



wwPDB EM Validation Summary Report ⓘ

Aug 27, 2026 – 11:56 AM EDT

PDB ID : 10LM / pdb_000010lm
EMDB ID : EMD-75270
Title : Native flagellar filament from *Leptospira biflexa*
Authors : Brady, M.R.; San Martin, F.; Sindelar, C.V.; Buschiazzi, A.
Deposited on : 2026-01-26
Resolution : 3.50 Å (reported)
Based on initial model : .

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:

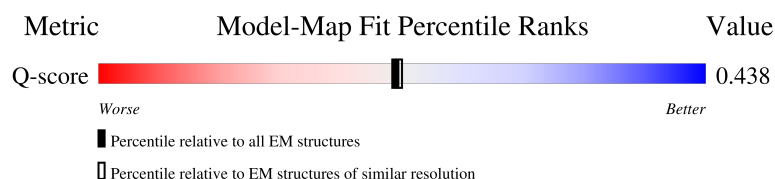
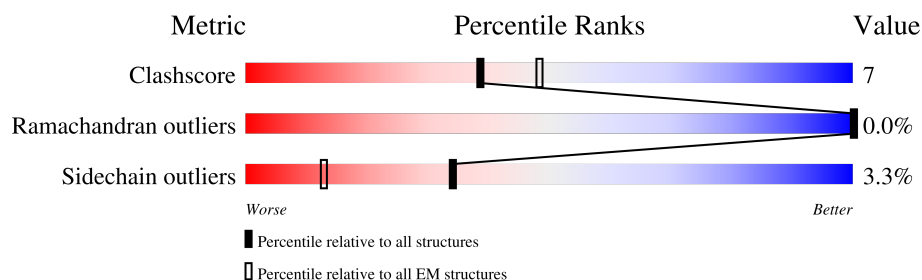
EMDB validation analysis : 0.0.1.dev133
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.50

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 3.50 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.



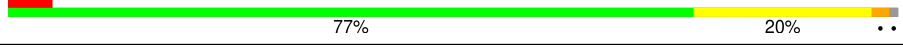
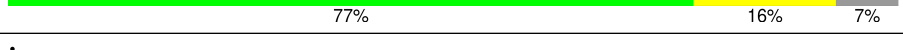
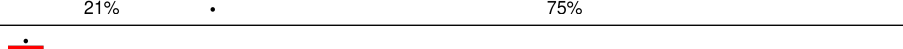
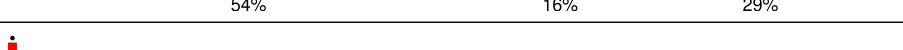
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	13950 (3.00 - 4.00)

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	A3	282	
1	A4	282	
1	A5	282	
1	A6	282	

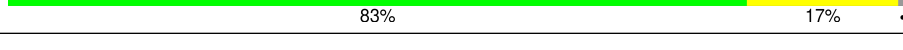
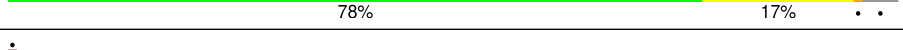
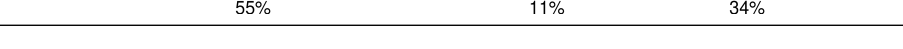
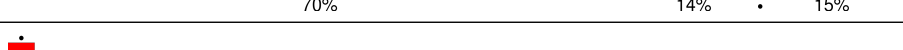
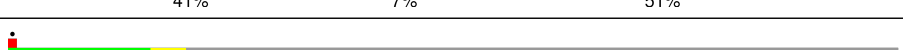
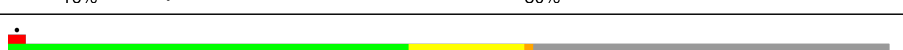
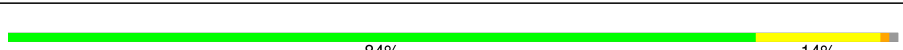
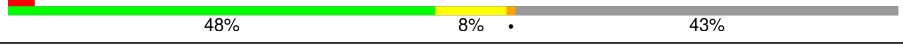
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	A7	282	
1	A8	282	
1	B3	282	
1	B4	282	
1	B5	282	
1	B6	282	
1	B7	282	
1	B8	282	
1	C2	282	
1	C3	282	
1	C4	282	
1	C5	282	
1	C6	282	
1	C7	282	
1	C8	282	
1	D2	282	
1	D3	282	
1	D4	282	
1	D5	282	
1	D6	282	
1	D7	282	
1	E1	282	
1	E2	282	
1	E3	282	
1	E4	282	

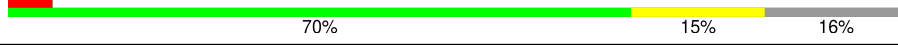
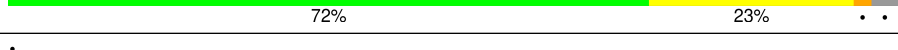
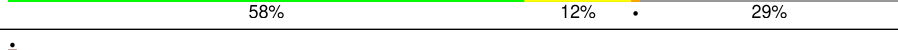
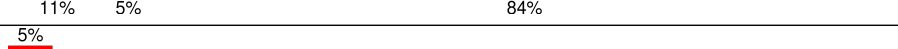
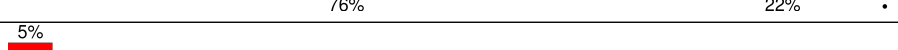
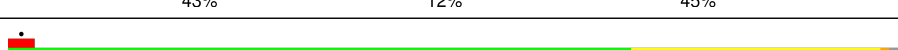
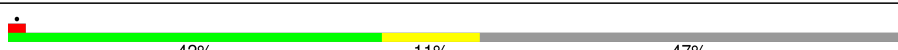
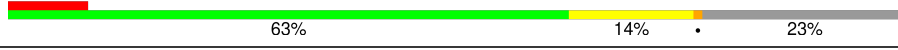
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	E5	282	
1	E6	282	
1	E7	282	
1	F1	282	
1	F2	282	
1	F3	282	
1	F4	282	
1	F5	282	
1	F6	282	
1	G1	282	
1	G2	282	
1	G5	282	
1	G6	282	
1	G7	282	
1	G8	282	
1	G9	282	
1	H5	282	
1	H6	282	
1	H7	282	
1	H8	282	
1	H9	282	
1	I4	282	
1	I5	282	
1	I6	282	
1	I7	282	

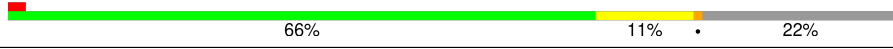
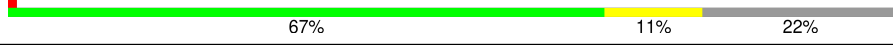
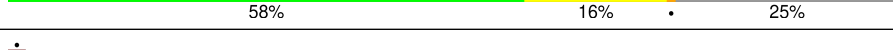
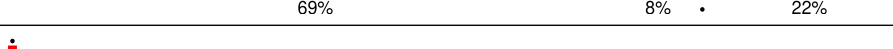
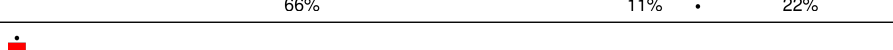
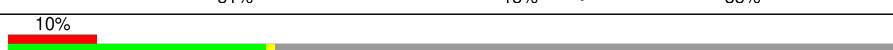
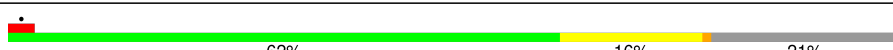
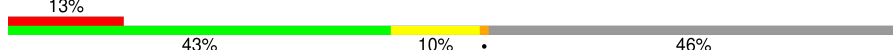
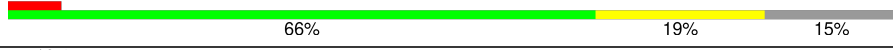
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	I8	282	
1	I9	282	
1	J4	282	
1	J5	282	
1	J6	282	
1	J7	282	
1	J8	282	
1	J9	282	
1	K3	282	
1	K4	282	
1	K5	282	
1	K6	282	
1	K7	282	
1	K8	282	
1	h0	282	
1	i0	282	
2	L1	300	
2	L2	300	
2	L3	300	
2	L4	300	
2	L5	300	
2	M1	300	
2	M2	300	
2	M3	300	
2	M4	300	

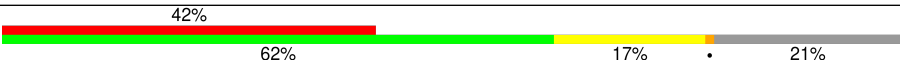
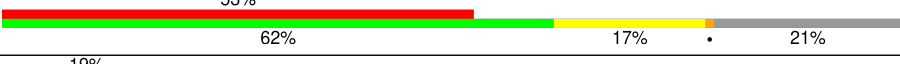
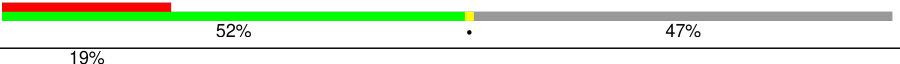
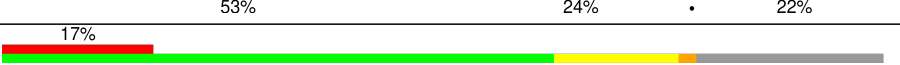
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	M5	300	
2	N1	300	
2	N2	300	
2	N3	300	
2	N4	300	
2	N5	300	
2	N6	300	
2	O1	300	
2	O2	300	
2	O3	300	
2	O4	300	
2	O5	300	
2	P1	300	
2	P2	300	
2	P3	300	
2	P4	300	
2	P5	300	
2	P6	300	
3	Q1	277	
3	Q2	277	
3	Q3	277	
3	Q4	277	
3	R1	277	
3	R2	277	
3	R3	277	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
3	R4	277	
3	R5	277	
3	S2	277	
3	S3	277	
3	S4	277	
3	S5	277	
3	S6	277	
4	U3	321	
4	U4	321	
4	U5	321	
4	U6	321	
5	V0	241	
5	V1	241	
5	V2	241	
5	V3	241	
5	V4	241	
5	X0	241	
5	X1	241	
5	X2	241	
5	X3	241	
5	X4	241	
6	Y1	284	
6	Y2	284	
6	Y3	284	
6	Y4	284	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
7	Z0	367	
7	Z1	367	
7	Z2	367	
7	Za	367	
8	a1	239	
8	a2	239	
8	a3	239	
8	a4	239	
8	a5	239	
9	b2	269	
9	b3	269	
9	b4	269	
10	c1	175	
10	c2	175	
10	c3	175	

2 Entry composition

There are 12 unique types of molecules in this entry. The entry contains 248112 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 Flagellin.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A3	92	Total	C	N	O	S	0	1
			702	428	130	137	7		
1	A4	229	Total	C	N	O	S	0	1
			1781	1090	332	344	15		
1	A5	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	A6	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	A7	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	A8	222	Total	C	N	O	S	0	0
			1713	1049	313	339	12		
1	B3	127	Total	C	N	O	S	0	0
			964	581	181	193	9		
1	B4	280	Total	C	N	O	S	0	0
			2177	1335	401	425	16		
1	B5	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		
1	B6	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		
1	B7	263	Total	C	N	O	S	0	0
			2037	1249	374	401	13		
1	B8	176	Total	C	N	O	S	0	0
			1372	849	252	263	8		
1	C2	70	Total	C	N	O	S	0	0
			547	338	100	104	5		
1	C3	199	Total	C	N	O	S	0	0
			1542	945	284	298	15		
1	C4	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	C5	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		
1	C6	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
1	C7	228	Total	C	N	O	S	0	0
			1772	1085	324	351	12		
1	C8	124	Total	C	N	O	S	0	0
			956	597	168	188	3		
1	D2	114	Total	C	N	O	S	0	0
			881	533	166	174	8		
1	D3	266	Total	C	N	O	S	0	0
			2068	1275	380	397	16		
1	D4	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	D5	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	D6	266	Total	C	N	O	S	0	0
			2063	1264	379	406	14		
1	D7	181	Total	C	N	O	S	0	0
			1410	871	258	273	8		
1	E1	62	Total	C	N	O	S	0	0
			478	297	88	89	4		
1	E2	184	Total	C	N	O	S	0	0
			1430	877	267	272	14		
1	E3	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	E4	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	E5	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	E6	235	Total	C	N	O	S	0	0
			1831	1123	335	361	12		
1	E7	129	Total	C	N	O	S	0	0
			983	613	174	194	2		
1	F1	108	Total	C	N	O	S	0	1
			818	494	152	164	8		
1	F2	251	Total	C	N	O	S	0	1
			1953	1198	361	378	16		
1	F3	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		
1	F4	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	F5	270	Total	C	N	O	S	0	0
			2092	1280	386	412	14		
1	F6	185	Total	C	N	O	S	0	0
			1440	889	263	279	9		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
1	G1	240	Total	C	N	O	S	0	0
			1869	1145	341	371	12		
1	G2	137	Total	C	N	O	S	0	0
			1061	662	188	207	4		
1	G5	56	Total	C	N	O	S	0	0
			431	268	81	78	4		
1	G6	168	Total	C	N	O	S	0	0
			1318	810	244	250	14		
1	G7	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		
1	G8	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		
1	G9	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	H5	102	Total	C	N	O	S	0	0
			785	474	146	157	8		
1	H6	242	Total	C	N	O	S	0	0
			1896	1163	350	367	16		
1	H7	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	H8	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		
1	H9	276	Total	C	N	O	S	0	0
			2140	1312	393	419	16		
1	I4	53	Total	C	N	O	S	0	1
			405	250	77	74	4		
1	I5	161	Total	C	N	O	S	0	0
			1259	767	236	242	14		
1	I6	282	Total	C	N	O	S	0	0
			2192	1344	403	429	16		
1	I7	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	I8	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	I9	246	Total	C	N	O	S	0	0
			1914	1173	350	379	12		
1	J4	101	Total	C	N	O	S	0	0
			772	467	143	154	8		
1	J5	238	Total	C	N	O	S	0	0
			1854	1139	341	359	15		
1	J6	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
1	J7	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	J8	273	Total	C	N	O	S	0	0
			2121	1299	390	417	15		
1	J9	199	Total	C	N	O	S	0	0
			1556	955	287	304	10		
1	K3	46	Total	C	N	O	S	0	0
			351	217	66	64	4		
1	K4	281	Total	C	N	O	S	0	0
			2185	1340	402	427	16		
1	K5	155	Total	C	N	O	S	0	0
			1210	733	230	233	14		
1	K6	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	K7	280	Total	C	N	O	S	0	0
			2178	1335	401	426	16		
1	K8	253	Total	C	N	O	S	0	0
			1966	1202	362	389	13		
1	h0	190	Total	C	N	O	S	0	0
			1490	918	276	287	9		
1	i0	150	Total	C	N	O	S	0	0
			1168	727	208	227	6		

- Molecule 2 is a protein called Flagellar Coiling Protein FcpA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	L1	133	Total	C	N	O	S	0	0
			1079	681	184	210	4		
2	L2	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	L3	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	L4	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	L5	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	M1	231	Total	C	N	O	S	0	0
			1924	1222	336	360	6		
2	M2	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	M3	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
2	M4	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	M5	194	Total	C	N	O	S	0	0
			1638	1046	288	299	5		
2	N1	107	Total	C	N	O	S	0	1
			855	539	147	168	1		
2	N2	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	N3	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	N4	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	N5	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	N6	145	Total	C	N	O	S	0	0
			1204	771	212	216	5		
2	O1	226	Total	C	N	O	S	0	0
			1860	1180	323	351	6		
2	O2	234	Total	C	N	O	S	0	0
			1950	1242	338	364	6		
2	O3	234	Total	C	N	O	S	0	0
			1955	1245	340	364	6		
2	O4	234	Total	C	N	O	S	0	0
			1955	1245	340	364	6		
2	O5	194	Total	C	N	O	S	0	0
			1638	1046	288	299	5		
2	P1	89	Total	C	N	O	S	0	0
			728	460	127	140	1		
2	P2	234	Total	C	N	O	S	0	0
			1959	1248	341	364	6		
2	P3	234	Total	C	N	O	S	0	0
			1960	1248	342	364	6		
2	P4	237	Total	C	N	O	S	0	0
			1983	1264	345	368	6		
2	P5	237	Total	C	N	O	S	0	0
			1983	1264	345	368	6		
2	P6	163	Total	C	N	O	S	0	0
			1365	872	238	250	5		

- Molecule 3 is a protein called Flagellar Coiling Protein FcpB.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	Q1	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	Q2	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	Q3	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	Q4	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	R1	204	Total	C	N	O	S	0	0
			1654	1053	276	321	4		
3	R2	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	R3	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	R4	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	R5	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	S2	233	Total	C	N	O	S	0	0
			1899	1200	326	368	5		
3	S3	236	Total	C	N	O	S	0	0
			1922	1215	330	372	5		
3	S4	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	S5	236	Total	C	N	O	S	0	0
			1926	1218	331	372	5		
3	S6	175	Total	C	N	O	S	0	0
			1426	907	247	268	4		

- Molecule 4 is a protein called LEPBI_I1029 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	U3	255	Total	C	N	O	S	0	0
			2101	1327	368	403	3		
4	U4	255	Total	C	N	O	S	0	0
			2101	1327	368	403	3		
4	U5	255	Total	C	N	O	S	0	0
			2101	1327	368	403	3		
4	U6	255	Total	C	N	O	S	0	0
			2101	1327	368	403	3		

- Molecule 5 is a protein called Flagellar filament outer layer protein (Sheath protein) putative signal peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
5	V0	128	Total	C	N	O	0	0
			645	385	128	132		
5	V1	190	Total	C	N	O	0	0
			1574	1019	275	280		
5	V2	190	Total	C	N	O	0	0
			1574	1019	275	280		
5	V3	189	Total	C	N	O	0	0
			1559	1008	273	278		
5	V4	190	Total	C	N	O	0	0
			1568	1016	272	280		
5	X0	156	Total	C	N	O	0	0
			786	471	156	159		
5	X1	189	Total	C	N	O	0	0
			1559	1008	273	278		
5	X2	189	Total	C	N	O	0	0
			1559	1008	273	278		
5	X3	190	Total	C	N	O	0	0
			1574	1019	275	280		
5	X4	190	Total	C	N	O	0	0
			1574	1019	275	280		

- Molecule 6 is a protein called FlaA2 associated protein B0STF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	Y1	217	Total	C	N	O	S	0	0
			1808	1171	301	331	5		
6	Y2	227	Total	C	N	O	S	0	0
			1905	1231	320	349	5		
6	Y3	237	Total	C	N	O	S	0	0
			1979	1274	335	365	5		
6	Y4	231	Total	C	N	O	S	0	0
			1937	1248	329	355	5		

- Molecule 7 is a protein called FlaA2-associated protein FlaAP.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	Z0	270	Total	C	N	O	S	0	0
			2271	1440	398	422	11		
7	Z1	303	Total	C	N	O	S	0	0
			2545	1616	444	472	13		
7	Z2	277	Total	C	N	O	S	0	0
			2329	1473	414	430	12		
7	Za	254	Total	C	N	O	S	0	0
			2121	1345	376	389	11		

- Molecule 8 is a protein called LEPBI_I3081 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	a1	166	Total	C	N	O	S	0	0
			1367	870	245	249	3		
8	a2	198	Total	C	N	O	S	0	0
			1596	1004	283	304	5		
8	a3	191	Total	C	N	O	S	0	0
			1546	978	274	289	5		
8	a4	195	Total	C	N	O	S	0	0
			1577	994	280	298	5		
8	a5	199	Total	C	N	O	S	0	0
			1605	1009	284	307	5		

- Molecule 9 is a protein called LEPBI_I0662 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	b2	238	Total	C	N	O		0	0
			1204	728	238	238			
9	b3	238	Total	C	N	O	S	0	0
			1944	1229	335	374	6		
9	b4	238	Total	C	N	O	S	0	0
			1944	1229	335	374	6		

- Molecule 10 is a protein called LEPBI_II0033 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	c1	119	Total	C	N	O		0	0
			600	362	119	119			
10	c2	119	Total	C	N	O	S	0	0
			1020	655	168	191	6		
10	c3	120	Total	C	N	O	S	0	0
			1025	656	170	193	6		

- Molecule 11 is CALCIUM ION (CCD ID: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
11	V0	1	Total	Ca	0
			1	1	
11	V1	1	Total	Ca	0
			1	1	
11	V2	1	Total	Ca	0
			1	1	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		AltConf
11	V3	1	Total 1	Ca 1	0
11	V4	1	Total 1	Ca 1	0
11	X0	1	Total 1	Ca 1	0
11	X1	1	Total 1	Ca 1	0
11	X2	1	Total 1	Ca 1	0
11	X3	1	Total 1	Ca 1	0
11	X4	1	Total 1	Ca 1	0

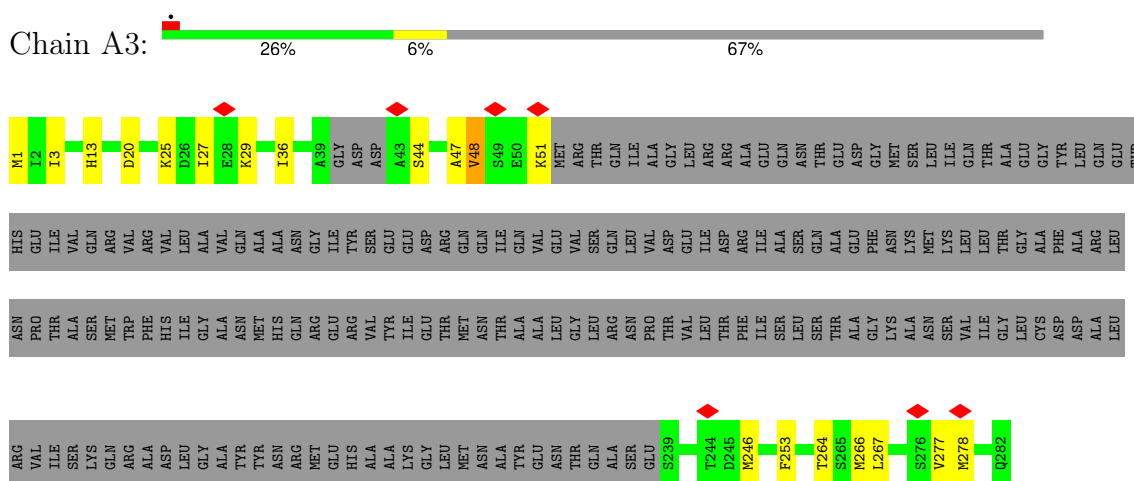
- Molecule 12 is water.

Mol	Chain	Residues	Atoms		AltConf
12	V0	2	Total 2	O 2	0
12	V1	2	Total 2	O 2	0
12	V2	2	Total 2	O 2	0
12	V3	2	Total 2	O 2	0
12	V4	2	Total 2	O 2	0
12	X0	2	Total 2	O 2	0
12	X1	2	Total 2	O 2	0
12	X2	2	Total 2	O 2	0
12	X3	2	Total 2	O 2	0
12	X4	2	Total 2	O 2	0

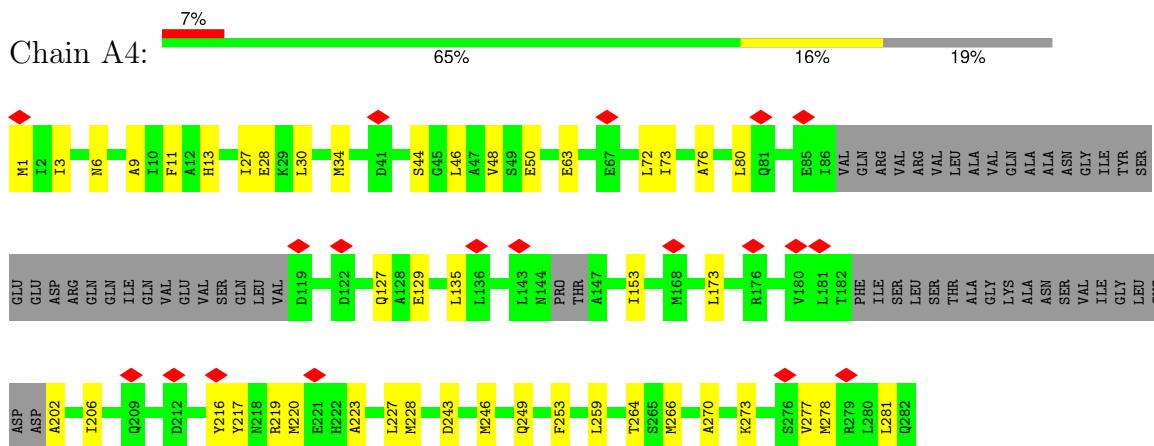
3 Residue-property plots [i](#)

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.

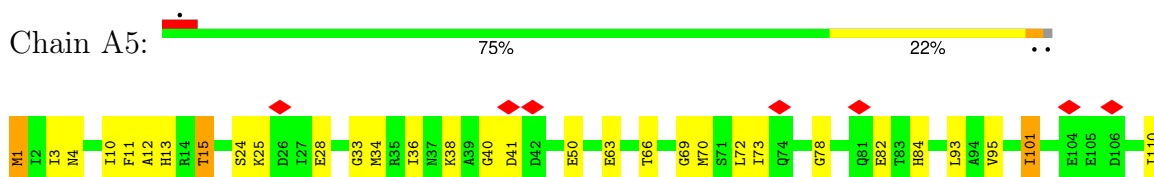
• Molecule 1: Flagellin

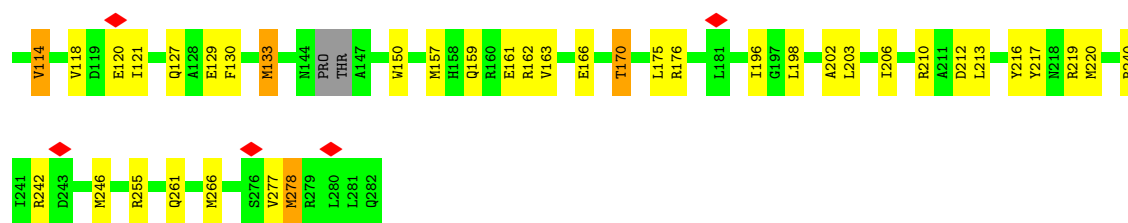


• Molecule 1: Flagellin

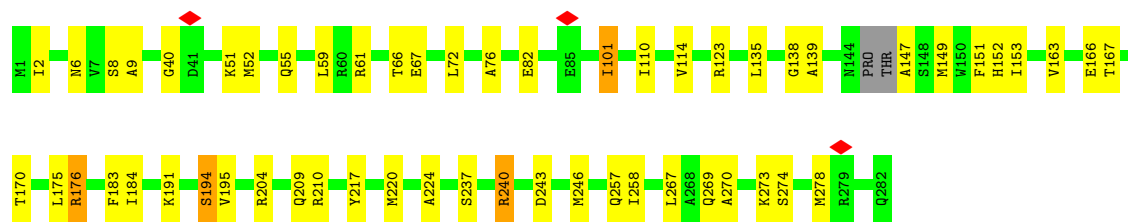
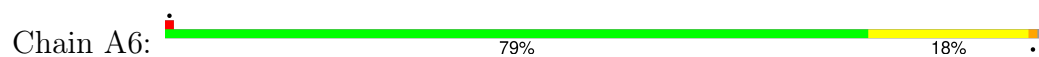


• Molecule 1: Flagellin

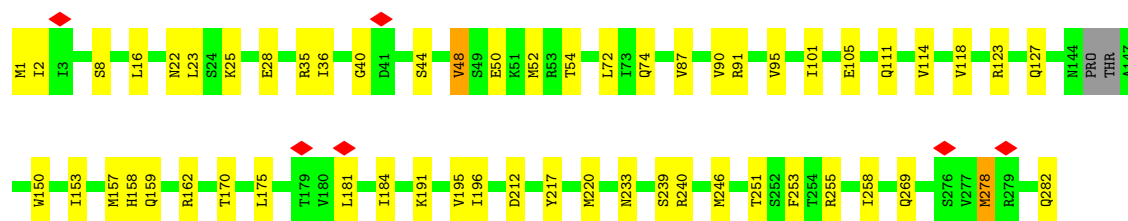
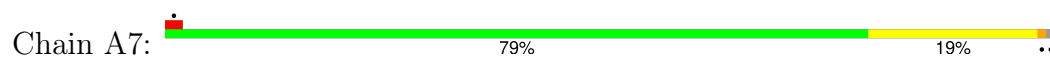




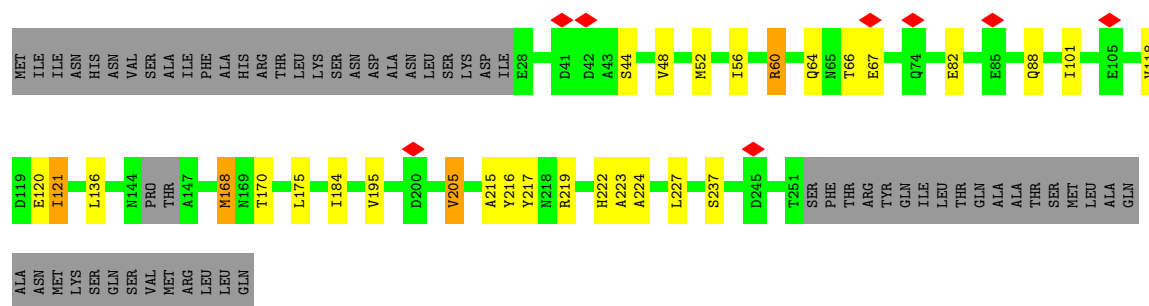
• Molecule 1: Flagellin



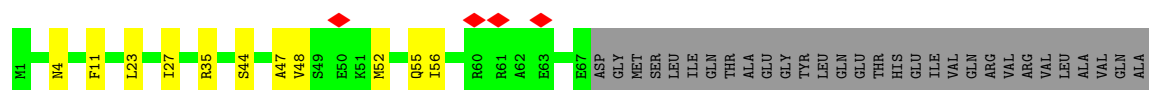
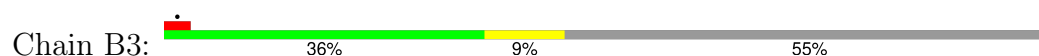
• Molecule 1: Flagellin

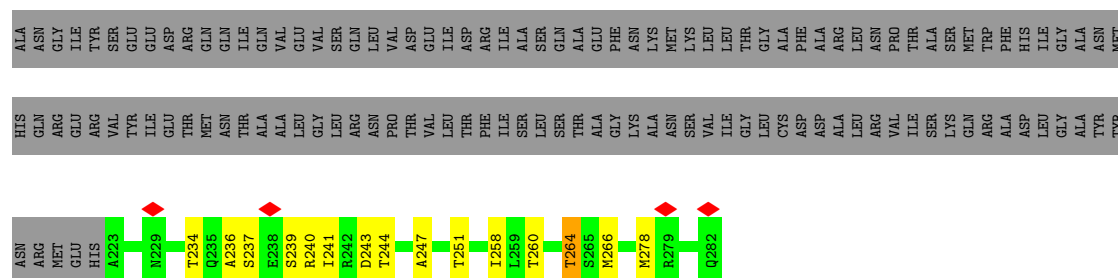


• Molecule 1: Flagellin

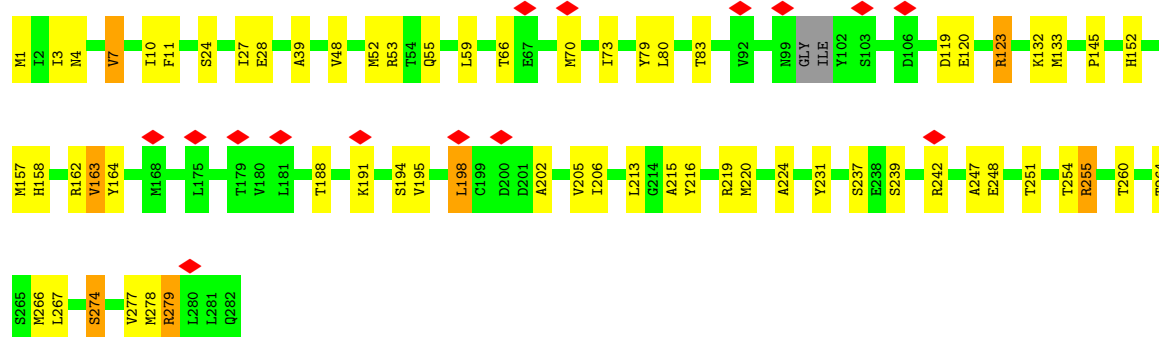
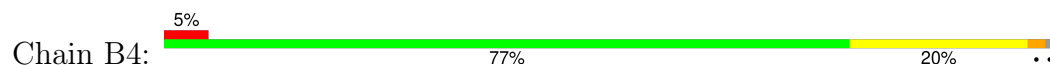


