



wwPDB EM Validation Summary Report ⓘ

Dec 11, 2022 – 04:41 am GMT

PDB ID : 4V3P
EMDB ID : EMD-2790
Title : The molecular structure of the left-handed supra-molecular helix of eukaryotic polyribosomes
Authors : Myasnikov, A.G.; Afonina, Z.A.; Menetret, J.F.; Shirokov, V.A.; Spirin, A.S.; Klaholz, B.P.
Deposited on : 2014-10-20
Resolution : 34.00 Å (reported)
Based on initial model : 3IZ6

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

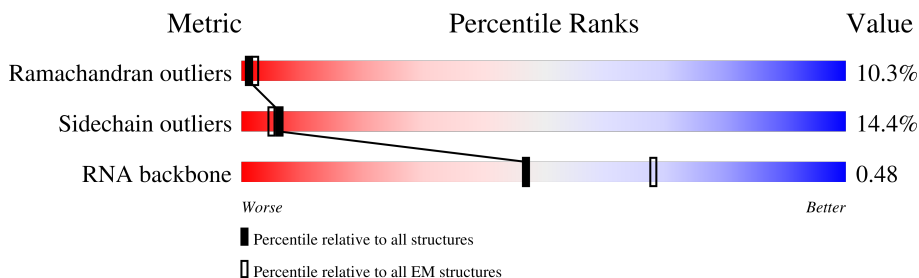
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 34.00 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)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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

Mol	Chain	Length	Quality of chain
1	Sa	380	34% (Poor fit) 65% (0 outliers), 26% (1 outlier), 7% (2 outliers), 2% (3+ outliers)
2	SA	260	30% (Poor fit) 62% (0 outliers), 23% (1 outlier), 13% (2 outliers), 2% (3+ outliers)
3	SB	208	34% (Poor fit) 41% (0 outliers), 33% (1 outlier), 22% (2 outliers), 2% (3+ outliers)
4	SD	200	65% (0 outliers), 21% (1 outlier), 8% (2 outliers), 6% (3+ outliers)
5	SE	263	5% (Poor fit) 62% (0 outliers), 28% (1 outlier), 8% (2 outliers), 2% (3+ outliers)
6	SF	191	63% (0 outliers), 76% (0 outliers), 19% (1 outlier), 5% (2 outliers)
7	SI	126	10% (Poor fit) 61% (0 outliers), 30% (1 outlier), 6% (2 outliers), 2% (3+ outliers)
8	SJ	128	30% (Poor fit) 68% (0 outliers), 23% (1 outlier), 8% (2 outliers), 2% (3+ outliers)



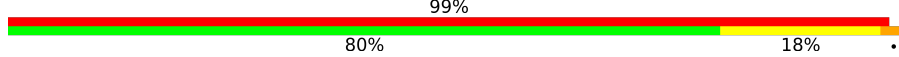









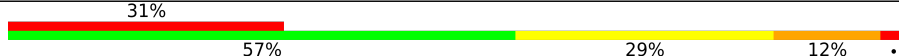
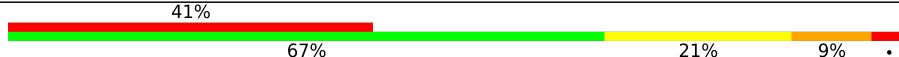
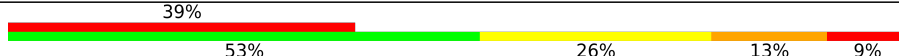

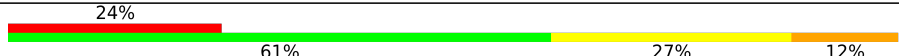
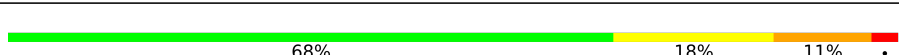
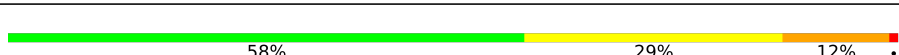
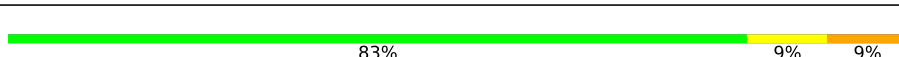
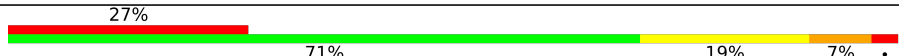




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Mol	Chain	Length	Quality of chain
9	SK	119	18% 54% 28% 17%
10	SL	142	90% 68% 18% 11%
11	SM	152	39% 43% 33% 19% 5%
12	SO	121	79% 71% 19% 7%
13	SQ	141	34% 45% 30% 14% 11%
14	SP	85	99% 55% 32% 11%
15	SS	146	55% 27% 12% 5%
16	SR	91	34% 63% 29% 7%
17	SV	100	55% 63% 23% 12%
18	SW	92	89% 11%
19	SY	58	34% 55% 28% 16%
20	SZ	62	39% 56% 32% 6% 5%
21	Sc	25	24% 96%
22	Sb	36	100%
23	SU	98	61% 29% 34% 21% 16%
24	SX	50	86% 66% 26% 6%
25	SC	195	12% 51% 26% 15% 8%
26	SG	143	37% 81% 19%
27	SH	130	59% 28% 12%
28	SN	48	44% 38% 15%
29	ST	82	44% 60% 29% 6% 5%
30	S3	11	9% 73% 18%
31	S2	75	80% 65% 31%
32	S1	1743	31% 7% 64% 29%
33	L1	3352	25% 10% 59% 31%

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Mol	Chain	Length	Quality of chain
34	L3	120	
35	L2	159	
36	LA	216	
37	LB	255	
38	LE	170	
39	LF	190	
40	LH	201	
41	LM	140	
42	LP	194	
43	LO	144	
44	LR	163	
45	LQ	304	
46	LT	189	
47	LU	164	
48	LV	171	
49	LX	122	
50	LZ	75	
51	LY	130	
52	Lb	73	
53	Ld	23	
54	Lf	112	
55	Lg	120	
56	Lh	133	
57	Li	94	
58	Ln	69	

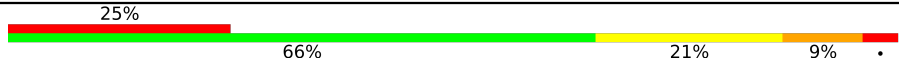


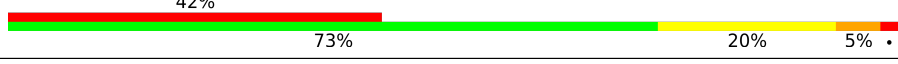
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Mol	Chain	Length	Quality of chain
59	Lo	51	53% 31% 35% 24% 10%
60	Lr	105	35% 50% 35% 11%
61	Lq	25	32% 56% 32% 12%
62	Lx	20	10% 80% 20%
62	Ly	20	95% 5%
63	Lz	14	86% 14%
64	LG	219	45% 30% 17% 8%
65	LL	182	34% 81% 19%
66	LN	134	49% 27% 16% 9%
67	LS	167	34% 38% 22% 5%
68	LW	108	49% 28% 16% 7%
69	La	99	45% 29% 19% 6%
70	Li	119	34% 28% 23% 15%
71	Lj	104	22% 47% 31% 14% 8%
72	Lk	77	8% 48% 30% 17% 5%
73	Lp	41	39% 32% 12% 17%
74	LJ	128	63% 24% 9%
75	Lt	58	91% 5%
75	Lu	58	5% 93%
76	Lv	59	88% 10%
76	Lw	59	86% 8% 5%
77	Lc	124	67% 24% 8%
78	Le	244	17% 64% 25% 9%
79	Ls	262	15% 77% 18% 5%
80	LC	389	57% 28% 11%

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Mol	Chain	Length	Quality of chain
81	LD	372	
82	LK	206	
83	Lm	92	
84	LI	184	

2 Entry composition [i](#)

There are 84 unique types of molecules in this entry. The entry contains 195694 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called G protein beta subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	Sa	380	2842	1758	512	553	19	0	0

- Molecule 2 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	SA	260	1946	1220	349	367	10	0	0

- Molecule 3 is a protein called Putative 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	SB	208	1539	964	288	279	8	0	0

- Molecule 4 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	SD	200	1607	1030	290	283	4	0	0

- Molecule 5 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	SE	263	2028	1283	385	352	8	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	SF	191	1485	925	281	272	7	0	0

- Molecule 7 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	SI	126	1017	648	195	170	4	0	0

- Molecule 8 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	SJ	128	887	541	171	171	4	0	0

- Molecule 9 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	SK	119	830	508	159	159	4	0	0

- Molecule 10 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	SL	142	952	576	197	175	4	0	0

- Molecule 11 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	SM	152	1167	722	233	206	6	0	0

- Molecule 12 is a protein called 40S ribosomal protein S13-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	SO	121	977	627	180	167	3	0	0

- Molecule 13 is a protein called 40S ribosomal protein S17-4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	SQ	141	1129	699	214	210	6	0	0

- Molecule 14 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	SP	85	Total	C	N	O	S	0	0
			639	399	130	107	3		

- Molecule 15 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	SS	146	Total	C	N	O	S	0	0
			1155	726	218	207	4		

- Molecule 16 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	SR	91	Total	C	N	O	S	0	0
			711	457	130	120	4		

- Molecule 17 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	SV	100	Total	C	N	O	0	0
			740	458	142	140		

- Molecule 18 is a protein called 40S WHEAT GERM RIBOSOME1.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	SW	92	Total	C	N	O	0	0
			460	276	92	92		

- Molecule 19 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	SY	58	Total	C	N	O	S	0	0
			442	274	83	82	3		

- Molecule 20 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	SZ	62	Total	C	N	O	S	0	0
			469	289	105	73	2		

- Molecule 21 is a protein called Unknown 40S wheat germ ribosome protein 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	Sc	25	Total	C	N	O	0	0
			126	75	25	26		

- Molecule 22 is a protein called Unknown 40S wheat germ ribosome protein 3.

Mol	Chain	Residues	Atoms				AltConf	Trace
22	Sb	36	Total	C	N	O	0	0
			181	108	36	37		

- Molecule 23 is a protein called Unknown 40S wheat germ ribosome protein 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	SU	98	Total	C	N	O	S	0	0
			732	466	142	123	1		

- Molecule 24 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	SX	50	Total	C	N	O	S	0	0
			375	235	65	68	7		

- Molecule 25 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	SC	195	Total	C	N	O	S	0	0
			1535	958	307	265	5		

- Molecule 26 is a protein called Unknown 40S wheat germ ribosome protein 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	SG	143	Total	C	N	O	0	0
			716	429	143	144		

- Molecule 27 is a protein called Ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	SH	130	Total	C	N	O	S	0	0
			1042	667	189	181	5		

- Molecule 28 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	SN	48	Total	C	N	O	S	0	0
			313	184	67	56	6		

- Molecule 29 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	ST	82	Total	C	N	O	S	0	0
			650	400	121	126	3		

- Molecule 30 is a RNA chain called 40S WHEAT GERM RIBOSOME protein 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	S3	11	Total	C	N	O	P	0	0
			236	106	45	74	11		

- Molecule 31 is a RNA chain called 40S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	S2	75	Total	C	N	O	P	0	0
			1599	712	280	532	75		

- Molecule 32 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	S1	1743	Total	C	N	O	P	0	11
			33897	14994	5742	11418	1743		

- Molecule 33 is a RNA chain called 26S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	L1	3352	Total	C	N	O	P	0	39
			69592	30953	12564	22725	3350		

- Molecule 34 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	L3	120	Total	C	N	O	P	0	0
			2565	1144	461	840	120		

- Molecule 35 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
35	L2	159	3192	1415	555	1063	159	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L2	136	G	C	conflict	GB 17016972

- Molecule 36 is a protein called Ribosomal protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	LA	216	1718	1092	309	304	13	0	0

- Molecule 37 is a protein called 60S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	LB	255	1933	1200	398	326	9	0	0

- Molecule 38 is a protein called Ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	LE	170	1376	867	256	244	9	0	0

- Molecule 39 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	LF	190	1500	947	270	277	6	0	0

- Molecule 40 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	LH	201	1564	996	289	273	6	0	0

- Molecule 41 is a protein called Ribosomal Pr 117.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	LM	140	1020	640	192	179	9	0	0

- Molecule 42 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	LP	194	1630	1027	342	257	4	0	0

- Molecule 43 is a protein called 60S ribosomal protein L27a-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	LO	144	1086	691	217	173	5	0	0

- Molecule 44 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	LR	163	1284	810	248	219	7	0	0

- Molecule 45 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	LQ	304	2395	1497	430	461	7	0	0

- Molecule 46 is a protein called Ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	LT	189	1569	972	330	257	10	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LT	184	GLY	UNK	variant	UNP Q7XY20

- Molecule 47 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	LU	164	1266	789	250	225	2	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LU	65	TRP	CYS	conflict	UNP W5EIT2

- Molecule 48 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	LV	171	1335	826	266	238	5	0	0

- Molecule 49 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	LX	122	987	634	178	173	2	0	0

- Molecule 50 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	LZ	75	578	366	115	94	3	0	0

- Molecule 51 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	LY	130	1048	647	220	178	3	0	0

- Molecule 52 is a protein called 60S ribosomal protein l28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	Lb	73	576	364	107	103	2	0	0

- Molecule 53 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
53	Ld	23	199	119	41	39	0	0

- Molecule 54 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	Lf	112	825	516	146	157	6	0	0

- Molecule 55 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	Lg	120	944	585	185	171	3	0	0

- Molecule 56 is a protein called Ribosomal L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	Lh	133	1089	688	216	179	6	0	0

- Molecule 57 is a protein called Ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	Ll	94	725	438	158	122	7	0	0

- Molecule 58 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	Ln	69	547	347	102	96	2	0	0

- Molecule 59 is a protein called Ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	Lo	51	460	291	100	67	2	0	0

- Molecule 60 is a protein called 60S ribosomal protein L44.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	Lr	105	Total	C	N	O	S	0	0
			838	523	166	143	6		

- Molecule 61 is a protein called Unknown 60S wheat germ ribosome protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	Lq	25	Total	C	N	O	S	0	0
			238	145	62	28	3		

- Molecule 62 is a protein called Unknown 60S wheat germ ribosome protein 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
62	Ly	20	Total	C	N	O	0	0
			101	60	20	21		
62	Lx	20	Total	C	N	O	0	0
			101	60	20	21		

- Molecule 63 is a protein called Unknown 60S wheat germ ribosome protein 3.

Mol	Chain	Residues	Atoms				AltConf	Trace
63	Lz	14	Total	C	N	O	0	0
			71	42	14	15		

- Molecule 64 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	LG	219	Total	C	N	O	S	0	0
			1730	1106	314	306	4		

- Molecule 65 is a protein called Unknown 60S wheat germ ribosome protein 5.

Mol	Chain	Residues	Atoms				AltConf	Trace
65	LL	182	Total	C	N	O	0	0
			910	545	182	183		

- Molecule 66 is a protein called Unknown 60S wheat germ ribosome protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	LN	134	Total	C	N	O	S	0	0
			1081	690	201	185	5		

- Molecule 67 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	LS	167	1419	916	263	233	7	0	0

- Molecule 68 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	LW	108	839	530	152	155	2	0	0

- Molecule 69 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
69	La	99	732	463	140	126	3	0	0

- Molecule 70 is a protein called Ribosomal protein l34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
70	Li	119	964	606	195	161	2	0	0

- Molecule 71 is a protein called ribosomal protein L35A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
71	Lj	104	797	498	158	138	3	0	0

- Molecule 72 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
72	Lk	77	613	383	128	100	2	0	0

- Molecule 73 is a protein called Ubiquitin-60S ribosomal protein L40-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
73	Lp	41	344	211	75	53	5	0	0

- Molecule 74 is a protein called 60S ribosomal protein L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	LJ	128	Total	C	N	O	S	0	0
			959	601	177	177	4		

- Molecule 75 is a protein called Ribosomal protein P1.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	Lt	58	Total	C	N	O	S	0	0
			432	283	69	79	1		
75	Lu	58	Total	C	N	O	S	0	0
			432	283	69	79	1		

- Molecule 76 is a protein called 60S acidic ribosomal protein P2A.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	Lv	59	Total	C	N	O	S	0	0
			441	278	69	90	4		
76	Lw	59	Total	C	N	O	S	0	0
			441	278	69	90	4		

- Molecule 77 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Lc	124	Total	C	N	O		0	0
			1006	632	202	172			

- Molecule 78 is a protein called Ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	Le	244	Total	C	N	O	S	0	0
			1984	1271	368	339	6		

- Molecule 79 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Ls	262	Total	C	N	O	S	0	0
			1993	1278	330	377	8		

- Molecule 80 is a protein called Ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	LC	389	Total	C	N	O	S	0	0
			3102	1968	578	538	18		

- Molecule 81 is a protein called 60S ribosomal protein L4/L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
81	LD	372	2866	1802	555	502	7	0	0

- Molecule 82 is a protein called Ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
82	LK	206	1650	1045	320	274	11	0	0

- Molecule 83 is a protein called 60S ribosomal protein L37a, expressed.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
83	Lm	92	715	447	137	124	7	0	0

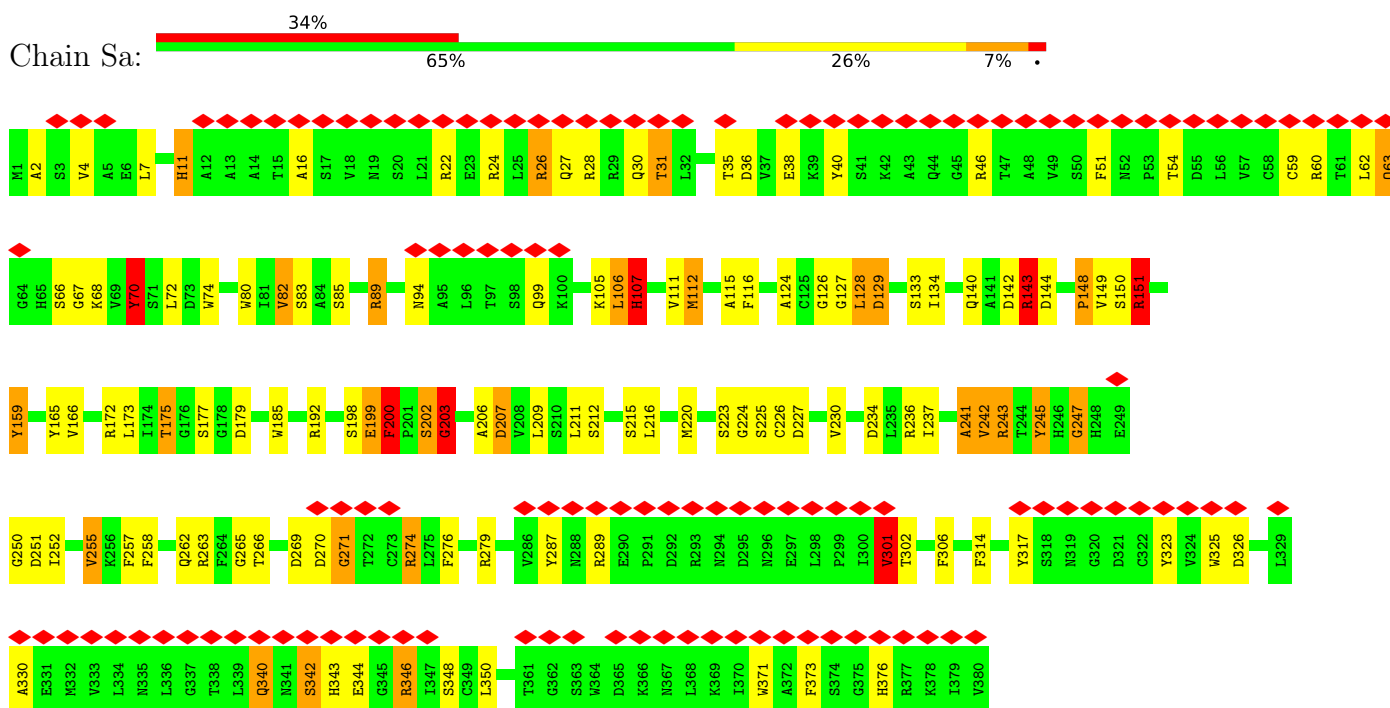
- Molecule 84 is a protein called 60S ribosomal protein L10-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
84	LI	184	1468	923	288	245	12	0	0

