



## Full wwPDB EM Validation Report ⓘ

Oct 7, 2024 – 01:21 PM EDT

PDB ID : 9COD  
EMDB ID : EMD-45776  
Title : C15 symmetrized DEV collar  
Authors : Iglesias, S.M.; Hou, C.F.D.; Li, F.; Cingolani, G.  
Deposited on : 2024-07-16  
Resolution : 4.70 Å (reported)

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

We welcome your comments at [validation@mail.wwpdb.org](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

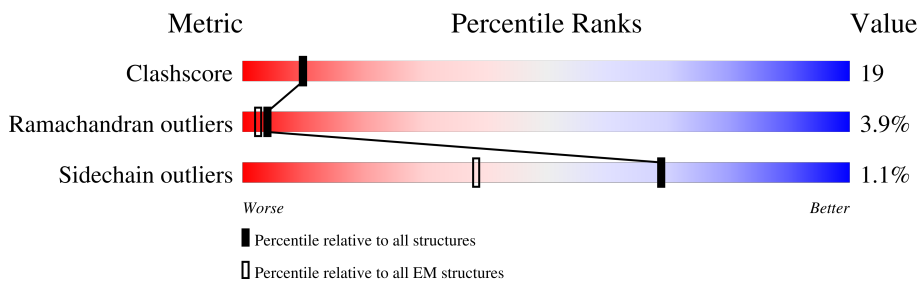
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 4.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	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	1090	6% • 90%
1	B	1090	6% • 90%
1	C	1090	6% • 90%
1	D	1090	6% • 90%
1	E	1090	6% • 90%
1	F	1090	6% • 90%
1	G	1090	6% • 90%
1	H	1090	6% • 90%

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Mol	Chain	Length	Quality of chain
1	I	1090	 6% . 90%
1	J	1090	 6% . 90%
1	K	1090	 6% . 90%
1	L	1090	 6% . 90%
1	M	1090	 6% . 90%
1	N	1090	 6% . 90%
1	O	1090	 6% . 90%

## 2 Entry composition i

There is only 1 type of molecule in this entry. The entry contains 12405 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 SGNH hydrolase-type esterase domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	105	827	520	126	175	6	0	0
1	B	105	827	520	126	175	6	0	0
1	C	105	827	520	126	175	6	0	0
1	D	105	827	520	126	175	6	0	0
1	E	105	827	520	126	175	6	0	0
1	F	105	827	520	126	175	6	0	0
1	G	105	827	520	126	175	6	0	0
1	H	105	827	520	126	175	6	0	0
1	I	105	827	520	126	175	6	0	0
1	J	105	827	520	126	175	6	0	0
1	K	105	827	520	126	175	6	0	0
1	L	105	827	520	126	175	6	0	0
1	M	105	827	520	126	175	6	0	0
1	N	105	827	520	126	175	6	0	0
1	O	105	827	520	126	175	6	0	0











LEU SER GLY PHE TYR SER VAL PRO ILE GLN ASP	ASN GLY TRP ASP VAL SER TRP VAL GLN GLY TRP	ASN GLY TRP VAL SER TRP VAL GLN GLY TRP MET	SER ALA VAL ASP VAL SER TRP VAL GLN GLY TRP MET	ARG VAL ALA GLY TYR THR HIS SER	LEU SER GLY PHE TYR SER VAL PRO ILE GLN ASP	ASN GLY TRP ASP VAL SER TRP VAL GLN GLY TRP MET	SER ALA VAL ASP VAL SER TRP VAL GLN GLY TRP MET	ARG VAL ALA GLY TYR THR HIS SER	LEU SER GLY PHE TYR SER VAL PRO ILE GLN ASP
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• Molecule 1: SGNH hydrolase-type esterase domain-containing protein

Chain E: 6% . 90%

H1	K4	V5	T8	H10	M11	P12	S15	P16	E20	K21	L26	V38	V39	I40	P41	Y44	E45	M46	V47	T48	D49	G52	E53	F54	T55	M56	E59	S60	T62	Y65	I70	D74	E75	T87	F88	P96	V97	Y98	Y99	L102	M105													
PRO	PRO	PRO	THR	THR	ASN	LEU	PRO	TRP	TRP	GLU	GLY	ASP	GLY	VAL	VAL	GLY	GLY	ALA	ARG	GLY	GLY	GLY	ALA	GLN	GLY	ALA	GLY	GLY	GLY	VAL	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY							
ALA	LYS	THR	THR	GLY	THR	THR	ASP	ARG	ALA	ALA	ALA	ASP	ALA	VAL	VAL	LYS	VAL	GLY	GLY	GLY	GLY	GLY	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA					
SER	ASP	GLY	SER	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR				
ASP	CYS	VAL	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR				
ARG	ARG	LEU	ASP	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR			
GLY	GLN	ASN	GLY	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR			
ASN	SER	GLY	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL			
SER	THR	THR	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR		
ALA	ASP	LEU	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY			
TYR	GLY	TYR	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
TRP	ASN	PRO	ALA	TYR	THR	THR	GLY	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
GLY	PHE	VAL	PRO	ILE	GLN	ASP	ASP	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER	SER





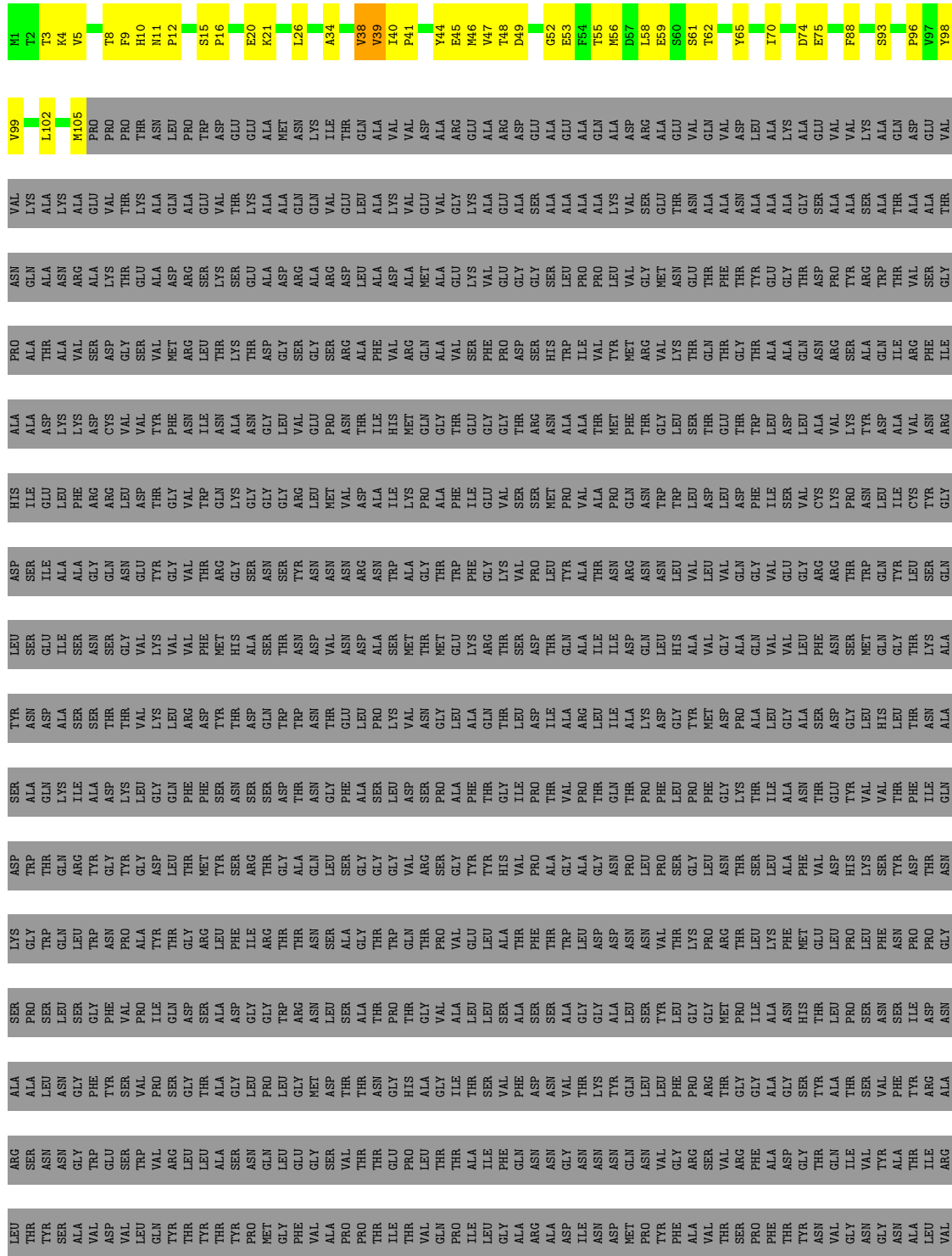




ALA  
GLY  
THR  
THR  
ALA  
HIS  
SER  
PHE  
ALA  
SER  
PHE  
ILE  
ASN  
CVS  
VAL  
ALA  
VAL  
VAL  
ALA  
GLY  
ARG  
TRP  
LYS

● Molecule 1: SGNH hydrolase-type esterase domain-containing protein

Chain J: 6% . 90%





● Molecule 1: SGNH hydrolase-type esterase domain-containing protein

Chain L:  6% . 90%

K4	V5	T8	F9	H10	N11	P12	S15	P16	E20	K21	L26	V38	V39	I40	P41	Y44	E45	M46	V47	T48	D49	G52	E53	F54	T55	M56	E59	S60	S61	T62	Y65	I70	D74	E75	T87	P96	Y97	Y98	V99	L102	M105	PRO										
PRO	THR	ASN	LEU	PRO	TRP	ASP	GLU	GLU	ALA	MET	ASN	LYS	ILE	THR	GLN	ALA	VAL	ASP	GLN	VAL	ALA	ARG	GLU	ALA	GLN	ALA	ASP	GLY	ALA	VAL	ASP	ASN	LEU	ALA	LYS	ALA	GLN	ASP	ALA	GLU	VAL	VAL	VAL	LYS	ALA	GLU						
VAL	THR	LYS	ALA	GLN	ALA	GLY	THR	LYS	THR	GLY	ALA	GLN	VAL	THR	GLU	ALA	ALA	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY						
LYS	THR	GLY	ALA	ARG	ASP	SER	LYS	THR	LYS	ASP	ARG	ALA	ALA	ARG	ALA	PHE	VAL	ASP	ALA	ALA	THR	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU				
ASP	GLY	SER	VAL	MET	GLY	THR	THR	LYS	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR				
CYS	VAL	VAL	TYR	PHE	GLY	ASN	ASN	ALA	ASN	ALA	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR				
ARG	LEU	ASP	THR	THR	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR			
GLN	ASN	TYR	GLY	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR			
SER	GLY	VAL	LYS	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL			
THR	THR	VAL	LYS	LEU	GLN	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU		
ASP	LYS	LEU	GLY	PHE	ASN	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
GLY	TYR	GLY	ASP	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
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PHE	VAL	PRO	ILE	GLY	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
TYR	SER	VAL	PRO	GLY	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
GLU	SER	TRP	VAL	LEU	ARG	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	
ASP	VAL	LEU	GLN	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
GLY	TYR	THR	ALA	HIS	SER	PHE	ILE	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN

