



wwPDB X-ray Structure Validation Summary Report ⓘ

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 ⓘ symbol.

The types of validation reports are described at

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

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

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

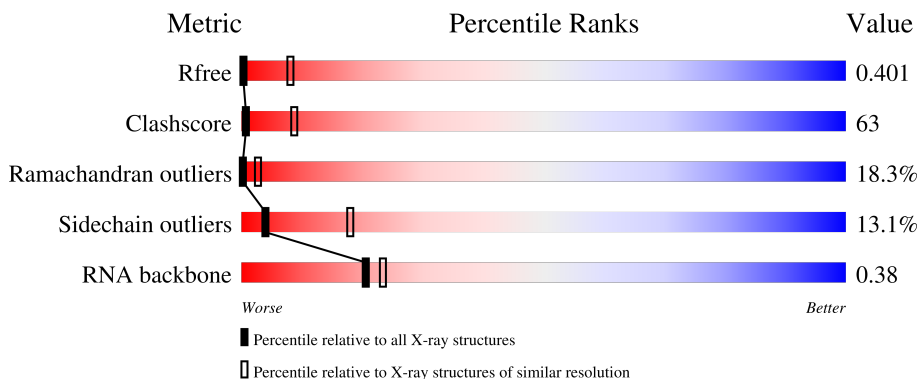
1 Overall quality at a glance

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 $\leq 5\%$.

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% .

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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%

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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%

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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%

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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%

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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%

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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%

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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%	•

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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%


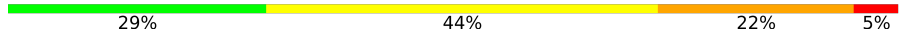
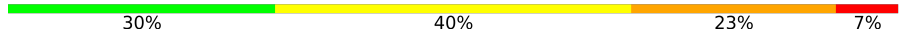
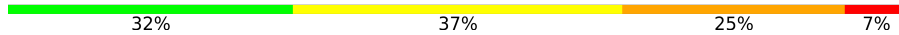
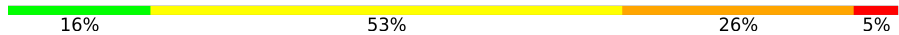
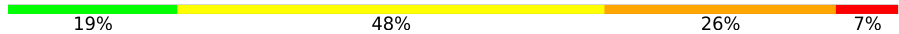
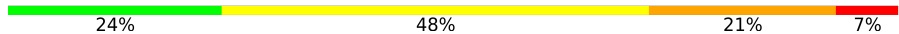
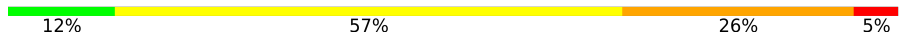
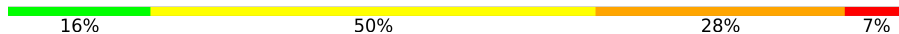
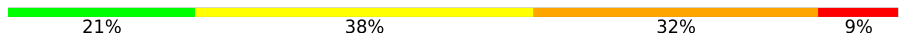
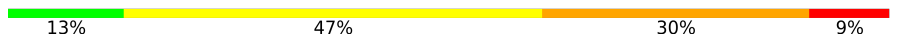
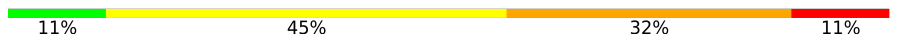
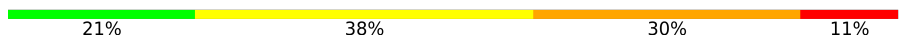
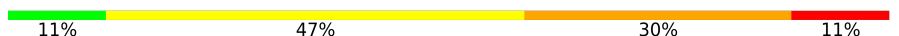



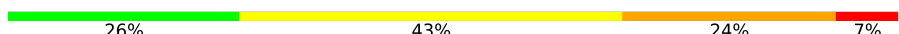







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Mol	Chain	Length	Quality of chain			
42	DV	113	27%	46%	26%	•
42	FV	113	26%	48%	27%	
42	HV	113	30%	45%	25%	
42	JV	113	21%	50%	28%	
43	BW	173	23%	46%	25%	6%
43	DW	173	21%	49%	25%	5%
43	FW	173	24%	46%	24%	6%
43	HW	173	24%	48%	23%	5%
43	JW	173	27%	45%	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%


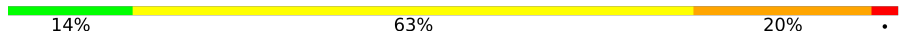



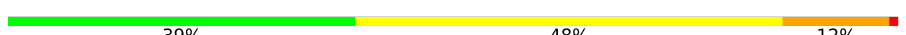
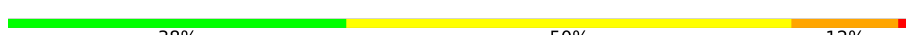
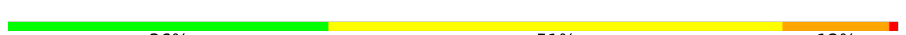

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Mol	Chain	Length	Quality of chain
47	D1	73	
47	F1	73	
47	H1	73	
47	J1	73	
48	B2	58	
48	D2	58	
48	F2	58	
48	H2	58	
48	J2	58	
49	B3	53	
49	D3	53	
49	F3	53	
49	H3	53	
49	J3	53	
50	B4	46	
50	D4	46	
50	F4	46	
50	H4	46	
50	J4	46	
51	B5	63	
51	D5	63	
51	F5	63	
51	H5	63	
51	J5	63	
52	B6	35	

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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
			Total	C	N	O	P			
1	AA	1526	Total 32799	C 14601	N 6082	O 10590	P 1526	0	0	0
1	CA	1526	Total 32799	C 14601	N 6082	O 10590	P 1526	0	0	0
1	EA	1526	Total 32799	C 14601	N 6082	O 10590	P 1526	0	0	0
1	GA	1526	Total 32799	C 14601	N 6082	O 10590	P 1526	0	0	0
1	IA	1526	Total 32799	C 14601	N 6082	O 10590	P 1526	0	0	0

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

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

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

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

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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			

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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			

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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			

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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			

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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			

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

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

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

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

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

- Molecule 21 is a protein called protein Y.

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

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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			

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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			

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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			

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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			

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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			

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

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

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

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

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

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

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

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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			

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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			

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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			

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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			

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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			

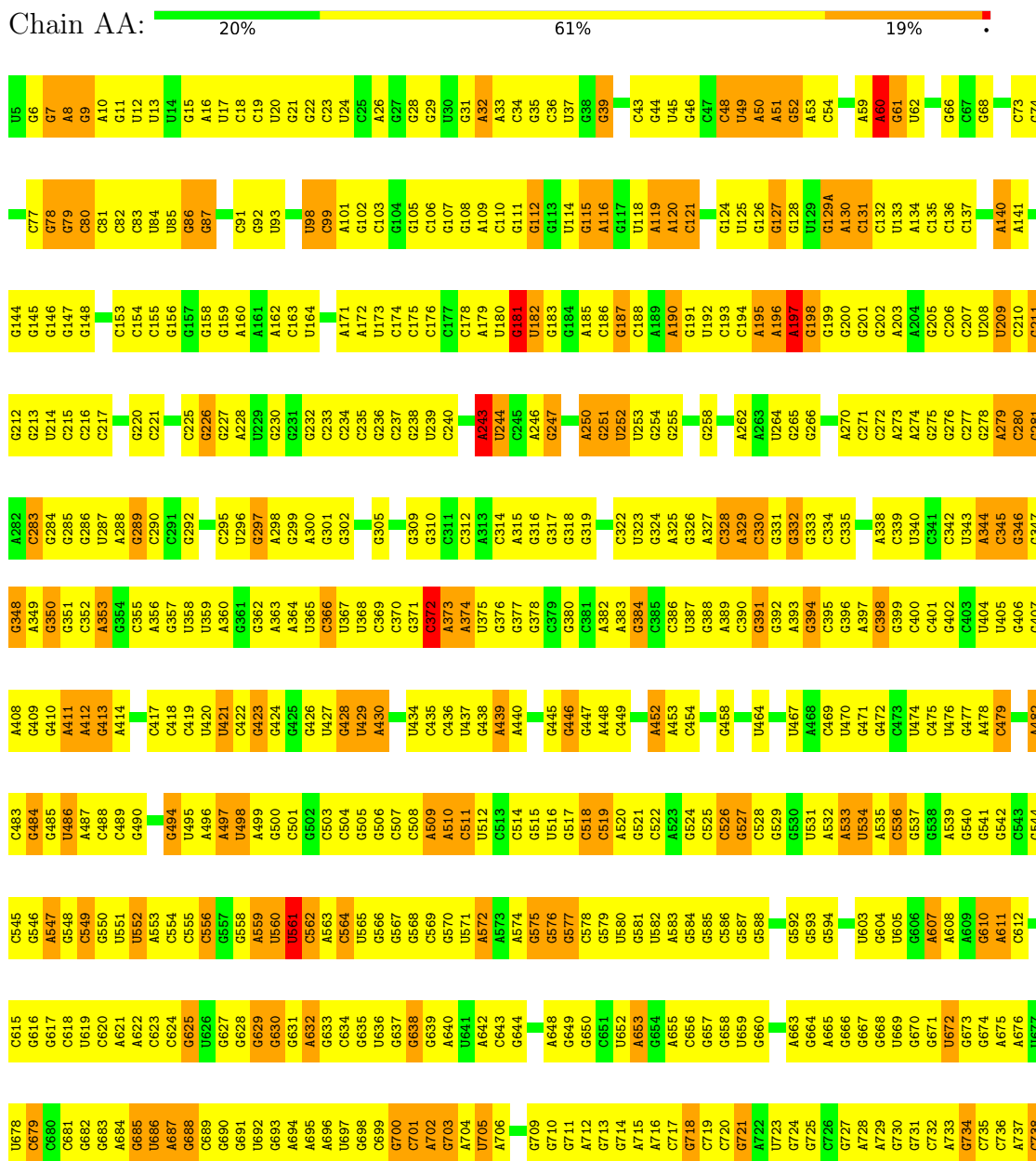
- Molecule 53 is a protein called 50S ribosomal protein L1P.

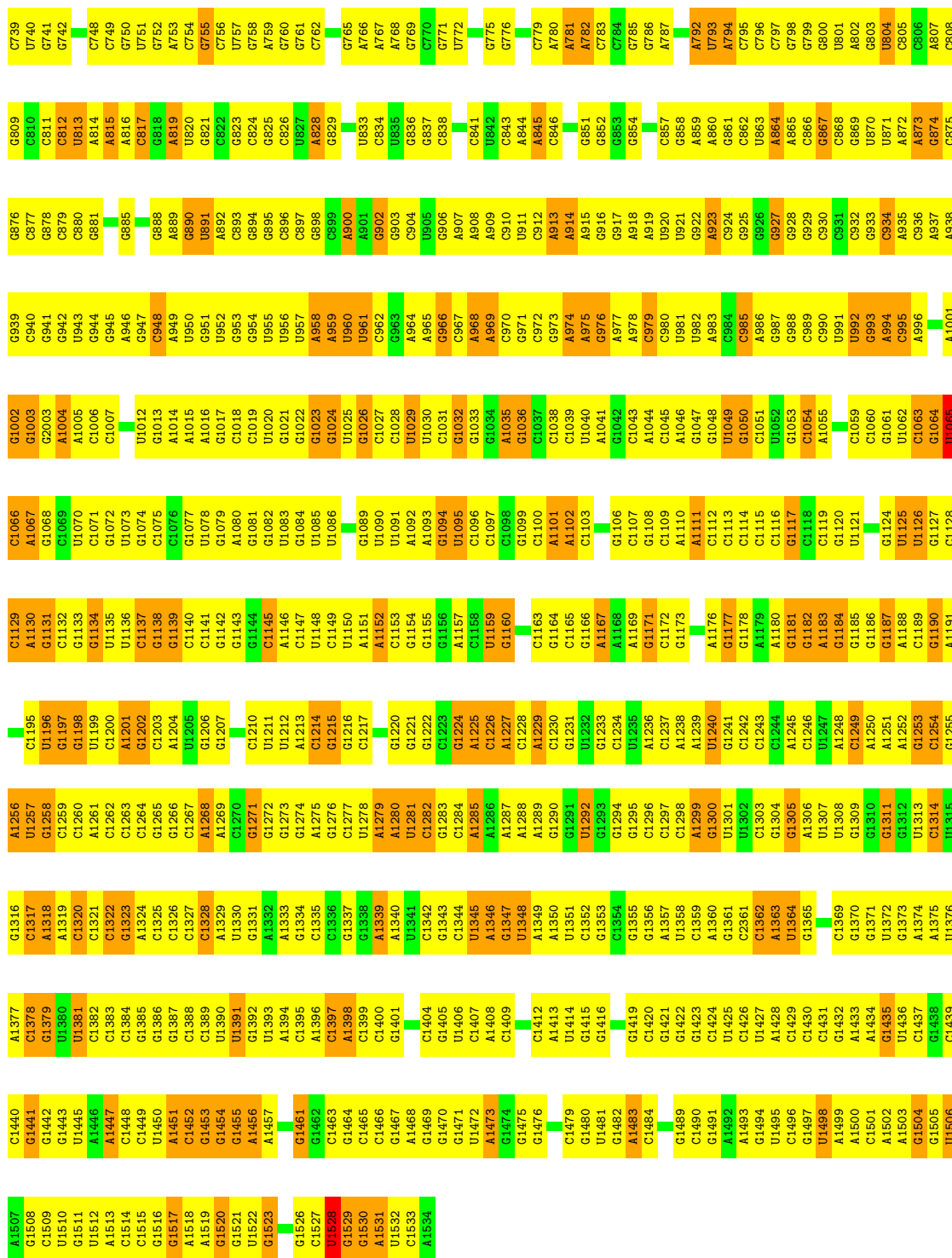
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
53	B7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			
53	D7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			
53	F7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			
53	H7	217	Total	C	N	O	S	Se	0	0	0
			1720	1098	304	313	1	4			
53	J7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





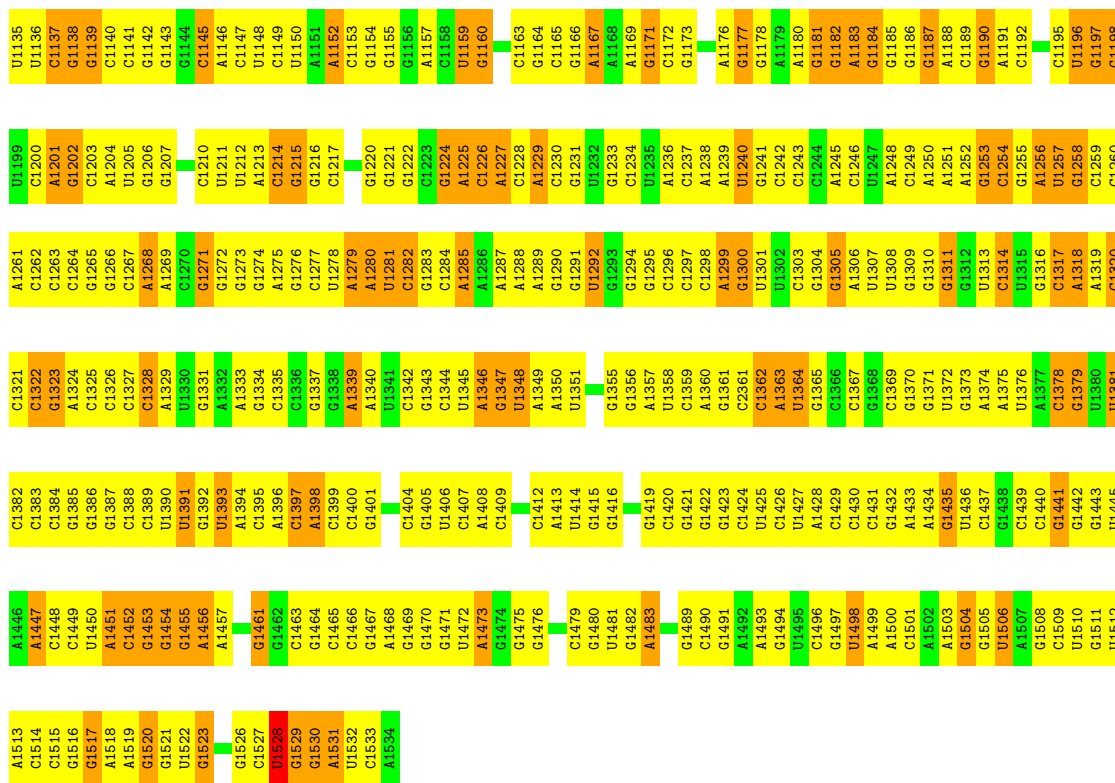
• Molecule 1: 16S ribosomal RNA

Chain CA: 20% 60% 19%

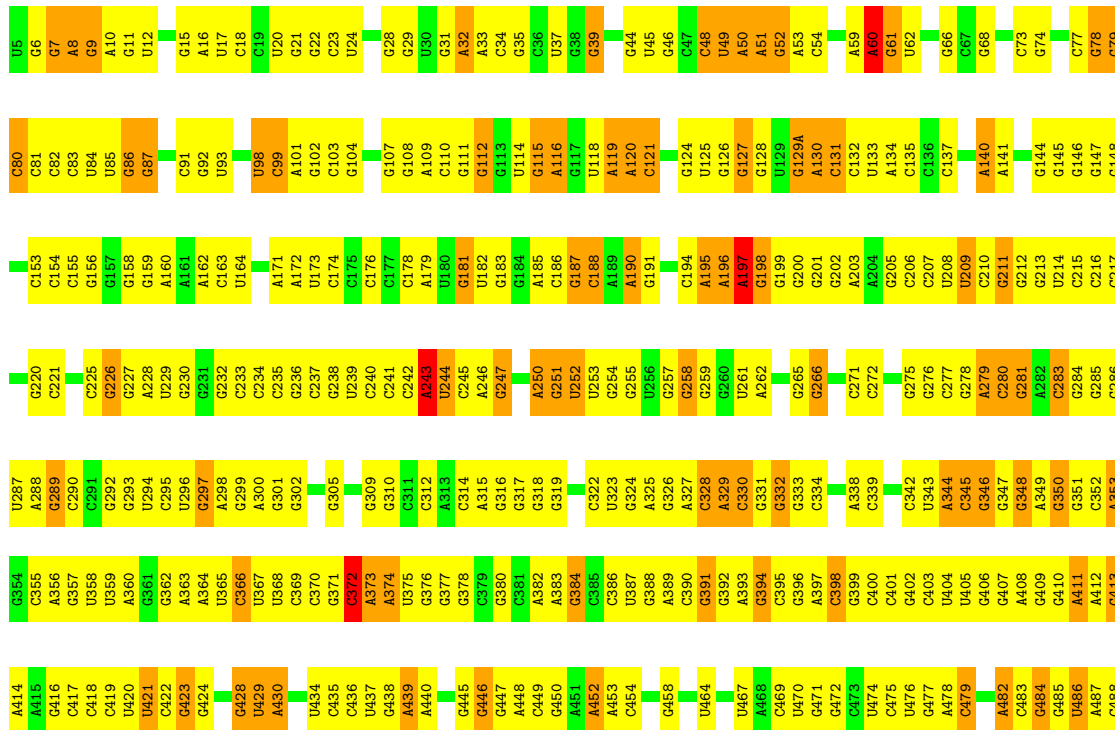


U5	G6	G7	A8	G9	A10	G11	U12	G15	A16	G17	U18	C19	U20	G21	C22	G23	U24	G28	G29	U30	G31	A32	A33	C34	G35	C36	U37	G38	C39	C43	G44	U45	G46	C47	C48	U49	A50	A51	G52	A53	C54	A59	A60	G61	U62	G66	C67	G68	C73	G74	C77	G78
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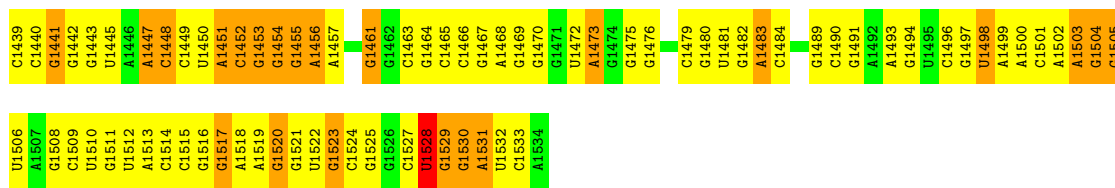
U1073	U1074	U1075	U1076	U1077	U1078	U1079	U1080	U1081	U1082	U1083	U1084	U1085	U1086	U1089	U1090	U1091	U1092	U1093	U1094	U1095	U1096	U1097	U1098	U1099	U1100	U1101	U1102	U1103	U1104	U1105	U1106	U1107	U1108	U1109	U1110	U1111	U1112	U1113	U1114	U1115	U1116	U1117	U1118	U1119	U1120	U1121	U1124	U1125	U1126	U1127	U1128	U1129	U1130	U1131	U1132	U1133	U1134				
U1012	G1013	A1014	G1015	U1016	G1017	C1018	G1019	U1020	G1021	U1022	G1023	U1024	U1025	G1026	C1027	G1028	U1029	U1030	C1031	G1032	U1033	G1034	A1035	G1036	C1037	U1038	G1039	U1040	A1041	U1045	G1046	U1047	G1048	U1049	U1050	C1051	U1052	G1053	U1054	A1055	U1056	G1057	U1058	C1059	G1060	U1061	U1062	C1063	U1064	C1065	U1066	C1067	U1068	C1069	U1070	C1071	G1072				
A946	G947	C948	A949	U950	G951	U952	G953	U954	G955	U956	A957	G958	U959	A960	G961	C962	G963	A964	G965	U966	C967	G968	U969	A970	G971	C972	G973	U974	A975	G976	A977	U978	C979	U980	U981	U982	A983	C984	G985	U986	C987	U988	C989	U990	U991	U992	G993	A994	C995	A996	A1001	U1002	U1003	G1004	C1005	U1006	C1007				
G881	A814	A815	A816	C817	G818	U819	G820	U821	G825	U826	A827	U828	G829	U830	U833	C834	G837	C838	G839	U840	C841	U842	A843	U844	A845	U846	A847	U848	U849	U850	U851	U852	U853	U854	C857	G858	A859	U860	G861	C862	U863	U864	U865	U866	U867	U868	U869	U870	U871	U872	U873	U874	U875	U876	U877	U878	U879	U880			
G742	A743	C744	U745	G752	A753	U754	G755	U756	U757	G758	A759	U760	G761	U762	G765	U766	A767	U768	G769	C770	G771	U772	A773	U774	G775	U776	C777	U778	A779	U780	U781	U782	C783	U784	G785	U786	U787	U788	U789	U790	U791	U792	U793	U794	U795	U796	U797	U798	U799	U800	U801	U802	U803	U804	U807	U808	U809	C810	U811	U812	U813
C681	G682	U683	A684	G685	U686	A687	G688	U689	G690	U691	A692	U693	G694	U695	G696	U697	C698	U699	G700	C701	A702	U703	A704	U705	A706	G709	U710	G711	U712	A713	U714	A715	U716	C717	U718	C719	U720	G721	U722	U723	U724	U725	C726	U727	U728	U729	U730	U731	U732	U733	U734	U735	U736	U737	U738	U739	U740	U741			
A553	C554	C555	C556	G557	U558	A559	U560	U561	C562	A563	U564	U565	G566	U567	C568	U569	C570	U571	A572	U573	A574	G575	U576	G577	C578	U579	U580	G581	U582	A583	U584	G585	U586	G587	U588	C589	G592	U593	G594	U597	U598	C599	U603	G604	U605	U606	A607	U608	A609	G610	A611	U612	G613	A614	U615	G616					
G490	C417	C418	C419	U420	U421	C422	U423	G424	U425	C426	U427	U428	U429	A430	U434	C435	U436	U437	G438	A439	U440	G445	U446	U447	U448	C449	A452	U453	U454	U455	U456	G457	U458	U459	U464	U465	U466	U467	U468	C469	U470	G471	U472	C473	U474	C475	U476	U477	U478	U479	U482	U483	U484	U485	U486	U487	U488	U489			
C355	A356	G357	U358	U359	A360	C363	G364	A365	U366	C367	U368	U369	C370	U371	G372	A373	U374	U375	A376	C377	U378	G379	G380	C381	U382	A383	U384	C385	U386	U387	G388	U389	C390	U392	A393	U394	C395	U396	A397	C398	U399	C400	C401	U402	C403	U404	U405	U406	U407	U408	U409	U410	U411	U412	U413	U414					
A288	G289	C290	C291	G292	C295	U296	U297	G298	A299	U300	C301	U302	C303	U304	C305	U306	U307	G308	U309	C310	U311	C312	U313	A314	U315	C316	U317	U318	U319	U320	U321	U322	U323	U324	A325	U326	U327	C328	U329	A329	C330	G331	U332	U333	U334	C335	U338	A339	U340	U341	U342	U343	U344	U345	U346	U347	U348	U349	U350	U351	U352
G220	C221	C225	G226	G227	A228	U229	G230	U231	G232	U233	C234	C235	G236	U237	U238	U239	C240	C241	C242	U243	U244	C245	U246	G247	A250	G251	U252	U253	U254	U255	G256	G258	A262	U263	U264	G265	U266	G267	A270	C271	U272	C273	U274	U275	U276	U277	U278	U279	U280	U281	U282	U283	U284	U285	U286	U287					
G147	G148	C153	C154	G158	U159	A160	C161	U162	C163	U164	U165	A171	U172	U173	C174	U175	C176	C177	U178	A179	U180	U181	U182	U183	U184	U185	U186	U187	U188	U189	U190	U191	A195	U196	A197	U198	U199	G200	G201	G202	A203	U204	U205	U206	U207	U208	U209	C210	G211	G212	G213	U214	U215	C216	U217	U218	U219	U220			



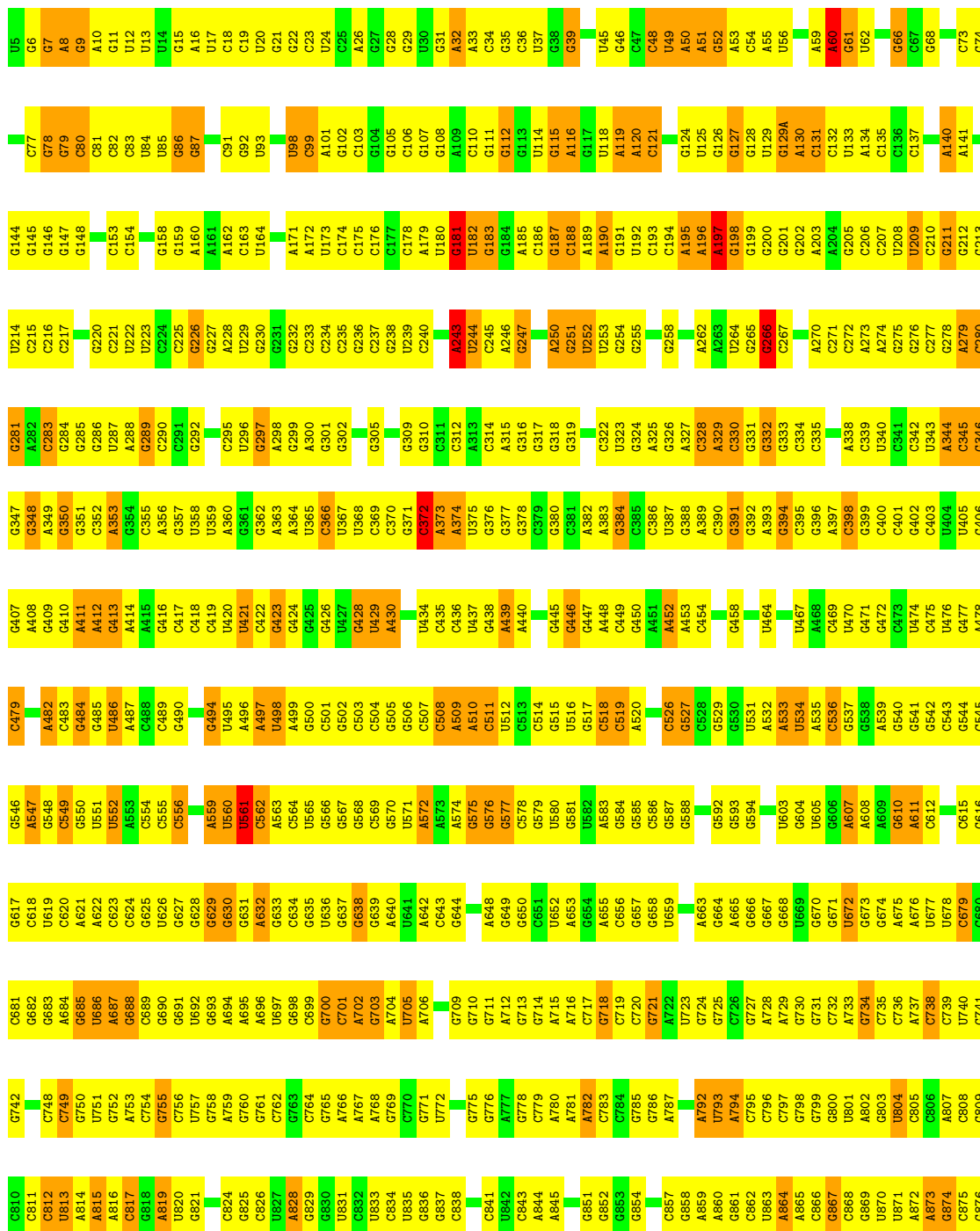
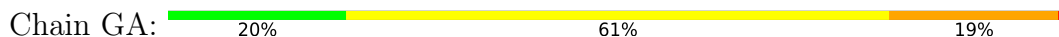
• Molecule 1: 16S ribosomal RNA



A1374	U1313	G1253	G1190	G1127	C1066	G1002	G939	G874	C806	A737	U677	A614	U551	C489
A1375	C1314	C1254	A1191	C1128	A1067	G1003	C940	C875	A807	C738	U678	C615	U552	G490
U1376	U1315	G1255	C1192	C1129	G1068	A1004	G941	C876	C808	G739	C679	G616	A553	G494
C1377	G1316	A1256	G1193	A1130	C1069	A1005	G942	C877	G809	U740	G680	G617	G554	U495
G1378	C1317	U1257	U1194	G1131	U1070	C1006	U943	C878	C810	G741	C681	C618	C555	A496
G1379	A1318	G1258	C1195	C1132	C1071	G1007	G944	C879	C811	G742	G682	U619	C556	A497
U1380	A1319	C1259	U1196	G1133	G1072	C1007	G945	C880	C812	G743	G683	C620	G557	U498
U1381	C1320	C1260	G1197	G1134	U1073	U1012	A946	G881	U813	C744	A684	A621	G558	U499
C1382	C1321	A1261	U1198	U1135	G1074	G1018	G947	G882	A814	C745	G685	A622	A559	A499
C1383	C1322	C1262	U1199	C1136	C1075	G1013	C948	G888	A815	G750	U686	G623	U560	G500
C1384	C1323	G1263	C1200	C1137	A1076	A1014	A949	A889	A816	U751	A687	C624	U561	C501
G1385	A1324	C1264	A1201	G1138	G1077	A1015	U950	G890	C817	G752	G688	G625	C562	C502
C1386	C1325	G1265	U1078	A1139	U1078	A1016	U951	U891	G818	A753	G689	U626	A563	C503
G1387	C1326	G1266	C1203	C1140	G1079	G1017	U952	A892	A819	C754	G690	G627	C564	C504
C1388	C1327	C1267	A1204	C1141	U1080	C1018	G953	C893	U820	G746	G691	A624	A559	G505
C1389	C1328	A1268	U1205	G1142	A1081	C1019	G954	C894	G821	C747	U692	G629	U560	G506
U1390	A1329	G1269	G1206	G1143	U1082	U1025	U955	C895	G825	G756	U693	G630	G567	C507
U1391	U1330	C1270	U1083	G1144	U1083	G1021	U956	C896	G826	G757	G694	G631	G568	C508
G1392	G1331	C1208	G1084	C1145	U1084	U1022	U957	C897	C826	A759	A695	A632	C569	A509
U1393	A1332	C1209	U1085	A1146	U1085	G1023	A958	C898	U827	G760	A696	G633	C570	A510
A1394	A1333	G1272	G1089	C1147	U1090	U1024	A959	C899	A828	G761	G697	C634	U571	C511
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G1406	G1343	G1222	U1099	A1157	C1098	A1035	C970	C910	C843	G773	C707	G644	G581	G521
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• Molecule 1: 16S ribosomal RNA



