wwPDB EM Validation Summary Report ⓘ

Oct 27, 2025 – 05:04 PM EDT

PDB ID	:	9N72 / pdb_00009n72
EMDB ID	:	EMD-49082
Title	:	SSU processome maturation and disassembly, State F
Authors	:	Buzovetsky, O.; Klinge, S.
Deposited on	:	2025-02-05
Resolution	:	5.94 Å(reported)

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

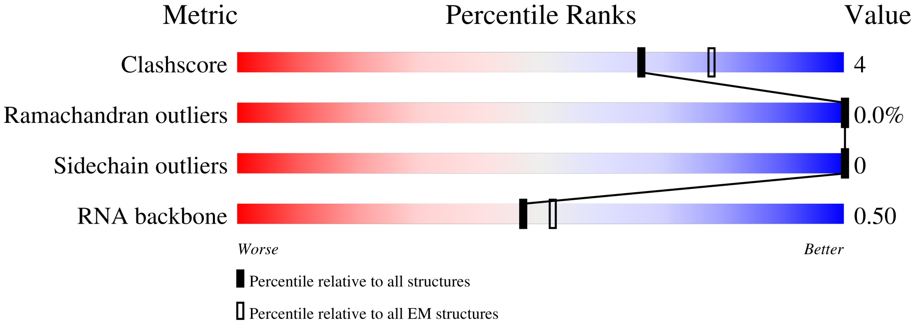
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

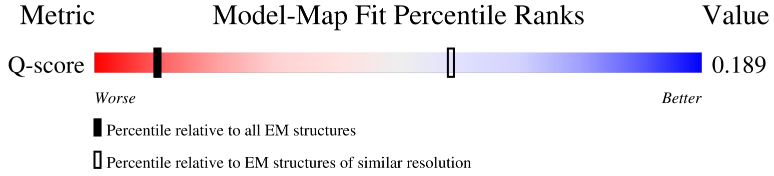
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 5.94 Å.

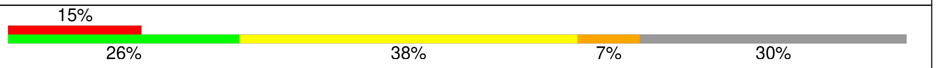
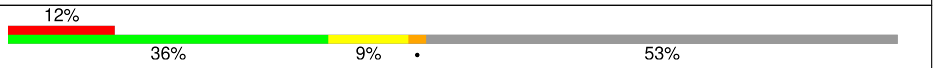
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





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	472 (5.44 - 6.43)

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	L0	700	
2	L1	1810	
3	L2	333	

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Mol	Chain	Length	Quality of chain
4	L3	146	72% 73% 27%
5	L4	261	21% 89% 10%
6	L5	225	6% 91% 8%
7	L6	236	26% 84% • 13%
8	L7	190	21% 92% • 6%
9	L8	200	34% 82% • 14%
10	L9	197	11% 88% • 8%
11	LC	143	11% 84% 6% 10%
12	LD	156	40% 87% • 12%
13	LE	130	5% 97% • •
14	LF	135	10% 68% • 28%
15	LG	67	7% 93% 7%
16	LH	896	45% 89% • 10%
17	LI	713	78% 84% • 16%
18	LJ	513	56% 91% • 7%
19	LK	575	18% 23% 77%
20	LL	643	28% 75% 24%
21	LM	1769	57% 90% • 9%
22	LN	776	39% 84% • 15%
23	LO	923	7% 85% • 14%
24	LP	440	25% 85% • 14%
25	LQ	943	6% 82% • 14%
26	LR	817	14% 96% • •
27	LS	594	13% 75% • 24%
28	LT	939	6% 91% • 7%

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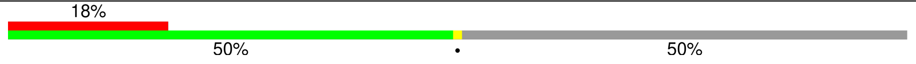
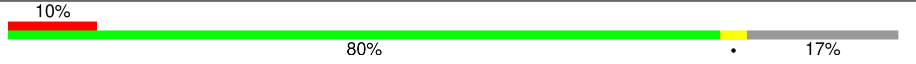
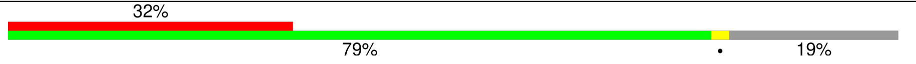
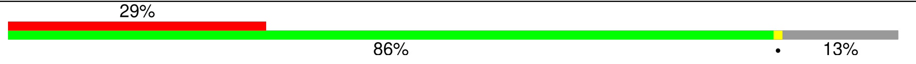
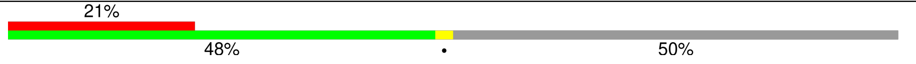
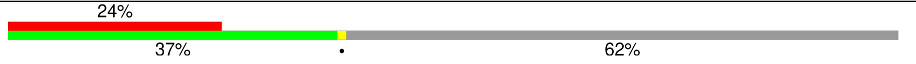
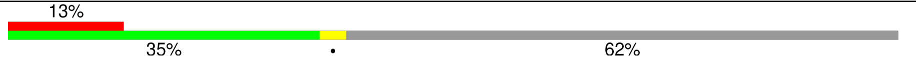
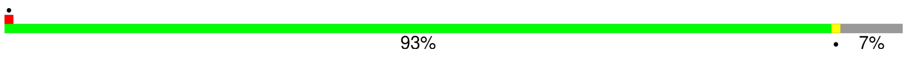
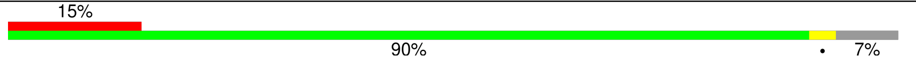
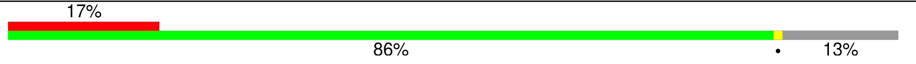
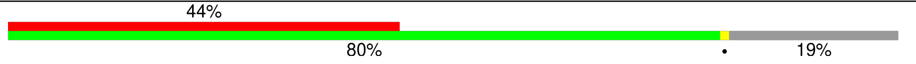
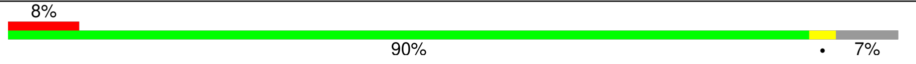
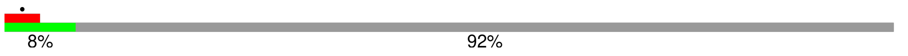
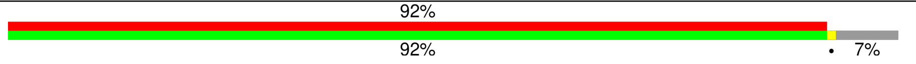
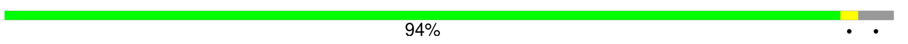
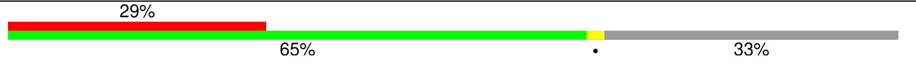
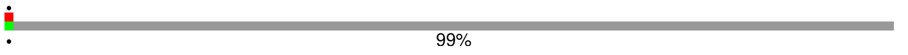
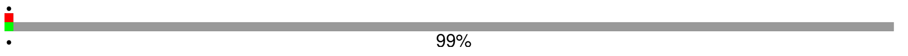
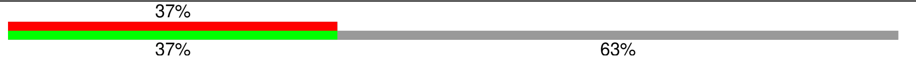
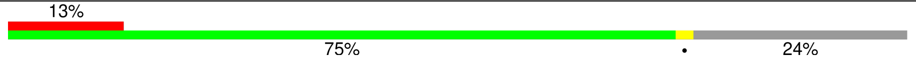
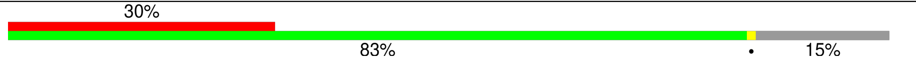
Mol	Chain	Length	Quality of chain
29	LU	489	 • 91% • 7%
30	LV	707	 18% 50% • 50%
31	LW	554	 10% 80% • 17%
32	LX	1056	 32% 79% • 19%
32	LY	1056	 59% 79% • 20%
33	LZ	183	 29% 86% • 13%
34	NA	593	 21% 48% • 50%
35	NB	610	 24% 37% • 62%
36	NC	357	 13% 35% • 62%
37	ND	214	 28% 27% • 72%
38	NF	151	 • 93% • 7%
39	NG	137	 15% 90% • 7%
40	NH	1237	 17% 86% • 13%
41	NI	297	 44% 80% • 19%
42	NM	255	 8% 90% • 7%
43	NN	534	 • 8% 92%
44	NP	144	 92% 92% • 7%
45	NQ	82	 94% • •
46	NS	1267	 29% 65% • 33%
47	NV	733	 • • 99%
48	OA	1729	 • • 99%
49	OH	143	 84% 83% • 16%
50	OU	152	 37% 37% 63%
51	SA	504	 13% 75% • 24%
52	SB	511	 30% 83% • 15%

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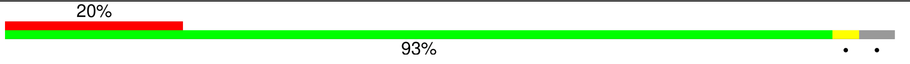
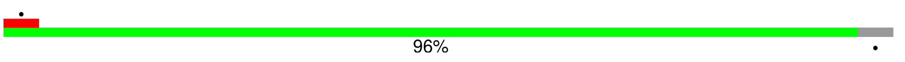
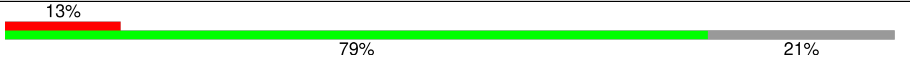
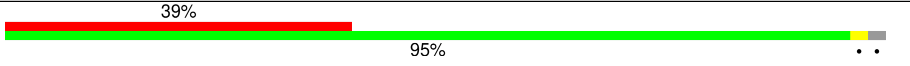
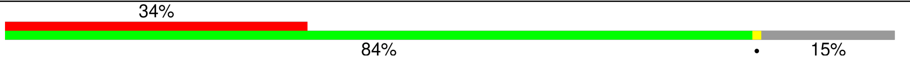
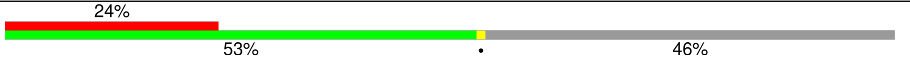
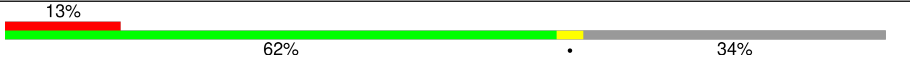
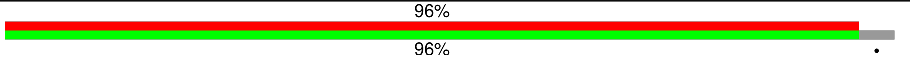
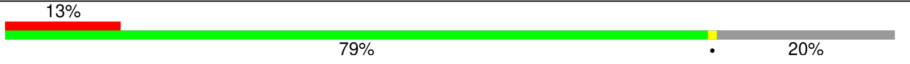
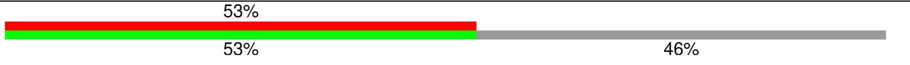
Mol	Chain	Length	Quality of chain
53	SC	327	8% 69% • 27%
53	SD	327	68% 70% • 27%
54	SE	126	20% 93% • •
54	SF	126	• 96% •
55	SG	573	13% 79% 21%
56	SH	367	39% 95% • •
57	SI	1183	17% 66% • 33%
58	SJ	252	80% 84% 15%
58	SK	252	81% 91% 9%
59	SL	189	6% 74% • 22%
60	SM	290	34% 84% • 15%
61	SP	2493	62% 85% • 14%
62	SQ	217	24% 53% • 46%
63	SR	145	13% 62% • 34%
64	SS	899	9% 25% 75%
65	ST	810	69% 74% • 26%
66	SU	552	96% 96% •
67	SW	274	13% 79% • 20%
68	SY	250	40% 47% • 51%
69	SZ	483	53% 53% 46%

2 Entry composition

There are 69 unique types of molecules in this entry. The entry contains 162433 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 RNA chain called 5'ETS rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	L0	64	1370	612	247	447	64	0	0

- Molecule 2 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	L1	1272	27142	12133	4851	8886	1272	0	0

- Molecule 3 is a RNA chain called U3 snoRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	L2	155	3289	1471	573	1090	155	0	0

- Molecule 4 is a protein called 40S ribosomal protein S18-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	L3	106	529	317	106	106	0	0

- Molecule 5 is a protein called 40S ribosomal protein S4-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
5	L4	234	1172	704	234	234	0	0

- Molecule 6 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	L5	206	1040	628	206	206	0	0

- Molecule 7 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
7	L6	206	1029	617	206	206	0	0

- Molecule 8 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
8	L7	178	903	547	178	178	0	0

- Molecule 9 is a protein called 40S ribosomal protein S8-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
9	L8	171	848	506	171	171	0	0

- Molecule 10 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
10	L9	181	914	552	181	181	0	0

- Molecule 11 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
11	LC	128	642	386	128	128	0	0

- Molecule 12 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
12	LD	137	693	419	137	137	0	0

- Molecule 13 is a protein called 40S ribosomal protein S22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
13	LE	129	640	382	129	129	0	0

- Molecule 14 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
14	LF	97	484	290	97	97	0	0

- Molecule 15 is a protein called 40S ribosomal protein S28-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
15	LG	62	309	185	62	62	0	0

- Molecule 16 is a protein called NET1-associated nuclear protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
16	LH	806	4034	2422	806	806	0	0

- Molecule 17 is a protein called U3 small nucleolar RNA-associated protein 8.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
17	LI	600	3027	1827	600	600	0	0

- Molecule 18 is a protein called U3 small nucleolar RNA-associated protein 15.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
18	LJ	476	2394	1442	476	476	0	0

- Molecule 19 is a protein called U3 small nucleolar RNA-associated protein 9.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
19	LK	132	664	400	132	132	0	0

- Molecule 20 is a protein called U3 small nucleolar RNA-associated protein 5.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
20	LL	487	2440	1466	487	487	0	0

- Molecule 21 is a protein called U3 small nucleolar RNA-associated protein 10.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
21	LM	1613	8115	4889	1613	1613	0	0

- Molecule 22 is a protein called U3 small nucleolar RNA-associated protein 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
22	LN	663	3315	1989	663	663	0	0

- Molecule 23 is a protein called Periodic tryptophan protein 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
23	LO	792	3958	2374	792	792	0	0

- Molecule 24 is a protein called U3 small nucleolar RNA-associated protein 6.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
24	LP	379	1901	1143	379	379	0	0

- Molecule 25 is a protein called U3 small nucleolar RNA-associated protein 12.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
25	LQ	815	4063	2433	815	815	0	0

- Molecule 26 is a protein called U3 small nucleolar RNA-associated protein 13.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
26	LR	793	3962	2376	793	793	0	0

- Molecule 27 is a protein called U3 small nucleolar RNA-associated protein 18.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
27	LS	454	2279	1371	454	454	0	0

- Molecule 28 is a protein called U3 small nucleolar RNA-associated protein 21.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	LT	871	Total 4347	C 2605	N 871	O 871	0	0

- Molecule 29 is a protein called Protein SOF1.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	LU	454	Total 2274	C 1366	N 454	O 454	0	0

- Molecule 30 is a protein called Ribosome biogenesis protein ENP2.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	LV	357	Total 1791	C 1077	N 357	O 357	0	0

- Molecule 31 is a protein called U3 small nucleolar RNA-associated protein 7.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	LW	459	Total 2304	C 1386	N 459	O 459	0	0

- Molecule 32 is a protein called RNA cytidine acetyltransferase.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	LX	852	Total 4302	C 2598	N 852	O 852	0	0
32	LY	846	Total 4274	C 2582	N 846	O 846	0	0

- Molecule 33 is a protein called U3 small nucleolar ribonucleoprotein protein IMP3.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	LZ	160	Total 808	C 488	N 160	O 160	0	0

- Molecule 34 is a protein called U3 small nucleolar RNA-associated protein MPP10.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	NA	296	Total 1491	C 899	N 296	O 296	0	0

- Molecule 35 is a protein called Something about silencing protein 10.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
35	NB	231	1159	697	231	231	0	0

- Molecule 36 is a protein called U3 small nucleolar ribonucleoprotein protein LCP5.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
36	NC	135	669	399	135	135	0	0

- Molecule 37 is a protein called Bud site selection protein 21.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
37	ND	59	297	179	59	59	0	0

- Molecule 38 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
38	NF	141	711	429	141	141	0	0

- Molecule 39 is a protein called 40S ribosomal protein S14-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
39	NG	127	630	376	127	127	0	0

- Molecule 40 is a protein called U3 small nucleolar RNA-associated protein 22.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
40	NH	1077	5443	3289	1077	1077	0	0

- Molecule 41 is a protein called Ribosomal RNA-processing protein 7.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
41	NI	240	1210	730	240	240	0	0

- Molecule 42 is a protein called Small ribosomal subunit protein eS1A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
42	NM	237	1183	709	237	237	0	0

- Molecule 43 is a protein called Protein BFR2.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
43	NN	43	215	129	43	43	0	0

- Molecule 44 is a protein called 40S ribosomal protein S19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
44	NP	134	666	398	134	134	0	0

- Molecule 45 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
45	NQ	79	398	240	79	79	0	0

- Molecule 46 is a protein called Probable ATP-dependent RNA helicase DHR1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
46	NS	844	4268	2580	844	844	0	0

- Molecule 47 is a protein called Exosome complex exonuclease RRP6.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
47	NV	8	39	23	8	8	0	0

- Molecule 48 is a protein called rRNA biogenesis protein RRP5.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
48	OA	14	69	41	14	14	0	0

- Molecule 49 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
49	OH	120	594	354	120	120	0	0

- Molecule 50 is a protein called Ubiquitin-40S ribosomal protein S31.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
50	OU	56	278	166	56	56	0	0

- Molecule 51 is a protein called Nucleolar protein 56.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
51	SA	384	1924	1154	385	385	1	0

- Molecule 52 is a protein called Nucleolar protein 58.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
52	SB	433	2161	1295	433	433	0	0

- Molecule 53 is a protein called rRNA 2'-O-methyltransferase fibrillarin.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
53	SC	238	1198	722	238	238	0	0
			Total	C	N	O		
53	SD	238	1198	722	238	238	0	0

- Molecule 54 is a protein called 13 kDa ribonucleoprotein-associated protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
54	SE	121	615	373	121	121	0	0
			Total	C	N	O		
54	SF	121	615	373	121	121	0	0

- Molecule 55 is a protein called Ribosomal RNA-processing protein 9.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
55	SG	453	2260	1354	453	453	0	0

- Molecule 56 is a protein called RNA 3'-terminal phosphate cyclase-like protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
56	SH	360	1801	1081	360	360	0	0

- Molecule 57 is a protein called Ribosome biogenesis protein BMS1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
57	SI	797	4024	2430	797	797	0	0

- Molecule 58 is a protein called Ribosomal RNA small subunit methyltransferase NEP1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
58	SJ	213	1074	648	213	213	0	0
58	SK	229	1160	702	229	229	0	0

- Molecule 59 is a protein called rRNA-processing protein FCF1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
59	SL	148	751	455	148	148	0	0

- Molecule 60 is a protein called U3 small nucleolar ribonucleoprotein protein IMP4.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
60	SM	247	1243	749	247	247	0	0

- Molecule 61 is a protein called U3 small nucleolar RNA-associated protein 20.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
61	SP	2156	10847	6535	2156	2156	0	0

- Molecule 62 is a protein called rRNA-processing protein FCF2.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
62	SQ	117	592	358	117	117	0	0

- Molecule 63 is a protein called 40S ribosomal protein S23-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
63	SR	95	476	286	95	95	0	0

- Molecule 64 is a protein called U3 small nucleolar RNA-associated protein 14.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
64	SS	225	1145	695	225	225	1	0

- Molecule 65 is a protein called Nucleolar complex protein 14.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
65	ST	603	3041	1835	603	603	0	0

- Molecule 66 is a protein called Nucleolar complex protein 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
66	SU	532	2703	1639	532	532	0	0

- Molecule 67 is a protein called Pre-rRNA-processing protein PNO1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
67	SW	219	1104	666	219	219	0	0

- Molecule 68 is a protein called U3 small nucleolar RNA-associated protein 11.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
68	SY	122	611	367	122	122	0	0

- Molecule 69 is a protein called Essential nuclear protein 1.

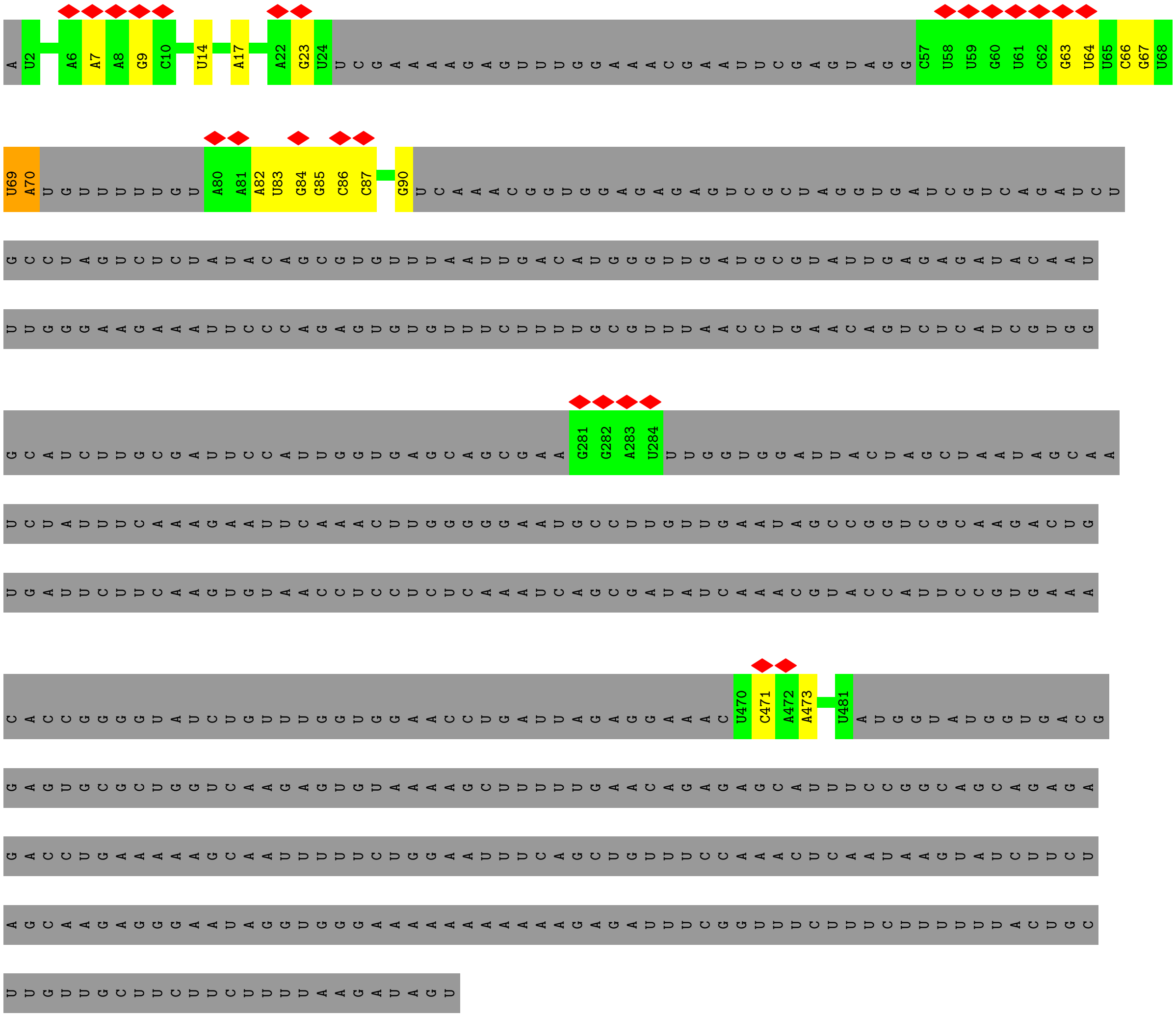
Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
69	SZ	259	1314	796	259	259	0	0

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.

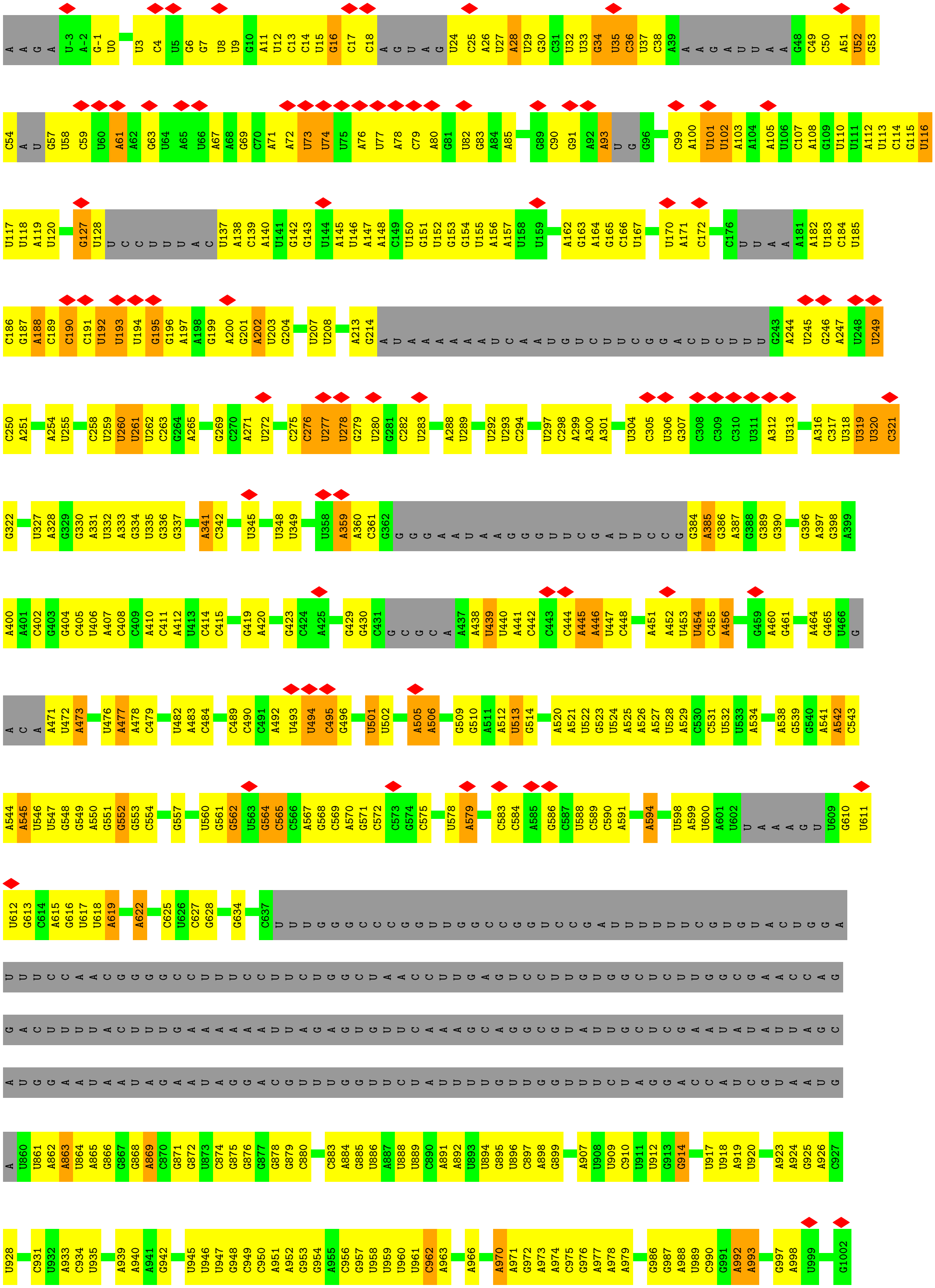
- Molecule 1: 5’ETS rRNA

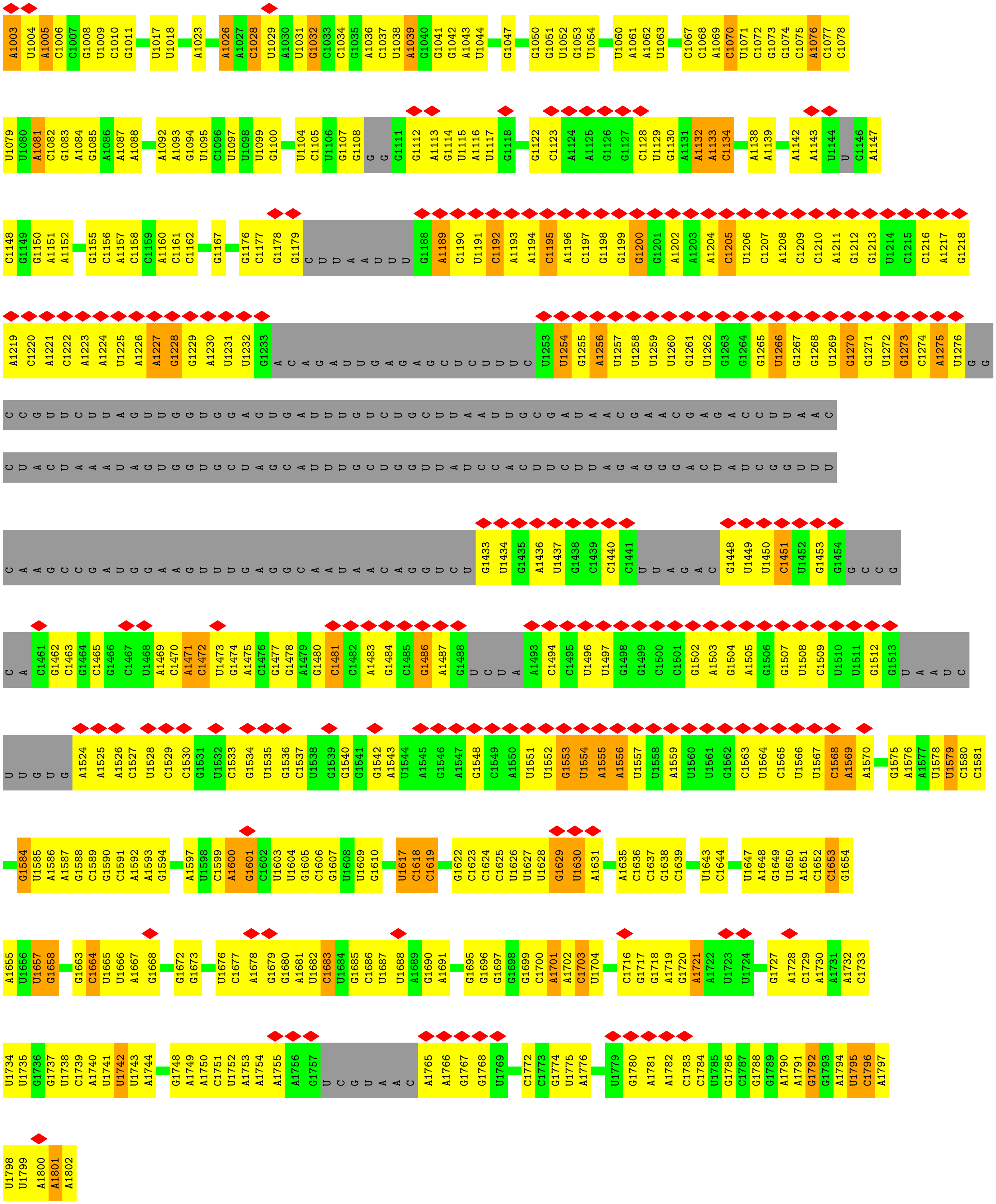
Chain L0:



- Molecule 2: 18S rRNA

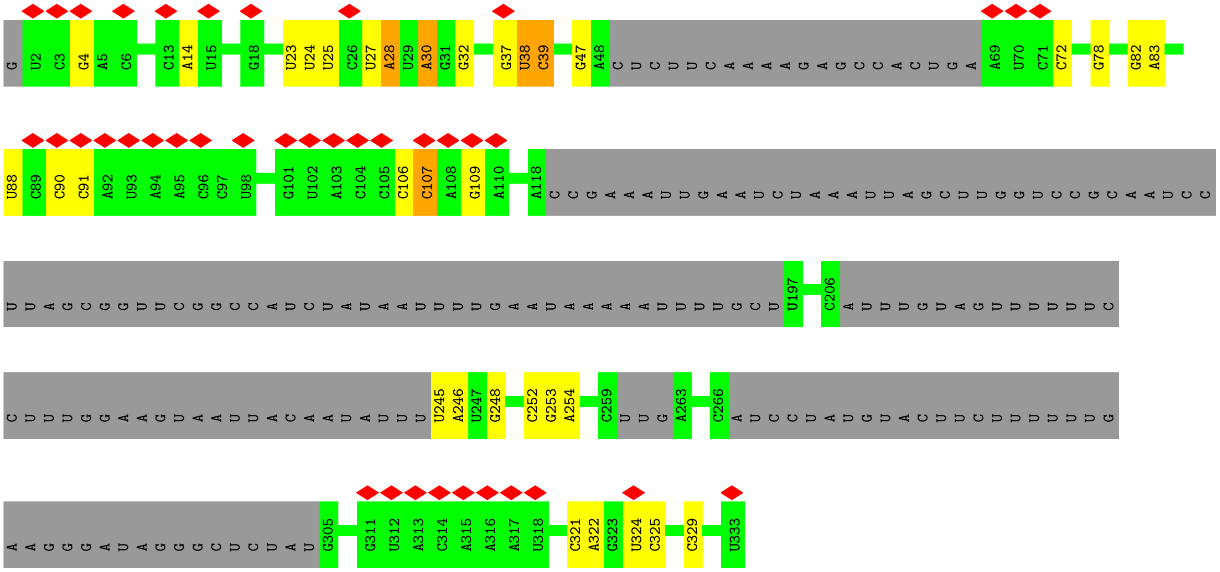
Chain L1:


A A G A U-3 A-2 G-1 U0 U3 C4 U5 G6 G7 U8 U9 G10 A11 U12 C13 C14 U15 G16 C17 C18 A G U A G U24 C25 A26 U27 A28 U29 G30 C31 U32 U33 G34 U35 C36 U37 C38 A39 A A G A U U A A G48 C49 C50 A51 U52 G53
C54 A U G57 U58 C59 U60 A61 A62 G63 U64 A65 U66 A67 A68 G69 C70 A71 A72 U73 U74 U75 A76 U77 A78 C79 A80 G81 U82 G83 A84 A85 G89 C90 G91 A92 A93 U G G96 C99 A100 U101 U102 A103 A104 A105 U106 C107 A108 G109 U110 U111 A112 U113 C114 G115 U116
U117 U118 A119 U120 G127 U128 U C C U U U A C U137 A138 C139 A140 U141 G142 G143 U144 A145 U146 A147 A148 C149 U150 G151 U152 G153 G154 U155 A156 A157 U158 U159 A162 G163 A164 G165 C166 U167 U170 A171 C172 C176 U U A A A181 A182 U183 C184 U185
C186 G187 A188 C189 C190 C191 U192 U193 U194 G195 G196 A197 A198 G199 A200 G201 A202 U203 G204 U207 U208 A213 G214 A U A A A A A A U C A A U G U C U U C G G A C U C U U U G243 A244 U245 G246 A247 U248 U249
C250 A251 A254 U255 C258 U259 U260 U261 U262 C263 G264 A265 G269 C270 A271 U272 C275 C276 U277 U278 G279 U280 G281 C282 U283 A288 U289 U292 U293 C294 U297 C298 A299 A300 A301 U304 C305 U306 G307 C308 C309 C310 U311 A312 U313 A316 C317 U318 U319 U320 C321
G322 U327 A328 G329 G330 A331 U332 A333 G334 U335 G336 G337 A341 C342 U345 U348 U349 U358 A359 A360 C361 G362 G G G A A U A A G G G U U C G A U U C C G G384 A385 G386 A387 G388 G389 G390 G396 A397 G398 A399
A400 A401 C402 G403 G404 C405 U406 A407 C408 C409 A410 C411 A412 U413 C414 C415 G419 A420 G423 C424 A425 G429 G430 C431 G C G C A A437 A438 U439 U440 A441 C442 C443 C444 A445 A446 U447 C448 A451 A452 U453 U454 C455 A456 G459 A460 G461 A464 G465 U466 G
A C A A471 U472 A473 U476 A477 A478 C479 U482 A483 C484 C489 C490 C491 A492 U493 U494 C495 G496 U501 U502 A505 A506 G509 G510 A511 A512 U513 G514 A520 A521 U522 G523 U524 A525 A526 A527 U528 A529 C530 C531 U532 U533 A534 A538 G539 G540 A541 A542 C543
A544 A545 U546 U547 G548 G549 A550 G551 G552 G553 C554 G557 U560 G561 G562 U563 G564 C565 C566 A567 G568 C569 A570 G571 C572 C573 G574 C575 U578 A579 C583 C584 A585 G586 C587 U588 C589 C590 A591 A594 U598 A599 U600 A601 U602 U A A A G U U609 G610 U611
U612 G613 C614 A615 G616 U617 U618 A619 A622 C625 U626 C627 G628 G634 C637 U U U G G G C C C G G U U G G C C G G U C C G A U U U U U U C G U G U A C U G G A
U U U C C A A C G G G G C C U U U C C U U C U G G C U A A C C U U G A G U C C U U G U G G C U C U U G G C G A A C C A G
G A C U U U U A C U U U G A A A A A A U U A G A G U G U U C A A A G C A G G C G U A U U G C U C G A A U A U A U U A G C
A U G G A A U A A U A G A A U A G G A C G U U U G G U U C U A U U U U G U U G G U U U C U A G G A C C A U C G U A A U G
A U860 U861 A862 A863 U864 A865 G866 G867 G868 A869 C870 G871 G872 U873 C874 G875 G876 G877 G878 G879 C880 C883 A884 G885 U886 A887 U888 U889 C890 A891 A892 U893 U894 G895 U896 C897 A898 G899 A907 U908 U909 C910 U911 U912 G913 G914 U917 U918 A919 U920 A923 A924 G925 A926 C927
U928 C931 U932 A933 C934 U935 A939 A940 A941 G942 U945 U946 U947 G948 C949 C950 A951 A952 G953 G954 A955 C956 G957 U958 U959 U960 U961 C962 A963 A966 A970 A971 G972 A973 A974 C975 G976 A977 A978 A979 G986 G987 A988 U989 C990 G991 A992 A993 G997 A998 U999 G1002



