wwPDB EM Validation Summary Report ⓘ

Nov 10, 2025 – 02:22 PM EST

PDB ID	:	8UXA / pdb_00008uxa
EMDB ID	:	EMD-42720
Title	:	Glucose treated mitochondrial ribosome of saccharomyces cerevisiae class I
Authors	:	Yu, Z.; Zheng, F.; Zhou, C.
Deposited on	:	2023-11-09
Resolution	:	3.20 Å(reported)

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

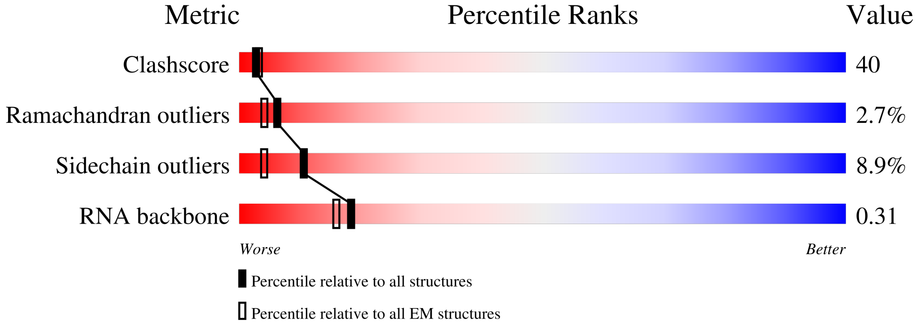
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

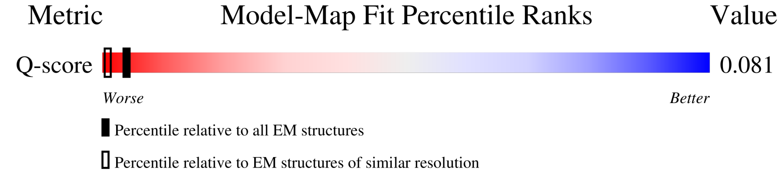
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.20 Å.

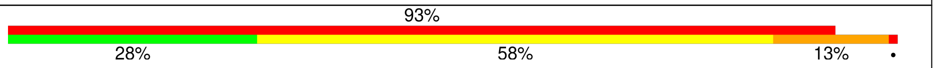
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	15020 (2.70 - 3.70)

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

Mol	Chain	Length	Quality of chain
1	AA	34	
2	AB	101	
3	AC	259	

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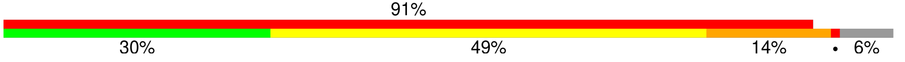
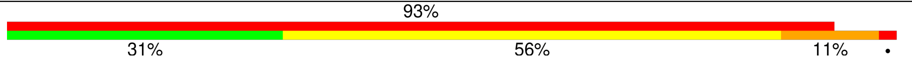
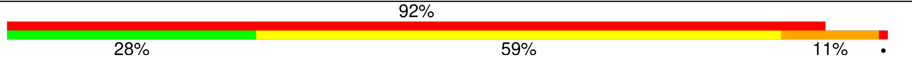
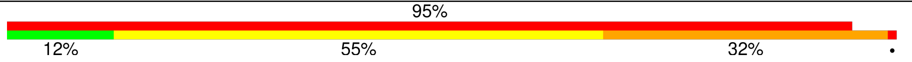
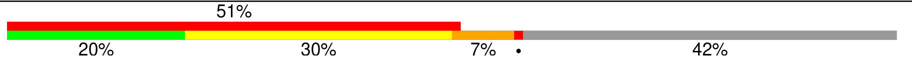
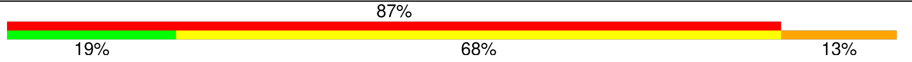
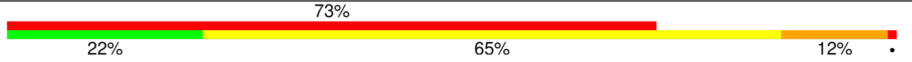
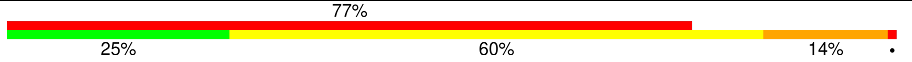
Mol	Chain	Length	Quality of chain
4	AD	321	
5	AE	339	
6	AF	320	
7	AG	236	
8	AH	234	
9	AI	405	
10	AJ	96	
11	AK	273	
12	AL	1649	
13	AM	76	
14	AN	13	
15	Z	91	
16	g	344	
17	h	267	
18	i	398	
19	j	486	
20	k	293	
21	l	131	
22	m	161	
23	n	155	
24	o	244	
25	p	186	
26	q	152	
27	r	125	
28	s	120	

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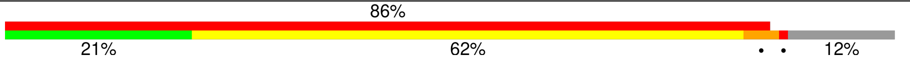
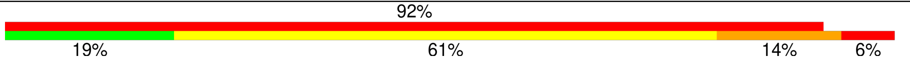
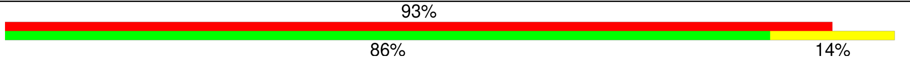
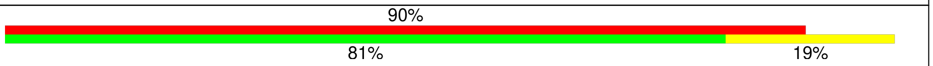
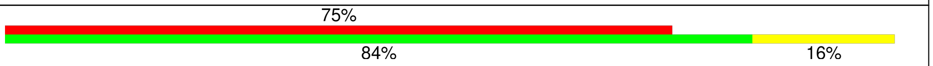
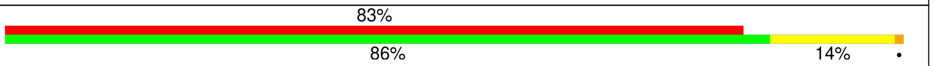
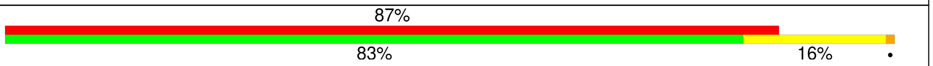
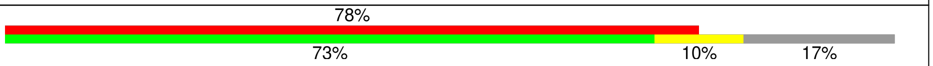
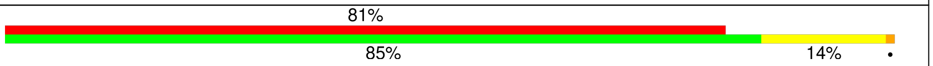
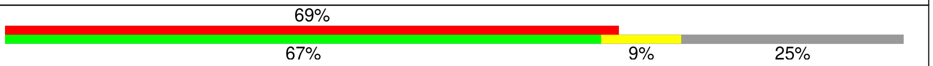
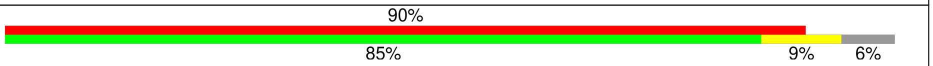
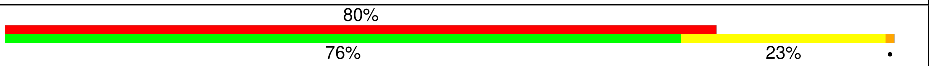
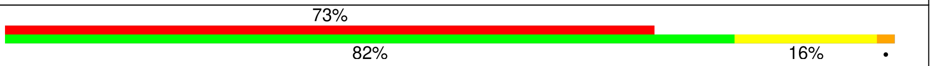
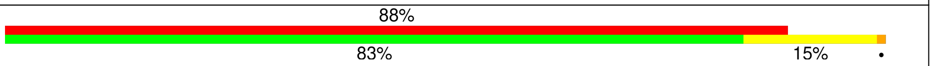
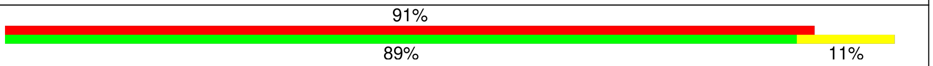
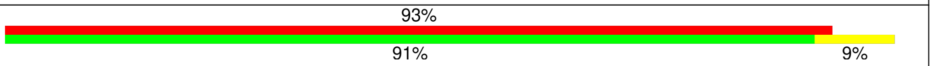
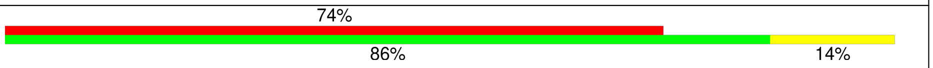
Mol	Chain	Length	Quality of chain
29	t	115	
30	u	253	
31	v	120	
32	w	237	
33	x	99	
34	y	80	
35	z	92	
36	0	38	
37	1	348	
38	2	113	
39	3	130	
40	4	138	
41	5	324	
42	6	281	
43	7	106	
44	8	264	
45	9	215	
46	A	3296	
47	B	393	
48	C	249	
49	D	252	
50	E	274	
51	F	196	
52	G	74	
53	H	160	

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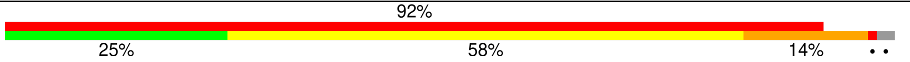
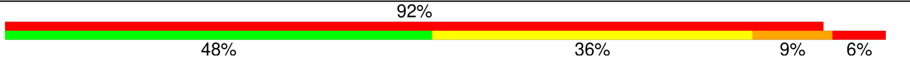
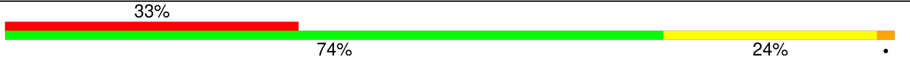
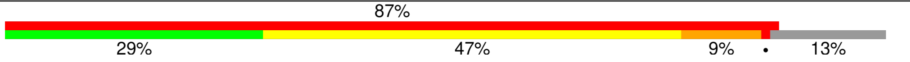
Mol	Chain	Length	Quality of chain
54	I	138	
55	J	220	
56	K	195	
57	L	237	
58	M	151	
59	N	118	
60	O	225	
61	P	207	
62	Q	296	
63	R	337	
64	S	216	
65	T	225	
66	U	82	
67	V	177	
68	W	112	
69	X	64	
70	Y	46	
71	a	177	
72	b	155	
73	c	119	
74	d	215	
75	e	249	
76	f	158	

2 Entry composition

There are 76 unique types of molecules in this entry. The entry contains 201764 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 Small ribosomal subunit protein mS38.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	AA	34	304	183	75	44	2	0	0

- Molecule 2 is a protein called Small ribosomal subunit protein mS41.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	AB	95	808	512	153	142	1	0	0

- Molecule 3 is a protein called Small ribosomal subunit protein mS42.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	AC	259	2079	1335	352	387	5	0	0

- Molecule 4 is a protein called 37S ribosomal protein MRP1, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	AD	301	2422	1530	418	464	10	0	0

- Molecule 5 is a protein called 37S ribosomal protein MRP13, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	AE	298	2432	1569	421	438	4	0	0

- Molecule 6 is a protein called Small ribosomal subunit protein mS45.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	AF	252	2079	1327	377	369	6	0	0

- Molecule 7 is a protein called Small ribosomal subunit protein mS23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	AG	236	1931	1224	337	363	7	0	0

- Molecule 8 is a protein called Small ribosomal subunit protein mS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	AH	234	1887	1197	339	347	4	0	0

- Molecule 9 is a protein called Small ribosomal subunit protein mS29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	AI	405	3243	2087	545	603	8	0	0

- Molecule 10 is a protein called Small ribosomal subunit protein mS33.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	AJ	96	774	496	140	135	3	0	0

- Molecule 11 is a protein called Small ribosomal subunit protein mS35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	AK	264	2212	1397	399	412	4	0	0

- Molecule 12 is a RNA chain called Small ribosomal subunit rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
12	AL	1501	31883	14338	5633	10411	1501	0	0

- Molecule 13 is a RNA chain called Small ribosomal subunit tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
13	AM	76	1615	723	289	528	75	0	0

- Molecule 14 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AN	13	Total 270	C 123	N 49	O 86	P 12	0	0

- Molecule 15 is a protein called Small ribosomal subunit protein mS37.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	Z	87	Total 687	C 435	N 128	O 118	S 6	0	0

- Molecule 16 is a protein called 37S ribosomal protein MRP51, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	g	198	Total 1577	C 1014	N 278	O 280	S 5	0	0

- Molecule 17 is a protein called Small ribosomal subunit protein uS2m.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	h	267	Total 2095	C 1319	N 368	O 406	S 2	0	0

- Molecule 18 is a protein called Ribosomal protein VAR1, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	i	293	Total 2461	C 1554	N 432	O 452	S 23	0	0

- Molecule 19 is a protein called 37S ribosomal protein NAM9, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	j	287	Total 2370	C 1542	N 420	O 404	S 4	0	0

- Molecule 20 is a protein called Small ribosomal subunit protein uS5m.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	k	288	Total 2306	C 1473	N 408	O 417	S 8	0	0

- Molecule 21 is a protein called 37S ribosomal protein MRP17, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	l	131	1055	671	189	191	4	0	0

- Molecule 22 is a protein called Small ribosomal subunit protein uS7m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	m	161	1282	811	238	228	5	0	0

- Molecule 23 is a protein called 37S ribosomal protein S8, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	n	155	1221	772	218	221	10	0	0

- Molecule 24 is a protein called Small ribosomal subunit protein uS9m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	o	226	1820	1167	332	316	5	0	0

- Molecule 25 is a protein called Small ribosomal subunit protein uS10m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	p	134	1108	719	192	193	4	0	0

- Molecule 26 is a protein called Small ribosomal subunit protein uS11m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	q	152	1208	775	211	216	6	0	0

- Molecule 27 is a protein called Small ribosomal subunit protein uS12m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	r	125	955	588	195	168	4	0	0

- Molecule 28 is a protein called Small ribosomal subunit protein uS13m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	s	120	942	596	179	161	6	0	0

- Molecule 29 is a protein called 37S ribosomal protein MRP2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	t	113	942	605	180	153	4	0	0

- Molecule 30 is a protein called Small ribosomal subunit protein uS15m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	u	253	2070	1292	387	383	8	0	0

- Molecule 31 is a protein called Small ribosomal subunit protein bS16m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	v	106	830	529	155	144	2	0	0

- Molecule 32 is a protein called 37S ribosomal protein S17, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	w	204	1683	1055	315	308	5	0	0

- Molecule 33 is a protein called Small ribosomal subunit protein bS18m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	x	91	738	463	143	128	4	0	0

- Molecule 34 is a protein called Small ribosomal subunit protein uS19m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	y	80	636	408	115	111	2	0	0

- Molecule 35 is a protein called Small ribosomal subunit protein bS21m.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	z	92	Total 760	C 475	N 150	O 130	S 5	0	0

- Molecule 36 is a protein called Large ribosomal subunit protein bL36m.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	0	38	Total 324	C 205	N 66	O 50	S 3	0	0

- Molecule 37 is a protein called Large ribosomal subunit protein mL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	1	348	Total 2875	C 1847	N 499	O 523	S 6	0	0

- Molecule 38 is a protein called Large ribosomal subunit protein mL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	2	113	Total 944	C 597	N 174	O 168	S 5	0	0

- Molecule 39 is a protein called Large ribosomal subunit protein mL41.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	3	130	Total 1046	C 671	N 189	O 183	S 3	0	0

- Molecule 40 is a protein called Large ribosomal subunit protein mL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	4	138	Total 1117	C 700	N 219	O 193	S 5	0	0

- Molecule 41 is a protein called Large ribosomal subunit protein mL44.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	5	324	Total 2552	C 1630	N 431	O 480	S 11	0	0

- Molecule 42 is a protein called Large ribosomal subunit protein mL46.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	6	234	1932	1250	327	353	2	0	0

- Molecule 43 is a protein called Large ribosomal subunit protein mL49.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	7	106	858	553	151	152	2	0	0

- Molecule 44 is a protein called Large ribosomal subunit protein mL50.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	8	199	1629	1032	278	315	4	0	0

- Molecule 45 is a protein called Large ribosomal subunit protein mL57.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	9	202	1587	1014	279	289	5	0	0

- Molecule 46 is a RNA chain called Large ribosomal subunit rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
46	A	2876	61141	27507	10875	19889	2870	0	0

- Molecule 47 is a protein called Large ribosomal subunit protein uL2m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	B	321	2527	1575	507	436	9	0	0

- Molecule 48 is a protein called Large ribosomal subunit protein uL3m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	C	249	1932	1218	360	344	10	0	0

- Molecule 49 is a protein called Large ribosomal subunit protein uL4m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	D	252	1989	1262	355	369	3	0	0

- Molecule 50 is a protein called Large ribosomal subunit protein uL5m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	E	274	2187	1396	391	394	6	0	0

- Molecule 51 is a protein called Large ribosomal subunit protein uL6m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	F	196	1524	967	273	280	4	0	0

- Molecule 52 is a protein called Large ribosomal subunit protein bL9m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	G	74	617	393	110	113	1	0	0

- Molecule 53 is a protein called Large ribosomal subunit protein uL13m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	H	160	1275	807	240	224	4	0	0

- Molecule 54 is a protein called Large ribosomal subunit protein uL14m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	I	127	956	595	180	170	11	0	0

- Molecule 55 is a protein called Large ribosomal subunit protein uL15m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	J	220	1746	1119	326	298	3	0	0

- Molecule 56 is a protein called Large ribosomal subunit protein uL16m.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	K	195	Total	C	N	O	S	0	0
			1573	1001	297	270	5		

- Molecule 57 is a protein called Large ribosomal subunit protein bL17m.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	L	229	Total	C	N	O	S	0	0
			1817	1140	333	336	8		

- Molecule 58 is a protein called Large ribosomal subunit protein bL19m.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	M	151	Total	C	N	O	S	0	0
			1206	766	220	217	3		

- Molecule 59 is a protein called Large ribosomal subunit protein bL21m.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	N	118	Total	C	N	O	S	0	0
			948	598	177	171	2		

- Molecule 60 is a protein called Large ribosomal subunit protein uL22m.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	O	225	Total	C	N	O	S	0	0
			1826	1169	332	320	5		

- Molecule 61 is a protein called Large ribosomal subunit protein uL23m.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	P	207	Total	C	N	O	S	0	0
			1729	1104	310	309	6		

- Molecule 62 is a protein called Large ribosomal subunit protein uL24m.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Q	284	Total	C	N	O	S	0	0
			2272	1451	396	417	8		

- Molecule 63 is a protein called Large ribosomal subunit protein bL27m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	R	331	2738	1728	497	509	4	0	0

- Molecule 64 is a protein called Large ribosomal subunit protein bL28m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	S	185	1543	994	281	265	3	0	0

- Molecule 65 is a protein called Large ribosomal subunit protein uL29m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	T	216	1792	1139	324	325	4	0	0

- Molecule 66 is a protein called Large ribosomal subunit protein uL30m.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
66	U	82	639	410	116	113	0	0

- Molecule 67 is a protein called Large ribosomal subunit protein bL31m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	V	66	543	340	110	92	1	0	0

- Molecule 68 is a protein called Large ribosomal subunit protein bL32m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	W	112	937	587	181	163	6	0	0

- Molecule 69 is a protein called Large ribosomal subunit protein bL33m.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
69	X	64	512	330	96	86	0	0

- Molecule 70 is a protein called Large ribosomal subunit protein bL34m.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
70	Y	46	385	245	82	58	0	0

- Molecule 71 is a protein called Large ribosomal subunit protein mL58.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
71	a	177	1440	907	267	260	6	0	0

- Molecule 72 is a protein called Large ribosomal subunit protein mL59.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
72	b	155	1299	850	225	221	3	0	0

- Molecule 73 is a protein called Large ribosomal subunit protein mL60.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
73	c	119	1004	645	191	164	4	0	0

- Molecule 74 is a protein called Large ribosomal subunit protein mL67.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
74	d	206	1746	1117	318	304	7	0	0

- Molecule 75 is a protein called Large ribosomal subunit protein uL10m.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
75	e	165	1340	862	234	238	6	0	0

- Molecule 76 is a protein called Large ribosomal subunit protein uL11m.

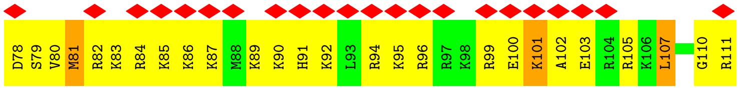
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
76	f	138	1032	668	176	183	5	0	0

3 Residue-property plots ⓘ

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

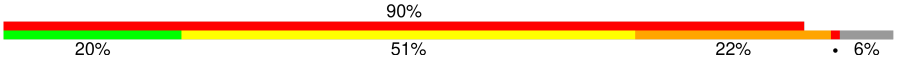
- Molecule 1: Small ribosomal subunit protein mS38

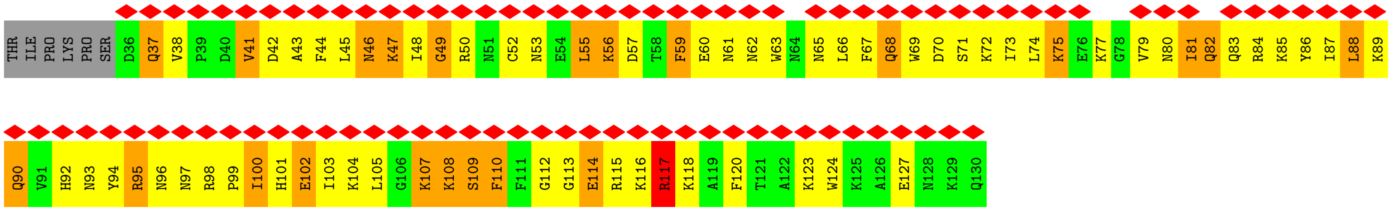
Chain AA:



- Molecule 2: Small ribosomal subunit protein mS41

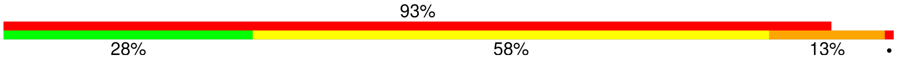
Chain AB:

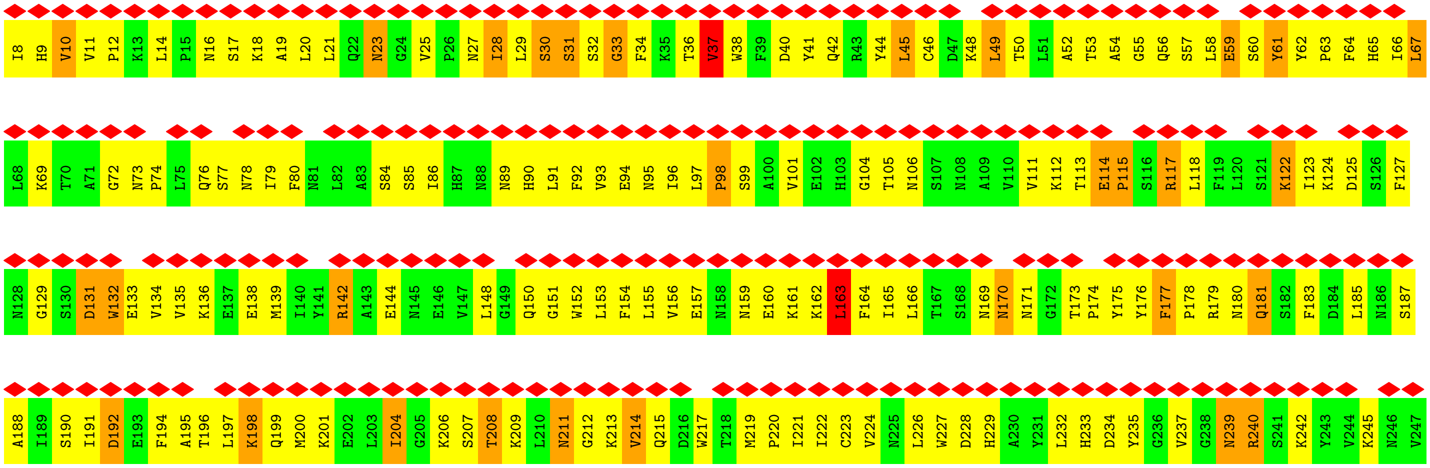


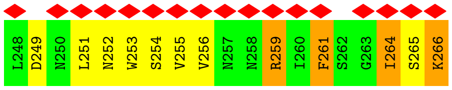


- Molecule 3: Small ribosomal subunit protein mS42

Chain AC:

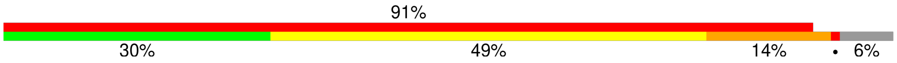


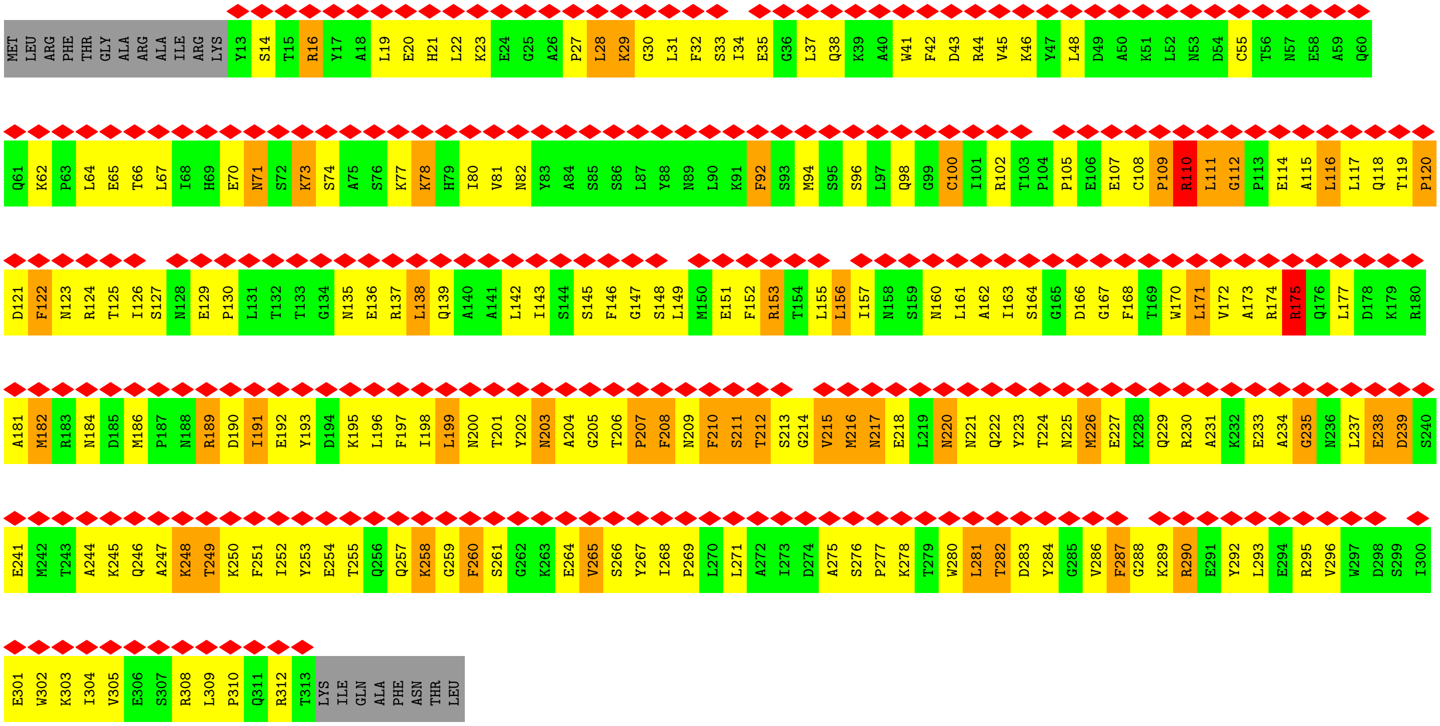




- Molecule 4: 37S ribosomal protein MRP1, mitochondrial

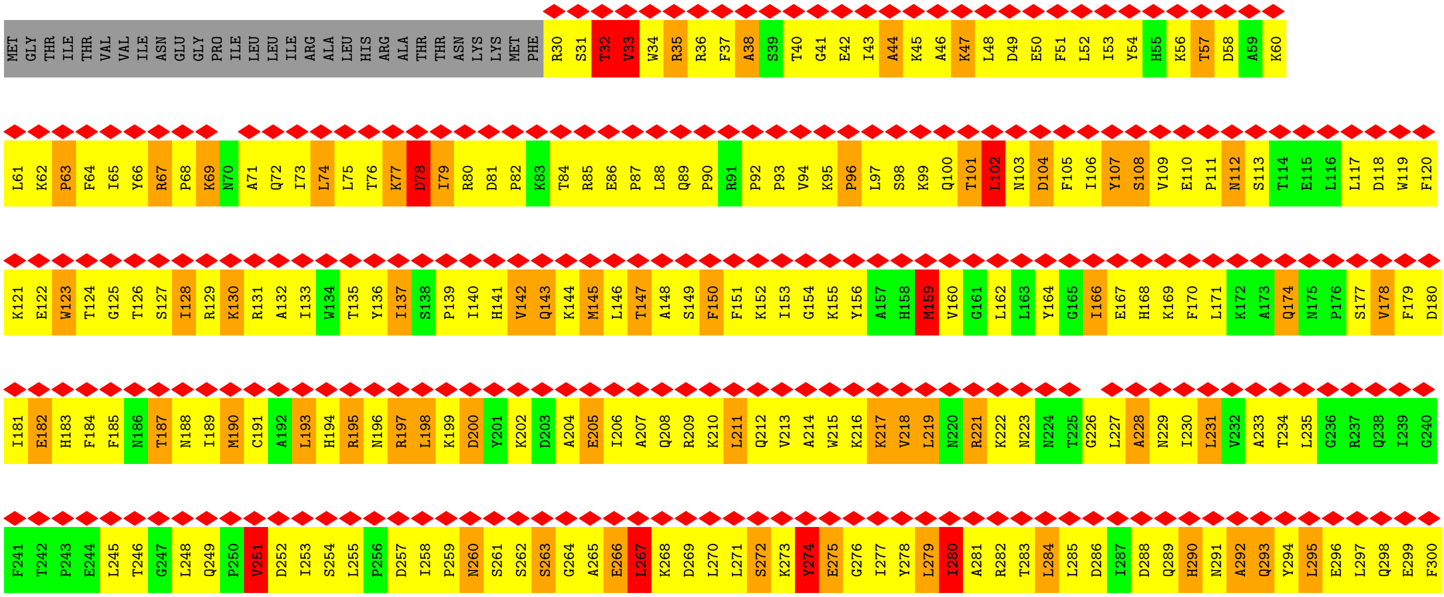
Chain AD:

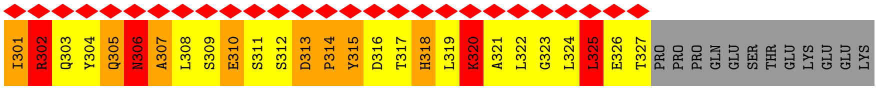




- Molecule 5: 37S ribosomal protein MRP13, mitochondrial

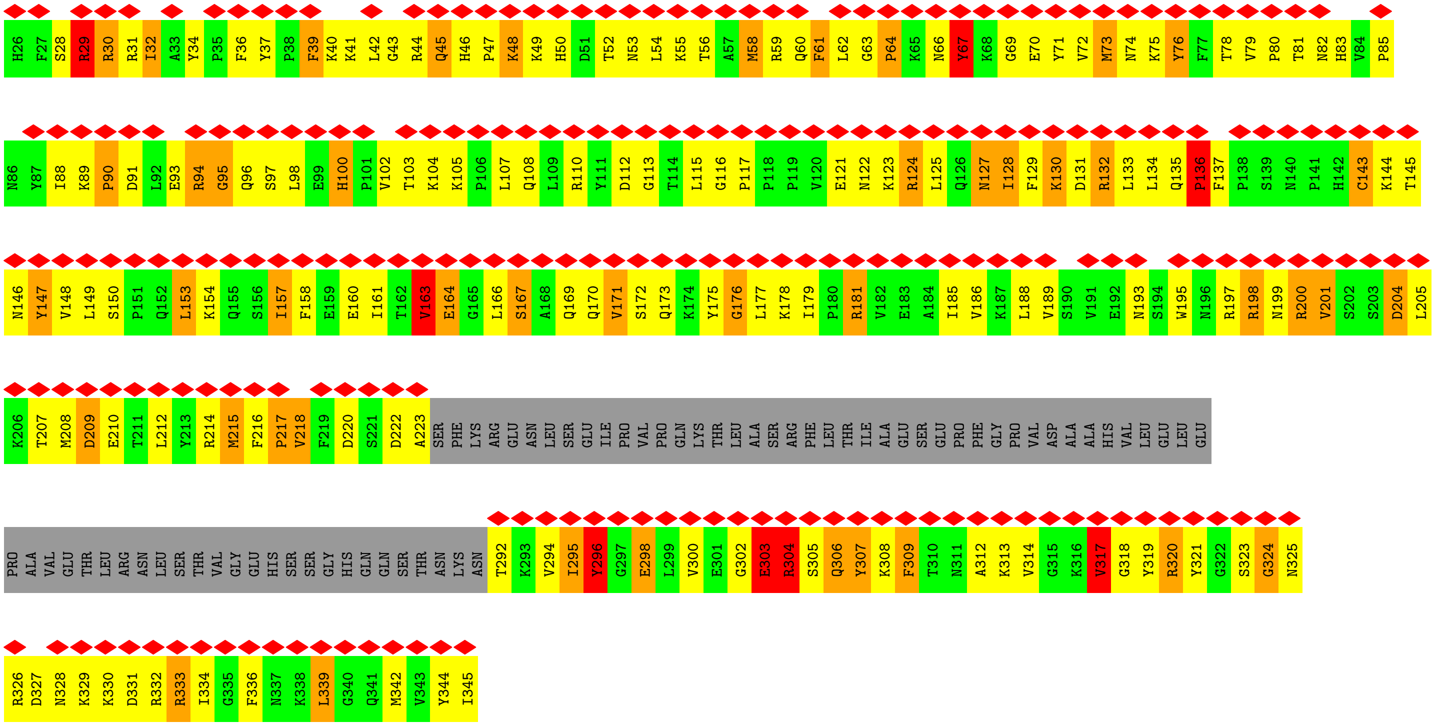
Chain AE:





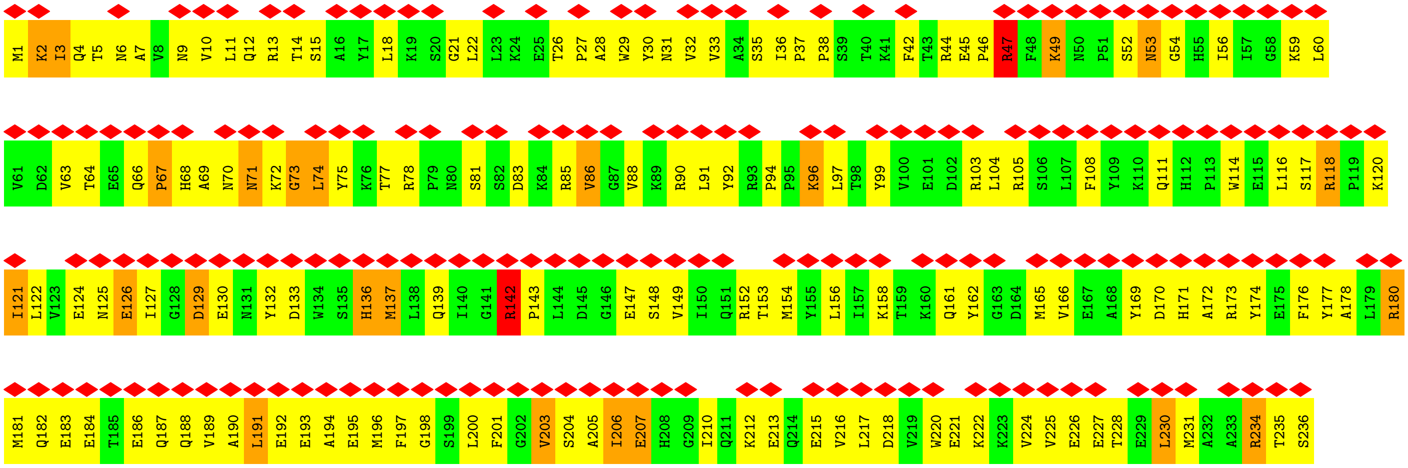
- Molecule 6: Small ribosomal subunit protein mS45

Chain AF:



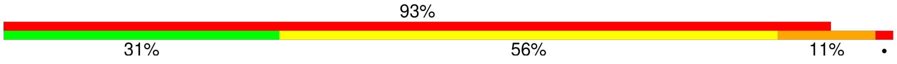
- Molecule 7: Small ribosomal subunit protein mS23

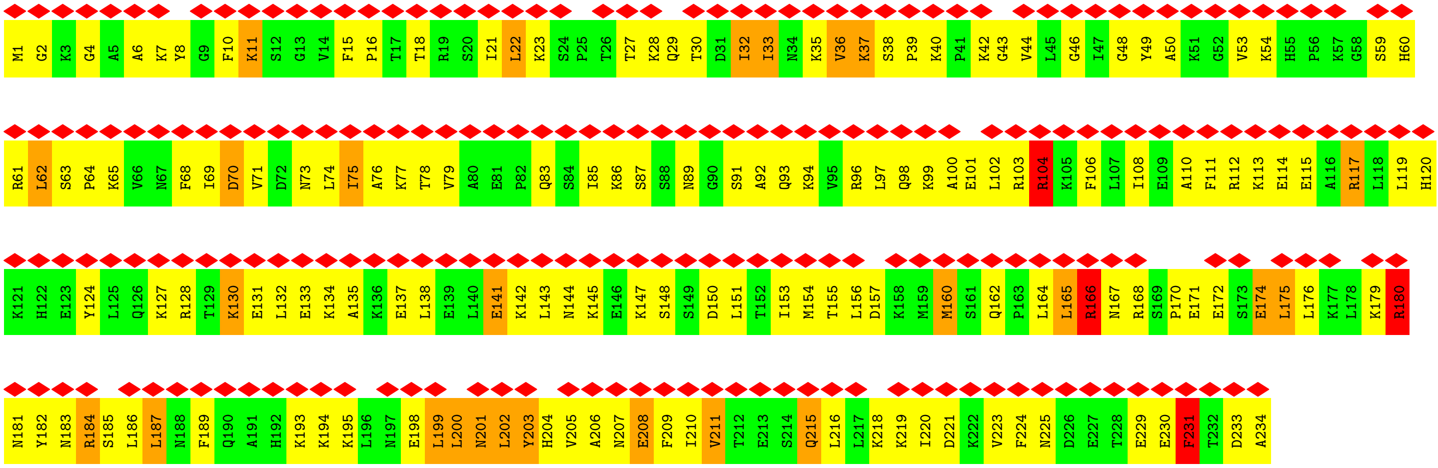
Chain AG:



- Molecule 8: Small ribosomal subunit protein mS26

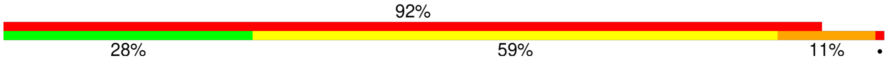
Chain AH:

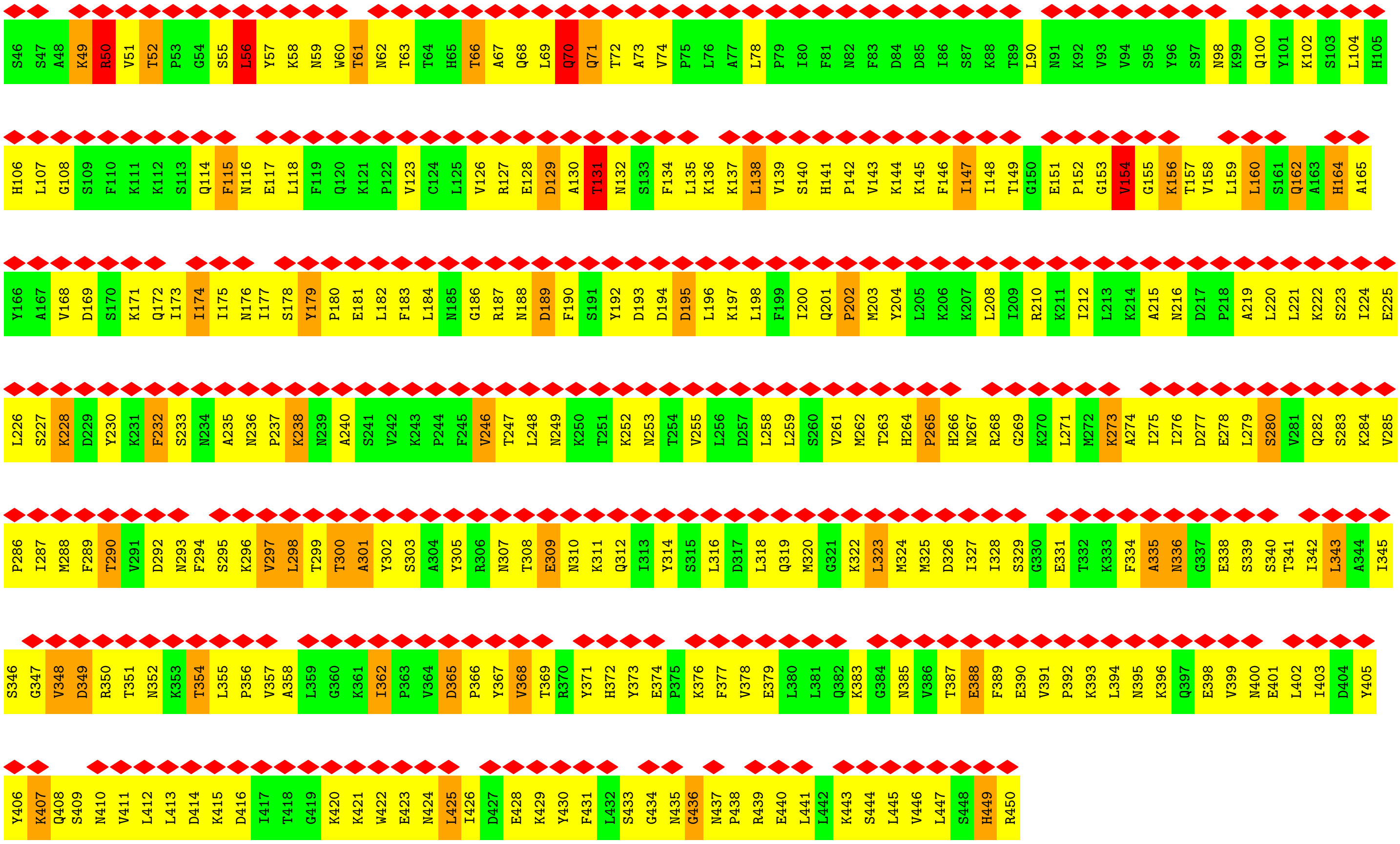




- Molecule 9: Small ribosomal subunit protein mS29

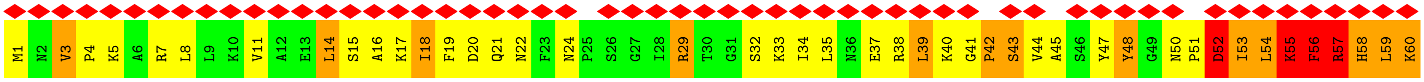
Chain AI:

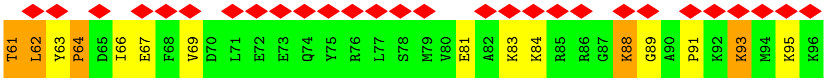




- Molecule 10: Small ribosomal subunit protein mS33

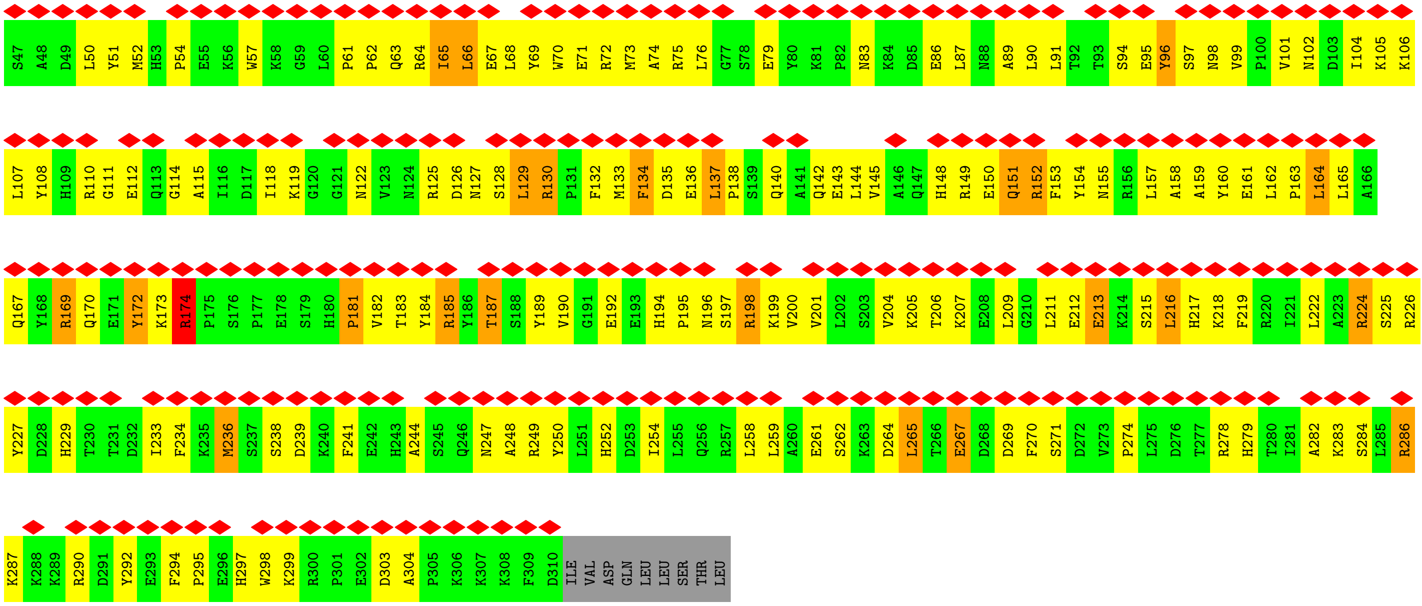
Chain AJ:





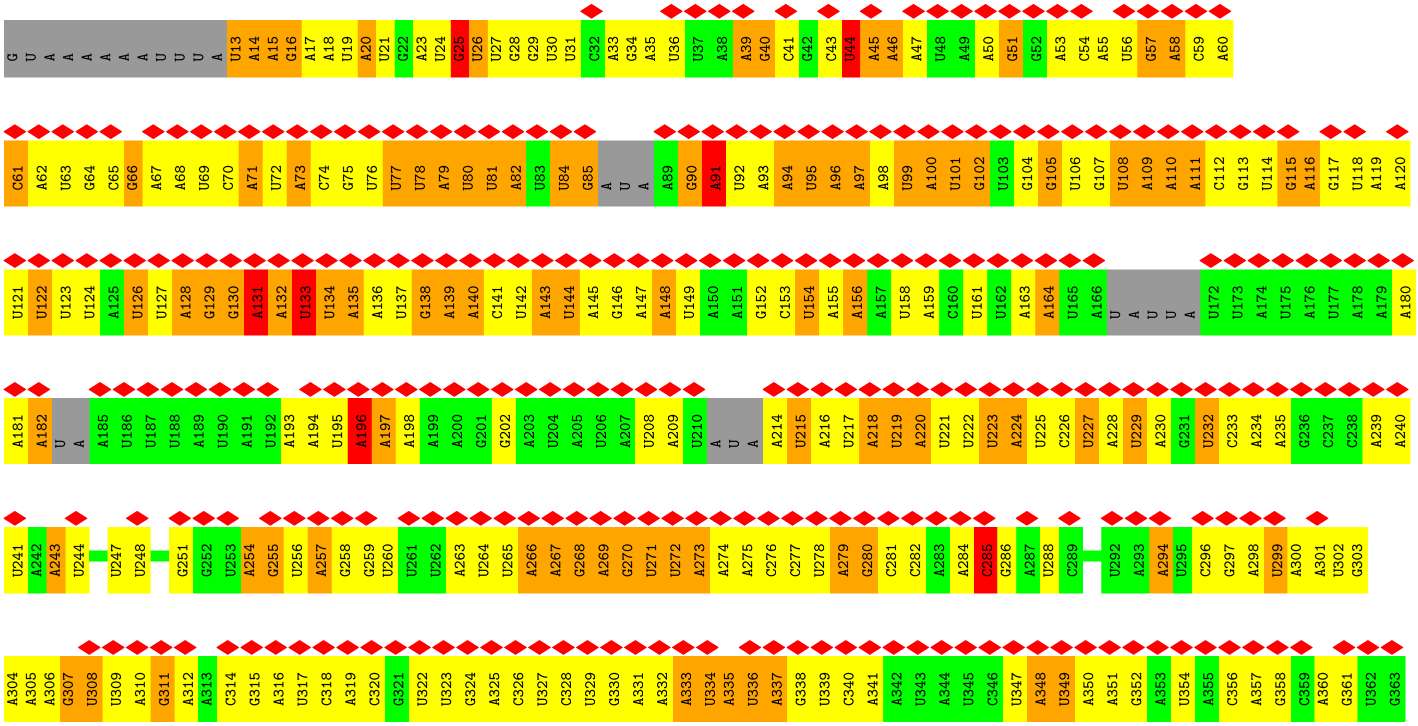
- Molecule 11: Small ribosomal subunit protein mS35

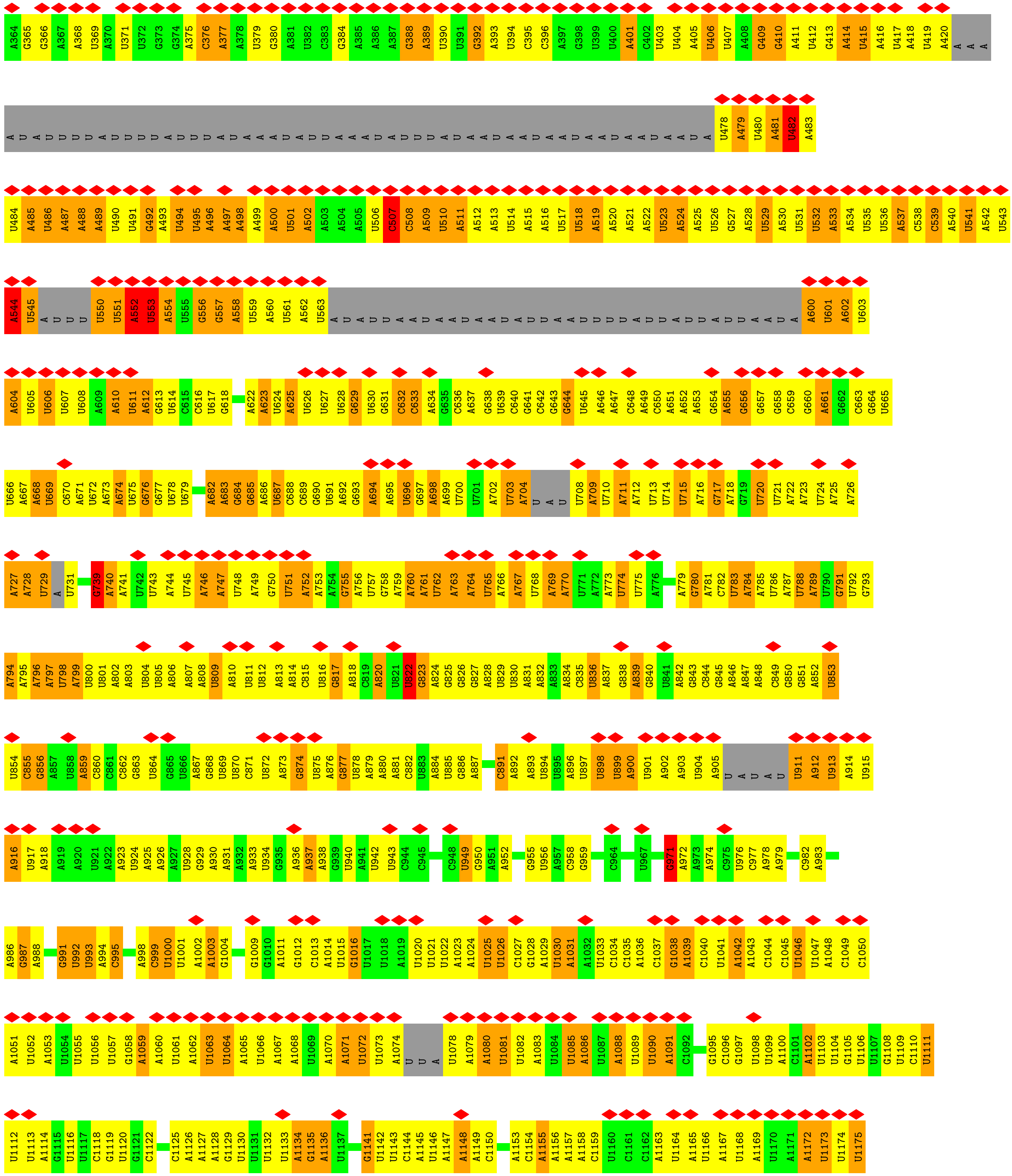
Chain AK:



- Molecule 12: Small ribosomal subunit rRNA

Chain AL:

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A U A U U U U A U U U U A U U U A U A A A U A U U A A A U A U U U A U A A U A A U A A U A A U A A U A A U A U478 A479 U480 A481 U482 A483
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U854 C855 G856 A857 U858 A859 C860 C861 C862 G863 U864 G865 U866 A867 G868 U869 U870 C871 U872 A873 G874 U875 A876 G877 U878 A879 A880 A881 C882 U883 A884 U885 G886 A887 C891 A892 A893 U894 U895 A896 U897 U898 U899 A900 U901 A902 A903 U904 A905 U A U A U U911 A912 U913 A914 U915
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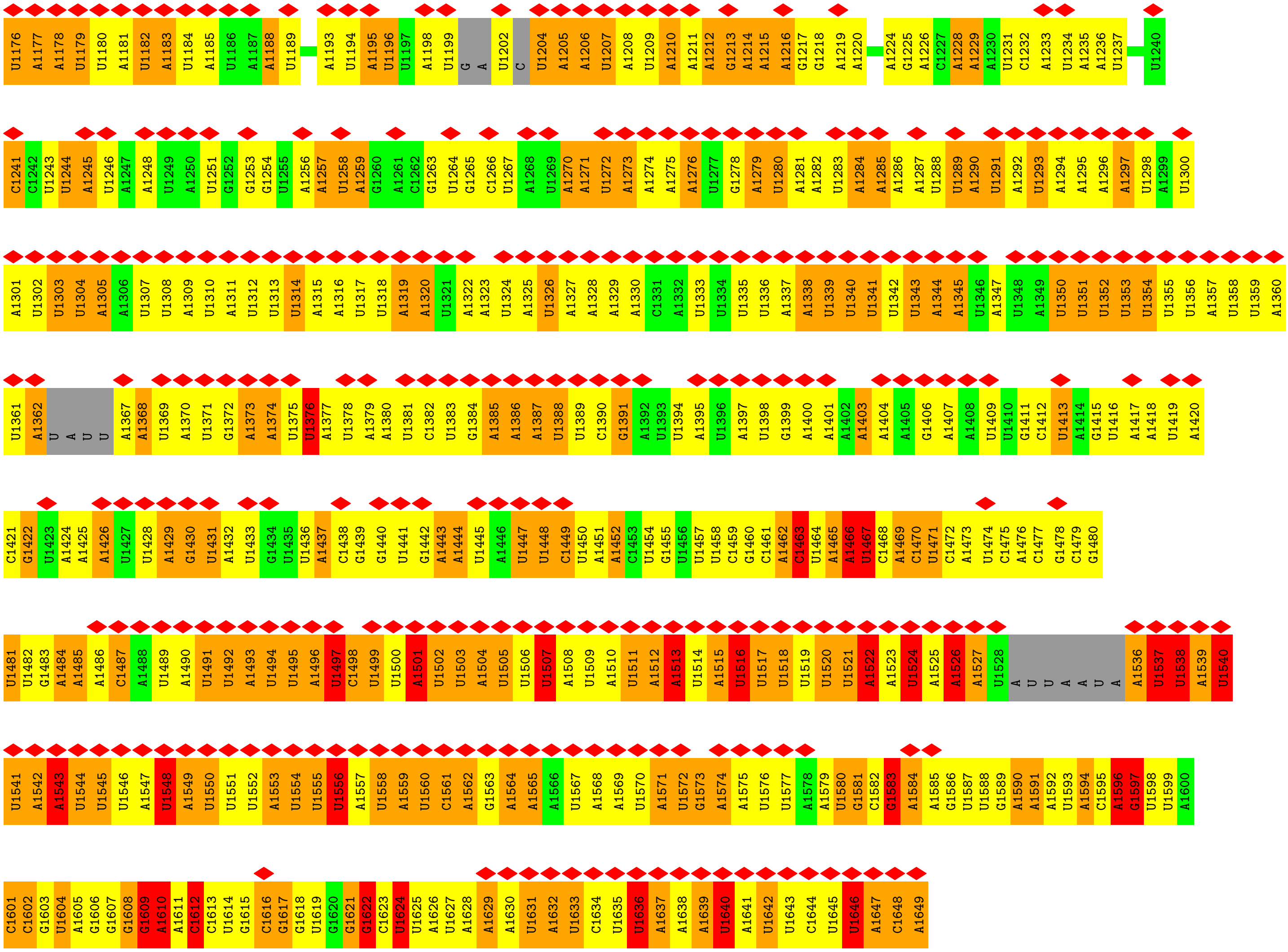
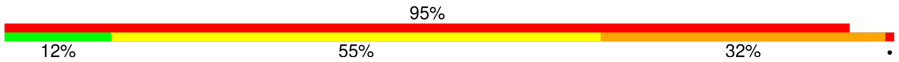
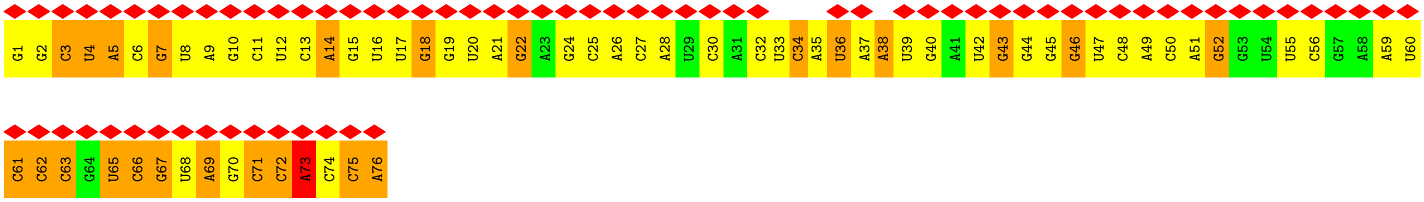


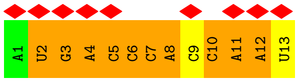
- Molecule 13: Small ribosomal subunit tRNA

Chain AM:


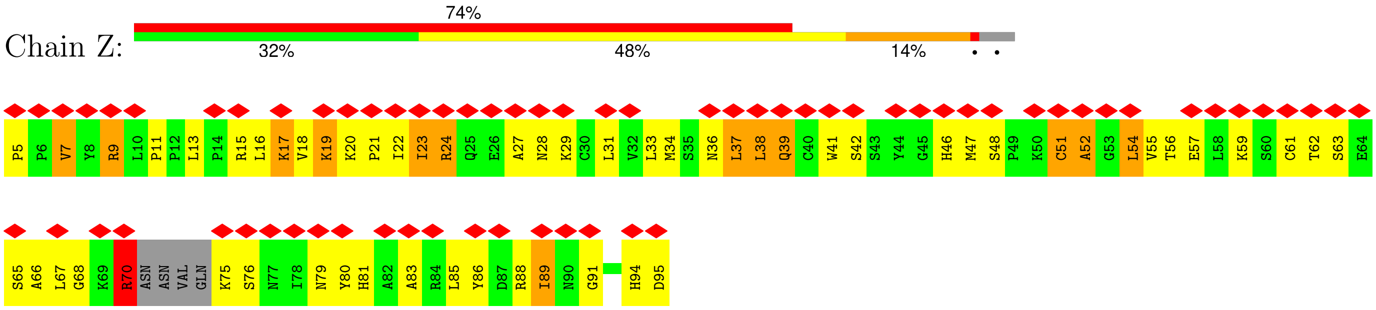


- Molecule 14: mRNA

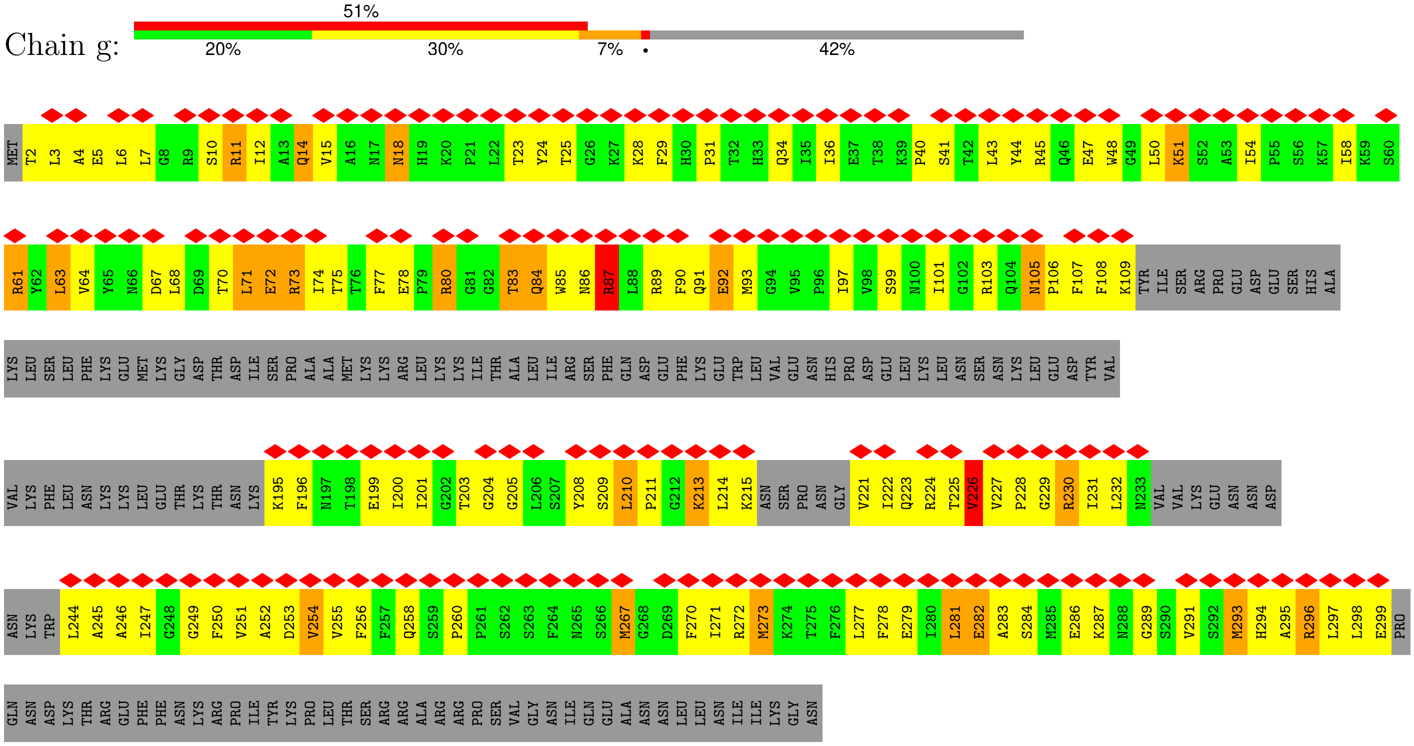
Chain AN:

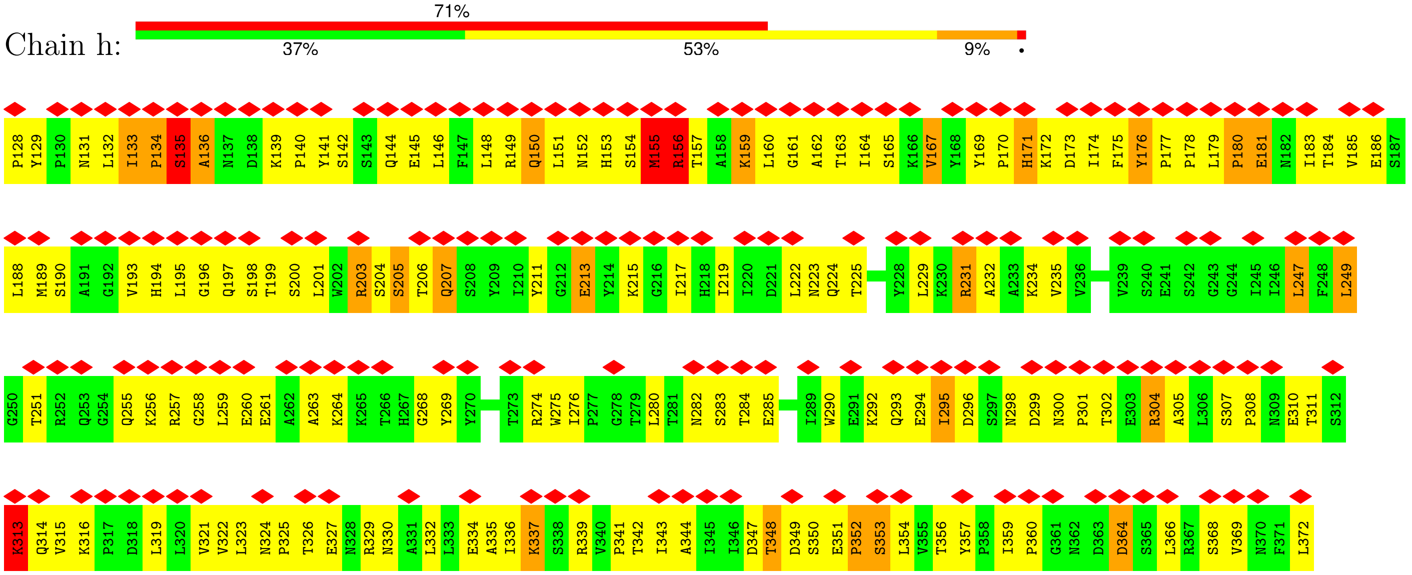
- Molecule 15: Small ribosomal subunit protein mS37

