wwPDB X-ray Structure Validation Summary Report (i)

Oct 9, 2023 – 11:28 PM EDT

PDB ID	:	6BZ6
Title	:	Thermus thermophilus 70S complex containing 16S G347U ram mutation and empty A site
Authors	:	Hoffer, E.D.; Maehigashi, T.; Fagan, C.E.; Dunham, C.M.
Deposited on	:	2017-12-22
Resolution	:	3.18 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

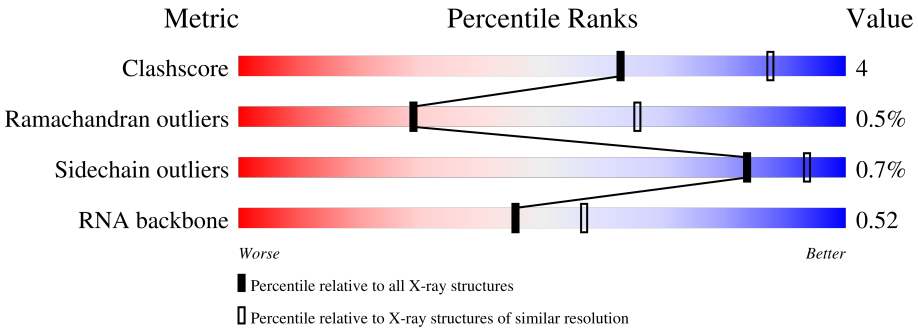
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	FAILED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.18 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))
Clashscore	141614	1599 (3.20-3.16)
Ramachandran outliers	138981	1574 (3.20-3.16)
Sidechain outliers	138945	1573 (3.20-3.16)
RNA backbone	3102	1054 (3.50-2.86)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Note EDS failed to run properly.

Mol	Chain	Length	Quality of chain
1	QA	1508	64% 29% 6% ••
1	XA	1508	66% 27% 6% ••
2	QB	256	77% 14% 8%
2	XB	256	79% 12% 8%
3	QC	239	72% 13% 14%
3	XC	239	72% 13% 14%

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Mol	Chain	Length	Quality of chain
4	QD	209	87% 12%
4	XD	209	85% 14%
5	QE	162	81% 12% 7%
5	XE	162	84% 9% 7%
6	QF	101	85% 15%
6	XF	101	88% 12%
7	QG	156	88% 10% ••
7	XG	156	89% 10% ••
8	QH	138	82% 17% •
8	XH	138	83% 16% •
9	QI	128	75% 23% ••
9	XI	128	80% 17% ••
10	QJ	105	70% 25% 6%
10	XJ	105	69% 23% 9%
11	QK	129	72% 20% 8%
11	XK	129	75% 15% 10%
12	QL	132	81% 14% 5%
12	XL	132	73% 20% 8%
13	QM	126	81% 13% • 5%
13	XM	126	75% 20% 6%
14	QN	61	75% 20% ••
14	XN	61	75% 18% 5% •
15	QO	89	92% 7% •
15	XO	89	90% 8% •
16	QP	88	83% 13% 5%

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Mol	Chain	Length	Quality of chain
16	XP	88	86% 9% 5%
17	QQ	105	89% 7% 5%
17	XQ	105	83% 12% 5%
18	QR	88	70% 9% 20%
18	XR	88	69% 10% 20%
19	QS	93	67% 23% 11%
19	XS	93	78% 12% 10%
20	QT	106	89% 5% 7%
20	XT	106	89% 5% 7%
21	QU	27	74% 19% 7%
21	XU	27	78% 15% 7%
22	QV	77	77% 18% 5%
22	XV	77	74% 19% 5%
23	QX	25	16% 28% 52%
23	XX	25	20% 16% 8% 56%
24	RA	2915	67% 26% 6%
24	YA	2915	66% 25% 6%
25	RB	122	64% 28% 7%
25	YB	122	66% 27% 6%
26	RD	276	76% 21%
26	YD	276	78% 20%
27	RE	206	80% 18%
27	YE	206	78% 20%
28	RF	210	82% 14%
28	YF	210	86% 10%

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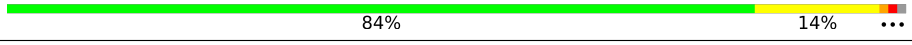
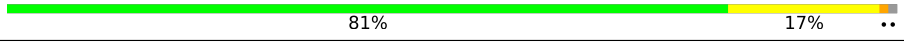
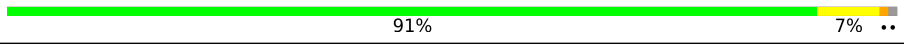
Mol	Chain	Length	Quality of chain
29	RG	182	
29	YG	182	
30	RH	180	
30	YH	180	
31	RI	148	
31	YI	148	
32	RN	140	
32	YN	140	
33	RO	122	
33	YO	122	
34	RP	150	
34	YP	150	
35	RQ	141	
35	YQ	141	
36	RR	118	
36	YR	118	
37	RS	112	
37	YS	112	
38	RT	146	
38	YT	146	
39	RU	118	
39	YU	118	
40	RV	101	
40	YV	101	
41	RW	113	

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Mol	Chain	Length	Quality of chain
41	YW	113	89% 11%
42	RX	96	80% 16%
42	YX	96	77% 19%
43	RY	110	77% 20%
43	YY	110	79% 18%
44	RZ	206	69% 18% 11%
44	YZ	206	69% 18% 11%
45	R0	85	75% 20% 5%
45	Y0	85	68% 20% 12%
46	R1	98	74% 24%
46	Y1	98	77% 18% 5%
47	R2	72	78% 18%
47	Y2	72	75% 21%
48	R3	60	82% 17%
48	Y3	60	82% 17%
49	R4	71	80% 14%
49	Y4	71	79% 15%
50	R5	60	83% 15%
50	Y5	60	80% 18%
51	R6	54	87% 11%
51	Y6	54	91% 7%
52	R7	49	88% 8%
52	Y7	49	86% 12%
53	R8	65	72% 20% 6%
53	Y8	65	75% 17% 6%

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Mol	Chain	Length	Quality of chain
54	R9	37	81% 19%
54	Y9	37	81% 19%

2 Entry composition (i)

There are 57 unique types of molecules in this entry. The entry contains 291753 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 rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	QA	1498	Total 32202	C 14333	N 5970	O 10402	P 1497	0	0	0
1	XA	1500	Total 32246	C 14353	N 5981	O 10413	P 1499	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
QA	347	U	G	engineered mutation	GB 55771382
XA	347	U	G	engineered mutation	GB 55771382

