wwPDB EM Validation Summary Report (i)

Mar 25, 2026 – 01:19 AM UTC

PDB ID	:	5JUS / pdb_00005jus
EMDB ID	:	EMD-6645
Title	:	Saccharomyces cerevisiae 80S ribosome bound with elongation factor eEF2-GDP-sordarin and Taura Syndrome Virus IRES, Structure III (mid-rotated 40S subunit)
Authors	:	Abeyrathne, P.; Koh, C.S.; Grant, T.; Grigorieff, N.; Korostelev, A.A.
Deposited on	:	2016-05-10
Resolution	:	4.20 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 (i) 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 (i)) were used in the production of this report:

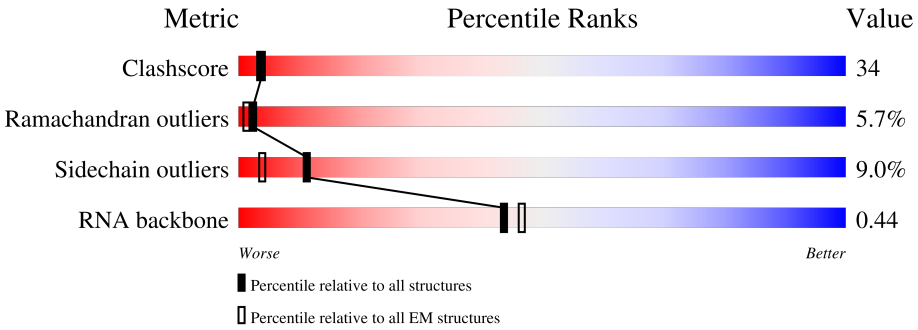
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

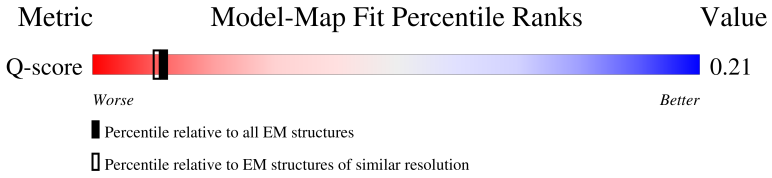
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.20 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	5410 (3.70 - 4.70)

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

Mol	Chain	Length	Quality of chain
1	A	1798	43% 31% 56% 11% ••
2	B	3396	18% 22% 59% 15% • •
3	C	158	23% 22% 61% 16% •

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Mol	Chain	Length	Quality of chain
4	D	121	26% 64% 8%
5	E	217	77% 11% 29% 32% 7% 21%
6	F	254	41% 20% 48% 27%
7	G	387	45% 24% 54% 19%
8	H	362	39% 25% 43% 27%
9	I	297	35% 38% 46% 15%
10	J	176	66% 27% 49% 22%
11	K	244	39% 25% 41% 22% 9%
12	L	256	59% 31% 43% 15% 9%
13	M	191	63% 26% 57% 16%
14	N	221	34% 25% 48% 21% 5%
15	O	174	43% 39% 49% 9%
16	P	165	40% 5% 21% 25% 6% 43%
17	Q	199	29% 28% 44% 23%
18	R	138	44% 25% 46% 24%
19	S	204	52% 19% 54% 21% 5%
20	T	199	52% 21% 52% 24%
21	U	184	46% 28% 41% 28%
22	V	186	28% 22% 56% 19%
23	W	189	66% 37% 48% 13%
24	X	172	56% 21% 50% 26%
25	Y	160	37% 26% 44% 24% 5%
26	Z	121	66% 43% 36% 17%
27	AA	137	54% 39% 42% 14%
28	BA	155	15% 5% 21% 12% 61%

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Mol	Chain	Length	Quality of chain
29	CA	142	67% 28% 39% 13% 15%
30	DA	127	32% 30% 44% 20% 5%
31	EA	136	61% 32% 54% 14%
32	FA	149	33% 21% 48% 30%
33	GA	59	34% 39% 39% 20%
34	HA	105	29% 28% 56% 8% 8%
35	IA	113	45% 34% 49% 12%
36	JA	130	25% 19% 45% 28% 6%
37	KA	107	65% 29% 49% 19%
38	LA	121	43% 28% 46% 14% 7%
39	MA	120	65% 33% 52% 12%
40	NA	100	42% 27% 56% 16%
41	OA	88	39% 24% 48% 20% 7%
42	PA	78	97% 60% 31% 6%
43	QA	51	45% 25% 45% 25%
44	RA	128	8% 14% 20% 5% 59%
45	SA	25	96% 24% 56% 16%
46	TA	106	15% 15% 64% 20%
47	UA	92	49% 34% 46% 17%
48	VA	312	37% 6% 28% 21% 5% 39%
49	WA	319	96% 42% 54%
50	XA	252	62% 27% 45% 9% 18%
51	YA	255	84% 71% 12% 16%
52	ZA	254	57% 36% 43% 7% 15%
53	AB	240	65% 44% 42% 7% 7%

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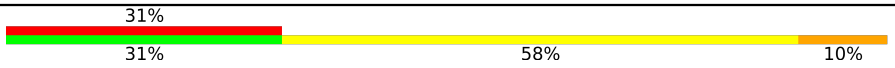
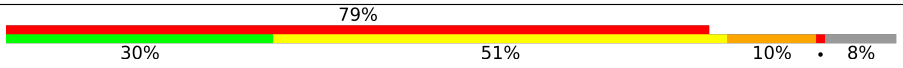
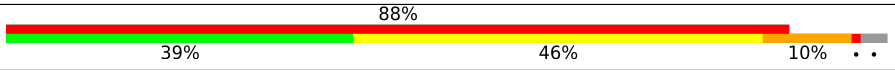
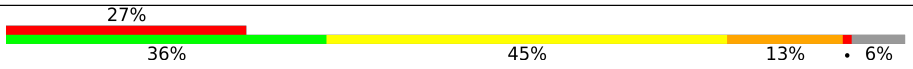
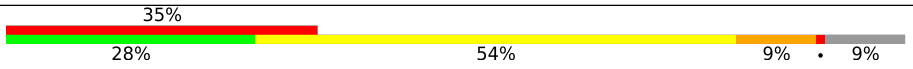
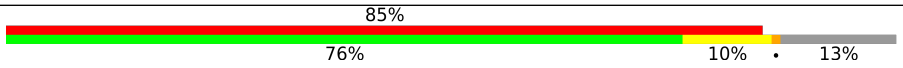
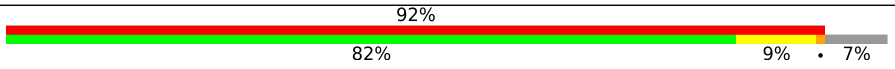
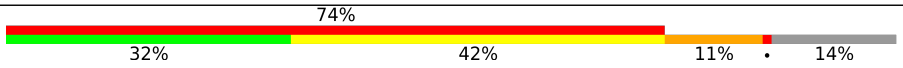
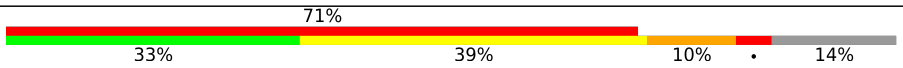
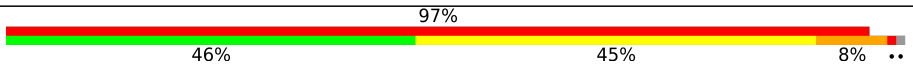
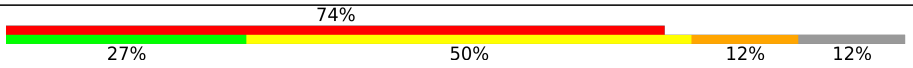
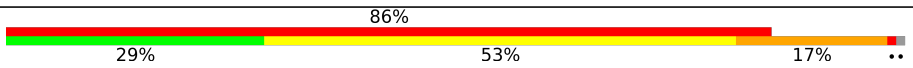
Mol	Chain	Length	Quality of chain
54	BB	261	
55	CB	225	
56	DB	236	
57	EB	190	
58	FB	200	
59	GB	197	
60	HB	105	
61	IB	156	
62	JB	143	
63	KB	151	
64	LB	137	
65	MB	142	
66	NB	143	
67	OB	136	
68	PB	146	
69	QB	144	
70	RB	121	
71	SB	87	
72	TB	130	
73	UB	145	
74	VB	135	
75	WB	108	
76	XB	119	
77	YB	82	
78	ZB	67	

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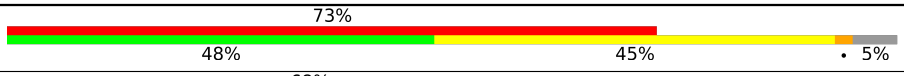
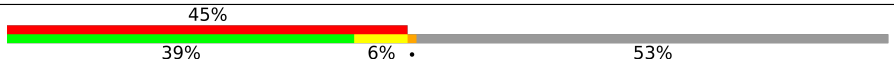
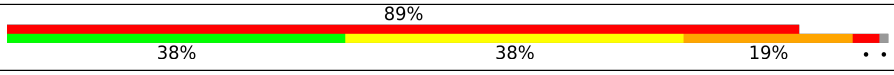
Mol	Chain	Length	Quality of chain
79	AC	56	
80	BC	63	
81	CC	152	
82	DC	842	
83	EC	201	

2 Entry composition (i)

There are 86 unique types of molecules in this entry. The entry contains 212680 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	36760	16335	6359	12285	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
7	G	386	Total	C	N	O	S	0	0
			3082	1956	584	534	8		

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

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

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

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

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

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

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

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

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

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

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

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

- 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
21	U	183	Total 1443	C 896	N 287	O 260	0	0

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- 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
			1612	1034	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	0	0
			856	428	214	214		

- 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
56	DB	226	Total	C	N	O	S	0	0
			1820	1142	350	325	3		

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

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

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

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

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

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

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

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

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

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

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

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

- 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	0	0
			508	254	127	127		

- 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	0	0
			388	194	97	97		

- 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		

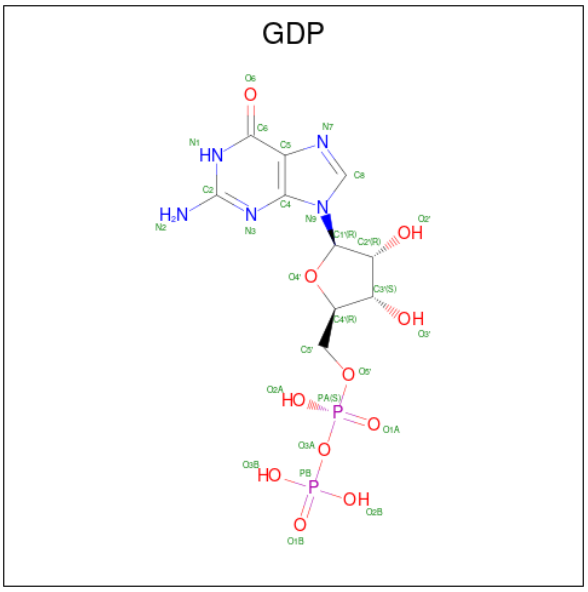
- Molecule 82 is a protein called yeast eEF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	DC	824	Total	C	N	O	S	0	0
			6419	4085	1096	1208	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
			4129	1839	725	1367	198		

- Molecule 84 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).

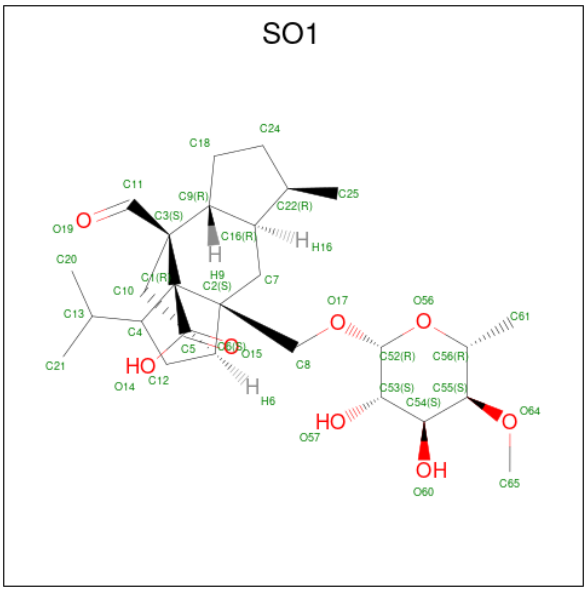


Mol	Chain	Residues	Atoms					AltConf
84	DC	1	Total	C	N	O	P	0
			28	10	5	11	2	

- Molecule 85 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

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

- 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 (CCD ID: SO1) (formula: $C_{27}H_{42}O_8$).

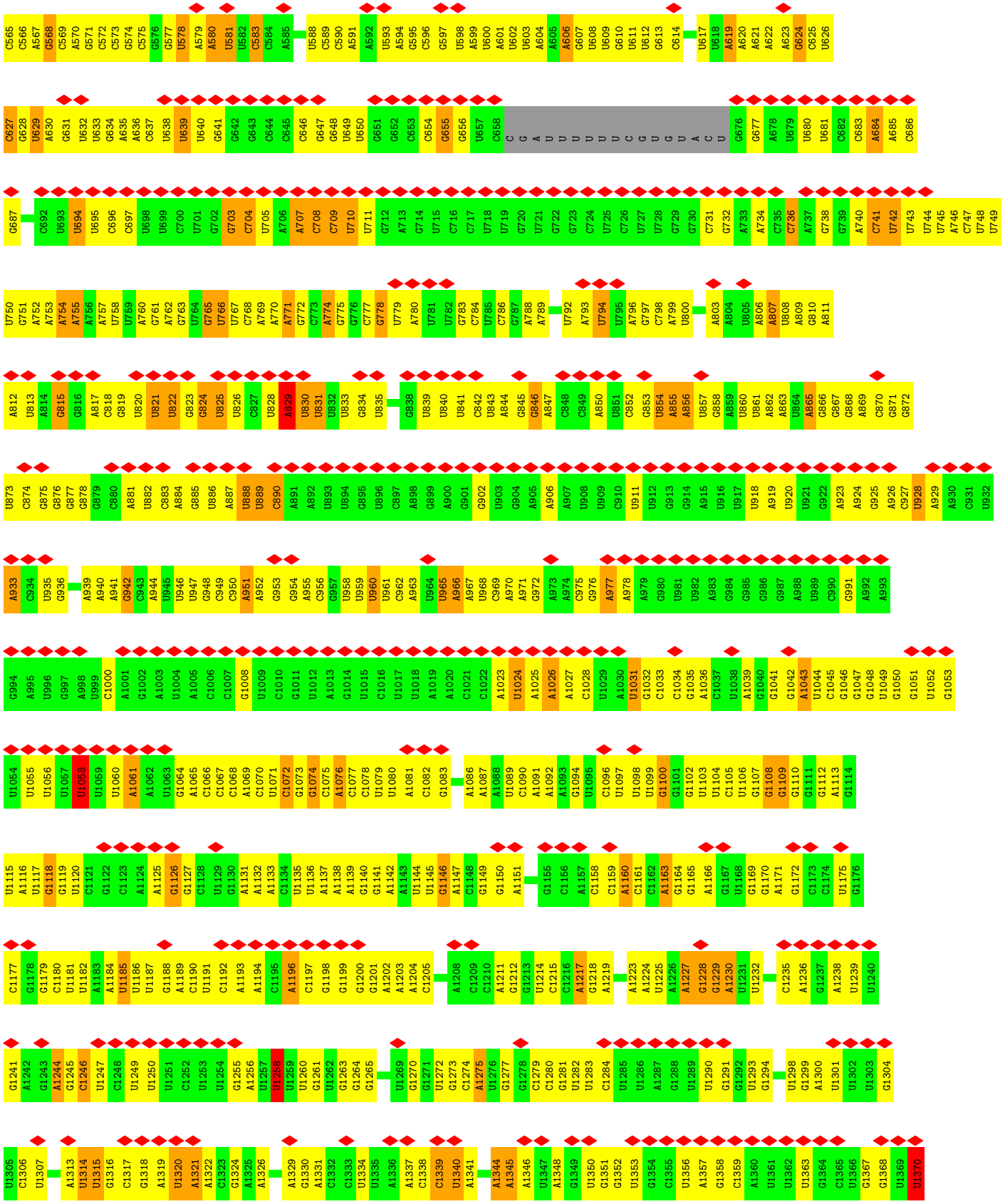


Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
86	DC	1	35	27	8	0

3 Residue-property plots (i)

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

- Molecule 1: 18S ribosomal RNA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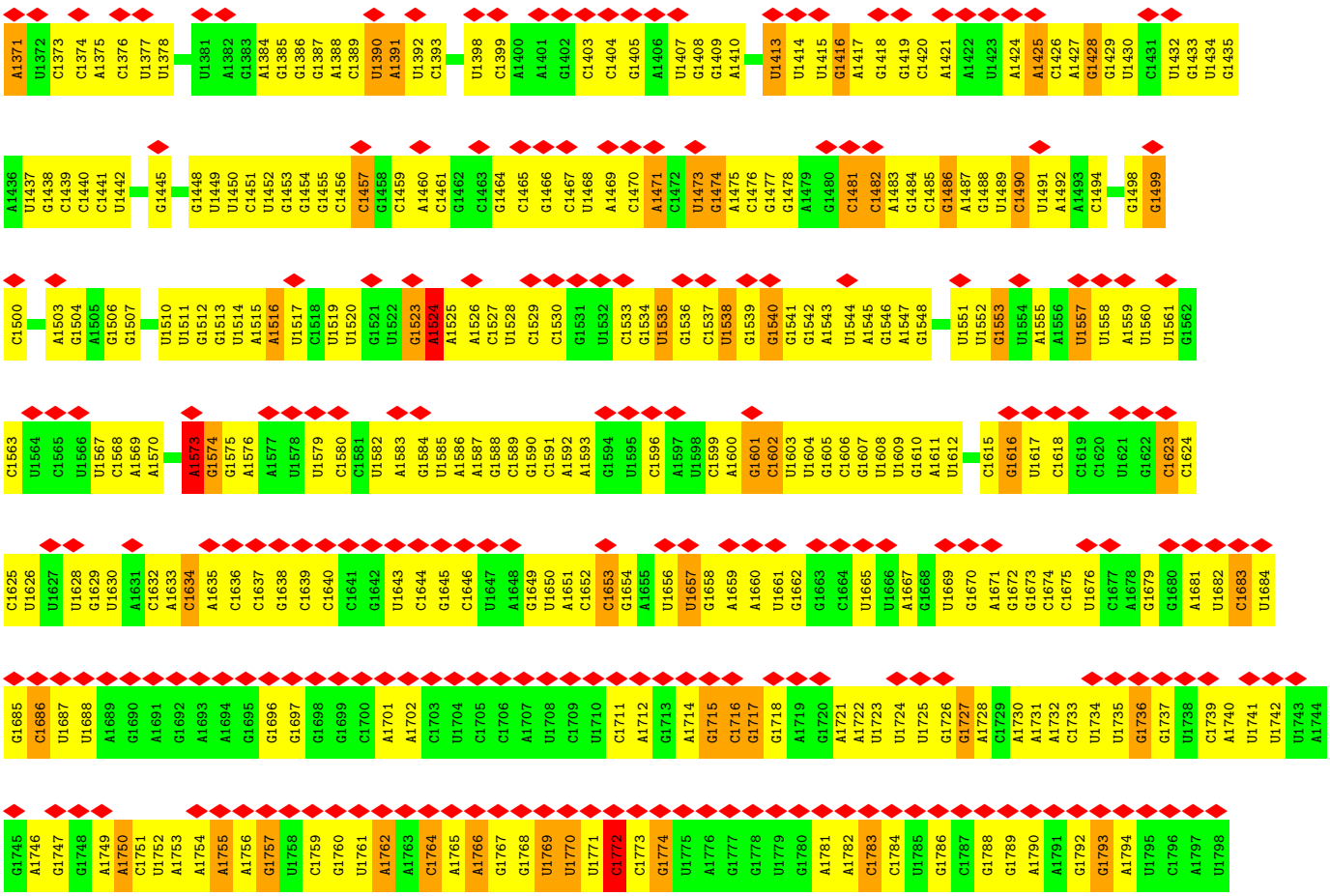
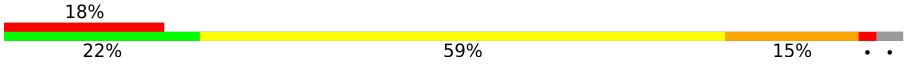
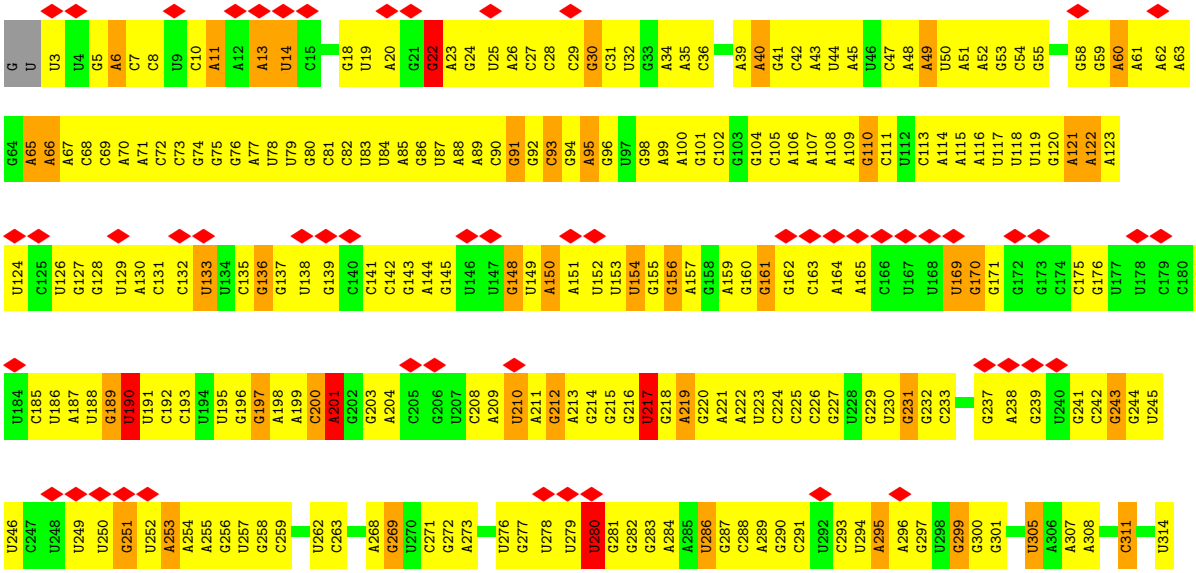
C627 G628 U629 A630 G631 U632 U633 G634 A635 A636 C637 U638 U639 U640 G641 G642 G643 C644 C645 C646 G647 G648 U649 U650 G651 G652 C653 C654 G655 G656 U657 C658 G676 G677 A678 U679 U680 U681 C682 C683 A684 A685 C686
G687 C692 U693 U694 U695 C696 C697 U698 U699 C700 U701 G702 G703 C704 U705 A706 A707 C708 C709 U710 U711 G712 A713 G714 U715 C716 C717 U718 U719 G720 U721 G722 G723 C724 U725 C726 U727 U728 G729 G730 C731 G732 A733 A734 C735 C736 A737 G738 G739 A740 C741 U742 U743 U744 U745 A746 C747 U748 U749
U750 G751 A752 A753 A754 A755 A756 A757 U758 U759 A760 G761 A762 G763 U764 G765 U766 U767 C768 A769 A770 A771 G772 C773 A774 G775 G776 C777 G778 U779 A780 U781 U782 G783 C784 U785 C786 G787 A788 A789 U792 A793 U794 U795 A796 G797 C798 A799 U800 A803 A804 U805 A806 A807 U808 A809 G810 A811
A812 U813 A814 G815 G816 A817 C818 G819 U820 U821 U822 G823 G824 U825 U826 C827 U828 A829 U830 U831 U832 U833 G834 U835 G838 U839 U840 U841 C842 U843 A844 G845 G846 A847 C848 C849 A850 U851 C852 G853 U854 A855 A856 U857 G858 A859 U860 U861 A862 A863 U864 A865 G866 G867 G868 A869 C870 G871 G872
U873 C874 G875 G876 G877 G878 G879 C880 A881 U882 C883 A884 G885 U886 A887 U888 U889 C890 A891 A892 U893 U894 G895 U896 C897 A898 G899 A900 G901 G902 U903 G904 A905 A906 A907 U908 U909 C910 U911 U912 G913 G914 A915 U916 U917 U918 A919 U920 U921 G922 A923 A924 G925 A926 C927 U928 A929 A930 C931 U932
A933 C934 U935 G936 A939 A940 A941 G942 C943 A944 U945 U946 U947 G948 G949 C950 A951 A952 G953 G954 A955 C956 G957 U958 U959 U960 U961 C962 A963 U964 U965 A966 A967 U968 C969 A970 A971 G972 A973 A974 C975 G976 A977 A978 A979 G980 U981 U982 A983 G984 G985 G986 G987 A988 U989 C990 G991 A992 A993
G994 A995 U996 G997 A998 U999 C1000 A1001 G1002 A1003 U1004 A1005 C1006 C1007 G1008 U1009 C1010 G1011 U1012 A1013 G1014 U1015 C1016 U1017 U1018 A1019 A1020 C1021 C1022 A1023 U1024 A1025 A1026 A1027 C1028 U1029 A1030 U1031 G1032 C1033 C1034 G1035 A1036 C1037 U1038 A1039 G1040 G1041 G1042 A1043 U1044 C1045 G1046 G1047 G1048 U1049 G1050 G1051 U1052 G1053
U1054 U1055 U1056 U1057 U1058 U1059 U1060 A1061 A1062 U1063 G1064 A1065 C1066 C1067 C1068 A1069 C1070 U1071 C1072 G1073 G1074 C1075 A1076 C1077 C1078 U1079 U1080 A1081 C1082 G1083 A1086 A1087 A1088 U1089 C1090 A1091 A1092 A1093 A1094 U1095 C1096 U1097 U1098 U1099 G1100 G1101 G1102 U1103 U1104 C1105 U1106 G1107 G1108 G1109 G1110 G1111 G1112 A1113 G1114
U1115 A1116 U1117 G1118 G1119 U1120 C1121 G1122 C1123 A1124 A1125 G1126 G1127 C1128 U1129 G1130 A1131 A1132 A1133 C1134 U1135 U1136 A1137 A1138 A1139 G1140 G1141 A1142 A1143 U1144 U1145 G1146 A1147 C1148 G1149 G1150 A1151 G1155 C1156 A1157 C1158 C1159 A1160 C1161 C1162 A1163 G1164 G1165 A1166 G1167 U1168 G1169 G1170 A1171 G1172 C1173 C1174 U1175 G1176
C1177 A1178 G1179 C1180 U1181 U1182 A1183 A1184 U1185 U1186 U1187 G1188 A1189 C1190 U1191 C1192 A1193 A1194 C1195 A1196 C1197 G1198 G1199 G1200 G1201 A1202 A1203 A1204 C1205 A1208 C1209 C1210 A1211 G1212 G1213 U1214 C1215 C1216 A1217 G1218 A1219 A1223 A1224 U1225 A1226 A1227 G1228 G1229 A1230 U1231 U1232 C1235 A1236 G1237 A1238 U1239 U1240
G1241 A1242 G1243 A1244 G1245 C1246 U1247 C1248 U1249 U1250 U1251 C1252 U1253 U1254 G1255 A1256 U1257 U1258 U1259 U1260 G1261 U1262 G1263 G1264 G1265 U1269 G1270 G1271 U1272 G1273 C1274 A1275 U1276 G1277 G1278 C1279 C1280 G1281 U1282 U1283 C1284 U1285 U1286 A1287 G1288 U1289 U1290 G1291 G1292 U1293 G1294 U1298 G1299 A1300 U1301 U1302 U1303 G1304
U1305 C1306 U1307 A1313 U1314 U1315 G1316 C1317 G1318 A1319 U1320 A1321 A1322 C1323 G1324 A1325 A1326 A1329 G1330 A1331 C1332 C1333 U1334 U1335 A1336 A1337 C1338 C1339 U1340 A1341 A1344 A1345 A1346 U1347 A1348 G1349 U1350 G1351 G1352 U1353 G1354 C1355 U1356 A1357 G1358 C1359 A1360 U1361 U1362 U1363 C1364 C1365 U1366 G1367 G1368 U1369 U1370

