



wwPDB EM Validation Summary Report ⓘ

Nov 20, 2022 – 06:35 am GMT

PDB ID : 6H7W
EMDB ID : EMD-0154
Title : Model of retromer-Vps5 complex assembled on membrane.
Authors : Kovtun, O.; Leneva, N.; Ariotti, N.; Rohan, T.S.; Owen, D.J.; Briggs, J.A.G.;
Collins, B.M.
Deposited on : 2018-07-31
Resolution : 11.40 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.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

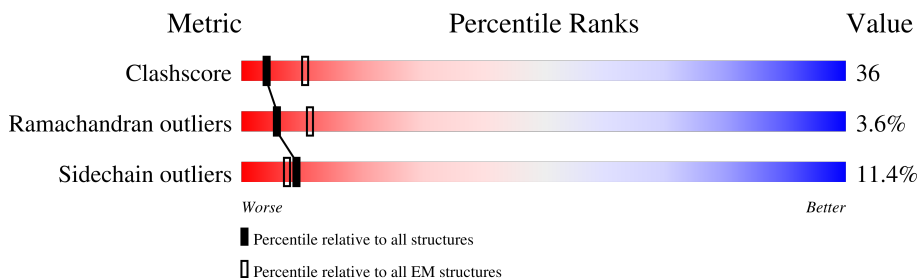
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 11.40 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments 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	C	292	
1	J	292	
2	A	368	
2	B	368	
2	E	368	
2	F	368	
2	G	368	
2	H	368	

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Mol	Chain	Length	Quality of chain
2	N	368	
2	P	368	
3	D	129	
3	K	129	
3	L	129	
3	V	129	
4	M	220	
4	O	220	
5	S	193	
5	T	193	
6	Q	846	
6	R	846	

2 Entry composition i

There are 6 unique types of molecules in this entry. The entry contains 95648 atoms, of which 45448 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 Vacuolar protein sorting-associated protein 26-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	J	292	Total	C	N	O	S	0	0
			2417	1550	416	442	9		
1	C	292	Total	C	N	O	S	0	0
			2417	1550	416	442	9		

- Molecule 2 is a protein called Putative vacuolar protein sorting-associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
2	B	349	Total	C	H	N	O	S	0	0
			5688	1796	2845	507	533	7		
2	A	349	Total	C	H	N	O	S	0	0
			5688	1796	2845	507	533	7		
2	G	349	Total	C	H	N	O	S	0	0
			5688	1796	2845	507	533	7		
2	E	349	Total	C	H	N	O	S	0	0
			5688	1796	2845	507	533	7		
2	P	349	Total	C	H	N	O	S	0	0
			5688	1796	2845	507	533	7		
2	N	349	Total	C	H	N	O	S	0	0
			5688	1796	2845	507	533	7		
2	H	349	Total	C	H	N	O	S	0	0
			5688	1796	2845	507	533	7		
2	F	349	Total	C	H	N	O	S	0	0
			5688	1796	2845	507	533	7		

- Molecule 3 is a protein called Putative vacuolar protein sorting-associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
3	D	129	Total	C	H	N	O	S	0	0
			2112	671	1059	190	191	1		
3	K	129	Total	C	H	N	O	S	0	0
			2112	671	1059	190	191	1		
3	V	129	Total	C	H	N	O	S	0	0
			2112	671	1059	190	191	1		

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Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
3	L	129	Total	C	H	N	O	S	0	0
			2112	671	1059	190	191	1		

- Molecule 4 is a protein called Putative vacuolar protein sorting-associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
4	O	220	Total	C	H	N	O	S	0	0
			3579	1125	1788	317	343	6		
4	M	220	Total	C	H	N	O	S	0	0
			3579	1125	1788	317	343	6		

- Molecule 5 is a protein called Vacuolar protein sorting-associated protein 29.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
5	S	184	Total	C	H	N	O	S	0	0
			2893	925	1457	235	268	8		
5	T	184	Total	C	H	N	O	S	0	0
			2893	925	1457	235	268	8		

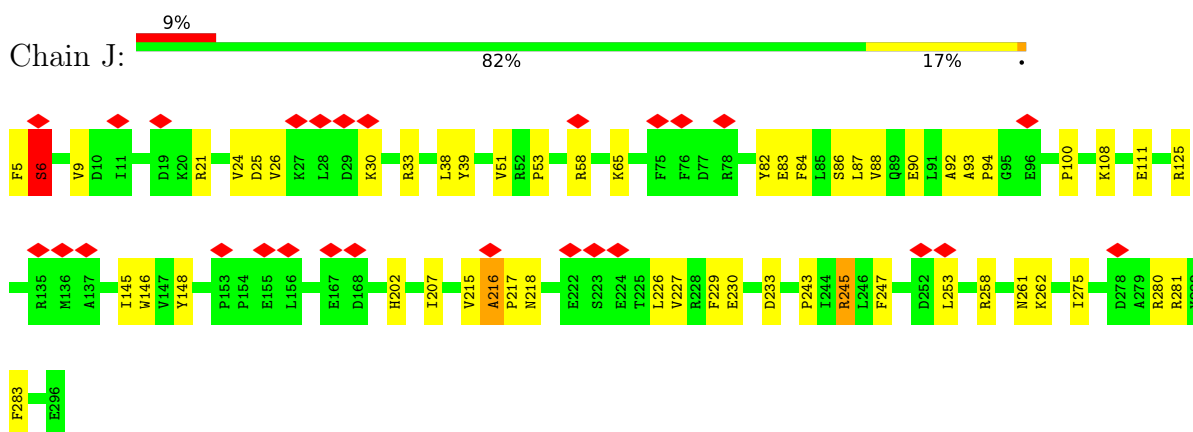
- Molecule 6 is a protein called Vacuolar protein sorting-associated protein 35.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
6	Q	744	Total	C	H	N	O	S	0	0
			11959	3785	5981	1047	1115	31		
6	R	744	Total	C	H	N	O	S	0	0
			11959	3785	5981	1047	1115	31		

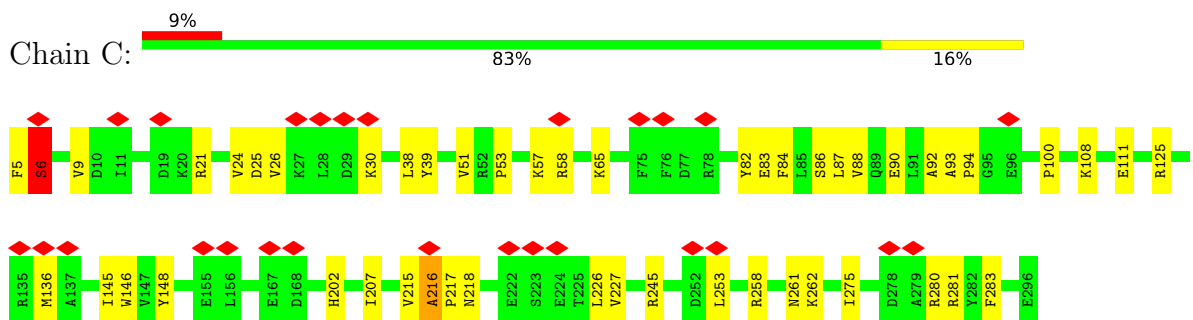
3 Residue-property plots

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.

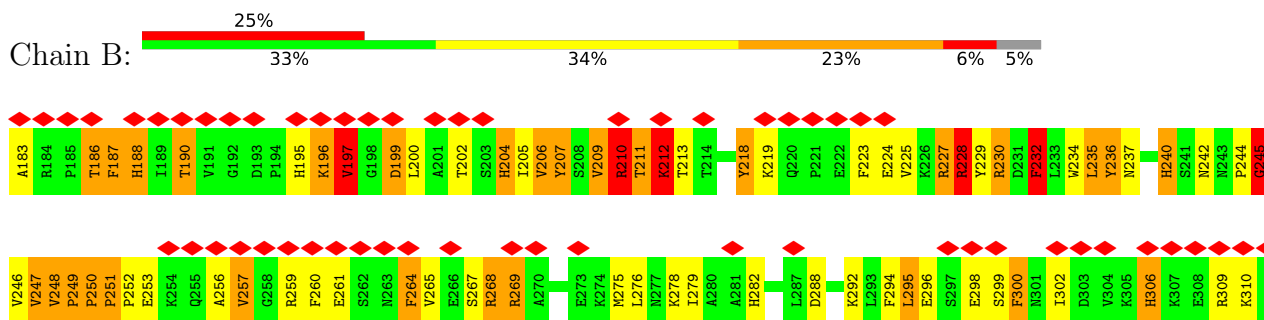
- Molecule 1: Vacuolar protein sorting-associated protein 26-like protein

