



wwPDB EM Validation Summary Report

Dec 17, 2022 – 07:10 pm GMT


PDB ID : 6Z7N
EMDB ID : EMD-11108
Title : The atomic structure of HAdV-F41 at pH 7.4
Authors : Carlson, L.-A.; Rafie, K.
Deposited on : 2020-05-31
Resolution : 3.77 Å (reported)
Based on initial model : 5TX1

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) : 2.31.3

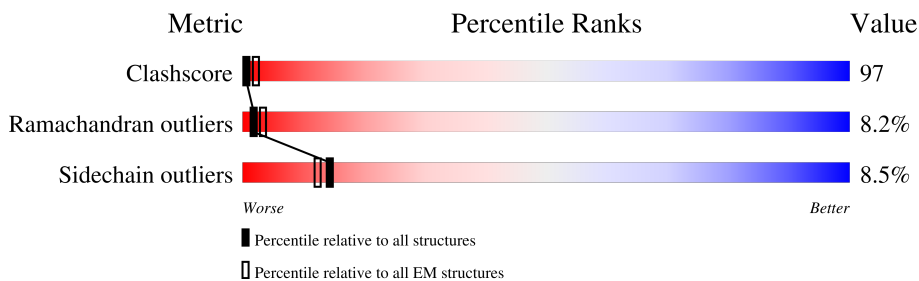
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.77 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	0	266	95%
1	1	266	94%
1	2	266	98%
1	3	266	95%
1	4	266	93%
1	5	266	94%
1	6	266	99%
1	7	266	99%




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Mol	Chain	Length	Quality of chain
1	8	266	90%
1	9	266	99%
2	A	925	25% 17% 56% 7% 5% 15%
2	B	925	31% 13% 48% 20% 10% 8%
2	C	925	29% 13% 48% 20% 12% 7%
2	D	925	25% 17% 64% 10% 5%
2	E	925	25% 18% 65% 7% 5% 5%
2	F	925	20% 15% 62% 12% 7%
2	G	925	19% 18% 59% 12% 6% 5%
2	H	925	22% 19% 65% 8% 5%
2	I	925	22% 25% 67%
2	J	925	25% 19% 62% 12% 6%
2	K	925	22% 23% 62% 9%
2	L	925	22% 22% 63% 8%
3	M	508	64% 38% 47% 10%
4	N	348	93%
5	O	579	15% 15% 26% 54%
6	P	133	17% 14% 26% 56%
6	Q	133	14% 10% 24% 62%
6	R	133	6% 5% 14% 77%
6	S	133	13% 18% 16% 7% 56%
7	T	233	9% 24% 48% 24%
7	U	233	7% 26% 48% 23%
8	X	7	100% 71% 29%
9	V	10	10% 90% 10%

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Mol	Chain	Length	Quality of chain
9	W	10	
9	Z	10	
10	Y	6	

2 Entry composition [i](#)

There are 10 unique types of molecules in this entry. The entry contains 94362 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 Pre-protein VI.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	12	Total 94	C 59	N 20	O 14	S 1	0	0
1	1	16	Total 124	C 79	N 25	O 19	S 1	0	0
1	2	6	Total 48	C 31	N 9	O 7	S 1	0	0
1	3	12	Total 98	C 63	N 17	O 17	S 1	0	0
1	4	19	Total 147	C 91	N 29	O 26	S 1	0	0
1	5	16	Total 123	C 76	N 22	O 24	S 1	0	0
1	6	3	Total 28	C 17	N 8	O 3		0	0
1	7	3	Total 28	C 17	N 8	O 3		0	0
1	8	26	Total 197	C 122	N 38	O 36	S 1	0	0
1	9	3	Total 28	C 17	N 8	O 3		0	0

- Molecule 2 is a protein called Hexon protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	788	Total 6307	C 4029	N 1063	O 1180	S 35	0	0
2	B	847	Total 6761	C 4305	N 1146	O 1277	S 33	0	0
2	C	860	Total 6862	C 4368	N 1163	O 1296	S 35	0	0
2	D	887	Total 7057	C 4493	N 1194	O 1335	S 35	0	0
2	E	878	Total 6988	C 4451	N 1180	O 1321	S 36	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	F	889	Total	C	N	O	S	0	0
			7070	4499	1196	1339	36		
2	G	880	Total	C	N	O	S	0	0
			7008	4462	1183	1328	35		
2	H	894	Total	C	N	O	S	0	0
			7095	4513	1202	1344	36		
2	I	908	Total	C	N	O	S	0	0
			7212	4584	1222	1370	36		
2	J	907	Total	C	N	O	S	0	0
			7203	4577	1219	1371	36		
2	K	840	Total	C	N	O	S	0	0
			6702	4271	1130	1265	36		
2	L	855	Total	C	N	O	S	0	0
			6831	4358	1155	1283	35		

- Molecule 3 is a protein called Penton protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	M	458	Total	C	N	O	S	0	0
			3659	2322	630	696	11		

- Molecule 4 is a protein called Core-capsid bridging protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	N	24	Total	C	N	O	S	0	0
			198	124	34	37	3		

- Molecule 5 is a protein called Pre-hexon-linking protein IIIa.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	O	267	Total	C	N	O	S	0	0
			2088	1309	371	404	4		

- Molecule 6 is a protein called Hexon-interlacing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	P	58	Total	C	N	O	S	0	0
			419	262	74	80	3		
6	Q	50	Total	C	N	O	S	0	0
			366	233	65	67	1		
6	R	30	Total	C	N	O	S	0	0
			228	147	41	39	1		

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Mol	Chain	Residues	Atoms					AltConf	Trace
6	S	58	Total	C	N	O	S	0	0
			419	262	74	80	3		

- Molecule 7 is a protein called Pre-hexon-linking protein VIII.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	T	178	Total	C	N	O	S	0	0
			1368	859	234	270	5		
7	U	179	Total	C	N	O	S	0	0
			1372	861	235	271	5		

- Molecule 8 is a protein called Fiber protein.

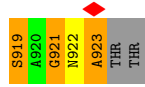
Mol	Chain	Residues	Atoms				AltConf	Trace
8	X	7	Total	C	N	O	0	0
			64	46	8	10		

- Molecule 9 is a protein called Unknown.

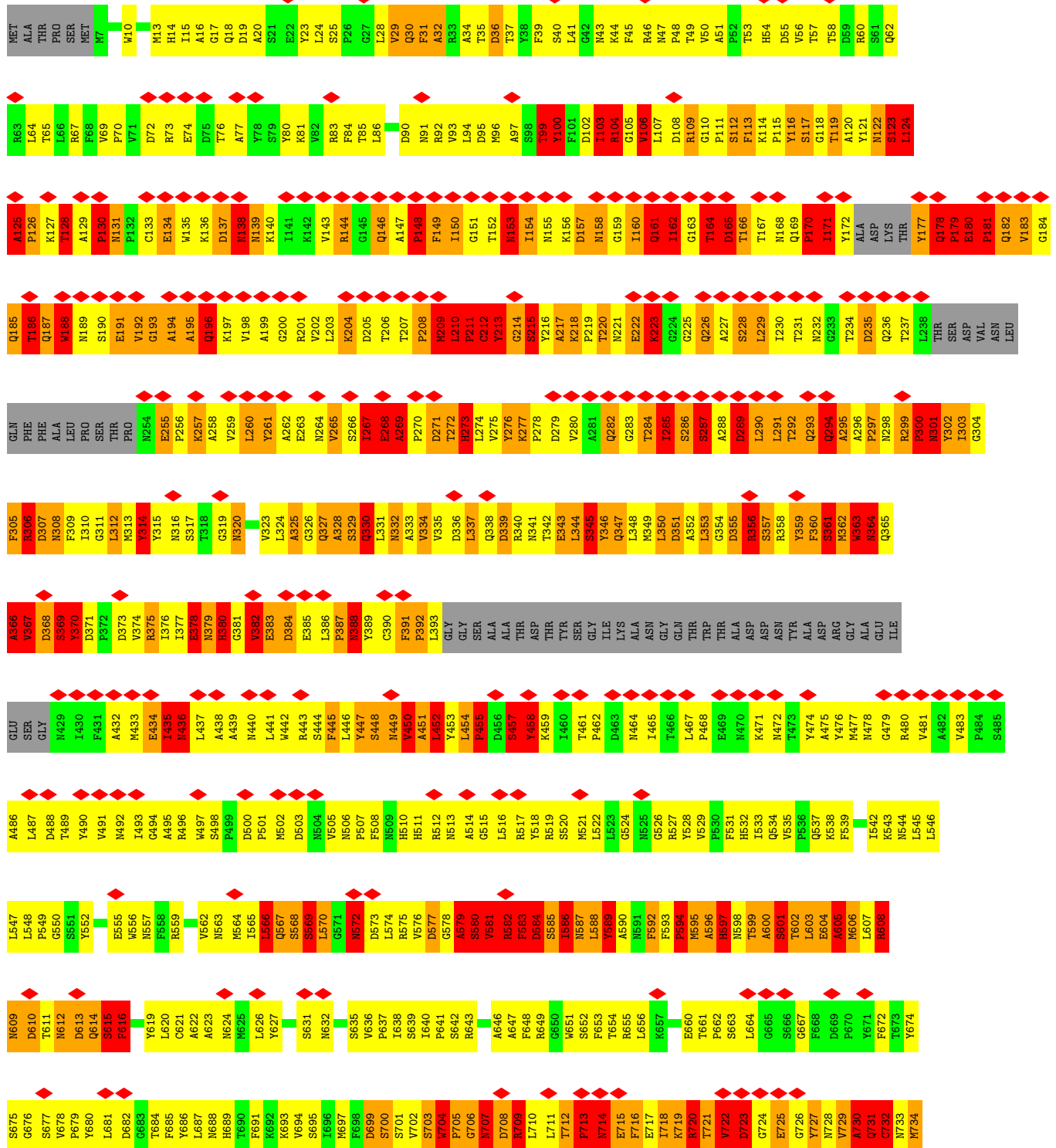
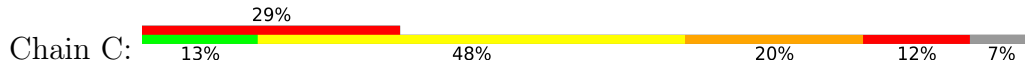
Mol	Chain	Residues	Atoms				AltConf	Trace
9	W	9	Total	C	N	O	0	0
			45	27	9	9		
9	V	10	Total	C	N	O	0	0
			50	30	10	10		
9	Z	9	Total	C	N	O	0	0
			45	27	9	9		

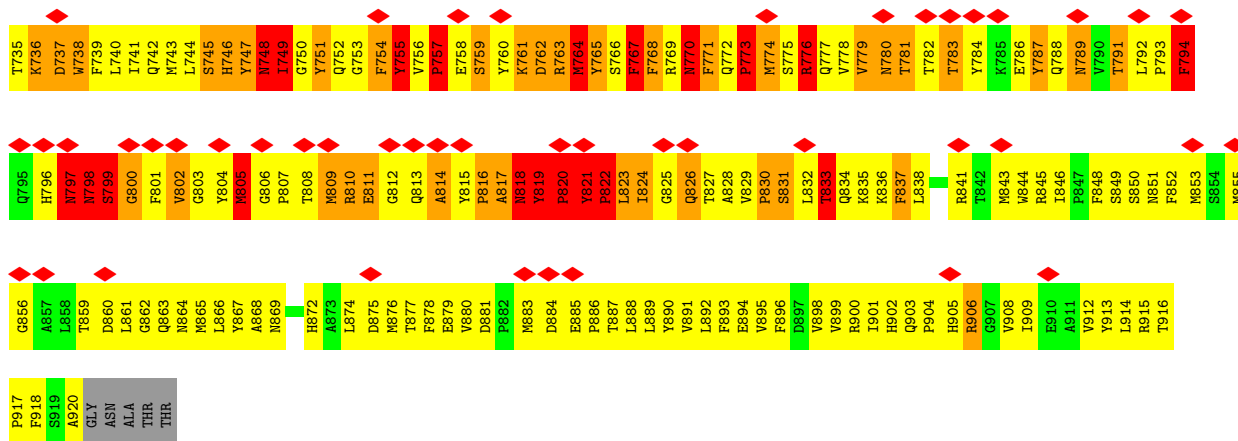
- Molecule 10 is a protein called Unknown.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	Y	6	Total	C	N	O	0	0
			30	18	6	6		