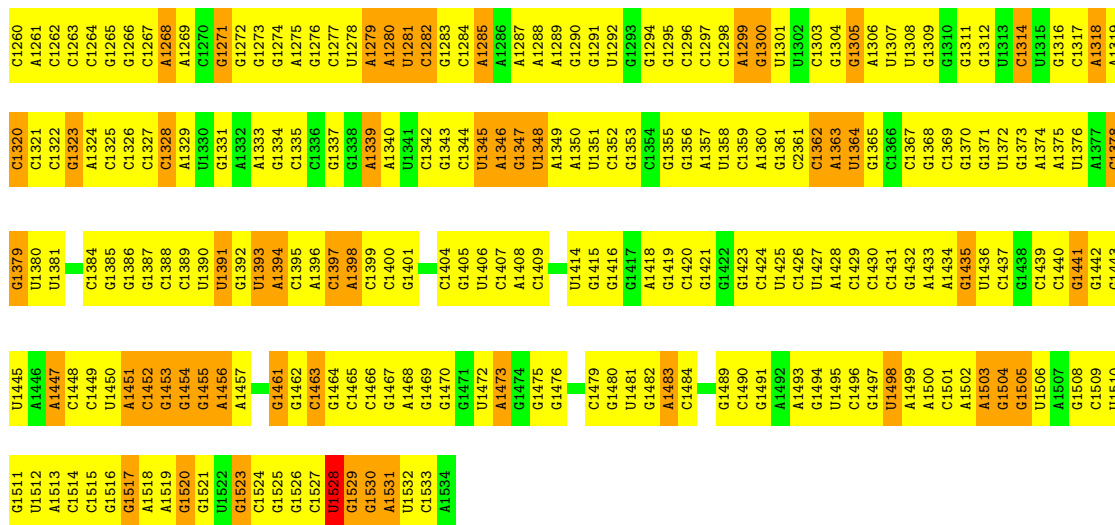
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● Molecule 1: 16S ribosomal RNA

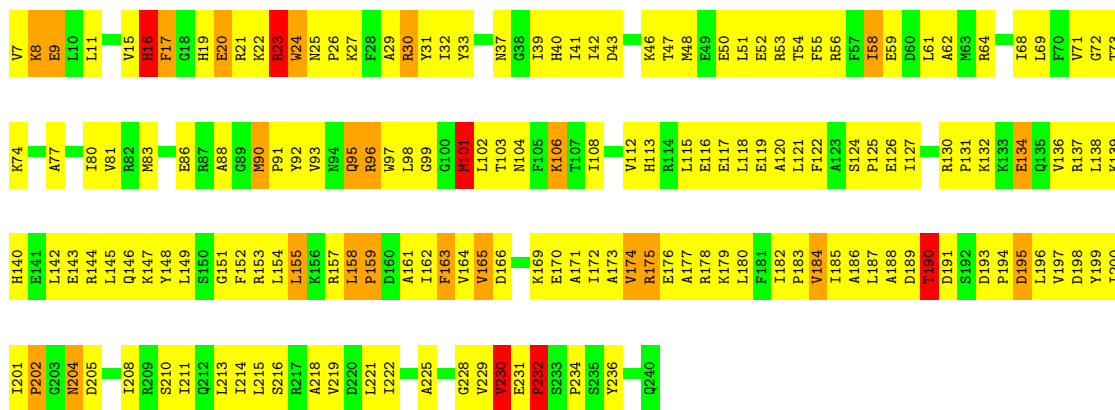
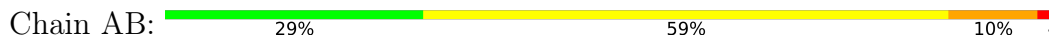


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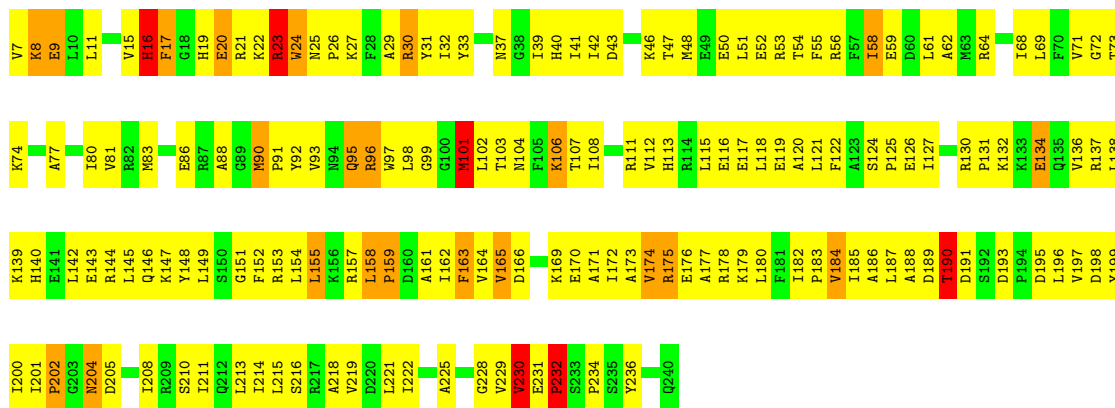
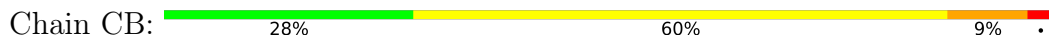
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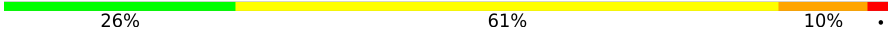
• Molecule 2: 30S ribosomal protein S2

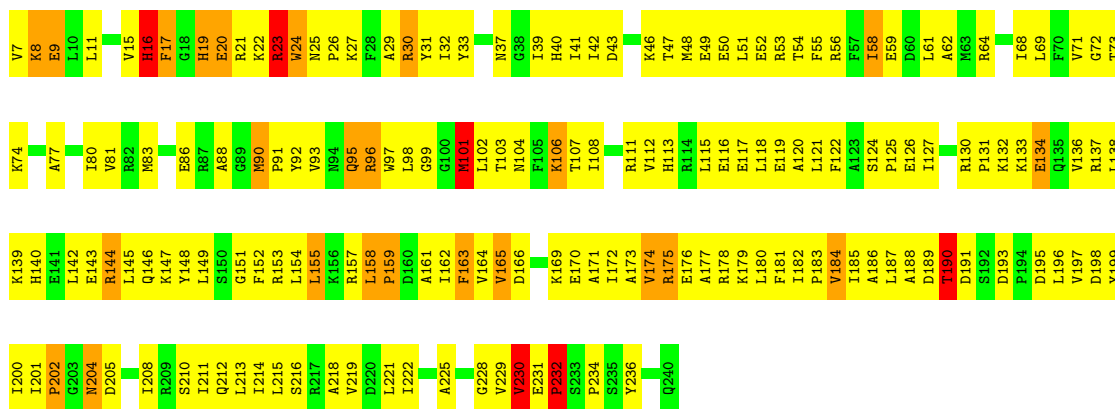


• Molecule 2: 30S ribosomal protein S2

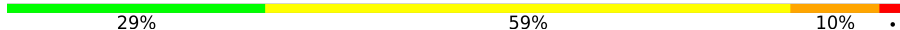


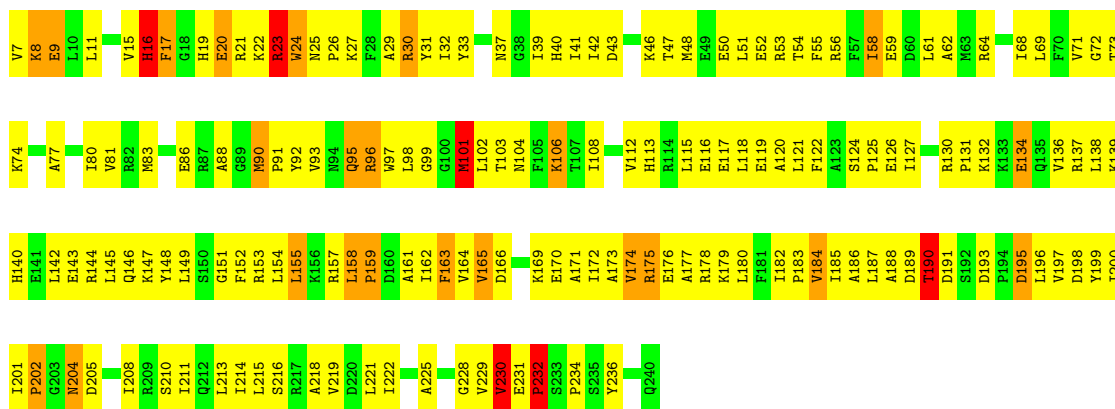
• Molecule 2: 30S ribosomal protein S2

Chain EB:  26% 61% 10%

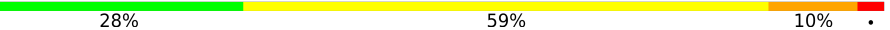


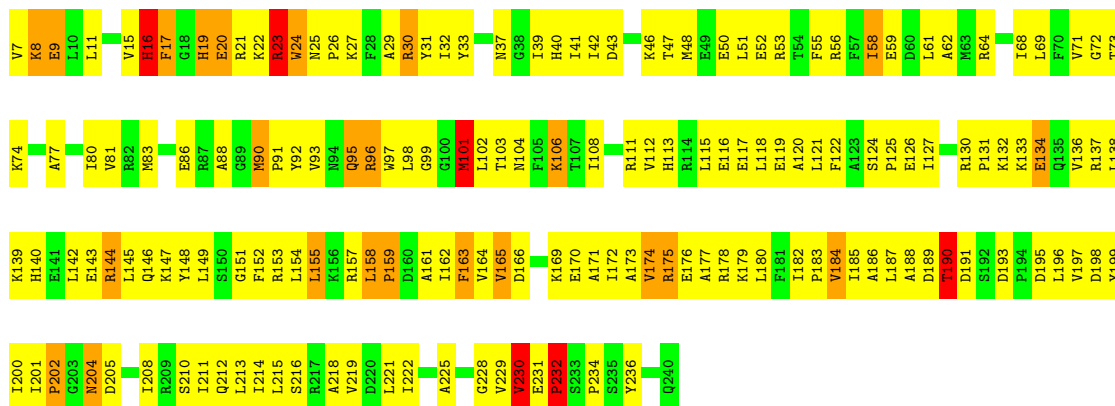
• Molecule 2: 30S ribosomal protein S2

Chain GB:  29% 59% 10%

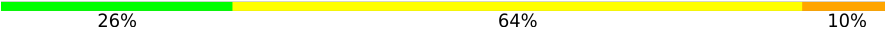


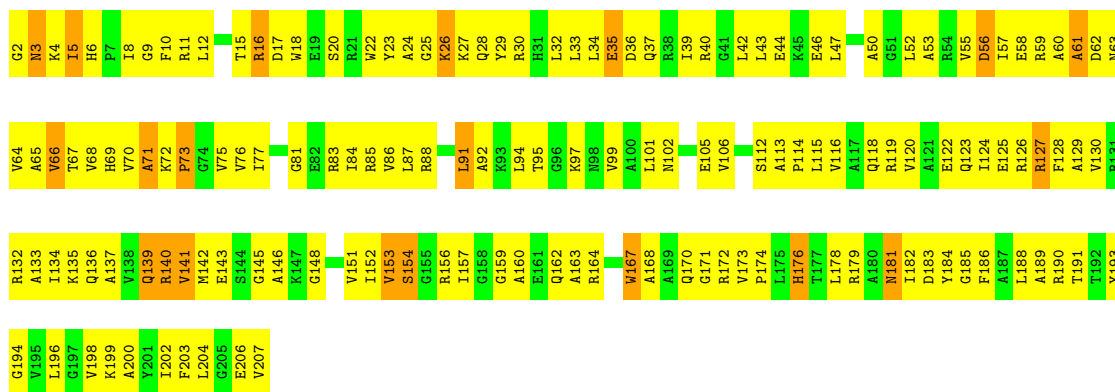
• Molecule 2: 30S ribosomal protein S2

Chain IB:  28% 59% 10%



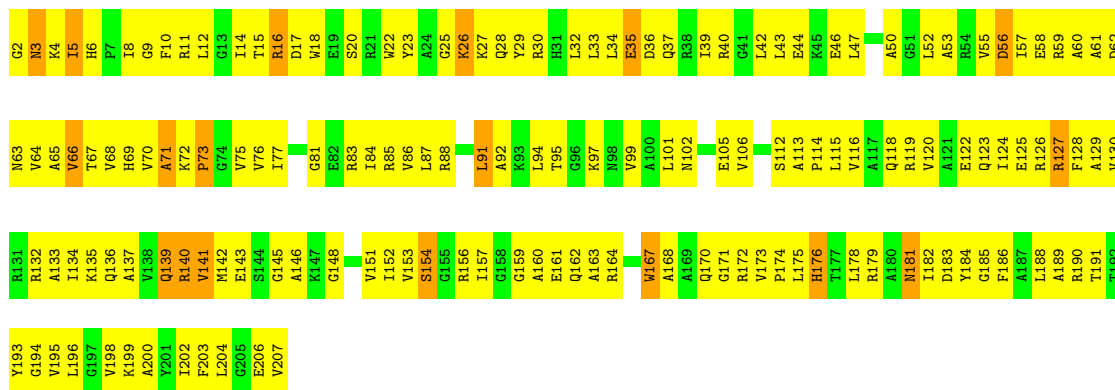
• Molecule 3: 30S ribosomal protein S3

Chain AC:  26% 64% 10%



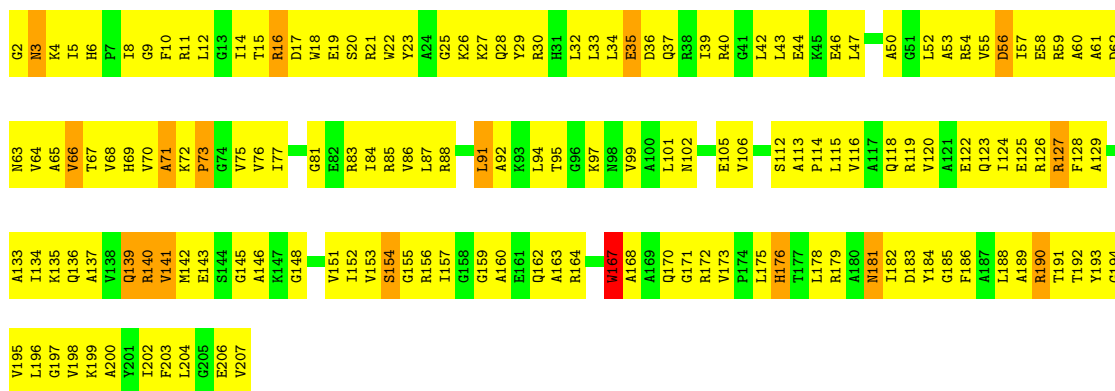
• Molecule 3: 30S ribosomal protein S3

Chain CC:  25% 67% 9%



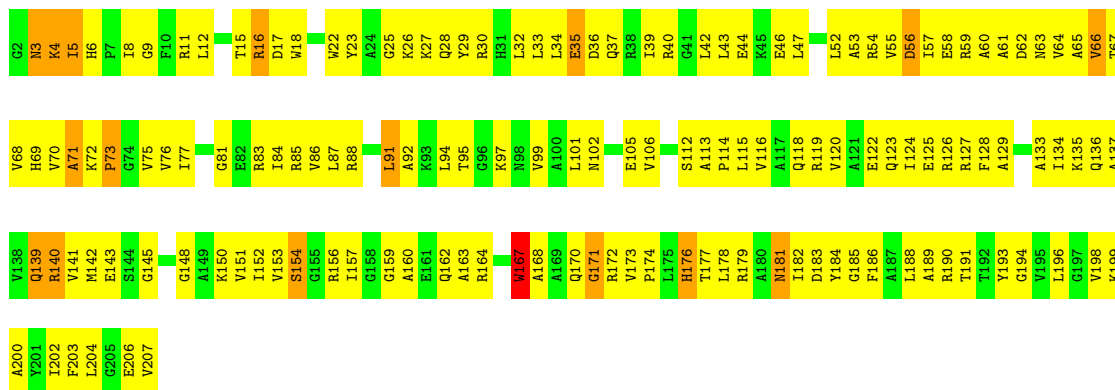
• Molecule 3: 30S ribosomal protein S3

Chain EC:  24% 68% 8%

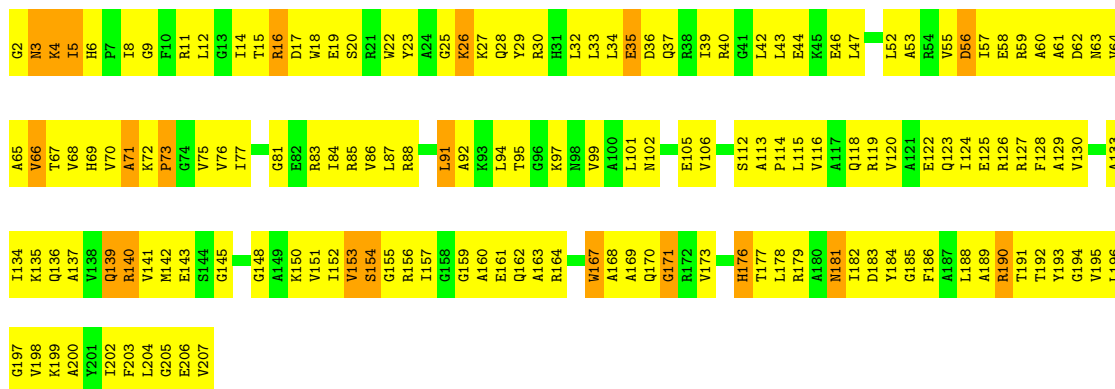


• Molecule 3: 30S ribosomal protein S3

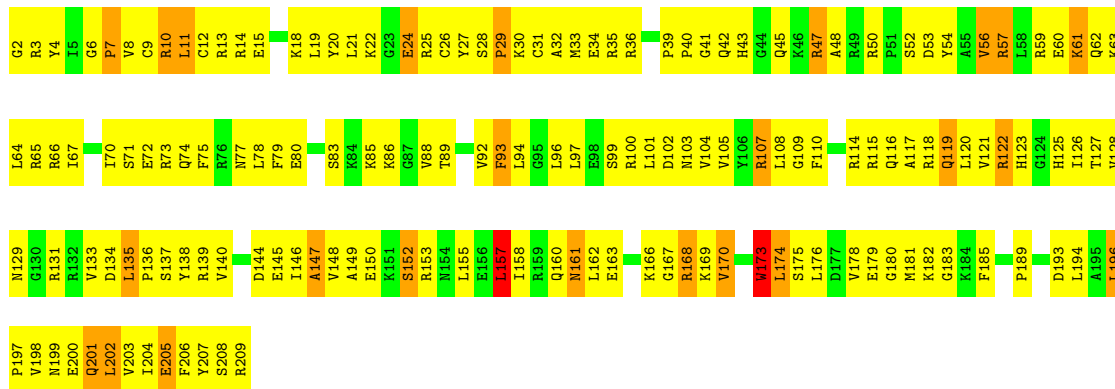
Chain GC:  29% 63% 8%



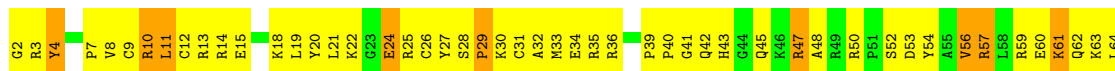
• Molecule 3: 30S ribosomal protein S3

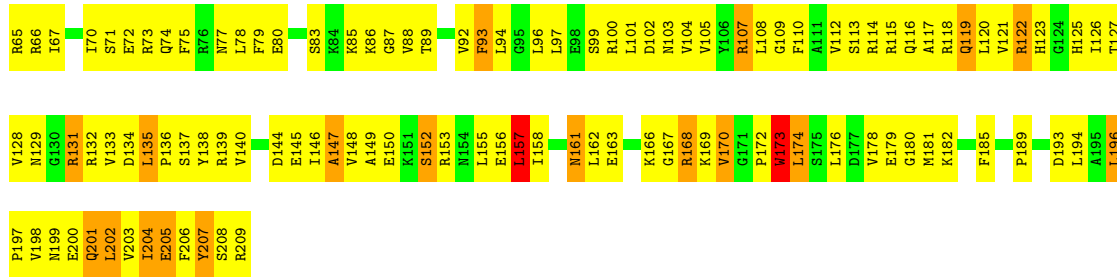


• Molecule 4: 30S ribosomal protein S4



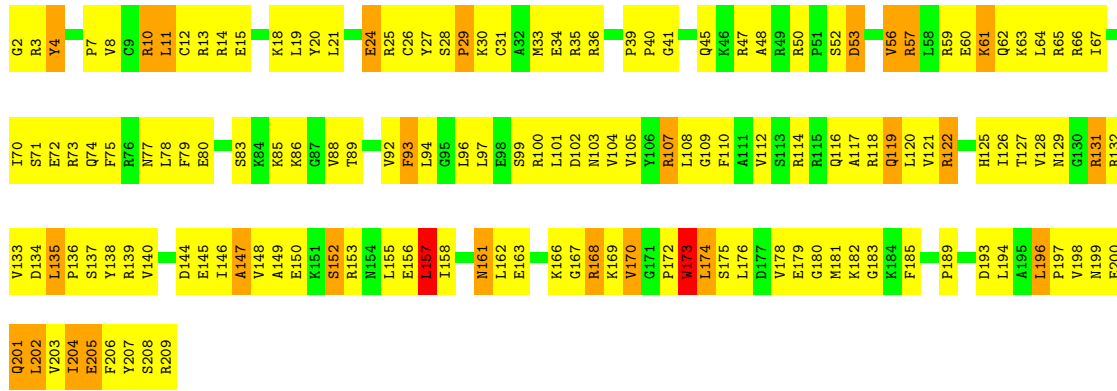
• Molecule 4: 30S ribosomal protein S4





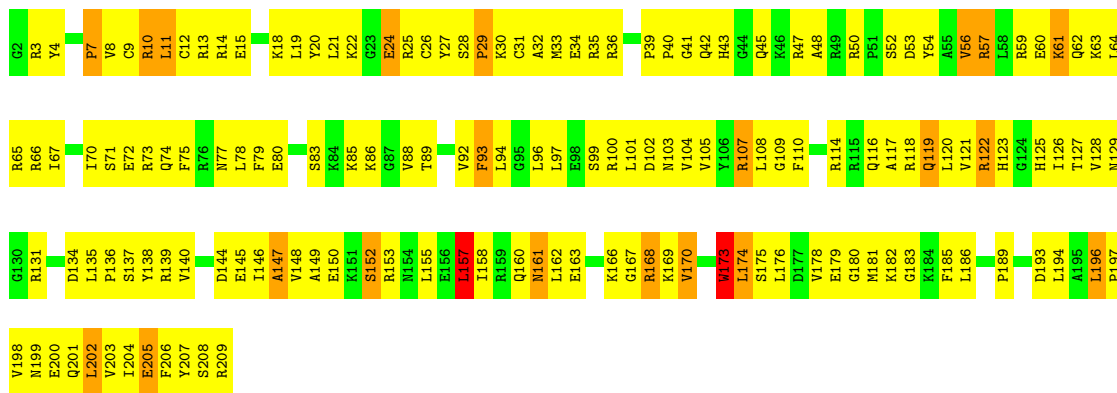
• Molecule 4: 30S ribosomal protein S4

Chain ED: 27% 60% 12%



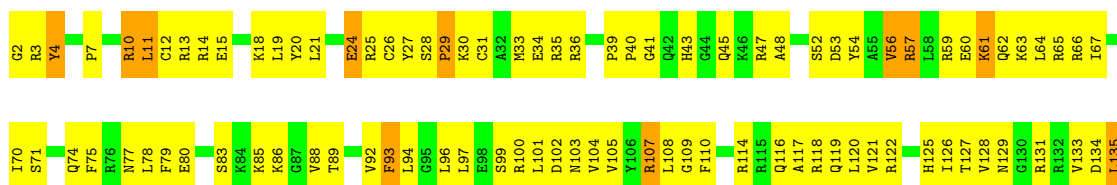
• Molecule 4: 30S ribosomal protein S4

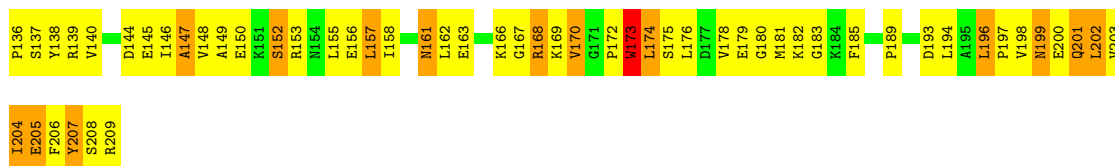
Chain GD: 25% 63% 10%



• Molecule 4: 30S ribosomal protein S4

Chain ID: 29% 59% 12%





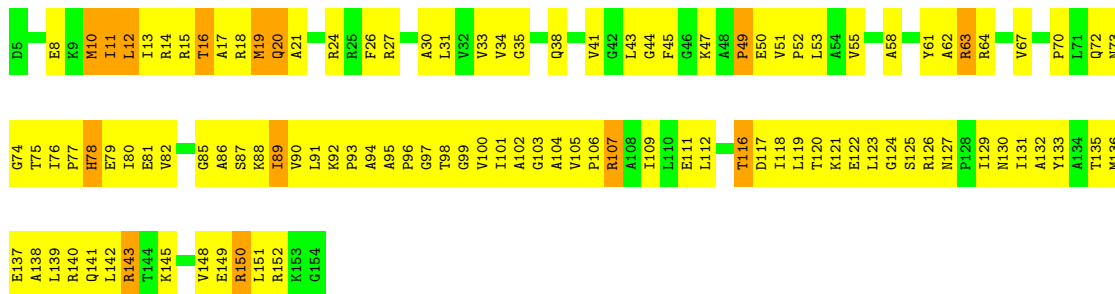
- Molecule 5: 30S ribosomal protein S5

Chain AE: 29% 62% 9%



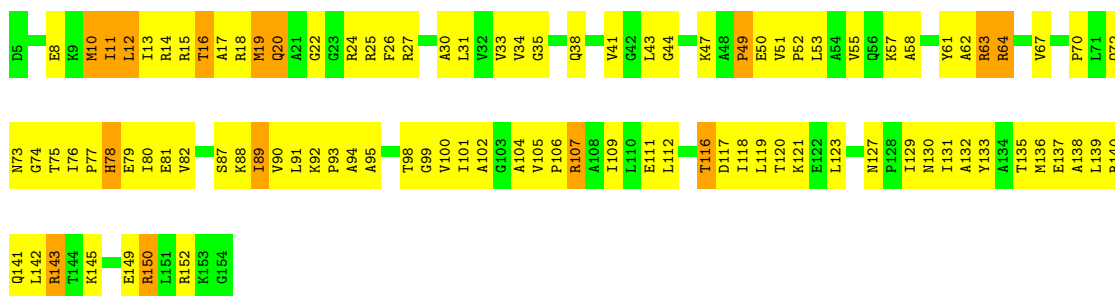
- Molecule 5: 30S ribosomal protein S5

Chain CE: 27% 63% 9%



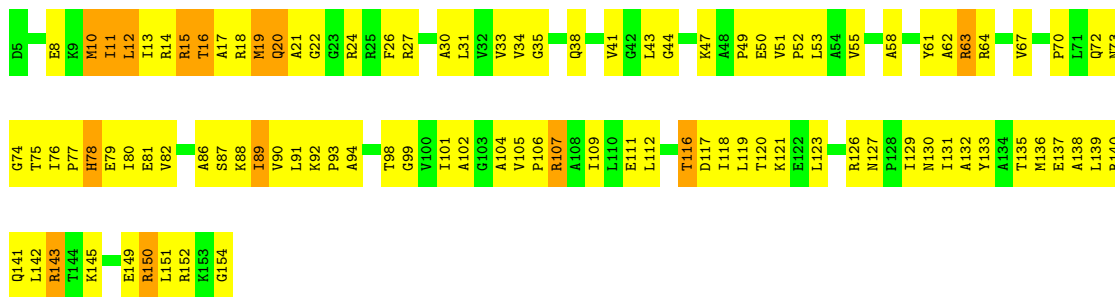
- Molecule 5: 30S ribosomal protein S5

Chain EE: 34% 56% 10%

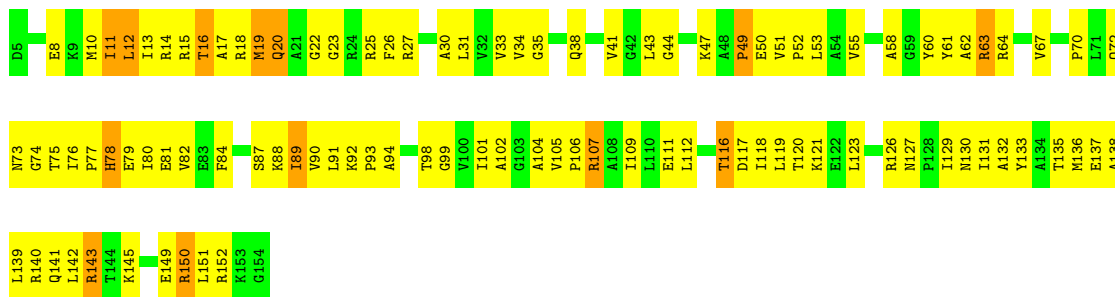


- Molecule 5: 30S ribosomal protein S5

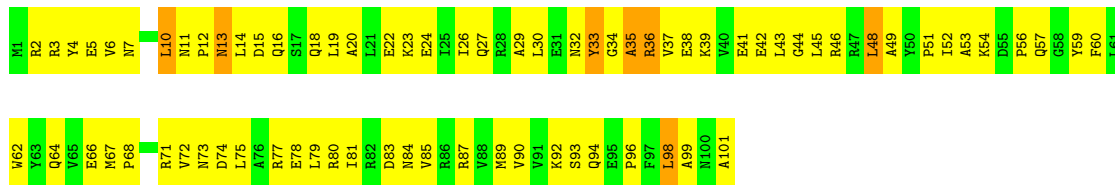
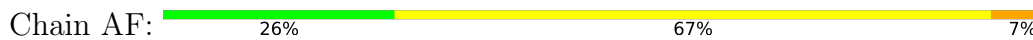
Chain GE: 33% 57% 9%



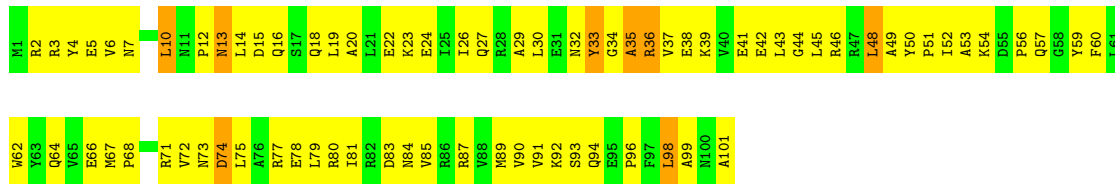
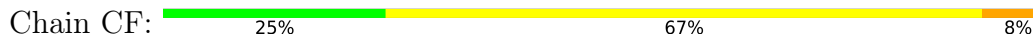
• Molecule 5: 30S ribosomal protein S5



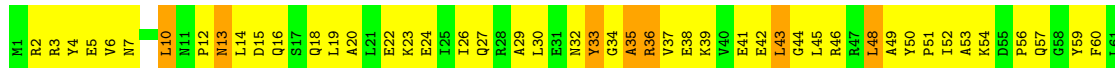
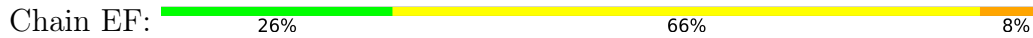
• Molecule 6: 30S ribosomal protein S6



• Molecule 6: 30S ribosomal protein S6

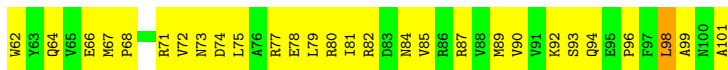
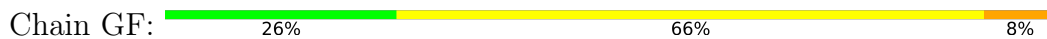