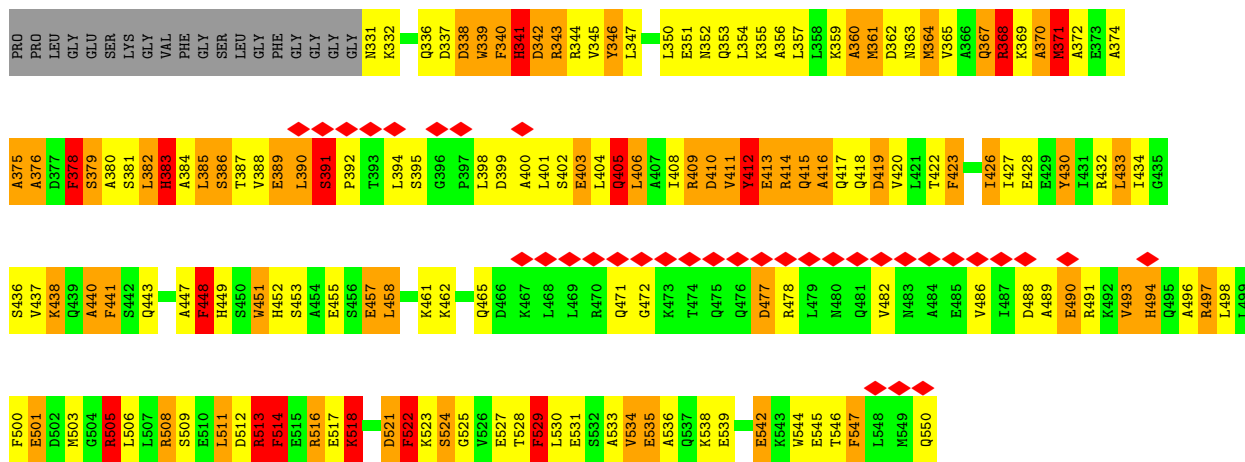


- Molecule 1: Vacuolar protein sorting-associated protein 26-like protein

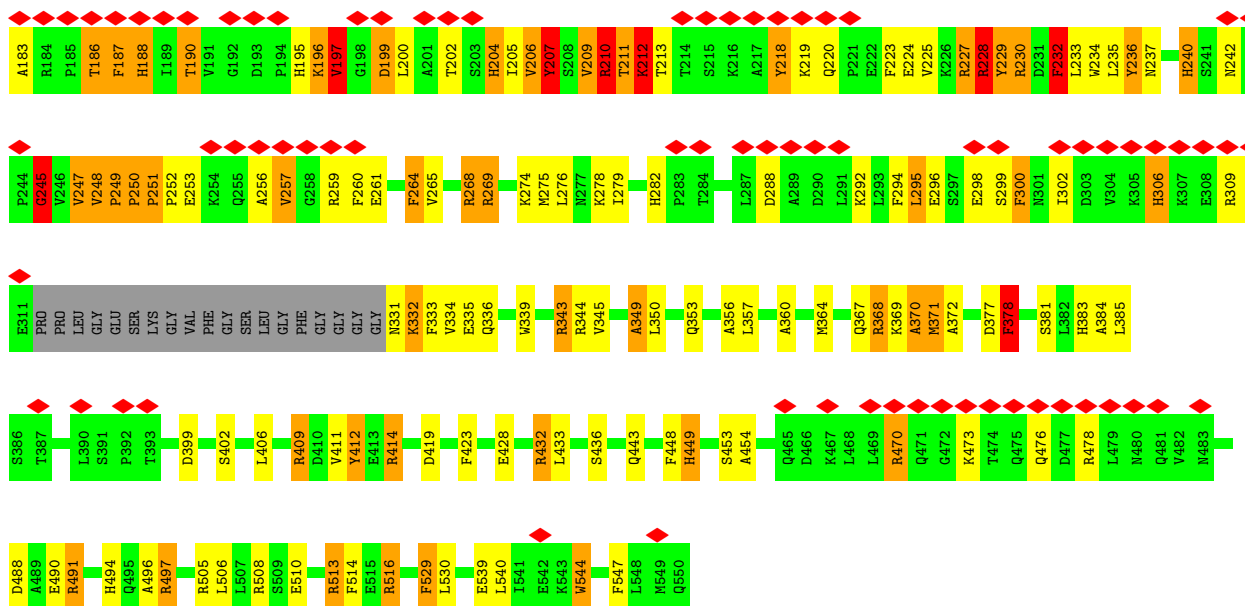


- Molecule 2: Putative vacuolar protein sorting-associated protein

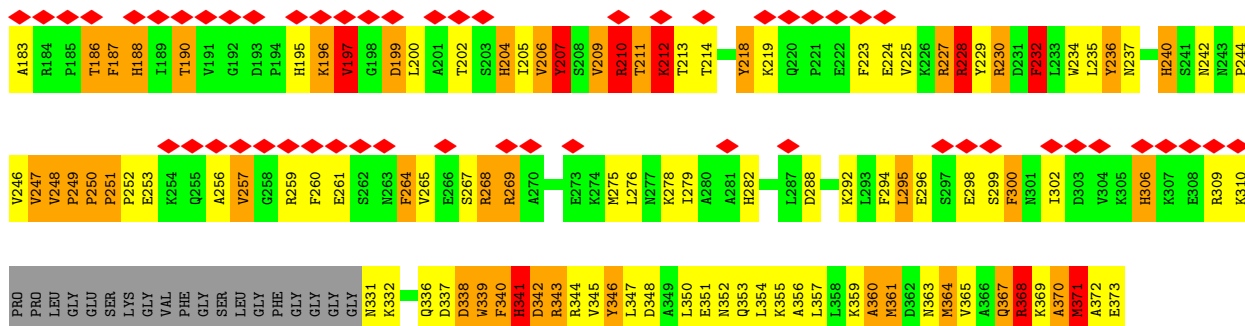


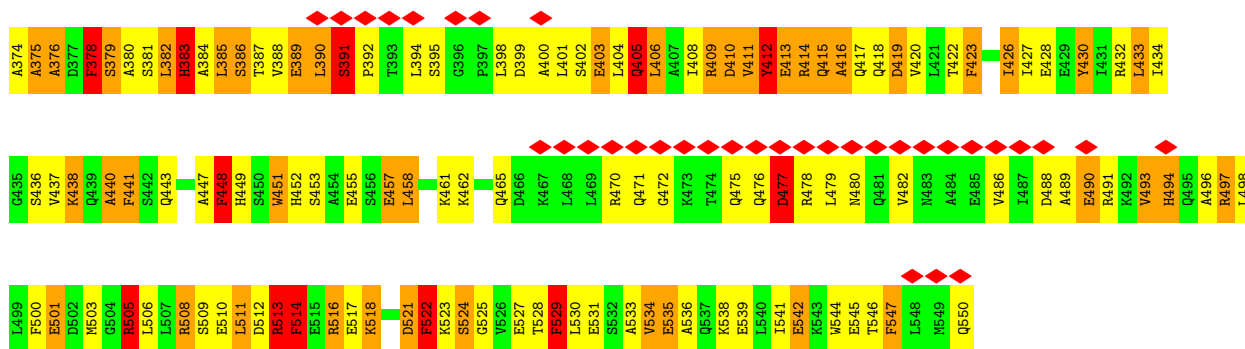


• Molecule 2: Putative vacuolar protein sorting-associated protein

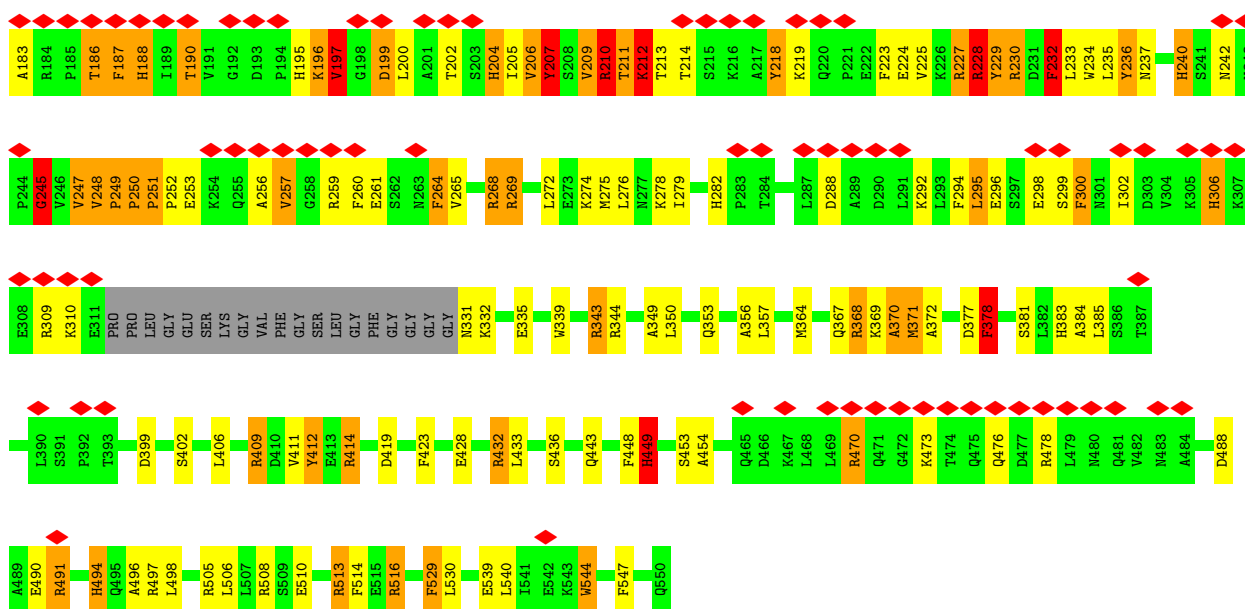


• Molecule 2: Putative vacuolar protein sorting-associated protein

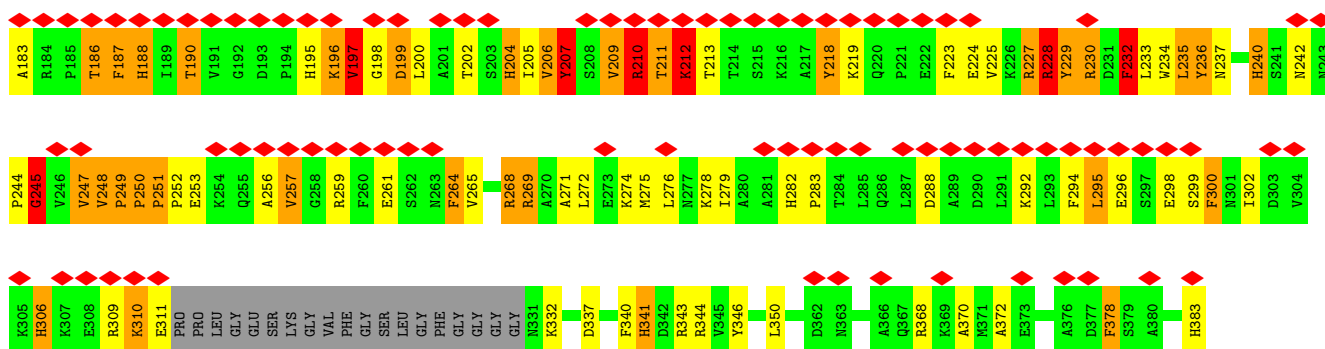
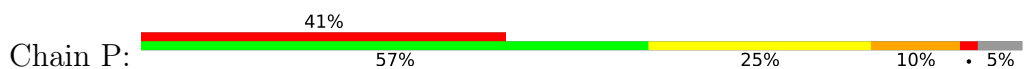


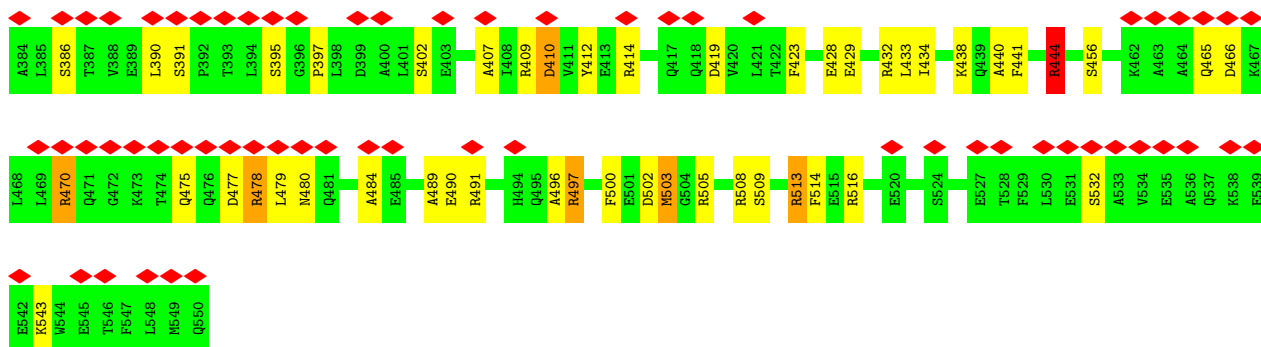


• Molecule 2: Putative vacuolar protein sorting-associated protein

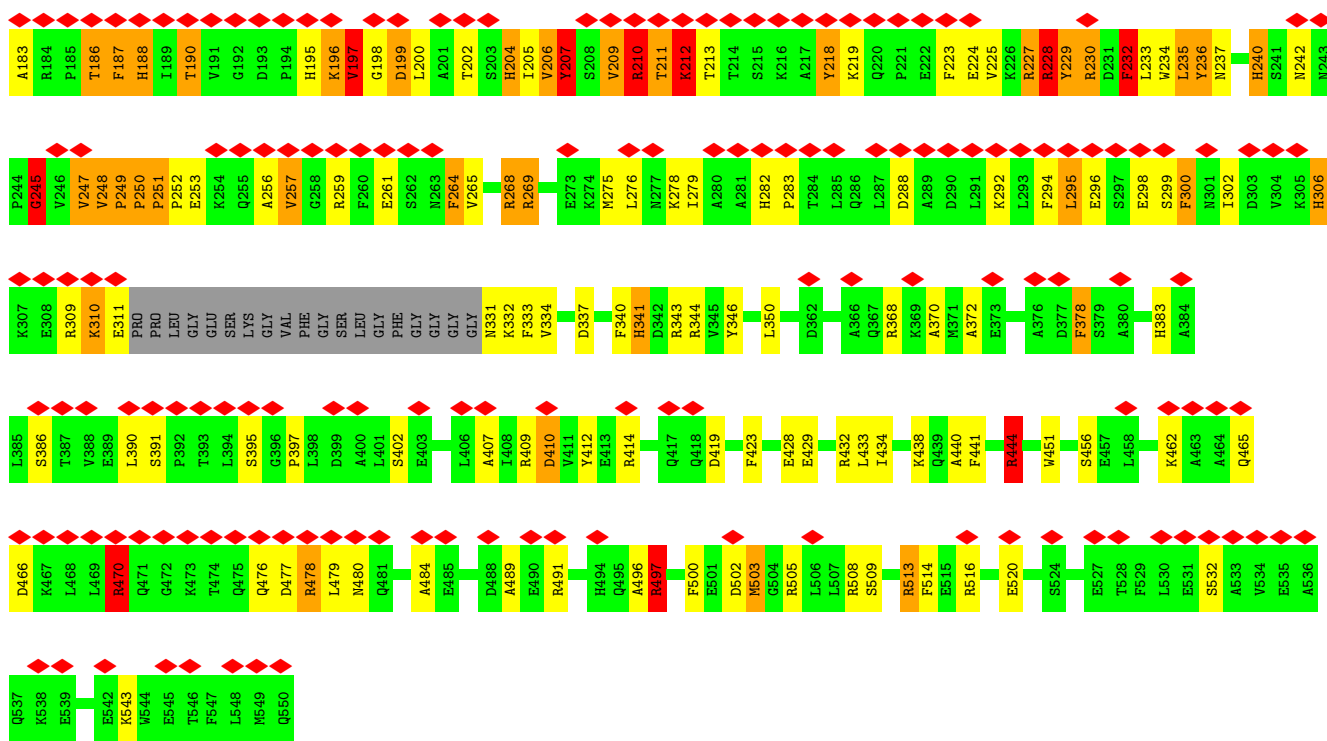
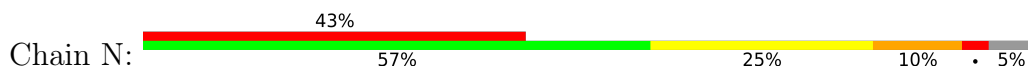


