Full wwPDB EM Validation Report ⓘ

Apr 27, 2024 – 01:55 PM EDT

PDB ID	:	8TSL
EMDB ID	:	EMD-41595
Title	:	S. thermodepolymerans KpsM-KpsE in Apo 2 state with rigid body fitted KpsT
Authors	:	Kuklewicz, J.; Zimmer, J.
Deposited on	:	2023-08-11
Resolution	:	3.40 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:

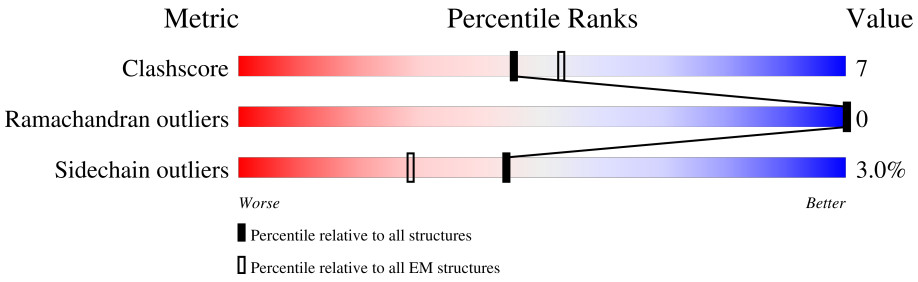
EMDB validation analysis	:	0.0.1.dev92
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.40 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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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 <=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	C	274	69% 24% · 7%
1	D	274	67% 26% 7%
2	E	390	43% 9% 47%
2	F	390	39% 12% 49%
2	G	390	46% 11% 44%
2	H	390	49% 6% 45%
2	I	390	43% 10% 47%
2	J	390	41% 10% 49%

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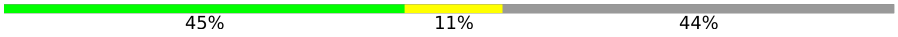
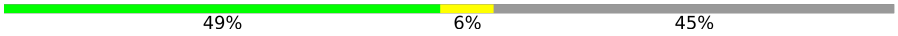
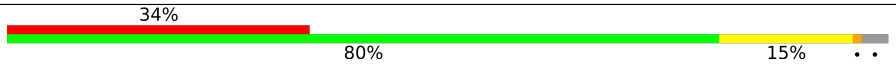
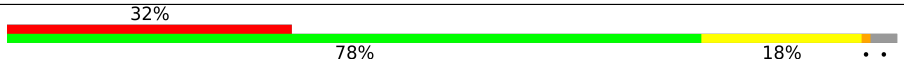
Mol	Chain	Length	Quality of chain
2	K	390	
2	L	390	
3	A	234	
3	B	234	

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 21392 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 Transport permease protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	C	256	Total	C	N	O	S	0	0
			2039	1367	343	322	7		
1	D	256	Total	C	N	O	S	0	0
			2039	1367	343	322	7		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	-2	MET	-	initiating methionine	UNP A0A2S5T447
C	-1	GLY	-	expression tag	UNP A0A2S5T447
C	0	LYS	-	expression tag	UNP A0A2S5T447
C	1	ILE	-	expression tag	UNP A0A2S5T447
C	2	HIS	-	expression tag	UNP A0A2S5T447
C	3	LEU	MET	conflict	UNP A0A2S5T447
D	-2	MET	-	initiating methionine	UNP A0A2S5T447
D	-1	GLY	-	expression tag	UNP A0A2S5T447
D	0	LYS	-	expression tag	UNP A0A2S5T447
D	1	ILE	-	expression tag	UNP A0A2S5T447
D	2	HIS	-	expression tag	UNP A0A2S5T447
D	3	LEU	MET	conflict	UNP A0A2S5T447

- Molecule 2 is a protein called Capsular biosynthesis protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	E	206	Total	C	N	O	S	0	0
			1690	1091	292	299	8		
2	F	200	Total	C	N	O	S	0	0
			1642	1065	280	288	9		
2	G	220	Total	C	N	O	S	0	0
			1792	1154	311	319	8		
2	H	215	Total	C	N	O	S	0	0
			1762	1135	306	313	8		
2	I	206	Total	C	N	O	S	0	0
			1690	1091	292	299	8		

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Mol	Chain	Residues	Atoms					AltConf	Trace
2	J	200	Total	C	N	O	S	0	0
			1642	1065	280	288	9		
2	K	220	Total	C	N	O	S	0	0
			1792	1154	311	319	8		
2	L	215	Total	C	N	O	S	0	0
			1762	1135	306	313	8		

There are 184 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	-2	MET	-	initiating methionine	UNP A0A2S5T4A0
E	-1	GLY	-	expression tag	UNP A0A2S5T4A0
E	0	LYS	-	expression tag	UNP A0A2S5T4A0
E	1	ILE	-	expression tag	UNP A0A2S5T4A0
E	2	HIS	-	expression tag	UNP A0A2S5T4A0
E	77	CYS	LEU	conflict	UNP A0A2S5T4A0
E	138	CYS	SER	conflict	UNP A0A2S5T4A0
E	372	GLY	-	expression tag	UNP A0A2S5T4A0
E	373	SER	-	expression tag	UNP A0A2S5T4A0
E	374	GLY	-	expression tag	UNP A0A2S5T4A0
E	375	SER	-	expression tag	UNP A0A2S5T4A0
E	376	GLY	-	expression tag	UNP A0A2S5T4A0
E	377	SER	-	expression tag	UNP A0A2S5T4A0
E	378	HIS	-	expression tag	UNP A0A2S5T4A0
E	379	HIS	-	expression tag	UNP A0A2S5T4A0
E	380	HIS	-	expression tag	UNP A0A2S5T4A0
E	381	HIS	-	expression tag	UNP A0A2S5T4A0
E	382	HIS	-	expression tag	UNP A0A2S5T4A0
E	383	HIS	-	expression tag	UNP A0A2S5T4A0
E	384	HIS	-	expression tag	UNP A0A2S5T4A0
E	385	HIS	-	expression tag	UNP A0A2S5T4A0
E	386	HIS	-	expression tag	UNP A0A2S5T4A0
E	387	HIS	-	expression tag	UNP A0A2S5T4A0
F	-2	MET	-	initiating methionine	UNP A0A2S5T4A0
F	-1	GLY	-	expression tag	UNP A0A2S5T4A0
F	0	LYS	-	expression tag	UNP A0A2S5T4A0
F	1	ILE	-	expression tag	UNP A0A2S5T4A0
F	2	HIS	-	expression tag	UNP A0A2S5T4A0
F	77	CYS	LEU	conflict	UNP A0A2S5T4A0
F	138	CYS	SER	conflict	UNP A0A2S5T4A0
F	372	GLY	-	expression tag	UNP A0A2S5T4A0
F	373	SER	-	expression tag	UNP A0A2S5T4A0

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Chain	Residue	Modelled	Actual	Comment	Reference
F	374	GLY	-	expression tag	UNP A0A2S5T4A0
F	375	SER	-	expression tag	UNP A0A2S5T4A0
F	376	GLY	-	expression tag	UNP A0A2S5T4A0
F	377	SER	-	expression tag	UNP A0A2S5T4A0
F	378	HIS	-	expression tag	UNP A0A2S5T4A0
F	379	HIS	-	expression tag	UNP A0A2S5T4A0
F	380	HIS	-	expression tag	UNP A0A2S5T4A0
F	381	HIS	-	expression tag	UNP A0A2S5T4A0
F	382	HIS	-	expression tag	UNP A0A2S5T4A0
F	383	HIS	-	expression tag	UNP A0A2S5T4A0
F	384	HIS	-	expression tag	UNP A0A2S5T4A0
F	385	HIS	-	expression tag	UNP A0A2S5T4A0
F	386	HIS	-	expression tag	UNP A0A2S5T4A0
F	387	HIS	-	expression tag	UNP A0A2S5T4A0
G	-2	MET	-	initiating methionine	UNP A0A2S5T4A0
G	-1	GLY	-	expression tag	UNP A0A2S5T4A0
G	0	LYS	-	expression tag	UNP A0A2S5T4A0
G	1	ILE	-	expression tag	UNP A0A2S5T4A0
G	2	HIS	-	expression tag	UNP A0A2S5T4A0
G	77	CYS	LEU	conflict	UNP A0A2S5T4A0
G	138	CYS	SER	conflict	UNP A0A2S5T4A0
G	372	GLY	-	expression tag	UNP A0A2S5T4A0
G	373	SER	-	expression tag	UNP A0A2S5T4A0
G	374	GLY	-	expression tag	UNP A0A2S5T4A0
G	375	SER	-	expression tag	UNP A0A2S5T4A0
G	376	GLY	-	expression tag	UNP A0A2S5T4A0
G	377	SER	-	expression tag	UNP A0A2S5T4A0
G	378	HIS	-	expression tag	UNP A0A2S5T4A0
G	379	HIS	-	expression tag	UNP A0A2S5T4A0
G	380	HIS	-	expression tag	UNP A0A2S5T4A0
G	381	HIS	-	expression tag	UNP A0A2S5T4A0
G	382	HIS	-	expression tag	UNP A0A2S5T4A0
G	383	HIS	-	expression tag	UNP A0A2S5T4A0
G	384	HIS	-	expression tag	UNP A0A2S5T4A0
G	385	HIS	-	expression tag	UNP A0A2S5T4A0
G	386	HIS	-	expression tag	UNP A0A2S5T4A0
G	387	HIS	-	expression tag	UNP A0A2S5T4A0
H	-2	MET	-	initiating methionine	UNP A0A2S5T4A0
H	-1	GLY	-	expression tag	UNP A0A2S5T4A0
H	0	LYS	-	expression tag	UNP A0A2S5T4A0
H	1	ILE	-	expression tag	UNP A0A2S5T4A0
H	2	HIS	-	expression tag	UNP A0A2S5T4A0

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Chain	Residue	Modelled	Actual	Comment	Reference
H	77	CYS	LEU	conflict	UNP A0A2S5T4A0
H	138	CYS	SER	conflict	UNP A0A2S5T4A0
H	372	GLY	-	expression tag	UNP A0A2S5T4A0
H	373	SER	-	expression tag	UNP A0A2S5T4A0
H	374	GLY	-	expression tag	UNP A0A2S5T4A0
H	375	SER	-	expression tag	UNP A0A2S5T4A0
H	376	GLY	-	expression tag	UNP A0A2S5T4A0
H	377	SER	-	expression tag	UNP A0A2S5T4A0
H	378	HIS	-	expression tag	UNP A0A2S5T4A0
H	379	HIS	-	expression tag	UNP A0A2S5T4A0
H	380	HIS	-	expression tag	UNP A0A2S5T4A0
H	381	HIS	-	expression tag	UNP A0A2S5T4A0
H	382	HIS	-	expression tag	UNP A0A2S5T4A0
H	383	HIS	-	expression tag	UNP A0A2S5T4A0
H	384	HIS	-	expression tag	UNP A0A2S5T4A0
H	385	HIS	-	expression tag	UNP A0A2S5T4A0
H	386	HIS	-	expression tag	UNP A0A2S5T4A0
H	387	HIS	-	expression tag	UNP A0A2S5T4A0
I	-2	MET	-	initiating methionine	UNP A0A2S5T4A0
I	-1	GLY	-	expression tag	UNP A0A2S5T4A0
I	0	LYS	-	expression tag	UNP A0A2S5T4A0
I	1	ILE	-	expression tag	UNP A0A2S5T4A0
I	2	HIS	-	expression tag	UNP A0A2S5T4A0
I	77	CYS	LEU	conflict	UNP A0A2S5T4A0
I	138	CYS	SER	conflict	UNP A0A2S5T4A0
I	372	GLY	-	expression tag	UNP A0A2S5T4A0
I	373	SER	-	expression tag	UNP A0A2S5T4A0
I	374	GLY	-	expression tag	UNP A0A2S5T4A0
I	375	SER	-	expression tag	UNP A0A2S5T4A0
I	376	GLY	-	expression tag	UNP A0A2S5T4A0
I	377	SER	-	expression tag	UNP A0A2S5T4A0
I	378	HIS	-	expression tag	UNP A0A2S5T4A0
I	379	HIS	-	expression tag	UNP A0A2S5T4A0
I	380	HIS	-	expression tag	UNP A0A2S5T4A0
I	381	HIS	-	expression tag	UNP A0A2S5T4A0
I	382	HIS	-	expression tag	UNP A0A2S5T4A0
I	383	HIS	-	expression tag	UNP A0A2S5T4A0
I	384	HIS	-	expression tag	UNP A0A2S5T4A0
I	385	HIS	-	expression tag	UNP A0A2S5T4A0
I	386	HIS	-	expression tag	UNP A0A2S5T4A0
I	387	HIS	-	expression tag	UNP A0A2S5T4A0
J	-2	MET	-	initiating methionine	UNP A0A2S5T4A0