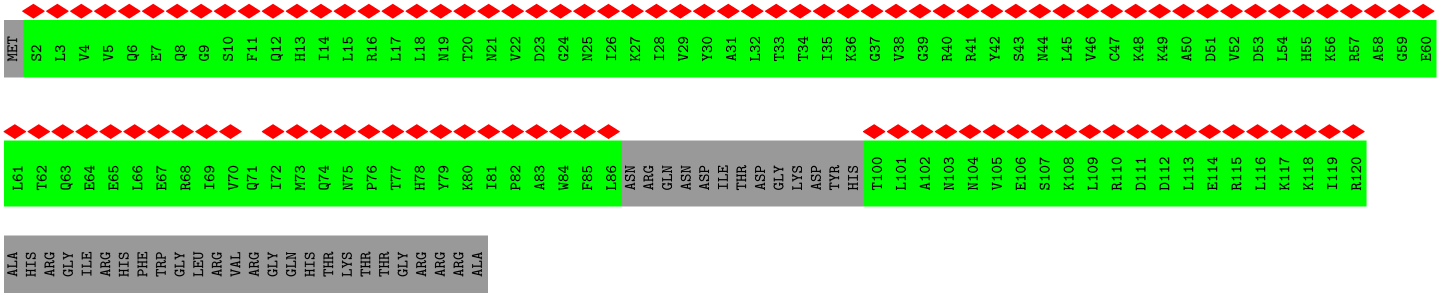
- Molecule 3: U3 snoRNA

Chain L2:



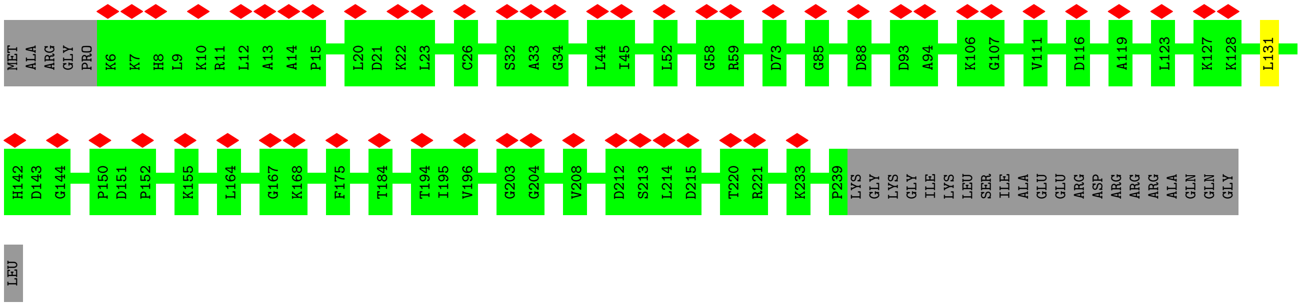
- Molecule 4: 40S ribosomal protein S18-A

Chain L3:



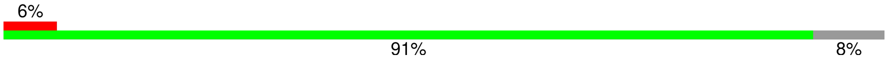
- Molecule 5: 40S ribosomal protein S4-A

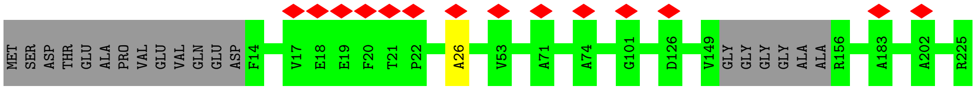
Chain L4:



- Molecule 6: 40S ribosomal protein S5

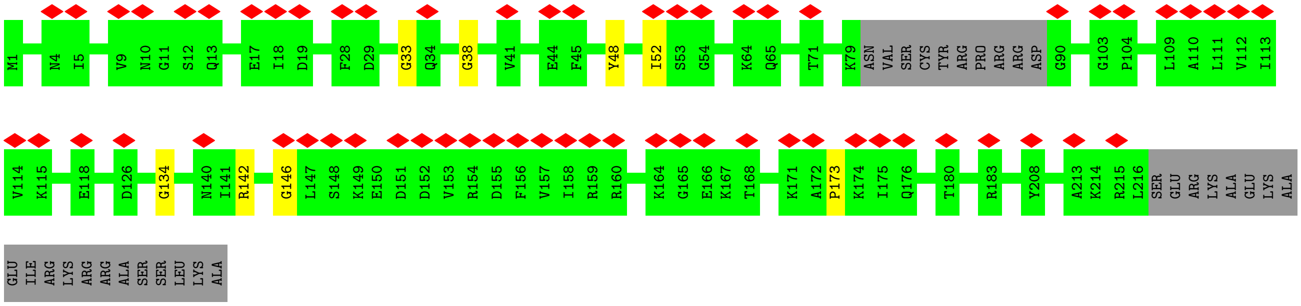
Chain L5:





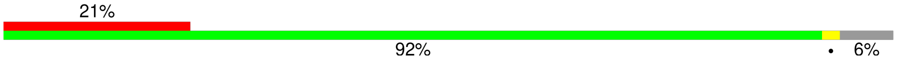
- Molecule 7: 40S ribosomal protein S6-A

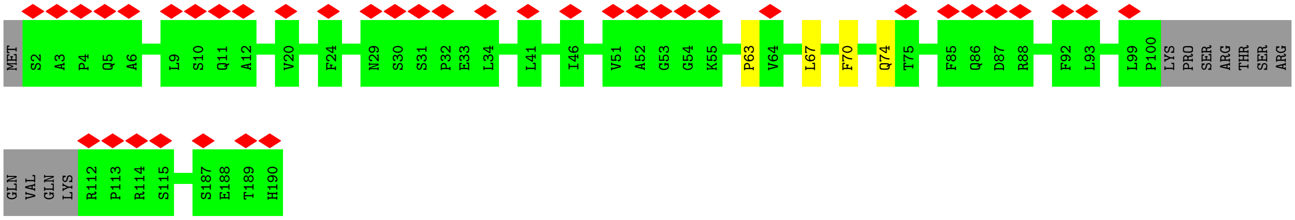
Chain L6:



- Molecule 8: 40S ribosomal protein S7-A

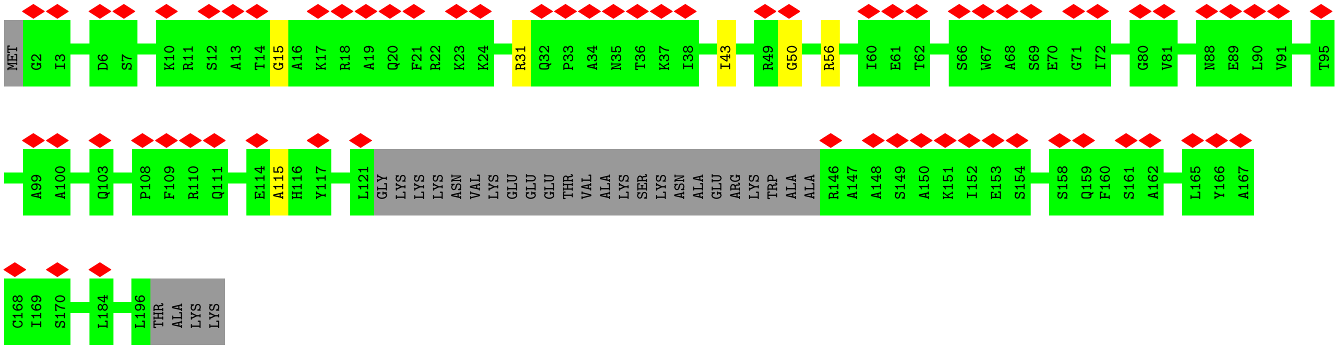
Chain L7:





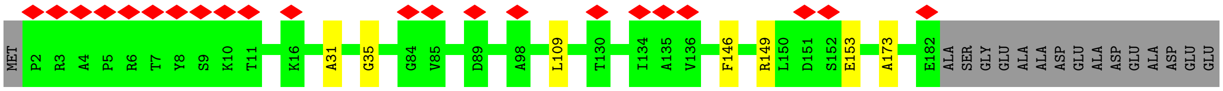
- Molecule 9: 40S ribosomal protein S8-A

Chain L8:

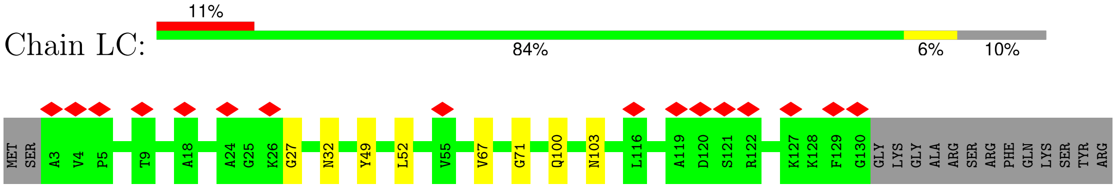


- Molecule 10: 40S ribosomal protein S9-A

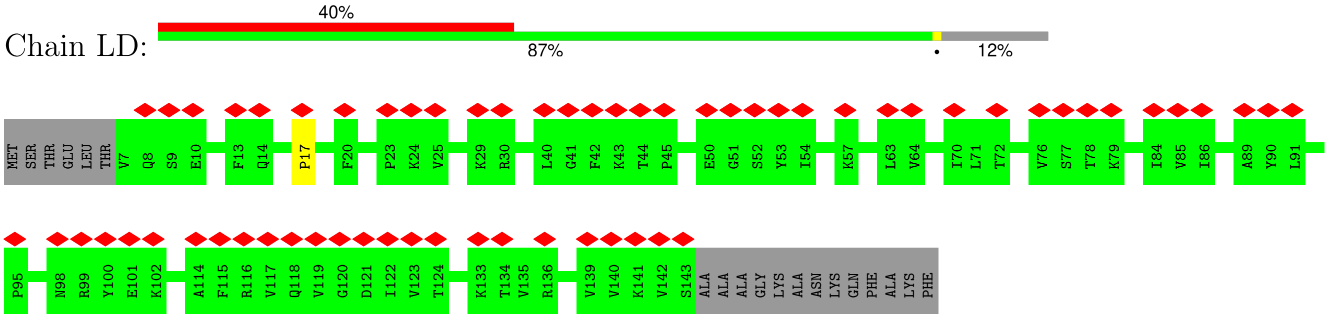
Chain L9:



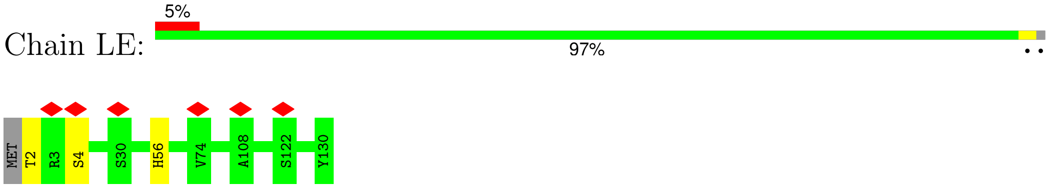
- Molecule 11: 40S ribosomal protein S16-A



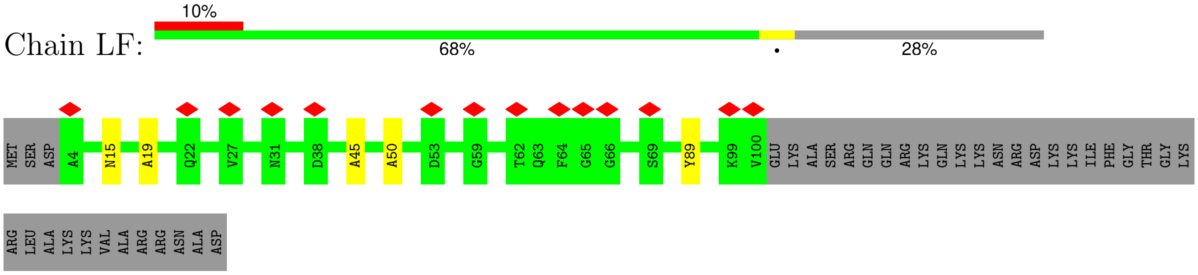
- Molecule 12: 40S ribosomal protein S11-A



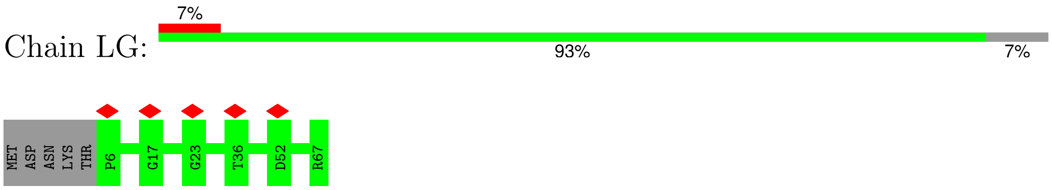
- Molecule 13: 40S ribosomal protein S22-A



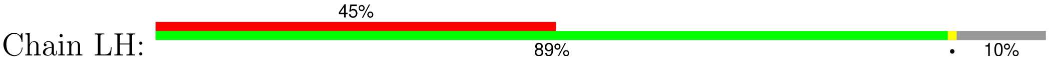
- Molecule 14: 40S ribosomal protein S24-A

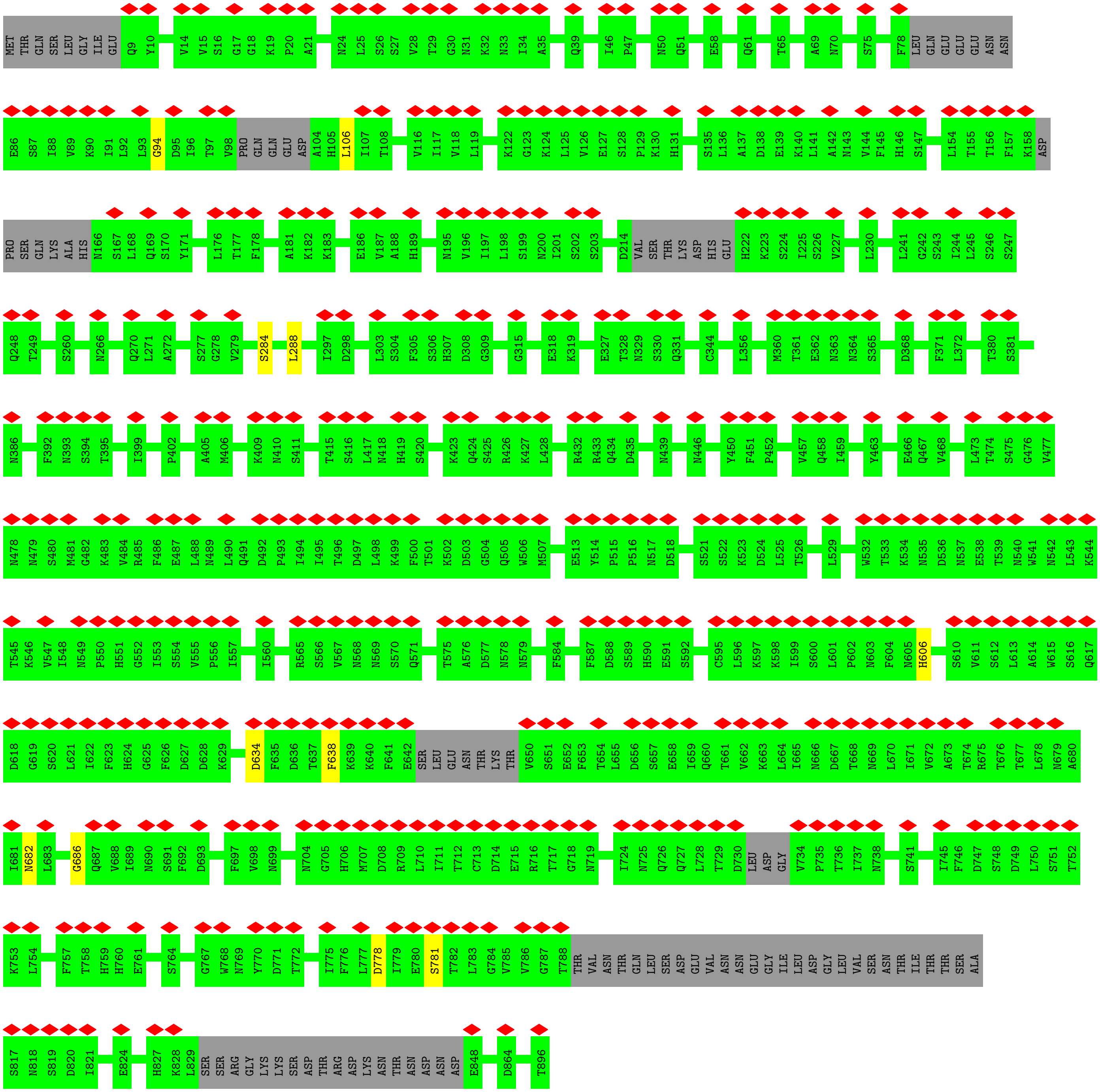


- Molecule 15: 40S ribosomal protein S28-A



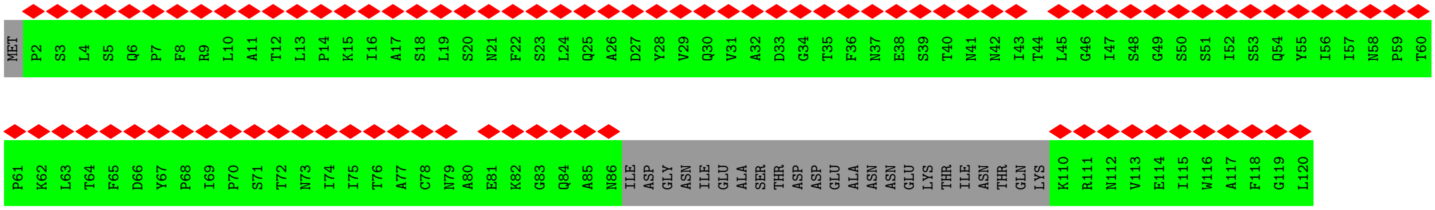
- Molecule 16: NET1-associated nuclear protein 1

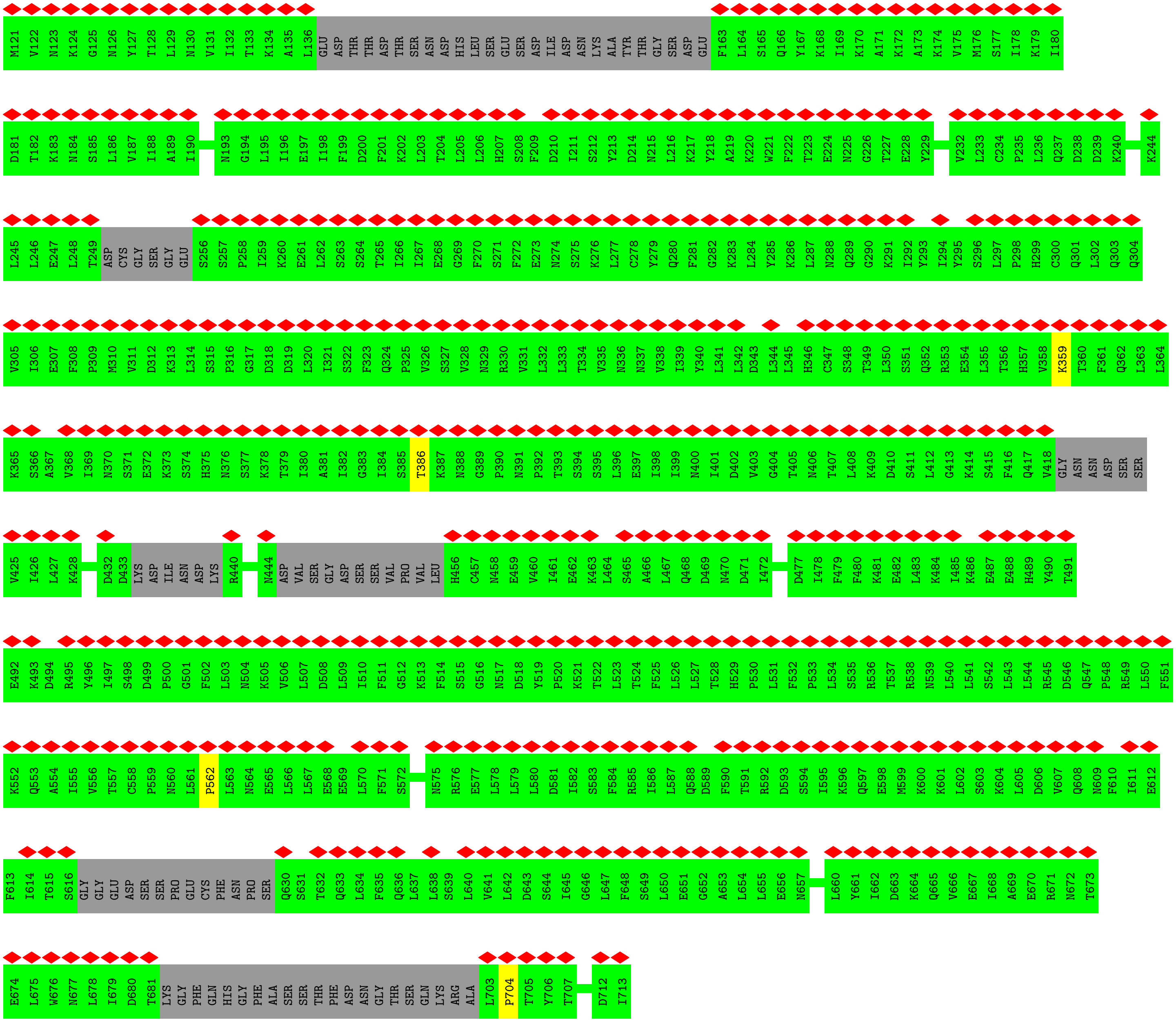




- Molecule 17: U3 small nucleolar RNA-associated protein 8

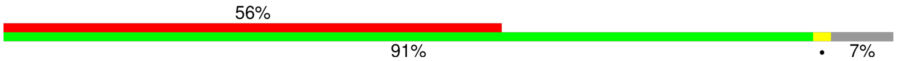
Chain LI:

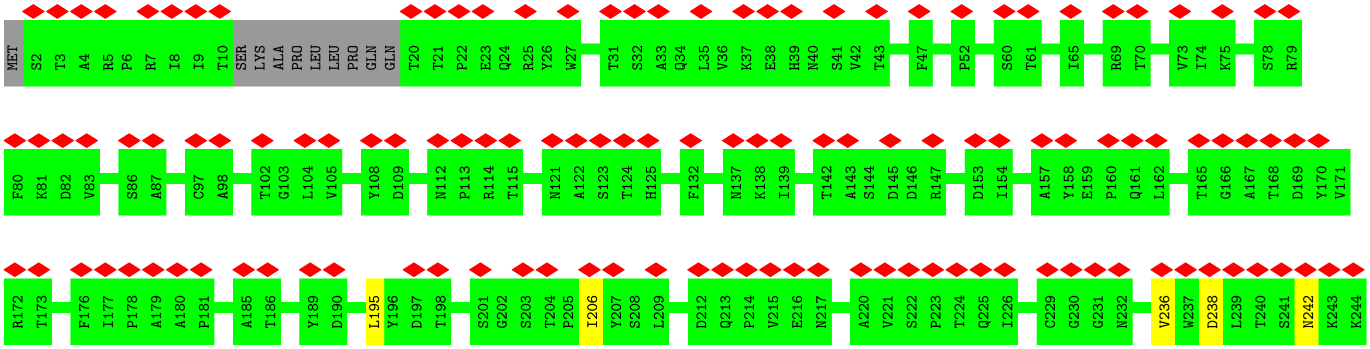


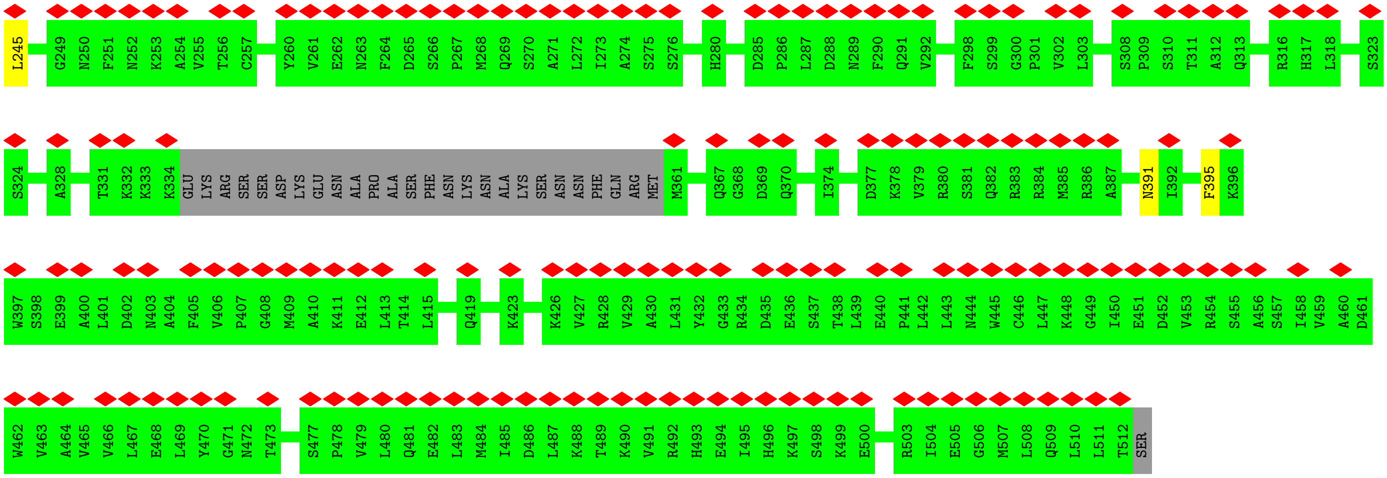


• Molecule 18: U3 small nucleolar RNA-associated protein 15

Chain LJ:

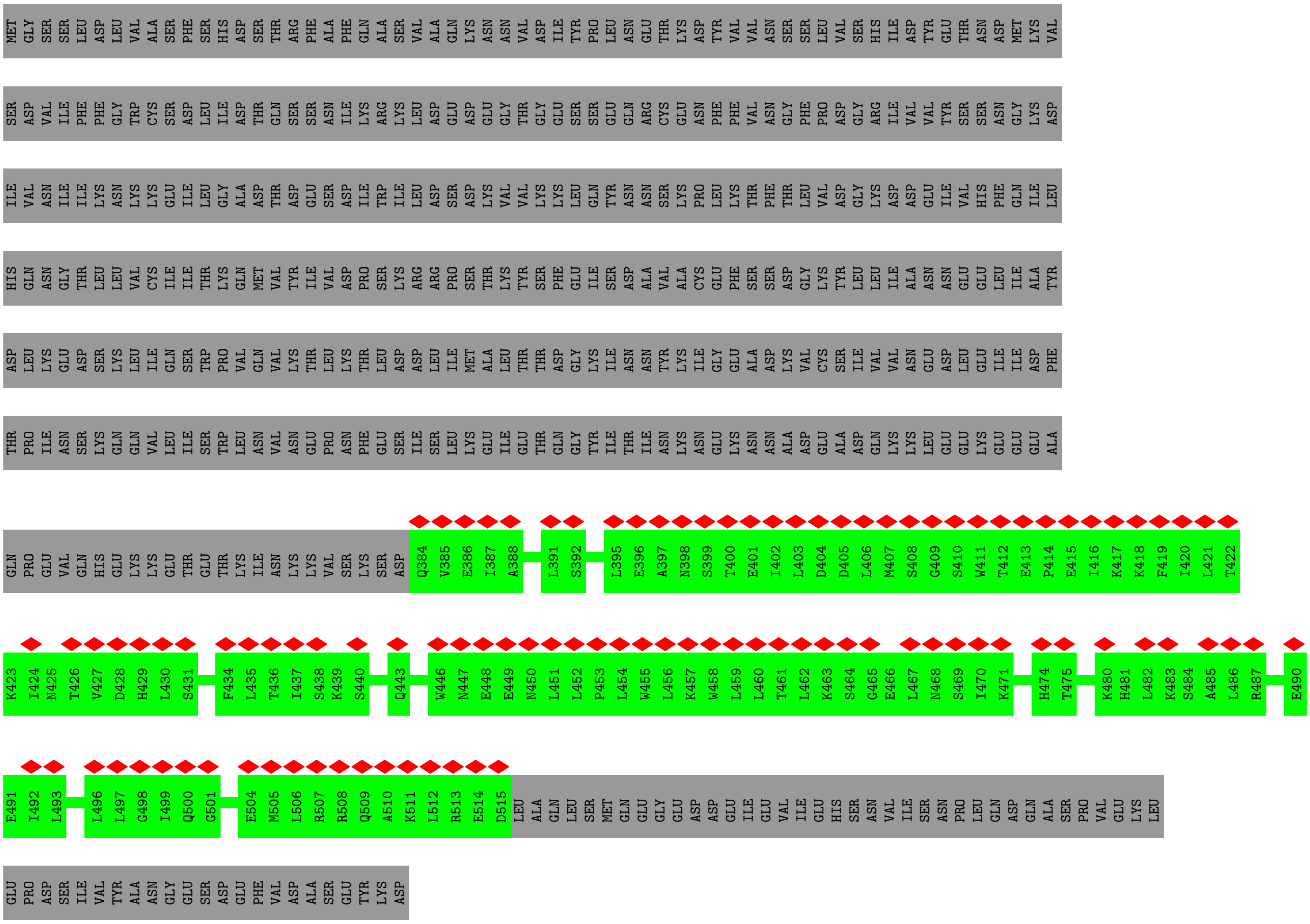






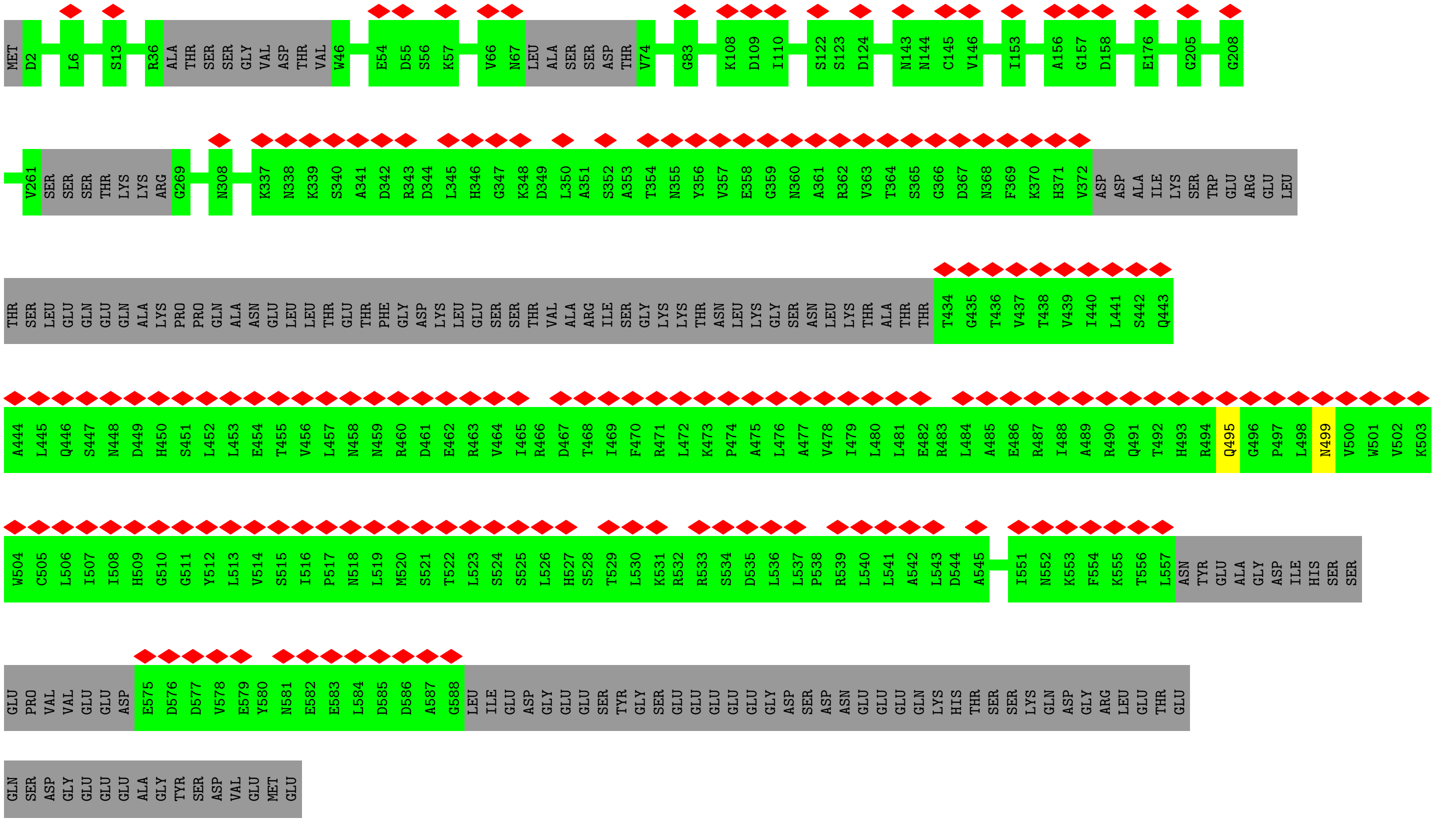
- Molecule 19: U3 small nucleolar RNA-associated protein 9

Chain LK:



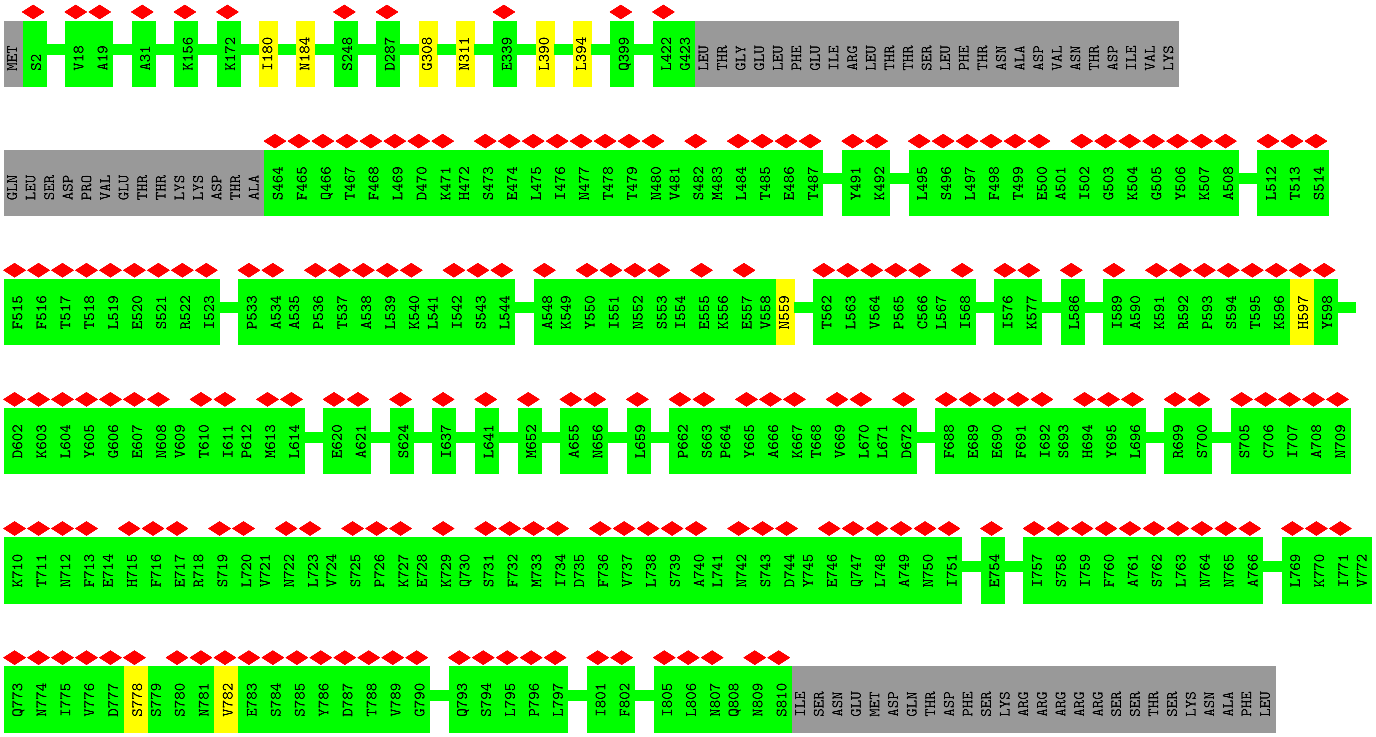
- Molecule 20: U3 small nucleolar RNA-associated protein 5

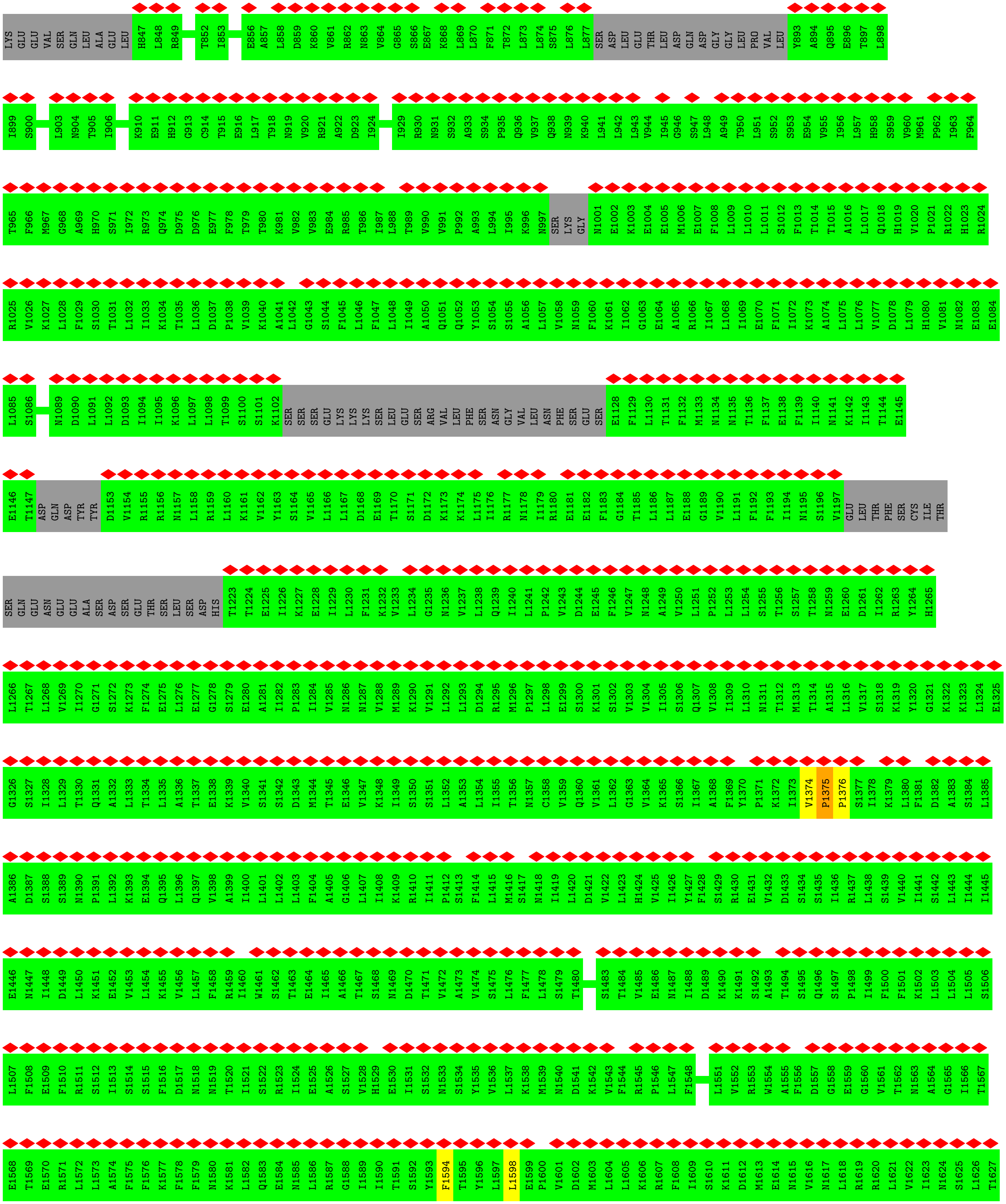
Chain LL:



- Molecule 21: U3 small nucleolar RNA-associated protein 10

Chain LM:




LYS GLU GLU VAL SER GLN LEU ALA GLU LEU H847 L848 R849 T852 I853 E856 A857 L858 D859 K860 V861 R862 N863 V864 G865 S866 E867 K868 L869 L870 F871 T872 L873 L874 S875 L876 L877 SER ASP LEU GLU THR LEU ASP GLN ASP GLY GLY LEU PRO VAL LEU Y893 A894 Q895 E896 T897 L898
I899 S900 L903 N904 T905 I906 K910 E911 H912 G913 C914 T915 E916 L917 T918 N919 V920 R921 A922 D923 I924 I929 R930 N931 S932 A933 S934 P935 Q936 V937 Q938 N939 K940 L941 L942 V943 V944 A945 G946 S947 L948 A949 T950 L951 S952 S953 E954 V955 L956 L957 H958 S959 V960 M961 P962 I963 F964
T965 F966 M967 G968 A969 H970 S971 I972 R973 Q974 D975 D976 E977 F978 T979 T980 K981 V982 V983 E984 R985 T986 I987 L988 T989 V990 V991 P992 A993 L994 I995 K996 N997 SER LYS GLY N1001 E1002 K1003 E1004 E1005 M1006 E1007 F1008 L1009 L1010 L1011 S1012 F1013 T1014 T1015 A1016 L1017 Q1018 H1019 V1020 P1021 R1022 H1023 R1024
R1025 V1026 K1027 L1028 F1029 S1030 T1031 L1032 I1033 K1034 T1035 L1036 D1037 P1038 V1039 K1040 A1041 L1042 G1043 S1044 F1045 L1046 F1047 L1048 I1049 A1050 Q1051 Q1052 Y1053 S1054 S1055 A1056 L1057 V1058 N1059 F1060 K1061 I1062 G1063 E1064 A1065 R1066 I1067 L1068 I1069 E1070 F1071 I1072 K1073 A1074 L1075 L1076 V1077 D1078 L1079 H1080 V1081 N1082 E1083 E1084
L1085 S1086 N1089 D1090 L1091 L1092 D1093 I1094 I1095 K1096 L1097 L1098 T1099 S1100 S1101 K1102 SER SER SER GLU LYS LYS SER LEU GLU SER ARG VAL LEU PHE SER ASN GLY VAL LEU ASN PHE SER GLU SER E1128 F1129 L1130 T1131 F1132 M1133 N1134 N1135 T1136 F1137 E1138 F1139 I1140 N1141 K1142 I1143 T1144 E1145
E1146 T1147 ASP GLN ASP TYR TYR D1153 V1154 R1155 R1156 N1157 L1158 R1159 L1160 K1161 V1162 Y1163 S1164 V1165 L1166 L1167 D1168 E1169 T1170 S1171 D1172 K1173 K1174 L1175 I1176 R1177 N1178 I1179 R1180 E1181 E1182 F1183 G1184 T1185 L1186 L1187 E1188 G1189 V1190 L1191 F1192 F1193 I1194 N1195 S1196 V1197 GLU LEU THR PHE SER CYS ILE THR
SER GLN GLU ASN GLU GLU ALA SER ASP SER GLU THR SER LEU SER ASP HIS T1223 T1224 E1225 I1226 K1227 E1228 I1229 L1230 F1231 K1232 V1233 L1234 G1235 N1236 V1237 L1238 Q1239 I1240 L1241 P1242 V1243 D1244 E1245 F1246 V1247 N1248 A1249 V1250 L1251 P1252 L1253 L1254 S1255 T1256 S1257 T1258 N1259 E1260 D1261 I1262 R1263 Y1264 H1265
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E1446 N1447 I1448 D1449 L1450 K1451 E1452 V1453 L1454 K1455 V1456 L1457 F1458 R1459 I1460 W1461 S1462 T1463 E1464 I1465 A1466 T1467 S1468 N1469 D1470 T1471 V1472 A1473 V1474 S1475 L1476 F1477 L1478 S1479 T1480 S1483 T1484 V1485 E1486 N1487 I1488 D1489 K1490 K1491 S1492 A1493 T1494 S1495 Q1496 S1497 P1498 I1499 F1500 F1501 K1502 L1503 L1504 L1505 S1506
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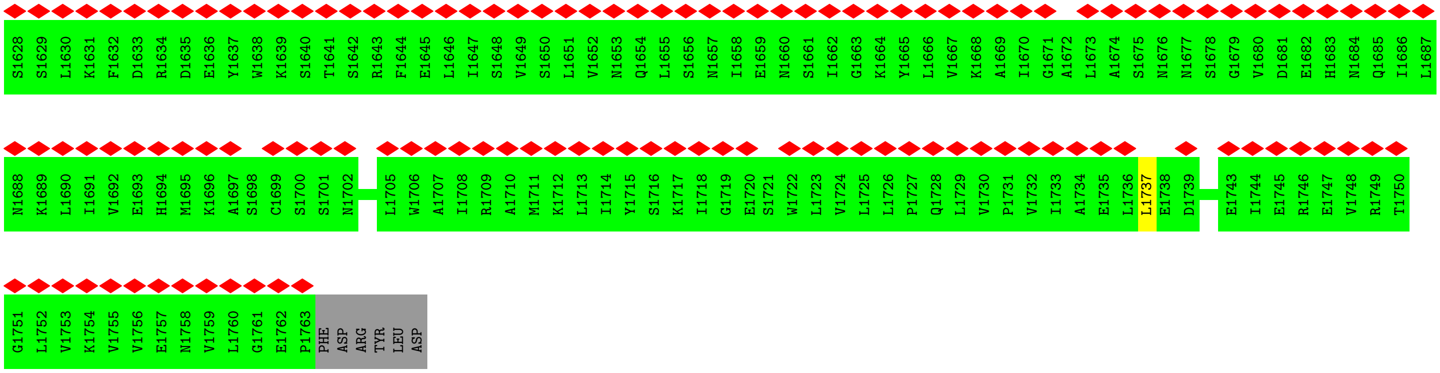
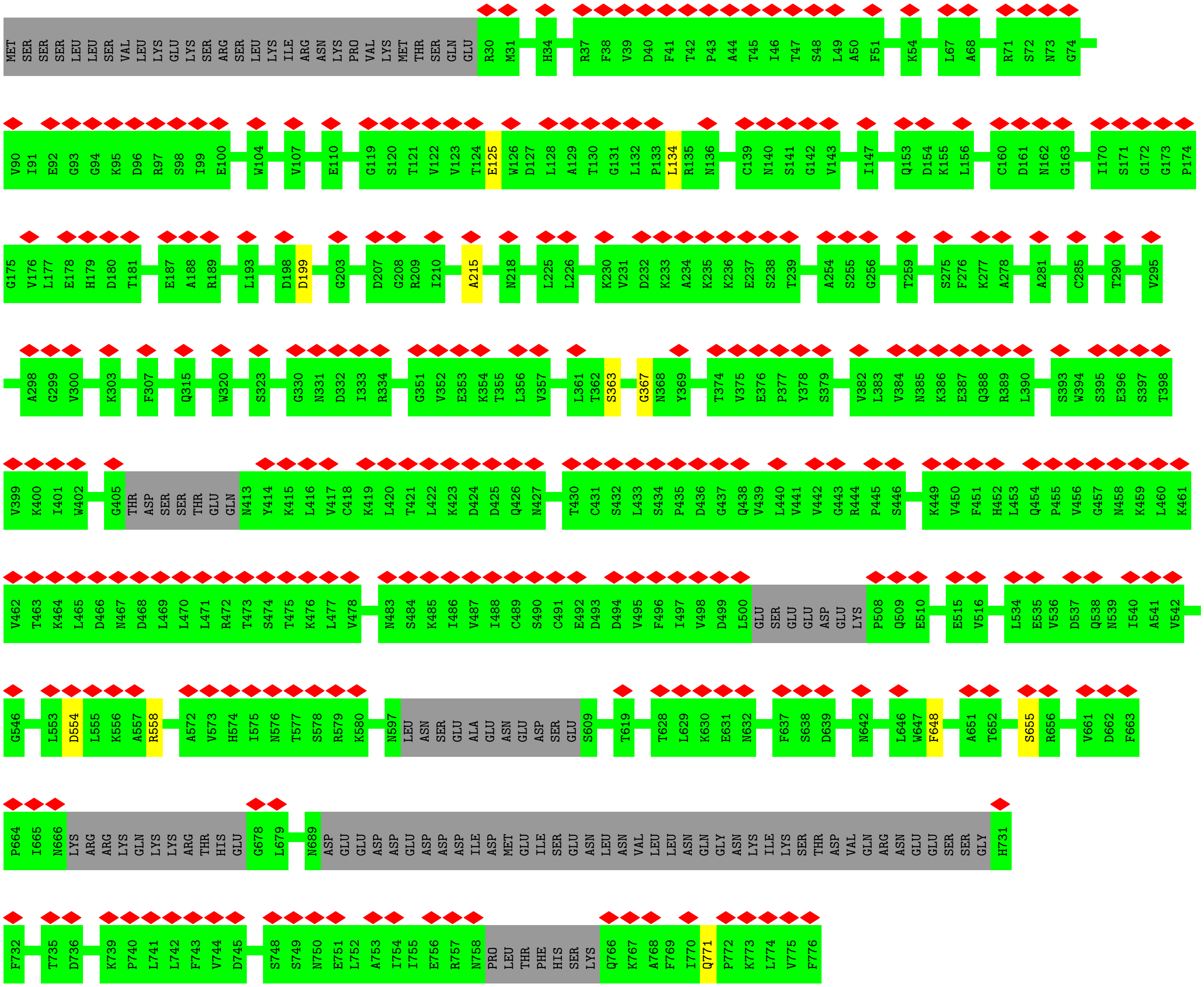


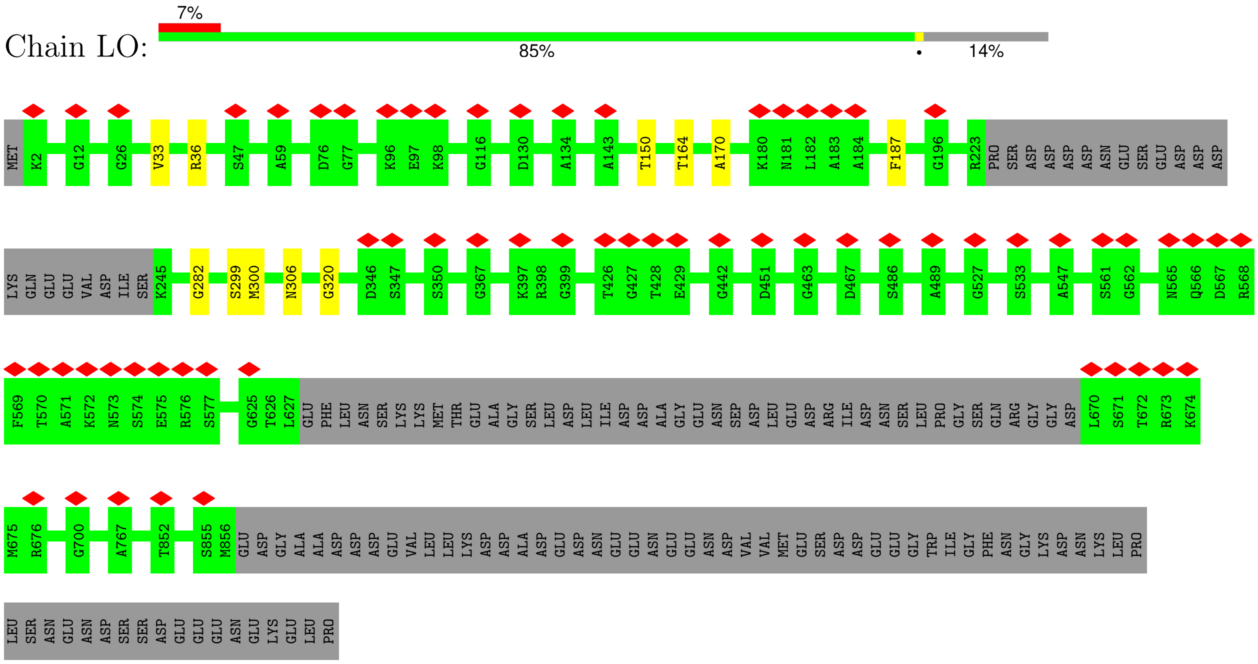
- Molecule 22: U3 small nucleolar RNA-associated protein 4

Chain LN:



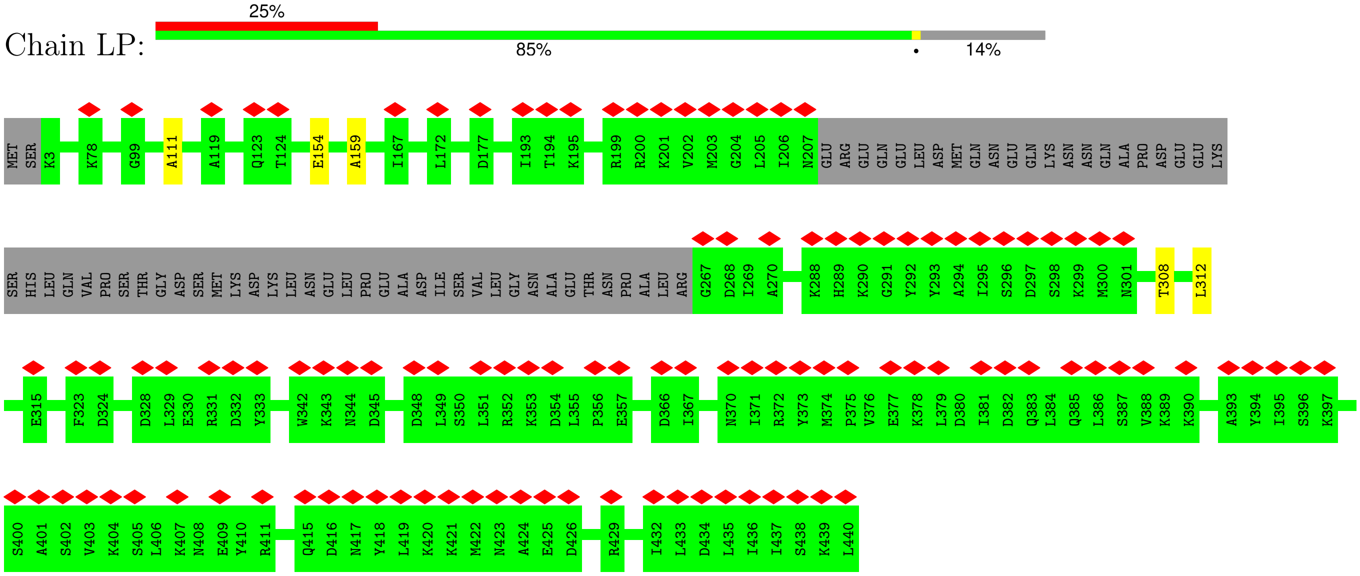
- Molecule 23: Periodic tryptophan protein 2

Chain LO:



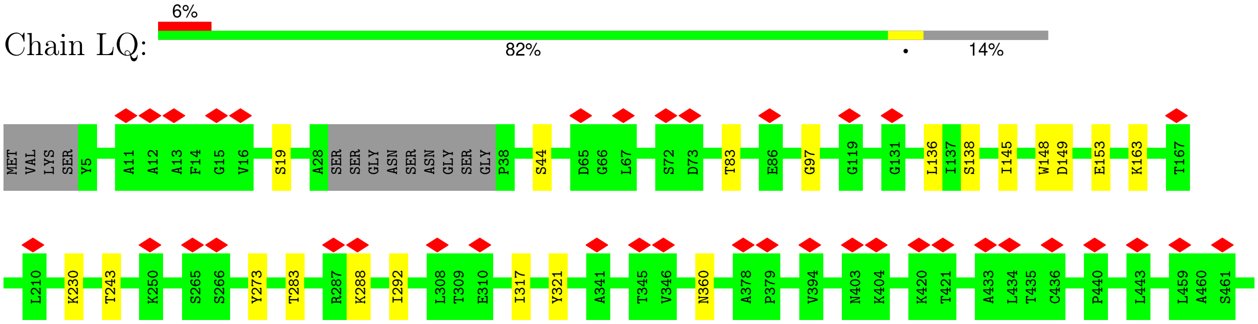
- Molecule 24: U3 small nucleolar RNA-associated protein 6

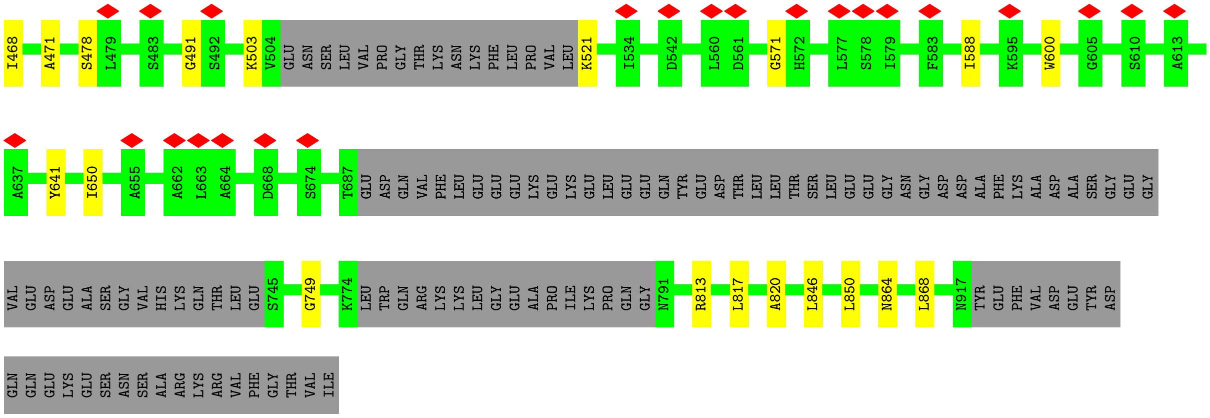
Chain LP:



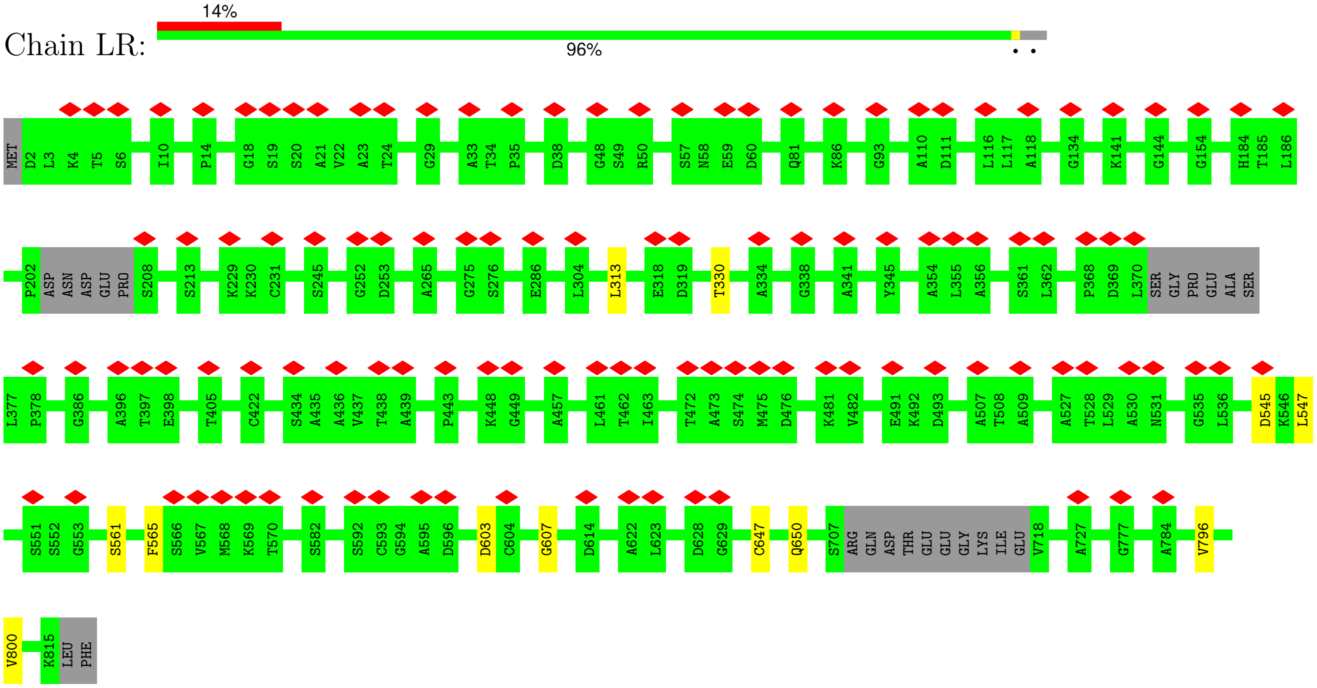
- Molecule 25: U3 small nucleolar RNA-associated protein 12

Chain LQ:

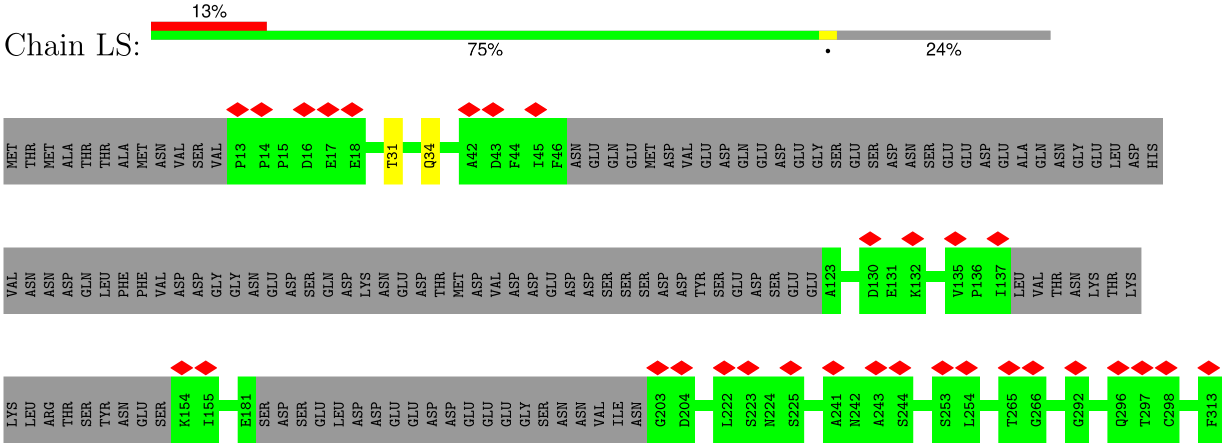


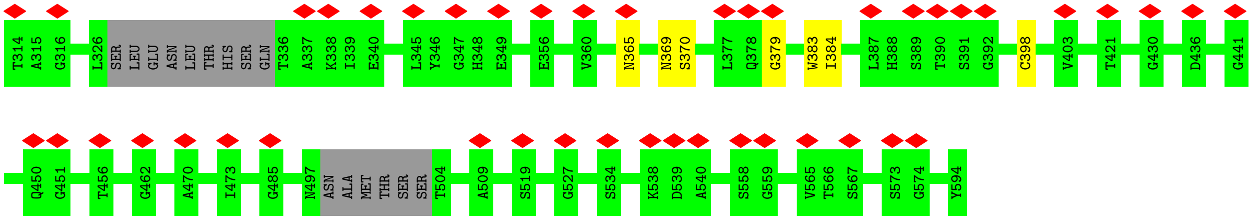


- Molecule 26: U3 small nucleolar RNA-associated protein 13

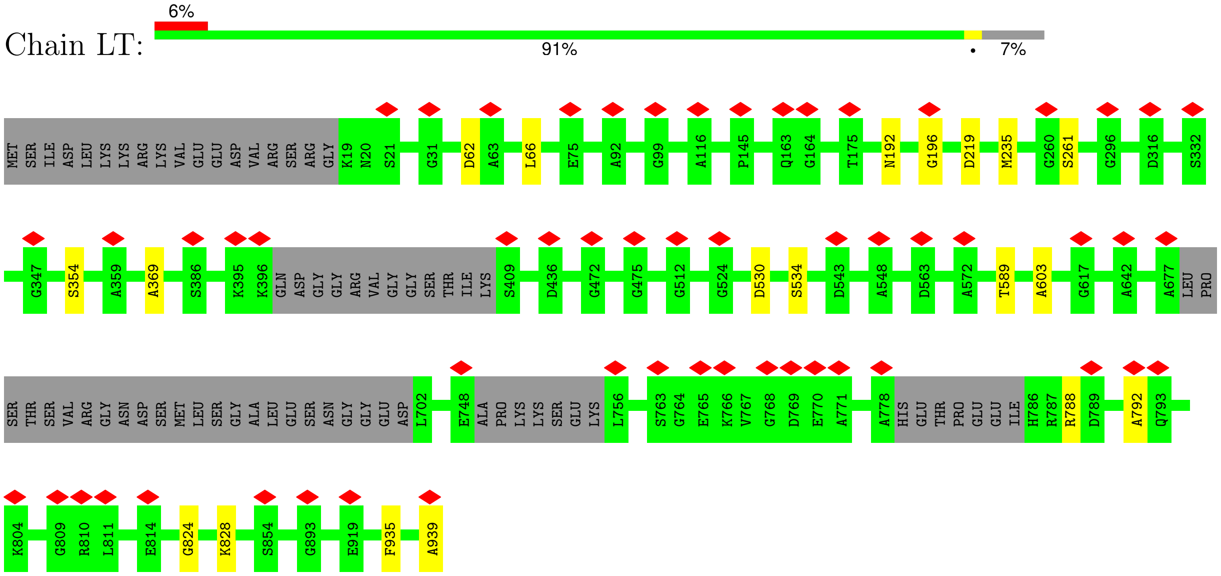


- Molecule 27: U3 small nucleolar RNA-associated protein 18

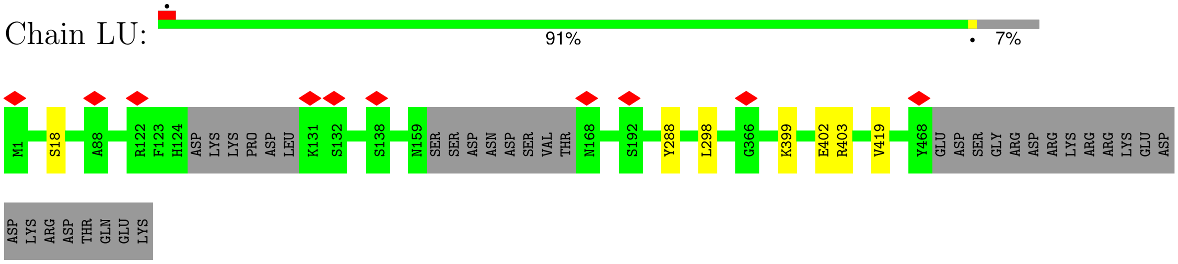




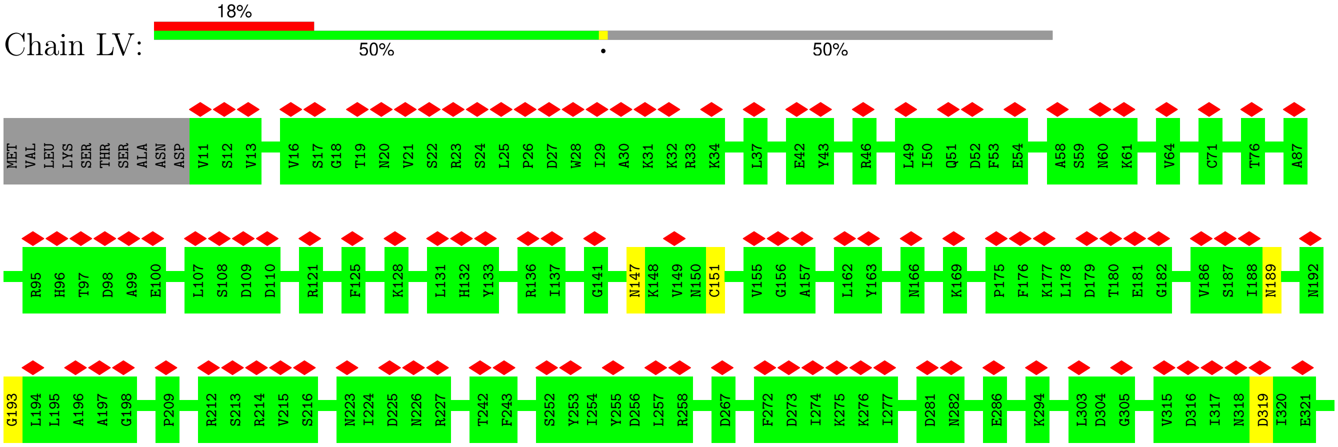
- Molecule 28: U3 small nucleolar RNA-associated protein 21

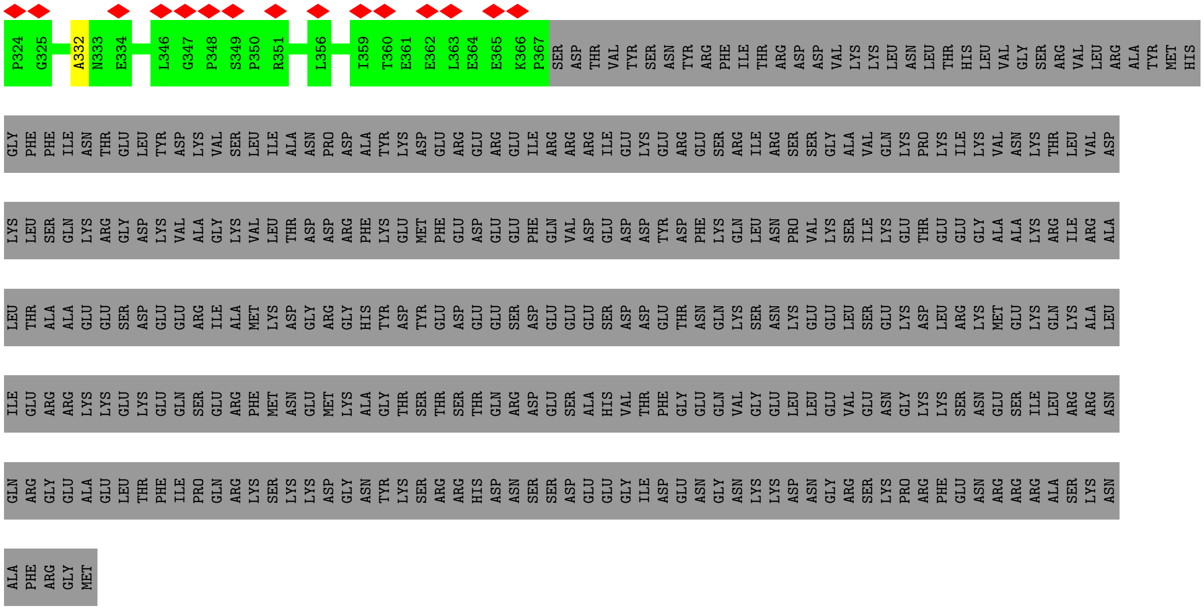


- Molecule 29: Protein SOF1



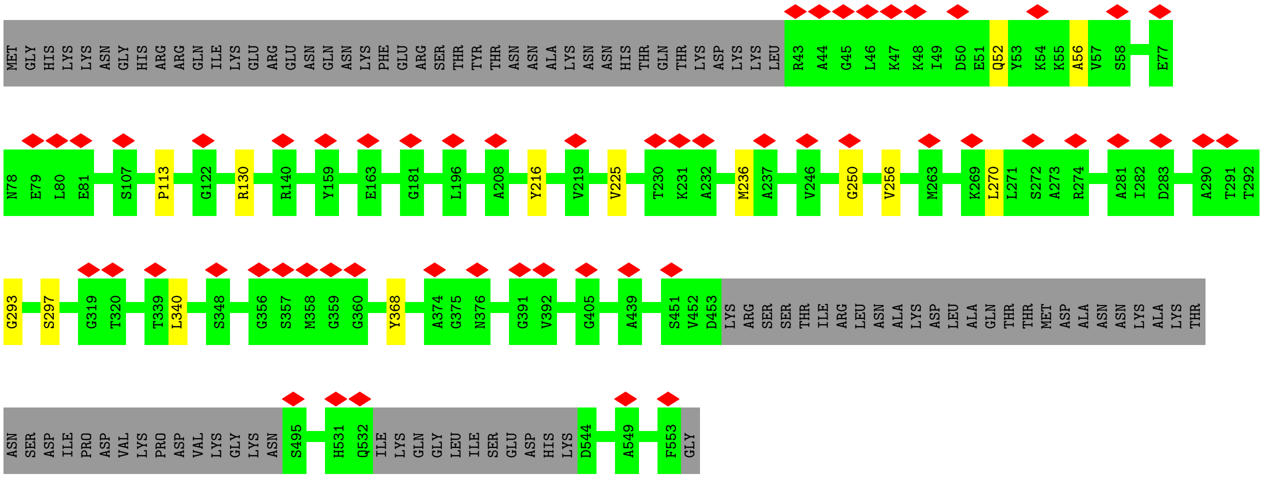
- Molecule 30: Ribosome biogenesis protein ENP2





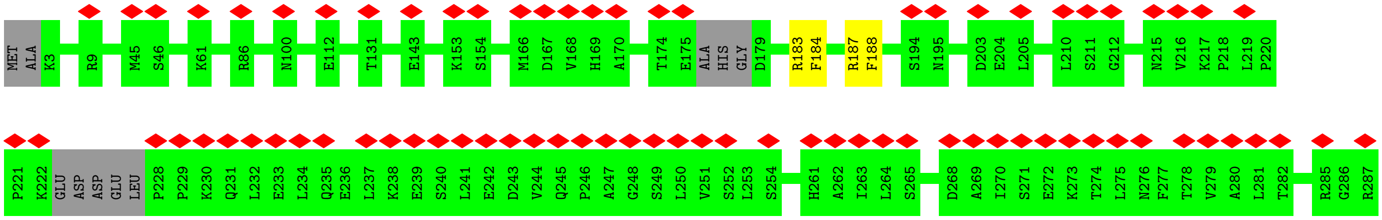
- Molecule 31: U3 small nucleolar RNA-associated protein 7

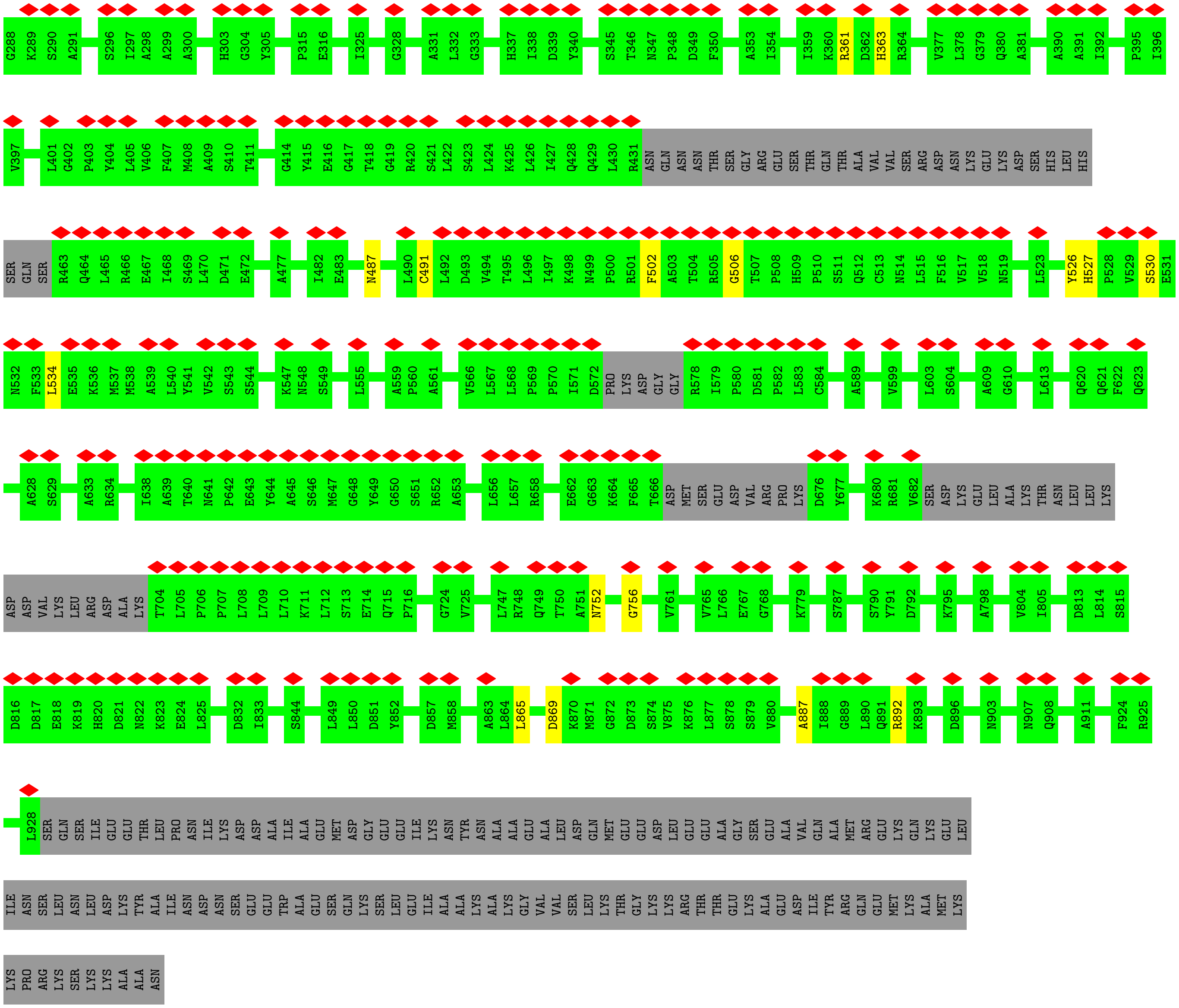
Chain LW:



- Molecule 32: RNA cytidine acetyltransferase

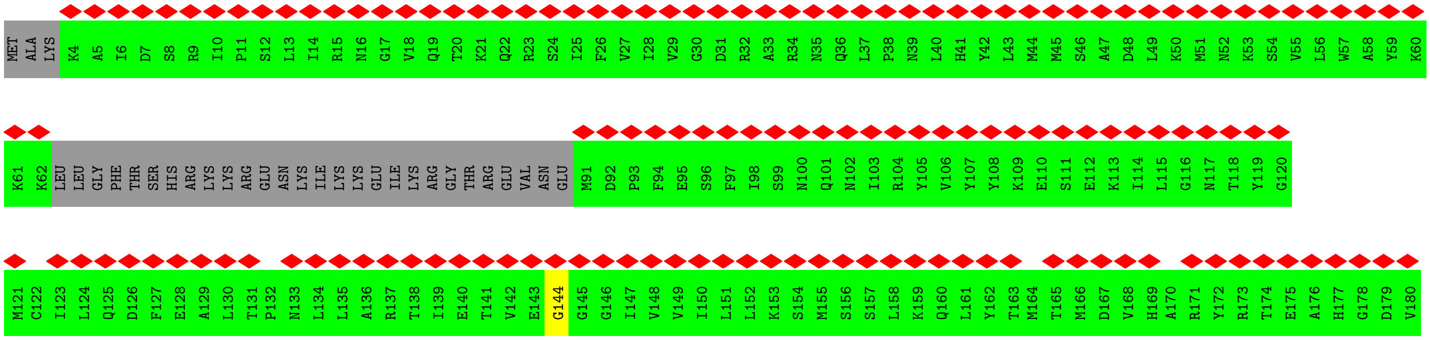
Chain LX:

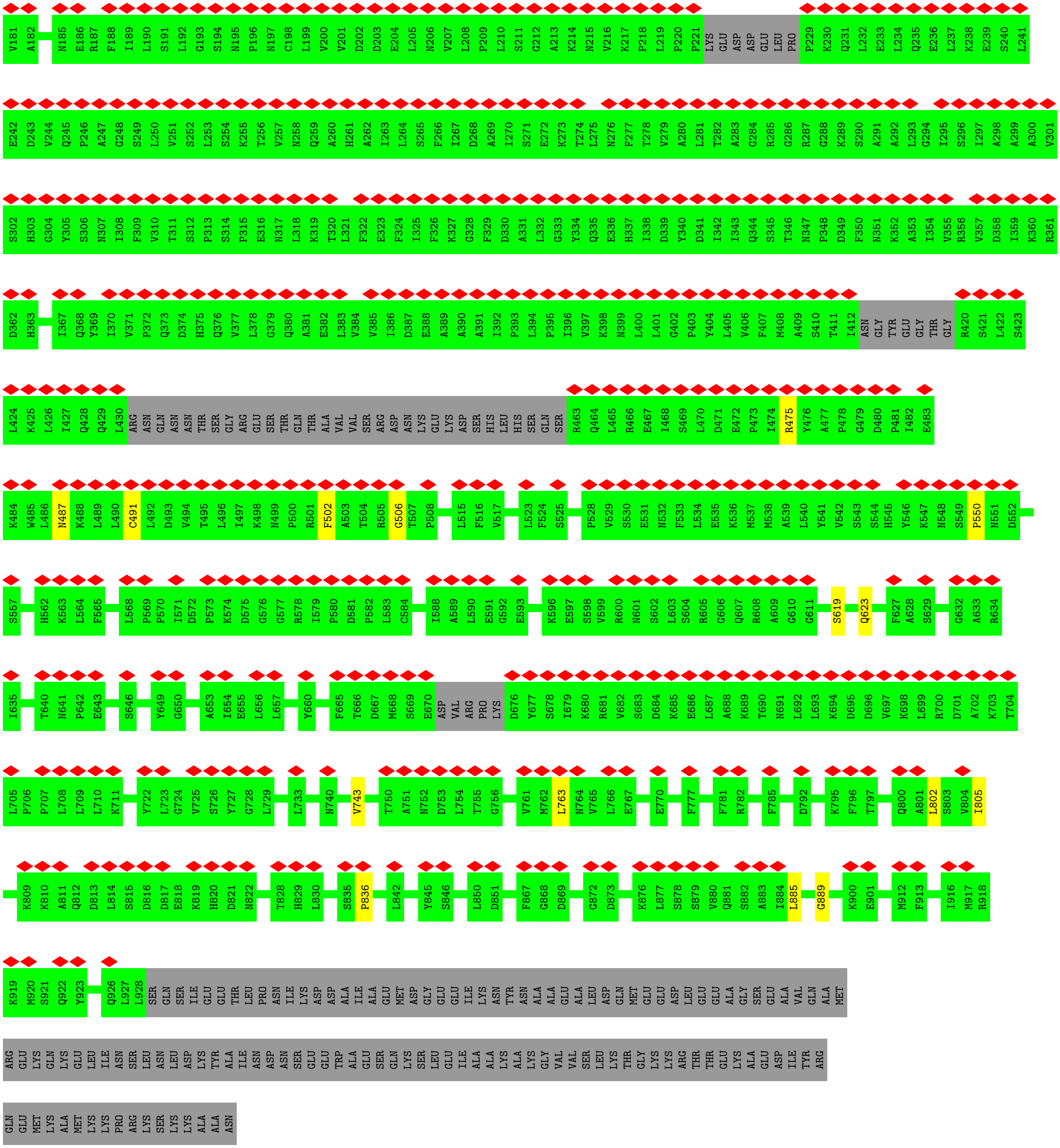




- Molecule 32: RNA cytidine acetyltransferase

Chain LY:

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E242 D243 V244 Q245 P246 A247 G248 S249 L250 V251 S252 L253 S254 K255 T256 V257 N258 Q259 A260 H261 A262 I263 L264 S265 F266 I267 D268 A269 I270 S271 E272 K273 T274 L275 N276 F277 T278 V279 A280 L281 T282 A283 G284 R285 G286 R287 G288 K289 S290 A291 A292 L293 G294 I295 S296 I297 A298 A299 A300 V301

S302 H303 G304 Y305 S306 N307 I308 F309 V310 T311 S312 P313 S314 P315 E316 N317 L318 K319 T320 L321 F322 E323 F324 I325 F326 K327 G328 F329 D330 A331 L332 G333 Y334 Q335 E336 H337 I338 D339 Y340 D341 I342 I343 Q344 S345 T346 N347 P348 D349 F350 N351 K352 A353 I354 V355 R356 V357 D358 I359 K360 R361

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L424 K425 L426 I427 Q428 Q429 L430 ARG ASN GLN ASN ASN THR SER GLY ARG GLU SER THR GLN THR ALA VAL VAL SER ARG ASP ASN LYS GLU LYS ASP SER HIS LEU HIS SER GLN SER R463 Q464 L465 R466 E467 I468 S469 L470 D471 E472 P473 I474 R475 Y476 A477 P478 G479 D480 P481 I482 E483

K484 W485 L486 N487 K488 L489 L490 C491 L492 D493 V494 T495 L496 I497 K498 N499 P500 R501 F502 A503 T504 R505 G506 T507 P508 L515 F516 V517 L523 F524 S525 P528 V529 S530 E531 N532 F533 L534 E535 K536 M537 M538 A539 L540 Y541 V542 S543 S544 H545 Y546 K547 N548 S549 P550 N551 D552

S557 H562 K563 L564 F565 L568 P569 P570 I571 D572 P573 K574 D575 G576 G577 R578 I579 P580 D581 P582 L583 C584 I588 A589 L590 E591 G592 E593 K596 E597 S598 V599 R600 N601 S602 L603 S604 R605 G606 Q607 R608 A609 G610 G611 S619 Q623 F627 A628 S629 G632 A633 R634

I635 T640 N641 P642 E643 S646 Y649 G650 A653 I654 E655 L656 L657 Y660 F665 T666 D667 M668 S669 E670 ASP VAL ARG PRO LYS D676 Y677 S678 I679 K680 R681 V682 S683 D684 K685 E686 L687 A688 K689 T690 N691 L692 L693 K694 D695 D696 V697 K698 L699 R700 D701 A702 K703 T704

L705 P706 P707 L708 L709 L710 K711 Y722 L723 G724 V725 S726 Y727 G728 L729 L733 N740 V743 T750 A751 N752 D753 L754 T755 G756 V761 M762 L763 N764 V765 L766 E767 E770 F777 F781 R782 F785 D792 K795 F796 T797 Q800 A801 L802 S803 V804 I805

K809 K810 A811 Q812 D813 L814 S815 D816 D817 E818 K819 H820 D821 N822 T828 H829 L830 S835 P836 L842 Y845 S846 L850 D851 F867 G868 D869 G872 D873 K876 L877 S878 S879 V880 Q881 S882 A883 I884 L885 G889 K900 E901 M912 F913 I916 M917 R918

K919 M920 S921 Q922 Y923 Q926 L927 L928 SER GLN SER ILE GLU GLU THR LEU PRO ASN ILE LYS ASP ASP ALA ILE ALA GLU MET ASP GLY GLU GLU ILE LYS ASN TYR ASN ALA ALA GLU ALA LEU ASP GLN MET GLU GLU ASP LEU GLU GLU ALA GLY SER GLU ALA VAL GLN ALA MET

ARG GLU LYS GLN LYS GLU LEU ILE ASN SER LEU ASN LEU ASP LYS TYR ALA ILE ASN ASP ASN SER GLU GLU TRP ALA GLU SER GLN LYS SER LEU GLU ILE ALA ALA LYS ALA LYS GLY VAL VAL SER LEU LYS THR GLY LYS LYS ARG THR THR GLU LYS ALA ASP ILE TYR ARG

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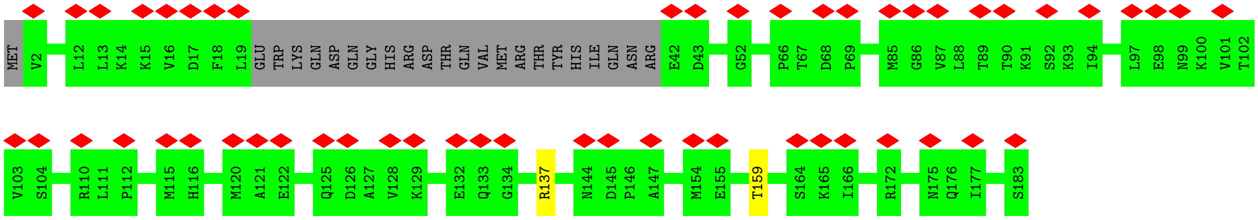
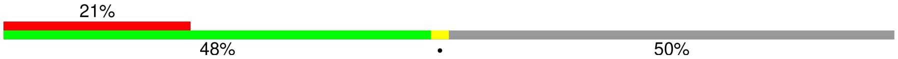
- Molecule 33: U3 small nucleolar ribonucleoprotein protein IMP3

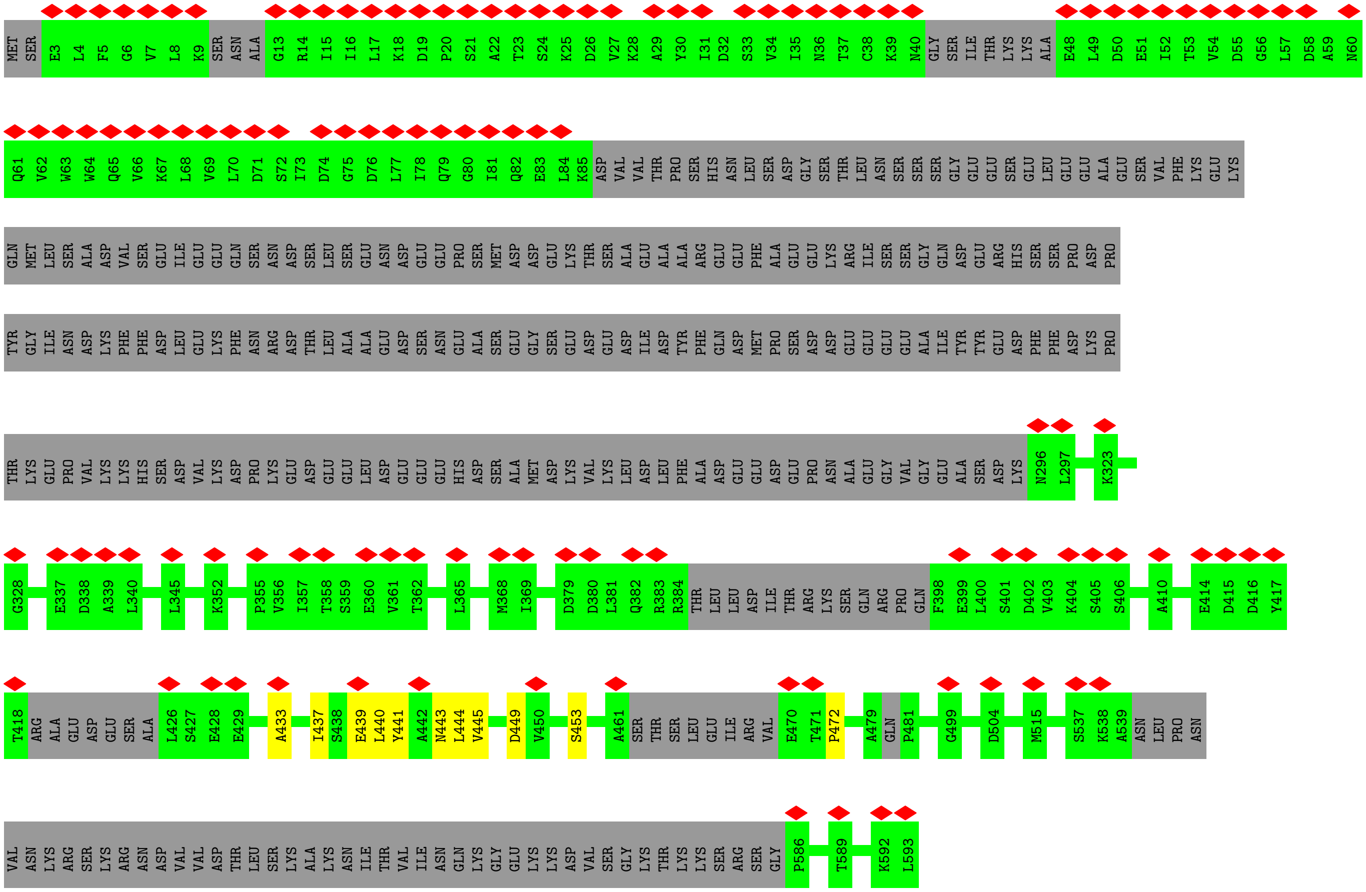
Chain LZ:

- Molecule 34: U3 small nucleolar RNA-associated protein MPP10

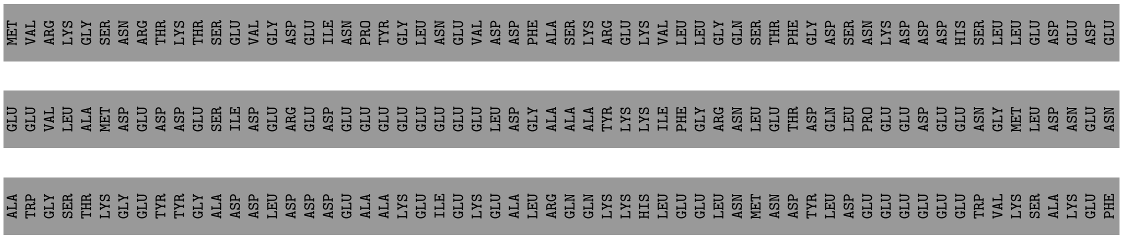
Chain NA:

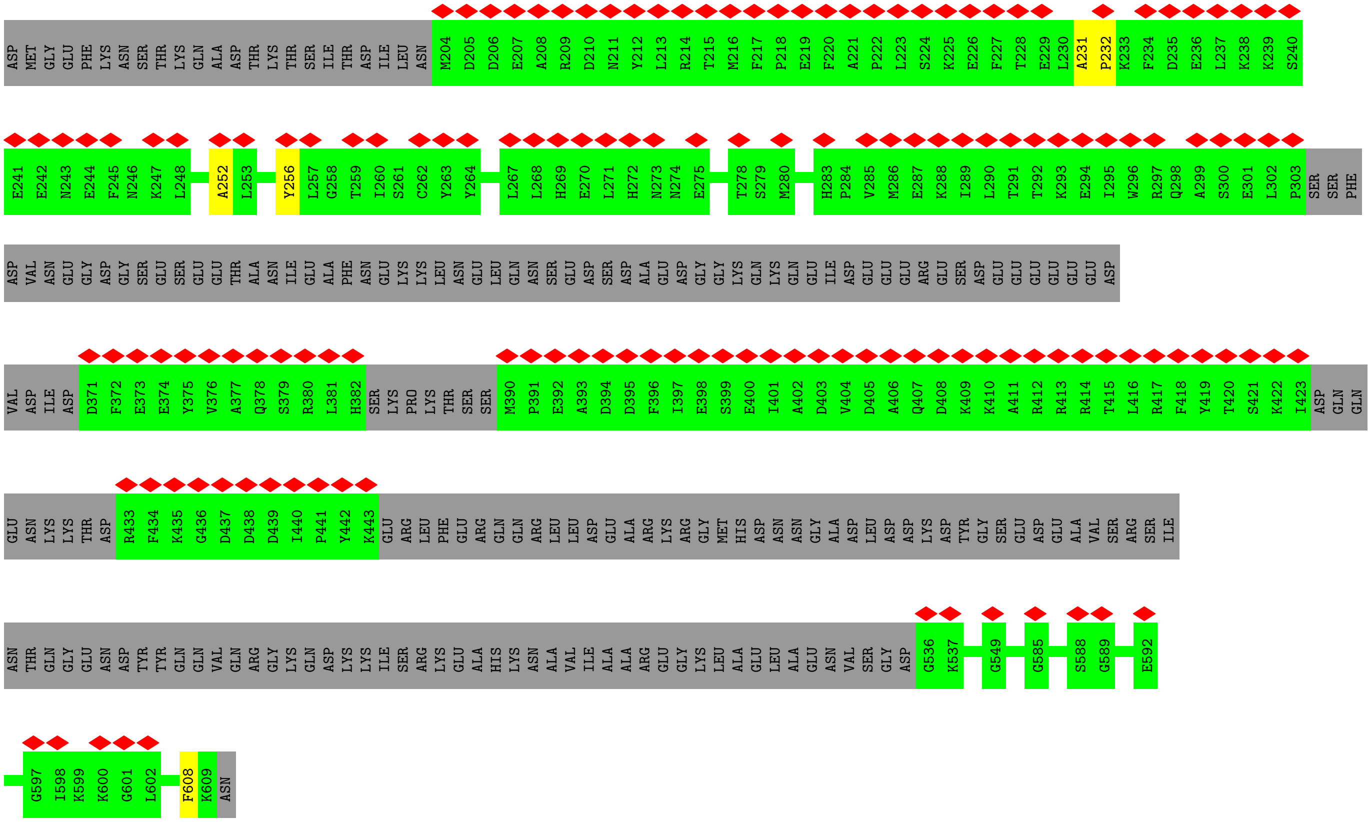




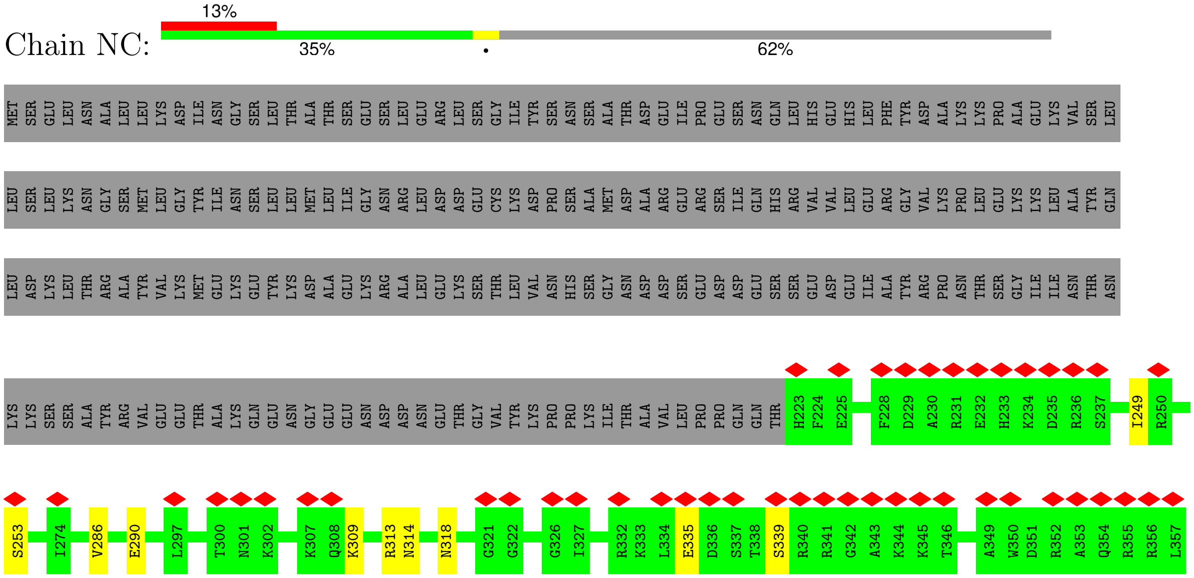
- Molecule 35: Something about silencing protein 10

Chain NB:

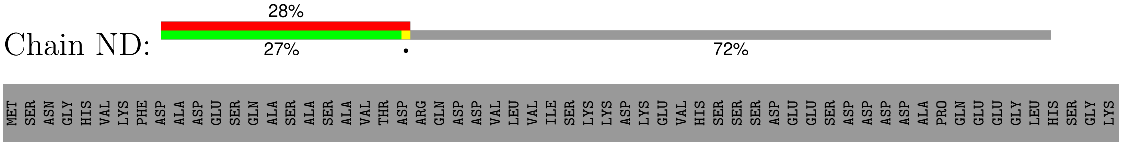


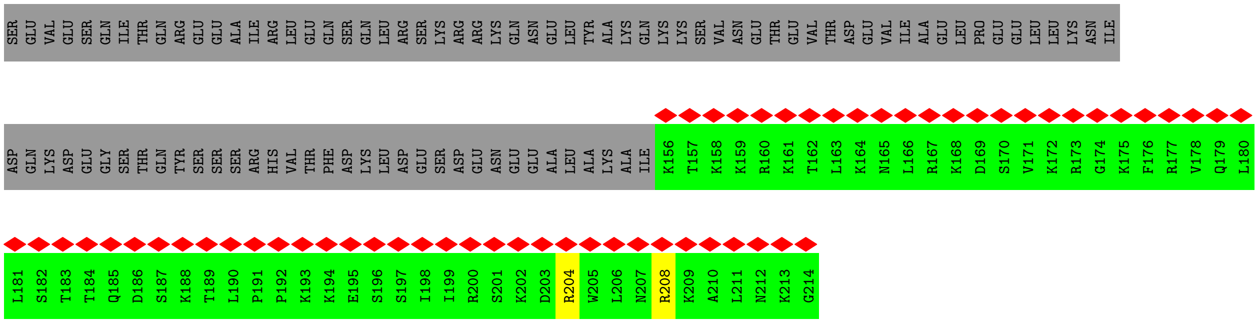


- Molecule 36: U3 small nucleolar ribonucleoprotein protein LCP5



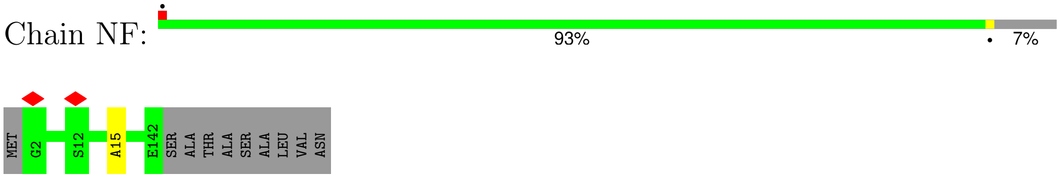
- Molecule 37: Bud site selection protein 21





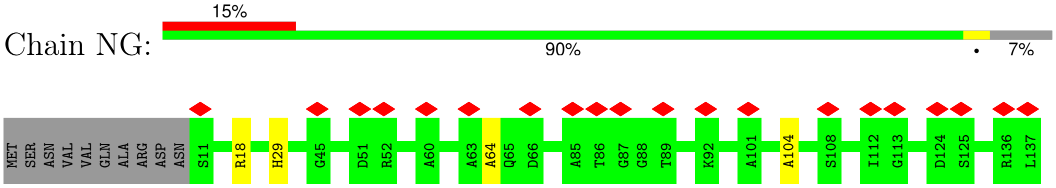
- Molecule 38: 40S ribosomal protein S13

Chain NF:



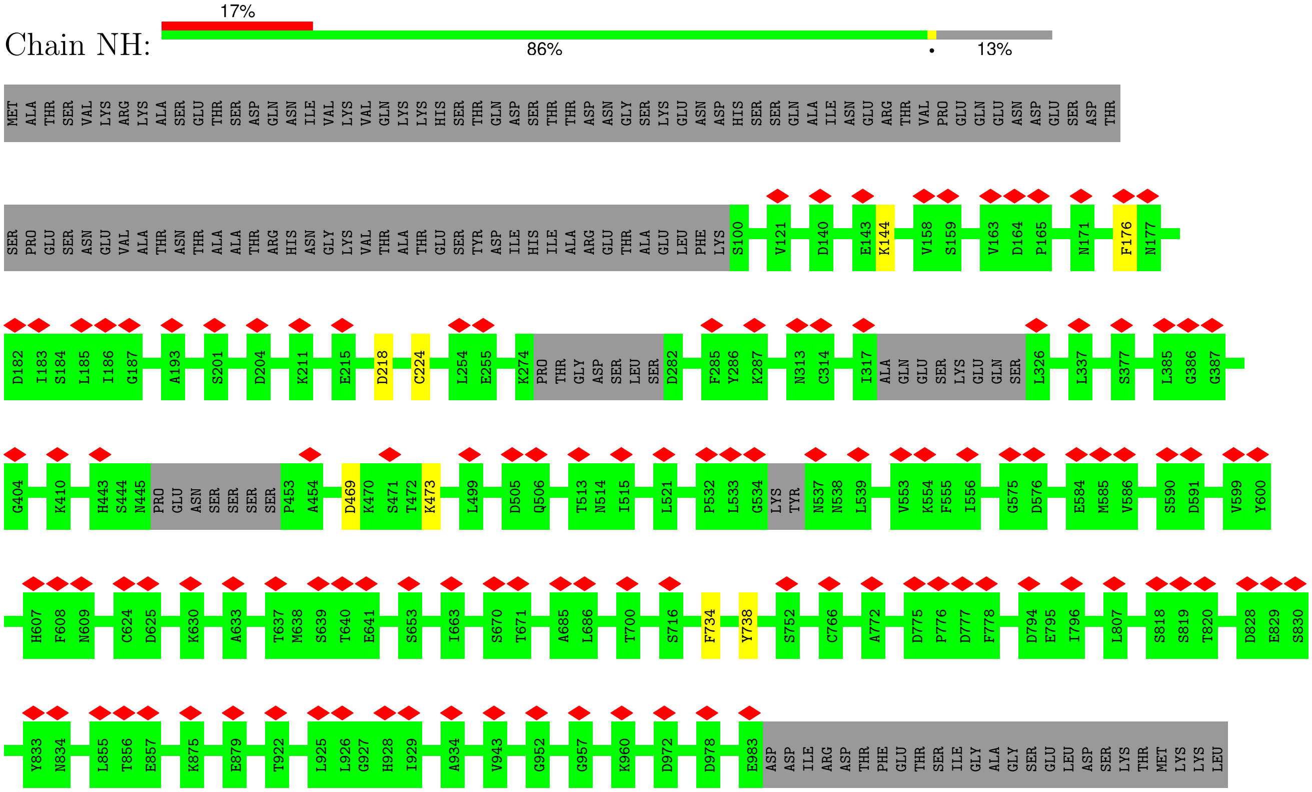
- Molecule 39: 40S ribosomal protein S14-A

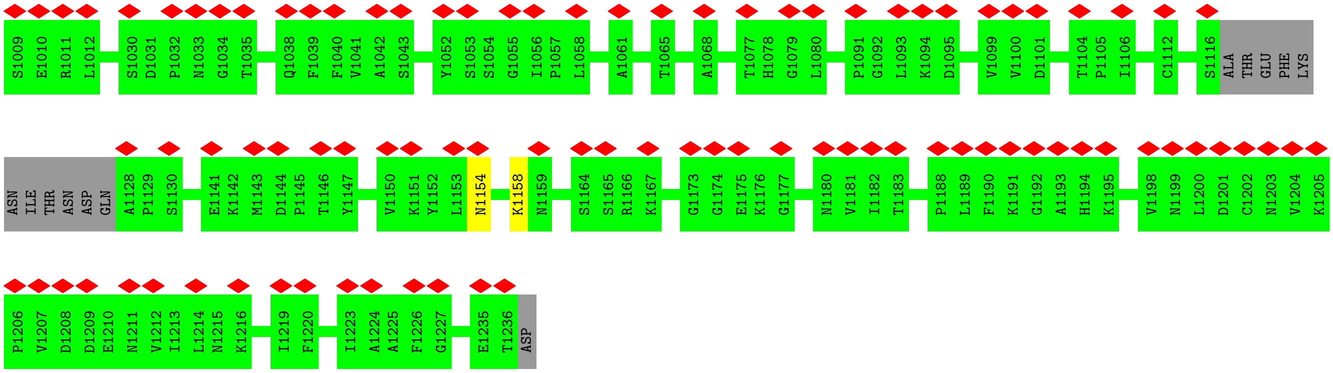
Chain NG:



- Molecule 40: U3 small nucleolar RNA-associated protein 22

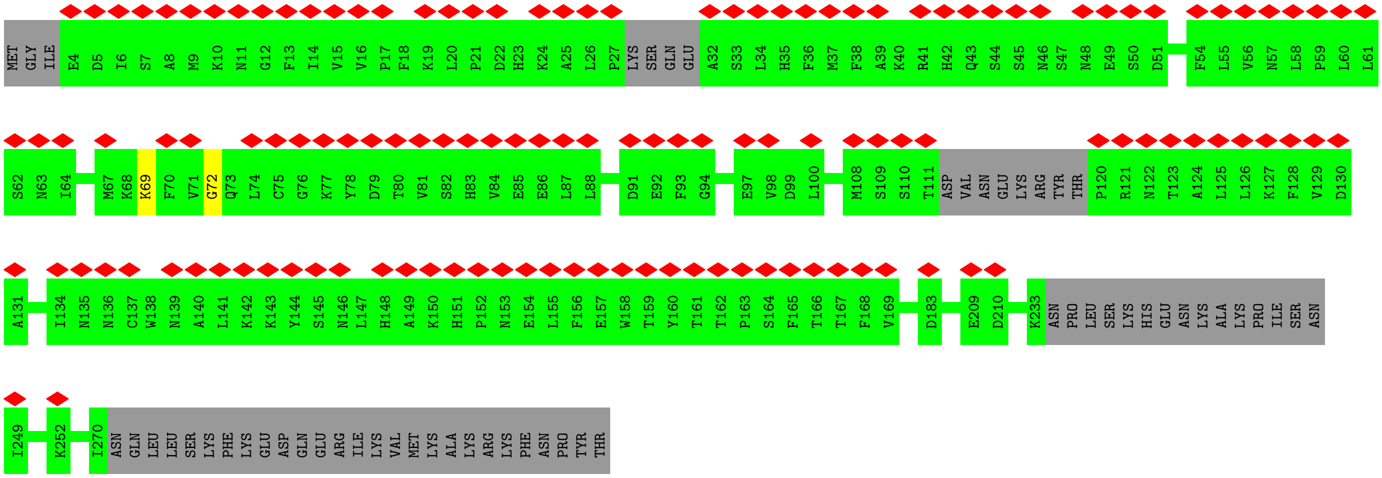
Chain NH:





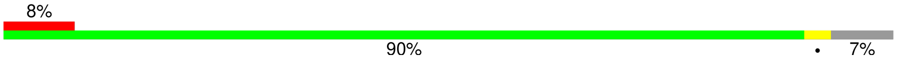
- Molecule 41: Ribosomal RNA-processing protein 7

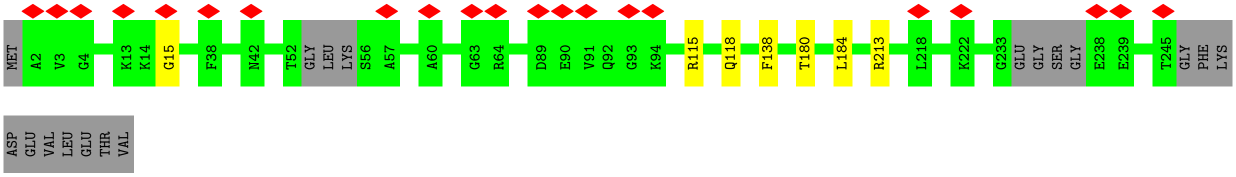
Chain NI:



- Molecule 42: Small ribosomal subunit protein eS1A

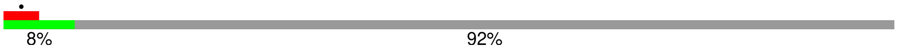
Chain NM:

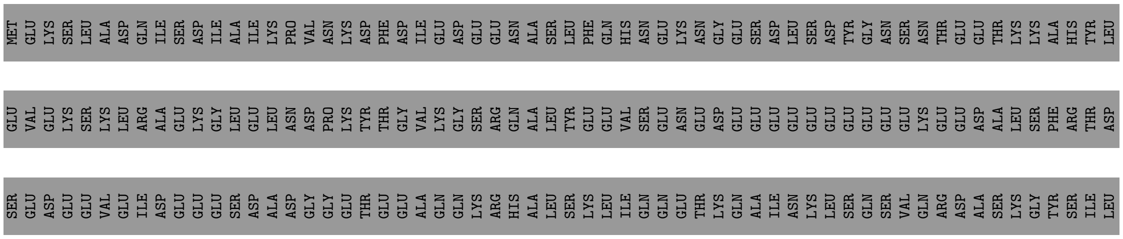


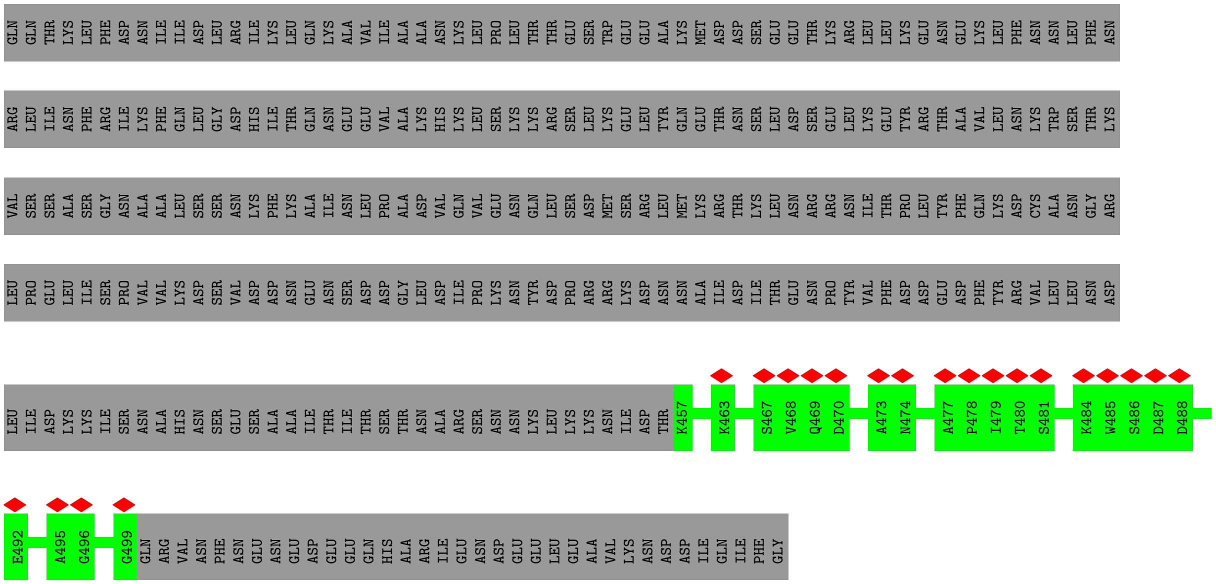


- Molecule 43: Protein BFR2

Chain NN:

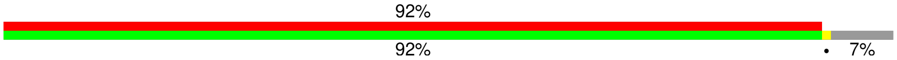


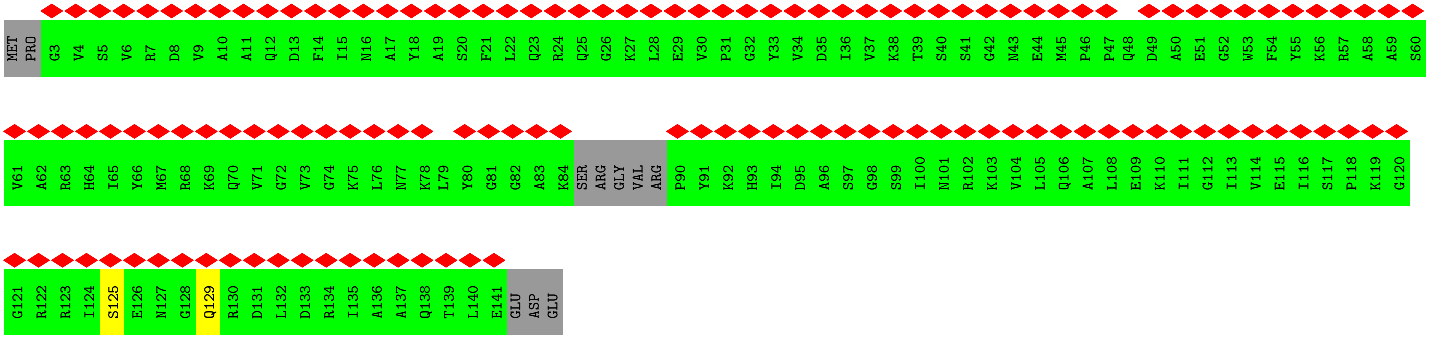




- Molecule 44: 40S ribosomal protein S19-A

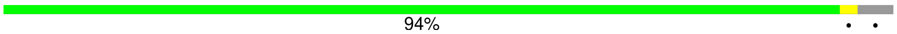
Chain NP:

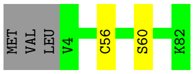




- Molecule 45: 40S ribosomal protein S27-A

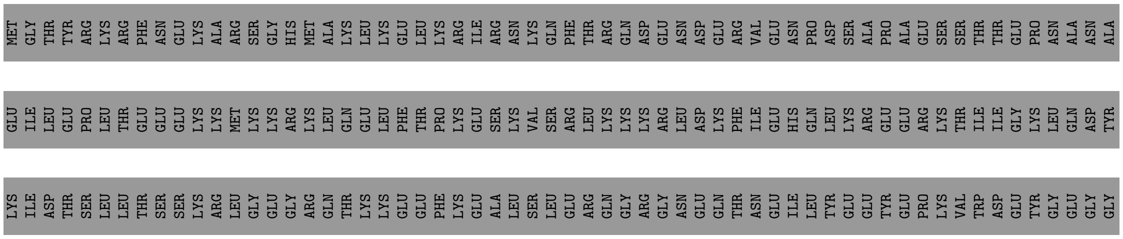
Chain NQ:

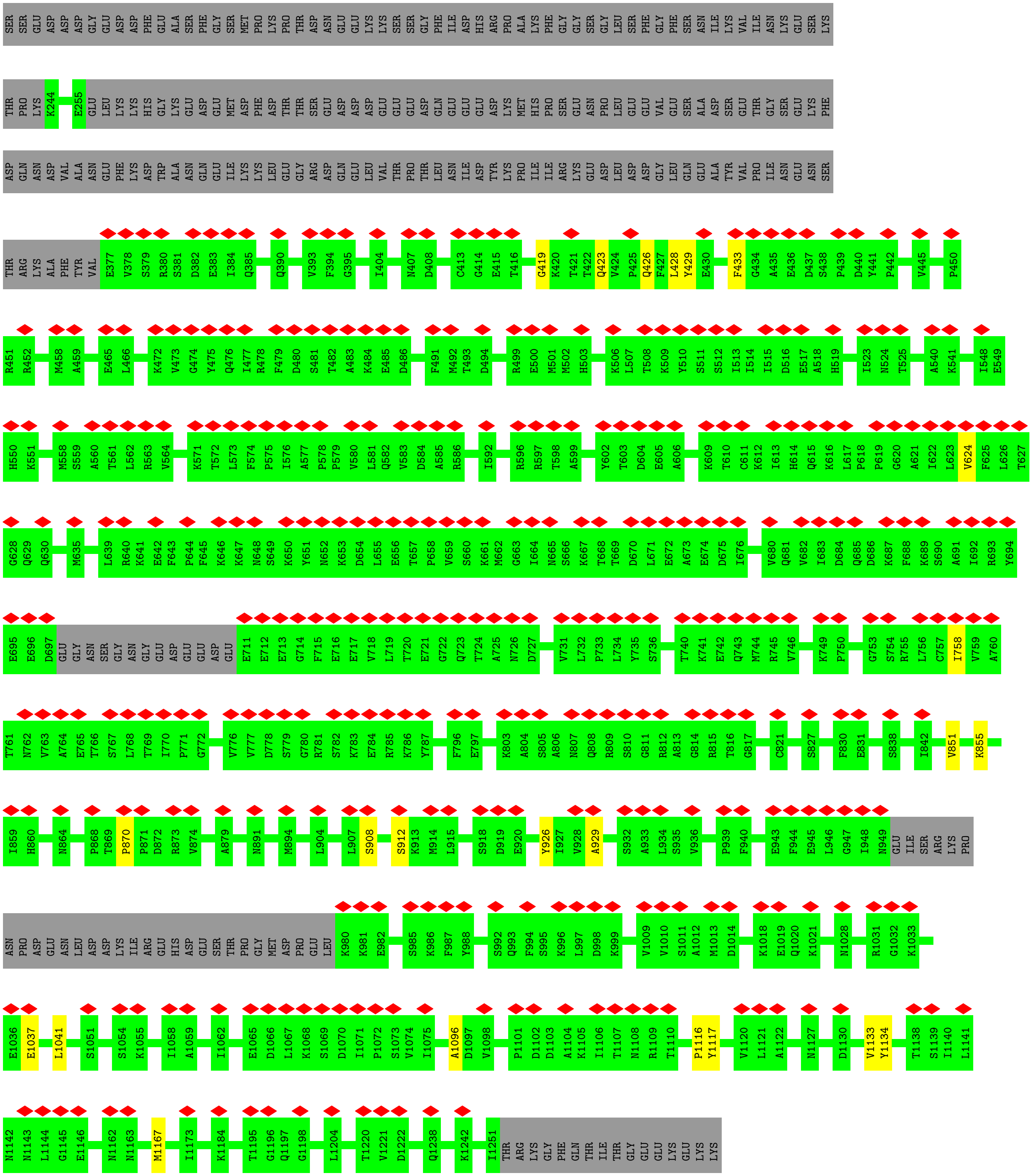




- Molecule 46: Probable ATP-dependent RNA helicase DHR1

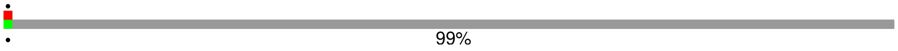
Chain NS:

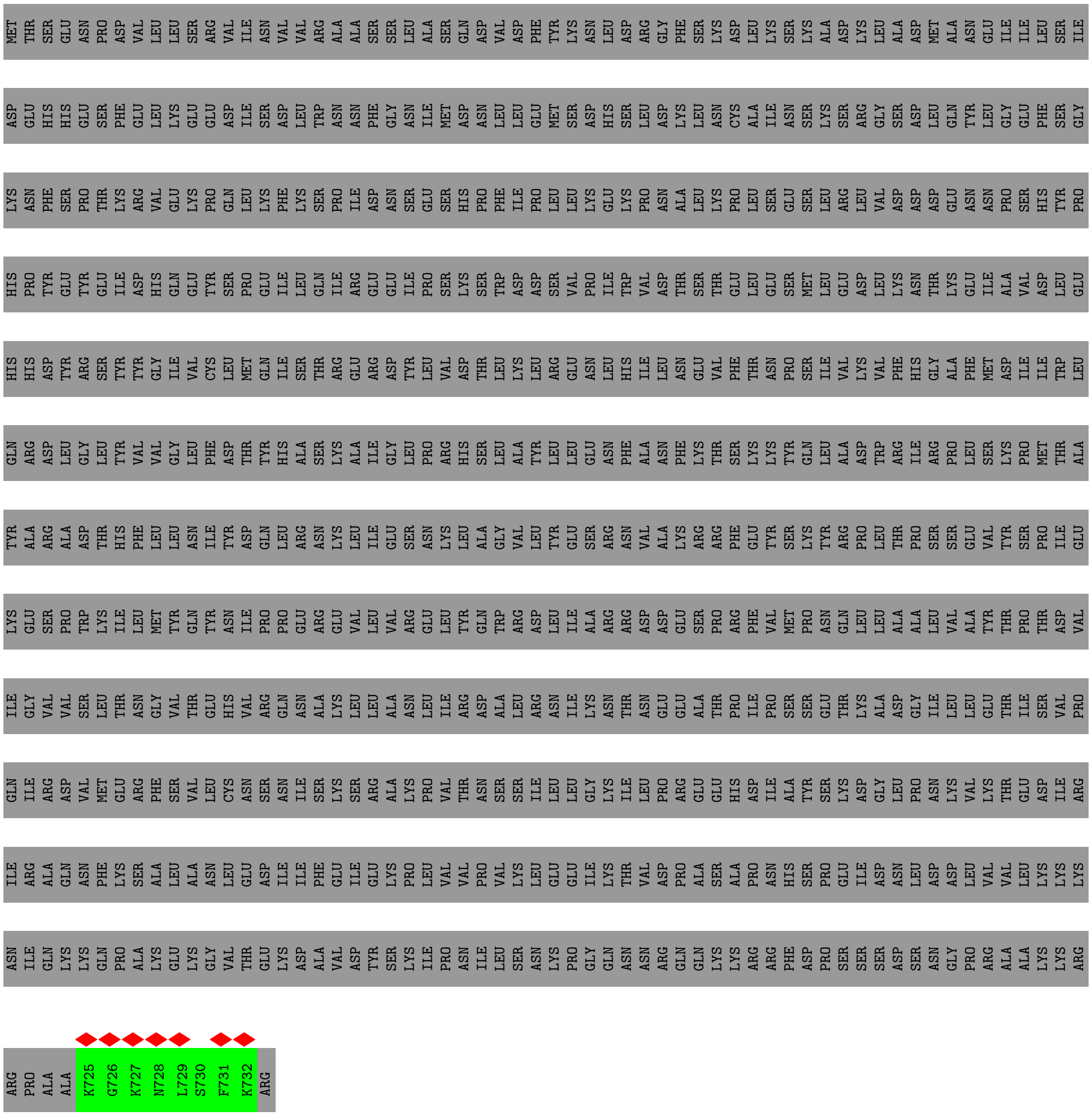




- Molecule 47: Exosome complex exonuclease RRP6

Chain NV:

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ASP GLU HIS HIS GLU SER PHE GLU LEU LYS GLU GLU ASP ILE SER ASP LEU TRP ASN ASN PHE GLY ASN ILE MET ASP ASN LEU LEU GLU MET SER ASP HIS SER LEU ASP LYS LEU ASN CYS ALA ILE ASN SER LYS SER ARG GLY SER ASP LEU GLN TYR LEU GLY GLU PHE SER GLY

LYS ASN PHE SER PRO THR LYS ARG VAL GLU LYS PRO GLN LEU LYS PHE LYS SER PRO ILE ASP ASN SER GLU SER HIS PRO PHE ILE PRO LEU LEU LYS GLU LYS PRO ASN ALA LEU LYS PRO LEU SER GLU SER LEU ARG LEU VAL ASP ASP ASP GLU ASN ASN PRO SER HIS TYR PRO

HIS PRO TYR GLU TYR GLU ILE ASP HIS GLN GLU TYR SER PRO GLU ILE LEU GLN ILE ARG GLU GLU ILE PRO SER LYS SER TRP ASP ASP SER VAL PRO ILE TRP VAL ASP THR SER THR GLU LEU GLU SER MET LEU GLU ASP LEU LYS ASN THR LYS GLU ILE ALA VAL ASP LEU GLU

HIS HIS ASP TYR ARG SER TYR TYR GLY ILE VAL CYS LEU MET GLN ILE SER THR ARG GLU ARG ASP TYR LEU VAL ASP THR LEU LYS LEU ARG GLU ASN LEU HIS ILE LEU ASN GLU VAL PHE THR ASN PRO SER ILE VAL LYS VAL PHE HIS GLY ALA PHE MET ASP ILE ILE TRP LEU

GLN ARG ASP LEU GLY LEU TYR VAL VAL GLY LEU PHE ASP THR TYR HIS ALA SER LYS ALA ILE GLY LEU PRO ARG HIS SER LEU ALA TYR LEU LEU GLU ASN PHE ALA ASN PHE LYS THR SER LYS LYS TYR GLN LEU ALA ASP TRP ARG ILE ARG PRO LEU SER LYS PRO MET THR ALA

TYR ALA ARG ALA ASP THR HIS PHE LEU LEU ASN ILE TYR ASP GLN LEU ARG ASN LYS LEU ILE GLU SER ASN LYS LEU ALA GLY VAL LEU TYR GLU SER ARG ASN VAL ALA LYS ARG ARG PHE GLU TYR SER LYS TYR ARG PRO LEU THR PRO SER SER GLU VAL TYR SER PRO ILE GLU

LYS GLU SER PRO TRP LYS ILE LEU MET TYR GLN TYR ASN ILE PRO PRO GLU ARG GLU VAL LEU VAL ARG GLU LEU TYR GLN TRP ARG ASP LEU ILE ALA ARG ARG ASP ASP GLU SER PRO ARG PHE VAL MET PRO ASN GLN LEU LEU ALA ALA LEU VAL ALA TYR THR PRO THR ASP VAL

ILE GLY VAL VAL SER LEU THR ASN GLY VAL THR GLU HIS VAL ARG GLN ASN ALA LYS LEU LEU ALA ASN LEU ILE ARG ASP ALA LEU ARG ASN ILE LYS ASN THR ASN GLU GLU ALA THR PRO ILE PRO SER SER GLU THR LYS ALA ASP GLY ILE LEU LEU GLU THR ILE SER VAL PRO

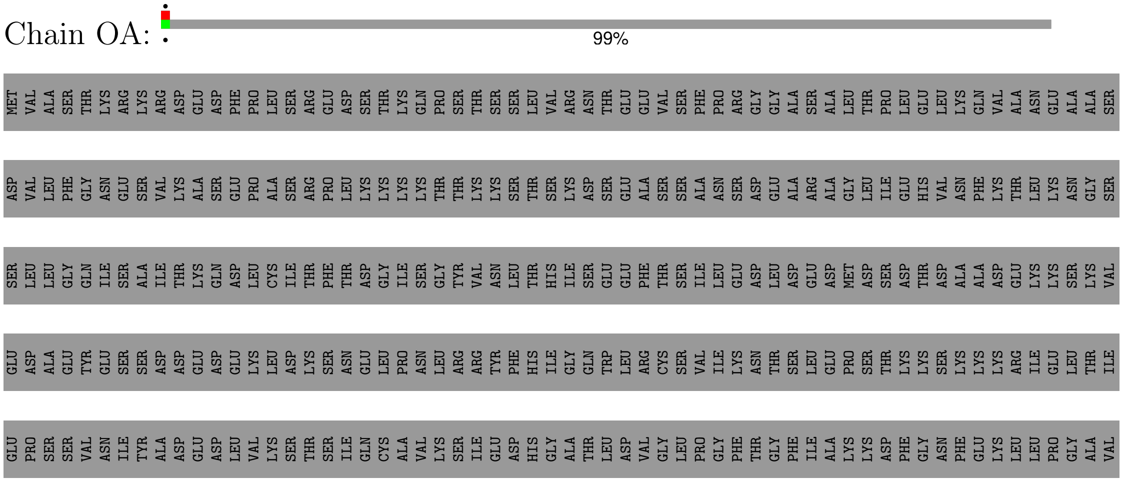
GLN ILE ARG ASP VAL MET GLU ARG PHE SER VAL LEU CYS ASN SER ASN ILE SER LYS SER ARG ALA LYS PRO VAL THR ASN SER SER ILE LEU LEU GLY LYS ILE LEU PRO ARG GLU GLU HIS ASP ILE ALA TYR SER LYS ASP GLY LEU PRO ASN LYS VAL LYS THR GLU ASP ILE ARG

ILE ARG ALA GLN ASN PHE LYS SER ALA LEU ALA ASN LEU GLU ASP ILE ILE PHE GLU ILE GLU LYS PRO LEU VAL VAL PRO VAL LYS LEU GLU GLU ILE LYS THR VAL ASP PRO ALA SER ALA PRO ASN HIS SER PRO GLU ILE ASP ASN LEU ASP ASP LEU VAL VAL LEU LYS LYS LYS

ASN ILE GLN LYS LYS GLN PRO ALA LYS GLU LYS GLY VAL THR GLU LYS ASP ALA VAL ASP TYR SER LYS ILE PRO ASN ILE LEU SER ASN LYS PRO GLY GLN ASN ASN ARG GLN GLN LYS LYS ARG ARG PHE ASP PRO SER SER SER ASP SER ASN GLY PRO ARG ALA ALA LYS LYS ARG

ARG PRO ALA ALA K725 G726 K727 N728 L729 S730 F731 K732 ARG

- Molecule 48: rRNA biogenesis protein RRP5



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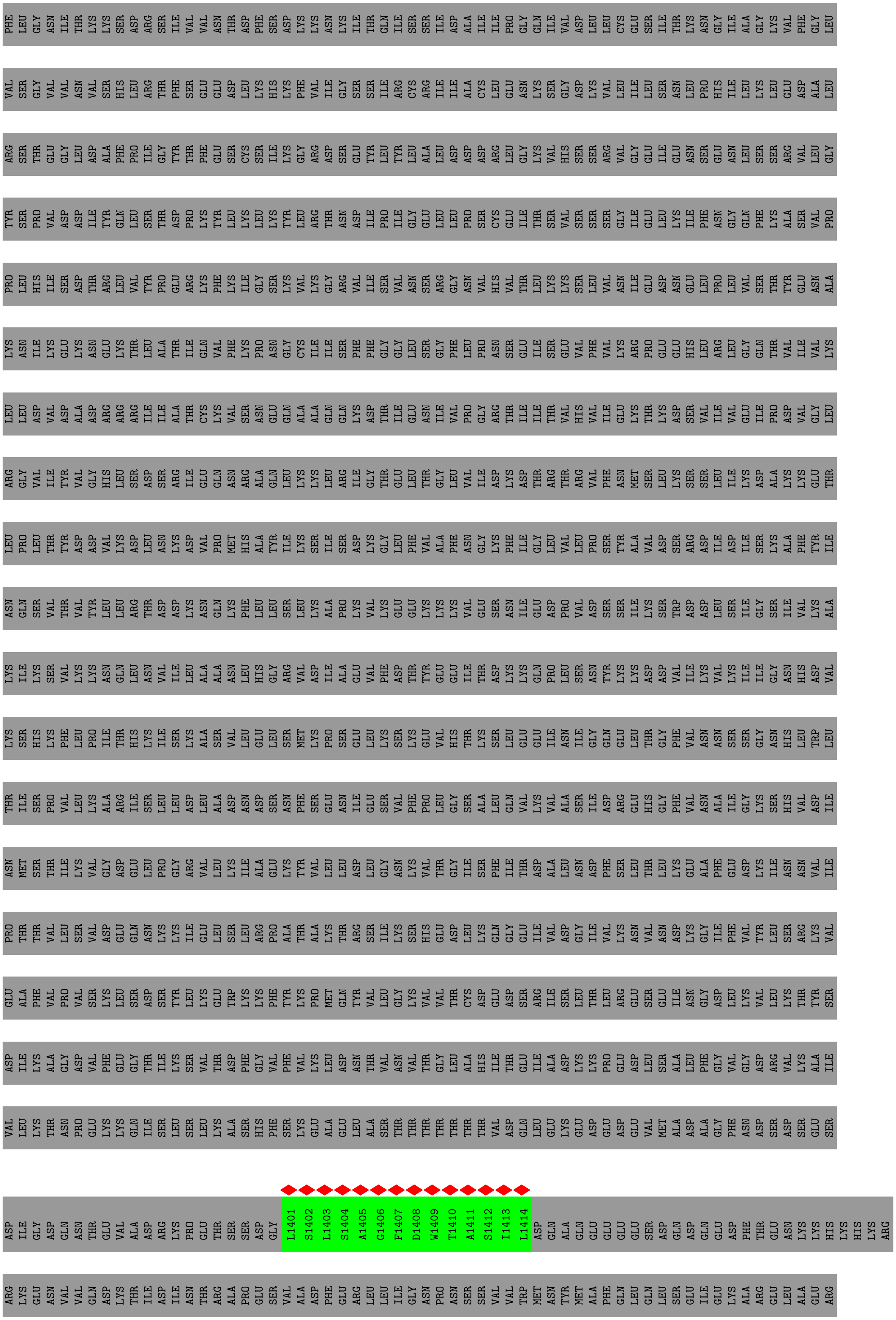
ASP VAL LEU PHE GLY ASN GLU SER VAL LYS ALA SER GLU PRO ALA SER ARG PRO LEU LYS LYS LYS LYS THR THR LYS LYS SER THR SER LYS ASP SER GLU ALA SER SER ALA ASN SER ASP GLU ALA ARG ALA GLY LEU ILE GLU HIS VAL ASN PHE LYS THR LEU LYS ASN GLY SER

SER LEU LEU GLY GLN ILE SER ALA ILE THR LYS GLN ASP LEU CYS ILE THR PHE THR ASP GLY ILE SER GLY TYR VAL ASN LEU THR HIS ILE SER GLU GLU PHE THR SER ILE LEU GLU ASP LEU ASP GLU ASP MET ASP SER ASP THR ASP ALA ALA ASP GLU LYS LYS SER LYS VAL

GLU ASP ALA GLU TYR GLU SER SER ASP ASP GLU ASP GLU LYS LEU ASP LYS SER ASN GLU LEU PRO ASN LEU ARG ARG TYR PHE HIS ILE GLY GLN TRP LEU ARG CYS SER VAL ILE LYS ASN THR SER LEU GLU PRO SER THR LYS LYS SER LYS LYS LYS ARG ILE GLU LEU THR ILE

GLU PRO SER SER VAL ASN ILE TYR ALA ASP GLU ASP LEU VAL LYS SER THR SER ILE GLN CYS ALA VAL LYS SER ILE GLU ASP HIS GLY ALA THR LEU ASP VAL GLY LEU PRO GLY PHE THR GLY PHE ILE ALA LYS LYS ASP PHE GLY ASN PHE GLU LYS LEU LEU PRO GLY ALA VAL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VAL SER GLY VAL VAL ASN VAL SER HIS LEU ARG THR PHE SER GLU GLU ASP LEU LYS HIS LYS PHE VAL ILE GLY SER SER ILE ARG CYS ARG ILE ILE ALA CYS LEU GLU ASN LYS SER GLY ASP LYS VAL LEU ILE LEU SER ASN LEU PRO HIS ILE LEU LYS LEU GLU ASP ALA LEU
ARG SER THR GLU GLY LEU ASP ALA PHE PRO ILE GLY TYR THR PHE GLU SER CYS SER ILE LYS GLY ARG ASP SER GLU TYR LEU TYR LEU ALA LEU ASP ASP ASP ARG LEU GLY LYS VAL HIS SER SER ARG VAL GLY GLU ILE GLU ASN SER GLU ASN LEU SER SER ARG VAL LEU GLY
TYR SER PRO VAL ASP ASP ILE TYR GLN LEU SER THR ASP PRO LYS TYR LEU LYS LEU LYS TYR LEU ARG THR ASN ASP ILE PRO ILE GLY GLU LEU LEU PRO SER CYS GLU ILE THR SER VAL SER SER SER GLY ILE GLU LEU LYS ILE PHE ASN GLY GLN PHE LYS ALA SER VAL PRO
PRO LEU HIS ILE SER ASP THR ARG LEU VAL TYR PRO GLU ARG LYS PHE LYS ILE GLY SER LYS VAL LYS GLY ARG VAL ILE SER VAL ASN SER ARG GLY ASN VAL HIS VAL THR LEU LYS LYS SER LEU VAL ASN ILE GLU ASP ASN GLU LEU PRO LEU VAL SER THR TYR GLU ASN ALA
LYS ASN ILE LYS GLU LYS ASN GLU LYS THR LEU ALA THR ILE GLN VAL PHE LYS PRO ASN GLY CYS ILE ILE SER PHE PHE GLY GLY LEU SER GLY PHE LEU PRO ASN SER GLU ILE SER GLU VAL PHE VAL LYS ARG PRO GLU GLU HIS LEU ARG LEU GLY GLN THR VAL ILE VAL LYS
LEU LEU ASP VAL ASP ALA ASP ARG ARG ARG ILE ILE ALA THR CYS LYS VAL SER ASN GLU GLN ALA ALA GLN GLN LYS ASP THR ILE GLU ASN ILE VAL PRO GLY ARG THR ILE ILE THR VAL HIS VAL ILE GLU LYS THR LYS ASP SER VAL ILE VAL GLU ILE PRO ASP VAL GLY LEU
ARG GLY VAL ILE TYR VAL GLY HIS LEU SER ASP SER ARG ILE GLU GLN ASN ARG ALA GLN LEU LYS LYS LEU ARG ILE GLY THR GLU LEU THR GLY LEU VAL ILE ASP LYS ASP THR ARG THR ARG VAL PHE ASN MET SER LEU LYS SER SER LEU ILE LYS ASP ALA LYS LYS GLU THR
LEU PRO LEU THR TYR ASP ASP VAL LYS ASP LEU ASN LYS ASP VAL PRO MET HIS ALA TYR ILE LYS SER ILE SER ASP LYS GLY LEU PHE VAL ALA PHE ASN GLY LYS PHE ILE GLY LEU VAL LEU PRO SER TYR ALA VAL ASP SER ARG ASP ILE ASP ILE SER LYS ALA PHE TYR ILE
ASN GLN SER VAL THR VAL TYR LEU LEU ARG THR ASP ASP LYS ASN GLN LYS PHE LEU LEU SER LEU LYS ALA PRO LYS VAL LYS GLU GLU LYS LYS VAL GLU SER ASN ILE GLU ASP PRO VAL ASP SER SER ILE LYS SER TRP ASP ASP LEU SER ILE GLY SER ILE VAL LYS ALA
LYS ILE LYS SER VAL LYS LYS ASN GLN LEU ASN VAL ILE LEU ALA ALA ASN LEU HIS GLY ARG VAL ASP ILE ALA GLU VAL PHE ASP THR TYR GLU GLU ILE THR ASP LYS LYS GLN PRO LEU SER ASN TYR LYS LYS ASP ASP VAL ILE LYS VAL LYS ILE ILE GLY ASN HIS ASP VAL
LYS SER HIS LYS PHE LEU PRO ILE THR HIS LYS ILE SER LYS ALA SER VAL LEU GLU LEU SER MET LYS PRO SER GLU LEU LYS SER LYS GLU VAL HIS THR LYS SER LEU GLU GLU ILE ASN ILE GLY GLN GLU LEU THR GLY PHE VAL ASN ASN SER SER GLY ASN HIS LEU TRP LEU
THR ILE SER PRO VAL LEU LYS ALA ARG ILE SER LEU LEU ASP LEU ALA ASP ASN ASP SER ASN PHE SER GLU ASN ILE GLU SER VAL PHE PRO LEU GLY SER ALA LEU GLN VAL LYS VAL ALA SER ILE ASP ARG GLU HIS GLY PHE VAL ASN ALA ILE GLY LYS SER HIS VAL ASP ILE
ASN MET SER THR ILE LYS VAL GLY ASP GLU LEU PRO GLY ARG VAL LEU LYS ILE ALA GLU LYS TYR VAL LEU LEU ASP LEU GLY ASN LYS VAL THR GLY ILE SER PHE ILE THR ASP ALA LEU ASN ASP PHE SER LEU THR LEU LYS GLU ALA PHE GLU ASP LYS ILE ASN ASN VAL ILE
PRO THR THR VAL LEU SER VAL ASP GLU GLN ASN LYS LYS ILE GLU LEU SER LEU ARG PRO ALA THR ALA LYS THR ARG SER ILE LYS SER HIS GLU ASP LEU LYS GLN GLY GLU ILE VAL ASP GLY ILE VAL LYS ASN VAL ASN ASP LYS GLY ILE PHE VAL TYR LEU SER ARG LYS VAL
GLU ALA PHE VAL PRO VAL SER LYS LEU SER ASP SER TYR LEU LYS GLU TRP LYS LYS PHE TYR LYS PRO MET GLN TYR VAL LEU GLY LYS VAL VAL THR CYS ASP GLU ASP SER ARG ILE SER LEU THR LEU ARG GLU SER GLU ILE ASN GLY ASP LEU LYS VAL LEU LYS THR TYR SER
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VAL LEU LYS THR ASN PRO GLU LYS LYS GLN ILE SER LEU SER LEU LYS ALA SER HIS PHE SER LYS GLU ALA GLU LEU ALA SER THR THR THR THR THR THR THR VAL ASP GLN LEU GLU LYS GLU ASP GLU ASP GLU VAL MET ALA ASP ALA GLY PHE ASN ASP SER ASP SER GLU SER
ASP ILE GLY ASP GLN ASN THR GLU VAL ALA ASP ARG LYS PRO GLU THR SER SER ASP GLY L1401 S1402 L1403 S1404 A1405 G1406 F1407 D1408 W1409 T1410 A1411 S1412 I1413 L1414 ASP GLN ALA GLN GLU GLU GLU SER ASP GLN ASP GLN GLU ASP PHE THR GLU ASN LYS LYS HIS LYS HIS LYS ARG
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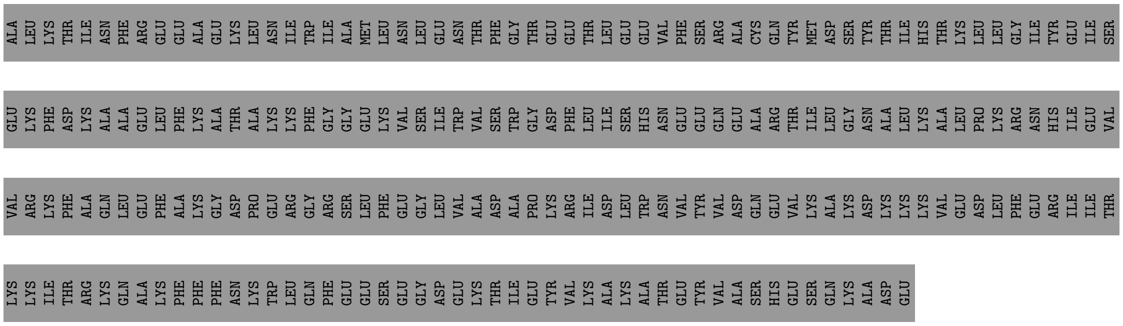
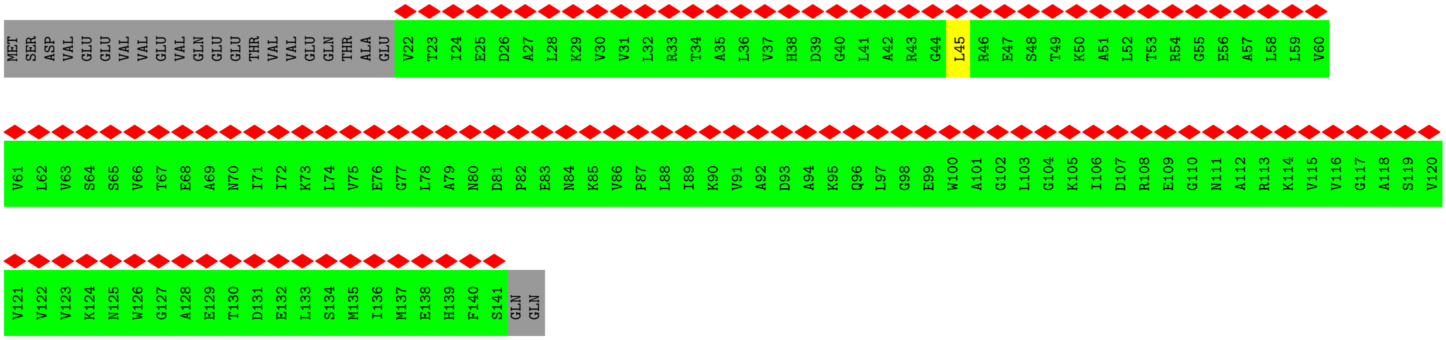


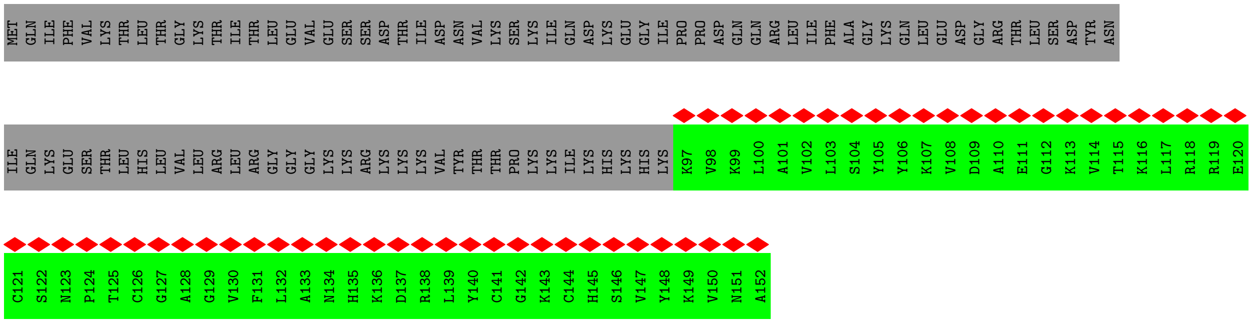
- Molecule 49: 40S ribosomal protein S12

Chain OH:



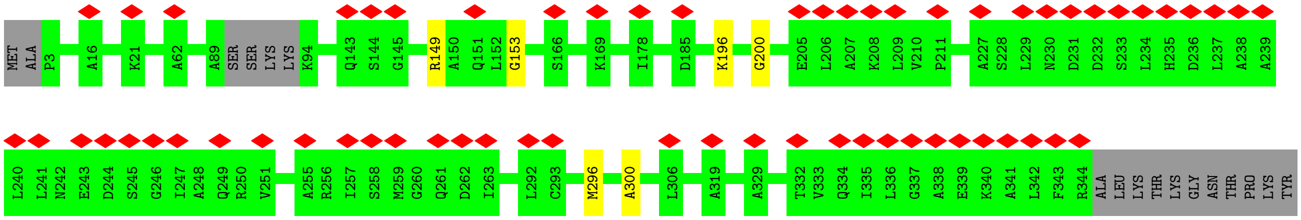
- Molecule 50: Ubiquitin-40S ribosomal protein S31

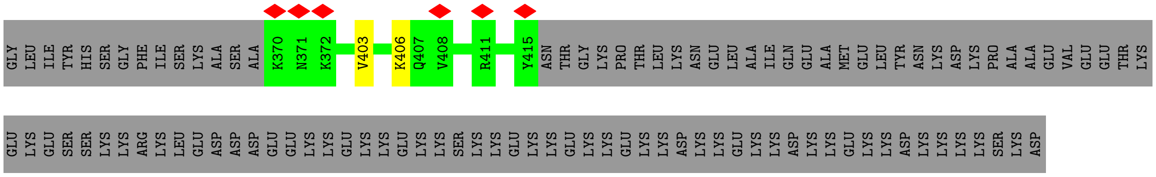
Chain OU:



- Molecule 51: Nucleolar protein 56

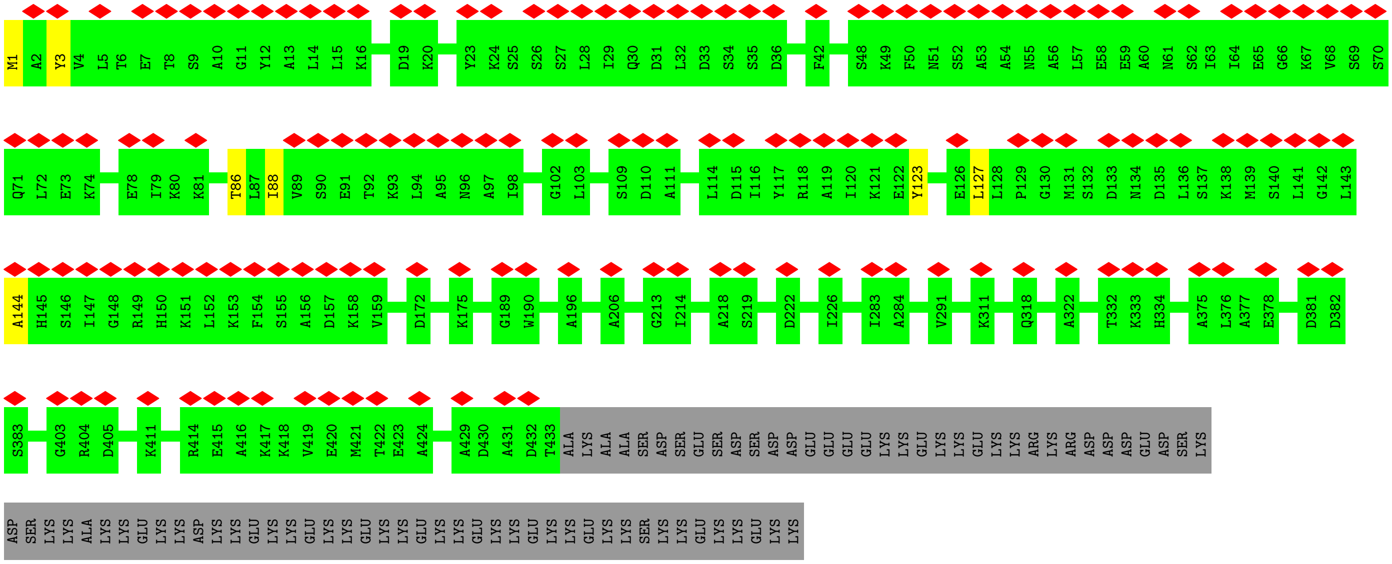
Chain SA:





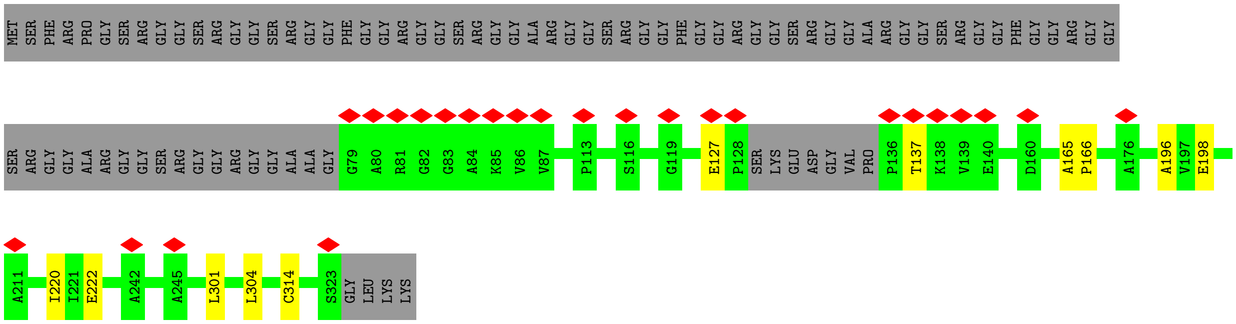
- Molecule 52: Nucleolar protein 58

Chain SB:



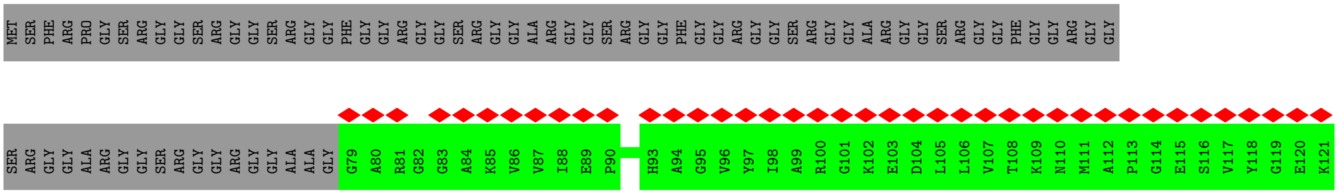
- Molecule 53: rRNA 2’-O-methyltransferase fibrillarin

Chain SC:



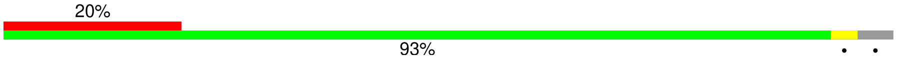
- Molecule 53: rRNA 2’-O-methyltransferase fibrillarin

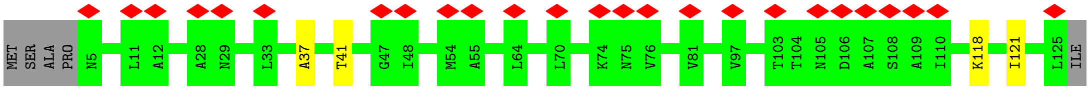
Chain SD:



- Molecule 54: 13 kDa ribonucleoprotein-associated protein

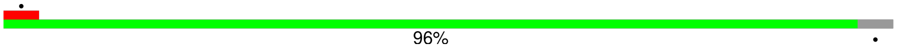
Chain SE:

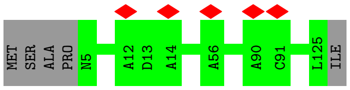




- Molecule 54: 13 kDa ribonucleoprotein-associated protein

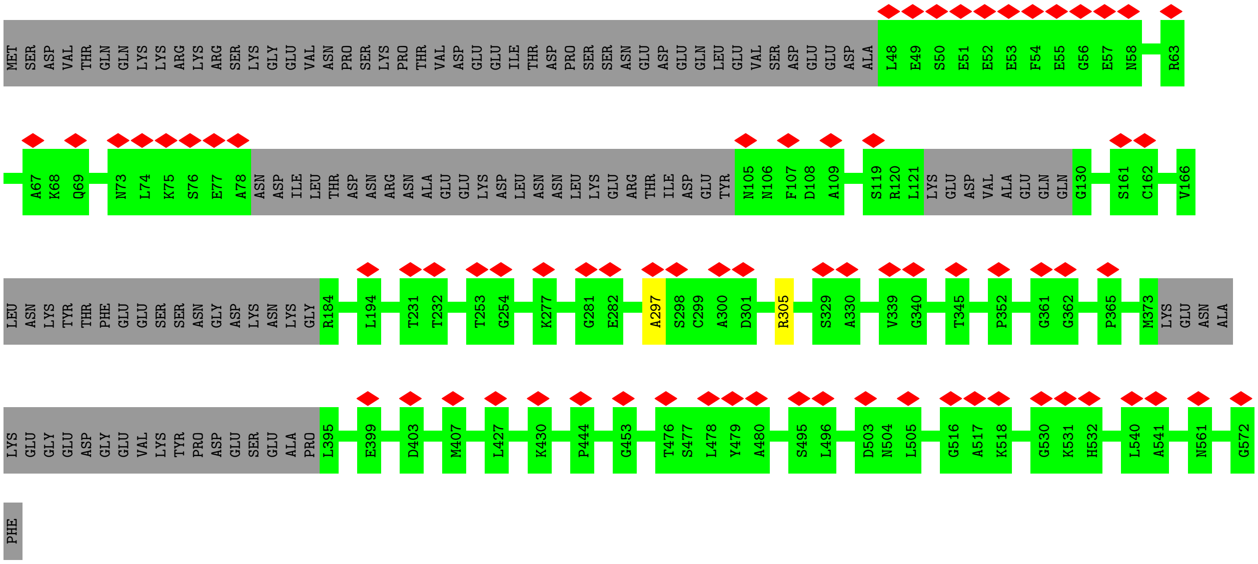
Chain SF:



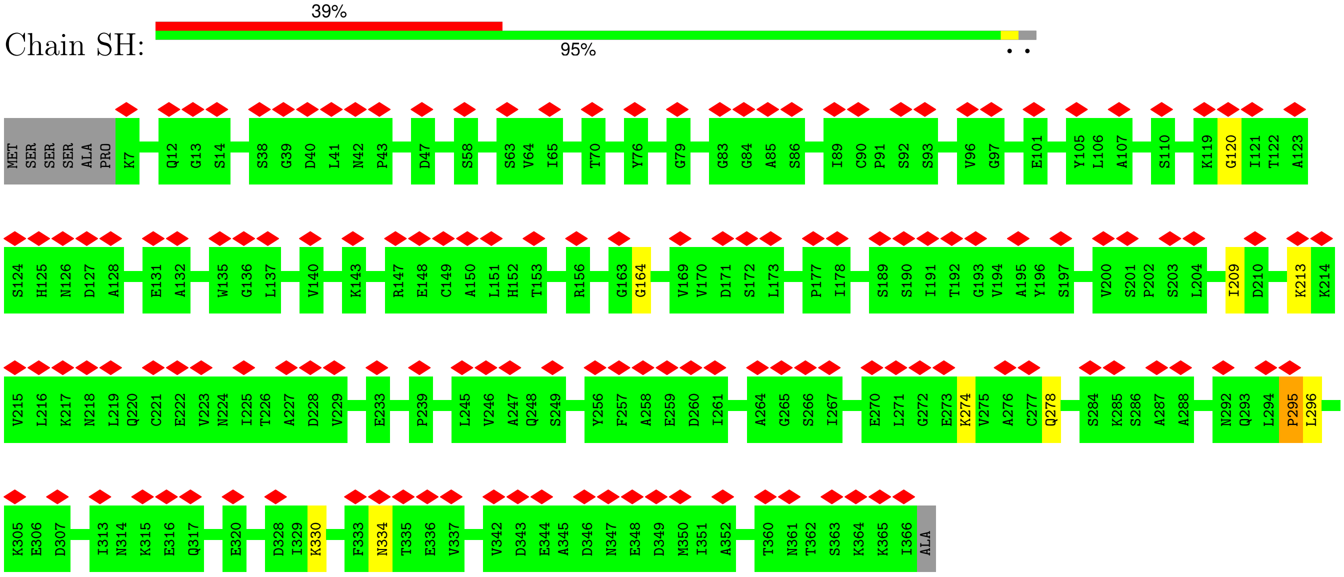


- Molecule 55: Ribosomal RNA-processing protein 9

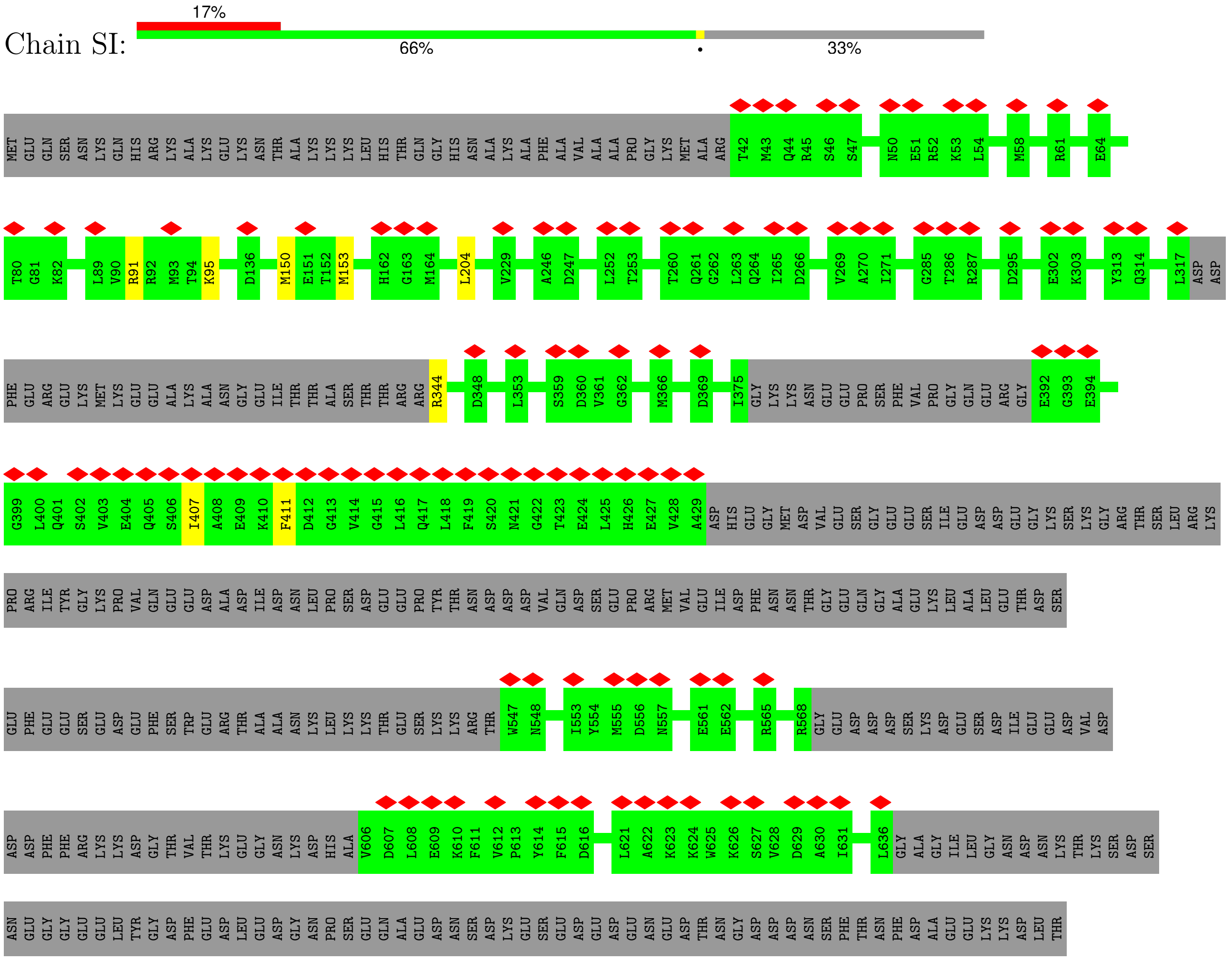
Chain SG:

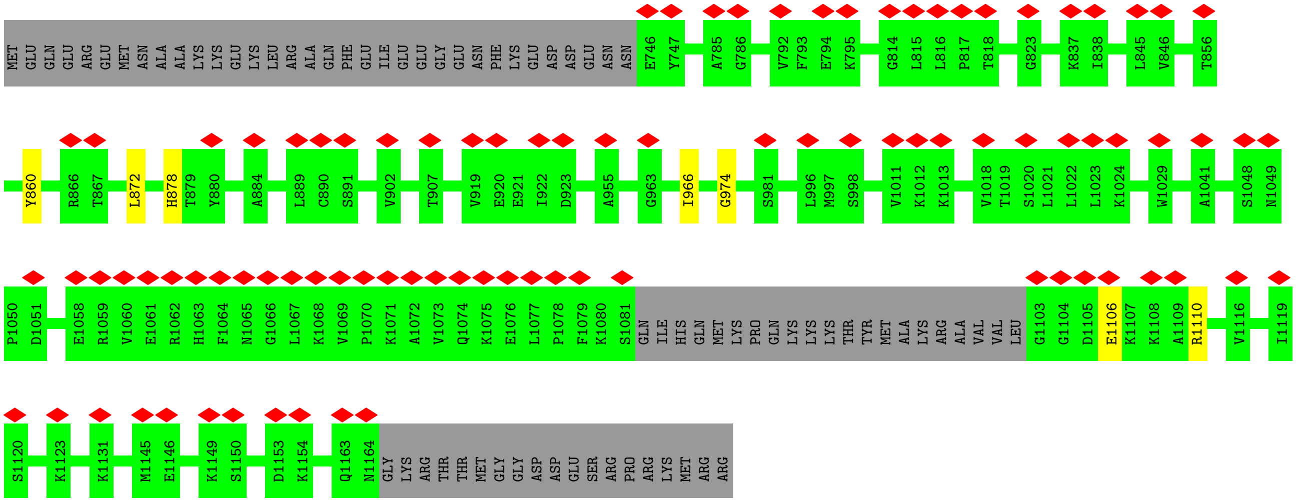


- Molecule 56: RNA 3'-terminal phosphate cyclase-like protein



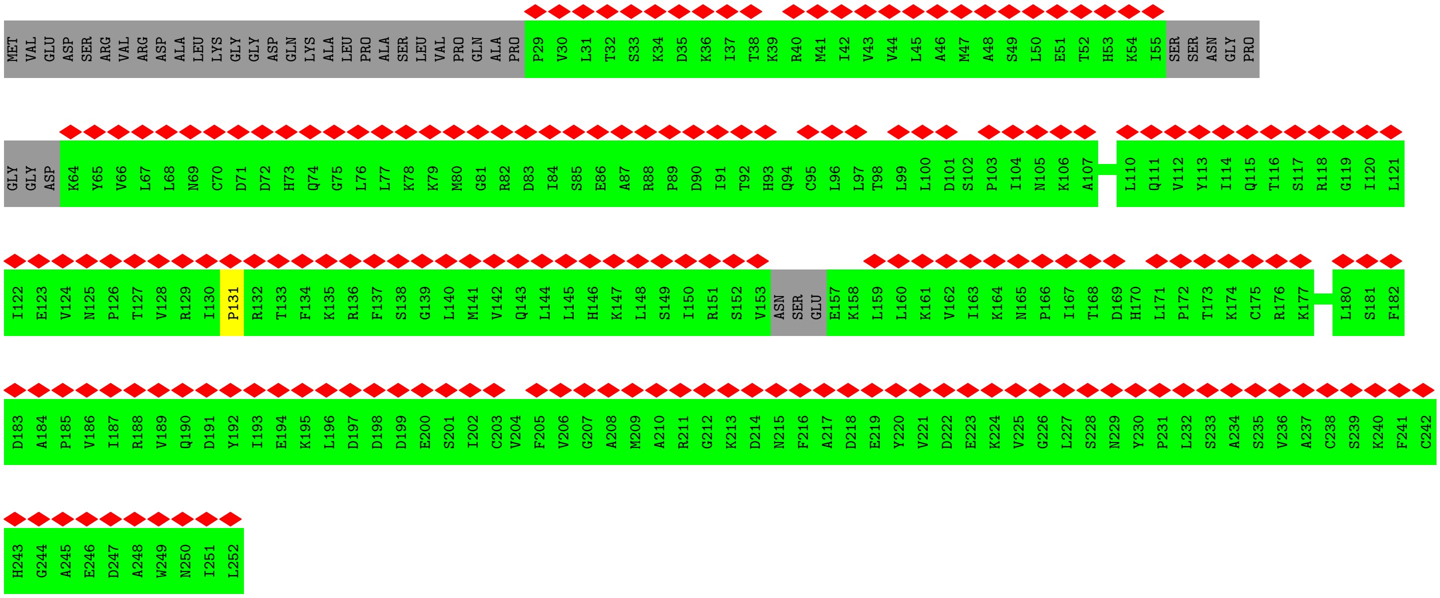
- Molecule 57: Ribosome biogenesis protein BMS1





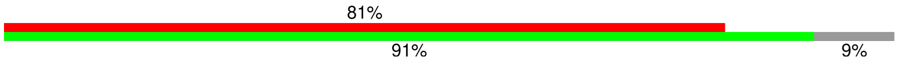
- Molecule 58: Ribosomal RNA small subunit methyltransferase NEP1

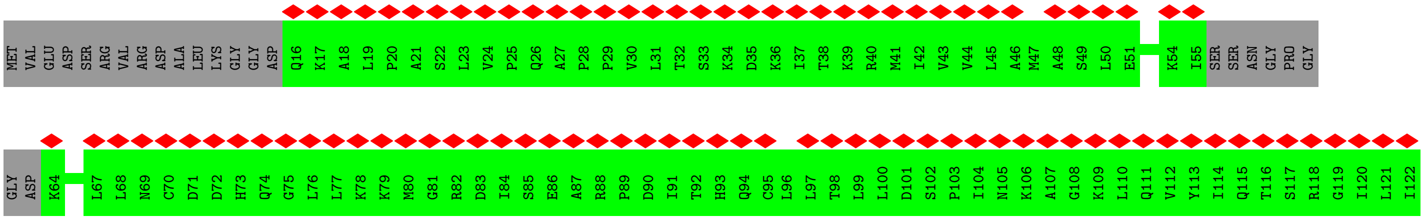
Chain SJ:

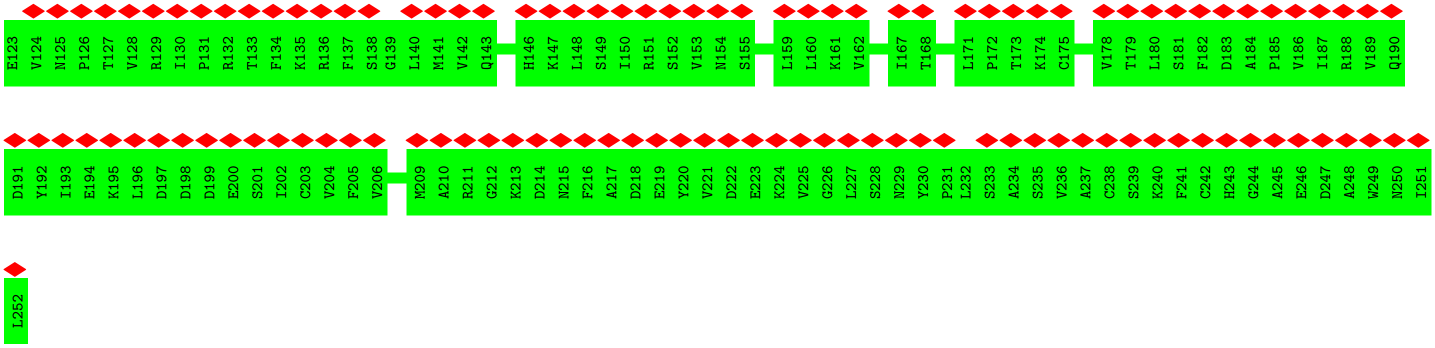


- Molecule 58: Ribosomal RNA small subunit methyltransferase NEP1

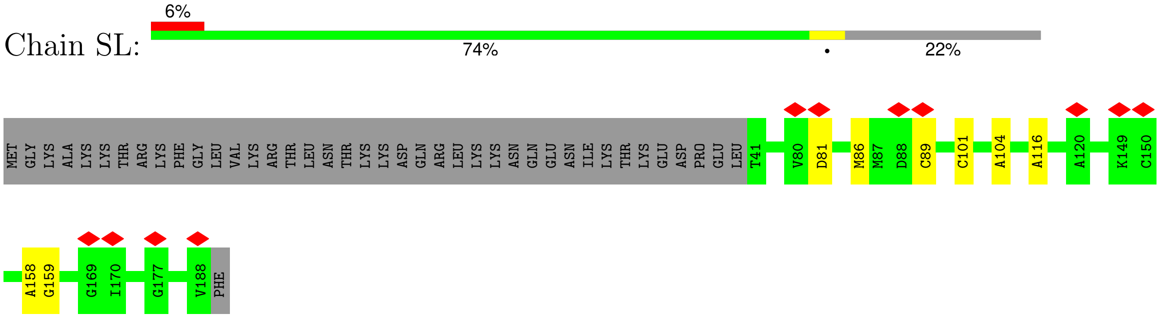
Chain SK:



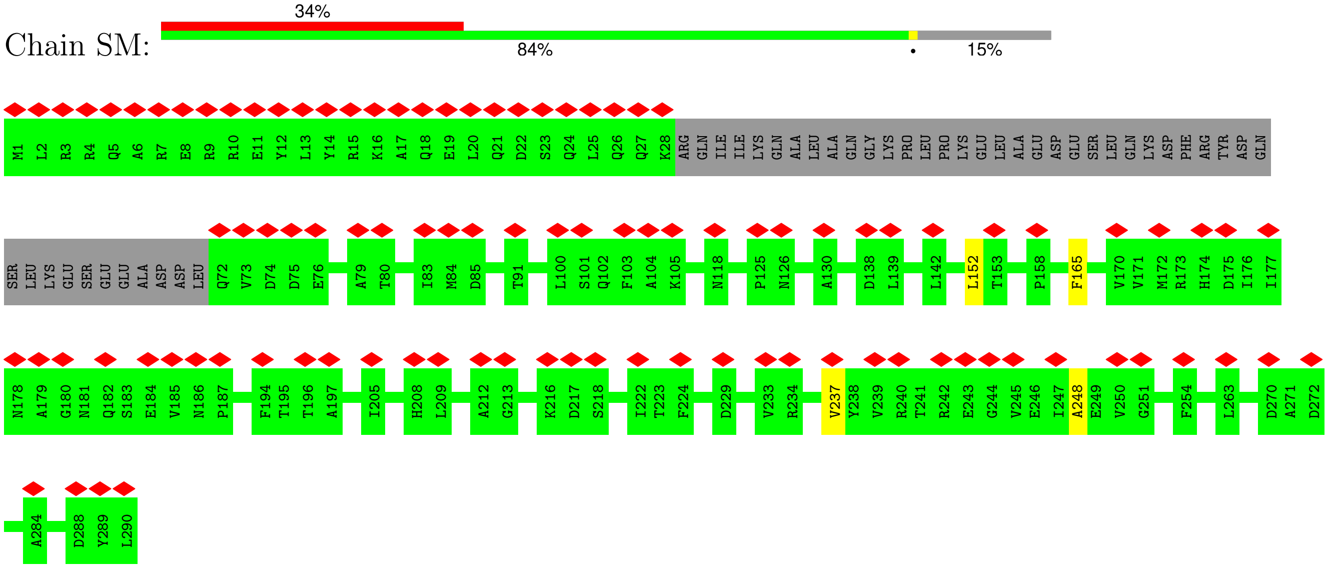




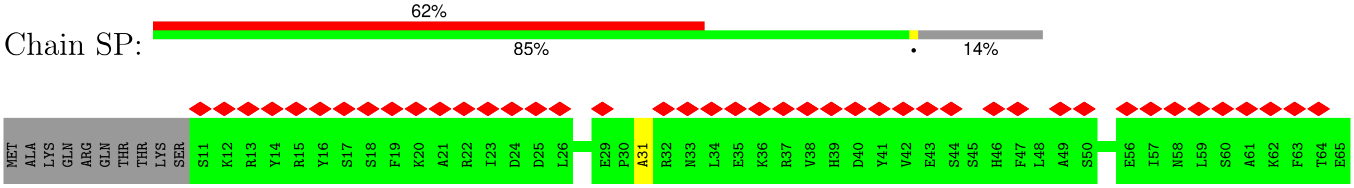
- Molecule 59: rRNA-processing protein FCF1

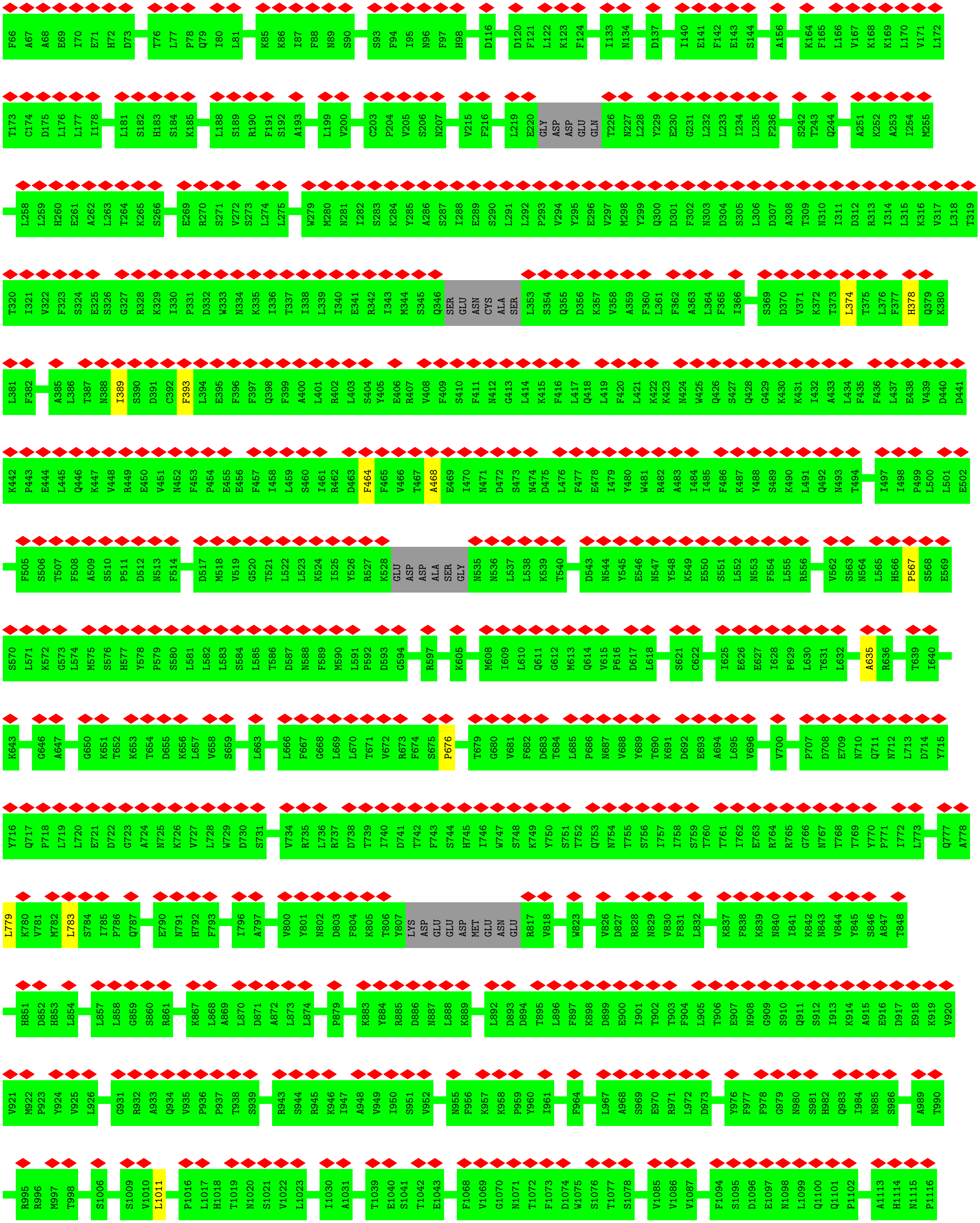


- Molecule 60: U3 small nucleolar ribonucleoprotein protein IMP4



- Molecule 61: U3 small nucleolar RNA-associated protein 20

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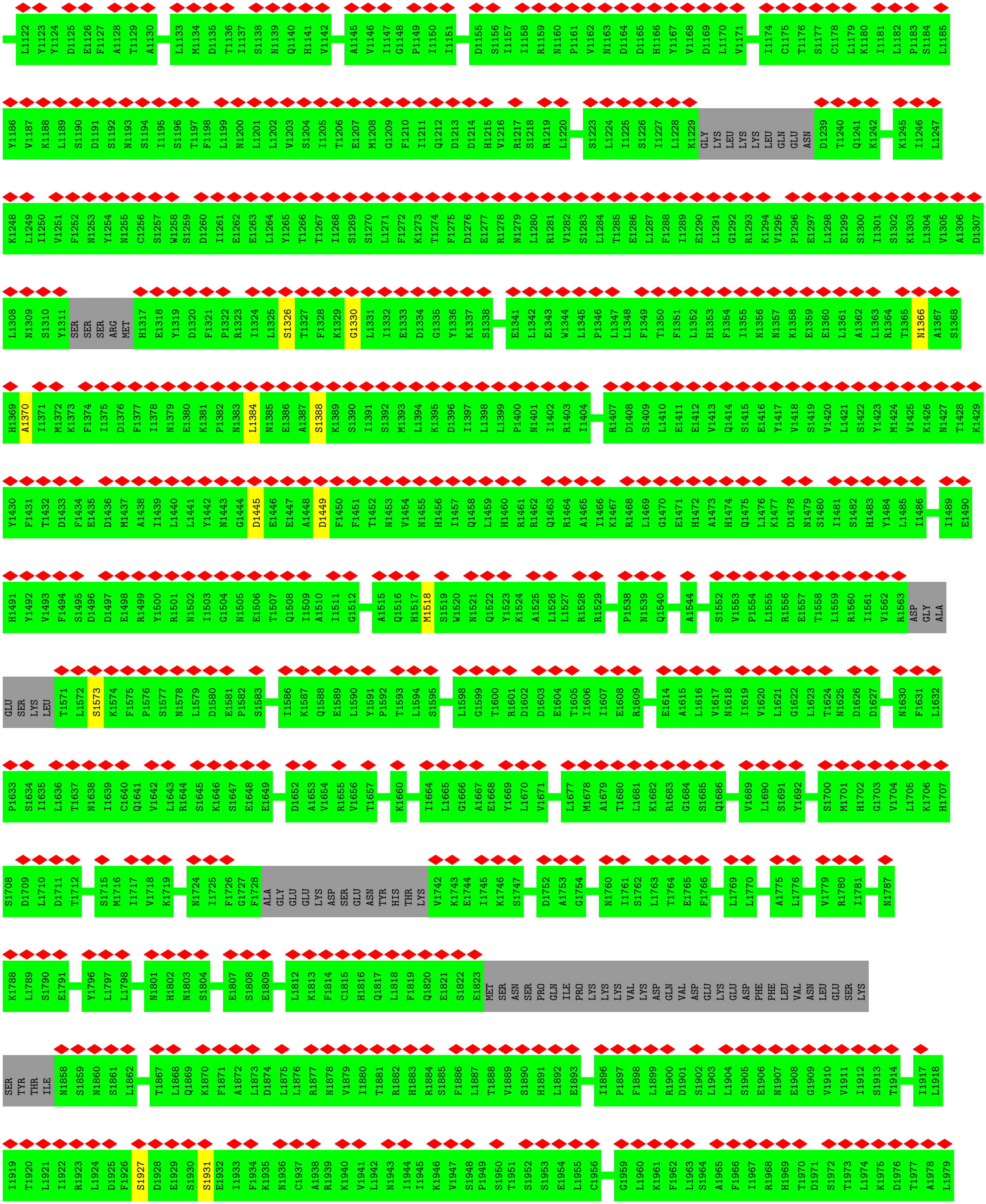
T173 C174 D175 L176 L177 I178 L181 S182 H183 S184 K185 L188 S189 R190 F191 S192 A193 I199 V200 C203 P204 V205 S206 N207 V215 F216 L219 E220 GLY ASP ASP GLU GLN T226 N227 L228 Y229 E230 G231 L232 L233 I234 L235 F236 S242 T243 Q244 A251 K252 A253 I254 M255
L258 L259 H260 E261 A262 L263 T264 K265 S266 E269 R270 S271 V272 S273 L274 L275 W279 M280 N281 I282 S283 K284 Y285 A286 S287 I288 E289 S290 L291 L292 P293 V294 Y295 E296 V297 M298 Y299 Q300 D301 F302 N303 D304 S305 L306 D307 A308 T309 N310 I311 D312 R313 I314 L315 K316 V317 L318 T319
T320 I321 V322 F323 S324 E325 S326 G327 R328 K329 I330 P331 D332 W333 N334 K335 I336 T337 I338 L339 I340 E341 R342 I343 M344 S345 Q346 SER GLU ASN CYS ALA SER L353 S354 Q355 D356 K357 V358 A359 F360 L361 F362 A363 L364 F365 I366 S369 D370 V371 K372 T373 L374 T375 L376 F377 H378 Q379 K380
L381 F382 A385 L386 T387 N388 I389 S390 D391 C392 F393 L394 E395 F396 F397 Q398 F399 A400 L401 R402 L403 S404 Y405 E406 R407 V408 F409 S410 F411 N412 G413 L414 K415 F416 L417 Q418 L419 F420 L421 K422 K423 N424 W425 Q426 S427 Q428 G429 K430 K431 I432 A433 L434 F435 F436 L437 E438 V439 D440 D441
K442 P443 E444 L445 Q446 K447 V448 R449 E450 V451 N452 F453 P454 E455 E456 F457 I458 L459 S460 I461 R462 D463 F464 F465 V466 T467 A468 E469 I470 N471 D472 S473 N474 D475 L476 F477 E478 I479 Y480 W481 R482 A483 I484 I485 F486 K487 Y488 S489 K490 L491 Q492 N493 T494 I497 I498 P499 L500 L501 E502
F505 S506 T507 F508 A509 S510 P511 D512 N513 F514 D517 M518 V519 G520 T521 L522 L523 K524 I525 Y526 R527 K528 GLU ASP ASP ALA SER GLY N535 N536 L537 L538 K539 T540 D543 N544 Y545 E546 N547 Y548 K549 E550 S551 L552 N553 F554 L555 R556 V562 S563 N564 L565 H566 P567 S568 E569
S570 L571 K572 G573 L574 M575 S576 H577 Y578 P579 S580 L581 L582 L583 S584 L585 T586 D587 N588 F589 M590 L591 P592 D593 G594 R597 K605 M608 I609 L610 Q611 G612 M613 Q614 V615 P616 D617 L618 S621 C622 I625 E626 E627 I628 P629 L630 T631 L632 A635 R636 T639 I640
K643 G646 A647 G650 K651 T652 K653 T654 D655 K656 L657 V658 S659 L663 L666 F667 G668 L669 L670 T671 V672 R673 F674 S675 P676 T679 G680 V681 F682 D683 T684 L685 P686 N687 V688 Y689 T690 K691 D692 E693 A694 L695 V696 V700 P707 D708 E709 N710 Q711 N712 L713 D714 Y715
Y716 Q717 P718 L719 L720 E721 D722 G723 A724 N725 K726 V727 L728 W729 D730 S731 V734 R735 L736 R737 D738 T739 I740 D741 T742 F743 S744 H745 I746 W747 S748 K749 Y750 S751 T752 Q753 N754 T755 S756 I757 I758 S759 T760 T761 I762 E763 R764 R765 G766 N767 T768 T769 Y770 P771 I772 L773 Q777 A778
L779 K780 V781 M782 L783 S784 I785 P786 Q787 E790 N791 H792 F793 I796 A797 V800 Y801 N802 D803 F804 K805 T806 Y807 LYS ASP GLU GLU ASP MET GLU ASN GLU R817 V818 W823 V826 D827 R828 N829 V830 F831 L832 K837 F838 K839 N840 I841 K842 N843 V844 Y845 S846 A847 T848
H851 D852 H853 L854 L857 L858 G859 S860 R861 K867 L868 A869 L870 D871 A872 L873 L874 P879 K883 Y884 R885 D886 N887 L888 K889 L892 D893 D894 T895 L896 F897 K898 D899 E900 I901 T902 T903 F904 L905 T906 E907 N908 G909 S910 Q911 S912 I913 K914 A915 E916 D917 E918 K919 V920
V921 M922 P923 Y924 V925 L926 G931 R932 A933 Q934 V935 P936 P937 T938 S939 R943 S944 R945 K946 I947 A948 V949 I950 S951 V952 N955 F956 K957 K958 P959 Y960 I961 F964 L967 A968 S969 E970 R971 L972 D973 Y976 F977 F978 G979 N980 S981 H982 Q983 I984 N985 S986 A989 T990
R995 R996 M997 T998 S1006 S1009 V1010 L1011 P1016 L1017 H1018 T1019 N1020 S1021 V1022 L1023 I1030 A1031 T1039 E1040 S1041 T1042 E1043 F1068 V1069 G1070 N1071 T1072 F1073 D1074 W1075 S1076 T1077 S1078 V1085 V1086 V1087 F1094 S1095 D1096 E1097 N1098 L1099 Q1100 Q1101 P1102 A1113 H1114 N1115 P1116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L1308 N1309 S1310 Y1311 SER SER SER ARG MET H1317 E1318 Y1319 D1320 F1321 P1322 R1323 I1324 L1325 S1326 T1327 F1328 K1329 G1330 L1331 I1332 E1333 D1334 G1335 Y1336 K1337 S1338 E1341 L1342 E1343 W1344 L1345 P1346 L1347 L1348 F1349 T1350 F1351 L1352 H1353 F1354 I1355 N1356 N1357 K1358 E1359 E1360 L1361 A1362 L1363 R1364 T1365 N1366 A1367 S1368
H1369 A1370 I1371 M1372 K1373 F1374 I1375 D1376 F1377 I1378 N1379 E1380 K1381 P1382 N1383 L1384 N1385 E1386 A1387 S1388 K1389 S1390 I1391 S1392 M1393 L1394 K1395 D1396 I1397 L1398 L1399 P1400 N1401 I1402 R1403 I1404 R1407 D1408 S1409 L1410 E1411 E1412 V1413 Q1414 S1415 E1416 Y1417 V1418 S1419 V1420 L1421 S1422 Y1423 M1424 V1425 K1426 N1427 T1428 K1429
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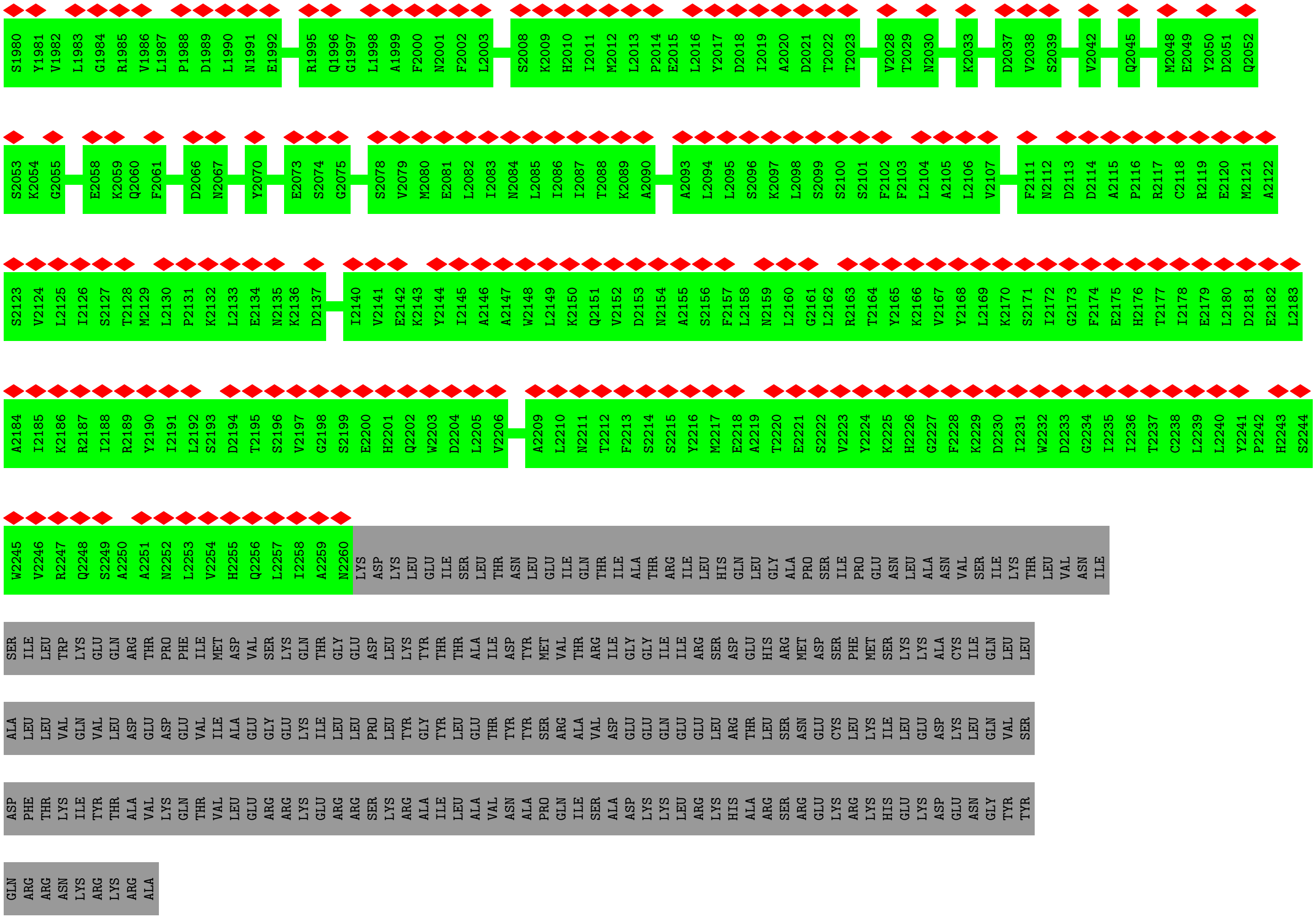
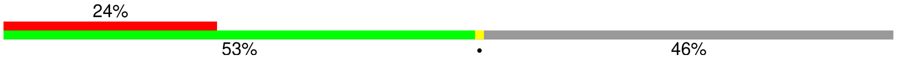
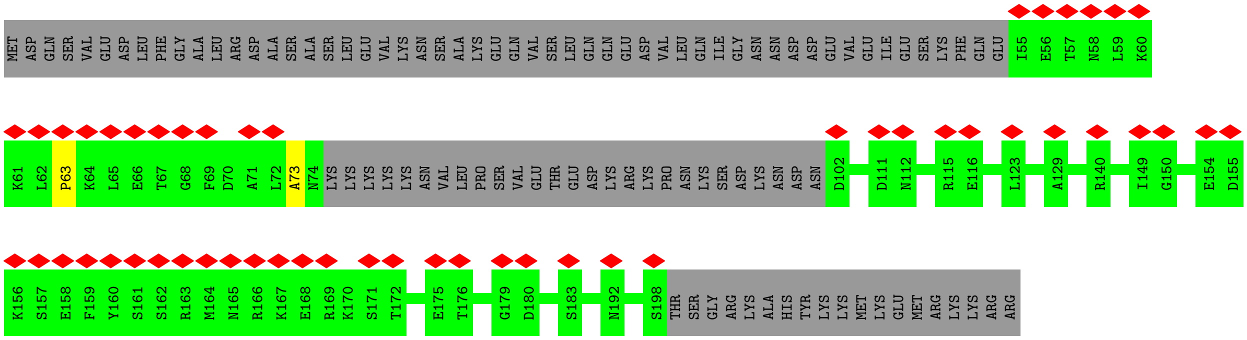
GLU SER LYS LEU T1571 L1572 S1573 K1574 F1575 P1576 S1577 N1578 L1579 D1580 E1581 P1582 S1583 I1586 K1587 Q1588 E1589 L1590 Y1591 P1592 T1593 L1594 S1595 L1598 G1599 T1600 R1601 D1602 D1603 E1604 T1605 I1606 I1607 E1608 R1609 E1614 A1615 L1616 V1617 N1618 I1619 V1620 L1621 G1622 L1623 T1624 N1625 D1626 D1627 N1630 F1631 L1632
P1633 S1634 I1635 L1636 T1637 N1638 I1639 C1640 Q1641 V1642 L1643 R1644 S1645 K1646 S1647 E1648 E1649 D1652 A1653 V1654 R1655 V1656 T1657 K1660 I1664 L1665 G1666 A1667 E1668 Y1669 L1670 V1671 L1677 M1678 A1679 T1680 L1681 K1682 R1683 G1684 S1685 Q1686 V1689 L1690 S1691 Y1692 S1700 M1701 H1702 G1703 V1704 L1705 K1706 H1707
S1708 D1709 L1710 D1711 T1712 S1715 M1716 I1717 V1718 K1719 N1724 I1725 F1726 G1727 F1728 ALA GLY GLU GLU LYS ASP SER GLU ASN TYR HIS THR LYS V1742 K1743 E1744 I1745 K1746 S1747 D1752 A1753 G1754 N1760 I1761 S1762 L1763 T1764 E1765 F1766 L1769 L1770 A1775 L1776 V1779 R1780 I1781 N1787
K1788 L1789 S1790 E1791 Y1796 L1797 L1798 N1801 H1802 N1803 S1804 E1807 S1808 E1809 L1812 K1813 F1814 C1815 H1816 Q1817 L1818 F1819 Q1820 E1821 S1822 E1823 MET SER ASN SER PRO GLN ILE PRO LYS LYS LYS VAL LYS ASP GLN VAL ASP GLU LYS GLU ASP PHE PHE LEU VAL ASN LEU GLU SER LYS
SER TYR THR ILE N1858 S1859 N1860 S1861 L1862 T1867 L1868 Q1869 K1870 F1871 A1872 L1873 D1874 L1875 L1876 R1877 N1878 V1879 I1880 T1881 R1882 H1883 R1884 S1885 F1886 L1887 T1888 V1889 S1890 H1891 L1892 E1893 I1896 P1897 F1898 L1899 R1900 D1901 S1902 L1903 L1904 S1905 E1906 N1907 E1908 G1909 V1910 V1911 I1912 S1913 T1914 I1917 L1918
I1919 T1920 L1921 I1922 R1923 L1924 D1925 F1926 S1927 D1928 E1929 S1930 S1931 E1932 I1933 F1934 K1935 N1936 C1937 A1938 R1939 K1940 V1941 L1942 N1943 I1944 I1945 K1946 V1947 S1948 P1949 S1950 T1951 S1952 S1953 E1954 L1955 C1956 G1959 L1960 K1961 F1962 L1963 S1964 A1965 F1966 I1967 R1968 H1969 T1970 D1971 S1972 T1973 L1974 K1975 D1976 T1977 A1978 L1979