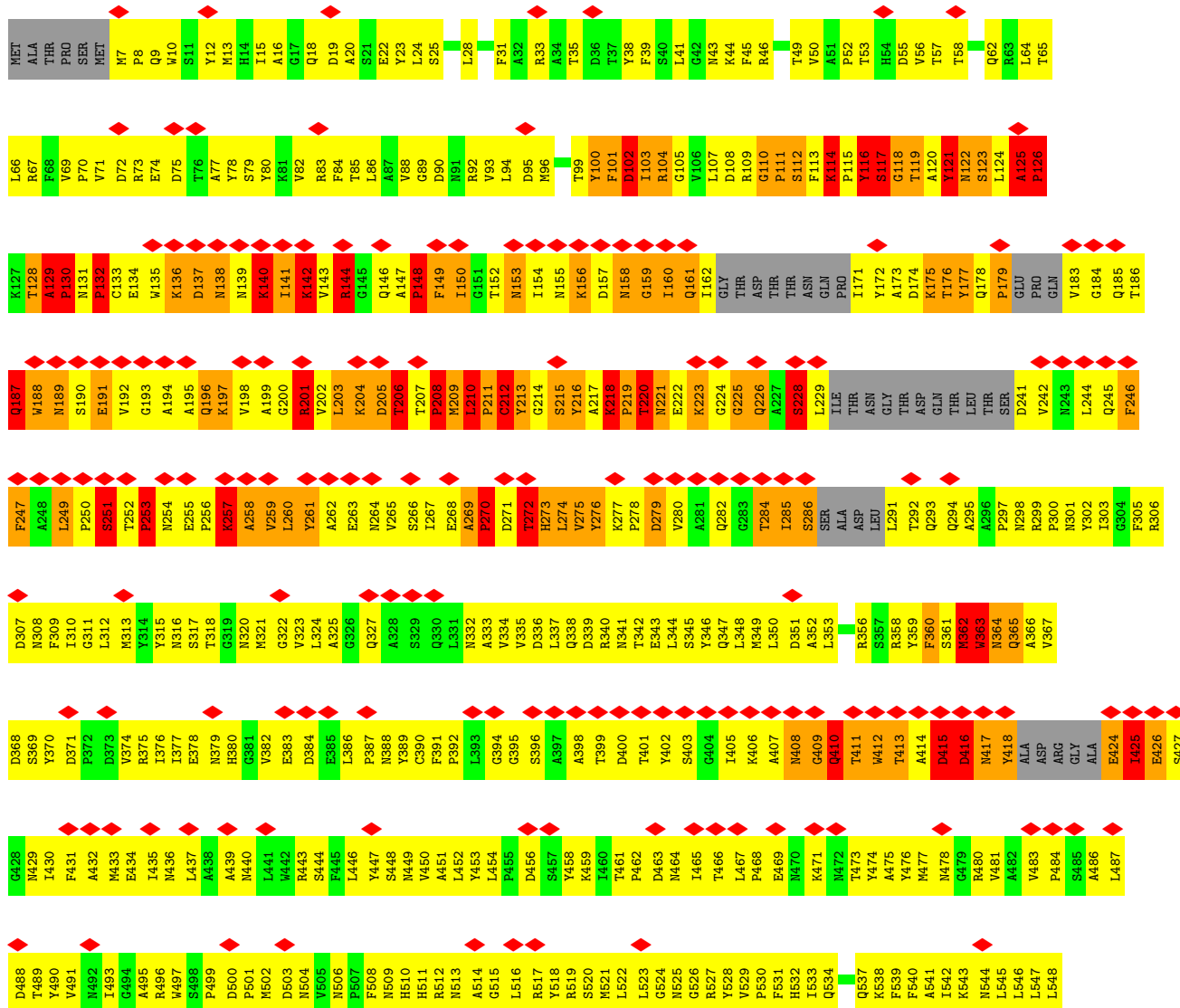


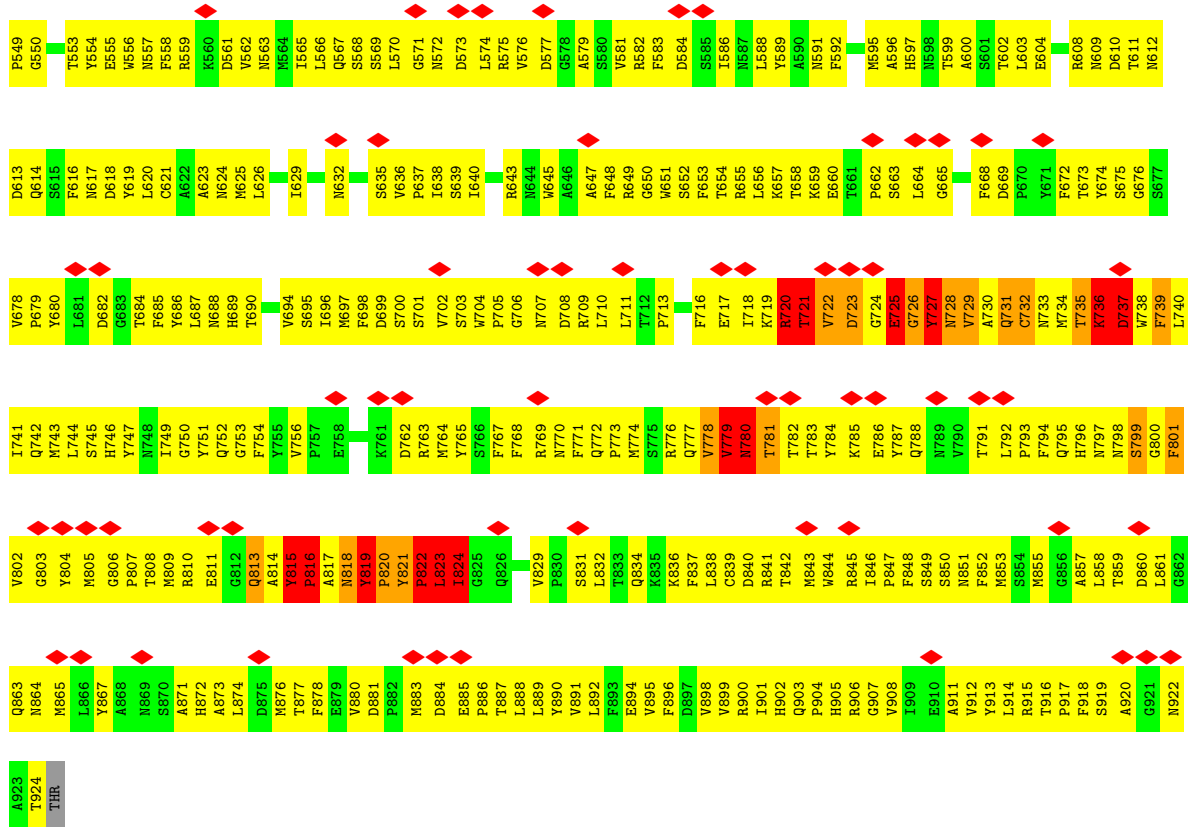
• Molecule 2: Hexon protein



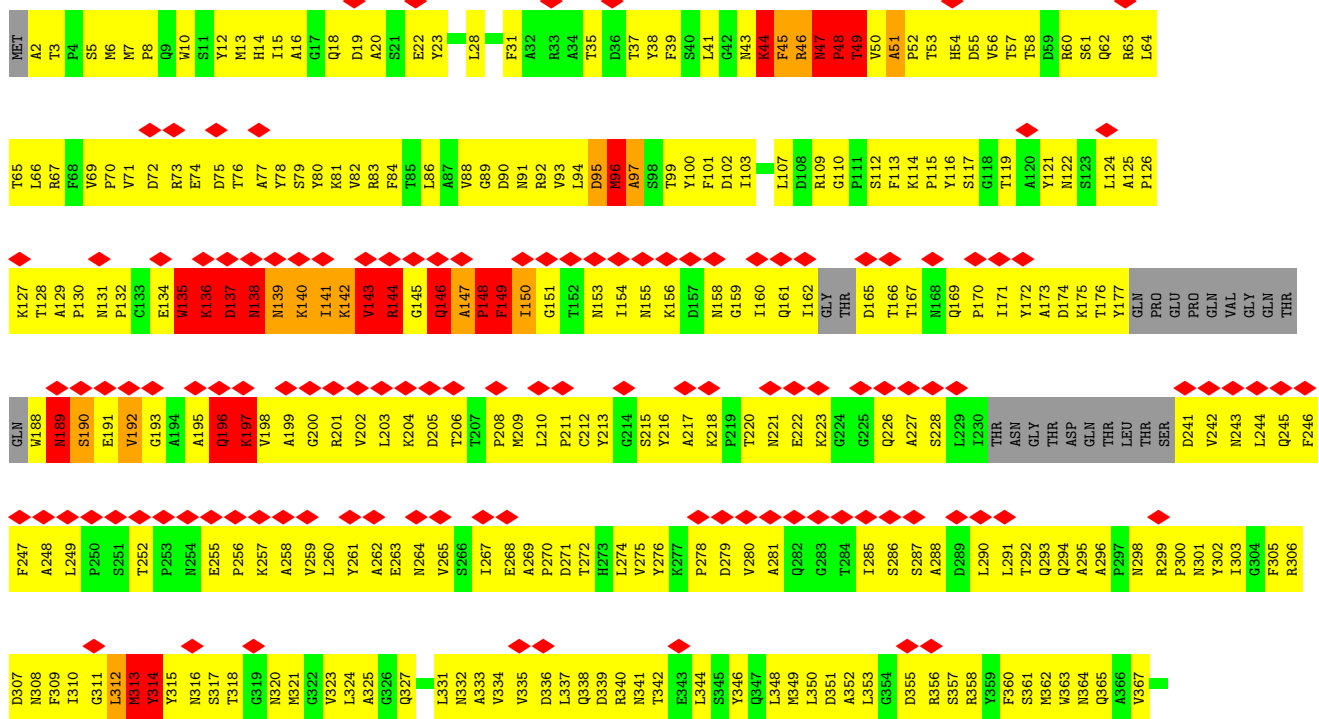


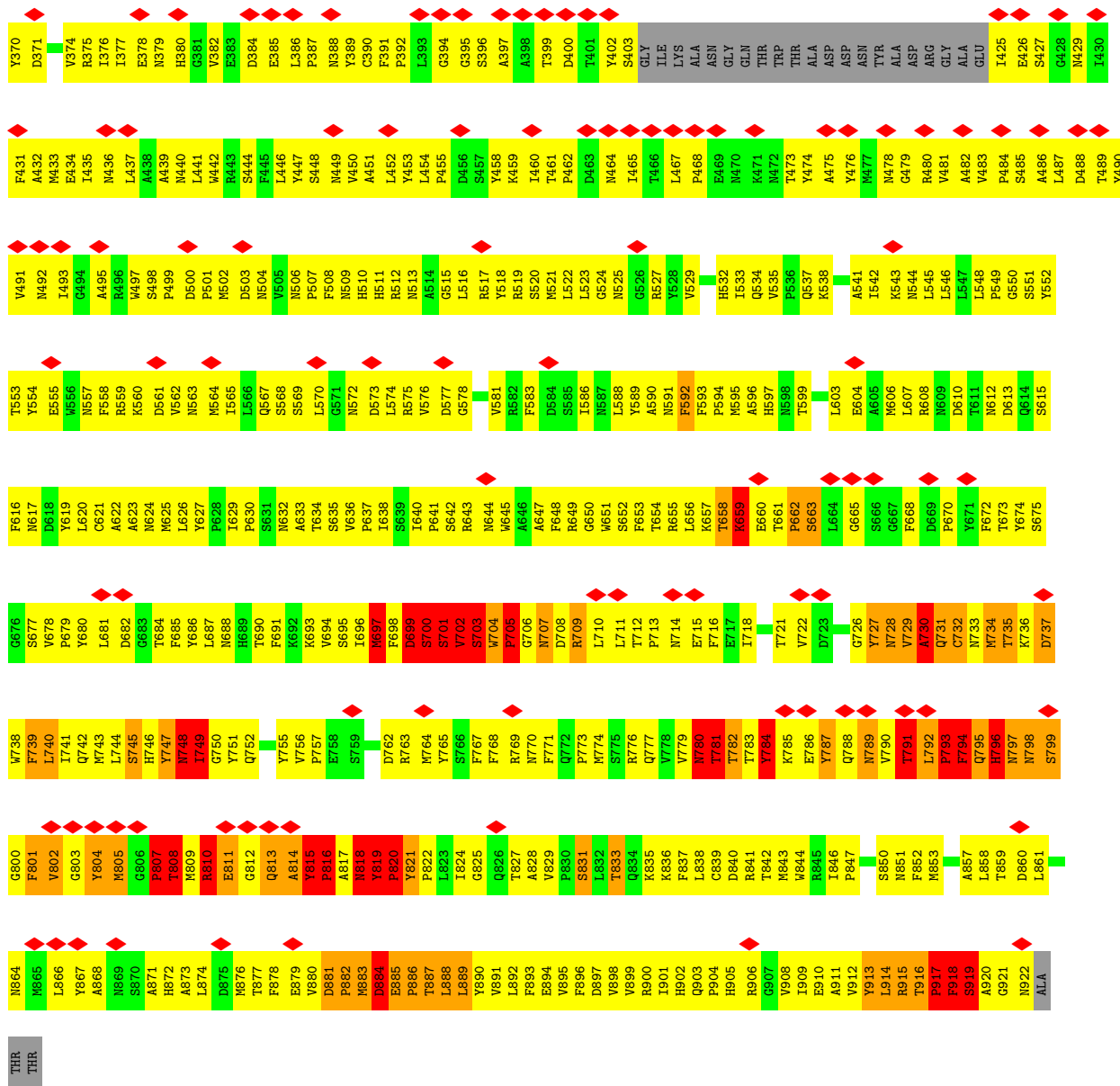
• Molecule 2: Hexon protein



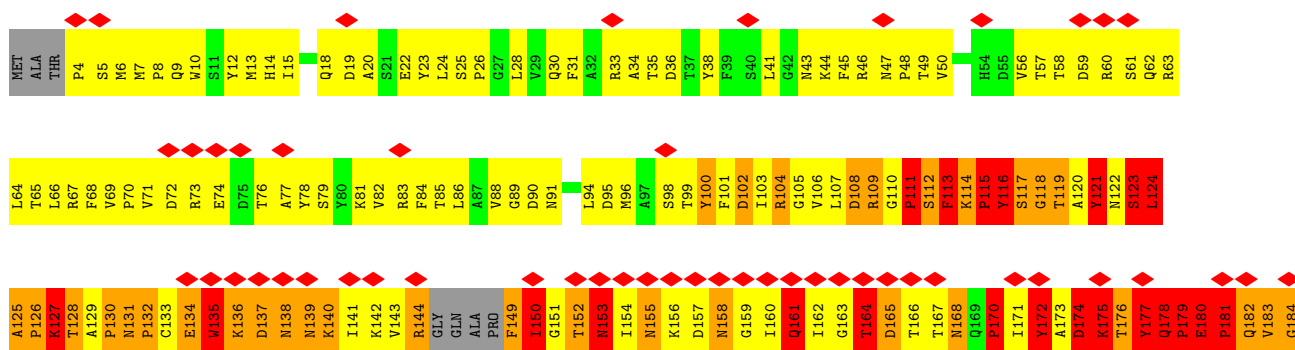
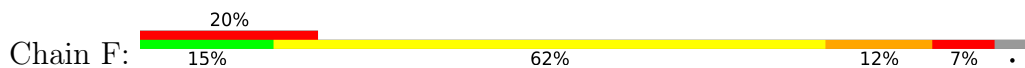


