



wwPDB EM Validation Summary Report ⓘ

Aug 17, 2026 – 09:36 pm BST

PDB ID : 9T64 / pdb_00009t64
EMDB ID : EMD-55604
Title : Cytoplasmic lattice filament repeat unit with the central FBXW-SKP1 complex
Authors : Singh, K.; Harasimov, K.; Carter, A.P.
Deposited on : 2025-11-06
Resolution : 7.30 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

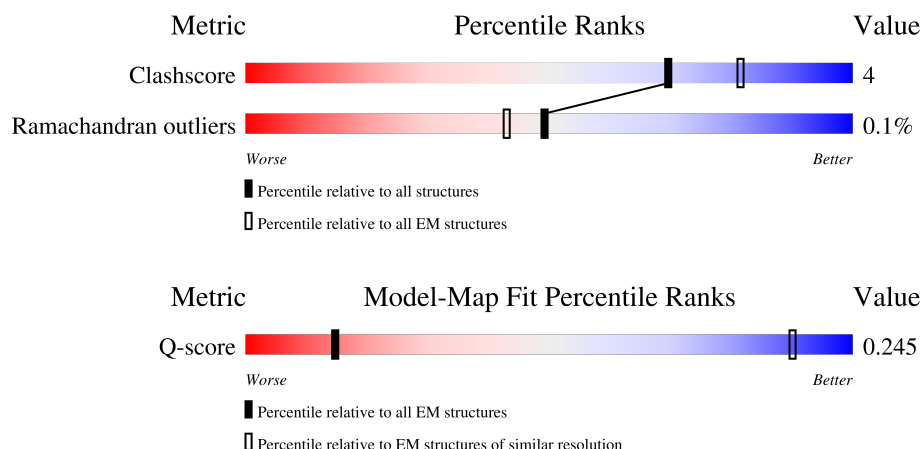
EMDB validation analysis : 0.0.1.dev133
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & 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 7.30 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.



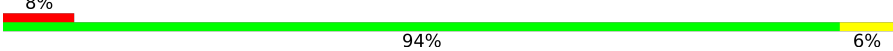
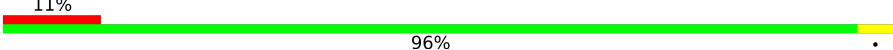
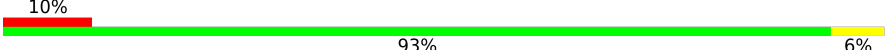
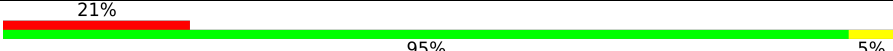
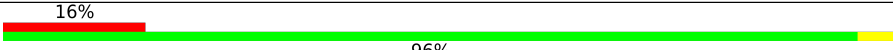
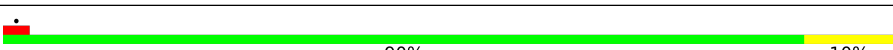
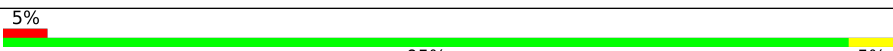
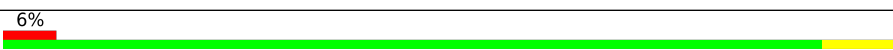
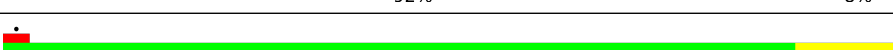
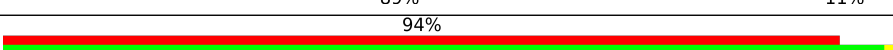
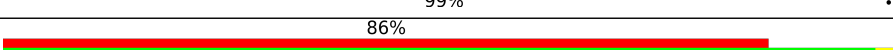
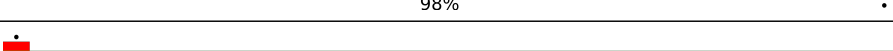
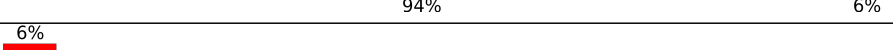
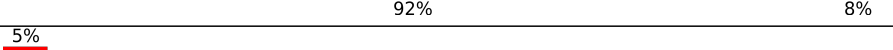
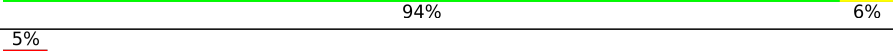
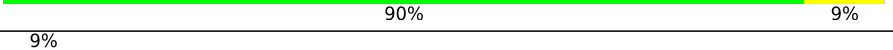
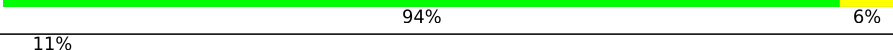
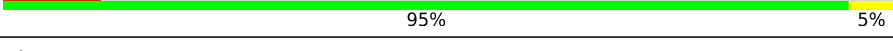
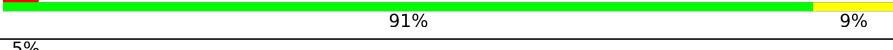
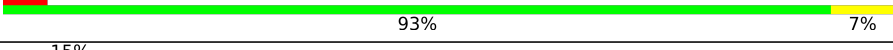
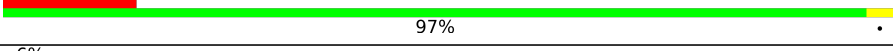
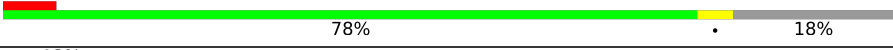
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Q-score	-	25397	436 (6.80 - 7.80)

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

Mol	Chain	Length	Quality of chain
1	0	440	
1	S	440	
2	1	682	
2	2	682	
2	3	682	

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Mol	Chain	Length	Quality of chain
2	A	682	
2	B	682	
2	C	682	
2	D	682	
2	E	682	
2	F	682	
2	G	682	
2	H	682	
2	I	682	
2	J	682	
2	K	682	
2	L	682	
2	m	682	
2	s	682	
2	t	682	
2	u	682	
2	v	682	
2	w	682	
2	x	682	
2	y	682	
2	z	682	
3	4	1163	
3	7	1163	
3	M	1163	
3	P	1163	

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Mol	Chain	Length	Quality of chain
4	5	581	
4	8	581	
4	N	581	
4	Q	581	
5	6	164	
5	9	164	
5	O	164	
5	R	164	
6	AA	228	
6	T	228	
7	AE	937	
7	AF	937	
7	X	937	
7	Y	937	
8	AG	993	
8	Z	993	
8	n	993	
9	AH	782	
9	a	782	
9	o	782	
10	AI	147	
10	b	147	
10	p	147	
11	AJ	449	
11	c	449	

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Mol	Chain	Length	Quality of chain
11	q	449	
12	AK	445	
12	d	445	
12	r	445	
13	AL	466	
13	AN	466	
13	U	466	
13	e	466	
13	g	466	
14	AM	163	
14	AO	163	
14	f	163	
14	h	163	
14	j	163	

2 Entry composition [i](#)

There are 14 unique types of molecules in this entry. The entry contains 183153 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 KH domain-containing protein 3.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	0	136	Total	C	N	O	0	0
			673	401	136	136		
1	S	136	Total	C	N	O	0	0
			673	401	136	136		

- Molecule 2 is a protein called Inactive protein-arginine deiminase type-6.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	1	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	2	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	3	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	A	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	B	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	C	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	D	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	E	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	F	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	G	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	H	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	I	682	Total	C	N	O	0	0
			3373	2009	682	682		
2	J	682	Total	C	N	O	0	0
			3373	2009	682	682		

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Mol	Chain	Residues	Atoms				AltConf	Trace
2	K	682	Total 3373	C 2009	N 682	O 682	0	0
2	L	682	Total 3373	C 2009	N 682	O 682	0	0
2	m	682	Total 3373	C 2009	N 682	O 682	0	0
2	s	682	Total 3373	C 2009	N 682	O 682	0	0
2	t	682	Total 3373	C 2009	N 682	O 682	0	0
2	u	682	Total 3373	C 2009	N 682	O 682	0	0
2	v	682	Total 3373	C 2009	N 682	O 682	0	0
2	w	682	Total 3373	C 2009	N 682	O 682	0	0
2	x	682	Total 3373	C 2009	N 682	O 682	0	0
2	y	682	Total 3373	C 2009	N 682	O 682	0	0
2	z	682	Total 3373	C 2009	N 682	O 682	0	0

- Molecule 3 is a protein called NACHT, LRR and PYD domains-containing protein 5.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	4	949	Total 4702	C 2804	N 949	O 949	0	0
3	7	949	Total 4702	C 2804	N 949	O 949	0	0
3	M	949	Total 4702	C 2804	N 949	O 949	0	0
3	P	949	Total 4702	C 2804	N 949	O 949	0	0

- Molecule 4 is a protein called Transducin-like enhancer protein 6.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	5	367	Total 1812	C 1078	N 367	O 367	0	0
4	8	367	Total 1812	C 1078	N 367	O 367	0	0

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Mol	Chain	Residues	Atoms				AltConf	Trace
4	N	367	Total	C	N	O	0	0
			1812	1078	367	367		
4	Q	367	Total	C	N	O	0	0
			1812	1078	367	367		

- Molecule 5 is a protein called Oocyte-expressed protein homolog.

Mol	Chain	Residues	Atoms				AltConf	Trace
5	6	119	Total	C	N	O	0	0
			592	354	119	119		
5	9	89	Total	C	N	O	0	0
			442	264	89	89		
5	O	119	Total	C	N	O	0	0
			592	354	119	119		
5	R	89	Total	C	N	O	0	0
			442	264	89	89		

- Molecule 6 is a protein called Zinc finger BED domain-containing protein 3.

Mol	Chain	Residues	Atoms				AltConf	Trace
6	AA	63	Total	C	N	O	0	0
			311	185	63	63		
6	T	63	Total	C	N	O	0	0
			311	185	63	63		

- Molecule 7 is a protein called NLR family, pyrin domain containing 4F.

Mol	Chain	Residues	Atoms				AltConf	Trace
7	AE	935	Total	C	N	O	0	0
			4643	2773	935	935		
7	AF	845	Total	C	N	O	0	0
			4196	2506	845	845		
7	X	935	Total	C	N	O	0	0
			4643	2773	935	935		
7	Y	845	Total	C	N	O	0	0
			4196	2506	845	845		

- Molecule 8 is a protein called NACHT, LRR and PYD domains-containing protein 14.

Mol	Chain	Residues	Atoms				AltConf	Trace
8	AG	966	Total	C	N	O	0	0
			4794	2862	966	966		

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Mol	Chain	Residues	Atoms				AltConf	Trace
8	Z	966	Total	C	N	O	0	0
			4794	2862	966	966		
8	n	966	Total	C	N	O	0	0
			4794	2862	966	966		

- Molecule 9 is a protein called E3 ubiquitin-protein ligase UHRF1.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	AH	635	Total	C	N	O	0	0
			3131	1861	635	635		
9	a	635	Total	C	N	O	0	0
			3131	1861	635	635		
9	o	635	Total	C	N	O	0	0
			3131	1861	635	635		

- Molecule 10 is a protein called Ubiquitin-conjugating enzyme E2 D3.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	AI	147	Total	C	N	O	0	0
			729	435	147	147		
10	b	147	Total	C	N	O	0	0
			729	435	147	147		
10	p	147	Total	C	N	O	0	0
			729	435	147	147		

- Molecule 11 is a protein called Tubulin alpha-1C chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
11	AJ	440	Total	C	N	O	0	0
			2167	1287	440	440		
11	c	440	Total	C	N	O	0	0
			2167	1287	440	440		
11	q	440	Total	C	N	O	0	0
			2167	1287	440	440		

- Molecule 12 is a protein called Tubulin beta-4B chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	AK	431	Total	C	N	O	0	0
			2121	1259	431	431		
12	d	431	Total	C	N	O	0	0
			2121	1259	431	431		

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Mol	Chain	Residues	Atoms				AltConf	Trace
12	r	431	Total	C	N	O	0	0
			2121	1259	431	431		

- Molecule 13 is a protein called F-box/WD repeat-containing protein.

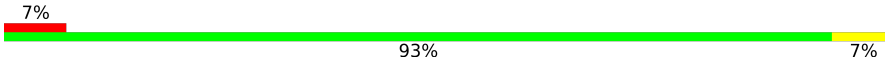
Mol	Chain	Residues	Atoms				AltConf	Trace
13	AL	466	Total	C	N	O	0	0
			2312	1380	466	466		
13	AN	466	Total	C	N	O	0	0
			2312	1380	466	466		
13	U	466	Total	C	N	O	0	0
			2312	1380	466	466		
13	e	466	Total	C	N	O	0	0
			2312	1380	466	466		
13	g	466	Total	C	N	O	0	0
			2312	1380	466	466		

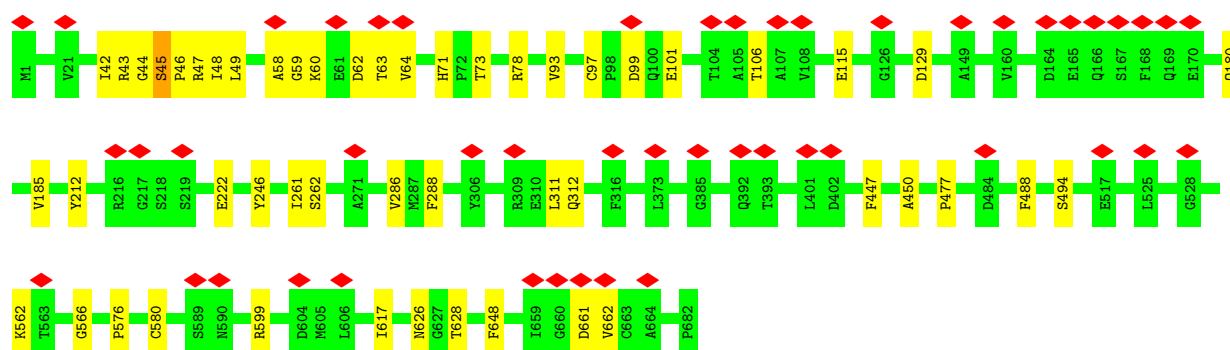
- Molecule 14 is a protein called S-phase kinase-associated protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	AM	163	Total	C	N	O	0	0
			809	483	163	163		
14	AO	163	Total	C	N	O	0	0
			809	483	163	163		
14	f	163	Total	C	N	O	0	0
			809	483	163	163		
14	h	163	Total	C	N	O	0	0
			809	483	163	163		
14	j	163	Total	C	N	O	0	0
			809	483	163	163		

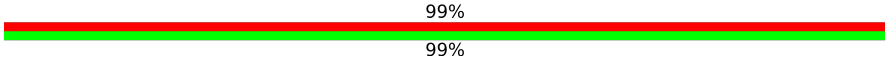
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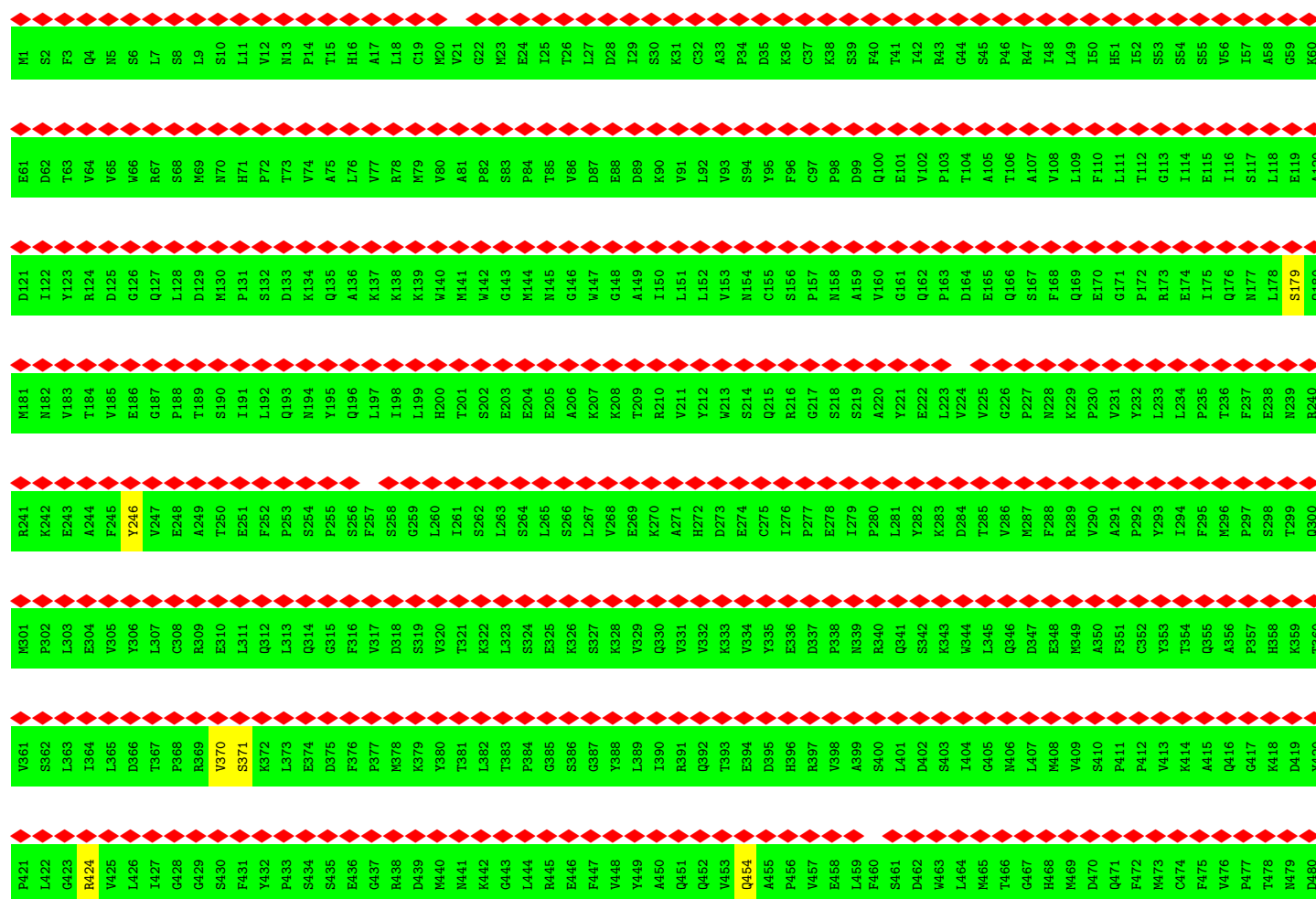
• Molecule 2: Inactive protein-arginine deiminase type-6

Chain 1: 



• Molecule 2: Inactive protein-arginine deiminase type-6

Chain 2: 

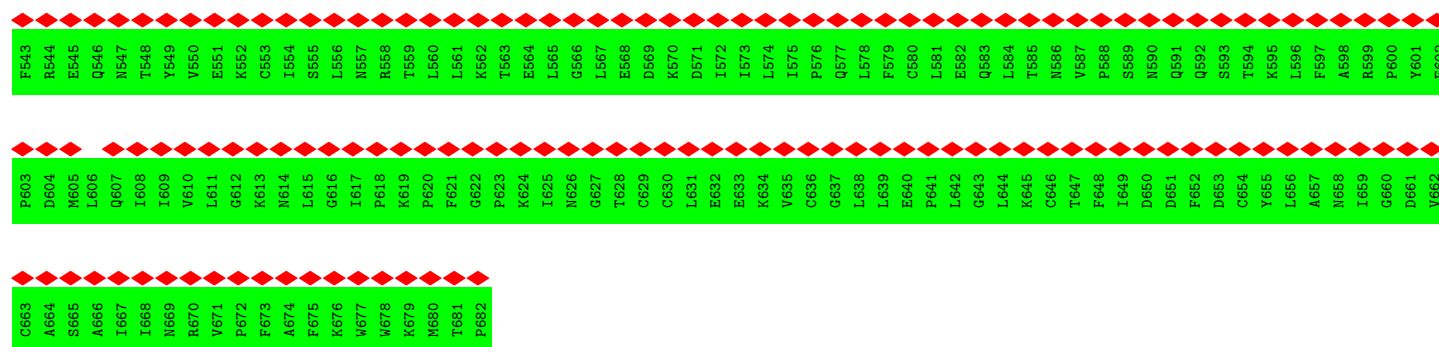


K481	K541	Y601	D661
N482	S542	F602	V662
N483	F543	P603	C663
D484	R544	D604	A664
Q485	E545	M605	S665
K486	Q546	L606	A666
D487	N547	Q607	I667
F488	T548	I608	I668
R489	Y549	I609	N669
L490	V550	V610	R670
L491	E551	L611	V671
L492	K552	G612	P672
A493	C553	K613	F673
S494	I554	N614	A674
P495	S555	L615	F675
S496	L556	G616	K676
A497	N557	I617	W677
C498	R558	P618	W678
F499	T559	K619	K679
E500	L560	P620	M680
L501	L561	F621	T681
F502	K562	G622	P682
E503	T563	P623	
Q504	E564	K624	
K505	L565	I625	
Q506	G566	N626	
K507	L567	G627	
E508	E568	T628	
G509	D569	C629	
Y510	K570	C630	
G511	D571	L631	
N512	I572	E632	
V513	I573	E633	
V514	L574	K634	
L515	I575	V635	
F516	P576	C636	
E517	Q577	G637	
D518	L578	L638	
I519	F579	L639	
G520	C580	E640	
A521	L581	P641	
E522	E582	L642	
Q523	Q583	G643	
L524	L584	L644	
L525	T585	K645	
S526	N586	C646	
N527	W587	T647	
G528	P588	F648	
R529	S589	I649	
E530	N590	D650	
S531	Q591	D651	
K532	Q592	F652	
T533	S593	D653	
I534	T594	C654	
S535	K595	Y655	
Q536	L596	L656	
I537	F597	A657	
L538	A598	K658	
A539	R599	I659	
D540	P600	G660	

• Molecule 2: Inactive protein-arginine deiminase type-6

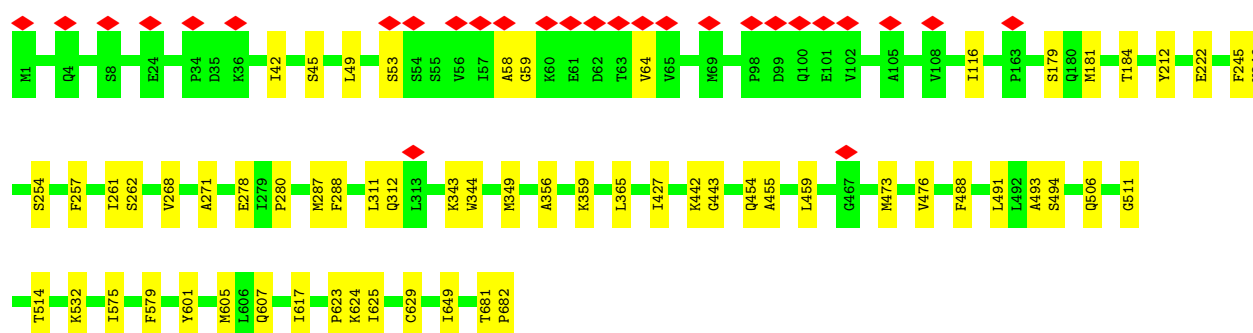


M1	I42	Y123	V183	E243	L303	L363	G423	M483
S2	R43	R124	T184	A244	E304	I364	R424	D484
F3	R44	D125	V185	F245	V305	L365	V425	Q485
Q4	S45	G126	W66	Y246	V306	D366	L426	K486
N5	S46	Q127	R67	V247	L307	P367	L427	D487
S6	P46	L128	S68	E248	C308	P368	G428	F488
L7	R47	D129	M69	A249	R309	R369	G429	R489
S8	L49	M130	N70	T250	E310	V370	S430	L490
L9	I51	P131	H71	E251	L311	S371	F431	L491
S10	I52	S132	P72	F252	Q312	K372	V432	L492
L11	S53	D133	T73	P253	L313	L373	P433	A493
V12	S54	K134	V74	S254	Q314	E374	S434	S494
N13	S55	Q135	A75	P255	G315	D375	P435	P495
P14	S56	A136	L76	S256	F316	F376	E436	S496
T15	S57	K137	V77	F257	V317	P377	G437	A497
H16	S58	I138	R78	S258	D318	M378	R438	C498
A17	S59	K139	M79	G259	S319	K379	D439	F499
L18	S60	W140	V80	L260	V320	V380	M440	E500
C19	S61	M141	A81	I261	T321	T381	M441	L501
M20	S62	W142	P82	S262	K322	L382	K442	F502
V21	S63	G143	S83	E203	L323	T383	G443	E503
G22	S64	M144	P84	E204	S324	P384	L444	Q504
M23	S65	N145	T85	E205	E325	G385	R445	K505
E24	S66	G146	V86	A206	K326	S386	E446	Q506
I25	S67	W147	D87	K207	S327	G387	F447	K507
T26	S68	G148	E88	K208	V268	V388	V448	E508
L27	S69	A149	D89	T209	V329	L389	Y449	G509
D28	S70	I150	K90	R210	Q330	I390	A450	Y510
I29	S71	L151	V91	V211	V331	R391	Q451	G511
S30	S72	L152	L92	Y212	V332	Q392	Q452	N512
K31	S73	V153	V93	W213	K333	T393	V453	V513
C32	S74	N154	S94	S214	V334	E394	Q454	T514
A33	S75	C155	Y95	Q215	V335	D395	A455	L515
P34	S76	S156	F96	R216	E336	H396	P456	F516
D35	S77	P157	C97	G217	D337	R397	V457	E517
K36	S78	N158	P98	S218	P338	V398	E458	D518
C37	S79	A159	D99	S219	N339	A399	L459	I519
K38	S80	V160	Q100	A220	R340	S400	F460	G520
I43	S81	G161	E101	Y221	Q341	L401	S461	A521
R43	S82	Q162	V102	E222	S342	D402	D462	E522
G44	S83	P163	P103	L223	K343	S403	W463	Q523
S45	S84	D164	T104	V224	V344	L404	L464	L524
P46	S85	E165	A105	G225	L345	G405	M465	L525
R47	S86	Q166	T106	Q226	Q346	N406	T466	S526
L49	S87	S167	A107	P227	D347	L407	G467	N527
I48	S88	F168	I108	N228	E348	M408	M469	G528
L109	S89	Q169	L109	K229	R349	V409	R469	R529
F110	S90	I170	E170	P230	A350	S410	D470	E530
H51	S91	G171	L111	V231	F351	P411	Q471	S531
I52	S92	P172	T112	Y232	C352	P412	F472	K532
S53	S93	R173	G113	L233	Y353	V413	M473	T533
E54	S94	E174	I114	L234	T354	K414	C474	I534
S55	S95	I175	E115	P235	Q355	A415	F475	S535
V56	S96	Q176	I116	T236	M356	Q416	V476	Q536
I57	S97	N177	S117	E237	P357	G417	P477	I537
G59	S98	L178	E119	N239	R358	K418	T478	L538
K60	S99	S179	E120	R240	T359	D419	M479	A539
E61	S100	M181	D121	Q241	Q300	Y420	D480	D540
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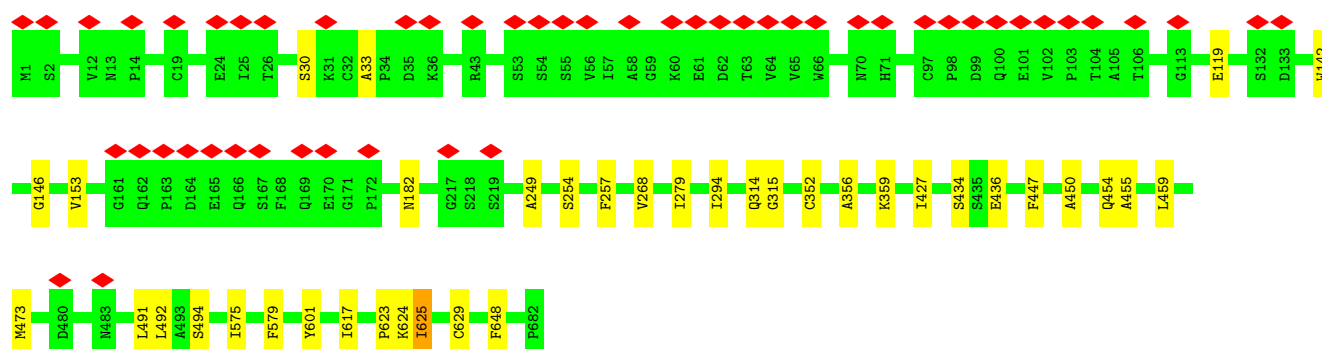
• Molecule 2: Inactive protein-arginine deiminase type-6