• Molecule 1: Flagellin

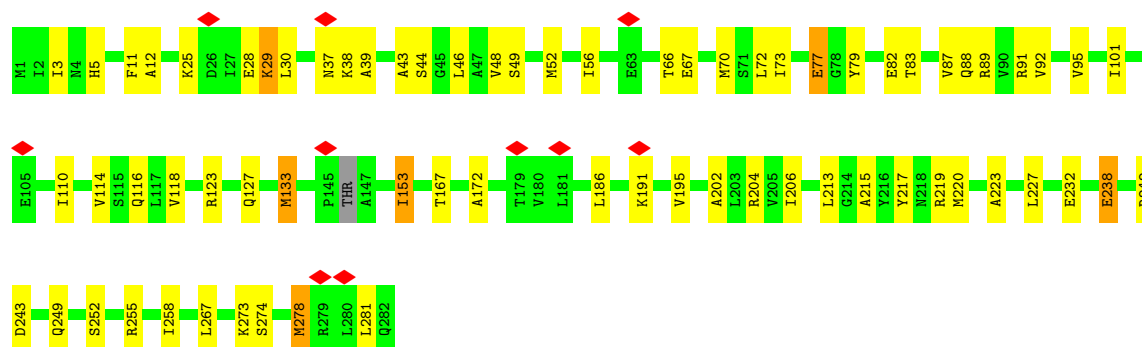
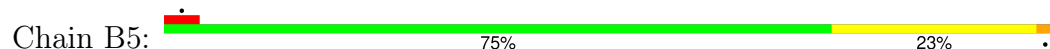




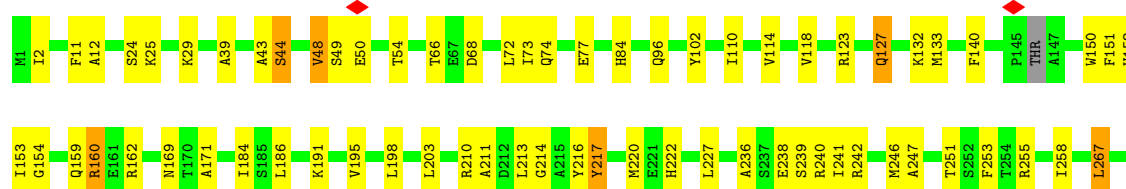
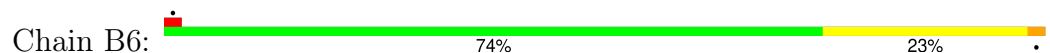
• Molecule 1: Flagellin

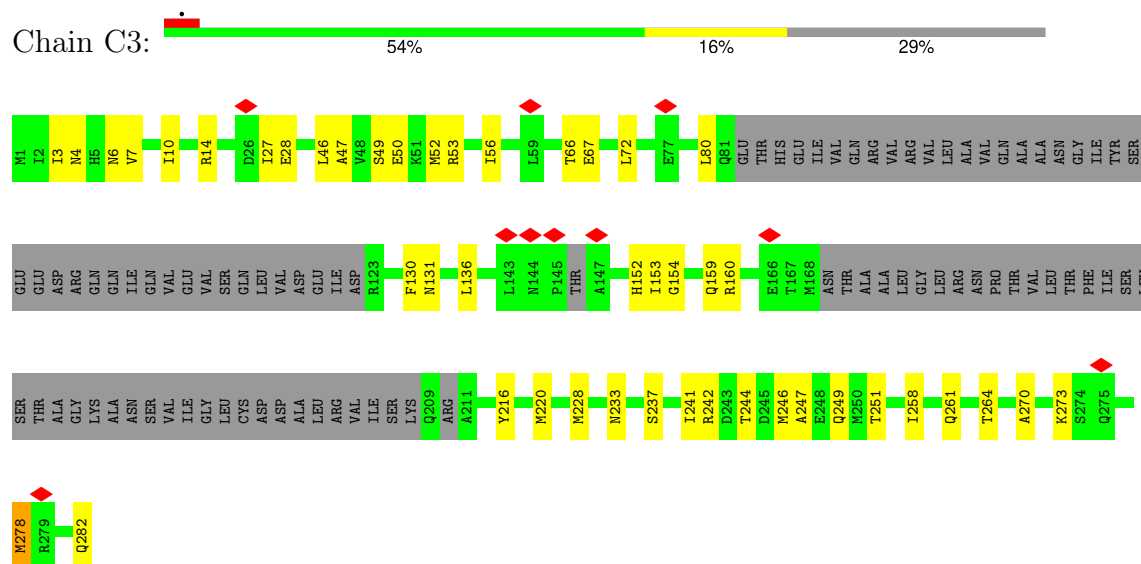


• Molecule 1: Flagellin

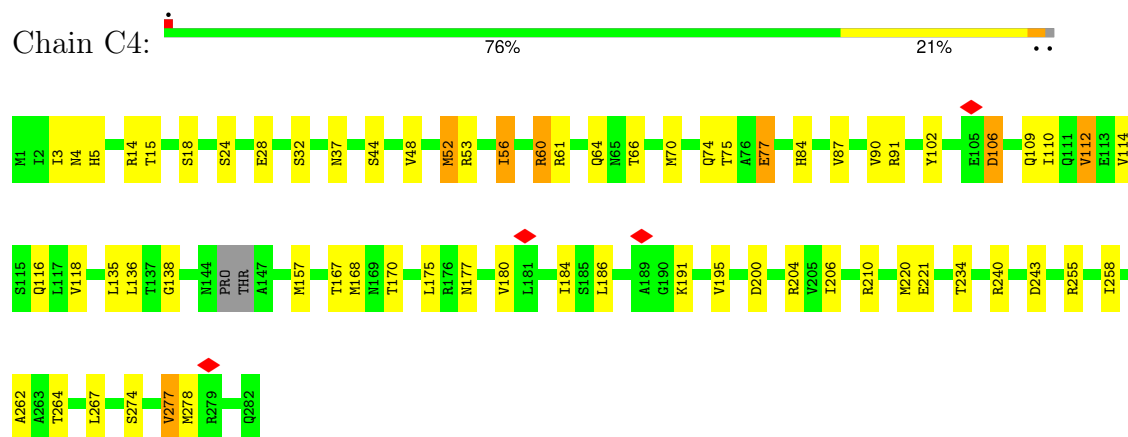


• Molecule 1: Flagellin

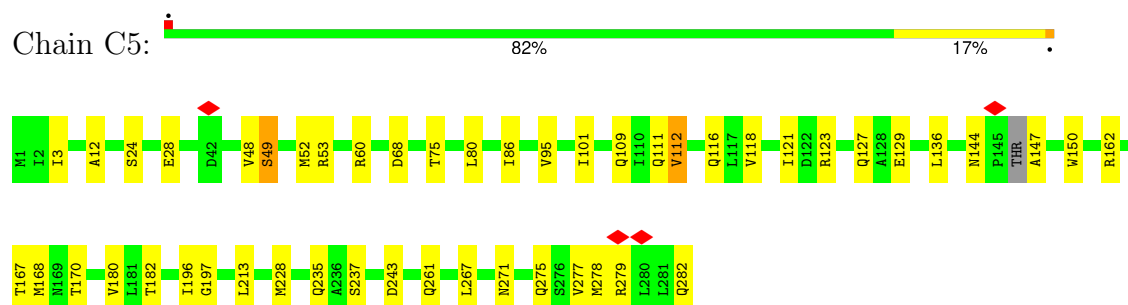




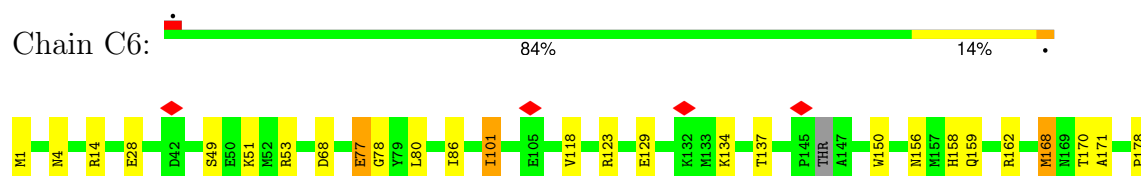
• Molecule 1: Flagellin



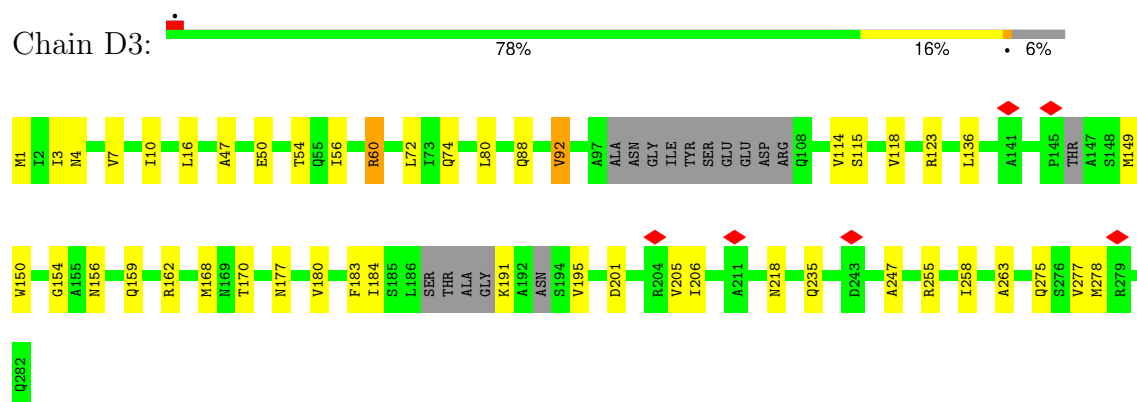
• Molecule 1: Flagellin



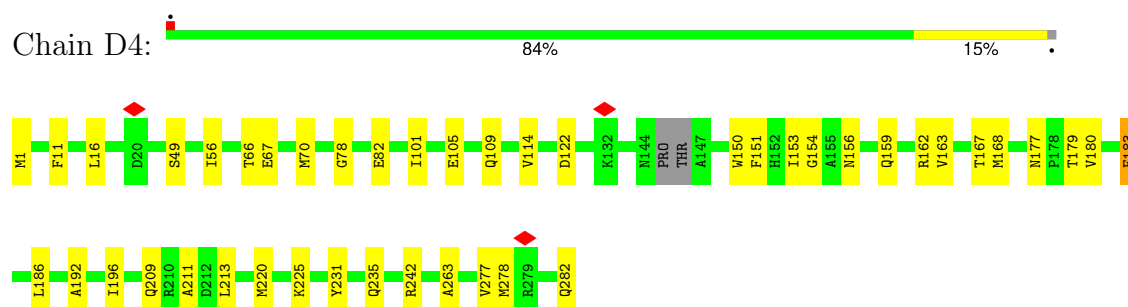
• Molecule 1: Flagellin



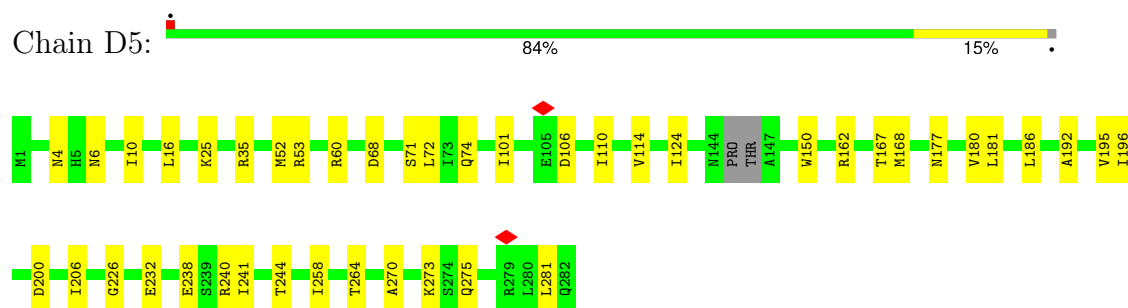
- Molecule 1: Flagellin



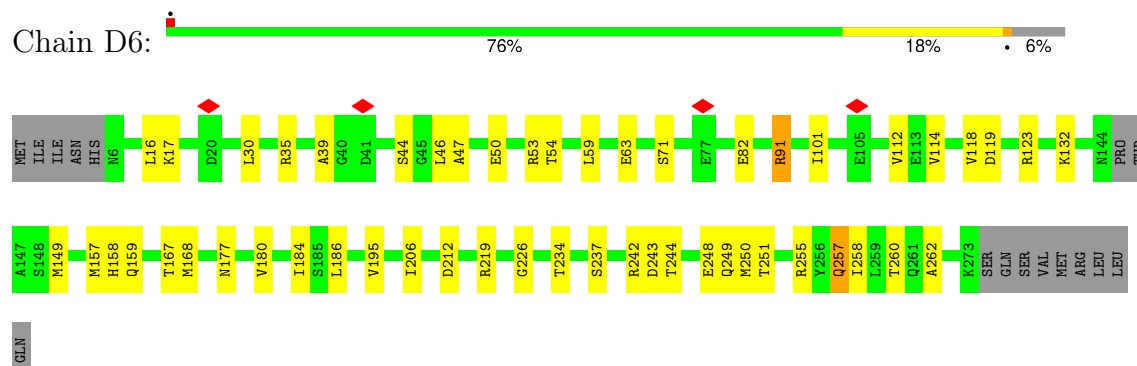
- Molecule 1: Flagellin



- Molecule 1: Flagellin

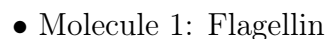


- Molecule 1: Flagellin

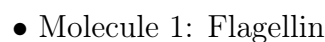


- Molecule 1: Flagellin

Response	Percentage
Used	54%
Not used	10%
Don't know	36%



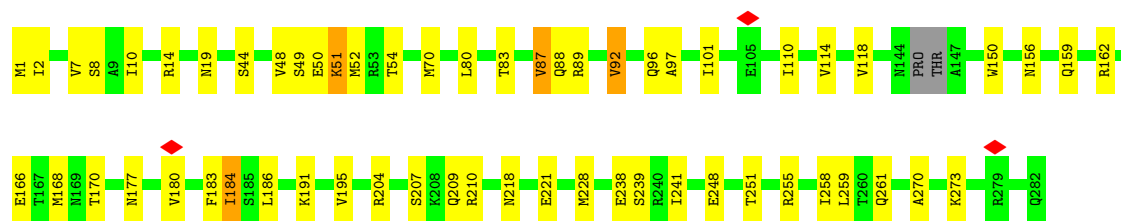
Response	Percentage
Yes, the U.S. is a threat to my country	19%
No, the U.S. is not a threat to my country	78%
Don't know	1%



Response	Percentage
Yes, the U.S. is a democracy	51%
No, the U.S. is not a democracy	13%
Don't know	35%

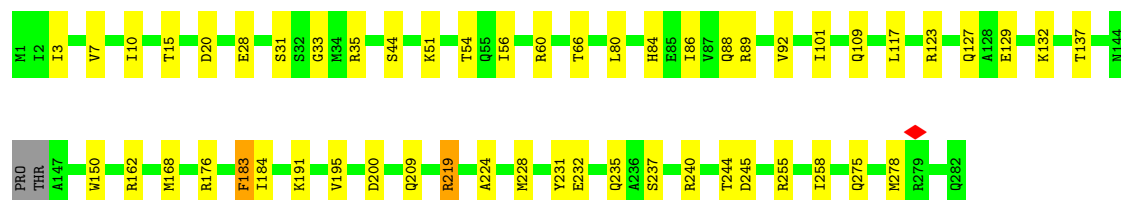


Response	Percentage
Yes	78%
No	20%



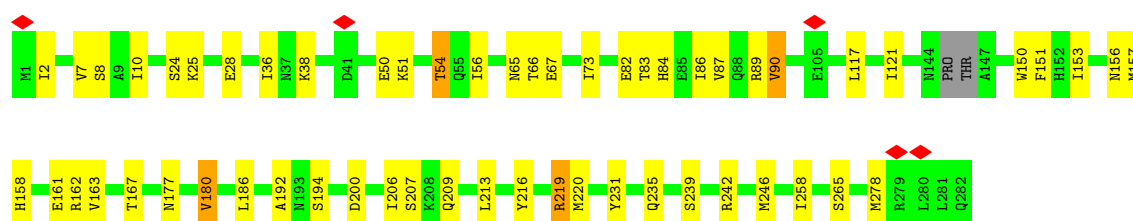
• Molecule 1: Flagellin

Chain E4: 80% 18% ..



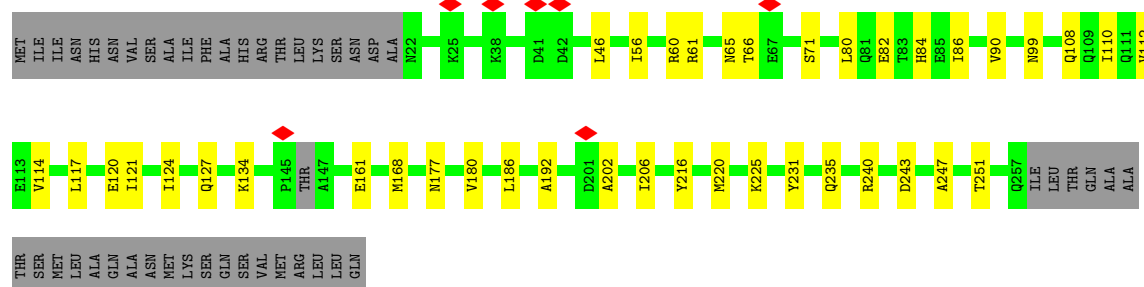
• Molecule 1: Flagellin

Chain E5: 79% 19% ..



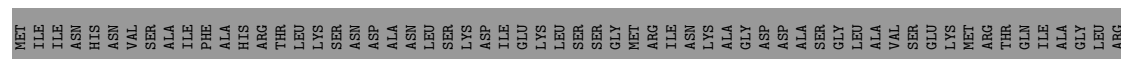
• Molecule 1: Flagellin

Chain E6: 69% 14% 17%



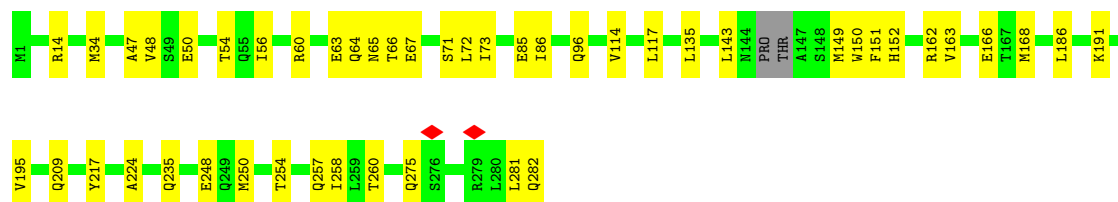
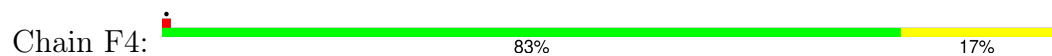
• Molecule 1: Flagellin

Chain E7: 35% 10% 54%

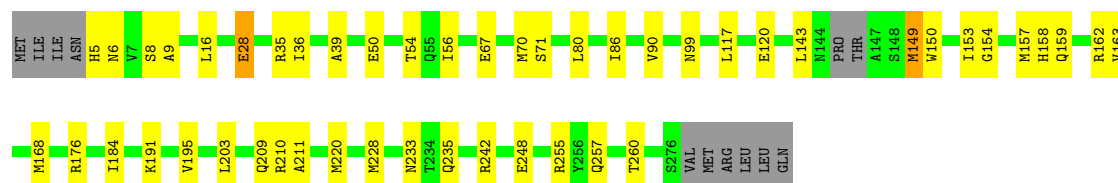
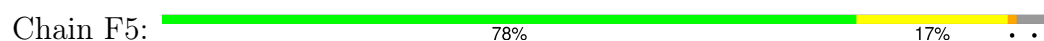




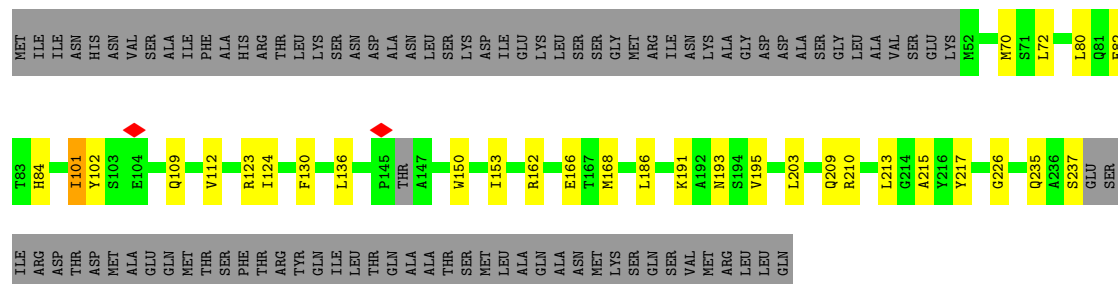
• Molecule 1: Flagellin



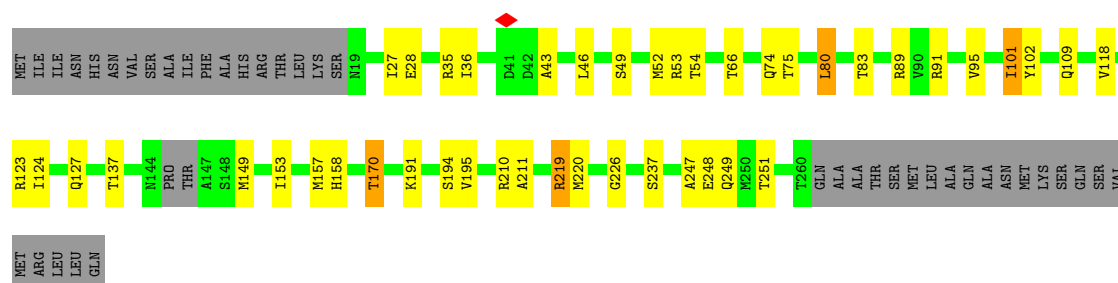
• Molecule 1: Flagellin



• Molecule 1: Flagellin

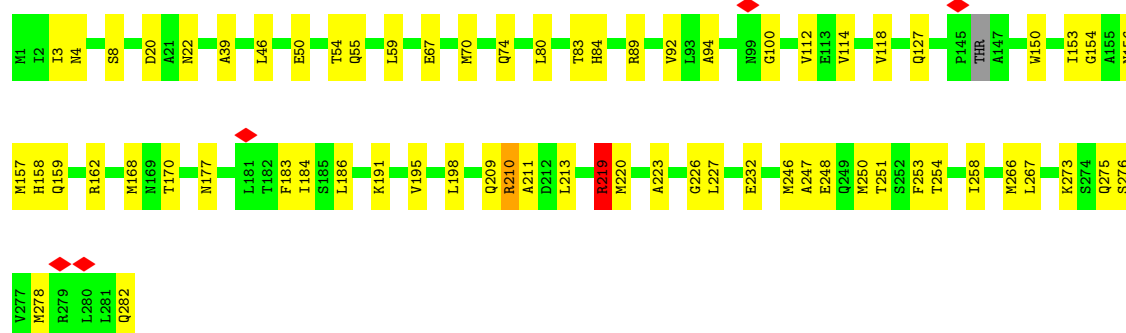
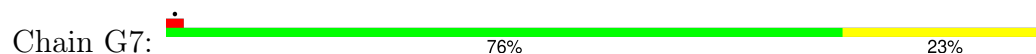


• Molecule 1: Flagellin

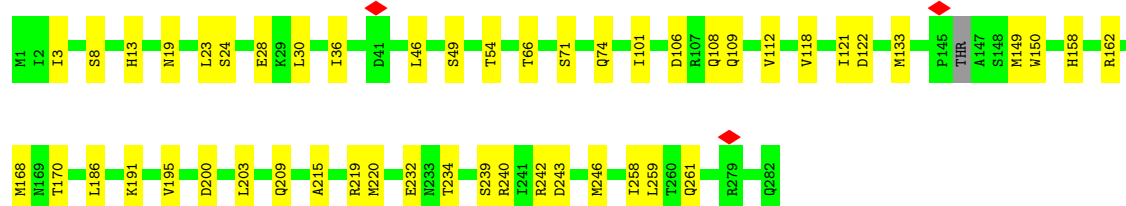
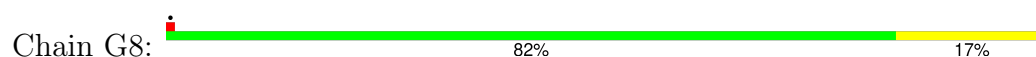




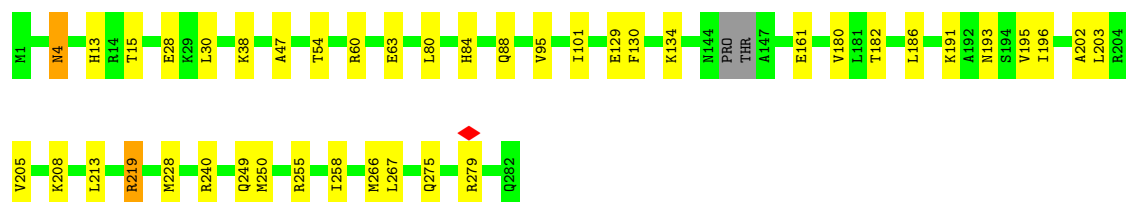
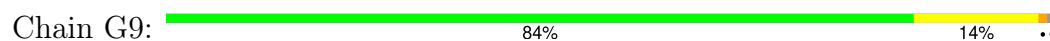
• Molecule 1: Flagellin



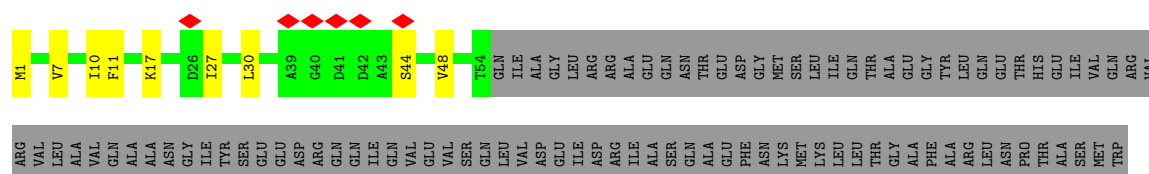
• Molecule 1: Flagellin

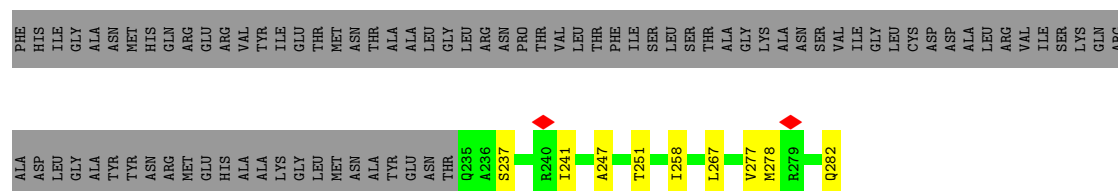


• Molecule 1: Flagellin

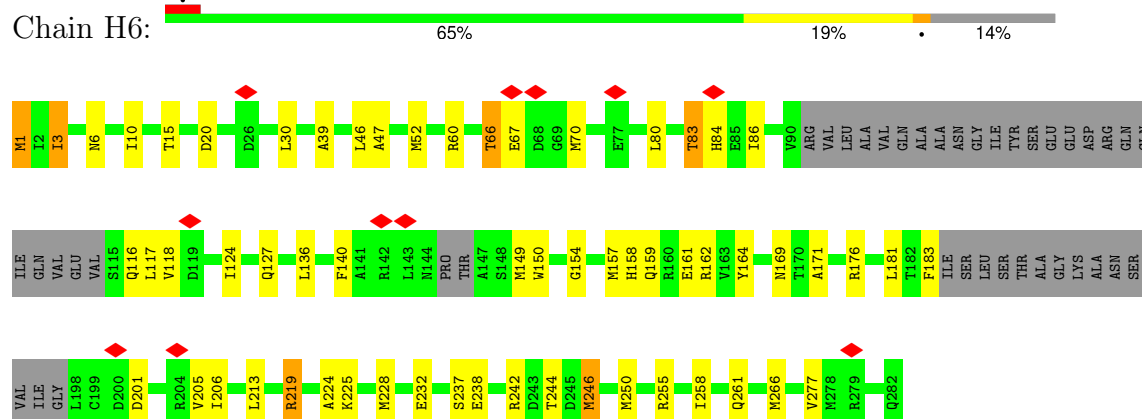


• Molecule 1: Flagellin

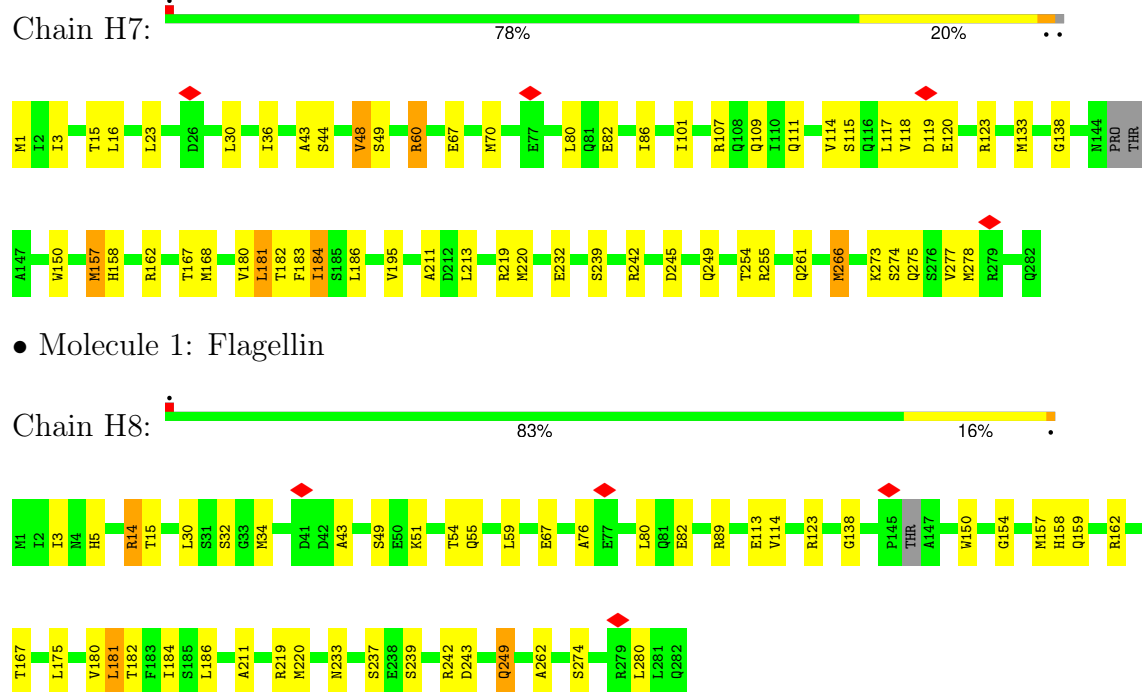




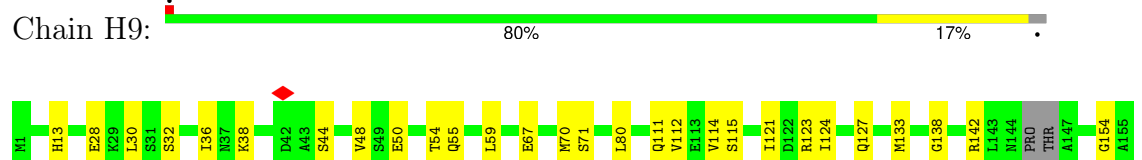
• Molecule 1: Flagellin

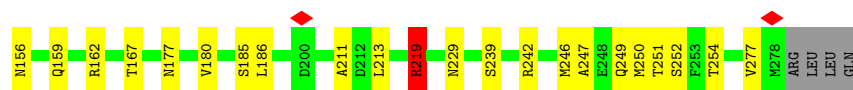


• Molecule 1: Flagellin

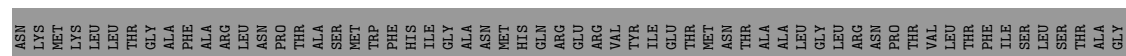
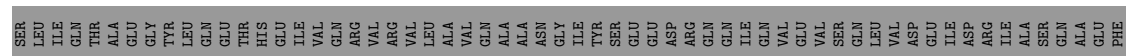
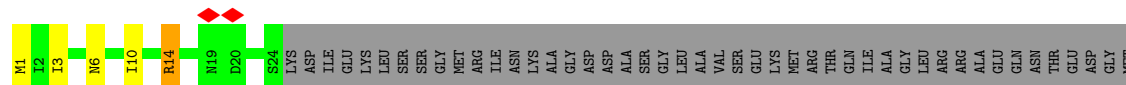


• Molecule 1: Flagellin

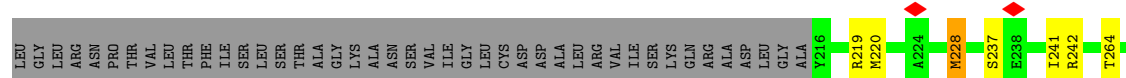




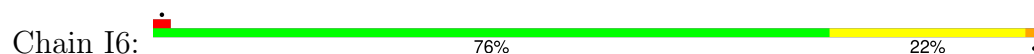
• Molecule 1: Flagellin

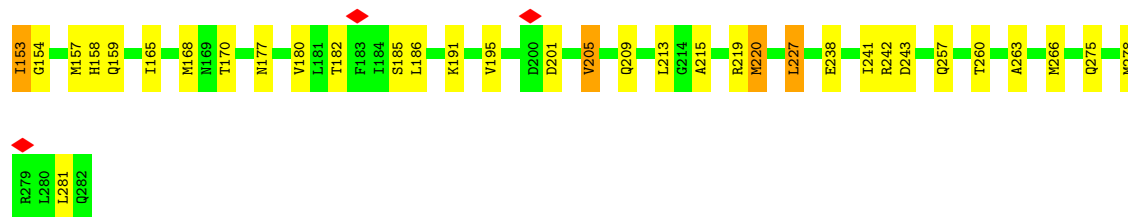


• Molecule 1: Flagellin



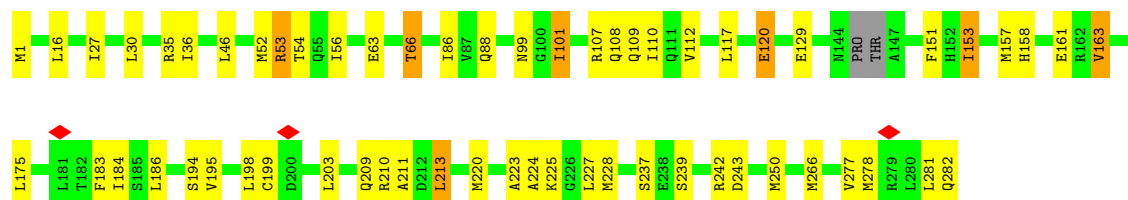
• Molecule 1: Flagellin





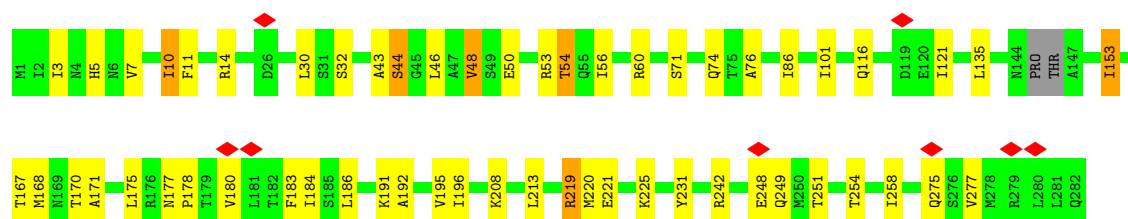
- Molecule 1: Flagellin

Chain I7: 78% 19% ..