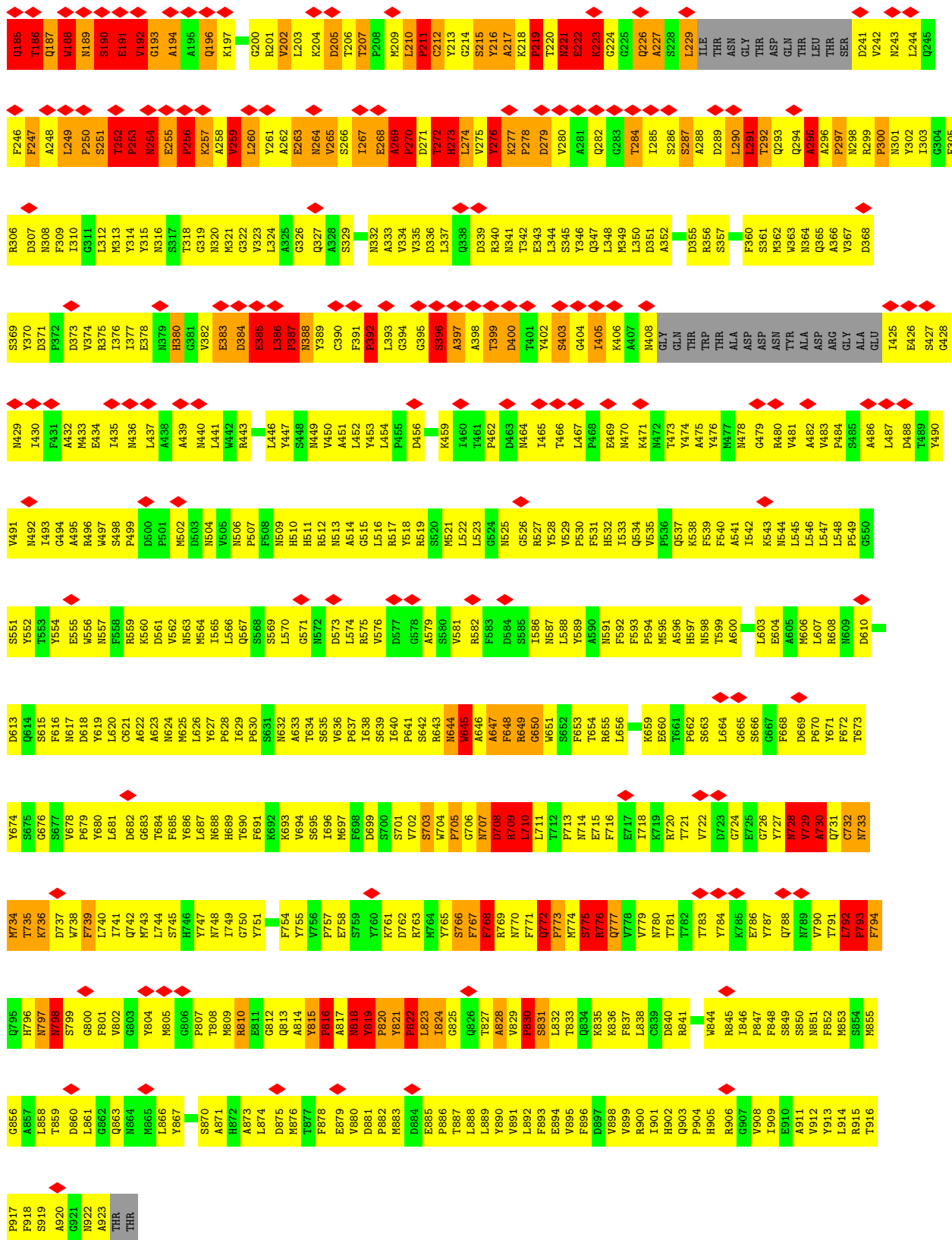
• Molecule 2: Hexon protein





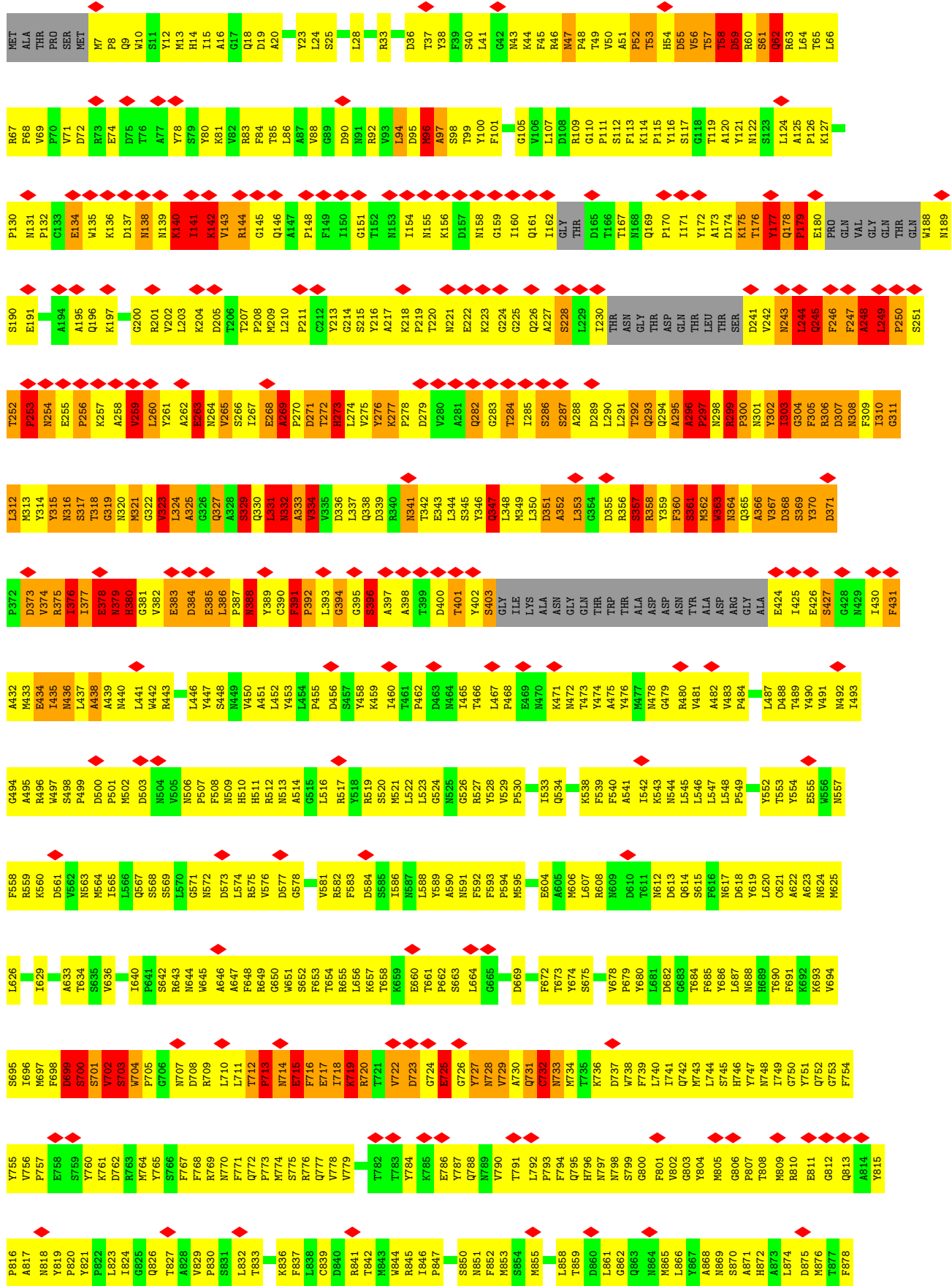
• Molecule 2: Hexon protein





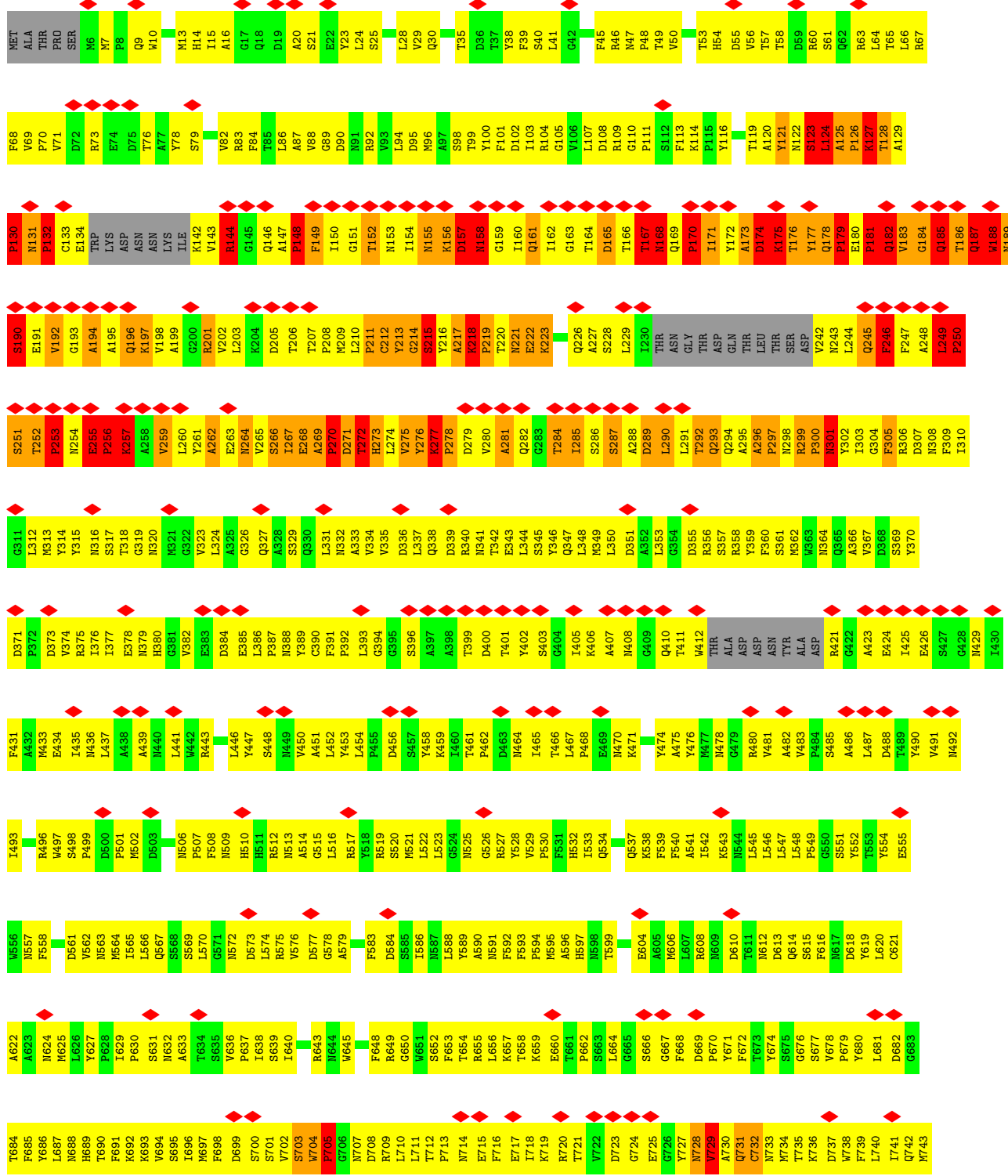
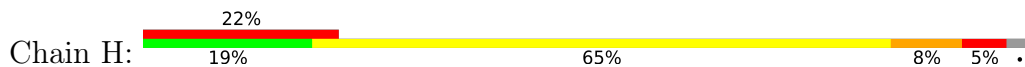
● Molecule 2: Hexon protein