● Molecule 1: SGNH hydrolase-type esterase domain-containing protein







M1	K4	V5	T8	F9	H10	M11	P12	S15	P16	E20	K21	L26	V38	V39	I40	P41	Y44	E45	M46	V47	T48	D49	G52	E53	F54	T55	M56	E59	S60	S61	T62	Y65	I70	D74	E75	T87	F88	P96	Y97	Y98	V99	L102	M105									
PRO	PRO	PRO	THR	THR	ASN	LEU	LEU	PRO	TRP	ASP	GLU	VAL	ASP	GLN	ALA	VAL	VAL	ALA	ALA	ARG	ASP	GLU	ALA	ALA	ALA	GLN	ALA	ALA	VAL	GLN	GLN	ALA	ALA	VAL	VAL	VAL	VAL	VAL	ALA	ALA	GLN	ASP	GLU	VAL	VAL	VAL	ALA	ALA				
GLU	VAL	THR	LYS	ALA	ALA	GLN	VAL	ALA	ALA	GLN	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL			
ALA	LYS	THR	GLU	VAL	ASP	ARG	SER	LEU	THR	LYS	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA			
SER	ASP	GLY	SER	VAL	THR	MET	VAL	ARG	LEU	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR		
ASP	CYS	VAL	THR	TYR	VAL	PHE	ASN	ILE	THR	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN		
ARG	ARG	LEU	ASP	THR	GLY	VAL	THR	TRP	THR	GLN	LYS	GLY	ARG	GLY	ARG	ILE	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
GLY	GLN	ASN	GLU	TYR	THR	VAL	THR	THR	THR	ARG	GLY	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
ASN	SER	GLY	VAL	LYS	VAL	PHE	THR	THR	THR	MET	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR		
SER	THR	THR	VAL	LYS	VAL	PHE	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR		
ALA	ASP	LYS	LEU	GLN	GLY	PHE	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR		
TYR	GLY	TYR	THR	ASP	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
TRP	ASN	PRO	ALA	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
GLY	PHE	VAL	PRO	ILE	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
PHE	TYR	SER	VAL	PRO	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
TRP	GLU	SER	TRP	VAL	ARG	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	
VAL	ASP	VAL	LEU	GLN	TYR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
ALA	GLY	TYR	THR	ALA	HIS	SER	PHE	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	3200	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.035	Depositor
Minimum map value	-0.017	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0018	Depositor
Map size (Å)	573.44, 573.44, 573.44	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.12, 1.12, 1.12	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	0.26	0/847	0.63	1/1156 (0.1%)
1	B	0.26	0/847	0.63	1/1156 (0.1%)
1	C	0.26	0/847	0.63	1/1156 (0.1%)
1	D	0.26	0/847	0.63	1/1156 (0.1%)
1	E	0.26	0/847	0.63	1/1156 (0.1%)
1	F	0.26	0/847	0.63	1/1156 (0.1%)
1	G	0.26	0/847	0.63	1/1156 (0.1%)
1	H	0.26	0/847	0.63	1/1156 (0.1%)
1	I	0.26	0/847	0.63	1/1156 (0.1%)
1	J	0.26	0/847	0.63	1/1156 (0.1%)
1	K	0.26	0/847	0.63	1/1156 (0.1%)
1	L	0.26	0/847	0.63	1/1156 (0.1%)
1	M	0.26	0/847	0.63	1/1156 (0.1%)
1	N	0.26	0/847	0.63	1/1156 (0.1%)
1	O	0.26	0/847	0.63	1/1156 (0.1%)
All	All	0.26	0/12705	0.63	15/17340 (0.1%)

There are no bond length outliers.

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	46	MET	CA-CB-CG	5.72	123.02	113.30
1	N	46	MET	CA-CB-CG	5.72	123.02	113.30
1	O	46	MET	CA-CB-CG	5.72	123.02	113.30
1	J	46	MET	CA-CB-CG	5.71	123.01	113.30
1	L	46	MET	CA-CB-CG	5.71	123.01	113.30
1	M	46	MET	CA-CB-CG	5.71	123.01	113.30
1	G	46	MET	CA-CB-CG	5.71	123.00	113.30
1	H	46	MET	CA-CB-CG	5.71	123.00	113.30
1	K	46	MET	CA-CB-CG	5.71	123.00	113.30
1	B	46	MET	CA-CB-CG	5.71	123.00	113.30
1	D	46	MET	CA-CB-CG	5.70	123.00	113.30
1	F	46	MET	CA-CB-CG	5.70	123.00	113.30

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Mol	Chain	Res	Type	Atoms	Z	Observed( $^{\circ}$ )	Ideal( $^{\circ}$ )
1	I	46	MET	CA-CB-CG	5.70	123.00	113.30
1	A	46	MET	CA-CB-CG	5.69	122.98	113.30
1	C	46	MET	CA-CB-CG	5.69	122.97	113.30

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	827	0	763	36	0
1	B	827	0	763	40	0
1	C	827	0	763	37	0
1	D	827	0	763	33	0
1	E	827	0	763	34	0
1	F	827	0	763	34	0
1	G	827	0	763	34	0
1	H	827	0	763	34	0
1	I	827	0	763	35	0
1	J	827	0	763	37	0
1	K	827	0	763	43	0
1	L	827	0	763	35	0
1	M	827	0	763	33	0
1	N	827	0	763	40	0
1	O	827	0	763	35	0
All	All	12405	0	11445	456	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 19.

