



wwPDB EM Validation Summary Report ⓘ

Feb 22, 2024 – 05:58 PM EST

PDB ID : 4V6I
EMDB ID : EMD-1669
Title : Localization of the small subunit ribosomal proteins into a 6.1 Å cryo-EM map of *Saccharomyces cerevisiae* translating 80S ribosome
Authors : Armache, J.-P.; Jarasch, A.; Anger, A.M.; Villa, E.; Becker, T.; Bhushan, S.; Jossinet, F.; Habeck, M.; Dindar, G.; Franckenberg, S.; Marquez, V.; Mielke, T.; Thomm, M.; Berninghausen, O.; Beatrix, B.; Soeding, J.; Westhof, E.; Wilson, D.N.; Beckmann, R.
Deposited on : 2010-10-12
Resolution : 8.80 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

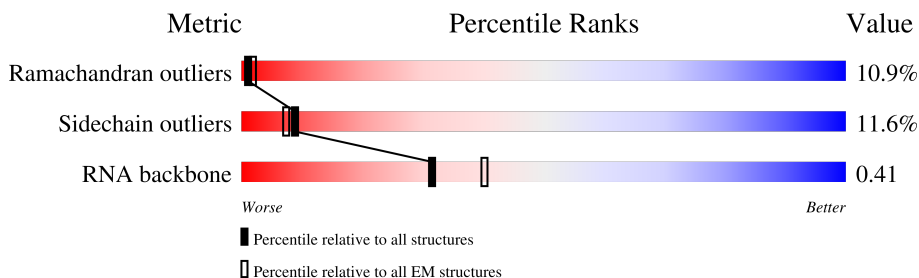
EMDB validation analysis : 0.0.1.dev70
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

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 8.80 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	Aa	319	47% (Poor fit) 72% (0 outliers), 19% (1 outlier), 8% (2 outliers), 5% (3+ outliers)
2	AA	252	27% (Poor fit) 65% (0 outliers), 25% (1 outlier), 6% (2 outliers), 5% (3+ outliers)
3	AB	240	41% (Poor fit) 49% (0 outliers), 23% (1 outlier), 10% (2 outliers), 15% (3+ outliers)
4	AD	261	24% (Poor fit) 43% (0 outliers), 21% (1 outlier), 11% (2 outliers), 23% (3+ outliers)
5	AC	197	35% (Poor fit) 49% (0 outliers), 31% (1 outlier), 14% (2 outliers), 6% (3+ outliers)
6	AE	254	33% (Poor fit) 64% (0 outliers), 19% (1 outlier), 13% (2 outliers), 5% (3+ outliers)
7	AG	144	31% (Poor fit) 78% (0 outliers), 21% (1 outlier), 1% (2 outliers), 1% (3+ outliers)
8	AF	225	38% (Poor fit) 61% (0 outliers), 19% (1 outlier), 7% (2 outliers), 12% (3+ outliers)

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Mol	Chain	Length	Quality of chain
9	AH	130	38% 61% 24% 10% 5%
10	AI	143	32% 50% 21% 15% 12%
11	AJ	121	38% 62% 21% 9% 7%
12	AK	137	30% 48% 28% 7% 13%
13	AL	145	31% 57% 32% 6% 5%
14	AM	146	66% 53% 32% 10%
15	AN	56	50% 36% 23% 25% 14%
16	AO	151	38% 48% 19% 11% 20%
17	AQ	136	67% 51% 31% 12% 6%
18	AP	156	30% 31% 12% 9% 46%
19	AR	142	39% 37% 17% 8% 38%
20	AS	144	42% 55% 32% 8% 6%
21	AT	87	55% 62% 18% 16%
22	AV	108	44% 44% 24% 6% 21%
23	AW	93	23% 78% 20%
24	AX	82	28% 32% 23% 39%
25	AY	67	58% 58% 27% 10%
26	AZ	63	43% 51% 21% 17% 11%
27	Ab	37	5% 89% 8%
28	Ac	26	35% 92%
29	AU	135	30% 38% 18% 14% 29%
30	BA	217	73% 76% 20%
31	BB	254	47% 67% 17% 13%
32	BC	388	30% 56% 28% 12%
33	BD	362	30% 55% 23% 7% 6% 9%

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Mol	Chain	Length	Quality of chain
34	BE	174	33% 60% 20% 11% 6% .
35	BG	176	28% 36% 28% 22% 14%
36	BF	191	37% 79% 16% . .
37	BH	256	21% 46% 19% 7% . 23%
38	Bs	312	57% 60% 16% 5% . 18%
39	BJ	165	48% 53% 17% 5% . 23%
40	BK	199	33% 63% 21% 13% .
41	BN	138	27% 55% 33% 11% .
42	BM	137	67% 60% 26% 9% . .
43	BP	204	30% 50% 25% 16% . 5%
44	BO	149	42% 54% 26% 15% 5%
45	BR	186	30% 49% 20% 12% 5% 13%
46	BT	189	42% 67% 23% 8% .
47	BU	160	25% 64% 27% 6% .
48	BW	121	31% 50% 24% 10% . 13%
49	BV	170	40% 71% 16% 11% .
50	BX	142	34% 53% 23% 9% . 14%
51	BZ	155	25% 25% 11% 7% . 53%
52	BY	123	15% 67% 25% 5% .
53	Ba	136	30% 32% 18% 14% 6% 30%
54	Bd	59	12% 25% 10% . 63%
55	Bc	120	8% 62% 21% 10% 6% .
56	Bf	105	40% 76% 17% 6% .
57	Be	244	29% 70% 19% 7% . .
58	Bg	113	35% 62% 20% 12% . .

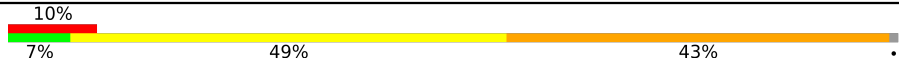


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Mol	Chain	Length	Quality of chain
59	Bh	130	43% 65% 24% 7% .
60	Bi	118	49% 53% 25% 14% 8%
61	Bj	107	46% 46% 27% 15% 6% 7%
62	Bk	100	12% 46% 15% 13% . 23%
63	Bm	92	51% 72% 22% . .
64	Bl	88	28% 64% 20% 14% .
65	Bn	78	33% 59% 21% 12% 9%
66	Bo	51	43% 45% 29% 18% 8%
67	Bp	52	38% 46% 17% 12% . 23%
68	Bq	25	48% 44% 40% 16%
69	Br	106	46% 53% 25% 14% 8%
70	Bx	21	19% 76% 19% 5%
70	By	21	5% 95% 5%
71	Bz	15	33% 87% 7% 7%
72	Bt	106	33% 43% 9% .. 45%
72	Bu	106	55% 41% 12% .. 45%
73	Bv	106	40% 49% 5% . 45%
73	Bw	106	52% 49% 5% . 45%
74	BQ	297	16% 60% 21% 13% 6%
75	BL	170	19% 96% ..
76	BS	167	41% 43% 31% 14% 13%
77	BI	221	20% 57% 15% 7% . 18%
78	CA	1800	11% 11% 52% 32% . .
79	CB	75	95% . 56% 41%
80	CC	11	91% 9% 27% 64%

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Mol	Chain	Length	Quality of chain
81	DA	3396	
82	DB	158	
83	DC	118	

2 Entry composition [i](#)

There are 83 unique types of molecules in this entry. The entry contains 191627 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 40S ribosomal protein RACK1 (RACK1).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	Aa	319	2442	1544	420	469	9	0	0

- Molecule 2 is a protein called 40S ribosomal protein rpS0 (S2p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	AA	252	1922	1204	336	380	2	0	0

- Molecule 3 is a protein called 40S ribosomal protein rpS3 (S3p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	AB	204	1511	945	282	278	6	0	0

- Molecule 4 is a protein called 40S ribosomal protein rpS4 (S4e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	AD	200	1591	1018	288	283	2	0	0

- Molecule 5 is a protein called 40S ribosomal protein rpS9 (S4p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	AC	197	1521	951	298	270	2	0	0

- Molecule 6 is a protein called 40S ribosomal protein rpS2 (S5p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	AE	254	1936	1224	360	349	3	0	0

- Molecule 7 is a protein called 40S ribosomal protein rpS7 (S7e).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
7	AG	143	716	429	143	144	0	0

- Molecule 8 is a protein called 40S ribosomal protein rpS5 (S7p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	AF	199	1543	958	293	289	3	0	0

- Molecule 9 is a protein called 40S ribosomal protein rpS22 (S8p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	AH	130	1030	655	189	182	4	0	0

- Molecule 10 is a protein called 40S ribosomal protein rpS16 (S9p).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
10	AI	126	998	639	184	175	0	0

- Molecule 11 is a protein called 40S ribosomal protein rpS20 (S10p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	AJ	113	849	528	158	162	1	0	0

- Molecule 12 is a protein called 40S ribosomal protein rpS14 (S11p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	AK	119	833	508	157	165	3	0	0

- Molecule 13 is a protein called 40S ribosomal protein rpS23 (S12p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	AL	145	978	588	203	184	3	0	0

- Molecule 14 is a protein called 40S ribosomal protein rpS18 (S13p).

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AM	140	Total	C	N	O	S	0	0
			1156	719	231	204	2		

- Molecule 15 is a protein called 40S ribosomal protein rpS29 (S14p).

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AN	48	Total	C	N	O	S	0	0
			353	209	79	61	4		

- Molecule 16 is a protein called 40S ribosomal protein rpS13 (S15p).

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AO	121	Total	C	N	O	S	0	0
			978	624	183	170	1		

- Molecule 17 is a protein called 40S ribosomal protein rpS17 (S17e).

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AQ	136	Total	C	N	O	S	0	0
			1098	682	213	201	2		

- Molecule 18 is a protein called 40S ribosomal protein rpS11 (S17p).

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AP	85	Total	C	N	O	S	0	0
			631	402	124	104	1		

- Molecule 19 is a protein called 40S ribosomal protein rpS15 (S19p).

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AR	88	Total	C	N	O	S	0	0
			676	429	123	118	6		

- Molecule 20 is a protein called 40S ribosomal protein rpS19 (S19e).

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AS	144	Total	C	N	O	S	0	0
			1120	699	209	209	3		

- Molecule 21 is a protein called 40S ribosomal protein rpS21 (S21e).

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AT	87	Total	C	N	O	S	0	0
			685	420	125	138	2		

- Molecule 22 is a protein called 40S ribosomal protein rpS25 (S25e).

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AV	85	Total	C	N	O	S	0	0
			688	437	128	122	1		

- Molecule 23 is a protein called 40S ribosomal protein rpS26 (S26e).

Mol	Chain	Residues	Atoms				AltConf	Trace	
23	AW	92	Total	C	N	O		0	0
			461	276	92	93			

- Molecule 24 is a protein called 40S ribosomal protein rpS27 (S27e).

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AX	50	Total	C	N	O	S	0	0
			366	229	60	72	5		

- Molecule 25 is a protein called 40S ribosomal protein rpS28 (S28e).

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AY	60	Total	C	N	O	S	0	0
			445	276	80	87	2		

- Molecule 26 is a protein called 40S ribosomal protein rpS30 (S30e).

Mol	Chain	Residues	Atoms					AltConf	Trace
26	AZ	63	Total	C	N	O	S	0	0
			492	307	102	81	2		

- Molecule 27 is a protein called Unknown 40S ribosomal protein XS1.

Mol	Chain	Residues	Atoms				AltConf	Trace	
27	Ab	36	Total	C	N	O		0	0
			181	108	36	37			

- Molecule 28 is a protein called Unknown 40S ribosomal protein XS2.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	Ac	25	Total	C	N	O	0	0
			126	75	25	26		

- Molecule 29 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	AU	96	Total	C	N	O	S	0	0
			714	450	134	129	1		

- Molecule 30 is a protein called 60S ribosomal protein rpL1 (L1p).

Mol	Chain	Residues	Atoms					AltConf	Trace
30	BA	217	Total	C	N	O	S	0	0
			1718	1097	299	312	10		

- Molecule 31 is a protein called 60S ribosomal protein rpL2 (L2p).

Mol	Chain	Residues	Atoms					AltConf	Trace
31	BB	254	Total	C	N	O	S	0	0
			1904	1183	385	334	2		

- Molecule 32 is a protein called 60S ribosomal protein rpL3 (L3p).

Mol	Chain	Residues	Atoms					AltConf	Trace
32	BC	388	Total	C	N	O	S	0	0
			3055	1933	579	534	9		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BC	388	GLY	-	expression tag	UNP P14126

- Molecule 33 is a protein called 60S ribosomal protein rpL4 (L4p).

Mol	Chain	Residues	Atoms					AltConf	Trace
33	BD	329	Total	C	N	O	S	0	0
			2486	1564	480	438	4		

- Molecule 34 is a protein called 60S ribosomal protein rpL11 (L5p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	BE	168	1341	839	252	245	5	0	0

- Molecule 35 is a protein called 60S ribosomal protein rpL6 (L6e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	BG	176	1409	907	252	248	2	0	0

- Molecule 36 is a protein called 60S ribosomal protein rpL9 (L6p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	BF	191	1516	961	274	277	4	0	0

- Molecule 37 is a protein called 60S ribosomal protein rpL8 (L7ae).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	BH	197	1505	959	269	274	3	0	0

- Molecule 38 is a protein called 60S acidic ribosomal protein rpP0 (L10P).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	Bs	257	1976	1269	334	368	5	0	0

- Molecule 39 is a protein called 60S ribosomal protein rpL12 (L11p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	BJ	127	954	601	174	178	1	0	0

- Molecule 40 is a protein called 60S ribosomal protein rpL16 (L13p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	BK	199	1570	1011	291	266	2	0	0

- Molecule 41 is a protein called 60S ribosomal protein rpL14 (L14e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	BN	138	1068	683	201	181	3	0	0

- Molecule 42 is a protein called 60S ribosomal protein rpL23 (L14p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	BM	131	972	611	182	172	7	0	0

- Molecule 43 is a protein called 60S ribosomal protein rpL15 (L15e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	BP	193	1625	1016	341	266	2	0	0

- Molecule 44 is a protein called 60S ribosomal protein rpL28 (L15p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	BO	149	1182	754	232	192	4	0	0

- Molecule 45 is a protein called 60S ribosomal protein rpL18 (L18e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	BR	161	1243	786	242	212	3	0	0

- Molecule 46 is a protein called 60S ribosomal protein rpL19 (L19e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	BT	189	1530	940	327	262	1	0	0

- Molecule 47 is a protein called 60S ribosomal protein rpL21 (L21e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	BU	160	1261	793	242	222	4	0	0

- Molecule 48 is a protein called 60S ribosomal protein rpL22 (L22e).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
48	BW	105	830	535	140	155	0	0

- Molecule 49 is a protein called 60S ribosomal protein rpL17 (L22p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	BV	170	1312	814	254	243	1	0	0

- Molecule 50 is a protein called 60S ribosomal protein rpL25 (L23p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	BX	122	978	629	172	175	2	0	0

- Molecule 51 is a protein called 60S ribosomal protein rpL24 (L24e).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
51	BZ	73	579	366	115	98	0	0

- Molecule 52 is a protein called 60S ribosomal protein rpL26 (L24p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	BY	123	972	611	188	172	1	0	0

- Molecule 53 is a protein called 60S ribosomal protein rpL27 (L27e).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
53	Ba	95	708	455	134	119	0	0

- Molecule 54 is a protein called 60S ribosomal protein rpL29 (L29e).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
54	Bd	22	174	109	40	25	0	0

- Molecule 55 is a protein called 60S ribosomal protein rpL35 (L29p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	Bc	118	965	612	185	167	1	0	0

- Molecule 56 is a protein called 60S ribosomal protein rpL30 (L30e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	Bf	105	785	501	133	150	1	0	0

- Molecule 57 is a protein called 60S ribosomal protein rpL7 (L30p).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	Be	239	1919	1235	348	335	1	0	0

- Molecule 58 is a protein called 60S ribosomal protein rpL31 (L31e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	Bg	110	873	552	169	150	2	0	0

- Molecule 59 is a protein called 60S ribosomal protein pL32 (L32e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	Bh	130	1043	660	208	173	2	0	0

- Molecule 60 is a protein called 60S ribosomal protein rpL34 (L34e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	Bi	118	926	572	188	161	5	0	0

- Molecule 61 is a protein called 60S ribosomal protein rpL33 (L35ae).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	Bj	100	738	461	147	128	2	0	0

- Molecule 62 is a protein called 60S ribosomal protein rpL36 (L36e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	Bk	77	619	384	129	105	1	0	0

- Molecule 63 is a protein called 60S ribosomal protein rpL43 (L37ae).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	Bm	92	703	434	139	123	7	0	0

- Molecule 64 is a protein called 60S ribosomal protein rpL37 (L37e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	Bl	88	678	410	148	114	6	0	0

- Molecule 65 is a protein called 60S ribosomal protein rpL38 (L38e).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
65	Bn	78	604	385	113	106	0	0

- Molecule 66 is a protein called 60S ribosomal protein rpL39 (L39e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	Bo	51	445	277	98	67	3	0	0

- Molecule 67 is a protein called 60S ribosomal protein rpL40 (L40e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	Bp	40	330	201	72	52	5	0	0

- Molecule 68 is a protein called 60S ribosomal protein rpL41 (L41e).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	Bq	25	234	142	63	28	1	0	0

- Molecule 69 is a protein called 60S ribosomal protein rpL42 (L44e).

Mol	Chain	Residues	Atoms					AltConf	Trace
69	Br	106	Total	C	N	O	S	0	0
			834	521	169	138	6		

- Molecule 70 is a protein called Unknown protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
70	Bx	20	Total	C	N	O	0	0
			100	60	20	20		
70	By	20	Total	C	N	O	0	0
			100	60	20	20		

- Molecule 71 is a protein called Unknown protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
71	Bz	14	Total	C	N	O	0	0
			70	42	14	14		

- Molecule 72 is a protein called 60S acidic ribosomal protein rpP11 (P1).

Mol	Chain	Residues	Atoms				AltConf	Trace
72	Bt	58	Total	C	N	O	0	0
			440	281	68	91		
72	Bu	58	Total	C	N	O	0	0
			440	281	68	91		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Bt	37	ASP	VAL	conflict	UNP P05318
Bu	37	ASP	VAL	conflict	UNP P05318

- Molecule 73 is a protein called 60S acidic ribosomal protein (P2).

Mol	Chain	Residues	Atoms					AltConf	Trace
73	Bv	58	Total	C	N	O	S	0	0
			429	271	66	91	1		
73	Bw	58	Total	C	N	O	S	0	0
			429	271	66	91	1		

- Molecule 74 is a protein called 60S ribosomal protein rpL5 (L18p).

Mol	Chain	Residues	Atoms					AltConf	Trace
74	BQ	297	Total	C	N	O	S	0	0
			2356	1485	414	454	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BQ	112	ARG	LYS	conflict	UNP P26321

- Molecule 75 is a protein called 60S ribosomal protein rpL13 (L13e).

Mol	Chain	Residues	Atoms				AltConf	Trace
75	BL	169	Total	C	N	O	0	0
			845	507	169	169		

- Molecule 76 is a protein called 60S ribosomal protein rpL20 (L18ae).

Mol	Chain	Residues	Atoms					AltConf	Trace
76	BS	167	Total	C	N	O	S	0	0
			1420	916	263	234	7		

- Molecule 77 is a protein called 60S ribosomal protein rpL10 (L10e).

Mol	Chain	Residues	Atoms					AltConf	Trace
77	BI	181	Total	C	N	O	S	0	0
			1444	907	281	248	8		

- Molecule 78 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	CA	1721	Total	C	N	O	P	0	10
			33643	14904	5670	11348	1721		

- Molecule 79 is a RNA chain called P-SITE TRNA ASP.

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

- Molecule 80 is a RNA chain called MRNA, RNA (5'-R(P*AP*AP*AP*AP*GP*AP*CP*U P*UP*CP*A)-3').

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

- Molecule 81 is a RNA chain called 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
81	DA	3354	68830	30640	12220	22616	3354	0	75

- Molecule 82 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
82	DB	157	3129	1391	523	1058	157	0	0

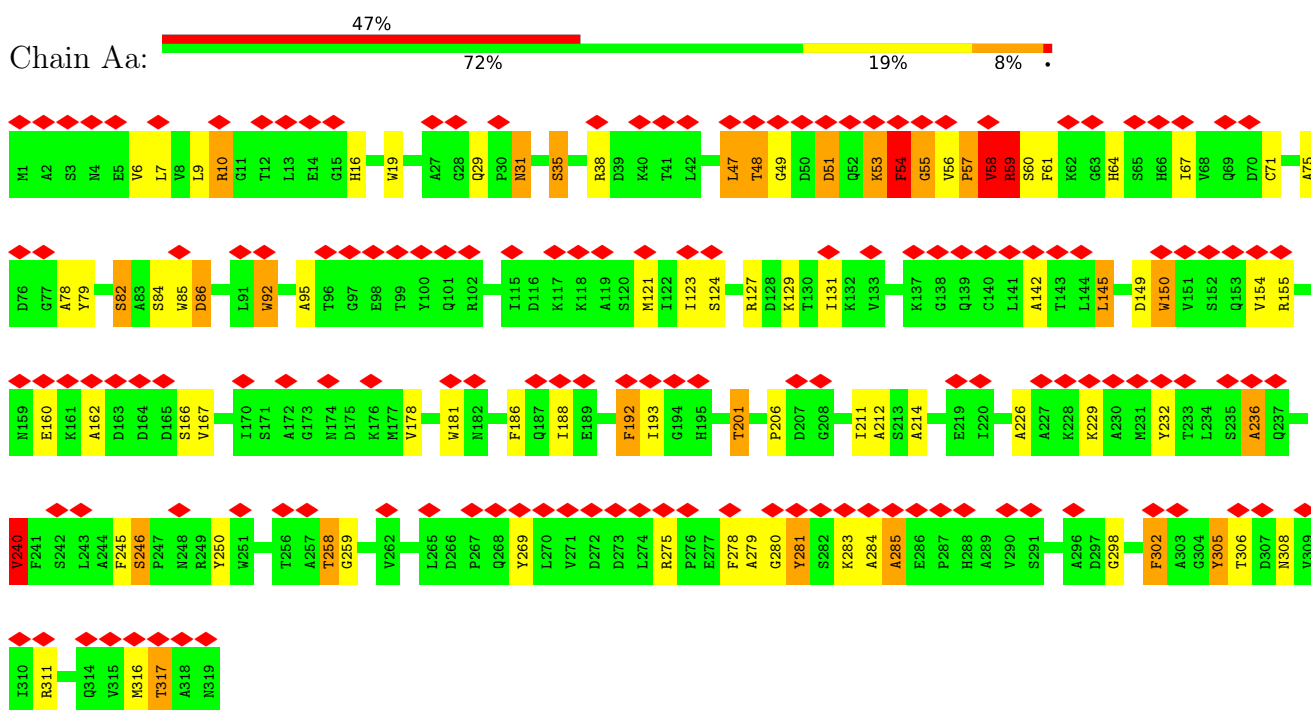
- Molecule 83 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
83	DC	118	2513	1122	446	827	118	0	0