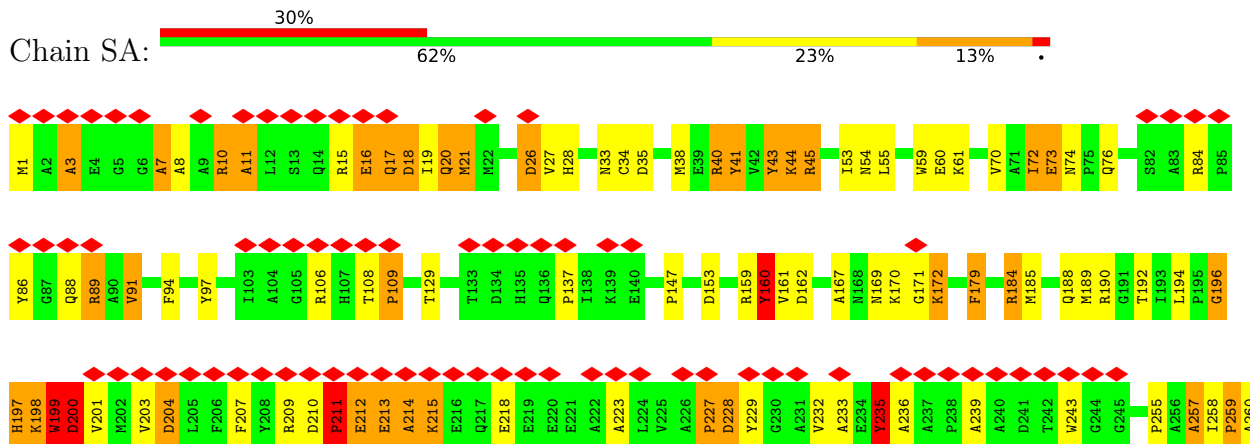
3 Residue-property plots [i](#)

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

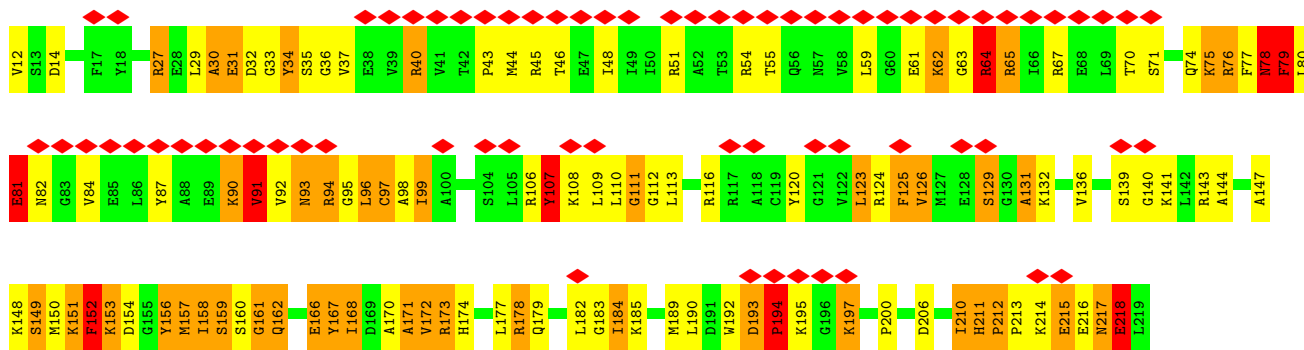
- Molecule 1: G protein beta subunit



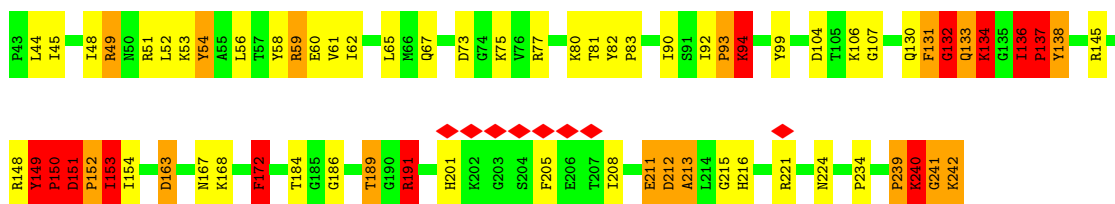
- Molecule 2: 40S ribosomal protein SA



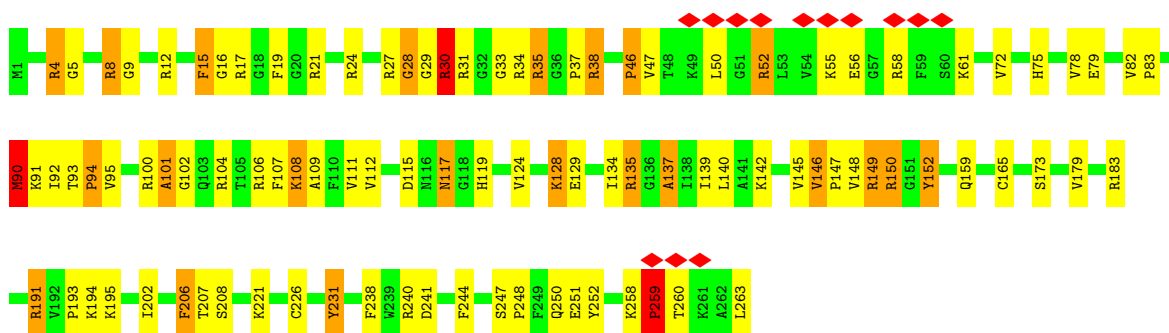
- Molecule 3: Putative 40S ribosomal protein S3



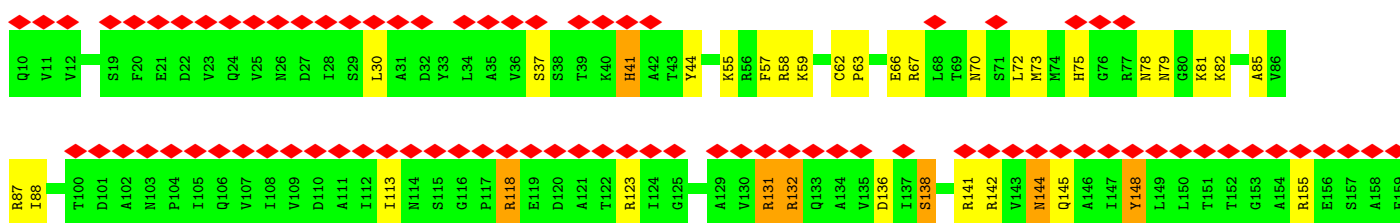
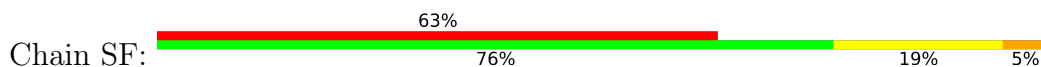
• Molecule 4: 40S ribosomal protein S4



• Molecule 5: 40S ribosomal protein S2

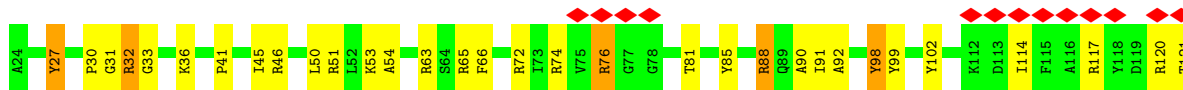


• Molecule 6: 40S ribosomal protein S5

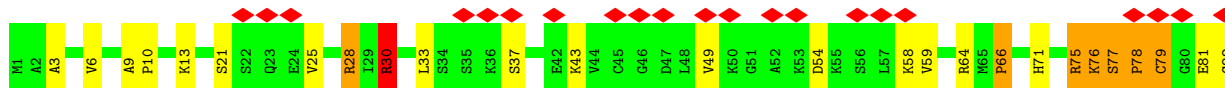




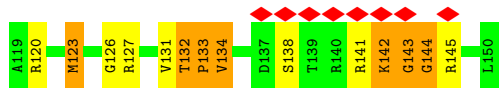
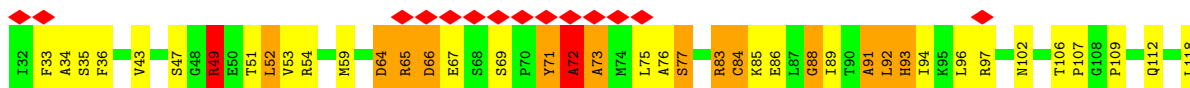
• Molecule 7: 40S ribosomal protein S16



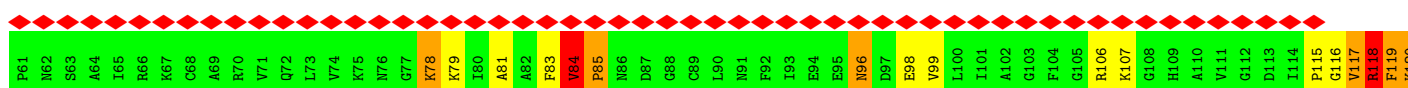
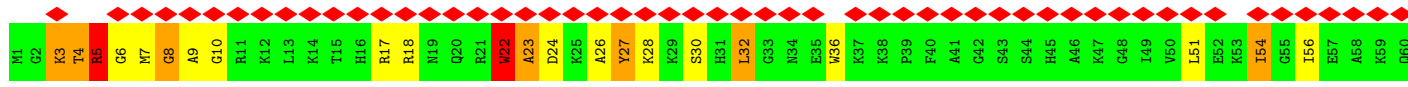
• Molecule 8: 40S ribosomal protein S20

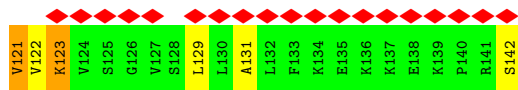


• Molecule 9: 40S ribosomal protein S14

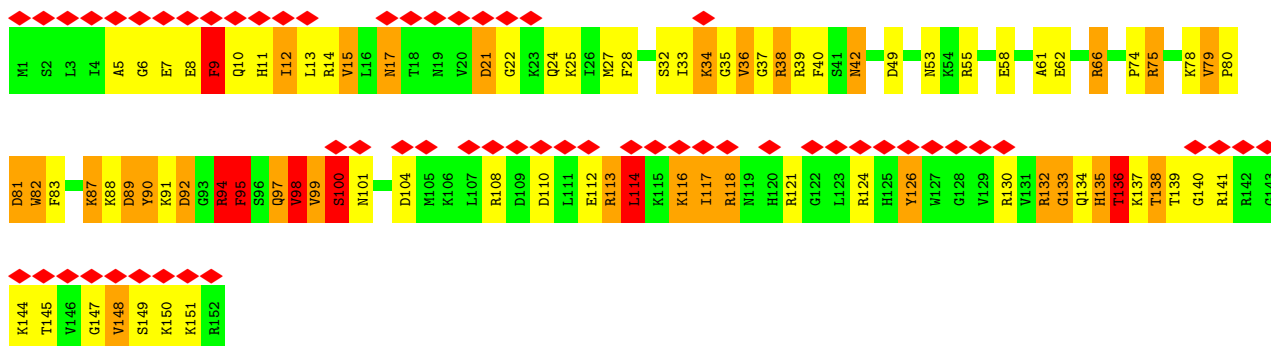
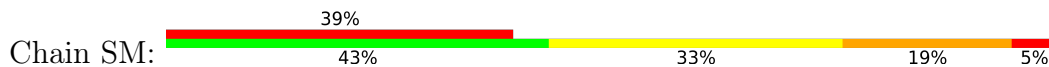


• Molecule 10: 40S ribosomal protein S23

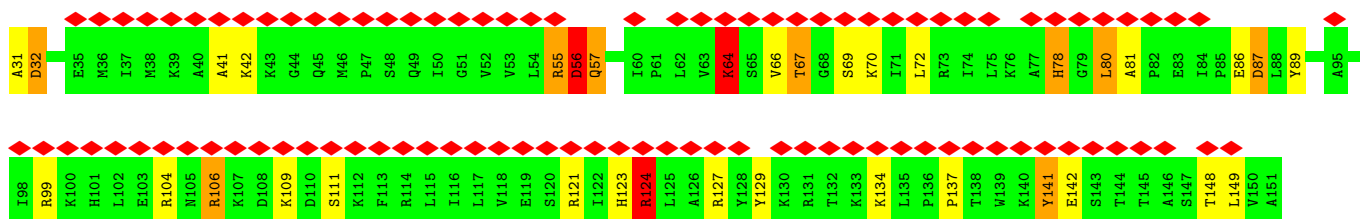
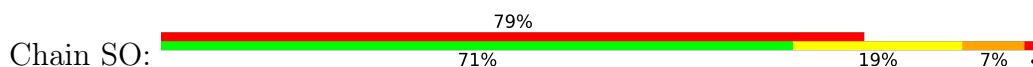




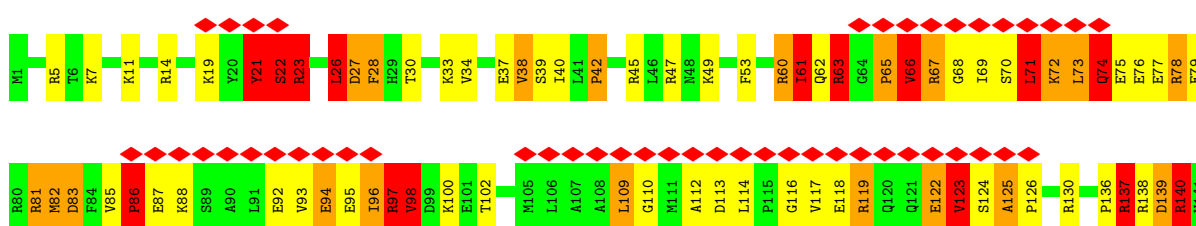
• Molecule 11: 40S ribosomal protein S18



• Molecule 12: 40S ribosomal protein S13-1



• Molecule 13: 40S ribosomal protein S17-4

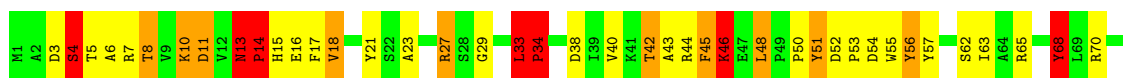


• Molecule 14: 40S ribosomal protein S11

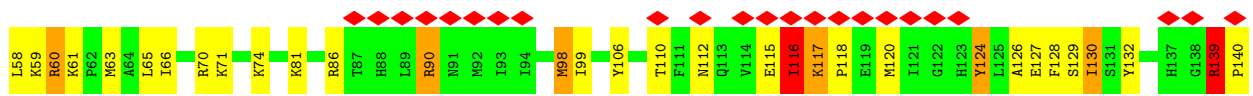




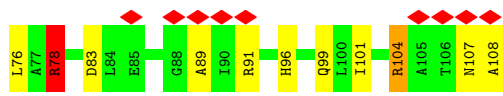
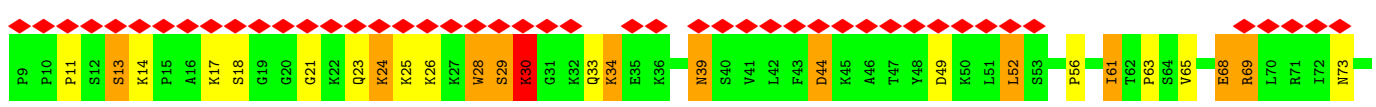
• Molecule 15: 40S ribosomal protein S19



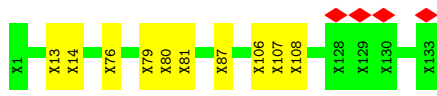
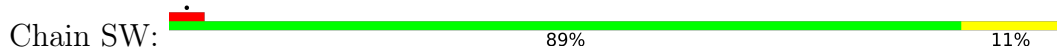
• Molecule 16: 40S ribosomal protein S15



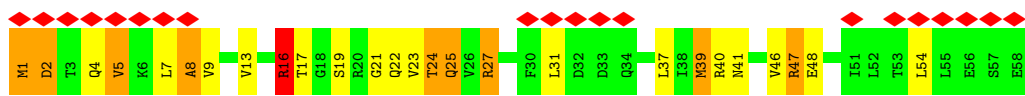
• Molecule 17: 40S ribosomal protein S25



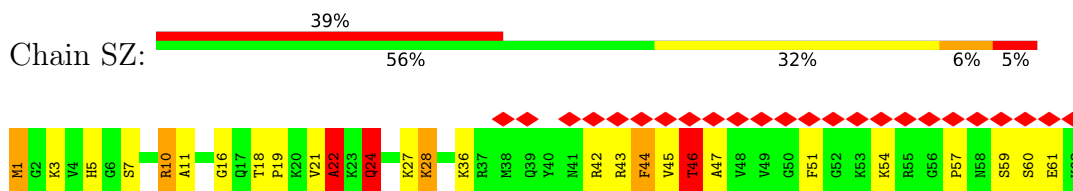
• Molecule 18: 40S WHEAT GERM RIBOSOME1



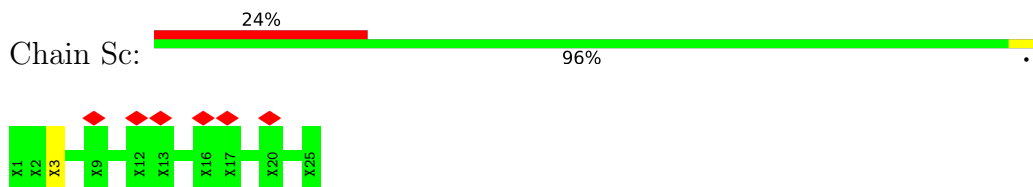
• Molecule 19: 40S ribosomal protein S28



- Molecule 20: 40S ribosomal protein S30



- Molecule 21: Unknown 40S wheat germ ribosome protein 2

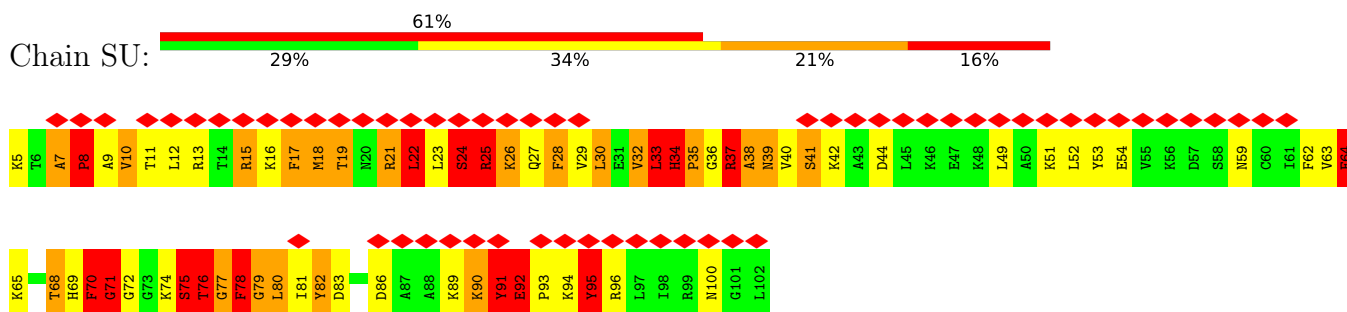


- Molecule 22: Unknown 40S wheat germ ribosome protein 3

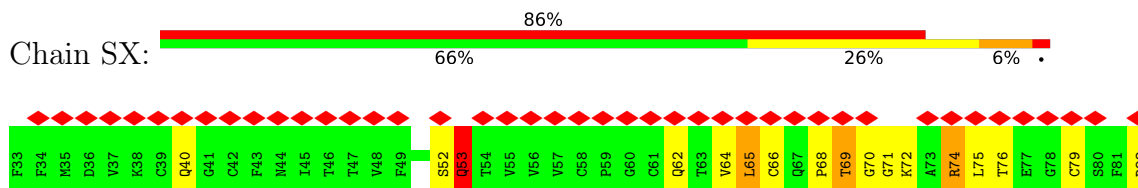


There are no outlier residues recorded for this chain.

