



Full wwPDB EM Validation Report ⓘ

Apr 3, 2024 – 08:54 PM JST

PDB ID : 8KEA
EMDB ID : EMD-37151
Title : Cyanophage A-1(L) baseplate-initiators
Authors : Yu, R.C.; Li, Q.; Zhou, C.Z.
Deposited on : 2023-08-11
Resolution : 3.44 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:

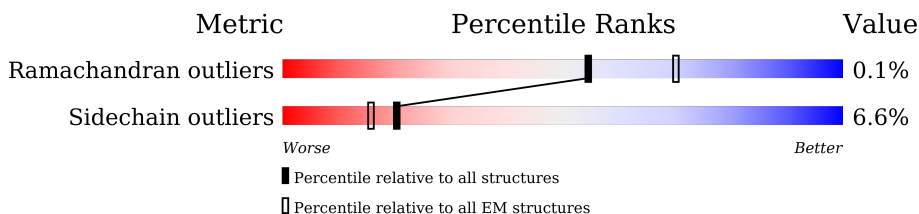
EMDB validation analysis : 0.0.1.dev70
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

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 3.44 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	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	899	
1	B	899	
1	C	899	
2	D	270	
2	E	270	
2	F	270	
3	G	689	
3	H	689	
3	I	689	

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Mol	Chain	Length	Quality of chain
4	J	155	32% 81% 17%
4	K	155	25% 85% 14%
4	L	155	36% 79% 19%
4	M	155	26% 87% 12%
4	N	155	36% 82% 15%
4	O	155	26% 81% 18%
5	P	282	16% 93% 6%
5	Q	282	13% 90% 9%
5	R	282	17% 93% 6%
5	S	282	14% 93% 6%
5	T	282	17% 92% 7%
5	U	282	13% 94% 5%
6	V	114	15% 94% 5%
6	W	114	18% 95% ..
6	X	114	15% 94% 5%
6	Y	114	17% 96% ..
6	Z	114	15% 92% 7%
6	a	114	19% 93% 6%
7	b	390	11% 98% ..
7	d	390	12% 95% ..
7	e	390	13% 94% 5%
7	g	390	11% 94% ..
7	h	390	12% 95% ..
7	j	390	12% 95% ..
7	k	390	13% 95% ..

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Mol	Chain	Length	Quality of chain
7	m	390	 12% 94% 6% 2%
7	n	390	 11% 97% 6% 2%
7	p	390	 13% 95% 6% 2%
7	q	390	 13% 93% 6% 2%
7	s	390	 11% 94% 6% 2%
8	c	191	 8% 96% 6% 2%
8	f	191	 9% 95% 6% 2%
8	i	191	 7% 95% 6% 2%
8	l	191	 9% 93% 6% 2%
8	o	191	 8% 95% 6% 2%
8	r	191	 12% 94% 6% 2%

2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 97165 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 hub.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	878	Total 6783	C 4258	N 1169	O 1345	S 11	0	0
1	B	878	Total 6783	C 4258	N 1169	O 1345	S 11	0	0
1	C	878	Total 6783	C 4258	N 1169	O 1345	S 11	0	0

- Molecule 2 is a protein called central spike.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	D	245	Total 1899	C 1178	N 335	O 380	S 6	0	0
2	E	245	Total 1899	C 1178	N 335	O 380	S 6	0	0
2	F	245	Total 1899	C 1178	N 335	O 380	S 6	0	0

- Molecule 3 is a protein called tmp.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	G	24	Total 187	C 118	N 31	O 38	0	0
3	H	24	Total 187	C 118	N 31	O 38	0	0
3	I	24	Total 187	C 118	N 31	O 38	0	0

- Molecule 4 is a protein called baseplate gp16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	J	151	Total 1173	C 742	N 191	O 239	S 1	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
4	K	154	Total	C	N	O	S	0	0
			1198	755	196	246	1		
4	L	151	Total	C	N	O	S	0	0
			1173	742	191	239	1		
4	M	153	Total	C	N	O	S	0	0
			1188	750	194	243	1		
4	N	151	Total	C	N	O	S	0	0
			1173	742	191	239	1		
4	O	153	Total	C	N	O	S	0	0
			1188	750	194	243	1		

- Molecule 5 is a protein called tube initiator.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	P	279	Total	C	N	O	S	0	0
			2217	1413	379	417	8		
5	Q	279	Total	C	N	O	S	0	0
			2217	1413	379	417	8		
5	R	281	Total	C	N	O	S	0	0
			2238	1424	385	421	8		
5	S	279	Total	C	N	O	S	0	0
			2217	1413	379	417	8		
5	T	279	Total	C	N	O	S	0	0
			2217	1413	379	417	8		
5	U	279	Total	C	N	O	S	0	0
			2217	1413	379	417	8		

- Molecule 6 is a protein called sheath initiator.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	V	113	Total	C	N	O	S	0	0
			907	586	142	178	1		
6	W	113	Total	C	N	O	S	0	0
			907	586	142	178	1		
6	X	113	Total	C	N	O	S	0	0
			907	586	142	178	1		
6	Y	113	Total	C	N	O	S	0	0
			907	586	142	178	1		
6	Z	113	Total	C	N	O	S	0	0
			907	586	142	178	1		
6	a	113	Total	C	N	O	S	0	0
			907	586	142	178	1		

- Molecule 7 is a protein called wedge protein gp31.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	b	386	Total	C	N	O	S	0	0
			2952	1882	479	582	9		
7	d	382	Total	C	N	O	S	0	0
			2918	1863	474	572	9		
7	e	386	Total	C	N	O	S	0	0
			2952	1882	479	582	9		
7	g	382	Total	C	N	O	S	0	0
			2918	1863	474	572	9		
7	h	386	Total	C	N	O	S	0	0
			2952	1882	479	582	9		
7	j	382	Total	C	N	O	S	0	0
			2918	1863	474	572	9		
7	k	386	Total	C	N	O	S	0	0
			2952	1882	479	582	9		
7	m	382	Total	C	N	O	S	0	0
			2918	1863	474	572	9		
7	n	386	Total	C	N	O	S	0	0
			2952	1882	479	582	9		
7	p	382	Total	C	N	O	S	0	0
			2918	1863	474	572	9		
7	q	386	Total	C	N	O	S	0	0
			2952	1882	479	582	9		
7	s	382	Total	C	N	O	S	0	0
			2918	1863	474	572	9		

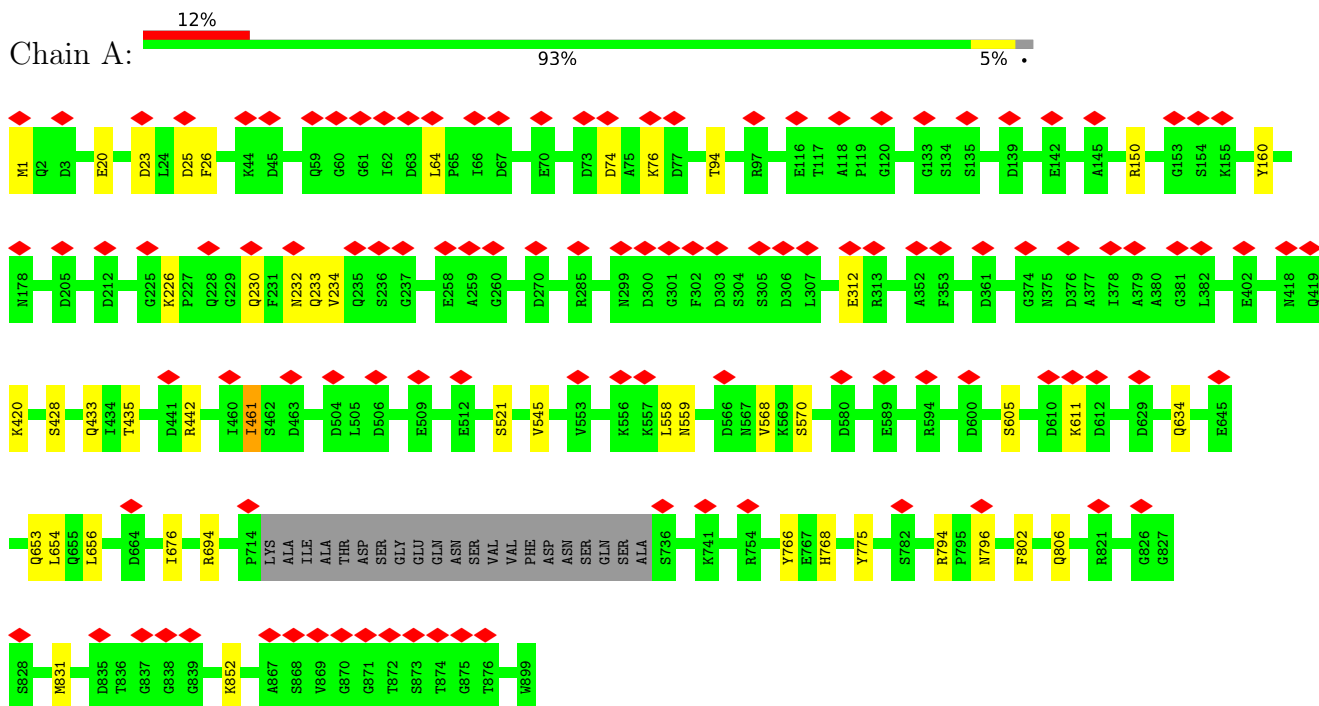
- Molecule 8 is a protein called wedge protein gp32.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	c	190	Total	C	N	O	S	0	0
			1580	1032	254	289	5		
8	f	190	Total	C	N	O	S	0	0
			1580	1032	254	289	5		
8	i	190	Total	C	N	O	S	0	0
			1580	1032	254	289	5		
8	l	190	Total	C	N	O	S	0	0
			1580	1032	254	289	5		
8	o	190	Total	C	N	O	S	0	0
			1580	1032	254	289	5		
8	r	190	Total	C	N	O	S	0	0
			1580	1032	254	289	5		

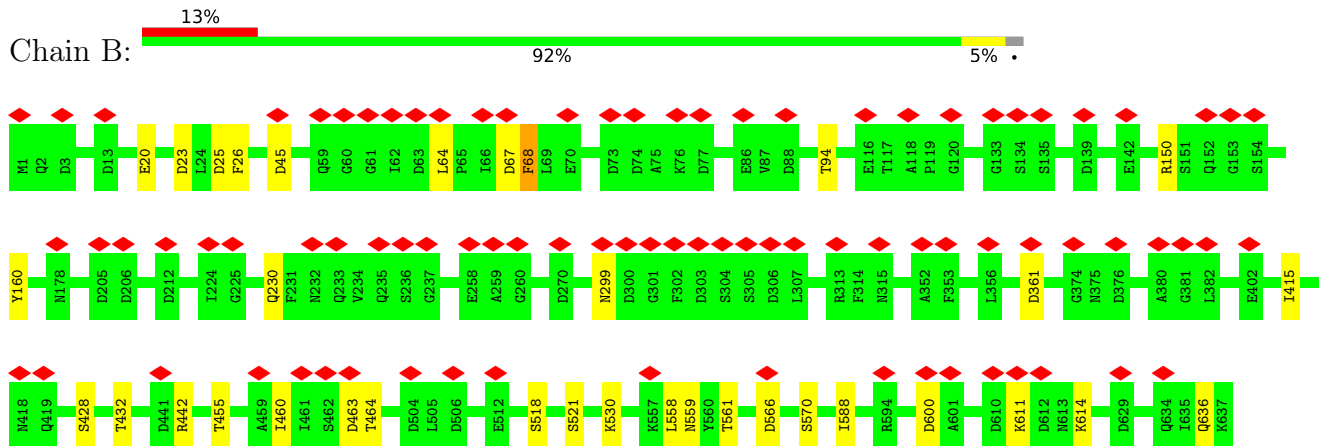
3 Residue-property plots

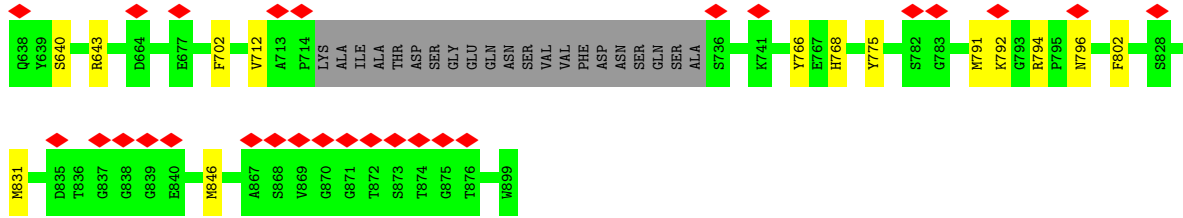
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

- Molecule 1: hub

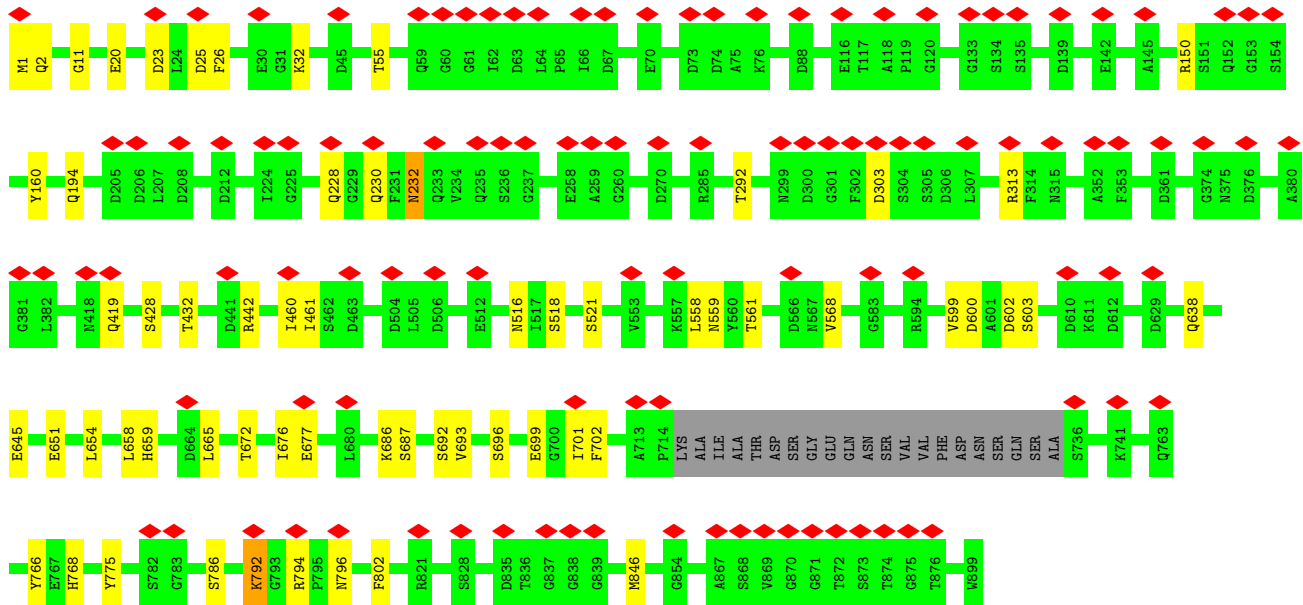
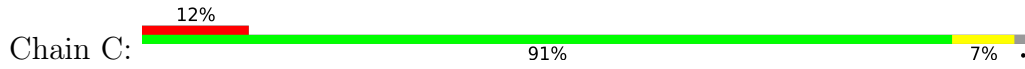