Chain A: 91% 9%



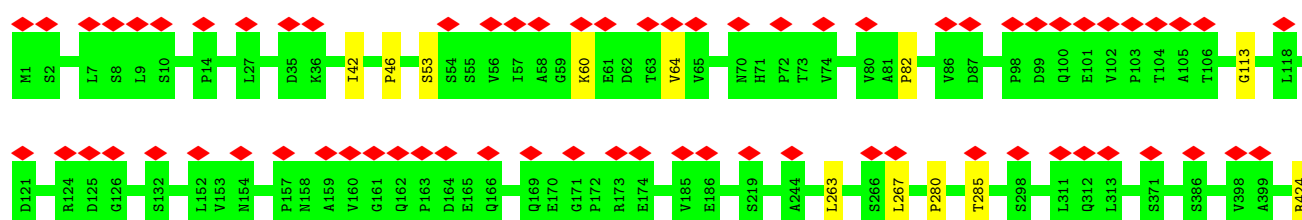
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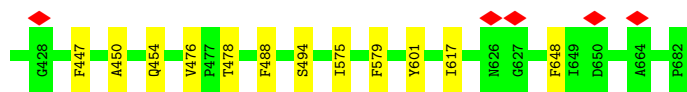
Chain B: 8% 94% 6%



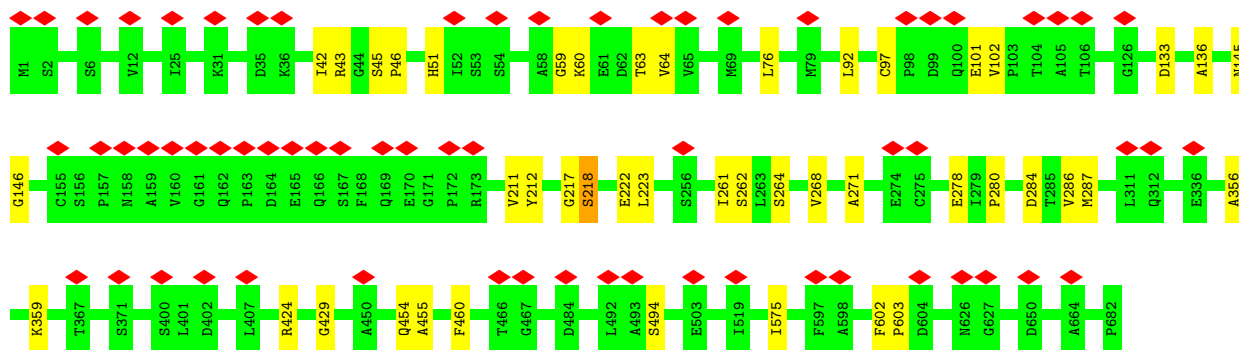
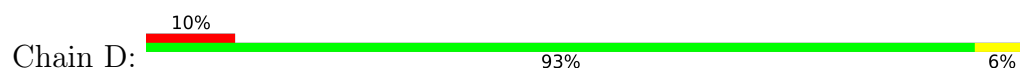
• Molecule 2: Inactive protein-arginine deiminase type-6

Chain C: 11% 96% 3%

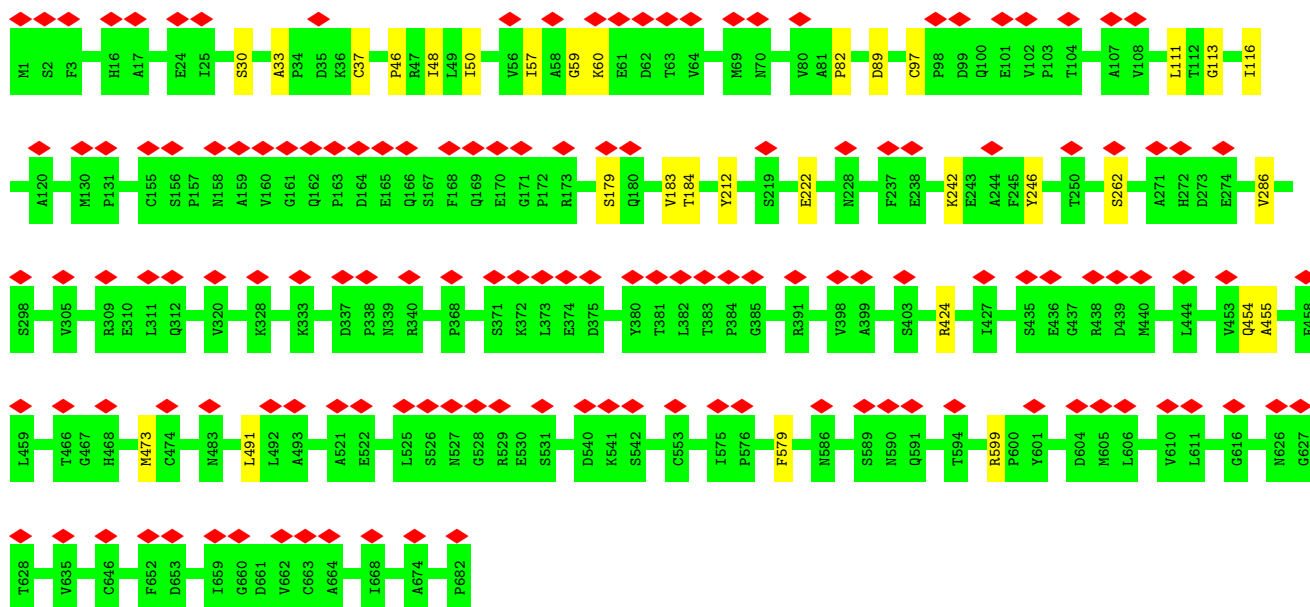




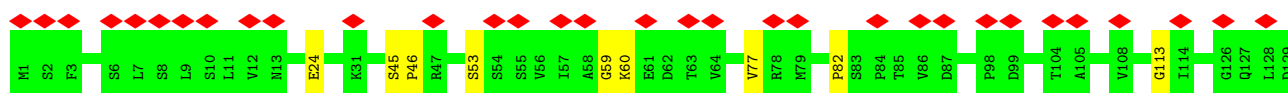
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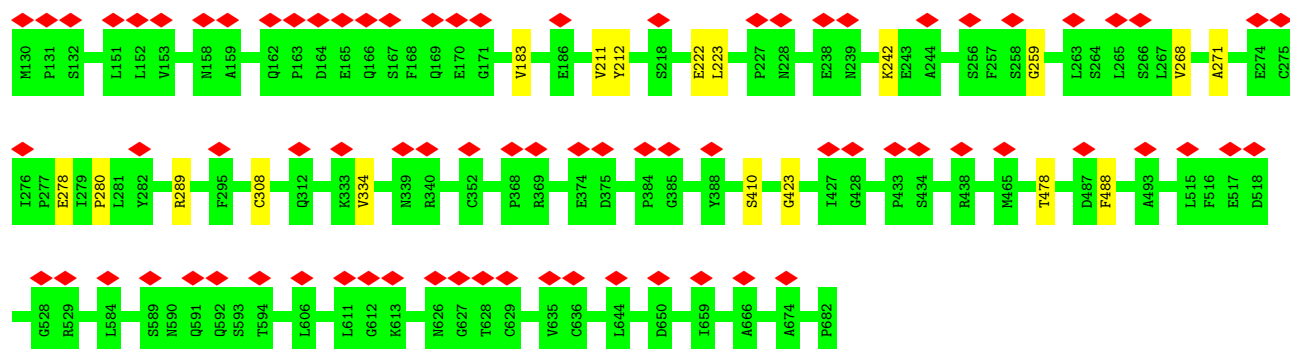


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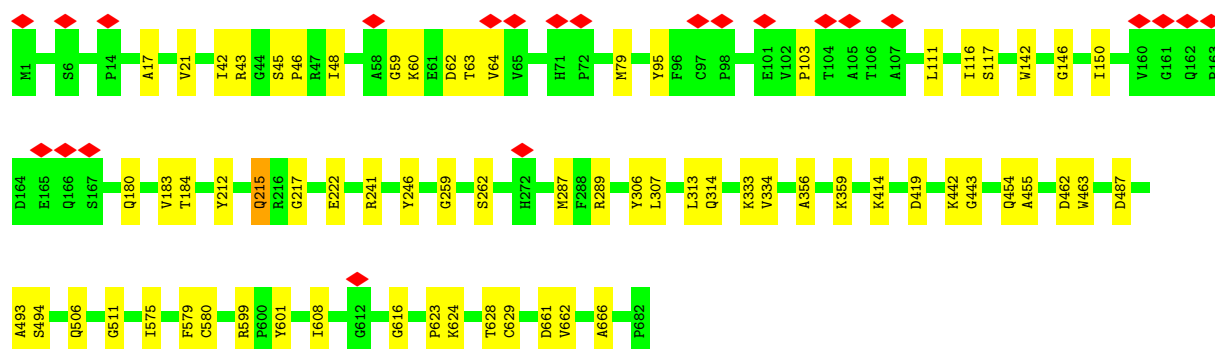


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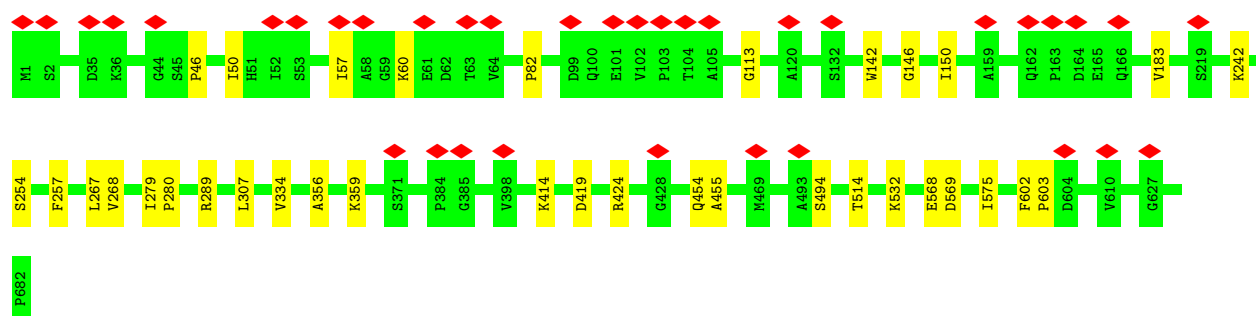




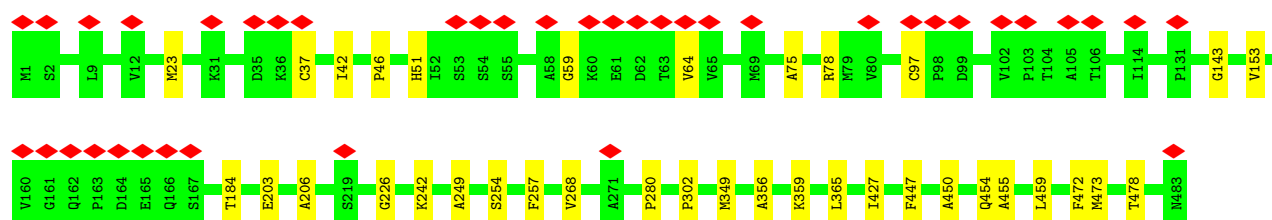
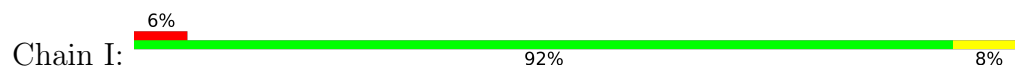
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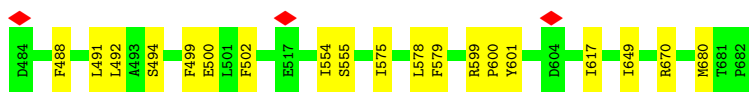


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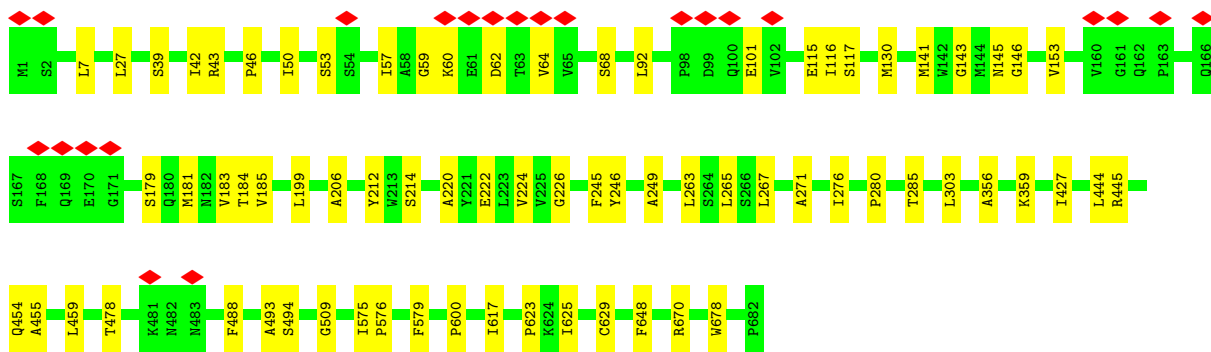
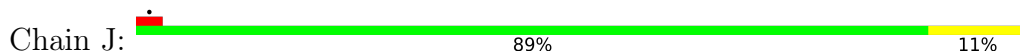


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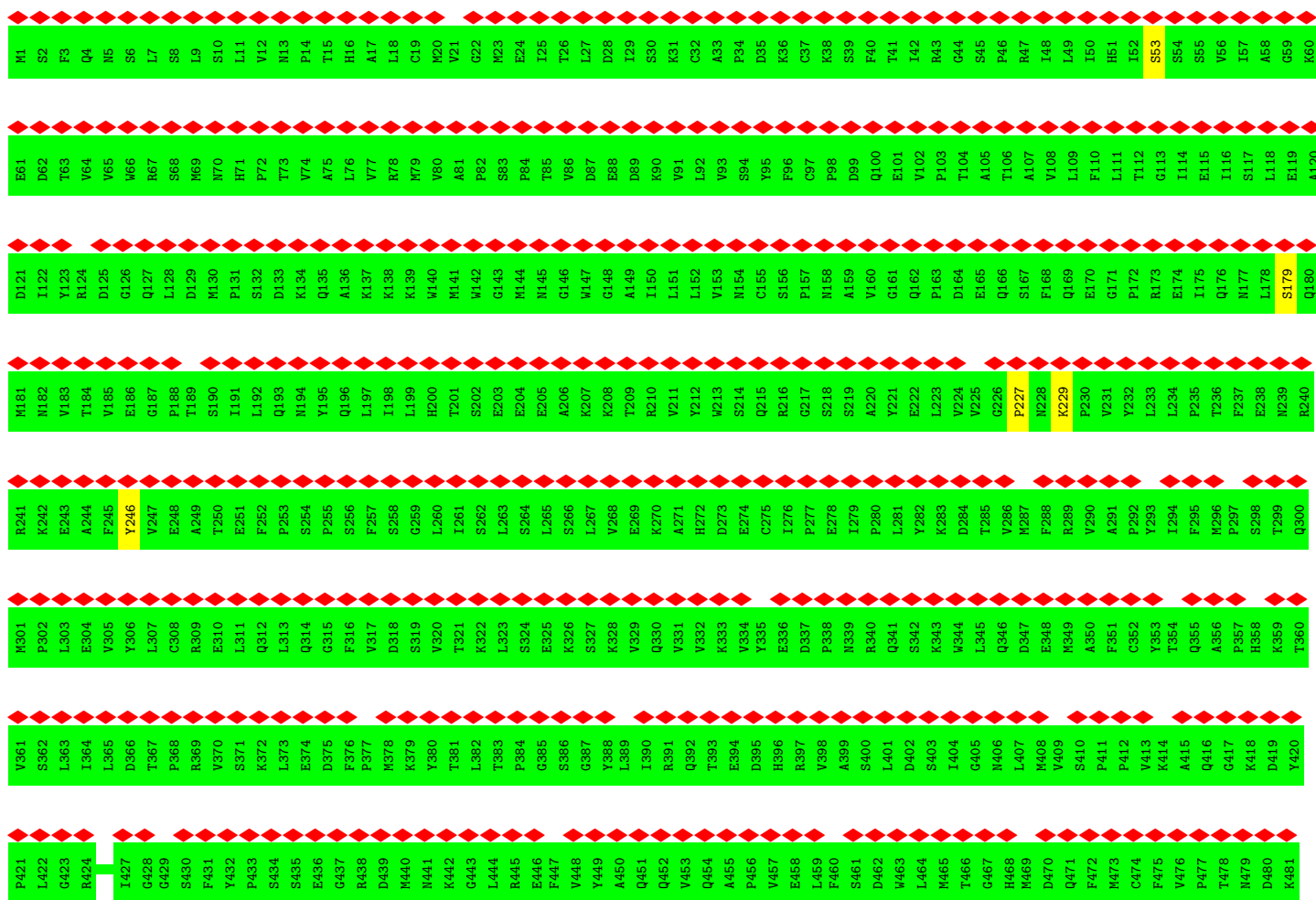


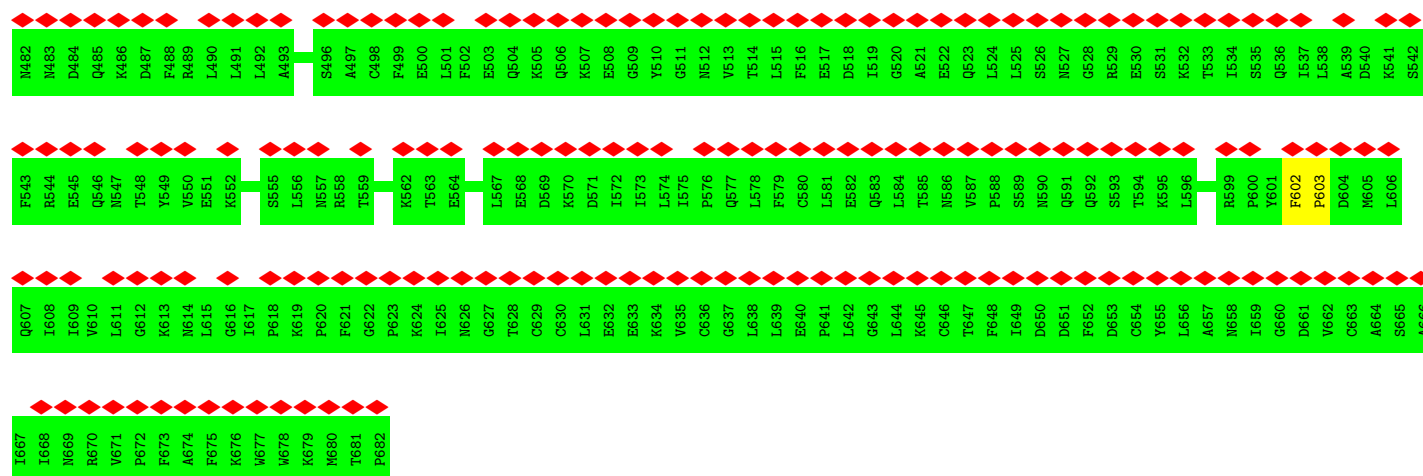


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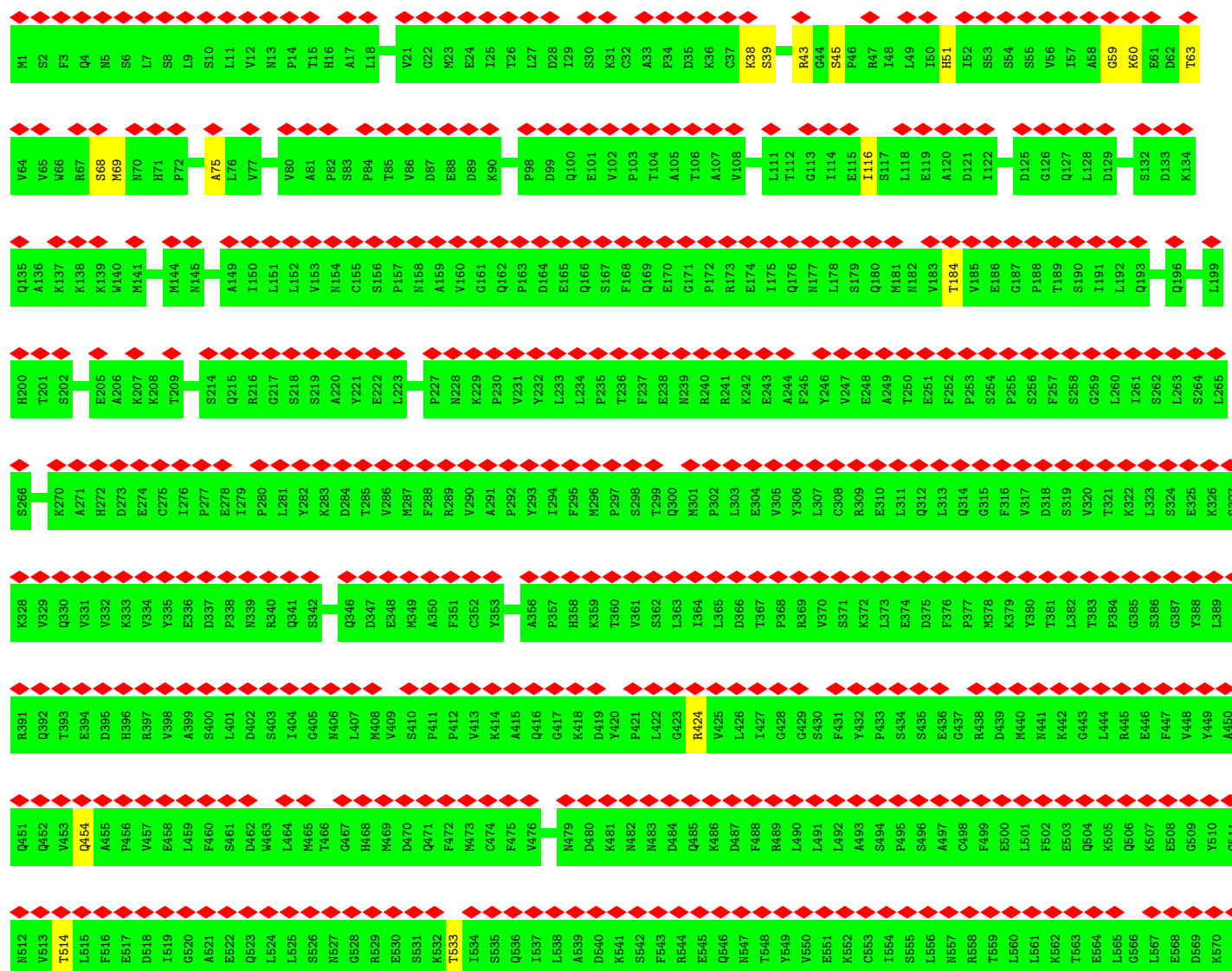
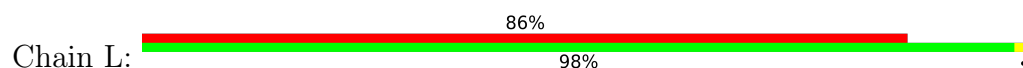