- Molecule 62: rRNA-processing protein FCF2

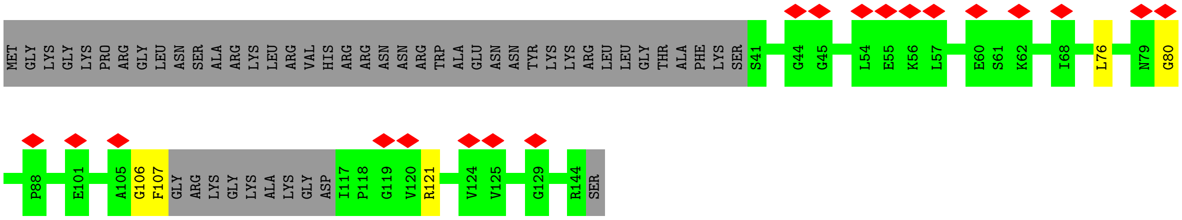
Chain SQ:



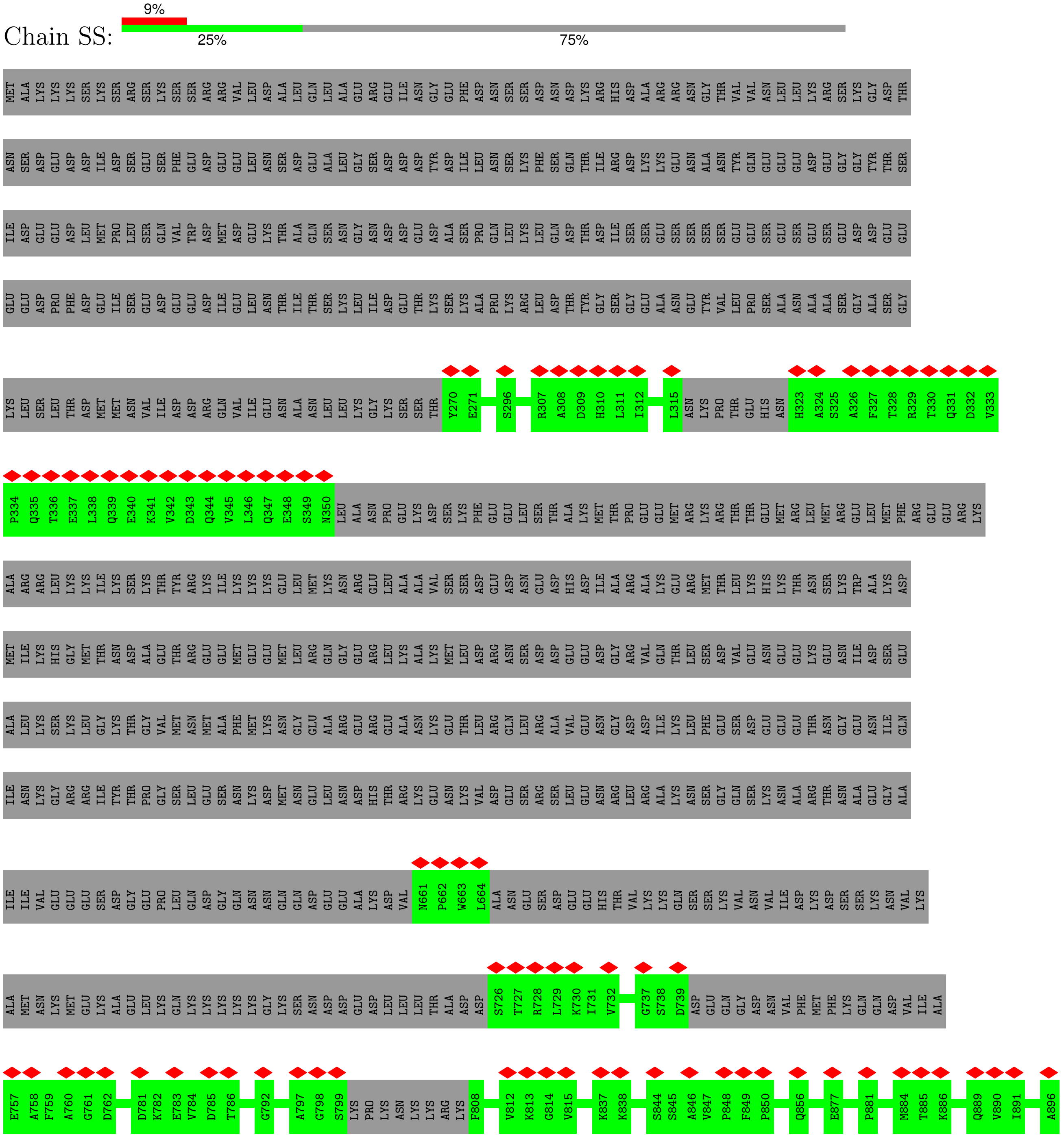


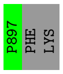
- Molecule 63: 40S ribosomal protein S23-A

Chain SR:



- Molecule 64: U3 small nucleolar RNA-associated protein 14

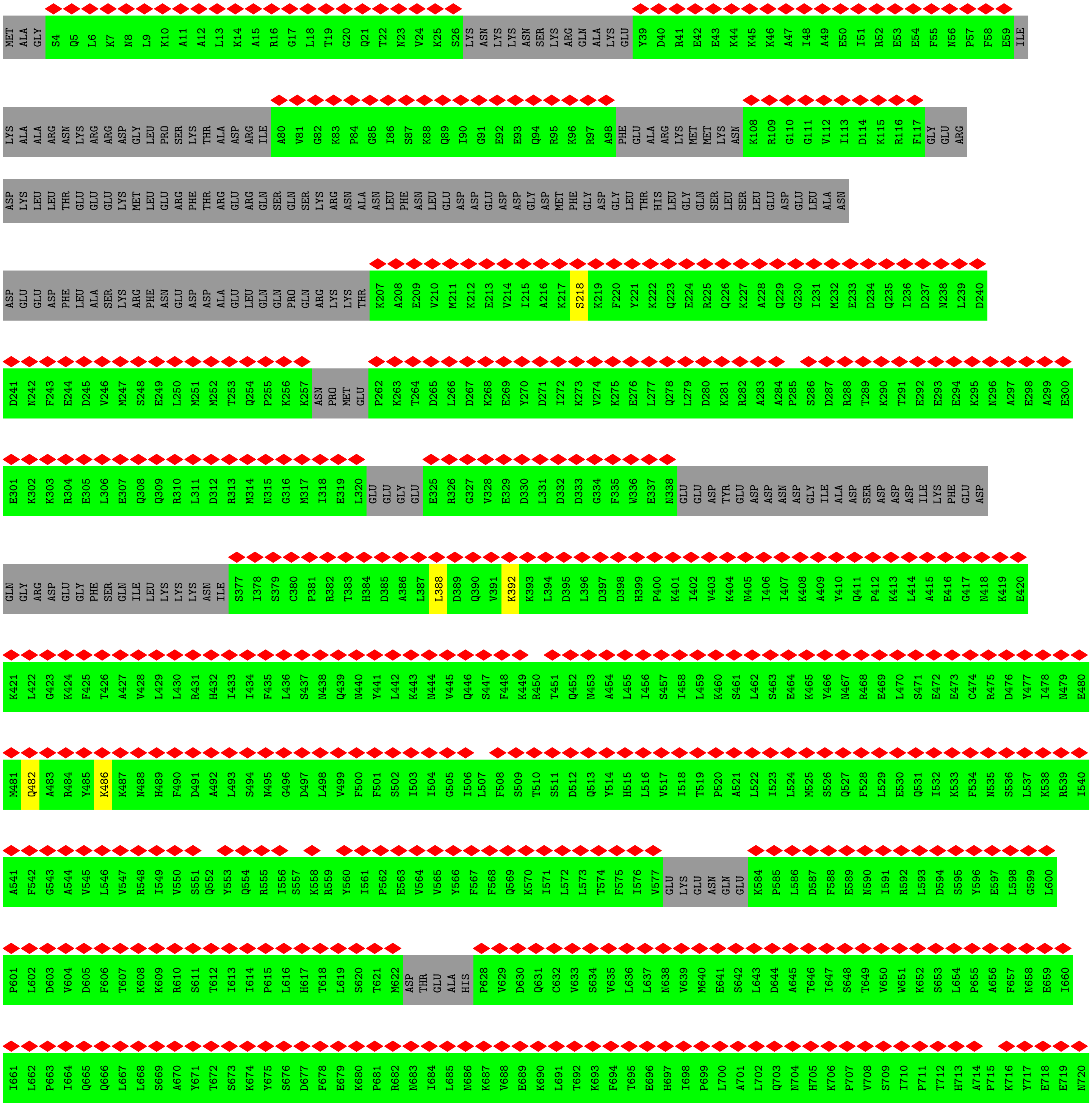




P897 PHE LYS

- Molecule 65: Nucleolar complex protein 14

Chain ST:



MET ALA GLY S4 Q5 L6 K7 N8 L9 K10 A11 A12 L13 K14 A15 R16 G17 L18 T19 G20 Q21 T22 N23 V24 K25 S26 LYS ASN LYS LYS ASN SER LYS ARG GLN ALA LYS GLU Y39 D40 R41 E42 E43 K44 K45 K46 A47 I48 A49 E50 I51 R52 E53 E54 F55 N56 P57 F58 E59 ILE

LYS ALA ALA ARG ASN LYS ARG ARG ASP GLY LEU PRO SER LYS THR ALA ASP ARG ILE A80 V81 G82 K83 P84 G85 I86 S87 K88 Q89 I90 G91 E92 E93 Q94 R95 K96 R97 A98 PHE GLU ALA ARG LYS MET MET LYS ASN K108 R109 G110 G111 V112 I113 D114 K115 R116 F117 GLY GLU ARG

ASP LYS LEU LEU THR GLU GLU GLU LYS MET LEU GLU ARG PHE THR ARG GLU ARG GLN SER GLN SER LYS ARG ASN ALA ASN LEU PHE ASN LEU GLU ASP ASP GLU ASP ASP GLY ASP MET PHE GLY ASP GLY LEU THR HIS LEU GLY GLN SER LEU SER LEU GLU ASP GLU LEU ALA ASN

ASP GLU GLU ASP PHE LEU ALA SER LYS ARG PHE ASN GLU ASP ASP ALA GLU LEU GLN GLN PRO GLN ARG LYS LYS THR K207 A208 E209 V210 M211 K212 E213 V214 I215 A216 K217 S218 K219 F220 Y221 K222 Q223 E224 R225 Q226 K227 A228 Q229 G230 I231 M232 E233 D234 Q235 I236 D237 N238 L239 D240

D241 N242 F243 E244 D245 V246 M247 S248 E249 L250 M251 M252 T253 Q254 P255 K256 K257 ASN PRO MET GLU P262 K263 T264 D265 L266 D267 K268 E269 Y270 D271 I272 K273 V274 K275 E276 L277 Q278 L279 D280 K281 R282 A283 A284 P285 S286 D287 R288 T289 K290 T291 E292 E293 E294 K295 N296 A297 E298 A299 E300

E301 K302 K303 R304 E305 L306 E307 Q308 Q309 R310 L311 D312 R313 M314 N315 G316 M317 I318 E319 L320 GLU GLU GLY GLU E325 R326 G327 V328 E329 D330 L331 D332 D333 G334 F335 W336 E337 N338 GLU GLU ASP TYR GLU ASP ASP ASN ASP GLY ILE ALA ASP SER ASP ASP ASP ILE LYS PHE GLU ASP

GLN GLY ARG ASP GLU GLY PHE SER GLN ILE LEU LYS LYS LYS ASN ILE S377 I378 S379 C380 P381 R382 T383 H384 D385 A386 L387 L388 D389 Q390 V391 K392 K393 L394 D395 L396 D397 D398 H399 P400 K401 I402 V403 K404 N405 I406 I407 K408 A409 Y410 Q411 P412 K413 L414 A415 E416 G417 N418 K419 E420

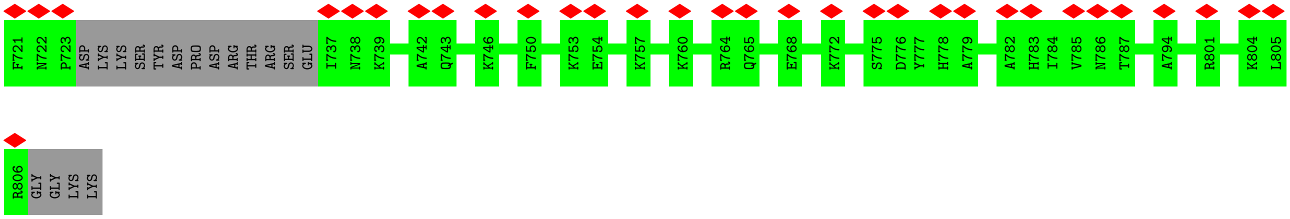
K421 L422 G423 K424 F425 T426 A427 V428 L429 L430 R431 H432 I433 I434 F435 L436 S437 N438 Q439 N440 Y441 L442 K443 N444 V445 Q446 S447 F448 K449 R450 T451 Q452 N453 A454 L455 I456 S457 I458 L459 K460 S461 L462 S463 E464 K465 Y466 N467 R468 E469 L470 S471 E472 E473 C474 R475 D476 Y477 I478 N479 E480

M481 Q482 A483 R484 Y485 K486 K487 N488 H489 F490 D491 A492 L493 S494 N495 G496 D497 L498 V499 F500 F501 S502 I503 I504 G505 I506 L507 F508 S509 T510 S511 D512 Q513 Y514 H515 L516 V517 I518 T519 P520 A521 L522 I523 L524 M525 S526 Q527 F528 L529 E530 Q531 I532 K533 F534 N535 S536 L537 K538 R539 I540

A541 F542 G543 A544 V545 L546 V547 R548 I549 V550 S551 Q552 Y553 Q554 R555 I556 S557 K558 R559 Y560 I561 P562 E563 V564 V565 Y566 F567 F568 Q569 K570 I571 L572 L573 T574 F575 I576 V577 GLU LYS GLU ASN GLN GLU K584 P585 L586 D587 F588 E589 N590 I591 R592 L593 D594 S595 Y596 E597 L598 G599 L600

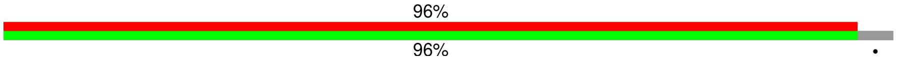
P601 L602 D603 V604 D605 F606 T607 K608 K609 R610 S611 T612 I613 I614 P615 L616 H617 T618 L619 S620 T621 M622 ASP THR GLU ALA HIS P628 V629 D630 Q631 C632 V633 S634 V635 L636 L637 N638 V639 M640 E641 S642 L643 D644 A645 T646 I647 S648 T649 V650 W651 K652 S653 L654 P655 A656 F657 N658 E659 I660

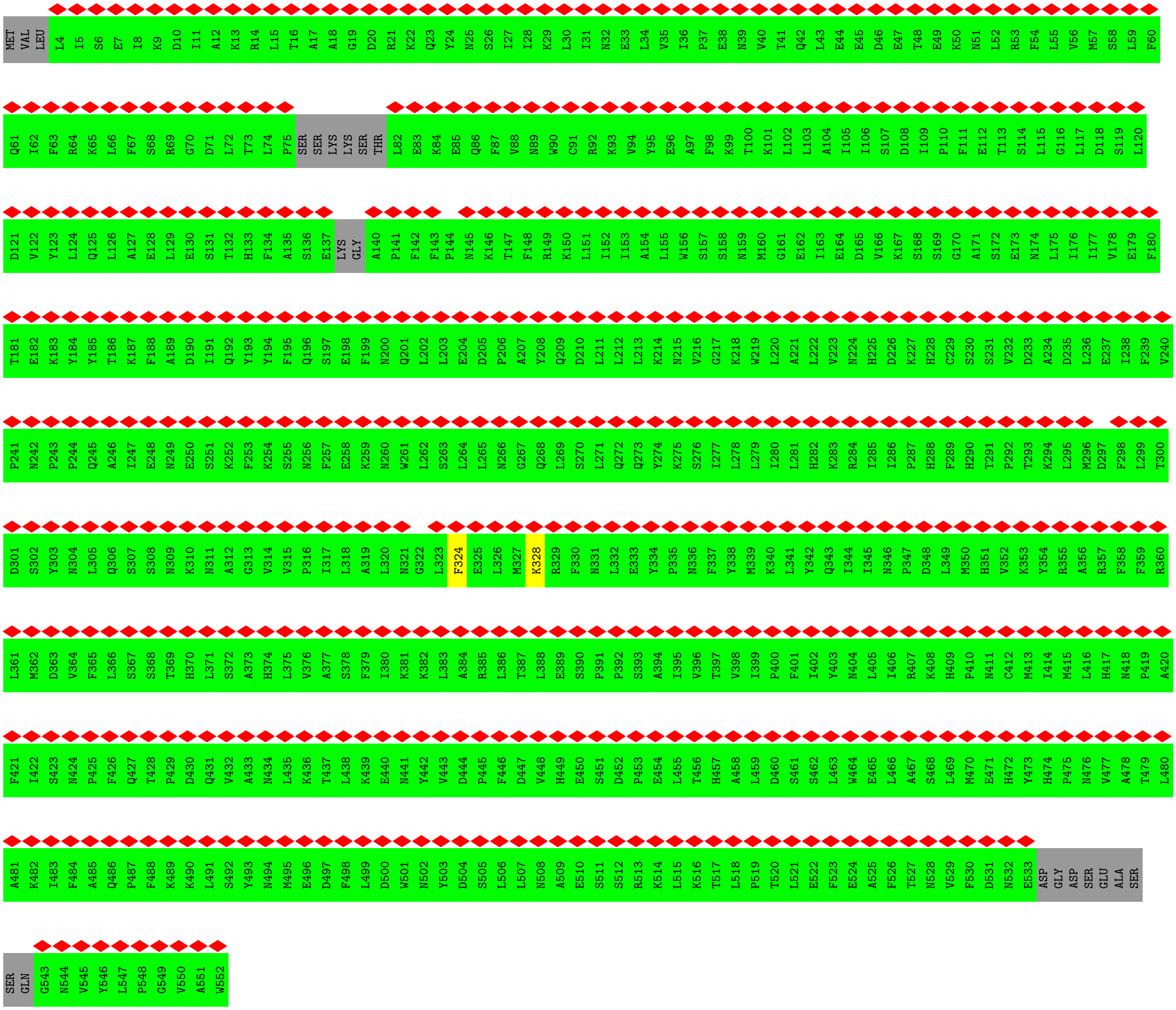
I661 L662 P663 I664 Q665 Q666 L667 L668 S669 A670 Y671 T672 S673 K674 Y675 S676 D677 F678 E679 K680 P681 R682 N683 I684 L685 N686 K687 V688 E689 K690 L691 T692 K693 F694 T695 E696 H697 I698 P699 L700 A701 L702 Q703 N704 H705 K706 P707 V708 S709 I710 P711 T712 H713 A714 P715 K716 Y717 E718 E719 N720



- Molecule 66: Nucleolar complex protein 4

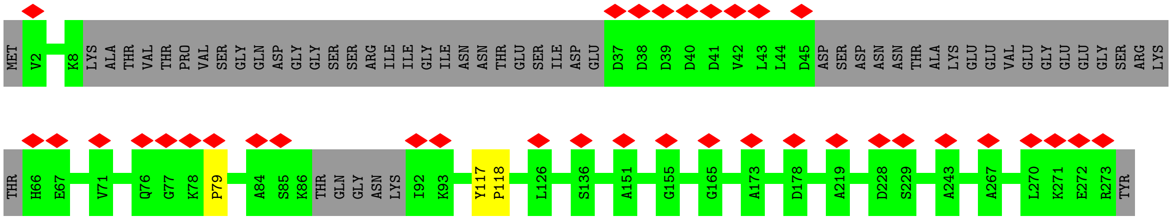
Chain SU:





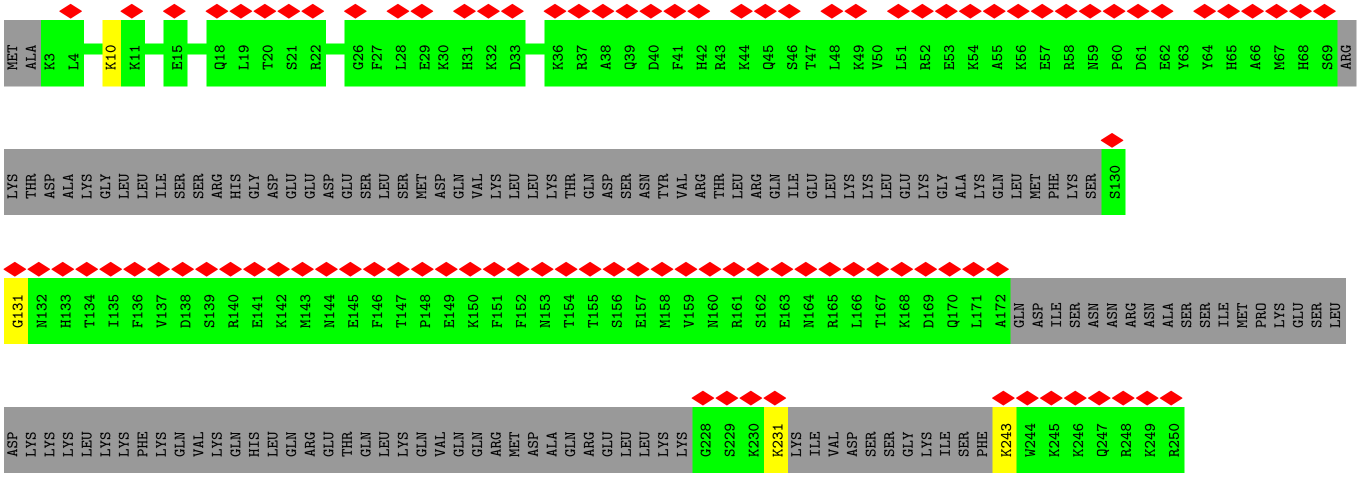
- Molecule 67: Pre-rRNA-processing protein PNO1

Chain SW:



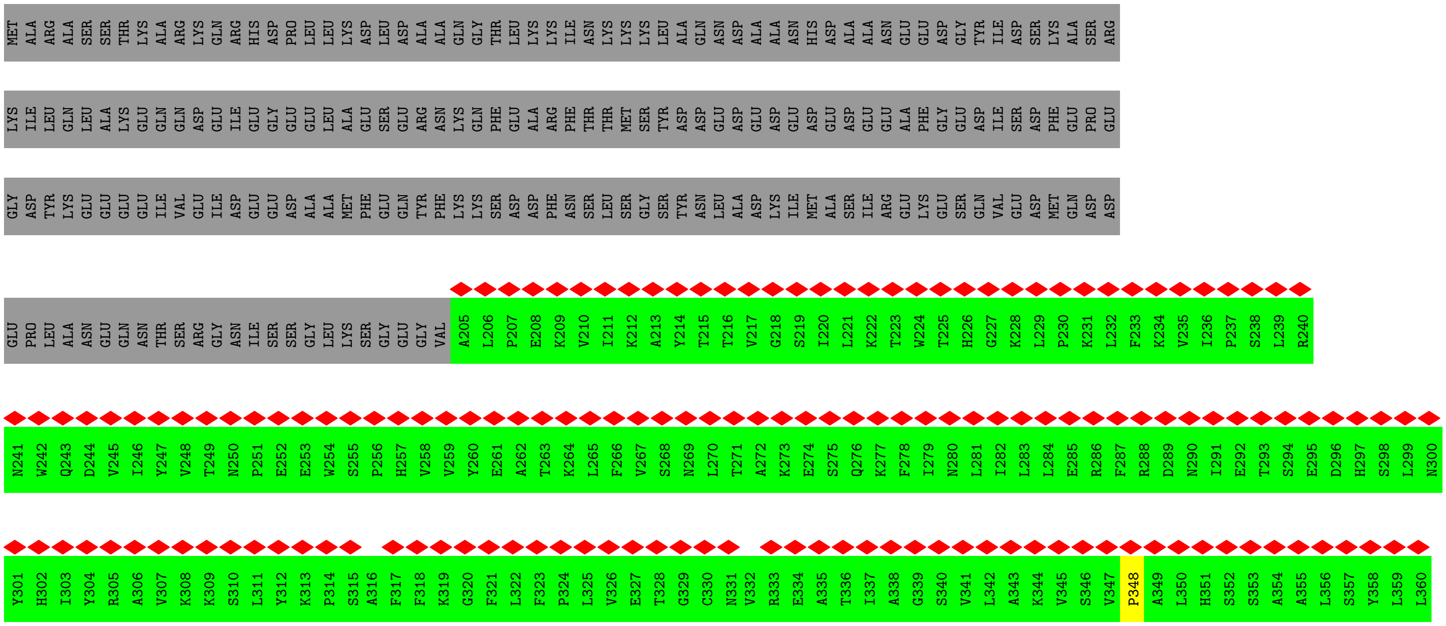
- Molecule 68: U3 small nucleolar RNA-associated protein 11

Chain SY:



- Molecule 69: Essential nuclear protein 1

Chain SZ:




R361
L362
P363
F364
S365
P366
P367
T368
T369
V370
F371
I372
K373
I374
L375
L376
D377
K378
K379
Y380
A381
L382
P383
Y384
Q385
T386
V387
D388
D389
C390
V391
Y392
Y393
F394
M395
R396
F397
R398
I399
L400
ASP
ASP
GLY
S404
N405
G406
E407
D408
A409
T410
R411
V412
L413
P414
V415
I416
W417
H418
K419
A420
F421
L422
T423
F424
A425
Q426
R427
Y428
K429
N430
D431
I432
T433
Q434
D435
Q436
R437
D438
F439
L440
L441
E442
T443
V444
R445
Q446
R447
G448
H449
K450
D451
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G453
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I456
R457
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GLU
PHE
VAL
ASP
PRO
GLN
GLU
ALA
ASN
ASP
ASP
LEU
MET
ILE
ASP
VAL
ASN

4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	6227	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 $(e^-/\text{Å}^2)$	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	25000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	5.102	Depositor
Minimum map value	0.000	Depositor
Average map value	0.112	Depositor
Map value standard deviation	0.203	Depositor
Recommended contour level	1	Depositor
Map size (Å)	535.75195, 535.75195, 535.75195	wwPDB
Map dimensions	504, 504, 504	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.063, 1.063, 1.063	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	L0	0.12	0/1529	0.33	0/2372
2	L1	0.07	0/30348	0.21	0/47245
3	L2	0.09	0/3669	0.24	0/5700
4	L3	0.15	0/529	0.37	0/736
5	L4	0.14	0/1182	0.39	0/1650
6	L5	0.18	0/1046	0.43	0/1464
7	L6	0.16	0/1035	0.39	0/1442
8	L7	0.18	0/911	0.46	0/1276
9	L8	0.14	0/850	0.34	0/1181
10	L9	0.22	0/922	0.53	0/1290
11	LC	0.21	0/647	0.52	0/903
12	LD	0.15	0/700	0.36	0/980
13	LE	0.20	0/642	0.51	0/893
14	LF	0.17	0/486	0.49	0/677
15	LG	0.14	0/310	0.36	0/430
16	LH	0.15	0/4046	0.40	0/5644
17	LI	0.32	2/3042 (0.1%)	0.53	6/4250 (0.1%)
18	LJ	0.17	0/2410	0.43	0/3370
19	LK	0.17	0/667	0.37	0/933
20	LL	0.16	0/2448	0.38	0/3415
21	LM	0.13	0/8150	0.33	2/11410 (0.0%)
22	LN	0.14	0/3326	0.35	0/4637
23	LO	0.14	0/3976	0.36	0/5552
24	LP	0.13	0/1907	0.34	0/2667
25	LQ	0.18	0/4075	0.46	0/5682
26	LR	0.14	0/3980	0.35	0/5555
27	LS	0.14	0/2288	0.37	0/3188
28	LT	0.14	0/4367	0.37	0/6091
29	LU	0.16	0/2284	0.40	0/3190
30	LV	0.17	0/1804	0.40	0/2522
31	LW	0.16	0/2322	0.40	0/3243
32	LX	0.15	0/4337	0.39	2/6068 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	LY	0.23	1/4310 (0.0%)	0.44	5/6033 (0.1%)
33	LZ	0.18	0/812	0.47	0/1136
34	NA	0.15	0/1492	0.39	0/2075
35	NB	0.14	0/1162	0.37	0/1618
36	NC	0.24	0/669	0.54	0/931
37	ND	0.14	0/298	0.35	0/416
38	NF	0.15	0/717	0.35	0/1003
39	NG	0.13	0/634	0.33	0/881
40	NH	0.13	0/5489	0.33	0/7686
41	NI	0.14	0/1214	0.34	0/1695
42	NM	0.14	0/1185	0.35	0/1651
43	NN	0.16	0/216	0.43	0/300
44	NP	0.13	0/669	0.32	0/928
45	NQ	0.15	0/401	0.44	0/560
46	NS	0.15	0/4309	0.39	0/6037
47	NV	0.15	0/38	0.42	0/51
48	OA	0.13	0/68	0.42	0/93
49	OH	0.09	0/595	0.27	0/827
50	OU	0.09	0/278	0.26	0/386
51	SA	0.18	0/1931	0.36	0/2693
52	SB	0.12	0/2168	0.31	0/3028
53	SC	0.16	0/1210	0.43	0/1689
53	SD	0.16	0/1210	0.39	0/1689
54	SE	0.17	0/621	0.44	0/871
54	SF	0.19	0/621	0.44	0/871
55	SG	0.15	0/2263	0.37	0/3150
56	SH	0.18	0/1817	0.46	1/2536 (0.0%)
57	SI	0.16	0/4060	0.39	0/5679
58	SJ	0.13	0/1080	0.34	0/1508
58	SK	0.13	0/1170	0.33	0/1639
59	SL	0.23	0/759	0.52	0/1064
60	SM	0.15	0/1251	0.41	0/1749
61	SP	0.18	1/10900 (0.0%)	0.39	3/15259 (0.0%)
62	SQ	0.57	2/595 (0.3%)	0.73	3/832 (0.4%)
63	SR	0.20	0/479	0.52	0/666
64	SS	0.19	0/1150	0.48	0/1604
65	ST	0.12	0/3052	0.31	0/4260
66	SU	0.12	0/2726	0.33	0/3825
67	SW	0.24	0/1111	0.52	2/1550 (0.1%)
68	SY	0.18	0/609	0.47	0/846
69	SZ	0.12	0/1326	0.33	0/1859
All	All	0.15	6/166900 (0.0%)	0.36	24/238830 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
16	LH	0	1
22	LN	0	1
28	LT	0	1
46	NS	0	1
59	SL	0	1
All	All	0	5

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
17	LI	562	PRO	CG-CD	-11.96	1.10	1.50
61	SP	567	PRO	CG-CD	-11.86	1.10	1.50
62	SQ	63	PRO	CG-CD	-11.55	1.11	1.50
32	LY	550	PRO	CG-CD	-9.83	1.17	1.50
17	LI	704	PRO	CG-CD	-7.00	1.26	1.50

The worst 5 of 24 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
61	SP	567	PRO	N-CD-CG	-15.04	80.65	103.20
17	LI	562	PRO	N-CD-CG	-15.01	80.68	103.20
32	LY	550	PRO	N-CD-CG	-13.00	83.70	103.20
62	SQ	63	PRO	N-CD-CG	-12.43	84.56	103.20
62	SQ	63	PRO	CA-N-CD	-9.98	98.02	112.00

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
16	LH	606	HIS	Peptide
22	LN	771	GLN	Peptide
28	LT	261	SER	Peptide
46	NS	870	PRO	Peptide
59	SL	81	ASP	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	L0	1370	0	692	1	0
2	L1	27142	0	13680	645	0
3	L2	3289	0	1667	12	0
4	L3	529	0	240	0	0
5	L4	1172	0	578	1	0
6	L5	1040	0	519	1	0
7	L6	1029	0	512	5	0
8	L7	903	0	450	2	0
9	L8	848	0	429	5	0
10	L9	914	0	464	4	0
11	LC	642	0	328	5	0
12	LD	693	0	336	1	0
13	LE	640	0	307	3	0
14	LF	484	0	242	3	0
15	LG	309	0	145	0	0
16	LH	4034	0	1821	5	0
17	LI	3027	0	1390	1	0
18	LJ	2394	0	1161	4	0
19	LK	664	0	299	0	0
20	LL	2440	0	1139	1	0
21	LM	8115	0	3739	10	0
22	LN	3315	0	1518	5	0
23	LO	3958	0	1889	6	0
24	LP	1901	0	836	3	0
25	LQ	4063	0	1898	22	0
26	LR	3962	0	1883	6	0
27	LS	2279	0	1110	5	0
28	LT	4347	0	2073	9	0
29	LU	2274	0	1064	5	0
30	LV	1791	0	844	3	0
31	LW	2304	0	1146	7	0
32	LX	4302	0	2100	10	0
32	LY	4274	0	2096	7	0
33	LZ	808	0	370	1	0
34	NA	1491	0	701	6	0
35	NB	1159	0	548	3	0
36	NC	669	0	309	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
37	ND	297	0	132	1	0
38	NF	711	0	360	1	0
39	NG	630	0	341	2	0
40	NH	5443	0	2602	5	0
41	NI	1210	0	565	1	0
42	NM	1183	0	553	5	0
43	NN	215	0	111	0	0
44	NP	666	0	345	1	0
45	NQ	398	0	200	1	0
46	NS	4268	0	2083	11	0
47	NV	39	0	16	0	0
48	OA	69	0	34	0	0
49	OH	594	0	298	1	0
50	OU	278	0	135	0	0
51	SA	1924	0	946	4	0
52	SB	2161	0	1090	4	0
53	SC	1198	0	625	6	0
53	SD	1198	0	625	5	0
54	SE	615	0	331	2	0
54	SF	615	0	331	0	0
55	SG	2260	0	1085	1	0
56	SH	1801	0	897	5	0
57	SI	4024	0	1981	9	0
58	SJ	1074	0	514	1	0
58	SK	1160	0	570	0	0
59	SL	751	0	377	7	0
60	SM	1243	0	602	2	0
61	SP	10847	0	4961	13	0
62	SQ	592	0	278	1	0
63	SR	476	0	237	3	0
64	SS	1145	0	565	0	0
65	ST	3041	0	1430	3	0
66	SU	2703	0	1302	1	0
67	SW	1104	0	544	1	0
68	SY	611	0	265	3	0
69	SZ	1314	0	649	2	0
All	All	162433	0	78503	870	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 870 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:192:U:H3	2:L1:193:U:HO2'	1.17	0.89
2:L1:453:U:H2'	2:L1:454:U:H5"	1.60	0.84
3:L2:38:U:O2'	3:L2:39:C:OP2	1.96	0.83
2:L1:194:U:H2'	2:L1:195:G:H5'	1.62	0.80
2:L1:34:G:H5'	2:L1:35:U:H5"	1.64	0.79