• Molecule 2: Putative vacuolar protein sorting-associated protein

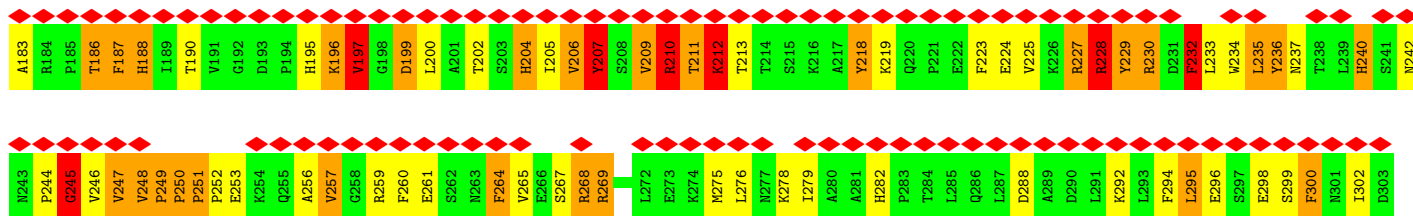


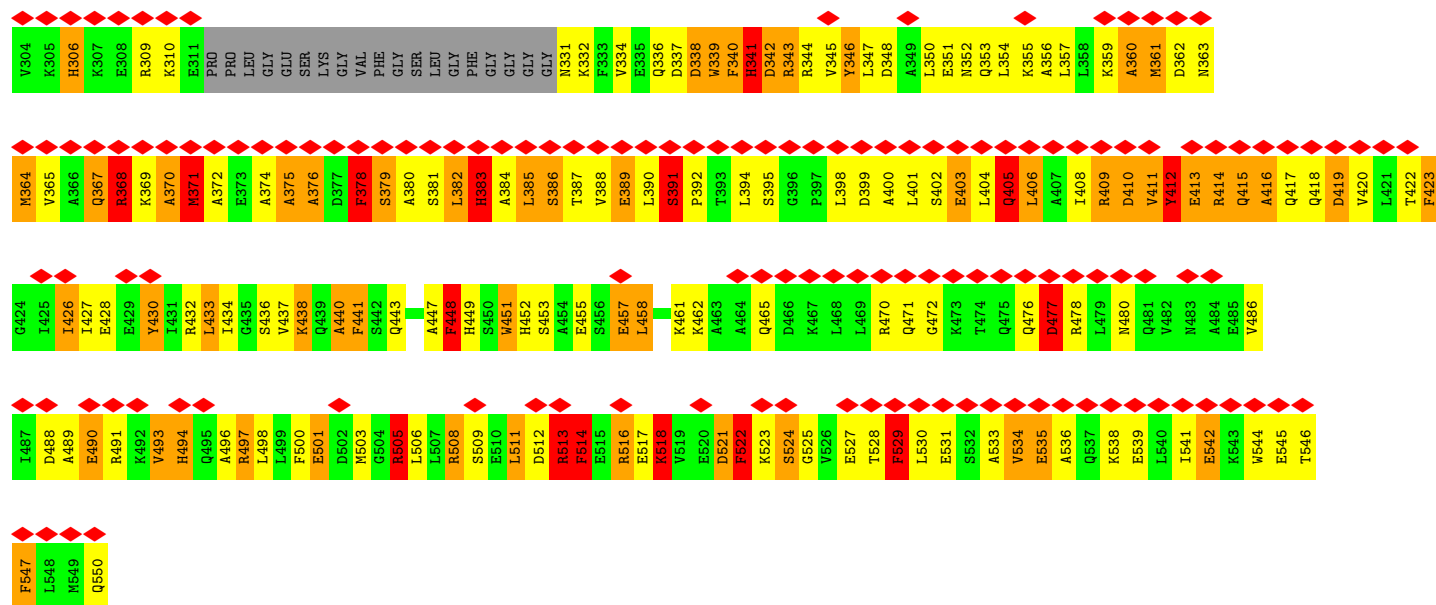


• Molecule 2: Putative vacuolar protein sorting-associated protein

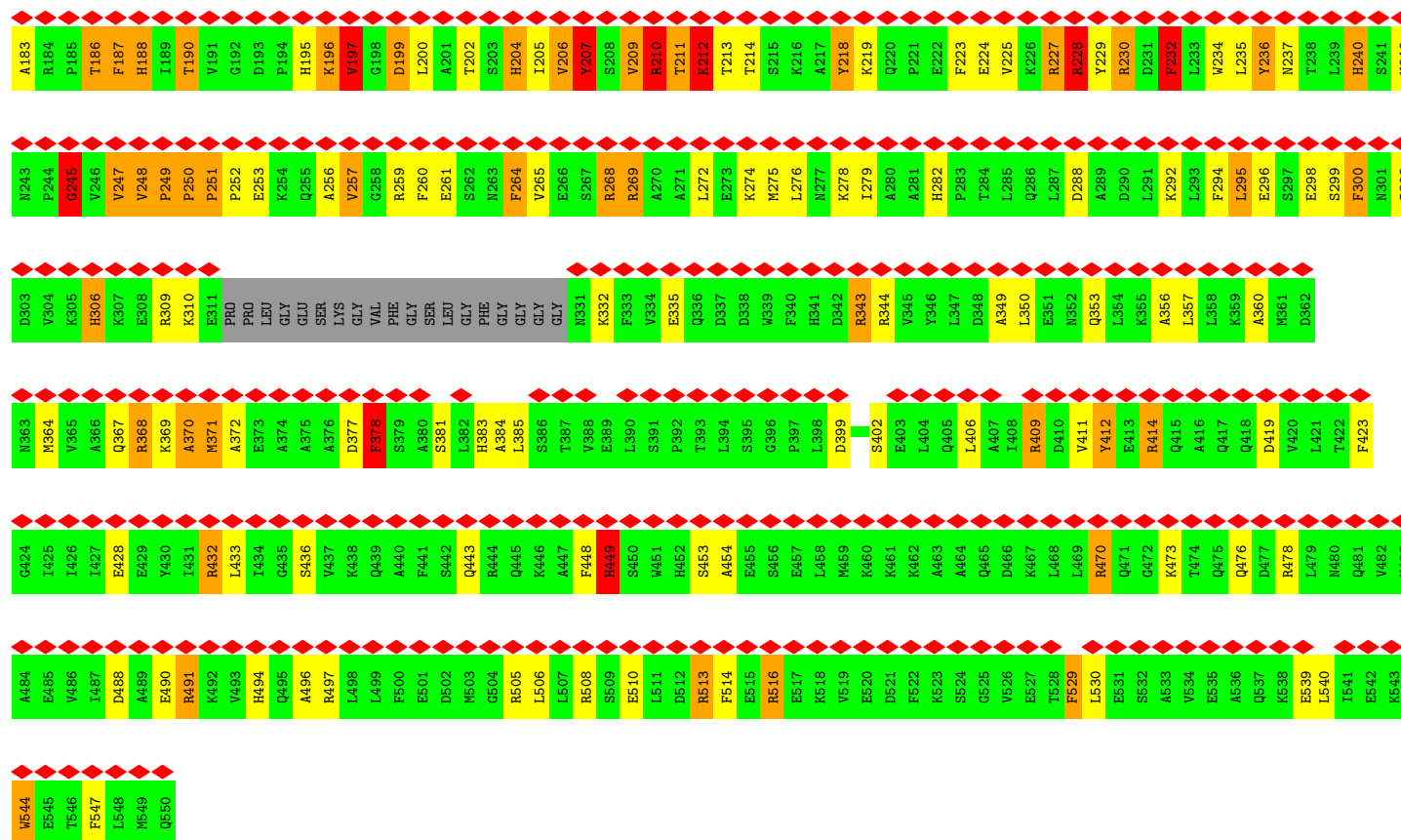
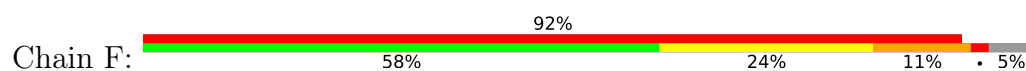


