wwPDB EM Validation Summary Report

Mar 8, 2026 – 02:48 AM UTC

PDB ID	:	8IYD / pdb_00008iyd
EMDB ID	:	EMD-35818
Title	:	Tail cap of phage lambda tail
Authors	:	Wang, J.W.; Wang, C.
Deposited on	:	2023-04-04
Resolution	:	3.10 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

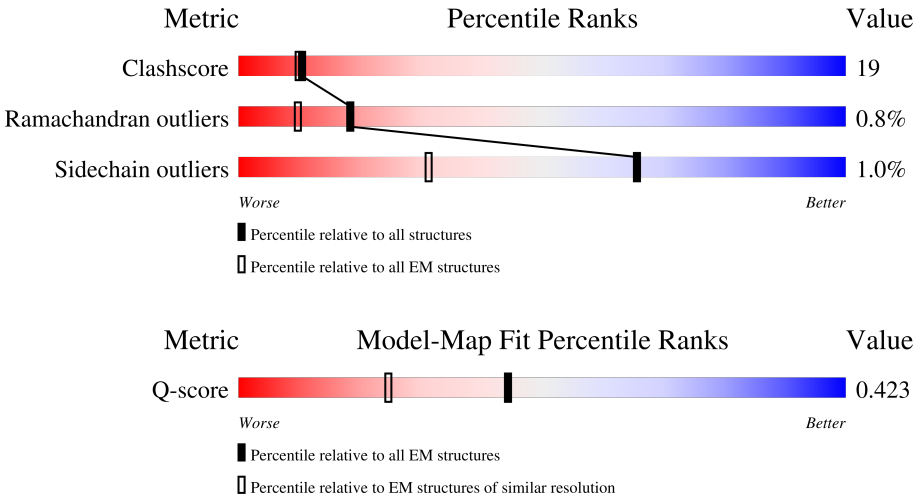
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh &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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.10 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	14724 (2.60 - 3.60)

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

Mol	Chain	Length	Quality of chain
1	A	246	15% 57% 41% ·
1	B	246	13% 62% 36% ·
1	C	246	14% 58% 40% ··
1	D	246	14% 60% 38% ··

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Mol	Chain	Length	Quality of chain
1	E	246	13% 64% 35%
1	F	246	15% 67% 32%
1	H	246	20% 59% 40%
1	I	246	12% 59% 40%
1	J	246	17% 63% 35%
1	L	246	35% 61% 38%
1	M	246	36% 63% 37%
1	N	246	16% 57% 41%
1	O	246	13% 63% 36%
1	P	246	13% 61% 37%
1	R	246	20% 58% 40%
1	S	246	13% 58% 41%
1	T	246	17% 66% 32%
1	V	246	35% 64% 35%
1	X	246	35% 61% 37%
1	Y	246	37% 61% 39%
1	a	246	21% 61% 39%
1	b	246	12% 61% 36%
1	c	246	17% 67% 31%
1	v	246	35% 62% 37%
2	G	131	68% 32%
2	K	131	66% 31%
2	Q	131	60% 35%
2	U	131	63% 35%
2	W	131	67% 30%

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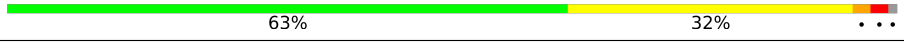
Mol	Chain	Length	Quality of chain
2	u	131	

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 49344 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 Tail tube protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	B	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	C	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	a	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	b	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	c	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	V	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	v	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	D	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	E	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	F	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	H	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	I	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	J	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	L	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	M	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	N	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	O	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	P	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	R	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	S	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	T	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	X	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		
1	Y	244	Total	C	N	O	S	0	0
			1799	1124	303	367	5		

- Molecule 2 is a protein called Tail tube terminator protein.

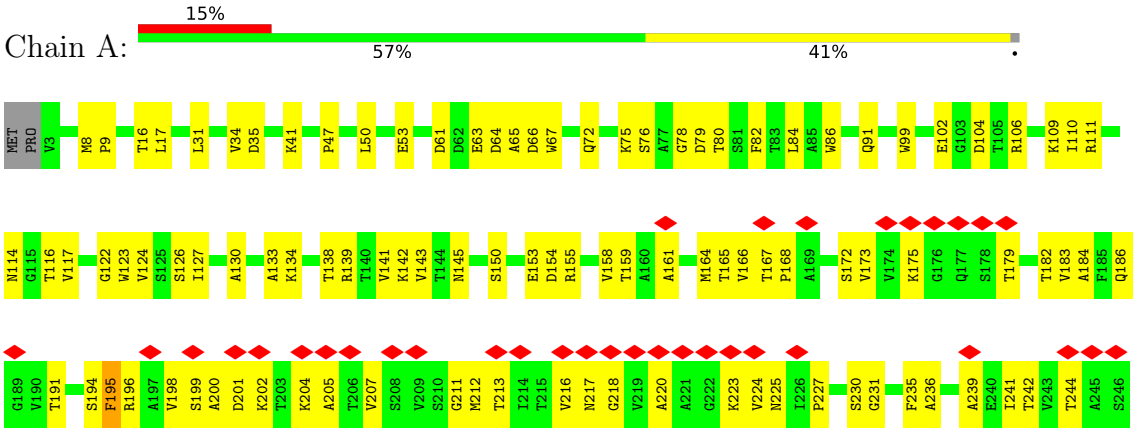
Mol	Chain	Residues	Atoms					AltConf	Trace
2	U	131	Total	C	N	O	S	0	0
			1032	655	159	213	5		
2	u	130	Total	C	N	O	S	0	0
			1024	650	158	212	4		
2	G	131	Total	C	N	O	S	0	0
			1032	655	159	213	5		
2	K	130	Total	C	N	O	S	0	0
			1024	650	158	212	4		
2	Q	131	Total	C	N	O	S	0	0
			1032	655	159	213	5		
2	W	130	Total	C	N	O	S	0	0
			1024	650	158	212	4		

3 Residue-property plots (i)

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

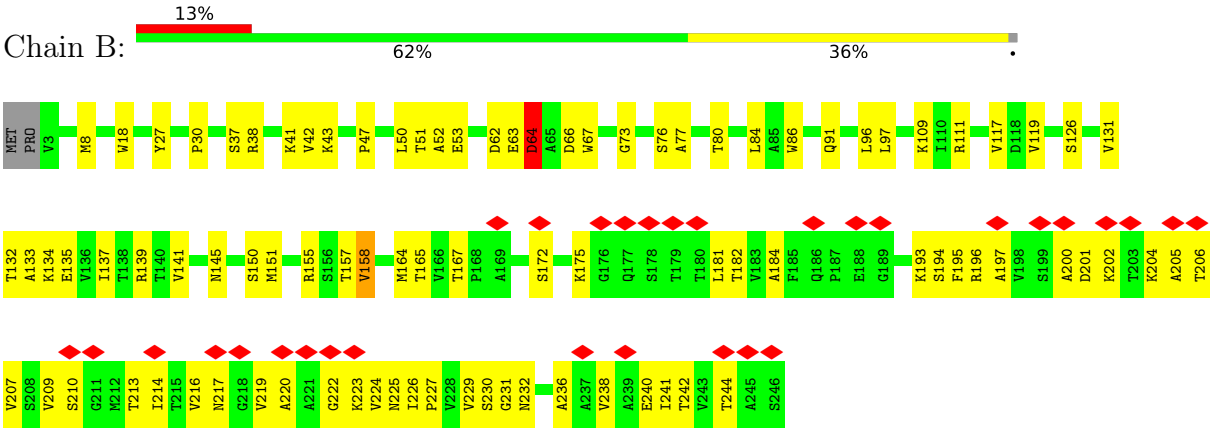
• Molecule 1: Tail tube protein

Chain A:



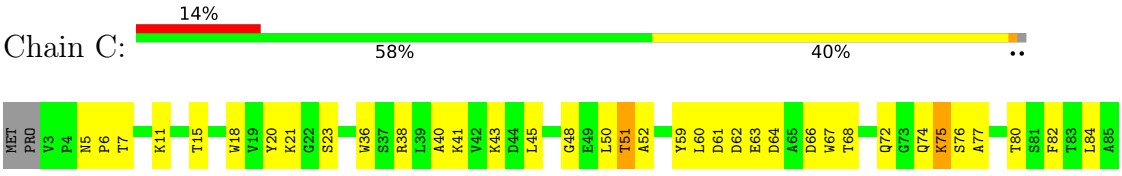
• Molecule 1: Tail tube protein

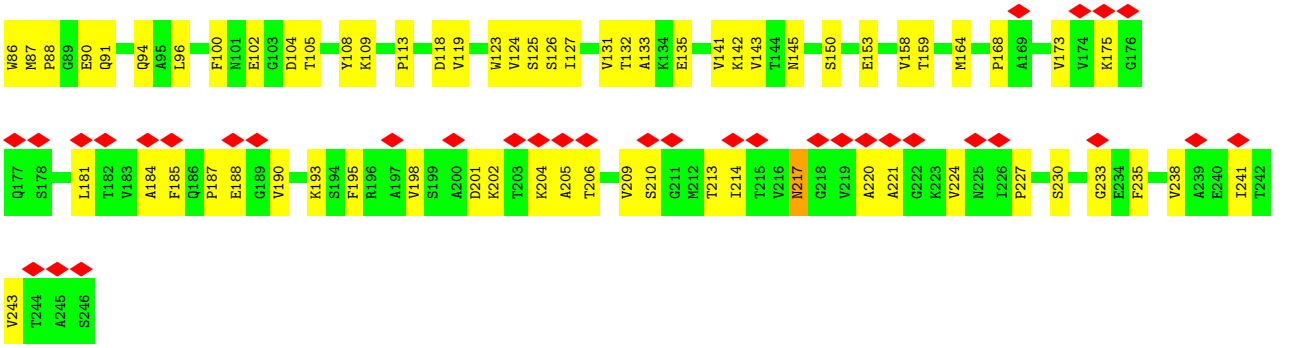
Chain B:



• Molecule 1: Tail tube protein

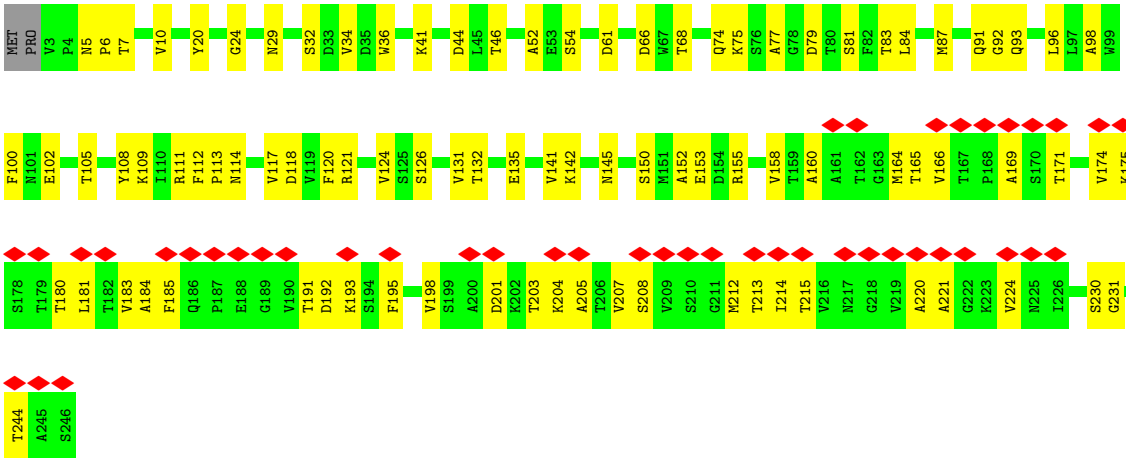
Chain C:





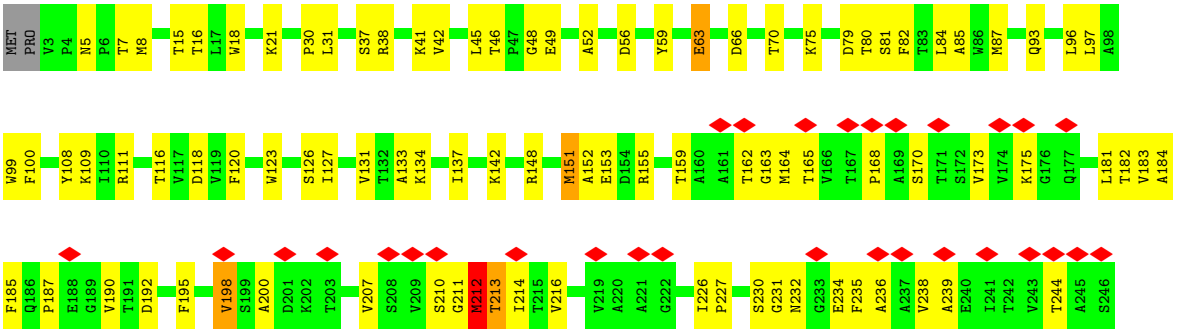
• Molecule 1: Tail tube protein

Chain a:



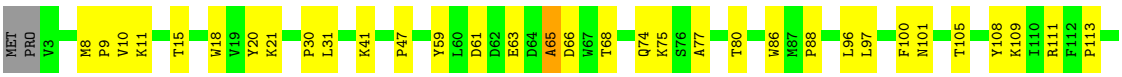
• Molecule 1: Tail tube protein

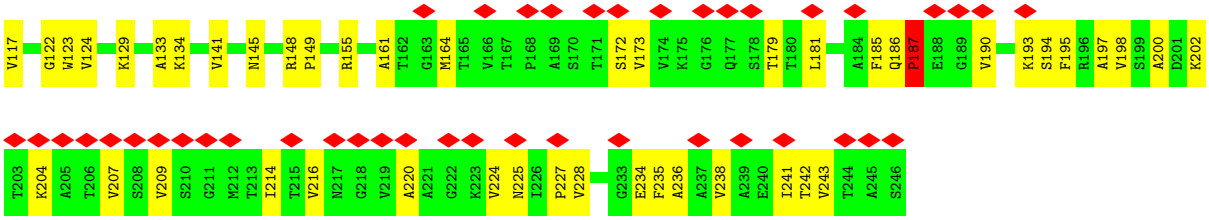
Chain b:



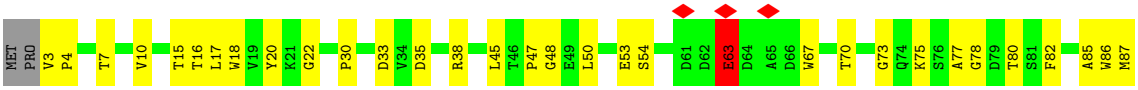
• Molecule 1: Tail tube protein

Chain c:

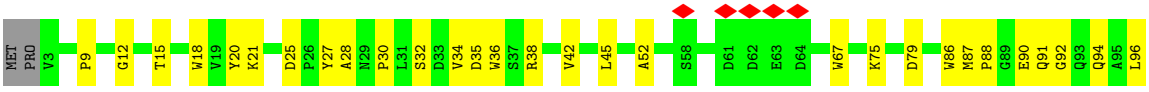


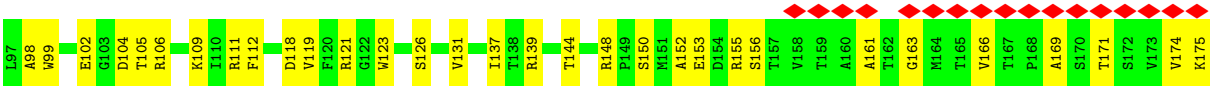


• Molecule 1: Tail tube protein

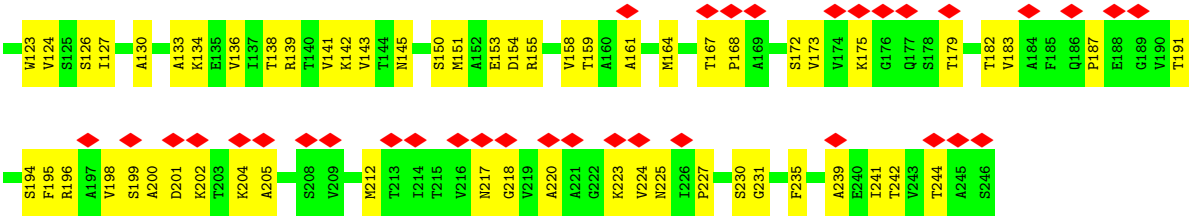


• Molecule 1: Tail tube protein



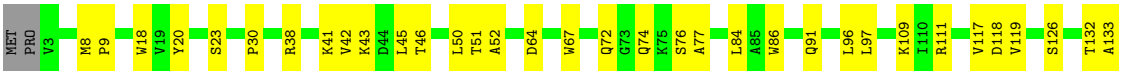


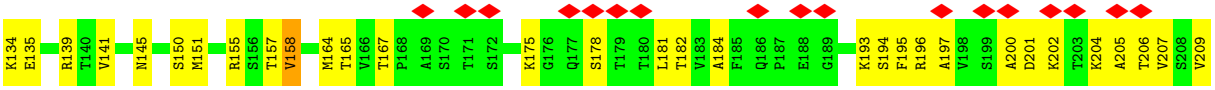
• Molecule 1: Tail tube protein

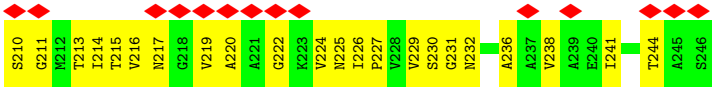


• Molecule 1: Tail tube protein

Chain E:

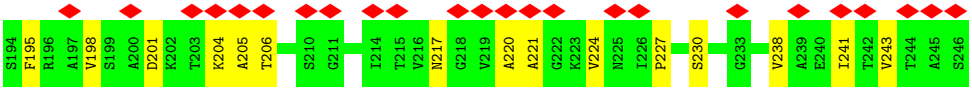






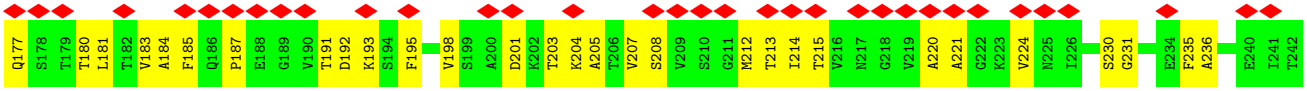
• Molecule 1: Tail tube protein

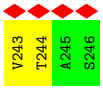
Chain F:



• Molecule 1: Tail tube protein

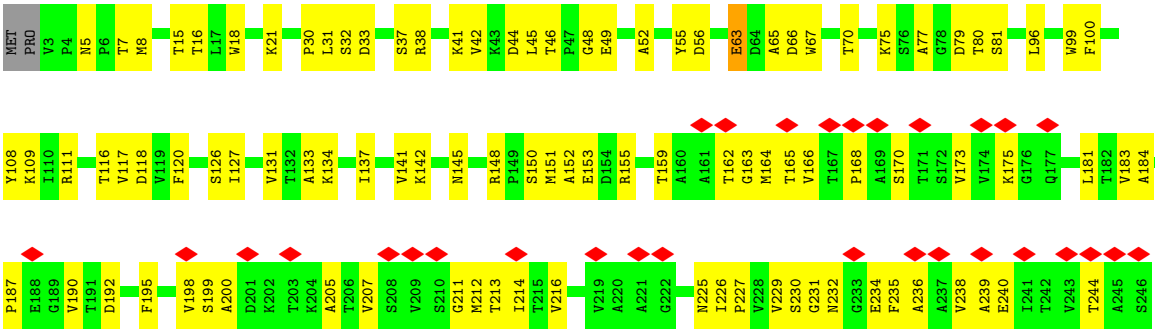
Chain H:





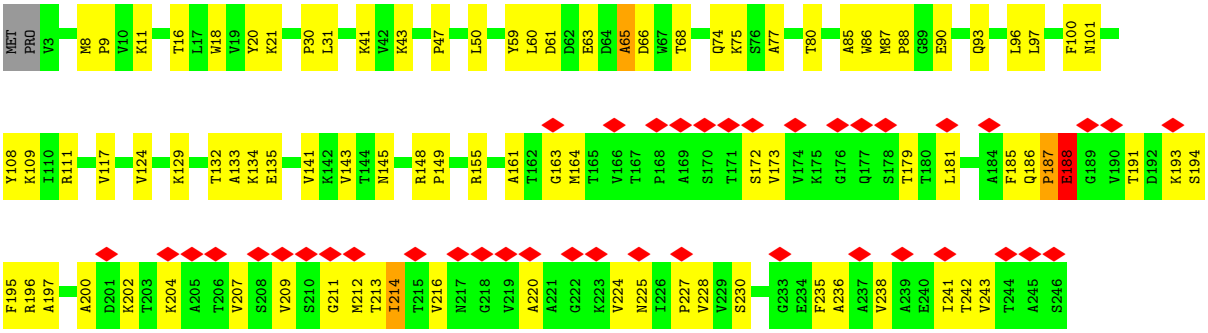
• Molecule 1: Tail tube protein

Chain I:



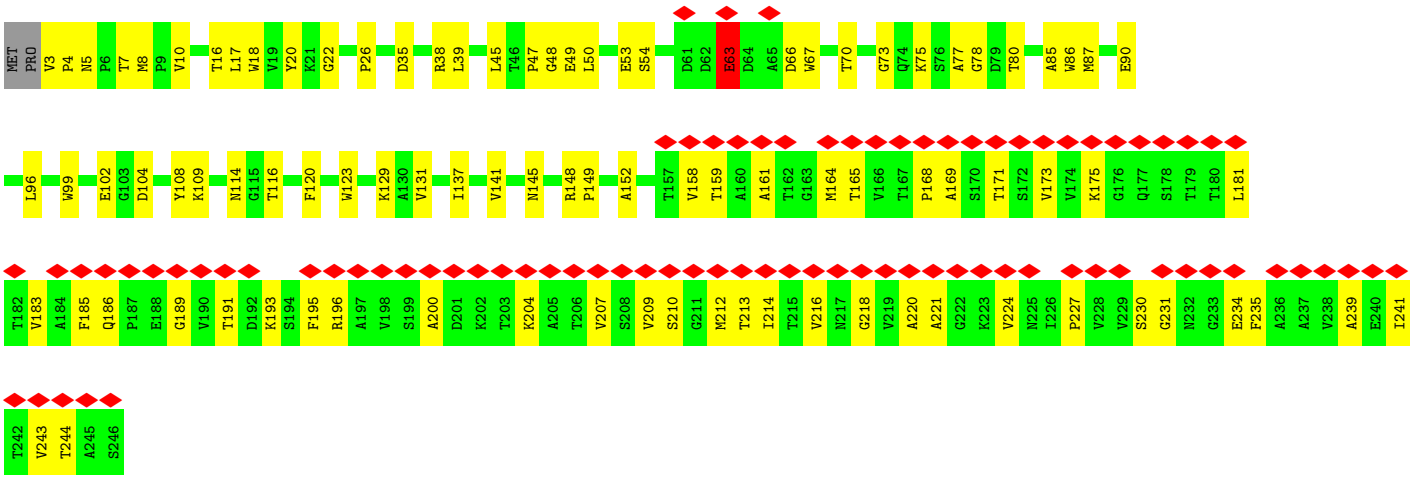
• Molecule 1: Tail tube protein

Chain J:



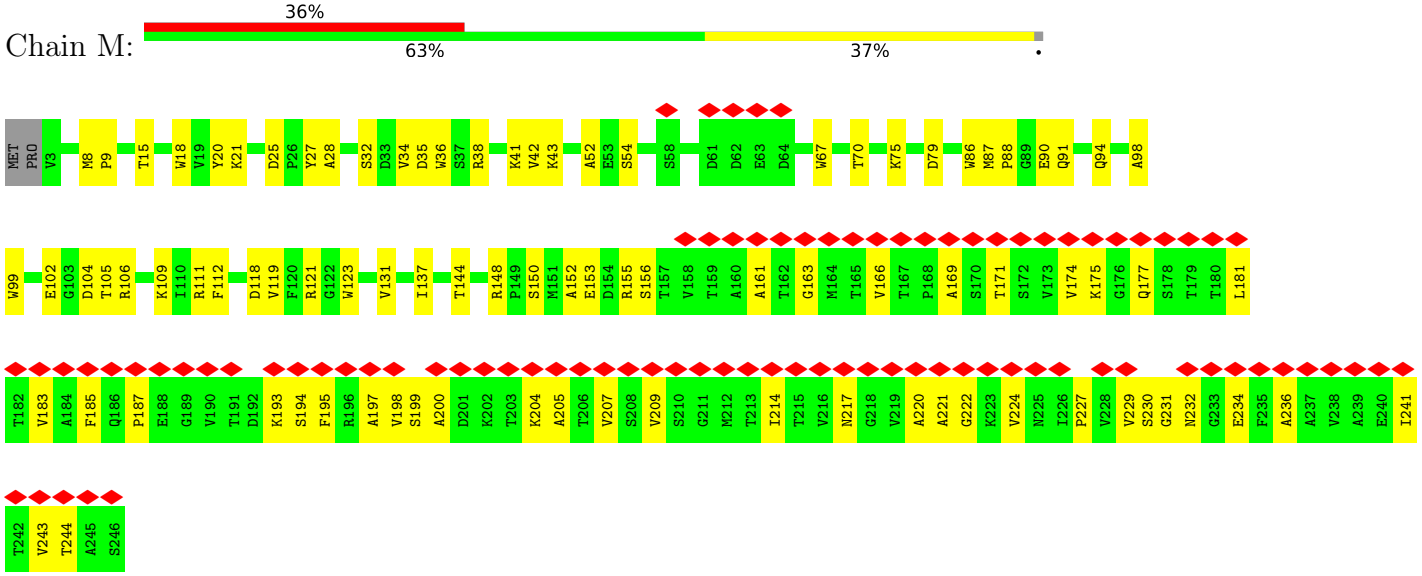
• Molecule 1: Tail tube protein

Chain L:



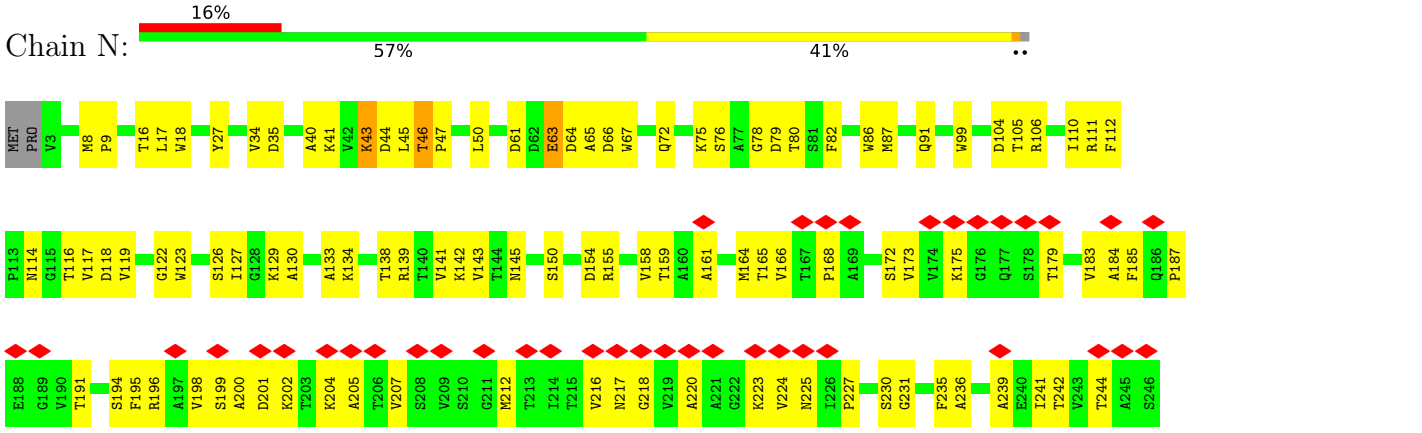
• Molecule 1: Tail tube protein

Chain M:



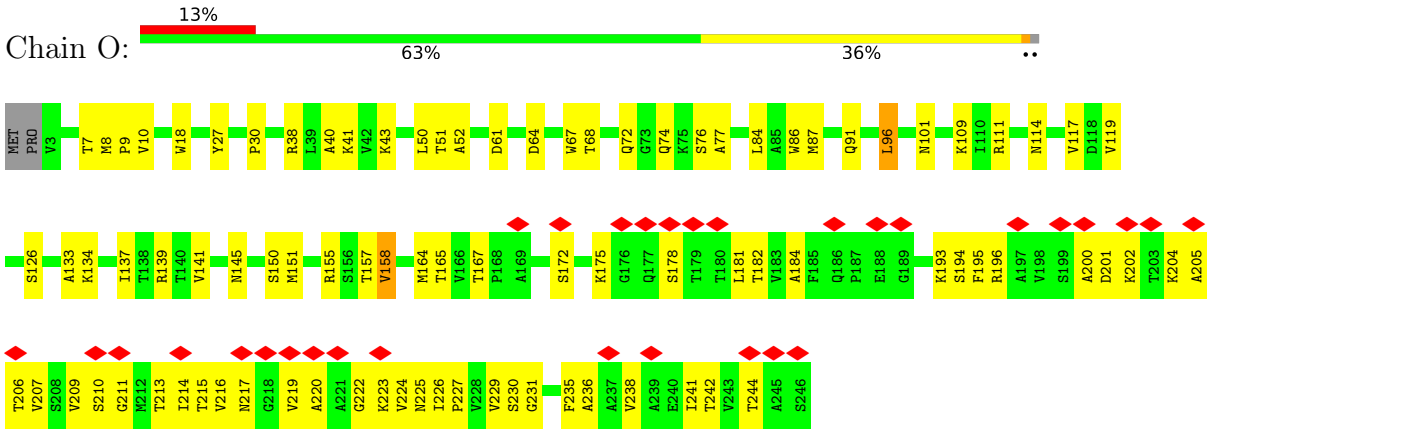
• Molecule 1: Tail tube protein

Chain N:



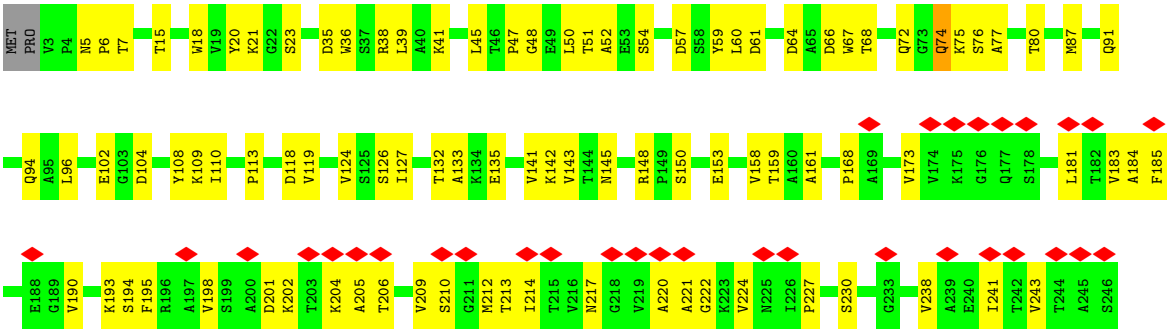
• Molecule 1: Tail tube protein

Chain O:



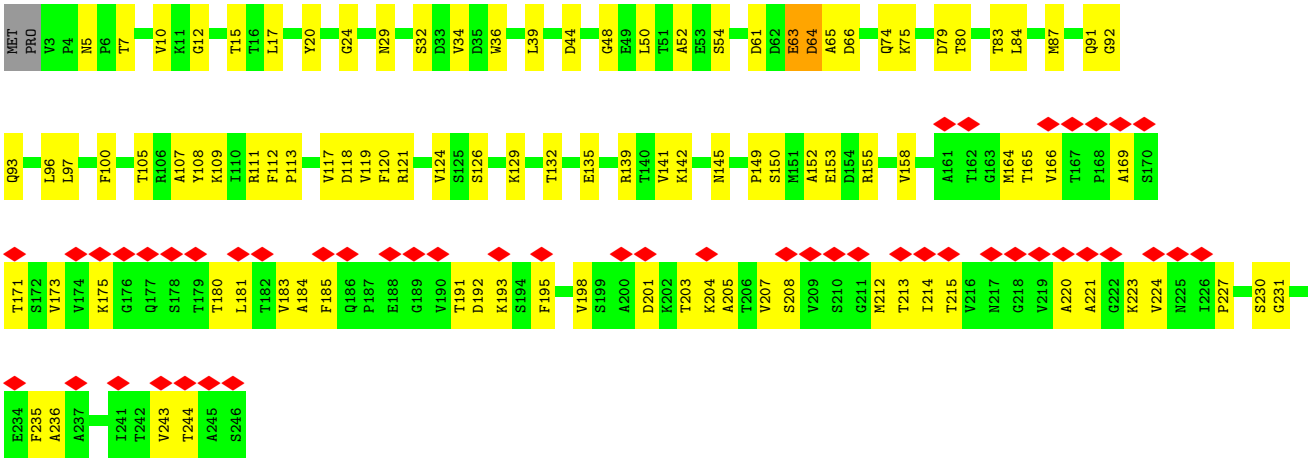
• Molecule 1: Tail tube protein

Chain P:



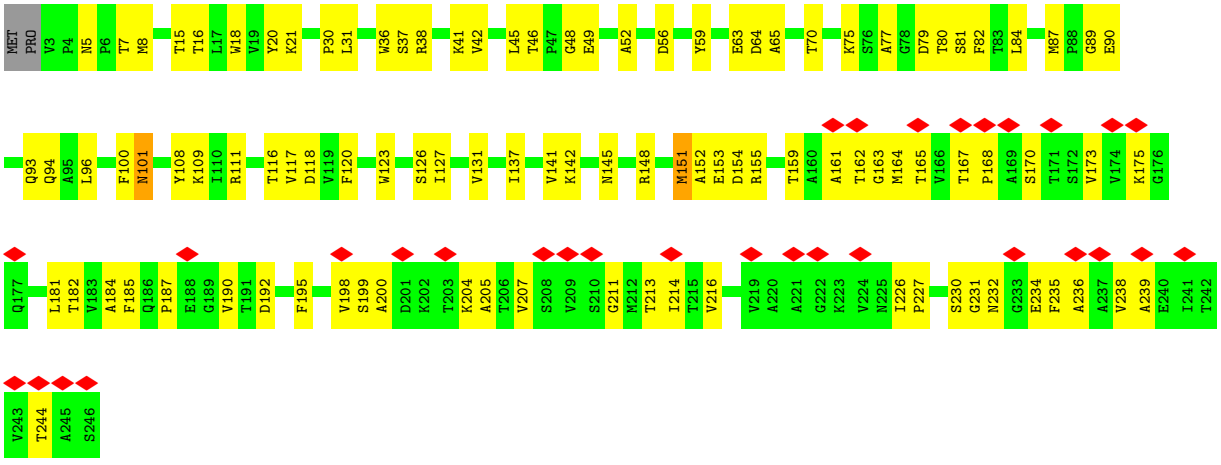
• Molecule 1: Tail tube protein

Chain R:



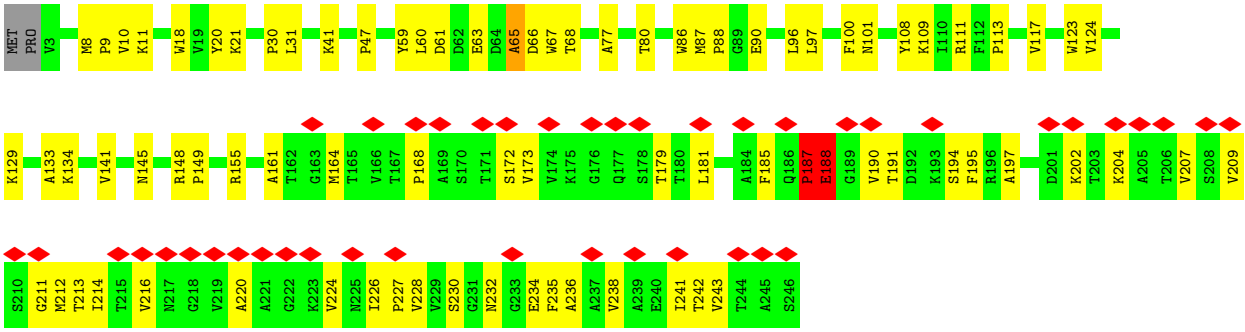
• Molecule 1: Tail tube protein

Chain S:



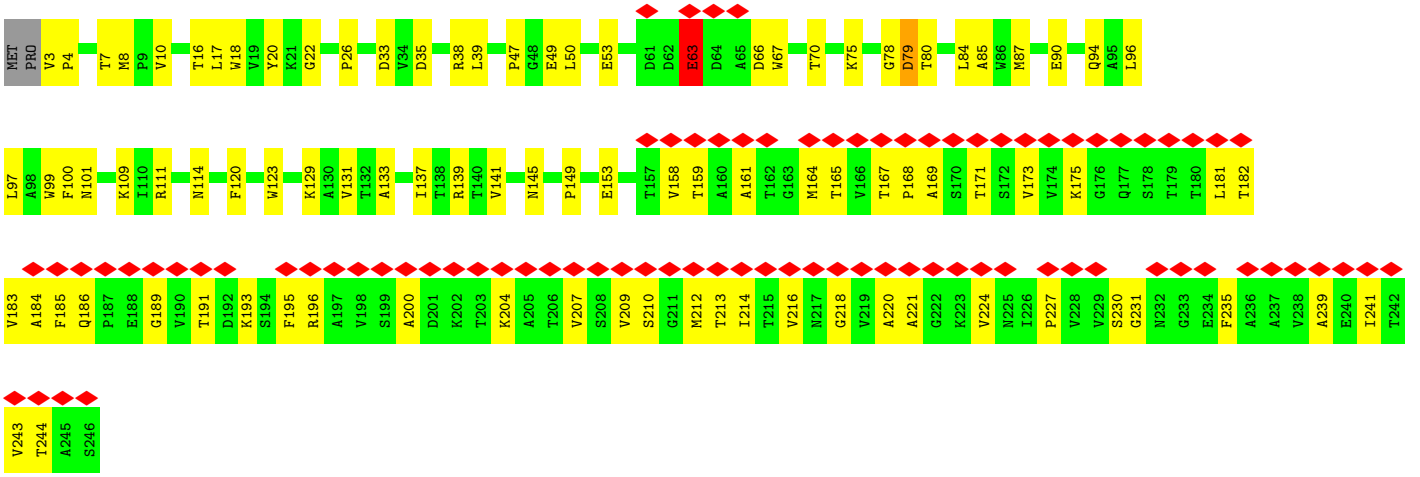
• Molecule 1: Tail tube protein

Chain T:



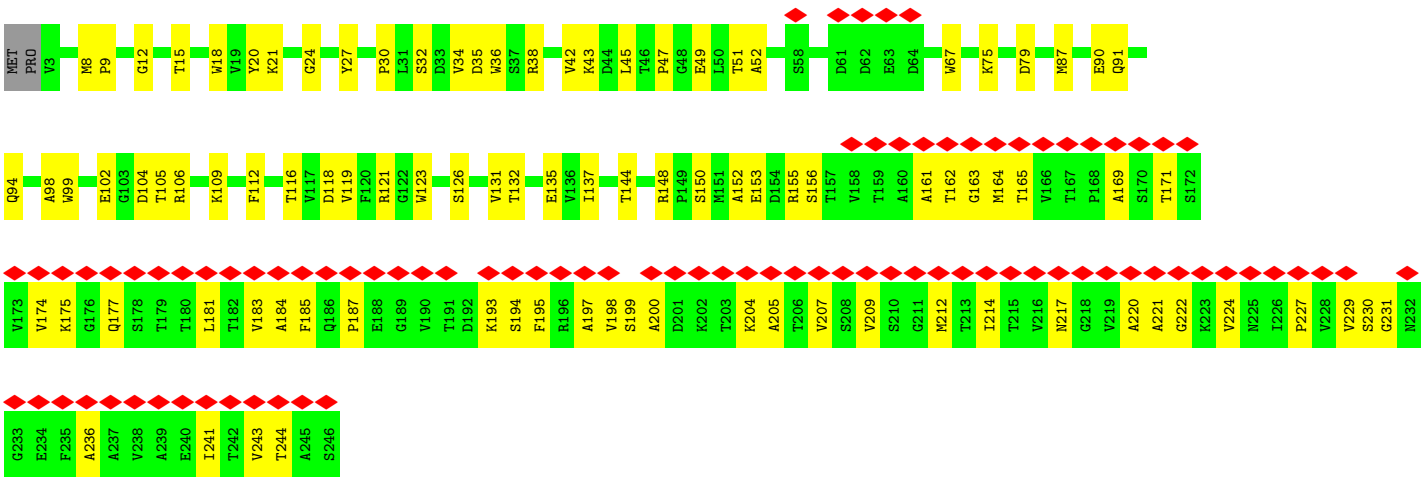
• Molecule 1: Tail tube protein

Chain X:



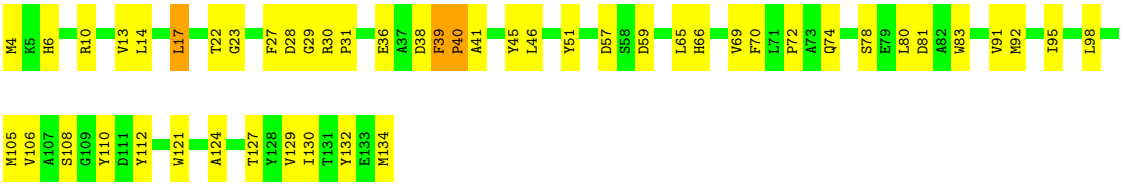
• Molecule 1: Tail tube protein

Chain Y:



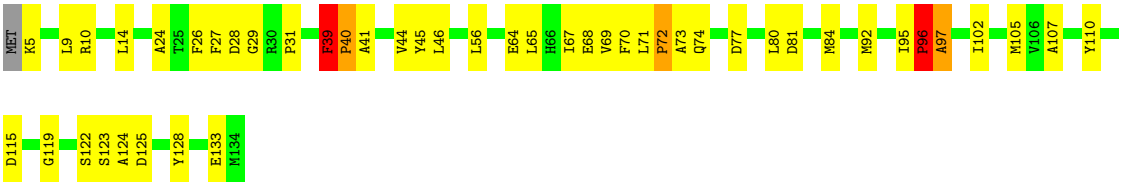
• Molecule 2: Tail tube terminator protein

Chain U:



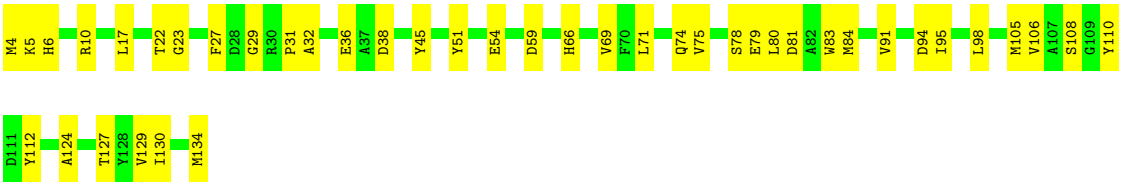
• Molecule 2: Tail tube terminator protein

Chain u:



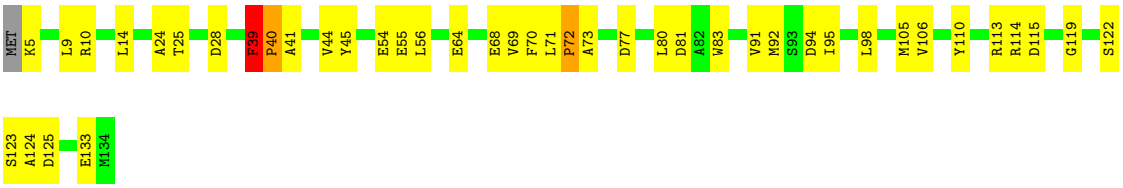
• Molecule 2: Tail tube terminator protein

Chain G:



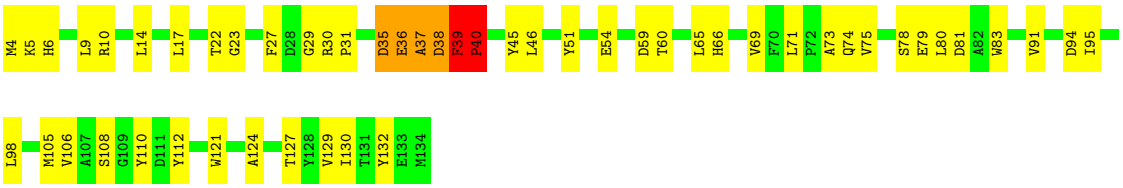
• Molecule 2: Tail tube terminator protein

Chain K:



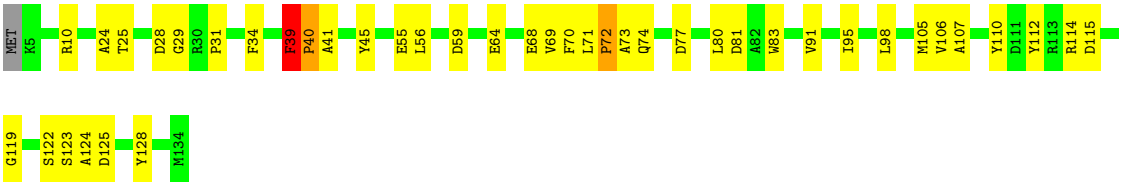
• Molecule 2: Tail tube terminator protein

Chain Q:



• Molecule 2: Tail tube terminator protein

Chain W:


MET
K5
R10
A24
T25
D28
G29
R30
P31
F34
F39
P40
A41
Y45
E55
L56
D59
E64
E68
V69
F70
L71
P72
A73
Q74
D77
L80
D81
A82
W83
V91
I95
L98
M105
V106
A107
Y110
D111
Y112
R113
R114
D115
G119
S122
S123
A124
D125
Y128
M134

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15959	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.292	Depositor
Minimum map value	-1.196	Depositor
Average map value	-0.003	Depositor
Map value standard deviation	0.078	Depositor
Recommended contour level	0.25	Depositor
Map size (Å)	386.712, 386.712, 386.712	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0742, 1.0742, 1.0742	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	0.21	0/1834	0.46	0/2505
1	B	0.19	0/1834	0.49	2/2505 (0.1%)
1	C	0.20	0/1834	0.47	0/2505
1	D	0.23	0/1834	0.45	0/2505
1	E	0.17	0/1834	0.45	0/2505
1	F	0.24	0/1834	0.51	1/2505 (0.0%)
1	H	0.20	0/1834	0.43	0/2505
1	I	0.23	0/1834	0.50	0/2505
1	J	0.23	0/1834	0.48	1/2505 (0.0%)
1	L	0.19	0/1834	0.41	0/2505
1	M	0.15	0/1834	0.37	0/2505
1	N	0.23	0/1834	0.51	0/2505
1	O	0.24	0/1834	0.48	0/2505
1	P	0.25	1/1834 (0.1%)	0.46	0/2505
1	R	0.21	0/1834	0.42	0/2505
1	S	0.23	0/1834	0.50	0/2505
1	T	0.24	0/1834	0.47	1/2505 (0.0%)
1	V	0.19	0/1834	0.41	0/2505
1	X	0.22	0/1834	0.44	0/2505
1	Y	0.18	0/1834	0.41	0/2505
1	a	0.20	0/1834	0.40	0/2505
1	b	0.26	0/1834	0.51	0/2505
1	c	0.24	0/1834	0.50	1/2505 (0.0%)
1	v	0.15	0/1834	0.37	0/2505
2	G	0.21	0/1058	0.48	0/1444
2	K	0.22	0/1050	0.49	0/1434
2	Q	0.29	0/1058	0.65	5/1444 (0.3%)
2	U	0.20	0/1058	0.48	0/1444
2	W	0.22	0/1050	0.49	0/1434
2	u	0.26	0/1050	0.51	0/1434
All	All	0.22	1/50340 (0.0%)	0.46	11/68754 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected

by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	K	0	1
2	U	0	1
2	W	0	1
2	u	0	1
All	All	0	4

