



Full wwPDB EM Validation Report ⓘ

Dec 29, 2024 – 10:30 PM EST

PDB ID : 7X30
EMDB ID : EMD-32974
Title : Capsid structure of Staphylococcus jumbo bacteriophage S6
Authors : Koibuchi, W.; Uchiyama, J.; Matsuzaki, S.; Murata, K.; Iwasaki, K.; Miyazaki, N.
Deposited on : 2022-02-27
Resolution : 3.60 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:

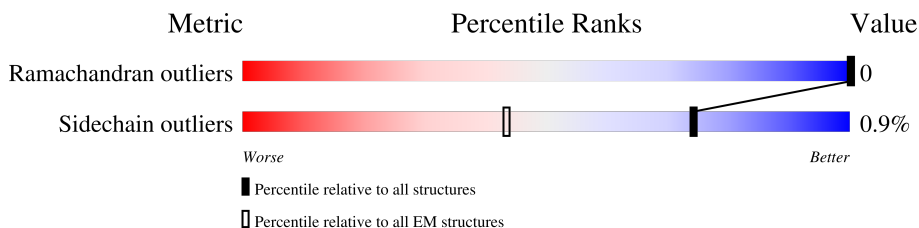
EMDB validation analysis : 0.0.1.dev113
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.40

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 3.60 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)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 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	534	81% 19%
1	a	534	83% 17%
1	b	534	85% 15%
1	c	534	85% 15%
1	d	534	85% 15%
1	e	534	85% 15%
1	f	534	85% 15%
1	g	534	85% 15%
1	h	534	85% 15%

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Mol	Chain	Length	Quality of chain
1	i	534	 85% 15%
1	j	534	 85% 15%
1	k	534	 85% 15%
1	l	534	 85% 15%
1	m	534	 85% 15%
1	n	534	 85% 15%
1	o	534	 85% 15%
1	p	534	 85% 15%
1	q	534	 85% 15%
1	r	534	 85% 15%
1	s	534	 85% 15%
1	t	534	 84% 15%
1	u	534	 84% 15%
1	v	534	 85% 15%
1	w	534	 84% 15%
1	x	534	 85% 15%
1	y	534	 85% 15%
1	z	534	 85% 15%
2	P	476	 59% 37%
2	Q	476	 59% 37%
2	R	476	 6% 59% 37%
2	S	476	 6% 59% 37%

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 105389 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 Major structural protein ORF12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	434	Total	C	N	O	S	0	0
			3394	2151	566	668	9		
1	a	444	Total	C	N	O	S	0	0
			3479	2207	581	682	9		
1	b	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	c	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	d	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	e	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	f	454	Total	C	N	O	S	0	0
			3549	2247	594	699	9		
1	g	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	h	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	i	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	j	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	k	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	l	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	m	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	n	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	o	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	p	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	q	454	Total	C	N	O	S	0	0
			3549	2247	594	699	9		
1	r	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	s	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	t	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	u	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	v	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	w	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	x	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	y	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		
1	z	454	Total	C	N	O	S	0	0
			3550	2247	595	699	9		

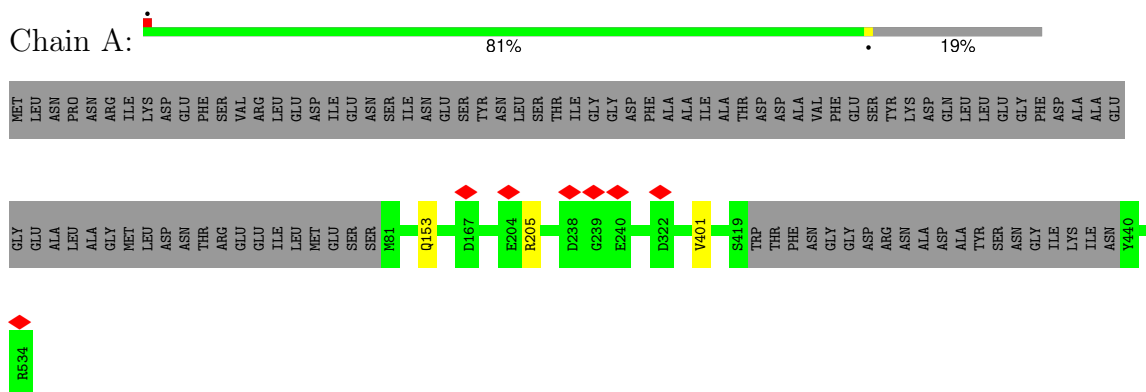
- Molecule 2 is a protein called Hoc-like protein ORF90.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	P	301	Total	C	N	O	0	0
			2442	1572	395	475		
2	Q	301	Total	C	N	O	0	0
			2442	1572	395	475		
2	R	301	Total	C	N	O	0	0
			2442	1572	395	475		
2	S	301	Total	C	N	O	0	0
			2442	1572	395	475		

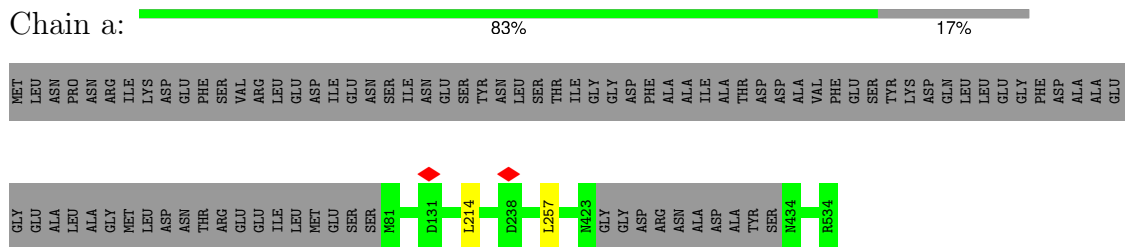
3 Residue-property plots [i](#)

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.

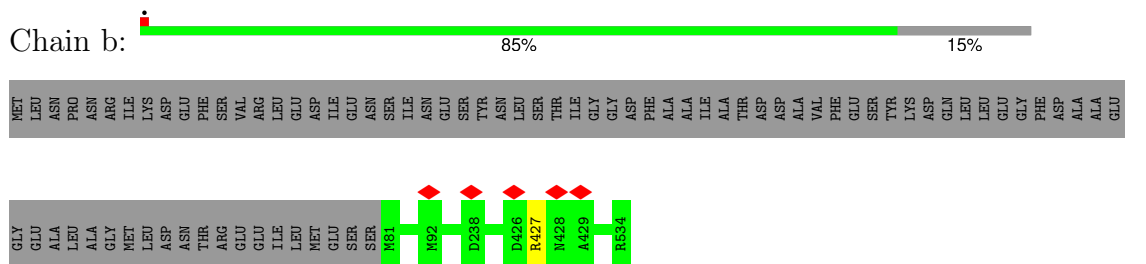
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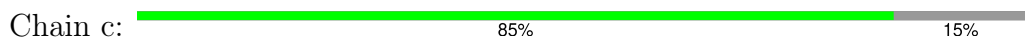
- Molecule 1: Major structural protein ORF12



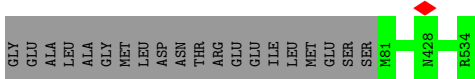
- Molecule 1: Major structural protein ORF12



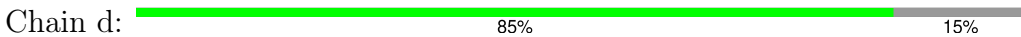
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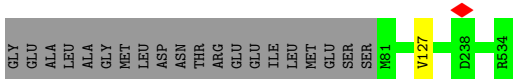
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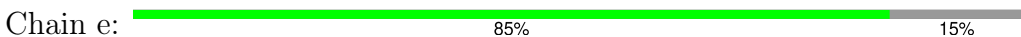
• Molecule 1: Major structural protein ORF12



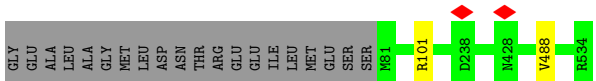
MET LEU LEU ASN ASN ASN PRO LEU LEU LEU ARG ARG ARG ARG ILE ILE LYS ASP ASP ASP ASP PHE THR THR VAL VAL ARG ARG LEU LEU LEU LEU LEU LEU ASP ASP ILE ILE ILE ILE GLU GLU GLU SER SER ASN ASN SER SER TYR ASN ASN LEU LEU LEU THR THR THR ILE ILE GLY GLY ASP ASP PHE PHE ALA ALA ALA ILE ILE ALA ALA THR THR ASP ASP ASP ASP VAL VAL PHE PHE GLU GLU TYR TYR LYS LYS ASP ASP GLN LEU LEU LEU LEU LEU GLY GLY PHE PHE ASP ASP ALA ALA ALA ALA GLU