- Molecule 1: hub

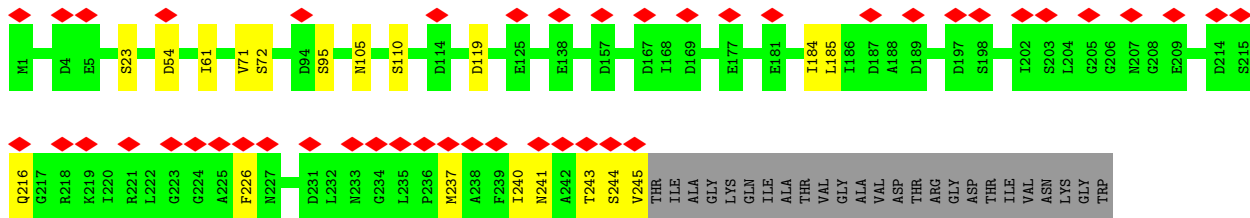
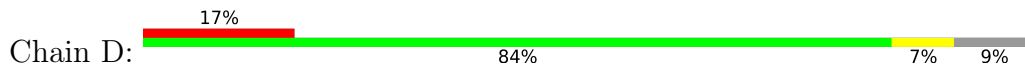




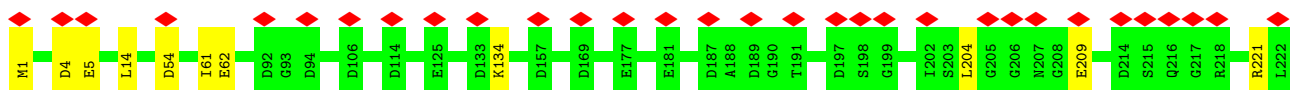
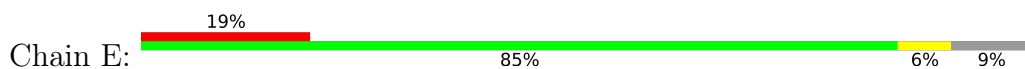
• Molecule 1: hub

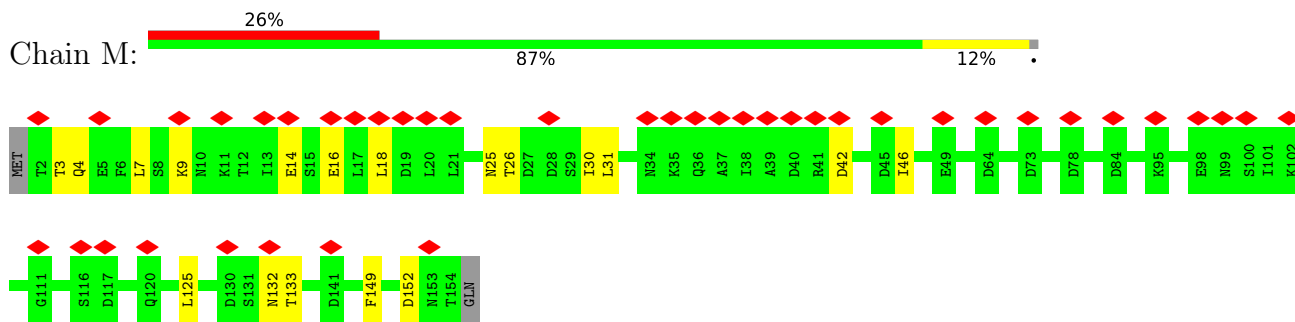


• Molecule 2: central spike

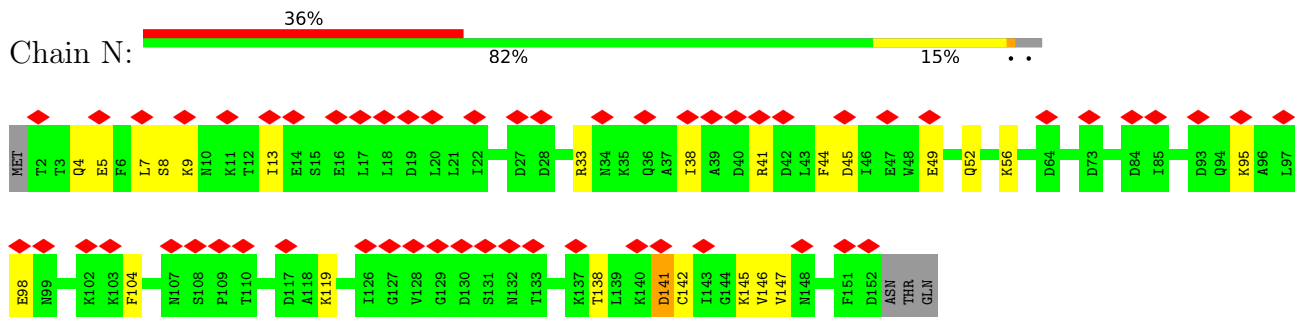


• Molecule 2: central spike

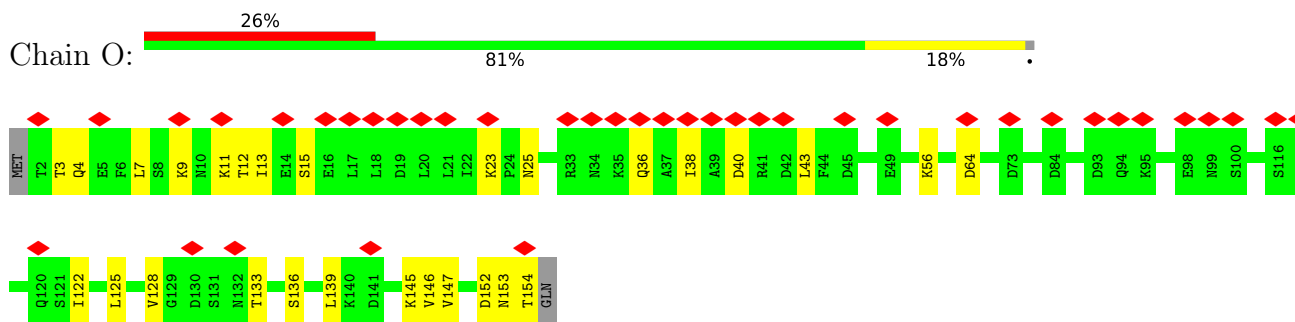




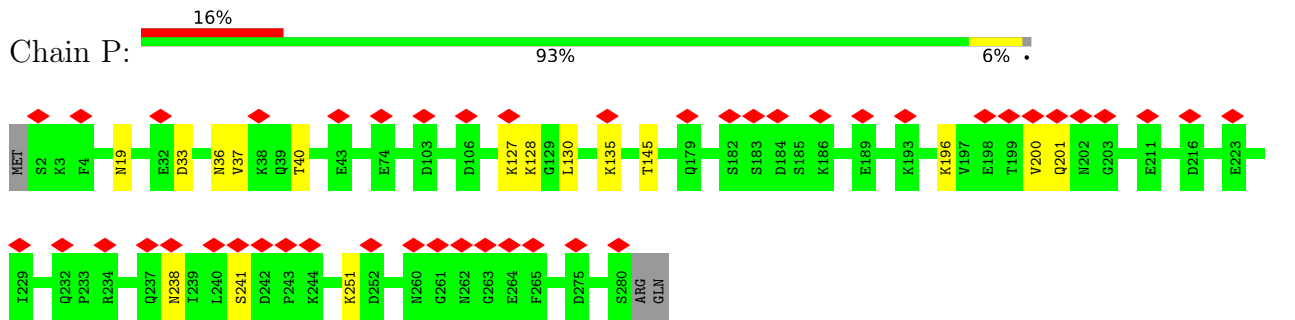
• Molecule 4: baseplate gp16



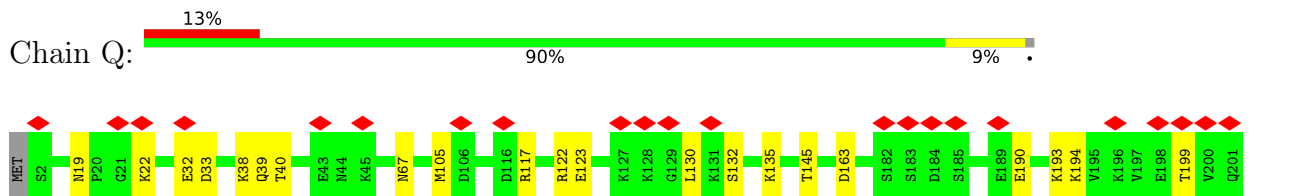
• Molecule 4: baseplate gp16

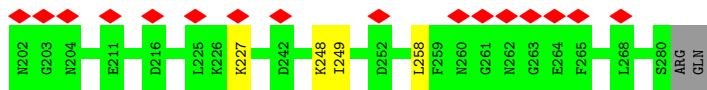


• Molecule 5: tube initiator

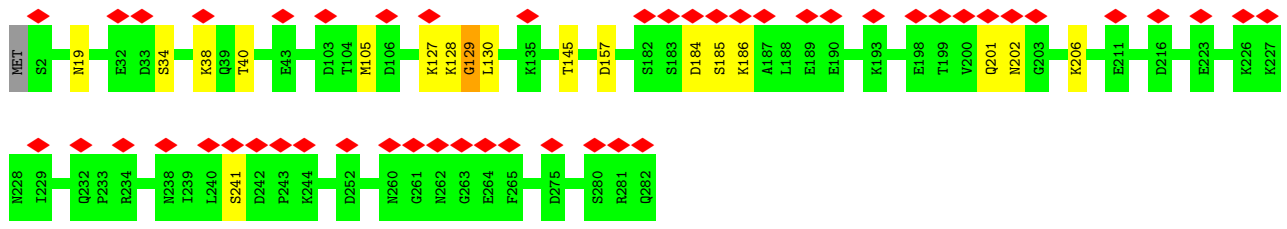
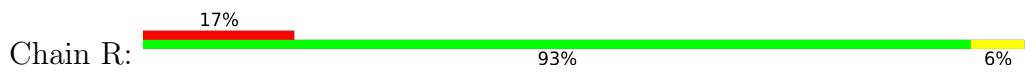


• Molecule 5: tube initiator

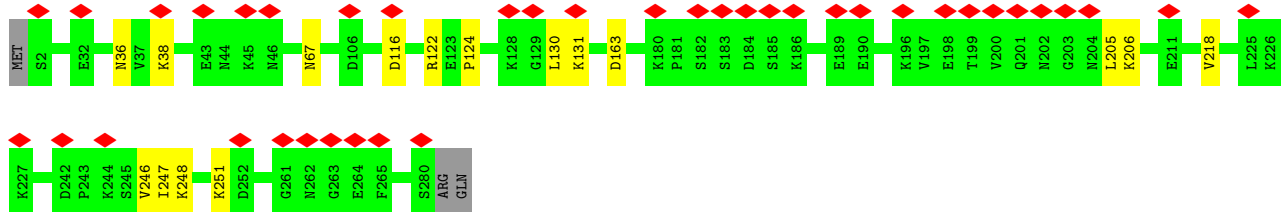
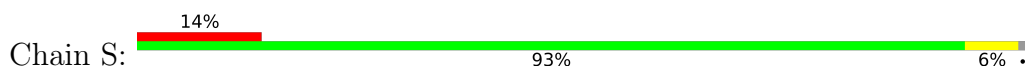




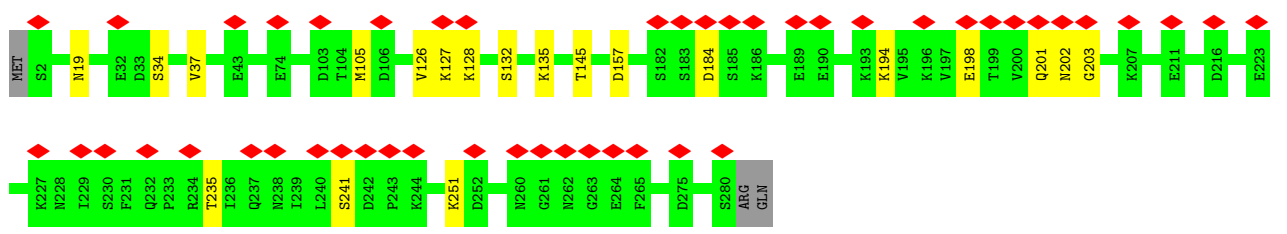
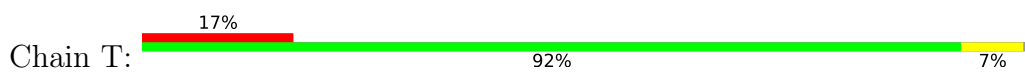
• Molecule 5: tube initiator



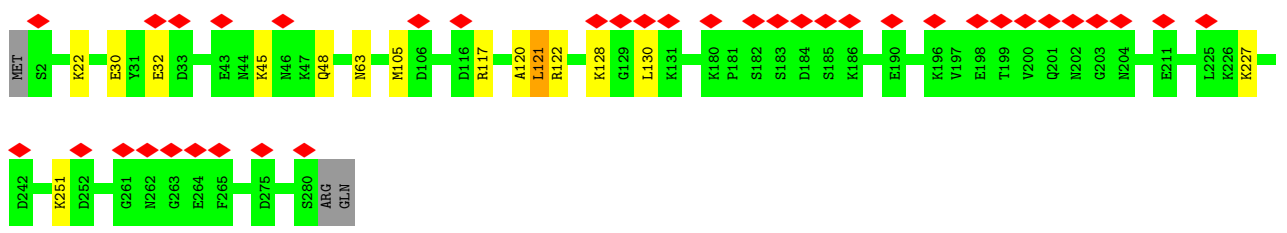
• Molecule 5: tube initiator



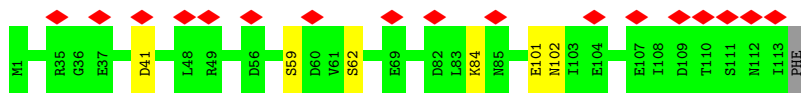
• Molecule 5: tube initiator



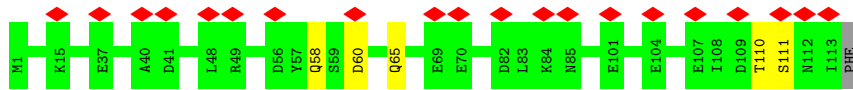
• Molecule 5: tube initiator



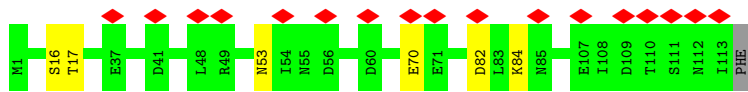
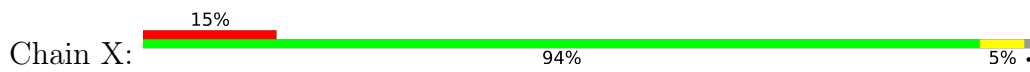
• Molecule 6: sheath initiator