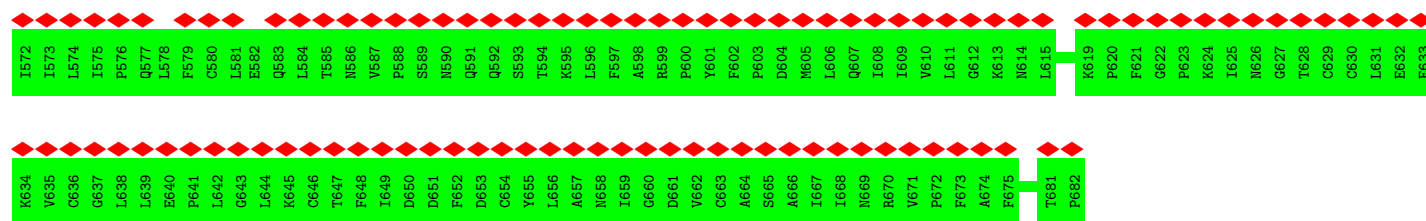
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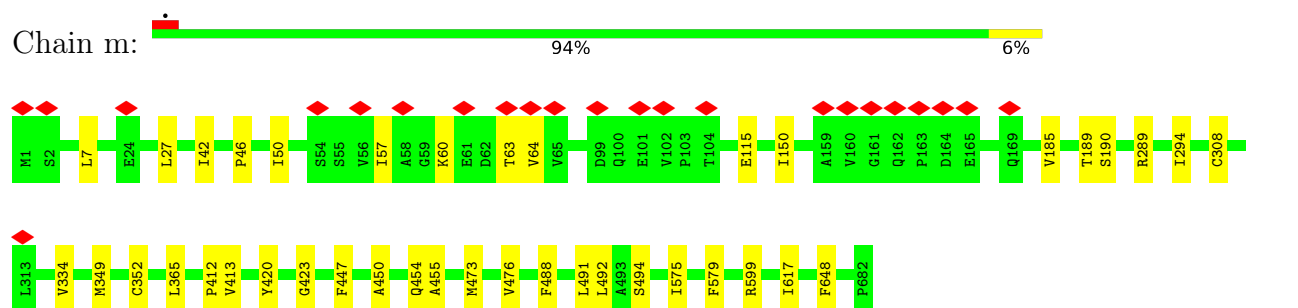


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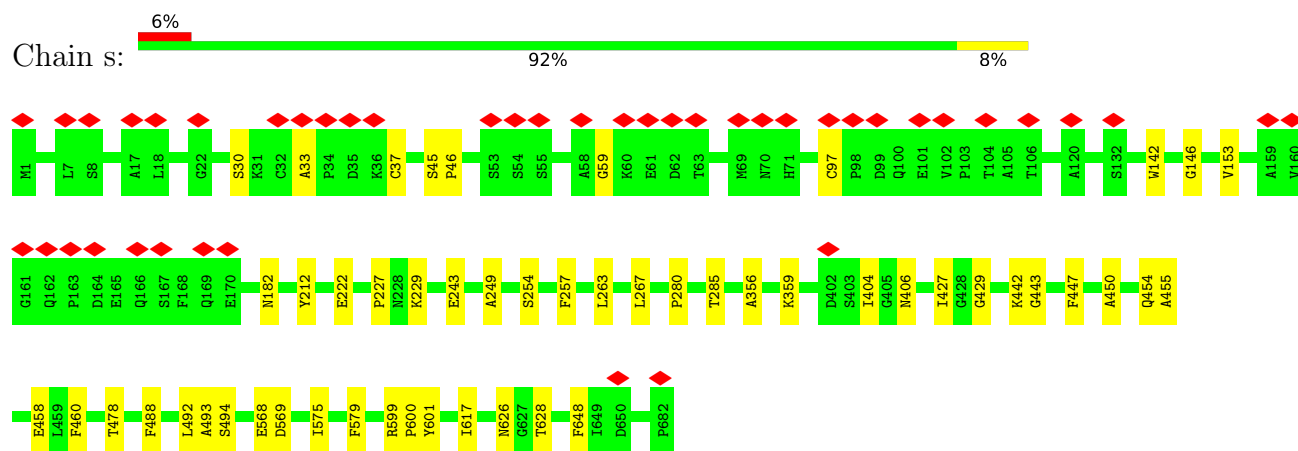




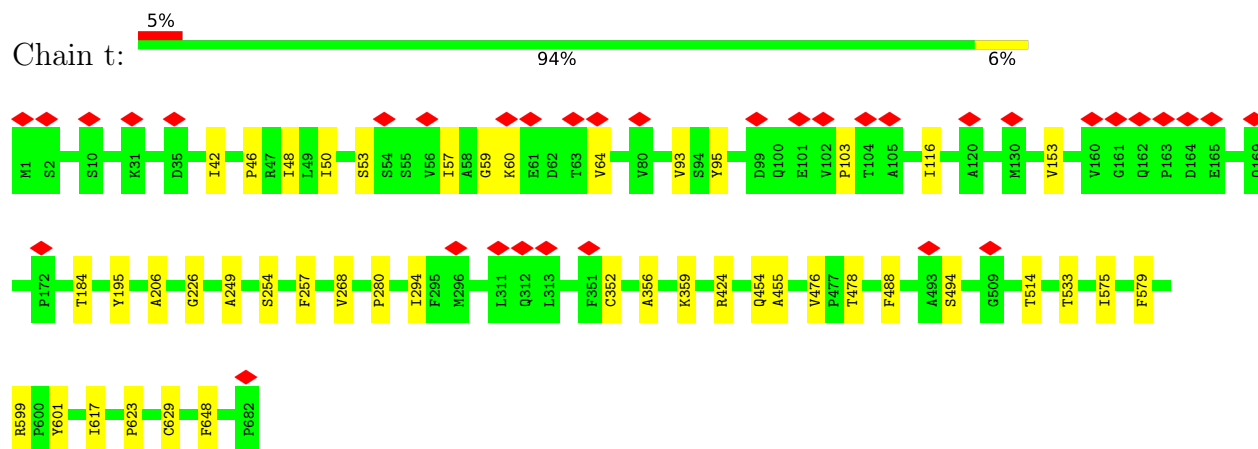
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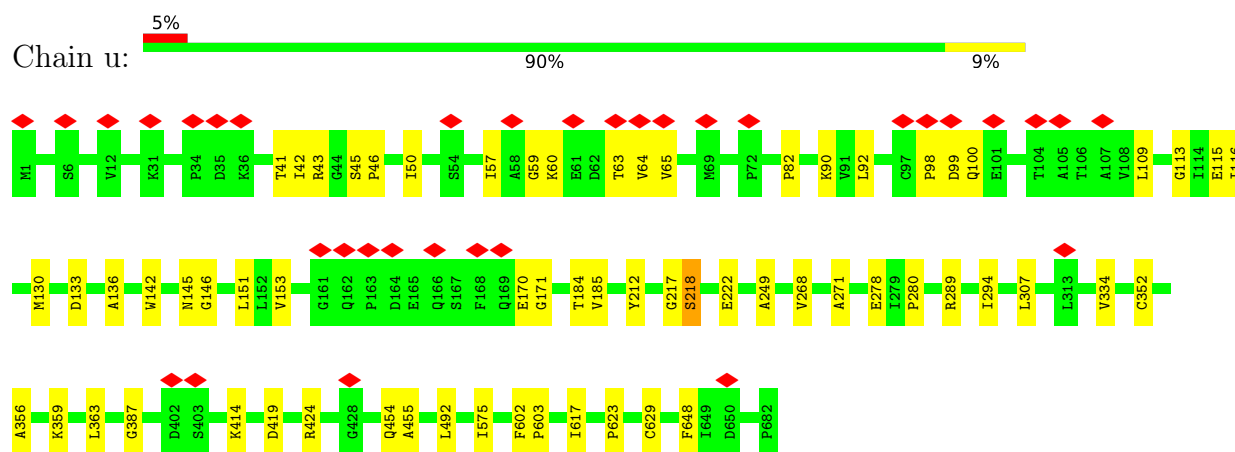
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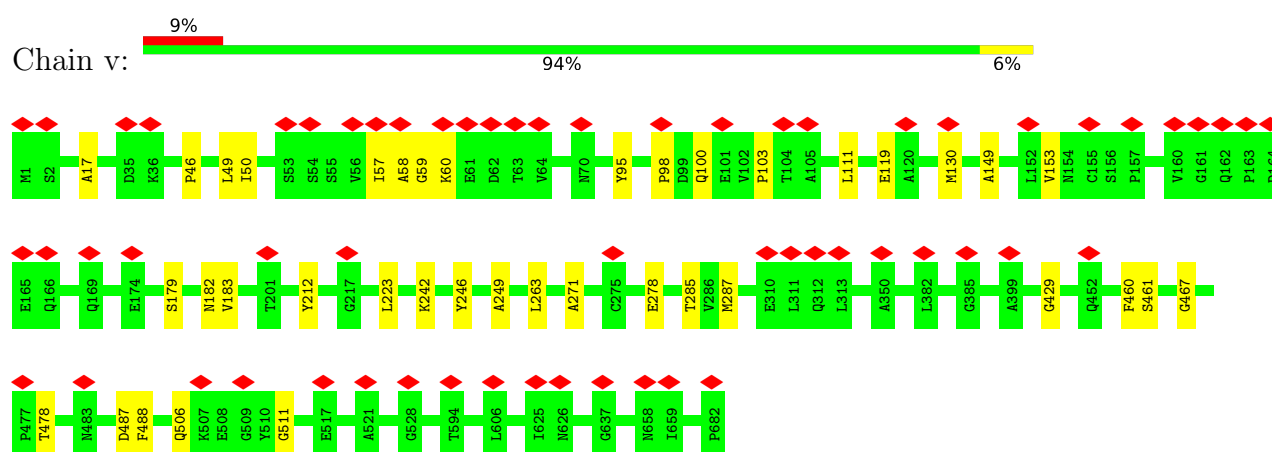
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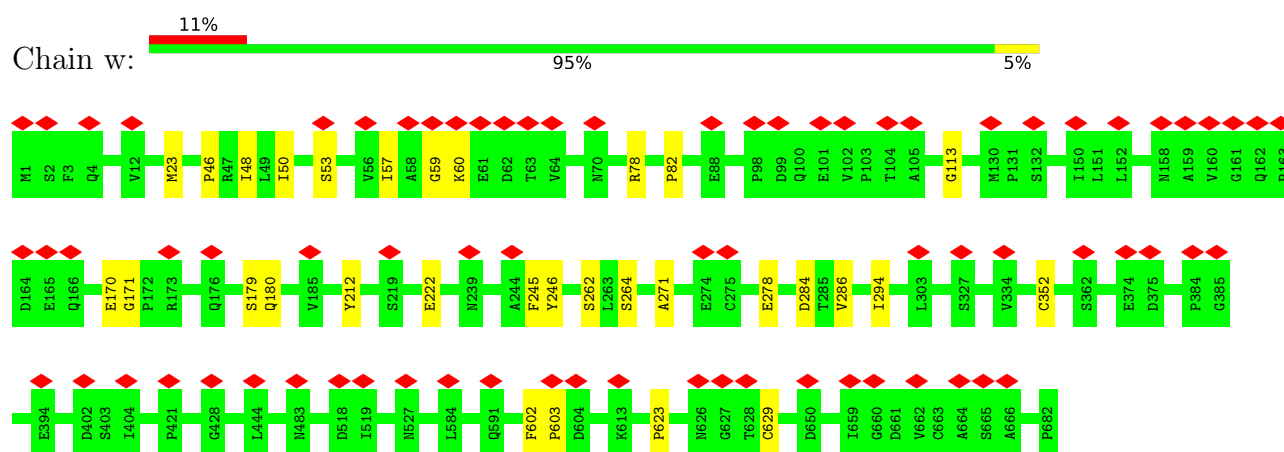
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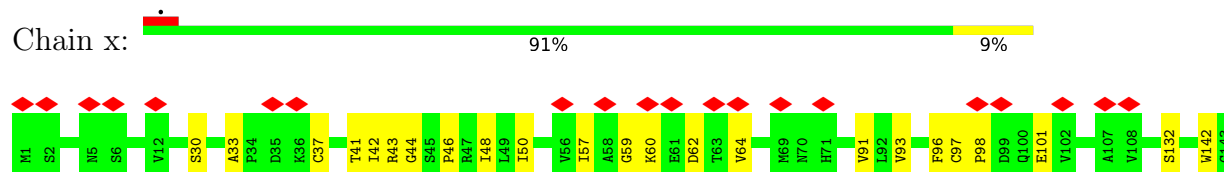
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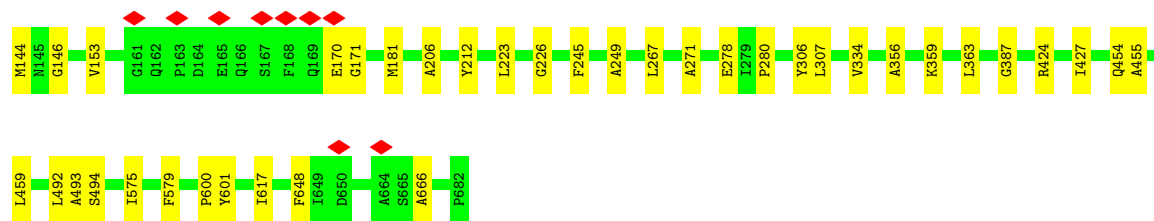


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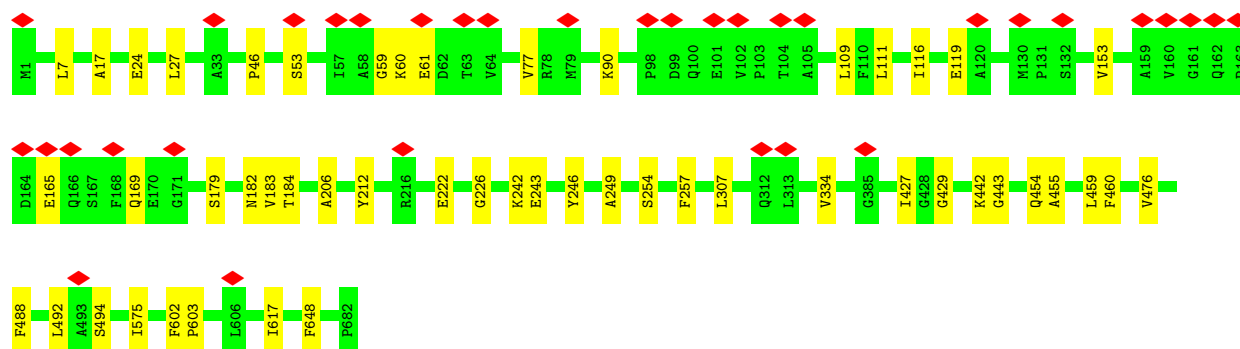
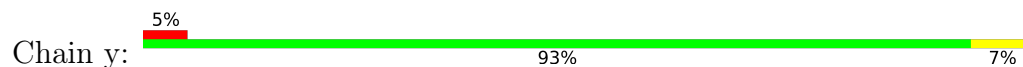


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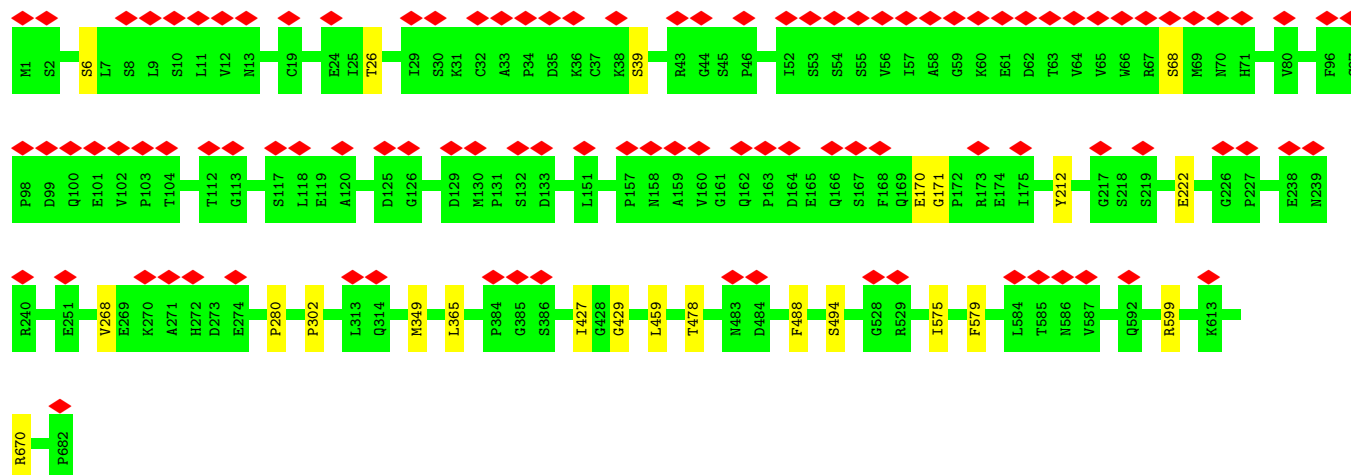




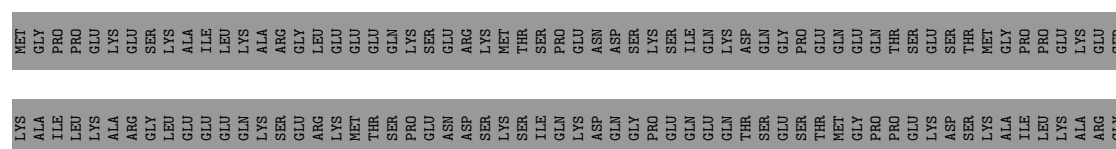
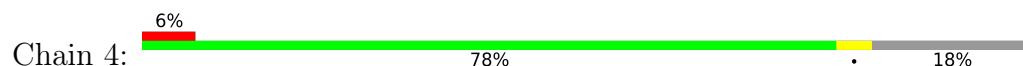
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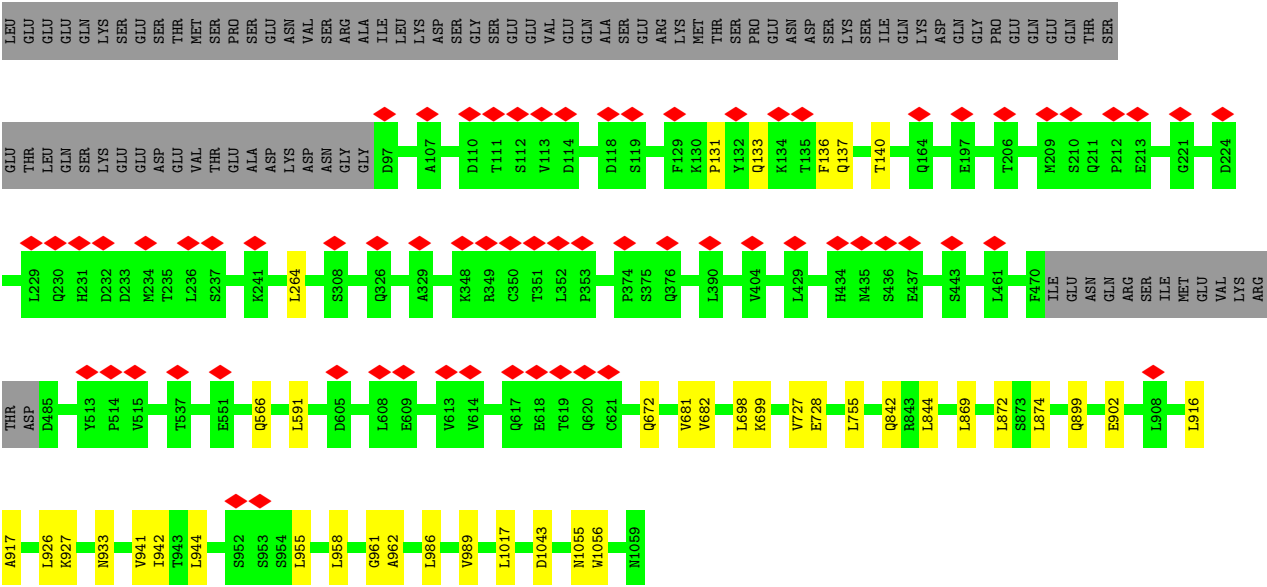


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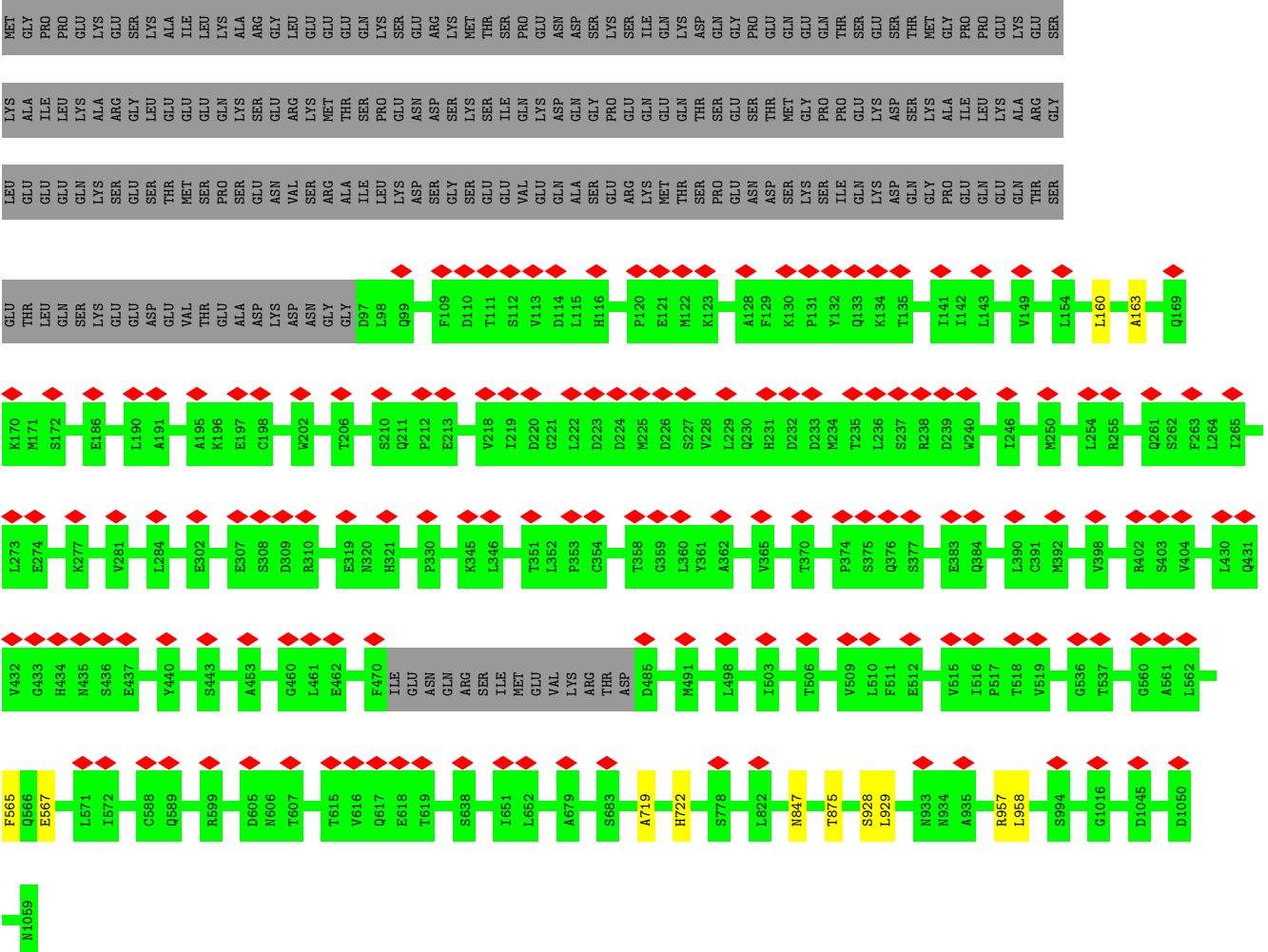
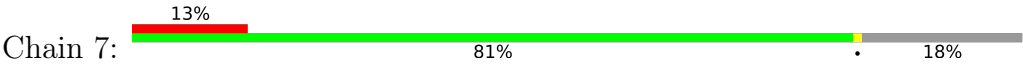