• Molecule 2: Putative vacuolar protein sorting-associated protein

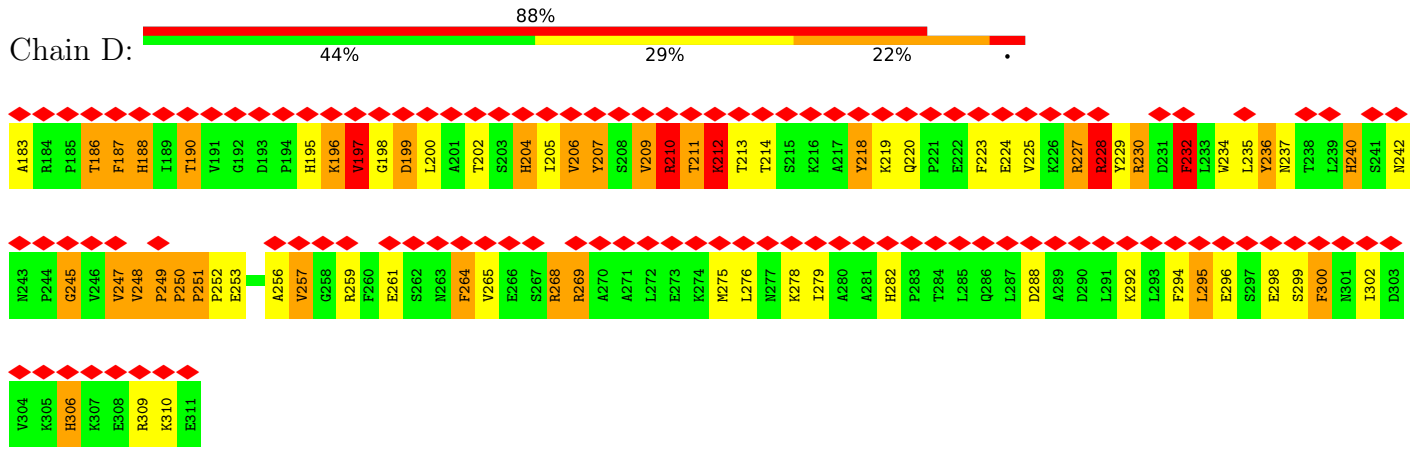




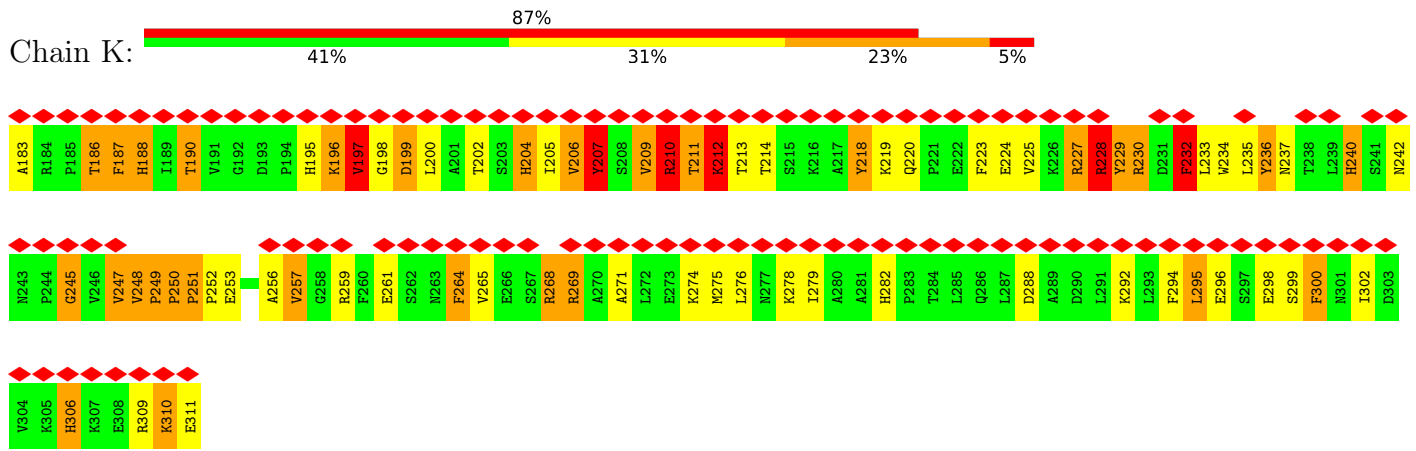
• Molecule 2: Putative vacuolar protein sorting-associated protein



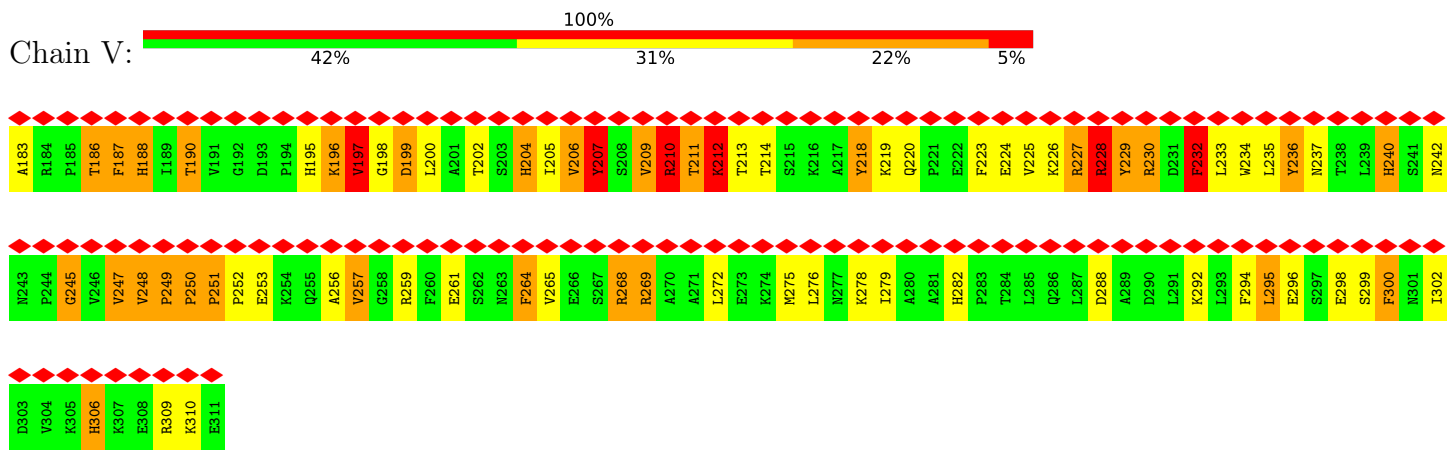
• Molecule 3: Putative vacuolar protein sorting-associated protein



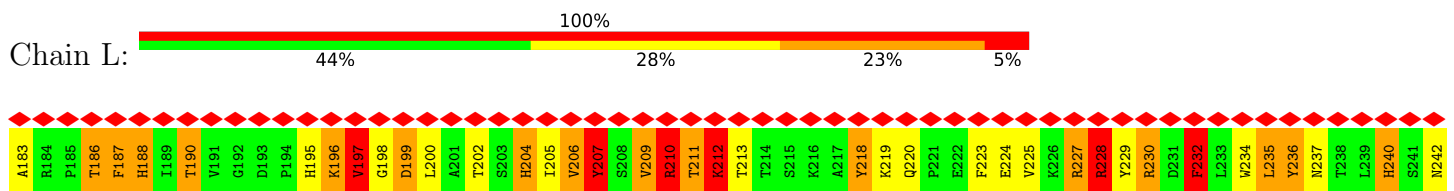
• Molecule 3: Putative vacuolar protein sorting-associated protein

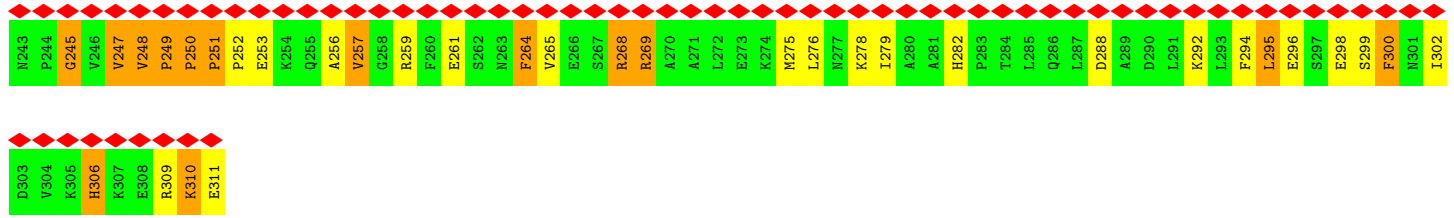


• Molecule 3: Putative vacuolar protein sorting-associated protein

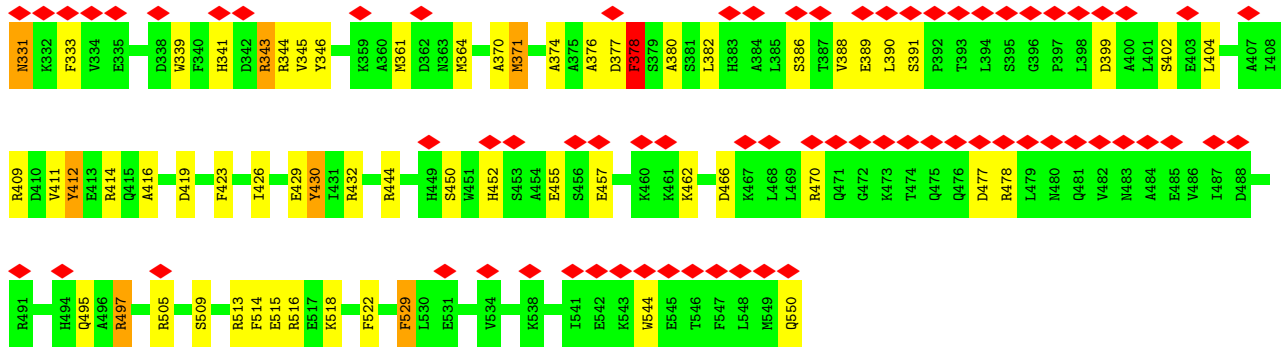
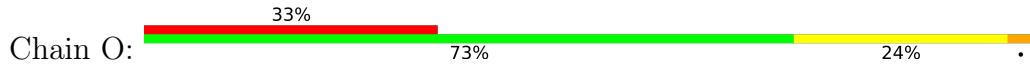


• Molecule 3: Putative vacuolar protein sorting-associated protein

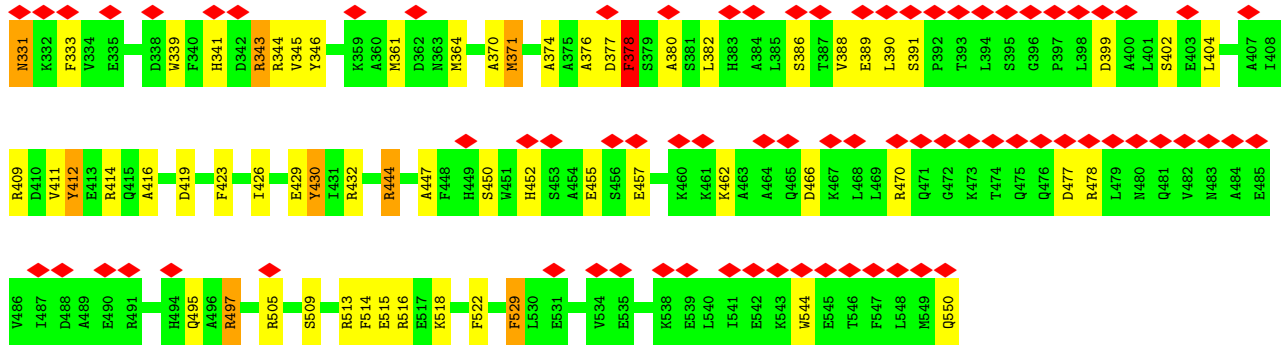




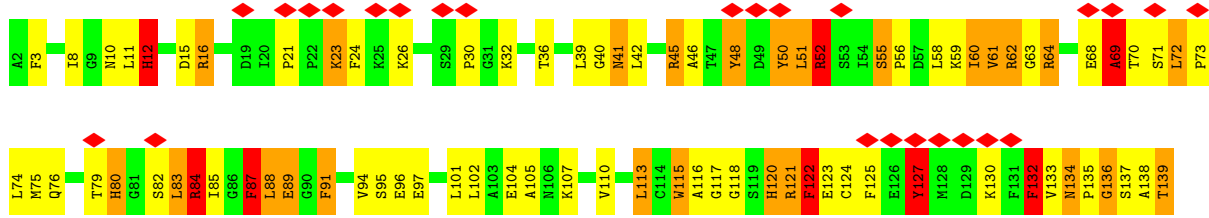
• Molecule 4: Putative vacuolar protein sorting-associated protein