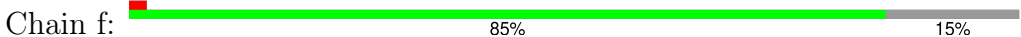
• Molecule 1: Major structural protein ORF12



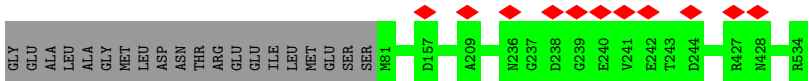
MET LEU LEU ASN ASN ASN PRO LEU LEU LEU ARG ARG ARG ARG ILE ILE LYS ASP ASP ASP ASP PHE THR THR VAL VAL ARG ARG LEU LEU LEU LEU LEU LEU ASP ASP ILE ILE ILE ILE GLU GLU GLU SER SER ASN ASN SER SER TYR ASN ASN LEU LEU LEU THR THR THR ILE ILE GLY GLY ASP ASP PHE PHE ALA ALA ALA ILE ILE ALA ALA THR THR ASP ASP ASP ASP VAL VAL PHE PHE GLU GLU TYR TYR LYS LYS ASP ASP GLN LEU LEU LEU LEU LEU GLY GLY PHE PHE ASP ASP ALA ALA ALA ALA GLU



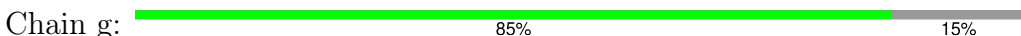
• Molecule 1: Major structural protein ORF12



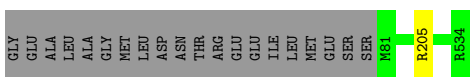
MET LEU LEU ASN ASN ASN PRO LEU LEU LEU ARG ARG ARG ARG ILE ILE LYS ASP ASP ASP ASP PHE THR THR VAL VAL ARG ARG LEU LEU LEU LEU LEU LEU ASP ASP ILE ILE ILE ILE GLU GLU GLU SER SER ASN ASN SER SER TYR ASN ASN LEU LEU LEU THR THR THR ILE ILE GLY GLY ASP ASP PHE PHE ALA ALA ALA ILE ILE ALA ALA THR THR ASP ASP ASP ASP VAL VAL PHE PHE GLU GLU TYR TYR LYS LYS ASP ASP GLN LEU LEU LEU LEU LEU GLY GLY PHE PHE ASP ASP ALA ALA ALA ALA GLU



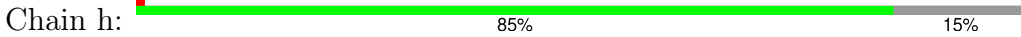
• Molecule 1: Major structural protein ORF12

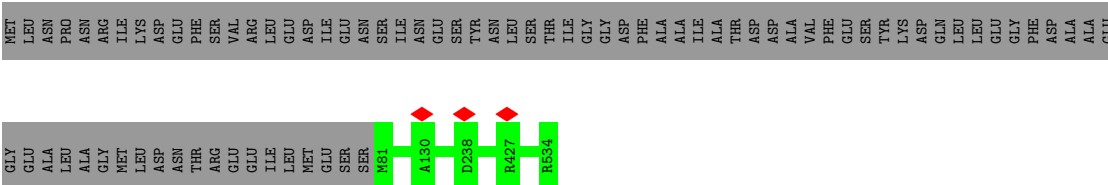


MET LEU LEU ASN ASN ASN PRO LEU LEU LEU ARG ARG ARG ARG ILE ILE LYS ASP ASP ASP ASP PHE THR THR VAL VAL ARG ARG LEU LEU LEU LEU LEU LEU ASP ASP ILE ILE ILE ILE GLU GLU GLU SER SER ASN ASN SER SER TYR ASN ASN LEU LEU LEU THR THR THR ILE ILE GLY GLY ASP ASP PHE PHE ALA ALA ALA ILE ILE ALA ALA THR THR ASP ASP ASP ASP VAL VAL PHE PHE GLU GLU TYR TYR LYS LYS ASP ASP GLN LEU LEU LEU LEU LEU GLY GLY PHE PHE ASP ASP ALA ALA ALA ALA GLU

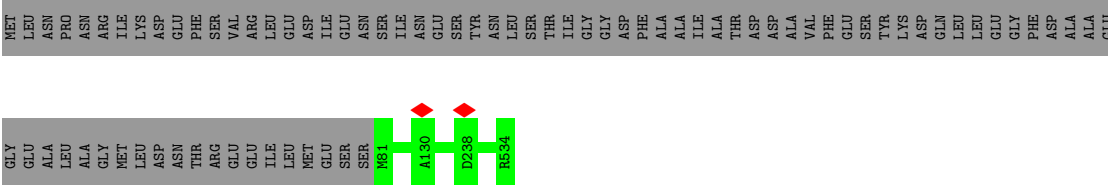
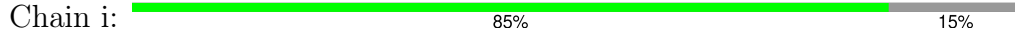


• Molecule 1: Major structural protein ORF12

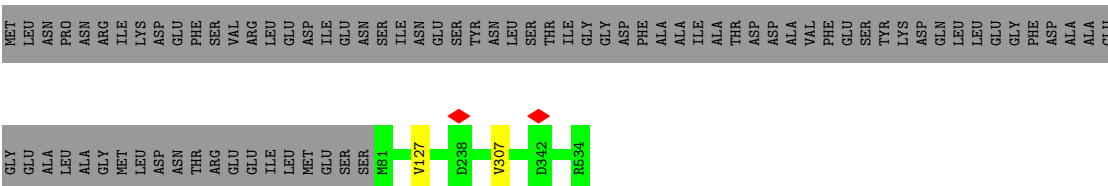
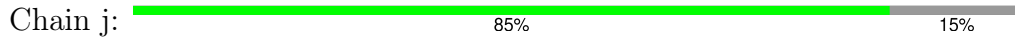




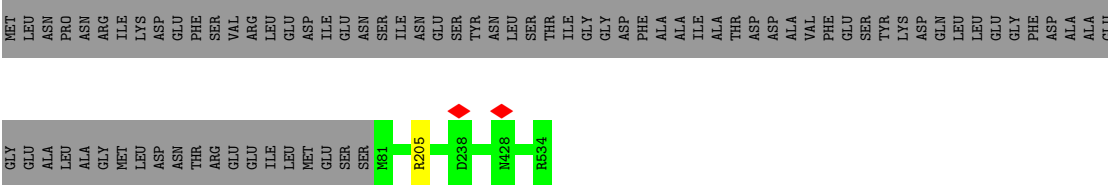
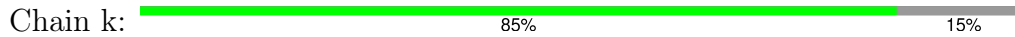
● Molecule 1: Major structural protein ORF12



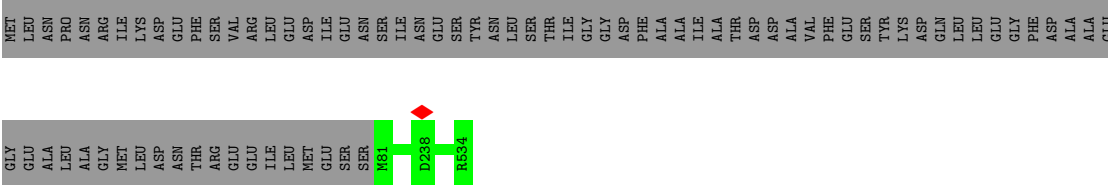
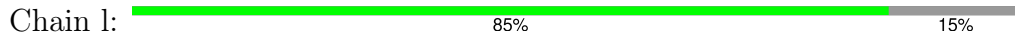
● Molecule 1: Major structural protein ORF12



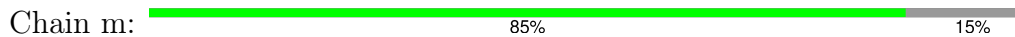
● Molecule 1: Major structural protein ORF12