• Molecule 6: 30S ribosomal protein S6





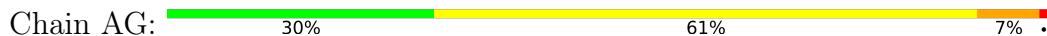
- Molecule 6: 30S ribosomal protein S6



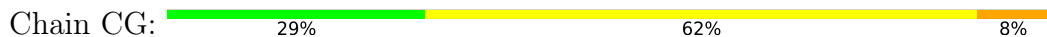
- Molecule 6: 30S ribosomal protein S6




- Molecule 7: 30S ribosomal protein S7

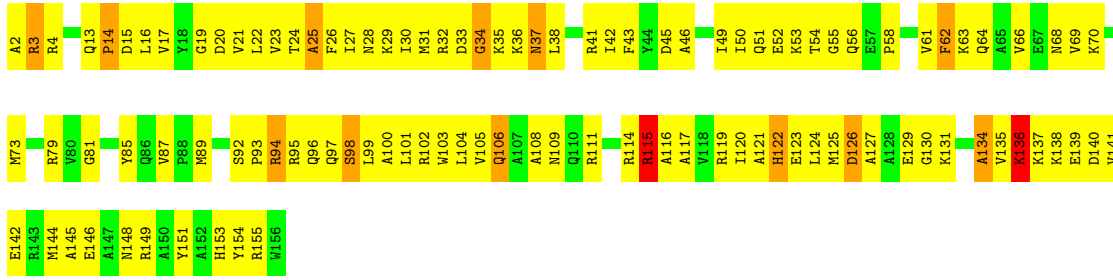


- Molecule 7: 30S ribosomal protein S7




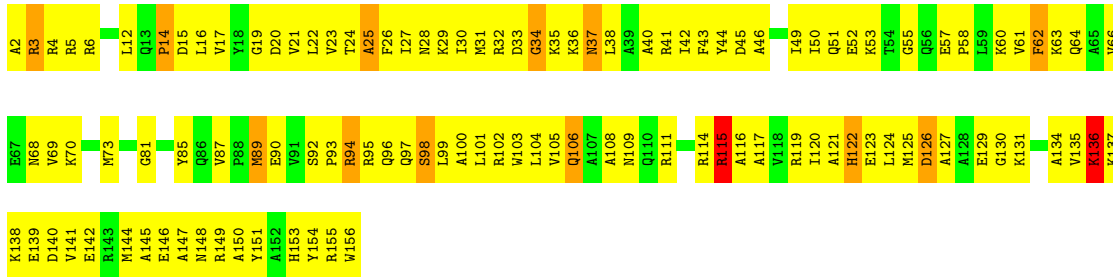
- Molecule 7: 30S ribosomal protein S7

Chain EG:  30% 61% 8%




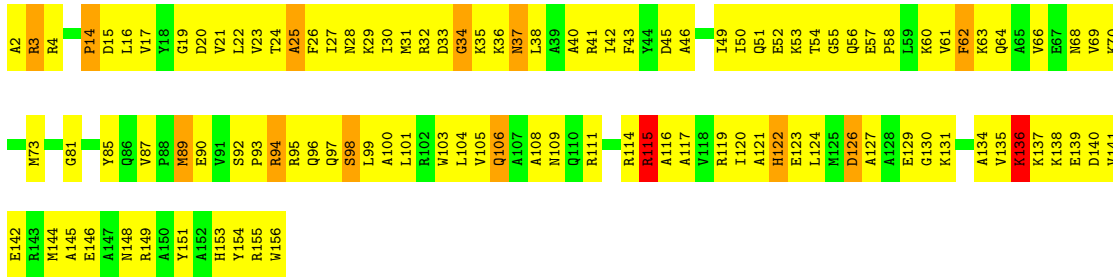
• Molecule 7: 30S ribosomal protein S7

Chain GG:  26% 65% 8%

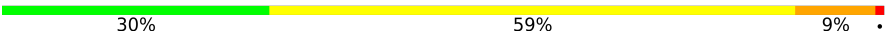


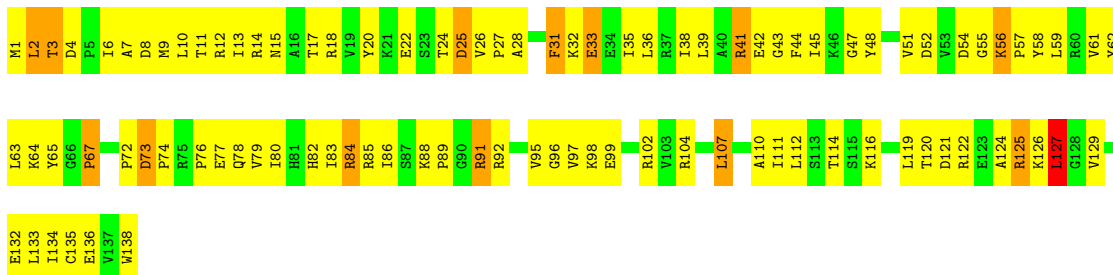
• Molecule 7: 30S ribosomal protein S7

Chain IG:  30% 61% 8%

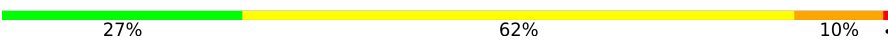


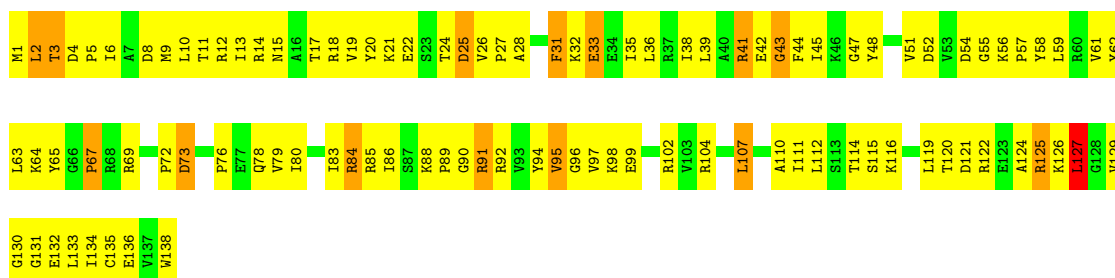
• Molecule 8: 30S ribosomal protein S8

Chain AH:  30% 59% 9%



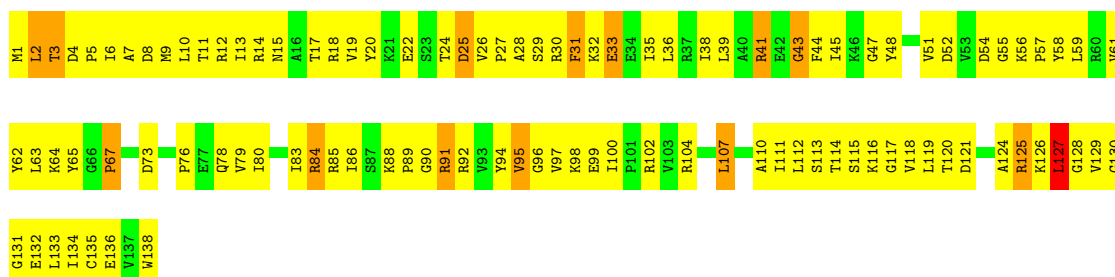
- Molecule 8: 30S ribosomal protein S8

Chain CH:  27% 62% 10%



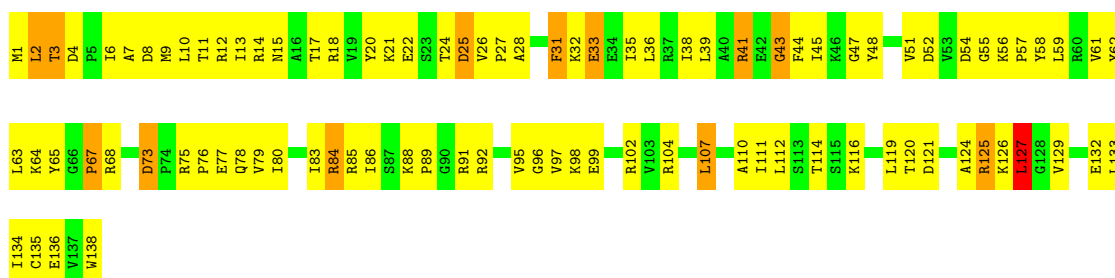
- Molecule 8: 30S ribosomal protein S8

Chain EH:  25% 65% 9%

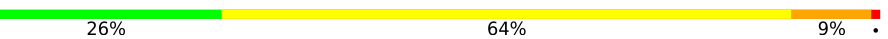


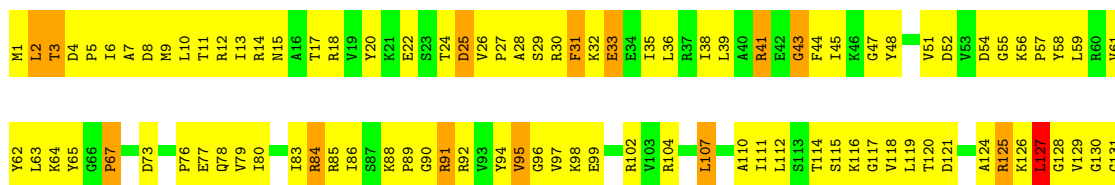
- Molecule 8: 30S ribosomal protein S8

Chain GH:  32% 59% 9%



- Molecule 8: 30S ribosomal protein S8

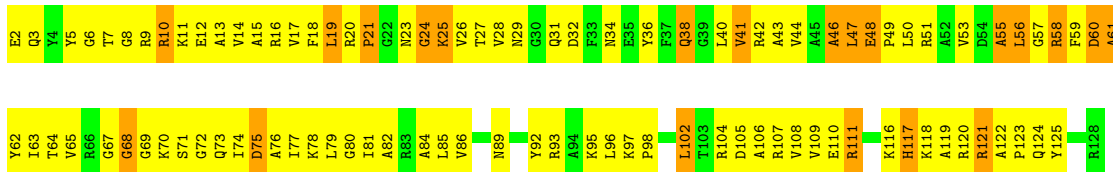
Chain IH:  26% 64% 9%



E132
L133
I134
C135
E136
W137
W138

- Molecule 9: 30S ribosomal protein S9

Chain AI: 22% 61% 17%



- Molecule 9: 30S ribosomal protein S9

Chain CI: 23% 60% 17%



K127
R128

- Molecule 9: 30S ribosomal protein S9

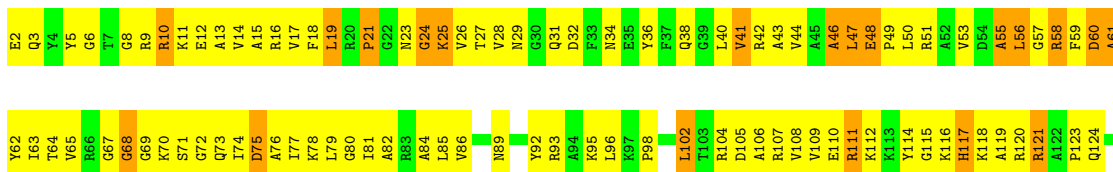
Chain EI: 24% 60% 16%



K127
R128

- Molecule 9: 30S ribosomal protein S9

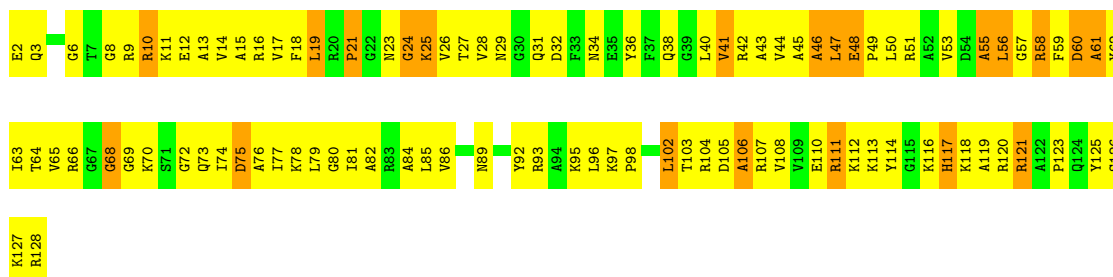
Chain GI: 23% 61% 16%



R128

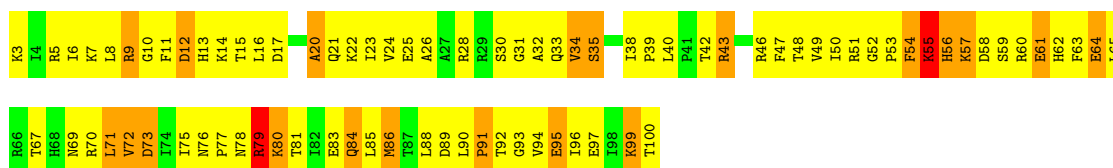
- Molecule 9: 30S ribosomal protein S9

Chain II: 21% 62% 17%



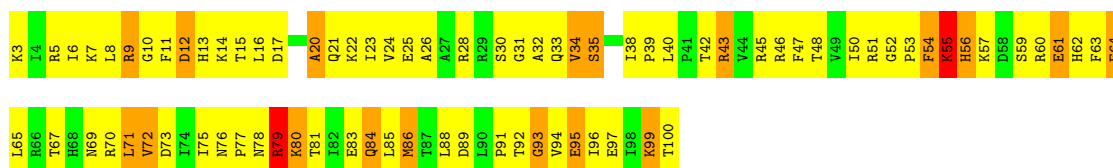
- Molecule 10: 30S ribosomal protein S10

Chain AJ: 16% 61% 20%



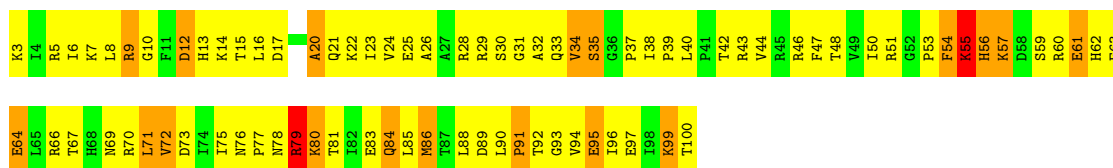
- Molecule 10: 30S ribosomal protein S10

Chain CJ: 18% 61% 18%



- Molecule 10: 30S ribosomal protein S10

Chain EJ: 17% 62% 18%

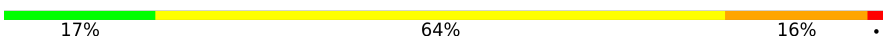


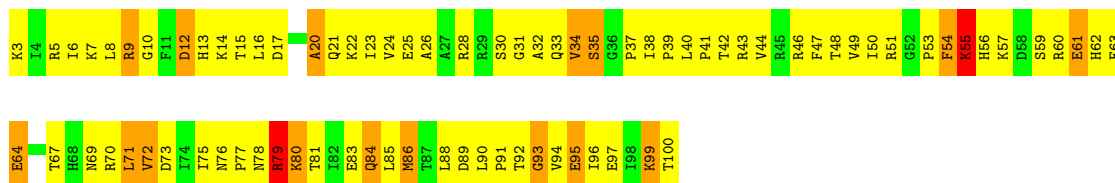
- Molecule 10: 30S ribosomal protein S10

Chain GJ: 14% 66% 17%



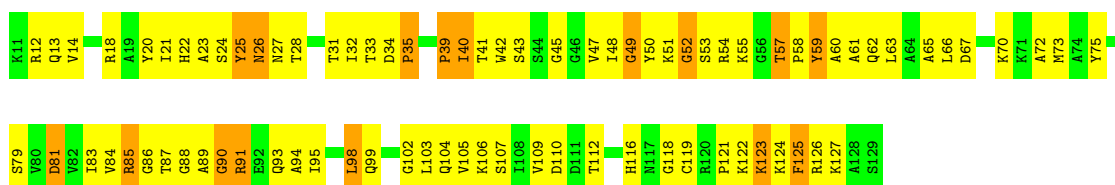
- Molecule 10: 30S ribosomal protein S10

Chain IJ:  17% 64% 16%



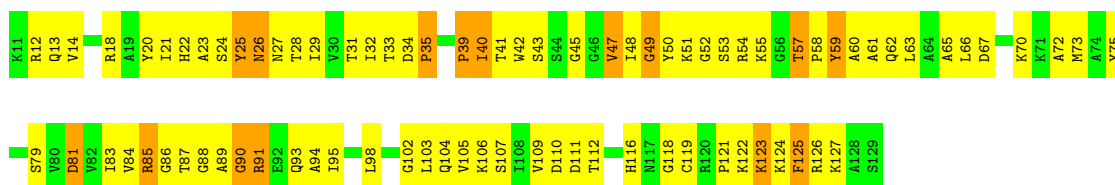
- Molecule 11: 30S ribosomal protein S11

Chain AK:  31% 55% 13%



- Molecule 11: 30S ribosomal protein S11

Chain CK:  30% 57% 13%



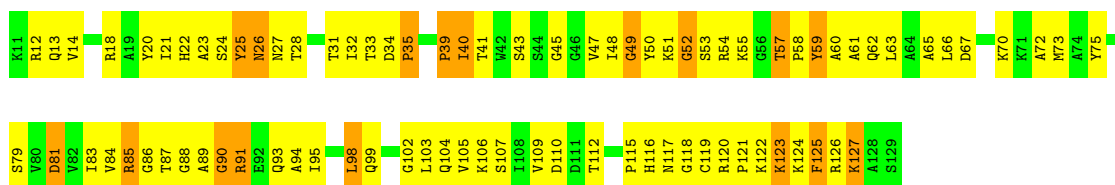
- Molecule 11: 30S ribosomal protein S11

Chain EK:  30% 57% 13%

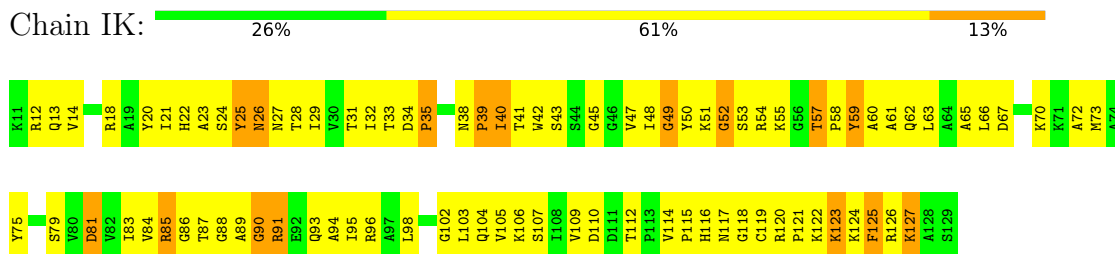


- Molecule 11: 30S ribosomal protein S11

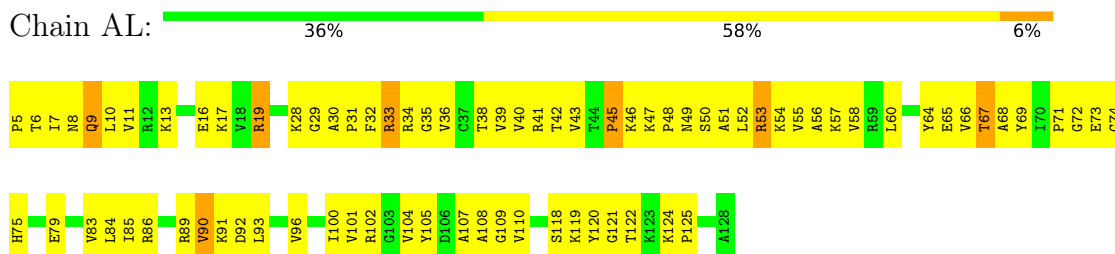
Chain GK:  29% 56% 14%



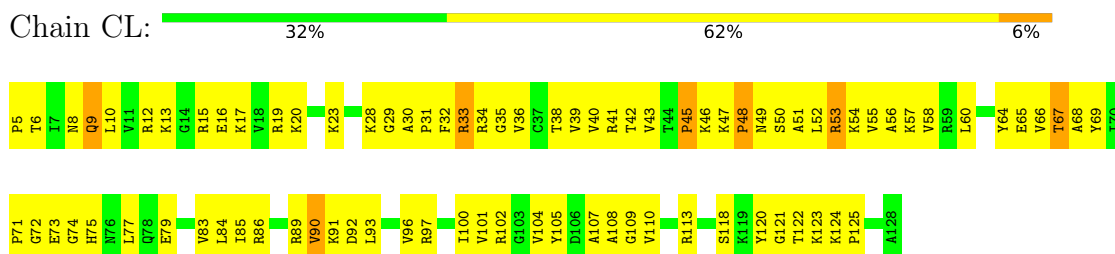
- Molecule 11: 30S ribosomal protein S11



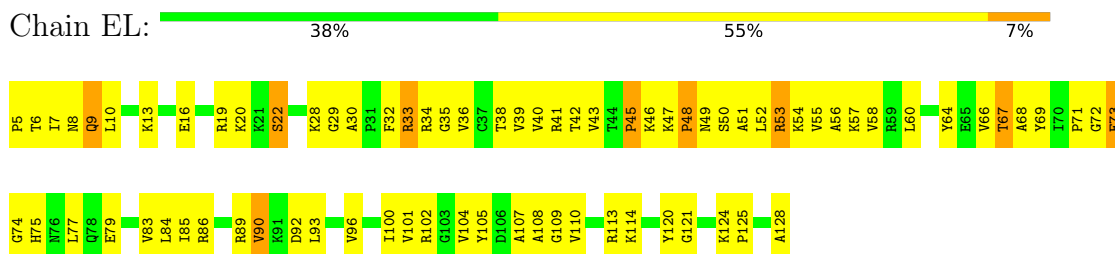
- Molecule 12: 30S ribosomal protein S12



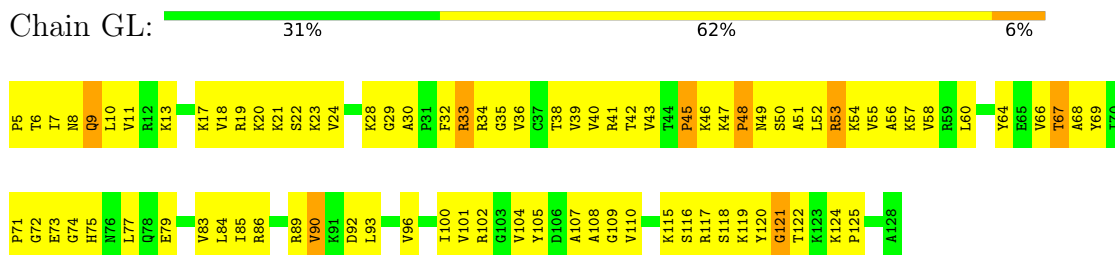
- Molecule 12: 30S ribosomal protein S12



- Molecule 12: 30S ribosomal protein S12



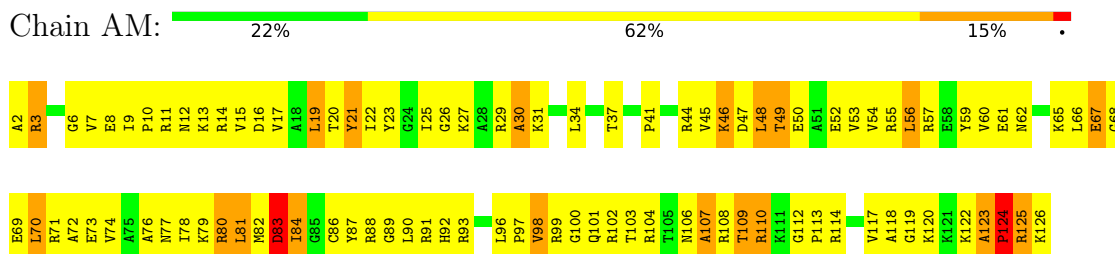
- Molecule 12: 30S ribosomal protein S12



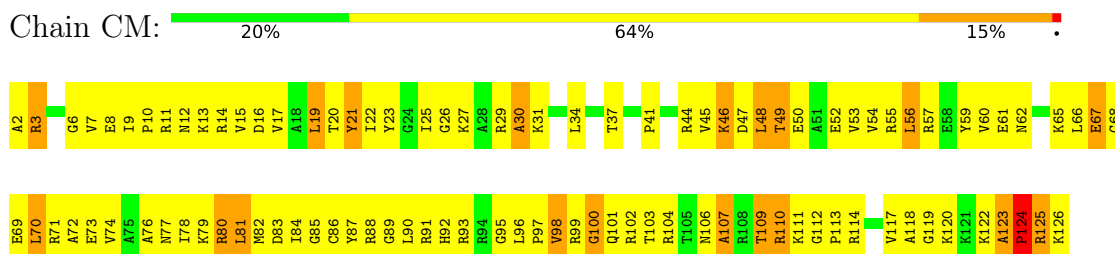
- Molecule 12: 30S ribosomal protein S12



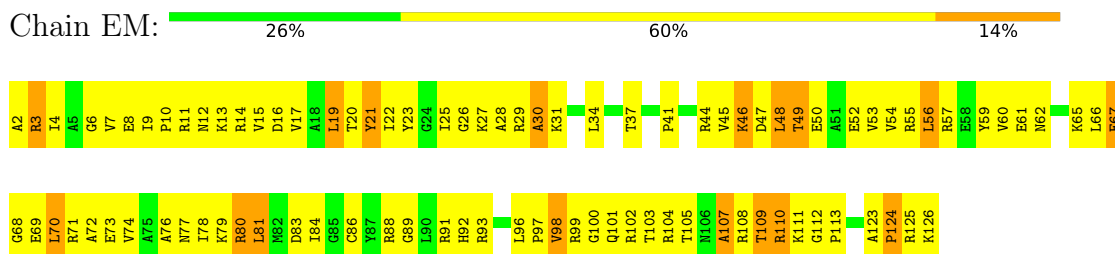
- Molecule 13: 30S ribosomal protein S13



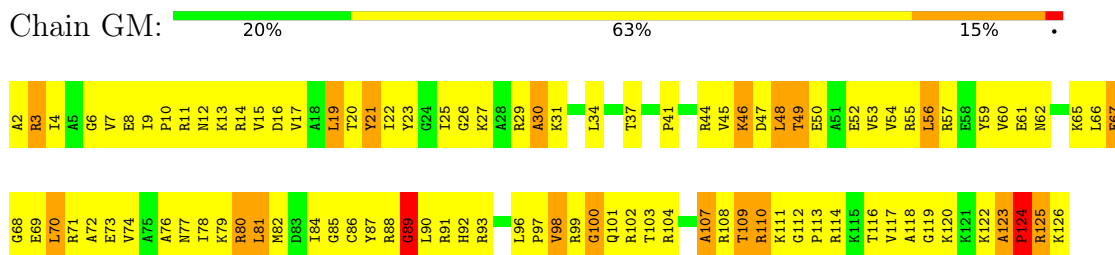
- Molecule 13: 30S ribosomal protein S13




- Molecule 13: 30S ribosomal protein S13

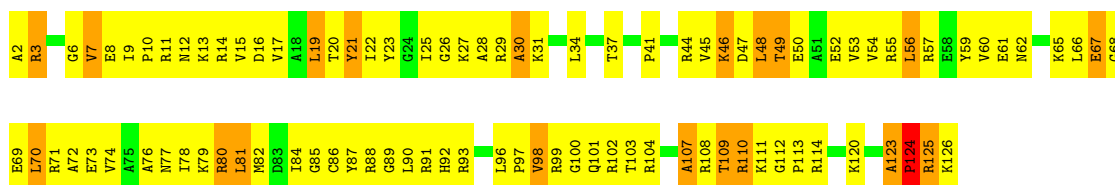


- Molecule 13: 30S ribosomal protein S13




- Molecule 13: 30S ribosomal protein S13

Chain IM:  24% 60% 15%

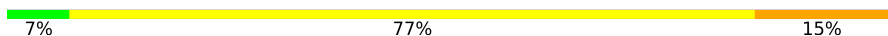


- Molecule 14: 30S ribosomal protein S14

Chain AN:  5% 78% 15%

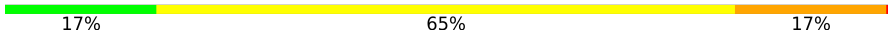


- Molecule 14: 30S ribosomal protein S14

Chain CN:  7% 77% 15%



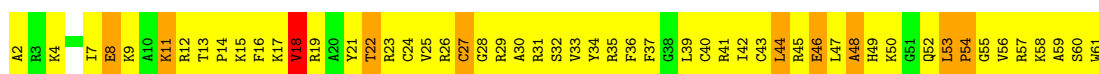
- Molecule 14: 30S ribosomal protein S14

Chain EN:  17% 65% 17%



- Molecule 14: 30S ribosomal protein S14

Chain GN:  12% 72% 15%



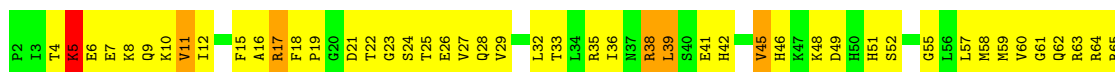
- Molecule 14: 30S ribosomal protein S14

Chain IN:  15% 68% 15%



- Molecule 15: 30S ribosomal protein S15

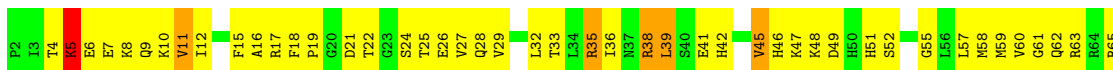
Chain AO:  28% 64% 7%





- Molecule 15: 30S ribosomal protein S15

Chain CO: 28% 64% 7%



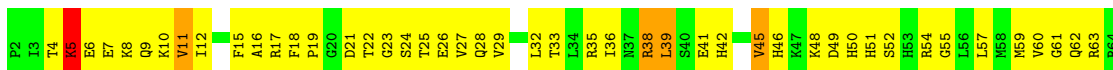
- Molecule 15: 30S ribosomal protein S15

Chain EO: 28% 63% 9%



- Molecule 15: 30S ribosomal protein S15

Chain GO: 28% 64% 7%



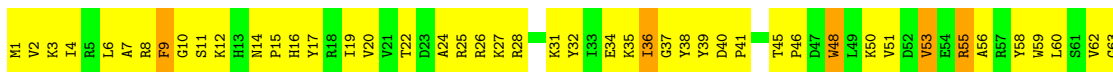
- Molecule 15: 30S ribosomal protein S15

Chain IO: 34% 57% 9%



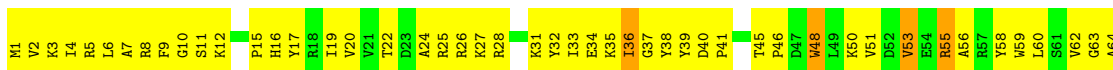
- Molecule 16: 30S ribosomal protein S16

Chain AP: 31% 61% 7%

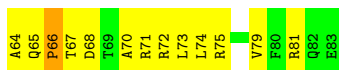
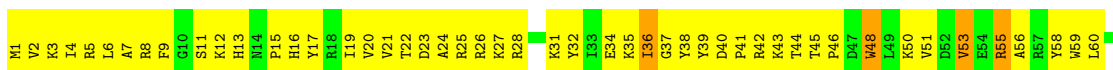




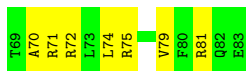
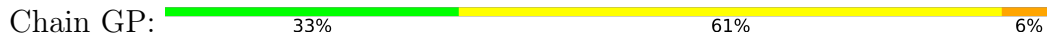
- Molecule 16: 30S ribosomal protein S16



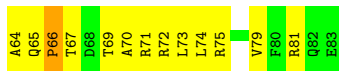
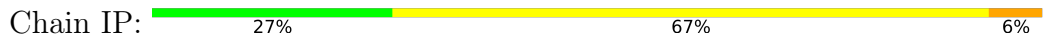
- Molecule 16: 30S ribosomal protein S16



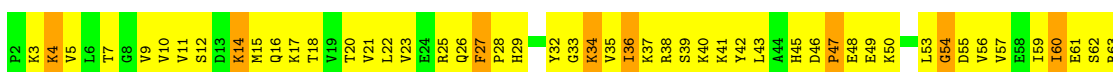
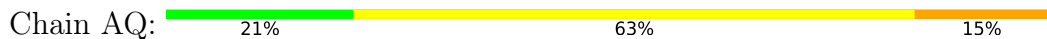
- Molecule 16: 30S ribosomal protein S16

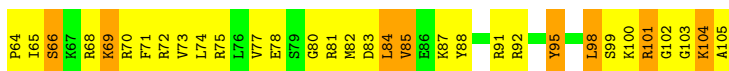


- Molecule 16: 30S ribosomal protein S16



- Molecule 17: 30S ribosomal protein S17





• Molecule 17: 30S ribosomal protein S17



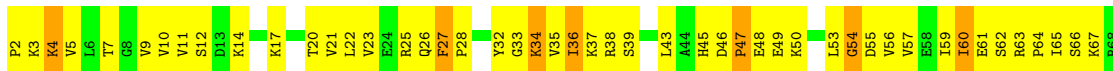
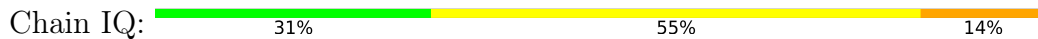
• Molecule 17: 30S ribosomal protein S17



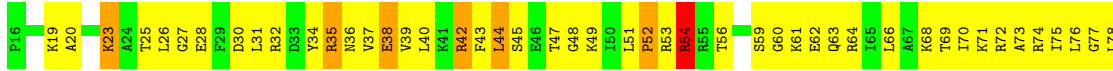
• Molecule 17: 30S ribosomal protein S17