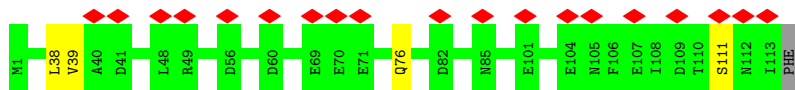
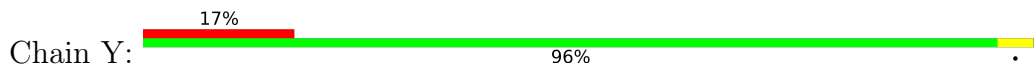
• Molecule 6: sheath initiator



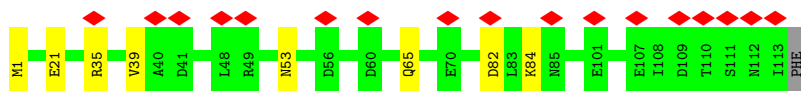
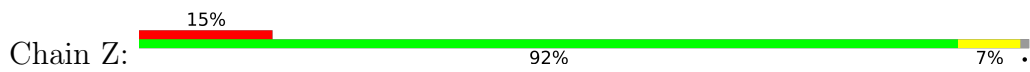
• Molecule 6: sheath initiator



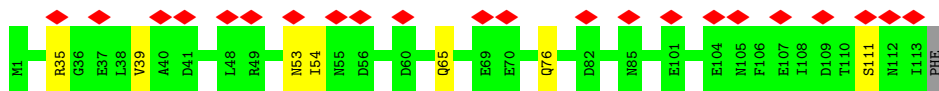
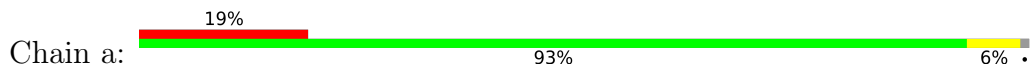
• Molecule 6: sheath initiator



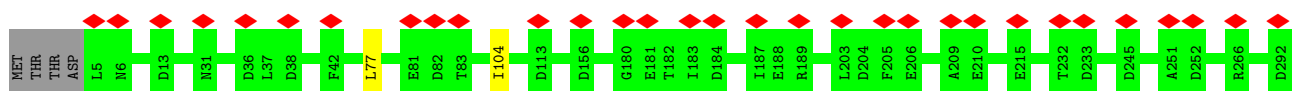
• Molecule 6: sheath initiator

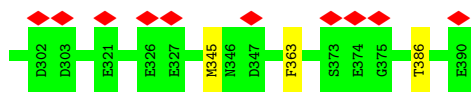


• Molecule 6: sheath initiator

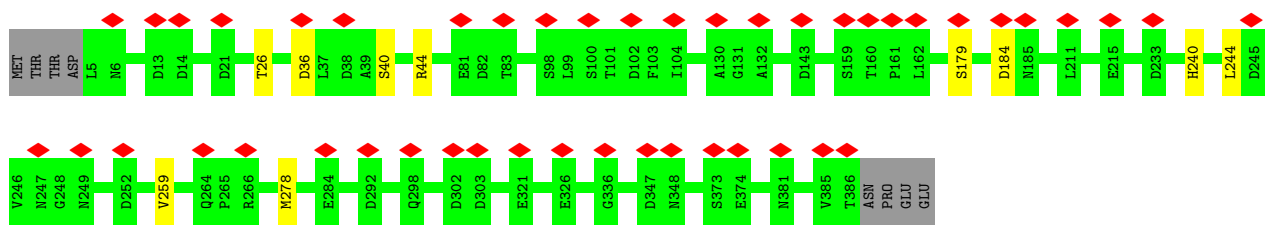
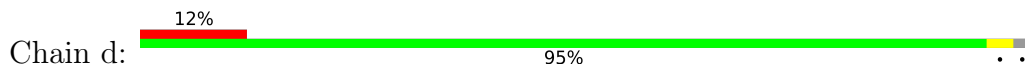


• Molecule 7: wedge protein gp31

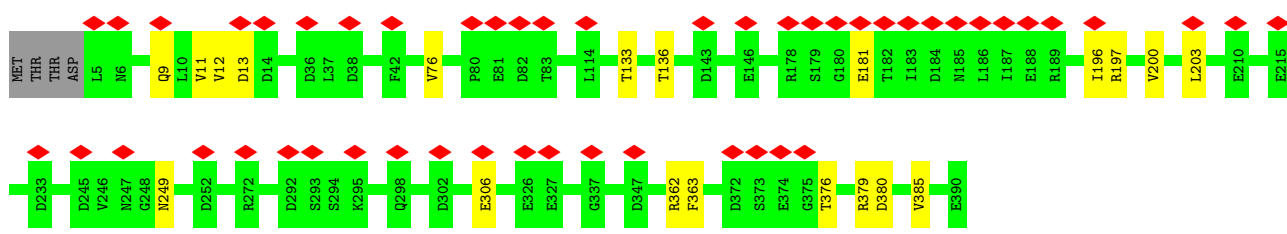




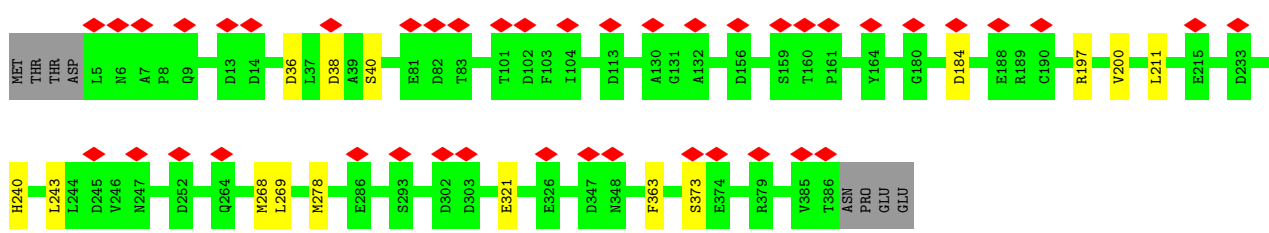
• Molecule 7: wedge protein gp31



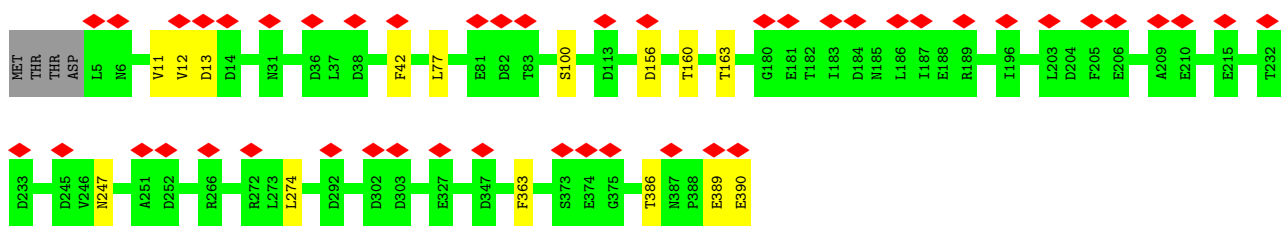
• Molecule 7: wedge protein gp31



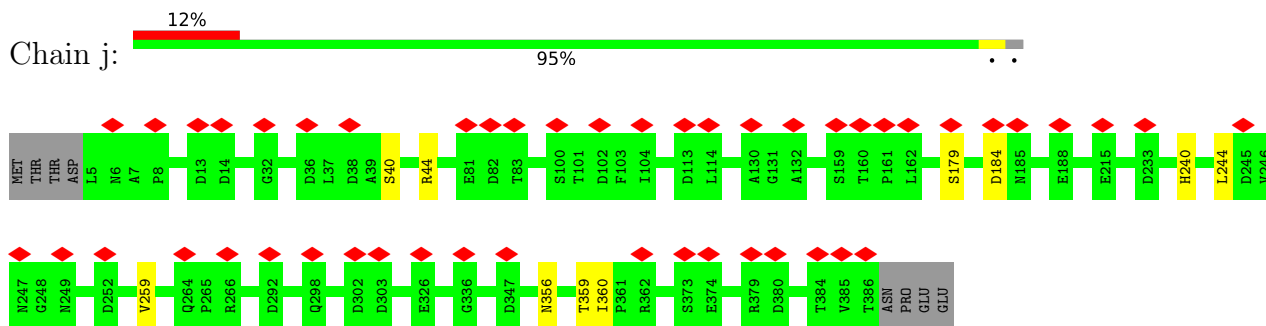
• Molecule 7: wedge protein gp31



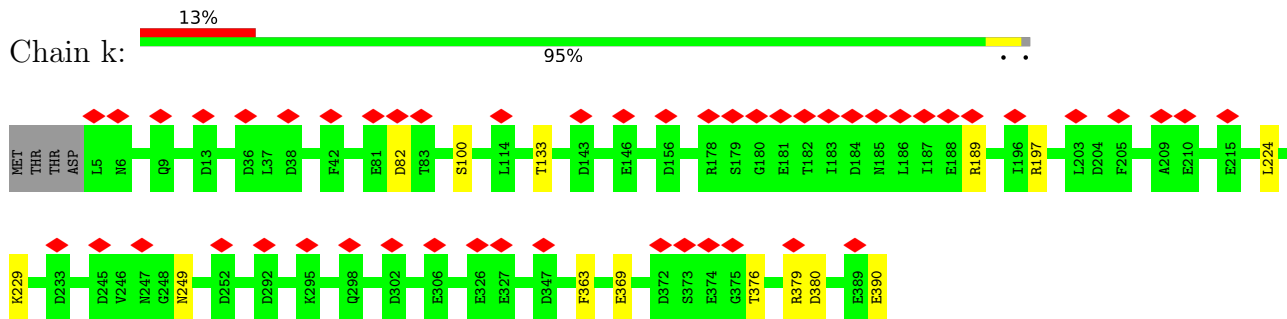
• Molecule 7: wedge protein gp31



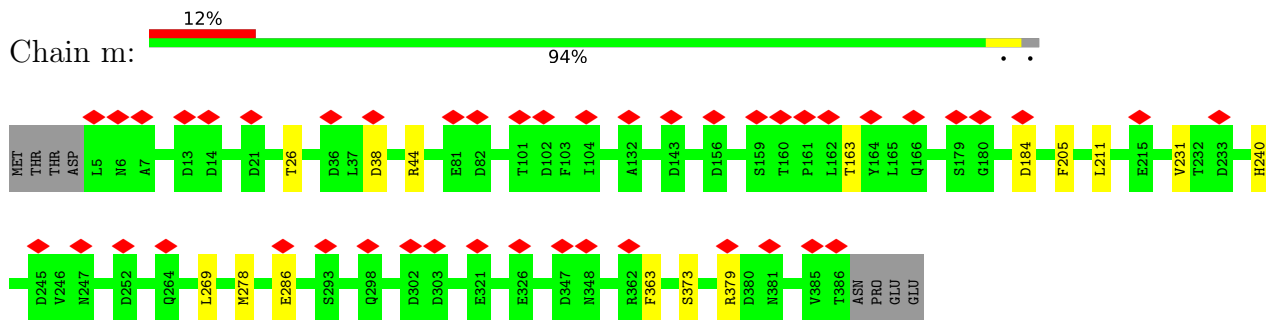
• Molecule 7: wedge protein gp31



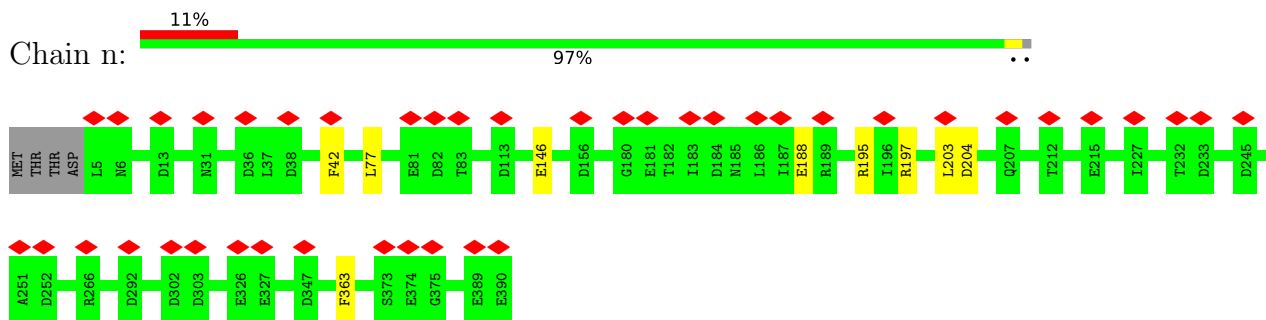
• Molecule 7: wedge protein gp31



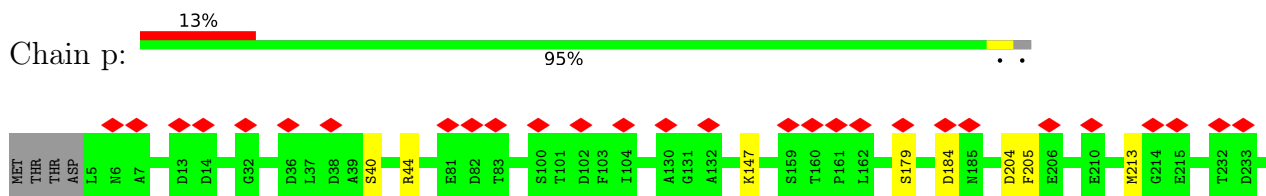
• Molecule 7: wedge protein gp31

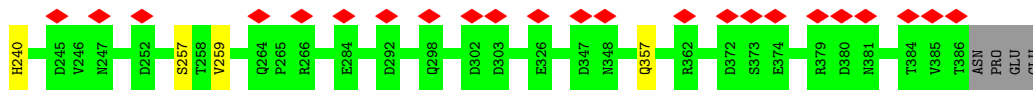


• Molecule 7: wedge protein gp31

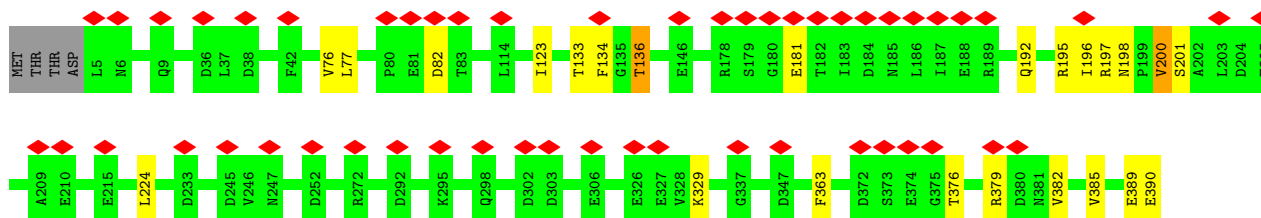
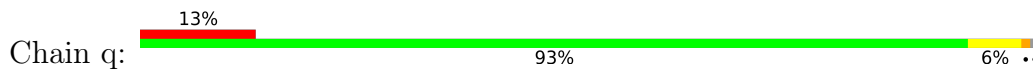


• Molecule 7: wedge protein gp31

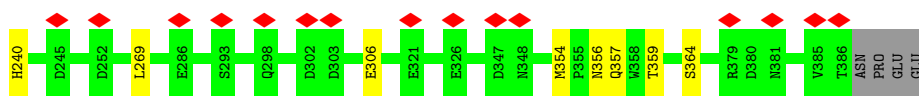
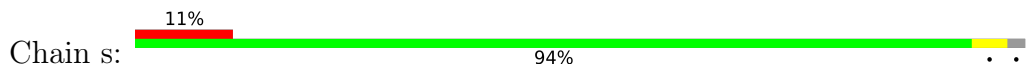