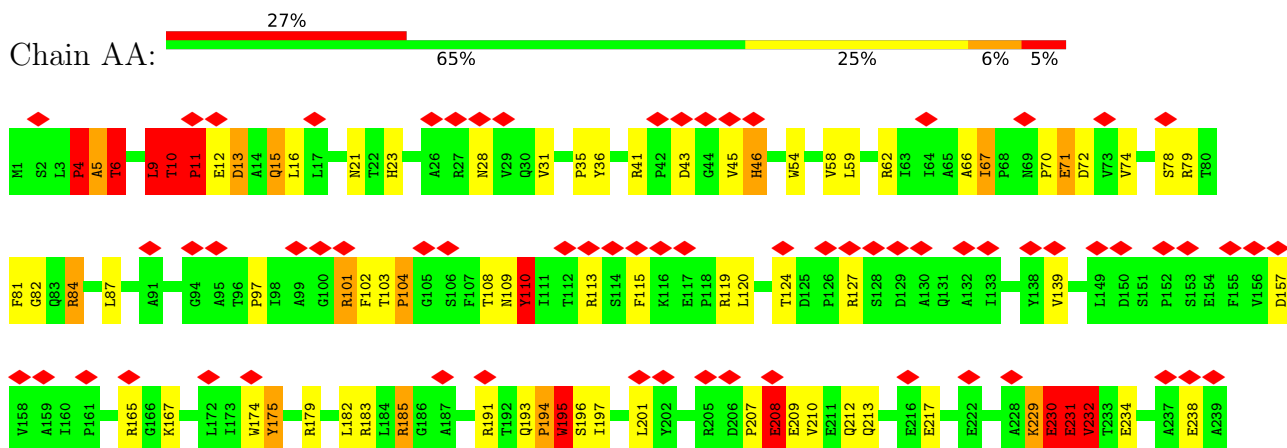
3 Residue-property plots

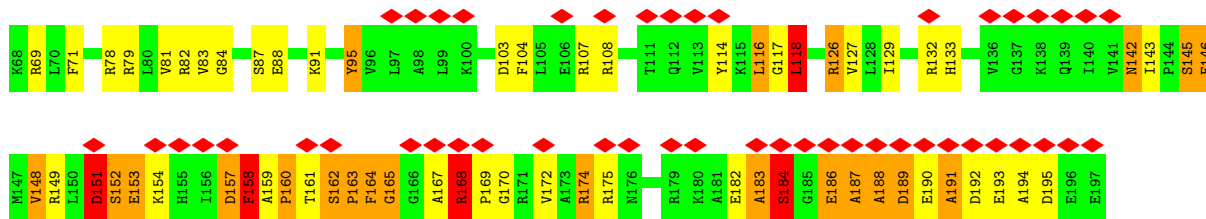
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 40S ribosomal protein RACK1 (RACK1)

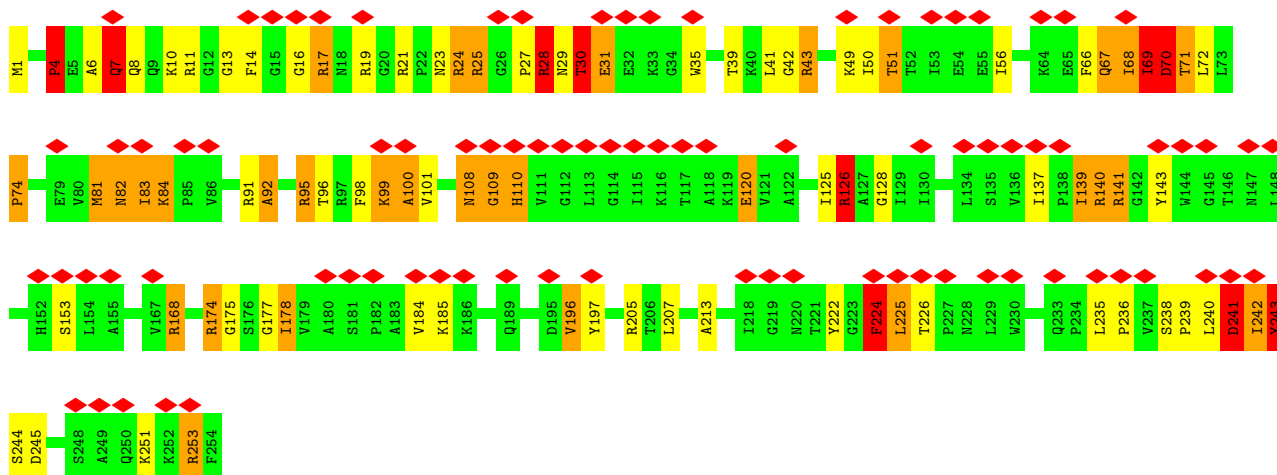


- Molecule 2: 40S ribosomal protein rpS0 (S2p)

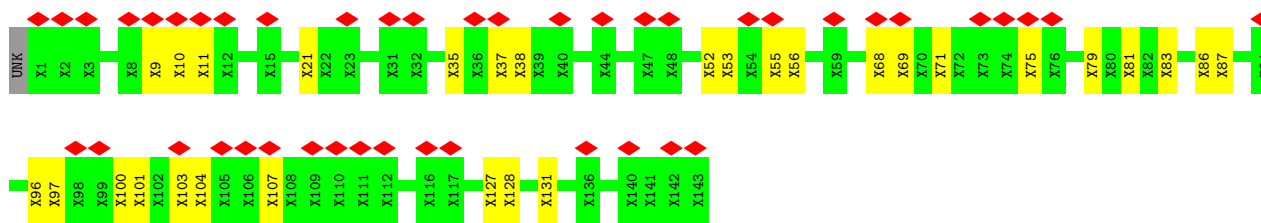
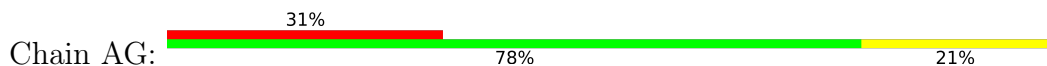




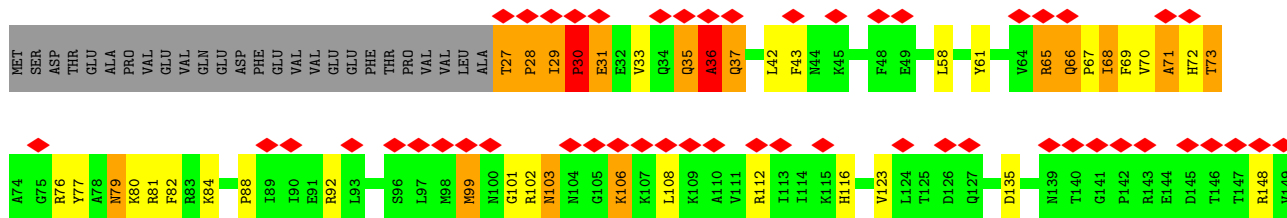
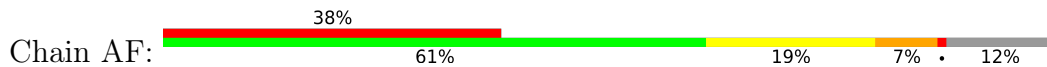
• Molecule 6: 40S ribosomal protein rpS2 (S5p)

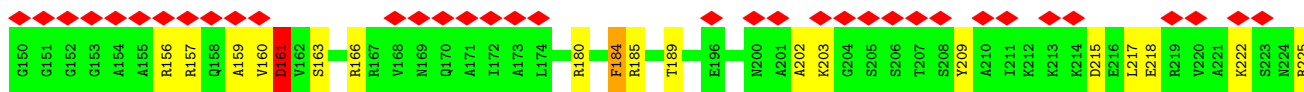


• Molecule 7: 40S ribosomal protein rpS7 (S7e)

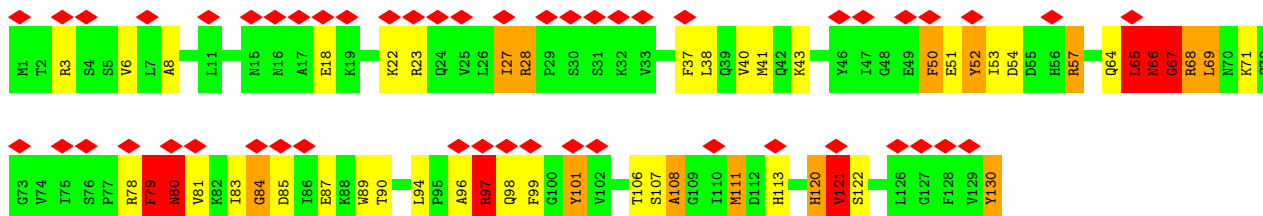
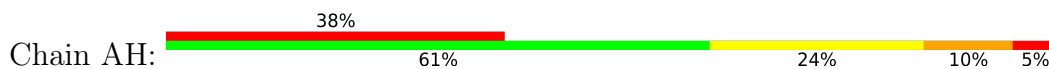


• Molecule 8: 40S ribosomal protein rpS5 (S7p)

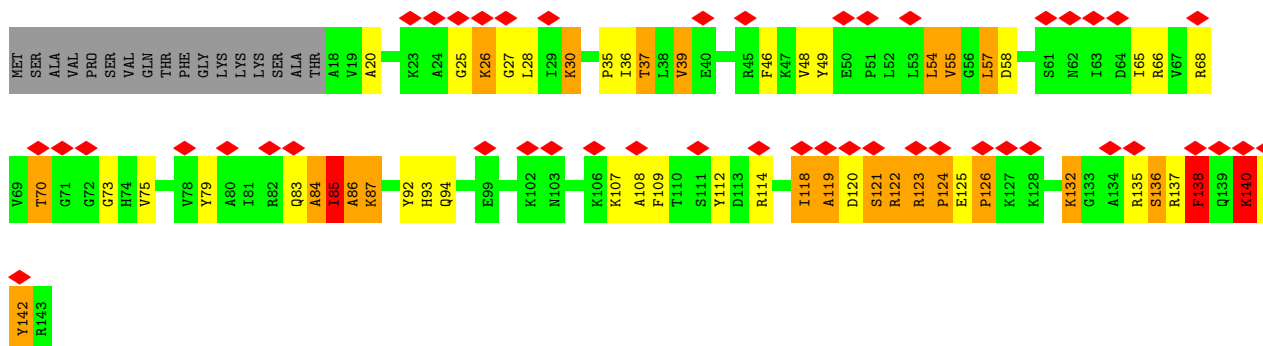




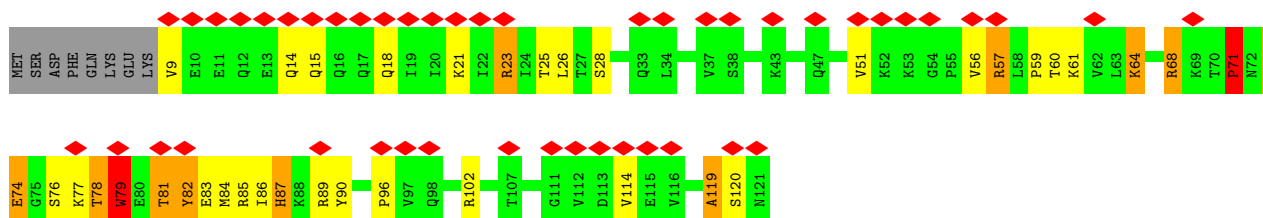
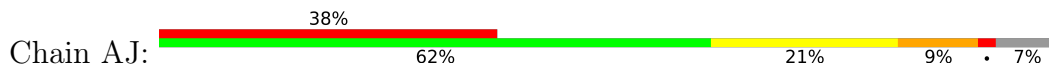
• Molecule 9: 40S ribosomal protein rpS22 (S8p)



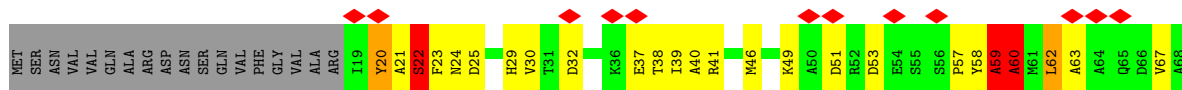
• Molecule 10: 40S ribosomal protein rpS16 (S9p)

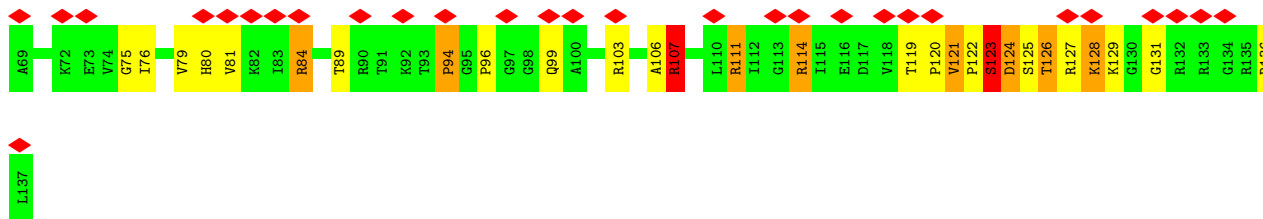


• Molecule 11: 40S ribosomal protein rpS20 (S10p)

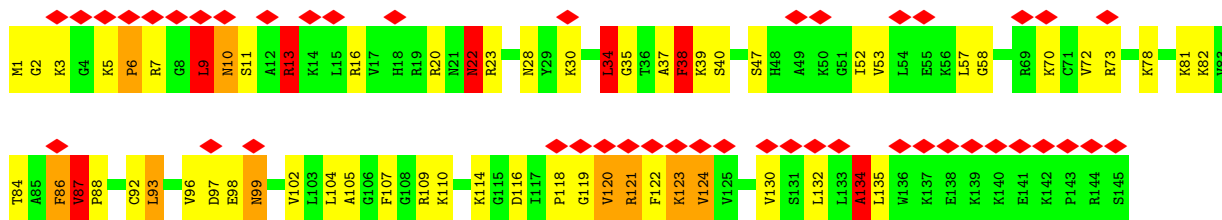


• Molecule 12: 40S ribosomal protein rpS14 (S11p)

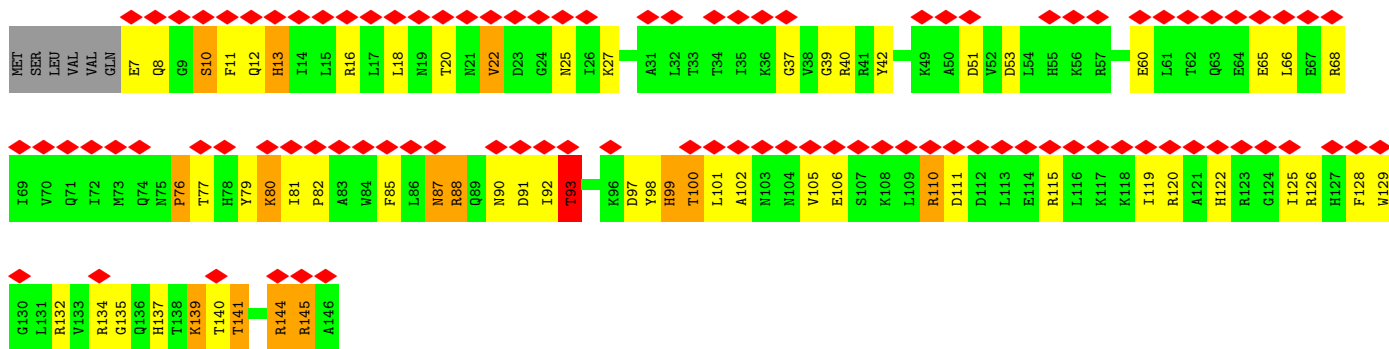




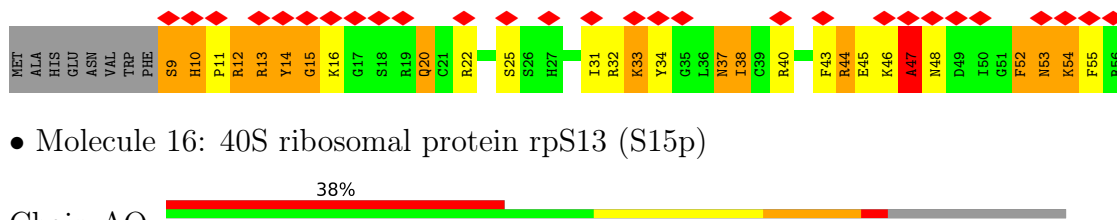
• Molecule 13: 40S ribosomal protein rpS23 (S12p)



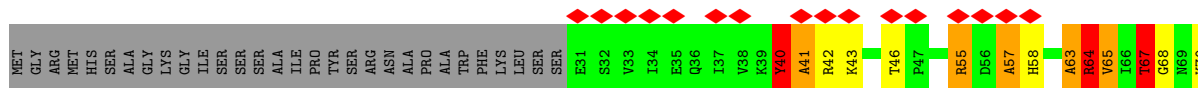
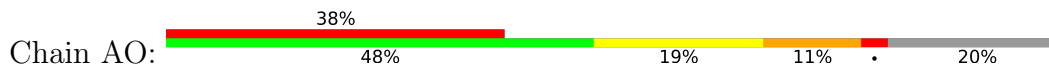
• Molecule 14: 40S ribosomal protein rpS18 (S13p)

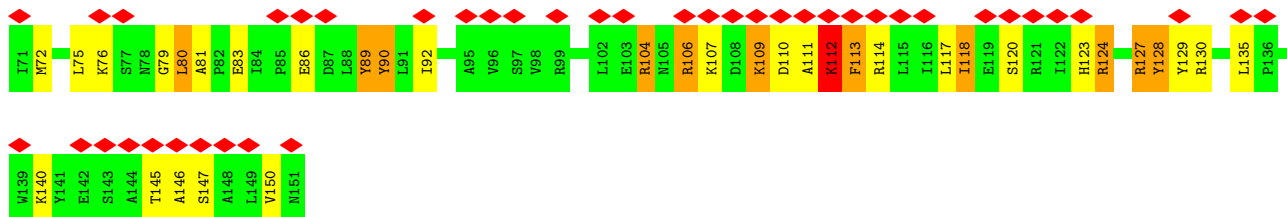


• Molecule 15: 40S ribosomal protein rpS29 (S14p)

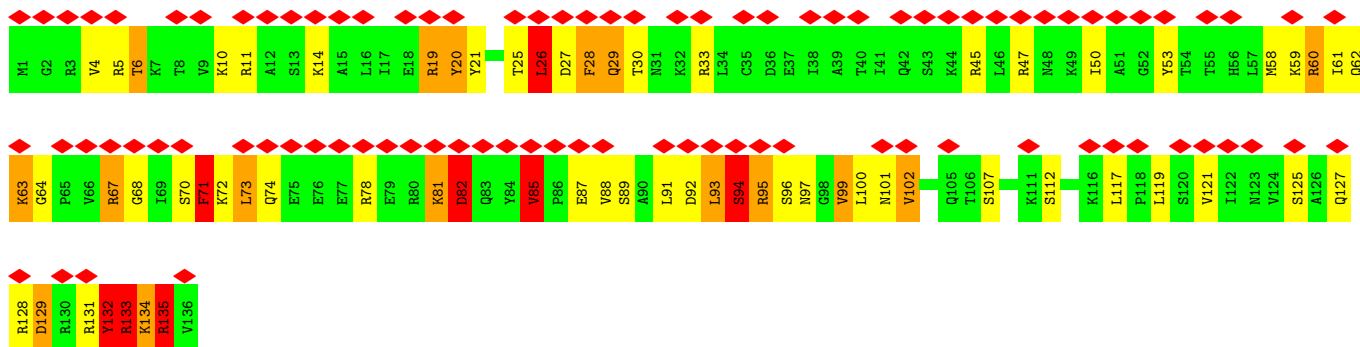


• Molecule 16: 40S ribosomal protein rpS13 (S15p)

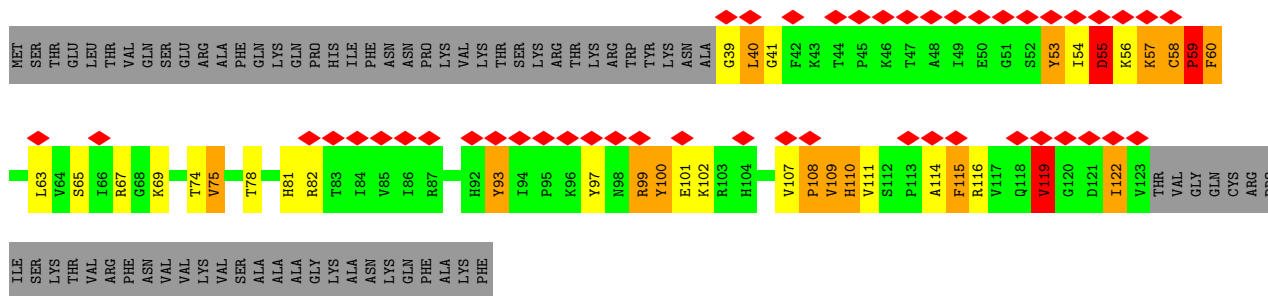
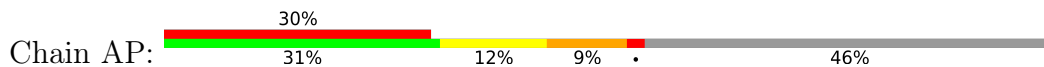




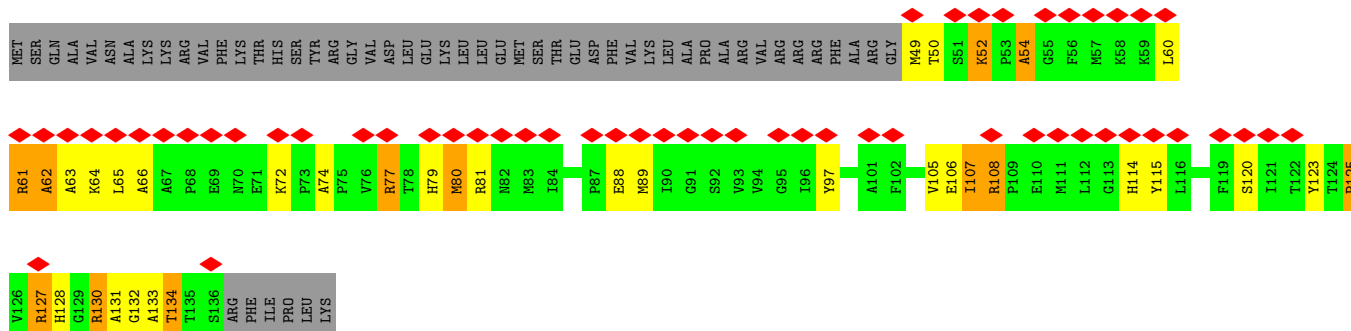
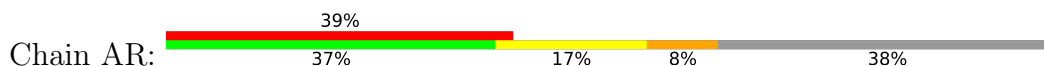
• Molecule 17: 40S ribosomal protein rpS17 (S17e)



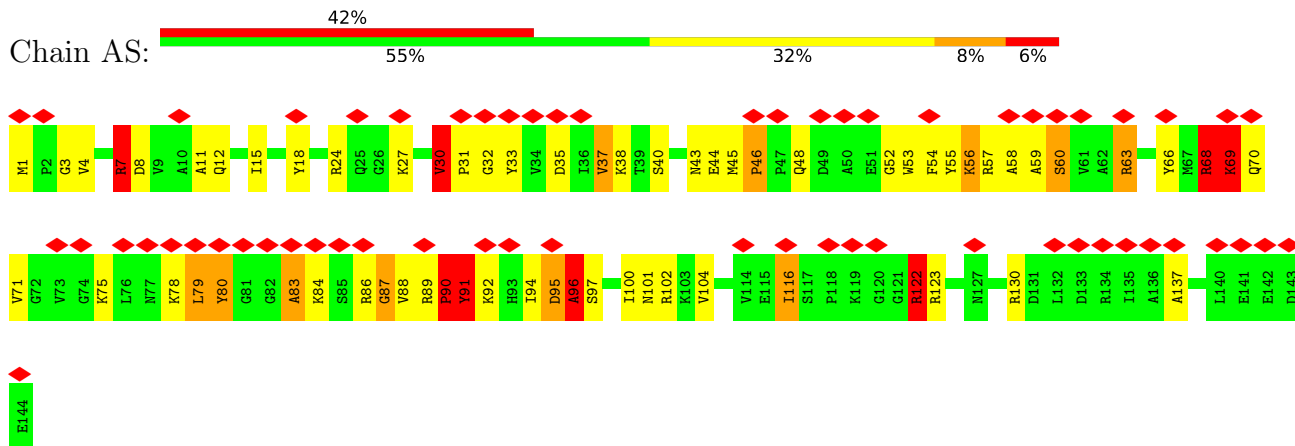
• Molecule 18: 40S ribosomal protein rpS11 (S17p)



