



# Full wwPDB EM Map/Model Validation Report ⓘ

May 21, 2020 – 11:46 am BST

PDB ID : 3J5M  
EMDB ID : EMD-5779  
Title : Cryo-EM structure of the BG505 SOSIP.664 HIV-1 Env trimer with 3 PGV04 Fabs  
Authors : Lyumkis, D.; Julien, J.-P.; Wilson, I.A.; Ward, A.B.  
Deposited on : 2013-10-26  
Resolution : 5.80 Å (reported)  
Based on initial models : 3SE9, 3U2S, 1ENV, 2B4C

This is a Full wwPDB EM Map/Model 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.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

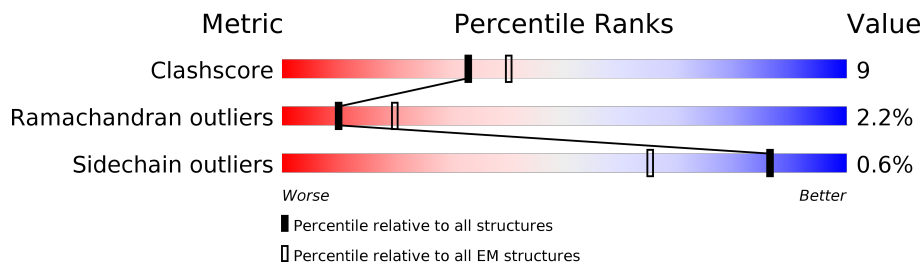
EMDB validation analysis : 0.0.0.dev33  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.11

# 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 5.80 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.



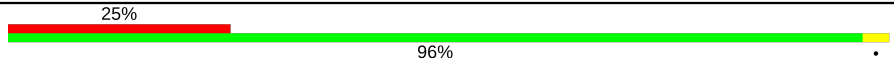

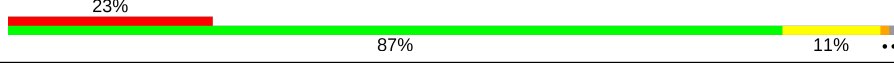
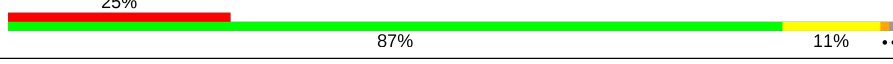
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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 on 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	475	18% (red), 70% (green), 14% (yellow), 13% (grey)
1	E	475	17% (red), 69% (green), 15% (yellow), 13% (grey)
1	I	475	18% (red), 70% (green), 13% (yellow), 13% (grey)
2	B	64	11% (red), 98% (green), 1% (yellow), 1% (grey)
2	F	64	9% (red), 98% (green), 1% (yellow), 1% (grey)
2	J	64	9% (red), 98% (green), 1% (yellow), 1% (grey)
3	C	208	25% (red), 95% (green), 1% (yellow), 1% (grey)
3	G	208	25% (red), 96% (green), 1% (yellow), 1% (grey)

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Mol	Chain	Length	Quality of chain
3	K	208	 <p>25% 96% .</p>
4	D	228	 <p>24% 86% 11% ..</p>
4	H	228	 <p>23% 87% 11% ..</p>
4	L	228	 <p>25% 87% 11% ..</p>

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 20394 atoms, of which 15 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 BG505 SOSIP gp120.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	415	Total 3140	C 1964	N 554	O 595	S 27	0	0
1	E	415	Total 3140	C 1964	N 554	O 595	S 27	0	0
1	I	415	Total 3140	C 1964	N 554	O 595	S 27	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	332	ASN	THR	ENGINEERED MUTATION	UNP Q2N0S6
A	501	CYS	ALA	ENGINEERED MUTATION	UNP Q2N0S6
E	332	ASN	THR	ENGINEERED MUTATION	UNP Q2N0S6
E	501	CYS	ALA	ENGINEERED MUTATION	UNP Q2N0S6
I	332	ASN	THR	ENGINEERED MUTATION	UNP Q2N0S6
I	501	CYS	ALA	ENGINEERED MUTATION	UNP Q2N0S6

- Molecule 2 is a protein called BG505 SOSIP gp41.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	B	63	Total 315	C 189	N 63	O 63	0	0
2	F	63	Total 315	C 189	N 63	O 63	0	0
2	J	63	Total 315	C 189	N 63	O 63	0	0

- Molecule 3 is a protein called PGV04 light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	208	Total 1621	C 1018	N 275	O 321	S 7	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	208	Total	C	N	O	S	0	0
			1621	1018	275	321	7		
3	K	208	Total	C	N	O	S	0	0
			1621	1018	275	321	7		

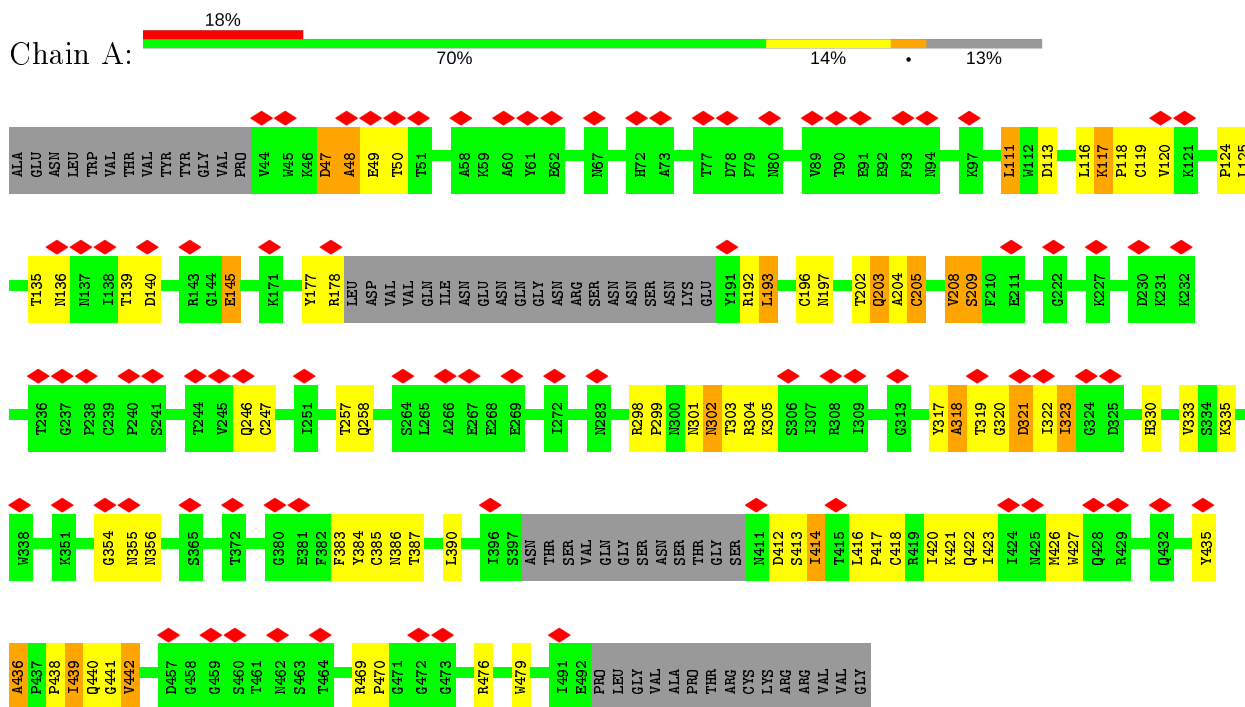
- Molecule 4 is a protein called PGV04 heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace	
4	D	225	Total	C	H	N	O	S	0	0
			1722	1090	5	298	324	5		
4	H	225	Total	C	H	N	O	S	0	0
			1722	1090	5	298	324	5		
4	L	225	Total	C	H	N	O	S	0	0
			1722	1090	5	298	324	5		

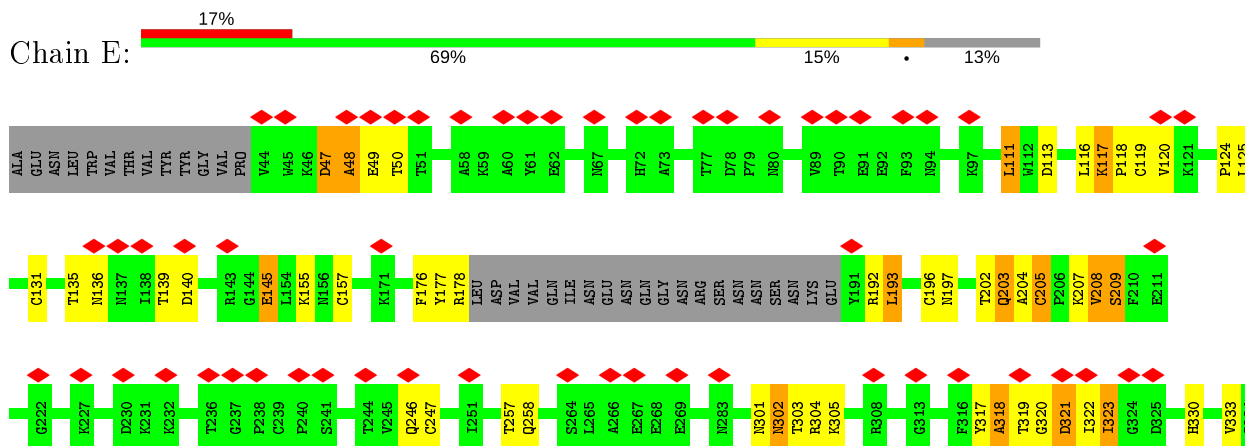
### 3 Residue-property plots [i](#)

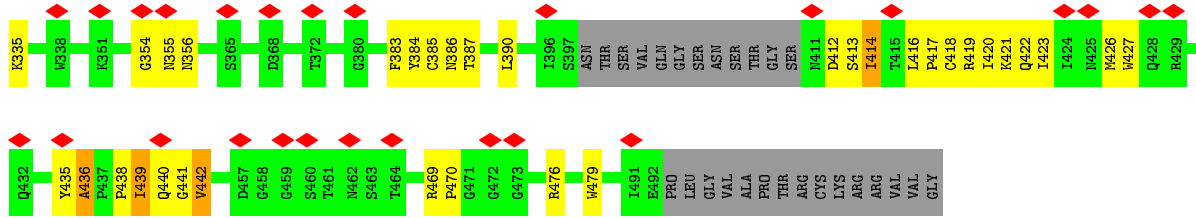
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. 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: BG505 SOSIP gp120