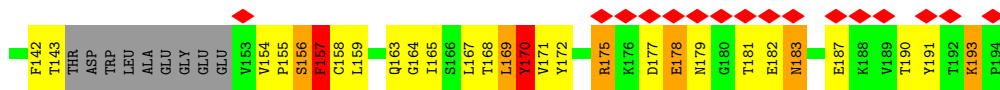


• Molecule 4: Putative vacuolar protein sorting-associated protein

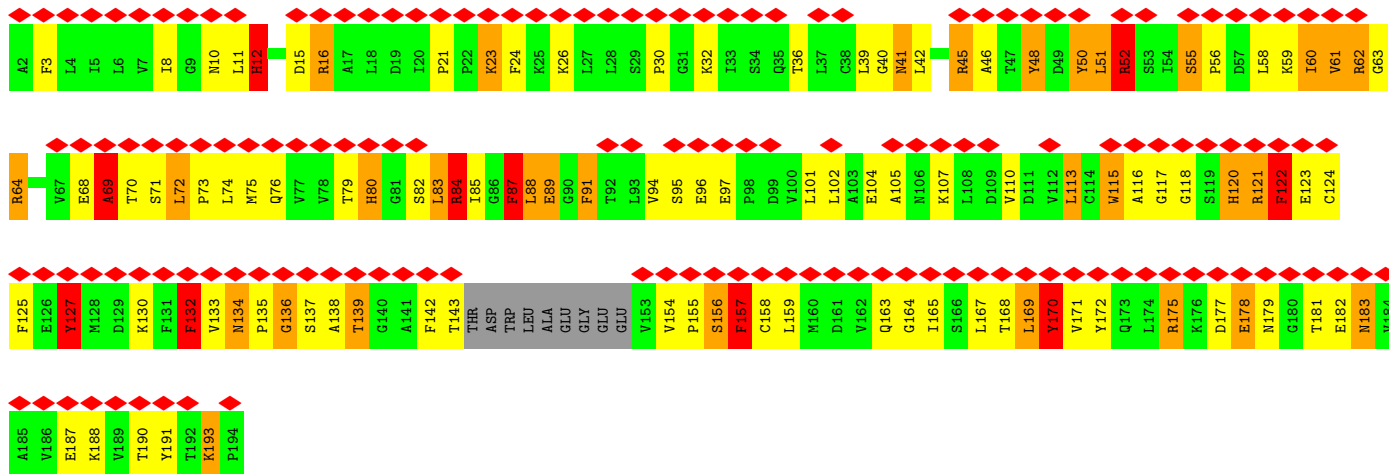
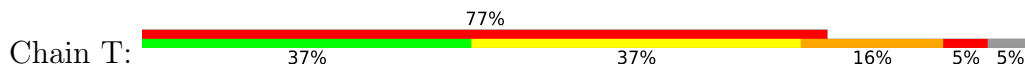


• Molecule 5: Vacuolar protein sorting-associated protein 29

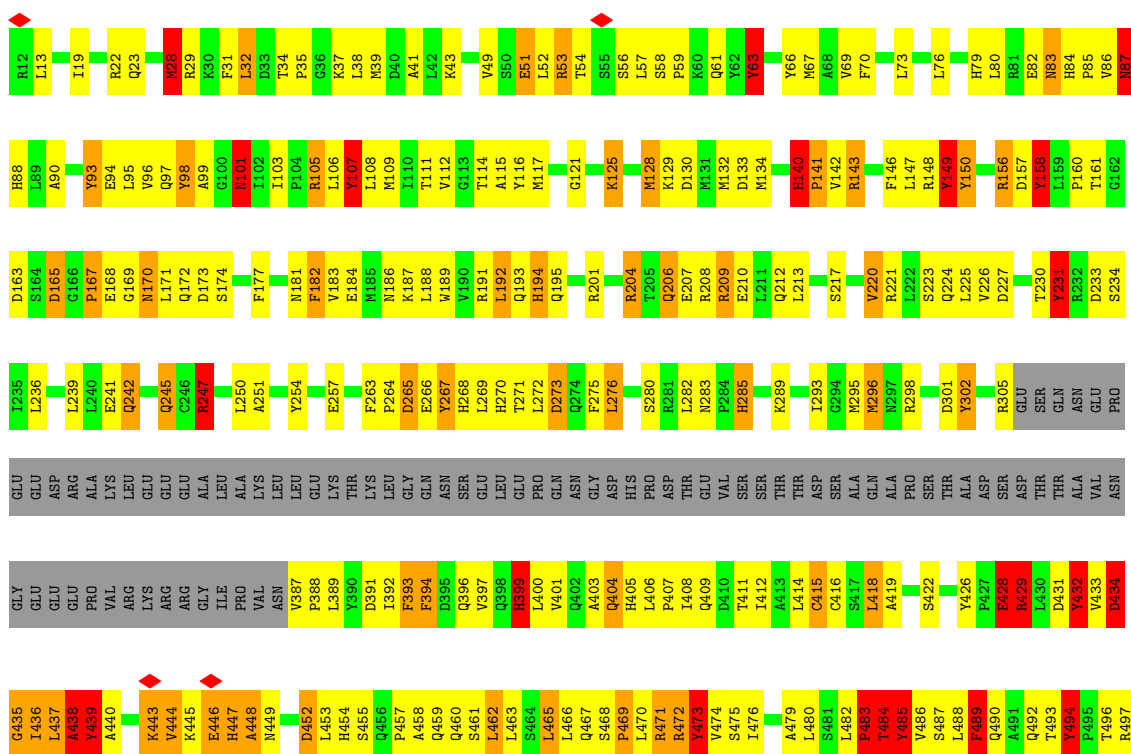


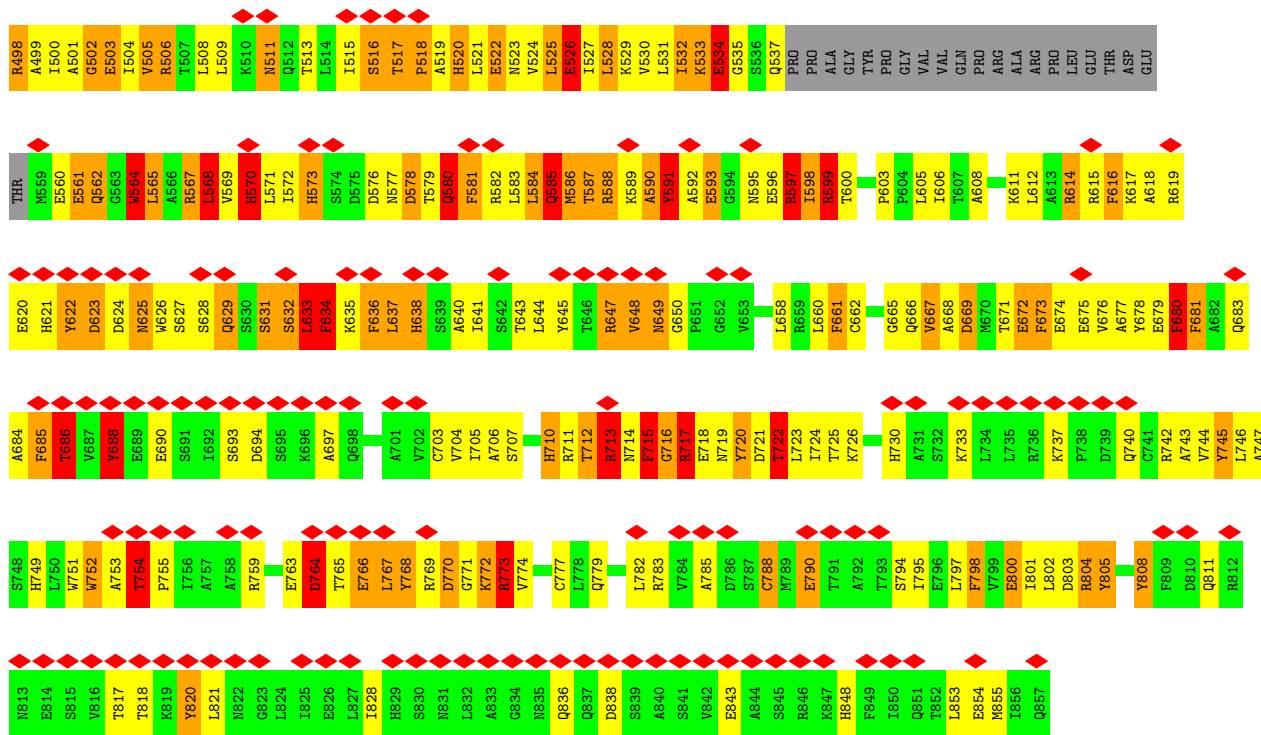


• Molecule 5: Vacuolar protein sorting-associated protein 29

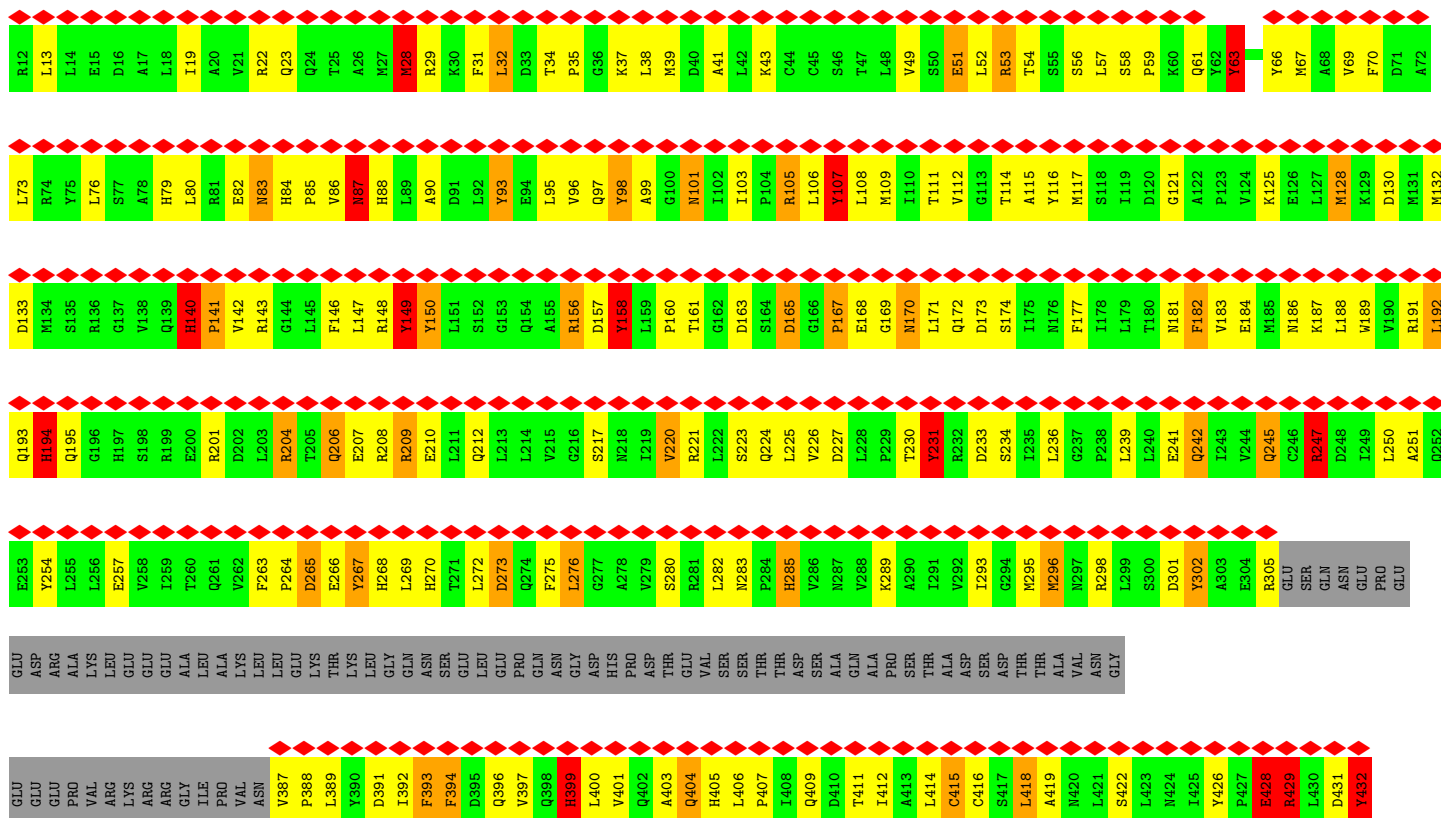
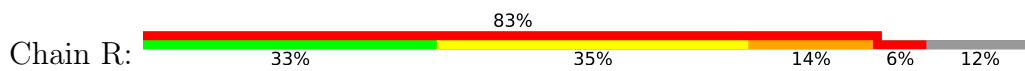


• Molecule 6: Vacuolar protein sorting-associated protein 35





● Molecule 6: Vacuolar protein sorting-associated protein 35



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of subtomograms used	16037	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; CTF correction was performed with ctfphaseflip IMOD command using defocus values measured by CTFFIND4 on non-dose-filtered images.	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	3.17	Depositor
Minimum defocus (nm)	2500	Depositor
Maximum defocus (nm)	6500	Depositor
Magnification	105000	Depositor
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	0.765	Depositor
Minimum map value	-0.535	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.058	Depositor
Recommended contour level	0.15	Depositor
Map size (\AA)	388.80002, 388.80002, 388.80002	wwPDB
Map dimensions	144, 144, 144	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	2.7, 2.7, 2.7	Depositor