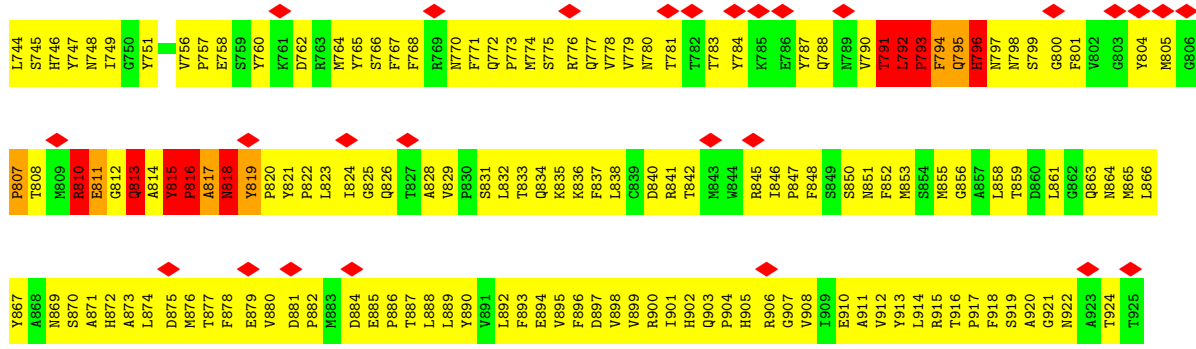




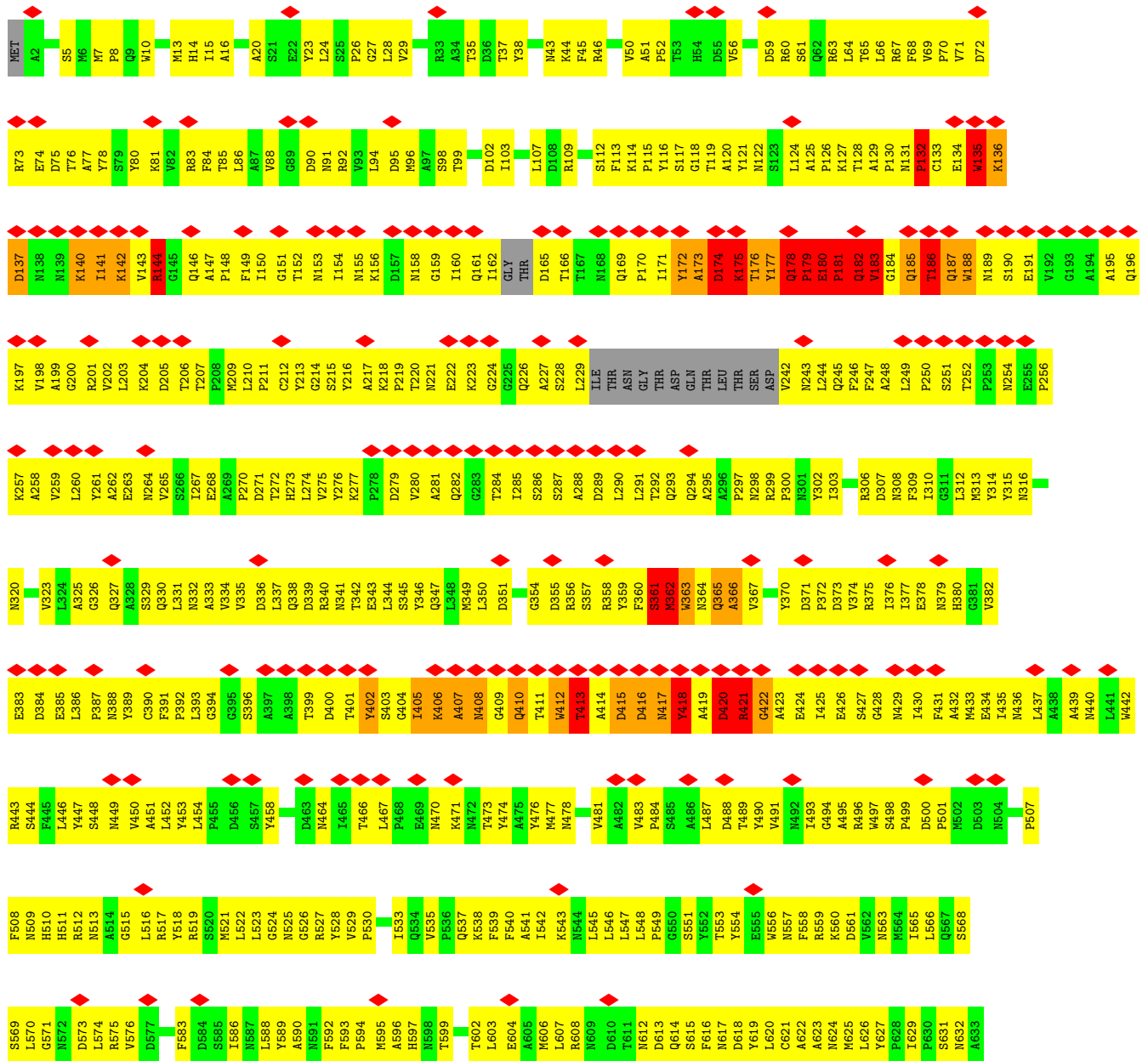


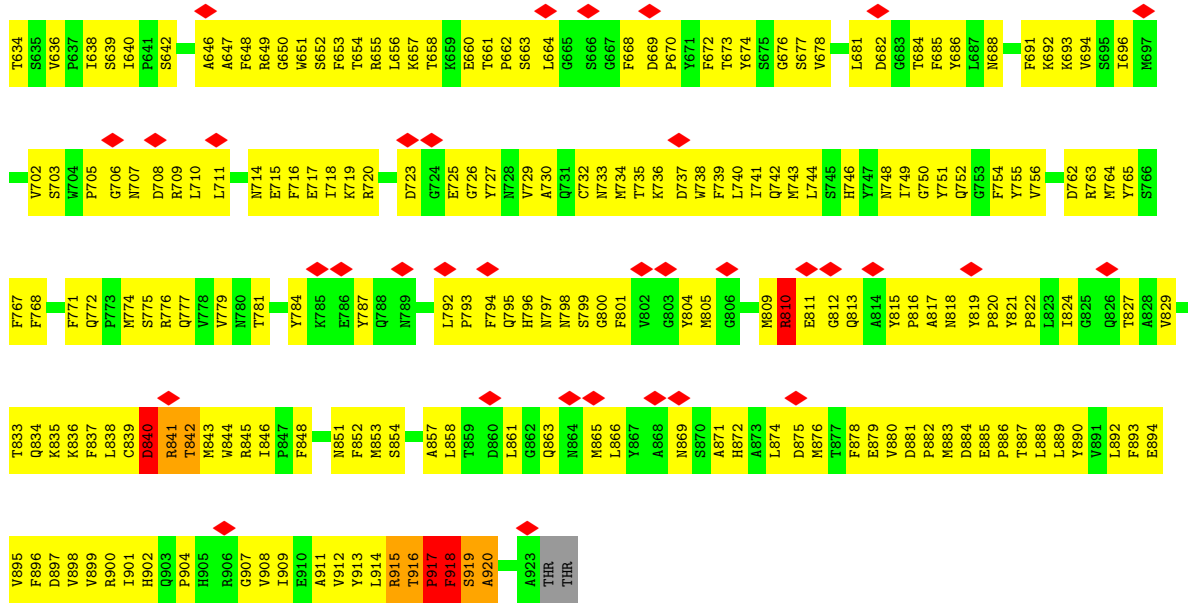
• Molecule 2: Hexon protein



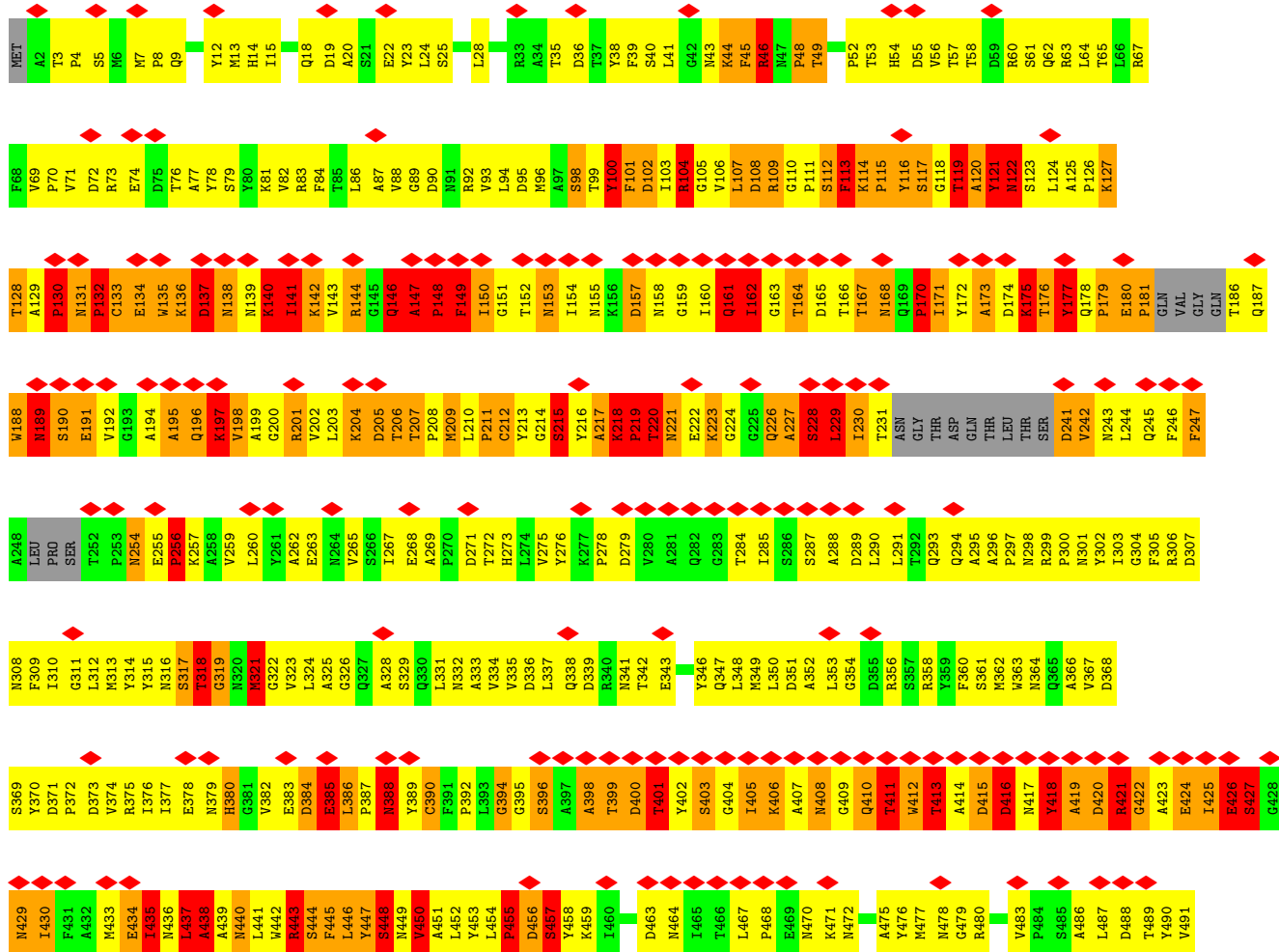


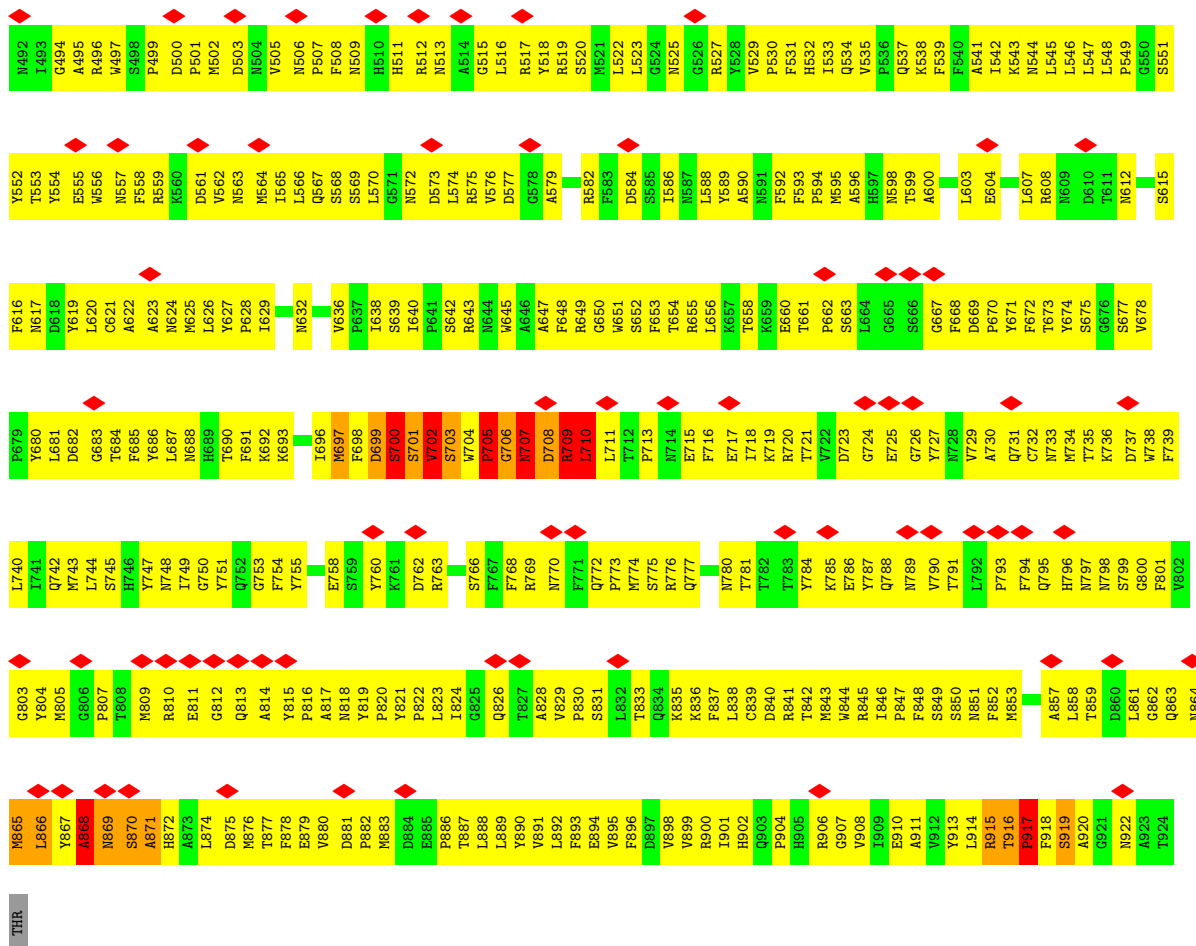
• Molecule 2: Hexon protein



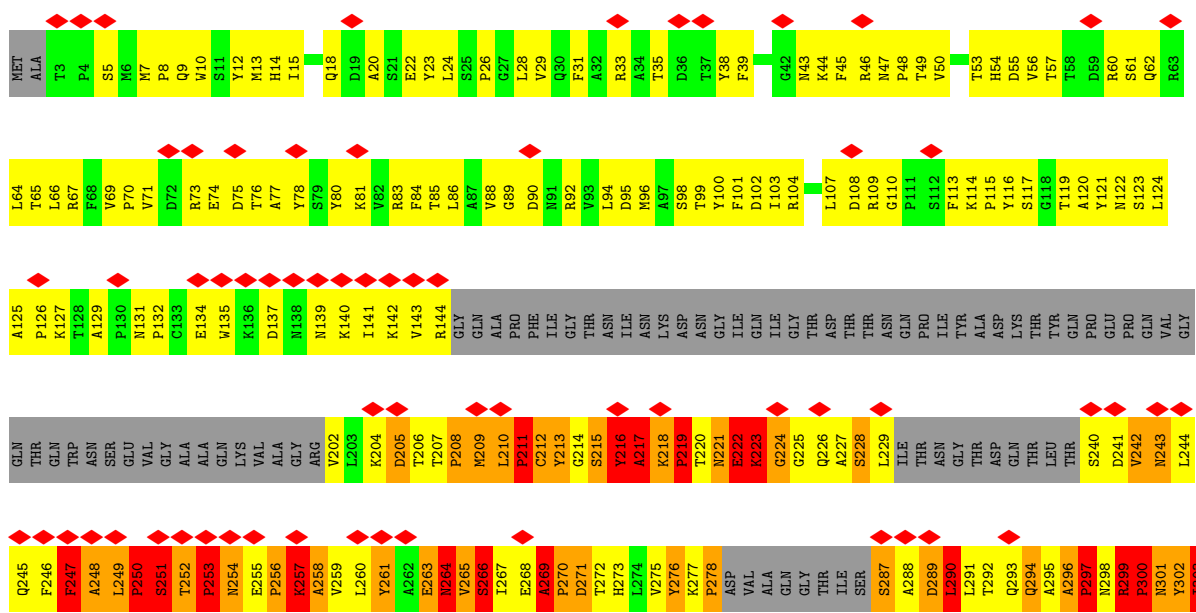


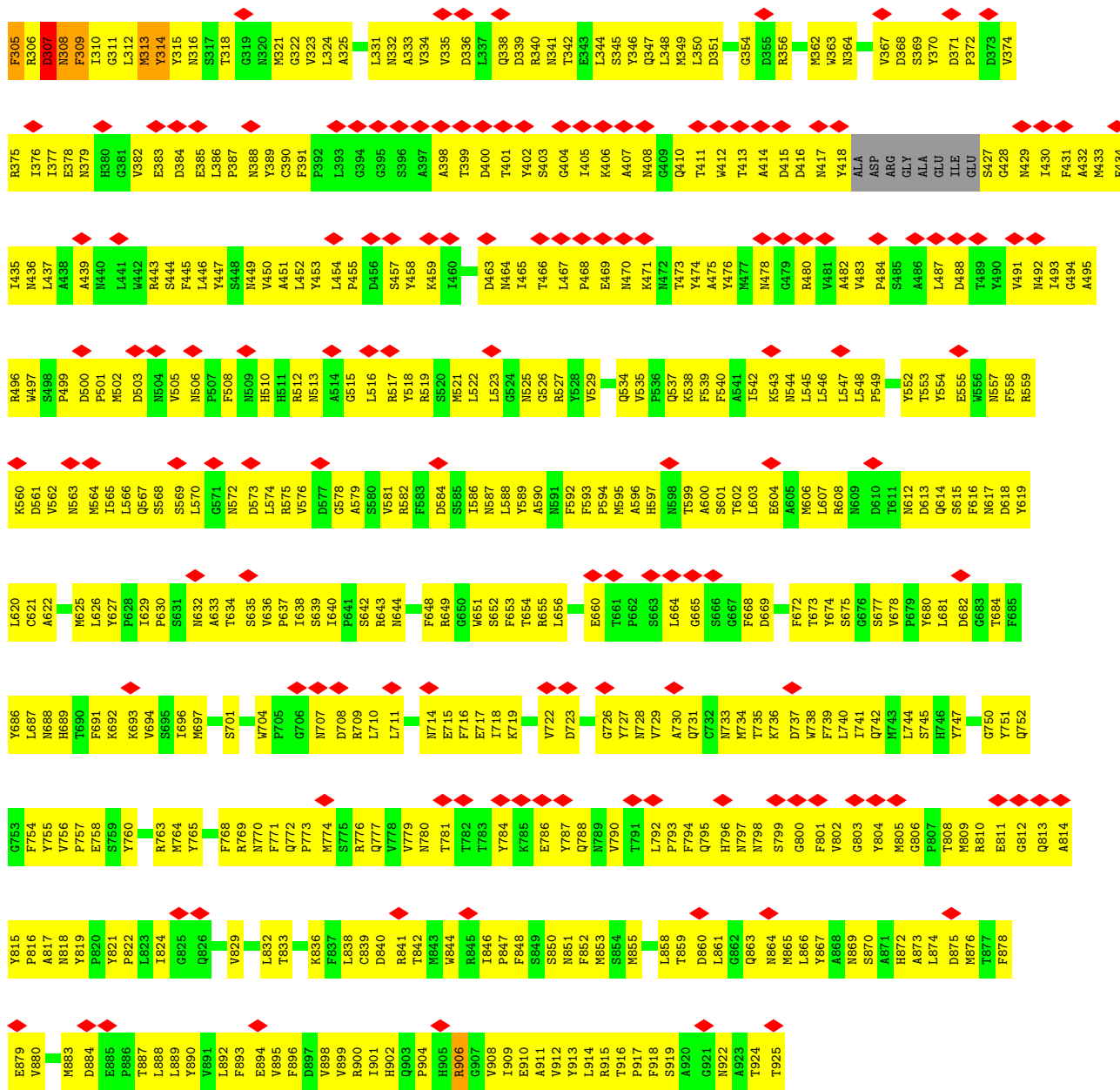
• Molecule 2: Hexon protein

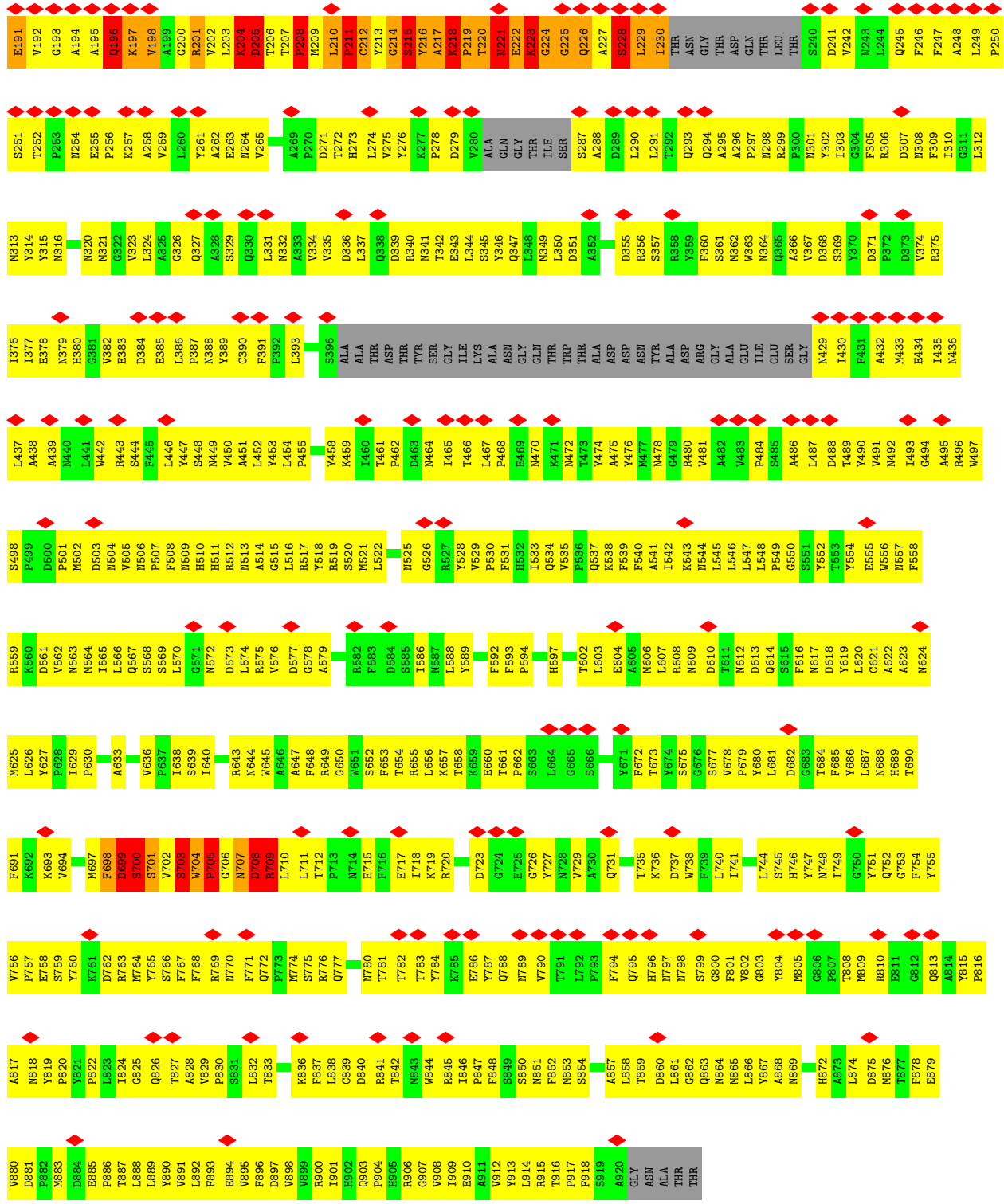




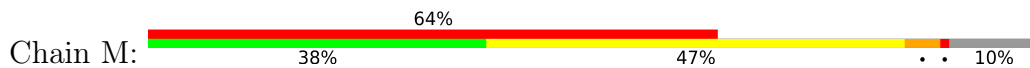
• Molecule 2: Hexon protein



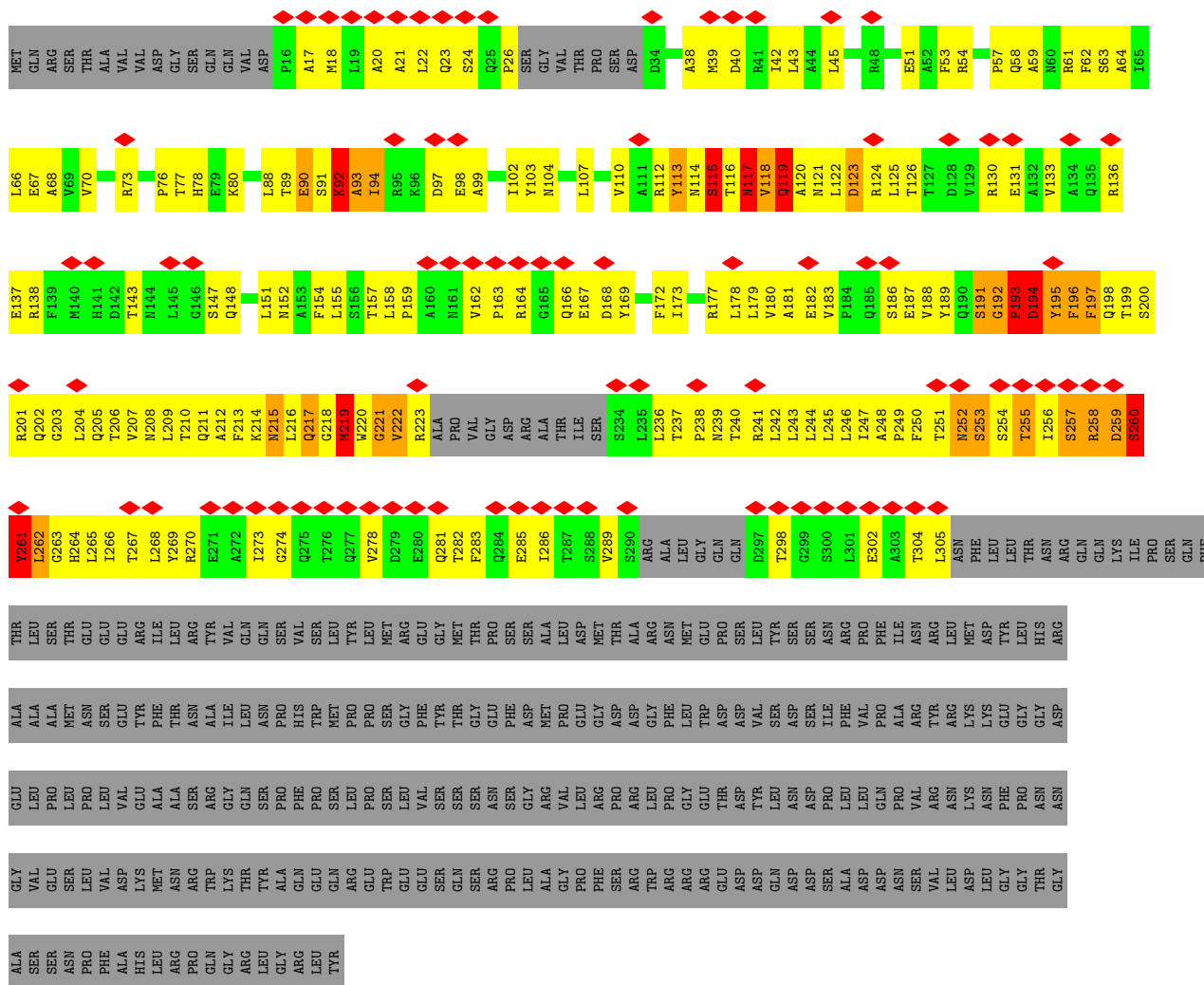
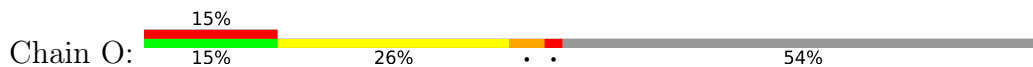




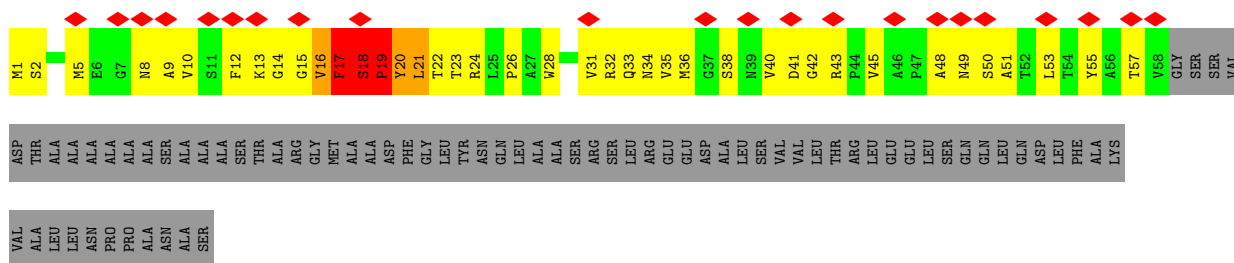
● Molecule 3: Penton protein



• Molecule 5: Pre-hexon-linking protein IIIa



• Molecule 6: Hexon-interlacing protein

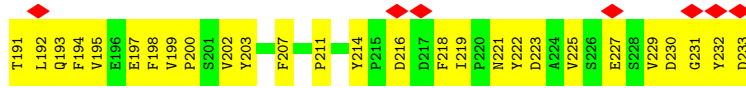
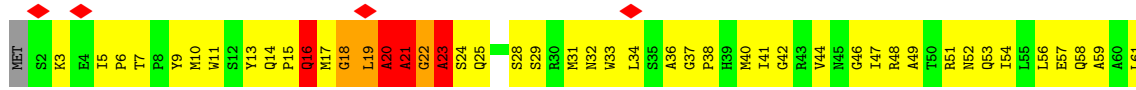


• Molecule 6: Hexon-interlacing protein

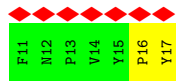




• Molecule 7: Pre-hexon-linking protein VIII



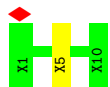
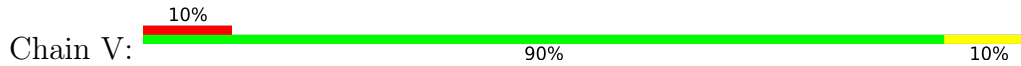
• Molecule 8: Fiber protein



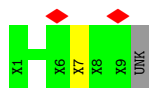
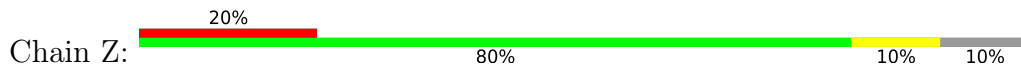
• Molecule 9: Unknown



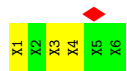
• Molecule 9: Unknown



• Molecule 9: Unknown



• Molecule 10: Unknown



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	19472	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 ($e^-/\text{\AA}^2$)	1.03	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	130000	Depositor
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	0.067	Depositor
Minimum map value	-0.049	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.015	Depositor
Map size (\AA)	936.9, 936.9, 936.9	wwPDB
Map dimensions	900, 900, 900	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.041, 1.041, 1.041	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	0	1.51	2/97 (2.1%)	2.07	4/129 (3.1%)
1	1	1.83	4/129 (3.1%)	2.04	7/174 (4.0%)
1	2	1.09	0/49	1.94	1/64 (1.6%)
1	3	0.89	0/101	1.13	1/136 (0.7%)
1	4	1.46	2/152 (1.3%)	1.75	4/205 (2.0%)
1	5	1.72	2/126 (1.6%)	2.55	5/169 (3.0%)
1	6	0.55	0/29	1.45	1/37 (2.7%)
1	7	0.94	0/29	1.26	0/37
1	8	1.59	3/203 (1.5%)	2.22	8/272 (2.9%)
1	9	0.82	0/29	0.86	0/37
2	A	0.75	12/6485 (0.2%)	1.10	64/8832 (0.7%)
2	B	1.19	36/6946 (0.5%)	1.56	165/9461 (1.7%)
2	C	1.22	57/7052 (0.8%)	1.59	168/9608 (1.7%)
2	D	0.81	18/7250 (0.2%)	1.11	64/9872 (0.6%)
2	E	0.78	19/7181 (0.3%)	1.12	76/9781 (0.8%)
2	F	0.97	30/7265 (0.4%)	1.32	125/9895 (1.3%)
2	G	1.10	50/7201 (0.7%)	1.28	104/9809 (1.1%)
2	H	0.85	26/7290 (0.4%)	1.15	90/9931 (0.9%)
2	I	0.55	5/7412 (0.1%)	0.80	25/10100 (0.2%)