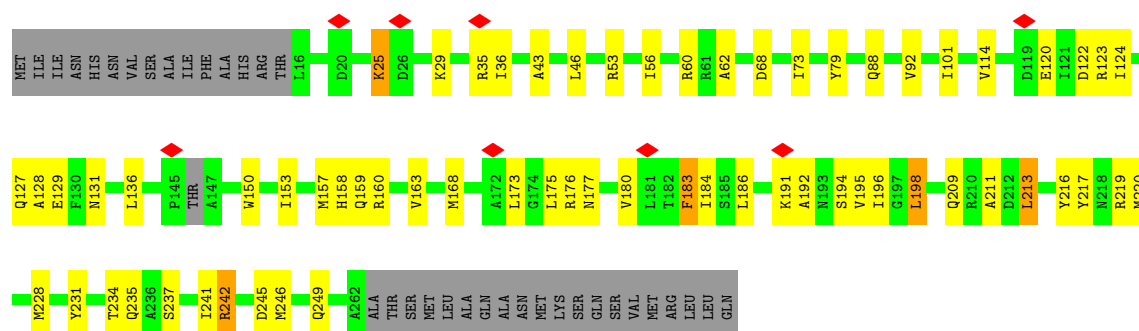
- Molecule 1: Flagellin

Chain I8: 79% 18% ..



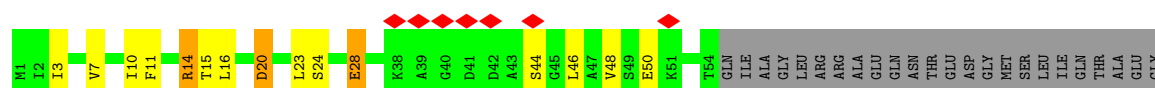
- Molecule 1: Flagellin

Chain I9: 64% 21% 13%

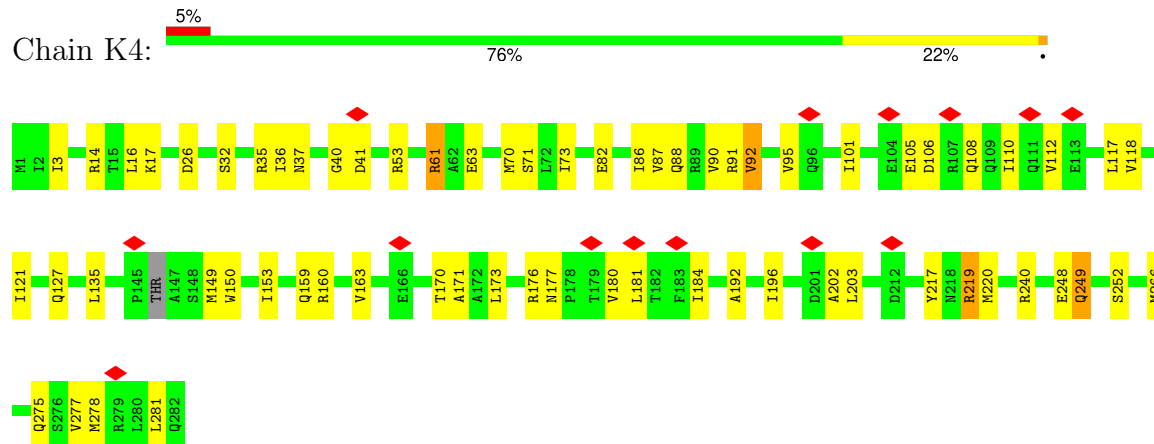


- Molecule 1: Flagellin

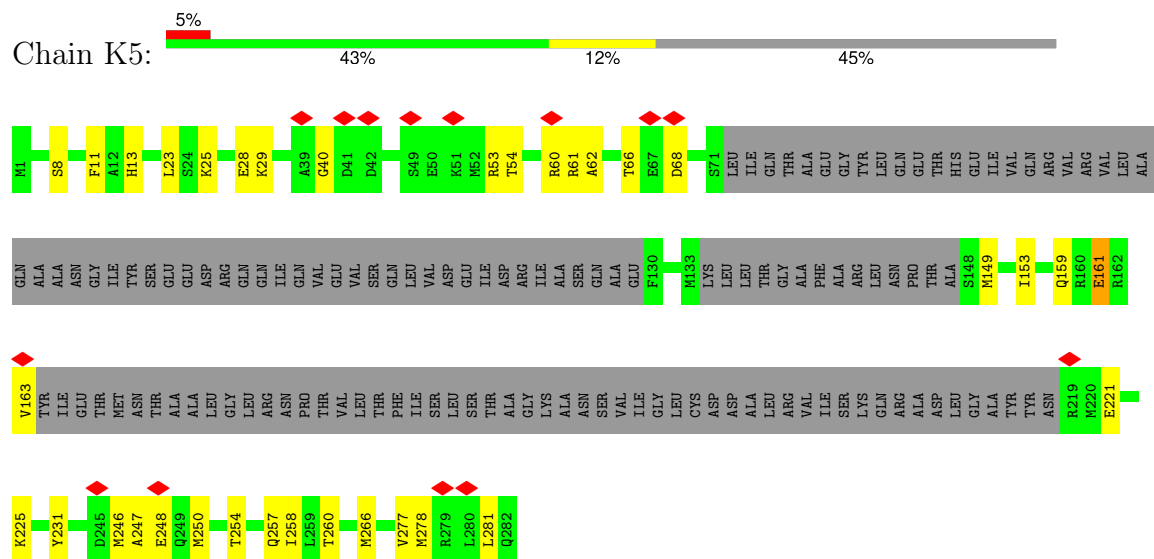
Chain J4: 28% 7% 64%



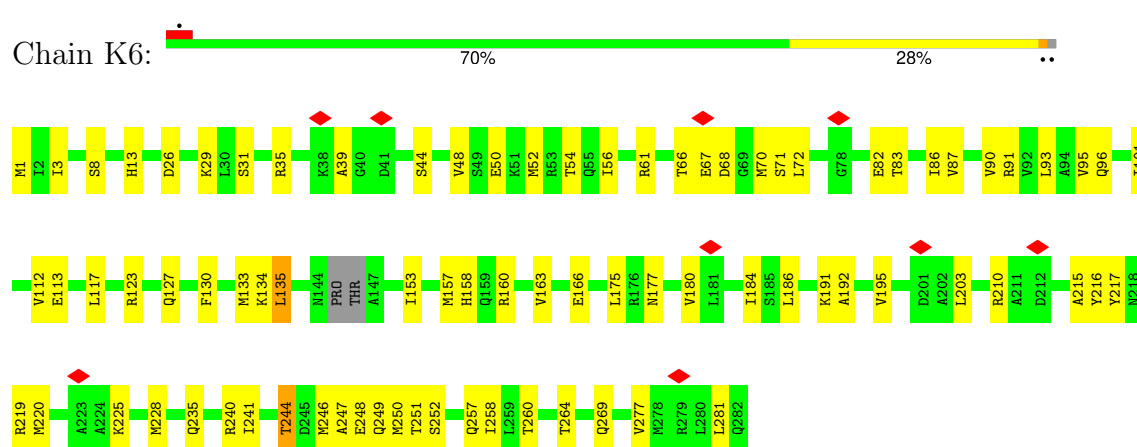
- Molecule 1: Flagellin



- Molecule 1: Flagellin

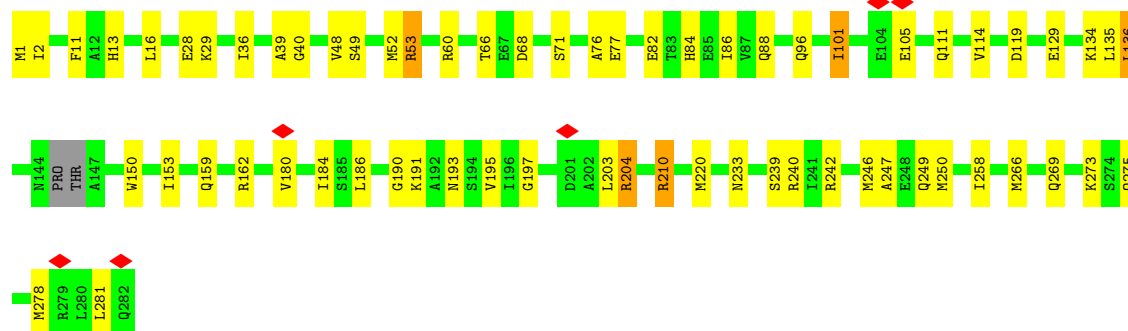


- Molecule 1: Flagellin



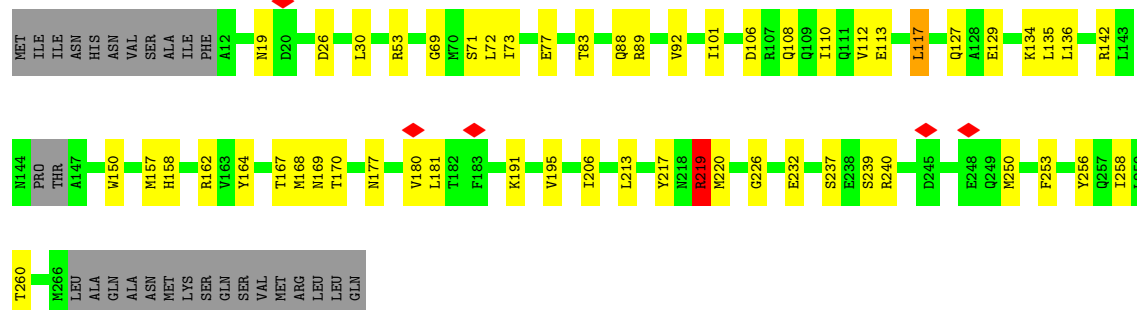
- Molecule 1: Flagellin

Chain K7:  76% 21% ..



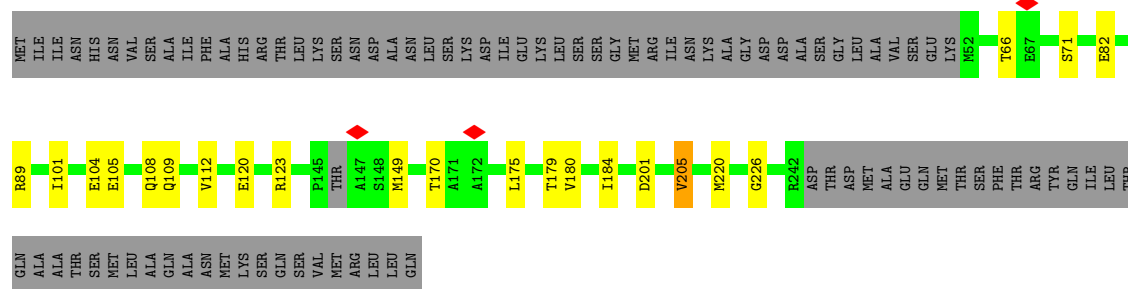
• Molecule 1: Flagellin

Chain K8:  70% 19% 10%

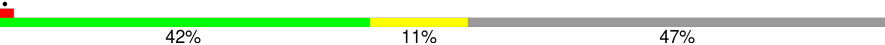


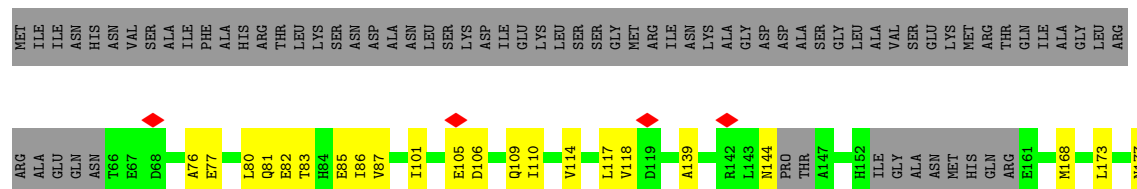
• Molecule 1: Flagellin

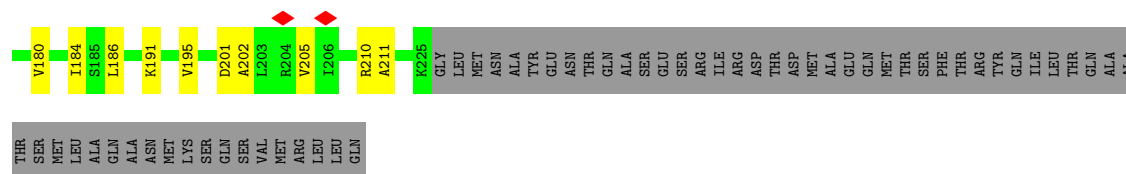
Chain h0:  60% 7% 33%



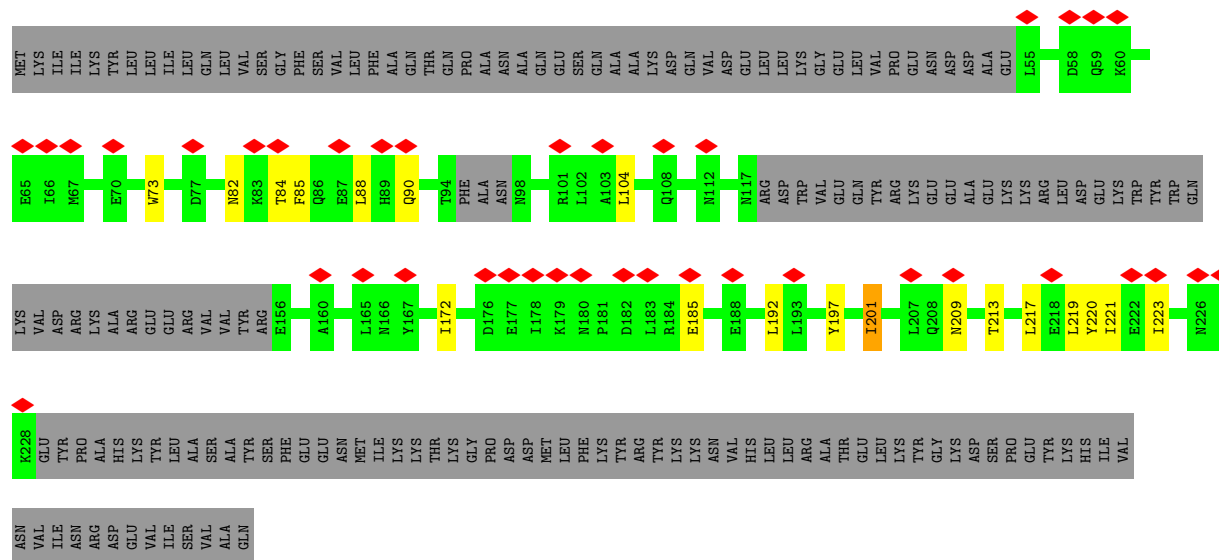
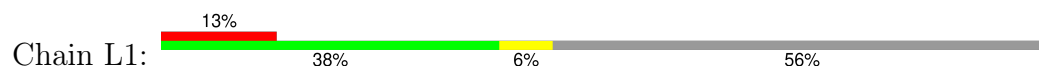
• Molecule 1: Flagellin

Chain i0:  42% 11% 47%

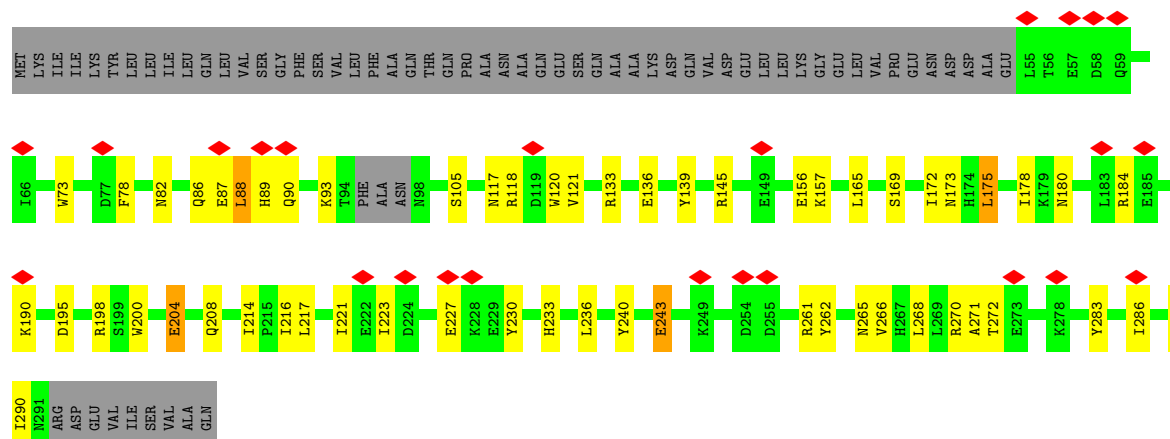




• Molecule 2: Flagellar Coiling Protein FcpA

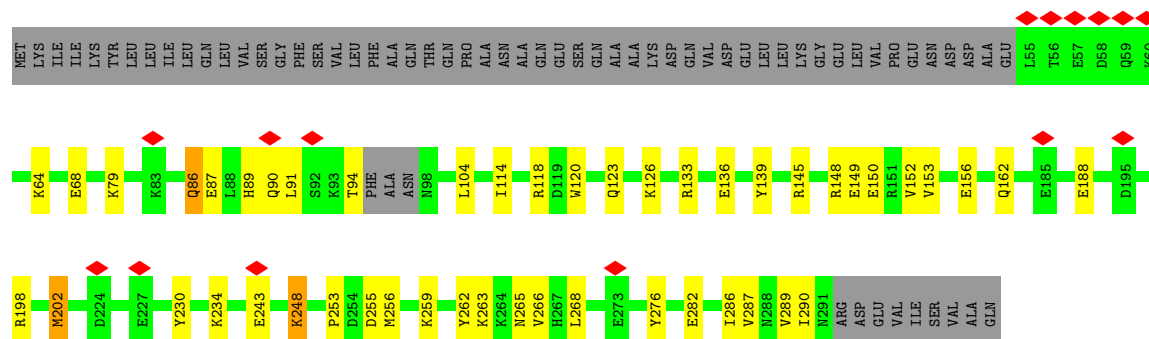


• Molecule 2: Flagellar Coiling Protein FcpA



• Molecule 2: Flagellar Coiling Protein FcpA





• Molecule 2: Flagellar Coiling Protein FcpA

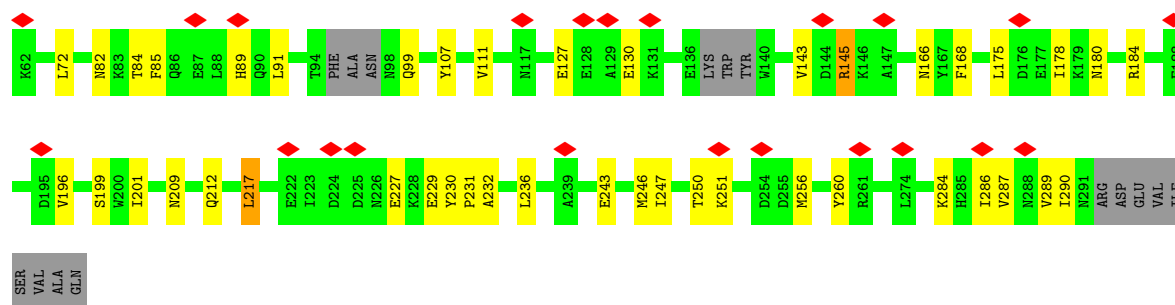


• Molecule 2: Flagellar Coiling Protein FcpA



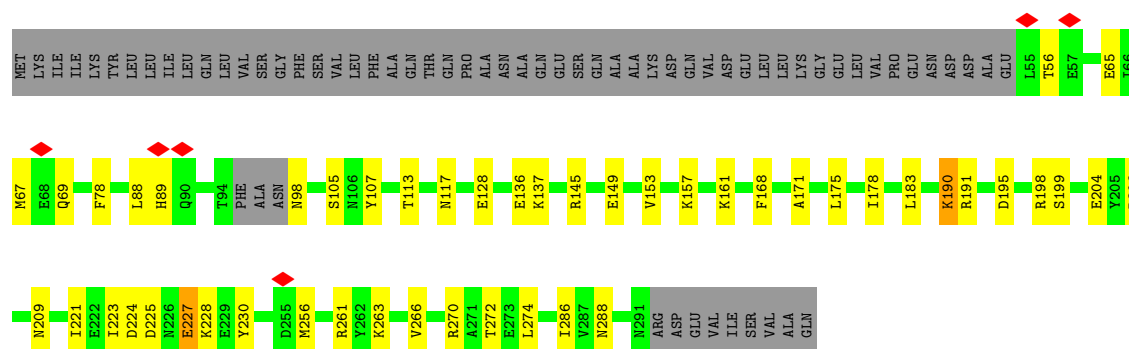
• Molecule 2: Flagellar Coiling Protein FcpA





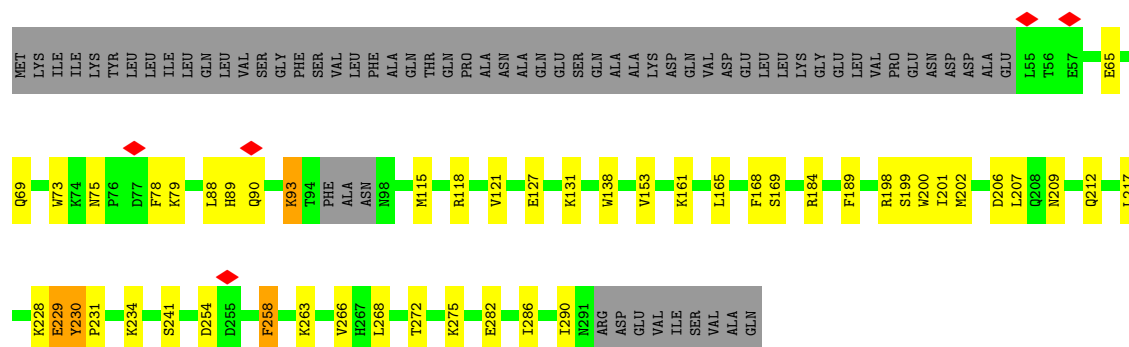
• Molecule 2: Flagellar Coiling Protein FcpA

Chain M2: 62% 16% 22%



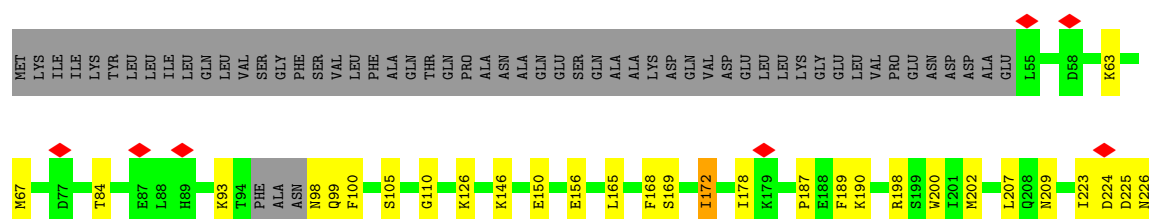
• Molecule 2: Flagellar Coiling Protein FcpA

Chain M3: 62% 15% 22%



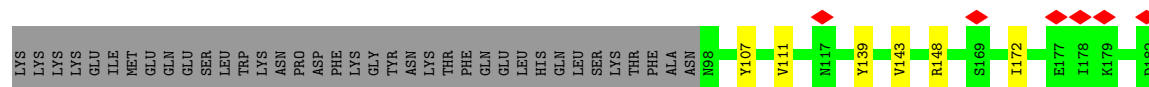
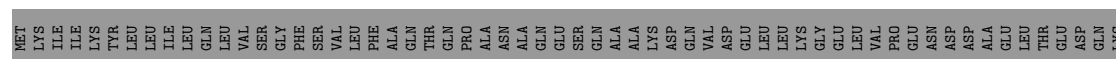
• Molecule 2: Flagellar Coiling Protein FcpA

Chain M4: 63% 15% 22%

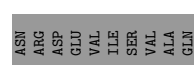
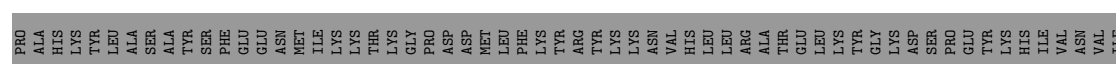
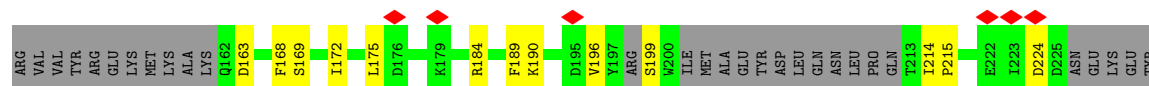
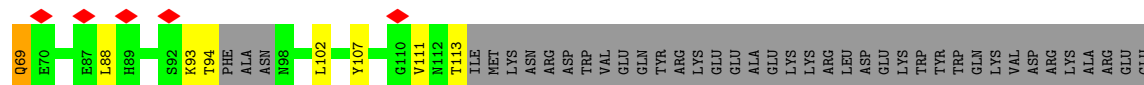
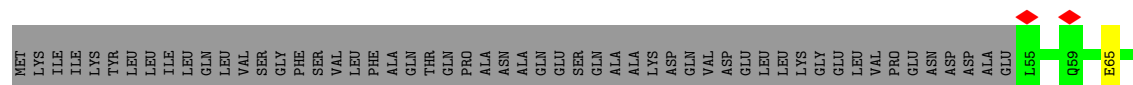




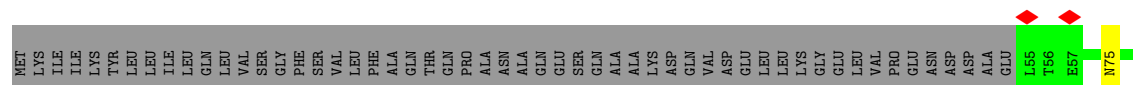
• Molecule 2: Flagellar Coiling Protein FcpA

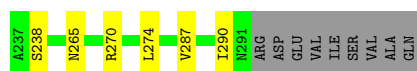


• Molecule 2: Flagellar Coiling Protein FcpA

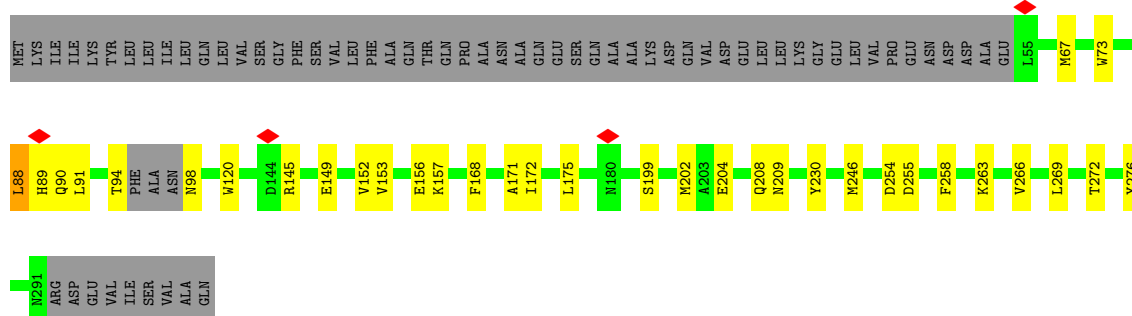


• Molecule 2: Flagellar Coiling Protein FcpA

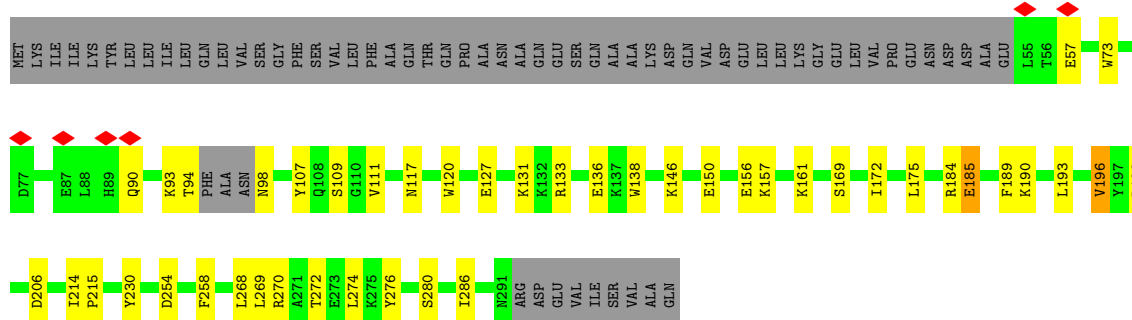




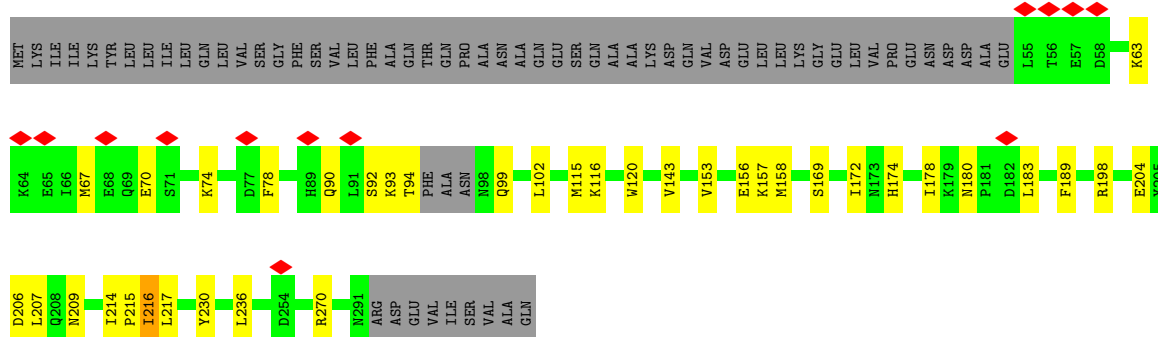
• Molecule 2: Flagellar Coiling Protein FcpA



