ARG	Mainchain
2	J	83	SER	Mainchain
2	K	146	ASP	Mainchain
2	K	147	ARG	Mainchain
2	K	83	SER	Mainchain
2	L	146	ASP	Mainchain
2	L	147	ARG	Mainchain
2	L	83	SER	Mainchain
2	M	146	ASP	Mainchain
2	M	147	ARG	Mainchain
2	M	83	SER	Mainchain
2	N	146	ASP	Mainchain
2	N	147	ARG	Mainchain
2	N	83	SER	Mainchain

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	A	1444	0	390	0	0
1	B	1444	0	390	0	0
1	C	1444	0	390	0	0
1	D	1444	0	390	0	0
1	E	1444	0	390	0	0
1	F	1444	0	390	0	0
1	G	1444	0	390	0	0
1	H	1444	0	390	0	0
2	I	592	0	160	0	0
2	J	592	0	160	0	0
2	K	592	0	160	0	0
2	L	592	0	160	0	0
2	M	592	0	160	0	0
2	N	592	0	160	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	15104	0	4080	0	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 0.

There are no clashes within the asymmetric unit.

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	357/370 (96%)	354 (99%)	3 (1%)	0	100	100
1	B	357/370 (96%)	354 (99%)	3 (1%)	0	100	100
1	C	357/370 (96%)	354 (99%)	3 (1%)	0	100	100
1	D	357/370 (96%)	354 (99%)	3 (1%)	0	100	100
1	E	357/370 (96%)	354 (99%)	3 (1%)	0	100	100
1	F	357/370 (96%)	354 (99%)	3 (1%)	0	100	100
1	G	357/370 (96%)	354 (99%)	3 (1%)	0	100	100
1	H	357/370 (96%)	354 (99%)	3 (1%)	0	100	100
2	I	146/148 (99%)	146 (100%)	0	0	100	100
2	J	146/148 (99%)	146 (100%)	0	0	100	100
2	K	146/148 (99%)	146 (100%)	0	0	100	100
2	L	146/148 (99%)	146 (100%)	0	0	100	100
2	M	146/148 (99%)	146 (100%)	0	0	100	100
2	N	146/148 (99%)	146 (100%)	0	0	100	100
All	All	3732/3848 (97%)	3708 (99%)	24 (1%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

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.

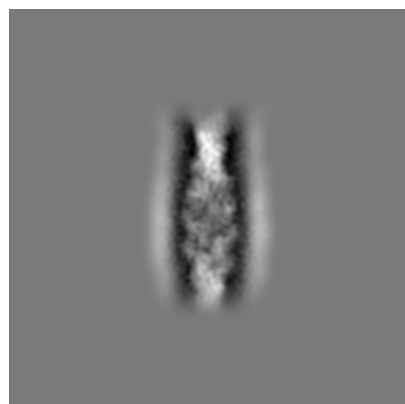
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-16877. These allow visual inspection of the internal detail of the map and identification of artifacts.

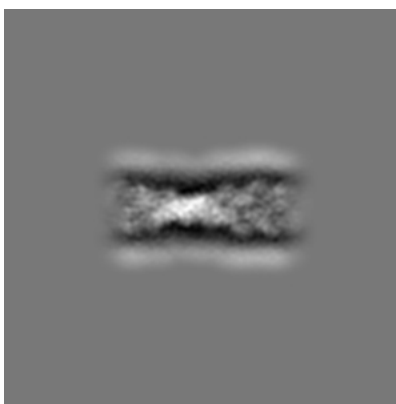
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