● Molecule 1: Major structural protein ORF12



● Molecule 1: Major structural protein ORF12



VAL
GLU
GLU
THR
THR
PRO
GLU
GLU
THR
THR
THR
GLU

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	27164	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 ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.204	Depositor
Minimum map value	-0.095	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.009	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	1394.0, 1394.0, 1394.0	wwPDB
Map dimensions	820, 820, 820	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7, 1.7, 1.7	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	0.31	0/3459	0.54	0/4701
1	a	0.33	0/3547	0.54	0/4821
1	b	0.33	0/3620	0.56	0/4921
1	c	0.34	0/3620	0.56	0/4921
1	d	0.33	0/3620	0.56	0/4921
1	e	0.33	0/3620	0.56	0/4921
1	f	0.31	0/3619	0.55	0/4919
1	g	0.34	0/3620	0.55	0/4921
1	h	0.32	0/3620	0.55	0/4921
1	i	0.32	0/3620	0.54	0/4921
1	j	0.32	0/3620	0.54	0/4921
1	k	0.33	0/3620	0.54	0/4921
1	l	0.32	0/3620	0.53	0/4921
1	m	0.34	0/3620	0.57	0/4921
1	n	0.34	0/3620	0.56	0/4921
1	o	0.33	0/3620	0.56	0/4921
1	p	0.33	0/3620	0.54	0/4921
1	q	0.34	0/3619	0.57	0/4919
1	r	0.34	0/3620	0.55	0/4921
1	s	0.33	0/3620	0.56	0/4921
1	t	0.35	0/3620	0.59	0/4921
1	u	0.33	0/3620	0.56	0/4921
1	v	0.34	0/3620	0.56	0/4921
1	w	0.34	0/3620	0.56	0/4921
1	x	0.34	0/3620	0.57	0/4921
1	y	0.33	0/3620	0.53	0/4921
1	z	0.31	0/3620	0.53	0/4921
2	P	0.33	0/2484	0.54	0/3353
2	Q	0.33	0/2484	0.54	0/3353
2	R	0.33	0/2484	0.54	0/3353
2	S	0.34	0/2484	0.54	0/3353
All	All	0.33	0/107440	0.55	0/145955

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 [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	430/534 (80%)	394 (92%)	36 (8%)	0	100	100
1	a	440/534 (82%)	404 (92%)	36 (8%)	0	100	100
1	b	452/534 (85%)	409 (90%)	43 (10%)	0	100	100
1	c	452/534 (85%)	422 (93%)	30 (7%)	0	100	100
1	d	452/534 (85%)	420 (93%)	32 (7%)	0	100	100
1	e	452/534 (85%)	421 (93%)	31 (7%)	0	100	100
1	f	452/534 (85%)	421 (93%)	31 (7%)	0	100	100
1	g	452/534 (85%)	418 (92%)	34 (8%)	0	100	100
1	h	452/534 (85%)	413 (91%)	39 (9%)	0	100	100
1	i	452/534 (85%)	417 (92%)	35 (8%)	0	100	100
1	j	452/534 (85%)	414 (92%)	38 (8%)	0	100	100
1	k	452/534 (85%)	417 (92%)	35 (8%)	0	100	100
1	l	452/534 (85%)	423 (94%)	29 (6%)	0	100	100
1	m	452/534 (85%)	415 (92%)	37 (8%)	0	100	100
1	n	452/534 (85%)	415 (92%)	37 (8%)	0	100	100
1	o	452/534 (85%)	413 (91%)	39 (9%)	0	100	100
1	p	452/534 (85%)	410 (91%)	42 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	q	452/534 (85%)	402 (89%)	50 (11%)	0	100	100
1	r	452/534 (85%)	420 (93%)	32 (7%)	0	100	100
1	s	452/534 (85%)	416 (92%)	36 (8%)	0	100	100
1	t	452/534 (85%)	412 (91%)	40 (9%)	0	100	100
1	u	452/534 (85%)	414 (92%)	38 (8%)	0	100	100
1	v	452/534 (85%)	409 (90%)	43 (10%)	0	100	100
1	w	452/534 (85%)	407 (90%)	45 (10%)	0	100	100
1	x	452/534 (85%)	420 (93%)	32 (7%)	0	100	100
1	y	452/534 (85%)	419 (93%)	33 (7%)	0	100	100
1	z	452/534 (85%)	416 (92%)	36 (8%)	0	100	100
2	P	299/476 (63%)	277 (93%)	22 (7%)	0	100	100
2	Q	299/476 (63%)	277 (93%)	22 (7%)	0	100	100
2	R	299/476 (63%)	277 (93%)	22 (7%)	0	100	100
2	S	299/476 (63%)	277 (93%)	22 (7%)	0	100	100
All	All	13366/16322 (82%)	12289 (92%)	1077 (8%)	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	A	379/461 (82%)	376 (99%)	3 (1%)	79	88
1	a	388/461 (84%)	386 (100%)	2 (0%)	86	93
1	b	394/461 (86%)	393 (100%)	1 (0%)	91	96
1	c	394/461 (86%)	394 (100%)	0	100	100
1	d	394/461 (86%)	393 (100%)	1 (0%)	91	96
1	e	394/461 (86%)	392 (100%)	2 (0%)	86	93
1	f	393/461 (85%)	393 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	g	394/461 (86%)	393 (100%)	1 (0%)	91	96
1	h	394/461 (86%)	394 (100%)	0	100	100
1	i	394/461 (86%)	394 (100%)	0	100	100
1	j	394/461 (86%)	392 (100%)	2 (0%)	86	93
1	k	394/461 (86%)	393 (100%)	1 (0%)	91	96
1	l	394/461 (86%)	394 (100%)	0	100	100
1	m	394/461 (86%)	394 (100%)	0	100	100
1	n	394/461 (86%)	393 (100%)	1 (0%)	91	96
1	o	394/461 (86%)	392 (100%)	2 (0%)	86	93
1	p	394/461 (86%)	393 (100%)	1 (0%)	91	96
1	q	393/461 (85%)	392 (100%)	1 (0%)	91	96
1	r	394/461 (86%)	393 (100%)	1 (0%)	91	96
1	s	394/461 (86%)	394 (100%)	0	100	100
1	t	394/461 (86%)	391 (99%)	3 (1%)	79	88
1	u	394/461 (86%)	391 (99%)	3 (1%)	79	88
1	v	394/461 (86%)	394 (100%)	0	100	100
1	w	394/461 (86%)	390 (99%)	4 (1%)	73	85
1	x	394/461 (86%)	394 (100%)	0	100	100
1	y	394/461 (86%)	394 (100%)	0	100	100
1	z	394/461 (86%)	394 (100%)	0	100	100
2	P	277/434 (64%)	258 (93%)	19 (7%)	13	40
2	Q	277/434 (64%)	258 (93%)	19 (7%)	13	40
2	R	277/434 (64%)	258 (93%)	19 (7%)	13	40
2	S	277/434 (64%)	258 (93%)	19 (7%)	13	40
All	All	11723/14183 (83%)	11618 (99%)	105 (1%)	74	87

All (105) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	153	GLN
1	A	205	ARG
1	A	401	VAL
1	a	214	LEU
1	a	257	LEU

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Mol	Chain	Res	Type
1	b	427	ARG
1	d	127	VAL
1	e	101	ARG
1	e	488	VAL
1	g	205	ARG
1	j	127	VAL
1	j	307	VAL
1	k	205	ARG
1	n	241	VAL
1	o	401	VAL
1	o	497	ARG
1	p	369	ASP
1	q	124	THR
1	r	190	LYS
1	t	166	THR
1	t	190	LYS
1	t	238	ASP
1	u	144	THR
1	u	307	VAL
1	u	398	LEU
1	w	193	ILE
1	w	238	ASP
1	w	240	GLU
1	w	460	ARG
2	P	57	THR
2	P	71	SER
2	P	108	SER
2	P	156	GLU
2	P	165	VAL
2	P	189	ASP
2	P	196	SER
2	P	215	THR
2	P	217	VAL
2	P	219	LYS
2	P	233	GLU
2	P	249	SER
2	P	253	GLU
2	P	267	ILE
2	P	277	GLU
2	P	278	GLU
2	P	287	LYS
2	P	296	LYS

