wwPDB X-ray Structure Validation Summary Report (i)

Sep 14, 2023 – 01:58 AM EDT

PDB ID	:	4V4G
Title	:	Crystal structure of five 70s ribosomes from Escherichia Coli in complex with protein Y.
Authors	:	Vila-Sanjurjo, A.; Schuwirth, B.S.; Hau, C.W.; Cate, J.H.
Deposited on	:	2004-10-06
Resolution	:	11.50 Å(reported)

This is a wwPDB X-ray Structure 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/XrayValidationReportHelp
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:

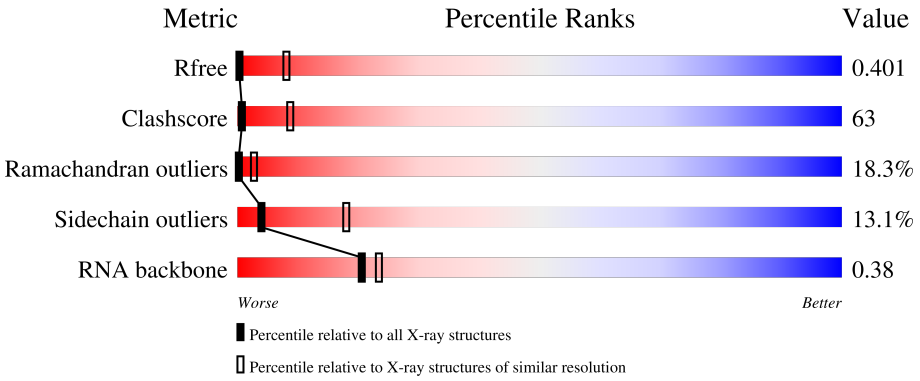
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 11.50 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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1005 (11.50-3.90)
Clashscore	141614	1071 (15.00-3.90)
Ramachandran outliers	138981	1003 (11.50-3.90)
Sidechain outliers	138945	1003 (11.50-3.86)
RNA backbone	3102	1079 (11.50-3.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower 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%

Mol	Chain	Length	Quality of chain
1	AA	1526	20% 61% 19%
1	CA	1526	20% 60% 19%
1	EA	1526	20% 60% 19%
1	GA	1526	20% 61% 19%
1	IA	1526	20% 60% 19%
2	AB	234	29% 59% 10%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	CB	234	28% 60% 9%
2	EB	234	26% 61% 10%
2	GB	234	29% 59% 10%
2	IB	234	28% 59% 10%
3	AC	206	26% 64% 10%
3	CC	206	25% 67% 9%
3	EC	206	24% 68% 8%
3	GC	206	29% 63% 8%
3	IC	206	24% 66% 10%
4	AD	208	24% 63% 12%
4	CD	208	23% 63% 13%
4	ED	208	27% 60% 12%
4	GD	208	25% 63% 10%
4	ID	208	29% 59% 12%
5	AE	150	29% 62% 9%
5	CE	150	27% 63% 9%
5	EE	150	34% 56% 10%
5	GE	150	33% 57% 9%
5	IE	150	33% 58% 9%
6	AF	101	26% 67% 7%
6	CF	101	25% 67% 8%
6	EF	101	26% 66% 8%
6	GF	101	26% 66% 8%
6	IF	101	27% 64% 9%
7	AG	155	30% 61% 7%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
7	CG	155	29% 62% 8%
7	EG	155	30% 61% 8%
7	GG	155	26% 65% 8%
7	IG	155	30% 61% 8%
8	AH	138	30% 59% 9%
8	CH	138	27% 62% 10%
8	EH	138	25% 65% 9%
8	GH	138	32% 59% 9%
8	IH	138	26% 64% 9%
9	AI	127	22% 61% 17%
9	CI	127	23% 60% 17%
9	EI	127	24% 60% 16%
9	GI	127	23% 61% 16%
9	II	127	21% 62% 17%
10	AJ	98	16% 61% 20%
10	CJ	98	18% 61% 18%
10	EJ	98	17% 62% 18%
10	GJ	98	14% 66% 17%
10	IJ	98	17% 64% 16%
11	AK	119	31% 55% 13%
11	CK	119	30% 57% 13%
11	EK	119	30% 57% 13%
11	GK	119	29% 56% 14%
11	IK	119	26% 61% 13%
12	AL	124	36% 58% 6%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
12	CL	124	32% 62% 6%
12	EL	124	38% 55% 7%
12	GL	124	31% 62% 6%
12	IL	124	32% 61% 6%
13	AM	125	22% 62% 15% •
13	CM	125	20% 64% 15% •
13	EM	125	26% 60% 14%
13	GM	125	20% 63% 15% •
13	IM	125	24% 60% 15% •
14	AN	60	5% 78% 15% •
14	CN	60	7% 77% 15% •
14	EN	60	17% 65% 17% •
14	GN	60	12% 72% 15% •
14	IN	60	15% 68% 15% •
15	AO	88	28% 64% 7% •
15	CO	88	28% 64% 7% •
15	EO	88	28% 63% 9%
15	GO	88	28% 64% 7% •
15	IO	88	34% 57% 9%
16	AP	83	31% 61% 7%
16	CP	83	31% 63% 6%
16	EP	83	25% 69% 6%
16	GP	83	33% 61% 6%
16	IP	83	27% 67% 6%
17	AQ	104	21% 63% 15%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
17	CQ	104	21% 63% 15%
17	EQ	104	20% 65% 14%
17	GQ	104	25% 62% 12%
17	IQ	104	31% 55% 14%
18	AR	73	26% 63% 10%
18	CR	73	26% 63% 10%
18	ER	73	30% 60% 8%
18	GR	73	25% 66% 8%
18	IR	73	27% 62% 10%
19	AS	80	18% 66% 14%
19	CS	80	19% 65% 14%
19	ES	80	18% 68% 12%
19	GS	80	25% 59% 14%
19	IS	80	20% 62% 15%
20	AT	99	37% 54% 9%
20	CT	99	39% 52% 9%
20	ET	99	38% 54% 8%
20	GT	99	33% 55% 12%
20	IT	99	36% 55% 9%
21	Aa	90	79% 21%
21	Ca	90	79% 21%
21	Ea	90	79% 21%
21	Ga	90	79% 21%
21	Ia	90	79% 21%
22	BB	2825	18% 59% 22%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
22	DB	2825	19% 58% 21%
22	FB	2825	19% 58% 22%
22	HB	2825	18% 59% 21%
22	JB	2825	19% 58% 21%
23	BA	119	24% 57% 18%
23	DA	119	18% 61% 20%
23	FA	119	24% 53% 22%
23	HA	119	24% 56% 18%
23	JA	119	27% 50% 22%
24	BD	270	20% 46% 30%
24	DD	270	18% 50% 28%
24	FD	270	18% 48% 30%
24	HD	270	20% 47% 28%
24	JD	270	19% 47% 30%
25	BE	205	22% 51% 23%
25	DE	205	23% 49% 24%
25	FE	205	20% 53% 23%
25	HE	205	27% 48% 21%
25	JE	205	27% 46% 23%
26	BF	198	36% 43% 19%
26	DF	198	36% 43% 18%
26	FF	198	30% 49% 19%
26	HF	198	34% 46% 18%
26	JF	198	28% 51% 19%
27	BG	178	20% 46% 29% 6%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
27	DG	178	20% 46% 29% 6%
27	FG	178	21% 44% 29% 6%
27	HG	178	21% 46% 28% 6%
27	JG	178	21% 44% 29% 6%
28	BH	177	30% 51% 16%
28	DH	177	28% 53% 16%
28	FH	177	27% 54% 16%
28	HH	177	30% 53% 15%
28	JH	177	29% 53% 15%
29	BI	52	23% 50% 21% 6%
29	DI	52	13% 58% 23% 6%
29	FI	52	15% 54% 25% 6%
29	HI	52	19% 52% 23% 6%
29	JI	52	17% 50% 27% 6%
30	BJ	143	35% 44% 17%
30	DJ	143	39% 40% 17%
30	FJ	143	39% 41% 17%
30	HJ	143	38% 41% 18%
30	JJ	143	36% 44% 17%
31	BK	143	18% 57% 20% 5%
31	DK	143	17% 59% 20% 5%
31	FK	143	19% 56% 20% 5%
31	HK	143	14% 62% 20% 5%
31	JK	143	18% 57% 20% 5%
32	BL	132	20% 57% 18% 5%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
32	DL	132	17% 59% 20%
32	FL	132	22% 55% 20%
32	HL	132	20% 56% 20%
32	JL	132	21% 56% 19%
33	BM	141	25% 52% 18% 6%
33	DM	141	23% 52% 18% 6%
33	FM	141	25% 52% 16% 6%
33	HM	141	21% 52% 21% 6%
33	JM	141	21% 52% 21% 6%
34	BN	124	11% 60% 23% 6%
34	DN	124	12% 56% 26% 6%
34	FN	124	15% 54% 25% 6%
34	HN	124	14% 59% 22% 6%
34	JN	124	20% 51% 24% 5%
35	BO	114	19% 60% 18%
35	DO	114	19% 61% 16%
35	FO	114	17% 64% 15%
35	HO	114	20% 58% 18%
35	JO	114	20% 59% 18%
36	BP	111	41% 41% 17%
36	DP	111	35% 46% 19%
36	FP	111	32% 50% 18%
36	HP	111	41% 41% 18%
36	JP	111	33% 49% 18%
37	BQ	125	19% 55% 24%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
37	DQ	125	22% 52% 24%
37	FQ	125	22% 52% 24%
37	HQ	125	21% 54% 23%
37	JQ	125	18% 56% 25%
38	BR	117	32% 45% 21%
38	DR	117	26% 53% 20%
38	FR	117	23% 56% 19%
38	HR	117	32% 47% 20%
38	JR	117	31% 49% 19%
39	BS	100	29% 51% 18%
39	DS	100	25% 55% 18%
39	FS	100	26% 56% 16%
39	HS	100	28% 54% 16%
39	JS	100	29% 52% 16%
40	BT	130	31% 48% 19%
40	DT	130	30% 50% 18%
40	FT	130	22% 58% 18%
40	HT	130	22% 58% 17%
40	JT	130	29% 52% 17%
41	BU	93	24% 48% 26%
41	DU	93	25% 45% 27%
41	FU	93	22% 54% 20%
41	HU	93	22% 51% 25%
41	JU	93	20% 49% 26%
42	BV	113	28% 48% 24%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
42	DV	113	27% 46% 26%
42	FV	113	26% 48% 27%
42	HV	113	30% 45% 25%
42	JV	113	21% 50% 28%
43	BW	173	23% 46% 25% 6%
43	DW	173	21% 49% 25% 5%
43	FW	173	24% 46% 24% 6%
43	HW	173	24% 48% 23% 5%
43	JW	173	27% 45% 23% 5%
44	BX	86	27% 40% 27% 7%
44	DX	86	26% 43% 24% 7%
44	FX	86	21% 45% 26% 8%
44	HX	86	23% 40% 30% 7%
44	JX	86	21% 50% 22% 7%
45	BY	65	29% 48% 22%
45	DY	65	29% 48% 22%
45	FY	65	29% 46% 23%
45	HY	65	22% 54% 23%
45	JY	65	22% 52% 23%
46	BZ	55	16% 60% 22%
46	DZ	55	16% 60% 22%
46	FZ	55	9% 64% 25%
46	HZ	55	16% 60% 22%
46	JZ	55	13% 64% 22%
47	B1	73	30% 40% 23% 7%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
47	D1	73	36% 36% 23% 5%
47	F1	73	29% 44% 22% 5%
47	H1	73	30% 40% 23% 7%
47	J1	73	32% 37% 25% 7%
48	B2	58	16% 53% 26% 5%
48	D2	58	19% 48% 26% 7%
48	F2	58	24% 48% 21% 7%
48	H2	58	12% 57% 26% 5%
48	J2	58	16% 50% 28% 7%
49	B3	53	21% 38% 32% 9%
49	D3	53	13% 47% 30% 9%
49	F3	53	11% 45% 32% 11%
49	H3	53	21% 38% 30% 11%
49	J3	53	11% 47% 30% 11%
50	B4	46	17% 54% 22% 7%
50	D4	46	24% 43% 26% 7%
50	F4	46	24% 43% 26% 7%
50	H4	46	26% 43% 24% 7%
50	J4	46	22% 43% 28% 7%
51	B5	63	19% 41% 35% 5%
51	D5	63	17% 43% 35% 5%
51	F5	63	14% 44% 37% 5%
51	H5	63	21% 40% 35% 5%
51	J5	63	19% 40% 37% 5%
52	B6	35	9% 60% 29%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
52	D6	35	9% 66% 23%
52	F6	35	14% 63% 20%
52	H6	35	11% 60% 26%
52	J6	35	11% 63% 23%
53	B7	217	38% 49% 12%
53	D7	217	39% 48% 12%
53	F7	217	38% 50% 12%
53	H7	217	36% 51% 12%
53	J7	217	34% 54% 12%

2 Entry composition (i)

There are 53 unique types of molecules in this entry. The entry contains 717805 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	AA	1526	Total	C	N	O	P	0	0	0
			32799	14601	6082	10590	1526			
1	CA	1526	Total	C	N	O	P	0	0	0
			32799	14601	6082	10590	1526			
1	EA	1526	Total	C	N	O	P	0	0	0
			32799	14601	6082	10590	1526			
1	GA	1526	Total	C	N	O	P	0	0	0
			32799	14601	6082	10590	1526			
1	IA	1526	Total	C	N	O	P	0	0	0
			32799	14601	6082	10590	1526			

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	AB	234	Total	C	N	O	S	0	0	0
			1901	1213	341	342	5			
2	CB	234	Total	C	N	O	S	0	0	0
			1901	1213	341	342	5			
2	EB	234	Total	C	N	O	S	0	0	0
			1901	1213	341	342	5			
2	GB	234	Total	C	N	O	S	0	0	0
			1901	1213	341	342	5			
2	IB	234	Total	C	N	O	S	0	0	0
			1901	1213	341	342	5			

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	AC	206	Total	C	N	O	S	0	0	0
			1613	1016	314	282	1			
3	CC	206	Total	C	N	O	S	0	0	0
			1613	1016	314	282	1			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	EC	206	Total	C	N	O	S	0	0	0
			1613	1016	314	282	1			
3	GC	206	Total	C	N	O	S	0	0	0
			1613	1016	314	282	1			
3	IC	206	Total	C	N	O	S	0	0	0
			1613	1016	314	282	1			

- Molecule 4 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	AD	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			
4	CD	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			
4	ED	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			
4	GD	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			
4	ID	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			

- Molecule 5 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	AE	150	Total	C	N	O	S	0	0	0
			1147	724	217	202	4			
5	CE	150	Total	C	N	O	S	0	0	0
			1147	724	217	202	4			
5	EE	150	Total	C	N	O	S	0	0	0
			1147	724	217	202	4			
5	GE	150	Total	C	N	O	S	0	0	0
			1147	724	217	202	4			
5	IE	150	Total	C	N	O	S	0	0	0
			1147	724	217	202	4			

- Molecule 6 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	AF	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			
6	CF	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	EF	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			
6	GF	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			
6	IF	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			

- Molecule 7 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	AG	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			
7	CG	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			
7	EG	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			
7	GG	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			
7	IG	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			

- Molecule 8 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	AH	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			
8	CH	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			
8	EH	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			
8	GH	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			
8	IH	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
9	AI	127	Total	C	N	O	0	0	0
			1011	639	198	174			
9	CI	127	Total	C	N	O	0	0	0
			1011	639	198	174			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
9	EI	127	Total	C	N	O	0	0	0
			1011	639	198	174			
9	GI	127	Total	C	N	O	0	0	0
			1011	639	198	174			
9	II	127	Total	C	N	O	0	0	0
			1011	639	198	174			

- Molecule 10 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	AJ	98	Total	C	N	O	S	0	0	0
			795	499	156	139	1			
10	CJ	98	Total	C	N	O	S	0	0	0
			795	499	156	139	1			
10	EJ	98	Total	C	N	O	S	0	0	0
			795	499	156	139	1			
10	GJ	98	Total	C	N	O	S	0	0	0
			795	499	156	139	1			
10	IJ	98	Total	C	N	O	S	0	0	0
			795	499	156	139	1			

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	AK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			
11	CK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			
11	EK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			
11	GK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			
11	IK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	AL	124	Total	C	N	O	S	0	0	0
			971	611	195	164	1			
12	CL	124	Total	C	N	O	S	0	0	0
			971	611	195	164	1			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	EL	124	Total	C	N	O	S	0	0	0
			971	611	195	164	1			
12	GL	124	Total	C	N	O	S	0	0	0
			971	611	195	164	1			
12	IL	124	Total	C	N	O	S	0	0	0
			971	611	195	164	1			

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	AM	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			
13	CM	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			
13	EM	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			
13	GM	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			
13	IM	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			

- Molecule 14 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	AN	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			
14	CN	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			
14	EN	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			
14	GN	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			
14	IN	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	AO	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			
15	CO	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	EO	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			
15	GO	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			
15	IO	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			

- Molecule 16 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	AP	83	Total	C	N	O	S	0	0	0
			701	443	139	118	1			
16	CP	83	Total	C	N	O	S	0	0	0
			701	443	139	118	1			
16	EP	83	Total	C	N	O	S	0	0	0
			701	443	139	118	1			
16	GP	83	Total	C	N	O	S	0	0	0
			701	443	139	118	1			
16	IP	83	Total	C	N	O	S	0	0	0
			701	443	139	118	1			

- Molecule 17 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	AQ	104	Total	C	N	O	S	0	0	0
			857	547	161	147	2			
17	CQ	104	Total	C	N	O	S	0	0	0
			857	547	161	147	2			
17	EQ	104	Total	C	N	O	S	0	0	0
			857	547	161	147	2			
17	GQ	104	Total	C	N	O	S	0	0	0
			857	547	161	147	2			
17	IQ	104	Total	C	N	O	S	0	0	0
			857	547	161	147	2			

- Molecule 18 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	AR	73	Total	C	N	O	0	0	0
			597	380	118	99			
18	CR	73	Total	C	N	O	0	0	0
			597	380	118	99			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	ER	73	Total 597	C 380	N 118	O 99	0	0	0
18	GR	73	Total 597	C 380	N 118	O 99	0	0	0
18	IR	73	Total 597	C 380	N 118	O 99	0	0	0

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	AS	80	Total 648	C 414	N 119	O 113	S 2	0	0	0
19	CS	80	Total 648	C 414	N 119	O 113	S 2	0	0	0
19	ES	80	Total 648	C 414	N 119	O 113	S 2	0	0	0
19	GS	80	Total 648	C 414	N 119	O 113	S 2	0	0	0
19	IS	80	Total 648	C 414	N 119	O 113	S 2	0	0	0

- Molecule 20 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	AT	99	Total 762	C 469	N 162	O 129	S 2	0	0	0
20	CT	99	Total 762	C 469	N 162	O 129	S 2	0	0	0
20	ET	99	Total 762	C 469	N 162	O 129	S 2	0	0	0
20	GT	99	Total 762	C 469	N 162	O 129	S 2	0	0	0
20	IT	99	Total 762	C 469	N 162	O 129	S 2	0	0	0

- Molecule 21 is a protein called protein Y.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	Aa	90	Total 719	C 452	N 131	O 133	S 3	0	0	0
21	Ca	90	Total 719	C 452	N 131	O 133	S 3	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	Ea	90	Total	C	N	O	S	0	0	0
			719	452	131	133	3			
21	Ga	90	Total	C	N	O	S	0	0	0
			719	452	131	133	3			
21	Ia	90	Total	C	N	O	S	0	0	0
			719	452	131	133	3			

- Molecule 22 is a RNA chain called 23S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	BB	2825	Total	C	N	O	P	0	0	0
			60635	27047	11190	19573	2825			
22	DB	2825	Total	C	N	O	P	0	0	0
			60635	27047	11190	19573	2825			
22	FB	2825	Total	C	N	O	P	0	0	0
			60635	27047	11190	19573	2825			
22	HB	2825	Total	C	N	O	P	0	0	0
			60635	27047	11190	19573	2825			
22	JB	2825	Total	C	N	O	P	0	0	0
			60635	27047	11190	19573	2825			

- Molecule 23 is a RNA chain called 5S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	BA	118	Total	C	N	O	P	0	0	0
			2519	1124	464	813	118			
23	DA	118	Total	C	N	O	P	0	0	0
			2519	1124	464	813	118			
23	FA	118	Total	C	N	O	P	0	0	0
			2519	1124	464	813	118			
23	HA	118	Total	C	N	O	P	0	0	0
			2519	1124	464	813	118			
23	JA	118	Total	C	N	O	P	0	0	0
			2519	1124	464	813	118			

- Molecule 24 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	BD	270	Total	C	N	O	S	0	0	0
			2079	1294	417	365	3			
24	DD	270	Total	C	N	O	S	0	0	0
			2079	1294	417	365	3			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	FD	270	Total	C	N	O	S	0	0	0
			2079	1294	417	365	3			
24	HD	270	Total	C	N	O	S	0	0	0
			2079	1294	417	365	3			
24	JD	270	Total	C	N	O	S	0	0	0
			2079	1294	417	365	3			

- Molecule 25 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
25	BE	205	Total	C	N	O	S	0	0	0
			1540	965	295	272	8			
25	DE	205	Total	C	N	O	S	0	0	0
			1540	965	295	272	8			
25	FE	205	Total	C	N	O	S	0	0	0
			1540	965	295	272	8			
25	HE	205	Total	C	N	O	S	0	0	0
			1540	965	295	272	8			
25	JE	205	Total	C	N	O	S	0	0	0
			1540	965	295	272	8			

- Molecule 26 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
26	BF	197	Total	C	N	O	S	0	0	0
			1507	935	287	283	2			
26	DF	197	Total	C	N	O	S	0	0	0
			1507	935	287	283	2			
26	FF	197	Total	C	N	O	S	0	0	0
			1507	935	287	283	2			
26	HF	197	Total	C	N	O	S	0	0	0
			1507	935	287	283	2			
26	JF	197	Total	C	N	O	S	0	0	0
			1507	935	287	283	2			

- Molecule 27 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
27	BG	178	Total	C	N	O	S	0	0	0
			1410	897	249	257	7			
27	DG	178	Total	C	N	O	S	0	0	0
			1410	897	249	257	7			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
27	FG	178	Total	C	N	O	S	0	0	0
			1410	897	249	257	7			
27	HG	178	Total	C	N	O	S	0	0	0
			1410	897	249	257	7			
27	JG	178	Total	C	N	O	S	0	0	0
			1410	897	249	257	7			

- Molecule 28 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
28	BH	177	Total	C	N	O	S	0	0	0
			1316	828	243	244	1			
28	DH	177	Total	C	N	O	S	0	0	0
			1316	828	243	244	1			
28	FH	177	Total	C	N	O	S	0	0	0
			1316	828	243	244	1			
28	HH	177	Total	C	N	O	S	0	0	0
			1316	828	243	244	1			
28	JH	177	Total	C	N	O	S	0	0	0
			1316	828	243	244	1			

- Molecule 29 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
29	BI	52	Total	C	N	O	S	0	0	0
			401	251	73	75	2			
29	DI	52	Total	C	N	O	S	0	0	0
			401	251	73	75	2			
29	FI	52	Total	C	N	O	S	0	0	0
			401	251	73	75	2			
29	HI	52	Total	C	N	O	S	0	0	0
			401	251	73	75	2			
29	JI	52	Total	C	N	O	S	0	0	0
			401	251	73	75	2			

- Molecule 30 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	BJ	143	Total	C	N	O	S	0	0	0
			1039	660	178	196	5			
30	DJ	143	Total	C	N	O	S	0	0	0
			1039	660	178	196	5			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	FJ	143	Total	C	N	O	S	0	0	0
			1039	660	178	196	5			
30	HJ	143	Total	C	N	O	S	0	0	0
			1039	660	178	196	5			
30	JJ	143	Total	C	N	O	S	0	0	0
			1039	660	178	196	5			

- Molecule 31 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
31	BK	143	Total	C	N	O	S	0	0	0
			1122	709	210	200	3			
31	DK	143	Total	C	N	O	S	0	0	0
			1122	709	210	200	3			
31	FK	143	Total	C	N	O	S	0	0	0
			1122	709	210	200	3			
31	HK	143	Total	C	N	O	S	0	0	0
			1122	709	210	200	3			
31	JK	143	Total	C	N	O	S	0	0	0
			1122	709	210	200	3			

- Molecule 32 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
32	BL	132	Total	C	N	O	S	0	0	0
			981	603	196	178	4			
32	DL	132	Total	C	N	O	S	0	0	0
			981	603	196	178	4			
32	FL	132	Total	C	N	O	S	0	0	0
			981	603	196	178	4			
32	HL	132	Total	C	N	O	S	0	0	0
			981	603	196	178	4			
32	JL	132	Total	C	N	O	S	0	0	0
			981	603	196	178	4			

- Molecule 33 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
33	BM	141	Total	C	N	O	0	0	0
			1068	655	216	197			
33	DM	141	Total	C	N	O	0	0	0
			1068	655	216	197			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
33	FM	141	Total	C	N	O	0	0	0
			1068	655	216	197			
33	HM	141	Total	C	N	O	0	0	0
			1068	655	216	197			
33	JM	141	Total	C	N	O	0	0	0
			1068	655	216	197			

- Molecule 34 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
34	BN	124	Total	C	N	O	S	0	0	0
			986	631	182	167	6			
34	DN	124	Total	C	N	O	S	0	0	0
			986	631	182	167	6			
34	FN	124	Total	C	N	O	S	0	0	0
			986	631	182	167	6			
34	HN	124	Total	C	N	O	S	0	0	0
			986	631	182	167	6			
34	JN	124	Total	C	N	O	S	0	0	0
			986	631	182	167	6			

- Molecule 35 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
35	BO	114	Total	C	N	O	S	0	0	0
			886	546	179	159	2			
35	DO	114	Total	C	N	O	S	0	0	0
			886	546	179	159	2			
35	FO	114	Total	C	N	O	S	0	0	0
			886	546	179	159	2			
35	HO	114	Total	C	N	O	S	0	0	0
			886	546	179	159	2			
35	JO	114	Total	C	N	O	S	0	0	0
			886	546	179	159	2			

- Molecule 36 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
36	BP	111	Total	C	N	O	8	0	0
			834	512	168	154			
36	DP	111	Total	C	N	O	8	0	0
			834	512	168	154			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
36	FP	111	Total 834	C 512	N 168	O 154	8	0	0
36	HP	111	Total 834	C 512	N 168	O 154	8	0	0
36	JP	111	Total 834	C 512	N 168	O 154	8	0	0

- Molecule 37 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
37	BQ	125	Total 1008	C 625	N 204	O 178	S 1	0	0	0
37	DQ	125	Total 1008	C 625	N 204	O 178	S 1	0	0	0
37	FQ	125	Total 1008	C 625	N 204	O 178	S 1	0	0	0
37	HQ	125	Total 1008	C 625	N 204	O 178	S 1	0	0	0
37	JQ	125	Total 1008	C 625	N 204	O 178	S 1	0	0	0

- Molecule 38 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
38	BR	117	Total 978	C 608	N 210	O 159	S 1	16	0	0
38	DR	117	Total 978	C 608	N 210	O 159	S 1	16	0	0
38	FR	117	Total 978	C 608	N 210	O 159	S 1	16	0	0
38	HR	117	Total 978	C 608	N 210	O 159	S 1	16	0	0
38	JR	117	Total 978	C 608	N 210	O 159	S 1	16	0	0

- Molecule 39 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	BS	100	Total 787	C 495	N 146	O 145	S 1	0	0	0
39	DS	100	Total 787	C 495	N 146	O 145	S 1	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	FS	100	Total	C	N	O	S	0	0	0
			787	495	146	145	1			
39	HS	100	Total	C	N	O	S	0	0	0
			787	495	146	145	1			
39	JS	100	Total	C	N	O	S	0	0	0
			787	495	146	145	1			

- Molecule 40 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
40	BT	130	Total	C	N	O	S	0	0	0
			1039	653	203	181	2			
40	DT	130	Total	C	N	O	S	0	0	0
			1039	653	203	181	2			
40	FT	130	Total	C	N	O	S	0	0	0
			1039	653	203	181	2			
40	HT	130	Total	C	N	O	S	0	0	0
			1039	653	203	181	2			
40	JT	130	Total	C	N	O	S	0	0	0
			1039	653	203	181	2			

- Molecule 41 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
41	BU	93	Total	C	N	O	S	0	0	0
			727	458	136	131	2			
41	DU	93	Total	C	N	O	S	0	0	0
			727	458	136	131	2			
41	FU	93	Total	C	N	O	S	0	0	0
			727	458	136	131	2			
41	HU	93	Total	C	N	O	S	0	0	0
			727	458	136	131	2			
41	JU	93	Total	C	N	O	S	0	0	0
			727	458	136	131	2			

- Molecule 42 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
42	BV	113	Total	C	N	O	S	0	0	0
			852	530	166	155	1			
42	DV	113	Total	C	N	O	S	0	0	0
			852	530	166	155	1			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
42	FV	113	Total	C	N	O	S	0	0	0
			852	530	166	155	1			
42	HV	113	Total	C	N	O	S	0	0	0
			852	530	166	155	1			
42	JV	113	Total	C	N	O	S	0	0	0
			852	530	166	155	1			

- Molecule 43 is a protein called general stress protein Ctc.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
43	BW	173	Total	C	N	O	S	0	0	0
			1328	838	231	253	6			
43	DW	173	Total	C	N	O	S	0	0	0
			1328	838	231	253	6			
43	FW	173	Total	C	N	O	S	0	0	0
			1328	838	231	253	6			
43	HW	173	Total	C	N	O	S	0	0	0
			1328	838	231	253	6			
43	JW	173	Total	C	N	O	S	0	0	0
			1328	838	231	253	6			

- Molecule 44 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
44	BX	86	Total	C	N	O	S	0	0	0
			642	402	124	115	1			
44	DX	86	Total	C	N	O	S	0	0	0
			642	402	124	115	1			
44	FX	86	Total	C	N	O	S	0	0	0
			642	402	124	115	1			
44	HX	86	Total	C	N	O	S	0	0	0
			642	402	124	115	1			
44	JX	86	Total	C	N	O	S	0	0	0
			642	402	124	115	1			

- Molecule 45 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
45	BY	65	Total	C	N	O	S	0	0	0
			526	322	106	96	2			
45	DY	65	Total	C	N	O	S	0	0	0
			526	322	106	96	2			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
45	FY	65	Total	C	N	O	S	0	0	0
			526	322	106	96	2			
45	HY	65	Total	C	N	O	S	0	0	0
			526	322	106	96	2			
45	JY	65	Total	C	N	O	S	0	0	0
			526	322	106	96	2			

- Molecule 46 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
46	BZ	55	Total	C	N	O	S	4	0	0
			424	264	82	76	2			
46	DZ	55	Total	C	N	O	S	4	0	0
			424	264	82	76	2			
46	FZ	55	Total	C	N	O	S	4	0	0
			424	264	82	76	2			
46	HZ	55	Total	C	N	O	S	4	0	0
			424	264	82	76	2			
46	JZ	55	Total	C	N	O	S	4	0	0
			424	264	82	76	2			

- Molecule 47 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
47	B1	73	Total	C	N	O	S	0	0	0
			604	382	110	108	4			
47	D1	73	Total	C	N	O	S	0	0	0
			604	382	110	108	4			
47	F1	73	Total	C	N	O	S	0	0	0
			604	382	110	108	4			
47	H1	73	Total	C	N	O	S	0	0	0
			604	382	110	108	4			
47	J1	73	Total	C	N	O	S	0	0	0
			604	382	110	108	4			

- Molecule 48 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
48	B2	58	Total	C	N	O	S	0	0	0
			458	281	94	78	5			
48	D2	58	Total	C	N	O	S	0	0	0
			458	281	94	78	5			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
48	F2	58	Total	C	N	O	S	0	0	0
			458	281	94	78	5			
48	H2	58	Total	C	N	O	S	0	0	0
			458	281	94	78	5			
48	J2	58	Total	C	N	O	S	0	0	0
			458	281	94	78	5			

- Molecule 49 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
49	B3	53	Total	C	N	O	S	0	0	0
			432	274	80	77	1			
49	D3	53	Total	C	N	O	S	0	0	0
			432	274	80	77	1			
49	F3	53	Total	C	N	O	S	0	0	0
			432	274	80	77	1			
49	H3	53	Total	C	N	O	S	0	0	0
			432	274	80	77	1			
49	J3	53	Total	C	N	O	S	0	0	0
			432	274	80	77	1			

- Molecule 50 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
50	B4	46	Total	C	N	O	S	0	0	0
			384	230	91	61	2			
50	D4	46	Total	C	N	O	S	0	0	0
			384	230	91	61	2			
50	F4	46	Total	C	N	O	S	0	0	0
			384	230	91	61	2			
50	H4	46	Total	C	N	O	S	0	0	0
			384	230	91	61	2			
50	J4	46	Total	C	N	O	S	0	0	0
			384	230	91	61	2			

- Molecule 51 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
51	B5	63	Total	C	N	O	S	0	0	0
			496	312	101	78	5			
51	D5	63	Total	C	N	O	S	0	0	0
			496	312	101	78	5			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
51	F5	63	Total	C	N	O	S	0	0	0
			496	312	101	78	5			
51	H5	63	Total	C	N	O	S	0	0	0
			496	312	101	78	5			
51	J5	63	Total	C	N	O	S	0	0	0
			496	312	101	78	5			

- Molecule 52 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
52	B6	35	Total	C	N	O	S	0	0	0
			285	172	64	45	4			
52	D6	35	Total	C	N	O	S	0	0	0
			285	172	64	45	4			
52	F6	35	Total	C	N	O	S	0	0	0
			285	172	64	45	4			
52	H6	35	Total	C	N	O	S	0	0	0
			285	172	64	45	4			
52	J6	35	Total	C	N	O	S	0	0	0
			285	172	64	45	4			

- Molecule 53 is a protein called 50S ribosomal protein L1P.

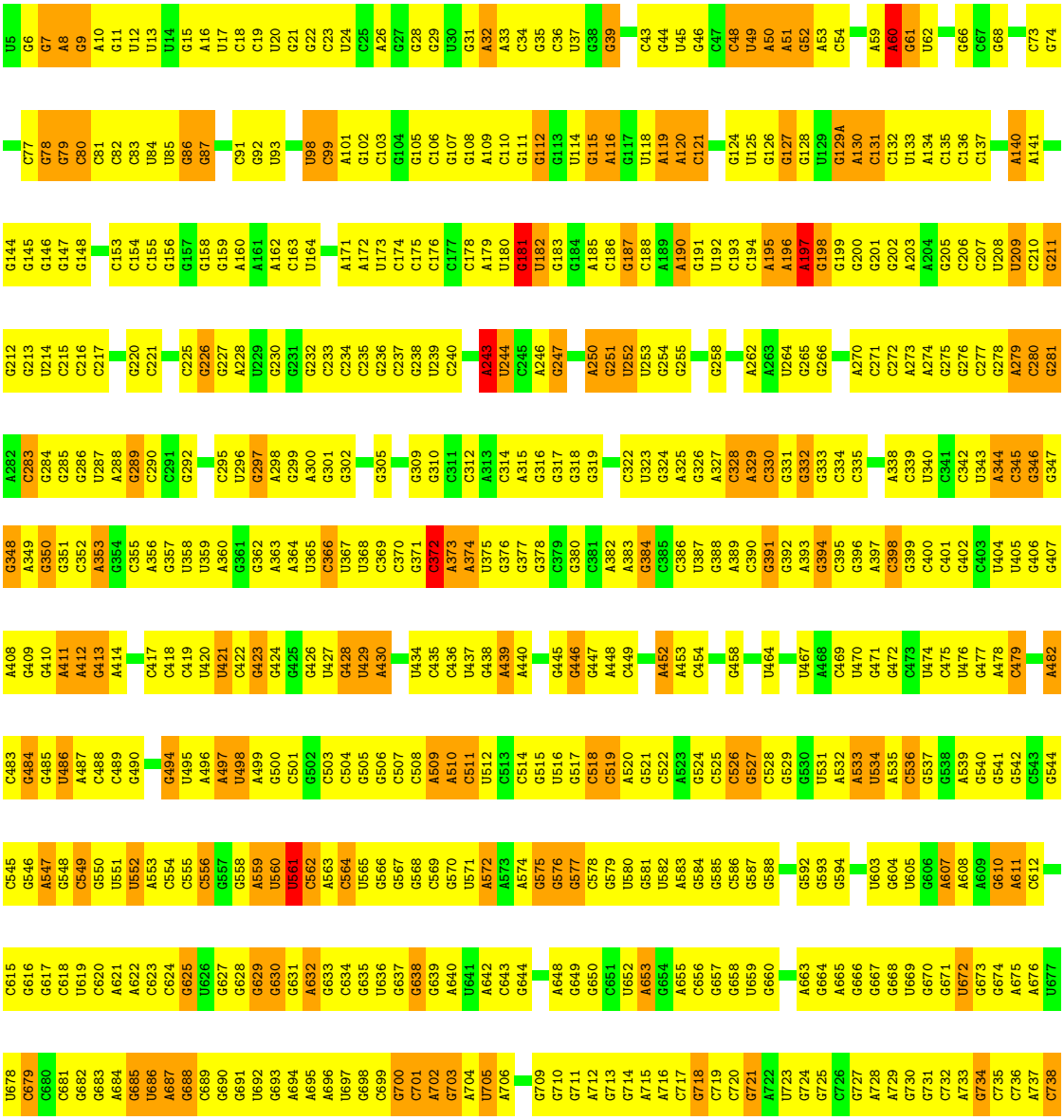
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
53	B7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			
53	D7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			
53	F7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			
53	H7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			
53	J7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			

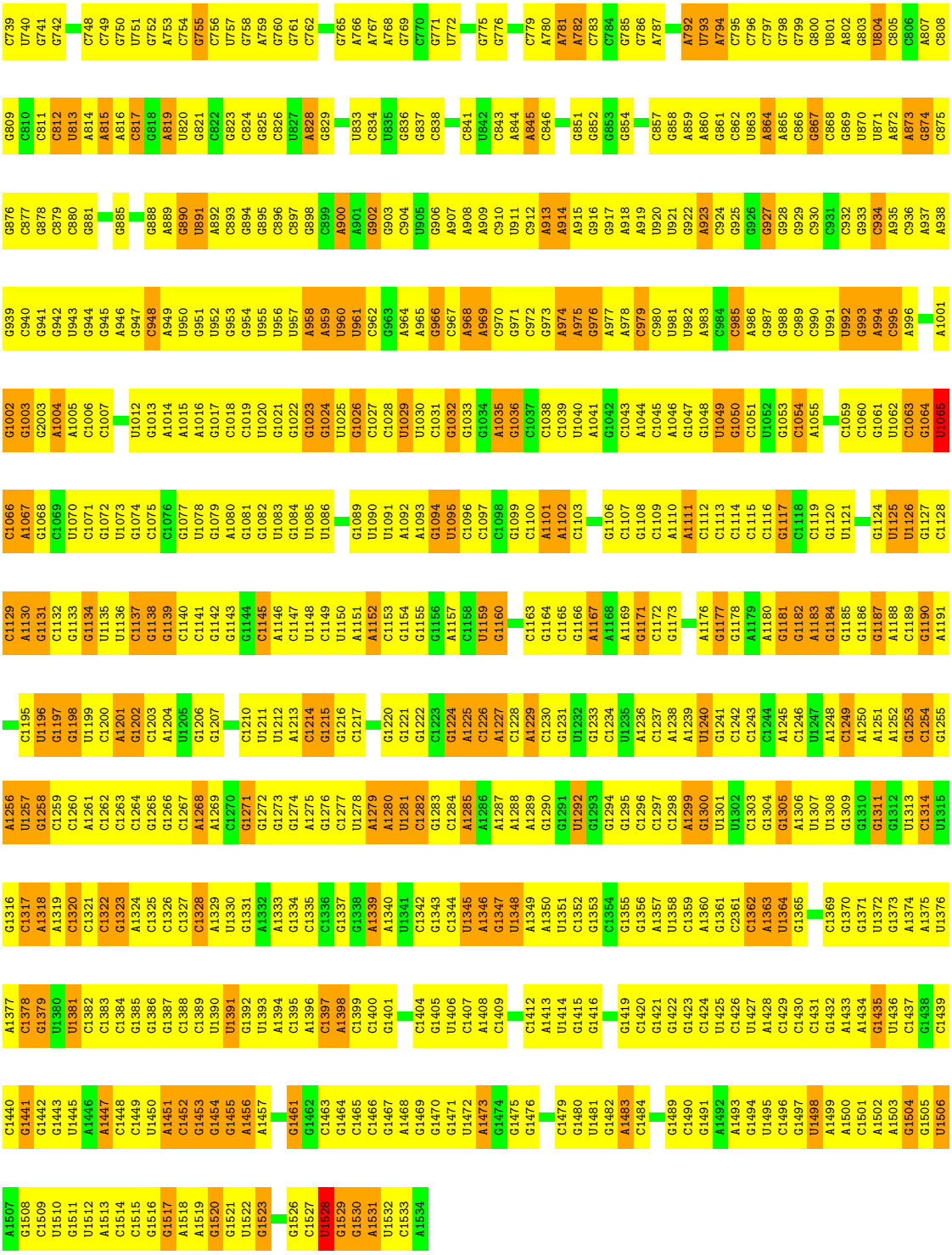
3 Residue-property plots (i)

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. 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. 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: 16S ribosomal RNA

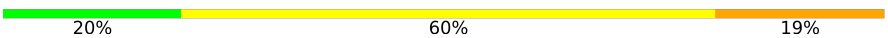
Chain AA: 20% 61% 19%

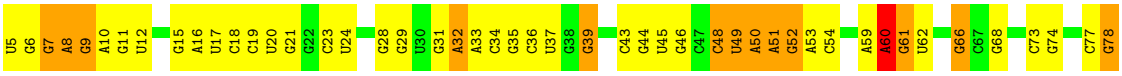


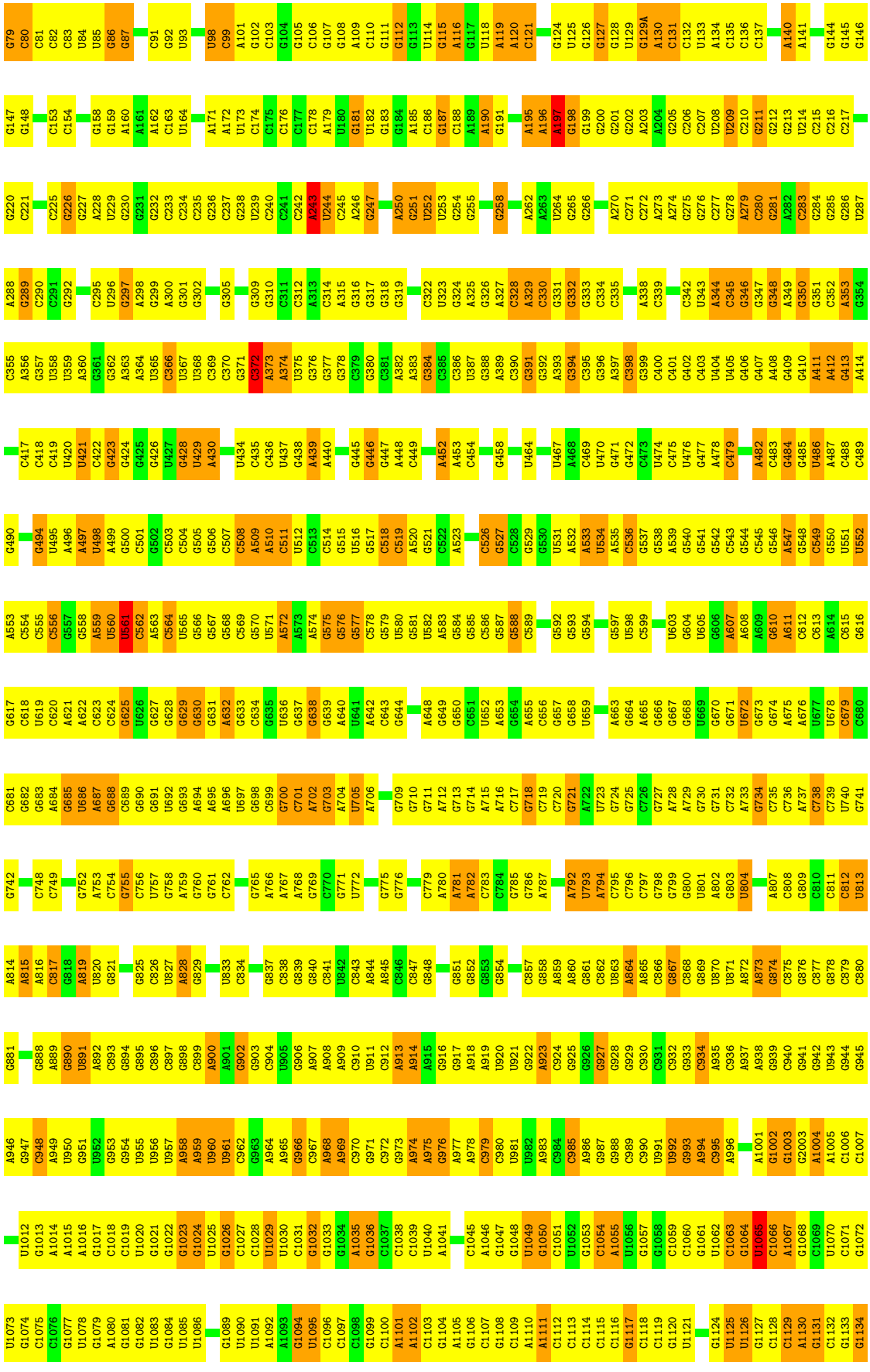


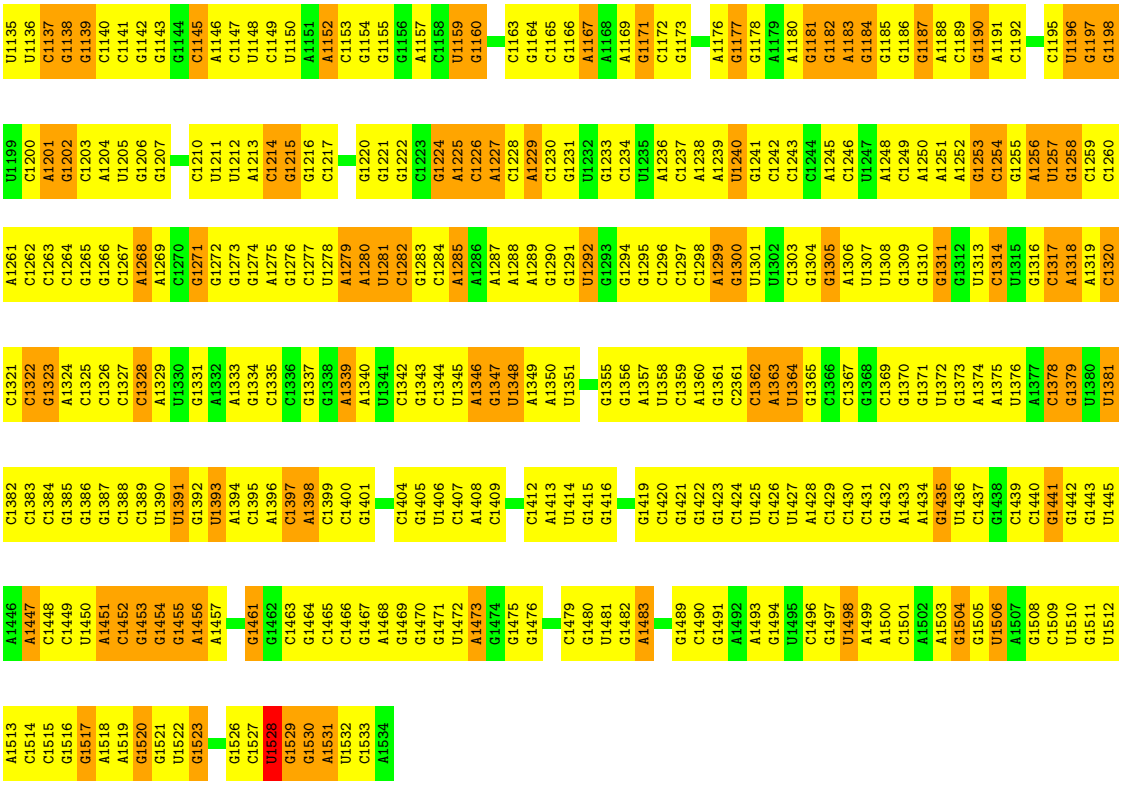
• Molecule 1: 16S ribosomal RNA

Chain CA:



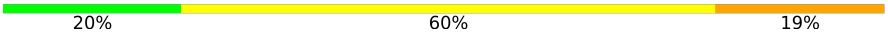


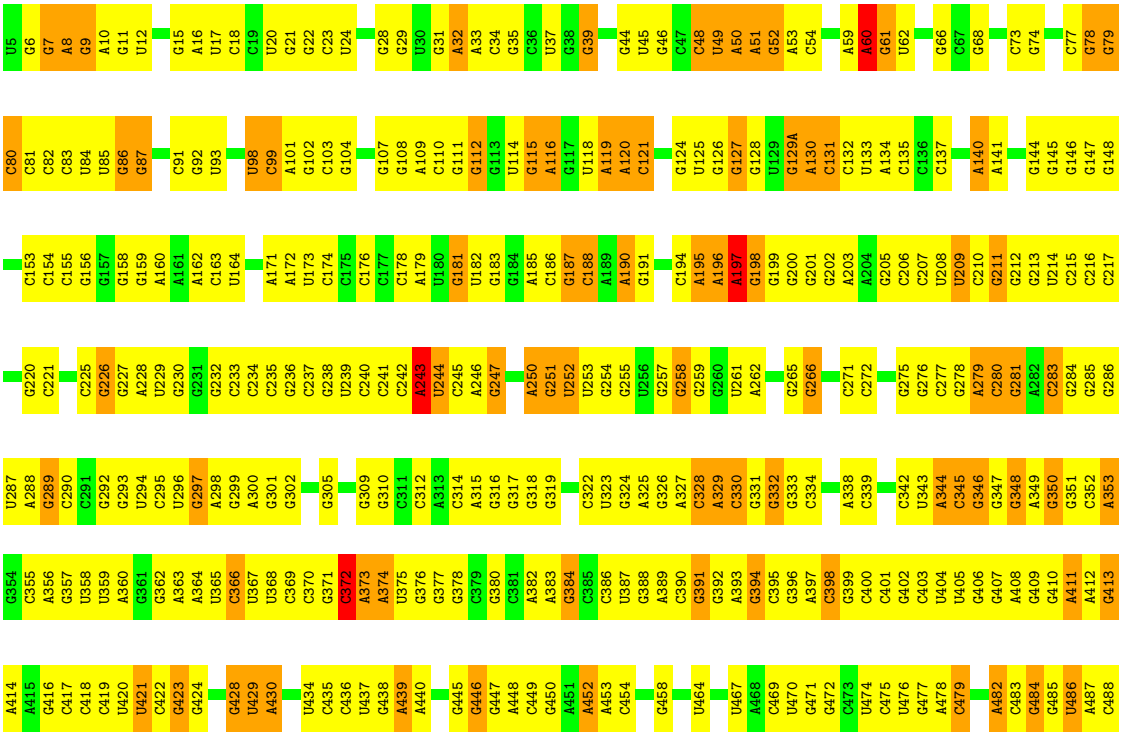


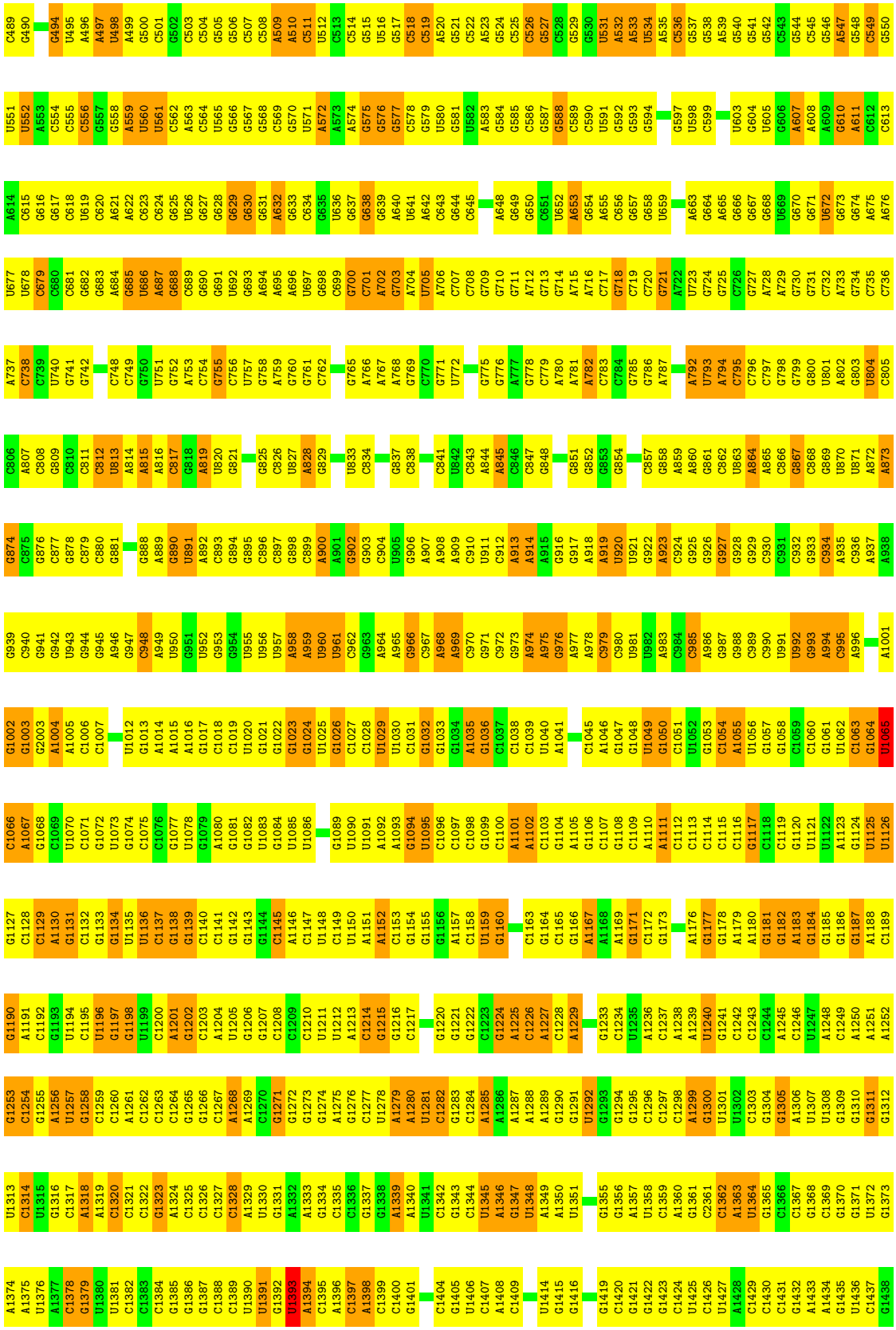


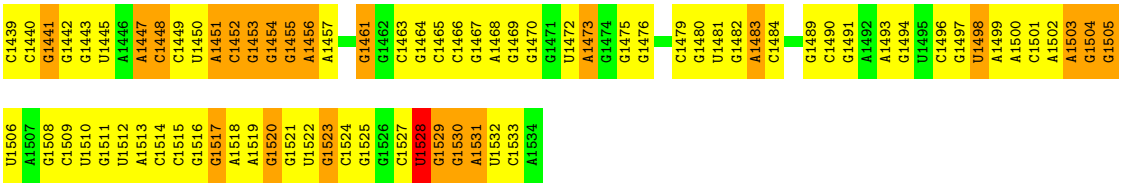
• Molecule 1: 16S ribosomal RNA

Chain EA:



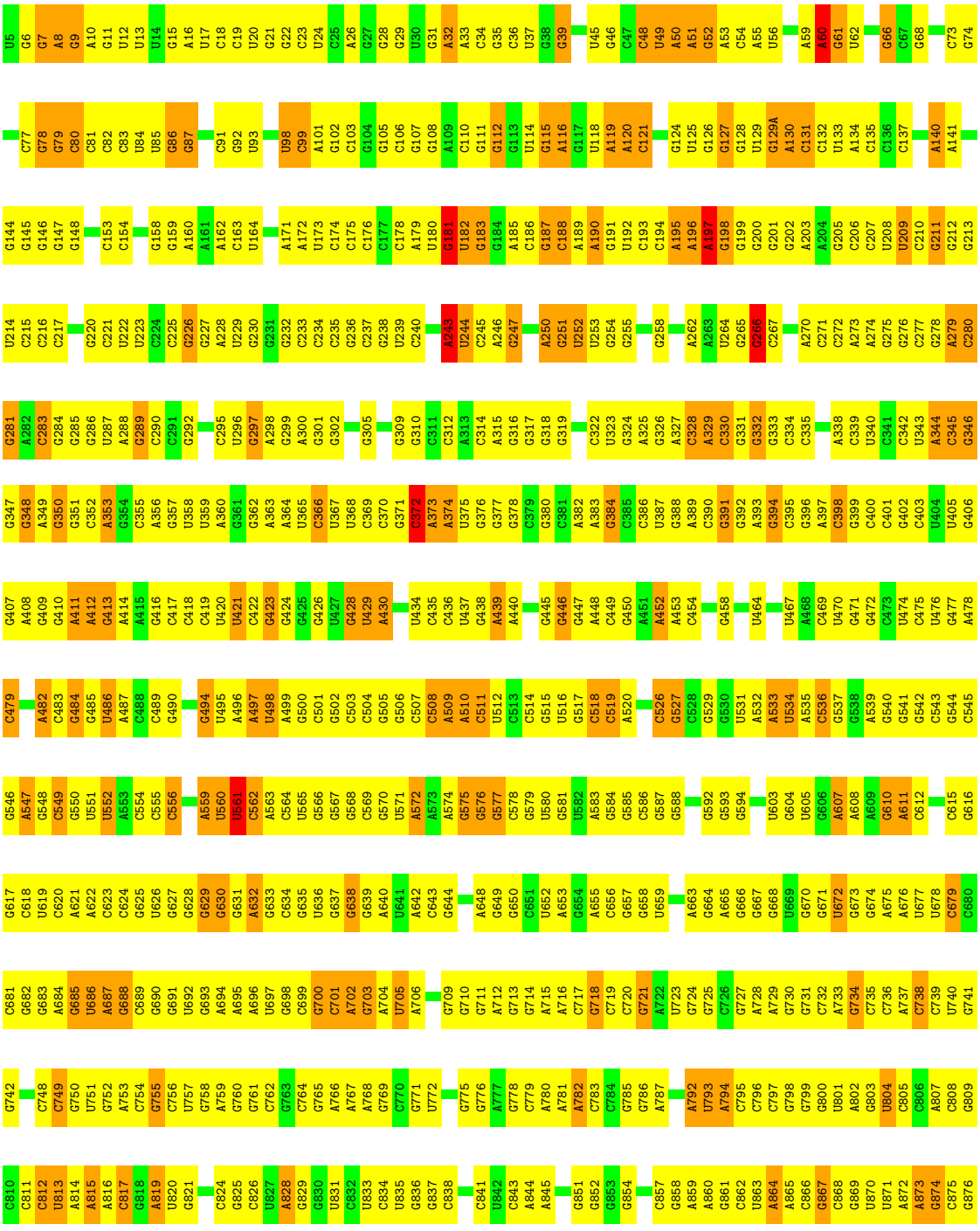


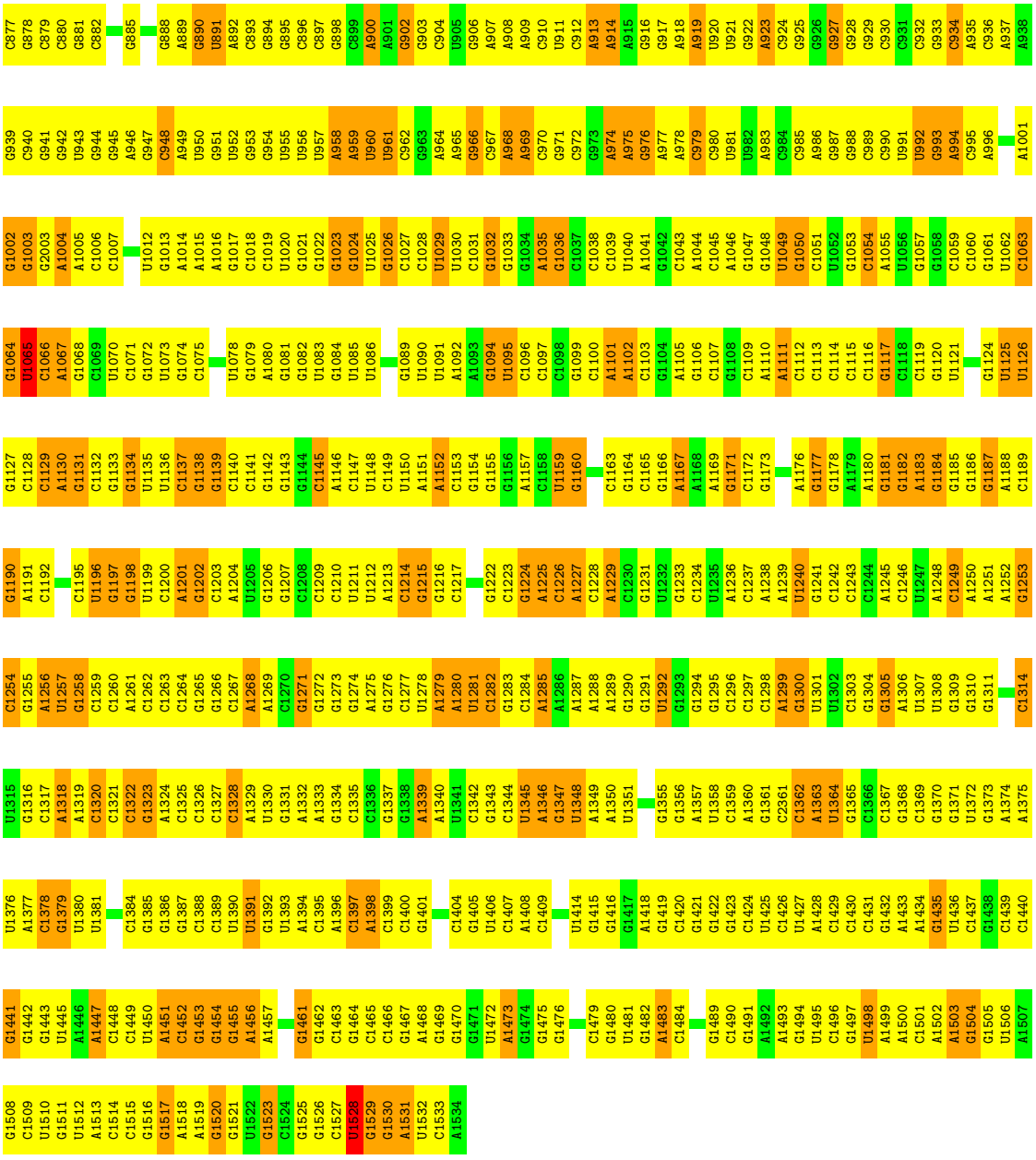




• Molecule 1: 16S ribosomal RNA

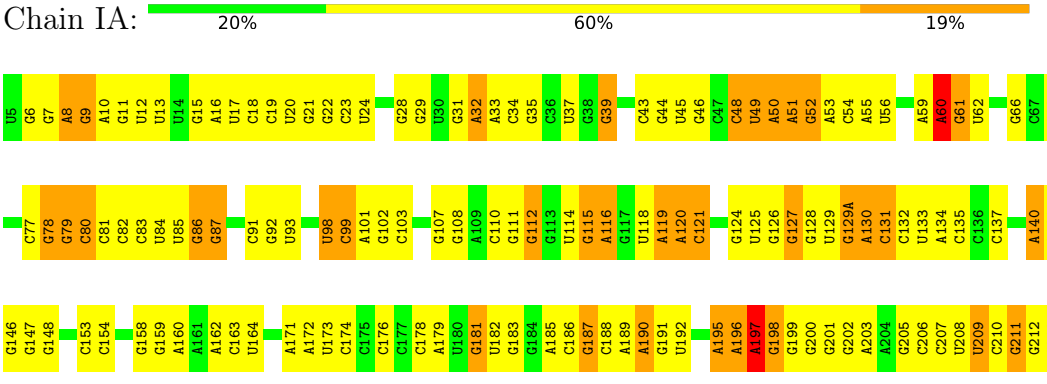
Chain GA:

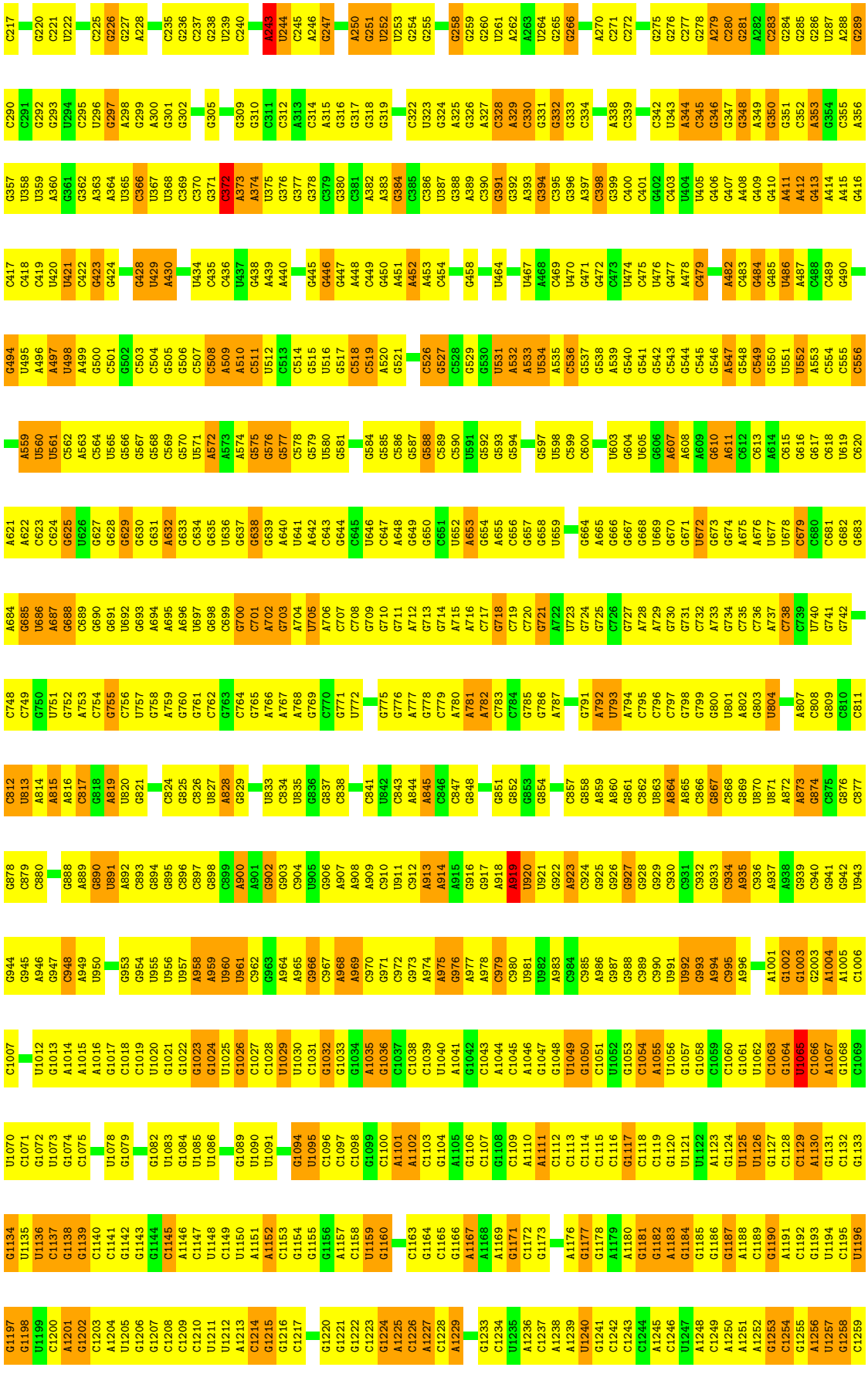


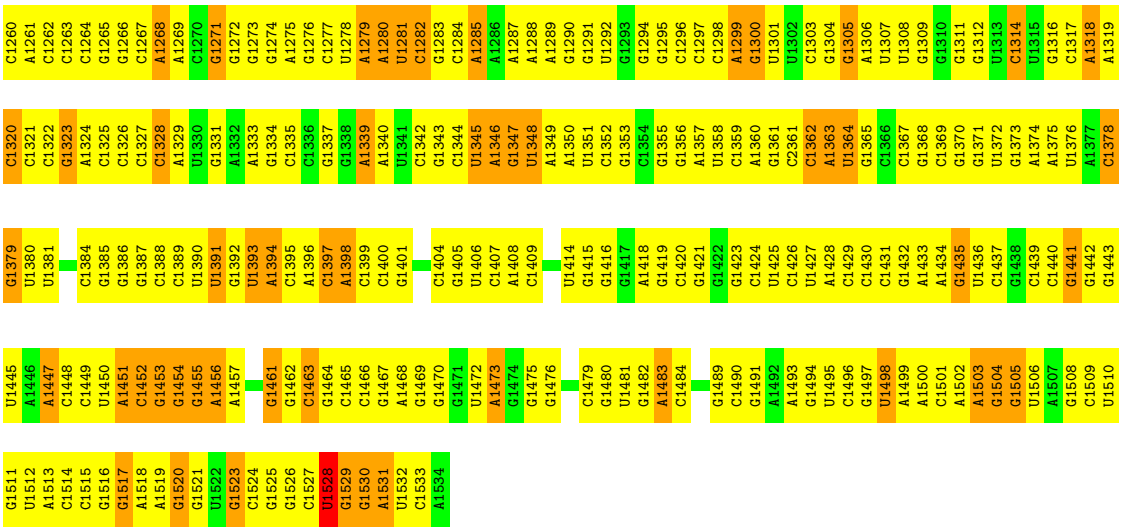


• Molecule 1: 16S ribosomal RNA

Chain IA:

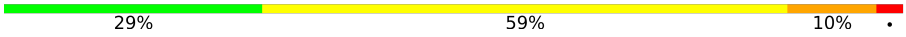


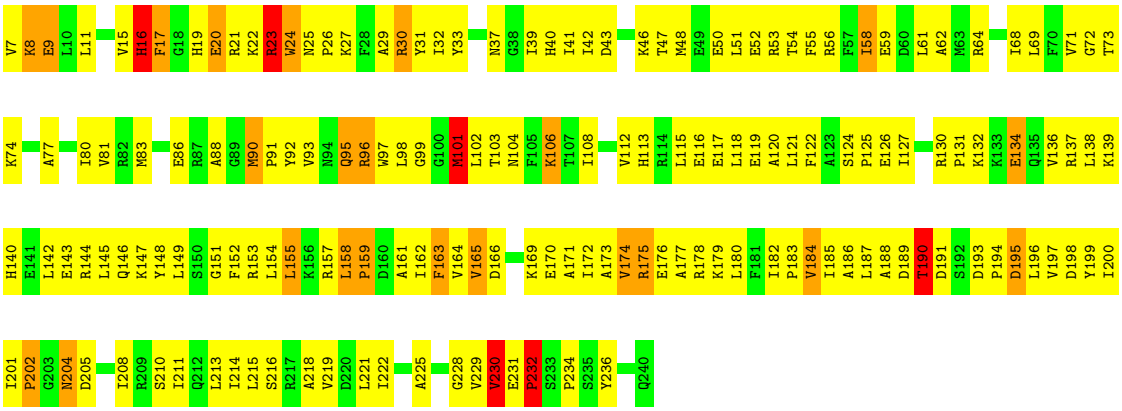




• Molecule 2: 30S ribosomal protein S2

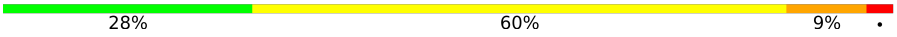
Chain AB:

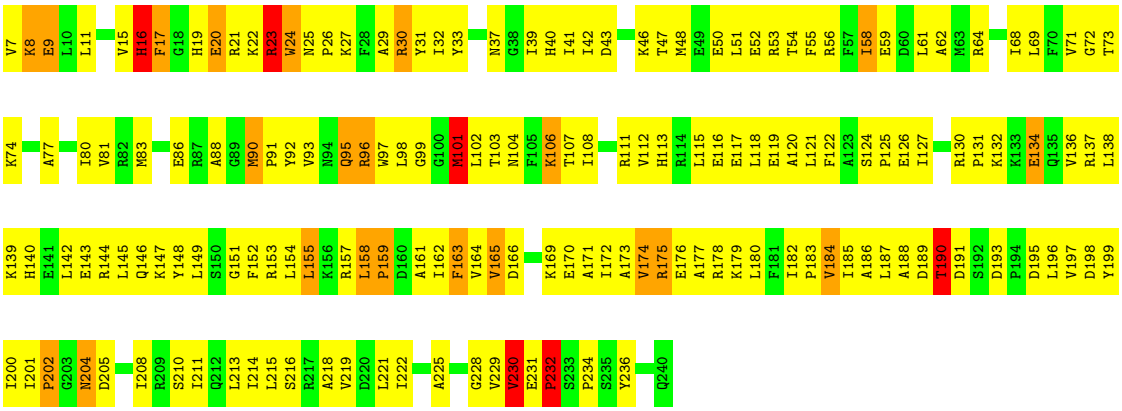




• Molecule 2: 30S ribosomal protein S2

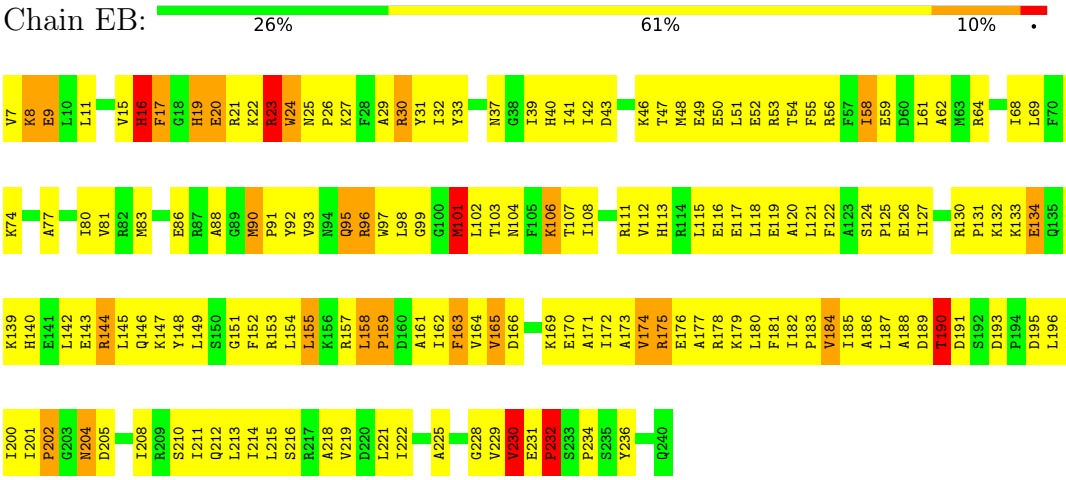
Chain CB:





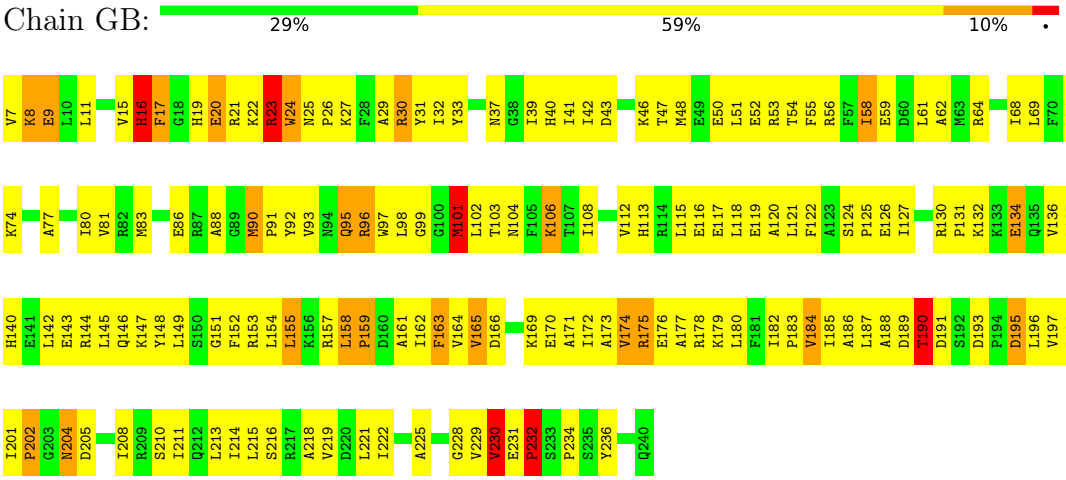
• Molecule 2: 30S ribosomal protein S2

Chain EB:



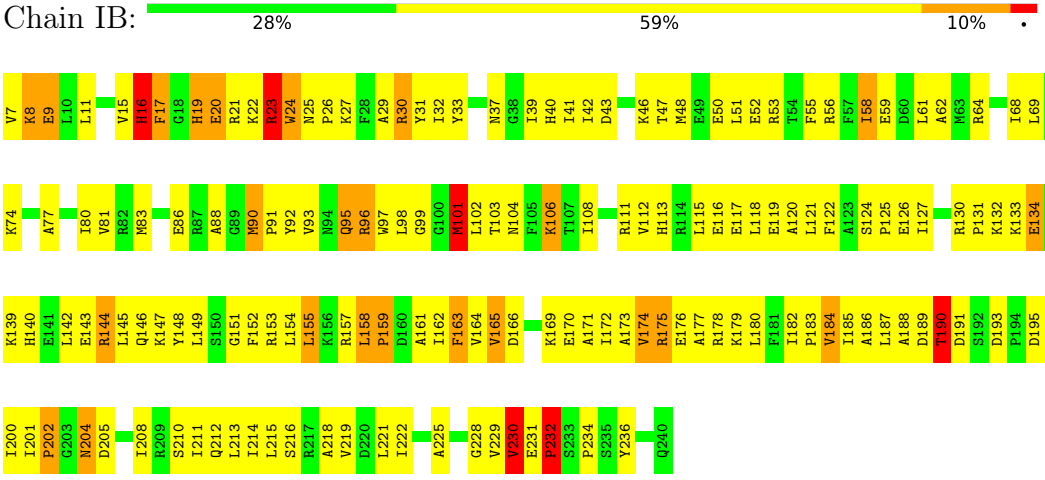
• Molecule 2: 30S ribosomal protein S2

Chain GB:



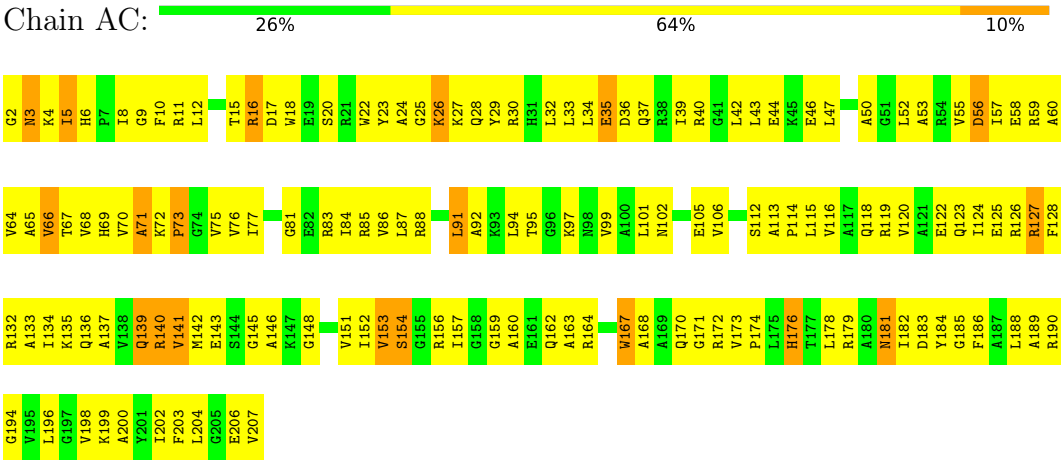
• Molecule 2: 30S ribosomal protein S2

Chain IB:



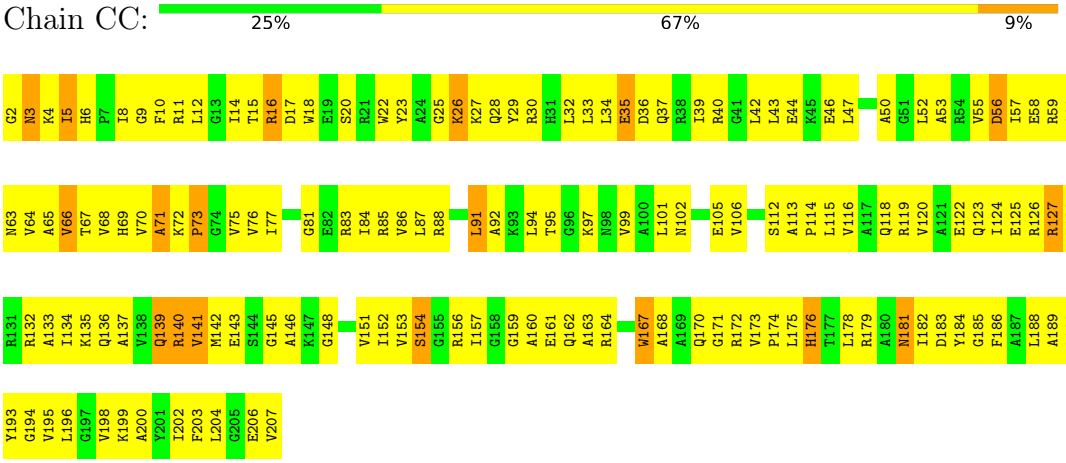
• Molecule 3: 30S ribosomal protein S3

Chain AC:



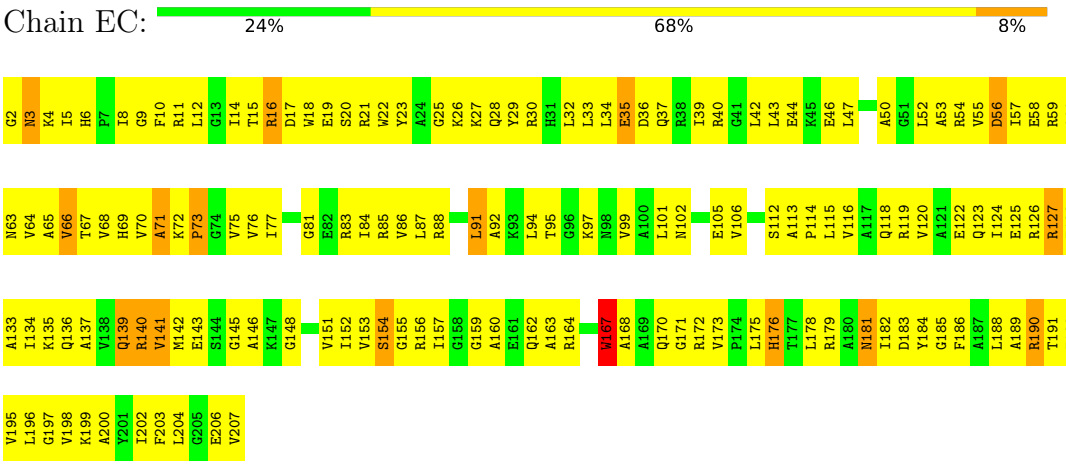
• Molecule 3: 30S ribosomal protein S3

Chain CC:



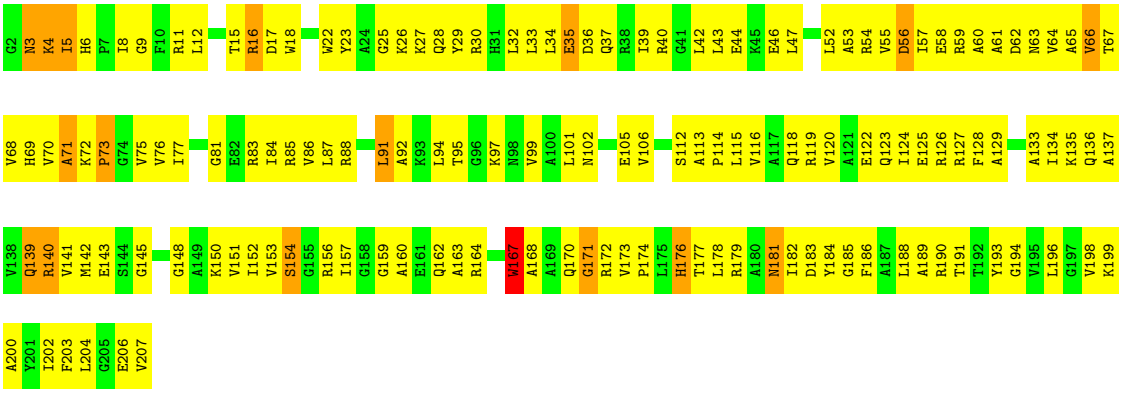
• Molecule 3: 30S ribosomal protein S3

Chain EC:



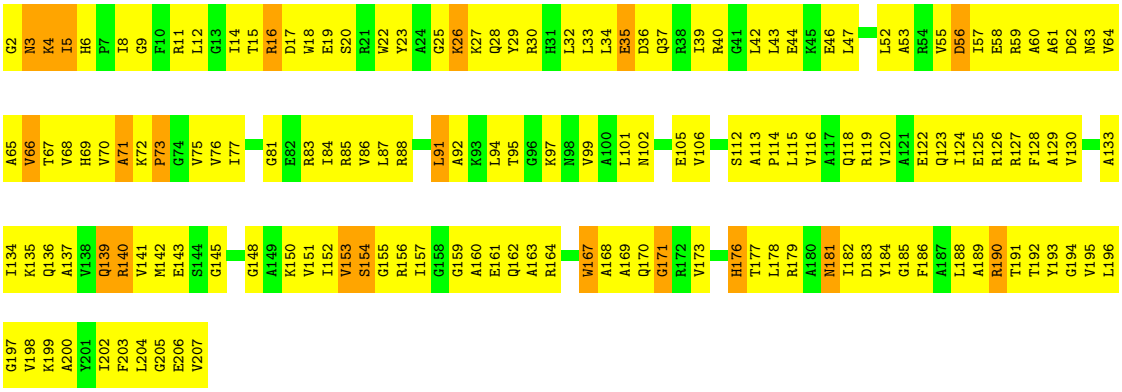
• Molecule 3: 30S ribosomal protein S3

Chain GC:



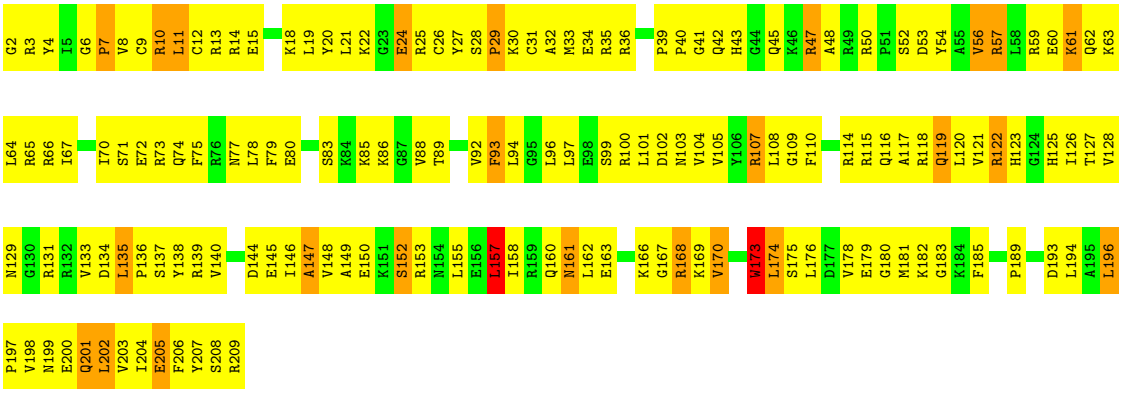
• Molecule 3: 30S ribosomal protein S3

Chain IC:



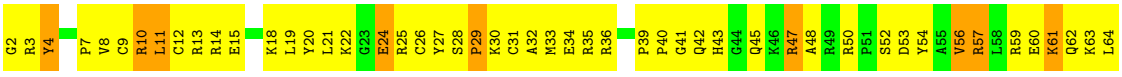
• Molecule 4: 30S ribosomal protein S4

Chain AD:



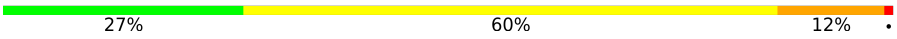
• Molecule 4: 30S ribosomal protein S4

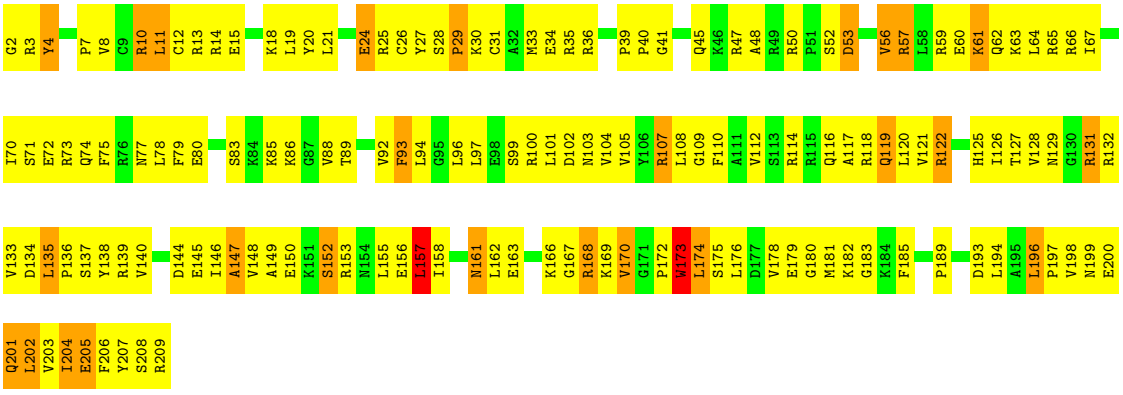
Chain CD:



• Molecule 4: 30S ribosomal protein S4

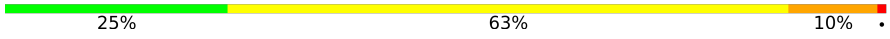
Chain ED:

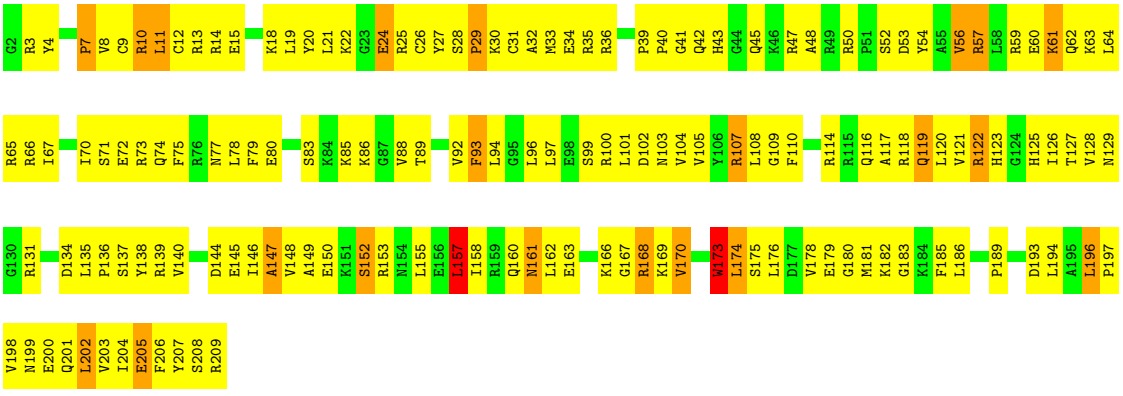




• Molecule 4: 30S ribosomal protein S4

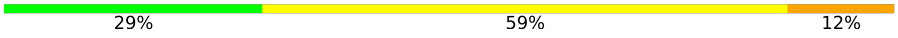
Chain GD:

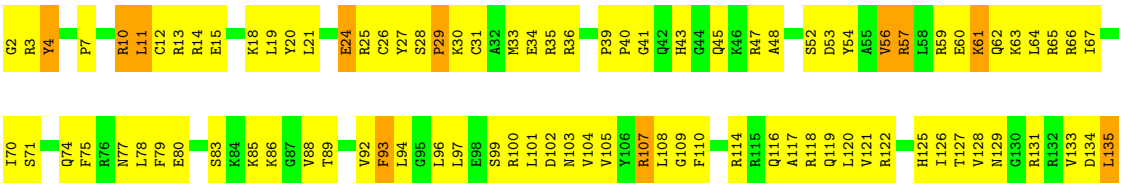


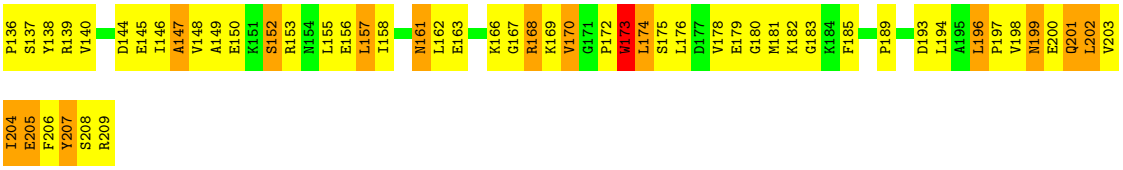


• Molecule 4: 30S ribosomal protein S4

Chain ID:





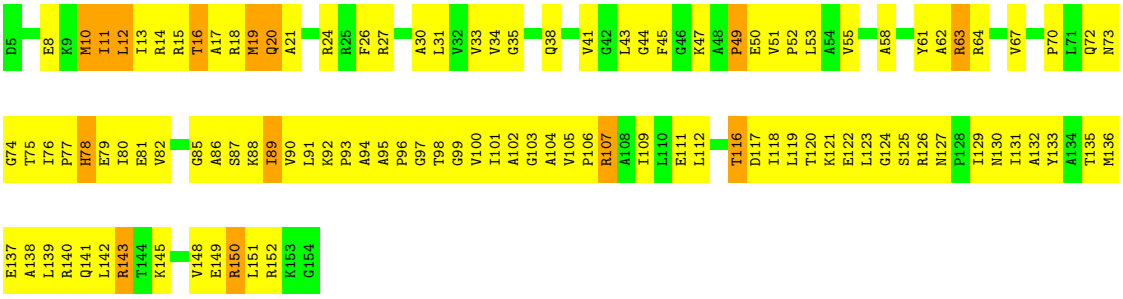


• Molecule 5: 30S ribosomal protein S5

Chain AE:

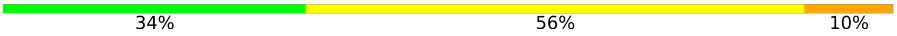
• Molecule 5: 30S ribosomal protein S5

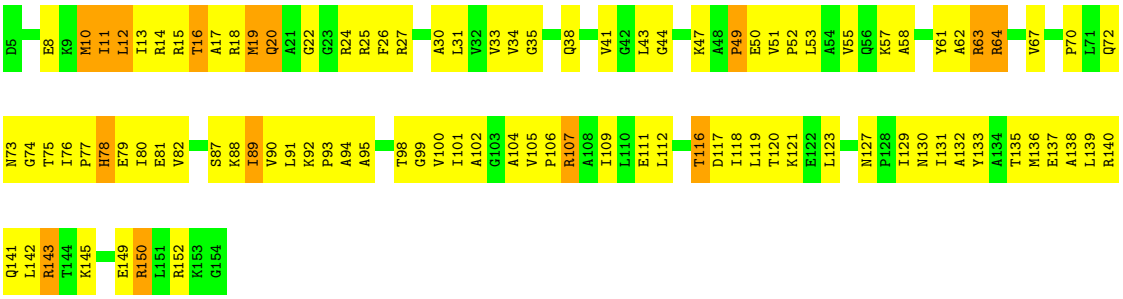
Chain CE:



• Molecule 5: 30S ribosomal protein S5

Chain EE:



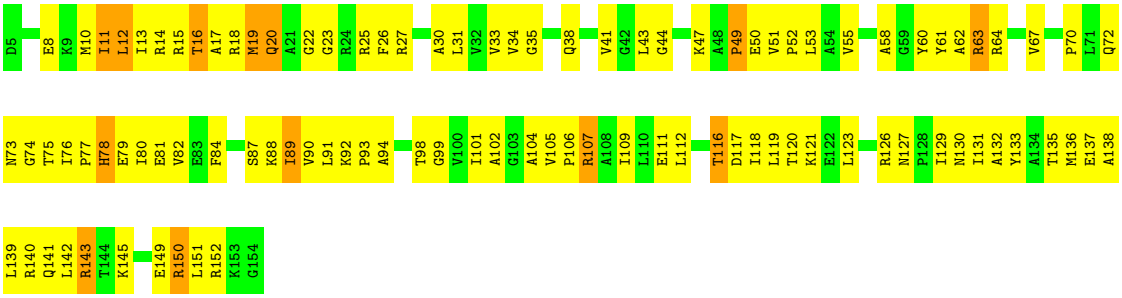


• Molecule 5: 30S ribosomal protein S5

Chain GE:

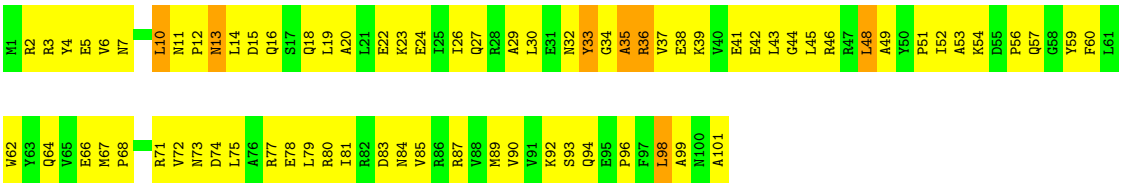
• Molecule 5: 30S ribosomal protein S5

Chain IE:



• Molecule 6: 30S ribosomal protein S6

Chain AF:

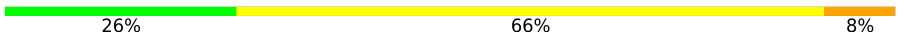


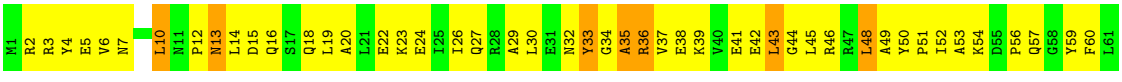
• Molecule 6: 30S ribosomal protein S6

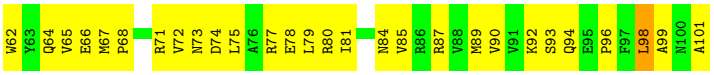
Chain CF:

• Molecule 6: 30S ribosomal protein S6

Chain EF:

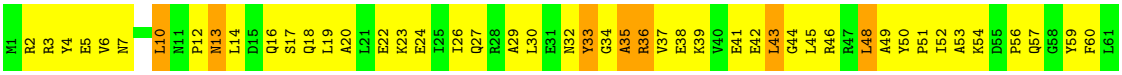


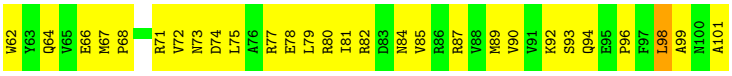




• Molecule 6: 30S ribosomal protein S6

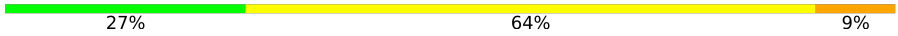
Chain GF:

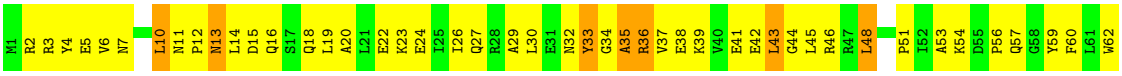


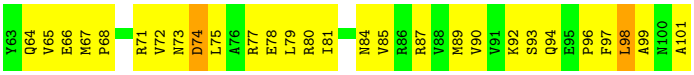


• Molecule 6: 30S ribosomal protein S6

Chain IF:





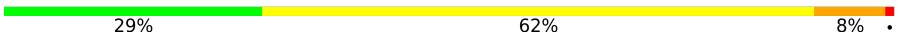


• Molecule 7: 30S ribosomal protein S7

Chain AG:

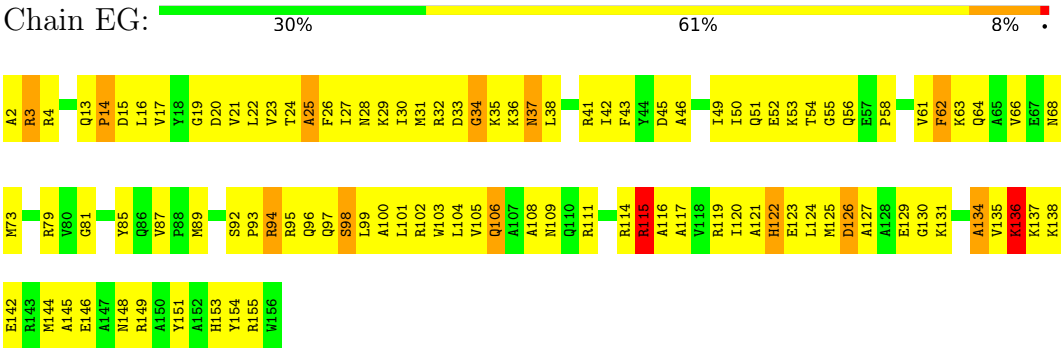
• Molecule 7: 30S ribosomal protein S7

Chain CG:



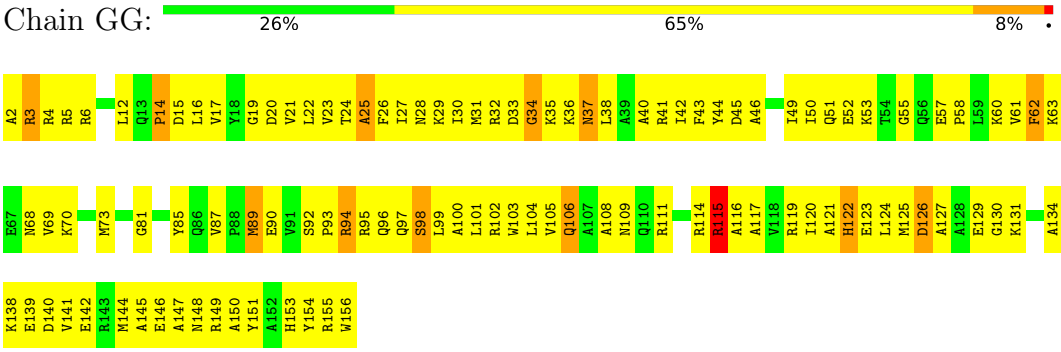
• Molecule 7: 30S ribosomal protein S7

Chain EG:



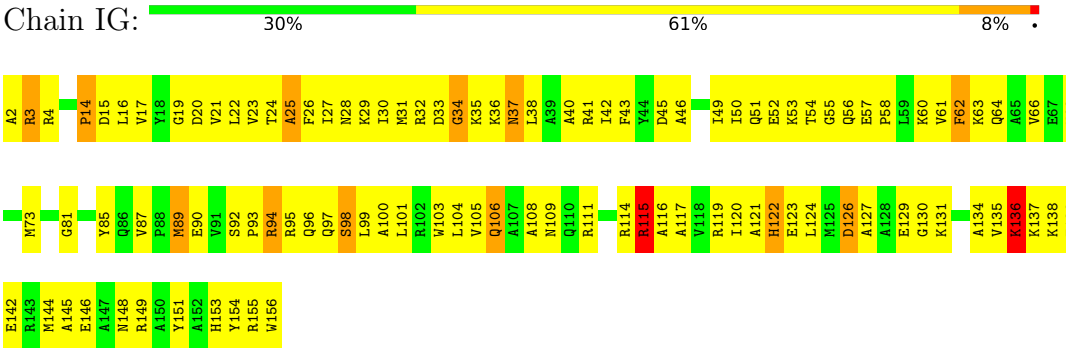
• Molecule 7: 30S ribosomal protein S7

Chain GG:



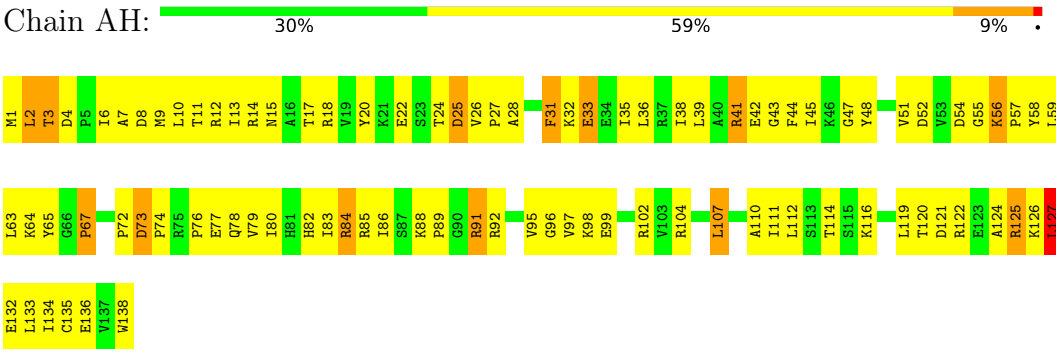
• Molecule 7: 30S ribosomal protein S7

Chain IG:



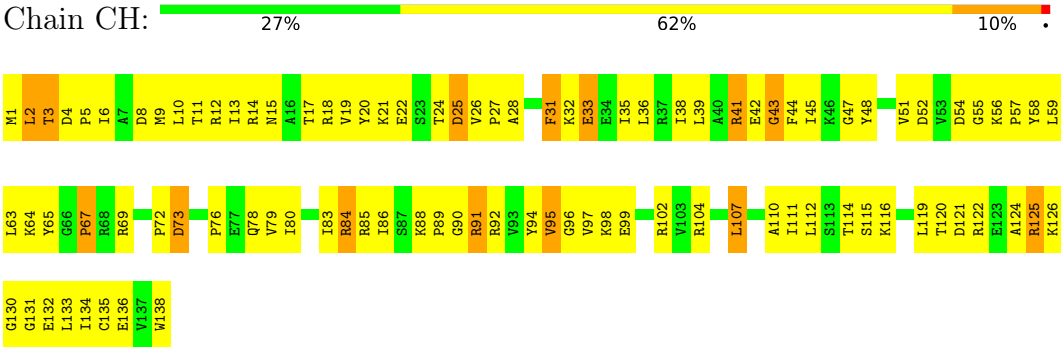
• Molecule 8: 30S ribosomal protein S8

Chain AH:



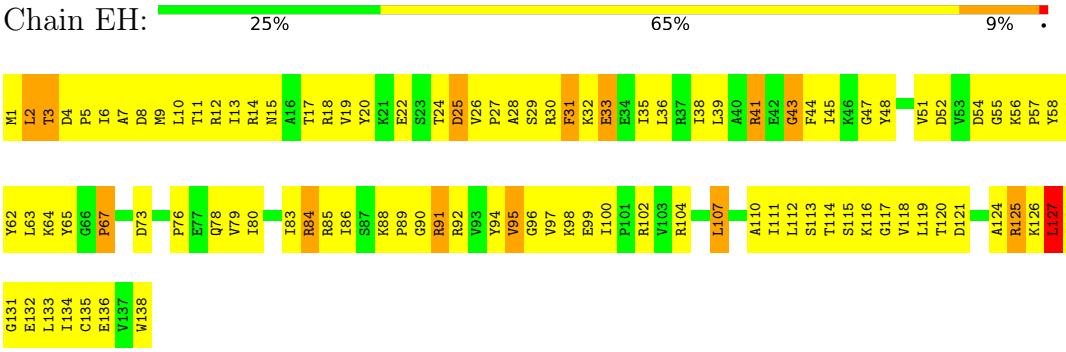
• Molecule 8: 30S ribosomal protein S8

Chain CH:



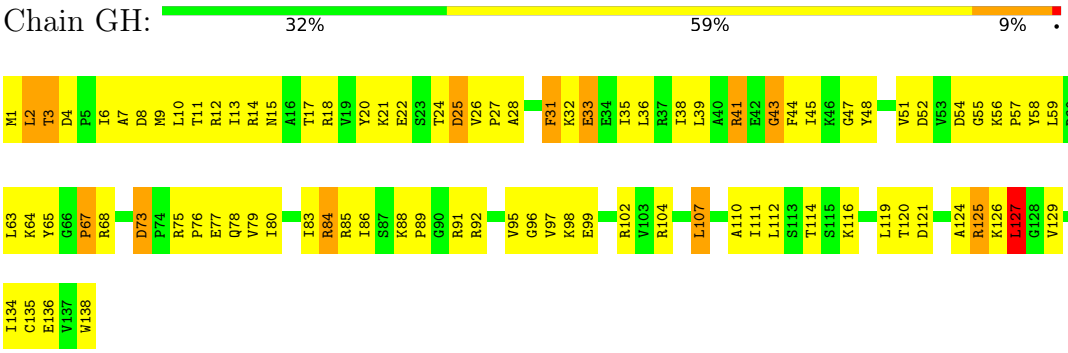
• Molecule 8: 30S ribosomal protein S8

Chain EH:



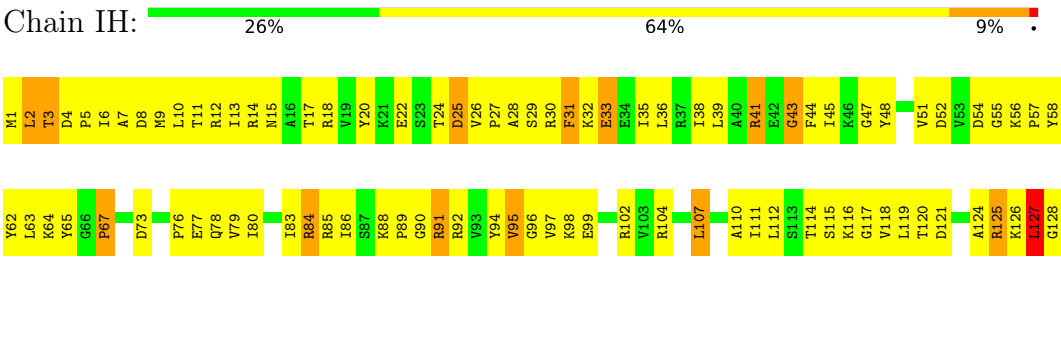
• Molecule 8: 30S ribosomal protein S8

Chain GH:



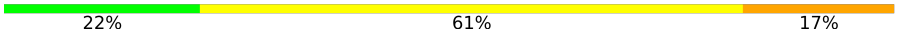
• Molecule 8: 30S ribosomal protein S8

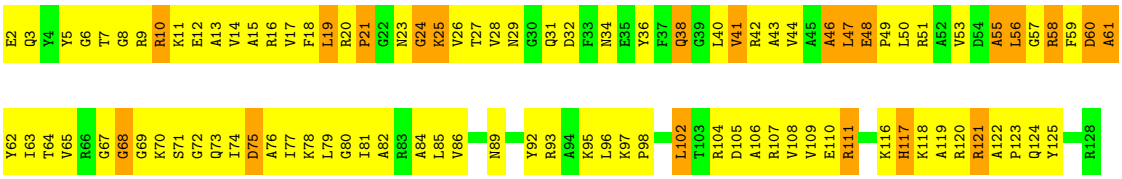
Chain IH:



• Molecule 9: 30S ribosomal protein S9

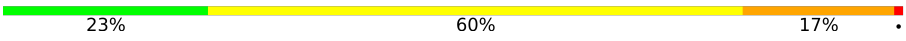
Chain AI:

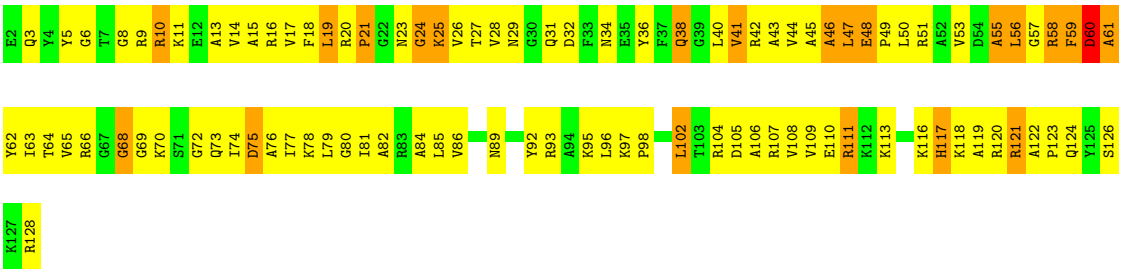




• Molecule 9: 30S ribosomal protein S9

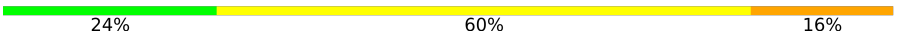
Chain CI:

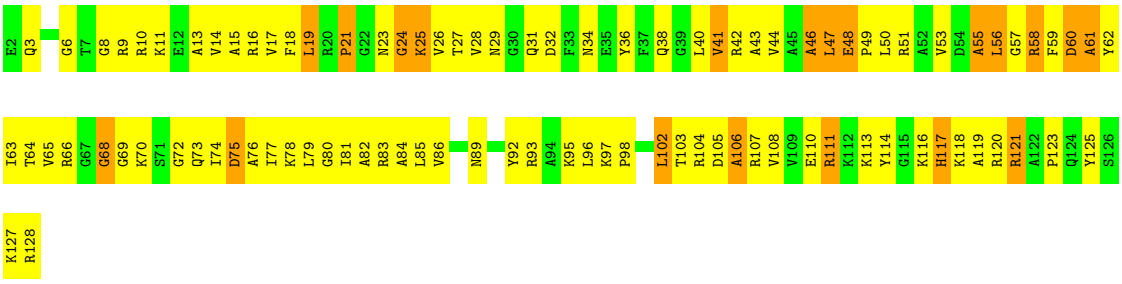




• Molecule 9: 30S ribosomal protein S9

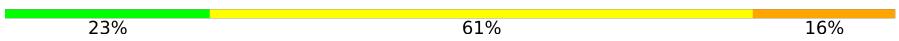
Chain EI:

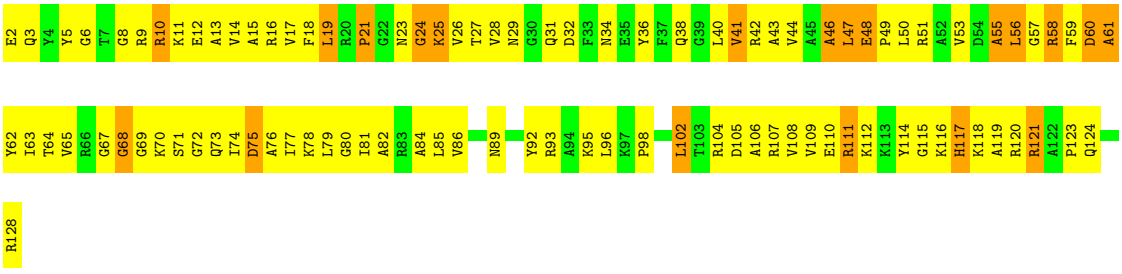




• Molecule 9: 30S ribosomal protein S9

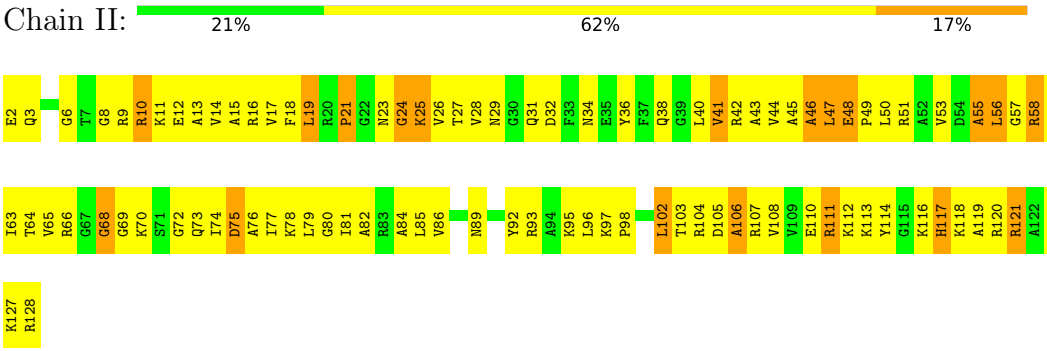
Chain GI:





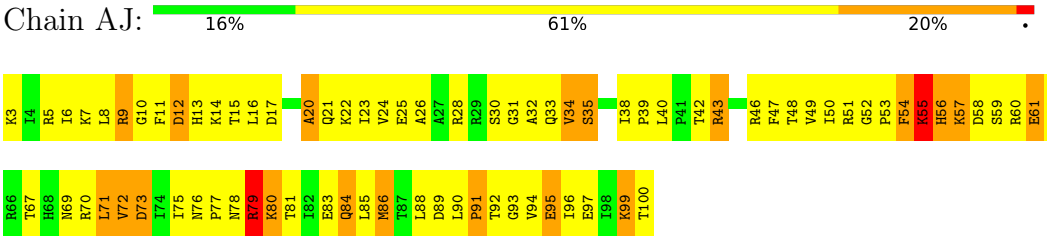
• Molecule 9: 30S ribosomal protein S9

Chain II:



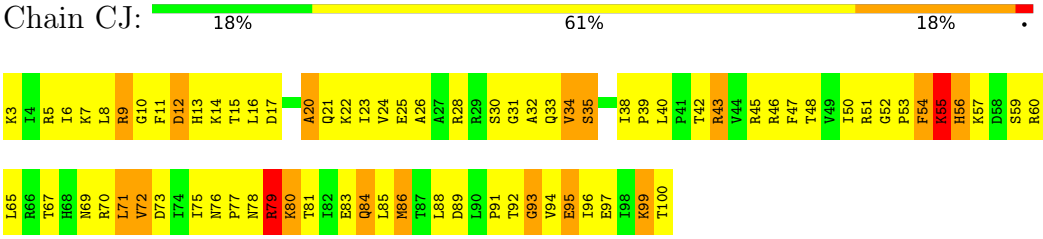
• Molecule 10: 30S ribosomal protein S10

Chain AJ:



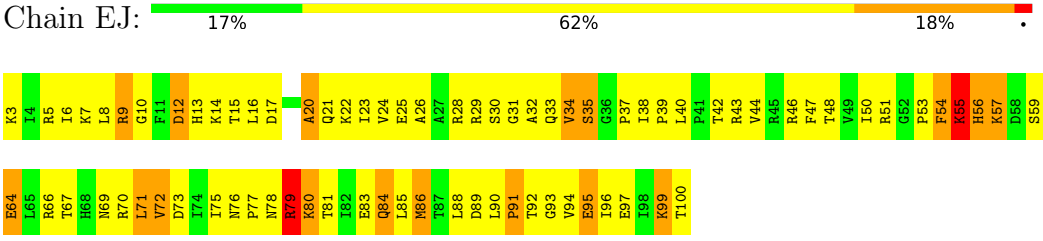
• Molecule 10: 30S ribosomal protein S10

Chain CJ:



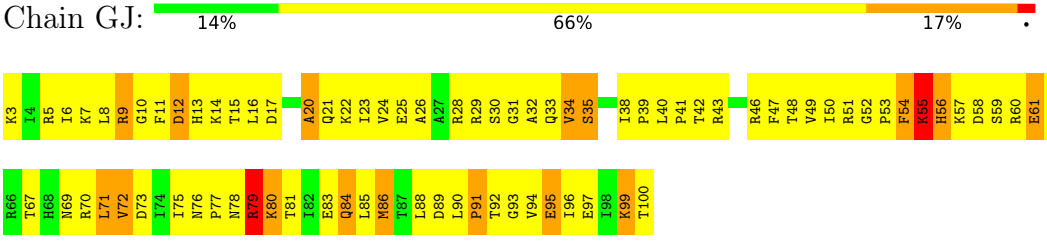
• Molecule 10: 30S ribosomal protein S10

Chain EJ:



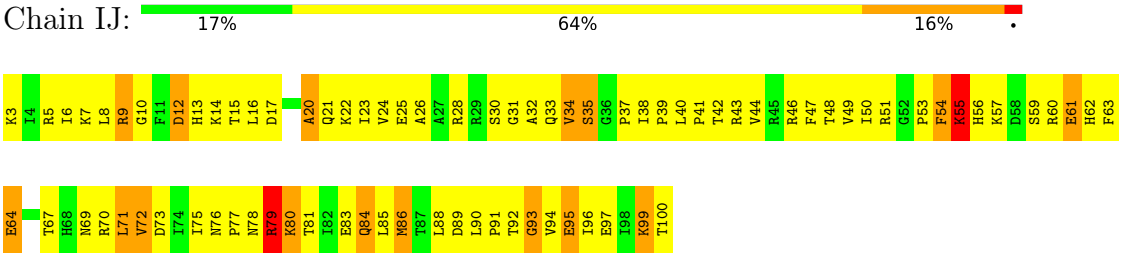
• Molecule 10: 30S ribosomal protein S10

Chain GJ:



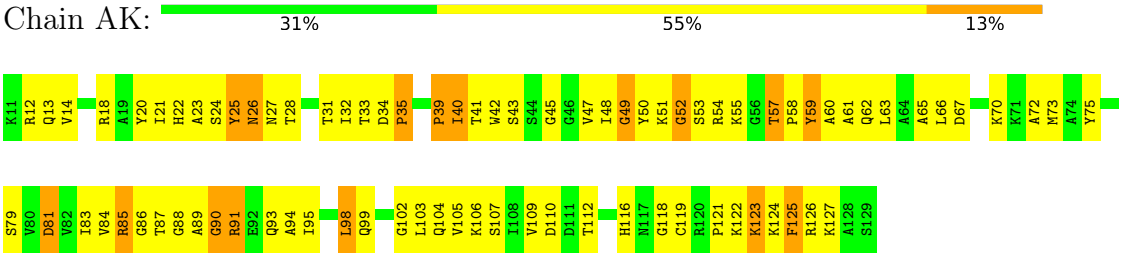
• Molecule 10: 30S ribosomal protein S10

Chain IJ:



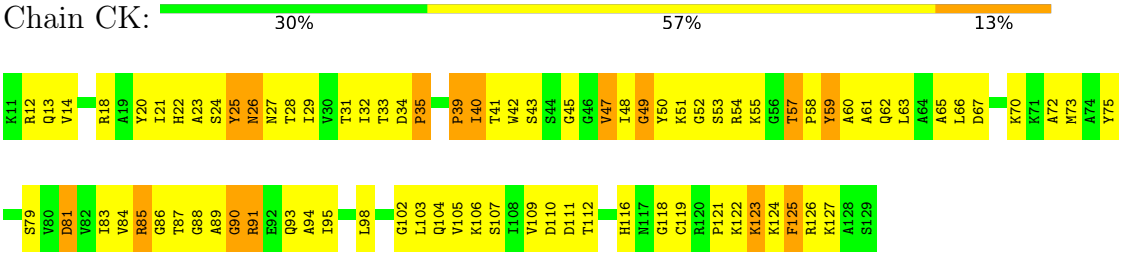
• Molecule 11: 30S ribosomal protein S11

Chain AK:



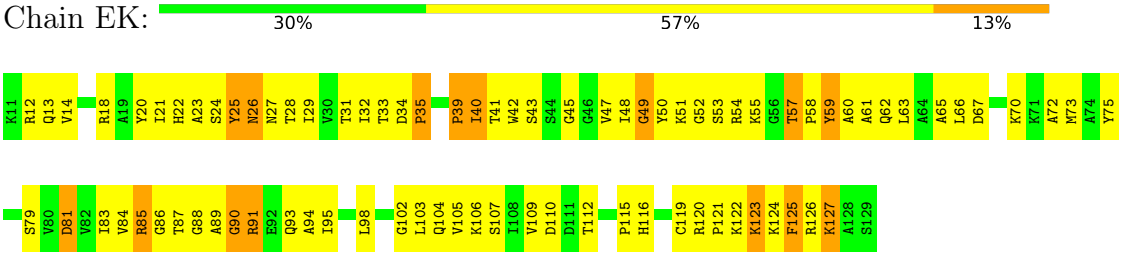
• Molecule 11: 30S ribosomal protein S11

Chain CK:



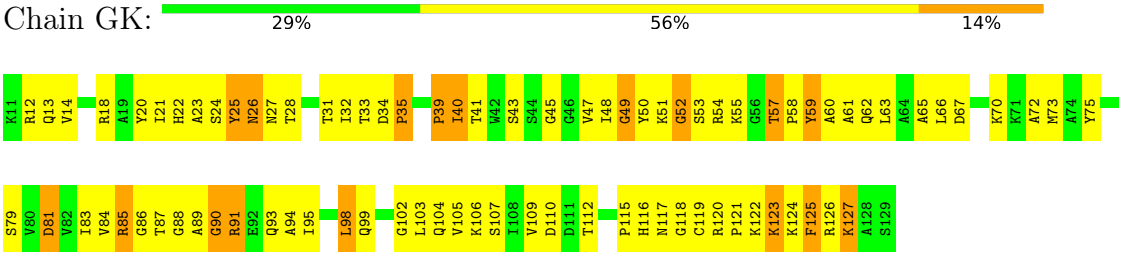
• Molecule 11: 30S ribosomal protein S11

Chain EK:



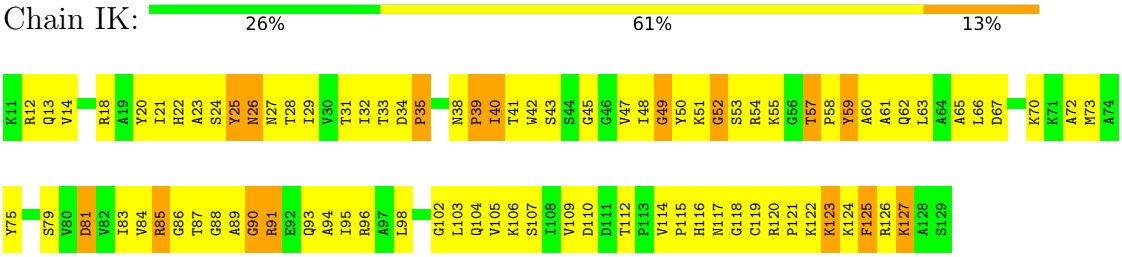
• Molecule 11: 30S ribosomal protein S11

Chain GK:



• Molecule 11: 30S ribosomal protein S11

Chain IK:

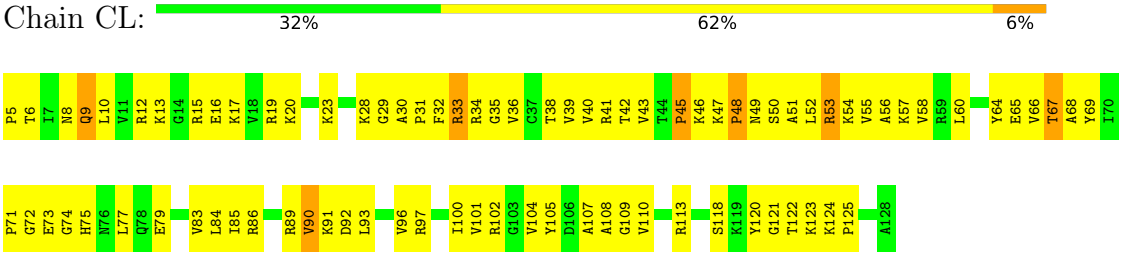


• Molecule 12: 30S ribosomal protein S12

Chain AL:

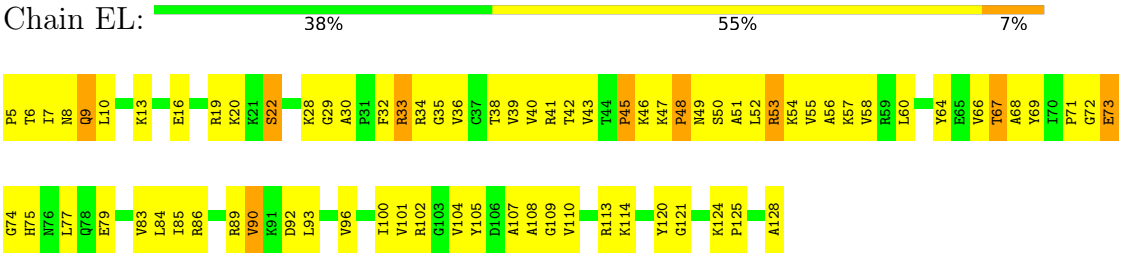
• Molecule 12: 30S ribosomal protein S12

Chain CL:



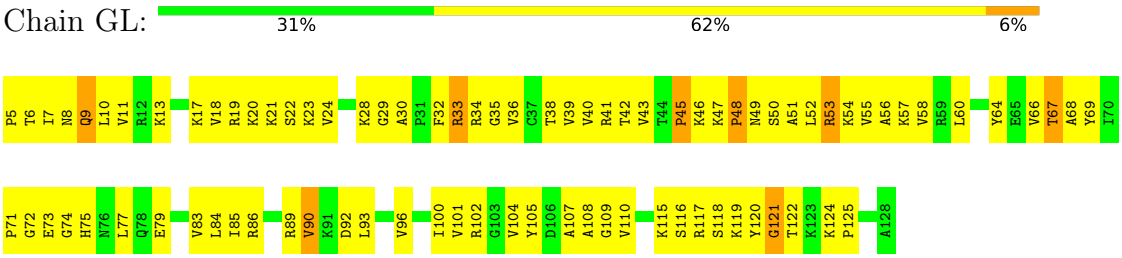
• Molecule 12: 30S ribosomal protein S12

Chain EL:



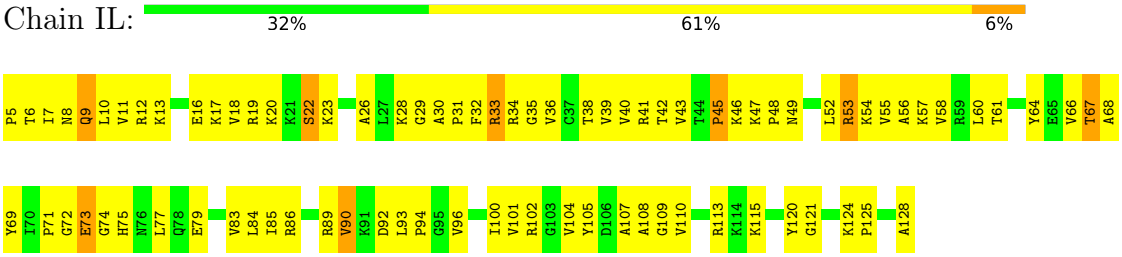
• Molecule 12: 30S ribosomal protein S12

Chain GL:



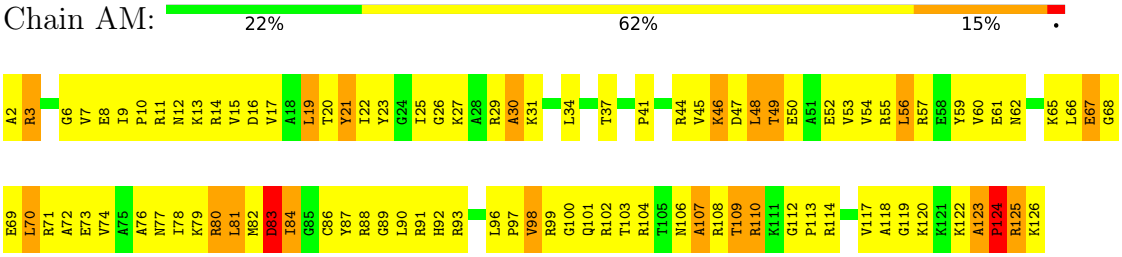
• Molecule 12: 30S ribosomal protein S12

Chain IL:



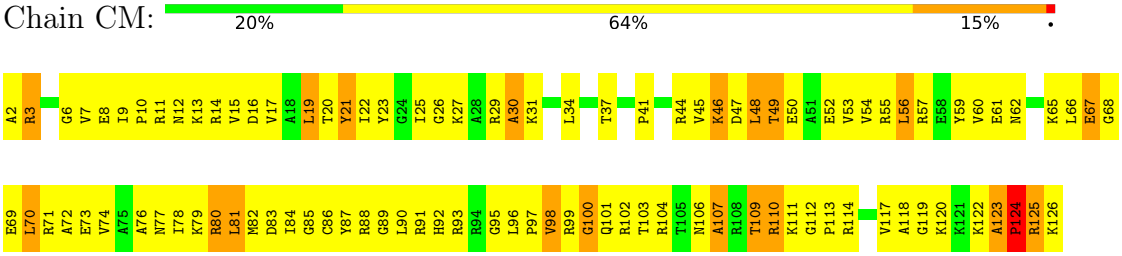
• Molecule 13: 30S ribosomal protein S13

Chain AM:



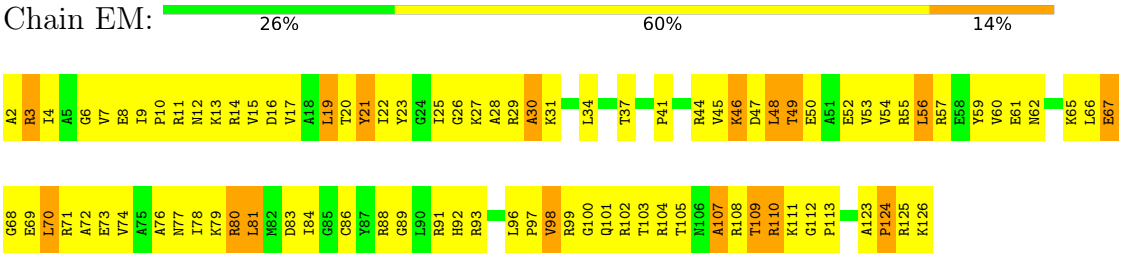
• Molecule 13: 30S ribosomal protein S13

Chain CM:



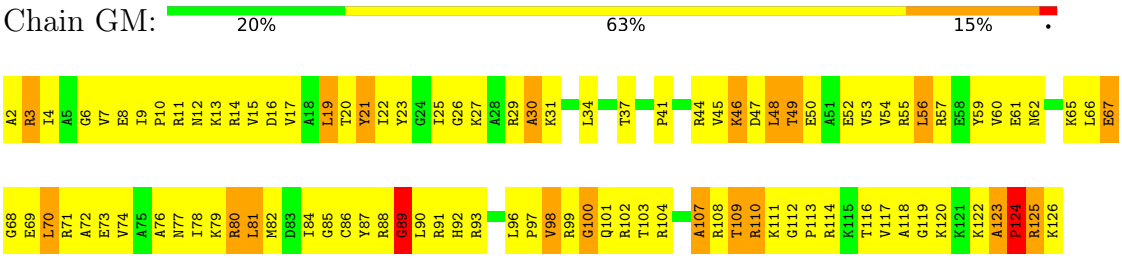
• Molecule 13: 30S ribosomal protein S13

Chain EM:



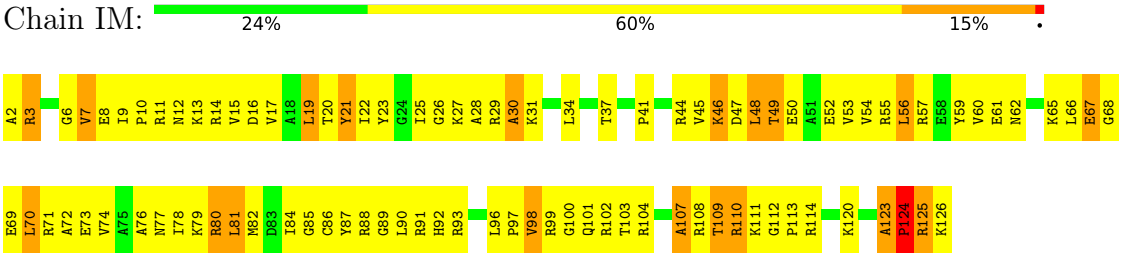
• Molecule 13: 30S ribosomal protein S13

Chain GM:



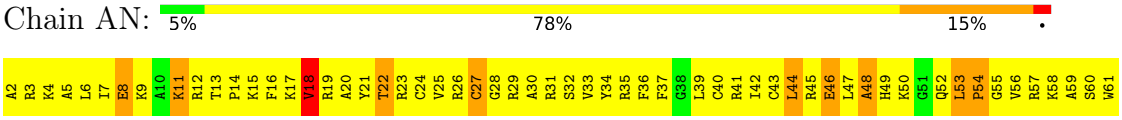
• Molecule 13: 30S ribosomal protein S13

Chain IM:



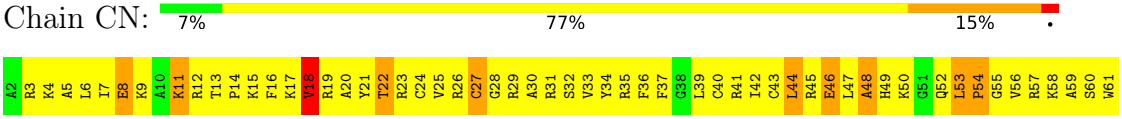
• Molecule 14: 30S ribosomal protein S14

Chain AN:



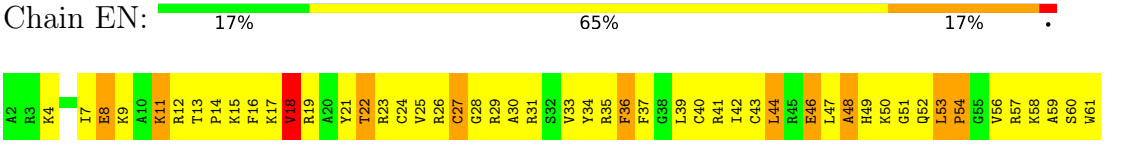
• Molecule 14: 30S ribosomal protein S14

Chain CN:



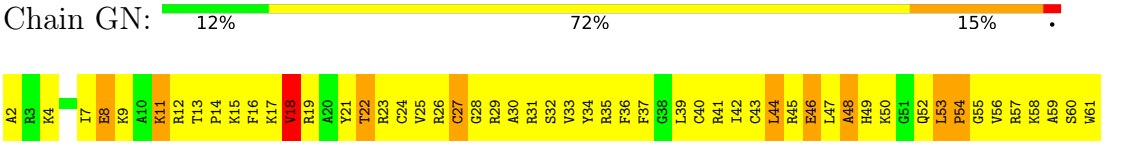
• Molecule 14: 30S ribosomal protein S14

Chain EN:



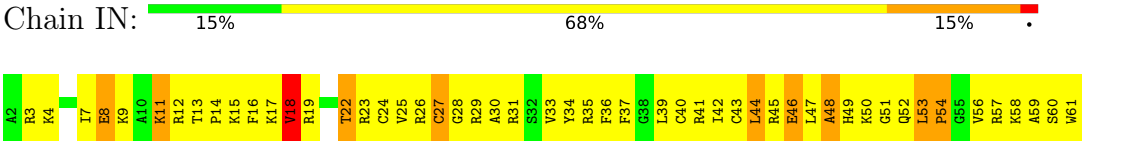
• Molecule 14: 30S ribosomal protein S14

Chain GN:



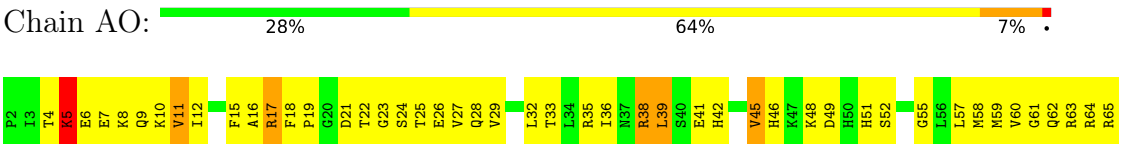
• Molecule 14: 30S ribosomal protein S14

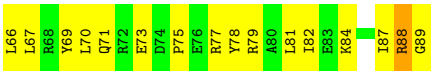
Chain IN:



• Molecule 15: 30S ribosomal protein S15

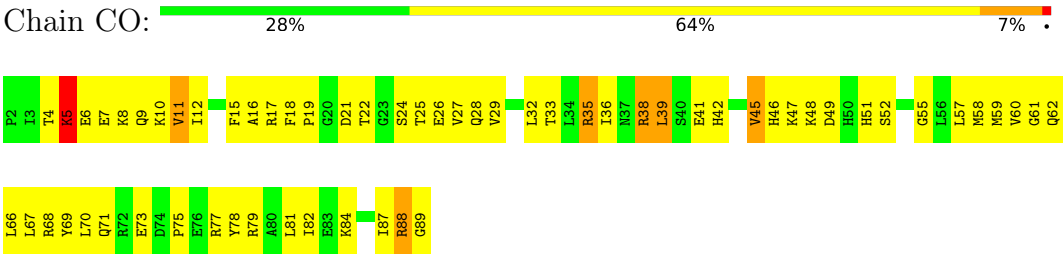
Chain AO:





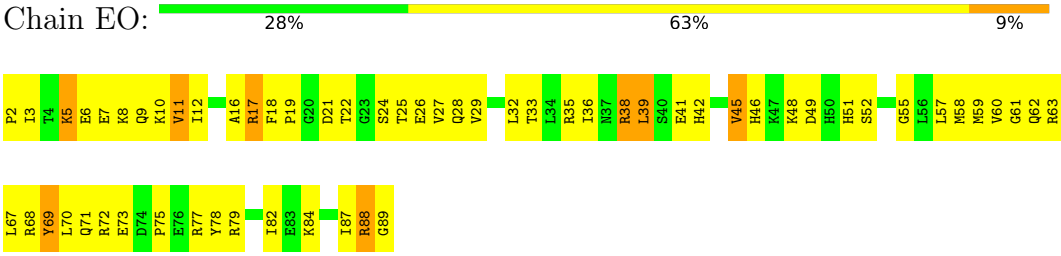
• Molecule 15: 30S ribosomal protein S15

Chain CO:



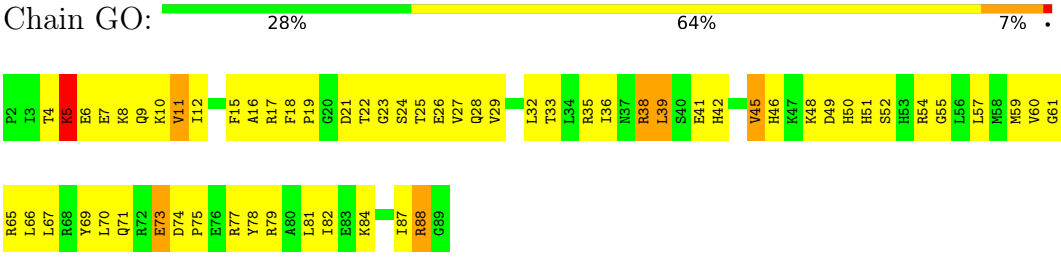
• Molecule 15: 30S ribosomal protein S15

Chain EO:



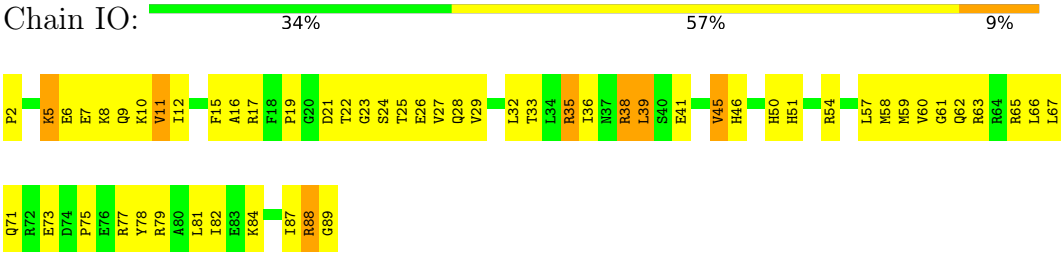
• Molecule 15: 30S ribosomal protein S15

Chain GO:



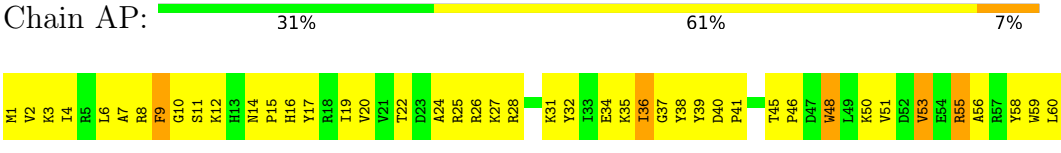
• Molecule 15: 30S ribosomal protein S15

Chain IO:



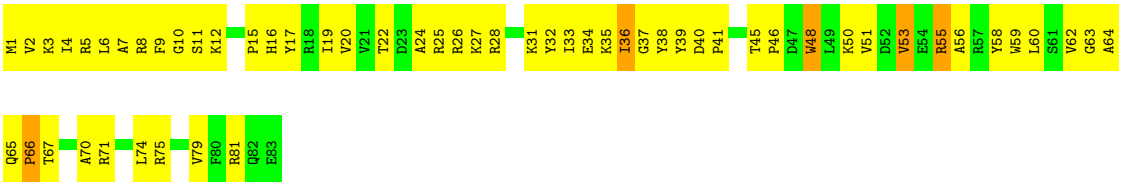
• Molecule 16: 30S ribosomal protein S16

Chain AP:



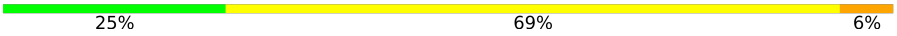
• Molecule 16: 30S ribosomal protein S16

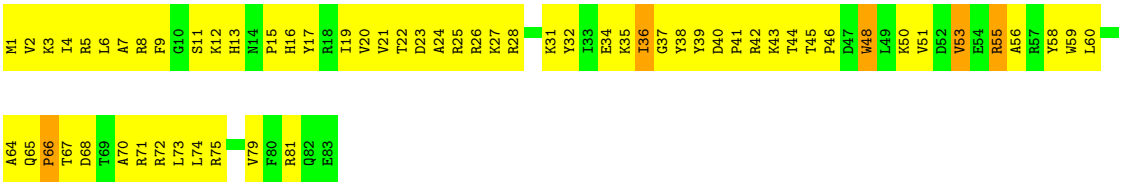
Chain CP:



• Molecule 16: 30S ribosomal protein S16

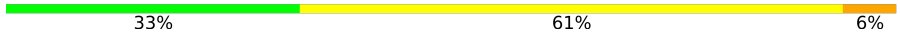
Chain EP:

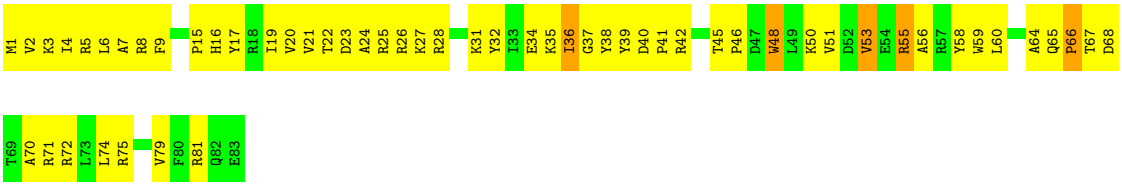




• Molecule 16: 30S ribosomal protein S16

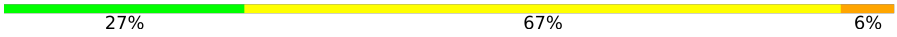
Chain GP:

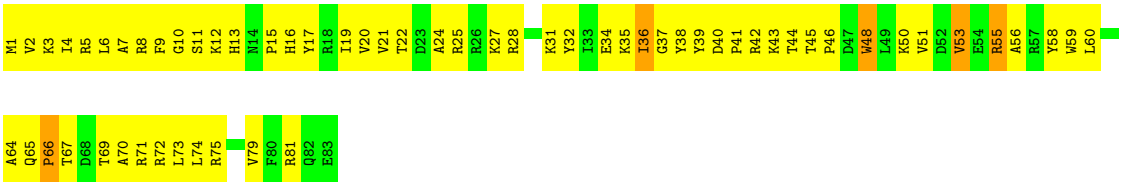




• Molecule 16: 30S ribosomal protein S16

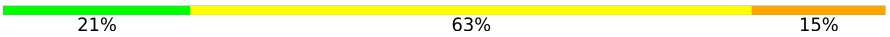
Chain IP:

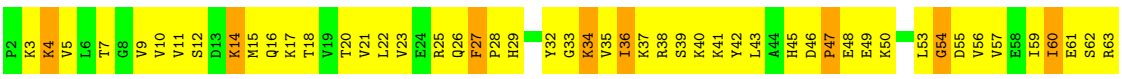




• Molecule 17: 30S ribosomal protein S17

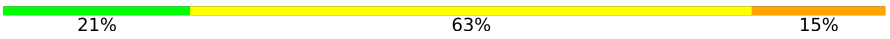
Chain AQ:





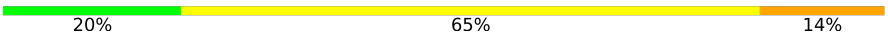
• Molecule 17: 30S ribosomal protein S17

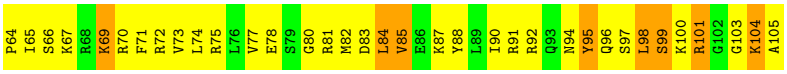
Chain CQ:



• Molecule 17: 30S ribosomal protein S17

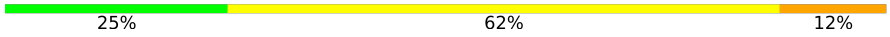
Chain EQ:

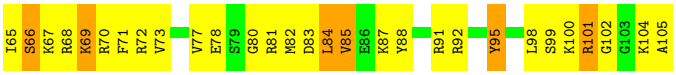




• Molecule 17: 30S ribosomal protein S17

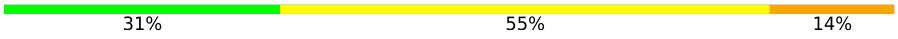
Chain GQ:

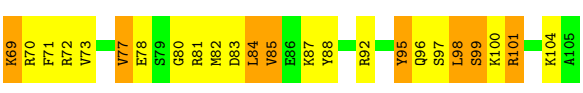




• Molecule 17: 30S ribosomal protein S17

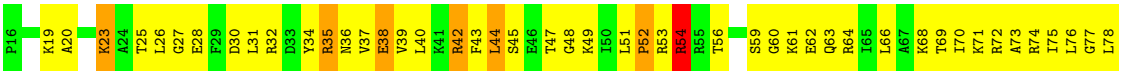
Chain IQ:

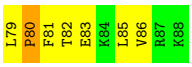




• Molecule 18: 30S ribosomal protein S18

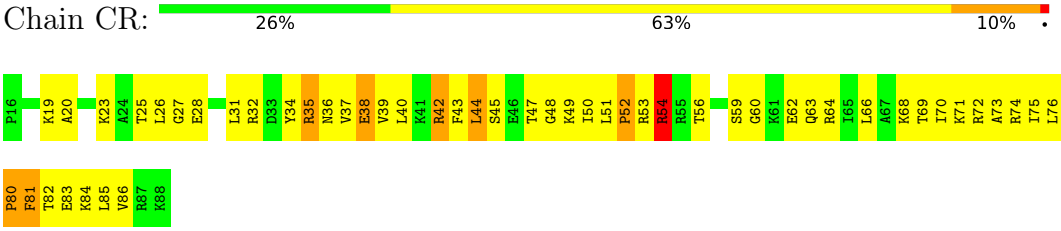
Chain AR:





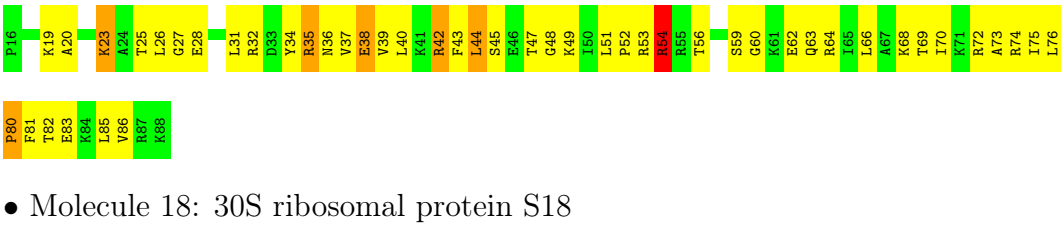
• Molecule 18: 30S ribosomal protein S18

Chain CR:



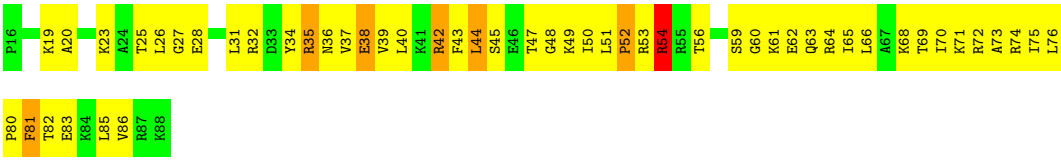
• Molecule 18: 30S ribosomal protein S18

Chain ER:



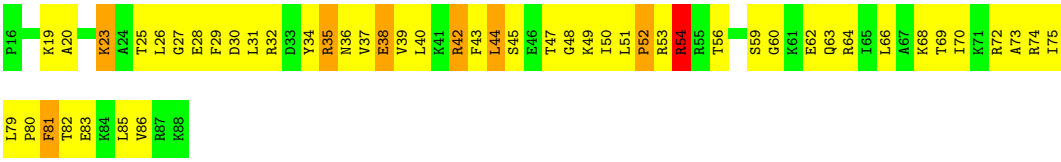
• Molecule 18: 30S ribosomal protein S18

Chain GR:



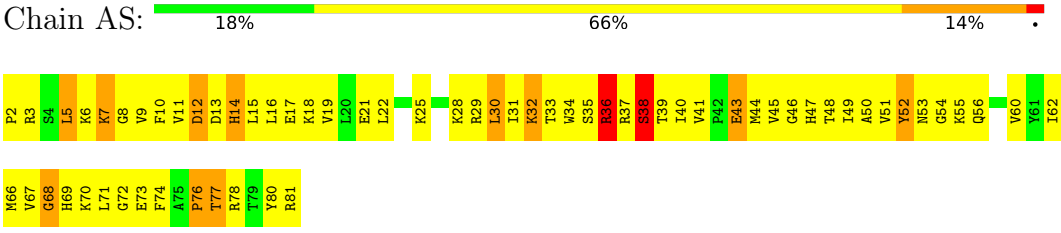
• Molecule 18: 30S ribosomal protein S18

Chain IR:



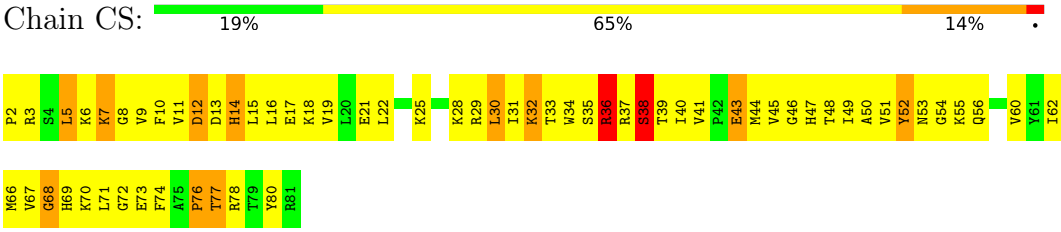
• Molecule 19: 30S ribosomal protein S19

Chain AS:



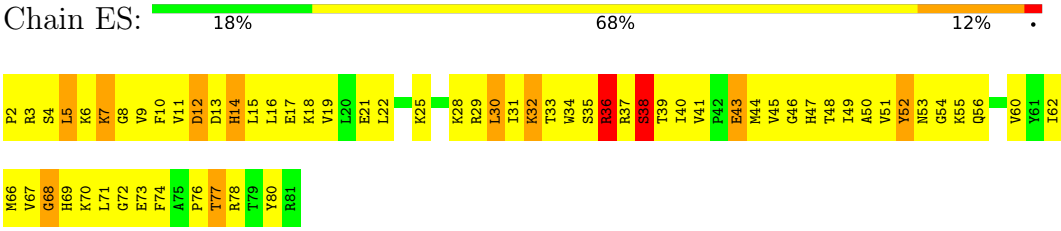
• Molecule 19: 30S ribosomal protein S19

Chain CS:



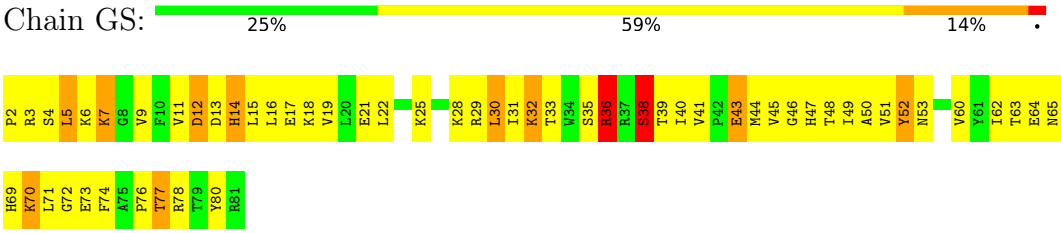
• Molecule 19: 30S ribosomal protein S19

Chain ES:



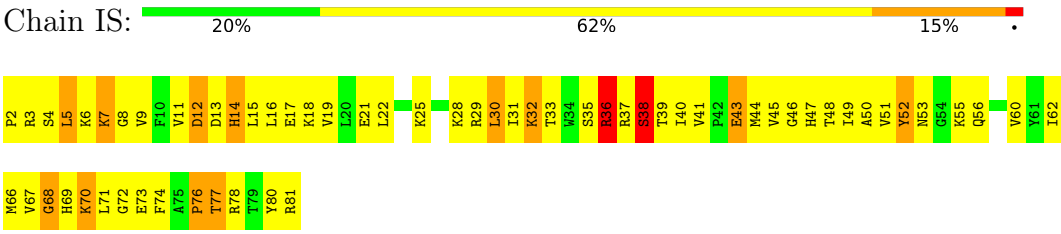
• Molecule 19: 30S ribosomal protein S19

Chain GS:



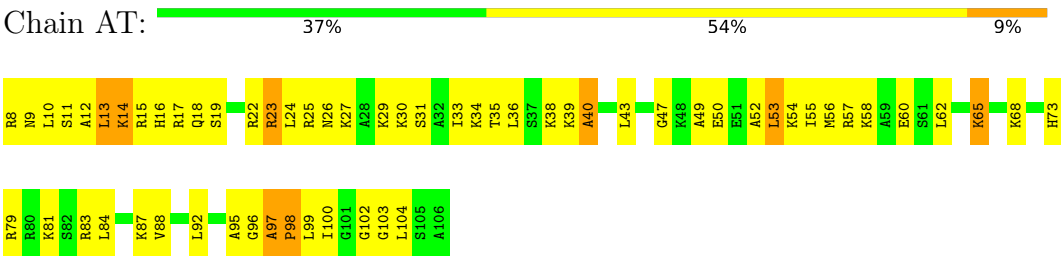
• Molecule 19: 30S ribosomal protein S19

Chain IS:



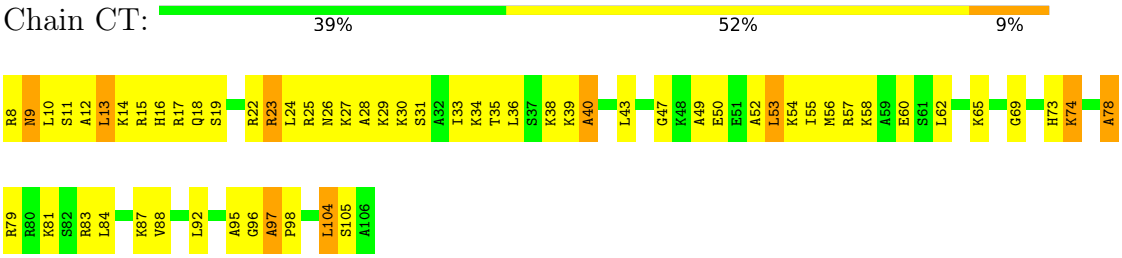
• Molecule 20: 30S ribosomal protein S20

Chain AT:



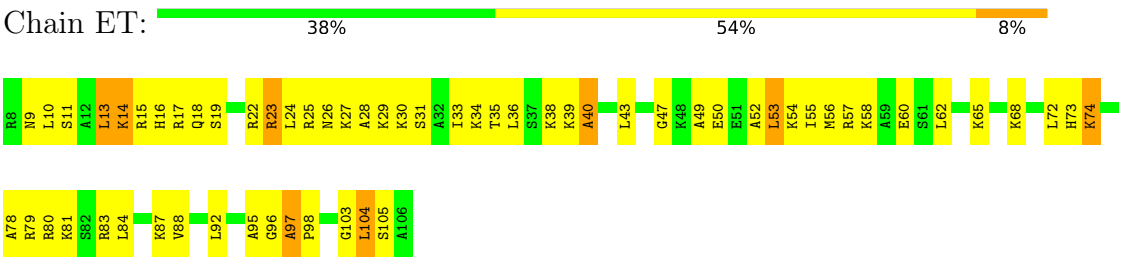
• Molecule 20: 30S ribosomal protein S20

Chain CT:



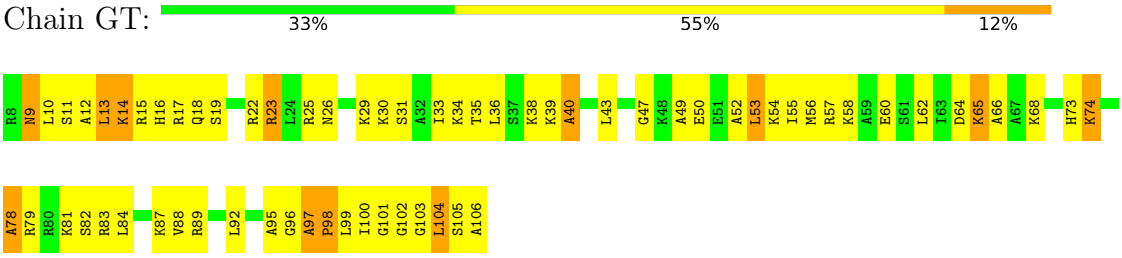
• Molecule 20: 30S ribosomal protein S20

Chain ET:



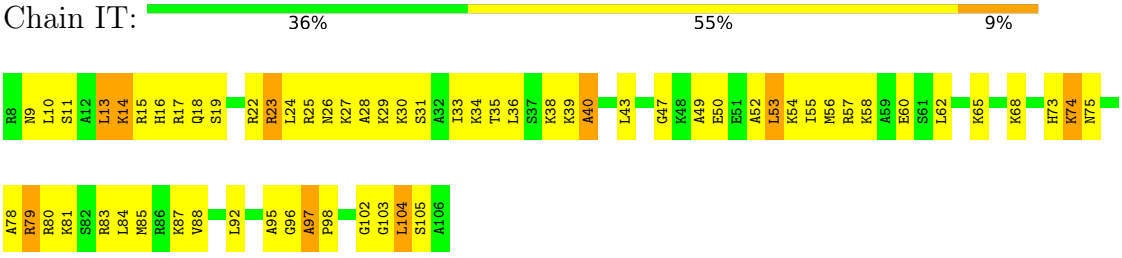
• Molecule 20: 30S ribosomal protein S20

Chain GT:



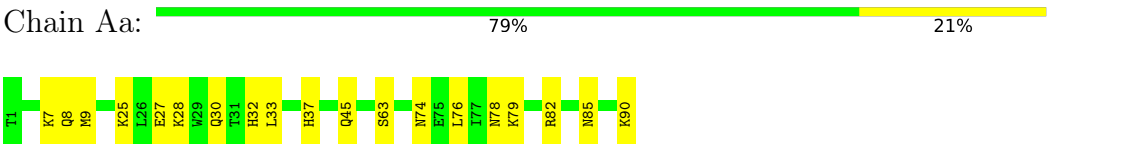
• Molecule 20: 30S ribosomal protein S20

Chain IT:



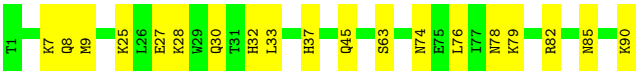
• Molecule 21: protein Y

Chain Aa:



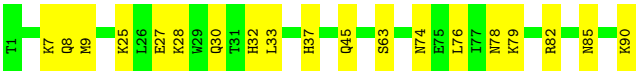
• Molecule 21: protein Y

Chain Ca:



• Molecule 21: protein Y

Chain Ea:



• Molecule 21: protein Y

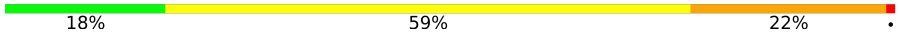
Chain Ga:

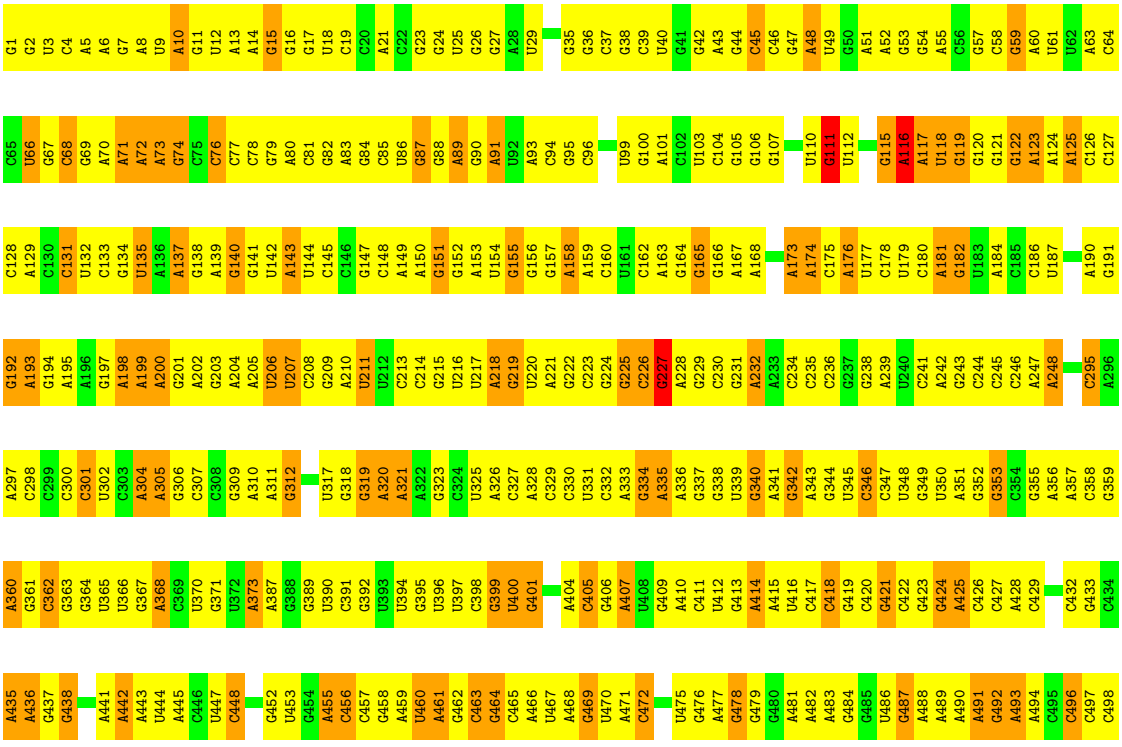
• Molecule 21: protein Y

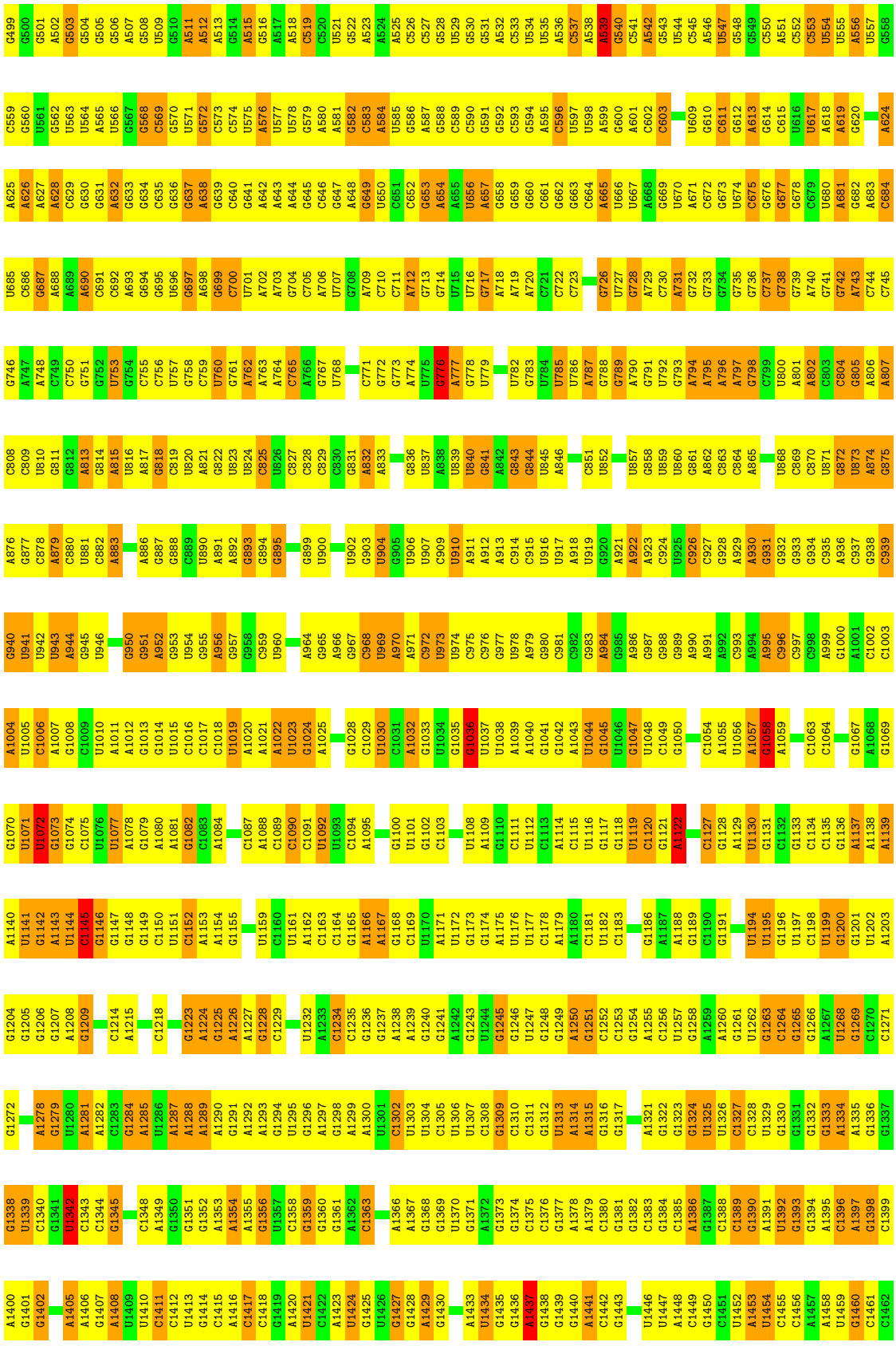
Chain Ia:

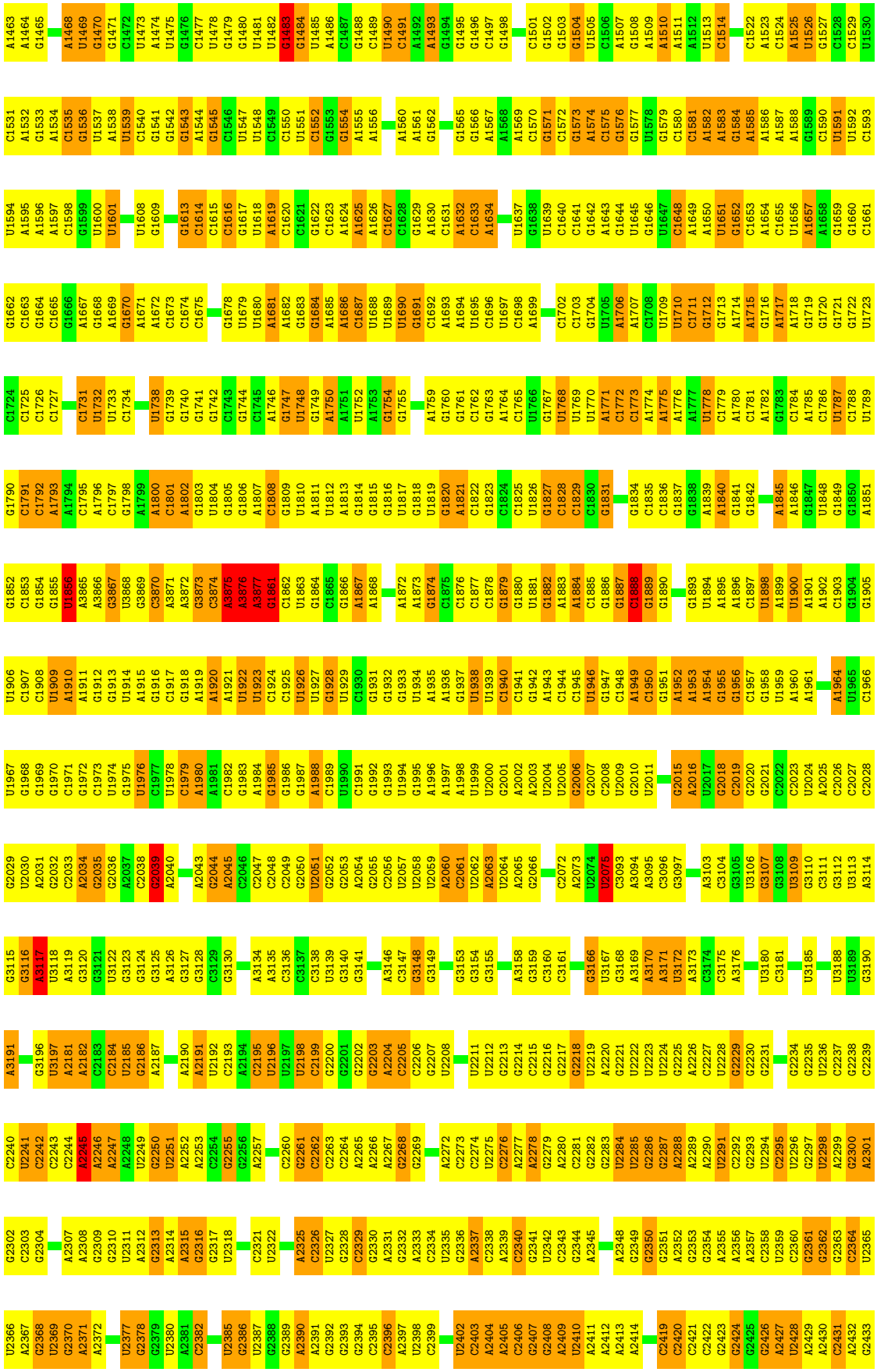
• Molecule 22: 23S RIBOSOMAL RNA

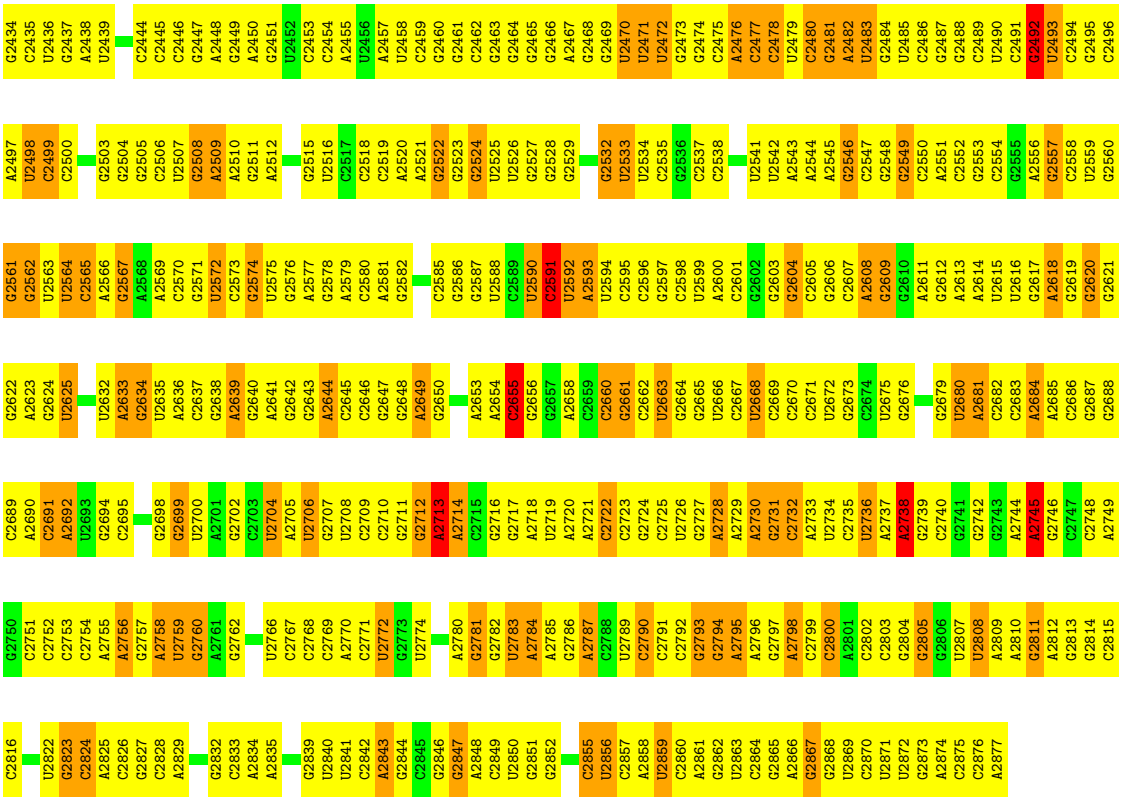
Chain BB:





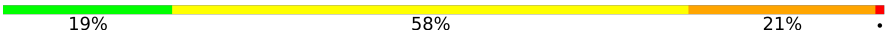


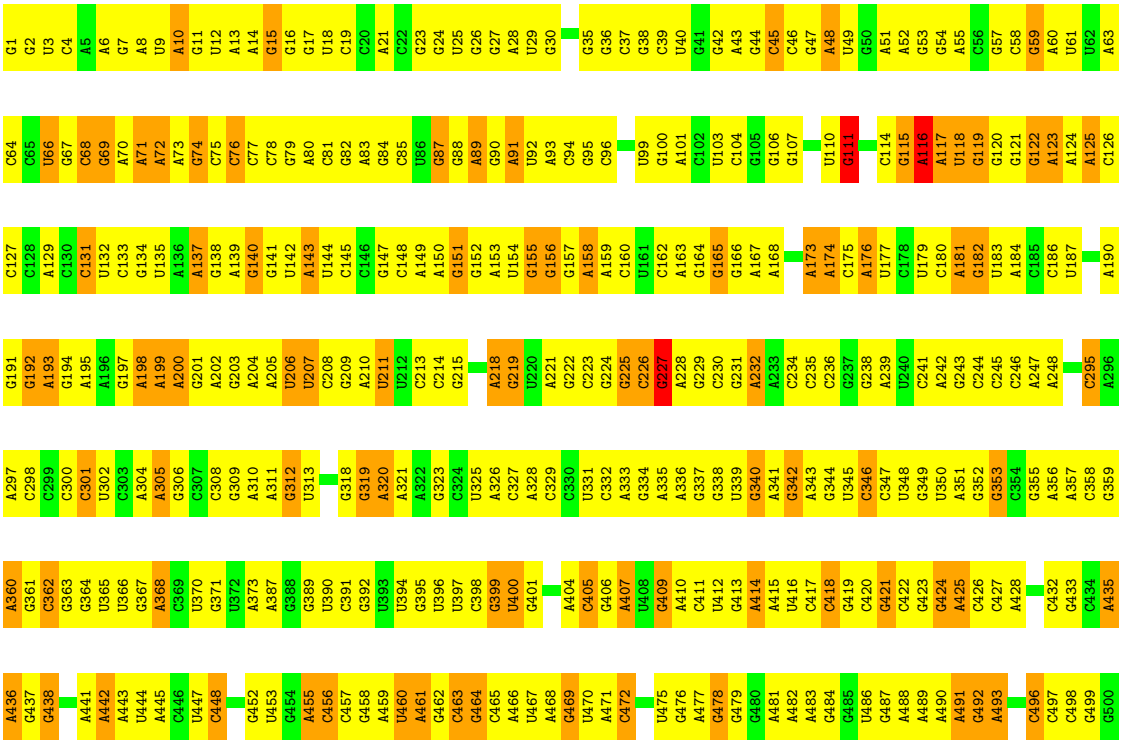


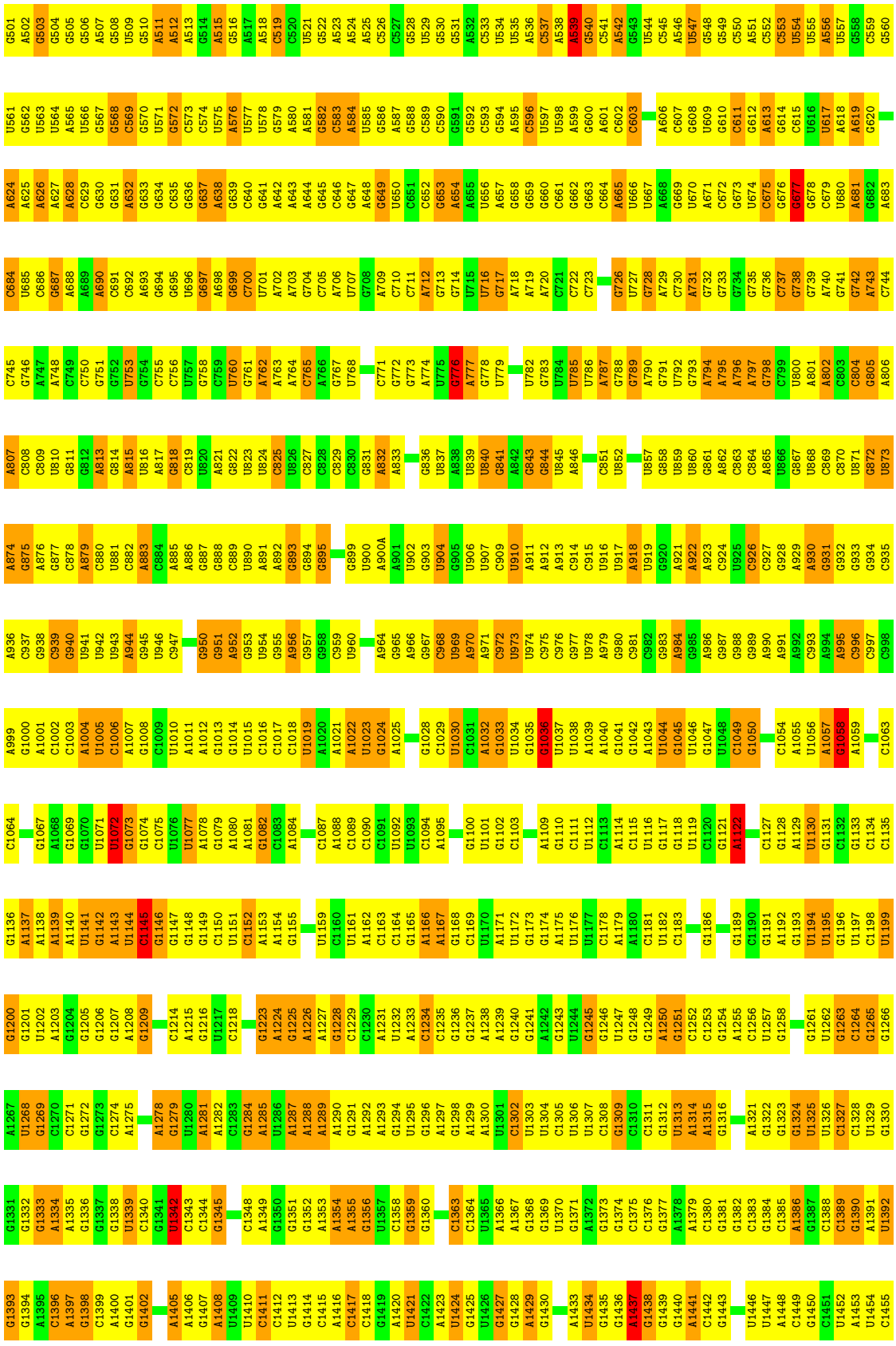


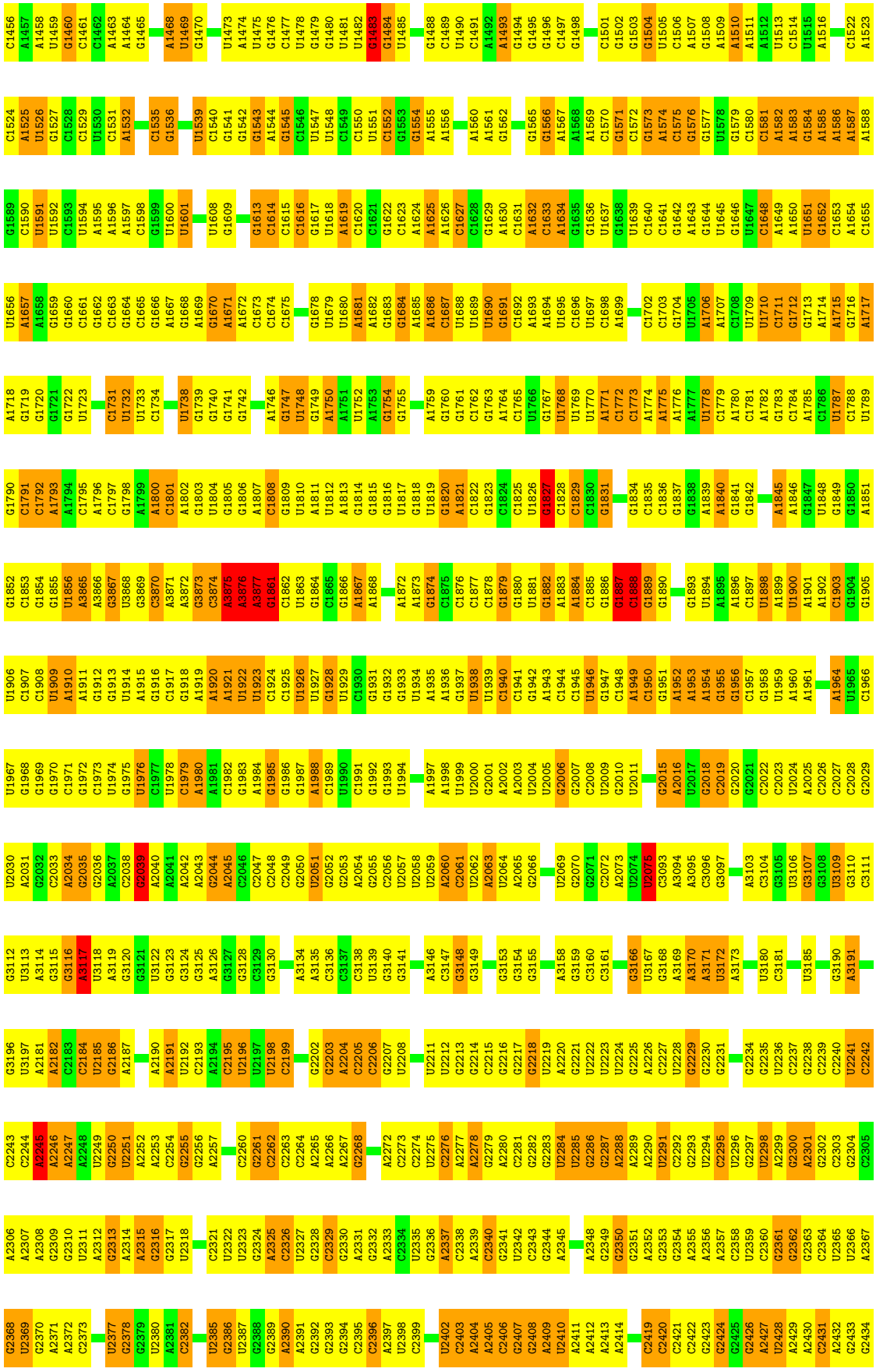
• Molecule 22: 23S RIBOSOMAL RNA

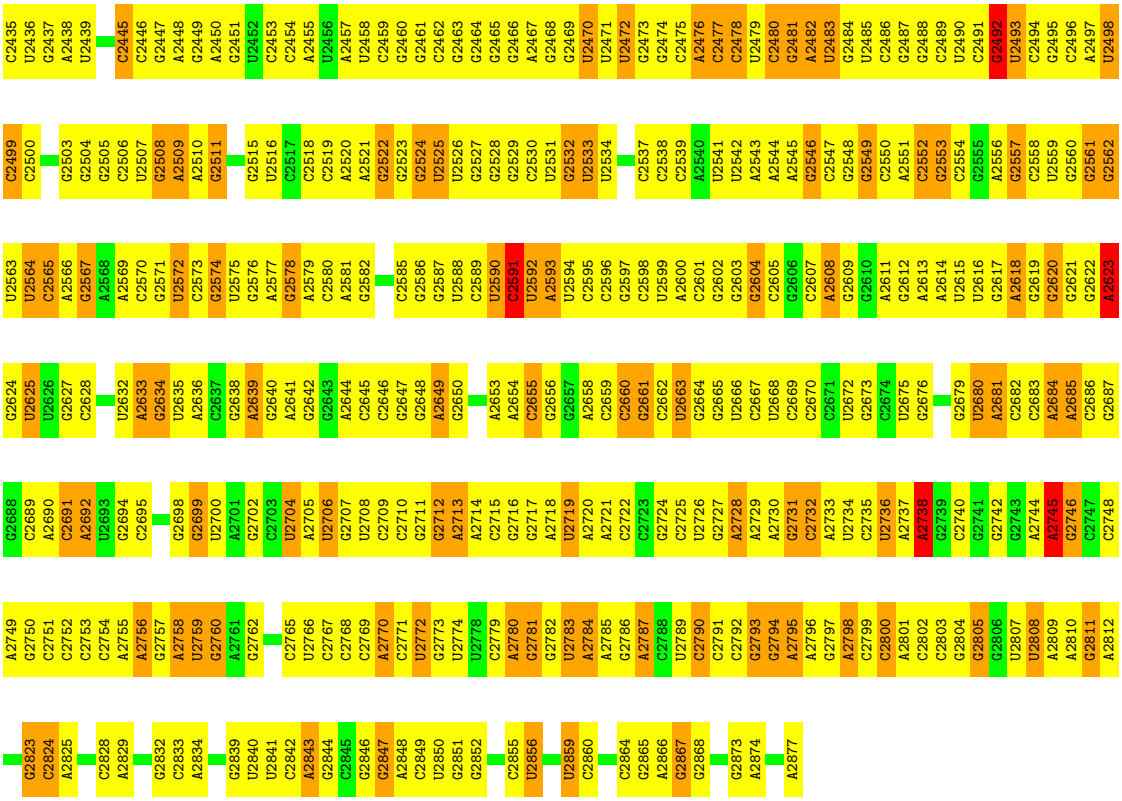
Chain DB:





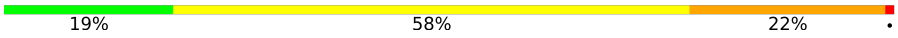

G501 A502 G503 G504 G505 G506 A507 G508 U509 G510 A511 A512 A513 G514 A515 G516 A517 A518 C519 C520 U521 G522 A523 A524 A525 C526 C527 G528 U529 G530 G531 A532 C533 U534 U535 A536 C537 A538 A539 G540 C541 A542 G543 U544 C545 A546 U547 G548 G549 C550 A551 C552 C553 U554 U555 A556 U557 G558 C559 G560
U561 G562 U563 G564 A565 U566 G567 G568 C569 G570 U571 G572 C573 C574 U575 A576 U577 U578 G579 A580 A581 G582 C583 A584 U585 G586 A587 G588 C589 C590 G591 G592 C593 G594 A595 C596 U597 U598 A599 G600 A601 C602 C603 A606 C607 G608 U609 G610 C611 G612 A613 G614 C615 U616 U617 A618 A619 G620
A624 A625 A626 A627 A628 C629 G630 G631 A632 G633 G634 C635 G636 G637 A638 G639 C640 G641 A642 A643 A644 G645 C646 A647 A648 G649 U650 C651 C652 G653 A654 A655 U656 A657 G658 G659 G660 C661 G662 G663 C664 A665 U666 U667 A668 G669 U670 A671 C672 G673 U674 G675 G676 G677 G678 C679 U680 A681 G682 A683
C684 U685 C686 G687 A688 A689 A690 C691 C692 A693 G694 G695 U696 G697 A698 G699 C700 U701 A702 A703 G704 C705 A706 U707 G708 A709 C710 C711 A712 G713 G714 U715 U716 G717 A718 A719 A720 C721 C722 C723 G726 U727 G728 A729 C730 A731 G732 G733 G734 G735 G736 C737 G738 G739 A740 G741 G742 A743 C744
C745 G746 A747 A748 C749 C750 G751 G752 U753 G754 C755 C756 U757 G758 C759 U760 G761 A762 A763 A764 C765 A766 G767 U768 C771 G772 G773 A774 U775 G776 A777 G778 U779 U782 G783 U784 U785 U786 A787 G788 G789 A790 G791 U792 G793 A794 A795 A796 A797 G798 C799 U800 A801 A802 C803 C804 G805 A806
A807 C808 C809 U810 G811 G812 A813 G814 A815 U816 A817 G818 C819 U820 A821 G822 U823 U824 C825 U826 C827 C828 C829 C830 G831 A832 A833 G836 U837 A838 U839 U840 G841 A842 G843 G844 U845 A846 C851 U852 U857 G858 U859 U860 C861 A862 C863 C864 A865 U866 G867 U868 C869 C870 U871 G872 U873
A874 G875 A876 G877 C878 A879 C880 U881 C882 A883 C884 A885 A886 G887 G888 C889 U890 A891 A892 G893 G894 G895 G899 U900 A900A A901 U902 G903 U904 G905 U906 U907 C909 U910 A911 A912 A913 C914 C915 U916 U917 A918 U919 G920 A921 A922 A923 C924 U925 C926 C927 G928 A929 A930 G931 G932 G933 G934 C935
A936 C937 G938 C939 G940 U941 U942 U943 A944 G945 U946 C947 G950 G951 A952 G953 U954 G955 A956 G957 G958 C959 U960 A964 G965 A966 G967 C968 U969 A970 A971 C972 U973 U974 C975 C976 G977 U978 A979 G980 C981 C982 G983 A984 G985 A986 G987 G988 G989 A990 A991 A992 C993 A994 A995 C996 C997 C998
A999 G1000 A1001 C1002 C1003 A1004 U1005 C1006 A1007 G1008 C1009 U1010 A1011 A1012 G1013 G1014 U1015 C1016 C1017 C1018 U1019 A1020 A1021 A1022 U1023 G1024 A1025 G1028 C1029 U1030 C1031 A1032 G1033 U1034 G1035 G1036 U1037 U1038 A1039 A1040 G1041 G1042 A1043 U1044 G1045 U1046 G1047 U1048 C1049 C1050 C1054 A1055 U1056 A1057 G1058 A1059 C1063
C1064 G1067 A1068 G1069 G1070 U1071 U1072 G1073 G1074 C1075 U1076 U1077 A1078 G1079 A1080 A1081 G1082 C1083 A1084 C1087 A1088 C1089 C1090 C1091 U1092 U1093 C1094 A1095 G1100 U1101 G1102 C1103 A1109 G1110 C1111 U1112 C1113 A1114 C1115 U1116 G1117 G1118 U1119 C1120 G1121 A1122 C1127 G1128 A1129 U1130 G1131 C1132 G1133 C1134 C1135
G1136 A1137 A1138 A1139 A1140 U1141 G1142 A1143 U1144 C1145 G1146 G1147 G1148 G1149 C1150 U1151 C1152 A1153 A1154 G1155 U1159 C1160 U1161 A1162 C1163 C1164 G1165 A1166 A1167 G1168 C1169 U1170 A1171 U1172 G1173 G1174 A1175 U1176 U1177 C1178 A1179 A1180 C1181 U1182 C1183 G1186 G1189 C1190 G1191 A1192 G1193 U1194 U1195 G1196 U1197 C1198 U1199
G1200 G1201 U1202 A1203 G1204 G1205 G1206 G1207 A1208 G1209 C1214 A1215 G1216 U1217 C1218 G1223 A1224 G1225 A1226 A1227 G1228 C1229 C1230 A1231 U1232 A1233 C1234 C1235 G1236 G1237 A1238 A1239 G1240 G1241 A1242 G1243 U1244 G1245 G1246 U1247 G1248 G1249 A1250 G1251 C1252 C1253 G1254 A1255 C1256 U1257 G1258 G1261 U1262 G1263 C1264 G1265 G1266
A1267 U1268 G1269 C1270 C1271 G1272 G1273 C1274 A1275 A1278 G1279 U1280 A1281 A1282 C1283 G1284 A1285 U1286 A1287 A1288 A1289 A1290 G1291 A1292 A1293 G1294 U1295 G1296 A1297 G1298 A1299 A1300 U1301 C1302 U1303 U1304 C1305 U1306 U1307 C1308 G1309 C1310 C1311 G1312 U1313 A1314 A1315 G1316 A1321 G1322 G1323 G1324 U1325 U1326 C1327 C1328 G1329 G1330
G1331 G1332 G1333 A1334 A1335 G1336 G1337 G1338 U1339 C1340 G1341 U1342 C1343 C1344 G1345 C1348 A1349 G1350 G1351 G1352 A1353 A1354 A1355 G1356 U1357 C1358 G1359 G1360 C1363 C1364 U1365 A1366 A1367 G1368 G1369 U1370 G1371 A1372 G1373 G1374 C1375 C1376 G1377 A1378 A1379 C1380 G1381 G1382 C1383 G1384 C1385 A1386 G1387 C1388 C1389 G1390 A1391 U1392
G1393 G1394 A1395 C1396 A1397 G1398 C1399 A1400 G1401 G1402 A1405 A1406 G1407 A1408 U1409 U1410 C1411 C1412 U1413 G1414 C1415 A1416 C1417 C1418 G1419 A1420 U1421 C1422 A1423 U1424 G1425 U1426 G1427 G1428 A1429 G1430 A1433 U1434 G1435 G1436 A1437 G1438 G1439 G1440 A1441 C1442 G1443 U1446 U1447 A1448 C1449 G1450 C1451 U1452 A1453 U1454 C1455

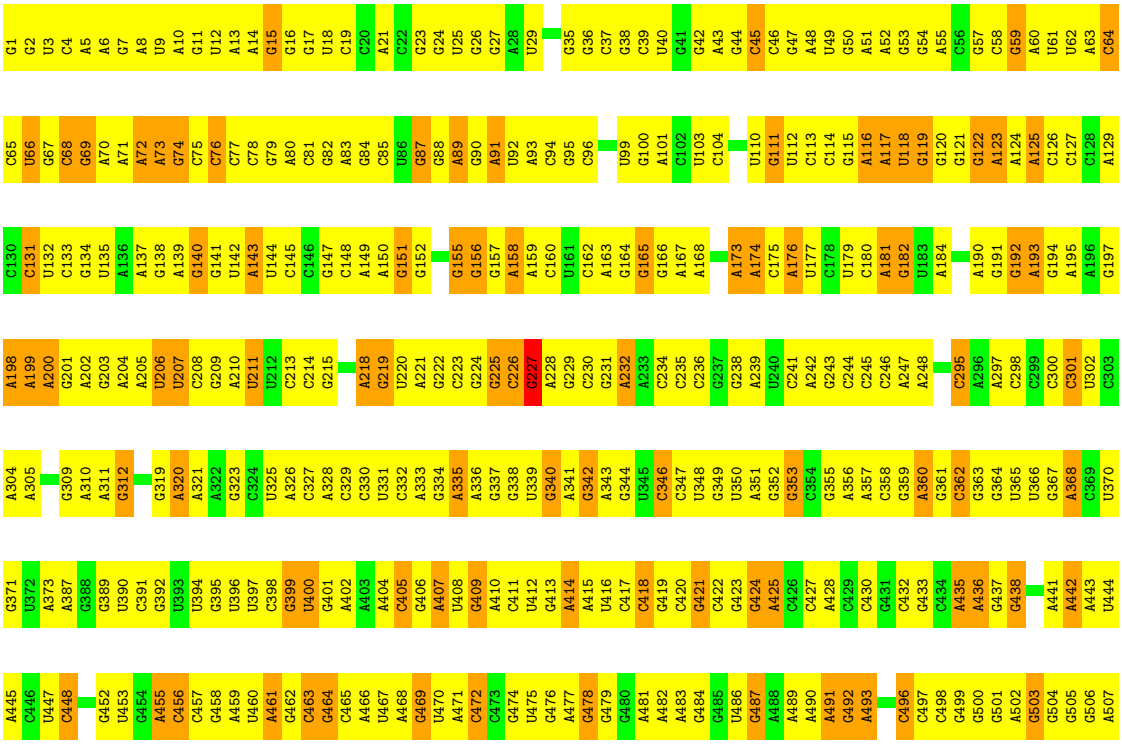


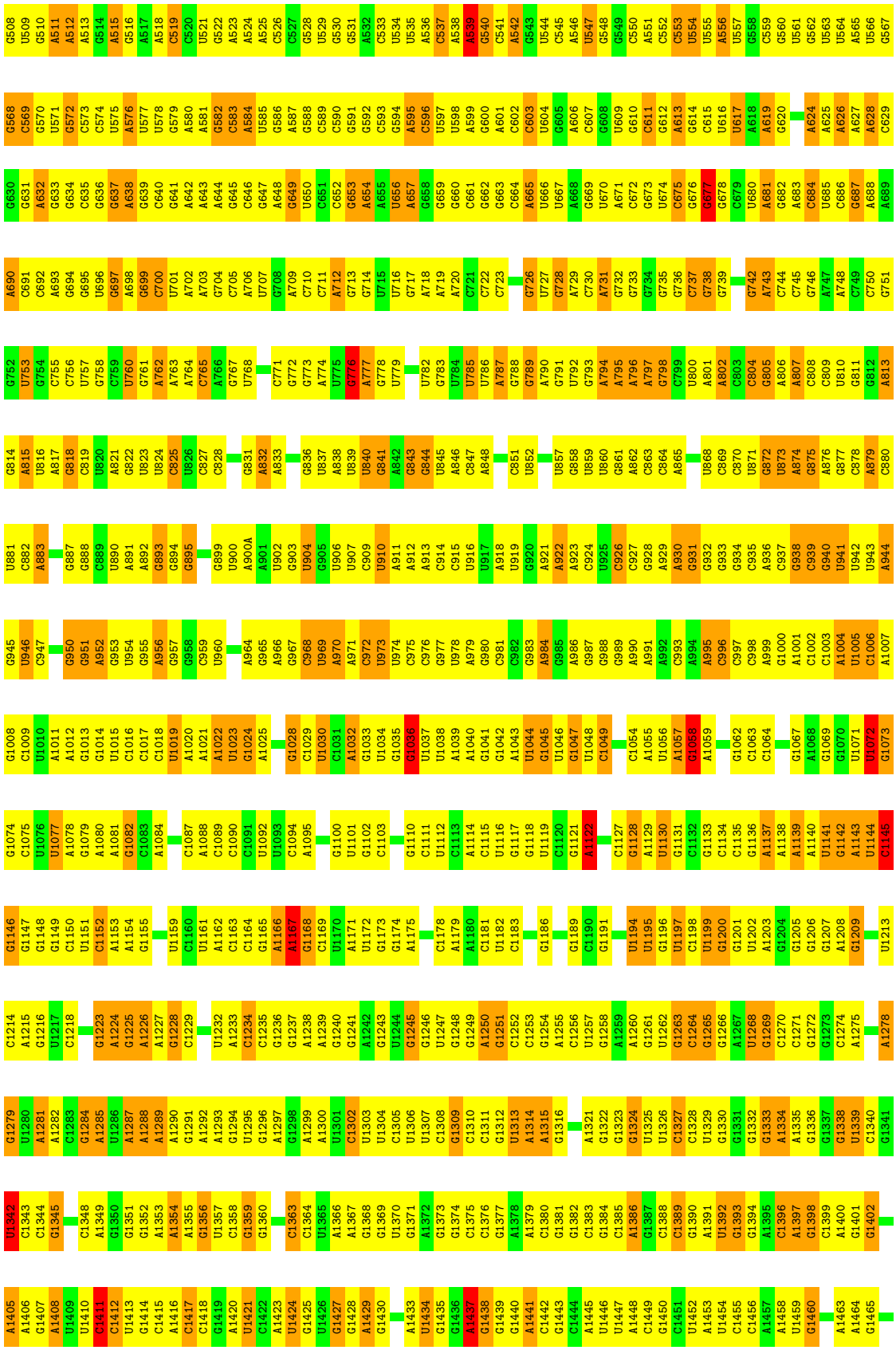


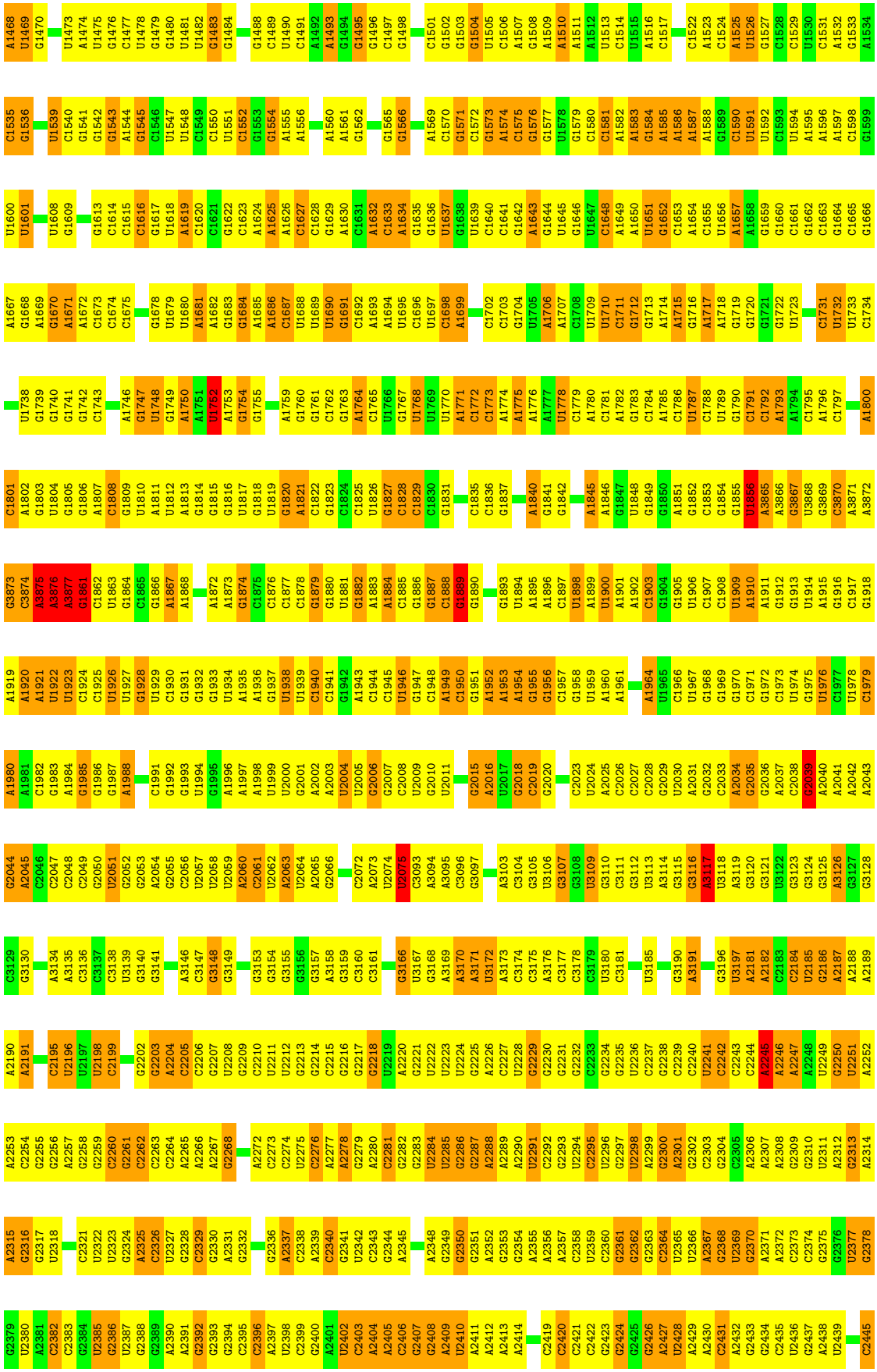
• Molecule 22: 23S RIBOSOMAL RNA

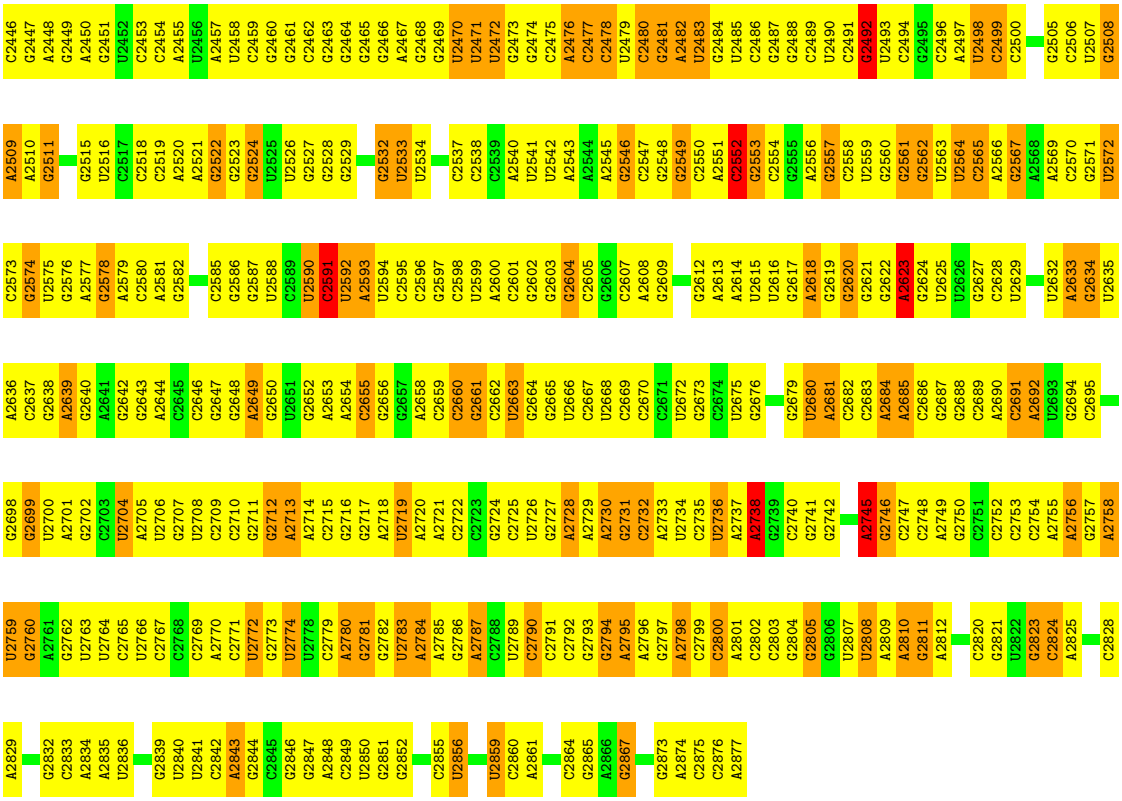
Chain FB:





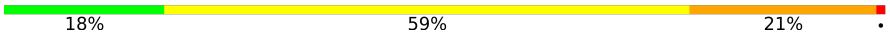


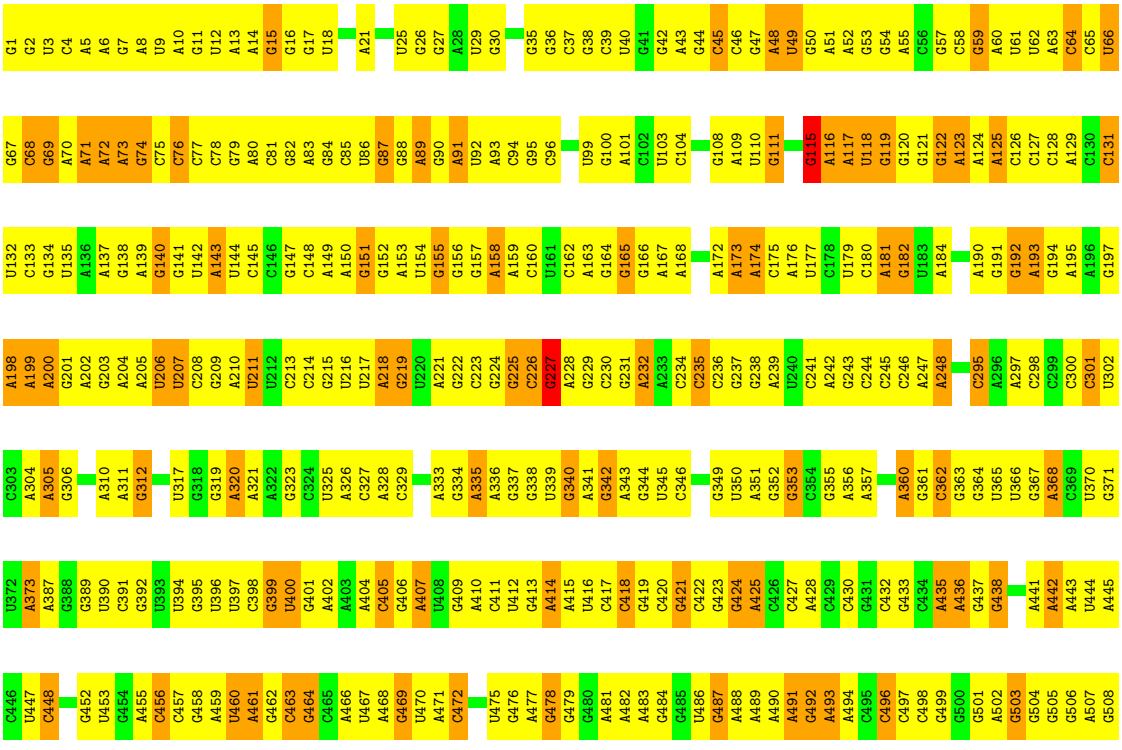


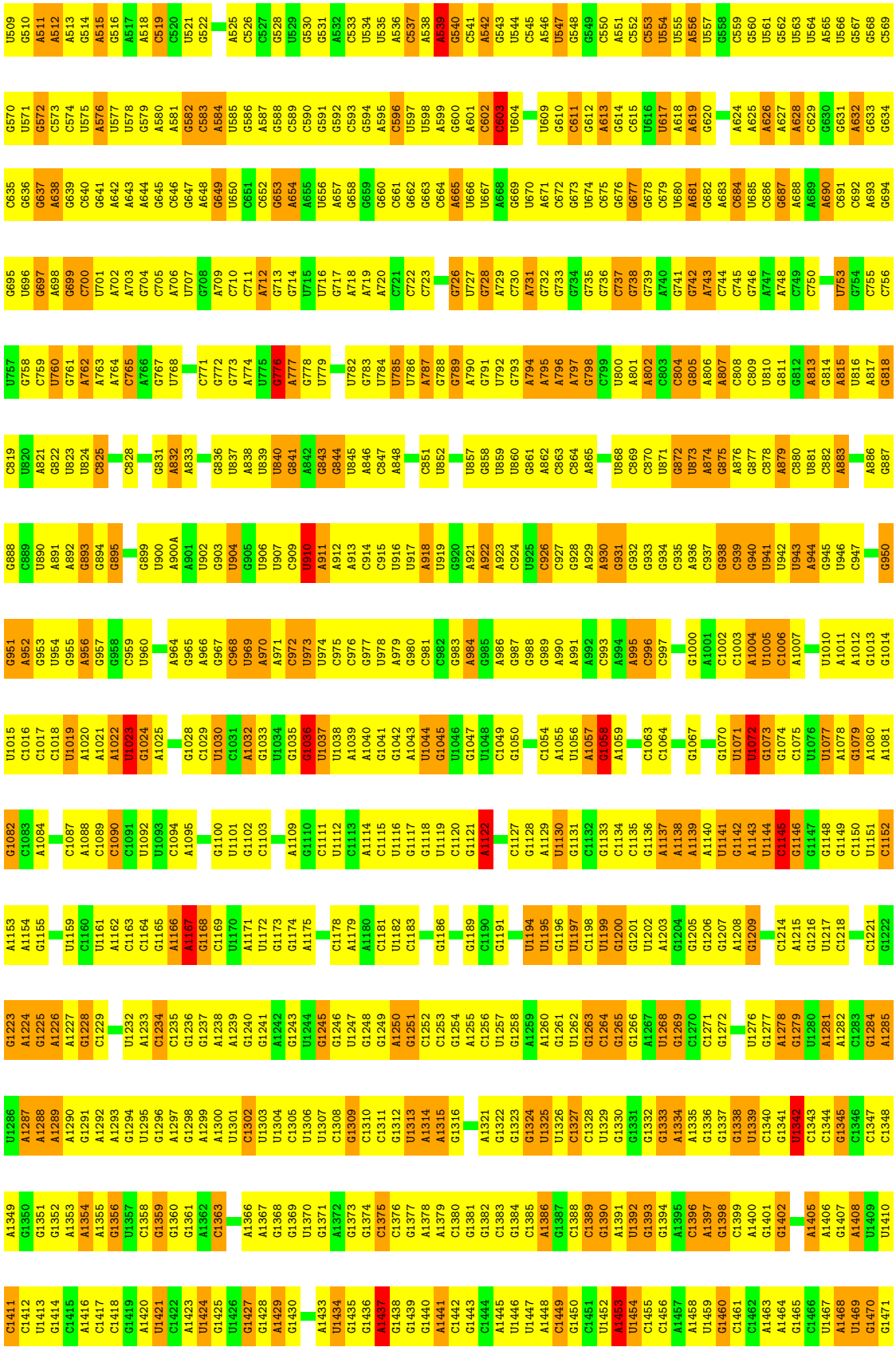


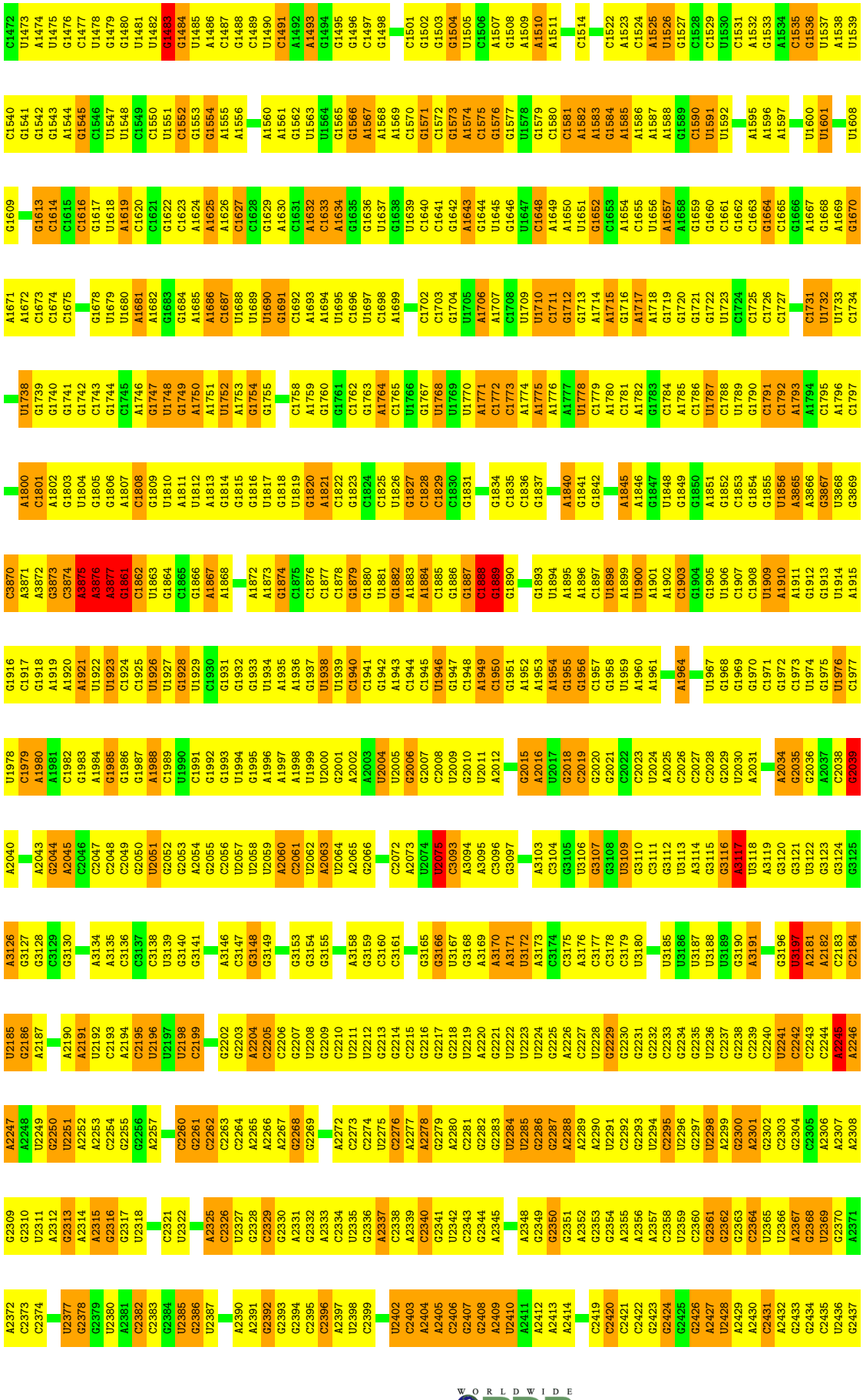
• Molecule 22: 23S RIBOSOMAL RNA

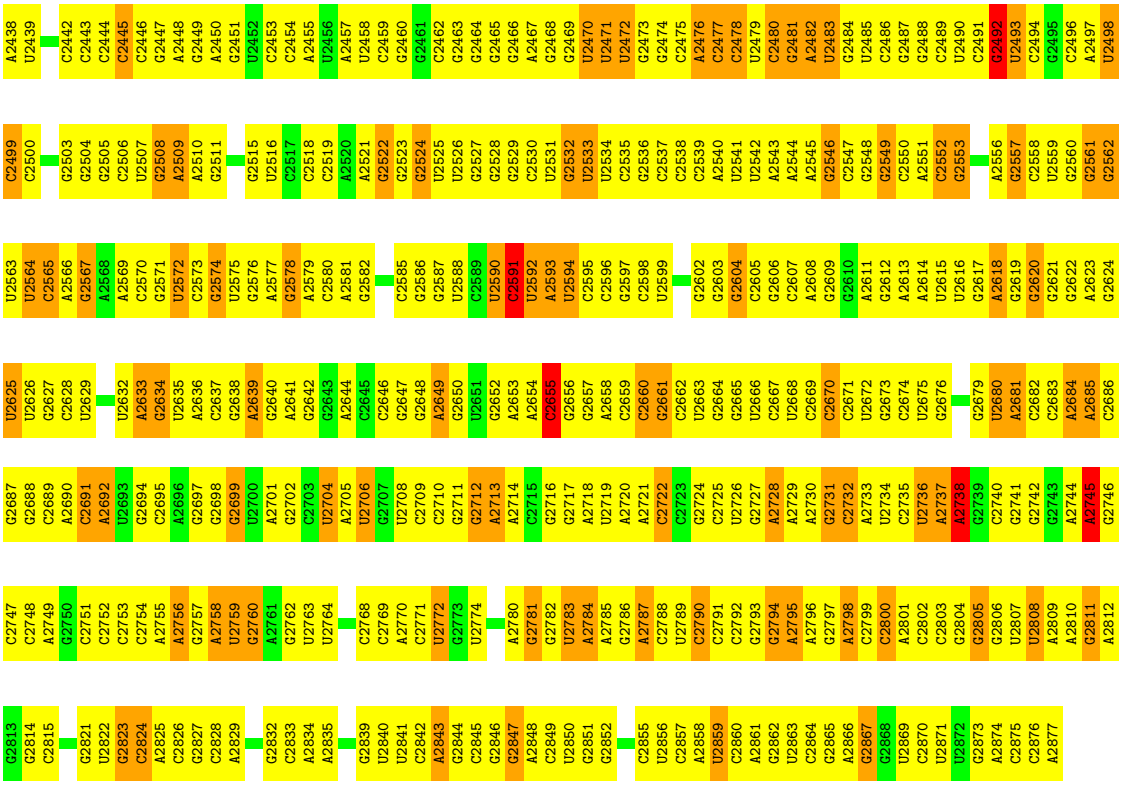
Chain HB:





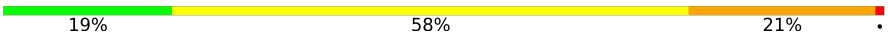


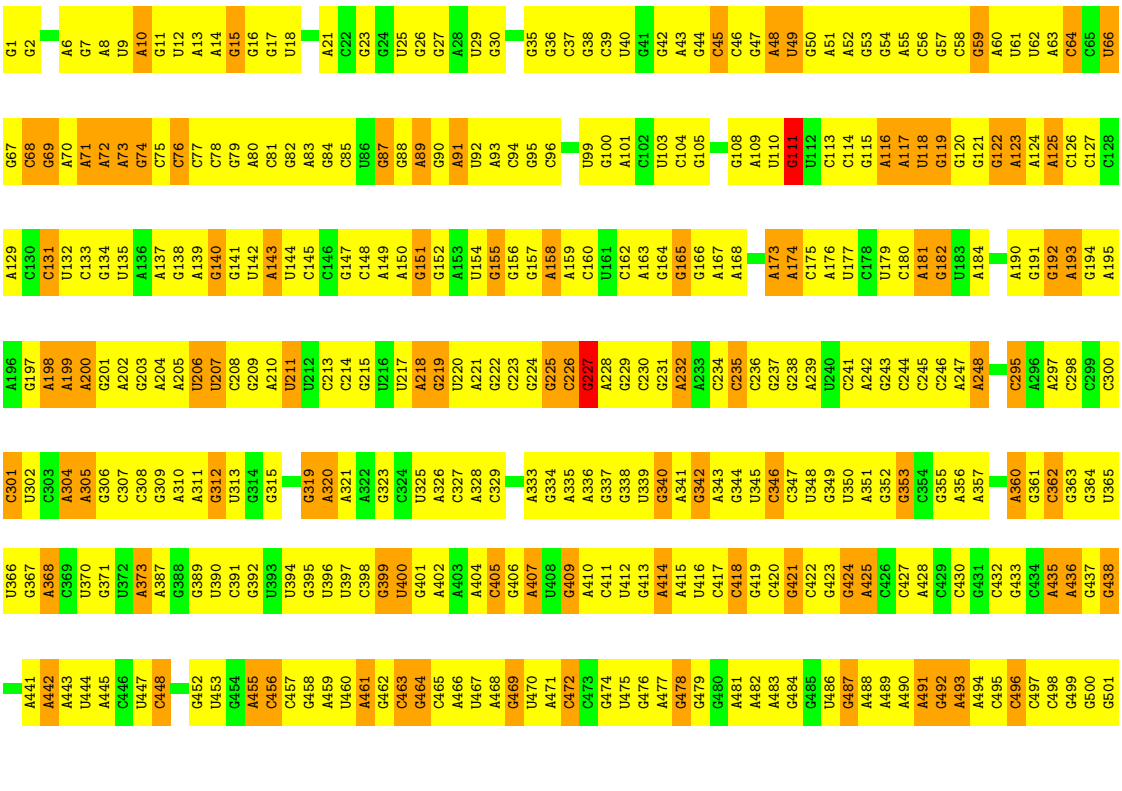


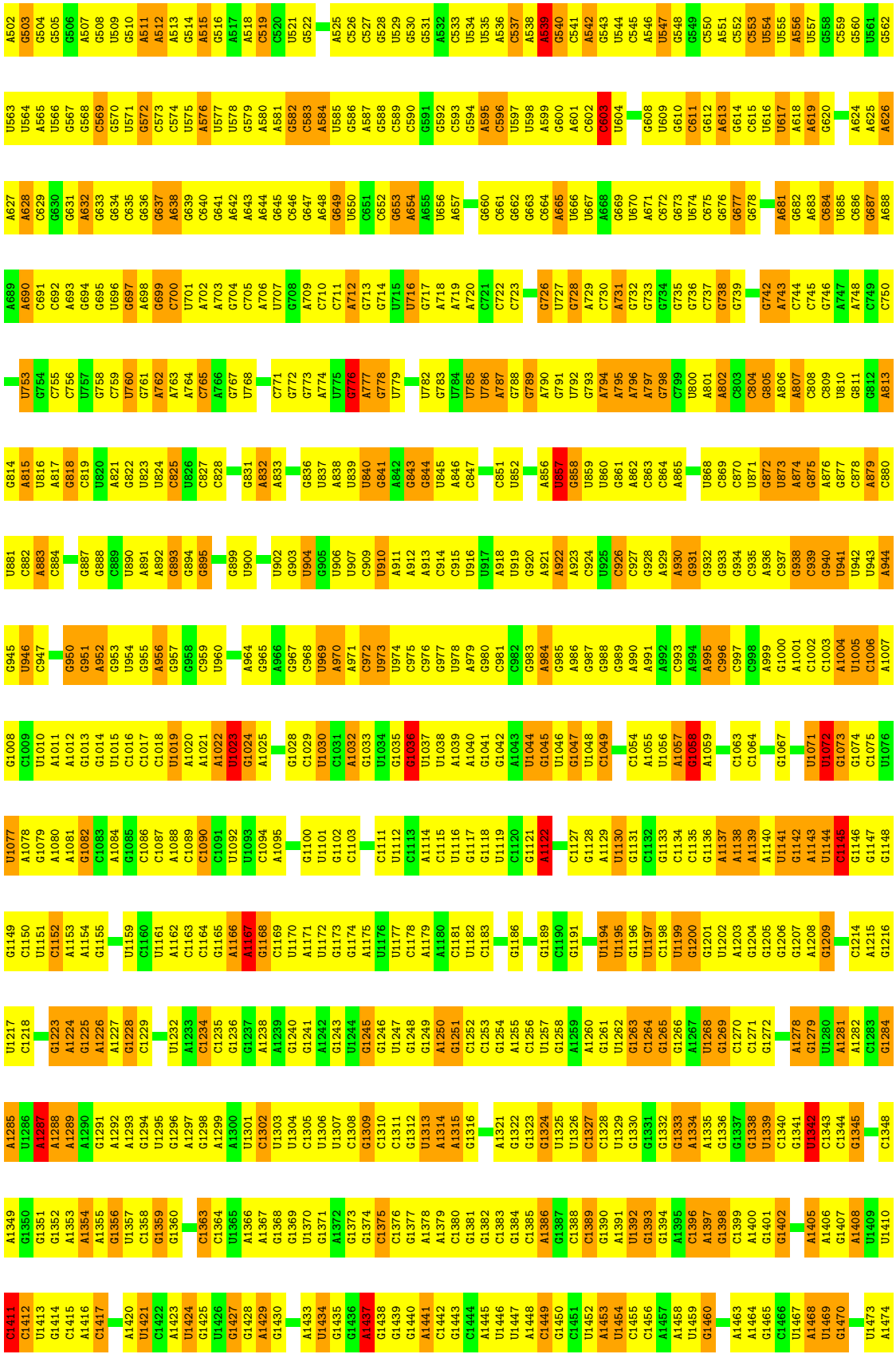


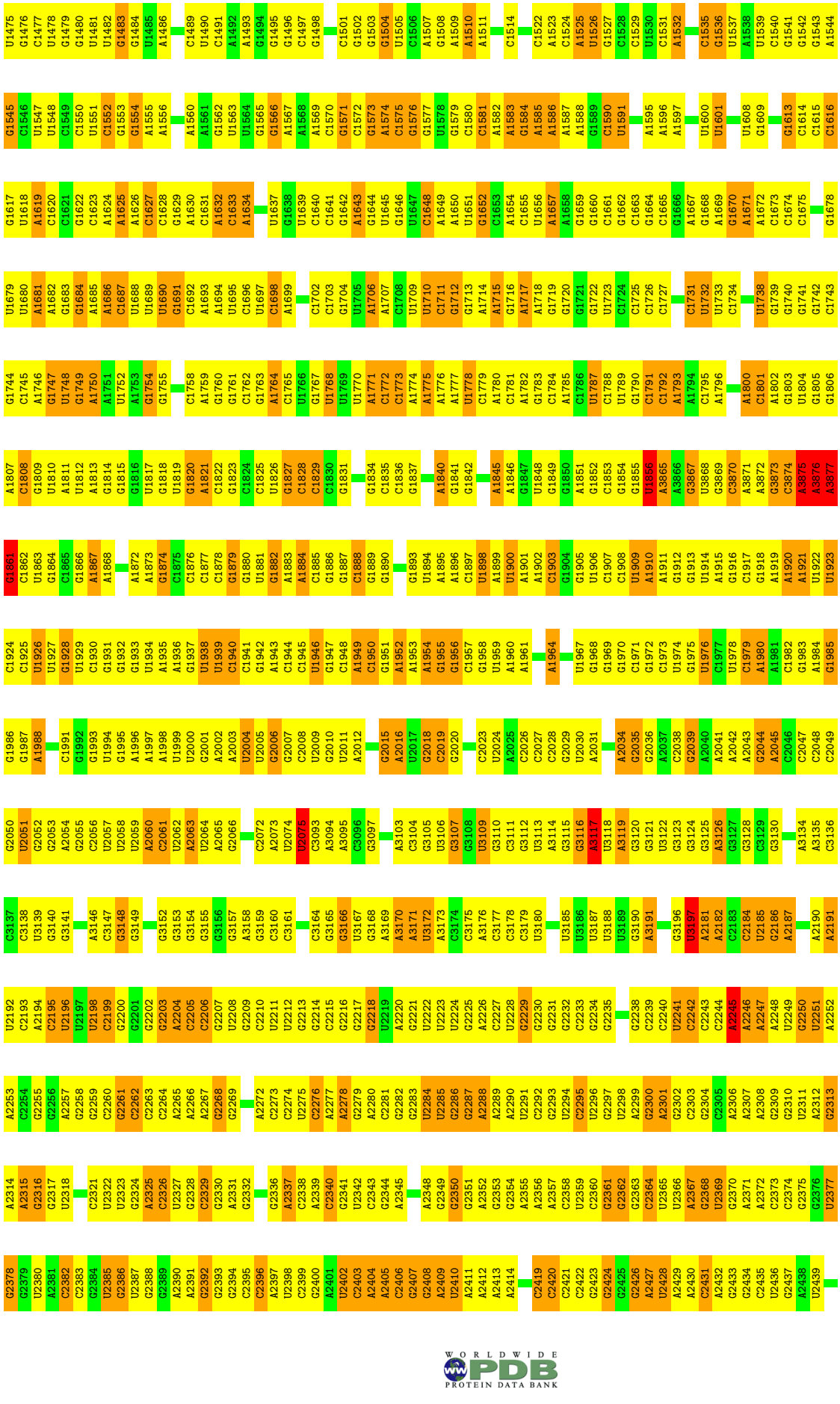
• Molecule 22: 23S RIBOSOMAL RNA

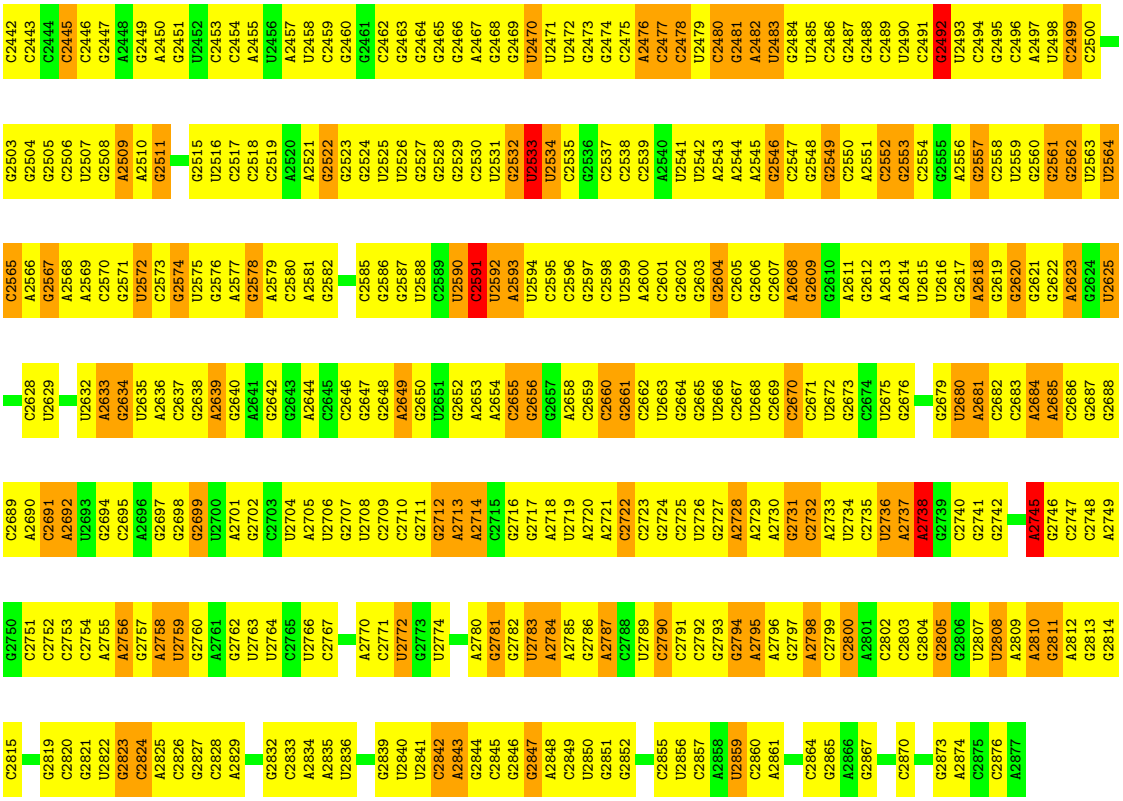
Chain JB:





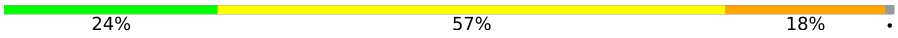


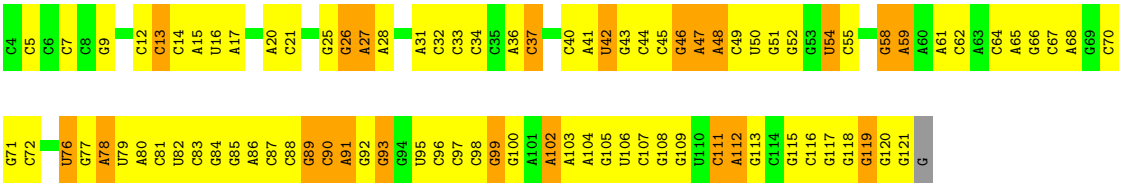




• Molecule 23: 5S RIBOSOMAL RNA

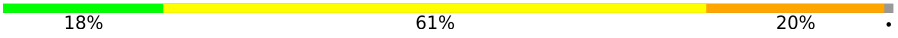
Chain BA:

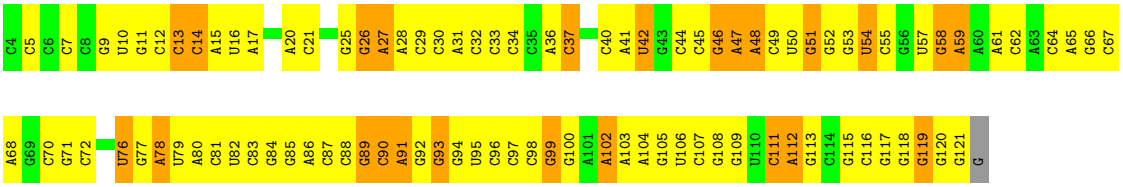




• Molecule 23: 5S RIBOSOMAL RNA

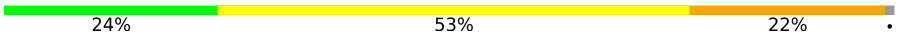
Chain DA:

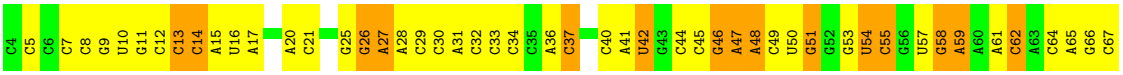




• Molecule 23: 5S RIBOSOMAL RNA

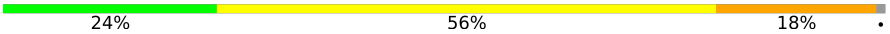
Chain FA:

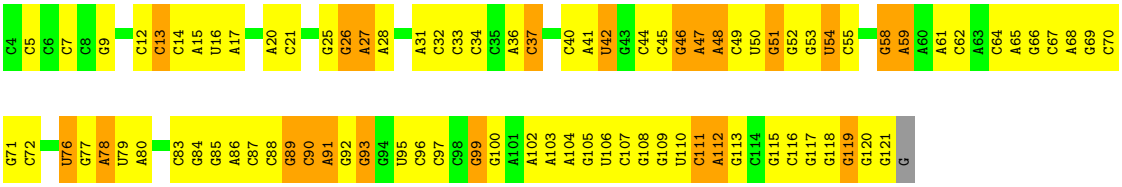




• Molecule 23: 5S RIBOSOMAL RNA

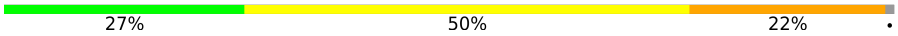
Chain HA:

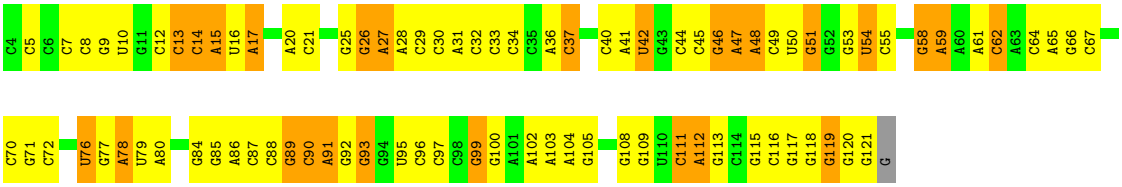




• Molecule 23: 5S RIBOSOMAL RNA

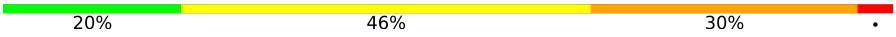
Chain JA:

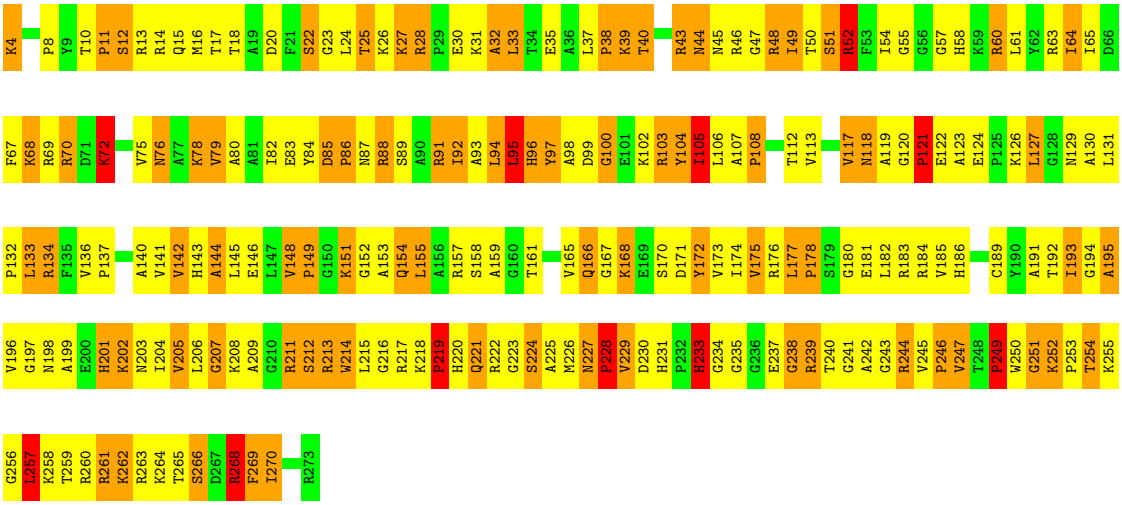




• Molecule 24: 50S ribosomal protein L2

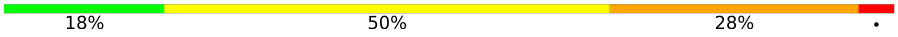
Chain BD:

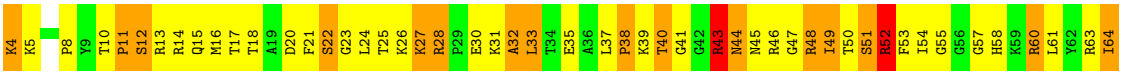


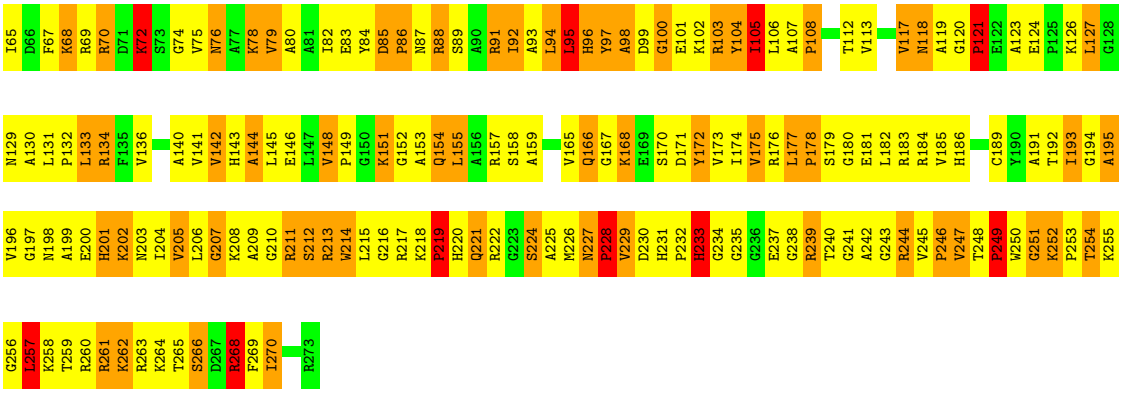


• Molecule 24: 50S ribosomal protein L2

Chain DD:

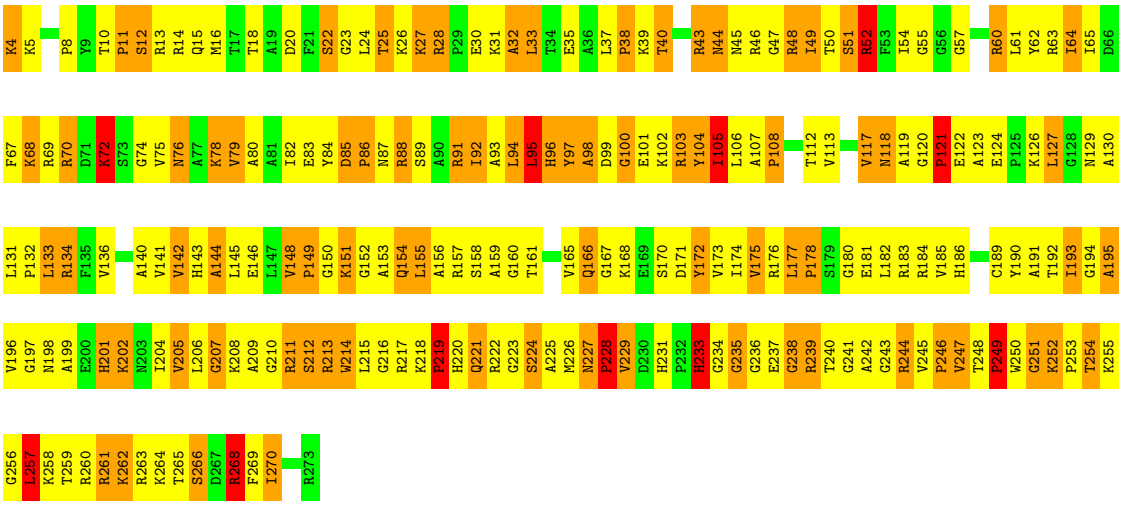






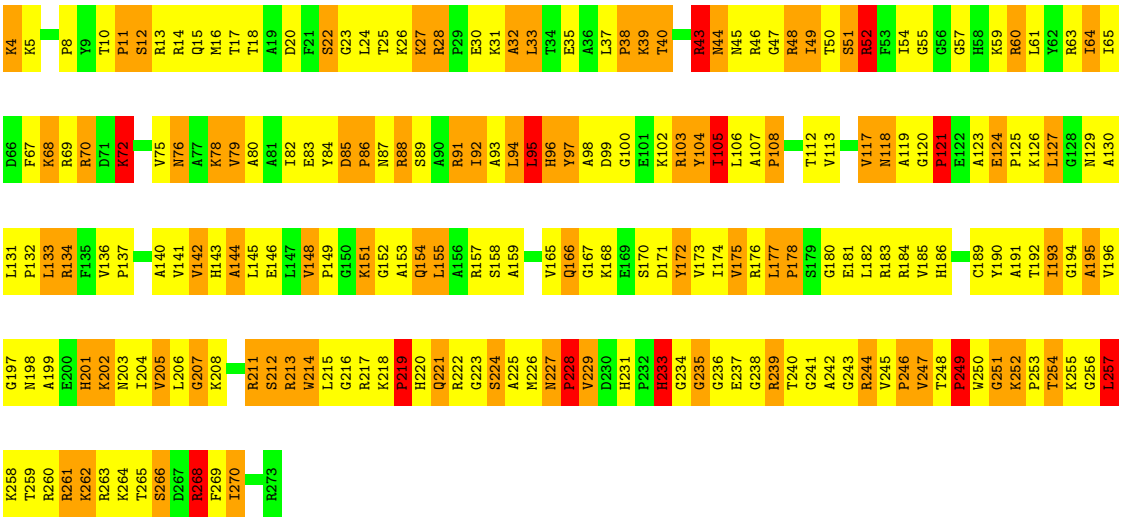
• Molecule 24: 50S ribosomal protein L2

Chain FD:



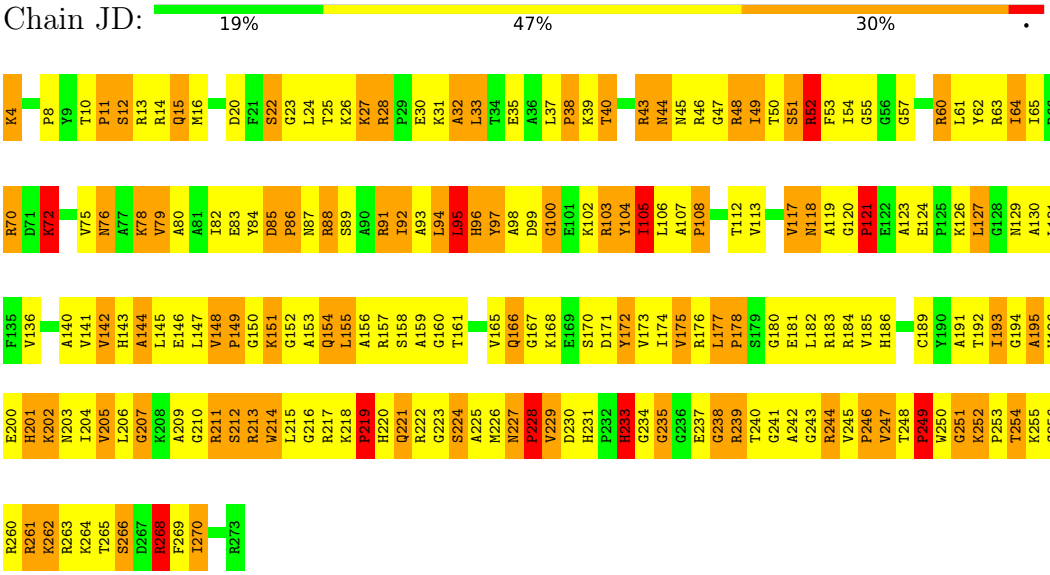
• Molecule 24: 50S ribosomal protein L2

Chain HD:



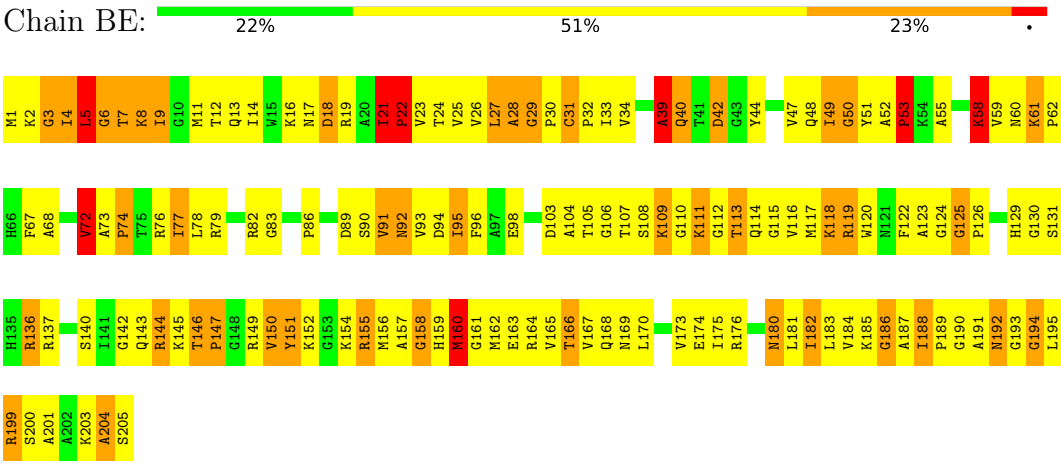
• Molecule 24: 50S ribosomal protein L2

Chain JD:



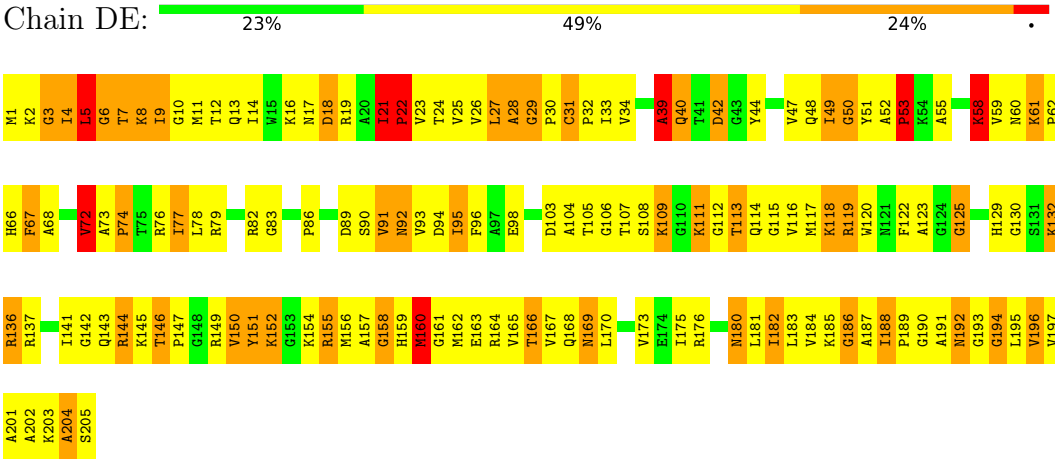
• Molecule 25: 50S ribosomal protein L3

Chain BE:



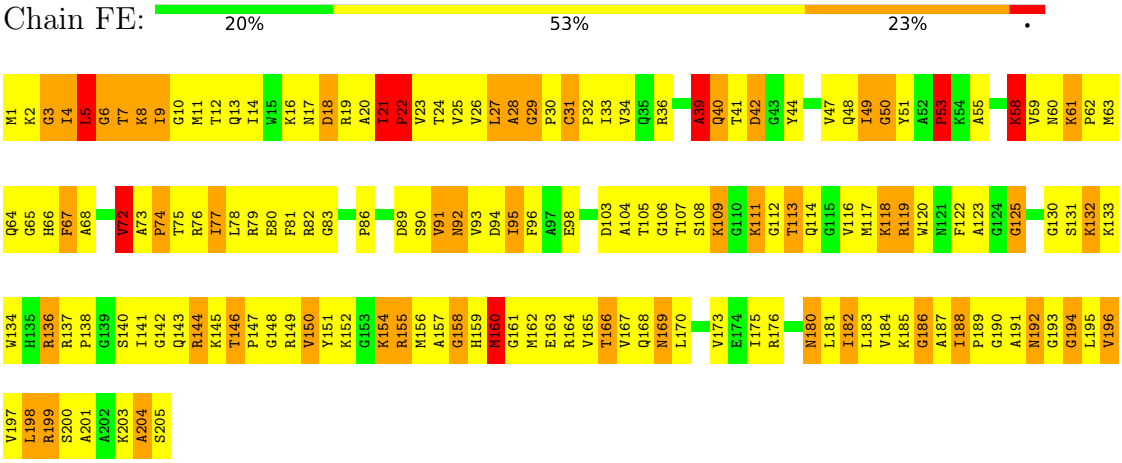
• Molecule 25: 50S ribosomal protein L3

Chain DE:



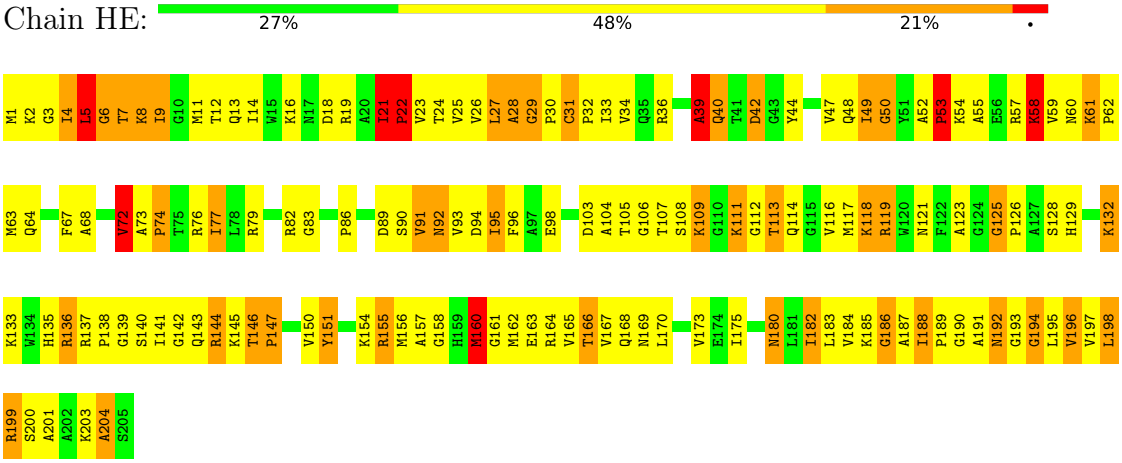
• Molecule 25: 50S ribosomal protein L3

Chain FE:



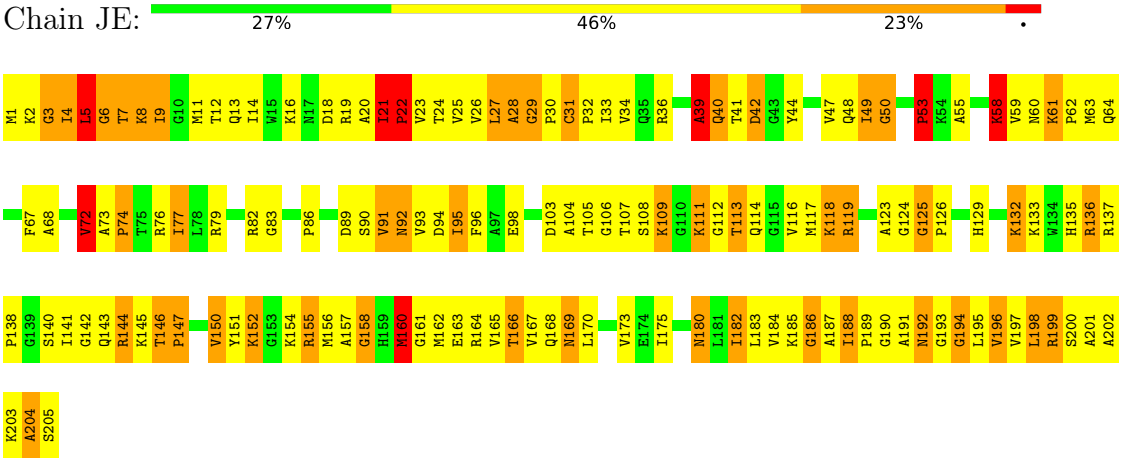
• Molecule 25: 50S ribosomal protein L3

Chain HE:



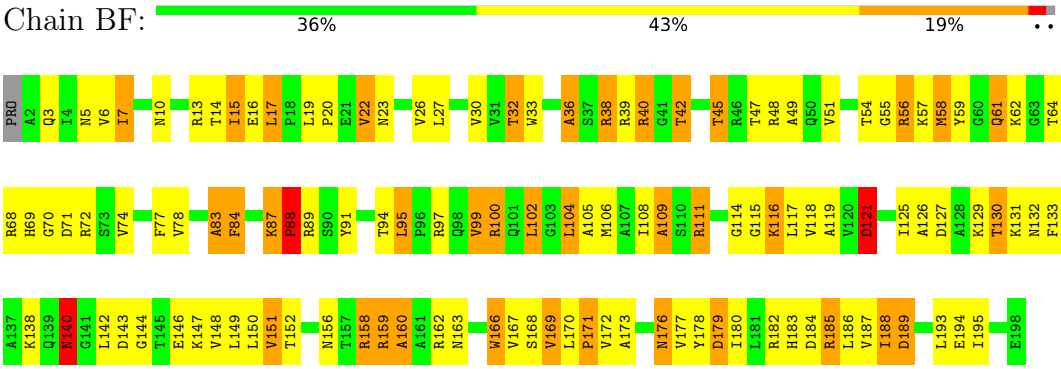
• Molecule 25: 50S ribosomal protein L3

Chain JE:



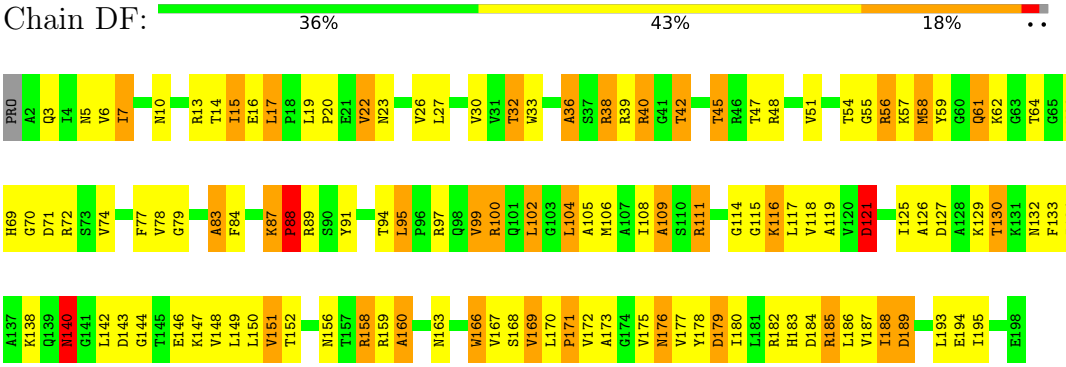
• Molecule 26: 50S ribosomal protein L4

Chain BF:



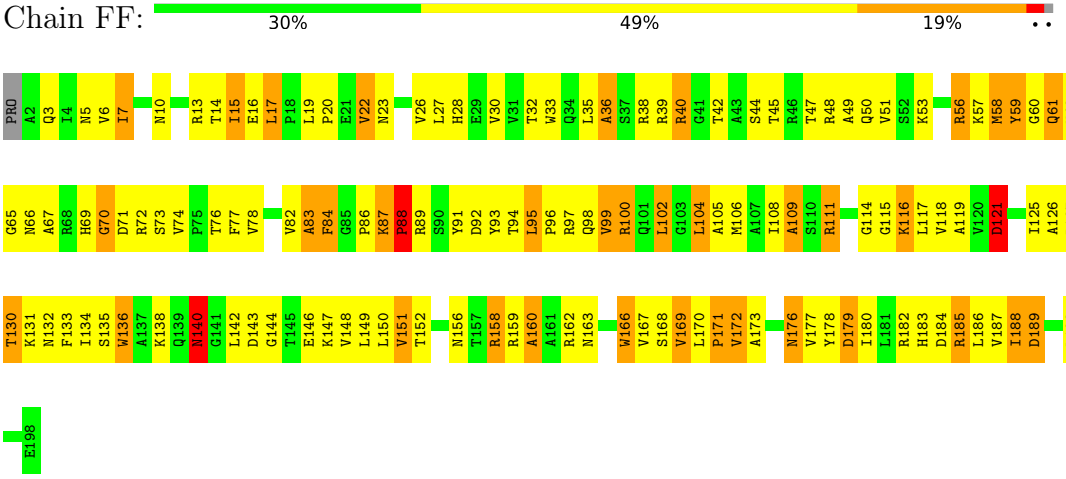
• Molecule 26: 50S ribosomal protein L4

Chain DF:



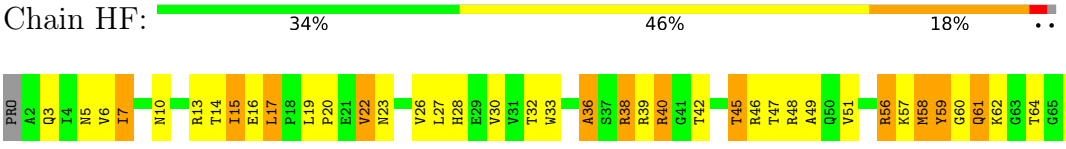
• Molecule 26: 50S ribosomal protein L4

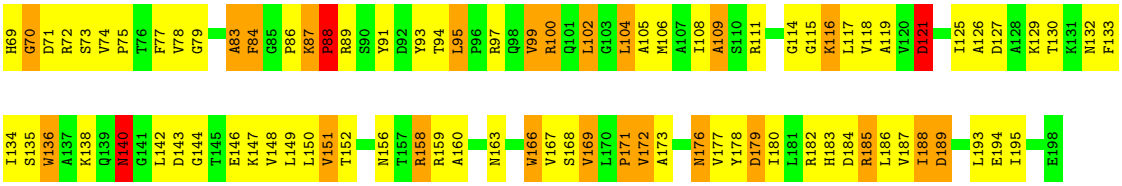
Chain FF:



• Molecule 26: 50S ribosomal protein L4

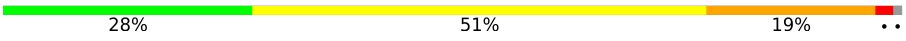
Chain HF:

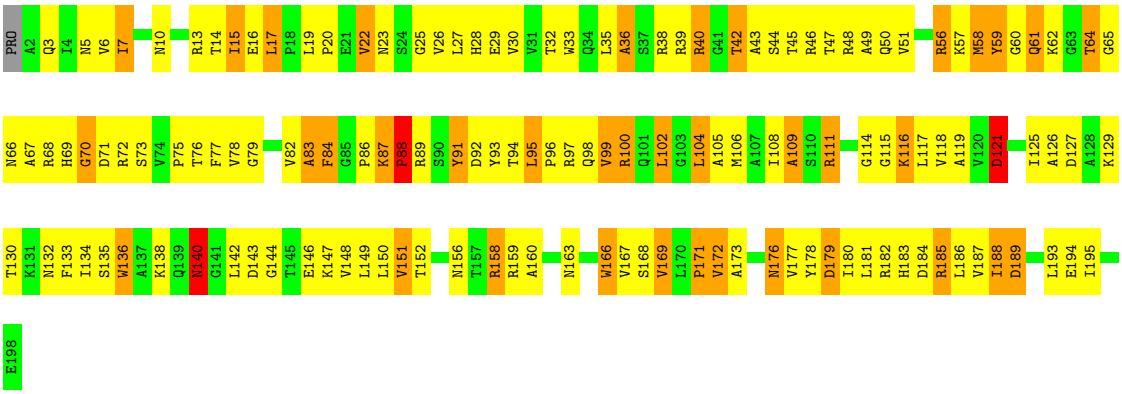




• Molecule 26: 50S ribosomal protein L4

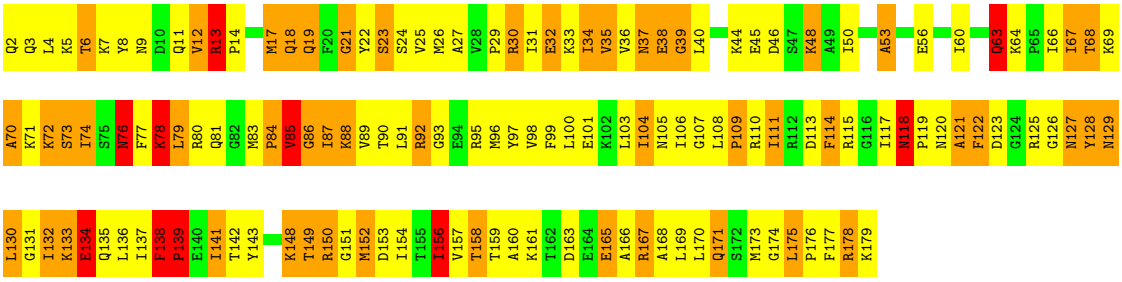
Chain JF:





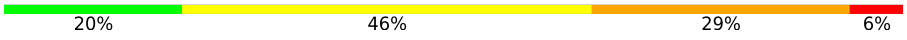
• Molecule 27: 50S ribosomal protein L5

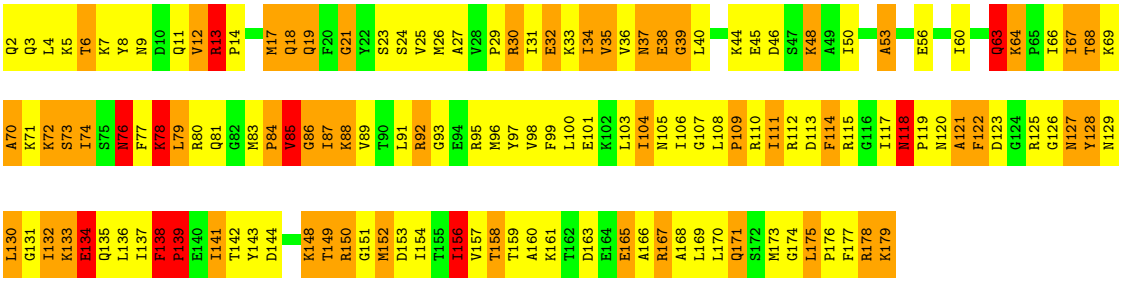
Chain BG:



• Molecule 27: 50S ribosomal protein L5

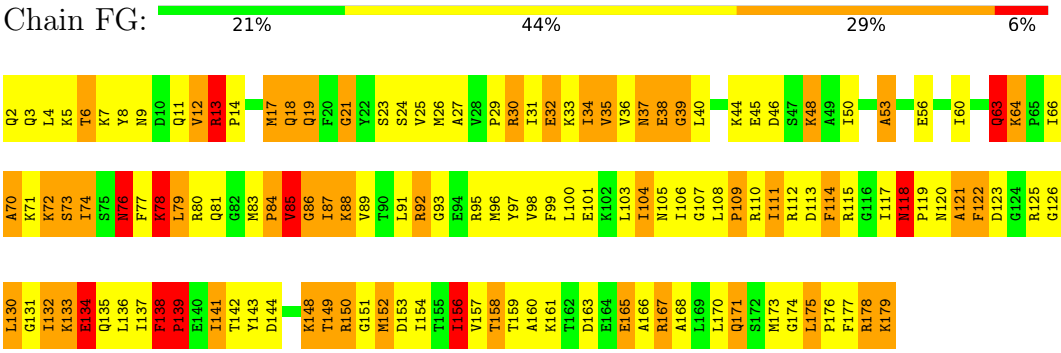
Chain DG:





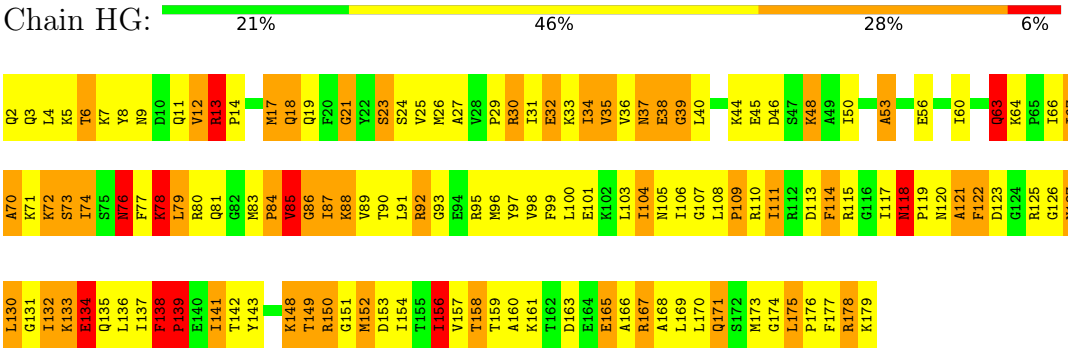
• Molecule 27: 50S ribosomal protein L5

Chain FG:



• Molecule 27: 50S ribosomal protein L5

Chain HG:

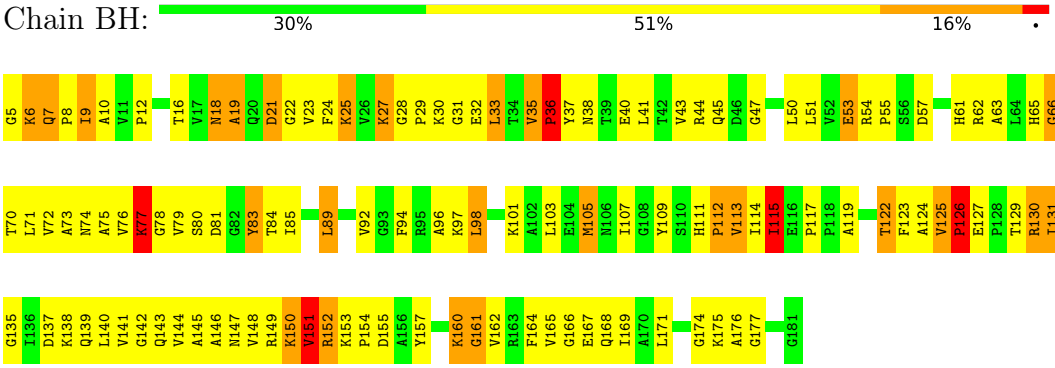


• Molecule 27: 50S ribosomal protein L5

Chain JG:

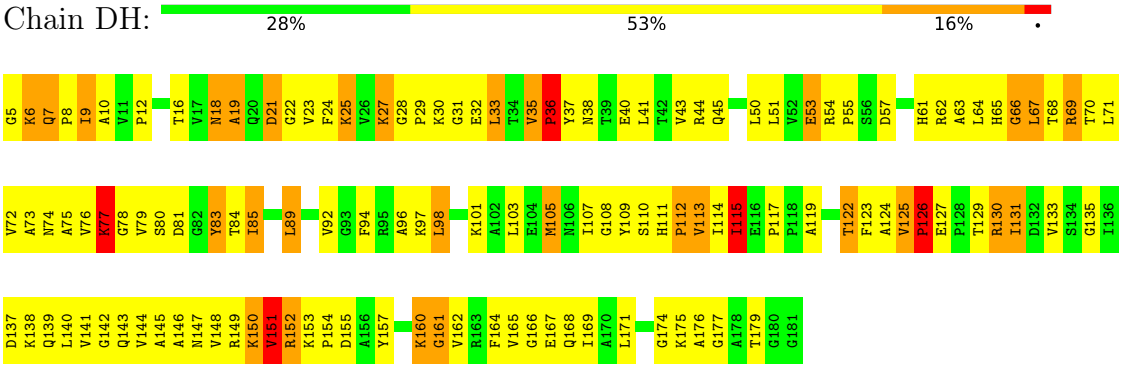
• Molecule 28: 50S ribosomal protein L6

Chain BH:



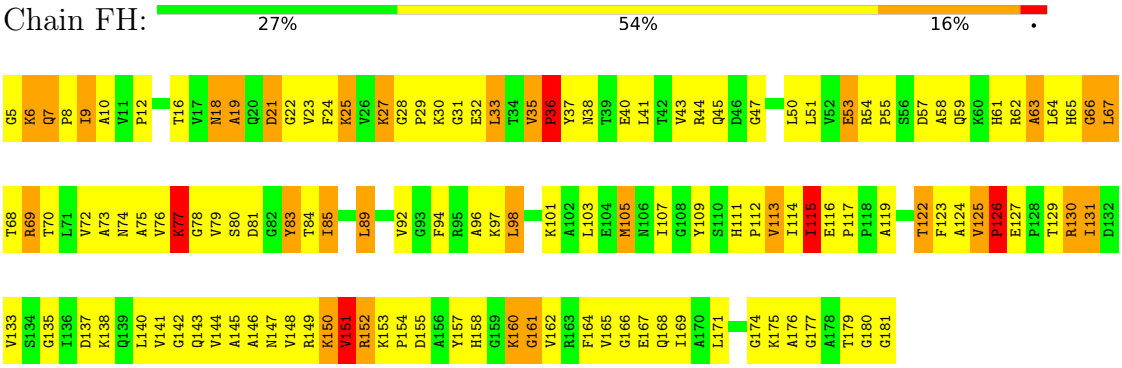
• Molecule 28: 50S ribosomal protein L6

Chain DH:



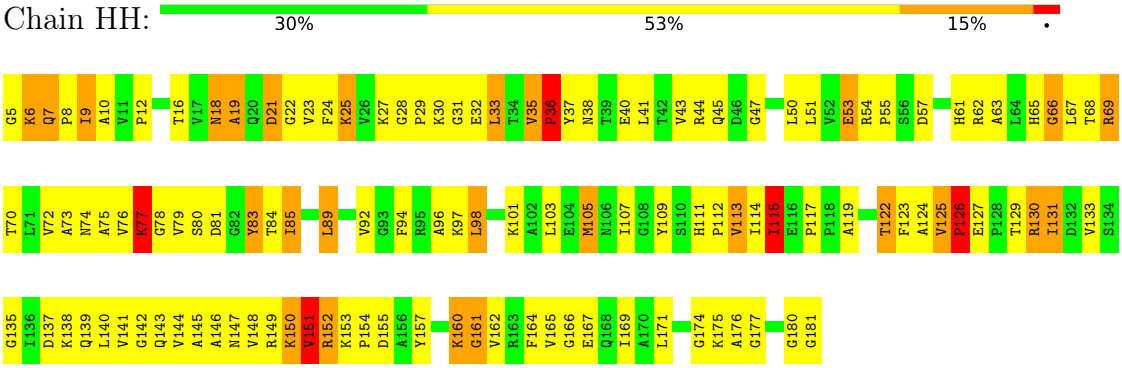
• Molecule 28: 50S ribosomal protein L6

Chain FH:



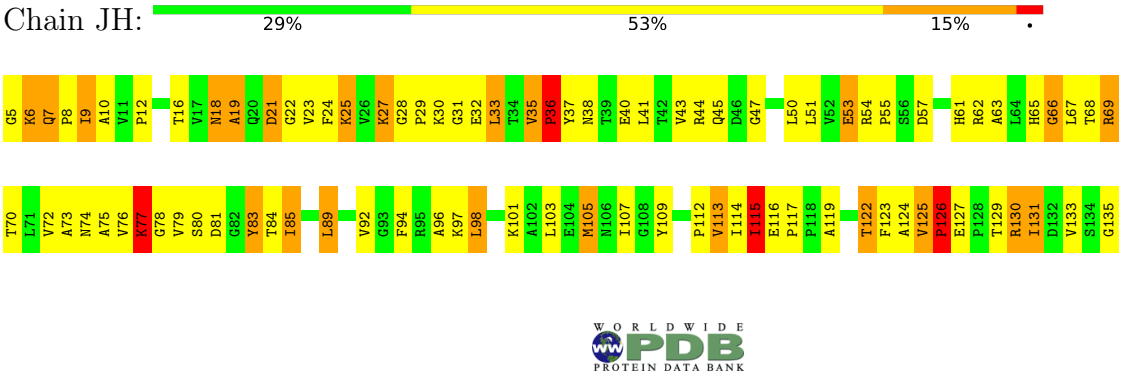
• Molecule 28: 50S ribosomal protein L6

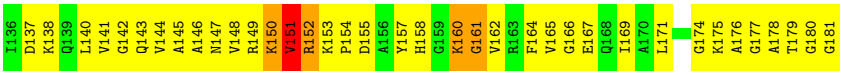
Chain HH:



• Molecule 28: 50S ribosomal protein L6

Chain JH:





• Molecule 29: 50S ribosomal protein L9

Chain BI:

• Molecule 29: 50S ribosomal protein L9

Chain DI:

• Molecule 29: 50S ribosomal protein L9

Chain FI:

• Molecule 29: 50S ribosomal protein L9

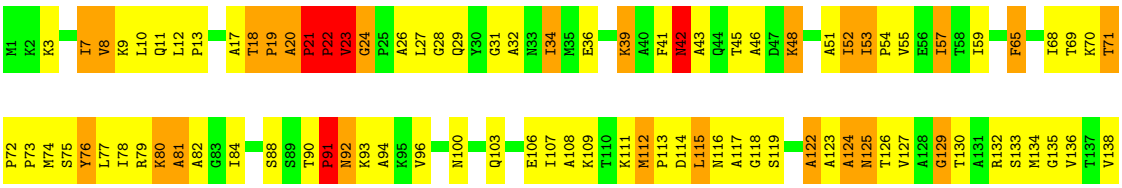
Chain HI:

• Molecule 29: 50S ribosomal protein L9

Chain JI:

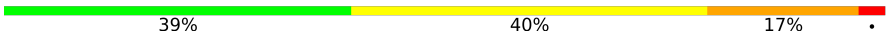
• Molecule 30: 50S ribosomal protein L11

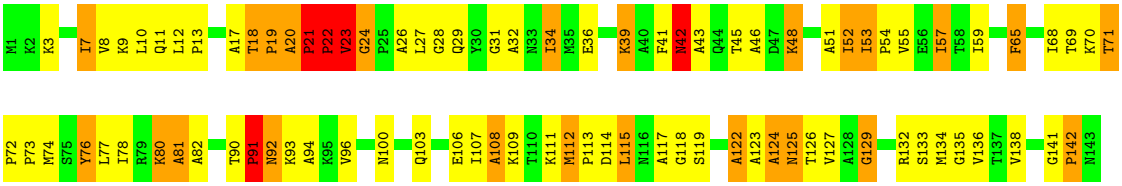
Chain BJ:



• Molecule 30: 50S ribosomal protein L11

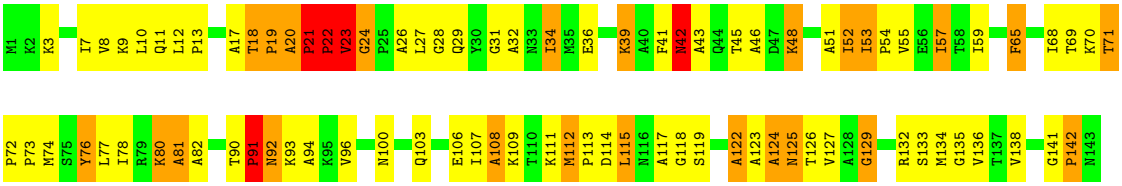
Chain DJ:





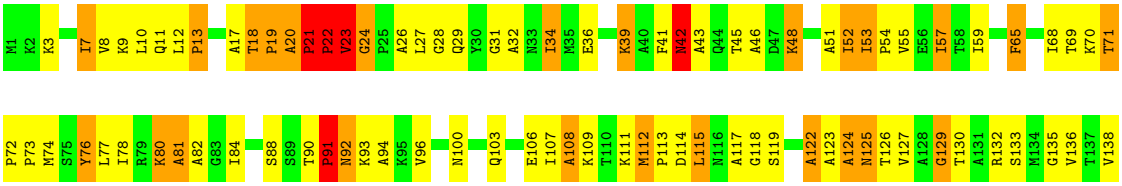
• Molecule 30: 50S ribosomal protein L11

Chain FJ:



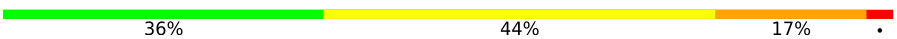
• Molecule 30: 50S ribosomal protein L11

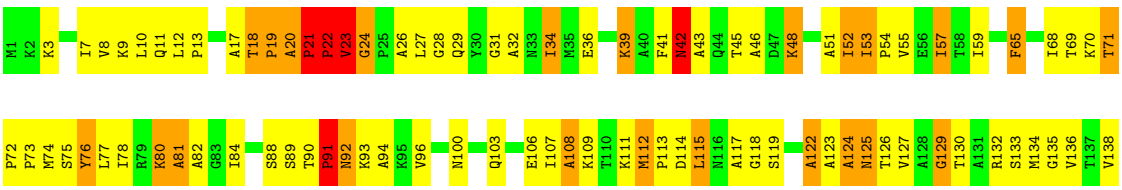
Chain HJ:



• Molecule 30: 50S ribosomal protein L11

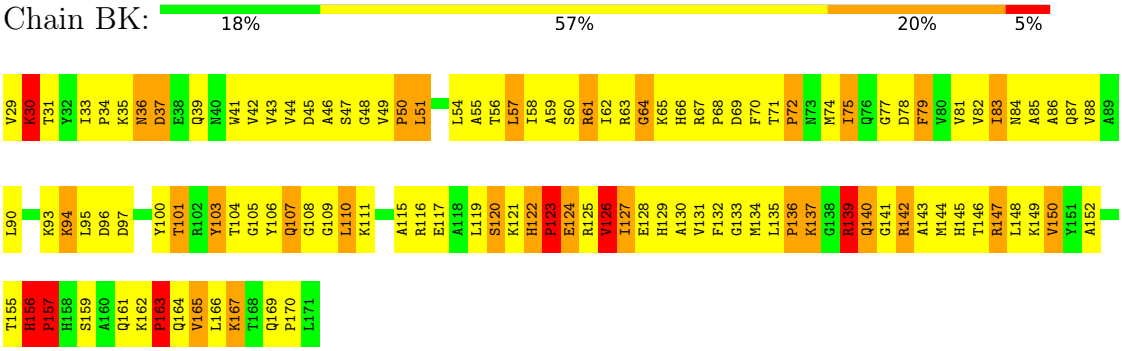
Chain JJ:





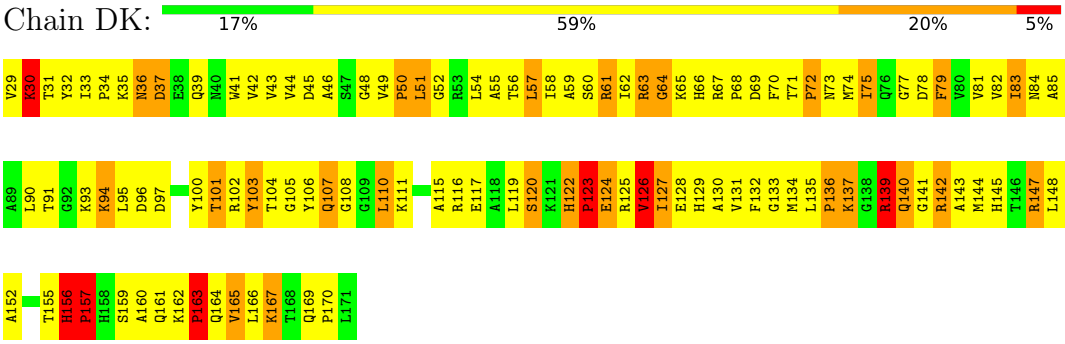
• Molecule 31: 50S ribosomal protein L13

Chain BK:



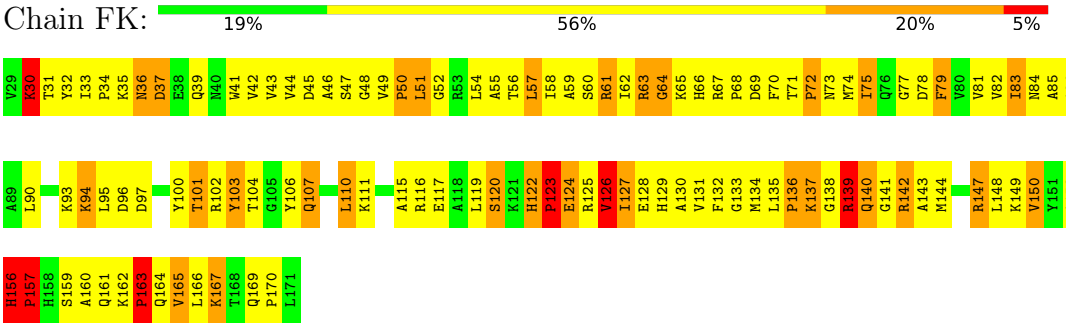
• Molecule 31: 50S ribosomal protein L13

Chain DK:



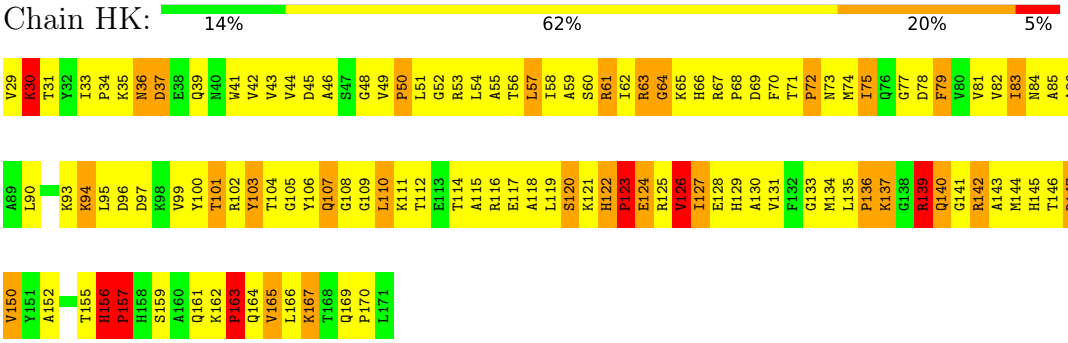
• Molecule 31: 50S ribosomal protein L13