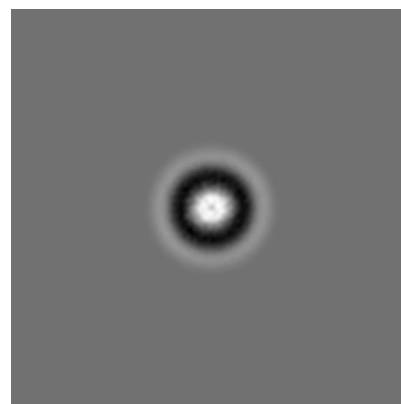
6.1.1 Primary map



X

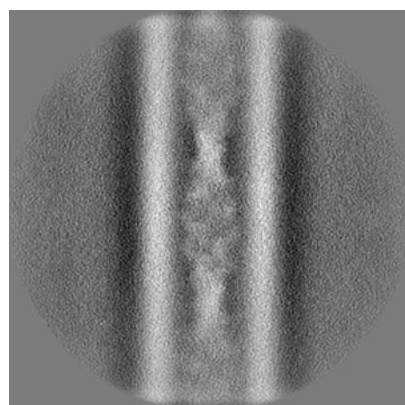


Y

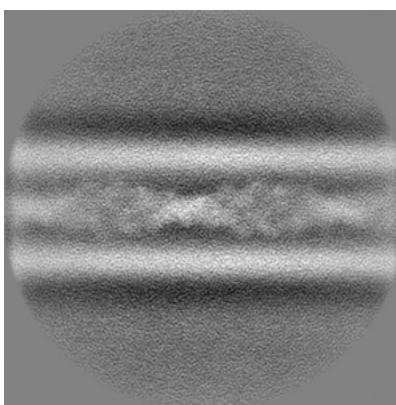


Z

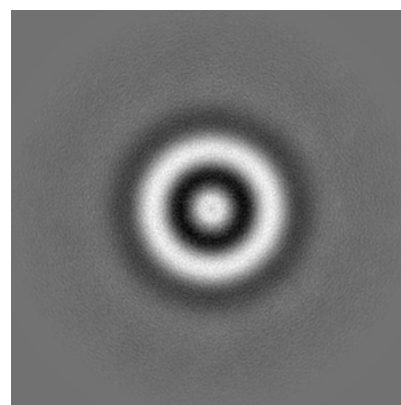
6.1.2 Raw map



X



Y

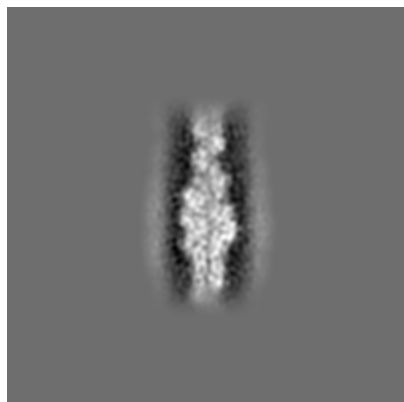


Z

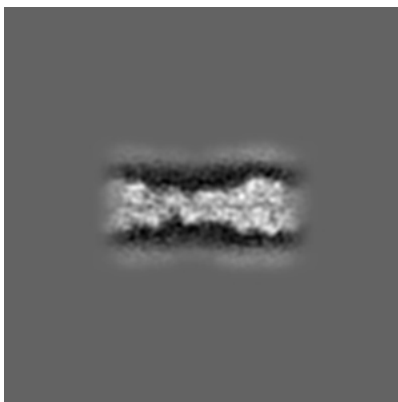
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

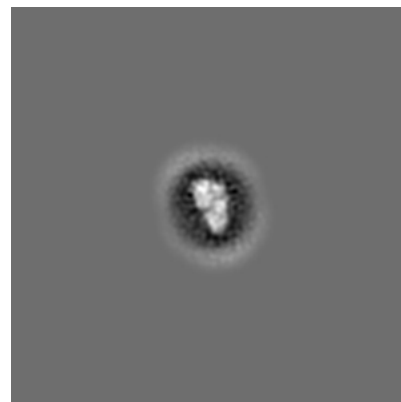
6.2.1 Primary map



X Index: 128

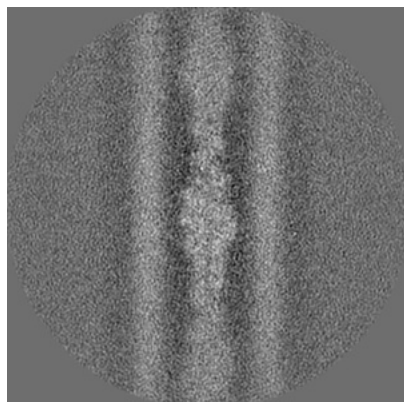


Y Index: 128

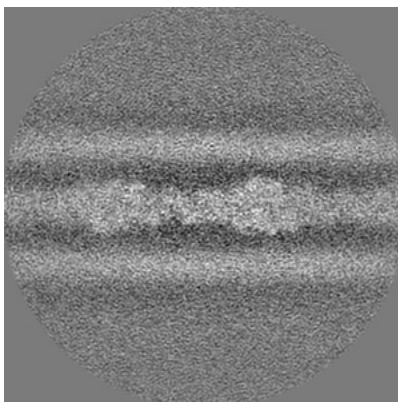


Z Index: 128

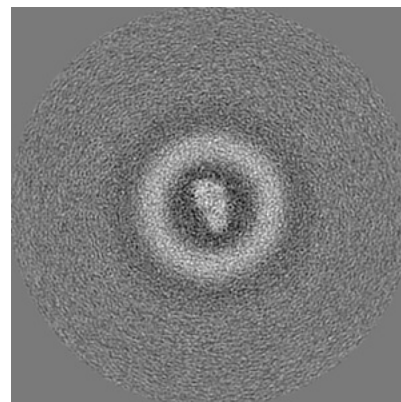
6.2.2 Raw map



X Index: 128



Y Index: 128



Z Index: 128

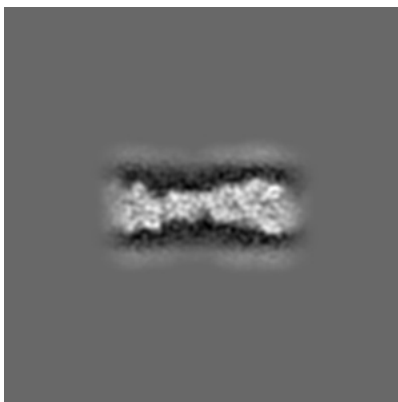
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