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	P	222	GLY	C-O	-7.31	1.20	1.24

The worst 5 of 11 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	Q	37	ALA	N-CA-C	-7.18	103.61	112.38
1	c	187	PRO	N-CA-C	-7.00	98.05	112.47
1	F	187	PRO	N-CA-C	-6.11	99.88	112.47
2	Q	73	ALA	CB-CA-C	-5.90	109.78	116.63
2	Q	39	PHE	CB-CA-C	5.82	121.63	110.17

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	K	39	PHE	Peptide
2	U	39	PHE	Peptide
2	W	39	PHE	Peptide
2	u	39	PHE	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1799	0	1768	81	0
1	B	1799	0	1768	80	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	1799	0	1768	78	0
1	D	1799	0	1768	81	0
1	E	1799	0	1768	73	0
1	F	1799	0	1768	66	0
1	H	1799	0	1768	80	0
1	I	1799	0	1768	81	0
1	J	1799	0	1768	88	0
1	L	1799	0	1768	75	0
1	M	1799	0	1768	71	0
1	N	1799	0	1768	86	0
1	O	1799	0	1768	75	0
1	P	1799	0	1768	72	0
1	R	1799	0	1768	80	0
1	S	1799	0	1768	83	0
1	T	1799	0	1768	82	0
1	V	1799	0	1768	59	0
1	X	1799	0	1768	79	0
1	Y	1799	0	1768	87	0
1	a	1799	0	1768	70	0
1	b	1799	0	1768	82	0
1	c	1799	0	1768	78	0
1	v	1799	0	1768	76	0
2	G	1032	0	956	35	0
2	K	1024	0	947	36	0
2	Q	1032	0	956	44	0
2	U	1032	0	956	40	0
2	W	1024	0	947	36	0
2	u	1024	0	947	37	0
All	All	49344	0	48141	1843	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 19.

The worst 5 of 1843 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:U:6:HIS:HE2	2:U:132:TYR:HH	1.10	0.94
2:Q:35:ASP:HB3	2:Q:38:ASP:HB2	1.48	0.92
2:Q:6:HIS:HE2	2:Q:132:TYR:HH	1.07	0.92
1:E:8:MET:HE3	1:E:9:PRO:HD2	1.49	0.92
1:J:161:ALA:HB3	1:J:187:PRO:HB2	1.52	0.91

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	242/246 (98%)	209 (86%)	32 (13%)	1 (0%)	30	61
1	B	242/246 (98%)	217 (90%)	24 (10%)	1 (0%)	30	61
1	C	242/246 (98%)	220 (91%)	20 (8%)	2 (1%)	16	47
1	D	242/246 (98%)	210 (87%)	31 (13%)	1 (0%)	30	61
1	E	242/246 (98%)	218 (90%)	22 (9%)	2 (1%)	16	47
1	F	242/246 (98%)	220 (91%)	19 (8%)	3 (1%)	10	37
1	H	242/246 (98%)	216 (89%)	25 (10%)	1 (0%)	30	61
1	I	242/246 (98%)	215 (89%)	27 (11%)	0	100	100
1	J	242/246 (98%)	215 (89%)	25 (10%)	2 (1%)	16	47
1	L	242/246 (98%)	222 (92%)	18 (7%)	2 (1%)	16	47
1	M	242/246 (98%)	226 (93%)	16 (7%)	0	100	100
1	N	242/246 (98%)	208 (86%)	32 (13%)	2 (1%)	16	47
1	O	242/246 (98%)	218 (90%)	21 (9%)	3 (1%)	10	37
1	P	242/246 (98%)	221 (91%)	19 (8%)	2 (1%)	16	47
1	R	242/246 (98%)	223 (92%)	17 (7%)	2 (1%)	16	47
1	S	242/246 (98%)	214 (88%)	28 (12%)	0	100	100
1	T	242/246 (98%)	216 (89%)	23 (10%)	3 (1%)	10	37
1	V	242/246 (98%)	224 (93%)	16 (7%)	2 (1%)	16	47
1	X	242/246 (98%)	219 (90%)	20 (8%)	3 (1%)	10	37
1	Y	242/246 (98%)	224 (93%)	18 (7%)	0	100	100
1	a	242/246 (98%)	224 (93%)	18 (7%)	0	100	100
1	b	242/246 (98%)	213 (88%)	28 (12%)	1 (0%)	30	61

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	c	242/246 (98%)	215 (89%)	25 (10%)	2 (1%)	16 47
1	v	242/246 (98%)	225 (93%)	17 (7%)	0	100 100
2	G	129/131 (98%)	109 (84%)	20 (16%)	0	100 100
2	K	128/131 (98%)	120 (94%)	5 (4%)	3 (2%)	5 23
2	Q	129/131 (98%)	108 (84%)	18 (14%)	3 (2%)	5 23
2	U	129/131 (98%)	107 (83%)	21 (16%)	1 (1%)	16 47
2	W	128/131 (98%)	117 (91%)	8 (6%)	3 (2%)	5 23
2	u	128/131 (98%)	113 (88%)	10 (8%)	5 (4%)	2 14
All	All	6579/6690 (98%)	5906 (90%)	623 (10%)	50 (1%)	18 47

5 of 50 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	158	VAL
1	B	158	VAL
1	C	158	VAL
2	u	39	PHE
2	u	40	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	194/196 (99%)	190 (98%)	4 (2%)	47 71
1	B	194/196 (99%)	193 (100%)	1 (0%)	81 85
1	C	194/196 (99%)	190 (98%)	4 (2%)	47 71
1	D	194/196 (99%)	190 (98%)	4 (2%)	47 71
1	E	194/196 (99%)	194 (100%)	0	100 100
1	F	194/196 (99%)	193 (100%)	1 (0%)	81 85
1	H	194/196 (99%)	193 (100%)	1 (0%)	81 85
1	I	194/196 (99%)	193 (100%)	1 (0%)	81 85

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	J	194/196 (99%)	191 (98%)	3 (2%)	57 75
1	L	194/196 (99%)	192 (99%)	2 (1%)	68 79
1	M	194/196 (99%)	194 (100%)	0	100 100
1	N	194/196 (99%)	191 (98%)	3 (2%)	57 75
1	O	194/196 (99%)	190 (98%)	4 (2%)	47 71
1	P	194/196 (99%)	192 (99%)	2 (1%)	68 79
1	R	194/196 (99%)	193 (100%)	1 (0%)	81 85
1	S	194/196 (99%)	192 (99%)	2 (1%)	68 79
1	T	194/196 (99%)	191 (98%)	3 (2%)	57 75
1	V	194/196 (99%)	192 (99%)	2 (1%)	68 79
1	X	194/196 (99%)	193 (100%)	1 (0%)	81 85
1	Y	194/196 (99%)	194 (100%)	0	100 100
1	a	194/196 (99%)	194 (100%)	0	100 100
1	b	194/196 (99%)	188 (97%)	6 (3%)	35 64
1	c	194/196 (99%)	193 (100%)	1 (0%)	81 85
1	v	194/196 (99%)	194 (100%)	0	100 100
2	G	109/109 (100%)	109 (100%)	0	100 100
2	K	108/109 (99%)	107 (99%)	1 (1%)	70 80
2	Q	109/109 (100%)	106 (97%)	3 (3%)	38 66
2	U	109/109 (100%)	108 (99%)	1 (1%)	70 80
2	W	108/109 (99%)	108 (100%)	0	100 100
2	u	108/109 (99%)	107 (99%)	1 (1%)	70 80
All	All	5307/5358 (99%)	5255 (99%)	52 (1%)	65 79

5 of 52 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	J	188	GLU
1	N	64	ASP
1	T	188	GLU
1	J	214	ILE
1	L	63	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 19 such sidechains are listed below:

Mol	Chain	Res	Type
1	S	94	GLN
1	X	91	GLN
1	X	94	GLN
1	X	74	GLN
1	I	94	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

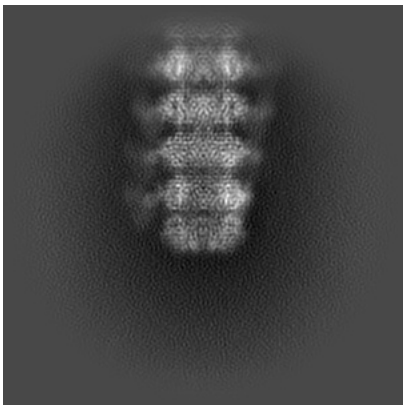
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-35818. These allow visual inspection of the internal detail of the map and identification of artifacts.

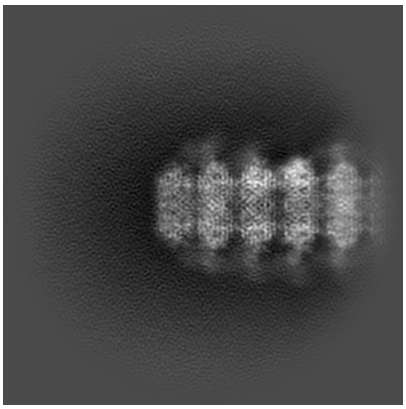
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

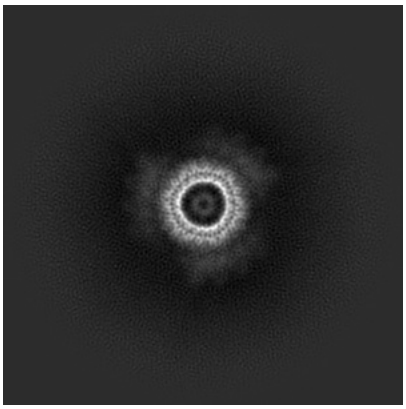
6.1.1 Primary map



X

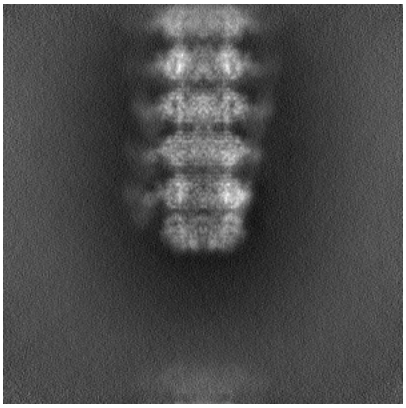


Y

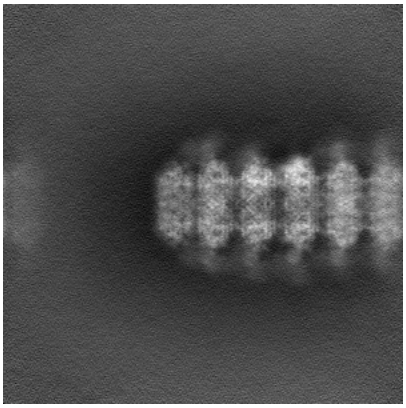


Z

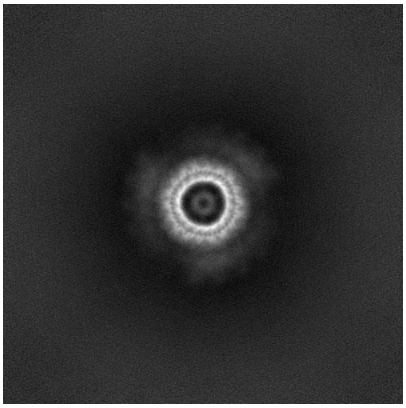
6.1.2 Raw map



X



Y

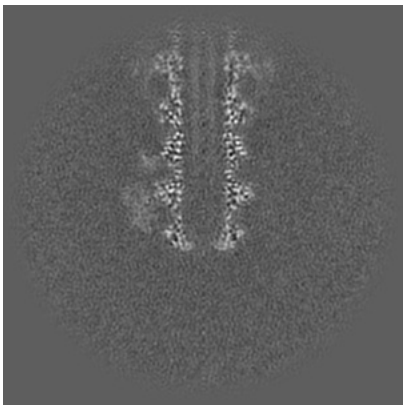


Z

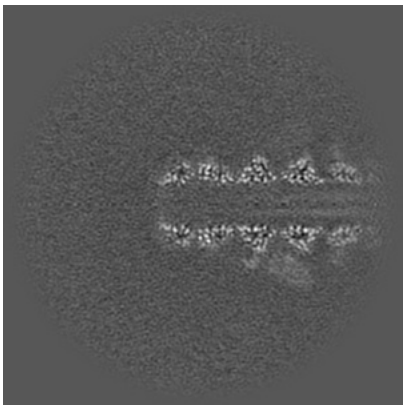
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