5 Model quality i

5.1 Standard geometry i

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	C	0.73	0/2469	1.08	10/3327 (0.3%)
1	J	0.74	0/2469	1.08	10/3327 (0.3%)
2	A	1.94	35/2896 (1.2%)	1.78	62/3898 (1.6%)
2	B	1.87	19/2896 (0.7%)	1.77	84/3898 (2.2%)
2	E	1.94	36/2896 (1.2%)	1.78	60/3898 (1.5%)
2	F	1.94	36/2896 (1.2%)	1.78	61/3898 (1.6%)
2	G	1.88	18/2896 (0.6%)	1.77	84/3898 (2.2%)
2	H	1.87	18/2896 (0.6%)	1.77	83/3898 (2.1%)
2	N	1.93	31/2896 (1.1%)	1.87	68/3898 (1.7%)
2	P	1.93	31/2896 (1.1%)	1.87	68/3898 (1.7%)
3	D	2.18	8/1080 (0.7%)	1.74	25/1460 (1.7%)
3	K	2.18	8/1080 (0.7%)	1.74	25/1460 (1.7%)
3	L	2.18	8/1080 (0.7%)	1.74	25/1460 (1.7%)
3	V	2.18	8/1080 (0.7%)	1.74	25/1460 (1.7%)
4	M	1.77	23/1817 (1.3%)	1.85	43/2438 (1.8%)
4	O	1.77	22/1817 (1.2%)	1.85	42/2438 (1.7%)
5	S	1.32	1/1465 (0.1%)	1.77	32/1986 (1.6%)
5	T	1.32	1/1465 (0.1%)	1.77	32/1986 (1.6%)
6	Q	1.50	22/6092 (0.4%)	1.71	127/8255 (1.5%)
6	R	1.50	22/6092 (0.4%)	1.71	127/8255 (1.5%)
All	All	1.72	347/51174 (0.7%)	1.72	1093/69036 (1.6%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1
1	J	0	1
2	A	0	15
2	B	0	27
2	E	0	16

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	F	0	16
2	G	0	27
2	H	0	27
2	N	0	16
2	P	0	16
3	D	0	11
3	K	0	11
3	L	0	11
3	V	0	11
4	M	0	7
4	O	0	7
5	S	0	12
5	T	0	12
6	Q	1	56
6	R	1	57
All	All	2	357

The worst 5 of 347 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	N	250	PRO	N-CD	32.85	1.93	1.47
2	H	250	PRO	N-CD	32.84	1.93	1.47
2	F	250	PRO	N-CD	32.83	1.93	1.47
3	D	250	PRO	N-CD	32.81	1.93	1.47
2	P	250	PRO	N-CD	32.79	1.93	1.47

The worst 5 of 1093 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	P	470	ARG	NE-CZ-NH1	-14.31	113.14	120.30
6	Q	98	TYR	CB-CG-CD2	-14.31	112.42	121.00
6	R	98	TYR	CB-CG-CD2	-14.21	112.48	121.00
2	N	470	ARG	NE-CZ-NH1	-14.20	113.20	120.30
4	O	516	ARG	NE-CZ-NH2	14.00	127.30	120.30

All (2) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
6	Q	87	ASN	CA
6	R	87	ASN	CA

5 of 357 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	207	TYR	Sidechain
2	B	210	ARG	Sidechain
2	B	227	ARG	Sidechain
1	C	148	TYR	Sidechain
1	J	148	TYR	Sidechain

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	C	2417	0	2432	218	0
1	J	2417	0	2430	249	0
2	A	2843	2845	2835	317	0
2	B	2843	2845	2836	449	0
2	E	2843	2845	2835	275	0
2	F	2843	2845	2835	231	0
2	G	2843	2845	2834	503	0
2	H	2843	2845	2833	437	0
2	N	2843	2845	2833	297	0
2	P	2843	2845	2834	223	0
3	D	1053	1059	1056	112	0
3	K	1053	1059	1055	129	0
3	L	1053	1059	1054	140	0
3	V	1053	1059	1056	109	0
4	M	1791	1788	1785	2	0
4	O	1791	1788	1785	1	0
5	S	1436	1457	1453	83	0
5	T	1436	1457	1453	78	0
6	Q	5978	5981	5974	454	0
6	R	5978	5981	5976	417	0
All	All	50200	45448	50184	3648	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 36.

The worst 5 of 3648 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:B:350:LEU:HD22	2:A:385:LEU:CG	1.21	1.65
2:G:350:LEU:HD22	2:E:385:LEU:CG	1.21	1.61
2:H:350:LEU:HD22	2:F:385:LEU:CG	1.21	1.59
1:J:217:PRO:CB	2:G:390:LEU:HD12	1.25	1.59
1:J:217:PRO:CD	2:G:390:LEU:HG	1.16	1.58

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	C	290/292 (99%)	280 (97%)	8 (3%)	2 (1%)	22	63
1	J	290/292 (99%)	280 (97%)	8 (3%)	2 (1%)	22	63
2	A	345/368 (94%)	321 (93%)	15 (4%)	9 (3%)	5	31
2	B	345/368 (94%)	314 (91%)	21 (6%)	10 (3%)	4	29
2	E	345/368 (94%)	321 (93%)	15 (4%)	9 (3%)	5	31
2	F	345/368 (94%)	321 (93%)	15 (4%)	9 (3%)	5	31
2	G	345/368 (94%)	313 (91%)	22 (6%)	10 (3%)	4	29
2	H	345/368 (94%)	313 (91%)	22 (6%)	10 (3%)	4	29
2	N	345/368 (94%)	318 (92%)	19 (6%)	8 (2%)	6	34
2	P	345/368 (94%)	318 (92%)	19 (6%)	8 (2%)	6	34
3	D	127/129 (98%)	105 (83%)	14 (11%)	8 (6%)	1	17
3	K	127/129 (98%)	105 (83%)	14 (11%)	8 (6%)	1	17
3	L	127/129 (98%)	105 (83%)	14 (11%)	8 (6%)	1	17
3	V	127/129 (98%)	105 (83%)	14 (11%)	8 (6%)	1	17
4	M	218/220 (99%)	215 (99%)	2 (1%)	1 (0%)	29	69
4	O	218/220 (99%)	215 (99%)	2 (1%)	1 (0%)	29	69

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	S	180/193 (93%)	145 (81%)	19 (11%)	16 (9%)	1	11
5	T	180/193 (93%)	145 (81%)	19 (11%)	16 (9%)	1	11
6	Q	738/846 (87%)	666 (90%)	32 (4%)	40 (5%)	2	19
6	R	738/846 (87%)	666 (90%)	32 (4%)	40 (5%)	2	19
All	All	6120/6562 (93%)	5571 (91%)	326 (5%)	223 (4%)	6	25

5 of 223 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	J	6	SER
1	J	216	ALA
1	C	6	SER
1	C	216	ALA
2	B	247	VAL

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	C	269/269 (100%)	269 (100%)	0	100	100
1	J	269/269 (100%)	269 (100%)	0	100	100
2	A	306/317 (96%)	285 (93%)	21 (7%)	15	40
2	B	306/317 (96%)	257 (84%)	49 (16%)	2	13
2	E	306/317 (96%)	285 (93%)	21 (7%)	15	40
2	F	306/317 (96%)	285 (93%)	21 (7%)	15	40
2	G	306/317 (96%)	257 (84%)	49 (16%)	2	13
2	H	306/317 (96%)	258 (84%)	48 (16%)	2	14
2	N	306/317 (96%)	285 (93%)	21 (7%)	15	40
2	P	306/317 (96%)	285 (93%)	21 (7%)	15	40
3	D	116/116 (100%)	103 (89%)	13 (11%)	6	22
3	K	116/116 (100%)	103 (89%)	13 (11%)	6	22

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	L	116/116 (100%)	103 (89%)	13 (11%)	6	22
3	V	116/116 (100%)	103 (89%)	13 (11%)	6	22
4	M	190/190 (100%)	182 (96%)	8 (4%)	30	54
4	O	190/190 (100%)	182 (96%)	8 (4%)	30	54
5	S	161/168 (96%)	133 (83%)	28 (17%)	2	11
5	T	161/168 (96%)	133 (83%)	28 (17%)	2	11
6	Q	656/743 (88%)	531 (81%)	125 (19%)	1	8
6	R	656/743 (88%)	532 (81%)	124 (19%)	1	8
All	All	5464/5740 (95%)	4840 (89%)	624 (11%)	9	21

5 of 624 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	Q	804	ARG
6	R	568	LEU
5	T	39	LEU
6	Q	797	LEU
6	R	174	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 165 such sidechains are listed below:

Mol	Chain	Res	Type
3	V	220	GLN
5	T	10	ASN
3	L	195	HIS
6	Q	83	ASN
6	R	101	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no 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-0154. These allow visual inspection of the internal detail of the map and identification of artifacts.

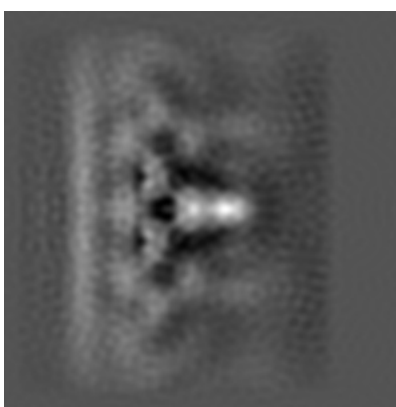
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

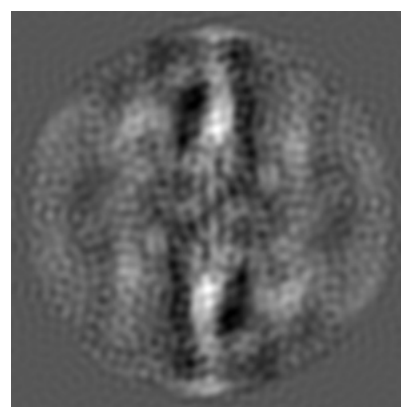
6.1.1 Primary map



X



Y

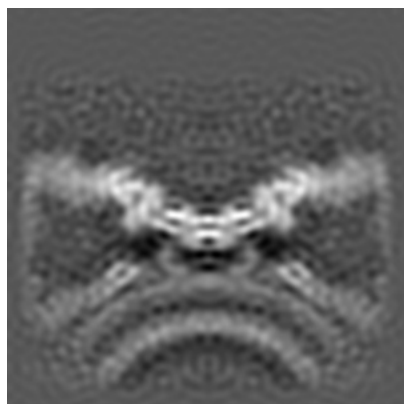


Z

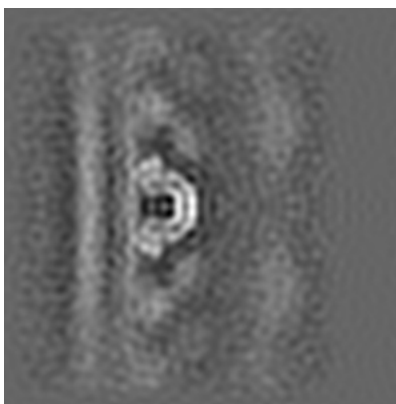
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