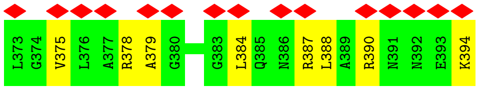


- Molecule 16: 37S ribosomal protein MRP51, mitochondrial

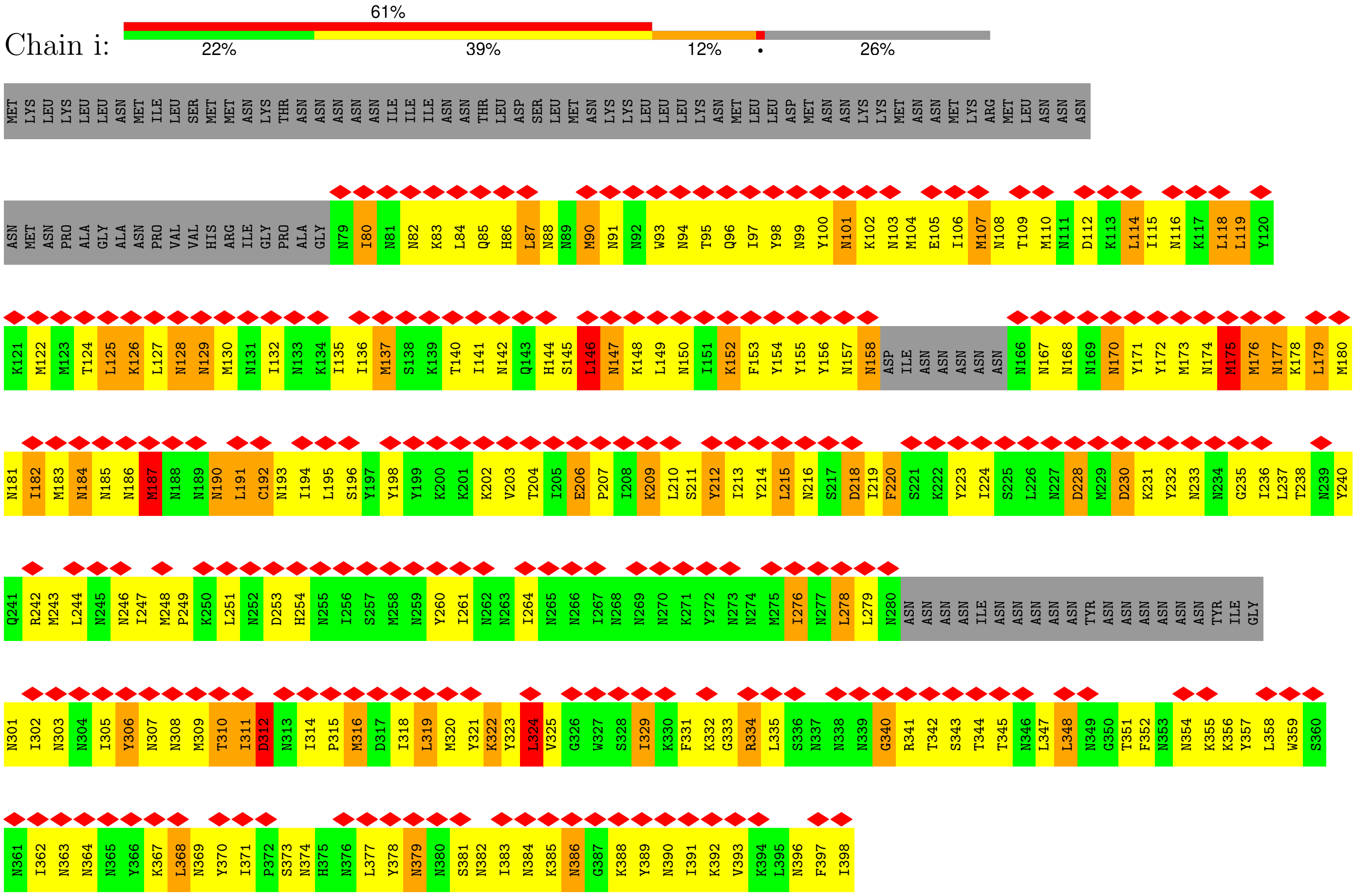


- Molecule 17: Small ribosomal subunit protein uS2m

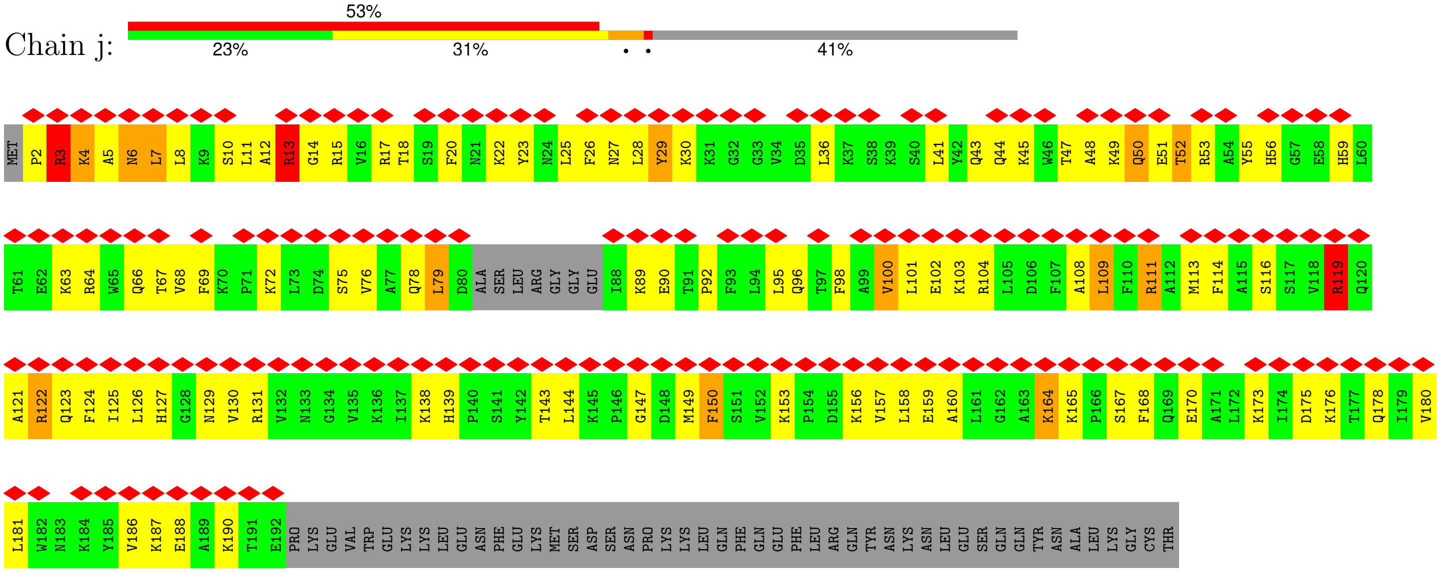


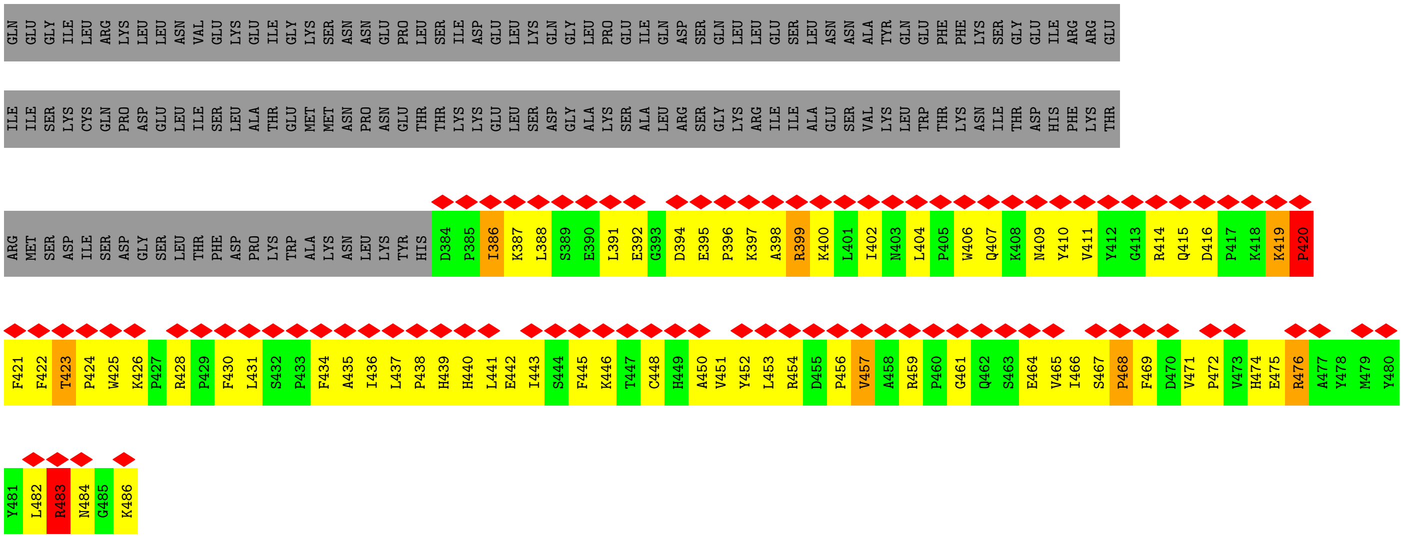


- Molecule 18: Ribosomal protein VAR1, mitochondrial

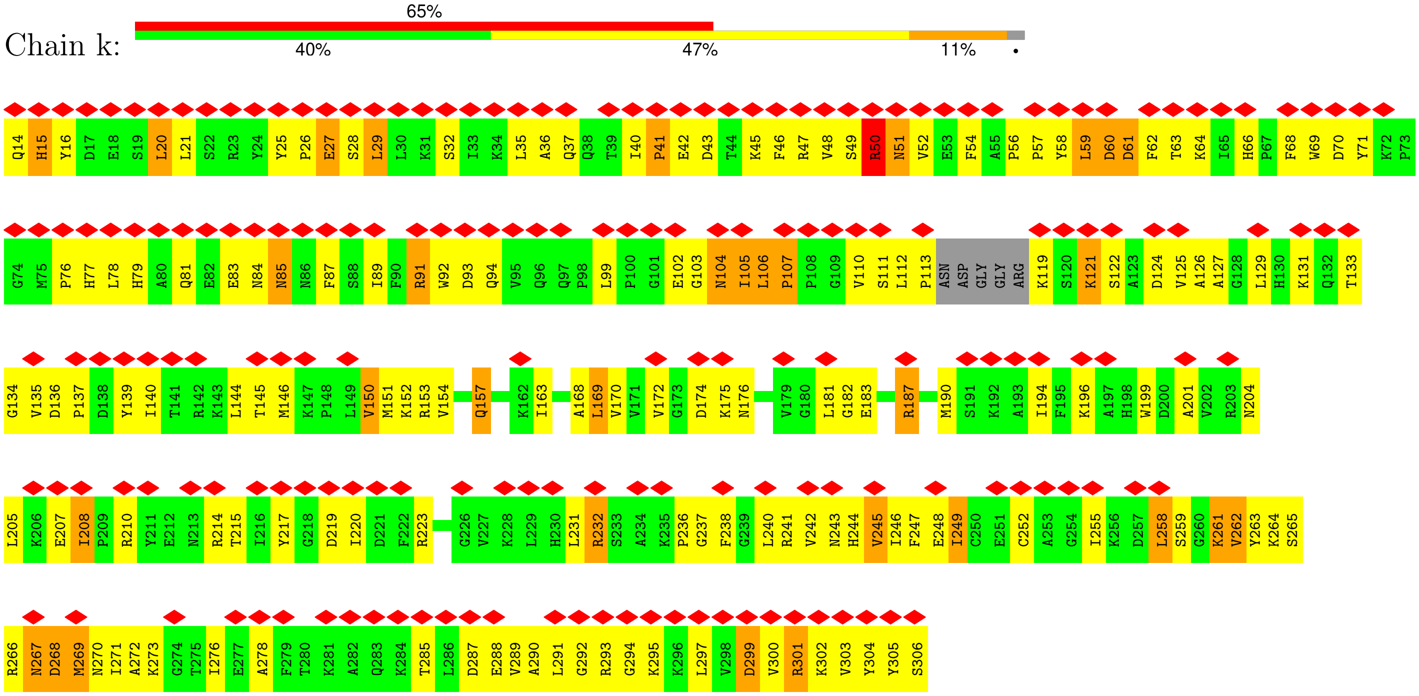


- Molecule 19: 37S ribosomal protein NAM9, mitochondrial

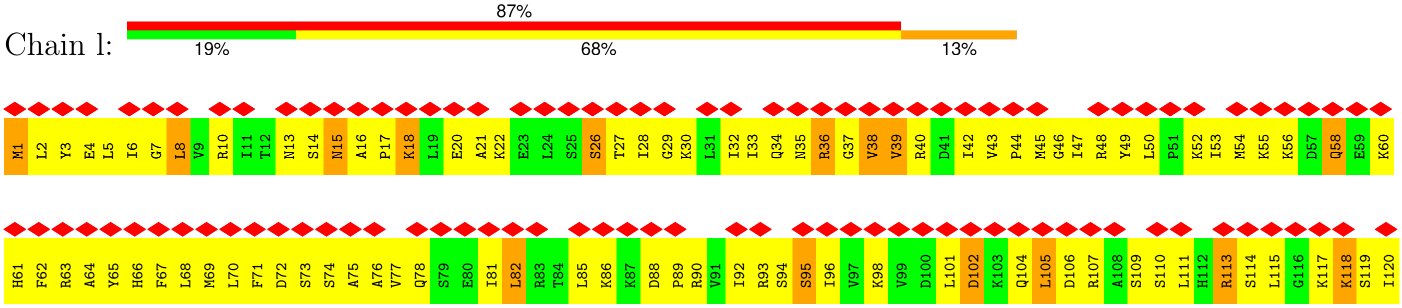


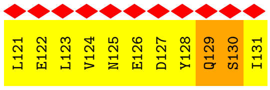


- Molecule 20: Small ribosomal subunit protein uS5m

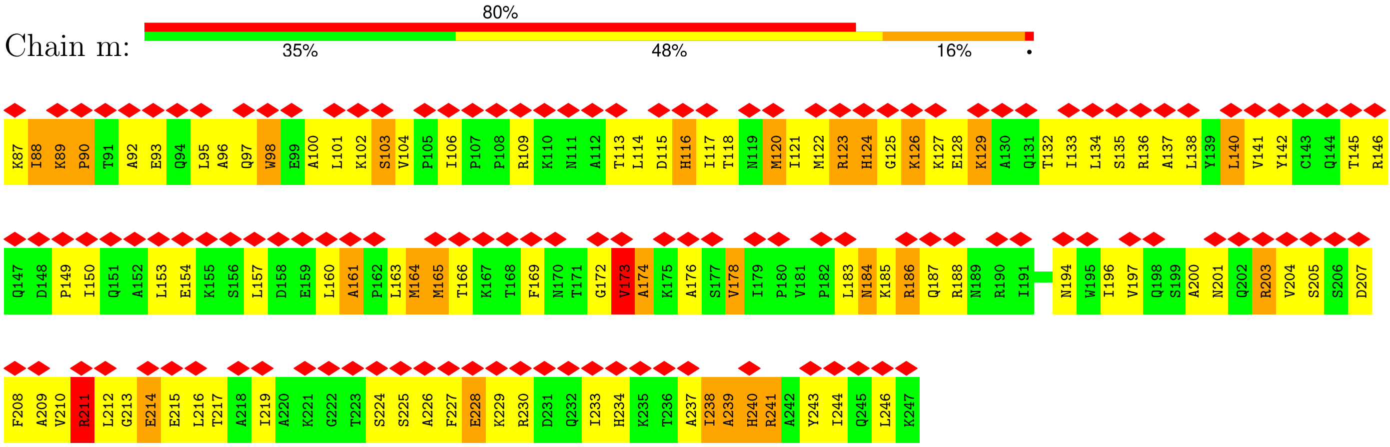


- Molecule 21: 37S ribosomal protein MRP17, mitochondrial

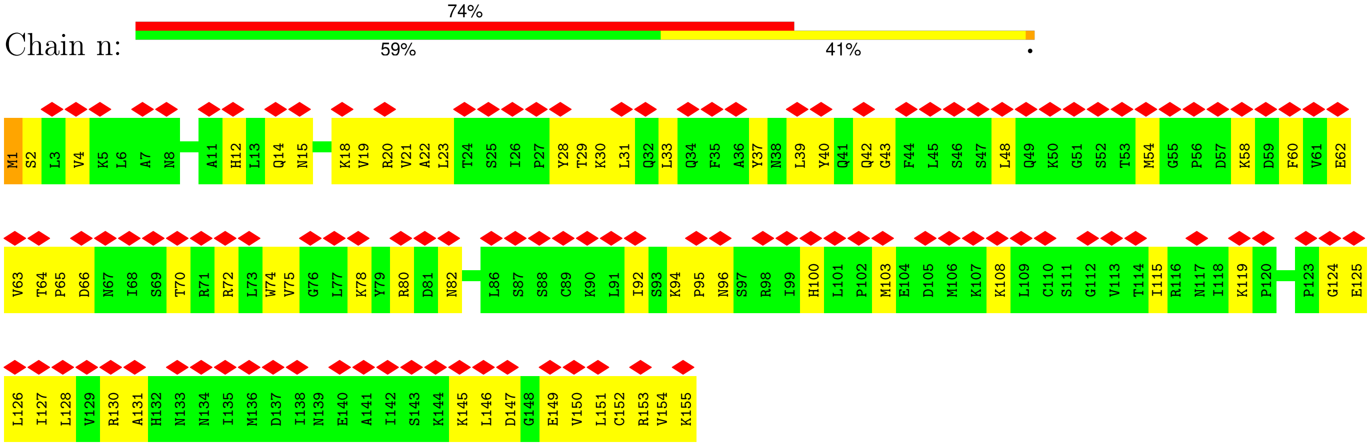




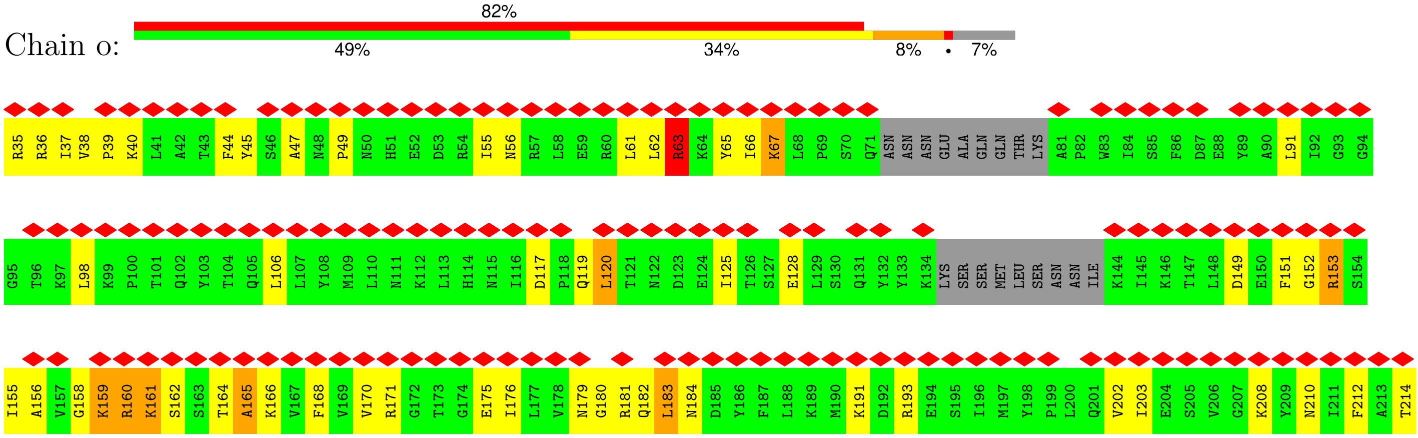
- Molecule 22: Small ribosomal subunit protein uS7m

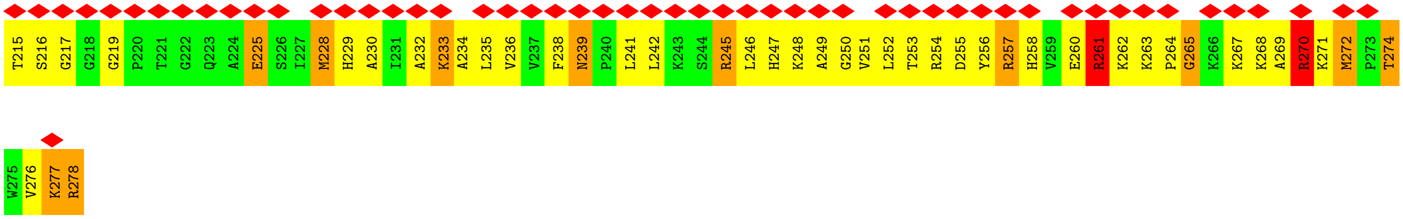


- Molecule 23: 37S ribosomal protein S8, mitochondrial



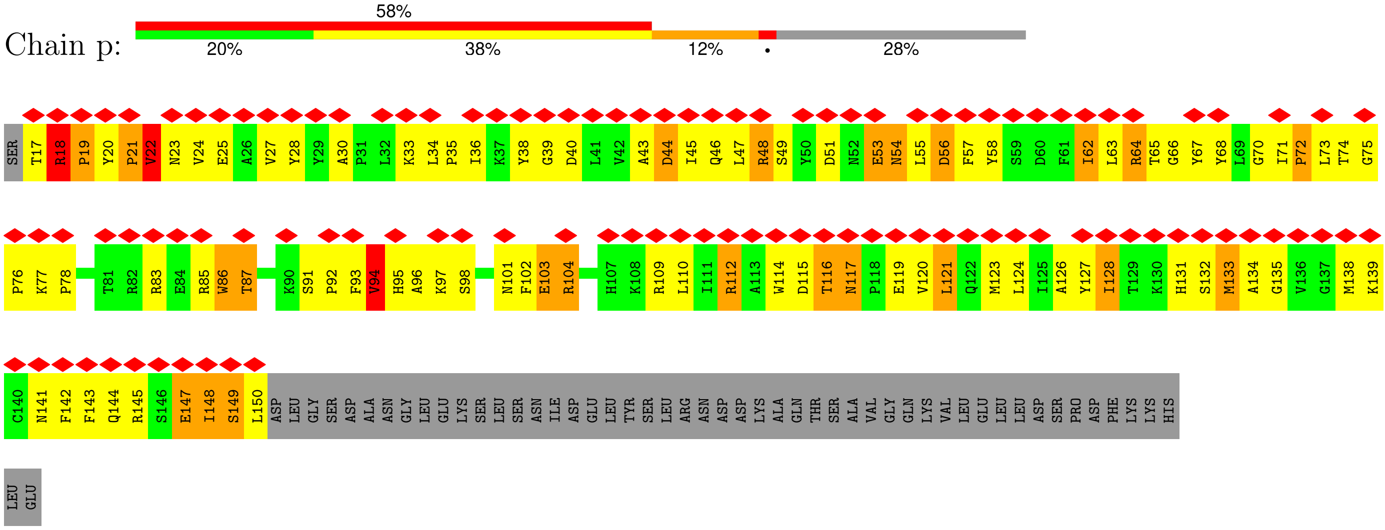
- Molecule 24: Small ribosomal subunit protein uS9m





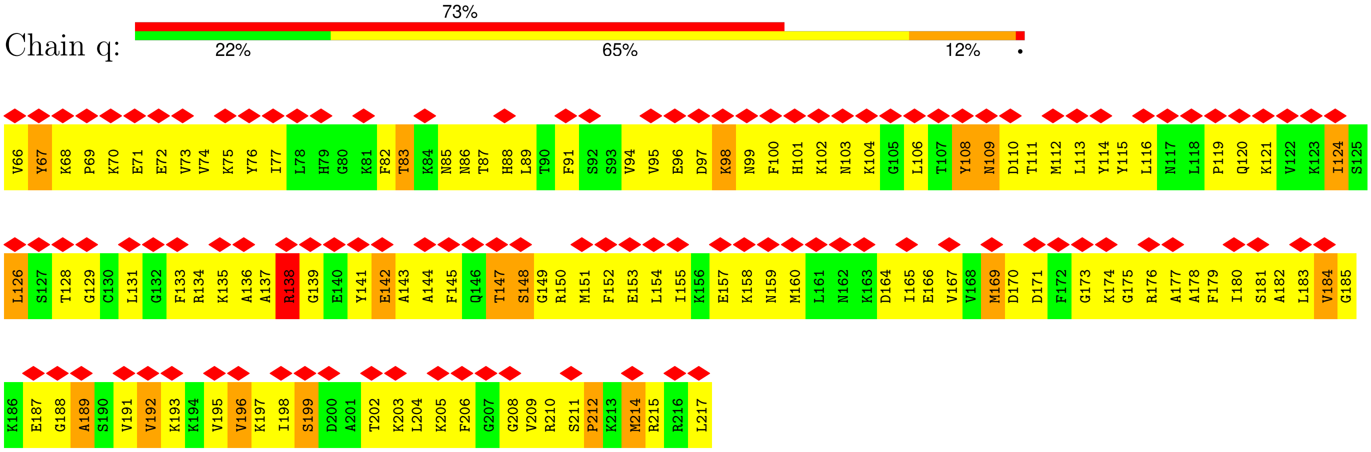
- Molecule 25: Small ribosomal subunit protein uS10m

Chain p:



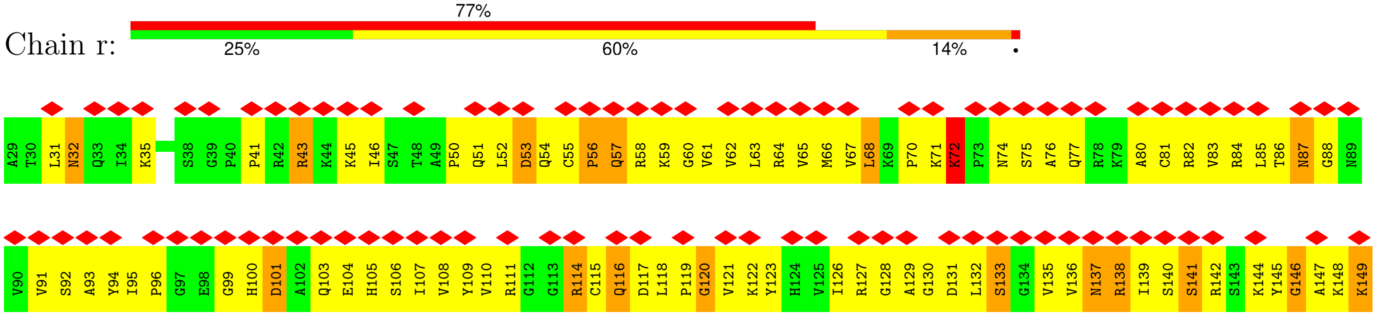
- Molecule 26: Small ribosomal subunit protein uS11m

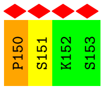
Chain q:



- Molecule 27: Small ribosomal subunit protein uS12m

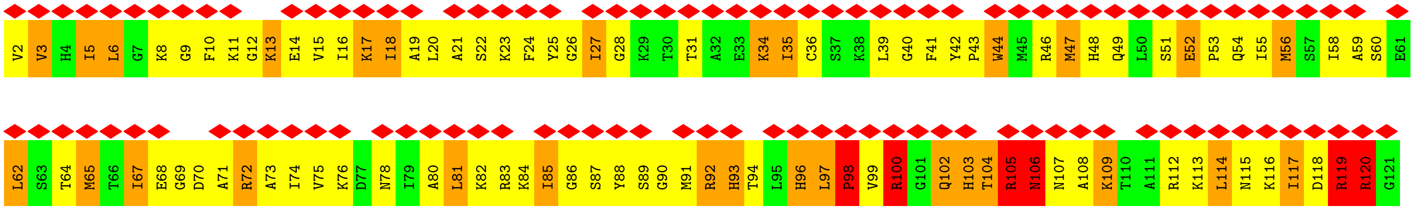
Chain r:





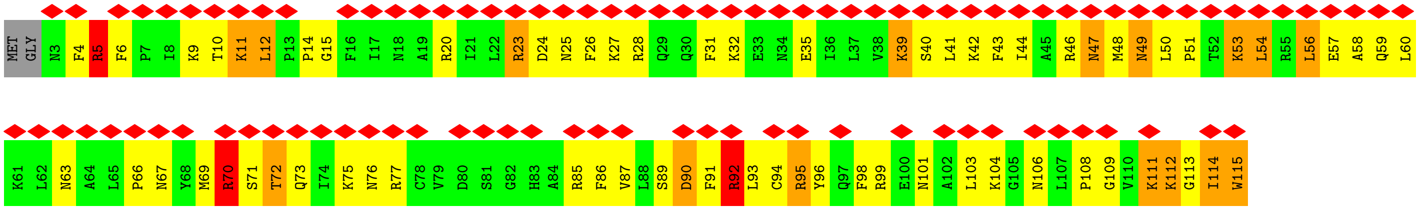
- Molecule 28: Small ribosomal subunit protein uS13m

Chain s:



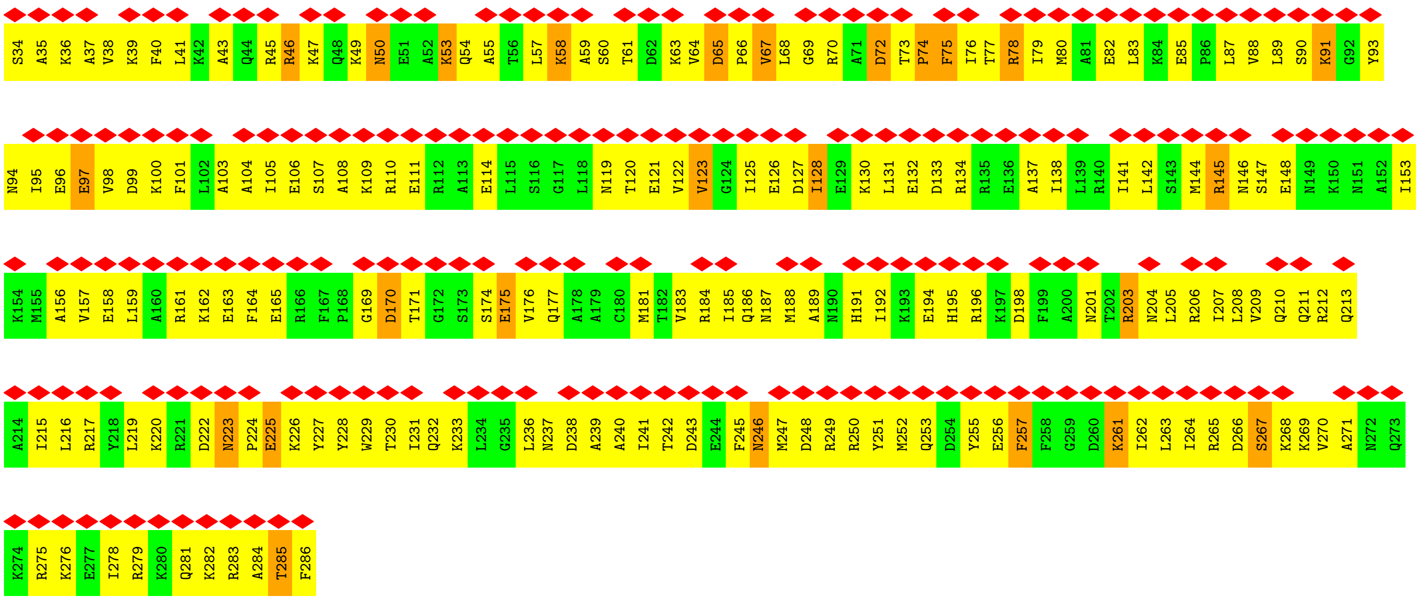
- Molecule 29: 37S ribosomal protein MRP2, mitochondrial

Chain t:



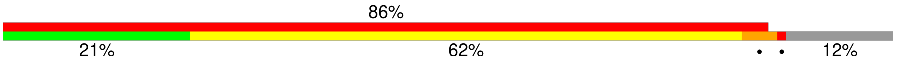
- Molecule 30: Small ribosomal subunit protein uS15m

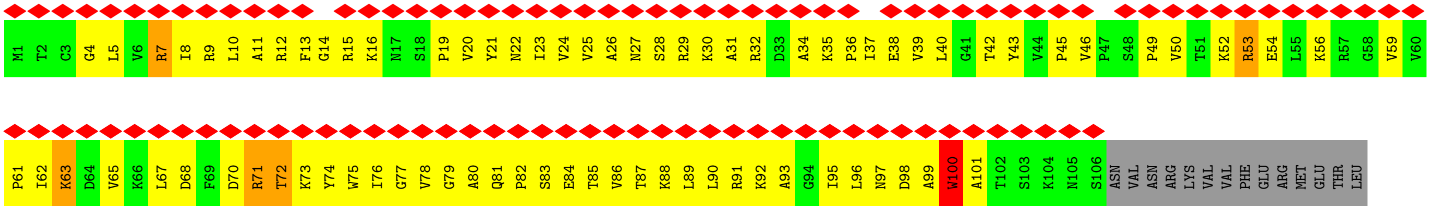
Chain u:



- Molecule 31: Small ribosomal subunit protein bS16m

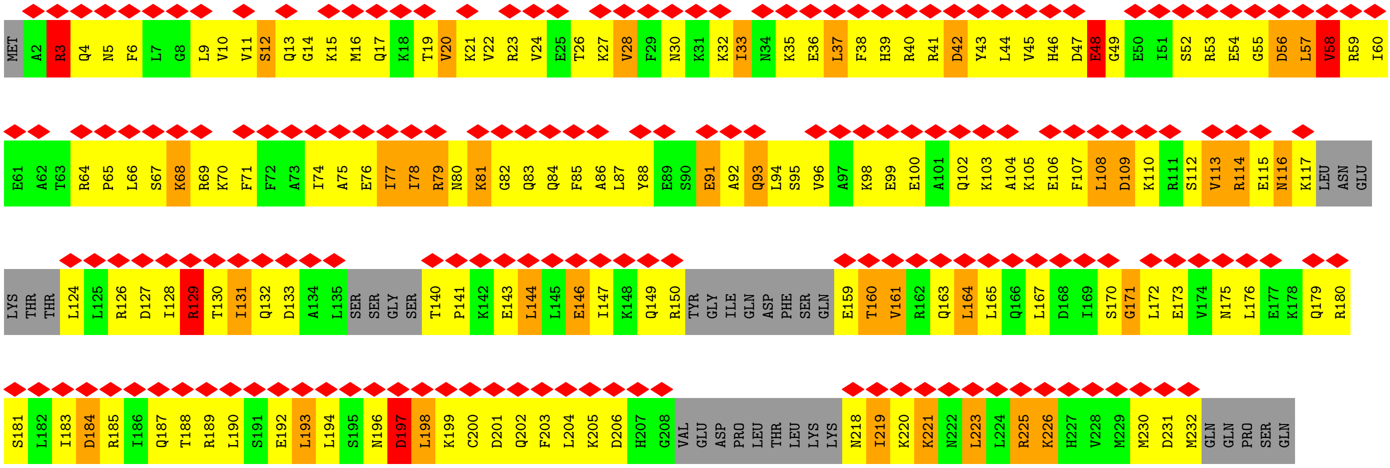
Chain v:





- Molecule 32: 37S ribosomal protein S17, mitochondrial

Chain w:



- Molecule 33: Small ribosomal subunit protein bS18m

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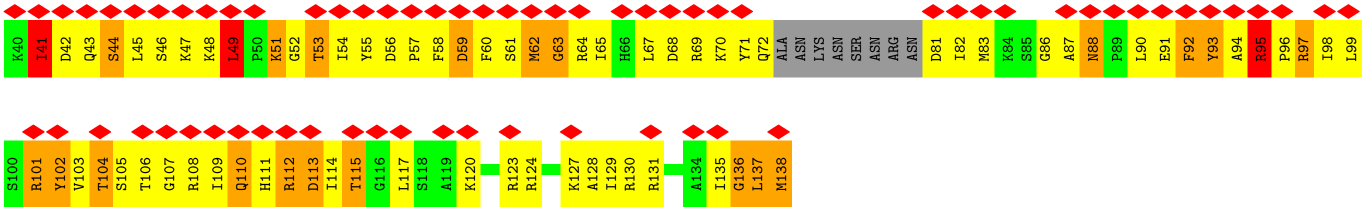
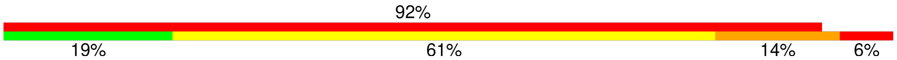
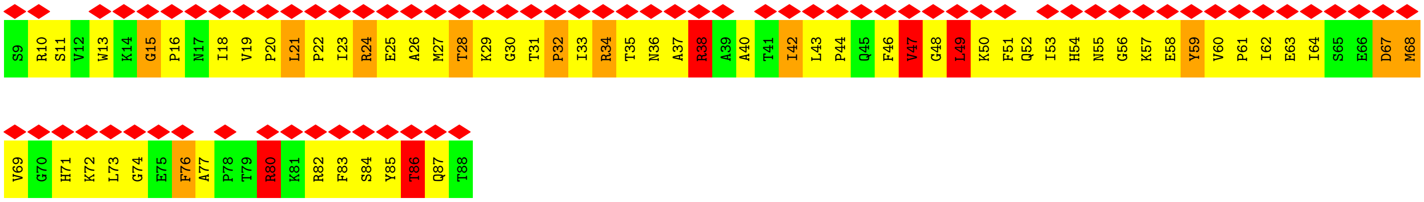


- Molecule 34: Small ribosomal subunit protein uS19m

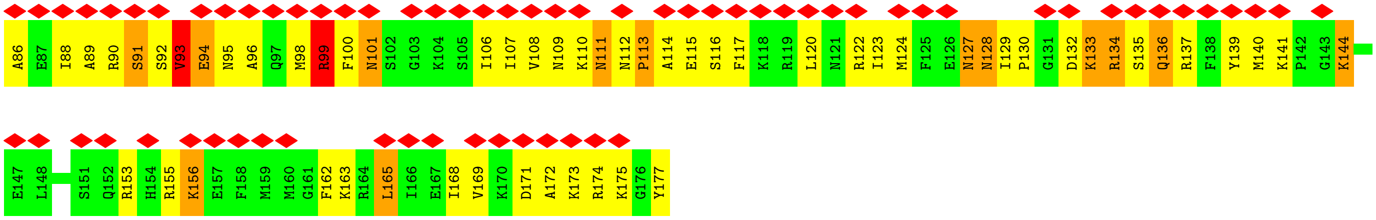
Chain y:





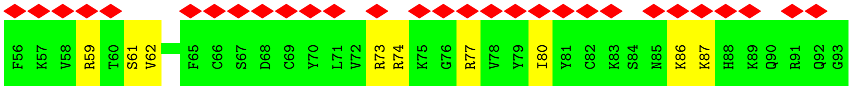
- Molecule 35: Small ribosomal subunit protein bS21m

Chain z:



- Molecule 36: Large ribosomal subunit protein bL36m

Chain 0:



- Molecule 37: Large ribosomal subunit protein mL38

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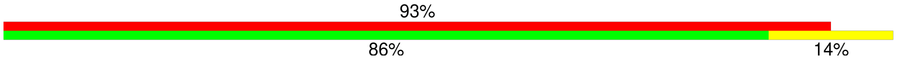
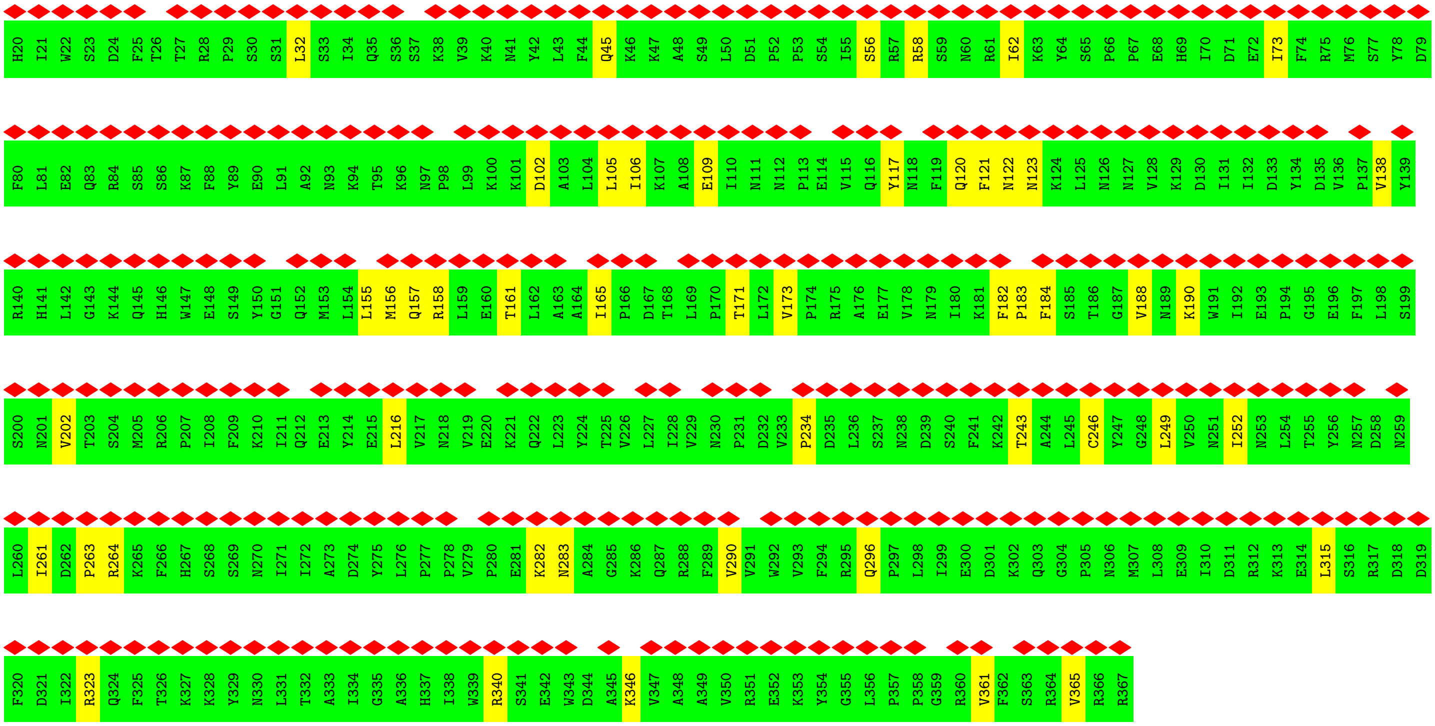
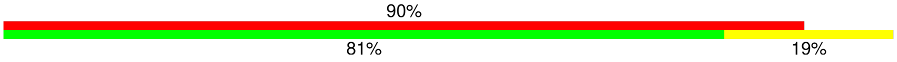
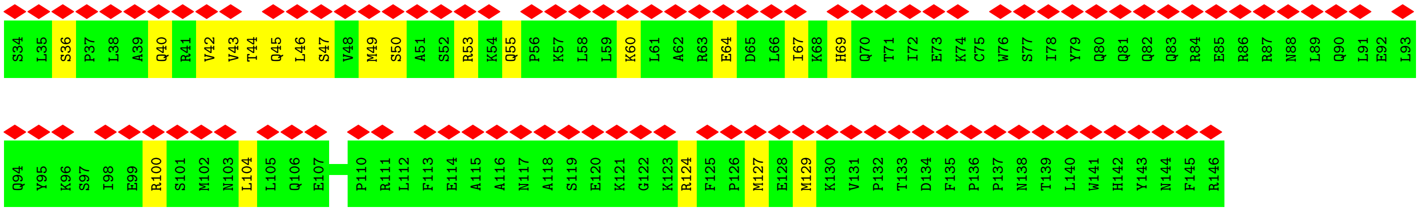




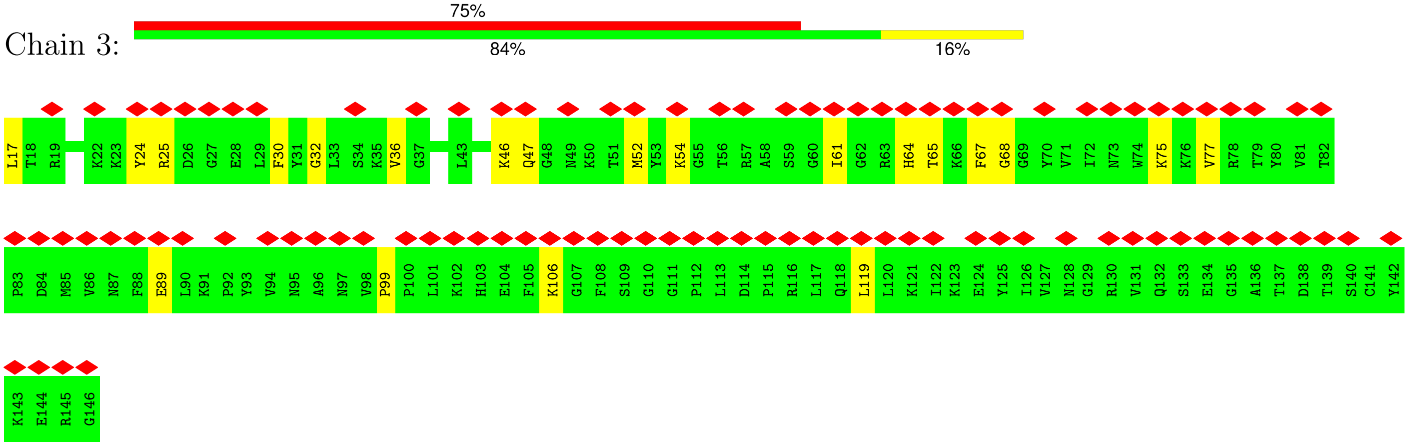
- Molecule 38: Large ribosomal subunit protein mL40

Chain 2:

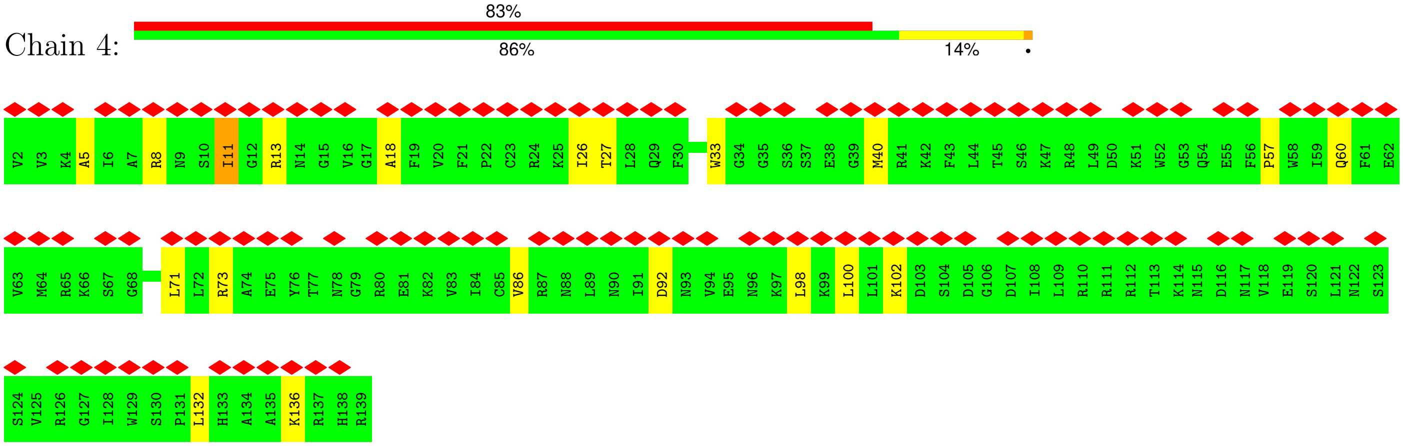




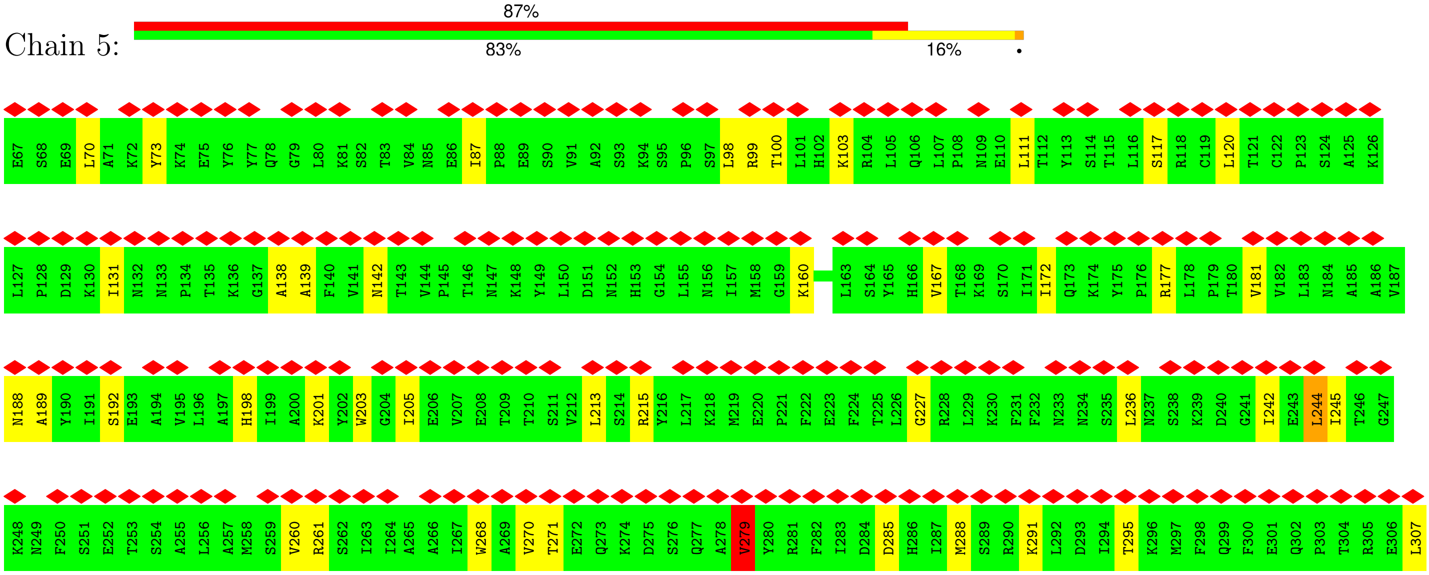
- Molecule 39: Large ribosomal subunit protein mL41

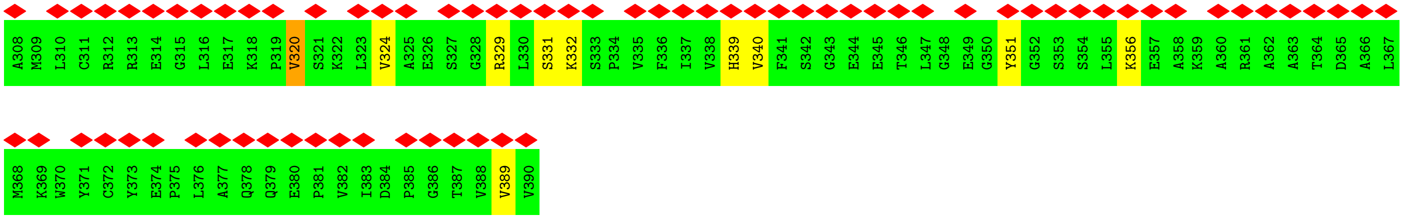


- Molecule 40: Large ribosomal subunit protein mL43



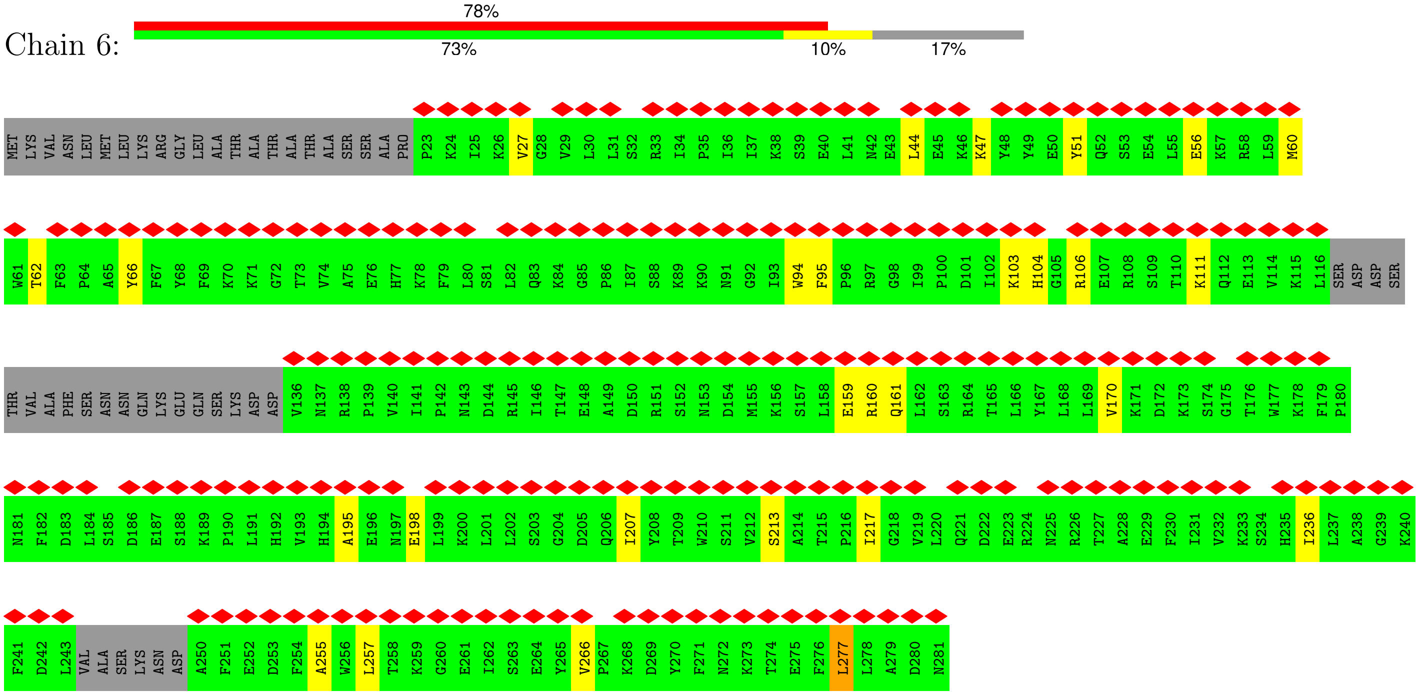
- Molecule 41: Large ribosomal subunit protein mL44





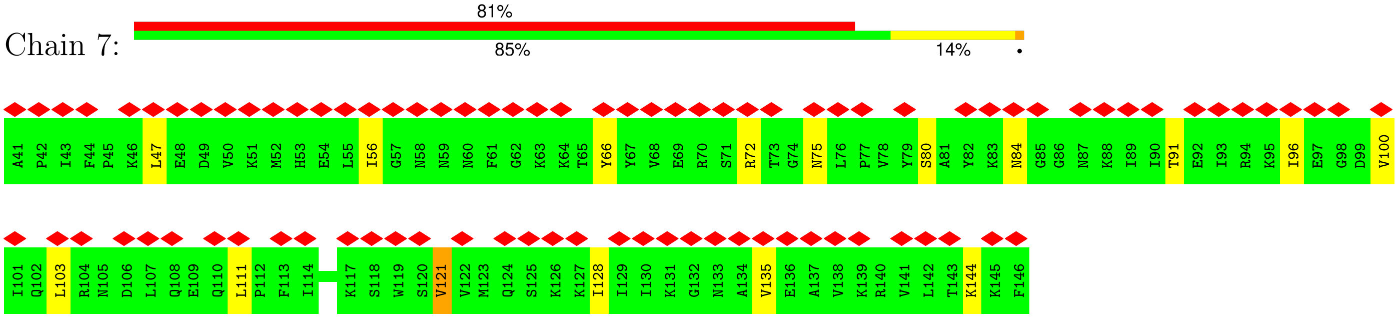
- Molecule 42: Large ribosomal subunit protein mL46

Chain 6:



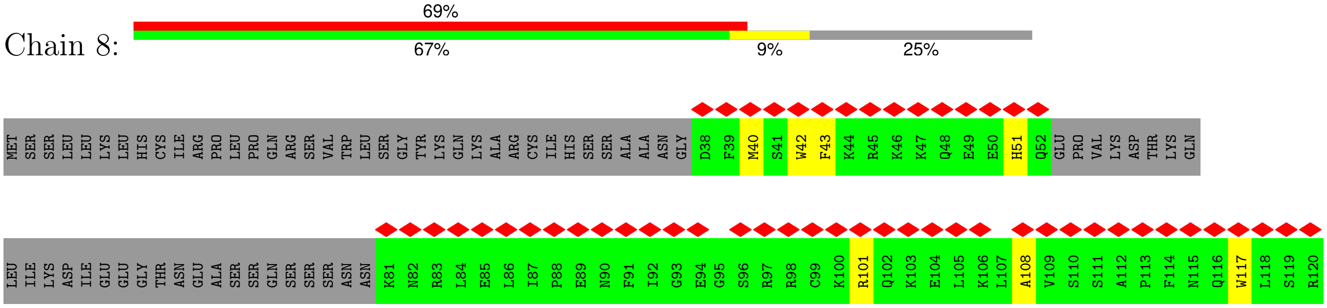
- Molecule 43: Large ribosomal subunit protein mL49

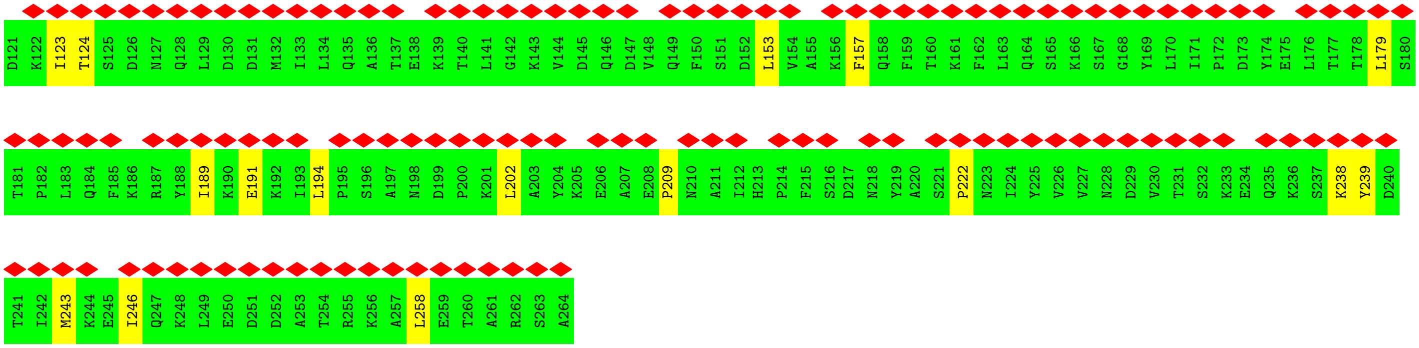
Chain 7:



- Molecule 44: Large ribosomal subunit protein mL50

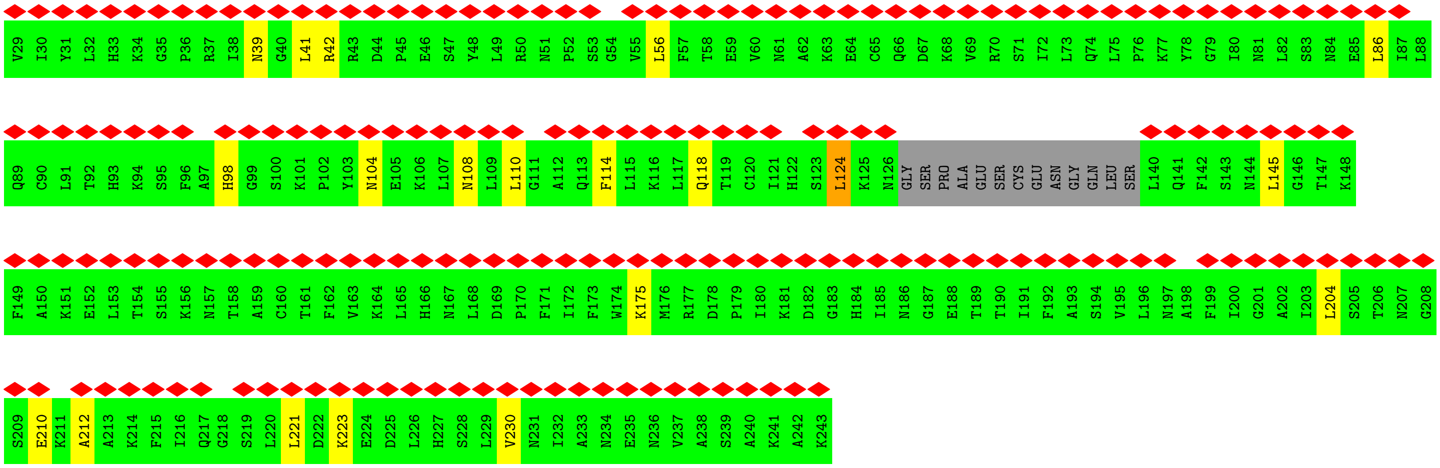
Chain 8:





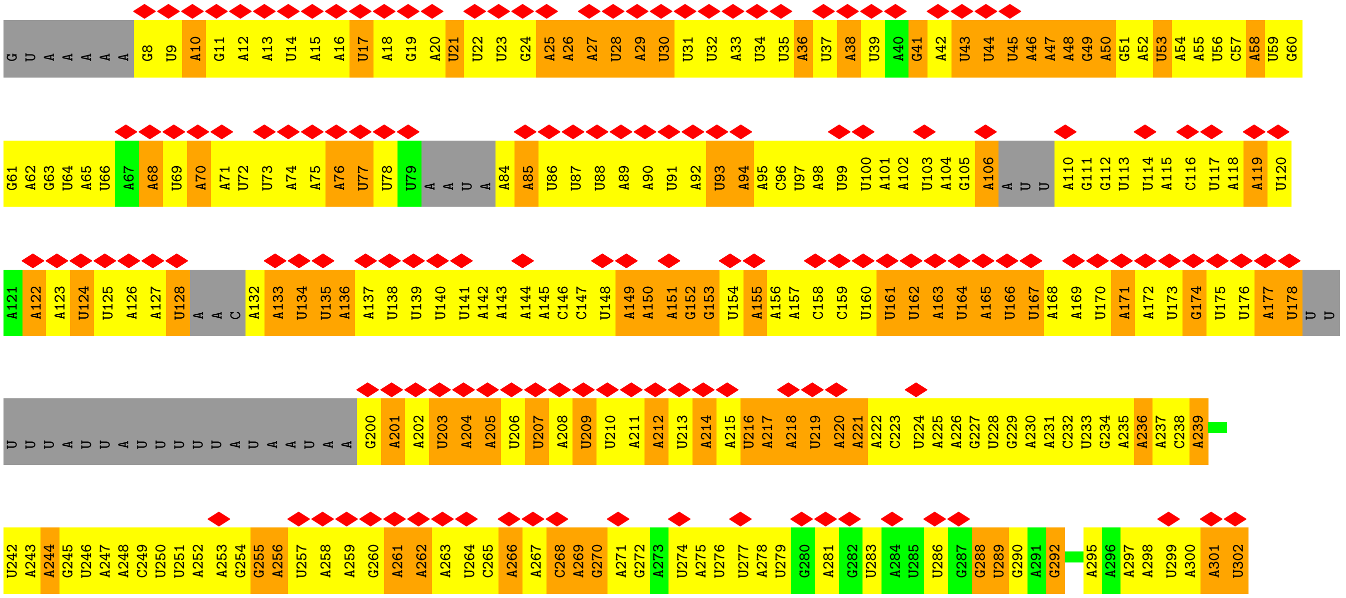
- Molecule 45: Large ribosomal subunit protein mL57

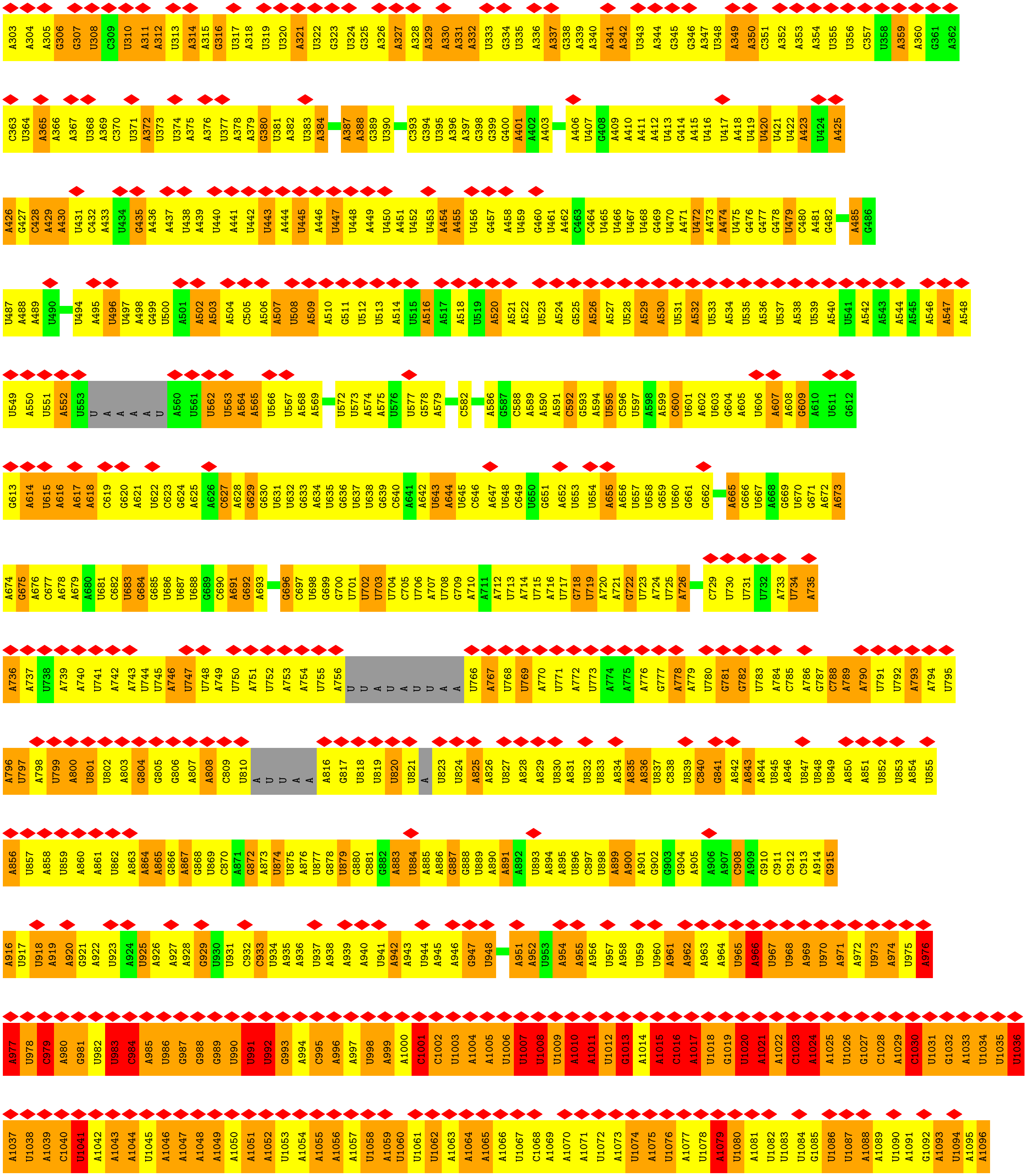
Chain 9:



- Molecule 46: Large ribosomal subunit rRNA

Chain A:

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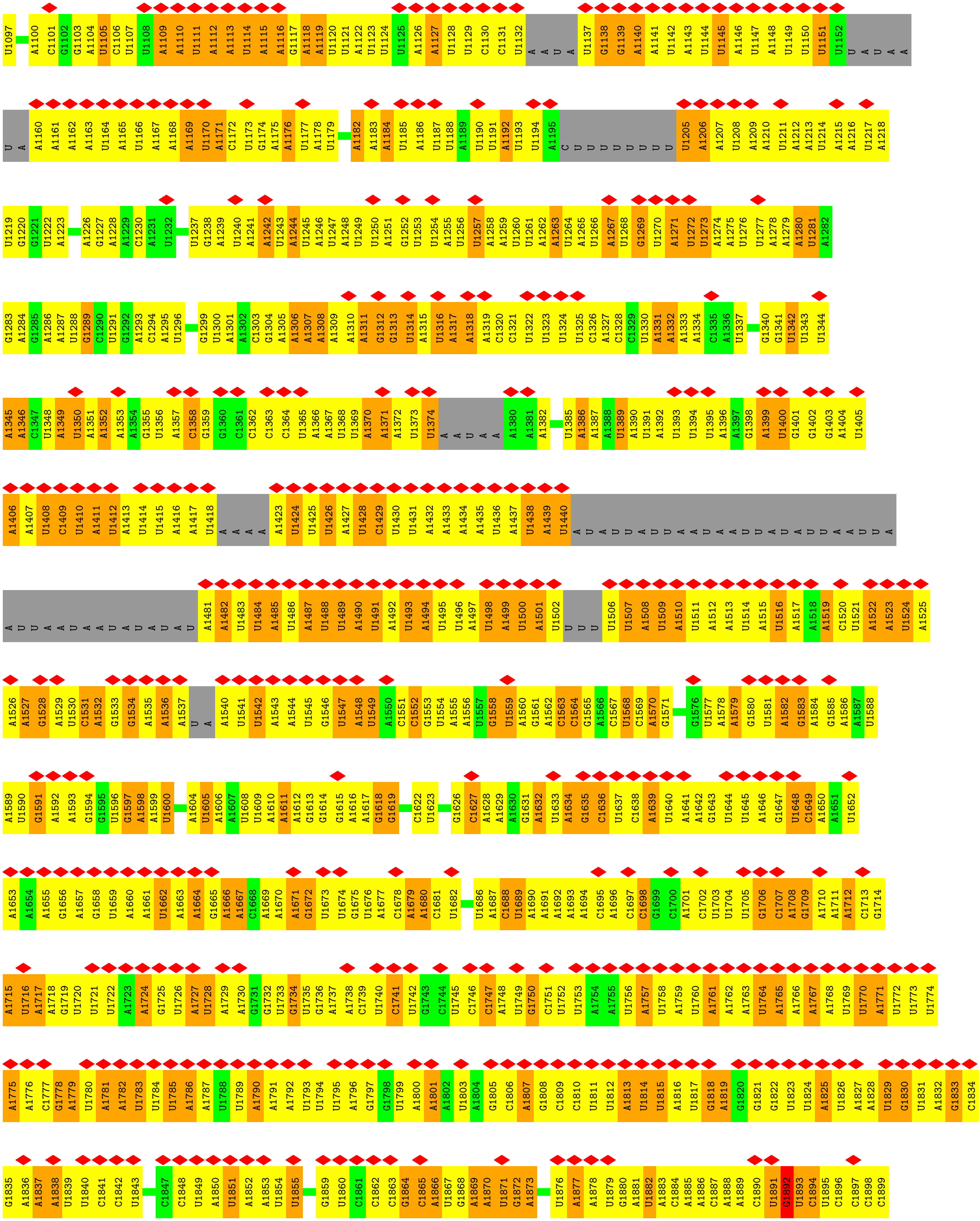
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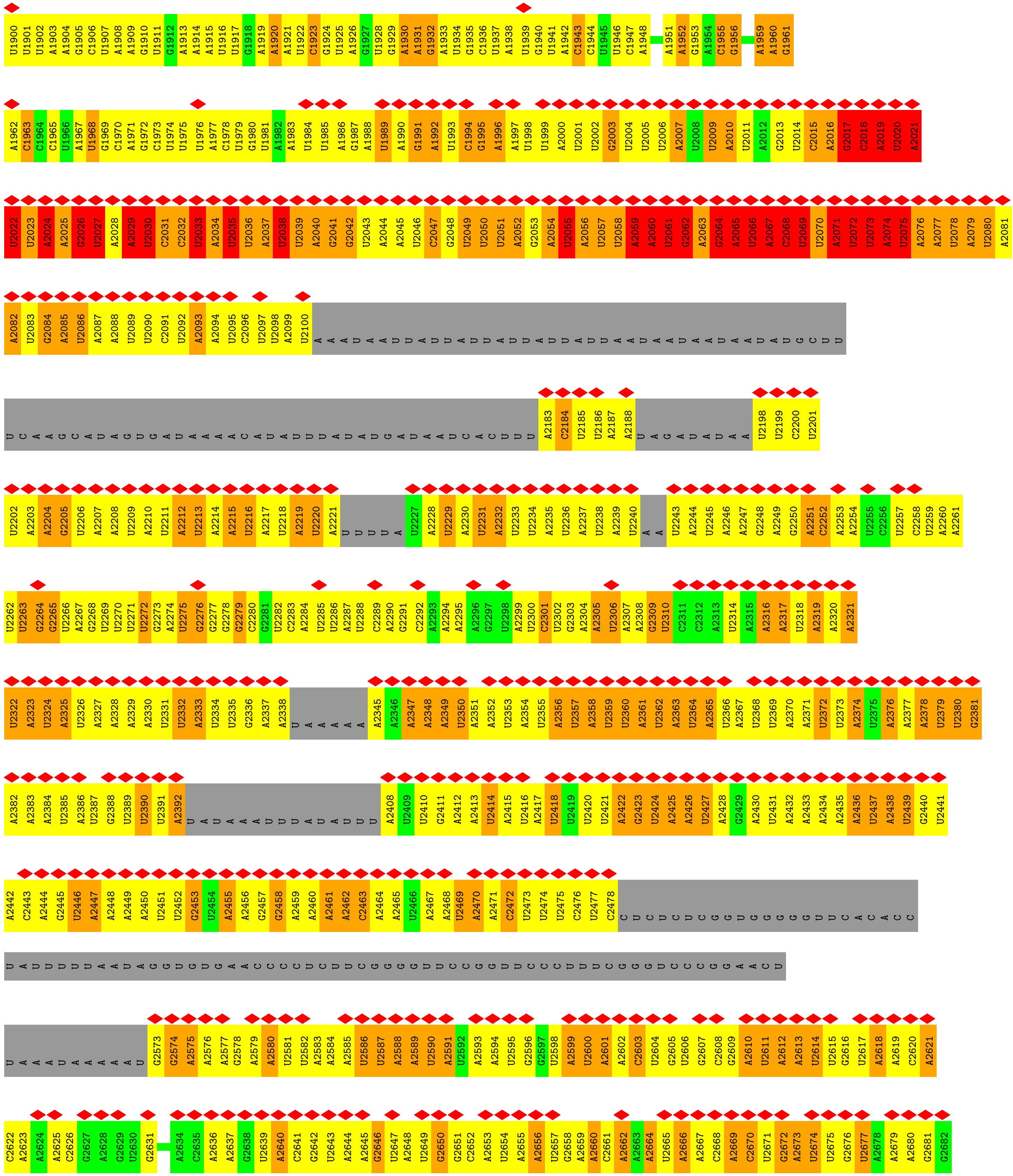
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A1962 C1963 C1964 C1965 U1966 A1967 U1968 G1969 C1970 A1971 G1972 C1973 U1974 U1975 U1976 A1977 C1978 U1979 G1980 U1981 A1982 A1983 U1984 U1985 A1986 G1987 A1988 U1989 A1990 G1991 A1992 U1993 C1994 G1995 A1996 A1997 U1998 U1999 A2000 U2001 U2002 G2003 U2004 U2005 U2006 A2007 U2008 U2009 A2010 U2011 A2012 G2013 U2014 C2015 A2016 G2017 C2018 A2019 U2020 A2021
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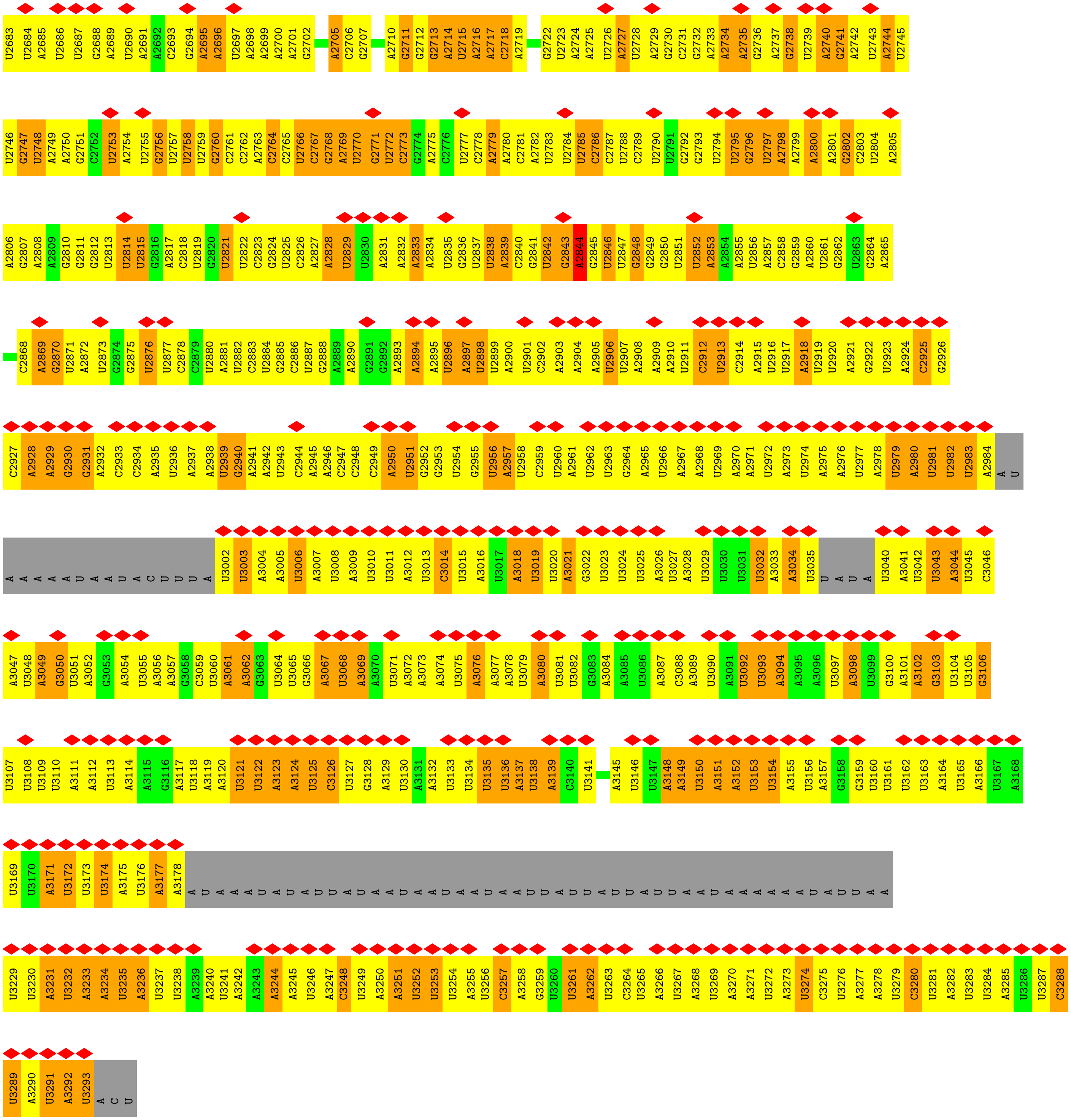
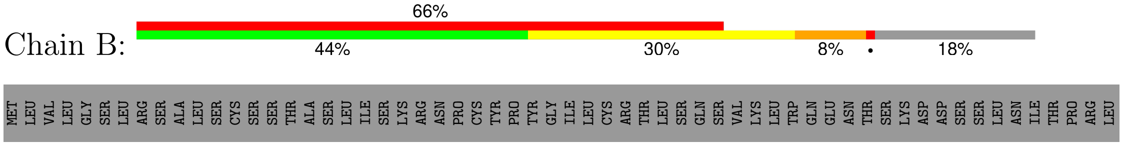
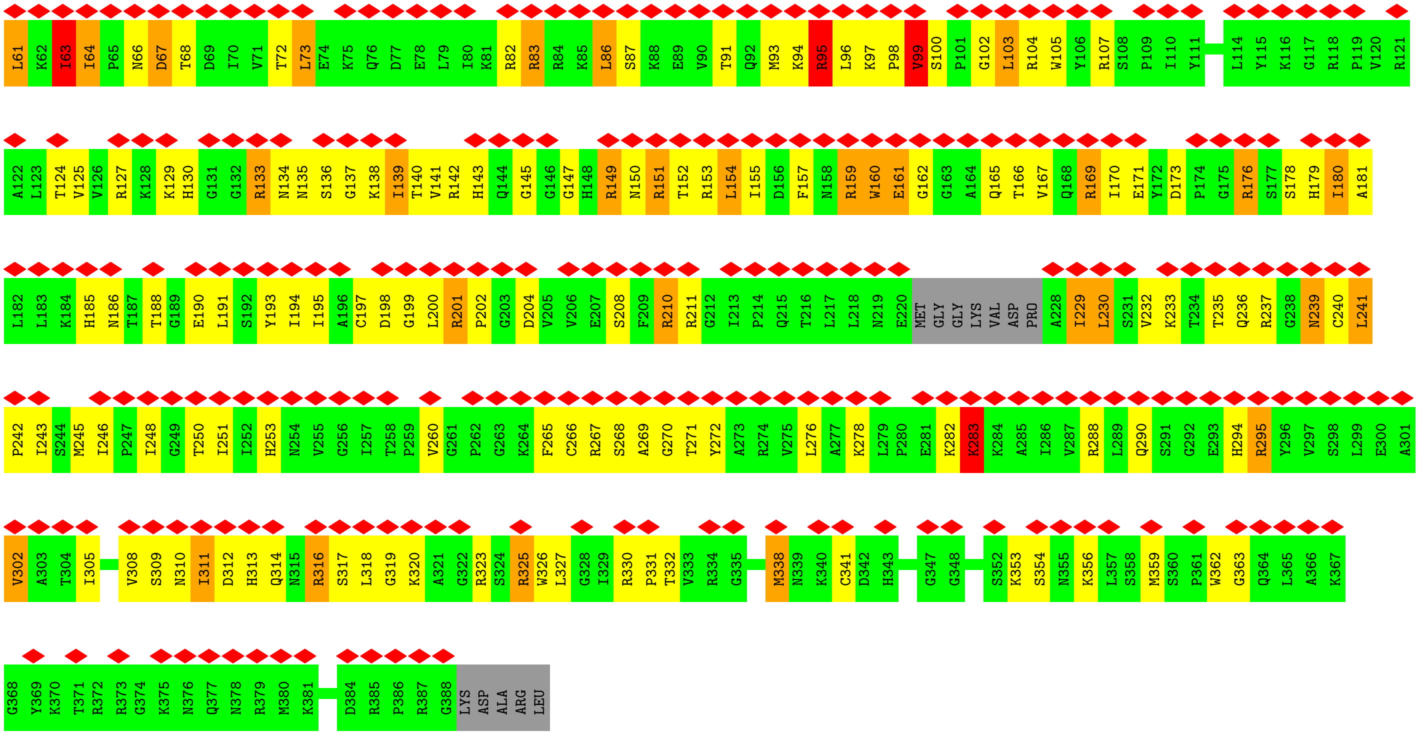
A2082 U2083 G2084 A2085 U2086 A2087 A2088 U2089 U2090 C2091 U2092 A2093 A2094 U2095 C2096 U2097 U2098 A2099 U2100 A A A U A A U U A U U A U U A U U A U U A U U A A U A A U A A U A A U A U G C U U
U C A A G C A U A G U G A U A A A A C A U A U U U A U A U G A U A A U C A C U U U A2183 C2184 U2185 U2186 A2187 A2188 U A G A U A U A A U2198 U2199 C2200 U2201
U2202 U2203 A2204 G2205 U2206 A2207 A2208 U2209 A2210 U2211 A2212 U2213 A2214 A2215 U2216 A2217 U2218 A2219 U2220 A2221 U U U A U2227 A2228 U2229 A2230 U2231 A2232 U2233 U2234 A2235 U2236 U2237 U2238 A2239 U2240 A A U2243 A2244 U2245 A2246 A2247 G2248 A2249 G2250 A2251 C2252 A2253 A2254 U2255 C2256 U2257 C2258 U2259 A2260 A2261
U2262 U2263 G2264 G2265 U2266 A2267 G2268 U2269 U2270 U2271 U2272 G2273 A2274 U2275 G2276 G2277 G2278 G2279 C2280 G2281 U2282 C2283 A2284 U2285 U2286 A2287 U2288 C2289 U2290 G2291 C2292 A2293 A2294 A2295 A2296 G2297 U2298 A2299 U2300 C2301 U2302 G2303 A2304 A2305 U2306 A2307 A2308 G2309 U2310 C2311 C2312 A2313 U2314 A2315 A2316 A2317 U2318 A2319 U2320 A2321
U2322 A2323 U2324 A2325 U2326 A2327 A2328 A2329 A2330 U2331 U2332 A2333 U2334 U2335 G2336 A2337 A2338 U A A A A A A2345 A2346 A2347 A2348 A2349 U2350 A2351 A2352 U2353 A2354 U2355 A2356 U2357 A2358 U2359 U2360 A2361 U2362 A2363 U2364 A2365 U2366 A2367 U2368 U2369 A2370 A2371 U2372 U2373 A2374 U2375 A2376 A2377 A2378 U2379 U2380 G2381
A2382 A2383 A2384 U2385 A2386 U2387 G2388 U2389 U2390 U2391 A2392 U A U A A A U U U A U A U U U A2408 U2409 U2410 G2411 A2412 A2413 U2414 A2415 U2416 A2417 U2418 U2419 U2420 U2421 A2422 G2423 U2424 A2425 A2426 U2427 A2428 G2429 A2430 U2431 A2432 A2433 A2434 A2435 A2436 U2437 A2438 U2439 G2440 U2441
A2442 C2443 A2444 G2445 U2446 A2447 A2448 A2449 A2450 U2451 U2452 G2453 U2454 A2455 A2456 G2457 G2458 A2459 A2460 A2461 A2462 C2463 A2464 A2465 U2466 A2467 A2468 U2469 A2470 A2471 C2472 U2473 U2474 U2475 C2476 U2477 C2478 C U C U C U C G G U G G G G G U U C A C A C C
U A U U U U U A A U A G G U G U G A A C C C C U C U U C G G G G U U C C G G U U C C C U U U C G G G U C C C G G A A C U
U A A A U A A A A A U G2573 G2574 A2575 A2576 A2577 G2578 A2579 A2580 U2581 U2582 A2583 A2584 A2585 U2586 U2587 A2588 A2589 U2590 A2591 U2592 A2593 A2594 U2595 G2596 G2597 U2598 A2599 U2600 A2601 A2602 C2603 U2604 G2605 U2606 G2607 C2608 G2609 A2610 U2611 A2612 A2613 U2614 U2615 G2616 U2617 A2618 A2619 C2620 A2621
C2622 A2623 A2624 A2625 C2626 G2627 A2628 G2629 U2630 G2631 A2634 C2635 A2636 A2637 G2638 U2639 A2640 C2641 G2642 U2643 A2644 A2645 G2646 U2647 A2648 U2649 G2650 G2651 C2652 A2653 U2654 A2655 A2656 U2657 G2658 A2659 A2660 C2661 A2662 A2663 A2664 U2665 A2666 A2667 C2668 A2669 C2670 U2671 G2672 A2673 U2674 U2675 G2676 U2677 A2678 A2679 A2680 G2681 G2682



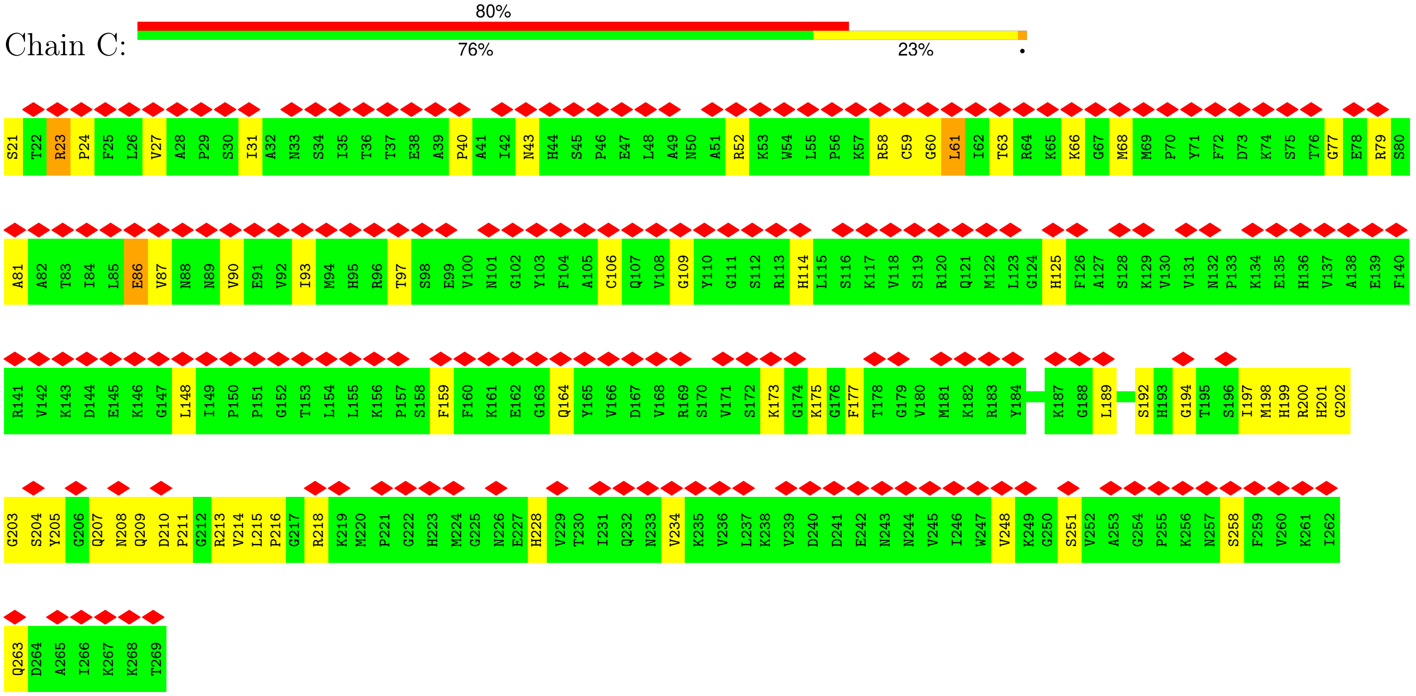
- Molecule 47: Large ribosomal subunit protein uL2m

Chain B:

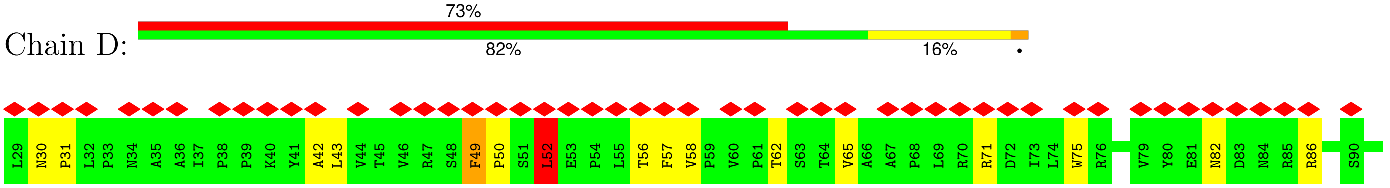


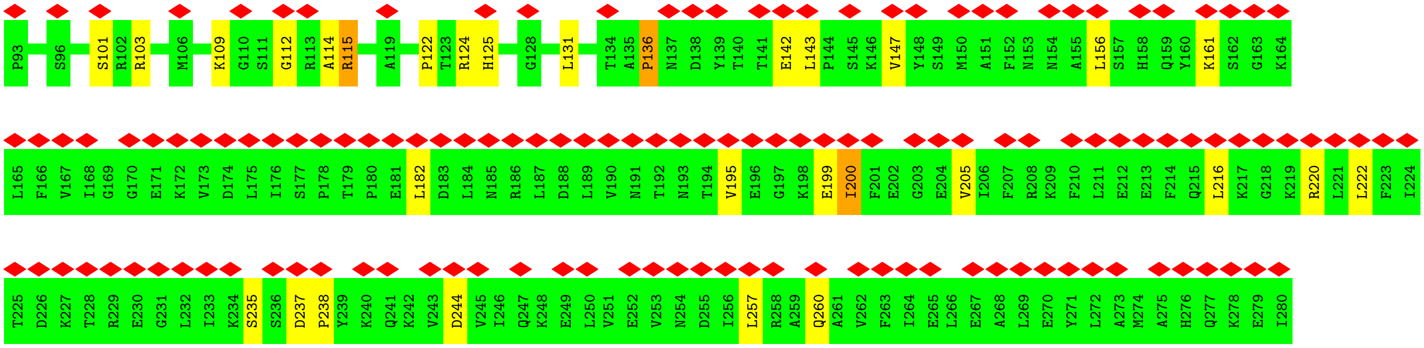


- Molecule 48: Large ribosomal subunit protein uL3m



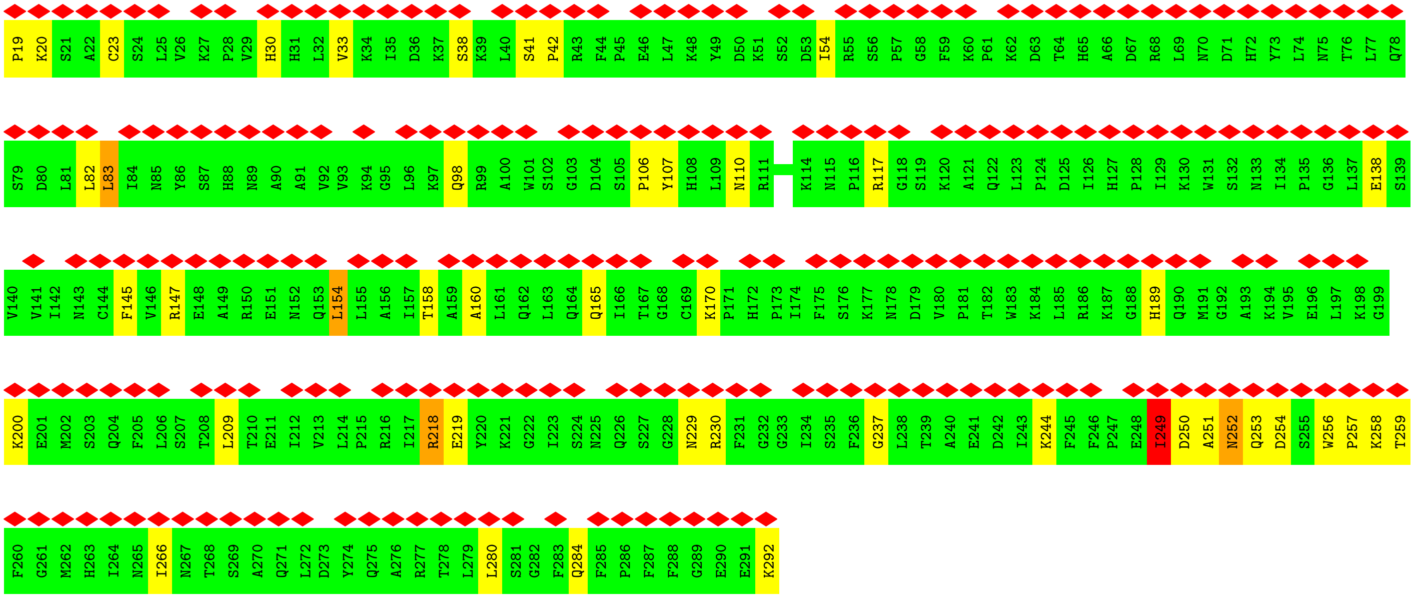
- Molecule 49: Large ribosomal subunit protein uL4m





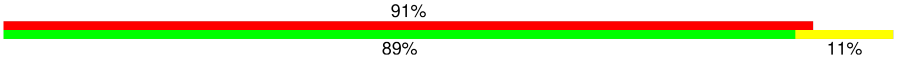
- Molecule 50: Large ribosomal subunit protein uL5m

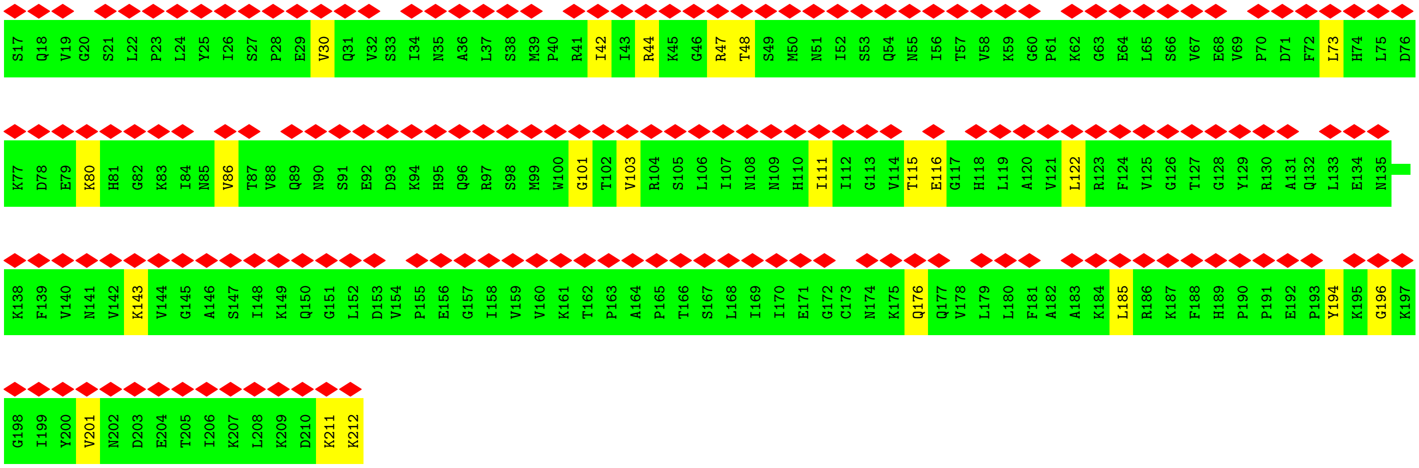
Chain E:



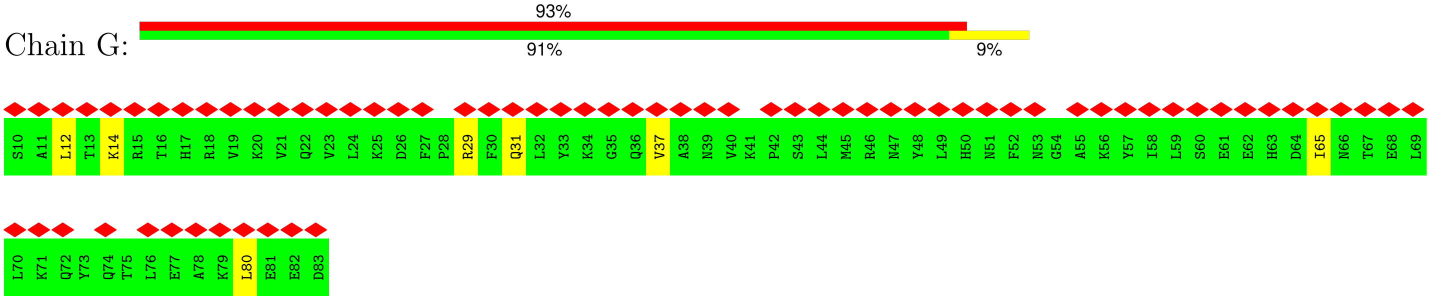
- Molecule 51: Large ribosomal subunit protein uL6m

Chain F:

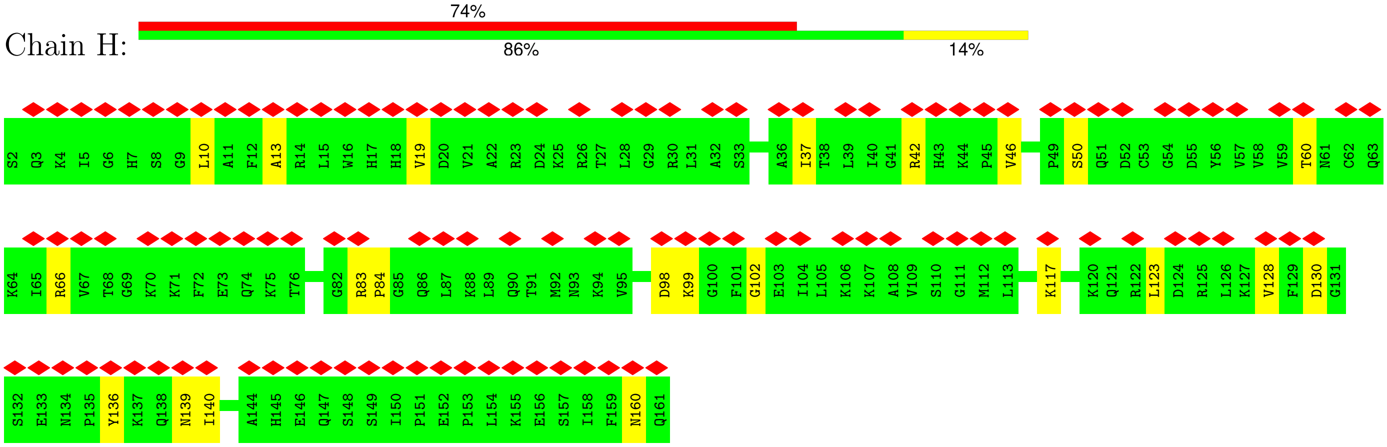




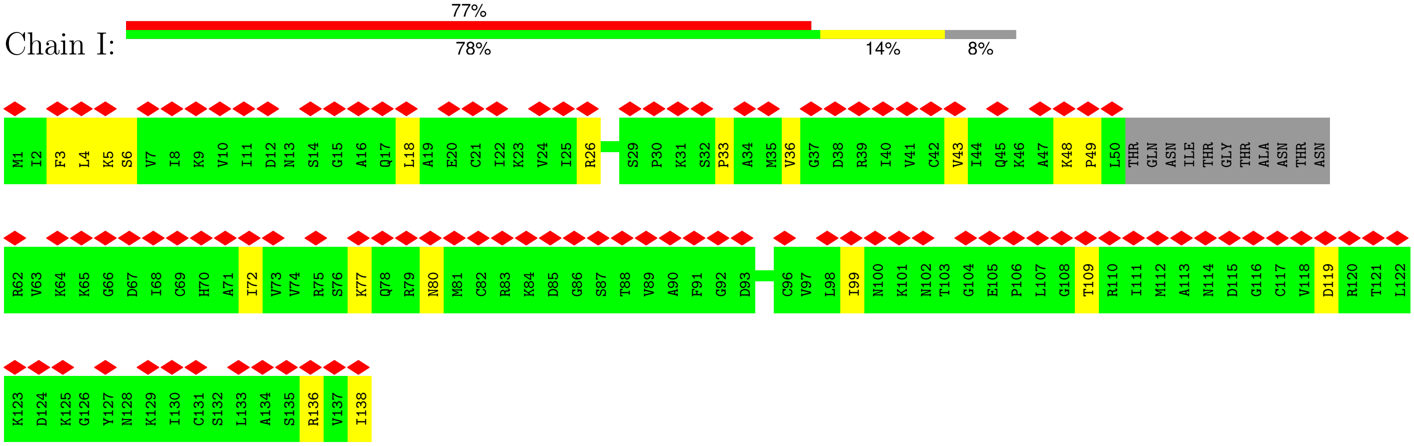
- Molecule 52: Large ribosomal subunit protein bL9m



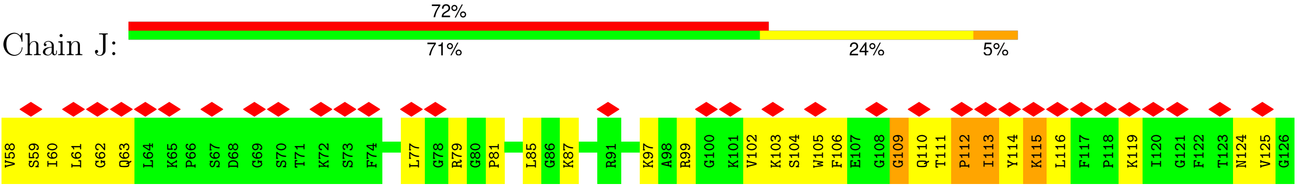
- Molecule 53: Large ribosomal subunit protein uL13m

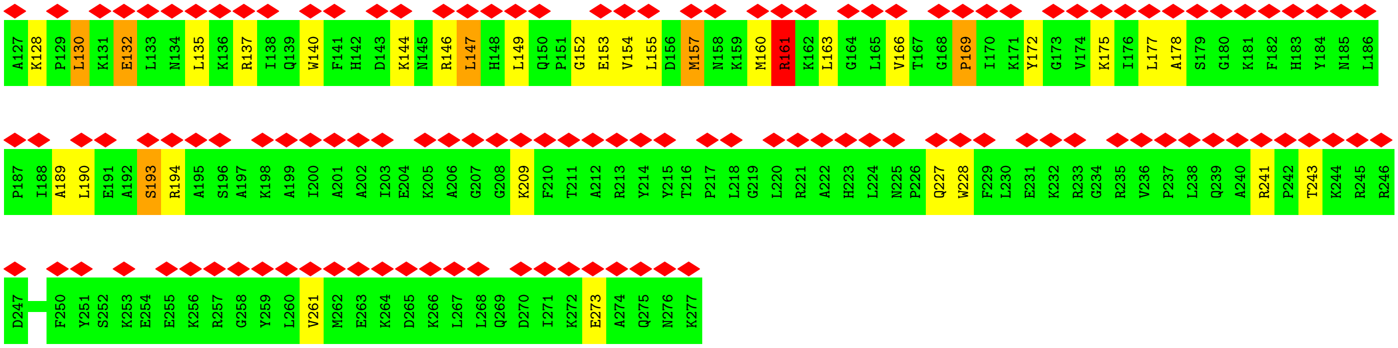


- Molecule 54: Large ribosomal subunit protein uL14m



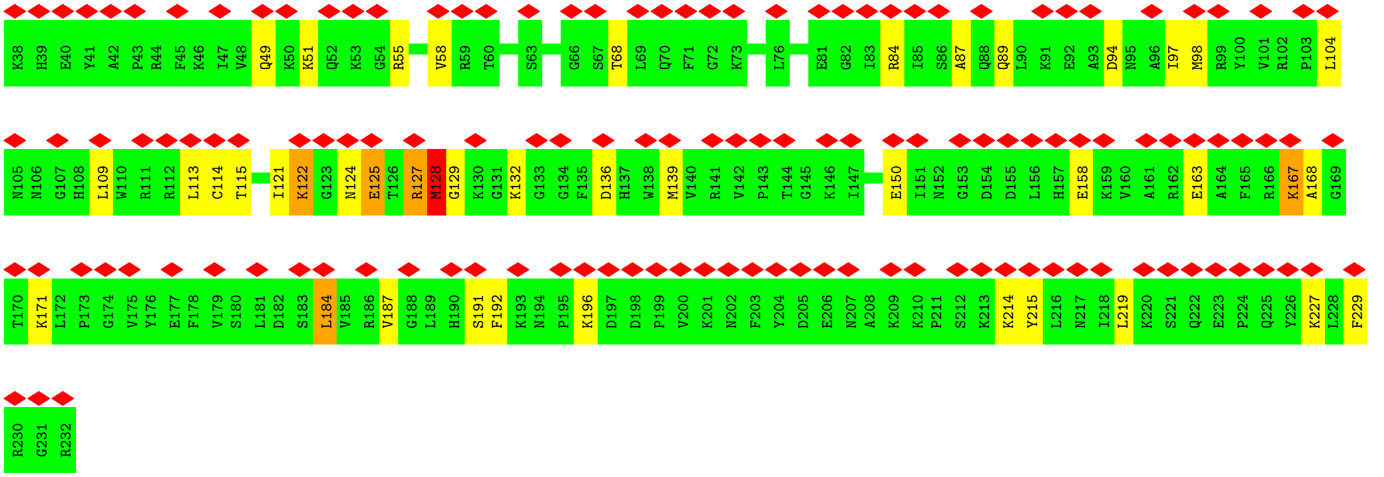
- Molecule 55: Large ribosomal subunit protein uL15m





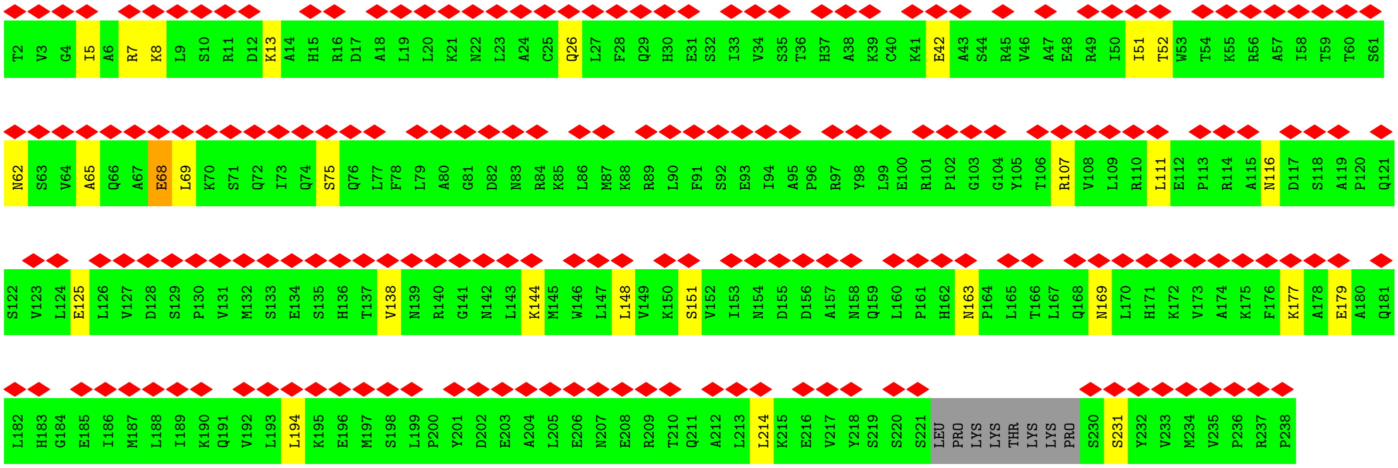
- Molecule 56: Large ribosomal subunit protein uL16m

