



Full wwPDB EM Validation Report ⓘ

Mar 29, 2026 – 03:33 AM UTC

PDB ID : 5WRG / pdb_00005wrg
EMDB ID : EMD-6679
Title : SARS-CoV spike glycoprotein
Authors : Gui, M.; Song, W.; Xiang, Y.; Wang, X.
Deposited on : 2016-12-01
Resolution : 4.30 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

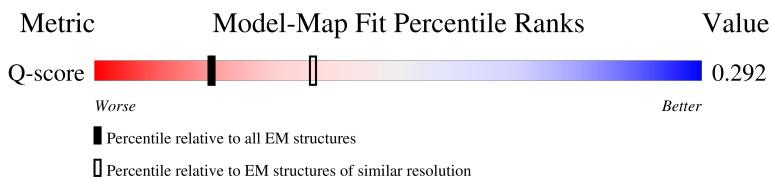
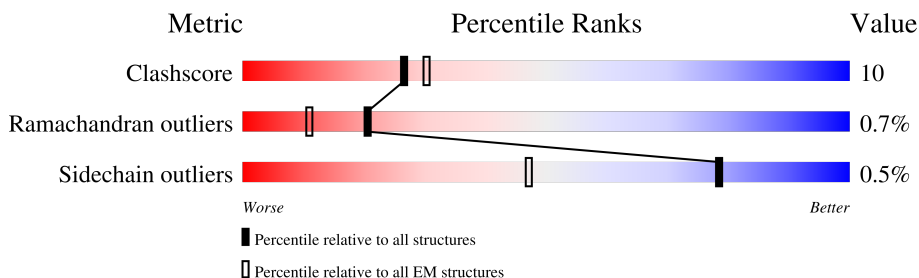
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.30 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	4585 (3.80 - 4.80)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1203	11% 45% 14% • 39%
1	B	1203	13% 46% 14% • 39%
1	C	1203	12% 46% 14% • 39%

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 16317 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.

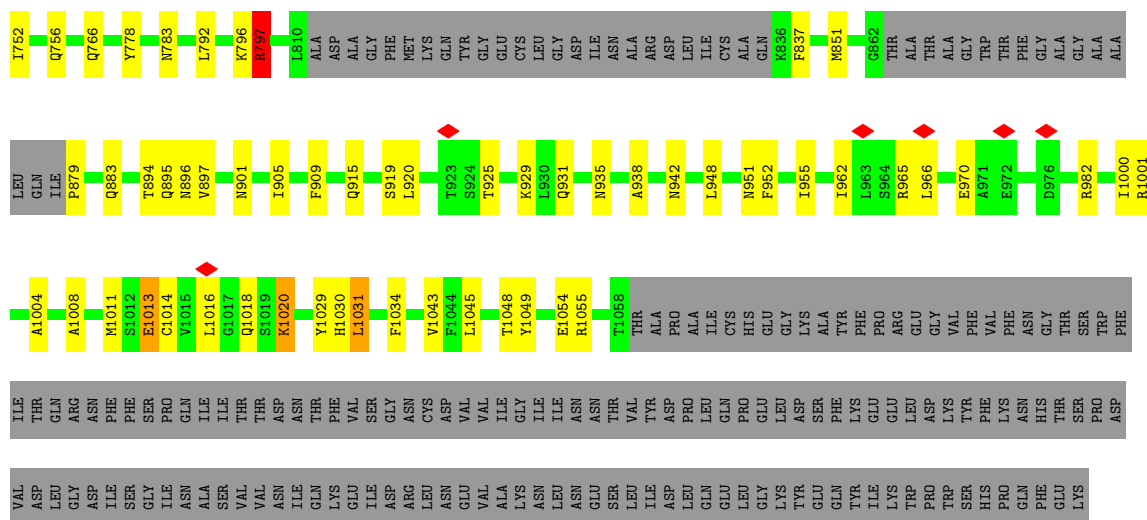
- Molecule 1 is a protein called Spike glycoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	736	Total	C	N	O	S	0	0
			5439	3427	920	1063	29		
1	B	736	Total	C	N	O	S	0	0
			5439	3427	920	1063	29		
1	C	736	Total	C	N	O	S	0	0
			5439	3427	920	1063	29		

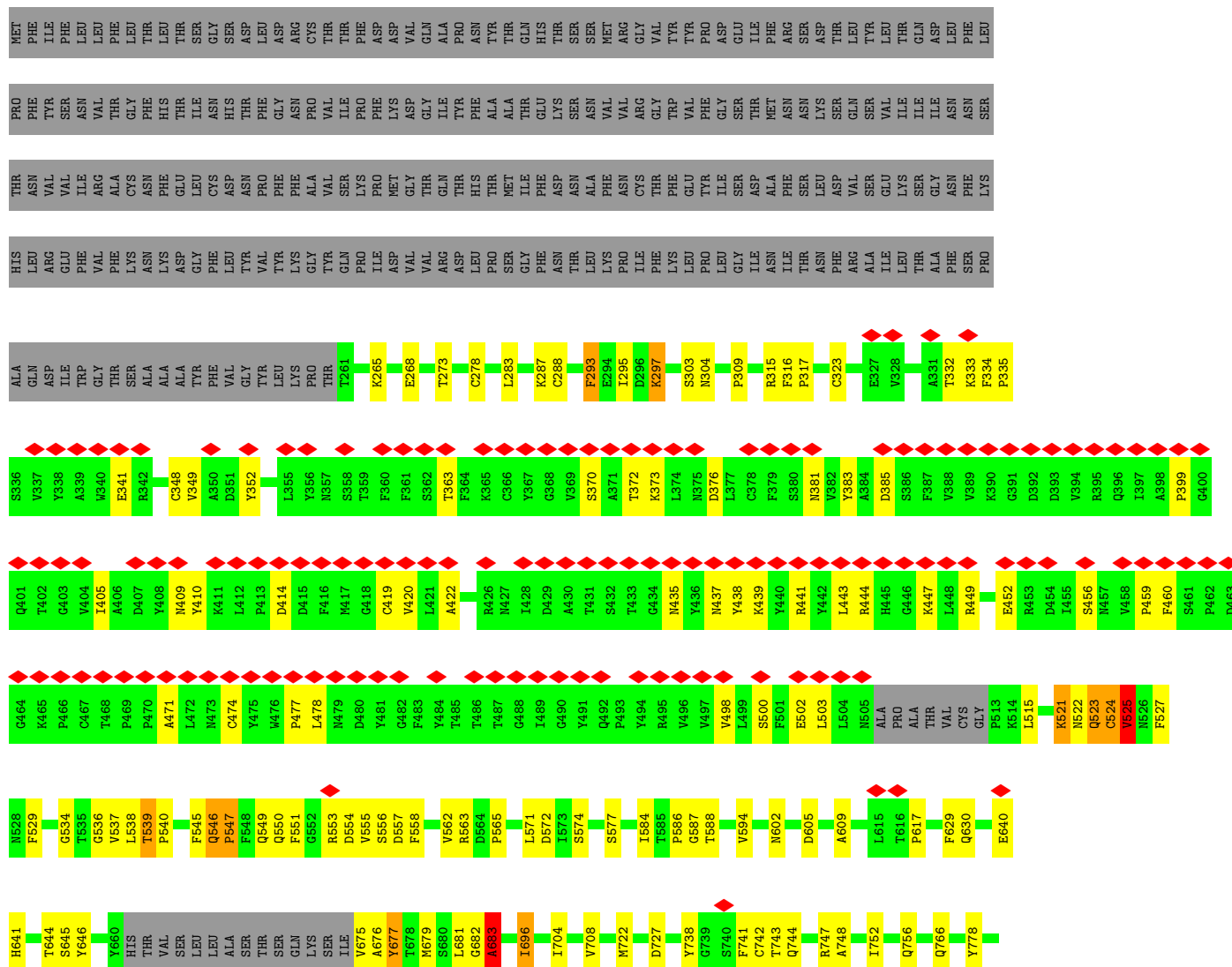
There are 24 discrepancies between the modelled and reference sequences:

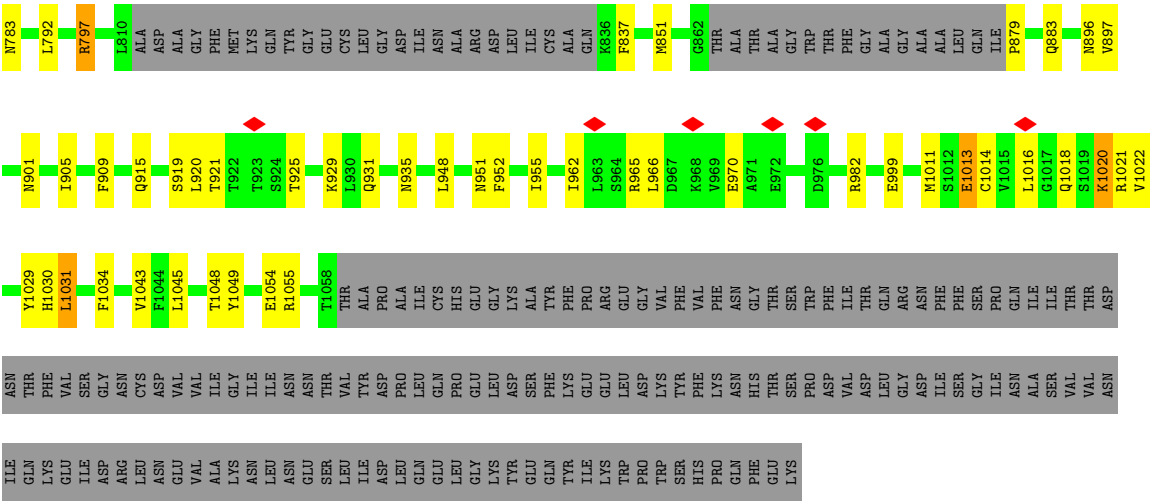
Chain	Residue	Modelled	Actual	Comment	Reference
A	667	ALA	ARG	engineered mutation	UNP P59594
A	1197	SER	-	expression tag	UNP P59594
A	1198	HIS	-	expression tag	UNP P59594
A	1199	PRO	-	expression tag	UNP P59594
A	1200	GLN	-	expression tag	UNP P59594
A	1201	PHE	-	expression tag	UNP P59594
A	1202	GLU	-	expression tag	UNP P59594
A	1203	LYS	-	expression tag	UNP P59594
B	667	ALA	ARG	engineered mutation	UNP P59594
B	1197	SER	-	expression tag	UNP P59594
B	1198	HIS	-	expression tag	UNP P59594
B	1199	PRO	-	expression tag	UNP P59594
B	1200	GLN	-	expression tag	UNP P59594
B	1201	PHE	-	expression tag	UNP P59594
B	1202	GLU	-	expression tag	UNP P59594
B	1203	LYS	-	expression tag	UNP P59594
C	667	ALA	ARG	engineered mutation	UNP P59594
C	1197	SER	-	expression tag	UNP P59594
C	1198	HIS	-	expression tag	UNP P59594
C	1199	PRO	-	expression tag	UNP P59594
C	1200	GLN	-	expression tag	UNP P59594
C	1201	PHE	-	expression tag	UNP P59594
C	1202	GLU	-	expression tag	UNP P59594
C	1203	LYS	-	expression tag	UNP P59594