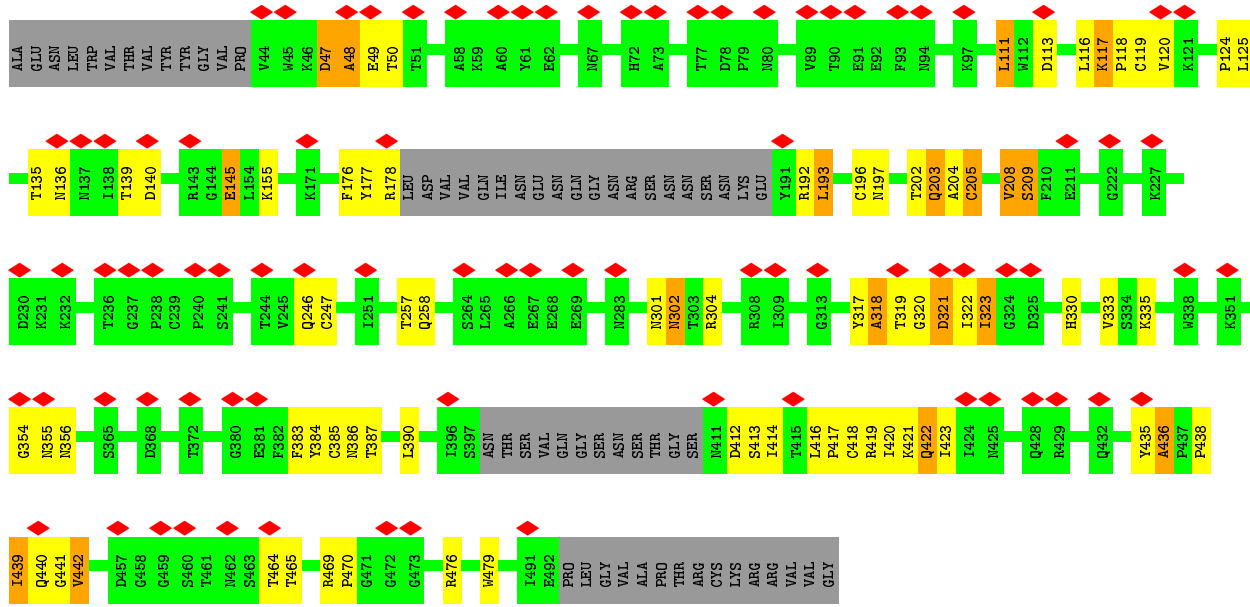


- Molecule 1: BG505 SOSIP gp120

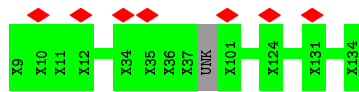




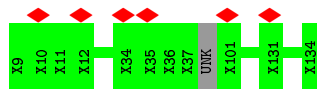
• Molecule 1: BG505 SOSIP gp120



• Molecule 2: BG505 SOSIP gp41

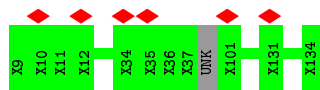


• Molecule 2: BG505 SOSIP gp41

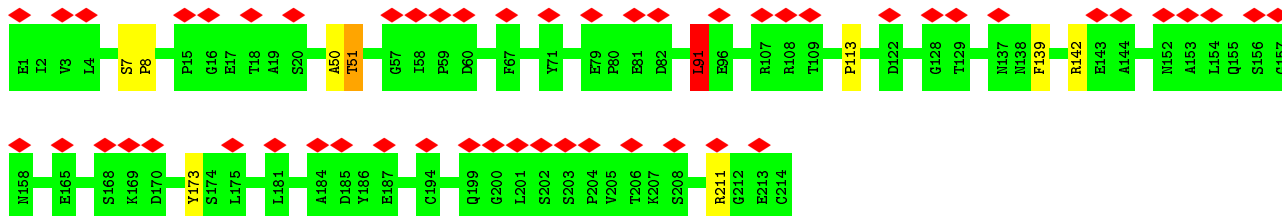


• Molecule 2: BG505 SOSIP gp41

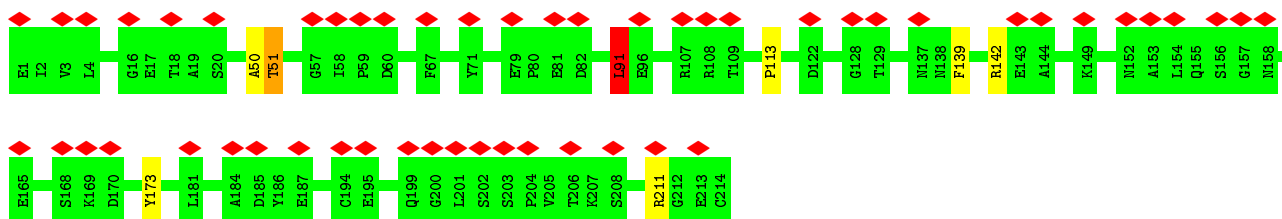




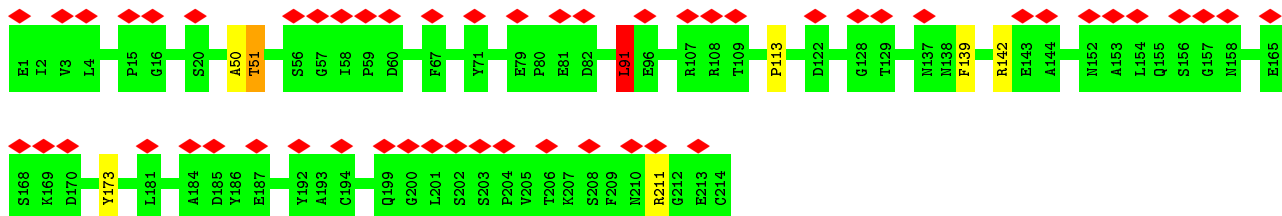
• Molecule 3: PGV04 light chain



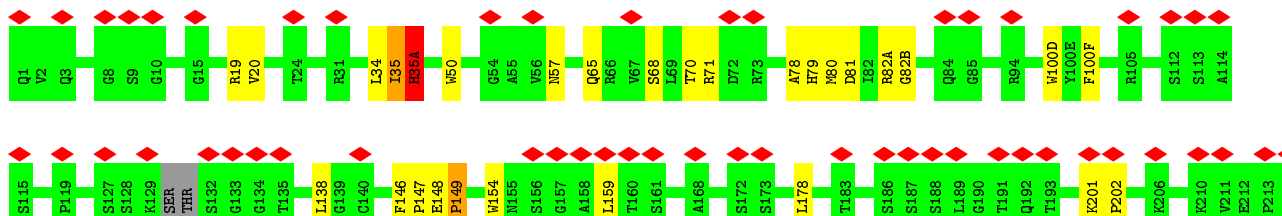
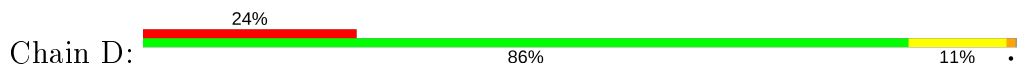
• Molecule 3: PGV04 light chain



• Molecule 3: PGV04 light chain



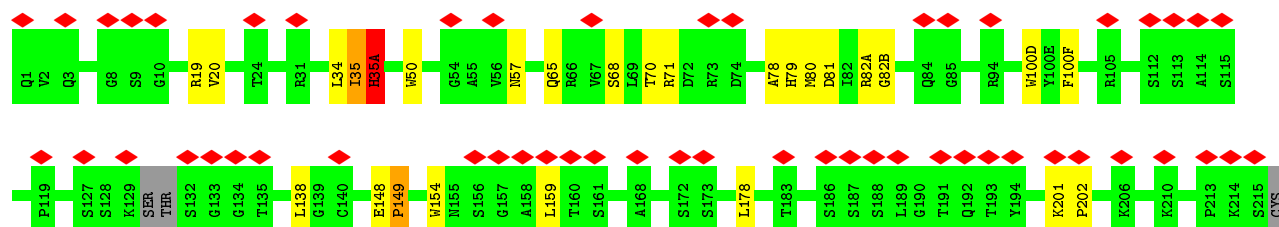
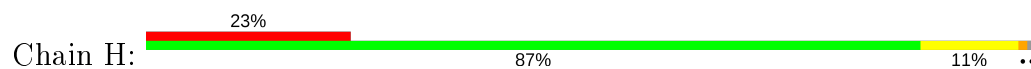
• Molecule 4: PGV04 heavy chain



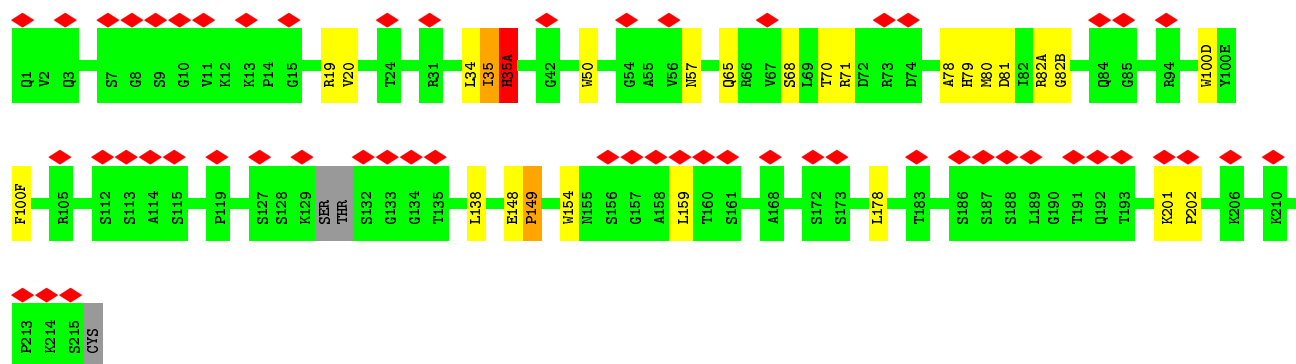
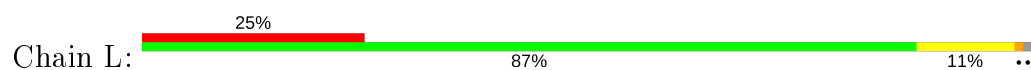