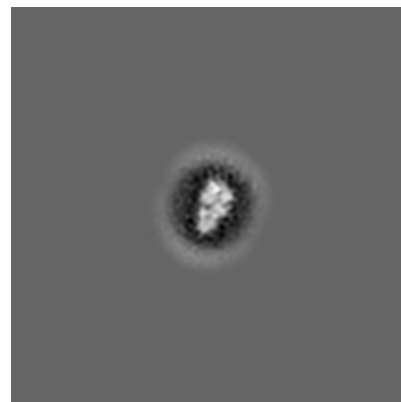
6.3.1 Primary map



X Index: 132

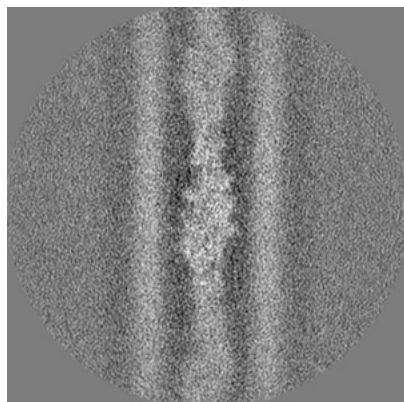


Y Index: 125

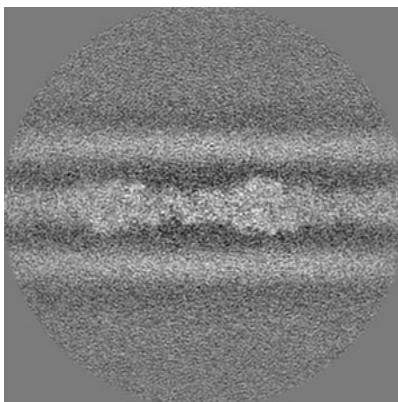


Z Index: 107

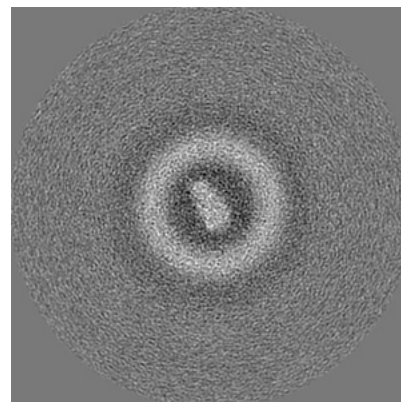
6.3.2 Raw map



X Index: 125



Y Index: 128

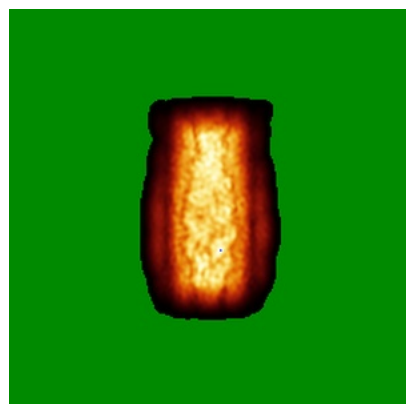


Z Index: 134

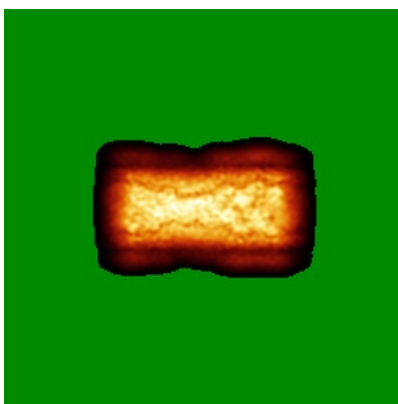
The images above show the largest variance slices of the map in three orthogonal directions.

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

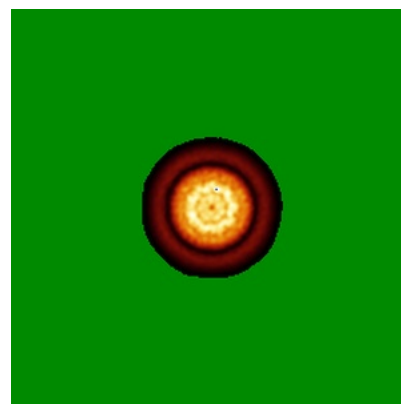
6.4.1 Primary map



X

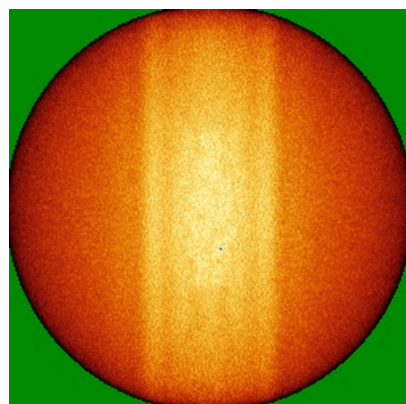


Y

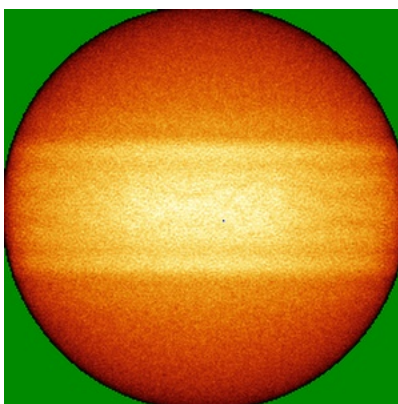


Z

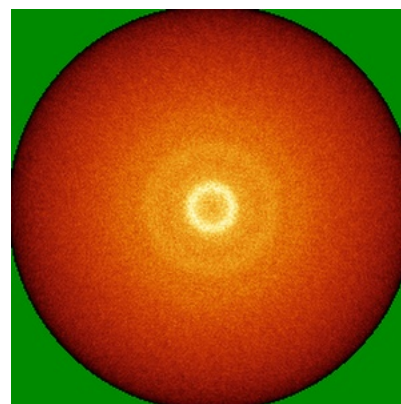
6.4.2 Raw map



X



Y

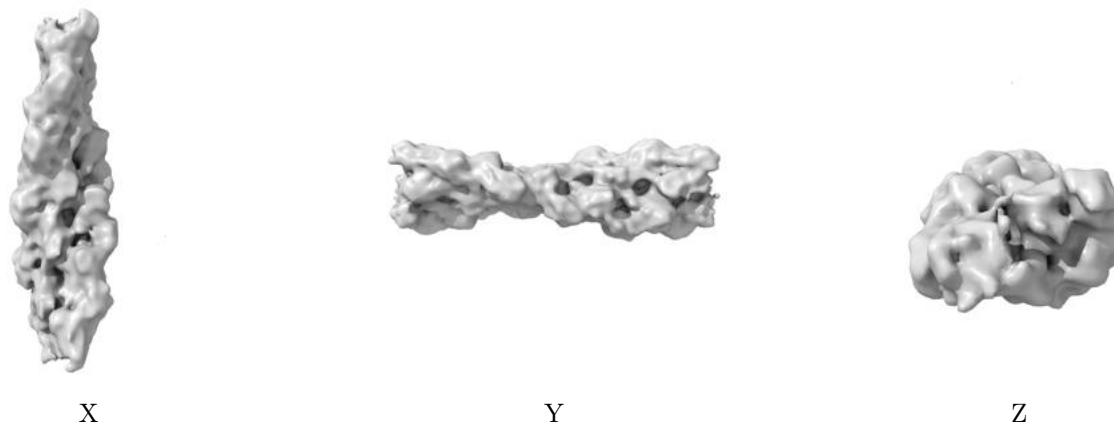


Z

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.