• Molecule 1: Spike glycoprotein





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C3	Depositor
Number of particles used	34152	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 ($e^-/\text{\AA}^2$)	4.7	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.135	Depositor
Minimum map value	-0.077	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	380.16, 380.16, 380.16	wwPDB
Map dimensions	288, 288, 288	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.32, 1.32, 1.32	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	0.35	0/5536	0.85	32/7535 (0.4%)
1	B	0.35	0/5536	0.85	32/7535 (0.4%)
1	C	0.35	0/5536	0.85	32/7535 (0.4%)
All	All	0.35	0/16608	0.85	96/22605 (0.4%)

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	14
1	B	0	14
1	C	0	14
All	All	0	42

There are no bond length outliers.

All (96) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	1013	GLU	CA-C-N	8.36	136.74	121.70
1	C	1013	GLU	C-N-CA	8.36	136.74	121.70
1	A	1013	GLU	CA-C-N	8.34	136.71	121.70
1	A	1013	GLU	C-N-CA	8.34	136.71	121.70
1	B	1013	GLU	CA-C-N	8.32	136.67	121.70
1	B	1013	GLU	C-N-CA	8.32	136.67	121.70
1	C	547	PRO	N-CA-C	8.16	124.33	113.40
1	B	547	PRO	N-CA-C	8.14	124.31	113.40
1	A	547	PRO	N-CA-C	8.12	124.28	113.40
1	B	951	ASN	CA-C-N	7.71	135.57	121.70
1	B	951	ASN	C-N-CA	7.71	135.57	121.70
1	A	951	ASN	CA-C-N	7.70	135.57	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	951	ASN	C-N-CA	7.70	135.57	121.70
1	C	951	ASN	CA-C-N	7.68	135.52	121.70
1	C	951	ASN	C-N-CA	7.68	135.52	121.70
1	C	696	ILE	CA-C-N	7.65	129.40	119.84
1	C	696	ILE	C-N-CA	7.65	129.40	119.84
1	B	696	ILE	CA-C-N	7.64	129.39	119.84
1	B	696	ILE	C-N-CA	7.64	129.39	119.84
1	A	696	ILE	CA-C-N	7.62	129.36	119.84
1	A	696	ILE	C-N-CA	7.62	129.36	119.84
1	B	525	VAL	N-CA-C	-7.38	106.11	113.20
1	C	525	VAL	N-CA-C	-7.34	106.16	113.20
1	A	525	VAL	N-CA-C	-7.33	106.16	113.20
1	B	1020	LYS	CA-C-N	7.23	134.71	121.70
1	B	1020	LYS	C-N-CA	7.23	134.71	121.70
1	C	1020	LYS	CA-C-N	7.21	134.68	121.70
1	C	1020	LYS	C-N-CA	7.21	134.68	121.70
1	A	1020	LYS	CA-C-N	7.20	134.67	121.70
1	A	1020	LYS	C-N-CA	7.20	134.67	121.70
1	A	797	ARG	CA-C-N	7.08	134.44	121.70
1	A	797	ARG	C-N-CA	7.08	134.44	121.70
1	B	797	ARG	CA-C-N	7.08	134.44	121.70
1	B	797	ARG	C-N-CA	7.08	134.44	121.70
1	C	797	ARG	CA-C-N	7.05	134.38	121.70
1	C	797	ARG	C-N-CA	7.05	134.38	121.70
1	A	792	LEU	CA-C-N	6.96	134.22	121.70
1	A	792	LEU	C-N-CA	6.96	134.22	121.70
1	C	792	LEU	CA-C-N	6.95	134.21	121.70
1	C	792	LEU	C-N-CA	6.95	134.21	121.70
1	B	792	LEU	CA-C-N	6.92	134.15	121.70
1	B	792	LEU	C-N-CA	6.92	134.15	121.70
1	A	1054	GLU	CA-C-N	6.76	133.86	121.70
1	A	1054	GLU	C-N-CA	6.76	133.86	121.70
1	B	1054	GLU	CA-C-N	6.74	133.83	121.70
1	B	1054	GLU	C-N-CA	6.74	133.83	121.70
1	C	1054	GLU	CA-C-N	6.74	133.83	121.70
1	C	1054	GLU	C-N-CA	6.74	133.83	121.70
1	B	677	TYR	CA-C-N	6.66	133.70	121.70
1	B	677	TYR	C-N-CA	6.66	133.70	121.70
1	C	677	TYR	CA-C-N	6.64	133.66	121.70
1	C	677	TYR	C-N-CA	6.64	133.66	121.70
1	A	677	TYR	CA-C-N	6.63	133.63	121.70
1	A	677	TYR	C-N-CA	6.63	133.63	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1055	ARG	CA-C-N	6.54	133.46	121.70
1	A	1055	ARG	C-N-CA	6.54	133.46	121.70
1	B	1055	ARG	CA-C-N	6.53	133.46	121.70
1	B	1055	ARG	C-N-CA	6.53	133.46	121.70
1	C	1055	ARG	CA-C-N	6.53	133.46	121.70
1	C	1055	ARG	C-N-CA	6.53	133.46	121.70
1	B	1030	HIS	CA-C-N	5.57	132.19	121.54
1	B	1030	HIS	C-N-CA	5.57	132.19	121.54
1	C	1030	HIS	CA-C-N	5.57	132.18	121.54
1	C	1030	HIS	C-N-CA	5.57	132.18	121.54
1	A	1030	HIS	CA-C-N	5.55	132.14	121.54
1	A	1030	HIS	C-N-CA	5.55	132.14	121.54
1	C	546	GLN	CA-C-N	-5.53	112.83	118.85
1	C	546	GLN	C-N-CA	-5.53	112.83	118.85
1	A	546	GLN	CA-C-N	-5.52	112.83	118.85
1	A	546	GLN	C-N-CA	-5.52	112.83	118.85
1	A	683	ALA	CA-C-N	5.51	131.62	121.70
1	A	683	ALA	C-N-CA	5.51	131.62	121.70
1	C	683	ALA	CA-C-N	5.49	131.58	121.70
1	C	683	ALA	C-N-CA	5.49	131.58	121.70
1	B	683	ALA	CA-C-N	5.49	131.58	121.70
1	B	683	ALA	C-N-CA	5.49	131.58	121.70
1	B	546	GLN	CA-C-N	-5.48	112.87	118.85
1	B	546	GLN	C-N-CA	-5.48	112.87	118.85
1	B	297	LYS	CA-C-N	5.34	131.31	121.70
1	B	297	LYS	C-N-CA	5.34	131.31	121.70
1	C	297	LYS	CA-C-N	5.34	131.31	121.70
1	C	297	LYS	C-N-CA	5.34	131.31	121.70
1	A	297	LYS	CA-C-N	5.34	131.31	121.70
1	A	297	LYS	C-N-CA	5.34	131.31	121.70
1	B	547	PRO	CA-C-O	-5.23	112.16	119.74
1	A	547	PRO	CA-C-O	-5.21	112.19	119.74
1	C	547	PRO	CA-C-O	-5.19	112.21	119.74
1	B	546	GLN	N-CA-C	5.16	121.20	109.81
1	A	546	GLN	N-CA-C	5.14	121.18	109.81
1	C	546	GLN	N-CA-C	5.13	121.15	109.81
1	C	675	VAL	CA-C-N	5.06	130.81	121.70
1	C	675	VAL	C-N-CA	5.06	130.81	121.70
1	A	675	VAL	CA-C-N	5.05	130.79	121.70
1	A	675	VAL	C-N-CA	5.05	130.79	121.70
1	B	675	VAL	CA-C-N	5.04	130.77	121.70
1	B	675	VAL	C-N-CA	5.04	130.77	121.70

There are no chirality outliers.

All (42) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1013	GLU	Peptide
1	A	1014	CYS	Peptide
1	A	268	GLU	Peptide
1	A	521	LYS	Peptide
1	A	522	ASN	Peptide
1	A	523	GLN	Peptide
1	A	524	CYS	Peptide
1	A	525	VAL	Peptide
1	A	539	THR	Peptide
1	A	540	PRO	Peptide
1	A	546	GLN	Peptide
1	A	683	ALA	Peptide
1	A	696	ILE	Peptide
1	A	797	ARG	Peptide
1	B	1013	GLU	Peptide
1	B	1014	CYS	Peptide
1	B	268	GLU	Peptide
1	B	521	LYS	Peptide
1	B	522	ASN	Peptide
1	B	523	GLN	Peptide
1	B	524	CYS	Peptide
1	B	525	VAL	Peptide
1	B	539	THR	Peptide
1	B	540	PRO	Peptide
1	B	546	GLN	Peptide
1	B	683	ALA	Peptide
1	B	696	ILE	Peptide
1	B	797	ARG	Peptide
1	C	1013	GLU	Peptide
1	C	1014	CYS	Peptide
1	C	268	GLU	Peptide
1	C	521	LYS	Peptide
1	C	522	ASN	Peptide
1	C	523	GLN	Peptide
1	C	524	CYS	Peptide
1	C	525	VAL	Peptide
1	C	539	THR	Peptide
1	C	540	PRO	Peptide
1	C	546	GLN	Peptide
1	C	683	ALA	Peptide

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Mol	Chain	Res	Type	Group
1	C	696	ILE	Peptide
1	C	797	ARG	Peptide

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5439	0	5089	116	0
1	B	5439	0	5089	113	0
1	C	5439	0	5089	111	0
All	All	16317	0	15267	315	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 10.