Chain FK:



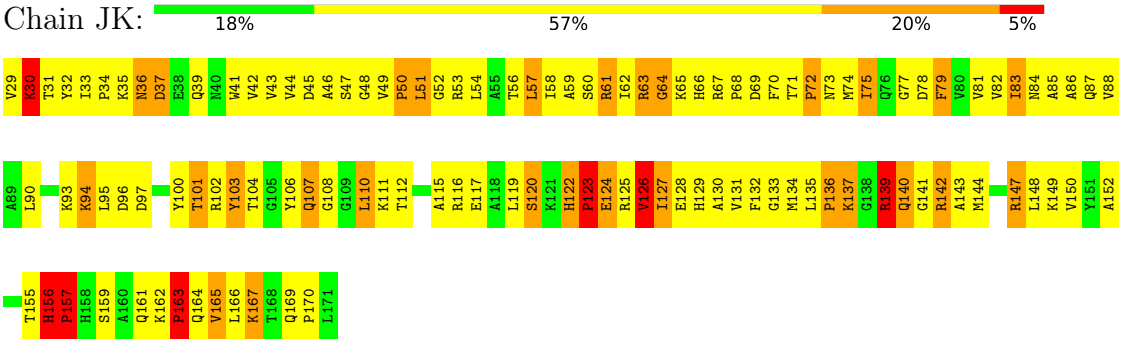
• Molecule 31: 50S ribosomal protein L13

Chain HK:



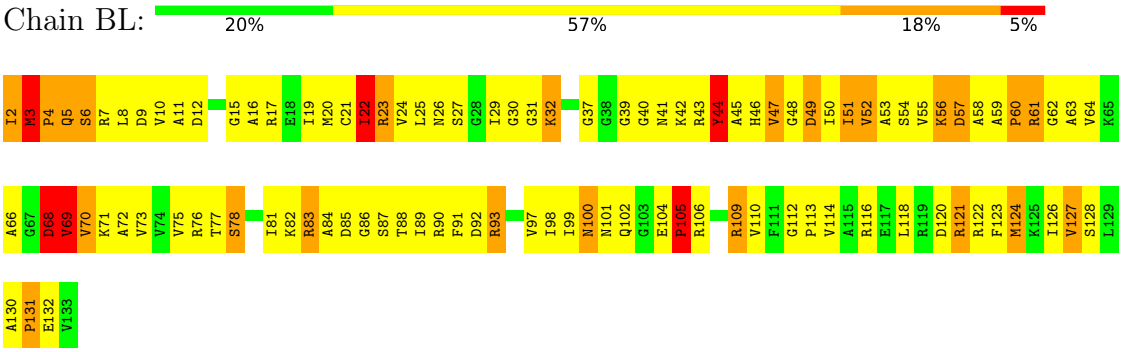
• Molecule 31: 50S ribosomal protein L13

Chain JK:



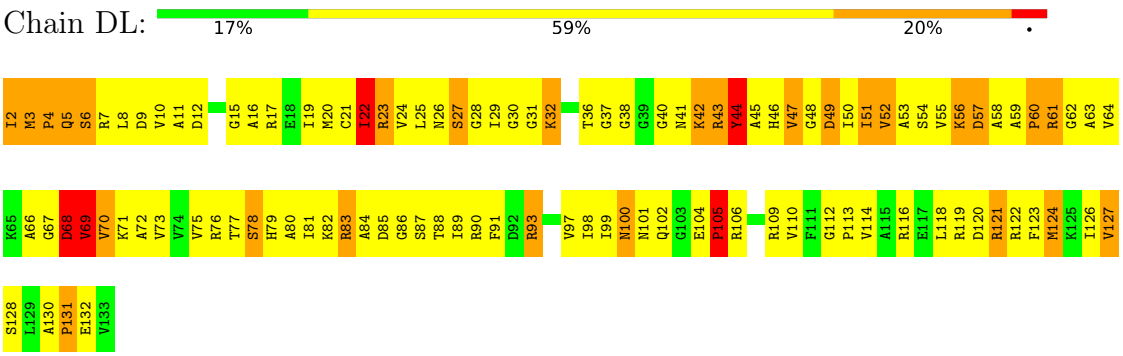
• Molecule 32: 50S ribosomal protein L14

Chain BL:



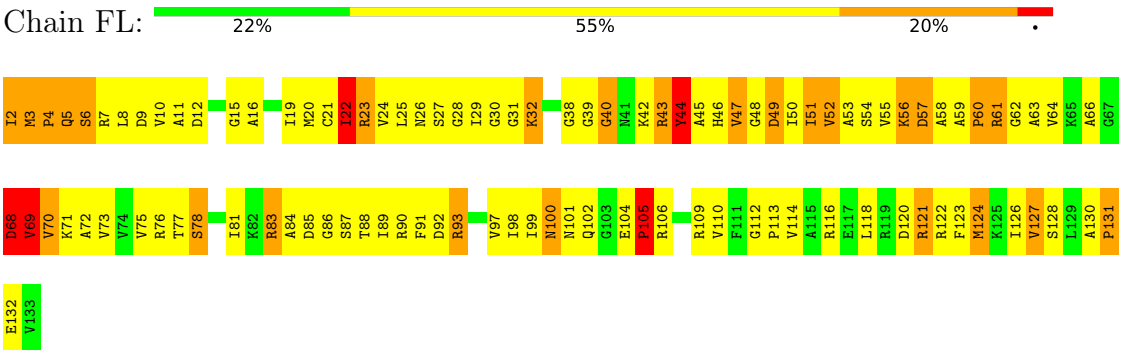
• Molecule 32: 50S ribosomal protein L14

Chain DL:



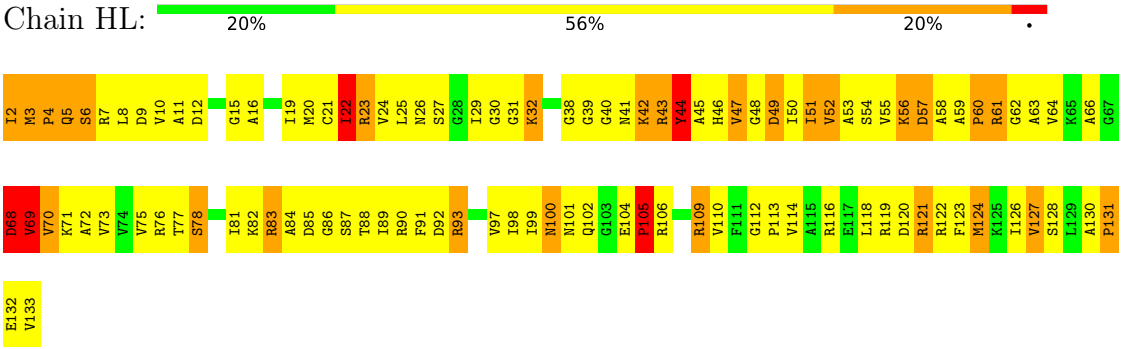
• Molecule 32: 50S ribosomal protein L14

Chain FL:



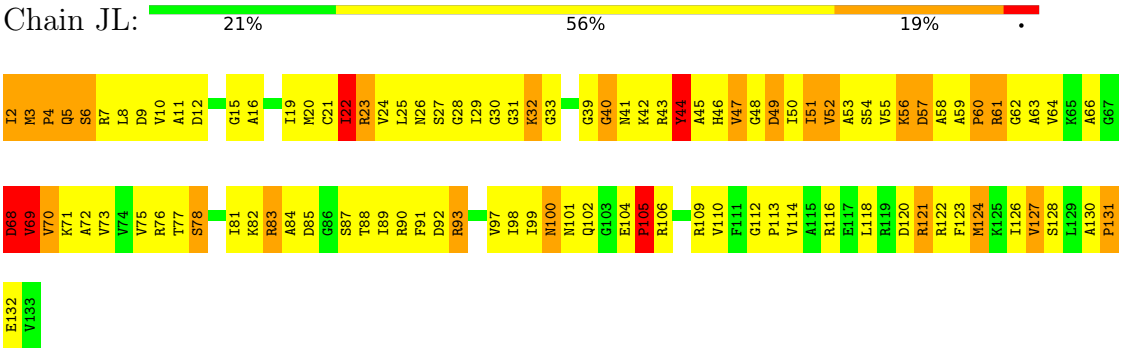
• Molecule 32: 50S ribosomal protein L14

Chain HL:



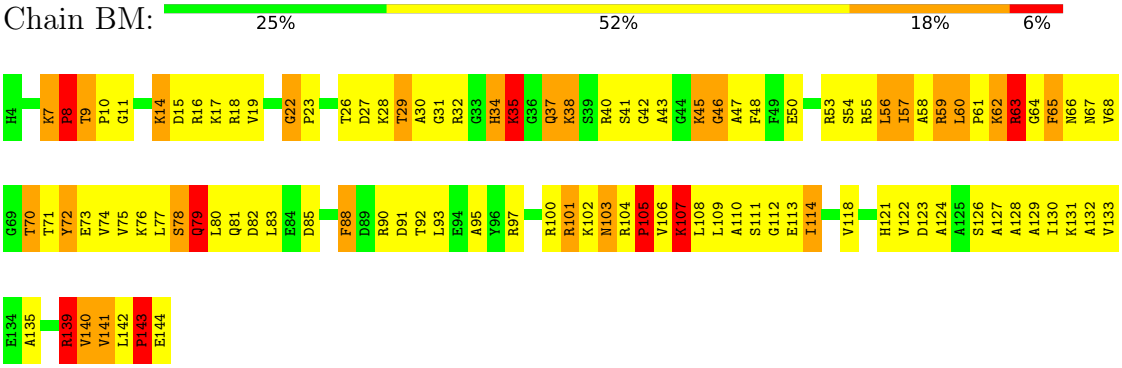
• Molecule 32: 50S ribosomal protein L14

Chain JL:



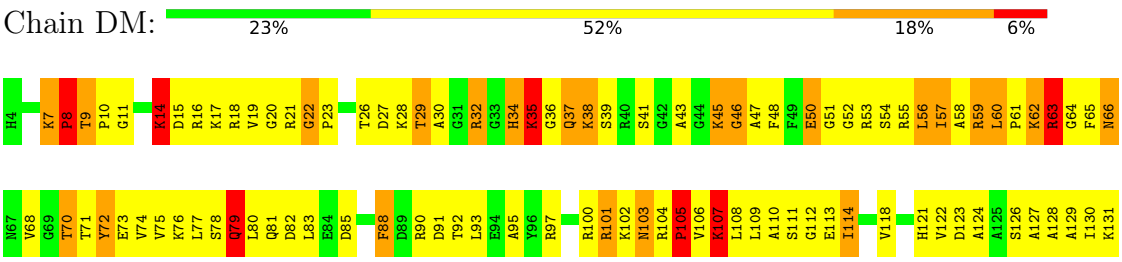
• Molecule 33: 50S ribosomal protein L15

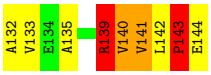
Chain BM:



• Molecule 33: 50S ribosomal protein L15

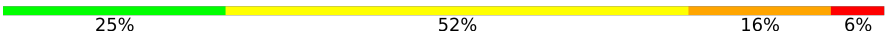
Chain DM:

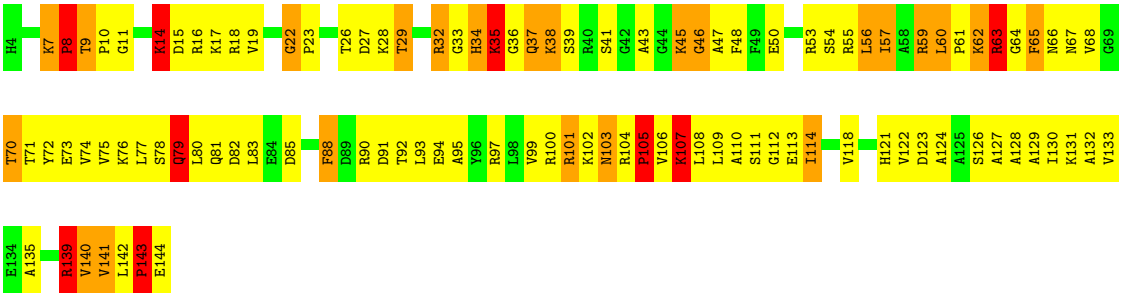




• Molecule 33: 50S ribosomal protein L15

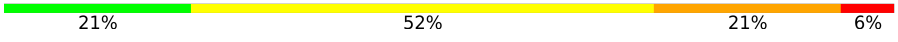
Chain FM:

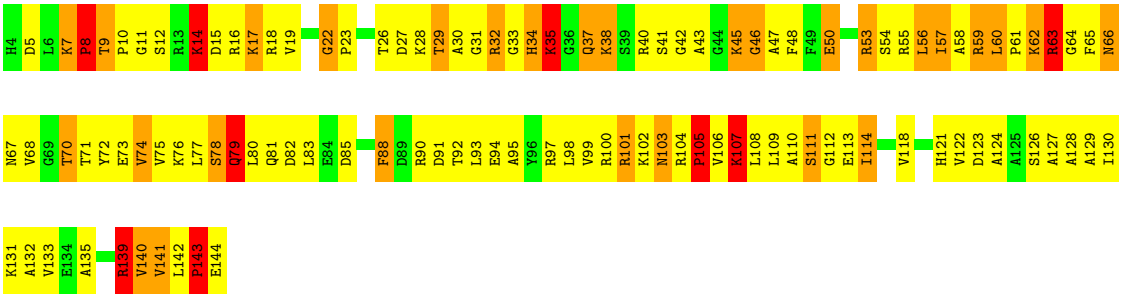




• Molecule 33: 50S ribosomal protein L15

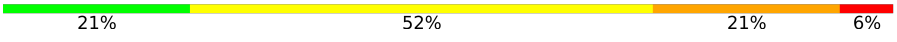
Chain HM:

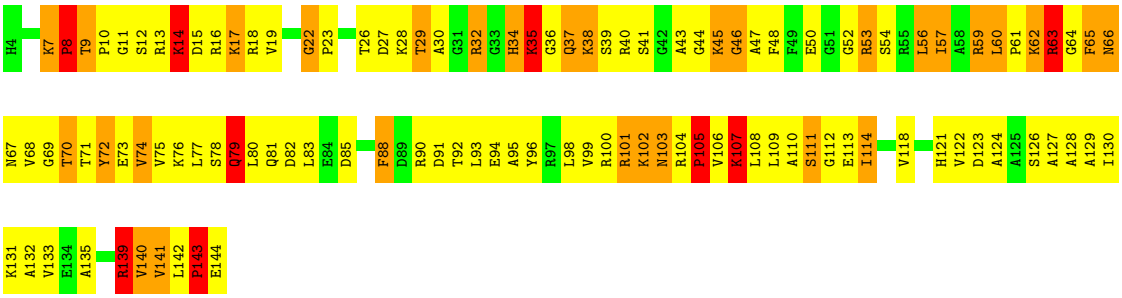




• Molecule 33: 50S ribosomal protein L15

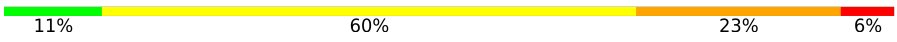
Chain JM:

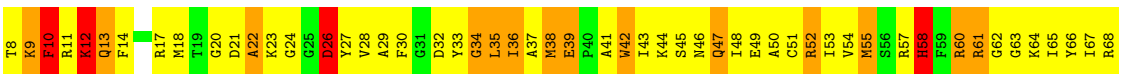




• Molecule 34: 50S ribosomal protein L16

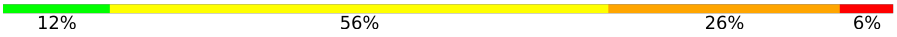
Chain BN:





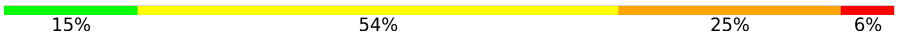
• Molecule 34: 50S ribosomal protein L16

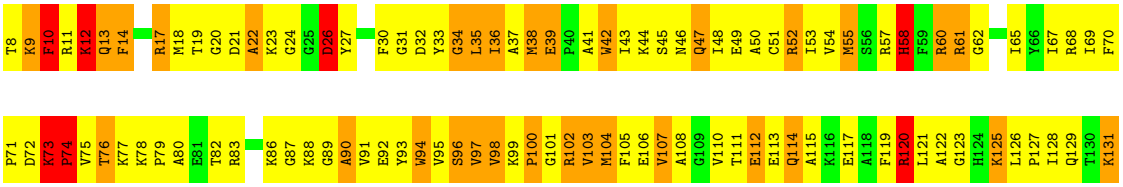
Chain DN:



• Molecule 34: 50S ribosomal protein L16

Chain FN:



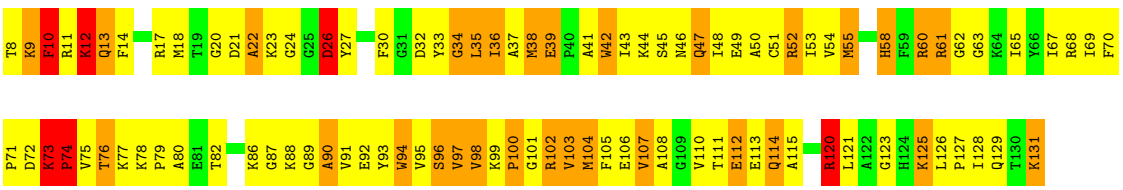


• Molecule 34: 50S ribosomal protein L16

Chain HN:

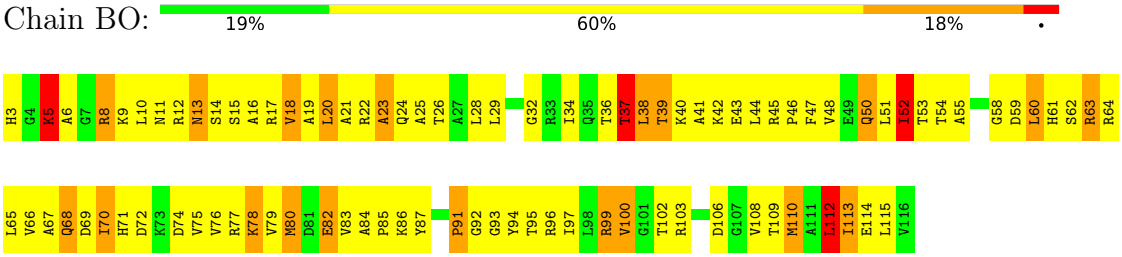
• Molecule 34: 50S ribosomal protein L16

Chain JN:



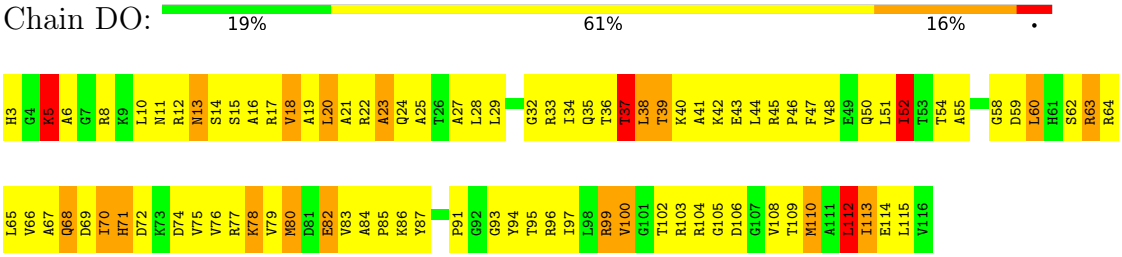
• Molecule 35: 50S ribosomal protein L17

Chain BO:



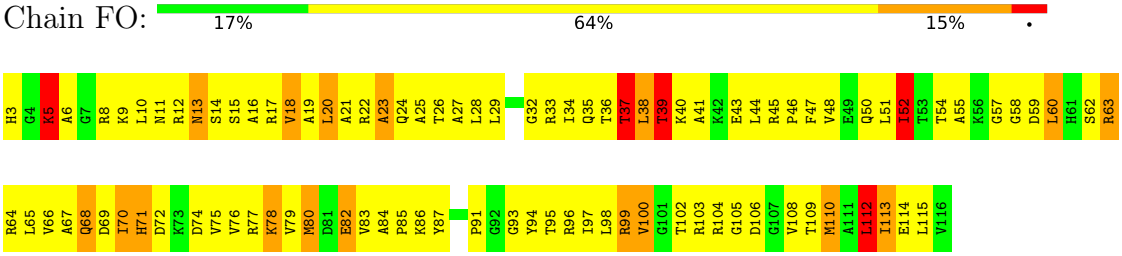
• Molecule 35: 50S ribosomal protein L17

Chain DO:



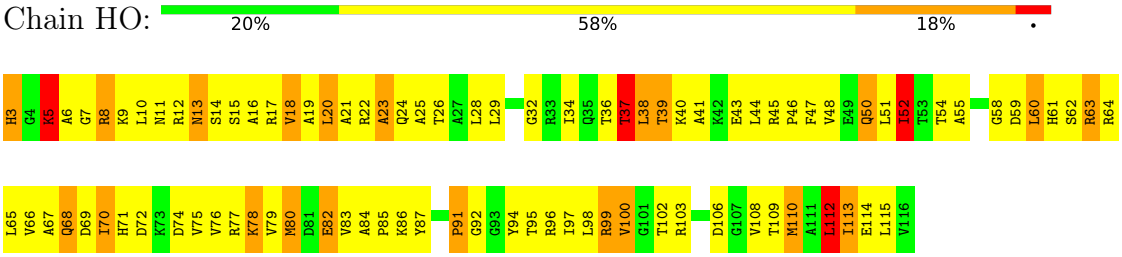
• Molecule 35: 50S ribosomal protein L17

Chain FO:



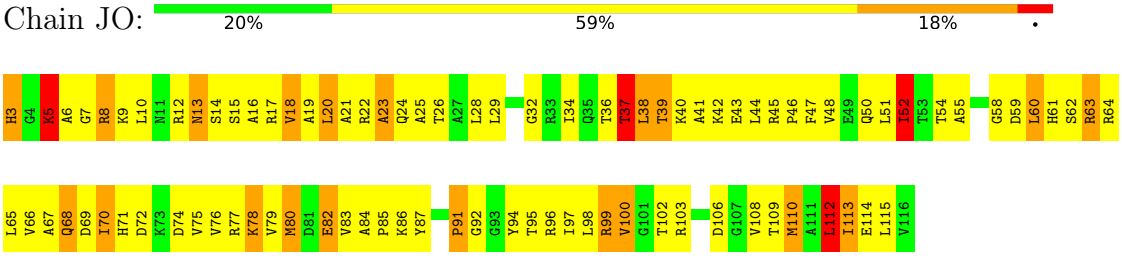
• Molecule 35: 50S ribosomal protein L17

Chain HO:



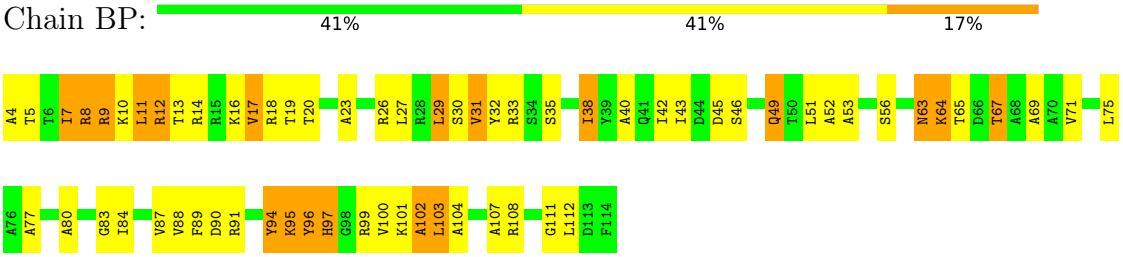
• Molecule 35: 50S ribosomal protein L17

Chain JO:



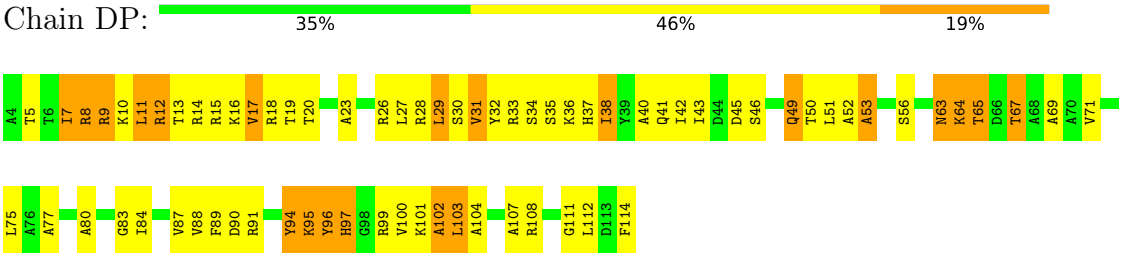
• Molecule 36: 50S ribosomal protein L18

Chain BP:



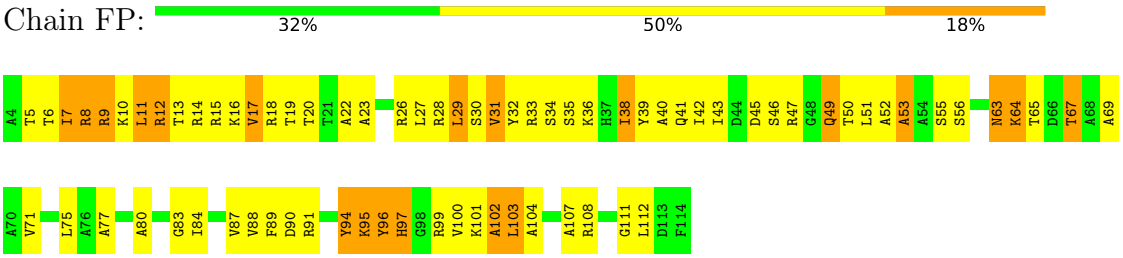
• Molecule 36: 50S ribosomal protein L18

Chain DP:



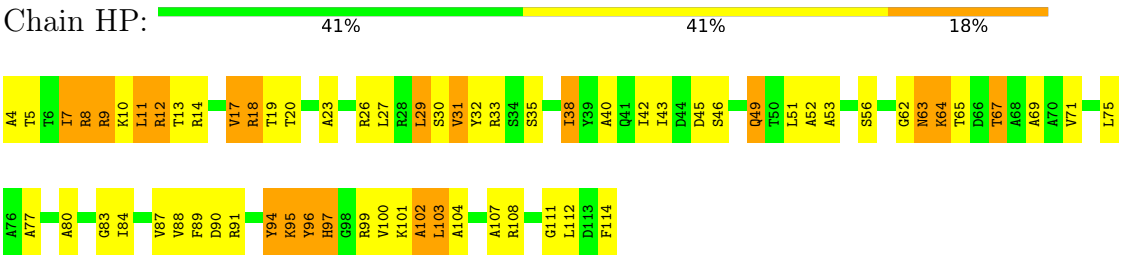
• Molecule 36: 50S ribosomal protein L18

Chain FP:



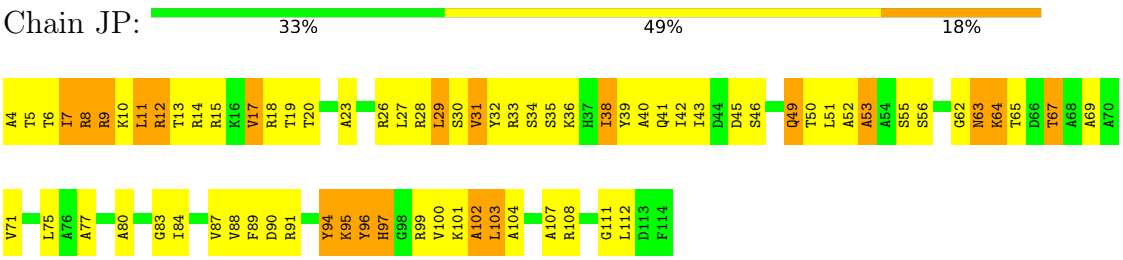
• Molecule 36: 50S ribosomal protein L18

Chain HP:



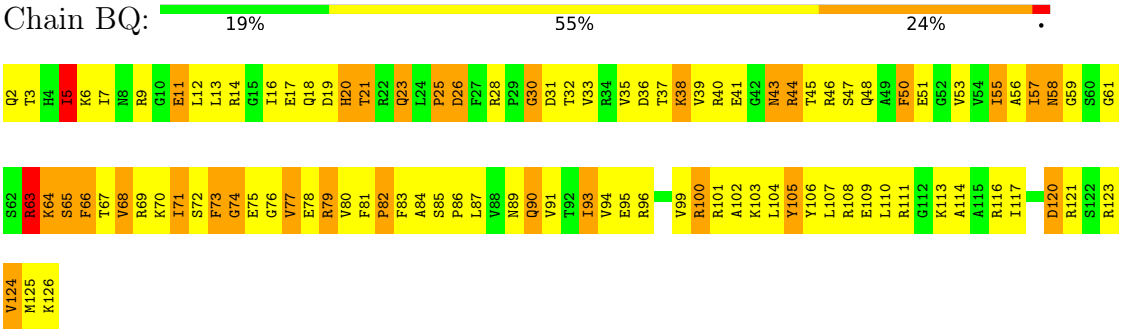
• Molecule 36: 50S ribosomal protein L18

Chain JP:



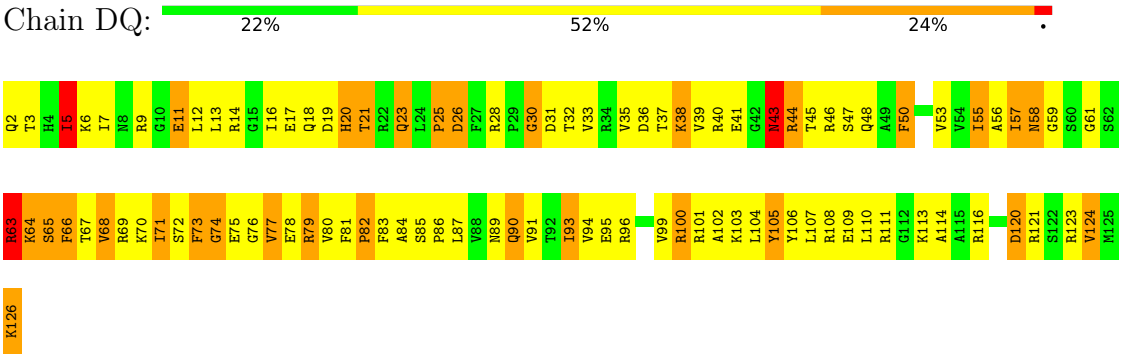
• Molecule 37: 50S ribosomal protein L19

Chain BQ:



• Molecule 37: 50S ribosomal protein L19

Chain DQ:

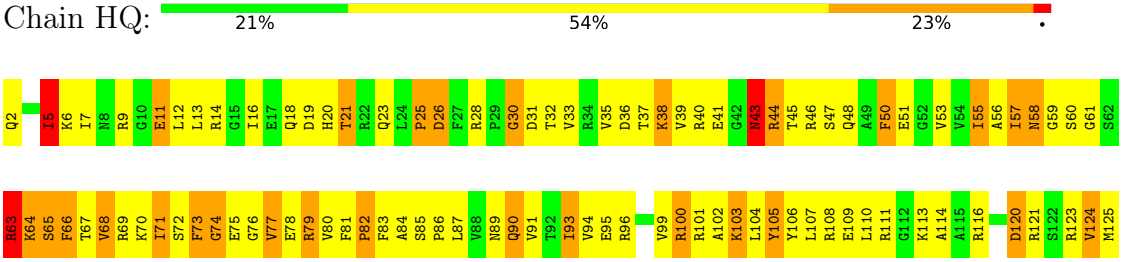


• Molecule 37: 50S ribosomal protein L19

Chain FQ:

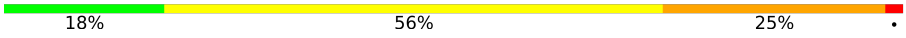
• Molecule 37: 50S ribosomal protein L19

Chain HQ:



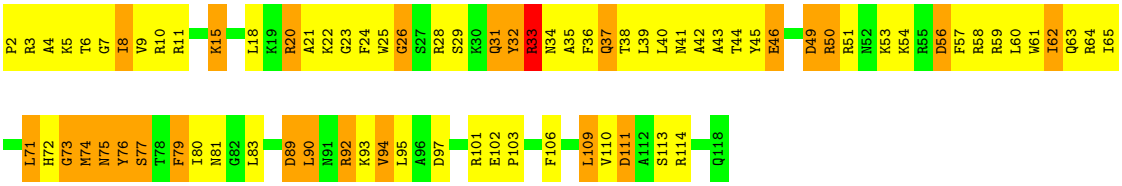
• Molecule 37: 50S ribosomal protein L19

Chain JQ:



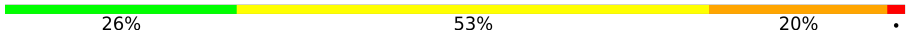
• Molecule 38: 50S ribosomal protein L20

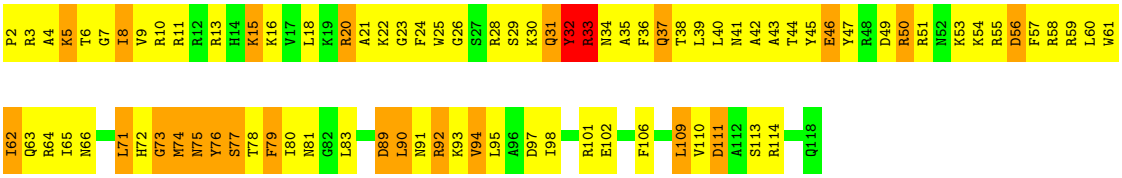
Chain BR:



• Molecule 38: 50S ribosomal protein L20

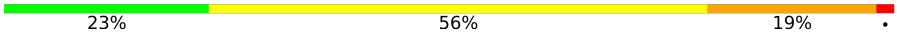
Chain DR:

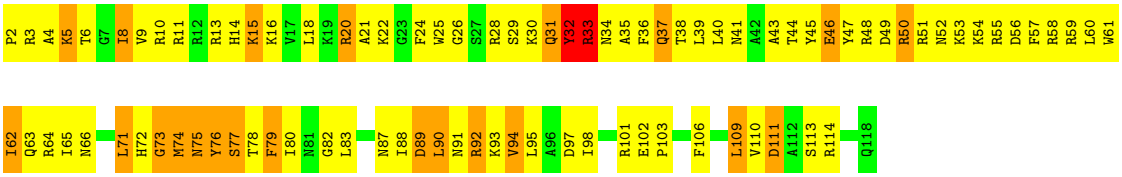




• Molecule 38: 50S ribosomal protein L20

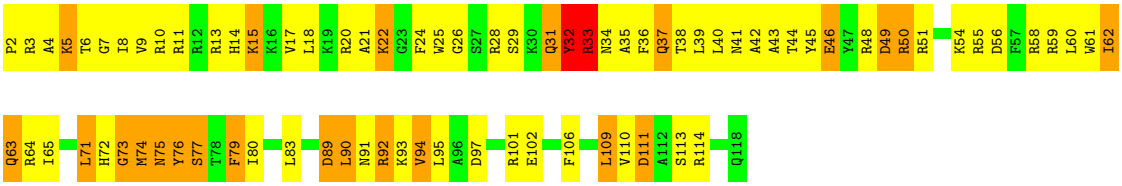
Chain FR:





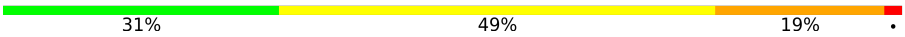
• Molecule 38: 50S ribosomal protein L20

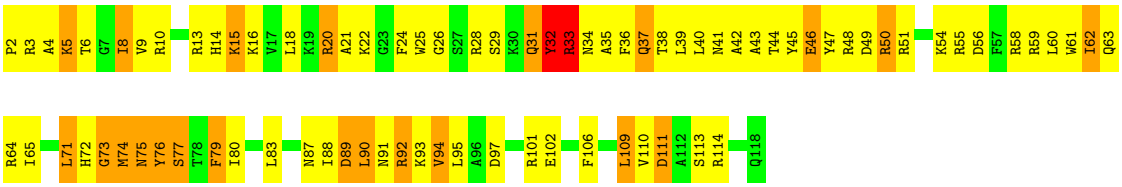
Chain HR:



• Molecule 38: 50S ribosomal protein L20

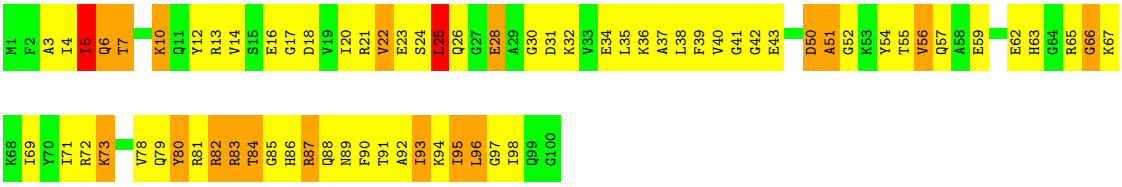
Chain JR:





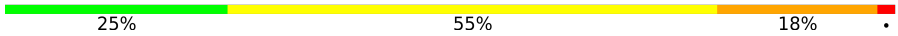
• Molecule 39: 50S ribosomal protein L21

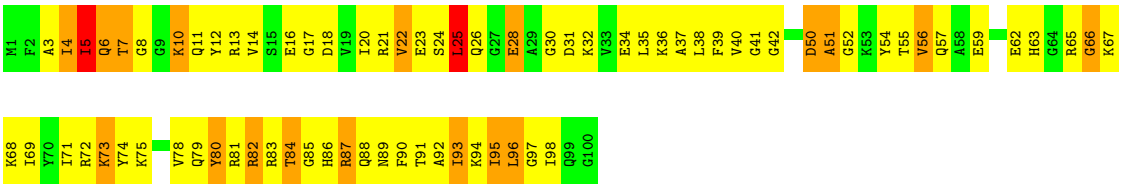
Chain BS:



• Molecule 39: 50S ribosomal protein L21

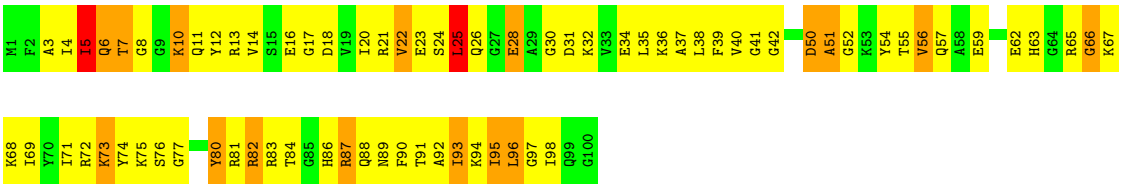
Chain DS:





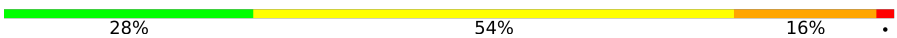
• Molecule 39: 50S ribosomal protein L21

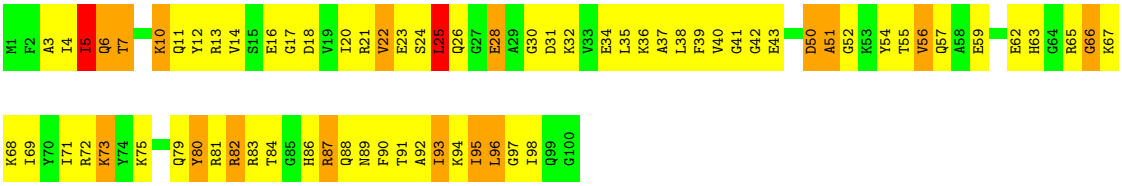
Chain FS:



• Molecule 39: 50S ribosomal protein L21

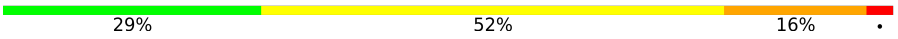
Chain HS:

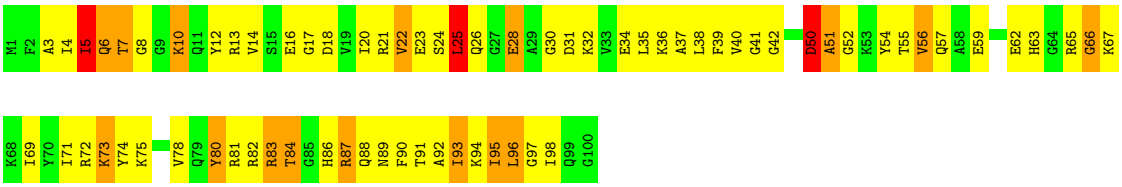




• Molecule 39: 50S ribosomal protein L21

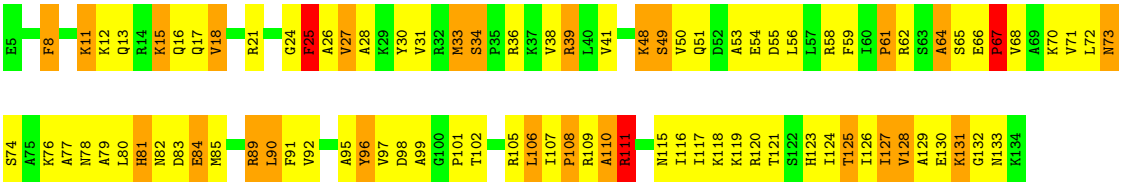
Chain JS:





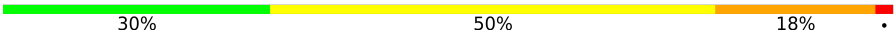
• Molecule 40: 50S ribosomal protein L22

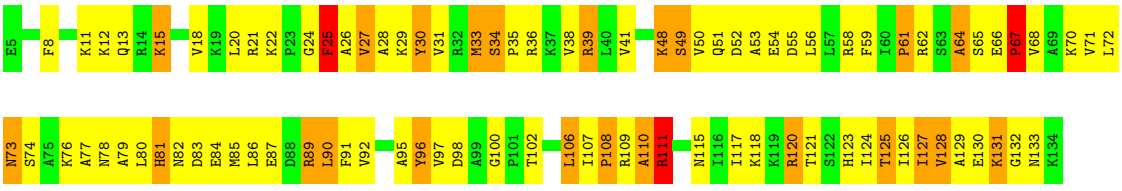
Chain BT:



• Molecule 40: 50S ribosomal protein L22

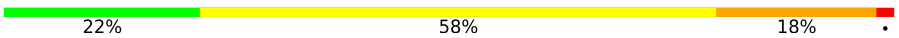
Chain DT:

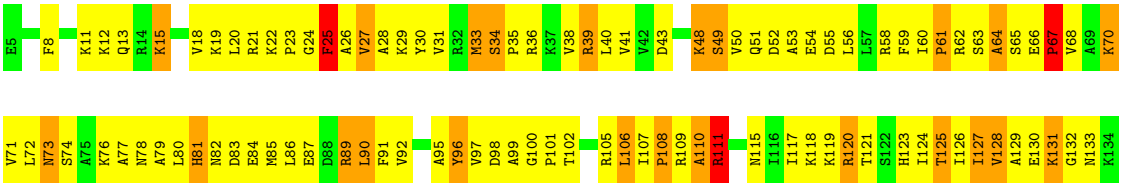




• Molecule 40: 50S ribosomal protein L22

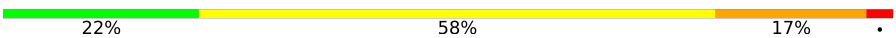
Chain FT:

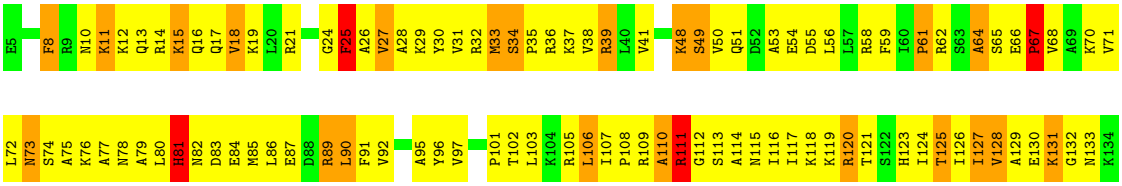




• Molecule 40: 50S ribosomal protein L22

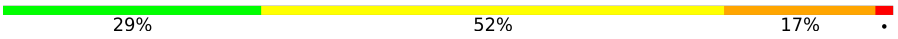
Chain HT:

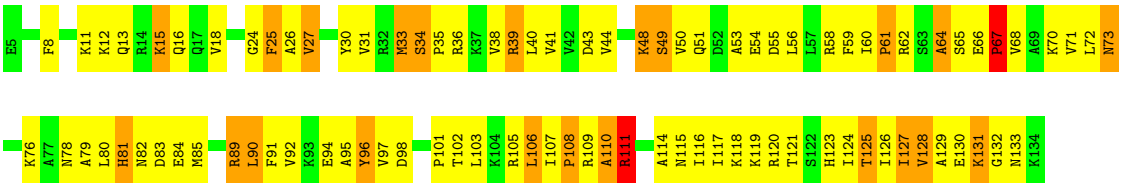




• Molecule 40: 50S ribosomal protein L22

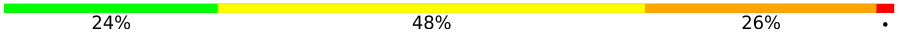
Chain JT:

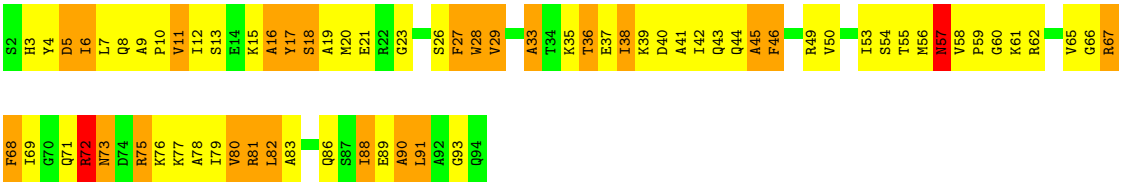




• Molecule 41: 50S ribosomal protein L23

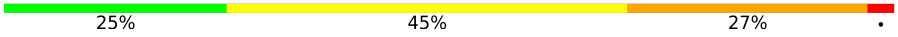
Chain BU:

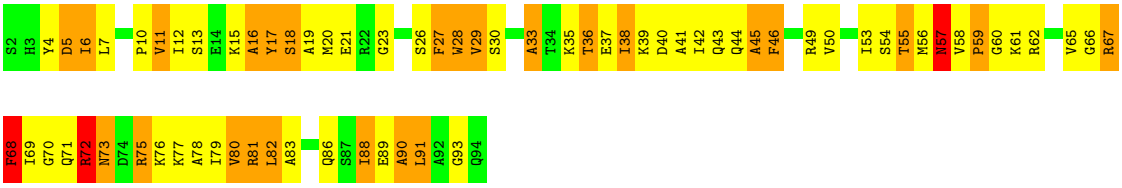




• Molecule 41: 50S ribosomal protein L23

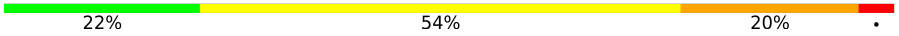
Chain DU:

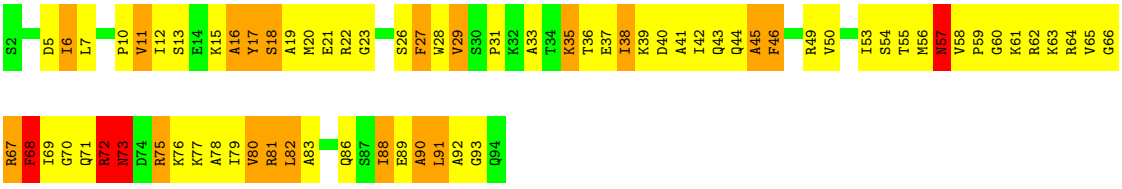




• Molecule 41: 50S ribosomal protein L23

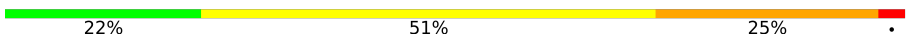
Chain FU:

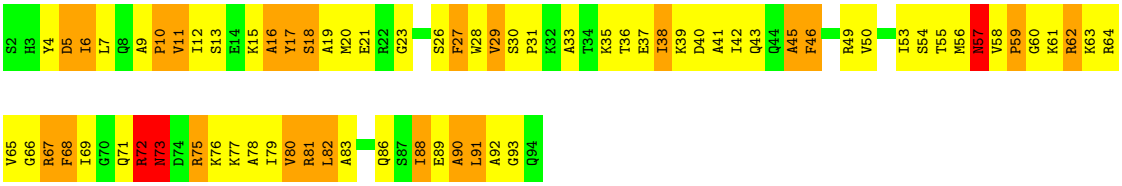




• Molecule 41: 50S ribosomal protein L23

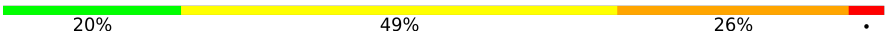
Chain HU:

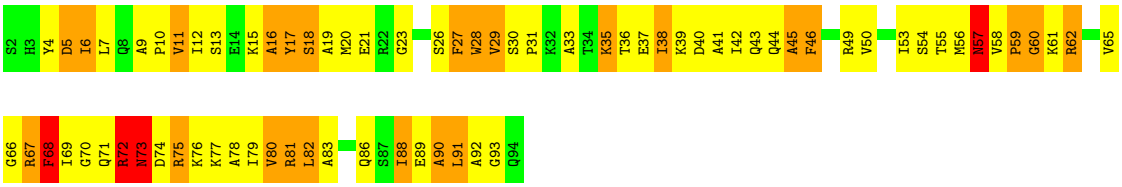




• Molecule 41: 50S ribosomal protein L23

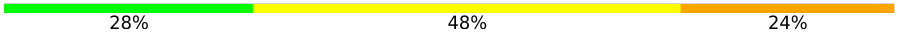
Chain JU:

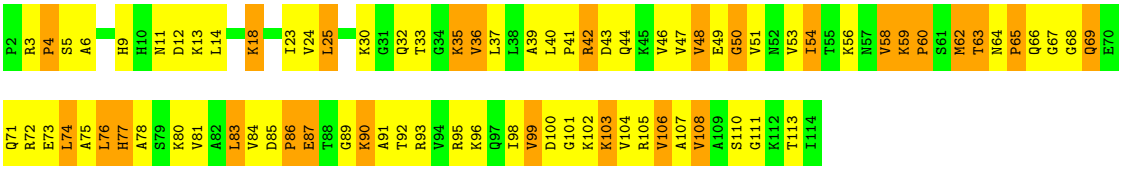




• Molecule 42: 50S ribosomal protein L24

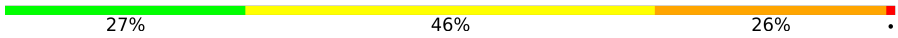
Chain BV:

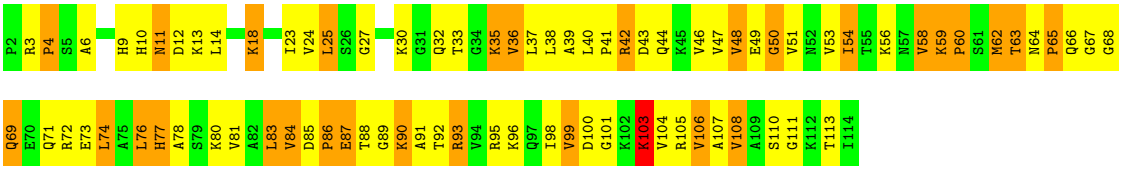




• Molecule 42: 50S ribosomal protein L24

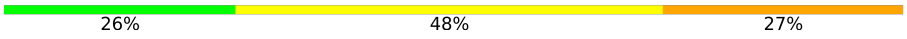
Chain DV:





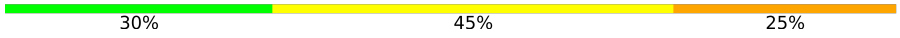
• Molecule 42: 50S ribosomal protein L24

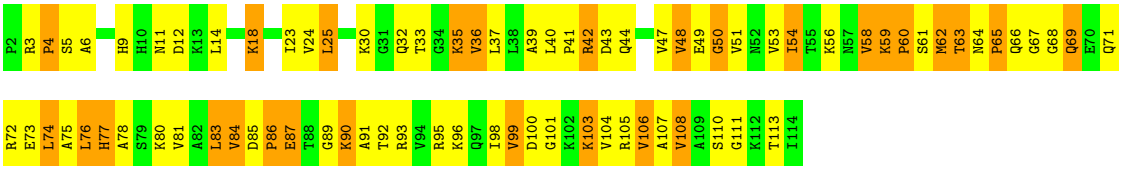
Chain FV:



• Molecule 42: 50S ribosomal protein L24

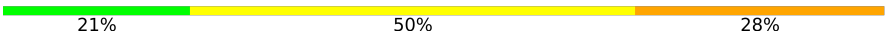
Chain HV:

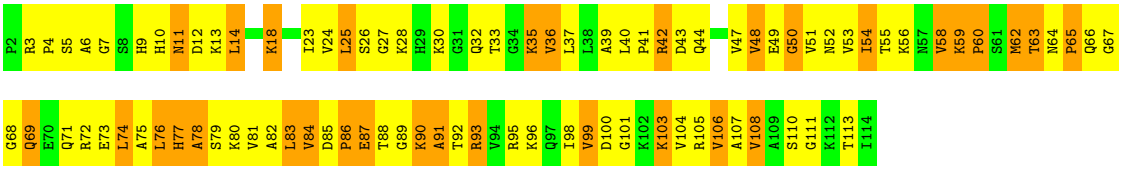




• Molecule 42: 50S ribosomal protein L24

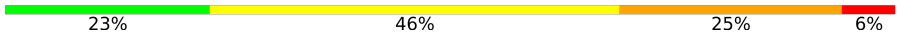
Chain JV:

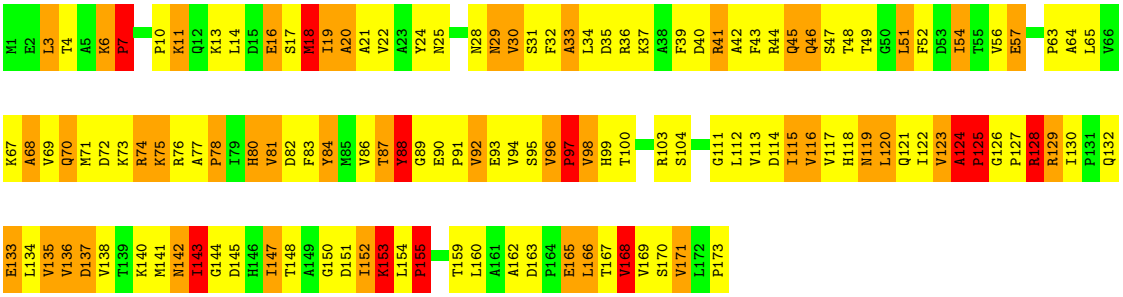




• Molecule 43: general stress protein Ctc

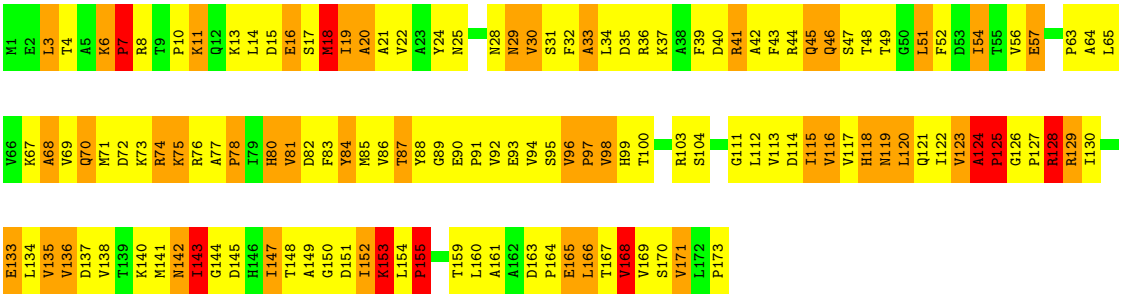
Chain BW:





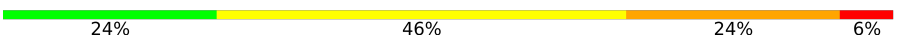
• Molecule 43: general stress protein Ctc

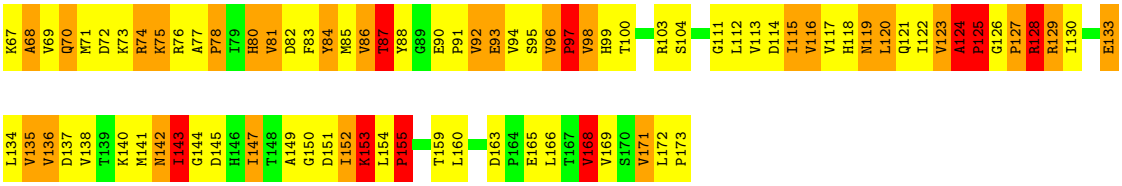
Chain DW:



• Molecule 43: general stress protein Ctc

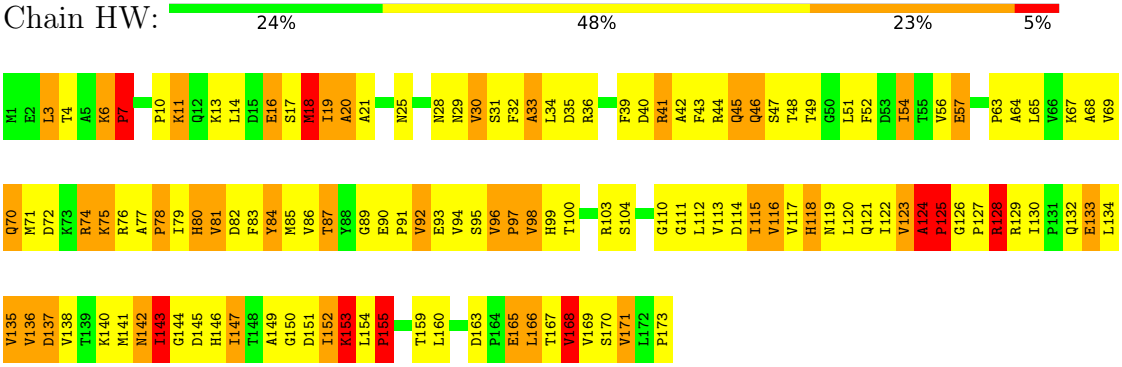
Chain FW:





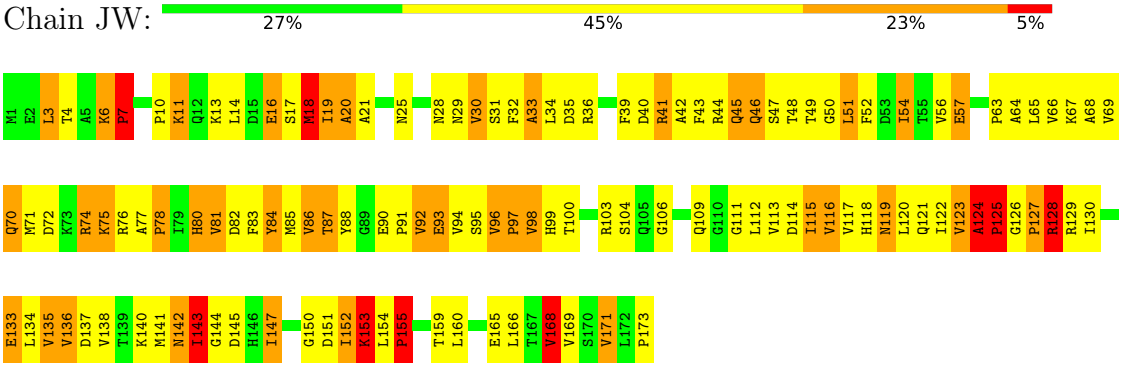
• Molecule 43: general stress protein Ctc

Chain HW:



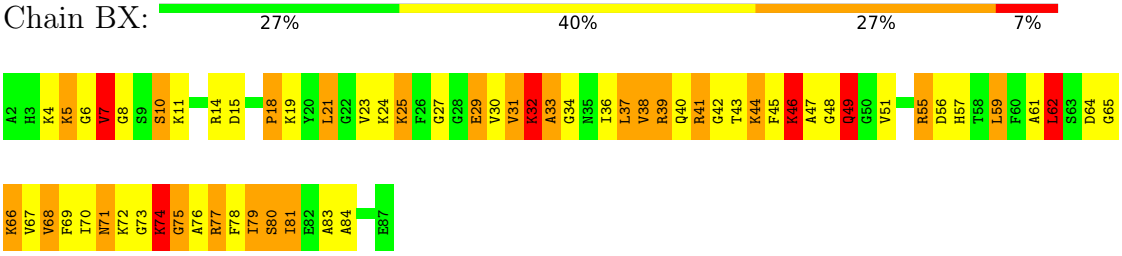
• Molecule 43: general stress protein Ctc

Chain JW:



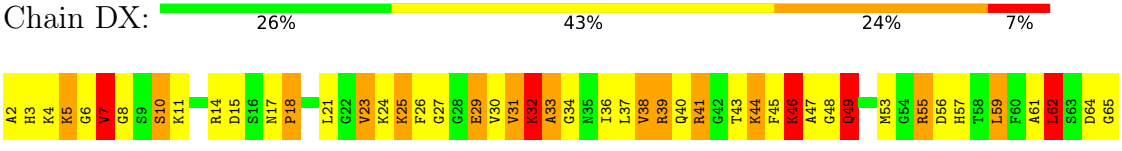
• Molecule 44: 50S ribosomal protein L27

Chain BX:



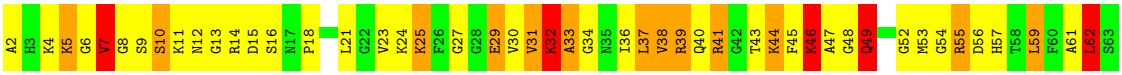
• Molecule 44: 50S ribosomal protein L27

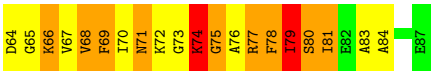
Chain DX:



• Molecule 44: 50S ribosomal protein L27

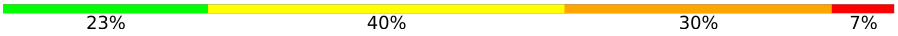
Chain FX:





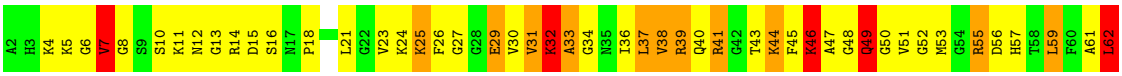
• Molecule 44: 50S ribosomal protein L27

Chain HX:



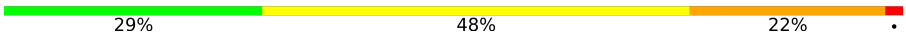
• Molecule 44: 50S ribosomal protein L27

Chain JX:



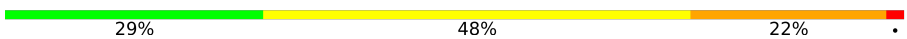
• Molecule 45: 50S ribosomal protein L29

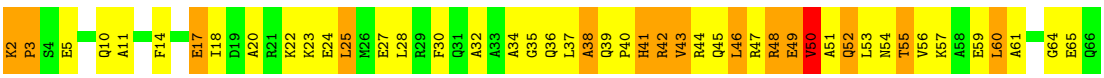
Chain BY:



• Molecule 45: 50S ribosomal protein L29

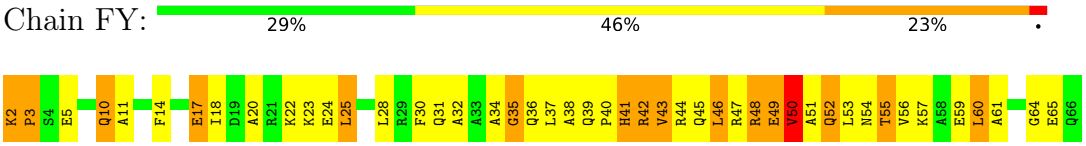
Chain DY:





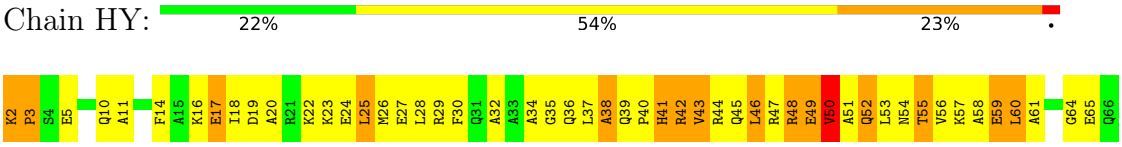
• Molecule 45: 50S ribosomal protein L29

Chain FY:



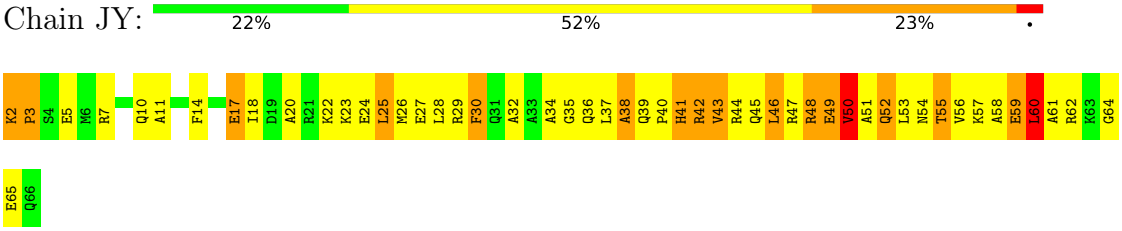
• Molecule 45: 50S ribosomal protein L29

Chain HY:



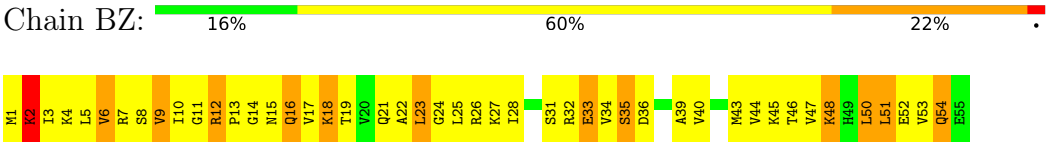
• Molecule 45: 50S ribosomal protein L29

Chain JY:



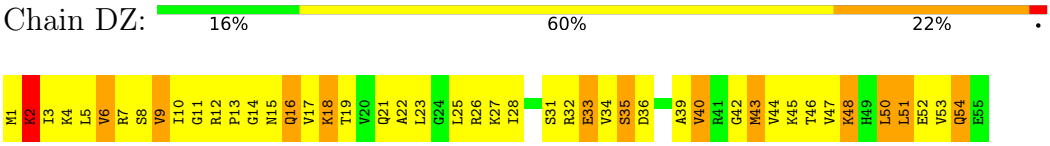
• Molecule 46: 50S ribosomal protein L30

Chain BZ:



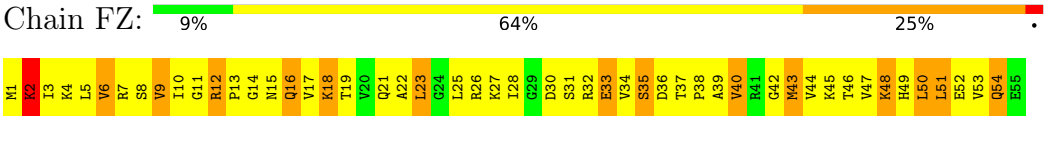
• Molecule 46: 50S ribosomal protein L30

Chain DZ:



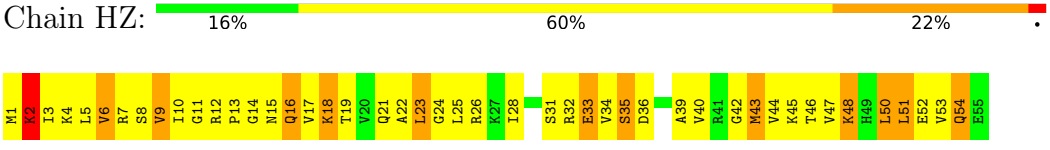
• Molecule 46: 50S ribosomal protein L30

Chain FZ:



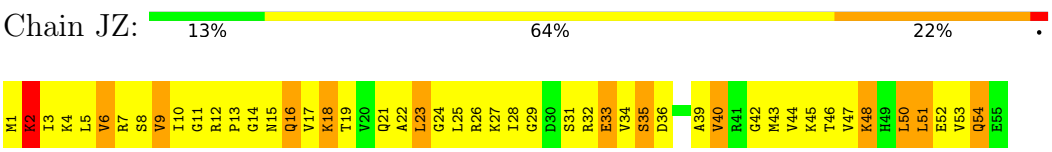
• Molecule 46: 50S ribosomal protein L30

Chain HZ:



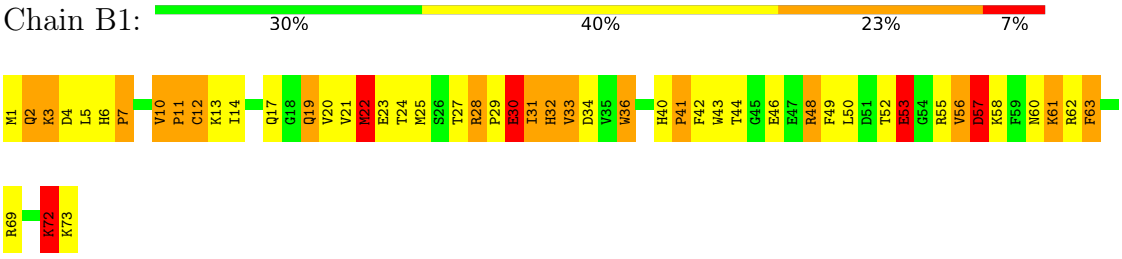
• Molecule 46: 50S ribosomal protein L30

Chain JZ:



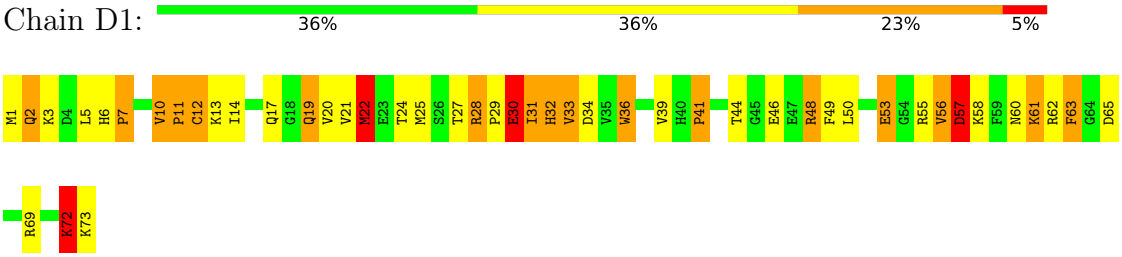
• Molecule 47: 50S ribosomal protein L31

Chain B1:



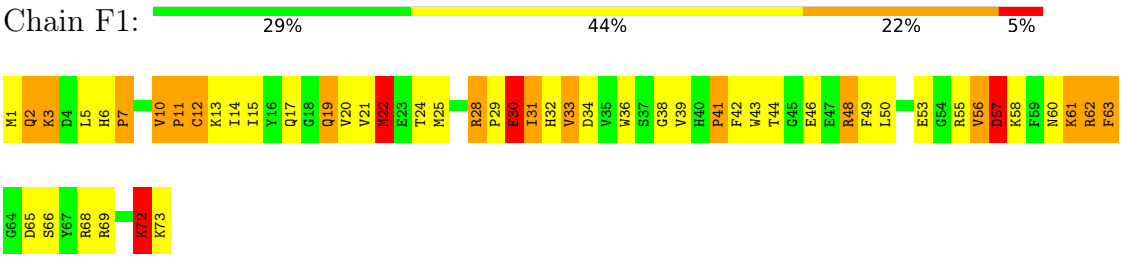
• Molecule 47: 50S ribosomal protein L31

Chain D1:



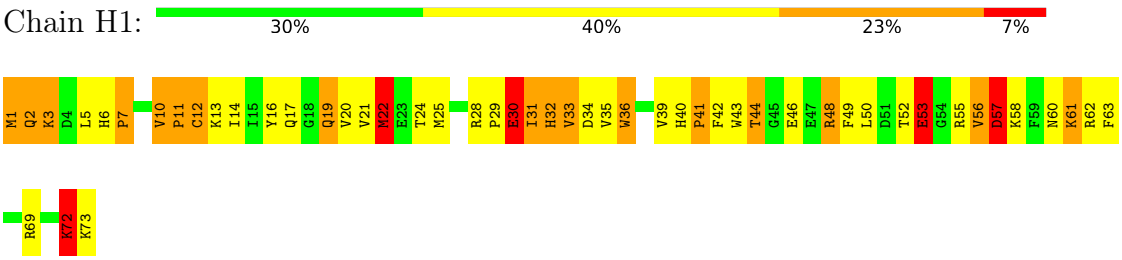
• Molecule 47: 50S ribosomal protein L31

Chain F1:



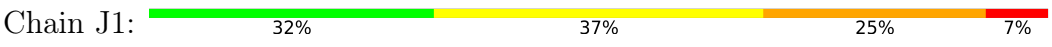
• Molecule 47: 50S ribosomal protein L31

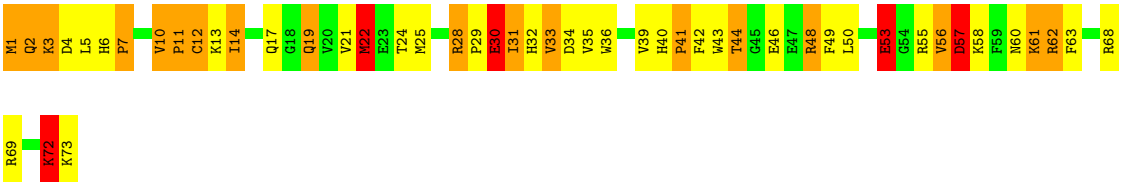
Chain H1:



• Molecule 47: 50S ribosomal protein L31

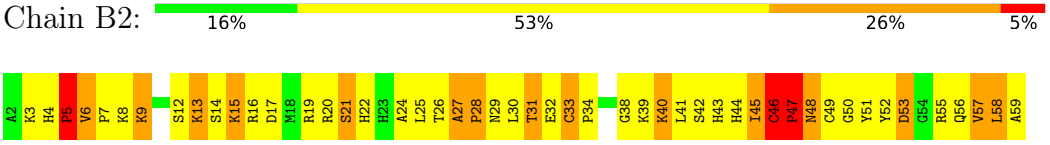
Chain J1:





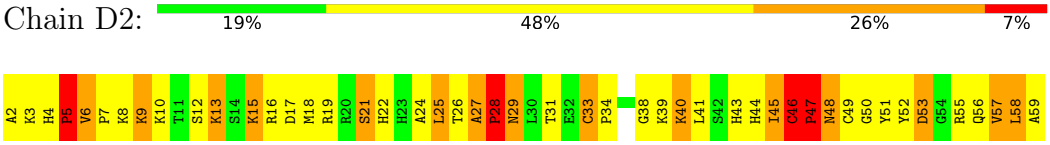
• Molecule 48: 50S ribosomal protein L32

Chain B2:



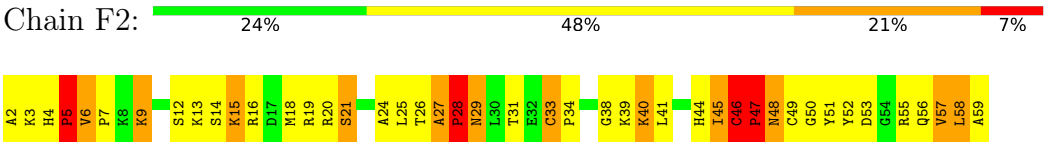
• Molecule 48: 50S ribosomal protein L32

Chain D2:



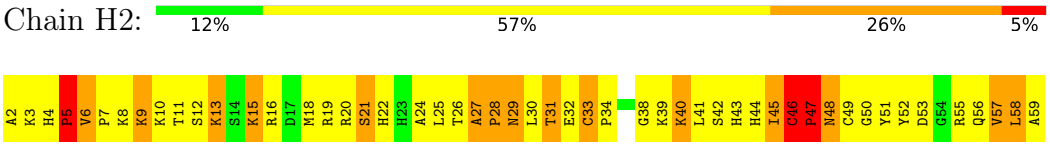
• Molecule 48: 50S ribosomal protein L32

Chain F2:



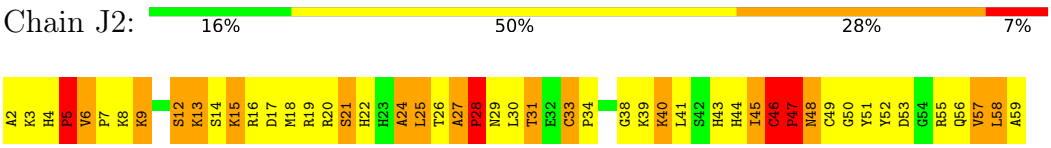
• Molecule 48: 50S ribosomal protein L32

Chain H2:



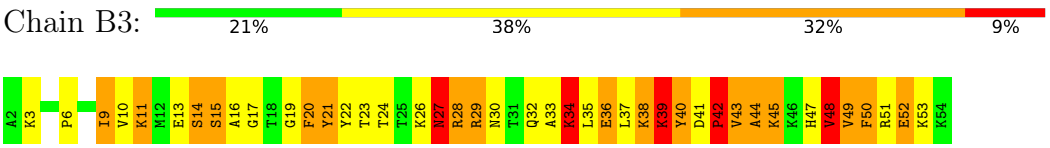
• Molecule 48: 50S ribosomal protein L32

Chain J2:



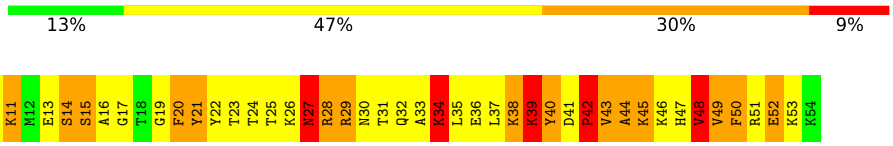
• Molecule 49: 50S ribosomal protein L33

Chain B3:



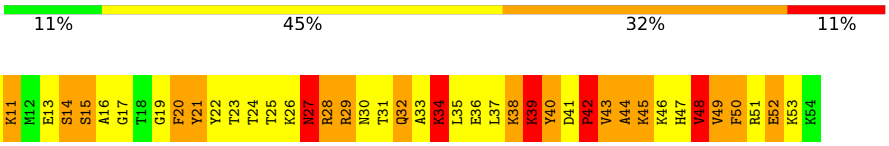
• Molecule 49: 50S ribosomal protein L33

Chain D3:



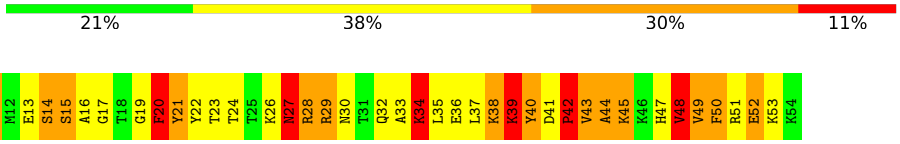
• Molecule 49: 50S ribosomal protein L33

Chain F3:



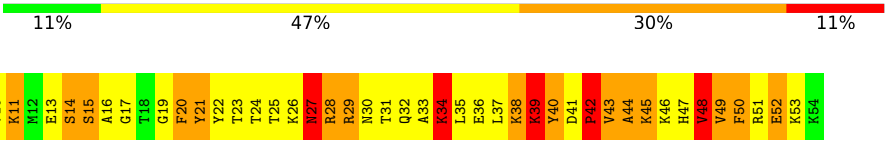
• Molecule 49: 50S ribosomal protein L33

Chain H3:



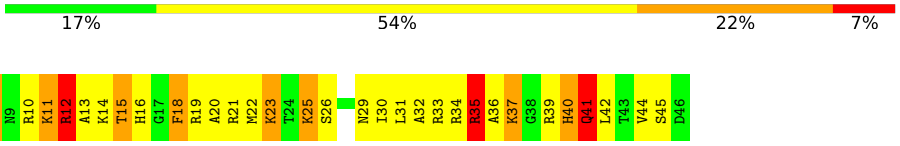
• Molecule 49: 50S ribosomal protein L33

Chain J3:



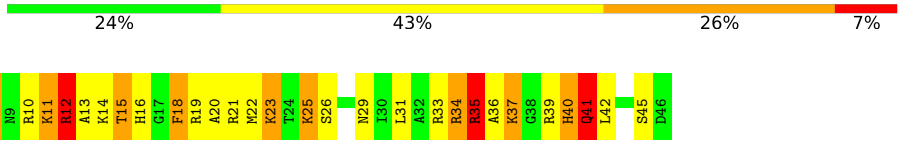
• Molecule 50: 50S ribosomal protein L34

Chain B4:



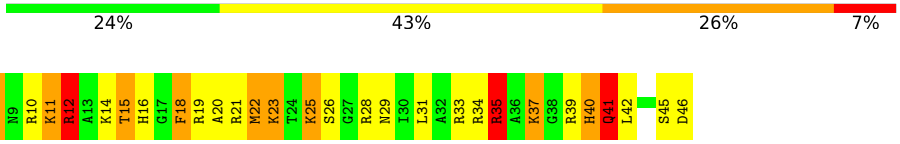
• Molecule 50: 50S ribosomal protein L34

Chain D4:



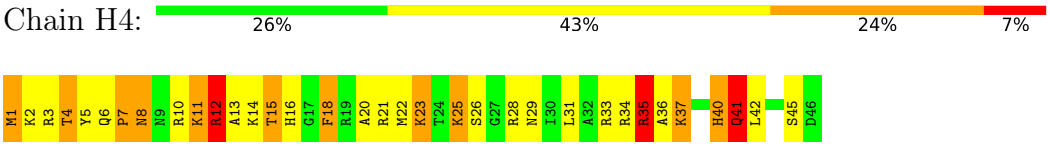
• Molecule 50: 50S ribosomal protein L34

Chain F4:



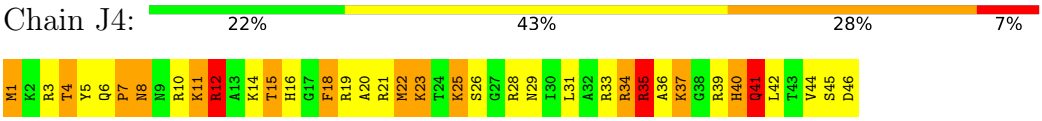
• Molecule 50: 50S ribosomal protein L34

Chain H4:



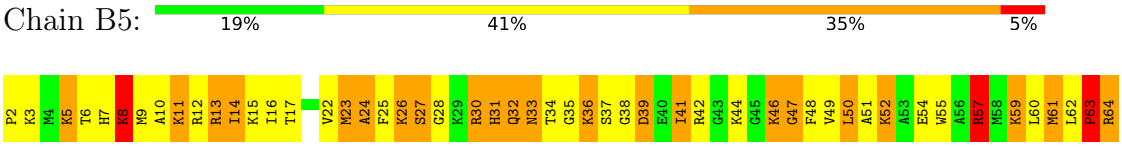
• Molecule 50: 50S ribosomal protein L34

Chain J4:



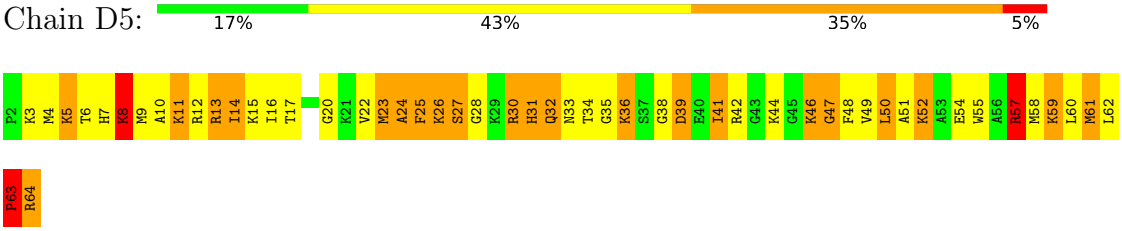
• Molecule 51: 50S ribosomal protein L35

Chain B5:



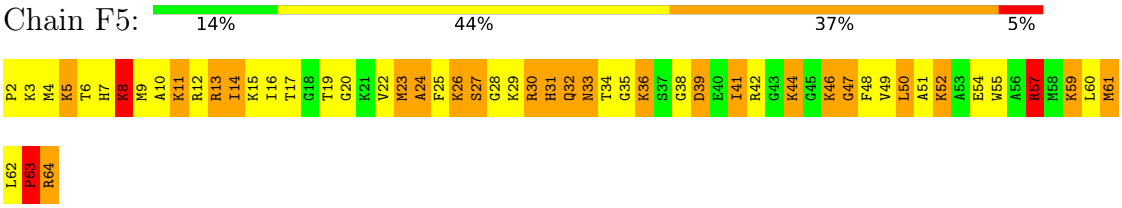
• Molecule 51: 50S ribosomal protein L35

Chain D5:



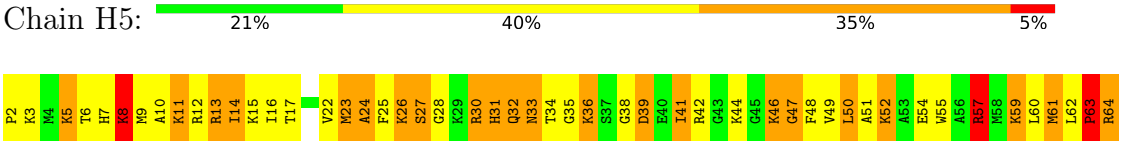
• Molecule 51: 50S ribosomal protein L35

Chain F5:



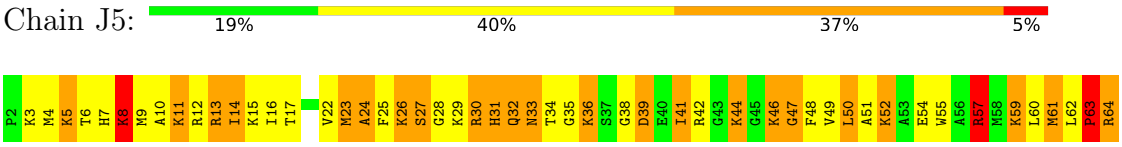
• Molecule 51: 50S ribosomal protein L35

Chain H5:



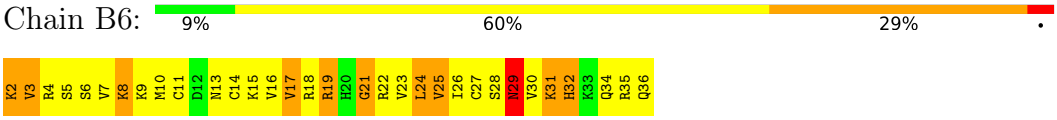
• Molecule 51: 50S ribosomal protein L35

Chain J5:



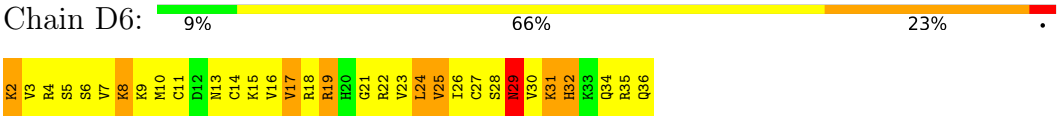
• Molecule 52: 50S ribosomal protein L36

Chain B6:



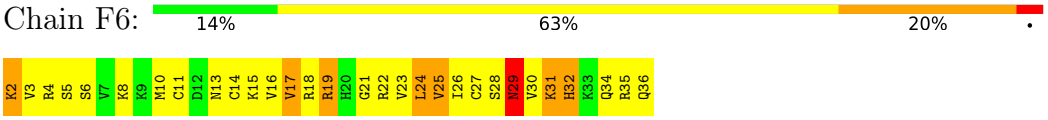
• Molecule 52: 50S ribosomal protein L36

Chain D6:



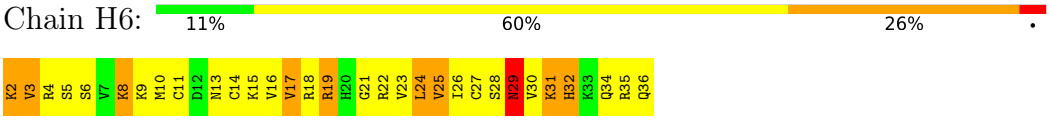
• Molecule 52: 50S ribosomal protein L36

Chain F6:



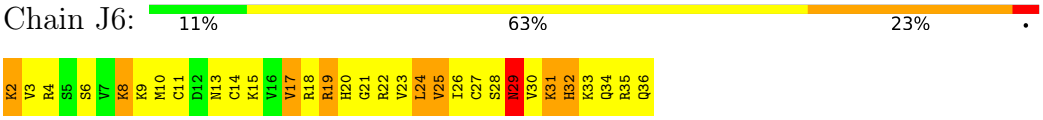
• Molecule 52: 50S ribosomal protein L36

Chain H6:



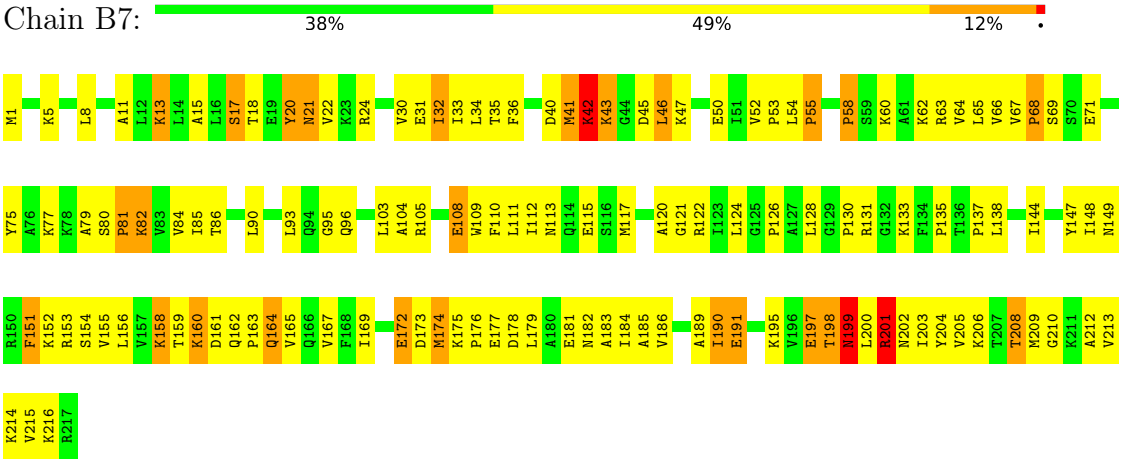
• Molecule 52: 50S ribosomal protein L36

Chain J6:



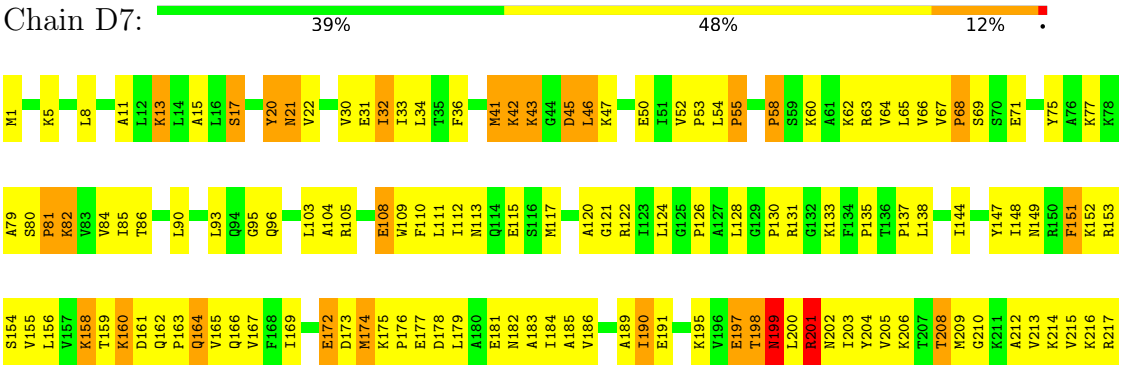
• Molecule 53: 50S ribosomal protein L1P

Chain B7:



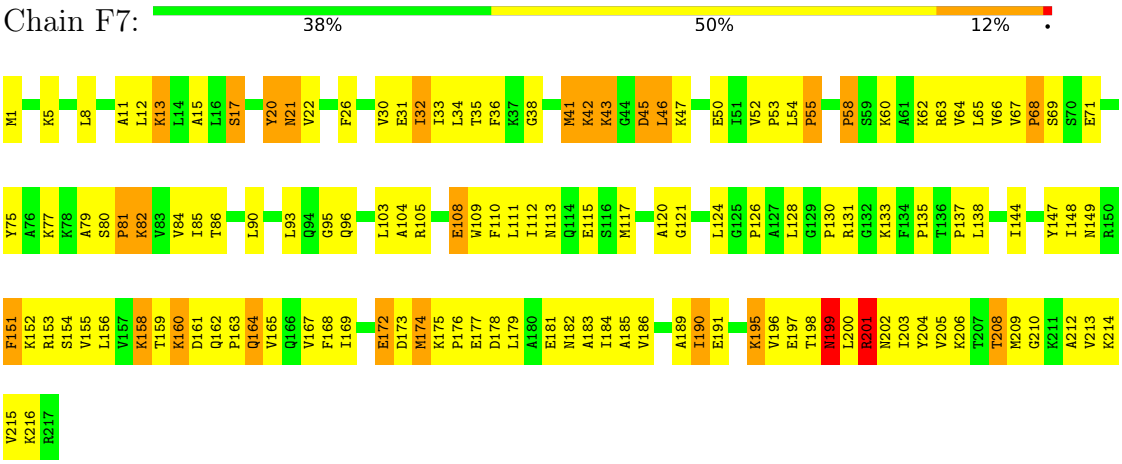
• Molecule 53: 50S ribosomal protein L1P

Chain D7:



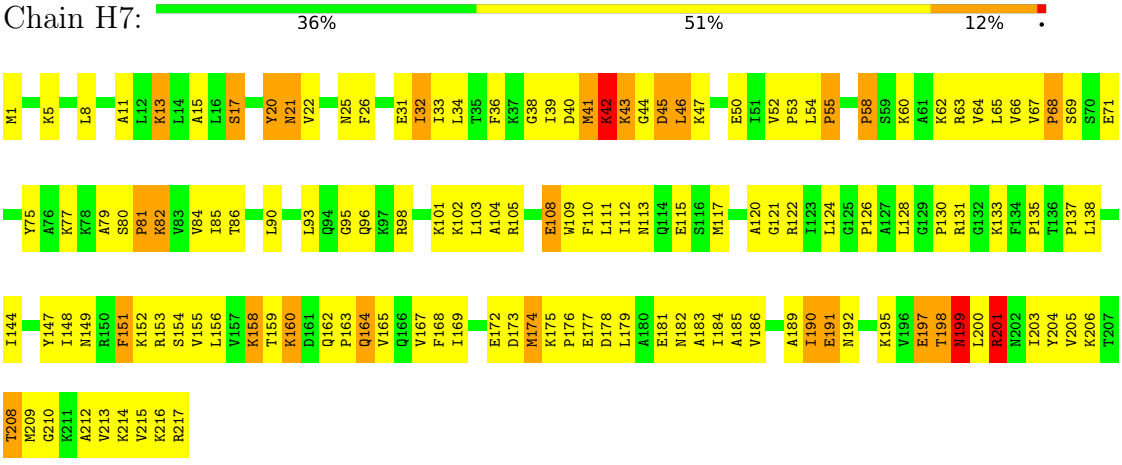
• Molecule 53: 50S ribosomal protein L1P

Chain F7:



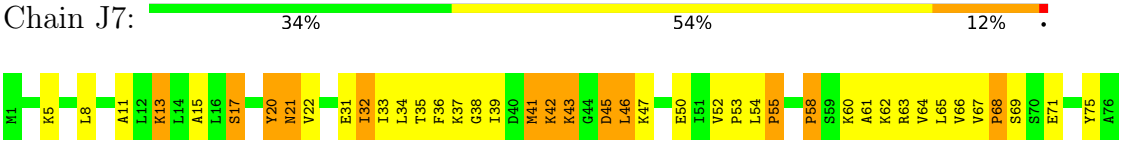
• Molecule 53: 50S ribosomal protein L1P

Chain H7:



• Molecule 53: 50S ribosomal protein L1P

Chain J7:




K77 K78 A79 S80 P81 K82 V83 V84 I85 T86 L90 L93 Q94 G95 Q96 K97 R98 P99 V100 K101 K102 L103 A104 R105 Q106 N107 E108 W109 F110 L111 I112 N113 Q114 E115 S116 M117 A120 G121 L124 G125 P126 A127 L128 G129 P130 R131 G132 K133 F134 P135 T136 P137 L138 I144
Y147 I148 N149 R150 F151 K152 R153 S154 V155 L156 V157 K158 T159 K160 D161 Q162 P163 Q164 V165 Q166 V167 F168 I169 E172 D173 M174 K175 P176 E177 D178 L179 A180 E181 N182 A183 I184 A185 V186 A189 I190 E191 K195 V196 E197 T198 N199 L200 R201 N202 I203 Y204 V205 K206 T207 T208 M209 G210
K211 A212 V213 K214 V215 K216 R217

4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 4 2 2	Depositor
Cell constants a, b, c, α, β, γ	687.90Å 687.90Å 1933.30Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	500.00 – 11.50 486.42 – 11.53	Depositor EDS
% Data completeness (in resolution range)	93.9 (500.00-11.50) 76.3 (486.42-11.53)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.18	Depositor
$< I/\sigma(I) >$	-	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.395 , 0.401 0.386 , 0.401	Depositor DCC
R_{free} test set	7421 reflections (10.12%)	wwPDB-VP
Wilson B-factor (Å^2)	(Not available)	Xtriage
Anisotropy	(Not available)	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.93 , -10.0	EDS
L-test for twinning[1]	$< \|L\| >$ = (Not available), $< L^2 >$ = (Not available)	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.84	EDS
Total number of atoms	717805	wwPDB-VP
Average B, all atoms (Å^2)	803.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *(Not available)*

[1]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality (i)

5.1 Standard geometry (i)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	AA	0.30	1/36713 (0.0%)	0.74	16/57289 (0.0%)
1	CA	0.30	1/36713 (0.0%)	0.74	15/57289 (0.0%)
1	EA	0.39	2/36714 (0.0%)	0.77	21/57293 (0.0%)
1	GA	0.39	2/36714 (0.0%)	0.75	19/57293 (0.0%)
1	IA	0.36	1/36714 (0.0%)	0.78	20/57293 (0.0%)
2	AB	0.26	0/1936	0.55	0/2609
2	CB	0.26	0/1936	0.55	0/2609
2	EB	0.26	0/1936	0.55	0/2609
2	GB	0.26	0/1936	0.55	0/2609
2	IB	0.26	0/1936	0.55	0/2609
3	AC	0.24	0/1637	0.53	0/2205
3	CC	0.24	0/1637	0.53	0/2205
3	EC	0.24	0/1637	0.53	0/2205
3	GC	0.24	0/1637	0.53	0/2205
3	IC	0.25	0/1637	0.53	0/2205
4	AD	0.24	0/1733	0.49	0/2318
4	CD	0.25	0/1733	0.49	0/2318
4	ED	0.25	0/1733	0.49	0/2318
4	GD	0.25	0/1733	0.49	0/2318
4	ID	0.25	0/1733	0.49	0/2318
5	AE	0.28	0/1163	0.59	0/1564
5	CE	0.28	0/1163	0.59	0/1564
5	EE	0.28	0/1163	0.59	0/1564
5	GE	0.28	0/1163	0.59	0/1564
5	IE	0.27	0/1163	0.59	0/1564
6	AF	0.24	0/856	0.52	0/1154
6	CF	0.24	0/856	0.52	0/1154
6	EF	0.24	0/856	0.52	0/1154
6	GF	0.24	0/856	0.52	0/1154
6	IF	0.24	0/856	0.52	0/1154
7	AG	0.24	0/1276	0.50	0/1709
7	CG	0.24	0/1276	0.50	0/1709
7	EG	0.25	0/1276	0.50	0/1709
7	GG	0.25	0/1276	0.50	0/1709

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
7	IG	0.25	0/1276	0.50	0/1709
8	AH	0.25	0/1136	0.56	0/1527
8	CH	0.25	0/1136	0.56	0/1527
8	EH	0.25	0/1136	0.56	0/1527
8	GH	0.25	0/1136	0.56	0/1527
8	IH	0.25	0/1136	0.56	0/1527
9	AI	0.26	0/1029	0.51	0/1378
9	CI	0.26	0/1029	0.51	0/1378
9	EI	0.25	0/1029	0.51	0/1378
9	GI	0.25	0/1029	0.51	0/1378
9	II	0.25	0/1029	0.51	0/1378
10	AJ	0.25	0/808	0.59	0/1085
10	CJ	0.25	0/808	0.59	0/1085
10	EJ	0.25	0/808	0.59	0/1085
10	GJ	0.25	0/808	0.58	0/1085
10	IJ	0.25	0/808	0.59	0/1085
11	AK	0.24	0/900	0.56	0/1213
11	CK	0.24	0/900	0.56	0/1213
11	EK	0.24	0/900	0.56	0/1213
11	GK	0.24	0/900	0.56	0/1213
11	IK	0.24	0/900	0.56	0/1213
12	AL	0.49	1/985 (0.1%)	0.68	1/1314 (0.1%)
12	CL	0.25	0/984	0.58	0/1311
12	EL	0.35	1/985 (0.1%)	0.83	3/1314 (0.2%)
12	GL	0.25	0/984	0.58	0/1311
12	IL	0.86	1/985 (0.1%)	0.70	2/1314 (0.2%)
13	AM	0.27	0/1007	0.87	3/1344 (0.2%)
13	CM	0.26	0/1006	0.59	1/1341 (0.1%)
13	EM	0.26	0/1006	0.58	1/1341 (0.1%)
13	GM	0.52	1/1007 (0.1%)	1.07	3/1344 (0.2%)
13	IM	0.27	0/1006	0.58	1/1341 (0.1%)
14	AN	0.27	0/501	0.59	0/664
14	CN	0.27	0/501	0.59	0/664
14	EN	0.27	0/501	0.59	0/664
14	GN	0.27	0/501	0.59	0/664
14	IN	0.28	0/501	0.59	0/664
15	AO	0.24	0/745	0.51	0/992
15	CO	0.24	0/745	0.51	0/992
15	EO	0.24	0/745	0.51	0/992
15	GO	0.24	0/745	0.51	0/992
15	IO	0.24	0/745	0.51	0/992
16	AP	0.26	0/717	0.58	0/963
16	CP	0.26	0/717	0.58	0/963

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
16	EP	0.26	0/717	0.58	0/963
16	GP	0.26	0/717	0.58	0/963
16	IP	0.26	0/717	0.59	0/963
17	AQ	0.26	0/870	0.59	0/1159
17	CQ	0.26	0/870	0.59	0/1159
17	EQ	0.26	0/870	0.59	0/1159
17	GQ	0.26	0/870	0.59	0/1159
17	IQ	0.26	0/870	0.59	0/1159
18	AR	0.26	0/603	0.52	0/799
18	CR	0.26	0/603	0.52	0/799
18	ER	0.26	0/603	0.52	0/799
18	GR	0.26	0/603	0.52	0/799
18	IR	0.26	0/603	0.52	0/799
19	AS	0.25	0/662	0.60	0/890
19	CS	0.25	0/662	0.60	0/890
19	ES	0.25	0/662	0.60	0/890
19	GS	0.25	0/662	0.60	0/890
19	IS	0.25	0/662	0.60	0/890
20	AT	0.30	0/764	0.68	1/1006 (0.1%)
20	CT	0.29	0/764	0.68	1/1006 (0.1%)
20	ET	0.30	0/764	0.68	1/1006 (0.1%)
20	GT	0.29	0/764	0.68	1/1006 (0.1%)
20	IT	0.29	0/764	0.68	1/1006 (0.1%)
21	Aa	0.23	0/731	0.36	0/987
21	Ca	0.23	0/731	0.36	0/987
21	Ea	0.23	0/731	0.36	0/987
21	Ga	0.23	0/731	0.36	0/987
21	Ia	0.23	0/731	0.36	0/987
22	BB	0.90	55/67883 (0.1%)	0.93	143/105846 (0.1%)
22	DB	0.87	62/67886 (0.1%)	0.89	142/105858 (0.1%)
22	FB	0.85	58/67883 (0.1%)	0.92	138/105846 (0.1%)
22	HB	0.80	57/67884 (0.1%)	0.92	146/105850 (0.1%)
22	JB	0.81	56/67885 (0.1%)	0.85	130/105854 (0.1%)
23	BA	0.35	0/2816	0.75	0/4388
23	DA	0.35	0/2816	0.75	0/4388
23	FA	0.35	0/2816	0.75	0/4388
23	HA	0.35	0/2816	0.75	0/4388
23	JA	0.34	0/2816	0.75	0/4388
24	BD	0.33	0/2121	0.90	2/2854 (0.1%)
24	DD	0.33	0/2121	0.90	2/2854 (0.1%)
24	FD	0.33	0/2121	0.90	2/2854 (0.1%)
24	HD	0.32	0/2121	0.90	2/2854 (0.1%)
24	JD	0.33	0/2121	0.90	2/2854 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
25	BE	0.33	0/1568	0.92	8/2105 (0.4%)
25	DE	0.33	0/1568	0.92	8/2105 (0.4%)
25	FE	0.33	0/1568	0.92	8/2105 (0.4%)
25	HE	0.33	0/1568	0.92	8/2105 (0.4%)
25	JE	0.33	0/1568	0.92	8/2105 (0.4%)
26	BF	0.29	0/1530	0.75	0/2070
26	DF	0.29	0/1530	0.75	0/2070
26	FF	0.29	0/1530	0.75	0/2070
26	HF	0.30	0/1530	0.75	0/2070
26	JF	0.29	0/1530	0.75	0/2070
27	BG	0.32	0/1429	0.87	3/1915 (0.2%)
27	DG	0.32	0/1429	0.87	3/1915 (0.2%)
27	FG	0.32	0/1429	0.87	3/1915 (0.2%)
27	HG	0.31	0/1429	0.87	3/1915 (0.2%)
27	JG	0.32	0/1429	0.87	3/1915 (0.2%)
28	BH	0.29	0/1338	0.80	3/1810 (0.2%)
28	DH	0.29	0/1338	0.79	3/1810 (0.2%)
28	FH	0.29	0/1338	0.79	3/1810 (0.2%)
28	HH	0.29	0/1338	0.79	3/1810 (0.2%)
28	JH	0.29	0/1338	0.80	3/1810 (0.2%)
29	BI	0.36	0/405	0.96	3/545 (0.6%)
29	DI	0.35	0/405	0.97	3/545 (0.6%)
29	FI	0.35	0/405	0.97	3/545 (0.6%)
29	HI	0.35	0/405	0.97	3/545 (0.6%)
29	JI	0.36	0/405	0.97	3/545 (0.6%)
30	BJ	0.31	0/1058	0.88	2/1433 (0.1%)
30	DJ	0.31	0/1058	0.88	2/1433 (0.1%)
30	FJ	0.31	0/1058	0.88	2/1433 (0.1%)
30	HJ	0.31	0/1058	0.88	2/1433 (0.1%)
30	JJ	0.31	0/1058	0.88	2/1433 (0.1%)
31	BK	0.32	0/1146	0.87	3/1549 (0.2%)
31	DK	0.32	0/1146	0.87	3/1549 (0.2%)
31	FK	0.32	0/1146	0.87	3/1549 (0.2%)
31	HK	0.32	0/1146	0.87	3/1549 (0.2%)
31	JK	0.32	0/1146	0.87	3/1549 (0.2%)
32	BL	0.28	0/991	0.76	1/1331 (0.1%)
32	DL	0.28	0/991	0.76	1/1331 (0.1%)
32	FL	0.28	0/991	0.76	1/1331 (0.1%)
32	HL	0.28	0/991	0.76	1/1331 (0.1%)
32	JL	0.28	0/991	0.76	1/1331 (0.1%)
33	BM	0.32	0/1082	0.82	1/1448 (0.1%)
33	DM	0.32	0/1082	0.82	1/1448 (0.1%)
33	FM	0.32	0/1082	0.82	1/1448 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	HM	0.32	0/1082	0.82	1/1448 (0.1%)
33	JM	0.32	0/1082	0.82	1/1448 (0.1%)
34	BN	0.36	0/1008	1.07	4/1346 (0.3%)
34	DN	0.36	0/1008	1.07	4/1346 (0.3%)
34	FN	0.36	0/1008	1.07	4/1346 (0.3%)
34	HN	0.36	0/1008	1.07	4/1346 (0.3%)
34	JN	0.36	0/1008	1.07	4/1346 (0.3%)
35	BO	0.28	0/894	0.79	0/1198
35	DO	0.28	0/894	0.79	0/1198
35	FO	0.27	0/894	0.79	0/1198
35	HO	0.27	0/894	0.79	0/1198
35	JO	0.28	0/894	0.79	0/1198
36	BP	0.29	0/841	0.70	0/1124
36	DP	0.28	0/841	0.70	0/1124
36	FP	0.28	0/841	0.70	0/1124
36	HP	0.28	0/841	0.70	0/1124
36	JP	0.28	0/841	0.70	0/1124
37	BQ	0.32	0/1021	0.90	3/1363 (0.2%)
37	DQ	0.32	0/1021	0.90	3/1363 (0.2%)
37	FQ	0.32	0/1021	0.90	3/1363 (0.2%)
37	HQ	0.32	0/1021	0.90	3/1363 (0.2%)
37	JQ	0.33	0/1021	0.90	3/1363 (0.2%)
38	BR	0.34	0/994	0.82	0/1323
38	DR	0.33	0/994	0.82	0/1323
38	FR	0.33	0/994	0.82	0/1323
38	HR	0.33	0/994	0.82	0/1323
38	JR	0.33	0/994	0.82	0/1323
39	BS	0.36	0/797	0.96	3/1061 (0.3%)
39	DS	0.35	0/797	0.96	3/1061 (0.3%)
39	FS	0.36	0/797	0.96	3/1061 (0.3%)
39	HS	0.36	0/797	0.96	3/1061 (0.3%)
39	JS	0.35	0/797	0.96	3/1061 (0.3%)
40	BT	0.31	0/1052	0.93	4/1407 (0.3%)
40	DT	0.31	0/1052	0.93	4/1407 (0.3%)
40	FT	0.31	0/1052	0.93	4/1407 (0.3%)
40	HT	0.31	0/1052	0.93	4/1407 (0.3%)
40	JT	0.31	0/1052	0.93	4/1407 (0.3%)
41	BU	0.33	0/738	0.87	2/988 (0.2%)
41	DU	0.32	0/738	0.87	2/988 (0.2%)
41	FU	0.33	0/738	0.87	2/988 (0.2%)
41	HU	0.33	0/738	0.87	2/988 (0.2%)
41	JU	0.33	0/738	0.87	2/988 (0.2%)
42	BV	0.28	0/863	0.92	1/1158 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
42	DV	0.28	0/863	0.92	1/1158 (0.1%)
42	FV	0.29	0/863	0.92	1/1158 (0.1%)
42	HV	0.29	0/863	0.92	1/1158 (0.1%)
42	JV	0.29	0/863	0.92	1/1158 (0.1%)
43	BW	0.43	1/1351 (0.1%)	1.39	10/1833 (0.5%)
43	DW	0.32	0/1350	0.89	7/1830 (0.4%)
43	FW	0.33	0/1350	0.89	7/1830 (0.4%)
43	HW	0.32	0/1350	0.89	7/1830 (0.4%)
43	JW	0.32	0/1350	0.89	7/1830 (0.4%)
44	BX	0.35	0/650	1.09	5/860 (0.6%)
44	DX	0.36	0/650	1.09	5/860 (0.6%)
44	FX	0.36	0/650	1.09	5/860 (0.6%)
44	HX	0.36	0/650	1.08	5/860 (0.6%)
44	JX	0.36	0/650	1.09	5/860 (0.6%)
45	BY	0.32	0/530	1.08	5/704 (0.7%)
45	DY	0.32	0/530	1.08	5/704 (0.7%)
45	FY	0.32	0/530	1.08	5/704 (0.7%)
45	HY	0.32	0/530	1.08	5/704 (0.7%)
45	JY	0.32	0/530	1.08	5/704 (0.7%)
46	BZ	0.27	0/426	0.70	0/568
46	DZ	0.27	0/426	0.71	0/568
46	FZ	0.27	0/426	0.70	0/568
46	HZ	0.27	0/426	0.70	0/568
46	JZ	0.27	0/426	0.71	0/568
47	B1	0.40	0/620	0.87	2/831 (0.2%)
47	D1	0.40	0/620	0.87	2/831 (0.2%)
47	F1	0.40	0/620	0.87	1/831 (0.1%)
47	H1	0.40	0/620	0.88	2/831 (0.2%)
47	J1	0.40	0/620	0.87	1/831 (0.1%)
48	B2	0.33	0/470	1.37	5/629 (0.8%)
48	D2	0.33	0/470	1.37	6/629 (1.0%)
48	F2	0.33	0/470	1.37	5/629 (0.8%)
48	H2	0.33	0/470	1.37	5/629 (0.8%)
48	J2	0.33	0/470	1.37	6/629 (1.0%)
49	B3	0.45	0/439	0.89	0/583
49	D3	0.45	0/439	0.90	0/583
49	F3	0.45	0/439	0.89	0/583
49	H3	0.44	0/439	0.89	0/583
49	J3	0.45	0/439	0.89	0/583
50	B4	0.30	0/388	0.82	0/509
50	D4	0.30	0/388	0.82	0/509
50	F4	0.30	0/388	0.82	0/509
50	H4	0.30	0/388	0.82	0/509

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
50	J4	0.30	0/388	0.82	0/509
51	B5	0.32	0/503	0.81	2/657 (0.3%)
51	D5	0.32	0/503	0.81	2/657 (0.3%)
51	F5	0.32	0/503	0.81	2/657 (0.3%)
51	H5	0.33	0/503	0.81	2/657 (0.3%)
51	J5	0.32	0/503	0.82	2/657 (0.3%)
52	B6	0.28	0/286	0.76	0/375
52	D6	0.27	0/286	0.76	0/375
52	F6	0.27	0/286	0.76	0/375
52	H6	0.28	0/286	0.76	0/375
52	J6	0.28	0/286	0.76	0/375
53	B7	0.49	3/1740 (0.2%)	0.76	11/2333 (0.5%)
53	D7	0.49	3/1740 (0.2%)	0.76	11/2333 (0.5%)
53	F7	0.49	3/1740 (0.2%)	0.76	11/2333 (0.5%)
53	H7	0.49	3/1740 (0.2%)	0.76	11/2333 (0.5%)
53	J7	0.49	3/1740 (0.2%)	0.76	11/2333 (0.5%)
All	All	0.61	315/778750 (0.0%)	0.83	1213/1161574 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	AA	0	5
1	CA	0	5
1	EA	0	5
1	GA	0	5
1	IA	0	6
12	AL	0	1
12	EL	0	1
13	AM	0	1
13	GM	0	1
22	BB	0	21
22	DB	0	21
22	FB	0	21
22	HB	0	21
22	JB	0	21
24	BD	0	1
24	DD	0	1
24	FD	0	1
24	HD	0	1

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
24	JD	0	1
27	BG	0	1
27	DG	0	1
27	FG	0	1
27	HG	0	1
27	JG	0	1
43	BW	0	1
All	All	0	146

The worst 5 of 315 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	BB	1888	C	O3'-P	-87.06	0.56	1.61
22	DB	1411	C	O3'-P	-62.45	0.86	1.61
22	FB	1047	G	O3'-P	-62.19	0.86	1.61
22	DB	1437	A	O3'-P	-58.70	0.90	1.61
22	FB	1586	A	O3'-P	-55.84	0.94	1.61

The worst 5 of 1213 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
22	DB	1888	C	P-O3'-C3'	-81.68	21.69	119.70
22	HB	910	U	P-O3'-C3'	-72.53	32.66	119.70
22	BB	1888	C	P-O3'-C3'	-66.03	40.47	119.70
22	FB	3197	U	P-O3'-C3'	-60.64	46.93	119.70
22	FB	1411	C	O3'-P-O5'	-53.08	3.15	104.00

There are no chirality outliers.