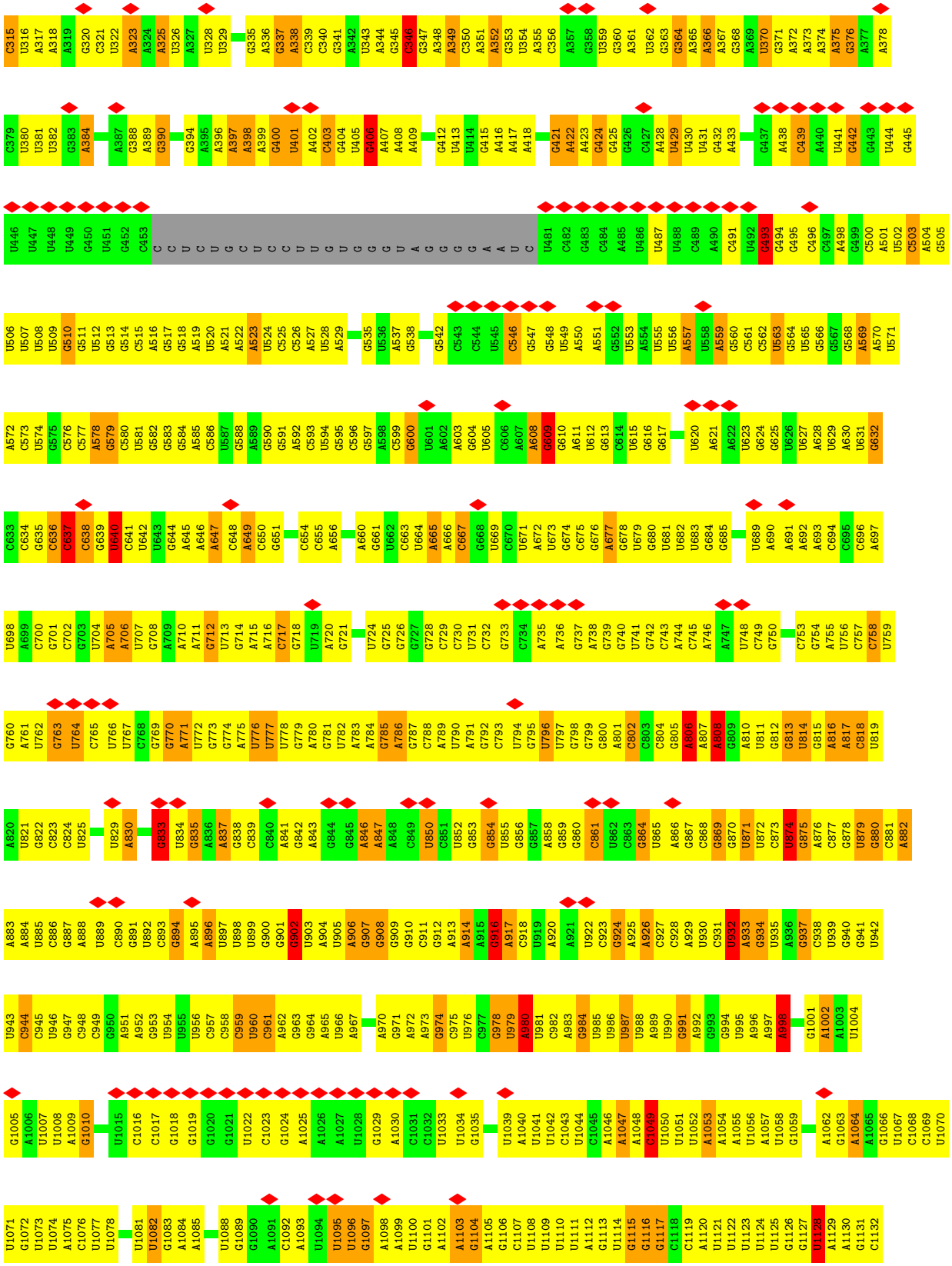


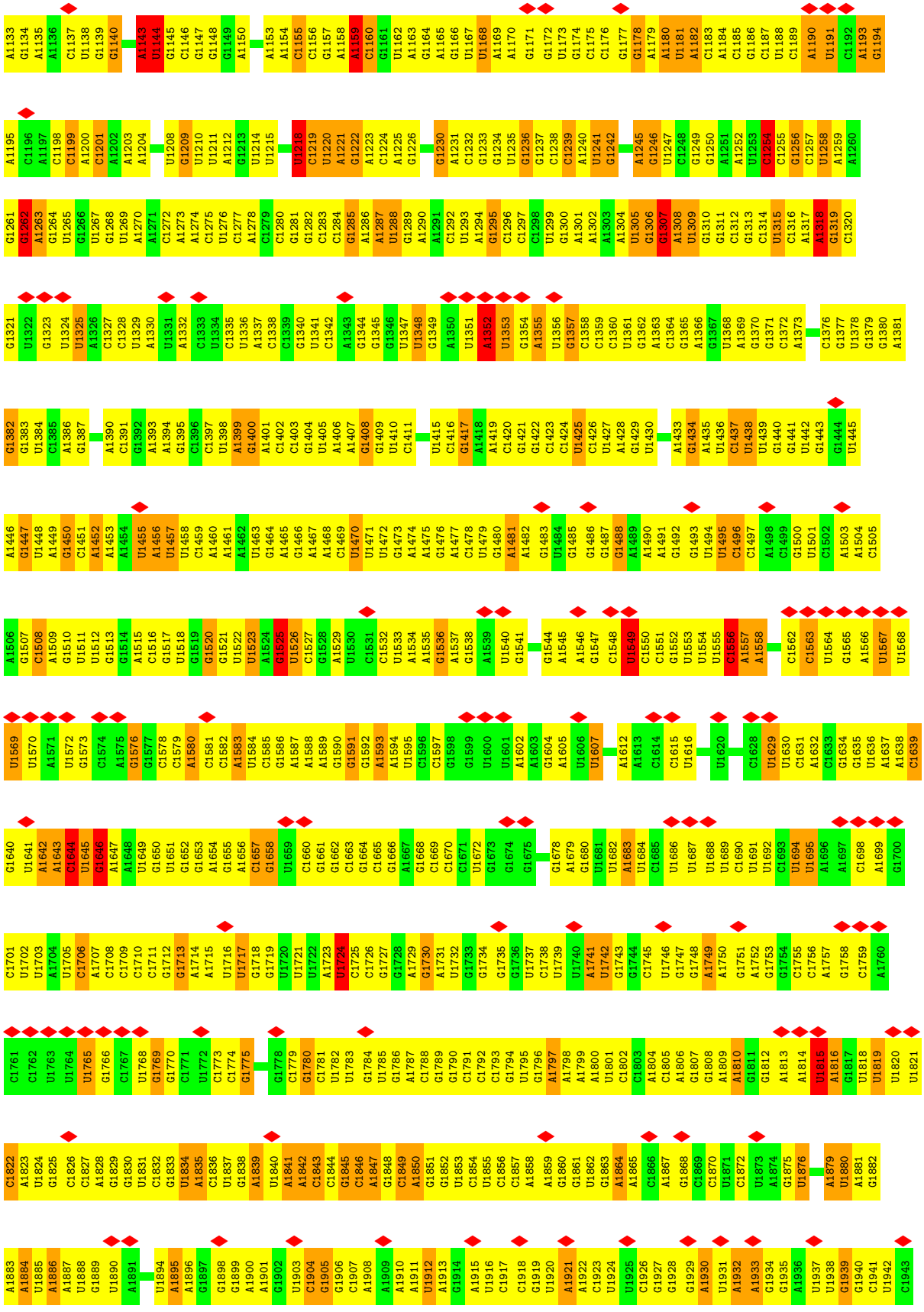
• Molecule 2: 25S ribosomal RNA

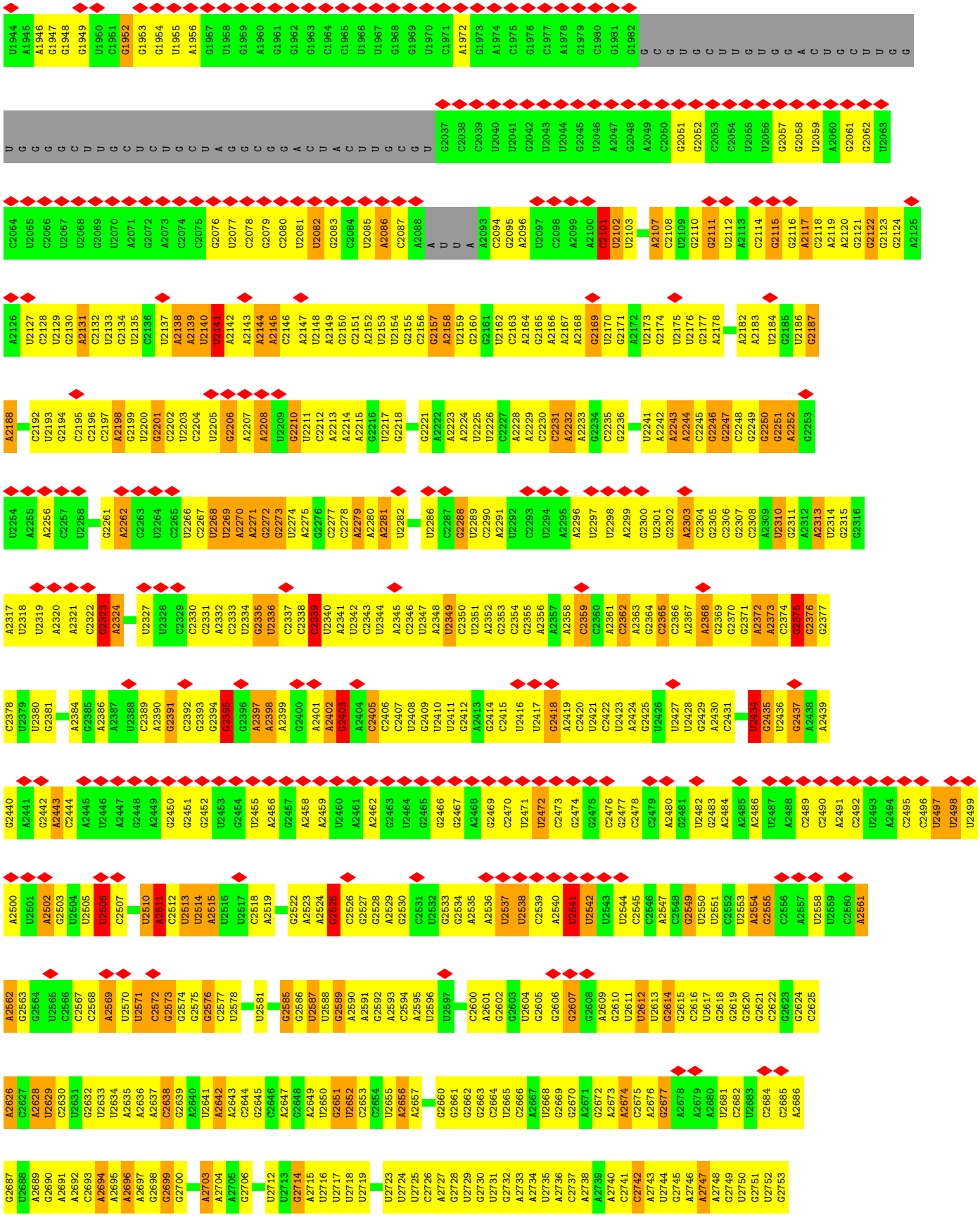
Chain B:

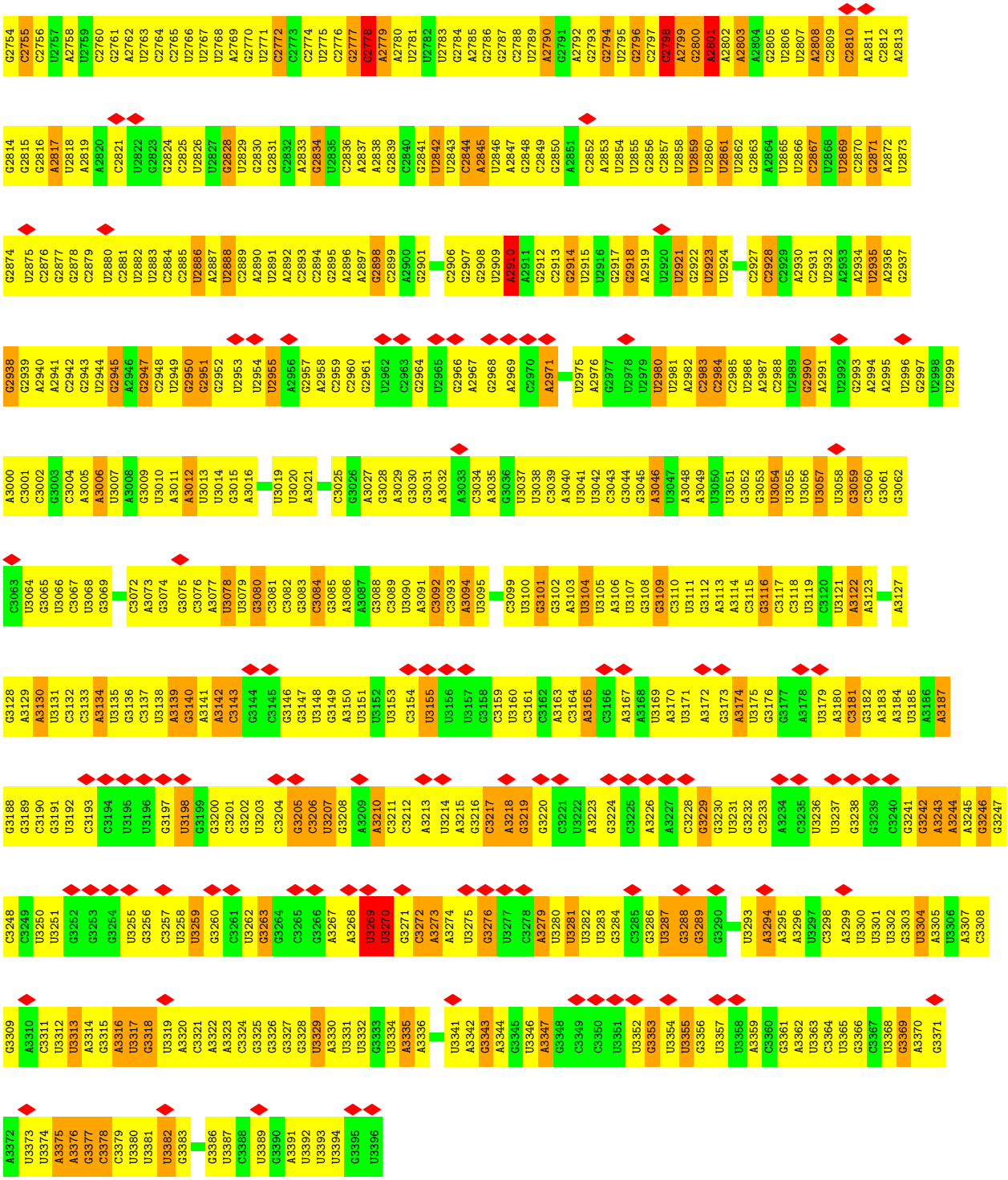






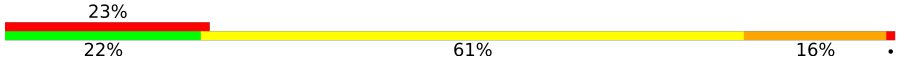


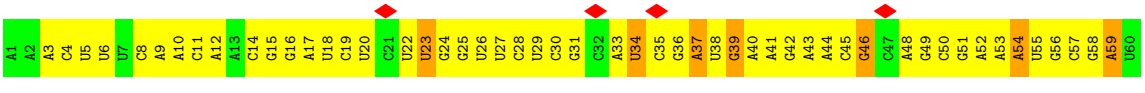


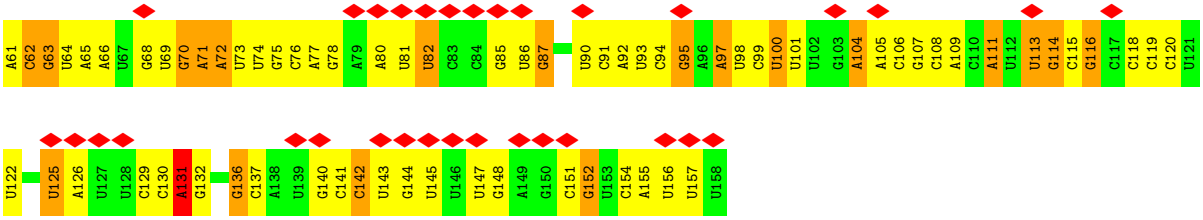


• Molecule 3: 5.8S ribosomal RNA

Chain C:

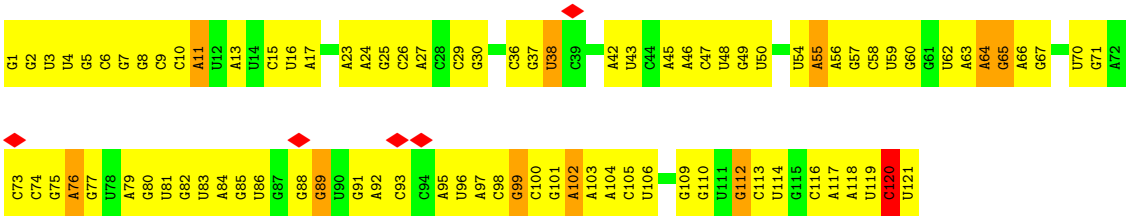






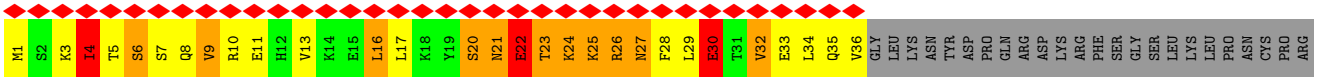
• Molecule 4: 5S ribosomal RNA

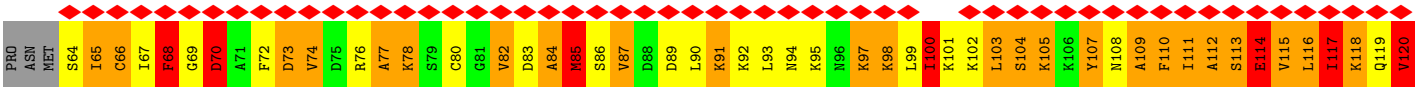
Chain D:

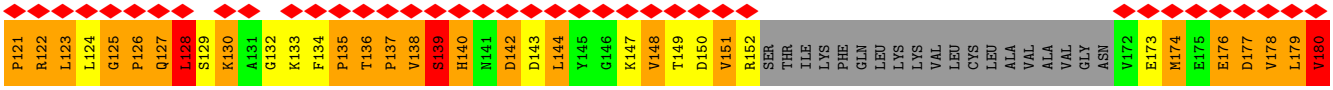


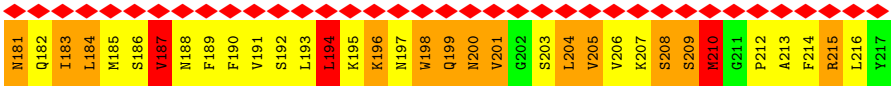
• Molecule 5: uL1 (yeast L1)

Chain E:



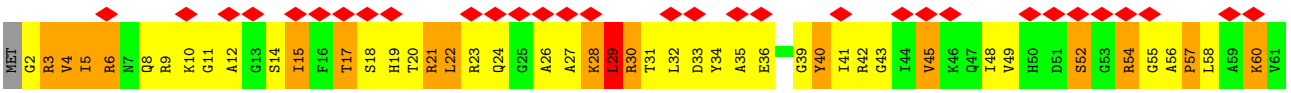


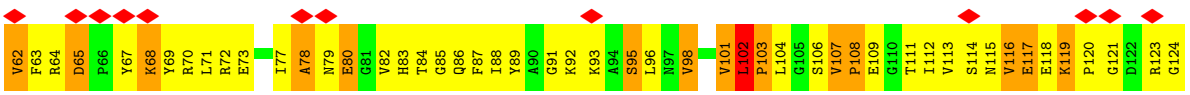




• Molecule 6: uL2 (yeast L2)

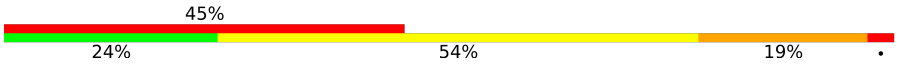
Chain F:

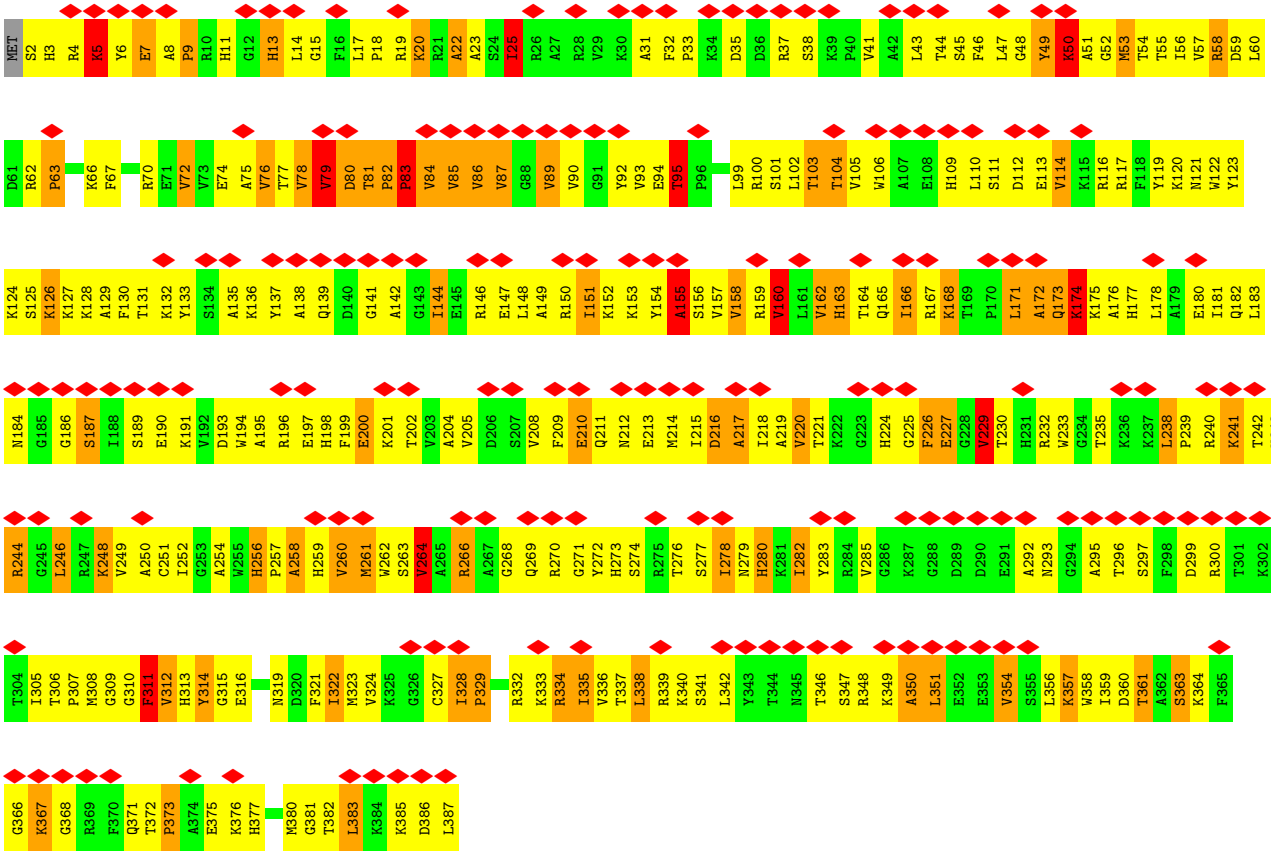




• Molecule 7: uL3 (yeast L3)

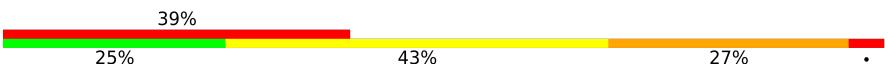
Chain G:

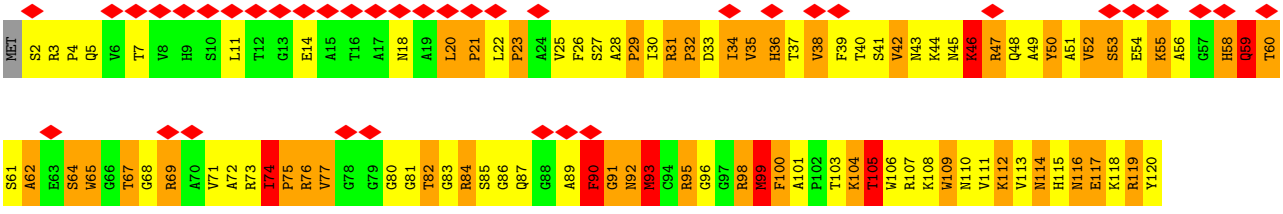


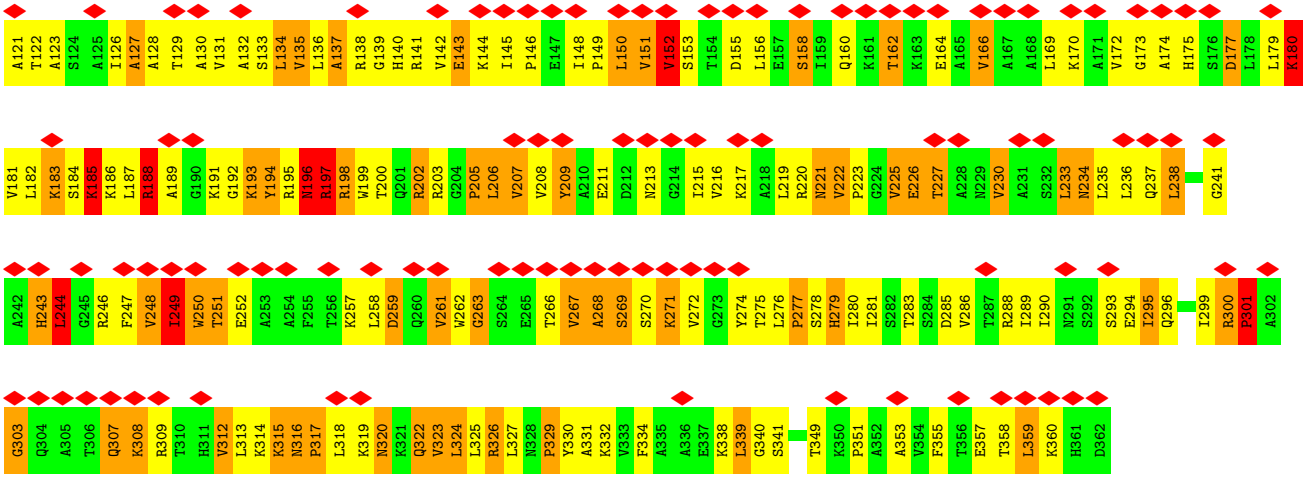


• Molecule 8: uL4 (yeast L4)

Chain H:

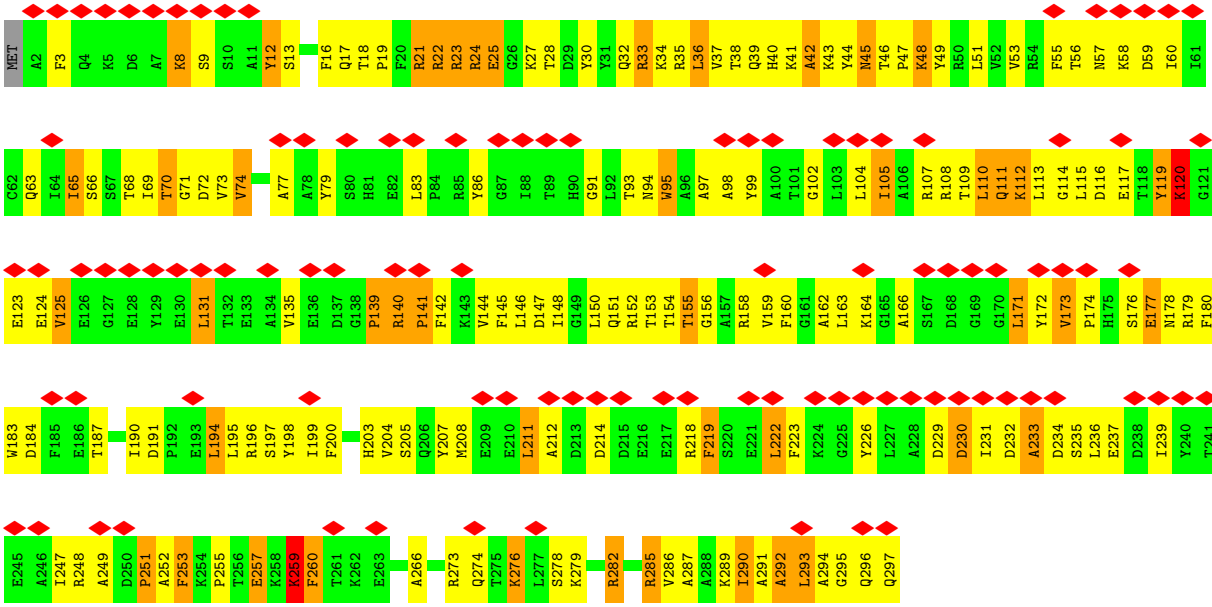






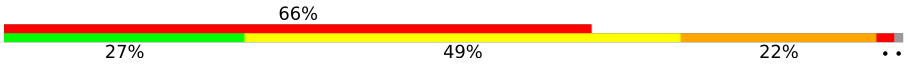
• Molecule 9: uL18 (yeast L5)

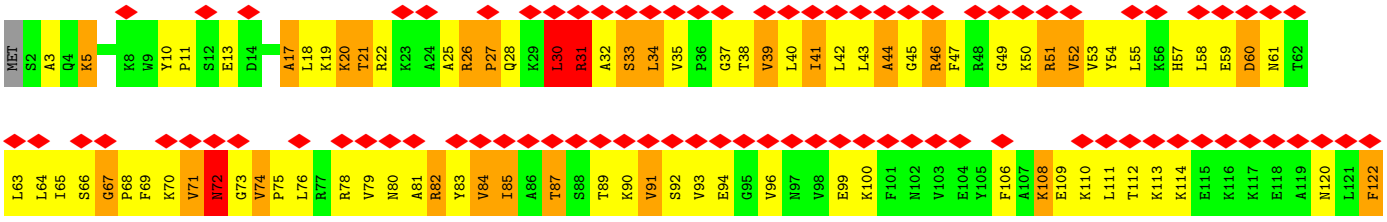
Chain I:

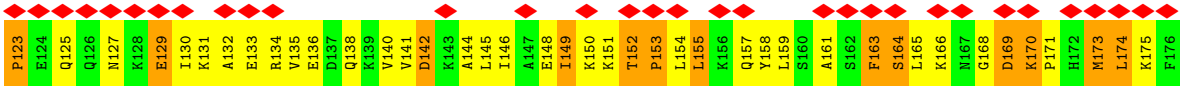


• Molecule 10: eL6 (yeast L6)

Chain J:

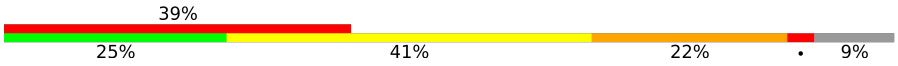


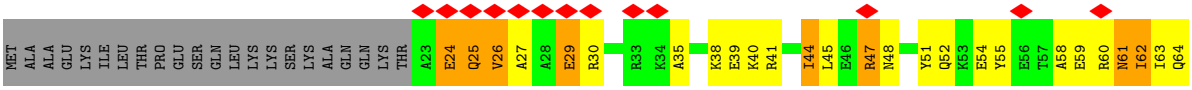


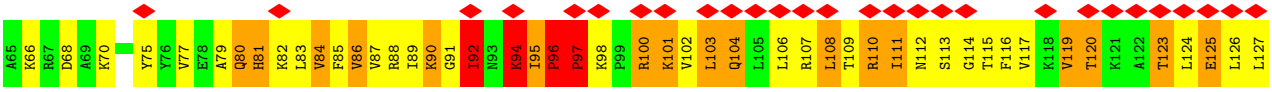


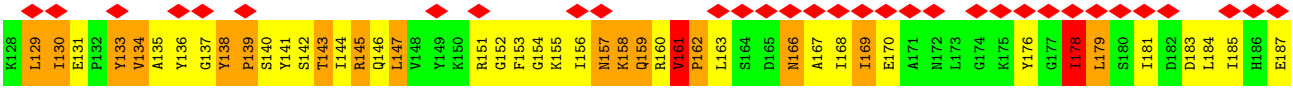
• Molecule 11: uL30 (yeast L7)

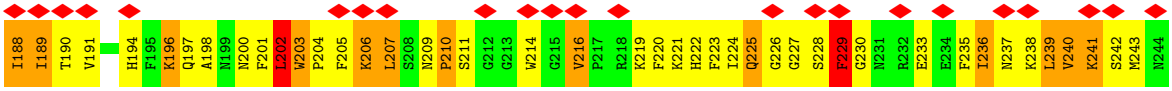
Chain K:





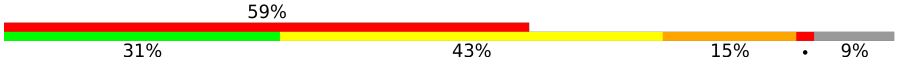


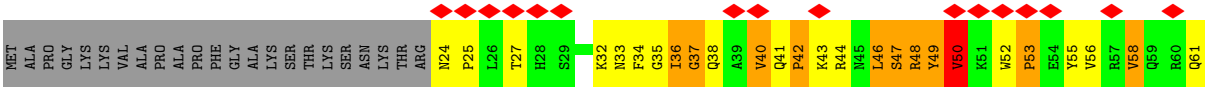


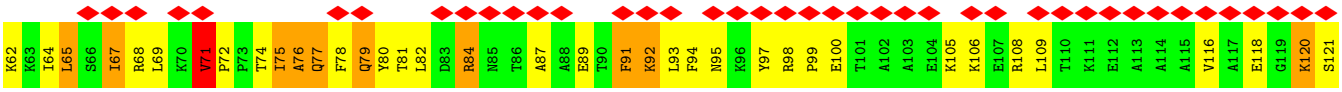


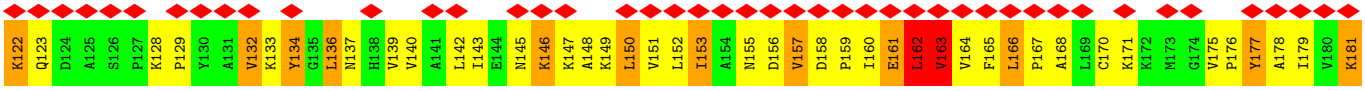
• Molecule 12: eL8 (yeast L8)

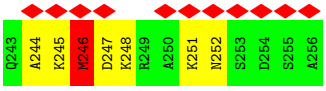
Chain L:





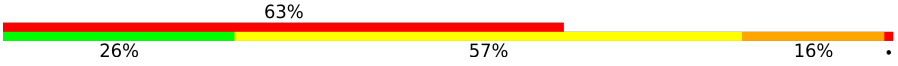


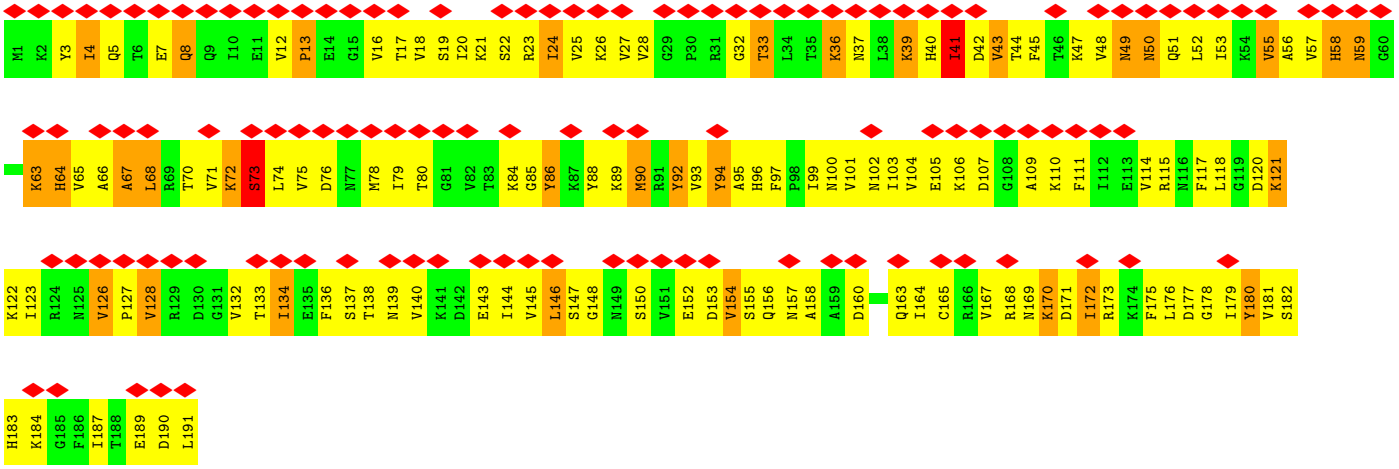




• Molecule 13: uL6 (yeast L9)

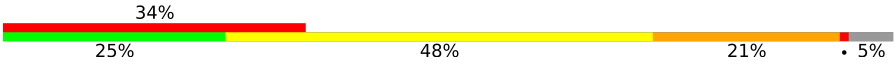
Chain M:

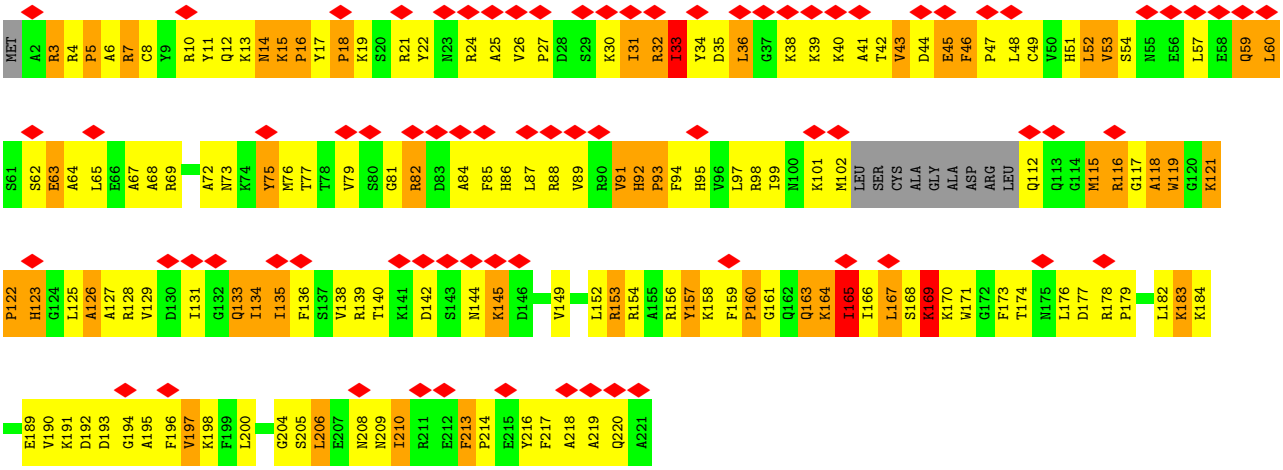




• Molecule 14: uL16 (yeast L10)

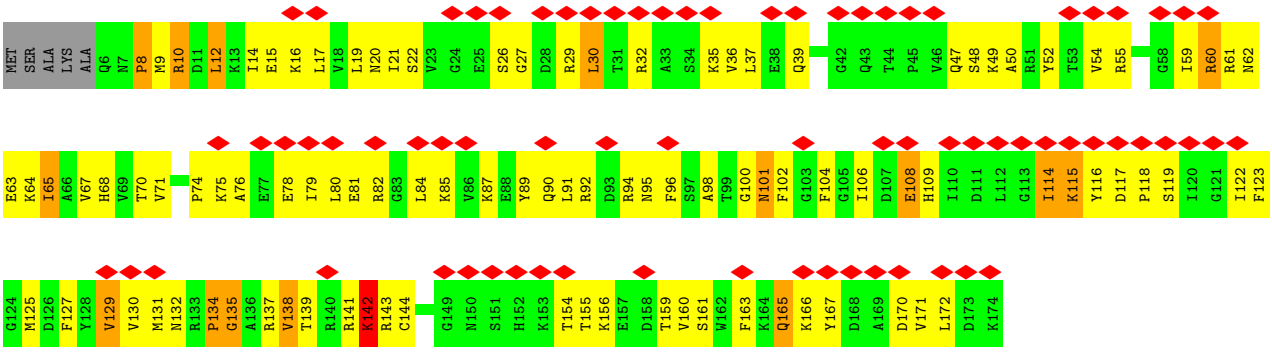
Chain N:



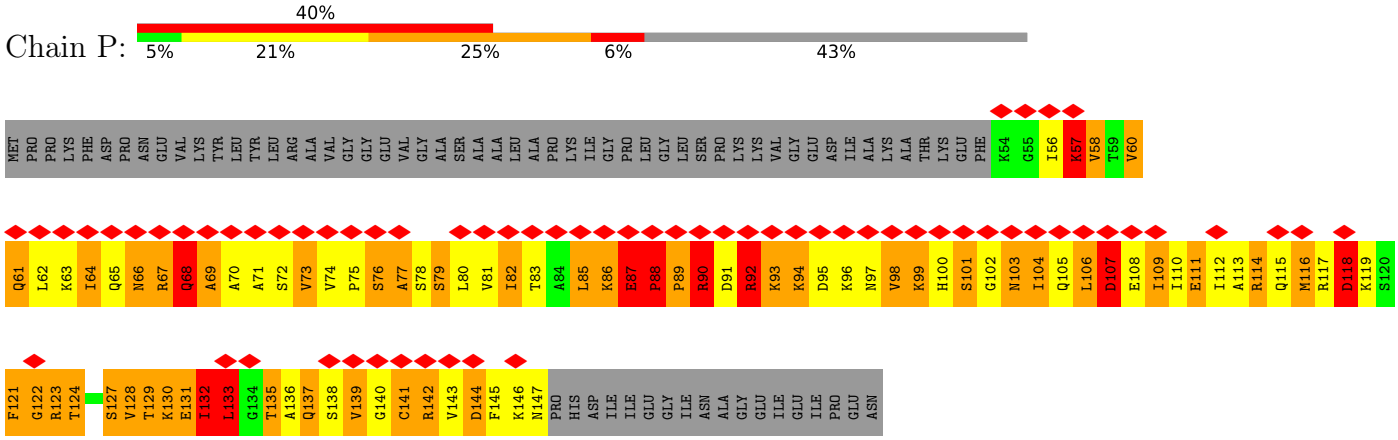


• Molecule 15: uL5 (yeast L11)

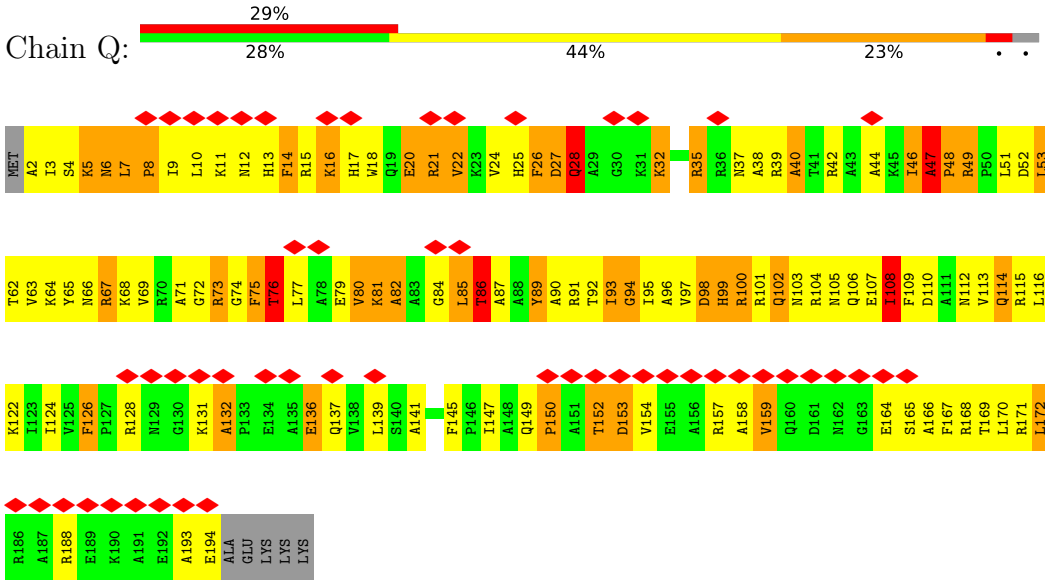
Chain O:



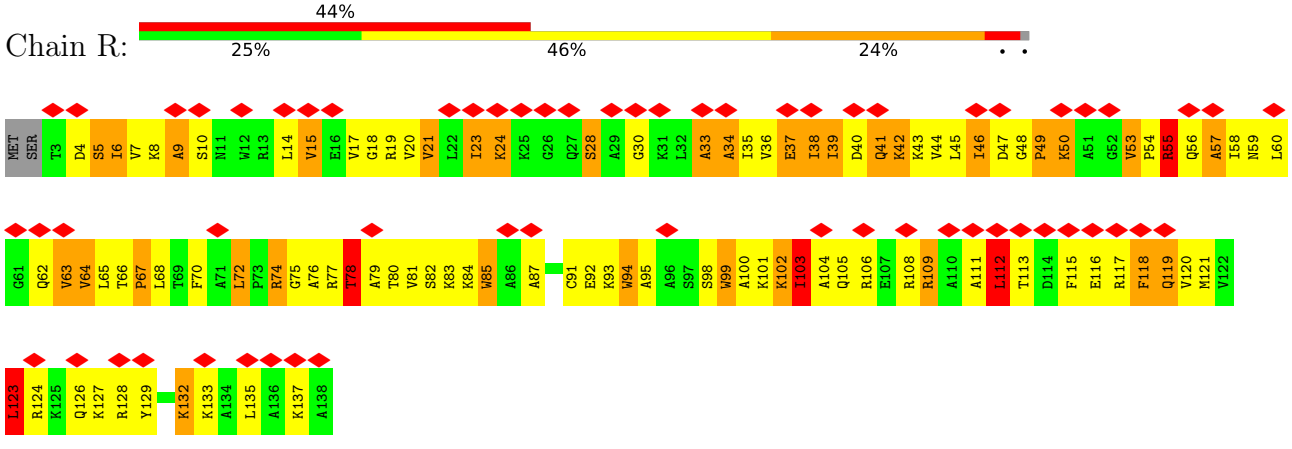
• Molecule 16: uL11 (yeast L12)



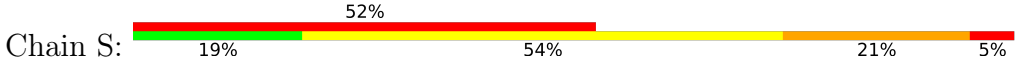
• Molecule 17: eL13 (yeast L13)

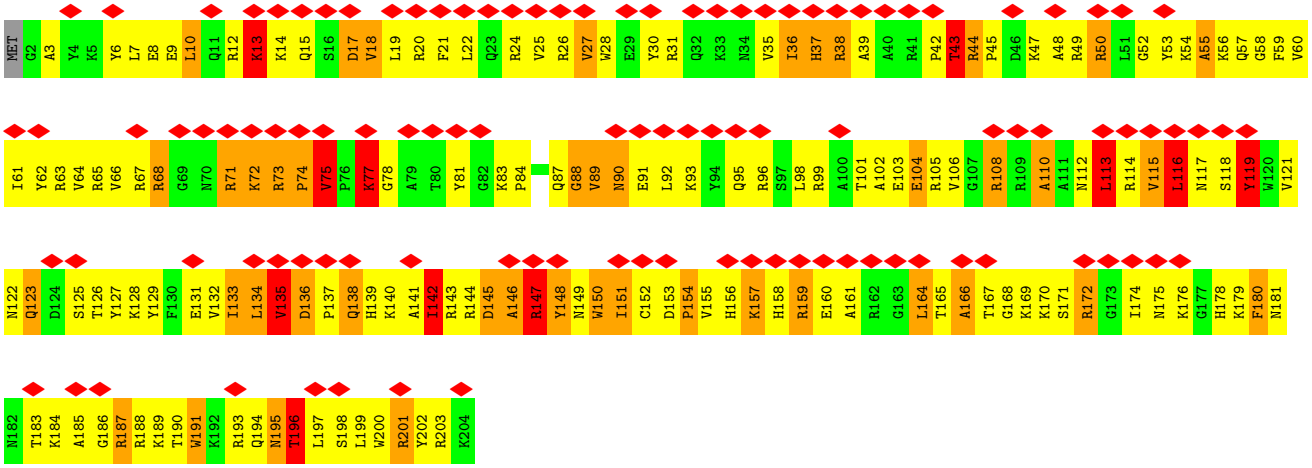


• Molecule 18: eL14 (yeast L14)



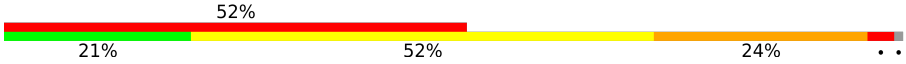
• Molecule 19: eL15 (yeast L15)

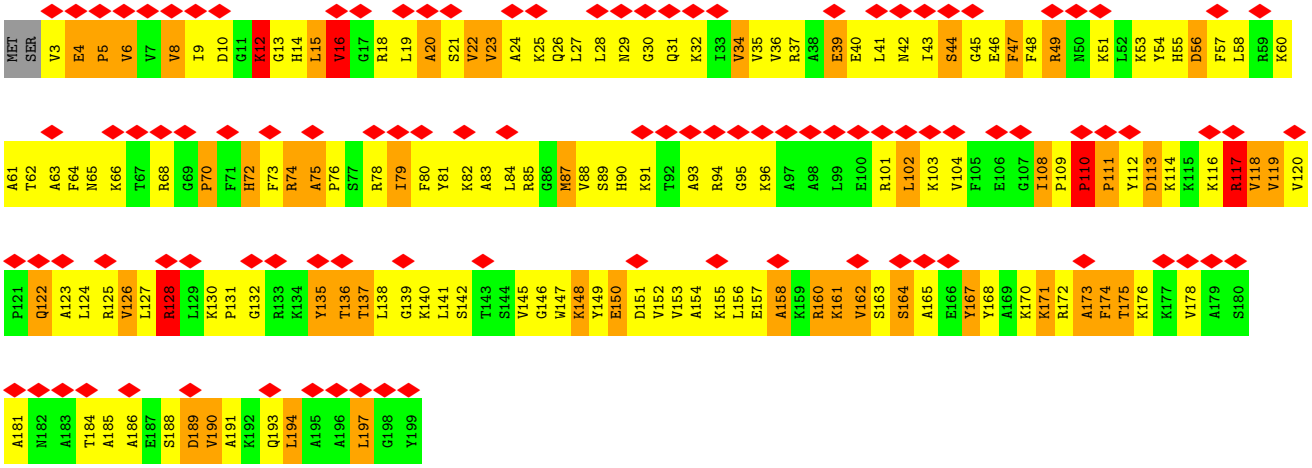




• Molecule 20: uL13 (yeast L16)

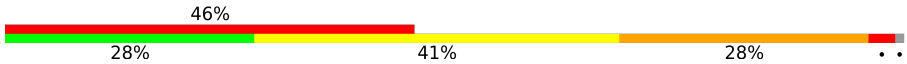
Chain T:

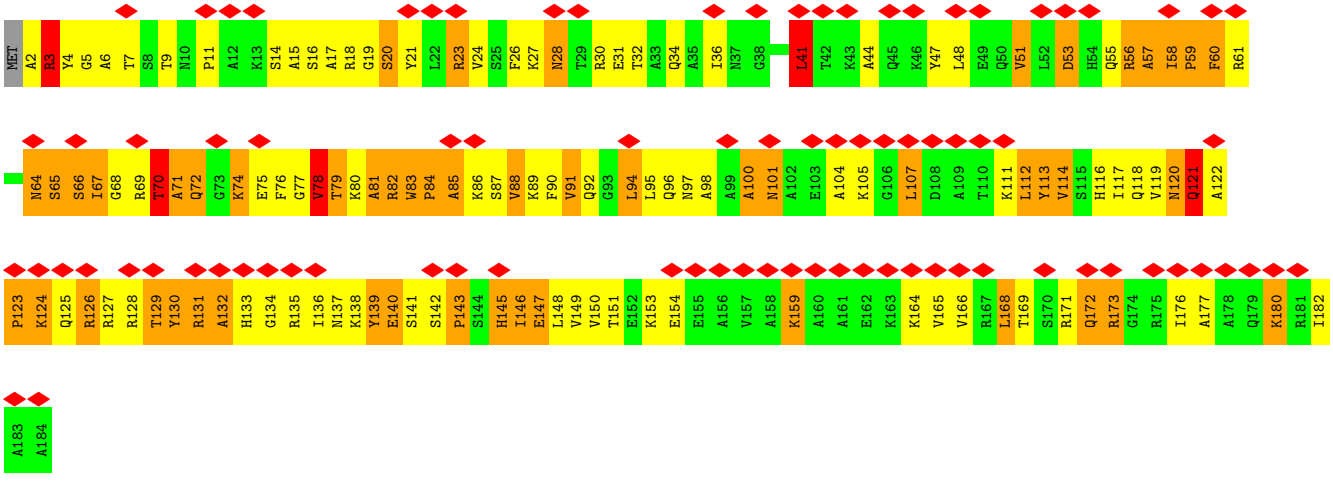




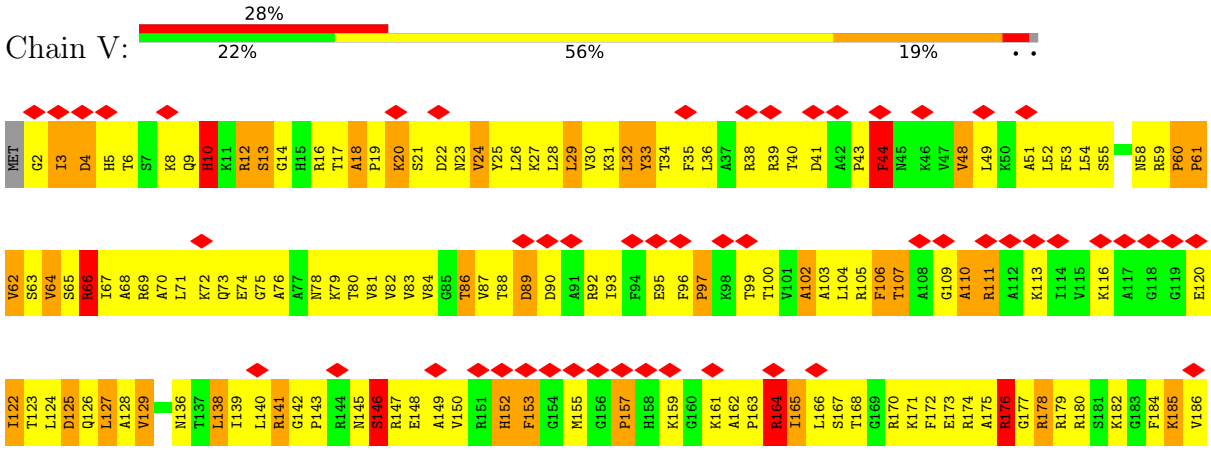
• Molecule 21: uL22 (yeast L17)

Chain U:

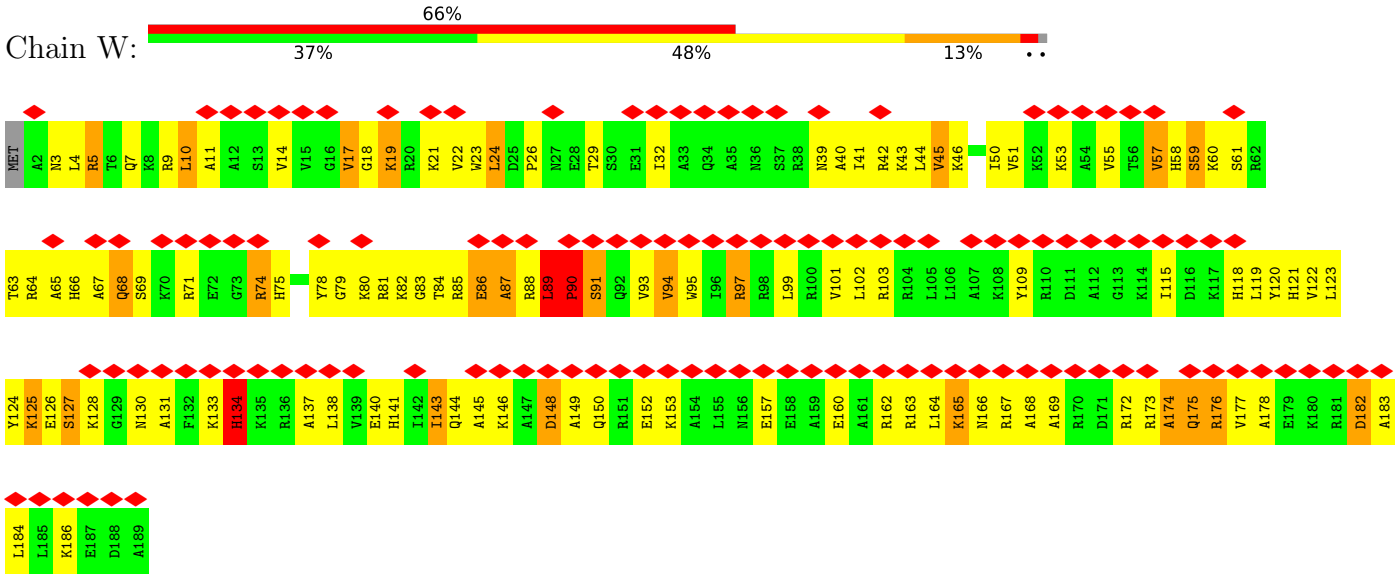




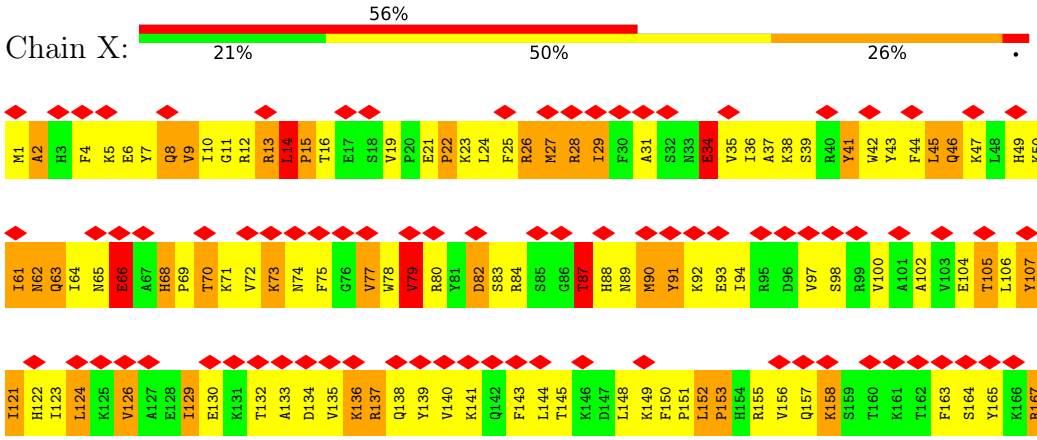
• Molecule 22: eL18 (yeast L18)



• Molecule 23: eL19 (yeast L19)

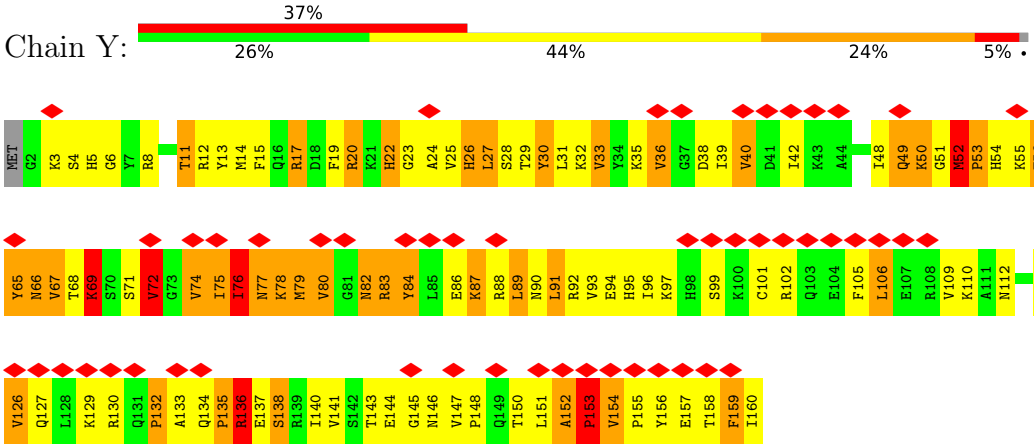


• Molecule 24: eL20 (yeast L20)