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	QB	235	Total 1907	C 1217	N 342	O 343	S 5	0	0	0
2	XB	236	Total 1915	C 1223	N 343	O 344	S 5	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	QC	205	Total 1605	C 1011	N 313	O 280	S 1	0	0	0
3	XC	205	Total 1605	C 1011	N 313	O 280	S 1	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	QD	208	Total 1703	C 1066	N 339	O 291	S 7	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	XD	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	QE	151	Total	C	N	O	S	0	0	0
			1155	729	218	204	4			
5	XE	151	Total	C	N	O	S	0	0	0
			1155	729	218	204	4			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	QF	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			
6	XF	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	QG	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			
7	XG	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	QH	137	Total	C	N	O	S	0	0	0
			1108	700	214	192	2			
8	XH	137	Total	C	N	O	S	0	0	0
			1108	700	214	192	2			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
9	QI	127	Total	C	N	O	0	0	0
			1010	639	197	174			
9	XI	126	Total	C	N	O	0	0	0
			998	633	193	172			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	QJ	99	Total	C	N	O	S	0	0	0
			801	504	157	139	1			
10	XJ	96	Total	C	N	O	S	0	0	0
			777	487	153	136	1			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	QK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			
11	XK	116	Total	C	N	O	S	0	0	0
			864	537	164	160	3			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	QL	125	Total	C	N	O	S	0	0	0
			975	614	196	164	1			
12	XL	122	Total	C	N	O	S	0	0	0
			956	603	193	159	1			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	QM	120	Total	C	N	O	S	0	0	0
			955	591	197	165	2			
13	XM	119	Total	C	N	O	S	0	0	0
			946	585	195	164	2			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	QN	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			
14	XN	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	QO	88	Total 734	C 459	N 147	O 126	S 2	0	0	0
15	XO	87	Total 729	C 457	N 146	O 124	S 2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	QP	84	Total 705	C 446	N 140	O 118	S 1	0	0	0
16	XP	84	Total 705	C 446	N 140	O 118	S 1	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	QQ	100	Total 834	C 534	N 155	O 143	S 2	0	0	0
17	XQ	100	Total 834	C 534	N 155	O 143	S 2	0	0	0

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	QR	70	Total 574	C 367	N 112	O 95	0	0	0
18	XR	70	Total 574	C 367	N 112	O 95	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	QS	83	Total 665	C 424	N 124	O 115	S 2	0	0	0
19	XS	84	Total 674	C 430	N 126	O 116	S 2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	QT	99	Total 763	C 470	N 162	O 129	S 2	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	XT	99	Total	C	N	O	S	0	0	0
			763	470	162	129	2			

- Molecule 21 is a protein called 30S ribosomal protein Thx.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
21	QU	25	Total	C	N	O	0	0	0
			217	134	52	31			
21	XU	25	Total	C	N	O	0	0	0
			217	134	52	31			

- Molecule 22 is a RNA chain called tRNA fMet.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	QV	77	Total	C	N	O	P	0	0	0
			1644	732	297	538	77			
22	XV	77	Total	C	N	O	P	0	0	0
			1644	732	297	538	77			

- Molecule 23 is a RNA chain called messenger RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	QX	12	Total	C	N	O	P	0	0	0
			259	116	48	83	12			
23	XX	11	Total	C	N	O	P	0	0	0
			239	107	46	75	11			

- Molecule 24 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	RA	2882	Total	C	N	O	P	0	0	0
			62071	27627	11611	19952	2881			
24	YA	2883	Total	C	N	O	P	0	0	0
			62091	27636	11613	19960	2882			

- Molecule 25 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
25	RB	120	Total	C	N	O	P	0	0	0
			2573	1146	476	832	119			
25	YB	120	Total	C	N	O	P	0	0	0
			2573	1146	476	832	119			

- Molecule 26 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
26	RD	272	Total	C	N	O	S	0	0	0
			2115	1335	420	357	3			
26	YD	272	Total	C	N	O	S	0	0	0
			2115	1335	420	357	3			

- Molecule 27 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
27	RE	205	Total	C	N	O	S	0	0	0
			1568	991	300	271	6			
27	YE	205	Total	C	N	O	S	0	0	0
			1568	991	300	271	6			

- Molecule 28 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
28	RF	202	Total	C	N	O	S	0	0	0
			1585	1011	297	275	2			
28	YF	202	Total	C	N	O	S	0	0	0
			1585	1011	297	275	2			

- Molecule 29 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
29	RG	181	Total	C	N	O	S	0	0	0
			1474	942	268	260	4			
29	YG	181	Total	C	N	O	S	0	0	0
			1474	942	268	260	4			

- Molecule 30 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	RH	174	Total	C	N	O	S	0	0	0
			1336	848	251	236	1			
30	YH	174	Total	C	N	O	S	0	0	0
			1336	848	251	236	1			

- Molecule 31 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
31	RI	146	Total	C	N	O	S	0	0	0
			1136	726	201	208	1			
31	YI	146	Total	C	N	O	S	0	0	0
			1136	726	201	208	1			

- Molecule 32 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
32	RN	138	Total	C	N	O	S	0	0	0
			1104	712	206	182	4			
32	YN	138	Total	C	N	O	S	0	0	0
			1104	712	206	182	4			

- Molecule 33 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
33	RO	122	Total	C	N	O	S	0	0	0
			933	588	171	170	4			
33	YO	122	Total	C	N	O	S	0	0	0
			933	588	171	170	4			

- Molecule 34 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
34	RP	150	Total	C	N	O	S	0	0	0
			1145	712	232	198	3			
34	YP	147	Total	C	N	O	S	0	0	0
			1122	698	229	192	3			

- Molecule 35 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
35	RQ	141	Total	C	N	O	S	0	0	0
			1122	715	212	188	7			
35	YQ	141	Total	C	N	O	S	0	0	0
			1122	715	212	188	7			

- Molecule 36 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
36	RR	117	Total	C	N	O	0	0	0
			960	599	202	159			

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
36	YR	117	Total 960	C 599	N 202	O 159	0	0	0

- Molecule 37 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
37	RS	111	Total 882	C 556	N 176	O 150	0	0	0
37	YS	111	Total 882	C 556	N 176	O 150	0	0	0