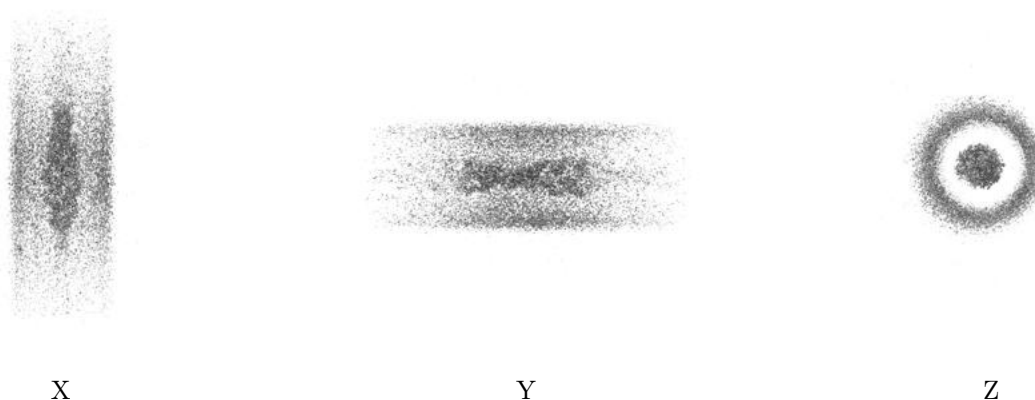
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.00337. 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.

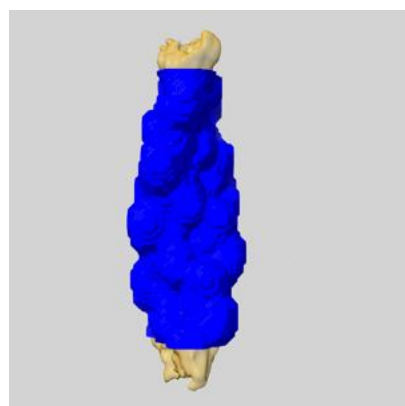
6.6 Mask visualisation [i](#)

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

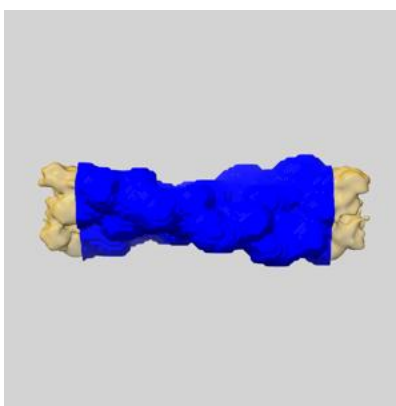
A mask typically either:

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

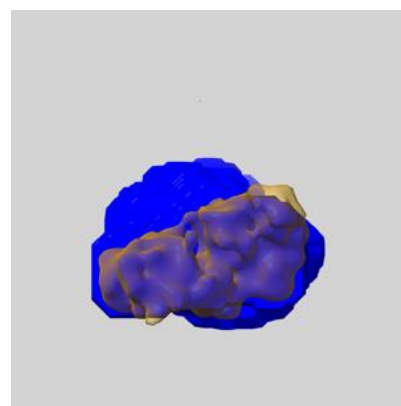
6.6.1 emd_16877_msk_1.map [i](#)