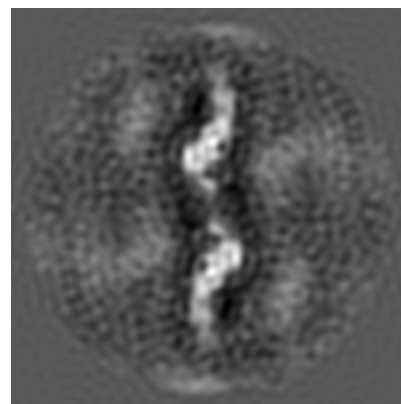
6.2.1 Primary map



X Index: 72



Y Index: 72

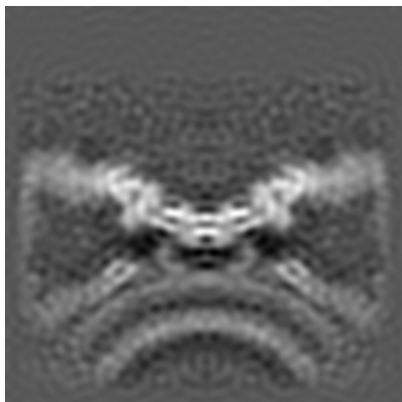


Z Index: 72

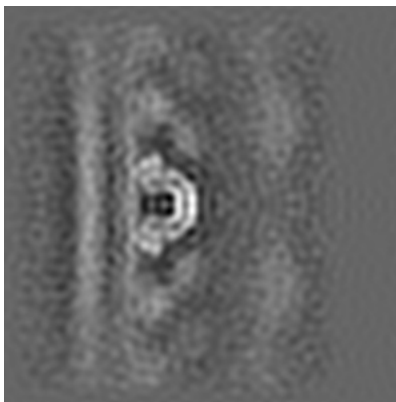
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

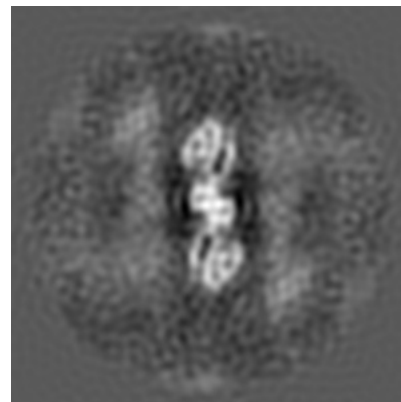
6.3.1 Primary map



X Index: 72



Y Index: 72



Z Index: 67

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.15. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

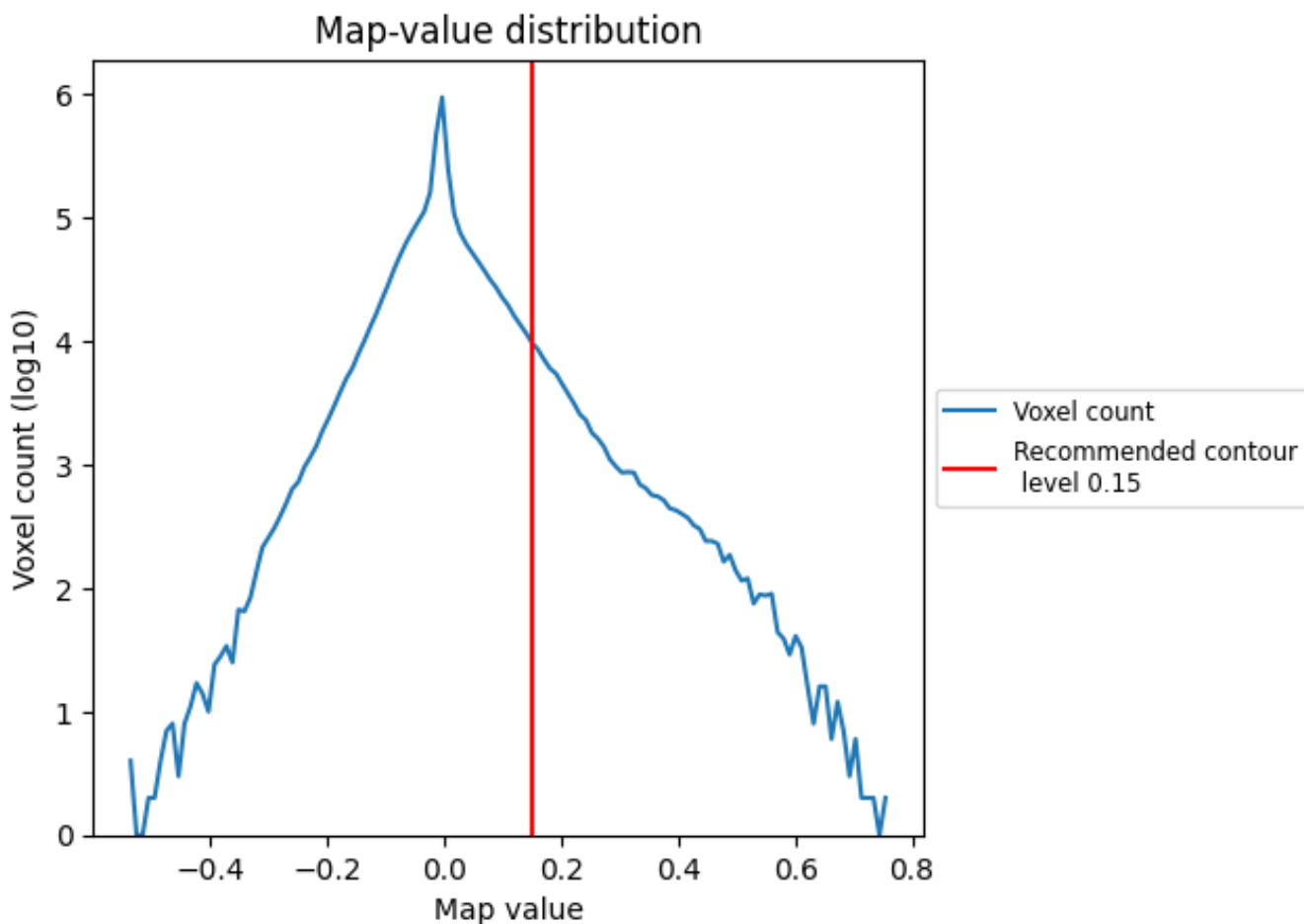
6.5 Mask visualisation

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

7 Map analysis [i](#)

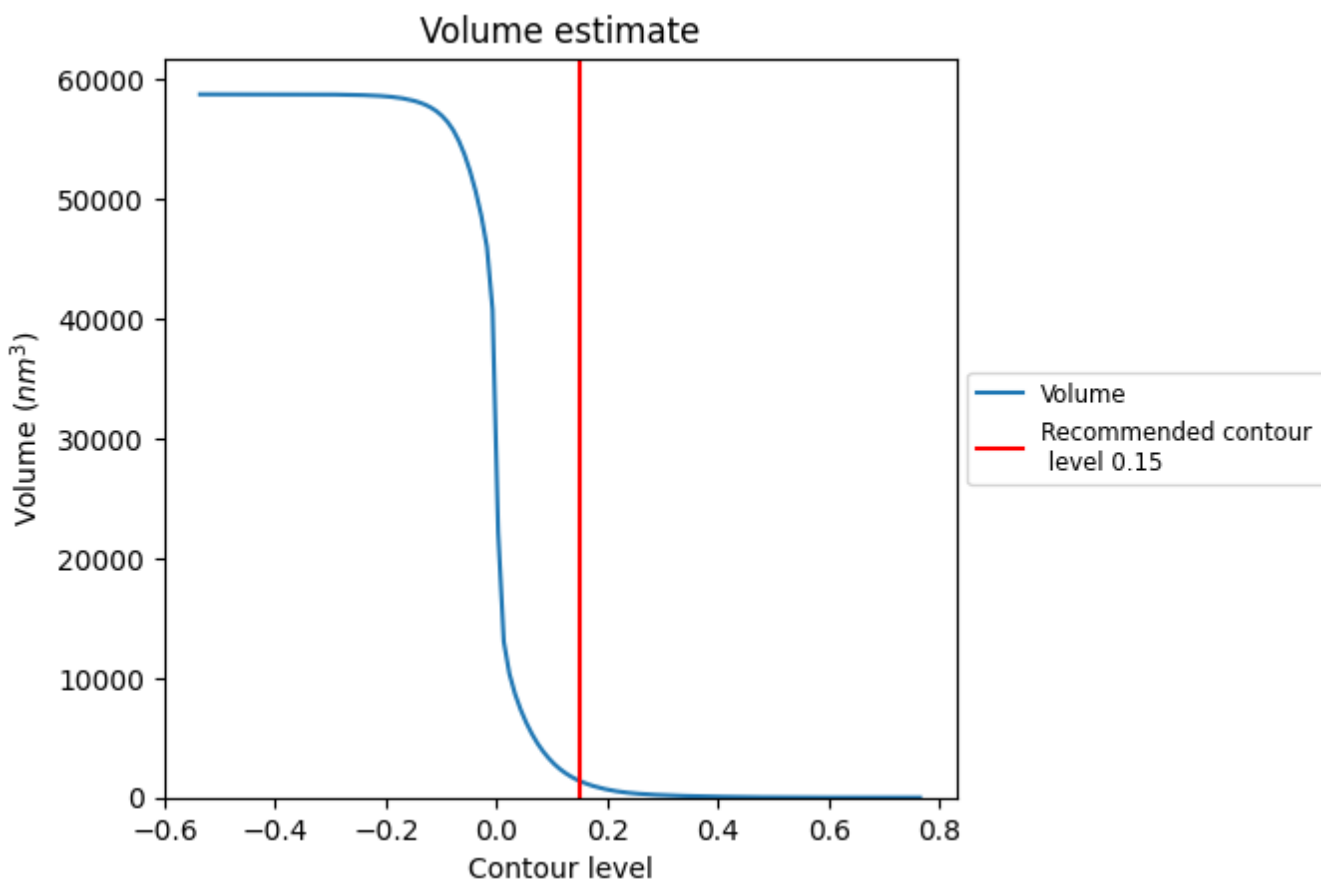
This section contains the results of statistical analysis of the map.

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.

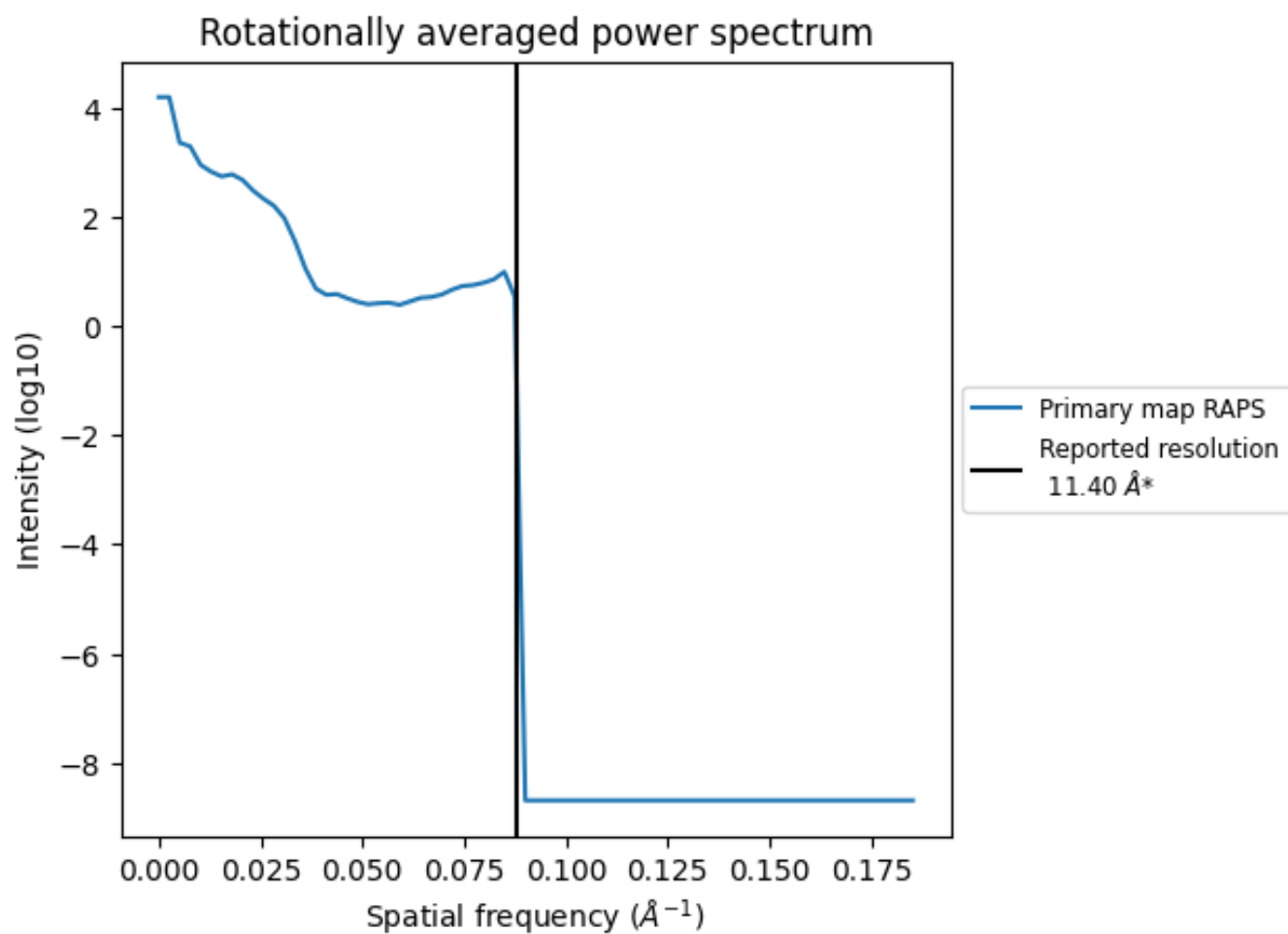
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1393 nm³; this corresponds to an approximate mass of 1259 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 0.088\AA^{-1}