- Molecule 4: PGV04 heavy chain



- Molecule 4: PGV04 heavy chain



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C3	Depositor
Number of particles used	49572	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	Frealign	Depositor
Microscope	FEI TECNAI F20	Depositor
Voltage (kV)	200	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	32	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	29000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.067	Depositor
Minimum map value	-0.028	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.027	Depositor
Map size ( $\text{\AA}$ )	309.76, 309.76, 309.76	Depositor
Map dimensions	256, 256, 256	Depositor
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	Depositor
Pixel spacing ( $\text{\AA}$ )	1.21, 1.21, 1.21	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	0.59	0/3206	0.57	1/4358 (0.0%)
1	E	0.60	0/3206	0.57	1/4358 (0.0%)
1	I	0.60	1/3206 (0.0%)	0.57	1/4358 (0.0%)
3	C	0.67	0/1658	0.56	1/2244 (0.0%)
3	G	0.67	0/1658	0.56	1/2244 (0.0%)
3	K	0.67	0/1658	0.56	1/2244 (0.0%)
4	D	0.58	2/1761 (0.1%)	0.57	2/2396 (0.1%)
4	H	0.58	2/1761 (0.1%)	0.57	2/2396 (0.1%)
4	L	0.58	2/1761 (0.1%)	0.57	2/2396 (0.1%)
All	All	0.61	7/19875 (0.0%)	0.57	12/26994 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
1	E	0	2
1	I	0	2
3	C	0	1
3	G	0	1
3	K	0	1
4	D	0	1
4	H	0	1
4	L	0	1
All	All	0	12

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	L	82(B)	GLY	C-N	5.29	1.46	1.34
4	D	82(B)	GLY	C-N	5.27	1.46	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	H	82(B)	GLY	C-N	5.27	1.46	1.34
4	D	149	PRO	N-CD	5.11	1.55	1.47
1	I	422	GLN	C-N	5.09	1.45	1.34
4	L	149	PRO	N-CD	5.09	1.54	1.47
4	H	149	PRO	N-CD	5.08	1.54	1.47

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	145	GLU	O-C-N	-12.75	102.31	122.70
1	A	145	GLU	O-C-N	-12.73	102.32	122.70
1	I	145	GLU	O-C-N	-12.73	102.33	122.70
3	G	91	LEU	O-C-N	-8.36	109.33	122.70
3	C	91	LEU	O-C-N	-8.34	109.36	122.70
3	K	91	LEU	O-C-N	-8.32	109.39	122.70
4	H	35(A)	HIS	O-C-N	-7.00	111.50	122.70
4	D	35(A)	HIS	O-C-N	-7.00	111.51	122.70
4	L	35(A)	HIS	O-C-N	-6.98	111.53	122.70
4	H	35	ILE	C-N-CA	-5.63	107.62	121.70
4	D	35	ILE	C-N-CA	-5.63	107.62	121.70
4	L	35	ILE	C-N-CA	-5.62	107.64	121.70

There are no chirality outliers.

All (12) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	145	GLU	Mainchain
1	A	47	ASP	Peptide
3	C	91	LEU	Mainchain
4	D	35(A)	HIS	Mainchain
1	E	145	GLU	Mainchain
1	E	47	ASP	Peptide
3	G	91	LEU	Mainchain
4	H	35(A)	HIS	Mainchain
1	I	145	GLU	Mainchain
1	I	47	ASP	Peptide
3	K	91	LEU	Mainchain
4	L	35(A)	HIS	Mainchain

## 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	3140	0	2943	90	0
1	E	3140	0	2943	93	0
1	I	3140	0	2943	90	0
2	B	315	0	67	0	0
2	F	315	0	67	0	0
2	J	315	0	67	0	0
3	C	1621	0	1579	6	0
3	G	1621	0	1579	5	0
3	K	1621	0	1579	5	0
4	D	1717	5	1690	24	0
4	H	1717	5	1690	25	0
4	L	1717	5	1690	23	0
All	All	20379	15	18837	361	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 9.

All (361) 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:384:TYR:CE1	1:A:421:LYS:HG2	1.30	1.66
1:E:384:TYR:CE1	1:E:421:LYS:HG2	1.30	1.63
1:I:384:TYR:CE1	1:I:421:LYS:HG2	1.30	1.60
1:E:384:TYR:CE1	1:E:421:LYS:CG	1.89	1.55
1:I:384:TYR:CE1	1:I:421:LYS:CG	1.89	1.54
1:A:384:TYR:CE1	1:A:421:LYS:CG	1.89	1.53
1:A:384:TYR:HE1	1:A:421:LYS:CG	1.32	1.31
1:I:384:TYR:HE1	1:I:421:LYS:CG	1.31	1.30
1:E:384:TYR:CD1	1:E:421:LYS:HG2	1.72	1.24
1:A:384:TYR:CD1	1:A:421:LYS:HG2	1.72	1.24
1:I:384:TYR:CD1	1:I:421:LYS:HG2	1.72	1.23
1:E:384:TYR:HE1	1:E:421:LYS:CG	1.31	1.22
1:A:387:THR:HG22	1:A:416:LEU:CD1	1.75	1.17
1:I:384:TYR:HE1	1:I:421:LYS:CB	1.58	1.17
1:E:384:TYR:HE1	1:E:421:LYS:CB	1.58	1.16