• Molecule 3: NACHT, LRR and PYD domains-containing protein 5



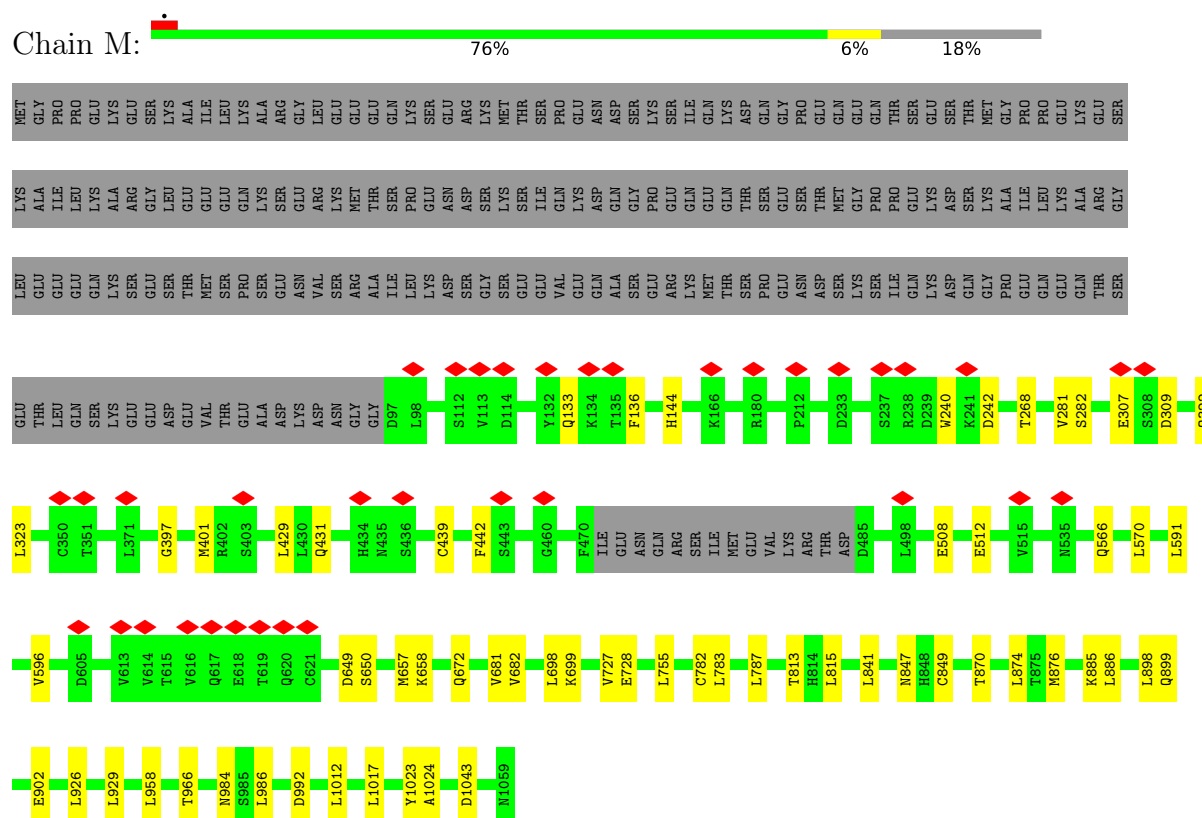


• Molecule 3: NACHT, LRR and PYD domains-containing protein 5



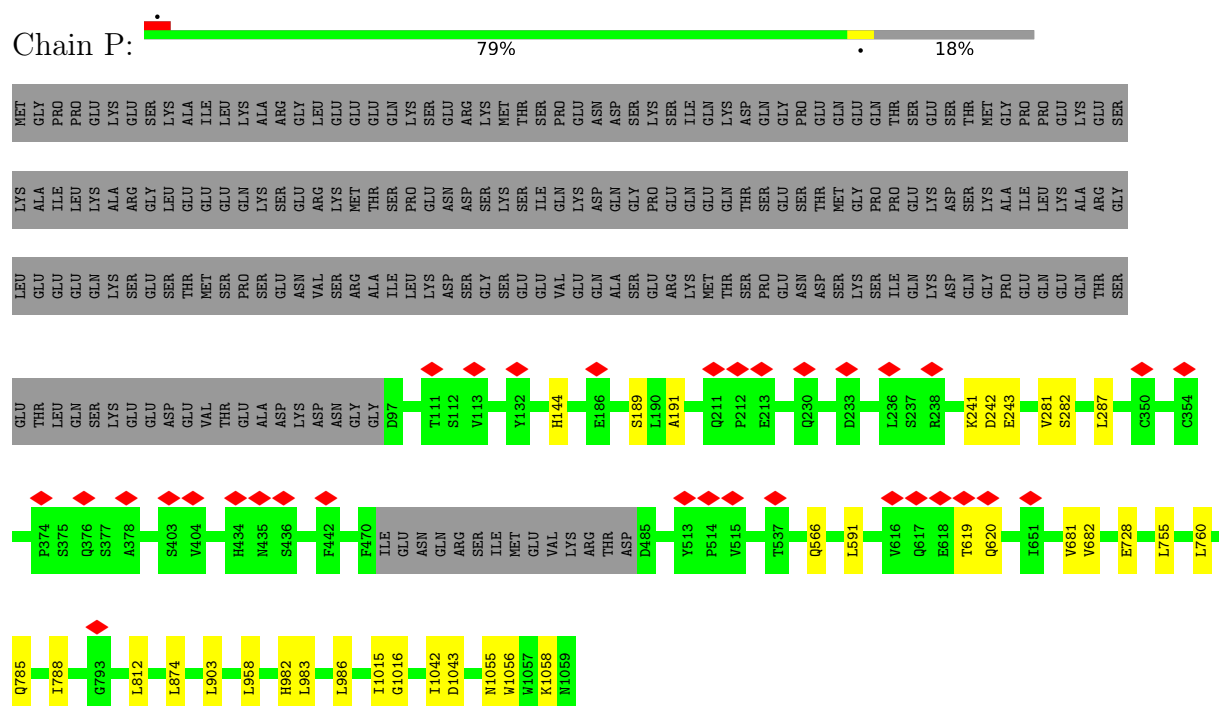
- Molecule 3: NACHT, LRR and PYD domains-containing protein 5

Chain M:

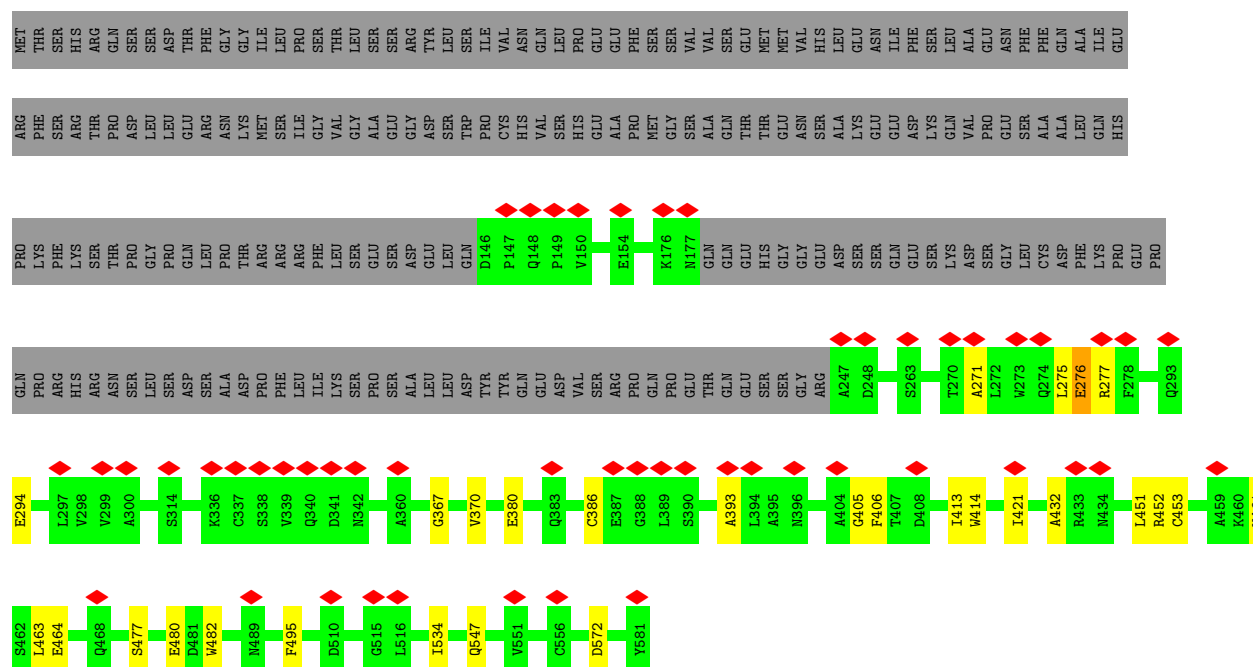


- Molecule 3: NACHT, LRR and PYD domains-containing protein 5

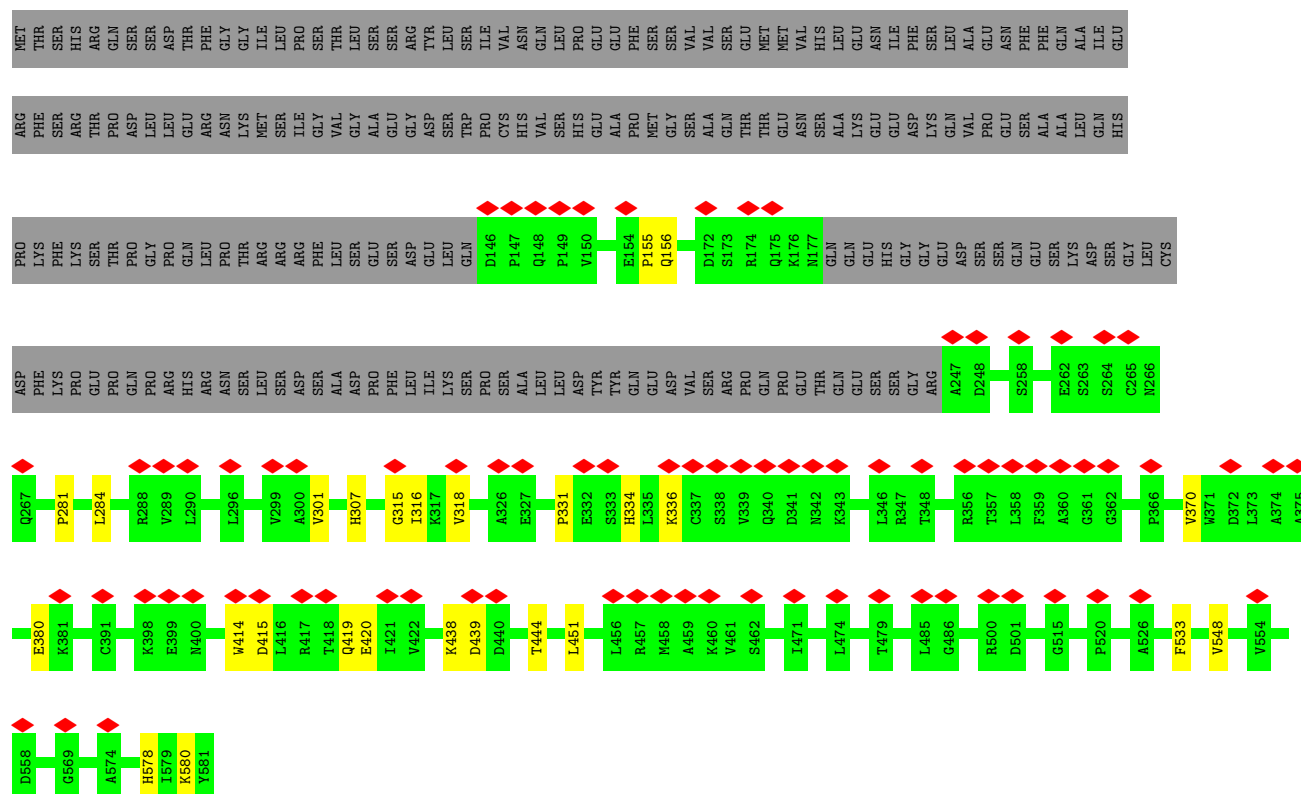
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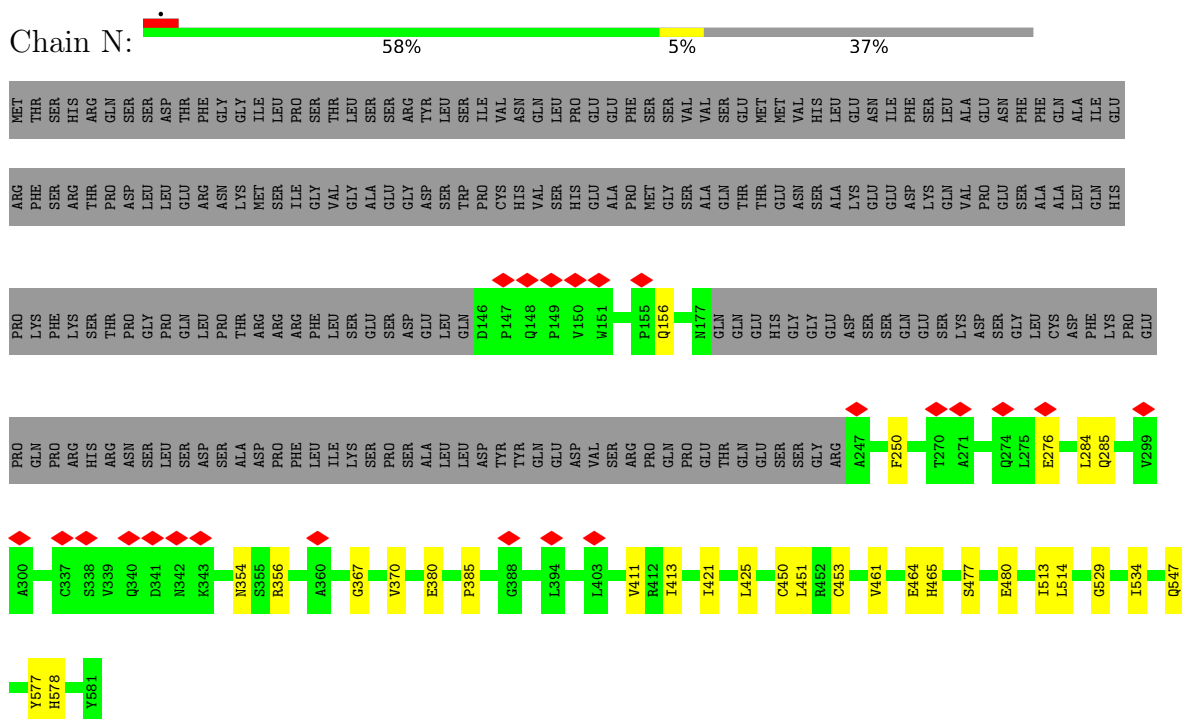
- Molecule 4: Transducin-like enhancer protein 6



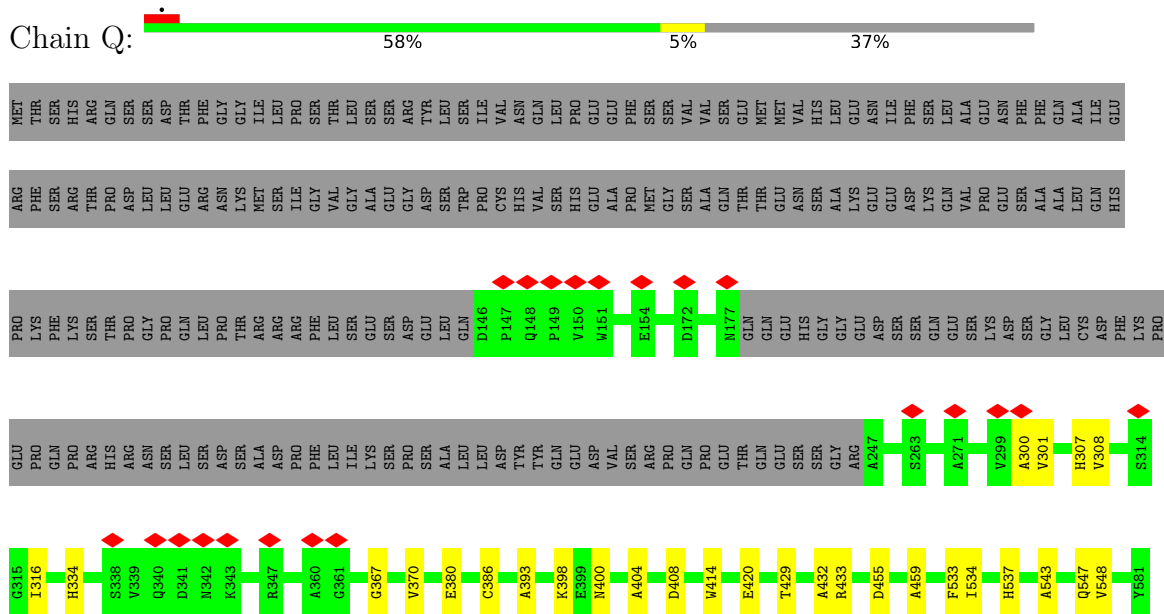
• Molecule 4: Transducin-like enhancer protein 6



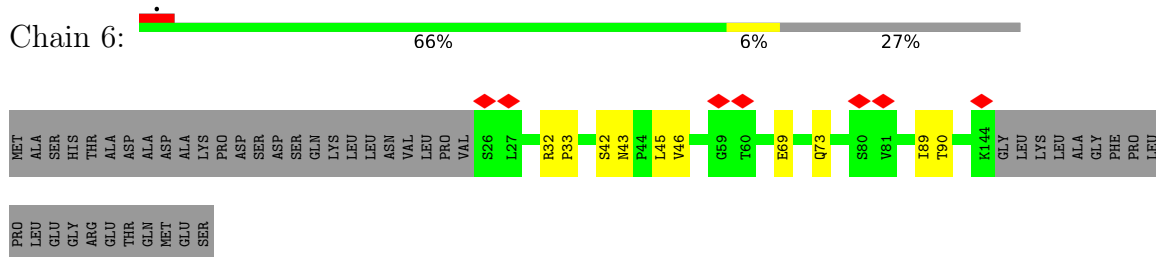
• Molecule 4: Transducin-like enhancer protein 6



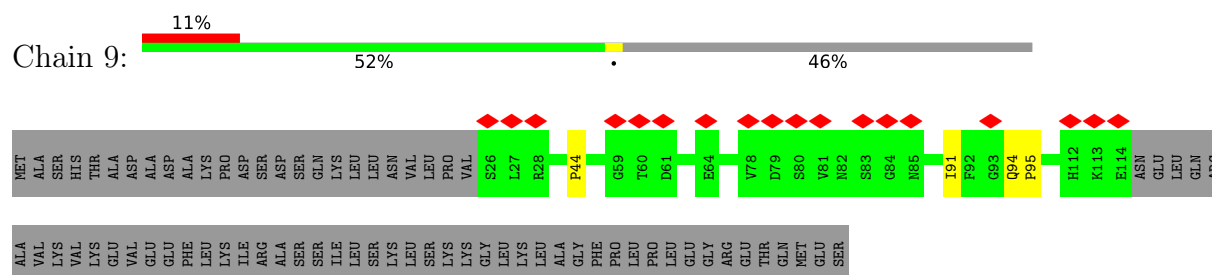
- Molecule 4: Transducin-like enhancer protein 6



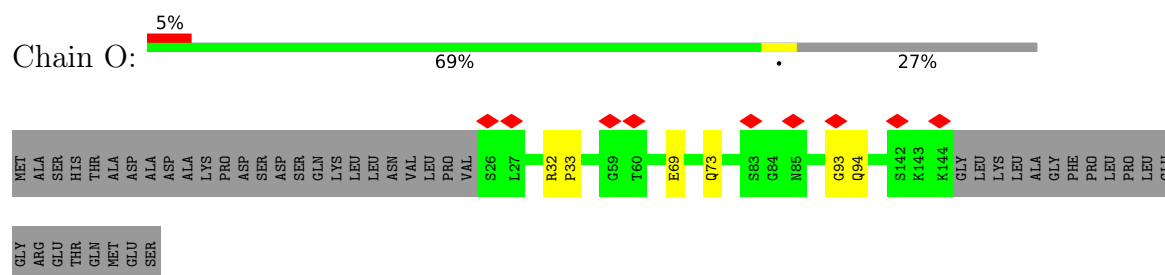
- Molecule 5: Oocyte-expressed protein homolog



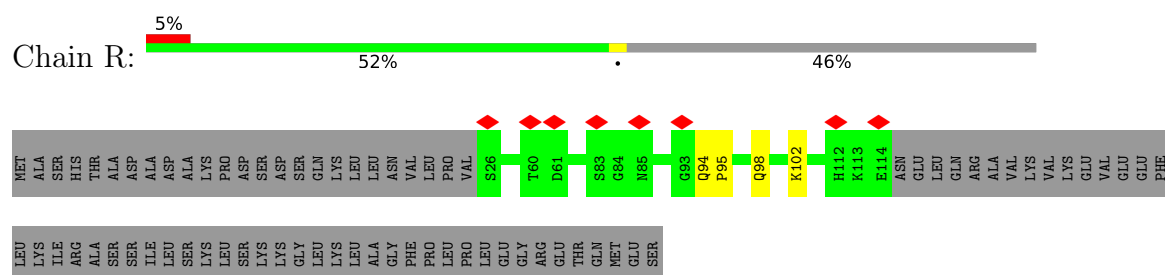
- Molecule 5: Oocyte-expressed protein homolog



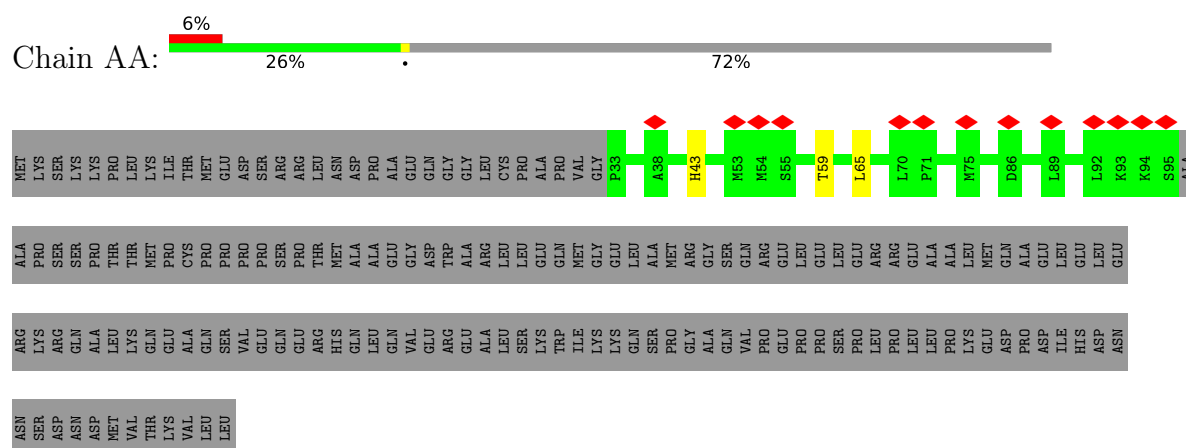
- Molecule 5: Oocyte-expressed protein homolog



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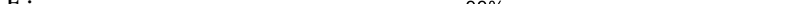
- Molecule 6: Zinc finger BED domain-containing protein 3

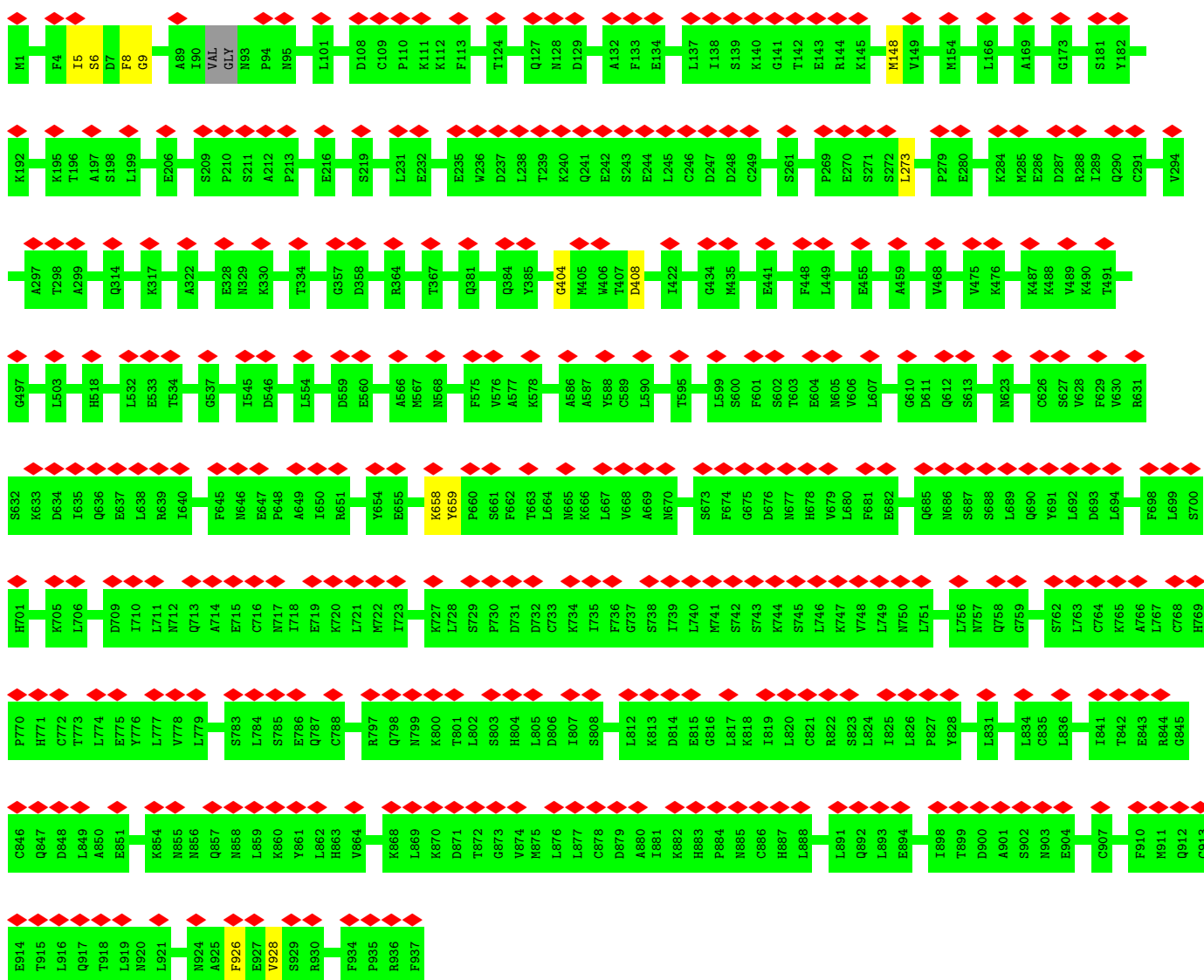


- Molecule 6: Zinc finger BED domain-containing protein 3



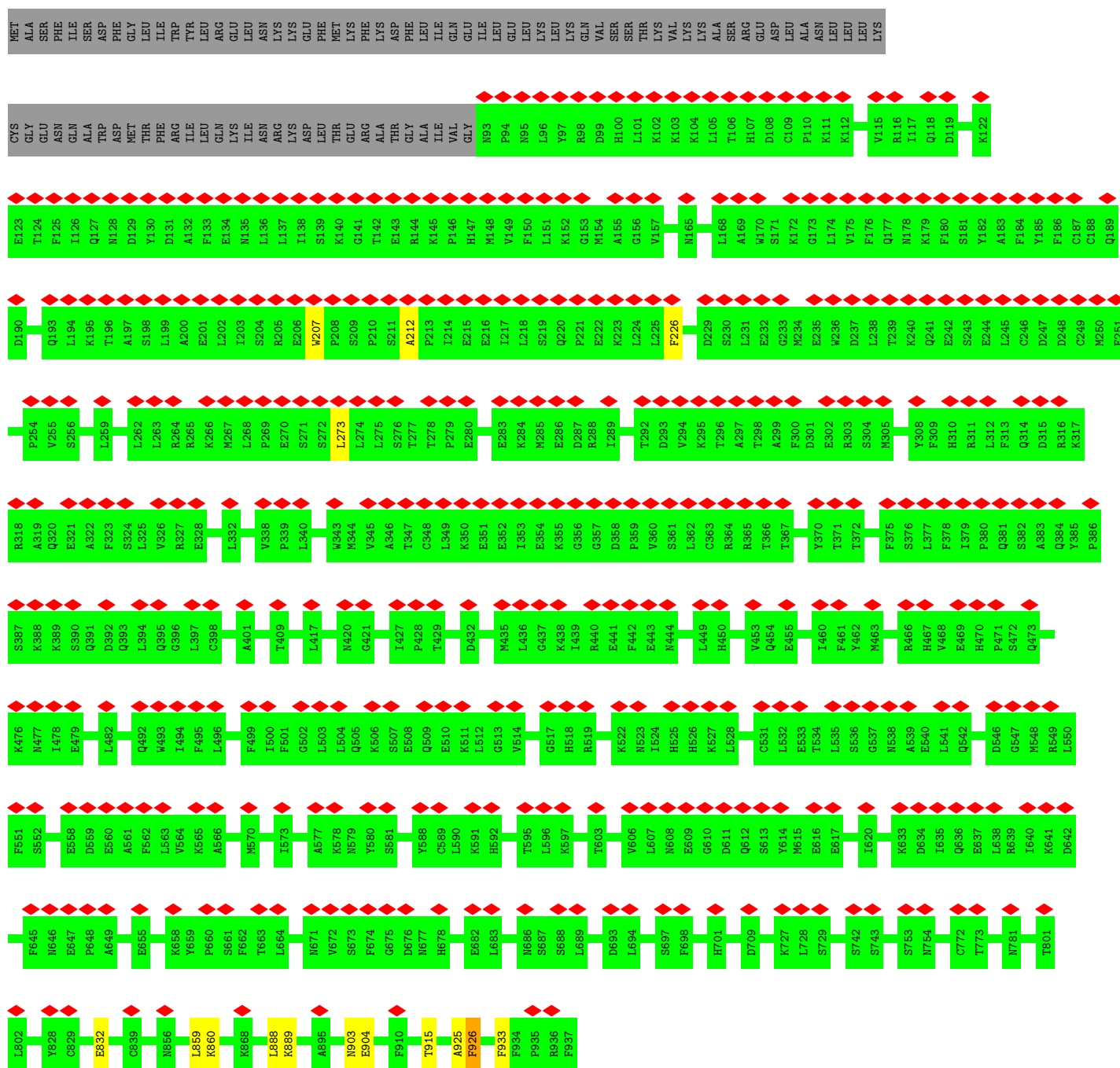
- Molecule 7: NLR family, pyrin domain containing 4F