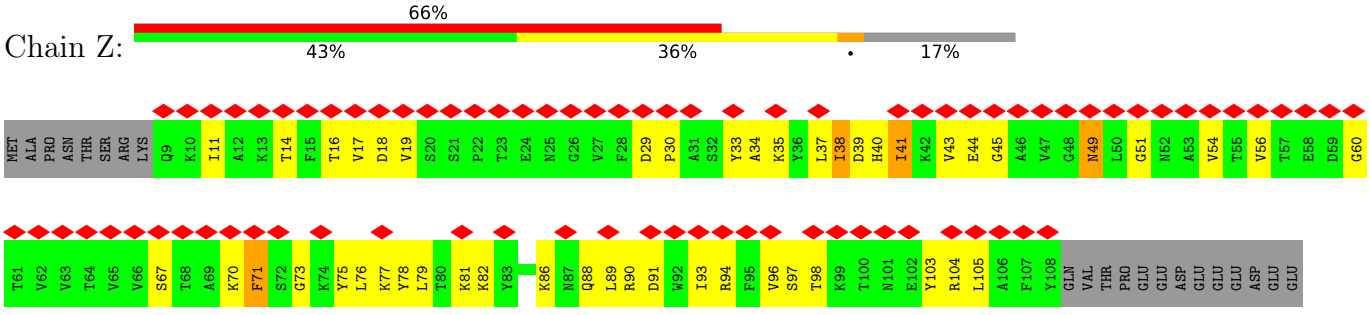
• Molecule 25: eL21 (yeast L21)

Chain Y:



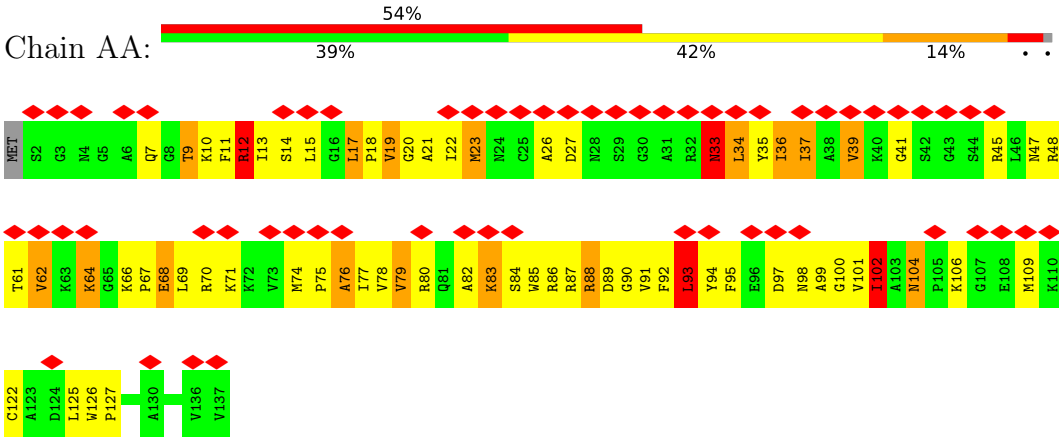
- Molecule 26: eL22 (yeast L22)

Chain Z:



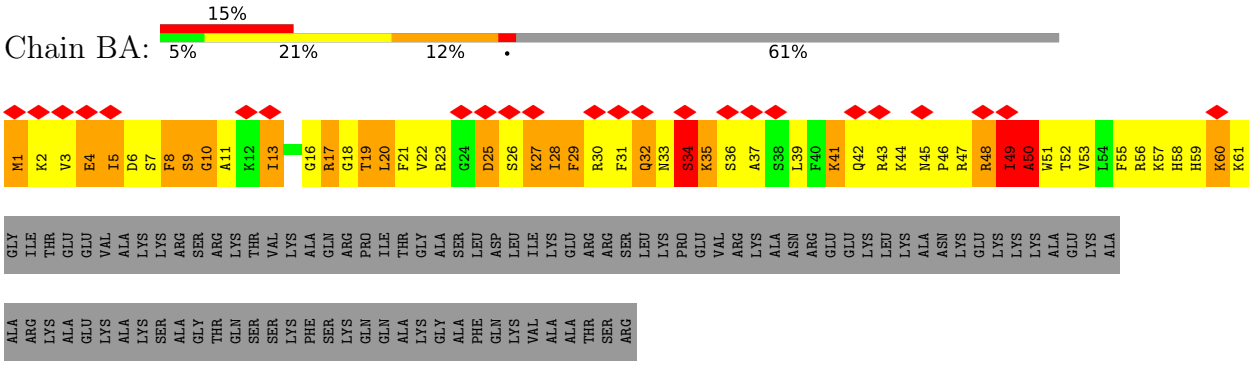
- Molecule 27: uL14 (yeast L23)

Chain AA:



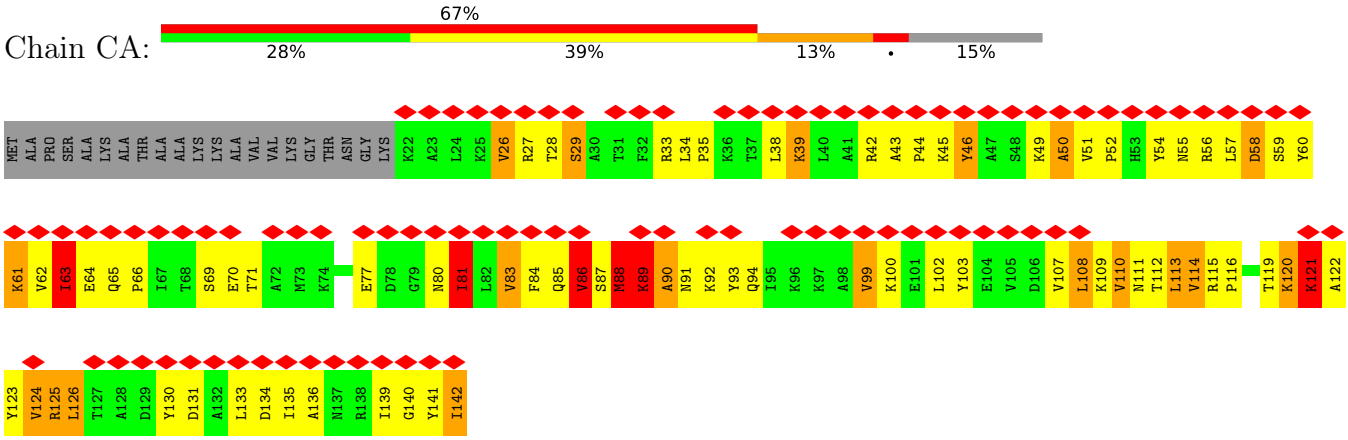
- Molecule 28: eL24 (yeast L24)

Chain BA:



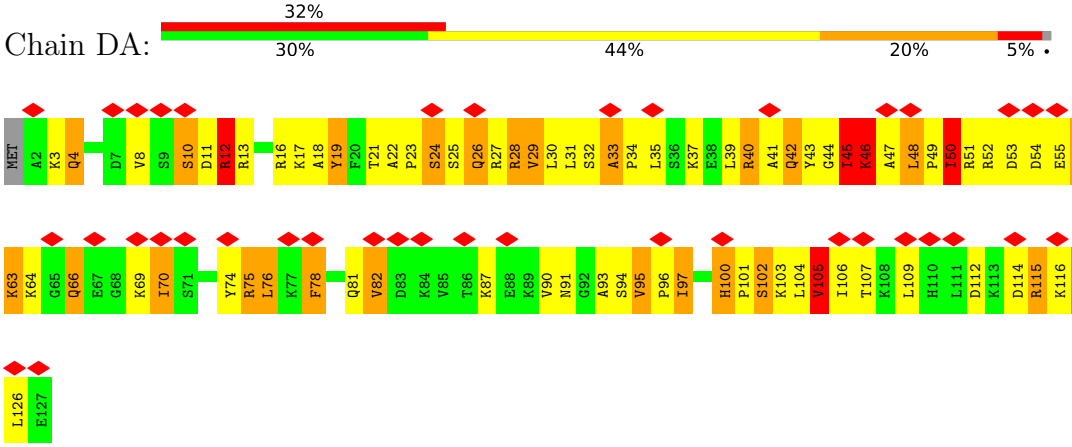
• Molecule 29: uL23 (yeast L25)

Chain CA:



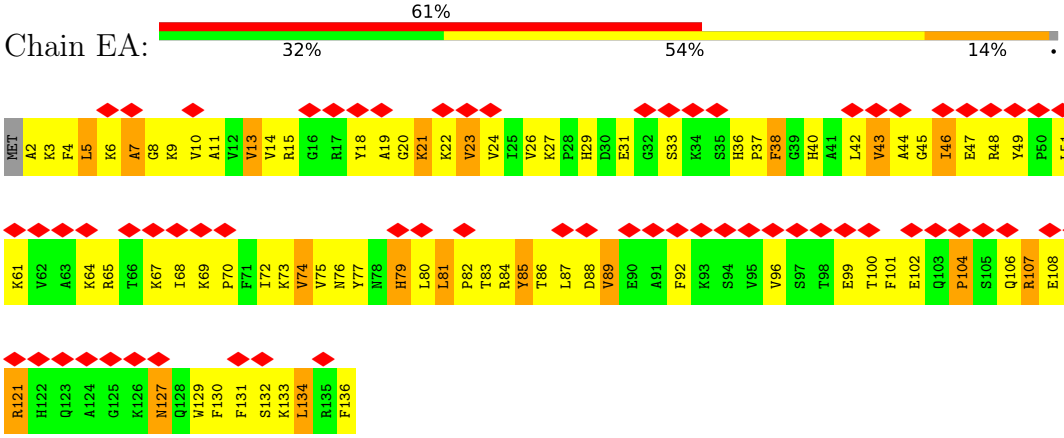
• Molecule 30: uL24 (yeast L26)

Chain DA:



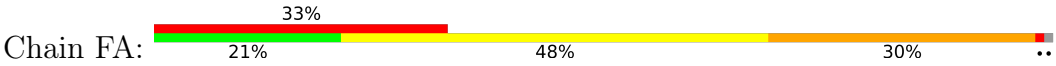
• Molecule 31: eL27 (yeast L27)

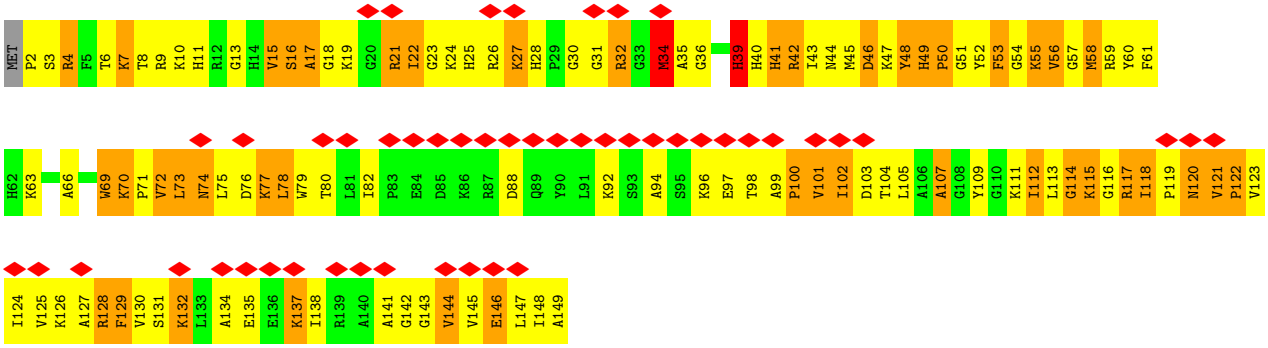
Chain EA:



• Molecule 32: uL15 (yeast L28)

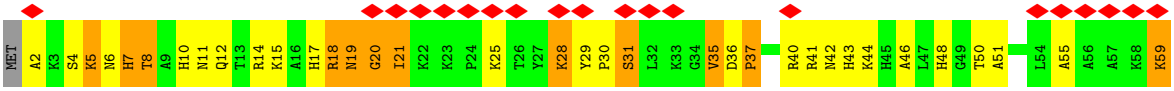
Chain FA:





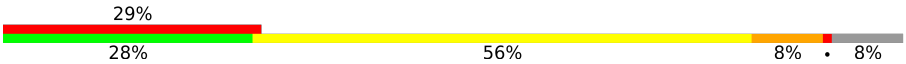
• Molecule 33: eL29 (yeast L29)

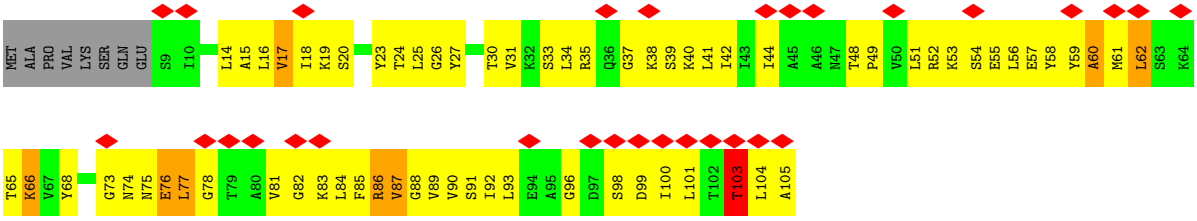
Chain GA:



• Molecule 34: eL30 (yeast L30)

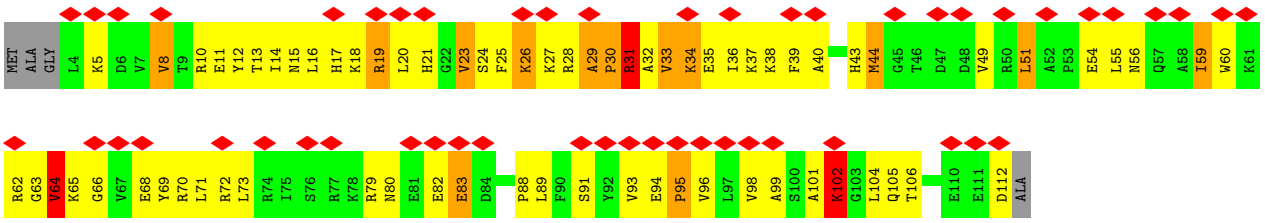
Chain HA:





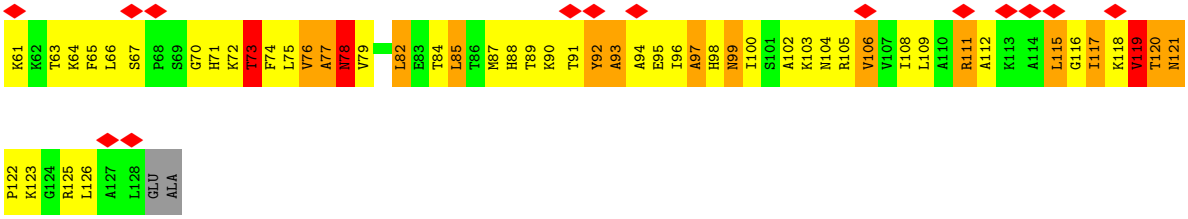
• Molecule 35: eL31 (yeast L31)

Chain IA:



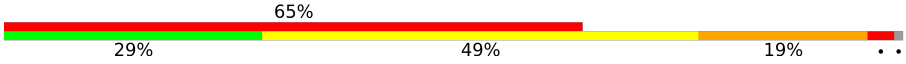
• Molecule 36: eL32 (yeast L32)

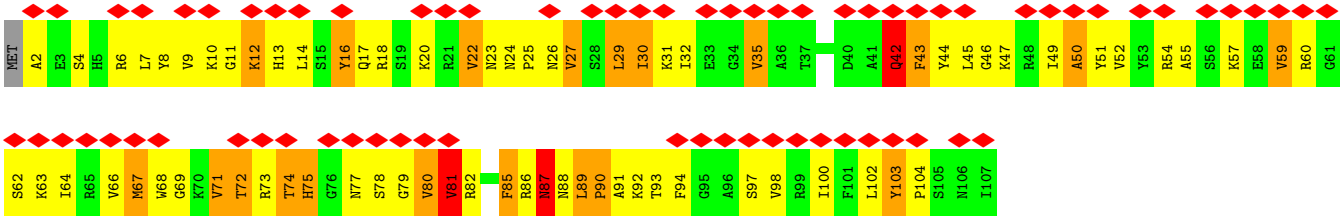
Chain JA:



• Molecule 37: eL33 (yeast L33)

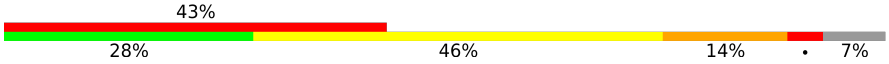
Chain KA:

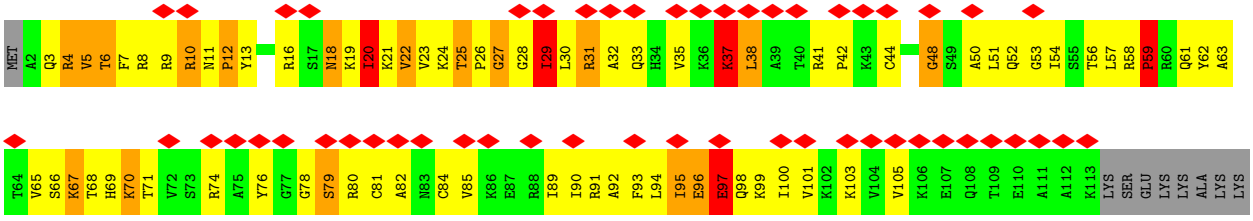




• Molecule 38: eL34 (yeast L34)

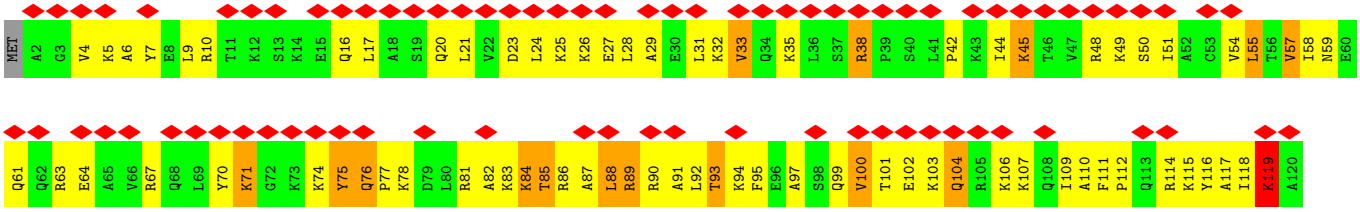
Chain LA:





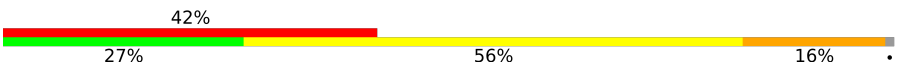
• Molecule 39: uL29 (yeast L35)

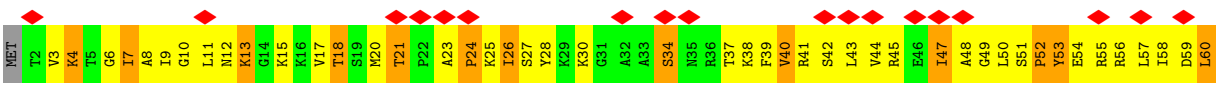
Chain MA:

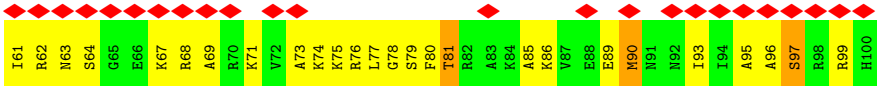


• Molecule 40: eL36 (yeast L36)

Chain NA:

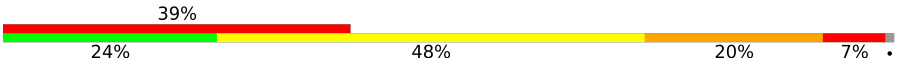


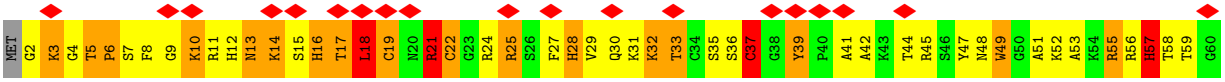


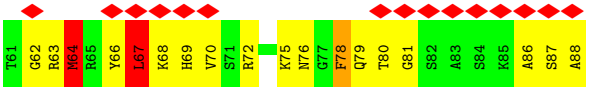


• Molecule 41: eL37 (yeast L37)

Chain OA:

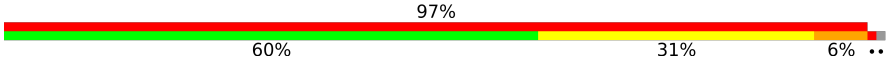


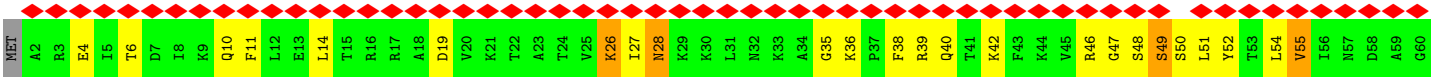


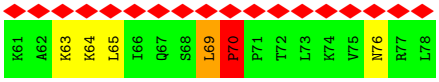


• Molecule 42: eL38 (yeast L38)

Chain PA:

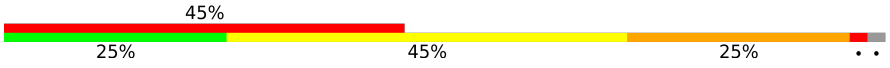


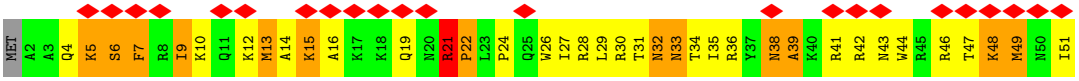




• Molecule 43: eL39 (yeast L39)

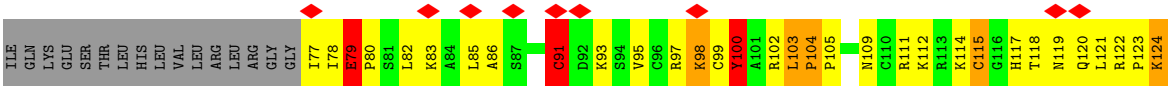
Chain QA:





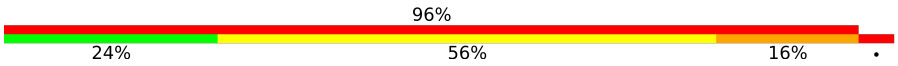
• Molecule 44: eL40 (yeast L40)

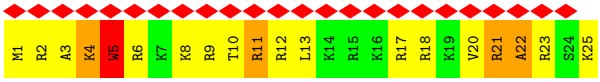
Chain RA:



• Molecule 45: eL41 (yeast L41)

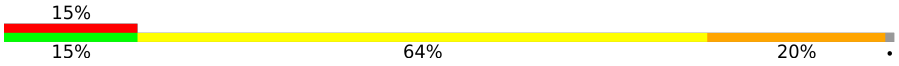
Chain SA:

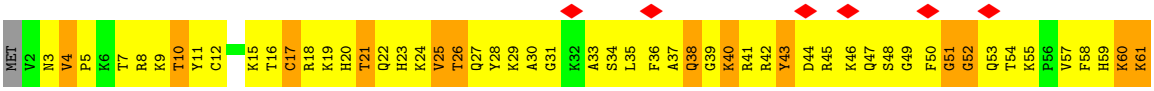


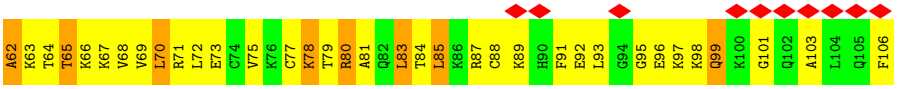


• Molecule 46: eL42 (yeast L42)

Chain TA:

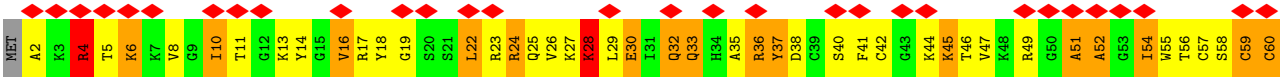


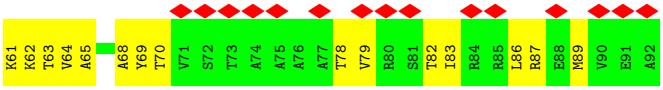




• Molecule 47: eL43 (yeast L43)

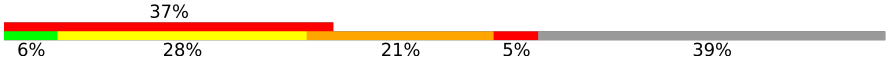
Chain UA:

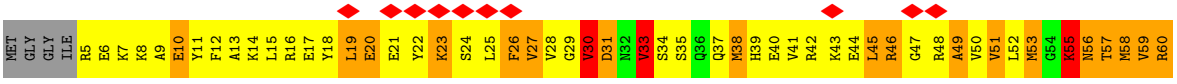


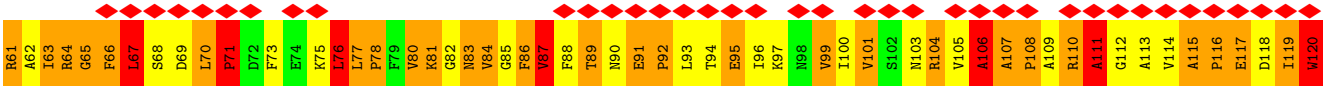


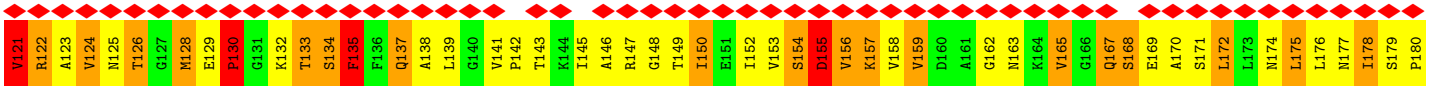
• Molecule 48: uL10 (yeast P0)

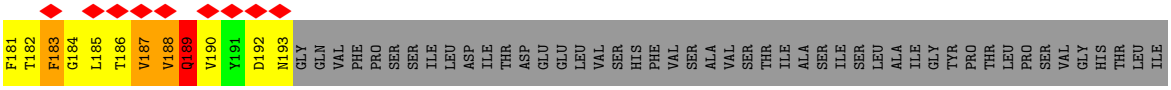
Chain VA:





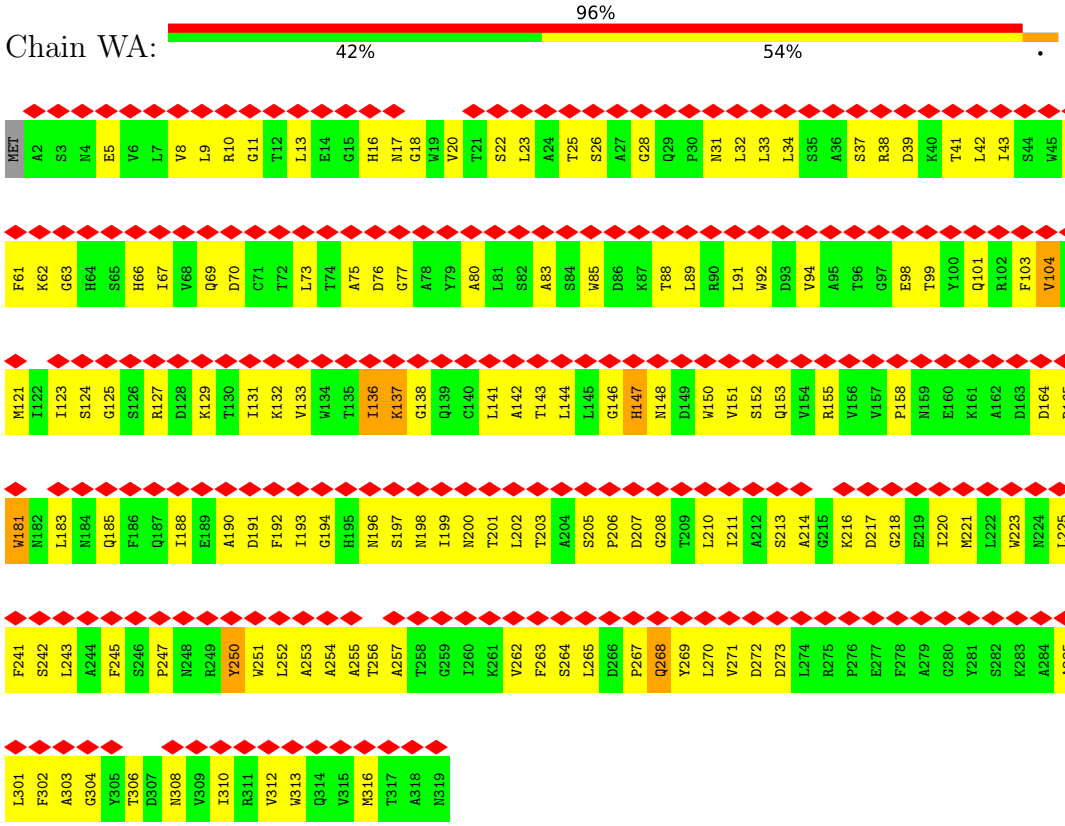






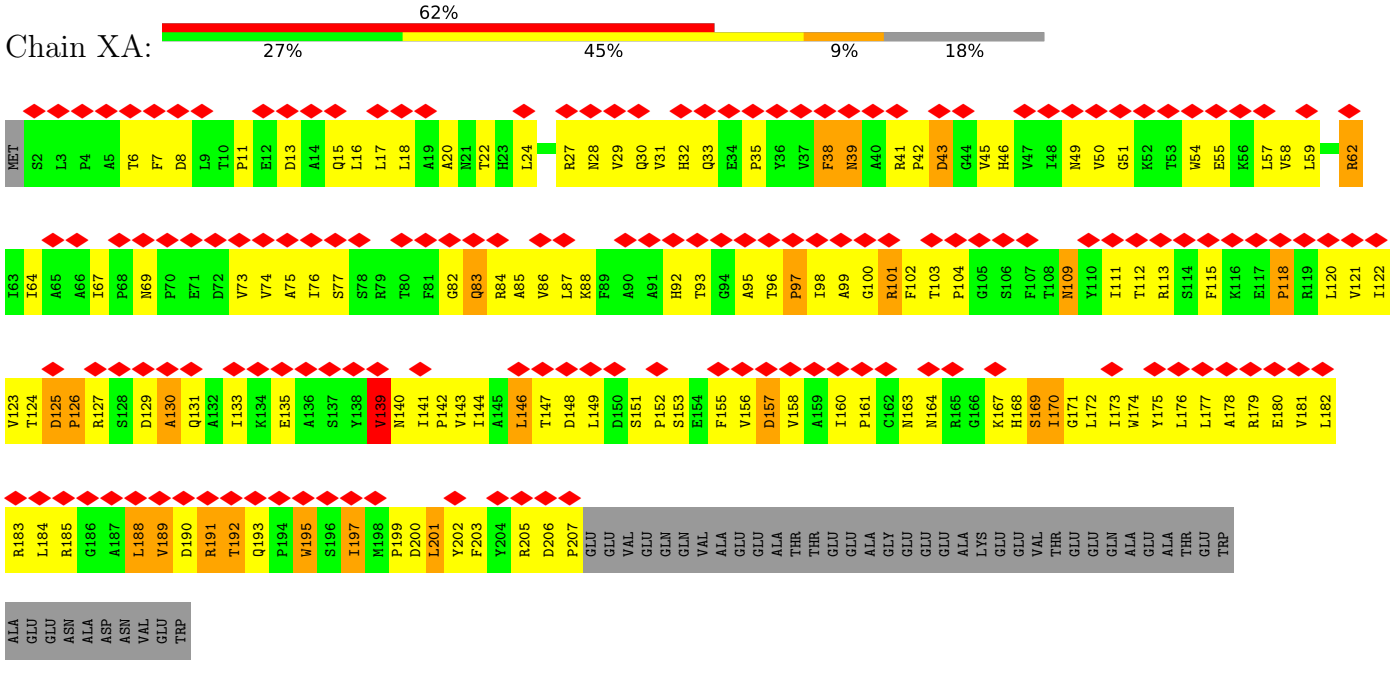
• Molecule 49: RACK1 (yeast Asc1)