• Molecule 2: Flagellar Coiling Protein FcpA

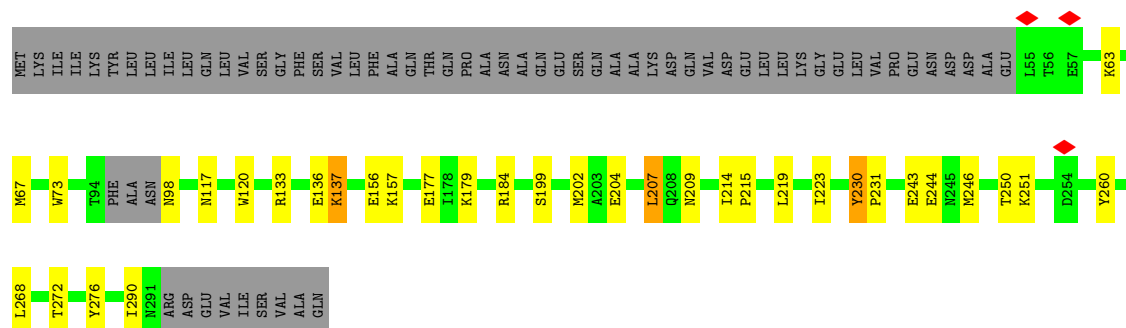


• Molecule 2: Flagellar Coiling Protein FcpA

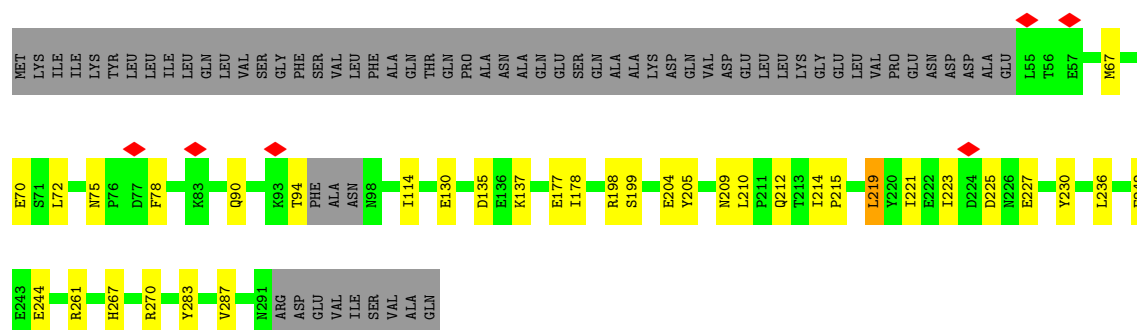


• Molecule 2: Flagellar Coiling Protein FcpA

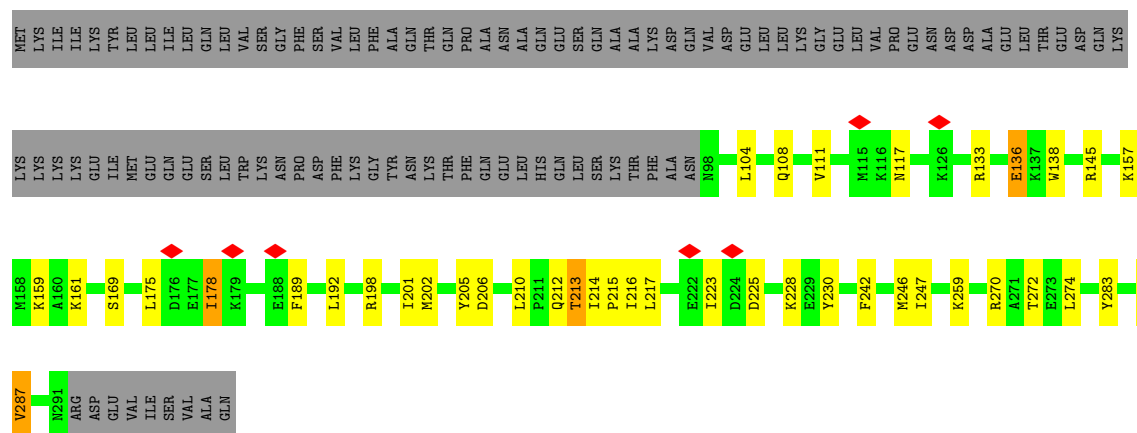




• Molecule 2: Flagellar Coiling Protein FcpA

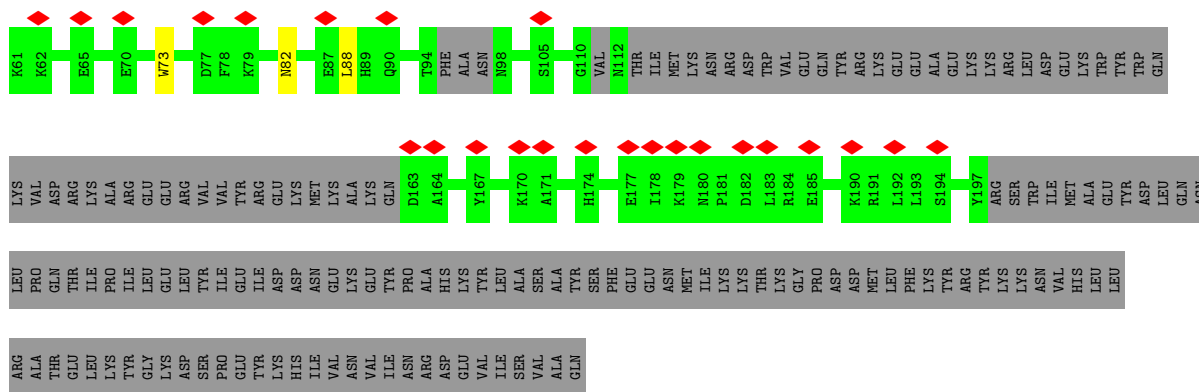


• Molecule 2: Flagellar Coiling Protein FcpA

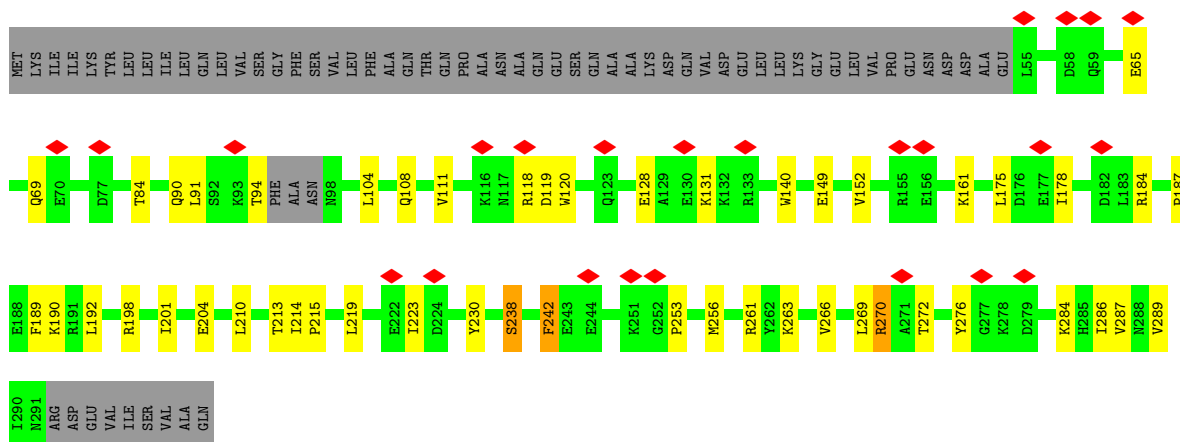


• Molecule 2: Flagellar Coiling Protein FcpA

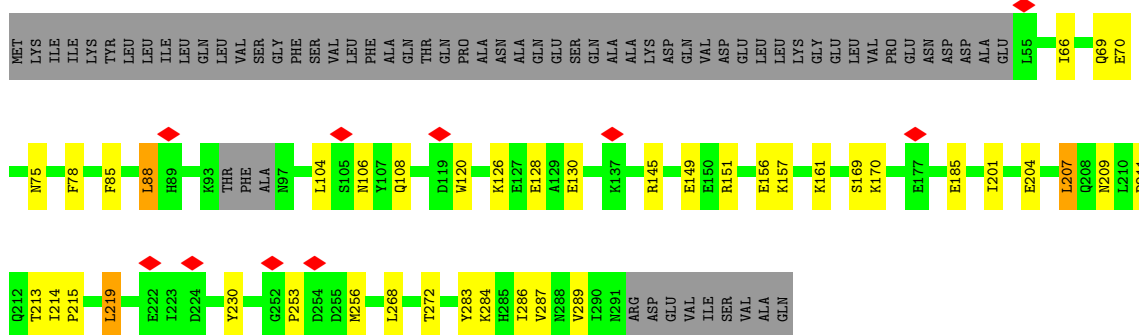




- Molecule 2: Flagellar Coiling Protein FcpA

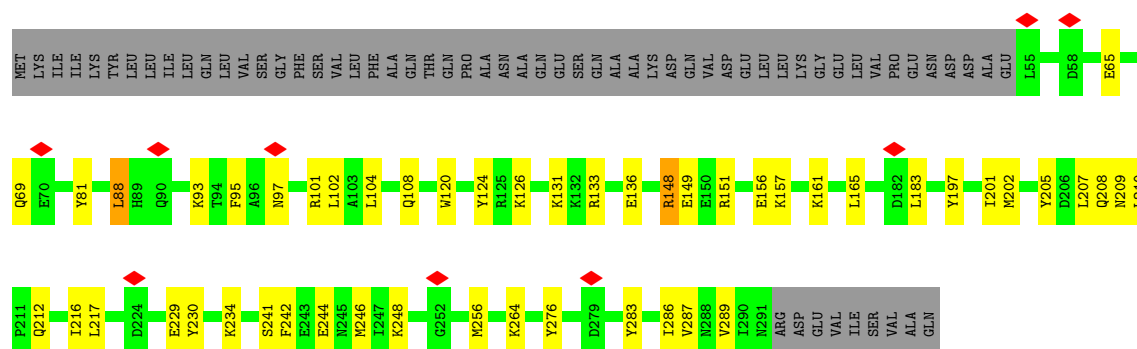


- Molecule 2: Flagellar Coiling Protein FcpA

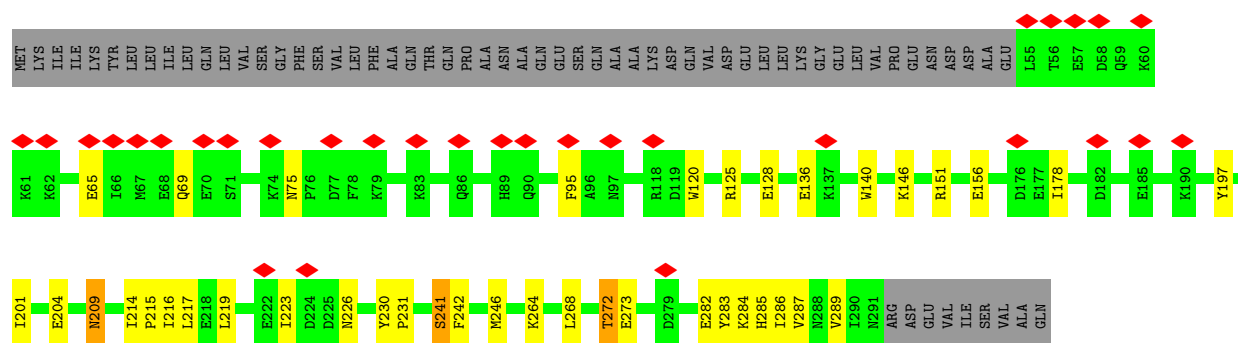


- Molecule 2: Flagellar Coiling Protein FcpA

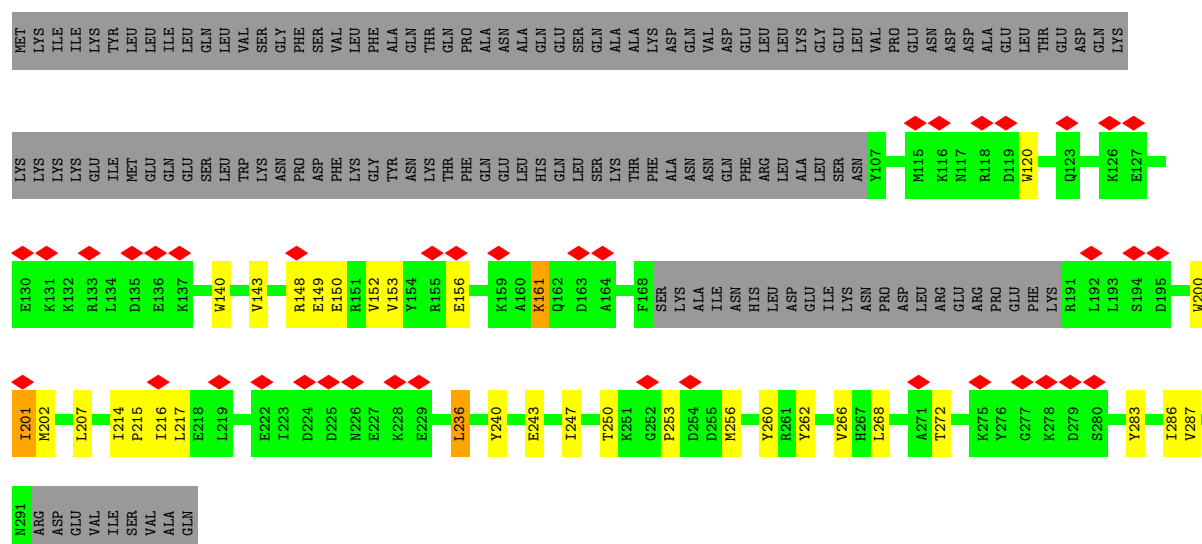
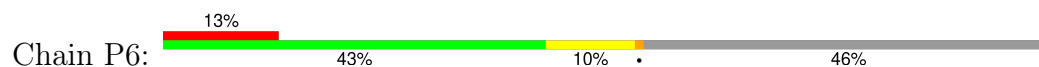




• Molecule 2: Flagellar Coiling Protein FcpA

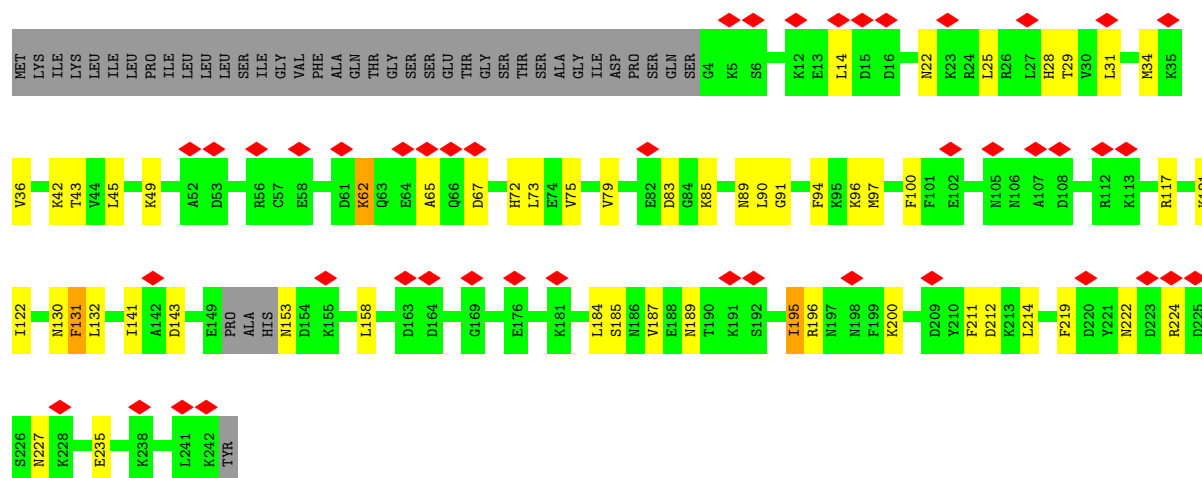


• Molecule 2: Flagellar Coiling Protein FcpA

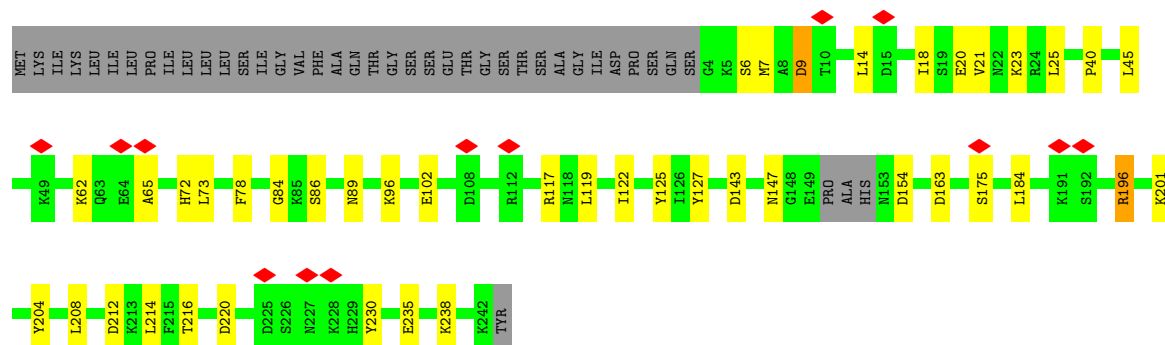


• Molecule 3: Flagellar Coiling Protein FcpB

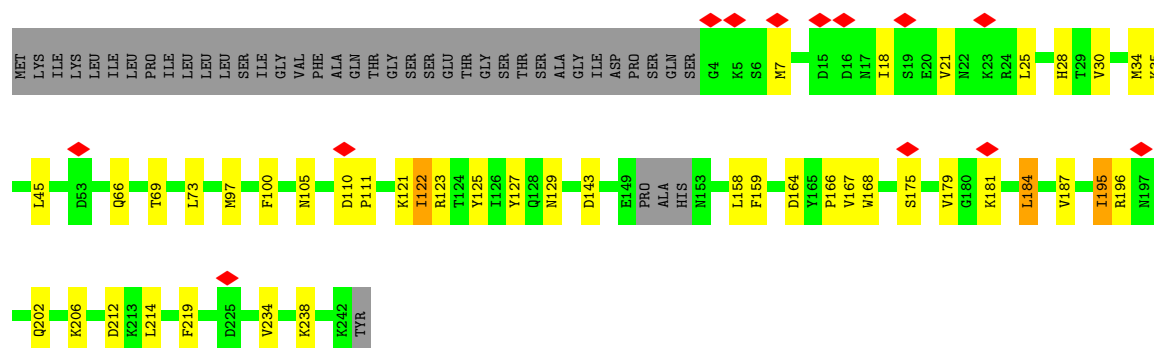




• Molecule 3: Flagellar Coiling Protein FcpB

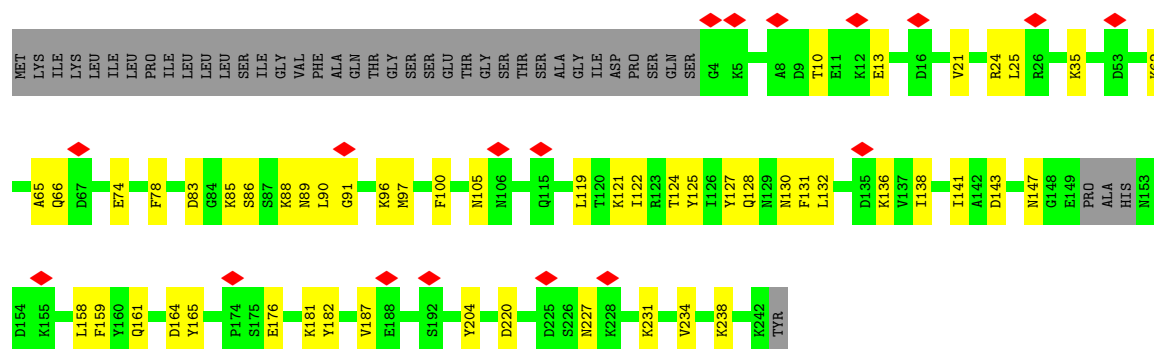


• Molecule 3: Flagellar Coiling Protein FcpB

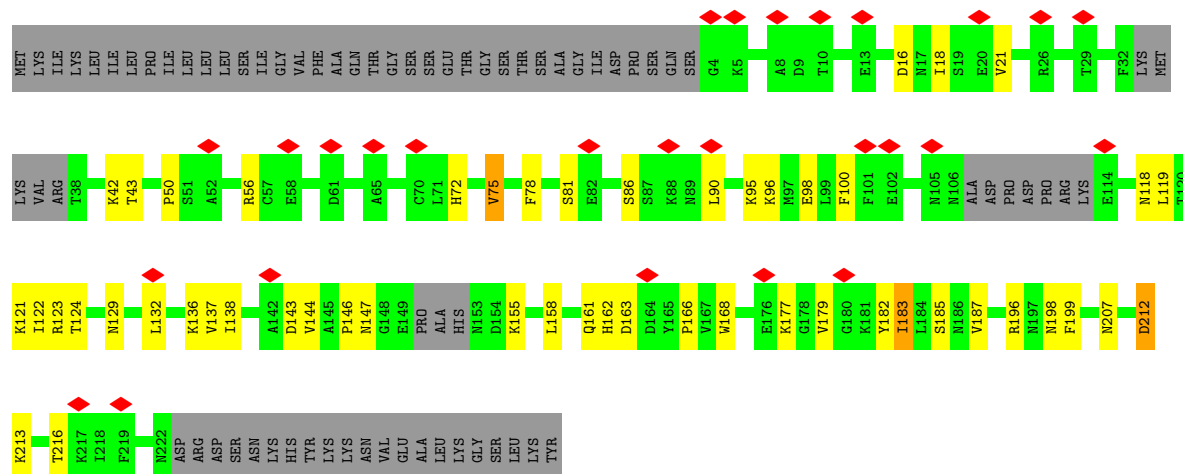


• Molecule 3: Flagellar Coiling Protein FcpB

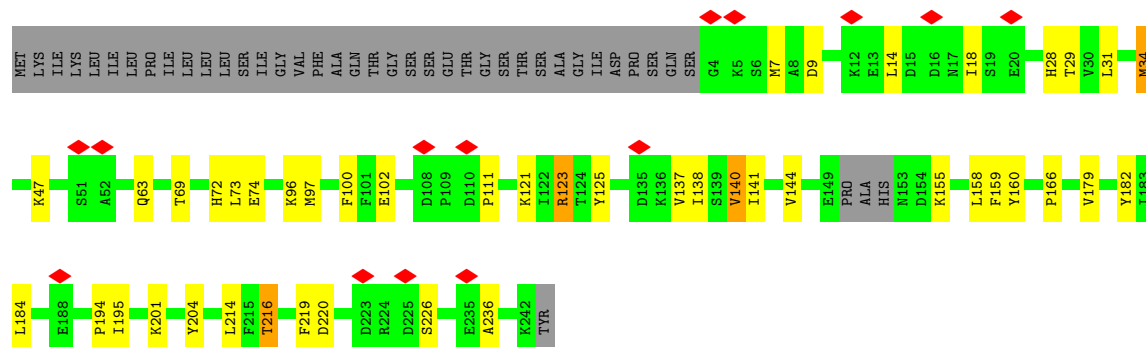




• Molecule 3: Flagellar Coiling Protein FcpB

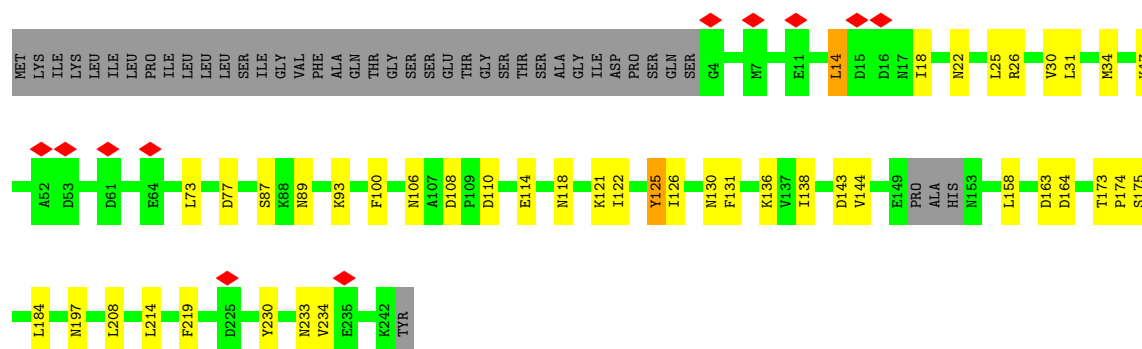


• Molecule 3: Flagellar Coiling Protein FcpB



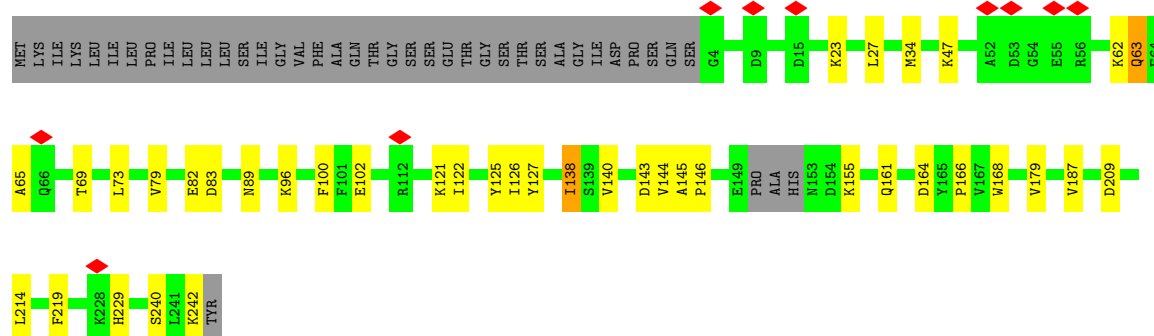
• Molecule 3: Flagellar Coiling Protein FcpB





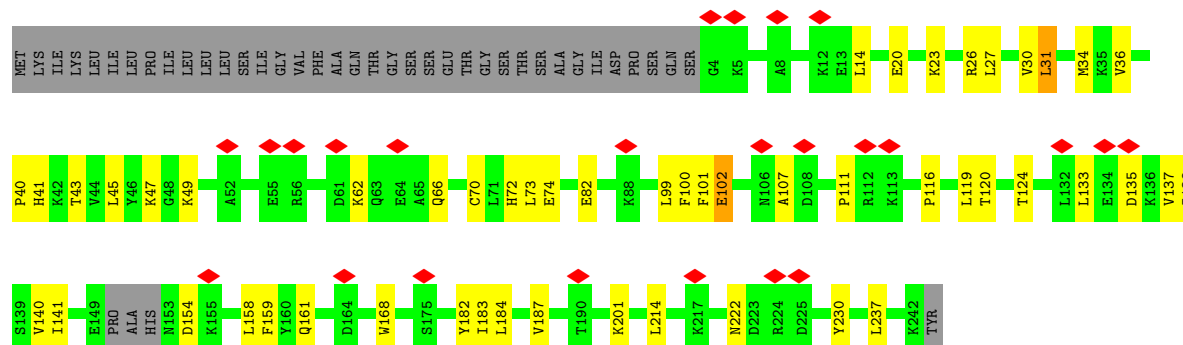
• Molecule 3: Flagellar Coiling Protein FcpB

Chain R4: 71% 14% 15%



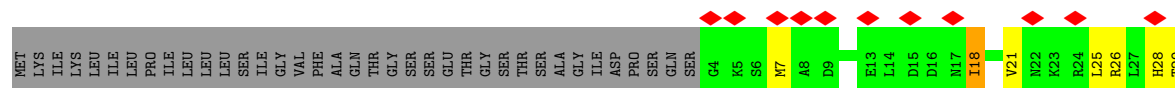
• Molecule 3: Flagellar Coiling Protein FcpB

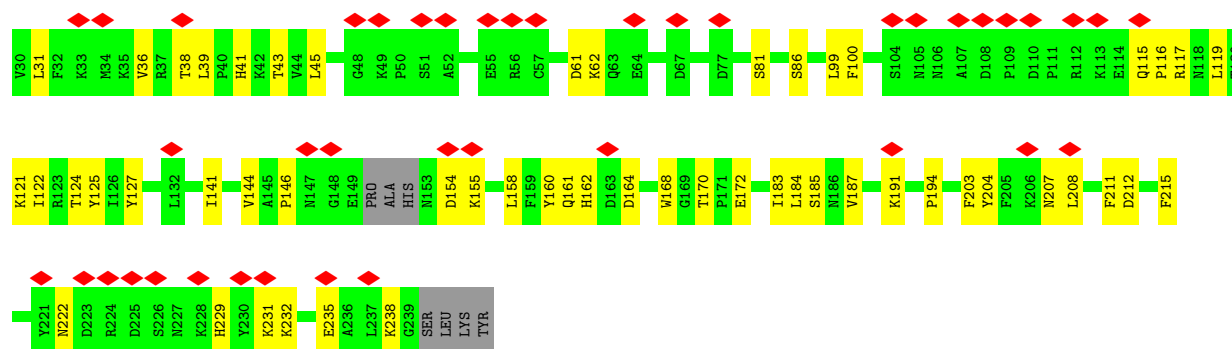
Chain R5: 9% 66% 18% 15%



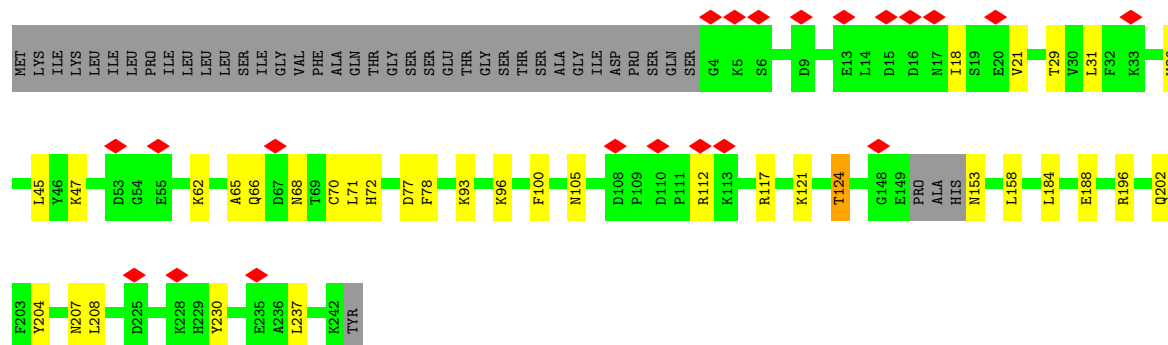
• Molecule 3: Flagellar Coiling Protein FcpB