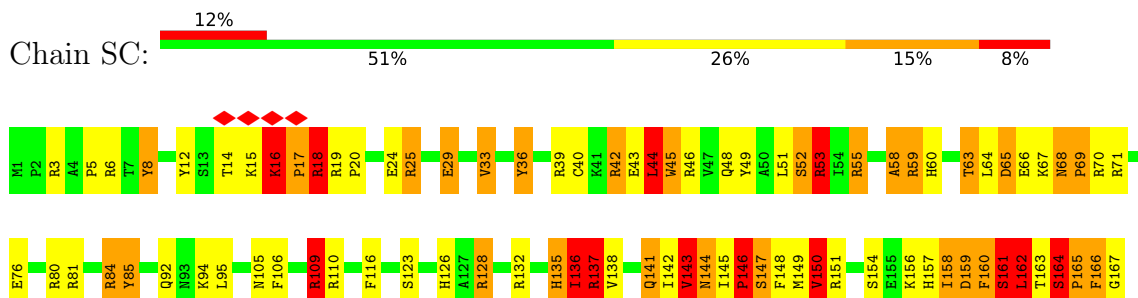
- Molecule 23: Unknown 40S wheat germ ribosome protein 3

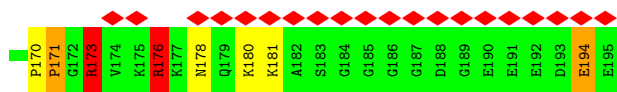


- Molecule 24: 40S ribosomal protein S27

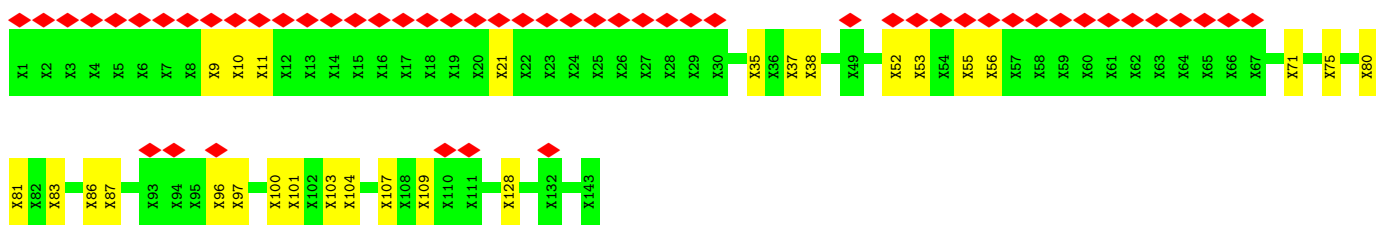
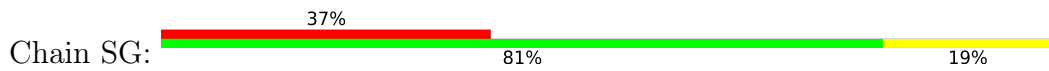


- Molecule 25: 40S ribosomal protein S9

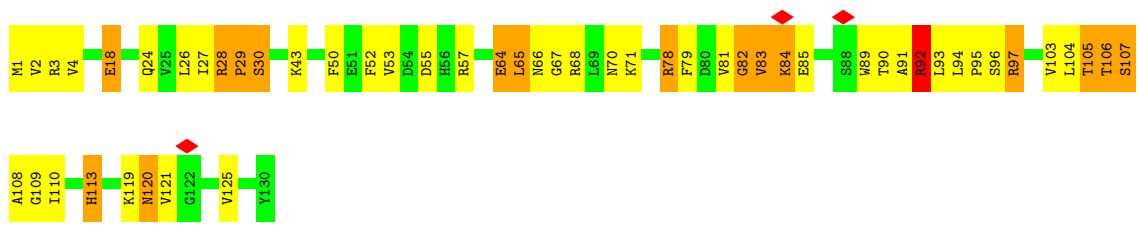




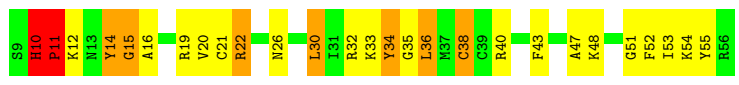
• Molecule 26: Unknown 40S wheat germ ribosome protein 4



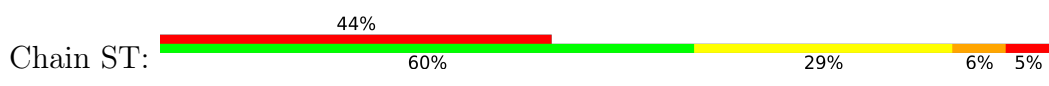
• Molecule 27: Ribosomal protein S15



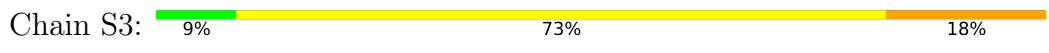
• Molecule 28: 40S ribosomal protein S29



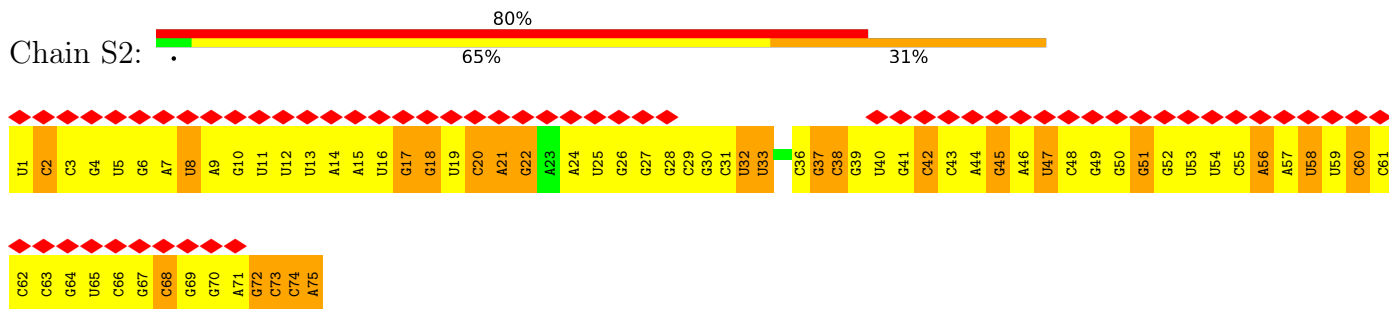
• Molecule 29: 40S ribosomal protein S21



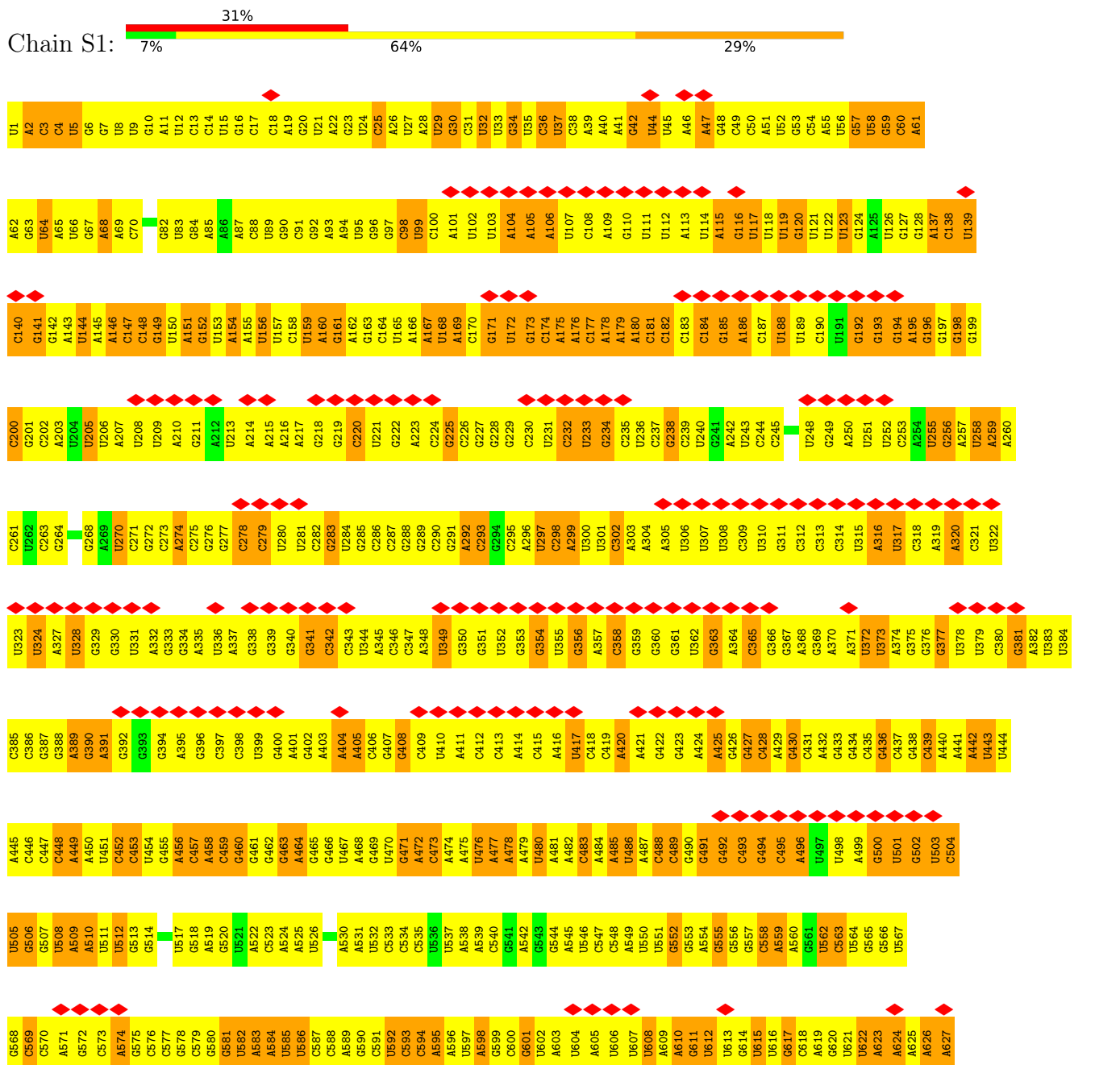
• Molecule 30: 40S WHEAT GERM RIBOSOME protein 4



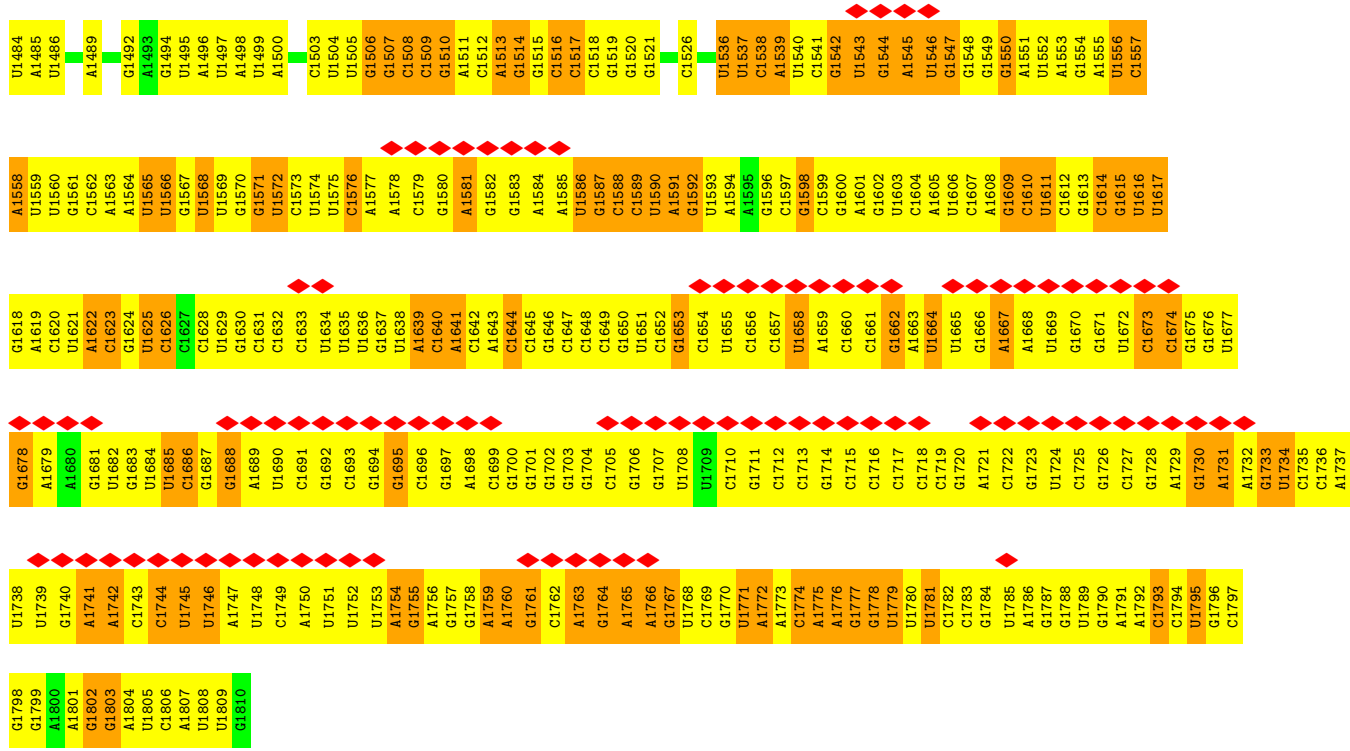
• Molecule 31: 40S ribosomal RNA



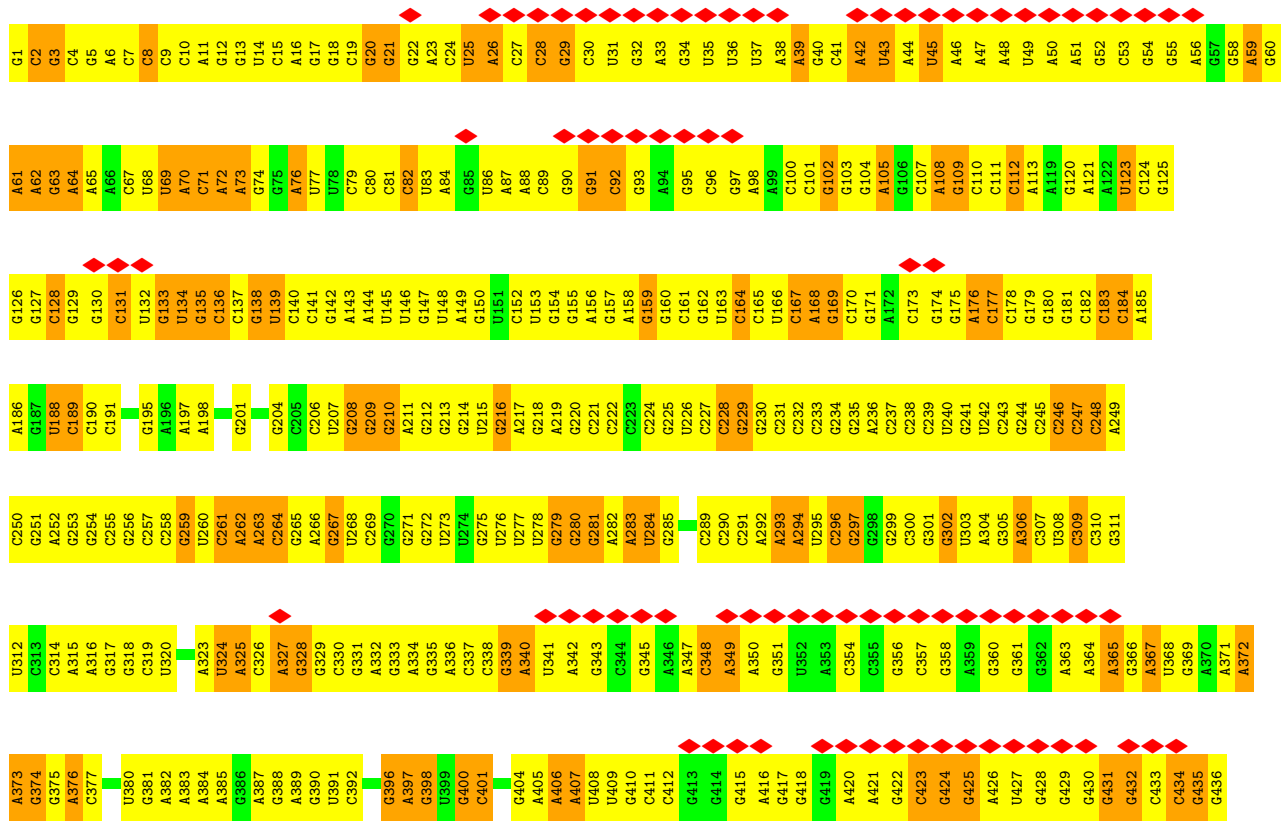
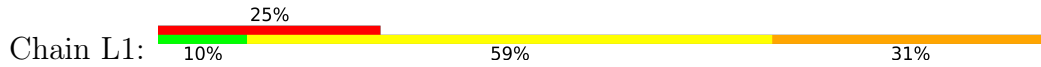
• Molecule 32: 18S ribosomal RNA



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U688	C689	G690	A691	C692	C693	C694	C701	U712	C713	C714	U715	A716	C717	C718	C719	U720	A723	U724	U725	G731	G732	U733	C734	U735	U736	G743	G744	U764	U765	G909	A766	G767	A768	G769	U770	G771	C772	U773	C774	A775	A776	U777	C778	A780	U781	G782	C783	U784	A785	U786	C787	G788	U789	U790	C791					
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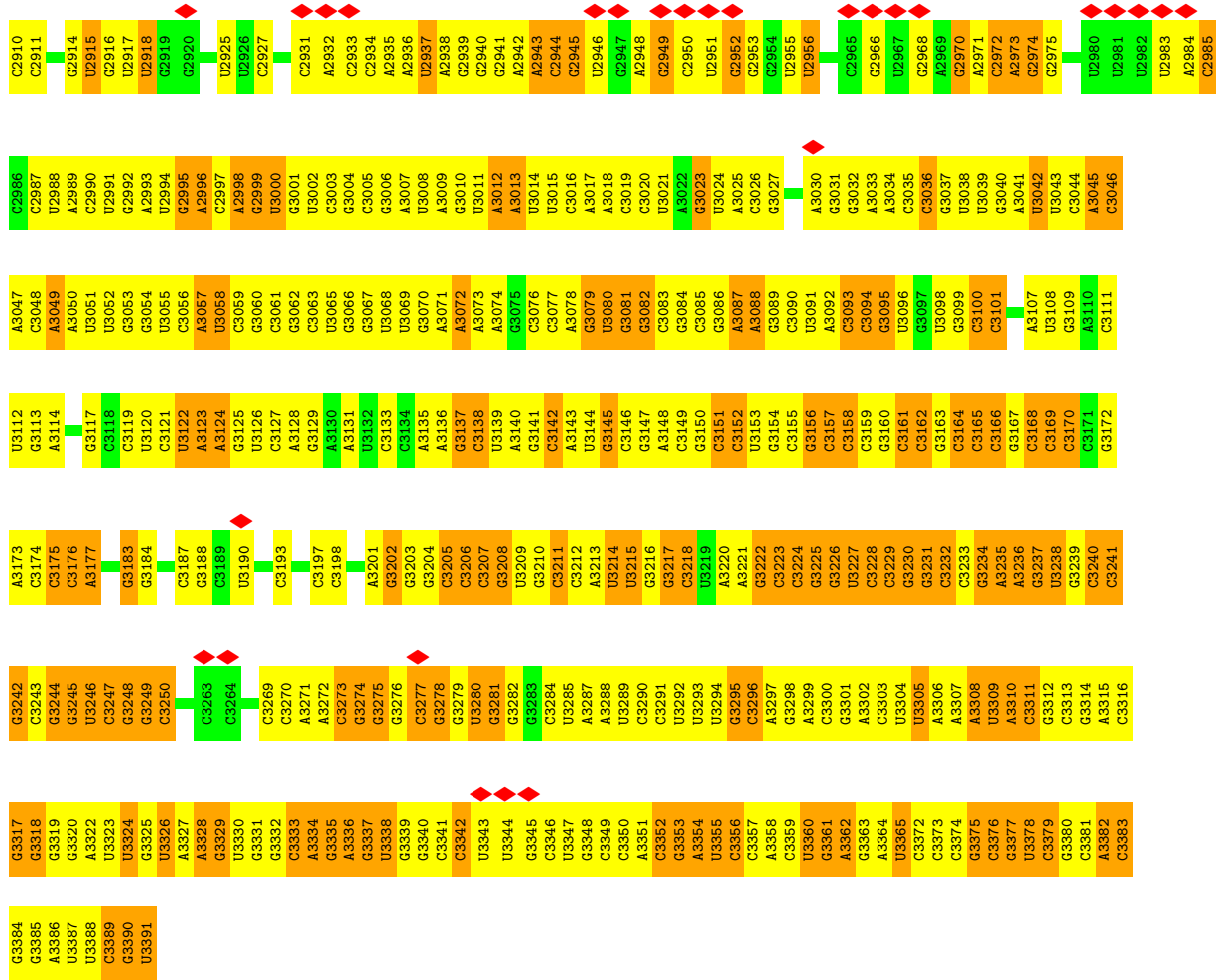


