



# wwPDB EM Validation Summary Report ⓘ

Nov 26, 2022 – 04:29 PM EST

PDB ID : 5JUO  
EMDB ID : EMD-6643  
Title : Saccharomyces cerevisiae 80S ribosome bound with elongation factor eEF2-GDP-sordarin and Taura Syndrome Virus IRES, Structure I (fully rotated 40S subunit)  
Authors : Abeyrathne, P.; Koh, C.S.; Grant, T.; Grigorieff, N.; Korostelev, A.A.  
Deposited on : 2016-05-10  
Resolution : 4.00 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](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev43  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
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

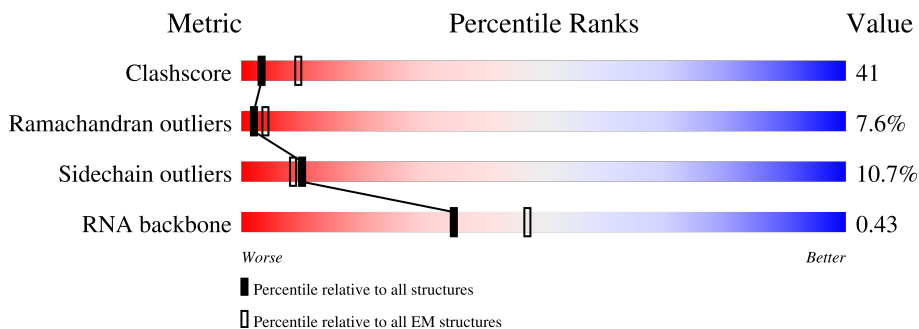
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 4.00 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.



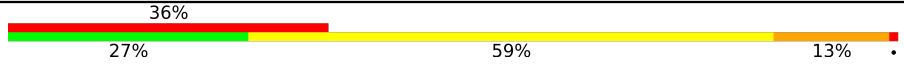


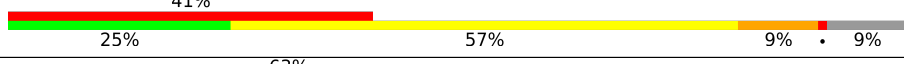
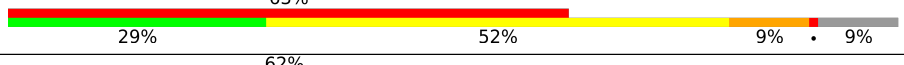



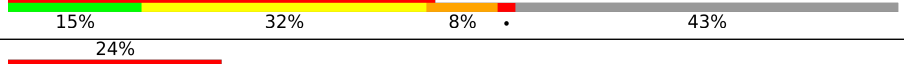
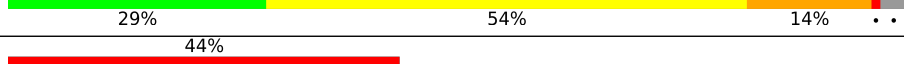

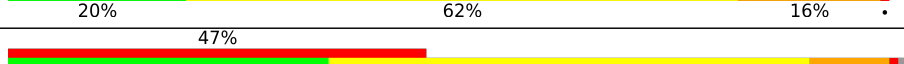
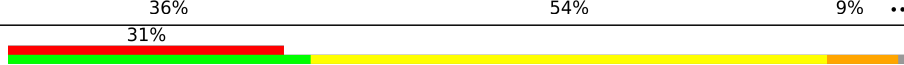
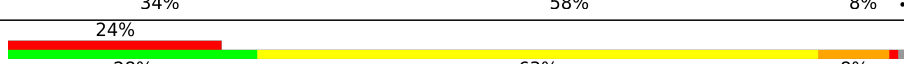



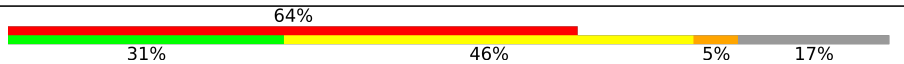


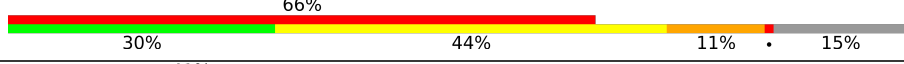
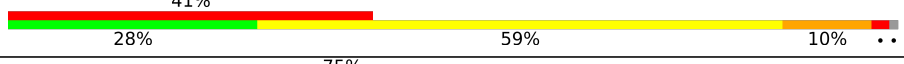

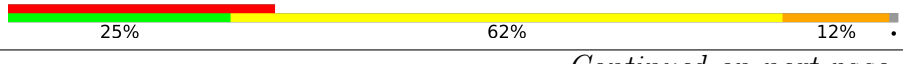

Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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  $\geq 3$ , 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	A	1798	<div style="display: flex; justify-content: space-between;"> <span>39%</span> <span>25%</span> <span>60%</span> <span>14%</span> </div>
2	B	3396	<div style="display: flex; justify-content: space-between;"> <span>20%</span> <span>20%</span> <span>59%</span> <span>18%</span> </div>
3	C	158	<div style="display: flex; justify-content: space-between;"> <span>20%</span> <span>18%</span> <span>62%</span> <span>18%</span> </div>
4	D	121	<div style="display: flex; justify-content: space-between;"> <span>7%</span> <span>16%</span> <span>70%</span> <span>14%</span> </div>
5	E	217	<div style="display: flex; justify-content: space-between;"> <span>76%</span> <span>39%</span> <span>31%</span> <span>9%</span> <span>21%</span> </div>
6	F	254	<div style="display: flex; justify-content: space-between;"> <span>40%</span> <span>15%</span> <span>66%</span> <span>17%</span> </div>
7	G	387	<div style="display: flex; justify-content: space-between;"> <span>41%</span> <span>25%</span> <span>62%</span> <span>11%</span> </div>

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Mol	Chain	Length	Quality of chain
8	H	362	
9	I	297	
10	J	176	
11	K	244	
12	L	256	
13	M	191	
14	N	221	
15	O	174	
16	P	165	
17	Q	199	
18	R	138	
19	S	204	
20	T	199	
21	U	184	
22	V	186	
23	W	189	
24	X	172	
25	Y	160	
26	Z	121	
27	AA	137	
28	BA	155	
29	CA	142	
30	DA	127	
31	EA	136	
32	FA	149	

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Mol	Chain	Length	Quality of chain
33	GA	59	36% 47% 44% 7%
34	HA	105	44% 27% 57% 9% 8%
35	IA	113	47% 27% 53% 15%
36	JA	130	27% 28% 59% 9%
37	KA	107	60% 25% 68% 6%
38	LA	121	45% 28% 48% 15% 7%
39	MA	120	77% 27% 62% 9%
40	NA	100	40% 27% 63% 9%
41	OA	88	38% 24% 59% 15%
42	PA	78	99% 49% 46%
43	QA	51	51% 20% 59% 18%
44	RA	128	17% 12% 23% 59%
45	SA	25	68% 44% 44% 12%
46	TA	106	23% 27% 57% 13%
47	UA	92	30% 28% 57% 12%
48	VA	312	48% 19% 35% 5% 39%
49	WA	319	99% 40% 55%
50	XA	252	74% 26% 45% 10% 18%
51	YA	255	63% 25% 47% 11% 16%
52	ZA	254	60% 27% 52% 6% 15%
53	AB	240	86% 40% 42% 10% 7%
54	BB	261	37% 25% 64% 10%
55	CB	225	75% 27% 56% 8% 8%
56	DB	236	66% 33% 55% 7%
57	EB	190	92% 31% 55% 9%

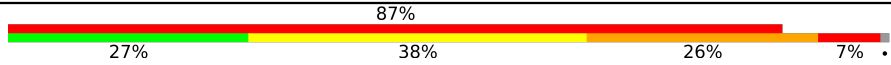
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Mol	Chain	Length	Quality of chain
58	FB	200	60% 33% 48% 12% 6%
59	GB	197	39% 27% 59% 8% 6%
60	HB	105	73% 29% 58% 5% 9%
61	IB	156	74% 36% 54% 8% ..
62	JB	143	87% 73% 14% 13%
63	KB	151	81% 32% 56% 11% ..
64	LB	137	50% 28% 58% 5% 7%
65	MB	142	80% 24% 56% 5% 14%
66	NB	143	90% 24% 68% 6% .
67	OB	136	84% 46% 32% 7% 14%
68	PB	146	95% 34% 58% 7% ..
69	QB	144	94% 38% 54% 8% .
70	RB	121	81% 29% 51% 8% 12%
71	SB	87	78% 38% 47% 15%
72	TB	130	67% 29% 52% 16% ..
73	UB	145	74% 37% 54% 8% .
74	VB	135	70% 39% 50% 11% .
75	WB	108	63% 19% 35% 11% 35%
76	XB	119	46% 14% 48% 18% 18%
77	YB	82	73% 41% 46% 10% ..
78	ZB	67	57% 40% 48% 6% 6%
79	AC	56	64% 29% 59% 7% 5%
80	BC	63	79% 48% 35% 13% 5%
81	CC	152	45% 35% 12% 53%
82	DC	842	64% 32% 56% 12%

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Mol	Chain	Length	Quality of chain
83	EC	201	 <p>87%</p> <p>27% 38% 26% 7%</p>

## 2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 215363 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A	1781	37658	16811	6630	12436	1781	0	0

- Molecule 2 is a RNA chain called 25S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	B	3309	70288	31354	12595	23030	3309	0	0

- Molecule 3 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	C	158	3354	1500	586	1110	158	0	0

- Molecule 4 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	D	121	2580	1152	461	846	121	0	0

- Molecule 5 is a protein called uL1 (yeast L1).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	171	1359	869	232	251	7	0	0

- Molecule 6 is a protein called uL2 (yeast L2).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	252	1918	1193	389	335	1	0	0

- Molecule 7 is a protein called uL3 (yeast L3).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	G	386	3082	1956	584	534	8	0	0

- Molecule 8 is a protein called uL4 (yeast L4).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	H	361	2750	1730	522	495	3	0	0

- Molecule 9 is a protein called uL18 (yeast L5).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	I	296	2376	1501	414	459	2	0	0

- Molecule 10 is a protein called eL6 (yeast L6).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	J	175	1401	902	251	247	1	0	0

- Molecule 11 is a protein called uL30 (yeast L7).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	K	222	1785	1151	324	309	1	0	0

- Molecule 12 is a protein called eL8 (yeast L8).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	L	233	1818	1159	326	330	3	0	0

- Molecule 13 is a protein called uL6 (yeast L9).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	M	191	1519	963	274	278	4	0	0

- Molecule 14 is a protein called uL16 (yeast L10).



Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	211	Total	C	N	O	S	0	0
			1718	1089	325	298	6		

- Molecule 15 is a protein called uL5 (yeast L11).

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	169	Total	C	N	O	S	0	0
			1354	847	253	250	4		

- Molecule 16 is a protein called uL11 (yeast L12).

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	94	Total	C	N	O	S	0	0
			723	448	138	135	2		

- Molecule 17 is a protein called eL13 (yeast L13).

Mol	Chain	Residues	Atoms				AltConf	Trace
17	Q	193	Total	C	N	O	0	0
			1543	962	315	266		

- Molecule 18 is a protein called eL14 (yeast L14).

Mol	Chain	Residues	Atoms					AltConf	Trace
18	R	136	Total	C	N	O	S	0	0
			1054	675	199	178	2		

- Molecule 19 is a protein called eL15 (yeast L15).

Mol	Chain	Residues	Atoms					AltConf	Trace
19	S	203	Total	C	N	O	S	0	0
			1721	1077	361	282	1		

- Molecule 20 is a protein called uL13 (yeast L16).

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	197	Total	C	N	O	S	0	0
			1556	1003	289	263	1		

- Molecule 21 is a protein called uL22 (yeast L17).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
21	U	183	1443	896	287	260	0	0

- Molecule 22 is a protein called eL18 (yeast L18).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	V	185	1442	908	290	242	2	0	0

- Molecule 23 is a protein called eL19 (yeast L19).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
23	W	188	1522	935	326	261	0	0

- Molecule 24 is a protein called eL20 (yeast L20).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	X	172	1446	930	267	245	4	0	0

- Molecule 25 is a protein called eL21 (yeast L21).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	Y	159	1277	805	246	222	4	0	0

- Molecule 26 is a protein called eL22 (yeast L22).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
26	Z	100	796	516	131	149	0	0

- Molecule 27 is a protein called uL14 (yeast L23).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	AA	136	1004	628	189	180	7	0	0

- Molecule 28 is a protein called eL24 (yeast L24).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	BA	61	509	328	100	80	1	0	0

- Molecule 29 is a protein called uL23 (yeast L25).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	CA	121	969	623	170	174	2	0	0

- Molecule 30 is a protein called uL24 (yeast L26).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
30	DA	126	994	625	192	177	0	0

- Molecule 31 is a protein called eL27 (yeast L27).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
31	EA	135	1093	710	202	181	0	0

- Molecule 32 is a protein called uL15 (yeast L28).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	FA	148	1174	749	231	191	3	0	0

- Molecule 33 is a protein called eL29 (yeast L29).

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
33	GA	58	463	289	100	74	0	0

- Molecule 34 is a protein called eL30 (yeast L30).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	HA	97	743	479	124	139	1	0	0

- Molecule 35 is a protein called eL31 (yeast L31).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	IA	109	890	565	168	156	1	0	0

- Molecule 36 is a protein called eL32 (yeast L32).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	JA	127	1020	647	205	167	1	0	0

- Molecule 37 is a protein called eL33 (yeast L33).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	KA	106	851	540	165	145	1	0	0

- Molecule 38 is a protein called eL34 (yeast L34).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	LA	112	881	546	179	152	4	0	0

- Molecule 39 is a protein called uL29 (yeast L35).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	MA	119	970	615	186	168	1	0	0

- Molecule 40 is a protein called eL36 (yeast L36).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	NA	99	772	481	156	133	2	0	0

- Molecule 41 is a protein called eL37 (yeast L37).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	OA	87	682	414	148	115	5	0	0

- Molecule 42 is a protein called eL38 (yeast L38).

Mol	Chain	Residues	Atoms				AltConf	Trace
42	PA	77	Total	C	N	O	0	0
			613	391	115	107		

- Molecule 43 is a protein called eL39 (yeast L39).

Mol	Chain	Residues	Atoms					AltConf	Trace
43	QA	50	Total	C	N	O	S	0	0
			437	272	97	66	2		

- Molecule 44 is a protein called eL40 (yeast L40).

Mol	Chain	Residues	Atoms					AltConf	Trace
44	RA	52	Total	C	N	O	S	0	0
			418	259	86	68	5		

- Molecule 45 is a protein called eL41 (yeast L41).

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

- Molecule 46 is a protein called eL42 (yeast L42).

Mol	Chain	Residues	Atoms					AltConf	Trace
46	TA	105	Total	C	N	O	S	0	0
			848	534	170	139	5		

- Molecule 47 is a protein called eL43 (yeast L43).

Mol	Chain	Residues	Atoms					AltConf	Trace
47	UA	91	Total	C	N	O	S	0	0
			695	429	138	122	6		

- Molecule 48 is a protein called uL10 (yeast P0).

Mol	Chain	Residues	Atoms					AltConf	Trace
48	VA	189	Total	C	N	O	S	0	0
			1473	942	257	270	4		

- Molecule 49 is a protein called RACK1 (yeast Asc1).

Mol	Chain	Residues	Atoms					AltConf	Trace
49	WA	318	Total	C	N	O	S	0	0
			2445	1546	419	472	8		

- Molecule 50 is a protein called uS2 (yeast S0).

Mol	Chain	Residues	Atoms					AltConf	Trace
50	XA	206	Total	C	N	O	S	0	0
			1611	1033	285	291	2		

- Molecule 51 is a protein called eS1 (yeast S1).

Mol	Chain	Residues	Atoms					AltConf	Trace
51	YA	214	Total	C	N	O	S	0	0
			1709	1084	310	311	4		

- Molecule 52 is a protein called uS5 (yeast S2).

Mol	Chain	Residues	Atoms					AltConf	Trace
52	ZA	217	Total	C	N	O	S	0	0
			1635	1047	289	297	2		

- Molecule 53 is a protein called uS3 (yeast S3).

Mol	Chain	Residues	Atoms					AltConf	Trace
53	AB	223	Total	C	N	O	S	0	0
			1734	1101	313	314	6		

- Molecule 54 is a protein called eS4 (yeast S4).

Mol	Chain	Residues	Atoms					AltConf	Trace
54	BB	260	Total	C	N	O	S	0	0
			2069	1316	389	361	3		

- Molecule 55 is a protein called uS7 (yeast S5).

Mol	Chain	Residues	Atoms					AltConf	Trace
55	CB	206	Total	C	N	O	S	0	0
			1610	1007	300	300	3		

- Molecule 56 is a protein called eS6 (yeast S6).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	DB	226	1820	1142	350	325	3	0	0

- Molecule 57 is a protein called eS7 (yeast S7).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	EB	184	1481	951	265	265		0	0

- Molecule 58 is a protein called eS8 (yeast S8).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	FB	188	1490	925	298	265	2	0	0

- Molecule 59 is a protein called uS4 (yeast S9).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	GB	185	1494	943	289	261	1	0	0

- Molecule 60 is a protein called eS10 (yeast S10).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	HB	96	817	529	133	153	2	0	0

- Molecule 61 is a protein called uS17 (yeast S11).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	IB	155	1245	798	235	209	3	0	0

- Molecule 62 is a protein called eS12 (yeast S12).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	JB	124	496	248	124	124		0	0

- Molecule 63 is a protein called uS15 (yeast S13).

Mol	Chain	Residues	Atoms					AltConf	Trace
63	KB	150	Total	C	N	O	S	0	0
			1193	759	224	208	2		

- Molecule 64 is a protein called uS11 (yeast S14).

Mol	Chain	Residues	Atoms					AltConf	Trace
64	LB	127	Total	C	N	O	S	0	0
			942	578	186	175	3		

- Molecule 65 is a protein called uS19 (yeast S15).

Mol	Chain	Residues	Atoms					AltConf	Trace
65	MB	122	Total	C	N	O	S	0	0
			975	622	182	164	7		

- Molecule 66 is a protein called uS9 (yeast S16).

Mol	Chain	Residues	Atoms				AltConf	Trace
66	NB	141	Total	C	N	O	0	0
			1106	708	203	195		

- Molecule 67 is a protein called eS17 (yeast S17).

Mol	Chain	Residues	Atoms					AltConf	Trace
67	OB	117	Total	C	N	O	S	0	0
			836	515	166	153	2		

- Molecule 68 is a protein called uS13 (yeast S18).

Mol	Chain	Residues	Atoms					AltConf	Trace
68	PB	145	Total	C	N	O	S	0	0
			1193	743	237	211	2		

- Molecule 69 is a protein called eS19 (yeast S19).

Mol	Chain	Residues	Atoms					AltConf	Trace
69	QB	143	Total	C	N	O	S	0	0
			1113	694	208	209	2		

- Molecule 70 is a protein called uS10 (yeast S20).



Mol	Chain	Residues	Atoms					AltConf	Trace
70	RB	107	Total	C	N	O	S	0	0
			856	539	156	160	1		

- Molecule 71 is a protein called eS21 (yeast S21).

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

- Molecule 72 is a protein called uS8 (yeast S22).

Mol	Chain	Residues	Atoms					AltConf	Trace
72	TB	129	Total	C	N	O	S	0	0
			1022	650	188	181	3		

- Molecule 73 is a protein called uS12 (yeast S23).

Mol	Chain	Residues	Atoms					AltConf	Trace
73	UB	144	Total	C	N	O	S	0	0
			1122	708	220	192	2		

- Molecule 74 is a protein called eS24 (yeast S24).

Mol	Chain	Residues	Atoms				AltConf	Trace
74	VB	134	Total	C	N	O	0	0
			1074	676	208	190		

- Molecule 75 is a protein called eS25 (yeast S25).

Mol	Chain	Residues	Atoms				AltConf	Trace
75	WB	70	Total	C	N	O	0	0
			563	360	104	99		

- Molecule 76 is a protein called eS26 (yeast S26).

Mol	Chain	Residues	Atoms					AltConf	Trace
76	XB	97	Total	C	N	O	S	0	0
			769	475	160	129	5		

- Molecule 77 is a protein called eS27 (yeast S27).

Mol	Chain	Residues	Atoms					AltConf	Trace
77	YB	81	Total	C	N	O	S	0	0
			611	382	110	114	5		

- Molecule 78 is a protein called eS28 (yeast S28).

Mol	Chain	Residues	Atoms					AltConf	Trace
78	ZB	63	Total	C	N	O	S	0	0
			498	306	99	92	1		

- Molecule 79 is a protein called uS14 (yeast S29).

Mol	Chain	Residues	Atoms					AltConf	Trace
79	AC	53	Total	C	N	O	S	0	0
			444	275	92	73	4		

- Molecule 80 is a protein called eS30 (yeast S30).

Mol	Chain	Residues	Atoms					AltConf	Trace
80	BC	60	Total	C	N	O	S	0	0
			475	299	98	77	1		

- Molecule 81 is a protein called eS31 (yeast S31).

Mol	Chain	Residues	Atoms				AltConf	Trace
81	CC	71	Total	C	N	O	0	0
			284	142	71	71		

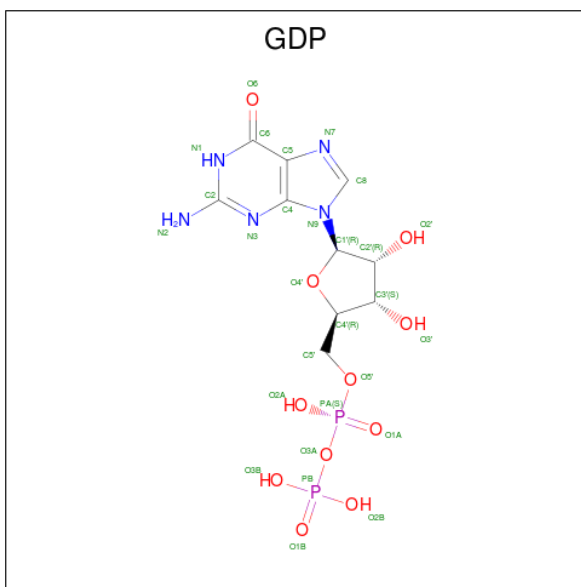
- Molecule 82 is a protein called yeast eEF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	DC	841	Total	C	N	O	S	0	0
			6561	4168	1125	1238	30		

- Molecule 83 is a RNA chain called IRES.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	EC	198	Total	C	N	O	P	0	0
			4105	1826	718	1363	198		

- Molecule 84 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: C<sub>10</sub>H<sub>15</sub>N<sub>5</sub>O<sub>11</sub>P<sub>2</sub>).

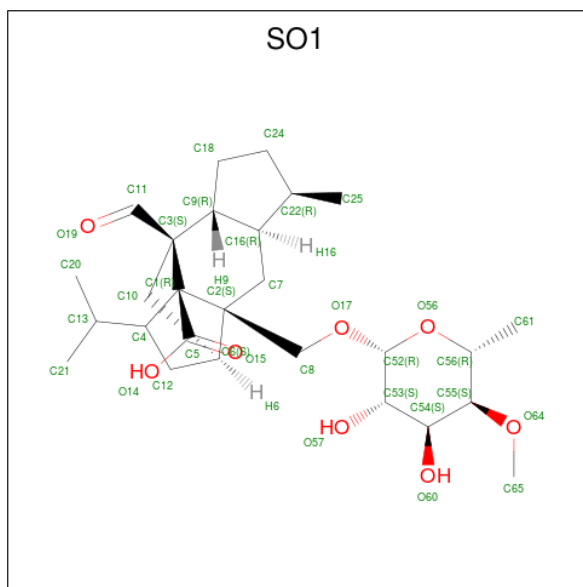


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
84	DC	1	28	10	5	11	2	0

- Molecule 85 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
85	DC	1	1	1	0

- Molecule 86 is [1R-(1.ALPHA.,3A.BETA.,4.BETA.,4A.BETA.,7.BETA.,7A.ALPHA.,8A.BETA.)]8A-[(6-DEOXY-4-O-METHYL-BETA-D-ALTROPYRANOSYLOXY)METHYL]-4-FORMYL-4,4A,5,6,7,7A,8,8A-OCTAHYDRO-7-METHYL-3-(1-METHYLETHYL)-1,4-METHANO-S-INDACENE-3A(1H)-CARBOXYLIC ACID (three-letter code: SO1) (formula: C<sub>27</sub>H<sub>42</sub>O<sub>8</sub>).

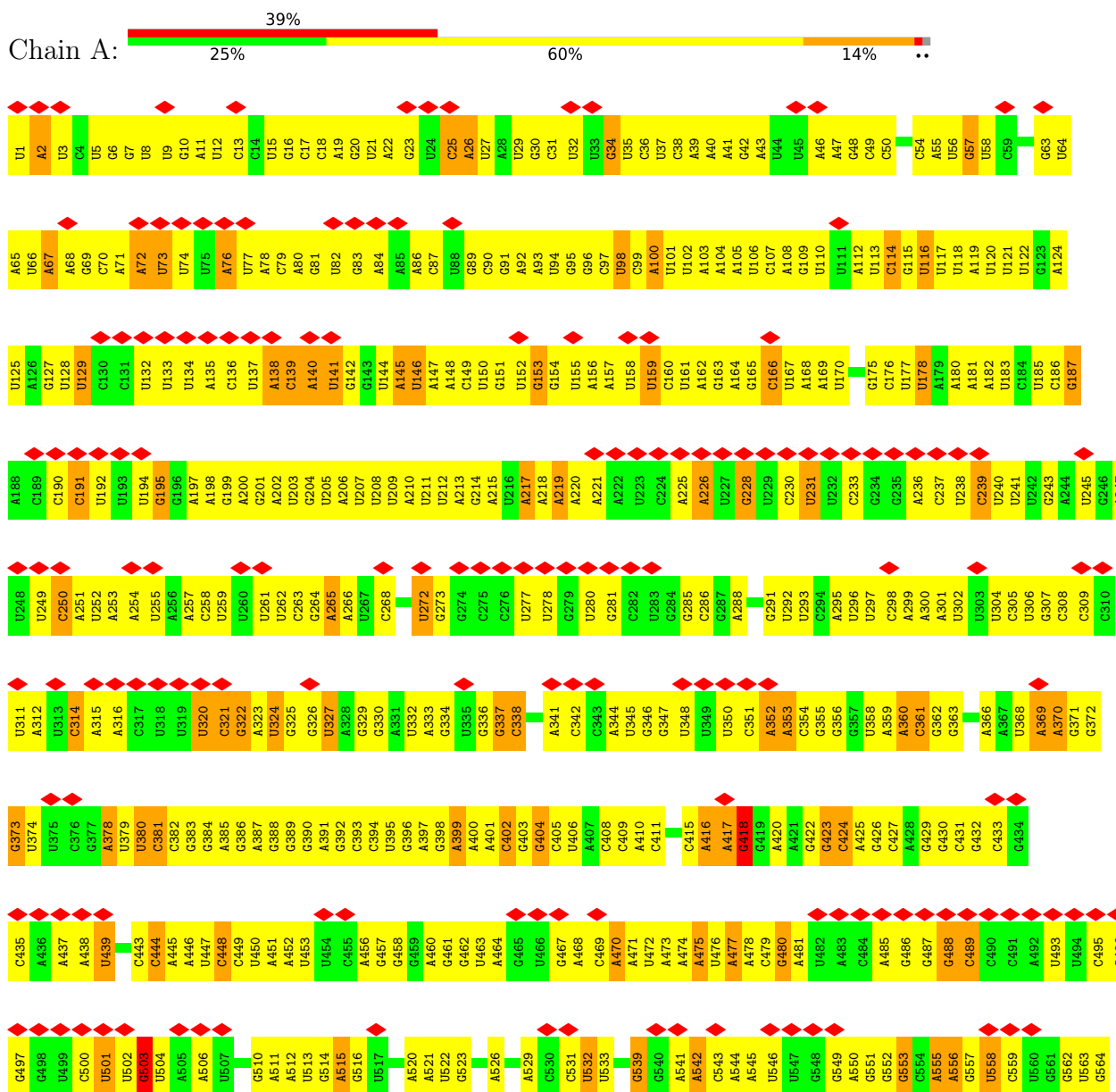


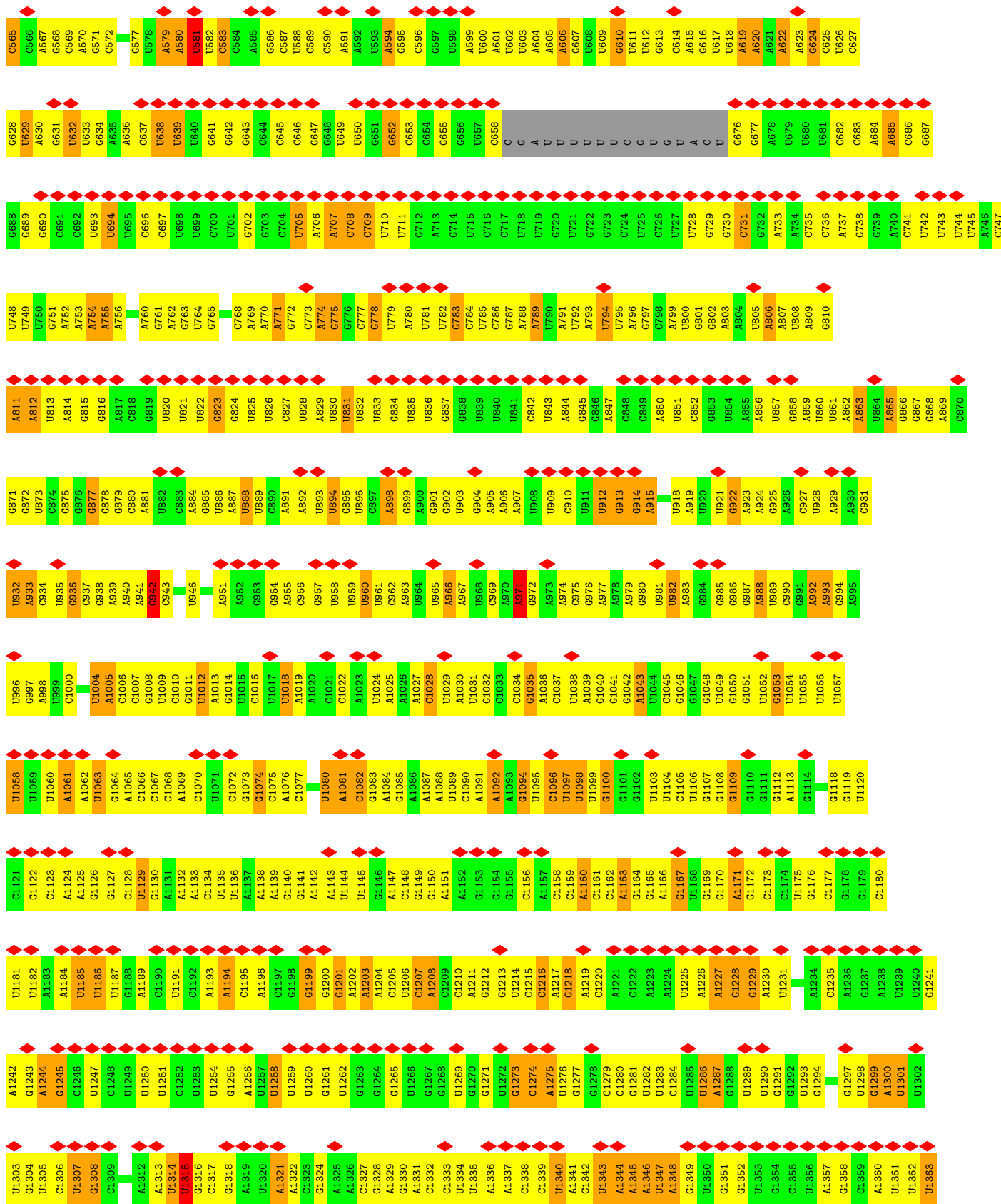
Mol	Chain	Residues	Atoms		AltConf
86	DC	1	Total	C O	0
			35	27 8	