X



Y

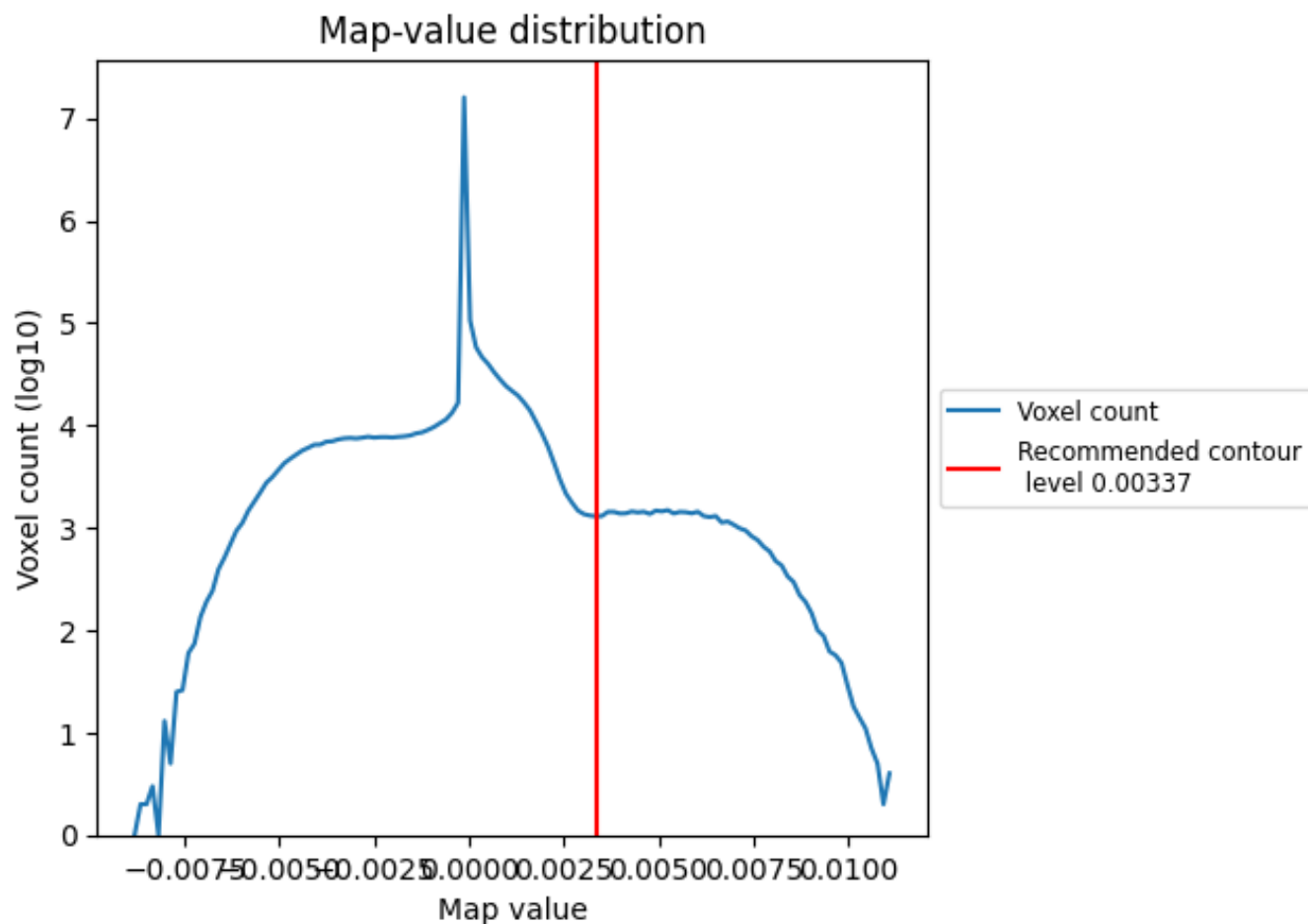


Z

7 Map analysis [i](#)

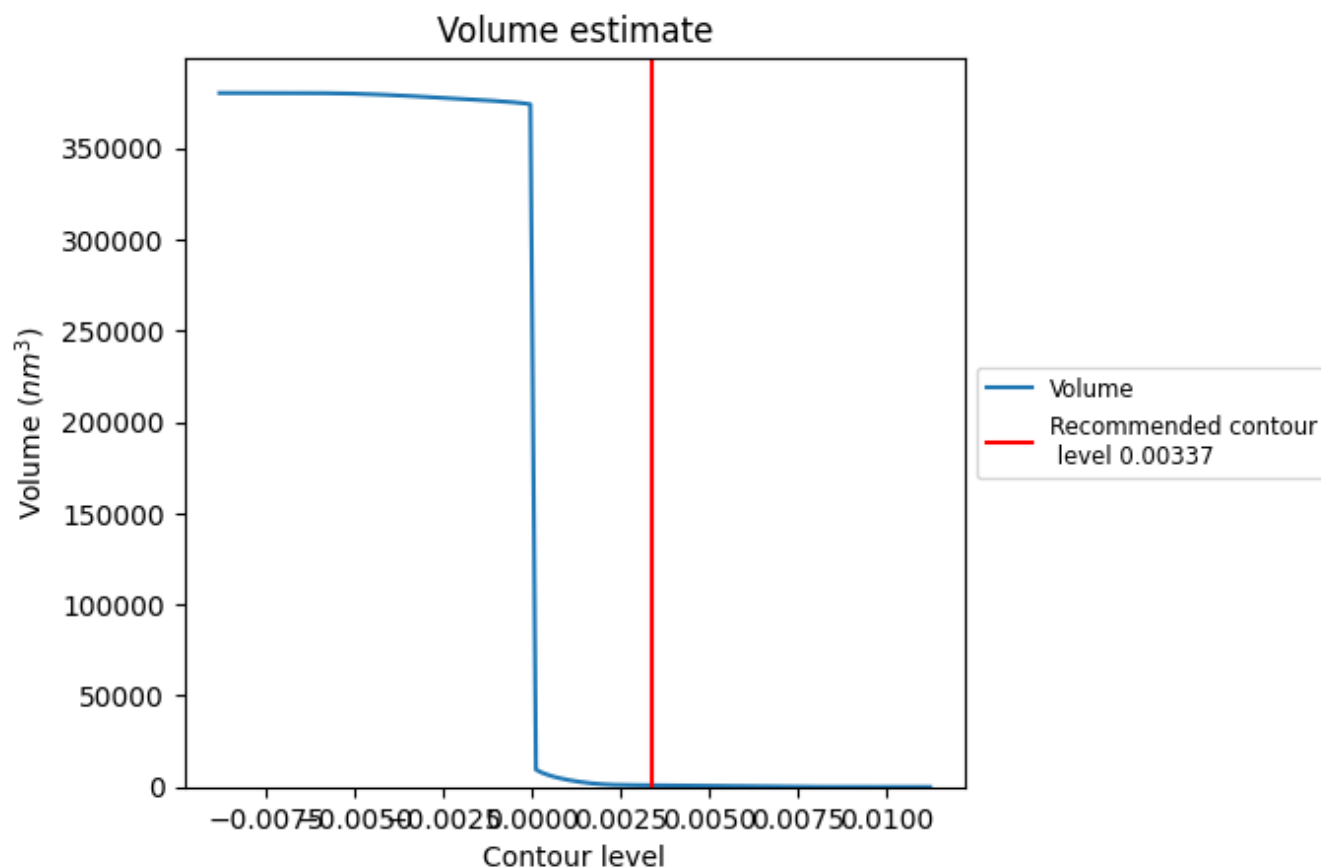
This section contains the results of statistical analysis of the map.

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.