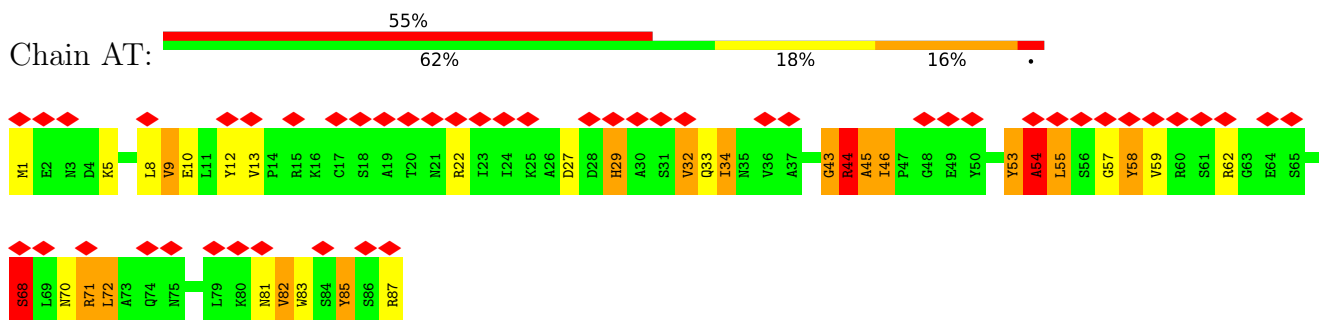
• Molecule 19: 40S ribosomal protein rpS15 (S19p)



• Molecule 20: 40S ribosomal protein rpS19 (S19e)



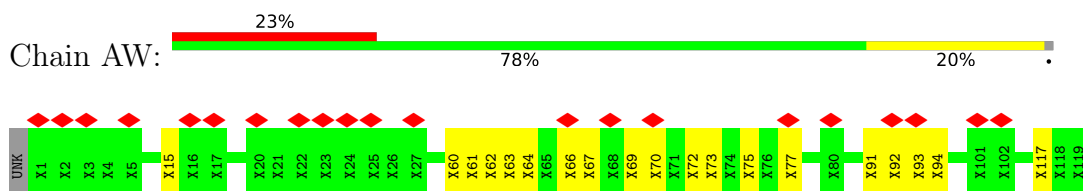
• Molecule 21: 40S ribosomal protein rpS21 (S21e)



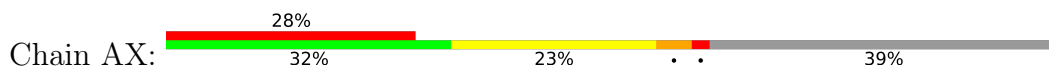
• Molecule 22: 40S ribosomal protein rpS25 (S25e)

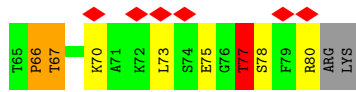
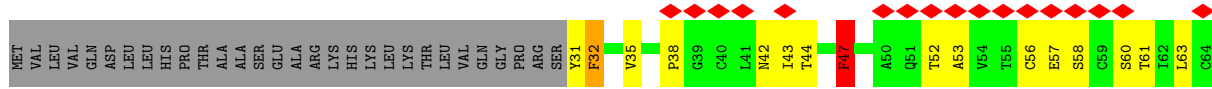


• Molecule 23: 40S ribosomal protein rpS26 (S26e)

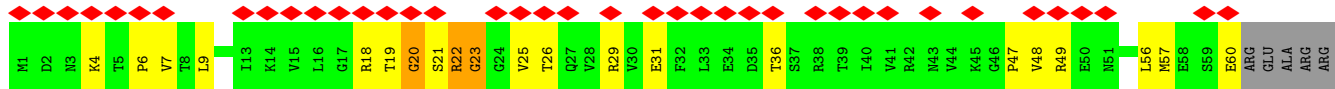


• Molecule 24: 40S ribosomal protein rpS27 (S27e)

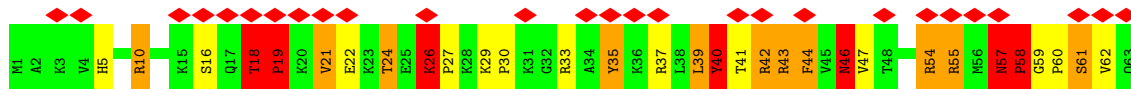




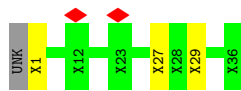
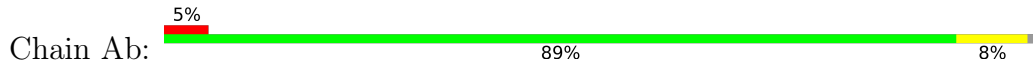
• Molecule 25: 40S ribosomal protein rpS28 (S28e)



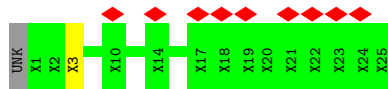
• Molecule 26: 40S ribosomal protein rpS30 (S30e)



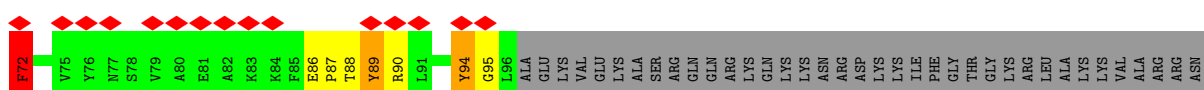
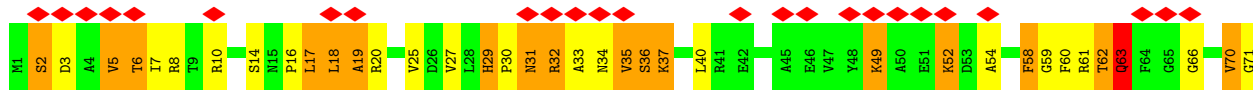
• Molecule 27: Unknown 40S ribosomal protein XS1



• Molecule 28: Unknown 40S ribosomal protein XS2

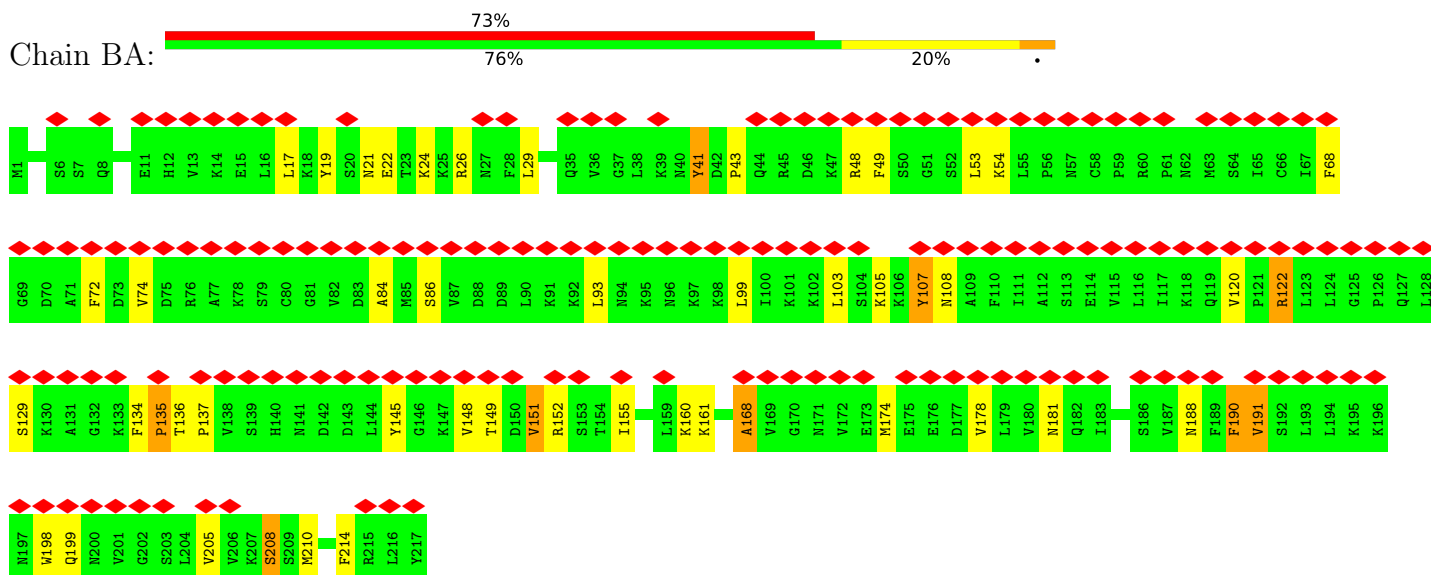


• Molecule 29: 40S ribosomal protein S24

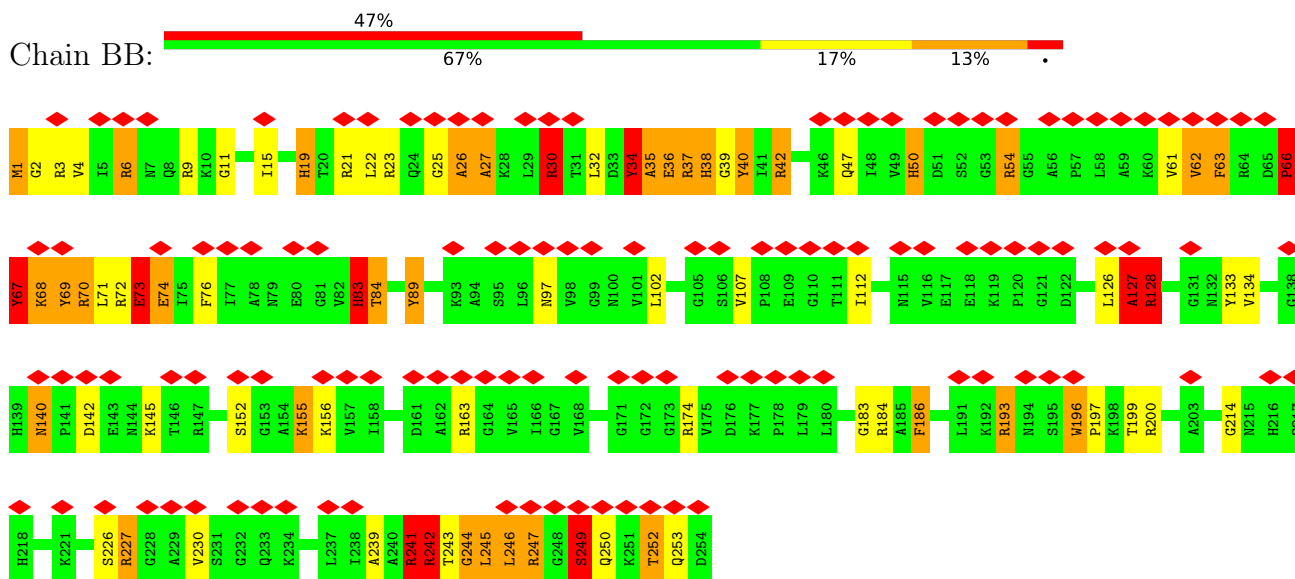


ALA
ASP

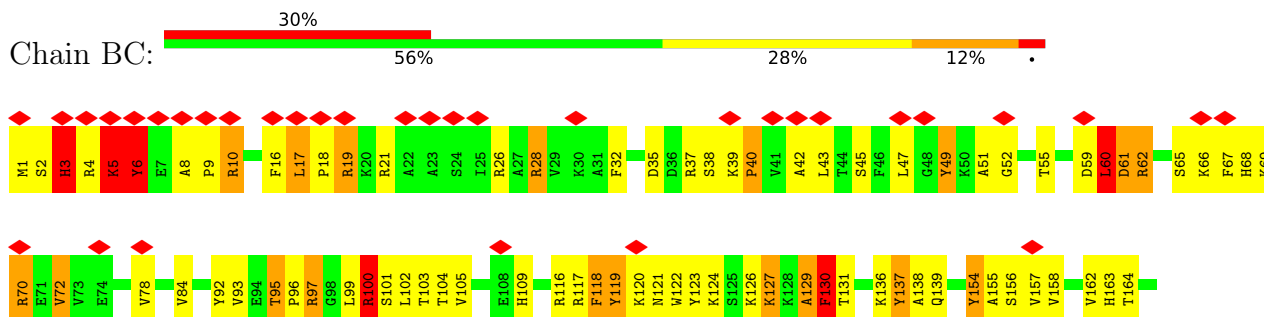
- Molecule 30: 60S ribosomal protein rpL1 (L1p)

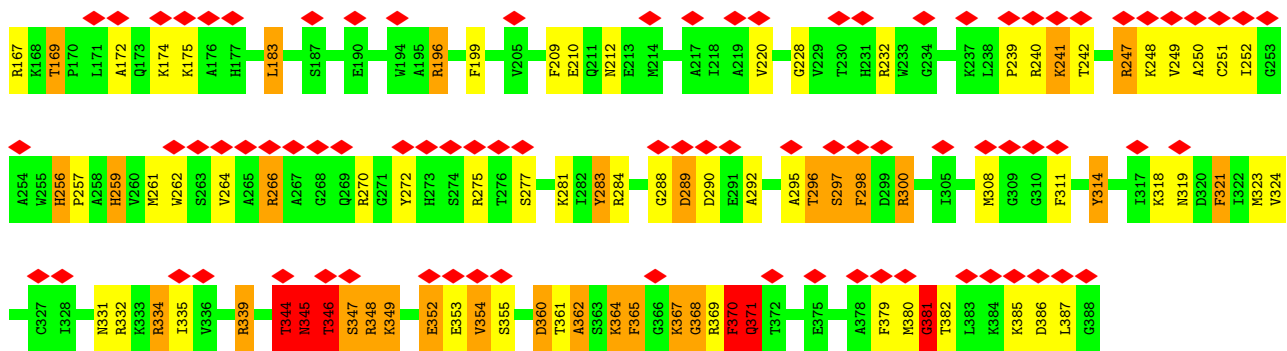


- Molecule 31: 60S ribosomal protein rpL2 (L2p)

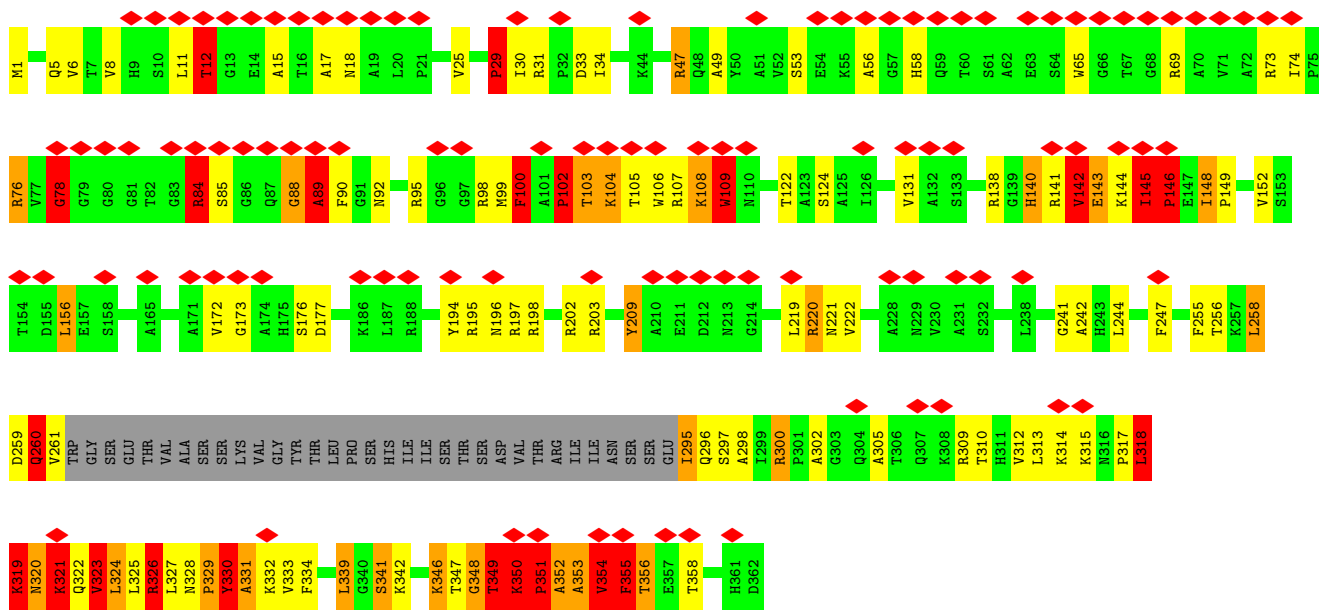


- Molecule 32: 60S ribosomal protein rpL3 (L3p)

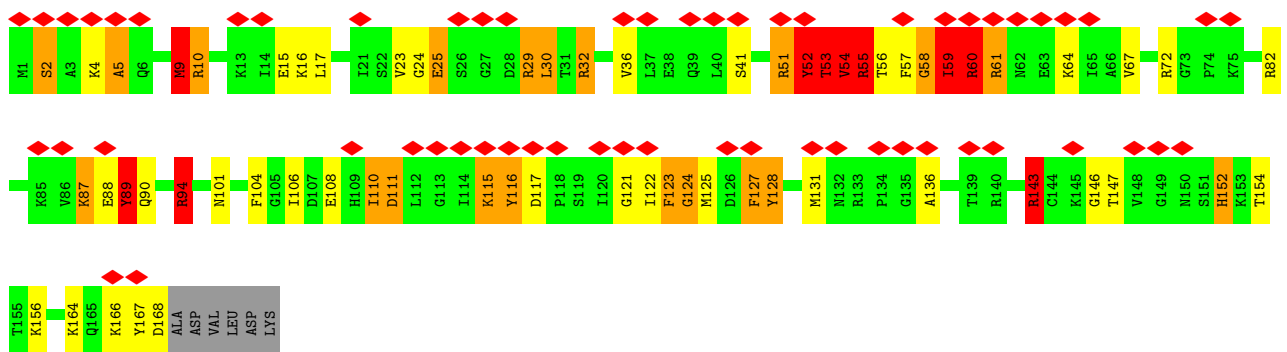




• Molecule 33: 60S ribosomal protein rpL4 (L4p)

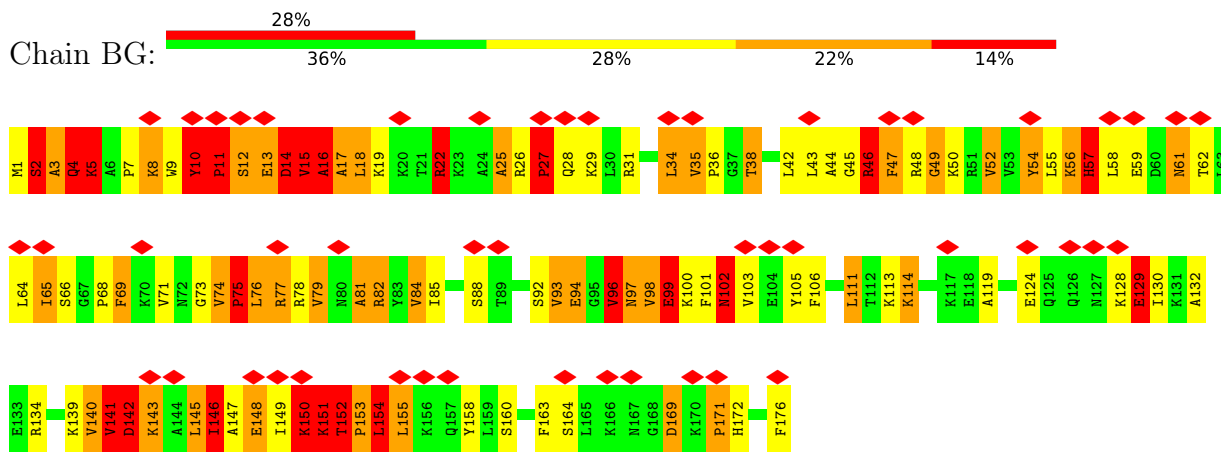


• Molecule 34: 60S ribosomal protein rpL11 (L5p)

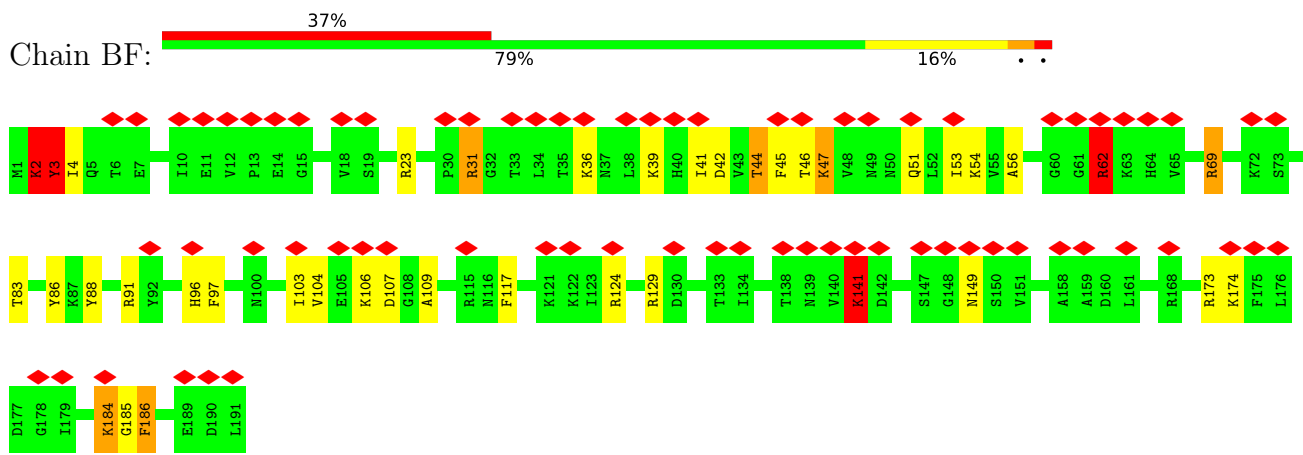


• Molecule 35: 60S ribosomal protein rpL6 (L6e)