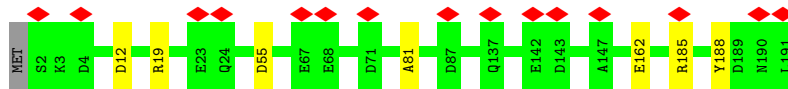
• Molecule 7: wedge protein gp31



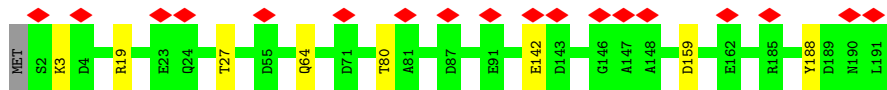
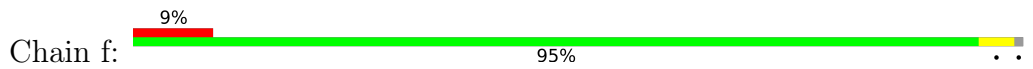
• Molecule 7: wedge protein gp31



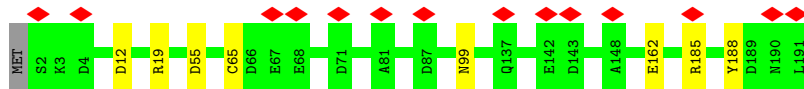
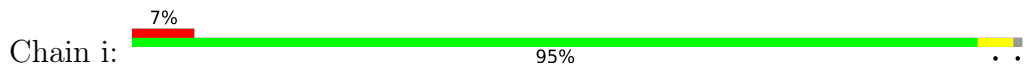
• Molecule 8: wedge protein gp32



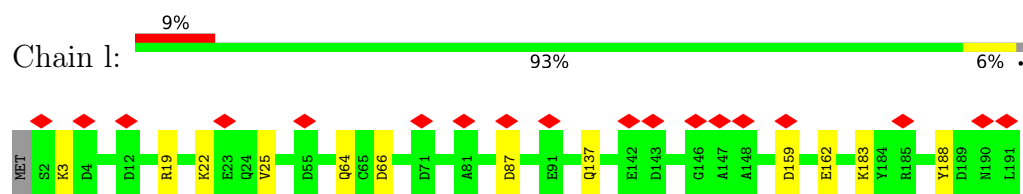
• Molecule 8: wedge protein gp32



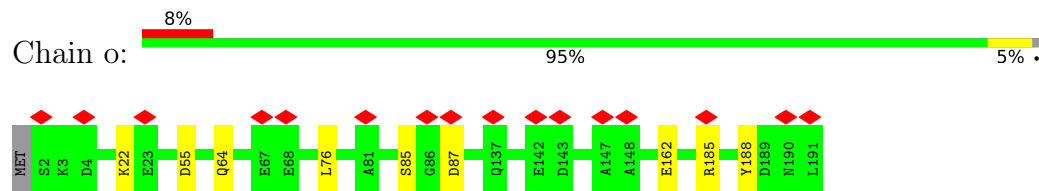
• Molecule 8: wedge protein gp32



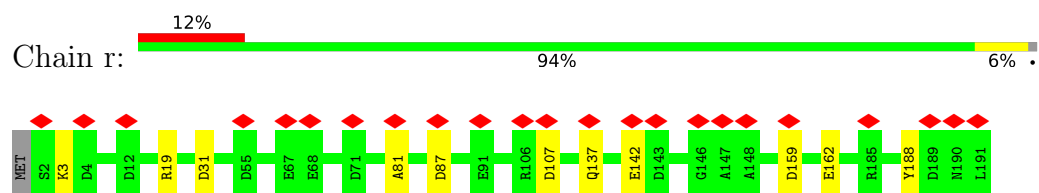
• Molecule 8: wedge protein gp32



- Molecule 8: wedge protein gp32



- Molecule 8: wedge protein gp32



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	41062	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.033	Depositor
Minimum map value	-0.014	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.01	Depositor
Map size (\AA)	479.36002, 479.36002, 479.36002	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.07, 1.07, 1.07	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.26	0/6909	0.50	0/9362
1	B	0.26	0/6909	0.52	1/9362 (0.0%)
1	C	0.26	0/6909	0.53	4/9362 (0.0%)
2	D	0.29	0/1926	0.57	0/2612
2	E	0.29	0/1926	0.56	1/2612 (0.0%)
2	F	0.29	0/1926	0.58	0/2612
3	G	0.41	0/190	0.61	0/257
3	H	0.44	0/190	0.78	1/257 (0.4%)
3	I	0.37	0/190	0.54	0/257
4	J	0.30	0/1189	0.60	0/1607
4	K	0.29	0/1214	0.53	0/1640
4	L	0.30	0/1189	0.55	1/1607 (0.1%)
4	M	0.30	0/1204	0.58	0/1628
4	N	0.29	0/1189	0.50	1/1607 (0.1%)
4	O	0.29	0/1204	0.52	0/1628
5	P	0.29	0/2259	0.51	0/3052
5	Q	0.30	0/2259	0.51	0/3052
5	R	0.30	0/2280	0.50	1/3078 (0.0%)
5	S	0.29	0/2259	0.51	1/3052 (0.0%)
5	T	0.29	0/2259	0.51	0/3052
5	U	0.29	0/2259	0.54	2/3052 (0.1%)
6	V	0.28	0/924	0.52	0/1258
6	W	0.27	0/924	0.50	0/1258
6	X	0.27	0/924	0.49	0/1258
6	Y	0.29	0/924	0.51	0/1258
6	Z	0.28	0/924	0.53	0/1258
6	a	0.26	0/924	0.47	0/1258
7	b	0.29	0/3006	0.51	0/4100
7	d	0.29	0/2971	0.49	0/4053
7	e	0.31	0/3006	0.51	0/4100
7	g	0.29	0/2971	0.49	0/4053
7	h	0.29	0/3006	0.51	0/4100
7	j	0.29	0/2971	0.50	0/4053
7	k	0.30	0/3006	0.51	0/4100

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
7	m	0.29	0/2971	0.49	0/4053
7	n	0.29	0/3006	0.50	0/4100
7	p	0.29	0/2971	0.49	0/4053
7	q	0.32	0/3006	0.55	1/4100 (0.0%)
7	s	0.29	0/2971	0.49	0/4053
8	c	0.30	0/1632	0.50	0/2224
8	f	0.32	0/1632	0.53	1/2224 (0.0%)
8	i	0.30	0/1632	0.48	0/2224
8	l	0.31	0/1632	0.50	0/2224
8	o	0.30	0/1632	0.49	0/2224
8	r	0.32	0/1632	0.53	0/2224
All	All	0.29	0/99037	0.52	15/134558 (0.0%)

There are no bond length outliers.

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	792	LYS	CB-CA-C	-5.98	98.44	110.40
1	B	68	PHE	CB-CA-C	-5.91	98.59	110.40
1	C	792	LYS	N-CA-C	5.85	126.78	111.00
5	U	121	LEU	N-CA-CB	5.83	122.05	110.40
1	C	11	GLY	N-CA-C	-5.81	98.58	113.10
4	L	149	PHE	CB-CA-C	5.67	121.75	110.40
8	f	27	THR	N-CA-CB	5.60	120.94	110.30
5	S	36	ASN	CB-CA-C	-5.53	99.34	110.40
1	C	232	ASN	N-CA-CB	-5.48	100.74	110.60
4	N	141	ASP	CB-CG-OD1	5.44	123.20	118.30
5	U	120	ALA	CB-CA-C	-5.39	102.01	110.10
5	R	129	GLY	N-CA-C	-5.39	99.62	113.10
3	H	681	TRP	CB-CA-C	-5.27	99.87	110.40
7	q	136	THR	N-CA-C	5.24	125.16	111.00
2	E	224	GLY	N-CA-C	-5.02	100.55	113.10

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

5.3.1 Protein backbone

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	874/899 (97%)	837 (96%)	36 (4%)	1 (0%)	51	83
1	B	874/899 (97%)	841 (96%)	33 (4%)	0	100	100
1	C	874/899 (97%)	839 (96%)	35 (4%)	0	100	100
2	D	243/270 (90%)	236 (97%)	7 (3%)	0	100	100
2	E	243/270 (90%)	232 (96%)	11 (4%)	0	100	100
2	F	243/270 (90%)	231 (95%)	12 (5%)	0	100	100
3	G	22/689 (3%)	22 (100%)	0	0	100	100
3	H	22/689 (3%)	22 (100%)	0	0	100	100
3	I	22/689 (3%)	22 (100%)	0	0	100	100
4	J	149/155 (96%)	143 (96%)	6 (4%)	0	100	100
4	K	152/155 (98%)	141 (93%)	9 (6%)	2 (1%)	12	46
4	L	149/155 (96%)	141 (95%)	8 (5%)	0	100	100
4	M	151/155 (97%)	146 (97%)	4 (3%)	1 (1%)	22	60
4	N	149/155 (96%)	143 (96%)	6 (4%)	0	100	100
4	O	151/155 (97%)	143 (95%)	8 (5%)	0	100	100
5	P	277/282 (98%)	264 (95%)	13 (5%)	0	100	100
5	Q	277/282 (98%)	269 (97%)	8 (3%)	0	100	100
5	R	279/282 (99%)	266 (95%)	11 (4%)	2 (1%)	22	60
5	S	277/282 (98%)	269 (97%)	8 (3%)	0	100	100
5	T	277/282 (98%)	259 (94%)	17 (6%)	1 (0%)	34	70
5	U	277/282 (98%)	267 (96%)	10 (4%)	0	100	100
6	V	111/114 (97%)	105 (95%)	6 (5%)	0	100	100
6	W	111/114 (97%)	104 (94%)	7 (6%)	0	100	100
6	X	111/114 (97%)	104 (94%)	7 (6%)	0	100	100
6	Y	111/114 (97%)	102 (92%)	9 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	Z	111/114 (97%)	107 (96%)	4 (4%)	0	100	100
6	a	111/114 (97%)	105 (95%)	6 (5%)	0	100	100
7	b	384/390 (98%)	374 (97%)	10 (3%)	0	100	100
7	d	380/390 (97%)	377 (99%)	3 (1%)	0	100	100
7	e	384/390 (98%)	377 (98%)	7 (2%)	0	100	100
7	g	380/390 (97%)	377 (99%)	3 (1%)	0	100	100
7	h	384/390 (98%)	372 (97%)	12 (3%)	0	100	100
7	j	380/390 (97%)	376 (99%)	4 (1%)	0	100	100
7	k	384/390 (98%)	371 (97%)	13 (3%)	0	100	100
7	m	380/390 (97%)	377 (99%)	3 (1%)	0	100	100
7	n	384/390 (98%)	376 (98%)	8 (2%)	0	100	100
7	p	380/390 (97%)	375 (99%)	5 (1%)	0	100	100
7	q	384/390 (98%)	373 (97%)	10 (3%)	1 (0%)	41	75
7	s	380/390 (97%)	376 (99%)	4 (1%)	0	100	100
8	c	188/191 (98%)	182 (97%)	5 (3%)	1 (0%)	29	66
8	f	188/191 (98%)	184 (98%)	4 (2%)	0	100	100
8	i	188/191 (98%)	183 (97%)	5 (3%)	0	100	100
8	l	188/191 (98%)	185 (98%)	3 (2%)	0	100	100
8	o	188/191 (98%)	181 (96%)	7 (4%)	0	100	100
8	r	188/191 (98%)	183 (97%)	4 (2%)	1 (0%)	29	66
All	All	12360/14706 (84%)	11959 (97%)	391 (3%)	10 (0%)	54	83

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	461	ILE
4	M	132	ASN
8	r	81	ALA
4	K	133	THR
8	c	81	ALA
5	T	203	GLY
5	R	129	GLY
5	R	127	LYS
7	q	200	VAL
4	K	132	ASN

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	743/760 (98%)	697 (94%)	46 (6%)	18	51
1	B	743/760 (98%)	694 (93%)	49 (7%)	16	49
1	C	743/760 (98%)	682 (92%)	61 (8%)	11	40
2	D	213/231 (92%)	194 (91%)	19 (9%)	9	36
2	E	213/231 (92%)	198 (93%)	15 (7%)	15	47
2	F	213/231 (92%)	196 (92%)	17 (8%)	12	41
3	G	19/545 (4%)	17 (90%)	2 (10%)	7	29
3	H	19/545 (4%)	16 (84%)	3 (16%)	2	14
3	I	19/545 (4%)	17 (90%)	2 (10%)	7	29
4	J	133/137 (97%)	107 (80%)	26 (20%)	1	6
4	K	136/137 (99%)	116 (85%)	20 (15%)	3	16
4	L	133/137 (97%)	105 (79%)	28 (21%)	1	4
4	M	135/137 (98%)	118 (87%)	17 (13%)	4	21
4	N	133/137 (97%)	109 (82%)	24 (18%)	1	8
4	O	135/137 (98%)	107 (79%)	28 (21%)	1	5
5	P	253/256 (99%)	237 (94%)	16 (6%)	18	50
5	Q	253/256 (99%)	228 (90%)	25 (10%)	8	32
5	R	255/256 (100%)	239 (94%)	16 (6%)	18	50
5	S	253/256 (99%)	238 (94%)	15 (6%)	19	52
5	T	253/256 (99%)	234 (92%)	19 (8%)	13	44
5	U	253/256 (99%)	239 (94%)	14 (6%)	21	54
6	V	102/103 (99%)	96 (94%)	6 (6%)	19	52
6	W	102/103 (99%)	97 (95%)	5 (5%)	25	58
6	X	102/103 (99%)	96 (94%)	6 (6%)	19	52
6	Y	102/103 (99%)	98 (96%)	4 (4%)	32	64
6	Z	102/103 (99%)	94 (92%)	8 (8%)	12	42

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	a	102/103 (99%)	95 (93%)	7 (7%)	15	47
7	b	329/333 (99%)	324 (98%)	5 (2%)	65	84
7	d	325/333 (98%)	315 (97%)	10 (3%)	40	70
7	e	329/333 (99%)	309 (94%)	20 (6%)	18	51
7	g	325/333 (98%)	310 (95%)	15 (5%)	27	60
7	h	329/333 (99%)	314 (95%)	15 (5%)	27	60
7	j	325/333 (98%)	315 (97%)	10 (3%)	40	70
7	k	329/333 (99%)	315 (96%)	14 (4%)	29	61
7	m	325/333 (98%)	310 (95%)	15 (5%)	27	60
7	n	329/333 (99%)	320 (97%)	9 (3%)	44	73
7	p	325/333 (98%)	313 (96%)	12 (4%)	34	65
7	q	329/333 (99%)	305 (93%)	24 (7%)	14	45
7	s	325/333 (98%)	311 (96%)	14 (4%)	29	61
8	c	169/170 (99%)	163 (96%)	6 (4%)	35	66
8	f	169/170 (99%)	162 (96%)	7 (4%)	30	62
8	i	169/170 (99%)	161 (95%)	8 (5%)	26	59
8	l	169/170 (99%)	157 (93%)	12 (7%)	14	46
8	o	169/170 (99%)	160 (95%)	9 (5%)	22	55
8	r	169/170 (99%)	159 (94%)	10 (6%)	19	52
All	All	10800/12600 (86%)	10087 (93%)	713 (7%)	20	49