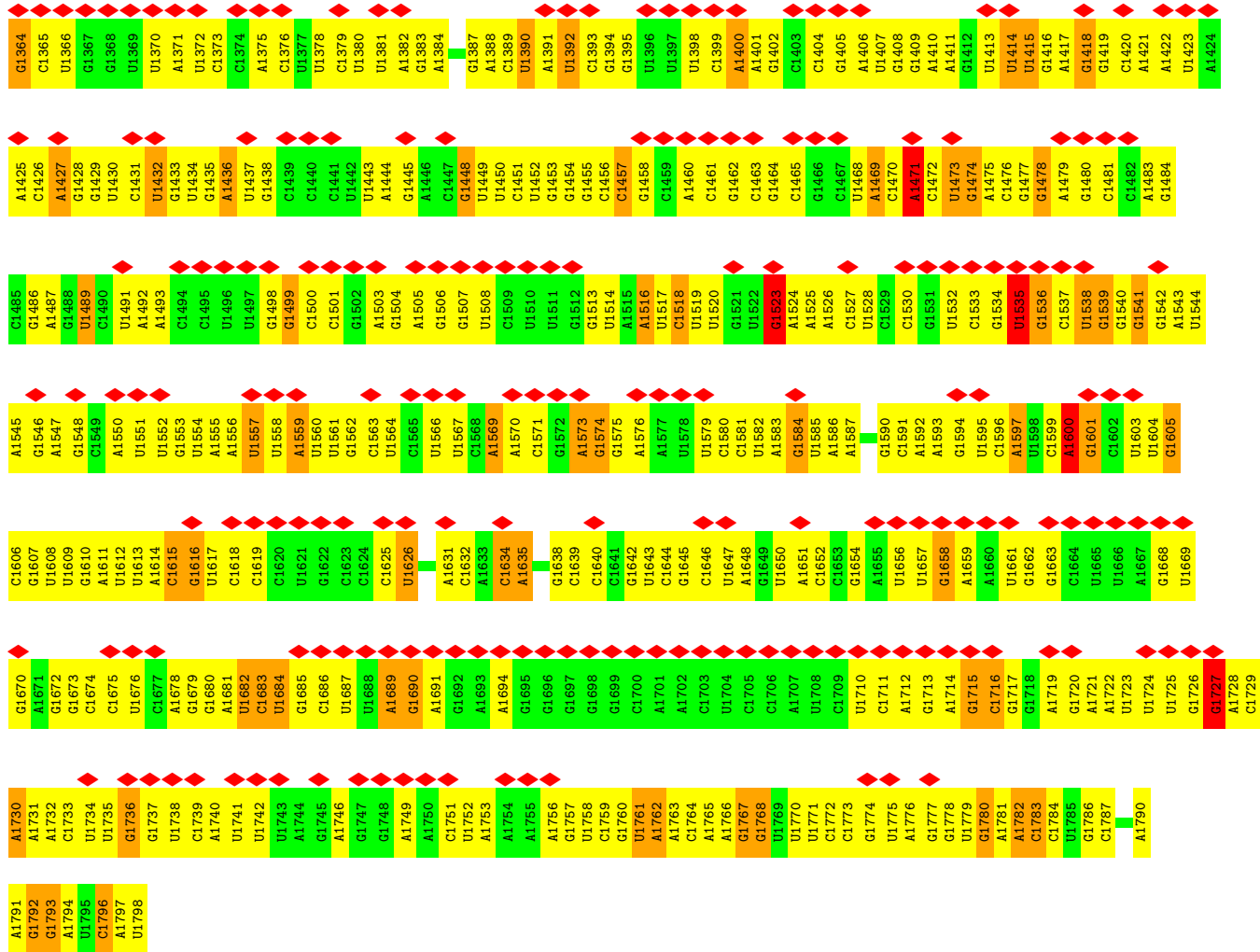
### 3 Residue-property plots

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.

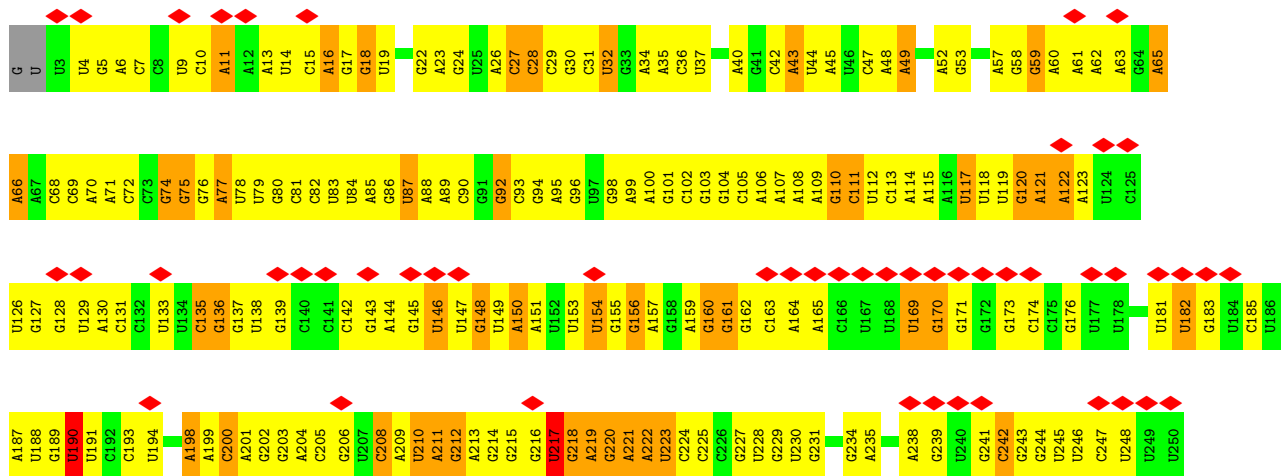
#### • Molecule 1: 18S ribosomal RNA

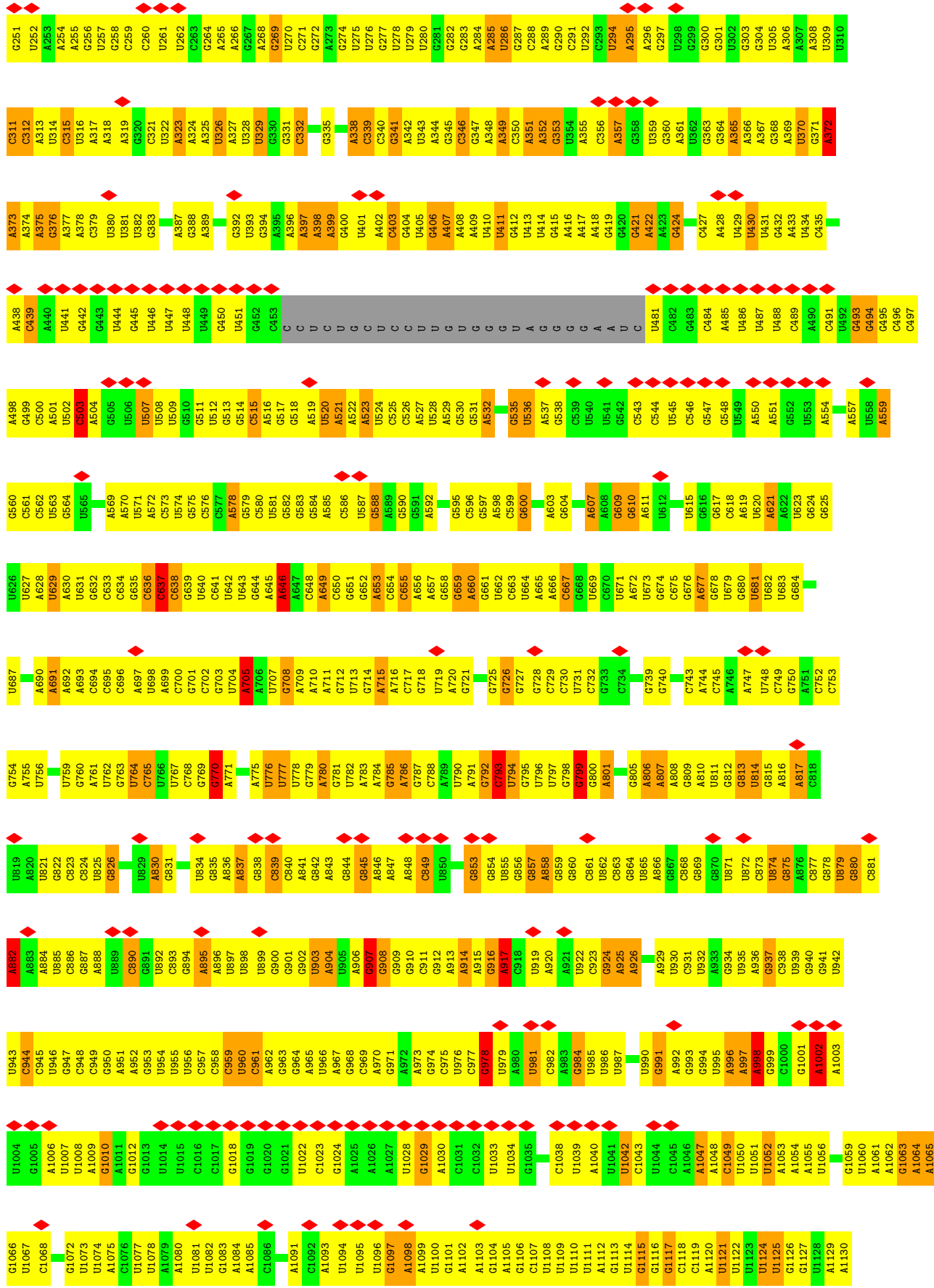




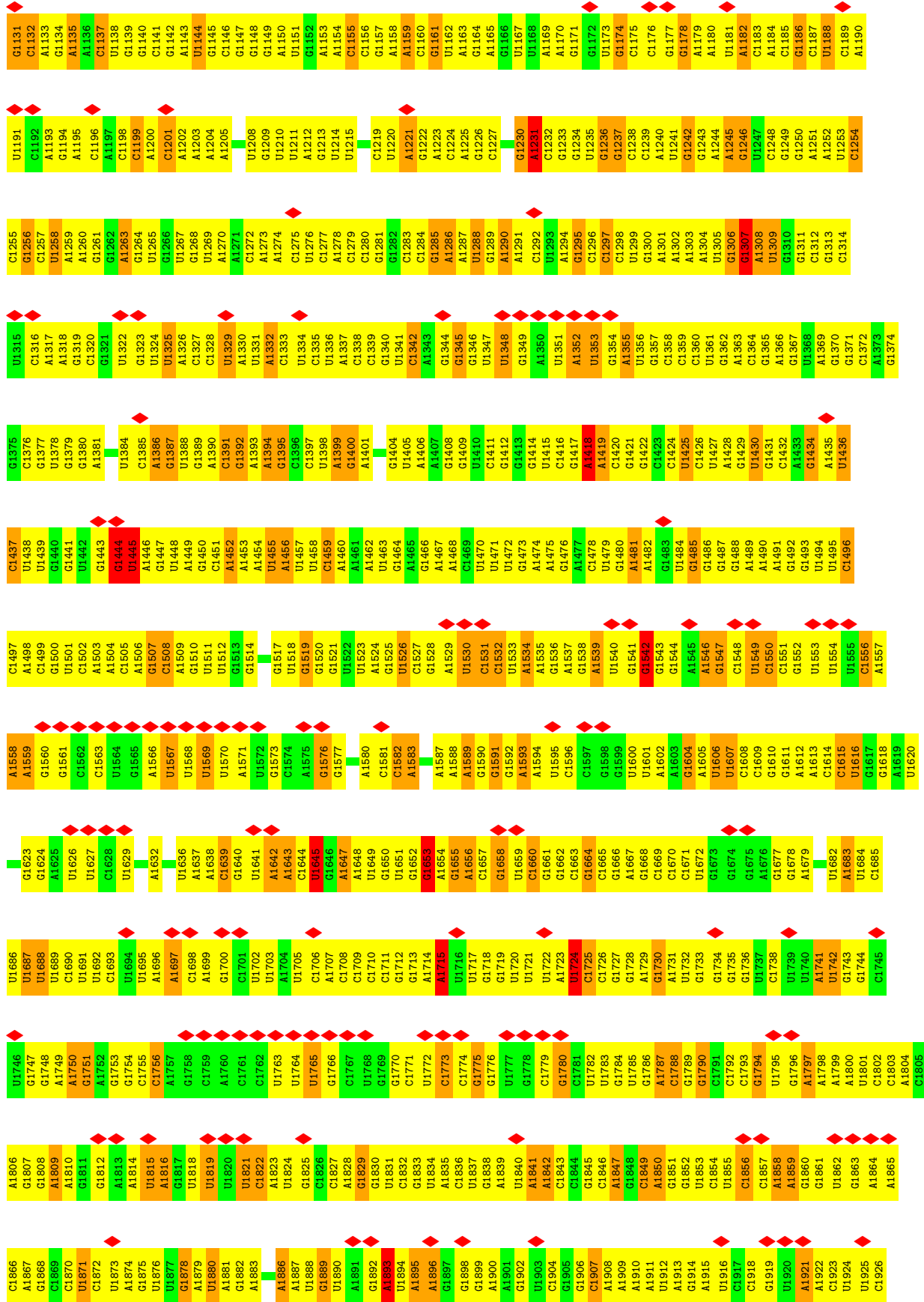


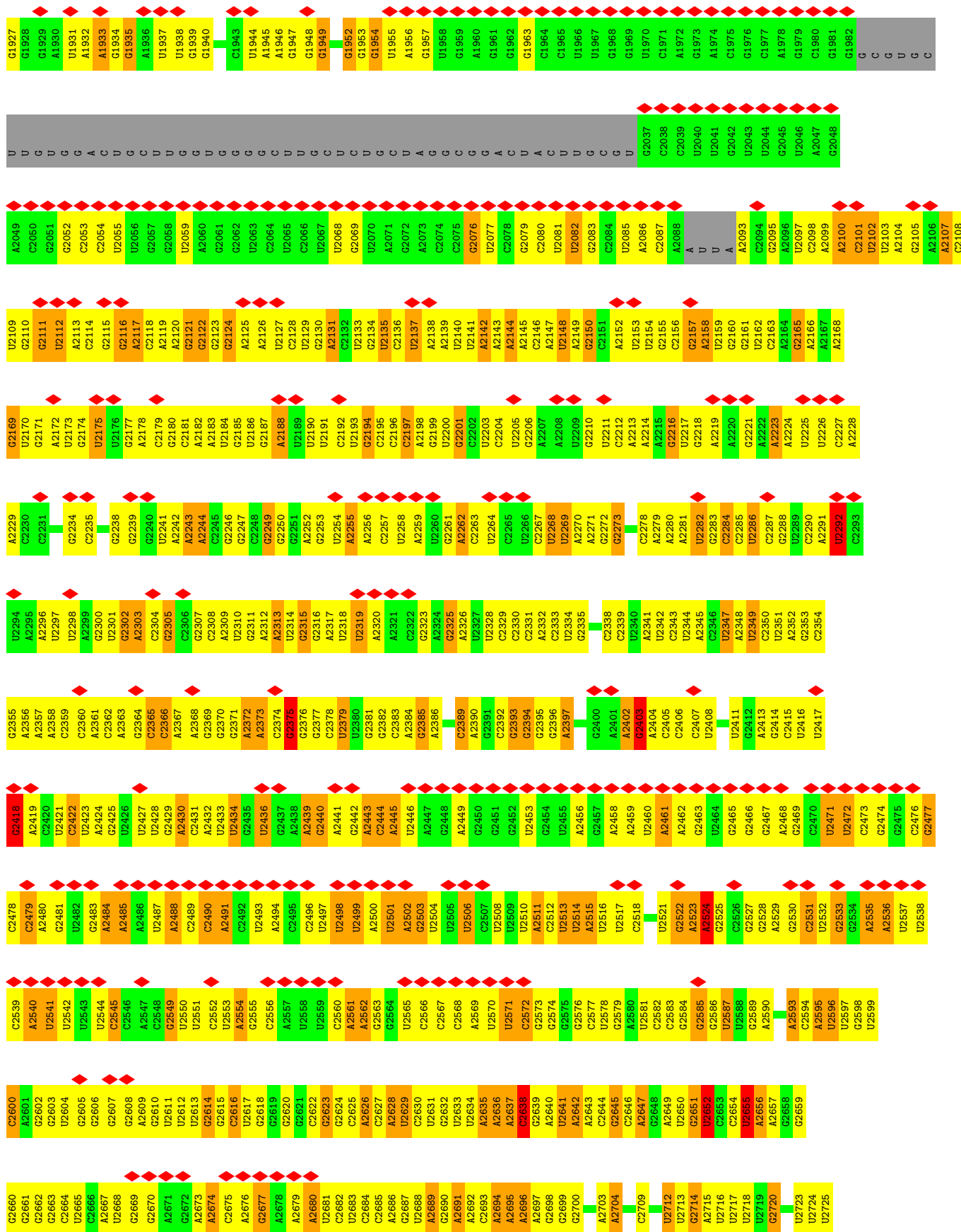
• Molecule 2: 25S ribosomal RNA

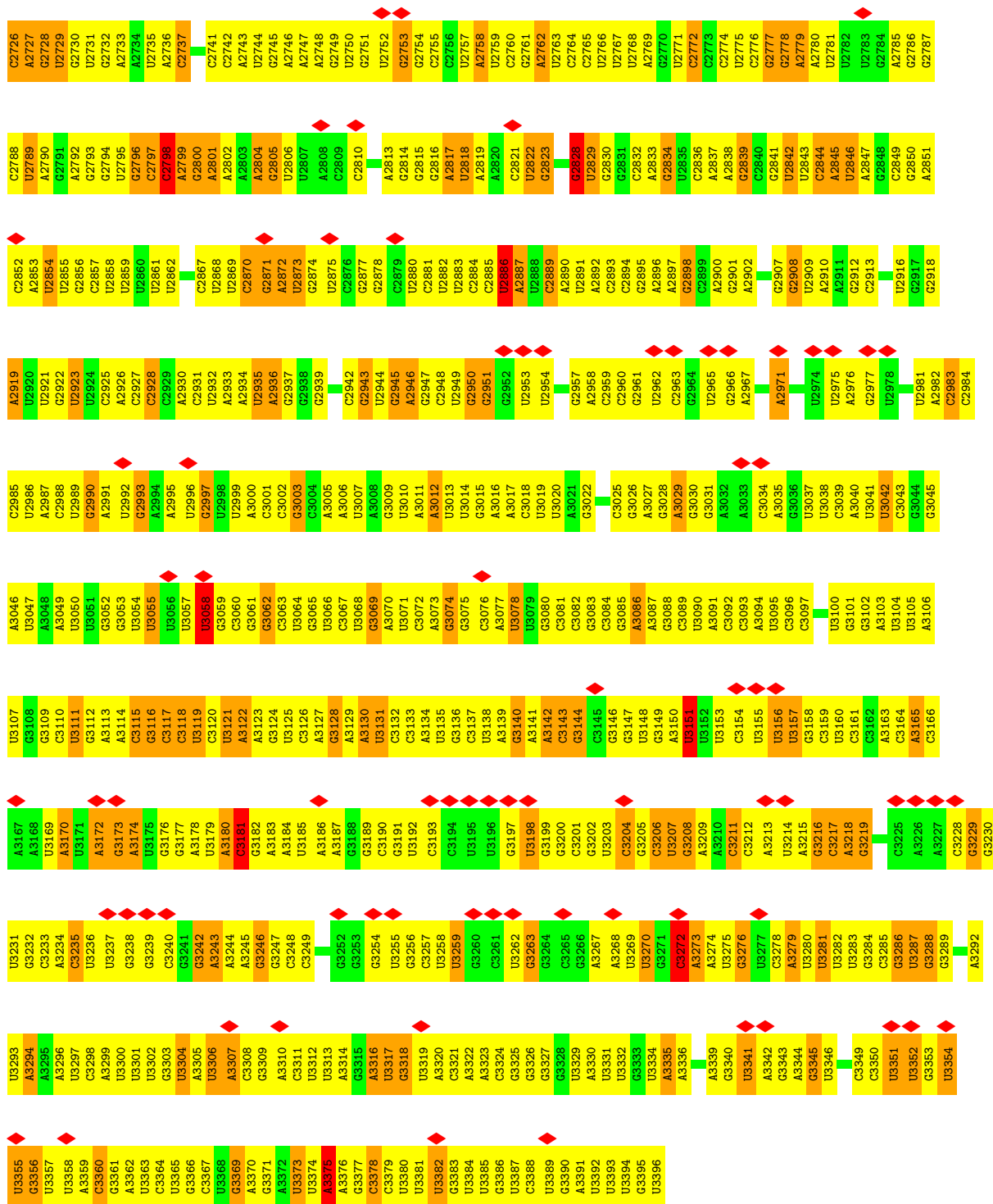




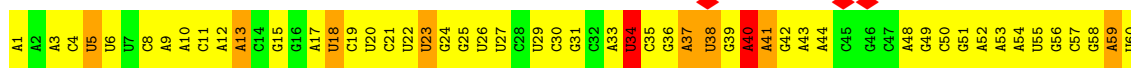


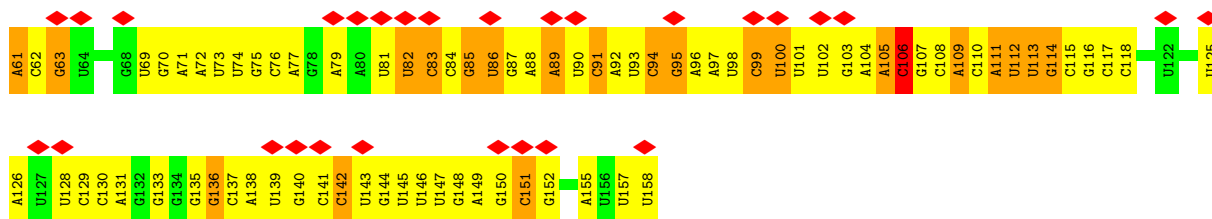




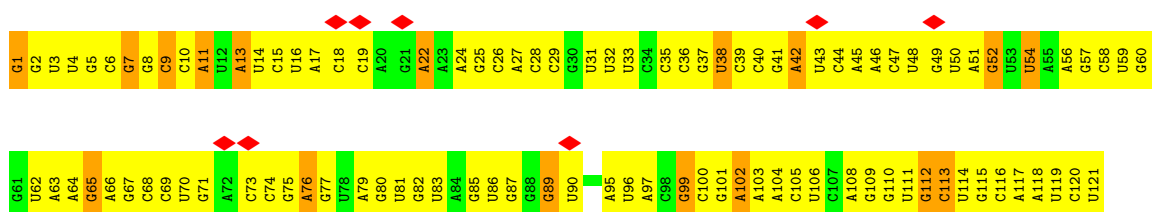


• Molecule 3: 5.8S ribosomal RNA

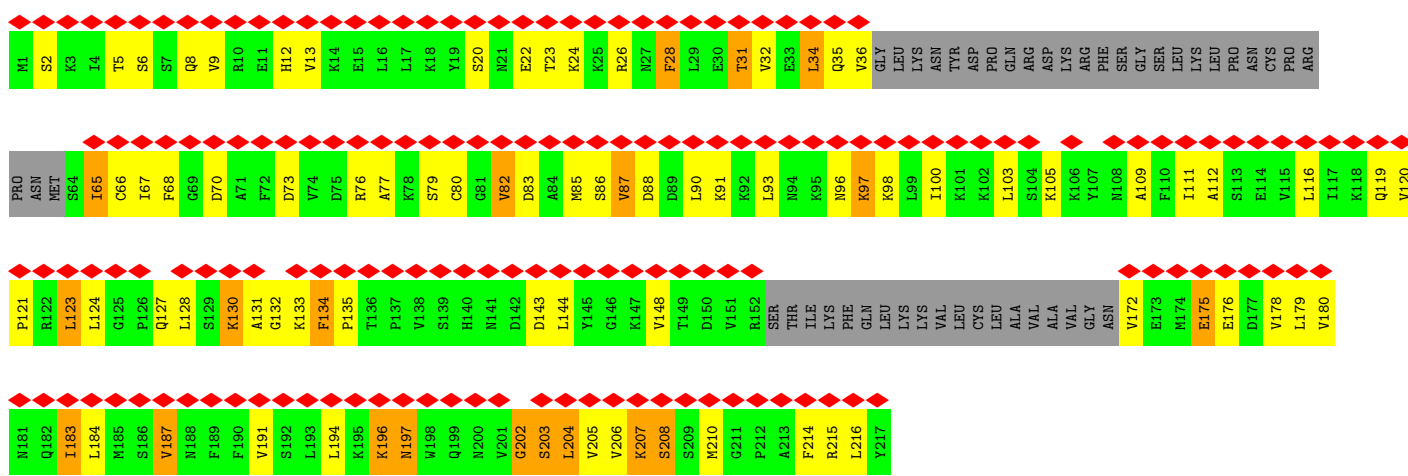
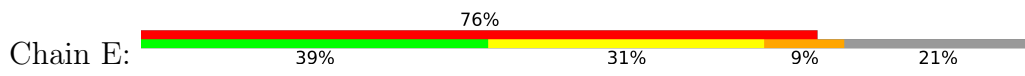