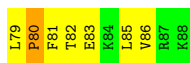


• Molecule 17: 30S ribosomal protein S17



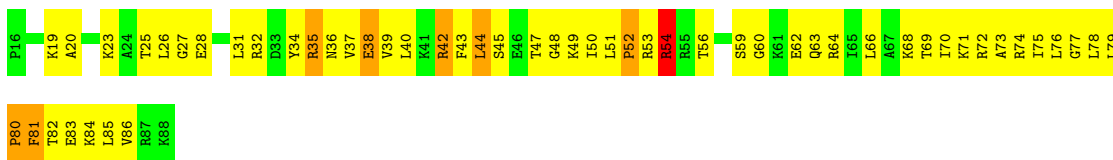
• Molecule 18: 30S ribosomal protein S18





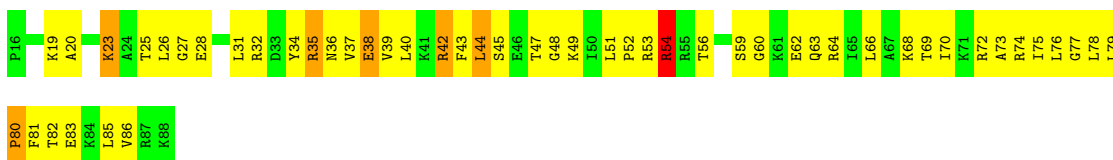
- Molecule 18: 30S ribosomal protein S18

Chain CR: 26% 63% 10%



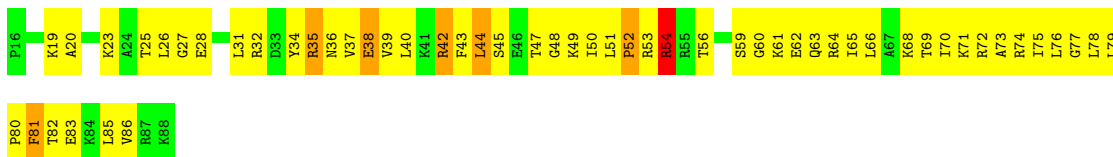
- Molecule 18: 30S ribosomal protein S18

Chain ER: 30% 60% 8%



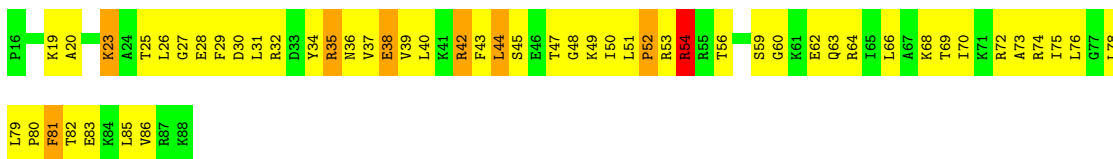
- Molecule 18: 30S ribosomal protein S18

Chain GR: 25% 66% 8%



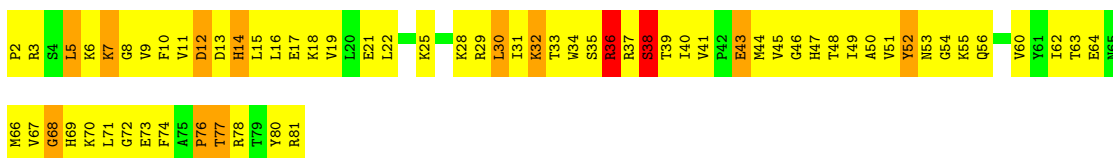
- Molecule 18: 30S ribosomal protein S18

Chain IR: 27% 62% 10%

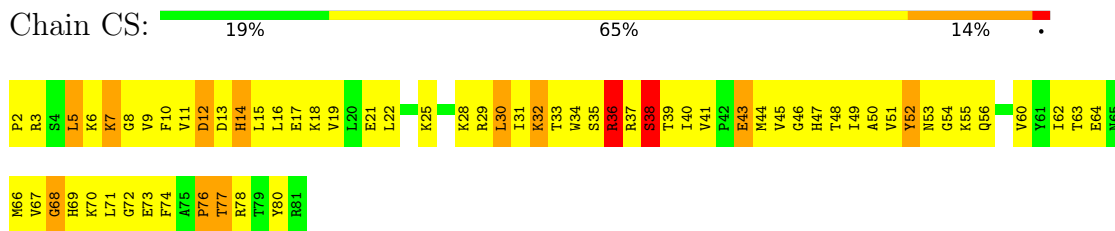


- Molecule 19: 30S ribosomal protein S19

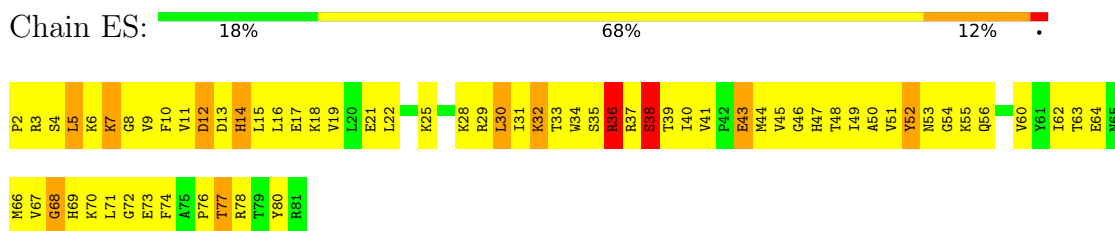
Chain AS: 18% 66% 14%



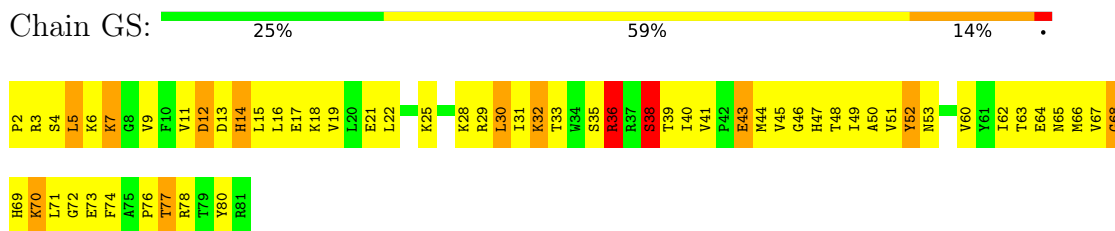
- Molecule 19: 30S ribosomal protein S19



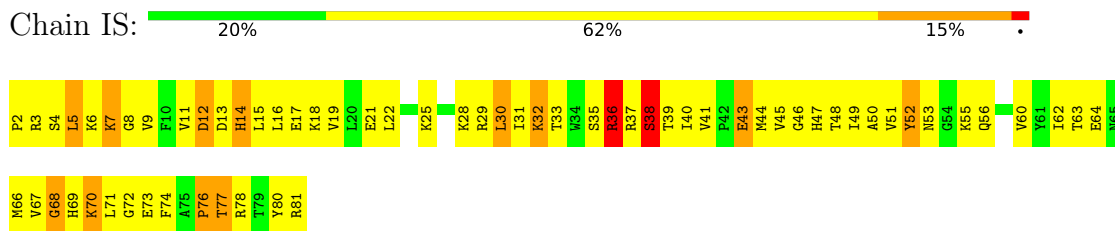
- Molecule 19: 30S ribosomal protein S19



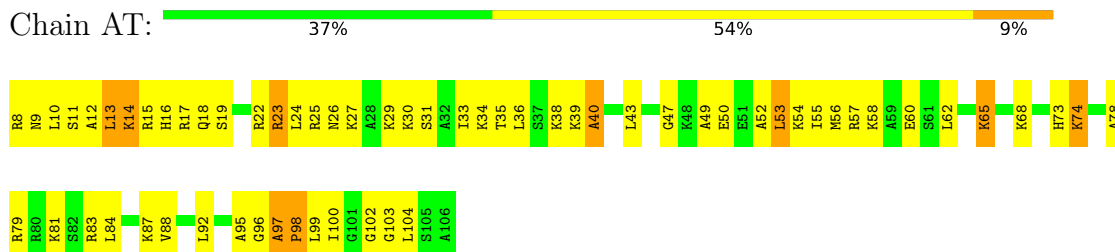
- Molecule 19: 30S ribosomal protein S19



- Molecule 19: 30S ribosomal protein S19

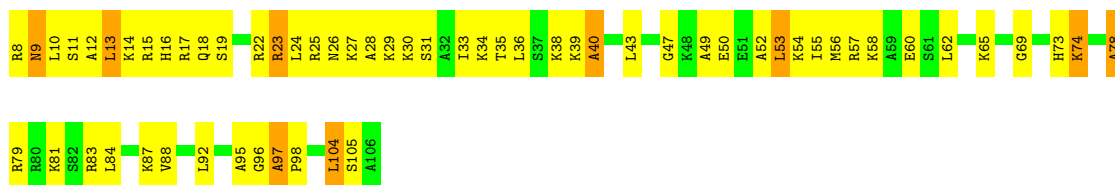


- Molecule 20: 30S ribosomal protein S20




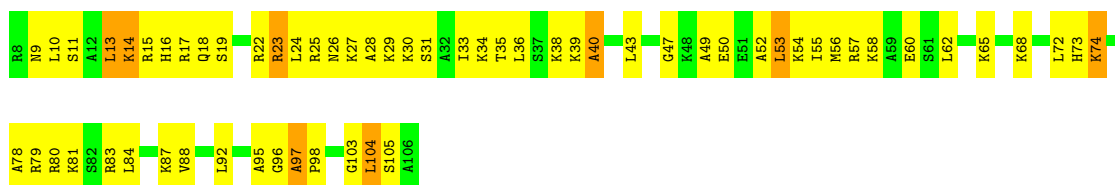
- Molecule 20: 30S ribosomal protein S20

Chain CT:  39% 52% 9%



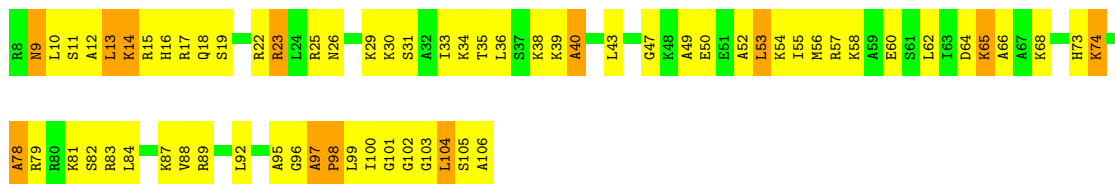
- Molecule 20: 30S ribosomal protein S20

Chain ET:  38% 54% 8%




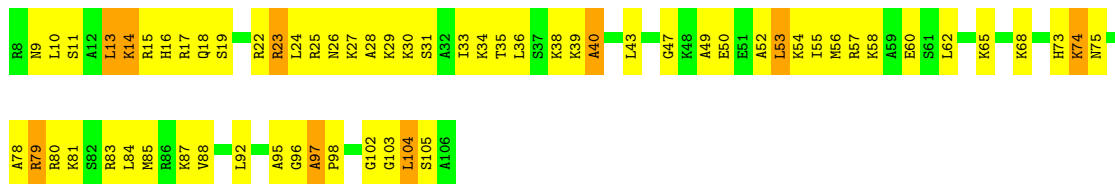
- Molecule 20: 30S ribosomal protein S20

Chain GT:  33% 55% 12%



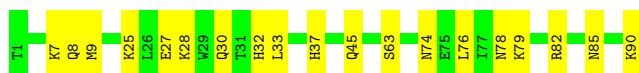
- Molecule 20: 30S ribosomal protein S20

Chain IT:  36% 55% 9%




- Molecule 21: protein Y

Chain Aa:  79% 21%

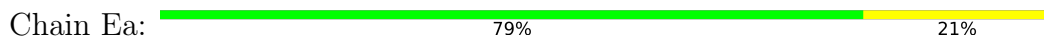


- Molecule 21: protein Y

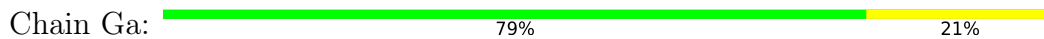
Chain Ca:  79% 21%



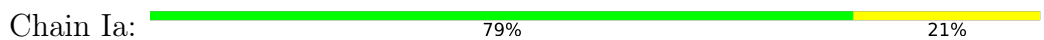
• Molecule 21: protein Y



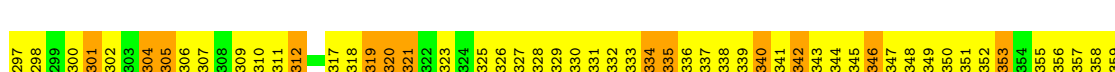
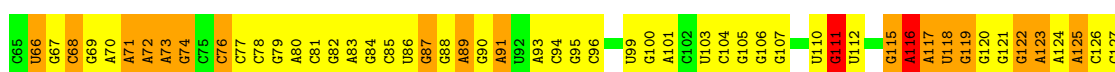
• Molecule 21: protein Y



• Molecule 21: protein Y



• Molecule 22: 23S RIBOSOMAL RNA



G499	G500	G501	G502	G503	G504	G505	G506	G507	G508	G509	G510	G511	G512	G513	G514	G515	G516	G517	G518	G519	G520	G521	G522	G523	G524	G525	G526	G527	G528	G529	G530	G531	G532	G533	G534	G535	G536	G537	G538	G539	G540	G541	G542	G543	G544	G545	G546	G547	G548	G549	G550	G551	G552	G553	G554	G555	G556	G557	G558																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
G559	G560	G561	G562	G563	G564	G565	G566	G567	G568	G569	G570	G571	G572	G573	G574	G575	G576	G577	G578	G579	G580	G581	G582	G583	G584	G585	G586	G587	G588	G589	G590	G591	G592	G593	G594	G595	G596	G597	G598	G599	G600	G601	G602	G603	G604	G605	G606	G607	G608	G609	G610	G611	G612	G613	G614	G615	G616	G617	G618	G619	G620	G621	G622	G623	G624																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
A625	A626	A627	A628	A629	A630	A631	A632	A633	A634	A635	A636	A637	A638	A639	A640	A641	A642	A643	A644	A645	A646	A647	A648	A649	A650	A651	A652	A653	A654	A655	A656	A657	A658	A659	A660	A661	A662	A663	A664	A665	A666	A667	A668	A669	A670	A671	A672	A673	A674	A675	A676	A677	A678	A679	A680	A681	A682	A683	A684	A685	A686	A687	A688	A689	A690	A691	A692	A693	A694	A695	A696	A697	A698	A699	A700	A701	A702	A703	A704	A705	A706	A707	A708	A709	A710	A711	A712	A713	A714	A715	A716	A717	A718	A719	A720	A721	A722	A723	A724	A725	A726	A727	A728	A729	A730	A731	A732	A733	A734	A735	A736	A737	A738	A739	A740	A741	A742	A743	A744	A745	A746	A747	A748	A749	A750	A751	A752	A753	A754	A755	A756	A757	A758	A759	A760	A761	A762	A763	A764	A765	A766	A767	A768	A769	A770	A771	A772	A773	A774	A775	A776	A777	A778	A779	A780	A781	A782	A783	A784	A785	A786	A787	A788	A789	A790	A791	A792	A793	A794	A795	A796	A797	A798	A799	A800	A801	A802	A803	A804	A805	A806	A807	A808	A809	A810	A811	A812	A813	A814	A815	A816	A817	A818	A819	A820	A821	A822	A823	A824	A825	A826	A827	A828	A829	A830	A831	A832	A833	A834	A835	A836	A837	A838	A839	A840	A841	A842	A843	A844	A845	A846	A847	A848	A849	A850	A851	A852	A853	A854	A855	A856	A857	A858	A859	A860	A861	A862	A863	A864	A865	A866	A867	A868	A869	A870	A871	A872	A873	A874	A875	A876	A877	A878	A879	A880	A881	A882	A883	A884	A885	A886	A887	A888	A889	A890	A891	A892	A893	A894	A895	A896	A897	A898	A899	A900	A901	A902	A903	A904	A905	A906	A907	A908	A909	A910	A911	A912	A913	A914	A915	A916	A917	A918	A919	A920	A921	A922	A923	A924	A925	A926	A927	A928	A929	A930	A931	A932	A933	A934	A935	A936	A937	A938	A939	A940	A941	A942	A943	A944	A945	A946	A947	A948	A949	A950	A951	A952	A953	A954	A955	A956	A957	A958	A959	A960	A961	A962	A963	A964	A965	A966	A967	A968	A969	A970	A971	A972	A973	A974	A975	A976	A977	A978	A979	A980	A981	A982	A983	A984	A985	A986	A987	A988	A989	A990	A991	A992	A993	A994	A995	A996	A997	A998	A999	A1000	A1001	A1002	A1003	A1004	A1005	A1006	A1007	A1008	A1009	A1010	A1011	A1012	A1013	A1014	A1015	A1016	A1017	A1018	A1019	A1020	A1021	A1022	A1023	A1024	A1025	A1026	A1027	A1028	A1029	A1030	A1031	A1032	A1033	A1034	A1035	A1036	A1037	A1038	A1039	A1040	A1041	A1042	A1043	A1044	A1045	A1046	A1047	A1048	A1049	A1050	A1051	A1052	A1053	A1054	A1055	A1056	A1057	A1058	A1059	A1060	A1061	A1062	A1063	A1064	A1065	A1066	A1067	A1068	A1069	A1070	A1071	A1072	A1073	A1074	A1075	A1076	A1077	A1078	A1079	A1080	A1081	A1082	A1083	A1084	A1085	A1086	A1087	A1088	A1089	A1090	A1091	A1092	A1093	A1094	A1095	A1096	A1097	A1098	A1099	A1100	A1101	A1102	A1103	A1104	A1105	A1106	A1107	A1108	A1109	A1110	A1111	A1112	A1113	A1114	A1115	A1116	A1117	A1118	A1119	A1120	A1121	A1122	A1123	A1124	A1125	A1126	A1127	A1128	A1129	A1130	A1131	A1132	A1133	A1134	A1135	A1136	A1137	A1138	A1139	A1140	A1141	A1142	A1143	A1144	A1145	A1146	A1147	A1148	A1149	A1150	A1151	A1152	A1153	A1154	A1155	A1156	A1157	A1158	A1159	A1160	A1161	A1162	A1163	A1164	A1165	A1166	A1167	A1168	A1169	A1170	A1171	A1172	A1173	A1174	A1175	A1176	A1177	A1178	A1179	A1180	A1181	A1182	A1183	A1184	A1185	A1186	A1187	A1188	A1189	A1190	A1191	A1192	A1193	A1194	A1195	A1196	A1197	A1198	A1199	A1200	A1201	A1202	A1203	A1204	A1205	A1206	A1207	A1208	A1209	A1210	A1211	A1212	A1213	A1214	A1215	A1216	A1217	A1218	A1219	A1220	A1221	A1222	A1223	A1224	A1225	A1226	A1227	A1228	A1229	A1230	A1231	A1232	A1233	A1234	A1235	A1236	A1237	A1238	A1239	A1240	A1241	A1242	A1243	A1244	A1245	A1246	A1247	A1248	A1249	A1250	A1251	A1252	A1253	A1254	A1255	A1256	A1257	A1258	A1259	A1260	A1261	A1262	A1263	A1264	A1265	A1266	A1267	A1268	A1269	A1270	A1271	A1272	A1273	A1274	A1275	A1276	A1277	A1278	A1279	A1280	A1281	A1282	A1283	A1284	A1285	A1286	A1287	A1288	A1289	A1290	A1291	A1292	A1293	A1294	A1295	A1296	A1297	A1298	A1299	A1300	A1301	A1302	A1303	A1304	A1305	A1306	A1307	A1308	A1309	A1310	A1311	A1312	A1313	A1314	A1315	A1316	A1317	A1318	A1319	A1320	A1321	A1322	A1323	A1324	A1325	A1326	A1327	A1328	A1329	A1330	A1331	A1332	A1333	A1334	A1335	A1336	A1337	A1338	A1339	A1340	A1341	A1342	A1343	A1344	A1345	A1346	A1347	A1348	A1349	A1350	A1351	A1352	A1353	A1354	A1355	A1356	A1357	A1358	A1359	A1360	A1361	A1362	A1363	A1364	A1365	A1366	A1367	A1368	A1369	A1370	A1371	A1372	A1373	A1374	A1375	A1376	A1377	A1378	A1379	A1380	A1381	A1382	A1383	A1384	A1385	A1386	A1387	A1388	A1389	A1390	A1391	A1392	A1393	A1394	A1395	A1396	A1397	A1398	A1399	A1400	A1401	A1402	A1403	A1404	A1405	A1406	A1407	A1408	A1409	A1410	A1411	A1412	A1413	A1414	A1415	A1416	A1417	A1418	A1419	A1420	A1421	A1422	A1423	A1424	A1425	A1426	A1427	A1428	A1429	A1430	A1431	A1432	A1433	A1434	A1435	A1436	A1437	A1438	A1439	A1440	A1441	A1442	A1443	A1444	A1445	A1446	A1447	A1448	A1449	A1450	A1451	A1452	A1453	A1454	A1455	A1456	A1457	A1458	A1459	A1460	A1461	A1462

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G2378	C2303	U2241	G3196	G3116	U2050	G1968	C1907	C1883	C1791	C1725	C1663	A1595	A1532	A1464
G2379	G2304	C2242	U3197	A3117	A2031	G1969	C1908	G1854	C1792	G1726	G1664	A1596	G1533	G1465
G2380	A2307	C2243	U3118	U3117	G2032	G1970	U1909	G1855	A1793	C1727	G1665	A1597	A1534	
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G2398	U2327	C2263	C2205	C3138	U2051	A1988	G1927	G1864	A1811	G1749	G1684	G1622	G1622	U1485
G2399	G2328	C2264	C2206	U3139	G2052	C1989	U1928	C1865	A1812	A1750	G1685	C1623	C1623	U1486
G2400	G2329	A2265	G2202	G3140	G2053	U1990	U1929	G1866	A1813	A1751	A1686	A1624	A1624	C1487
G2401	G2330	A2266	G2203	G3141	G2054	C1991	C1930	G1867	A1814	U1752	A1687	A1625	A1625	G1488
G2402	A2331	A2267	A2204	A3142	G2055	G1992	G1931	A1868	G1815	A1753	U1688	A1626	A1626	C1489
G2403	C2332	G2268	C2205	A3146	G2056	G1993	G1932	C1869	G1816	G1754	U1689	C1627	C1627	U1490
G2404	U2327	C2269	C2206	C3149	U2057	A1994	G1933	A1872	U1817	G1755	U1690	G1628	G1628	C1491
G2405	G2334	G2270	C2207	G3149	U2058	G1995	U1934	G1873	A1818	G1756	G1691	G1629	G1629	A1492
G2406	C2341	A2278	G2215	G3159	G2059	A1996	U1935	G1874	U1819	A1759	G1692	A1630	A1630	G1493
G2407	U2342	G2279	G2216	C3160	A2060	A1997	A1936	C1875	G1820	G1760	A1693	C1631	C1631	G1494
G2408	C2343	A2280	G2217	C3161	G2061	A1998	G1937	C1876	A1821	G1761	A1694	A1632	A1632	G1495
G2409	G2344	C2281	G2218	G3166	U2062	U1999	U1938	C1877	C1822	G1762	U1695	G1666	G1666	G1496
G2410	A2345	C2282	U2219	G3167	U2074	G2000	U1939	C1878	G1823	G1763	G1696	A1634	A1634	C1497
G2411	C2346	G2283	A2220	U3167	C3093	C2001	C1940	G1879	C1824	A1764	G1697	A1634	A1634	G1498
G2412	U2347	G2284	G2221	G3168	U2075	A2002	G1941	G1880	U1825	C1765	C1698	C1637	C1637	
G2413	G2349	U2285	U2222	A3169	A3094	A2003	G1942	G1881	U1826	U1766	C1699	U1637	U1637	C1501
G2414	G2350	G2286	U2223	C3170	A3095	U2004	A1943	G1882	G1827	G1767	A1699	G1638	G1638	G1502
G2415	A2348	G2287	U2224	A3171	A2072	U2005	C1944	G1883	C1828	U1768	U1699	U1639	U1639	G1503
G2416	G2351	G2288	U2225	U3172	U2076	G2006	C1945	A1884	C1829	U1769	C1640	C1640	C1640	G1504
G2417	A2352	A2289	G2225	A3173	C3095	C2007	U1946	G1885	G1830	U1770	C1641	C1641	C1641	U1505
G2418	G2353	A2290	A2226	C3174	U2077	C2008	G1947	G1886	C1831	A1771	A1642	A1642	A1642	C1506
G2419	G2354	U2291	U2228	C3175	G3104	U2009	C1948	G1887	U1772	C1772	A1644	A1644	A1644	A1507
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G2421	G2356	G2293	G2230	U3177	U3106	G2015	C1944	G1889	C1836	A1775	G1646	G1646	G1646	A1509
G2422	A2357	G2294	U2231	U3180	G3107	A2016	C1945	G1890	G1837	A1776	U1647	U1647	U1647	A1510
G2423	G2358	U2295	G2232	C3181	G3108	C2022	U2005	G1891	U1837	A1777	C1648	C1648	C1648	A1511
G2424	A2359	C2296	G2233	U3185	G3109	G2023	G1958	U1892	G1838	U1778	A1649	A1649	A1649	A1512
G2425	G2360	U2296	G2234	U3186	U3109	U2024	A1960	A1900	A1839	U1779	A1650	A1650	A1650	U1513
G2426	A2361	G2297	U2235	U3187	G3110	A2025	G1955	A1895	A1840	C1779	U1651	U1651	U1651	C1514
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G2428	A2363	A2299	G2237	U3189	G3112	C2027	C1957	U1897	G1842	C1781	A1653	A1653	A1653	C1522
G2429	G2364	U2300	C2237	U3190	U3113	C2027	U1964	U1898	G1903	A1782	A1654	A1654	A1654	A1523
G2430	U2365	A2301	C2239	G3190	A3114	C2028	A1965	U1899	A1845	G1783	A1655	A1655	A1655	C1524
G2431							U1966	A1900	G1846	A1784	U1656	U1656	U1656	U1525
G2432							A1967	A1901	G1847	A1785	U1657	U1657	U1657	A1526
G2433							U1968	A1902	U1848	C1786	G1720	G1720	G1720	G1527
G2434							U1969	A1903	G1849	U1787	G1721	G1721	G1721	C1528
G2435							C1966	G1905	A1851	U1789	U1723	U1723	U1723	U1530

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G2561	G2562	U2563	U2564	U2565	U2566	U2567	U2568	U2569	U2570	U2571	U2572	U2573	U2574	U2575	U2576	U2577	U2578	U2579	U2580	U2581	U2582	U2583	U2584	U2585	U2586	U2587	U2588	U2589	U2590	U2591	U2592	U2593	U2594	U2595	U2596	U2597	U2598	U2599	U2600	U2601	U2602	U2603	U2604	U2605	U2606	U2607	U2608	U2609	U2610	U2611	U2612	U2613	U2614	U2615	U2616	U2617	U2618	U2619	U2620	U2621						
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C2689	A2690	C2691	A2692	U2693	C2694	C2695	C2696	C2697	C2698	C2699	C2700	C2701	C2702	C2703	C2704	C2705	C2706	C2707	C2708	C2709	C2710	C2711	C2712	C2713	C2714	C2715	C2716	C2717	C2718	C2719	C2720	C2721	C2722	C2723	C2724	C2725	C2726	C2727	C2728	C2729	C2730	C2731	C2732	C2733	C2734	C2735	C2736	C2737	C2738	C2739	C2740	C2741	C2742	C2743	C2744	C2745	C2746	C2747	C2748	C2749						
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C2816	U2817	U2818	U2819	U2820	U2821	U2822	U2823	U2824	U2825	U2826	U2827	U2828	U2829	U2830	U2831	U2832	U2833	U2834	U2835	U2836	U2837	U2838	U2839	U2840	U2841	U2842	U2843	U2844	U2845	U2846	U2847	U2848	U2849	U2850	U2851	U2852	U2853	U2854	U2855	U2856	U2857	U2858	U2859	U2860	U2861	U2862	U2863	U2864	U2865	U2866	U2867	U2868	U2869	U2870	U2871	U2872	U2873	U2874	U2875	U2876	U2877					

• Molecule 22: 23S RIBOSOMAL RNA



G1	G2	U3	C4	A5	G6	G7	A8	U9	A10	G11	U12	A13	A14	G15	G16	G17	U18	C19	G20	A21	G22	G23	G24	U25	G26	G27	A28	U29	G30	G31	G32	G33	G34	G35	G36	C37	G38	C39	U40	G41	G42	A43	G44	C45	C46	G47	A48	U49	G50	A51	A52	G53	G54	A55	G56	G57	C58	G59	A60	U61	U62	A63																		
C64	C65	U66	C67	C68	C69	A70	A71	U72	A73	G74	C75	C76	C77	C78	G79	A80	C81	G82	A83	G84	A85	G86	C87	G88	A89	G90	A91	U92	A93	C94	G95	C96	U99	G100	A101	G102	U103	G104	G105	G106	G107	U110	G111	G112	G113	G114	G115	A116	A117	U118	G119	G120	G121	C122	A123	U124	A125	C126																						
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U561	G562	U563	U564	U565	U566	G567	G568	G569	G570	U571	G572	G573	G574	G575	U576	U577	U578	G579	G580	U581	G582	G583	G584	U585	G586	G587	G588	G589	G590	G591	G592	G593	G594	G595	G596	U597	U598	G599	G600	A601	G602	G603	A606	G607	G608	U609	G610	G611	G612	G613	G614	G615	G616	U617	U618	A619	G620	G621	G622	G623	G624	G625	G626	G627	G628	G629	G630	G631	G632	G633	G634	G635	G636	G637	G638	G639	G640	G641	G642	G643	G644	G645	G646	G647	G648	G649	G650	G651	G652	G653	G654	G655	G656	G657	G658	G659	G660	G661	G662	G663	G664	G665	G666	G667	G668	G669	G670	G671	G672	G673	G674	G675	G676	G677	G678	G679	G680	G681	G682	G683	G684	G685	G686	G687	G688	G689	G690	G691	G692	G693	G694	G695	G696	G697	G698	G699	G700	G701	G702	G703	G704	G705	G706	G707	G708	G709	G710	G711	G712	G713	G714	G715	G716	G717	G718	G719	G720	G721	G722	G723	G724	G725	G726	G727	G728	G729	G730	G731	G732	G733	G734	G735	G736	G737	G738	G739	G740	G741	G742	G743	G744	G745	G746	G747	G748	G749	G750	G751	G752	G753	G754	G755	G756	G757	G758	G759	G760	G761	G762	G763	G764	G765	G766	G767	G768	G769	G770	G771	G772	G773	G774	G775	G776	G777	G778	G779	G780	G781	G782	G783	G784	G785	G786	G787	G788	G789	G790	G791	G792	G793	G794	G795	G796	G797	G798	G799	G800	G801	G802	G803	G804	G805	G806	G807	G808	G809	G810	G811	G812	G813	G814	G815	G816	G817	G818	G819	G820	G821	G822	G823	G824	G825	G826	G827	G828	G829	G830	G831	G832	G833	G834	G835	G836	G837	G838	G839	G840	G841	G842	G843	G844	G845	G846	G847	G848	G849	G850	G851	G852	G853	G854	G855	G856	G857	G858	G859	G860	G861	G862	G863	G864	G865	G866	G867	G868	G869	G870	G871	G872	G873	G874	G875	G876	G877	G878	G879	G880	G881	G882	G883	G884	G885	G886	G887	G888	G889	G890	G891	G892	G893	G894	G895	G896	G897	G898	G899	G900	G901	G902	G903	G904	G905	G906	G907	G908	G909	G910	G911	G912	G913	G914	G915	G916	G917	G918	G919	G920	G921	G922	G923	G924	G925	G926	G927	G928	G929	G930	G931	G932	G933	G934	G935	G936	G937	G938	G939	G940	G941	G942	G943	G944	G945	G946	G947	G948	G949	G950	G951	G952	G953	G954	G955	G956	G957	G958	G959	G960	G961	G962	G963	G964	G965	G966	G967	G968	G969	G970	G971	G972	G973	G974	G975	G976	G977	G978	G979	G980	G981	G982	G983	G984	G985	G986	G987	G988	G989	G990	G991	G992	G993	G994	G995	G996	G997	G998	G999	C1000	C1001	C1002	C1003	C1004	C1005	C1006	C1007	C1008	C1009	C1010	C1011	C1012	C1013	C1014	C1015	C1016	C1017	C1018	C1019	C1020	C1021	C1022	C1023	C1024	C1025	C1026	C1027	C1028	C1029	C1030	C1031	C1032	C1033	C1034	C1035	C1036	C1037	C1038	C1039	C1040	C1041	C1042	C1043	C1044	C1045	C1046	C1047	C1048	C1049	C1050	C1051	C1052	C1053	C1054	C1055	C1056	C1057	C1058	C1059	C1060	C1061	C1062	C1063	C1064	C1065	C1066	C1067	C1068	C1069	C1070	C1071	C1072	C1073	C1074	C1075	C1076	C1077	C1078	C1079	C1080	C1081	C1082	C1083	C1084	C1085	C1086	C1087	C1088	C1089	C1090	C1091	C1092	C1093	C1094	C1095	C1096	C1097	C1098	C1099	C1100	C1101	C1102	C1103	C1104	C1105	C1106	C1107	C1108	C1109	C1110	C1111	C1112	C1113	C1114	C1115	C1116	C1117	C1118	C1119	C1120	C1121	C1122	C1123	C1124	C1125	C1126	C1127	C1128	C1129	C1130	C1131	C1132	C1133	C1134	C1135	C1136	C1137	C1138	C1139	C1140	C1141	C1142	C1143	C1144	C1145	C1146	C1147	C1148	C1149	C1150	C1151	C1152	C1153	C1154	C1155	C1156	C1157	C1158	C1159	C1160	C1161	C1162	C1163	C1164	C1165	C1166	C1167	C1168	C1169	C1170	C1171	C1172	C1173	C1174	C1175	C1176	C1177	C1178	C1179	C1180	C1181	C1182	C1183	C1184	C1185	C1186	C1187	C1188	C1189	C1190	C1191	C1192	C1193	C1194	C1195	C1196	C1197	C1198	C1199	C1200	C1201	C1202	C1203	C1204	C1205	C1206	C1207	C1208	C1209	C1210	C1211	C1212	C1213	C1214	C1215	C1216	C1217	C1218	C1219	C1220	C1221	C1222	C1223	C1224	C1225	C1226	C1227	C1228	C1229	C1230	C1231	C1232	C1233	C1234	C1235	C1236	C1237	C1238	C1239	C1240	C1241	C1242	C1243	C1244	C1245	C1246	C1247	C1248	C1249	C1250	C1251	C1252	C1253	C1254	C1255	C1256	C1257	C1258	C1259	C1260	C1261	C1262	C1263	C1264	C1265	C1266	C1267	C1268	C1269	C1270	C1271	C1272	C1273	C1274	C1275	C1276	C1277	C1278	C1279	C1280	C1281	C1282	C1283	C1284	C1285	C1286	C1287	C1288	C1289	C1290	C1291	C1292	C1293	C1294	C1295	C1296	C1297	C1298	C1299	C1300	C1301	C1302	C1303	C1304	C1305	C1306	C1307	C1308	C1309	C1310	C1311	C1312	C1313	C1314	C1315	C1316	C1317	C1318	C1319	C1320	C1321	C1322	C1323	C1324	C1325	C1326	C1327	C1328	C1329	C1330	C1331	C1332	C1333	C1334	C1335	C1336	C1337	C1338	C1339	C1340	C1341	C1342	C1343	C1344	C1345	C1346	C1347	C1348	C1349	C1350	C1351	C1352	C1353	C1354	C1355	C1356	C1357	C1358	C1359	C1360	C1361	C1362	C1363	C1364	C1365	C1366	C1367	C1368	C1369	C1370	C1371	C1372	C1373	C1374	C1375	C1376	C1377	C1378	C1379	C1380	C1381	C1382	C1383	C1384	C1385	C1386	C1387	C1388	C1389	C1390	C1391	C1392	C1393	C1394	C1395	C1396	C1397	C1398	C1399	C1400	C1401	C1402	C1403	C1404	C1405	C1406	C1407	C1408	C1409	C1410	C1411	C1412	C1413	C1414	C1415	C1416	C1417	C1418	C1419	C1420	C1421	C1422	C1423	C1424	C1425	C1426	C1427	C1428	C1429	C1430	C1431	C1432	C1433	C1434	C1435	C1436	C1437	C1438	C1439	C1440	C1441	C1442	C1443	C1444	C1445	C1446	C1447	C1448	C1449	C1450	C1451	C1452	C1453	C1454	C1455