All (713) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	20	GLU
1	A	23	ASP
1	A	25	ASP
1	A	26	PHE
1	A	64	LEU
1	A	74	ASP
1	A	76	LYS
1	A	94	THR
1	A	150	ARG
1	A	160	TYR

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Mol	Chain	Res	Type
1	A	226	LYS
1	A	230	GLN
1	A	232	ASN
1	A	233	GLN
1	A	234	VAL
1	A	312	GLU
1	A	420	LYS
1	A	428	SER
1	A	433	GLN
1	A	435	THR
1	A	442	ARG
1	A	461	ILE
1	A	521	SER
1	A	545	VAL
1	A	558	LEU
1	A	559	ASN
1	A	568	VAL
1	A	570	SER
1	A	605	SER
1	A	611	LYS
1	A	634	GLN
1	A	653	GLN
1	A	654	LEU
1	A	656	LEU
1	A	676	ILE
1	A	694	ARG
1	A	766	TYR
1	A	768	HIS
1	A	775	TYR
1	A	794	ARG
1	A	796	ASN
1	A	802	PHE
1	A	806	GLN
1	A	831	MET
1	A	852	LYS
1	B	20	GLU
1	B	23	ASP
1	B	25	ASP
1	B	26	PHE
1	B	45	ASP
1	B	64	LEU
1	B	67	ASP

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Mol	Chain	Res	Type
1	B	68	PHE
1	B	94	THR
1	B	150	ARG
1	B	160	TYR
1	B	230	GLN
1	B	299	ASN
1	B	361	ASP
1	B	415	ILE
1	B	428	SER
1	B	432	THR
1	B	442	ARG
1	B	455	THR
1	B	460	ILE
1	B	463	ASP
1	B	464	THR
1	B	518	SER
1	B	521	SER
1	B	530	LYS
1	B	558	LEU
1	B	559	ASN
1	B	561	THR
1	B	566	ASP
1	B	570	SER
1	B	588	ILE
1	B	600	ASP
1	B	611	LYS
1	B	614	LYS
1	B	636	GLN
1	B	640	SER
1	B	643	ARG
1	B	702	PHE
1	B	712	VAL
1	B	766	TYR
1	B	768	HIS
1	B	775	TYR
1	B	791	MET
1	B	792	LYS
1	B	794	ARG
1	B	796	ASN
1	B	802	PHE
1	B	831	MET
1	B	846	MET

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Mol	Chain	Res	Type
1	C	1	MET
1	C	2	GLN
1	C	20	GLU
1	C	23	ASP
1	C	25	ASP
1	C	26	PHE
1	C	32	LYS
1	C	55	THR
1	C	150	ARG
1	C	160	TYR
1	C	194	GLN
1	C	228	GLN
1	C	230	GLN
1	C	232	ASN
1	C	292	THR
1	C	303	ASP
1	C	313	ARG
1	C	419	GLN
1	C	428	SER
1	C	432	THR
1	C	442	ARG
1	C	460	ILE
1	C	461	ILE
1	C	516	ASN
1	C	518	SER
1	C	521	SER
1	C	558	LEU
1	C	559	ASN
1	C	561	THR
1	C	568	VAL
1	C	599	VAL
1	C	600	ASP
1	C	602	ASP
1	C	603	SER
1	C	638	GLN
1	C	645	GLU
1	C	651	GLU
1	C	654	LEU
1	C	658	LEU
1	C	659	HIS
1	C	665	LEU
1	C	672	THR

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Mol	Chain	Res	Type
1	C	676	ILE
1	C	677	GLU
1	C	686	LYS
1	C	687	SER
1	C	692	SER
1	C	693	VAL
1	C	696	SER
1	C	699	GLU
1	C	701	ILE
1	C	702	PHE
1	C	766	TYR
1	C	768	HIS
1	C	775	TYR
1	C	786	SER
1	C	792	LYS
1	C	794	ARG
1	C	796	ASN
1	C	802	PHE
1	C	846	MET
2	D	23	SER
2	D	54	ASP
2	D	61	ILE
2	D	71	VAL
2	D	72	SER
2	D	95	SER
2	D	105	ASN
2	D	110	SER
2	D	119	ASP
2	D	184	ILE
2	D	185	LEU
2	D	216	GLN
2	D	226	PHE
2	D	237	MET
2	D	240	ILE
2	D	241	ASN
2	D	243	THR
2	D	244	SER
2	D	245	VAL
2	E	1	MET
2	E	4	ASP
2	E	5	GLU
2	E	14	LEU

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Mol	Chain	Res	Type
2	E	54	ASP
2	E	61	ILE
2	E	62	GLU
2	E	134	LYS
2	E	204	LEU
2	E	209	GLU
2	E	221	ARG
2	E	226	PHE
2	E	228	SER
2	E	243	THR
2	E	244	SER
2	F	18	LYS
2	F	19	MET
2	F	21	LYS
2	F	61	ILE
2	F	62	GLU
2	F	73	GLN
2	F	75	GLN
2	F	105	ASN
2	F	138	GLU
2	F	185	LEU
2	F	219	LYS
2	F	221	ARG
2	F	226	PHE
2	F	235	LEU
2	F	237	MET
2	F	243	THR
2	F	244	SER
3	G	667	GLN
3	G	684	THR
3	H	667	GLN
3	H	673	ILE
3	H	684	THR
3	I	667	GLN
3	I	684	THR
4	J	3	THR
4	J	4	GLN
4	J	7	LEU
4	J	8	SER
4	J	9	LYS
4	J	13	ILE
4	J	15	SER

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Mol	Chain	Res	Type
4	J	16	GLU
4	J	17	LEU
4	J	21	LEU
4	J	22	ILE
4	J	23	LYS
4	J	56	LYS
4	J	81	LYS
4	J	84	ASP
4	J	95	LYS
4	J	98	GLU
4	J	102	LYS
4	J	117	ASP
4	J	119	LYS
4	J	138	THR
4	J	141	ASP
4	J	142	CYS
4	J	145	LYS
4	J	146	VAL
4	J	150	SER
4	K	3	THR
4	K	7	LEU
4	K	9	LYS
4	K	11	LYS
4	K	16	GLU
4	K	18	LEU
4	K	20	LEU
4	K	21	LEU
4	K	22	ILE
4	K	23	LYS
4	K	25	ASN
4	K	26	THR
4	K	27	ASP
4	K	31	LEU
4	K	42	ASP
4	K	60	GLU
4	K	99	ASN
4	K	131	SER
4	K	147	VAL
4	K	153	ASN
4	L	2	THR
4	L	3	THR
4	L	9	LYS

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Mol	Chain	Res	Type
4	L	13	ILE
4	L	15	SER
4	L	16	GLU
4	L	17	LEU
4	L	18	LEU
4	L	20	LEU
4	L	23	LYS
4	L	25	ASN
4	L	26	THR
4	L	27	ASP
4	L	34	ASN
4	L	41	ARG
4	L	47	GLU
4	L	83	ILE
4	L	84	ASP
4	L	95	LYS
4	L	98	GLU
4	L	102	LYS
4	L	104	PHE
4	L	119	LYS
4	L	139	LEU
4	L	143	ILE
4	L	145	LYS
4	L	146	VAL
4	L	150	SER
4	M	3	THR
4	M	4	GLN
4	M	7	LEU
4	M	9	LYS
4	M	14	GLU
4	M	16	GLU
4	M	18	LEU
4	M	25	ASN
4	M	26	THR
4	M	30	ILE
4	M	31	LEU
4	M	42	ASP
4	M	46	ILE
4	M	125	LEU
4	M	133	THR
4	M	149	PHE
4	M	152	ASP

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Mol	Chain	Res	Type
4	N	4	GLN
4	N	5	GLU
4	N	7	LEU
4	N	8	SER
4	N	9	LYS
4	N	13	ILE
4	N	33	ARG
4	N	38	ILE
4	N	41	ARG
4	N	44	PHE
4	N	45	ASP
4	N	49	GLU
4	N	52	GLN
4	N	56	LYS
4	N	95	LYS
4	N	98	GLU
4	N	104	PHE
4	N	119	LYS
4	N	138	THR
4	N	141	ASP
4	N	142	CYS
4	N	145	LYS
4	N	146	VAL
4	N	147	VAL
4	O	3	THR
4	O	4	GLN
4	O	7	LEU
4	O	9	LYS
4	O	11	LYS
4	O	12	THR
4	O	13	ILE
4	O	15	SER
4	O	23	LYS
4	O	25	ASN
4	O	36	GLN
4	O	38	ILE
4	O	40	ASP
4	O	43	LEU
4	O	56	LYS
4	O	64	ASP
4	O	122	ILE
4	O	125	LEU

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Mol	Chain	Res	Type
4	O	128	VAL
4	O	133	THR
4	O	136	SER
4	O	139	LEU
4	O	145	LYS
4	O	146	VAL
4	O	147	VAL
4	O	152	ASP
4	O	153	ASN
4	O	154	THR
5	P	19	ASN
5	P	33	ASP
5	P	36	ASN
5	P	37	VAL
5	P	40	THR
5	P	127	LYS
5	P	128	LYS
5	P	130	LEU
5	P	135	LYS
5	P	145	THR
5	P	196	LYS
5	P	200	VAL
5	P	201	GLN
5	P	238	ASN
5	P	241	SER
5	P	251	LYS
5	Q	19	ASN
5	Q	22	LYS
5	Q	32	GLU
5	Q	33	ASP
5	Q	38	LYS
5	Q	39	GLN
5	Q	40	THR
5	Q	67	ASN
5	Q	105	MET
5	Q	117	ARG
5	Q	122	ARG
5	Q	123	GLU
5	Q	130	LEU
5	Q	132	SER
5	Q	135	LYS
5	Q	145	THR

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Mol	Chain	Res	Type
5	Q	163	ASP
5	Q	190	GLU
5	Q	193	LYS
5	Q	194	LYS
5	Q	199	THR
5	Q	227	LYS
5	Q	248	LYS
5	Q	249	ILE
5	Q	258	LEU
5	R	19	ASN
5	R	34	SER
5	R	38	LYS
5	R	40	THR
5	R	105	MET
5	R	128	LYS
5	R	130	LEU
5	R	145	THR
5	R	157	ASP
5	R	184	ASP
5	R	185	SER
5	R	186	LYS
5	R	201	GLN
5	R	202	ASN
5	R	206	LYS
5	R	241	SER
5	S	38	LYS
5	S	67	ASN
5	S	116	ASP
5	S	122	ARG
5	S	124	PRO
5	S	130	LEU
5	S	131	LYS
5	S	163	ASP
5	S	205	LEU
5	S	206	LYS
5	S	218	VAL
5	S	246	VAL
5	S	247	ILE
5	S	248	LYS
5	S	251	LYS
5	T	19	ASN
5	T	34	SER

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Mol	Chain	Res	Type
5	T	37	VAL
5	T	105	MET
5	T	126	VAL
5	T	127	LYS
5	T	128	LYS
5	T	132	SER
5	T	135	LYS
5	T	145	THR
5	T	157	ASP
5	T	184	ASP
5	T	194	LYS
5	T	198	GLU
5	T	201	GLN
5	T	202	ASN
5	T	235	THR
5	T	241	SER
5	T	251	LYS
5	U	22	LYS
5	U	30	GLU
5	U	32	GLU
5	U	45	LYS
5	U	48	GLN
5	U	63	ASN
5	U	105	MET
5	U	117	ARG
5	U	121	LEU
5	U	122	ARG
5	U	128	LYS
5	U	130	LEU
5	U	227	LYS
5	U	251	LYS
6	V	41	ASP
6	V	59	SER
6	V	62	SER
6	V	84	LYS
6	V	101	GLU
6	V	102	ASN
6	W	58	GLN
6	W	60	ASP
6	W	65	GLN
6	W	110	THR
6	W	111	SER

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Mol	Chain	Res	Type
6	X	16	SER
6	X	17	THR
6	X	53	ASN
6	X	70	GLU
6	X	82	ASP
6	X	84	LYS
6	Y	38	LEU
6	Y	39	VAL
6	Y	76	GLN
6	Y	111	SER
6	Z	1	MET
6	Z	21	GLU
6	Z	35	ARG
6	Z	39	VAL
6	Z	53	ASN
6	Z	65	GLN
6	Z	82	ASP
6	Z	84	LYS
6	a	35	ARG
6	a	39	VAL
6	a	53	ASN
6	a	54	ILE
6	a	65	GLN
6	a	76	GLN
6	a	111	SER
7	b	77	LEU
7	b	104	ILE
7	b	345	MET
7	b	363	PHE
7	b	386	THR
8	c	12	ASP
8	c	19	ARG
8	c	55	ASP
8	c	162	GLU
8	c	185	ARG
8	c	188	TYR
7	d	26	THR
7	d	36	ASP
7	d	40	SER
7	d	44	ARG
7	d	179	SER
7	d	184	ASP

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Mol	Chain	Res	Type
7	d	240	HIS
7	d	244	LEU
7	d	259	VAL
7	d	278	MET
7	e	9	GLN
7	e	11	VAL
7	e	12	VAL
7	e	13	ASP
7	e	76	VAL
7	e	133	THR
7	e	136	THR
7	e	181	GLU
7	e	196	ILE
7	e	197	ARG
7	e	200	VAL
7	e	203	LEU
7	e	249	ASN
7	e	306	GLU
7	e	362	ARG
7	e	363	PHE
7	e	376	THR
7	e	379	ARG
7	e	380	ASP
7	e	385	VAL
8	f	3	LYS
8	f	19	ARG
8	f	64	GLN
8	f	80	THR
8	f	142	GLU
8	f	159	ASP
8	f	188	TYR
7	g	36	ASP
7	g	38	ASP
7	g	40	SER
7	g	184	ASP
7	g	197	ARG
7	g	200	VAL
7	g	211	LEU
7	g	240	HIS
7	g	243	LEU
7	g	268	MET
7	g	269	LEU

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Mol	Chain	Res	Type
7	g	278	MET
7	g	321	GLU
7	g	363	PHE
7	g	373	SER
7	h	11	VAL
7	h	12	VAL
7	h	13	ASP
7	h	42	PHE
7	h	77	LEU
7	h	100	SER
7	h	156	ASP
7	h	160	THR
7	h	163	THR
7	h	247	ASN
7	h	274	LEU
7	h	363	PHE
7	h	386	THR
7	h	389	GLU
7	h	390	GLU
8	i	12	ASP
8	i	19	ARG
8	i	55	ASP
8	i	65	CYS
8	i	99	ASN
8	i	162	GLU
8	i	185	ARG
8	i	188	TYR
7	j	40	SER
7	j	44	ARG
7	j	179	SER
7	j	184	ASP
7	j	240	HIS
7	j	244	LEU
7	j	259	VAL
7	j	356	ASN
7	j	359	THR
7	j	360	ILE
7	k	82	ASP
7	k	100	SER
7	k	133	THR
7	k	189	ARG
7	k	197	ARG