All (456) 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:A:38:VAL:HG13	1:A:39:VAL:H	1.34	0.93
1:F:38:VAL:HG13	1:F:39:VAL:H	1.34	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:38:VAL:HG13	1:D:39:VAL:H	1.34	0.93
1:K:38:VAL:HG13	1:K:39:VAL:H	1.34	0.92
1:J:38:VAL:HG13	1:J:39:VAL:H	1.34	0.92
1:G:38:VAL:HG13	1:G:39:VAL:H	1.34	0.92
1:B:38:VAL:HG13	1:B:39:VAL:H	1.34	0.92
1:E:38:VAL:HG13	1:E:39:VAL:H	1.34	0.91
1:H:38:VAL:HG13	1:H:39:VAL:H	1.34	0.91
1:C:38:VAL:HG13	1:C:39:VAL:H	1.34	0.91
1:L:38:VAL:HG13	1:L:39:VAL:H	1.34	0.91
1:N:38:VAL:HG13	1:N:39:VAL:H	1.34	0.91
1:I:38:VAL:HG13	1:I:39:VAL:H	1.34	0.90
1:O:38:VAL:HG13	1:O:39:VAL:H	1.34	0.90
1:M:38:VAL:HG13	1:M:39:VAL:H	1.34	0.90
1:K:40:ILE:H	1:N:11:ASN:ND2	1.80	0.79
1:K:58:LEU:HD22	1:N:13:ASP:N	2.06	0.71
1:H:40:ILE:HG12	1:M:11:ASN:ND2	2.07	0.70
1:G:40:ILE:HG12	1:K:11:ASN:ND2	2.08	0.68
1:F:5:VAL:HG12	1:F:56:MET:H	1.59	0.68
1:C:5:VAL:HG12	1:C:56:MET:H	1.59	0.68
1:L:5:VAL:HG12	1:L:56:MET:H	1.59	0.68
1:K:5:VAL:HG12	1:K:56:MET:H	1.59	0.68
1:H:5:VAL:HG12	1:H:56:MET:H	1.59	0.68
1:A:5:VAL:HG12	1:A:56:MET:H	1.59	0.67
1:I:5:VAL:HG12	1:I:56:MET:H	1.59	0.67
1:J:5:VAL:HG12	1:J:56:MET:H	1.59	0.67
1:M:5:VAL:HG12	1:M:56:MET:H	1.59	0.67
1:G:5:VAL:HG12	1:G:56:MET:H	1.59	0.67
1:K:40:ILE:HD12	1:N:70:ILE:HD12	1.77	0.67
1:B:5:VAL:HG12	1:B:56:MET:H	1.59	0.66
1:D:5:VAL:HG12	1:D:56:MET:H	1.59	0.66
1:K:38:VAL:HG11	1:N:9:PHE:HA	1.77	0.66
1:O:5:VAL:HG12	1:O:56:MET:H	1.59	0.66
1:E:5:VAL:HG12	1:E:56:MET:H	1.59	0.66
1:N:5:VAL:HG12	1:N:56:MET:H	1.59	0.66
1:A:12:PRO:HG2	1:A:15:SER:HB3	1.78	0.66
1:B:12:PRO:HG2	1:B:15:SER:HB3	1.78	0.66
1:D:12:PRO:HG2	1:D:15:SER:HB3	1.78	0.66
1:C:48:THR:HG22	1:C:52:GLY:HA2	1.78	0.66
1:I:48:THR:HG22	1:I:52:GLY:HA2	1.78	0.66
1:A:48:THR:HG22	1:A:52:GLY:HA2	1.78	0.66
1:L:48:THR:HG22	1:L:52:GLY:HA2	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:48:THR:HG22	1:O:52:GLY:HA2	1.78	0.66
1:E:48:THR:HG22	1:E:52:GLY:HA2	1.78	0.66
1:G:11:ASN:ND2	1:O:40:ILE:HG12	2.09	0.66
1:H:48:THR:HG22	1:H:52:GLY:HA2	1.78	0.66
1:L:12:PRO:HG2	1:L:15:SER:HB3	1.78	0.66
1:M:48:THR:HG22	1:M:52:GLY:HA2	1.78	0.66
1:B:48:THR:HG22	1:B:52:GLY:HA2	1.78	0.65
1:J:48:THR:HG22	1:J:52:GLY:HA2	1.78	0.65
1:D:40:ILE:HG12	1:H:11:ASN:ND2	2.11	0.65
1:H:12:PRO:HG2	1:H:15:SER:HB3	1.78	0.65
1:C:12:PRO:HG2	1:C:15:SER:HB3	1.78	0.65
1:D:48:THR:HG22	1:D:52:GLY:HA2	1.78	0.65
1:M:12:PRO:HG2	1:M:15:SER:HB3	1.78	0.65
1:K:48:THR:HG22	1:K:52:GLY:HA2	1.78	0.65
1:F:48:THR:HG22	1:F:52:GLY:HA2	1.78	0.65
1:G:48:THR:HG22	1:G:52:GLY:HA2	1.78	0.65
1:J:12:PRO:HG2	1:J:15:SER:HB3	1.78	0.65
1:N:48:THR:HG22	1:N:52:GLY:HA2	1.78	0.65
1:E:12:PRO:HG2	1:E:15:SER:HB3	1.78	0.65
1:F:12:PRO:HG2	1:F:15:SER:HB3	1.78	0.65
1:A:11:ASN:ND2	1:C:40:ILE:HG12	2.13	0.64
1:O:12:PRO:HG2	1:O:15:SER:HB3	1.78	0.64
1:I:12:PRO:HG2	1:I:15:SER:HB3	1.78	0.64
1:G:38:VAL:HG11	1:K:9:PHE:HA	1.79	0.64
1:G:12:PRO:HG2	1:G:15:SER:HB3	1.78	0.64
1:N:12:PRO:HG2	1:N:15:SER:HB3	1.78	0.64
1:B:38:VAL:HG11	1:L:9:PHE:HA	1.80	0.64
1:K:12:PRO:HG2	1:K:15:SER:HB3	1.78	0.64
1:E:40:ILE:HG12	1:I:11:ASN:ND2	2.13	0.63
1:B:40:ILE:HG12	1:L:11:ASN:ND2	2.14	0.63
1:G:11:ASN:HD22	1:O:40:ILE:HG12	1.62	0.63
1:D:11:ASN:ND2	1:L:40:ILE:HG12	2.14	0.63
1:I:40:ILE:HG12	1:O:11:ASN:ND2	2.14	0.62
1:A:40:ILE:HG12	1:B:11:ASN:ND2	2.14	0.62
1:A:38:VAL:HG11	1:B:9:PHE:HA	1.82	0.62
1:F:40:ILE:HG12	1:J:11:ASN:ND2	2.15	0.61
1:D:11:ASN:HD22	1:L:40:ILE:HG12	1.66	0.60
1:G:34:ALA:O	1:K:98:TYR:HE2	1.85	0.60
1:I:38:VAL:HG11	1:O:9:PHE:HA	1.82	0.60
1:E:20:GLU:O	1:E:48:THR:OG1	2.18	0.60
1:M:53:GLU:OE2	1:M:55:THR:OG1	2.20	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:11:ASN:HD22	1:C:40:ILE:HG12	1.66	0.60
1:H:20:GLU:O	1:H:48:THR:OG1	2.18	0.60
1:A:9:PHE:HA	1:C:38:VAL:HG11	1.83	0.59
1:E:53:GLU:OE2	1:E:55:THR:OG1	2.20	0.59
1:J:20:GLU:O	1:J:48:THR:OG1	2.18	0.59
1:H:53:GLU:OE2	1:H:55:THR:OG1	2.20	0.59
1:O:53:GLU:OE2	1:O:55:THR:OG1	2.20	0.59
1:G:53:GLU:OE2	1:G:55:THR:OG1	2.20	0.59
1:L:53:GLU:OE2	1:L:55:THR:OG1	2.20	0.59
1:G:40:ILE:HG12	1:K:11:ASN:HD22	1.67	0.59
1:H:40:ILE:HG12	1:M:11:ASN:HD22	1.66	0.59
1:B:53:GLU:OE2	1:B:55:THR:OG1	2.20	0.59
1:B:20:GLU:O	1:B:48:THR:OG1	2.18	0.59
1:O:20:GLU:O	1:O:48:THR:OG1	2.18	0.59
1:F:53:GLU:OE2	1:F:55:THR:OG1	2.20	0.59
1:J:53:GLU:OE2	1:J:55:THR:OG1	2.20	0.59
1:L:20:GLU:O	1:L:48:THR:OG1	2.18	0.59
1:E:11:ASN:ND2	1:M:40:ILE:HG12	2.18	0.59
1:I:53:GLU:OE2	1:I:55:THR:OG1	2.20	0.59
1:G:20:GLU:O	1:G:48:THR:OG1	2.18	0.58
1:D:53:GLU:OE2	1:D:55:THR:OG1	2.20	0.58
1:N:53:GLU:OE2	1:N:55:THR:OG1	2.20	0.58
1:A:53:GLU:OE2	1:A:55:THR:OG1	2.20	0.58
1:I:20:GLU:O	1:I:48:THR:OG1	2.18	0.58
1:C:53:GLU:OE2	1:C:55:THR:OG1	2.20	0.58
1:K:53:GLU:OE2	1:K:55:THR:OG1	2.20	0.58
1:C:20:GLU:O	1:C:48:THR:OG1	2.18	0.57
1:F:20:GLU:O	1:F:48:THR:OG1	2.18	0.56
1:H:38:VAL:HG13	1:H:39:VAL:N	2.15	0.56
1:I:38:VAL:HG13	1:I:39:VAL:N	2.15	0.56
1:K:20:GLU:O	1:K:48:THR:OG1	2.18	0.56
1:N:20:GLU:O	1:N:48:THR:OG1	2.18	0.56
1:E:40:ILE:HG12	1:I:11:ASN:HD22	1.69	0.56
1:E:38:VAL:HG13	1:E:39:VAL:N	2.15	0.56
1:D:40:ILE:HG12	1:H:11:ASN:HD22	1.70	0.56
1:M:20:GLU:O	1:M:48:THR:OG1	2.18	0.56
1:A:40:ILE:HG12	1:B:11:ASN:HD22	1.71	0.56
1:A:11:ASN:ND2	1:C:40:ILE:H	2.03	0.55
1:A:20:GLU:O	1:A:48:THR:OG1	2.18	0.55
1:D:38:VAL:HG13	1:D:39:VAL:N	2.14	0.55
1:M:38:VAL:HG13	1:M:39:VAL:N	2.14	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:10:HIS:HB2	1:I:16:PRO:HA	1.89	0.55
1:M:38:VAL:CG1	1:M:39:VAL:H	2.15	0.55
1:G:10:HIS:HB2	1:G:16:PRO:HA	1.89	0.55
1:I:34:ALA:O	1:O:98:TYR:HE2	1.89	0.55
1:N:38:VAL:HG13	1:N:39:VAL:N	2.15	0.55
1:E:10:HIS:HB2	1:E:16:PRO:HA	1.89	0.55
1:N:10:HIS:HB2	1:N:16:PRO:HA	1.89	0.55
1:K:10:HIS:HB2	1:K:16:PRO:HA	1.89	0.54
1:O:10:HIS:HB2	1:O:16:PRO:HA	1.89	0.54
1:M:10:HIS:HB2	1:M:16:PRO:HA	1.89	0.54
1:A:34:ALA:O	1:B:98:TYR:HE2	1.90	0.54
1:L:38:VAL:HG13	1:L:39:VAL:N	2.15	0.54
1:C:9:PHE:HA	1:J:38:VAL:HG11	1.88	0.54
1:D:20:GLU:O	1:D:48:THR:OG1	2.18	0.54
1:H:105:MET:SD	1:H:105:MET:N	2.81	0.54
1:L:105:MET:SD	1:L:105:MET:N	2.81	0.54
1:C:10:HIS:HB2	1:C:16:PRO:HA	1.89	0.54
1:E:105:MET:SD	1:E:105:MET:N	2.81	0.54
1:H:10:HIS:HB2	1:H:16:PRO:HA	1.89	0.54
1:N:105:MET:SD	1:N:105:MET:N	2.81	0.54
1:G:105:MET:SD	1:G:105:MET:N	2.81	0.54
1:B:105:MET:SD	1:B:105:MET:N	2.81	0.54
1:F:10:HIS:HB2	1:F:16:PRO:HA	1.89	0.54
1:O:105:MET:SD	1:O:105:MET:N	2.81	0.54
1:A:105:MET:SD	1:A:105:MET:N	2.81	0.54
1:C:105:MET:N	1:C:105:MET:SD	2.81	0.54
1:I:105:MET:SD	1:I:105:MET:N	2.81	0.54
1:B:10:HIS:HB2	1:B:16:PRO:HA	1.89	0.53
1:B:40:ILE:HG12	1:L:11:ASN:HD22	1.71	0.53
1:B:40:ILE:H	1:L:11:ASN:ND2	2.05	0.53
1:L:10:HIS:HB2	1:L:16:PRO:HA	1.89	0.53
1:D:10:HIS:HB2	1:D:16:PRO:HA	1.89	0.53
1:F:98:TYR:HE2	1:N:34:ALA:O	1.92	0.53
1:M:105:MET:SD	1:M:105:MET:N	2.81	0.53
1:A:10:HIS:HB2	1:A:16:PRO:HA	1.89	0.53
1:D:105:MET:SD	1:D:105:MET:N	2.81	0.53
1:J:105:MET:SD	1:J:105:MET:N	2.81	0.53
1:J:10:HIS:HB2	1:J:16:PRO:HA	1.89	0.53
1:K:105:MET:SD	1:K:105:MET:N	2.81	0.53
1:B:34:ALA:O	1:L:98:TYR:HE2	1.92	0.53
1:F:38:VAL:HG11	1:J:9:PHE:HA	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:105:MET:SD	1:F:105:MET:N	2.81	0.53
1:K:38:VAL:HG13	1:K:39:VAL:N	2.15	0.53
1:D:34:ALA:O	1:H:98:TYR:HE2	1.92	0.53
1:K:29:PRO:HD3	1:N:84:TYR:CD1	2.44	0.53
1:B:38:VAL:HG13	1:B:39:VAL:N	2.14	0.53
1:J:38:VAL:CG1	1:J:39:VAL:H	2.15	0.53
1:G:40:ILE:H	1:K:11:ASN:ND2	2.08	0.52
1:C:11:ASN:ND2	1:J:40:ILE:HG12	2.24	0.52
1:K:38:VAL:HG21	1:N:9:PHE:CD2	2.45	0.52
1:G:38:VAL:HG13	1:G:39:VAL:N	2.15	0.52
1:G:11:ASN:ND2	1:O:40:ILE:H	2.08	0.52
1:A:38:VAL:CG1	1:A:39:VAL:H	2.15	0.52
1:A:40:ILE:H	1:B:11:ASN:ND2	2.08	0.52
1:G:9:PHE:HA	1:O:38:VAL:HG11	1.90	0.52
1:F:34:ALA:O	1:J:98:TYR:HE2	1.93	0.51
1:A:38:VAL:HG13	1:A:39:VAL:N	2.14	0.51
1:O:38:VAL:HG13	1:O:39:VAL:N	2.14	0.51
1:K:26:LEU:HB3	1:K:41:PRO:HA	1.93	0.51
1:A:26:LEU:HB3	1:A:41:PRO:HA	1.93	0.51
1:C:26:LEU:HB3	1:C:41:PRO:HA	1.93	0.51
1:F:26:LEU:HB3	1:F:41:PRO:HA	1.93	0.51
1:F:38:VAL:HG13	1:F:39:VAL:N	2.15	0.51
1:C:38:VAL:HG13	1:C:39:VAL:N	2.14	0.51
1:D:38:VAL:HG11	1:H:9:PHE:HA	1.91	0.51
1:N:26:LEU:HB3	1:N:41:PRO:HA	1.93	0.51
1:J:26:LEU:HB3	1:J:41:PRO:HA	1.93	0.51
1:O:26:LEU:HB3	1:O:41:PRO:HA	1.93	0.51
1:B:26:LEU:HB3	1:B:41:PRO:HA	1.93	0.51
1:G:26:LEU:HB3	1:G:41:PRO:HA	1.93	0.51
1:J:38:VAL:HG13	1:J:39:VAL:N	2.15	0.51
1:L:26:LEU:HB3	1:L:41:PRO:HA	1.93	0.51
1:I:26:LEU:HB3	1:I:41:PRO:HA	1.93	0.50
1:D:26:LEU:HB3	1:D:41:PRO:HA	1.93	0.50
1:D:3:THR:OG1	1:D:93:SER:O	2.25	0.50
1:F:38:VAL:CG1	1:F:39:VAL:H	2.15	0.50
1:M:26:LEU:HB3	1:M:41:PRO:HA	1.93	0.50
1:D:38:VAL:CG1	1:D:39:VAL:H	2.15	0.50
1:E:26:LEU:HB3	1:E:41:PRO:HA	1.93	0.50
1:H:26:LEU:HB3	1:H:41:PRO:HA	1.93	0.50
1:K:38:VAL:CG1	1:K:39:VAL:H	2.15	0.50
1:M:44:TYR:HD2	1:M:45:GLU:HB2	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:44:TYR:HD2	1:L:45:GLU:HB2	1.77	0.49
1:D:44:TYR:HD2	1:D:45:GLU:HB2	1.77	0.49
1:E:11:ASN:HD22	1:M:40:ILE:HG12	1.76	0.49
1:A:59:GLU:HG3	1:A:65:TYR:HE2	1.78	0.49
1:B:44:TYR:HD2	1:B:45:GLU:HB2	1.77	0.49
1:K:59:GLU:HG3	1:K:65:TYR:HE2	1.78	0.49
1:O:59:GLU:HG3	1:O:65:TYR:HE2	1.78	0.49
1:C:38:VAL:CG1	1:C:39:VAL:H	2.15	0.49
1:C:59:GLU:HG3	1:C:65:TYR:HE2	1.78	0.49
1:G:59:GLU:HG3	1:G:65:TYR:HE2	1.78	0.49
1:H:44:TYR:HD2	1:H:45:GLU:HB2	1.77	0.49
1:O:44:TYR:HD2	1:O:45:GLU:HB2	1.77	0.49
1:H:59:GLU:HG3	1:H:65:TYR:HE2	1.78	0.49
1:L:38:VAL:CG1	1:L:39:VAL:H	2.15	0.49
1:M:59:GLU:HG3	1:M:65:TYR:HE2	1.78	0.49
1:F:59:GLU:HG3	1:F:65:TYR:HE2	1.78	0.49
1:N:38:VAL:CG1	1:N:39:VAL:H	2.15	0.49
1:A:44:TYR:HD2	1:A:45:GLU:HB2	1.77	0.49
1:H:38:VAL:HG11	1:M:9:PHE:HA	1.94	0.49
1:I:59:GLU:HG3	1:I:65:TYR:HE2	1.78	0.49
1:B:59:GLU:HG3	1:B:65:TYR:HE2	1.78	0.49
1:N:59:GLU:HG3	1:N:65:TYR:HE2	1.78	0.49
1:E:12:PRO:O	1:E:15:SER:N	2.39	0.48
1:H:74:ASP:OD1	1:H:75:GLU:N	2.46	0.48
1:I:44:TYR:HD2	1:I:45:GLU:HB2	1.77	0.48
1:E:59:GLU:HG3	1:E:65:TYR:HE2	1.78	0.48
1:C:44:TYR:HD2	1:C:45:GLU:HB2	1.77	0.48
1:D:9:PHE:HA	1:L:38:VAL:HG11	1.95	0.48
1:D:59:GLU:HG3	1:D:65:TYR:HE2	1.78	0.48
1:E:44:TYR:HD2	1:E:45:GLU:HB2	1.77	0.48
1:O:38:VAL:CG1	1:O:39:VAL:H	2.15	0.48