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Chain	Residue	Modelled	Actual	Comment	Reference
J	-1	GLY	-	expression tag	UNP A0A2S5T4A0
J	0	LYS	-	expression tag	UNP A0A2S5T4A0
J	1	ILE	-	expression tag	UNP A0A2S5T4A0
J	2	HIS	-	expression tag	UNP A0A2S5T4A0
J	77	CYS	LEU	conflict	UNP A0A2S5T4A0
J	138	CYS	SER	conflict	UNP A0A2S5T4A0
J	372	GLY	-	expression tag	UNP A0A2S5T4A0
J	373	SER	-	expression tag	UNP A0A2S5T4A0
J	374	GLY	-	expression tag	UNP A0A2S5T4A0
J	375	SER	-	expression tag	UNP A0A2S5T4A0
J	376	GLY	-	expression tag	UNP A0A2S5T4A0
J	377	SER	-	expression tag	UNP A0A2S5T4A0
J	378	HIS	-	expression tag	UNP A0A2S5T4A0
J	379	HIS	-	expression tag	UNP A0A2S5T4A0
J	380	HIS	-	expression tag	UNP A0A2S5T4A0
J	381	HIS	-	expression tag	UNP A0A2S5T4A0
J	382	HIS	-	expression tag	UNP A0A2S5T4A0
J	383	HIS	-	expression tag	UNP A0A2S5T4A0
J	384	HIS	-	expression tag	UNP A0A2S5T4A0
J	385	HIS	-	expression tag	UNP A0A2S5T4A0
J	386	HIS	-	expression tag	UNP A0A2S5T4A0
J	387	HIS	-	expression tag	UNP A0A2S5T4A0
K	-2	MET	-	initiating methionine	UNP A0A2S5T4A0
K	-1	GLY	-	expression tag	UNP A0A2S5T4A0
K	0	LYS	-	expression tag	UNP A0A2S5T4A0
K	1	ILE	-	expression tag	UNP A0A2S5T4A0
K	2	HIS	-	expression tag	UNP A0A2S5T4A0
K	77	CYS	LEU	conflict	UNP A0A2S5T4A0
K	138	CYS	SER	conflict	UNP A0A2S5T4A0
K	372	GLY	-	expression tag	UNP A0A2S5T4A0
K	373	SER	-	expression tag	UNP A0A2S5T4A0
K	374	GLY	-	expression tag	UNP A0A2S5T4A0
K	375	SER	-	expression tag	UNP A0A2S5T4A0
K	376	GLY	-	expression tag	UNP A0A2S5T4A0
K	377	SER	-	expression tag	UNP A0A2S5T4A0
K	378	HIS	-	expression tag	UNP A0A2S5T4A0
K	379	HIS	-	expression tag	UNP A0A2S5T4A0
K	380	HIS	-	expression tag	UNP A0A2S5T4A0
K	381	HIS	-	expression tag	UNP A0A2S5T4A0
K	382	HIS	-	expression tag	UNP A0A2S5T4A0
K	383	HIS	-	expression tag	UNP A0A2S5T4A0
K	384	HIS	-	expression tag	UNP A0A2S5T4A0

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Chain	Residue	Modelled	Actual	Comment	Reference
K	385	HIS	-	expression tag	UNP A0A2S5T4A0
K	386	HIS	-	expression tag	UNP A0A2S5T4A0
K	387	HIS	-	expression tag	UNP A0A2S5T4A0
L	-2	MET	-	initiating methionine	UNP A0A2S5T4A0
L	-1	GLY	-	expression tag	UNP A0A2S5T4A0
L	0	LYS	-	expression tag	UNP A0A2S5T4A0
L	1	ILE	-	expression tag	UNP A0A2S5T4A0
L	2	HIS	-	expression tag	UNP A0A2S5T4A0
L	77	CYS	LEU	conflict	UNP A0A2S5T4A0
L	138	CYS	SER	conflict	UNP A0A2S5T4A0
L	372	GLY	-	expression tag	UNP A0A2S5T4A0
L	373	SER	-	expression tag	UNP A0A2S5T4A0
L	374	GLY	-	expression tag	UNP A0A2S5T4A0
L	375	SER	-	expression tag	UNP A0A2S5T4A0
L	376	GLY	-	expression tag	UNP A0A2S5T4A0
L	377	SER	-	expression tag	UNP A0A2S5T4A0
L	378	HIS	-	expression tag	UNP A0A2S5T4A0
L	379	HIS	-	expression tag	UNP A0A2S5T4A0
L	380	HIS	-	expression tag	UNP A0A2S5T4A0
L	381	HIS	-	expression tag	UNP A0A2S5T4A0
L	382	HIS	-	expression tag	UNP A0A2S5T4A0
L	383	HIS	-	expression tag	UNP A0A2S5T4A0
L	384	HIS	-	expression tag	UNP A0A2S5T4A0
L	385	HIS	-	expression tag	UNP A0A2S5T4A0
L	386	HIS	-	expression tag	UNP A0A2S5T4A0
L	387	HIS	-	expression tag	UNP A0A2S5T4A0

- Molecule 3 is a protein called ABC transporter ATP-binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	A	226	Total	C	N	O	S	0	0
			1771	1122	309	329	11		
3	B	226	Total	C	N	O	S	0	0
			1771	1122	309	329	11		

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	227	ASP	-	expression tag	UNP A0A2S5T4B3
A	228	TYR	-	expression tag	UNP A0A2S5T4B3
A	229	LYS	-	expression tag	UNP A0A2S5T4B3
A	230	ASP	-	expression tag	UNP A0A2S5T4B3

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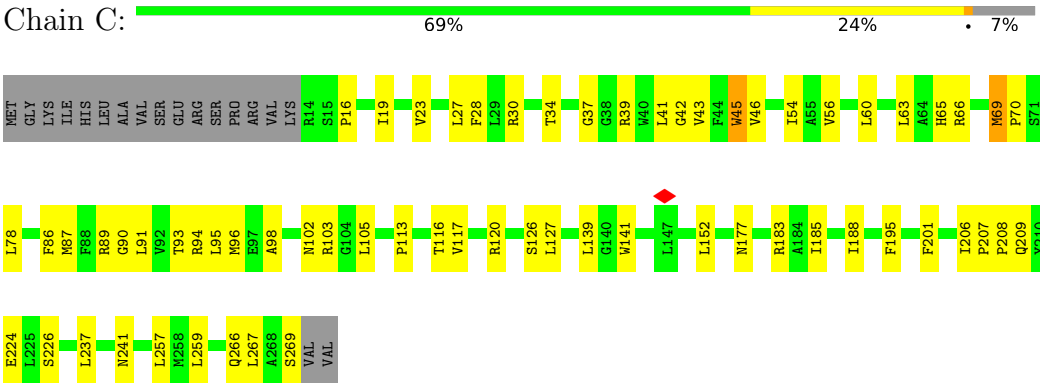
Chain	Residue	Modelled	Actual	Comment	Reference
A	231	ASP	-	expression tag	UNP A0A2S5T4B3
A	232	ASP	-	expression tag	UNP A0A2S5T4B3
A	233	ASP	-	expression tag	UNP A0A2S5T4B3
A	234	LYS	-	expression tag	UNP A0A2S5T4B3
B	227	ASP	-	expression tag	UNP A0A2S5T4B3
B	228	TYR	-	expression tag	UNP A0A2S5T4B3
B	229	LYS	-	expression tag	UNP A0A2S5T4B3
B	230	ASP	-	expression tag	UNP A0A2S5T4B3
B	231	ASP	-	expression tag	UNP A0A2S5T4B3
B	232	ASP	-	expression tag	UNP A0A2S5T4B3
B	233	ASP	-	expression tag	UNP A0A2S5T4B3
B	234	LYS	-	expression tag	UNP A0A2S5T4B3

3 Residue-property plots (i)

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

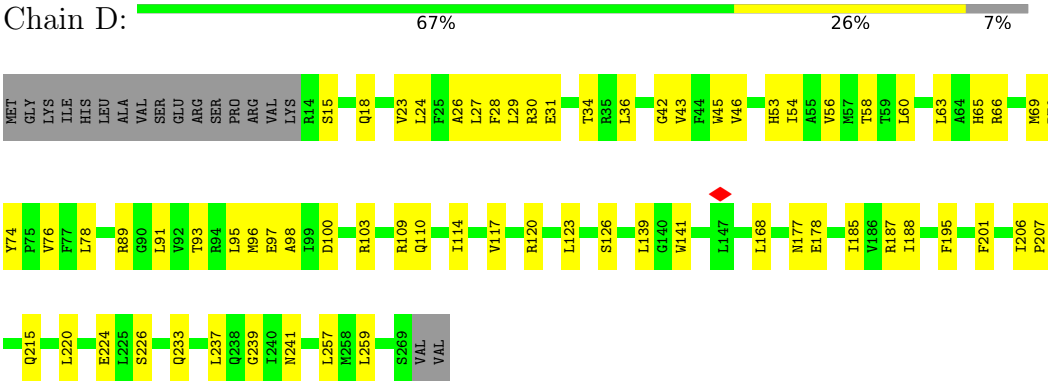
• Molecule 1: Transport permease protein

Chain C:



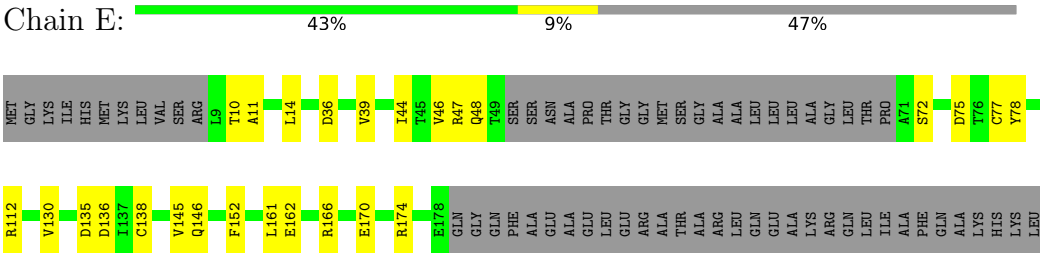
• Molecule 1: Transport permease protein

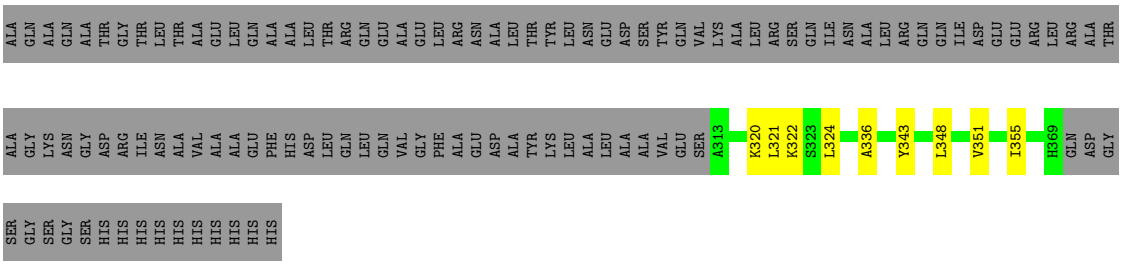
Chain D:



• Molecule 2: Capsular biosynthesis protein

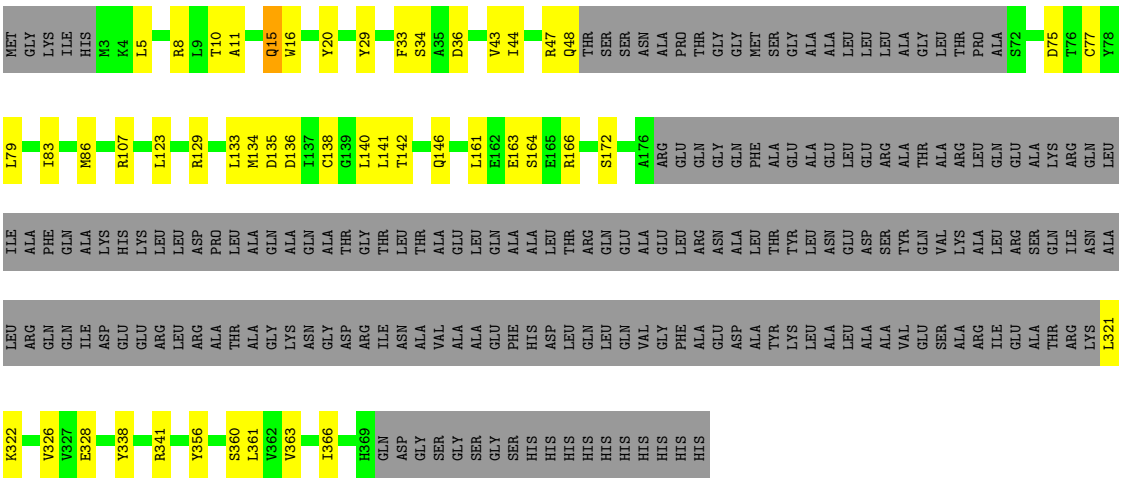
Chain E:





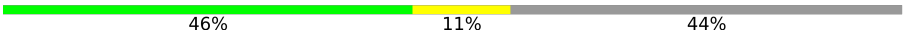
• Molecule 2: Capsular biosynthesis protein

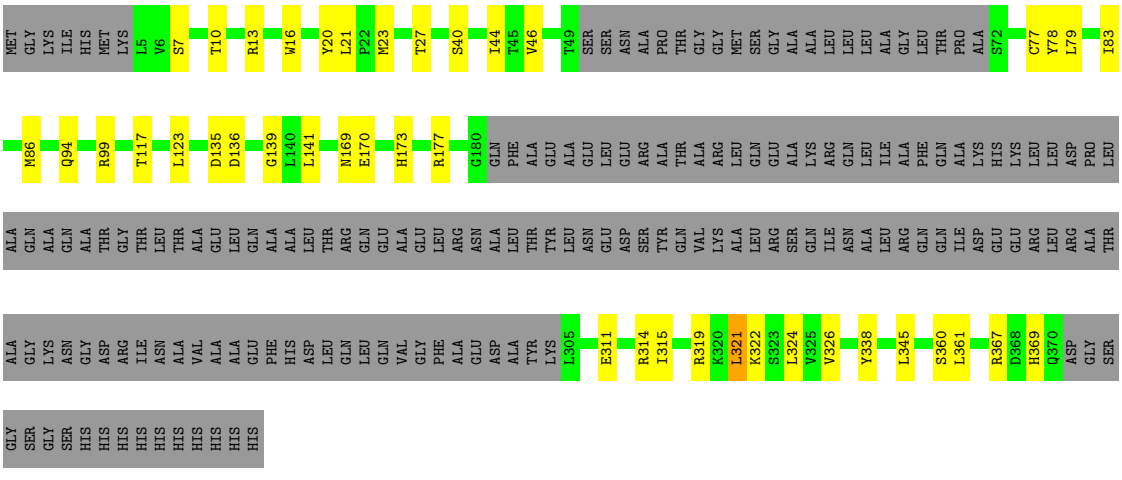
Chain F:



• Molecule 2: Capsular biosynthesis protein

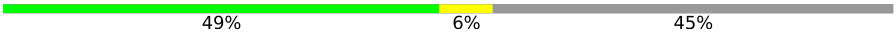
Chain G:

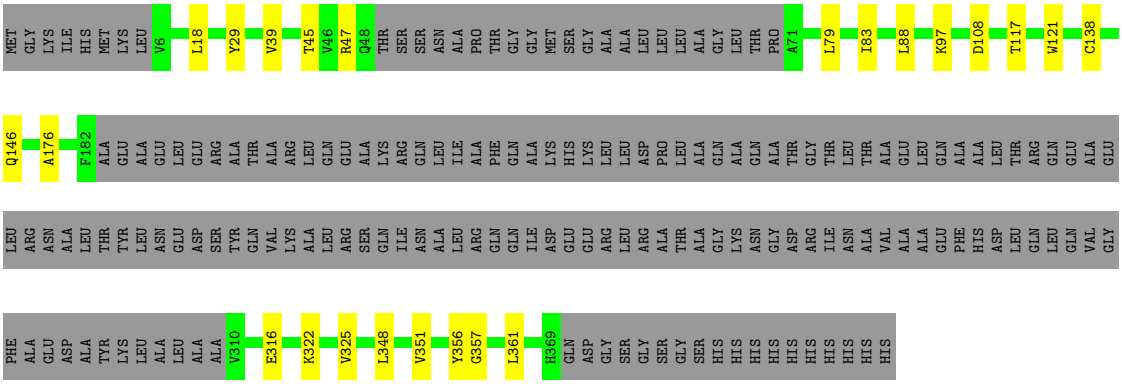




• Molecule 2: Capsular biosynthesis protein

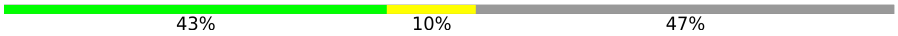
Chain H:

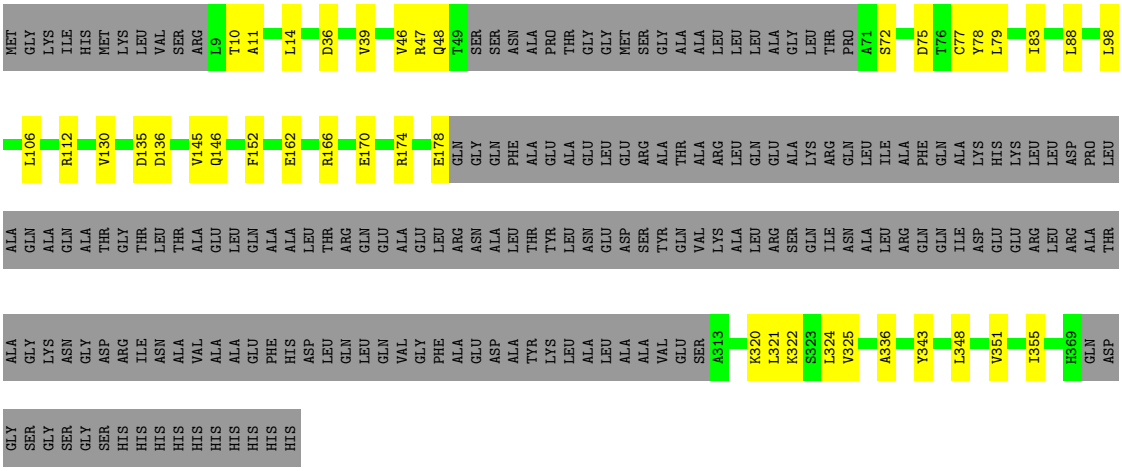




• Molecule 2: Capsular biosynthesis protein

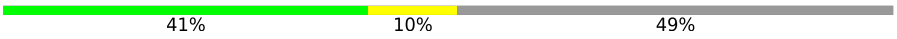
Chain I:

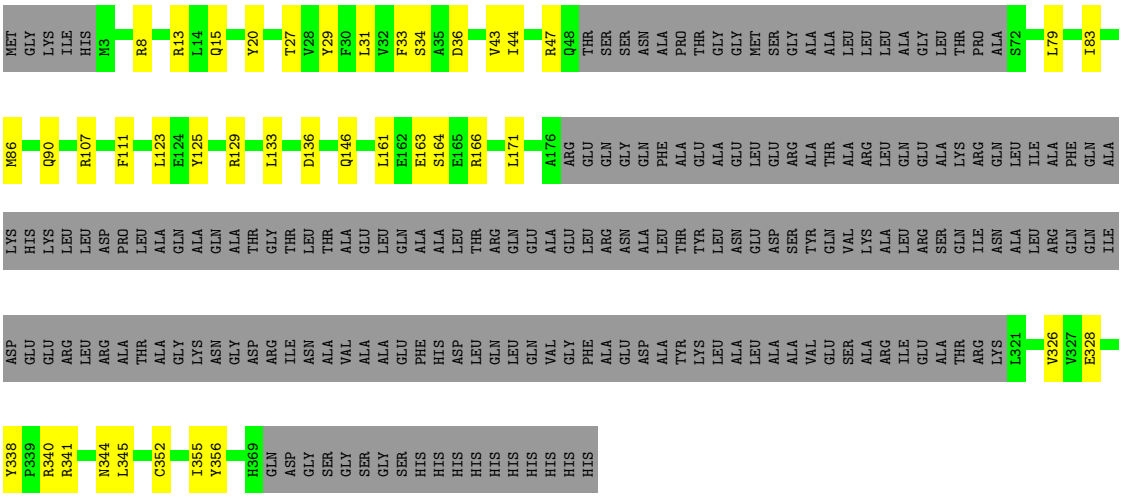




• Molecule 2: Capsular biosynthesis protein

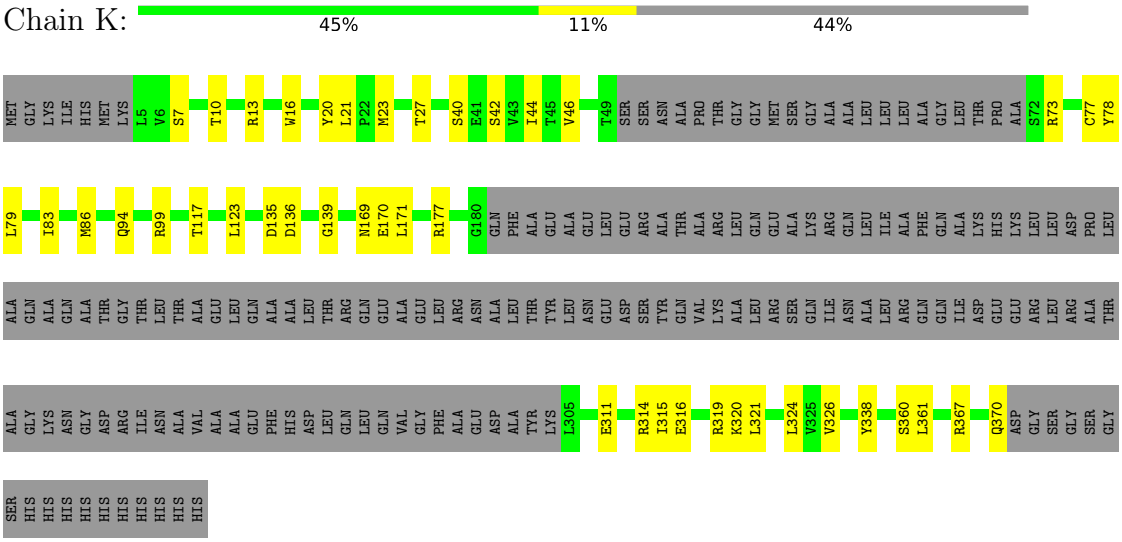
Chain J:





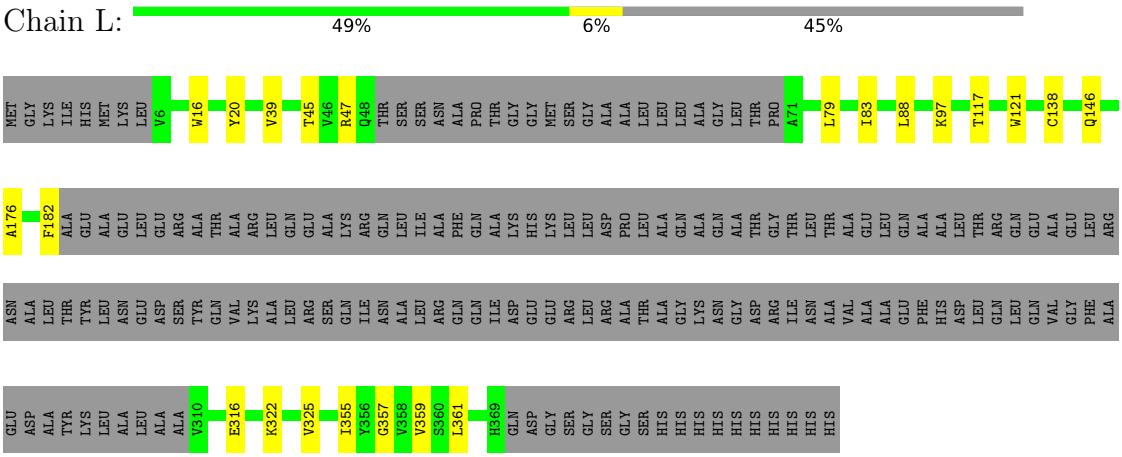
• Molecule 2: Capsular biosynthesis protein

Chain K:



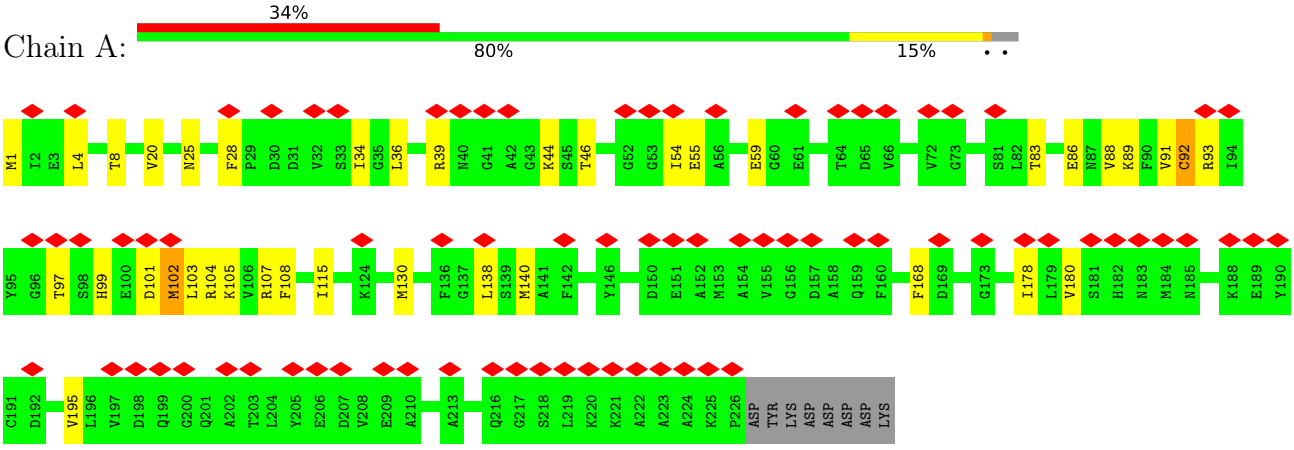
• Molecule 2: Capsular biosynthesis protein

Chain L:



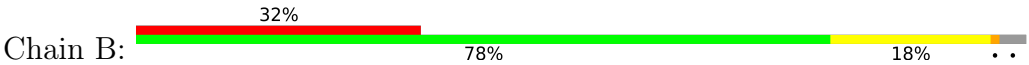
• Molecule 3: ABC transporter ATP-binding protein

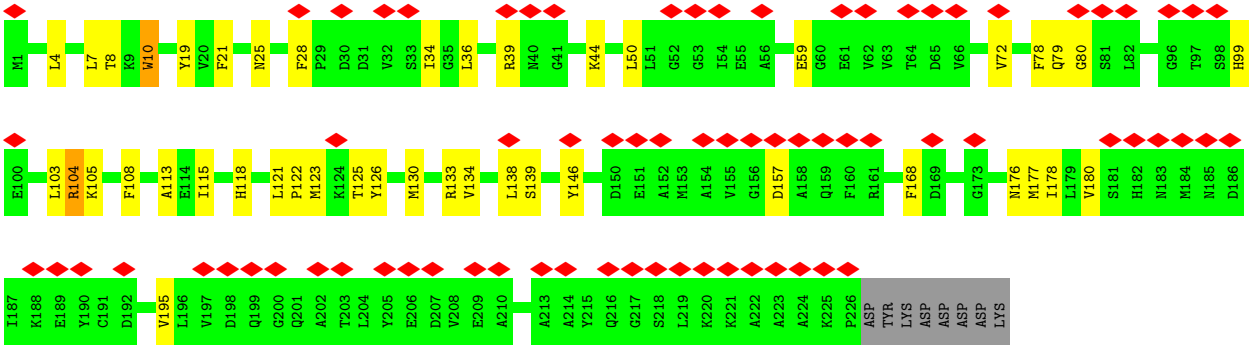
Chain A:



• Molecule 3: ABC transporter ATP-binding protein

Chain B:




M1 L4 L7 T8 K9 W10 Y19 V20 F21 W25 F28 P29 D30 D31 V32 S33 I34 G35 L36 R39 N40 G41 K44 L50 L51 G52 G53 I54 E55 A56 E59 G60 E61 V62 V63 T64 D65 V66 V72 F78 Q79 G80 S81 L82 G96 T97 S98 H99
E100 L103 R104 K105 F108 A113 E114 I115 H118 L121 P122 M123 K124 T125 Y126 M130 R133 V134 L138 S139 Y146 D150 E151 A152 M153 A154 V155 G156 D157 A158 Q159 F160 R161 F168 D169 G173 N176 M177 I178 L179 V180 S181 H182 N183 M184 N185 D186
I187 K188 E189 Y190 C191 D192 V195 L196 V197 D198 Q199 G200 Q201 A202 T203 L204 Y205 E206 D207 V208 E209 A210 A213 A214 Y215 Q216 G217 S218 L219 K220 K221 A222 A223 A224 K225 P226 ASP TYR LYS ASP ASP ASP ASP LYS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	46064	Depositor
Resolution determination method	FSC 0.5 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	47.901	Depositor
Minimum map value	-24.827	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	4.0	Depositor
Map size (Å)	388.80002, 388.80002, 388.80002	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.08, 1.08, 1.08	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	C	0.28	0/2095	0.54	0/2856
1	D	0.29	0/2095	0.53	0/2856
2	E	0.27	0/1725	0.55	0/2341
2	F	0.32	0/1677	0.55	0/2276
2	G	0.28	0/1827	0.53	0/2479
2	H	0.28	0/1798	0.55	0/2438
2	I	0.27	0/1725	0.55	0/2341
2	J	0.28	0/1677	0.53	0/2276
2	K	0.28	0/1827	0.53	0/2479
2	L	0.26	0/1798	0.53	0/2438
3	A	0.27	0/1807	0.50	0/2436
3	B	0.28	0/1807	0.48	0/2436
All	All	0.28	0/21858	0.53	0/29652