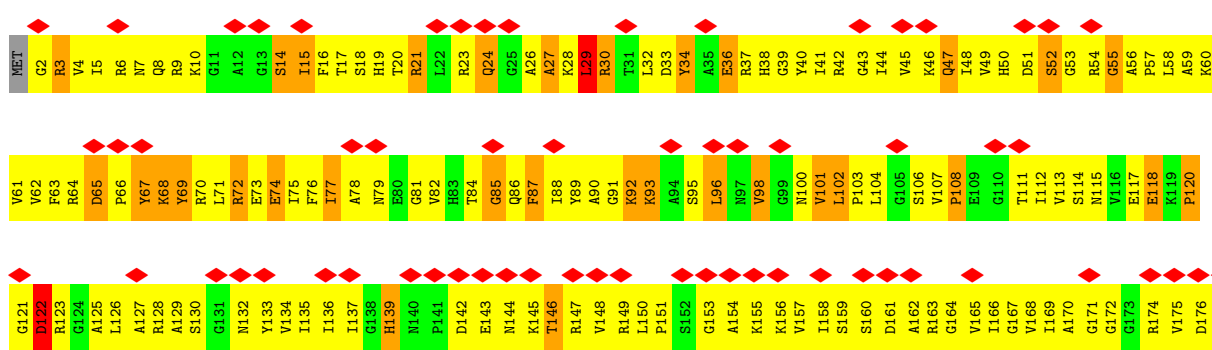
• Molecule 4: 5S ribosomal RNA

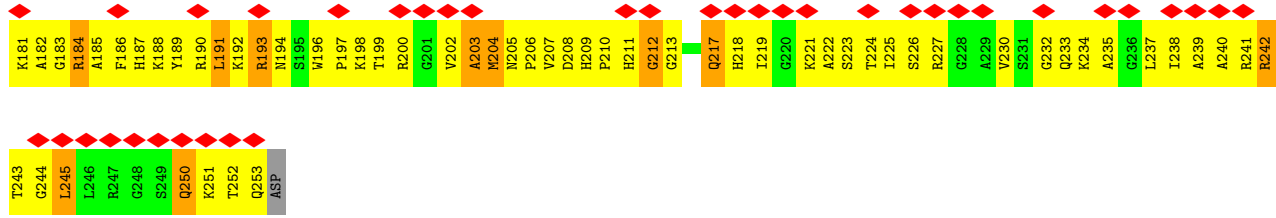


• Molecule 5: uL1 (yeast L1)

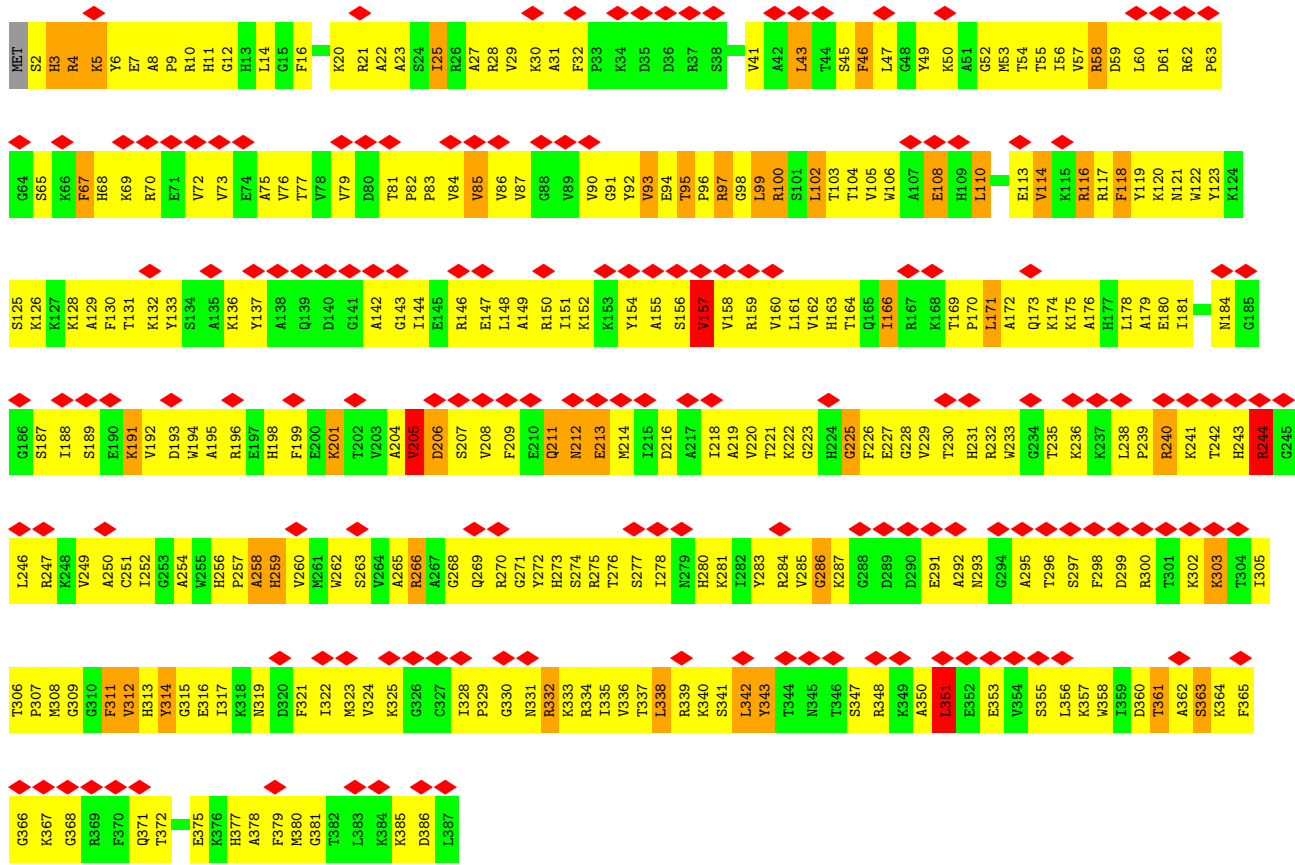


• Molecule 6: uL2 (yeast L2)

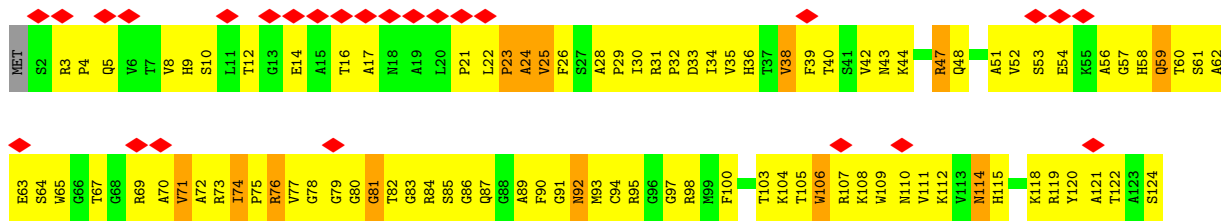


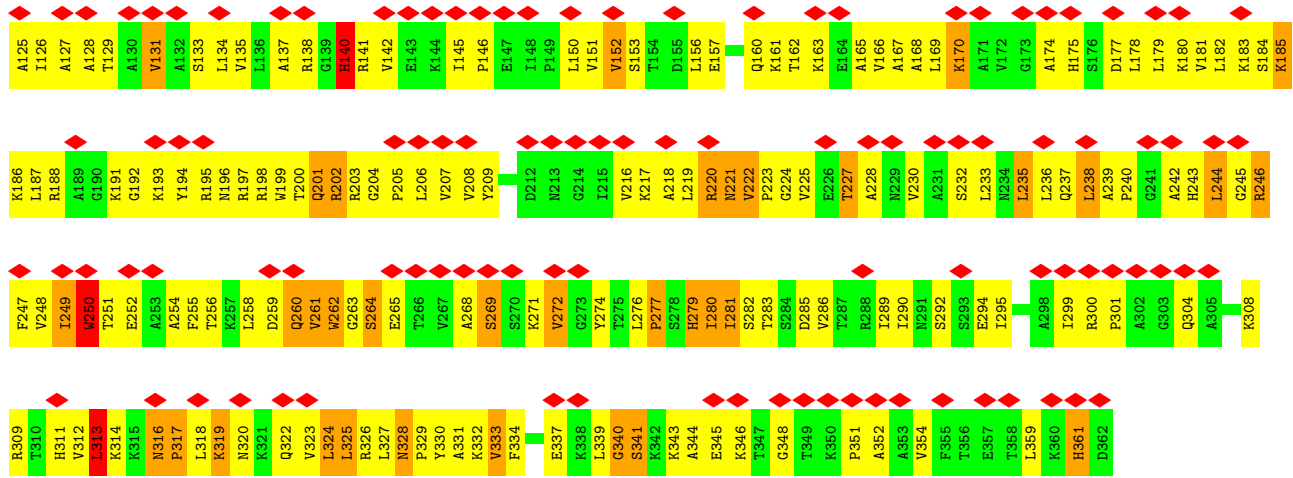


• Molecule 7: uL3 (yeast L3)

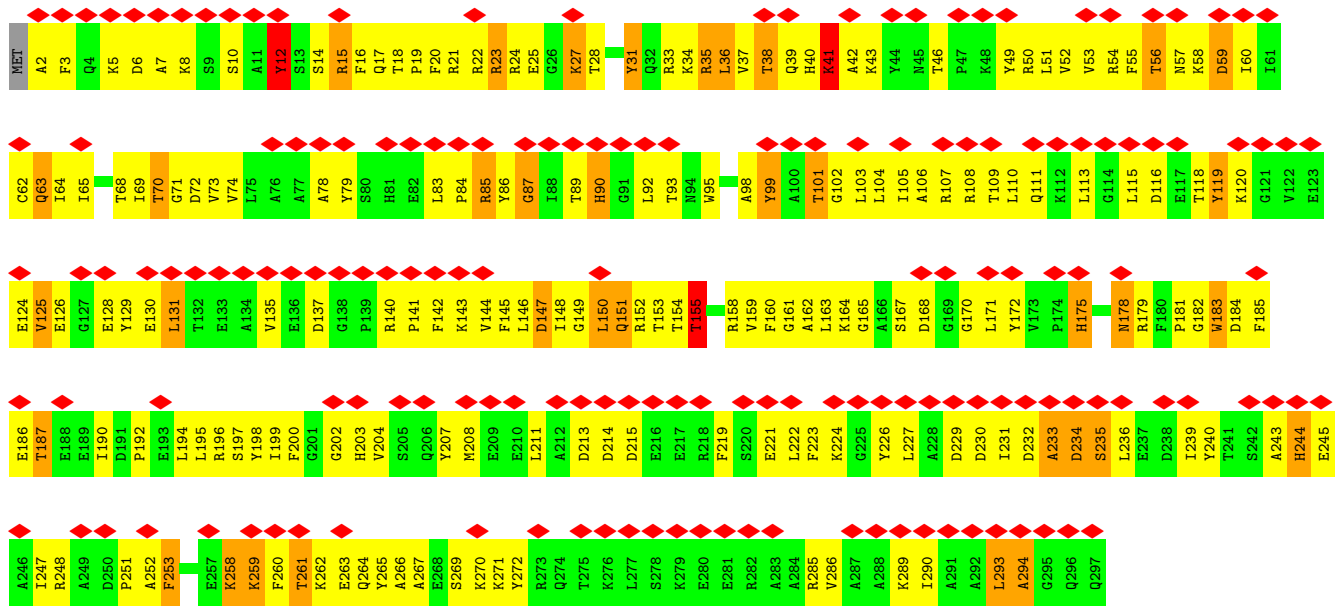


• Molecule 8: uL4 (yeast L4)

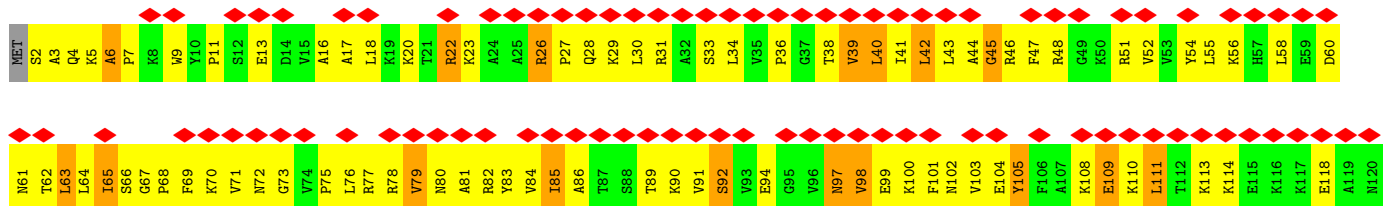




• Molecule 9: uL18 (yeast L5)

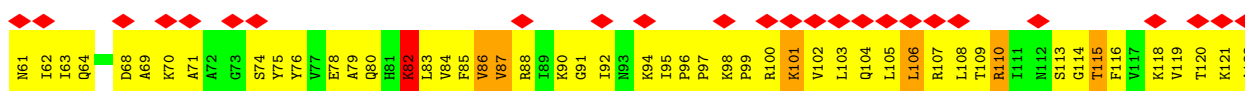
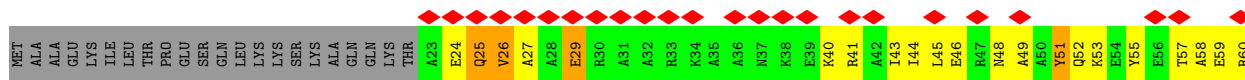


• Molecule 10: eL6 (yeast L6)



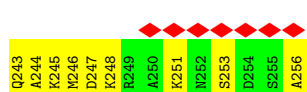
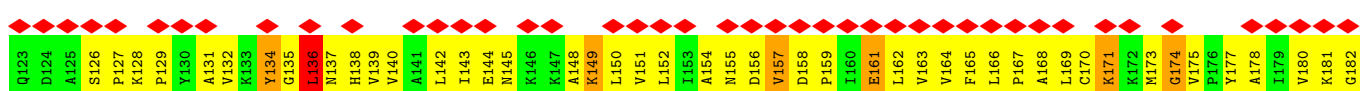
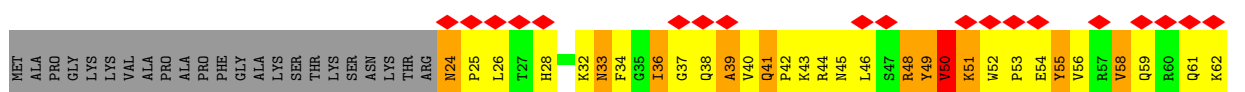


• Molecule 11: uL30 (yeast L7)



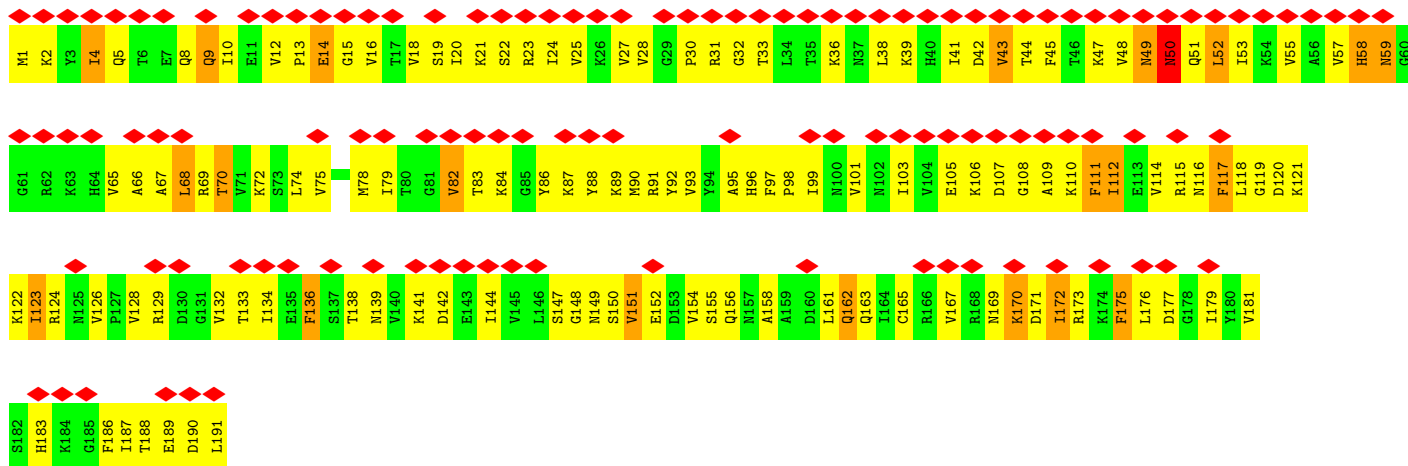
N244

• Molecule 12: eL8 (yeast L8)

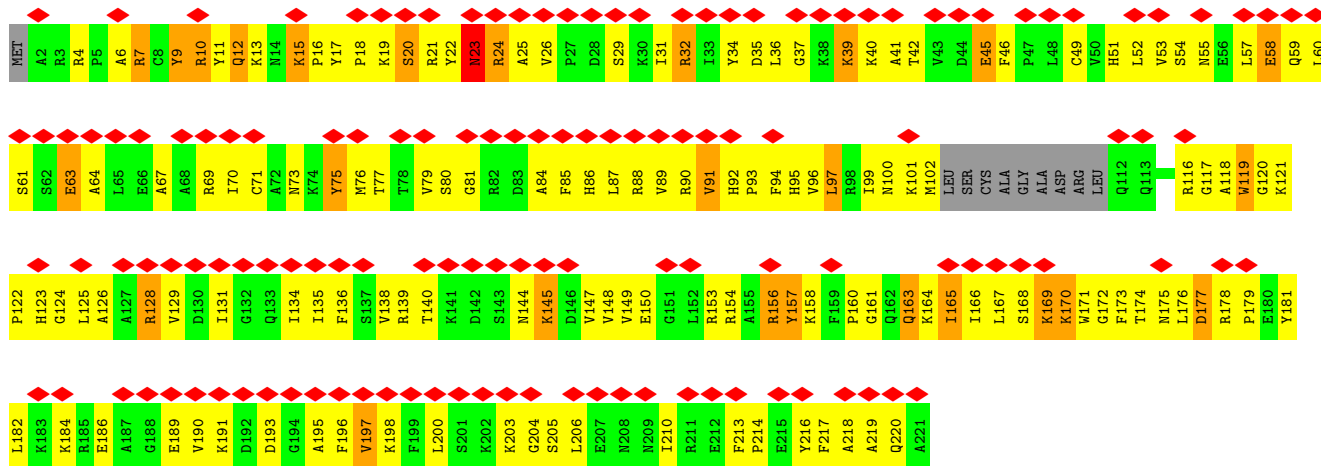


• Molecule 13: uL6 (yeast L9)

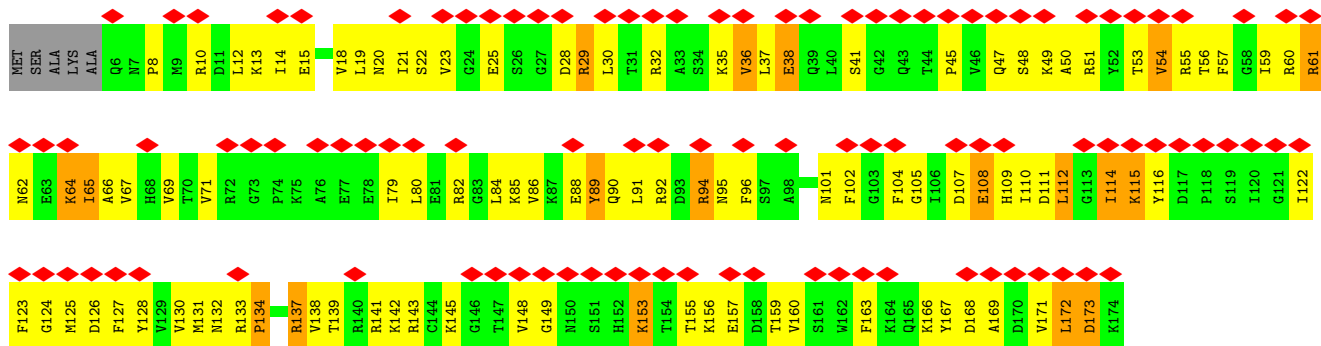




• Molecule 14: uL16 (yeast L10)

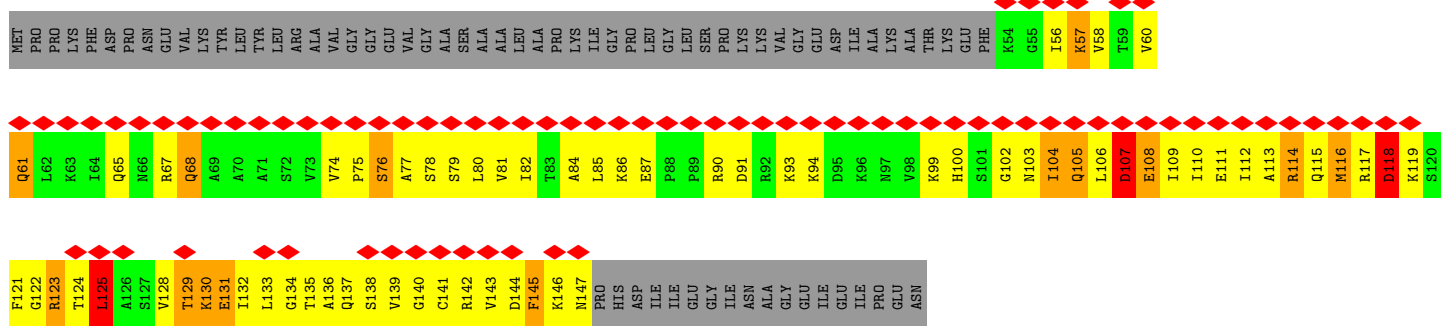


• Molecule 15: uL5 (yeast L11)

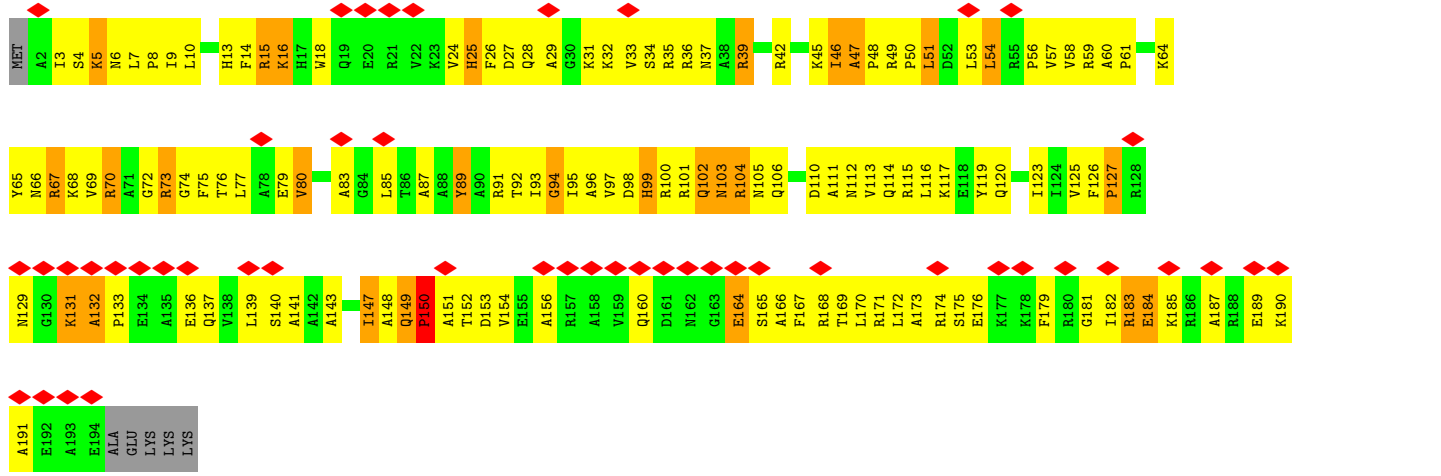


• Molecule 16: uL11 (yeast L12)





• Molecule 17: eL13 (yeast L13)

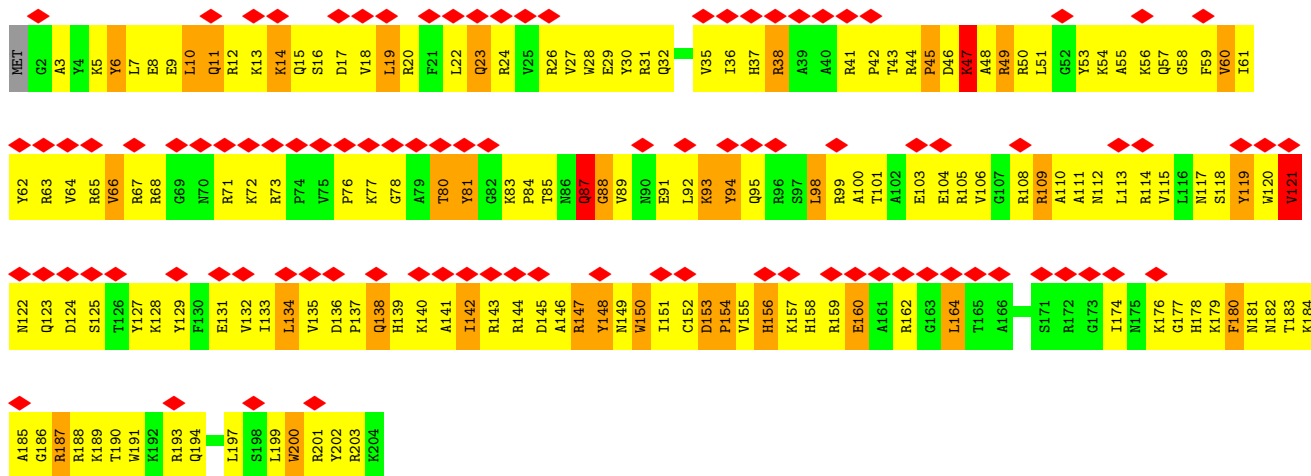


• Molecule 18: eL14 (yeast L14)



• Molecule 19: eL15 (yeast L15)

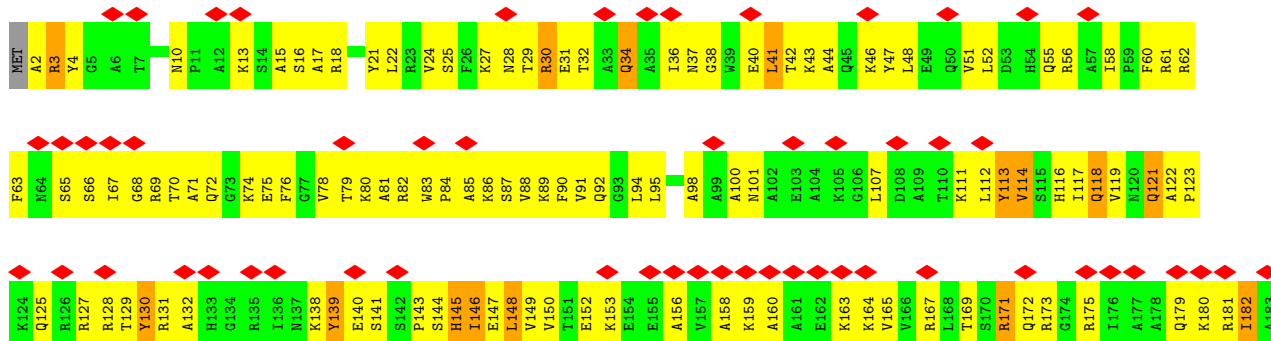




• Molecule 20: uL13 (yeast L16)

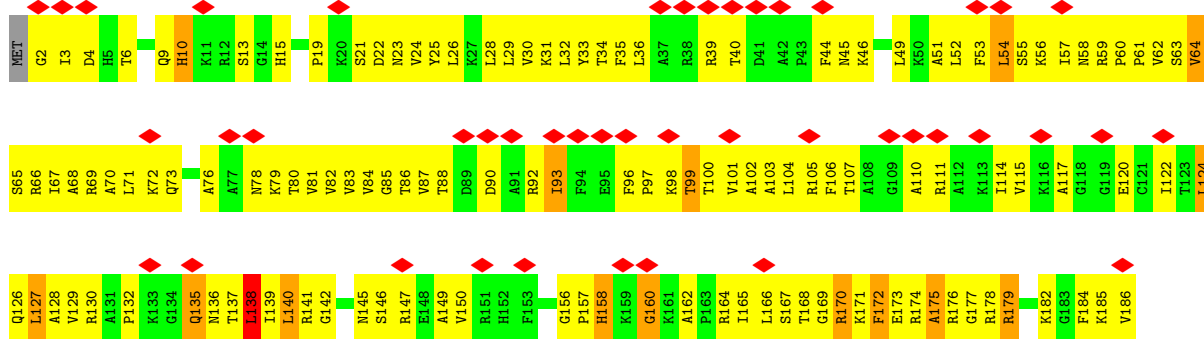


• Molecule 21: uL22 (yeast L17)