Chain AE: 

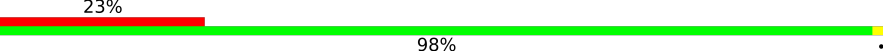


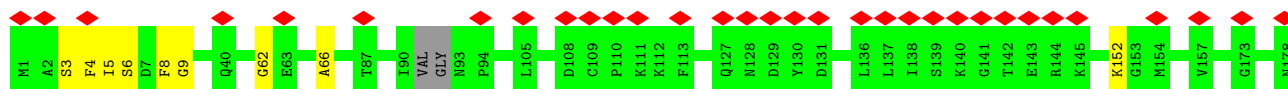
- Molecule 7: NLR family, pyrin domain containing 4F

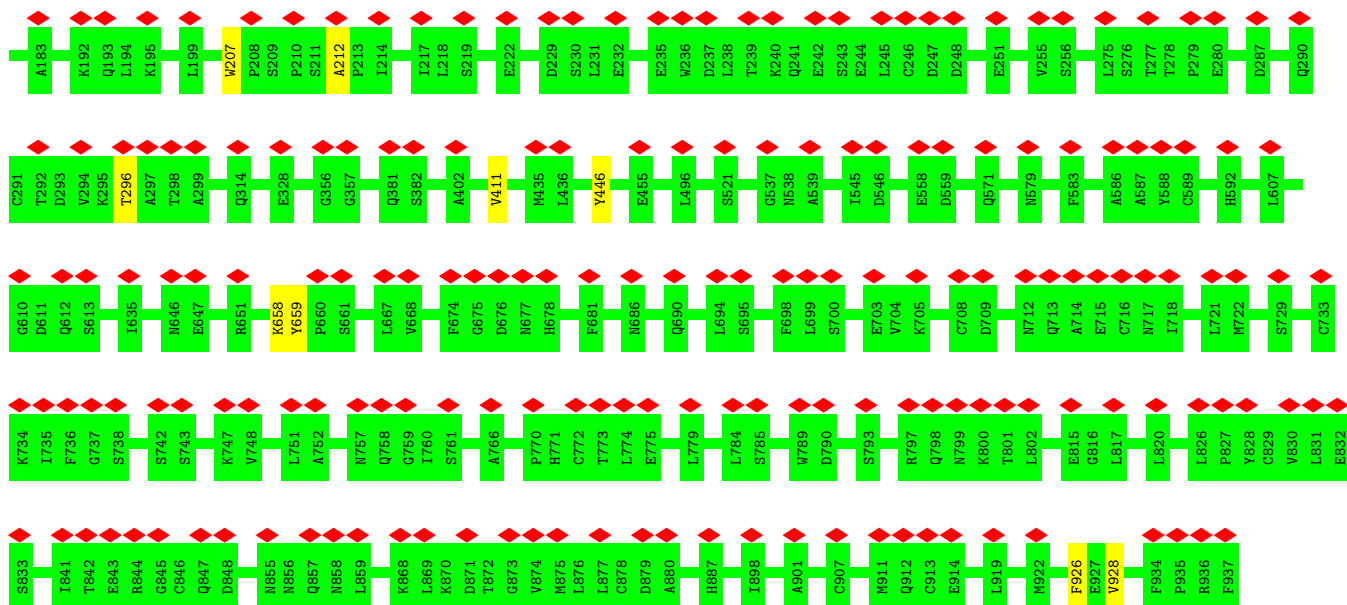
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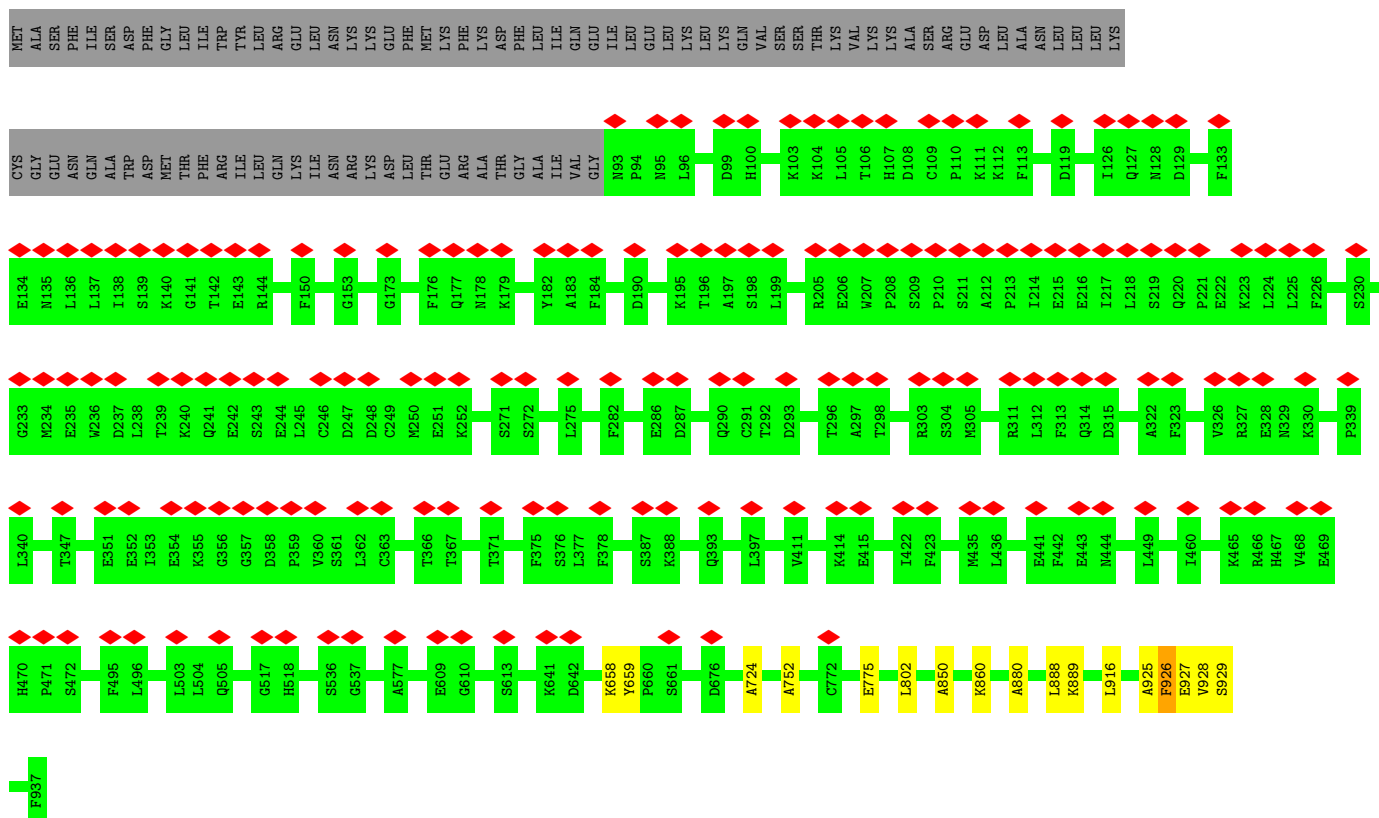
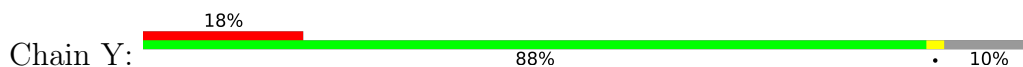
• Molecule 7: NLR family, pyrin domain containing 4F

Chain X: 



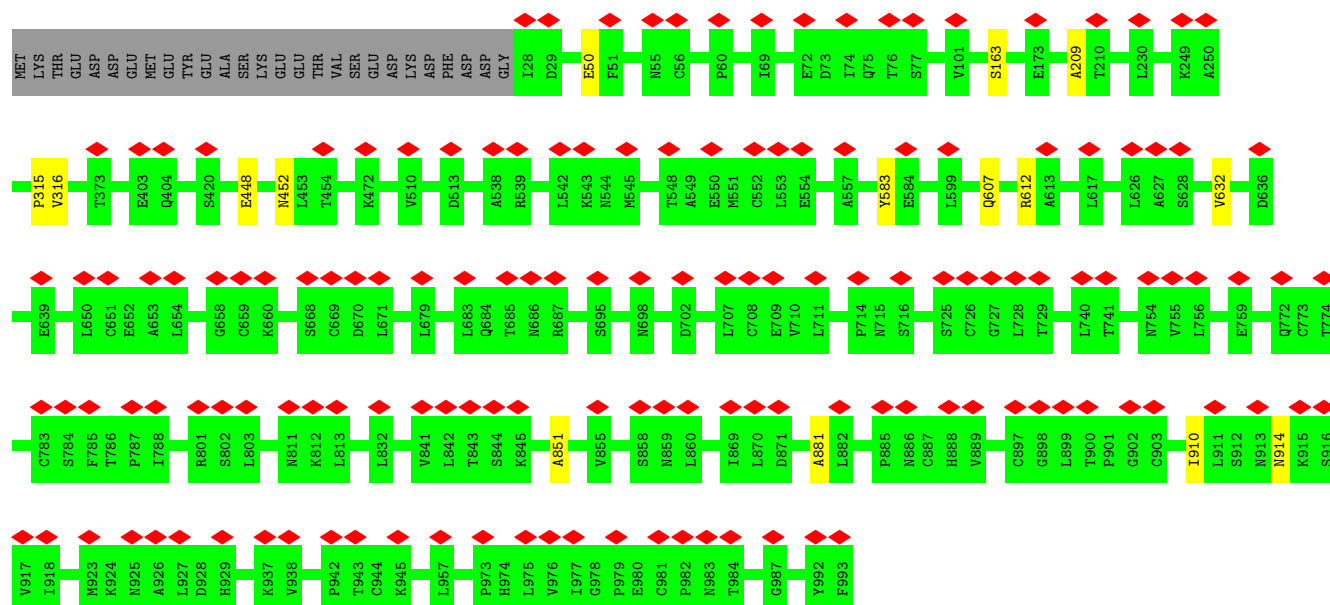


- Molecule 7: NLR family, pyrin domain containing 4F

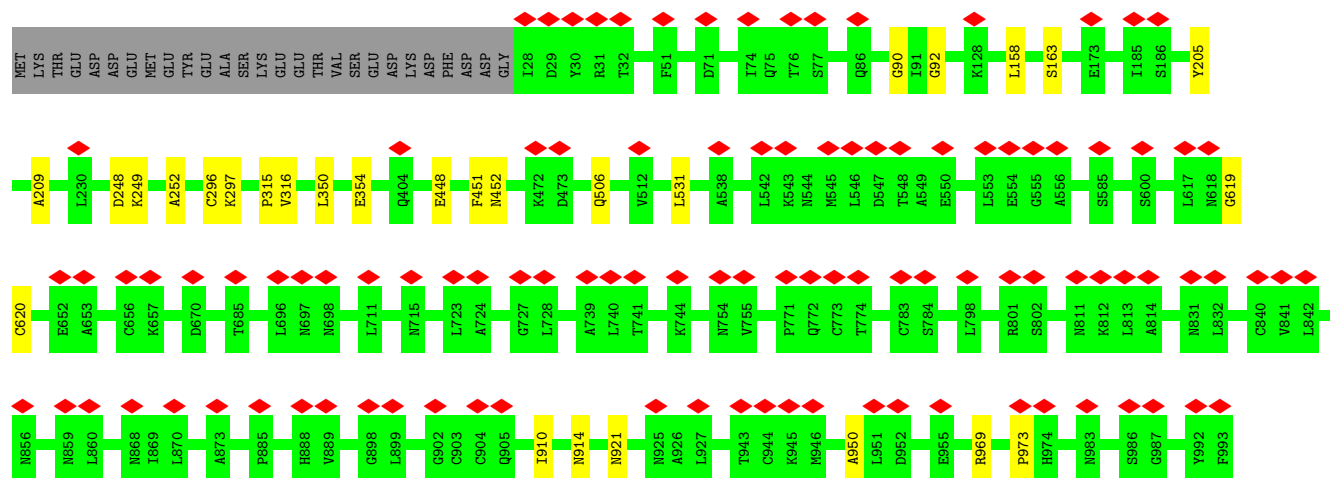
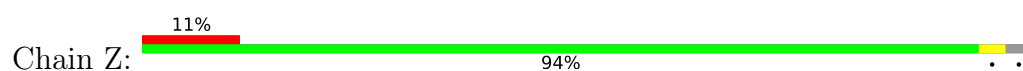


- Molecule 8: NACHT, LRR and PYD domains-containing protein 14

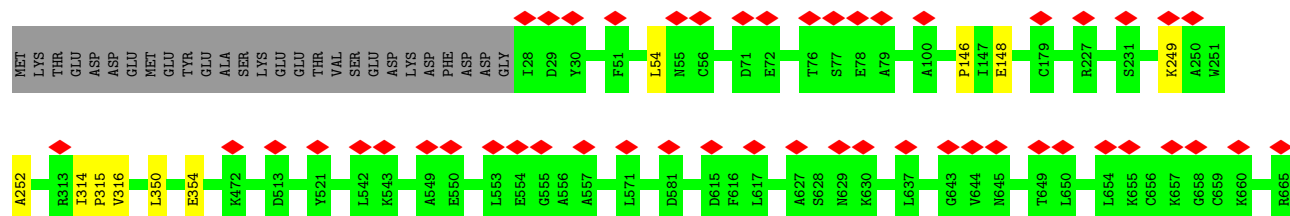


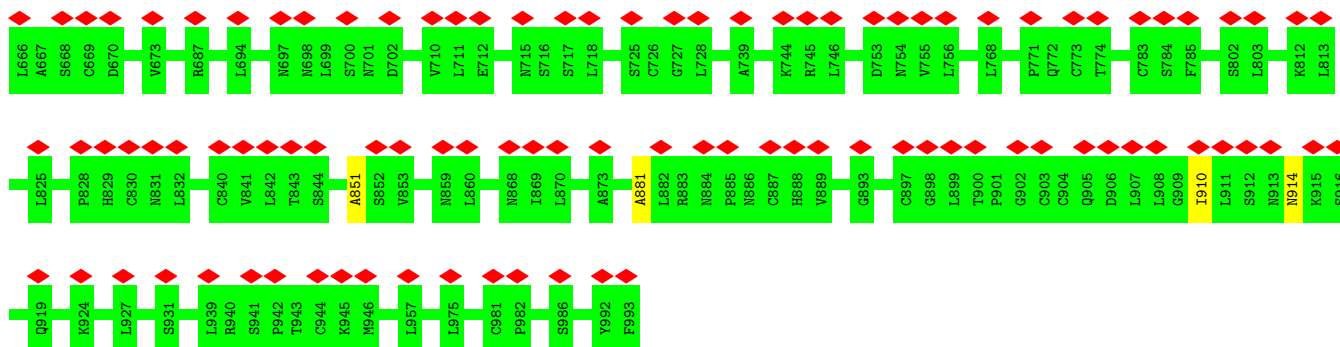


• Molecule 8: NACHT, LRR and PYD domains-containing protein 14

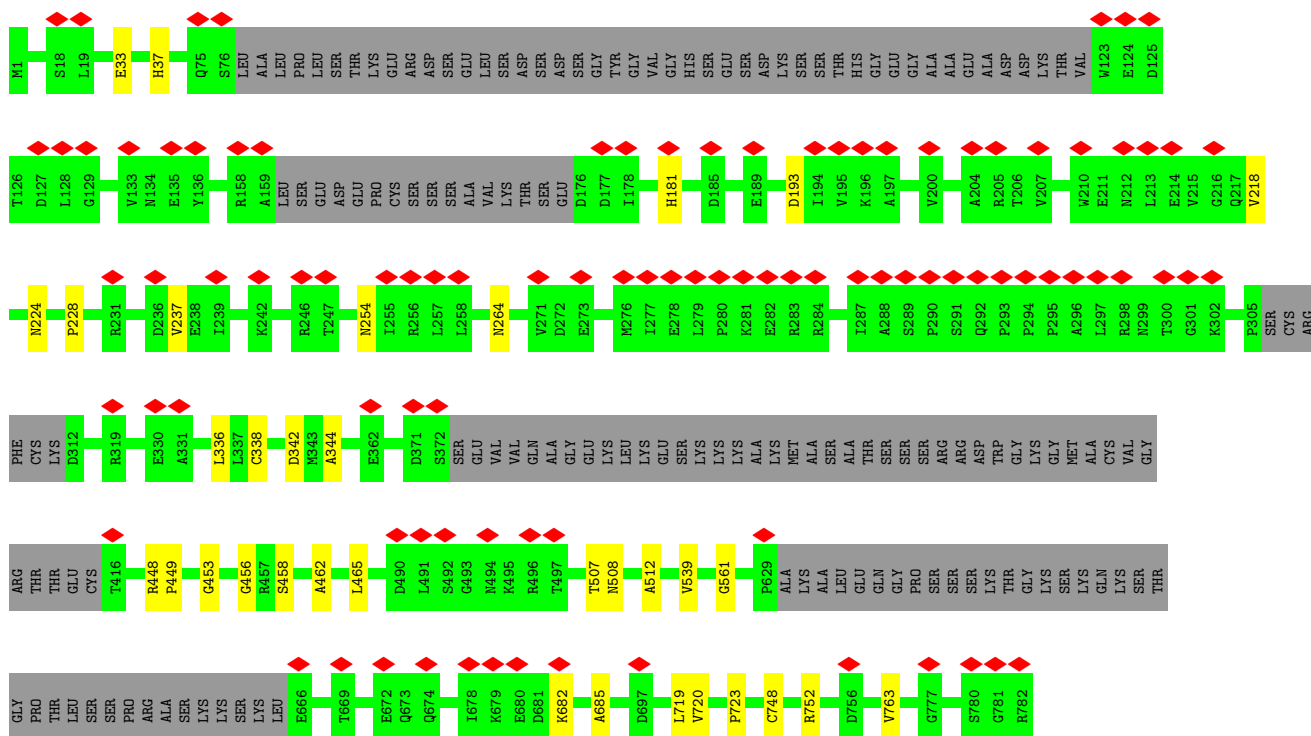
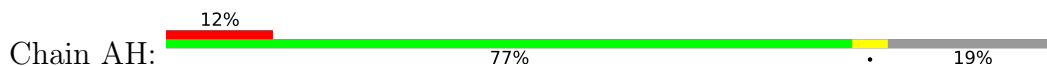


• Molecule 8: NACHT, LRR and PYD domains-containing protein 14

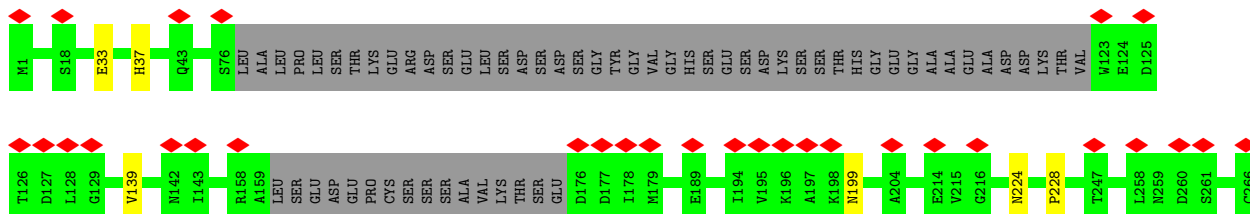
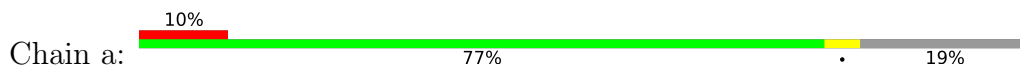


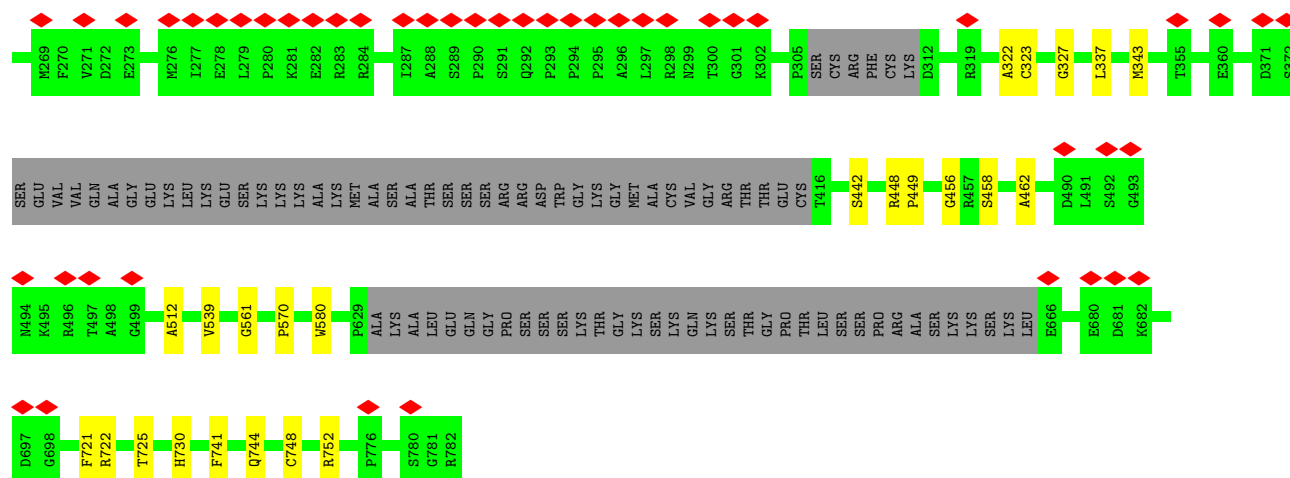


- Molecule 9: E3 ubiquitin-protein ligase UHRF1

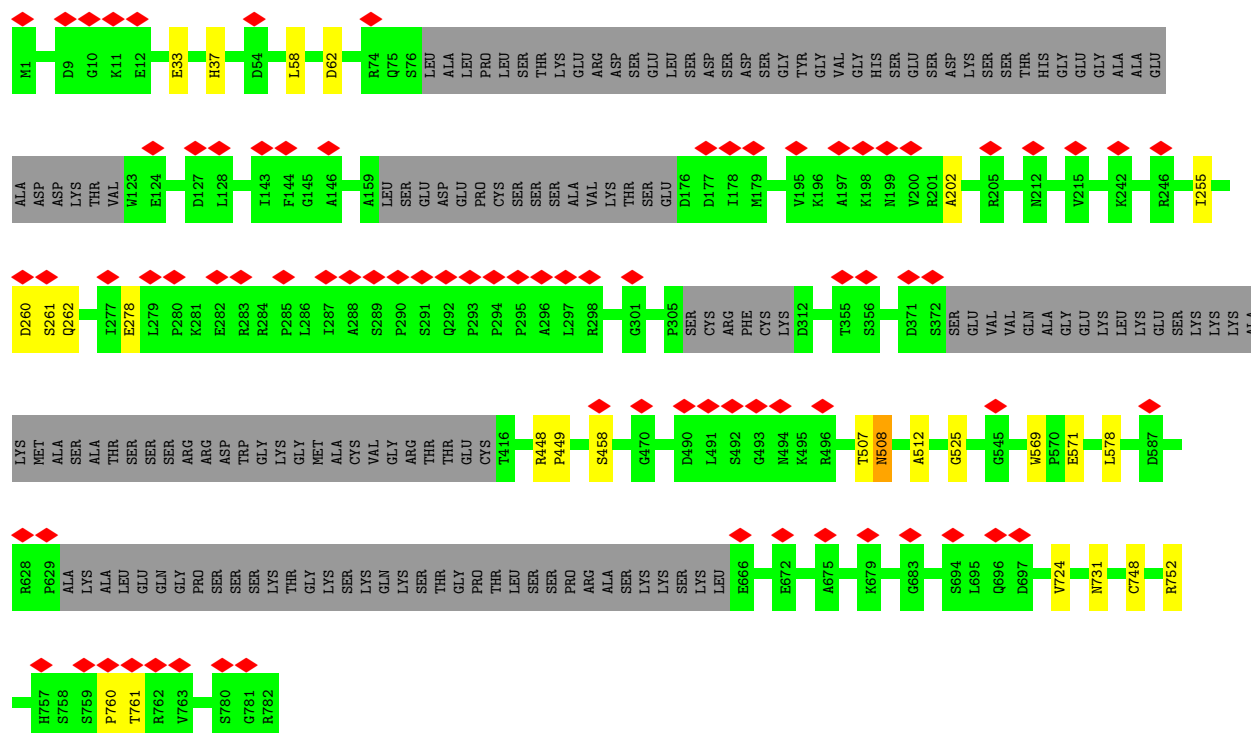
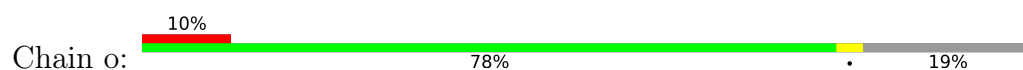