All (315) 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:722:MET:SD	1:C:577:SER:OG	2.47	0.73
1:A:1018:GLN:HB2	1:C:1021:ARG:HH22	1.54	0.70
1:C:297:LYS:HA	1:C:586:PRO:HG3	1.73	0.69
1:A:297:LYS:HA	1:A:586:PRO:HG3	1.73	0.69
1:B:297:LYS:HA	1:B:586:PRO:HG3	1.73	0.69
1:A:682:GLY:HA2	1:B:851:MET:HE1	1.80	0.63
1:A:309:PRO:HA	1:A:525:VAL:HB	1.82	0.62
1:A:1020:LYS:HE2	1:B:1020:LYS:HE3	1.81	0.62
1:B:459:PRO:HA	1:B:477:PRO:HD3	1.82	0.62
1:A:939:GLN:OE1	1:B:747:ARG:NH1	2.33	0.62
1:C:708:VAL:HG12	1:C:1043:VAL:HG22	1.80	0.62
1:B:708:VAL:HG12	1:B:1043:VAL:HG22	1.80	0.62
1:B:309:PRO:HA	1:B:525:VAL:HB	1.82	0.62
1:A:708:VAL:HG12	1:A:1043:VAL:HG22	1.80	0.62
1:C:309:PRO:HA	1:C:525:VAL:HB	1.82	0.62
1:A:459:PRO:HA	1:A:477:PRO:HD3	1.82	0.62
1:C:459:PRO:HA	1:C:477:PRO:HD3	1.82	0.61
1:A:948:LEU:HG	1:A:982:ARG:HH12	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:948:LEU:HG	1:B:982:ARG:HH12	1.66	0.60
1:A:584:ILE:HG13	1:A:594:VAL:HG22	1.84	0.60
1:C:948:LEU:HG	1:C:982:ARG:HH12	1.66	0.60
1:B:584:ILE:HG13	1:B:594:VAL:HG22	1.84	0.59
1:C:584:ILE:HG13	1:C:594:VAL:HG22	1.84	0.59
1:C:629:PHE:HB2	1:C:640:GLU:HB3	1.84	0.59
1:C:444:ARG:NH1	1:C:447:LYS:O	2.36	0.59
1:A:629:PHE:HB2	1:A:640:GLU:HB3	1.84	0.59
1:B:439:LYS:HD3	1:B:478:LEU:HB3	1.84	0.58
1:A:444:ARG:NH1	1:A:447:LYS:O	2.36	0.58
1:B:444:ARG:NH1	1:B:447:LYS:O	2.36	0.58
1:A:439:LYS:HD3	1:A:478:LEU:HB3	1.84	0.58
1:A:1020:LYS:HE3	1:C:1020:LYS:HE2	1.86	0.58
1:B:629:PHE:HB2	1:B:640:GLU:HB3	1.84	0.58
1:C:439:LYS:HD3	1:C:478:LEU:HB3	1.84	0.58
1:A:562:VAL:HB	1:A:571:LEU:HB2	1.86	0.58
1:A:645:SER:OG	1:A:646:TYR:N	2.37	0.58
1:A:306:ARG:NH2	1:B:727:ASP:OD1	2.37	0.57
1:C:645:SER:OG	1:C:646:TYR:N	2.37	0.57
1:A:1029:TYR:N	1:A:1048:THR:OG1	2.37	0.57
1:B:562:VAL:HB	1:B:571:LEU:HB2	1.86	0.57
1:B:741:PHE:O	1:B:744:GLN:N	2.26	0.57
1:B:1029:TYR:N	1:B:1048:THR:OG1	2.37	0.57
1:B:966:LEU:HD22	1:B:970:GLU:HB2	1.87	0.57
1:A:966:LEU:HD23	1:C:372:THR:HA	1.87	0.57
1:C:562:VAL:HB	1:C:571:LEU:HB2	1.86	0.57
1:C:741:PHE:O	1:C:744:GLN:N	2.26	0.56
1:A:966:LEU:HD22	1:A:970:GLU:HB2	1.87	0.56
1:B:1034:PHE:HB2	1:B:1045:LEU:HB2	1.87	0.56
1:A:1018:GLN:HE22	1:A:1031:LEU:HA	1.71	0.56
1:C:1034:PHE:HB2	1:C:1045:LEU:HB2	1.87	0.56
1:A:435:ASN:OD1	1:A:437:ASN:ND2	2.38	0.56
1:A:1034:PHE:HB2	1:A:1045:LEU:HB2	1.87	0.56
1:C:539:THR:HG23	1:C:572:ASP:HB2	1.88	0.56
1:C:966:LEU:HD22	1:C:970:GLU:HB2	1.87	0.56
1:C:435:ASN:OD1	1:C:437:ASN:ND2	2.38	0.55
1:B:645:SER:OG	1:B:646:TYR:N	2.37	0.55
1:C:405:ILE:HA	1:C:409:ASN:HB2	1.88	0.55
1:B:435:ASN:OD1	1:B:437:ASN:ND2	2.38	0.55
1:A:405:ILE:HA	1:A:409:ASN:HB2	1.88	0.55
1:B:646:TYR:O	1:B:677:TYR:OH	2.19	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:471:ALA:HB3	1:C:474:CYS:HB3	1.88	0.55
1:C:1018:GLN:HE22	1:C:1031:LEU:HA	1.71	0.55
1:B:897:VAL:O	1:B:901:ASN:ND2	2.40	0.55
1:A:539:THR:HG23	1:A:572:ASP:HB2	1.88	0.54
1:A:897:VAL:O	1:A:901:ASN:ND2	2.40	0.54
1:B:405:ILE:HA	1:B:409:ASN:HB2	1.88	0.54
1:B:1018:GLN:HE22	1:B:1031:LEU:HA	1.71	0.54
1:B:381:ASN:N	1:B:502:GLU:O	2.41	0.54
1:C:283:LEU:HD13	1:C:594:VAL:HG21	1.90	0.54
1:B:539:THR:HG23	1:B:572:ASP:HB2	1.88	0.54
1:C:897:VAL:O	1:C:901:ASN:ND2	2.40	0.54
1:A:381:ASN:N	1:A:502:GLU:O	2.41	0.54
1:A:738:TYR:HB3	1:C:952:PHE:HD2	1.73	0.54
1:B:602:ASN:O	1:B:630:GLN:NE2	2.41	0.54
1:A:283:LEU:HD13	1:A:594:VAL:HG21	1.90	0.54
1:A:471:ALA:HB3	1:A:474:CYS:HB3	1.88	0.53
1:A:741:PHE:O	1:A:744:GLN:N	2.26	0.53
1:C:602:ASN:O	1:C:630:GLN:NE2	2.41	0.53
1:B:743:THR:O	1:B:747:ARG:N	2.40	0.53
1:A:602:ASN:O	1:A:630:GLN:NE2	2.41	0.53
1:B:283:LEU:HD13	1:B:594:VAL:HG21	1.90	0.53
1:C:1029:TYR:N	1:C:1048:THR:OG1	2.37	0.53
1:B:471:ALA:HB3	1:B:474:CYS:HB3	1.88	0.53
1:A:547:PRO:HD2	1:A:550:GLN:HB3	1.91	0.53
1:C:381:ASN:N	1:C:502:GLU:O	2.41	0.53
1:C:547:PRO:HD2	1:C:550:GLN:HB3	1.91	0.53
1:A:1018:GLN:HB2	1:C:1021:ARG:NH2	2.22	0.52
1:B:547:PRO:HD2	1:B:550:GLN:HB3	1.91	0.52
1:C:743:THR:O	1:C:747:ARG:N	2.40	0.52
1:A:1021:ARG:HH22	1:B:1018:GLN:HB2	1.75	0.52
1:C:646:TYR:O	1:C:677:TYR:OH	2.19	0.52
1:B:577:SER:OG	1:C:722:MET:SD	2.65	0.51
1:A:704:ILE:HD11	1:A:1045:LEU:HB3	1.92	0.51
1:B:295:ILE:HG12	1:B:587:GLY:H	1.76	0.51
1:C:295:ILE:HG12	1:C:587:GLY:H	1.76	0.51
1:A:743:THR:O	1:A:747:ARG:N	2.40	0.51
1:B:399:PRO:HB3	1:B:414:ASP:HA	1.92	0.51
1:C:523:GLN:OE1	1:C:525:VAL:N	2.30	0.51
1:C:1048:THR:OG1	1:C:1049:TYR:N	2.43	0.51
1:A:547:PRO:HB2	1:A:549:GLN:H	1.75	0.51
1:C:381:ASN:ND2	1:C:503:LEU:O	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:381:ASN:ND2	1:A:503:LEU:O	2.44	0.51
1:A:383:TYR:HB2	1:A:500:SER:HB2	1.93	0.51
1:B:381:ASN:ND2	1:B:503:LEU:O	2.44	0.51
1:C:704:ILE:HD11	1:C:1045:LEU:HB3	1.91	0.51
1:B:523:GLN:OE1	1:B:525:VAL:N	2.30	0.51
1:B:641:HIS:ND1	1:B:676:ALA:O	2.39	0.51
1:B:704:ILE:HD11	1:B:1045:LEU:HB3	1.92	0.51
1:C:744:GLN:HE21	1:C:748:ALA:HB2	1.76	0.51
1:A:399:PRO:HB3	1:A:414:ASP:HA	1.92	0.50
1:C:399:PRO:HB3	1:C:414:ASP:HA	1.92	0.50
1:C:915:GLN:O	1:C:919:SER:N	2.44	0.50
1:B:385:ASP:HB2	1:B:498:VAL:HB	1.93	0.50
1:B:553:ARG:NH1	1:B:557:ASP:OD1	2.45	0.50
1:C:547:PRO:HB2	1:C:549:GLN:H	1.75	0.50
1:B:383:TYR:HB2	1:B:500:SER:HB2	1.93	0.50
1:A:931:GLN:O	1:A:935:ASN:ND2	2.45	0.50
1:B:915:GLN:O	1:B:919:SER:N	2.44	0.50
1:C:553:ARG:NH1	1:C:557:ASP:OD1	2.45	0.50
1:A:553:ARG:NH1	1:A:557:ASP:OD1	2.45	0.50
1:A:385:ASP:HB2	1:A:498:VAL:HB	1.93	0.50
1:A:681:LEU:HB3	1:A:683:ALA:HB2	1.93	0.50
1:A:1048:THR:OG1	1:A:1049:TYR:N	2.43	0.50
1:B:547:PRO:HB2	1:B:549:GLN:H	1.75	0.50
1:C:681:LEU:HB3	1:C:683:ALA:HB2	1.93	0.50
1:B:931:GLN:O	1:B:935:ASN:ND2	2.45	0.49
1:C:931:GLN:O	1:C:935:ASN:ND2	2.45	0.49
1:B:744:GLN:HE21	1:B:748:ALA:HB2	1.76	0.49
1:C:385:ASP:HB2	1:C:498:VAL:HB	1.93	0.49
1:A:295:ILE:HG12	1:A:587:GLY:H	1.76	0.49
1:A:641:HIS:ND1	1:A:676:ALA:O	2.39	0.49
1:A:915:GLN:O	1:A:919:SER:N	2.44	0.49
1:C:383:TYR:HB2	1:C:500:SER:HB2	1.93	0.49
1:B:315:ARG:HH21	1:B:529:PHE:HB3	1.78	0.49
1:B:681:LEU:HB3	1:B:683:ALA:HB2	1.93	0.49
1:C:287:LYS:HE2	1:C:293:PHE:HA	1.95	0.49
1:B:1048:THR:OG1	1:B:1049:TYR:N	2.43	0.49
1:A:901:ASN:OD1	1:A:901:ASN:N	2.46	0.49
1:A:287:LYS:HE2	1:A:293:PHE:HA	1.95	0.48
1:A:744:GLN:HE21	1:A:748:ALA:HB2	1.76	0.48
1:A:778:TYR:HA	1:A:783:ASN:HA	1.95	0.48
1:C:315:ARG:HH21	1:C:529:PHE:HB3	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:524:CYS:H	1:B:525:VAL:HG22	1.78	0.48
1:B:901:ASN:OD1	1:B:901:ASN:N	2.46	0.48
1:C:778:TYR:HA	1:C:783:ASN:HA	1.95	0.48
1:A:999:GLU:OE2	1:B:1001:ARG:NH1	2.46	0.48
1:B:550:GLN:O	1:B:563:ARG:NH1	2.47	0.48
1:A:550:GLN:O	1:A:563:ARG:NH1	2.47	0.48
1:A:905:ILE:O	1:A:909:PHE:N	2.46	0.48
1:B:306:ARG:NH2	1:C:727:ASP:OD1	2.46	0.48
1:C:278:CYS:HB3	1:C:288:CYS:HB2	1.55	0.48
1:C:605:ASP:O	1:C:609:ALA:N	2.45	0.48
1:C:879:PRO:O	1:C:883:GLN:N	2.45	0.48
1:A:315:ARG:HH21	1:A:529:PHE:HB3	1.78	0.47
1:B:778:TYR:HA	1:B:783:ASN:HA	1.95	0.47
1:C:550:GLN:O	1:C:563:ARG:NH1	2.47	0.47
1:B:405:ILE:HD13	1:B:409:ASN:HD22	1.79	0.47
1:B:605:ASP:O	1:B:609:ALA:N	2.44	0.47
1:A:405:ILE:HD13	1:A:409:ASN:HD22	1.79	0.47
1:B:708:VAL:HG23	1:B:929:LYS:HD2	1.97	0.47