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:387:THR:HG22	1:E:416:LEU:CD1	1.74	1.16
1:A:384:TYR:HE1	1:A:421:LYS:CB	1.58	1.16
1:I:387:THR:HG22	1:I:416:LEU:CD1	1.74	1.16
1:E:387:THR:CG2	1:E:416:LEU:HD13	1.85	1.07
1:I:387:THR:CG2	1:I:416:LEU:HD13	1.85	1.07
1:A:387:THR:CG2	1:A:416:LEU:HD13	1.85	1.04
1:A:387:THR:HA	1:A:416:LEU:HD22	1.44	1.00
1:I:387:THR:HA	1:I:416:LEU:HD22	1.44	0.99
1:E:387:THR:HA	1:E:416:LEU:HD22	1.44	0.98
1:E:384:TYR:CE1	1:E:421:LYS:HG3	2.01	0.95
1:A:384:TYR:CE1	1:A:421:LYS:HG3	2.01	0.94
1:I:384:TYR:CE1	1:I:421:LYS:HG3	2.01	0.92
1:I:390:LEU:HD13	1:I:416:LEU:HD21	1.53	0.90
1:E:383:PHE:CE1	1:E:420:ILE:CG2	2.56	0.89
1:I:383:PHE:CE1	1:I:420:ILE:CG2	2.56	0.89
1:I:384:TYR:CE1	1:I:421:LYS:CB	2.43	0.88
1:A:390:LEU:HD13	1:A:416:LEU:HD21	1.53	0.87
1:A:383:PHE:CE1	1:A:420:ILE:CG2	2.56	0.87
1:E:390:LEU:HD13	1:E:416:LEU:HD21	1.53	0.87
1:A:387:THR:HG22	1:A:416:LEU:HD13	0.88	0.86
1:E:384:TYR:CE1	1:E:421:LYS:CB	2.43	0.84
1:I:387:THR:HG22	1:I:416:LEU:HD13	0.88	0.84
1:E:387:THR:HG22	1:E:416:LEU:HD13	0.88	0.83
1:A:384:TYR:CE1	1:A:421:LYS:HB2	2.15	0.82
1:E:384:TYR:CE1	1:E:421:LYS:HB2	2.15	0.81
1:I:384:TYR:CE1	1:I:421:LYS:HB2	2.15	0.81
1:A:384:TYR:CE1	1:A:421:LYS:CB	2.43	0.80
4:D:138:LEU:HD12	4:D:138:LEU:O	1.82	0.79
4:L:138:LEU:O	4:L:138:LEU:HD12	1.82	0.79
1:A:317:TYR:O	1:A:318:ALA:CB	2.31	0.78
4:H:138:LEU:HD12	4:H:138:LEU:O	1.82	0.78
1:E:317:TYR:O	1:E:318:ALA:CB	2.31	0.77
1:I:317:TYR:O	1:I:318:ALA:CB	2.31	0.77
1:E:435:TYR:O	1:E:436:ALA:CB	2.32	0.77
1:A:383:PHE:CE1	1:A:420:ILE:HG22	2.20	0.77
1:A:435:TYR:O	1:A:436:ALA:CB	2.32	0.77
1:I:383:PHE:CE1	1:I:420:ILE:HG22	2.20	0.76
1:E:383:PHE:CE1	1:E:420:ILE:HG22	2.20	0.76
1:I:435:TYR:O	1:I:436:ALA:CB	2.32	0.76
1:E:422:GLN:HG2	1:E:423:ILE:N	2.03	0.73
1:E:383:PHE:CD1	1:E:420:ILE:HG22	2.25	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:383:PHE:CD1	1:I:420:ILE:HG22	2.25	0.71
1:A:383:PHE:CD1	1:A:420:ILE:HG22	2.25	0.70
1:A:139:THR:HA	1:A:140:ASP:CB	2.22	0.69
1:E:387:THR:HA	1:E:416:LEU:CD2	2.22	0.69
1:I:387:THR:HA	1:I:416:LEU:CD2	2.22	0.69
1:E:139:THR:HA	1:E:140:ASP:CB	2.22	0.68
1:I:139:THR:HA	1:I:140:ASP:CB	2.22	0.68
1:I:192:ARG:O	1:I:193:LEU:CB	2.42	0.67
1:I:47:ASP:HA	1:I:48:ALA:HB3	1.77	0.67
1:A:192:ARG:O	1:A:193:LEU:CB	2.42	0.67
1:A:387:THR:HA	1:A:416:LEU:CD2	2.22	0.67
4:L:138:LEU:C	4:L:138:LEU:HD12	2.16	0.67
1:E:192:ARG:O	1:E:193:LEU:CB	2.42	0.66
4:H:138:LEU:HD12	4:H:138:LEU:C	2.16	0.66
1:A:47:ASP:HA	1:A:48:ALA:HB3	1.76	0.66
1:I:422:GLN:HG2	1:I:423:ILE:N	2.10	0.65
1:E:139:THR:HG23	1:E:139:THR:O	1.97	0.65
1:E:47:ASP:HA	1:E:48:ALA:HB3	1.77	0.65
1:I:139:THR:O	1:I:139:THR:HG23	1.97	0.65
1:A:139:THR:O	1:A:139:THR:HG23	1.97	0.65
4:H:19:ARG:NE	4:H:81:ASP:CG	2.49	0.65
4:D:138:LEU:HD12	4:D:138:LEU:C	2.16	0.65
4:L:19:ARG:NE	4:L:81:ASP:CG	2.49	0.65
4:D:19:ARG:NE	4:D:81:ASP:CG	2.49	0.64
4:D:68:SER:HB2	4:D:82(A):ARG:HH12	1.62	0.64
4:L:68:SER:HB2	4:L:82(A):ARG:HH12	1.62	0.64
1:I:320:GLY:O	1:I:321:ASP:CB	2.46	0.63
1:E:320:GLY:O	1:E:321:ASP:CB	2.46	0.63
4:H:68:SER:HB2	4:H:82(A):ARG:HH12	1.62	0.63
1:E:317:TYR:O	1:E:318:ALA:HB3	1.99	0.63
1:A:317:TYR:O	1:A:318:ALA:HB3	1.99	0.63
1:I:317:TYR:O	1:I:318:ALA:HB3	1.99	0.63
1:A:320:GLY:O	1:A:321:ASP:CB	2.46	0.62
1:A:301:ASN:O	1:A:302:ASN:HB2	1.99	0.62
1:E:301:ASN:O	1:E:302:ASN:HB2	1.99	0.61
1:I:301:ASN:O	1:I:302:ASN:HB2	1.98	0.61
4:D:65:GLN:O	4:D:82(A):ARG:NH2	2.34	0.61
1:E:117:LYS:H	1:E:118:PRO:HD2	1.66	0.61
4:L:35(A):HIS:CE1	4:L:100(D):TRP:CZ3	2.89	0.61
4:L:65:GLN:O	4:L:82(A):ARG:NH2	2.34	0.61
1:E:177:TYR:O	1:E:178:ARG:CB	2.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:383:PHE:CD1	1:I:420:ILE:CG2	2.84	0.60
4:H:65:GLN:O	4:H:82(A):ARG:NH2	2.34	0.60
1:A:177:TYR:O	1:A:178:ARG:CB	2.49	0.60
4:D:35(A):HIS:CE1	4:D:100(D):TRP:CZ3	2.89	0.60
4:H:35(A):HIS:CE1	4:H:100(D):TRP:CZ3	2.89	0.60
1:I:335:LYS:HE3	1:I:413:SER:O	2.02	0.60
1:A:335:LYS:HE3	1:A:413:SER:O	2.02	0.59
1:I:177:TYR:O	1:I:178:ARG:CB	2.49	0.59
1:I:117:LYS:H	1:I:118:PRO:HD2	1.66	0.59
1:E:384:TYR:OH	1:E:421:LYS:HB2	2.03	0.59
4:H:201:LYS:N	4:H:202:PRO:CD	2.65	0.59
1:E:383:PHE:CD1	1:E:420:ILE:CG2	2.84	0.59
1:A:117:LYS:H	1:A:118:PRO:HD2	1.66	0.59
4:L:201:LYS:N	4:L:202:PRO:CD	2.66	0.59
4:D:201:LYS:N	4:D:202:PRO:CD	2.66	0.58
1:A:383:PHE:CD1	1:A:420:ILE:CG2	2.84	0.58
1:A:435:TYR:O	1:A:436:ALA:HB3	2.03	0.58
1:I:384:TYR:OH	1:I:421:LYS:HB2	2.03	0.58
1:A:384:TYR:OH	1:A:421:LYS:HB2	2.03	0.58
1:I:435:TYR:O	1:I:436:ALA:HB3	2.03	0.58
1:I:354:GLY:O	1:I:355:ASN:HB2	2.04	0.57
1:I:384:TYR:CZ	1:I:421:LYS:HB2	2.40	0.57
1:E:435:TYR:O	1:E:436:ALA:HB3	2.03	0.56
1:A:354:GLY:O	1:A:355:ASN:HB2	2.04	0.56
1:E:354:GLY:O	1:E:355:ASN:HB2	2.04	0.56
3:C:50:ALA:O	3:C:51:THR:HB	2.06	0.56
1:E:422:GLN:HG2	1:E:423:ILE:H	1.67	0.56
3:G:50:ALA:O	3:G:51:THR:HB	2.06	0.56
1:A:384:TYR:CZ	1:A:421:LYS:HB2	2.40	0.56
1:E:384:TYR:CZ	1:E:421:LYS:HB2	2.40	0.56
3:K:50:ALA:O	3:K:51:THR:HB	2.06	0.55
1:A:422:GLN:HG2	1:A:423:ILE:N	2.20	0.55
4:H:19:ARG:HE	4:H:81:ASP:CG	2.10	0.55
4:L:35:ILE:HD13	4:L:78:ALA:HB2	1.89	0.55
1:E:47:ASP:CA	1:E:48:ALA:HB3	2.37	0.55
1:I:47:ASP:CA	1:I:48:ALA:HB3	2.37	0.55
4:D:35:ILE:HD13	4:D:78:ALA:HB2	1.89	0.55
1:E:435:TYR:O	1:E:436:ALA:HB2	2.07	0.54
4:H:35:ILE:HD13	4:H:78:ALA:HB2	1.89	0.54
4:H:70:THR:OG1	4:H:79:HIS:HB2	2.08	0.54
1:E:335:LYS:HE3	1:E:413:SER:O	2.02	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:19:ARG:HE	4:D:81:ASP:CG	2.10	0.54
1:A:435:TYR:O	1:A:436:ALA:HB2	2.07	0.54
1:I:177:TYR:O	1:I:178:ARG:HB2	2.07	0.54
1:A:335:LYS:H	1:A:413:SER:HA	1.73	0.54
1:E:330:HIS:HB2	1:E:416:LEU:O	2.08	0.54
4:L:19:ARG:HE	4:L:81:ASP:CG	2.10	0.54
1:A:330:HIS:HB2	1:A:416:LEU:O	2.08	0.54
1:I:330:HIS:HB2	1:I:416:LEU:O	2.08	0.54
1:I:435:TYR:O	1:I:436:ALA:HB2	2.07	0.54
1:E:335:LYS:H	1:E:413:SER:HA	1.73	0.53
1:I:335:LYS:H	1:I:413:SER:HA	1.73	0.53
1:A:177:TYR:O	1:A:178:ARG:HB2	2.07	0.53
4:L:70:THR:OG1	4:L:79:HIS:HB2	2.08	0.53
1:A:47:ASP:CA	1:A:48:ALA:HB3	2.37	0.53
1:E:177:TYR:O	1:E:178:ARG:HB2	2.07	0.53
1:A:117:LYS:HB2	1:A:118:PRO:CD	2.39	0.53
1:I:117:LYS:HB2	1:I:118:PRO:CD	2.39	0.53
4:D:70:THR:OG1	4:D:79:HIS:HB2	2.08	0.52
1:A:317:TYR:O	1:A:318:ALA:HB2	2.09	0.52
1:E:117:LYS:HB2	1:E:118:PRO:CD	2.39	0.52
1:E:385:CYS:HA	1:E:418:CYS:HA	1.91	0.52
1:A:135:THR:HA	1:A:136:ASN:HB2	1.91	0.52
1:E:135:THR:HA	1:E:136:ASN:HB2	1.91	0.52
1:I:135:THR:HA	1:I:136:ASN:HB2	1.91	0.52
1:I:385:CYS:HA	1:I:418:CYS:HA	1.91	0.51
1:I:317:TYR:O	1:I:318:ALA:HB2	2.09	0.51
1:A:385:CYS:HA	1:A:418:CYS:HA	1.91	0.51
4:H:148:GLU:CB	4:H:149:PRO:HA	2.41	0.51
1:E:202:THR:O	1:E:203:GLN:CB	2.59	0.50
1:E:317:TYR:O	1:E:318:ALA:HB2	2.09	0.50
4:D:35(A):HIS:CD2	4:D:100(F):PHE:HE2	2.30	0.50
4:D:148:GLU:CB	4:D:149:PRO:HA	2.41	0.50
4:D:148:GLU:HB3	4:D:149:PRO:HA	1.94	0.50
4:H:35(A):HIS:CD2	4:H:100(F):PHE:HE2	2.30	0.50
1:I:202:THR:O	1:I:203:GLN:CB	2.59	0.50
4:L:35(A):HIS:CD2	4:L:100(F):PHE:HE2	2.30	0.50
1:A:117:LYS:CB	1:A:118:PRO:CD	2.90	0.49
1:A:139:THR:CA	1:A:140:ASP:HB2	2.42	0.49
4:D:178:LEU:C	4:D:178:LEU:HD23	2.32	0.49
1:E:117:LYS:CB	1:E:118:PRO:CD	2.90	0.49
4:L:148:GLU:CB	4:L:149:PRO:HA	2.41	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:117:LYS:CB	1:I:118:PRO:CD	2.90	0.49
1:A:202:THR:O	1:A:203:GLN:CB	2.60	0.49
4:L:178:LEU:C	4:L:178:LEU:HD23	2.32	0.49
1:I:139:THR:HA	1:I:140:ASP:HB2	1.95	0.49
3:G:50:ALA:O	3:G:51:THR:CB	2.61	0.49
1:E:139:THR:HA	1:E:140:ASP:C	2.33	0.49
3:G:113:PRO:HA	3:G:139:PHE:HB3	1.94	0.49
1:A:135:THR:HA	1:A:136:ASN:CB	2.43	0.49
3:C:113:PRO:HA	3:C:139:PHE:HB3	1.94	0.49
4:D:20:VAL:HB	4:D:80:MET:CE	2.43	0.49
1:E:135:THR:HA	1:E:136:ASN:CB	2.42	0.49