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	C	2039	0	2156	41	0
1	D	2039	0	2156	41	0
2	E	1690	0	1716	22	0
2	F	1642	0	1671	31	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	G	1792	0	1825	25	0
2	H	1762	0	1785	13	0
2	I	1690	0	1716	24	0
2	J	1642	0	1671	20	0
2	K	1792	0	1825	20	0
2	L	1762	0	1785	13	0
3	A	1771	0	1745	22	0
3	B	1771	0	1745	35	0
All	All	21392	0	21796	288	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (288) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:104:ARG:HH21	3:B:108:PHE:HB3	1.14	1.09
3:B:104:ARG:HH21	3:B:108:PHE:CB	1.71	1.01
3:B:104:ARG:NH2	3:B:108:PHE:CB	2.26	0.98
3:A:4:LEU:O	3:A:25:ASN:HA	1.76	0.86
2:F:134:MET:HB2	2:F:141:LEU:HD12	1.61	0.83
3:B:104:ARG:NH2	3:B:108:PHE:HB3	1.90	0.81
3:B:118:HIS:HA	3:B:121:LEU:HG	1.63	0.79
3:B:4:LEU:O	3:B:25:ASN:HA	1.82	0.79
1:C:208:PRO:HA	1:C:211:LEU:HD13	1.68	0.74
3:B:104:ARG:NH2	3:B:108:PHE:HB2	2.04	0.73
1:D:208:PRO:HA	1:D:211:LEU:HD13	1.71	0.72
1:D:91:LEU:O	1:D:95:LEU:HB2	1.89	0.72
2:F:47:ARG:NH2	2:G:78:TYR:OH	2.23	0.71
2:J:47:ARG:NH2	2:K:78:TYR:OH	2.23	0.71
1:C:89:ARG:O	1:C:93:THR:HG23	1.90	0.70
1:D:30:ARG:O	1:D:34:THR:HG23	1.94	0.67
1:D:89:ARG:O	1:D:93:THR:HG23	1.95	0.66
3:A:8:THR:HB	3:A:59:GLU:HB2	1.78	0.66
2:F:321:LEU:HG	2:F:322:LYS:HG3	1.76	0.65
3:B:36:LEU:HB3	3:B:180:VAL:HG22	1.79	0.65
3:A:91:VAL:HG21	3:A:138:LEU:HD11	1.79	0.64
2:G:169:ASN:ND2	2:G:322:LYS:O	2.31	0.64
1:C:16:PRO:HB3	2:G:369:HIS:HB2	1.79	0.63
3:B:113:ALA:HB1	3:B:115:ILE:HG12	1.81	0.63
2:G:135:ASP:O	2:G:139:GLY:N	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:36:LEU:HB3	3:A:180:VAL:HG22	1.81	0.62
2:J:8:ARG:O	2:J:13:ARG:NH2	2.34	0.61
2:E:78:TYR:OH	2:L:47:ARG:NH2	2.34	0.61
3:B:123:MET:O	3:B:126:TYR:HB2	2.01	0.61
2:K:44:ILE:HG22	2:K:326:VAL:HG23	1.82	0.60
2:F:10:THR:OG1	2:F:11:ALA:N	2.34	0.60
1:C:91:LEU:O	1:C:95:LEU:HB2	2.01	0.60
2:J:129:ARG:HD3	2:J:146:GLN:HB2	1.84	0.59
1:D:30:ARG:HH22	3:B:79:GLN:HE21	1.48	0.59
2:G:44:ILE:HG22	2:G:326:VAL:HG23	1.85	0.58
1:C:42:GLY:HA2	1:C:45:TRP:HD1	1.68	0.58
2:K:135:ASP:O	2:K:139:GLY:N	2.37	0.58
1:D:26:ALA:O	1:D:29:LEU:HG	2.04	0.57
3:B:104:ARG:NH2	3:B:108:PHE:CG	2.72	0.57
1:C:266:GLN:OE1	1:C:266:GLN:N	2.35	0.57
2:I:47:ARG:NH2	2:I:72:SER:OG	2.37	0.56
2:J:27:THR:HG23	2:J:31:LEU:HD23	1.87	0.56
3:A:92:CYS:SG	3:A:102:MET:HB2	2.45	0.56
2:I:48:GLN:NE2	2:I:321:LEU:O	2.39	0.56
2:F:16:TRP:HA	2:F:20:TYR:HD2	1.71	0.55
1:D:98:ALA:HB3	1:D:117:VAL:HG12	1.89	0.55
1:D:54:ILE:HD13	1:D:78:LEU:HD22	1.89	0.55
1:C:39:ARG:HB2	1:C:41:LEU:HD22	1.88	0.54
1:D:15:SER:HB3	1:D:18:GLN:HG3	1.89	0.54
2:H:348:LEU:O	2:H:351:VAL:HG12	2.08	0.54
2:I:130:VAL:HG22	2:I:145:VAL:HG22	1.89	0.54
1:D:30:ARG:NH2	3:B:79:GLN:HE21	2.05	0.54
3:B:115:ILE:HD12	3:B:130:MET:HE2	1.90	0.54
1:C:206:ILE:HD12	1:C:207:PRO:HD2	1.89	0.53
2:K:46:VAL:HA	2:K:324:LEU:HA	1.89	0.53
2:K:99:ARG:NH2	2:K:117:THR:OG1	2.41	0.53
2:L:39:VAL:HG22	2:L:146:GLN:HG2	1.91	0.53
2:J:79:LEU:HD11	2:J:164:SER:HB3	1.90	0.53
2:L:357:GLY:O	2:L:361:LEU:HG	2.09	0.53
3:A:99:HIS:O	3:A:103:LEU:HG	2.09	0.53
2:H:39:VAL:HG22	2:H:146:GLN:HG2	1.91	0.53
3:B:146:TYR:HA	3:B:176:ASN:O	2.09	0.53
1:C:23:VAL:O	1:C:27:LEU:HG	2.09	0.53
1:D:241:ASN:OD1	1:D:241:ASN:N	2.42	0.53
2:F:79:LEU:HD11	2:F:164:SER:HB3	1.90	0.53
2:F:129:ARG:HD3	2:F:146:GLN:HB2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:99:ARG:NH2	2:G:117:THR:OG1	2.42	0.53
1:C:98:ALA:HB3	1:C:117:VAL:HG12	1.91	0.52
2:I:36:ASP:OD1	2:I:36:ASP:N	2.42	0.52
2:E:48:GLN:NE2	2:E:321:LEU:O	2.42	0.52
2:E:130:VAL:HG22	2:E:145:VAL:HG22	1.91	0.52
2:F:44:ILE:HD13	2:F:161:LEU:HD22	1.92	0.52
1:D:109:ARG:HG3	1:D:110:GLN:HG2	1.91	0.52
3:A:20:VAL:HG11	3:A:46:THR:HG21	1.92	0.52
2:J:44:ILE:HD13	2:J:161:LEU:HD22	1.92	0.52
3:A:28:PHE:HE1	3:A:195:VAL:HG21	1.74	0.52
1:C:28:PHE:CZ	2:F:361:LEU:HD13	2.44	0.51
1:C:257:LEU:HB3	2:G:361:LEU:HD23	1.91	0.51
1:D:206:ILE:HD12	1:D:207:PRO:HD2	1.92	0.51
3:A:88:VAL:HG12	3:A:138:LEU:HD12	1.92	0.51
3:A:99:HIS:CE1	3:A:103:LEU:HD21	2.45	0.51
1:C:42:GLY:HA2	1:C:45:TRP:CD1	2.45	0.51
3:B:28:PHE:HE1	3:B:195:VAL:HG21	1.75	0.51
3:B:104:ARG:HE	3:B:104:ARG:C	2.14	0.51
1:C:19:ILE:HD11	2:G:369:HIS:O	2.11	0.51
1:C:56:VAL:O	1:C:60:LEU:HB2	2.11	0.51
3:B:39:ARG:O	3:B:44:LYS:NZ	2.44	0.51
3:B:133:ARG:NH2	3:B:157:ASP:OD2	2.44	0.51
1:D:257:LEU:HB3	2:K:361:LEU:HD23	1.91	0.50
2:H:47:ARG:NH2	2:I:78:TYR:OH	2.33	0.50
3:A:34:ILE:HB	3:A:178:ILE:HG12	1.93	0.50
3:A:83:THR:HG22	3:A:86:GLU:HG2	1.93	0.50
3:A:89:LYS:O	3:A:93:ARG:HG2	2.11	0.50
3:B:10:TRP:HB3	3:B:19:TYR:HA	1.93	0.50
2:I:75:ASP:OD2	2:I:322:LYS:NZ	2.43	0.50
2:H:357:GLY:O	2:H:361:LEU:HG	2.11	0.50
3:A:97:THR:HG21	3:A:105:LYS:HE3	1.93	0.50
3:A:97:THR:HG22	3:A:101:ASP:HB2	1.92	0.50
2:F:135:ASP:OD2	2:F:138:CYS:HB2	2.12	0.50
2:G:315:ILE:HG12	2:G:319:ARG:HH21	1.75	0.50
2:L:355:ILE:O	2:L:359:VAL:HG12	2.12	0.50
1:D:43:VAL:HA	1:D:46:VAL:HG22	1.94	0.50
3:B:118:HIS:HA	3:B:121:LEU:CG	2.40	0.50
2:G:46:VAL:HA	2:G:324:LEU:HA	1.94	0.49
2:J:29:TYR:HA	2:J:33:PHE:HB2	1.94	0.49
1:C:98:ALA:HA	1:C:120:ARG:HH11	1.77	0.49
1:D:27:LEU:O	1:D:31:GLU:HG2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:233:GLN:HG3	2:J:133:LEU:HD22	1.95	0.49
3:B:122:PRO:HG2	3:B:125:THR:HG23	1.93	0.49
2:K:7:SER:HA	2:K:367:ARG:NH1	2.27	0.49
2:J:163:GLU:OE2	2:J:166:ARG:NH2	2.46	0.49
2:J:340:ARG:O	2:J:344:ASN:ND2	2.34	0.49
2:K:311:GLU:O	2:K:315:ILE:HG22	2.13	0.49
1:C:241:ASN:N	1:C:241:ASN:OD1	2.42	0.49
2:F:135:ASP:OD1	2:F:140:LEU:N	2.46	0.49
2:I:325:VAL:HG13	2:J:171:LEU:HD11	1.94	0.49
2:E:46:VAL:HG22	2:E:324:LEU:HD12	1.94	0.48
2:G:94:GLN:O	2:G:94:GLN:NE2	2.45	0.48
2:G:311:GLU:O	2:G:315:ILE:HG22	2.13	0.48
2:L:117:THR:HG23	2:L:121:TRP:HB3	1.96	0.48
2:E:36:ASP:OD1	2:E:36:ASP:N	2.45	0.48
2:F:134:MET:HA	2:F:140:LEU:O	2.13	0.48
2:K:94:GLN:O	2:K:94:GLN:NE2	2.45	0.48
2:L:45:THR:HG23	2:L:325:VAL:HB	1.95	0.48
2:F:163:GLU:OE2	2:F:166:ARG:NH2	2.45	0.48
3:B:99:HIS:O	3:B:103:LEU:HG	2.13	0.48
1:C:220:LEU:O	1:C:224:GLU:HG2	2.14	0.48
2:G:173:HIS:NE2	2:G:319:ARG:O	2.35	0.48
2:I:162:GLU:OE2	2:I:166:ARG:NH1	2.46	0.48
2:K:79:LEU:O	2:K:83:ILE:HG12	2.14	0.48
3:A:54:ILE:HG22	3:A:55:GLU:HG3	1.95	0.48
1:C:141:TRP:O	2:E:343:TYR:OH	2.31	0.47
2:F:48:GLN:OE1	2:F:48:GLN:N	2.35	0.47
2:F:29:TYR:HA	2:F:33:PHE:HB2	1.96	0.47
2:I:320:LYS:HB3	2:I:320:LYS:HE2	1.70	0.47
1:D:141:TRP:O	2:I:343:TYR:OH	2.30	0.47
2:G:79:LEU:O	2:G:83:ILE:HG12	2.14	0.47
1:C:66:ARG:HH22	1:C:70:PRO:HA	1.79	0.47
2:K:86:MET:HE2	2:K:123:LEU:HD22	1.97	0.47
3:B:34:ILE:HB	3:B:178:ILE:HG12	1.97	0.47
2:F:133:LEU:HB2	2:F:142:THR:CG2	2.43	0.47
1:D:36:LEU:HD13	1:D:42:GLY:HA3	1.96	0.47
1:D:56:VAL:O	1:D:60:LEU:HB2	2.14	0.47
1:D:220:LEU:O	1:D:224:GLU:HG2	2.14	0.47
2:G:7:SER:HA	2:G:367:ARG:NH1	2.29	0.47
2:G:86:MET:HE2	2:G:123:LEU:HD22	1.97	0.47
1:D:66:ARG:HH22	1:D:70:PRO:HA	1.79	0.47
2:H:117:THR:HG23	2:H:121:TRP:HB3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:7:LEU:HD21	3:B:50:LEU:HD13	1.96	0.47
1:C:89:ARG:HE	1:C:89:ARG:HB2	1.60	0.46
2:G:10:THR:HG23	2:G:13:ARG:H	1.79	0.46
2:J:136:ASP:OD1	2:J:136:ASP:N	2.35	0.46
3:B:8:THR:HB	3:B:59:GLU:HB2	1.96	0.46
1:C:43:VAL:HA	1:C:46:VAL:HG12	1.98	0.46
1:D:28:PHE:HE1	1:D:123:LEU:HA	1.79	0.46
1:D:76:VAL:HB	1:D:139:LEU:HD21	1.97	0.46
2:J:44:ILE:HG22	2:J:326:VAL:HG13	1.96	0.46
2:K:10:THR:HG23	2:K:13:ARG:H	1.80	0.46
2:K:73:ARG:NH2	2:K:136:ASP:O	2.49	0.46
2:I:10:THR:OG1	2:I:11:ALA:N	2.48	0.46
1:D:23:VAL:O	1:D:27:LEU:HG	2.16	0.46
2:E:10:THR:OG1	2:E:11:ALA:N	2.49	0.46
1:C:46:VAL:HG21	1:C:127:LEU:HD21	1.96	0.46
2:F:5:LEU:H	2:F:5:LEU:HD23	1.81	0.46
2:H:29:TYR:OH	2:H:108:ASP:OD1	2.24	0.46
3:A:39:ARG:O	3:A:44:LYS:NZ	2.49	0.46
2:H:79:LEU:O	2:H:83:ILE:HG12	2.16	0.45
2:L:79:LEU:O	2:L:83:ILE:HG12	2.16	0.45
3:B:8:THR:HA	3:B:21:PHE:O	2.17	0.45
2:F:44:ILE:HG22	2:F:326:VAL:HG13	1.97	0.45
2:E:348:LEU:HA	2:E:351:VAL:HG12	1.98	0.45
2:E:162:GLU:OE2	2:E:166:ARG:NH1	2.46	0.45
2:F:363:VAL:HA	2:F:366:ILE:HG22	1.98	0.45
2:I:106:LEU:HA	2:I:112:ARG:HH11	1.80	0.45
2:J:15:GLN:HB3	2:J:20:TYR:HE2	1.82	0.45
2:F:79:LEU:O	2:F:83:ILE:HG12	2.17	0.45
2:K:170:GLU:OE2	2:K:177:ARG:NH2	2.42	0.45
3:A:97:THR:HG21	3:A:105:LYS:CE	2.47	0.45
1:C:69:MET:HB2	2:F:136:ASP:OD2	2.17	0.45
1:D:65:HIS:NE2	1:D:72:ILE:O	2.37	0.45
2:E:138:CYS:HB3	2:F:77:CYS:HB3	1.67	0.45
2:F:43:VAL:HB	2:F:328:GLU:HB3	1.99	0.45
3:A:115:ILE:HD12	3:A:130:MET:HG2	1.99	0.45
1:C:76:VAL:HB	1:C:139:LEU:HD21	1.99	0.44
2:H:45:THR:HG23	2:H:325:VAL:HB	2.00	0.44
2:I:348:LEU:HA	2:I:351:VAL:HG12	1.98	0.44
1:C:177:ASN:ND2	1:C:267:LEU:HD13	2.33	0.44
2:J:79:LEU:O	2:J:83:ILE:HG12	2.17	0.44
1:C:102:ASN:HB3	1:C:105:LEU:HD22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:98:ALA:HA	1:D:120:ARG:HH11	1.82	0.44
2:E:77:CYS:HB3	2:L:138:CYS:HB3	1.99	0.44
2:E:106:LEU:HA	2:E:112:ARG:HH11	1.81	0.44
2:I:36:ASP:HB2	2:I:336:ALA:HB3	2.00	0.44
2:K:315:ILE:HG12	2:K:319:ARG:HH21	1.83	0.44
2:K:316:GLU:OE1	2:K:319:ARG:NH2	2.50	0.44
1:D:177:ASN:O	1:D:178:GLU:HG2	2.17	0.44
2:H:18:LEU:HD22	2:H:356:TYR:HB2	1.98	0.44
2:E:75:ASP:OD2	2:E:322:LYS:NZ	2.41	0.44
2:E:162:GLU:OE1	2:E:166:ARG:NH2	2.51	0.44
2:F:48:GLN:HA	2:F:322:LYS:HG2	2.00	0.44
3:B:80:GLY:O	3:B:122:PRO:HB2	2.18	0.44
1:C:30:ARG:O	1:C:34:THR:HG23	2.17	0.44
2:E:351:VAL:O	2:E:355:ILE:HG12	2.18	0.44
2:H:138:CYS:HB2	2:I:77:CYS:SG	2.58	0.44
2:I:46:VAL:HG22	2:I:324:LEU:HD12	2.00	0.44
2:F:15:GLN:NE2	2:F:15:GLN:HA	2.33	0.43
2:F:134:MET:HB2	2:F:141:LEU:CD1	2.41	0.43
2:I:170:GLU:OE1	2:I:174:ARG:NE	2.51	0.43
2:E:39:VAL:HG22	2:E:146:GLN:HG2	2.01	0.43
1:C:65:HIS:NE2	1:C:72:ILE:O	2.37	0.43
2:E:170:GLU:OE1	2:E:174:ARG:NE	2.51	0.43
2:H:176:ALA:HB1	2:H:316:GLU:HG3	1.99	0.43
2:I:39:VAL:HG22	2:I:146:GLN:HG2	2.00	0.43
1:C:113:PRO:O	1:C:116:THR:OG1	2.26	0.43
2:E:320:LYS:HE2	2:E:320:LYS:HB3	1.71	0.43
1:C:188:ILE:HD12	1:C:188:ILE:HA	1.84	0.43
2:I:79:LEU:HD23	2:I:79:LEU:HA	1.83	0.43
2:K:23:MET:O	2:K:27:THR:OG1	2.28	0.43
1:C:185:ILE:O	1:C:188:ILE:HG22	2.18	0.43
1:D:24:LEU:HD23	1:D:24:LEU:HA	1.87	0.43
2:L:16:TRP:HD1	2:L:20:TYR:HD2	1.65	0.43
2:G:23:MET:O	2:G:27:THR:OG1	2.28	0.43
2:K:16:TRP:HA	2:K:20:TYR:CD2	2.54	0.43
2:L:83:ILE:HA	2:L:88:LEU:HD23	2.01	0.43
3:B:168:PHE:CE1	3:B:177:MET:HG2	2.54	0.43
3:A:104:ARG:HE	3:A:107:ARG:HE	1.67	0.43
1:D:215:GLN:NE2	1:D:239:GLY:O	2.52	0.42
2:G:322:LYS:HB2	2:G:322:LYS:HE2	1.89	0.42
2:I:162:GLU:OE1	2:I:166:ARG:NH2	2.51	0.42
2:I:351:VAL:O	2:I:355:ILE:HG12	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:97:GLU:OE2	1:D:187:ARG:NH2	2.53	0.42
2:F:5:LEU:HA	2:F:8:ARG:HB2	2.01	0.42
2:G:16:TRP:HA	2:G:20:TYR:CD2	2.54	0.42
2:G:170:GLU:OE2	2:G:177:ARG:NH2	2.44	0.42
2:J:43:VAL:HB	2:J:328:GLU:HB3	2.01	0.42
2:J:355:ILE:HD13	2:J:355:ILE:HA	1.89	0.42
2:K:135:ASP:O	2:K:139:GLY:CA	2.67	0.42
2:E:36:ASP:HB2	2:E:336:ALA:HB3	2.01	0.42
2:K:169:ASN:ND2	2:K:320:LYS:HD2	2.33	0.42
3:B:78:PHE:HB3	3:B:123:MET:HG3	2.01	0.42
1:C:37:GLY:HA3	1:C:41:LEU:HD23	2.02	0.42
2:F:360:SER:HA	2:F:363:VAL:HG12	2.01	0.42
3:B:80:GLY:HA2	3:B:123:MET:HB2	2.01	0.42
2:E:98:LEU:HD23	2:E:152:PHE:HZ	1.85	0.42
2:G:321:LEU:HD12	2:G:321:LEU:H	1.85	0.42
2:L:322:LYS:HD2	2:L:322:LYS:HA	1.87	0.42
3:B:134:VAL:O	3:B:138:LEU:HG	2.20	0.42
1:D:103:ARG:HA	1:D:103:ARG:HD3	1.79	0.42
2:F:133:LEU:HB2	2:F:142:THR:HG23	2.02	0.42
1:D:54:ILE:O	1:D:58:THR:OG1	2.25	0.41
2:I:98:LEU:HD23	2:I:152:PHE:HZ	1.85	0.41
2:J:111:PHE:O	2:J:125:TYR:OH	2.30	0.41
1:C:237:LEU:HD23	1:C:237:LEU:H	1.85	0.41
1:D:168:LEU:HD23	1:D:168:LEU:HA	1.87	0.41
1:C:90:GLY:O	1:C:94:ARG:HG2	2.20	0.41
1:D:185:ILE:O	1:D:188:ILE:HG22	2.20	0.41
2:G:79:LEU:HD23	2:G:79:LEU:HA	1.79	0.41
2:H:322:LYS:HD2	2:H:322:LYS:HA	1.93	0.41
1:D:259:LEU:HD23	1:D:259:LEU:HA	1.93	0.41
2:H:83:ILE:HA	2:H:88:LEU:HD23	2.02	0.41
2:J:86:MET:HE2	2:J:123:LEU:HD22	2.03	0.41
3:A:92:CYS:SG	3:A:97:THR:HB	2.60	0.41
1:C:54:ILE:HD13	1:C:78:LEU:HD13	2.02	0.41
1:D:237:LEU:HD23	1:D:237:LEU:H	1.85	0.41
2:F:86:MET:HE2	2:F:123:LEU:HD22	2.03	0.41
2:G:345:LEU:HD23	2:G:345:LEU:HA	1.93	0.41
3:B:79:GLN:OE1	3:B:80:GLY:N	2.53	0.41
2:F:172:SER:HB2	2:F:322:LYS:NZ	2.36	0.41
1:C:86:PHE:HA	1:C:89:ARG:HG2	2.02	0.41
1:C:152:LEU:HD23	1:C:152:LEU:HA	1.86	0.41
1:C:259:LEU:HD23	1:C:259:LEU:HA	1.92	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:178:GLU:H	2:I:178:GLU:HG3	1.65	0.41
2:J:345:LEU:HD23	2:J:345:LEU:HA	1.93	0.41
1:C:183:ARG:H	1:C:183:ARG:HG2	1.71	0.41
1:D:53:HIS:HA	1:D:56:VAL:HG12	2.03	0.40
2:I:83:ILE:HA	2:I:88:LEU:HD22	2.03	0.40
2:L:16:TRP:HA	2:L:20:TYR:CD2	2.55	0.40
3:B:72:VAL:HG22	3:B:139:SER:HB2	2.03	0.40
2:E:44:ILE:HD13	2:E:161:LEU:HD22	2.03	0.40
2:E:47:ARG:NH1	2:E:72:SER:OG	2.54	0.40
1:D:42:GLY:HA2	1:D:45:TRP:CE3	2.56	0.40
1:D:73:GLU:OE2	1:D:73:GLU:N	2.29	0.40
1:C:103:ARG:NH2	1:C:269:SER:OG	2.53	0.40
2:L:176:ALA:HB1	2:L:316:GLU:HG3	2.03	0.40
3:A:108:PHE:HE2	3:A:140:MET:HG3	1.87	0.40
1:D:114:ILE:HA	1:D:117:VAL:HG22	2.03	0.40
2:G:141:LEU:HD23	2:G:141:LEU:HA	1.87	0.40
3:B:104:ARG:CZ	3:B:105:LYS:HD2	2.52	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	C	254/274 (93%)	244 (96%)	10 (4%)	0	100	100
1	D	254/274 (93%)	245 (96%)	9 (4%)	0	100	100
2	E	200/390 (51%)	192 (96%)	8 (4%)	0	100	100
2	F	194/390 (50%)	187 (96%)	7 (4%)	0	100	100
2	G	214/390 (55%)	208 (97%)	6 (3%)	0	100	100
2	H	209/390 (54%)	203 (97%)	6 (3%)	0	100	100
2	I	200/390 (51%)	193 (96%)	7 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	J	194/390 (50%)	188 (97%)	6 (3%)	0	100	100
2	K	214/390 (55%)	206 (96%)	8 (4%)	0	100	100
2	L	209/390 (54%)	202 (97%)	7 (3%)	0	100	100
3	A	224/234 (96%)	223 (100%)	1 (0%)	0	100	100
3	B	224/234 (96%)	222 (99%)	2 (1%)	0	100	100
All	All	2590/4136 (63%)	2513 (97%)	77 (3%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	216/232 (93%)	206 (95%)	10 (5%)	27	57
1	D	216/232 (93%)	206 (95%)	10 (5%)	27	57
2	E	185/325 (57%)	182 (98%)	3 (2%)	62	81
2	F	182/325 (56%)	174 (96%)	8 (4%)	28	58
2	G	196/325 (60%)	188 (96%)	8 (4%)	30	59
2	H	193/325 (59%)	192 (100%)	1 (0%)	88	94
2	I	185/325 (57%)	182 (98%)	3 (2%)	62	81
2	J	182/325 (56%)	174 (96%)	8 (4%)	28	58
2	K	196/325 (60%)	186 (95%)	10 (5%)	24	54
2	L	193/325 (59%)	191 (99%)	2 (1%)	76	88
3	A	186/194 (96%)	182 (98%)	4 (2%)	52	75
3	B	186/194 (96%)	184 (99%)	2 (1%)	73	86
All	All	2316/3452 (67%)	2247 (97%)	69 (3%)	44	68