Chain WA:



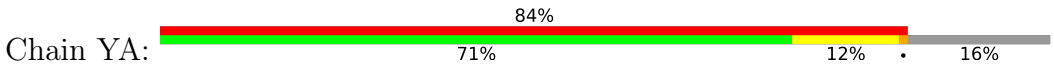
- Molecule 50: uS2 (yeast S0)

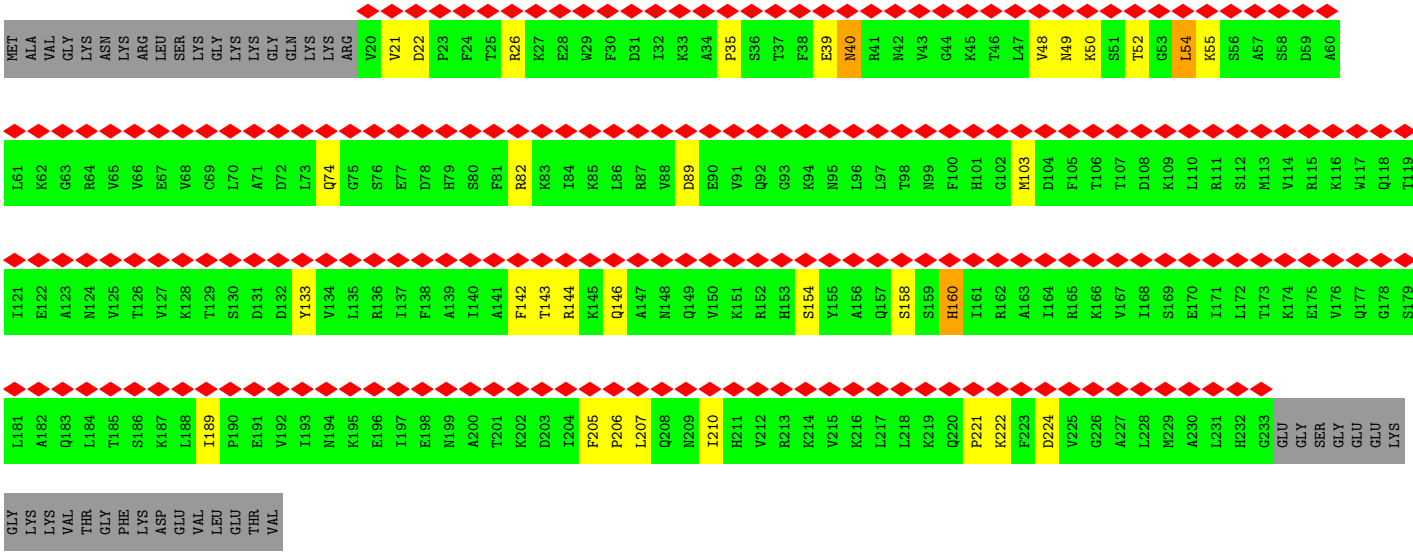
Chain XA:



- Molecule 51: eS1 (yeast S1)

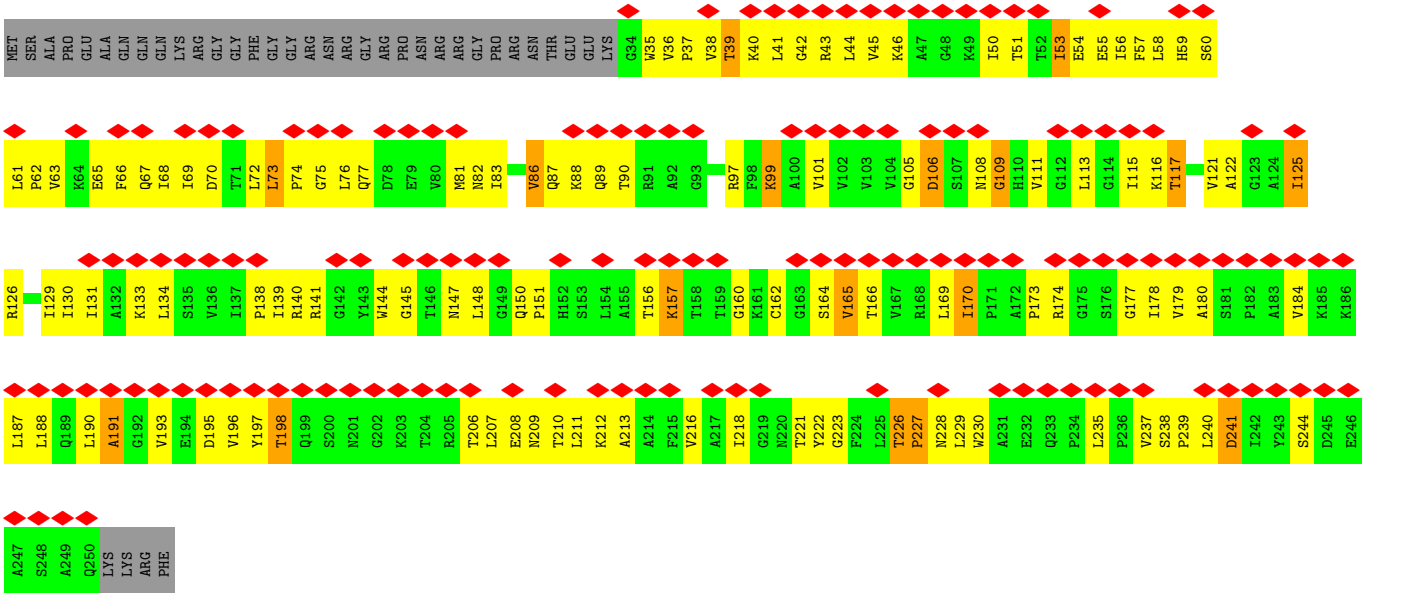
Chain YA:





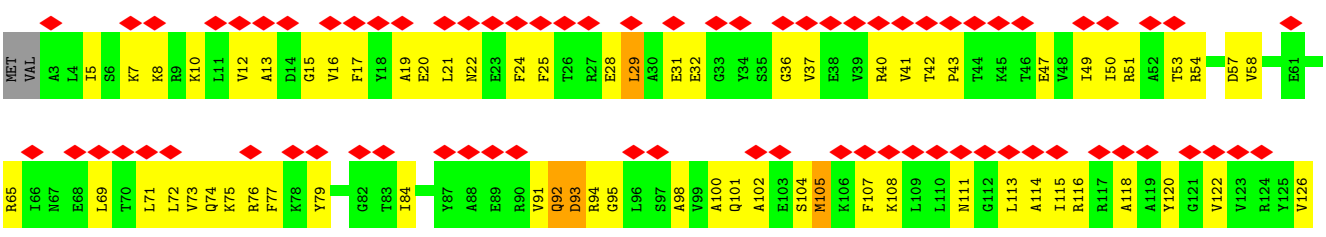
• Molecule 52: uS5 (yeast S2)

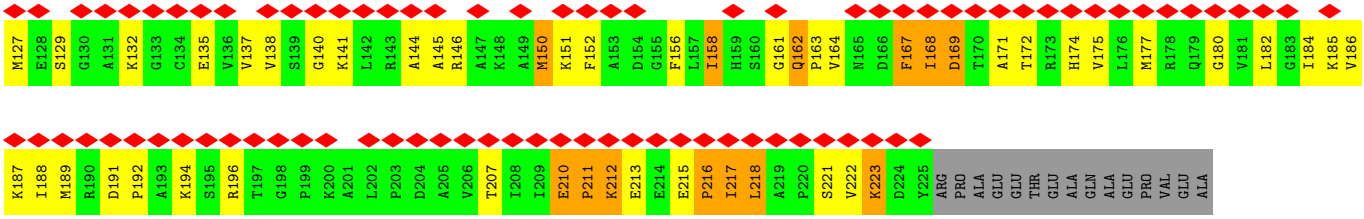
Chain ZA:



• Molecule 53: uS3 (yeast S3)

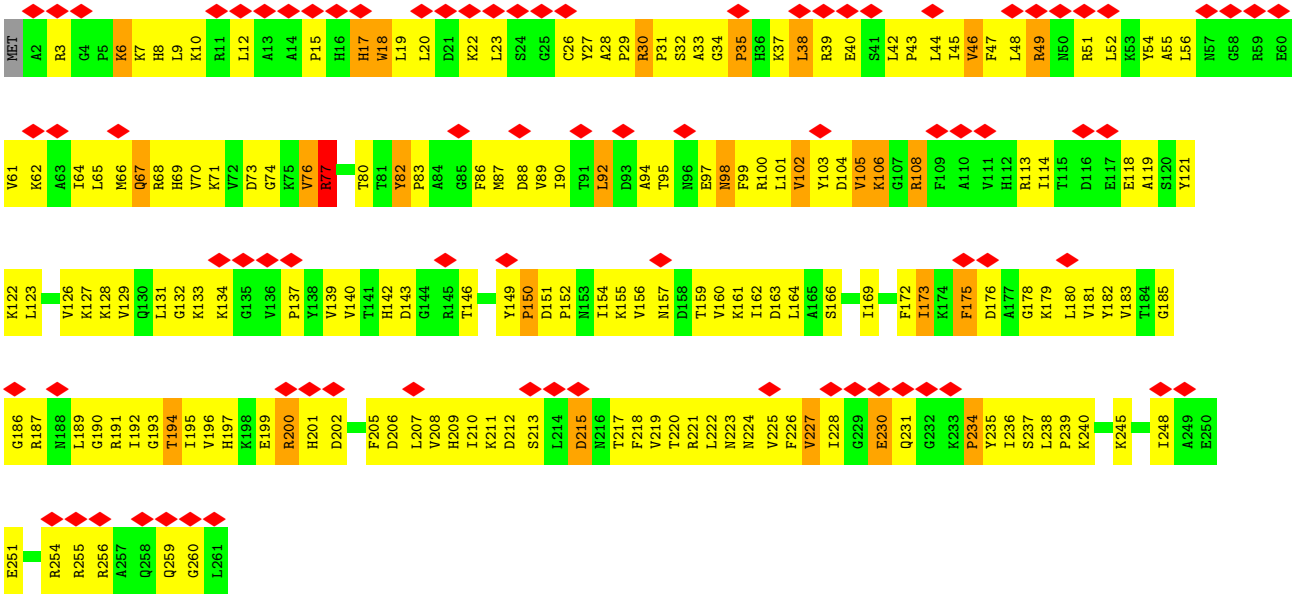
Chain AB:





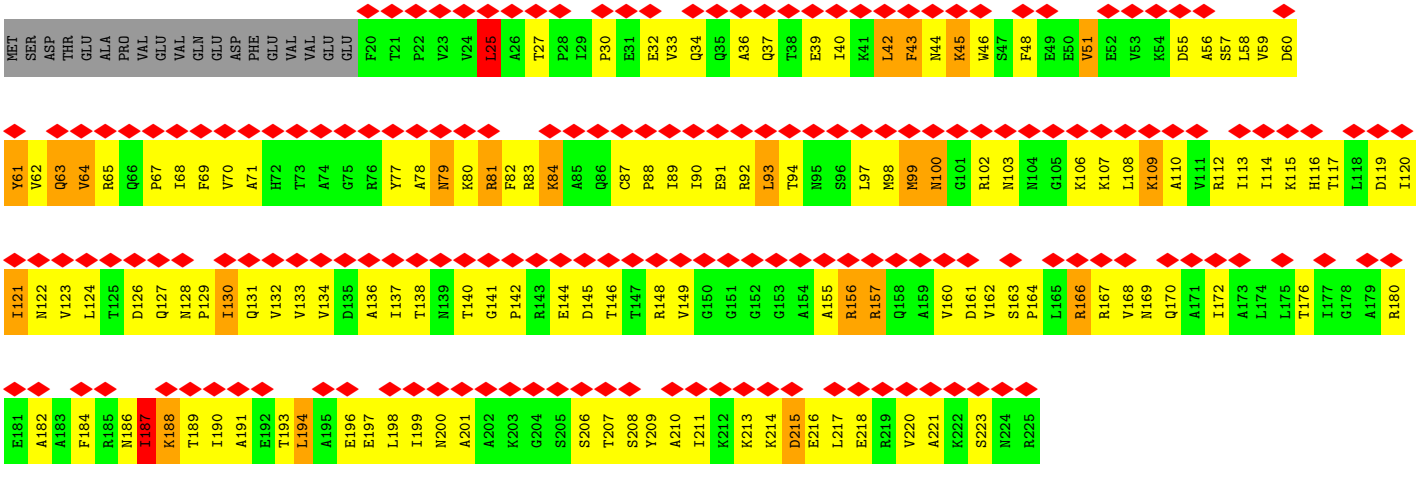
• Molecule 54: eS4 (yeast S4)

Chain BB:



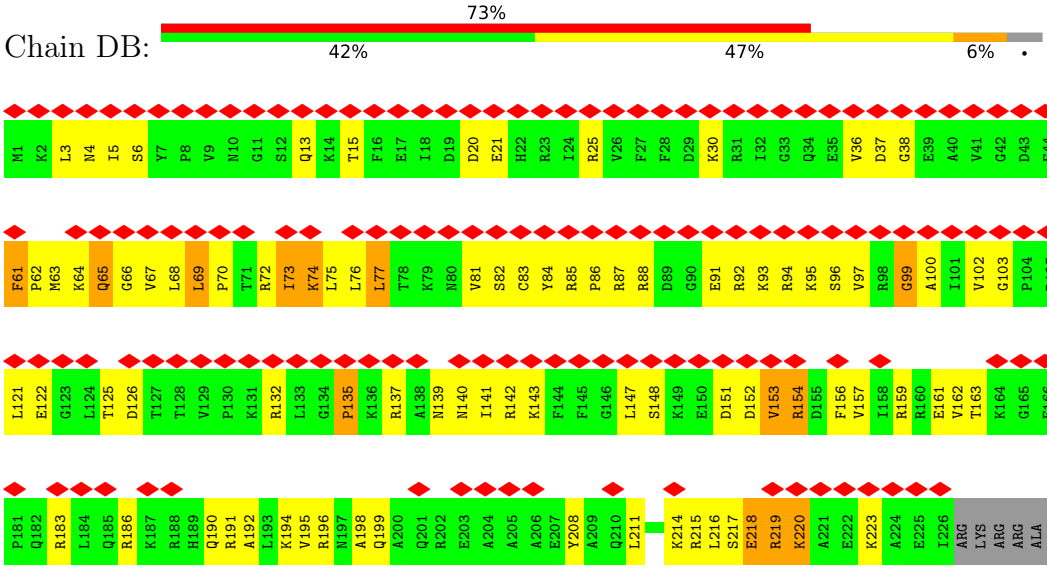
• Molecule 55: uS7 (yeast S5)

Chain CB:



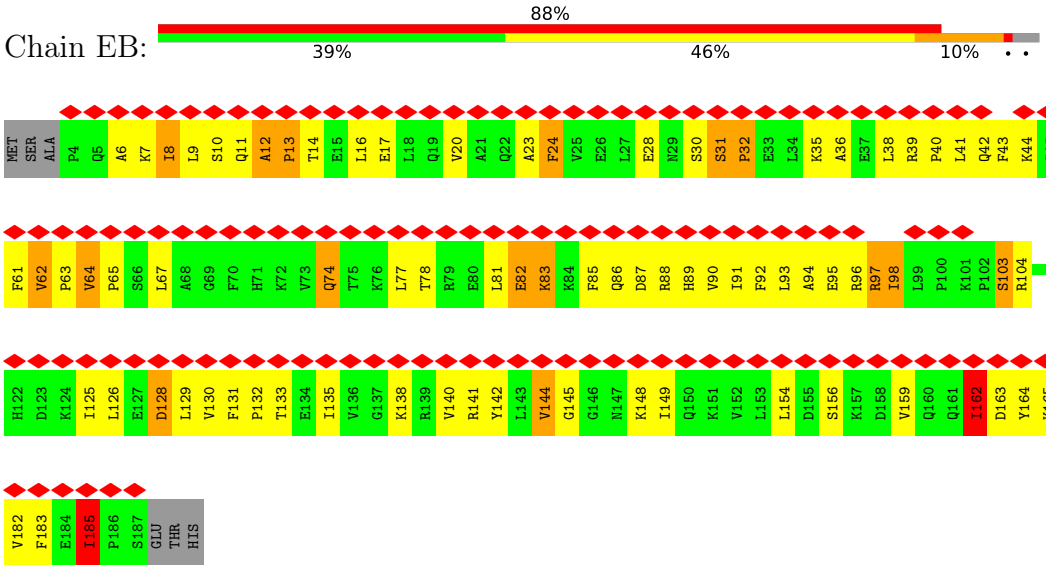
• Molecule 56: eS6 (yeast S6)

Chain DB:



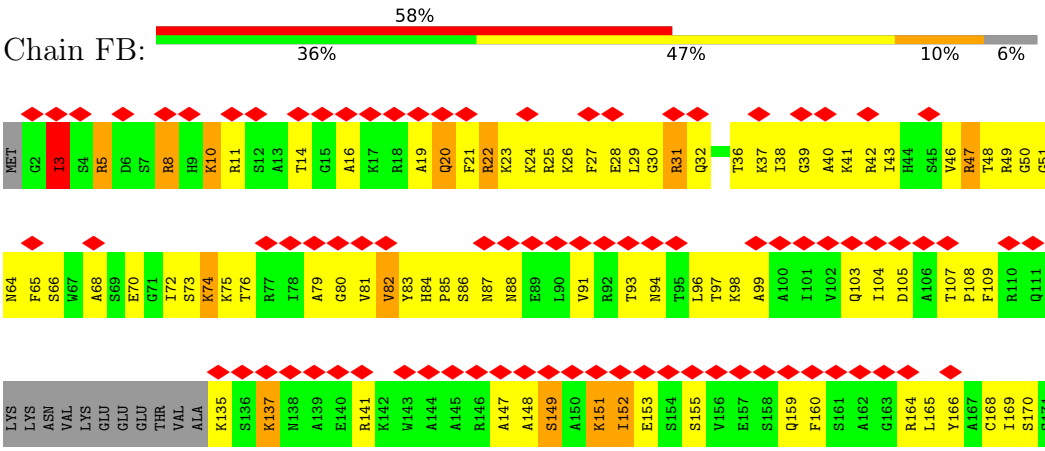
• Molecule 57: eS7 (yeast S7)

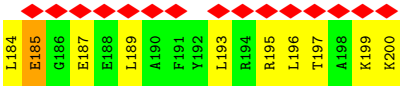
Chain EB:



• Molecule 58: eS8 (yeast S8)

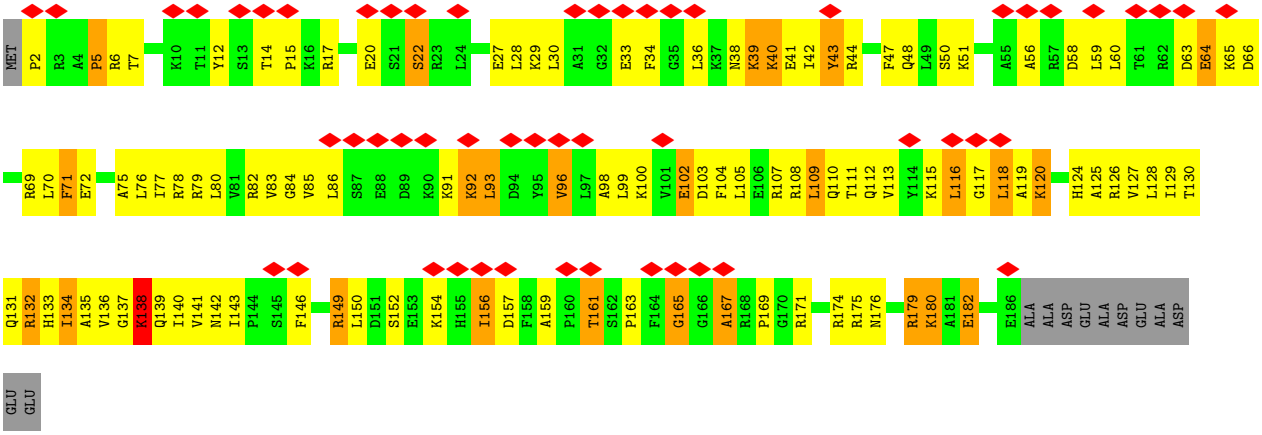
Chain FB:





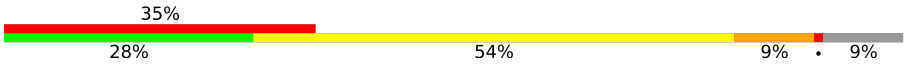
• Molecule 59: uS4 (yeast S9)

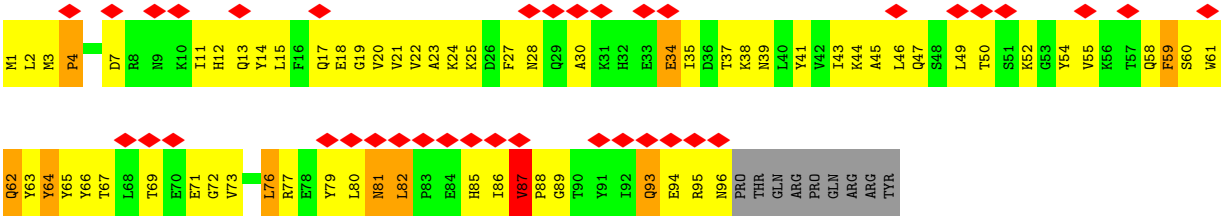
Chain GB:



• Molecule 60: eS10 (yeast S10)

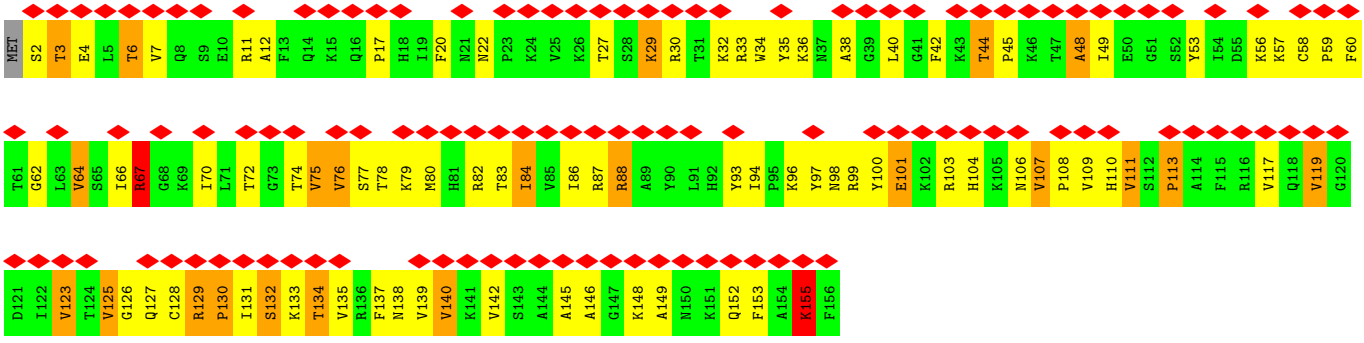
Chain HB:





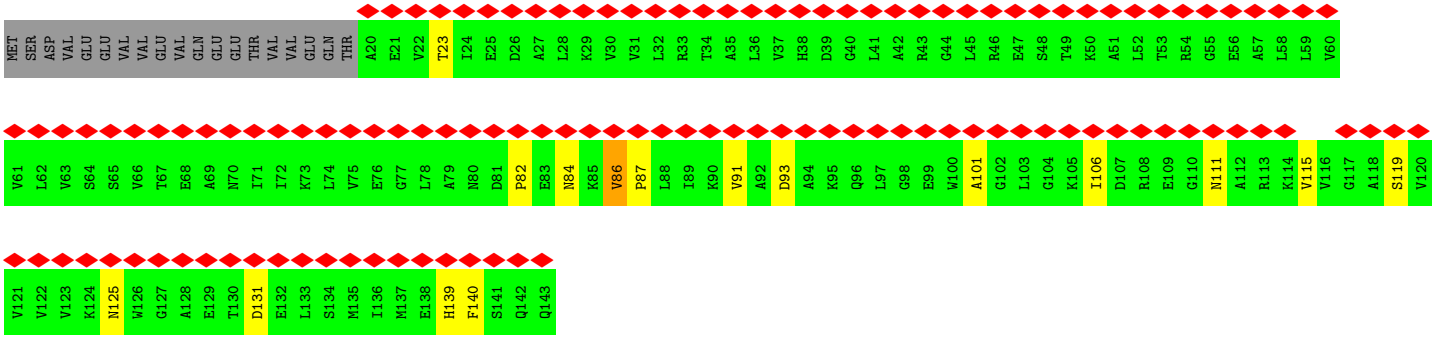
• Molecule 61: uS17 (yeast S11)

Chain IB:



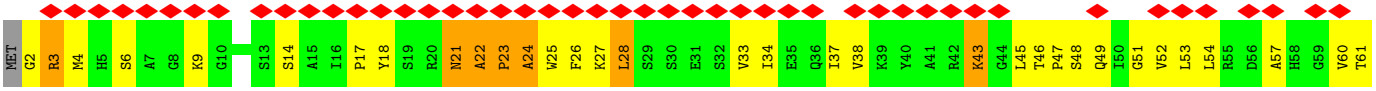
• Molecule 62: eS12 (yeast S12)

Chain JB:



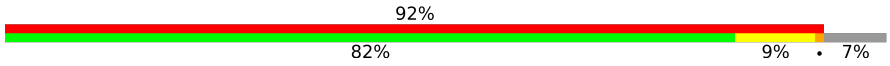
- Molecule 63: uS15 (yeast S13)

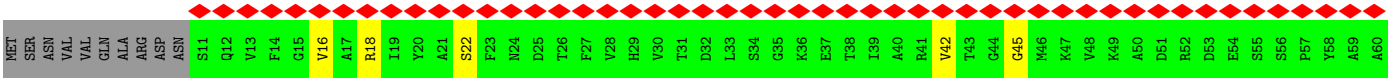
Chain KB:



- Molecule 64: uS11 (yeast S14)

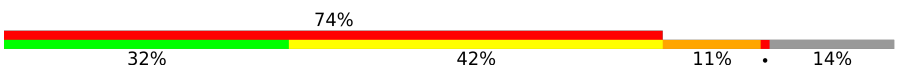
Chain LB:

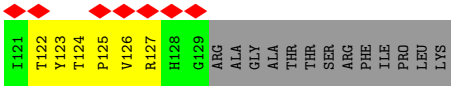




- Molecule 65: uS19 (yeast S15)

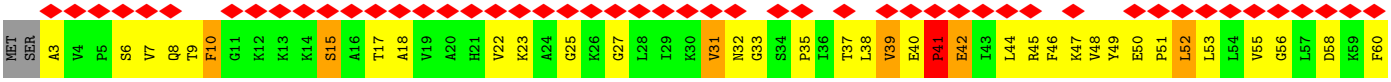
Chain MB:

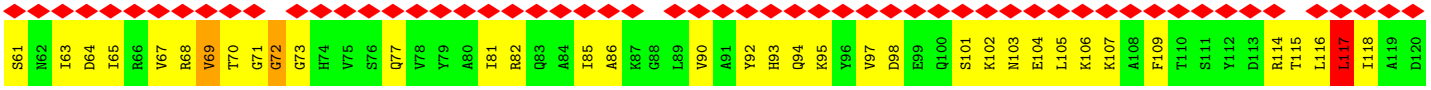


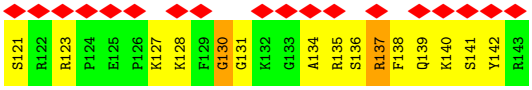


• Molecule 66: uS9 (yeast S16)