1:J:59:GLU:HG3	1:J:65:TYR:HE2	1.78	0.48
1:J:74:ASP:OD1	1:J:75:GLU:N	2.46	0.48
1:L:59:GLU:HG3	1:L:65:TYR:HE2	1.78	0.48
1:N:44:TYR:HD2	1:N:45:GLU:HB2	1.77	0.48
1:I:74:ASP:OD1	1:I:75:GLU:N	2.46	0.48
1:B:12:PRO:O	1:B:15:SER:N	2.39	0.48
1:E:9:PHE:HA	1:M:38:VAL:HG11	1.94	0.48
1:N:74:ASP:OD1	1:N:75:GLU:N	2.46	0.48
1:A:26:LEU:HD13	1:A:65:TYR:HE1	1.79	0.48
1:B:74:ASP:OD1	1:B:75:GLU:N	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:26:LEU:HD13	1:C:65:TYR:HE1	1.79	0.48
1:E:38:VAL:CG1	1:E:39:VAL:H	2.15	0.48
1:A:74:ASP:OD1	1:A:75:GLU:N	2.46	0.48
1:C:70:ILE:HD12	1:J:40:ILE:HD12	1.95	0.48
1:F:44:TYR:HD2	1:F:45:GLU:HB2	1.77	0.48
1:I:40:ILE:HG12	1:O:11:ASN:HD22	1.76	0.48
1:J:44:TYR:HD2	1:J:45:GLU:HB2	1.77	0.48
1:M:74:ASP:OD1	1:M:75:GLU:N	2.46	0.48
1:O:74:ASP:OD1	1:O:75:GLU:N	2.46	0.48
1:B:26:LEU:HD13	1:B:65:TYR:HE1	1.79	0.47
1:G:44:TYR:HD2	1:G:45:GLU:HB2	1.77	0.47
1:K:74:ASP:OD1	1:K:75:GLU:N	2.46	0.47
1:K:40:ILE:H	1:N:11:ASN:HD22	1.61	0.47
1:K:44:TYR:HD2	1:K:45:GLU:HB2	1.77	0.47
1:F:74:ASP:OD1	1:F:75:GLU:N	2.46	0.47
1:H:26:LEU:HD13	1:H:65:TYR:HE1	1.79	0.47
1:F:40:ILE:HG12	1:J:11:ASN:HD22	1.78	0.47
1:K:58:LEU:HD22	1:N:13:ASP:CA	2.44	0.47
1:C:12:PRO:O	1:C:15:SER:N	2.39	0.47
1:E:26:LEU:HD13	1:E:65:TYR:HE1	1.79	0.47
1:J:26:LEU:HD13	1:J:65:TYR:HE1	1.79	0.47
1:L:74:ASP:OD1	1:L:75:GLU:N	2.46	0.47
1:N:26:LEU:HD13	1:N:65:TYR:HE1	1.79	0.47
1:C:8:THR:H	1:C:98:TYR:HE1	1.63	0.47
1:G:74:ASP:OD1	1:G:75:GLU:N	2.46	0.47
1:I:26:LEU:HD13	1:I:65:TYR:HE1	1.79	0.47
1:I:40:ILE:H	1:O:11:ASN:ND2	2.13	0.47
1:K:58:LEU:HB2	1:N:13:ASP:HA	1.95	0.47
1:L:8:THR:H	1:L:98:TYR:HE1	1.63	0.47
1:L:26:LEU:HD13	1:L:65:TYR:HE1	1.79	0.47
1:M:8:THR:H	1:M:98:TYR:HE1	1.63	0.47
1:O:26:LEU:HD13	1:O:65:TYR:HE1	1.79	0.47
1:I:8:THR:H	1:I:98:TYR:HE1	1.63	0.47
1:F:13:ASP:N	1:N:58:LEU:HD22	2.30	0.47
1:N:4:LYS:HE2	1:N:96:PRO:HB3	1.97	0.47
1:N:12:PRO:O	1:N:15:SER:N	2.40	0.47
1:D:26:LEU:HD13	1:D:65:TYR:HE1	1.79	0.47
1:E:4:LYS:HE2	1:E:96:PRO:HB3	1.97	0.47
1:G:4:LYS:HE2	1:G:96:PRO:HB3	1.97	0.47
1:H:4:LYS:HE2	1:H:96:PRO:HB3	1.97	0.47
1:H:8:THR:H	1:H:98:TYR:HE1	1.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:12:PRO:O	1:M:15:SER:N	2.39	0.47
1:M:26:LEU:HD13	1:M:65:TYR:HE1	1.79	0.47
1:C:11:ASN:HD22	1:J:40:ILE:HG12	1.80	0.46
1:B:8:THR:H	1:B:98:TYR:HE1	1.63	0.46
1:I:4:LYS:HE2	1:I:96:PRO:HB3	1.97	0.46
1:O:8:THR:H	1:O:98:TYR:HE1	1.63	0.46
1:B:38:VAL:CG1	1:B:39:VAL:H	2.15	0.46
1:D:4:LYS:HE2	1:D:96:PRO:HB3	1.97	0.46
1:M:4:LYS:HE2	1:M:96:PRO:HB3	1.97	0.46
1:O:4:LYS:HE2	1:O:96:PRO:HB3	1.98	0.46
1:F:3:THR:OG1	1:F:93:SER:O	2.25	0.46
1:F:8:THR:H	1:F:98:TYR:HE1	1.63	0.46
1:G:26:LEU:HD13	1:G:65:TYR:HE1	1.79	0.46
1:K:8:THR:H	1:K:98:TYR:HE1	1.63	0.46
1:L:4:LYS:HE2	1:L:96:PRO:HB3	1.97	0.46
1:B:3:THR:OG1	1:B:93:SER:O	2.25	0.46
1:E:74:ASP:OD1	1:E:75:GLU:N	2.46	0.46
1:F:26:LEU:HD13	1:F:65:TYR:HE1	1.79	0.46
1:I:38:VAL:CG1	1:I:39:VAL:H	2.15	0.46
1:K:4:LYS:HE2	1:K:96:PRO:HB3	1.97	0.46
1:B:4:LYS:HE2	1:B:96:PRO:HB3	1.98	0.46
1:C:74:ASP:OD1	1:C:75:GLU:N	2.46	0.46
1:E:98:TYR:HE2	1:M:34:ALA:O	1.99	0.46
1:G:8:THR:H	1:G:98:TYR:HE1	1.63	0.46
1:E:38:VAL:HG11	1:I:9:PHE:HA	1.96	0.46
1:F:4:LYS:HE2	1:F:96:PRO:HB3	1.97	0.46
1:H:38:VAL:CG1	1:H:39:VAL:H	2.15	0.46
1:A:8:THR:H	1:A:98:TYR:HE1	1.63	0.46
1:D:74:ASP:OD1	1:D:75:GLU:N	2.46	0.46
1:J:12:PRO:O	1:J:15:SER:N	2.39	0.46
1:A:4:LYS:HE2	1:A:96:PRO:HB3	1.97	0.46
1:J:8:THR:H	1:J:98:TYR:HE1	1.63	0.46
1:K:26:LEU:HD13	1:K:65:TYR:HE1	1.79	0.46
1:N:8:THR:H	1:N:98:TYR:HE1	1.63	0.46
1:A:12:PRO:O	1:A:15:SER:N	2.39	0.45
1:E:8:THR:H	1:E:98:TYR:HE1	1.63	0.45
1:K:40:ILE:HG12	1:N:11:ASN:ND2	2.31	0.45
1:C:4:LYS:HE2	1:C:96:PRO:HB3	1.97	0.45
1:D:8:THR:H	1:D:98:TYR:HE1	1.63	0.45
1:J:4:LYS:HE2	1:J:96:PRO:HB3	1.98	0.45
1:G:38:VAL:CG1	1:G:39:VAL:H	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:49:ASP:OD1	1:I:52:GLY:N	2.50	0.45
1:K:12:PRO:O	1:K:15:SER:N	2.39	0.45
1:M:49:ASP:OD1	1:M:52:GLY:N	2.50	0.45
1:F:9:PHE:HA	1:N:38:VAL:HG11	1.98	0.44
1:E:61:SER:OG	1:E:62:THR:N	2.50	0.44
1:I:61:SER:OG	1:I:62:THR:N	2.50	0.44
1:J:3:THR:OG1	1:J:93:SER:O	2.25	0.44
1:O:49:ASP:OD1	1:O:52:GLY:N	2.50	0.44
1:A:98:TYR:HE2	1:C:34:ALA:O	1.99	0.44
1:D:49:ASP:OD1	1:D:52:GLY:N	2.50	0.44
1:E:48:THR:O	1:E:49:ASP:OD1	2.36	0.44
1:E:49:ASP:OD1	1:E:52:GLY:N	2.50	0.44
1:G:49:ASP:OD1	1:G:52:GLY:N	2.50	0.44
1:H:49:ASP:OD1	1:H:52:GLY:N	2.50	0.44
1:K:49:ASP:OD1	1:K:52:GLY:N	2.50	0.44
1:A:48:THR:O	1:A:49:ASP:OD1	2.36	0.44
1:D:61:SER:OG	1:D:62:THR:N	2.50	0.44
1:C:48:THR:O	1:C:49:ASP:OD1	2.36	0.44
1:C:49:ASP:OD1	1:C:52:GLY:N	2.50	0.44
1:I:48:THR:O	1:I:49:ASP:OD1	2.36	0.44
1:J:48:THR:O	1:J:49:ASP:OD1	2.36	0.44
1:M:48:THR:O	1:M:49:ASP:OD1	2.36	0.44
1:B:48:THR:O	1:B:49:ASP:OD1	2.36	0.44
1:C:11:ASN:ND2	1:J:40:ILE:H	2.16	0.44
1:H:48:THR:O	1:H:49:ASP:OD1	2.36	0.44
1:J:49:ASP:OD1	1:J:52:GLY:N	2.50	0.44
1:L:49:ASP:OD1	1:L:52:GLY:N	2.50	0.44
1:N:61:SER:OG	1:N:62:THR:N	2.50	0.44
1:O:48:THR:O	1:O:49:ASP:OD1	2.36	0.44
1:C:98:TYR:HE2	1:J:34:ALA:O	1.99	0.44
1:F:12:PRO:O	1:F:15:SER:N	2.40	0.44
1:F:48:THR:O	1:F:49:ASP:OD1	2.36	0.44
1:K:10:HIS:O	1:K:10:HIS:CG	2.71	0.44
1:L:48:THR:O	1:L:49:ASP:OD1	2.36	0.44
1:D:11:ASN:ND2	1:L:40:ILE:H	2.15	0.44
1:G:48:THR:O	1:G:49:ASP:OD1	2.36	0.44
1:N:49:ASP:OD1	1:N:52:GLY:N	2.50	0.44
1:D:48:THR:O	1:D:49:ASP:OD1	2.36	0.44
1:F:61:SER:OG	1:F:62:THR:N	2.50	0.44
1:I:40:ILE:HD12	1:O:70:ILE:HD12	2.00	0.44
1:L:61:SER:OG	1:L:62:THR:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:10:HIS:O	1:N:10:HIS:CG	2.71	0.44
1:F:49:ASP:OD1	1:F:52:GLY:N	2.50	0.43
1:G:10:HIS:CG	1:G:10:HIS:O	2.71	0.43
1:K:48:THR:O	1:K:49:ASP:OD1	2.36	0.43
1:H:12:PRO:O	1:H:15:SER:N	2.40	0.43
1:K:26:LEU:HD22	1:K:39:VAL:HG12	2.01	0.43
1:L:26:LEU:HD22	1:L:39:VAL:HG12	2.01	0.43
1:A:49:ASP:OD1	1:A:52:GLY:N	2.50	0.43
1:A:61:SER:OG	1:A:62:THR:N	2.50	0.43
1:B:26:LEU:HD22	1:B:39:VAL:HG12	2.00	0.43
1:B:40:ILE:HD12	1:L:70:ILE:HD12	2.00	0.43
1:C:61:SER:OG	1:C:62:THR:N	2.50	0.43
1:D:26:LEU:HD22	1:D:39:VAL:HG12	2.01	0.43
1:E:10:HIS:CG	1:E:10:HIS:O	2.71	0.43
1:G:26:LEU:HD22	1:G:39:VAL:HG12	2.01	0.43
1:M:10:HIS:CG	1:M:10:HIS:O	2.71	0.43
1:M:61:SER:OG	1:M:62:THR:N	2.50	0.43
1:J:61:SER:OG	1:J:62:THR:N	2.50	0.43
1:K:38:VAL:HG21	1:N:9:PHE:HD2	1.83	0.43
1:K:61:SER:OG	1:K:62:THR:N	2.50	0.43
1:N:48:THR:O	1:N:49:ASP:OD1	2.36	0.43
1:G:12:PRO:O	1:G:15:SER:N	2.39	0.43
1:B:49:ASP:OD1	1:B:52:GLY:N	2.50	0.43
1:F:10:HIS:CG	1:F:10:HIS:O	2.71	0.43
1:H:26:LEU:HD22	1:H:39:VAL:HG12	2.01	0.43
1:O:26:LEU:HD22	1:O:39:VAL:HG12	2.01	0.43
1:G:61:SER:OG	1:G:62:THR:N	2.50	0.43
1:O:10:HIS:CG	1:O:10:HIS:O	2.71	0.43
1:H:10:HIS:O	1:H:10:HIS:CG	2.71	0.43
1:I:10:HIS:O	1:I:10:HIS:CG	2.71	0.43
1:A:26:LEU:HD22	1:A:39:VAL:HG12	2.01	0.43
1:B:61:SER:OG	1:B:62:THR:N	2.50	0.43
1:K:40:ILE:H	1:N:11:ASN:HD21	1.61	0.43
1:F:26:LEU:HD22	1:F:39:VAL:HG12	2.00	0.42
1:I:26:LEU:HD22	1:I:39:VAL:HG12	2.00	0.42
1:N:26:LEU:HD22	1:N:39:VAL:HG12	2.01	0.42
1:A:10:HIS:O	1:A:10:HIS:CG	2.71	0.42
1:D:10:HIS:O	1:D:10:HIS:CG	2.71	0.42
1:F:40:ILE:HD12	1:J:70:ILE:HD12	2.02	0.42
1:L:10:HIS:O	1:L:10:HIS:CG	2.71	0.42
1:B:10:HIS:O	1:B:10:HIS:CG	2.71	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:26:LEU:HD22	1:C:39:VAL:HG12	2.01	0.42
1:H:40:ILE:H	1:M:11:ASN:ND2	2.17	0.42
1:C:10:HIS:O	1:C:10:HIS:CG	2.71	0.42
1:J:10:HIS:CG	1:J:10:HIS:O	2.71	0.42
1:M:26:LEU:HD22	1:M:39:VAL:HG12	2.01	0.42
1:A:40:ILE:HD12	1:B:70:ILE:HD12	2.01	0.42
1:G:38:VAL:HG21	1:K:9:PHE:CD2	2.54	0.42
1:O:61:SER:OG	1:O:62:THR:N	2.50	0.42
1:E:26:LEU:HD22	1:E:39:VAL:HG12	2.01	0.42
1:J:26:LEU:HD22	1:J:39:VAL:HG12	2.01	0.42
1:C:3:THR:OG1	1:C:93:SER:O	2.25	0.41
1:B:38:VAL:HG21	1:L:9:PHE:CD2	2.55	0.41
1:E:88:PHE:HA	1:E:102:LEU:HG	2.02	0.41
1:H:61:SER:OG	1:H:62:THR:N	2.50	0.41
1:F:70:ILE:HD12	1:N:40:ILE:HD12	2.02	0.41
1:L:12:PRO:O	1:L:15:SER:N	2.39	0.41
1:A:78:ASP:OD1	1:A:78:ASP:N	2.47	0.41
1:C:13:ASP:N	1:J:58:LEU:HD22	2.35	0.41
1:O:88:PHE:HA	1:O:102:LEU:HG	2.02	0.41
1:E:70:ILE:HD12	1:M:40:ILE:HD12	2.03	0.41
1:A:88:PHE:HA	1:A:102:LEU:HG	2.02	0.41
1:C:88:PHE:HA	1:C:102:LEU:HG	2.02	0.41
1:B:88:PHE:HA	1:B:102:LEU:HG	2.02	0.41
1:E:40:ILE:H	1:I:11:ASN:ND2	2.19	0.41
1:E:87:THR:HG23	1:E:102:LEU:HD12	2.03	0.41
1:H:88:PHE:HA	1:H:102:LEU:HG	2.02	0.41
1:I:87:THR:HG23	1:I:102:LEU:HD12	2.03	0.41
1:K:88:PHE:HA	1:K:102:LEU:HG	2.02	0.41
1:L:87:THR:HG23	1:L:102:LEU:HD12	2.03	0.41
1:M:87:THR:HG23	1:M:102:LEU:HD12	2.03	0.41
1:N:87:THR:HG23	1:N:102:LEU:HD12	2.03	0.41
1:O:87:THR:HG23	1:O:102:LEU:HD12	2.03	0.41
1:D:12:PRO:O	1:D:15:SER:N	2.39	0.41
1:G:87:THR:HG23	1:G:102:LEU:HD12	2.03	0.41
1:H:87:THR:HG23	1:H:102:LEU:HD12	2.03	0.40
1:B:87:THR:HG23	1:B:102:LEU:HD12	2.03	0.40
1:D:87:THR:HG23	1:D:102:LEU:HD12	2.03	0.40
1:I:38:VAL:HG21	1:O:9:PHE:CD2	2.56	0.40
1:J:88:PHE:HA	1:J:102:LEU:HG	2.02	0.40
1:K:87:THR:HG23	1:K:102:LEU:HD12	2.03	0.40
1:B:37:CYS:O	1:B:38:VAL:HB	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:37:CYS:O	1:H:38:VAL:HB	2.22	0.40
1:I:37:CYS:O	1:I:38:VAL:HB	2.22	0.40
1:F:88:PHE:HA	1:F:102:LEU:HG	2.02	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	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	B	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	C	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	D	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	E	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	F	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	G	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	H	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	I	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	J	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	K	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	L	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	M	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	N	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
1	O	103/1090 (9%)	74 (72%)	25 (24%)	4 (4%)	2	19
All	All	1545/16350 (9%)	1110 (72%)	375 (24%)	60 (4%)	4	19