All (69) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	45	TRP
1	C	63	LEU
1	C	69	MET
1	C	87	MET
1	C	96	MET
1	C	126	SER
1	C	195	PHE
1	C	201	PHE
1	C	209	GLN
1	C	226	SER
1	D	63	LEU
1	D	69	MET
1	D	74	TYR
1	D	96	MET
1	D	100	ASP
1	D	126	SER
1	D	195	PHE
1	D	201	PHE
1	D	209	GLN
1	D	226	SER
2	E	14	LEU
2	E	135	ASP
2	E	136	ASP
2	F	15	GLN
2	F	34	SER
2	F	36	ASP
2	F	75	ASP
2	F	107	ARG
2	F	338	TYR
2	F	341	ARG
2	F	356	TYR
2	G	21	LEU
2	G	40	SER
2	G	77	CYS
2	G	136	ASP
2	G	314	ARG
2	G	321	LEU
2	G	338	TYR
2	G	360	SER
2	H	97	LYS
2	I	14	LEU
2	I	135	ASP
2	I	136	ASP

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Mol	Chain	Res	Type
2	J	34	SER
2	J	36	ASP
2	J	90	GLN
2	J	107	ARG
2	J	338	TYR
2	J	341	ARG
2	J	352	CYS
2	J	356	TYR
2	K	21	LEU
2	K	40	SER
2	K	42	SER
2	K	77	CYS
2	K	171	LEU
2	K	314	ARG
2	K	321	LEU
2	K	338	TYR
2	K	360	SER
2	K	370	GLN
2	L	97	LYS
2	L	182	PHE
3	A	1	MET
3	A	92	CYS
3	A	102	MET
3	A	168	PHE
3	B	10	TRP
3	B	104	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
2	G	169	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 monosaccharides 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.

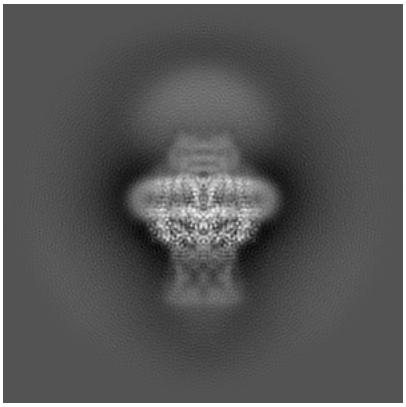
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-41595. These allow visual inspection of the internal detail of the map and identification of artifacts.

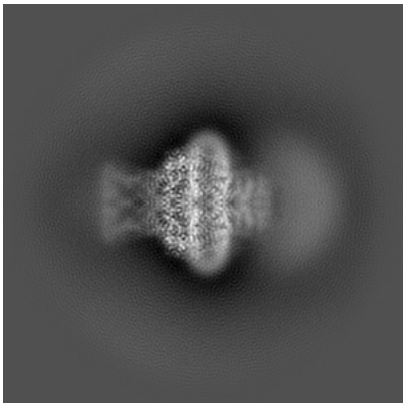
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

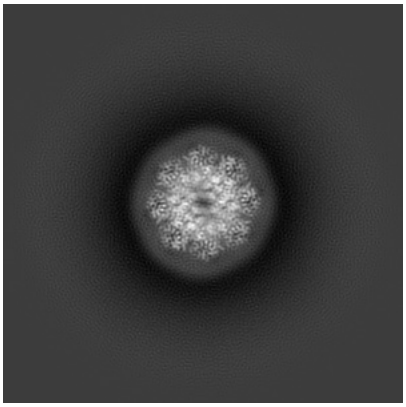
6.1.1 Primary map



X



Y

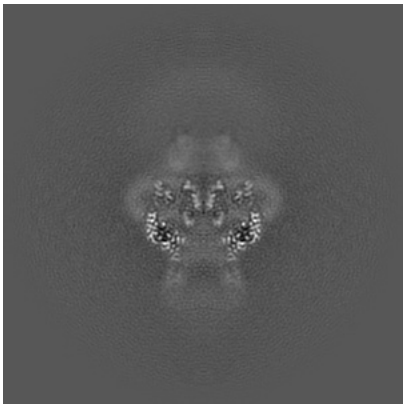


Z

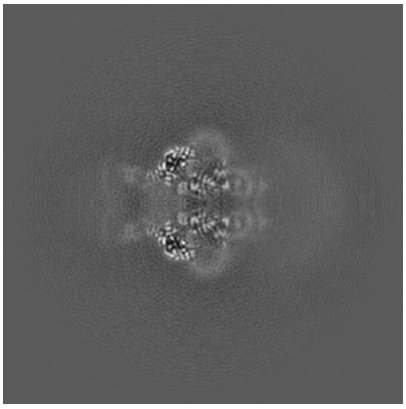
The images above show the map projected in three orthogonal directions.