4:L:148:GLU:HB3	4:L:149:PRO:HA	1.94	0.49
1:E:139:THR:CA	1:E:140:ASP:HB2	2.42	0.49
4:H:178:LEU:C	4:H:178:LEU:HD23	2.32	0.49
1:I:139:THR:CA	1:I:140:ASP:HB2	2.42	0.49
4:H:20:VAL:HB	4:H:80:MET:CE	2.43	0.48
1:A:139:THR:HA	1:A:140:ASP:C	2.33	0.48
1:A:139:THR:HA	1:A:140:ASP:HB2	1.95	0.48
4:L:71:ARG:HD2	4:L:71:ARG:C	2.34	0.48
3:C:50:ALA:O	3:C:51:THR:CB	2.61	0.48
4:D:71:ARG:HD2	4:D:71:ARG:C	2.34	0.48
1:E:139:THR:HA	1:E:140:ASP:HB2	1.95	0.48
3:K:113:PRO:HA	3:K:139:PHE:HB3	1.94	0.48
4:L:20:VAL:HB	4:L:80:MET:CE	2.43	0.48
1:A:139:THR:CA	1:A:140:ASP:CB	2.91	0.48
1:I:135:THR:HA	1:I:136:ASN:CB	2.43	0.48
1:I:47:ASP:HA	1:I:48:ALA:CB	2.44	0.48
4:H:148:GLU:HB3	4:H:149:PRO:HA	1.94	0.48
1:A:124:PRO:CB	1:A:125:LEU:HA	2.44	0.47
1:A:47:ASP:HA	1:A:48:ALA:CB	2.44	0.47
1:I:139:THR:HA	1:I:140:ASP:C	2.34	0.47
4:H:71:ARG:C	4:H:71:ARG:HD2	2.34	0.47
1:I:385:CYS:HA	1:I:418:CYS:CB	2.45	0.47
1:E:139:THR:CA	1:E:140:ASP:CB	2.91	0.47
1:E:416:LEU:HA	1:E:417:PRO:HD3	1.70	0.47
1:E:246:GLN:HG2	1:E:247:CYS:SG	2.55	0.47
1:E:47:ASP:HA	1:E:48:ALA:CB	2.44	0.47
1:E:124:PRO:CB	1:E:125:LEU:HA	2.44	0.47
1:E:390:LEU:HD22	1:E:416:LEU:HD11	1.97	0.47
1:I:116:LEU:C	1:I:116:LEU:HD12	2.36	0.47
1:A:385:CYS:HA	1:A:418:CYS:CB	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:116:LEU:HD12	1:E:116:LEU:C	2.36	0.46
1:I:384:TYR:CD1	1:I:421:LYS:CG	2.61	0.46
3:K:50:ALA:O	3:K:51:THR:CB	2.61	0.46
1:I:124:PRO:CB	1:I:125:LEU:HA	2.44	0.46
1:A:246:GLN:HG2	1:A:247:CYS:SG	2.55	0.46
1:A:390:LEU:HD22	1:A:416:LEU:HD11	1.97	0.46
1:I:390:LEU:HD22	1:I:416:LEU:HD11	1.97	0.46
1:A:116:LEU:C	1:A:116:LEU:HD12	2.36	0.46
1:E:49:GLU:HA	1:E:50:THR:HB	1.98	0.46
1:E:113:ASP:HA	1:E:116:LEU:HG	1.97	0.46
1:I:139:THR:CA	1:I:140:ASP:CB	2.91	0.46
4:L:19:ARG:HA	4:L:80:MET:O	2.16	0.46
1:I:246:GLN:HG2	1:I:247:CYS:SG	2.55	0.46
1:I:49:GLU:HA	1:I:50:THR:HB	1.98	0.46
1:A:257:THR:O	1:A:258:GLN:HB2	2.16	0.46
1:A:49:GLU:HA	1:A:50:THR:HB	1.98	0.46
4:D:19:ARG:HA	4:D:80:MET:O	2.16	0.46
1:E:257:THR:O	1:E:258:GLN:HB2	2.16	0.46
1:E:385:CYS:HA	1:E:418:CYS:CB	2.45	0.45
1:I:257:THR:O	1:I:258:GLN:HB2	2.16	0.45
4:H:19:ARG:HA	4:H:80:MET:O	2.16	0.45
1:I:322:ILE:O	1:I:323:ILE:O	2.35	0.45
1:A:113:ASP:HA	1:A:116:LEU:HG	1.97	0.45
1:A:335:LYS:HE2	1:A:414:ILE:HG22	1.56	0.45
1:E:124:PRO:HB3	1:E:125:LEU:HA	1.99	0.45
1:I:124:PRO:HB3	1:I:125:LEU:HA	1.99	0.45
1:E:439:ILE:HG22	1:E:440:GLN:HG2	1.99	0.45
1:I:113:ASP:HA	1:I:116:LEU:HG	1.97	0.45
1:E:335:LYS:HD3	1:E:414:ILE:HG23	1.37	0.45
1:A:333:VAL:O	1:A:333:VAL:HG13	2.17	0.45
1:I:441:GLY:O	1:I:442:VAL:O	2.35	0.44
1:A:322:ILE:O	1:A:323:ILE:O	2.35	0.44
1:A:204:ALA:O	1:A:205:CYS:HB2	2.17	0.44
1:A:441:GLY:O	1:A:442:VAL:O	2.35	0.44
1:A:124:PRO:HB3	1:A:125:LEU:HA	1.99	0.44
4:H:65:GLN:O	4:H:82(A):ARG:CZ	2.66	0.44
4:D:50:TRP:CE2	4:D:57:ASN:HB3	2.53	0.44
1:E:204:ALA:O	1:E:205:CYS:HB2	2.17	0.44
1:I:204:ALA:O	1:I:205:CYS:HB2	2.17	0.44
1:A:439:ILE:HG22	1:A:440:GLN:HG2	1.99	0.44
1:I:383:PHE:CE1	1:I:420:ILE:HG21	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L:50:TRP:CE2	4:L:57:ASN:HB3	2.53	0.44
1:E:322:ILE:O	1:E:323:ILE:O	2.35	0.44
1:E:333:VAL:HG13	1:E:333:VAL:O	2.17	0.44
3:G:211:ARG:HG3	3:G:211:ARG:O	2.18	0.44
1:I:438:PRO:O	1:I:439:ILE:HB	2.18	0.44
4:D:65:GLN:O	4:D:82(A):ARG:CZ	2.66	0.44
4:L:65:GLN:O	4:L:82(A):ARG:CZ	2.66	0.43
1:A:383:PHE:CZ	1:A:420:ILE:CG2	3.01	0.43
1:E:383:PHE:CZ	1:E:420:ILE:HG22	2.52	0.43
1:E:441:GLY:O	1:E:442:VAL:O	2.35	0.43
1:A:416:LEU:HA	1:A:417:PRO:HD3	1.69	0.43
4:H:50:TRP:CE2	4:H:57:ASN:HB3	2.53	0.43
1:I:383:PHE:CZ	1:I:420:ILE:CG2	3.01	0.43
1:I:439:ILE:HG22	1:I:440:GLN:HG2	1.99	0.43
1:A:383:PHE:CZ	1:A:420:ILE:HG22	2.52	0.43
1:I:111:LEU:HD12	1:I:111:LEU:HA	1.78	0.43
1:I:476:ARG:HA	1:I:479:TRP:CD1	2.54	0.43
1:E:196:CYS:O	1:E:197:ASN:HB2	2.19	0.43
1:I:333:VAL:O	1:I:333:VAL:HG13	2.17	0.43
1:E:111:LEU:HD12	1:E:111:LEU:HA	1.78	0.43
1:E:383:PHE:CZ	1:E:420:ILE:CG2	3.01	0.43
1:A:476:ARG:HA	1:A:479:TRP:CD1	2.54	0.43
3:K:211:ARG:O	3:K:211:ARG:HG3	2.18	0.43
1:A:438:PRO:O	1:A:439:ILE:HB	2.18	0.43
1:A:47:ASP:O	1:A:47:ASP:OD1	2.37	0.43
1:A:196:CYS:O	1:A:197:ASN:HB2	2.19	0.43
3:C:211:ARG:HG3	3:C:211:ARG:O	2.18	0.43
1:E:139:THR:HA	1:E:140:ASP:O	2.19	0.43
1:E:384:TYR:N	1:E:419:ARG:O	2.41	0.43
1:E:438:PRO:O	1:E:439:ILE:HB	2.18	0.43
1:E:47:ASP:OD1	1:E:47:ASP:O	2.37	0.42
4:H:34:LEU:HG	4:H:50:TRP:CE3	2.54	0.42
1:I:390:LEU:CD2	1:I:416:LEU:HD11	2.49	0.42
1:A:208:VAL:HG12	1:A:209:SER:N	2.34	0.42
1:A:390:LEU:CD2	1:A:416:LEU:HD11	2.49	0.42
1:A:139:THR:HA	1:A:140:ASP:O	2.19	0.42
4:D:34:LEU:HG	4:D:50:TRP:CE3	2.54	0.42
1:I:384:TYR:N	1:I:419:ARG:O	2.41	0.42
1:I:383:PHE:CZ	1:I:420:ILE:HG22	2.52	0.42
1:I:47:ASP:OD1	1:I:47:ASP:O	2.37	0.42
1:E:469:ARG:HB2	1:E:470:PRO:HD2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:476:ARG:HA	1:E:479:TRP:CD1	2.54	0.42
4:L:34:LEU:HG	4:L:50:TRP:CE3	2.54	0.42
3:C:142:ARG:HB3	3:C:173:TYR:CG	2.55	0.42
1:I:196:CYS:O	1:I:197:ASN:HB2	2.19	0.42
1:A:111:LEU:HD12	1:A:111:LEU:HA	1.78	0.42
4:D:146:PHE:HA	4:D:147:PRO:HA	1.84	0.42
4:H:20:VAL:HB	4:H:80:MET:HE3	2.01	0.42
1:I:117:LYS:N	1:I:118:PRO:HD2	2.34	0.42
1:I:464:THR:HG1	1:I:465:THR:N	2.18	0.42
1:A:119:CYS:SG	1:A:120:VAL:N	2.93	0.42
1:I:119:CYS:SG	1:I:120:VAL:N	2.93	0.42
4:L:20:VAL:HB	4:L:80:MET:HE2	2.01	0.42
1:A:390:LEU:CD1	1:A:416:LEU:HD21	2.38	0.42
1:E:386:ASN:O	1:E:416:LEU:HD22	2.20	0.42
1:E:390:LEU:CD2	1:E:416:LEU:HD11	2.49	0.42
1:A:386:ASN:O	1:A:416:LEU:HD22	2.20	0.42
1:E:117:LYS:N	1:E:118:PRO:HD2	2.34	0.42
4:H:19:ARG:NE	4:H:81:ASP:OD2	2.53	0.42
1:I:208:VAL:HG12	1:I:209:SER:N	2.34	0.42
1:I:469:ARG:HB2	1:I:470:PRO:HD2	2.02	0.42
1:A:383:PHE:CE1	1:A:420:ILE:HG21	2.51	0.41
1:E:117:LYS:HB2	1:E:118:PRO:HD3	2.01	0.41
1:I:117:LYS:HB2	1:I:118:PRO:HD3	2.01	0.41
1:I:139:THR:HA	1:I:140:ASP:O	2.19	0.41
1:I:386:ASN:O	1:I:416:LEU:HD22	2.20	0.41
1:A:117:LYS:HB2	1:A:118:PRO:HD3	2.01	0.41
1:A:298:ARG:HA	1:A:299:PRO:HD3	1.93	0.41
4:D:19:ARG:NE	4:D:81:ASP:OD2	2.53	0.41
1:E:139:THR:CG2	1:E:139:THR:O	2.68	0.41
4:L:19:ARG:NE	4:L:81:ASP:OD2	2.53	0.41
1:A:469:ARG:HB2	1:A:470:PRO:HD2	2.02	0.41
4:D:138:LEU:CD1	4:D:138:LEU:C	2.87	0.41
1:I:139:THR:O	1:I:139:THR:CG2	2.68	0.41
3:G:142:ARG:HB3	3:G:173:TYR:CG	2.55	0.41
1:I:416:LEU:HA	1:I:417:PRO:HD3	1.70	0.41
4:L:154:TRP:HB3	4:L:159:LEU:HB2	2.03	0.41
4:H:154:TRP:HB3	4:H:159:LEU:HB2	2.03	0.41
4:H:68:SER:CB	4:H:82(A):ARG:HH12	2.33	0.41
1:I:155:LYS:HB2	1:I:176:PHE:HB2	2.03	0.41
3:K:142:ARG:HB3	3:K:173:TYR:CG	2.55	0.41
1:A:335:LYS:HD3	1:A:414:ILE:HG23	1.37	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:208:VAL:HG12	1:E:209:SER:N	2.34	0.41
1:I:387:THR:CG2	1:I:416:LEU:CD1	2.69	0.41
1:A:426:MET:O	1:A:427:TRP:HB2	2.21	0.41
1:E:155:LYS:HB2	1:E:176:PHE:HB2	2.03	0.41
1:E:426:MET:O	1:E:427:TRP:HB2	2.21	0.41
4:H:138:LEU:C	4:H:138:LEU:CD1	2.87	0.41
1:A:330:HIS:CB	1:A:416:LEU:O	2.68	0.41
1:I:330:HIS:CB	1:I:416:LEU:O	2.69	0.41
1:A:303:THR:O	1:A:305:LYS:N	2.55	0.40
1:A:387:THR:CG2	1:A:416:LEU:CD1	2.69	0.40
1:E:303:THR:O	1:E:305:LYS:N	2.54	0.40
4:D:154:TRP:HB3	4:D:159:LEU:HB2	2.03	0.40
1:E:119:CYS:SG	1:E:120:VAL:N	2.93	0.40
1:E:131:CYS:HA	1:E:157:CYS:HA	2.04	0.40
1:E:207:LYS:O	1:E:209:SER:N	2.55	0.40
1:E:330:HIS:CB	1:E:416:LEU:O	2.69	0.40
1:E:439:ILE:O	1:E:440:GLN:HB2	2.21	0.40
3:C:7:SER:HB2	3:C:8:PRO:HA	2.03	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	409/475 (86%)	359 (88%)	33 (8%)	17 (4%)	3	22
1	E	409/475 (86%)	359 (88%)	33 (8%)	17 (4%)	3	22
1	I	409/475 (86%)	359 (88%)	33 (8%)	17 (4%)	3	22
3	C	206/208 (99%)	198 (96%)	7 (3%)	1 (0%)	29	69
3	G	206/208 (99%)	198 (96%)	7 (3%)	1 (0%)	29	69
3	K	206/208 (99%)	198 (96%)	7 (3%)	1 (0%)	29	69