Chain NB:

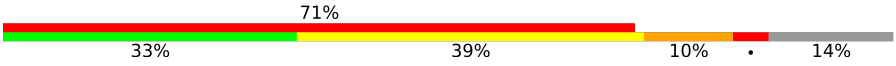


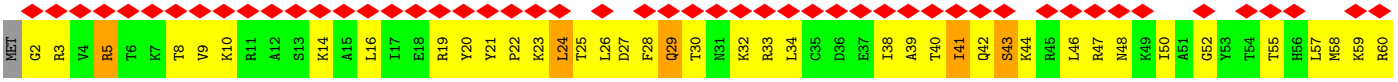


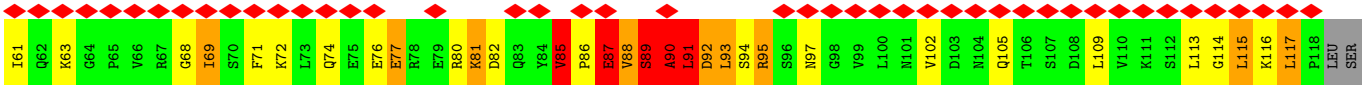


• Molecule 67: eS17 (yeast S17)

Chain OB:

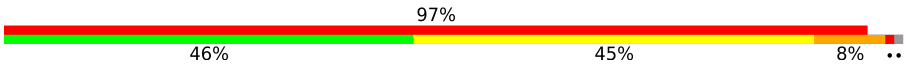


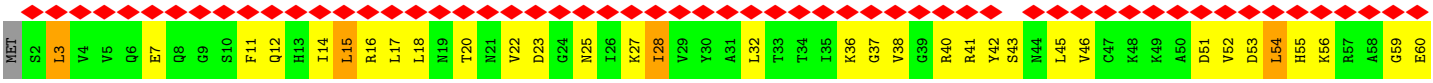


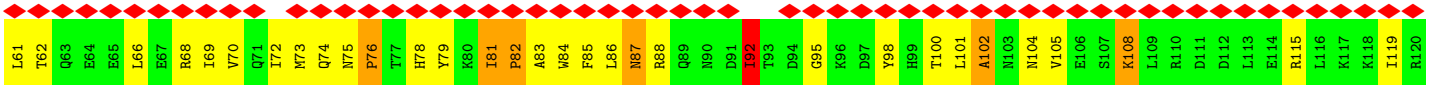


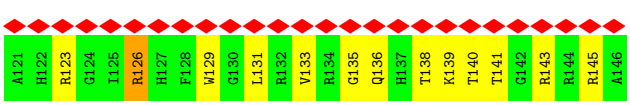
• Molecule 68: uS13 (yeast S18)

Chain PB:



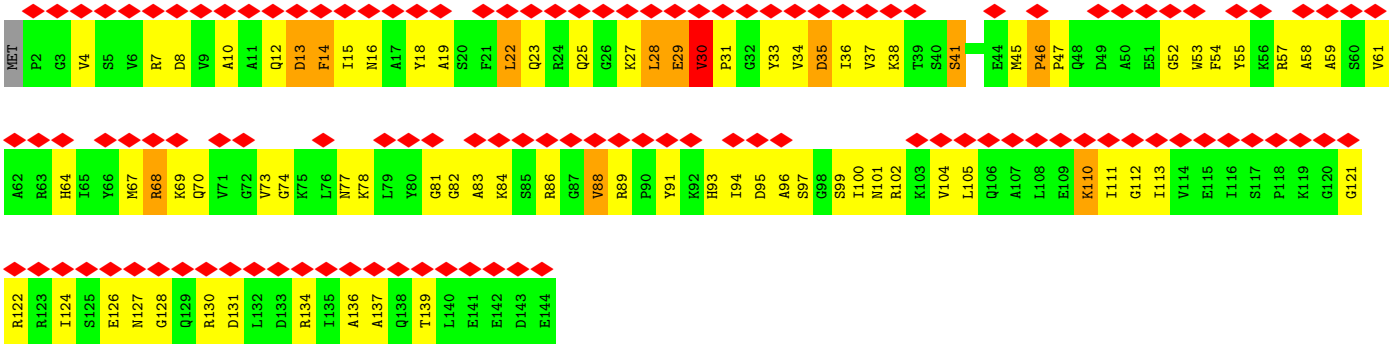






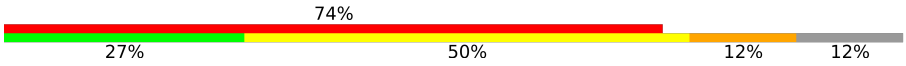
• Molecule 69: eS19 (yeast S19)

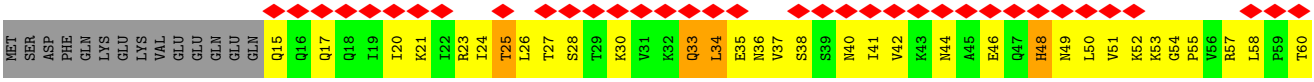
Chain QB:

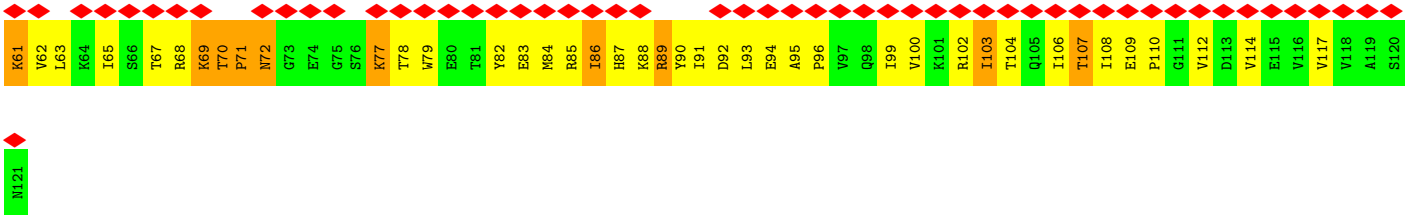


• Molecule 70: uS10 (yeast S20)

Chain RB:

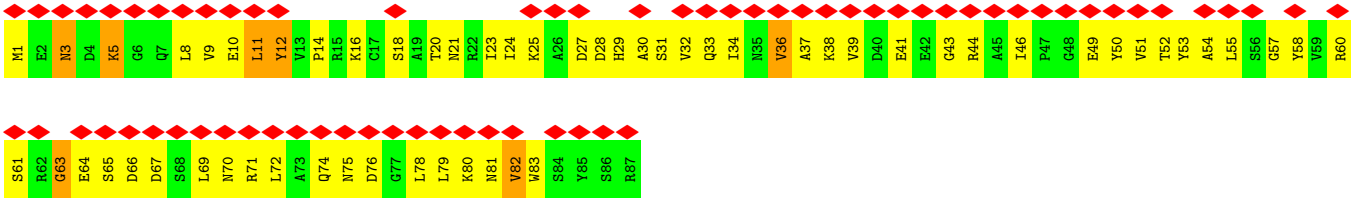






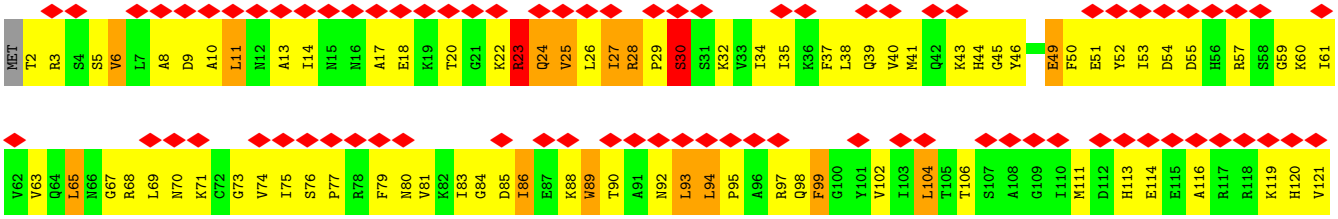
• Molecule 71: eS21 (yeast S21)

Chain SB:



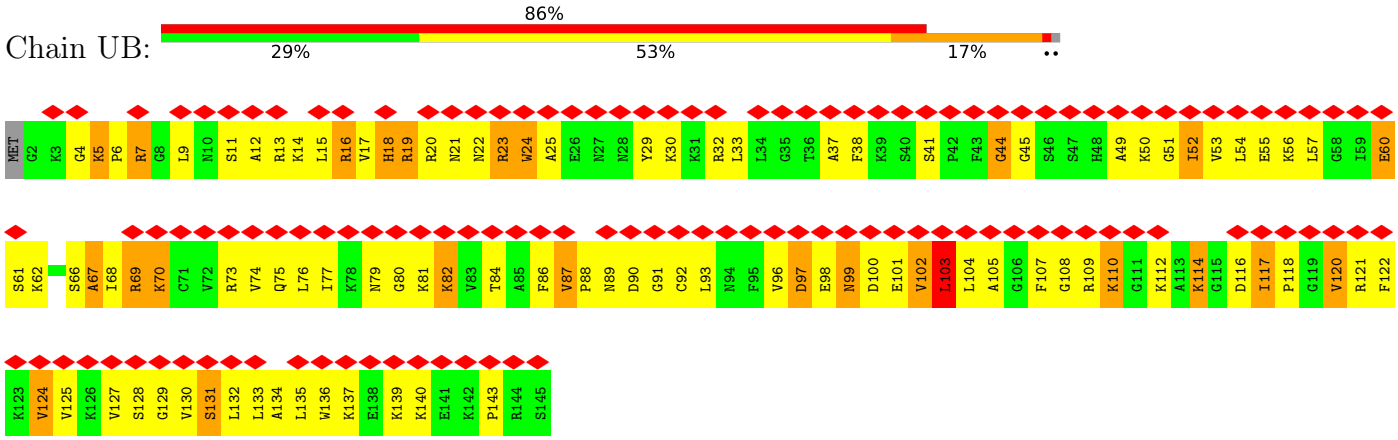
• Molecule 72: uS8 (yeast S22)

Chain TB:



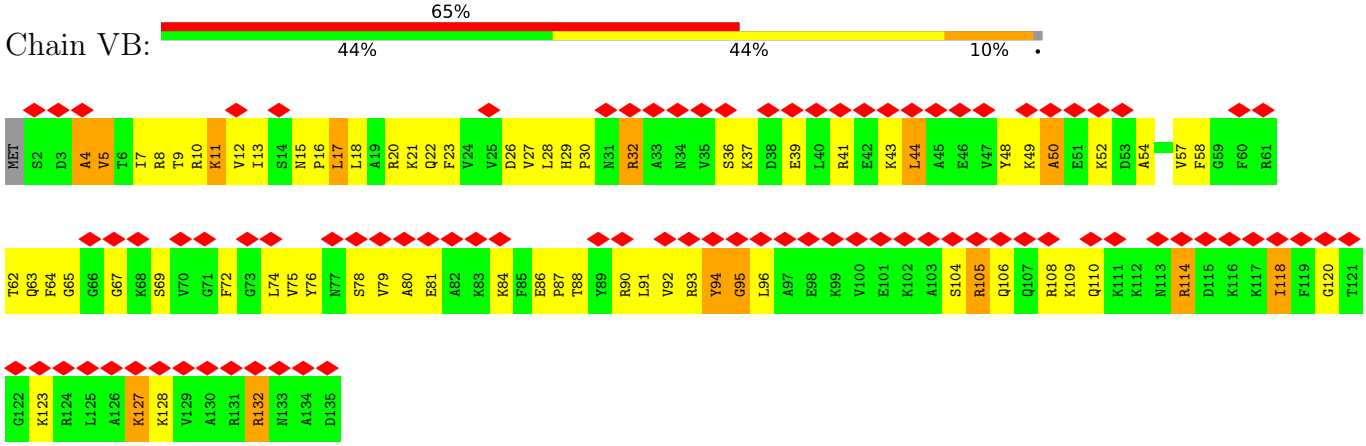
• Molecule 73: uS12 (yeast S23)

Chain UB:



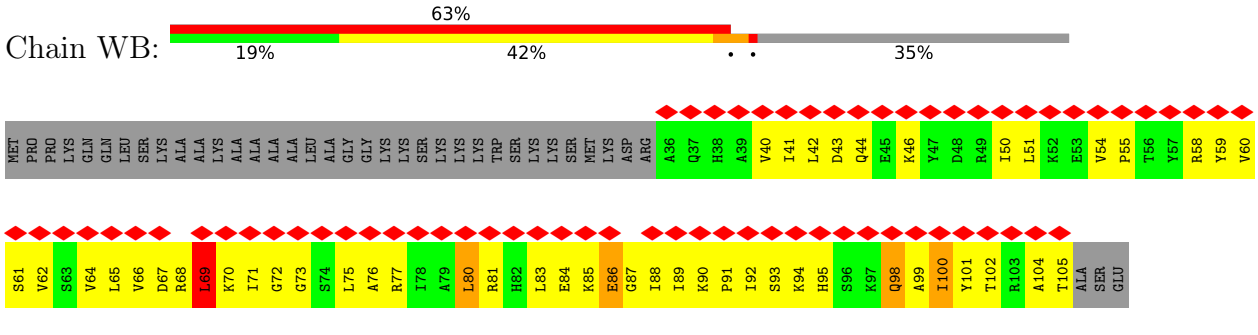
• Molecule 74: eS24 (yeast S24)

Chain VB:



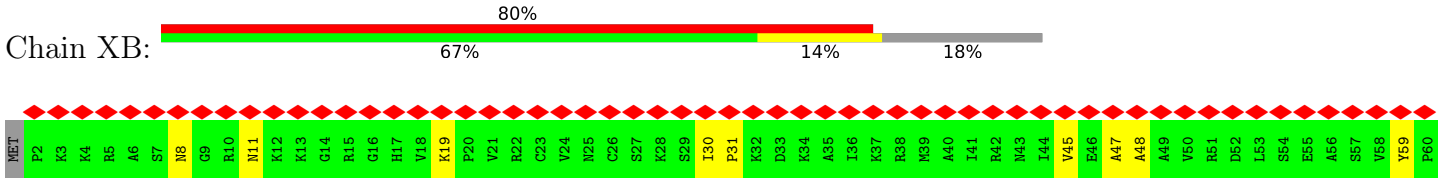
• Molecule 75: eS25 (yeast S25)

Chain WB:



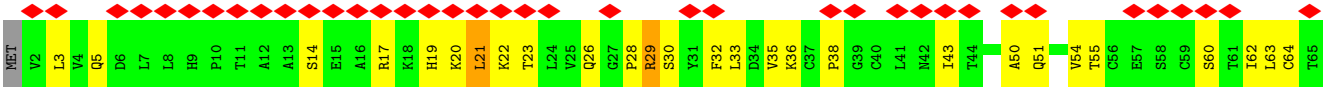
• Molecule 76: eS26 (yeast S26)

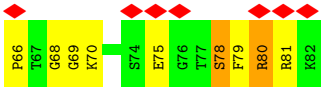
Chain XB:



• Molecule 77: eS27 (yeast S27)

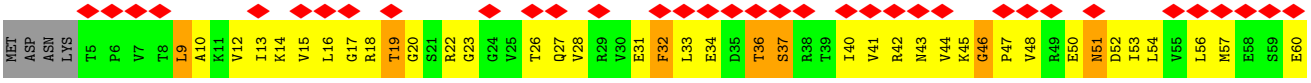
Chain YB:

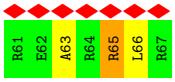




• Molecule 78: eS28 (yeast S28)

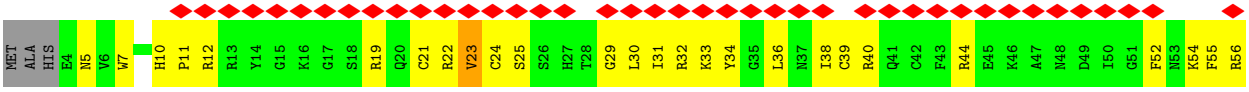
Chain ZB:





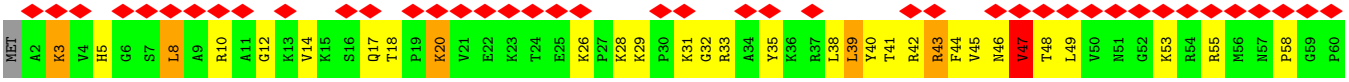
• Molecule 79: uS14 (yeast S29)

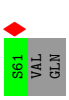
Chain AC:



• Molecule 80: eS30 (yeast S30)

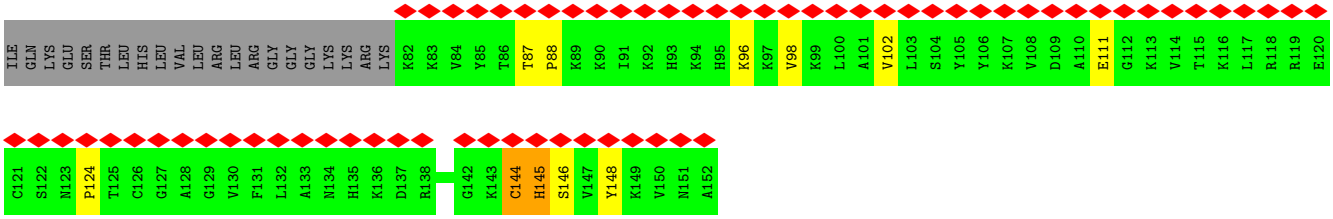
Chain BC:





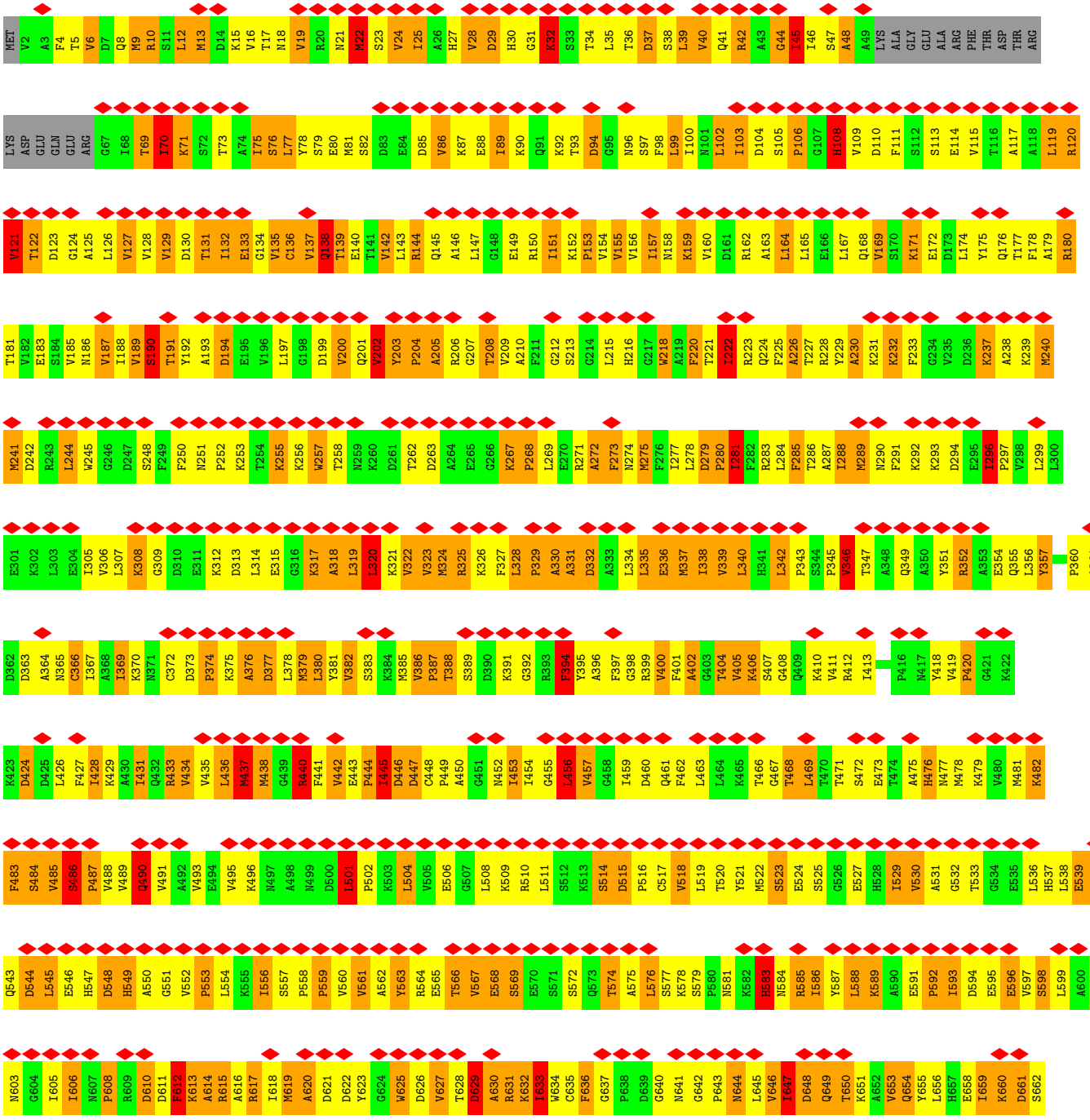
• Molecule 81: eS31 (yeast S31)

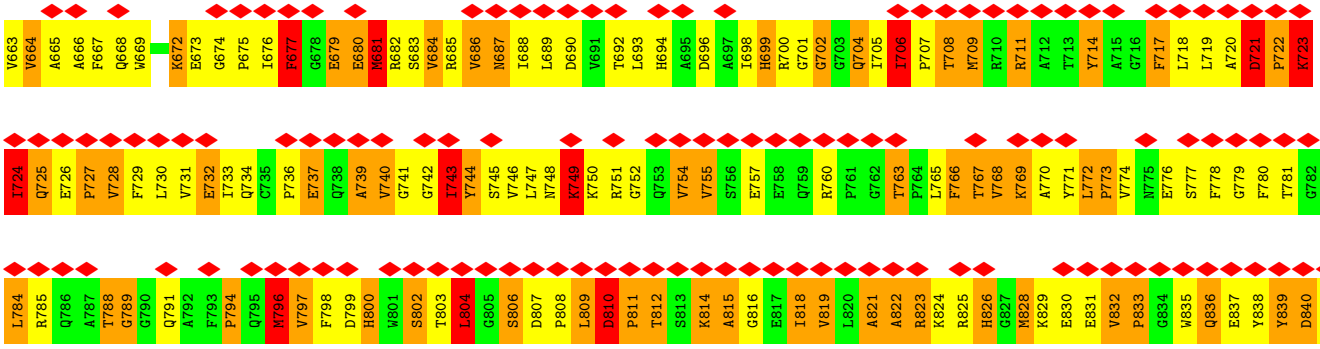
Chain CC:



• Molecule 82: yeast eEF2

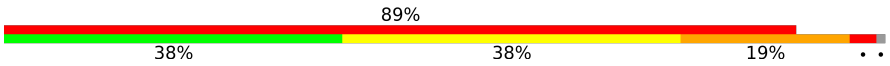
Chain DC:

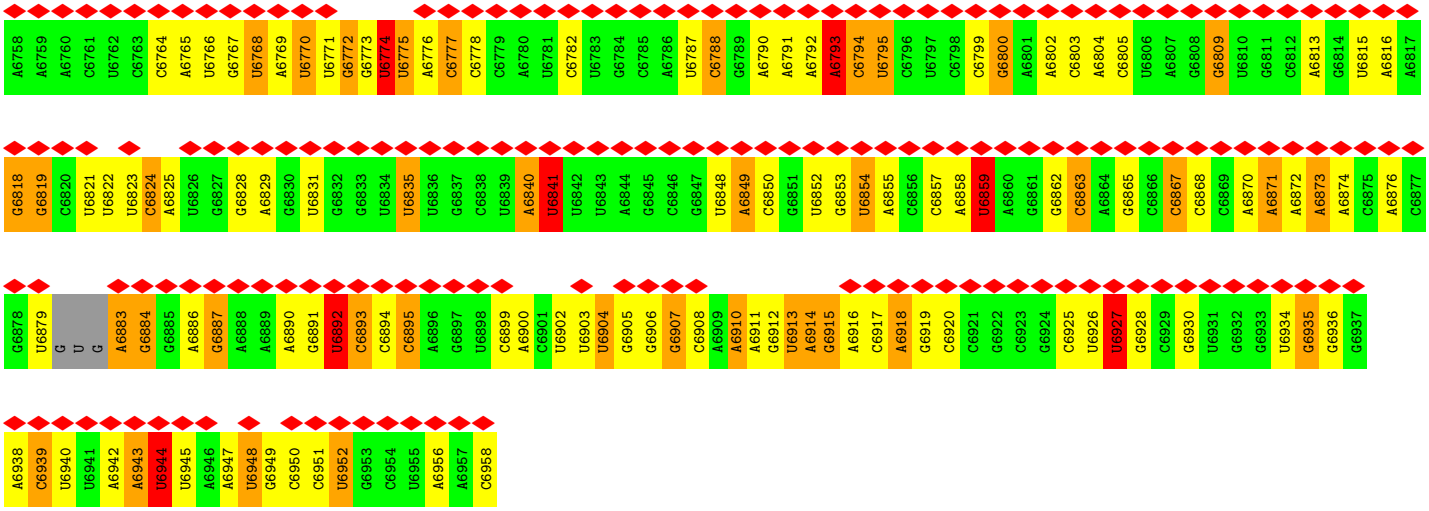




- Molecule 83: IRES

Chain EC:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	38054	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 ($e^-/Å^2$)	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	0.055	Depositor
Minimum map value	-0.025	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.015	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: DDE, MG, SO1, GDP

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	0.85	1/41014 (0.0%)	0.67	29/63809 (0.0%)
2	B	1.10	4/78631 (0.0%)	0.74	96/122552 (0.1%)
3	C	1.10	0/3747	0.73	3/5832 (0.1%)
4	D	1.02	0/2884	0.69	2/4491 (0.0%)
5	E	2.80	150/1377 (10.9%)	1.14	7/1844 (0.4%)
6	F	2.03	64/1952 (3.3%)	1.02	8/2622 (0.3%)
7	G	1.97	90/3153 (2.9%)	0.96	4/4239 (0.1%)
8	H	2.14	112/2802 (4.0%)	1.12	24/3792 (0.6%)
9	I	1.62	16/2426 (0.7%)	1.00	9/3271 (0.3%)
10	J	1.94	43/1425 (3.0%)	1.00	6/1912 (0.3%)
11	K	2.08	58/1822 (3.2%)	1.13	9/2451 (0.4%)
12	L	1.70	18/1850 (1.0%)	1.06	10/2495 (0.4%)
13	M	1.92	30/1540 (1.9%)	0.97	4/2073 (0.2%)
14	N	1.88	46/1754 (2.6%)	1.02	9/2350 (0.4%)
15	O	1.54	2/1375 (0.1%)	0.86	1/1842 (0.1%)
16	P	2.83	82/728 (11.3%)	1.11	3/975 (0.3%)
17	Q	1.93	35/1568 (2.2%)	1.11	17/2106 (0.8%)
18	R	2.05	32/1069 (3.0%)	1.06	7/1438 (0.5%)
19	S	1.97	44/1758 (2.5%)	1.08	8/2354 (0.3%)
20	T	2.06	51/1586 (3.2%)	1.12	9/2128 (0.4%)
21	U	2.11	52/1466 (3.5%)	1.08	7/1968 (0.4%)
22	V	2.08	40/1466 (2.7%)	1.05	4/1965 (0.2%)
23	W	1.67	11/1539 (0.7%)	1.21	17/2050 (0.8%)
24	X	2.17	56/1482 (3.8%)	1.03	6/1990 (0.3%)
25	Y	2.15	54/1301 (4.2%)	0.99	4/1743 (0.2%)
26	Z	1.51	2/812 (0.2%)	0.85	1/1099 (0.1%)
27	AA	2.05	32/1019 (3.1%)	0.94	5/1369 (0.4%)
28	BA	2.13	20/521 (3.8%)	0.99	1/691 (0.1%)
29	CA	1.96	26/984 (2.6%)	0.95	2/1325 (0.2%)
30	DA	2.00	28/1005 (2.8%)	1.06	4/1341 (0.3%)
31	EA	1.59	10/1119 (0.9%)	0.90	3/1497 (0.2%)
32	FA	2.01	37/1205 (3.1%)	1.06	4/1612 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\|>5$	RMSZ	$\#\|Z\|>5$
33	GA	1.91	14/474 (3.0%)	1.30	7/629 (1.1%)
34	HA	1.53	1/751 (0.1%)	1.04	7/1008 (0.7%)
35	IA	1.79	14/904 (1.5%)	0.90	3/1213 (0.2%)
36	JA	2.15	46/1041 (4.4%)	0.99	4/1394 (0.3%)
37	KA	2.11	26/869 (3.0%)	1.00	2/1168 (0.2%)
38	LA	1.84	18/891 (2.0%)	1.07	7/1191 (0.6%)
39	MA	1.79	9/979 (0.9%)	1.04	2/1301 (0.2%)
40	NA	1.75	10/779 (1.3%)	1.09	3/1034 (0.3%)
41	OA	2.16	30/697 (4.3%)	1.01	4/923 (0.4%)
42	PA	1.69	6/619 (1.0%)	0.87	3/826 (0.4%)
43	QA	1.98	12/444 (2.7%)	1.17	3/588 (0.5%)
44	RA	1.92	6/424 (1.4%)	0.96	1/562 (0.2%)
45	SA	2.29	15/235 (6.4%)	1.09	0/300
46	TA	1.88	17/861 (2.0%)	0.95	2/1136 (0.2%)
47	UA	1.88	12/702 (1.7%)	1.00	1/934 (0.1%)
48	VA	2.55	127/1498 (8.5%)	1.35	18/2025 (0.9%)
49	WA	1.46	4/2498 (0.2%)	0.78	4/3398 (0.1%)
50	XA	1.21	4/1653 (0.2%)	0.94	3/2261 (0.1%)
51	YA	2.16	12/855 (1.4%)	1.00	0/1067
52	ZA	1.50	10/1665 (0.6%)	0.94	5/2263 (0.2%)
53	AB	1.51	8/1759 (0.5%)	0.90	3/2368 (0.1%)
54	BB	1.36	5/2110 (0.2%)	0.92	7/2839 (0.2%)
55	CB	1.38	2/1630 (0.1%)	0.97	7/2202 (0.3%)
56	DB	1.37	2/1844 (0.1%)	0.96	8/2464 (0.3%)
57	EB	1.45	4/1506 (0.3%)	0.88	1/2028 (0.0%)
58	FB	1.58	7/1515 (0.5%)	0.96	5/2021 (0.2%)
59	GB	1.26	0/1519	1.06	6/2035 (0.3%)
60	HB	1.49	4/837 (0.5%)	0.85	0/1131
61	IB	1.72	13/1273 (1.0%)	0.91	7/1712 (0.4%)
62	JB	2.06	5/495 (1.0%)	1.23	2/617 (0.3%)
63	KB	1.54	5/1216 (0.4%)	1.05	4/1638 (0.2%)
64	LB	1.92	1/507 (0.2%)	1.10	0/632
65	MB	1.59	5/996 (0.5%)	0.94	3/1335 (0.2%)
66	NB	1.44	2/1126 (0.2%)	0.87	2/1510 (0.1%)
67	OB	1.61	9/844 (1.1%)	1.37	11/1120 (1.0%)
68	PB	1.44	2/1212 (0.2%)	0.88	2/1628 (0.1%)
69	QB	1.36	2/1131 (0.2%)	1.07	6/1517 (0.4%)
70	RB	1.60	6/866 (0.7%)	0.87	0/1169
71	SB	1.35	2/694 (0.3%)	0.84	1/935 (0.1%)
72	TB	1.43	4/1039 (0.4%)	0.91	3/1395 (0.2%)
73	UB	1.66	9/1140 (0.8%)	0.90	1/1518 (0.1%)
74	VB	1.35	1/1088 (0.1%)	0.92	3/1449 (0.2%)
75	WB	1.40	0/571	0.97	2/768 (0.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\|>5$	RMSZ	$\#\|Z\|>5$
76	XB	2.07	2/387 (0.5%)	1.24	4/482 (0.8%)
77	YB	1.34	0/621	0.80	0/838
78	ZB	1.42	2/500 (0.4%)	0.79	2/670 (0.3%)
79	AC	1.52	1/454 (0.2%)	0.87	1/602 (0.2%)
80	BC	1.56	2/483 (0.4%)	0.95	1/643 (0.2%)
81	CC	1.84	1/283 (0.4%)	0.89	1/352 (0.3%)
82	DC	2.40	432/6521 (6.6%)	1.08	30/8830 (0.3%)
83	EC	1.53	1/4608 (0.0%)	0.90	14/7166 (0.2%)
All	All	1.45	2178/227994 (1.0%)	0.85	539/334061 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	14
2	B	0	72
3	C	0	6
4	D	0	2
50	XA	0	1
83	EC	0	5
All	All	0	100

The worst 5 of 2178 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
67	OB	91	LEU	C-O	12.18	1.39	1.24
11	K	96	PRO	CA-C	11.61	1.62	1.52
7	G	82	PRO	CA-C	11.48	1.58	1.51
1	A	627	C	O3'-P	-11.22	1.44	1.61
19	S	116	LEU	CA-C	11.18	1.59	1.53

The worst 5 of 539 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	493	G	O5'-P-OP1	-15.38	61.87	108.00
67	OB	93	LEU	N-CA-C	13.00	127.69	111.69
2	B	487	U	P-O3'-C3'	12.57	139.06	120.20
1	A	627	C	O3'-P-O5'	12.39	122.59	104.00
48	VA	107	ALA	CA-C-N	10.93	133.50	119.84

There are no chirality outliers.