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C2243	C2244	A2245	A2246	C2247	A2248	U2249	G2250	C2251	U2252	A2253	G2254	U2255	G2256	A2257	U2258	C2259	G2260	C2261	C2262	C2263	C2264	G2265	C2266	A2267	C2268	A2269	C2270	C2271	C2272	A2273	C2274	C2275	C2276	A2277	A2278	C2279	C2280	C2281	C2282	C2283	U2284	U2285	U2286	C2287	A2288	A2289	U2290	U2291	G2292	G2293	A2294	C2295	U2296	C2297	U2298	C2299	G2300	G2301	G2302	U2303	U2304	A2305	C2306									
G3112	U3113	A3114	G3115	A3116	A3117	U3118	A3119	G3120	G3121	U3122	G3123	A3124	G3125	A3126	A3127	C3128	G3129	G3130	A3131	A3132	C3133	U3134	A3135	C3136	C3137	C3138	U3139	G3140	A3141	A3142	C3143	A3144	A3145	A3146	C3147	G3148	G3149	G3150	G3151	C3152	C3153	G3154	G3155	A3156	A3157	G3158	G3159	C3160	C3161	A3170	A3171	U3172	A3173	U3174	C3175	C3176	C3177	C3178	C3179	C3180	C3181	U3182	U3183	U3184	U3185	G3186	U3187	G3188	G3189	G3190	A3191	C3192
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U1967	G1968	U1969	G1970	C1971	A1972	U1973	U1974	G1975	U1976	A1977	C1978	U1979	A1980	U1981	C1982	G1983	U1984	G1985	U1986	G1987	A1988	C1989	U1990	C1991	G1992	U1993	U1994	A1995	U1996	C1997	U1998	U2000	G2001	A2002	U2003	A2004	U2005	G2006	U2007	A2016	U2017	C2018	C2019	G2020	U2021	C2022	C2023	U2024	A2025	C2026	U1965	C1966																				
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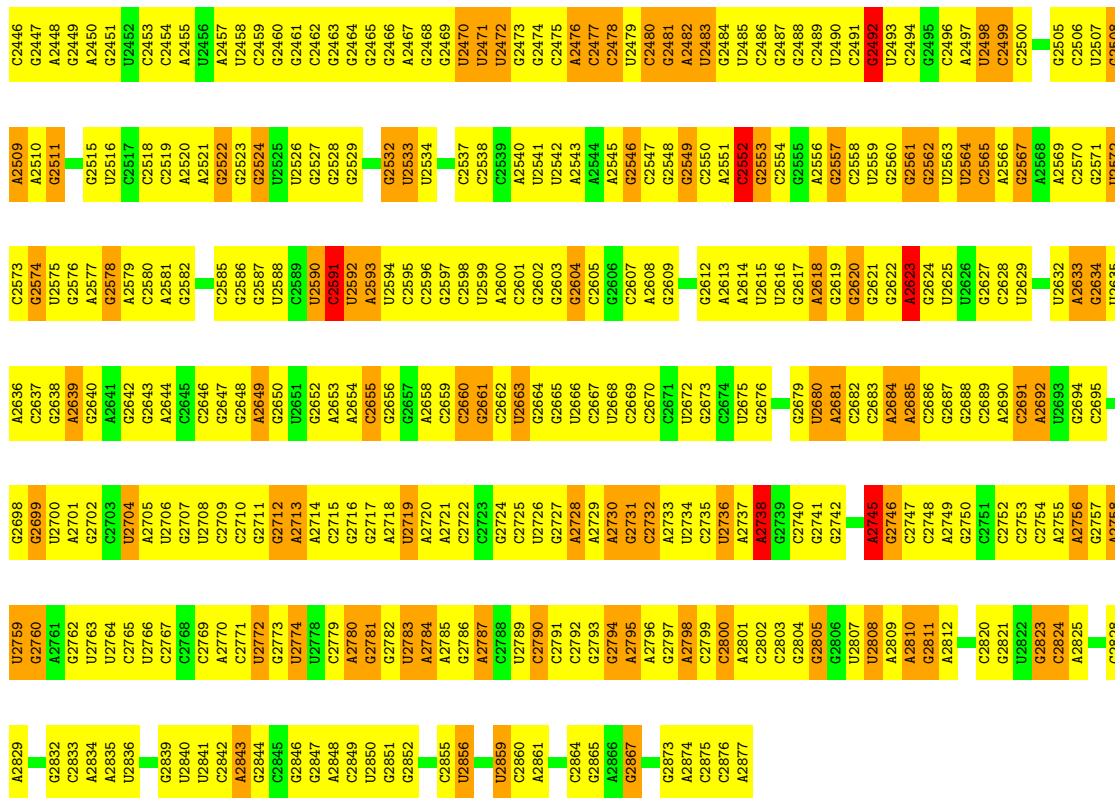
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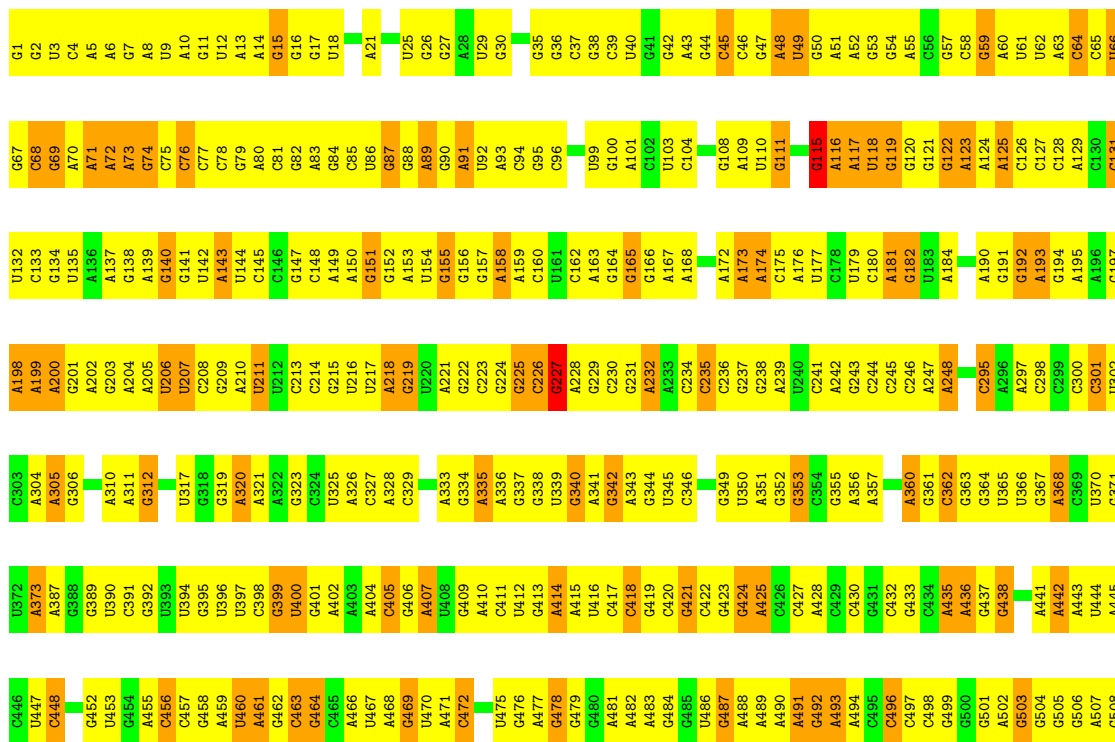
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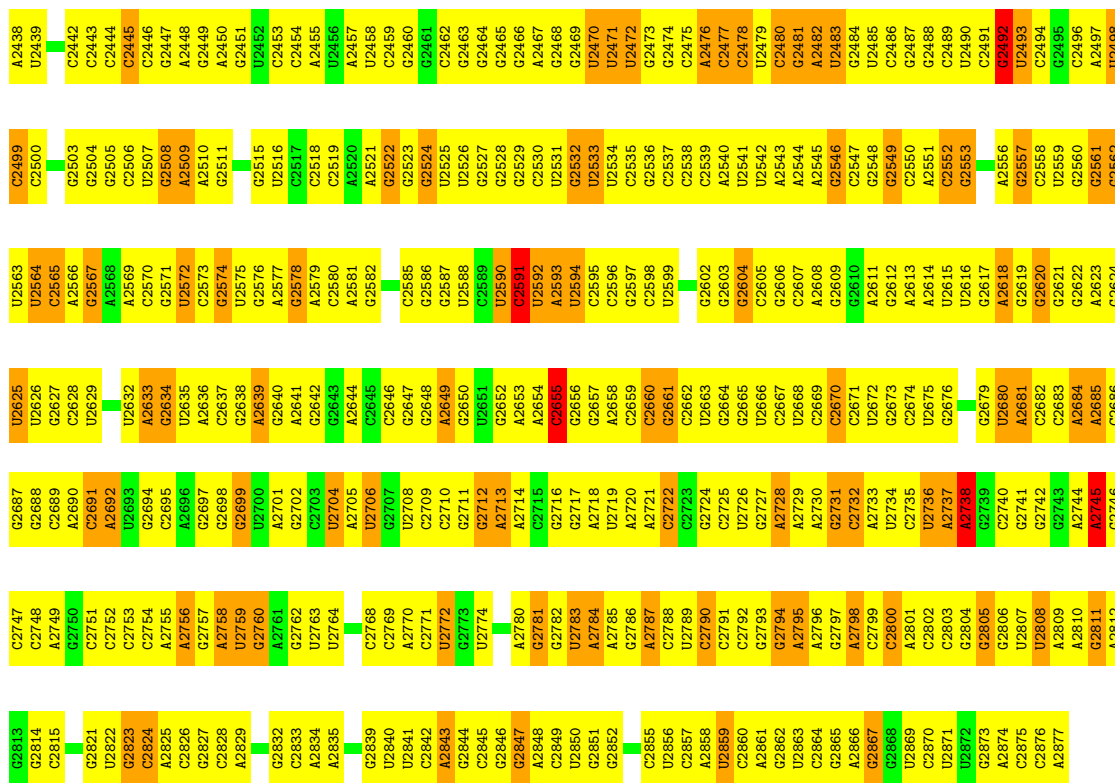
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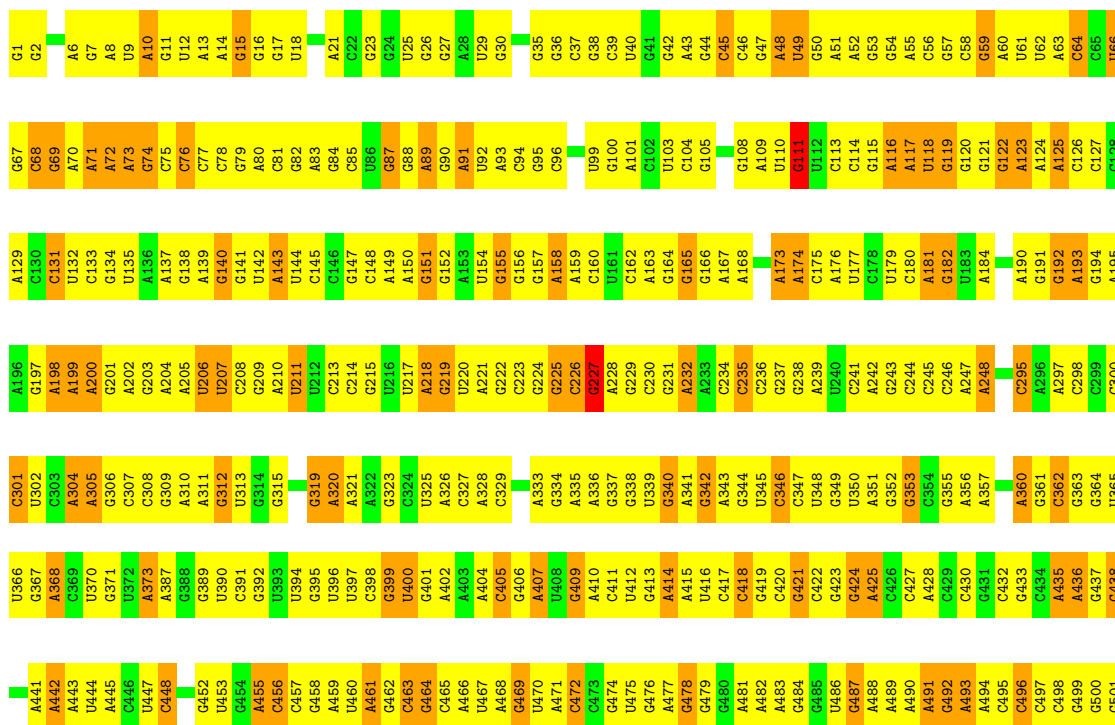
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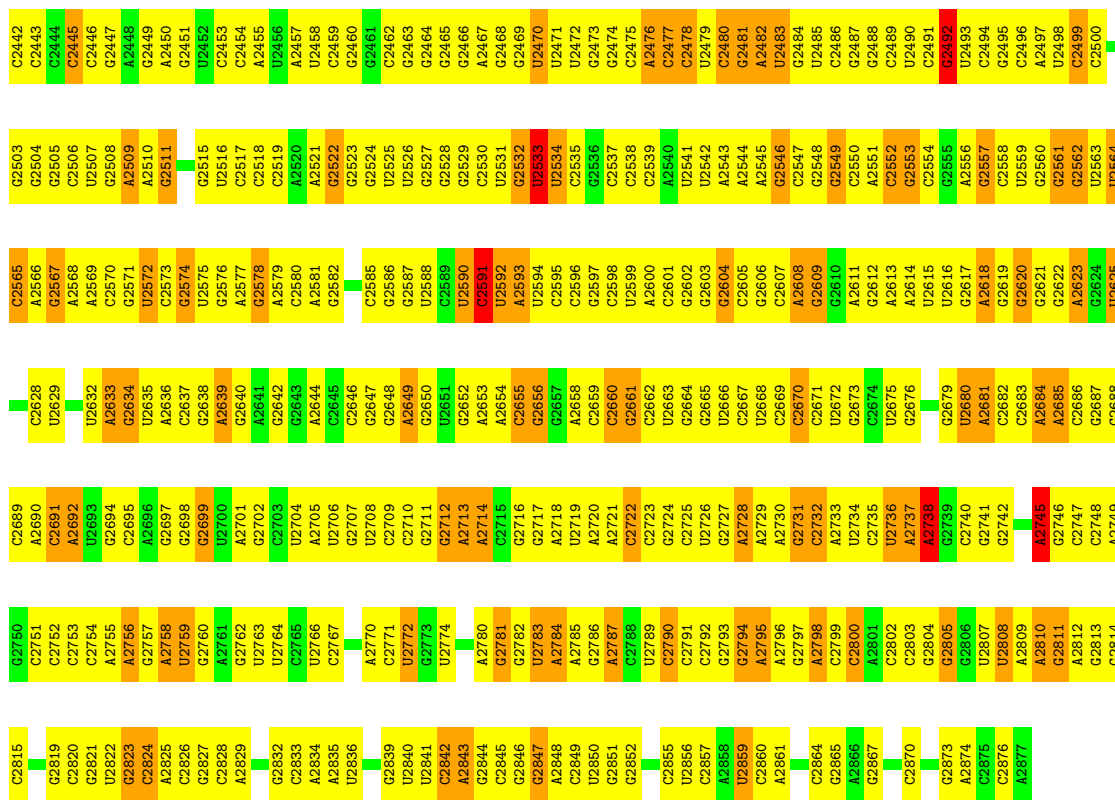
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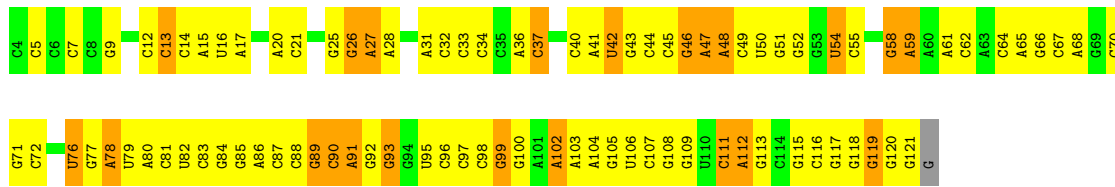
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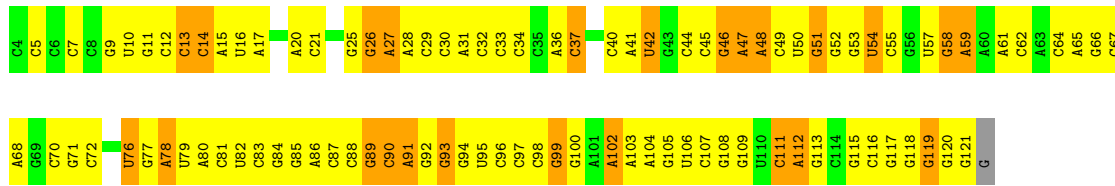
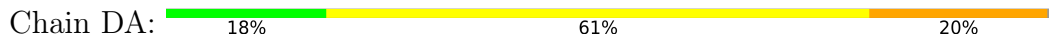
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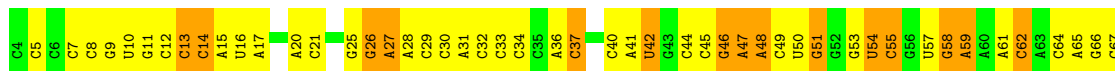
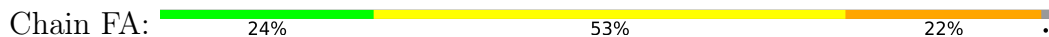
• Molecule 23: 5S RIBOSOMAL RNA

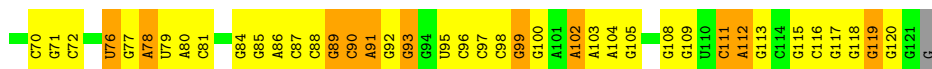


• Molecule 23: 5S RIBOSOMAL RNA

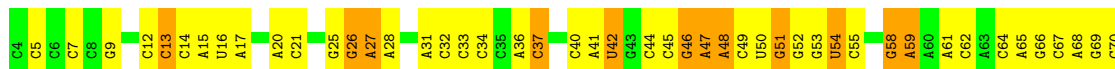


• Molecule 23: 5S RIBOSOMAL RNA

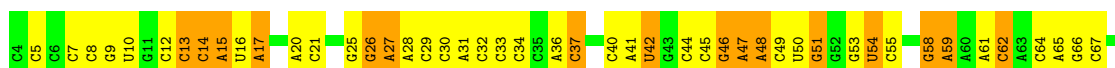
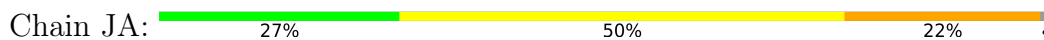




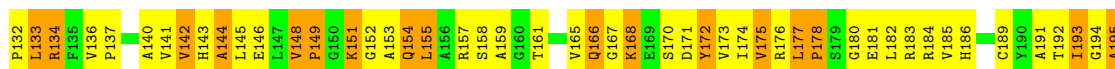
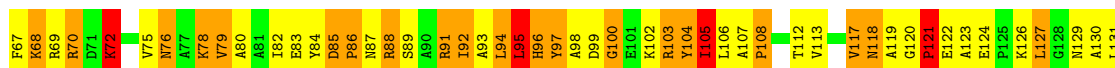
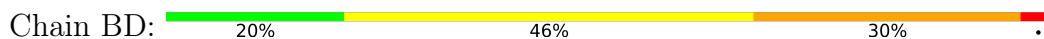
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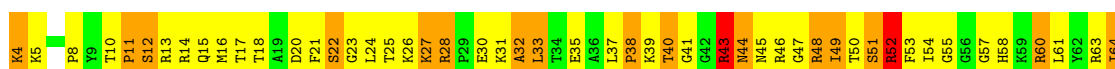
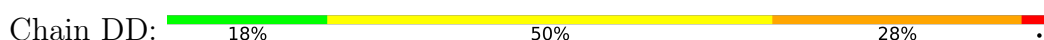
• Molecule 23: 5S RIBOSOMAL RNA

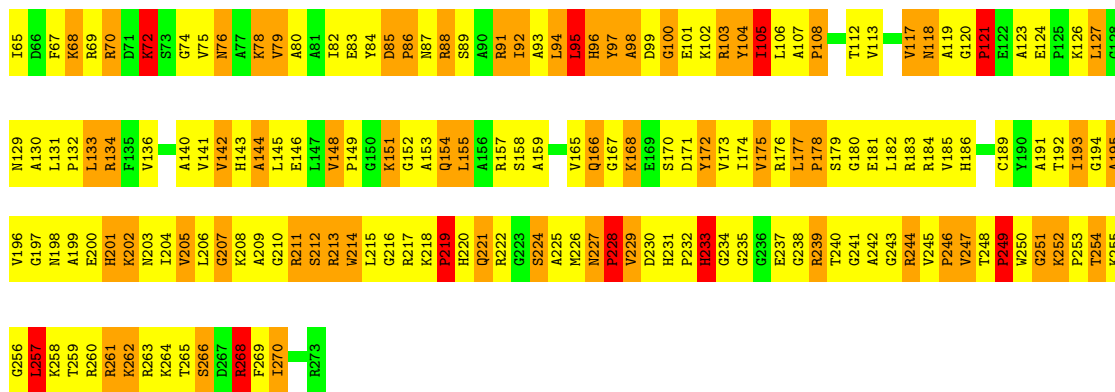


• Molecule 24: 50S ribosomal protein L2

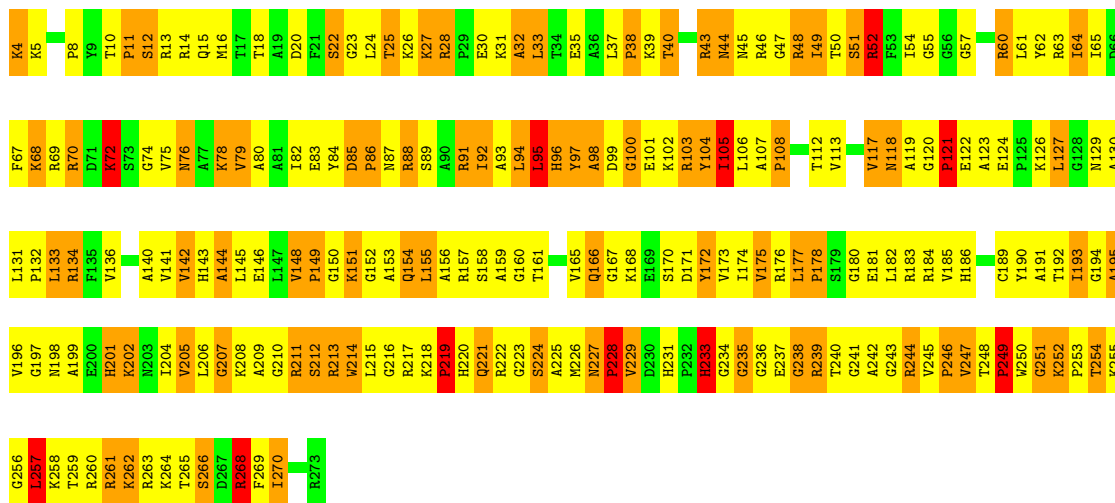
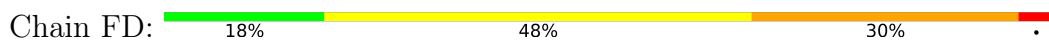


• Molecule 24: 50S ribosomal protein L2

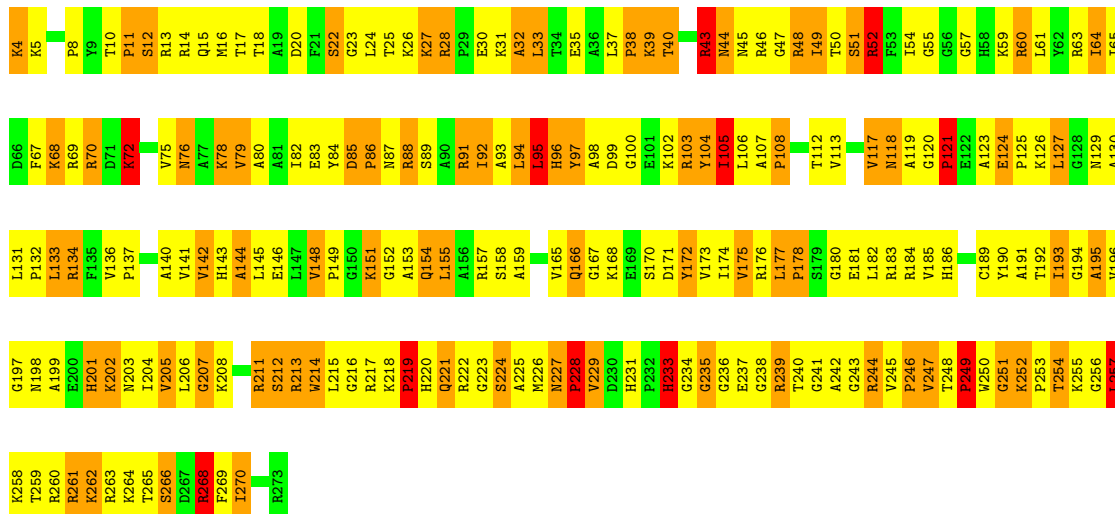
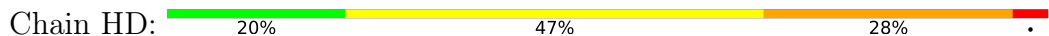




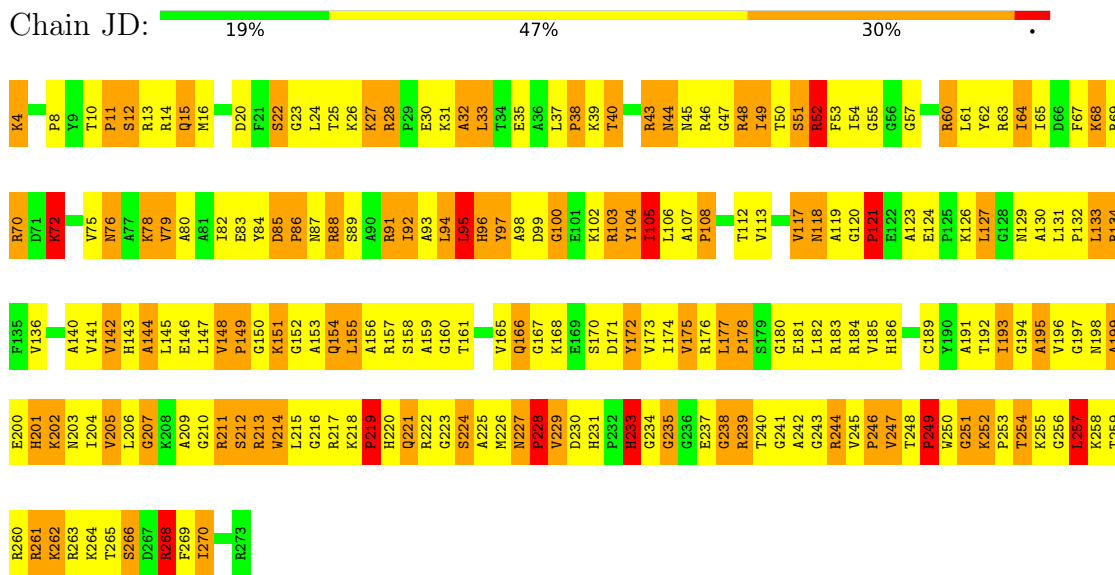
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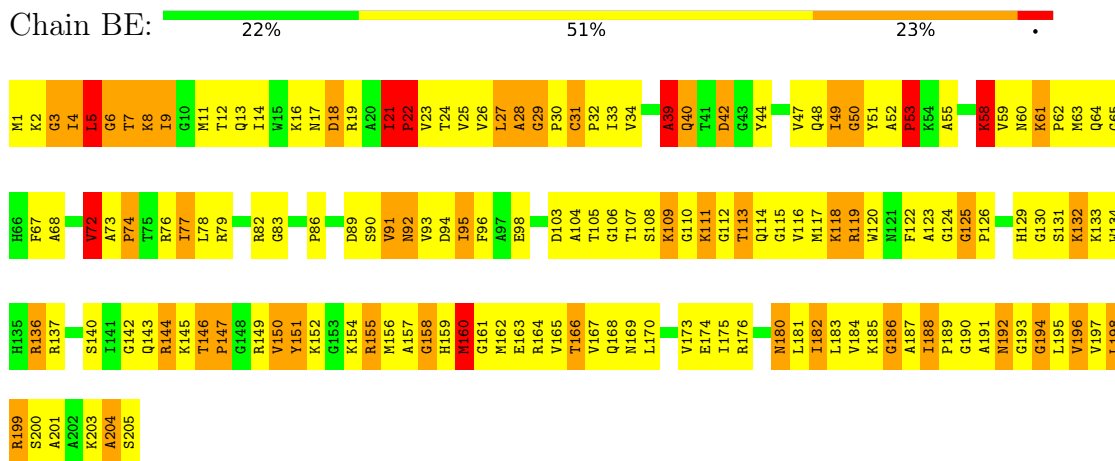
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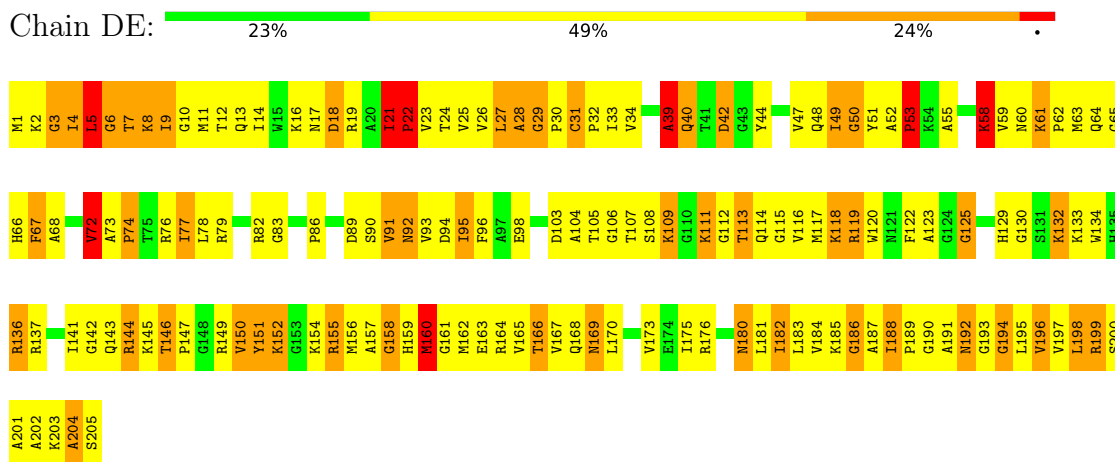
- Molecule 24: 50S ribosomal protein L2