2	J	0.93	27/7401 (0.4%)	1.20	103/10084 (1.0%)
2	K	0.63	10/6891 (0.1%)	0.86	36/9387 (0.4%)
2	L	0.68	9/7023 (0.1%)	0.90	48/9565 (0.5%)
3	M	0.49	3/3744 (0.1%)	0.87	27/5099 (0.5%)
4	N	1.52	1/199 (0.5%)	2.12	10/265 (3.8%)
5	O	0.76	7/2120 (0.3%)	1.01	21/2882 (0.7%)
6	P	0.84	4/428 (0.9%)	1.01	4/583 (0.7%)
6	Q	0.83	2/375 (0.5%)	1.02	3/514 (0.6%)
6	R	1.37	2/234 (0.9%)	1.37	1/317 (0.3%)
6	S	1.31	4/428 (0.9%)	1.80	11/583 (1.9%)
7	T	0.54	0/1406	0.75	9/1922 (0.5%)
7	U	0.63	4/1410 (0.3%)	0.70	4/1927 (0.2%)
8	X	0.41	0/68	0.30	0/94
All	All	0.88	339/96753 (0.4%)	1.18	1189/131771 (0.9%)

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	2	2	0
1	3	1	0
1	5	1	0
1	8	3	0
2	A	4	1
2	B	5	3
2	C	12	2
2	D	4	3
2	E	2	6
2	F	3	1
2	G	0	4
2	H	1	1
2	I	4	0
2	J	6	1
2	K	1	0
2	L	1	2
3	M	2	1
5	O	2	2
6	P	1	0
6	R	1	0
6	S	1	0
7	T	0	1
7	U	0	1
All	All	57	29

The worst 5 of 339 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	886	PRO	N-CD	-37.96	0.94	1.47
2	L	179	PRO	N-CD	-21.89	1.17	1.47
2	G	392	PRO	N-CD	-20.39	1.19	1.47
2	H	208	PRO	N-CD	-19.71	1.20	1.47
2	J	181	PRO	N-CD	-18.41	1.22	1.47

The worst 5 of 1189 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	886	PRO	CA-N-CD	24.15	145.51	111.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	816	PRO	N-CA-CB	-22.76	75.99	103.30
2	E	917	PRO	N-CA-CB	-22.19	76.67	103.30
2	E	48	PRO	N-CA-CB	-20.20	79.06	103.30
2	I	132	PRO	N-CA-CB	-20.17	79.10	103.30

5 of 57 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	2	17	PRO	CA
1	2	21	THR	CA
1	3	23	ASN	CA
1	5	27	THR	CA
1	8	16	ARG	CA

5 of 29 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A	323	VAL	Mainchain
2	B	180	GLU	Mainchain
2	B	431	PHE	Mainchain
2	B	822	PRO	Mainchain
2	C	125	ALA	Mainchain

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	94	0	93	19	0
1	1	124	0	118	30	0
1	2	48	0	47	10	0
1	3	98	0	90	14	0
1	4	147	0	135	40	0
1	5	123	0	111	52	0
1	6	28	0	27	6	0
1	7	28	0	27	10	0
1	8	197	0	181	65	0
1	9	28	0	27	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	A	6307	0	6043	1301	0
2	B	6761	0	6493	1663	0
2	C	6862	0	6574	1727	0
2	D	7057	0	6749	1560	0
2	E	6988	0	6702	1670	0
2	F	7070	0	6781	1694	0
2	G	7008	0	6715	1527	0
2	H	7095	0	6803	1564	0
2	I	7212	0	6900	1365	0
2	J	7203	0	6888	1583	0
2	K	6702	0	6413	1357	0
2	L	6831	0	6550	1300	0
3	M	3659	0	3605	485	0
4	N	198	0	209	90	0
5	O	2088	0	2087	326	0
6	P	419	0	414	84	0
6	Q	366	0	365	93	0
6	R	228	0	227	62	0
6	S	419	0	413	88	0
7	T	1368	0	1297	228	0
7	U	1372	0	1300	181	0
8	X	64	0	55	2	0
9	V	50	0	14	1	0
9	W	45	0	12	8	0
9	Z	45	0	13	1	0
10	Y	30	0	10	3	0
All	All	94362	0	90488	17849	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 97.