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Mol	Chain	Res	Type
2	P	299	LYS
2	Q	57	THR
2	Q	71	SER
2	Q	108	SER
2	Q	156	GLU
2	Q	165	VAL
2	Q	189	ASP
2	Q	196	SER
2	Q	215	THR
2	Q	217	VAL
2	Q	219	LYS
2	Q	233	GLU
2	Q	249	SER
2	Q	253	GLU
2	Q	267	ILE
2	Q	277	GLU
2	Q	278	GLU
2	Q	287	LYS
2	Q	296	LYS
2	Q	299	LYS
2	R	57	THR
2	R	71	SER
2	R	108	SER
2	R	156	GLU
2	R	165	VAL
2	R	189	ASP
2	R	196	SER
2	R	215	THR
2	R	217	VAL
2	R	219	LYS
2	R	233	GLU
2	R	249	SER
2	R	253	GLU
2	R	267	ILE
2	R	277	GLU
2	R	278	GLU
2	R	287	LYS
2	R	296	LYS
2	R	299	LYS
2	S	57	THR
2	S	71	SER
2	S	108	SER

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Mol	Chain	Res	Type
2	S	156	GLU
2	S	165	VAL
2	S	189	ASP
2	S	196	SER
2	S	215	THR
2	S	217	VAL
2	S	219	LYS
2	S	233	GLU
2	S	249	SER
2	S	253	GLU
2	S	267	ILE
2	S	277	GLU
2	S	278	GLU
2	S	287	LYS
2	S	296	LYS
2	S	299	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (123) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	224	ASN
1	A	373	HIS
1	A	471	GLN
1	A	527	ASN
1	a	142	ASN
1	a	153	GLN
1	a	236	ASN
1	a	472	GLN
1	b	135	HIS
1	b	279	GLN
1	b	301	GLN
1	b	333	GLN
1	b	373	HIS
1	b	434	ASN
1	b	472	GLN
1	b	474	ASN
1	b	500	ASN
1	c	224	ASN
1	c	301	GLN
1	c	373	HIS
1	c	489	ASN
1	c	503	ASN

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Mol	Chain	Res	Type
1	c	527	ASN
1	d	222	GLN
1	d	402	GLN
1	d	423	ASN
1	e	85	GLN
1	e	313	GLN
1	e	495	ASN
1	e	500	ASN
1	f	236	ASN
1	f	373	HIS
1	g	285	ASN
1	g	373	HIS
1	g	408	ASN
1	g	471	GLN
1	h	279	GLN
1	h	526	ASN
1	i	135	HIS
1	i	301	GLN
1	i	367	HIS
1	i	495	ASN
1	j	285	ASN
1	j	428	ASN
1	j	486	ASN
1	k	85	GLN
1	k	153	GLN
1	k	402	GLN
1	k	486	ASN
1	l	390	GLN
1	l	495	ASN
1	m	417	ASN
1	n	143	ASN
1	n	224	ASN
1	n	402	GLN
1	n	417	ASN
1	n	495	ASN
1	n	498	ASN
1	n	503	ASN
1	o	337	GLN
1	o	472	GLN
1	p	236	ASN
1	p	373	HIS
1	p	402	GLN

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Mol	Chain	Res	Type
1	p	417	ASN
1	q	143	ASN
1	q	279	GLN
1	q	313	GLN
1	q	402	GLN
1	q	417	ASN
1	q	486	ASN
1	q	498	ASN
1	r	135	HIS
1	r	224	ASN
1	r	279	GLN
1	r	285	ASN
1	r	417	ASN
1	s	301	GLN
1	s	367	HIS
1	s	387	HIS
1	s	390	GLN
1	s	402	GLN
1	s	471	GLN
1	s	486	ASN
1	s	503	ASN
1	t	143	ASN
1	t	230	GLN
1	t	394	ASN
1	t	417	ASN
1	t	472	GLN
1	u	143	ASN
1	u	285	ASN
1	v	280	HIS
1	v	367	HIS
1	v	373	HIS
1	v	402	GLN
1	w	402	GLN
1	x	135	HIS
1	x	222	GLN
1	x	224	ASN
1	x	301	GLN
1	x	313	GLN
1	x	367	HIS
1	x	417	ASN
1	x	486	ASN
1	z	133	ASN

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Mol	Chain	Res	Type
1	z	143	ASN
1	z	285	ASN
1	z	302	HIS
1	z	313	GLN
1	z	333	GLN
2	P	188	GLN
2	P	271	ASN
2	Q	80	ASN
2	Q	188	GLN
2	Q	271	ASN
2	R	188	GLN
2	R	271	ASN
2	S	80	ASN
2	S	158	HIS
2	S	188	GLN
2	S	264	GLN
2	S	271	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

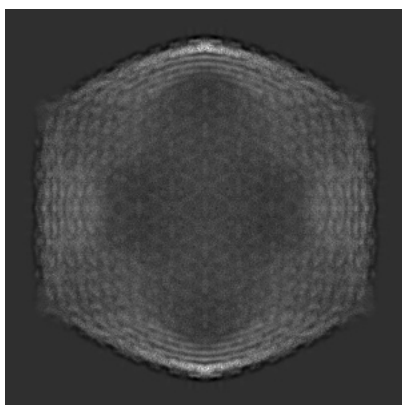
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32974. These allow visual inspection of the internal detail of the map and identification of artifacts.

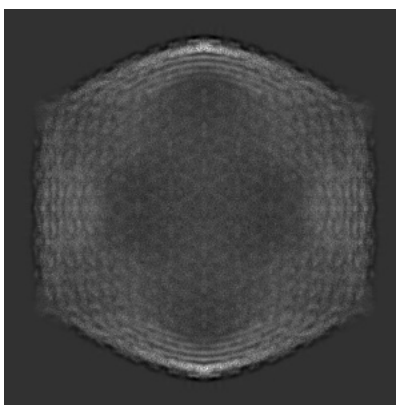
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

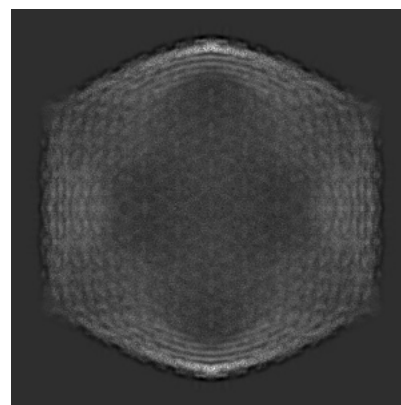
6.1.1 Primary map



X



Y

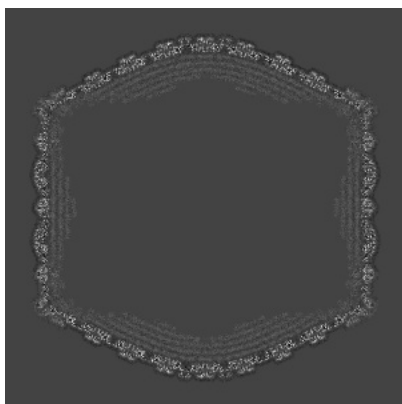


Z

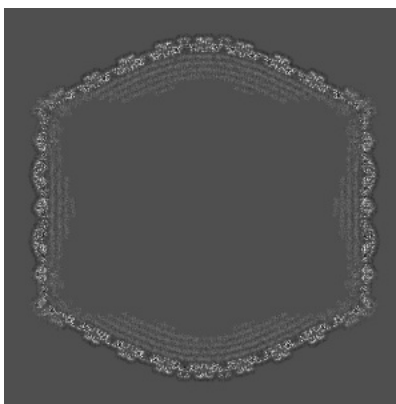
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