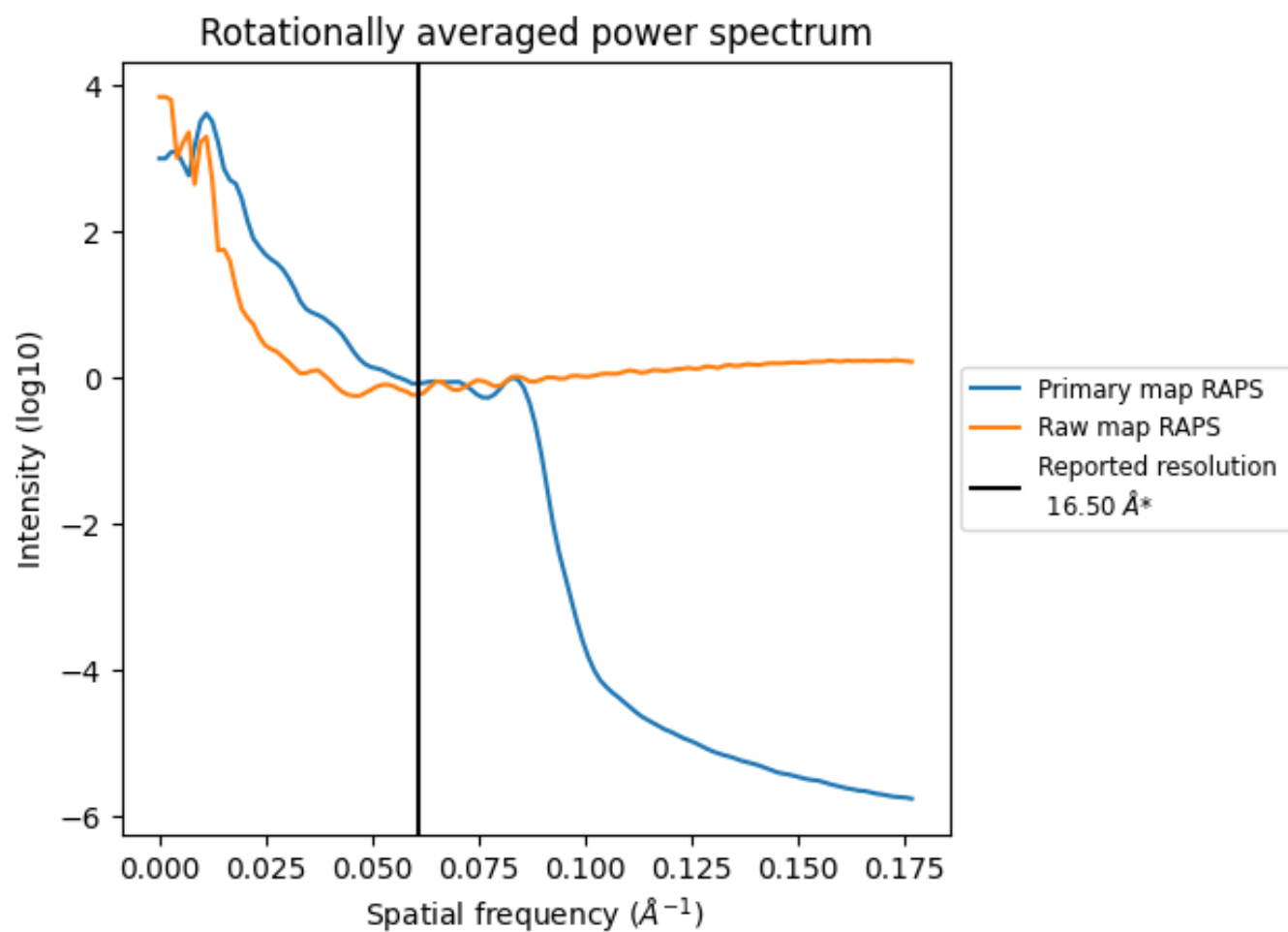
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 901 nm³; this corresponds to an approximate mass of 814 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 ⓘ