- Molecule 9: E3 ubiquitin-protein ligase UHRF1





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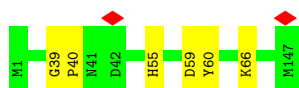
• Molecule 10: Ubiquitin-conjugating enzyme E2 D3



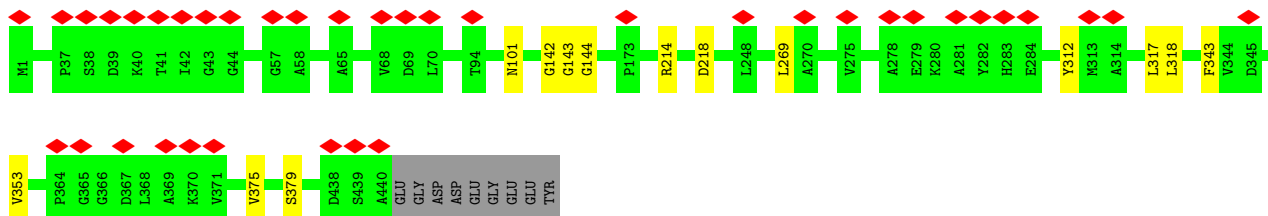
• Molecule 10: Ubiquitin-conjugating enzyme E2 D3



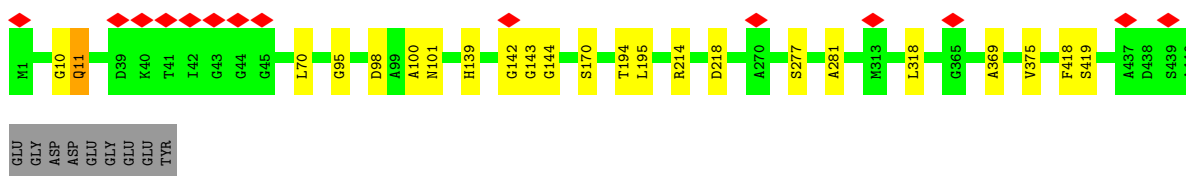
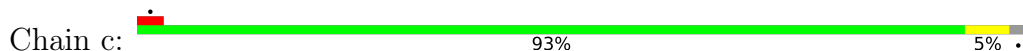
- Molecule 10: Ubiquitin-conjugating enzyme E2 D3



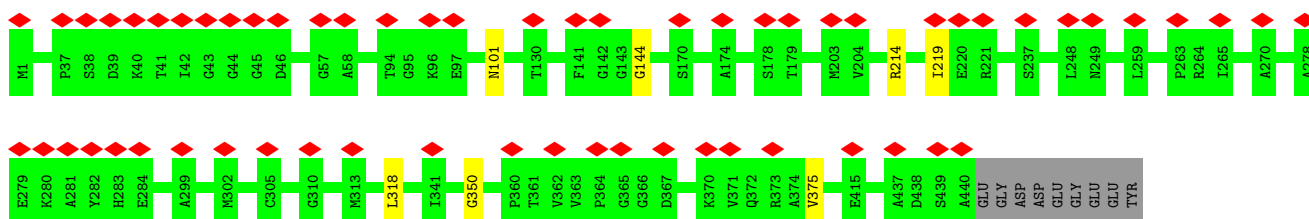
- Molecule 11: Tubulin alpha-1C chain



- Molecule 11: Tubulin alpha-1C chain

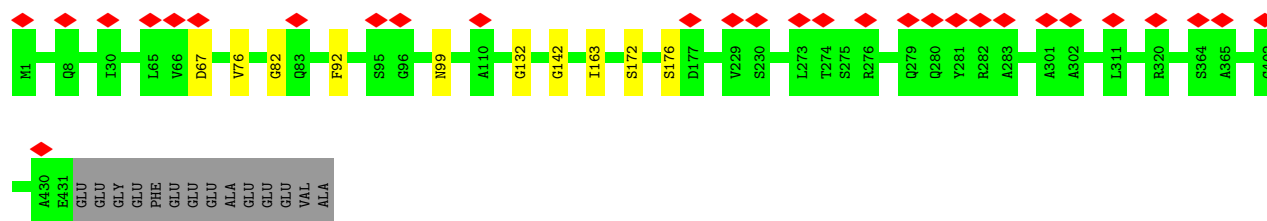


- Molecule 11: Tubulin alpha-1C chain

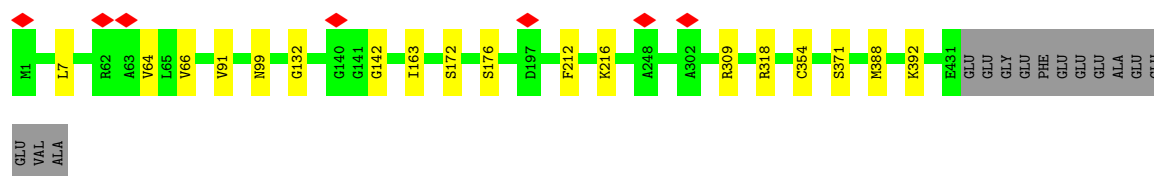


- Molecule 12: Tubulin beta-4B chain

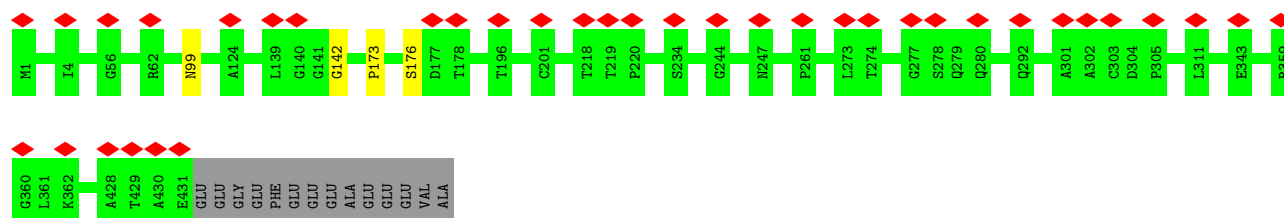




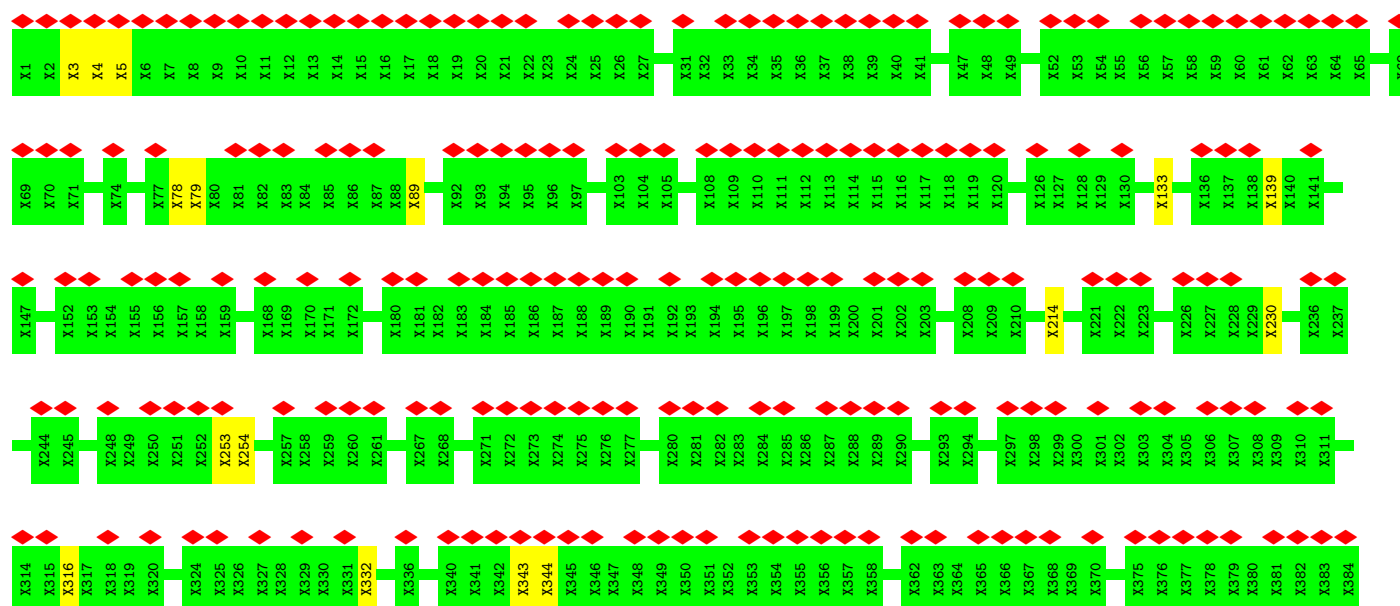
- Molecule 12: Tubulin beta-4B chain

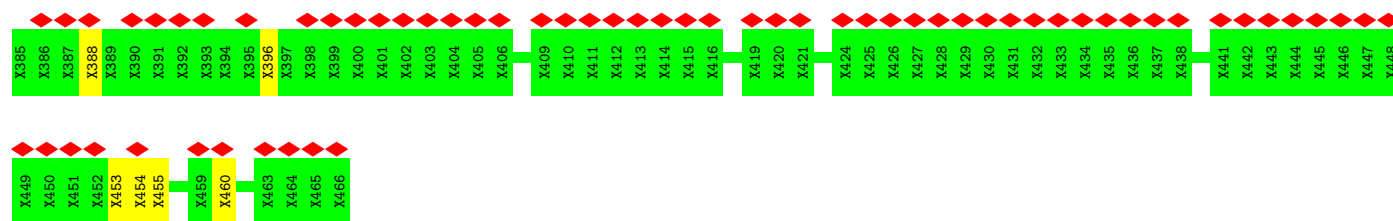


- Molecule 12: Tubulin beta-4B chain

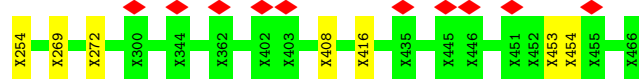
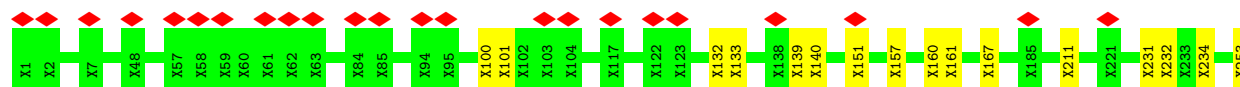


- Molecule 13: F-box/WD repeat-containing protein

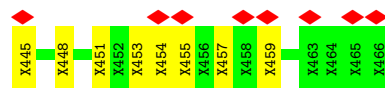
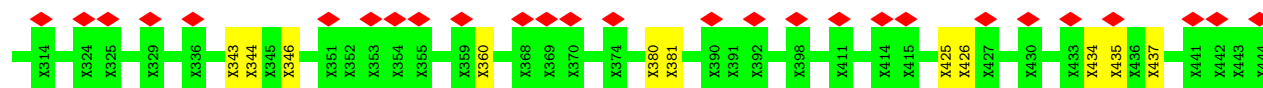
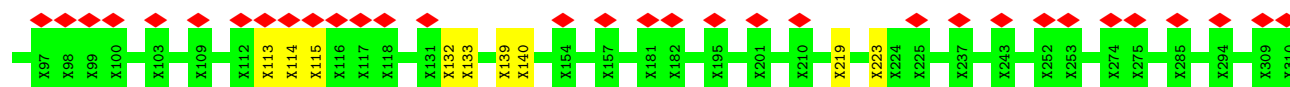
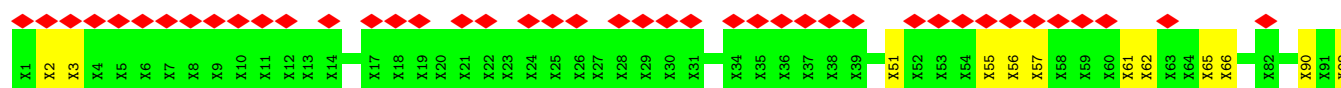
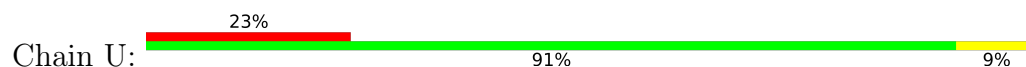




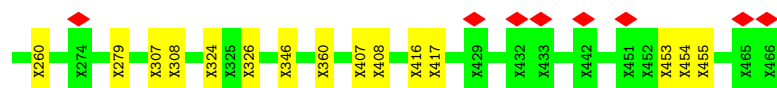
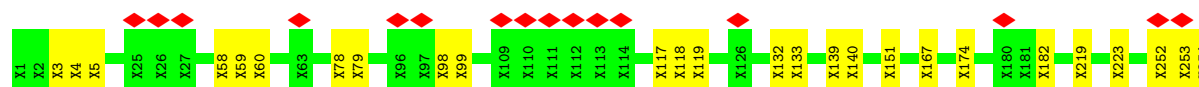
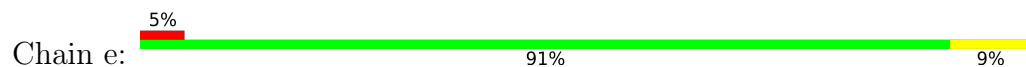
- Molecule 13: F-box/WD repeat-containing protein



- Molecule 13: F-box/WD repeat-containing protein



- Molecule 13: F-box/WD repeat-containing protein



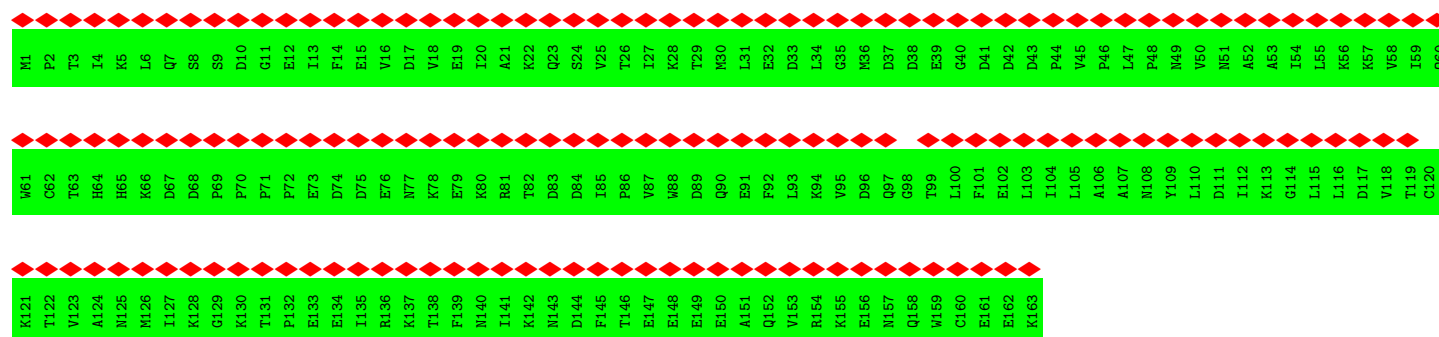
- Molecule 13: F-box/WD repeat-containing protein

Chain g:  90% 10%



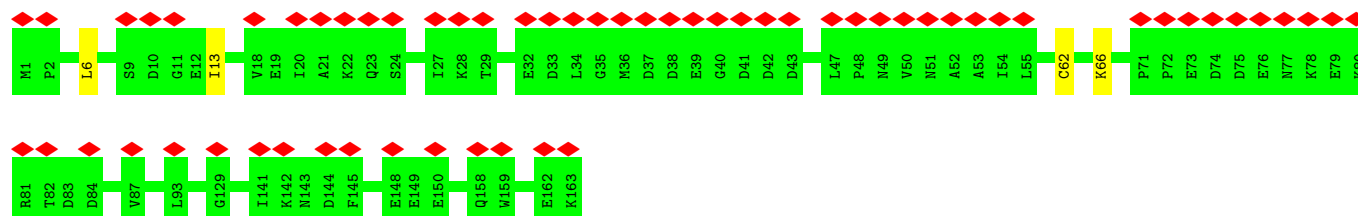
- Molecule 14: S-phase kinase-associated protein 1

Chain AM:  99% 100%



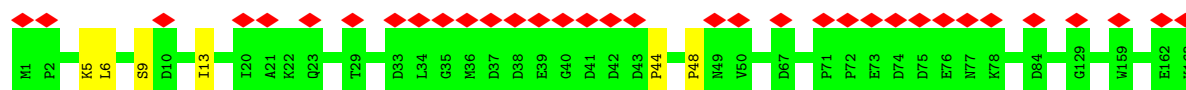
- Molecule 14: S-phase kinase-associated protein 1

Chain AO:  37% 98%



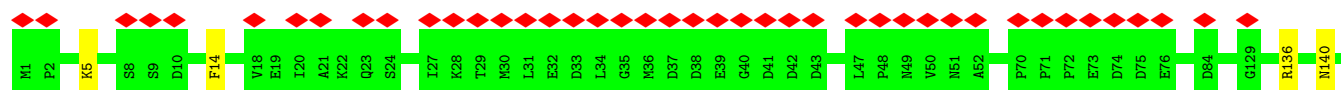
- Molecule 14: S-phase kinase-associated protein 1

Chain f:  21% 96%



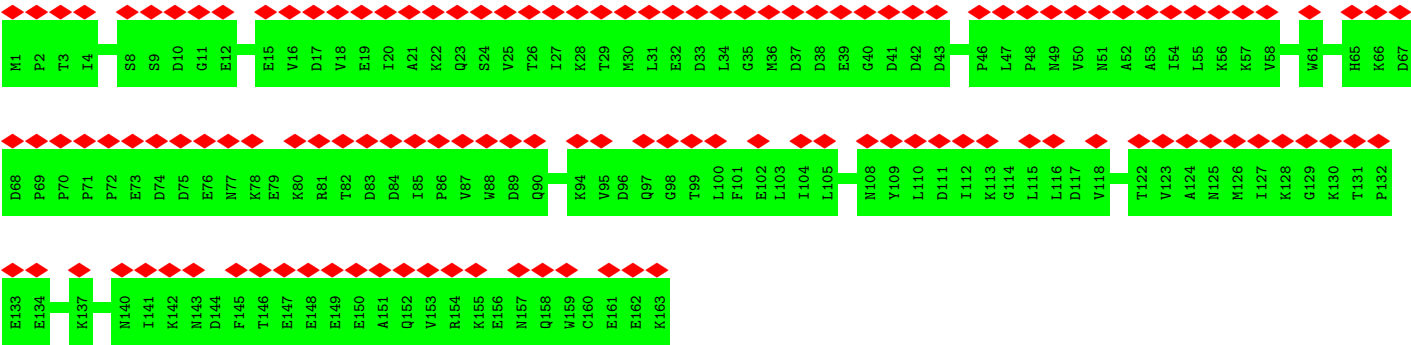
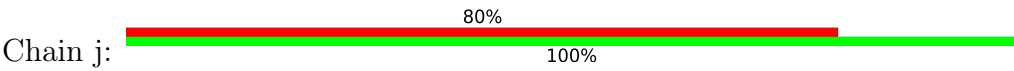
- Molecule 14: S-phase kinase-associated protein 1

Chain h:  27% 98%





• Molecule 14: S-phase kinase-associated protein 1



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	34451	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 ($e^-/\text{\AA}^2$)	115	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	4000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.272	Depositor
Minimum map value	-0.136	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.016	Depositor
Recommended contour level	0.06	Depositor
Map size (Å)	606.72, 606.72, 606.72	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.37, 2.37, 2.37	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.28	0/672	0.41	0/935
1	S	0.31	0/672	0.45	0/935
2	1	0.28	0/3372	0.57	0/4697
2	2	0.14	0/3372	0.34	0/4697
2	3	0.14	0/3372	0.35	0/4697
2	A	0.34	0/3372	0.47	0/4697
2	B	0.33	0/3372	0.45	0/4697
2	C	0.24	0/3372	0.42	0/4697
2	D	0.24	0/3372	0.42	0/4697
2	E	0.21	0/3372	0.40	0/4697
2	F	0.20	0/3372	0.39	0/4697
2	G	0.36	0/3372	0.62	0/4697
2	H	0.28	0/3372	0.43	0/4697
2	I	0.31	0/3372	0.45	0/4697
2	J	0.34	0/3372	0.47	0/4697
2	K	0.14	0/3372	0.32	0/4697
2	L	0.15	0/3372	0.35	0/4697
2	m	0.33	0/3372	0.45	0/4697
2	s	0.33	0/3372	0.43	0/4697
2	t	0.29	0/3372	0.43	0/4697
2	u	0.34	0/3372	0.49	0/4697
2	v	0.23	0/3372	0.40	0/4697
2	w	0.23	0/3372	0.40	0/4697
2	x	0.35	0/3372	0.48	0/4697
2	y	0.29	0/3372	0.46	0/4697
2	z	0.23	0/3372	0.40	0/4697
3	4	0.29	0/4700	0.43	0/6551
3	7	0.24	0/4700	0.43	0/6551
3	M	0.36	1/4700 (0.0%)	0.49	0/6551
3	P	0.33	0/4700	0.47	0/6551
4	5	0.24	0/1810	0.42	0/2517
4	8	0.20	0/1810	0.43	0/2517
4	N	0.29	0/1810	0.46	0/2517
4	Q	0.27	0/1810	0.46	0/2517

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
5	6	0.32	0/591	0.45	0/824
5	9	0.21	0/441	0.44	0/614
5	O	0.35	0/591	0.44	0/824
5	R	0.32	0/441	0.58	0/614
6	AA	0.24	0/310	0.46	0/430
6	T	0.31	0/310	0.49	0/430
7	AE	0.19	0/4641	0.36	0/6475
7	AF	0.19	0/4195	0.39	0/5854
7	X	0.22	0/4641	0.39	0/6475
7	Y	0.22	0/4195	0.39	0/5854
8	AG	0.25	0/4793	0.42	0/6687
8	Z	0.26	0/4793	0.40	0/6687
8	n	0.23	0/4793	0.39	0/6687
9	AH	0.25	0/3125	0.40	0/4339
9	a	0.26	0/3125	0.42	0/4339
9	o	0.24	0/3125	0.40	0/4339
10	AI	0.37	0/728	0.49	0/1014
10	b	0.38	0/728	0.46	0/1014
10	p	0.35	0/728	0.45	0/1014
11	AJ	0.27	0/2166	0.39	0/3011
11	c	0.33	0/2166	0.44	0/3011
11	q	0.24	0/2166	0.36	0/3011
12	AK	0.30	0/2120	0.43	0/2946
12	d	0.38	0/2120	0.47	0/2946
12	r	0.26	0/2120	0.41	0/2946
14	AM	0.15	0/808	0.34	0/1126
14	AO	0.22	0/808	0.34	0/1126
14	f	0.27	0/808	0.38	0/1126
14	h	0.24	0/808	0.37	0/1126
14	j	0.18	0/808	0.33	0/1126
All	All	0.27	1/171504 (0.0%)	0.43	0/238885

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	1	0	2
2	G	0	1
2	J	0	1
7	AF	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
8	Z	0	1
8	n	0	1
All	All	0	7

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	M	876	MET	C-N	-6.18	1.23	1.33

There are no bond angle outliers.

There are no chirality outliers.

5 of 7 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	1	129	ASP	Peptide
2	1	45	SER	Peptide
7	AF	933	PHE	Peptide
2	G	215	GLN	Peptide
2	J	509	GLY	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	673	0	298	3	0
1	S	673	0	298	5	0
2	1	3373	0	1454	27	0
2	2	3373	0	1454	5	0
2	3	3373	0	1454	1	0
2	A	3373	0	1454	31	0
2	B	3373	0	1454	21	0
2	C	3373	0	1454	12	0
2	D	3373	0	1454	26	0
2	E	3373	0	1454	19	0
2	F	3373	0	1454	14	0
2	G	3373	0	1454	41	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	H	3373	0	1454	18	0
2	I	3373	0	1454	30	0
2	J	3373	0	1454	41	0
2	K	3373	0	1454	3	0
2	L	3373	0	1454	10	0
2	m	3373	0	1454	21	0
2	s	3373	0	1454	31	0
2	t	3373	0	1454	25	0
2	u	3373	0	1454	37	0
2	v	3373	0	1454	24	0
2	w	3373	0	1454	16	0
2	x	3373	0	1454	40	0
2	y	3373	0	1454	27	0
2	z	3373	0	1454	12	0
3	4	4702	0	2048	21	0
3	7	4702	0	2048	6	0
3	M	4702	0	2048	33	0
3	P	4702	0	2048	18	0
4	5	1812	0	802	17	0
4	8	1812	0	802	13	0
4	N	1812	0	802	16	0
4	Q	1812	0	802	14	0
5	6	592	0	266	5	0
5	9	442	0	200	2	0
5	O	592	0	266	3	0
5	R	442	0	200	2	0
6	AA	311	0	140	2	0
6	T	311	0	140	4	0
7	AE	4643	0	2005	5	0
7	AF	4196	0	1802	7	0
7	X	4643	0	2005	8	0
7	Y	4196	0	1802	8	0
8	AG	4794	0	2077	8	0
8	Z	4794	0	2077	14	0
8	n	4794	0	2077	7	0
9	AH	3131	0	1365	18	0
9	a	3131	0	1365	17	0
9	o	3131	0	1365	13	0
10	AI	729	0	314	1	0
10	b	729	0	314	5	0
10	p	729	0	314	3	0
11	AJ	2167	0	1009	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	c	2167	0	1009	13	0
11	q	2167	0	1009	4	0
12	AK	2121	0	962	6	0
12	d	2121	0	962	9	0
12	r	2121	0	962	2	0
13	AL	2312	0	498	12	0
13	AN	2312	0	497	12	0
13	U	2312	0	505	22	0
13	e	2312	0	502	24	0
13	g	2312	0	505	25	0
14	AM	809	0	345	0	0
14	AO	809	0	345	2	0
14	f	809	0	345	3	0
14	h	809	0	345	2	0
14	j	809	0	345	0	0
All	All	183153	0	77131	947	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 4.