5 of 100 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	313	U	Sidechain
1	A	324	U	Sidechain
1	A	447	U	Sidechain
1	A	53	G	Sidechain
1	A	568	G	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	36760	0	18348	1353	0
2	B	70288	0	35262	3579	0
3	C	3354	0	1695	188	0
4	D	2580	0	1304	127	0
5	E	1359	0	1425	101	0
6	F	1918	0	1987	262	0
7	G	3082	0	3165	367	0
8	H	2750	0	2863	337	0
9	I	2376	0	2325	221	0
10	J	1401	0	1501	145	0
11	K	1785	0	1862	197	0
12	L	1818	0	1908	194	0
13	M	1519	0	1587	157	0
14	N	1718	0	1754	172	0
15	O	1354	0	1383	91	0
16	P	723	0	774	98	0
17	Q	1543	0	1608	213	0
18	R	1054	0	1149	161	0
19	S	1721	0	1779	248	0
20	T	1556	0	1659	208	0
21	U	1443	0	1485	147	0
22	V	1442	0	1543	201	0
23	W	1522	0	1617	119	0
24	X	1446	0	1487	205	0
25	Y	1277	0	1323	152	0
26	Z	796	0	812	48	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	AA	1004	0	1048	95	0
28	BA	509	0	537	70	0
29	CA	969	0	1036	74	0
30	DA	994	0	1081	114	0
31	EA	1093	0	1155	117	0
32	FA	1174	0	1215	170	0
33	GA	463	0	491	47	0
34	HA	743	0	797	87	0
35	IA	890	0	938	80	0
36	JA	1020	0	1090	119	0
37	KA	851	0	880	96	0
38	LA	881	0	949	104	0
39	MA	970	0	1078	112	0
40	NA	772	0	849	85	0
41	OA	682	0	687	95	0
42	PA	613	0	682	20	0
43	QA	437	0	475	51	0
44	RA	418	0	459	48	0
45	SA	234	0	284	16	0
46	TA	848	0	918	112	0
47	UA	695	0	738	72	0
48	VA	1473	0	1514	186	0
49	WA	2445	0	2401	159	0
50	XA	1612	0	1623	153	0
51	YA	856	0	226	4	0
52	ZA	1635	0	1723	139	0
53	AB	1734	0	1817	129	0
54	BB	2069	0	2154	227	0
55	CB	1610	0	1675	163	0
56	DB	1820	0	1918	118	0
57	EB	1481	0	1572	132	0
58	FB	1490	0	1525	158	0
59	GB	1494	0	1573	124	0
60	HB	817	0	804	66	0
61	IB	1245	0	1314	106	0
62	JB	496	0	141	0	0
63	KB	1193	0	1255	101	0
64	LB	508	0	151	4	0
65	MB	975	0	1017	71	0
66	NB	1106	0	1166	124	0
67	OB	836	0	827	87	0
68	PB	1193	0	1222	82	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
69	QB	1113	0	1124	91	0
70	RB	856	0	917	75	0
71	SB	685	0	672	75	0
72	TB	1022	0	1060	111	0
73	UB	1122	0	1196	126	0
74	VB	1074	0	1132	78	0
75	WB	563	0	603	56	0
76	XB	388	0	96	2	0
77	YB	611	0	633	39	0
78	ZB	498	0	535	48	0
79	AC	444	0	436	30	0
80	BC	475	0	525	28	0
81	CC	284	0	76	1	0
82	DC	6419	0	6493	605	0
83	EC	4129	0	2078	96	0
84	DC	28	0	12	2	0
85	DC	1	0	0	0	0
86	DC	35	0	41	2	0
All	All	212680	0	156239	12595	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 34.

The worst 5 of 12595 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)
37:KA:67:MET:CE	37:KA:67:MET:SD	2.03	1.47
66:NB:93:HIS:HA	66:NB:97:VAL:HB	1.20	1.19
2:B:1494:U:H4'	2:B:1495:U:H5'	1.24	1.14
2:B:2954:U:H4'	2:B:2955:U:H5'	1.26	1.13
2:B:1719:G:H4'	2:B:1732:U:H4'	1.30	1.11

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%)	129 (78%)	26 (16%)	10 (6%)	1 14
6	F	250/254 (98%)	177 (71%)	56 (22%)	17 (7%)	1 12
7	G	384/387 (99%)	293 (76%)	70 (18%)	21 (6%)	1 15
8	H	359/362 (99%)	259 (72%)	77 (21%)	23 (6%)	1 13
9	I	294/297 (99%)	226 (77%)	49 (17%)	19 (6%)	1 13
10	J	173/176 (98%)	125 (72%)	33 (19%)	15 (9%)	0 9
11	K	220/244 (90%)	165 (75%)	39 (18%)	16 (7%)	1 11
12	L	231/256 (90%)	180 (78%)	38 (16%)	13 (6%)	1 15
13	M	189/191 (99%)	150 (79%)	36 (19%)	3 (2%)	7 37
14	N	207/221 (94%)	169 (82%)	28 (14%)	10 (5%)	2 17
15	O	167/174 (96%)	128 (77%)	31 (19%)	8 (5%)	2 17
16	P	92/165 (56%)	62 (67%)	20 (22%)	10 (11%)	0 6
17	Q	191/199 (96%)	144 (75%)	35 (18%)	12 (6%)	1 13
18	R	134/138 (97%)	103 (77%)	23 (17%)	8 (6%)	1 14
19	S	201/204 (98%)	144 (72%)	46 (23%)	11 (6%)	1 15
20	T	195/199 (98%)	160 (82%)	27 (14%)	8 (4%)	2 18
21	U	181/184 (98%)	133 (74%)	35 (19%)	13 (7%)	1 11
22	V	183/186 (98%)	131 (72%)	39 (21%)	13 (7%)	1 11
23	W	186/189 (98%)	162 (87%)	19 (10%)	5 (3%)	4 26
24	X	170/172 (99%)	130 (76%)	31 (18%)	9 (5%)	1 16
25	Y	157/160 (98%)	124 (79%)	25 (16%)	8 (5%)	1 16
26	Z	98/121 (81%)	69 (70%)	23 (24%)	6 (6%)	1 14
27	AA	134/137 (98%)	107 (80%)	24 (18%)	3 (2%)	5 29
28	BA	59/155 (38%)	43 (73%)	11 (19%)	5 (8%)	0 9
29	CA	119/142 (84%)	84 (71%)	29 (24%)	6 (5%)	1 16
30	DA	124/127 (98%)	89 (72%)	28 (23%)	7 (6%)	1 15
31	EA	133/136 (98%)	108 (81%)	19 (14%)	6 (4%)	2 18
32	FA	146/149 (98%)	106 (73%)	31 (21%)	9 (6%)	1 13
33	GA	56/59 (95%)	48 (86%)	8 (14%)	0	100 100
34	HA	95/105 (90%)	80 (84%)	13 (14%)	2 (2%)	5 30

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
35	IA	107/113 (95%)	87 (81%)	17 (16%)	3 (3%)	4 25
36	JA	125/130 (96%)	95 (76%)	23 (18%)	7 (6%)	1 15
37	KA	104/107 (97%)	81 (78%)	17 (16%)	6 (6%)	1 14
38	LA	110/121 (91%)	76 (69%)	26 (24%)	8 (7%)	1 11
39	MA	117/120 (98%)	93 (80%)	20 (17%)	4 (3%)	3 21
40	NA	97/100 (97%)	80 (82%)	10 (10%)	7 (7%)	1 11
41	OA	85/88 (97%)	62 (73%)	18 (21%)	5 (6%)	1 14
42	PA	75/78 (96%)	64 (85%)	8 (11%)	3 (4%)	2 19
43	QA	48/51 (94%)	35 (73%)	9 (19%)	4 (8%)	0 9
44	RA	50/128 (39%)	32 (64%)	10 (20%)	8 (16%)	0 2
45	SA	23/25 (92%)	23 (100%)	0	0	100 100
46	TA	103/106 (97%)	75 (73%)	22 (21%)	6 (6%)	1 14
47	UA	89/92 (97%)	63 (71%)	18 (20%)	8 (9%)	0 8
48	VA	187/312 (60%)	132 (71%)	39 (21%)	16 (9%)	0 9
49	WA	316/319 (99%)	247 (78%)	63 (20%)	6 (2%)	6 32
50	XA	204/252 (81%)	146 (72%)	40 (20%)	18 (9%)	0 8
51	YA	212/255 (83%)	159 (75%)	36 (17%)	17 (8%)	1 10
52	ZA	215/254 (85%)	169 (79%)	37 (17%)	9 (4%)	2 18
53	AB	221/240 (92%)	191 (86%)	24 (11%)	6 (3%)	4 26
54	BB	258/261 (99%)	185 (72%)	60 (23%)	13 (5%)	1 16
55	CB	204/225 (91%)	159 (78%)	33 (16%)	12 (6%)	1 14
56	DB	224/236 (95%)	192 (86%)	21 (9%)	11 (5%)	1 16
57	EB	182/190 (96%)	130 (71%)	34 (19%)	18 (10%)	0 7
58	FB	184/200 (92%)	141 (77%)	36 (20%)	7 (4%)	2 20
59	GB	183/197 (93%)	144 (79%)	27 (15%)	12 (7%)	1 12
60	HB	94/105 (90%)	73 (78%)	15 (16%)	6 (6%)	1 13
61	IB	153/156 (98%)	113 (74%)	30 (20%)	10 (6%)	1 13
62	JB	122/143 (85%)	90 (74%)	21 (17%)	11 (9%)	0 8
63	KB	148/151 (98%)	124 (84%)	19 (13%)	5 (3%)	3 21
64	LB	125/137 (91%)	88 (70%)	26 (21%)	11 (9%)	0 8
65	MB	120/142 (84%)	91 (76%)	15 (12%)	14 (12%)	0 4

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
66	NB	139/143 (97%)	108 (78%)	24 (17%)	7 (5%)	1 16
67	OB	115/136 (85%)	79 (69%)	24 (21%)	12 (10%)	0 6
68	PB	143/146 (98%)	111 (78%)	24 (17%)	8 (6%)	1 15
69	QB	141/144 (98%)	122 (86%)	16 (11%)	3 (2%)	5 30
70	RB	105/121 (87%)	85 (81%)	15 (14%)	5 (5%)	2 17
71	SB	85/87 (98%)	63 (74%)	17 (20%)	5 (6%)	1 14
72	TB	127/130 (98%)	99 (78%)	24 (19%)	4 (3%)	3 23
73	UB	142/145 (98%)	108 (76%)	22 (16%)	12 (8%)	0 9
74	VB	132/135 (98%)	105 (80%)	20 (15%)	7 (5%)	1 16
75	WB	68/108 (63%)	47 (69%)	17 (25%)	4 (6%)	1 14
76	XB	95/119 (80%)	54 (57%)	32 (34%)	9 (10%)	0 8
77	YB	79/82 (96%)	59 (75%)	17 (22%)	3 (4%)	2 20
78	ZB	61/67 (91%)	43 (70%)	15 (25%)	3 (5%)	1 16
79	AC	51/56 (91%)	39 (76%)	11 (22%)	1 (2%)	6 32
80	BC	58/63 (92%)	38 (66%)	16 (28%)	4 (7%)	1 12
81	CC	69/152 (45%)	42 (61%)	18 (26%)	9 (13%)	0 3
82	DC	819/842 (97%)	646 (79%)	137 (17%)	36 (4%)	2 18
All	All	12207/13416 (91%)	9316 (76%)	2192 (18%)	699 (6%)	2 15

5 of 699 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	E	70	ASP
6	F	29	LEU
6	F	34	TYR
6	F	68	LYS
7	G	187	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
5	E	157/198 (79%)	134 (85%)	23 (15%)	3 15
6	F	194/196 (99%)	167 (86%)	27 (14%)	3 16
7	G	322/323 (100%)	293 (91%)	29 (9%)	9 29
8	H	288/289 (100%)	247 (86%)	41 (14%)	3 16
9	I	244/245 (100%)	221 (91%)	23 (9%)	8 27
10	J	152/153 (99%)	140 (92%)	12 (8%)	11 33
11	K	186/205 (91%)	165 (89%)	21 (11%)	5 21
12	L	191/208 (92%)	170 (89%)	21 (11%)	6 22
13	M	171/171 (100%)	158 (92%)	13 (8%)	12 33
14	N	180/187 (96%)	162 (90%)	18 (10%)	7 24
15	O	147/150 (98%)	134 (91%)	13 (9%)	9 30
16	P	81/136 (60%)	70 (86%)	11 (14%)	3 16
17	Q	154/159 (97%)	139 (90%)	15 (10%)	8 26
18	R	107/109 (98%)	95 (89%)	12 (11%)	6 21
19	S	175/176 (99%)	149 (85%)	26 (15%)	3 15
20	T	160/162 (99%)	143 (89%)	17 (11%)	6 23
21	U	145/146 (99%)	120 (83%)	25 (17%)	2 12
22	V	150/151 (99%)	134 (89%)	16 (11%)	6 22
23	W	153/154 (99%)	140 (92%)	13 (8%)	10 30
24	X	156/156 (100%)	142 (91%)	14 (9%)	9 29
25	Y	136/137 (99%)	117 (86%)	19 (14%)	3 16
26	Z	87/107 (81%)	85 (98%)	2 (2%)	44 64
27	AA	104/105 (99%)	95 (91%)	9 (9%)	9 30
28	BA	54/129 (42%)	47 (87%)	7 (13%)	4 17
29	CA	105/118 (89%)	95 (90%)	10 (10%)	8 26
30	DA	109/110 (99%)	96 (88%)	13 (12%)	5 20
31	EA	115/116 (99%)	108 (94%)	7 (6%)	17 40
32	FA	118/119 (99%)	106 (90%)	12 (10%)	7 24
33	GA	46/47 (98%)	44 (96%)	2 (4%)	26 48
34	HA	81/88 (92%)	74 (91%)	7 (9%)	10 30
35	IA	96/97 (99%)	89 (93%)	7 (7%)	13 35
36	JA	109/111 (98%)	96 (88%)	13 (12%)	5 20

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
37	KA	90/91 (99%)	82 (91%)	8 (9%)	9 29
38	LA	95/103 (92%)	89 (94%)	6 (6%)	16 39
39	MA	104/105 (99%)	95 (91%)	9 (9%)	9 30
40	NA	81/82 (99%)	74 (91%)	7 (9%)	10 30
41	OA	70/71 (99%)	60 (86%)	10 (14%)	3 16
42	PA	68/69 (99%)	62 (91%)	6 (9%)	9 30
43	QA	45/46 (98%)	39 (87%)	6 (13%)	4 17
44	RA	47/116 (40%)	44 (94%)	3 (6%)	16 38
45	SA	23/23 (100%)	20 (87%)	3 (13%)	4 17
46	TA	90/91 (99%)	80 (89%)	10 (11%)	6 21
47	UA	71/72 (99%)	65 (92%)	6 (8%)	10 30
48	VA	160/254 (63%)	145 (91%)	15 (9%)	8 27
49	WA	261/262 (100%)	247 (95%)	14 (5%)	20 43
50	XA	173/210 (82%)	159 (92%)	14 (8%)	11 32
52	ZA	176/205 (86%)	170 (97%)	6 (3%)	32 55
53	AB	182/195 (93%)	168 (92%)	14 (8%)	12 33
54	BB	221/222 (100%)	205 (93%)	16 (7%)	13 35
55	CB	173/191 (91%)	161 (93%)	12 (7%)	14 37
56	DB	193/201 (96%)	188 (97%)	5 (3%)	40 61
57	EB	165/170 (97%)	158 (96%)	7 (4%)	26 49
58	FB	150/161 (93%)	141 (94%)	9 (6%)	17 40
59	GB	158/166 (95%)	142 (90%)	16 (10%)	7 24
60	HB	89/98 (91%)	82 (92%)	7 (8%)	11 33
61	IB	136/137 (99%)	127 (93%)	9 (7%)	15 38
63	KB	127/128 (99%)	119 (94%)	8 (6%)	16 39
65	MB	103/118 (87%)	97 (94%)	6 (6%)	18 41
66	NB	117/119 (98%)	109 (93%)	8 (7%)	14 37
67	OB	82/124 (66%)	76 (93%)	6 (7%)	13 35
68	PB	128/129 (99%)	118 (92%)	10 (8%)	11 33
69	QB	115/116 (99%)	106 (92%)	9 (8%)	11 33
70	RB	100/114 (88%)	89 (89%)	11 (11%)	6 22

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
71	SB	74/74 (100%)	69 (93%)	5 (7%)	14 37
72	TB	110/111 (99%)	98 (89%)	12 (11%)	6 22
73	UB	119/120 (99%)	106 (89%)	13 (11%)	6 22
74	VB	112/113 (99%)	103 (92%)	9 (8%)	11 32
75	WB	61/89 (68%)	56 (92%)	5 (8%)	10 32
77	YB	70/71 (99%)	67 (96%)	3 (4%)	26 48
78	ZB	56/60 (93%)	50 (89%)	6 (11%)	6 22
79	AC	47/49 (96%)	46 (98%)	1 (2%)	47 65
80	BC	51/54 (94%)	46 (90%)	5 (10%)	7 25
82	DC	699/714 (98%)	642 (92%)	57 (8%)	10 32
All	All	9865/10602 (93%)	8975 (91%)	890 (9%)	11 29

5 of 890 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
32	FA	73	LEU
82	DC	800	HIS
48	VA	23	LYS
82	DC	723	LYS
73	UB	69	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 355 such sidechains are listed below:

Mol	Chain	Res	Type
53	AB	174	HIS
65	MB	114	HIS
54	BB	258	GLN
58	FB	119	GLN
69	QB	16	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1676/1798 (93%)	310 (18%)	11 (0%)
2	B	3265/3396 (96%)	632 (19%)	27 (0%)
3	C	157/158 (99%)	32 (20%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	D	120/121 (99%)	12 (10%)	0
83	EC	187/201 (93%)	74 (39%)	2 (1%)
All	All	5405/5674 (95%)	1060 (19%)	40 (0%)

5 of 1060 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	47	A

5 of 40 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	B	2513	U
2	B	3269	U
2	B	2525	G
2	B	3218	A
2	B	3375	A

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	18,20,21	2.87	7 (38%)	17,28,30	2.25	5 (29%)

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	-	1/20/21/23	0/1/1/1

The worst 5 of 7 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
82	DC	699	DDE	CD2-CG	8.48	1.54	1.36
82	DC	699	DDE	CBW-CBI	4.31	1.60	1.53
82	DC	699	DDE	CB-CG	3.64	1.59	1.49
82	DC	699	DDE	CAT-CE1	3.25	1.55	1.49
82	DC	699	DDE	CBW-NCB	3.13	1.60	1.54

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
82	DC	699	DDE	CAU-CAT-CE1	6.90	140.11	114.38
82	DC	699	DDE	CD2-NE2-CE1	3.09	110.13	107.55
82	DC	699	DDE	CAU-CBW-CBI	-2.85	105.65	111.22
82	DC	699	DDE	CD2-CG-ND1	-2.37	104.10	108.87
82	DC	699	DDE	OAG-CBI-NAD	2.13	126.80	123.04

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
82	DC	699	DDE	OAG-CBI-CBW-NCB

There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
82	DC	699	DDE	3	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

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	29,30,30	2.07	7 (24%)	45,47,47	1.79	11 (24%)
86	SO1	DC	903	-	34,39,39	2.83	20 (58%)	38,64,64	2.09	8 (21%)

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	-	3/16/32/32	0/3/3/3
86	SO1	DC	903	-	-	2/21/104/104	0/7/5/5

The worst 5 of 27 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
84	DC	901	GDP	PA-O3A	6.92	1.67	1.59
86	DC	903	SO1	O17-C52	5.26	1.49	1.40
86	DC	903	SO1	C12-C6	4.69	1.64	1.53
86	DC	903	SO1	C8-C2	4.42	1.61	1.53
86	DC	903	SO1	C55-C56	4.35	1.60	1.52

The worst 5 of 19 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
86	DC	903	SO1	C12-C6-C10	-7.02	102.42	107.92
84	DC	901	GDP	C2-N3-C4	5.65	122.04	112.30
84	DC	901	GDP	C5-C4-N3	-5.44	119.74	128.39
86	DC	903	SO1	C25-C22-C24	4.97	129.42	113.64
84	DC	901	GDP	N9-C4-N3	4.12	134.20	125.95

There are no chirality outliers.

All (5) torsion outliers are listed below:

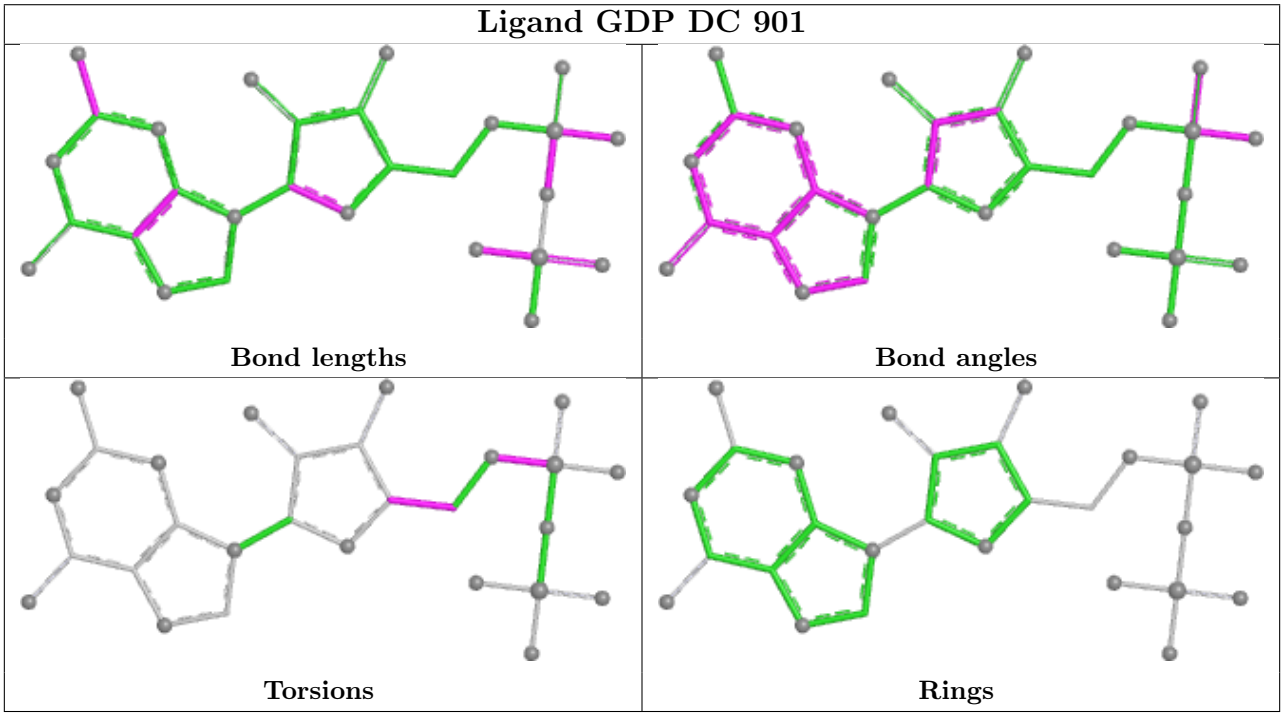
Mol	Chain	Res	Type	Atoms
84	DC	901	GDP	O4'-C4'-C5'-O5'
84	DC	901	GDP	C3'-C4'-C5'-O5'
86	DC	903	SO1	C2-C1-C5-O14
86	DC	903	SO1	C2-C1-C5-O15
84	DC	901	GDP	C5'-O5'-PA-O1A

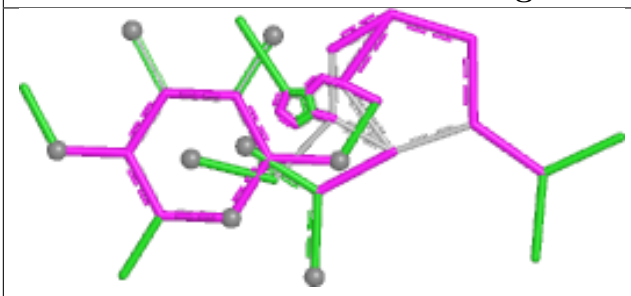
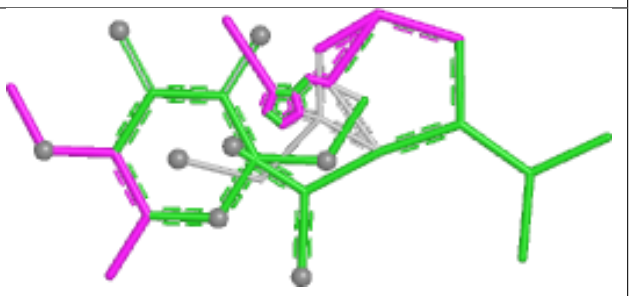
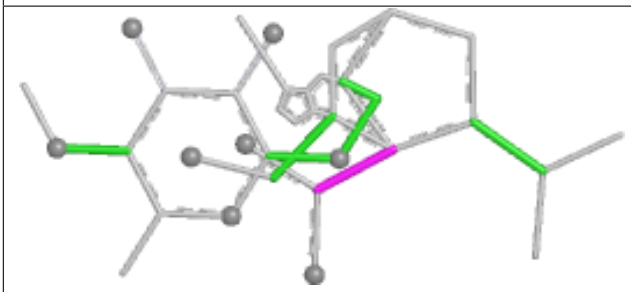
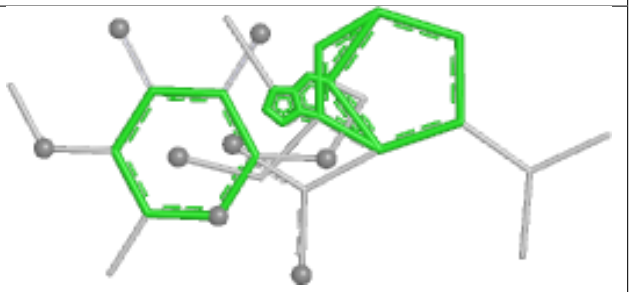
There are no ring outliers.

2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
84	DC	901	GDP	2	0
86	DC	903	SO1	2	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 then 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.