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	D	221/228 (97%)	212 (96%)	9 (4%)	0	100	100
4	H	221/228 (97%)	212 (96%)	9 (4%)	0	100	100
4	L	221/228 (97%)	212 (96%)	9 (4%)	0	100	100
All	All	2508/2733 (92%)	2307 (92%)	147 (6%)	54 (2%)	10	35

All (54) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	193	LEU
1	A	302	ASN
1	A	318	ALA
1	A	321	ASP
1	A	323	ILE
1	A	356	ASN
1	A	436	ALA
1	A	439	ILE
1	A	442	VAL
1	E	193	LEU
1	E	302	ASN
1	E	318	ALA
1	E	321	ASP
1	E	323	ILE
1	E	356	ASN
1	E	436	ALA
1	E	439	ILE
1	E	442	VAL
1	I	193	LEU
1	I	302	ASN
1	I	318	ALA
1	I	321	ASP
1	I	323	ILE
1	I	356	ASN
1	I	436	ALA
1	I	439	ILE
1	I	442	VAL
1	A	48	ALA
1	A	208	VAL
1	A	209	SER
1	A	304	ARG
1	E	48	ALA
1	E	208	VAL

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Mol	Chain	Res	Type
1	E	209	SER
1	E	304	ARG
1	I	48	ALA
1	I	208	VAL
1	I	209	SER
1	I	304	ARG
3	C	51	THR
3	G	51	THR
3	K	51	THR
1	A	117	LYS
1	A	203	GLN
1	A	319	THR
1	E	117	LYS
1	E	203	GLN
1	E	319	THR
1	I	117	LYS
1	I	203	GLN
1	I	319	THR
1	A	205	CYS
1	E	205	CYS
1	I	205	CYS

### 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	333/422 (79%)	330 (99%)	3 (1%)	78	87
1	E	333/422 (79%)	330 (99%)	3 (1%)	78	87
1	I	333/422 (79%)	330 (99%)	3 (1%)	78	87
3	C	182/182 (100%)	181 (100%)	1 (0%)	88	93
3	G	182/182 (100%)	181 (100%)	1 (0%)	88	93
3	K	182/182 (100%)	181 (100%)	1 (0%)	88	93
4	D	190/193 (98%)	190 (100%)	0	100	100
4	H	190/193 (98%)	190 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	L	190/193 (98%)	190 (100%)	0	100	100
All	All	2115/2391 (88%)	2103 (99%)	12 (1%)	86	92

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	111	LEU
1	A	412	ASP
1	A	414	ILE
3	C	91	LEU
1	E	111	LEU
1	E	412	ASP
1	E	414	ILE
3	G	91	LEU
1	I	111	LEU
1	I	412	ASP
1	I	414	ILE
3	K	91	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	67	ASN
4	D	171	GLN
1	E	67	ASN
4	H	171	GLN
1	I	67	ASN
4	L	171	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no carbohydrates 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.

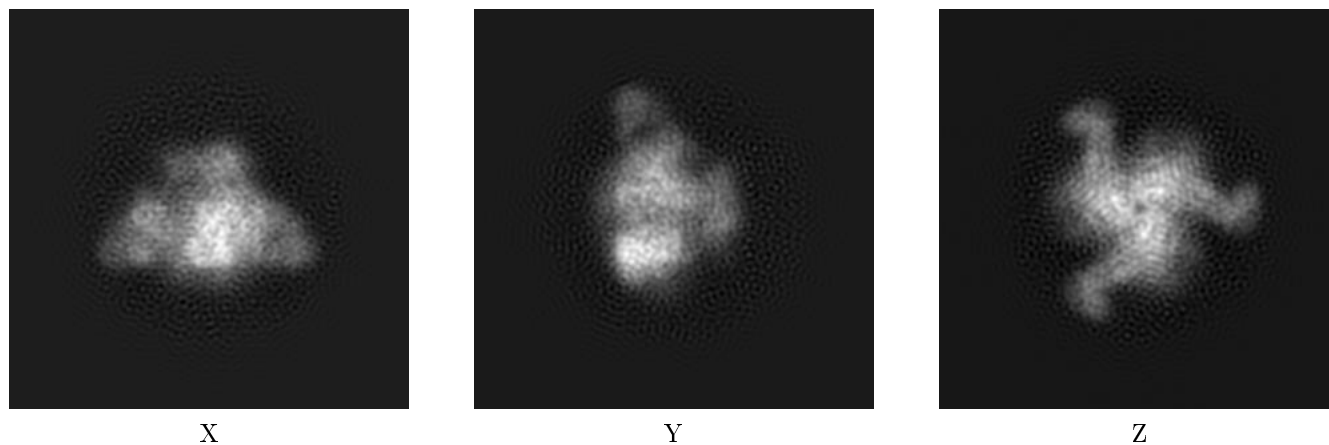
## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Map visualisation [i](#)

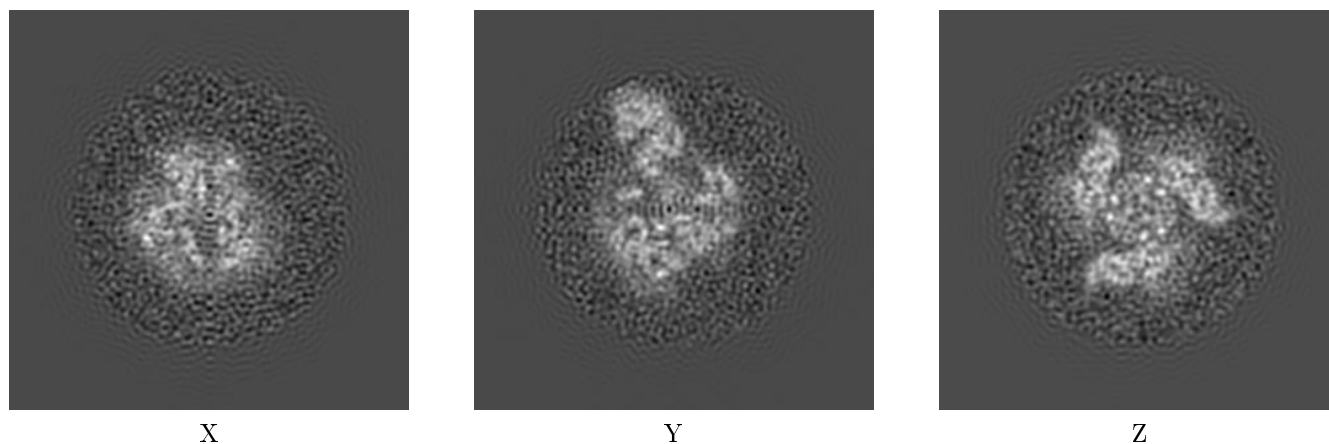
This section contains visualisations of the EMDB entry EMD-5779. These are intended to permit visual inspection of the internal detail of the map and identification of artifacts.