Chain S2: 19% 62% 22% 16%

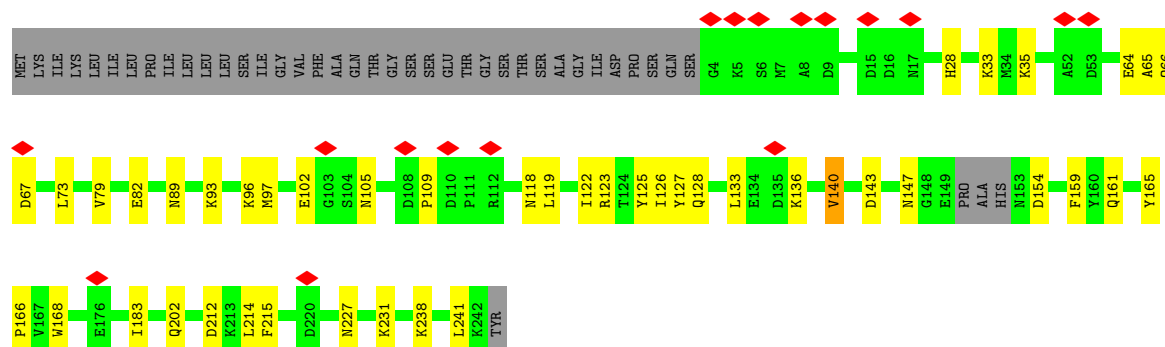




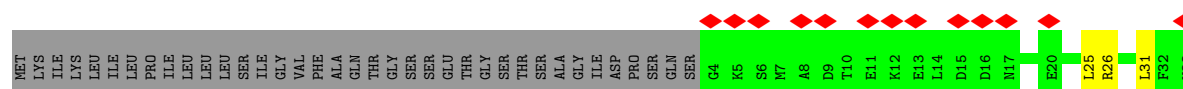
• Molecule 3: Flagellar Coiling Protein FcpB



• Molecule 3: Flagellar Coiling Protein FcpB

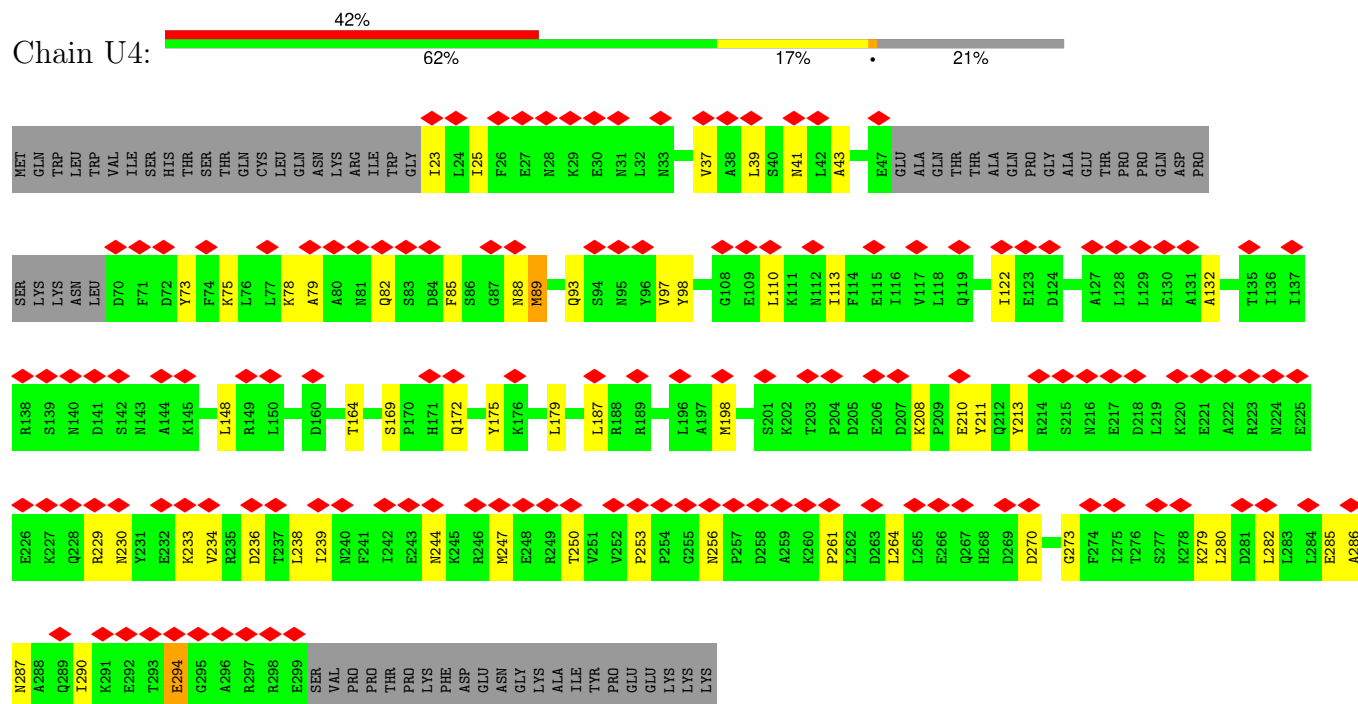


• Molecule 3: Flagellar Coiling Protein FcpB

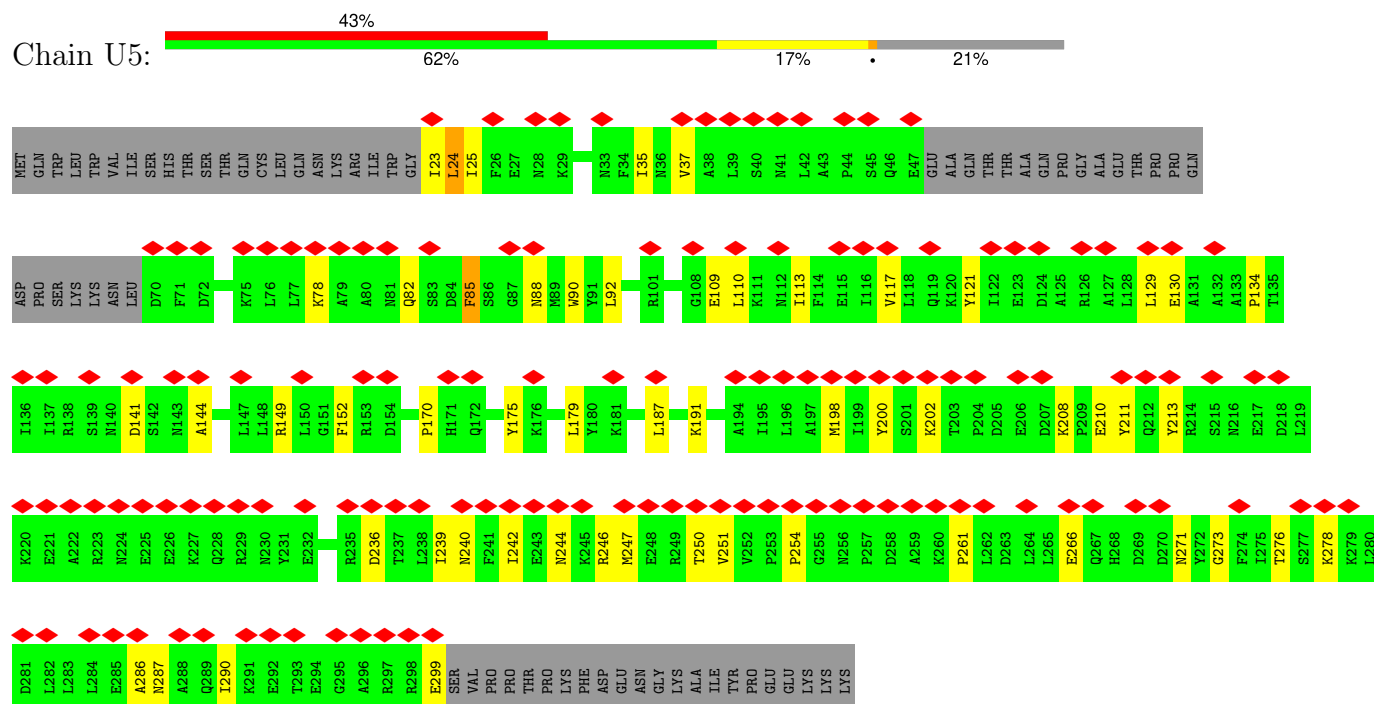


LYS

- Molecule 4: LEPBI_I1029 protein



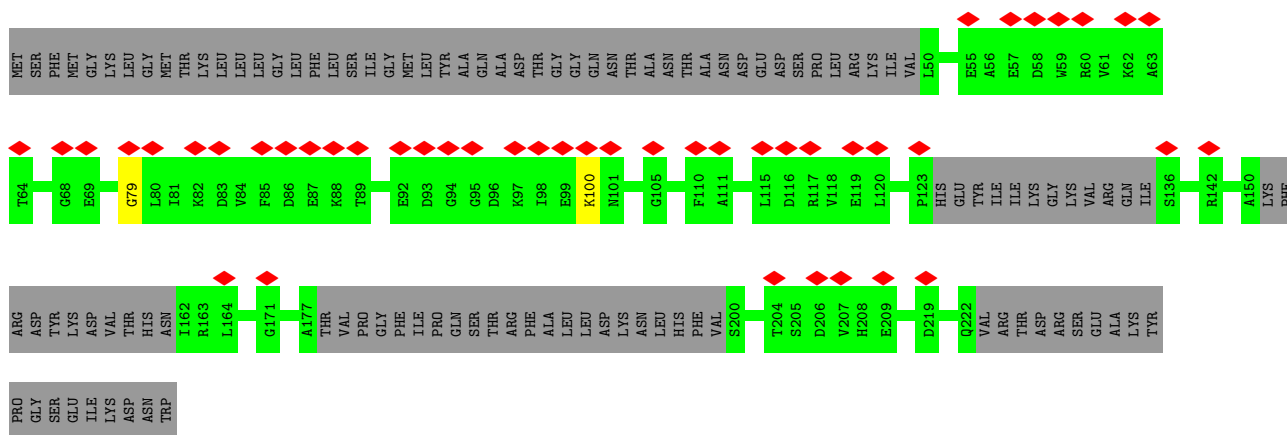
- Molecule 4: LEPBI_I1029 protein



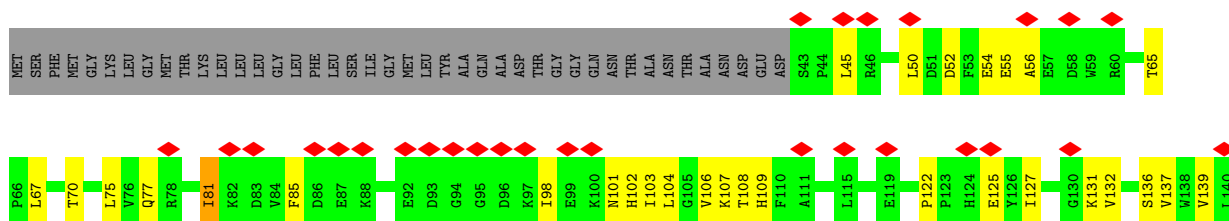
- Molecule 4: LEPBI_I1029 protein



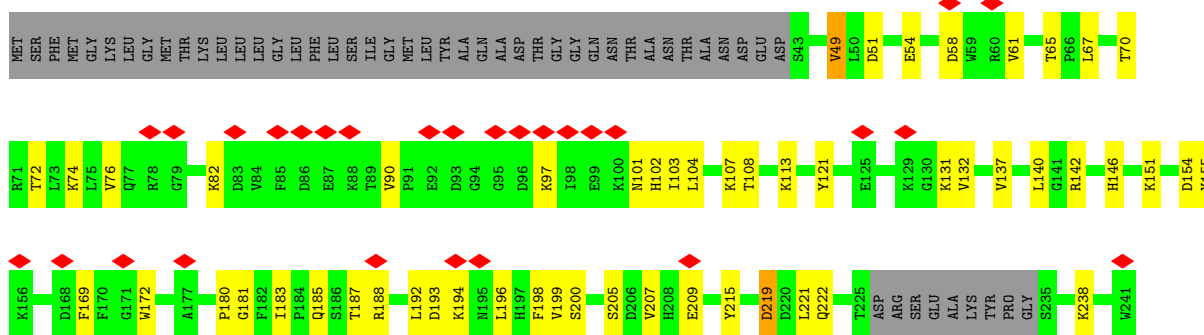
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide



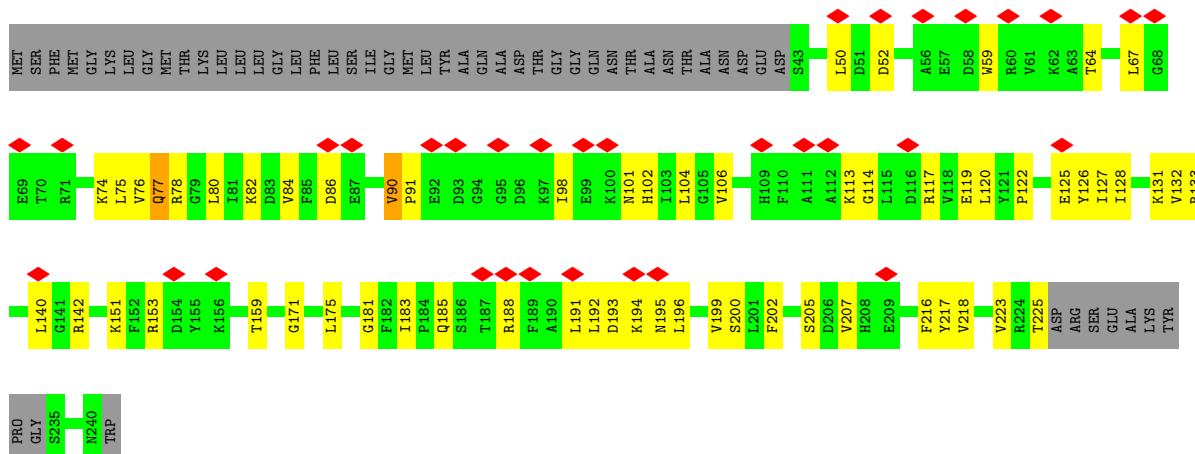
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide



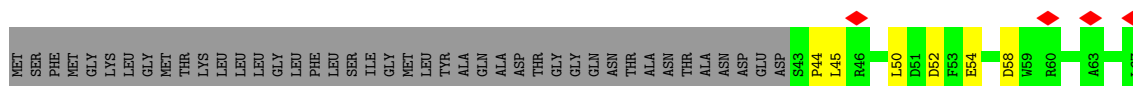
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide

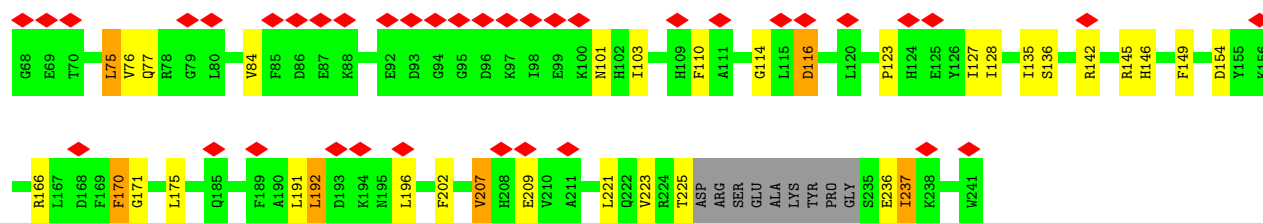


- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide



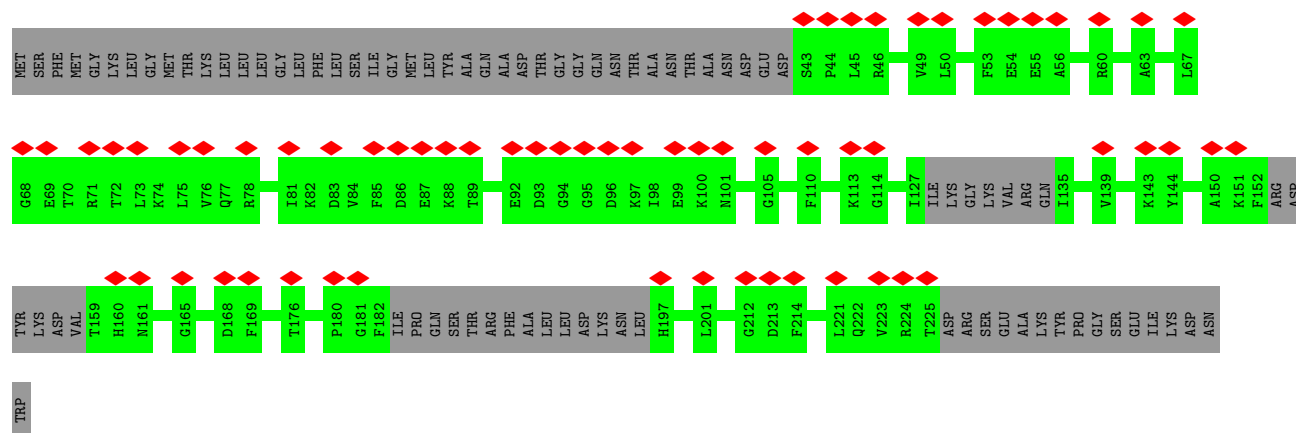
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide





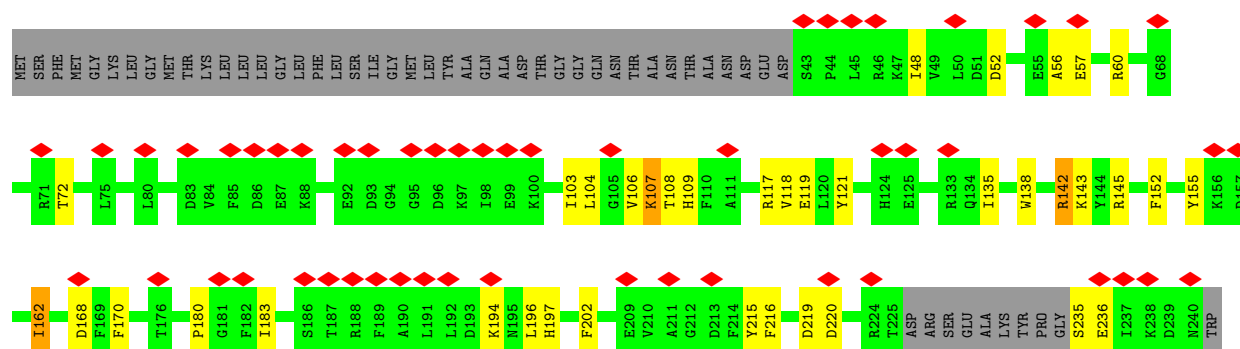
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide

Chain X0: 26% 65% 35%



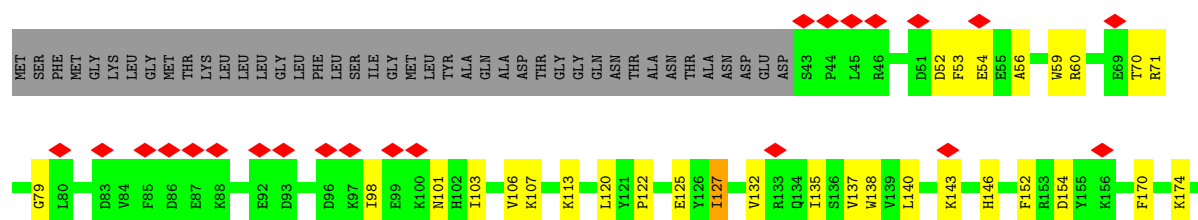
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide

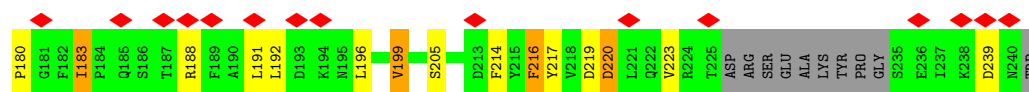
Chain X1: 22% 63% 15% 22%



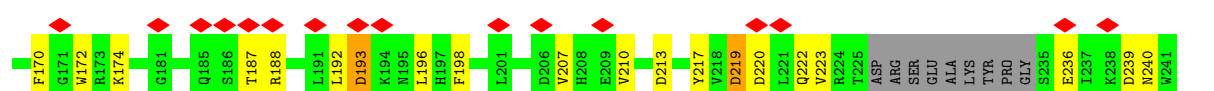
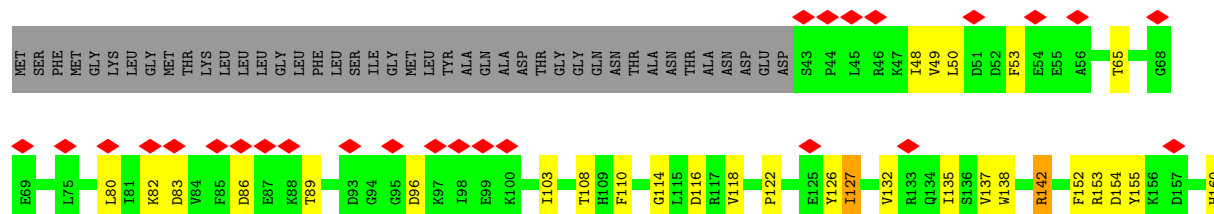
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide

Chain X2: 15% 60% 17% 22%

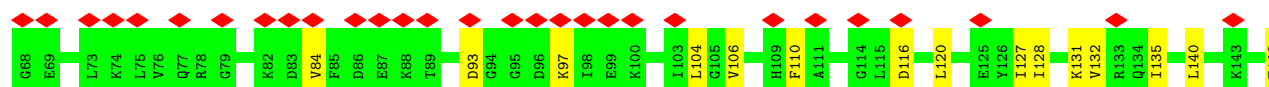




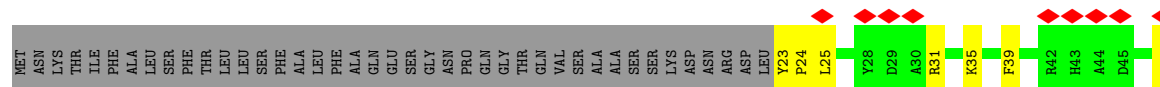
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide



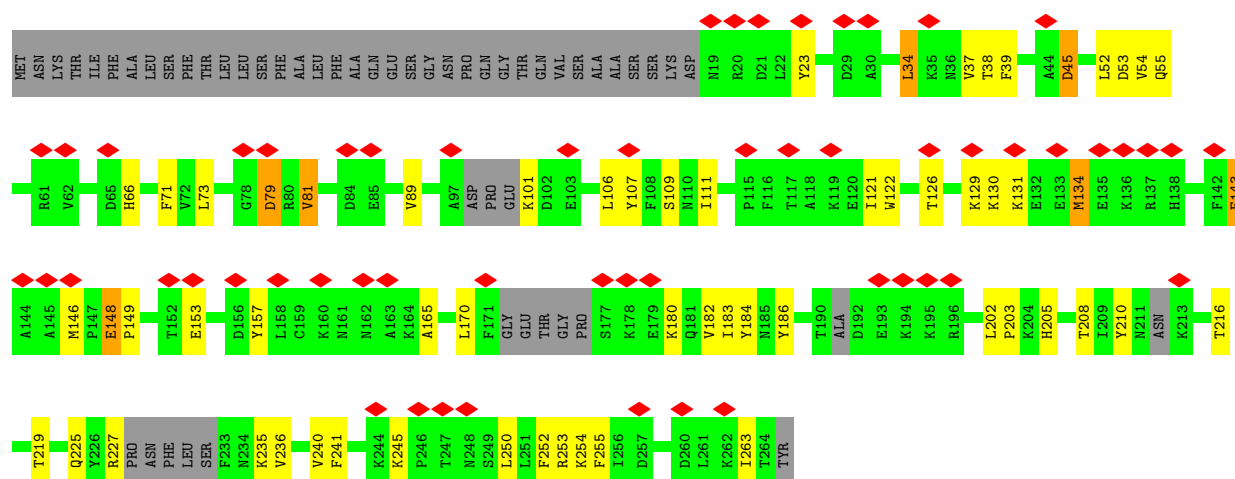
- Molecule 5: Flagellar filament outer layer protein (Sheath protein) putative signal peptide



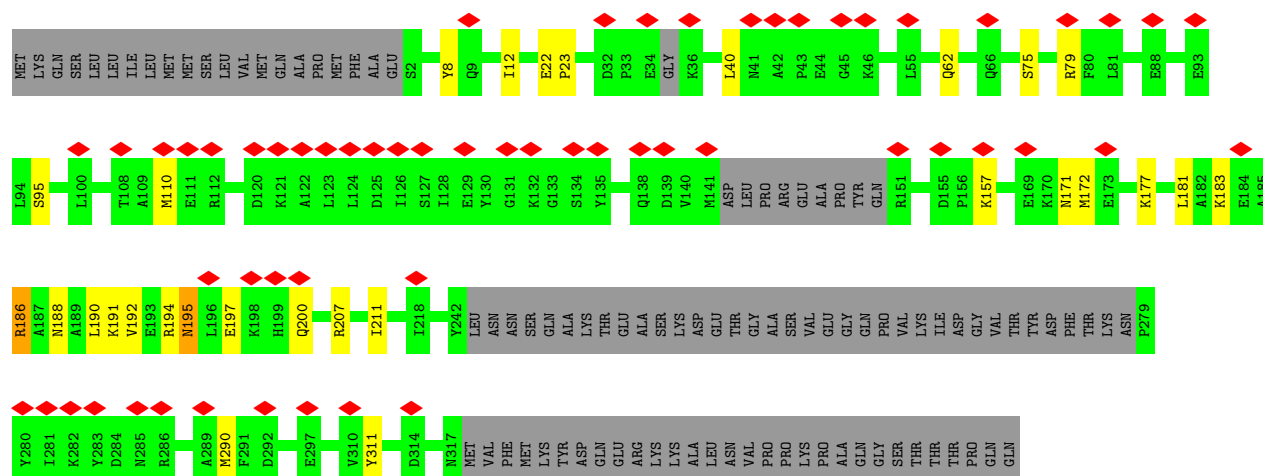
- Molecule 6: FlaA2 associated protein B0STF2



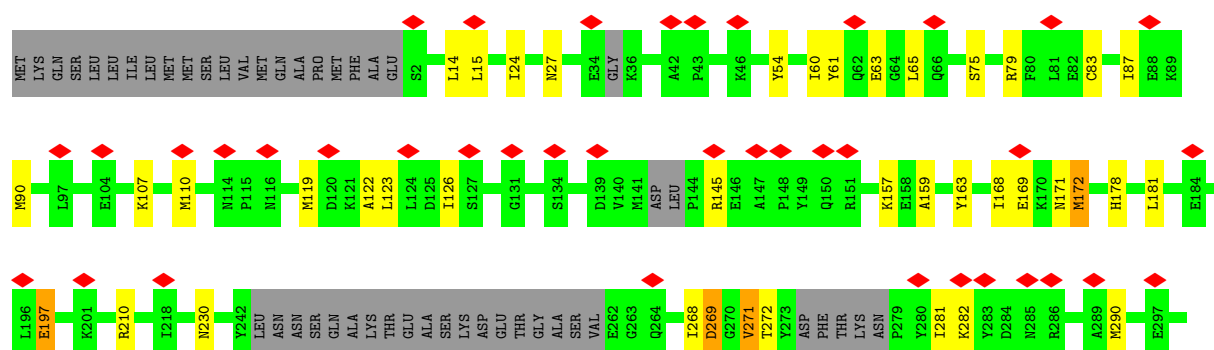




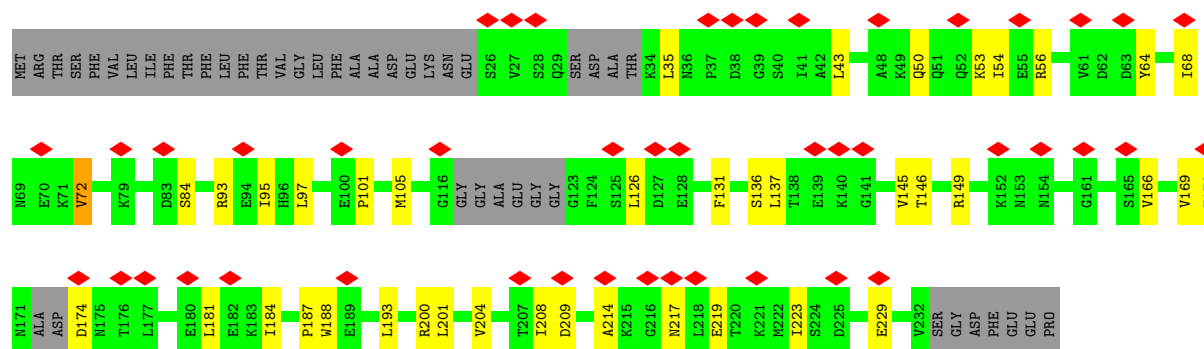
• Molecule 7: FlaA2-associated protein FlaAP



• Molecule 7: FlaA2-associated protein FlaAP

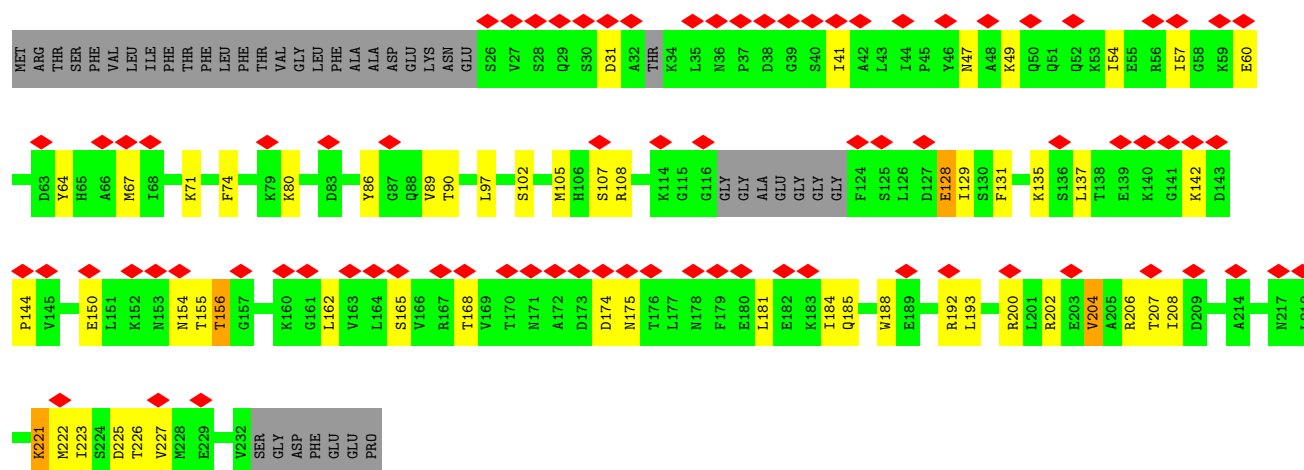






• Molecule 8: LEPBI_I3081 protein

Chain a5: 34% 61% 21% 17%



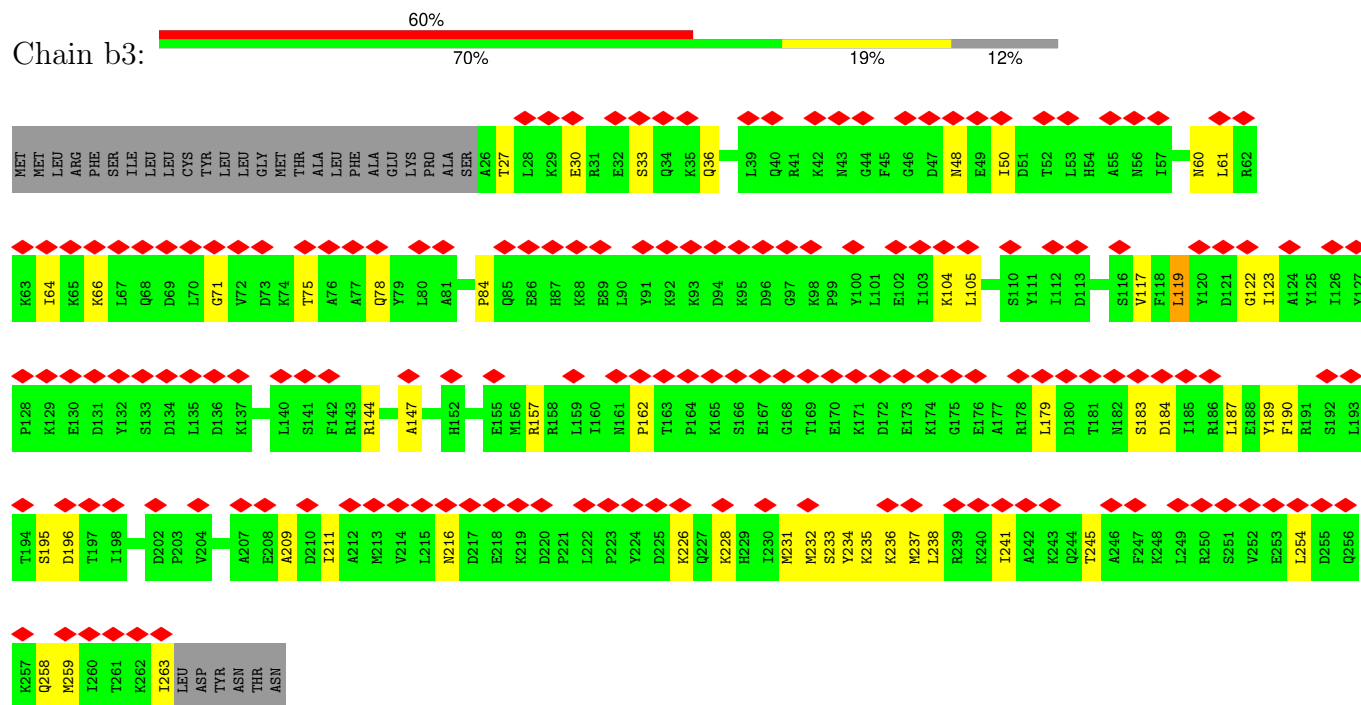
• Molecule 9: LEPBI_I0662 protein

Chain b2: 65% 87% 12%



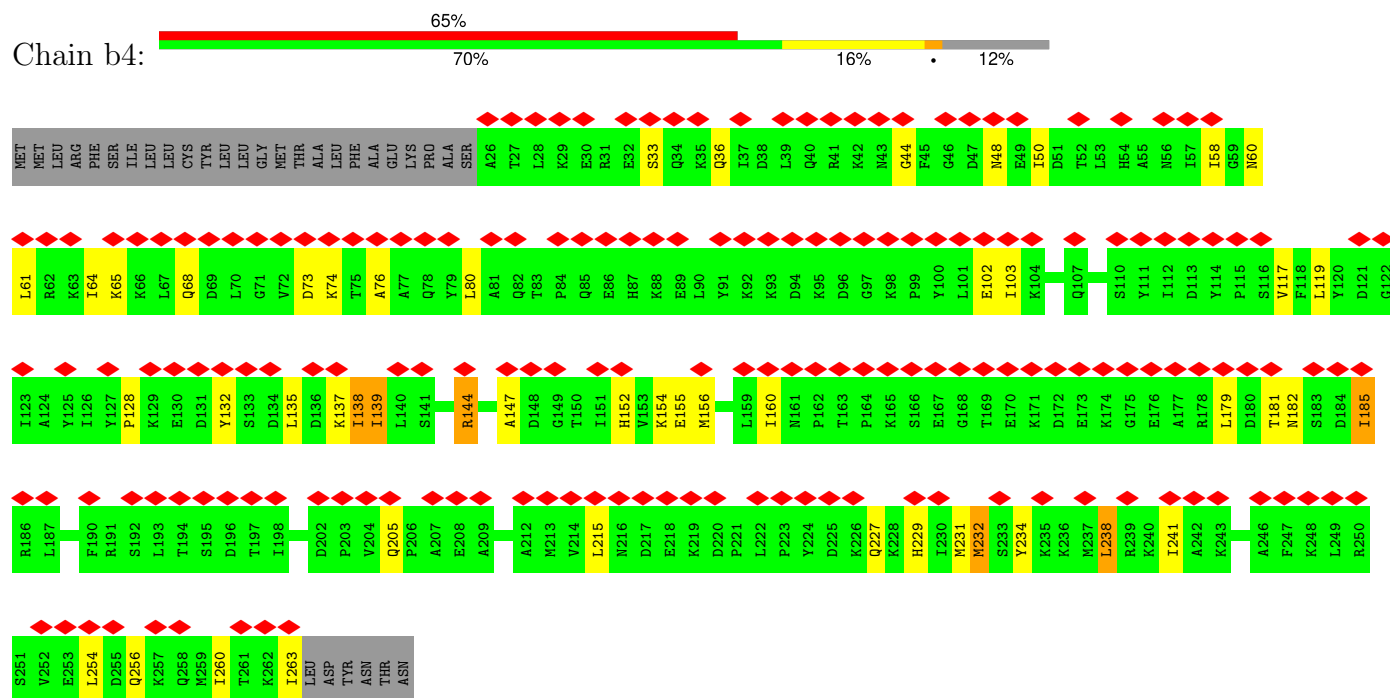
- Molecule 9: LEPBI_I0662 protein

Chain b3:



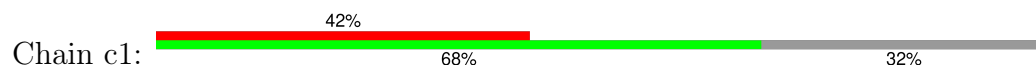
- Molecule 9: LEPBI_I0662 protein

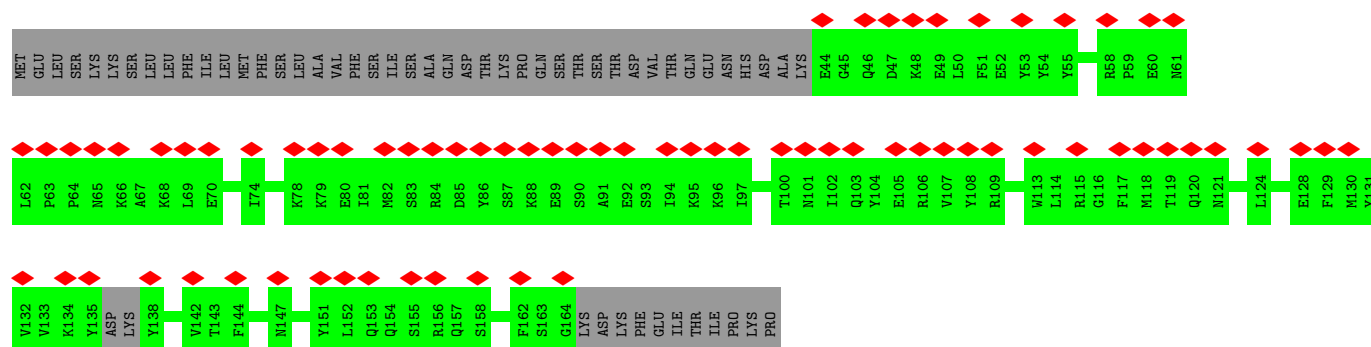
Chain b4:



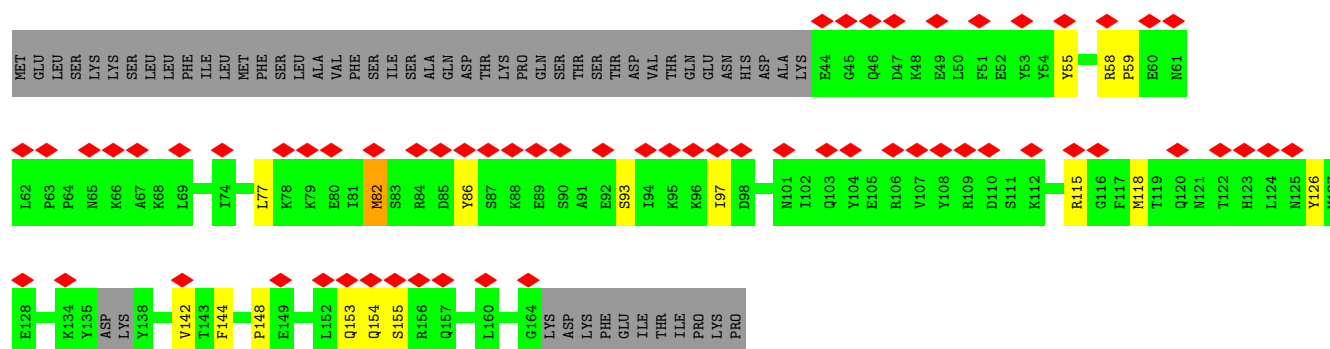
- Molecule 10: LEPBI_II0033 protein

Chain c1:

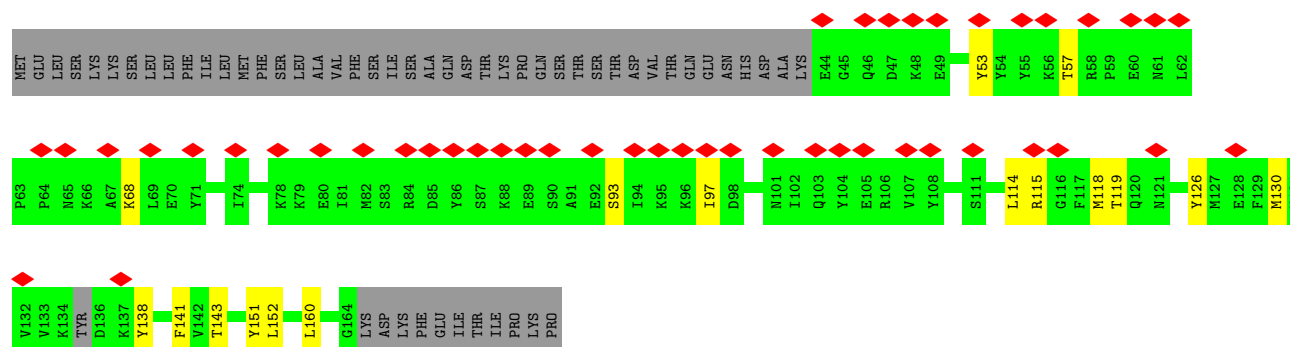




• Molecule 10: LEPBI_Ii0033 protein



• Molecule 10: LEPBI_Ii0033 protein



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	176558	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	25.7	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2600	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.994	Depositor
Minimum map value	-0.506	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.065	Depositor
Recommended contour level	0.05	Depositor
Map size (Å)	273.408, 273.408, 273.408	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.068, 1.068, 1.068	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section:
CA

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	A3	0.21	0/704	0.50	0/937
1	A4	0.19	0/1797	0.45	0/2404
1	A5	0.21	0/2198	0.48	0/2953
1	A6	0.22	0/2198	0.47	0/2953
1	A7	0.22	0/2198	0.46	0/2953
1	A8	0.20	0/1728	0.44	0/2323
1	B3	0.20	0/968	0.45	0/1291
1	B4	0.24	0/2198	0.50	0/2954
1	B5	0.23	0/2206	0.52	0/2965
1	B6	0.23	0/2206	0.46	0/2965
1	B7	0.23	0/2057	0.49	0/2768
1	B8	0.19	0/1387	0.46	0/1868
1	C2	0.20	0/549	0.41	0/730
1	C3	0.21	0/1556	0.49	0/2077
1	C4	0.22	0/2198	0.47	0/2953
1	C5	0.22	0/2206	0.48	0/2965
1	C6	0.22	0/2206	0.44	0/2965
1	C7	0.19	0/1788	0.43	0/2402
1	C8	0.16	0/963	0.41	0/1302
1	D2	0.19	0/885	0.39	0/1181
1	D3	0.22	0/2085	0.48	0/2795
1	D4	0.22	0/2198	0.44	0/2953
1	D5	0.23	0/2198	0.47	0/2953
1	D6	0.22	0/2082	0.47	0/2799
1	D7	0.19	0/1425	0.43	0/1920
1	E1	0.22	0/480	0.46	0/637
1	E2	0.20	0/1443	0.44	0/1924
1	E3	0.23	0/2198	0.47	0/2953
1	E4	0.25	0/2198	0.49	0/2953
1	E5	0.24	0/2198	0.48	0/2953
1	E6	0.22	0/1849	0.45	0/2485
1	E7	0.20	0/988	0.51	0/1335

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	F1	0.24	0/821	0.48	0/1096
1	F2	0.22	0/1970	0.50	0/2640
1	F3	0.25	0/2206	0.47	0/2965
1	F4	0.25	0/2198	0.49	0/2953
1	F5	0.25	0/2112	0.48	0/2839
1	F6	0.22	0/1456	0.49	0/1963
1	G1	0.24	0/1886	0.49	0/2535
1	G2	0.19	0/1069	0.43	0/1441
1	G5	0.21	0/431	0.51	0/571
1	G6	0.22	0/1330	0.53	0/1769
1	G7	0.24	0/2206	0.51	0/2965
1	G8	0.25	0/2206	0.49	0/2965
1	G9	0.24	0/2198	0.46	0/2953
1	H5	0.19	0/788	0.41	0/1050
1	H6	0.21	0/1913	0.43	0/2564
1	H7	0.22	0/2198	0.48	0/2953
1	H8	0.23	0/2206	0.49	0/2965
1	H9	0.22	0/2160	0.47	0/2904
1	I4	0.17	0/407	0.38	0/542
1	I5	0.19	0/1270	0.45	0/1691
1	I6	0.22	0/2214	0.50	0/2978
1	I7	0.23	0/2198	0.47	0/2953
1	I8	0.23	0/2198	0.50	0/2953
1	I9	0.21	0/1932	0.51	0/2598
1	J4	0.24	0/775	0.53	0/1032
1	J5	0.20	0/1871	0.48	0/2505
1	J6	0.22	0/2198	0.48	0/2953
1	J7	0.23	0/2198	0.49	0/2953
1	J8	0.21	0/2140	0.49	0/2874
1	J9	0.18	0/1571	0.46	0/2114
1	K3	0.20	0/352	0.42	0/470
1	K4	0.23	0/2206	0.49	0/2965
1	K5	0.20	0/1218	0.46	0/1618
1	K6	0.24	0/2198	0.50	0/2953
1	K7	0.23	0/2198	0.51	0/2953
1	K8	0.21	0/1984	0.47	0/2667
1	h0	0.19	0/1506	0.41	0/2027
1	i0	0.19	0/1178	0.46	0/1587
2	L1	0.16	0/1097	0.44	0/1476
2	L2	0.19	0/2003	0.47	0/2698
2	L3	0.20	0/2003	0.46	0/2698
2	L4	0.20	0/2003	0.49	0/2698
2	L5	0.20	0/2003	0.48	0/2698

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
2	M1	0.19	0/1964	0.49	0/2643
2	M2	0.22	0/2003	0.47	0/2698
2	M3	0.23	0/2003	0.48	0/2698
2	M4	0.22	0/2003	0.44	0/2698
2	M5	0.18	0/1676	0.44	1/2259 (0.0%)
2	N1	0.15	0/868	0.39	0/1163
2	N2	0.21	0/2003	0.47	0/2698
2	N3	0.23	0/2003	0.48	0/2698
2	N4	0.23	0/2003	0.48	0/2698
2	N5	0.20	0/2003	0.46	0/2698
2	N6	0.16	0/1228	0.39	0/1646
2	O1	0.20	0/1893	0.47	0/2541
2	O2	0.21	0/1993	0.45	0/2686
2	O3	0.23	0/1999	0.49	0/2694
2	O4	0.22	0/1999	0.47	0/2694
2	O5	0.21	0/1676	0.50	0/2259
2	P1	0.13	0/740	0.36	0/990
2	P2	0.20	0/2003	0.49	0/2698
2	P3	0.21	0/2004	0.47	0/2699
2	P4	0.22	0/2029	0.48	0/2735
2	P5	0.19	0/2029	0.43	0/2735
2	P6	0.16	0/1395	0.42	0/1877
3	Q1	0.17	0/1965	0.50	0/2639
3	Q2	0.19	0/1965	0.53	0/2639
3	Q3	0.21	0/1965	0.54	1/2639 (0.0%)
3	Q4	0.20	0/1965	0.55	0/2639
3	R1	0.20	0/1687	0.52	0/2265
3	R2	0.21	0/1965	0.50	0/2639
3	R3	0.22	0/1965	0.53	0/2639
3	R4	0.21	0/1965	0.53	0/2639
3	R5	0.19	0/1965	0.53	0/2639
3	S2	0.18	0/1938	0.51	0/2605
3	S3	0.19	0/1961	0.51	0/2635
3	S4	0.19	0/1965	0.51	0/2639
3	S5	0.21	0/1965	0.61	0/2639
3	S6	0.17	0/1449	0.50	0/1934
4	U3	0.15	0/2137	0.40	0/2878
4	U4	0.17	0/2137	0.44	0/2878
4	U5	0.17	0/2137	0.44	0/2878
4	U6	0.17	0/2137	0.43	0/2878
5	V0	0.10	0/645	0.43	0/893
5	V1	0.19	0/1613	0.65	0/2178
5	V2	0.20	0/1613	0.64	0/2178

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
5	V3	0.18	0/1596	0.63	0/2155
5	V4	0.18	0/1607	0.57	0/2171
5	X0	0.12	0/788	0.49	0/1093
5	X1	0.16	0/1596	0.53	0/2155
5	X2	0.19	0/1596	0.58	0/2155
5	X3	0.18	0/1613	0.58	0/2178
5	X4	0.17	0/1613	0.54	0/2178
6	Y1	0.17	0/1853	0.54	0/2500
6	Y2	0.17	0/1950	0.51	0/2625
6	Y3	0.18	0/2027	0.53	0/2732
6	Y4	0.18	0/1982	0.53	0/2668
7	Z0	0.17	0/2317	0.44	0/3101
7	Z1	0.17	0/2597	0.46	0/3475
7	Z2	0.24	0/2374	0.49	0/3172
7	Za	0.15	0/2158	0.41	0/2882
8	a1	0.18	0/1390	0.52	0/1864
8	a2	0.18	0/1620	0.49	0/2175
8	a3	0.18	0/1569	0.49	0/2103
8	a4	0.19	0/1600	0.53	0/2146
8	a5	0.20	0/1629	0.53	0/2188
9	b2	0.13	0/1215	0.51	0/1703
9	b3	0.16	0/1978	0.49	0/2660
9	b4	0.18	0/1978	0.54	0/2660
10	c1	0.12	0/602	0.39	0/841
10	c2	0.17	0/1044	0.47	0/1402
10	c3	0.18	0/1048	0.52	0/1406
All	All	0.21	0/251774	0.49	2/338497 (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
1	A5	0	2
1	A6	0	3
1	A7	0	1
1	A8	0	1
1	B4	0	3
1	B5	0	1
1	B6	0	1
1	B7	0	3

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C3	0	1
1	C4	0	1
1	C5	0	1
1	C6	0	3
1	C7	0	2
1	D2	0	1
1	D5	0	1
1	D6	0	1
1	E2	0	2
1	E4	0	1
1	E5	0	1
1	E6	0	1
1	F2	0	1
1	F3	0	2
1	F5	0	2
1	G1	0	1
1	G2	0	2
1	G6	0	1
1	G7	0	2
1	G9	0	1
1	H6	0	1
1	H7	0	2
1	H8	0	1
1	H9	0	1
1	I4	0	1
1	I5	0	2
1	I6	0	1
1	I7	0	2
1	I8	0	1
1	I9	0	3
1	J4	0	1
1	J5	0	1
1	J6	0	1
1	J7	0	2
1	J8	0	1
1	J9	0	2
1	K4	0	3
1	K5	0	1
1	K7	0	3
1	K8	0	2
1	h0	0	1
2	L2	0	2

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
2	M2	0	1
2	N2	0	1
2	O2	0	1
2	O3	0	1
2	P3	0	1
2	P5	0	1
3	Q4	0	1
3	R1	0	1
3	S2	0	1
3	S5	0	1
4	U6	0	1
5	X3	0	1
6	Y1	0	3
6	Y3	0	1
7	Z0	0	1
7	Z1	0	1
7	Z2	0	1
8	a5	0	1
9	b4	0	1
10	c2	0	1
All	All	0	100

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	M5	224	ASP	CB-CA-C	-5.24	110.51	116.54
3	Q3	184	LEU	N-CA-C	5.22	117.71	111.71

There are no chirality outliers.

5 of 100 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A5	240	ARG	Sidechain
1	A5	255	ARG	Sidechain
1	A6	176	ARG	Sidechain
1	A6	204	ARG	Sidechain
1	A6	240	ARG	Sidechain

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	A3	702	0	718	17	0
1	A4	1781	0	1770	39	0
1	A5	2178	0	2182	53	0
1	A6	2178	0	2182	44	0
1	A7	2178	0	2182	48	0
1	A8	1713	0	1691	25	0
1	B3	964	0	961	22	0
1	B4	2177	0	2178	54	0
1	B5	2185	0	2189	52	0
1	B6	2185	0	2189	55	0
1	B7	2037	0	2023	37	0
1	B8	1372	0	1359	28	0
1	C2	547	0	564	10	0
1	C3	1542	0	1519	38	0
1	C4	2178	0	2182	40	0
1	C5	2185	0	2189	28	0
1	C6	2185	0	2189	34	0
1	C7	1772	0	1758	29	0
1	C8	956	0	965	12	0
1	D2	881	0	895	6	0
1	D3	2068	0	2086	34	0
1	D4	2178	0	2182	30	0
1	D5	2178	0	2182	28	0
1	D6	2063	0	2056	36	0
1	D7	1410	0	1396	18	0
1	E1	478	0	495	7	0
1	E2	1430	0	1418	30	0
1	E3	2178	0	2182	42	0
1	E4	2178	0	2182	39	0
1	E5	2178	0	2182	38	0
1	E6	1831	0	1815	31	0
1	E7	983	0	977	19	0
1	F1	818	0	830	26	0
1	F2	1953	0	1949	32	0
1	F3	2185	0	2189	37	0
1	F4	2178	0	2182	35	0
1	F5	2092	0	2080	36	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F6	1440	0	1424	23	0
1	G1	1869	0	1852	35	0
1	G2	1061	0	1069	13	0
1	G5	431	0	448	12	0
1	G6	1318	0	1297	34	0
1	G7	2185	0	2189	57	0
1	G8	2185	0	2189	39	0
1	G9	2178	0	2182	31	0
1	H5	785	0	798	14	0
1	H6	1896	0	1894	46	0
1	H7	2178	0	2182	40	0
1	H8	2185	0	2189	28	0
1	H9	2140	0	2139	37	0
1	I4	405	0	422	6	0
1	I5	1259	0	1242	21	0
1	I6	2192	0	2197	50	0
1	I7	2178	0	2182	48	0
1	I8	2178	0	2182	42	0
1	I9	1914	0	1903	44	0
1	J4	772	0	785	16	0
1	J5	1854	0	1843	35	0
1	J6	2178	0	2182	60	0
1	J7	2178	0	2182	66	0
1	J8	2121	0	2120	58	0
1	J9	1556	0	1544	21	0
1	K3	351	0	370	18	0
1	K4	2185	0	2189	47	0
1	K5	1210	0	1203	28	0
1	K6	2178	0	2182	62	0
1	K7	2178	0	2182	65	0
1	K8	1966	0	1954	34	0
1	h0	1490	0	1482	15	0
1	i0	1168	0	1159	23	0
2	L1	1079	0	1027	17	0
2	L2	1959	0	1885	40	0
2	L3	1959	0	1885	34	0
2	L4	1959	0	1885	24	0
2	L5	1959	0	1885	25	0
2	M1	1924	0	1852	29	0
2	M2	1959	0	1885	35	0
2	M3	1959	0	1885	36	0
2	M4	1959	0	1885	33	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	M5	1638	0	1597	17	0
2	N1	855	0	785	12	0
2	N2	1959	0	1885	19	0
2	N3	1959	0	1885	21	0
2	N4	1959	0	1885	28	0
2	N5	1959	0	1885	20	0
2	N6	1204	0	1164	12	0
2	O1	1860	0	1786	35	0
2	O2	1950	0	1869	17	0
2	O3	1955	0	1874	24	0
2	O4	1955	0	1874	23	0
2	O5	1638	0	1597	30	0
2	P1	728	0	682	4	0
2	P2	1959	0	1885	31	0
2	P3	1960	0	1884	31	0
2	P4	1983	0	1906	41	0
2	P5	1983	0	1906	26	0
2	P6	1365	0	1310	22	0
3	Q1	1926	0	1895	41	0
3	Q2	1926	0	1895	28	0
3	Q3	1926	0	1895	26	0
3	Q4	1926	0	1895	32	0
3	R1	1654	0	1604	33	0
3	R2	1926	0	1893	32	0
3	R3	1926	0	1895	30	0
3	R4	1926	0	1895	25	0
3	R5	1926	0	1895	34	0
3	S2	1899	0	1855	40	0
3	S3	1922	0	1884	22	0
3	S4	1926	0	1895	29	0
3	S5	1926	0	1893	33	0
3	S6	1426	0	1410	21	0
4	U3	2101	0	2087	18	0
4	U4	2101	0	2087	37	0
4	U5	2101	0	2087	39	0
4	U6	2101	0	2087	40	0
5	V0	645	0	309	2	0
5	V1	1574	0	1578	49	0
5	V2	1574	0	1578	36	0
5	V3	1559	0	1568	42	0
5	V4	1568	0	1567	25	0
5	X0	786	0	375	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	X1	1559	0	1568	26	0
5	X2	1559	0	1568	30	0
5	X3	1574	0	1578	31	0
5	X4	1574	0	1578	23	0
6	Y1	1808	0	1783	36	0
6	Y2	1905	0	1886	35	0
6	Y3	1979	0	1953	37	0
6	Y4	1937	0	1919	42	0
7	Z0	2271	0	2238	18	0
7	Z1	2545	0	2513	31	0
7	Z2	2329	0	2309	17	0
7	Za	2121	0	2100	22	0
8	a1	1367	0	1399	25	0
8	a2	1596	0	1621	25	0
8	a3	1546	0	1583	20	0
8	a4	1577	0	1606	32	0
8	a5	1605	0	1627	37	0
9	b2	1204	0	584	2	0
9	b3	1944	0	1974	34	0
9	b4	1944	0	1974	38	0
10	c1	600	0	268	0	0
10	c2	1020	0	992	10	0
10	c3	1025	0	1000	9	0
11	V0	1	0	0	0	0
11	V1	1	0	0	0	0
11	V2	1	0	0	0	0
11	V3	1	0	0	0	0
11	V4	1	0	0	0	0
11	X0	1	0	0	0	0
11	X1	1	0	0	0	0
11	X2	1	0	0	0	0
11	X3	1	0	0	0	0
11	X4	1	0	0	0	0
12	V0	2	0	0	1	0
12	V1	2	0	0	0	0
12	V2	2	0	0	0	0
12	V3	2	0	0	1	0
12	V4	2	0	0	0	0
12	X0	2	0	0	0	0
12	X1	2	0	0	1	0
12	X2	2	0	0	0	0
12	X3	2	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
12	X4	2	0	0	3	0
All	All	248112	0	244001	3588	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 7.

The worst 5 of 3588 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)
5:V0:100:LYS:O	12:V0:401:HOH:O	1.58	1.18
5:V4:50:LEU:HD11	5:V4:223:VAL:HG13	1.48	0.94
4:U5:149:ARG:HA	4:U6:92:LEU:HD21	1.51	0.93
3:Q1:189:ASN:HB2	3:Q1:196:ARG:HD3	1.51	0.91
9:b3:189:TYR:HB3	9:b3:211:ILE:HG12	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	A3	86/282 (30%)	83 (96%)	3 (4%)	0	100	100
1	A4	221/282 (78%)	216 (98%)	5 (2%)	0	100	100
1	A5	276/282 (98%)	270 (98%)	6 (2%)	0	100	100
1	A6	276/282 (98%)	271 (98%)	5 (2%)	0	100	100
1	A7	276/282 (98%)	269 (98%)	7 (2%)	0	100	100
1	A8	218/282 (77%)	215 (99%)	3 (1%)	0	100	100
1	B3	123/282 (44%)	121 (98%)	2 (2%)	0	100	100
1	B4	276/282 (98%)	266 (96%)	9 (3%)	1 (0%)	30	62