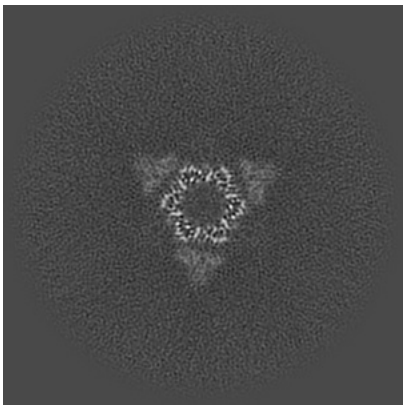
6.2.1 Primary map



X Index: 180

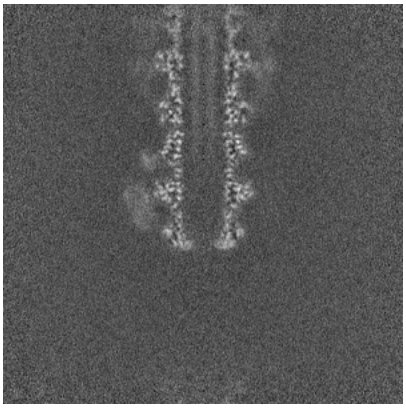


Y Index: 180

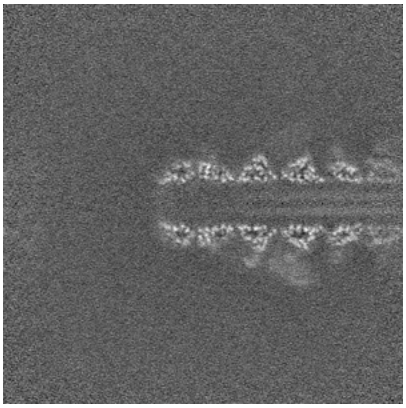


Z Index: 180

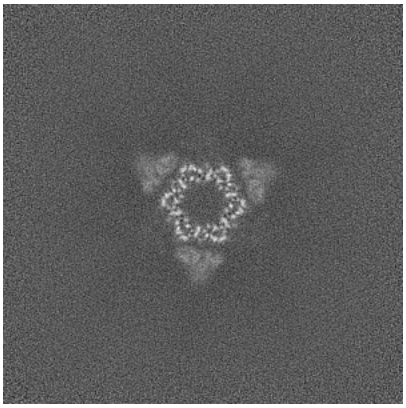
6.2.2 Raw map



X Index: 180



Y Index: 180

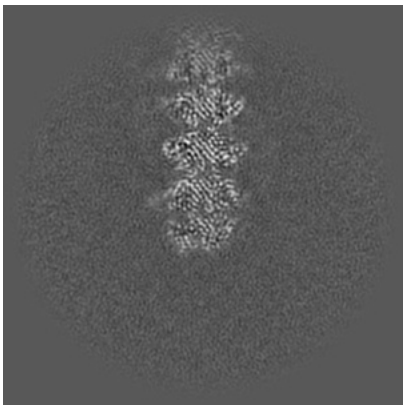


Z Index: 180

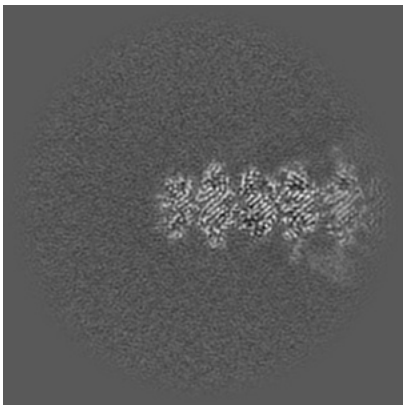
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

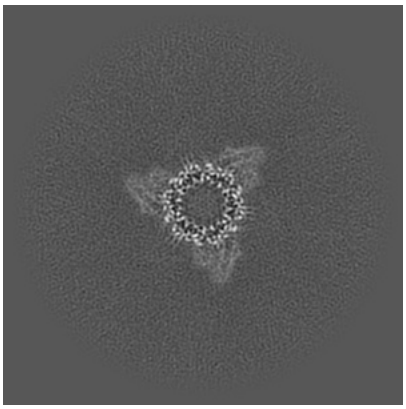
6.3.1 Primary map



X Index: 159

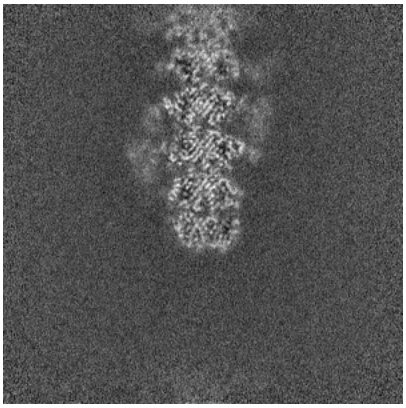


Y Index: 159

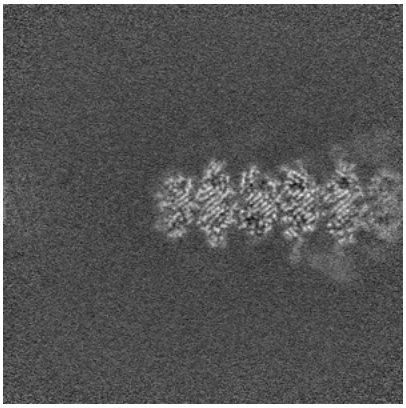


Z Index: 223

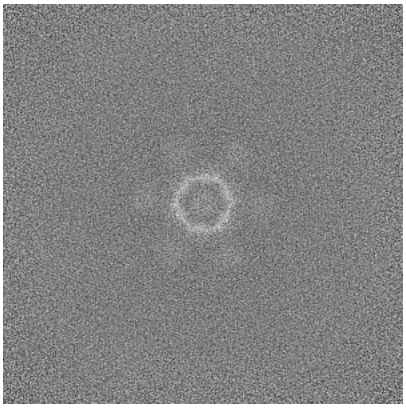
6.3.2 Raw map



X Index: 201



Y Index: 159

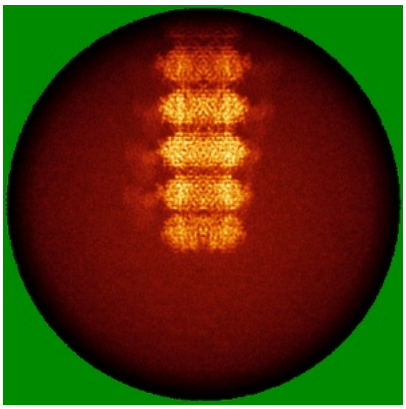


Z Index: 0

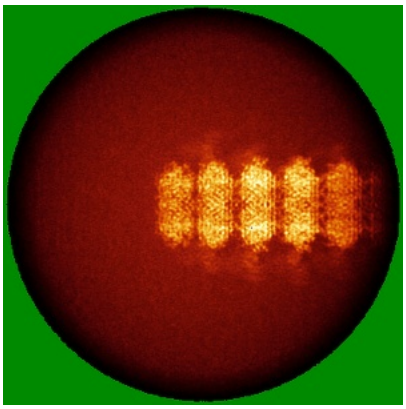
The images above show the largest variance slices of the map in three orthogonal directions.

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

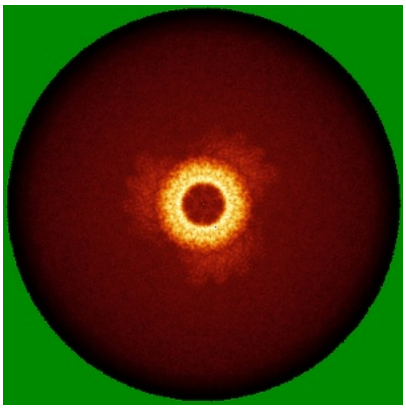
6.4.1 Primary map



X

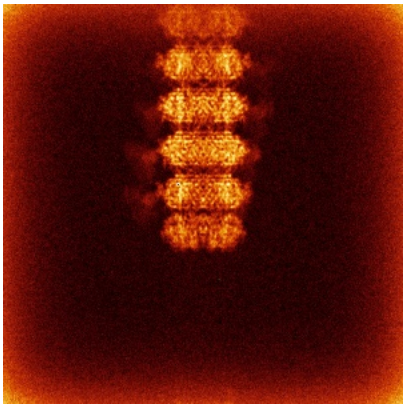


Y

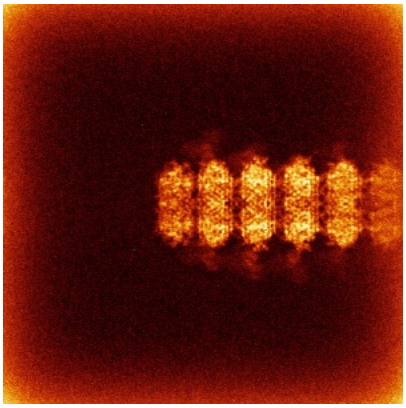


Z

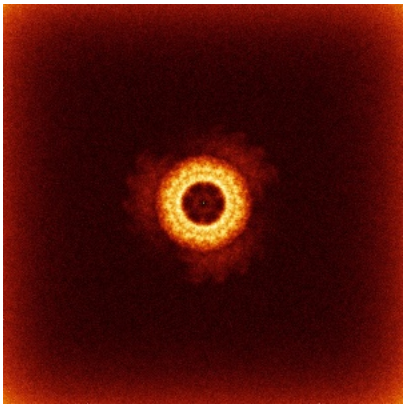
6.4.2 Raw map



X



Y

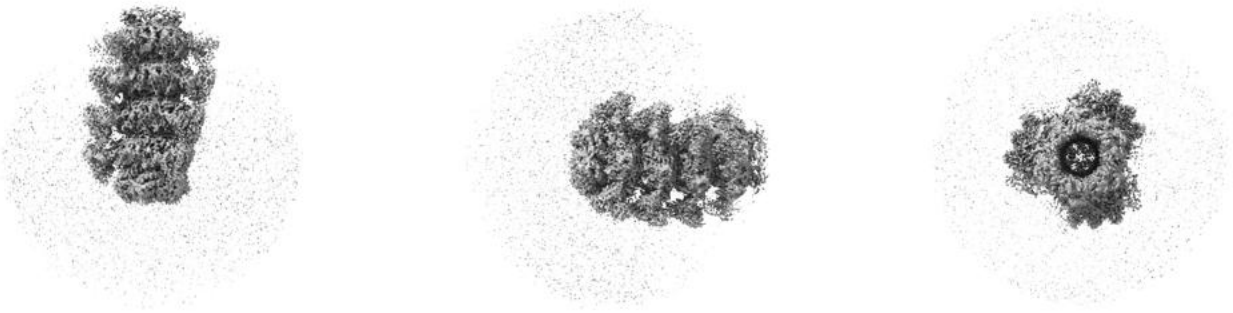


Z

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)

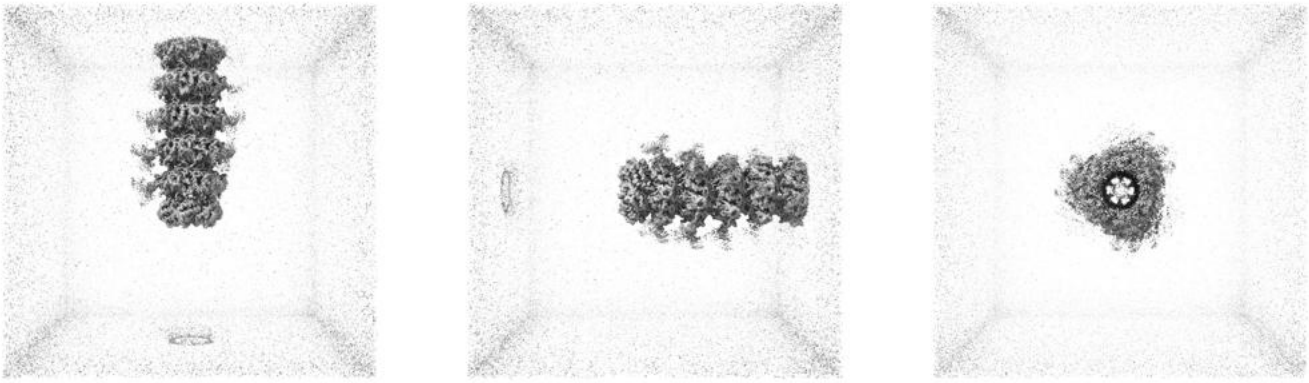
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.25. 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.