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Mol	Chain	Res	Type
7	k	224	LEU
7	k	229	LYS
7	k	249	ASN
7	k	363	PHE
7	k	369	GLU
7	k	376	THR
7	k	379	ARG
7	k	380	ASP
7	k	390	GLU
8	l	3	LYS
8	l	19	ARG
8	l	22	LYS
8	l	25	VAL
8	l	64	GLN
8	l	66	ASP
8	l	87	ASP
8	l	137	GLN
8	l	159	ASP
8	l	162	GLU
8	l	183	LYS
8	l	188	TYR
7	m	26	THR
7	m	38	ASP
7	m	44	ARG
7	m	163	THR
7	m	184	ASP
7	m	205	PHE
7	m	211	LEU
7	m	231	VAL
7	m	240	HIS
7	m	269	LEU
7	m	278	MET
7	m	286	GLU
7	m	363	PHE
7	m	373	SER
7	m	379	ARG
7	n	42	PHE
7	n	77	LEU
7	n	146	GLU
7	n	188	GLU
7	n	195	ARG
7	n	197	ARG

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Mol	Chain	Res	Type
7	n	203	LEU
7	n	204	ASP
7	n	363	PHE
8	o	22	LYS
8	o	55	ASP
8	o	64	GLN
8	o	76	LEU
8	o	85	SER
8	o	87	ASP
8	o	162	GLU
8	o	185	ARG
8	o	188	TYR
7	p	40	SER
7	p	44	ARG
7	p	147	LYS
7	p	179	SER
7	p	184	ASP
7	p	204	ASP
7	p	205	PHE
7	p	213	MET
7	p	240	HIS
7	p	257	SER
7	p	259	VAL
7	p	357	GLN
7	q	76	VAL
7	q	77	LEU
7	q	82	ASP
7	q	123	ILE
7	q	133	THR
7	q	134	PHE
7	q	136	THR
7	q	181	GLU
7	q	192	GLN
7	q	195	ARG
7	q	196	ILE
7	q	197	ARG
7	q	198	ASN
7	q	200	VAL
7	q	201	SER
7	q	224	LEU
7	q	329	LYS
7	q	363	PHE

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Mol	Chain	Res	Type
7	q	376	THR
7	q	379	ARG
7	q	382	VAL
7	q	385	VAL
7	q	389	GLU
7	q	390	GLU
8	r	3	LYS
8	r	19	ARG
8	r	31	ASP
8	r	87	ASP
8	r	107	ASP
8	r	137	GLN
8	r	142	GLU
8	r	159	ASP
8	r	162	GLU
8	r	188	TYR
7	s	26	THR
7	s	38	ASP
7	s	44	ARG
7	s	184	ASP
7	s	211	LEU
7	s	220	LYS
7	s	240	HIS
7	s	269	LEU
7	s	306	GLU
7	s	354	MET
7	s	356	ASN
7	s	357	GLN
7	s	359	THR
7	s	364	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (82) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	36	ASN
1	A	194	GLN
1	A	195	HIS
1	A	230	GLN
1	A	578	GLN
1	A	705	GLN
1	A	877	HIS
1	B	36	ASN

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Mol	Chain	Res	Type
1	B	194	GLN
1	B	433	GLN
1	B	522	GLN
1	B	559	ASN
1	B	578	GLN
1	B	613	ASN
1	B	806	GLN
1	C	34	GLN
1	C	36	ASN
1	C	230	GLN
1	C	310	ASN
1	C	470	GLN
1	C	516	ASN
1	C	578	GLN
1	C	636	GLN
2	D	84	GLN
2	D	227	ASN
2	E	81	GLN
4	J	25	ASN
4	K	55	ASN
4	L	4	GLN
4	M	10	ASN
4	M	94	GLN
4	N	25	ASN
4	O	10	ASN
4	O	55	ASN
4	O	94	GLN
5	P	144	ASN
5	P	201	GLN
5	P	213	GLN
5	Q	19	ASN
5	Q	48	GLN
5	Q	73	GLN
5	R	202	ASN
5	S	19	ASN
5	S	24	GLN
5	S	46	ASN
5	S	48	GLN
5	T	201	GLN
5	T	213	GLN
5	U	36	ASN
5	U	46	ASN

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Mol	Chain	Res	Type
5	U	86	ASN
5	U	213	GLN
6	W	29	GLN
6	W	55	ASN
6	X	102	ASN
6	Y	55	ASN
6	Z	29	GLN
6	a	53	ASN
7	b	381	ASN
7	e	75	ASN
7	e	110	GLN
7	e	198	ASN
7	e	381	ASN
8	f	10	ASN
8	f	24	GLN
7	g	17	GLN
7	h	75	ASN
7	h	92	GLN
7	h	381	ASN
7	k	75	ASN
7	k	110	GLN
8	l	10	ASN
7	m	17	GLN
7	n	75	ASN
7	n	381	ASN
8	o	10	ASN
7	q	75	ASN
7	q	110	GLN
7	q	192	GLN
7	q	346	ASN
8	r	10	ASN
8	r	24	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

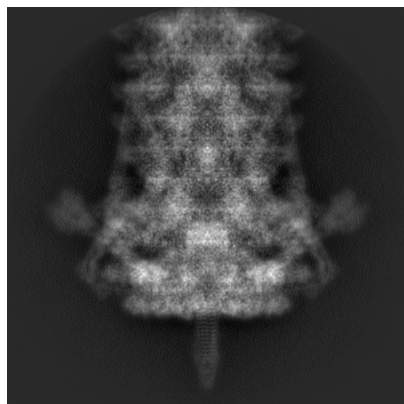
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-37151. These allow visual inspection of the internal detail of the map and identification of artifacts.

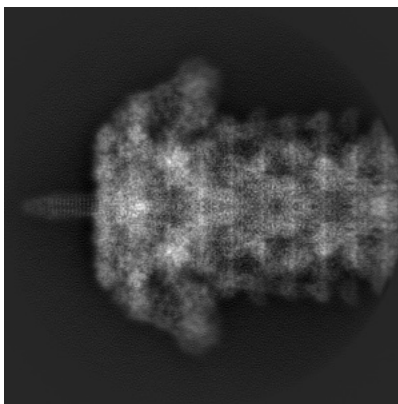
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

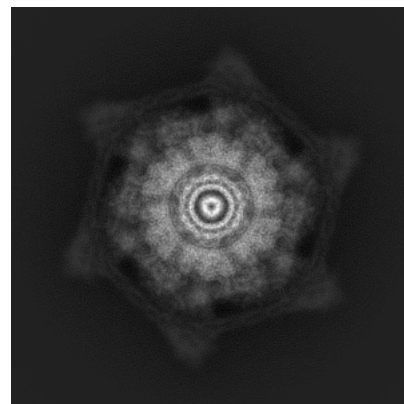
6.1.1 Primary map



X

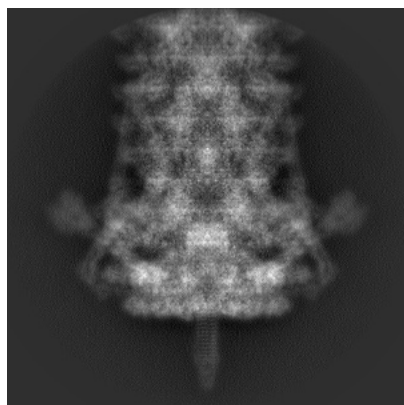


Y

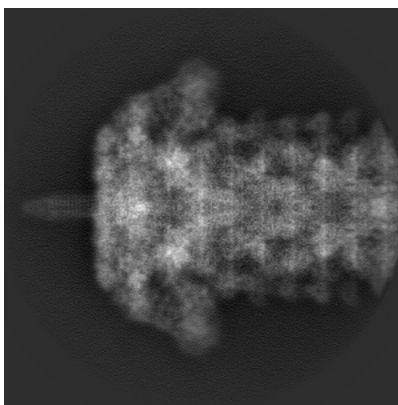


Z

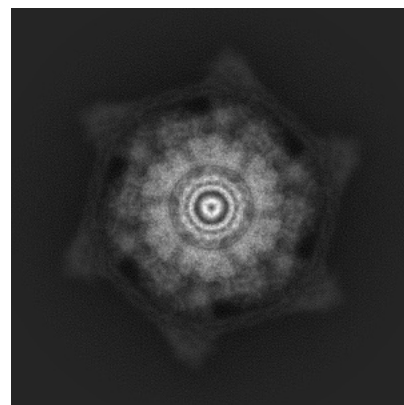
6.1.2 Raw map



X



Y

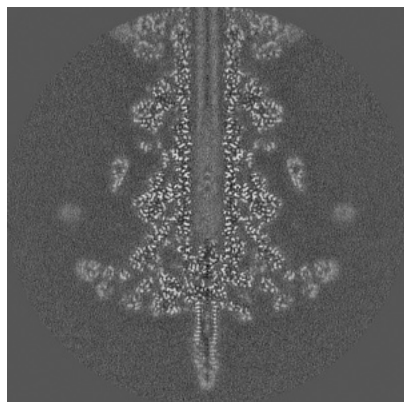


Z

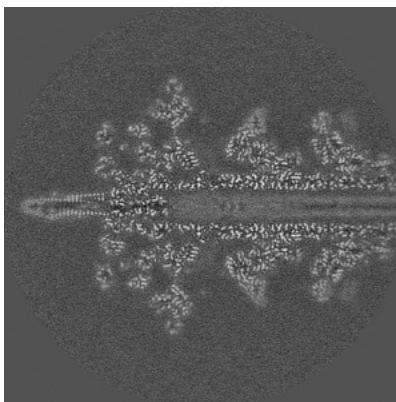
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

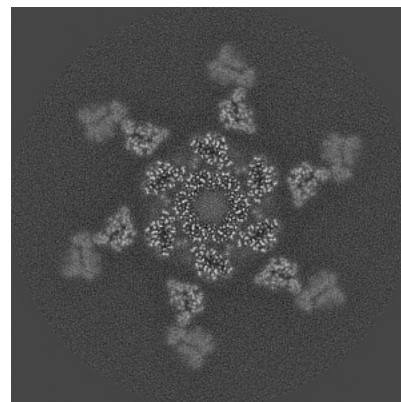
6.2.1 Primary map



X Index: 224

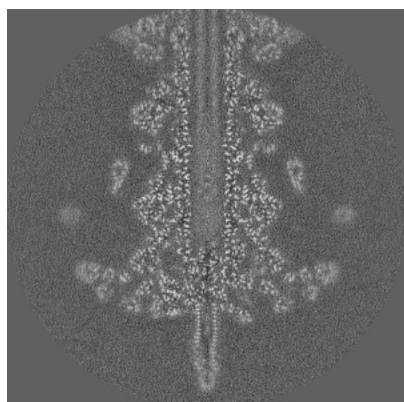


Y Index: 224

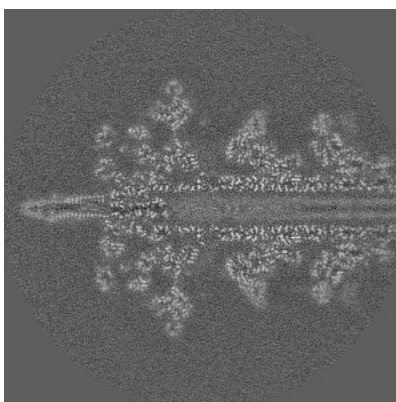


Z Index: 224

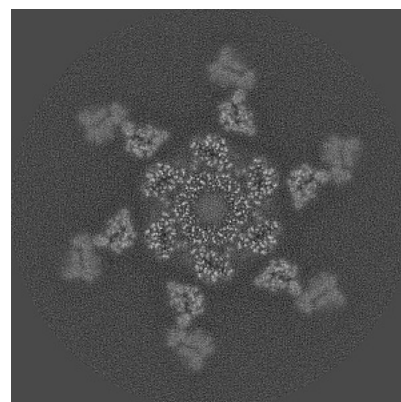
6.2.2 Raw map



X Index: 224



Y Index: 224

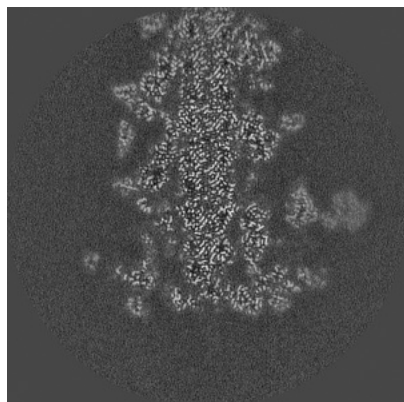


Z Index: 224

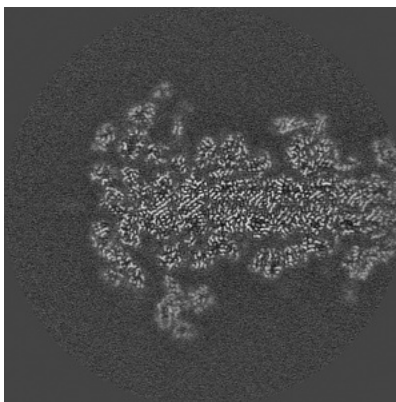
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

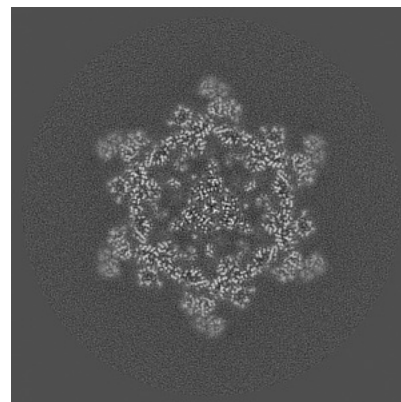
6.3.1 Primary map



X Index: 244

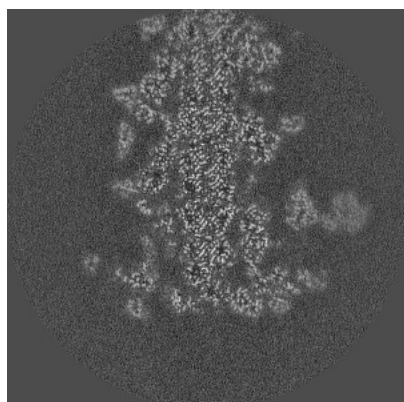


Y Index: 204

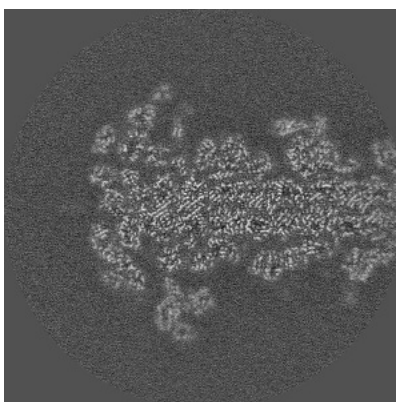


Z Index: 148

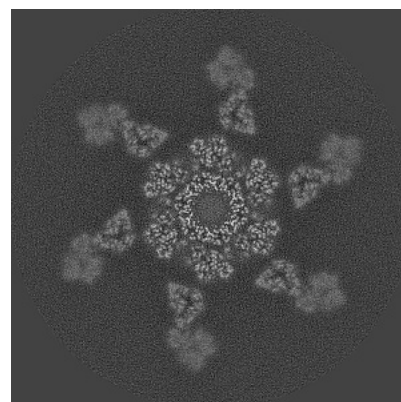
6.3.2 Raw map



X Index: 244



Y Index: 204

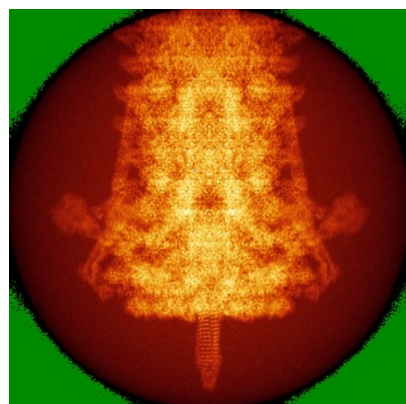


Z Index: 221

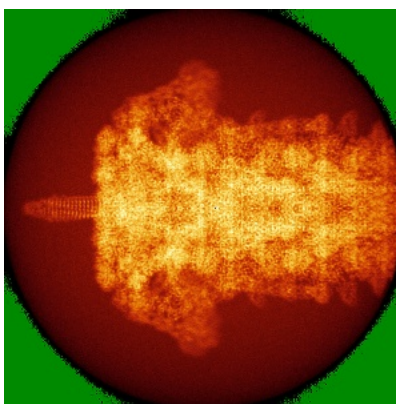
The images above show the largest variance slices of the map in three orthogonal directions.