All (60) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	38	VAL
1	A	47	VAL
1	B	38	VAL
1	B	47	VAL
1	C	38	VAL
1	C	47	VAL
1	D	38	VAL
1	D	47	VAL
1	E	38	VAL
1	E	47	VAL
1	F	38	VAL
1	F	47	VAL
1	G	38	VAL
1	G	47	VAL
1	H	38	VAL
1	H	47	VAL
1	I	38	VAL
1	I	47	VAL
1	J	38	VAL
1	J	47	VAL
1	K	38	VAL
1	K	47	VAL
1	L	38	VAL
1	L	47	VAL
1	M	38	VAL
1	M	47	VAL
1	N	38	VAL
1	N	47	VAL
1	O	38	VAL
1	O	47	VAL
1	A	99	VAL
1	B	99	VAL
1	C	99	VAL
1	D	99	VAL
1	E	99	VAL
1	F	99	VAL
1	G	99	VAL
1	H	99	VAL
1	I	99	VAL
1	J	99	VAL
1	K	99	VAL
1	L	99	VAL
1	M	99	VAL

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Mol	Chain	Res	Type
1	N	99	VAL
1	O	99	VAL
1	A	39	VAL
1	B	39	VAL
1	C	39	VAL
1	D	39	VAL
1	E	39	VAL
1	F	39	VAL
1	G	39	VAL
1	H	39	VAL
1	I	39	VAL
1	J	39	VAL
1	K	39	VAL
1	L	39	VAL
1	M	39	VAL
1	N	39	VAL
1	O	39	VAL

### 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	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	B	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	C	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	D	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	E	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	F	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	G	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	H	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	I	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	J	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	K	94/882 (11%)	93 (99%)	1 (1%)	70	80

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	L	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	M	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	N	94/882 (11%)	93 (99%)	1 (1%)	70	80
1	O	94/882 (11%)	93 (99%)	1 (1%)	70	80
All	All	1410/13230 (11%)	1395 (99%)	15 (1%)	69	80

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	21	LYS
1	B	21	LYS
1	C	21	LYS
1	D	21	LYS
1	E	21	LYS
1	F	21	LYS
1	G	21	LYS
1	H	21	LYS
1	I	21	LYS
1	J	21	LYS
1	K	21	LYS
1	L	21	LYS
1	M	21	LYS
1	N	21	LYS
1	O	21	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (20) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	11	ASN
1	B	10	HIS
1	B	11	ASN
1	C	11	ASN
1	D	11	ASN
1	E	11	ASN
1	G	11	ASN
1	H	10	HIS
1	H	11	ASN
1	I	11	ASN
1	J	10	HIS
1	J	11	ASN

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Mol	Chain	Res	Type
1	K	10	HIS
1	K	11	ASN
1	L	10	HIS
1	L	11	ASN
1	M	11	ASN
1	N	11	ASN
1	O	10	HIS
1	O	11	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

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

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

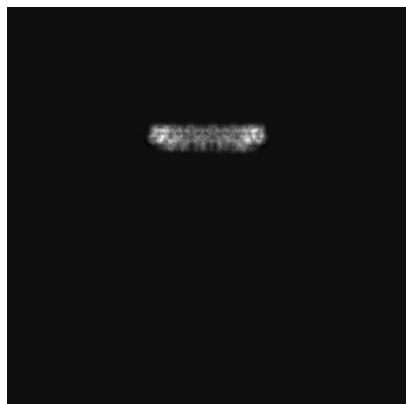
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-45776. These allow visual inspection of the internal detail of the map and identification of artifacts.

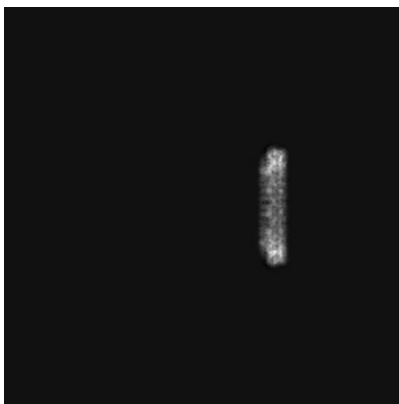
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

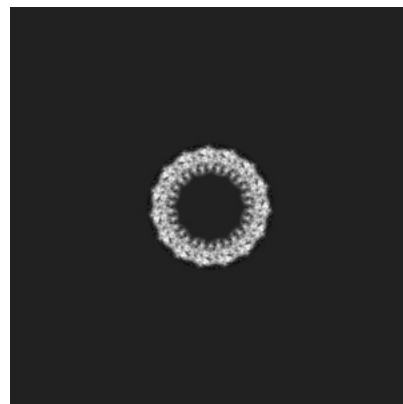
#### 6.1.1 Primary map



X

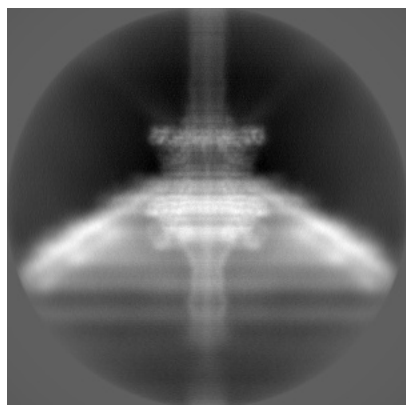


Y

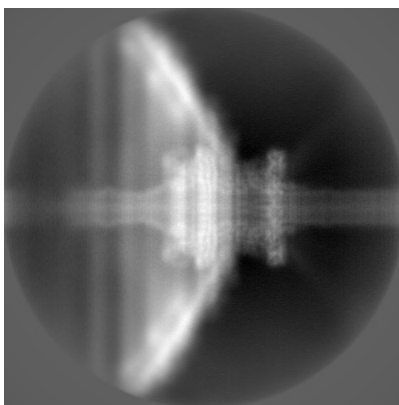


Z

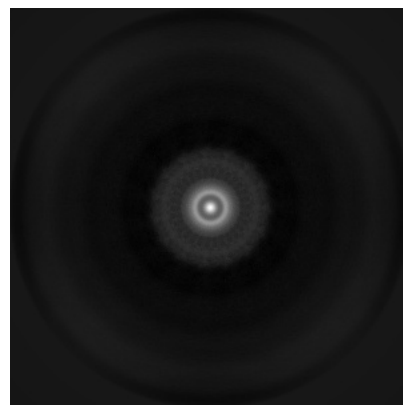
#### 6.1.2 Raw map



X



Y

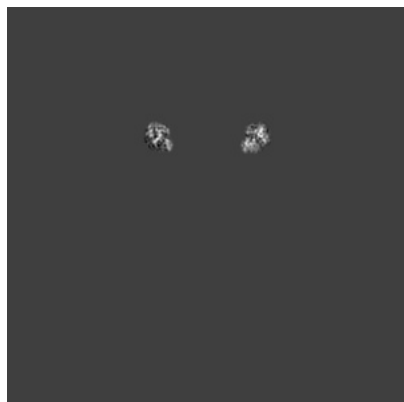


Z

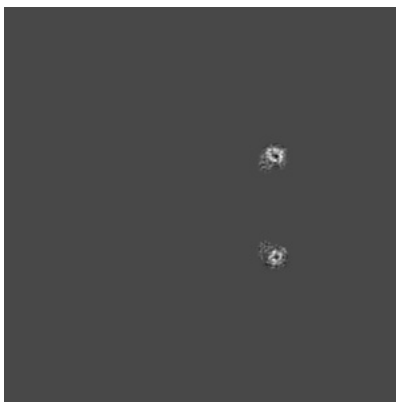
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