- Molecule 38 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
38	RT	137	Total 1141	C 710	N 234	O 196	S 1	0	0	0
38	YT	137	Total 1141	C 710	N 234	O 196	S 1	0	0	0

- Molecule 39 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	RU	117	Total 964	C 610	N 202	O 151	S 1	0	0	0
39	YU	117	Total 964	C 610	N 202	O 151	S 1	0	0	0

- Molecule 40 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
40	RV	101	Total 779	C 501	N 142	O 135	S 1	0	0	0
40	YV	101	Total 779	C 501	N 142	O 135	S 1	0	0	0

- Molecule 41 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
41	RW	113	Total 900	C 566	N 177	O 155	S 2	0	0	0
41	YW	113	Total 900	C 566	N 177	O 155	S 2	0	0	0

- Molecule 42 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
42	RX	92	Total	C	N	O	0	0	0
			725	471	131	123			
42	YX	92	Total	C	N	O	0	0	0
			725	471	131	123			

- Molecule 43 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
43	RY	107	Total	C	N	O	S	0	0	0
			818	525	155	132	6			
43	YY	107	Total	C	N	O	S	0	0	0
			818	525	155	132	6			

- Molecule 44 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
44	RZ	183	Total	C	N	O	S	0	0	0
			1461	933	260	265	3			
44	YZ	183	Total	C	N	O	S	0	0	0
			1461	933	260	265	3			

- Molecule 45 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
45	R0	81	Total	C	N	O	S	0	0	0
			643	398	137	107	1			
45	Y0	75	Total	C	N	O	S	0	0	0
			599	370	127	101	1			

- Molecule 46 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
46	R1	97	Total	C	N	O	S	0	0	0
			763	481	150	131	1			
46	Y1	93	Total	C	N	O	S	0	0	0
			729	457	145	126	1			

- Molecule 47 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
47	R2	69	Total	C	N	O	S	0	0	0
			581	358	118	104	1			
47	Y2	69	Total	C	N	O	S	0	0	0
			581	358	118	104	1			

- Molecule 48 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
48	R3	59	Total	C	N	O	0	0	0
			469	298	90	81			
48	Y3	59	Total	C	N	O	0	0	0
			469	298	90	81			

- Molecule 49 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
49	R4	69	Total	C	N	O	S	0	0	0
			565	356	103	101	5			
49	Y4	69	Total	C	N	O	S	0	0	0
			565	356	103	101	5			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
50	R5	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			
50	Y5	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			

- Molecule 51 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
51	R6	53	Total	C	N	O	S	0	0	0
			453	281	91	77	4			
51	Y6	53	Total	C	N	O	S	0	0	0
			453	281	91	77	4			

- Molecule 52 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
52	R7	47	Total	C	N	O	S	0	0	0
			409	251	102	54	2			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
52	Y7	48	Total	C	N	O	S	0	0	0
			418	257	104	55	2			

- Molecule 53 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
53	R8	64	Total	C	N	O	S	0	0	0
			517	331	102	82	2			
53	Y8	64	Total	C	N	O	S	0	0	0
			517	331	102	82	2			

- Molecule 54 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
54	R9	37	Total	C	N	O	S	0	0	0
			307	188	68	47	4			
54	Y9	37	Total	C	N	O	S	0	0	0
			307	188	68	47	4			

- Molecule 55 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
55	QA	80	Total	Mg	0	0
			80	80		
55	QC	1	Total	Mg	0	0
			1	1		
55	QF	1	Total	Mg	0	0
			1	1		
55	QH	1	Total	Mg	0	0
			1	1		
55	QT	1	Total	Mg	0	0
			1	1		
55	QV	6	Total	Mg	0	0
			6	6		
55	RA	521	Total	Mg	0	0
			521	521		
55	RB	11	Total	Mg	0	0
			11	11		
55	RD	1	Total	Mg	0	0
			1	1		
55	RE	4	Total	Mg	0	0
			4	4		

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
55	RN	1	Total Mg 1 1	0	0
55	RO	1	Total Mg 1 1	0	0
55	RP	3	Total Mg 3 3	0	0
55	RQ	3	Total Mg 3 3	0	0
55	RR	2	Total Mg 2 2	0	0
55	RT	1	Total Mg 1 1	0	0
55	R0	2	Total Mg 2 2	0	0
55	R8	1	Total Mg 1 1	0	0
55	XA	98	Total Mg 98 98	0	0
55	XE	1	Total Mg 1 1	0	0
55	XL	2	Total Mg 2 2	0	0
55	XM	2	Total Mg 2 2	0	0
55	XQ	1	Total Mg 1 1	0	0
55	XS	1	Total Mg 1 1	0	0
55	XV	8	Total Mg 8 8	0	0
55	XX	1	Total Mg 1 1	0	0
55	YA	551	Total Mg 551 551	0	0
55	YB	12	Total Mg 12 12	0	0
55	YD	3	Total Mg 3 3	0	0
55	YE	4	Total Mg 4 4	0	0
55	YF	1	Total Mg 1 1	0	0

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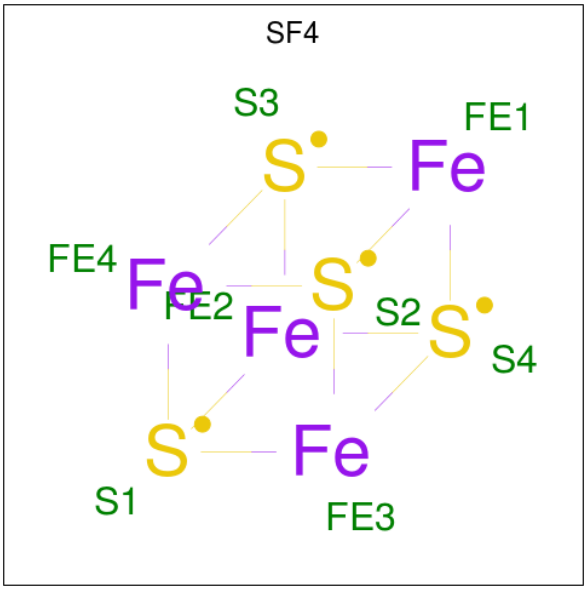
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
55	YO	1	Total Mg 1 1	0	0
55	YP	2	Total Mg 2 2	0	0
55	YQ	4	Total Mg 4 4	0	0
55	YU	1	Total Mg 1 1	0	0
55	YX	2	Total Mg 2 2	0	0
55	YY	1	Total Mg 1 1	0	0
55	Y0	2	Total Mg 2 2	0	0
55	Y1	1	Total Mg 1 1	0	0
55	Y5	1	Total Mg 1 1	0	0
55	Y7	1	Total Mg 1 1	0	0
55	Y8	2	Total Mg 2 2	0	0

- Molecule 56 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	QD	1	Total Fe S 8 4 4	0	0
56	XD	1	Total Fe S 8 4 4	0	0

- Molecule 57 is ZINC ION (three-letter code: ZN) (formula: Zn).