1:B:905:ILE:O	1:B:909:PHE:N	2.46	0.47
1:A:332:THR:HG22	1:A:333:LYS:HG3	1.97	0.47
1:B:287:LYS:HE2	1:B:293:PHE:HA	1.95	0.47
1:C:332:THR:HG22	1:C:333:LYS:HG3	1.97	0.47
1:C:524:CYS:H	1:C:525:VAL:HG22	1.78	0.47
1:A:524:CYS:H	1:A:525:VAL:HG22	1.78	0.47
1:A:605:ASP:O	1:A:609:ALA:N	2.45	0.47
1:A:766:GLN:NE2	1:A:1011:MET:O	2.44	0.47
1:A:1001:ARG:NH1	1:C:999:GLU:OE2	2.48	0.47
1:B:332:THR:HG22	1:B:333:LYS:HG3	1.97	0.47
1:B:879:PRO:O	1:B:883:GLN:N	2.45	0.47
1:C:708:VAL:HG23	1:C:929:LYS:HD2	1.97	0.47
1:B:554:ASP:HB2	1:B:558:PHE:H	1.80	0.46
1:A:708:VAL:HG23	1:A:929:LYS:HD2	1.97	0.46
1:B:278:CYS:HB3	1:B:288:CYS:HB2	1.55	0.46
1:C:405:ILE:HD13	1:C:409:ASN:HD22	1.79	0.46
1:C:641:HIS:ND1	1:C:676:ALA:O	2.39	0.46
1:C:905:ILE:O	1:C:909:PHE:N	2.46	0.46
1:A:527:PHE:HD2	1:A:534:GLY:HA3	1.81	0.46
1:B:317:PRO:HD2	1:B:565:PRO:HB2	1.98	0.46
1:B:527:PHE:HD2	1:B:534:GLY:HA3	1.81	0.46
1:C:317:PRO:HD2	1:C:565:PRO:HB2	1.98	0.46
1:A:441:ARG:NH2	1:A:456:SER:O	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:441:ARG:NH2	1:B:456:SER:O	2.48	0.46
1:A:317:PRO:HD2	1:A:565:PRO:HB2	1.98	0.46
1:C:385:ASP:OD2	1:C:410:TYR:OH	2.33	0.46
1:C:420:VAL:HG22	1:C:498:VAL:HG13	1.98	0.46
1:C:527:PHE:HD2	1:C:534:GLY:HA3	1.81	0.46
1:C:766:GLN:NE2	1:C:1011:MET:O	2.44	0.46
1:B:896:ASN:OD1	1:B:896:ASN:N	2.48	0.46
1:A:554:ASP:HB2	1:A:558:PHE:H	1.80	0.46
1:C:441:ARG:NH2	1:C:456:SER:O	2.48	0.46
1:B:420:VAL:HG22	1:B:498:VAL:HG13	1.98	0.46
1:A:292:SER:OG	1:A:293:PHE:N	2.48	0.45
1:C:363:THR:HB	1:C:422:ALA:HB3	1.98	0.45
1:C:896:ASN:OD1	1:C:896:ASN:N	2.48	0.45
1:B:524:CYS:O	1:B:536:GLY:N	2.49	0.45
1:C:554:ASP:HB2	1:C:558:PHE:H	1.80	0.45
1:B:363:THR:HB	1:B:422:ALA:HB3	1.98	0.45
1:C:524:CYS:O	1:C:536:GLY:N	2.49	0.45
1:B:524:CYS:HB3	1:B:525:VAL:HG22	1.99	0.45
1:B:952:PHE:HD2	1:C:738:TYR:HB3	1.82	0.45
1:C:524:CYS:HB3	1:C:525:VAL:HG22	1.99	0.45
1:C:919:SER:OG	1:C:920:LEU:N	2.49	0.45
1:A:265:LYS:O	1:A:273:THR:OG1	2.35	0.45
1:A:363:THR:HB	1:A:422:ALA:HB3	1.98	0.45
1:B:550:GLN:HA	1:B:551:PHE:HA	1.57	0.45
1:B:901:ASN:HB2	1:B:905:ILE:HG12	1.99	0.45
1:A:278:CYS:HB3	1:A:288:CYS:HB2	1.55	0.45
1:A:420:VAL:HG22	1:A:498:VAL:HG13	1.98	0.45
1:A:523:GLN:OE1	1:A:525:VAL:N	2.30	0.45
1:A:443:LEU:HB3	1:A:460:PHE:CG	2.52	0.45
1:A:524:CYS:HB3	1:A:525:VAL:HG22	1.99	0.45
1:A:901:ASN:HB2	1:A:905:ILE:HG12	1.99	0.45
1:C:752:ILE:O	1:C:756:GLN:N	2.50	0.45
1:C:901:ASN:OD1	1:C:901:ASN:N	2.46	0.45
1:C:901:ASN:HB2	1:C:905:ILE:HG12	1.99	0.45
1:A:385:ASP:OD2	1:A:410:TYR:OH	2.33	0.45
1:A:524:CYS:O	1:A:536:GLY:N	2.49	0.45
1:B:265:LYS:O	1:B:273:THR:OG1	2.35	0.45
1:B:555:VAL:HA	1:B:556:SER:HA	1.71	0.45
1:A:752:ILE:O	1:A:756:GLN:N	2.50	0.45
1:B:443:LEU:HB3	1:B:460:PHE:CG	2.52	0.45
1:B:575:PRO:HG3	1:C:837:PHE:HA	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:265:LYS:O	1:C:273:THR:OG1	2.35	0.45
1:C:373:LYS:HD2	1:C:376:ASP:HB2	1.99	0.45
1:B:323:CYS:HB3	1:B:348:CYS:HB2	1.88	0.44
1:A:738:TYR:HA	1:C:952:PHE:HB2	1.99	0.44
1:B:766:GLN:NE2	1:B:1011:MET:O	2.44	0.44
1:B:962:ILE:HD12	1:B:965:ARG:HB2	2.00	0.44
1:B:752:ILE:O	1:B:756:GLN:N	2.50	0.44
1:C:443:LEU:HB3	1:C:460:PHE:CG	2.52	0.44
1:C:962:ILE:HD12	1:C:965:ARG:HB2	2.00	0.44
1:B:373:LYS:HD2	1:B:376:ASP:HB2	1.99	0.44
1:C:373:LYS:HB3	1:C:376:ASP:HB2	2.00	0.44
1:B:295:ILE:HG21	1:B:588:THR:H	1.83	0.44
1:A:962:ILE:HD12	1:A:965:ARG:HB2	2.00	0.43
1:A:965:ARG:HA	1:C:373:LYS:HD3	1.99	0.43
1:B:385:ASP:OD2	1:B:410:TYR:OH	2.33	0.43
1:A:896:ASN:N	1:A:896:ASN:OD1	2.48	0.43
1:A:1015:VAL:HG21	1:C:1022:VAL:HG11	2.01	0.43
1:C:295:ILE:HG21	1:C:588:THR:H	1.83	0.43
1:B:370:SER:OG	1:B:419:CYS:SG	2.75	0.43
1:B:373:LYS:HB3	1:B:376:ASP:HB2	2.00	0.43
1:C:527:PHE:O	1:C:534:GLY:N	2.51	0.43
1:B:682:GLY:HA2	1:C:851:MET:HE1	2.00	0.43
1:A:295:ILE:HG21	1:A:588:THR:H	1.83	0.43
1:A:527:PHE:O	1:A:534:GLY:N	2.51	0.43
1:A:373:LYS:HD2	1:A:376:ASP:HB2	1.99	0.43
1:B:292:SER:OG	1:B:293:PHE:N	2.48	0.43
1:B:527:PHE:O	1:B:534:GLY:N	2.51	0.43
1:A:348:CYS:SG	1:A:349:VAL:N	2.92	0.43
1:A:879:PRO:O	1:A:883:GLN:N	2.45	0.43
1:B:373:LYS:HE2	1:C:965:ARG:CZ	2.48	0.43
1:B:551:PHE:HD2	1:B:563:ARG:HB3	1.84	0.43
1:A:370:SER:OG	1:A:419:CYS:SG	2.75	0.42
1:C:323:CYS:HB3	1:C:348:CYS:HB2	1.88	0.42
1:A:373:LYS:HB3	1:A:376:ASP:HB2	2.00	0.42
1:B:335:PRO:HG3	1:B:341:GLU:HB3	2.01	0.42
1:B:348:CYS:SG	1:B:349:VAL:N	2.92	0.42
1:B:521:LYS:HA	1:B:538:LEU:HB2	2.02	0.42
1:B:1004:ALA:O	1:B:1008:ALA:N	2.48	0.42
1:C:644:THR:HA	1:C:679:MET:HE3	2.02	0.42
1:A:521:LYS:HA	1:A:538:LEU:HB2	2.02	0.42
1:C:551:PHE:HD2	1:C:563:ARG:HB3	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:372:THR:HB	1:B:965:ARG:HB3	2.00	0.42
1:A:551:PHE:HD2	1:A:563:ARG:HB3	1.84	0.42
1:A:919:SER:OG	1:A:920:LEU:N	2.49	0.42
1:C:370:SER:OG	1:C:419:CYS:SG	2.75	0.42
1:A:555:VAL:HA	1:A:556:SER:HA	1.71	0.42
1:C:348:CYS:SG	1:C:349:VAL:N	2.92	0.42
1:C:521:LYS:HA	1:C:538:LEU:HB2	2.02	0.42
1:A:303:SER:OG	1:A:304:ASN:N	2.53	0.42
1:C:335:PRO:HG3	1:C:341:GLU:HB3	2.01	0.42
1:A:545:PHE:HA	1:A:551:PHE:HZ	1.85	0.42
1:B:303:SER:OG	1:B:304:ASN:N	2.53	0.42
1:C:545:PHE:HA	1:C:551:PHE:HZ	1.85	0.42
1:A:323:CYS:HB3	1:A:348:CYS:HB2	1.88	0.41
1:A:644:THR:HA	1:A:679:MET:HE3	2.02	0.41
1:A:707:GLU:OE2	1:A:1046:HIS:NE2	2.41	0.41
1:C:550:GLN:HB2	1:C:551:PHE:CD2	2.55	0.41
1:B:550:GLN:HB2	1:B:551:PHE:CD2	2.55	0.41
1:A:941:LEU:HD23	1:A:941:LEU:HA	1.93	0.41
1:B:264:LEU:HB3	1:B:265:LYS:H	1.71	0.41
1:A:550:GLN:HA	1:A:551:PHE:HA	1.57	0.41
1:A:550:GLN:HB2	1:A:551:PHE:CD2	2.55	0.41
1:C:920:LEU:HA	1:C:921:THR:HA	1.79	0.41
1:A:335:PRO:HG3	1:A:341:GLU:HB3	2.01	0.41
1:C:303:SER:OG	1:C:304:ASN:N	2.53	0.41
1:A:316:PHE:HB2	1:A:515:LEU:HD22	2.02	0.41
1:A:851:MET:HE1	1:C:682:GLY:HA2	2.03	0.41
1:B:316:PHE:HB2	1:B:515:LEU:HD22	2.02	0.41
1:B:644:THR:HA	1:B:679:MET:HE3	2.02	0.41
1:B:919:SER:OG	1:B:920:LEU:N	2.49	0.41
1:C:295:ILE:HD12	1:C:295:ILE:HA	1.92	0.41
1:C:334:PHE:O	1:C:438:TYR:OH	2.31	0.41
1:A:1000:ILE:O	1:A:1004:ALA:N	2.53	0.41
1:B:537:VAL:HG12	1:B:574:SER:HB3	2.03	0.41
1:C:352:TYR:OH	1:C:376:ASP:N	2.54	0.41
1:C:449:ARG:HB2	1:C:452:GLU:HB2	2.03	0.41
1:B:352:TYR:OH	1:B:376:ASP:N	2.54	0.40
1:B:545:PHE:HA	1:B:551:PHE:HZ	1.85	0.40
1:B:1000:ILE:O	1:B:1004:ALA:N	2.53	0.40
1:A:449:ARG:HB2	1:A:452:GLU:HB2	2.03	0.40
1:A:938:ALA:O	1:A:942:ASN:ND2	2.55	0.40
1:C:316:PHE:HB2	1:C:515:LEU:HD22	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:904:GLN:O	1:A:908:GLN:N	2.44	0.40
1:B:938:ALA:O	1:B:942:ASN:ND2	2.55	0.40
1:C:537:VAL:HG12	1:C:574:SER:HB3	2.03	0.40
1:A:542:SER:HB2	1:A:543:LYS:HG3	2.03	0.40
1:A:575:PRO:HG3	1:B:837:PHE:HA	2.03	0.40
1:B:894:THR:HG22	1:B:895:GLN:H	1.86	0.40
1:A:352:TYR:OH	1:A:376:ASP:N	2.54	0.40
1:B:542:SER:HB2	1:B:543:LYS:HG3	2.03	0.40
1:B:796:LYS:HA	1:B:797:ARG:HA	1.65	0.40
1:C:555:VAL:HA	1:C:556:SER:HA	1.72	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	726/1203 (60%)	591 (81%)	130 (18%)	5 (1%)	18	55
1	B	726/1203 (60%)	591 (81%)	130 (18%)	5 (1%)	18	55
1	C	726/1203 (60%)	590 (81%)	131 (18%)	5 (1%)	18	55
All	All	2178/3609 (60%)	1772 (81%)	391 (18%)	15 (1%)	20	55