The worst 5 of 17849 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:E:885:GLU:HG2	2:E:886:PRO:CD	1.24	1.68
2:A:704:TRP:CG	2:A:705:PRO:HD2	1.14	1.65
2:L:136:LYS:CG	2:L:140:LYS:HG2	1.25	1.63
3:M:221:LEU:HD11	3:M:336:ASN:CB	1.14	1.62
3:M:221:LEU:CD1	3:M:336:ASN:HB3	1.30	1.61

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	0	10/266 (4%)	3 (30%)	3 (30%)	4 (40%)	0	0
1	1	14/266 (5%)	6 (43%)	2 (14%)	6 (43%)	0	0
1	2	4/266 (2%)	2 (50%)	0	2 (50%)	0	0
1	3	10/266 (4%)	3 (30%)	5 (50%)	2 (20%)	0	2
1	4	17/266 (6%)	7 (41%)	8 (47%)	2 (12%)	0	6
1	5	14/266 (5%)	7 (50%)	4 (29%)	3 (21%)	0	1
1	6	1/266 (0%)	1 (100%)	0	0	100	100
1	7	1/266 (0%)	1 (100%)	0	0	100	100
1	8	24/266 (9%)	10 (42%)	9 (38%)	5 (21%)	0	1
1	9	1/266 (0%)	1 (100%)	0	0	100	100
2	A	776/925 (84%)	555 (72%)	163 (21%)	58 (8%)	1	15
2	B	837/925 (90%)	534 (64%)	178 (21%)	125 (15%)	0	4
2	C	852/925 (92%)	513 (60%)	186 (22%)	153 (18%)	0	2
2	D	875/925 (95%)	604 (69%)	202 (23%)	69 (8%)	1	13
2	E	868/925 (94%)	576 (66%)	230 (26%)	62 (7%)	1	16
2	F	881/925 (95%)	599 (68%)	185 (21%)	97 (11%)	0	7
2	G	870/925 (94%)	611 (70%)	184 (21%)	75 (9%)	1	11
2	H	886/925 (96%)	682 (77%)	146 (16%)	58 (6%)	1	19
2	I	902/925 (98%)	737 (82%)	137 (15%)	28 (3%)	4	33
2	J	899/925 (97%)	639 (71%)	183 (20%)	77 (9%)	1	11
2	K	830/925 (90%)	662 (80%)	138 (17%)	30 (4%)	3	30
2	L	845/925 (91%)	683 (81%)	127 (15%)	35 (4%)	3	27
3	M	452/508 (89%)	365 (81%)	81 (18%)	6 (1%)	12	48
4	N	22/348 (6%)	9 (41%)	6 (27%)	7 (32%)	0	0
5	O	259/579 (45%)	190 (73%)	53 (20%)	16 (6%)	1	19

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	P	56/133 (42%)	41 (73%)	12 (21%)	3 (5%)	2	22
6	Q	48/133 (36%)	34 (71%)	12 (25%)	2 (4%)	3	26
6	R	28/133 (21%)	13 (46%)	11 (39%)	4 (14%)	0	4
6	S	56/133 (42%)	17 (30%)	16 (29%)	23 (41%)	0	0
7	T	174/233 (75%)	139 (80%)	33 (19%)	2 (1%)	14	51
7	U	175/233 (75%)	139 (79%)	31 (18%)	5 (3%)	4	34
8	X	5/7 (71%)	1 (20%)	4 (80%)	0	100	100
All	All	11692/16200 (72%)	8384 (72%)	2349 (20%)	959 (8%)	2	12

5 of 959 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	0	20	ALA
1	0	23	HIS
1	0	25	SER
1	1	10	ALA
1	1	12	ARG

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	0	10/227 (4%)	7 (70%)	3 (30%)	0	2
1	1	12/227 (5%)	7 (58%)	5 (42%)	0	0
1	2	5/227 (2%)	3 (60%)	2 (40%)	0	0
1	3	10/227 (4%)	6 (60%)	4 (40%)	0	0
1	4	15/227 (7%)	13 (87%)	2 (13%)	4	22
1	5	13/227 (6%)	9 (69%)	4 (31%)	0	2
1	6	3/227 (1%)	2 (67%)	1 (33%)	0	1
1	7	3/227 (1%)	2 (67%)	1 (33%)	0	1
1	8	20/227 (9%)	12 (60%)	8 (40%)	0	0

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	9	3/227 (1%)	2 (67%)	1 (33%)	0	1
2	A	687/797 (86%)	629 (92%)	58 (8%)	11	40
2	B	739/797 (93%)	605 (82%)	134 (18%)	1	11
2	C	748/797 (94%)	621 (83%)	127 (17%)	2	14
2	D	764/797 (96%)	692 (91%)	72 (9%)	8	35
2	E	761/797 (96%)	710 (93%)	51 (7%)	16	48
2	F	770/797 (97%)	693 (90%)	77 (10%)	7	32
2	G	763/797 (96%)	696 (91%)	67 (9%)	10	38
2	H	770/797 (97%)	713 (93%)	57 (7%)	13	44
2	I	782/797 (98%)	754 (96%)	28 (4%)	35	63
2	J	781/797 (98%)	712 (91%)	69 (9%)	10	38
2	K	731/797 (92%)	708 (97%)	23 (3%)	40	65
2	L	744/797 (93%)	712 (96%)	32 (4%)	29	58
3	M	408/447 (91%)	400 (98%)	8 (2%)	55	75
4	N	24/307 (8%)	22 (92%)	2 (8%)	11	40
5	O	228/501 (46%)	219 (96%)	9 (4%)	32	60
6	P	44/97 (45%)	42 (96%)	2 (4%)	27	57
6	Q	38/97 (39%)	35 (92%)	3 (8%)	12	42
6	R	24/97 (25%)	23 (96%)	1 (4%)	30	59
6	S	44/97 (45%)	28 (64%)	16 (36%)	0	0
7	T	148/192 (77%)	143 (97%)	5 (3%)	37	64
7	U	148/192 (77%)	147 (99%)	1 (1%)	84	91
8	X	7/7 (100%)	7 (100%)	0	100	100
All	All	10247/13868 (74%)	9374 (92%)	873 (8%)	14	40

5 of 873 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	E	820	PRO
2	G	299	ARG
2	L	149	PHE
2	F	116	TYR
2	E	815	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 264 such sidechains are listed below:

Mol	Chain	Res	Type
2	L	316	ASN
2	L	752	GLN
7	T	45	ASN
2	E	509	ASN
2	E	316	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.

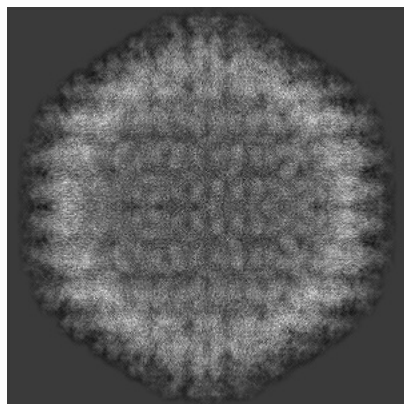
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-11108. These allow visual inspection of the internal detail of the map and identification of artifacts.

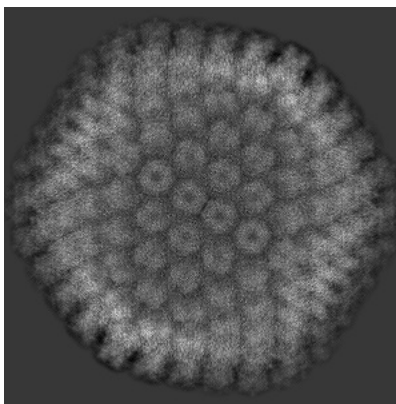
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

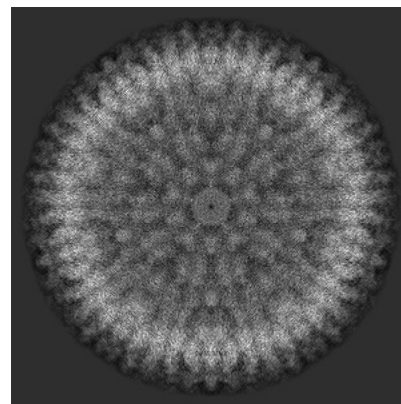
6.1.1 Primary map



X

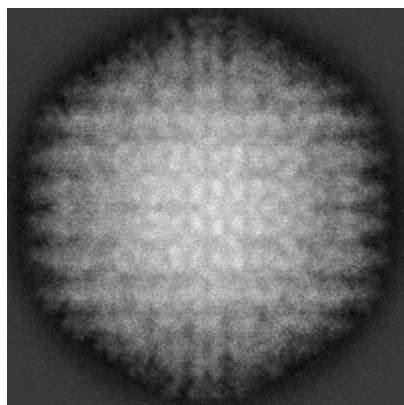


Y

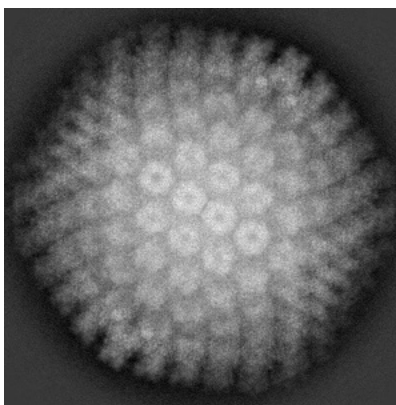


Z

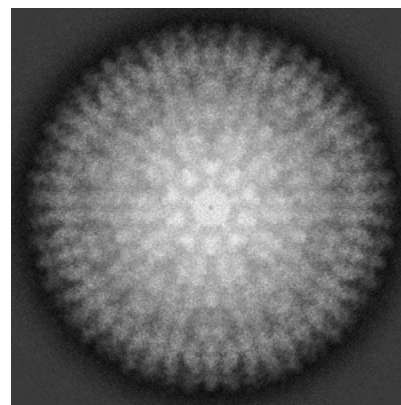
6.1.2 Raw map



X



Y

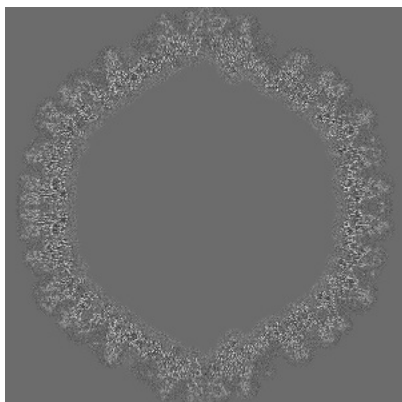


Z

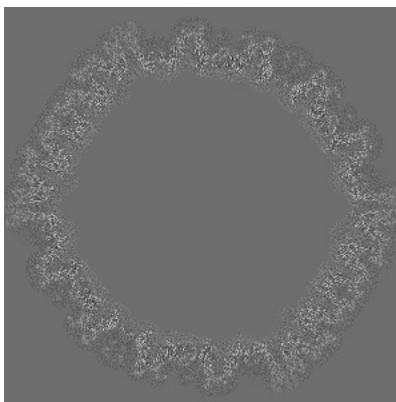
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

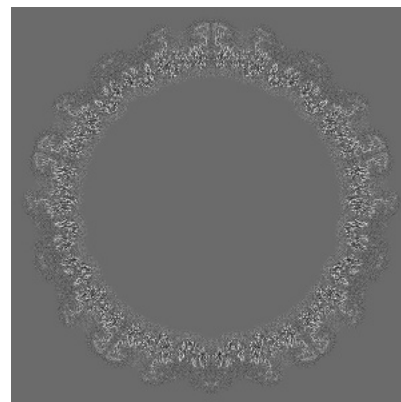
6.2.1 Primary map



X Index: 450

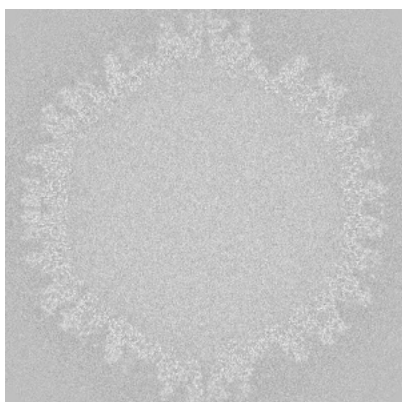


Y Index: 450

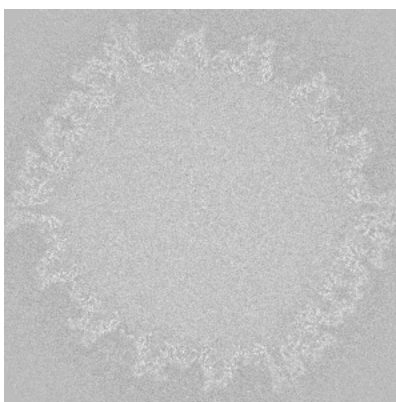


Z Index: 450

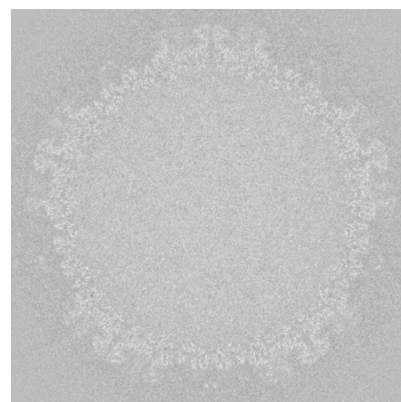
6.2.2 Raw map



X Index: 450



Y Index: 450

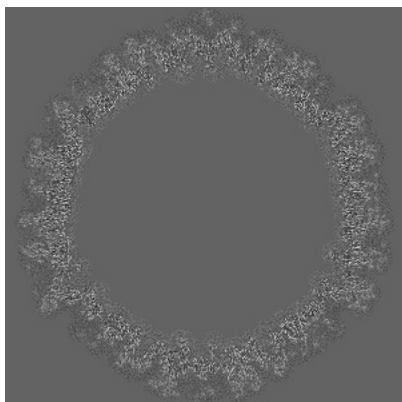


Z Index: 450

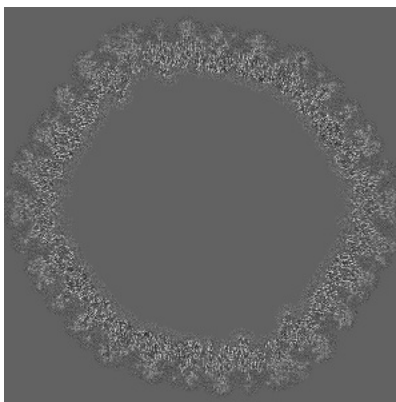
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

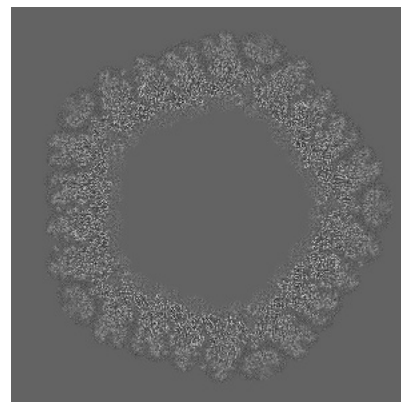
6.3.1 Primary map



X Index: 492

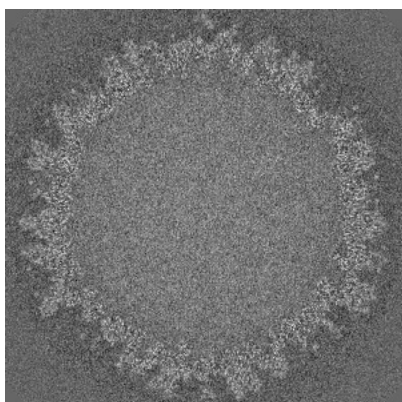


Y Index: 431

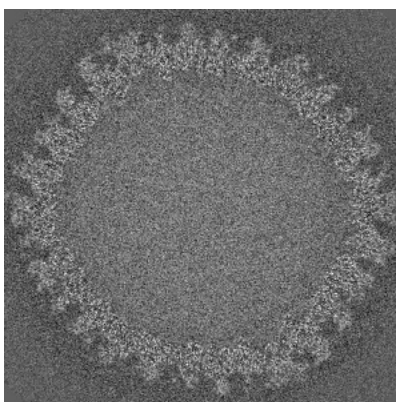


Z Index: 249

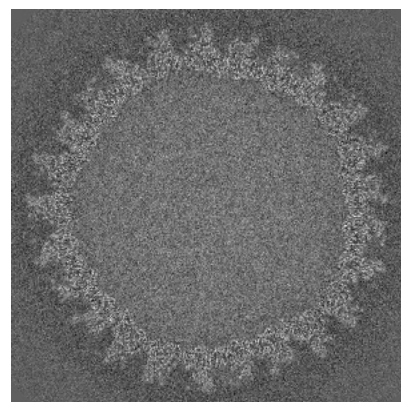
6.3.2 Raw map



X Index: 490



Y Index: 431

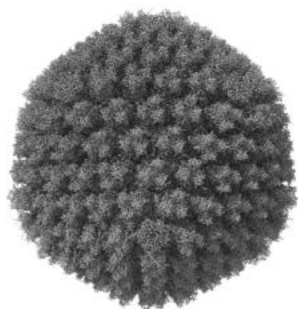


Z Index: 504

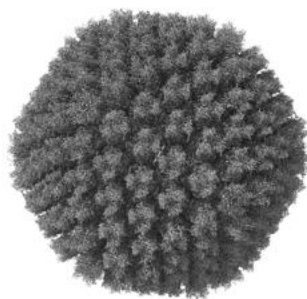
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

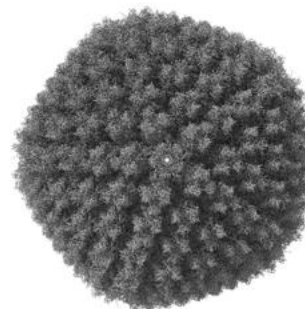
6.4.1 Primary map



X



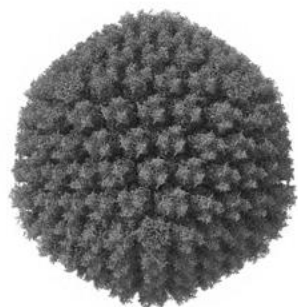
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.015. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

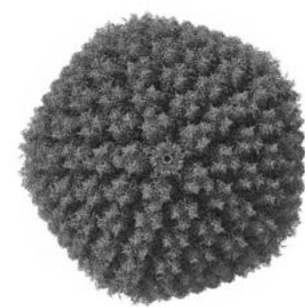
6.4.2 Raw map



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.