5 of 146 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	AA	187	G	Sidechain
1	AA	188	C	Sidechain
1	AA	190	A	Sidechain
1	AA	197	A	Sidechain
1	AA	916	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	AA	32799	0	16508	3508	4
1	CA	32799	0	16515	3468	3
1	EA	32799	0	16515	3290	2
1	GA	32799	0	16500	3234	3
1	IA	32799	0	16508	3429	10
2	AB	1901	0	1950	183	0
2	CB	1901	0	1951	212	0
2	EB	1901	0	1948	269	0
2	GB	1901	0	1951	188	0
2	IB	1901	0	1951	207	0
3	AC	1613	0	1677	235	0
3	CC	1613	0	1677	271	0
3	EC	1613	0	1674	311	0
3	GC	1613	0	1676	221	0
3	IC	1613	0	1676	319	0
4	AD	1703	0	1765	340	2
4	CD	1703	0	1765	475	24
4	ED	1703	0	1762	358	12
4	GD	1703	0	1767	242	1
4	ID	1703	0	1766	225	2
5	AE	1147	0	1195	303	0
5	CE	1147	0	1198	360	0
5	EE	1147	0	1205	202	0
5	GE	1147	0	1199	236	0
5	IE	1147	0	1202	169	0
6	AF	843	0	857	106	2
6	CF	843	0	857	123	12
6	EF	843	0	857	127	11
6	GF	843	0	857	99	1
6	IF	843	0	857	140	2
7	AG	1257	0	1284	306	0
7	CG	1257	0	1292	310	0
7	EG	1257	0	1296	252	1
7	GG	1257	0	1294	306	21
7	IG	1257	0	1290	237	10
8	AH	1116	0	1175	239	0
8	CH	1116	0	1169	296	0
8	EH	1116	0	1166	369	0
8	GH	1116	0	1176	198	0
8	IH	1116	0	1168	368	0
9	AI	1011	0	1036	313	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	CI	1011	0	1039	268	0
9	EI	1011	0	1017	278	0
9	GI	1011	0	1038	262	0
9	II	1011	0	1031	331	1
10	AJ	795	0	837	303	0
10	CJ	795	0	839	192	0
10	EJ	795	0	831	188	1
10	GJ	795	0	835	260	21
10	IJ	795	0	838	211	11
11	AK	885	0	904	112	0
11	CK	885	0	903	118	12
11	EK	885	0	904	163	1
11	GK	885	0	899	174	0
11	IK	885	0	900	239	0
12	AL	971	0	1046	198	0
12	CL	971	0	1041	188	0
12	EL	971	0	1049	248	3
12	GL	971	0	1044	190	0
12	IL	971	0	1052	198	21
13	AM	997	0	1052	373	0
13	CM	997	0	1047	387	0
13	EM	997	0	1061	198	0
13	GM	997	0	1051	335	0
13	IM	997	0	1057	274	0
14	AN	492	0	531	320	0
14	CN	492	0	532	190	0
14	EN	492	0	532	207	0
14	GN	492	0	533	224	0
14	IN	492	0	532	159	0
15	AO	734	0	771	244	0
15	CO	734	0	767	148	0
15	EO	734	0	769	110	0
15	GO	734	0	770	179	0
15	IO	734	0	768	153	0
16	AP	701	0	718	117	0
16	CP	701	0	719	125	0
16	EP	701	0	712	184	0
16	GP	701	0	716	107	0
16	IP	701	0	713	178	0
17	AQ	857	0	917	348	0
17	CQ	857	0	916	300	0
17	EQ	857	0	920	289	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
17	GQ	857	0	916	320	0
17	IQ	857	0	923	252	0
18	AR	597	0	667	114	0
18	CR	597	0	666	123	0
18	ER	597	0	668	96	0
18	GR	597	0	666	155	0
18	IR	597	0	668	126	0
19	AS	648	0	673	215	0
19	CS	648	0	673	177	0
19	ES	648	0	671	227	0
19	GS	648	0	673	168	0
19	IS	648	0	668	233	0
20	AT	762	0	856	194	0
20	CT	762	0	854	132	0
20	ET	762	0	848	142	0
20	GT	762	0	850	336	0
20	IT	762	0	848	154	0
21	Aa	719	0	735	0	0
21	Ca	719	0	734	0	0
21	Ea	719	0	737	0	0
21	Ga	719	0	738	0	0
21	Ia	719	0	735	0	0
22	BB	60635	0	30507	6789	5
22	DB	60635	0	30501	6512	4
22	FB	60635	0	30479	6851	6
22	HB	60635	0	30492	6628	2
22	JB	60635	0	30478	7310	31
23	BA	2519	0	1281	279	6
23	DA	2519	0	1279	352	3
23	FA	2519	0	1279	281	0
23	HA	2519	0	1283	137	4
23	JA	2519	0	1284	252	9
24	BD	2079	0	2144	622	0
24	DD	2079	0	2144	593	0
24	FD	2079	0	2152	466	0
24	HD	2079	0	2149	544	0
24	JD	2079	0	2146	636	0
25	BE	1540	0	1592	596	0
25	DE	1540	0	1579	737	0
25	FE	1540	0	1582	628	0
25	HE	1540	0	1597	338	0
25	JE	1540	0	1600	367	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
26	BF	1507	0	1521	251	0
26	DF	1507	0	1520	196	0
26	FF	1507	0	1523	253	0
26	HF	1507	0	1525	180	0
26	JF	1507	0	1518	322	0
27	BG	1410	0	1489	221	0
27	DG	1410	0	1485	267	0
27	FG	1410	0	1488	320	0
27	HG	1410	0	1487	187	0
27	JG	1410	0	1486	229	0
28	BH	1316	0	1362	246	0
28	DH	1316	0	1360	253	0
28	FH	1316	0	1361	210	0
28	HH	1316	0	1361	164	0
28	JH	1316	0	1361	212	0
29	BI	401	0	426	36	0
29	DI	401	0	424	78	0
29	FI	401	0	425	99	0
29	HI	401	0	426	48	1
29	JI	401	0	426	102	0
30	BJ	1039	0	1083	201	0
30	DJ	1039	0	1083	105	0
30	FJ	1039	0	1083	103	0
30	HJ	1039	0	1083	151	0
30	JJ	1039	0	1080	160	0
31	BK	1122	0	1141	432	0
31	DK	1122	0	1132	390	0
31	FK	1122	0	1146	312	0
31	HK	1122	0	1143	329	0
31	JK	1122	0	1153	200	0
32	BL	981	0	1020	247	0
32	DL	981	0	1020	313	0
32	FL	981	0	1017	246	0
32	HL	981	0	1018	276	0
32	JL	981	0	1019	179	0
33	BM	1068	0	1098	308	0
33	DM	1068	0	1099	305	0
33	FM	1068	0	1100	290	0
33	HM	1068	0	1103	358	0
33	JM	1068	0	1091	414	0
34	BN	986	0	1010	489	0
34	DN	986	0	1006	542	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
34	FN	986	0	1006	381	0
34	HN	986	0	1011	371	0
34	JN	986	0	1012	300	0
35	BO	886	0	939	236	0
35	DO	886	0	939	252	0
35	FO	886	0	934	286	0
35	HO	886	0	936	259	0
35	JO	886	0	936	247	0
36	BP	834	0	874	71	0
36	DP	834	0	874	147	0
36	FP	834	0	863	177	0
36	HP	834	0	872	114	0
36	JP	834	0	868	170	0
37	BQ	1008	0	1048	323	0
37	DQ	1008	0	1050	269	0
37	FQ	1008	0	1048	212	0
37	HQ	1008	0	1050	276	0
37	JQ	1008	0	1045	336	0
38	BR	978	0	1018	183	0
38	DR	978	0	1015	377	0
38	FR	978	0	1011	513	0
38	HR	978	0	1009	306	0
38	JR	978	0	999	354	0
39	BS	787	0	803	206	0
39	DS	787	0	804	257	0
39	FS	787	0	800	291	0
39	HS	787	0	804	152	0
39	JS	787	0	798	247	0
40	BT	1039	0	1111	284	0
40	DT	1039	0	1105	328	0
40	FT	1039	0	1107	323	0
40	HT	1039	0	1107	453	0
40	JT	1039	0	1110	312	0
41	BU	727	0	752	108	0
41	DU	727	0	749	117	0
41	FU	727	0	736	211	0
41	HU	727	0	751	157	0
41	JU	727	0	747	183	0
42	BV	852	0	909	121	0
42	DV	852	0	911	104	0
42	FV	852	0	908	201	0
42	HV	852	0	908	132	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	JV	852	0	905	292	0
43	BW	1328	0	1343	486	0
43	DW	1328	0	1338	594	0
43	FW	1328	0	1341	325	0
43	HW	1328	0	1350	306	0
43	JW	1328	0	1342	254	0
44	BX	642	0	664	280	0
44	DX	642	0	665	210	0
44	FX	642	0	658	257	0
44	HX	642	0	663	295	0
44	JX	642	0	661	246	0
45	BY	526	0	546	72	0
45	DY	526	0	543	49	0
45	FY	526	0	538	102	0
45	HY	526	0	535	211	0
45	JY	526	0	535	196	0
46	BZ	424	0	468	76	0
46	DZ	424	0	468	109	0
46	FZ	424	0	467	204	0
46	HZ	424	0	466	82	0
46	JZ	424	0	468	135	0
47	B1	604	0	594	201	0
47	D1	604	0	593	193	0
47	F1	604	0	592	177	0
47	H1	604	0	582	203	0
47	J1	604	0	592	232	0
48	B2	458	0	457	218	0
48	D2	458	0	461	188	0
48	F2	458	0	459	178	0
48	H2	458	0	456	286	0
48	J2	458	0	460	221	0
49	B3	432	0	456	53	0
49	D3	432	0	456	87	0
49	F3	432	0	453	181	0
49	H3	432	0	455	74	0
49	J3	432	0	452	154	0
50	B4	384	0	406	139	0
50	D4	384	0	403	166	0
50	F4	384	0	408	198	0
50	H4	384	0	409	115	0
50	J4	384	0	401	167	0
51	B5	496	0	547	162	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
51	D5	496	0	542	191	0
51	F5	496	0	542	251	0
51	H5	496	0	545	230	0
51	J5	496	0	536	298	0
52	B6	285	0	305	210	0
52	D6	285	0	313	119	0
52	F6	285	0	309	72	0
52	H6	285	0	310	88	0
52	J6	285	0	311	114	0
53	B7	1720	0	1842	221	6
53	D7	1720	0	1842	167	4
53	F7	1720	0	1847	223	9
53	H7	1720	0	1843	360	3
53	J7	1720	0	1826	472	0
All	All	717805	0	489246	75816	144

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 63.

The worst 5 of 75816 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)
34:DN:66:TYR:CE2	43:DW:118:HIS:CE1	1.77	1.72
22:HB:2733:A:C2	52:H6:15:LYS:HE2	1.22	1.72
22:BB:1437:A:H2'	22:BB:1438:G:C8	1.25	1.70
22:BB:1805:G:C2	24:BD:52:ARG:HD3	1.26	1.69
34:BN:66:TYR:CD1	43:BW:115:ILE:HG21	1.25	1.69

The worst 5 of 144 symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:435:C:OP1	22:BB:3096:C:OP1[3_465]	0.46	1.74
12:IL:128:ALA:C	22:JB:3157:G:C4'[4_445]	0.52	1.68
7:GG:60:LYS:CD	10:GJ:90:LEU:CD1[3_465]	0.58	1.62
7:GG:60:LYS:CE	10:GJ:90:LEU:CG[3_465]	0.60	1.60
4:CD:173:TRP:N	6:CF:15:ASP:OD2[3_465]	0.63	1.57

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 X-ray entries followed by that with respect to entries of similar resolution.

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	
2	AB	232/234 (99%)	129 (56%)	74 (32%)	29 (12%)	0	5
2	CB	232/234 (99%)	128 (55%)	75 (32%)	29 (12%)	0	5
2	EB	232/234 (99%)	127 (55%)	76 (33%)	29 (12%)	0	5
2	GB	232/234 (99%)	129 (56%)	74 (32%)	29 (12%)	0	5
2	IB	232/234 (99%)	128 (55%)	75 (32%)	29 (12%)	0	5
3	AC	204/206 (99%)	125 (61%)	60 (29%)	19 (9%)	0	11
3	CC	204/206 (99%)	124 (61%)	61 (30%)	19 (9%)	0	11
3	EC	204/206 (99%)	125 (61%)	60 (29%)	19 (9%)	0	11
3	GC	204/206 (99%)	124 (61%)	61 (30%)	19 (9%)	0	11
3	IC	204/206 (99%)	124 (61%)	61 (30%)	19 (9%)	0	11
4	AD	206/208 (99%)	130 (63%)	56 (27%)	20 (10%)	0	10
4	CD	206/208 (99%)	129 (63%)	57 (28%)	20 (10%)	0	10
4	ED	206/208 (99%)	130 (63%)	56 (27%)	20 (10%)	0	10
4	GD	206/208 (99%)	128 (62%)	58 (28%)	20 (10%)	0	10
4	ID	206/208 (99%)	129 (63%)	57 (28%)	20 (10%)	0	10
5	AE	148/150 (99%)	93 (63%)	43 (29%)	12 (8%)	1	12
5	CE	148/150 (99%)	91 (62%)	45 (30%)	12 (8%)	1	12
5	EE	148/150 (99%)	92 (62%)	44 (30%)	12 (8%)	1	12
5	GE	148/150 (99%)	92 (62%)	44 (30%)	12 (8%)	1	12
5	IE	148/150 (99%)	92 (62%)	44 (30%)	12 (8%)	1	12
6	AF	99/101 (98%)	67 (68%)	25 (25%)	7 (7%)	1	14
6	CF	99/101 (98%)	67 (68%)	25 (25%)	7 (7%)	1	14
6	EF	99/101 (98%)	67 (68%)	25 (25%)	7 (7%)	1	14
6	GF	99/101 (98%)	67 (68%)	25 (25%)	7 (7%)	1	14
6	IF	99/101 (98%)	67 (68%)	25 (25%)	7 (7%)	1	14

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
7	AG	153/155 (99%)	94 (61%)	47 (31%)	12 (8%)	1 13
7	CG	153/155 (99%)	94 (61%)	47 (31%)	12 (8%)	1 13
7	EG	153/155 (99%)	93 (61%)	48 (31%)	12 (8%)	1 13
7	GG	153/155 (99%)	94 (61%)	47 (31%)	12 (8%)	1 13
7	IG	153/155 (99%)	94 (61%)	47 (31%)	12 (8%)	1 13
8	AH	136/138 (99%)	83 (61%)	38 (28%)	15 (11%)	0 7
8	CH	136/138 (99%)	83 (61%)	37 (27%)	16 (12%)	0 6
8	EH	136/138 (99%)	83 (61%)	37 (27%)	16 (12%)	0 6
8	GH	136/138 (99%)	83 (61%)	37 (27%)	16 (12%)	0 6
8	IH	136/138 (99%)	83 (61%)	37 (27%)	16 (12%)	0 6
9	AI	125/127 (98%)	68 (54%)	43 (34%)	14 (11%)	0 7
9	CI	125/127 (98%)	68 (54%)	43 (34%)	14 (11%)	0 7
9	EI	125/127 (98%)	68 (54%)	43 (34%)	14 (11%)	0 7
9	GI	125/127 (98%)	68 (54%)	43 (34%)	14 (11%)	0 7
9	II	125/127 (98%)	68 (54%)	43 (34%)	14 (11%)	0 7
10	AJ	96/98 (98%)	52 (54%)	22 (23%)	22 (23%)	0 1
10	CJ	96/98 (98%)	53 (55%)	21 (22%)	22 (23%)	0 1
10	EJ	96/98 (98%)	52 (54%)	22 (23%)	22 (23%)	0 1
10	GJ	96/98 (98%)	52 (54%)	22 (23%)	22 (23%)	0 1
10	IJ	96/98 (98%)	52 (54%)	22 (23%)	22 (23%)	0 1
11	AK	117/119 (98%)	72 (62%)	32 (27%)	13 (11%)	0 7
11	CK	117/119 (98%)	74 (63%)	30 (26%)	13 (11%)	0 7
11	EK	117/119 (98%)	73 (62%)	31 (26%)	13 (11%)	0 7
11	GK	117/119 (98%)	73 (62%)	31 (26%)	13 (11%)	0 7
11	IK	117/119 (98%)	73 (62%)	31 (26%)	13 (11%)	0 7
12	AL	118/124 (95%)	77 (65%)	34 (29%)	7 (6%)	1 17
12	CL	116/124 (94%)	76 (66%)	32 (28%)	8 (7%)	1 15
12	EL	118/124 (95%)	76 (64%)	34 (29%)	8 (7%)	1 15
12	GL	116/124 (94%)	77 (66%)	31 (27%)	8 (7%)	1 15
12	IL	118/124 (95%)	78 (66%)	33 (28%)	7 (6%)	1 17
13	AM	121/125 (97%)	77 (64%)	32 (26%)	12 (10%)	0 9

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
13	CM	119/125 (95%)	77 (65%)	32 (27%)	10 (8%)	1 12
13	EM	119/125 (95%)	77 (65%)	32 (27%)	10 (8%)	1 12
13	GM	121/125 (97%)	77 (64%)	32 (26%)	12 (10%)	0 9
13	IM	119/125 (95%)	78 (66%)	30 (25%)	11 (9%)	1 11
14	AN	58/60 (97%)	22 (38%)	27 (47%)	9 (16%)	0 3
14	CN	58/60 (97%)	23 (40%)	26 (45%)	9 (16%)	0 3
14	EN	58/60 (97%)	22 (38%)	27 (47%)	9 (16%)	0 3
14	GN	58/60 (97%)	22 (38%)	27 (47%)	9 (16%)	0 3
14	IN	58/60 (97%)	22 (38%)	27 (47%)	9 (16%)	0 3
15	AO	86/88 (98%)	59 (69%)	19 (22%)	8 (9%)	0 11
15	CO	86/88 (98%)	59 (69%)	20 (23%)	7 (8%)	1 12
15	EO	86/88 (98%)	59 (69%)	19 (22%)	8 (9%)	0 11
15	GO	86/88 (98%)	59 (69%)	20 (23%)	7 (8%)	1 12
15	IO	86/88 (98%)	59 (69%)	19 (22%)	8 (9%)	0 11
16	AP	81/83 (98%)	48 (59%)	29 (36%)	4 (5%)	2 20
16	CP	81/83 (98%)	48 (59%)	29 (36%)	4 (5%)	2 20
16	EP	81/83 (98%)	48 (59%)	29 (36%)	4 (5%)	2 20
16	GP	81/83 (98%)	48 (59%)	29 (36%)	4 (5%)	2 20
16	IP	81/83 (98%)	49 (60%)	28 (35%)	4 (5%)	2 20
17	AQ	102/104 (98%)	53 (52%)	34 (33%)	15 (15%)	0 4
17	CQ	102/104 (98%)	53 (52%)	34 (33%)	15 (15%)	0 4
17	EQ	102/104 (98%)	53 (52%)	34 (33%)	15 (15%)	0 4
17	GQ	102/104 (98%)	53 (52%)	34 (33%)	15 (15%)	0 4
17	IQ	102/104 (98%)	53 (52%)	34 (33%)	15 (15%)	0 4
18	AR	71/73 (97%)	43 (61%)	20 (28%)	8 (11%)	0 7
18	CR	71/73 (97%)	43 (61%)	20 (28%)	8 (11%)	0 7
18	ER	71/73 (97%)	43 (61%)	20 (28%)	8 (11%)	0 7
18	GR	71/73 (97%)	43 (61%)	20 (28%)	8 (11%)	0 7
18	IR	71/73 (97%)	43 (61%)	20 (28%)	8 (11%)	0 7
19	AS	78/80 (98%)	48 (62%)	22 (28%)	8 (10%)	0 8
19	CS	78/80 (98%)	49 (63%)	21 (27%)	8 (10%)	0 8

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	ES	78/80 (98%)	48 (62%)	22 (28%)	8 (10%)	0	8
19	GS	78/80 (98%)	49 (63%)	20 (26%)	9 (12%)	0	6
19	IS	78/80 (98%)	48 (62%)	21 (27%)	9 (12%)	0	6
20	AT	97/99 (98%)	65 (67%)	20 (21%)	12 (12%)	0	5
20	CT	97/99 (98%)	64 (66%)	21 (22%)	12 (12%)	0	5
20	ET	97/99 (98%)	64 (66%)	21 (22%)	12 (12%)	0	5
20	GT	97/99 (98%)	64 (66%)	21 (22%)	12 (12%)	0	5
20	IT	97/99 (98%)	64 (66%)	21 (22%)	12 (12%)	0	5
21	Aa	88/90 (98%)	77 (88%)	10 (11%)	1 (1%)	14	52
21	Ca	88/90 (98%)	77 (88%)	10 (11%)	1 (1%)	14	52
21	Ea	88/90 (98%)	77 (88%)	10 (11%)	1 (1%)	14	52
21	Ga	88/90 (98%)	77 (88%)	10 (11%)	1 (1%)	14	52
21	Ia	88/90 (98%)	77 (88%)	10 (11%)	1 (1%)	14	52
24	BD	268/270 (99%)	96 (36%)	93 (35%)	79 (30%)	0	0
24	DD	268/270 (99%)	98 (37%)	92 (34%)	78 (29%)	0	0
24	FD	268/270 (99%)	97 (36%)	93 (35%)	78 (29%)	0	0
24	HD	268/270 (99%)	97 (36%)	93 (35%)	78 (29%)	0	0
24	JD	268/270 (99%)	96 (36%)	95 (35%)	77 (29%)	0	0
25	BE	203/205 (99%)	85 (42%)	74 (36%)	44 (22%)	0	2
25	DE	203/205 (99%)	85 (42%)	74 (36%)	44 (22%)	0	2
25	FE	203/205 (99%)	85 (42%)	73 (36%)	45 (22%)	0	1
25	HE	203/205 (99%)	85 (42%)	73 (36%)	45 (22%)	0	1
25	JE	203/205 (99%)	86 (42%)	73 (36%)	44 (22%)	0	2
26	BF	195/198 (98%)	90 (46%)	59 (30%)	46 (24%)	0	1
26	DF	195/198 (98%)	90 (46%)	59 (30%)	46 (24%)	0	1
26	FF	195/198 (98%)	90 (46%)	59 (30%)	46 (24%)	0	1
26	HF	195/198 (98%)	90 (46%)	59 (30%)	46 (24%)	0	1
26	JF	195/198 (98%)	90 (46%)	59 (30%)	46 (24%)	0	1
27	BG	176/178 (99%)	75 (43%)	59 (34%)	42 (24%)	0	1
27	DG	176/178 (99%)	75 (43%)	59 (34%)	42 (24%)	0	1
27	FG	176/178 (99%)	74 (42%)	60 (34%)	42 (24%)	0	1

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	HG	176/178 (99%)	75 (43%)	59 (34%)	42 (24%)	0	1
27	JG	176/178 (99%)	75 (43%)	58 (33%)	43 (24%)	0	1
28	BH	175/177 (99%)	84 (48%)	55 (31%)	36 (21%)	0	2
28	DH	175/177 (99%)	83 (47%)	56 (32%)	36 (21%)	0	2
28	FH	175/177 (99%)	83 (47%)	56 (32%)	36 (21%)	0	2
28	HH	175/177 (99%)	84 (48%)	55 (31%)	36 (21%)	0	2
28	JH	175/177 (99%)	83 (47%)	56 (32%)	36 (21%)	0	2
29	BI	50/52 (96%)	16 (32%)	19 (38%)	15 (30%)	0	0
29	DI	50/52 (96%)	16 (32%)	19 (38%)	15 (30%)	0	0
29	FI	50/52 (96%)	16 (32%)	19 (38%)	15 (30%)	0	0
29	HI	50/52 (96%)	16 (32%)	19 (38%)	15 (30%)	0	0
29	JI	50/52 (96%)	16 (32%)	19 (38%)	15 (30%)	0	0
30	BJ	141/143 (99%)	56 (40%)	47 (33%)	38 (27%)	0	0
30	DJ	141/143 (99%)	56 (40%)	47 (33%)	38 (27%)	0	0
30	FJ	141/143 (99%)	56 (40%)	47 (33%)	38 (27%)	0	0
30	HJ	141/143 (99%)	56 (40%)	47 (33%)	38 (27%)	0	0
30	JJ	141/143 (99%)	56 (40%)	47 (33%)	38 (27%)	0	0
31	BK	141/143 (99%)	55 (39%)	58 (41%)	28 (20%)	0	2
31	DK	141/143 (99%)	55 (39%)	58 (41%)	28 (20%)	0	2
31	FK	141/143 (99%)	55 (39%)	58 (41%)	28 (20%)	0	2
31	HK	141/143 (99%)	55 (39%)	58 (41%)	28 (20%)	0	2
31	JK	141/143 (99%)	55 (39%)	58 (41%)	28 (20%)	0	2
32	BL	130/132 (98%)	56 (43%)	37 (28%)	37 (28%)	0	0
32	DL	130/132 (98%)	56 (43%)	37 (28%)	37 (28%)	0	0
32	FL	130/132 (98%)	56 (43%)	37 (28%)	37 (28%)	0	0
32	HL	130/132 (98%)	56 (43%)	37 (28%)	37 (28%)	0	0
32	JL	130/132 (98%)	56 (43%)	37 (28%)	37 (28%)	0	0
33	BM	139/141 (99%)	60 (43%)	43 (31%)	36 (26%)	0	1
33	DM	139/141 (99%)	60 (43%)	43 (31%)	36 (26%)	0	1
33	FM	139/141 (99%)	60 (43%)	43 (31%)	36 (26%)	0	1
33	HM	139/141 (99%)	60 (43%)	43 (31%)	36 (26%)	0	1

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	JM	139/141 (99%)	60 (43%)	43 (31%)	36 (26%)	0	1
34	BN	122/124 (98%)	60 (49%)	35 (29%)	27 (22%)	0	1
34	DN	122/124 (98%)	61 (50%)	34 (28%)	27 (22%)	0	1
34	FN	122/124 (98%)	61 (50%)	34 (28%)	27 (22%)	0	1
34	HN	122/124 (98%)	61 (50%)	34 (28%)	27 (22%)	0	1
34	JN	122/124 (98%)	61 (50%)	34 (28%)	27 (22%)	0	1
35	BO	112/114 (98%)	52 (46%)	38 (34%)	22 (20%)	0	2
35	DO	112/114 (98%)	52 (46%)	38 (34%)	22 (20%)	0	2
35	FO	112/114 (98%)	52 (46%)	37 (33%)	23 (20%)	0	2
35	HO	112/114 (98%)	52 (46%)	38 (34%)	22 (20%)	0	2
35	JO	112/114 (98%)	51 (46%)	39 (35%)	22 (20%)	0	2
36	BP	109/111 (98%)	52 (48%)	37 (34%)	20 (18%)	0	3
36	DP	109/111 (98%)	52 (48%)	37 (34%)	20 (18%)	0	3
36	FP	109/111 (98%)	52 (48%)	37 (34%)	20 (18%)	0	3
36	HP	109/111 (98%)	52 (48%)	37 (34%)	20 (18%)	0	3
36	JP	109/111 (98%)	52 (48%)	37 (34%)	20 (18%)	0	3
37	BQ	123/125 (98%)	50 (41%)	47 (38%)	26 (21%)	0	2
37	DQ	123/125 (98%)	50 (41%)	48 (39%)	25 (20%)	0	2
37	FQ	123/125 (98%)	50 (41%)	47 (38%)	26 (21%)	0	2
37	HQ	123/125 (98%)	50 (41%)	48 (39%)	25 (20%)	0	2
37	JQ	123/125 (98%)	50 (41%)	47 (38%)	26 (21%)	0	2
38	BR	115/117 (98%)	55 (48%)	41 (36%)	19 (16%)	0	3
38	DR	115/117 (98%)	55 (48%)	41 (36%)	19 (16%)	0	3
38	FR	115/117 (98%)	55 (48%)	41 (36%)	19 (16%)	0	3
38	HR	115/117 (98%)	55 (48%)	40 (35%)	20 (17%)	0	3
38	JR	115/117 (98%)	55 (48%)	41 (36%)	19 (16%)	0	3
39	BS	98/100 (98%)	39 (40%)	37 (38%)	22 (22%)	0	1
39	DS	98/100 (98%)	38 (39%)	38 (39%)	22 (22%)	0	1
39	FS	98/100 (98%)	39 (40%)	37 (38%)	22 (22%)	0	1
39	HS	98/100 (98%)	39 (40%)	37 (38%)	22 (22%)	0	1
39	JS	98/100 (98%)	39 (40%)	37 (38%)	22 (22%)	0	1

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
40	BT	128/130 (98%)	52 (41%)	51 (40%)	25 (20%)	0	2
40	DT	128/130 (98%)	52 (41%)	51 (40%)	25 (20%)	0	2
40	FT	128/130 (98%)	52 (41%)	51 (40%)	25 (20%)	0	2
40	HT	128/130 (98%)	52 (41%)	51 (40%)	25 (20%)	0	2
40	JT	128/130 (98%)	53 (41%)	50 (39%)	25 (20%)	0	2
41	BU	91/93 (98%)	29 (32%)	30 (33%)	32 (35%)	0	0
41	DU	91/93 (98%)	29 (32%)	30 (33%)	32 (35%)	0	0
41	FU	91/93 (98%)	28 (31%)	31 (34%)	32 (35%)	0	0
41	HU	91/93 (98%)	29 (32%)	30 (33%)	32 (35%)	0	0
41	JU	91/93 (98%)	28 (31%)	31 (34%)	32 (35%)	0	0
42	BV	111/113 (98%)	43 (39%)	35 (32%)	33 (30%)	0	0
42	DV	111/113 (98%)	43 (39%)	36 (32%)	32 (29%)	0	0
42	FV	111/113 (98%)	43 (39%)	36 (32%)	32 (29%)	0	0
42	HV	111/113 (98%)	43 (39%)	35 (32%)	33 (30%)	0	0
42	JV	111/113 (98%)	43 (39%)	36 (32%)	32 (29%)	0	0
43	BW	169/173 (98%)	45 (27%)	69 (41%)	55 (32%)	0	0
43	DW	168/173 (97%)	44 (26%)	70 (42%)	54 (32%)	0	0
43	FW	168/173 (97%)	44 (26%)	69 (41%)	55 (33%)	0	0
43	HW	168/173 (97%)	44 (26%)	70 (42%)	54 (32%)	0	0
43	JW	168/173 (97%)	44 (26%)	70 (42%)	54 (32%)	0	0
44	BX	84/86 (98%)	31 (37%)	29 (34%)	24 (29%)	0	0
44	DX	84/86 (98%)	31 (37%)	29 (34%)	24 (29%)	0	0
44	FX	84/86 (98%)	31 (37%)	29 (34%)	24 (29%)	0	0
44	HX	84/86 (98%)	31 (37%)	29 (34%)	24 (29%)	0	0
44	JX	84/86 (98%)	31 (37%)	29 (34%)	24 (29%)	0	0
45	BY	63/65 (97%)	35 (56%)	16 (25%)	12 (19%)	0	2
45	DY	63/65 (97%)	35 (56%)	16 (25%)	12 (19%)	0	2
45	FY	63/65 (97%)	35 (56%)	16 (25%)	12 (19%)	0	2
45	HY	63/65 (97%)	35 (56%)	16 (25%)	12 (19%)	0	2
45	JY	63/65 (97%)	35 (56%)	16 (25%)	12 (19%)	0	2
46	BZ	53/55 (96%)	25 (47%)	19 (36%)	9 (17%)	0	3

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
46	DZ	53/55 (96%)	25 (47%)	19 (36%)	9 (17%)	0	3
46	FZ	53/55 (96%)	25 (47%)	19 (36%)	9 (17%)	0	3
46	HZ	53/55 (96%)	25 (47%)	19 (36%)	9 (17%)	0	3
46	JZ	53/55 (96%)	25 (47%)	19 (36%)	9 (17%)	0	3
47	B1	71/73 (97%)	26 (37%)	24 (34%)	21 (30%)	0	0
47	D1	71/73 (97%)	26 (37%)	24 (34%)	21 (30%)	0	0
47	F1	71/73 (97%)	26 (37%)	25 (35%)	20 (28%)	0	0
47	H1	71/73 (97%)	26 (37%)	24 (34%)	21 (30%)	0	0
47	J1	71/73 (97%)	26 (37%)	24 (34%)	21 (30%)	0	0
48	B2	56/58 (97%)	19 (34%)	23 (41%)	14 (25%)	0	1
48	D2	56/58 (97%)	19 (34%)	23 (41%)	14 (25%)	0	1
48	F2	56/58 (97%)	19 (34%)	23 (41%)	14 (25%)	0	1
48	H2	56/58 (97%)	19 (34%)	23 (41%)	14 (25%)	0	1
48	J2	56/58 (97%)	19 (34%)	23 (41%)	14 (25%)	0	1
49	B3	51/53 (96%)	13 (26%)	18 (35%)	20 (39%)	0	0
49	D3	51/53 (96%)	13 (26%)	18 (35%)	20 (39%)	0	0
49	F3	51/53 (96%)	13 (26%)	18 (35%)	20 (39%)	0	0
49	H3	51/53 (96%)	13 (26%)	18 (35%)	20 (39%)	0	0
49	J3	51/53 (96%)	13 (26%)	18 (35%)	20 (39%)	0	0
50	B4	44/46 (96%)	20 (46%)	15 (34%)	9 (20%)	0	2
50	D4	44/46 (96%)	20 (46%)	15 (34%)	9 (20%)	0	2
50	F4	44/46 (96%)	20 (46%)	15 (34%)	9 (20%)	0	2
50	H4	44/46 (96%)	20 (46%)	15 (34%)	9 (20%)	0	2
50	J4	44/46 (96%)	20 (46%)	15 (34%)	9 (20%)	0	2
51	B5	61/63 (97%)	26 (43%)	19 (31%)	16 (26%)	0	1
51	D5	61/63 (97%)	27 (44%)	19 (31%)	15 (25%)	0	1
51	F5	61/63 (97%)	26 (43%)	20 (33%)	15 (25%)	0	1
51	H5	61/63 (97%)	26 (43%)	20 (33%)	15 (25%)	0	1
51	J5	61/63 (97%)	26 (43%)	20 (33%)	15 (25%)	0	1
52	B6	33/35 (94%)	12 (36%)	10 (30%)	11 (33%)	0	0
52	D6	33/35 (94%)	12 (36%)	10 (30%)	11 (33%)	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
52	F6	33/35 (94%)	12 (36%)	10 (30%)	11 (33%)	0	0
52	H6	33/35 (94%)	12 (36%)	10 (30%)	11 (33%)	0	0
52	J6	33/35 (94%)	12 (36%)	10 (30%)	11 (33%)	0	0
53	B7	215/217 (99%)	112 (52%)	79 (37%)	24 (11%)	0	7
53	D7	215/217 (99%)	113 (53%)	78 (36%)	24 (11%)	0	7
53	F7	215/217 (99%)	114 (53%)	77 (36%)	24 (11%)	0	7
53	H7	215/217 (99%)	113 (53%)	78 (36%)	24 (11%)	0	7
53	J7	215/217 (99%)	112 (52%)	79 (37%)	24 (11%)	0	7
All	All	29701/30260 (98%)	14747 (50%)	9520 (32%)	5434 (18%)	0	3

5 of 5434 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	AB	19	HIS
2	AB	24	TRP
2	AB	165	VAL
2	AB	195	ASP
3	AC	4	LYS

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 X-ray entries followed by that with respect to entries of similar resolution.

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	
2	AB	202/202 (100%)	179 (89%)	23 (11%)	5	21
2	CB	202/202 (100%)	179 (89%)	23 (11%)	5	21
2	EB	202/202 (100%)	179 (89%)	23 (11%)	5	21
2	GB	202/202 (100%)	179 (89%)	23 (11%)	5	21
2	IB	202/202 (100%)	179 (89%)	23 (11%)	5	21
3	AC	160/160 (100%)	150 (94%)	10 (6%)	18	43
3	CC	160/160 (100%)	150 (94%)	10 (6%)	18	43
3	EC	160/160 (100%)	150 (94%)	10 (6%)	18	43

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	GC	160/160 (100%)	150 (94%)	10 (6%)	18	43
3	IC	160/160 (100%)	150 (94%)	10 (6%)	18	43
4	AD	180/180 (100%)	157 (87%)	23 (13%)	4	18
4	CD	180/180 (100%)	157 (87%)	23 (13%)	4	18
4	ED	180/180 (100%)	157 (87%)	23 (13%)	4	18
4	GD	180/180 (100%)	157 (87%)	23 (13%)	4	18
4	ID	180/180 (100%)	157 (87%)	23 (13%)	4	18
5	AE	115/115 (100%)	106 (92%)	9 (8%)	12	36
5	CE	115/115 (100%)	106 (92%)	9 (8%)	12	36
5	EE	115/115 (100%)	106 (92%)	9 (8%)	12	36
5	GE	115/115 (100%)	106 (92%)	9 (8%)	12	36
5	IE	115/115 (100%)	106 (92%)	9 (8%)	12	36
6	AF	90/90 (100%)	82 (91%)	8 (9%)	9	30
6	CF	90/90 (100%)	81 (90%)	9 (10%)	7	26
6	EF	90/90 (100%)	82 (91%)	8 (9%)	9	30
6	GF	90/90 (100%)	82 (91%)	8 (9%)	9	30
6	IF	90/90 (100%)	81 (90%)	9 (10%)	7	26
7	AG	126/126 (100%)	115 (91%)	11 (9%)	10	31
7	CG	126/126 (100%)	115 (91%)	11 (9%)	10	31
7	EG	126/126 (100%)	115 (91%)	11 (9%)	10	31
7	GG	126/126 (100%)	115 (91%)	11 (9%)	10	31
7	IG	126/126 (100%)	115 (91%)	11 (9%)	10	31
8	AH	119/119 (100%)	113 (95%)	6 (5%)	24	49
8	CH	119/119 (100%)	113 (95%)	6 (5%)	24	49
8	EH	119/119 (100%)	113 (95%)	6 (5%)	24	49
8	GH	119/119 (100%)	113 (95%)	6 (5%)	24	49
8	IH	119/119 (100%)	113 (95%)	6 (5%)	24	49
9	AI	98/98 (100%)	87 (89%)	11 (11%)	6	22
9	CI	98/98 (100%)	87 (89%)	11 (11%)	6	22
9	EI	98/98 (100%)	88 (90%)	10 (10%)	7	25
9	GI	98/98 (100%)	87 (89%)	11 (11%)	6	22

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	II	98/98 (100%)	87 (89%)	11 (11%)	6	22
10	AJ	88/88 (100%)	81 (92%)	7 (8%)	12	35
10	CJ	88/88 (100%)	81 (92%)	7 (8%)	12	35
10	EJ	88/88 (100%)	81 (92%)	7 (8%)	12	35
10	GJ	88/88 (100%)	81 (92%)	7 (8%)	12	35
10	IJ	88/88 (100%)	81 (92%)	7 (8%)	12	35
11	AK	90/90 (100%)	80 (89%)	10 (11%)	6	22
11	CK	90/90 (100%)	80 (89%)	10 (11%)	6	22
11	EK	90/90 (100%)	80 (89%)	10 (11%)	6	22
11	GK	90/90 (100%)	80 (89%)	10 (11%)	6	22
11	IK	90/90 (100%)	80 (89%)	10 (11%)	6	22
12	AL	104/104 (100%)	98 (94%)	6 (6%)	20	45
12	CL	104/104 (100%)	98 (94%)	6 (6%)	20	45
12	EL	104/104 (100%)	98 (94%)	6 (6%)	20	45
12	GL	104/104 (100%)	98 (94%)	6 (6%)	20	45
12	IL	104/104 (100%)	98 (94%)	6 (6%)	20	45
13	AM	100/100 (100%)	86 (86%)	14 (14%)	3	17
13	CM	100/100 (100%)	86 (86%)	14 (14%)	3	17
13	EM	100/100 (100%)	86 (86%)	14 (14%)	3	17
13	GM	100/100 (100%)	86 (86%)	14 (14%)	3	17
13	IM	100/100 (100%)	86 (86%)	14 (14%)	3	17
14	AN	49/49 (100%)	44 (90%)	5 (10%)	7	25
14	CN	49/49 (100%)	44 (90%)	5 (10%)	7	25
14	EN	49/49 (100%)	44 (90%)	5 (10%)	7	25
14	GN	49/49 (100%)	44 (90%)	5 (10%)	7	25
14	IN	49/49 (100%)	44 (90%)	5 (10%)	7	25
15	AO	79/79 (100%)	75 (95%)	4 (5%)	24	48
15	CO	79/79 (100%)	75 (95%)	4 (5%)	24	48
15	EO	79/79 (100%)	75 (95%)	4 (5%)	24	48
15	GO	79/79 (100%)	75 (95%)	4 (5%)	24	48
15	IO	79/79 (100%)	75 (95%)	4 (5%)	24	48

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
16	AP	72/72 (100%)	68 (94%)	4 (6%)	21	46
16	CP	72/72 (100%)	68 (94%)	4 (6%)	21	46
16	EP	72/72 (100%)	68 (94%)	4 (6%)	21	46
16	GP	72/72 (100%)	68 (94%)	4 (6%)	21	46
16	IP	72/72 (100%)	68 (94%)	4 (6%)	21	46
17	AQ	96/96 (100%)	88 (92%)	8 (8%)	11	34
17	CQ	96/96 (100%)	88 (92%)	8 (8%)	11	34
17	EQ	96/96 (100%)	88 (92%)	8 (8%)	11	34
17	GQ	96/96 (100%)	88 (92%)	8 (8%)	11	34
17	IQ	96/96 (100%)	88 (92%)	8 (8%)	11	34
18	AR	64/64 (100%)	57 (89%)	7 (11%)	6	23
18	CR	64/64 (100%)	57 (89%)	7 (11%)	6	23
18	ER	64/64 (100%)	57 (89%)	7 (11%)	6	23
18	GR	64/64 (100%)	57 (89%)	7 (11%)	6	23
18	IR	64/64 (100%)	57 (89%)	7 (11%)	6	23
19	AS	71/71 (100%)	62 (87%)	9 (13%)	4	18
19	CS	71/71 (100%)	62 (87%)	9 (13%)	4	18
19	ES	71/71 (100%)	62 (87%)	9 (13%)	4	18
19	GS	71/71 (100%)	62 (87%)	9 (13%)	4	18
19	IS	71/71 (100%)	62 (87%)	9 (13%)	4	18
20	AT	76/76 (100%)	73 (96%)	3 (4%)	32	56
20	CT	76/76 (100%)	73 (96%)	3 (4%)	32	56
20	ET	76/76 (100%)	73 (96%)	3 (4%)	32	56
20	GT	76/76 (100%)	73 (96%)	3 (4%)	32	56
20	IT	76/76 (100%)	73 (96%)	3 (4%)	32	56
21	Aa	80/80 (100%)	62 (78%)	18 (22%)	1	5
21	Ca	80/80 (100%)	62 (78%)	18 (22%)	1	5
21	Ea	80/80 (100%)	62 (78%)	18 (22%)	1	5
21	Ga	80/80 (100%)	62 (78%)	18 (22%)	1	5
21	Ia	80/80 (100%)	62 (78%)	18 (22%)	1	5
24	BD	212/212 (100%)	168 (79%)	44 (21%)	1	6

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
24	DD	212/212 (100%)	168 (79%)	44 (21%)	1 6
24	FD	212/212 (100%)	168 (79%)	44 (21%)	1 6
24	HD	212/212 (100%)	168 (79%)	44 (21%)	1 6
24	JD	212/212 (100%)	168 (79%)	44 (21%)	1 6
25	BE	155/155 (100%)	130 (84%)	25 (16%)	2 13
25	DE	155/155 (100%)	130 (84%)	25 (16%)	2 13
25	FE	155/155 (100%)	131 (84%)	24 (16%)	2 14
25	HE	155/155 (100%)	131 (84%)	24 (16%)	2 14
25	JE	155/155 (100%)	130 (84%)	25 (16%)	2 13
26	BF	157/158 (99%)	139 (88%)	18 (12%)	5 21
26	DF	157/158 (99%)	139 (88%)	18 (12%)	5 21
26	FF	157/158 (99%)	139 (88%)	18 (12%)	5 21
26	HF	157/158 (99%)	139 (88%)	18 (12%)	5 21
26	JF	157/158 (99%)	139 (88%)	18 (12%)	5 21
27	BG	154/154 (100%)	122 (79%)	32 (21%)	1 6
27	DG	154/154 (100%)	122 (79%)	32 (21%)	1 6
27	FG	154/154 (100%)	122 (79%)	32 (21%)	1 6
27	HG	154/154 (100%)	122 (79%)	32 (21%)	1 6
27	JG	154/154 (100%)	122 (79%)	32 (21%)	1 6
28	BH	137/137 (100%)	116 (85%)	21 (15%)	2 14
28	DH	137/137 (100%)	116 (85%)	21 (15%)	2 14
28	FH	137/137 (100%)	116 (85%)	21 (15%)	2 14
28	HH	137/137 (100%)	116 (85%)	21 (15%)	2 14
28	JH	137/137 (100%)	116 (85%)	21 (15%)	2 14
29	BI	44/44 (100%)	39 (89%)	5 (11%)	5 21
29	DI	44/44 (100%)	39 (89%)	5 (11%)	5 21
29	FI	44/44 (100%)	39 (89%)	5 (11%)	5 21
29	HI	44/44 (100%)	39 (89%)	5 (11%)	5 21
29	JI	44/44 (100%)	39 (89%)	5 (11%)	5 21
30	BJ	107/107 (100%)	95 (89%)	12 (11%)	6 22
30	DJ	107/107 (100%)	95 (89%)	12 (11%)	6 22

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
30	FJ	107/107 (100%)	95 (89%)	12 (11%)	6 22
30	HJ	107/107 (100%)	95 (89%)	12 (11%)	6 22
30	JJ	107/107 (100%)	95 (89%)	12 (11%)	6 22
31	BK	119/119 (100%)	102 (86%)	17 (14%)	3 16
31	DK	119/119 (100%)	102 (86%)	17 (14%)	3 16
31	FK	119/119 (100%)	102 (86%)	17 (14%)	3 16
31	HK	119/119 (100%)	102 (86%)	17 (14%)	3 16
31	JK	119/119 (100%)	102 (86%)	17 (14%)	3 16
32	BL	101/101 (100%)	88 (87%)	13 (13%)	4 18
32	DL	101/101 (100%)	88 (87%)	13 (13%)	4 18
32	FL	101/101 (100%)	88 (87%)	13 (13%)	4 18
32	HL	101/101 (100%)	88 (87%)	13 (13%)	4 18
32	JL	101/101 (100%)	88 (87%)	13 (13%)	4 18
33	BM	108/108 (100%)	88 (82%)	20 (18%)	1 9
33	DM	108/108 (100%)	88 (82%)	20 (18%)	1 9
33	FM	108/108 (100%)	88 (82%)	20 (18%)	1 9
33	HM	108/108 (100%)	88 (82%)	20 (18%)	1 9
33	JM	108/108 (100%)	88 (82%)	20 (18%)	1 9
34	BN	99/99 (100%)	75 (76%)	24 (24%)	0 4
34	DN	99/99 (100%)	75 (76%)	24 (24%)	0 4
34	FN	99/99 (100%)	75 (76%)	24 (24%)	0 4
34	HN	99/99 (100%)	75 (76%)	24 (24%)	0 4
34	JN	99/99 (100%)	75 (76%)	24 (24%)	0 4
35	BO	91/91 (100%)	78 (86%)	13 (14%)	3 16
35	DO	91/91 (100%)	78 (86%)	13 (14%)	3 16
35	FO	91/91 (100%)	78 (86%)	13 (14%)	3 16
35	HO	91/91 (100%)	78 (86%)	13 (14%)	3 16
35	JO	91/91 (100%)	78 (86%)	13 (14%)	3 16
36	BP	80/80 (100%)	71 (89%)	9 (11%)	6 21
36	DP	80/80 (100%)	71 (89%)	9 (11%)	6 21
36	FP	80/80 (100%)	71 (89%)	9 (11%)	6 21

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	HP	80/80 (100%)	71 (89%)	9 (11%)	6	21
36	JP	80/80 (100%)	71 (89%)	9 (11%)	6	21
37	BQ	108/108 (100%)	92 (85%)	16 (15%)	3	15
37	DQ	108/108 (100%)	92 (85%)	16 (15%)	3	15
37	FQ	108/108 (100%)	92 (85%)	16 (15%)	3	15
37	HQ	108/108 (100%)	92 (85%)	16 (15%)	3	15
37	JQ	108/108 (100%)	92 (85%)	16 (15%)	3	15
38	BR	96/96 (100%)	82 (85%)	14 (15%)	3	15
38	DR	96/96 (100%)	82 (85%)	14 (15%)	3	15
38	FR	96/96 (100%)	82 (85%)	14 (15%)	3	15
38	HR	96/96 (100%)	82 (85%)	14 (15%)	3	15
38	JR	96/96 (100%)	82 (85%)	14 (15%)	3	15
39	BS	79/79 (100%)	70 (89%)	9 (11%)	5	21
39	DS	79/79 (100%)	70 (89%)	9 (11%)	5	21
39	FS	79/79 (100%)	70 (89%)	9 (11%)	5	21
39	HS	79/79 (100%)	70 (89%)	9 (11%)	5	21
39	JS	79/79 (100%)	70 (89%)	9 (11%)	5	21
40	BT	112/112 (100%)	99 (88%)	13 (12%)	5	21
40	DT	112/112 (100%)	99 (88%)	13 (12%)	5	21
40	FT	112/112 (100%)	99 (88%)	13 (12%)	5	21
40	HT	112/112 (100%)	99 (88%)	13 (12%)	5	21
40	JT	112/112 (100%)	99 (88%)	13 (12%)	5	21
41	BU	75/75 (100%)	69 (92%)	6 (8%)	12	35
41	DU	75/75 (100%)	69 (92%)	6 (8%)	12	35
41	FU	75/75 (100%)	69 (92%)	6 (8%)	12	35
41	HU	75/75 (100%)	68 (91%)	7 (9%)	9	28
41	JU	75/75 (100%)	68 (91%)	7 (9%)	9	28
42	BV	94/94 (100%)	86 (92%)	8 (8%)	10	33
42	DV	94/94 (100%)	86 (92%)	8 (8%)	10	33
42	FV	94/94 (100%)	86 (92%)	8 (8%)	10	33
42	HV	94/94 (100%)	86 (92%)	8 (8%)	10	33

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
42	JV	94/94 (100%)	86 (92%)	8 (8%)	10 33
43	BW	147/147 (100%)	125 (85%)	22 (15%)	3 15
43	DW	147/147 (100%)	125 (85%)	22 (15%)	3 15
43	FW	147/147 (100%)	125 (85%)	22 (15%)	3 15
43	HW	147/147 (100%)	125 (85%)	22 (15%)	3 15
43	JW	147/147 (100%)	125 (85%)	22 (15%)	3 15
44	BX	64/64 (100%)	49 (77%)	15 (23%)	1 4
44	DX	64/64 (100%)	49 (77%)	15 (23%)	1 4
44	FX	64/64 (100%)	48 (75%)	16 (25%)	0 3
44	HX	64/64 (100%)	48 (75%)	16 (25%)	0 3
44	JX	64/64 (100%)	49 (77%)	15 (23%)	1 4
45	BY	53/53 (100%)	44 (83%)	9 (17%)	2 12
45	DY	53/53 (100%)	44 (83%)	9 (17%)	2 12
45	FY	53/53 (100%)	44 (83%)	9 (17%)	2 12
45	HY	53/53 (100%)	44 (83%)	9 (17%)	2 12
45	JY	53/53 (100%)	44 (83%)	9 (17%)	2 12
46	BZ	48/48 (100%)	38 (79%)	10 (21%)	1 6
46	DZ	48/48 (100%)	38 (79%)	10 (21%)	1 6
46	FZ	48/48 (100%)	38 (79%)	10 (21%)	1 6
46	HZ	48/48 (100%)	38 (79%)	10 (21%)	1 6
46	JZ	48/48 (100%)	38 (79%)	10 (21%)	1 6
47	B1	66/66 (100%)	53 (80%)	13 (20%)	1 8
47	D1	66/66 (100%)	53 (80%)	13 (20%)	1 8
47	F1	66/66 (100%)	53 (80%)	13 (20%)	1 8
47	H1	66/66 (100%)	53 (80%)	13 (20%)	1 8
47	J1	66/66 (100%)	53 (80%)	13 (20%)	1 8
48	B2	51/51 (100%)	39 (76%)	12 (24%)	1 4
48	D2	51/51 (100%)	39 (76%)	12 (24%)	1 4
48	F2	51/51 (100%)	39 (76%)	12 (24%)	1 4
48	H2	51/51 (100%)	39 (76%)	12 (24%)	1 4
48	J2	51/51 (100%)	39 (76%)	12 (24%)	1 4

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
49	B3	46/46 (100%)	33 (72%)	13 (28%)	0 2
49	D3	46/46 (100%)	33 (72%)	13 (28%)	0 2
49	F3	46/46 (100%)	33 (72%)	13 (28%)	0 2
49	H3	46/46 (100%)	33 (72%)	13 (28%)	0 2
49	J3	46/46 (100%)	33 (72%)	13 (28%)	0 2
50	B4	39/39 (100%)	28 (72%)	11 (28%)	0 2
50	D4	39/39 (100%)	28 (72%)	11 (28%)	0 2
50	F4	39/39 (100%)	28 (72%)	11 (28%)	0 2
50	H4	39/39 (100%)	28 (72%)	11 (28%)	0 2
50	J4	39/39 (100%)	28 (72%)	11 (28%)	0 2
51	B5	50/50 (100%)	35 (70%)	15 (30%)	0 2
51	D5	50/50 (100%)	35 (70%)	15 (30%)	0 2
51	F5	50/50 (100%)	35 (70%)	15 (30%)	0 2
51	H5	50/50 (100%)	35 (70%)	15 (30%)	0 2
51	J5	50/50 (100%)	35 (70%)	15 (30%)	0 2
52	B6	34/34 (100%)	30 (88%)	4 (12%)	5 20
52	D6	34/34 (100%)	30 (88%)	4 (12%)	5 20
52	F6	34/34 (100%)	30 (88%)	4 (12%)	5 20
52	H6	34/34 (100%)	30 (88%)	4 (12%)	5 20
52	J6	34/34 (100%)	30 (88%)	4 (12%)	5 20
53	B7	191/187 (102%)	179 (94%)	12 (6%)	18 43
53	D7	191/187 (102%)	179 (94%)	12 (6%)	18 43
53	F7	191/187 (102%)	179 (94%)	12 (6%)	18 43
53	H7	191/187 (102%)	179 (94%)	12 (6%)	18 43
53	J7	191/187 (102%)	179 (94%)	12 (6%)	18 43
All	All	24880/24865 (100%)	21622 (87%)	3258 (13%)	4 18

5 of 3258 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
44	FX	74	LYS
29	HI	46	LEU
48	J2	47	PRO

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
49	F3	42	PRO
44	FX	62	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 944 such sidechains are listed below:

Mol	Chain	Res	Type
26	FF	34	GLN
37	JQ	23	GLN
3	GC	3	ASN
33	JM	81	GLN
11	IK	38	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	1521/1526 (99%)	348 (22%)	56 (3%)
1	CA	1521/1526 (99%)	348 (22%)	57 (3%)
1	EA	1522/1526 (99%)	349 (22%)	57 (3%)
1	GA	1522/1526 (99%)	349 (22%)	56 (3%)
1	IA	1522/1526 (99%)	348 (22%)	57 (3%)
22	BB	2801/2825 (99%)	768 (27%)	35 (1%)
22	DB	2804/2825 (99%)	771 (27%)	36 (1%)
22	FB	2801/2825 (99%)	768 (27%)	38 (1%)
22	HB	2803/2825 (99%)	768 (27%)	36 (1%)
22	JB	2804/2825 (99%)	765 (27%)	37 (1%)
23	BA	117/119 (98%)	30 (25%)	1 (0%)
23	DA	117/119 (98%)	30 (25%)	1 (0%)
23	FA	117/119 (98%)	31 (26%)	1 (0%)
23	HA	117/119 (98%)	30 (25%)	1 (0%)
23	JA	117/119 (98%)	30 (25%)	1 (0%)
All	All	22206/22350 (99%)	5733 (25%)	470 (2%)

5 of 5733 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	7	G
1	AA	8	A
1	AA	9	G
1	AA	31	G
1	AA	32	A

5 of 470 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	EA	1226	C
22	JB	1263	G
1	GA	115	G
22	JB	583	C
1	IA	560	U

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
22	FB	56
22	HB	55
22	JB	52
22	DB	51
22	BB	51
1	EA	5
1	AA	4
1	CA	4
1	GA	4
1	IA	4
12	AL	3

Continued on next page...

Continued from previous page...

Mol	Chain	Number of breaks
12	GL	3
12	CL	3
12	IL	3
43	DW	2
43	JW	2
43	FW	2
43	BW	2
13	IM	2
13	EM	2
13	CM	2
43	HW	2
12	EL	2
13	GM	2
13	AM	1

The worst 5 of 319 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	JB	373:A	O3'	387:A	P	28.29
1	HB	373:A	O3'	387:A	P	28.03
1	FB	373:A	O3'	387:A	P	28.01
1	DB	373:A	O3'	387:A	P	27.91
1	FB	248:A	O3'	292:A	P	27.80

6 Fit of model and data

6.1 Protein, DNA and RNA chains

Unable to reproduce the depositors R factor - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands

Unable to reproduce the depositors R factor - this section is therefore empty.

6.5 Other polymers

Unable to reproduce the depositors R factor - this section is therefore empty.