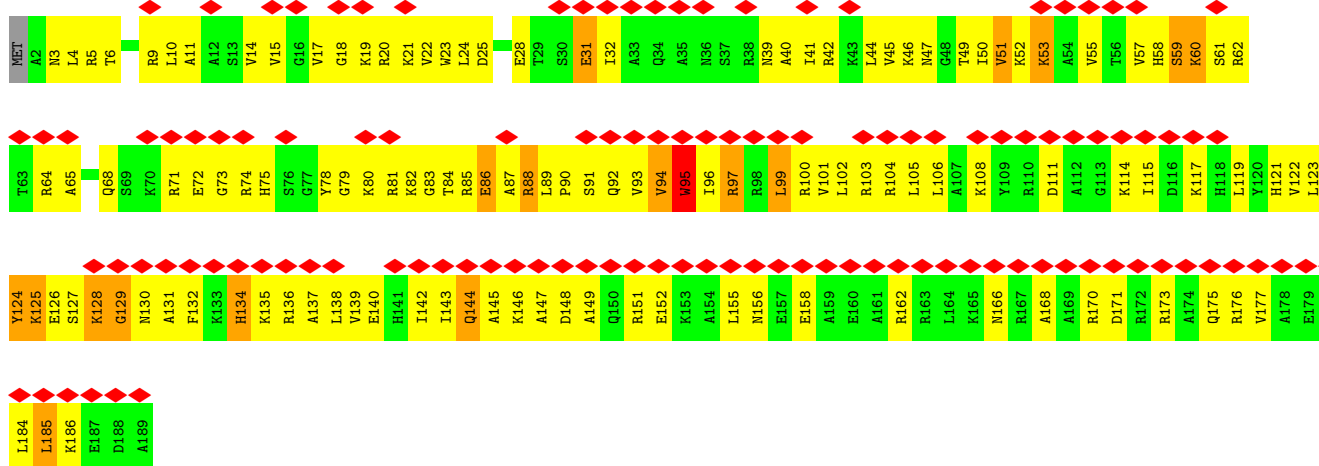


A184

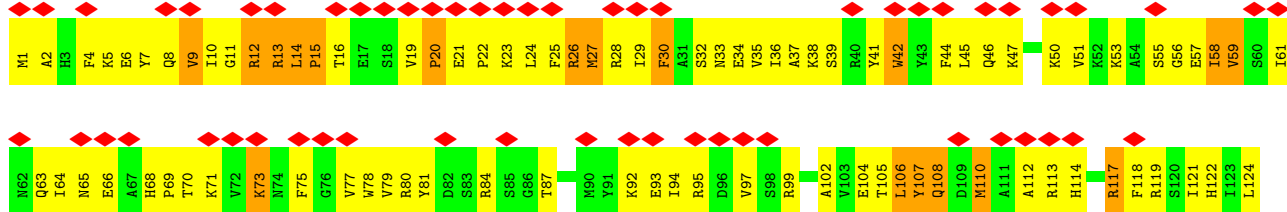
• Molecule 22: eL18 (yeast L18)

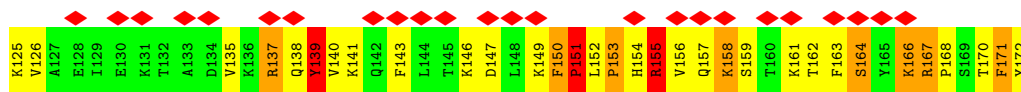


• Molecule 23: eL19 (yeast L19)

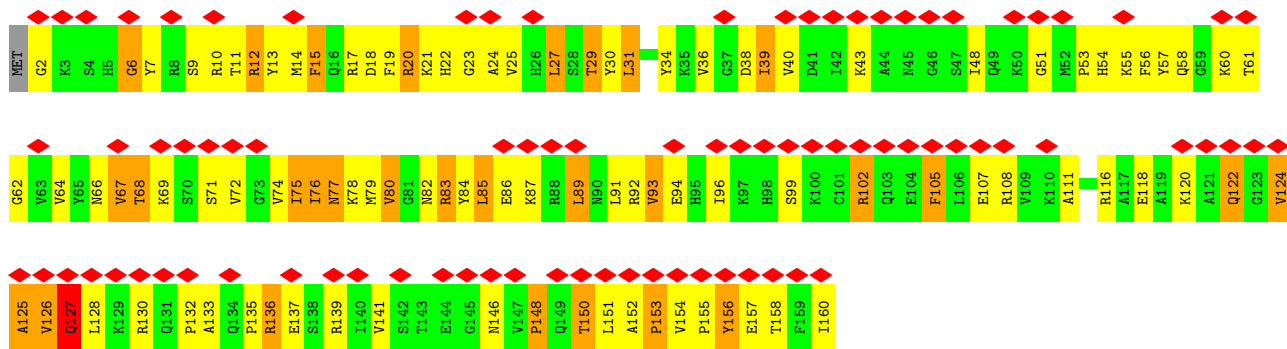


• Molecule 24: eL20 (yeast L20)

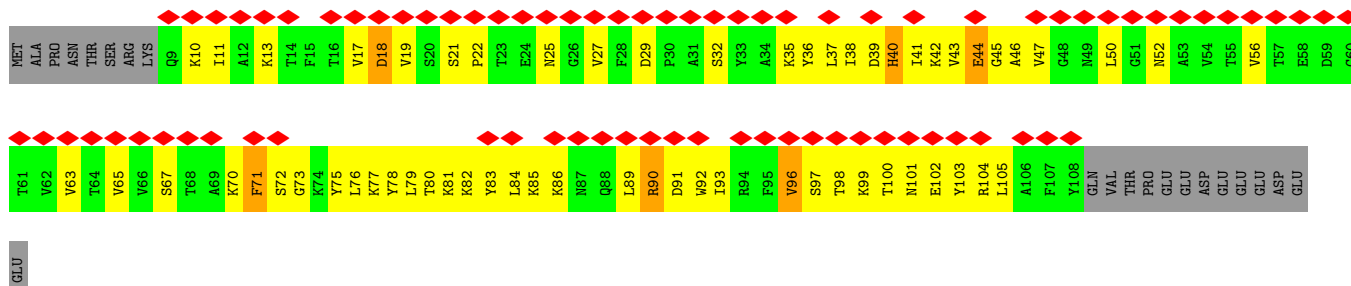




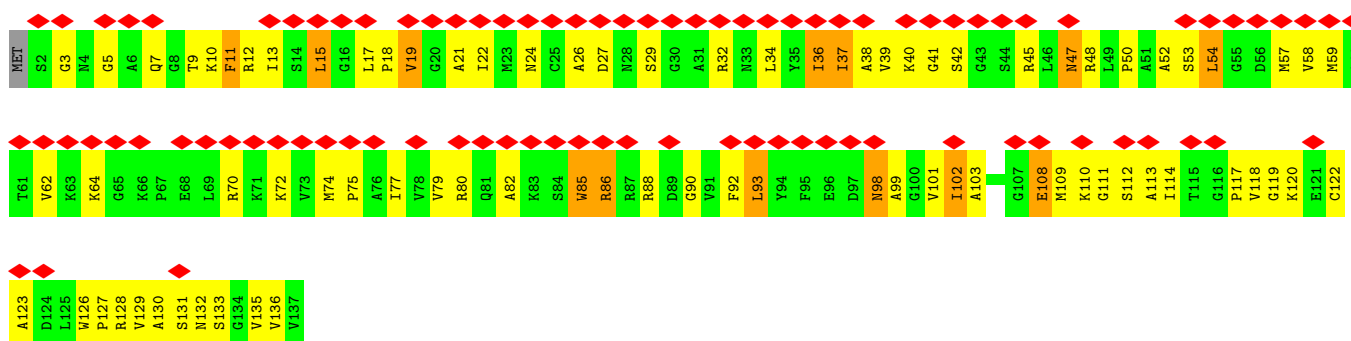
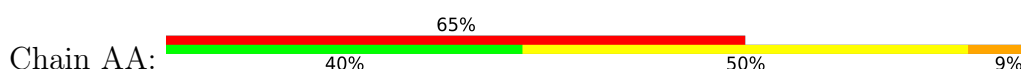
• Molecule 25: eL21 (yeast L21)



• Molecule 26: eL22 (yeast L22)

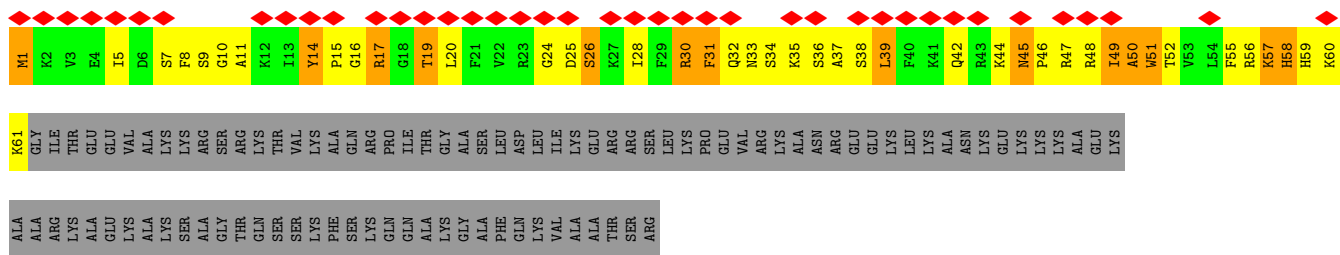


• Molecule 27: uL14 (yeast L23)

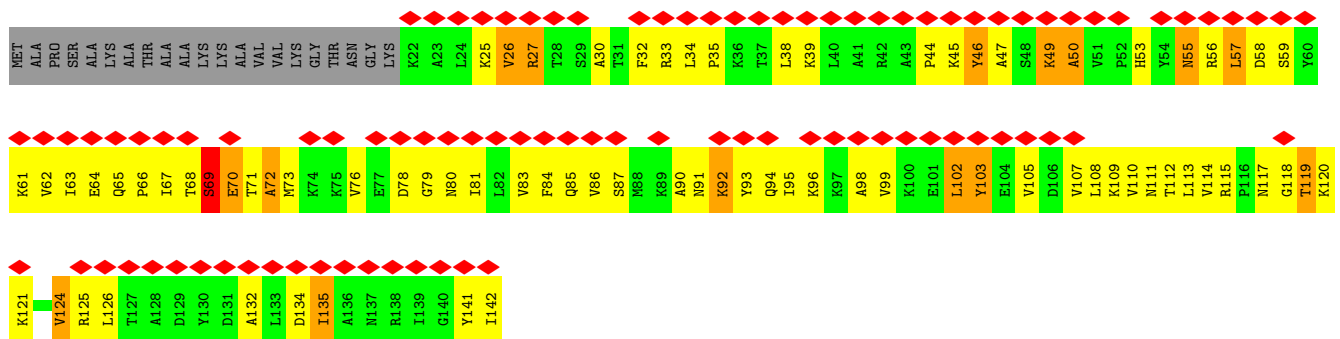


• Molecule 28: eL24 (yeast L24)





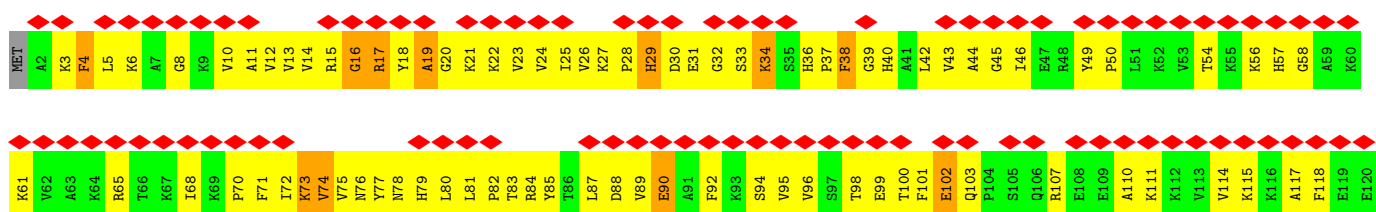
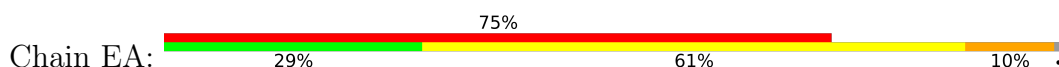
• Molecule 29: uL23 (yeast L25)



• Molecule 30: uL24 (yeast L26)

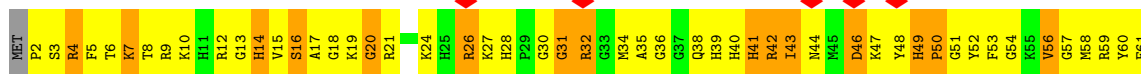


• Molecule 31: eL27 (yeast L27)





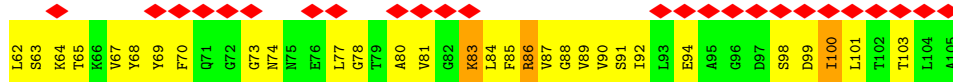
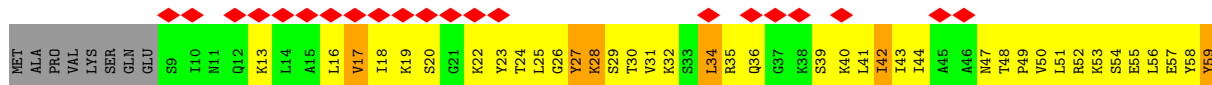
• Molecule 32: uL15 (yeast L28)



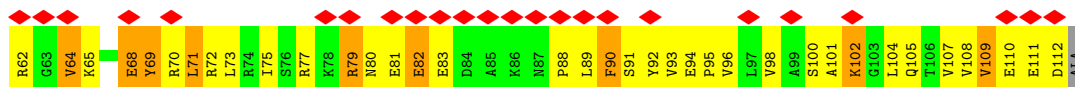
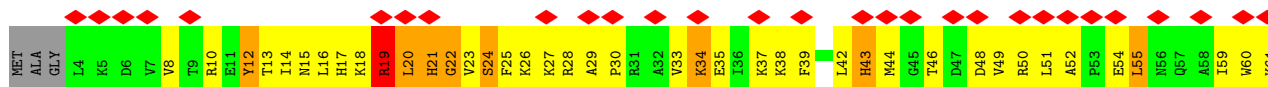
• Molecule 33: eL29 (yeast L29)



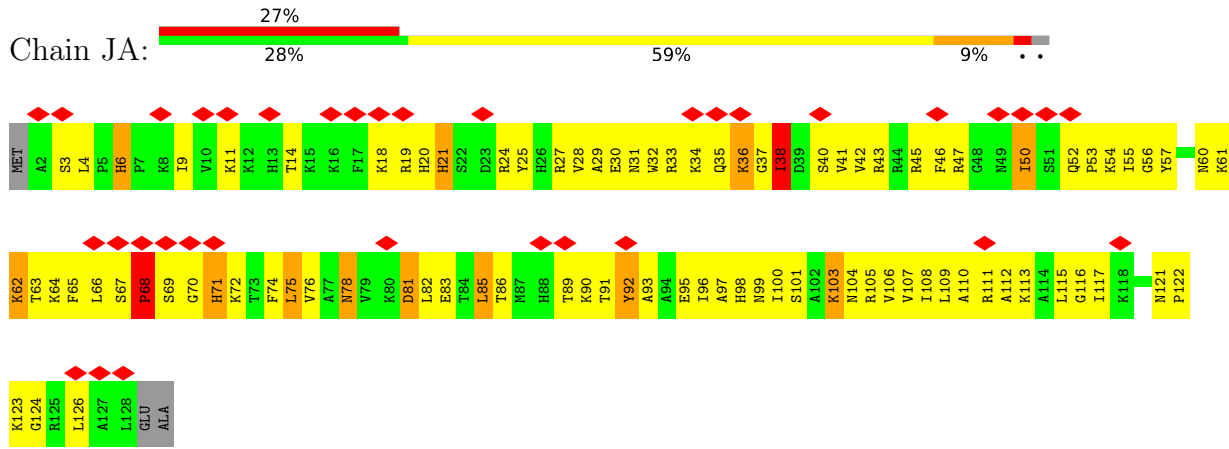
• Molecule 34: eL30 (yeast L30)



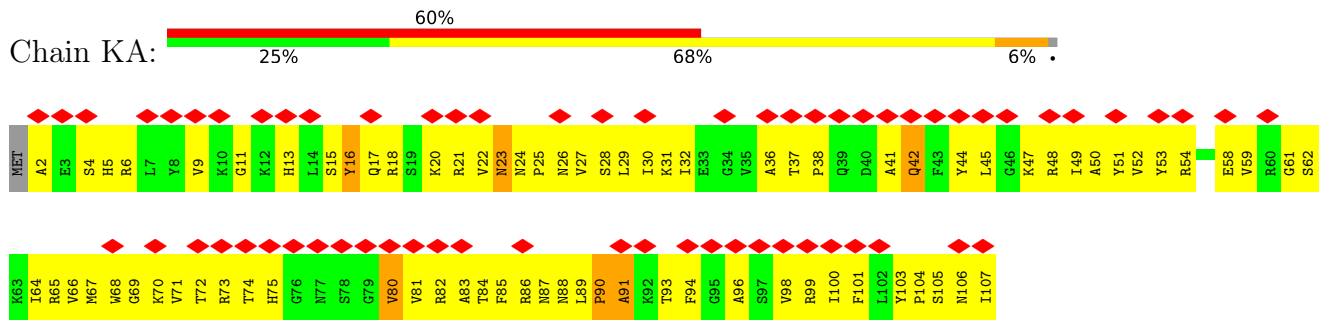
• Molecule 35: eL31 (yeast L31)



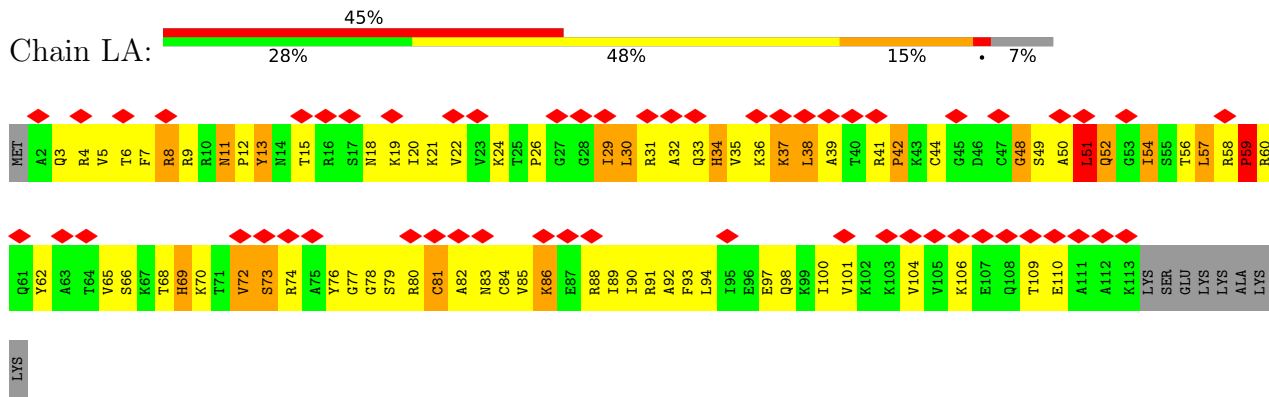
• Molecule 36: eL32 (yeast L32)



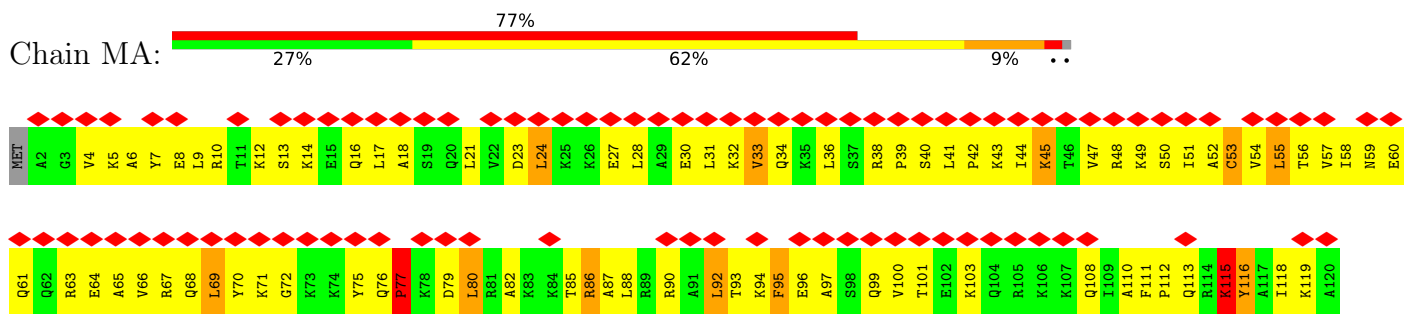
• Molecule 37: eL33 (yeast L33)



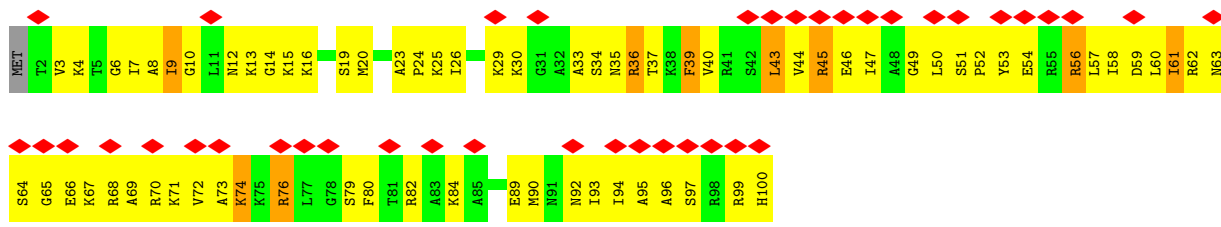
• Molecule 38: eL34 (yeast L34)



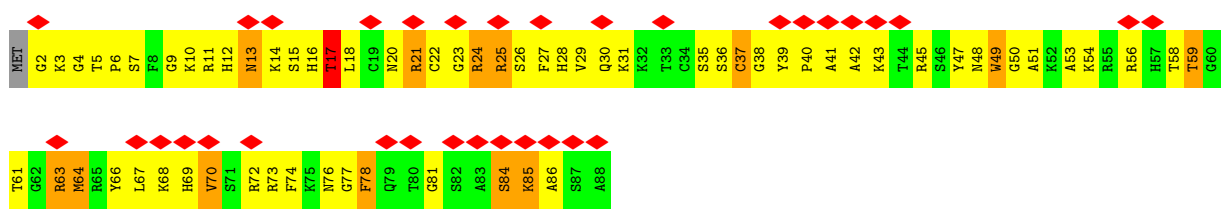
• Molecule 39: uL29 (yeast L35)



• Molecule 40: eL36 (yeast L36)



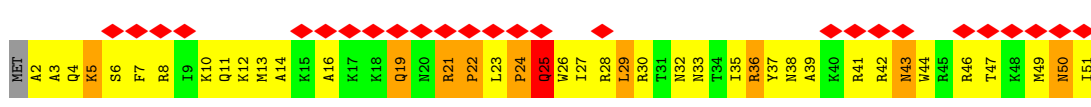
• Molecule 41: eL37 (yeast L37)



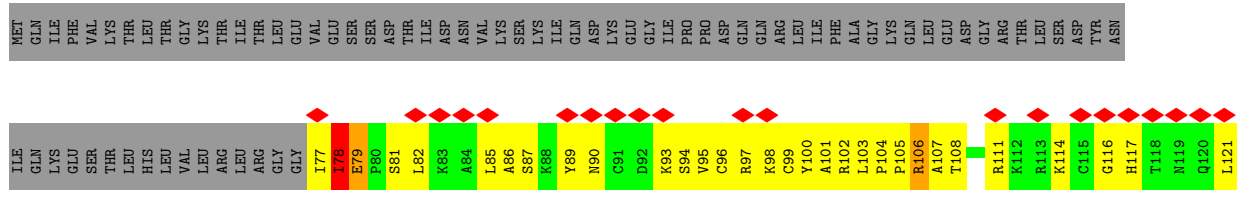
• Molecule 42: eL38 (yeast L38)



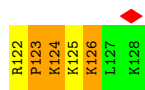
• Molecule 43: eL39 (yeast L39)



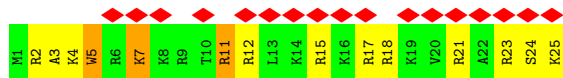
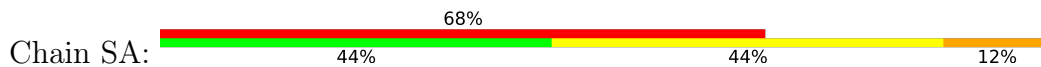
• Molecule 44: eL40 (yeast L40)



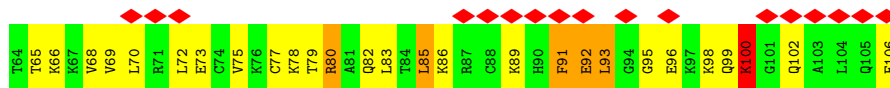




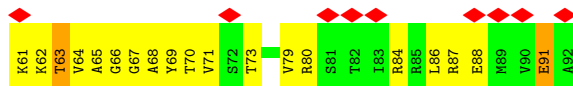
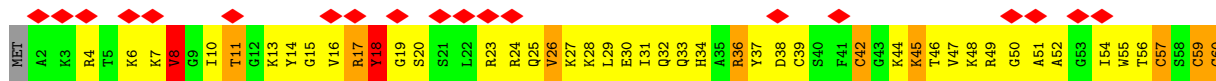
• Molecule 45: eL41 (yeast L41)



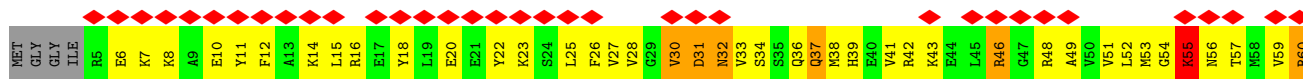
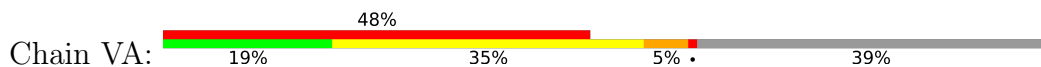
• Molecule 46: eL42 (yeast L42)

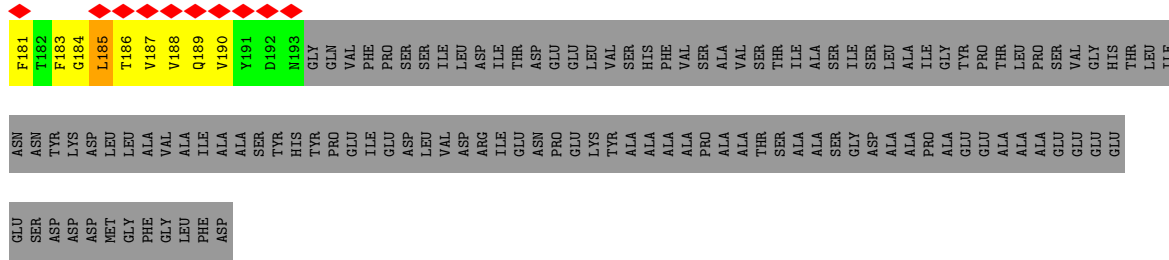


• Molecule 47: eL43 (yeast L43)

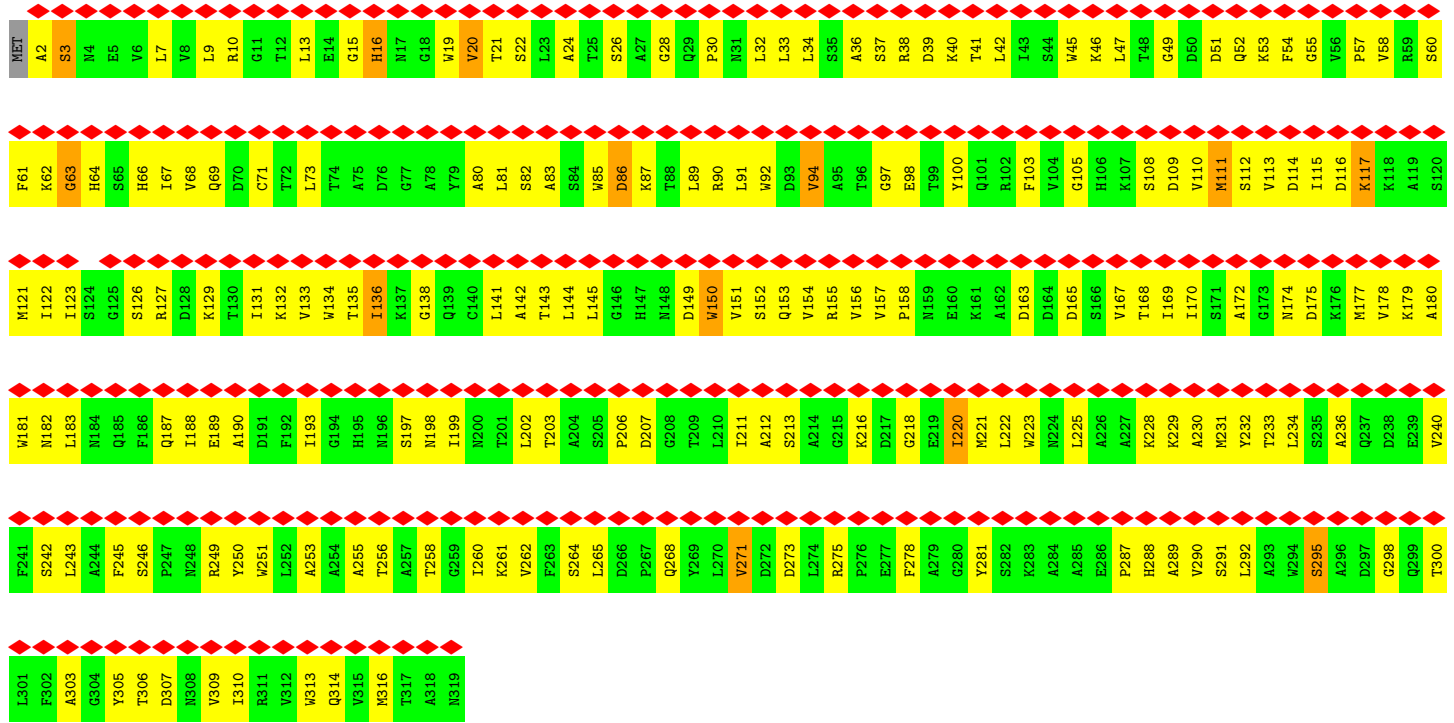


• Molecule 48: uL10 (yeast P0)