All (15) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	742	CYS
1	A	1031	LEU
1	B	742	CYS
1	B	1031	LEU
1	C	742	CYS
1	C	1031	LEU
1	A	293	PHE

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Mol	Chain	Res	Type
1	B	293	PHE
1	C	293	PHE
1	C	925	THR
1	A	925	THR
1	B	925	THR
1	A	617	PRO
1	B	617	PRO
1	C	617	PRO

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	562/1047 (54%)	559 (100%)	3 (0%)	81	81
1	B	562/1047 (54%)	559 (100%)	3 (0%)	81	81
1	C	562/1047 (54%)	559 (100%)	3 (0%)	81	81
All	All	1686/3141 (54%)	1677 (100%)	9 (0%)	78	81

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	525	VAL
1	A	955	ILE
1	A	1016	LEU
1	B	525	VAL
1	B	955	ILE
1	B	1016	LEU
1	C	525	VAL
1	C	955	ILE
1	C	1016	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	301	GLN
1	A	381	ASN
1	A	401	GLN
1	A	435	ASN
1	A	437	ASN
1	A	630	GLN
1	A	721	ASN
1	A	746	ASN
1	A	931	GLN
1	A	935	ASN
1	A	1018	GLN
1	B	381	ASN
1	B	401	GLN
1	B	435	ASN
1	B	437	ASN
1	B	630	GLN
1	B	746	ASN
1	B	931	GLN
1	B	935	ASN
1	B	947	GLN
1	B	1018	GLN
1	C	381	ASN
1	C	401	GLN
1	C	435	ASN
1	C	437	ASN
1	C	630	GLN
1	C	721	ASN
1	C	746	ASN
1	C	910	ASN
1	C	931	GLN
1	C	935	ASN
1	C	951	ASN
1	C	1018	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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.

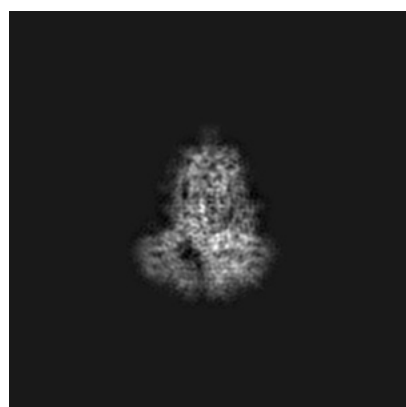
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-6679. These allow visual inspection of the internal detail of the map and identification of artifacts.