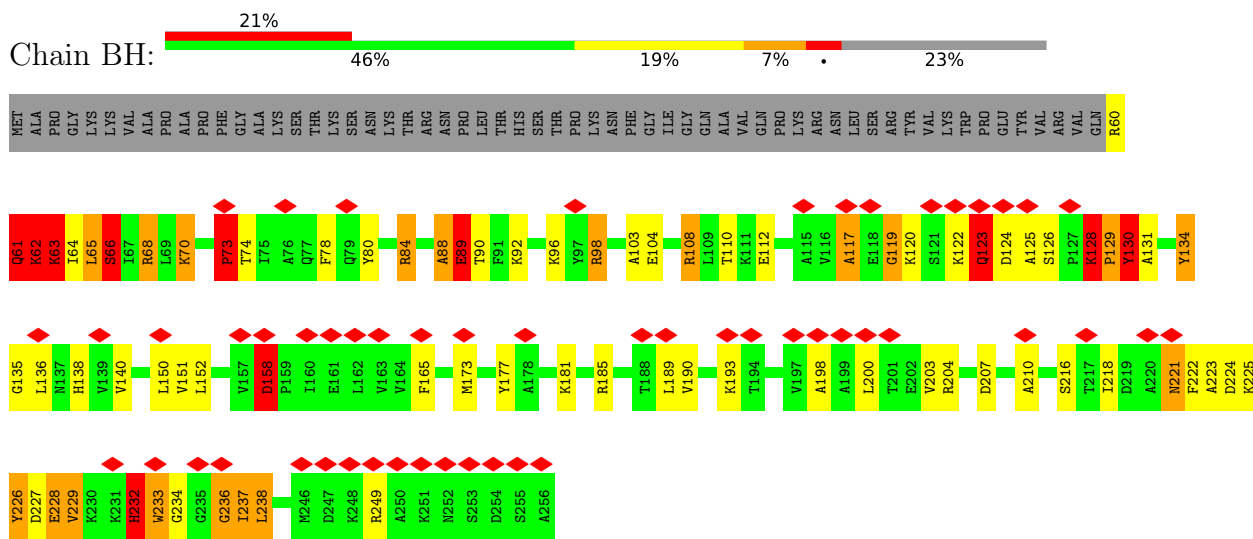




• Molecule 36: 60S ribosomal protein rpL9 (L6p)

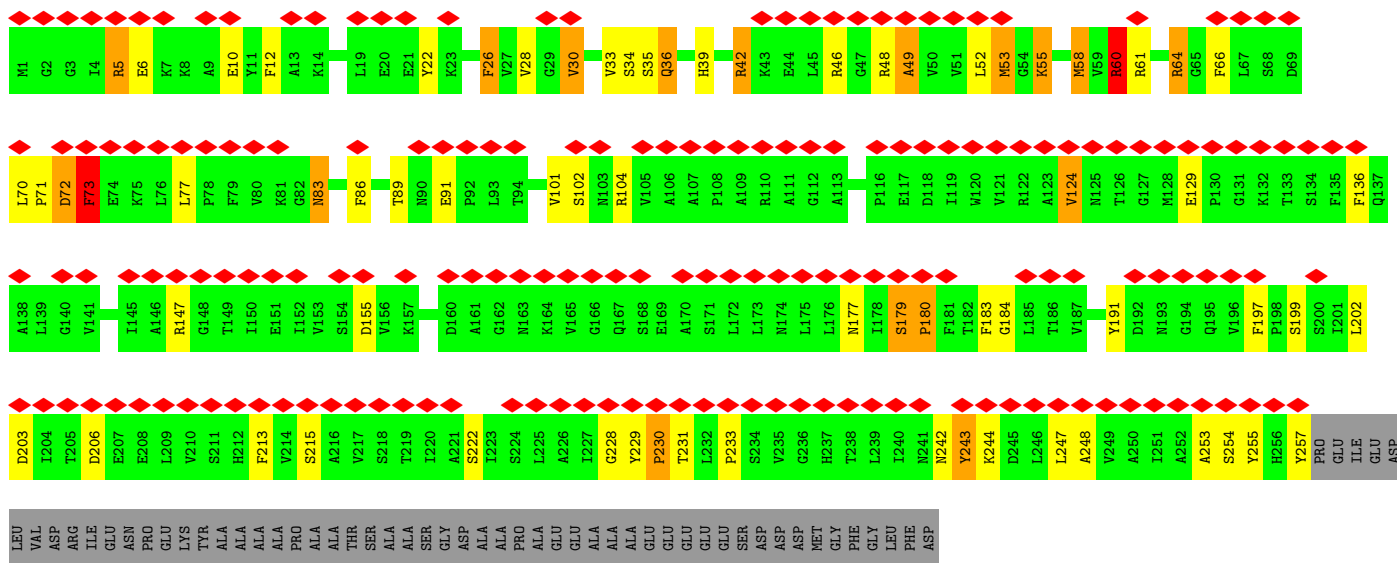


• Molecule 37: 60S ribosomal protein rpL8 (L7ae)

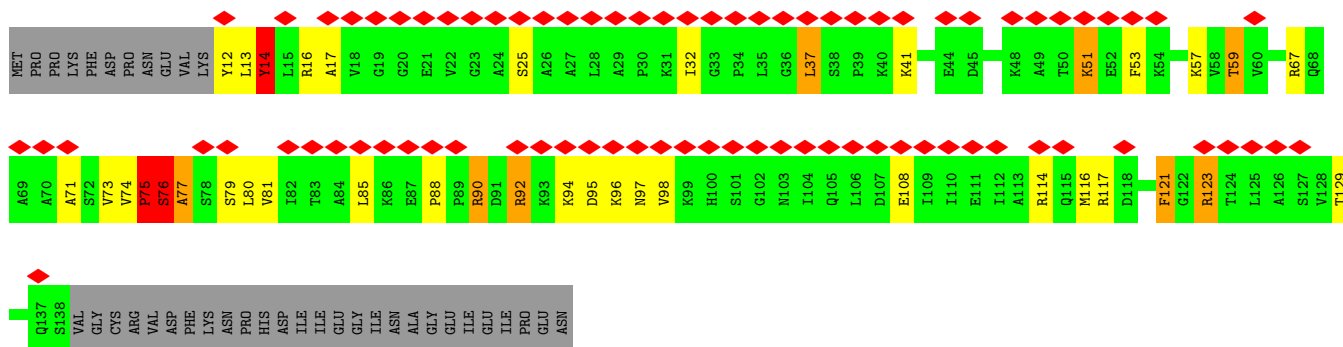


• Molecule 38: 60S acidic ribosomal protein rpP0 (L10P)

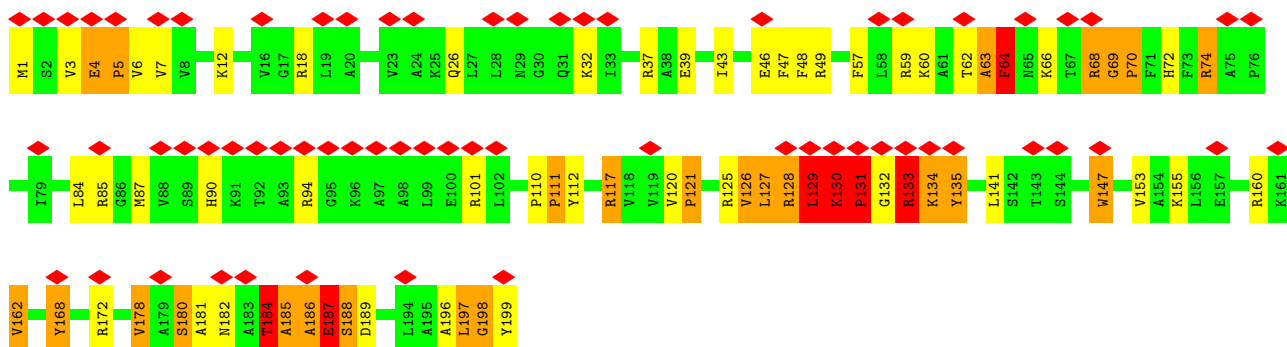




• Molecule 39: 60S ribosomal protein rpL12 (L11p)

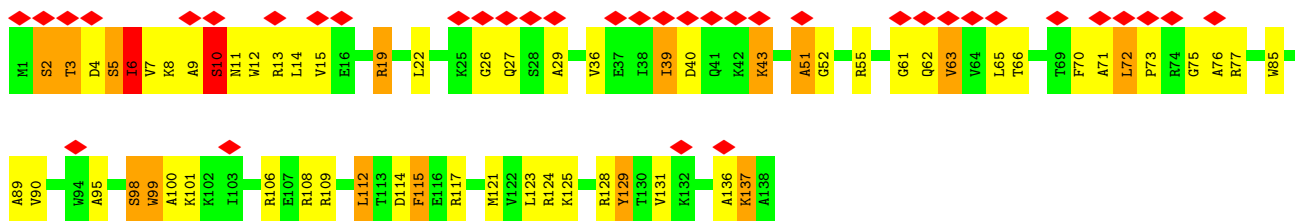


• Molecule 40: 60S ribosomal protein rpL16 (L13p)

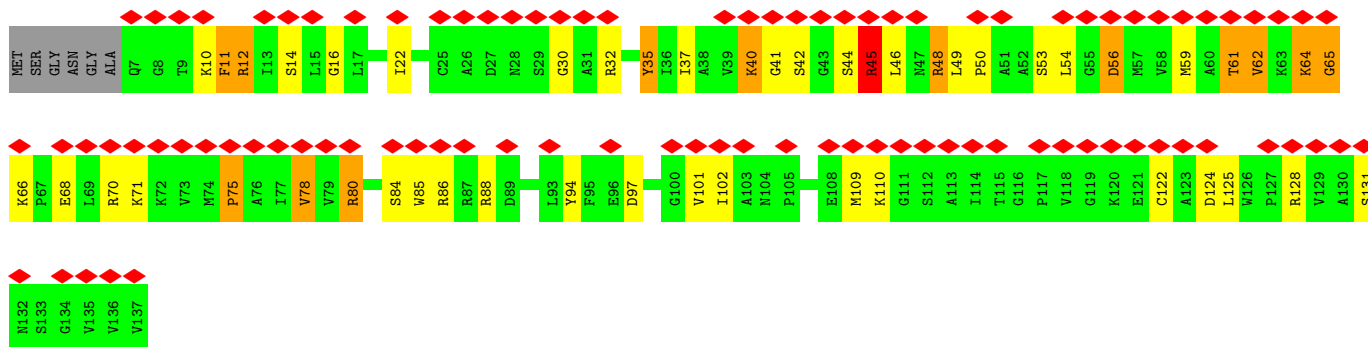


• Molecule 41: 60S ribosomal protein rpL14 (L14e)

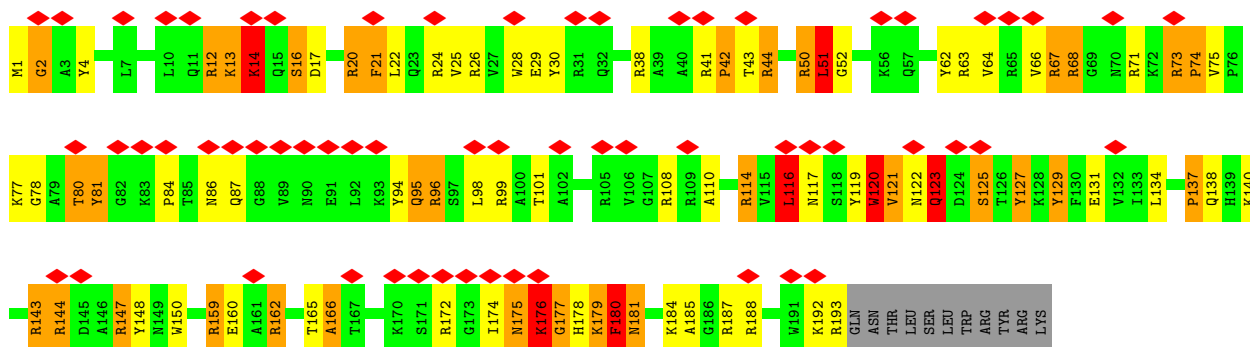




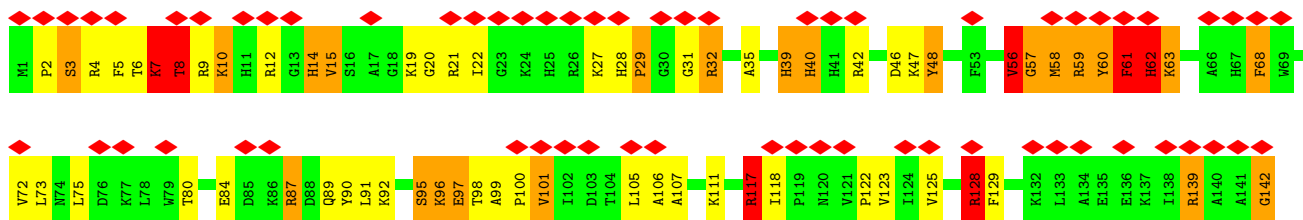
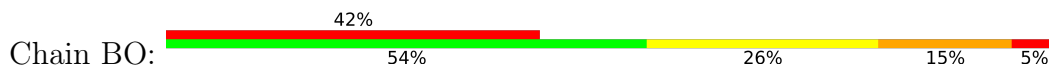
• Molecule 42: 60S ribosomal protein rpL23 (L14p)



• Molecule 43: 60S ribosomal protein rpL15 (L15e)



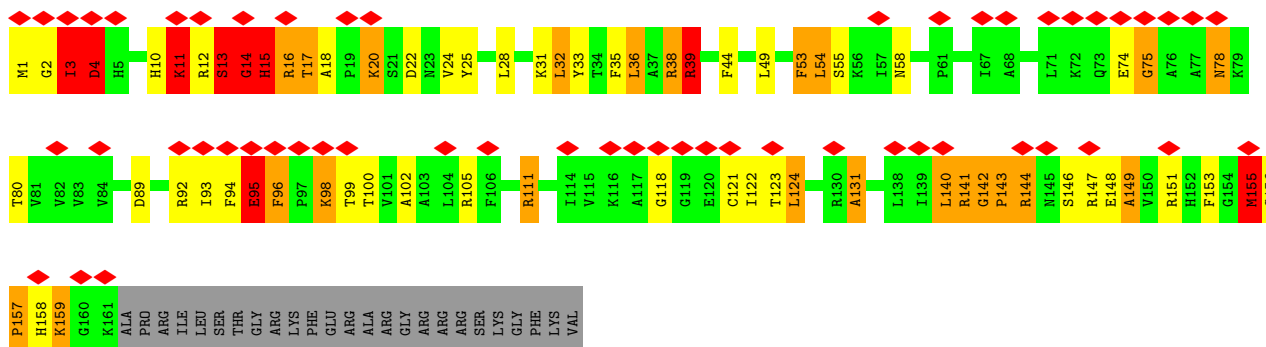
• Molecule 44: 60S ribosomal protein rpL28 (L15p)



Al149

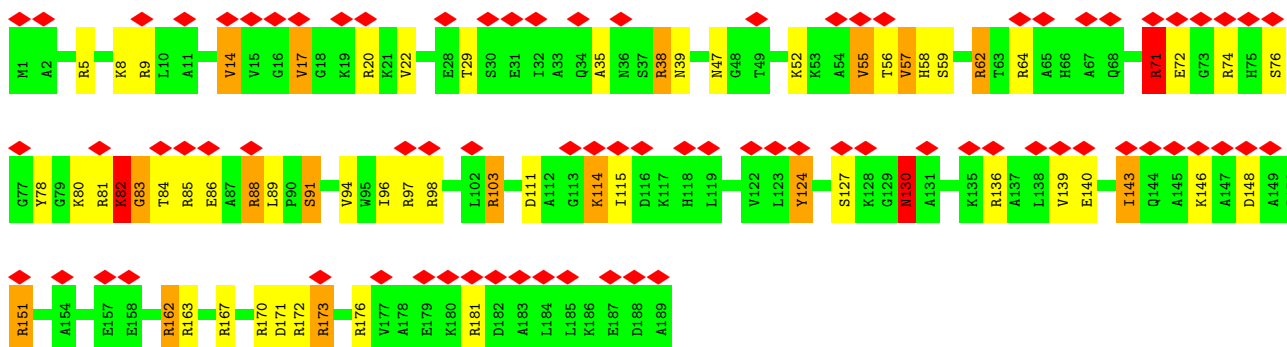
- Molecule 45: 60S ribosomal protein rpL18 (L18e)

Chain BR: 



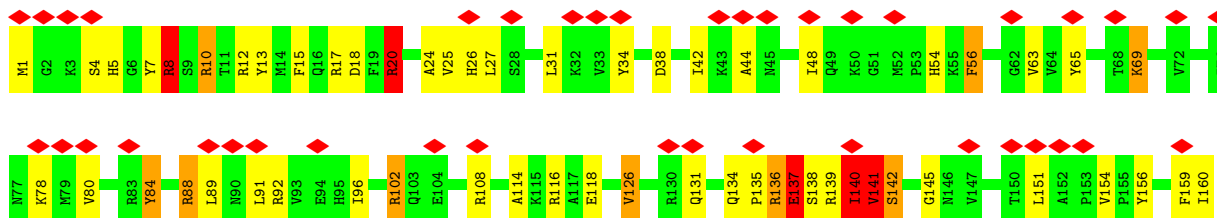
- Molecule 46: 60S ribosomal protein rpL19 (L19e)

Chain BT: 



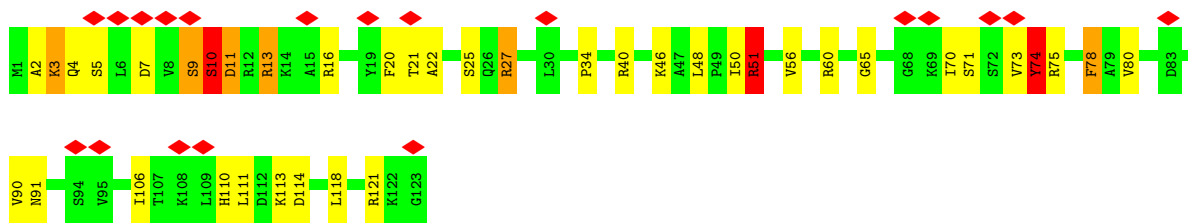
- Molecule 47: 60S ribosomal protein rpL21 (L21e)

Chain BU: 

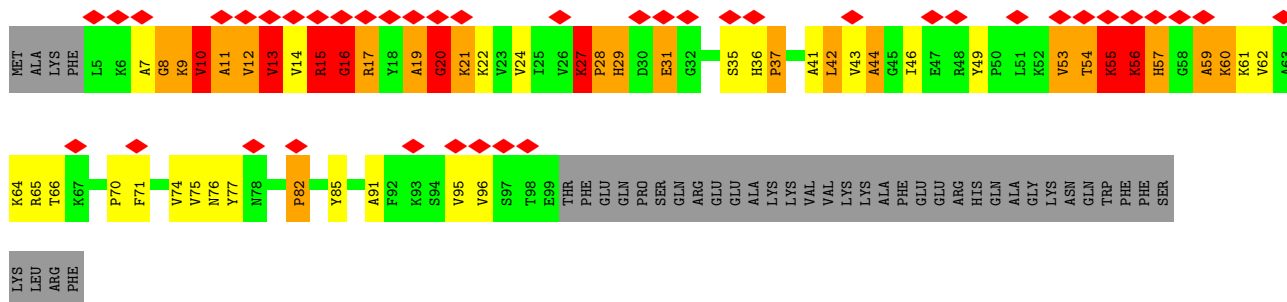
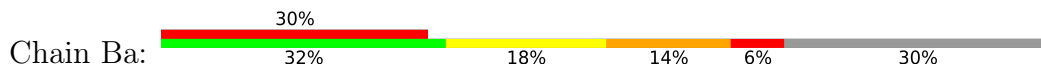


- Molecule 48: 60S ribosomal protein rpL22 (L22e)

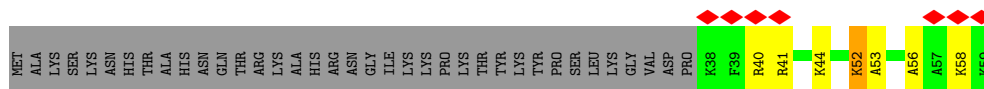
Chain BW: 



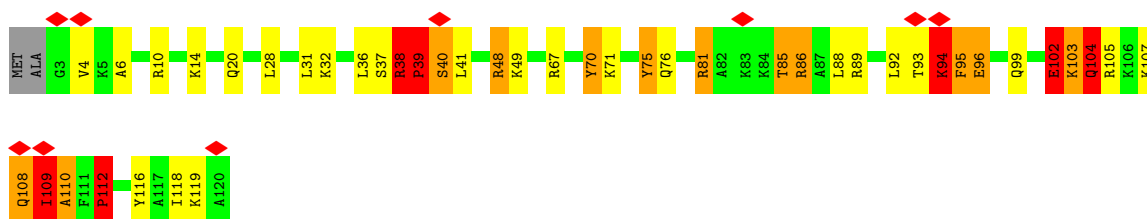
• Molecule 53: 60S ribosomal protein rpL27 (L27e)



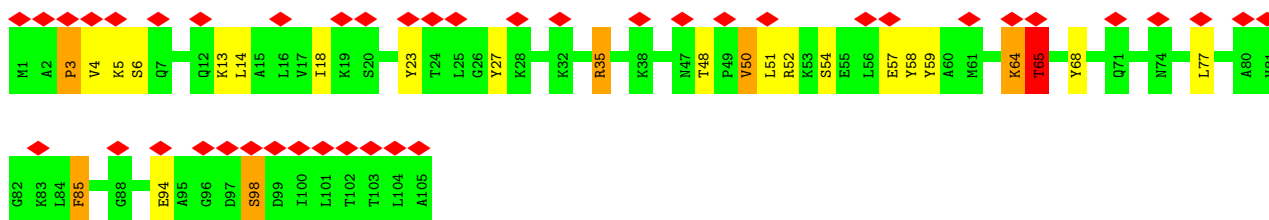
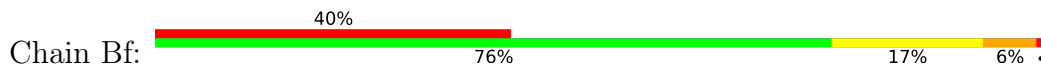
• Molecule 54: 60S ribosomal protein rpL29 (L29e)



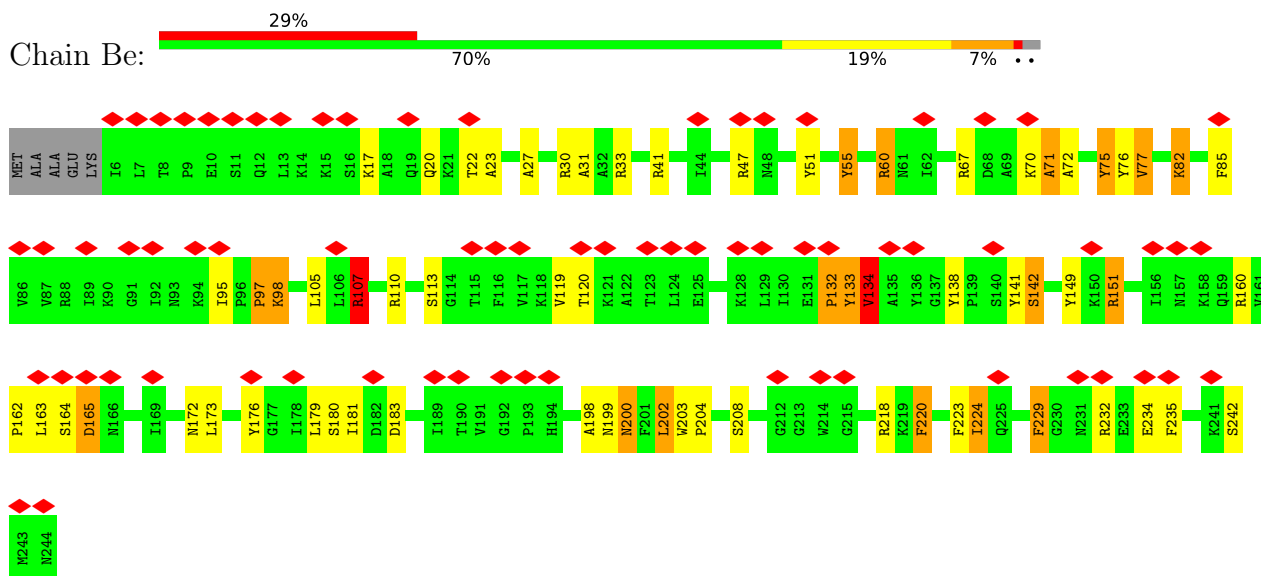
• Molecule 55: 60S ribosomal protein rpL35 (L29p)