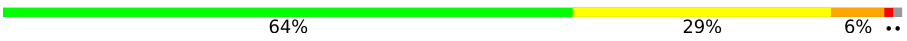
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
57	QN	1	Total Zn 1 1	0	0
57	RY	1	Total Zn 1 1	0	0
57	R4	1	Total Zn 1 1	0	0
57	R5	1	Total Zn 1 1	0	0
57	R6	1	Total Zn 1 1	0	0
57	R9	1	Total Zn 1 1	0	0
57	XN	1	Total Zn 1 1	0	0
57	YY	1	Total Zn 1 1	0	0
57	Y4	1	Total Zn 1 1	0	0
57	Y5	1	Total Zn 1 1	0	0
57	Y6	1	Total Zn 1 1	0	0
57	Y9	1	Total Zn 1 1	0	0

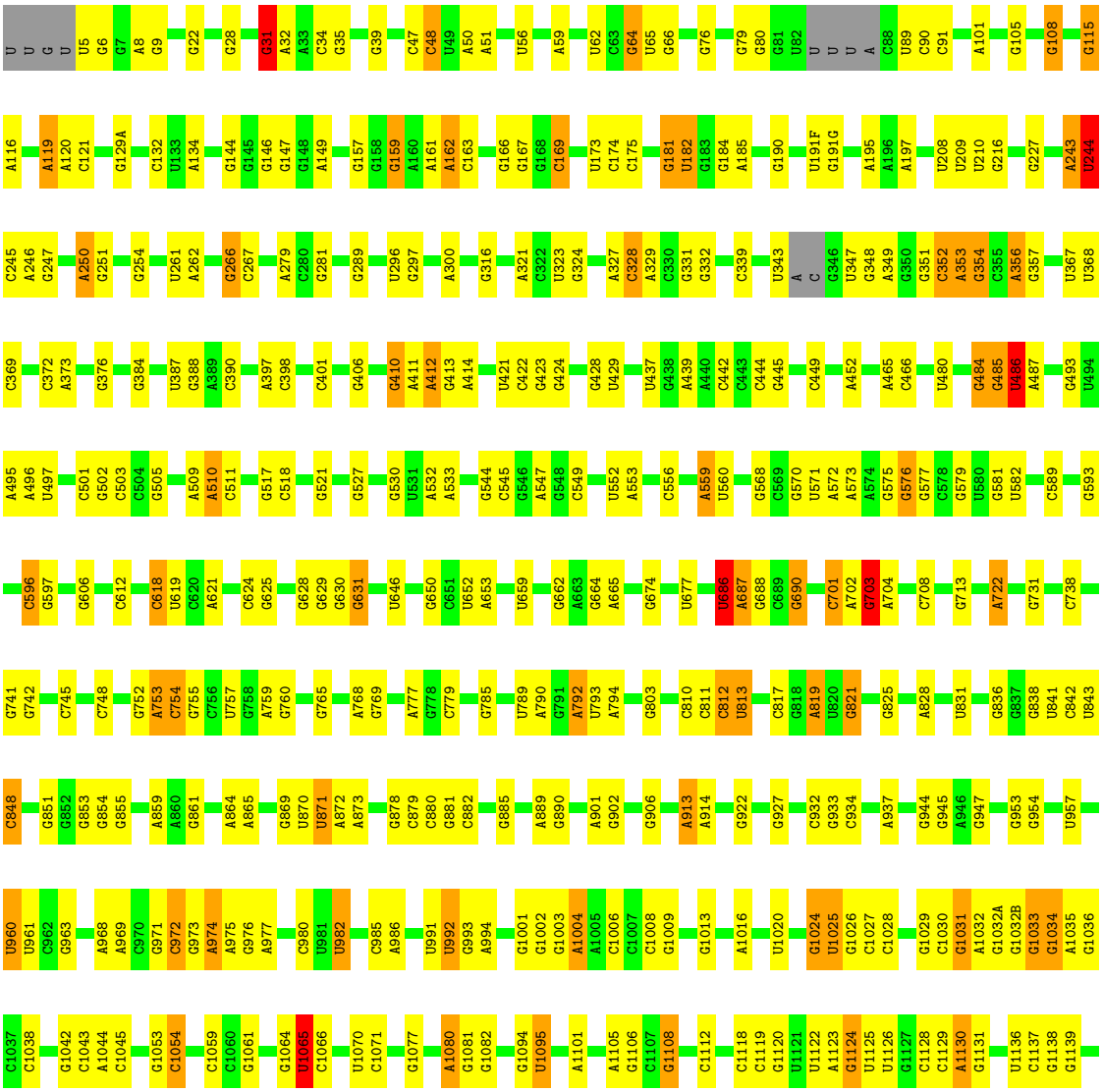
3 Residue-property plots (i)

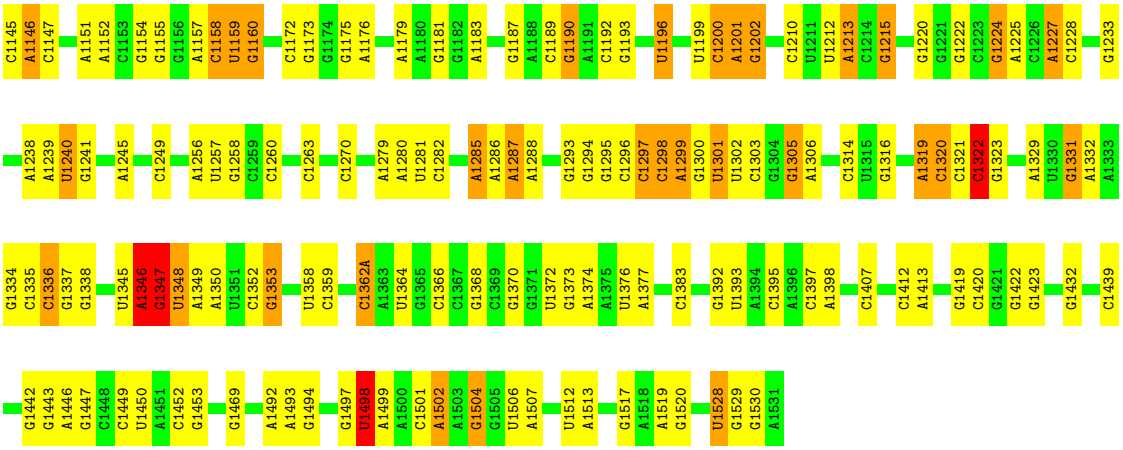
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded 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.