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



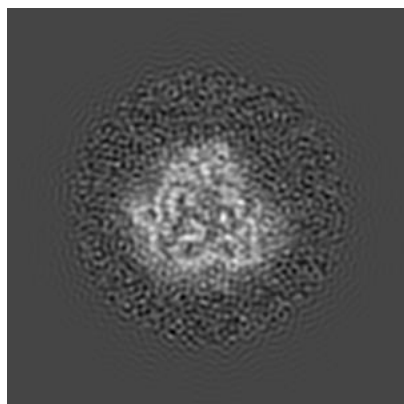
The images above show the map projected in three orthogonal projections, in greyscale.

### 6.2 Central slices [i](#)

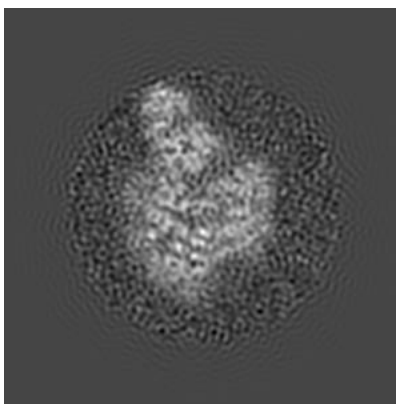


The images above show central slices of the map in three orthogonal directions, in greyscale.

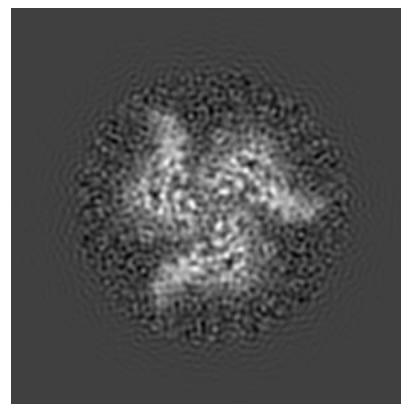
### 6.3 Largest variance slices [i](#)



X Index: 136



Y Index: 135



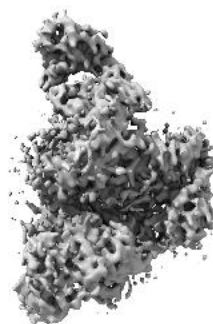
Z Index: 121

The images above show the highest variance slices of the map in three orthogonal directions, in greyscale.

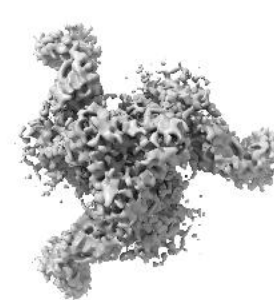
### 6.4 Orthogonal surface views [i](#)



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.027. This in conjunction with the slice images can indicate whether an appropriate contour level has been selected.

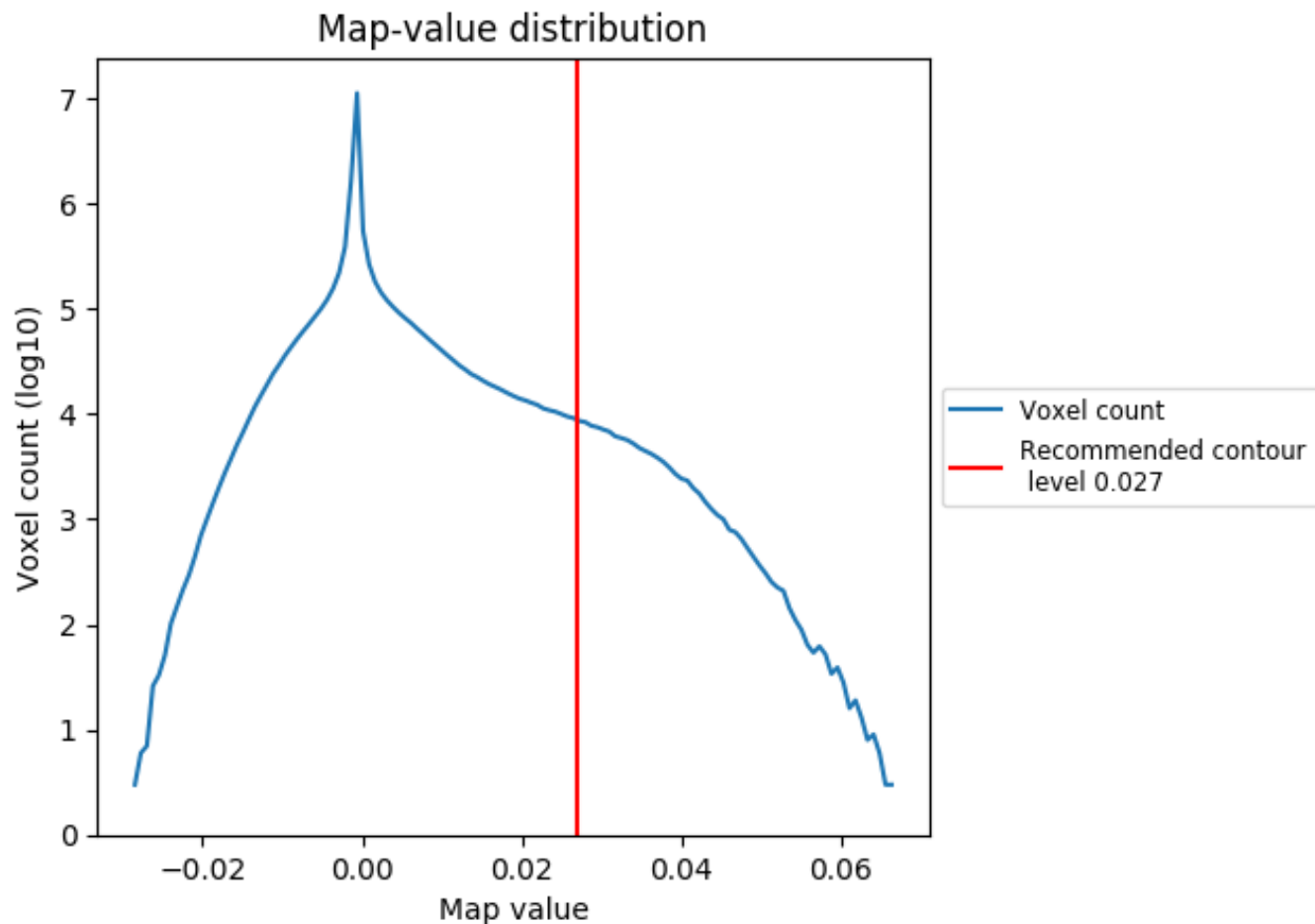
### 6.5 Mask visualisation [i](#)

This section was not generated. No masks were provided.

## 7 Map analysis [i](#)

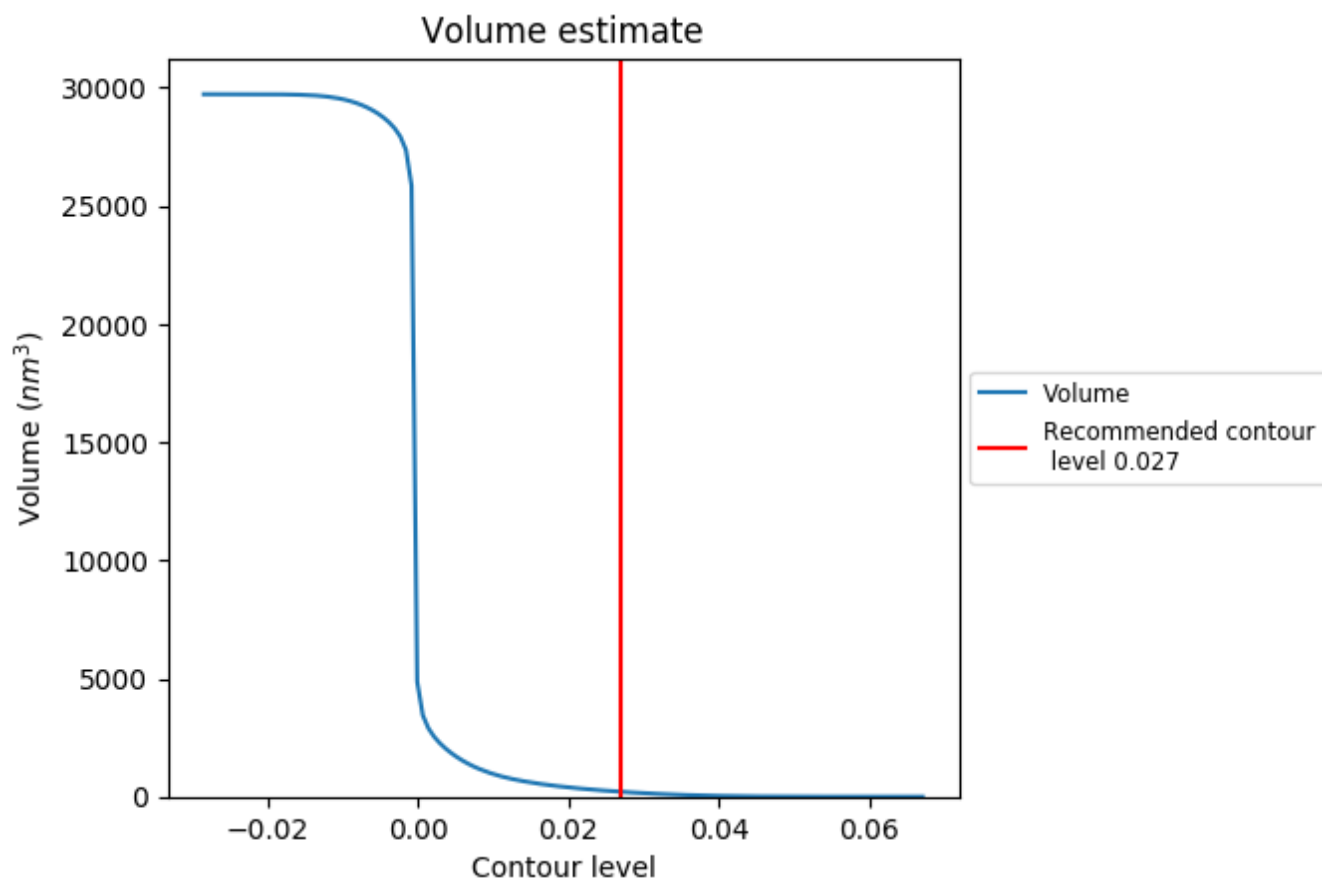
This section contains the results of statistical analysis of the map.