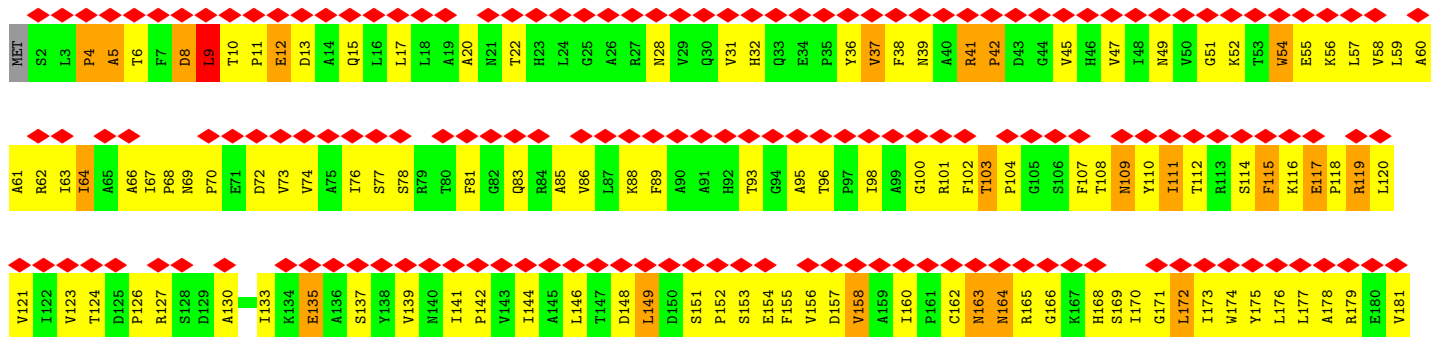
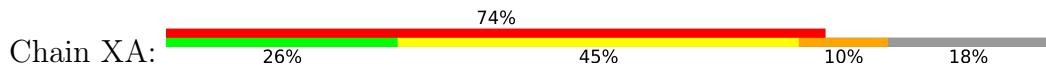


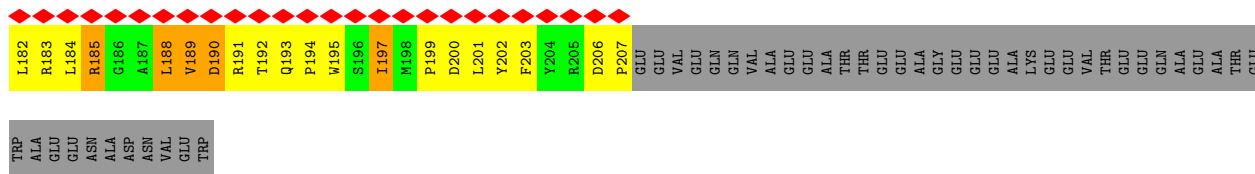


• Molecule 49: RACK1 (yeast Asc1)

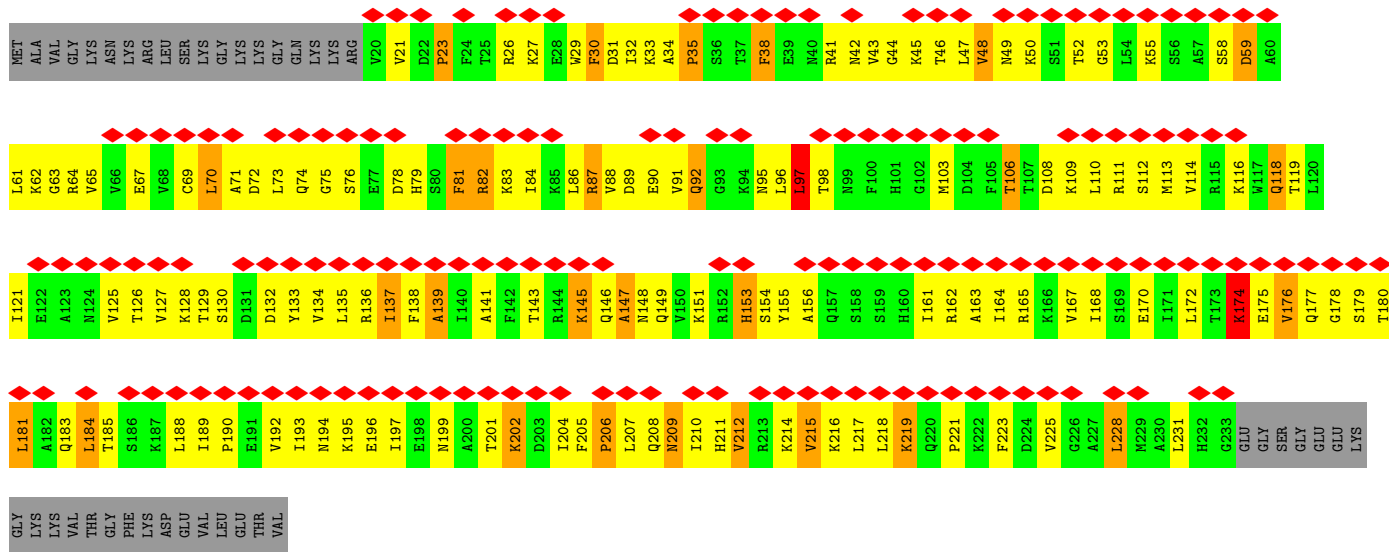


• Molecule 50: uS2 (yeast S0)

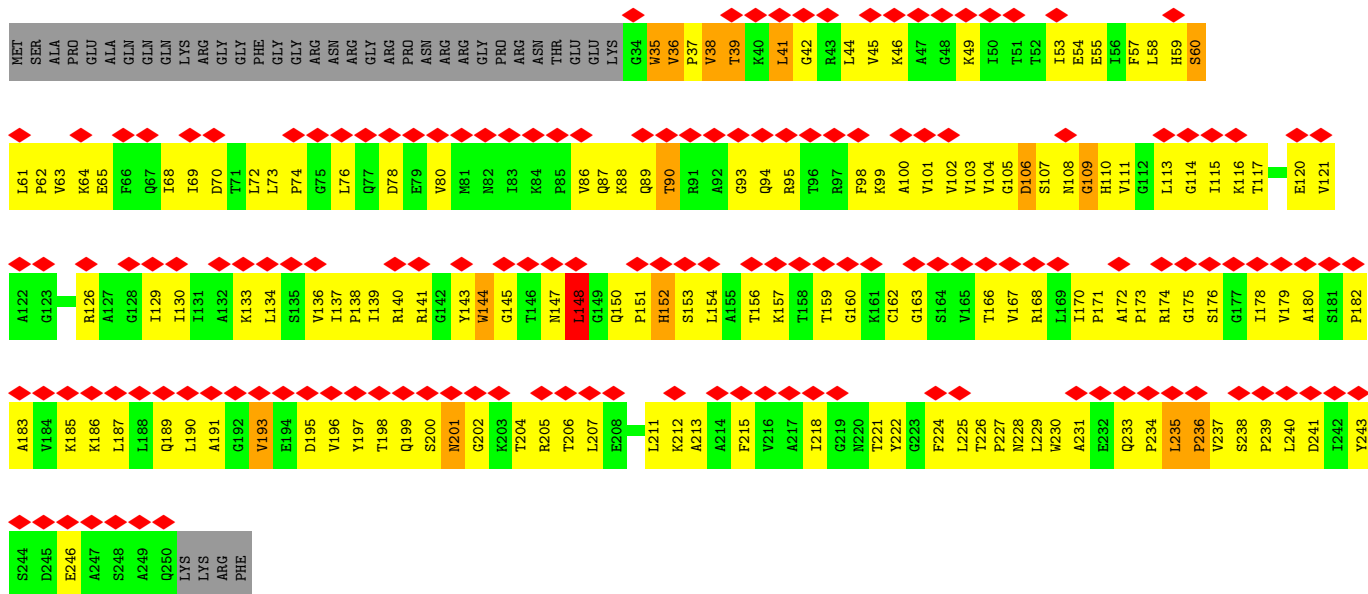




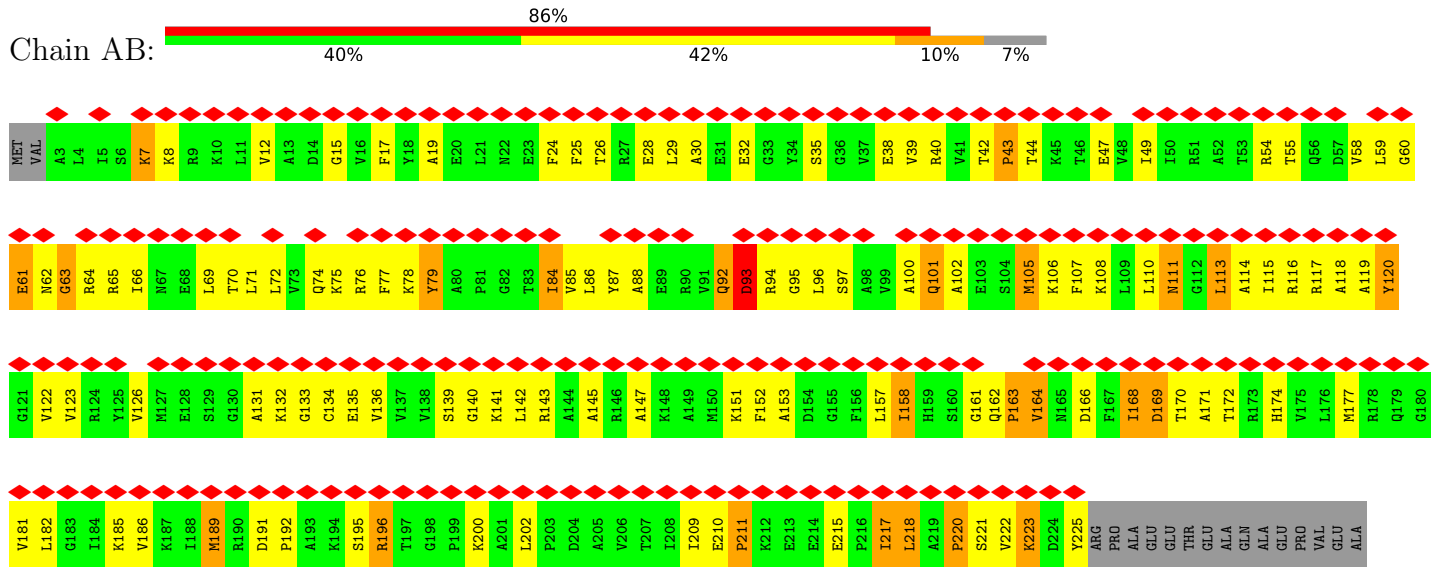
• Molecule 51: eS1 (yeast S1)



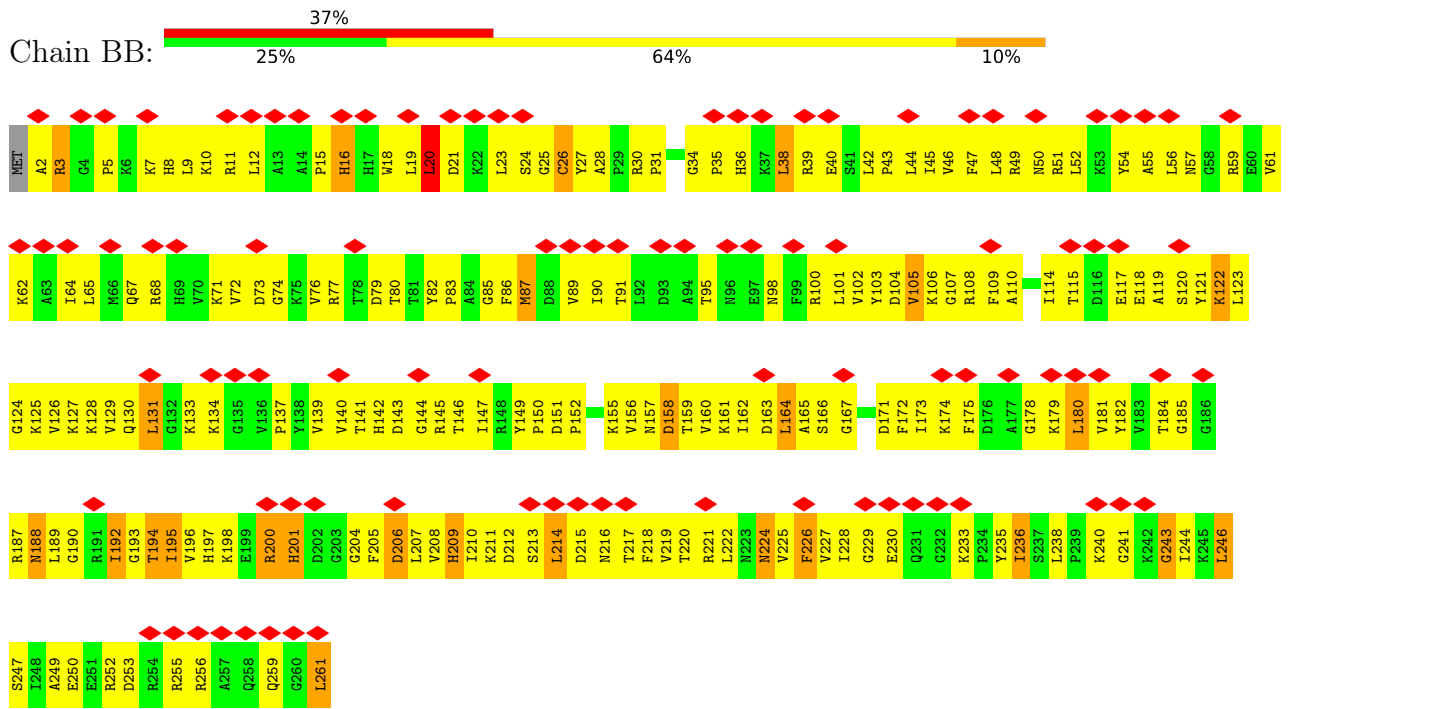
• Molecule 52: uS5 (yeast S2)



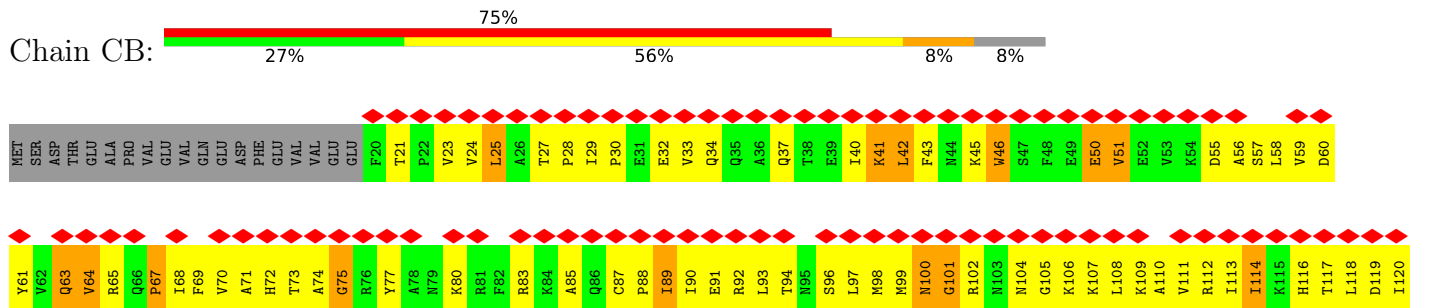
• Molecule 53: uS3 (yeast S3)

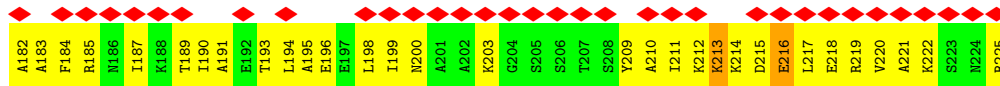


• Molecule 54: eS4 (yeast S4)

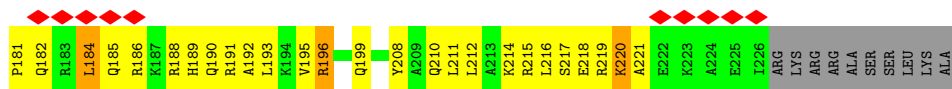
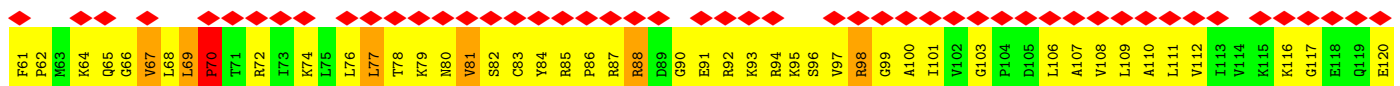
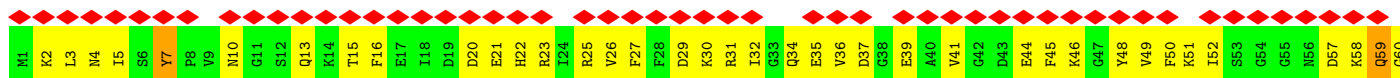


• Molecule 55: uS7 (yeast S5)

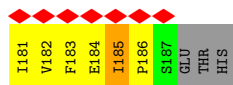




• Molecule 56: eS6 (yeast S6)



• Molecule 57: eS7 (yeast S7)



• Molecule 58: eS8 (yeast S8)

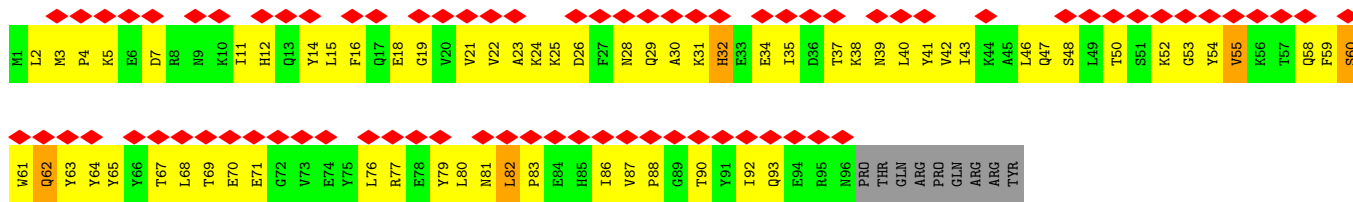
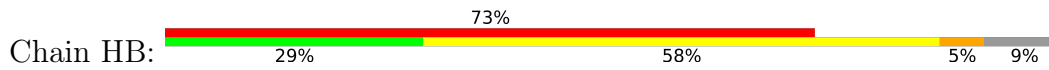




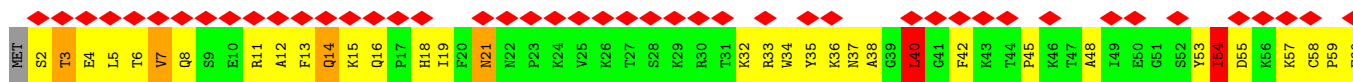
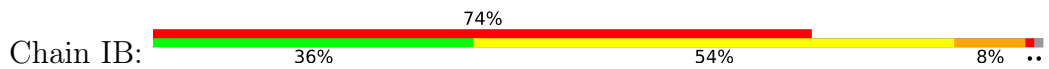
• Molecule 59: uS4 (yeast S9)



• Molecule 60: eS10 (yeast S10)

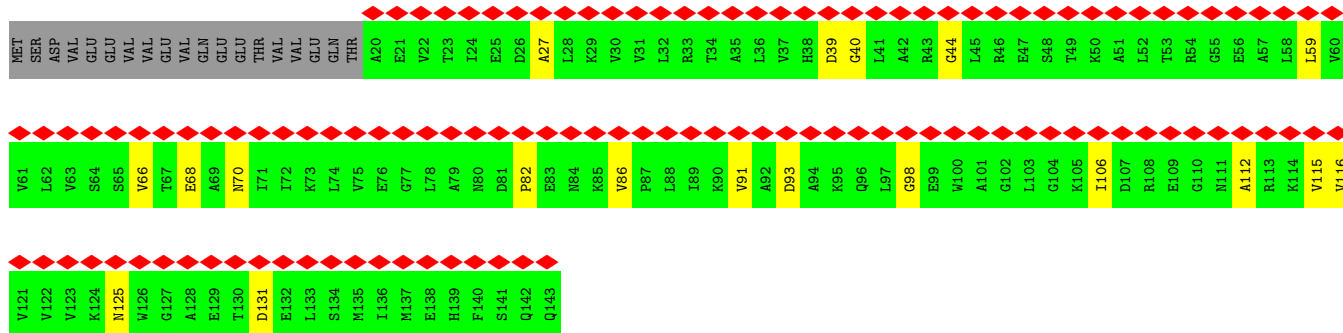
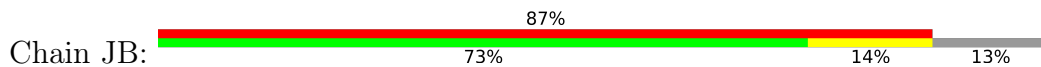


• Molecule 61: uS17 (yeast S11)

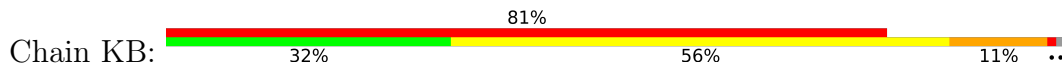




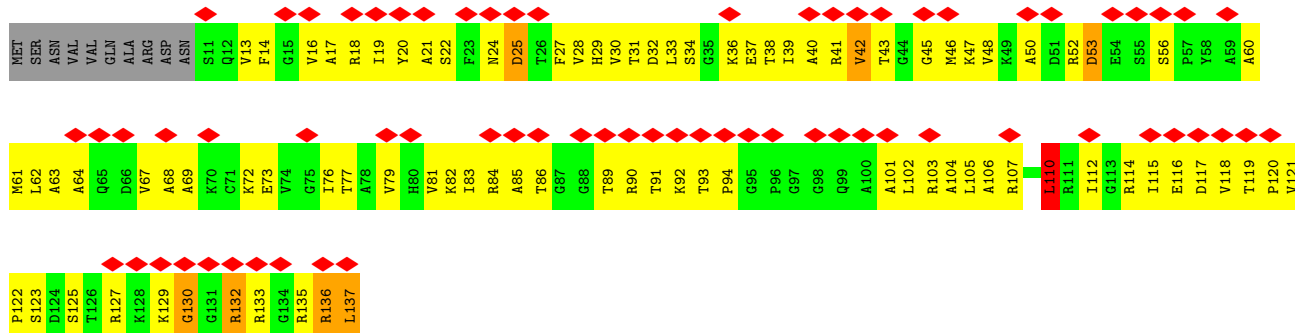
• Molecule 62: eS12 (yeast S12)



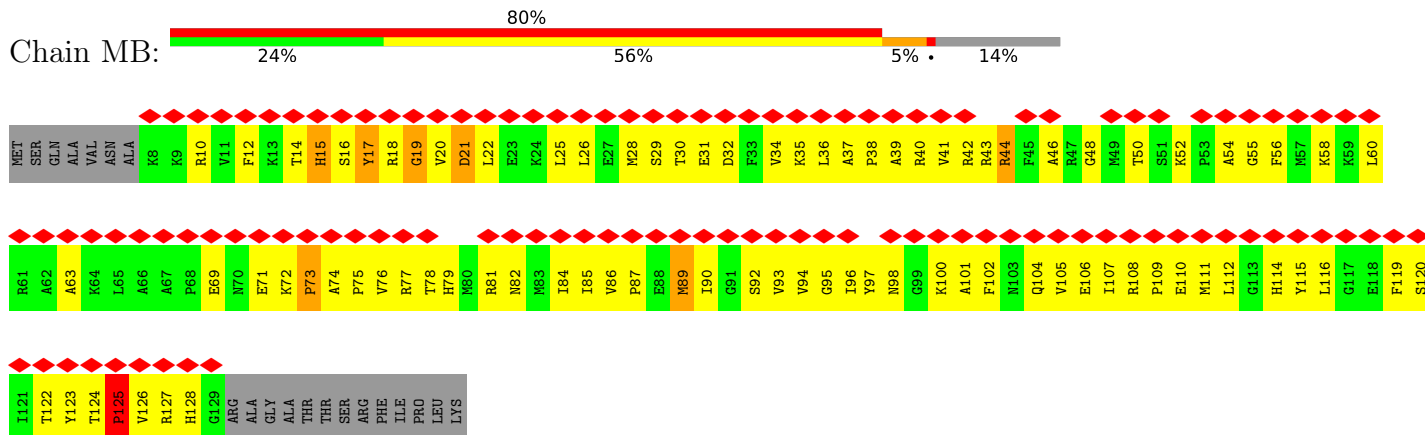
• Molecule 63: uS15 (yeast S13)



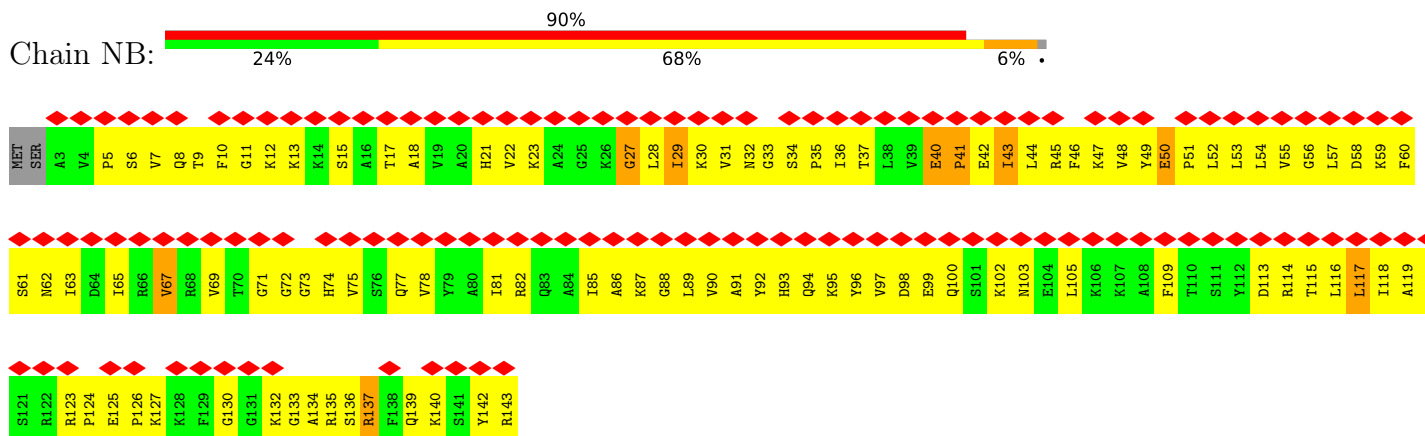
• Molecule 64: uS11 (yeast S14)



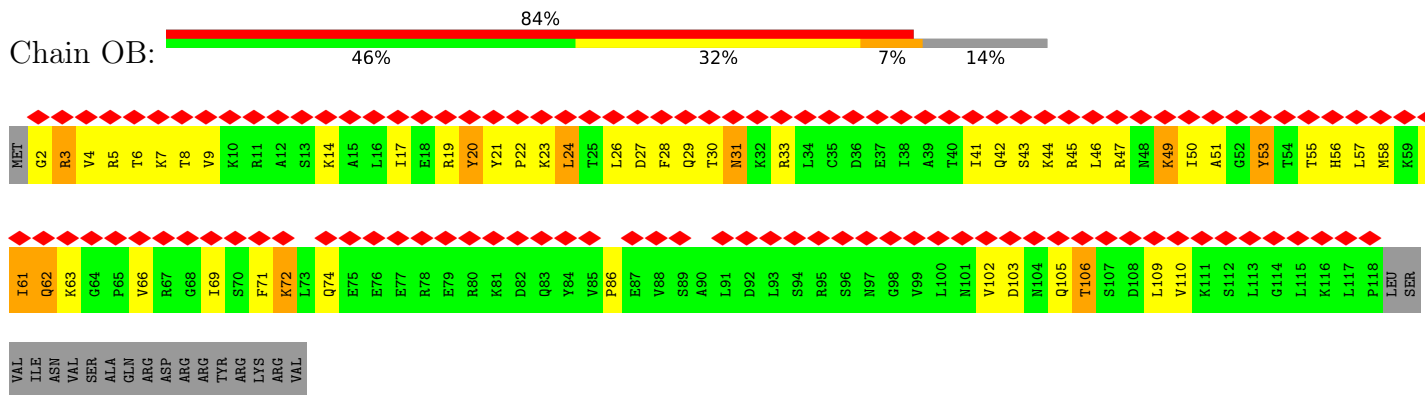
• Molecule 65: uS19 (yeast S15)