● Molecule 33: 26S ribosomal RNA

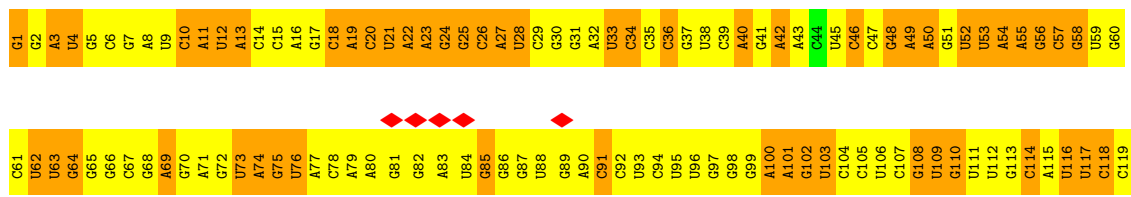


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G2034	C1974	C1853	A1790	G1670	G1548	A1484	G1349	C1288
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C2060	A1999	G1879	G1757	G1696	G1510	U1446	G1386	U1319
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G2065	C2003	C1884	G1762	A1640	C1515	U1451	G1392	G1324
G2066	U2004	U1885	G1763	G1641	C1516	A1452	G1393	C1325
C2067	C2005	G1886	C1764	U1642	C1517	C1453	A1394	G1326
G2068	U2006	U1887	G1765	A1643	C1518	G1454	A1395	G1329
G2069	C2007	A1888	U1766	A1644	C1519	A1455	A1398	A1330
C2070	U2008	G1889	C1767	G1645	C1520	A1456	C1399	C1331
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C2074	C2012	A1893	G1771	G1649	C1524	C1462	G1404	C1335
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G2078	C2016	U1897	C1716	A1653	C1528	A1468	G1408	C1339
A2079	U2017	A1898	G1717	C1654	C1529	G1469	G1340	G1341
C2080	C2018	C1899	U1718	G1655	C1530	U1470	A1410	C1342
C2081	G2019	U1900	U1719	C1656	C1531	A1471	G1411	C1343
U2082	U2020	C1901	A1721	C1657	C1532	U1472	C1414	A1344
U2083	G2021	G1902	G1722	G1658	C1533	U1473	G1415	G1416
G2084	U2022	C1903	C1723	G1659	C1534	U1474	G1416	U1345
A2085	C2023	U1904	U1724	C1660	C1535	U1475	U1475	U1345
A2086	G2024	A1905	G1725	G1661	C1536	A1476	U1476	U1345
C2087	C2025	U1906	C1726	G1662	C1537	U1477	U1477	U1345
C2088	G2026	A1907	U1727	G1663	C1538	U1478	U1478	U1345
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	G2029							
	G2030							



• Molecule 34: 5S ribosomal RNA

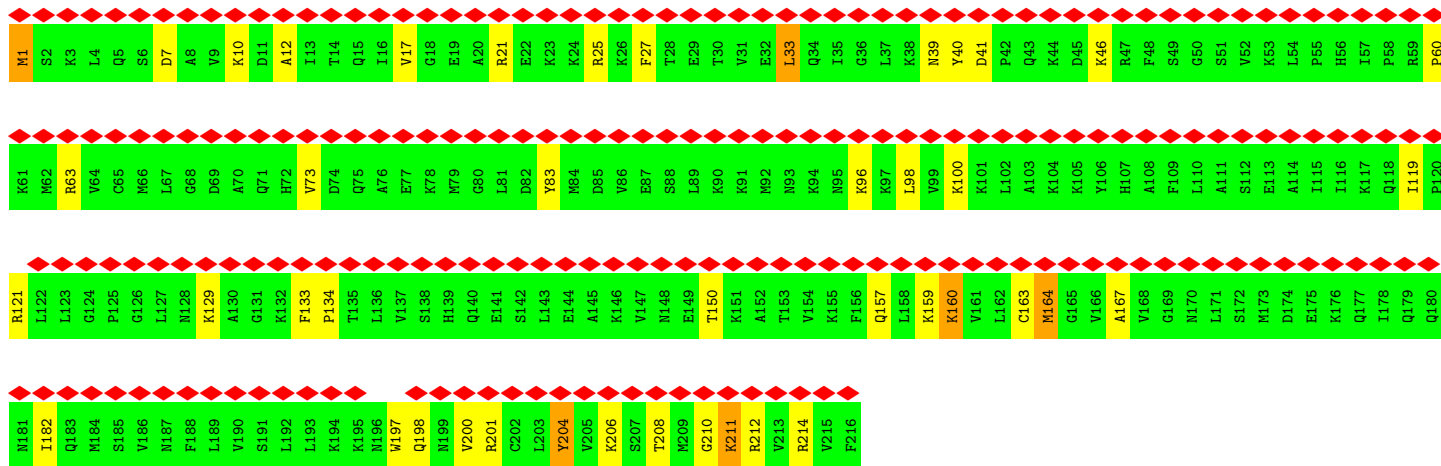
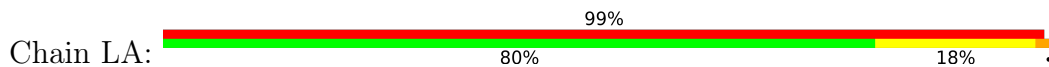


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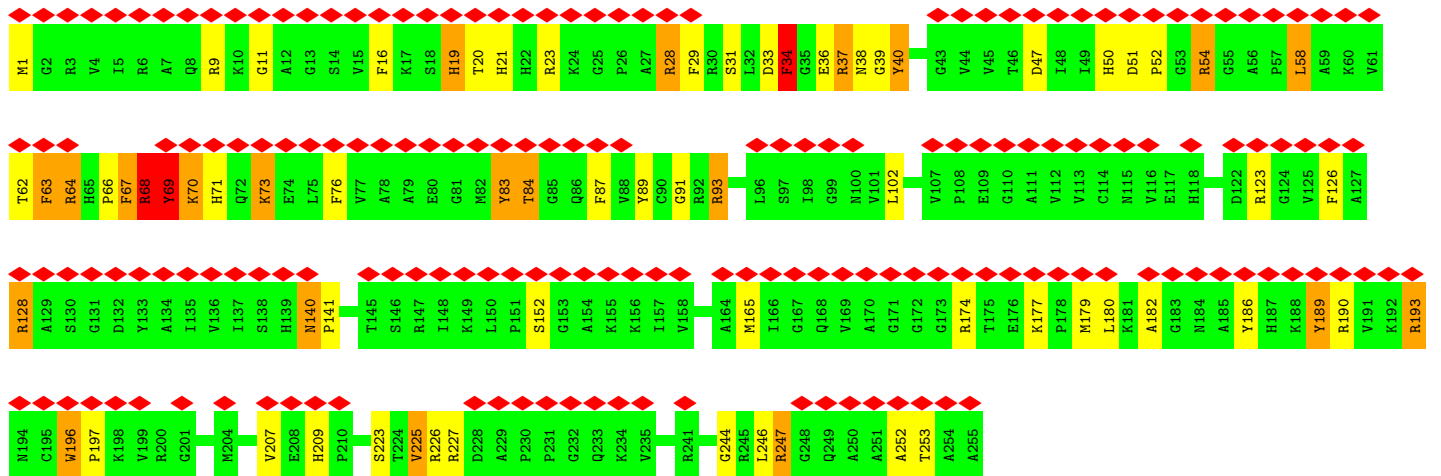
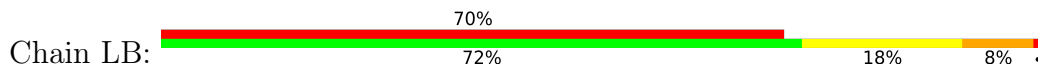




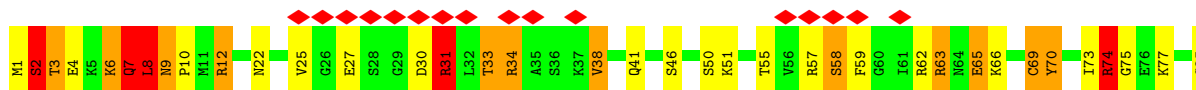
• Molecule 36: Ribosomal protein

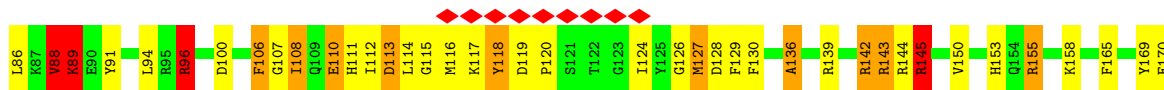


• Molecule 37: 60S ribosomal protein L2

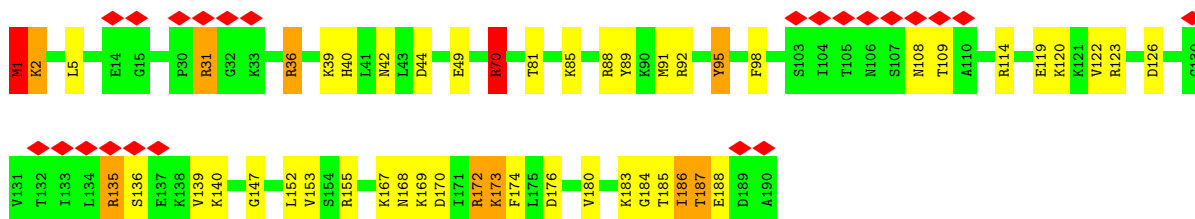
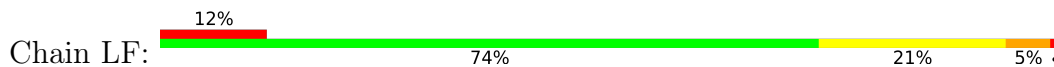


• Molecule 38: Ribosomal protein L11

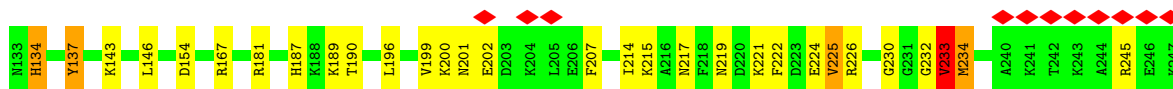
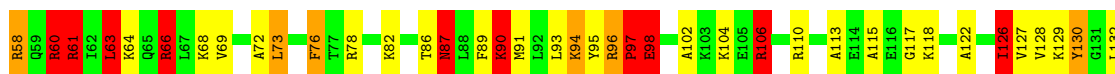




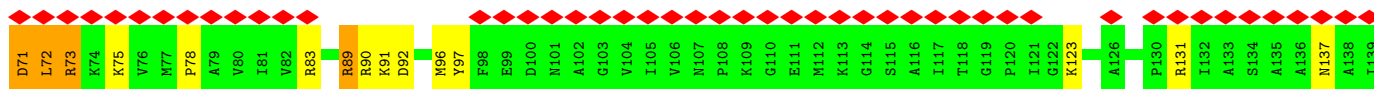
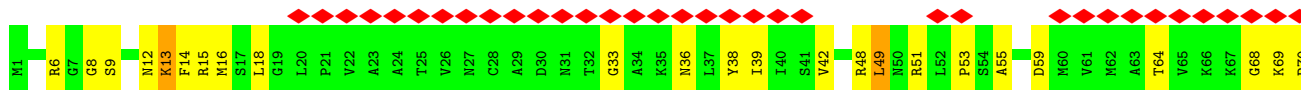
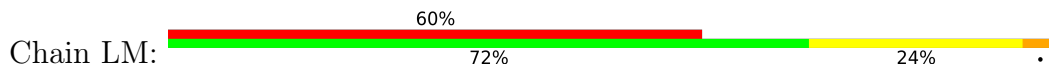
• Molecule 39: 60S ribosomal protein L9



• Molecule 40: 60S ribosomal protein L7a

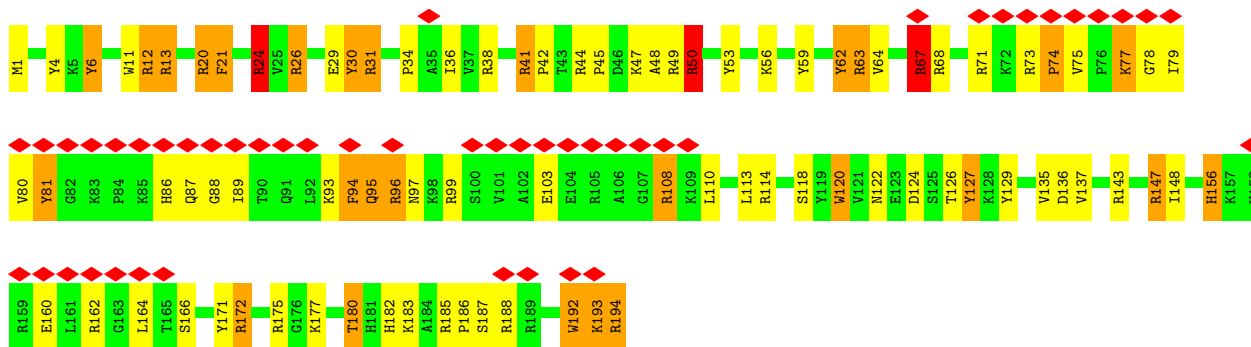


• Molecule 41: Ribosomal Pr 117

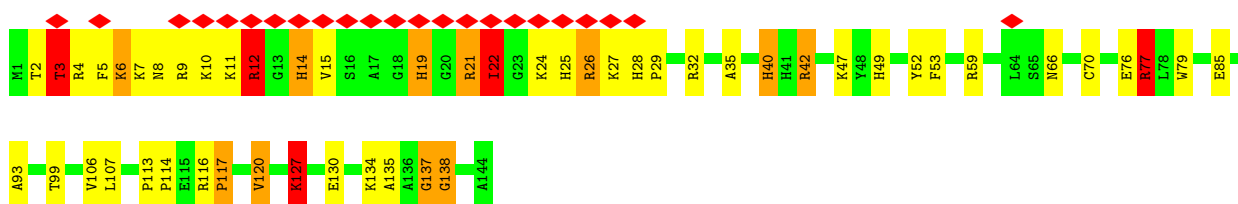


• Molecule 42: Ribosomal protein L15

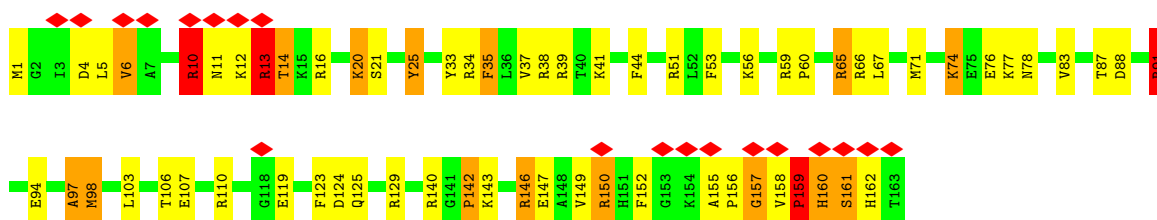




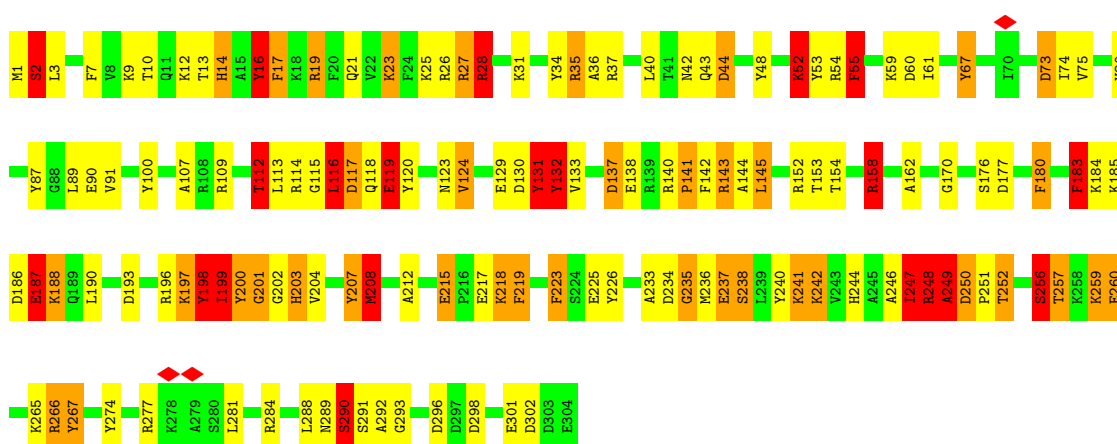
• Molecule 43: 60S ribosomal protein L27a-3



• Molecule 44: 60S ribosomal protein L18



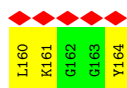
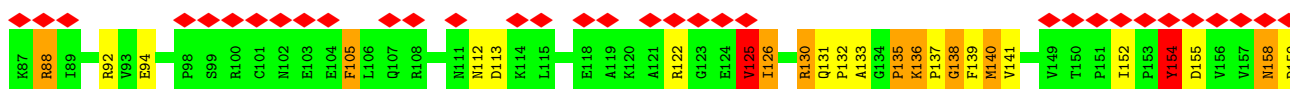
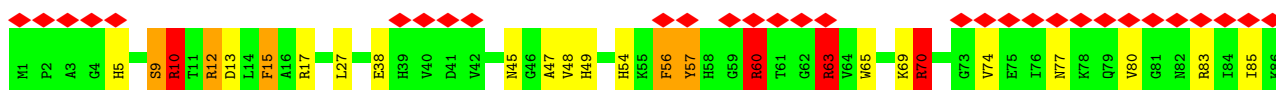
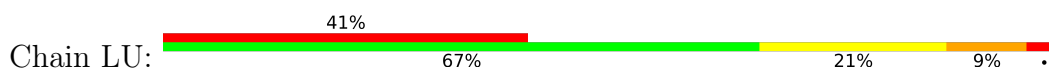
• Molecule 45: 60S ribosomal protein L5



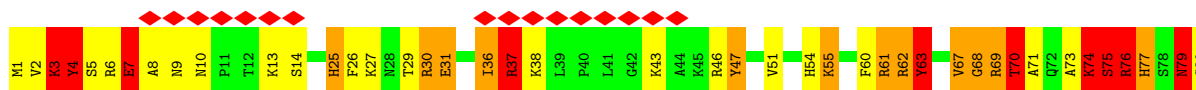
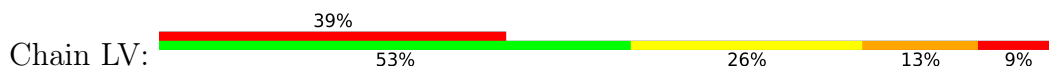
- Molecule 46: Ribosomal protein L19



- Molecule 47: 60S ribosomal protein L21

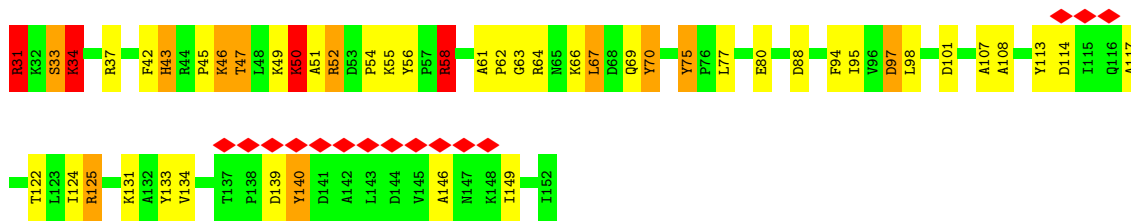


- Molecule 48: 60S ribosomal protein L17



- Molecule 49: 60S ribosomal protein L23a

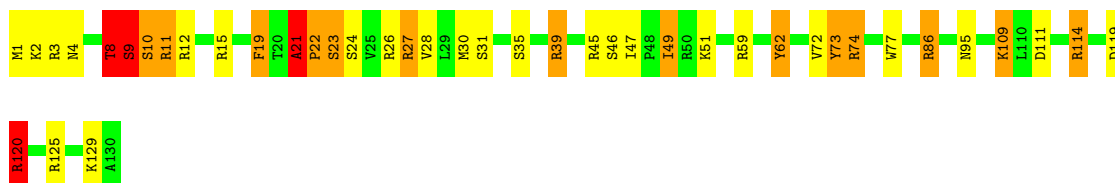




• Molecule 50: 60S ribosomal protein L24



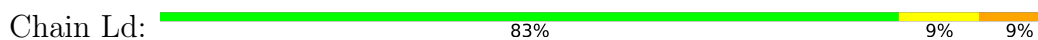
• Molecule 51: 60S ribosomal protein L26