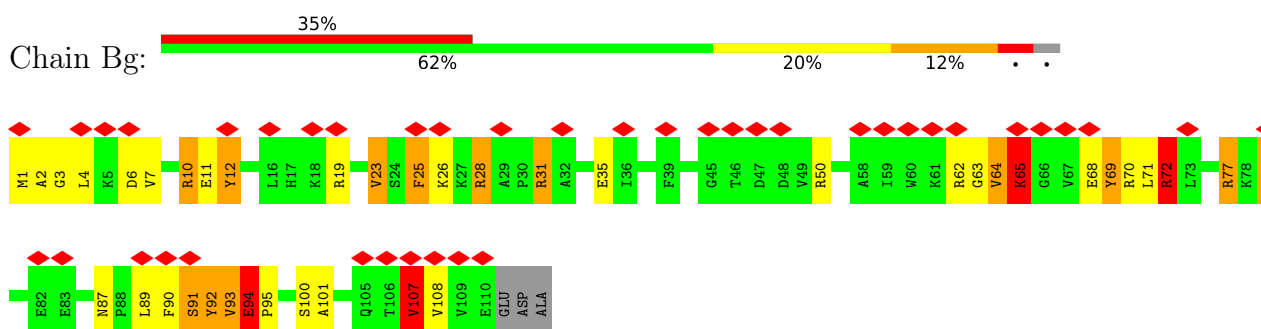
• Molecule 56: 60S ribosomal protein rpL30 (L30e)



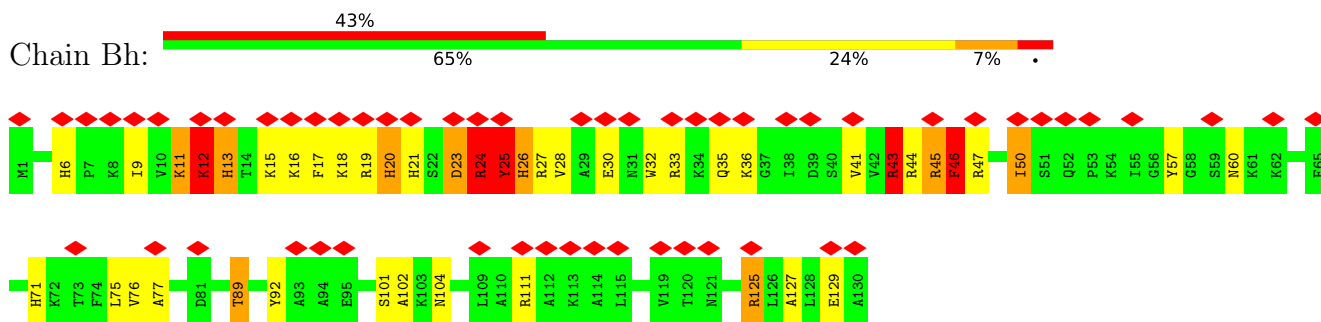
• Molecule 57: 60S ribosomal protein rpL7 (L30p)



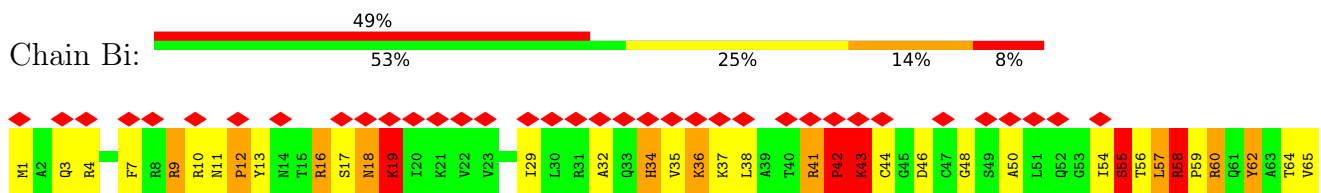
• Molecule 58: 60S ribosomal protein rpL31 (L31e)

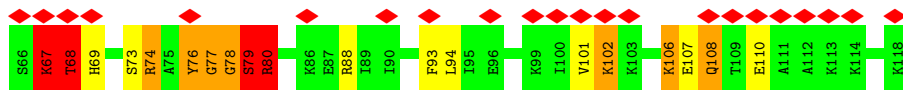


• Molecule 59: 60S ribosomal protein pL32 (L32e)

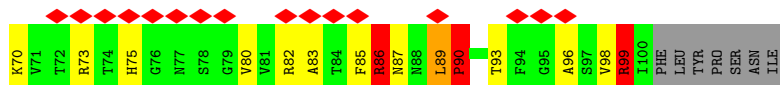
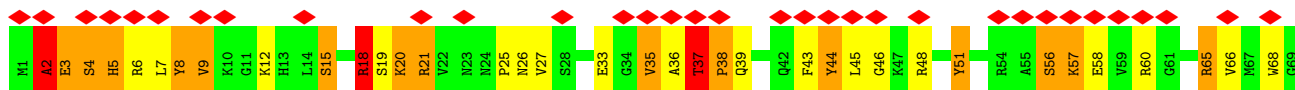


• Molecule 60: 60S ribosomal protein rpL34 (L34e)

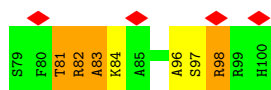
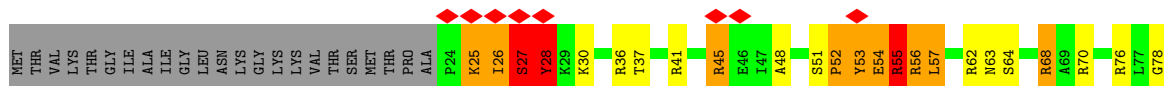




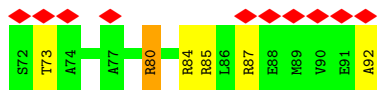
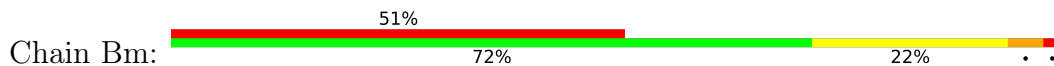
• Molecule 61: 60S ribosomal protein rpL33 (L35ae)



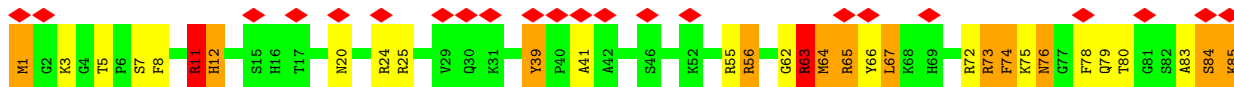
• Molecule 62: 60S ribosomal protein rpL36 (L36e)



• Molecule 63: 60S ribosomal protein rpL43 (L37ae)



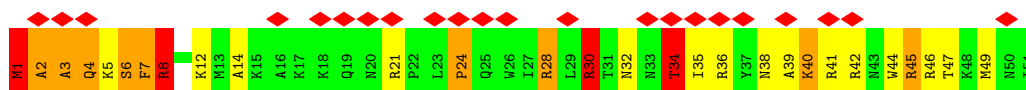
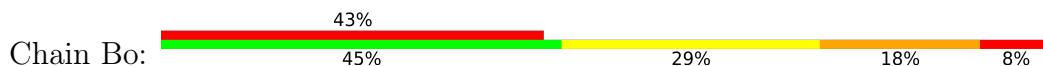
• Molecule 64: 60S ribosomal protein rpL37 (L37e)



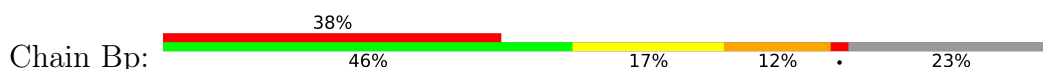
• Molecule 65: 60S ribosomal protein rpL38 (L38e)



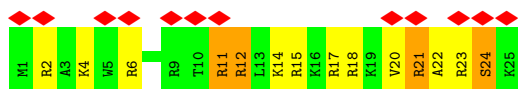
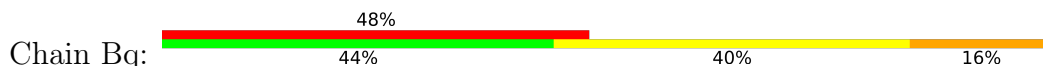
• Molecule 66: 60S ribosomal protein rpL39 (L39e)



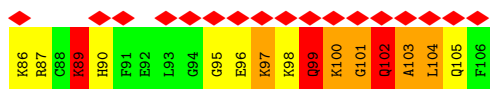
• Molecule 67: 60S ribosomal protein rpL40 (L40e)



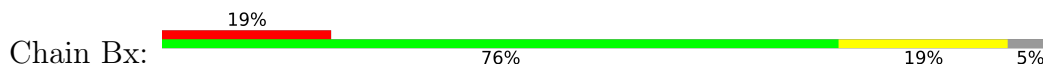
• Molecule 68: 60S ribosomal protein rpL41 (L41e)



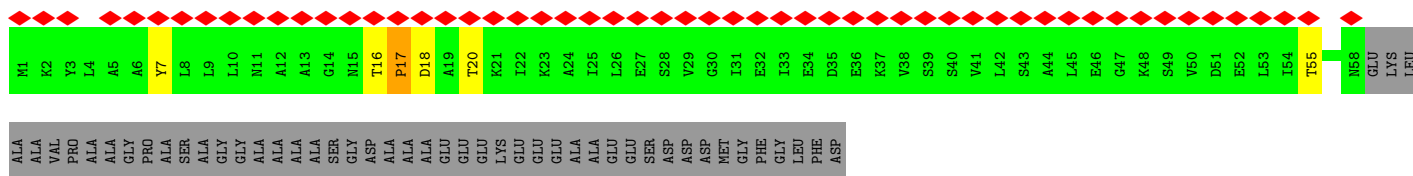
• Molecule 69: 60S ribosomal protein rpL42 (L44e)



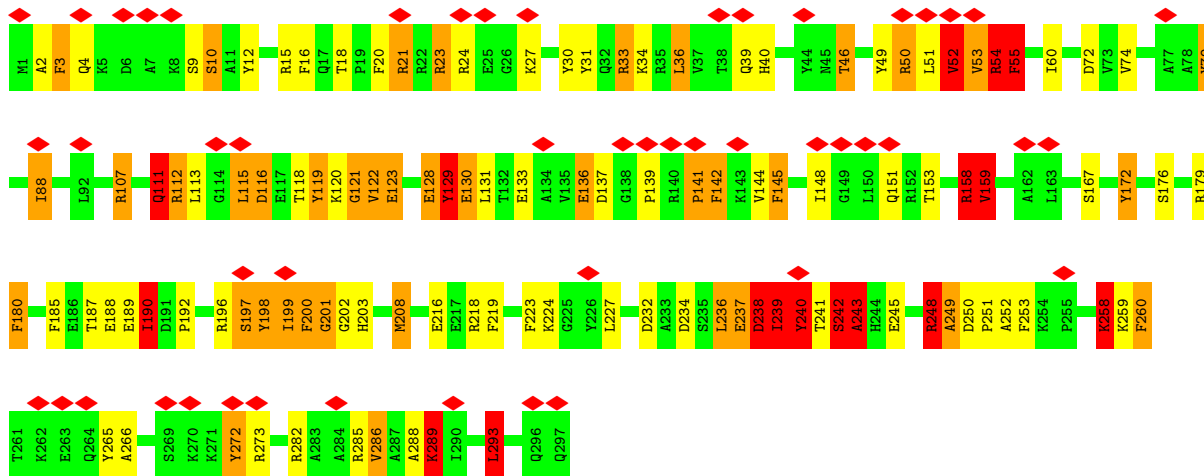
• Molecule 70: Unknown protein



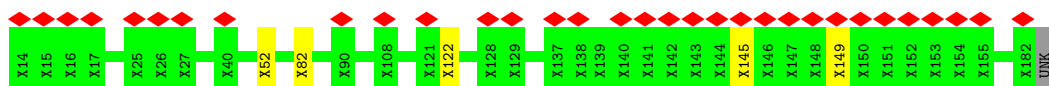
• Molecule 70: Unknown protein



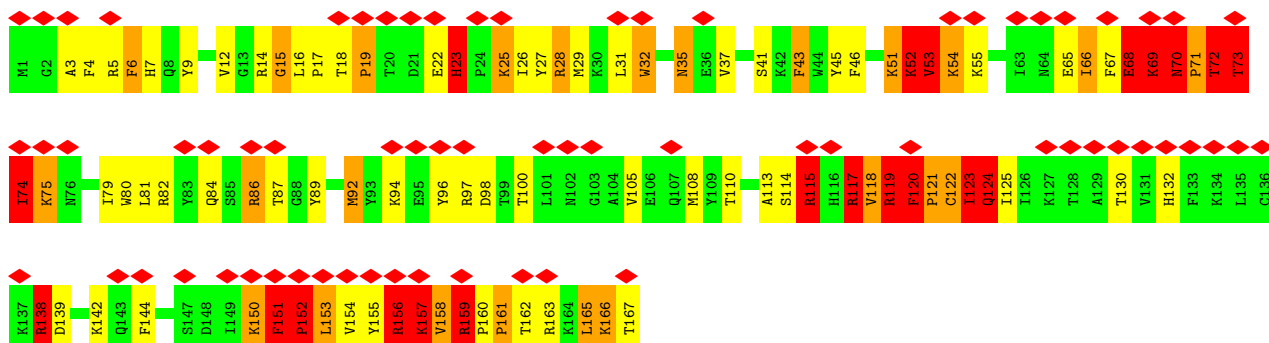
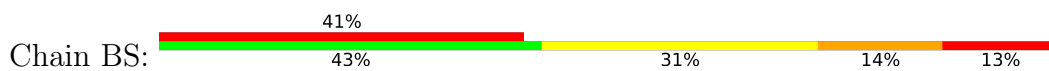
• Molecule 74: 60S ribosomal protein rpL5 (L18p)



• Molecule 75: 60S ribosomal protein rpL13 (L13e)

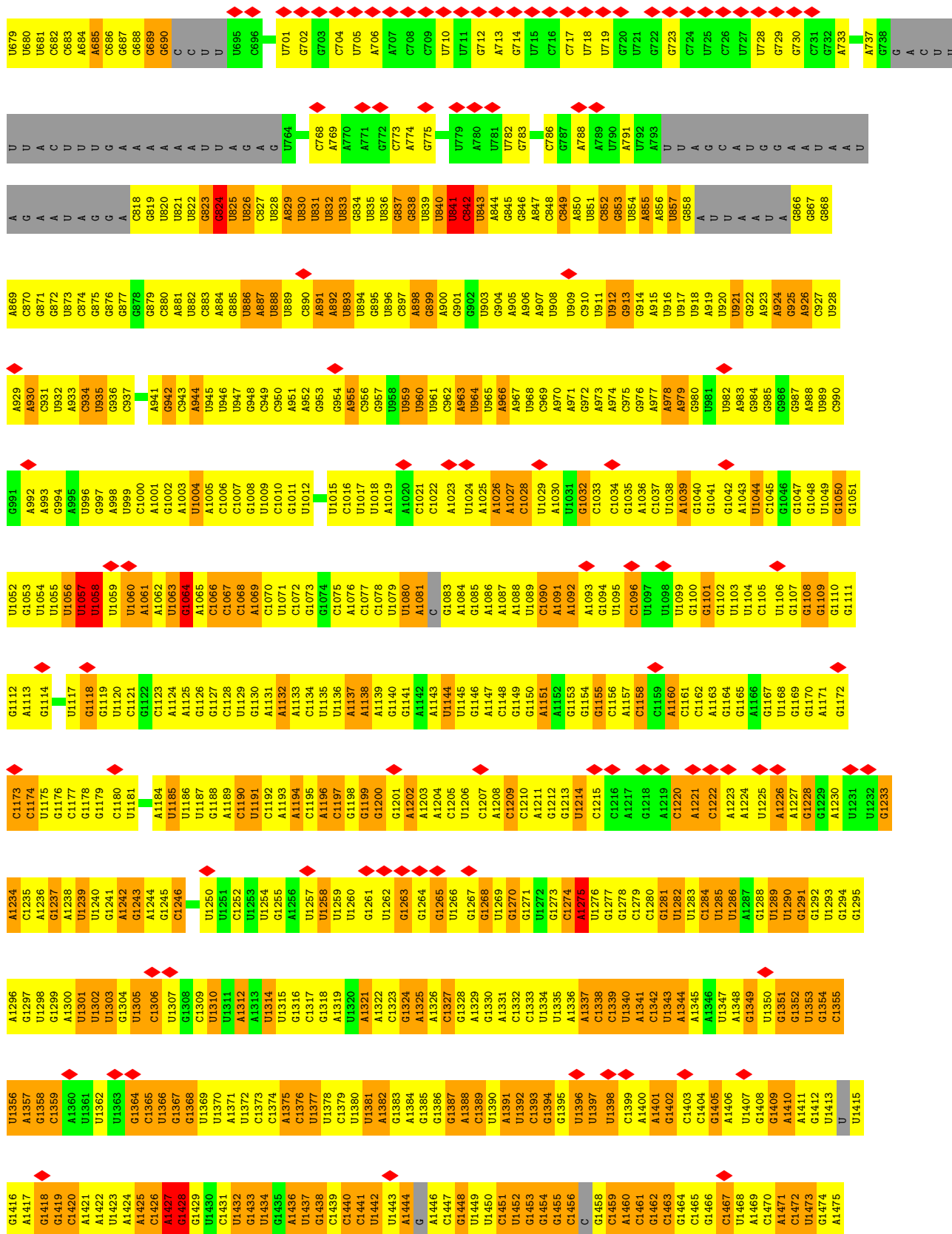


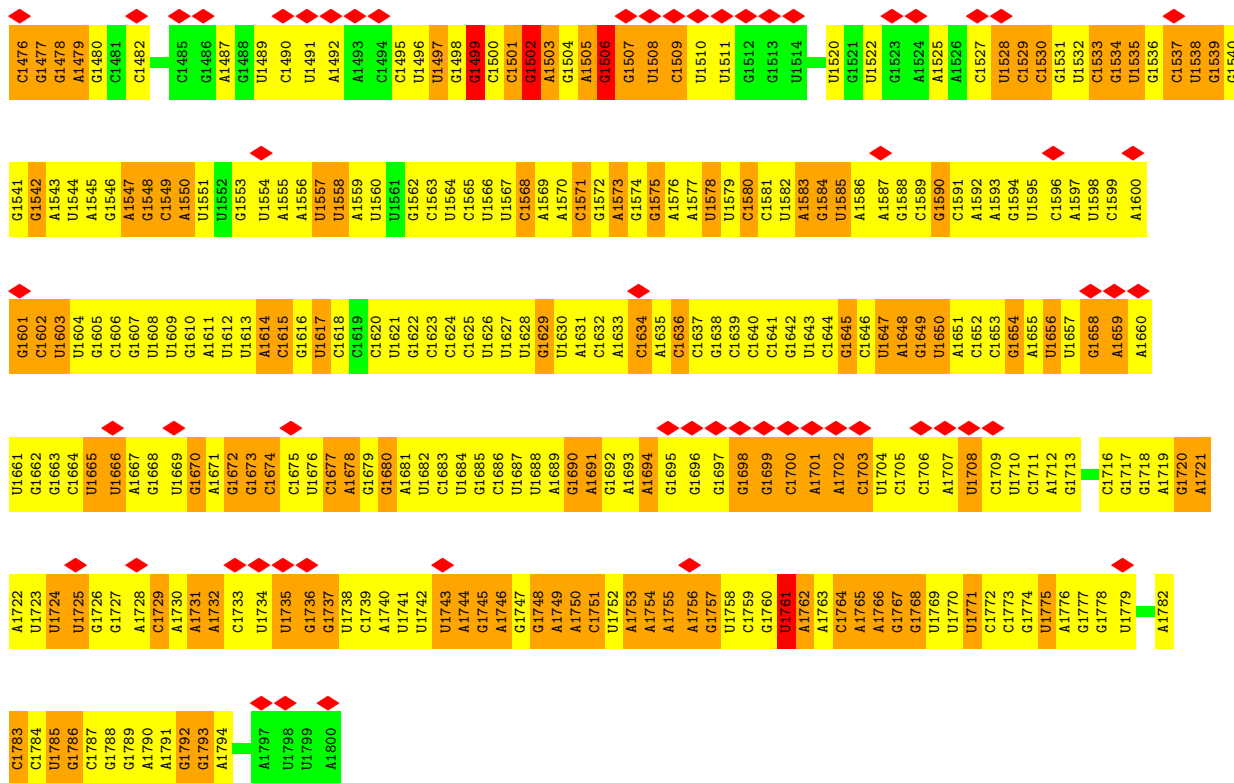
• Molecule 76: 60S ribosomal protein rpL20 (L18ae)



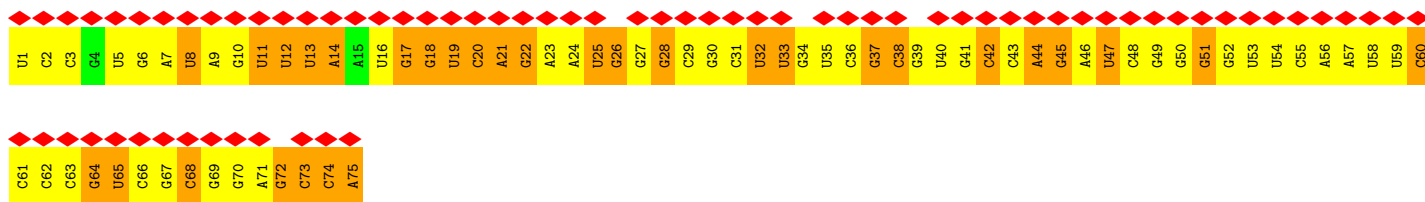
• Molecule 77: 60S ribosomal protein rpL10 (L10e)



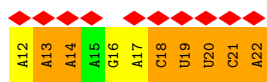
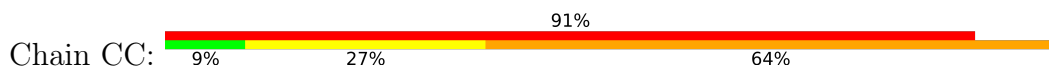