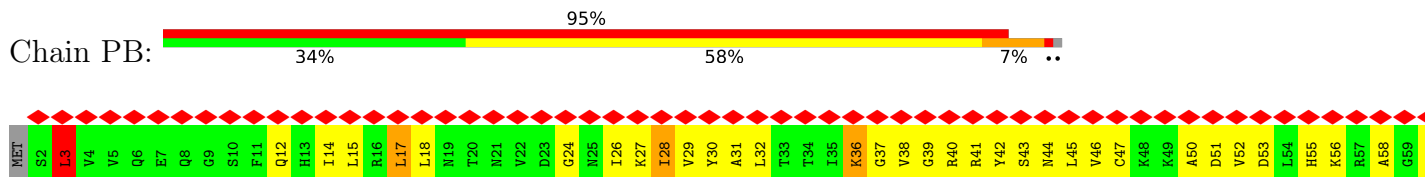
• Molecule 66: uS9 (yeast S16)



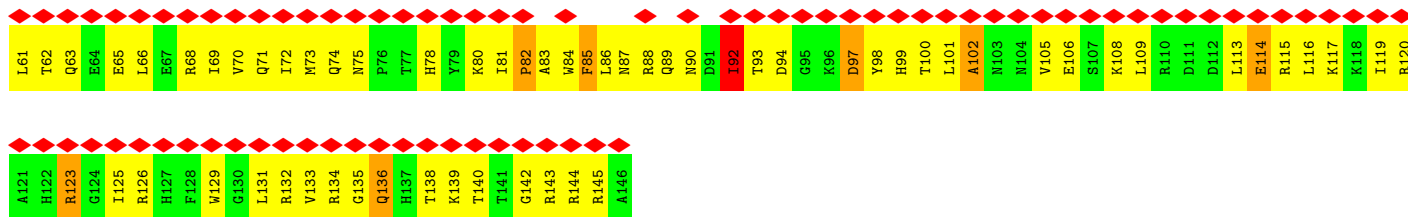
• Molecule 67: eS17 (yeast S17)



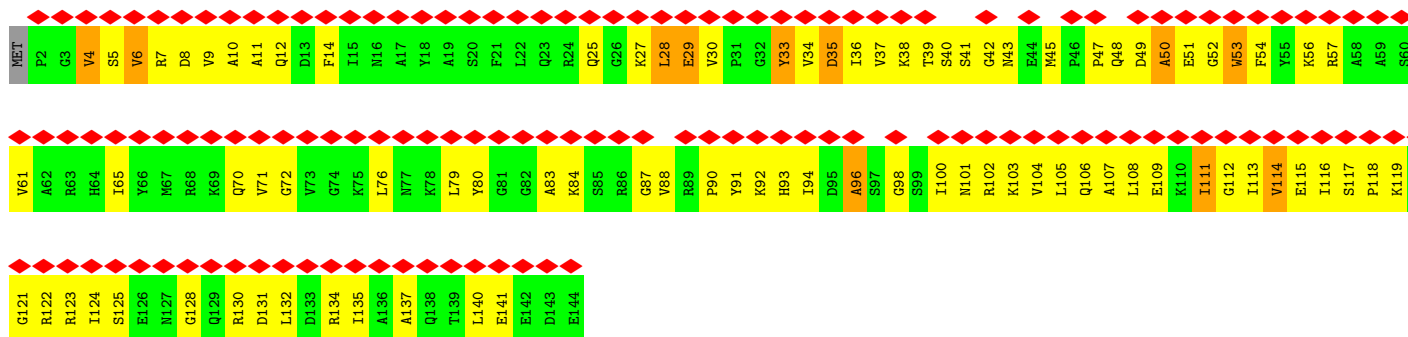
• Molecule 68: uS13 (yeast S18)



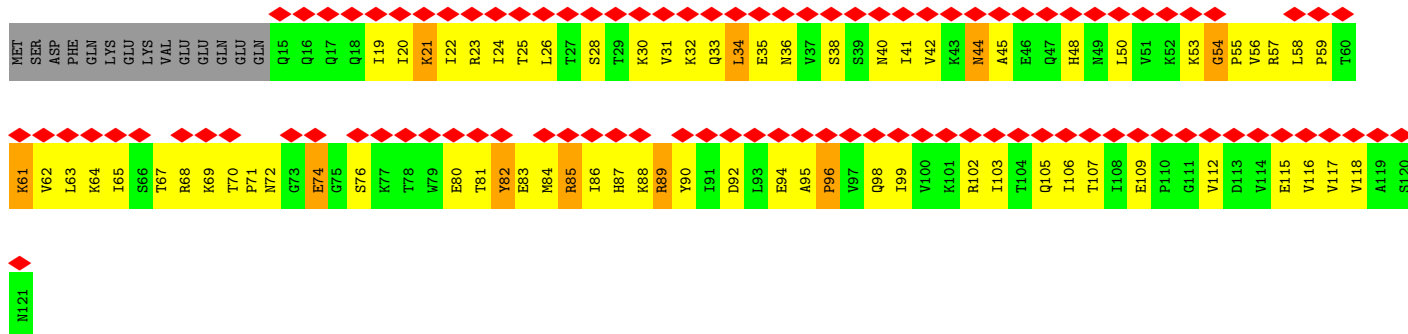
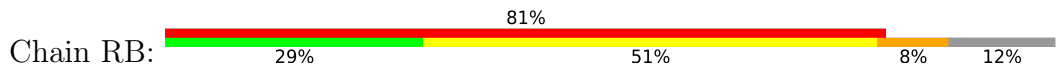




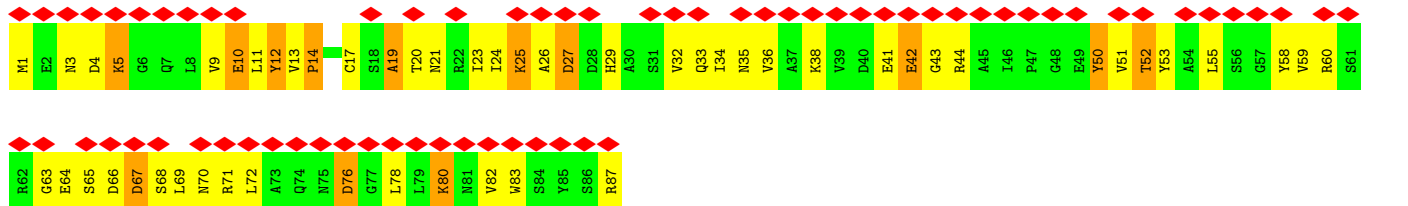
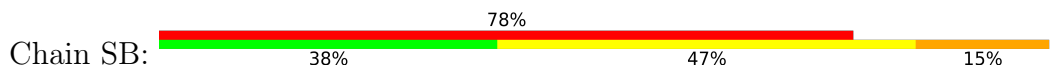
• Molecule 69: eS19 (yeast S19)



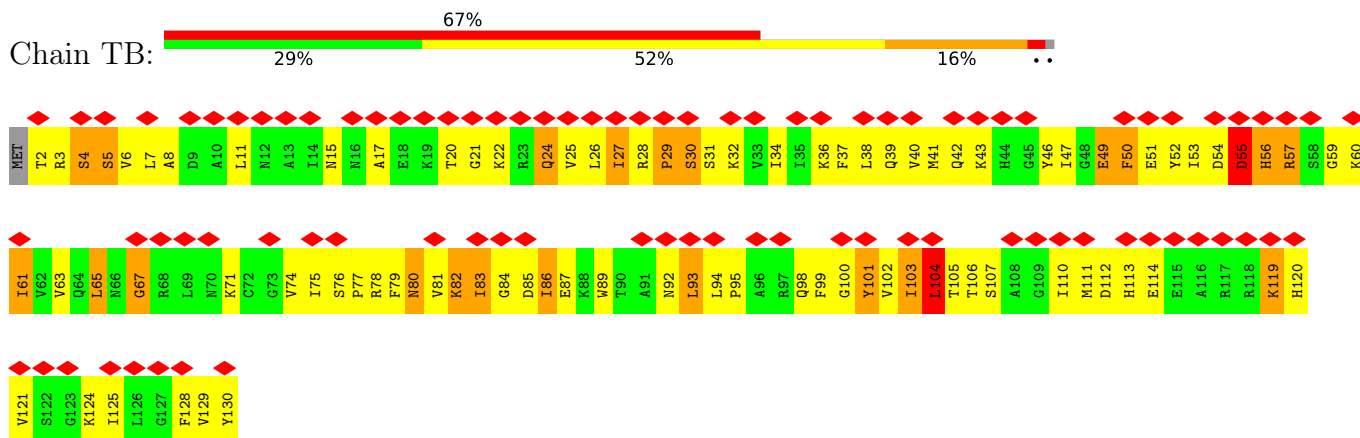
• Molecule 70: uS10 (yeast S20)



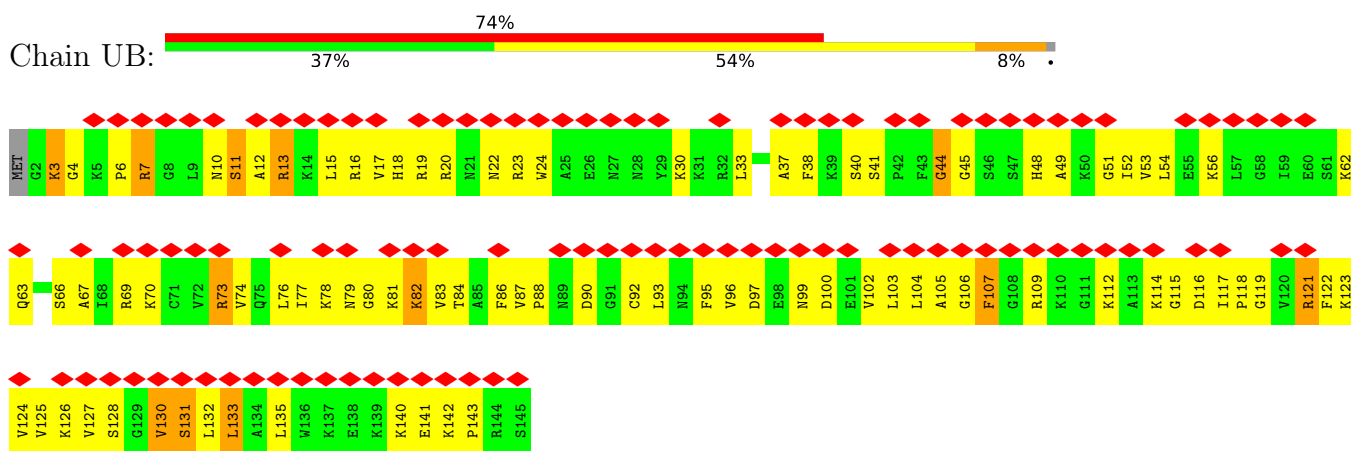
• Molecule 71: eS21 (yeast S21)



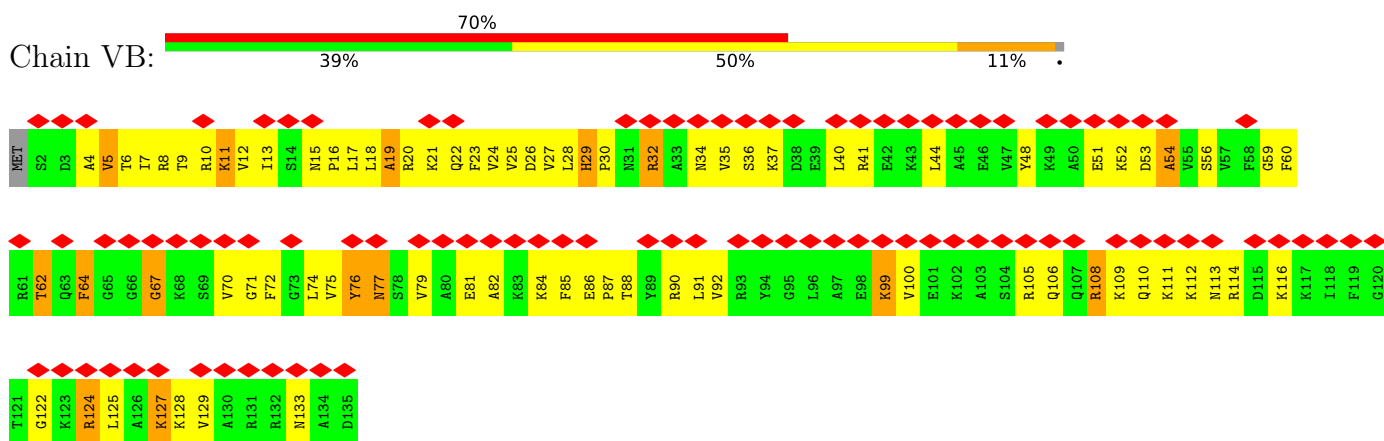
• Molecule 72: uS8 (yeast S22)



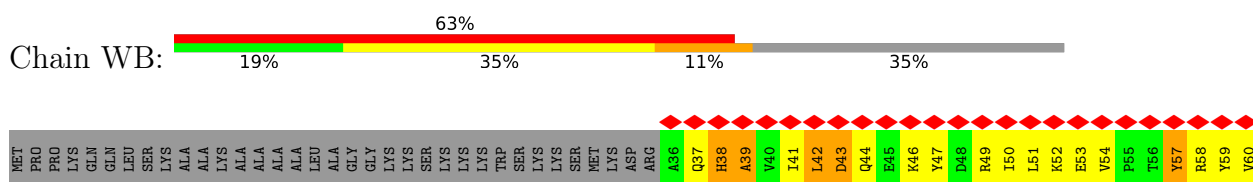
• Molecule 73: uS12 (yeast S23)

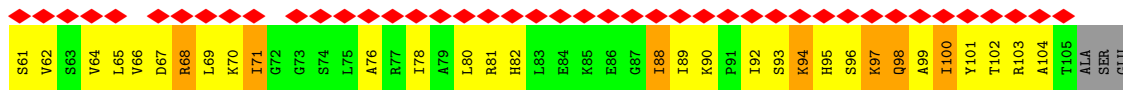


• Molecule 74: eS24 (yeast S24)

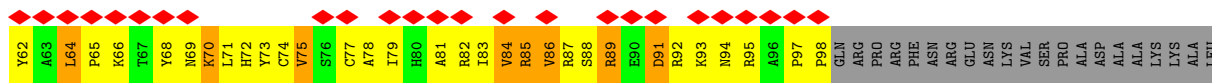
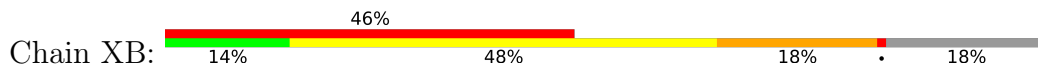


• Molecule 75: eS25 (yeast S25)

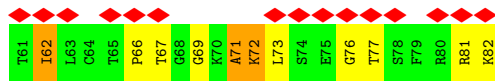
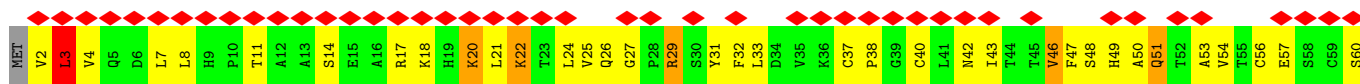
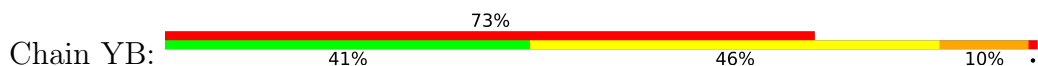




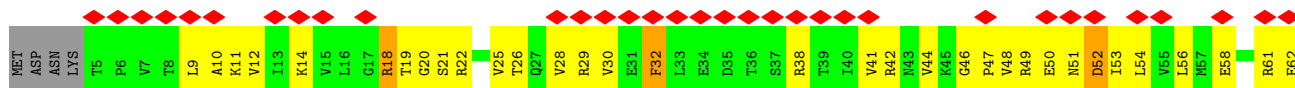
• Molecule 76: eS26 (yeast S26)



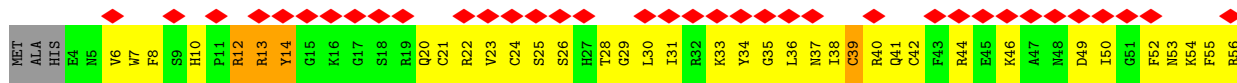
• Molecule 77: eS27 (yeast S27)



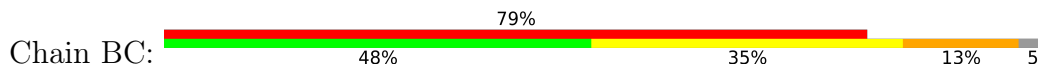
• Molecule 78: eS28 (yeast S28)



• Molecule 79: uS14 (yeast S29)

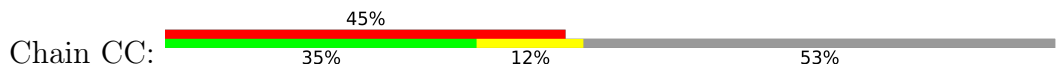


• Molecule 80: eS30 (yeast S30)



MET  
VAL  
GLN

● Molecule 81: eS31 (yeast S31)



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

ILE  
GLN  
LYS  
GLU  
SER  
THR  
LEU  
HIS  
VAL  
LEU  
LEU  
VAL  
V130  
ARC  
S11  
L12  
M13  
L13  
L132  
GLY  
GLY  
VAL  
GLY  
GLY  
VAL  
H135  
K136  
D137  
R138  
L139  
Y140  
C141  
G142  
K143  
C144  
H145  
S146  
V147  
Y148  
K149  
M150  
M151  
A152

● Molecule 82: yeast eEF2



MET  
V2  
A3  
F4  
T5  
V6  
D7  
Q8  
M9  
R10  
L11  
L12  
M13  
K15  
V16  
T17  
M18  
V19  
R20  
M21  
M22  
S23  
V24  
I25  
A26  
H27  
H28  
D29  
H30  
G31  
K32  
S33  
T34  
L35  
T36  
D37  
S38  
L39  
V40  
Q41  
Q42  
A43  
G44  
I45  
I46  
S47  
A48  
A49  
K50  
A51  
D52  
G52  
E53  
A54  
R55  
F56  
T57  
D58  
T59  
R60

K61  
D62  
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Q64  
E65  
R66  
G67  
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T69  
T70  
K71  
T72  
T73  
A74  
I75  
S76  
L77  
Y78  
S79  
E80  
M81  
S82  
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D86  
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M101  
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I105  
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A117  
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E140  
T141  
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L143  
R144  
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A146  
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L164  
L165  
E166  
Q168  
V169  
S170  
K171  
E172  
D173  
L174  
Y175  
Q176  
A238  
K239  
M240  
M241

T181  
V182  
E183  
S184  
M186  
V187  
I188  
F189  
S190  
T191  
A192  
A193  
D194  
E195  
V196  
L197  
G198  
D199  
V200  
Q201  
Y203  
P204  
A205  
R206  
V209  
A210  
F211  
G212  
S213  
G214  
L215  
H216  
G217  
W218  
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A226  
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R228  
Y229  
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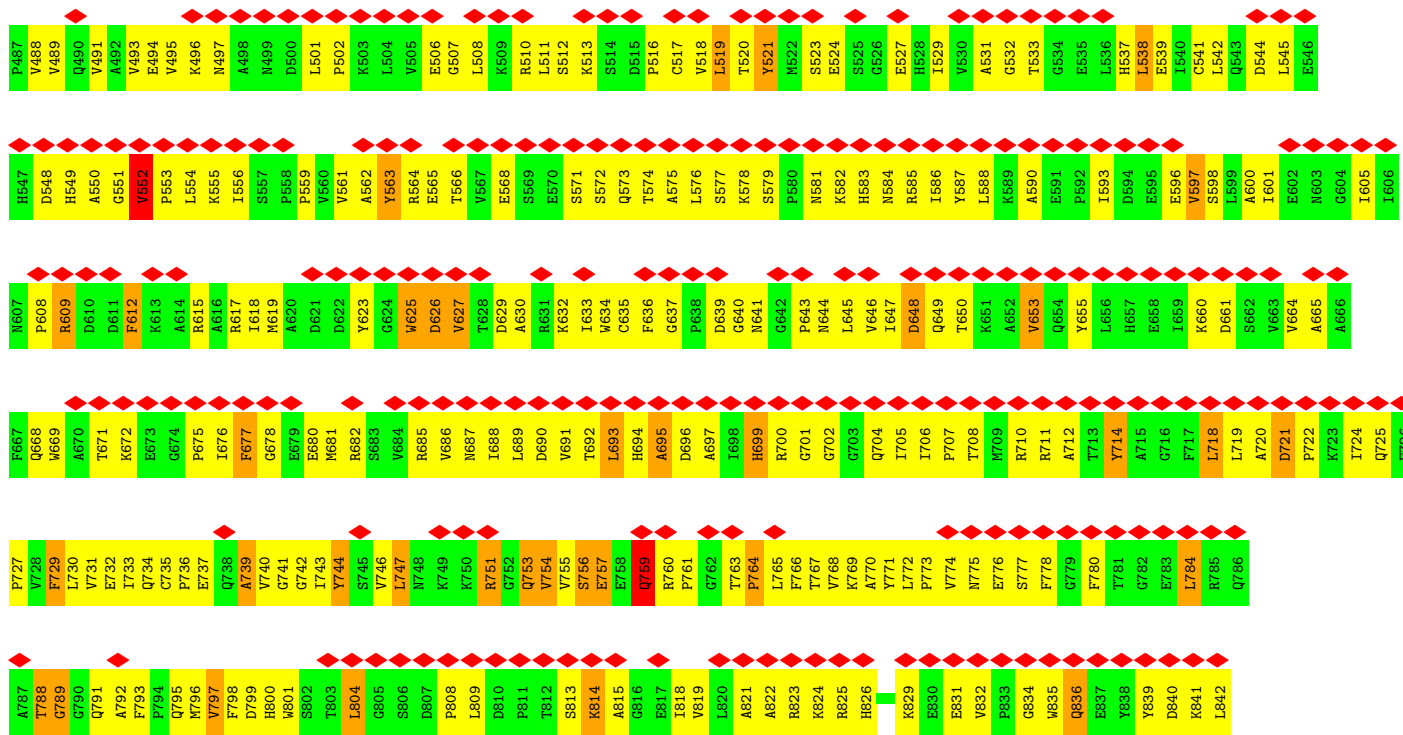
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W257  
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D263  
A264  
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G266  
K267  
P268  
L269  
E270  
R271  
A272  
F273  
M274  
M275  
F276  
L277  
D278  
D279  
P280  
I281  
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F285  
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A287  
L288  
M289  
N290  
F291  
K292  
K293  
D294  
E295  
I296  
P297  
V298  
L299  
L300  
E301

K302  
L303  
E304  
I305  
V306  
L307  
K308  
G309  
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E311  
K312  
D313  
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E315  
G316  
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A318  
L319  
L320  
K321  
V322  
V323  
K324  
R325  
K326  
F327  
L328  
P329  
A330  
Y331  
A332  
A333  
L334  
L335  
E336  
K337  
I338  
V339  
L340  
H341  
L342  
P343  
S344  
P345  
V346  
T347  
A348  
Q349  
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E301

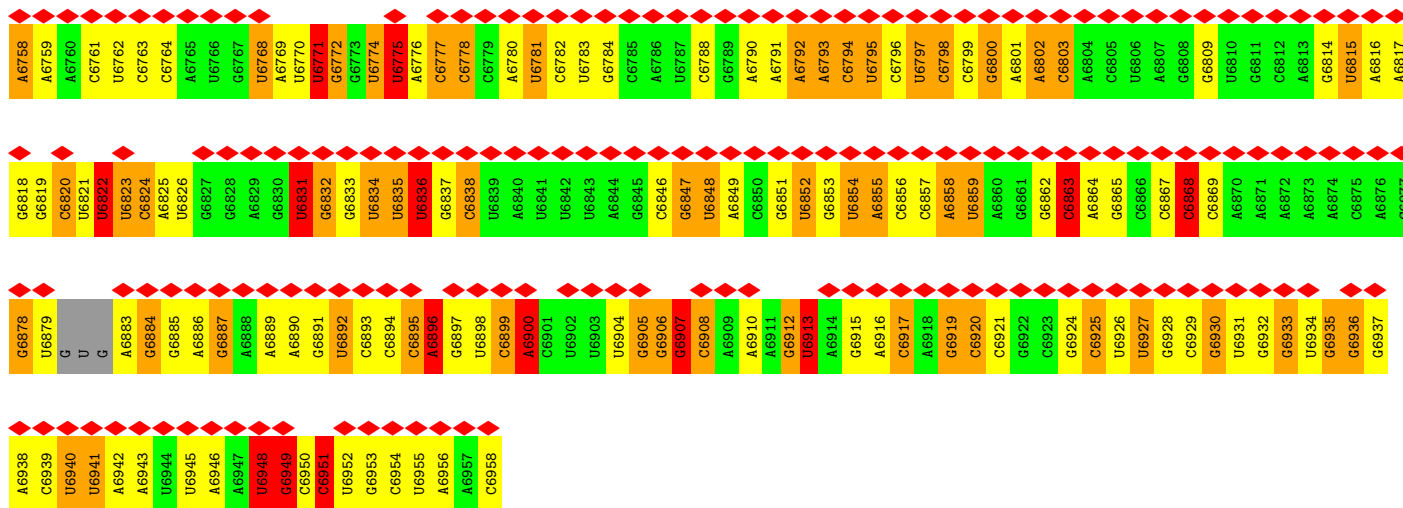
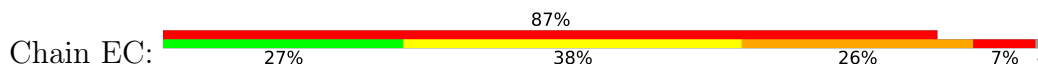
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D424  
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P444  
I445  
D446  
C448  
P449  
A450  
G451  
H452  
L453  
L454  
G455  
L456  
V457  
G458  
L459  
D460  
Q461  
F462  
L463  
K465  
T466  
G467  
T468  
L469  
T470  
E473  
T474  
A475  
H476  
M477  
H478  
K479  
V480  
M481  
K482  
F483  
S484  
V485





• Molecule 83: IRES



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	38047	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	1.4	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.062	Depositor
Minimum map value	-0.029	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.018	Depositor
Map size (Å)	419.84, 419.84, 419.84	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.82, 0.82, 0.82	Depositor

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SO1, GDP, DDE, MG

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	A	0.98	2/42096 (0.0%)	0.78	11/65570 (0.0%)
2	B	1.34	49/78631 (0.1%)	0.82	47/122552 (0.0%)
3	C	1.42	7/3747 (0.2%)	0.81	3/5832 (0.1%)
4	D	1.20	2/2884 (0.1%)	0.76	1/4491 (0.0%)
5	E	1.78	0/1377	0.74	1/1844 (0.1%)
6	F	1.16	0/1952	0.73	2/2622 (0.1%)
7	G	1.11	0/3153	0.69	1/4239 (0.0%)
8	H	1.20	1/2802 (0.0%)	0.69	0/3792
9	I	1.03	0/2426	0.63	0/3271
10	J	1.09	0/1425	0.72	3/1912 (0.2%)
11	K	1.27	0/1822	0.68	0/2451
12	L	1.04	0/1850	0.66	1/2495 (0.0%)
13	M	1.10	0/1540	0.66	0/2073
14	N	1.17	0/1754	0.68	1/2350 (0.0%)
15	O	0.91	0/1375	0.60	0/1842
16	P	1.70	0/728	0.77	1/975 (0.1%)
17	Q	1.10	0/1568	0.67	0/2106
18	R	1.21	0/1069	0.67	0/1438
19	S	1.27	0/1758	0.75	0/2354
20	T	1.19	0/1586	0.67	0/2128
21	U	1.27	0/1466	0.70	0/1968
22	V	1.19	0/1466	0.71	1/1965 (0.1%)
23	W	1.00	1/1539 (0.1%)	0.66	1/2050 (0.0%)
24	X	1.26	0/1482	0.63	0/1990
25	Y	1.28	0/1301	0.68	0/1743
26	Z	0.87	0/812	0.57	0/1099
27	AA	1.17	0/1019	0.70	0/1369
28	BA	1.31	0/521	0.67	0/691
29	CA	1.22	0/984	0.68	0/1325
30	DA	1.22	0/1005	0.71	0/1341
31	EA	0.99	0/1119	0.57	0/1497
32	FA	1.19	0/1205	0.71	0/1612

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
33	GA	1.03	0/474	0.64	0/629
34	HA	0.90	0/751	0.72	0/1008
35	IA	1.09	0/904	0.70	2/1213 (0.2%)
36	JA	1.26	0/1041	0.64	0/1394
37	KA	1.24	0/869	0.65	0/1168
38	LA	1.08	0/891	0.70	2/1191 (0.2%)
39	MA	1.12	0/979	0.69	1/1301 (0.1%)
40	NA	1.02	0/779	0.66	0/1034
41	OA	1.37	0/697	0.70	0/923
42	PA	0.97	0/619	0.58	0/826
43	QA	1.22	0/444	0.73	0/588
44	RA	1.16	0/424	0.65	0/562
45	SA	1.07	0/235	0.62	0/300
46	TA	1.14	0/861	0.68	0/1136
47	UA	1.12	0/702	0.65	0/934
48	VA	1.64	0/1498	0.79	0/2025
49	WA	0.86	0/2498	0.57	0/3398
50	XA	0.74	0/1651	0.59	0/2257
51	YA	0.80	0/1735	0.60	0/2335
52	ZA	0.79	0/1665	0.60	0/2263
53	AB	0.91	0/1759	0.58	0/2368
54	BB	0.79	0/2110	0.60	0/2839
55	CB	0.80	0/1630	0.58	0/2202
56	DB	0.78	0/1844	0.58	0/2464
57	EB	0.87	0/1506	0.60	0/2028
58	FB	0.94	0/1515	0.59	0/2021
59	GB	0.74	0/1519	0.57	0/2035
60	HB	0.99	0/837	0.56	0/1131
61	IB	1.05	0/1273	0.60	0/1712
62	JB	1.01	0/495	0.52	0/617
63	KB	0.92	0/1216	0.63	1/1638 (0.1%)
64	LB	0.72	0/953	0.60	0/1279
65	MB	1.01	0/996	0.62	0/1335
66	NB	0.87	0/1126	0.55	0/1510
67	OB	0.82	0/844	0.60	0/1120
68	PB	0.91	0/1212	0.62	1/1628 (0.1%)
69	QB	0.87	0/1131	0.60	0/1517
70	RB	0.92	0/866	0.62	0/1169
71	SB	0.78	0/694	0.58	0/935
72	TB	0.90	0/1039	0.63	1/1395 (0.1%)
73	UB	0.94	0/1140	0.61	0/1518
74	VB	0.76	0/1088	0.57	0/1449
75	WB	0.84	0/571	0.59	0/768



Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
76	XB	0.80	0/782	0.58	0/1047
77	YB	0.86	0/621	0.61	0/838
78	ZB	0.75	0/500	0.59	0/670
79	AC	1.03	0/454	0.66	0/602
80	BC	0.84	0/483	0.57	0/643
81	CC	1.00	0/283	0.63	0/352
82	DC	1.44	0/6665	0.70	3/9022 (0.0%)
83	EC	2.03	50/4579 (1.1%)	0.97	14/7119 (0.2%)
All	All	1.20	112/230910 (0.0%)	0.75	99/338443 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	21
2	B	0	92
3	C	0	4
4	D	0	3
6	F	0	1
83	EC	0	8
All	All	0	129

The worst 5 of 112 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	503	C	O3'-P	10.15	1.73	1.61
83	EC	6796	C	N1-C2	7.38	1.47	1.40
83	EC	6775	U	N1-C2	6.90	1.44	1.38
4	D	1	G	OP3-P	-6.88	1.52	1.61
1	A	1	U	OP3-P	-6.77	1.53	1.61

The worst 5 of 99 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	503	C	P-O3'-C3'	10.74	132.58	119.70
83	EC	6949	G	N9-C1'-C2'	8.39	124.91	114.00
2	B	961	C	C5'-C4'-O4'	7.63	118.26	109.10
2	B	705	A	N9-C1'-C2'	7.58	123.86	114.00
83	EC	6900	A	N9-C1'-C2'	7.42	123.65	114.00

There are no chirality outliers.