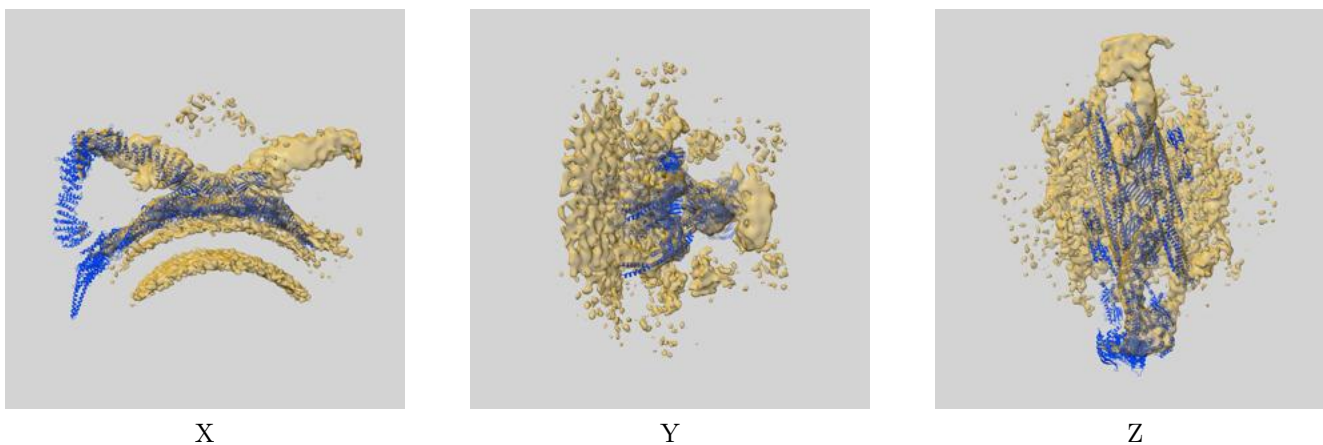
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

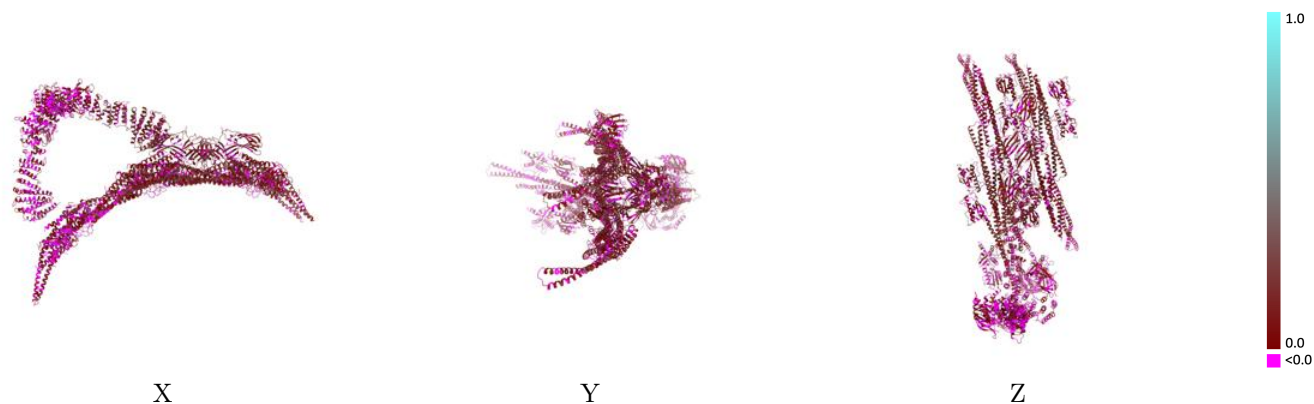
This section contains information regarding the fit between EMDB map EMD-0154 and PDB model 6H7W. Per-residue inclusion information can be found in section [3](#) on page [6](#).

9.1 Map-model overlay [i](#)



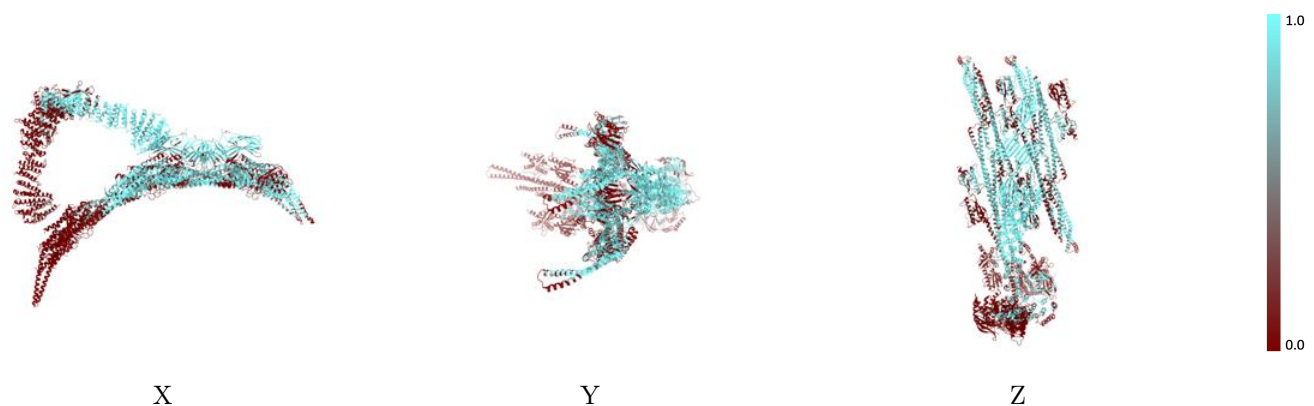
The images above show the 3D surface view of the map at the recommended contour level 0.15 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



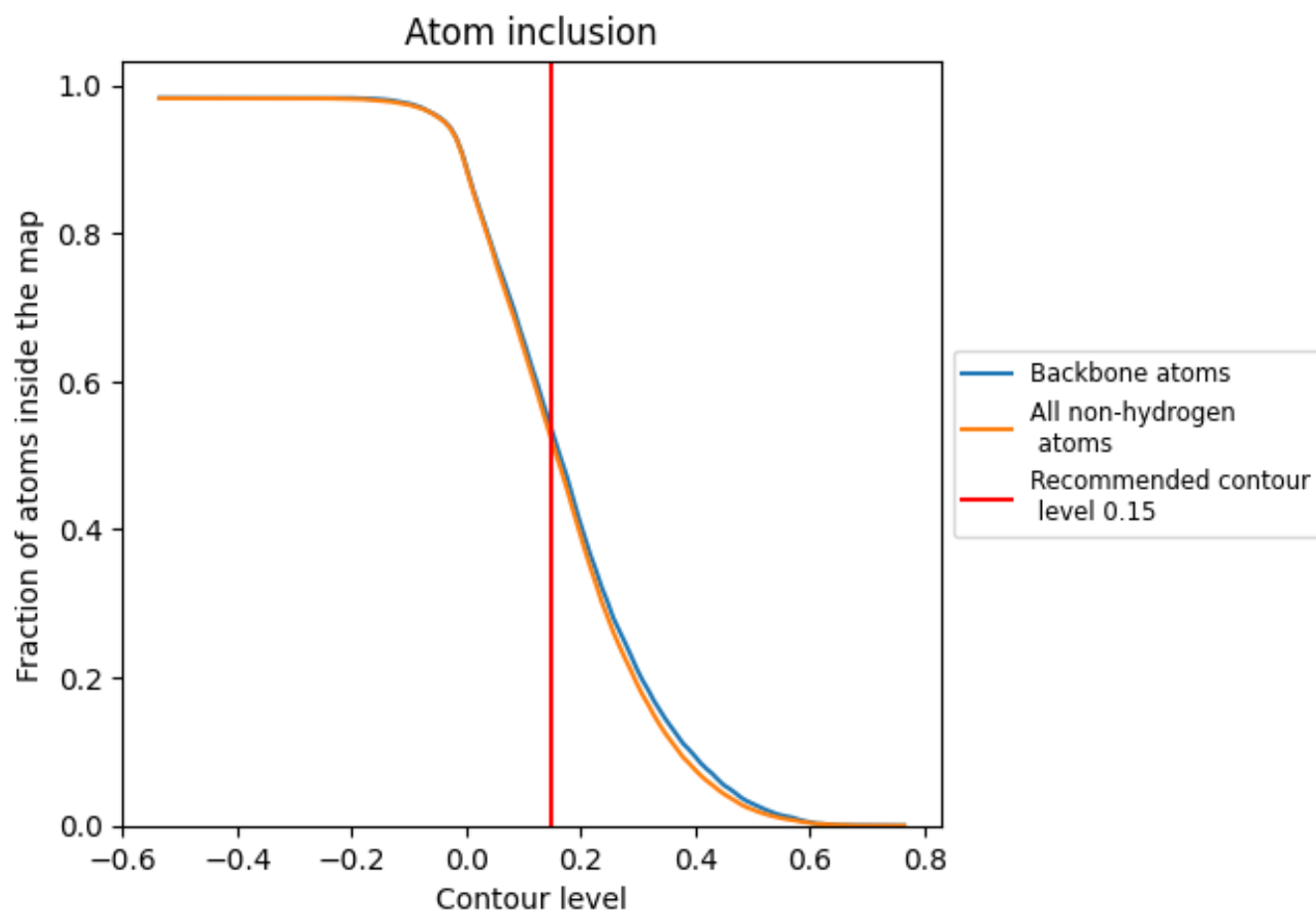
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.15).











































9.4 Atom inclusion [i](#)



At the recommended contour level, 53% of all backbone atoms, 52% 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 (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5181	 0.0760
A	 0.6864	 0.1290
B	 0.7055	 0.1310
C	 0.8177	 0.0990
D	 0.1320	 0.0330
E	 0.6879	 0.1310
F	 0.0266	 0.0280
G	 0.7047	 0.1280
H	 0.2866	 0.0720
J	 0.8177	 0.1000
K	 0.1320	 0.0320
L	 0.0019	 0.0320
M	 0.6114	 0.0750
N	 0.5208	 0.0980
O	 0.6182	 0.0740
P	 0.5330	 0.0910
Q	 0.8019	 0.0880
R	 0.0564	 0.0140
S	 0.7282	 0.0490
T	 0.1635	 0.0130
V	 0.0000	 -0.0110