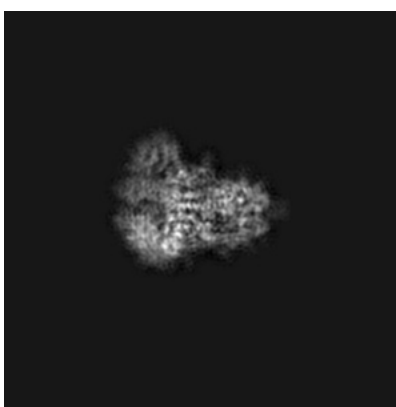
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

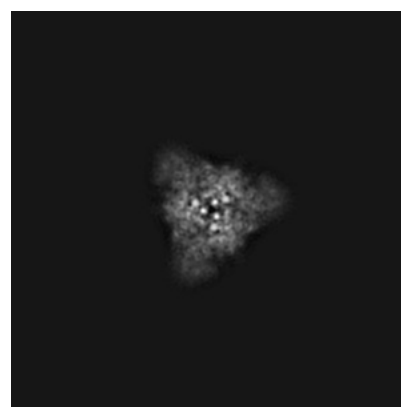
6.1.1 Primary map



X



Y

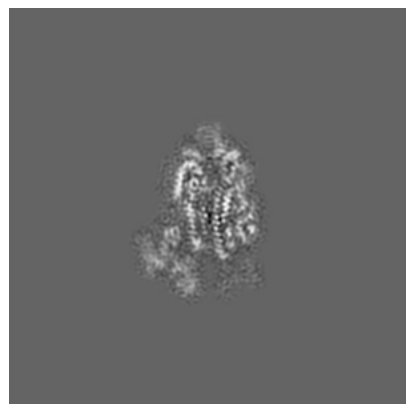


Z

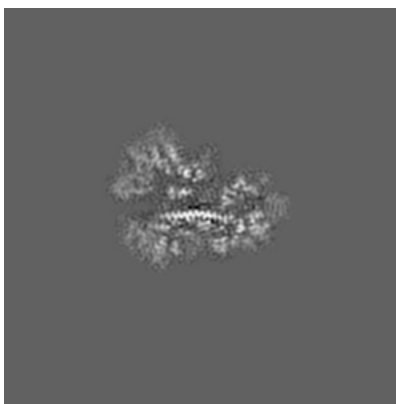
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

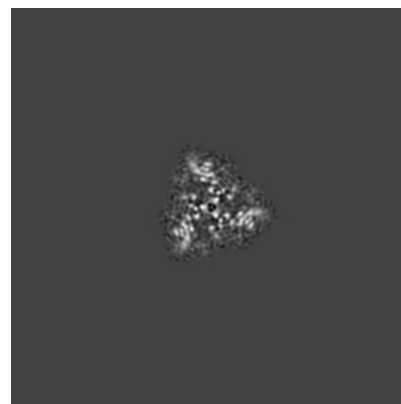
6.2.1 Primary map



X Index: 144



Y Index: 144

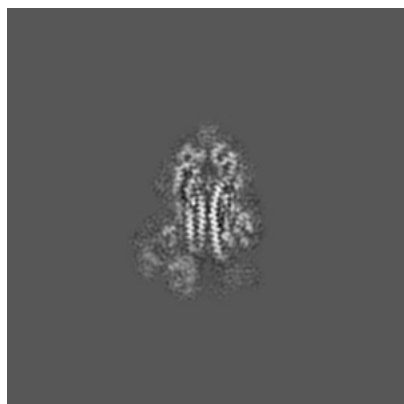


Z Index: 144

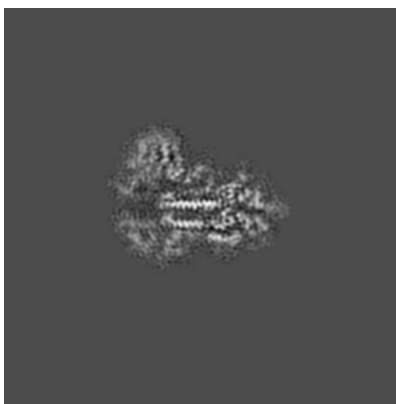
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 146



Y Index: 149

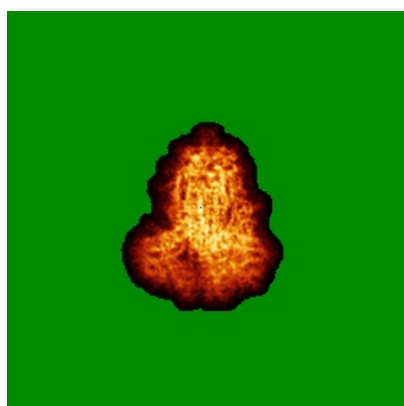


Z Index: 124

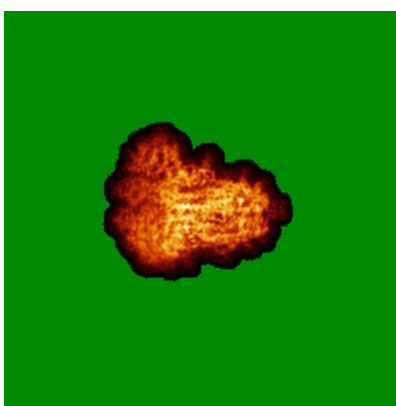
The images above show the largest variance slices of the map in three orthogonal directions.

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

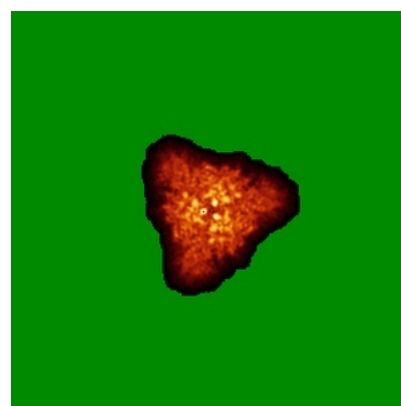
6.4.1 Primary map



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



The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

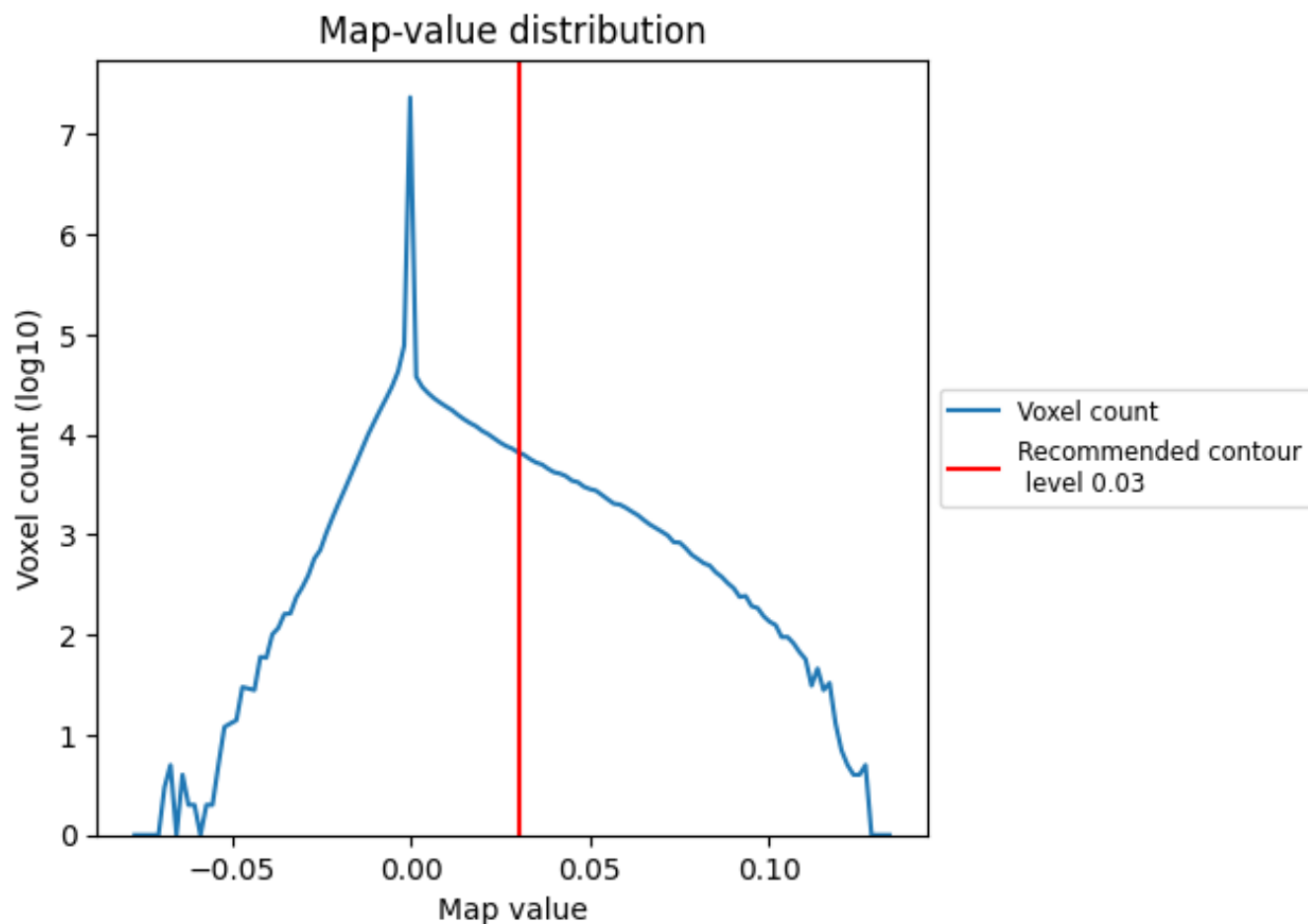
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