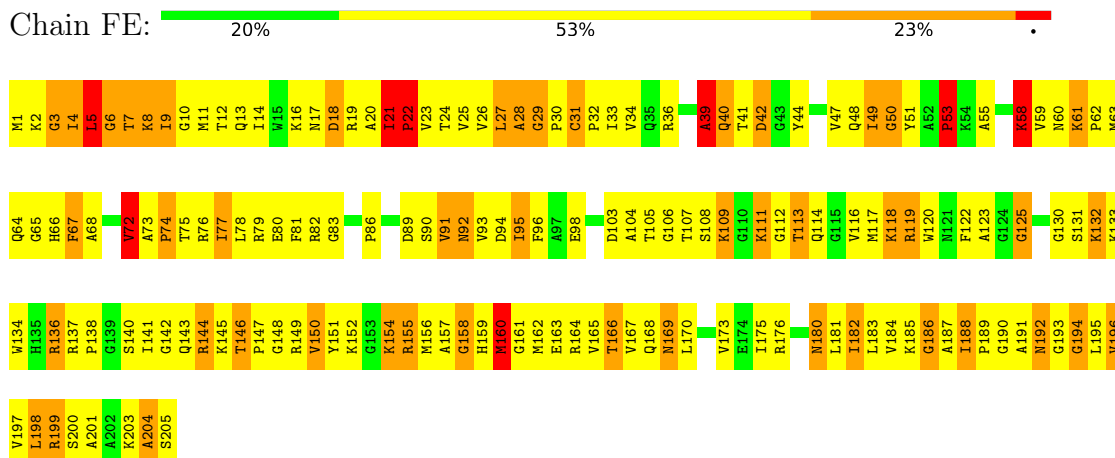
- Molecule 25: 50S ribosomal protein L3



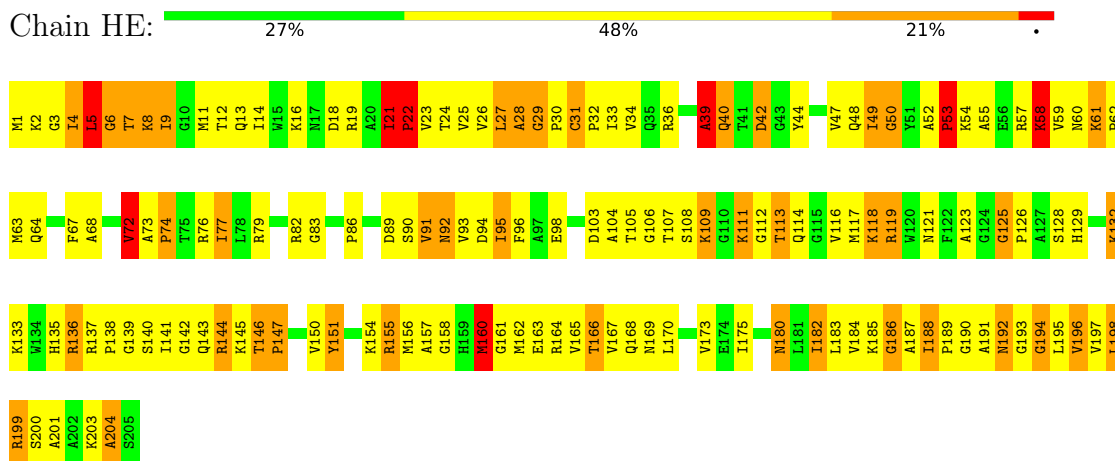
- Molecule 25: 50S ribosomal protein L3



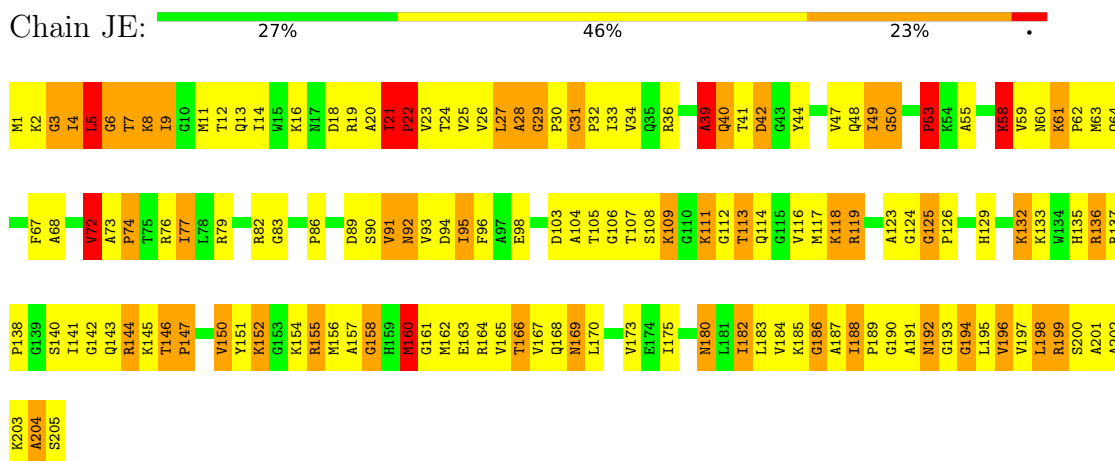
- Molecule 25: 50S ribosomal protein L3



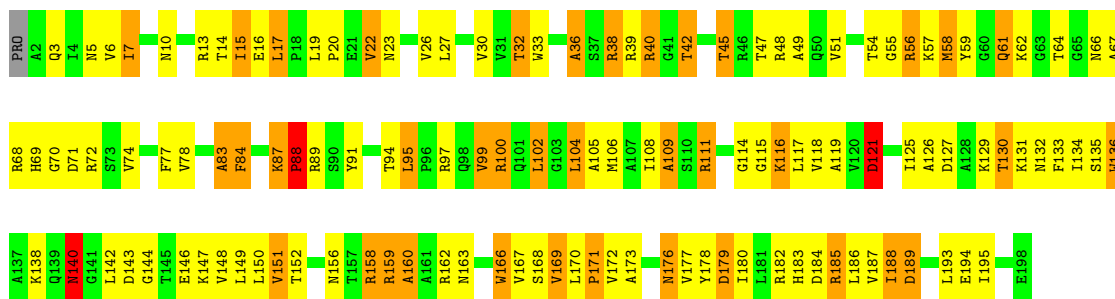
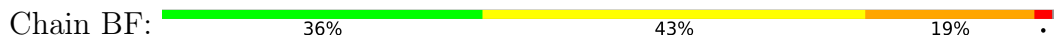
- Molecule 25: 50S ribosomal protein L3



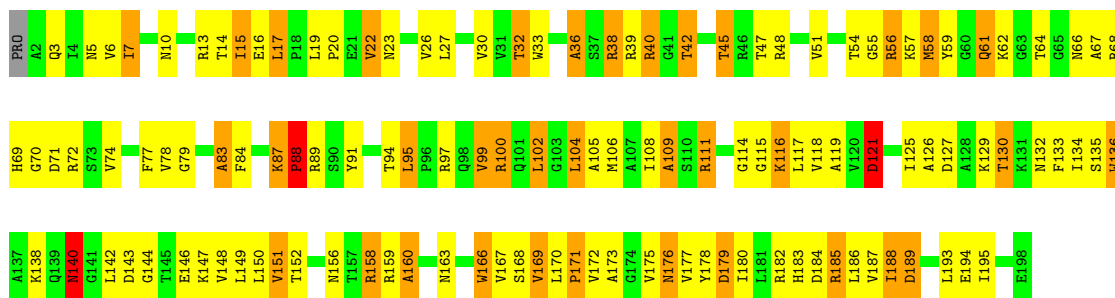
- Molecule 25: 50S ribosomal protein L3



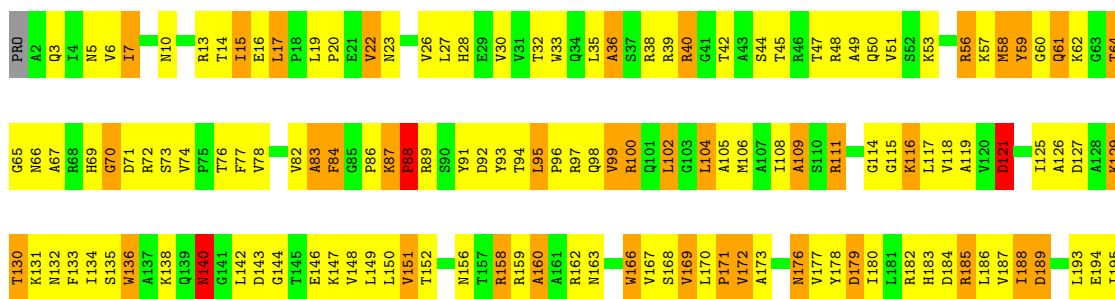
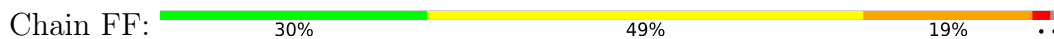
- Molecule 26: 50S ribosomal protein L4



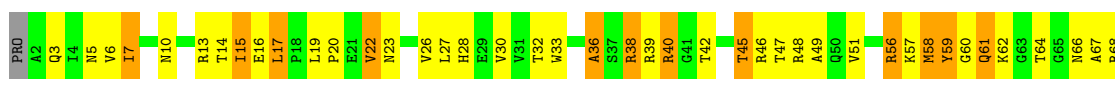
• Molecule 26: 50S ribosomal protein L4

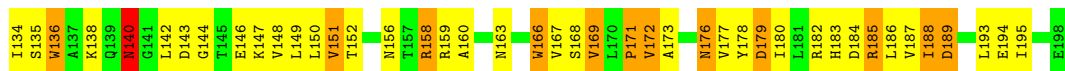


• Molecule 26: 50S ribosomal protein L4

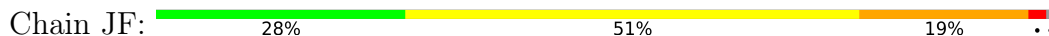


• Molecule 26: 50S ribosomal protein L4

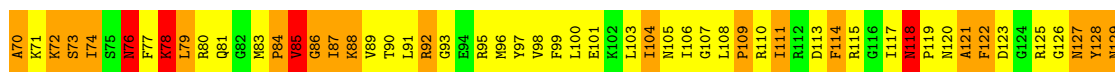
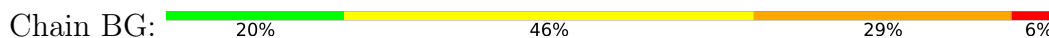




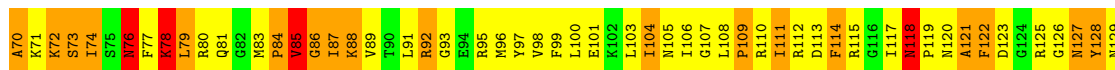
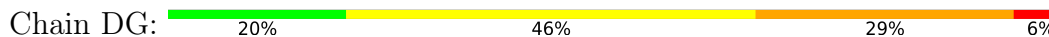
• Molecule 26: 50S ribosomal protein L4



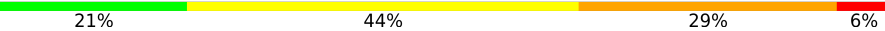
• Molecule 27: 50S ribosomal protein L5

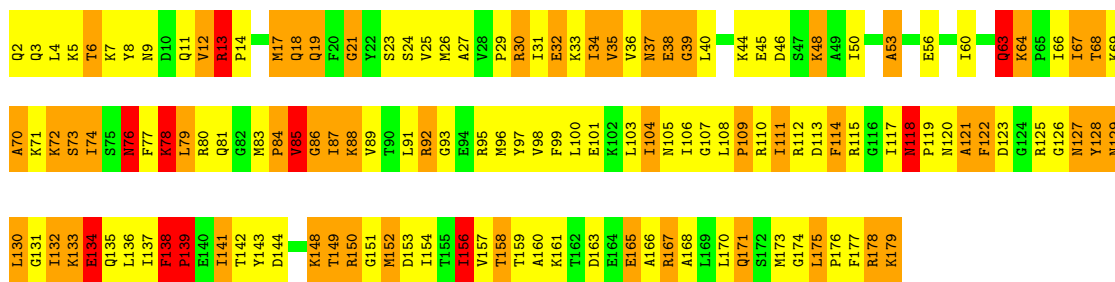


• Molecule 27: 50S ribosomal protein L5




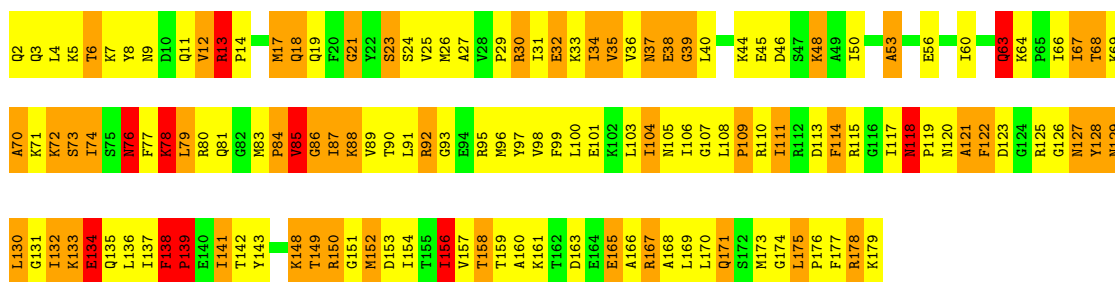
• Molecule 27: 50S ribosomal protein L5

Chain FG:  21% 44% 29% 6%

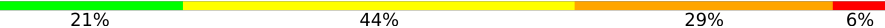


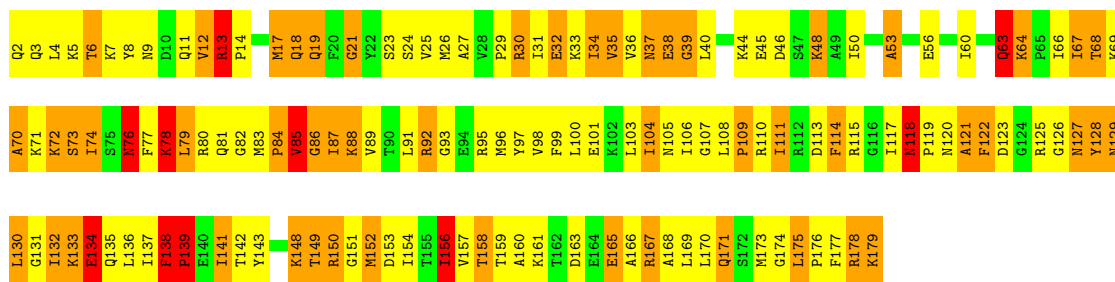
• Molecule 27: 50S ribosomal protein L5

Chain HG:  21% 46% 28% 6%

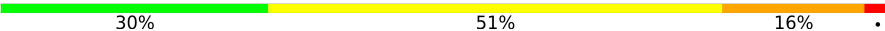


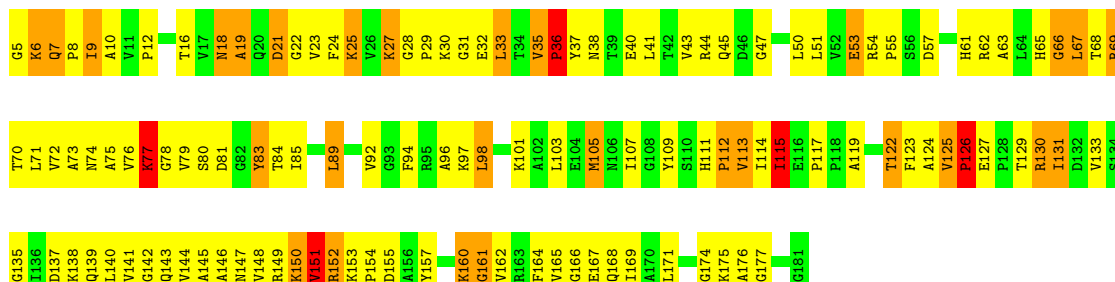
• Molecule 27: 50S ribosomal protein L5

Chain JG:  21% 44% 29% 6%

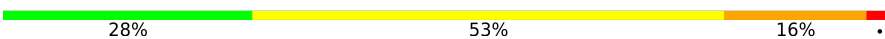


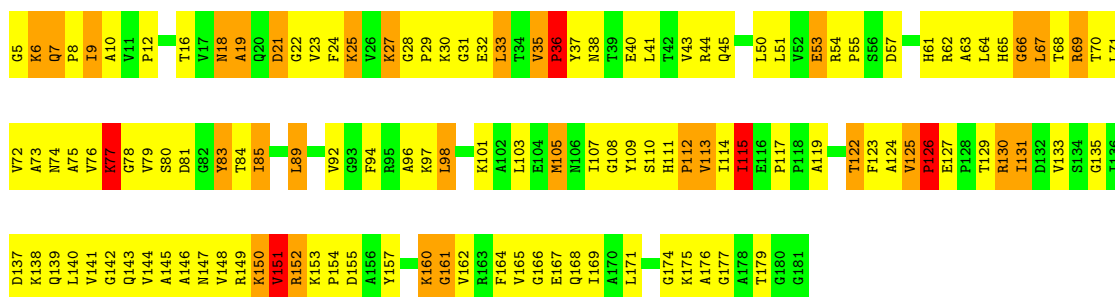
• Molecule 28: 50S ribosomal protein L6

Chain BH:  30% 51% 16% .



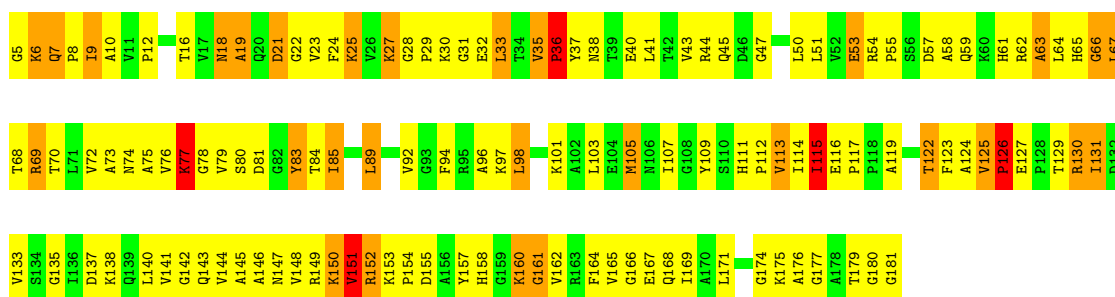
- Molecule 28: 50S ribosomal protein L6

Chain DH:  28% 53% 16%

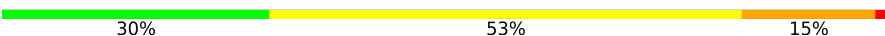


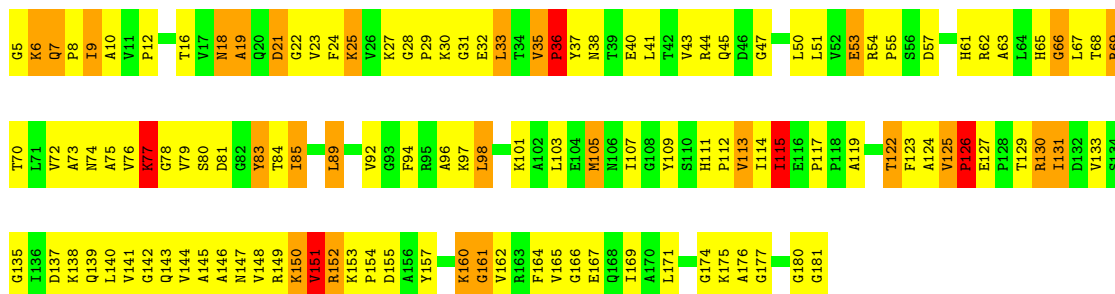
- Molecule 28: 50S ribosomal protein L6

Chain FH:  27% 54% 16%




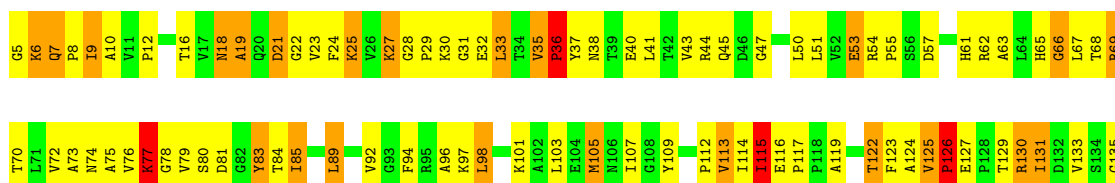
- Molecule 28: 50S ribosomal protein L6

Chain HH:  30% 53% 15%



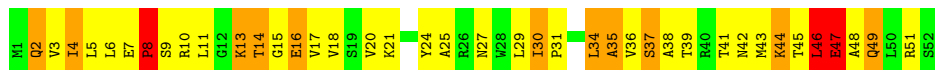
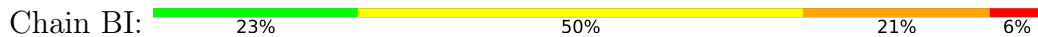
- Molecule 28: 50S ribosomal protein L6

Chain JH:  29% 53% 15%

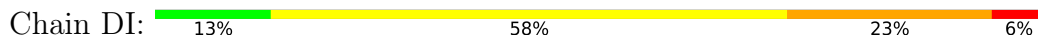




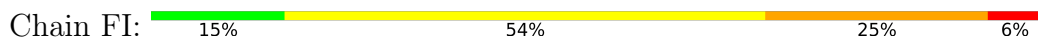
• Molecule 29: 50S ribosomal protein L9



• Molecule 29: 50S ribosomal protein L9



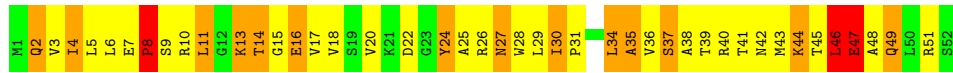
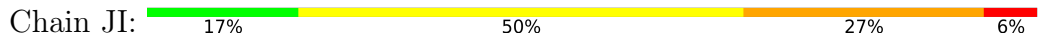
• Molecule 29: 50S ribosomal protein L9



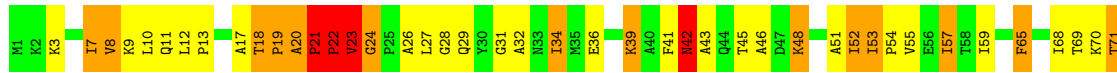
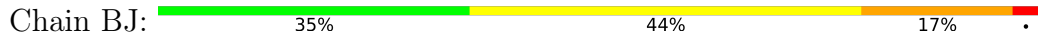
• Molecule 29: 50S ribosomal protein L9



• Molecule 29: 50S ribosomal protein L9

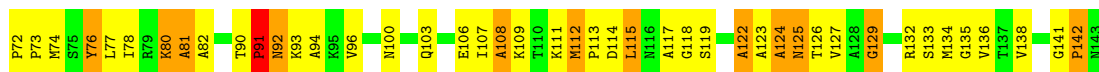


• Molecule 30: 50S ribosomal protein L11

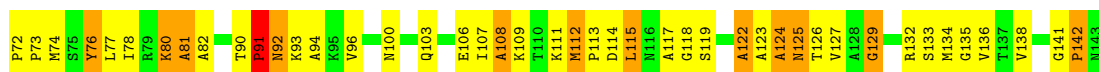
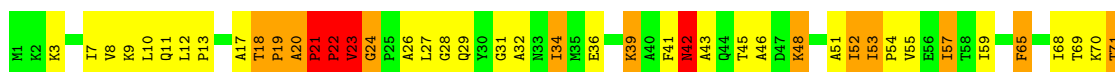




• Molecule 30: 50S ribosomal protein L11



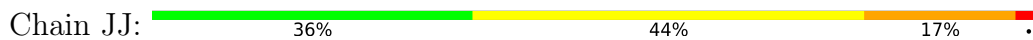
• Molecule 30: 50S ribosomal protein L11



• Molecule 30: 50S ribosomal protein L11

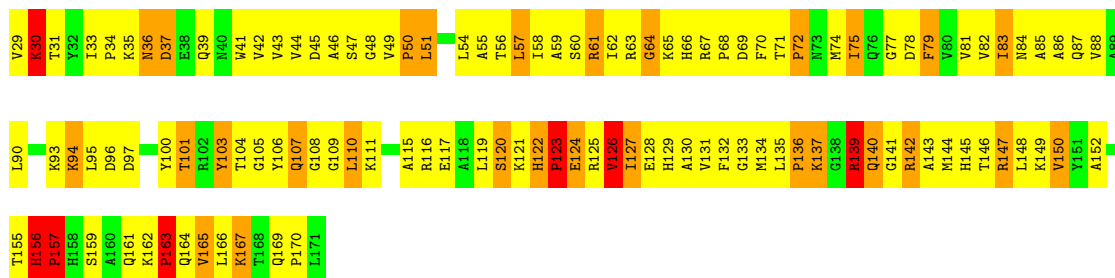


• Molecule 30: 50S ribosomal protein L11



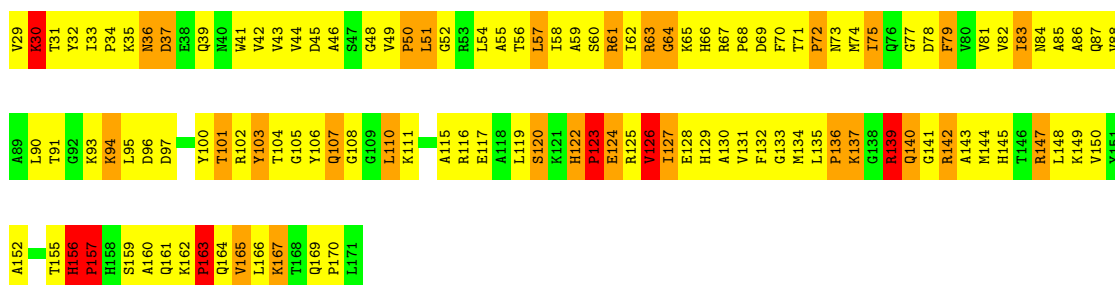
- Molecule 31: 50S ribosomal protein L13

Chain BK: 18% 57% 20% 5%



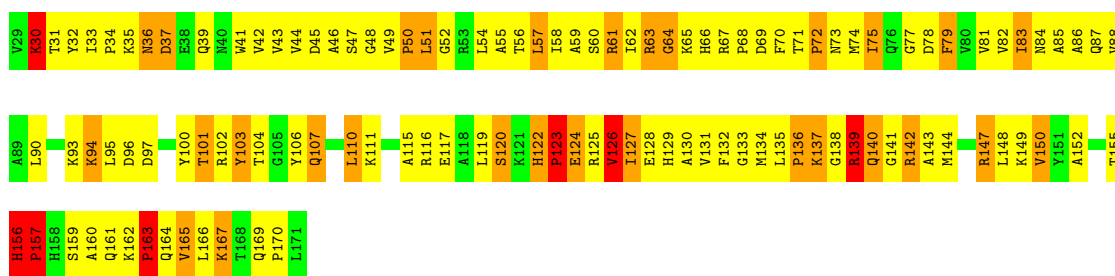
- Molecule 31: 50S ribosomal protein L13

Chain DK: 17% 59% 20% 5%



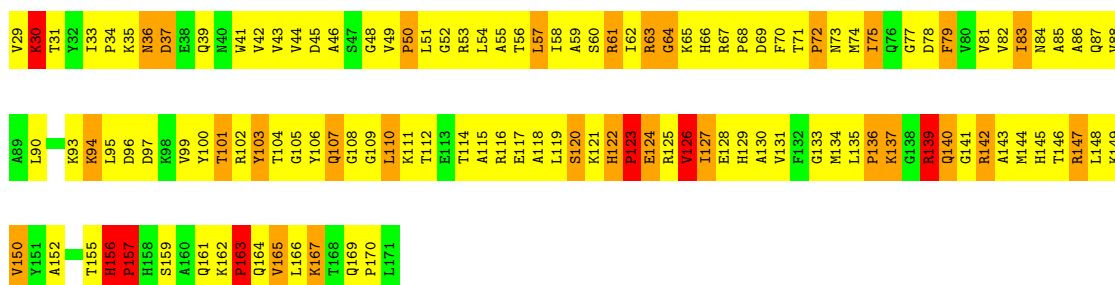
- Molecule 31: 50S ribosomal protein L13

Chain FK: 19% 56% 20% 5%

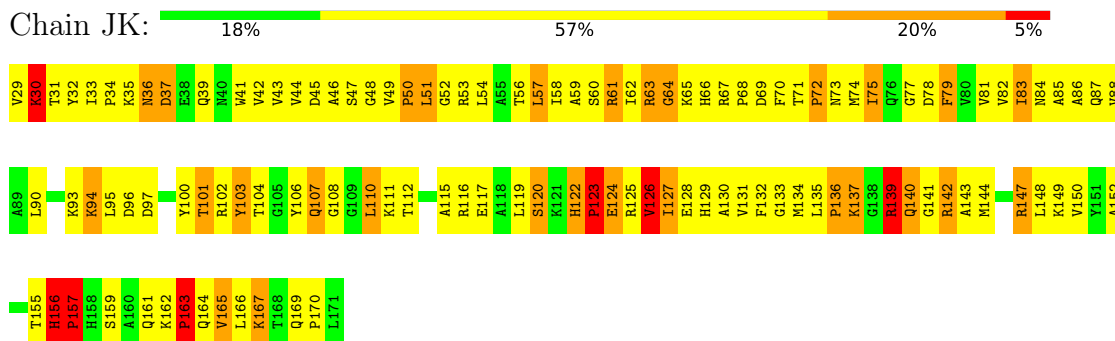


- Molecule 31: 50S ribosomal protein L13

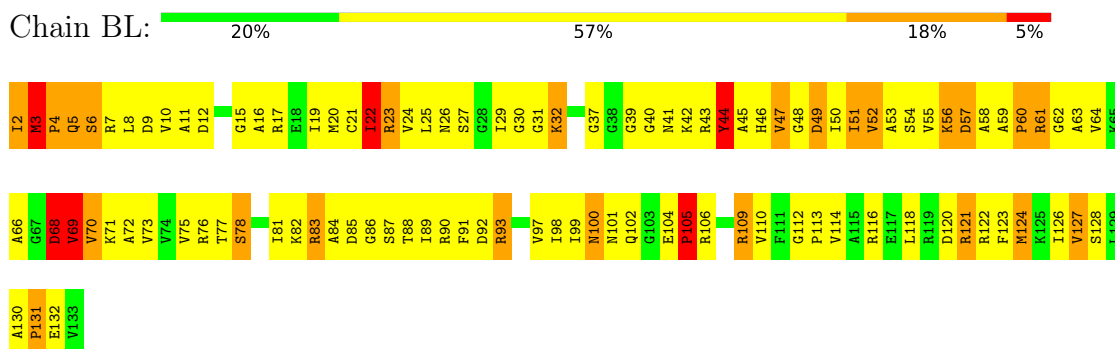
Chain HK: 14% 62% 20% 5%



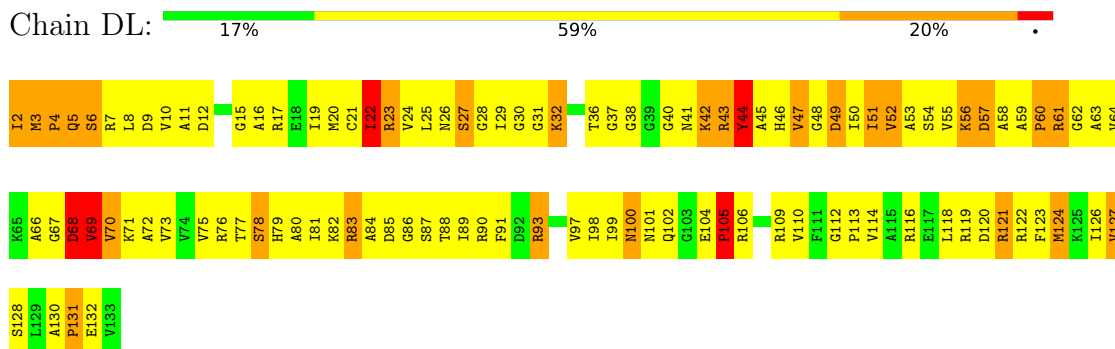
- Molecule 31: 50S ribosomal protein L13