The worst 5 of 947 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)
4:5:393:ALA:HB2	4:5:432:ALA:O	1.81	0.80
2:x:271:ALA:HB2	2:x:278:GLU:N	2.03	0.74
9:a:458:SER:HA	9:a:512:ALA:HB2	1.74	0.70
3:M:566:GLN:HA	3:M:591:LEU:HA	1.75	0.69
2:u:271:ALA:HB2	2:u:278:GLU:N	2.09	0.67

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	134/440 (30%)	125 (93%)	9 (7%)	0	100	100
1	S	134/440 (30%)	123 (92%)	11 (8%)	0	100	100
2	1	680/682 (100%)	607 (89%)	72 (11%)	1 (0%)	48	83
2	2	680/682 (100%)	650 (96%)	30 (4%)	0	100	100
2	3	680/682 (100%)	650 (96%)	30 (4%)	0	100	100
2	A	680/682 (100%)	608 (89%)	71 (10%)	1 (0%)	48	83
2	B	680/682 (100%)	618 (91%)	61 (9%)	1 (0%)	48	83
2	C	680/682 (100%)	630 (93%)	49 (7%)	1 (0%)	48	83
2	D	680/682 (100%)	627 (92%)	52 (8%)	1 (0%)	48	83
2	E	680/682 (100%)	635 (93%)	45 (7%)	0	100	100
2	F	680/682 (100%)	631 (93%)	48 (7%)	1 (0%)	48	83
2	G	680/682 (100%)	601 (88%)	78 (12%)	1 (0%)	48	83
2	H	680/682 (100%)	624 (92%)	56 (8%)	0	100	100
2	I	680/682 (100%)	611 (90%)	69 (10%)	0	100	100
2	J	680/682 (100%)	604 (89%)	74 (11%)	2 (0%)	36	72
2	K	680/682 (100%)	648 (95%)	31 (5%)	1 (0%)	48	83
2	L	680/682 (100%)	652 (96%)	28 (4%)	0	100	100
2	m	680/682 (100%)	613 (90%)	67 (10%)	0	100	100
2	s	680/682 (100%)	621 (91%)	59 (9%)	0	100	100
2	t	680/682 (100%)	624 (92%)	55 (8%)	1 (0%)	48	83
2	u	680/682 (100%)	605 (89%)	73 (11%)	2 (0%)	36	72
2	v	680/682 (100%)	624 (92%)	56 (8%)	0	100	100
2	w	680/682 (100%)	629 (92%)	50 (7%)	1 (0%)	48	83
2	x	680/682 (100%)	610 (90%)	70 (10%)	0	100	100
2	y	680/682 (100%)	608 (89%)	71 (10%)	1 (0%)	48	83
2	z	680/682 (100%)	637 (94%)	43 (6%)	0	100	100
3	4	945/1163 (81%)	861 (91%)	84 (9%)	0	100	100
3	7	945/1163 (81%)	871 (92%)	74 (8%)	0	100	100
3	M	945/1163 (81%)	847 (90%)	98 (10%)	0	100	100
3	P	945/1163 (81%)	839 (89%)	106 (11%)	0	100	100
4	5	363/581 (62%)	325 (90%)	37 (10%)	1 (0%)	36	72
4	8	363/581 (62%)	317 (87%)	46 (13%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	N	363/581 (62%)	318 (88%)	44 (12%)	1 (0%)	36	72
4	Q	363/581 (62%)	311 (86%)	52 (14%)	0	100	100
5	6	117/164 (71%)	111 (95%)	6 (5%)	0	100	100
5	9	87/164 (53%)	80 (92%)	7 (8%)	0	100	100
5	O	117/164 (71%)	110 (94%)	7 (6%)	0	100	100
5	R	87/164 (53%)	74 (85%)	13 (15%)	0	100	100
6	AA	61/228 (27%)	56 (92%)	5 (8%)	0	100	100
6	T	61/228 (27%)	53 (87%)	8 (13%)	0	100	100
7	AE	931/937 (99%)	871 (94%)	58 (6%)	2 (0%)	43	78
7	AF	843/937 (90%)	788 (94%)	54 (6%)	1 (0%)	48	83
7	X	931/937 (99%)	873 (94%)	56 (6%)	2 (0%)	43	78
7	Y	843/937 (90%)	792 (94%)	49 (6%)	2 (0%)	43	78
8	AG	964/993 (97%)	892 (92%)	72 (8%)	0	100	100
8	Z	964/993 (97%)	904 (94%)	60 (6%)	0	100	100
8	n	964/993 (97%)	886 (92%)	78 (8%)	0	100	100
9	AH	623/782 (80%)	565 (91%)	58 (9%)	0	100	100
9	a	623/782 (80%)	573 (92%)	50 (8%)	0	100	100
9	o	623/782 (80%)	563 (90%)	59 (10%)	1 (0%)	43	78
10	AI	145/147 (99%)	132 (91%)	13 (9%)	0	100	100
10	b	145/147 (99%)	133 (92%)	12 (8%)	0	100	100
10	p	145/147 (99%)	133 (92%)	12 (8%)	0	100	100
11	AJ	438/449 (98%)	412 (94%)	26 (6%)	0	100	100
11	c	438/449 (98%)	404 (92%)	33 (8%)	1 (0%)	43	78
11	q	438/449 (98%)	414 (94%)	24 (6%)	0	100	100
12	AK	429/445 (96%)	398 (93%)	31 (7%)	0	100	100
12	d	429/445 (96%)	400 (93%)	29 (7%)	0	100	100
12	r	429/445 (96%)	416 (97%)	13 (3%)	0	100	100
14	AM	161/163 (99%)	156 (97%)	5 (3%)	0	100	100
14	AO	161/163 (99%)	152 (94%)	9 (6%)	0	100	100
14	f	161/163 (99%)	154 (96%)	7 (4%)	0	100	100
14	h	161/163 (99%)	152 (94%)	9 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	j	161/163 (99%)	150 (93%)	11 (7%)	0	100	100
All	All	34500/38347 (90%)	31701 (92%)	2773 (8%)	26 (0%)	49	83

5 of 26 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	AF	926	PHE
2	D	218	SER
7	Y	928	VAL
11	c	11	GLN
2	u	99	ASP

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

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](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

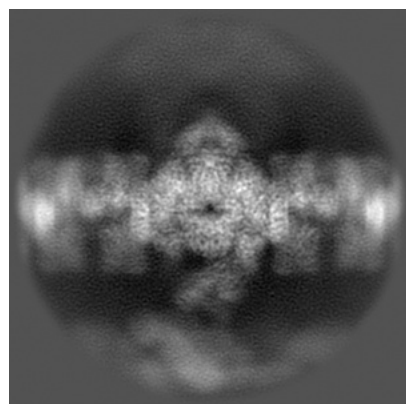
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-55604. These allow visual inspection of the internal detail of the map and identification of artifacts.

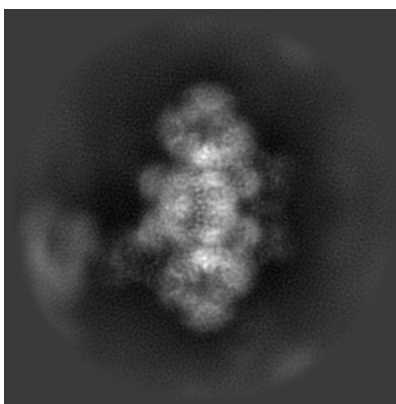
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

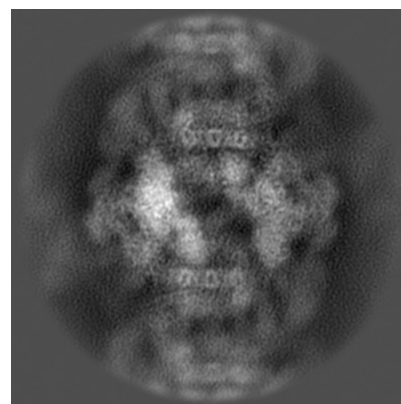
6.1.1 Primary map



X

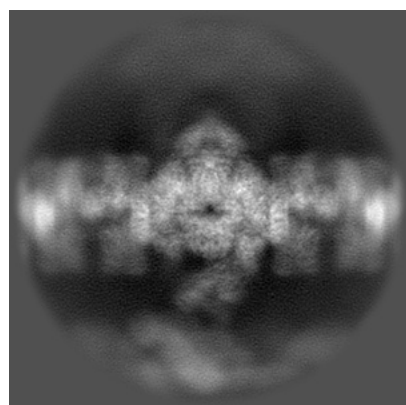


Y

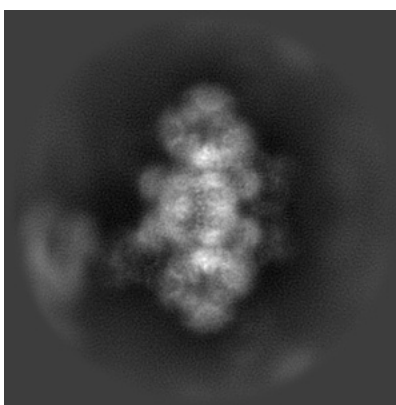


Z

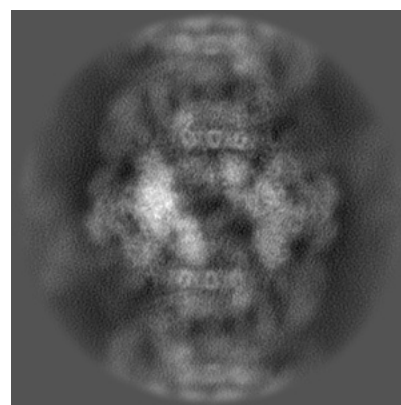
6.1.2 Raw map



X



Y

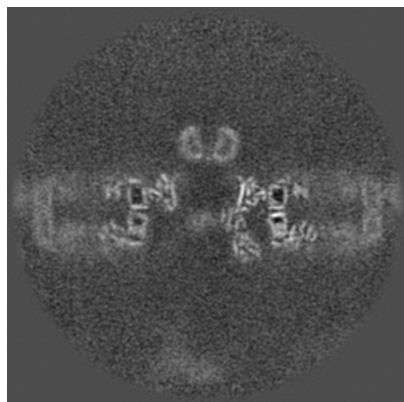


Z

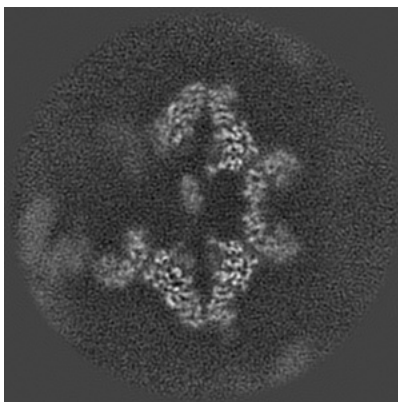
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

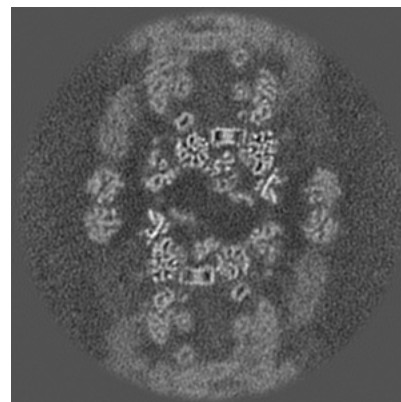
6.2.1 Primary map



X Index: 128

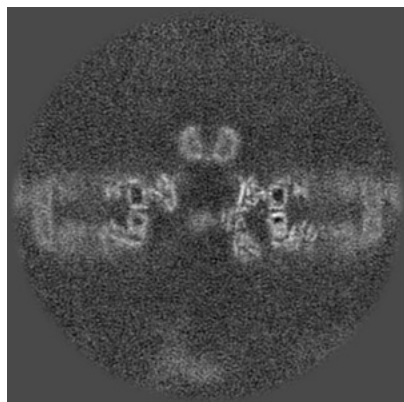


Y Index: 128

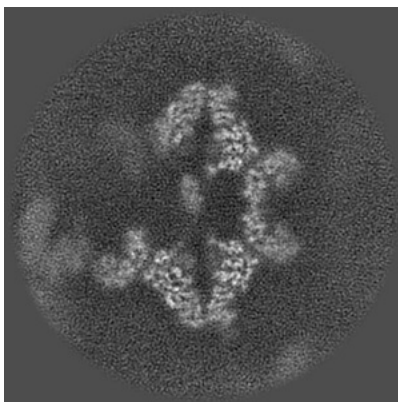


Z Index: 128

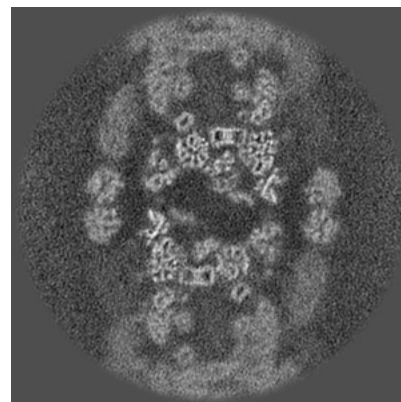
6.2.2 Raw map



X Index: 128



Y Index: 128

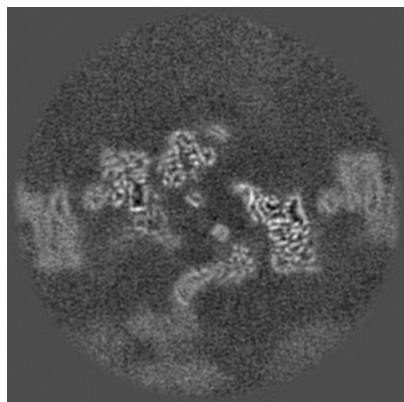


Z Index: 128

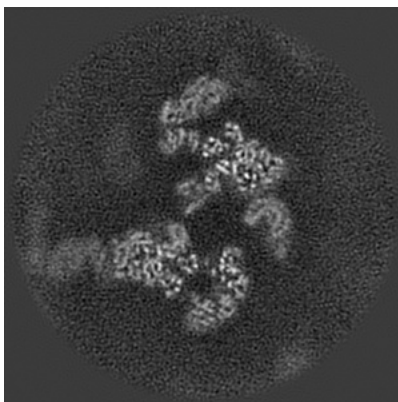
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

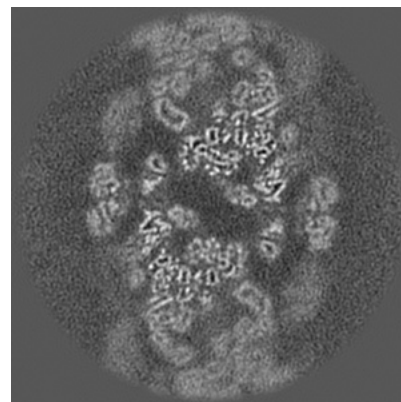
6.3.1 Primary map



X Index: 111

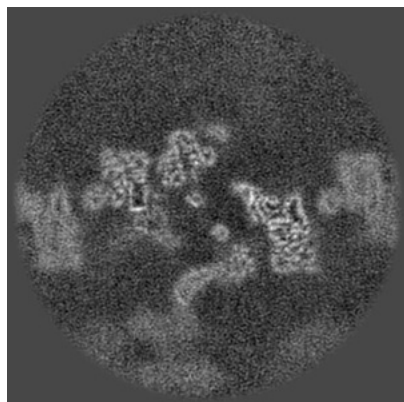


Y Index: 137

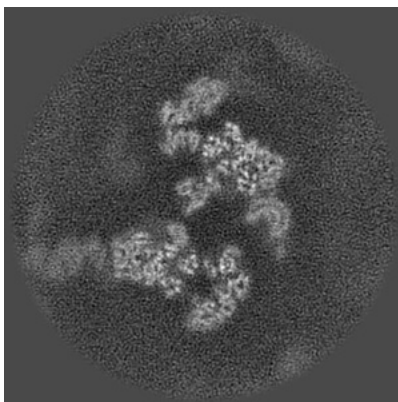


Z Index: 133

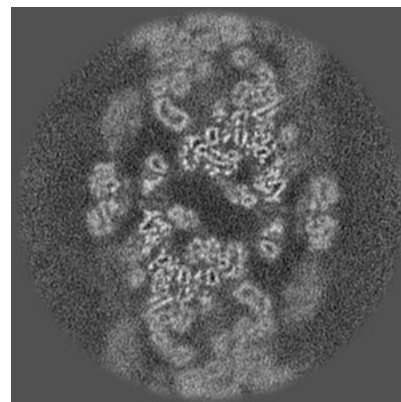
6.3.2 Raw map



X Index: 111



Y Index: 138

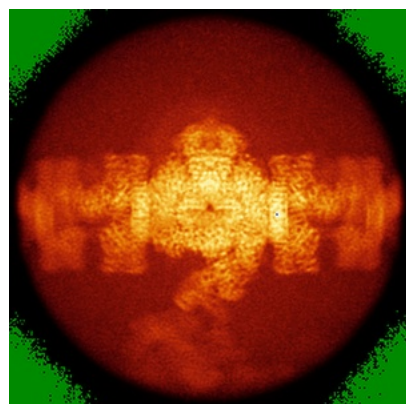


Z Index: 133

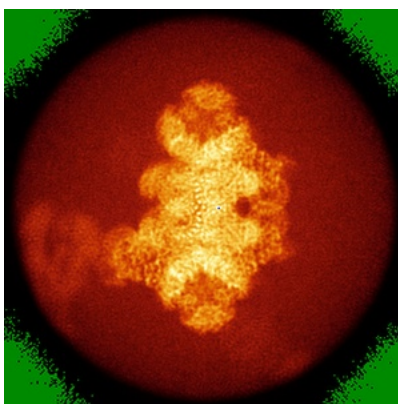
The images above show the largest variance slices of the map in three orthogonal directions.

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

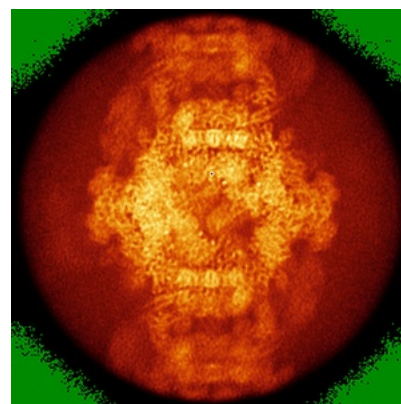
6.4.1 Primary map



X

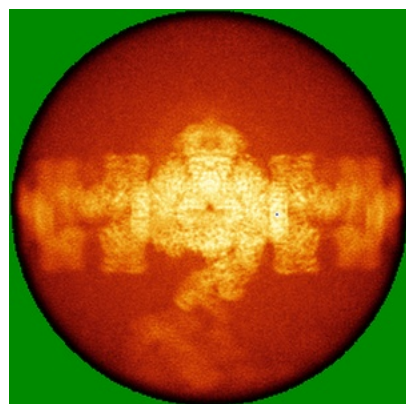


Y

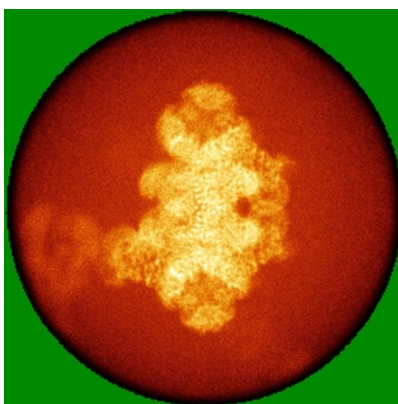


Z

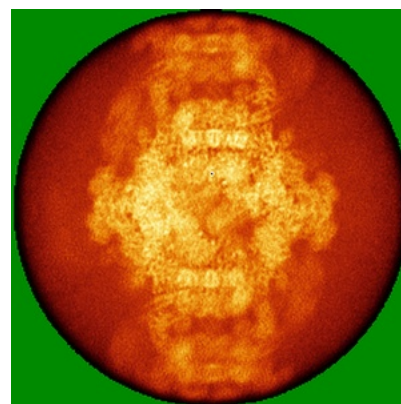
6.4.2 Raw map



X



Y

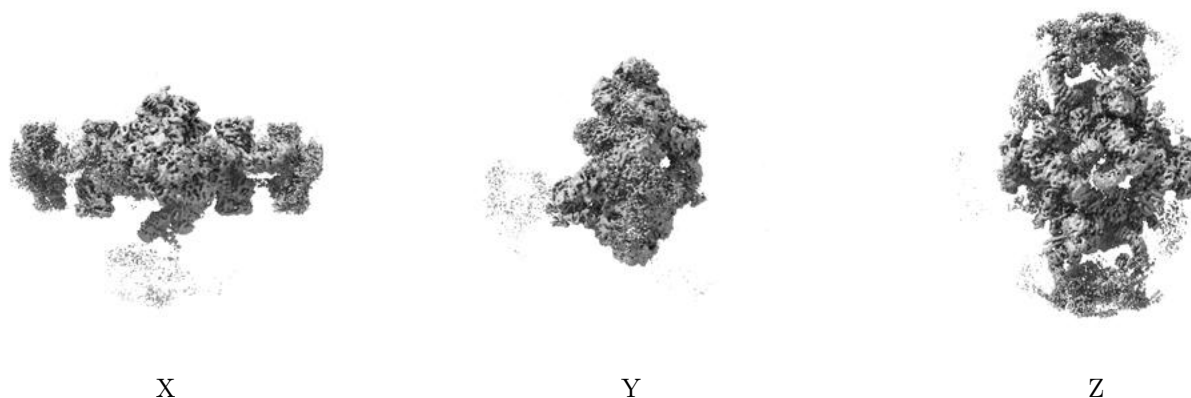


Z

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.

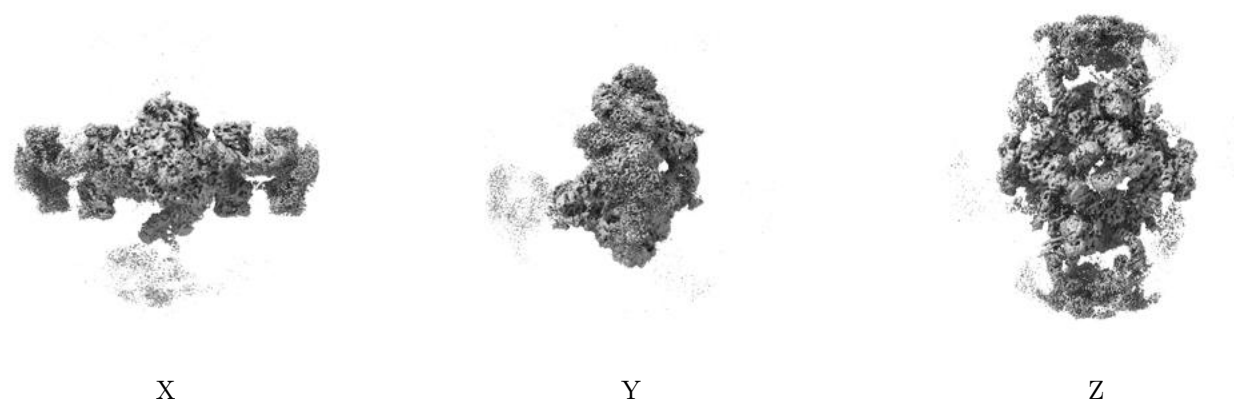
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.06. 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.