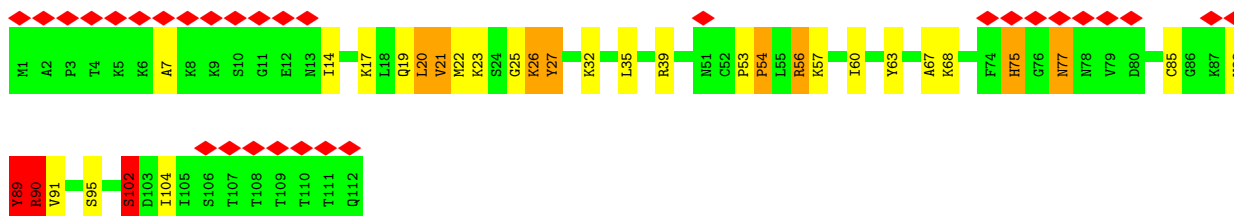
• Molecule 52: 60S ribosomal protein L28



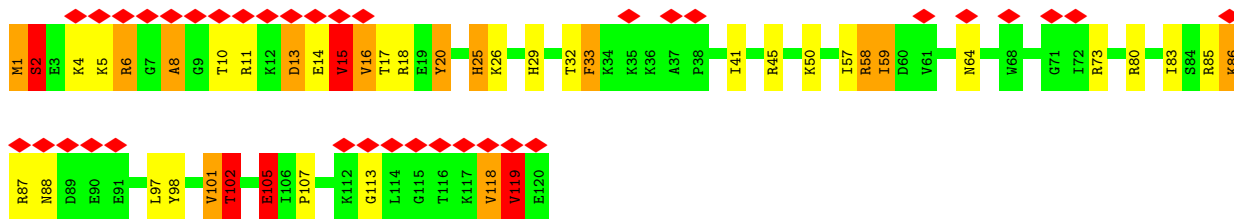
• Molecule 53: 60S ribosomal protein L29



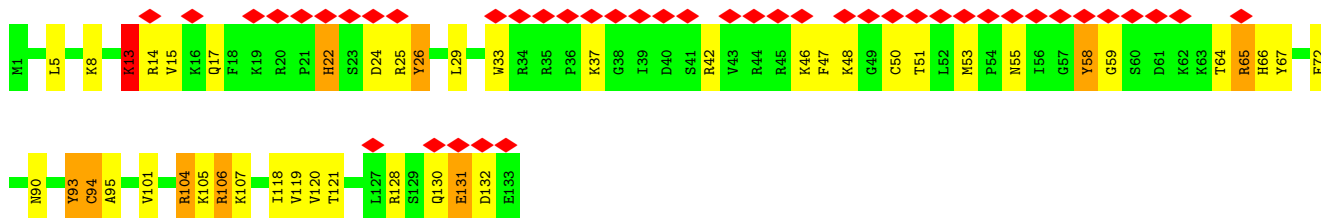
• Molecule 54: 60S ribosomal protein L30



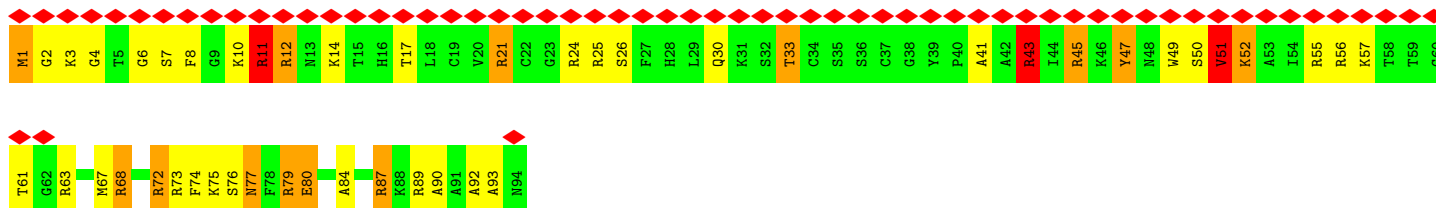
• Molecule 55: 60S ribosomal protein L31



• Molecule 56: Ribosomal L32



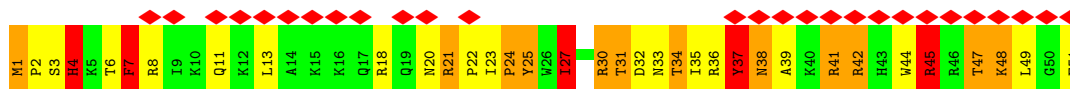
• Molecule 57: Ribosomal protein L37



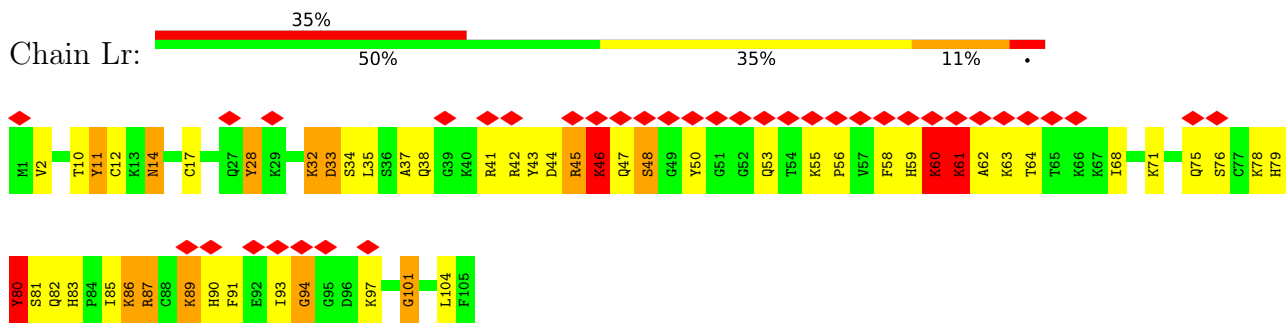
• Molecule 58: 60S ribosomal protein L38



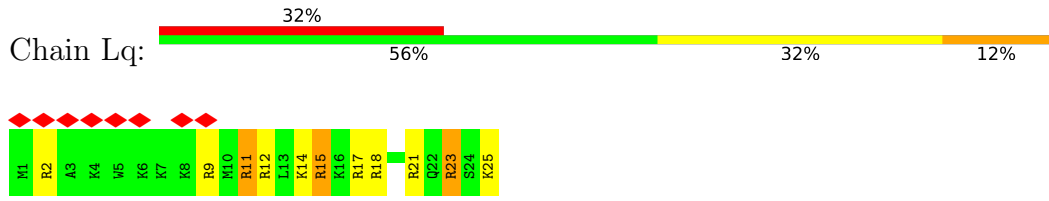
• Molecule 59: Ribosomal protein L39



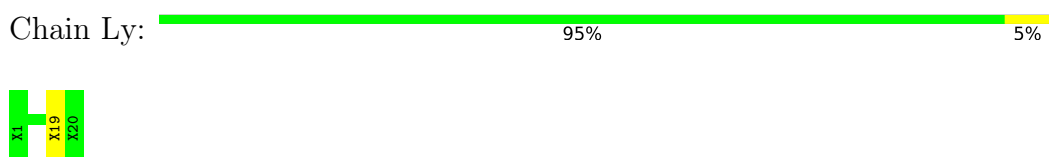
• Molecule 60: 60S ribosomal protein L44



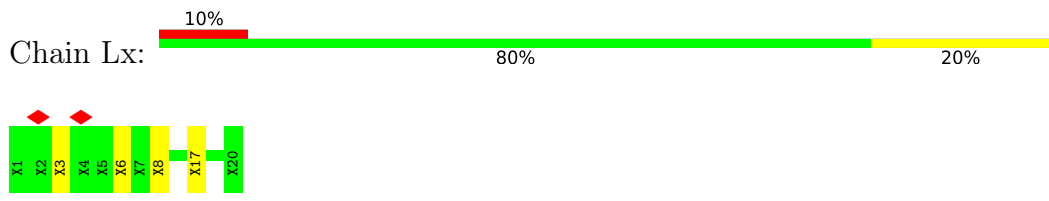
• Molecule 61: Unknown 60S wheat germ ribosome protein 1



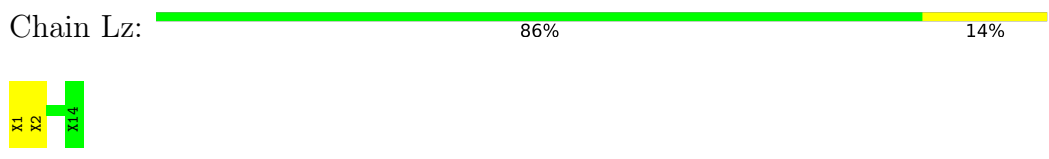
• Molecule 62: Unknown 60S wheat germ ribosome protein 2



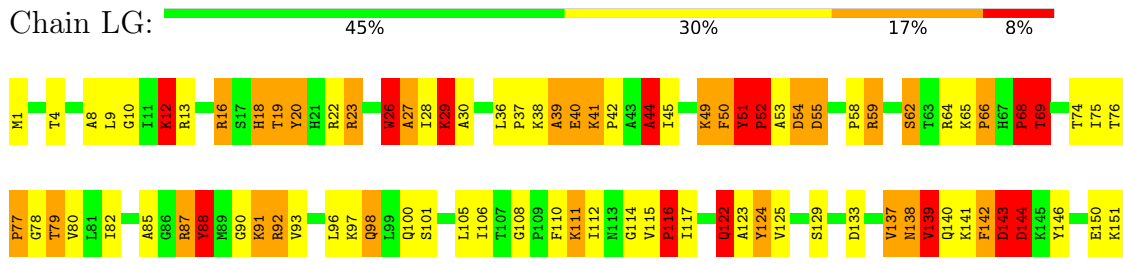
• Molecule 62: Unknown 60S wheat germ ribosome protein 2

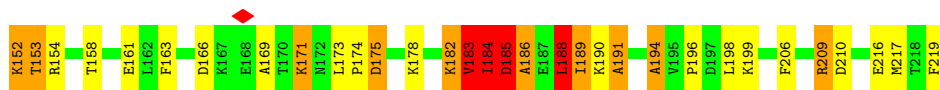


• Molecule 63: Unknown 60S wheat germ ribosome protein 3

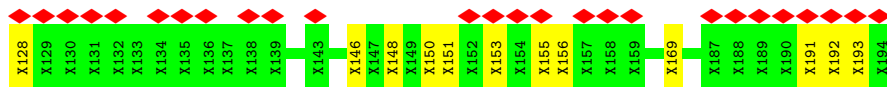
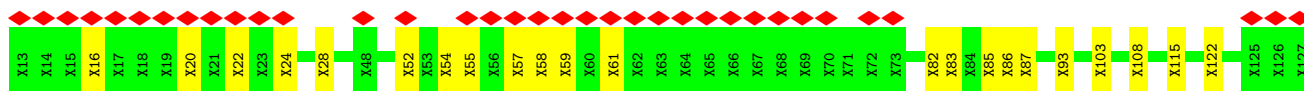
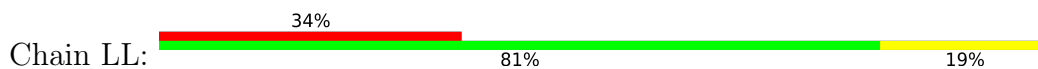


• Molecule 64: 60S ribosomal protein L6

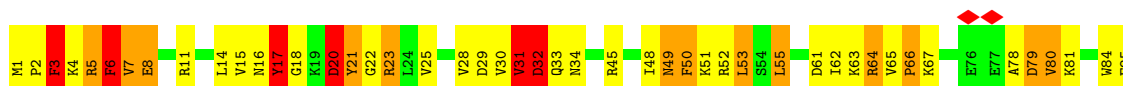




• Molecule 65: Unknown 60S wheat germ ribosome protein 5



• Molecule 66: Unknown 60S wheat germ ribosome protein 6



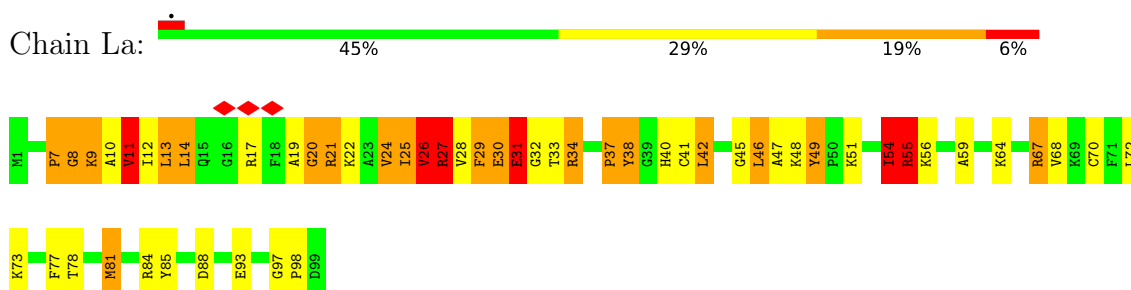
• Molecule 67: 60S ribosomal protein L18a



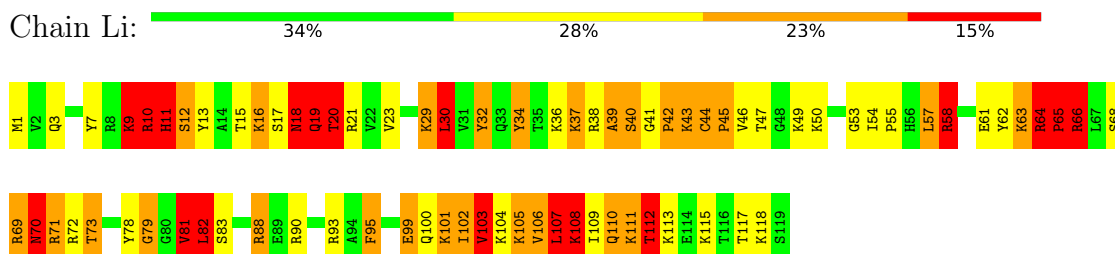
• Molecule 68: 60S ribosomal protein L22



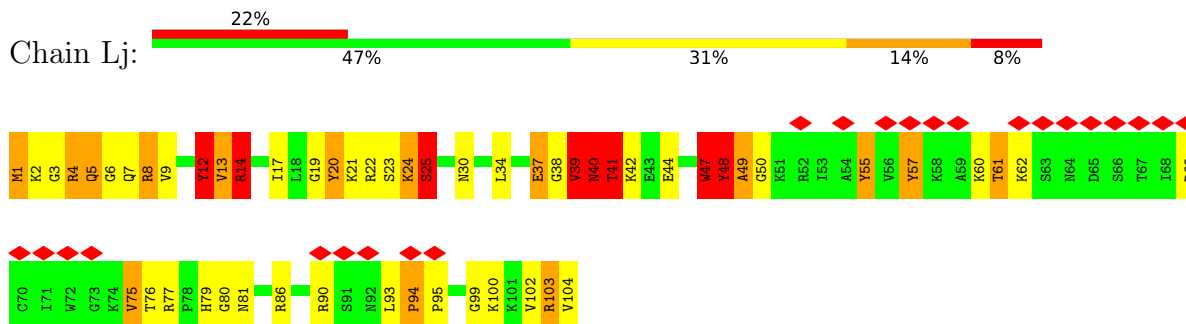
- Molecule 69: 60S ribosomal protein L27



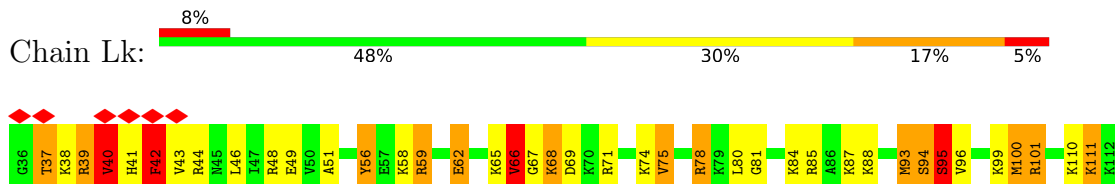
- Molecule 70: Ribosomal protein l34



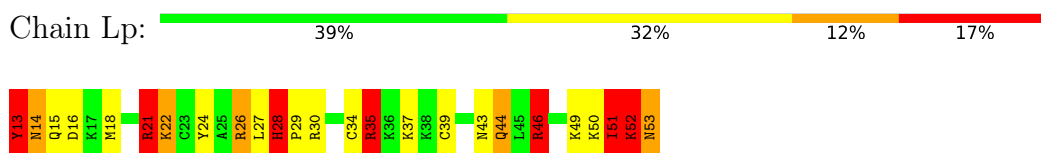
- Molecule 71: ribosomal protein L35A



- Molecule 72: 60S ribosomal protein L36

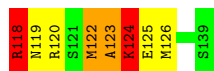


- Molecule 73: Ubiquitin-60S ribosomal protein L40-1



- Molecule 74: 60S ribosomal protein L12





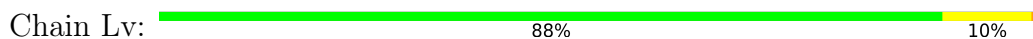
• Molecule 75: Ribosomal protein P1



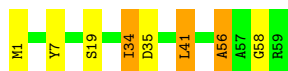
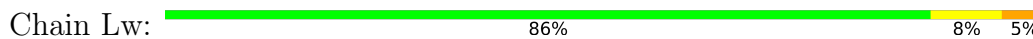
• Molecule 75: Ribosomal protein P1



• Molecule 76: 60S acidic ribosomal protein P2A



• Molecule 76: 60S acidic ribosomal protein P2A

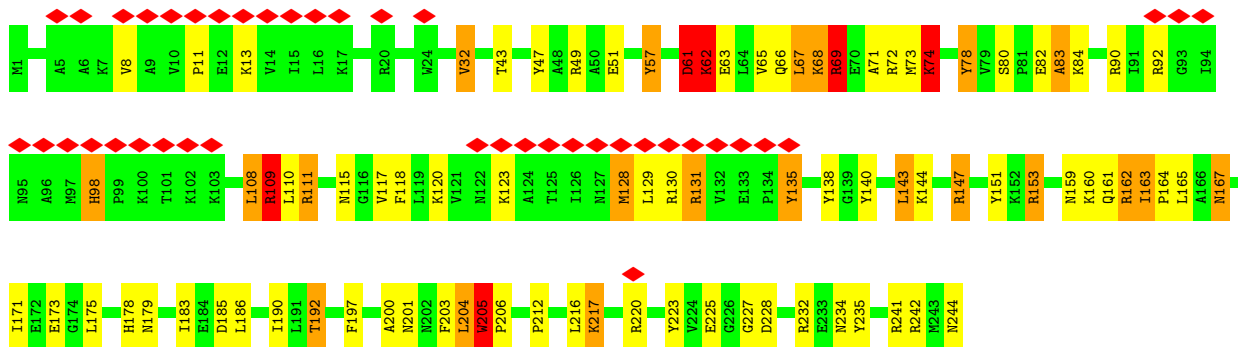


• Molecule 77: 60S ribosomal protein L35

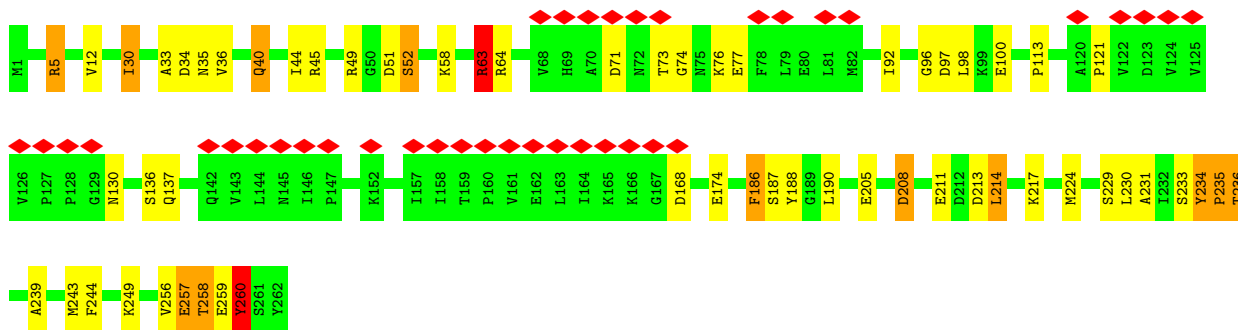
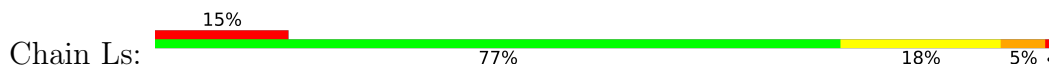