6.2 Central slices

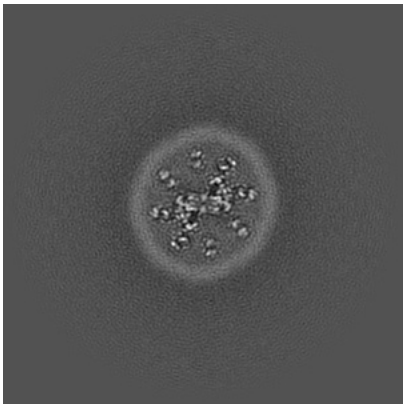
6.2.1 Primary map



X Index: 180



Y Index: 180

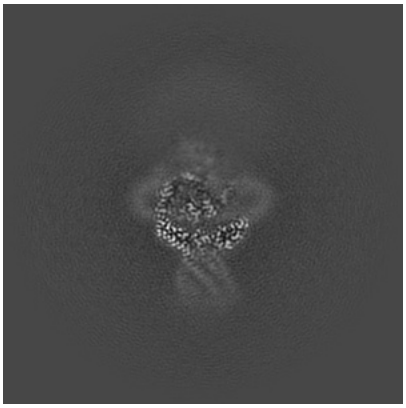


Z Index: 180

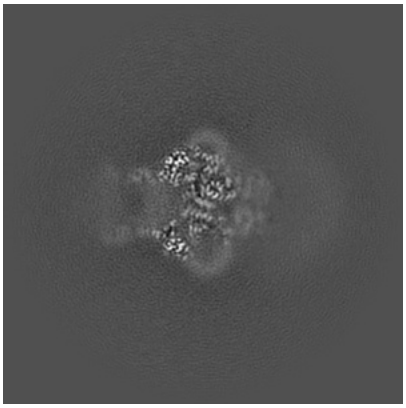
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

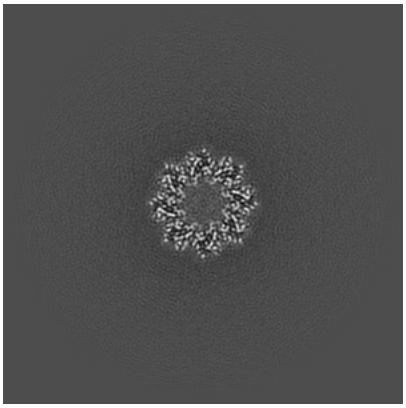
6.3.1 Primary map



X Index: 157



Y Index: 186

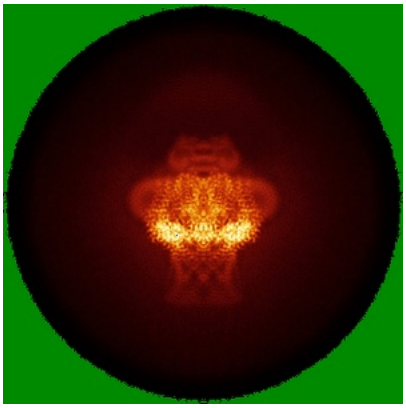


Z Index: 151

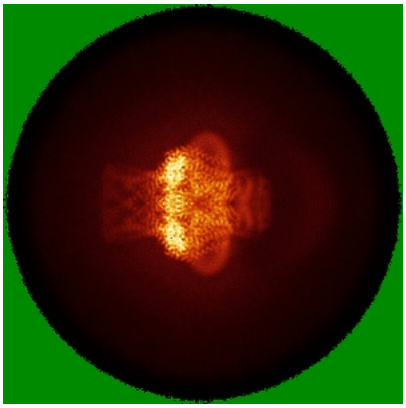
The images above show the largest variance slices of the map in three orthogonal directions.

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

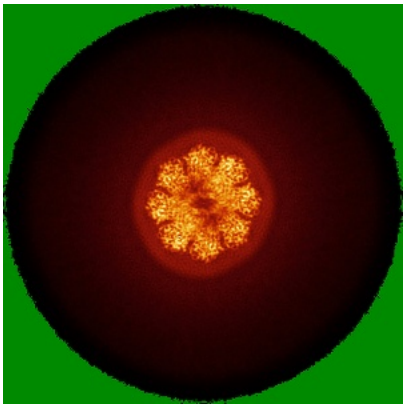
6.4.1 Primary map



X



Y

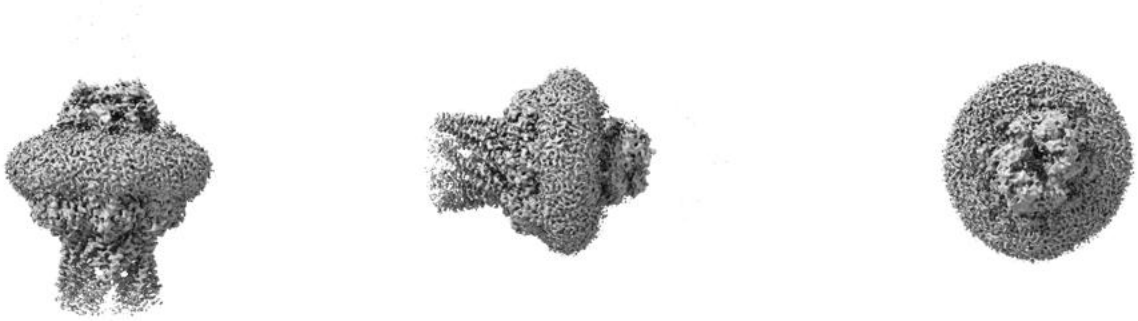


Z

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



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 4.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

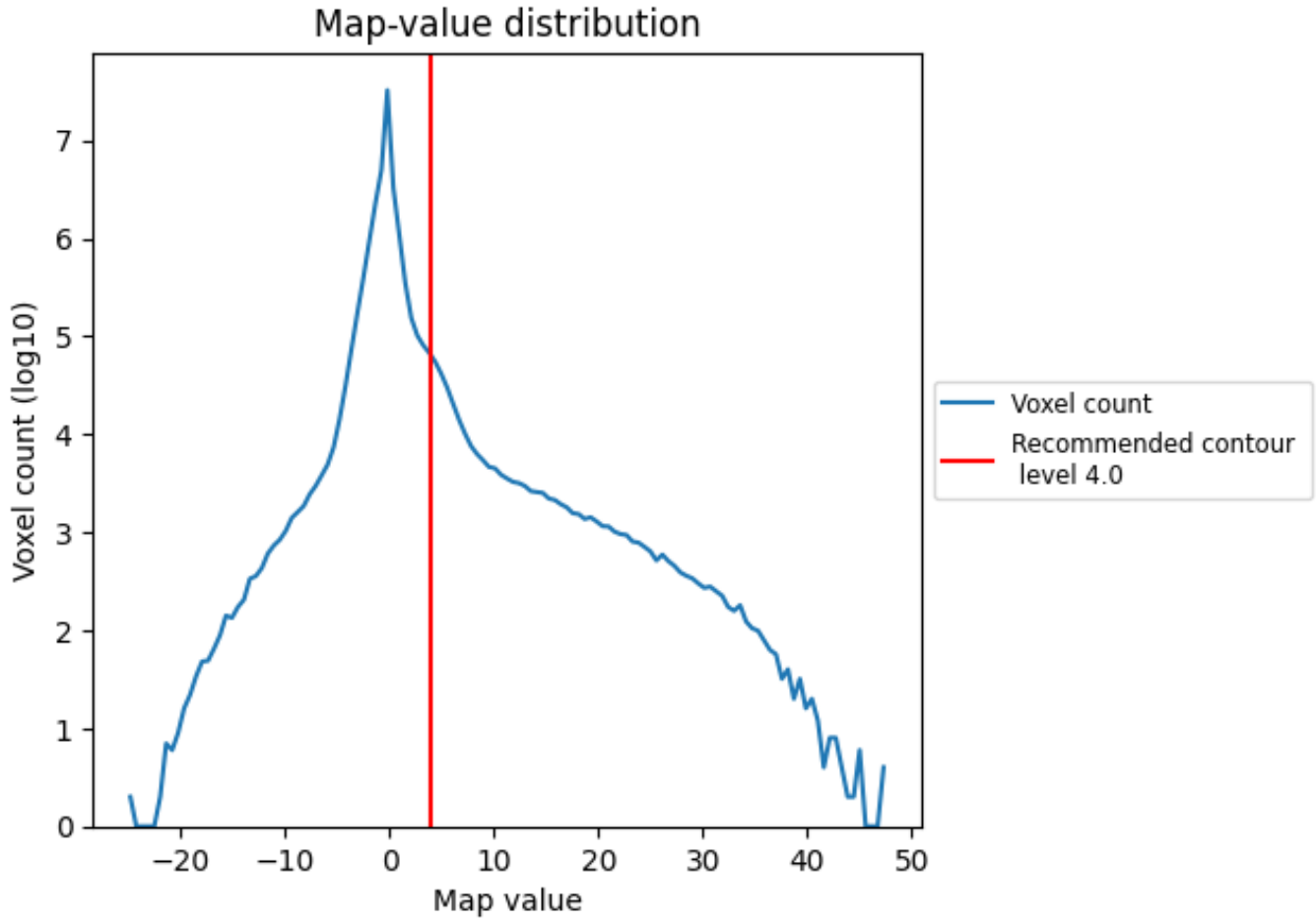
6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

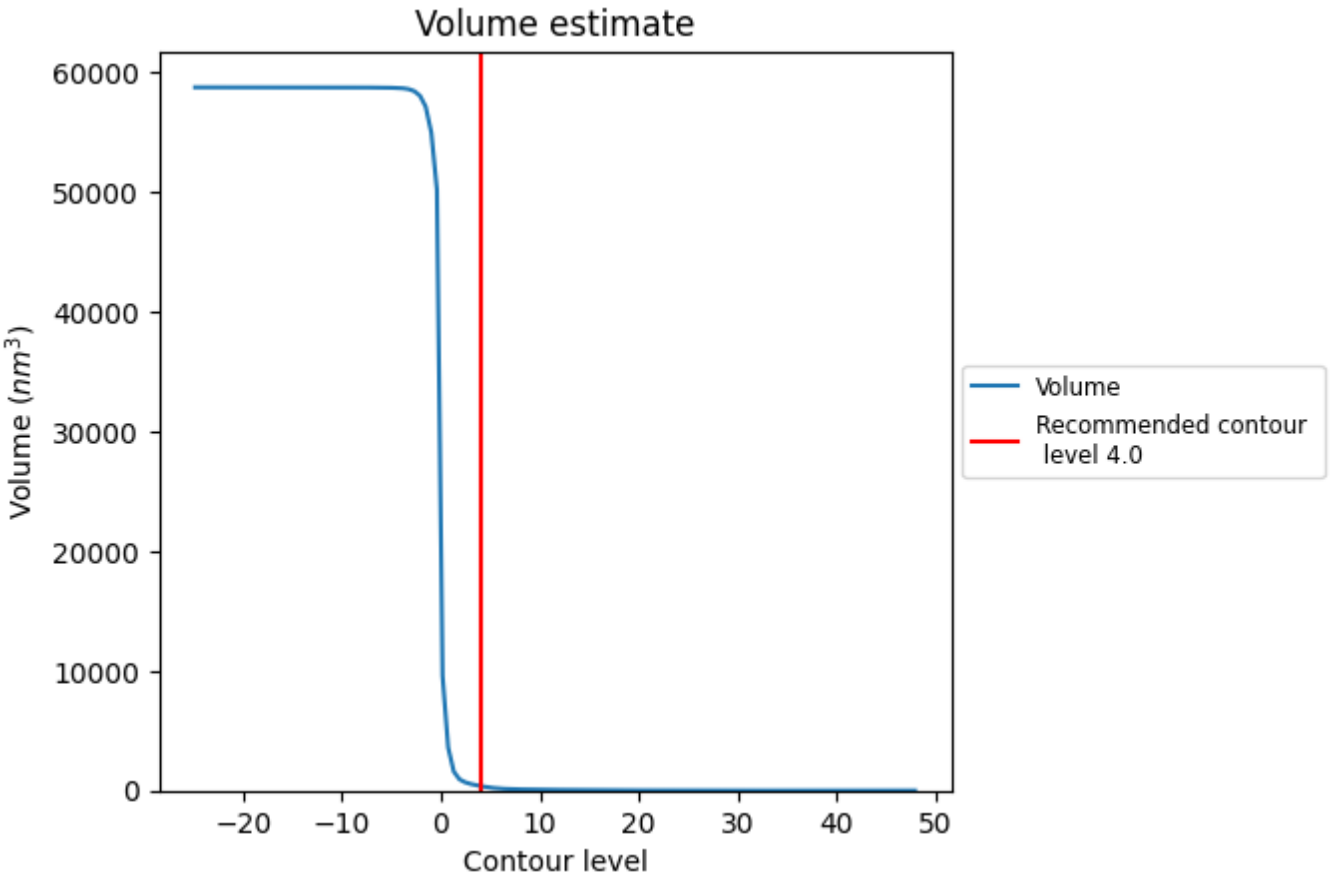
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