• Molecule 79: P-SITE TRNA ASP

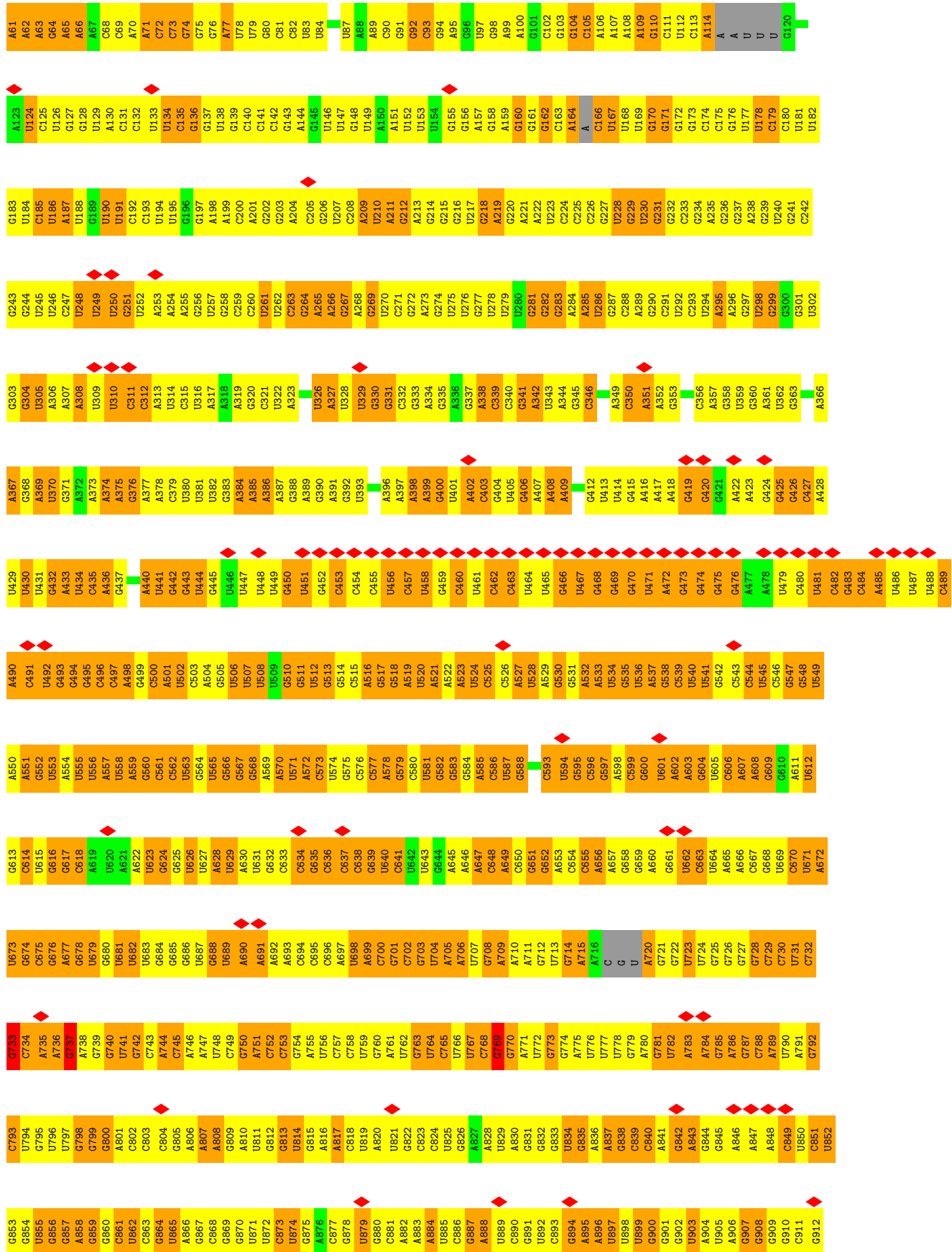


• Molecule 80: MRNA, RNA (5'-R(P*AP*AP*AP*AP*GP*AP*CP*UP*UP*CP*A)-3')



• Molecule 81: 25S rRNA

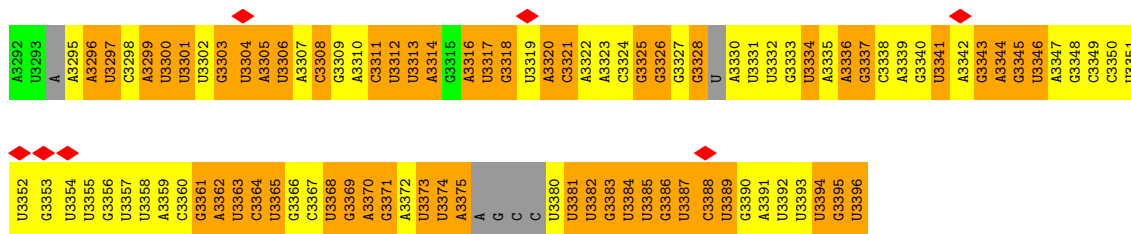




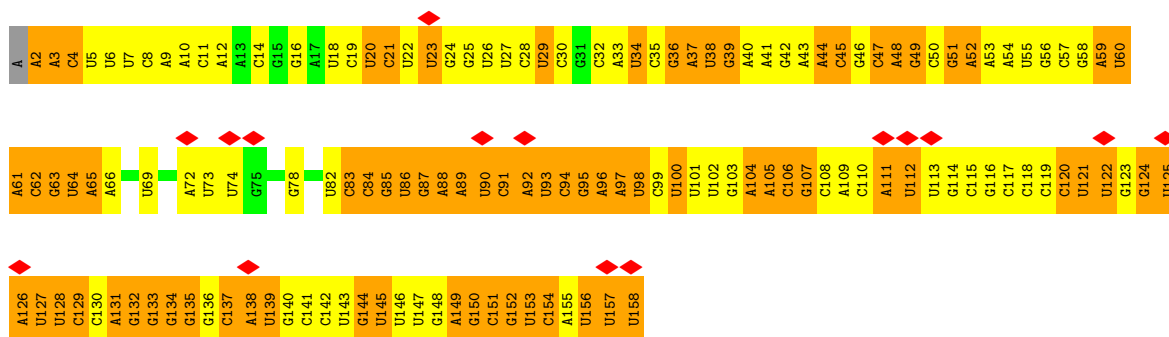
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A2464	A2404	U2344	U2281	U2220	G2160	A2096	G2038	G1982	U1920	G1860	A1797	C1738
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C2466	C2406	C2346	G2283	A2223	G2162	G2098	G2040	G1984	A1922	U1862	A1799	U1740
G2467	U2407	U2347	C2284	U2224	U2162	C2099	U2041	G1985	U1923	G1863	A1800	A1741
A2468	G2408	A2348	U2285	U2225	C2163	A2100	U2042	G1986	U1924	A1864	U1801	U1742
G2469	U2409	U2349	U2286	U2226	U2164	G2101	U2043	G1987	C1926	A1865	A1802	G1743
U2411	U2411	U2351	G2287	C2227	G2165	C2102	G2044	U1988	G1927	C1866	A1803	G1744
G2412	G2412	A2352	U2288	A2229	A2166	U2102	G2045	G1989	U1928	G1867	A1804	U1745
A2413	A2413	G2353	C2289	C2230	A2167	U2103	G2046	C1988	G1929	U1868	A1806	C1746
C2414	G2414	G2354	A2291	C2231	A	U2104	U2047	U1989	U1930	C1870	G1807	U1747
C2415	C2415	A2355	U2292	A2232	G2170	A2105	A2048	G1990	A1931	U1871	A1808	G1748
U2416	U2416	C2356	C2293	A2233	G2171	A2106	G2049	U1991	U1932	C1872	A1809	A1749
U2417	U2417	A2357	U2294	G2234	A2172	C2108	C2050	G1992	A1933	U1873	A1810	U1750
G2418	G2418	C2358	A2295	G2235	U2173	U2109	G2051	G1993	G1934	U1874	G1811	G1751
A2419	A2419	U2359	U2296	C2236	G2174	G2110	G2052	G1994	G1935	U1875	A1812	A1752
C2420	C2420	U2360	U2297	C2237	U2175	G2111	C2053	G1995	A1936	U1876	A1813	G1753
U2421	U2421	C2361	U2298	G2238	U2176	G2112	G2054	G1996	U1937	U1877	A1814	G1754
C2422	C2422	A2362	U2299	C2239	G2177	U2113	C2055	U1997	U1938	G1878	U1815	C1755
U2423	U2423	A2363	A2303	G2240	A2178	G2114	C2056	G1998	G1939	A1879	A1816	A1757
A2424	G2304	C2364	G2304	U2241	C2179	G2115	U2057	U1998	U1940	U1880	G1817	G1758
G2425	G2305	C2365	C2305	A2242	G2180	G2116	G2058	C1999	G1941	U1881	U1818	G1759
U2426	C2306	C2366	C2306	A2243	C2181	C2117	U2059	U2001	U1942			

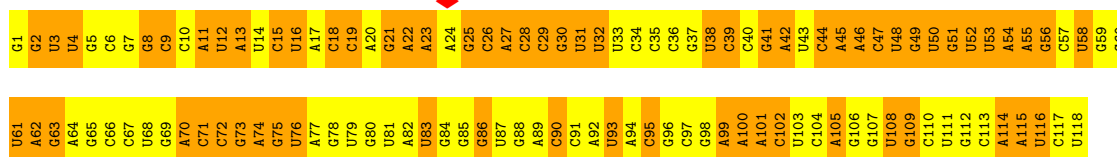
A3223	A3224	C3225	C3226	C3227	C3228	C3229	C3230	C3231	C3232	C3233	C3234	C3235	C3236	C3237	C3238	C3239	C3240	C3241	C3242	C3243	C3244	C3245	C3246	C3247	C3248	C3249	U3250	U3251	C3252	C3253	C3254	C3255	U3256	C3257	U3258	C3259	C3260	C3261	C3262	C3263	C3264	U3265	C3266	C3267	U3268	C3269	C3270	G																									
G3149	A3150	U3151	U3152	U3153	U3154	U3155	U3156	U3157	U3158	U3159	U3160	U3161	U3162	U3163	U3164	U3165	U3166	U3167	U3168	U3169	U3170	U3171	U3172	U3173	U3174	U3175	U3176	U3177	U3178	U3179	U3180	U3181	U3182	U3183	U3184	U3185	U3186	U3187	U3188	U3189	U3190	U3191	U3192	U3193	U3194	U3195	U3196	U3197	U3198	U3199	U3200	U3201	U3202	U3203	U3204	U3205	U3206	U3207	U3208	U3209	U3210	U3211	U3212	U3213	U3214	U3215	U3216	U3217	U3218	U3219	U3220	U3221	U3222
C3089	U3090	C3091	C3092	C3093	C3094	C3095	C3096	C3097	C3098	C3099	C3100	C3101	C3102	C3103	C3104	C3105	C3106	C3107	C3108	C3109	C3110	C3111	C3112	C3113	C3114	C3115	C3116	C3117	C3118	C3119	C3120	C3121	C3122	C3123	C3124	C3125	C3126	C3127	C3128	C3129	C3130	C3131	C3132	C3133	C3134	C3135	C3136	C3137	C3138	C3139	C3140	C3141	C3142	C3143	C3144	C3145	C3146	C3147	C3148														
A3029	G3030	G3031	A3032	C3033	C3034	A3035	C3036	U3037	U3038	C3039	U3040	U3041	U3042	C3043	C3044	C3045	A3046	U3047	A3048	A3049	U3050	U3051	C3052	C3053	U3054	U3055	U3056	U3057	U3058	C3059	C3060	C3061	C3062	C3063	C3065	U3066	C3067	U3068	C3069	A3070	U3071	C3072	A3073	C3074	C3075	C3076	A3077	U3078	U3079	C3080	C3081	C3082	C3083	C3084	C3085	A3086	C3087	C3088															
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G2848	C2849	G2850	A2851	C2852	C2853	U2854	U2855	C2856	C2857	U2858	U2859	U2860	U2861	C2862	C2863	A2864	C2865	U2866	C2867	U2868	U2869	C2870	C2871	C2872	U2873	C2874	U2875	C2876	C2877	C2878	U2879	U2880	C2881	U2882	U2883	C2884	C2885	U2886	A2887	U2888	C2889	A2890	U2891	C2892	C2893	C2894	U2895	C2896	U2897	C2898	C2899	A2900	C2901	U2902	C2903	U2904	C2905	C2906	U2907														
C2788	U2789	C2790	C2791	C2792	C2793	C2794	U2795	C2796	C2797	C2798	U2799	C2800	A2801	A2802	C2803	C2804	U2805	U2806	U2807	U2808	C2809	C2810	C2811	C2812	C2813	C2814	C2815	C2816	C2817	U2818	U2819	U2820	C2821	U2822	C2823	C2824	C2825	U2826	U2827	C2828	U2829	C2830	C2831	C2832	C2833	C2834	U2835	C2836	U2837	C2838	C2839	C2840	C2841	U2842	U2843	C2844	U2845	U2846	C2847														
U2668	G2669	U2670	A2671	C2672	C2673	A2674	C2675	C2676	C2677	U2678	U2679	U2680	U2681	U2682	C2683	C2684	C2685	U2686	U2687	U2688	C2689	C2690	C2691	C2692	C2693	C2694	C2695	C2696	C2697	C2698	C2699	C2700	U2701	A2702	C2703	A2704	C2705	C2706	C2707	C2708	C2709	C2710	C2711	U2712	U2713	C2714	U2715	C2716	C2717	C2718	U2719	C2720	U2721	U2722	U2723	C2724	U2725	C2726	C2727														
G2608	A2609	G2610	U2611	U2612	U2613	U2614	C2615	C2616	U2617	U2618	U2619	U2620	C2621	C2622	C2623	C2624	C2625	U2626	C2627	U2628	C2629	C2630	U2631	C2632	C2633	U2634	C2635	C2636	C2637	C2638	C2639	U2640	U2641	A2642	C2643	C2644	C2645	U2646	C2647	C2648	C2649	C2650	A2651	C2652	C2653	C2654	C2655	U2656	C2657	C2658	C2659	C2660	C2661	C2662	C2663	U2664	C2665	C2666	A2667														
A2547	C	G	U	U	C	U	U	G	A	C	U	U	U	C	A2561	A2562	C2563	C2564	U2565	C2566	C2567	C2568	C2569	C2570	U2571	C2572	U2573	C2574	C2575	C2576	C2577	C2578	C2579	A2580	U2581	C2582	C2583	C2584	C2585	C2586	C2587	C2588	C2589	A2590	C2591	C2592	C2593	C2594	C2595	C2596	C2597	C2598	U2599	C2600	A2601	C2602	C2603	U2604	C2605	C2606	C2607												
U2487	A2488	C2489	C2490	A2491	C2492	U2493	A2494	C2495	C2496	U2497	U2498	U2499	A2500	U2501	A2502	C2503	U2504	U2505	C2506	C2507	U2508	U2509	U2510	C2511	C2512	U2513	U2514	A2515	U2516	U2517	C2518	A2519	U2520	U2521	C2522	A2523	U2524	C2525	C2526	C2527	C2528	A2529	C2530	C2531	U2532	C2533	C2534	A2535	U2536	U2537	U2538	C2539	U2540	U2541	U2542	U2543	U2544	C2545	C2546														



• Molecule 82: 5.8S rRNA



• Molecule 83: 5S rRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	20400	Depositor
Resolution determination method	Not provided	
CTF correction method	Not provided	
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	25	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	4500	Depositor
Magnification	39000	Depositor
Image detector	KODAK SO-163 FILM	Depositor
Maximum map value	7.747	Depositor
Minimum map value	-3.672	Depositor
Average map value	0.049	Depositor
Map value standard deviation	0.609	Depositor
Recommended contour level	1.75	Depositor
Map size (\AA)	455.4, 455.4, 455.4	wwPDB
Map dimensions	368, 368, 368	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.2375, 1.2375, 1.2375	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	Aa	1.65	23/2495 (0.9%)	2.01	81/3391 (2.4%)
2	AA	1.99	33/1962 (1.7%)	2.62	83/2674 (3.1%)
3	AB	1.87	20/1530 (1.3%)	2.48	72/2049 (3.5%)
4	AD	1.95	29/1620 (1.8%)	2.88	94/2182 (4.3%)
5	AC	2.12	34/1544 (2.2%)	3.02	112/2059 (5.4%)
6	AE	1.82	21/1971 (1.1%)	2.46	79/2664 (3.0%)
8	AF	1.70	13/1561 (0.8%)	1.94	47/2103 (2.2%)
9	AH	1.85	10/1047 (1.0%)	2.39	47/1405 (3.3%)
10	AI	1.94	15/1016 (1.5%)	2.50	48/1362 (3.5%)
11	AJ	1.93	13/857 (1.5%)	2.90	38/1148 (3.3%)
12	AK	1.98	14/843 (1.7%)	2.28	38/1134 (3.4%)
13	AL	2.41	23/990 (2.3%)	3.21	80/1304 (6.1%)
14	AM	1.85	23/1175 (2.0%)	2.38	47/1577 (3.0%)
15	AN	1.78	5/358 (1.4%)	2.77	29/469 (6.2%)
16	AO	1.85	10/994 (1.0%)	2.70	58/1339 (4.3%)
17	AQ	2.16	24/1109 (2.2%)	3.08	59/1483 (4.0%)
18	AP	2.29	17/646 (2.6%)	3.39	49/867 (5.7%)
19	AR	1.65	5/691 (0.7%)	2.07	20/931 (2.1%)
20	AS	1.83	17/1138 (1.5%)	2.73	74/1527 (4.8%)
21	AT	2.06	13/694 (1.9%)	2.67	32/935 (3.4%)
22	AV	1.91	14/698 (2.0%)	2.68	44/932 (4.7%)
24	AX	1.77	5/372 (1.3%)	2.15	13/504 (2.6%)
25	AY	1.80	3/447 (0.7%)	2.08	19/601 (3.2%)
26	AZ	2.63	17/499 (3.4%)	3.77	31/660 (4.7%)
29	AU	1.93	8/725 (1.1%)	2.49	45/969 (4.6%)
30	BA	1.42	4/1745 (0.2%)	1.78	32/2342 (1.4%)
31	BB	2.07	31/1938 (1.6%)	2.90	100/2600 (3.8%)
32	BC	2.25	65/3124 (2.1%)	3.27	171/4196 (4.1%)
33	BD	2.15	53/2531 (2.1%)	2.93	146/3414 (4.3%)
34	BE	2.08	25/1362 (1.8%)	3.17	79/1824 (4.3%)
35	BG	2.50	42/1433 (2.9%)	3.60	142/1922 (7.4%)
36	BF	1.65	9/1537 (0.6%)	2.05	27/2068 (1.3%)
37	BH	2.09	26/1527 (1.7%)	2.60	82/2052 (4.0%)
38	Bs	1.71	18/2013 (0.9%)	2.32	75/2731 (2.7%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
39	BJ	1.89	16/964 (1.7%)	2.63	44/1295 (3.4%)
40	BK	1.93	21/1600 (1.3%)	2.78	76/2146 (3.5%)
41	BN	1.88	15/1083 (1.4%)	2.30	56/1456 (3.8%)
42	BM	1.73	12/987 (1.2%)	2.20	45/1326 (3.4%)
43	BP	2.03	23/1659 (1.4%)	2.68	113/2221 (5.1%)
44	BO	2.47	29/1213 (2.4%)	3.20	74/1623 (4.6%)
45	BR	2.41	29/1264 (2.3%)	3.18	68/1701 (4.0%)
46	BT	1.82	26/1547 (1.7%)	2.27	54/2060 (2.6%)
47	BU	1.78	21/1285 (1.6%)	2.44	54/1720 (3.1%)
48	BW	2.02	13/846 (1.5%)	2.75	47/1142 (4.1%)
49	BV	1.71	14/1335 (1.0%)	2.03	40/1794 (2.2%)
50	BX	1.58	5/993 (0.5%)	2.19	41/1336 (3.1%)
51	BZ	2.29	14/590 (2.4%)	2.74	40/783 (5.1%)
52	BY	1.61	10/983 (1.0%)	1.95	25/1312 (1.9%)
53	Ba	2.24	20/722 (2.8%)	3.30	75/967 (7.8%)
54	Bd	1.63	2/177 (1.1%)	1.91	5/231 (2.2%)
55	Bc	2.06	14/974 (1.4%)	2.76	53/1294 (4.1%)
56	Bf	1.59	7/793 (0.9%)	1.92	17/1062 (1.6%)
57	Be	1.85	25/1957 (1.3%)	2.29	69/2631 (2.6%)
58	Bg	1.83	16/887 (1.8%)	2.38	32/1185 (2.7%)
59	Bh	1.80	11/1064 (1.0%)	2.30	47/1423 (3.3%)
60	Bi	2.51	24/935 (2.6%)	3.64	59/1242 (4.8%)
61	Bj	2.79	19/751 (2.5%)	3.05	68/1004 (6.8%)
62	Bk	2.48	19/625 (3.0%)	3.48	45/826 (5.4%)
63	Bm	1.73	9/710 (1.3%)	2.09	24/944 (2.5%)
64	Bl	2.03	9/693 (1.3%)	2.42	34/915 (3.7%)
65	Bn	2.32	13/610 (2.1%)	3.37	37/813 (4.6%)
66	Bo	1.80	4/452 (0.9%)	2.23	17/598 (2.8%)
67	Bp	1.57	2/335 (0.6%)	2.25	18/442 (4.1%)
68	Bq	1.98	3/235 (1.3%)	2.32	14/300 (4.7%)
69	Br	2.01	14/846 (1.7%)	2.74	44/1113 (4.0%)
72	Bt	0.69	1/445 (0.2%)	1.49	16/606 (2.6%)
72	Bu	0.92	1/445 (0.2%)	1.63	18/606 (3.0%)
73	Bv	0.97	0/431	1.29	4/582 (0.7%)
73	Bw	0.96	0/431	1.28	4/582 (0.7%)
74	BQ	2.23	50/2404 (2.1%)	3.27	146/3236 (4.5%)
76	BS	1.92	23/1458 (1.6%)	2.70	109/1957 (5.6%)
77	BI	0.95	1/1473 (0.1%)	1.60	29/1976 (1.5%)
78	CA	2.64	1783/37406 (4.8%)	2.65	3176/57948 (5.5%)
79	CB	2.75	77/1785 (4.3%)	2.58	142/2779 (5.1%)
80	CC	3.40	11/264 (4.2%)	3.22	29/407 (7.1%)
81	DA	2.74	3996/76832 (5.2%)	2.77	7042/119578 (5.9%)
82	DB	2.68	166/3480 (4.8%)	2.64	305/5395 (5.7%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
83	DC	2.90	156/2808 (5.6%)	3.09	331/4372 (7.6%)
All	All	2.44	7406/202969 (3.6%)	2.70	14979/298347 (5.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	Aa	0	18
2	AA	1	30
3	AB	0	29
4	AD	0	36
5	AC	2	40
6	AE	3	29
7	AG	0	52
8	AF	0	14
9	AH	0	15
10	AI	0	14
11	AJ	0	17
12	AK	1	15
13	AL	0	14
14	AM	0	12
15	AN	0	12
16	AO	2	15
17	AQ	0	29
18	AP	0	15
19	AR	0	8
20	AS	0	19
21	AT	0	15
22	AV	0	12
23	AW	0	20
24	AX	0	2
25	AY	0	4
26	AZ	0	25
27	Ab	0	3
28	Ac	0	1
29	AU	2	12
30	BA	0	8
31	BB	2	45
32	BC	2	56
33	BD	2	53

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Mol	Chain	#Chirality outliers	#Planarity outliers
34	BE	2	25
35	BG	2	57
36	BF	0	10
37	BH	0	36
38	Bs	0	18
39	BJ	1	10
40	BK	0	29
41	BN	1	13
42	BM	0	11
43	BP	4	44
44	BO	1	28
45	BR	0	31
46	BT	0	17
47	BU	1	16
48	BW	0	12
49	BV	0	20
50	BX	0	13
51	BZ	0	18
52	BY	0	8
53	Ba	0	25
54	Bd	0	1
55	Bc	0	16
56	Bf	0	6
57	Be	1	14
58	Bg	0	13
59	Bh	0	14
60	Bi	0	25
61	Bj	1	26
62	Bk	1	15
63	Bm	1	5
64	Bl	0	13
65	Bn	0	15
66	Bo	0	15
67	Bp	0	8
68	Bq	0	4
69	Br	0	23
70	Bx	0	7
71	Bz	0	1
72	Bt	0	3
72	Bu	0	3
73	Bv	0	1
73	Bw	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
74	BQ	0	48
75	BL	0	5
76	BS	1	41
77	BI	2	24
78	CA	10	22
79	CB	1	0
80	CC	1	0
81	DA	32	15
82	DB	5	0
All	All	85	1514

The worst 5 of 7406 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
81	DA	1261	G	C2'-C1'	59.16	2.18	1.53
79	CB	55	C	C2'-C1'	-55.11	0.92	1.53
78	CA	636	A	C2'-C1'	54.35	2.13	1.53
81	DA	3215	A	C2'-C1'	-49.15	0.99	1.53
78	CA	1190	C	O5'-C5'	-48.72	0.65	1.42