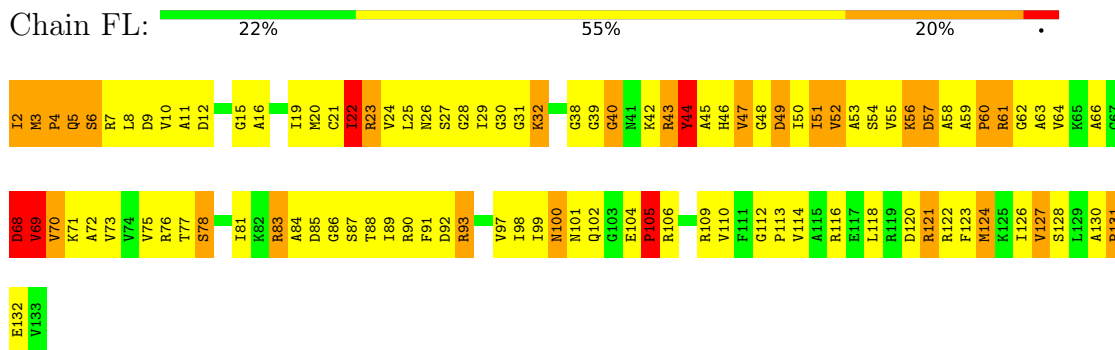
- Molecule 32: 50S ribosomal protein L14



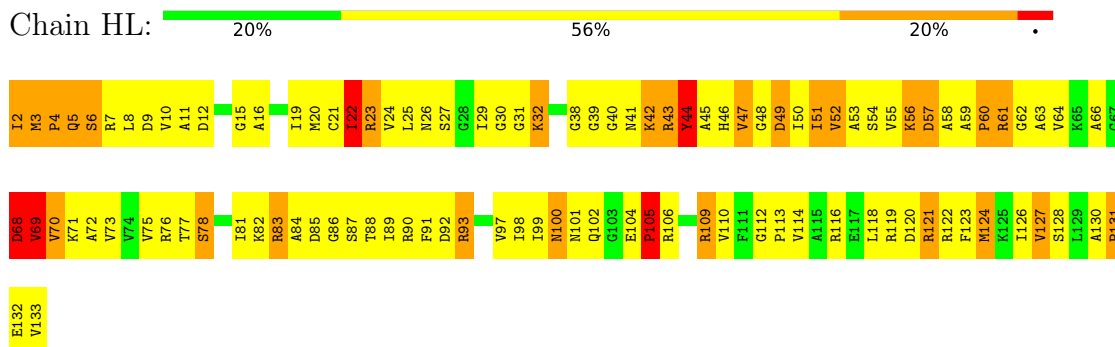
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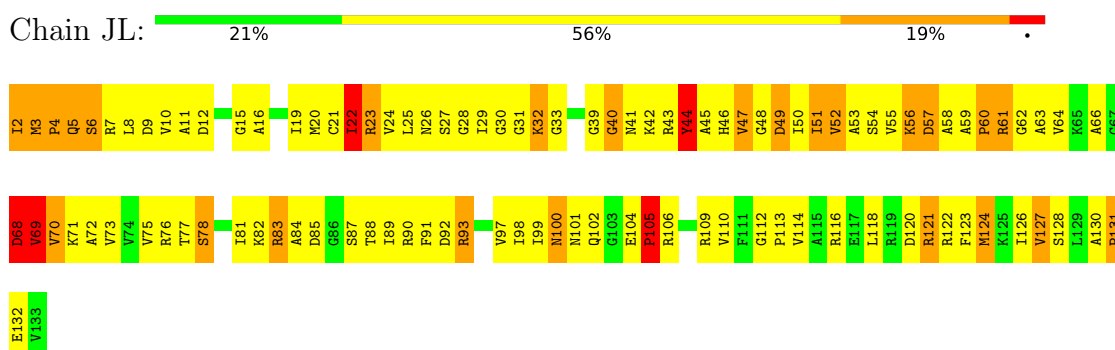
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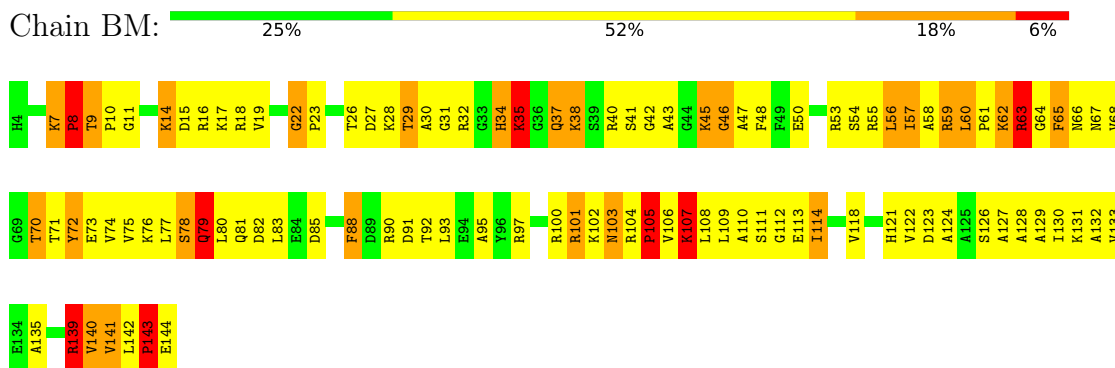
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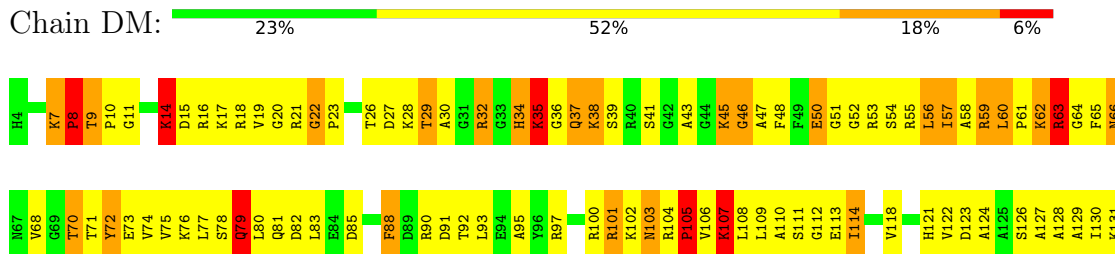
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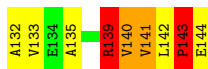


- Molecule 33: 50S ribosomal protein L15



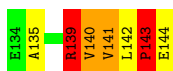
- Molecule 33: 50S ribosomal protein L15





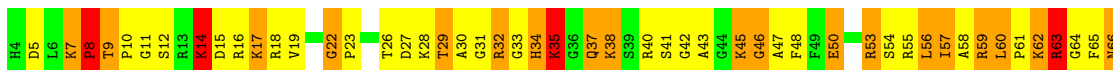
- Molecule 33: 50S ribosomal protein L15

Chain FM: 25% 52% 16% 6%



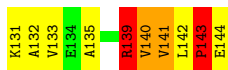
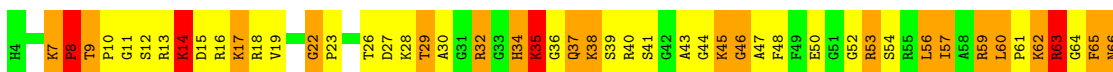
- Molecule 33: 50S ribosomal protein L15

Chain HM: 21% 52% 21% 6%



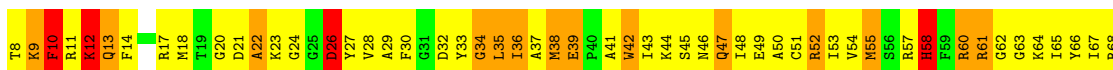
- Molecule 33: 50S ribosomal protein L15

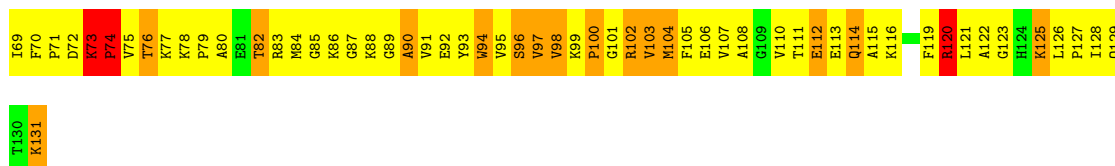
Chain JM: 21% 52% 21% 6%



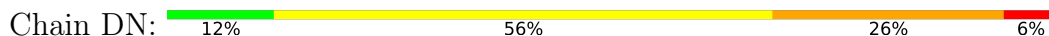
- Molecule 34: 50S ribosomal protein L16

Chain BN: 11% 60% 23% 6%

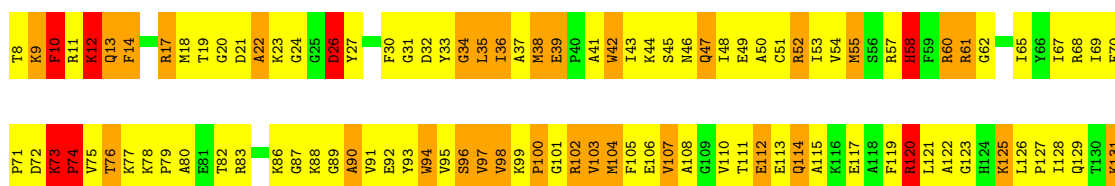
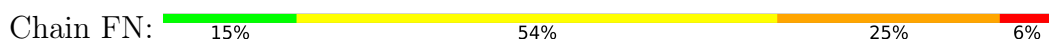




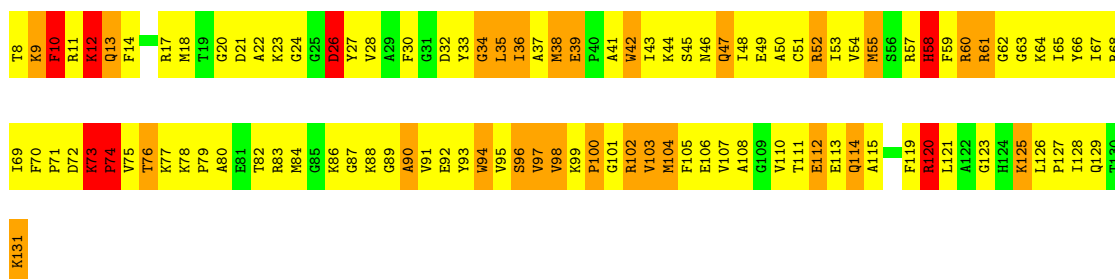
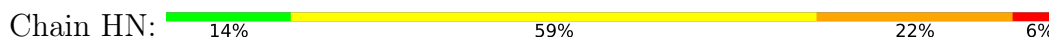
• Molecule 34: 50S ribosomal protein L16



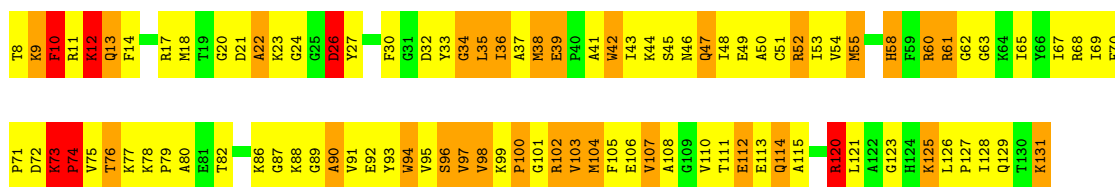
• Molecule 34: 50S ribosomal protein L16



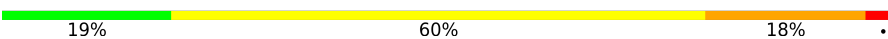
• Molecule 34: 50S ribosomal protein L16

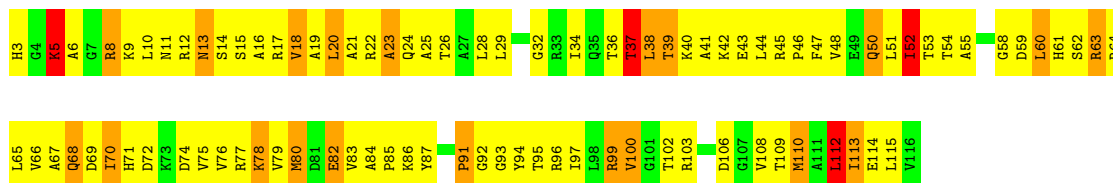


• Molecule 34: 50S ribosomal protein L16



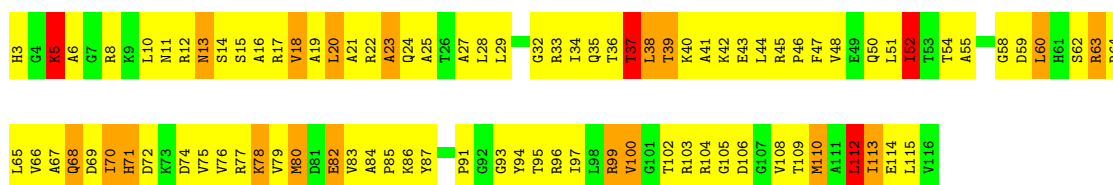
- Molecule 35: 50S ribosomal protein L17

Chain BO:  19% 60% 18%



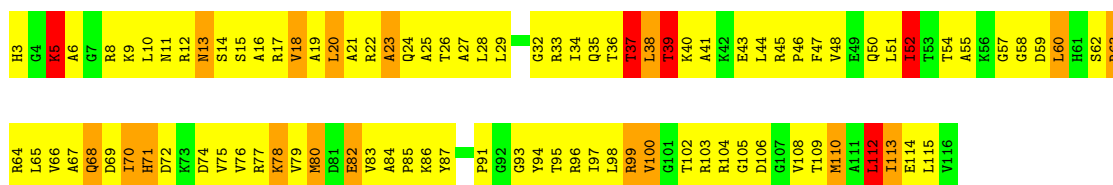
- Molecule 35: 50S ribosomal protein L17

Chain DO:  19% 61% 16%



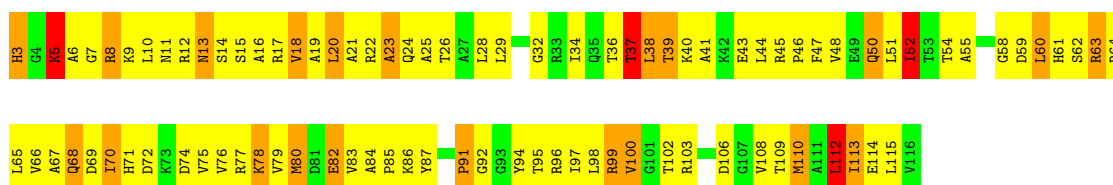
- Molecule 35: 50S ribosomal protein L17

Chain FO:  17% 64% 15%



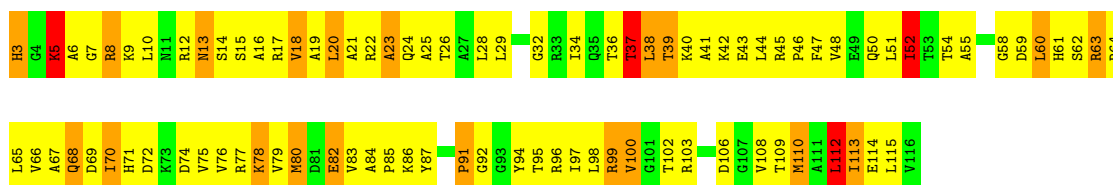
- Molecule 35: 50S ribosomal protein L17

Chain HO:  20% 58% 18%

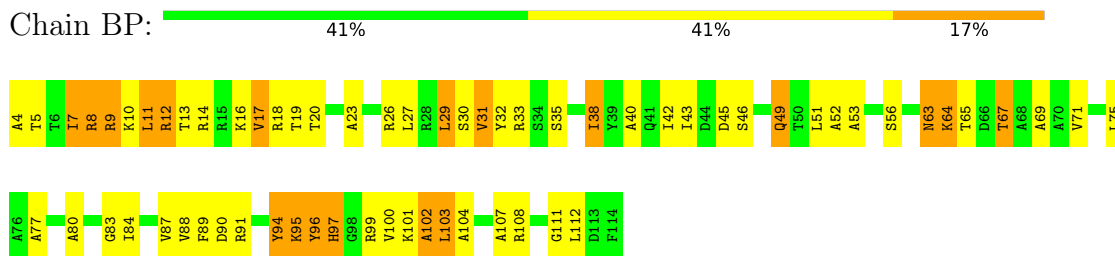


- Molecule 35: 50S ribosomal protein L17

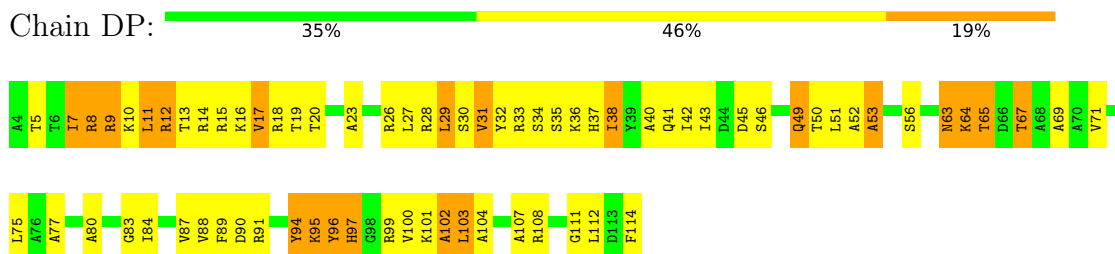
Chain JO:  20% 59% 18%



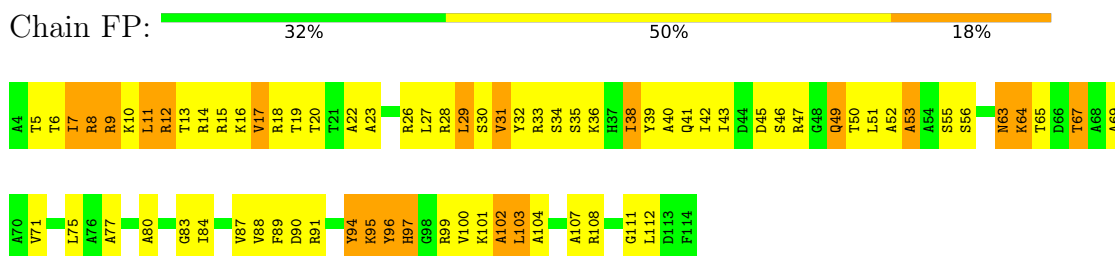
- Molecule 36: 50S ribosomal protein L18



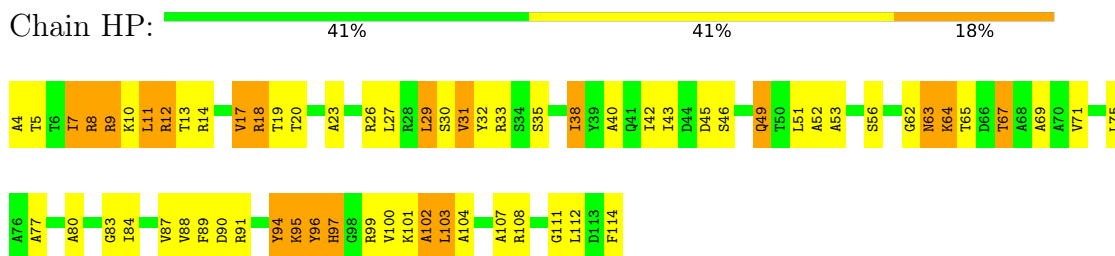
- Molecule 36: 50S ribosomal protein L18



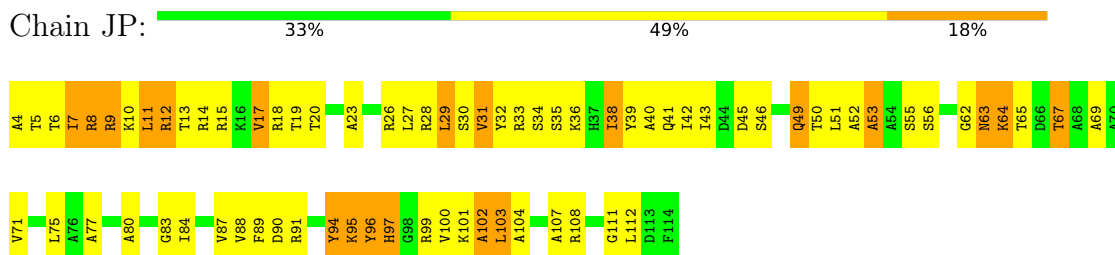
- Molecule 36: 50S ribosomal protein L18



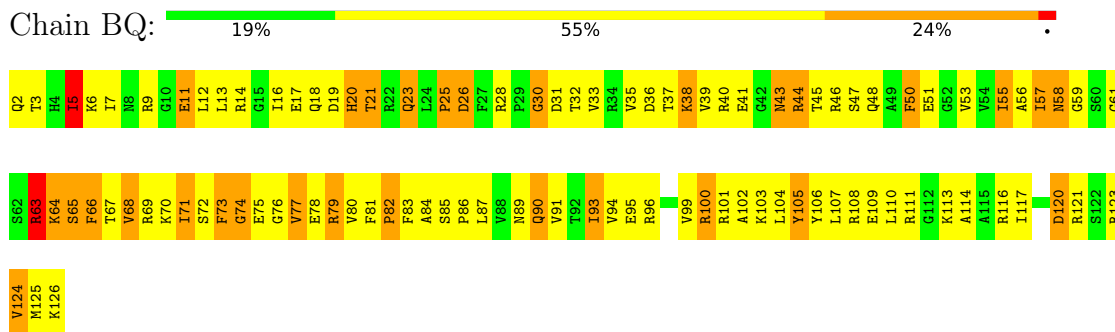
- Molecule 36: 50S ribosomal protein L18



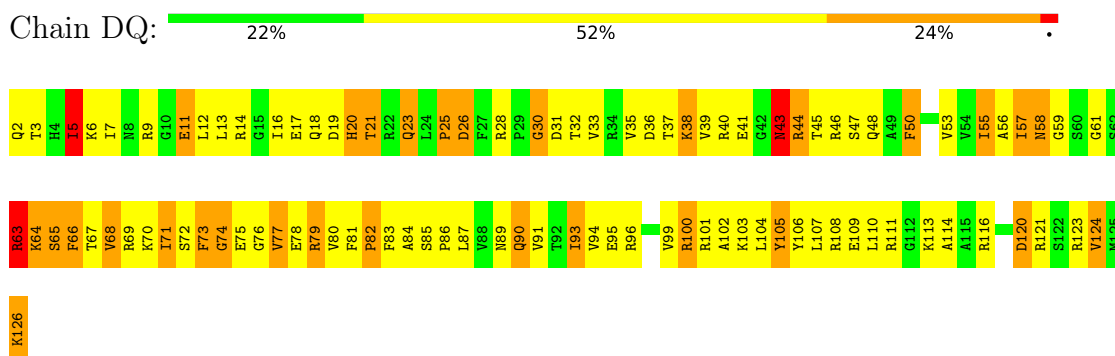
- Molecule 36: 50S ribosomal protein L18



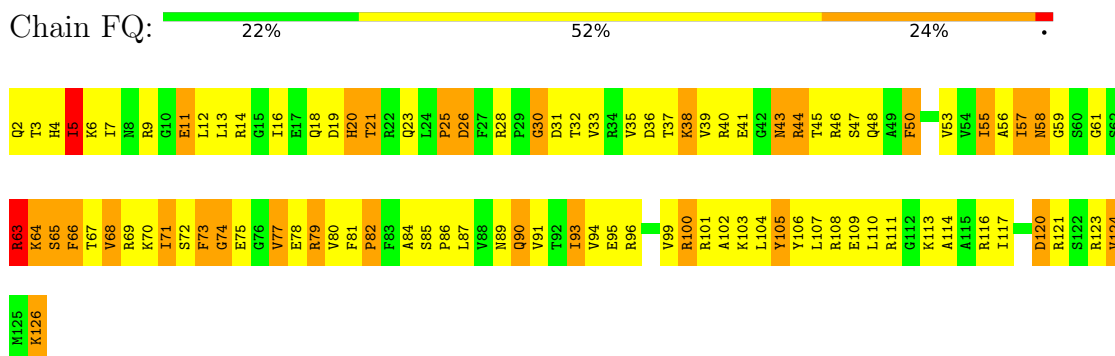
• Molecule 37: 50S ribosomal protein L19



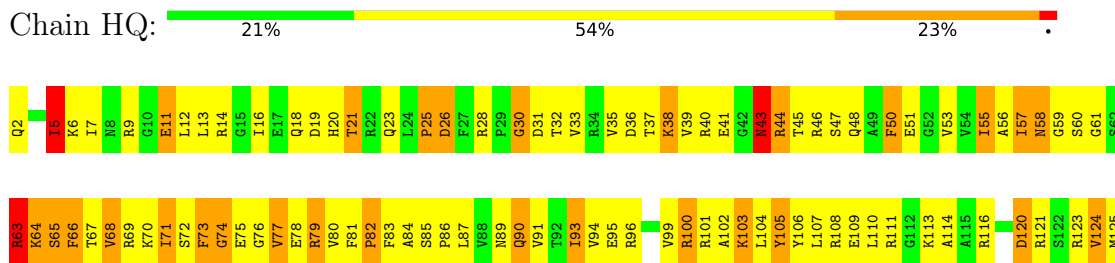
• Molecule 37: 50S ribosomal protein L19



• Molecule 37: 50S ribosomal protein L19



• Molecule 37: 50S ribosomal protein L19

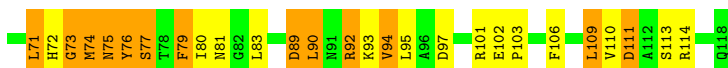


K126

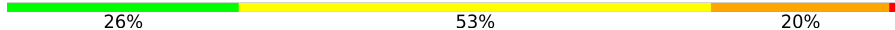
- Molecule 37: 50S ribosomal protein L19

Chain JQ:  18% 56% 25%V124
M125
K126

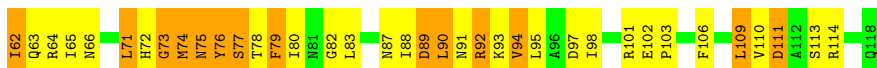
- Molecule 38: 50S ribosomal protein L20

Chain BR:  32% 45% 21%


- Molecule 38: 50S ribosomal protein L20

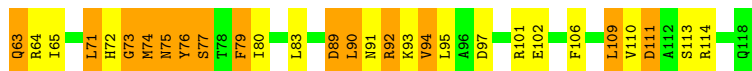
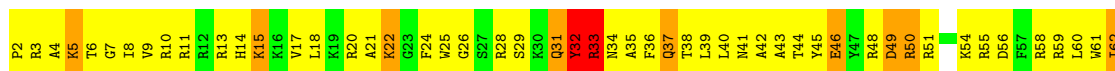
Chain DR:  26% 53% 20%

- Molecule 38: 50S ribosomal protein L20

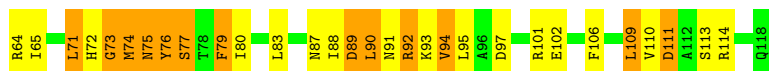
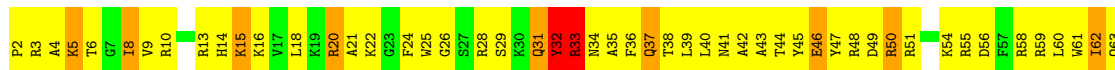
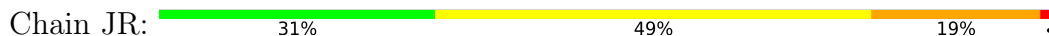
Chain FR:  23% 56% 19%

- Molecule 38: 50S ribosomal protein L20

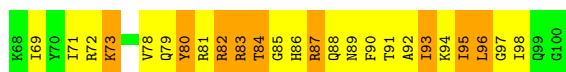
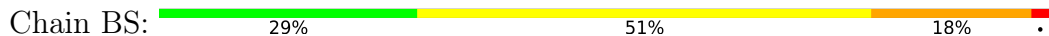
Chain HR:  32% 47% 20%



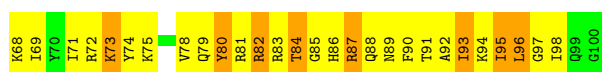
• Molecule 38: 50S ribosomal protein L20



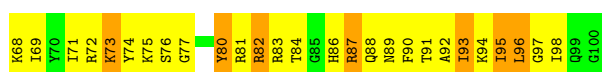
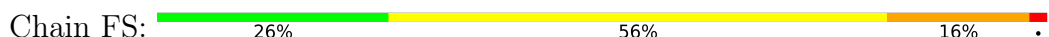
• Molecule 39: 50S ribosomal protein L21



• Molecule 39: 50S ribosomal protein L21

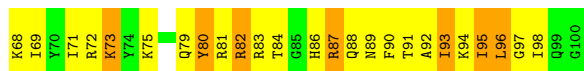


• Molecule 39: 50S ribosomal protein L21

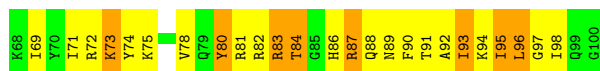
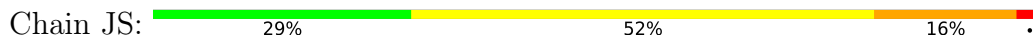


• Molecule 39: 50S ribosomal protein L21

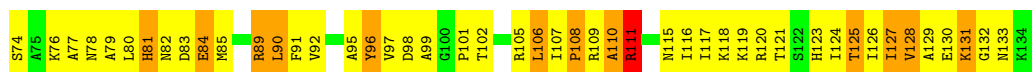
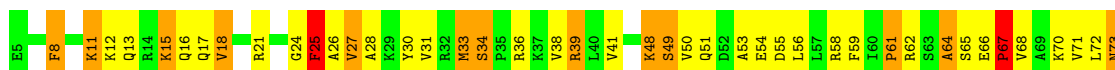
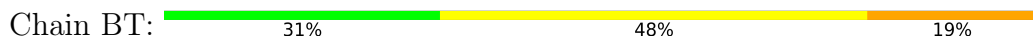




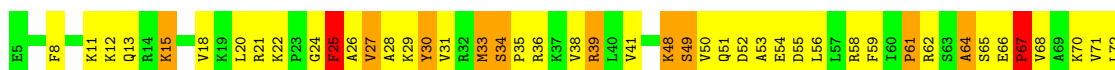
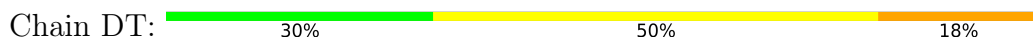
• Molecule 39: 50S ribosomal protein L21



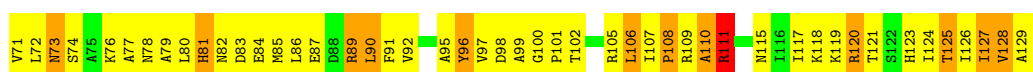
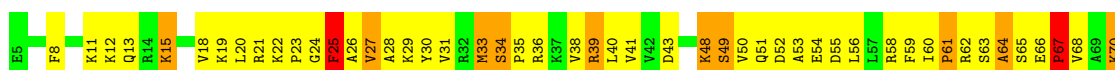
• Molecule 40: 50S ribosomal protein L22



• Molecule 40: 50S ribosomal protein L22



• Molecule 40: 50S ribosomal protein L22



• Molecule 40: 50S ribosomal protein L22

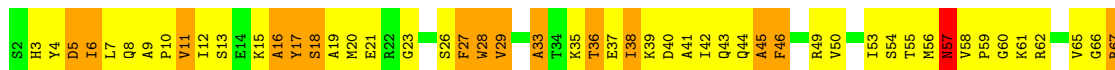
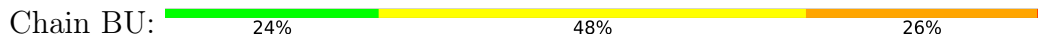




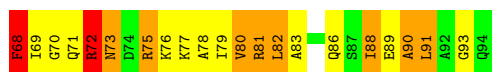
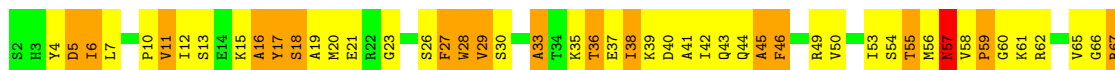
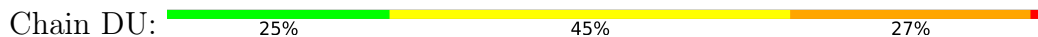
- Molecule 40: 50S ribosomal protein L22