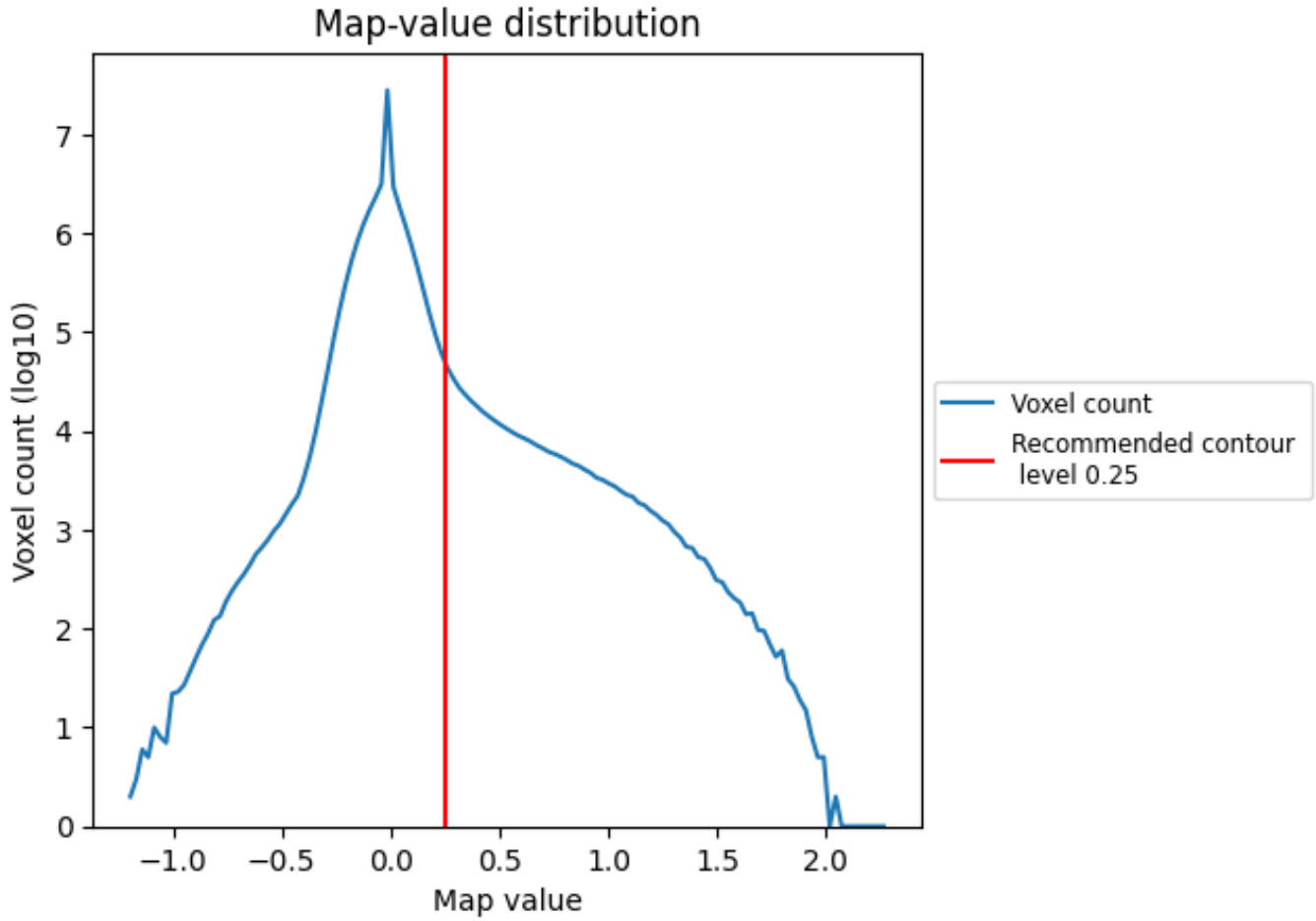
6.6 Mask visualisation (i)

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

7 Map analysis

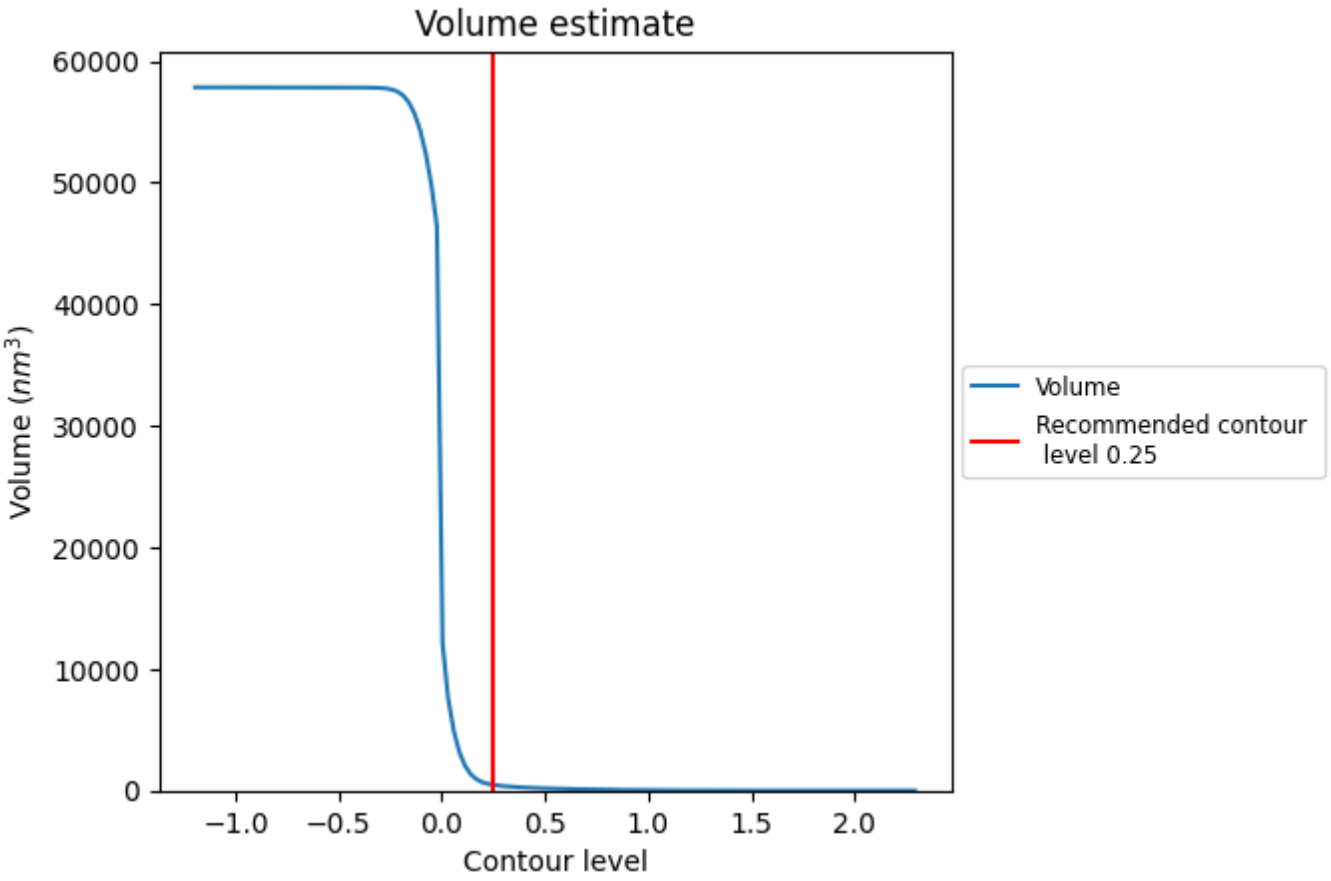
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

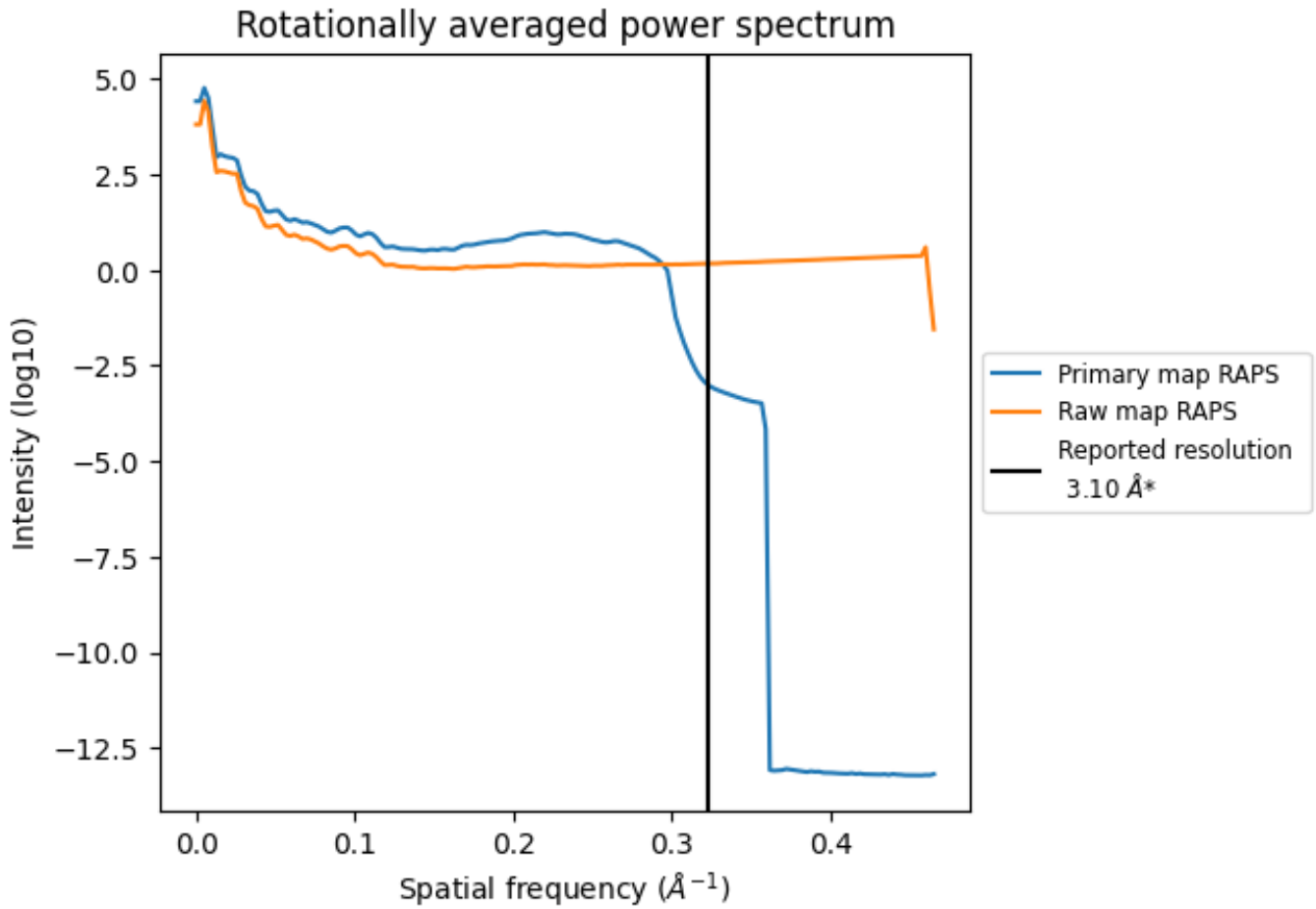
7.2 Volume estimate (i)