Chain K:



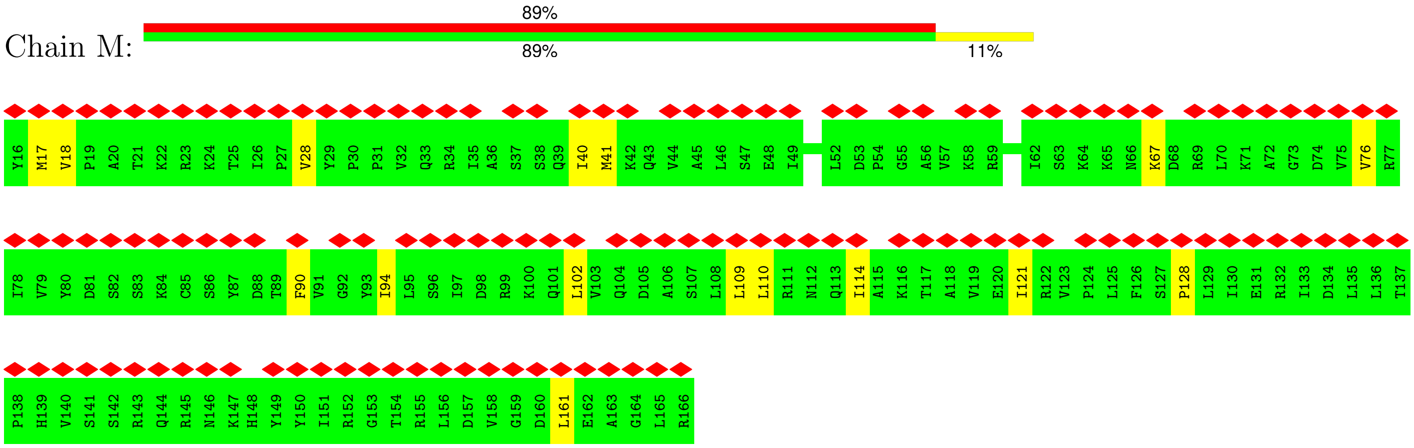
- Molecule 57: Large ribosomal subunit protein bL17m

Chain L:



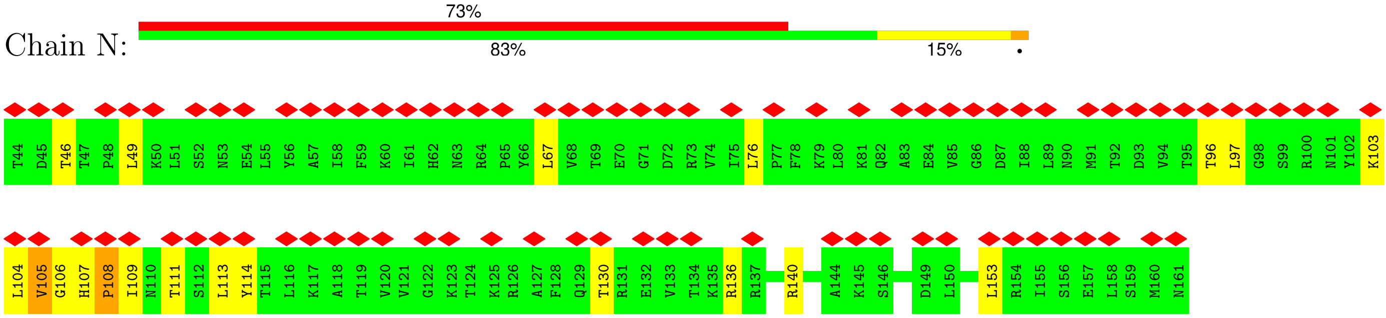
- Molecule 58: Large ribosomal subunit protein bL19m

Chain M:



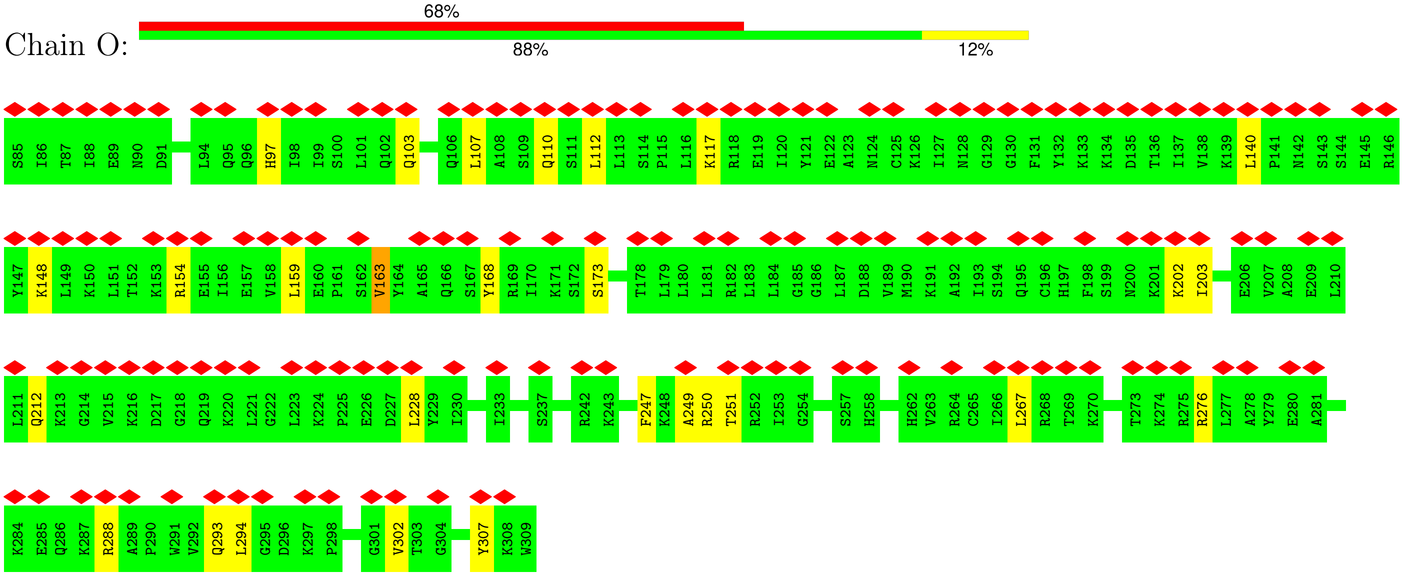
- Molecule 59: Large ribosomal subunit protein bL21m

Chain N:



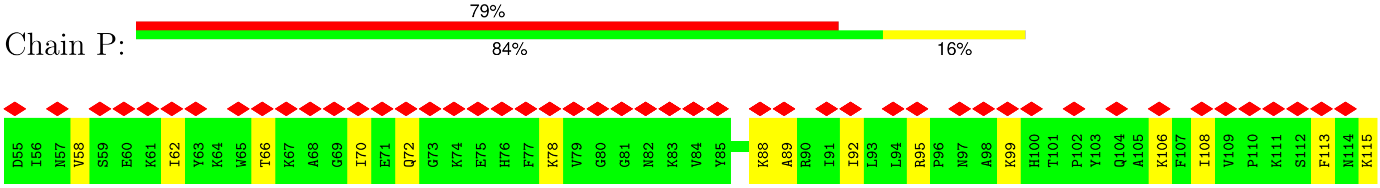
- Molecule 60: Large ribosomal subunit protein uL22m

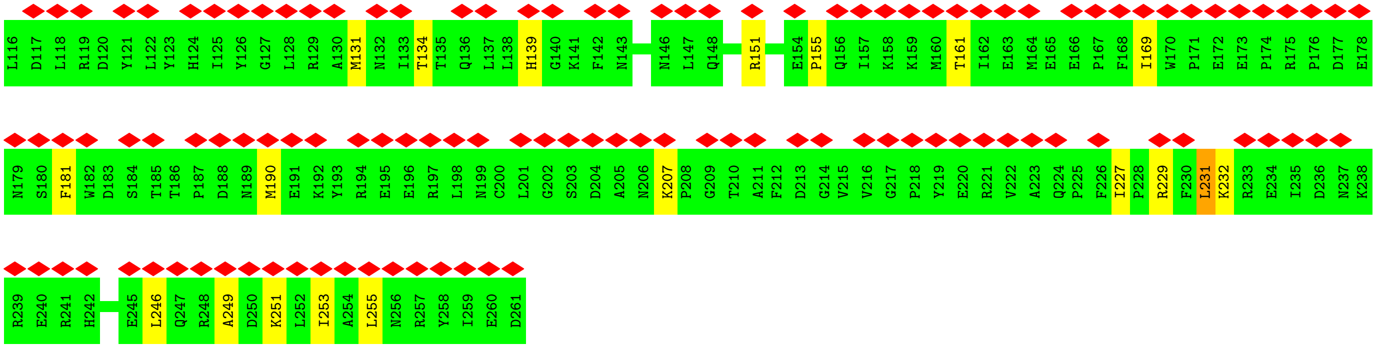
Chain O:



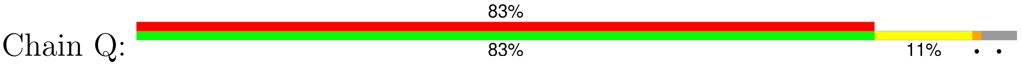
- Molecule 61: Large ribosomal subunit protein uL23m

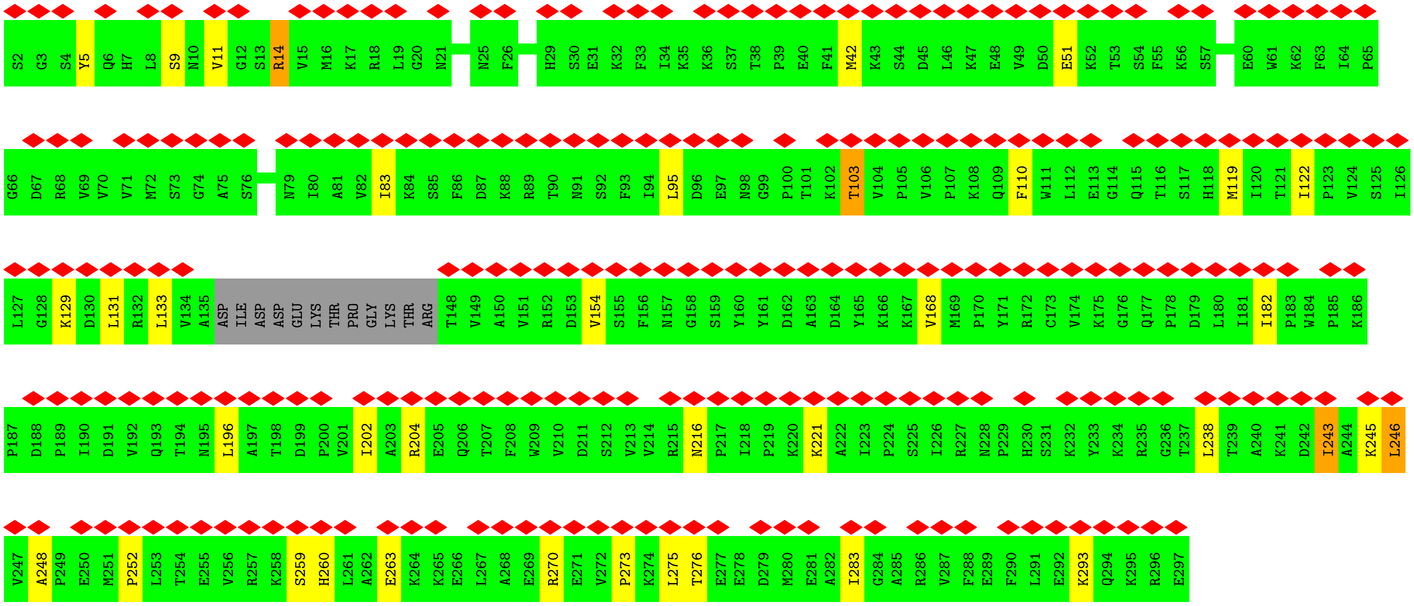
Chain P:



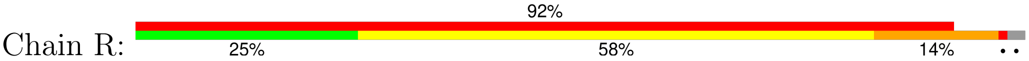


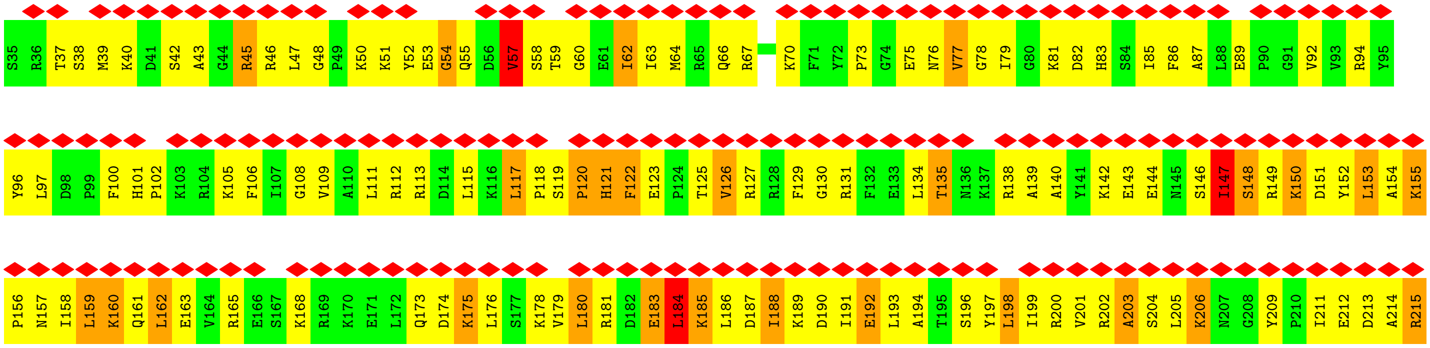
- Molecule 62: Large ribosomal subunit protein uL24m

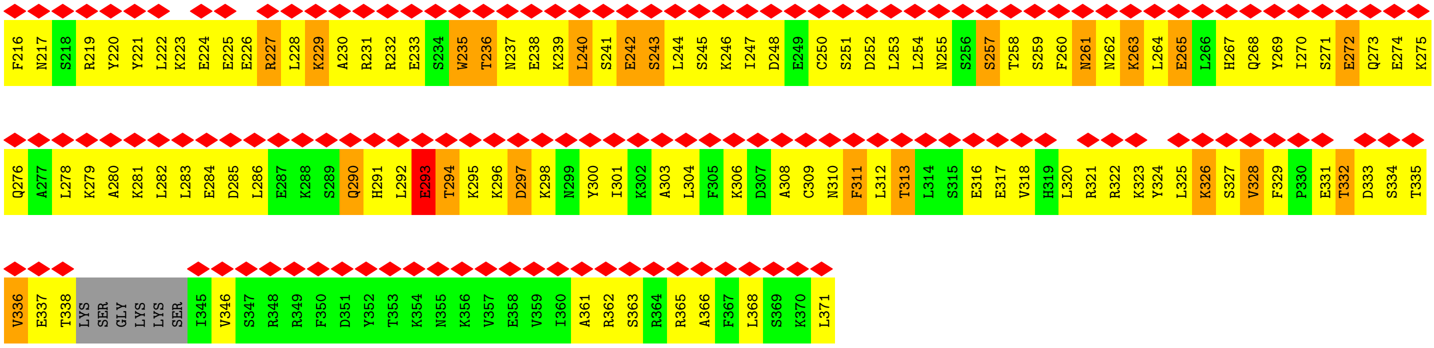




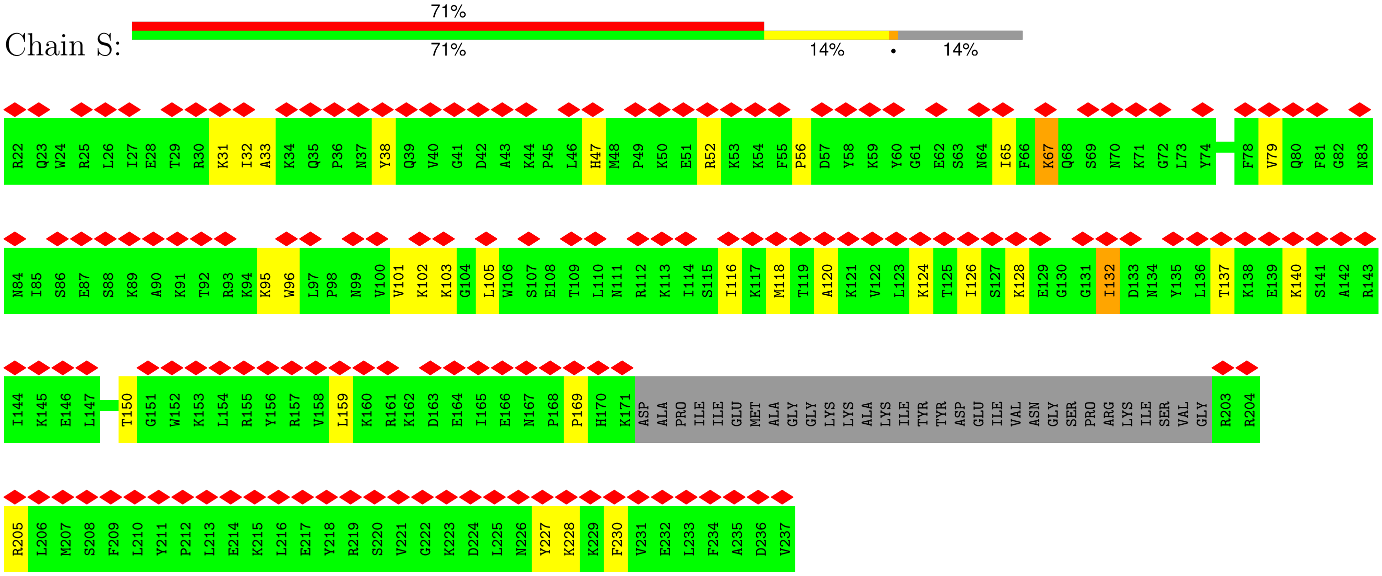
- Molecule 63: Large ribosomal subunit protein bL27m



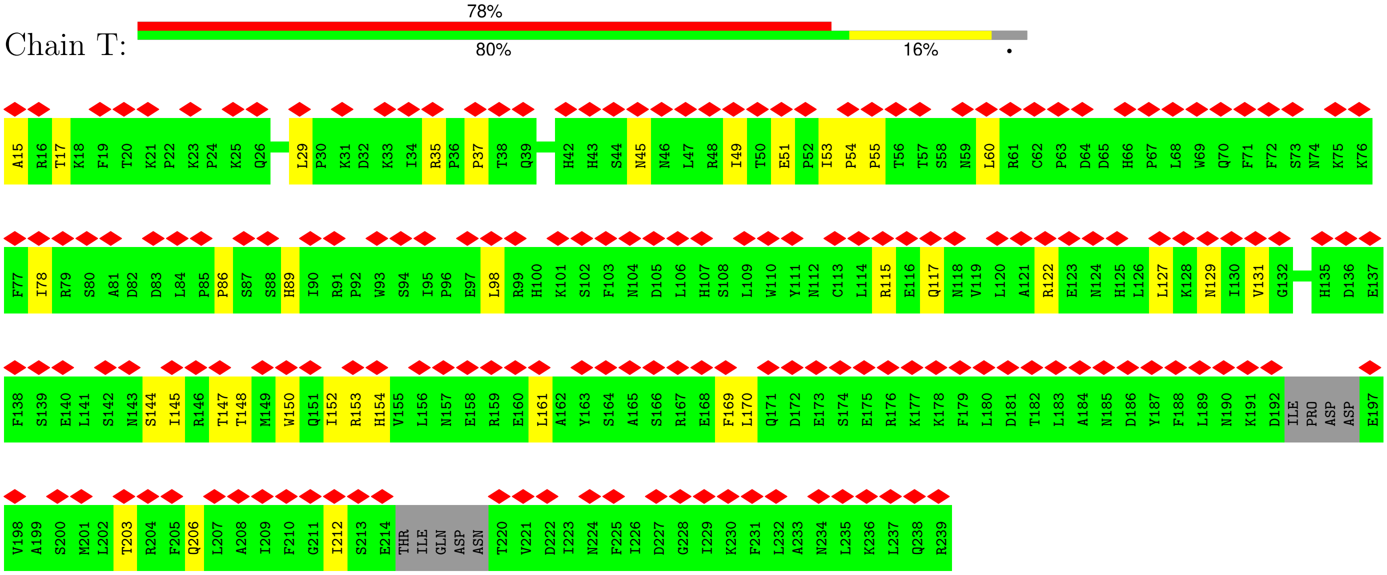




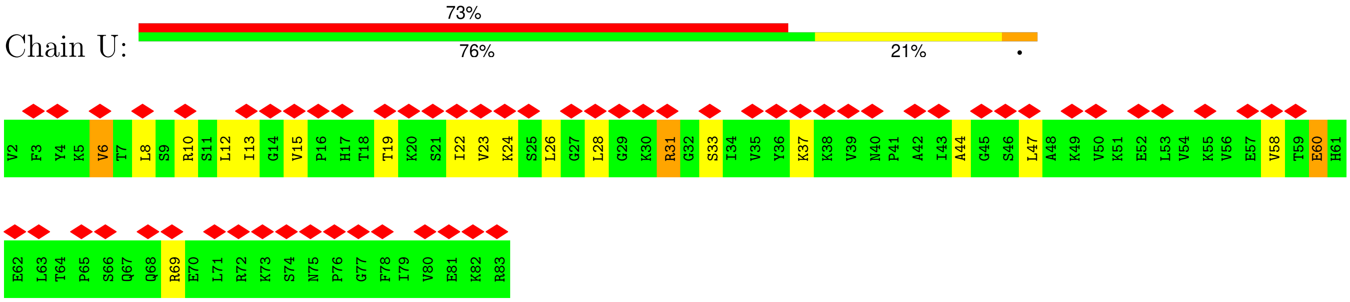
- Molecule 64: Large ribosomal subunit protein bL28m



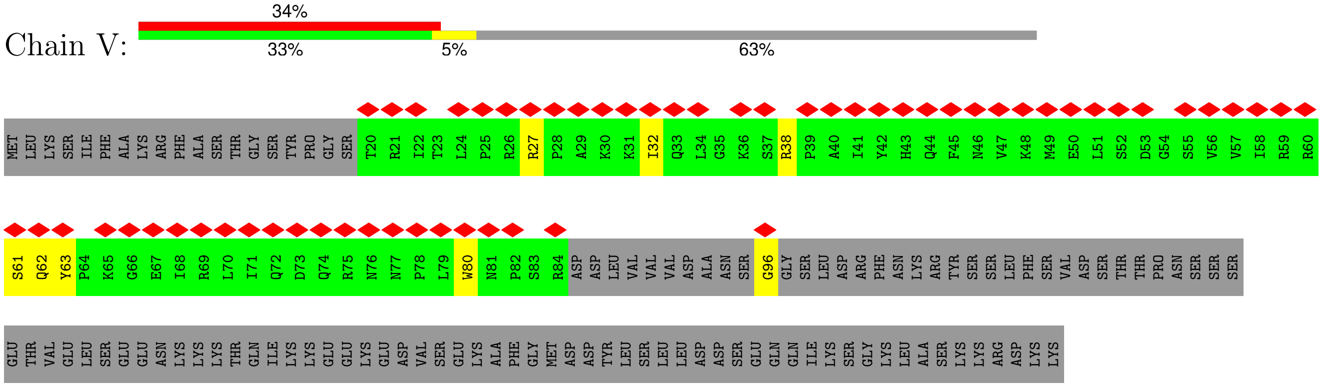
- Molecule 65: Large ribosomal subunit protein uL29m



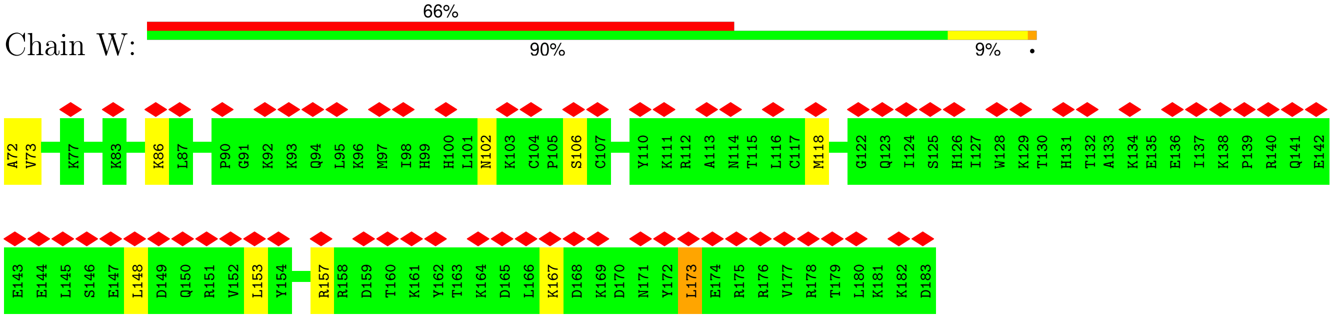
- Molecule 66: Large ribosomal subunit protein uL30m



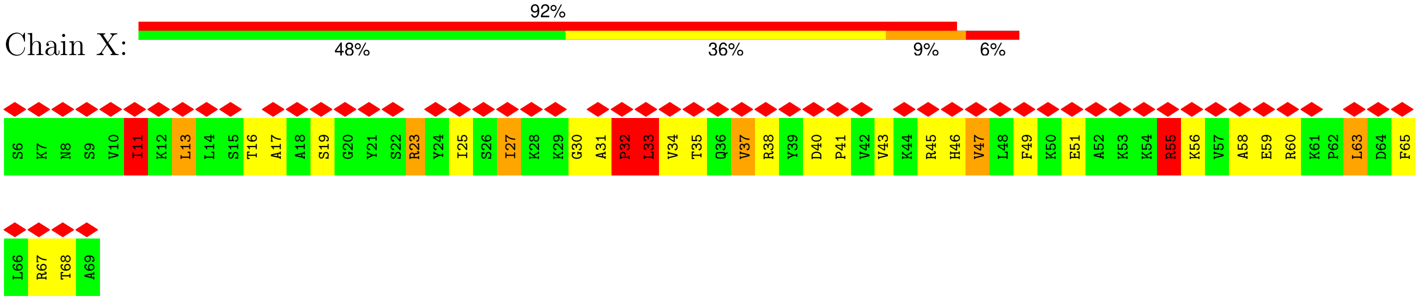
- Molecule 67: Large ribosomal subunit protein bL31m



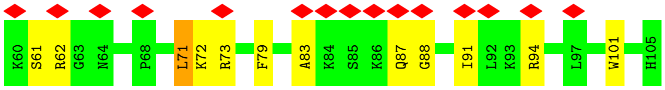
- Molecule 68: Large ribosomal subunit protein bL32m



- Molecule 69: Large ribosomal subunit protein bL33m

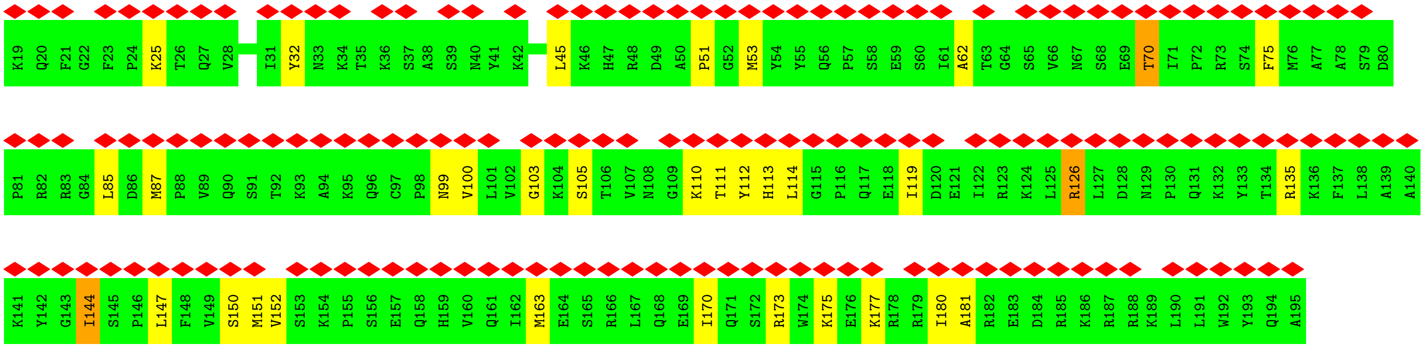


- Molecule 70: Large ribosomal subunit protein bL34m



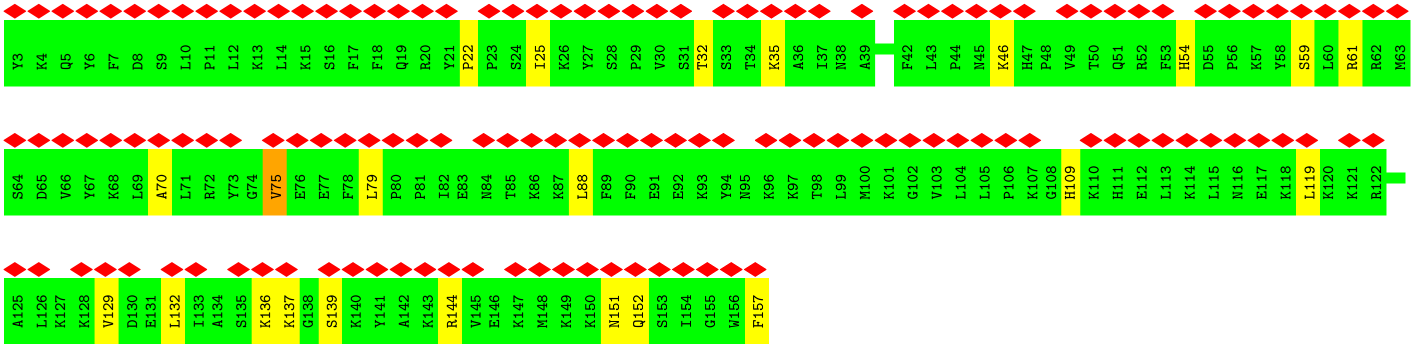
- Molecule 71: Large ribosomal subunit protein mL58

Chain a:



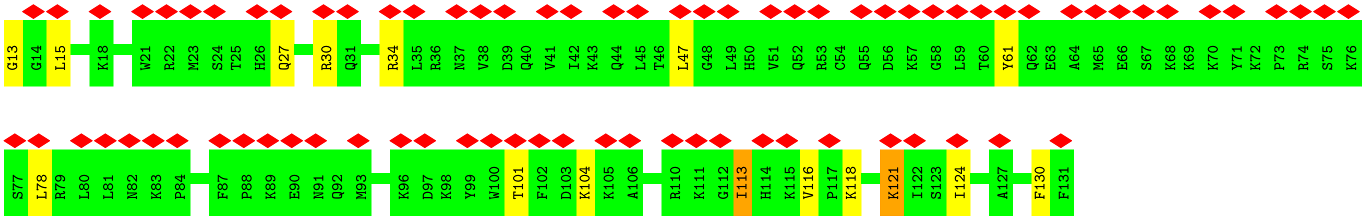
- Molecule 72: Large ribosomal subunit protein mL59

Chain b:



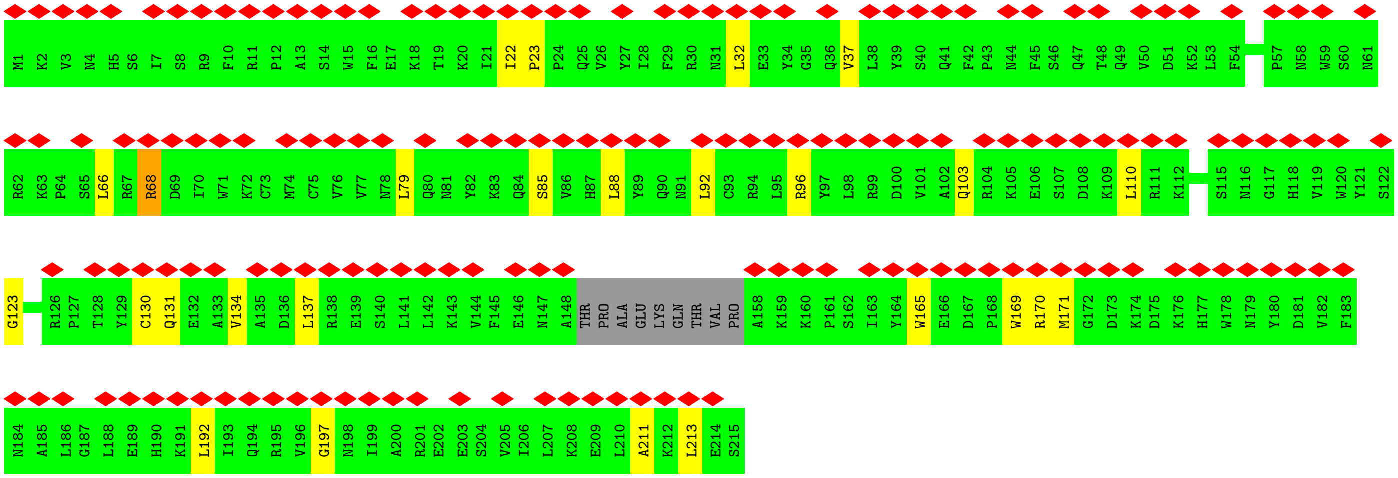
- Molecule 73: Large ribosomal subunit protein mL60

Chain c:

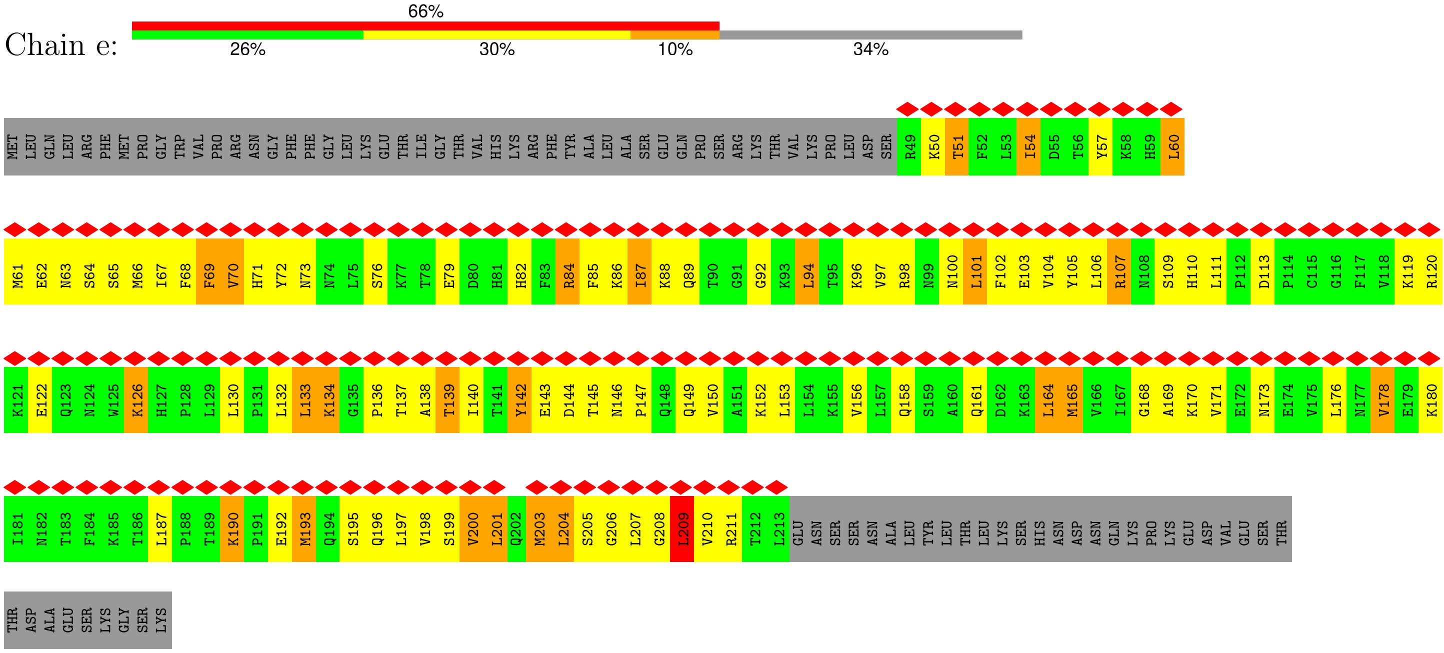


- Molecule 74: Large ribosomal subunit protein mL67

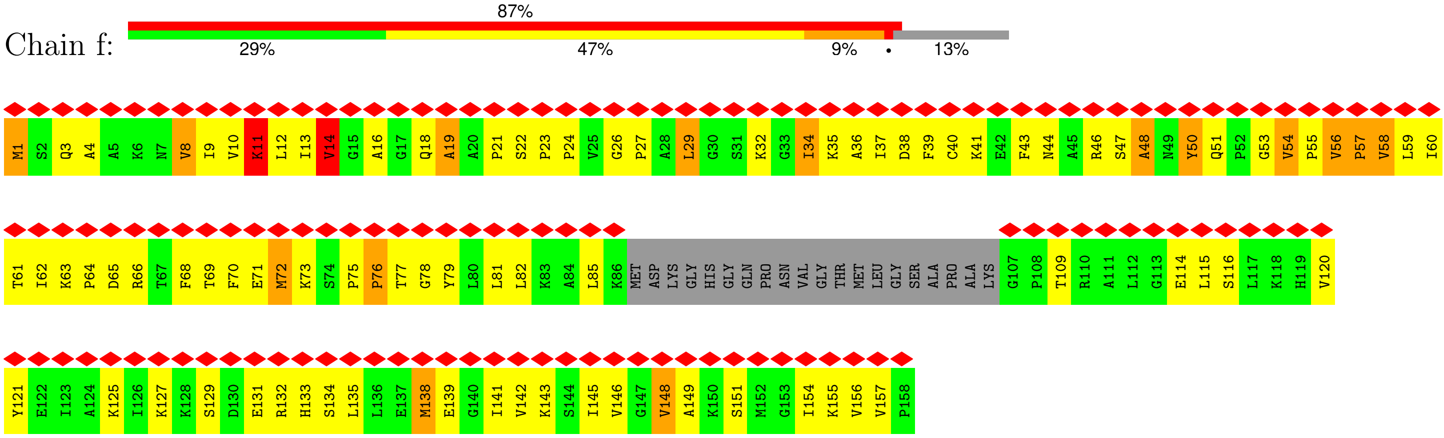
Chain d:



- Molecule 75: Large ribosomal subunit protein uL10m



- Molecule 76: Large ribosomal subunit protein uL11m



4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	12907	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TECNAI ARCTICA	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{Å}^2$)	60	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	19.881	Depositor
Minimum map value	-12.977	Depositor
Average map value	0.066	Depositor
Map value standard deviation	1.736	Depositor
Recommended contour level	4.3	Depositor
Map size (Å)	427.52, 427.52, 427.52	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.835, 0.835, 0.835	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	AA	0.84	0/304	1.30	1/386 (0.3%)
2	AB	0.78	0/825	1.05	4/1101 (0.4%)
3	AC	0.89	0/2130	1.21	1/2891 (0.0%)
4	AD	0.89	0/2472	1.24	4/3338 (0.1%)
5	AE	0.84	0/2490	1.27	35/3372 (1.0%)
6	AF	0.88	0/2130	1.20	4/2867 (0.1%)
7	AG	0.88	0/1974	1.20	1/2668 (0.0%)
8	AH	0.92	0/1915	1.23	3/2559 (0.1%)
9	AI	0.94	0/3309	1.13	19/4472 (0.4%)
10	AJ	0.75	0/788	1.08	1/1052 (0.1%)
11	AK	0.94	0/2268	1.13	4/3058 (0.1%)
12	AL	0.49	1/35699 (0.0%)	0.83	182/55529 (0.3%)
13	AM	0.72	0/1805	0.96	3/2811 (0.1%)
14	AN	0.70	0/301	1.13	0/466
15	Z	0.90	0/702	1.24	5/945 (0.5%)
16	g	0.91	0/1610	1.16	2/2168 (0.1%)
17	h	0.88	0/2138	1.27	2/2903 (0.1%)
18	i	0.88	0/2503	1.14	1/3375 (0.0%)
19	j	0.91	0/2435	1.19	4/3281 (0.1%)
20	k	0.89	0/2360	1.21	7/3180 (0.2%)
21	l	0.97	0/1068	1.13	2/1430 (0.1%)
22	m	1.01	0/1305	1.29	13/1763 (0.7%)
23	n	0.73	0/1240	1.20	1/1670 (0.1%)
24	o	0.65	0/1855	1.04	0/2492
25	p	0.88	0/1140	1.17	0/1547
26	q	1.06	2/1228 (0.2%)	1.09	5/1638 (0.3%)
27	r	0.92	0/970	1.20	7/1300 (0.5%)
28	s	0.90	0/957	1.35	3/1277 (0.2%)
29	t	0.96	1/961 (0.1%)	1.19	4/1285 (0.3%)
30	u	1.00	0/2094	1.12	10/2796 (0.4%)
31	v	0.88	0/845	1.10	1/1143 (0.1%)
32	w	0.91	0/1694	1.18	9/2252 (0.4%)
33	x	0.90	0/749	1.25	7/998 (0.7%)
34	y	0.91	0/652	1.18	1/882 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	z	0.87	0/771	1.20	5/1019 (0.5%)
36	0	0.41	0/329	0.57	0/432
37	1	0.48	0/2949	0.84	0/3998
38	2	0.44	0/963	0.95	0/1295
39	3	0.48	0/1072	0.79	0/1442
40	4	0.47	0/1138	0.88	0/1526
41	5	0.46	0/2604	0.92	1/3526 (0.0%)
42	6	0.48	0/1978	0.83	0/2664
43	7	0.51	0/873	0.84	0/1170
44	8	0.46	0/1659	0.95	0/2230
45	9	0.48	0/1616	0.95	0/2177
46	A	0.45	0/68489	0.75	114/106553 (0.1%)
47	B	0.80	0/2573	1.18	3/3456 (0.1%)
48	C	0.50	0/1975	0.79	0/2657
49	D	0.52	0/2028	0.92	1/2746 (0.0%)
50	E	0.48	0/2244	0.82	1/3033 (0.0%)
51	F	0.50	0/1551	0.82	0/2093
52	G	0.44	0/628	0.88	0/844
53	H	0.48	0/1302	0.90	0/1749
54	I	0.46	0/962	0.80	0/1285
55	J	0.62	0/1783	1.03	1/2384 (0.0%)
56	K	0.50	0/1606	0.93	0/2148
57	L	0.45	0/1845	0.96	0/2489
58	M	0.51	0/1224	0.83	0/1651
59	N	0.50	0/961	0.75	0/1295
60	O	0.45	0/1859	0.89	0/2495
61	P	0.44	0/1773	0.89	0/2390
62	Q	0.51	0/2323	0.84	0/3135
63	R	0.96	1/2783 (0.0%)	1.13	20/3723 (0.5%)
64	S	0.48	0/1576	0.88	0/2104
65	T	0.49	0/1837	0.96	0/2486
66	U	0.60	0/648	0.89	2/870 (0.2%)
67	V	0.48	0/553	0.69	0/742
68	W	0.44	0/955	0.84	0/1273
69	X	0.93	0/520	1.25	0/696
70	Y	0.43	0/392	0.98	0/515
71	a	0.48	0/1471	0.97	0/1976
72	b	0.46	0/1333	0.92	0/1783
73	c	0.46	0/1028	0.91	0/1372
74	d	0.44	0/1791	0.90	0/2415
75	e	0.97	0/1367	1.12	1/1844 (0.1%)
76	f	0.97	0/1051	1.19	0/1416
All	All	0.62	5/215299 (0.0%)	0.92	495/311992 (0.2%)

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	AB	0	1
3	AC	0	4
4	AD	0	7
5	AE	0	5
6	AF	0	6
7	AG	0	8
8	AH	0	8
9	AI	0	2
10	AJ	0	3
11	AK	0	9
15	Z	0	2
16	g	0	5
17	h	0	5
18	i	0	1
19	j	0	10
20	k	0	5
21	l	0	1
22	m	0	3
24	o	0	6
25	p	0	5
26	q	0	1
27	r	0	2
28	s	0	6
29	t	0	5
30	u	0	2
31	v	0	2
32	w	0	3
33	x	0	1
34	y	0	5
35	z	0	1
47	B	0	16
48	C	0	1
55	J	0	1
56	K	0	1
63	R	0	1
69	X	0	3
75	e	0	2
76	f	0	1
All	All	0	150

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	AL	482	U	O3'-P	-19.09	1.32	1.61
63	R	148	SER	CA-C	-6.40	1.49	1.52
26	q	147	THR	CA-C	-5.19	1.46	1.52
29	t	47	ASN	CA-C	5.07	1.59	1.53
26	q	142	GLU	CA-C	-5.05	1.46	1.52

The worst 5 of 495 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	AL	44	U	C3'-C2'-O2'	16.77	135.86	110.70
12	AL	44	U	C2'-C3'-O3'	-16.37	89.15	113.70
46	A	2067	A	P-O3'-C3'	-15.88	96.38	120.20
46	A	2072	U	P-O3'-C3'	-15.36	97.16	120.20
46	A	2018	C	P-O3'-C3'	-13.26	100.31	120.20

There are no chirality outliers.

5 of 150 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	AB	117	ARG	Sidechain
3	AC	117	ARG	Sidechain
3	AC	142	ARG	Sidechain
3	AC	240	ARG	Sidechain
3	AC	259	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	AA	304	0	357	64	0
2	AB	808	0	809	138	0
3	AC	2079	0	2057	482	0
4	AD	2422	0	2395	424	0
5	AE	2432	0	2480	451	0
6	AF	2079	0	2104	448	0
7	AG	1931	0	1923	588	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	AH	1887	0	1994	495	0
9	AI	3243	0	3342	494	0
10	AJ	774	0	821	183	0
11	AK	2212	0	2170	524	0
12	AL	31883	0	15998	2046	0
13	AM	1615	0	820	84	0
14	AN	270	0	141	41	0
15	Z	687	0	719	154	0
16	g	1577	0	1611	527	0
17	h	2095	0	2101	535	0
18	i	2461	0	2450	637	0
19	j	2370	0	2435	364	0
20	k	2306	0	2323	428	0
21	l	1055	0	1129	281	0
22	m	1282	0	1342	253	0
23	n	1221	0	1287	167	0
24	o	1820	0	1906	331	0
25	p	1108	0	1115	369	0
26	q	1208	0	1262	206	0
27	r	955	0	1010	109	0
28	s	942	0	1001	194	0
29	t	942	0	992	254	0
30	u	2070	0	2138	327	0
31	v	830	0	890	258	0
32	w	1683	0	1769	330	0
33	x	738	0	771	240	0
34	y	636	0	654	87	0
35	z	760	0	791	157	0
36	0	324	0	347	20	0
37	1	2875	0	2881	79	0
38	2	944	0	969	38	0
39	3	1046	0	1071	32	0
40	4	1117	0	1142	19	0
41	5	2552	0	2600	47	0
42	6	1932	0	1950	43	0
43	7	858	0	908	10	0
44	8	1629	0	1633	15	0
45	9	1587	0	1628	17	0
46	A	61141	0	30666	4457	0
47	B	2527	0	2649	197	0
48	C	1932	0	1969	109	0
49	D	1989	0	2026	38	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
50	E	2187	0	2203	56	0
51	F	1524	0	1587	24	0
52	G	617	0	626	6	0
53	H	1275	0	1310	18	0
54	I	956	0	1037	13	0
55	J	1746	0	1840	80	0
56	K	1573	0	1628	35	0
57	L	1817	0	1878	22	0
58	M	1206	0	1283	13	0
59	N	948	0	1006	19	0
60	O	1826	0	1933	19	0
61	P	1729	0	1724	42	0
62	Q	2272	0	2334	43	0
63	R	2738	0	2811	405	0
64	S	1543	0	1621	43	0
65	T	1792	0	1782	29	0
66	U	639	0	699	16	0
67	V	543	0	568	39	0
68	W	937	0	978	13	0
69	X	512	0	563	47	0
70	Y	385	0	423	22	0
71	a	1440	0	1473	44	0
72	b	1299	0	1367	42	0
73	c	1004	0	1065	21	0
74	d	1746	0	1743	20	0
75	e	1340	0	1397	158	0
76	f	1032	0	1115	126	0
All	All	201764	0	157540	14173	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 40.

The worst 5 of 14173 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)
3:AC:9:HIS:CE1	17:h:164:ILE:CD1	1.76	1.65
8:AH:210:ILE:CG2	21:l:39:VAL:HB	1.29	1.62
17:h:247:LEU:HD11	24:o:45:TYR:CD2	1.28	1.61
18:i:180:MET:HG2	20:k:92:TRP:CG	1.33	1.60
7:AG:114:TRP:CZ2	16:g:87:ARG:HB2	1.31	1.59

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	AA	32/34 (94%)	30 (94%)	2 (6%)	0	100	100
2	AB	93/101 (92%)	70 (75%)	15 (16%)	8 (9%)	0	3
3	AC	257/259 (99%)	209 (81%)	32 (12%)	16 (6%)	1	9
4	AD	299/321 (93%)	215 (72%)	63 (21%)	21 (7%)	1	6
5	AE	296/339 (87%)	220 (74%)	58 (20%)	18 (6%)	1	9
6	AF	248/320 (78%)	178 (72%)	49 (20%)	21 (8%)	0	3
7	AG	234/236 (99%)	196 (84%)	31 (13%)	7 (3%)	3	23
8	AH	232/234 (99%)	192 (83%)	34 (15%)	6 (3%)	4	27
9	AI	403/405 (100%)	316 (78%)	62 (15%)	25 (6%)	1	9
10	AJ	94/96 (98%)	75 (80%)	7 (7%)	12 (13%)	0	1
11	AK	262/273 (96%)	237 (90%)	22 (8%)	3 (1%)	12	44
15	Z	83/91 (91%)	63 (76%)	17 (20%)	3 (4%)	3	20
16	g	190/344 (55%)	159 (84%)	29 (15%)	2 (1%)	12	44
17	h	265/267 (99%)	215 (81%)	38 (14%)	12 (4%)	2	15
18	i	287/398 (72%)	236 (82%)	37 (13%)	14 (5%)	2	14
19	j	281/486 (58%)	253 (90%)	23 (8%)	5 (2%)	7	35
20	k	284/293 (97%)	219 (77%)	54 (19%)	11 (4%)	2	18
21	l	129/131 (98%)	104 (81%)	19 (15%)	6 (5%)	2	14
22	m	159/161 (99%)	128 (80%)	24 (15%)	7 (4%)	2	15
23	n	153/155 (99%)	150 (98%)	3 (2%)	0	100	100
24	o	220/244 (90%)	196 (89%)	17 (8%)	7 (3%)	3	22
25	p	132/186 (71%)	100 (76%)	25 (19%)	7 (5%)	1	12

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	q	150/152 (99%)	117 (78%)	22 (15%)	11 (7%)	1	6
27	r	123/125 (98%)	91 (74%)	22 (18%)	10 (8%)	1	4
28	s	118/120 (98%)	87 (74%)	21 (18%)	10 (8%)	0	3
29	t	111/115 (96%)	102 (92%)	8 (7%)	1 (1%)	14	49
30	u	251/253 (99%)	205 (82%)	37 (15%)	9 (4%)	3	20
31	v	104/120 (87%)	94 (90%)	9 (9%)	1 (1%)	13	47
32	w	194/237 (82%)	155 (80%)	29 (15%)	10 (5%)	1	12
33	x	87/99 (88%)	67 (77%)	11 (13%)	9 (10%)	0	2
34	y	78/80 (98%)	54 (69%)	15 (19%)	9 (12%)	0	2
35	z	90/92 (98%)	72 (80%)	12 (13%)	6 (7%)	1	7
36	0	36/38 (95%)	33 (92%)	3 (8%)	0	100	100
37	1	346/348 (99%)	329 (95%)	17 (5%)	0	100	100
38	2	111/113 (98%)	106 (96%)	5 (4%)	0	100	100
39	3	128/130 (98%)	122 (95%)	6 (5%)	0	100	100
40	4	136/138 (99%)	130 (96%)	6 (4%)	0	100	100
41	5	322/324 (99%)	306 (95%)	16 (5%)	0	100	100
42	6	228/281 (81%)	221 (97%)	7 (3%)	0	100	100
43	7	104/106 (98%)	97 (93%)	7 (7%)	0	100	100
44	8	195/264 (74%)	192 (98%)	3 (2%)	0	100	100
45	9	198/215 (92%)	186 (94%)	12 (6%)	0	100	100
47	B	317/393 (81%)	273 (86%)	34 (11%)	10 (3%)	3	22
48	C	247/249 (99%)	233 (94%)	13 (5%)	1 (0%)	30	64
49	D	250/252 (99%)	235 (94%)	10 (4%)	5 (2%)	6	32
50	E	272/274 (99%)	254 (93%)	15 (6%)	3 (1%)	12	44
51	F	194/196 (99%)	183 (94%)	10 (5%)	1 (0%)	25	60
52	G	72/74 (97%)	70 (97%)	2 (3%)	0	100	100
53	H	158/160 (99%)	152 (96%)	6 (4%)	0	100	100
54	I	123/138 (89%)	114 (93%)	9 (7%)	0	100	100
55	J	218/220 (99%)	193 (88%)	19 (9%)	6 (3%)	4	25
56	K	193/195 (99%)	181 (94%)	10 (5%)	2 (1%)	13	47
57	L	225/237 (95%)	217 (96%)	8 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
58	M	149/151 (99%)	139 (93%)	10 (7%)	0	100	100
59	N	116/118 (98%)	106 (91%)	9 (8%)	1 (1%)	14	49
60	O	223/225 (99%)	211 (95%)	12 (5%)	0	100	100
61	P	205/207 (99%)	196 (96%)	9 (4%)	0	100	100
62	Q	280/296 (95%)	268 (96%)	12 (4%)	0	100	100
63	R	327/337 (97%)	268 (82%)	45 (14%)	14 (4%)	2	16
64	S	181/216 (84%)	171 (94%)	10 (6%)	0	100	100
65	T	210/225 (93%)	199 (95%)	11 (5%)	0	100	100
66	U	80/82 (98%)	78 (98%)	2 (2%)	0	100	100
67	V	63/177 (36%)	61 (97%)	2 (3%)	0	100	100
68	W	110/112 (98%)	105 (96%)	5 (4%)	0	100	100
69	X	62/64 (97%)	50 (81%)	8 (13%)	4 (6%)	1	8
70	Y	44/46 (96%)	41 (93%)	3 (7%)	0	100	100
71	a	175/177 (99%)	163 (93%)	12 (7%)	0	100	100
72	b	153/155 (99%)	146 (95%)	7 (5%)	0	100	100
73	c	117/119 (98%)	112 (96%)	4 (3%)	1 (1%)	14	49
74	d	202/215 (94%)	189 (94%)	13 (6%)	0	100	100
75	e	163/249 (66%)	136 (83%)	23 (14%)	4 (2%)	4	28
76	f	134/158 (85%)	104 (78%)	21 (16%)	9 (7%)	1	7
All	All	13006/14441 (90%)	11375 (88%)	1283 (10%)	348 (3%)	6	26

5 of 348 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	AB	82	GLN
2	AB	95	ARG
3	AC	33	GLY
3	AC	59	GLU
3	AC	170	ASN

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	AA	32/32 (100%)	28 (88%)	4 (12%)	3	18
2	AB	86/92 (94%)	73 (85%)	13 (15%)	2	12
3	AC	234/234 (100%)	206 (88%)	28 (12%)	4	19
4	AD	265/281 (94%)	235 (89%)	30 (11%)	4	22
5	AE	266/303 (88%)	213 (80%)	53 (20%)	1	5
6	AF	230/290 (79%)	189 (82%)	41 (18%)	1	7
7	AG	211/211 (100%)	189 (90%)	22 (10%)	5	25
8	AH	211/211 (100%)	177 (84%)	34 (16%)	2	9
9	AI	371/371 (100%)	347 (94%)	24 (6%)	14	45
10	AJ	84/84 (100%)	68 (81%)	16 (19%)	1	6
11	AK	241/250 (96%)	221 (92%)	20 (8%)	9	35
15	Z	78/82 (95%)	65 (83%)	13 (17%)	2	9
16	g	173/309 (56%)	143 (83%)	30 (17%)	1	8
17	h	234/234 (100%)	210 (90%)	24 (10%)	6	25
18	i	287/385 (74%)	236 (82%)	51 (18%)	1	7
19	j	256/437 (59%)	233 (91%)	23 (9%)	8	30
20	k	249/252 (99%)	220 (88%)	29 (12%)	4	21
21	l	120/120 (100%)	111 (92%)	9 (8%)	11	40
22	m	138/138 (100%)	124 (90%)	14 (10%)	6	26
23	n	142/142 (100%)	137 (96%)	5 (4%)	31	63
24	o	196/215 (91%)	173 (88%)	23 (12%)	4	21
25	p	121/167 (72%)	103 (85%)	18 (15%)	2	12
26	q	131/131 (100%)	122 (93%)	9 (7%)	13	43
27	r	104/104 (100%)	94 (90%)	10 (10%)	7	28
28	s	100/100 (100%)	73 (73%)	27 (27%)	0	1
29	t	102/103 (99%)	89 (87%)	13 (13%)	3	17
30	u	220/220 (100%)	206 (94%)	14 (6%)	14	46
31	v	91/105 (87%)	87 (96%)	4 (4%)	24	57
32	w	187/218 (86%)	160 (86%)	27 (14%)	2	13
33	x	80/87 (92%)	64 (80%)	16 (20%)	1	5

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
34	y	69/69 (100%)	54 (78%)	15 (22%)	1	4
35	z	81/81 (100%)	71 (88%)	10 (12%)	4	19
36	0	36/36 (100%)	36 (100%)	0	100	100
37	1	323/323 (100%)	308 (95%)	15 (5%)	23	56
38	2	106/106 (100%)	100 (94%)	6 (6%)	17	50
39	3	112/112 (100%)	110 (98%)	2 (2%)	54	77
40	4	121/121 (100%)	116 (96%)	5 (4%)	26	59
41	5	284/284 (100%)	278 (98%)	6 (2%)	48	74
42	6	213/252 (84%)	203 (95%)	10 (5%)	22	55
43	7	95/95 (100%)	90 (95%)	5 (5%)	19	52
44	8	182/240 (76%)	174 (96%)	8 (4%)	24	57
45	9	176/186 (95%)	168 (96%)	8 (4%)	23	56
47	B	272/337 (81%)	240 (88%)	32 (12%)	4	20
48	C	210/210 (100%)	197 (94%)	13 (6%)	15	47
49	D	217/218 (100%)	195 (90%)	22 (10%)	6	26
50	E	242/242 (100%)	227 (94%)	15 (6%)	15	47
51	F	172/172 (100%)	167 (97%)	5 (3%)	37	67
52	G	68/68 (100%)	65 (96%)	3 (4%)	24	57
53	H	138/138 (100%)	131 (95%)	7 (5%)	20	53
54	I	108/117 (92%)	104 (96%)	4 (4%)	29	62
55	J	181/181 (100%)	167 (92%)	14 (8%)	10	39
56	K	167/167 (100%)	149 (89%)	18 (11%)	5	23
57	L	203/211 (96%)	195 (96%)	8 (4%)	27	60
58	M	136/136 (100%)	131 (96%)	5 (4%)	29	62
59	N	107/107 (100%)	103 (96%)	4 (4%)	29	62
60	O	200/200 (100%)	187 (94%)	13 (6%)	14	45
61	P	185/185 (100%)	180 (97%)	5 (3%)	40	69
62	Q	256/267 (96%)	244 (95%)	12 (5%)	22	55
63	R	303/308 (98%)	270 (89%)	33 (11%)	5	23
64	S	167/191 (87%)	157 (94%)	10 (6%)	16	48
65	T	204/213 (96%)	197 (97%)	7 (3%)	32	63

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
66	U	73/73 (100%)	68 (93%)	5 (7%)	13	43
67	V	60/161 (37%)	58 (97%)	2 (3%)	33	64
68	W	104/104 (100%)	102 (98%)	2 (2%)	52	76
69	X	56/56 (100%)	45 (80%)	11 (20%)	1	6
70	Y	40/40 (100%)	39 (98%)	1 (2%)	42	71
71	a	158/158 (100%)	150 (95%)	8 (5%)	20	53
72	b	144/144 (100%)	138 (96%)	6 (4%)	25	58
73	c	110/110 (100%)	108 (98%)	2 (2%)	54	77
74	d	191/199 (96%)	186 (97%)	5 (3%)	41	70
75	e	154/229 (67%)	129 (84%)	25 (16%)	2	9
76	f	113/127 (89%)	100 (88%)	13 (12%)	4	21
All	All	11777/12882 (91%)	10733 (91%)	1044 (9%)	10	31

5 of 1044 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
63	R	180	LEU
64	S	124	LYS
63	R	175	LYS
76	f	56	VAL
18	i	306	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 285 such sidechains are listed below:

Mol	Chain	Res	Type
50	E	253	GLN
55	J	110	GLN
63	R	267	HIS
18	i	103	ASN
18	i	91	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
12	AL	1490/1649 (90%)	523 (35%)	97 (6%)
13	AM	75/76 (98%)	43 (57%)	7 (9%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
14	AN	12/13 (92%)	12 (100%)	7 (58%)
46	A	2851/3296 (86%)	977 (34%)	187 (6%)
All	All	4428/5034 (87%)	1555 (35%)	298 (6%)

5 of 1555 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
12	AL	14	A
12	AL	15	A
12	AL	16	G
12	AL	20	A
12	AL	25	G

5 of 298 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
46	A	2039	U
46	A	3018	A
46	A	2056	A
46	A	2437	U
13	AM	7	G

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
12	AL	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	AL	482:U	O3’	483:A	P	1.32

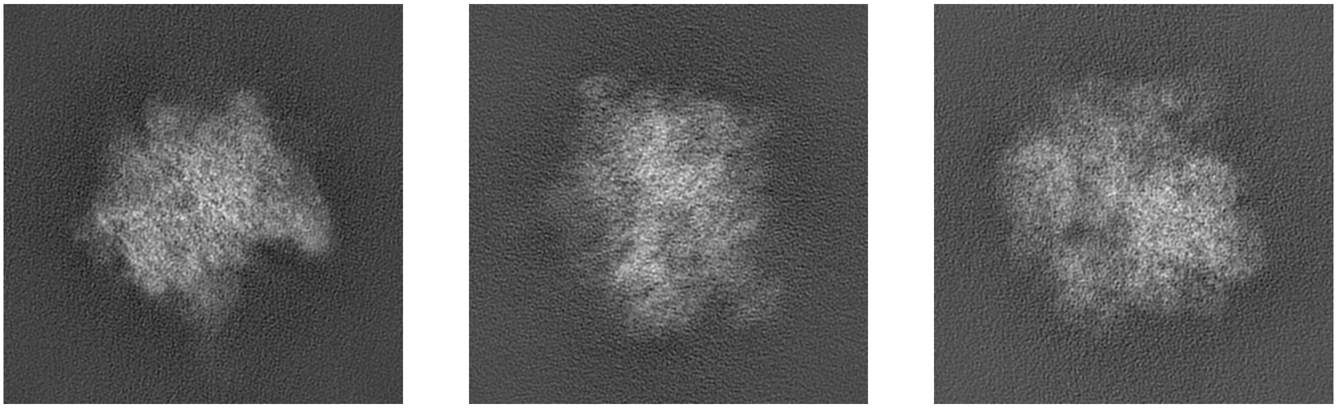
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-42720. These allow visual inspection of the internal detail of the map and identification of artifacts.

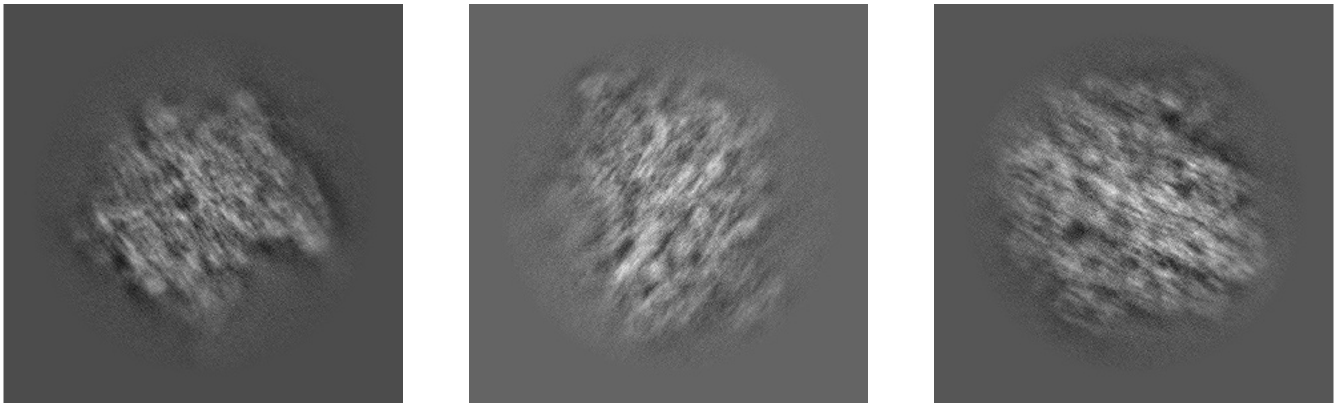
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

6.1.1 Primary map


X Y Z

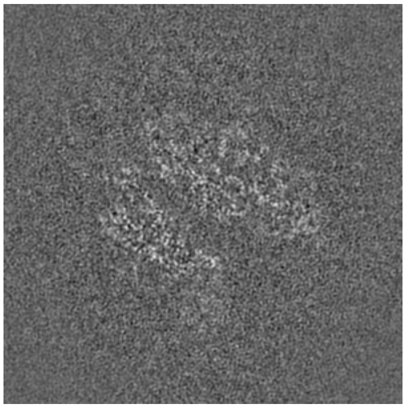
6.1.2 Raw map


X Y Z

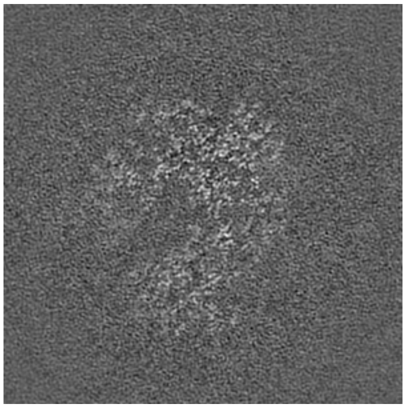
The images above show the map projected in three orthogonal directions.