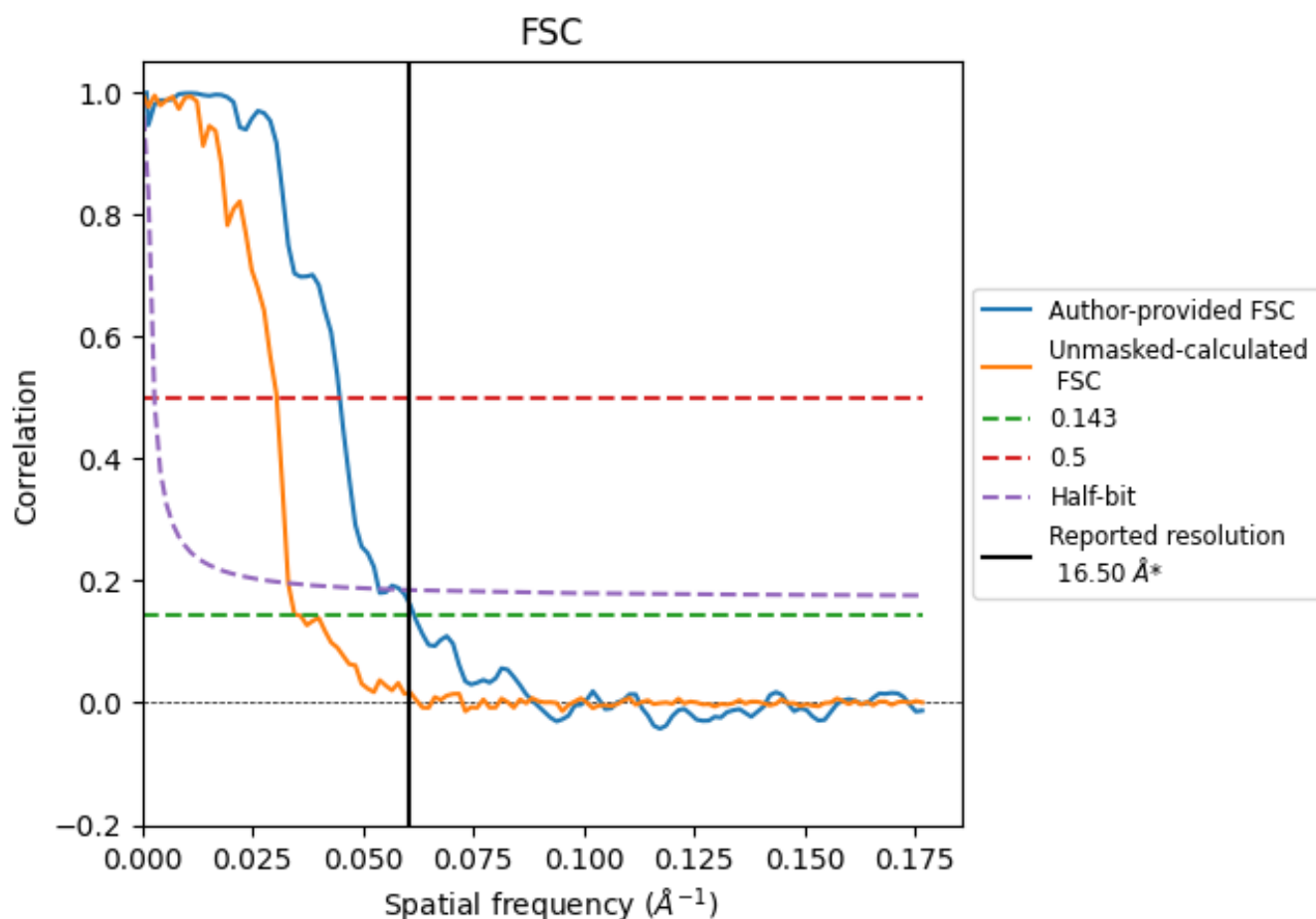


*Reported resolution corresponds to spatial frequency of 0.061 Å⁻¹

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 $0.061 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

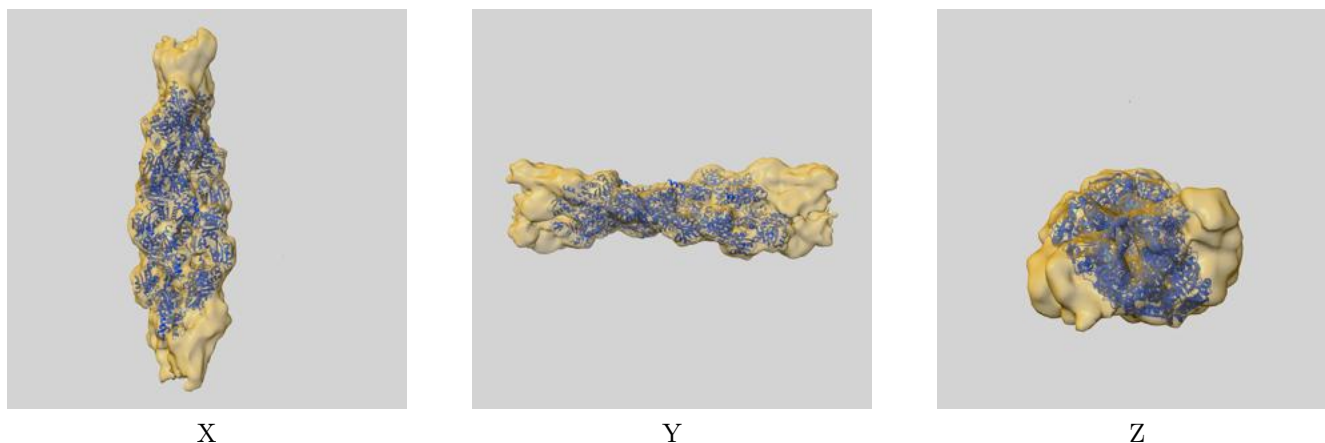
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	16.50	-	-
Author-provided FSC curve	16.21	22.32	18.66
Unmasked-calculated*	28.01	32.89	30.21

*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 28.01 differs from the reported value 16.5 by more than 10 %

9 Map-model fit [i](#)

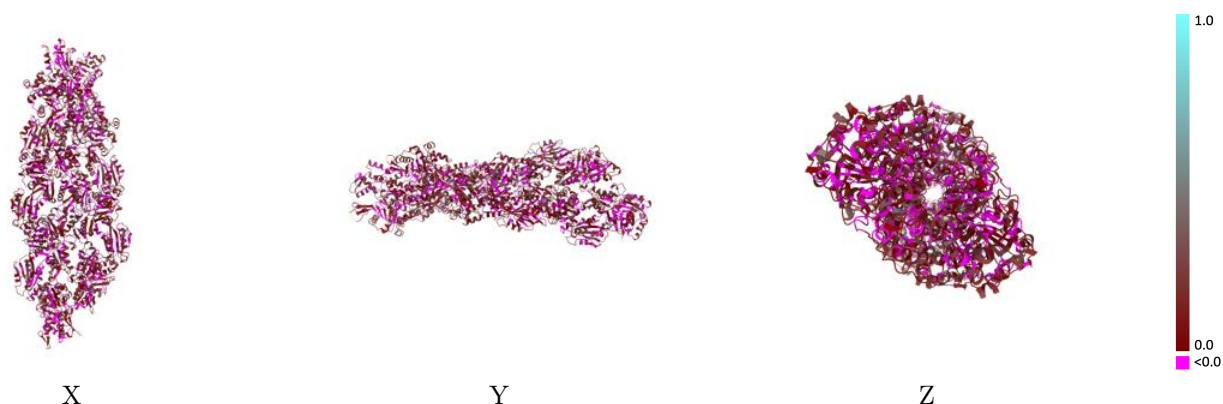
This section contains information regarding the fit between EMDB map EMD-16877 and PDB model 8OH4. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