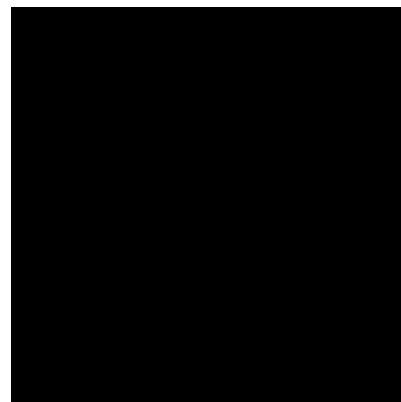
### 6.2.1 Primary map



X Index: 256

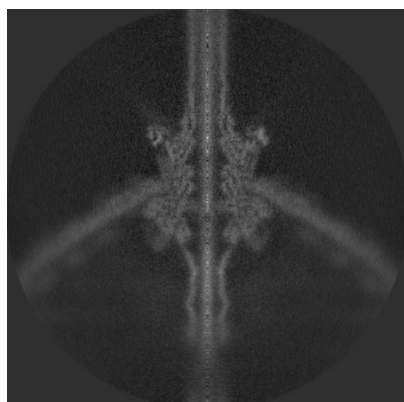


Y Index: 256

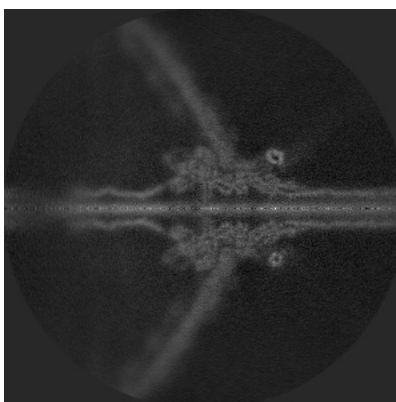


Z Index: 256

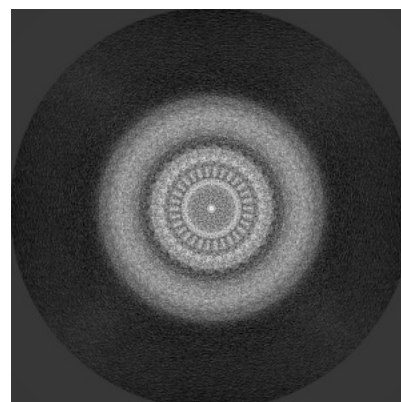
### 6.2.2 Raw map



X Index: 256



Y Index: 256



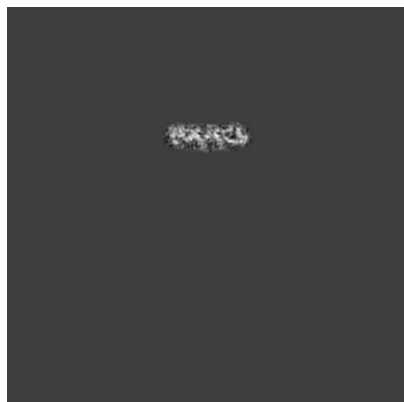
Z Index: 256

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



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

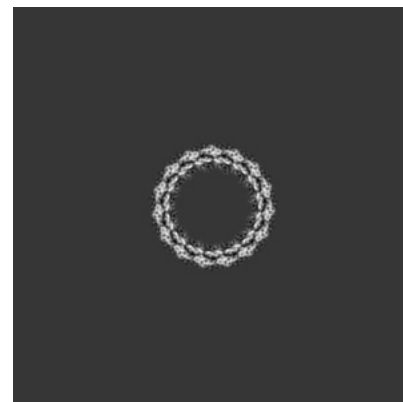
### 6.3.1 Primary map



X Index: 198

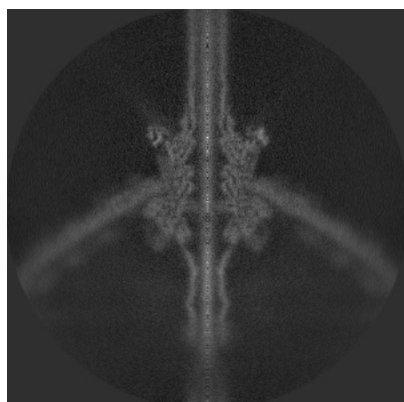


Y Index: 197

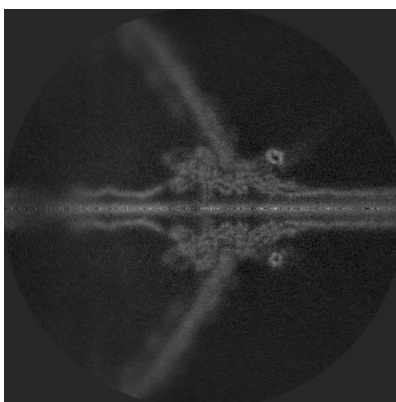


Z Index: 346

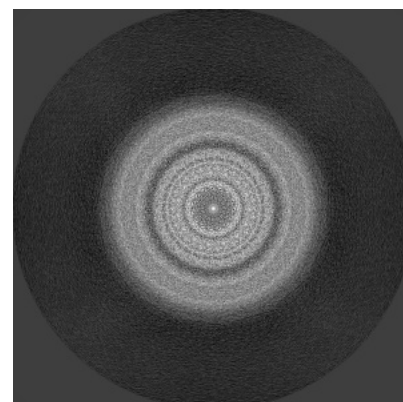
### 6.3.2 Raw map



X Index: 256



Y Index: 256

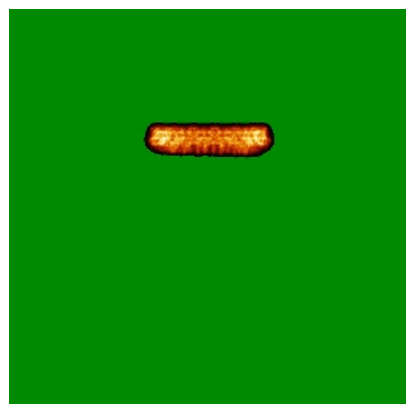


Z Index: 262

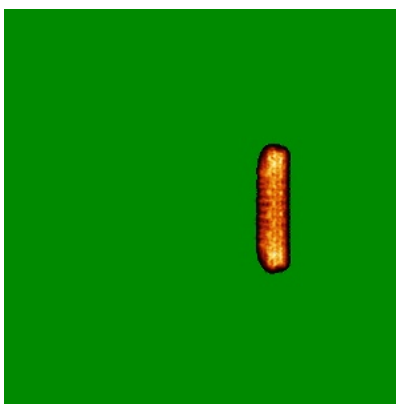
The images above show the largest variance slices of the map in three orthogonal directions.

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

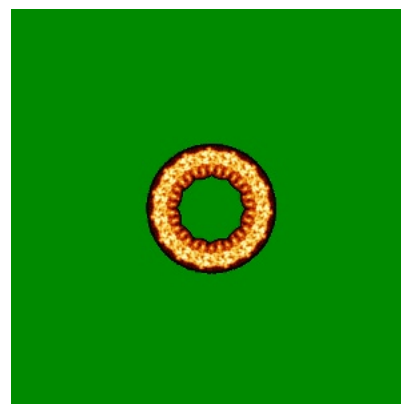
### 6.4.1 Primary map



X

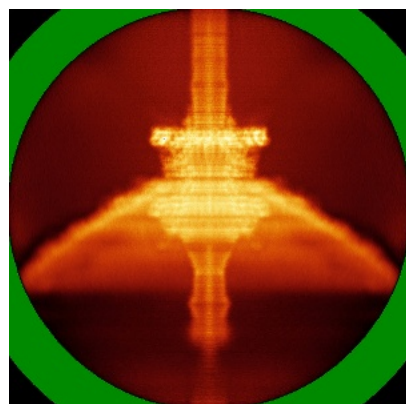


Y

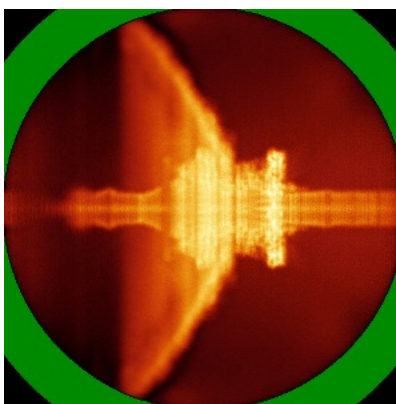


Z

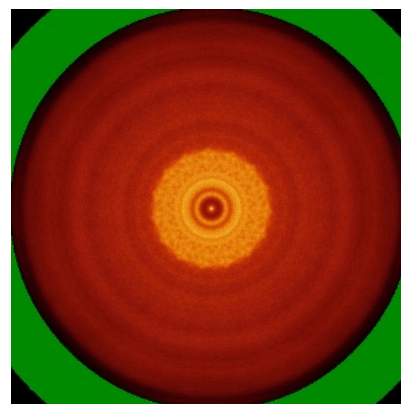
### 6.4.2 Raw map



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.

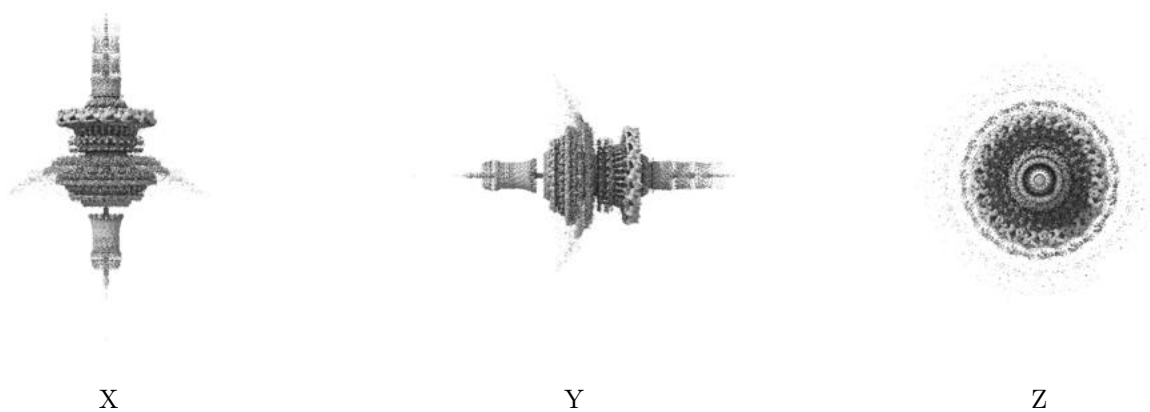
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0018. 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.

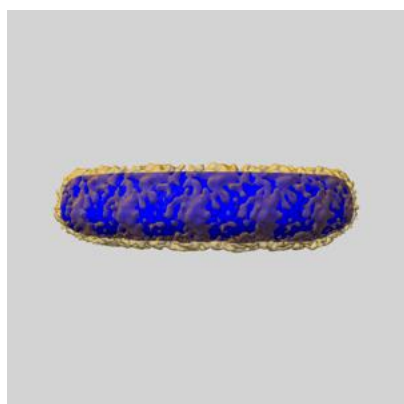
## 6.6 Mask visualisation [i](#)

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

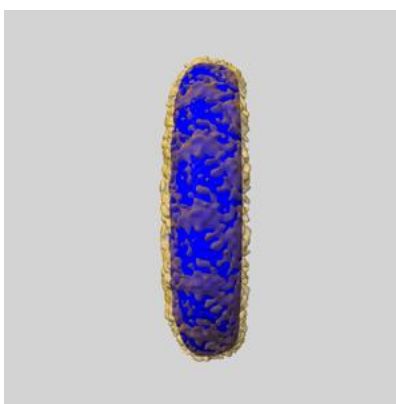
A mask typically either:

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

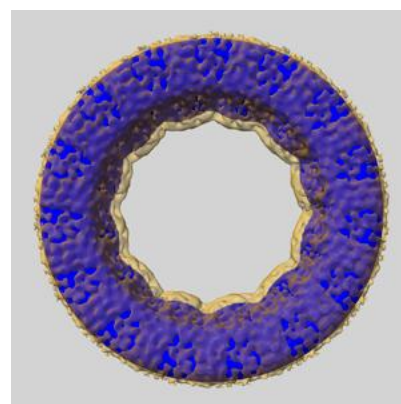
### 6.6.1 emd\_45776\_msk\_1.map [i](#)