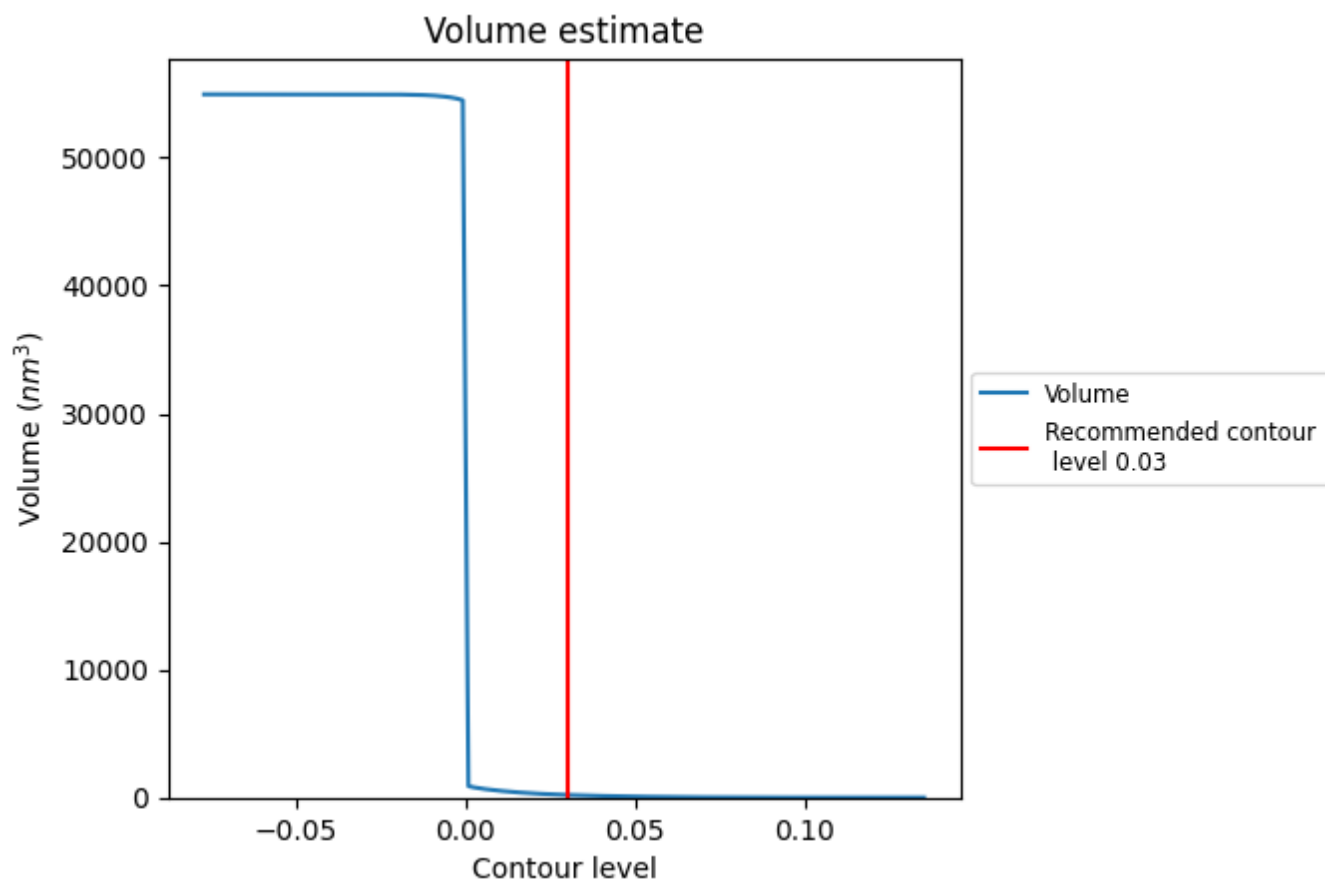
This section contains the results of statistical analysis of the map.

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.

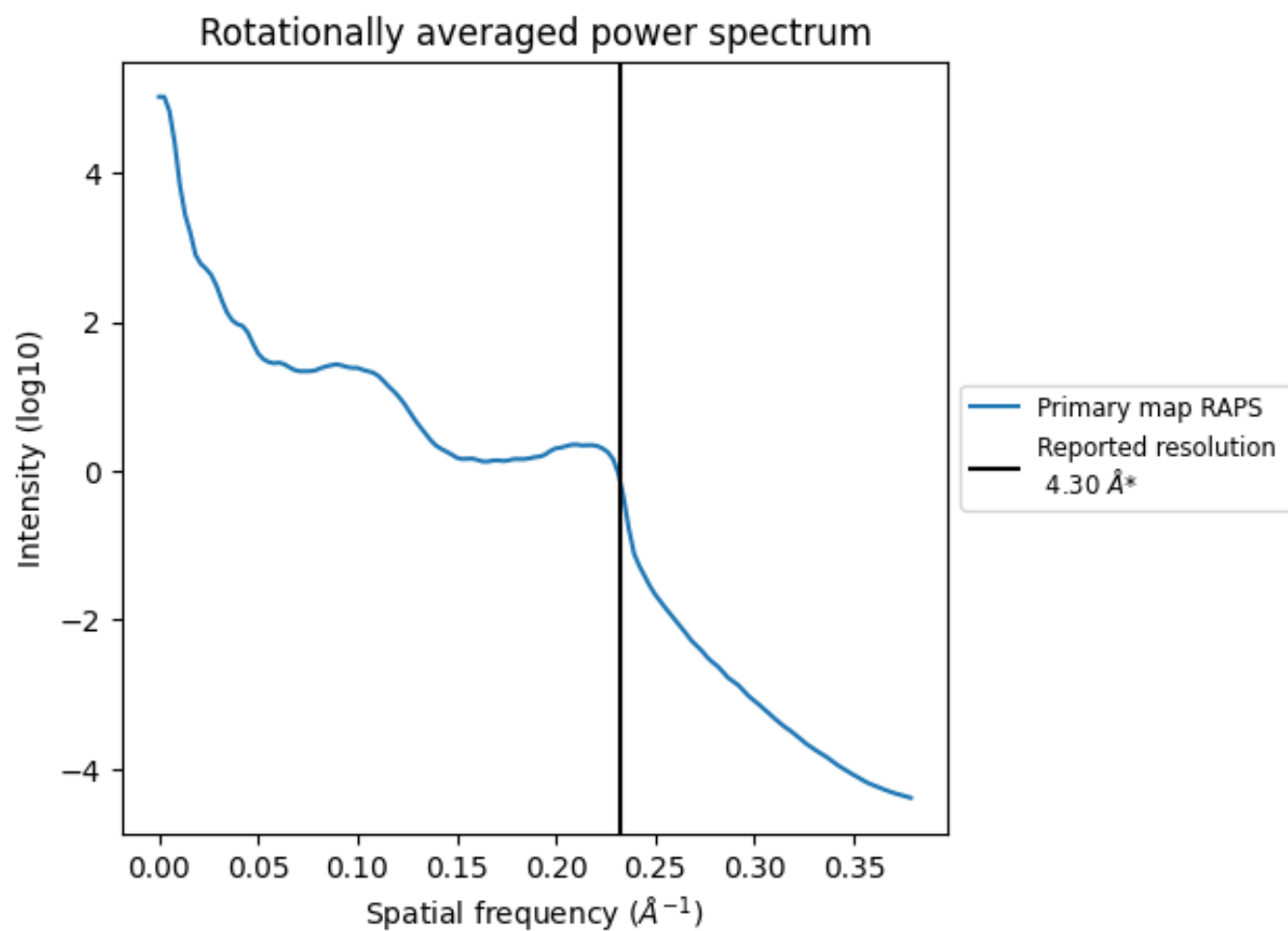
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 203 nm³; this corresponds to an approximate mass of 183 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

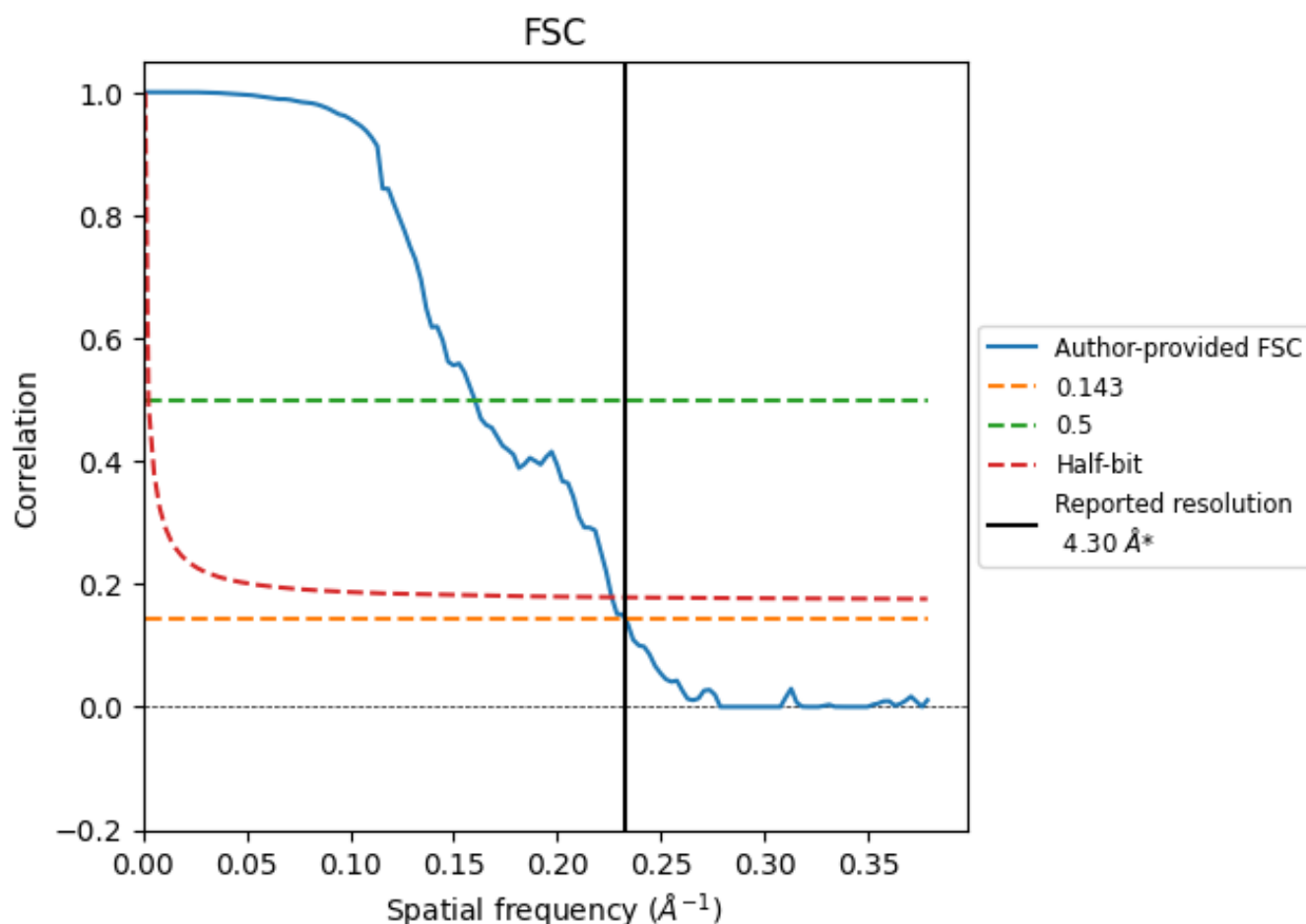


*Reported resolution corresponds to spatial frequency of 0.233 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.233 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