5 of 129 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	203	U	Sidechain
1	A	309	C	Sidechain
1	A	322	G	Sidechain
1	A	324	U	Sidechain
1	A	98	U	Sidechain

## 5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	37658	0	18908	1685	0
2	B	70288	0	35262	4094	0
3	C	3354	0	1695	203	0
4	D	2580	0	1304	168	0
5	E	1359	0	1425	90	0
6	F	1918	0	1987	409	0
7	G	3082	0	3165	404	0
8	H	2750	0	2863	430	0
9	I	2376	0	2325	304	0
10	J	1401	0	1500	271	0
11	K	1785	0	1862	248	0
12	L	1818	0	1908	230	0
13	M	1519	0	1587	187	0
14	N	1718	0	1754	196	0
15	O	1354	0	1383	135	0
16	P	723	0	774	103	0
17	Q	1543	0	1608	194	0
18	R	1054	0	1149	188	0
19	S	1721	0	1779	299	0
20	T	1556	0	1659	182	0
21	U	1443	0	1485	177	0
22	V	1442	0	1543	231	0
23	W	1522	0	1617	208	0
24	X	1446	0	1487	210	0
25	Y	1277	0	1323	146	0
26	Z	796	0	812	60	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	AA	1004	0	1048	109	0
28	BA	509	0	537	69	0
29	CA	969	0	1036	100	0
30	DA	994	0	1081	150	0
31	EA	1093	0	1155	128	0
32	FA	1174	0	1215	159	0
33	GA	463	0	491	39	0
34	HA	743	0	797	133	0
35	IA	890	0	938	116	0
36	JA	1020	0	1090	165	0
37	KA	851	0	880	172	0
38	LA	881	0	949	135	0
39	MA	970	0	1078	96	0
40	NA	772	0	849	97	0
41	OA	682	0	687	86	0
42	PA	613	0	682	39	0
43	QA	437	0	475	73	0
44	RA	418	0	459	60	0
45	SA	234	0	284	28	0
46	TA	848	0	918	96	0
47	UA	695	0	738	112	0
48	VA	1473	0	1514	145	0
49	WA	2445	0	2401	194	0
50	XA	1611	0	1618	165	0
51	YA	1709	0	1784	201	0
52	ZA	1635	0	1723	197	0
53	AB	1734	0	1817	130	0
54	BB	2069	0	2154	268	0
55	CB	1610	0	1675	190	0
56	DB	1820	0	1918	171	0
57	EB	1481	0	1572	150	0
58	FB	1490	0	1525	182	0
59	GB	1494	0	1573	161	0
60	HB	817	0	804	67	0
61	IB	1245	0	1314	155	0
62	JB	496	0	141	3	0
63	KB	1193	0	1255	155	0
64	LB	942	0	979	116	0
65	MB	975	0	1017	86	0
66	NB	1106	0	1166	132	0
67	OB	836	0	827	51	0
68	PB	1193	0	1222	100	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
69	QB	1113	0	1124	103	0
70	RB	856	0	917	107	0
71	SB	685	0	672	83	0
72	TB	1022	0	1060	149	0
73	UB	1122	0	1196	115	0
74	VB	1074	0	1132	86	0
75	WB	563	0	603	68	0
76	XB	769	0	818	121	0
77	YB	611	0	633	57	0
78	ZB	498	0	535	52	0
79	AC	444	0	436	54	0
80	BC	475	0	525	34	0
81	CC	284	0	76	0	0
82	DC	6561	0	6629	663	0
83	EC	4105	0	2063	82	0
84	DC	28	0	12	3	0
85	DC	1	0	0	0	0
86	DC	35	0	40	6	0
All	All	215363	0	160021	15325	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 41.

The worst 5 of 15325 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:31:ARG:CD	37:KA:107:ILE:HA	1.38	1.53
10:J:158:TYR:CE1	18:R:115:PHE:HA	1.45	1.50
10:J:165:LEU:HG	37:KA:6:ARG:O	1.26	1.33
10:J:31:ARG:HD3	37:KA:107:ILE:CA	1.57	1.33
10:J:165:LEU:O	37:KA:6:ARG:CB	1.80	1.28

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	E	165/217 (76%)	125 (76%)	32 (19%)	8 (5%)	2	23
6	F	250/254 (98%)	152 (61%)	66 (26%)	32 (13%)	0	5
7	G	384/387 (99%)	268 (70%)	80 (21%)	36 (9%)	0	11
8	H	359/362 (99%)	239 (67%)	79 (22%)	41 (11%)	0	6
9	I	294/297 (99%)	213 (72%)	57 (19%)	24 (8%)	1	13
10	J	173/176 (98%)	124 (72%)	33 (19%)	16 (9%)	1	11
11	K	220/244 (90%)	165 (75%)	46 (21%)	9 (4%)	3	25
12	L	231/256 (90%)	165 (71%)	52 (22%)	14 (6%)	1	19
13	M	189/191 (99%)	134 (71%)	41 (22%)	14 (7%)	1	15
14	N	207/221 (94%)	150 (72%)	42 (20%)	15 (7%)	1	16
15	O	167/174 (96%)	118 (71%)	32 (19%)	17 (10%)	0	9
16	P	92/165 (56%)	61 (66%)	23 (25%)	8 (9%)	1	12
17	Q	191/199 (96%)	138 (72%)	36 (19%)	17 (9%)	1	12
18	R	134/138 (97%)	102 (76%)	23 (17%)	9 (7%)	1	17
19	S	201/204 (98%)	130 (65%)	58 (29%)	13 (6%)	1	18
20	T	195/199 (98%)	164 (84%)	23 (12%)	8 (4%)	3	25
21	U	181/184 (98%)	137 (76%)	36 (20%)	8 (4%)	2	24
22	V	183/186 (98%)	130 (71%)	42 (23%)	11 (6%)	1	19
23	W	186/189 (98%)	140 (75%)	35 (19%)	11 (6%)	1	19
24	X	170/172 (99%)	116 (68%)	42 (25%)	12 (7%)	1	16
25	Y	157/160 (98%)	107 (68%)	34 (22%)	16 (10%)	0	9
26	Z	98/121 (81%)	70 (71%)	24 (24%)	4 (4%)	3	25
27	AA	134/137 (98%)	103 (77%)	27 (20%)	4 (3%)	4	32
28	BA	59/155 (38%)	38 (64%)	14 (24%)	7 (12%)	0	6
29	CA	119/142 (84%)	83 (70%)	23 (19%)	13 (11%)	0	7
30	DA	124/127 (98%)	95 (77%)	19 (15%)	10 (8%)	1	13
31	EA	133/136 (98%)	92 (69%)	32 (24%)	9 (7%)	1	17
32	FA	146/149 (98%)	89 (61%)	40 (27%)	17 (12%)	0	6
33	GA	56/59 (95%)	46 (82%)	9 (16%)	1 (2%)	8	41
34	HA	95/105 (90%)	70 (74%)	21 (22%)	4 (4%)	3	25

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
35	IA	107/113 (95%)	78 (73%)	19 (18%)	10 (9%)	0	11
36	JA	125/130 (96%)	88 (70%)	34 (27%)	3 (2%)	6	36
37	KA	104/107 (97%)	72 (69%)	27 (26%)	5 (5%)	2	23
38	LA	110/121 (91%)	70 (64%)	28 (26%)	12 (11%)	0	7
39	MA	117/120 (98%)	93 (80%)	16 (14%)	8 (7%)	1	17
40	NA	97/100 (97%)	72 (74%)	21 (22%)	4 (4%)	3	25
41	OA	85/88 (97%)	45 (53%)	27 (32%)	13 (15%)	0	3
42	PA	75/78 (96%)	64 (85%)	11 (15%)	0	100	100
43	QA	48/51 (94%)	29 (60%)	12 (25%)	7 (15%)	0	3
44	RA	50/128 (39%)	30 (60%)	15 (30%)	5 (10%)	0	9
45	SA	23/25 (92%)	22 (96%)	1 (4%)	0	100	100
46	TA	103/106 (97%)	67 (65%)	29 (28%)	7 (7%)	1	17
47	UA	89/92 (97%)	55 (62%)	25 (28%)	9 (10%)	0	9
48	VA	187/312 (60%)	137 (73%)	34 (18%)	16 (9%)	1	12
49	WA	316/319 (99%)	236 (75%)	67 (21%)	13 (4%)	3	25
50	XA	204/252 (81%)	141 (69%)	45 (22%)	18 (9%)	1	12
51	YA	212/255 (83%)	142 (67%)	51 (24%)	19 (9%)	1	12
52	ZA	215/254 (85%)	160 (74%)	41 (19%)	14 (6%)	1	18
53	AB	221/240 (92%)	169 (76%)	35 (16%)	17 (8%)	1	14
54	BB	258/261 (99%)	188 (73%)	53 (20%)	17 (7%)	1	17
55	CB	204/225 (91%)	156 (76%)	32 (16%)	16 (8%)	1	14
56	DB	224/236 (95%)	169 (75%)	42 (19%)	13 (6%)	1	19
57	EB	182/190 (96%)	118 (65%)	44 (24%)	20 (11%)	0	7
58	FB	184/200 (92%)	130 (71%)	36 (20%)	18 (10%)	0	10
59	GB	183/197 (93%)	132 (72%)	35 (19%)	16 (9%)	1	12
60	HB	94/105 (90%)	63 (67%)	22 (23%)	9 (10%)	0	10
61	IB	153/156 (98%)	102 (67%)	41 (27%)	10 (6%)	1	18
62	JB	122/143 (85%)	87 (71%)	20 (16%)	15 (12%)	0	5
63	KB	148/151 (98%)	114 (77%)	25 (17%)	9 (6%)	1	19
64	LB	125/137 (91%)	90 (72%)	28 (22%)	7 (6%)	2	20
65	MB	120/142 (84%)	81 (68%)	30 (25%)	9 (8%)	1	15

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
66	NB	139/143 (97%)	106 (76%)	24 (17%)	9 (6%)	1	18
67	OB	115/136 (85%)	90 (78%)	19 (16%)	6 (5%)	2	21
68	PB	143/146 (98%)	99 (69%)	34 (24%)	10 (7%)	1	16
69	QB	141/144 (98%)	108 (77%)	23 (16%)	10 (7%)	1	16
70	RB	105/121 (87%)	77 (73%)	25 (24%)	3 (3%)	4	32
71	SB	85/87 (98%)	64 (75%)	13 (15%)	8 (9%)	0	11
72	TB	127/130 (98%)	89 (70%)	28 (22%)	10 (8%)	1	14
73	UB	142/145 (98%)	102 (72%)	31 (22%)	9 (6%)	1	18
74	VB	132/135 (98%)	94 (71%)	31 (24%)	7 (5%)	2	21
75	WB	68/108 (63%)	48 (71%)	11 (16%)	9 (13%)	0	4
76	XB	95/119 (80%)	60 (63%)	19 (20%)	16 (17%)	0	3
77	YB	79/82 (96%)	50 (63%)	24 (30%)	5 (6%)	1	18
78	ZB	61/67 (91%)	42 (69%)	19 (31%)	0	100	100
79	AC	51/56 (91%)	41 (80%)	7 (14%)	3 (6%)	1	19
80	BC	58/63 (92%)	41 (71%)	13 (22%)	4 (7%)	1	16
81	CC	69/152 (45%)	37 (54%)	14 (20%)	18 (26%)	0	1
82	DC	838/842 (100%)	629 (75%)	153 (18%)	56 (7%)	1	17
All	All	12226/13416 (91%)	8741 (72%)	2555 (21%)	930 (8%)	2	14

5 of 930 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	F	21	ARG
6	F	77	ILE
6	F	93	LYS
6	F	120	PRO
6	F	203	ALA

### 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	
5	E	157/198 (79%)	135 (86%)	22 (14%)	3	20
6	F	194/196 (99%)	173 (89%)	21 (11%)	6	27
7	G	322/323 (100%)	284 (88%)	38 (12%)	5	24
8	H	288/289 (100%)	251 (87%)	37 (13%)	4	22
9	I	244/245 (100%)	215 (88%)	29 (12%)	5	24
10	J	152/153 (99%)	142 (93%)	10 (7%)	16	45
11	K	186/205 (91%)	165 (89%)	21 (11%)	6	25
12	L	191/208 (92%)	171 (90%)	20 (10%)	7	27
13	M	171/171 (100%)	152 (89%)	19 (11%)	6	26
14	N	180/187 (96%)	159 (88%)	21 (12%)	5	24
15	O	147/150 (98%)	136 (92%)	11 (8%)	13	41
16	P	81/136 (60%)	62 (76%)	19 (24%)	1	5
17	Q	154/159 (97%)	135 (88%)	19 (12%)	4	23
18	R	107/109 (98%)	95 (89%)	12 (11%)	6	25
19	S	175/176 (99%)	140 (80%)	35 (20%)	1	8
20	T	160/162 (99%)	147 (92%)	13 (8%)	11	39
21	U	145/146 (99%)	129 (89%)	16 (11%)	6	26
22	V	150/151 (99%)	139 (93%)	11 (7%)	14	42
23	W	153/154 (99%)	139 (91%)	14 (9%)	9	32
24	X	156/156 (100%)	129 (83%)	27 (17%)	2	13
25	Y	136/137 (99%)	111 (82%)	25 (18%)	1	10
26	Z	87/107 (81%)	80 (92%)	7 (8%)	12	39
27	AA	104/105 (99%)	92 (88%)	12 (12%)	5	25
28	BA	54/129 (42%)	44 (82%)	10 (18%)	1	10
29	CA	105/118 (89%)	91 (87%)	14 (13%)	4	21
30	DA	109/110 (99%)	94 (86%)	15 (14%)	3	20
31	EA	115/116 (99%)	103 (90%)	12 (10%)	7	28
32	FA	118/119 (99%)	107 (91%)	11 (9%)	9	32
33	GA	46/47 (98%)	40 (87%)	6 (13%)	4	22
34	HA	81/88 (92%)	72 (89%)	9 (11%)	6	26
35	IA	96/97 (99%)	82 (85%)	14 (15%)	3	18
36	JA	109/111 (98%)	95 (87%)	14 (13%)	4	22

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
37	KA	90/91 (99%)	87 (97%)	3 (3%)	38	62
38	LA	95/103 (92%)	83 (87%)	12 (13%)	4	22
39	MA	104/105 (99%)	88 (85%)	16 (15%)	2	16
40	NA	81/82 (99%)	70 (86%)	11 (14%)	3	21
41	OA	70/71 (99%)	63 (90%)	7 (10%)	7	29
42	PA	68/69 (99%)	64 (94%)	4 (6%)	19	48
43	QA	45/46 (98%)	38 (84%)	7 (16%)	2	16
44	RA	47/116 (40%)	44 (94%)	3 (6%)	17	45
45	SA	23/23 (100%)	19 (83%)	4 (17%)	2	12
46	TA	90/91 (99%)	72 (80%)	18 (20%)	1	8
47	UA	71/72 (99%)	60 (84%)	11 (16%)	2	16
48	VA	160/254 (63%)	139 (87%)	21 (13%)	4	21
49	WA	261/262 (100%)	248 (95%)	13 (5%)	24	52
50	XA	172/210 (82%)	155 (90%)	17 (10%)	8	29
51	YA	191/224 (85%)	170 (89%)	21 (11%)	6	26
52	ZA	176/205 (86%)	166 (94%)	10 (6%)	20	49
53	AB	182/195 (93%)	164 (90%)	18 (10%)	8	29
54	BB	221/222 (100%)	199 (90%)	22 (10%)	7	29
55	CB	173/191 (91%)	162 (94%)	11 (6%)	17	45
56	DB	193/201 (96%)	180 (93%)	13 (7%)	16	44
57	EB	165/170 (97%)	149 (90%)	16 (10%)	8	30
58	FB	150/161 (93%)	135 (90%)	15 (10%)	7	29
59	GB	158/166 (95%)	150 (95%)	8 (5%)	24	52
60	HB	89/98 (91%)	83 (93%)	6 (7%)	16	44
61	IB	136/137 (99%)	125 (92%)	11 (8%)	11	39
63	KB	127/128 (99%)	112 (88%)	15 (12%)	5	24
64	LB	96/105 (91%)	92 (96%)	4 (4%)	30	56
65	MB	103/118 (87%)	95 (92%)	8 (8%)	12	39
66	NB	117/119 (98%)	109 (93%)	8 (7%)	16	44
67	OB	82/124 (66%)	74 (90%)	8 (10%)	8	29
68	PB	128/129 (99%)	113 (88%)	15 (12%)	5	24

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
69	QB	115/116 (99%)	110 (96%)	5 (4%)	29 56
70	RB	100/114 (88%)	92 (92%)	8 (8%)	12 39
71	SB	74/74 (100%)	67 (90%)	7 (10%)	8 31
72	TB	110/111 (99%)	93 (84%)	17 (16%)	2 16
73	UB	119/120 (99%)	110 (92%)	9 (8%)	13 40
74	VB	112/113 (99%)	101 (90%)	11 (10%)	8 29
75	WB	61/89 (68%)	56 (92%)	5 (8%)	11 38
76	XB	83/101 (82%)	71 (86%)	12 (14%)	3 18
77	YB	70/71 (99%)	65 (93%)	5 (7%)	14 42
78	ZB	56/60 (93%)	52 (93%)	4 (7%)	14 42
79	AC	47/49 (96%)	40 (85%)	7 (15%)	3 17
80	BC	51/54 (94%)	44 (86%)	7 (14%)	3 20
82	DC	713/714 (100%)	630 (88%)	83 (12%)	5 24
All	All	10248/11032 (93%)	9148 (89%)	1100 (11%)	10 27

5 of 1100 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
70	RB	34	LEU
72	TB	101	TYR
70	RB	23	ARG
82	DC	218	TRP
24	X	9	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 283 such sidechains are listed below:

Mol	Chain	Res	Type
68	PB	74	GLN
69	QB	138	GLN
77	YB	5	GLN
21	U	101	ASN
21	U	37	ASN

### 5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1755/1798 (97%)	369 (21%)	14 (0%)
2	B	3267/3396 (96%)	679 (20%)	26 (0%)
3	C	157/158 (99%)	36 (22%)	2 (1%)
4	D	120/121 (99%)	17 (14%)	0
83	EC	187/201 (93%)	74 (39%)	3 (1%)
All	All	5486/5674 (96%)	1175 (21%)	45 (0%)

5 of 1175 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	2	A
1	A	25	C
1	A	26	A
1	A	34	G
1	A	42	G

5 of 45 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	B	1815	U
2	B	3218	A
2	B	2101	C
2	B	2950	G
2	B	3242	G

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
82	DDE	DC	699	82	14,20,21	2.25	4 (28%)	14,28,30	1.79	6 (42%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the

Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
82	DDE	DC	699	82	-	5/20/21/23	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
82	DC	699	DDE	CBW-CBI	4.86	1.61	1.53
82	DC	699	DDE	CAT-CE1	4.37	1.56	1.50
82	DC	699	DDE	CB-CA	2.35	1.58	1.53
82	DC	699	DDE	CB-CG	2.07	1.58	1.51

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	DC	699	DDE	OAG-CBI-CBW	-3.64	115.88	120.49
82	DC	699	DDE	CAU-CBW-CBI	-2.74	105.77	111.20
82	DC	699	DDE	CG-ND1-CE1	2.52	110.51	103.05
82	DC	699	DDE	OAG-CBI-NAD	2.16	126.76	123.00
82	DC	699	DDE	CG-CD2-NE2	-2.03	105.08	109.25

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
82	DC	699	DDE	CA-CB-CG-ND1
82	DC	699	DDE	CAU-CAT-CE1-NE2
82	DC	699	DDE	CE1-CAT-CAU-CBW
82	DC	699	DDE	CAU-CAT-CE1-ND1
82	DC	699	DDE	CA-CB-CG-CD2

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
82	DC	699	DDE	2	0

## 5.5 Carbohydrates

There are no monosaccharides in this entry.

## 5.6 Ligand geometry

Of 3 ligands modelled in this entry, 1 is monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
84	GDP	DC	901	85	24,30,30	1.86	5 (20%)	30,47,47	1.70	6 (20%)
86	SO1	DC	903	-	35,39,39	2.54	15 (42%)	39,64,64	1.98	9 (23%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
84	GDP	DC	901	85	-	3/12/32/32	0/3/3/3
86	SO1	DC	903	-	-	2/21/104/104	0/7/5/5

The worst 5 of 20 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
84	DC	901	GDP	O4'-C1'	5.52	1.48	1.41
86	DC	903	SO1	O56-C52	-4.48	1.30	1.41
86	DC	903	SO1	O17-C52	4.31	1.47	1.40
86	DC	903	SO1	C10-C3	4.17	1.61	1.55
86	DC	903	SO1	C8-C2	3.78	1.60	1.53

The worst 5 of 15 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
84	DC	901	GDP	PA-O3A-PB	-5.75	113.11	132.83
86	DC	903	SO1	C12-C6-C10	-5.48	103.56	107.91
86	DC	903	SO1	C25-C22-C24	5.29	130.59	113.56
86	DC	903	SO1	C1-C4-C13	3.59	122.29	118.44
86	DC	903	SO1	C10-C6-C2	3.50	108.37	104.16

There are no chirality outliers.

All (5) torsion outliers are listed below:

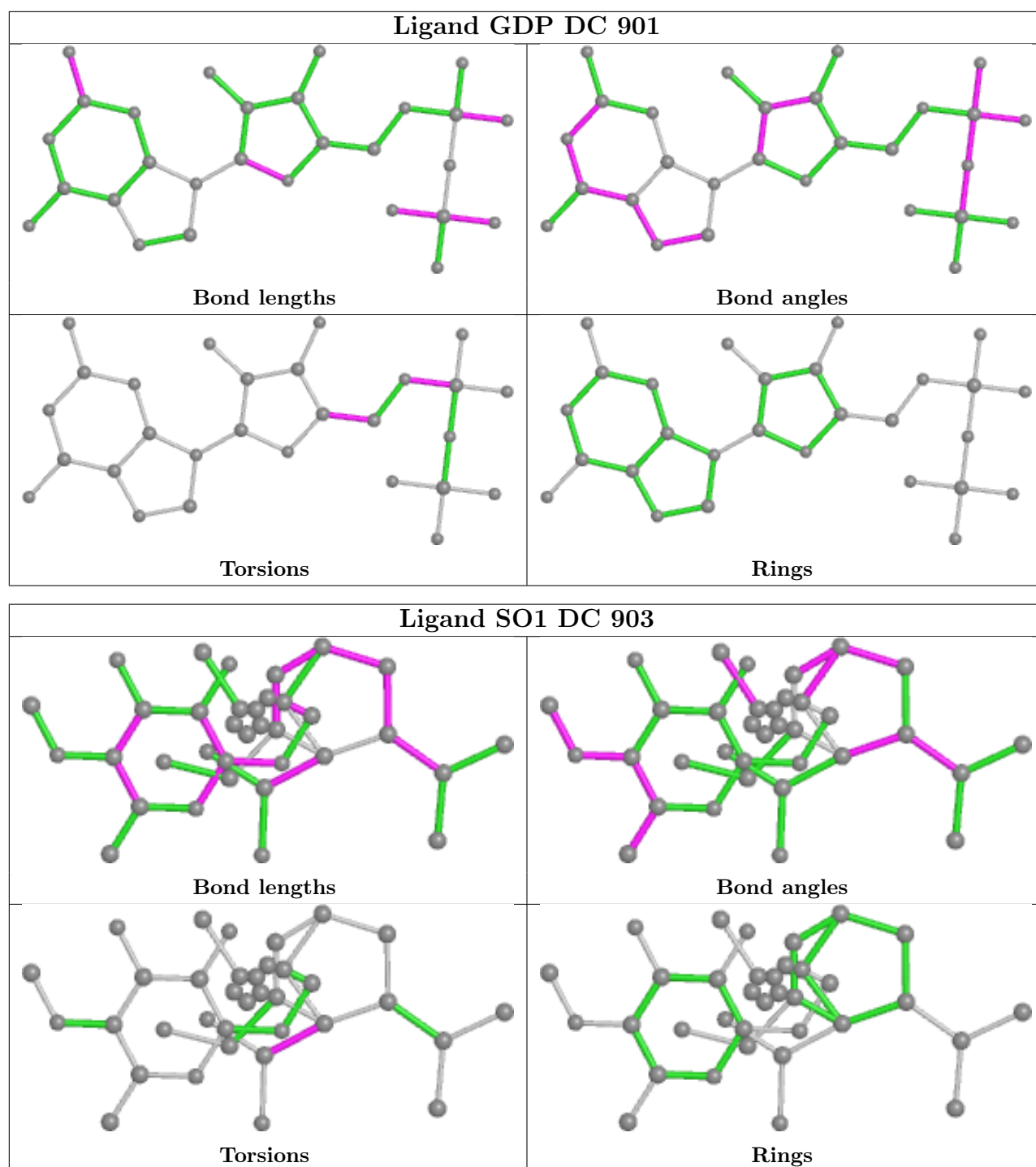
Mol	Chain	Res	Type	Atoms
84	DC	901	GDP	O4'-C4'-C5'-O5'
86	DC	903	SO1	C2-C1-C5-O14
86	DC	903	SO1	C2-C1-C5-O15
84	DC	901	GDP	C3'-C4'-C5'-O5'
84	DC	901	GDP	C5'-O5'-PA-O1A

There are no ring outliers.

2 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
84	DC	901	GDP	3	0
86	DC	903	SO1	6	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

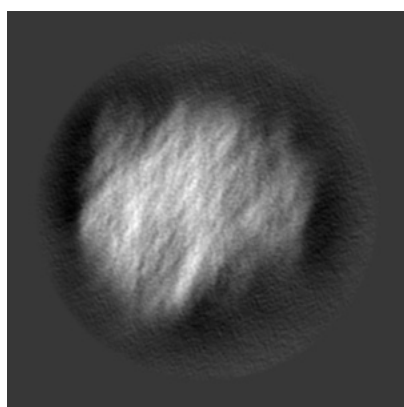
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-6643. These allow visual inspection of the internal detail of the map and identification of artifacts.