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B5	277/282 (98%)	270 (98%)	7 (2%)	0	100	100
1	B6	277/282 (98%)	272 (98%)	5 (2%)	0	100	100
1	B7	259/282 (92%)	254 (98%)	5 (2%)	0	100	100
1	B8	172/282 (61%)	169 (98%)	3 (2%)	0	100	100
1	C2	64/282 (23%)	64 (100%)	0	0	100	100
1	C3	190/282 (67%)	185 (97%)	5 (3%)	0	100	100
1	C4	276/282 (98%)	270 (98%)	6 (2%)	0	100	100
1	C5	277/282 (98%)	271 (98%)	6 (2%)	0	100	100
1	C6	277/282 (98%)	272 (98%)	5 (2%)	0	100	100
1	C7	224/282 (79%)	221 (99%)	3 (1%)	0	100	100
1	C8	118/282 (42%)	116 (98%)	2 (2%)	0	100	100
1	D2	110/282 (39%)	109 (99%)	1 (1%)	0	100	100
1	D3	256/282 (91%)	250 (98%)	6 (2%)	0	100	100
1	D4	276/282 (98%)	270 (98%)	6 (2%)	0	100	100
1	D5	276/282 (98%)	271 (98%)	5 (2%)	0	100	100
1	D6	262/282 (93%)	255 (97%)	7 (3%)	0	100	100
1	D7	177/282 (63%)	171 (97%)	6 (3%)	0	100	100
1	E1	56/282 (20%)	55 (98%)	1 (2%)	0	100	100
1	E2	176/282 (62%)	174 (99%)	2 (1%)	0	100	100
1	E3	276/282 (98%)	272 (99%)	4 (1%)	0	100	100
1	E4	276/282 (98%)	271 (98%)	5 (2%)	0	100	100
1	E5	276/282 (98%)	270 (98%)	6 (2%)	0	100	100
1	E6	231/282 (82%)	224 (97%)	7 (3%)	0	100	100
1	E7	123/282 (44%)	121 (98%)	2 (2%)	0	100	100
1	F1	104/282 (37%)	102 (98%)	2 (2%)	0	100	100
1	F2	243/282 (86%)	236 (97%)	7 (3%)	0	100	100
1	F3	277/282 (98%)	271 (98%)	6 (2%)	0	100	100
1	F4	276/282 (98%)	270 (98%)	6 (2%)	0	100	100
1	F5	266/282 (94%)	261 (98%)	5 (2%)	0	100	100
1	F6	181/282 (64%)	179 (99%)	2 (1%)	0	100	100
1	G1	236/282 (84%)	230 (98%)	6 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	G2	131/282 (46%)	129 (98%)	2 (2%)	0	100	100
1	G5	51/282 (18%)	51 (100%)	0	0	100	100
1	G6	159/282 (56%)	154 (97%)	5 (3%)	0	100	100
1	G7	277/282 (98%)	270 (98%)	7 (2%)	0	100	100
1	G8	277/282 (98%)	271 (98%)	6 (2%)	0	100	100
1	G9	276/282 (98%)	271 (98%)	5 (2%)	0	100	100
1	H5	98/282 (35%)	98 (100%)	0	0	100	100
1	H6	234/282 (83%)	227 (97%)	7 (3%)	0	100	100
1	H7	276/282 (98%)	270 (98%)	5 (2%)	1 (0%)	30	62
1	H8	277/282 (98%)	272 (98%)	4 (1%)	1 (0%)	30	62
1	H9	272/282 (96%)	266 (98%)	6 (2%)	0	100	100
1	I4	49/282 (17%)	49 (100%)	0	0	100	100
1	I5	153/282 (54%)	150 (98%)	3 (2%)	0	100	100
1	I6	280/282 (99%)	272 (97%)	8 (3%)	0	100	100
1	I7	276/282 (98%)	271 (98%)	5 (2%)	0	100	100
1	I8	276/282 (98%)	271 (98%)	5 (2%)	0	100	100
1	I9	242/282 (86%)	238 (98%)	4 (2%)	0	100	100
1	J4	97/282 (34%)	94 (97%)	3 (3%)	0	100	100
1	J5	230/282 (82%)	224 (97%)	6 (3%)	0	100	100
1	J6	276/282 (98%)	272 (99%)	4 (1%)	0	100	100
1	J7	276/282 (98%)	269 (98%)	7 (2%)	0	100	100
1	J8	269/282 (95%)	262 (97%)	6 (2%)	1 (0%)	30	62
1	J9	195/282 (69%)	192 (98%)	3 (2%)	0	100	100
1	K3	42/282 (15%)	41 (98%)	1 (2%)	0	100	100
1	K4	277/282 (98%)	271 (98%)	6 (2%)	0	100	100
1	K5	147/282 (52%)	143 (97%)	4 (3%)	0	100	100
1	K6	276/282 (98%)	271 (98%)	5 (2%)	0	100	100
1	K7	276/282 (98%)	270 (98%)	6 (2%)	0	100	100
1	K8	249/282 (88%)	245 (98%)	4 (2%)	0	100	100
1	h0	186/282 (66%)	183 (98%)	3 (2%)	0	100	100
1	i0	144/282 (51%)	143 (99%)	1 (1%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	L1	127/300 (42%)	124 (98%)	3 (2%)	0	100	100
2	L2	230/300 (77%)	228 (99%)	2 (1%)	0	100	100
2	L3	230/300 (77%)	229 (100%)	1 (0%)	0	100	100
2	L4	230/300 (77%)	226 (98%)	4 (2%)	0	100	100
2	L5	230/300 (77%)	228 (99%)	2 (1%)	0	100	100
2	M1	225/300 (75%)	223 (99%)	2 (1%)	0	100	100
2	M2	230/300 (77%)	224 (97%)	6 (3%)	0	100	100
2	M3	230/300 (77%)	224 (97%)	6 (3%)	0	100	100
2	M4	230/300 (77%)	227 (99%)	3 (1%)	0	100	100
2	M5	192/300 (64%)	189 (98%)	3 (2%)	0	100	100
2	N1	96/300 (32%)	92 (96%)	4 (4%)	0	100	100
2	N2	230/300 (77%)	226 (98%)	3 (1%)	1 (0%)	30	62
2	N3	230/300 (77%)	225 (98%)	5 (2%)	0	100	100
2	N4	230/300 (77%)	226 (98%)	4 (2%)	0	100	100
2	N5	230/300 (77%)	227 (99%)	3 (1%)	0	100	100
2	N6	138/300 (46%)	136 (99%)	1 (1%)	1 (1%)	18	51
2	O1	216/300 (72%)	211 (98%)	5 (2%)	0	100	100
2	O2	230/300 (77%)	225 (98%)	4 (2%)	1 (0%)	30	62
2	O3	230/300 (77%)	227 (99%)	3 (1%)	0	100	100
2	O4	230/300 (77%)	226 (98%)	4 (2%)	0	100	100
2	O5	192/300 (64%)	190 (99%)	2 (1%)	0	100	100
2	P1	82/300 (27%)	80 (98%)	2 (2%)	0	100	100
2	P2	230/300 (77%)	224 (97%)	6 (3%)	0	100	100
2	P3	230/300 (77%)	225 (98%)	5 (2%)	0	100	100
2	P4	235/300 (78%)	231 (98%)	4 (2%)	0	100	100
2	P5	235/300 (78%)	232 (99%)	3 (1%)	0	100	100
2	P6	159/300 (53%)	156 (98%)	3 (2%)	0	100	100
3	Q1	232/277 (84%)	227 (98%)	5 (2%)	0	100	100
3	Q2	232/277 (84%)	226 (97%)	6 (3%)	0	100	100
3	Q3	232/277 (84%)	224 (97%)	8 (3%)	0	100	100
3	Q4	232/277 (84%)	228 (98%)	4 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	R1	196/277 (71%)	189 (96%)	7 (4%)	0	100	100
3	R2	232/277 (84%)	223 (96%)	9 (4%)	0	100	100
3	R3	232/277 (84%)	225 (97%)	7 (3%)	0	100	100
3	R4	232/277 (84%)	227 (98%)	5 (2%)	0	100	100
3	R5	232/277 (84%)	227 (98%)	5 (2%)	0	100	100
3	S2	229/277 (83%)	225 (98%)	4 (2%)	0	100	100
3	S3	232/277 (84%)	225 (97%)	7 (3%)	0	100	100
3	S4	232/277 (84%)	225 (97%)	7 (3%)	0	100	100
3	S5	232/277 (84%)	218 (94%)	13 (6%)	1 (0%)	30	62
3	S6	167/277 (60%)	162 (97%)	5 (3%)	0	100	100
4	U3	251/321 (78%)	251 (100%)	0	0	100	100
4	U4	251/321 (78%)	251 (100%)	0	0	100	100
4	U5	251/321 (78%)	250 (100%)	1 (0%)	0	100	100
4	U6	251/321 (78%)	250 (100%)	1 (0%)	0	100	100
5	V0	120/241 (50%)	112 (93%)	8 (7%)	0	100	100
5	V1	186/241 (77%)	172 (92%)	13 (7%)	1 (0%)	24	57
5	V2	186/241 (77%)	171 (92%)	14 (8%)	1 (0%)	24	57
5	V3	185/241 (77%)	171 (92%)	13 (7%)	1 (0%)	24	57
5	V4	186/241 (77%)	178 (96%)	7 (4%)	1 (0%)	24	57
5	X0	148/241 (61%)	139 (94%)	9 (6%)	0	100	100
5	X1	185/241 (77%)	177 (96%)	8 (4%)	0	100	100
5	X2	185/241 (77%)	171 (92%)	14 (8%)	0	100	100
5	X3	186/241 (77%)	178 (96%)	7 (4%)	1 (0%)	24	57
5	X4	186/241 (77%)	173 (93%)	13 (7%)	0	100	100
6	Y1	203/284 (72%)	192 (95%)	11 (5%)	0	100	100
6	Y2	213/284 (75%)	203 (95%)	9 (4%)	1 (0%)	24	57
6	Y3	225/284 (79%)	220 (98%)	4 (2%)	1 (0%)	30	62
6	Y4	219/284 (77%)	206 (94%)	13 (6%)	0	100	100
7	Z0	262/367 (71%)	253 (97%)	9 (3%)	0	100	100
7	Z1	293/367 (80%)	280 (96%)	13 (4%)	0	100	100
7	Z2	269/367 (73%)	258 (96%)	11 (4%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	Za	240/367 (65%)	237 (99%)	3 (1%)	0	100	100
8	a1	160/239 (67%)	155 (97%)	5 (3%)	0	100	100
8	a2	192/239 (80%)	189 (98%)	3 (2%)	0	100	100
8	a3	183/239 (77%)	178 (97%)	5 (3%)	0	100	100
8	a4	187/239 (78%)	180 (96%)	7 (4%)	0	100	100
8	a5	193/239 (81%)	189 (98%)	4 (2%)	0	100	100
9	b2	236/269 (88%)	228 (97%)	8 (3%)	0	100	100
9	b3	236/269 (88%)	223 (94%)	13 (6%)	0	100	100
9	b4	236/269 (88%)	229 (97%)	7 (3%)	0	100	100
10	c1	115/175 (66%)	112 (97%)	3 (3%)	0	100	100
10	c2	115/175 (66%)	112 (97%)	3 (3%)	0	100	100
10	c3	116/175 (66%)	113 (97%)	3 (3%)	0	100	100
All	All	30432/40543 (75%)	29680 (98%)	737 (2%)	15 (0%)	100	100

5 of 15 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	H7	181	LEU
6	Y2	250	LEU
1	B4	145	PRO
3	S5	164	ASP
5	V1	193	ASP

5.3.2 Protein sidechains ⓘ

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	A3	77/234 (33%)	74 (96%)	3 (4%)	28	54
1	A4	185/234 (79%)	183 (99%)	2 (1%)	65	74
1	A5	232/234 (99%)	220 (95%)	12 (5%)	21	47
1	A6	232/234 (99%)	229 (99%)	3 (1%)	61	72

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A7	232/234 (99%)	225 (97%)	7 (3%)	36	60
1	A8	178/234 (76%)	174 (98%)	4 (2%)	45	65
1	B3	103/234 (44%)	101 (98%)	2 (2%)	50	68
1	B4	232/234 (99%)	225 (97%)	7 (3%)	36	60
1	B5	233/234 (100%)	220 (94%)	13 (6%)	19	46
1	B6	233/234 (100%)	225 (97%)	8 (3%)	32	57
1	B7	214/234 (92%)	210 (98%)	4 (2%)	50	68
1	B8	142/234 (61%)	139 (98%)	3 (2%)	47	66
1	C2	61/234 (26%)	61 (100%)	0	100	100
1	C3	159/234 (68%)	156 (98%)	3 (2%)	50	68
1	C4	232/234 (99%)	215 (93%)	17 (7%)	13	38
1	C5	233/234 (100%)	224 (96%)	9 (4%)	28	54
1	C6	233/234 (100%)	228 (98%)	5 (2%)	47	66
1	C7	187/234 (80%)	184 (98%)	3 (2%)	55	70
1	C8	102/234 (44%)	97 (95%)	5 (5%)	22	48
1	D2	96/234 (41%)	93 (97%)	3 (3%)	35	59
1	D3	220/234 (94%)	214 (97%)	6 (3%)	39	62
1	D4	232/234 (99%)	228 (98%)	4 (2%)	53	70
1	D5	232/234 (99%)	226 (97%)	6 (3%)	40	62
1	D6	218/234 (93%)	210 (96%)	8 (4%)	30	56
1	D7	146/234 (62%)	145 (99%)	1 (1%)	76	78
1	E1	52/234 (22%)	52 (100%)	0	100	100
1	E2	147/234 (63%)	140 (95%)	7 (5%)	23	49
1	E3	232/234 (99%)	222 (96%)	10 (4%)	26	51
1	E4	232/234 (99%)	222 (96%)	10 (4%)	26	51
1	E5	232/234 (99%)	222 (96%)	10 (4%)	26	51
1	E6	193/234 (82%)	193 (100%)	0	100	100
1	E7	104/234 (44%)	98 (94%)	6 (6%)	18	44
1	F1	90/234 (38%)	84 (93%)	6 (7%)	15	41
1	F2	207/234 (88%)	201 (97%)	6 (3%)	37	60
1	F3	233/234 (100%)	225 (97%)	8 (3%)	32	57

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	F4	232/234 (99%)	227 (98%)	5 (2%)	45	65
1	F5	222/234 (95%)	215 (97%)	7 (3%)	34	59
1	F6	149/234 (64%)	148 (99%)	1 (1%)	76	78
1	G1	198/234 (85%)	188 (95%)	10 (5%)	21	48
1	G2	112/234 (48%)	109 (97%)	3 (3%)	39	62
1	G5	47/234 (20%)	47 (100%)	0	100	100
1	G6	139/234 (59%)	137 (99%)	2 (1%)	59	71
1	G7	233/234 (100%)	230 (99%)	3 (1%)	61	72
1	G8	233/234 (100%)	227 (97%)	6 (3%)	40	62
1	G9	232/234 (99%)	226 (97%)	6 (3%)	40	62
1	H5	87/234 (37%)	86 (99%)	1 (1%)	65	74
1	H6	202/234 (86%)	190 (94%)	12 (6%)	18	44
1	H7	232/234 (99%)	213 (92%)	19 (8%)	10	34
1	H8	233/234 (100%)	223 (96%)	10 (4%)	26	51
1	H9	228/234 (97%)	218 (96%)	10 (4%)	25	51
1	I4	45/234 (19%)	44 (98%)	1 (2%)	45	65
1	I5	133/234 (57%)	129 (97%)	4 (3%)	36	60
1	I6	234/234 (100%)	226 (97%)	8 (3%)	32	57
1	I7	232/234 (99%)	222 (96%)	10 (4%)	26	51
1	I8	232/234 (99%)	223 (96%)	9 (4%)	28	54
1	I9	203/234 (87%)	194 (96%)	9 (4%)	25	51
1	J4	86/234 (37%)	81 (94%)	5 (6%)	18	44
1	J5	194/234 (83%)	188 (97%)	6 (3%)	35	59
1	J6	232/234 (99%)	224 (97%)	8 (3%)	32	57
1	J7	232/234 (99%)	228 (98%)	4 (2%)	53	70
1	J8	225/234 (96%)	216 (96%)	9 (4%)	28	54
1	J9	163/234 (70%)	158 (97%)	5 (3%)	35	59
1	K3	39/234 (17%)	37 (95%)	2 (5%)	21	48
1	K4	233/234 (100%)	224 (96%)	9 (4%)	28	54
1	K5	129/234 (55%)	126 (98%)	3 (2%)	44	64
1	K6	232/234 (99%)	220 (95%)	12 (5%)	21	47

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	K7	232/234 (99%)	227 (98%)	5 (2%)	45	65
1	K8	208/234 (89%)	202 (97%)	6 (3%)	37	60
1	h0	156/234 (67%)	152 (97%)	4 (3%)	40	62
1	i0	123/234 (53%)	122 (99%)	1 (1%)	73	77
2	L1	115/275 (42%)	113 (98%)	2 (2%)	53	70
2	L2	204/275 (74%)	194 (95%)	10 (5%)	22	48
2	L3	204/275 (74%)	196 (96%)	8 (4%)	28	54
2	L4	204/275 (74%)	197 (97%)	7 (3%)	32	57
2	L5	204/275 (74%)	196 (96%)	8 (4%)	28	54
2	M1	201/275 (73%)	195 (97%)	6 (3%)	36	60
2	M2	204/275 (74%)	197 (97%)	7 (3%)	32	57
2	M3	204/275 (74%)	196 (96%)	8 (4%)	28	54
2	M4	204/275 (74%)	198 (97%)	6 (3%)	37	60
2	M5	171/275 (62%)	169 (99%)	2 (1%)	63	73
2	N1	91/275 (33%)	89 (98%)	2 (2%)	45	65
2	N2	204/275 (74%)	194 (95%)	10 (5%)	22	48
2	N3	204/275 (74%)	198 (97%)	6 (3%)	37	60
2	N4	204/275 (74%)	196 (96%)	8 (4%)	28	54
2	N5	204/275 (74%)	198 (97%)	6 (3%)	37	60
2	N6	121/275 (44%)	118 (98%)	3 (2%)	42	63
2	O1	192/275 (70%)	185 (96%)	7 (4%)	31	57
2	O2	202/275 (74%)	193 (96%)	9 (4%)	24	50
2	O3	203/275 (74%)	197 (97%)	6 (3%)	36	60
2	O4	203/275 (74%)	197 (97%)	6 (3%)	36	60
2	O5	171/275 (62%)	164 (96%)	7 (4%)	27	53
2	P1	77/275 (28%)	77 (100%)	0	100	100
2	P2	204/275 (74%)	193 (95%)	11 (5%)	20	46
2	P3	204/275 (74%)	195 (96%)	9 (4%)	25	51
2	P4	206/275 (75%)	201 (98%)	5 (2%)	43	64
2	P5	206/275 (75%)	201 (98%)	5 (2%)	43	64
2	P6	138/275 (50%)	133 (96%)	5 (4%)	31	57

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	Q1	214/248 (86%)	207 (97%)	7 (3%)	33	58
3	Q2	214/248 (86%)	209 (98%)	5 (2%)	44	64
3	Q3	214/248 (86%)	209 (98%)	5 (2%)	44	64
3	Q4	214/248 (86%)	208 (97%)	6 (3%)	38	61
3	R1	184/248 (74%)	179 (97%)	5 (3%)	39	62
3	R2	214/248 (86%)	205 (96%)	9 (4%)	26	52
3	R3	214/248 (86%)	208 (97%)	6 (3%)	38	61
3	R4	214/248 (86%)	204 (95%)	10 (5%)	23	49
3	R5	214/248 (86%)	206 (96%)	8 (4%)	30	56
3	S2	210/248 (85%)	204 (97%)	6 (3%)	37	60
3	S3	213/248 (86%)	208 (98%)	5 (2%)	44	64
3	S4	214/248 (86%)	210 (98%)	4 (2%)	50	68
3	S5	214/248 (86%)	201 (94%)	13 (6%)	17	43
3	S6	155/248 (62%)	151 (97%)	4 (3%)	40	62
4	U3	226/285 (79%)	217 (96%)	9 (4%)	28	54
4	U4	226/285 (79%)	219 (97%)	7 (3%)	35	59
4	U5	226/285 (79%)	222 (98%)	4 (2%)	51	69
4	U6	226/285 (79%)	220 (97%)	6 (3%)	39	62
5	V0	6/209 (3%)	6 (100%)	0	100	100
5	V1	170/209 (81%)	166 (98%)	4 (2%)	43	64
5	V2	170/209 (81%)	162 (95%)	8 (5%)	23	49
5	V3	169/209 (81%)	163 (96%)	6 (4%)	31	57
5	V4	169/209 (81%)	162 (96%)	7 (4%)	27	53
5	X0	8/209 (4%)	8 (100%)	0	100	100
5	X1	169/209 (81%)	162 (96%)	7 (4%)	27	53
5	X2	169/209 (81%)	162 (96%)	7 (4%)	27	53
5	X3	170/209 (81%)	160 (94%)	10 (6%)	18	44
5	X4	170/209 (81%)	168 (99%)	2 (1%)	63	73
6	Y1	197/254 (78%)	184 (93%)	13 (7%)	15	41
6	Y2	208/254 (82%)	198 (95%)	10 (5%)	23	49
6	Y3	216/254 (85%)	208 (96%)	8 (4%)	30	56

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	Y4	211/254 (83%)	192 (91%)	19 (9%)	9	32
7	Z0	241/325 (74%)	238 (99%)	3 (1%)	63	73
7	Z1	270/325 (83%)	264 (98%)	6 (2%)	45	65
7	Z2	247/325 (76%)	245 (99%)	2 (1%)	73	77
7	Za	224/325 (69%)	220 (98%)	4 (2%)	51	69
8	a1	150/209 (72%)	147 (98%)	3 (2%)	48	67
8	a2	178/209 (85%)	170 (96%)	8 (4%)	24	50
8	a3	172/209 (82%)	166 (96%)	6 (4%)	32	57
8	a4	176/209 (84%)	172 (98%)	4 (2%)	44	64
8	a5	179/209 (86%)	172 (96%)	7 (4%)	28	54
9	b2	12/242 (5%)	12 (100%)	0	100	100
9	b3	215/242 (89%)	211 (98%)	4 (2%)	50	68
9	b4	215/242 (89%)	206 (96%)	9 (4%)	26	52
10	c1	4/166 (2%)	4 (100%)	0	100	100
10	c2	113/166 (68%)	111 (98%)	2 (2%)	51	69
10	c3	114/166 (69%)	113 (99%)	1 (1%)	70	76
All	All	26175/35092 (75%)	25311 (97%)	864 (3%)	34	58

5 of 864 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	M3	230	TYR
2	P5	272	THR
6	Y4	263	ILE
2	N1	88	LEU
2	M3	229	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 675 such sidechains are listed below:

Mol	Chain	Res	Type
2	N5	209	ASN
3	S4	161	GLN
2	O3	117	ASN
2	N5	174	HIS
3	Q2	186	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 10 ligands modelled in this entry, 10 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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.

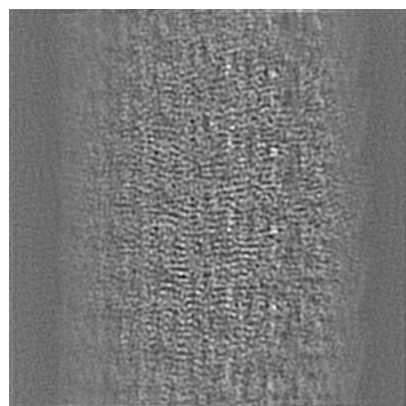
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-75270. These allow visual inspection of the internal detail of the map and identification of artifacts.

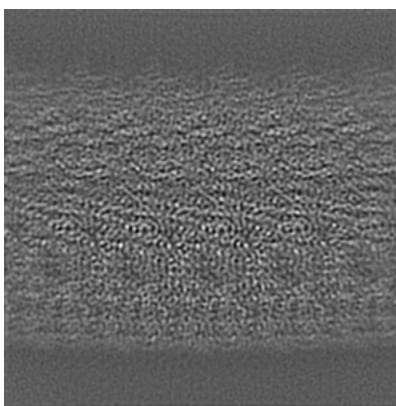
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

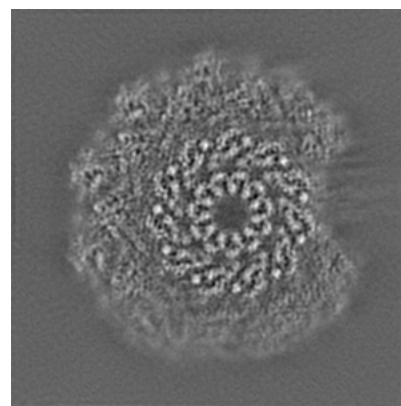
6.1.1 Primary map



X

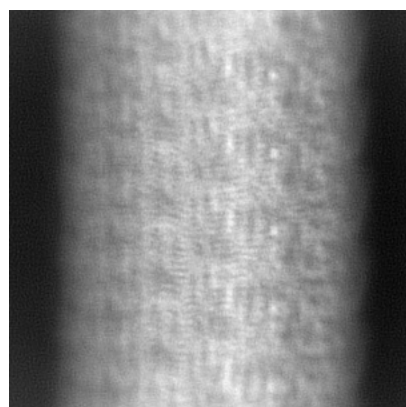


Y

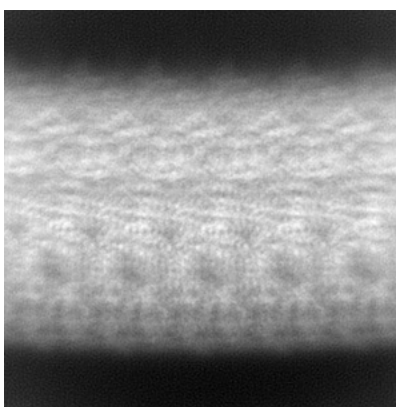


Z

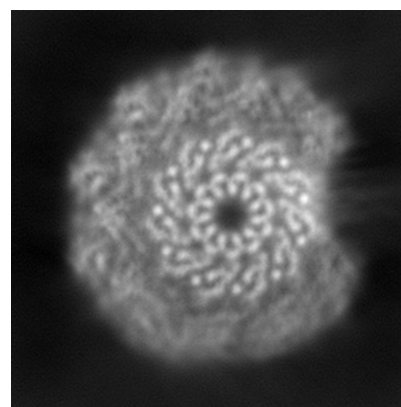
6.1.2 Raw map



X



Y

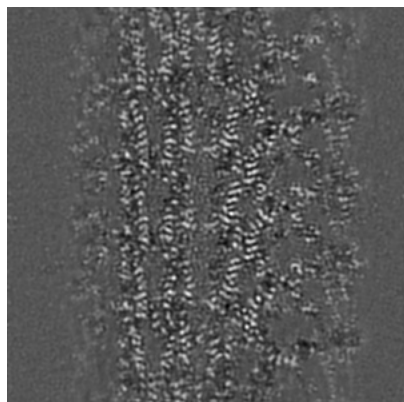


Z

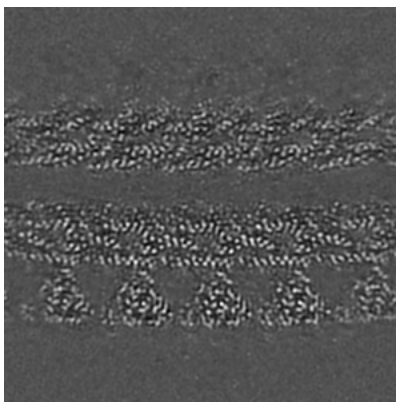
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

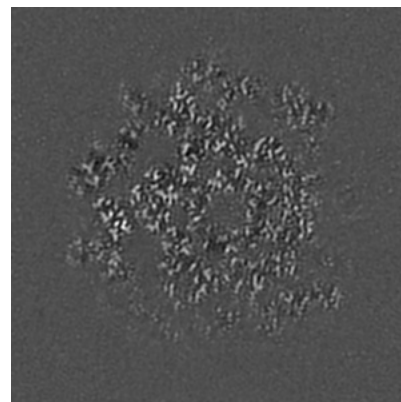
6.2.1 Primary map



X Index: 128

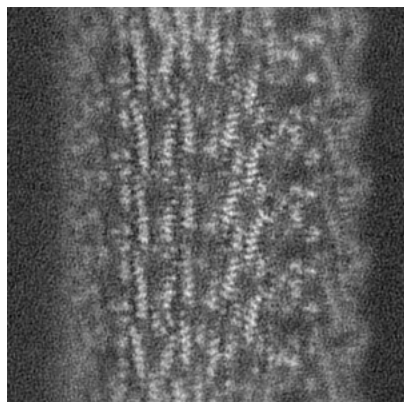


Y Index: 128

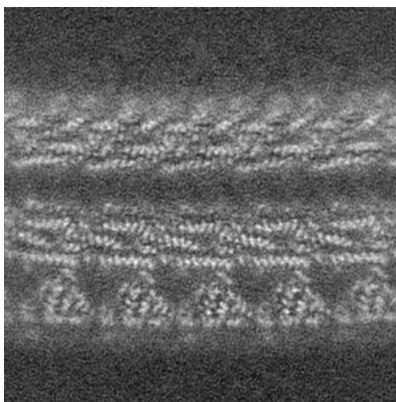


Z Index: 128

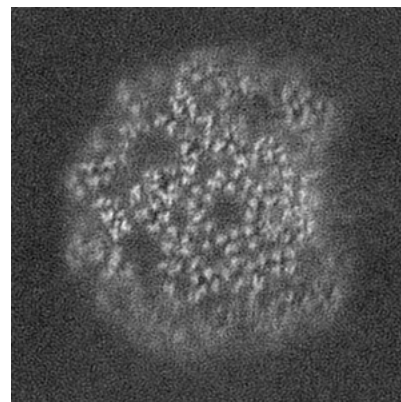
6.2.2 Raw map



X Index: 128



Y Index: 128

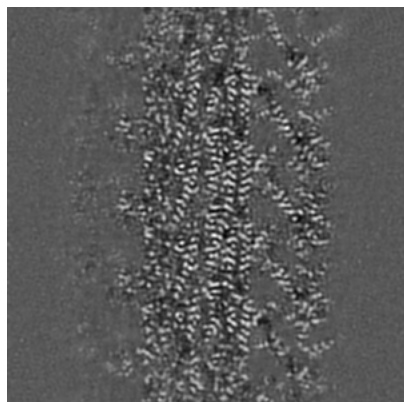


Z Index: 128

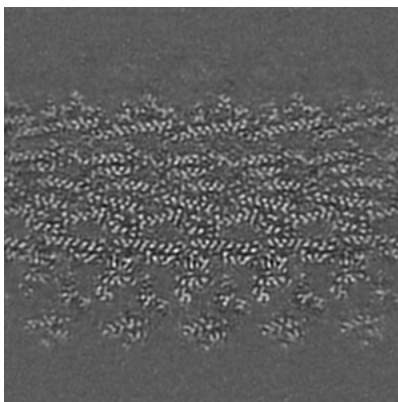
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

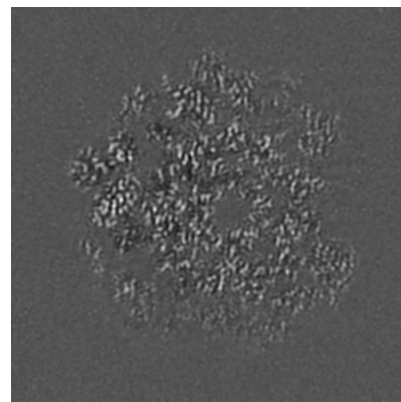
6.3.1 Primary map



X Index: 102

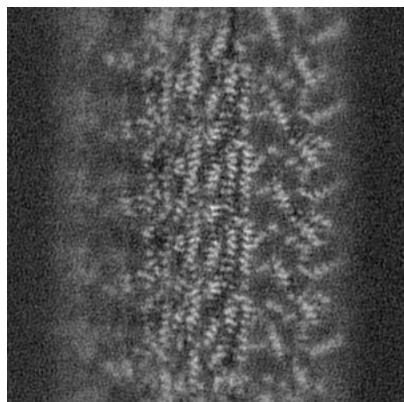


Y Index: 141

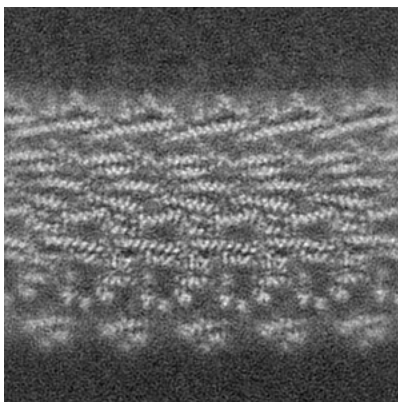


Z Index: 139

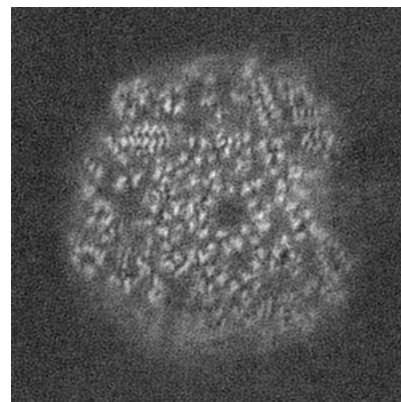
6.3.2 Raw map



X Index: 101



Y Index: 141

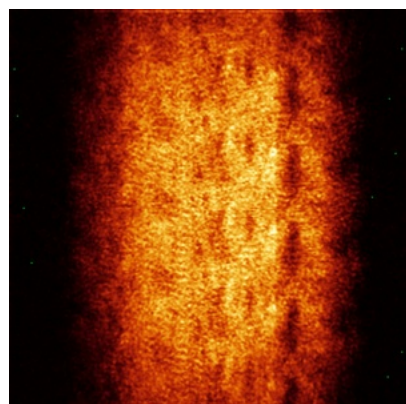


Z Index: 113

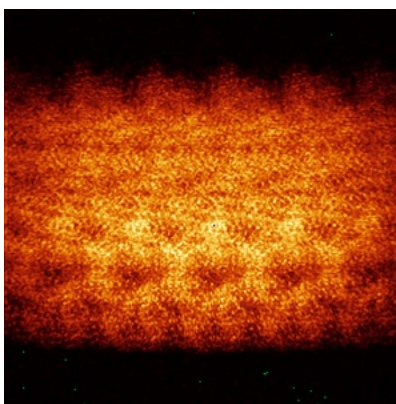
The images above show the largest variance slices of the map in three orthogonal directions.

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

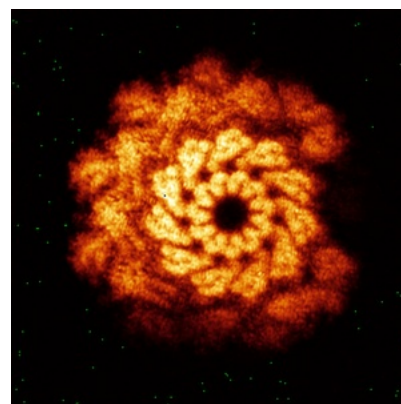
6.4.1 Primary map



X

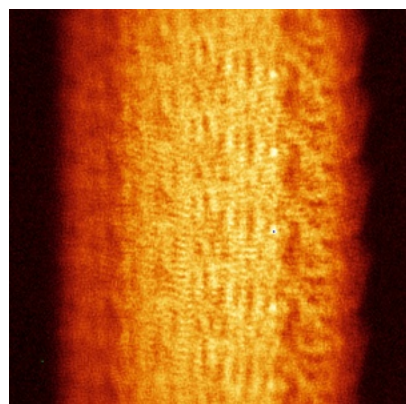


Y

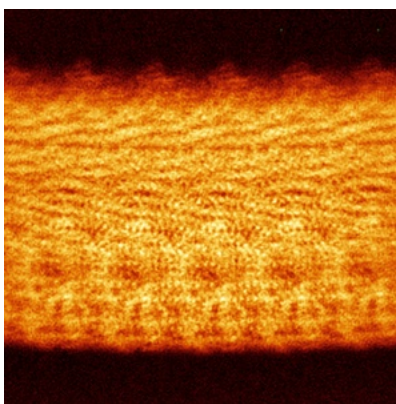


Z

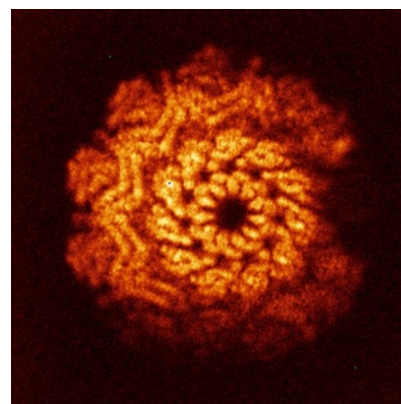
6.4.2 Raw map



X



Y

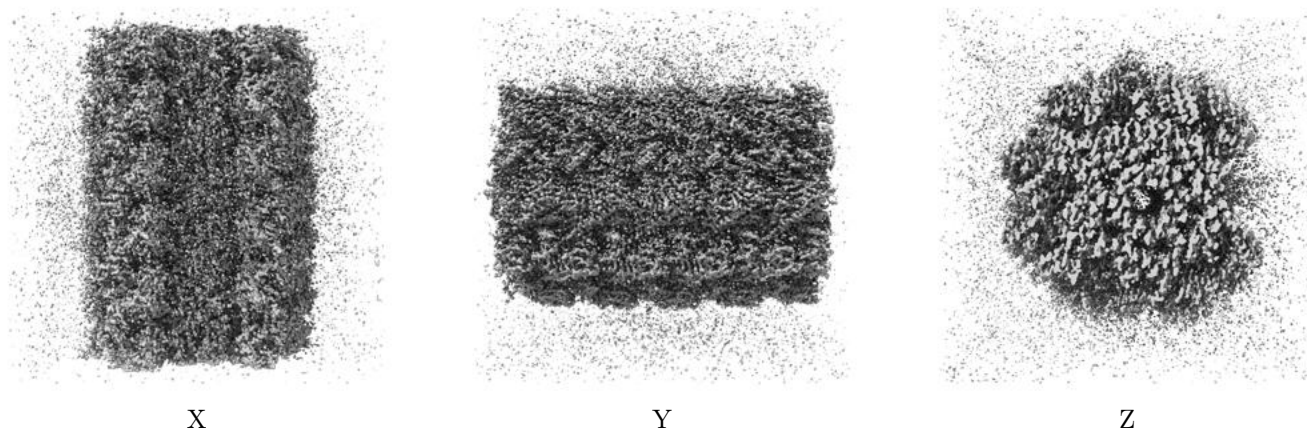


Z

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.