### 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.

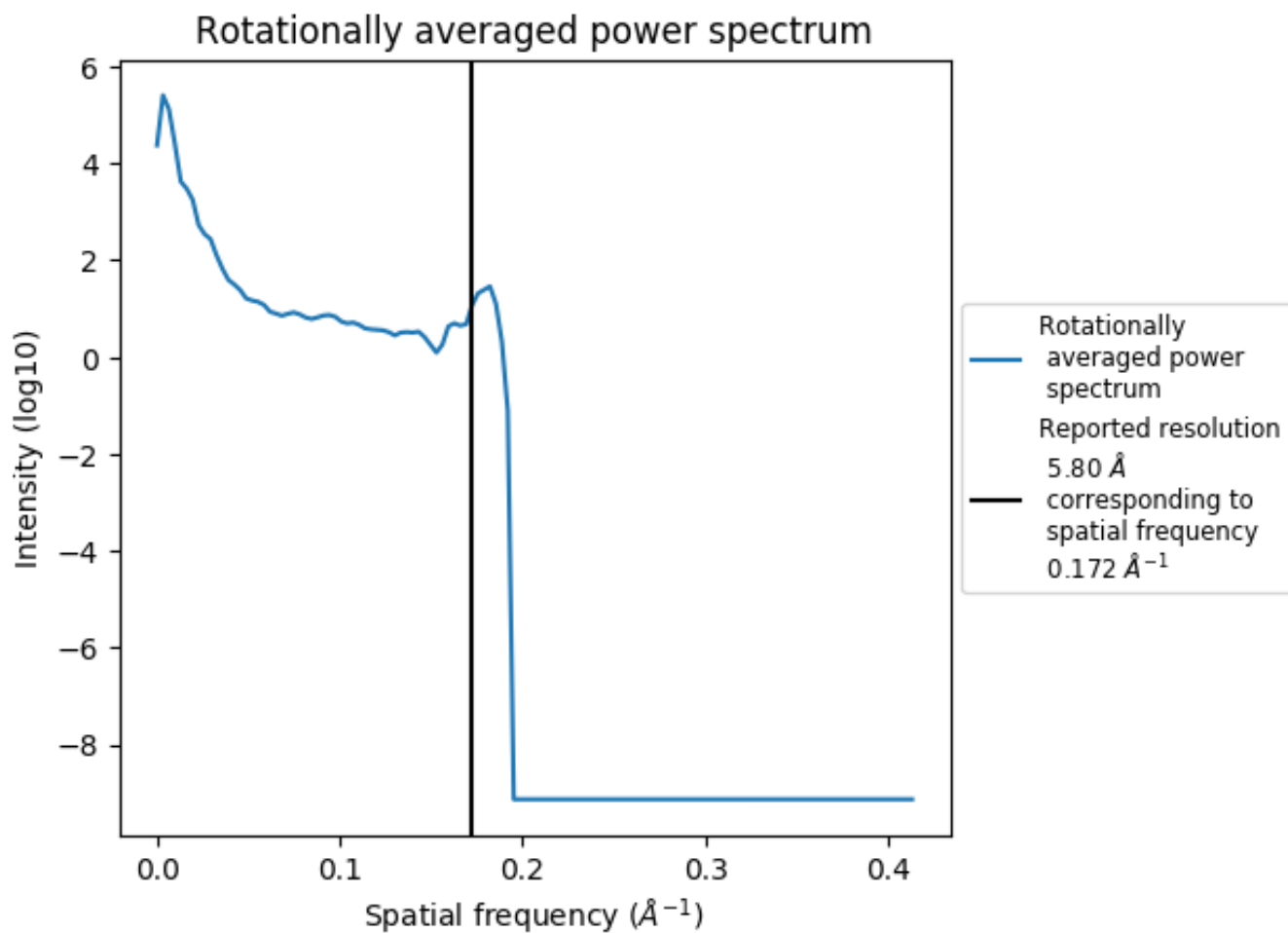
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 207 nm<sup>3</sup>; this corresponds to an approximate mass of 187 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](#)



## 8 Fourier-Shell correlation

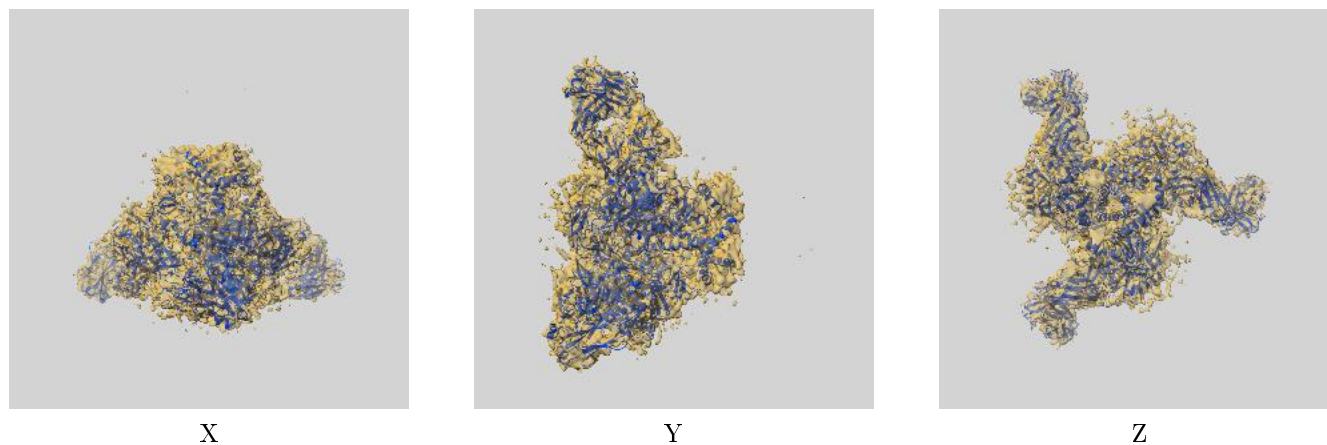
This section was not generated. No FSC curve or half maps provided.



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

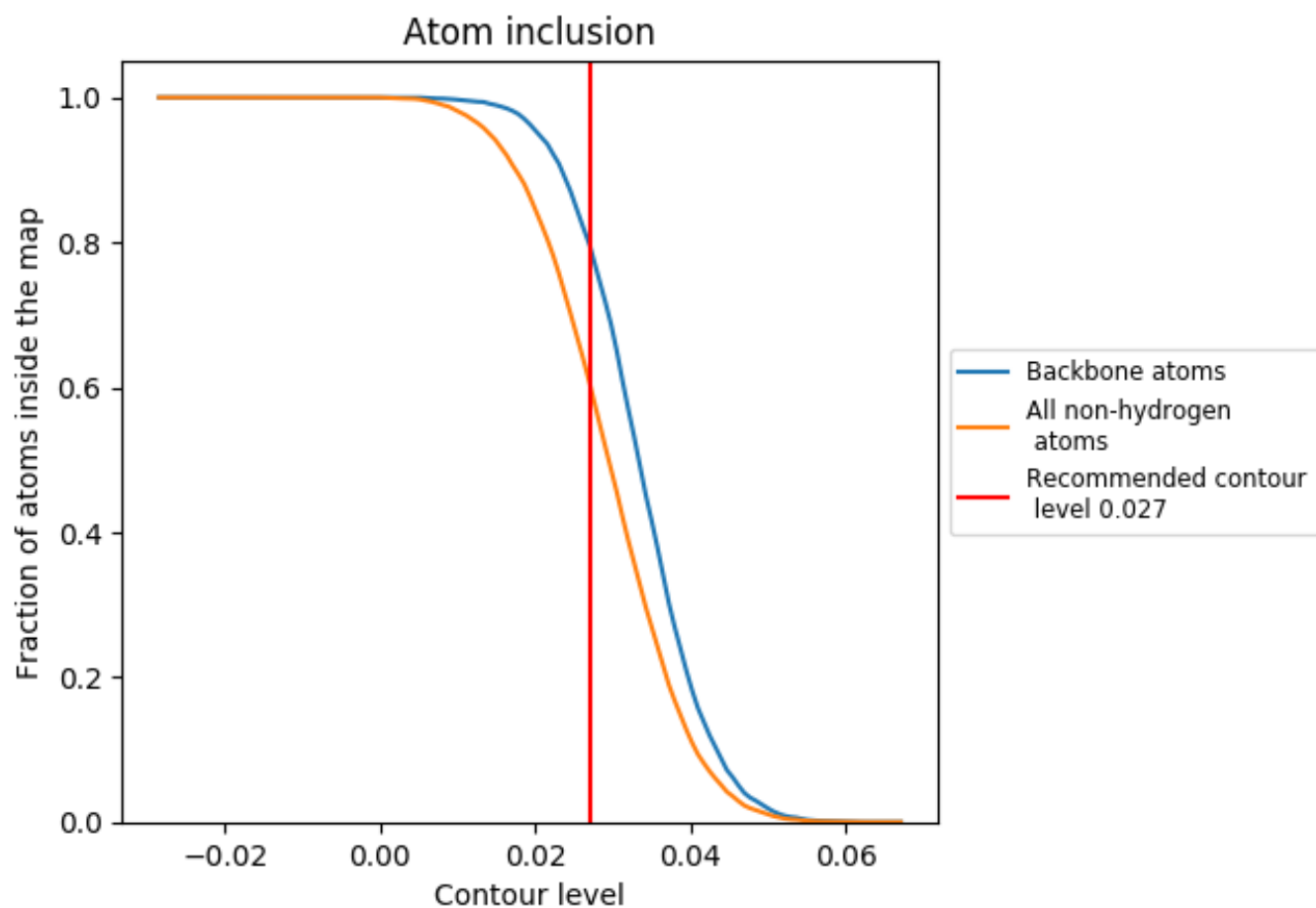
This section contains information regarding the fit between EMDB map EMD-5779 and PDB model 3J5M. Per-residue inclusion information can be found in section 3 on page 6.

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



The images above show the 3D surface view of the map at the recommended contour level 0.027 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 Atom inclusion [i](#)



At the recommended contour level, 80% of all backbone atoms, 61% of all non-hydrogen atoms, are inside the map.