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

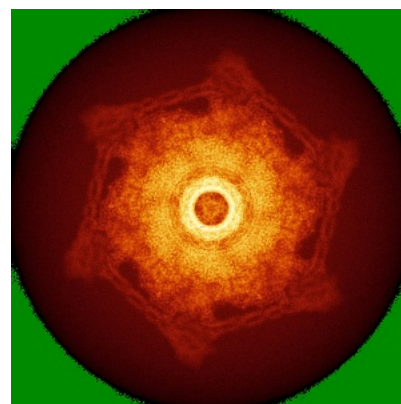
6.4.1 Primary map



X

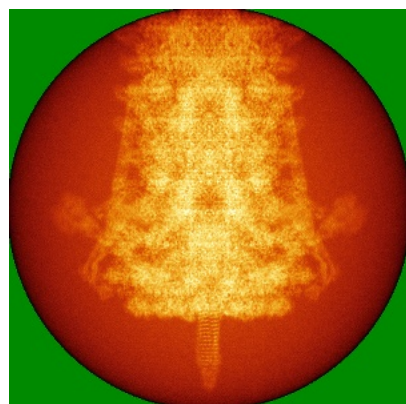


Y

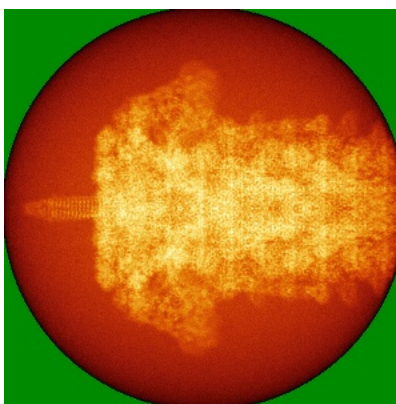


Z

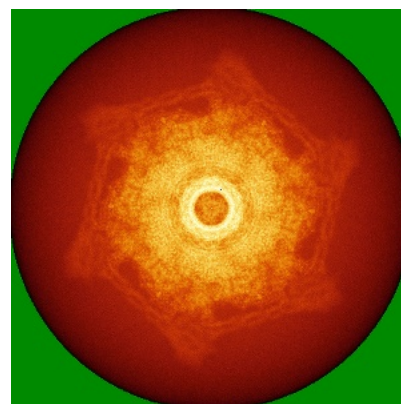
6.4.2 Raw map



X



Y

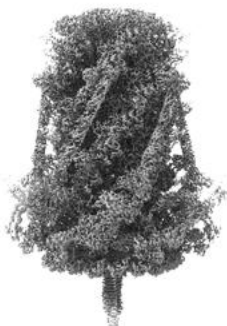


Z

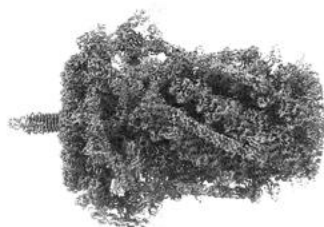
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

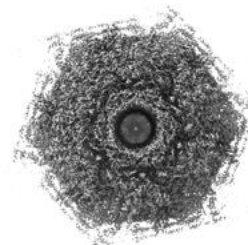
6.5.1 Primary map



X



Y



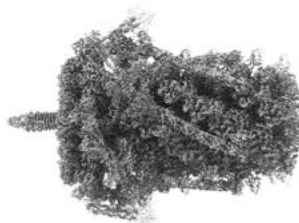
Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

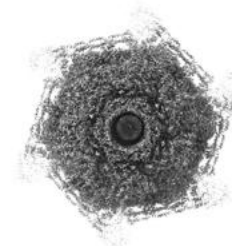
6.5.2 Raw map



X



Y



Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

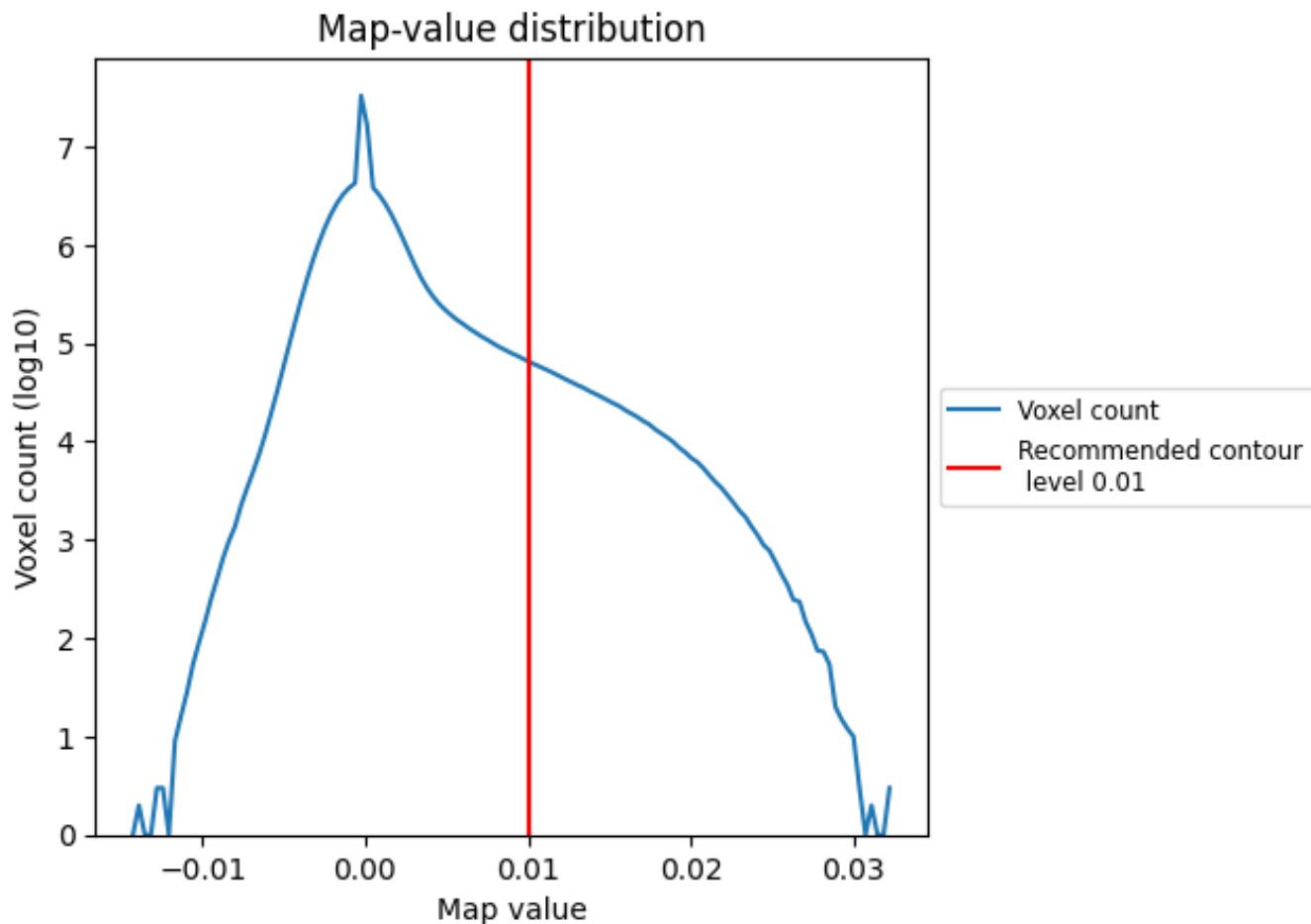
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

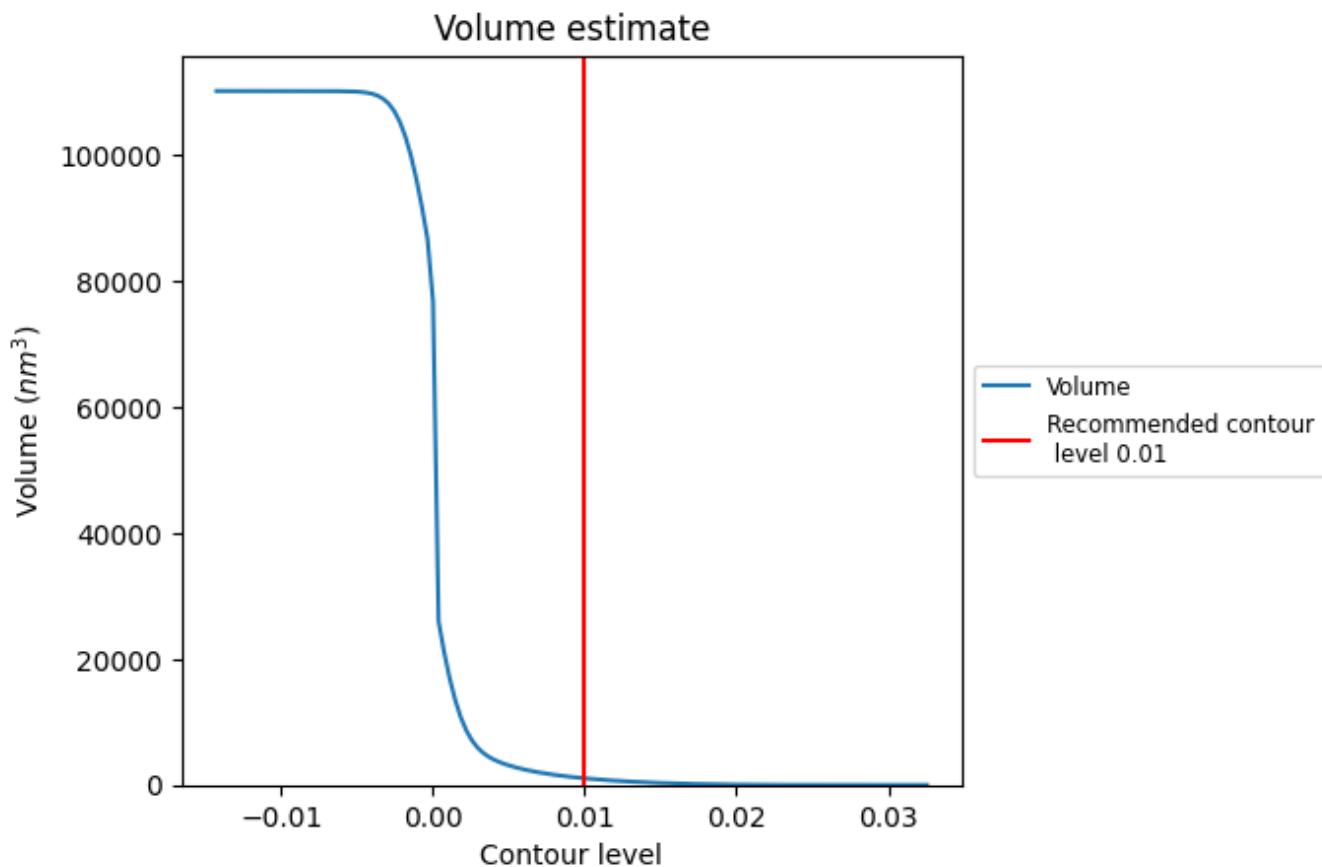
This section contains the results of statistical analysis of the map.

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.

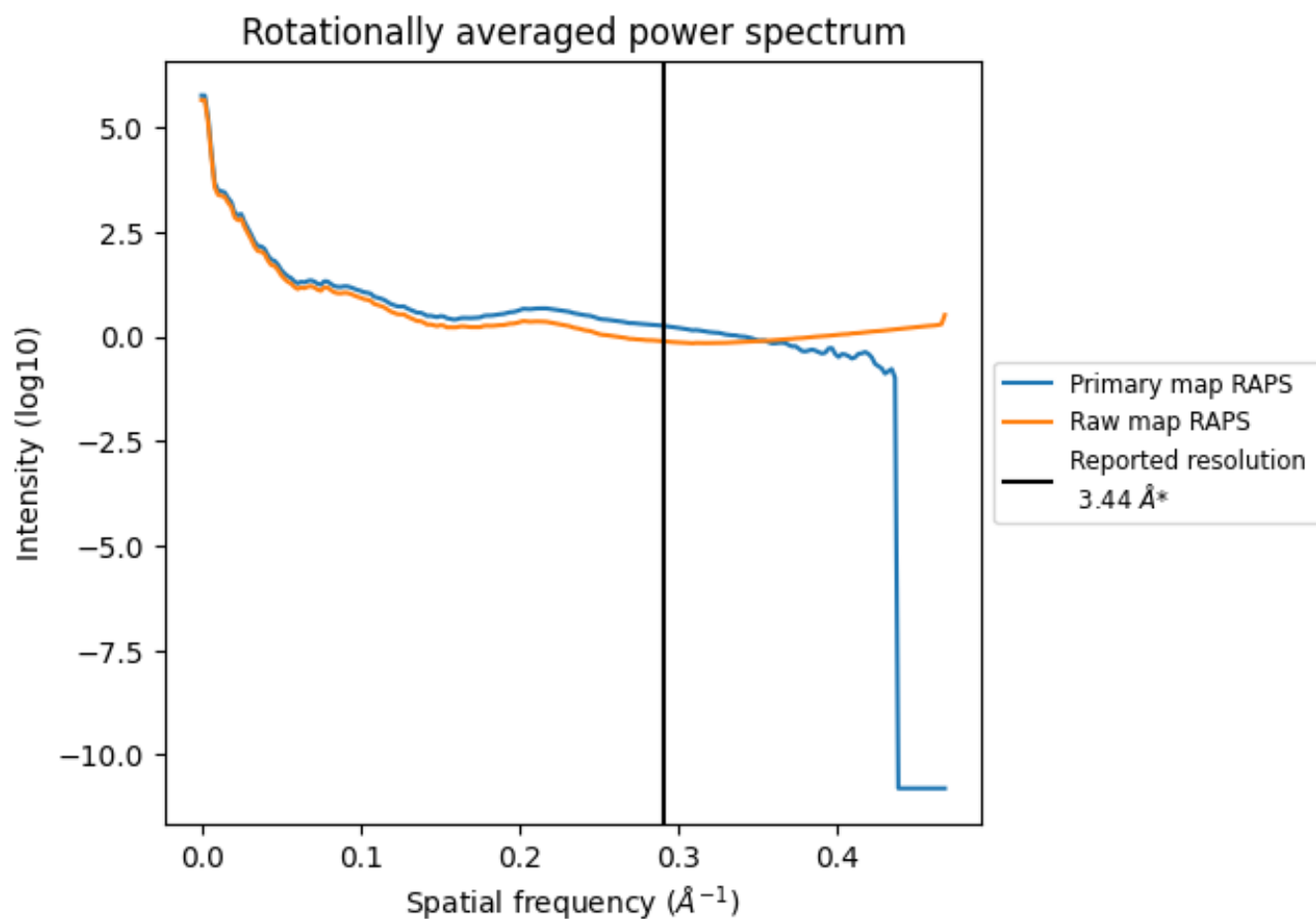
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 1060 nm^3 ; this corresponds to an approximate mass of 957 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](#)