6.2 Central slices

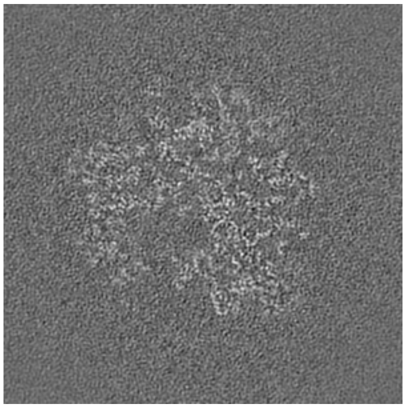
6.2.1 Primary map



X Index: 256

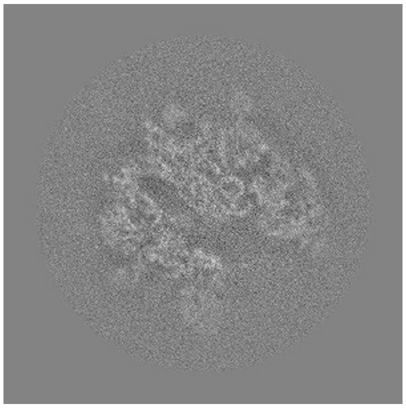


Y Index: 256

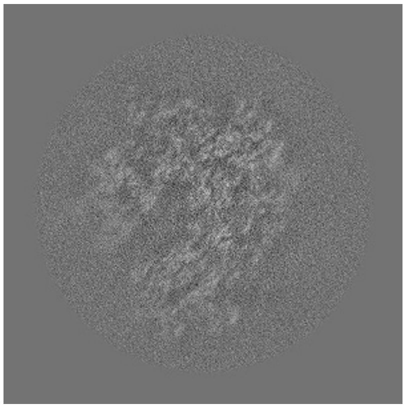


Z Index: 256

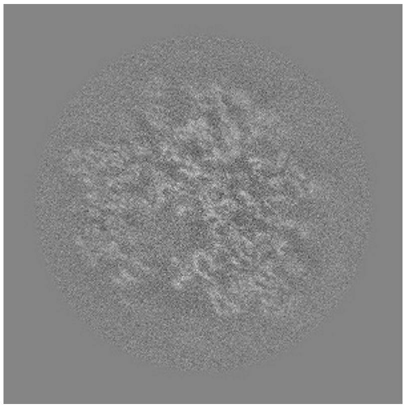
6.2.2 Raw map



X Index: 256



Y Index: 256

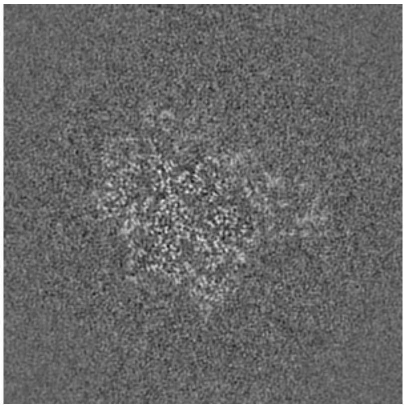


Z Index: 256

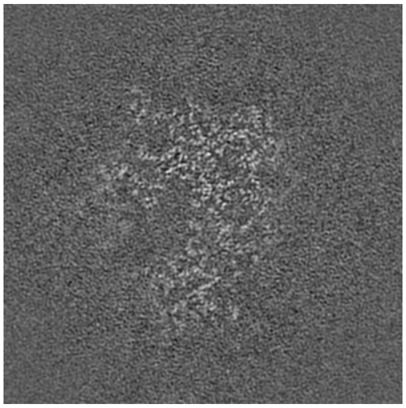
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

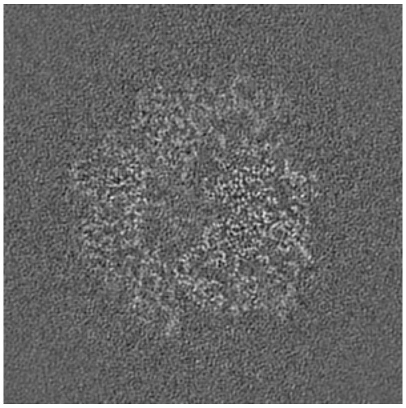
6.3.1 Primary map



X Index: 296

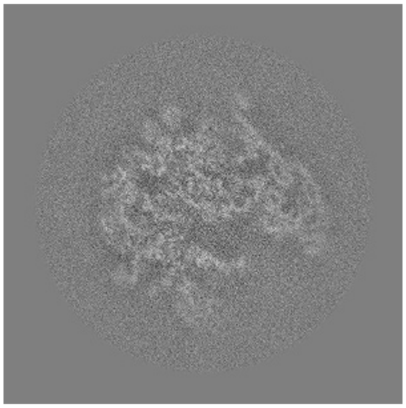


Y Index: 254

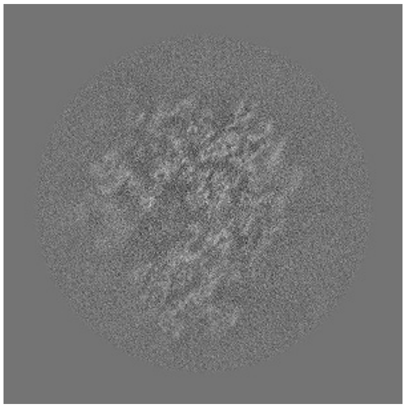


Z Index: 236

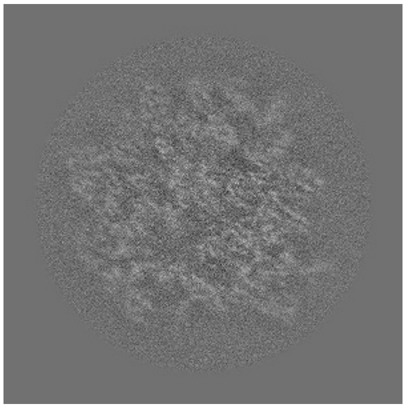
6.3.2 Raw map



X Index: 262



Y Index: 257

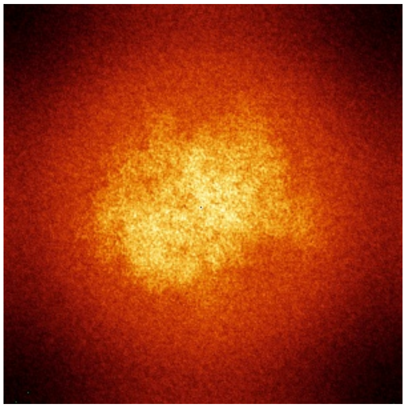


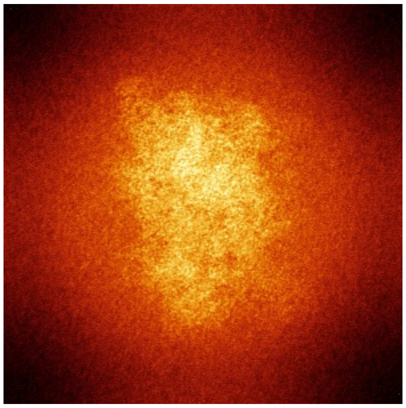
Z Index: 244

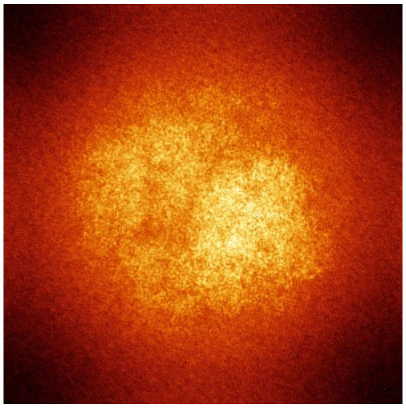
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color)

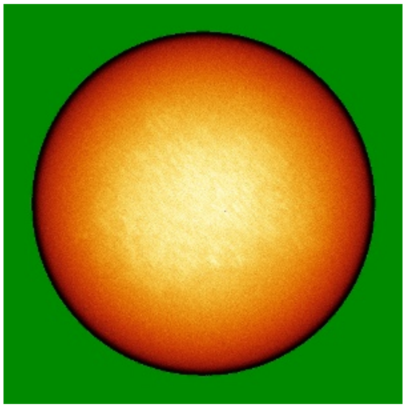
6.4.1 Primary map

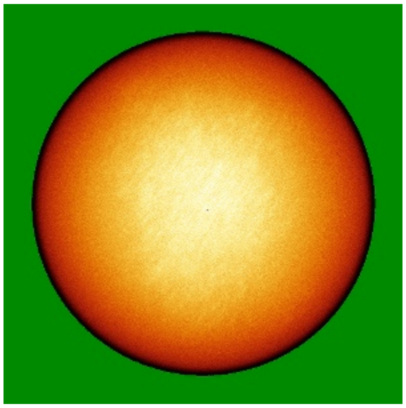

X

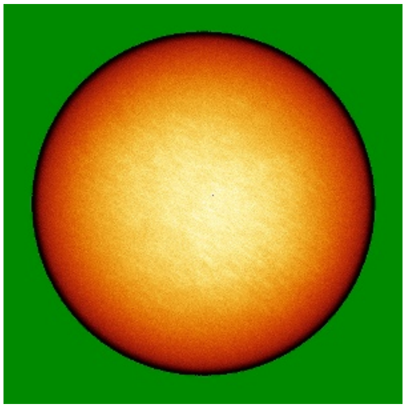

Y


Z

6.4.2 Raw map


X

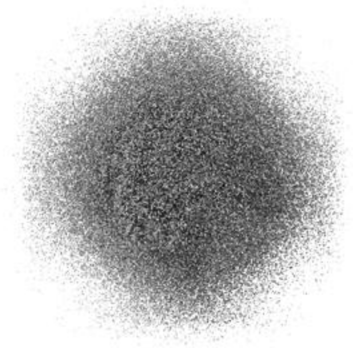

Y


Z

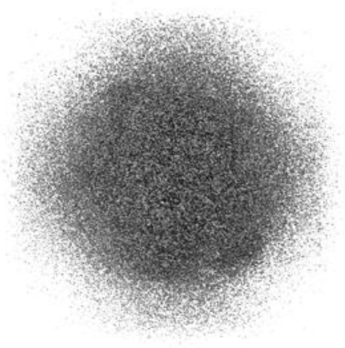
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

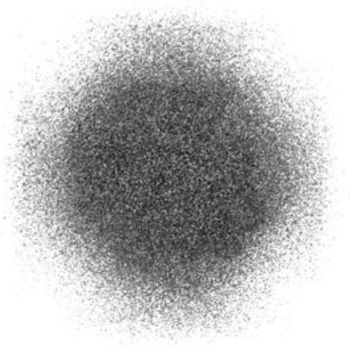
6.5.1 Primary map



X



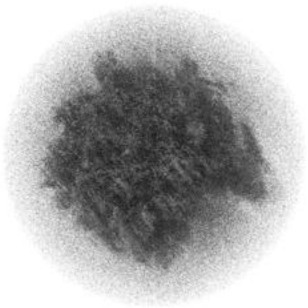
Y



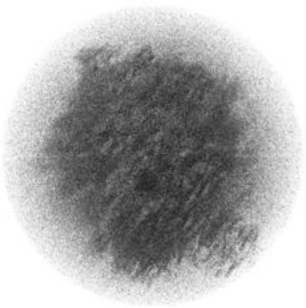
Z

The images above show the 3D surface view of the map at the recommended contour level 4.3. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

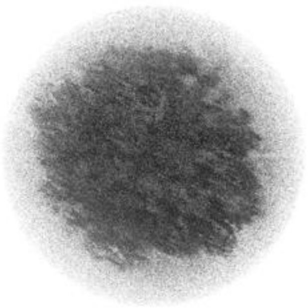
6.5.2 Raw map



X



Y



Z

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

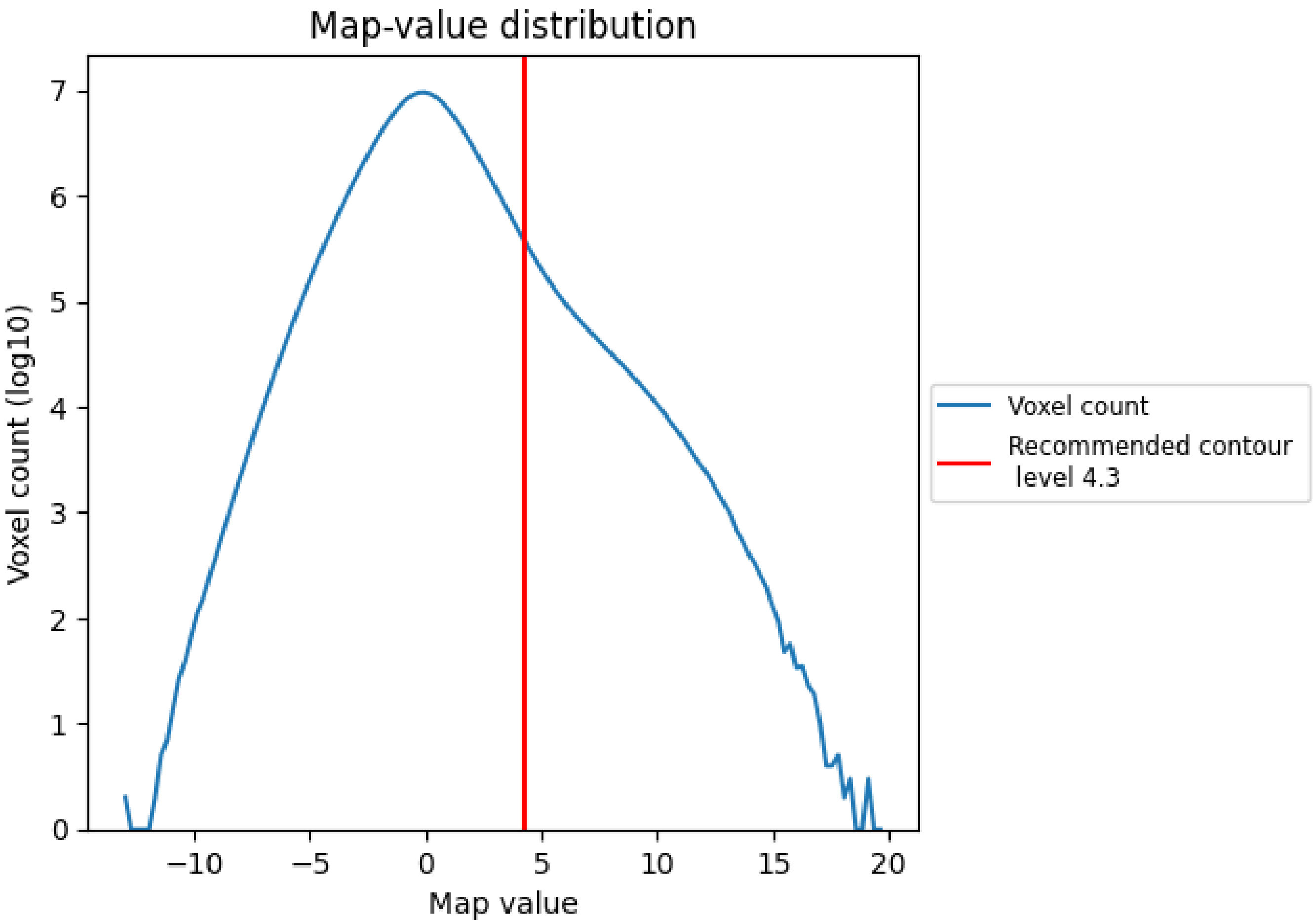
6.6 Mask visualisation ⓘ

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

7 Map analysis ⓘ

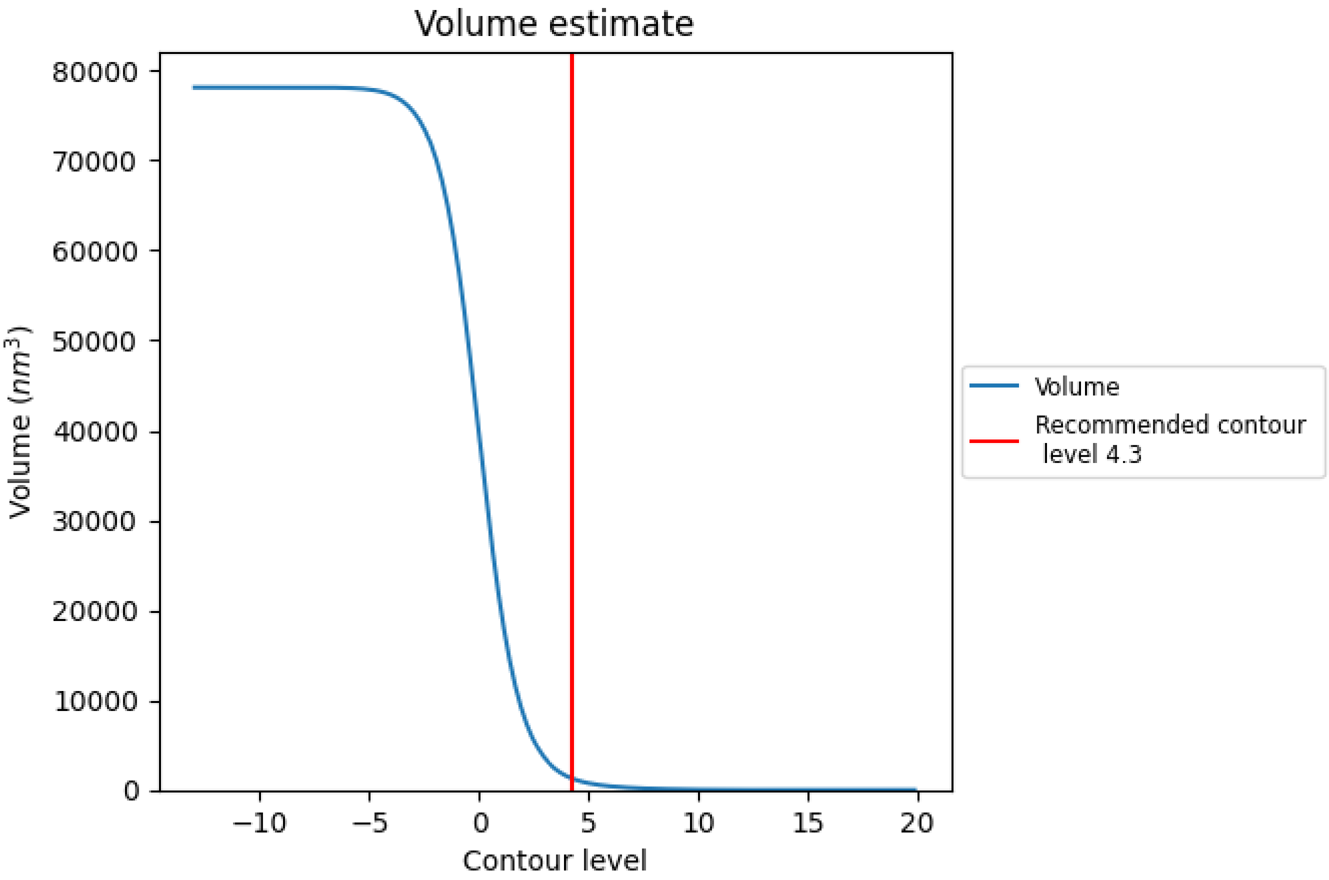
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution ⓘ



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

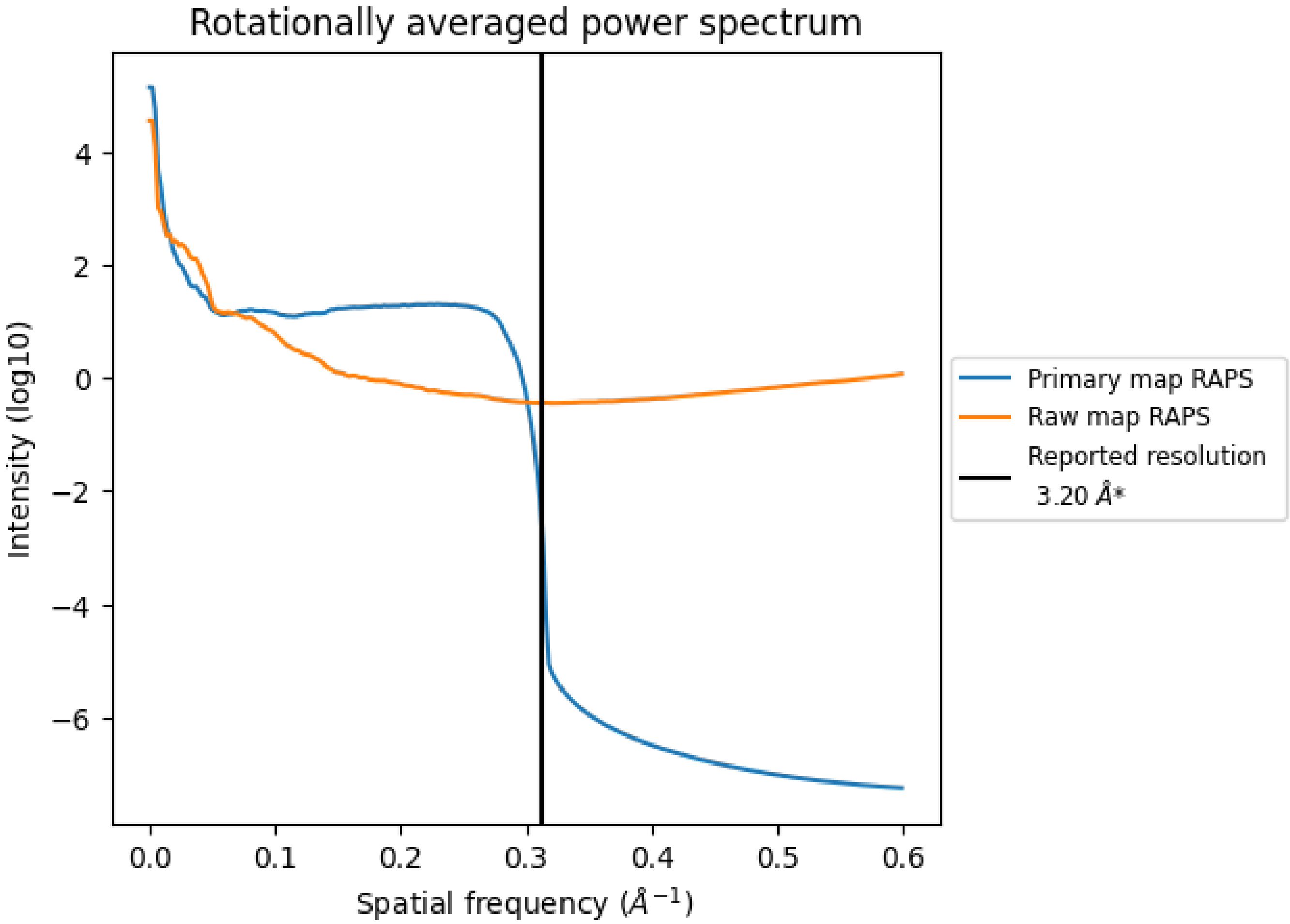
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 1241 nm^3; this corresponds to an approximate mass of 1121 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 ⓘ

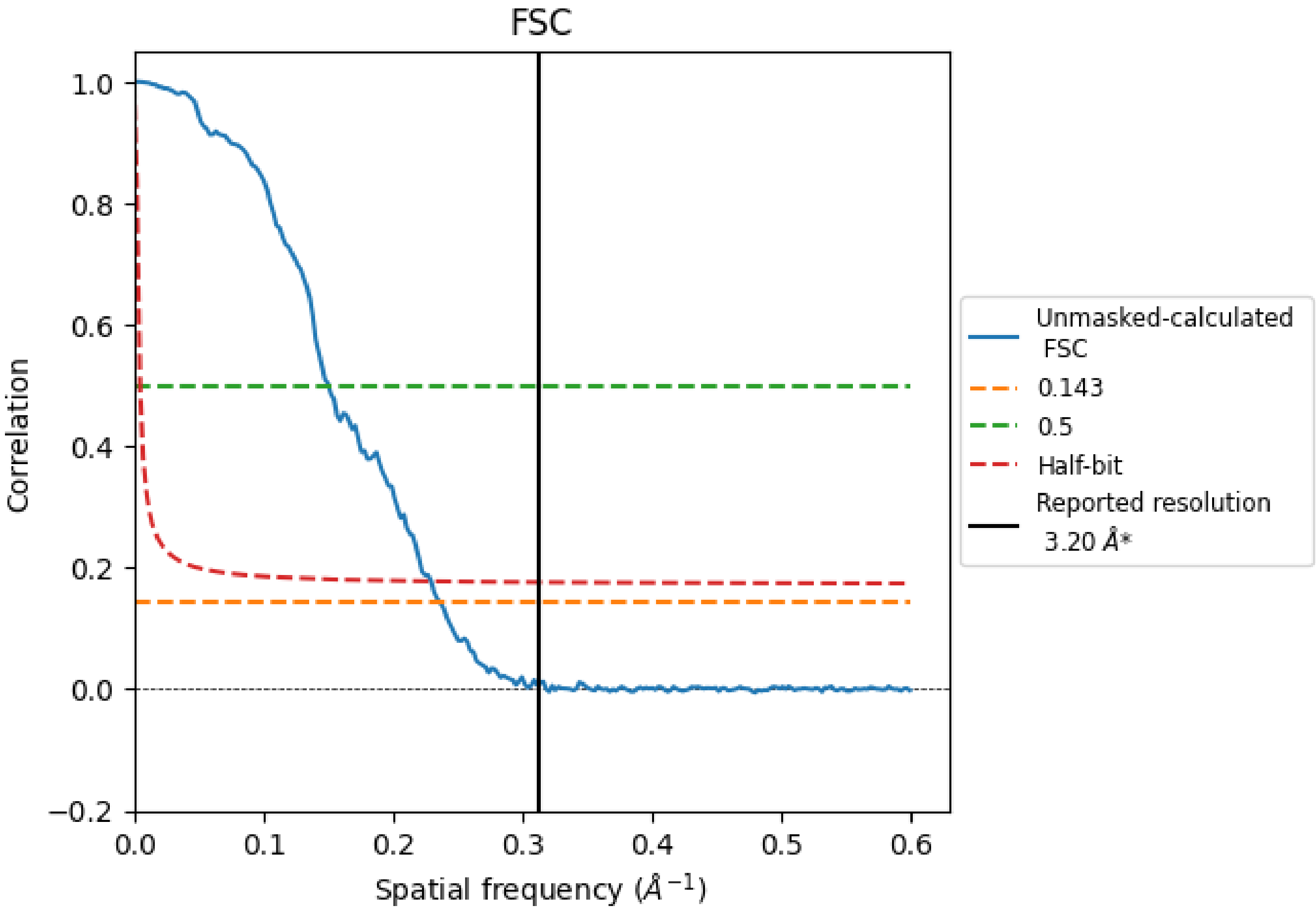


*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8 Fourier-Shell correlation ⓘ

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

8.1 FSC ⓘ



*Reported resolution corresponds to spatial frequency of 0.312 $Å^{-1}$

8.2 Resolution estimates

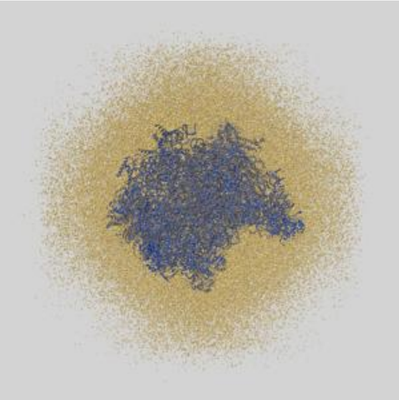
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.23	6.66	4.36

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.23 differs from the reported value 3.2 by more than 10 %

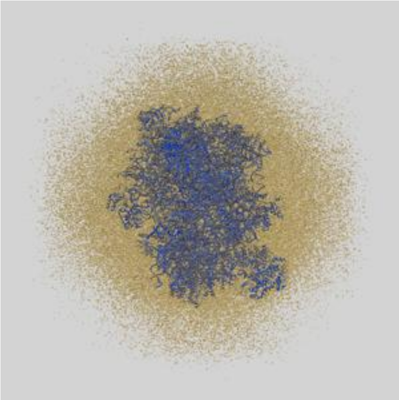
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-42720 and PDB model 8UXA. Per-residue inclusion information can be found in section 3 on page 17.

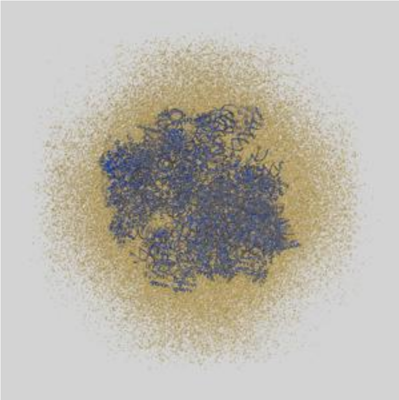
9.1 Map-model overlay



X



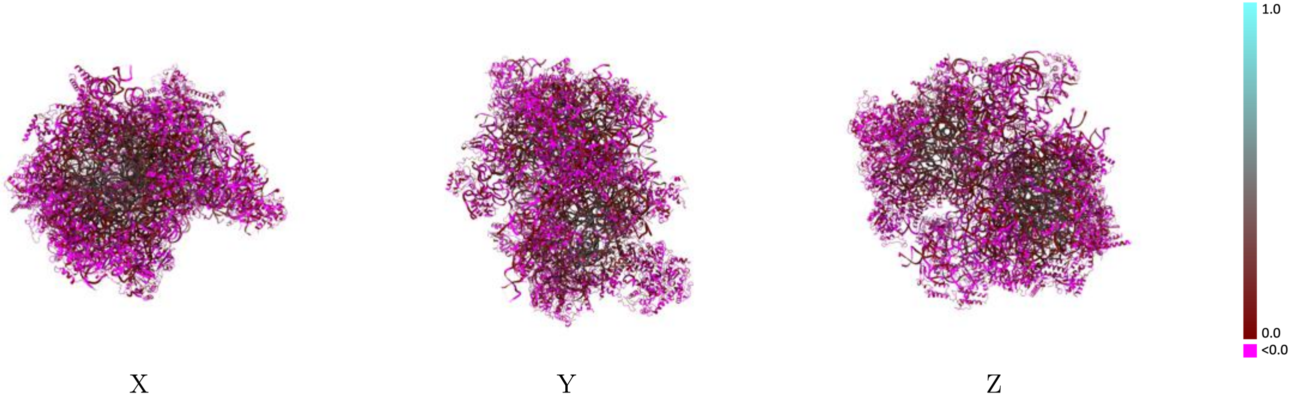
Y



Z

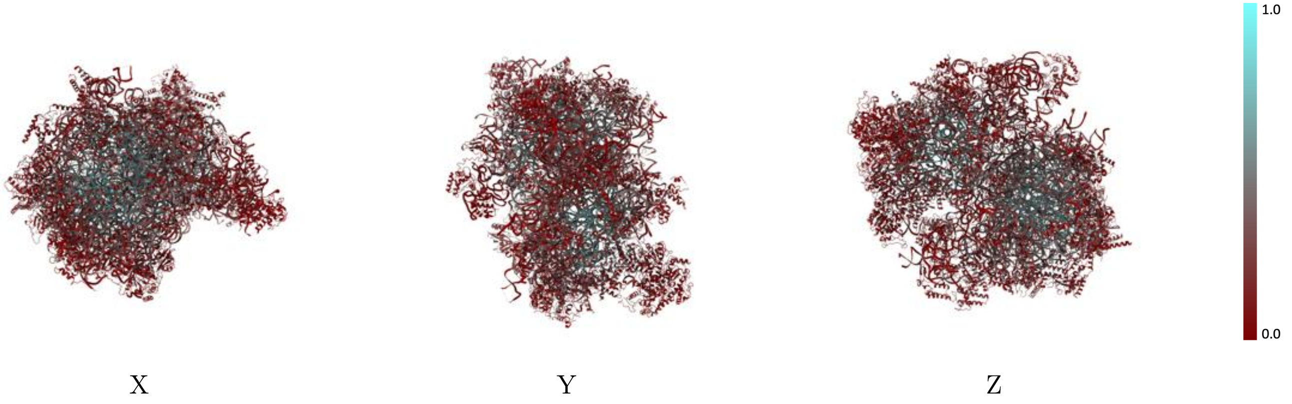
The images above show the 3D surface view of the map at the recommended contour level 4.3 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ



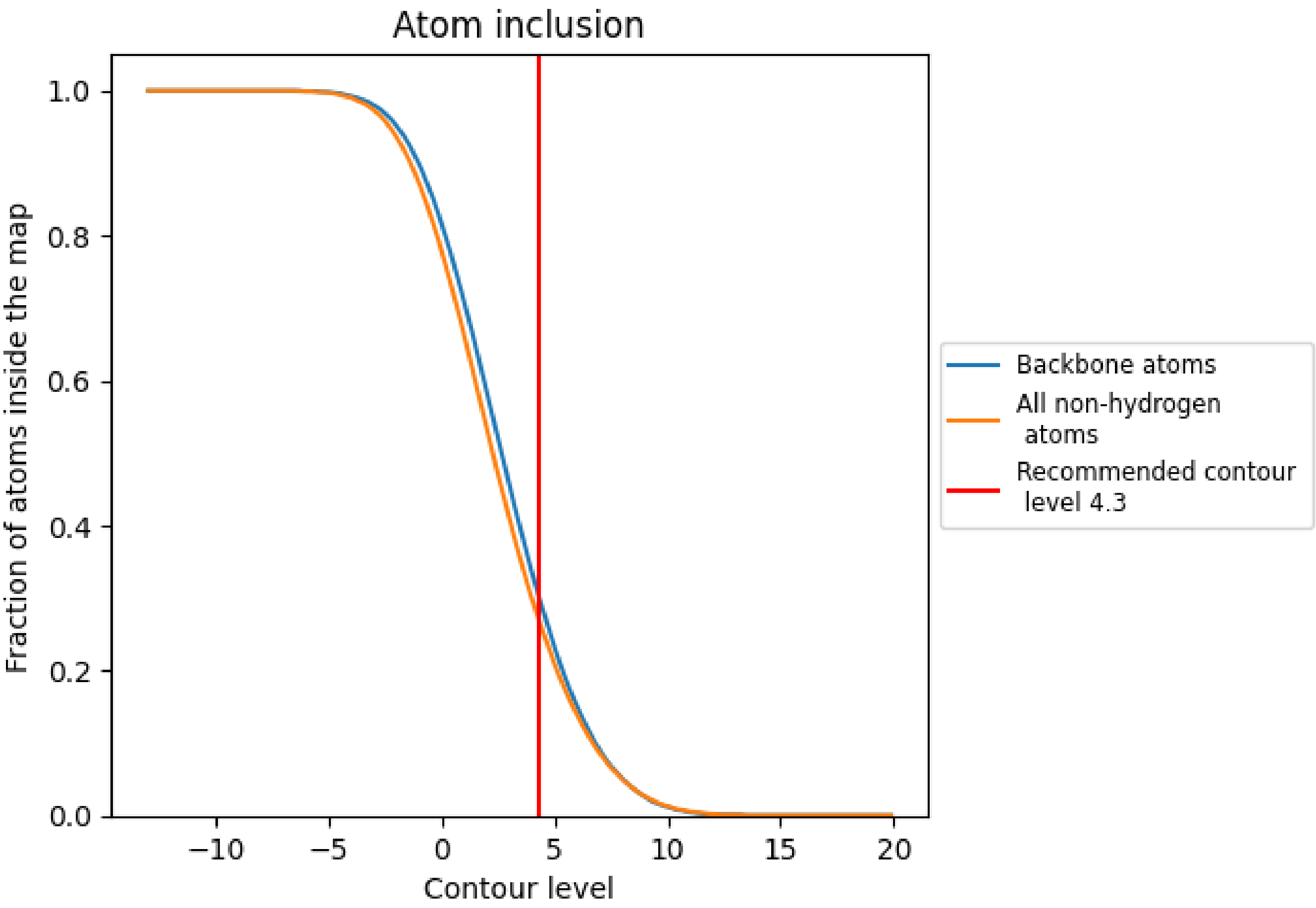
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (4.3).

9.4 Atom inclusion ⓘ



At the recommended contour level, 30% of all backbone atoms, 27% 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 (4.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	🟥 0.2700	🟥 0.0810
0	🟥 0.2610	🟥 0.0530
1	🟥 0.1270	🟪 -0.0450
2	🟥 0.1240	🟪 -0.0420
3	🟥 0.2550	🟥 0.0750
4	🟥 0.2190	🟥 0.0190
5	🟥 0.1670	🟪 -0.0180
6	🟥 0.1160	🟪 -0.0400
7	🟥 0.2050	🟪 -0.0030
8	🟥 0.1440	🟪 -0.0140
9	🟥 0.0880	🟪 -0.0550
A	🟥 0.3720	🟥 0.1290
AA	🟥 0.3530	🟥 0.1610
AB	🟥 0.0860	🟪 -0.0290
AC	🟥 0.1120	🟪 -0.0300
AD	🟥 0.0790	🟪 -0.0240
AE	🟥 0.0550	🟥 -0.0000
AF	🟥 0.1470	🟥 0.0480
AG	🟥 0.2040	🟥 0.0500
AH	🟥 0.1250	🟥 0.0140
AI	🟥 0.1210	🟪 -0.0410
AJ	🟥 0.1840	🟥 0.0820
AK	🟥 0.1510	🟥 0.0190
AL	🟥 0.3490	🟥 0.1360
AM	🟥 0.1400	🟥 0.0840
AN	🟥 0.2740	🟥 0.1610
B	🟥 0.2350	🟥 0.0230
C	🟥 0.2400	🟥 0.0400
D	🟥 0.2570	🟥 0.0880
E	🟥 0.1560	🟪 -0.0290
F	🟥 0.1420	🟪 -0.0180
G	🟥 0.1410	🟪 -0.0740
H	🟥 0.2740	🟥 0.0940
I	🟥 0.2080	🟥 0.0490
J	🟥 0.2510	🟥 0.0610

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Chain	Atom inclusion	Q-score
K	🟥 0.3040	🟥 0.1040
L	🟥 0.2110	🟥 0.0210
M	🟥 0.1580	🟪 -0.0290
N	🟥 0.2570	🟥 0.0620
O	🟥 0.3150	🟥 0.1580
P	🟥 0.2730	🟥 0.1030
Q	🟥 0.1800	🟥 0.0590
R	🟥 0.1370	🟪 -0.0110
S	🟥 0.2130	🟥 0.0240
T	🟥 0.2130	🟥 0.0240
U	🟥 0.2550	🟥 0.0410
V	🟥 0.1340	🟪 -0.0330
W	🟥 0.3080	🟥 0.1450
X	🟥 0.1330	🟪 -0.0630
Y	⬛ 0.4630	🟥 0.2740
Z	🟥 0.2640	🟥 0.1370
a	🟥 0.1590	🟪 -0.0290
b	🟥 0.1660	🟪 -0.0290
c	🟥 0.3160	🟥 0.1000
d	🟥 0.2170	🟥 0.0080
e	🟥 0.0610	🟥 0.0030
f	🟥 0.0350	🟪 -0.0030
g	🟥 0.1530	🟥 0.0320
h	🟥 0.2830	🟥 0.1290
i	🟥 0.2280	🟥 0.1230
j	🟥 0.1670	🟥 0.0520
k	🟥 0.3150	🟥 0.1960
l	🟥 0.1930	🟥 0.0450
m	🟥 0.2250	🟥 0.0820
n	🟥 0.2680	🟥 0.1090
o	🟥 0.1760	🟥 0.0380
p	🟥 0.2240	🟥 0.0940
q	🟥 0.2830	🟥 0.1260
r	🟥 0.2650	🟥 0.1550
s	🟥 0.1540	🟪 -0.0260
t	🟥 0.2220	🟥 0.0840
u	🟥 0.2200	🟥 0.0720
v	🟥 0.0940	🟪 -0.0100
w	🟥 0.1450	🟥 0.0160
x	🟥 0.2470	🟥 0.1060
y	🟥 0.1550	🟥 0.0340
z	🟥 0.3290	🟥 0.1900