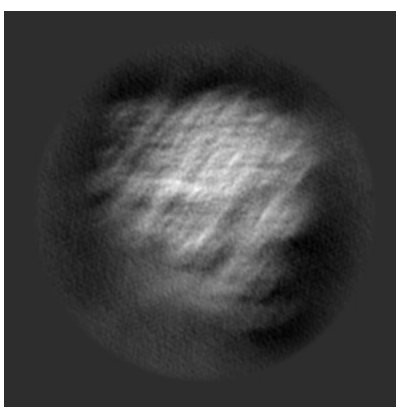
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

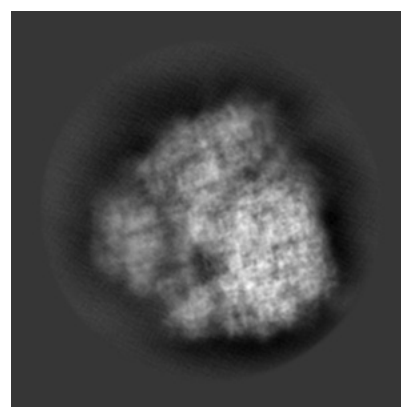
#### 6.1.1 Primary map



X



Y

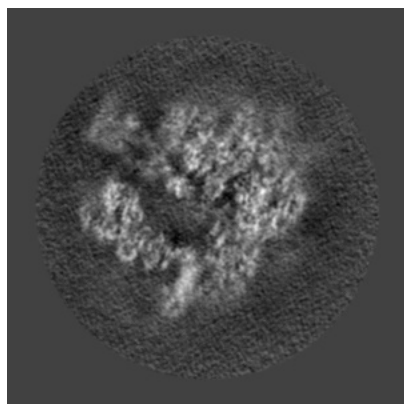


Z

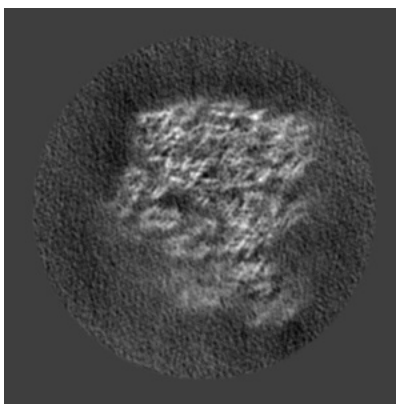
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

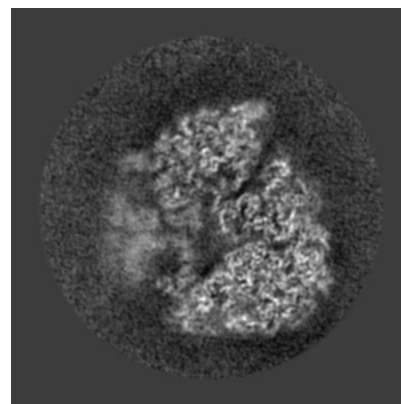
#### 6.2.1 Primary map



X Index: 256



Y Index: 256



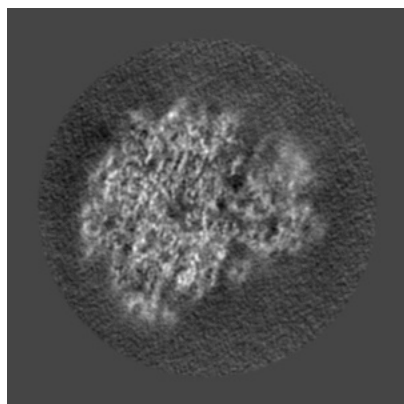
Z Index: 256



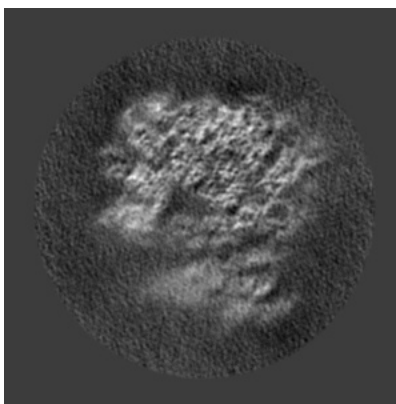
The images above show central slices of the map in three orthogonal directions.

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

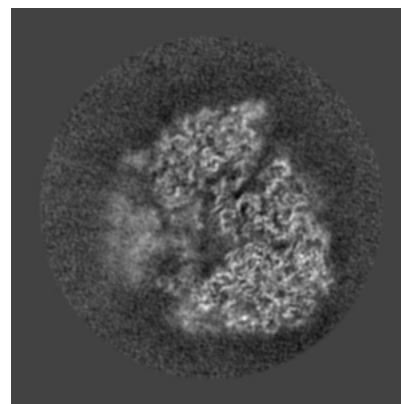
### 6.3.1 Primary map



X Index: 292



Y Index: 233

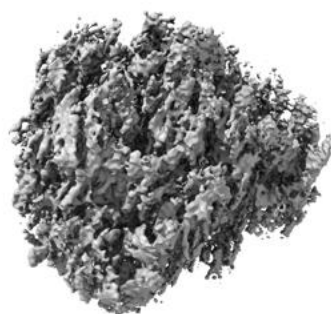


Z Index: 258

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 0.018. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

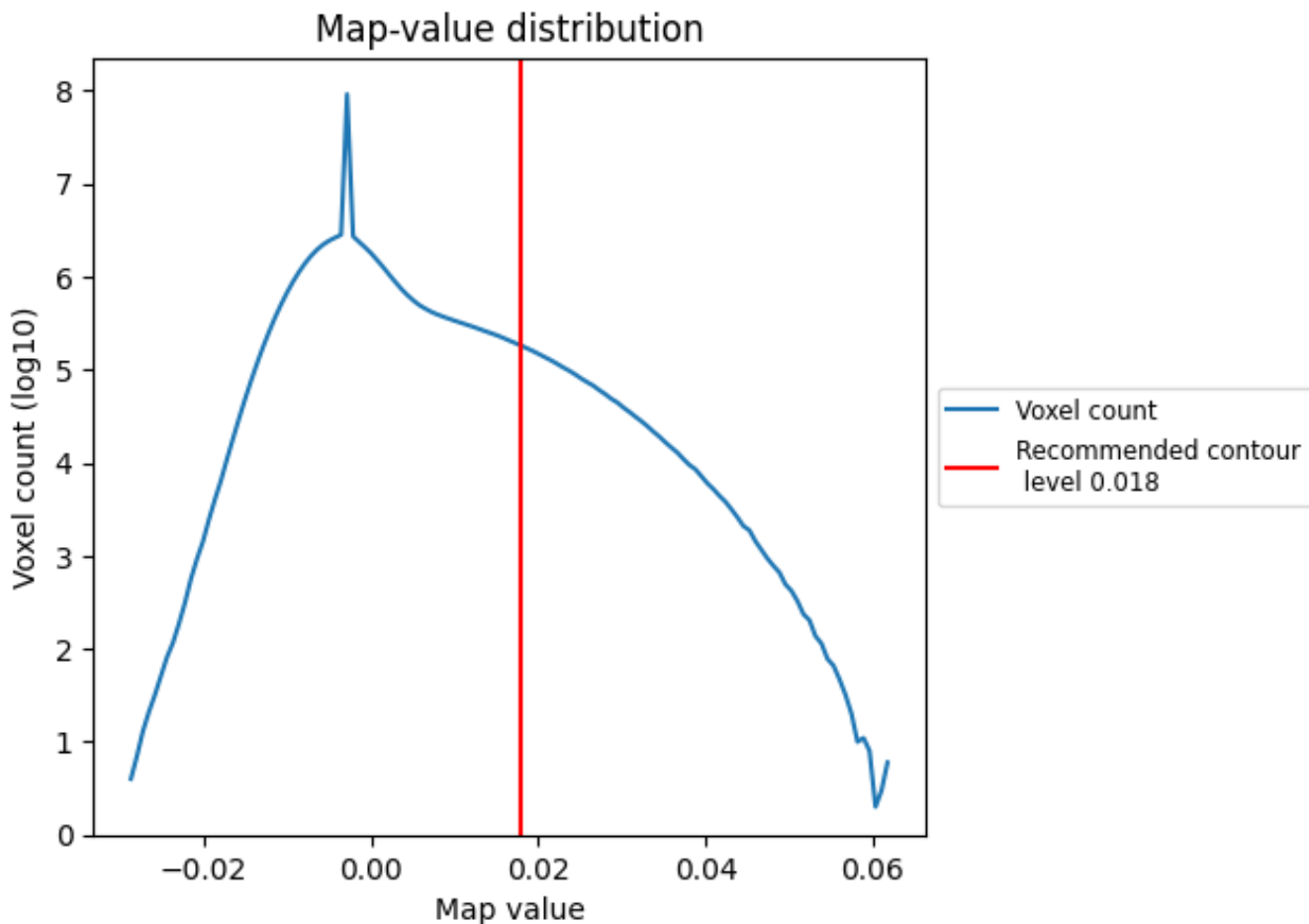
## 6.5 Mask visualisation

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

## 7 Map analysis [i](#)

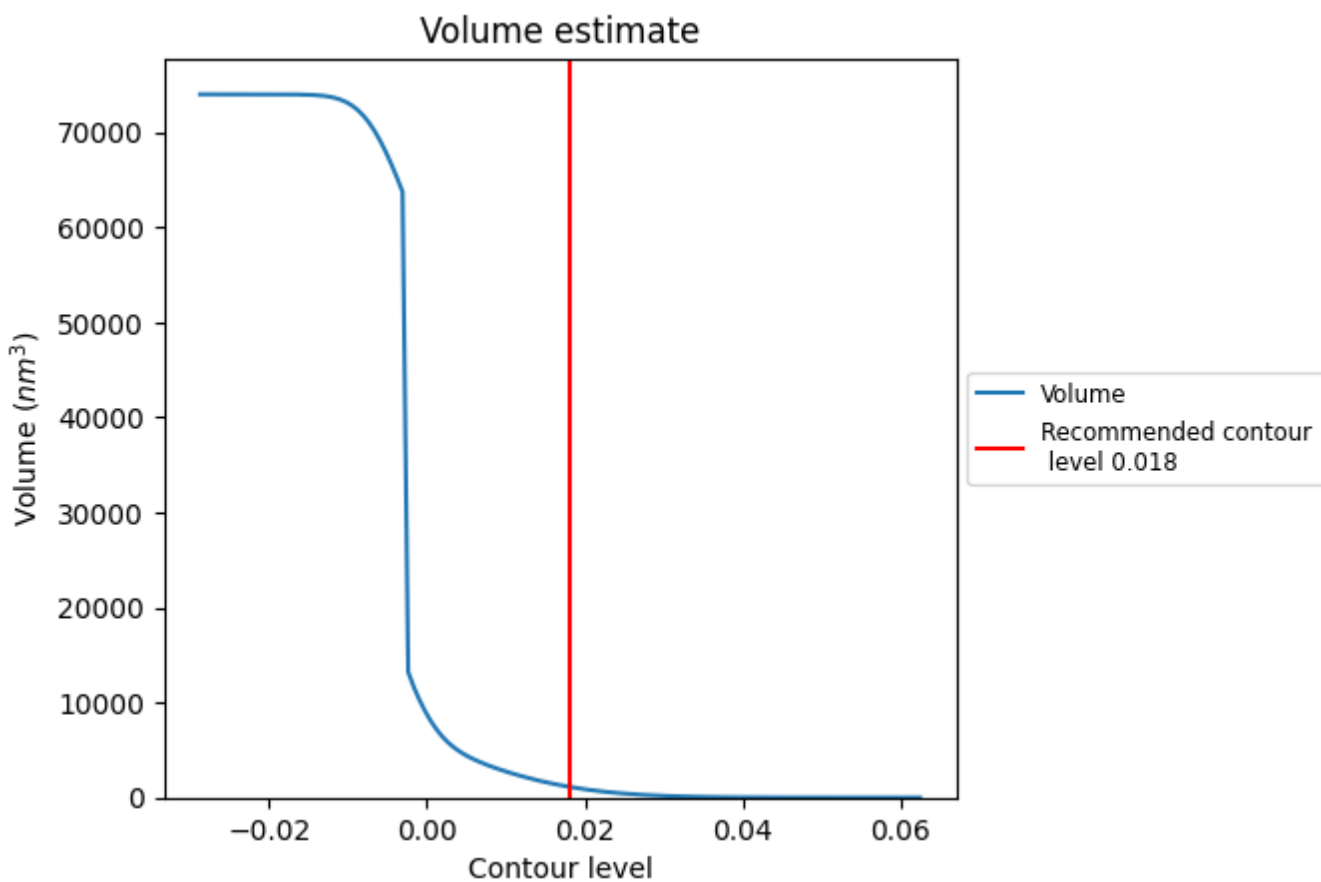
This section contains the results of statistical analysis of the map.

### 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.

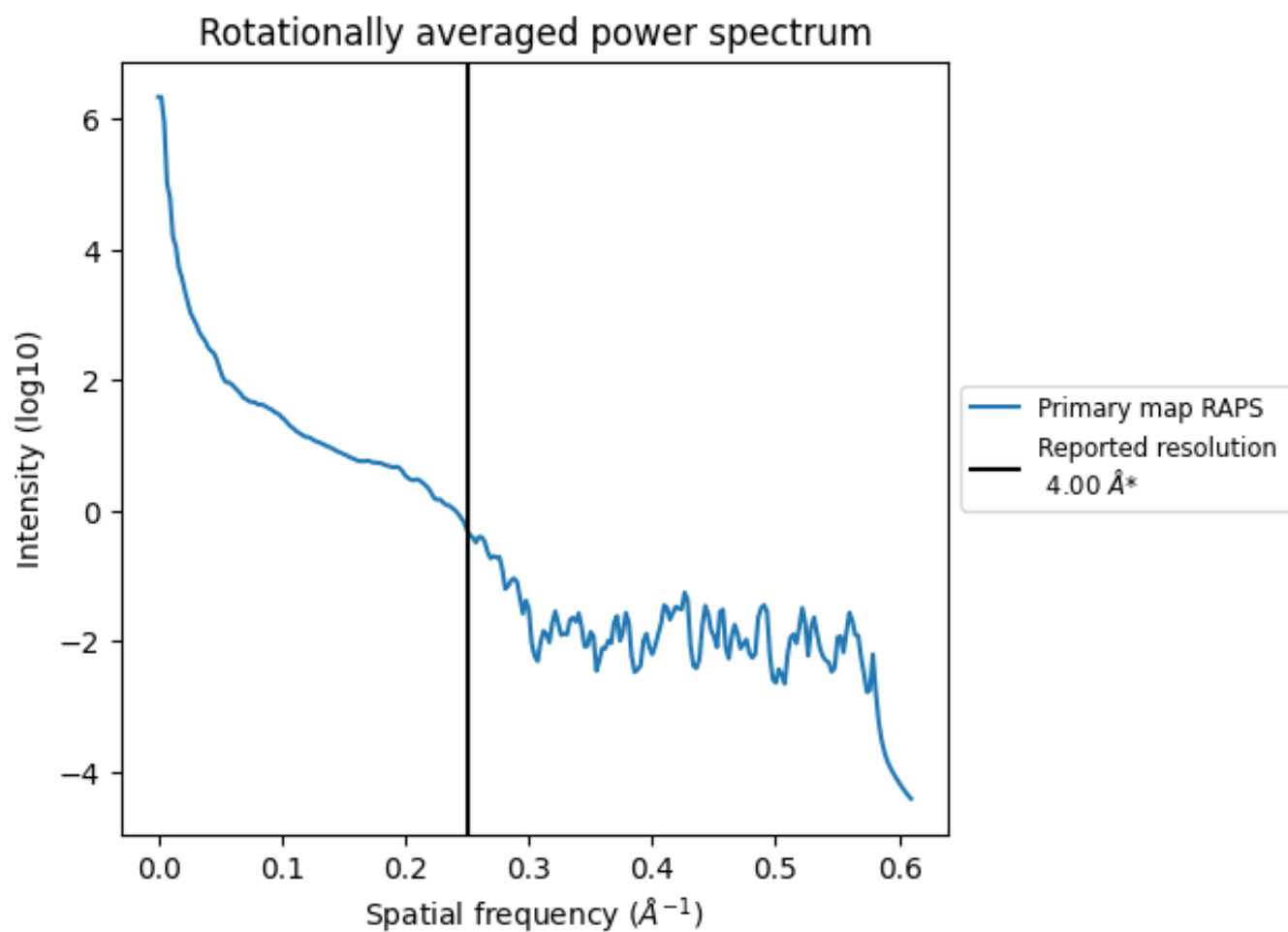
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1135 nm<sup>3</sup>; this corresponds to an approximate mass of 1025 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 0.250 Å<sup>-1</sup>

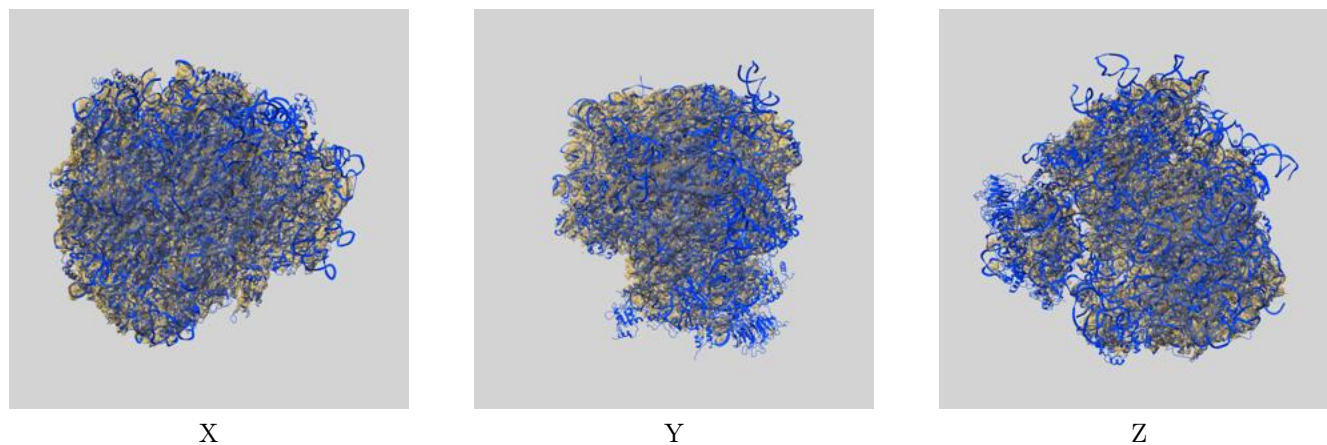
## 8 Fourier-Shell correlation

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

## 9 Map-model fit [i](#)

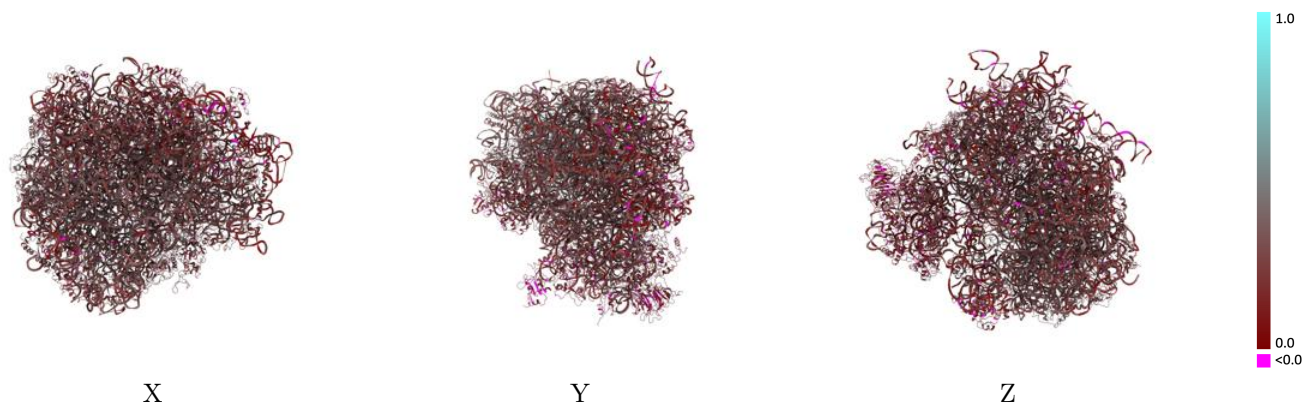
This section contains information regarding the fit between EMDB map EMD-6643 and PDB model 5JUO. Per-residue inclusion information can be found in section 3 on page 21.

### 9.1 Map-model overlay [i](#)



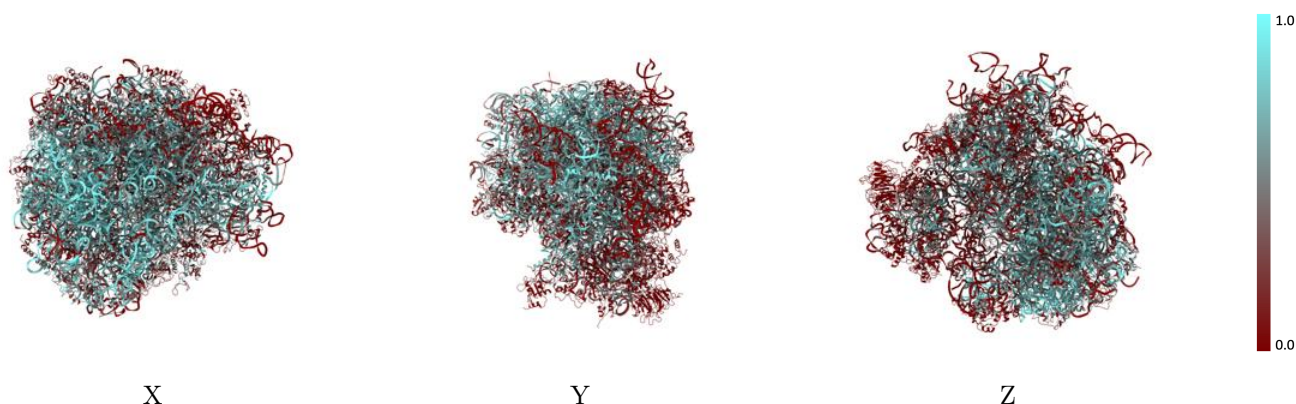
The images above show the 3D surface view of the map at the recommended contour level 0.018 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



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

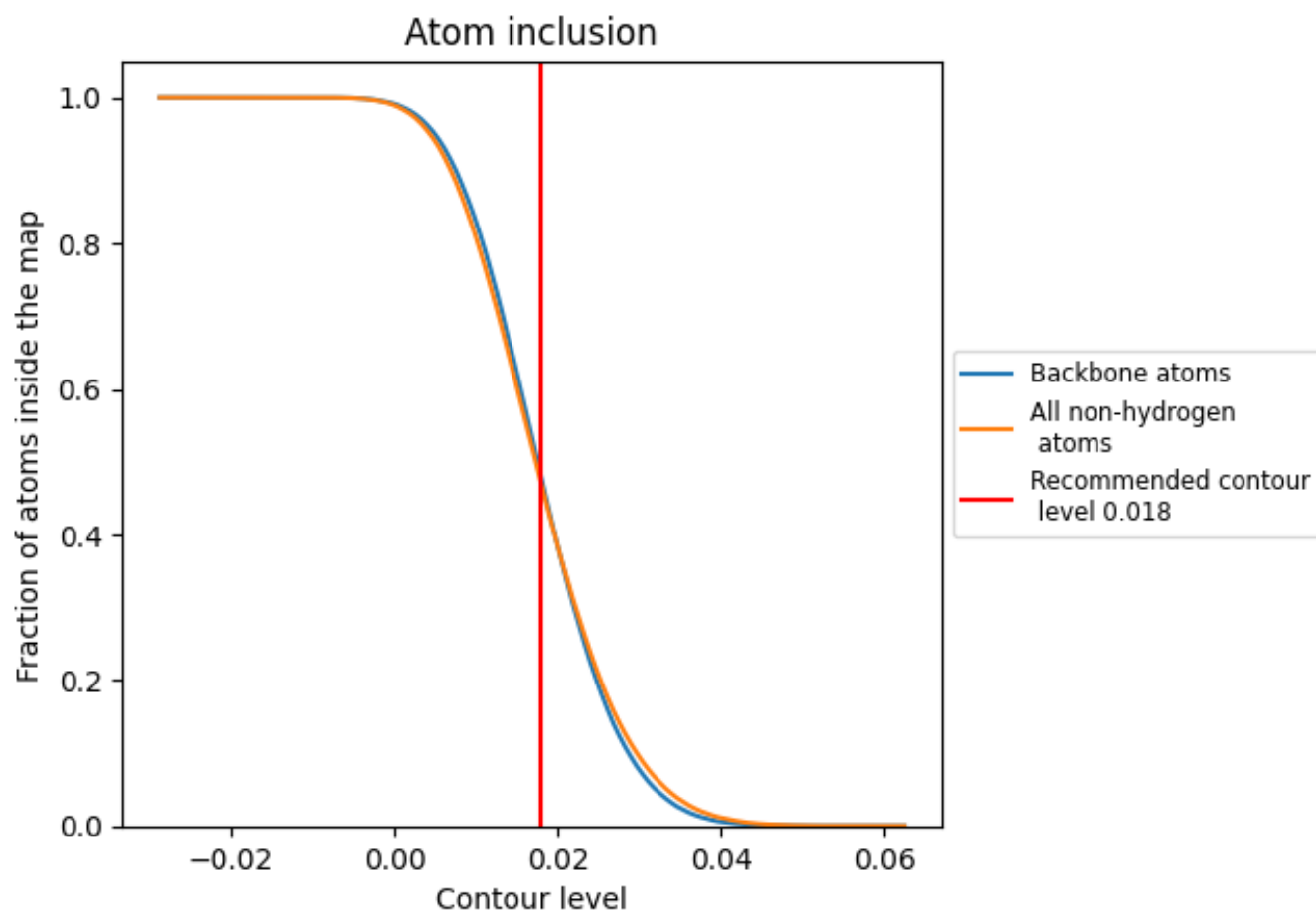
## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.018).



## 9.4 Atom inclusion [i](#)



At the recommended contour level, 48% of all backbone atoms, 47% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary





















































































The table lists the average atom inclusion at the recommended contour level (0.018) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4704	0.2760
A	0.4903	0.2520
AA	0.2878	0.3460
AB	0.0858	0.2300
AC	0.3035	0.2110
B	0.6664	0.2960
BA	0.3327	0.3410
BB	0.5022	0.2870
BC	0.1460	0.2980
C	0.6327	0.2790
CA	0.2038	0.2560
CB	0.1883	0.2190
CC	0.0141	0.1700
D	0.7686	0.2820
DA	0.4819	0.2760
DB	0.2924	0.2690
DC	0.3033	0.2730
E	0.0373	0.2070
EA	0.2313	0.2090
EB	0.0592	0.2270
EC	0.1354	0.1950
F	0.4952	0.2920
FA	0.6037	0.3510
FB	0.3166	0.2660
G	0.4665	0.3350
GA	0.5673	0.3410
GB	0.4577	0.2800
H	0.5286	0.3310
HA	0.4761	0.2570
HB	0.2087	0.1810
I	0.4021	0.2550
IA	0.4329	0.3150
IB	0.2323	0.2730
J	0.2618	0.2390
JA	0.5322	0.3400



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Chain	Atom inclusion	Q-score
JB	 0.0000	 0.1240
K	 0.4251	 0.3110
KA	 0.3151	 0.3440
KB	 0.1765	 0.2300
L	 0.2884	 0.2620
LA	 0.4401	 0.2610
LB	 0.4134	 0.2910
M	 0.3266	 0.3190
MA	 0.2108	 0.2810
MB	 0.0961	 0.1840
N	 0.3327	 0.3110
NA	 0.5241	 0.3140
NB	 0.0991	 0.1920
O	 0.3397	 0.2840
OA	 0.5229	 0.3060
OB	 0.0307	 0.2050
P	 0.1453	 0.1580
PA	 0.0217	 0.2230
PB	 0.0468	 0.1950
Q	 0.6268	 0.3230
QA	 0.5216	 0.3240
QB	 0.0749	 0.1950
R	 0.4401	 0.2980
RA	 0.4356	 0.3360
RB	 0.0773	 0.1960
S	 0.4206	 0.2860
SA	 0.3099	 0.3180
SB	 0.2060	 0.2870
T	 0.4337	 0.3220
TA	 0.6104	 0.3340
TB	 0.2873	 0.2720
U	 0.5483	 0.3290
UA	 0.5373	 0.2830
UB	 0.2575	 0.3140
V	 0.6340	 0.3330
VA	 0.1974	 0.1940
VB	 0.2678	 0.2970
W	 0.3192	 0.2560
WA	 0.0071	 0.1940
WB	 0.0530	 0.2080
X	 0.4284	 0.3270
XA	 0.0992	 0.2390

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Chain	Atom inclusion	Q-score
XB	■ 0.3775	■ 0.3020
Y	■ 0.4110	■ 0.3280
YA	■ 0.2323	■ 0.2450
YB	■ 0.2226	■ 0.2780
Z	■ 0.2059	■ 0.2550
ZA	■ 0.2774	■ 0.2990
ZB	■ 0.2887	■ 0.2800