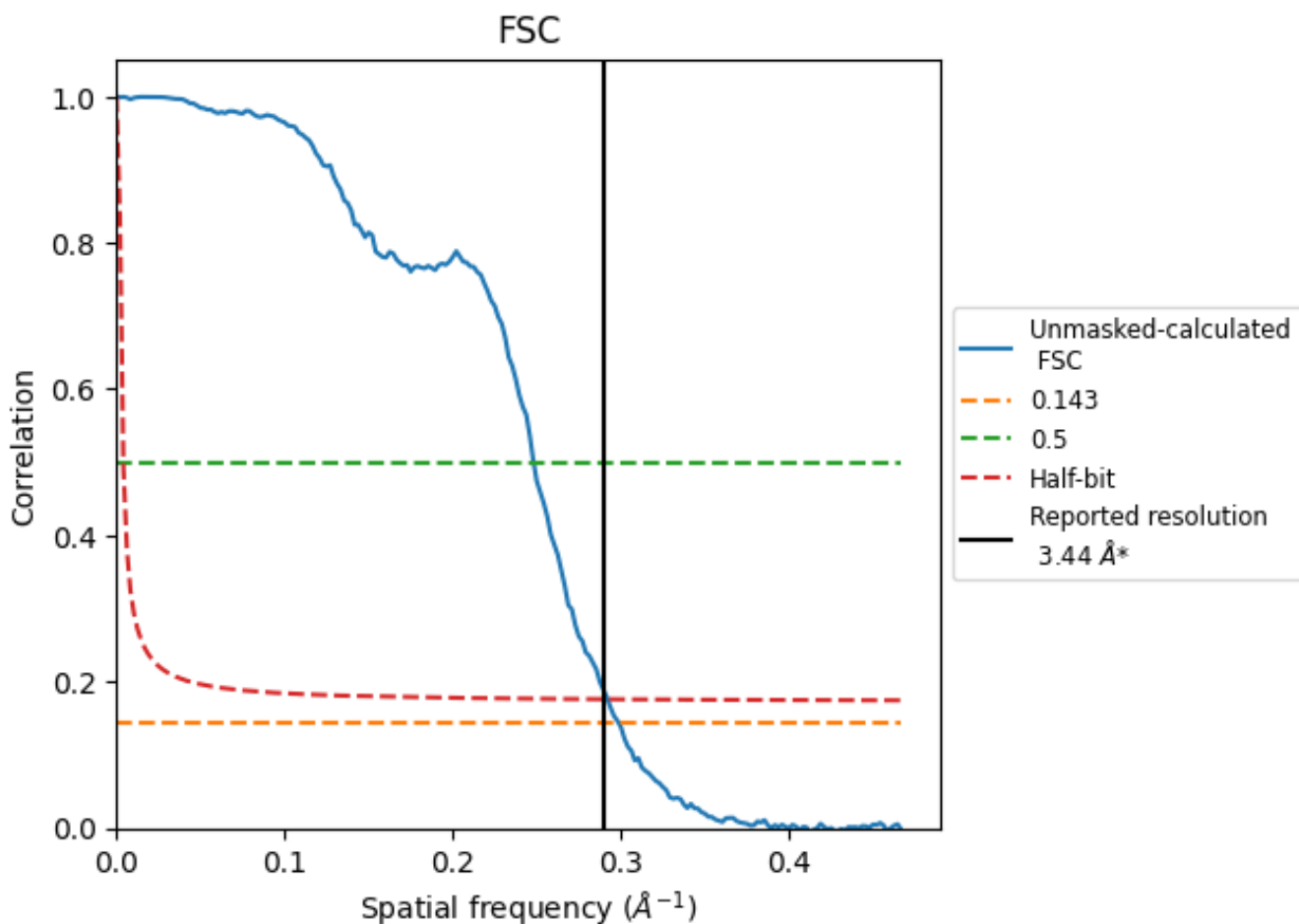


*Reported resolution corresponds to spatial frequency of 0.291 Å⁻¹

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 0.291 \AA^{-1}

8.2 Resolution estimates [i](#)

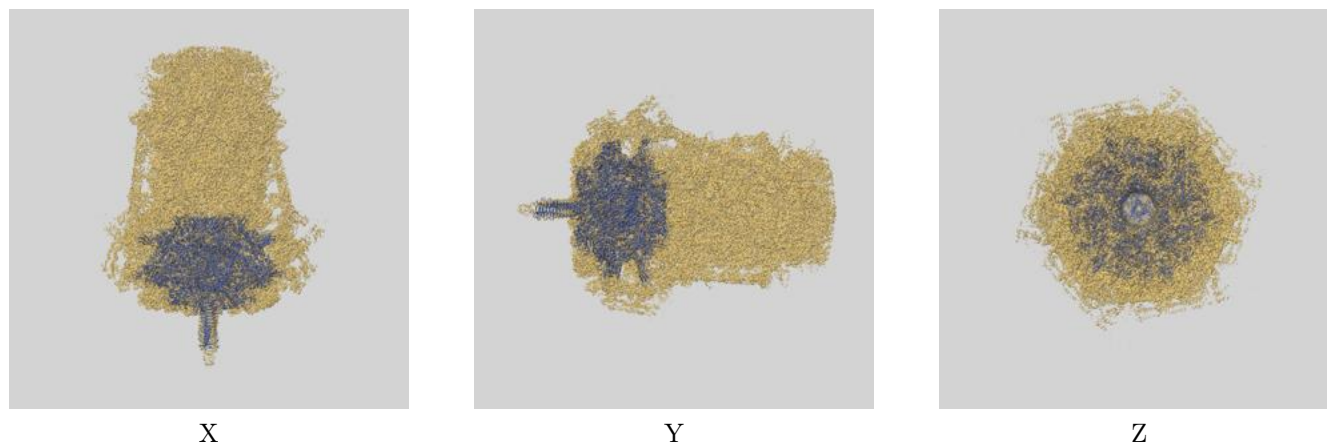
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.44	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.34	4.02	3.42

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

9 Map-model fit [i](#)

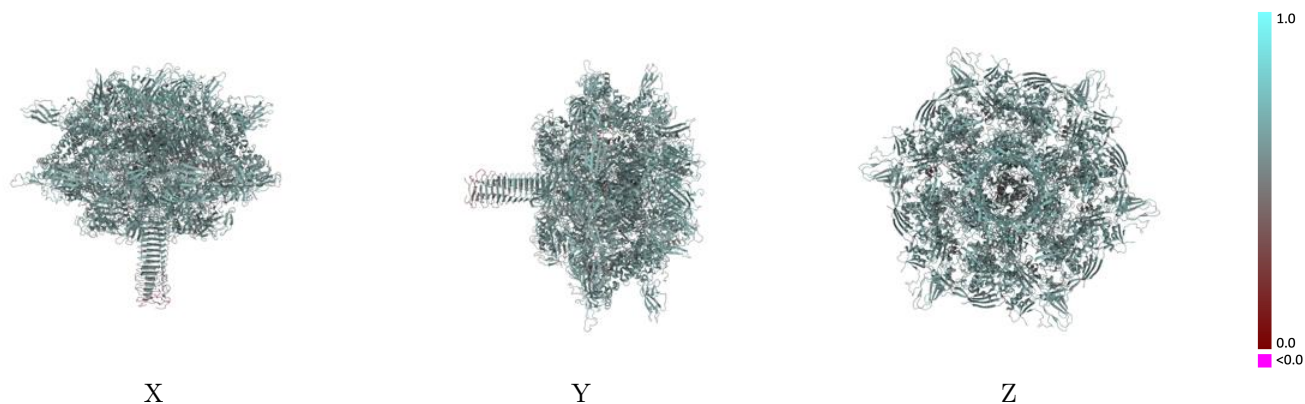
This section contains information regarding the fit between EMDB map EMD-37151 and PDB model 8KEA. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay [i](#)



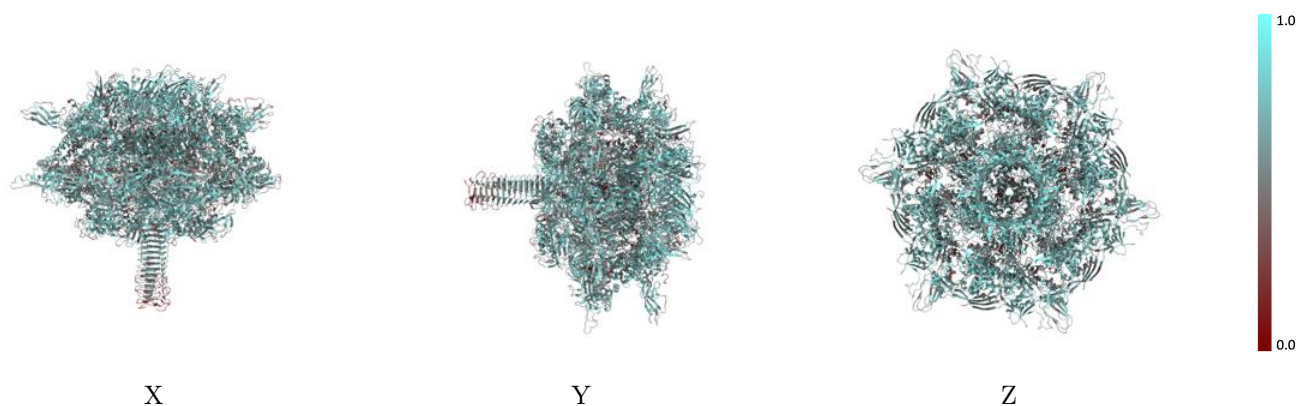
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



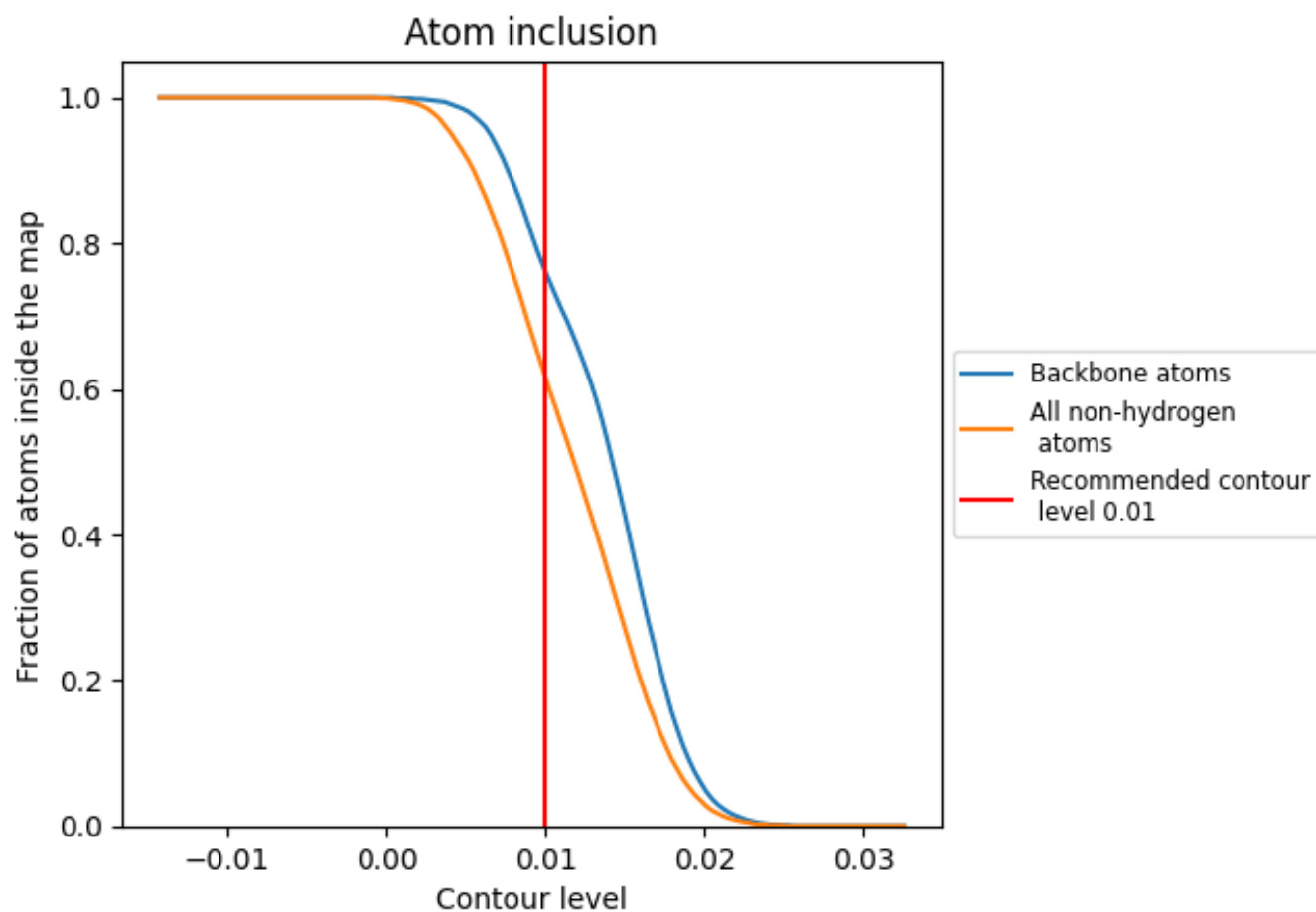
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.01).

9.4 Atom inclusion [i](#)



At the recommended contour level, 76% of all backbone atoms, 62% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6160	0.5780
A	0.6320	0.5810
B	0.6330	0.5820
C	0.6320	0.5800
D	0.6060	0.5650
E	0.6010	0.5640
F	0.6000	0.5640
G	0.4810	0.4890
H	0.4600	0.4690
I	0.4650	0.4530
J	0.4880	0.5400
K	0.5410	0.5410
L	0.4790	0.5400
M	0.5370	0.5530
N	0.4850	0.5360
O	0.5250	0.5390
P	0.6270	0.5980
Q	0.6190	0.5930
R	0.6240	0.5940
S	0.6230	0.5960
T	0.6270	0.5950
U	0.6240	0.5950
V	0.6130	0.5750
W	0.5960	0.5670
X	0.6240	0.5670
Y	0.5970	0.5680
Z	0.6030	0.5640
a	0.5930	0.5640
b	0.6290	0.5820
c	0.6900	0.5900
d	0.6080	0.5830
e	0.6090	0.5790
f	0.6760	0.5870
g	0.6130	0.5760
h	0.6320	0.5820



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Chain	Atom inclusion	Q-score
i	 0.6940	 0.5910
j	 0.6100	 0.5830
k	 0.6040	 0.5730
l	 0.6860	 0.5910
m	 0.6050	 0.5780
n	 0.6370	 0.5860
o	 0.6850	 0.5870
p	 0.6070	 0.5820
q	 0.6050	 0.5700
r	 0.6810	 0.5920
s	 0.6070	 0.5760