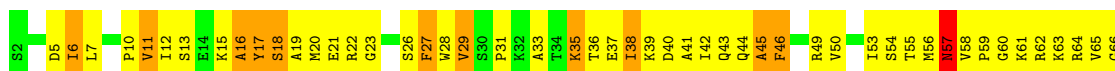
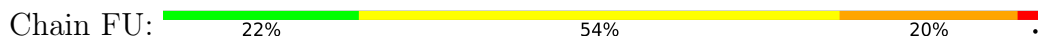
- Molecule 41: 50S ribosomal protein L23



- Molecule 41: 50S ribosomal protein L23



- Molecule 41: 50S ribosomal protein L23

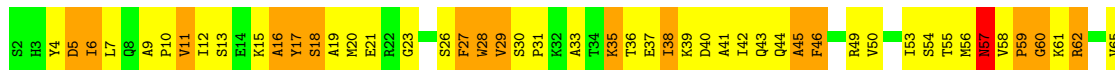
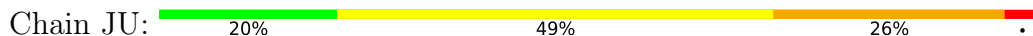


- Molecule 41: 50S ribosomal protein L23

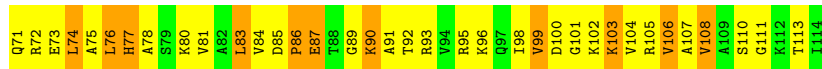
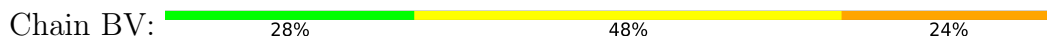




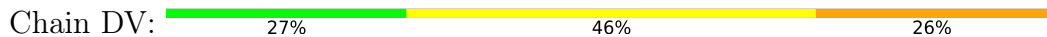
- Molecule 41: 50S ribosomal protein L23



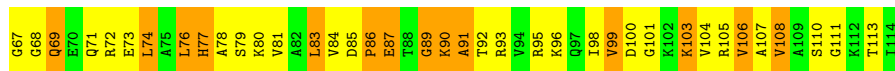
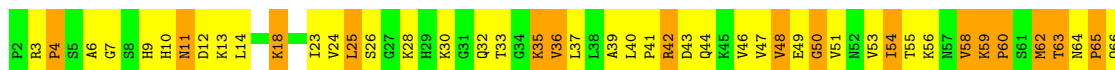
- Molecule 42: 50S ribosomal protein L24



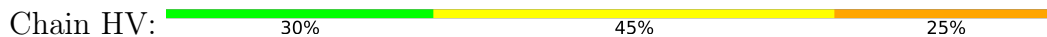
- Molecule 42: 50S ribosomal protein L24



- Molecule 42: 50S ribosomal protein L24

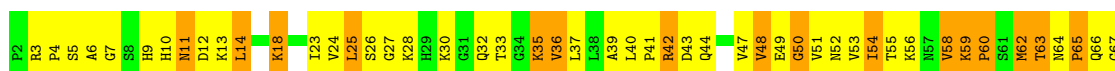


- Molecule 42: 50S ribosomal protein L24

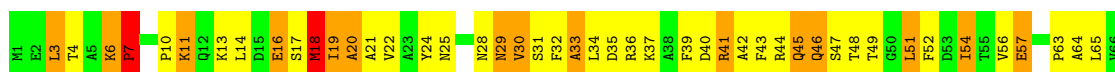




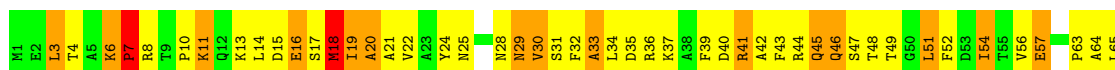
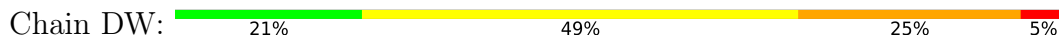
- Molecule 42: 50S ribosomal protein L24



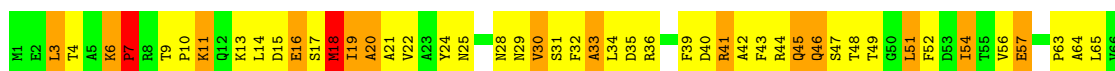
- Molecule 43: general stress protein Ctc



- Molecule 43: general stress protein Ctc

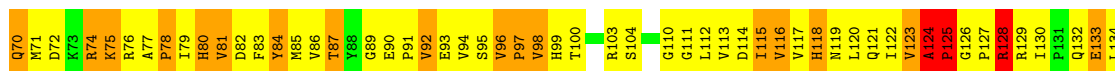
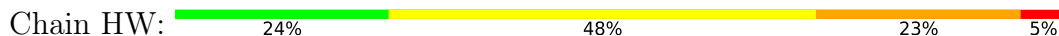


- Molecule 43: general stress protein Ctc

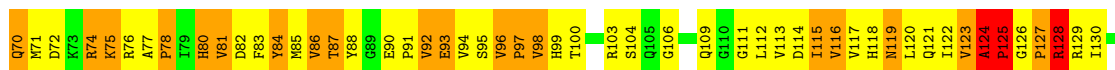




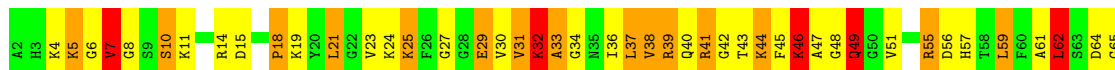
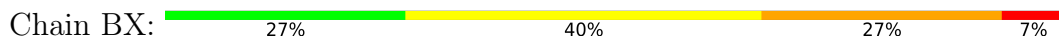
- Molecule 43: general stress protein Ctc



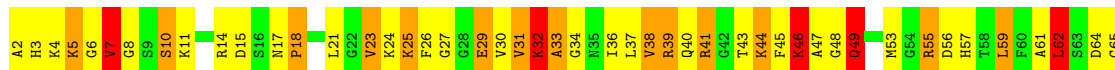
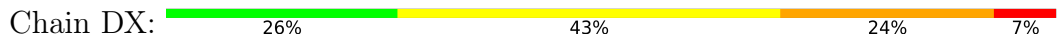
- Molecule 43: general stress protein Ctc



- Molecule 44: 50S ribosomal protein L27

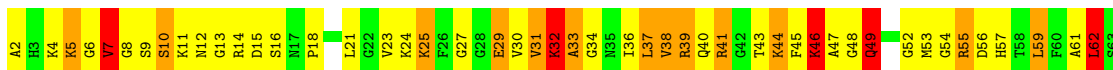
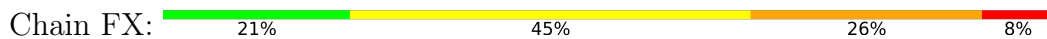


- Molecule 44: 50S ribosomal protein L27

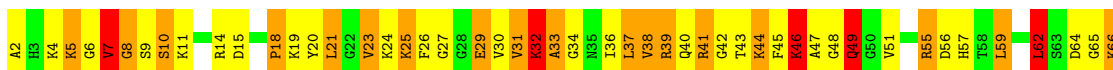
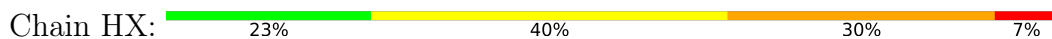




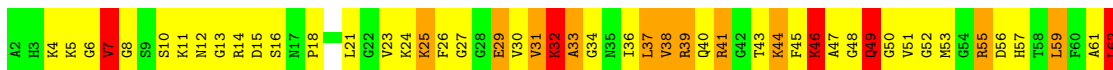
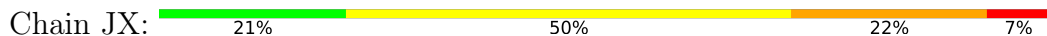
- Molecule 44: 50S ribosomal protein L27



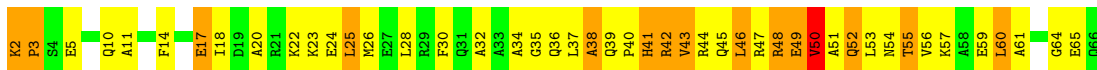
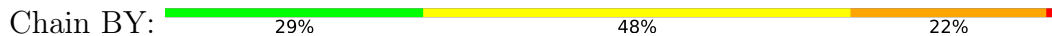
- Molecule 44: 50S ribosomal protein L27



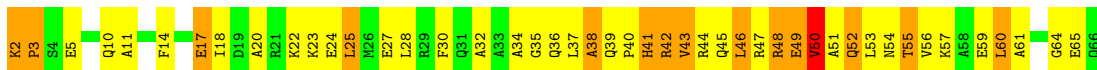
- Molecule 44: 50S ribosomal protein L27



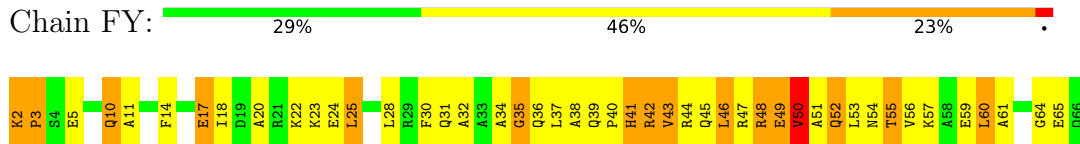
- Molecule 45: 50S ribosomal protein L29



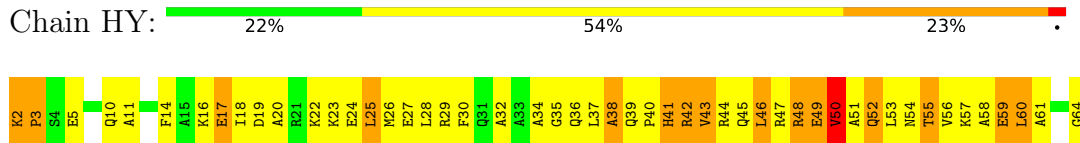
- Molecule 45: 50S ribosomal protein L29



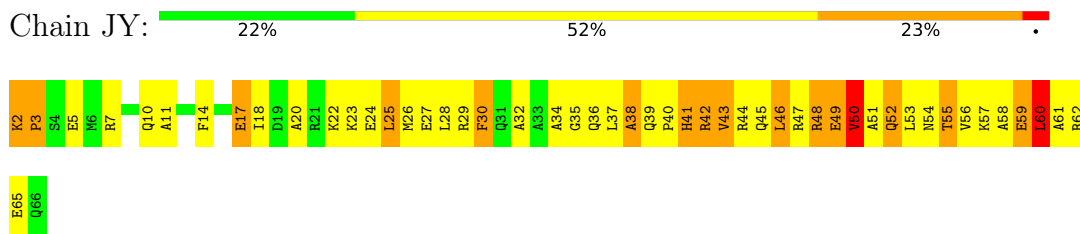
- Molecule 45: 50S ribosomal protein L29



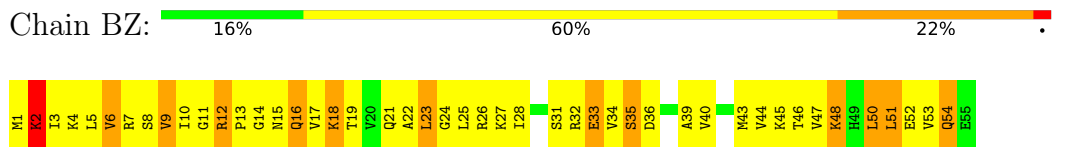
- Molecule 45: 50S ribosomal protein L29



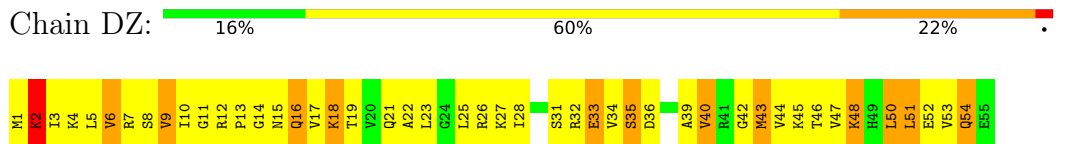
- Molecule 45: 50S ribosomal protein L29



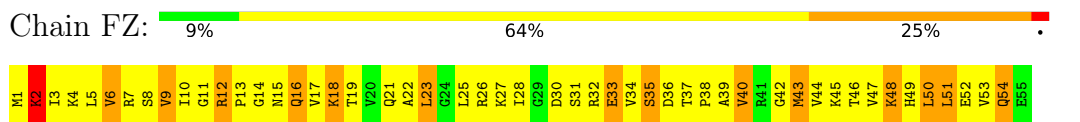
- Molecule 46: 50S ribosomal protein L30



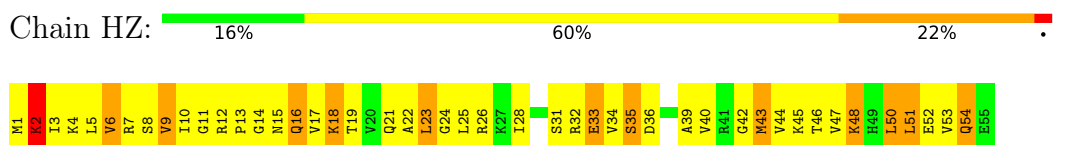
- Molecule 46: 50S ribosomal protein L30



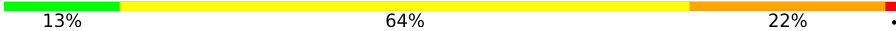
- Molecule 46: 50S ribosomal protein L30

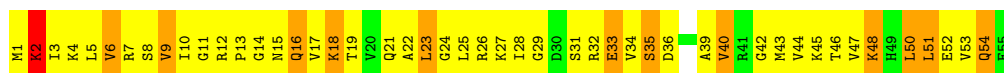


- Molecule 46: 50S ribosomal protein L30

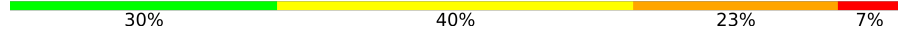


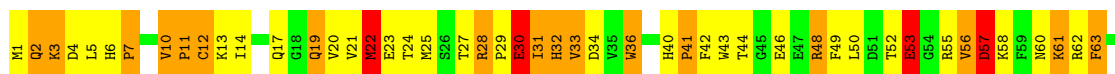
- Molecule 46: 50S ribosomal protein L30

Chain JZ:  13% 64% 22%




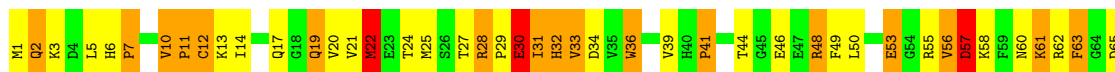
• Molecule 47: 50S ribosomal protein L31

Chain B1:  30% 40% 23% 7%

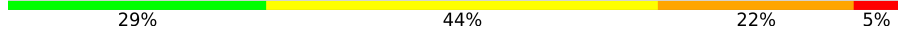


• Molecule 47: 50S ribosomal protein L31

Chain D1:  36% 36% 23% 5%

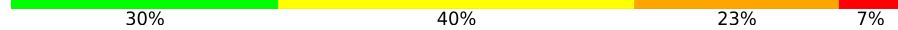


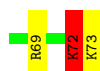
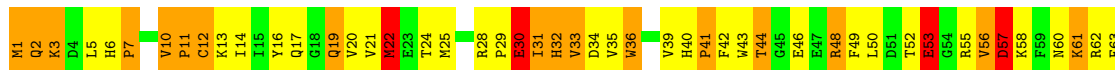
• Molecule 47: 50S ribosomal protein L31

Chain F1:  29% 44% 22% 5%

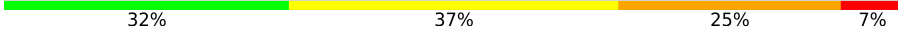


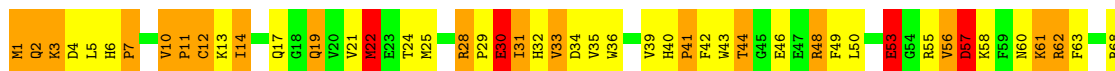
• Molecule 47: 50S ribosomal protein L31

Chain H1:  30% 40% 23% 7%

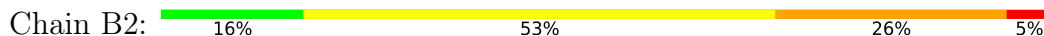


• Molecule 47: 50S ribosomal protein L31

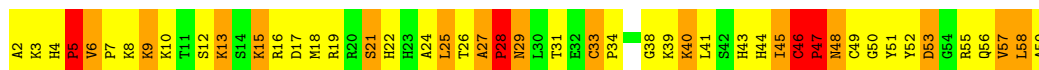
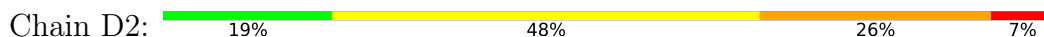
Chain J1:  32% 37% 25% 7%



- Molecule 48: 50S ribosomal protein L32



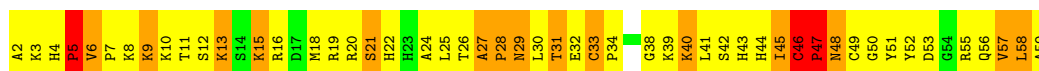
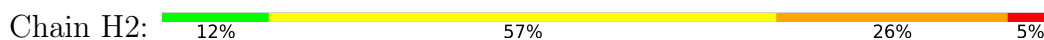
- Molecule 48: 50S ribosomal protein L32



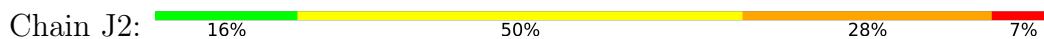
- Molecule 48: 50S ribosomal protein L32



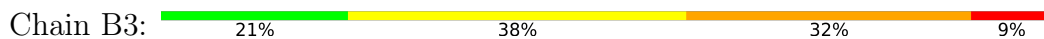
- Molecule 48: 50S ribosomal protein L32



- Molecule 48: 50S ribosomal protein L32



- Molecule 49: 50S ribosomal protein L33



- Molecule 49: 50S ribosomal protein L33

Chain D3: 13% 47% 30% 9%



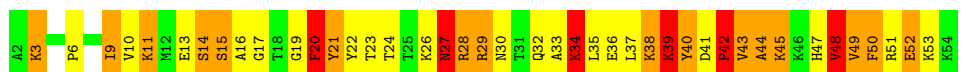
- Molecule 49: 50S ribosomal protein L33

Chain F3: 11% 45% 32% 11%



- Molecule 49: 50S ribosomal protein L33

Chain H3: 21% 38% 30% 11%



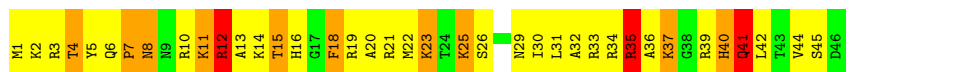
- Molecule 49: 50S ribosomal protein L33

Chain J3: 11% 47% 30% 11%



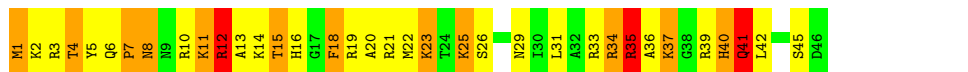
- Molecule 50: 50S ribosomal protein L34

Chain B4: 17% 54% 22% 7%



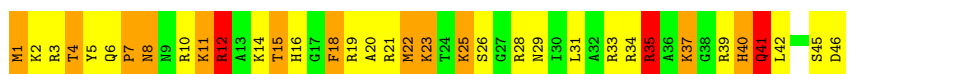
- Molecule 50: 50S ribosomal protein L34

Chain D4: 24% 43% 26% 7%

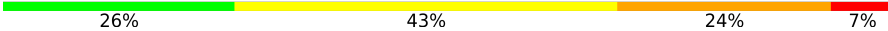


- Molecule 50: 50S ribosomal protein L34

Chain F4: 24% 43% 26% 7%

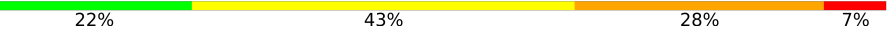


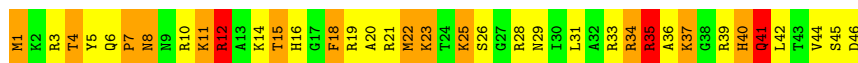
- Molecule 50: 50S ribosomal protein L34

Chain H4: 

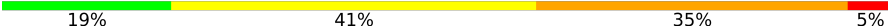


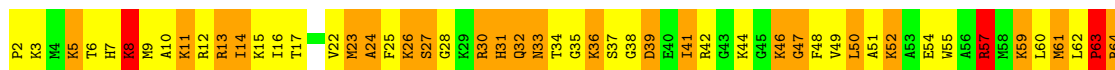
- Molecule 50: 50S ribosomal protein L34

Chain J4: 




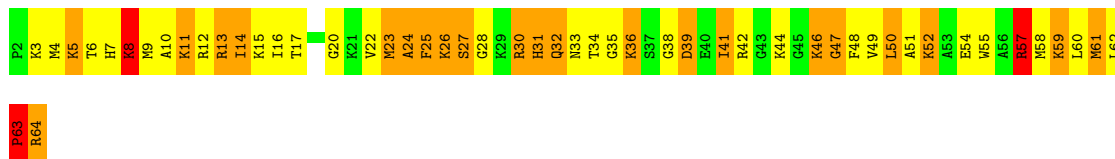
- Molecule 51: 50S ribosomal protein L35

Chain B5: 




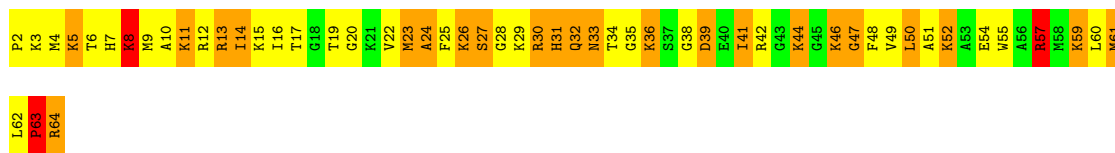
- Molecule 51: 50S ribosomal protein L35

Chain D5: 




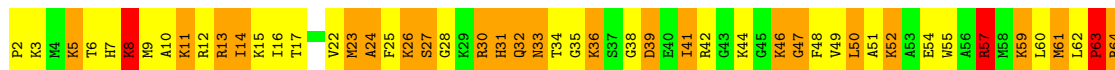
- Molecule 51: 50S ribosomal protein L35

Chain F5: 

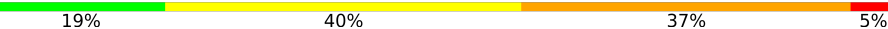


- Molecule 51: 50S ribosomal protein L35

Chain H5: 

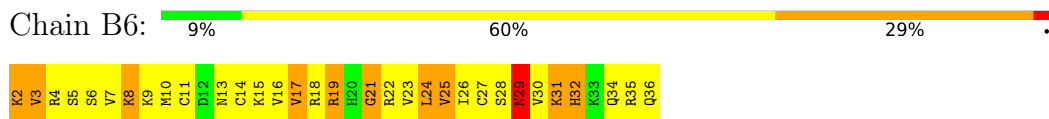


- Molecule 51: 50S ribosomal protein L35

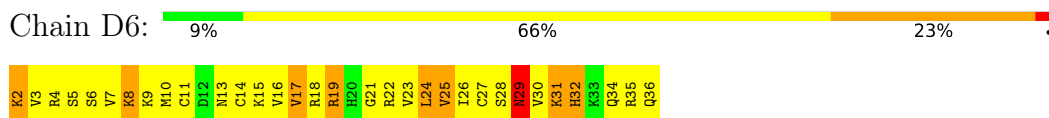
Chain J5: 



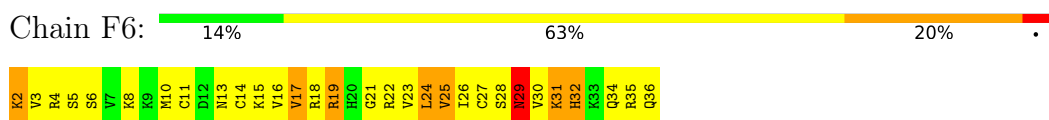
- Molecule 52: 50S ribosomal protein L36



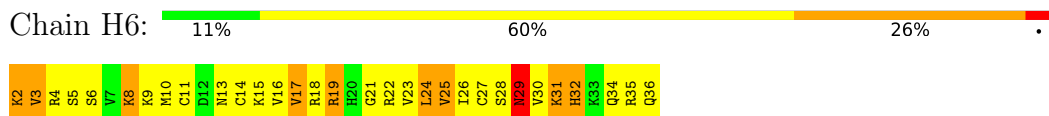
- Molecule 52: 50S ribosomal protein L36



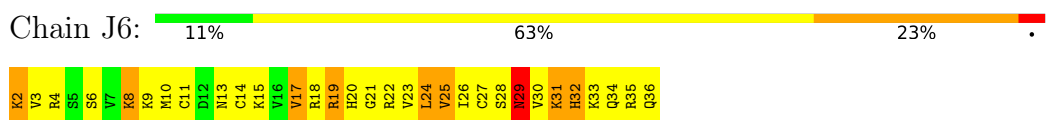
- Molecule 52: 50S ribosomal protein L36



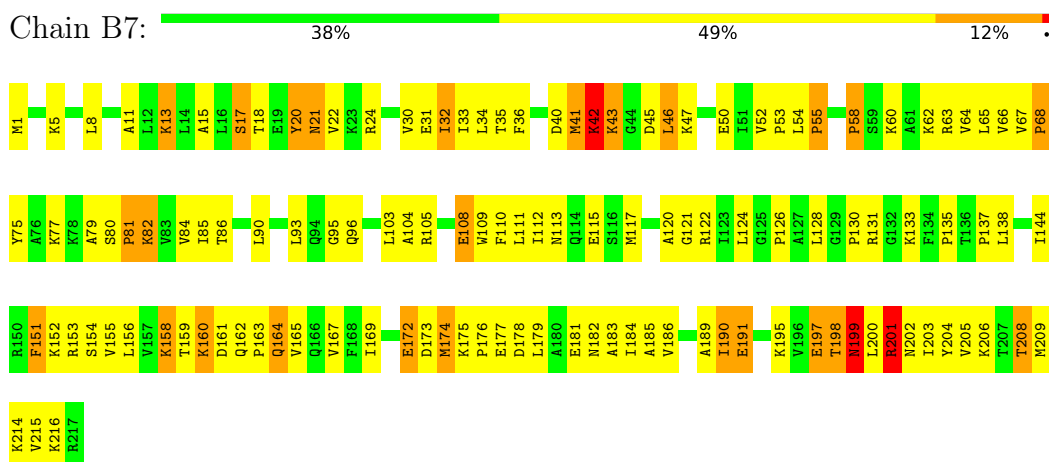
- Molecule 52: 50S ribosomal protein L36



- Molecule 52: 50S ribosomal protein L36

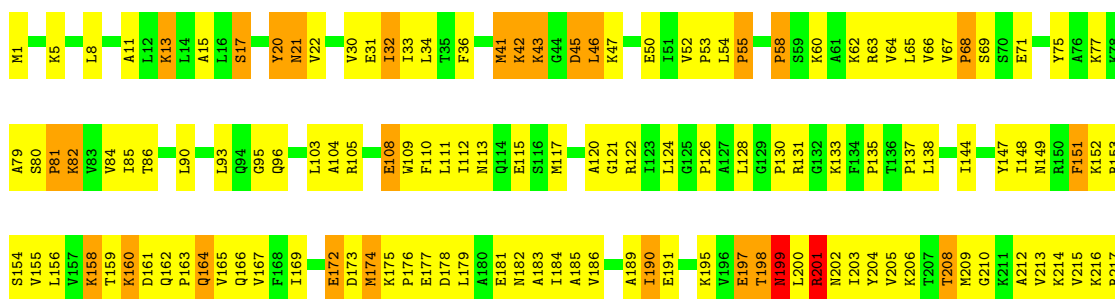


- Molecule 53: 50S ribosomal protein L1P



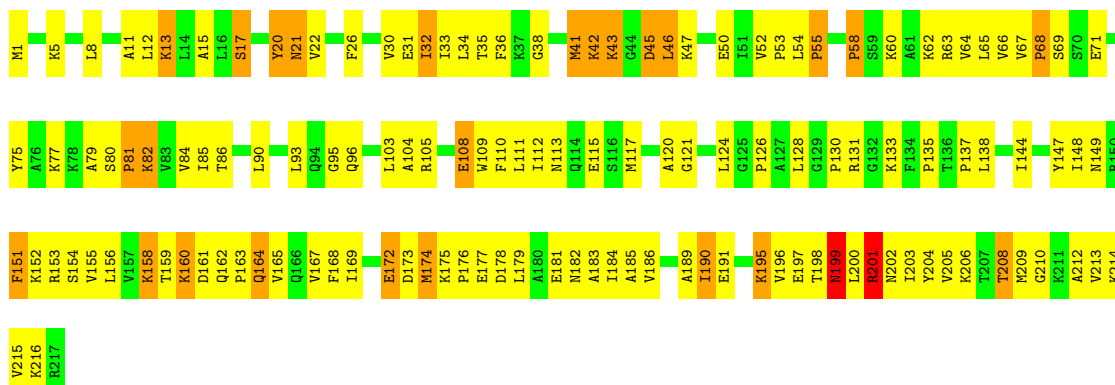
- Molecule 53: 50S ribosomal protein L1P

Chain D7:  39% 48% 12%



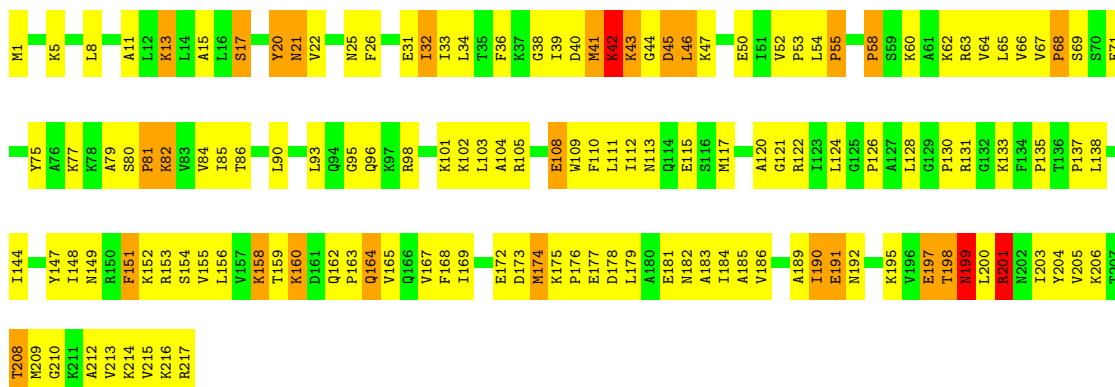
• Molecule 53: 50S ribosomal protein L1P

Chain F7:  38% 50% 12%




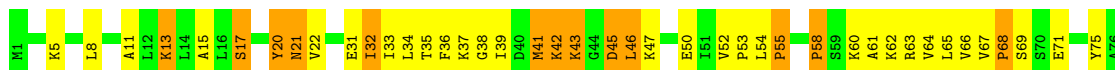
• Molecule 53: 50S ribosomal protein L1P

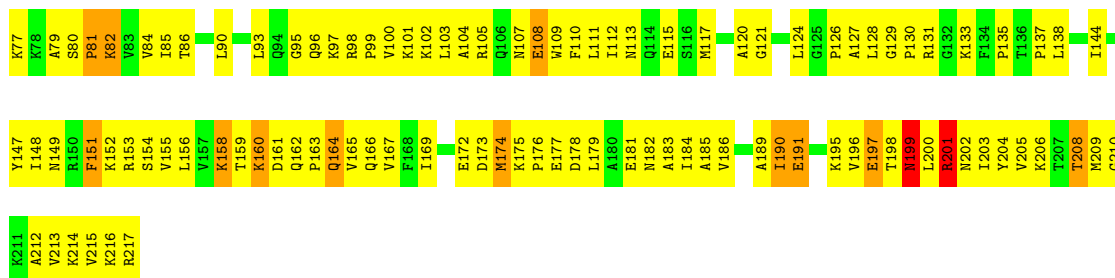
Chain H7:  36% 51% 12%



• Molecule 53: 50S ribosomal protein L1P

Chain J7:  34% 54% 12%





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
$\langle I/\sigma(I) \rangle$	-	Xtrriage
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)	Xtrriage
Anisotropy	(Not available)	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.93 , -10.0	EDS
L-test for twinning ¹	$\langle L \rangle =$ (Not available), $\langle L^2 \rangle =$ (Not available)	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
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

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

¹Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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

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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(°)	Ideal(°)
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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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.