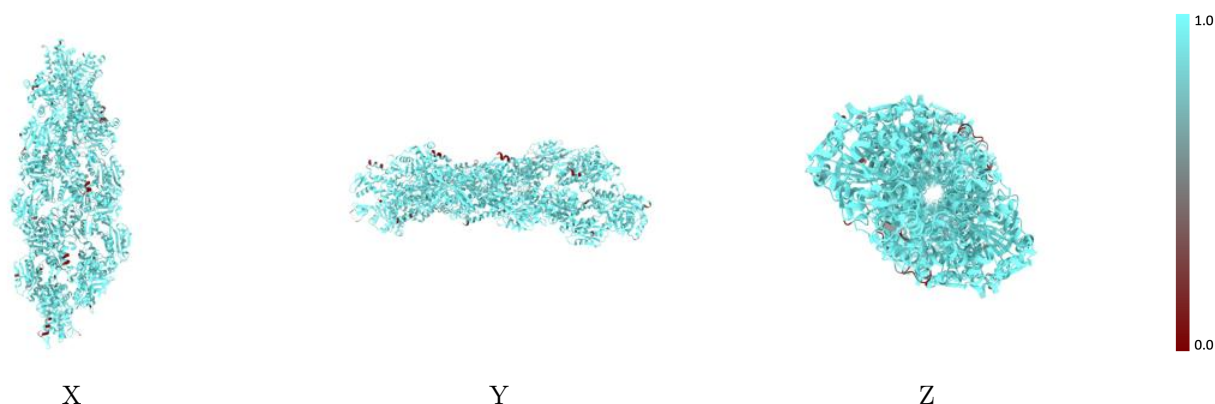
The images above show the 3D surface view of the map at the recommended contour level 0.00337 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



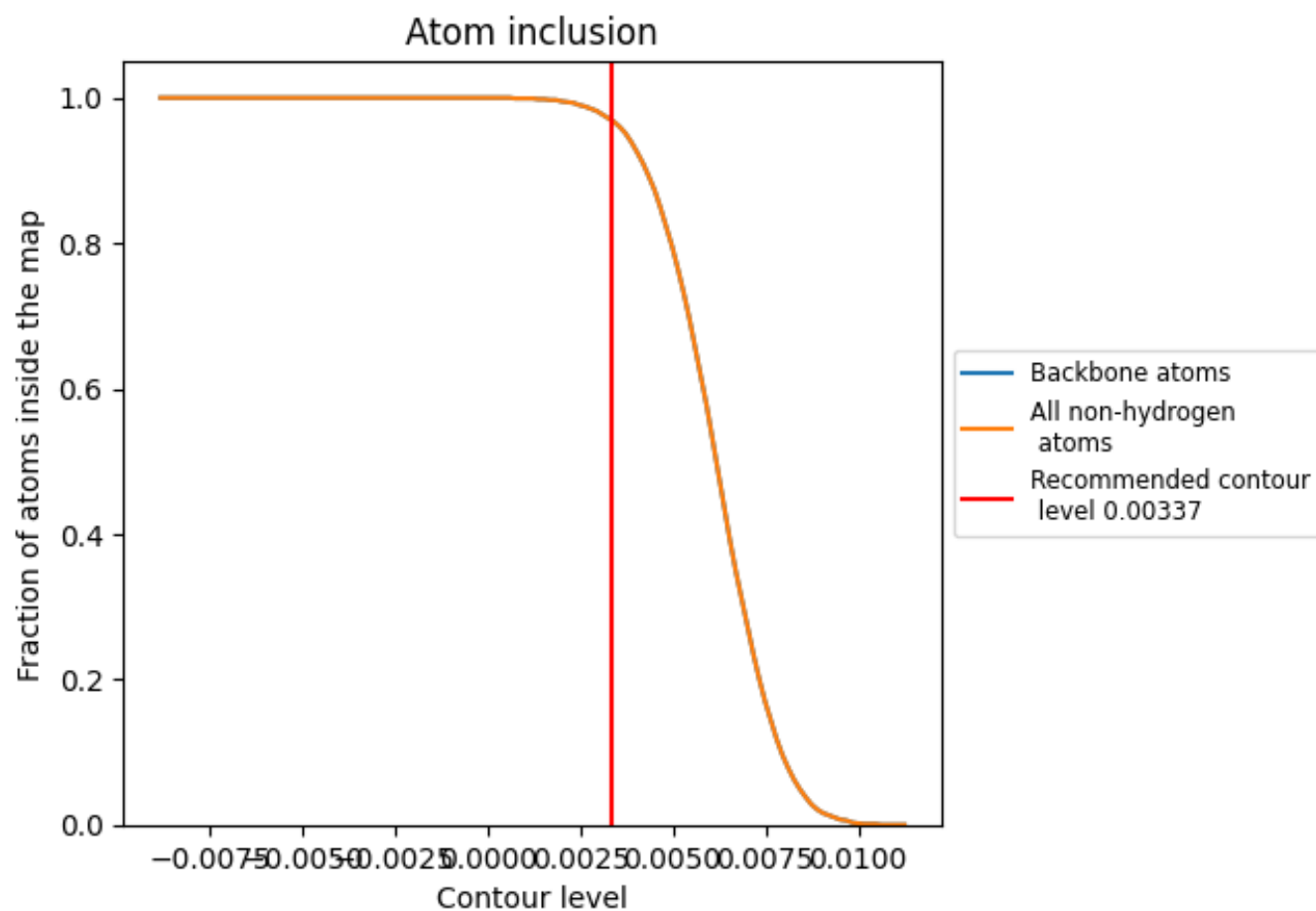
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.00337).

9.4 Atom inclusion [i](#)



At the recommended contour level, 97% of all backbone atoms, 97% 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 (0.00337) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9680	 0.0960
A	 0.9670	 0.0890
B	 0.9710	 0.0920
C	 0.9770	 0.1060
D	 0.9650	 0.1000
E	 0.9790	 0.0960
F	 0.9560	 0.1080
G	 0.9660	 0.0990
H	 0.9560	 0.0810
I	 0.9710	 0.0920
J	 0.9680	 0.0970
K	 0.9900	 0.0800
L	 0.9660	 0.1040
M	 0.9800	 0.1070
N	 0.9580	 0.0830