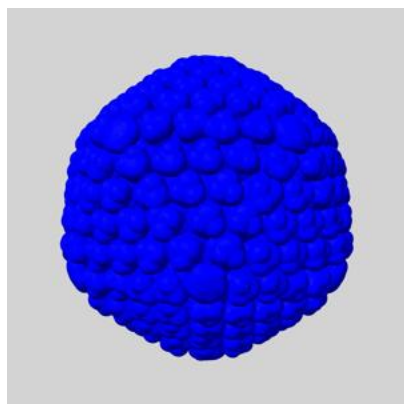
6.5 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

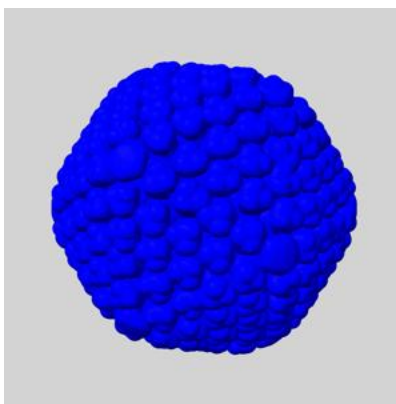
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

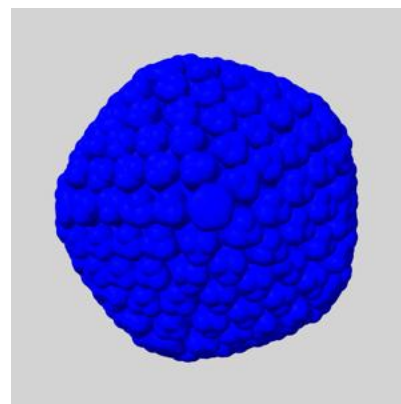
6.5.1 emd_11108_msk_1.map [i](#)



X



Y

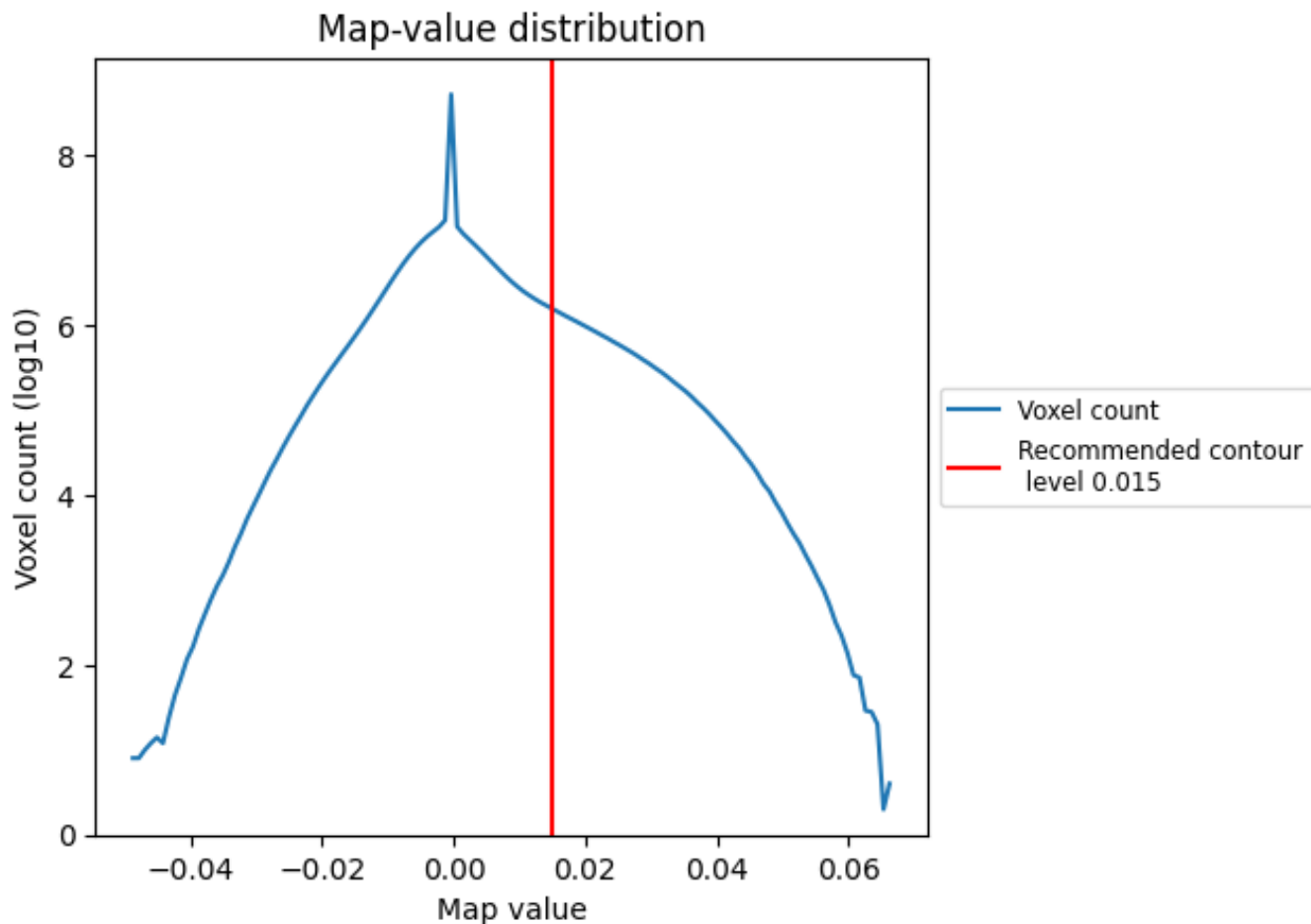


Z

7 Map analysis [i](#)

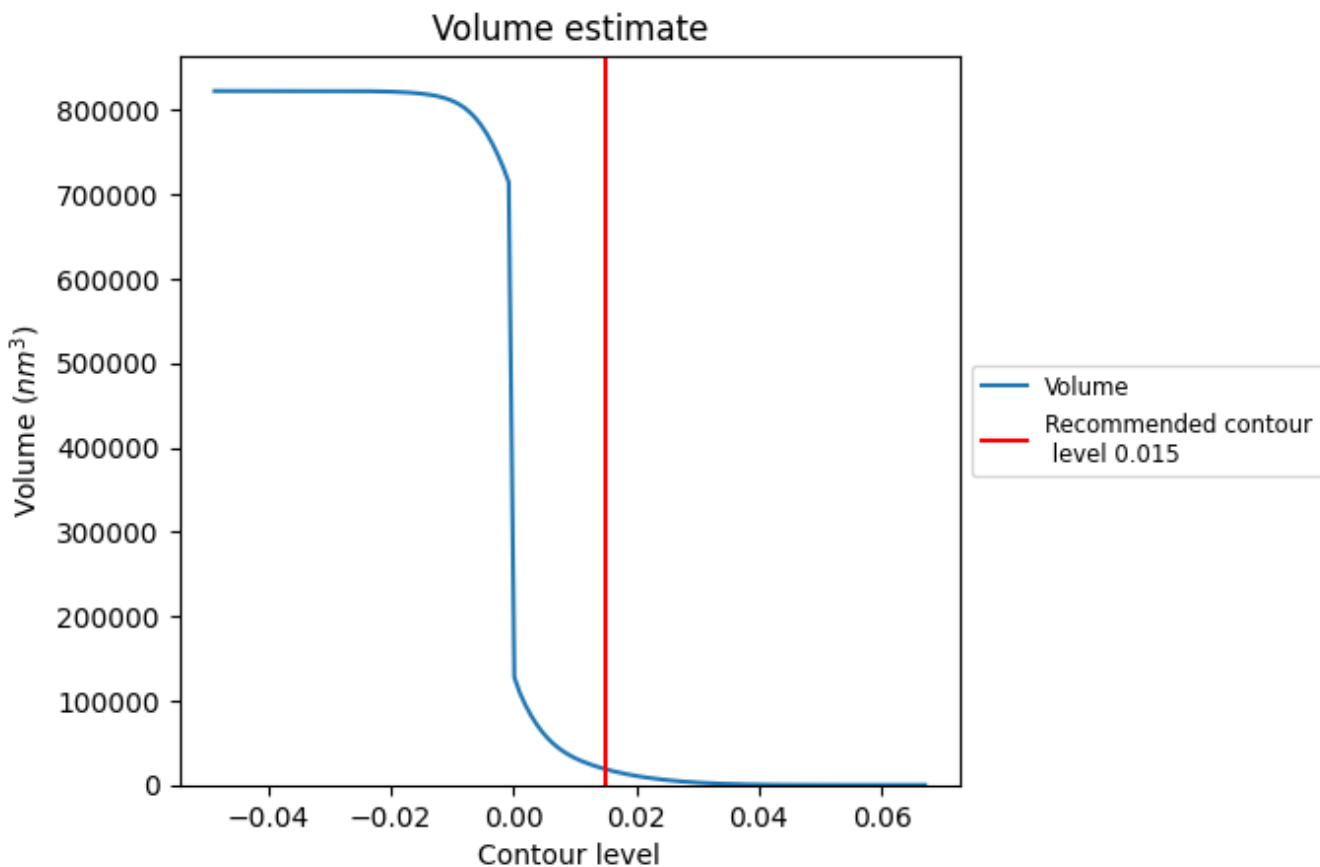
This section contains the results of statistical analysis of the map.

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.

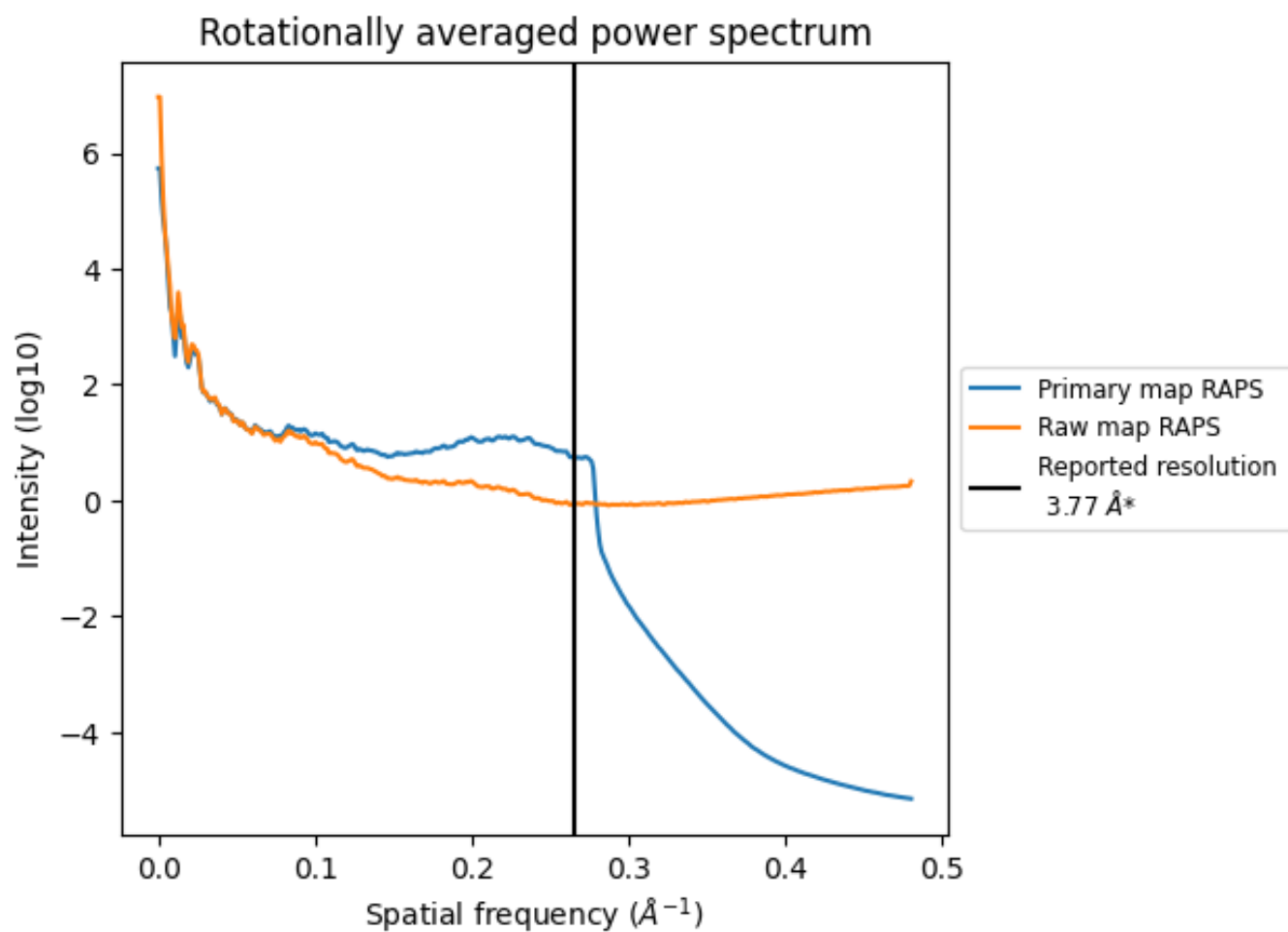
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 18776 nm^3 ; this corresponds to an approximate mass of 16961 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