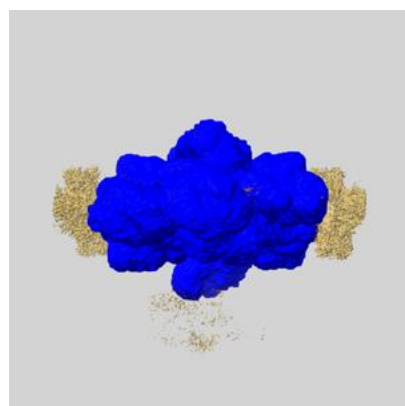
6.6 Mask visualisation [i](#)

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

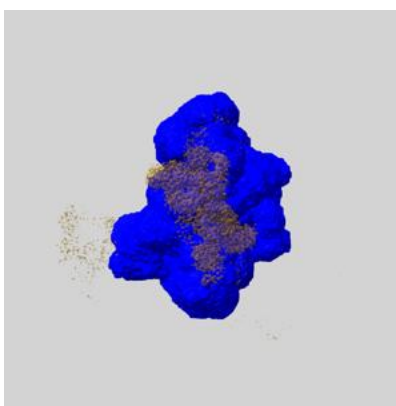
A mask typically either:

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

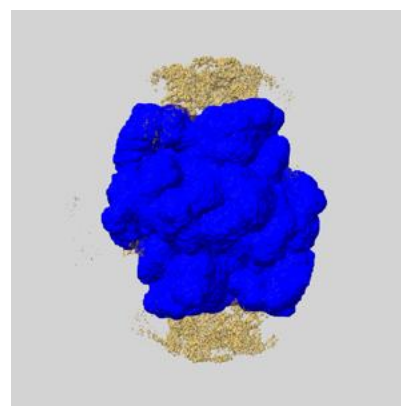
6.6.1 emd_55604_msk_1.map [i](#)



X



Y

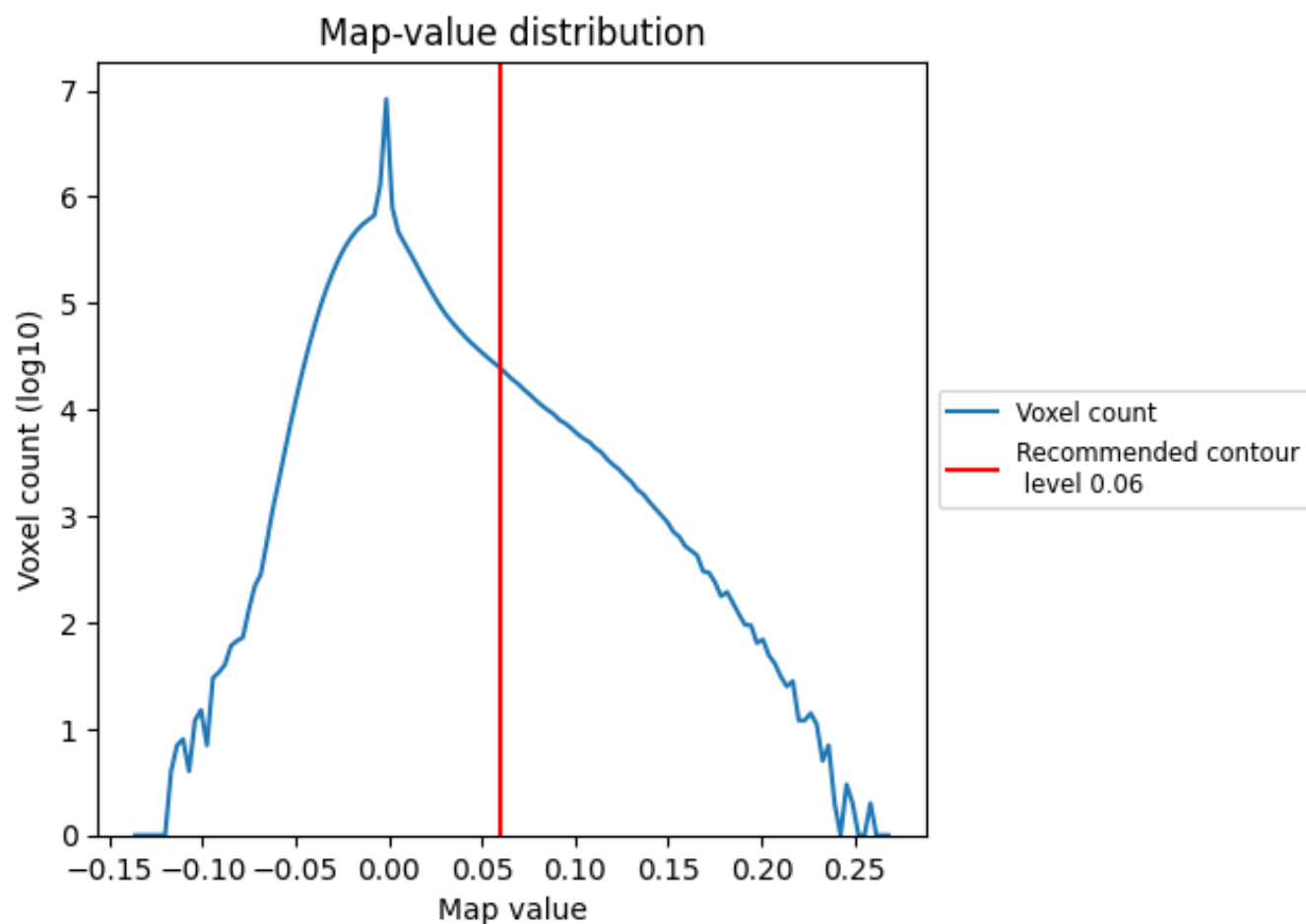


Z

7 Map analysis [i](#)

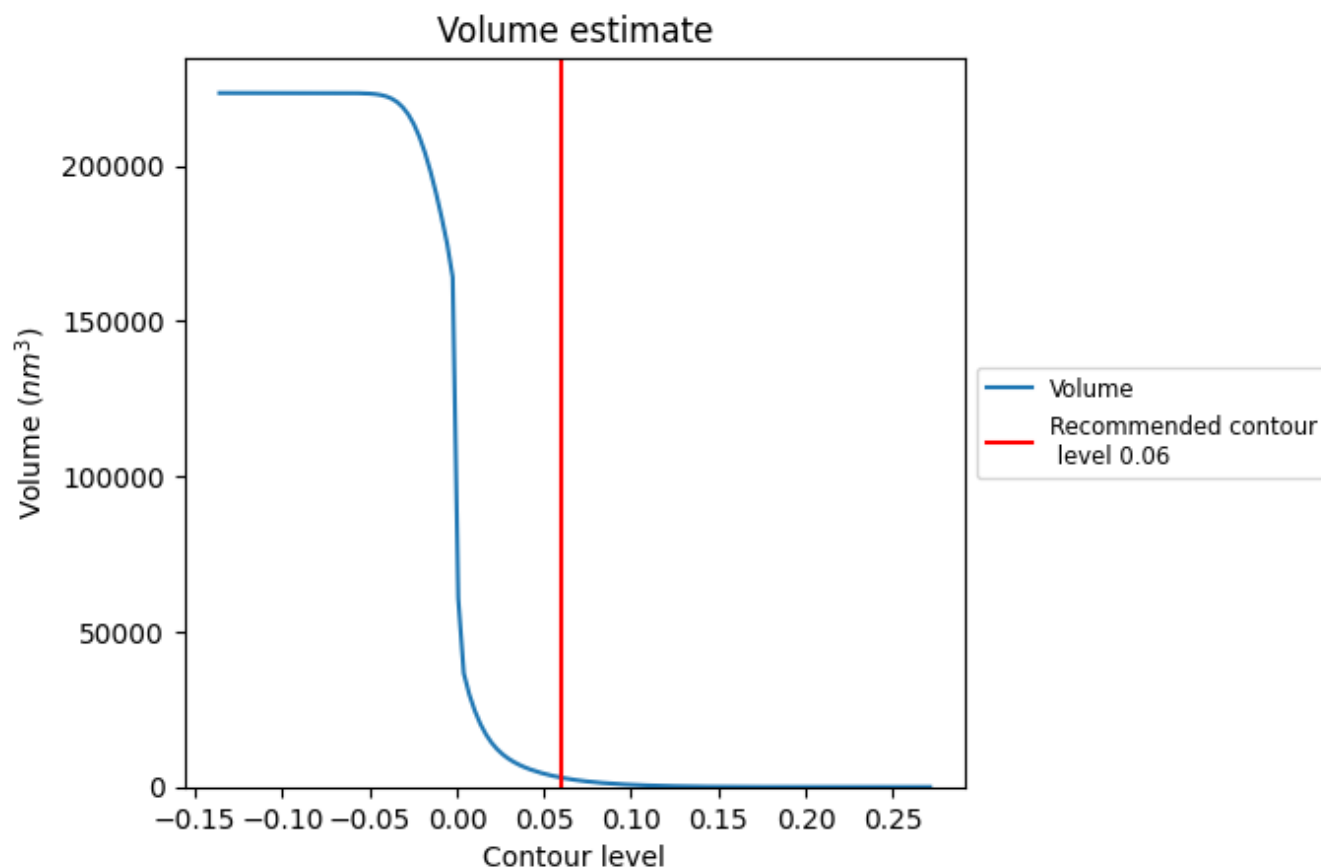
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

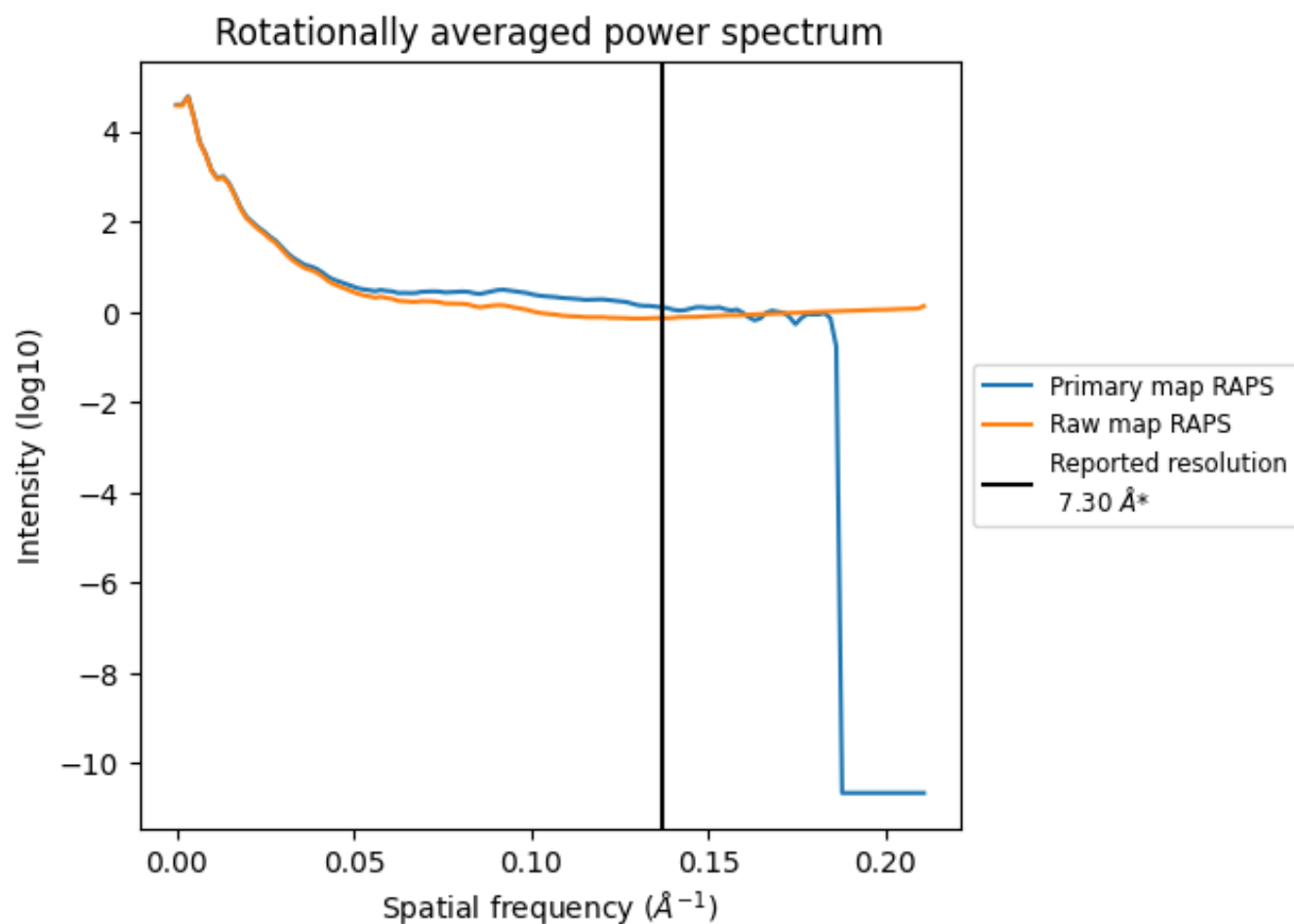
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3001 nm³; this corresponds to an approximate mass of 2711 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 ⓘ

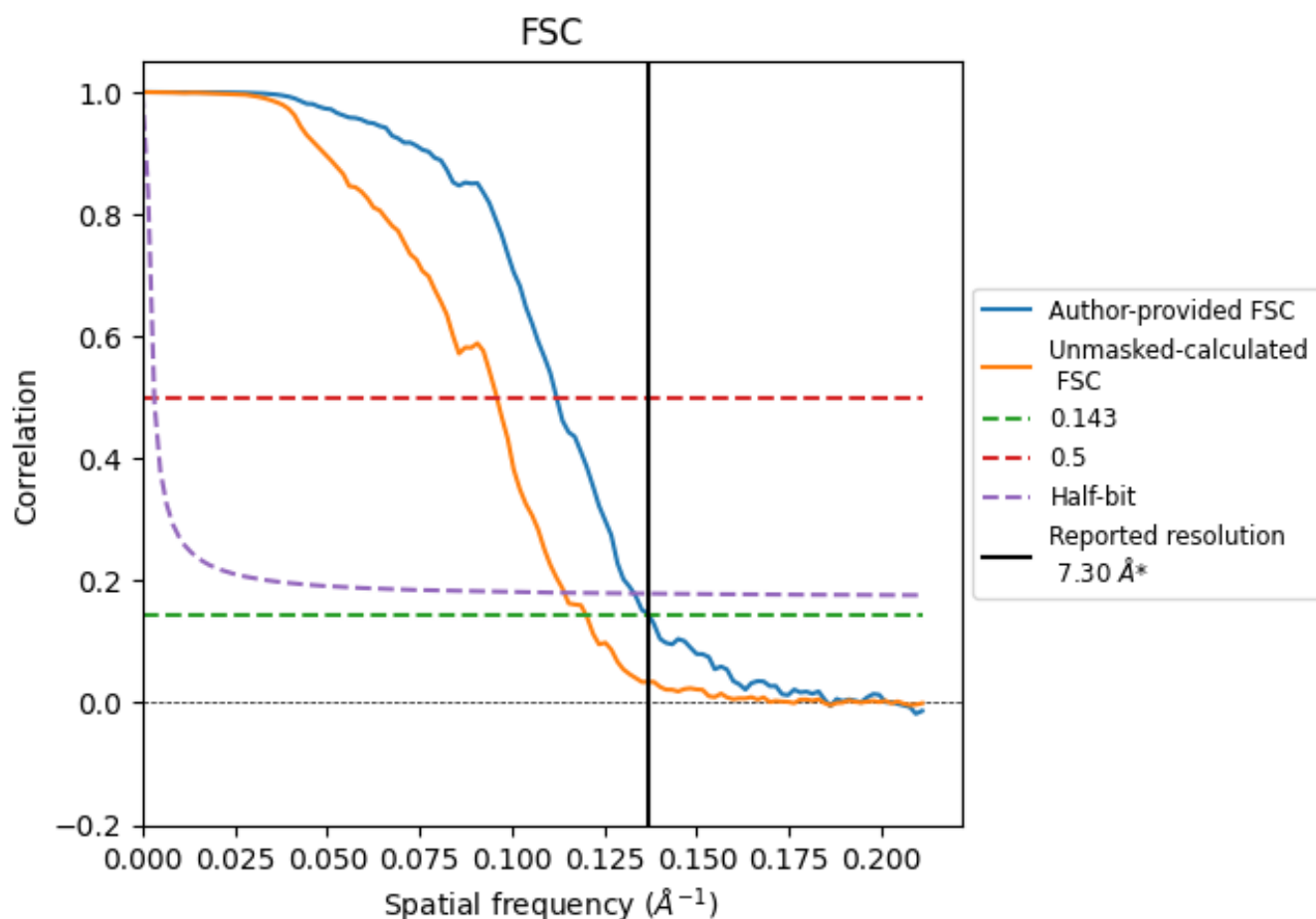


*Reported resolution corresponds to spatial frequency of 0.137 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of $0.137 \text{ \AA}^{-1}$

8.2 Resolution estimates

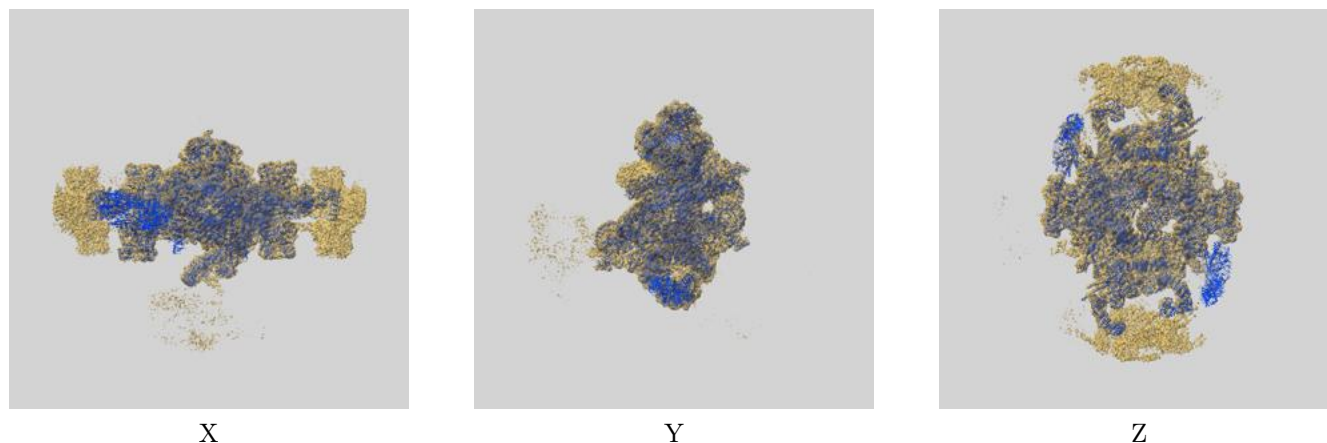
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	7.30	-	-
Author-provided FSC curve	7.29	8.92	7.51
Unmasked-calculated*	8.33	10.43	8.76

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 8.33 differs from the reported value 7.3 by more than 10 %

9 Map-model fit [i](#)

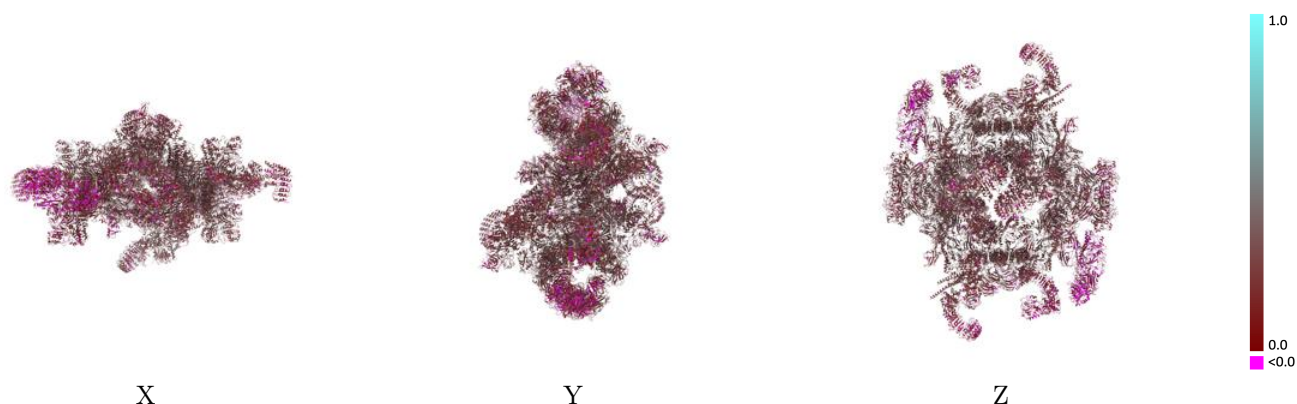
This section contains information regarding the fit between EMDB map EMD-55604 and PDB model 9T64. Per-residue inclusion information can be found in [section 3](#) on [page 11](#).

9.1 Map-model overlay [i](#)



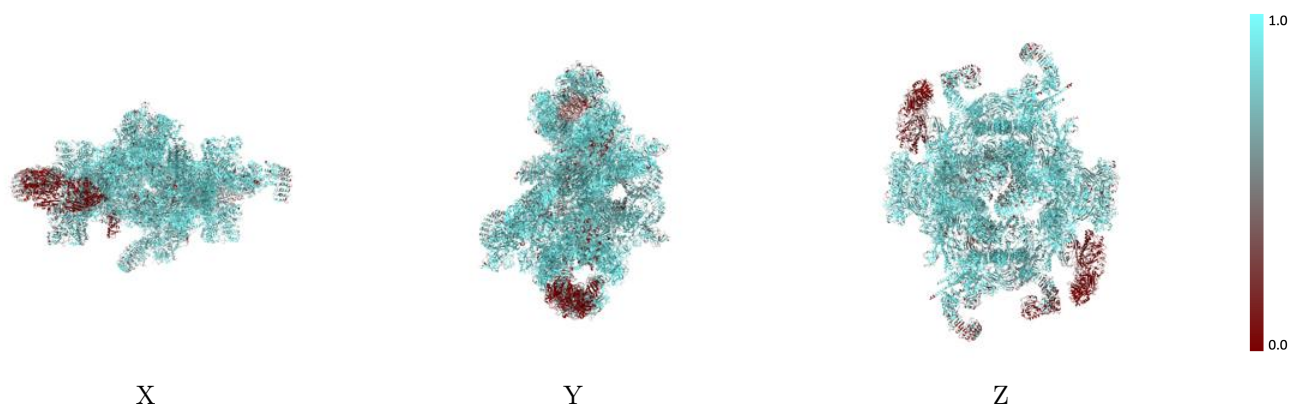
The images above show the 3D surface view of the map at the recommended contour level 0.06 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



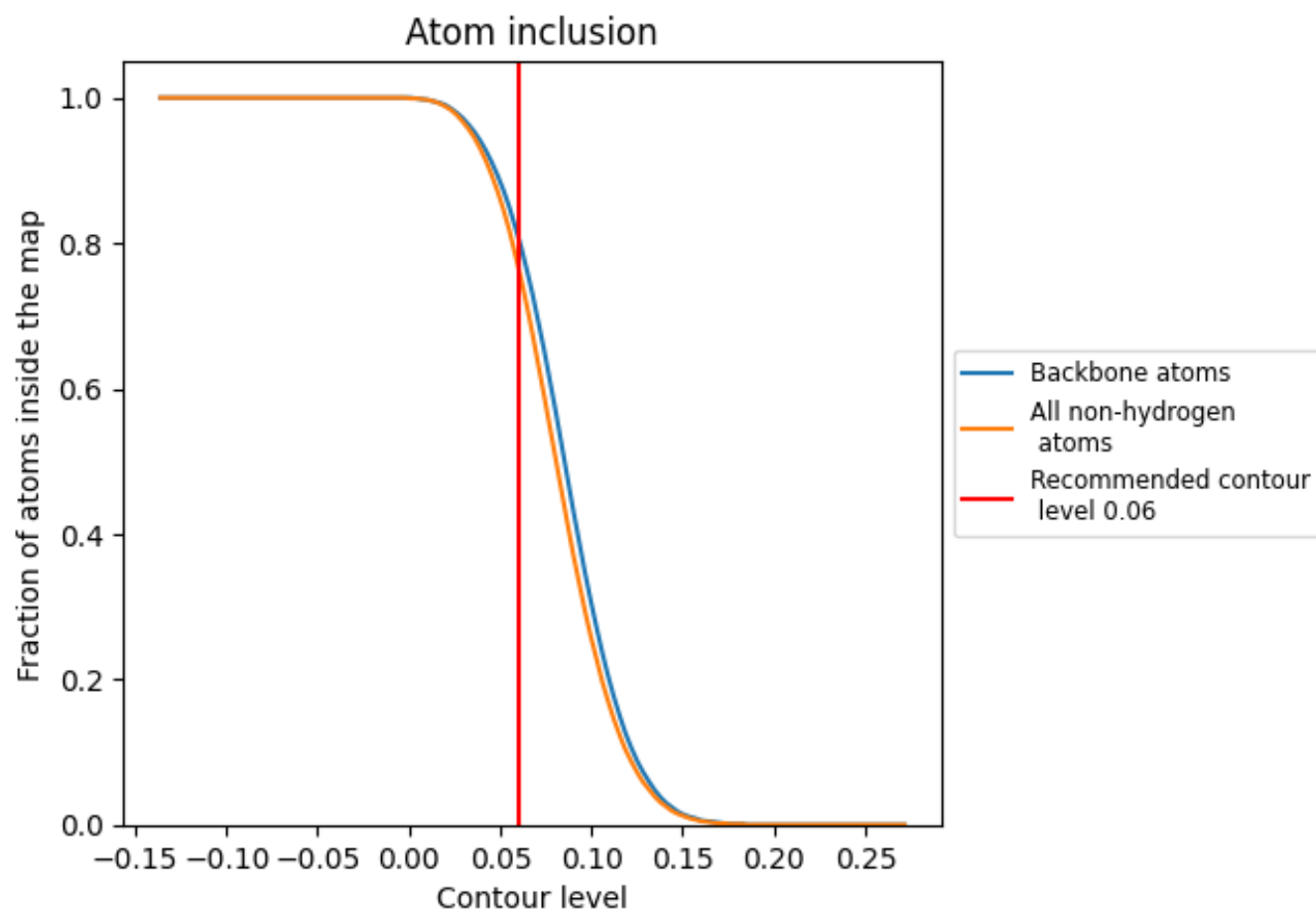
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.06).

9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 77% 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 (0.06) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7670	 0.2450
0	 0.8600	 0.2670
1	 0.8710	 0.2780
2	 0.0190	 0.0740
3	 0.0290	 0.0720
4	 0.8750	 0.2660
5	 0.8210	 0.2440
6	 0.8850	 0.2750
7	 0.7810	 0.2270
8	 0.7260	 0.2030
9	 0.6900	 0.2070
A	 0.9150	 0.3010
AA	 0.7490	 0.2070
AE	 0.6060	 0.1800
AF	 0.4950	 0.1510
AG	 0.8020	 0.2370
AH	 0.8060	 0.2500
AI	 0.9450	 0.2970
AJ	 0.8620	 0.2640
AK	 0.8680	 0.2610
AL	 0.4060	 0.2200
AM	 0.0250	 0.1130
AN	 0.8680	 0.2560
AO	 0.6000	 0.2380
B	 0.8850	 0.2950
C	 0.8380	 0.2460
D	 0.8420	 0.2560
E	 0.7420	 0.2060
F	 0.7770	 0.2180
G	 0.9190	 0.3020
H	 0.9010	 0.2820
I	 0.8960	 0.2900
J	 0.9190	 0.3060
K	 0.0870	 0.1030
L	 0.1520	 0.1330



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Chain	Atom inclusion	Q-score
M	 0.9160	 0.2880
N	 0.8810	 0.2640
O	 0.8870	 0.2900
P	 0.9150	 0.2740
Q	 0.8850	 0.2710
R	 0.8510	 0.2740
S	 0.8780	 0.2700
T	 0.8940	 0.2670
U	 0.6940	 0.2680
X	 0.7230	 0.2080
Y	 0.7590	 0.2220
Z	 0.8410	 0.2480
a	 0.8430	 0.2530
b	 0.9490	 0.2970
c	 0.9090	 0.2830
d	 0.9400	 0.2930
e	 0.8900	 0.2910
f	 0.7610	 0.2610
g	 0.9430	 0.3080
h	 0.6860	 0.2270
j	 0.2460	 0.2030
m	 0.9250	 0.3020
n	 0.7970	 0.2330
o	 0.8340	 0.2560
p	 0.9410	 0.2930
q	 0.8000	 0.2490
r	 0.8340	 0.2730
s	 0.8960	 0.2990
t	 0.9050	 0.2740
u	 0.9080	 0.2960
v	 0.8490	 0.2470
w	 0.8450	 0.2380
x	 0.9140	 0.3000
y	 0.9140	 0.2910
z	 0.7980	 0.2470