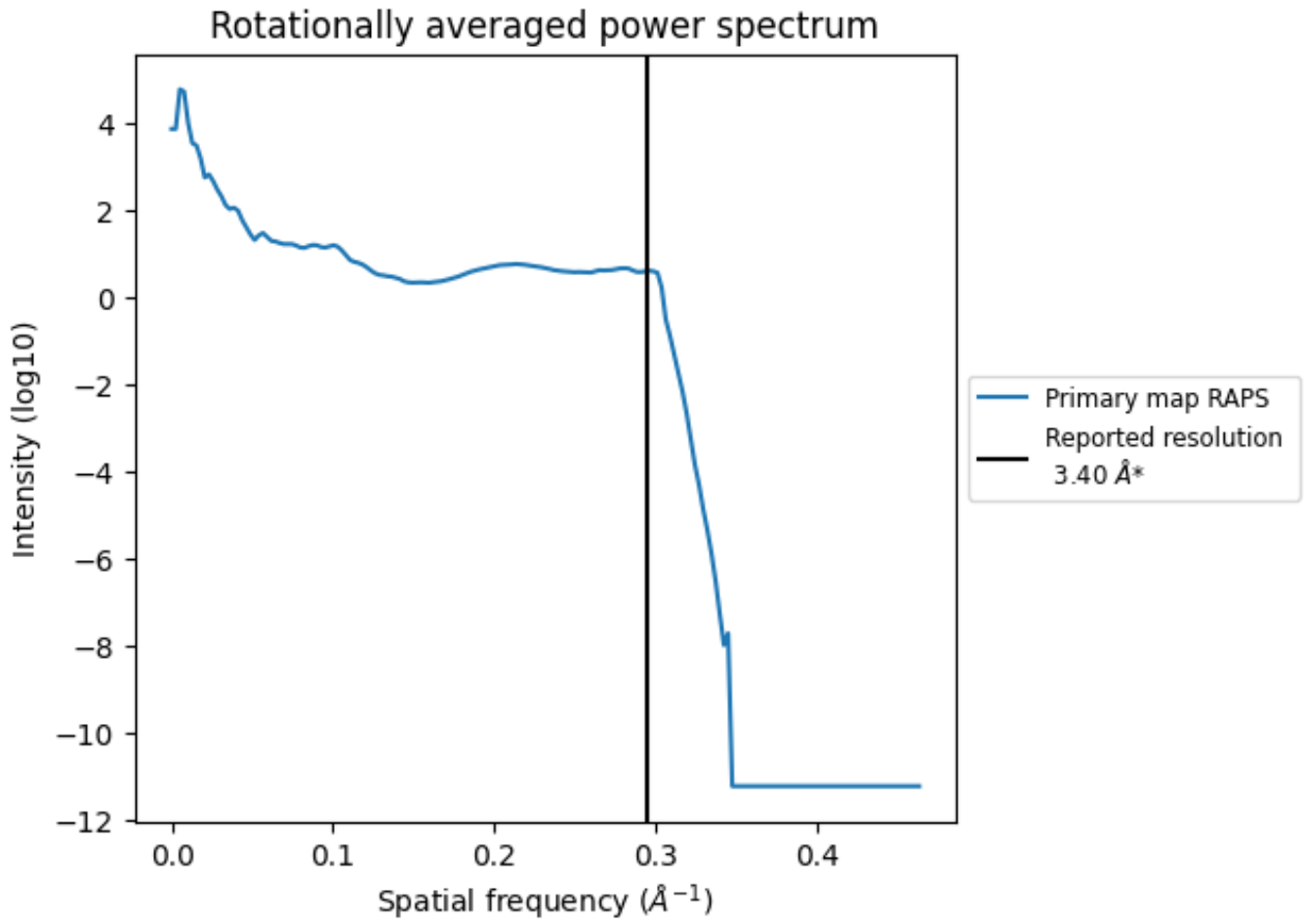
7.2 Volume estimate



The volume at the recommended contour level is 375 nm^3; this corresponds to an approximate mass of 338 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 0.294 $Å^{-1}$

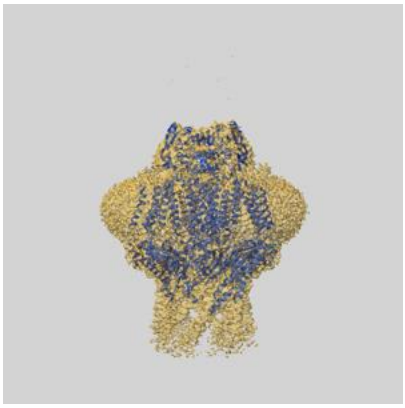
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

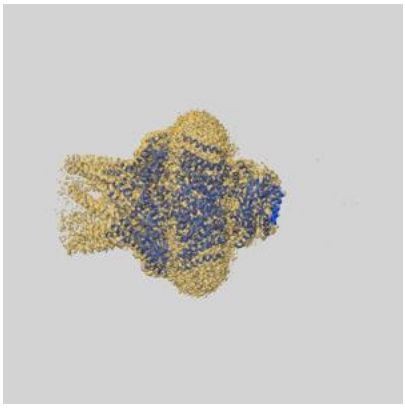
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-41595 and PDB model 8TSL. Per-residue inclusion information can be found in section 3 on page 11.

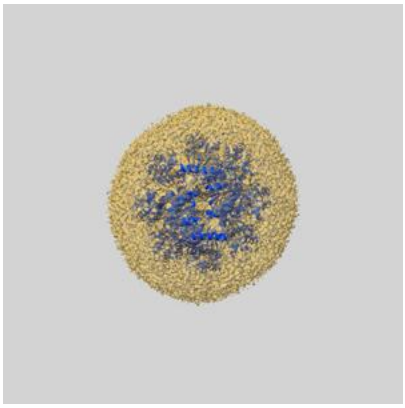
9.1 Map-model overlay



X



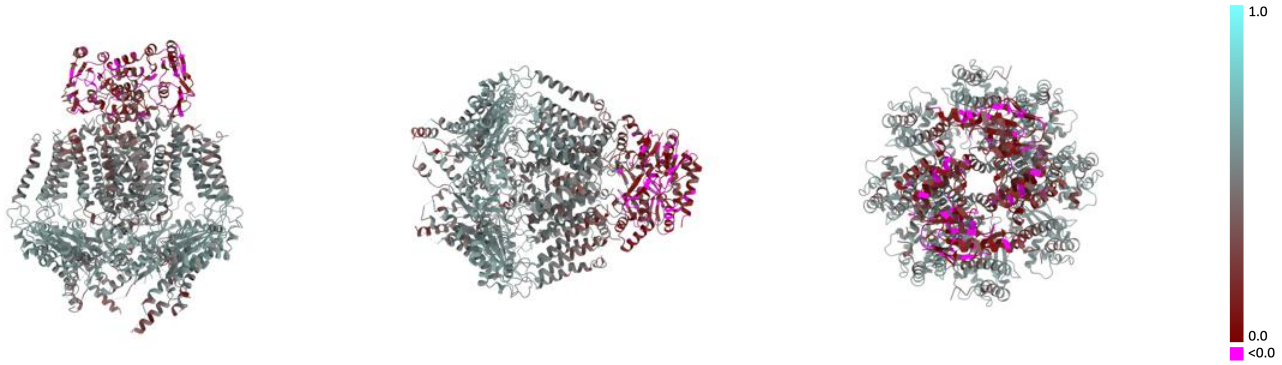
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 4.0 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.

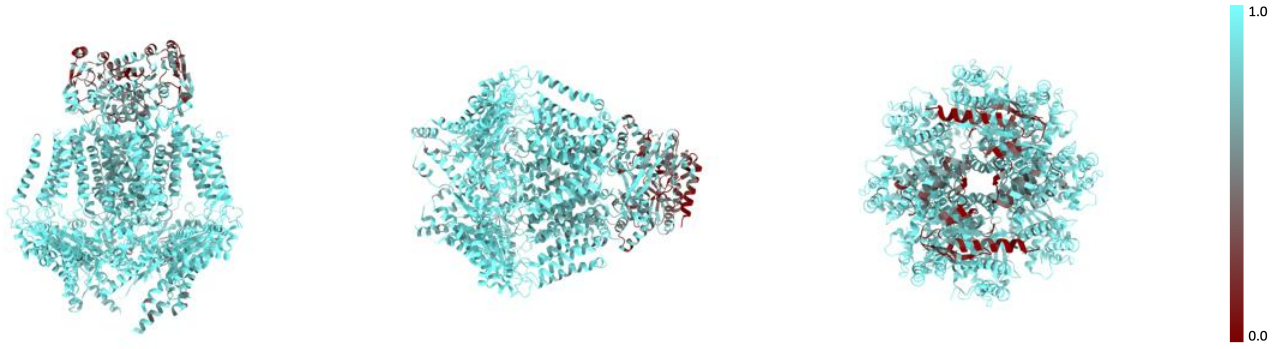
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

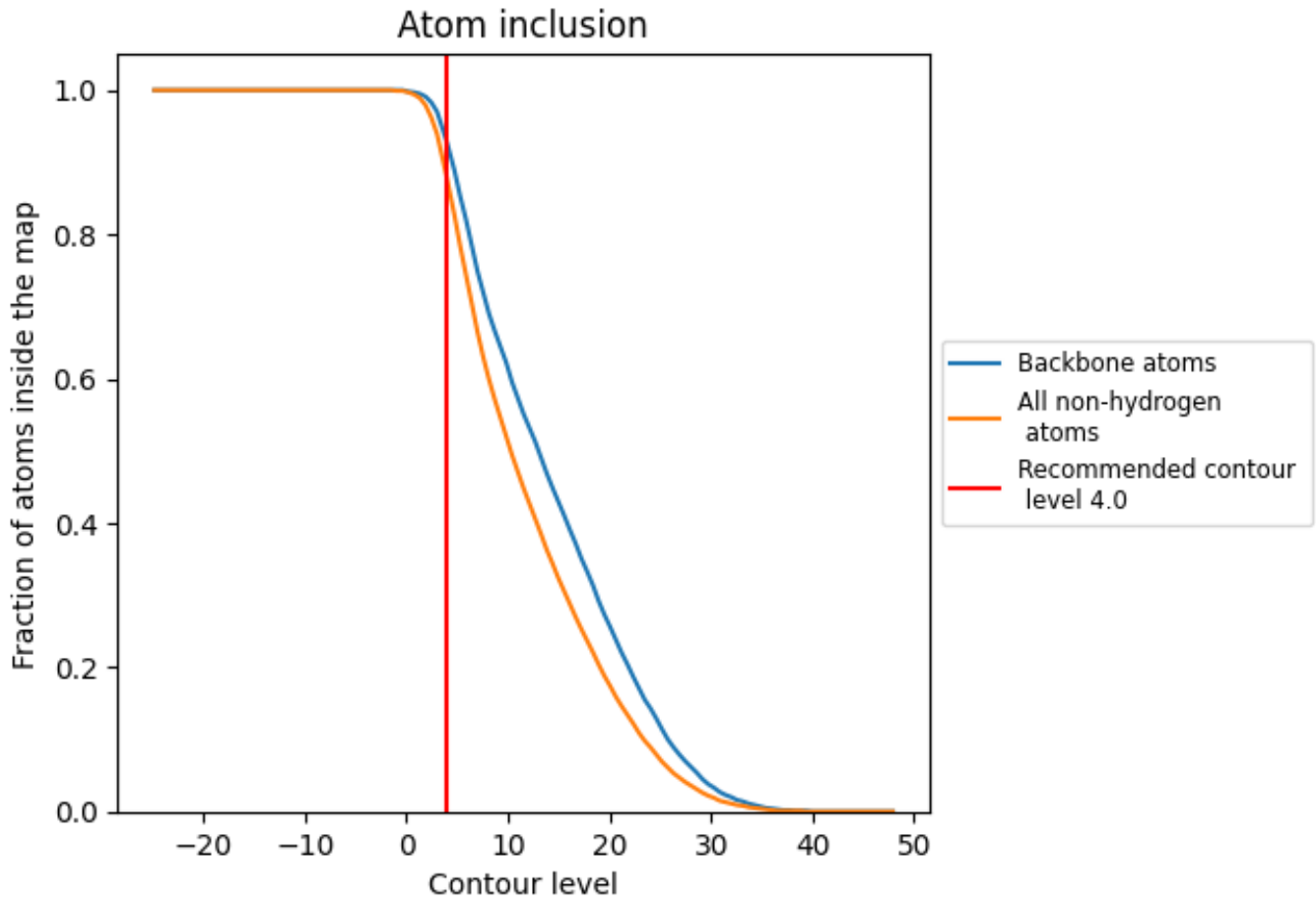
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (4.0).

9.4 Atom inclusion (i)



At the recommended contour level, 93% of all backbone atoms, 88% 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 (4.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8770	0.4440
A	0.5680	0.1190
B	0.5790	0.1290
C	0.9150	0.4720
D	0.9140	0.4710
E	0.9410	0.5100
F	0.9490	0.5130
G	0.9430	0.5240
H	0.9380	0.5210
I	0.9410	0.5090
J	0.9570	0.5190
K	0.9460	0.5260
L	0.9420	0.5260