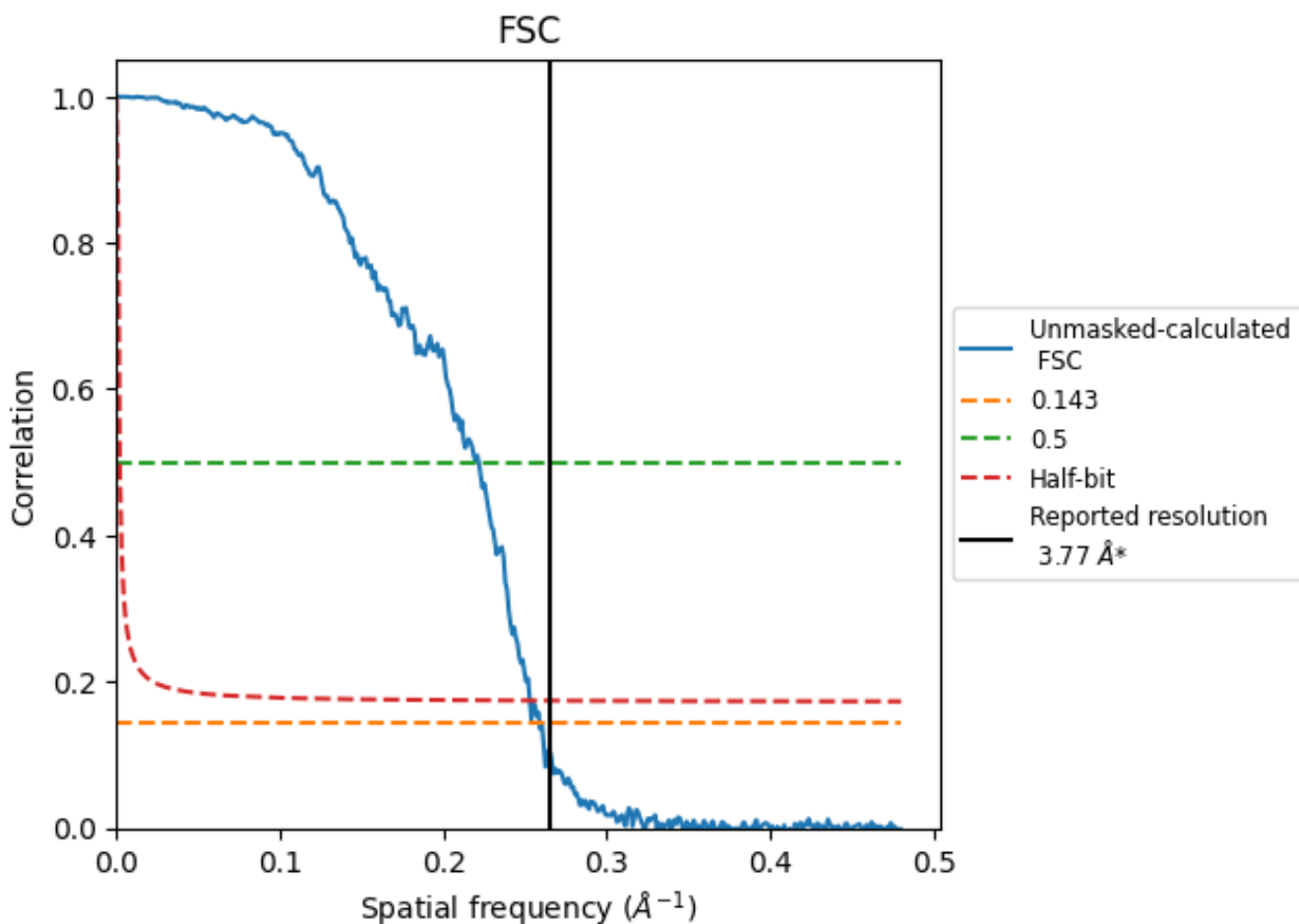


*Reported resolution corresponds to spatial frequency of 0.265 \AA^{-1}

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.265 \AA^{-1}

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.77	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.86	4.51	3.95

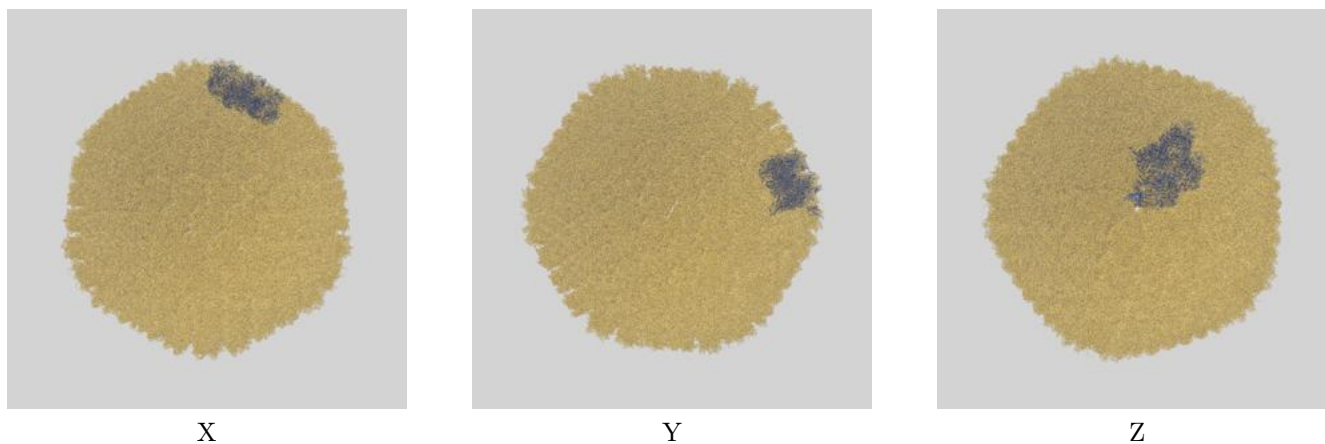
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

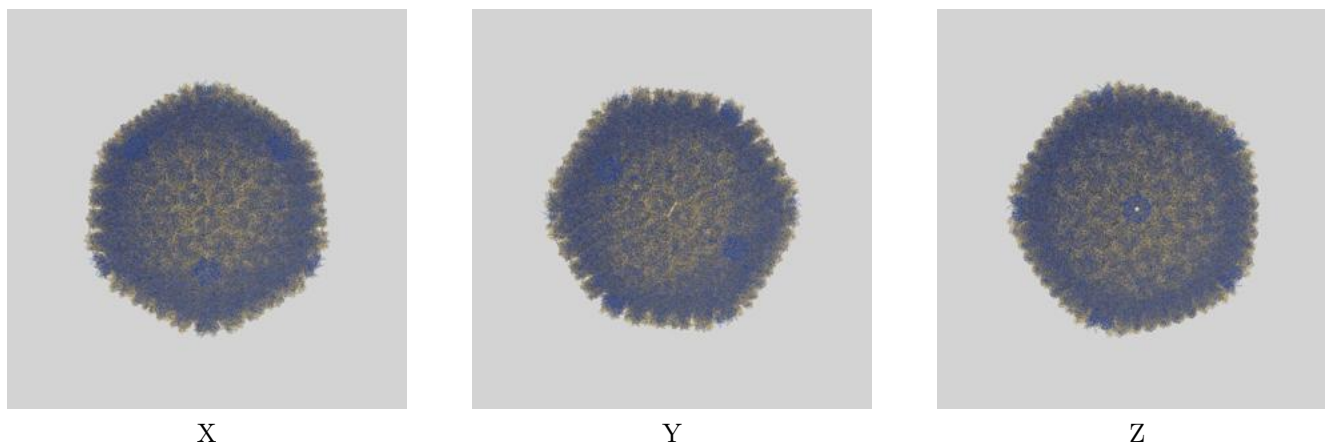
This section contains information regarding the fit between EMDB map EMD-11108 and PDB model 6Z7N. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlays

9.1.1 Map-model overlay [i](#)

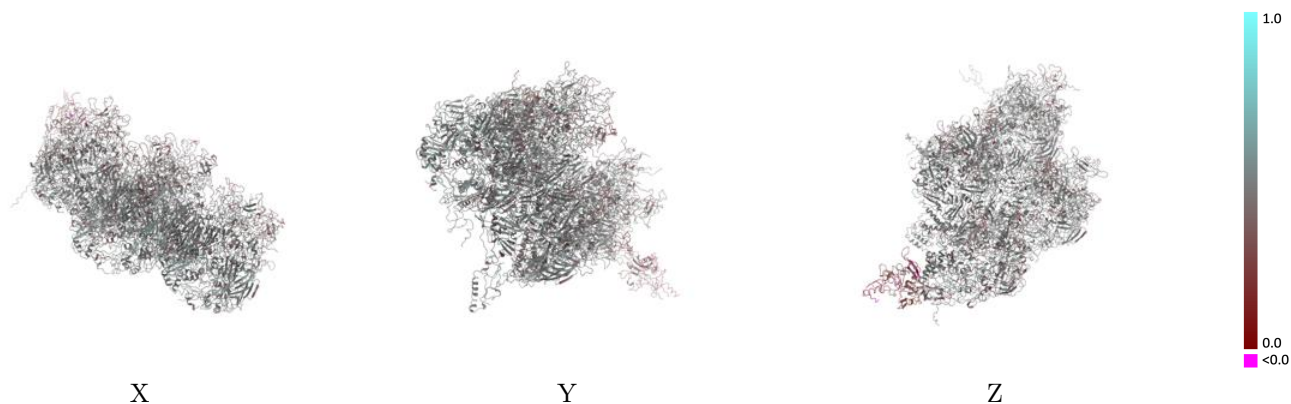


9.1.2 Map-model assembly overlay [i](#)



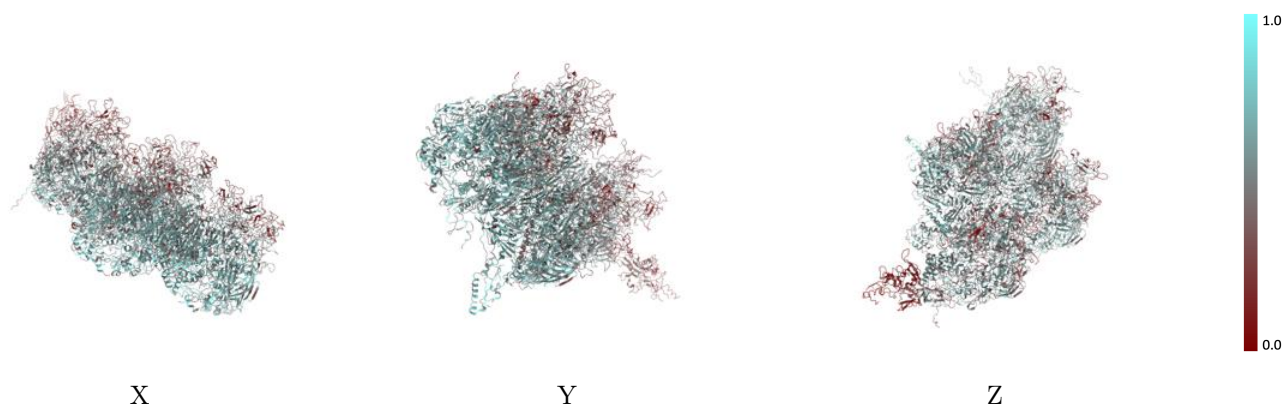
The images above show the 3D surface view of the map at the recommended contour level 0.015 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



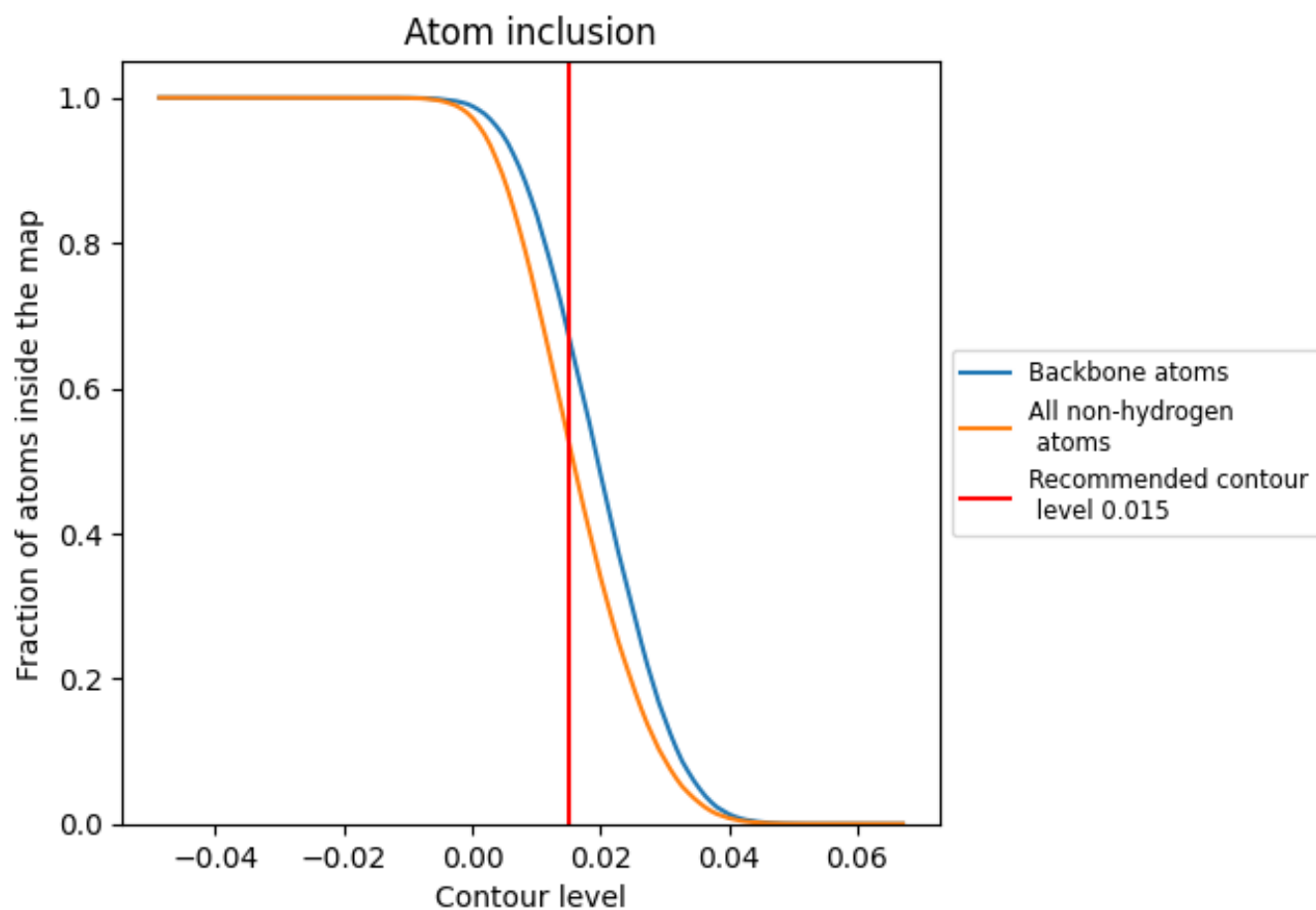
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.015).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 67% of all backbone atoms, 53% 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 (0.015) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5289	 0.4610
0	 0.2444	 0.4680
1	 0.6218	 0.5020
2	 0.4348	 0.4980
3	 0.3895	 0.4510
4	 0.5000	 0.4060
5	 0.5417	 0.4650
6	 0.6154	 0.5350
7	 0.5769	 0.4950
8	 0.5104	 0.4680
9	 0.5769	 0.5150
A	 0.5144	 0.4630
B	 0.4798	 0.4610
C	 0.5111	 0.4660
D	 0.5415	 0.4650
E	 0.5329	 0.4640
F	 0.5610	 0.4760
G	 0.5751	 0.4760
H	 0.5613	 0.4720
I	 0.5578	 0.4650
J	 0.5381	 0.4650
K	 0.5428	 0.4590
L	 0.5487	 0.4680
M	 0.2803	 0.3230
N	 0.5765	 0.4360
O	 0.4836	 0.4540
P	 0.4561	 0.4440
Q	 0.4706	 0.4460
R	 0.5000	 0.4750
S	 0.5268	 0.4830
T	 0.5994	 0.4750
U	 0.6334	 0.4950
V	 0.7800	 0.5380
W	 0.7778	 0.4850
X	 0.0000	 0.0520



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Chain	Atom inclusion	Q-score
Y	 0.6000	 0.5160
Z	 0.5778	 0.4690