• Molecule 78: Ribosomal protein L7

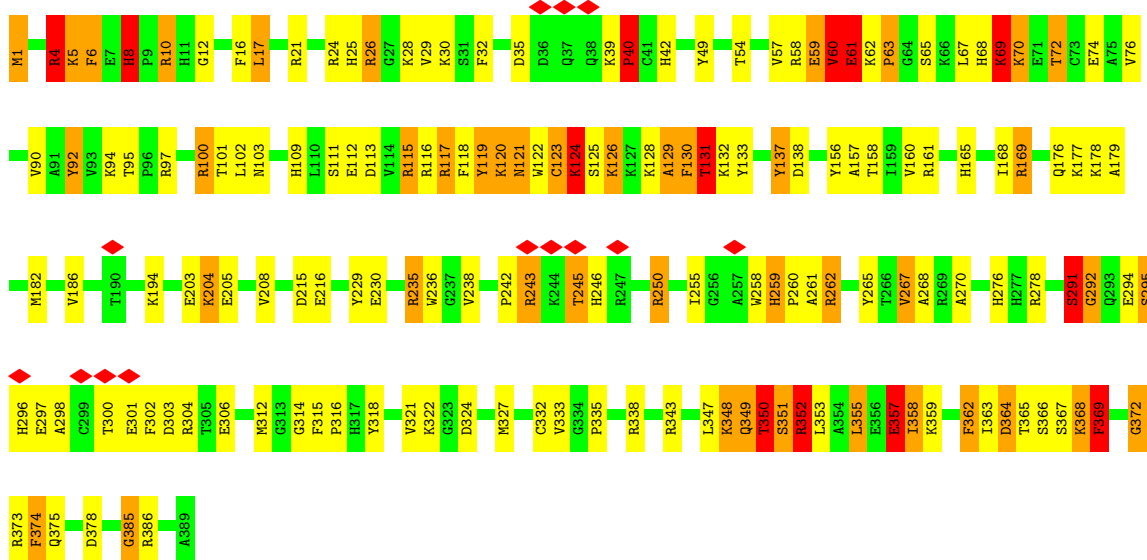




• Molecule 79: 60S acidic ribosomal protein P0

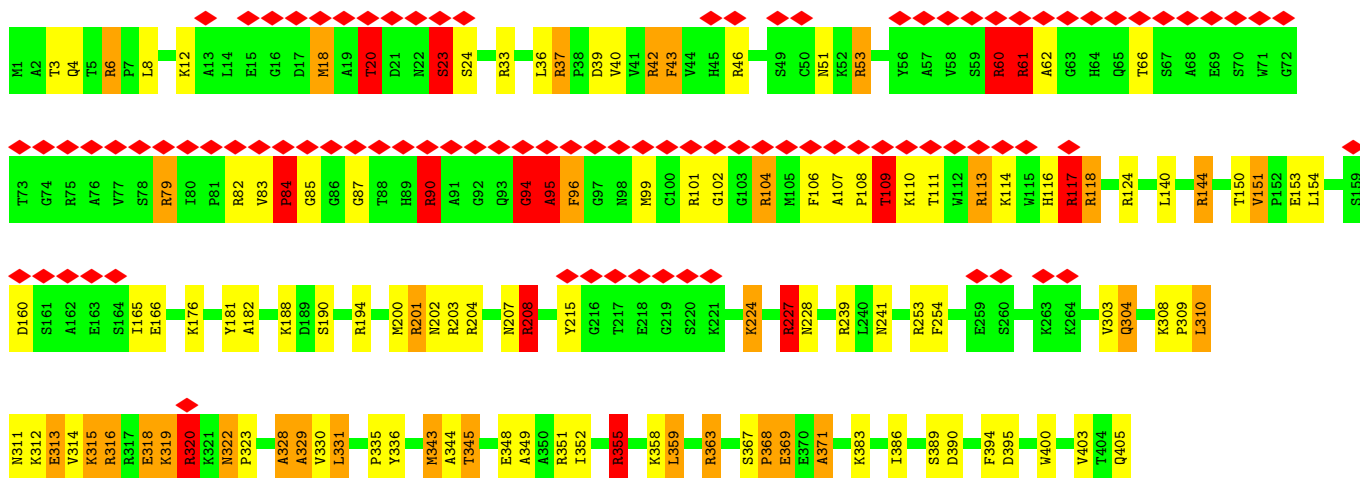


• Molecule 80: Ribosomal protein L3

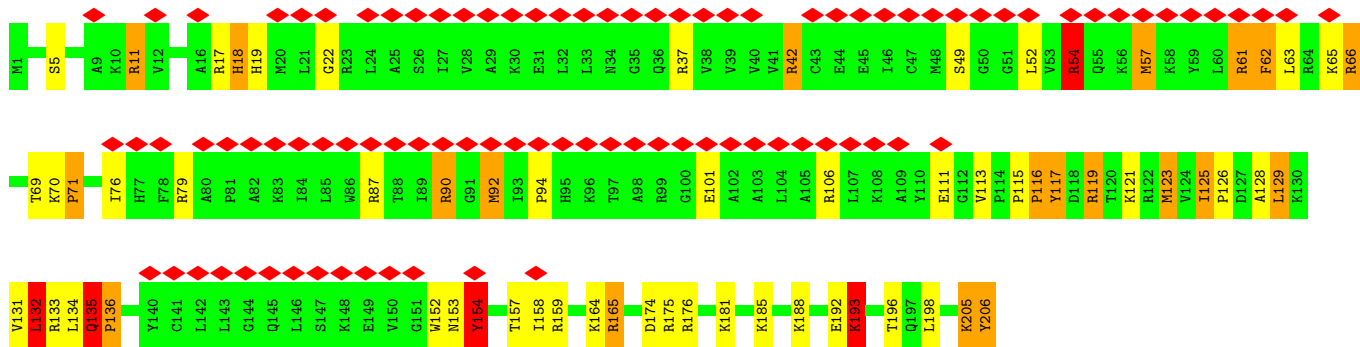


• Molecule 81: 60S ribosomal protein L4/L1

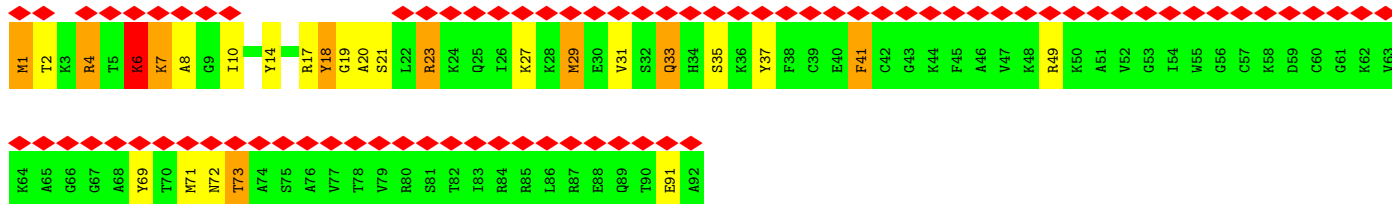
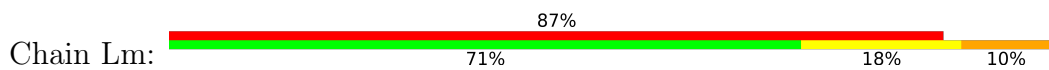




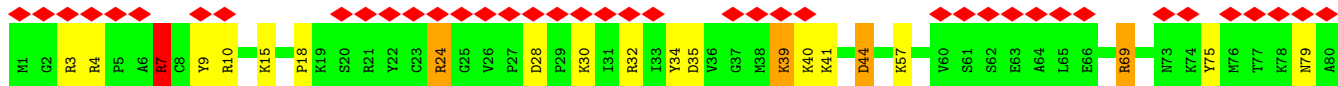
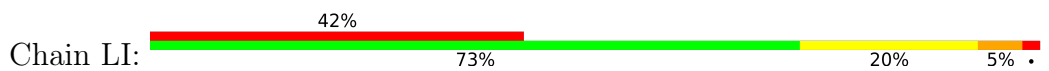
• Molecule 82: Ribosomal protein L13a

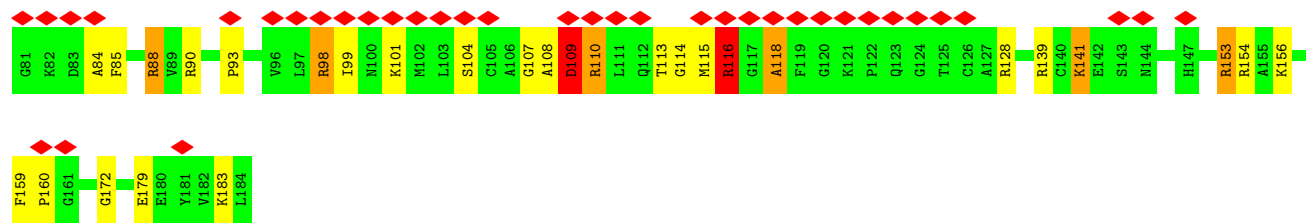


• Molecule 83: 60S ribosomal protein L37a, expressed



• Molecule 84: 60S ribosomal protein L10-1





4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	HELICAL, twist=Not provided°, rise=Not provided Å, axial sym=Not provided	Depositor
Number of subtomograms used	106	Depositor
Resolution determination method	Not provided	
CTF correction method	Not provided	
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	150	Depositor
Electron dose ($e^-/\text{Å}^2$)	30	Depositor
Minimum defocus (nm)	2000	Depositor
Maximum defocus (nm)	4000	Depositor
Magnification	41176	Depositor
Image detector	FEI FALCON I (4k x 4k)	Depositor
Maximum map value	16.279	Depositor
Minimum map value	-14.012	Depositor
Average map value	0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	1.0	Depositor
Map size (Å)	1740.8, 1740.8, 1360.0	wwPDB
Map dimensions	256, 256, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	6.8, 6.8, 6.8	Depositor

5 Model quality i

5.1 Standard geometry i

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	Sa	1.90	33/2897 (1.1%)	2.28	124/3917 (3.2%)
2	SA	1.63	11/1988 (0.6%)	2.25	83/2697 (3.1%)
3	SB	2.02	27/1555 (1.7%)	2.91	115/2077 (5.5%)
4	SD	1.94	35/1637 (2.1%)	3.00	96/2202 (4.4%)
5	SE	2.09	32/2068 (1.5%)	2.98	73/2776 (2.6%)
6	SF	0.99	2/1505 (0.1%)	1.58	29/2027 (1.4%)
7	SI	1.85	14/1034 (1.4%)	2.36	42/1379 (3.0%)
8	SJ	1.78	13/896 (1.5%)	2.78	34/1193 (2.8%)
9	SK	2.29	11/839 (1.3%)	2.92	43/1120 (3.8%)
10	SL	1.68	18/965 (1.9%)	2.24	35/1271 (2.8%)
11	SM	3.93	25/1185 (2.1%)	3.78	113/1574 (7.2%)
12	SO	0.90	2/994 (0.2%)	2.31	29/1332 (2.2%)
13	SQ	1.81	23/1145 (2.0%)	3.16	96/1531 (6.3%)
14	SP	1.91	10/653 (1.5%)	2.85	41/871 (4.7%)
15	SS	1.88	24/1179 (2.0%)	3.02	80/1586 (5.0%)
16	SR	1.50	6/727 (0.8%)	1.91	29/975 (3.0%)
17	SV	1.18	3/748 (0.4%)	1.77	31/994 (3.1%)
19	SY	1.98	8/443 (1.8%)	2.41	20/592 (3.4%)
20	SZ	1.54	4/476 (0.8%)	2.82	22/623 (3.5%)
23	SU	2.45	34/745 (4.6%)	3.90	126/988 (12.8%)
24	SX	1.65	9/382 (2.4%)	1.96	15/515 (2.9%)
25	SC	3.58	34/1563 (2.2%)	3.62	136/2086 (6.5%)
27	SH	1.53	10/1060 (0.9%)	2.45	52/1419 (3.7%)
28	SN	2.18	7/317 (2.2%)	2.71	27/414 (6.5%)
29	ST	1.52	4/659 (0.6%)	2.09	29/884 (3.3%)
30	S3	2.62	16/264 (6.1%)	2.41	16/407 (3.9%)
31	S2	3.33	165/1785 (9.2%)	2.83	192/2779 (6.9%)
32	S1	2.97	2435/37672 (6.5%)	2.60	3313/58357 (5.7%)
33	L1	3.27	5613/77720 (7.2%)	2.85	8211/121026 (6.8%)
34	L3	3.13	166/2868 (5.8%)	2.95	328/4468 (7.3%)
35	L2	3.74	298/3553 (8.4%)	3.05	429/5515 (7.8%)
36	LA	1.27	7/1741 (0.4%)	1.66	27/2323 (1.2%)
37	LB	1.57	15/1979 (0.8%)	2.30	63/2659 (2.4%)
38	LE	2.68	30/1397 (2.1%)	2.43	86/1864 (4.6%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
39	LF	1.25	10/1519 (0.7%)	1.98	45/2042 (2.2%)
40	LH	1.24	9/1586 (0.6%)	2.43	41/2120 (1.9%)
41	LM	1.36	7/1036 (0.7%)	1.97	40/1388 (2.9%)
42	LP	1.72	23/1669 (1.4%)	2.57	80/2235 (3.6%)
43	LO	1.49	11/1113 (1.0%)	2.62	32/1485 (2.2%)
44	LR	1.36	7/1303 (0.5%)	2.09	41/1748 (2.3%)
45	LQ	1.69	24/2438 (1.0%)	3.26	131/3271 (4.0%)
46	LT	1.73	12/1590 (0.8%)	2.57	88/2100 (4.2%)
47	LU	1.75	9/1290 (0.7%)	2.66	55/1728 (3.2%)
48	LV	2.47	27/1359 (2.0%)	3.07	111/1816 (6.1%)
49	LX	1.71	9/1002 (0.9%)	2.28	42/1340 (3.1%)
50	LZ	1.42	5/591 (0.8%)	2.45	20/782 (2.6%)
51	LY	1.65	15/1061 (1.4%)	2.37	37/1418 (2.6%)
52	Lb	1.79	9/585 (1.5%)	2.16	31/786 (3.9%)
53	Ld	1.12	0/201	1.55	3/261 (1.1%)
54	Lf	1.22	1/836 (0.1%)	1.85	23/1121 (2.1%)
55	Lg	1.52	7/954 (0.7%)	2.14	42/1272 (3.3%)
56	Lh	1.50	4/1108 (0.4%)	2.35	37/1477 (2.5%)
57	Li	1.67	8/738 (1.1%)	2.57	49/974 (5.0%)
58	Ln	1.11	1/554 (0.2%)	2.46	15/738 (2.0%)
59	Lo	1.87	7/472 (1.5%)	3.05	44/627 (7.0%)
60	Lr	1.99	14/853 (1.6%)	3.17	41/1124 (3.6%)
61	Lq	1.77	5/239 (2.1%)	3.70	15/302 (5.0%)
64	LG	1.72	25/1765 (1.4%)	3.20	140/2372 (5.9%)
66	LN	1.57	13/1094 (1.2%)	3.36	81/1461 (5.5%)
67	LS	1.93	21/1457 (1.4%)	2.83	120/1957 (6.1%)
68	LW	1.76	14/850 (1.6%)	2.74	55/1135 (4.8%)
69	La	1.69	12/743 (1.6%)	2.67	65/992 (6.6%)
70	Li	1.87	15/979 (1.5%)	2.91	91/1305 (7.0%)
71	Lj	1.89	20/811 (2.5%)	3.14	58/1083 (5.4%)
72	Lk	1.74	7/618 (1.1%)	3.73	52/809 (6.4%)
73	Lp	2.33	11/349 (3.2%)	3.33	37/458 (8.1%)
74	LJ	1.36	1/967 (0.1%)	2.08	29/1298 (2.2%)
75	Lt	0.83	0/438	1.67	4/596 (0.7%)
75	Lu	0.69	0/438	1.28	2/596 (0.3%)
76	Lv	0.83	0/444	1.42	6/596 (1.0%)
76	Lw	0.97	1/444 (0.2%)	1.61	8/596 (1.3%)
77	Lc	1.69	10/1017 (1.0%)	2.53	27/1351 (2.0%)
78	Le	1.52	13/2018 (0.6%)	2.44	77/2702 (2.8%)
79	Ls	0.90	0/2023	1.71	40/2739 (1.5%)
80	LC	1.56	35/3168 (1.1%)	3.16	134/4234 (3.2%)
81	LD	1.47	27/2919 (0.9%)	3.04	129/3924 (3.3%)
82	LK	1.33	12/1678 (0.7%)	2.08	44/2246 (2.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
83	Lm	1.32	4/724 (0.6%)	2.06	28/958 (2.9%)
84	LI	0.93	6/1499 (0.4%)	1.88	31/2001 (1.5%)
All	All	2.71	9615/207179 (4.6%)	2.73	16506/304005 (5.4%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	Sa	1	25
2	SA	1	24
3	SB	0	32
4	SD	1	31
5	SE	0	23
6	SF	0	14
7	SI	0	5
8	SJ	0	16
9	SK	0	14
10	SL	0	11
11	SM	1	24
12	SO	0	14
13	SQ	1	37
14	SP	0	6
15	SS	1	25
16	SR	0	4
17	SV	0	5
18	SW	0	12
19	SY	0	6
20	SZ	1	9
21	Sc	0	1
23	SU	3	38
24	SX	0	3
25	SC	6	43
26	SG	0	43
27	SH	0	11
28	SN	1	6
29	ST	2	6
32	S1	9	0
33	L1	45	0
34	L3	2	0
35	L2	4	0

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Mol	Chain	#Chirality outliers	#Planarity outliers
36	LA	0	4
37	LB	0	25
38	LE	1	18
39	LF	0	15
40	LH	0	28
41	LM	0	5
42	LP	0	29
43	LO	0	20
44	LR	0	27
45	LQ	4	59
46	LT	1	26
47	LU	1	21
48	LV	0	29
49	LX	1	11
50	LZ	0	12
51	LY	0	12
52	Lb	0	2
53	Ld	0	2
54	Lf	0	6
55	Lg	0	11
56	Lh	1	13
57	Li	0	11
58	Ln	0	11
59	Lo	0	12
60	Lr	1	28
61	Lq	0	5
62	Lx	0	5
62	Ly	0	1
63	Lz	0	2
64	LG	2	59
65	LL	0	39
66	LN	2	21
67	LS	2	41
68	LW	0	24
69	La	0	28
70	Li	2	43
71	Lj	0	26
72	Lk	1	10
73	Lp	2	10
74	LJ	1	12
75	Lt	0	2
75	Lu	0	3

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Mol	Chain	#Chirality outliers	#Planarity outliers
76	Lv	0	1
76	Lw	0	2
77	Lc	0	16
78	Le	0	23
79	Ls	1	13
80	LC	5	58
81	LD	2	58
82	LK	2	26
83	Lm	0	12
84	LI	0	17
All	All	111	1482

The worst 5 of 9615 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	SM	126	TYR	CD2-CE2	112.90	3.08	1.39
25	SC	171	PRO	N-CD	81.71	2.62	1.47
32	S1	1315	U	O3'-P	-72.15	0.74	1.61
32	S1	860	A	O3'-P	-63.70	0.84	1.61
33	L1	2398	A	O3'-P	-57.14	0.92	1.61

The worst 5 of 16506 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	SE	30	ARG	NE-CZ-NH2	-75.84	82.38	120.30
66	LN	64	ARG	NE-CZ-NH2	-64.81	87.90	120.30
11	SM	126	TYR	CZ-CE2-CD2	-63.49	62.66	119.80
33	L1	1395	A	O4'-C1'-N9	60.43	156.54	108.20
33	L1	62	A	O4'-C1'-N9	55.67	152.73	108.20

5 of 111 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	Sa	128	LEU	CA
2	SA	199	TRP	CA
4	SD	56	LEU	CA
11	SM	116	LYS	CA
13	SQ	139	ASP	CA

5 of 1482 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	Sa	105	LYS	Peptide
1	Sa	26	ARG	Sidechain
1	Sa	63	GLN	Sidechain
1	Sa	70	TYR	Sidechain
1	Sa	82	VAL	Mainchain

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	Sa	376/380 (99%)	330 (88%)	24 (6%)	22 (6%)	1	17
2	SA	258/260 (99%)	194 (75%)	31 (12%)	33 (13%)	0	5
3	SB	206/208 (99%)	117 (57%)	35 (17%)	54 (26%)	0	1
4	SD	198/200 (99%)	164 (83%)	17 (9%)	17 (9%)	1	12
5	SE	261/263 (99%)	186 (71%)	45 (17%)	30 (12%)	0	6
6	SF	189/191 (99%)	157 (83%)	25 (13%)	7 (4%)	3	24
7	SI	124/126 (98%)	90 (73%)	17 (14%)	17 (14%)	0	4
8	SJ	126/128 (98%)	103 (82%)	14 (11%)	9 (7%)	1	14
9	SK	117/119 (98%)	85 (73%)	13 (11%)	19 (16%)	0	3
10	SL	140/142 (99%)	93 (66%)	18 (13%)	29 (21%)	0	2
11	SM	150/152 (99%)	101 (67%)	22 (15%)	27 (18%)	0	3
12	SO	119/121 (98%)	95 (80%)	11 (9%)	13 (11%)	0	8
13	SQ	139/141 (99%)	87 (63%)	27 (19%)	25 (18%)	0	3
14	SP	83/85 (98%)	64 (77%)	12 (14%)	7 (8%)	1	12
15	SS	144/146 (99%)	119 (83%)	13 (9%)	12 (8%)	1	12