Ligand SO1 DC 903	
	
Bond lengths	**Bond angles**
	
Torsions	**Rings**

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

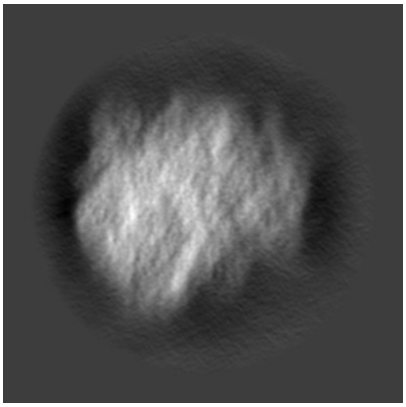
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-6645. These allow visual inspection of the internal detail of the map and identification of artifacts.

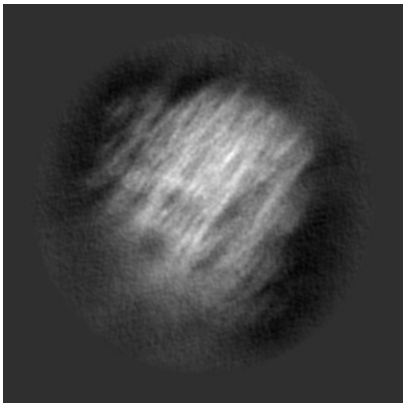
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

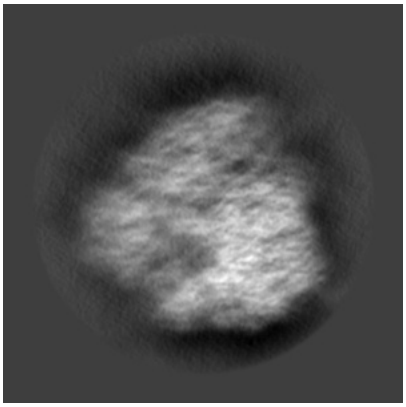
6.1.1 Primary map



X



Y

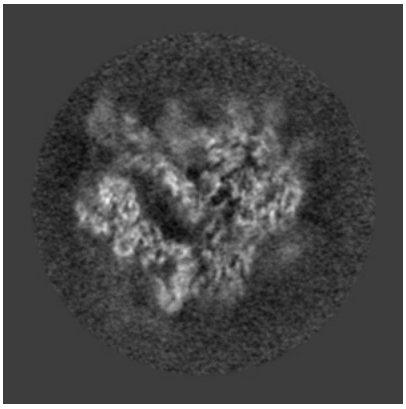


Z

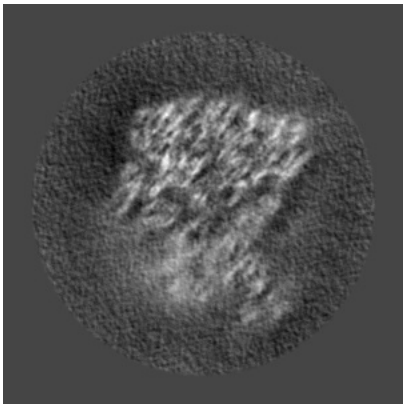
The images above show the map projected in three orthogonal directions.

6.2 Central slices

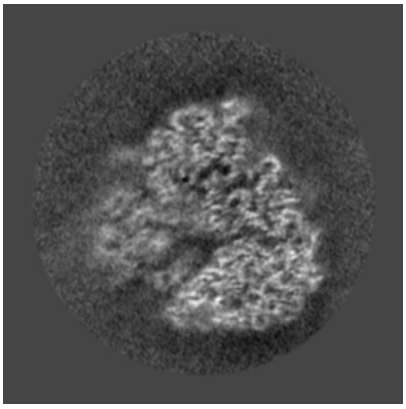
6.2.1 Primary map



X Index: 256



Y Index: 256

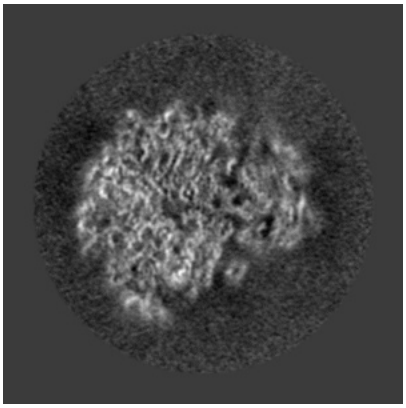


Z Index: 256

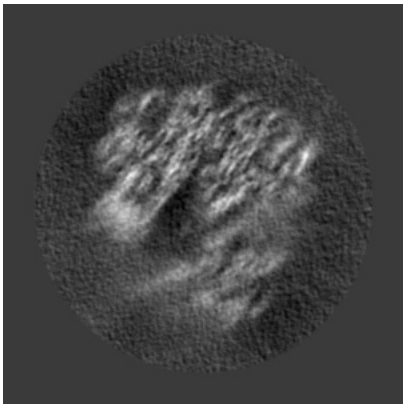
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

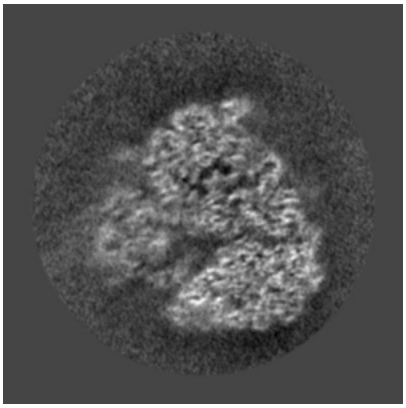
6.3.1 Primary map



X Index: 287



Y Index: 221

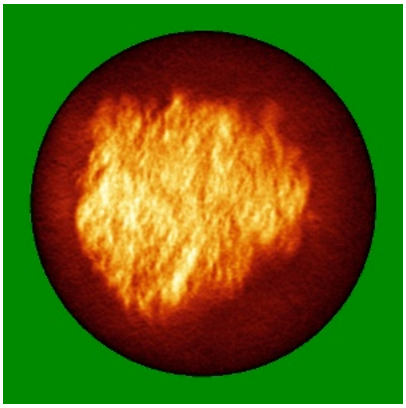


Z Index: 258

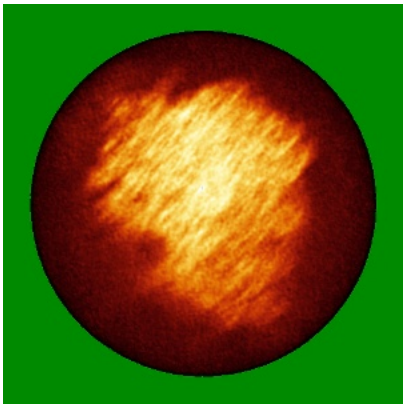
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

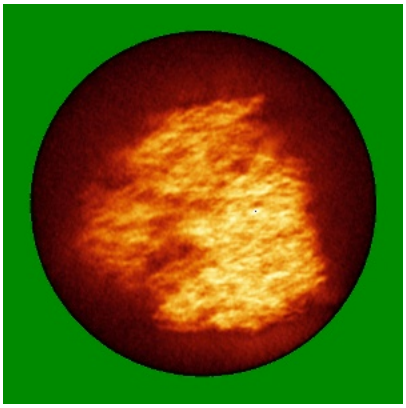
6.4.1 Primary map



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

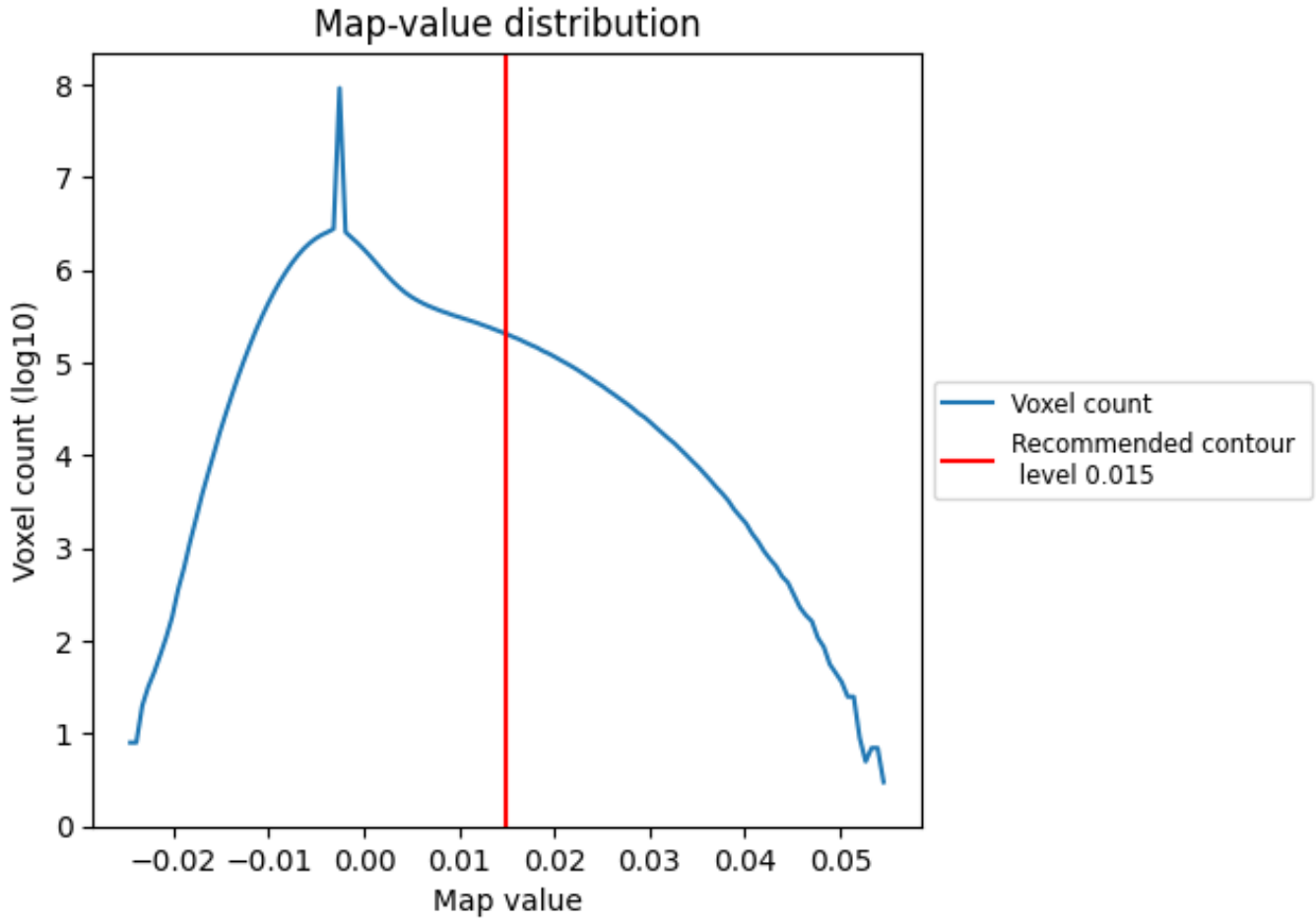
6.6 Mask visualisation (i)

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

7 Map analysis

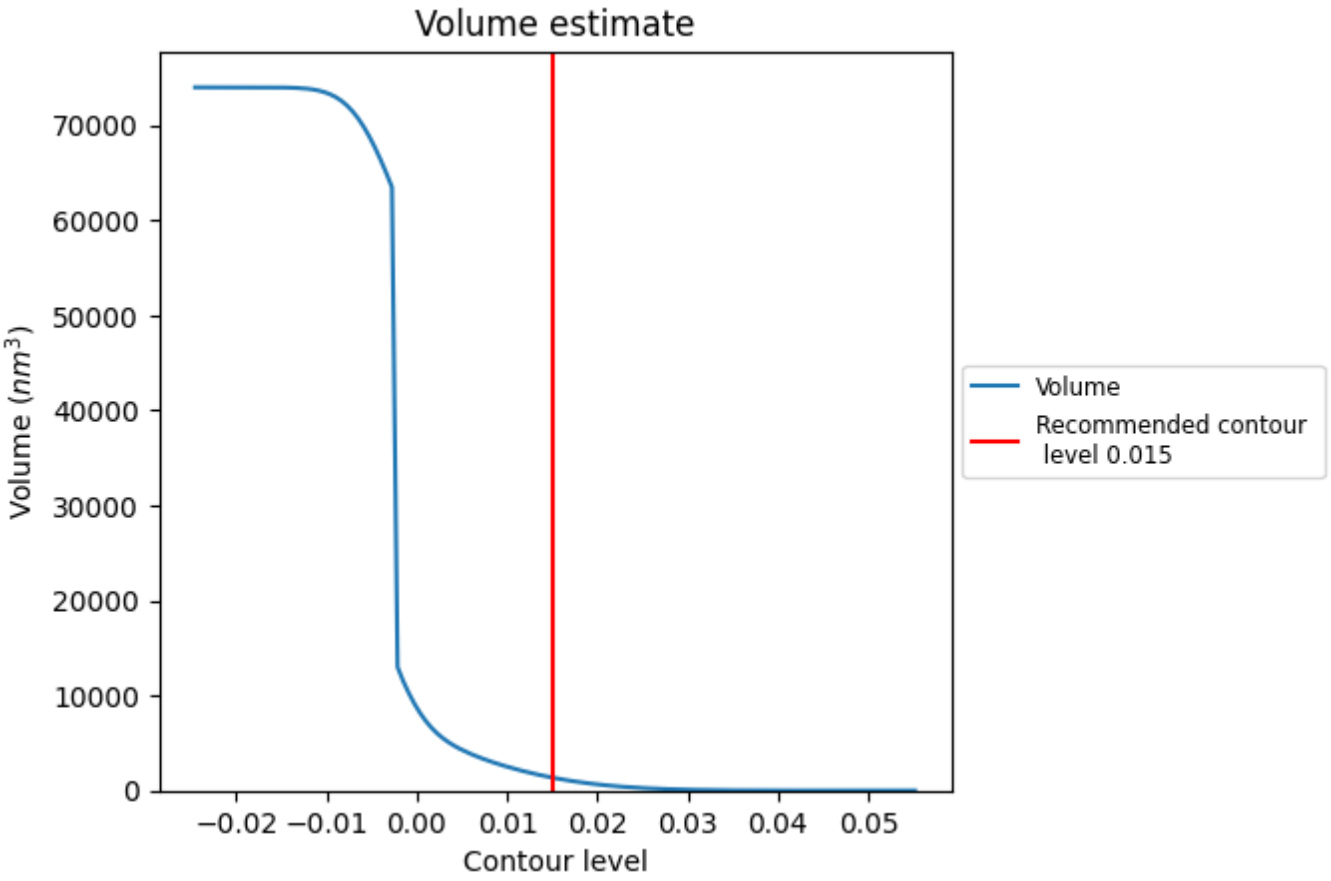
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

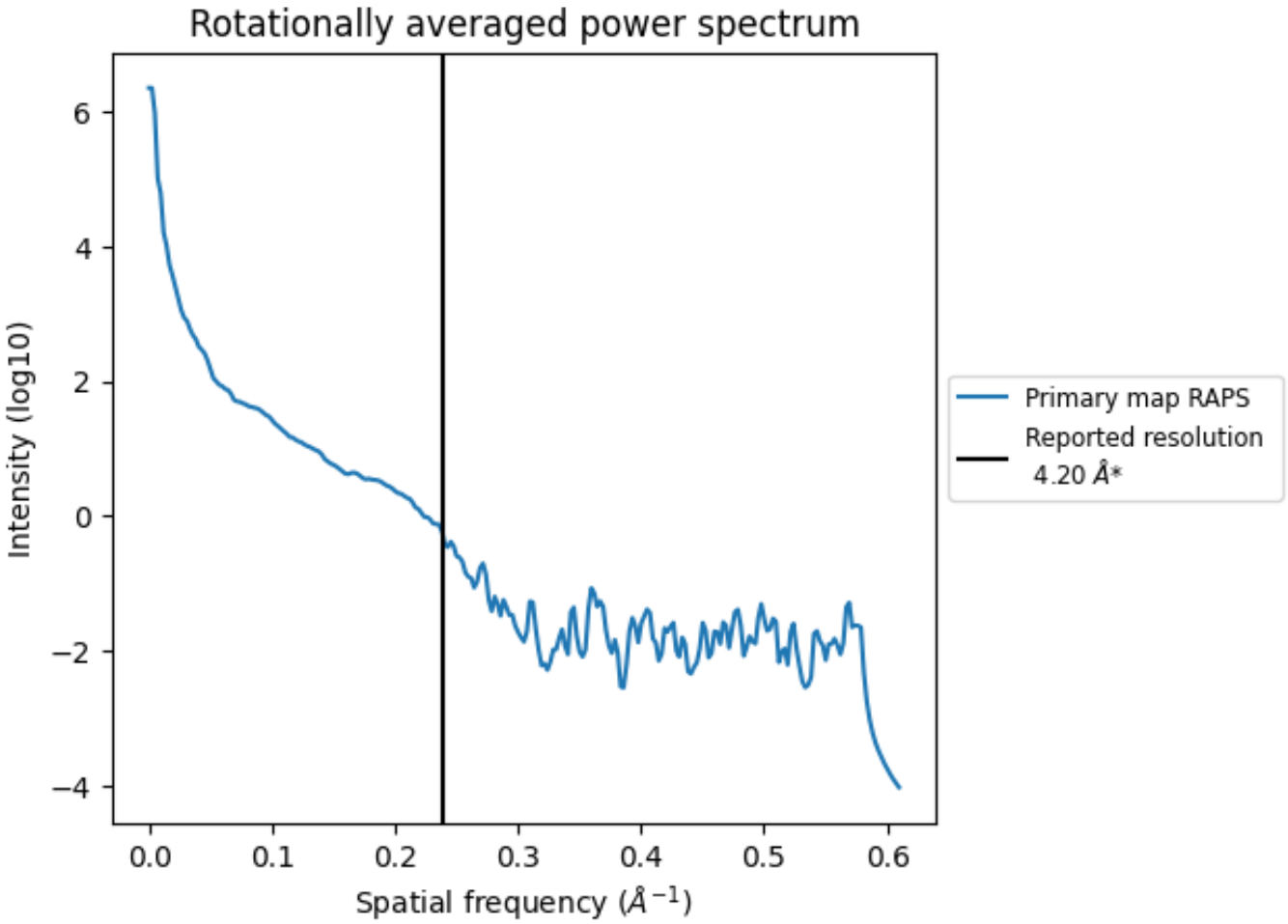
7.2 Volume estimate (i)



The volume at the recommended contour level is 1368 nm^3; this corresponds to an approximate mass of 1236 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 0.238 Å^{-1}

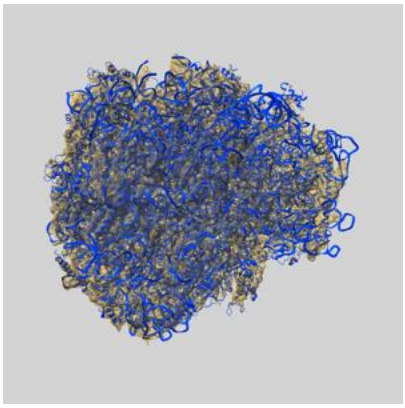
8 Fourier-Shell correlation (i)

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

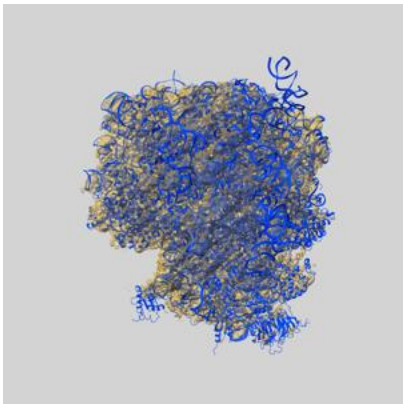
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-6645 and PDB model 5JUS. Per-residue inclusion information can be found in section 3 on page 21.

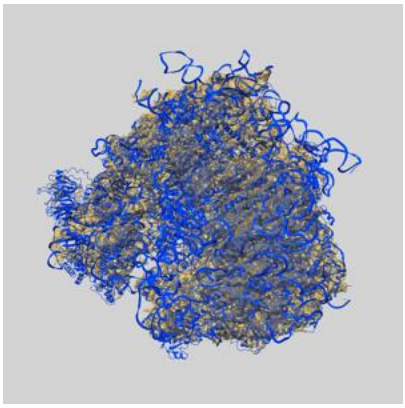
9.1 Map-model overlay



X



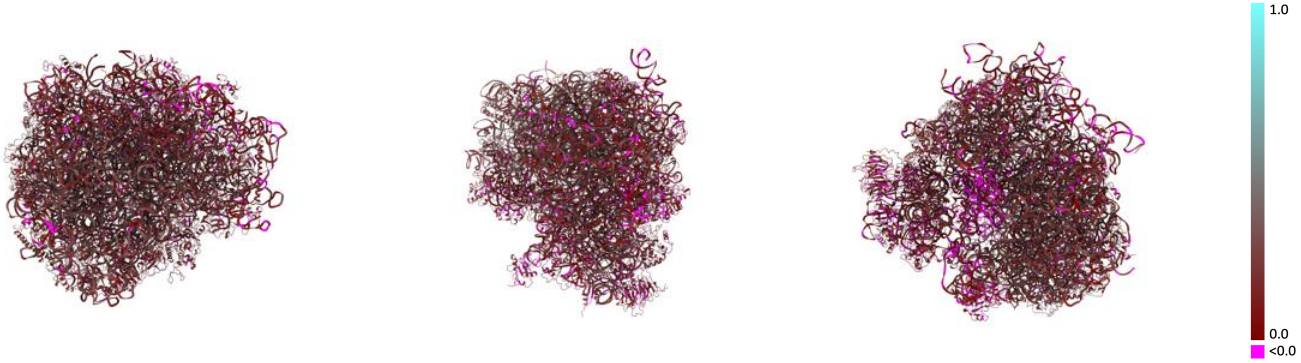
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.015 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

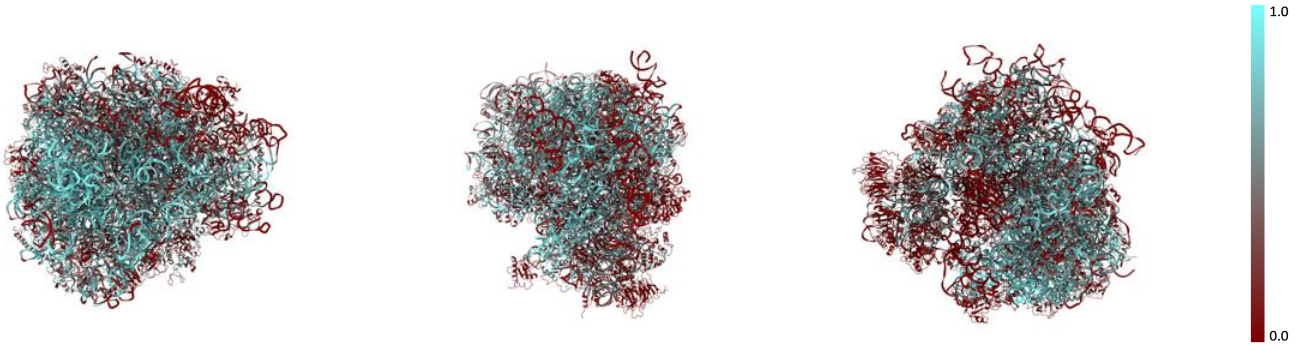
9.2 Q-score mapped to coordinate model



X Y Z

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

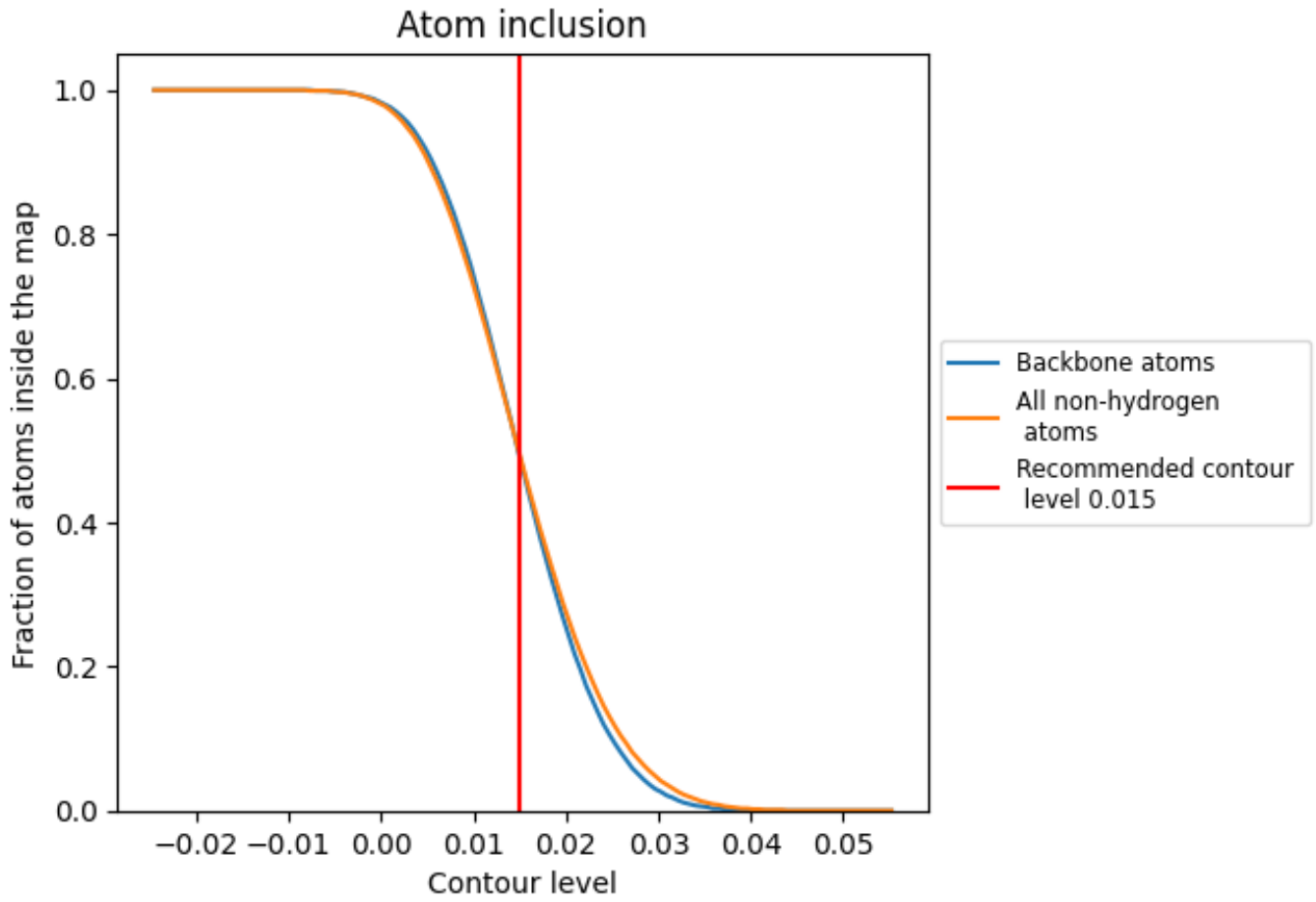
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.015).

9.4 Atom inclusion (i)



At the recommended contour level, 49% of all backbone atoms, 49% 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 (0.015) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4940	0.2100
A	0.4890	0.1870
AA	0.3890	0.2650
AB	0.2650	0.1660
AC	0.2640	0.1450
B	0.6930	0.2430
BA	0.5090	0.2440
BB	0.5820	0.2120
BC	0.2550	0.1610
C	0.6220	0.2320
CA	0.2000	0.2000
CB	0.1550	0.1440
CC	0.0320	0.0500
D	0.8630	0.2350
DA	0.5640	0.2180
DB	0.2030	0.1920
DC	0.3240	0.1850
E	0.0290	0.1090
EA	0.3060	0.1650
EB	0.0790	0.1560
EC	0.1000	0.0830
F	0.4860	0.2290
FA	0.5790	0.2680
FB	0.3700	0.1920
G	0.4470	0.2570
GA	0.5720	0.2360
GB	0.5620	0.1960
H	0.5190	0.2580
HA	0.6100	0.2070
HB	0.4860	0.1050
I	0.5650	0.1950
IA	0.4440	0.2540
IB	0.2370	0.1940
J	0.2930	0.2270
JA	0.6190	0.2830

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Chain	Atom inclusion	Q-score
JB	0.0180	0.0670
K	0.4350	0.2330
KA	0.2970	0.2550
KB	0.2790	0.1800
L	0.2930	0.1840
LA	0.4540	0.2080
LB	0.0080	0.0460
M	0.3220	0.2300
MA	0.2900	0.2020
MB	0.1540	0.1380
N	0.5280	0.2150
NA	0.5190	0.2510
NB	0.1230	0.1430
O	0.4570	0.1960
OA	0.4970	0.2240
OB	0.1350	0.1630
P	0.2850	0.1070
PA	0.0170	0.1330
PB	0.0530	0.1280
Q	0.6110	0.2470
QA	0.4640	0.2600
QB	0.1440	0.1430
R	0.4980	0.2340
RA	0.6660	0.2650
RB	0.1520	0.1520
S	0.4270	0.2240
SA	0.0240	0.0800
SB	0.2130	0.2110
T	0.4000	0.2400
TA	0.7620	0.2350
TB	0.2740	0.2240
U	0.4690	0.2450
UA	0.4280	0.2330
UB	0.1640	0.2150
V	0.5590	0.2570
VA	0.3580	0.1540
VB	0.2890	0.1750
W	0.3160	0.2080
WA	0.0400	0.1300
WB	0.0460	0.1330
X	0.3870	0.2450
XA	0.2230	0.2070

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Chain	Atom inclusion	Q-score
XB	0.0210	0.0390
Y	0.5290	0.2540
YA	0.0040	0.0120
YB	0.3650	0.2160
Z	0.2290	0.1920
ZA	0.3090	0.2340
ZB	0.2930	0.2090