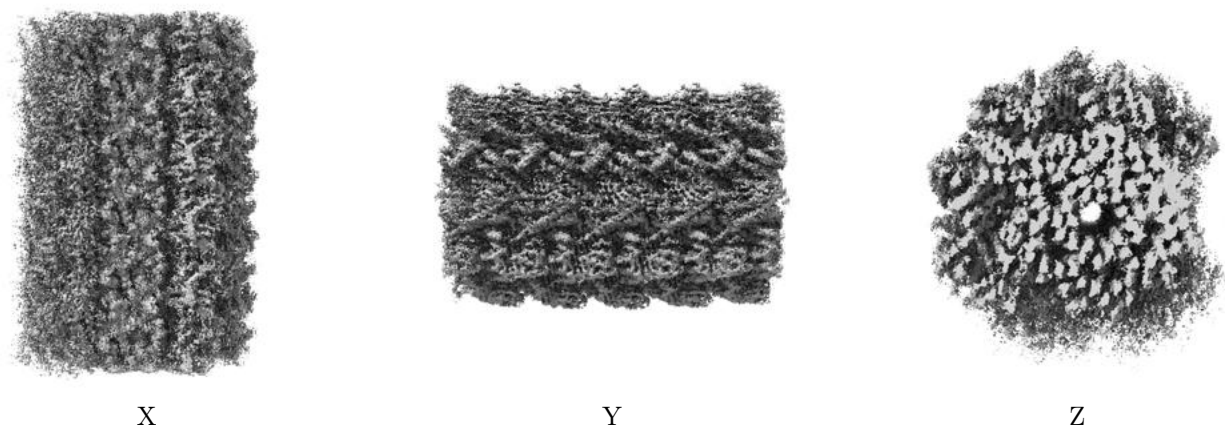
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.05. 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



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

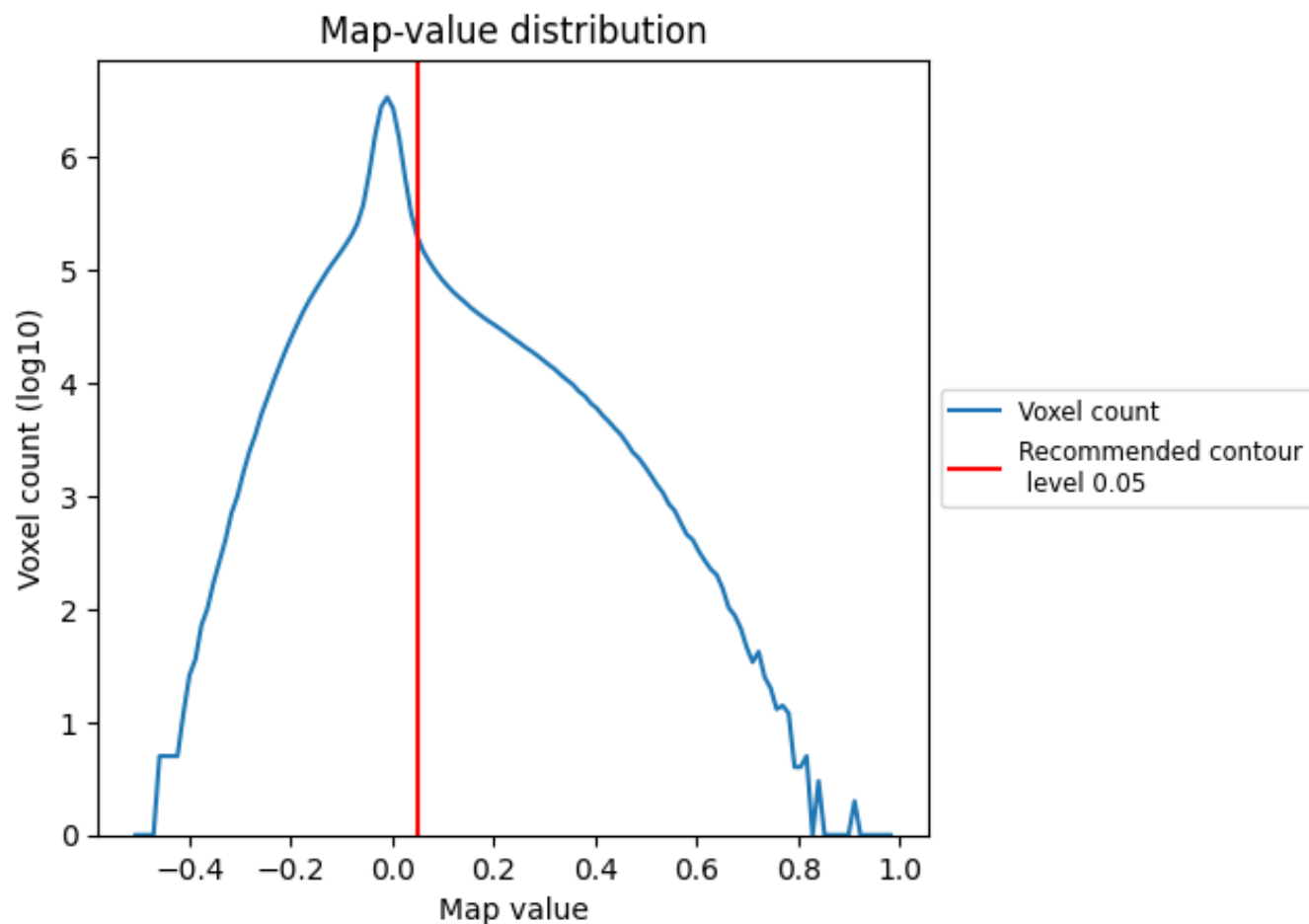
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

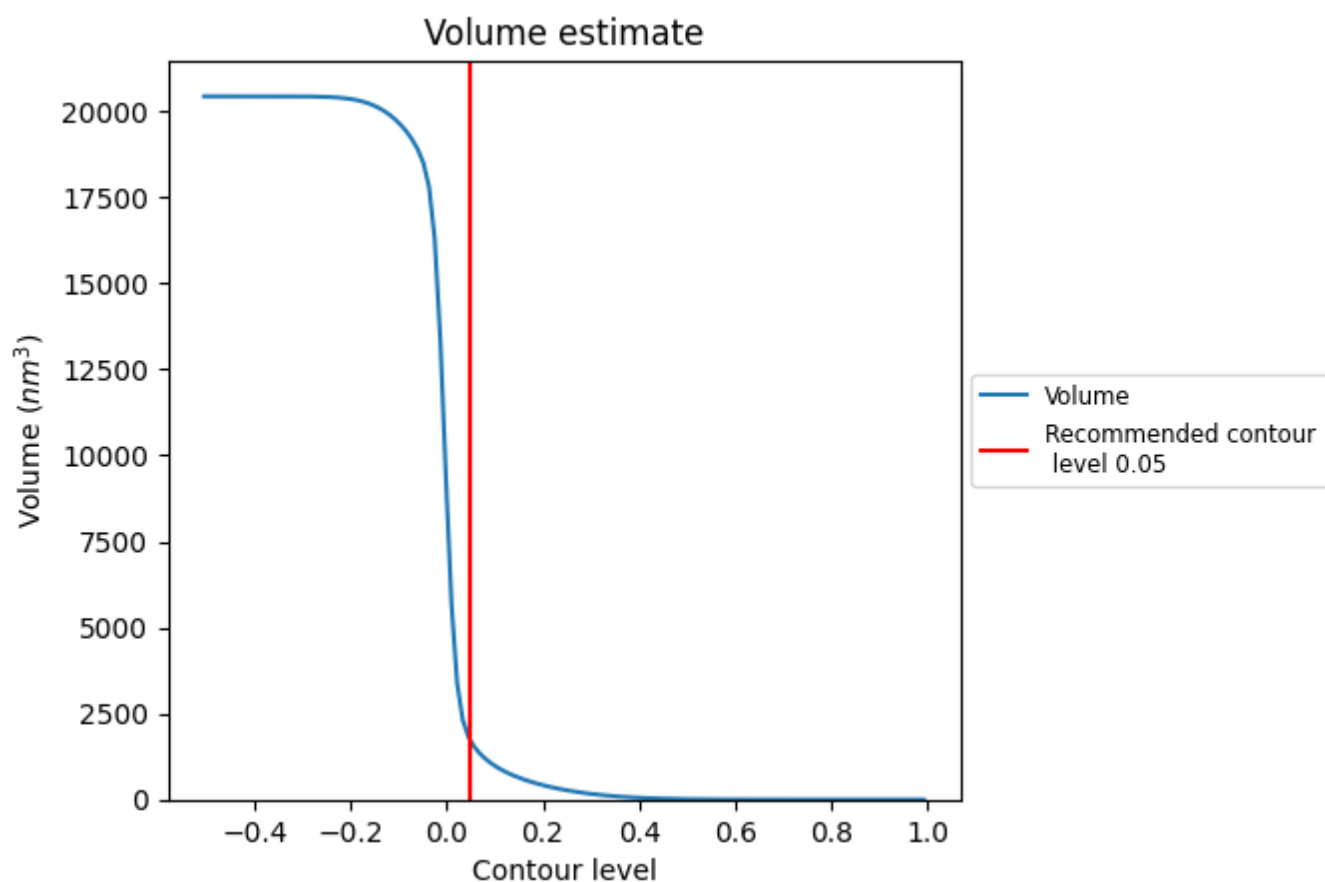
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

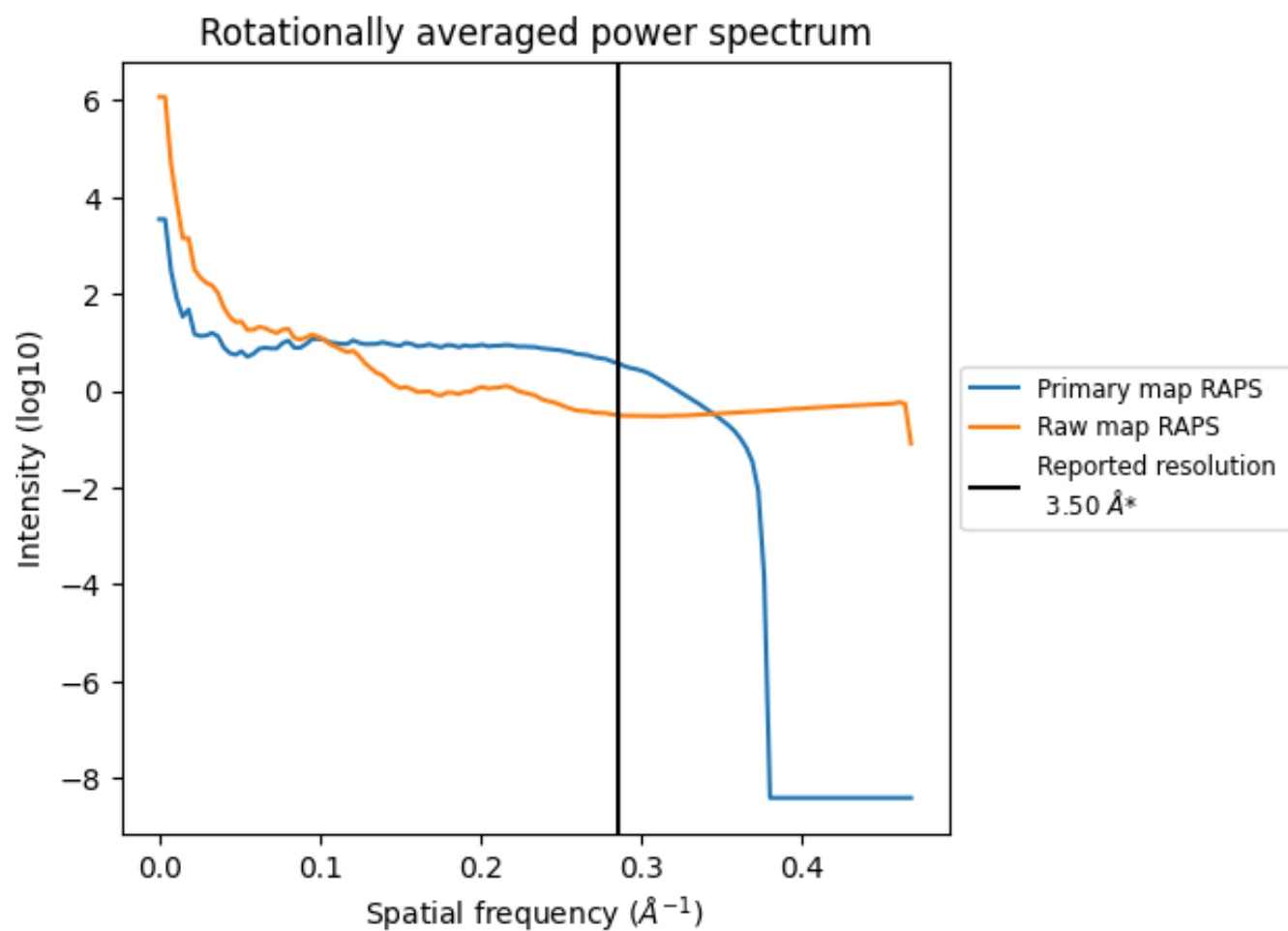
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1700 nm³; this corresponds to an approximate mass of 1536 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 ⓘ

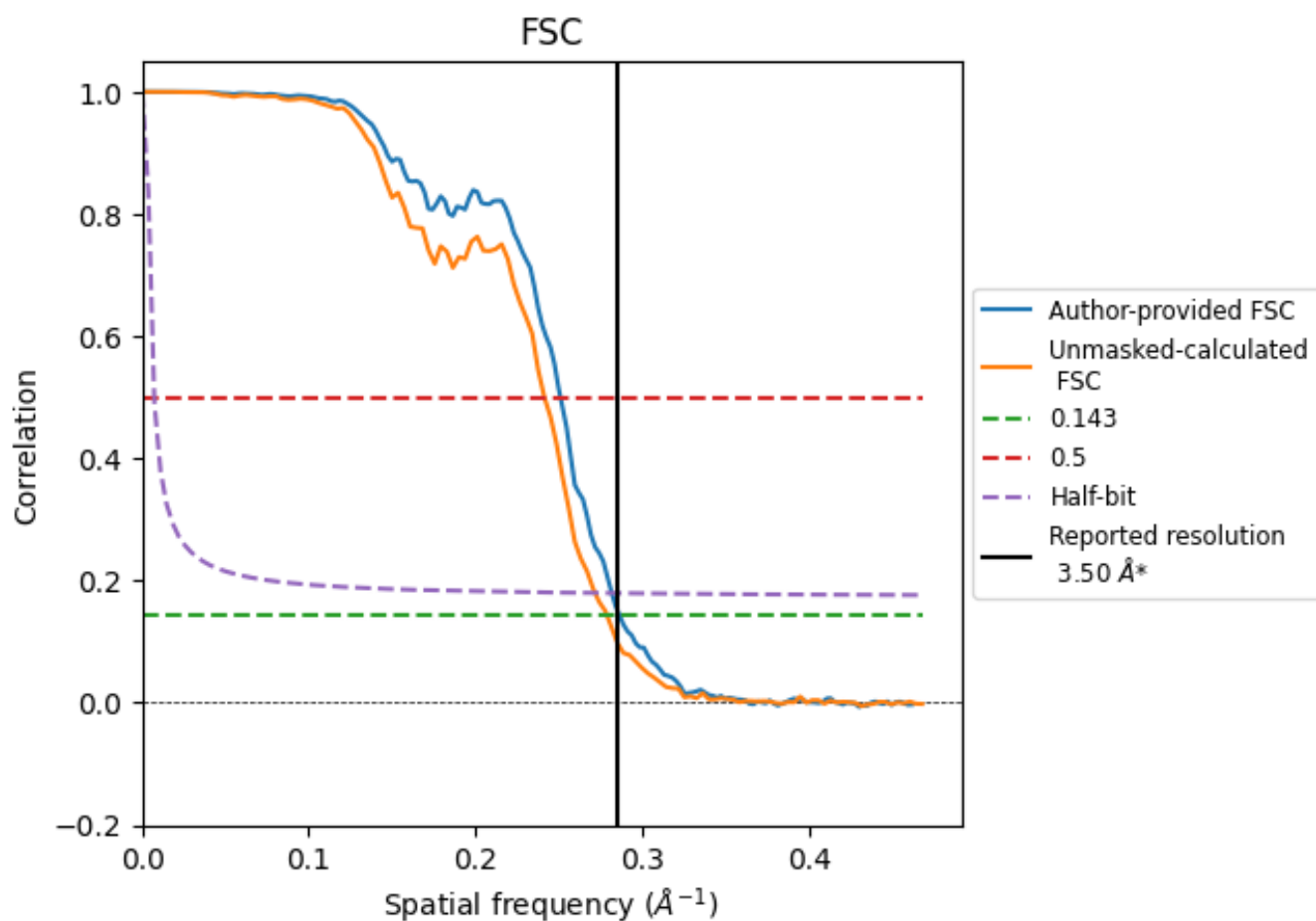


*Reported resolution corresponds to spatial frequency of 0.286 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.286 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

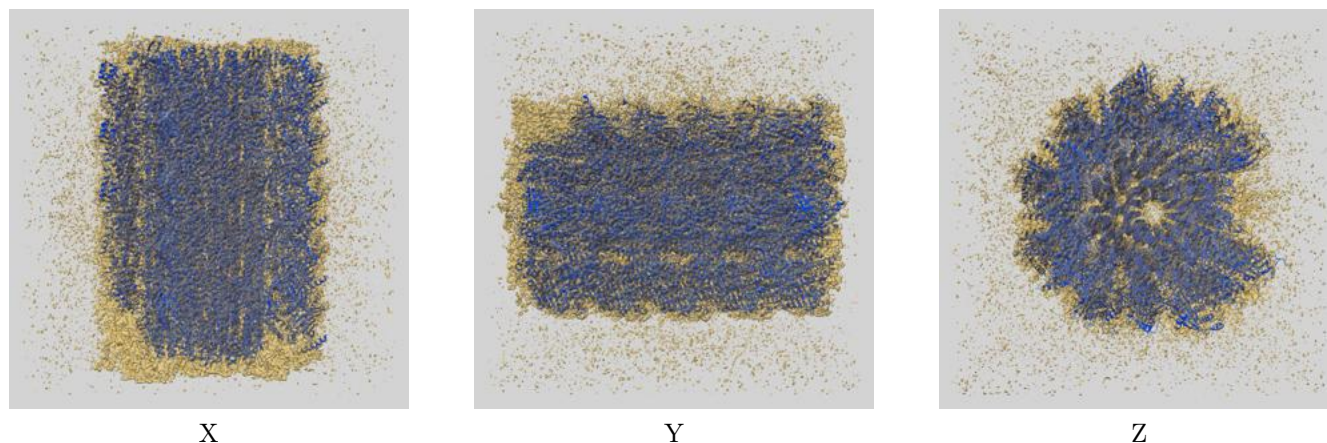
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.50	-	-
Author-provided FSC curve	3.49	3.98	3.54
Unmasked-calculated*	3.58	4.14	3.68

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

9 Map-model fit [i](#)

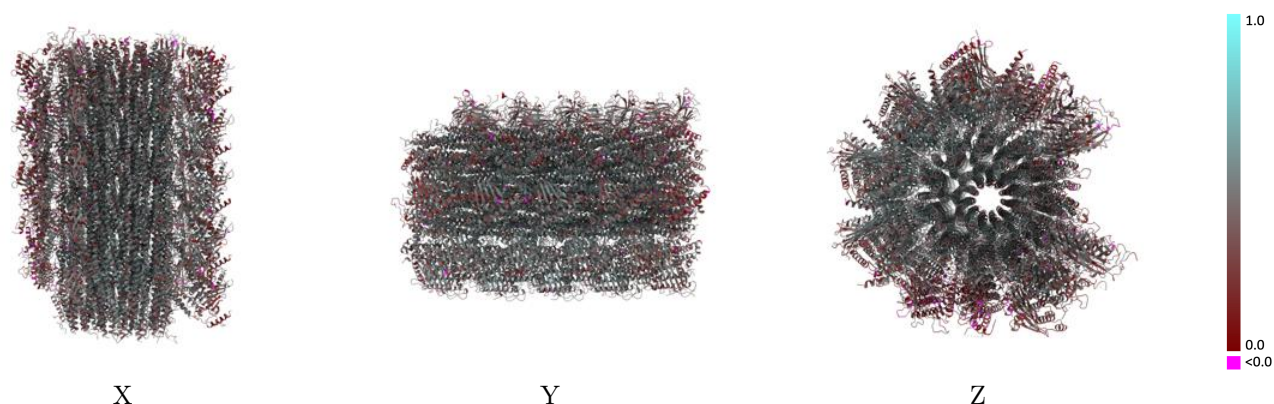
This section contains information regarding the fit between EMDB map EMD-75270 and PDB model 10LM. Per-residue inclusion information can be found in section [3](#) on page [18](#).

9.1 Map-model overlay [i](#)



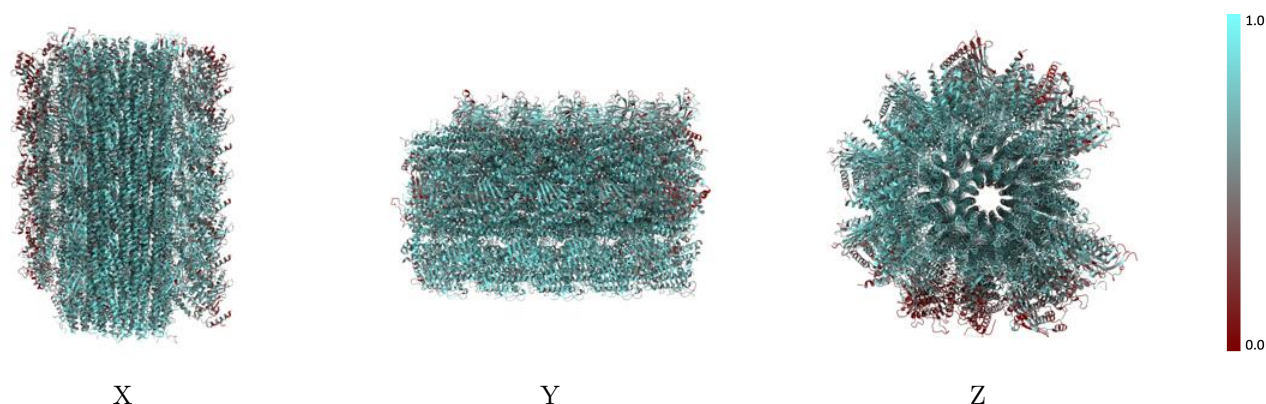
The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



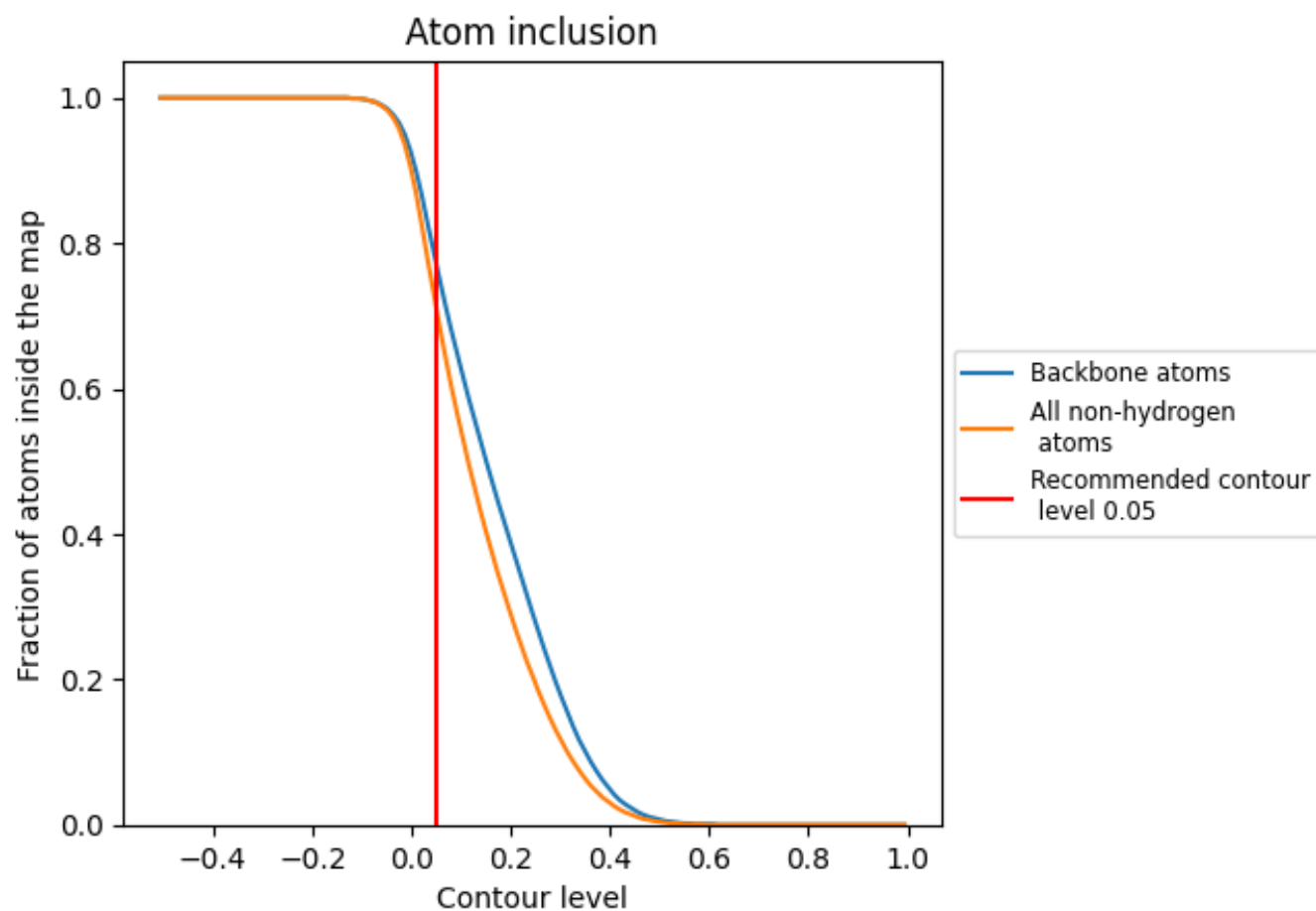
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.05).

9.4 Atom inclusion [i](#)



At the recommended contour level, 77% of all backbone atoms, 71% 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 (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7100	 0.4380
A3	 0.7200	 0.4270
A4	 0.7120	 0.4180
A5	 0.7730	 0.4600
A6	 0.7990	 0.4810
A7	 0.7970	 0.4870
A8	 0.7840	 0.4760
B3	 0.7360	 0.4220
B4	 0.7330	 0.4260
B5	 0.7840	 0.4760
B6	 0.8170	 0.4940
B7	 0.7990	 0.4770
B8	 0.7480	 0.4490
C2	 0.7800	 0.4640
C3	 0.7780	 0.4760
C4	 0.8120	 0.5040
C5	 0.8160	 0.5050
C6	 0.8040	 0.4900
C7	 0.7610	 0.4570
C8	 0.6890	 0.4120
D2	 0.7900	 0.4880
D3	 0.7800	 0.4760
D4	 0.8320	 0.5150
D5	 0.8400	 0.5210
D6	 0.8240	 0.5080
D7	 0.7790	 0.4630
E1	 0.7430	 0.4500
E2	 0.8030	 0.4950
E3	 0.8140	 0.5130
E4	 0.8360	 0.5260
E5	 0.8310	 0.5180
E6	 0.8250	 0.5120
E7	 0.7480	 0.4550
F1	 0.8110	 0.4950
F2	 0.7900	 0.4930



Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
F3	 0.8360	 0.5230
F4	 0.8410	 0.5220
F5	 0.8360	 0.5150
F6	 0.8200	 0.5090
G1	 0.8280	 0.5090
G2	 0.7530	 0.4700
G5	 0.7780	 0.4690
G6	 0.8110	 0.4930
G7	 0.8040	 0.5060
G8	 0.8360	 0.5190
G9	 0.8400	 0.5130
H5	 0.7690	 0.4690
H6	 0.7620	 0.4530
H7	 0.8230	 0.5040
H8	 0.8150	 0.5090
H9	 0.8280	 0.5150
I4	 0.7640	 0.4500
I5	 0.7650	 0.4700
I6	 0.7690	 0.4660
I7	 0.8090	 0.4890
I8	 0.8080	 0.4860
I9	 0.7610	 0.4640
J4	 0.7420	 0.4500
J5	 0.7230	 0.4250
J6	 0.7880	 0.4760
J7	 0.7850	 0.4750
J8	 0.7780	 0.4650
J9	 0.7630	 0.4640
K3	 0.7320	 0.4310
K4	 0.7590	 0.4470
K5	 0.7470	 0.4500
K6	 0.7830	 0.4710
K7	 0.7870	 0.4710
K8	 0.7780	 0.4630
L1	 0.5590	 0.3250
L2	 0.7120	 0.4190
L3	 0.7730	 0.4510
L4	 0.7410	 0.4360
L5	 0.6820	 0.3950
M1	 0.7050	 0.3970
M2	 0.8070	 0.4950
M3	 0.8150	 0.5040

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
M4	 0.7860	 0.4860
M5	 0.7490	 0.4400
N1	 0.7020	 0.4120
N2	 0.7950	 0.4890
N3	 0.8210	 0.5100
N4	 0.8160	 0.5070
N5	 0.7800	 0.4850
N6	 0.7400	 0.4510
O1	 0.7120	 0.4370
O2	 0.8130	 0.4930
O3	 0.8320	 0.5100
O4	 0.8060	 0.4850
O5	 0.7610	 0.4620
P1	 0.5340	 0.3600
P2	 0.6870	 0.4130
P3	 0.7690	 0.4600
P4	 0.7620	 0.4560
P5	 0.6910	 0.4210
P6	 0.6260	 0.3850
Q1	 0.6240	 0.3710
Q2	 0.7350	 0.4350
Q3	 0.7480	 0.4410
Q4	 0.7130	 0.4300
R1	 0.6420	 0.3950
R2	 0.7520	 0.4540
R3	 0.7850	 0.4730
R4	 0.7730	 0.4660
R5	 0.6970	 0.4270
S2	 0.5930	 0.3760
S3	 0.6950	 0.4290
S4	 0.7280	 0.4430
S5	 0.6650	 0.4170
S6	 0.5450	 0.3600
U3	 0.2780	 0.2550
U4	 0.3890	 0.2700
U5	 0.3910	 0.2760
U6	 0.3300	 0.2600
V0	 0.5510	 0.3660
V1	 0.5930	 0.3580
V2	 0.6550	 0.3840
V3	 0.6440	 0.3740
V4	 0.5860	 0.3530

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
X0	 0.5220	 0.3750
X1	 0.5440	 0.3640
X2	 0.6010	 0.3770
X3	 0.6060	 0.3760
X4	 0.5390	 0.3590
Y1	 0.4500	 0.3050
Y2	 0.6120	 0.3580
Y3	 0.6170	 0.3640
Y4	 0.5720	 0.3480
Z0	 0.6110	 0.3950
Z1	 0.6260	 0.3920
Z2	 0.5980	 0.3780
Za	 0.5220	 0.3730
a1	 0.3980	 0.2940
a2	 0.5470	 0.3440
a3	 0.6560	 0.4100
a4	 0.6240	 0.3790
a5	 0.4630	 0.3110
b2	 0.2820	 0.2650
b3	 0.3190	 0.2380
b4	 0.2870	 0.2380
c1	 0.3650	 0.2930
c2	 0.3880	 0.3040
c3	 0.4600	 0.3200
h0	 0.7860	 0.4890
i0	 0.7060	 0.4310