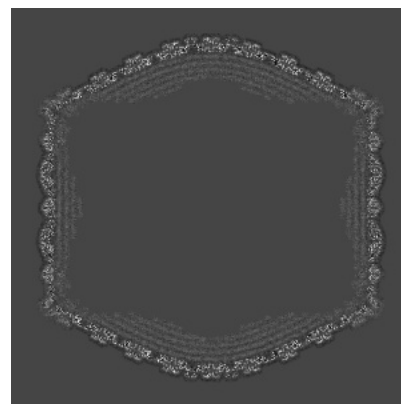
6.2.1 Primary map



X Index: 410



Y Index: 410

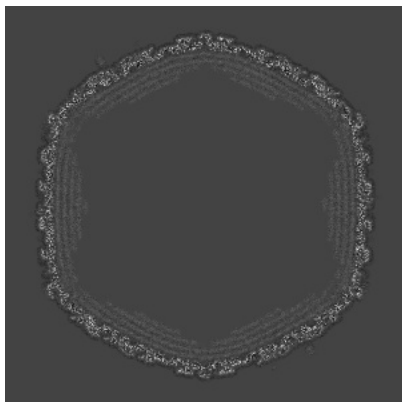


Z Index: 410

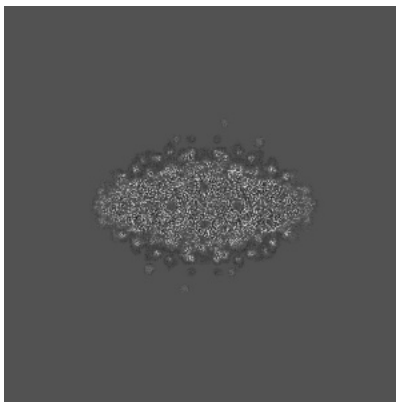
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

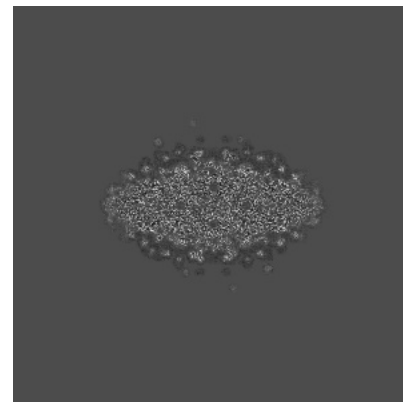
6.3.1 Primary map



X Index: 344



Y Index: 86

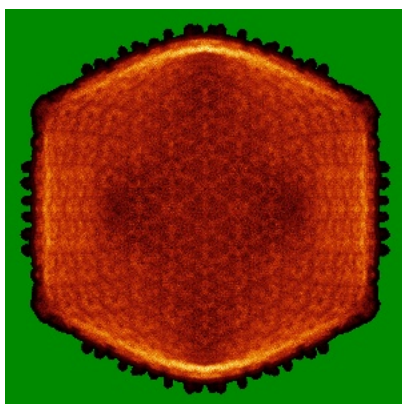


Z Index: 734

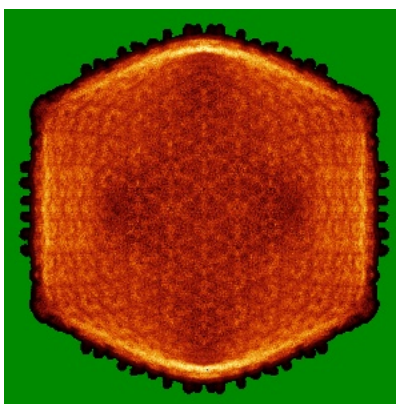
The images above show the largest variance slices of the map in three orthogonal directions.

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

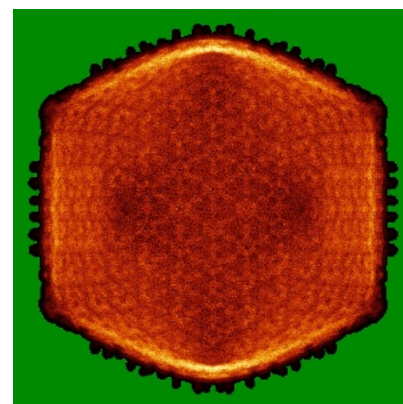
6.4.1 Primary map



X



Y

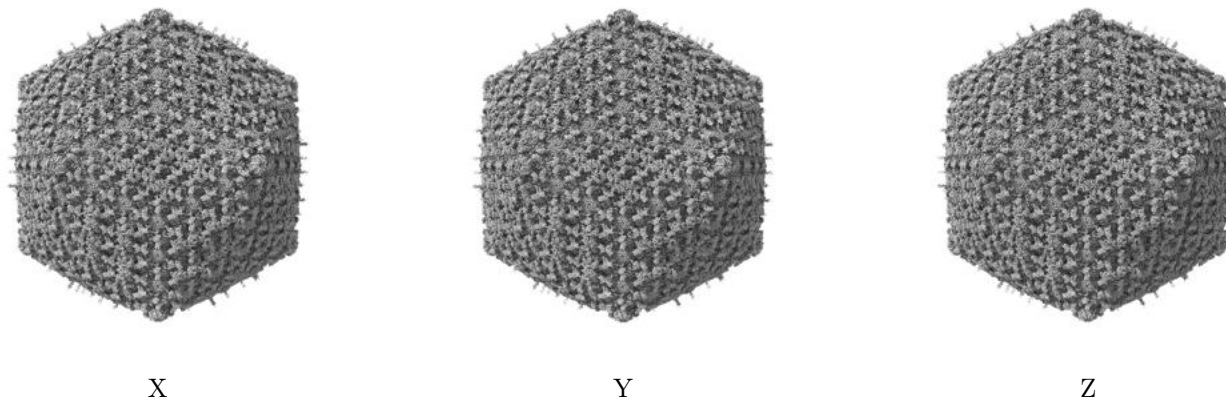


Z

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 0.02. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

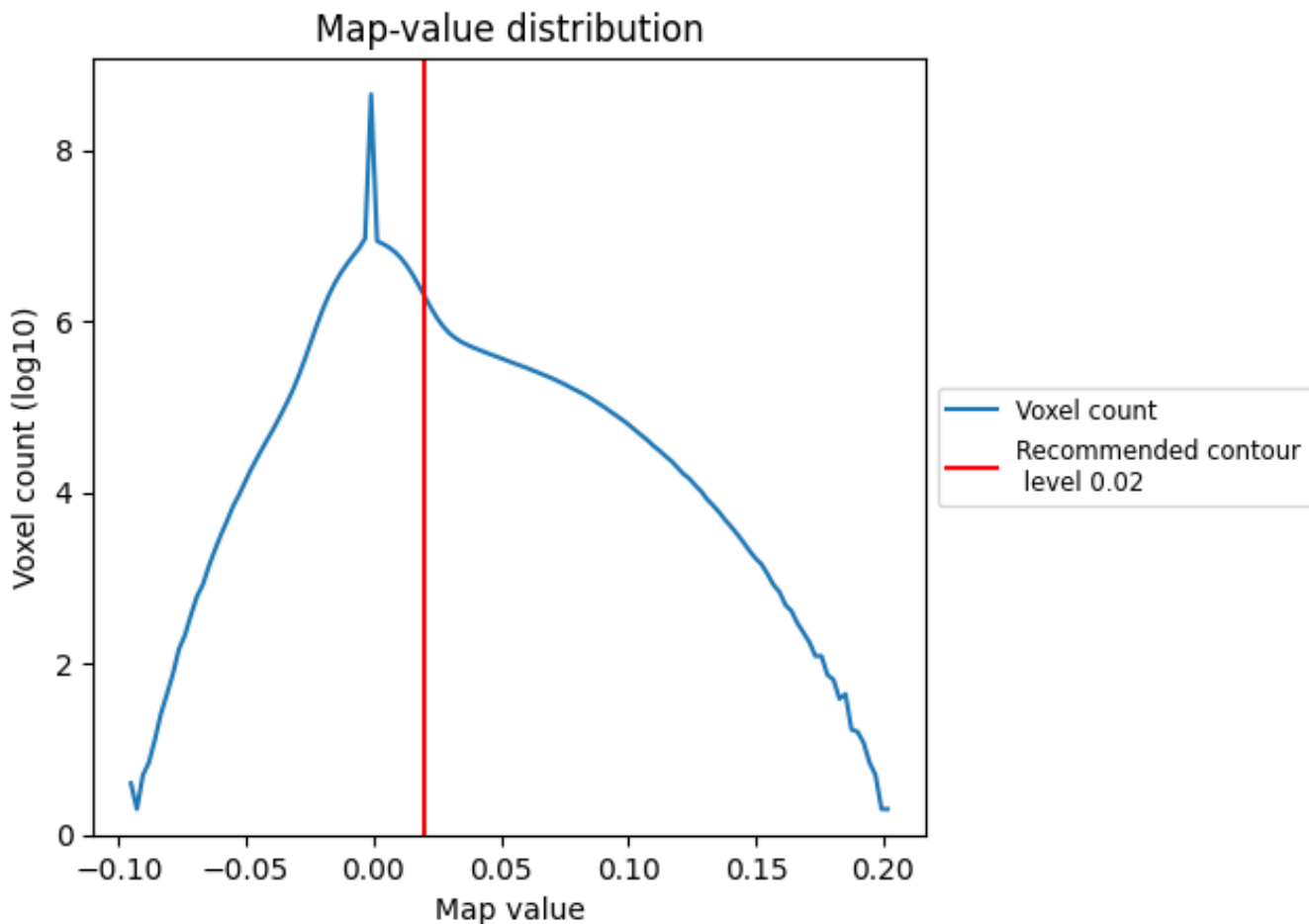
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