The worst 5 of 14979 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	BC	266	ARG	NE-CZ-NH1	-73.84	83.38	120.30
81	DA	3305	A	P-O3'-C3'	50.10	179.82	119.70
81	DA	3047	U	P-O3'-C3'	47.61	176.83	119.70
81	DA	2046	U	P-O3'-C3'	47.25	176.40	119.70
81	DA	2071	A	P-O3'-C3'	46.20	175.13	119.70

5 of 85 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	AA	241	GLU	CA
5	AC	129	ILE	CA
5	AC	162	SER	CA
6	AE	28	ARG	CA
6	AE	30	THR	CA

5 of 1514 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	Aa	10	ARG	Sidechain

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Mol	Chain	Res	Type	Group
1	Aa	48	THR	Peptide
1	Aa	49	GLY	Peptide
1	Aa	53	LYS	Peptide,Mainchain
1	Aa	54	PHE	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	Aa	317/319 (99%)	274 (86%)	23 (7%)	20 (6%)	1	17
2	AA	250/252 (99%)	199 (80%)	21 (8%)	30 (12%)	0	6
3	AB	202/240 (84%)	137 (68%)	30 (15%)	35 (17%)	0	3
4	AD	198/261 (76%)	160 (81%)	17 (9%)	21 (11%)	0	8
5	AC	192/197 (98%)	136 (71%)	28 (15%)	28 (15%)	0	4
6	AE	252/254 (99%)	176 (70%)	36 (14%)	40 (16%)	0	3
8	AF	197/225 (88%)	170 (86%)	9 (5%)	18 (9%)	1	11
9	AH	128/130 (98%)	95 (74%)	17 (13%)	16 (12%)	0	5
10	AI	124/143 (87%)	84 (68%)	16 (13%)	24 (19%)	0	2
11	AJ	108/121 (89%)	92 (85%)	8 (7%)	8 (7%)	1	14
12	AK	117/137 (85%)	81 (69%)	9 (8%)	27 (23%)	0	1
13	AL	143/145 (99%)	100 (70%)	22 (15%)	21 (15%)	0	4
14	AM	138/146 (94%)	107 (78%)	21 (15%)	10 (7%)	1	14
15	AN	46/56 (82%)	31 (67%)	2 (4%)	13 (28%)	0	0
16	AO	119/151 (79%)	95 (80%)	12 (10%)	12 (10%)	0	9

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	AQ	134/136 (98%)	90 (67%)	22 (16%)	22 (16%)	0	3
18	AP	83/156 (53%)	65 (78%)	12 (14%)	6 (7%)	1	14
19	AR	86/142 (61%)	64 (74%)	10 (12%)	12 (14%)	0	4
20	AS	142/144 (99%)	118 (83%)	8 (6%)	16 (11%)	0	7
21	AT	85/87 (98%)	66 (78%)	10 (12%)	9 (11%)	0	8
22	AV	83/108 (77%)	66 (80%)	7 (8%)	10 (12%)	0	6
24	AX	48/82 (58%)	37 (77%)	7 (15%)	4 (8%)	1	12
25	AY	58/67 (87%)	46 (79%)	7 (12%)	5 (9%)	1	12
26	AZ	61/63 (97%)	41 (67%)	6 (10%)	14 (23%)	0	1
29	AU	94/135 (70%)	62 (66%)	14 (15%)	18 (19%)	0	2
30	BA	215/217 (99%)	194 (90%)	11 (5%)	10 (5%)	2	21
31	BB	252/254 (99%)	208 (82%)	18 (7%)	26 (10%)	0	8
32	BC	386/388 (100%)	316 (82%)	33 (8%)	37 (10%)	0	10
33	BD	325/362 (90%)	250 (77%)	34 (10%)	41 (13%)	0	5
34	BE	166/174 (95%)	136 (82%)	11 (7%)	19 (11%)	0	7
35	BG	174/176 (99%)	108 (62%)	15 (9%)	51 (29%)	0	0
36	BF	189/191 (99%)	173 (92%)	13 (7%)	3 (2%)	9	44
37	BH	195/256 (76%)	156 (80%)	18 (9%)	21 (11%)	0	8
38	Bs	255/312 (82%)	224 (88%)	16 (6%)	15 (6%)	1	17
39	BJ	125/165 (76%)	107 (86%)	11 (9%)	7 (6%)	2	19
40	BK	197/199 (99%)	161 (82%)	15 (8%)	21 (11%)	0	8
41	BN	136/138 (99%)	104 (76%)	14 (10%)	18 (13%)	0	5
42	BM	129/137 (94%)	124 (96%)	5 (4%)	0	100	100
43	BP	191/204 (94%)	168 (88%)	14 (7%)	9 (5%)	2	21
44	BO	147/149 (99%)	100 (68%)	24 (16%)	23 (16%)	0	3
45	BR	159/186 (86%)	116 (73%)	22 (14%)	21 (13%)	0	5
46	BT	187/189 (99%)	163 (87%)	14 (8%)	10 (5%)	2	19
47	BU	158/160 (99%)	144 (91%)	7 (4%)	7 (4%)	2	22
48	BW	103/121 (85%)	79 (77%)	15 (15%)	9 (9%)	1	11
49	BV	168/170 (99%)	135 (80%)	20 (12%)	13 (8%)	1	13
50	BX	120/142 (84%)	95 (79%)	11 (9%)	14 (12%)	0	6

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
51	BZ	71/155 (46%)	48 (68%)	13 (18%)	10 (14%)	0	4
52	BY	121/123 (98%)	115 (95%)	2 (2%)	4 (3%)	4	26
53	Ba	93/136 (68%)	62 (67%)	15 (16%)	16 (17%)	0	3
54	Bd	20/59 (34%)	19 (95%)	1 (5%)	0	100	100
55	Bc	116/120 (97%)	92 (79%)	11 (10%)	13 (11%)	0	7
56	Bf	103/105 (98%)	91 (88%)	7 (7%)	5 (5%)	2	20
57	Be	237/244 (97%)	213 (90%)	14 (6%)	10 (4%)	3	22
58	Bg	108/113 (96%)	95 (88%)	4 (4%)	9 (8%)	1	12
59	Bh	128/130 (98%)	115 (90%)	7 (6%)	6 (5%)	2	21
60	Bi	116/118 (98%)	76 (66%)	13 (11%)	27 (23%)	0	1
61	Bj	98/107 (92%)	66 (67%)	15 (15%)	17 (17%)	0	3
62	Bk	75/100 (75%)	61 (81%)	6 (8%)	8 (11%)	0	8
63	Bm	90/92 (98%)	78 (87%)	10 (11%)	2 (2%)	6	35
64	Bl	86/88 (98%)	65 (76%)	14 (16%)	7 (8%)	1	12
65	Bn	76/78 (97%)	56 (74%)	10 (13%)	10 (13%)	0	5
66	Bo	49/51 (96%)	38 (78%)	3 (6%)	8 (16%)	0	3
67	Bp	38/52 (73%)	28 (74%)	7 (18%)	3 (8%)	1	13
68	Bq	23/25 (92%)	21 (91%)	1 (4%)	1 (4%)	2	22
69	Br	104/106 (98%)	71 (68%)	14 (14%)	19 (18%)	0	3
72	Bt	56/106 (53%)	53 (95%)	0	3 (5%)	2	19
72	Bu	56/106 (53%)	53 (95%)	0	3 (5%)	2	19
73	Bv	56/106 (53%)	53 (95%)	1 (2%)	2 (4%)	3	25
73	Bw	56/106 (53%)	53 (95%)	1 (2%)	2 (4%)	3	25
74	BQ	295/297 (99%)	232 (79%)	27 (9%)	36 (12%)	0	6
76	BS	165/167 (99%)	116 (70%)	15 (9%)	34 (21%)	0	2
77	BI	179/221 (81%)	135 (75%)	23 (13%)	21 (12%)	0	6
All	All	9997/11298 (88%)	7958 (80%)	949 (10%)	1090 (11%)	1	8

5 of 1090 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	Aa	29	GLN
1	Aa	51	ASP

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Mol	Chain	Res	Type
1	Aa	55	GLY
1	Aa	57	PRO
1	Aa	84	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	Aa	259/262 (99%)	238 (92%)	21 (8%)	11	35
2	AA	198/210 (94%)	180 (91%)	18 (9%)	9	29
3	AB	148/195 (76%)	136 (92%)	12 (8%)	11	35
4	AD	173/222 (78%)	158 (91%)	15 (9%)	10	31
5	AC	153/166 (92%)	132 (86%)	21 (14%)	3	17
6	AE	205/205 (100%)	188 (92%)	17 (8%)	11	34
8	AF	163/191 (85%)	144 (88%)	19 (12%)	5	21
9	AH	111/111 (100%)	98 (88%)	13 (12%)	5	21
10	AI	105/119 (88%)	93 (89%)	12 (11%)	5	21
11	AJ	93/114 (82%)	88 (95%)	5 (5%)	22	47
12	AK	82/105 (78%)	77 (94%)	5 (6%)	18	44
13	AL	87/120 (72%)	75 (86%)	12 (14%)	3	17
14	AM	123/129 (95%)	104 (85%)	19 (15%)	2	14
15	AN	34/49 (69%)	30 (88%)	4 (12%)	5	20
16	AO	105/128 (82%)	91 (87%)	14 (13%)	4	18
17	AQ	122/124 (98%)	109 (89%)	13 (11%)	6	23
18	AP	63/137 (46%)	56 (89%)	7 (11%)	6	22
19	AR	71/118 (60%)	62 (87%)	9 (13%)	4	18
20	AS	115/116 (99%)	100 (87%)	15 (13%)	4	18
21	AT	74/74 (100%)	67 (90%)	7 (10%)	8	27
22	AV	74/89 (83%)	67 (90%)	7 (10%)	8	27

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
24	AX	43/71 (61%)	33 (77%)	10 (23%)	1	4
25	AY	50/60 (83%)	47 (94%)	3 (6%)	19	44
26	AZ	51/54 (94%)	47 (92%)	4 (8%)	12	36
29	AU	72/113 (64%)	62 (86%)	10 (14%)	3	17
30	BA	198/198 (100%)	184 (93%)	14 (7%)	14	39
31	BB	189/196 (96%)	177 (94%)	12 (6%)	18	43
32	BC	315/323 (98%)	265 (84%)	50 (16%)	2	13
33	BD	253/289 (88%)	222 (88%)	31 (12%)	4	19
34	BE	145/150 (97%)	118 (81%)	27 (19%)	1	9
35	BG	153/153 (100%)	124 (81%)	29 (19%)	1	8
36	BF	170/171 (99%)	152 (89%)	18 (11%)	6	24
37	BH	154/208 (74%)	136 (88%)	18 (12%)	5	21
38	Bs	216/254 (85%)	209 (97%)	7 (3%)	39	61
39	BJ	102/136 (75%)	94 (92%)	8 (8%)	12	36
40	BK	162/162 (100%)	143 (88%)	19 (12%)	5	21
41	BN	109/109 (100%)	96 (88%)	13 (12%)	5	20
42	BM	101/105 (96%)	85 (84%)	16 (16%)	2	13
43	BP	165/176 (94%)	141 (86%)	24 (14%)	3	15
44	BO	119/119 (100%)	100 (84%)	19 (16%)	2	13
45	BR	131/151 (87%)	106 (81%)	25 (19%)	1	8
46	BT	154/154 (100%)	144 (94%)	10 (6%)	17	42
47	BU	132/137 (96%)	113 (86%)	19 (14%)	3	16
48	BW	90/107 (84%)	77 (86%)	13 (14%)	3	16
49	BV	131/137 (96%)	117 (89%)	14 (11%)	6	23
50	BX	106/118 (90%)	99 (93%)	7 (7%)	16	41
51	BZ	59/129 (46%)	51 (86%)	8 (14%)	3	17
52	BY	107/107 (100%)	93 (87%)	14 (13%)	4	18
53	Ba	73/116 (63%)	63 (86%)	10 (14%)	3	17
54	Bd	15/47 (32%)	13 (87%)	2 (13%)	4	18
55	Bc	104/105 (99%)	88 (85%)	16 (15%)	2	14
56	Bf	83/88 (94%)	75 (90%)	8 (10%)	8	27

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
57	Be	202/205 (98%)	182 (90%)	20 (10%)	8	26
58	Bg	90/97 (93%)	79 (88%)	11 (12%)	5	20
59	Bh	111/111 (100%)	95 (86%)	16 (14%)	3	16
60	Bi	99/101 (98%)	87 (88%)	12 (12%)	5	20
61	Bj	71/91 (78%)	63 (89%)	8 (11%)	6	21
62	Bk	64/82 (78%)	58 (91%)	6 (9%)	8	28
63	Bm	72/72 (100%)	67 (93%)	5 (7%)	15	40
64	Bl	68/71 (96%)	61 (90%)	7 (10%)	7	25
65	Bn	66/69 (96%)	53 (80%)	13 (20%)	1	8
66	Bo	46/46 (100%)	38 (83%)	8 (17%)	2	11
67	Bp	37/47 (79%)	35 (95%)	2 (5%)	22	47
68	Bq	23/23 (100%)	21 (91%)	2 (9%)	10	31
69	Br	87/91 (96%)	76 (87%)	11 (13%)	4	19
72	Bt	48/76 (63%)	48 (100%)	0	100	100
72	Bu	48/76 (63%)	48 (100%)	0	100	100
73	Bv	47/74 (64%)	45 (96%)	2 (4%)	29	53
73	Bw	47/74 (64%)	46 (98%)	1 (2%)	53	72
74	BQ	238/245 (97%)	196 (82%)	42 (18%)	2	11
76	BS	153/153 (100%)	116 (76%)	37 (24%)	0	4
77	BI	151/187 (81%)	133 (88%)	18 (12%)	5	20
All	All	8278/9418 (88%)	7314 (88%)	964 (12%)	9	21

5 of 964 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
36	BF	47	LYS
74	BQ	131	LEU
43	BP	174	ILE
74	BQ	53	VAL
77	BI	4	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 133 such sidechains are listed below:

Mol	Chain	Res	Type
60	Bi	52	GLN
61	Bj	13	HIS
76	BS	124	GLN
31	BB	216	HIS
31	BB	205	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
78	CA	1485/1800 (82%)	521 (35%)	209 (14%)
79	CB	74/75 (98%)	26 (35%)	10 (13%)
80	CC	10/11 (90%)	7 (70%)	1 (10%)
81	DA	3156/3396 (92%)	1246 (39%)	607 (19%)
82	DB	142/158 (89%)	65 (45%)	36 (25%)
83	DC	117/118 (99%)	60 (51%)	26 (22%)
All	All	4984/5558 (89%)	1925 (38%)	889 (17%)

5 of 1925 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
78	CA	3	U
78	CA	4	C
78	CA	5	U
78	CA	10	G
78	CA	11	A

5 of 889 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
81	DA	1526	U
83	DC	75	G
81	DA	2031	U
83	DC	32	U
81	DA	3258	U

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
78	CA	4
44	BO	3
23	AW	1
80	CC	1
74	BQ	1
76	BS	1
20	AS	1
7	AG	1
14	AM	1
34	BE	1
32	BC	1

The worst 5 of 16 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	AW	31:UNK	C	59:UNK	N	10.96
1	CC	18:C	O3'	19:U	P	2.07
1	CA	1255:G	O3'	1256:A	P	1.94
1	BQ	39:GLN	C	40:HIS	N	1.90
1	CA	1254:U	O3'	1255:G	P	1.83

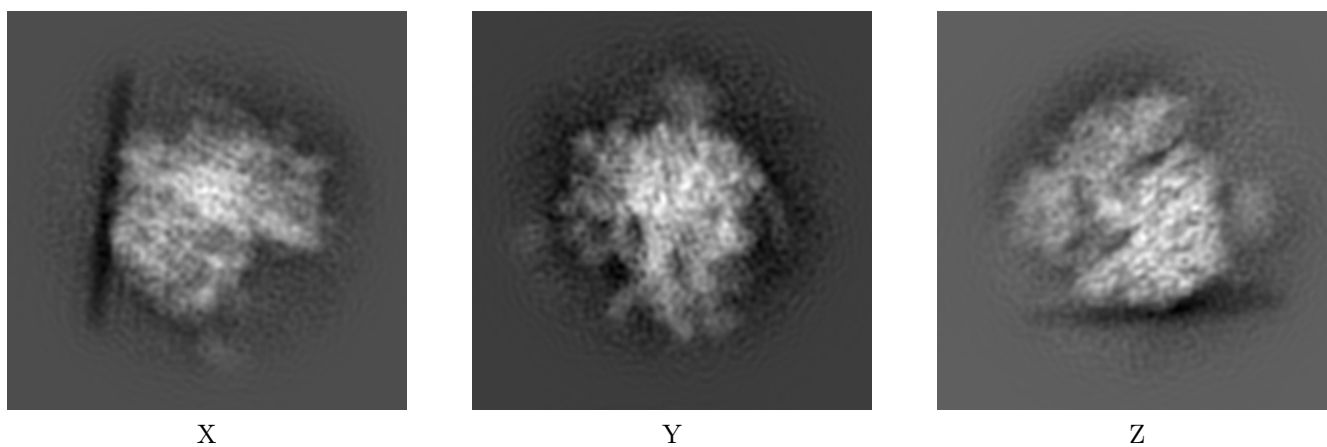
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-1669. 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](#)

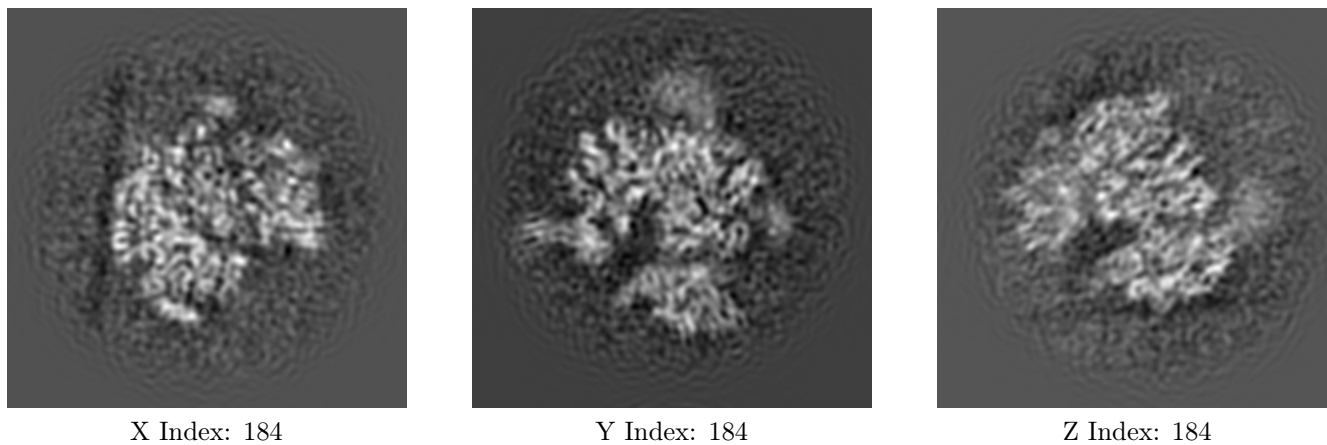
6.1.1 Primary map



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

6.2 Central slices [i](#)

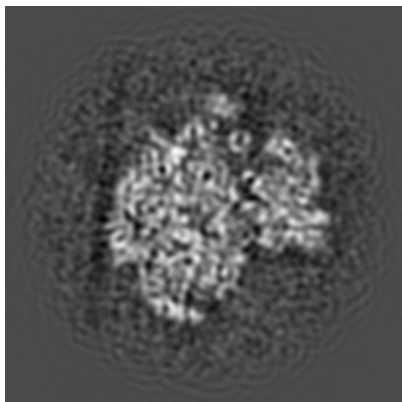
6.2.1 Primary map



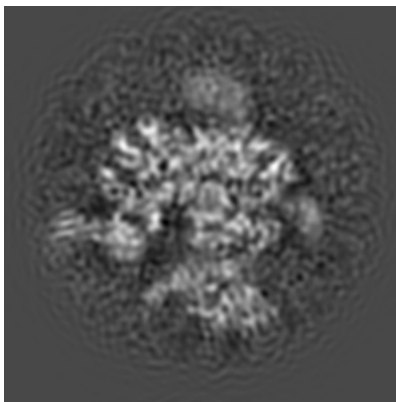
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [\(i\)](#)

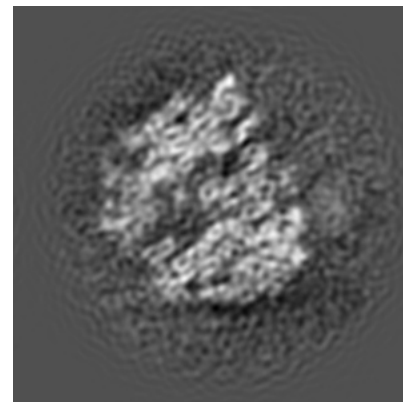
6.3.1 Primary map



X Index: 188



Y Index: 187

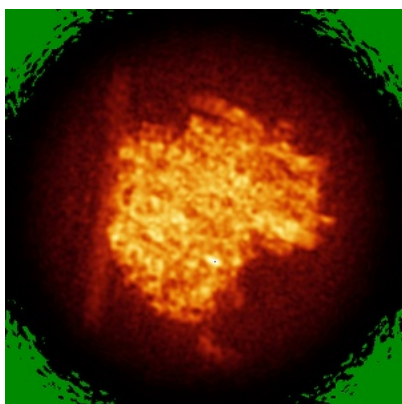


Z Index: 172

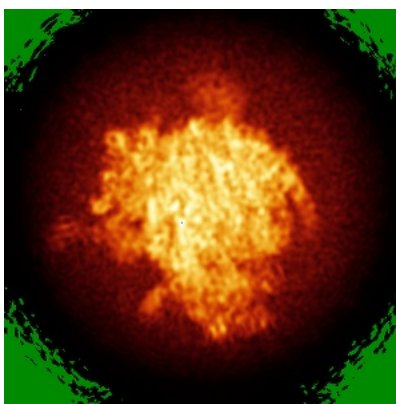
The images above show the largest variance slices of the map in three orthogonal directions.