X



Y

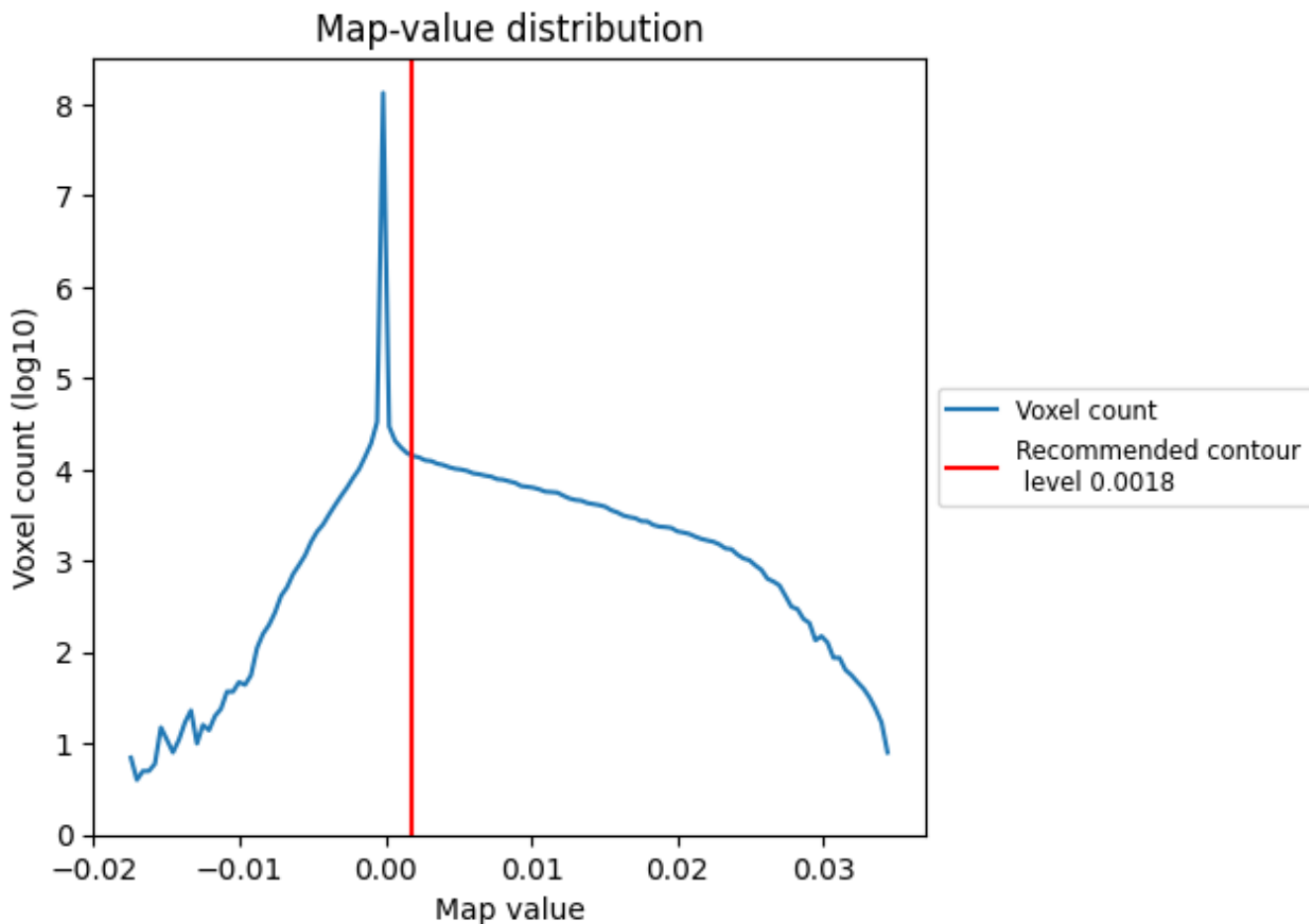


Z

## 7 Map analysis [i](#)

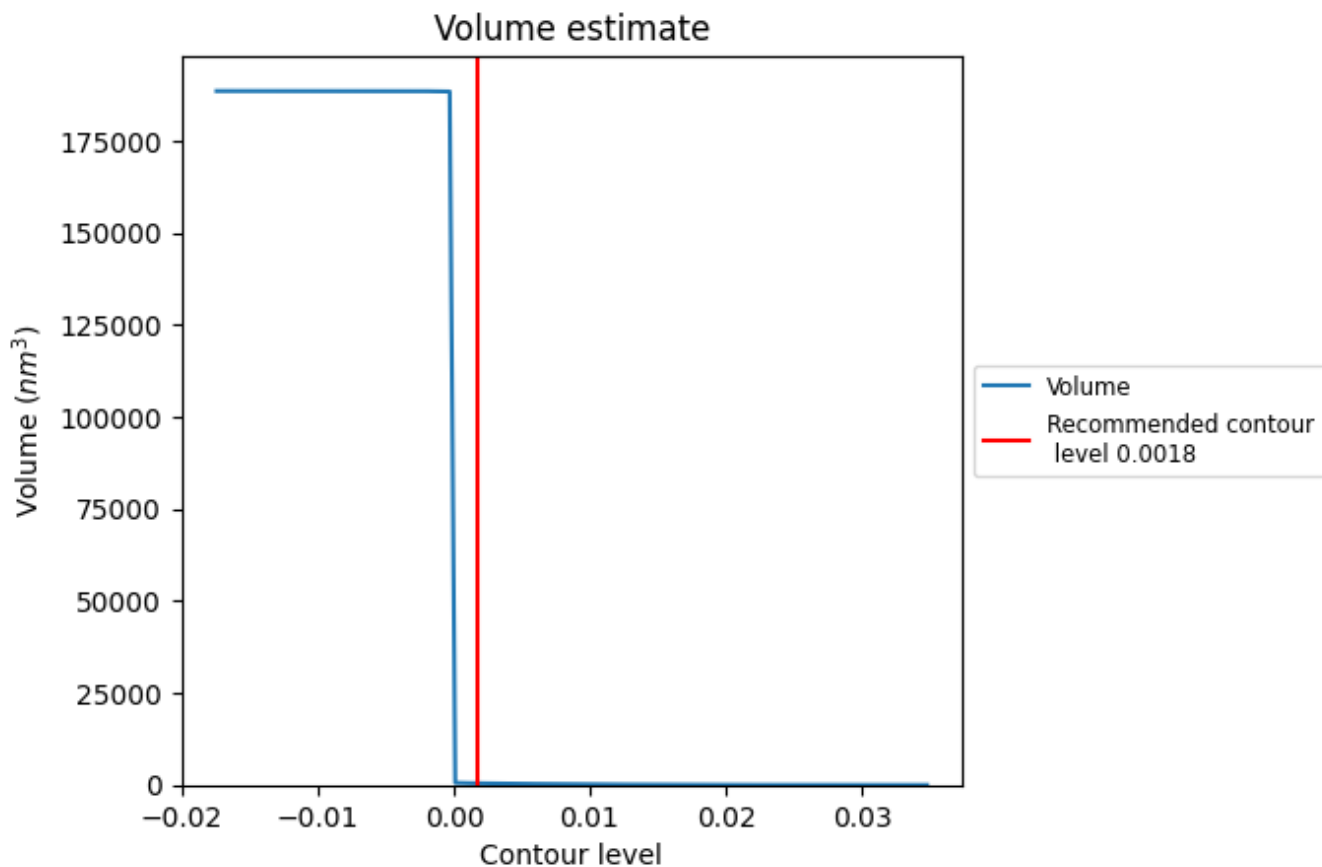
This section contains the results of statistical analysis of the map.

### 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.

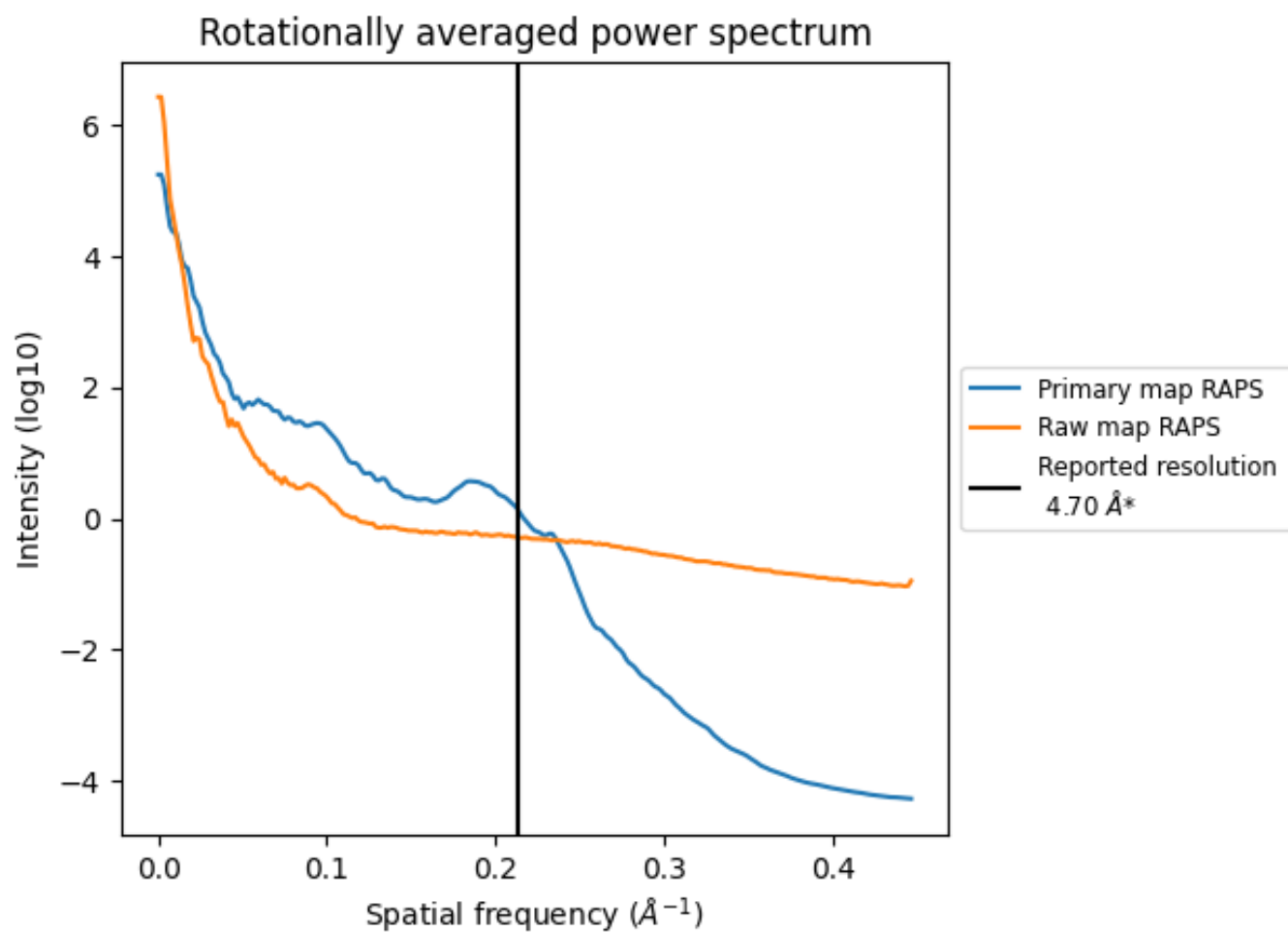
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 451 nm<sup>3</sup>; this corresponds to an approximate mass of 407 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](#)