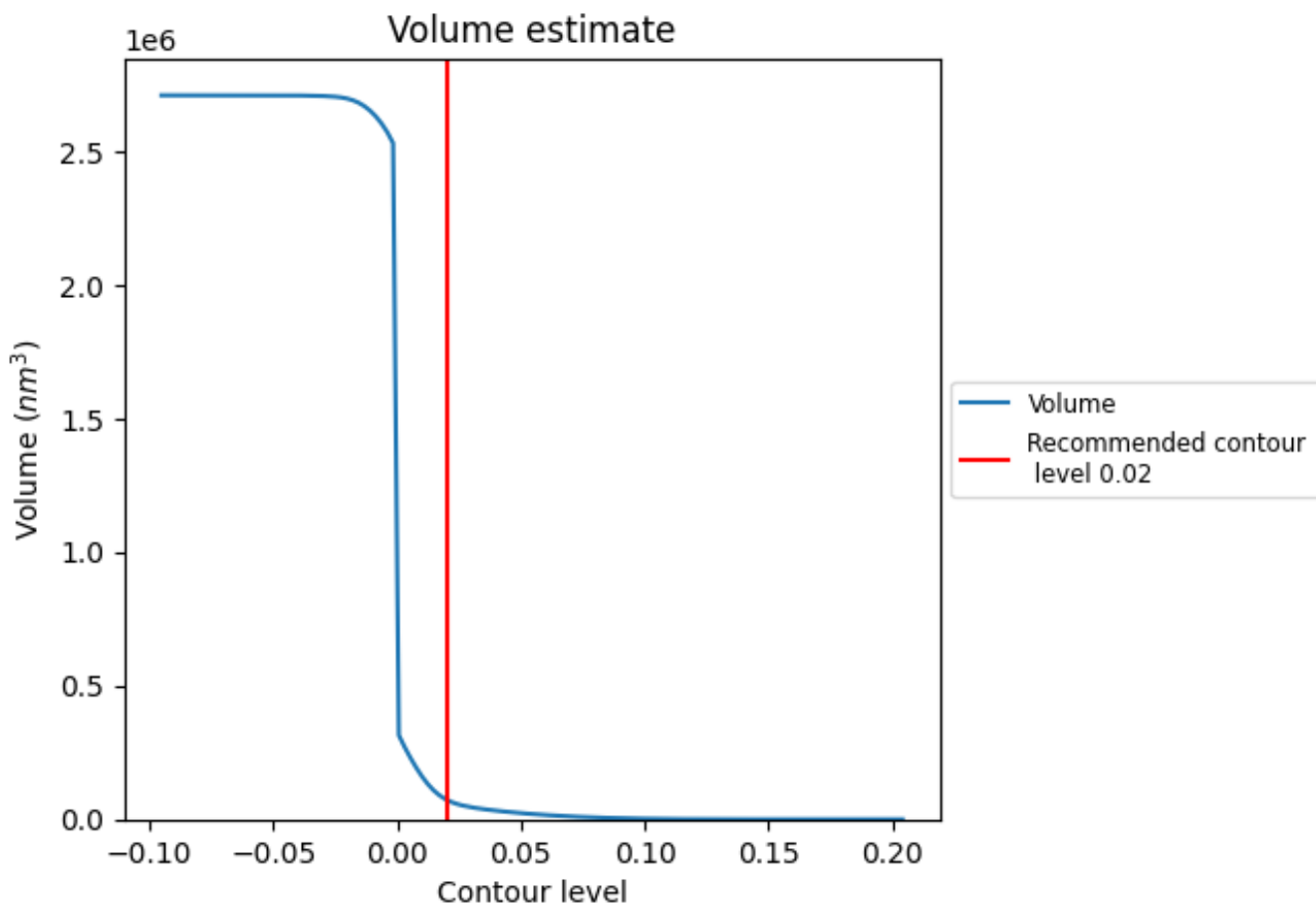
This section contains the results of statistical analysis of the map.

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.

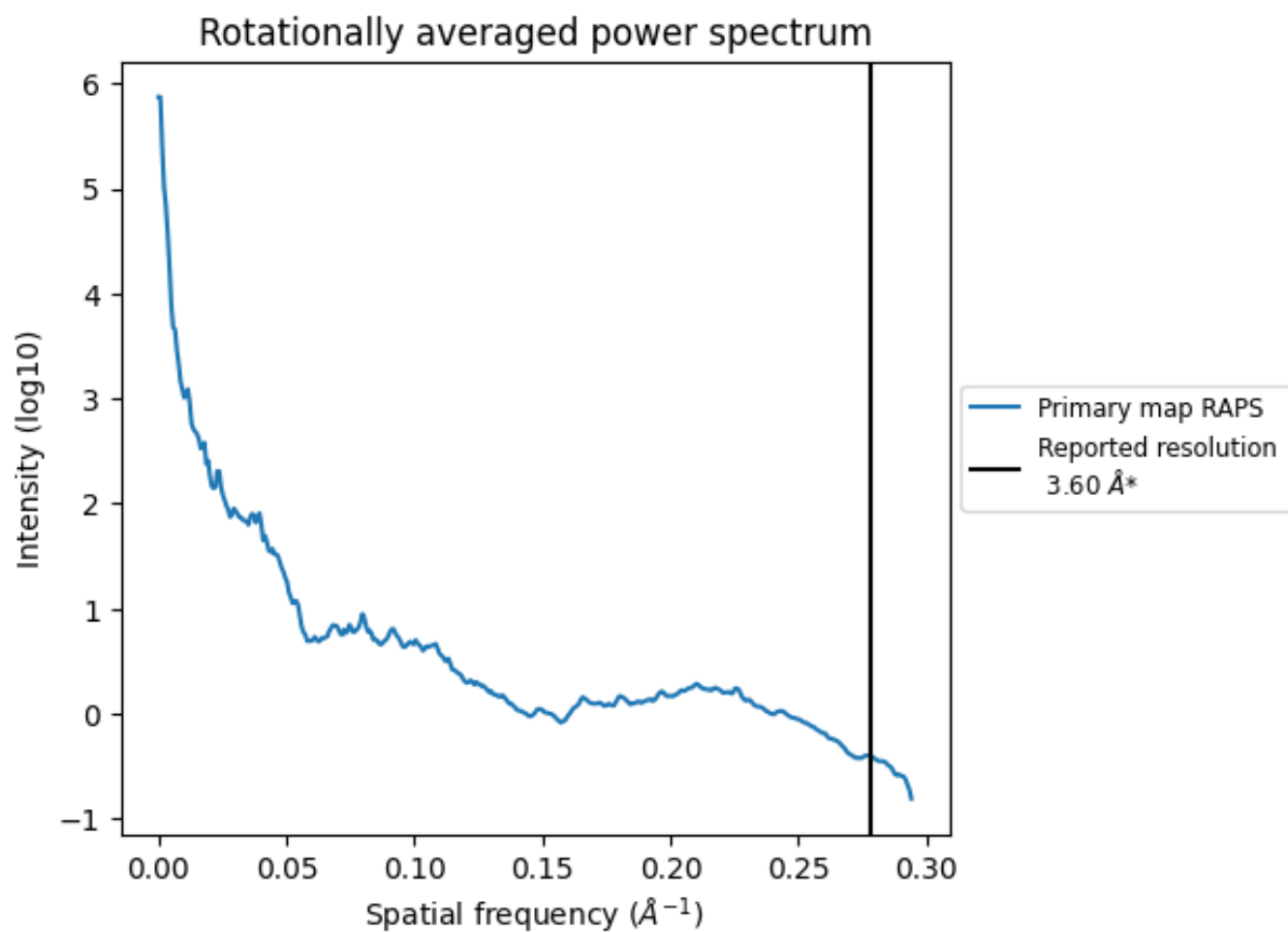
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 73369 nm^3 ; this corresponds to an approximate mass of 66276 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](#)