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	SR	89/91 (98%)	65 (73%)	15 (17%)	9 (10%)	0	9
17	SV	98/100 (98%)	70 (71%)	12 (12%)	16 (16%)	0	3
19	SY	56/58 (97%)	38 (68%)	8 (14%)	10 (18%)	0	3
20	SZ	60/62 (97%)	43 (72%)	9 (15%)	8 (13%)	0	5
23	SU	96/98 (98%)	70 (73%)	12 (12%)	14 (15%)	0	4
24	SX	48/50 (96%)	36 (75%)	8 (17%)	4 (8%)	1	12
25	SC	193/195 (99%)	127 (66%)	34 (18%)	32 (17%)	0	3
27	SH	128/130 (98%)	100 (78%)	17 (13%)	11 (9%)	1	12
28	SN	46/48 (96%)	30 (65%)	4 (9%)	12 (26%)	0	1
29	ST	80/82 (98%)	67 (84%)	4 (5%)	9 (11%)	0	7
36	LA	214/216 (99%)	191 (89%)	14 (6%)	9 (4%)	3	22
37	LB	253/255 (99%)	224 (88%)	18 (7%)	11 (4%)	2	22
38	LE	168/170 (99%)	129 (77%)	16 (10%)	23 (14%)	0	4
39	LF	188/190 (99%)	165 (88%)	16 (8%)	7 (4%)	3	24
40	LH	199/201 (99%)	149 (75%)	26 (13%)	24 (12%)	0	6
41	LM	138/140 (99%)	123 (89%)	9 (6%)	6 (4%)	2	22
42	LP	192/194 (99%)	169 (88%)	18 (9%)	5 (3%)	5	31
43	LO	142/144 (99%)	106 (75%)	17 (12%)	19 (13%)	0	5
44	LR	161/163 (99%)	127 (79%)	18 (11%)	16 (10%)	0	9
45	LQ	302/304 (99%)	218 (72%)	39 (13%)	45 (15%)	0	3
46	LT	187/189 (99%)	167 (89%)	12 (6%)	8 (4%)	2	22
47	LU	162/164 (99%)	136 (84%)	18 (11%)	8 (5%)	2	20
48	LV	169/171 (99%)	131 (78%)	20 (12%)	18 (11%)	0	8
49	LX	120/122 (98%)	98 (82%)	12 (10%)	10 (8%)	1	12
50	LZ	73/75 (97%)	53 (73%)	13 (18%)	7 (10%)	0	10
51	LY	128/130 (98%)	113 (88%)	9 (7%)	6 (5%)	2	21
52	Lb	71/73 (97%)	48 (68%)	12 (17%)	11 (16%)	0	3
53	Ld	21/23 (91%)	18 (86%)	2 (10%)	1 (5%)	2	21
54	Lf	110/112 (98%)	95 (86%)	8 (7%)	7 (6%)	1	16
55	Lg	118/120 (98%)	96 (81%)	13 (11%)	9 (8%)	1	13
56	Lh	131/133 (98%)	113 (86%)	9 (7%)	9 (7%)	1	15

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
57	Ll	92/94 (98%)	60 (65%)	18 (20%)	14 (15%)	0	4
58	Ln	67/69 (97%)	51 (76%)	11 (16%)	5 (8%)	1	13
59	Lo	49/51 (96%)	33 (67%)	6 (12%)	10 (20%)	0	2
60	Lr	103/105 (98%)	75 (73%)	16 (16%)	12 (12%)	0	6
61	Lq	23/25 (92%)	20 (87%)	3 (13%)	0	100	100
64	LG	217/219 (99%)	149 (69%)	24 (11%)	44 (20%)	0	2
66	LN	132/134 (98%)	96 (73%)	15 (11%)	21 (16%)	0	3
67	LS	165/167 (99%)	115 (70%)	24 (14%)	26 (16%)	0	3
68	LW	106/108 (98%)	73 (69%)	15 (14%)	18 (17%)	0	3
69	La	97/99 (98%)	68 (70%)	15 (16%)	14 (14%)	0	4
70	Li	117/119 (98%)	72 (62%)	13 (11%)	32 (27%)	0	0
71	Lj	102/104 (98%)	74 (72%)	17 (17%)	11 (11%)	0	8
72	Lk	75/77 (97%)	60 (80%)	5 (7%)	10 (13%)	0	5
73	Lp	39/41 (95%)	28 (72%)	8 (20%)	3 (8%)	1	13
74	LJ	126/128 (98%)	97 (77%)	15 (12%)	14 (11%)	0	7
75	Lt	56/58 (97%)	54 (96%)	1 (2%)	1 (2%)	8	40
75	Lu	56/58 (97%)	54 (96%)	1 (2%)	1 (2%)	8	40
76	Lv	57/59 (97%)	54 (95%)	2 (4%)	1 (2%)	8	40
76	Lw	57/59 (97%)	54 (95%)	2 (4%)	1 (2%)	8	40
77	Lc	122/124 (98%)	106 (87%)	7 (6%)	9 (7%)	1	14
78	Le	239/244 (98%)	212 (89%)	17 (7%)	10 (4%)	3	22
79	Ls	260/262 (99%)	233 (90%)	17 (6%)	10 (4%)	3	24
80	LC	387/389 (100%)	298 (77%)	43 (11%)	46 (12%)	0	6
81	LD	368/372 (99%)	306 (83%)	38 (10%)	24 (6%)	1	16
82	LK	204/206 (99%)	179 (88%)	15 (7%)	10 (5%)	2	20
83	Lm	90/92 (98%)	77 (86%)	9 (10%)	4 (4%)	2	22
84	LI	182/184 (99%)	140 (77%)	26 (14%)	16 (9%)	1	11
All	All	10359/10512 (98%)	8138 (79%)	1149 (11%)	1072 (10%)	1	8

5 of 1072 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	Sa	2	ALA

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Mol	Chain	Res	Type
1	Sa	112	MET
1	Sa	129	ASP
1	Sa	149	VAL
1	Sa	150	SER

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	Sa	301/323 (93%)	275 (91%)	26 (9%)	10	32
2	SA	190/204 (93%)	161 (85%)	29 (15%)	2	14
3	SB	150/175 (86%)	126 (84%)	24 (16%)	2	13
4	SD	176/176 (100%)	152 (86%)	24 (14%)	3	17
5	SE	211/211 (100%)	190 (90%)	21 (10%)	7	26
6	SF	158/159 (99%)	144 (91%)	14 (9%)	9	30
7	SI	103/103 (100%)	91 (88%)	12 (12%)	5	21
8	SJ	91/113 (80%)	84 (92%)	7 (8%)	13	37
9	SK	78/94 (83%)	66 (85%)	12 (15%)	2	14
10	SL	79/113 (70%)	71 (90%)	8 (10%)	7	25
11	SM	116/133 (87%)	91 (78%)	25 (22%)	1	6
12	SO	106/106 (100%)	97 (92%)	9 (8%)	10	33
13	SQ	123/127 (97%)	100 (81%)	23 (19%)	1	9
14	SP	63/74 (85%)	53 (84%)	10 (16%)	2	13
15	SS	121/121 (100%)	96 (79%)	25 (21%)	1	6
16	SR	77/77 (100%)	64 (83%)	13 (17%)	2	12
17	SV	76/87 (87%)	70 (92%)	6 (8%)	12	35
19	SY	49/52 (94%)	41 (84%)	8 (16%)	2	13
20	SZ	44/49 (90%)	38 (86%)	6 (14%)	3	17
23	SU	70/84 (83%)	42 (60%)	28 (40%)	0	0

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
24	SX	44/44 (100%)	40 (91%)	4 (9%)	9	29
25	SC	154/167 (92%)	136 (88%)	18 (12%)	5	21
27	SH	113/113 (100%)	95 (84%)	18 (16%)	2	13
28	SN	27/40 (68%)	24 (89%)	3 (11%)	6	22
29	ST	68/68 (100%)	59 (87%)	9 (13%)	4	18
36	LA	192/192 (100%)	179 (93%)	13 (7%)	16	41
37	LB	193/195 (99%)	175 (91%)	18 (9%)	9	28
38	LE	148/149 (99%)	126 (85%)	22 (15%)	3	15
39	LF	164/164 (100%)	152 (93%)	12 (7%)	14	39
40	LH	164/173 (95%)	135 (82%)	29 (18%)	2	10
41	LM	103/109 (94%)	91 (88%)	12 (12%)	5	21
42	LP	167/167 (100%)	143 (86%)	24 (14%)	3	16
43	LO	104/110 (94%)	88 (85%)	16 (15%)	2	14
44	LR	138/138 (100%)	117 (85%)	21 (15%)	3	14
45	LQ	242/251 (96%)	196 (81%)	46 (19%)	1	8
46	LT	166/166 (100%)	144 (87%)	22 (13%)	4	18
47	LU	129/140 (92%)	110 (85%)	19 (15%)	3	15
48	LV	136/144 (94%)	112 (82%)	24 (18%)	2	11
49	LX	109/109 (100%)	95 (87%)	14 (13%)	4	18
50	LZ	54/66 (82%)	49 (91%)	5 (9%)	9	28
51	LY	115/115 (100%)	98 (85%)	17 (15%)	3	15
52	Lb	64/64 (100%)	57 (89%)	7 (11%)	6	23
53	Ld	21/21 (100%)	20 (95%)	1 (5%)	25	51
54	Lf	90/98 (92%)	72 (80%)	18 (20%)	1	7
55	Lg	99/103 (96%)	85 (86%)	14 (14%)	3	16
56	Lh	119/122 (98%)	111 (93%)	8 (7%)	16	41
57	Li	72/77 (94%)	61 (85%)	11 (15%)	2	14
58	Ln	59/63 (94%)	48 (81%)	11 (19%)	1	9
59	Lo	48/48 (100%)	37 (77%)	11 (23%)	1	4
60	Lr	91/94 (97%)	75 (82%)	16 (18%)	2	11
61	Lq	24/24 (100%)	22 (92%)	2 (8%)	11	34

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
64	LG	185/185 (100%)	152 (82%)	33 (18%)	2	10
66	LN	116/116 (100%)	88 (76%)	28 (24%)	0	4
67	LS	153/153 (100%)	123 (80%)	30 (20%)	1	8
68	LW	89/94 (95%)	75 (84%)	14 (16%)	2	14
69	La	73/83 (88%)	56 (77%)	17 (23%)	1	4
70	Li	105/107 (98%)	78 (74%)	27 (26%)	0	3
71	Lj	80/89 (90%)	63 (79%)	17 (21%)	1	6
72	Lk	62/62 (100%)	45 (73%)	17 (27%)	0	3
73	Lp	38/38 (100%)	26 (68%)	12 (32%)	0	2
74	LJ	104/105 (99%)	80 (77%)	24 (23%)	1	4
75	Lt	46/46 (100%)	45 (98%)	1 (2%)	52	71
75	Lu	46/46 (100%)	46 (100%)	0	100	100
76	Lv	48/48 (100%)	47 (98%)	1 (2%)	53	72
76	Lw	48/48 (100%)	46 (96%)	2 (4%)	30	54
77	Lc	107/109 (98%)	99 (92%)	8 (8%)	13	38
78	Le	206/206 (100%)	171 (83%)	35 (17%)	2	12
79	Ls	222/222 (100%)	199 (90%)	23 (10%)	7	24
80	LC	328/335 (98%)	276 (84%)	52 (16%)	2	13
81	LD	294/302 (97%)	257 (87%)	37 (13%)	4	19
82	LK	173/173 (100%)	141 (82%)	32 (18%)	1	9
83	Lm	73/73 (100%)	67 (92%)	6 (8%)	11	34
84	LI	152/156 (97%)	135 (89%)	17 (11%)	6	22
All	All	8547/8911 (96%)	7319 (86%)	1228 (14%)	6	16

5 of 1228 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
70	Li	45	PRO
81	LD	99	MET
71	Lj	40	ASN
70	Li	29	LYS
78	Le	98	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 143 such sidechains are listed below:

Mol	Chain	Res	Type
64	LG	18	HIS
67	LS	145	HIS
79	Ls	35	ASN
27	SH	8	ASN
25	SC	178	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
30	S3	10/11 (90%)	3 (30%)	1 (10%)
31	S2	74/75 (98%)	22 (29%)	5 (6%)
32	S1	1492/1743 (85%)	439 (29%)	156 (10%)
33	L1	3192/3352 (95%)	903 (28%)	413 (12%)
34	L3	120/120 (100%)	49 (40%)	17 (14%)
35	L2	143/159 (89%)	55 (38%)	28 (19%)
All	All	5031/5460 (92%)	1471 (29%)	620 (12%)

5 of 1471 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
30	S3	13	A
30	S3	14	A
30	S3	18	C
31	S2	2	C
31	S2	8	U

5 of 620 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
33	L1	2468	G
33	L1	3389	C
33	L1	2504	A
33	L1	2467	A
33	L1	2842	C

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
32	S1	23
33	L1	20
26	SG	3
78	Le	2
25	SC	2
9	SK	2
19	SY	2
2	SA	2
81	LD	1
18	SW	1
1	Sa	1
4	SD	1
16	SR	1
3	SB	1
28	SN	1
5	SE	1
24	SX	1
15	SS	1
10	SL	1
14	SP	1

The worst 5 of 68 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	S1	694:C	O3'	701:C	P	33.58

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	S1	803:G	O3'	823:A	P	30.95
1	L1	2547:C	O3'	2561:A	P	30.63
1	S1	744:G	O3'	764:U	P	27.26
1	S1	862:U	O3'	871:G	P	24.78

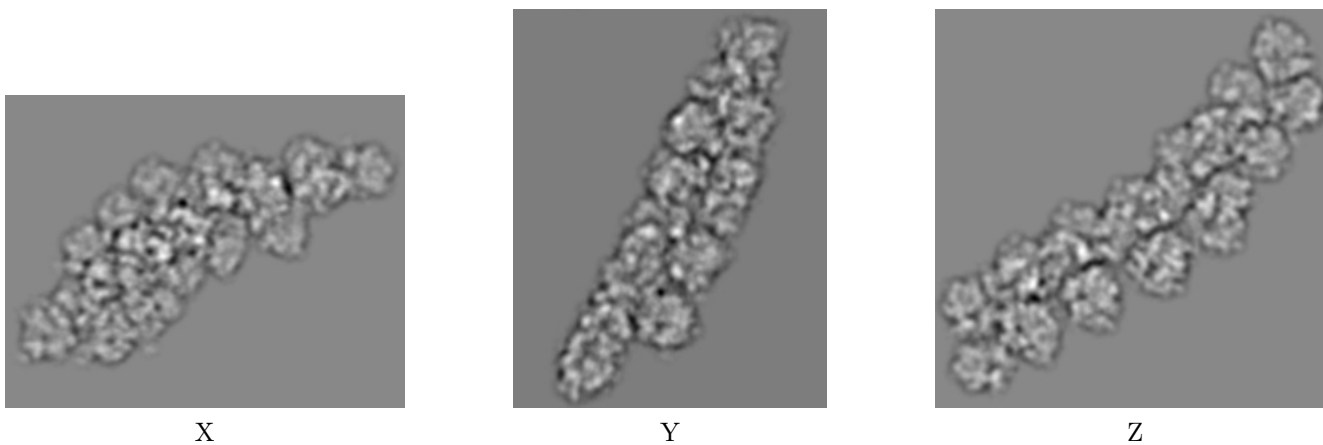
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-2790. 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 [i](#)