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	
4	L3	102/146 (70%)	101 (99%)	1 (1%)	0	100	100
5	L4	232/261 (89%)	230 (99%)	2 (1%)	0	100	100
6	L5	202/225 (90%)	196 (97%)	6 (3%)	0	100	100
7	L6	202/236 (86%)	200 (99%)	2 (1%)	0	100	100
8	L7	174/190 (92%)	172 (99%)	2 (1%)	0	100	100
9	L8	167/200 (84%)	164 (98%)	3 (2%)	0	100	100
10	L9	179/197 (91%)	175 (98%)	4 (2%)	0	100	100
11	LC	126/143 (88%)	122 (97%)	4 (3%)	0	100	100
12	LD	135/156 (86%)	133 (98%)	2 (2%)	0	100	100
13	LE	127/130 (98%)	124 (98%)	3 (2%)	0	100	100
14	LF	95/135 (70%)	90 (95%)	5 (5%)	0	100	100
15	LG	60/67 (90%)	59 (98%)	1 (2%)	0	100	100
16	LH	788/896 (88%)	766 (97%)	22 (3%)	0	100	100
17	LI	582/713 (82%)	574 (99%)	8 (1%)	0	100	100
18	LJ	470/513 (92%)	463 (98%)	7 (2%)	0	100	100
19	LK	130/575 (23%)	130 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	LL	475/643 (74%)	461 (97%)	14 (3%)	0	100	100
21	LM	1597/1769 (90%)	1572 (98%)	25 (2%)	0	100	100
22	LN	649/776 (84%)	635 (98%)	14 (2%)	0	100	100
23	LO	786/923 (85%)	770 (98%)	16 (2%)	0	100	100
24	LP	375/440 (85%)	369 (98%)	6 (2%)	0	100	100
25	LQ	805/943 (85%)	785 (98%)	19 (2%)	1 (0%)	48	83
26	LR	785/817 (96%)	768 (98%)	17 (2%)	0	100	100
27	LS	441/594 (74%)	433 (98%)	8 (2%)	0	100	100
28	LT	861/939 (92%)	846 (98%)	15 (2%)	0	100	100
29	LU	448/489 (92%)	438 (98%)	10 (2%)	0	100	100
30	LV	355/707 (50%)	347 (98%)	8 (2%)	0	100	100
31	LW	453/554 (82%)	442 (98%)	11 (2%)	0	100	100
32	LX	838/1056 (79%)	824 (98%)	14 (2%)	0	100	100
32	LY	834/1056 (79%)	823 (99%)	11 (1%)	0	100	100
33	LZ	156/183 (85%)	155 (99%)	1 (1%)	0	100	100
34	NA	278/593 (47%)	278 (100%)	0	0	100	100
35	NB	221/610 (36%)	217 (98%)	4 (2%)	0	100	100
36	NC	133/357 (37%)	123 (92%)	10 (8%)	0	100	100
37	ND	57/214 (27%)	57 (100%)	0	0	100	100
38	NF	139/151 (92%)	138 (99%)	1 (1%)	0	100	100
39	NG	125/137 (91%)	122 (98%)	3 (2%)	0	100	100
40	NH	1063/1237 (86%)	1049 (99%)	14 (1%)	0	100	100
41	NI	232/297 (78%)	226 (97%)	6 (3%)	0	100	100
42	NM	231/255 (91%)	227 (98%)	4 (2%)	0	100	100
43	NN	41/534 (8%)	41 (100%)	0	0	100	100
44	NP	130/144 (90%)	127 (98%)	3 (2%)	0	100	100
45	NQ	77/82 (94%)	75 (97%)	2 (3%)	0	100	100
46	NS	836/1267 (66%)	820 (98%)	16 (2%)	0	100	100
47	NV	6/733 (1%)	6 (100%)	0	0	100	100
48	OA	12/1729 (1%)	12 (100%)	0	0	100	100
49	OH	118/143 (82%)	118 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
50	OU	54/152 (36%)	54 (100%)	0	0	100	100
51	SA	379/504 (75%)	369 (97%)	10 (3%)	0	100	100
52	SB	431/511 (84%)	423 (98%)	8 (2%)	0	100	100
53	SC	234/327 (72%)	228 (97%)	6 (3%)	0	100	100
53	SD	234/327 (72%)	229 (98%)	5 (2%)	0	100	100
54	SE	119/126 (94%)	117 (98%)	2 (2%)	0	100	100
54	SF	119/126 (94%)	116 (98%)	3 (2%)	0	100	100
55	SG	442/573 (77%)	432 (98%)	10 (2%)	0	100	100
56	SH	358/367 (98%)	346 (97%)	12 (3%)	0	100	100
57	SI	783/1183 (66%)	764 (98%)	19 (2%)	0	100	100
58	SJ	207/252 (82%)	201 (97%)	6 (3%)	0	100	100
58	SK	225/252 (89%)	223 (99%)	2 (1%)	0	100	100
59	SL	146/189 (77%)	140 (96%)	6 (4%)	0	100	100
60	SM	243/290 (84%)	238 (98%)	5 (2%)	0	100	100
61	SP	2136/2493 (86%)	2112 (99%)	24 (1%)	0	100	100
62	SQ	113/217 (52%)	112 (99%)	1 (1%)	0	100	100
63	SR	91/145 (63%)	89 (98%)	2 (2%)	0	100	100
64	SS	213/899 (24%)	207 (97%)	6 (3%)	0	100	100
65	ST	581/810 (72%)	574 (99%)	7 (1%)	0	100	100
66	SU	524/552 (95%)	522 (100%)	2 (0%)	0	100	100
67	SW	211/274 (77%)	206 (98%)	5 (2%)	0	100	100
68	SY	114/250 (46%)	111 (97%)	3 (3%)	0	100	100
69	SZ	255/483 (53%)	252 (99%)	3 (1%)	0	100	100
All	All	25540/36457 (70%)	25068 (98%)	471 (2%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
25	LQ	360	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	
4	L3	2/129 (2%)	2 (100%)	0	100	100
5	L4	11/222 (5%)	11 (100%)	0	100	100
6	L5	8/191 (4%)	8 (100%)	0	100	100
7	L6	8/201 (4%)	8 (100%)	0	100	100
8	L7	10/170 (6%)	10 (100%)	0	100	100
9	L8	4/161 (2%)	4 (100%)	0	100	100
10	L9	9/166 (5%)	9 (100%)	0	100	100
11	LC	6/119 (5%)	6 (100%)	0	100	100
12	LD	8/137 (6%)	8 (100%)	0	100	100
13	LE	3/111 (3%)	3 (100%)	0	100	100
14	LF	3/113 (3%)	3 (100%)	0	100	100
15	LG	2/60 (3%)	2 (100%)	0	100	100
16	LH	21/826 (2%)	21 (100%)	0	100	100
17	LI	24/657 (4%)	24 (100%)	0	100	100
18	LJ	19/454 (4%)	19 (100%)	0	100	100
19	LK	4/533 (1%)	4 (100%)	0	100	100
20	LL	14/574 (2%)	14 (100%)	0	100	100
21	LM	43/1633 (3%)	43 (100%)	0	100	100
22	LN	18/713 (2%)	18 (100%)	0	100	100
23	LO	21/811 (3%)	21 (100%)	0	100	100
24	LP	8/414 (2%)	8 (100%)	0	100	100
25	LQ	17/832 (2%)	17 (100%)	0	100	100
26	LR	22/719 (3%)	22 (100%)	0	100	100
27	LS	21/528 (4%)	21 (100%)	0	100	100
28	LT	25/819 (3%)	25 (100%)	0	100	100
29	LU	13/443 (3%)	13 (100%)	0	100	100
30	LV	14/636 (2%)	14 (100%)	0	100	100
31	LW	21/480 (4%)	21 (100%)	0	100	100
32	LX	42/934 (4%)	42 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	LY	42/934 (4%)	42 (100%)	0	100	100
33	LZ	6/172 (4%)	6 (100%)	0	100	100
34	NA	10/535 (2%)	10 (100%)	0	100	100
35	NB	8/538 (2%)	8 (100%)	0	100	100
36	NC	1/315 (0%)	1 (100%)	0	100	100
37	ND	2/196 (1%)	2 (100%)	0	100	100
38	NF	7/128 (6%)	7 (100%)	0	100	100
39	NG	5/105 (5%)	5 (100%)	0	100	100
40	NH	53/1125 (5%)	53 (100%)	0	100	100
41	NI	8/274 (3%)	8 (100%)	0	100	100
42	NM	5/224 (2%)	5 (100%)	0	100	100
43	NN	2/482 (0%)	2 (100%)	0	100	100
44	NP	5/116 (4%)	5 (100%)	0	100	100
45	NQ	4/71 (6%)	4 (100%)	0	100	100
46	NS	45/1140 (4%)	45 (100%)	0	100	100
49	OH	2/119 (2%)	2 (100%)	0	100	100
50	OU	1/135 (1%)	1 (100%)	0	100	100
51	SA	10/435 (2%)	10 (100%)	0	100	100
52	SB	8/433 (2%)	8 (100%)	0	100	100
53	SC	14/240 (6%)	14 (100%)	0	100	100
53	SD	14/240 (6%)	14 (100%)	0	100	100
54	SE	7/104 (7%)	7 (100%)	0	100	100
54	SF	7/104 (7%)	7 (100%)	0	100	100
55	SG	14/502 (3%)	14 (100%)	0	100	100
56	SH	17/312 (5%)	17 (100%)	0	100	100
57	SI	43/1039 (4%)	43 (100%)	0	100	100
58	SJ	9/222 (4%)	9 (100%)	0	100	100
58	SK	12/222 (5%)	12 (100%)	0	100	100
59	SL	9/169 (5%)	9 (100%)	0	100	100
60	SM	10/258 (4%)	10 (100%)	0	100	100
61	SP	63/2307 (3%)	63 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
62	SQ	5/200 (2%)	5 (100%)	0	100	100
63	SR	5/120 (4%)	5 (100%)	0	100	100
64	SS	14/807 (2%)	14 (100%)	0	100	100
65	ST	22/732 (3%)	22 (100%)	0	100	100
66	SU	27/506 (5%)	27 (100%)	0	100	100
67	SW	11/238 (5%)	11 (100%)	0	100	100
68	SY	2/234 (1%)	2 (100%)	0	100	100
69	SZ	14/424 (3%)	14 (100%)	0	100	100
All	All	964/30243 (3%)	964 (100%)	0	100	100

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

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	L0	59/700 (8%)	20 (33%)	1 (1%)
2	L1	1249/1810 (69%)	227 (18%)	4 (0%)
3	L2	149/333 (44%)	22 (14%)	0
All	All	1457/2843 (51%)	269 (18%)	5 (0%)

5 of 269 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	L0	7	A
1	L0	9	G
1	L0	14	U
1	L0	17	A
1	L0	23	G

All (5) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	L0	69	U
2	L1	320	U
2	L1	494	U

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Mol	Chain	Res	Type
2	L1	1568	C
2	L1	1600	A

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

3 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
27	SEP	LS	128	27	3,4,10	0.65	0	2,4,14	0.78	0
55	SEP	SG	50	55	3,4,10	0.64	0	2,4,14	0.85	0
64	SEP	SS	738	64	3,4,10	0.70	0	2,4,14	0.74	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
27	SEP	LS	128	27	-	1/1/2/10	-
55	SEP	SG	50	55	-	0/1/2/10	-
64	SEP	SS	738	64	-	0/1/2/10	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
27	LS	128	SEP	O-C-CA-CB

There are no ring outliers.

No monomer is involved in short contacts.

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 (i)

There are no chain breaks in this entry.

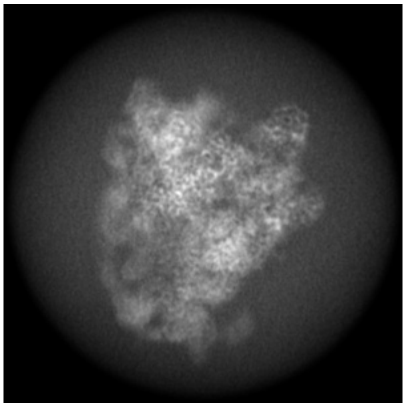
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-49082. These allow visual inspection of the internal detail of the map and identification of artifacts.

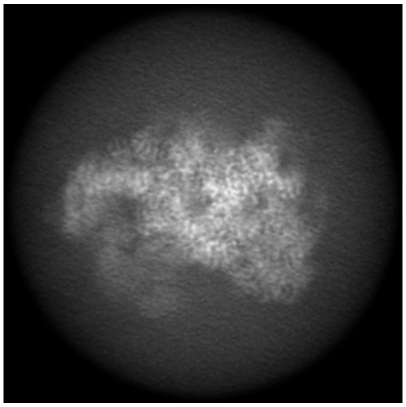
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections ⓘ

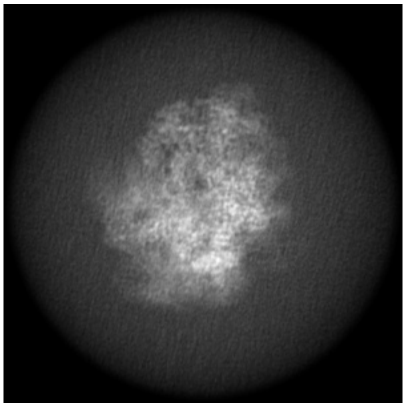
6.1.1 Primary map



X



Y

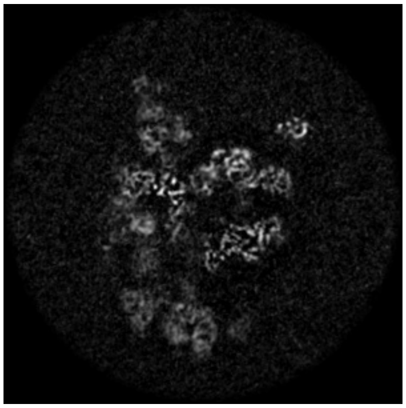


Z

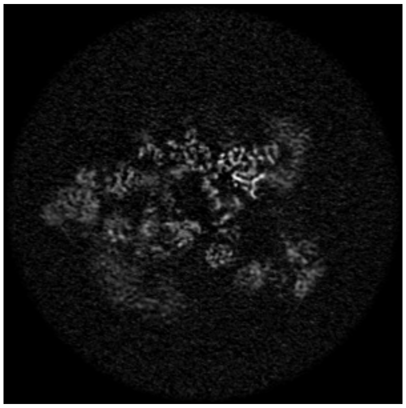
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ

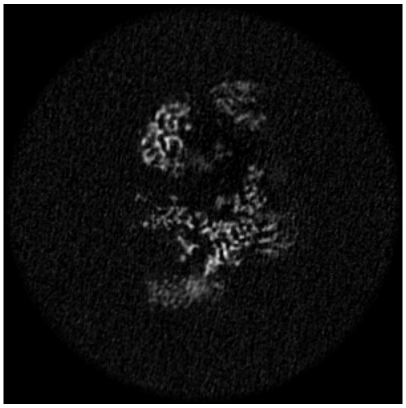
6.2.1 Primary map



X Index: 252



Y Index: 252

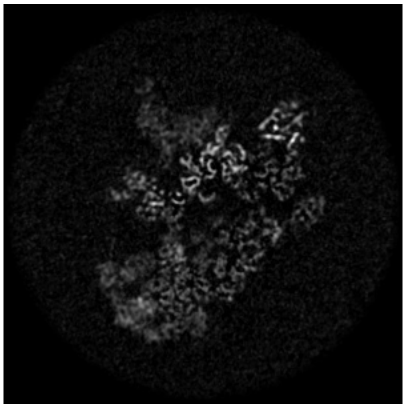


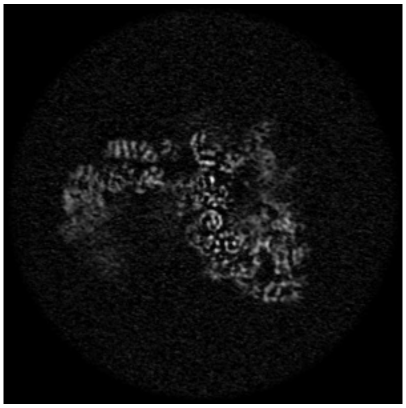
Z Index: 252

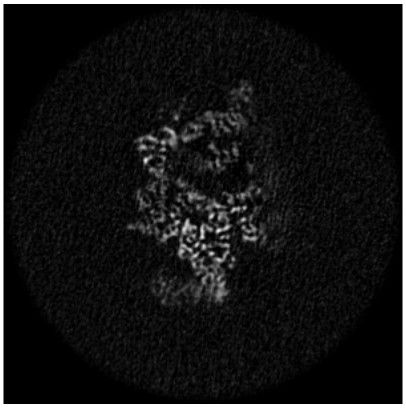
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

6.3.1 Primary map


X Index: 279

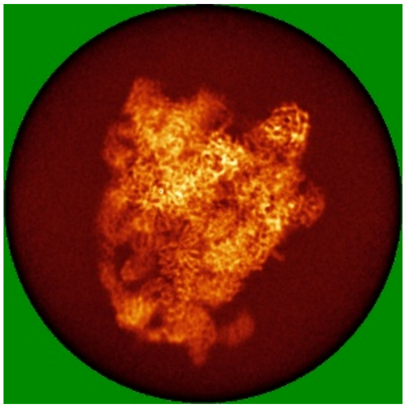

Y Index: 222

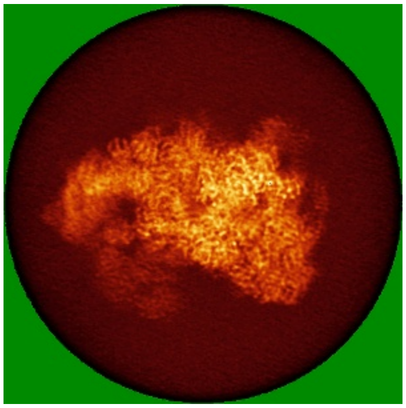

Z Index: 265

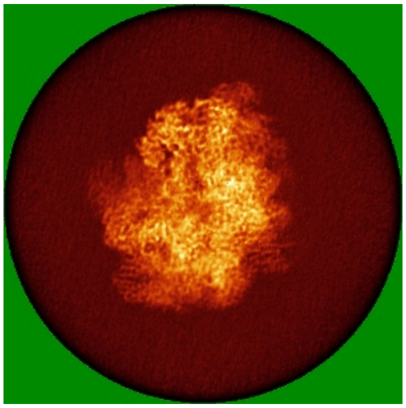
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color)

6.4.1 Primary map


X

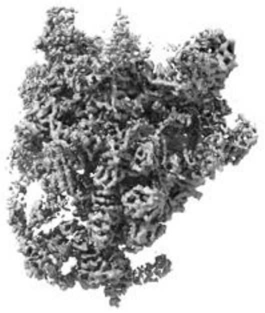

Y


Z

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.

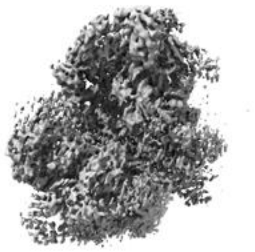
6.5 Orthogonal surface views

6.5.1 Primary map



X

Y



Z

The images above show the 3D surface view of the map at the recommended contour level 1.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

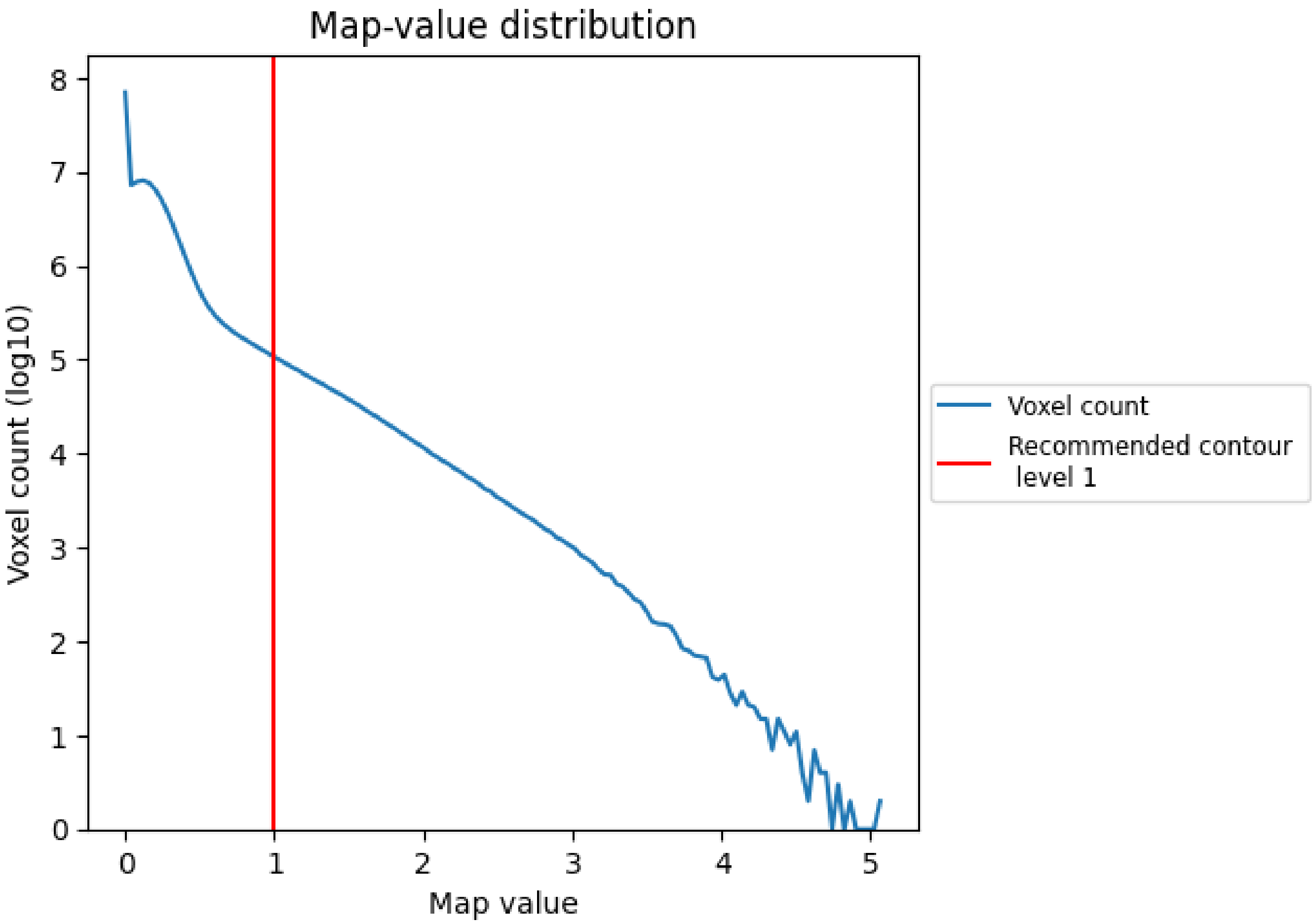
6.6 Mask visualisation

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

7 Map analysis ⓘ

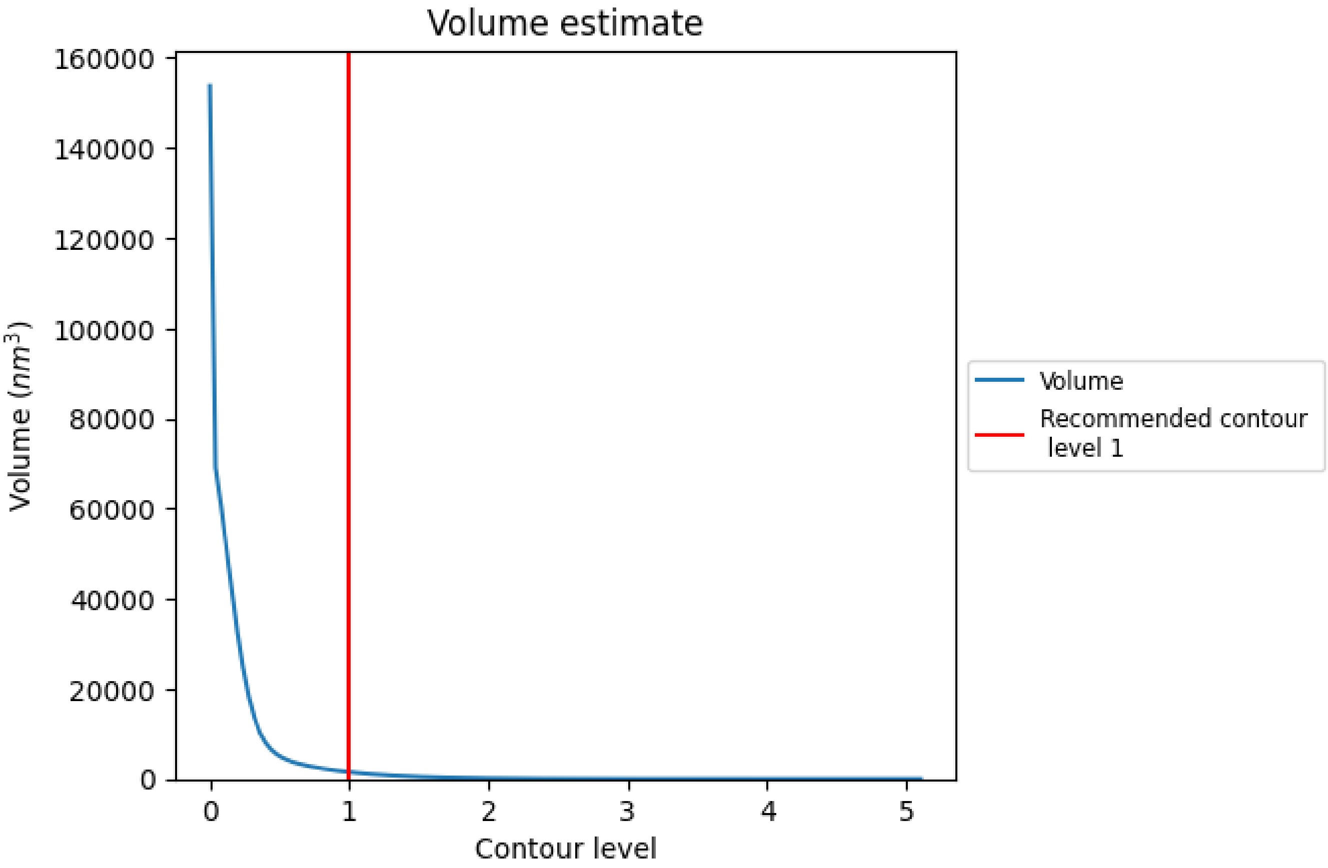
This section contains the results of statistical analysis of the map.

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.

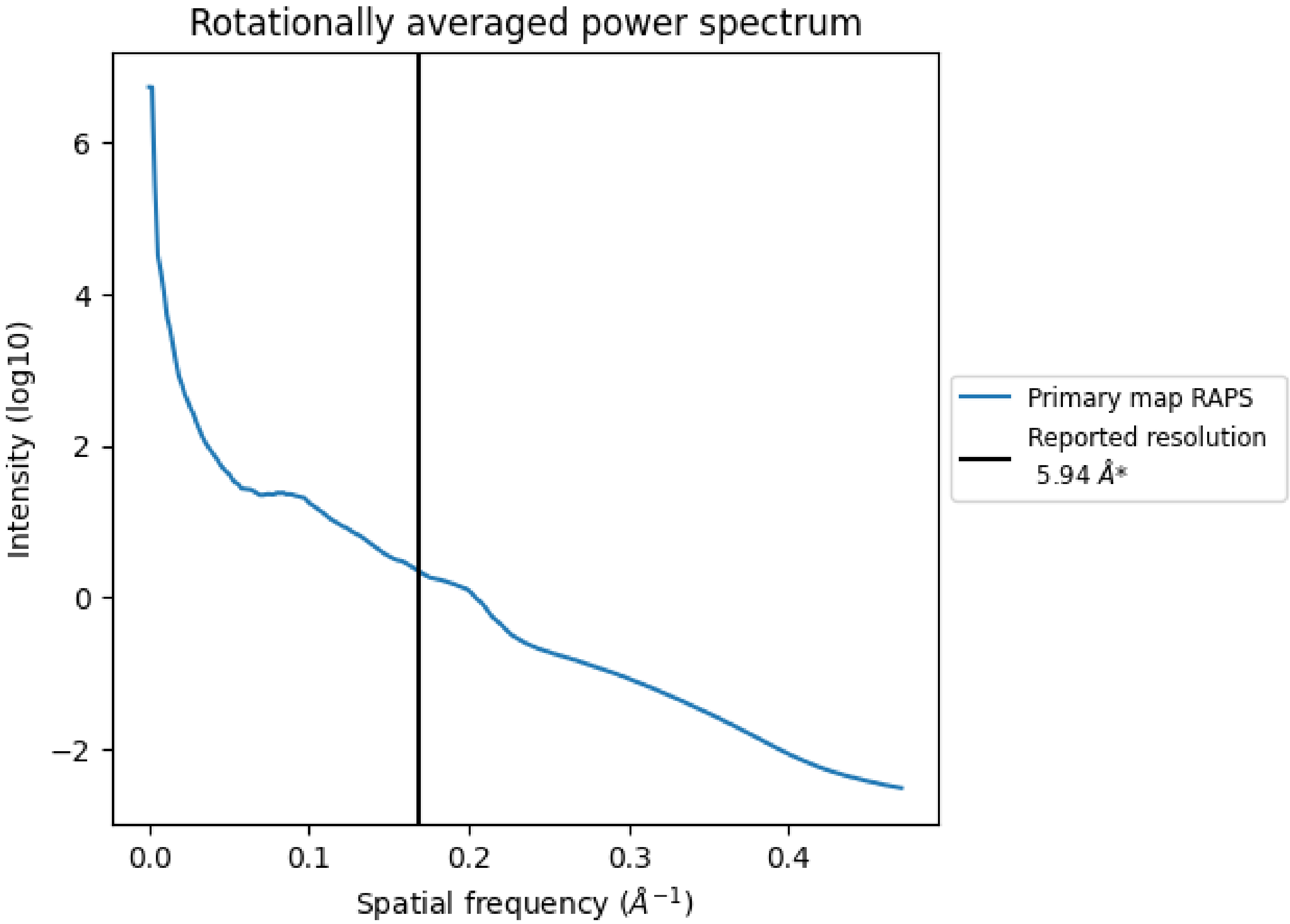
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 1535 nm^3; this corresponds to an approximate mass of 1386 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 0.168 $Å^{-1}$

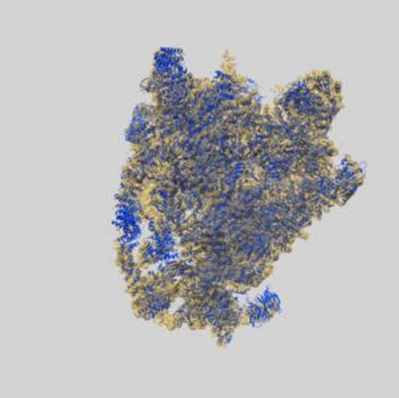
8 Fourier-Shell correlation ⓘ

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

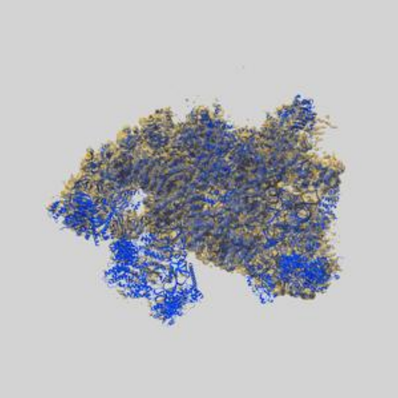
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-49082 and PDB model 9N72. Per-residue inclusion information can be found in section 3 on page 16.

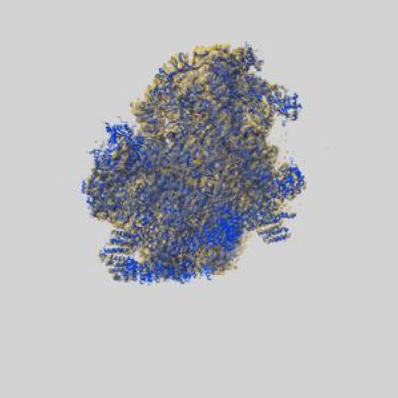
9.1 Map-model overlay



X



Y



Z

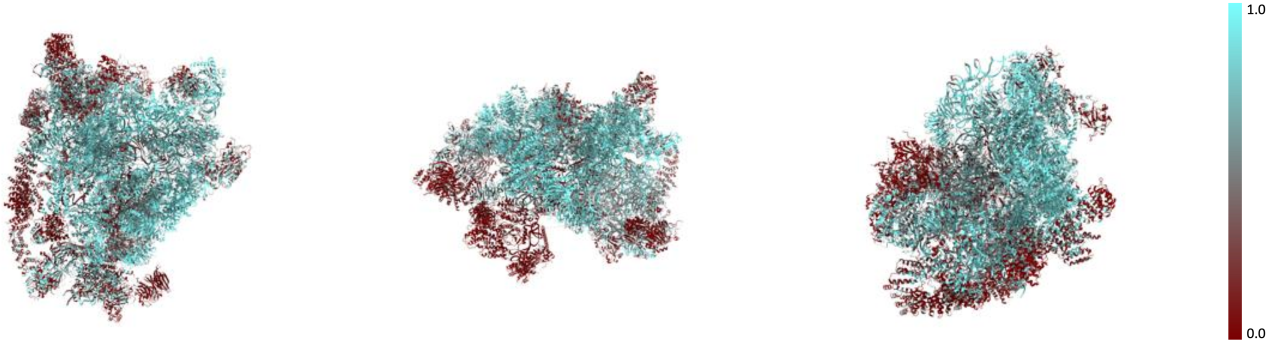
The images above show the 3D surface view of the map at the recommended contour level 1.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

X Y Z

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.

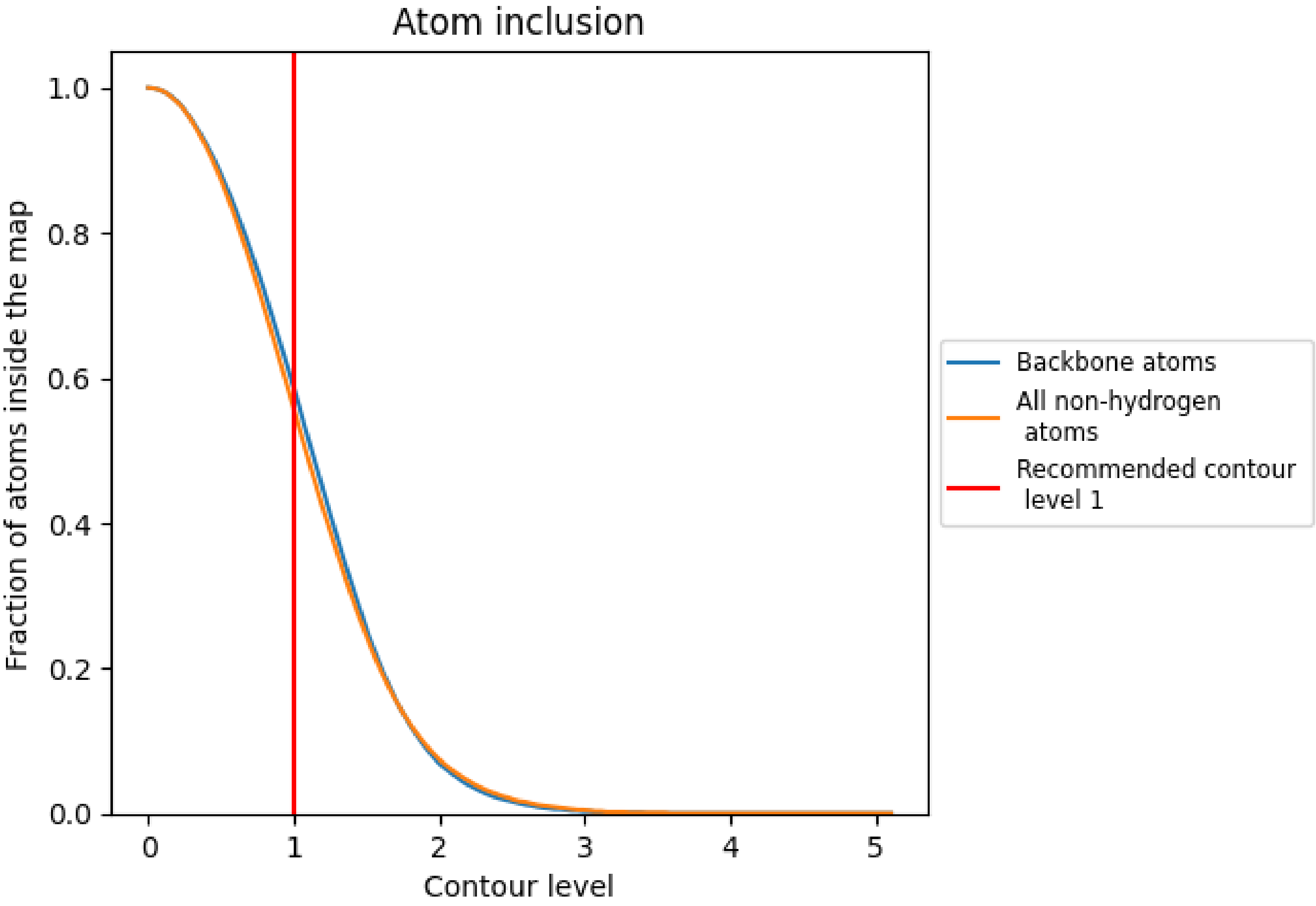
9.3 Atom inclusion mapped to coordinate model ⓘ



X Y Z

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 (1).

9.4 Atom inclusion ⓘ



At the recommended contour level, 59% of all backbone atoms, 56% 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 (1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5560	0.1890
L0	0.5470	0.1160
L1	0.6730	0.1750
L2	0.6410	0.1710
L3	0.0170	0.1030
L4	0.7160	0.1730
L5	0.8460	0.3110
L6	0.6710	0.1830
L7	0.7340	0.2230
L8	0.5680	0.1350
L9	0.7830	0.2400
LC	0.7880	0.3070
LD	0.5320	0.1300
LE	0.8640	0.2890
LF	0.8370	0.2090
LG	0.8030	0.3410
LH	0.4850	0.1660
LI	0.0900	0.0410
LJ	0.3890	0.1460
LK	0.2290	0.0930
LL	0.5710	0.2450
LM	0.3620	0.0910
LN	0.5240	0.1730
LO	0.8250	0.3510
LP	0.6350	0.2400
LQ	0.8500	0.2290
LR	0.7640	0.2930
LS	0.7470	0.3140
LT	0.8420	0.3370
LU	0.8880	0.3000
LV	0.6080	0.1340
LW	0.7670	0.3120
LX	0.5600	0.1750
LY	0.2760	0.0790
LZ	0.6360	0.2410

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Chain	Atom inclusion	Q-score
NA	0.5400	0.2160
NB	0.3200	0.1120
NC	0.6140	0.2170
ND	0.0000	0.0210
NF	0.9040	0.2790
NG	0.7030	0.3360
NH	0.7200	0.2590
NI	0.4550	0.2290
NM	0.7990	0.3440
NN	0.5020	0.1540
NP	0.0350	0.0980
NQ	0.8840	0.2640
NS	0.5210	0.2450
NV	0.1030	-0.1090
OA	0.0000	0.0600
OH	0.0000	-0.0320
OU	0.0000	-0.0450
SA	0.7460	0.2560
SB	0.5810	0.2140
SC	0.7810	0.2980
SD	0.0940	0.0750
SE	0.6910	0.2530
SF	0.8460	0.2680
SG	0.7780	0.2310
SH	0.5480	0.2130
SI	0.6750	0.2550
SJ	0.0640	0.0390
SK	0.1140	0.0540
SL	0.8440	0.2980
SM	0.5530	0.2290
SP	0.2950	0.1190
SQ	0.4800	0.2410
SR	0.7230	0.2360
SS	0.5560	0.2650
ST	0.0880	0.0380
SU	0.0140	0.0180
SW	0.7340	0.3270
SY	0.1980	0.1540
SZ	0.0200	-0.0060