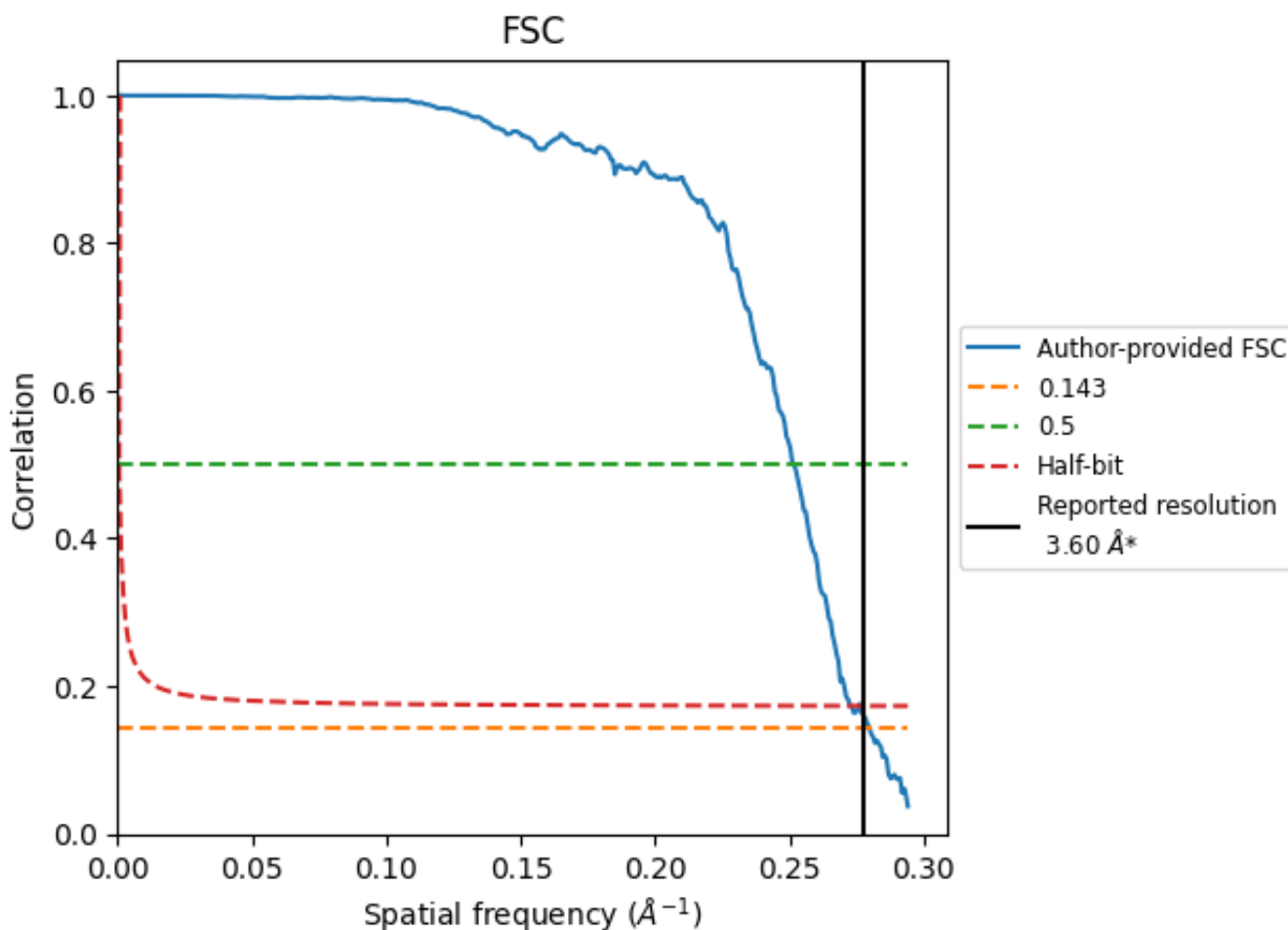


*Reported resolution corresponds to spatial frequency of 0.278 Å⁻¹

8 Fourier-Shell correlation [\(i\)](#)

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

8.1 FSC [\(i\)](#)



*Reported resolution corresponds to spatial frequency of 0.278 Å⁻¹

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	3.57	3.97	3.66
Unmasked-calculated*	-	-	-

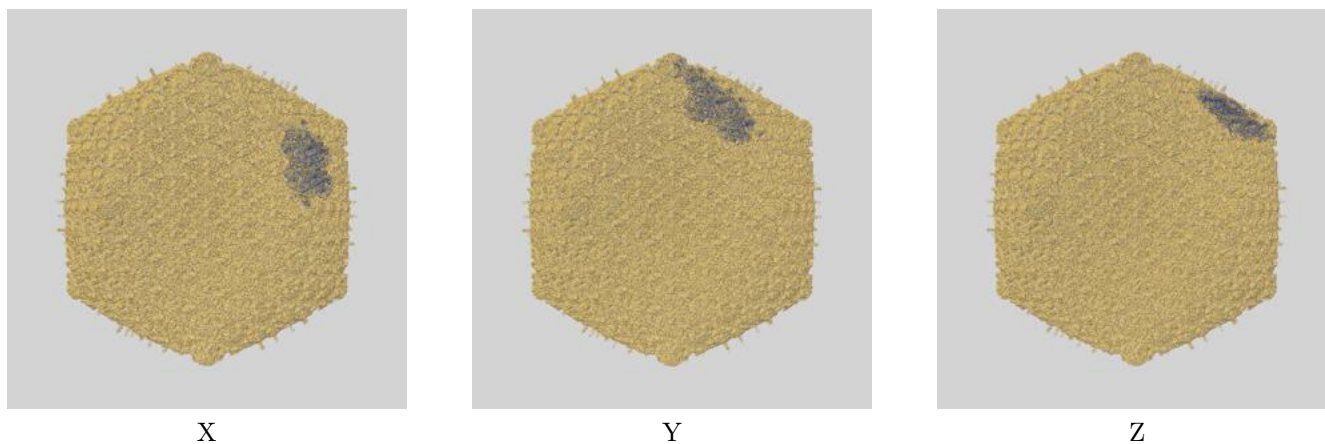
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

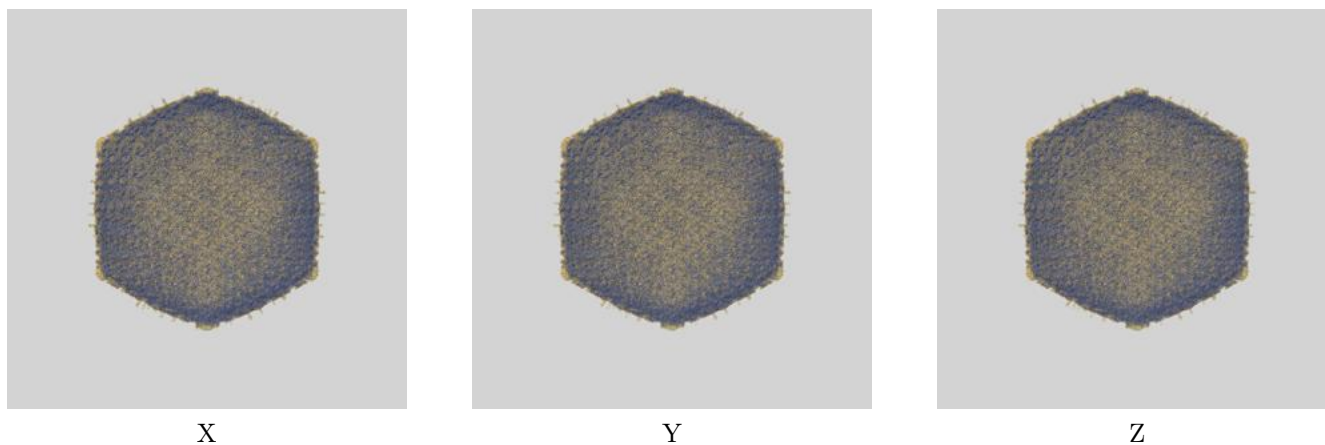
This section contains information regarding the fit between EMDB map EMD-32974 and PDB model 7X30. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlays

9.1.1 Map-model overlay [i](#)

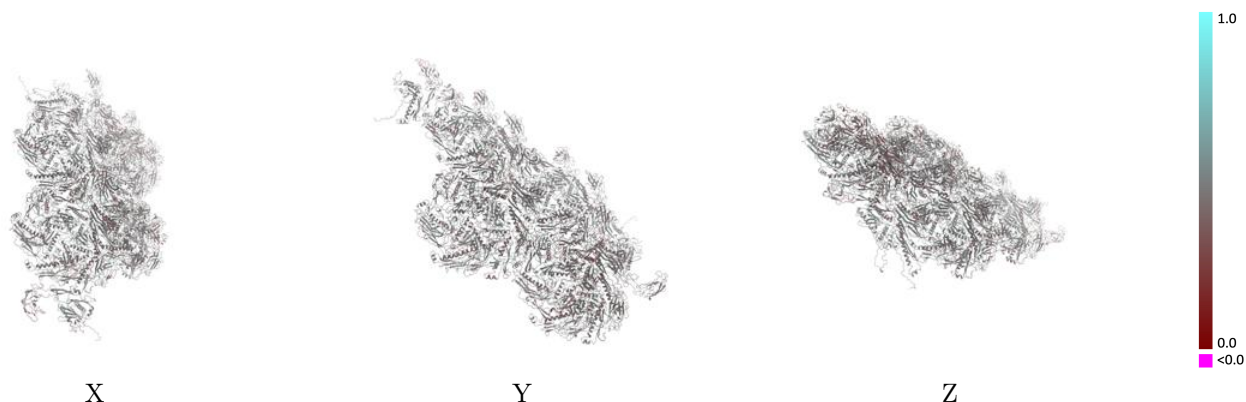


9.1.2 Map-model assembly overlay [i](#)



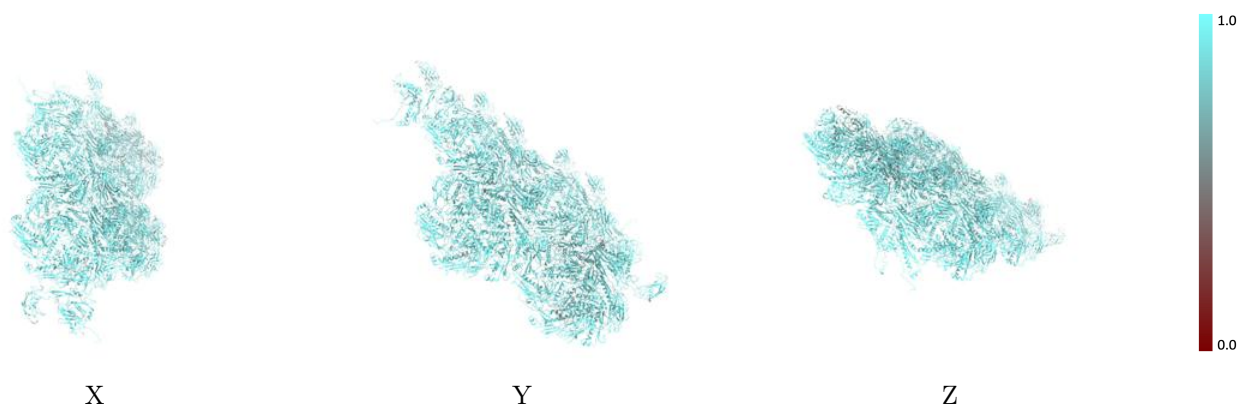
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



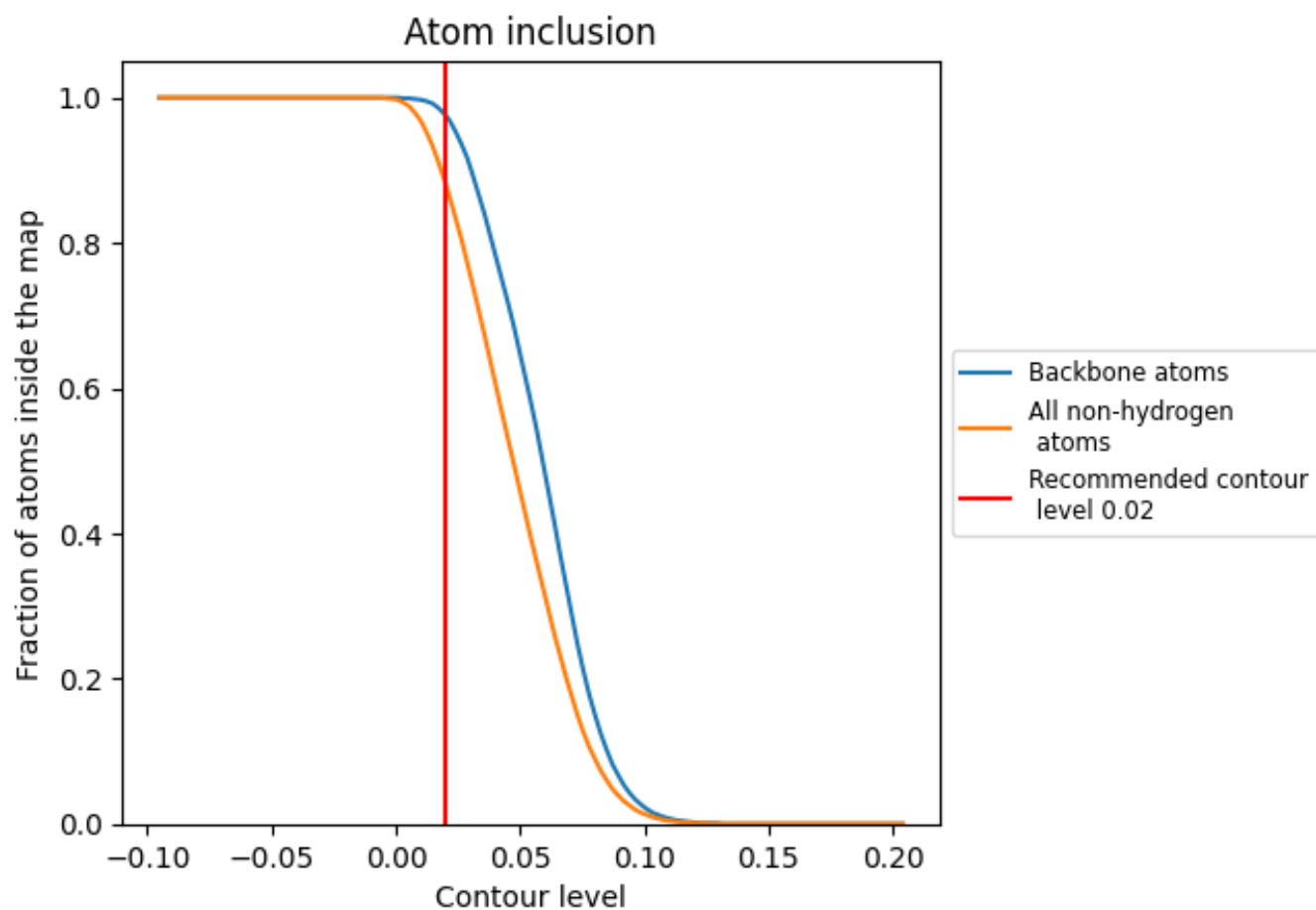
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.02).

































































9.4 Atom inclusion [i](#)



At the recommended contour level, 98% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8820	 0.4580
A	 0.8320	 0.4430
P	 0.8520	 0.4280
Q	 0.8460	 0.4260
R	 0.7070	 0.3870
S	 0.6910	 0.3680
a	 0.8950	 0.4640
b	 0.8910	 0.4630
c	 0.8900	 0.4650
d	 0.8920	 0.4680
e	 0.8940	 0.4630
f	 0.8590	 0.4570
g	 0.9040	 0.4660
h	 0.9020	 0.4650
i	 0.8990	 0.4660
j	 0.9010	 0.4680
k	 0.9060	 0.4680
l	 0.9000	 0.4650
m	 0.8930	 0.4630
n	 0.8930	 0.4670
o	 0.8920	 0.4630
p	 0.8980	 0.4600
q	 0.8880	 0.4660
r	 0.8850	 0.4620
s	 0.8960	 0.4630
t	 0.8930	 0.4620
u	 0.8950	 0.4580
v	 0.9020	 0.4640
w	 0.8980	 0.4630
x	 0.8980	 0.4660
y	 0.9100	 0.4640
z	 0.9030	 0.4670