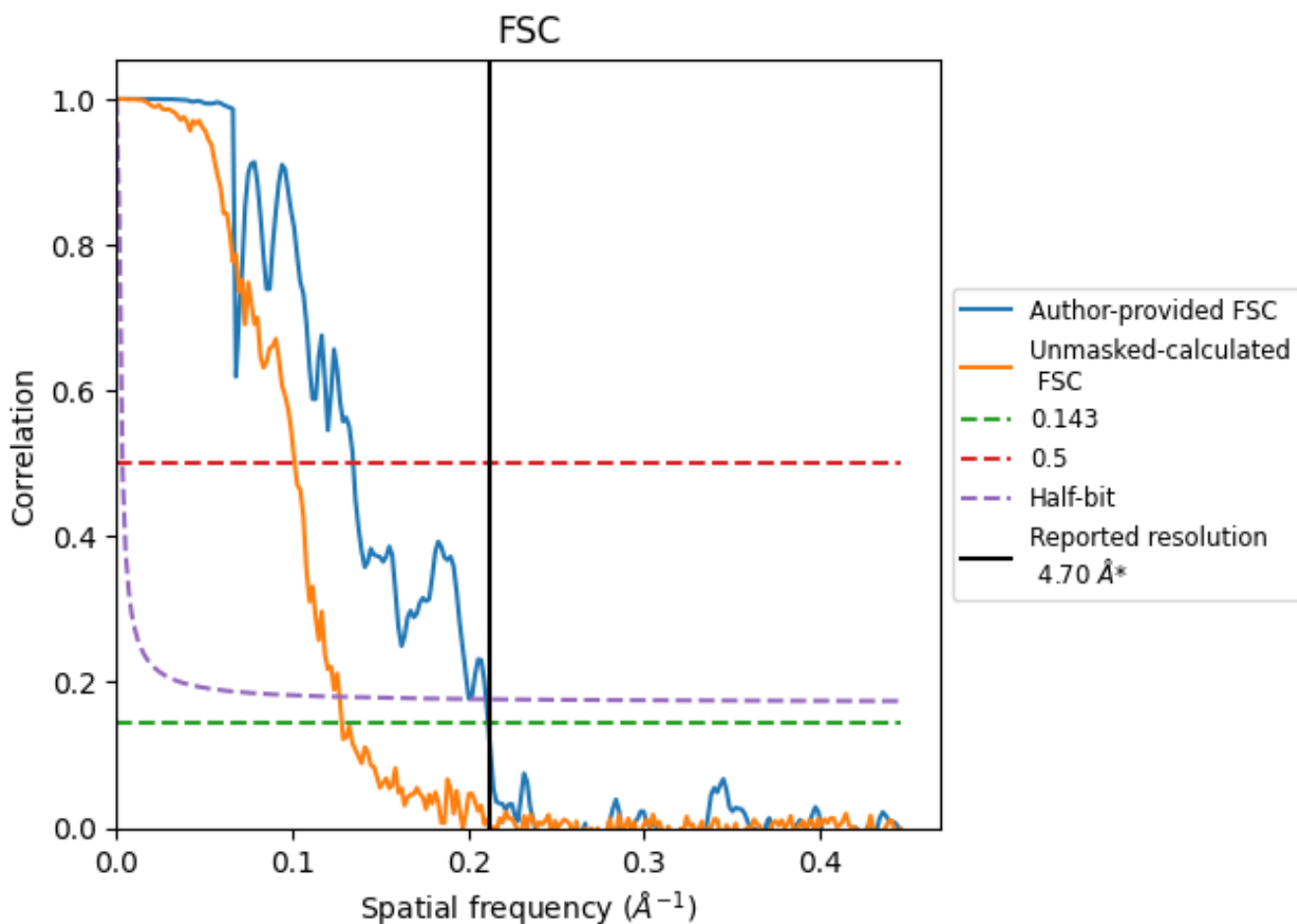


\*Reported resolution corresponds to spatial frequency of 0.213 Å<sup>-1</sup>

## 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 0.213 Å<sup>-1</sup>



## 8.2 Resolution estimates [i](#)

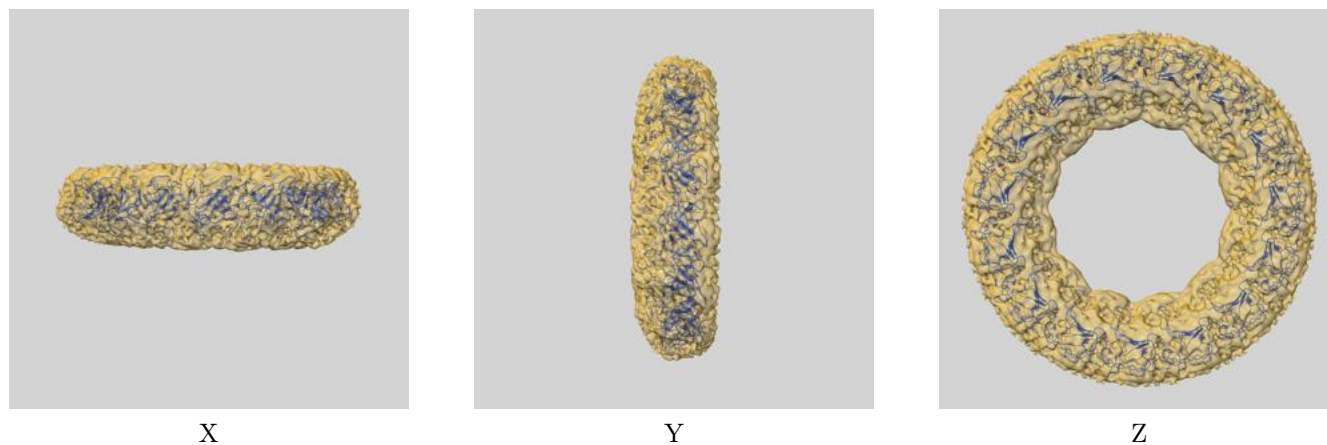
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.70	-	-
Author-provided FSC curve	4.73	7.42	4.76
Unmasked-calculated*	7.79	9.85	7.88

\*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 7.79 differs from the reported value 4.7 by more than 10 %

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

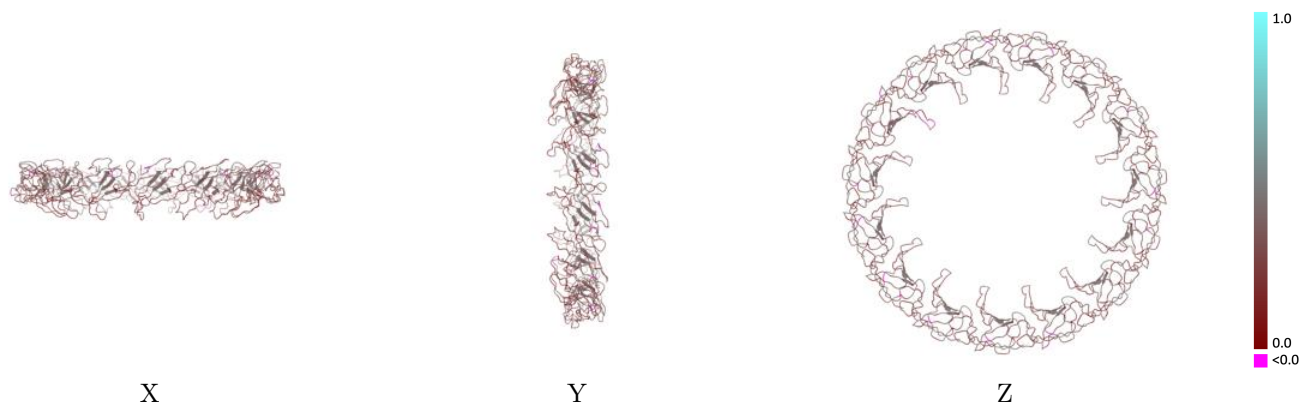
This section contains information regarding the fit between EMDB map EMD-45776 and PDB model 9COD. Per-residue inclusion information can be found in section [3](#) on page [5](#).

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



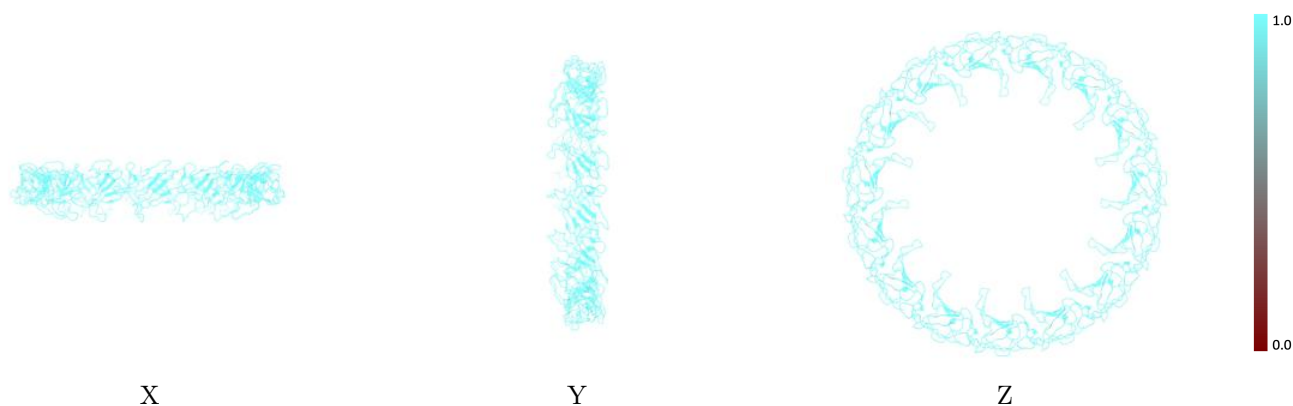
The images above show the 3D surface view of the map at the recommended contour level 0.0018 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



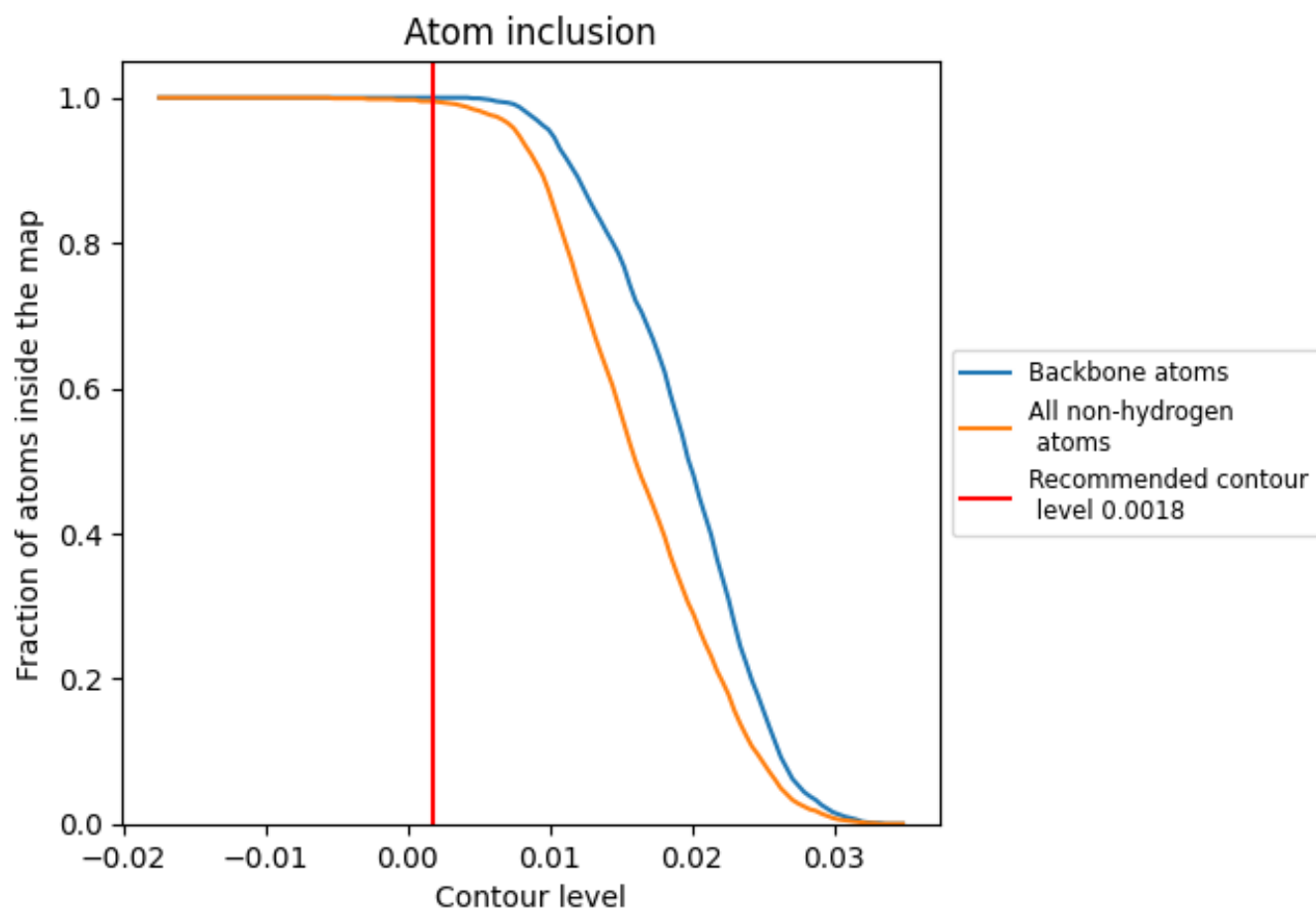
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0018).

































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 100% of all backbone atoms, 100% 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 (0.0018) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9950	 0.2950
A	 0.9950	 0.2960
B	 0.9950	 0.2960
C	 0.9950	 0.2980
D	 0.9950	 0.2940
E	 0.9950	 0.2960
F	 0.9950	 0.2960
G	 0.9950	 0.3000
H	 0.9950	 0.2970
I	 0.9950	 0.2960
J	 0.9950	 0.2970
K	 0.9940	 0.2950
L	 0.9950	 0.2960
M	 0.9950	 0.2940
N	 0.9940	 0.2710
O	 0.9950	 0.2990