The volume at the recommended contour level is 463 nm^3; this corresponds to an approximate mass of 418 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)

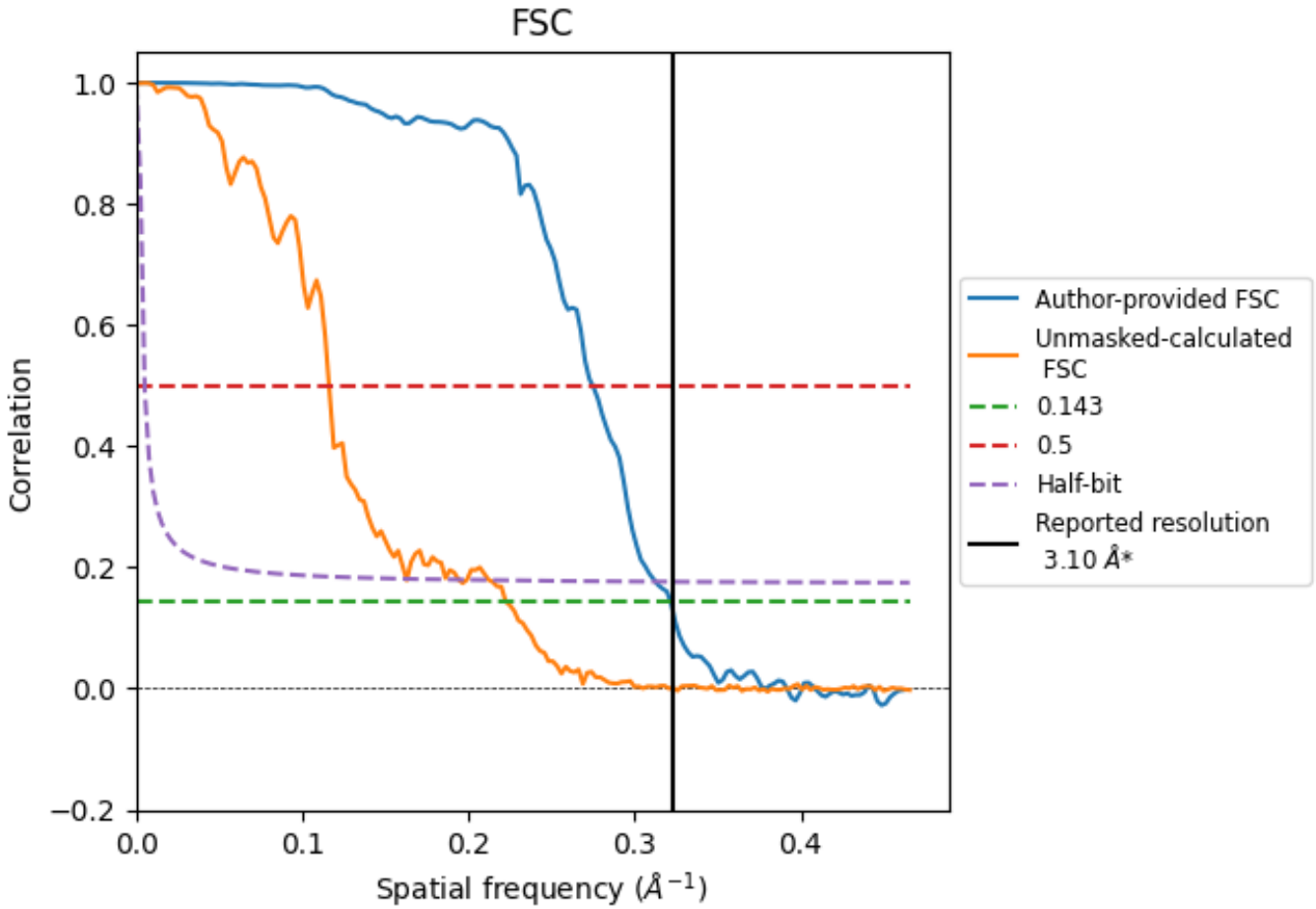


*Reported resolution corresponds to spatial frequency of 0.323 $Å^{-1}$

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.323 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.11	3.64	3.20
Unmasked-calculated*	4.49	8.61	6.15

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.49 differs from the reported value 3.1 by more than 10 %

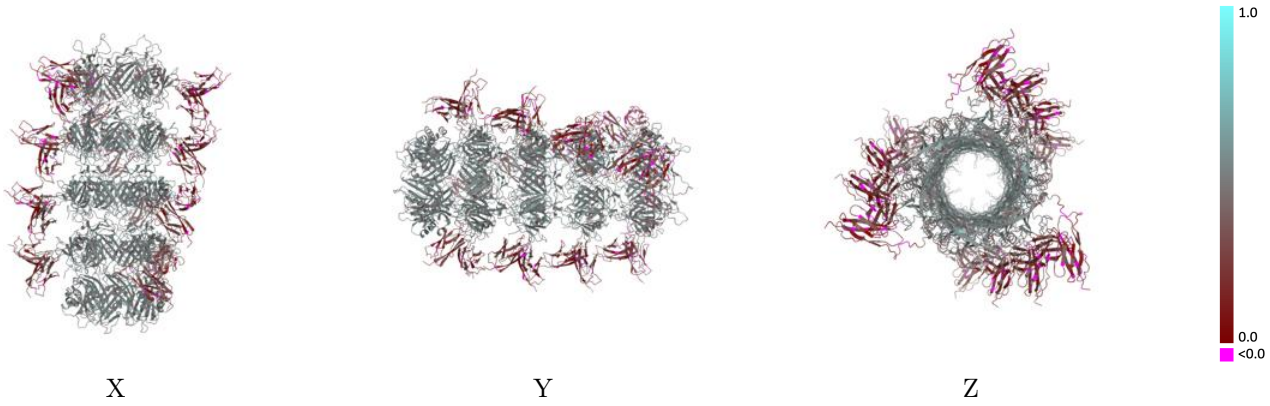
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-35818 and PDB model 8IYD. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay

This section was not generated.

9.2 Q-score mapped to coordinate model



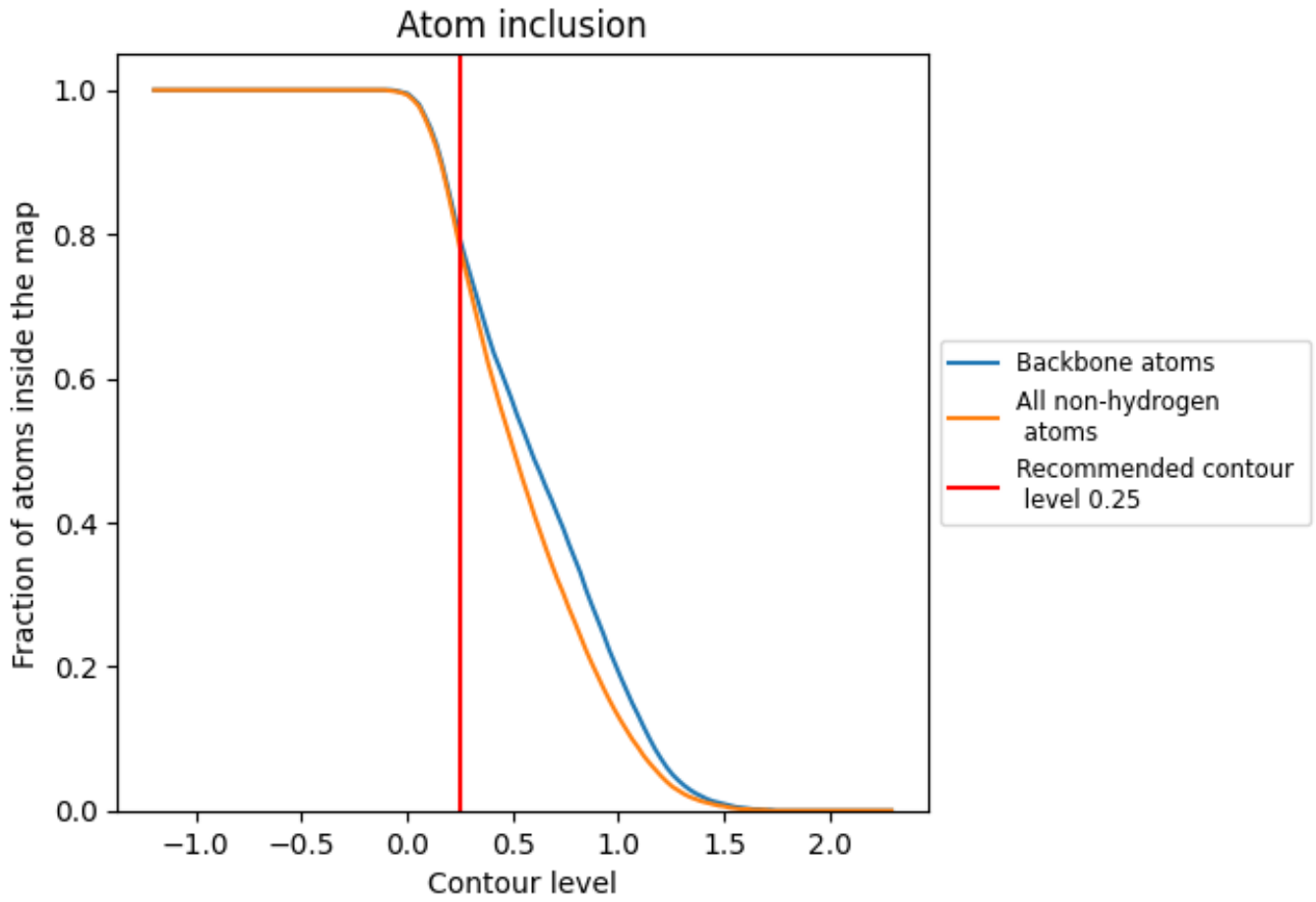
X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model

This section was not generated.

9.4 Atom inclusion (i)



At the recommended contour level, 79% of all backbone atoms, 78% 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 (0.25) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7820	0.4230
A	0.7940	0.4170
B	0.8230	0.4260
C	0.8080	0.4290
D	0.7910	0.4170
E	0.8250	0.4270
F	0.8100	0.4280
G	0.9430	0.5110
H	0.7600	0.4110
I	0.8190	0.4310
J	0.7980	0.4290
K	0.9500	0.5080
L	0.6310	0.3720
M	0.6260	0.3760
N	0.7920	0.4180
O	0.8250	0.4280
P	0.8110	0.4260
Q	0.9480	0.5120
R	0.7580	0.4110
S	0.8170	0.4280
T	0.7970	0.4270
U	0.9520	0.5110
V	0.6340	0.3710
W	0.9590	0.5070
X	0.6380	0.3700
Y	0.6310	0.3760
a	0.7580	0.4100
b	0.8220	0.4310
c	0.7980	0.4240
u	0.9520	0.5060
v	0.6310	0.3780