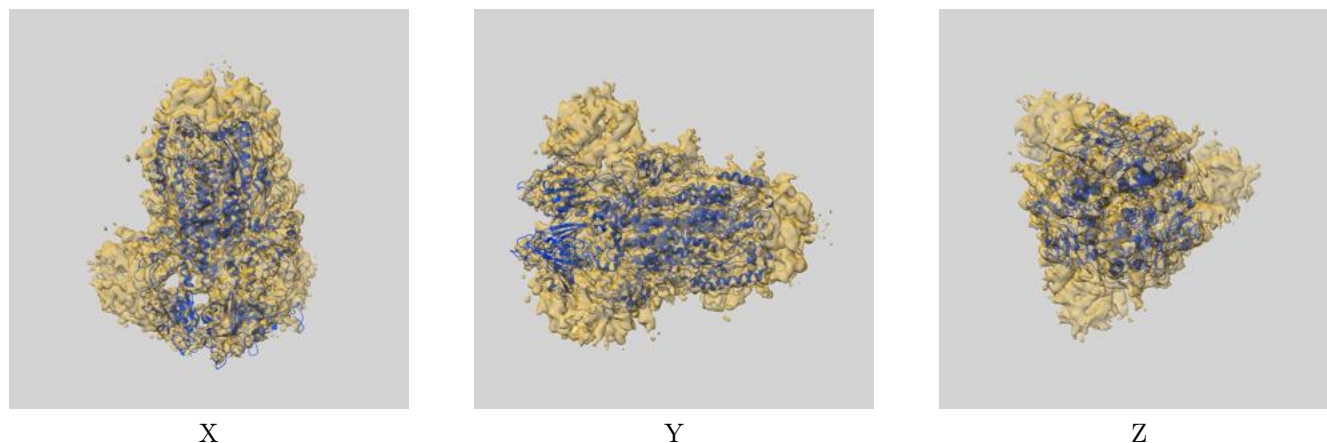
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.30	-	-
Author-provided FSC curve	4.30	6.25	4.42
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

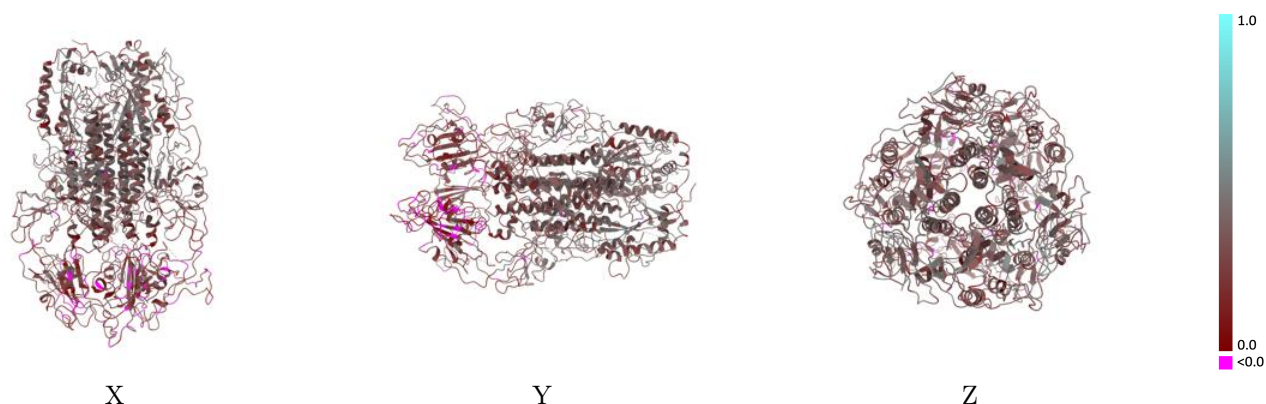
This section contains information regarding the fit between EMDB map EMD-6679 and PDB model 5WRG. Per-residue inclusion information can be found in [section 3](#) on [page 4](#).

9.1 Map-model overlay [i](#)



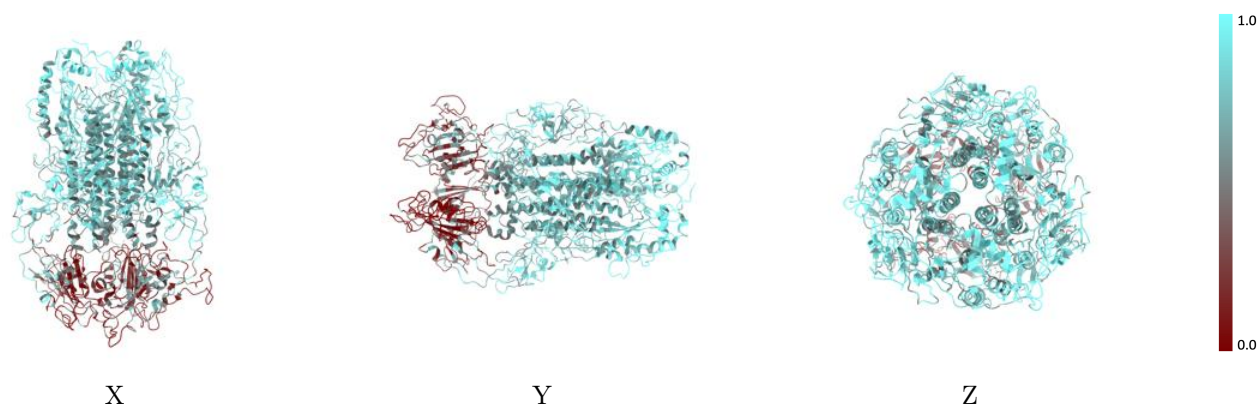
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



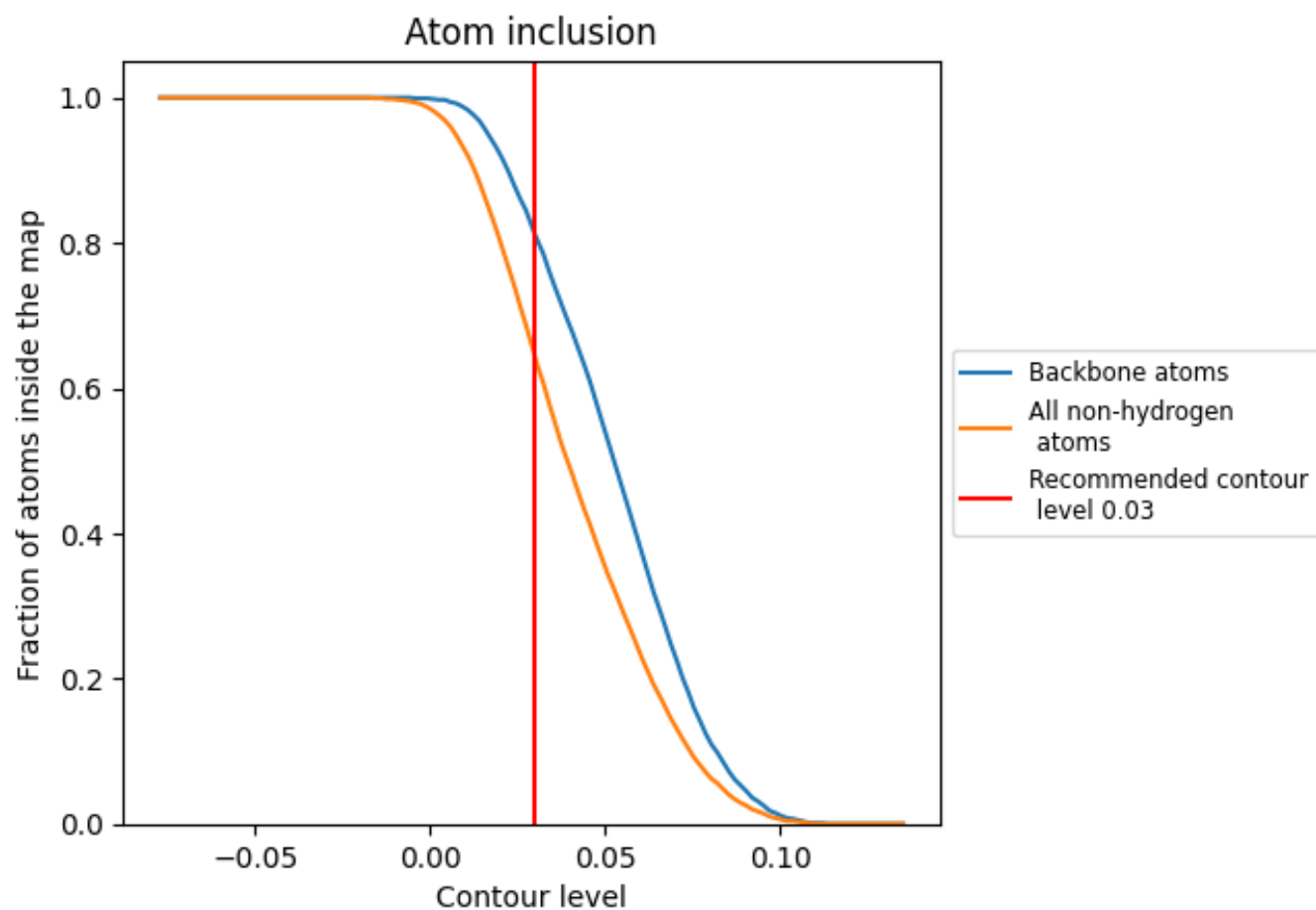
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.03).

9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 64% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6430	0.2920
A	0.6530	0.3020
B	0.6420	0.2910
C	0.6340	0.2820