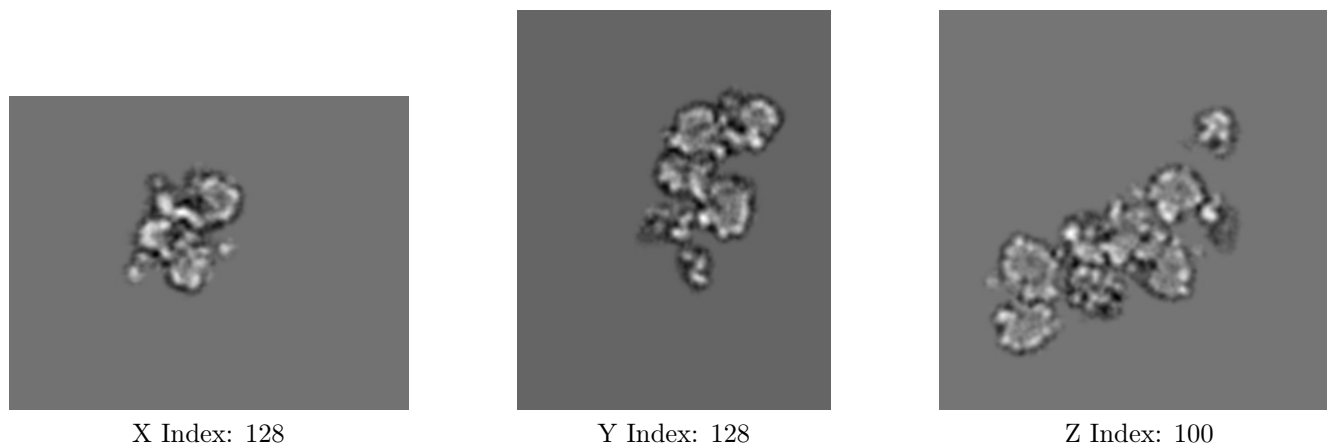
6.1.1 Primary map



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

6.2 Central slices [i](#)

6.2.1 Primary map



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

6.3 Largest variance slices [i](#)

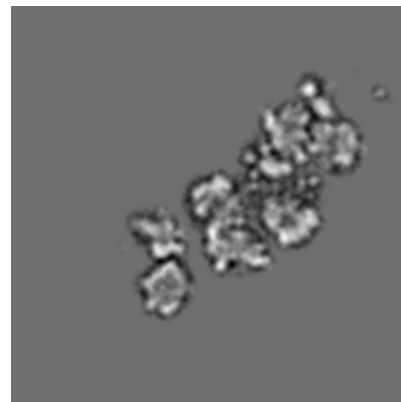
6.3.1 Primary map



X Index: 44



Y Index: 93

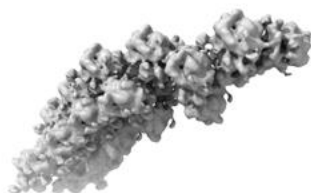


Z Index: 126

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

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

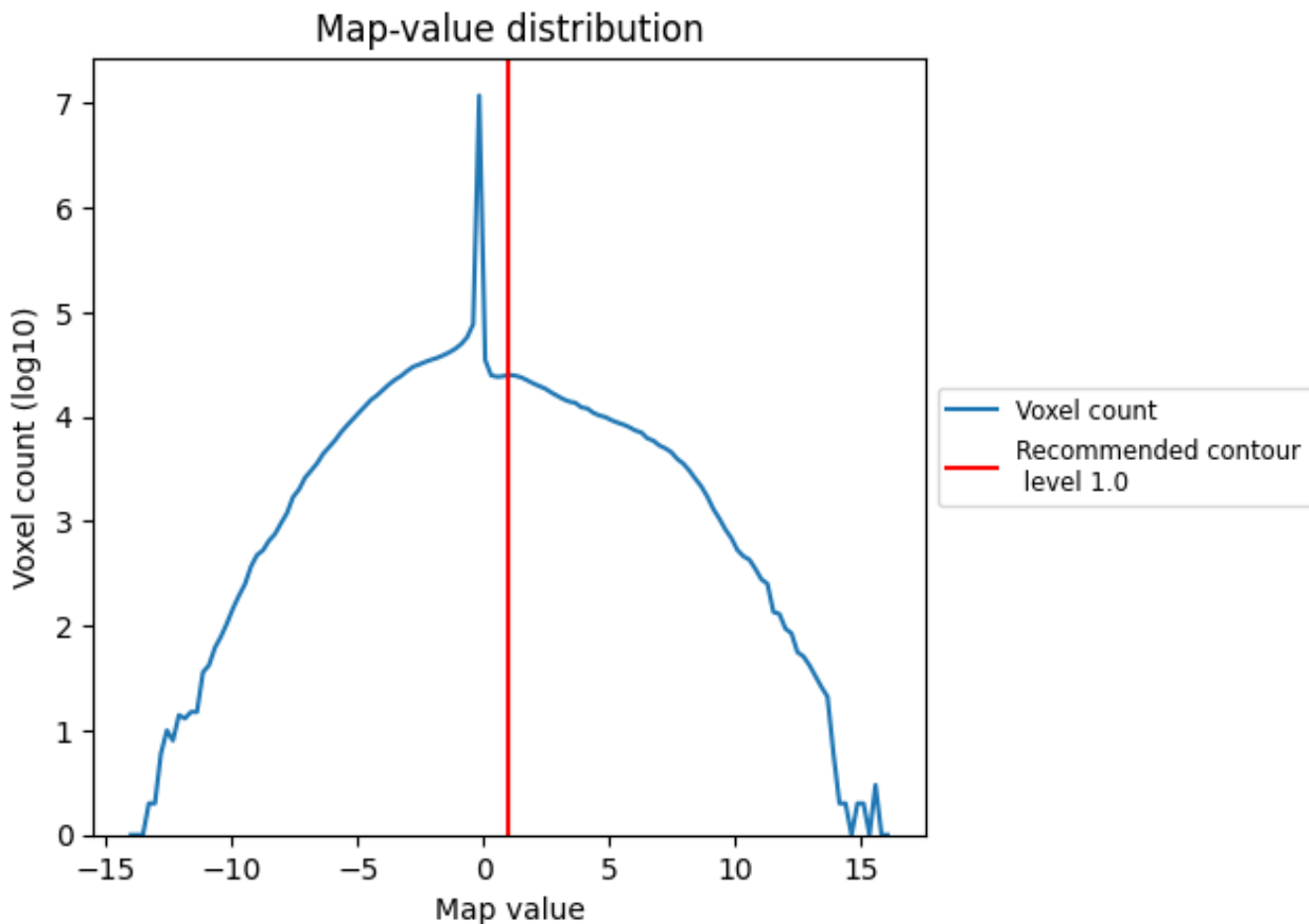
6.5 Mask visualisation

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

7 Map analysis [i](#)

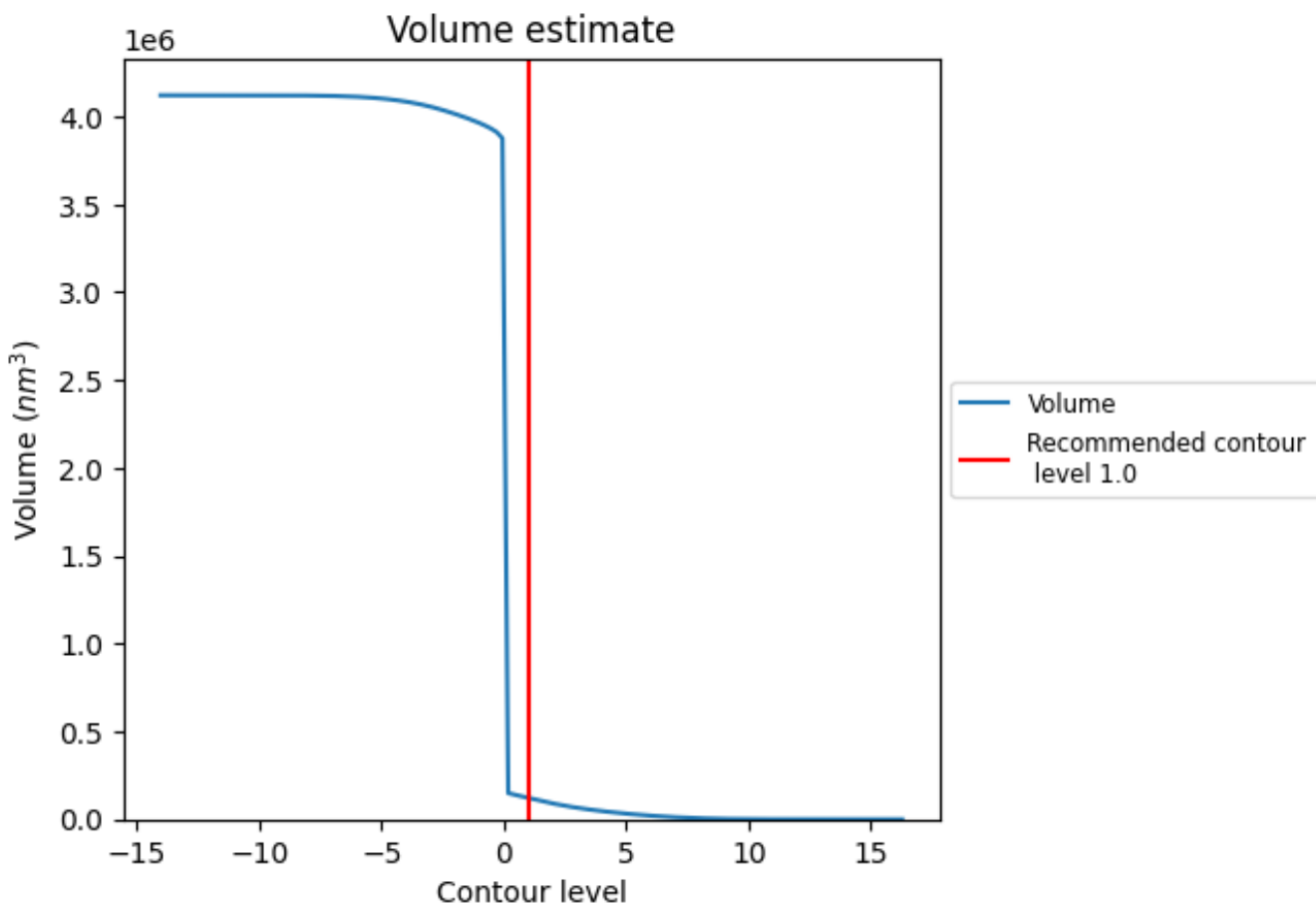
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

7.2 Volume estimate [i](#)



The volume at the recommended contour level is 122092 nm³; this corresponds to an approximate mass of 110289 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)

This section was not generated. The rotationally averaged power spectrum is only generated for cubic maps.

8 Fourier-Shell correlation

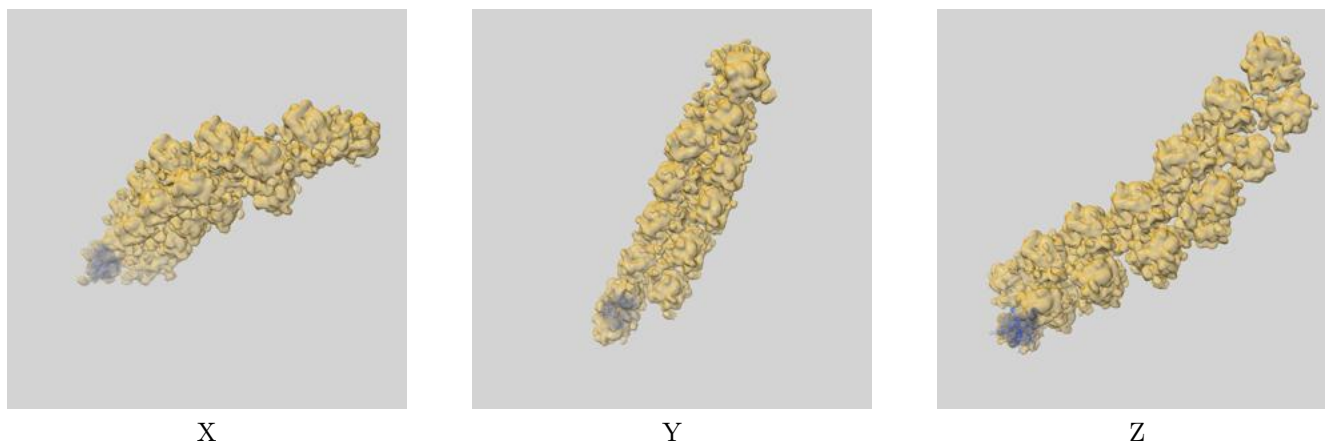
This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

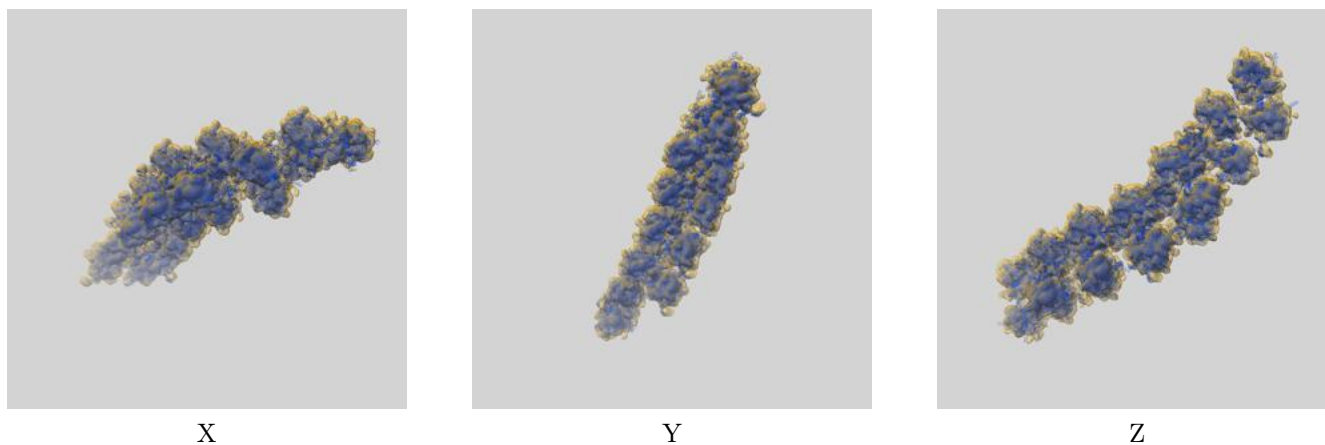
This section contains information regarding the fit between EMDB map EMD-2790 and PDB model 4V3P. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlays

9.1.1 Map-model overlay [i](#)

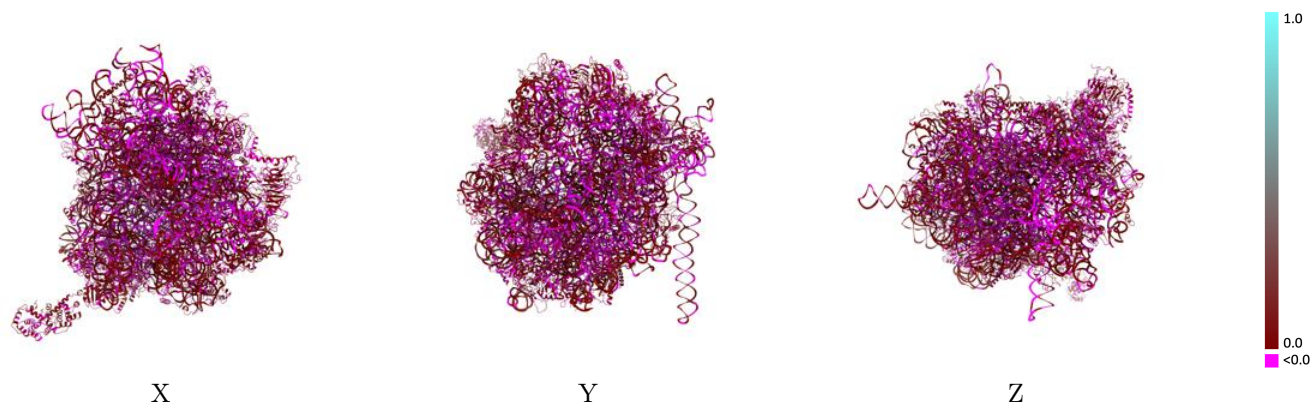


9.1.2 Map-model assembly overlay [i](#)



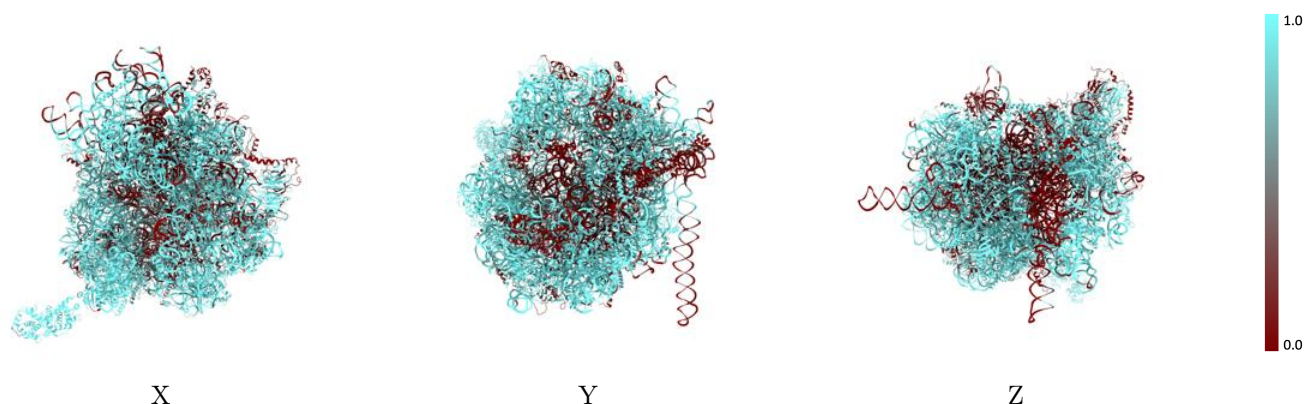
The images above show the 3D surface view of the map at the recommended contour level 1.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



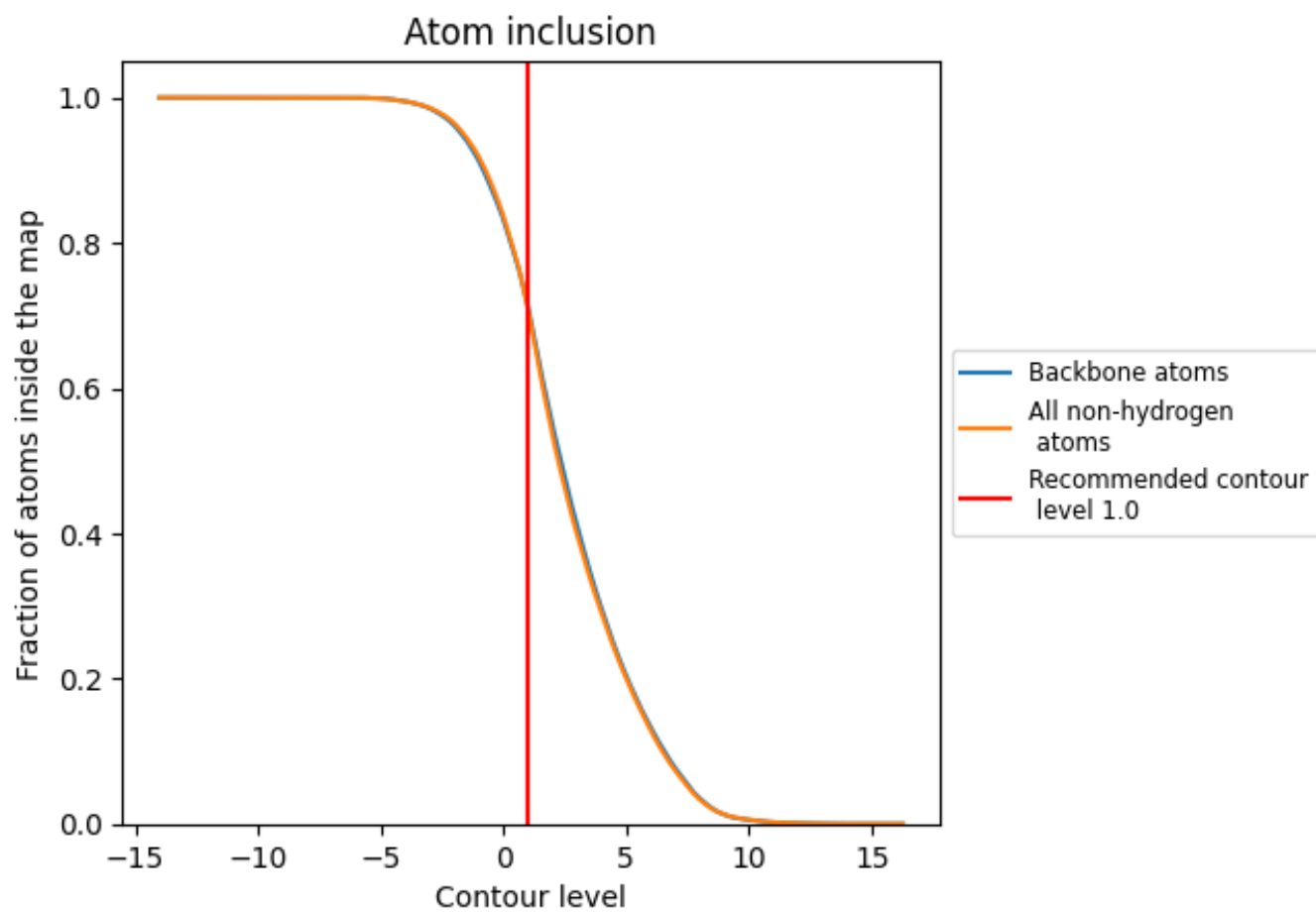
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (1.0).

9.4 Atom inclusion [i](#)



At the recommended contour level, 71% of all backbone atoms, 71% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary





















































































The table lists the average atom inclusion at the recommended contour level (1.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7105	0.0160
L1	0.7195	0.0180
L2	0.8095	0.0040
L3	0.9400	0.0370
LA	0.0136	-0.0110
LB	0.2945	-0.0160
LC	0.9568	0.0250
LD	0.7453	0.0060
LE	0.8461	0.0270
LF	0.8747	0.0510
LG	0.9888	0.0500
LH	0.8814	0.0350
LI	0.5715	0.0040
LJ	0.9851	0.0470
LK	0.5417	-0.0260
LL	0.6670	0.0050
LM	0.3938	-0.0240
LN	0.9658	0.0150
LO	0.8244	0.0400
LP	0.7394	-0.0220
LQ	0.9863	0.0420
LR	0.8748	0.0340
LS	0.9615	0.0030
LT	0.6817	0.0060
LU	0.5639	-0.0170
LV	0.6151	0.0030
LW	0.9609	0.0590
LX	0.8666	0.0280
LY	1.0000	0.0440
LZ	0.7768	-0.0020
La	0.9398	0.0030
Lb	1.0000	0.0500
Lc	0.9805	0.0470
Ld	1.0000	-0.0110
Le	0.8055	-0.0040

























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Chain	Atom inclusion	Q-score
Lf	 0.7334	 0.0220
Lg	 0.6918	 0.0010
Lh	 0.6698	 -0.0050
Li	 1.0000	 0.0700
Lj	 0.7757	 -0.0140
Lk	 0.9054	 0.0460
Ll	 0.3227	 -0.0400
Lm	 0.1081	 -0.0130
Ln	 0.5366	 0.0300
Lo	 0.4587	 -0.0550
Lp	 0.9849	 -0.0140
Lq	 0.7032	 0.0370
Lr	 0.6039	 0.0130
Ls	 0.8262	 0.0350
Lt	 1.0000	 0.0840
Lu	 0.9439	 0.0330
Lv	 0.9977	 0.0540
Lw	 0.9931	 0.0220
Lx	 0.9208	 0.0120
Ly	 1.0000	 0.0200
Lz	 1.0000	 -0.0620
S1	 0.6480	 0.0130
S2	 0.1920	 -0.0060
S3	 1.0000	 0.0580
SA	 0.7039	 0.0150
SB	 0.6261	 0.0000
SC	 0.8903	 0.0220
SD	 0.9503	 0.0040
SE	 0.9356	 0.0110
SF	 0.3649	 0.0150
SG	 0.6271	 0.0250
SH	 0.9645	 0.0030
SI	 0.8924	 0.0190
SJ	 0.6789	 -0.0170
SK	 0.8192	 0.0470
SL	 0.0782	 -0.0180
SM	 0.6308	 0.0170
SN	 1.0000	 0.0080
SO	 0.2027	 -0.0070
SP	 0.0081	 -0.0010
SQ	 0.6636	 0.0240
SR	 0.6476	 0.0330

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Chain	Atom inclusion	Q-score
SS	 1.0000	 0.0720
ST	 0.5197	 0.0230
SU	 0.3725	 -0.0060
SV	 0.4420	 0.0210
SW	 0.9543	 0.0840
SX	 0.1536	 -0.0240
SY	 0.6204	 0.0330
SZ	 0.6283	 0.0340
Sa	 0.6628	 0.0350
Sb	 1.0000	 0.1390
Sc	 0.7619	 0.0180