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

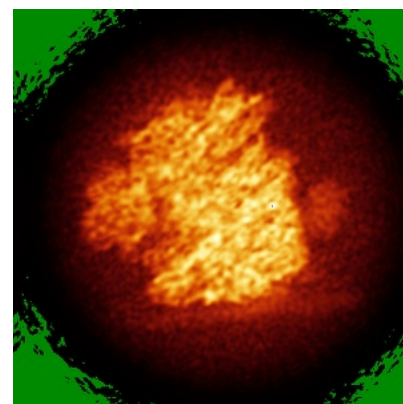
6.4.1 Primary map



X



Y

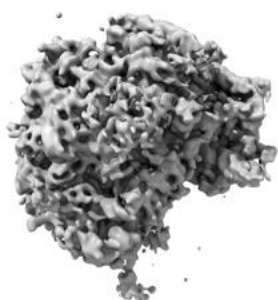


Z

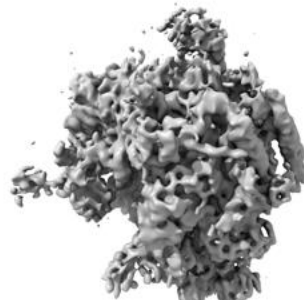
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

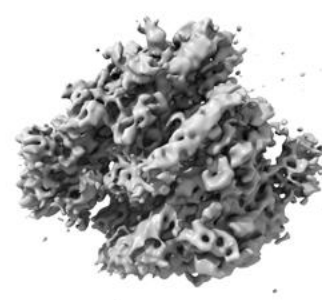
6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 1.75. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

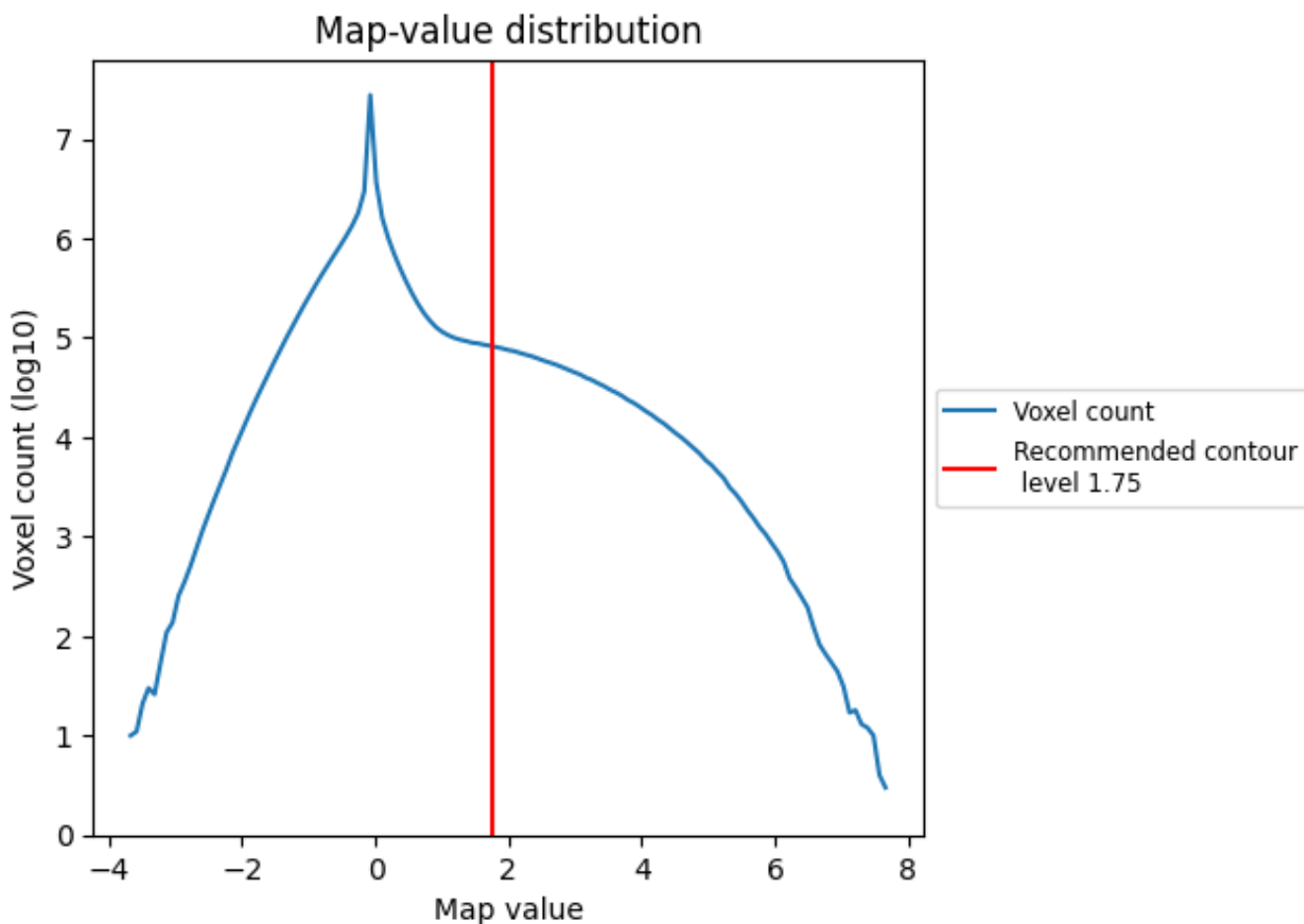
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

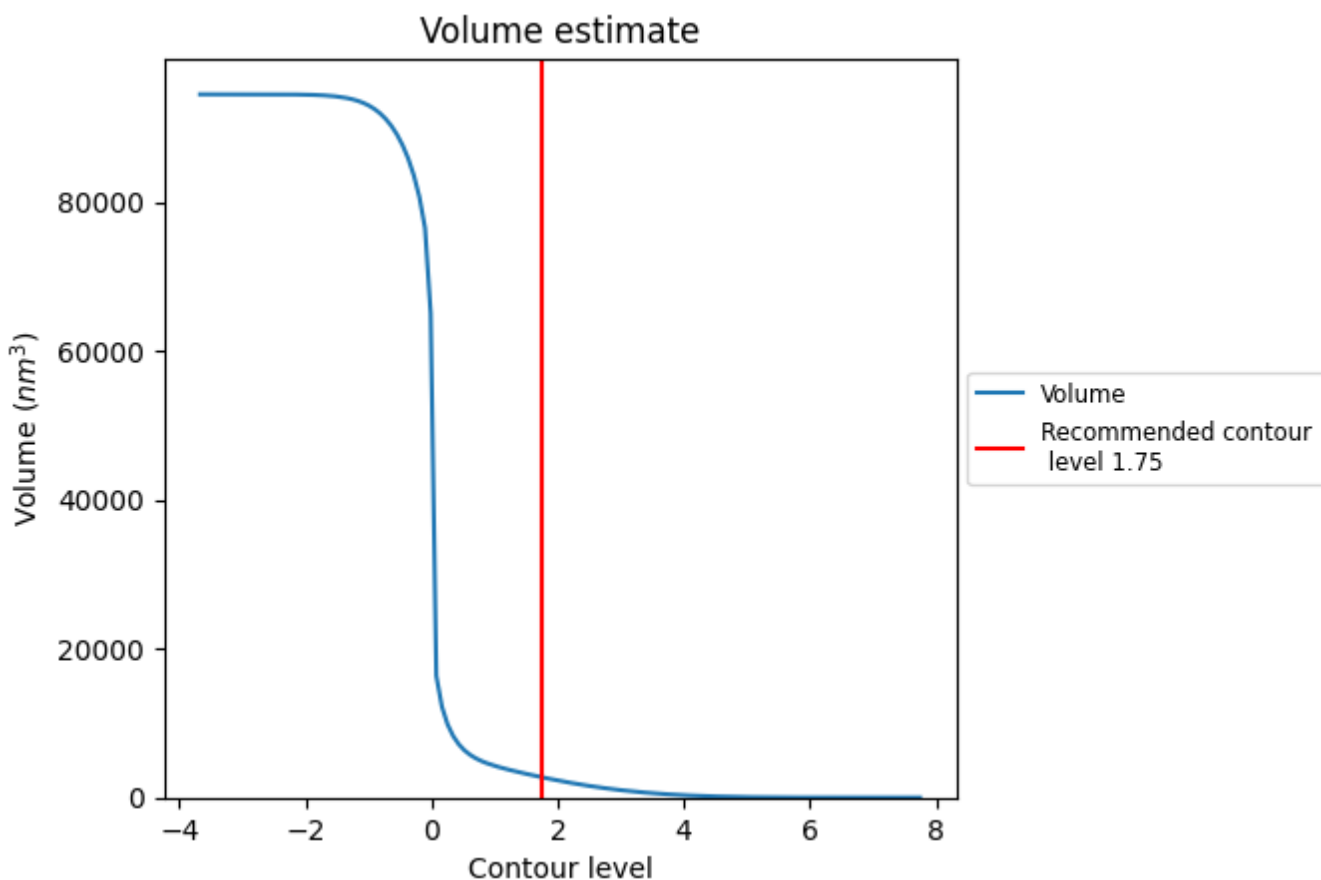
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

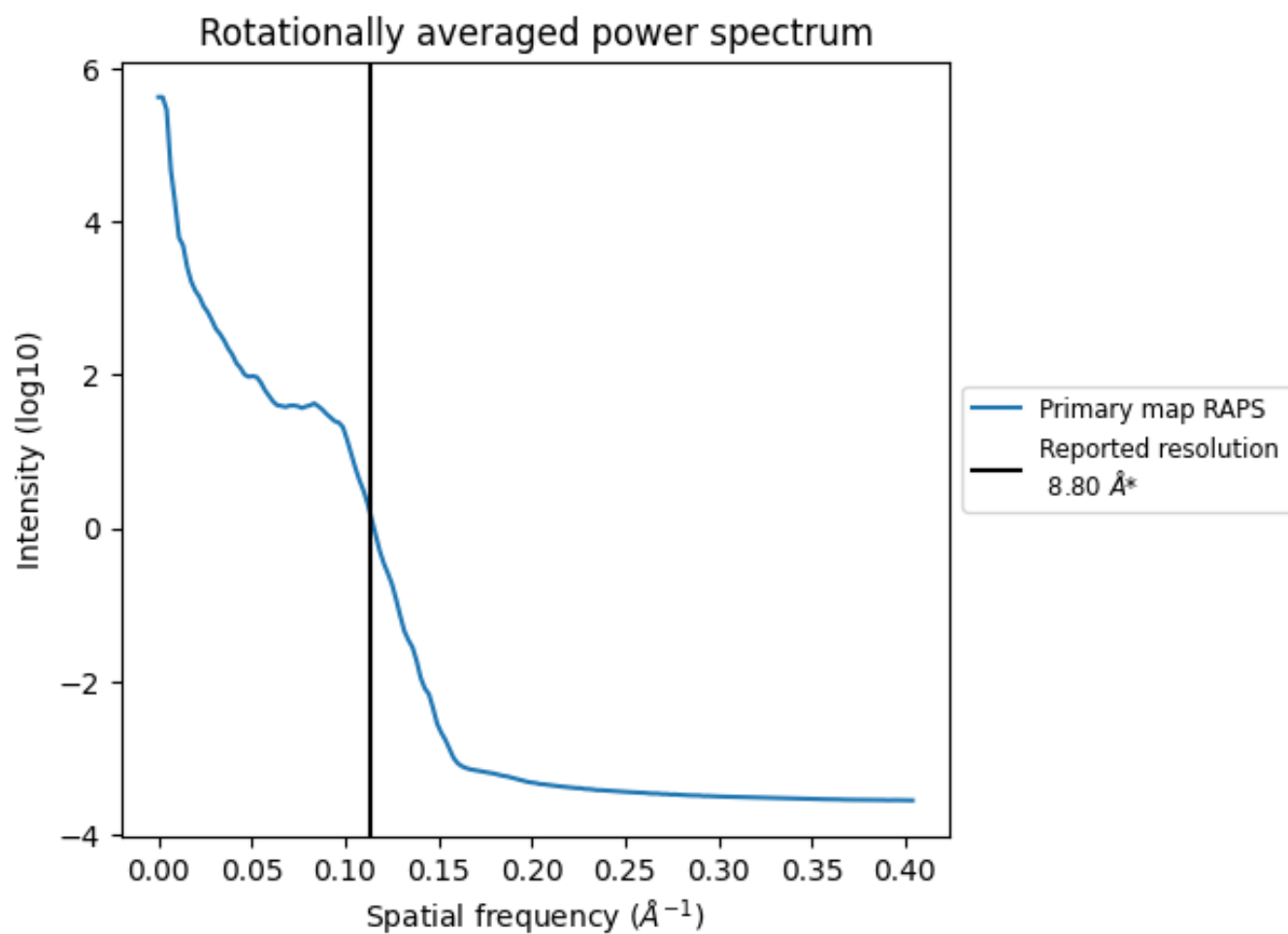
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2728 nm³; this corresponds to an approximate mass of 2464 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



*Reported resolution corresponds to spatial frequency of 0.114 Å⁻¹

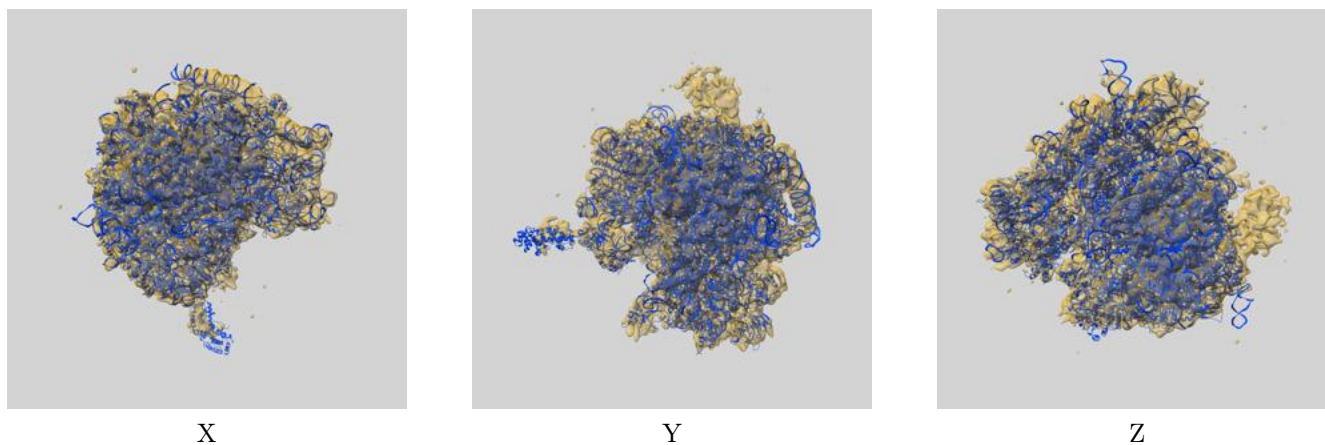
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

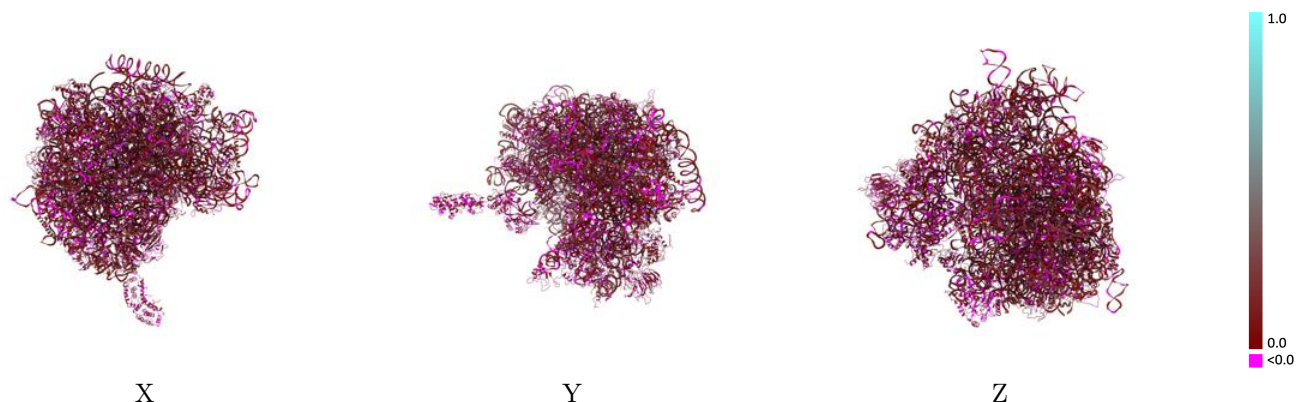
This section contains information regarding the fit between EMDB map EMD-1669 and PDB model 4V6I. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlay [i](#)



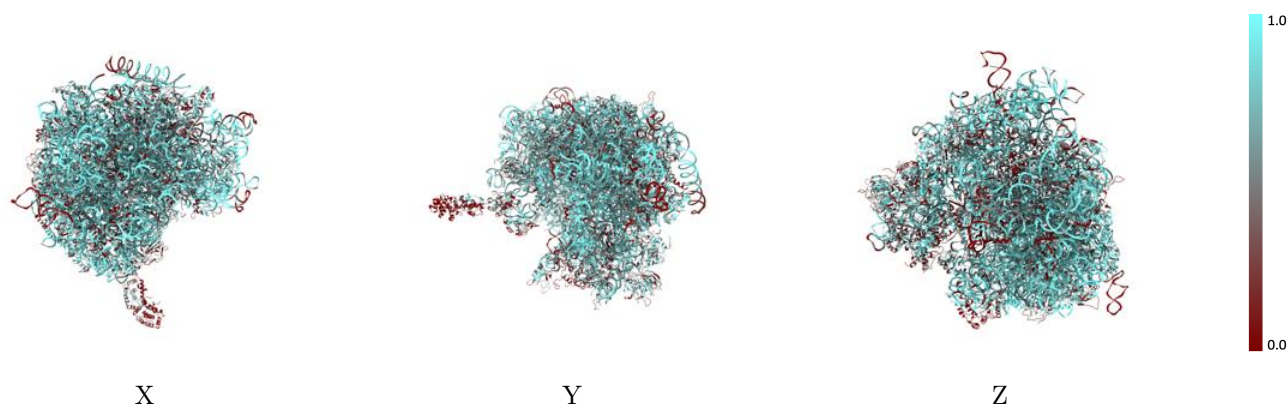
The images above show the 3D surface view of the map at the recommended contour level 1.75 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



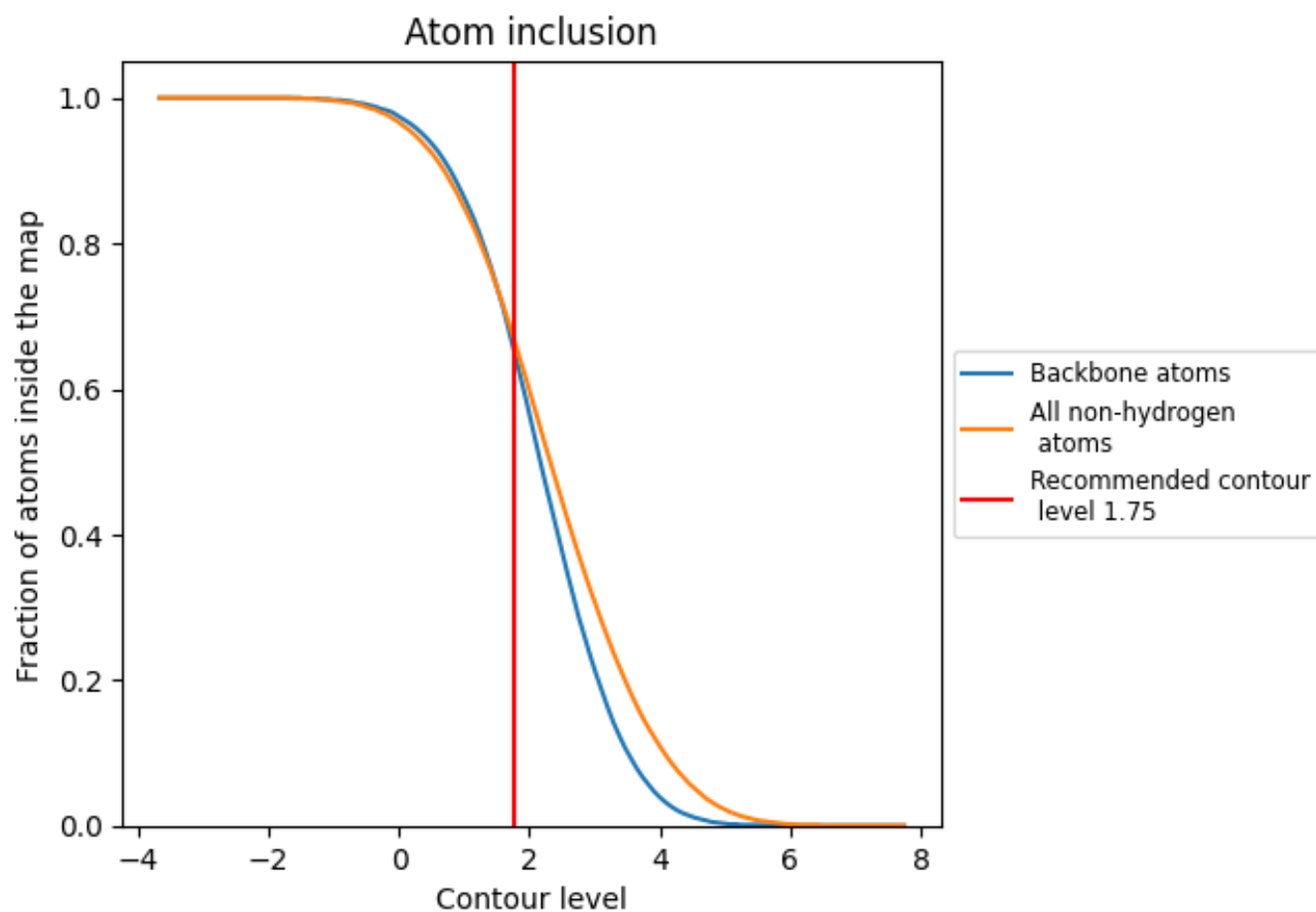
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (1.75).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 66% of all backbone atoms, 67% 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 (1.75) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6720	 0.0940
AA	 0.6070	 0.1010
AB	 0.4530	 0.0770
AC	 0.5850	 0.0770
AD	 0.5780	 0.0860
AE	 0.5530	 0.0920
AF	 0.5030	 0.0710
AG	 0.6840	 0.1610
AH	 0.5130	 0.0870
AI	 0.5430	 0.0530
AJ	 0.5000	 0.0680
AK	 0.5770	 0.0700
AL	 0.6540	 0.0570
AM	 0.2950	 0.0500
AN	 0.3770	 0.0420
AO	 0.4520	 0.0830
AP	 0.4140	 0.0750
AQ	 0.3000	 0.0670
AR	 0.3300	 0.0730
AS	 0.5260	 0.0540
AT	 0.4160	 0.1050
AU	 0.5370	 0.0730
AV	 0.3770	 0.0800
AW	 0.7200	 0.1670
AX	 0.4820	 0.0650
AY	 0.3320	 0.0120
AZ	 0.4960	 0.0540
Aa	 0.4650	 0.0690
Ab	 0.8670	 0.2310
Ac	 0.6350	 0.2370
BA	 0.2180	 0.0010
BB	 0.4620	 0.0460
BC	 0.5830	 0.0580
BD	 0.5840	 0.0660
BE	 0.5590	 0.0870























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Chain	Atom inclusion	Q-score
BF	0.5300	0.0860
BG	0.5860	0.0780
BH	0.6210	0.0830
BI	0.6600	0.0620
BJ	0.3380	0.0300
BK	0.5740	0.0870
BL	0.7800	0.1700
BM	0.2620	0.0860
BN	0.6400	0.0980
BO	0.4910	0.0400
BP	0.5560	0.0370
BQ	0.7450	0.0620
BR	0.5520	0.1000
BS	0.5020	0.0650
BT	0.4790	0.0960
BU	0.6290	0.0650
BV	0.5070	0.0570
BW	0.6070	0.0800
BX	0.5130	0.0770
BY	0.6950	0.0860
BZ	0.3940	0.0600
Ba	0.4830	0.0350
Bc	0.7380	0.1170
Bd	0.6180	0.0590
Be	0.5650	0.0900
Bf	0.4790	0.1190
Bg	0.5580	0.0760
Bh	0.4620	0.0730
Bi	0.4370	0.0580
Bj	0.4450	0.0490
Bk	0.6900	0.0950
Bl	0.6730	0.0500
Bm	0.3920	0.0810
Bn	0.5630	0.0860
Bo	0.4720	0.0500
Bp	0.4370	-0.0300
Bq	0.4880	0.1170
Br	0.4650	0.0650
Bs	0.2770	0.0350
Bt	0.3560	0.0260
Bu	0.0000	0.0530
Bv	0.2740	0.0480

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Chain	Atom inclusion	Q-score
Bw	 0.0370	 0.0100
Bx	 0.7900	 0.1580
By	 0.9100	 0.2380
Bz	 0.6140	 0.2150
CA	 0.7890	 0.1050
CB	 0.0690	 0.0440
CC	 0.1440	 -0.0370
DA	 0.7960	 0.1160
DB	 0.8120	 0.1140
DC	 0.9130	 0.1250