Note EDS failed to run properly.

- Molecule 1: 16S rRNA

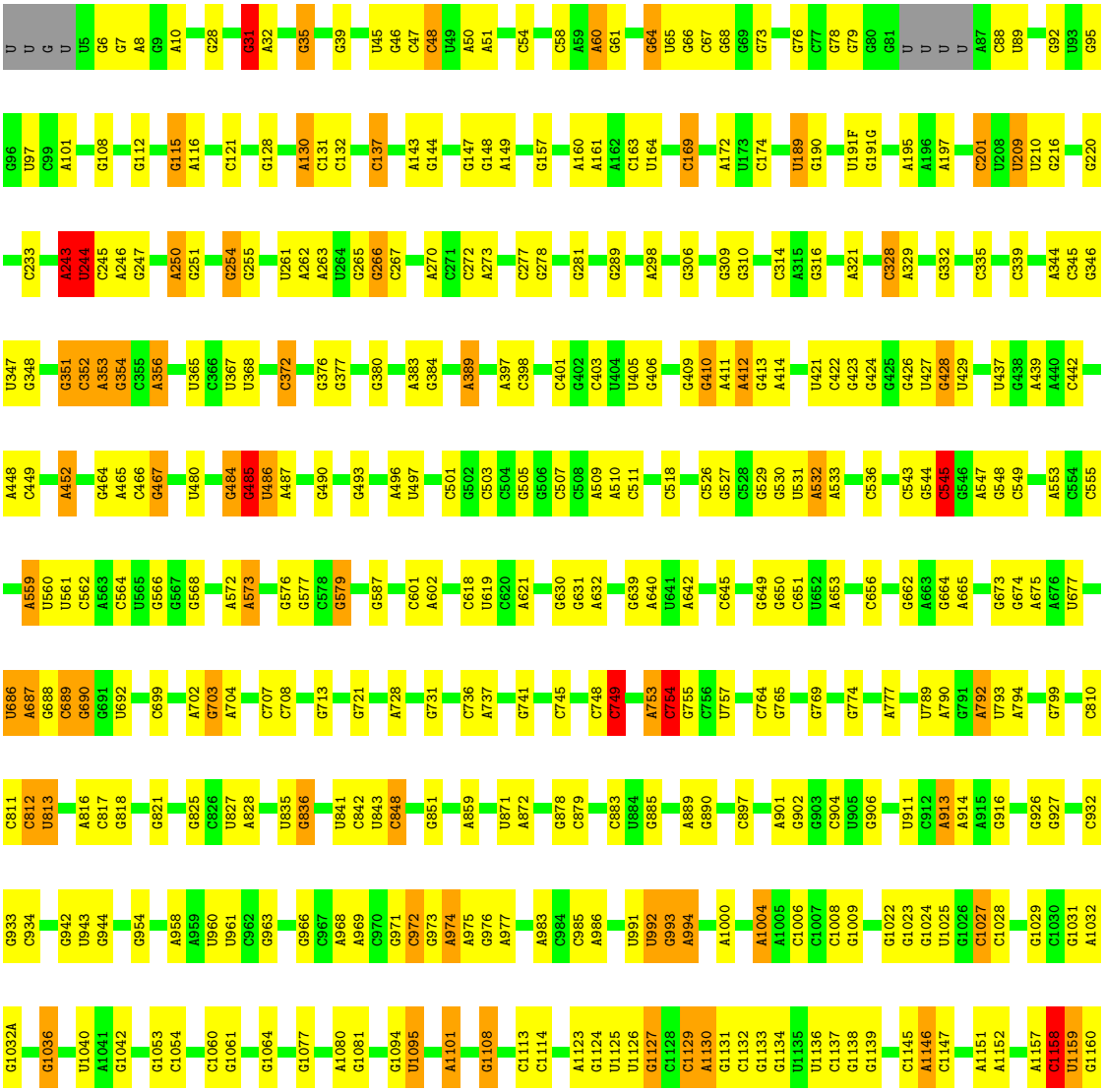
Chain QA: 

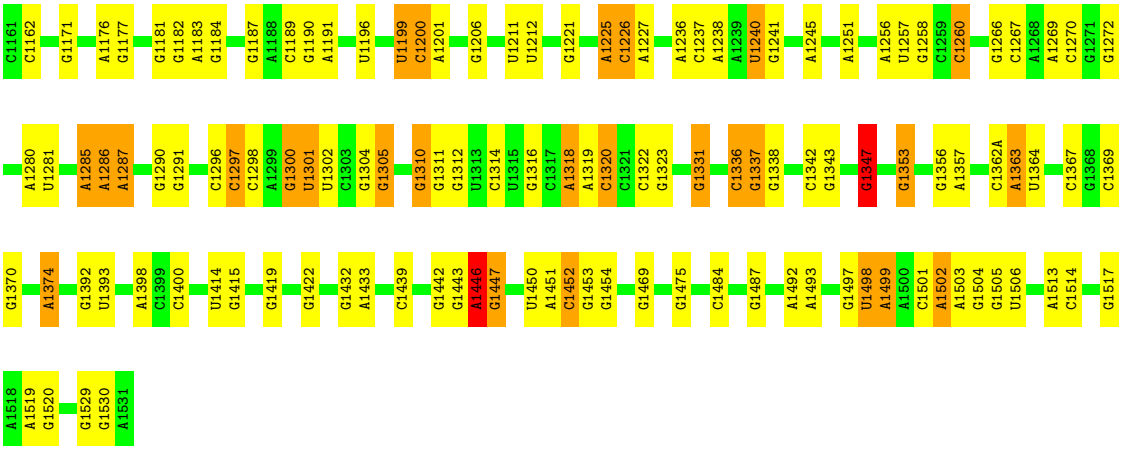




• Molecule 1: 16S rRNA

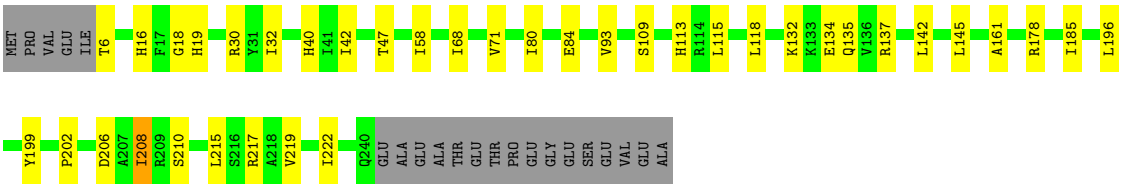
Chain XA:





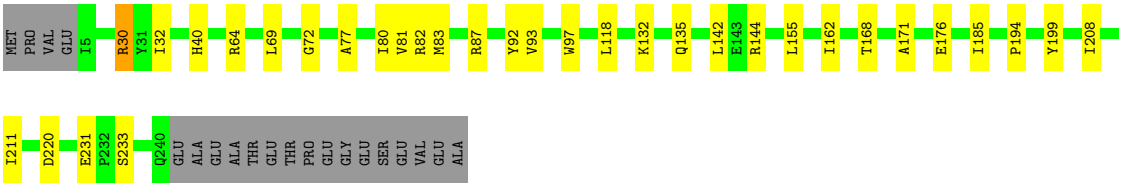
• Molecule 2: 30S ribosomal protein S2

Chain QB:



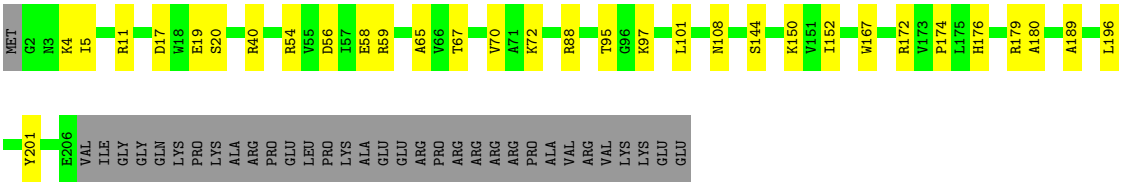
• Molecule 2: 30S ribosomal protein S2

Chain XB:



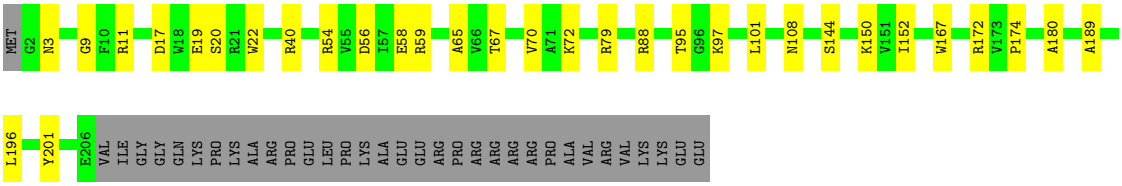
• Molecule 3: 30S ribosomal protein S3

Chain QC:



• Molecule 3: 30S ribosomal protein S3

Chain XC:

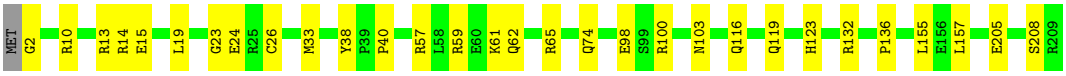


• Molecule 4: 30S ribosomal protein S4

Chain QD:

• Molecule 4: 30S ribosomal protein S4

Chain XD:



• Molecule 5: 30S ribosomal protein S5

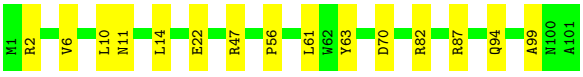
Chain QE:

• Molecule 5: 30S ribosomal protein S5

Chain XE:

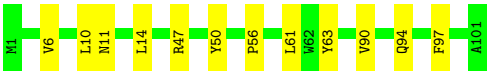
• Molecule 6: 30S ribosomal protein S6

Chain QF:



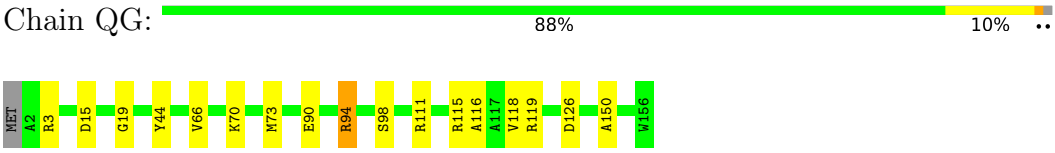
• Molecule 6: 30S ribosomal protein S6

Chain XF:



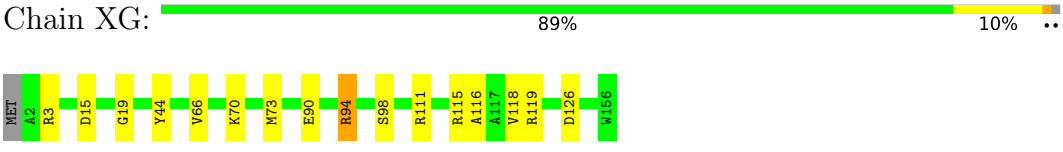
• Molecule 7: 30S ribosomal protein S7

Chain QG:



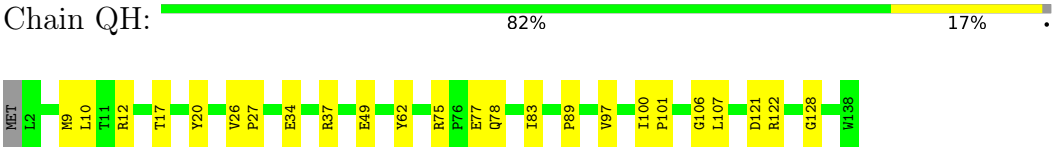
• Molecule 7: 30S ribosomal protein S7

Chain XG:



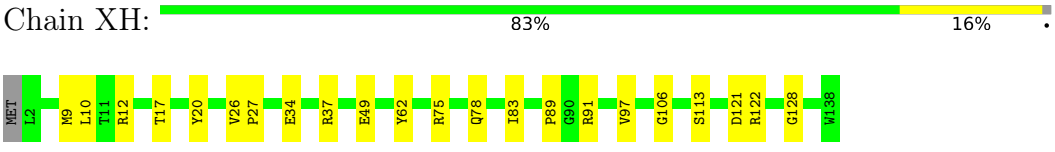
• Molecule 8: 30S ribosomal protein S8

Chain QH:



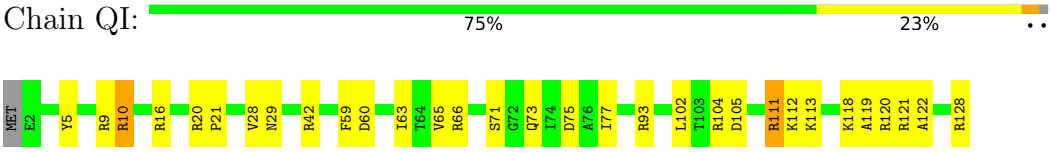
• Molecule 8: 30S ribosomal protein S8

Chain XH:



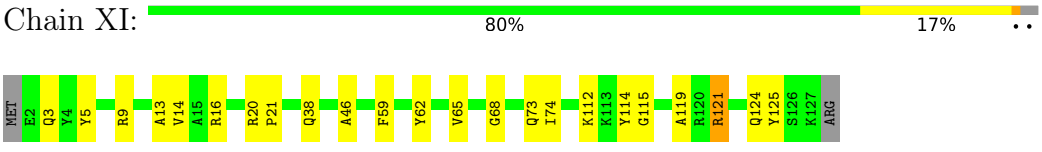
• Molecule 9: 30S ribosomal protein S9

Chain QI:



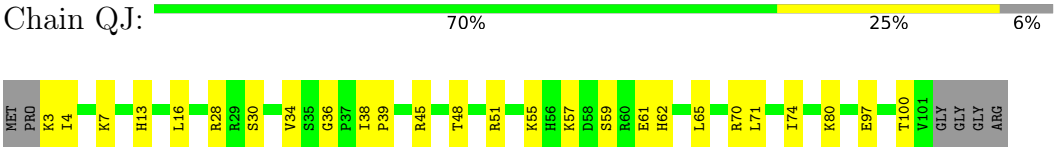
• Molecule 9: 30S ribosomal protein S9

Chain XI:



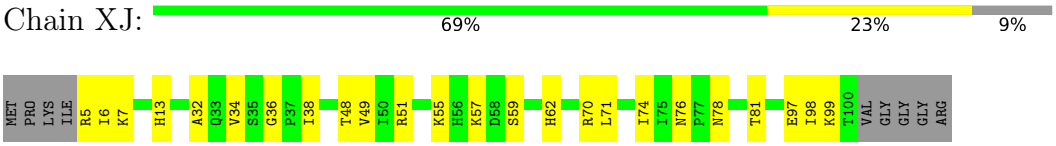
• Molecule 10: 30S ribosomal protein S10

Chain QJ:



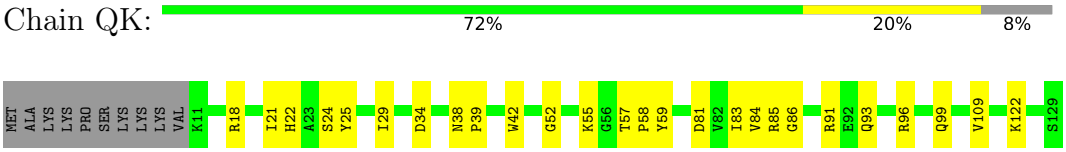
• Molecule 10: 30S ribosomal protein S10

Chain XJ:



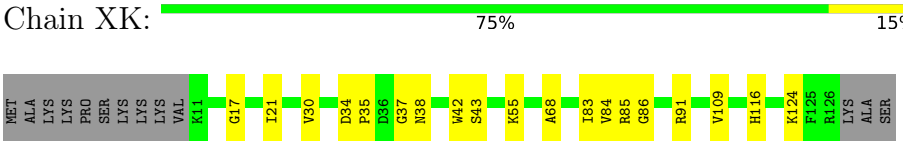
• Molecule 11: 30S ribosomal protein S11

Chain QK:



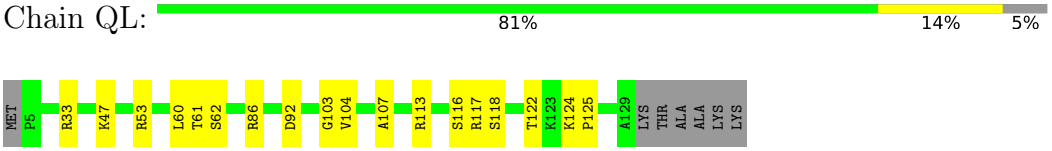
• Molecule 11: 30S ribosomal protein S11

Chain XK:



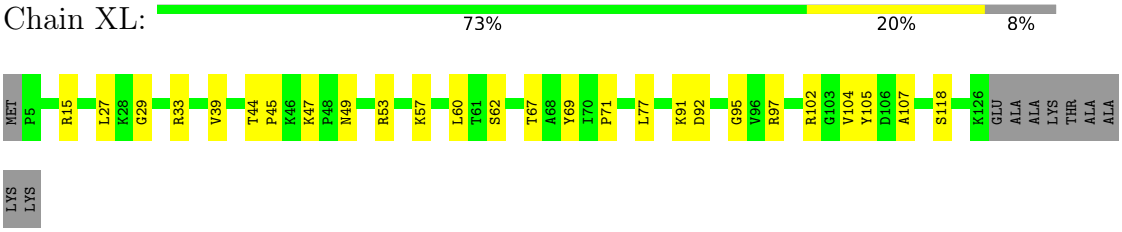
• Molecule 12: 30S ribosomal protein S12

Chain QL:



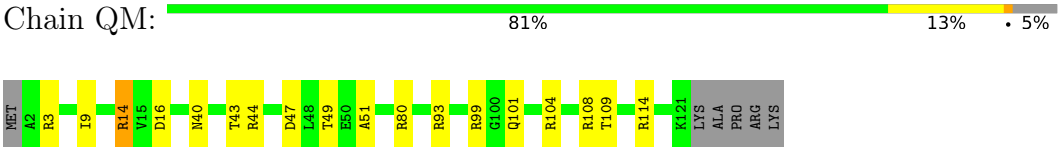
• Molecule 12: 30S ribosomal protein S12

Chain XL:



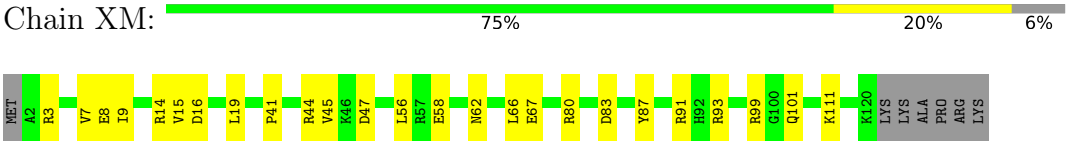
• Molecule 13: 30S ribosomal protein S13

Chain QM:



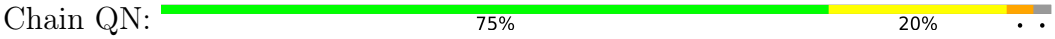
• Molecule 13: 30S ribosomal protein S13

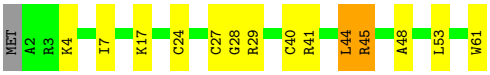
Chain XM:



• Molecule 14: 30S ribosomal protein S14 type Z

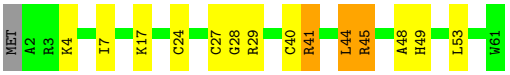
Chain QN:





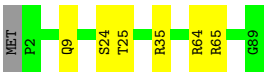
• Molecule 14: 30S ribosomal protein S14 type Z

Chain XN:



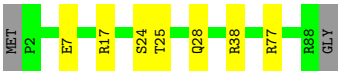
• Molecule 15: 30S ribosomal protein S15

Chain QO:



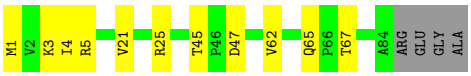
• Molecule 15: 30S ribosomal protein S15

Chain XO:



• Molecule 16: 30S ribosomal protein S16

Chain QP:



• Molecule 16: 30S ribosomal protein S16

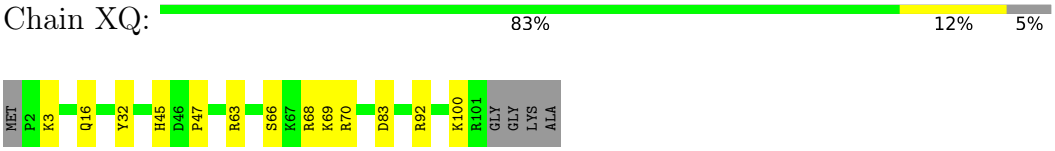
Chain XP:

• Molecule 17: 30S ribosomal protein S17

Chain QQ:

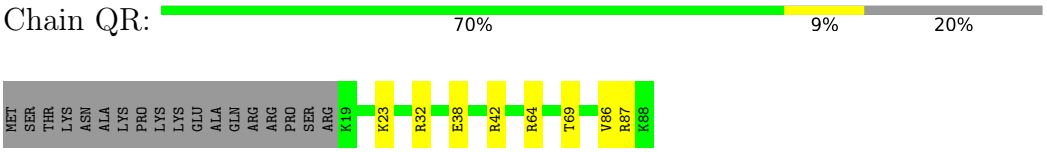
• Molecule 17: 30S ribosomal protein S17

Chain XQ:



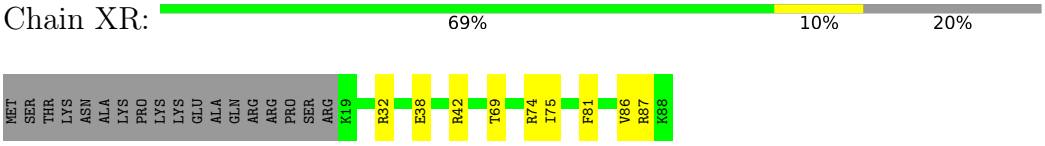
• Molecule 18: 30S ribosomal protein S18

Chain QR:



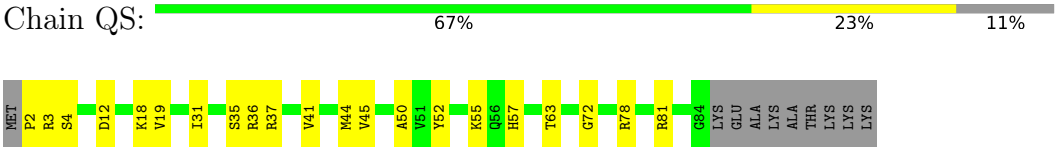
• Molecule 18: 30S ribosomal protein S18

Chain XR:



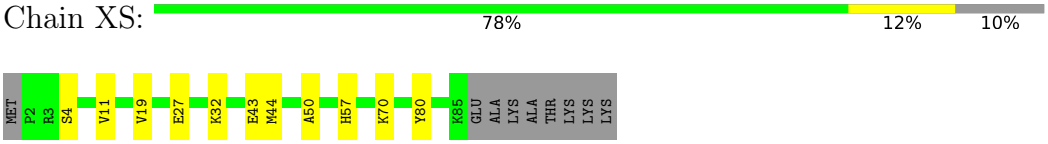
• Molecule 19: 30S ribosomal protein S19

Chain QS:



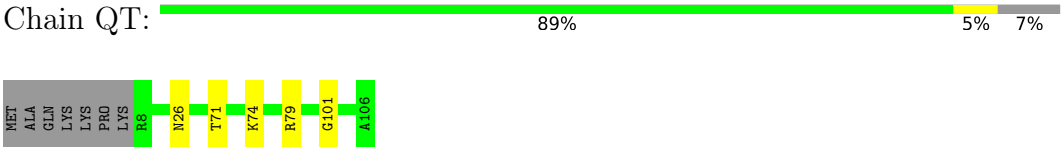
• Molecule 19: 30S ribosomal protein S19

Chain XS:



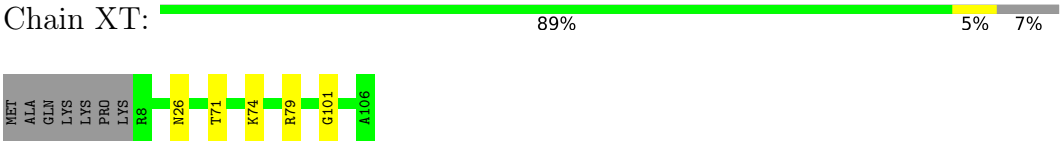
• Molecule 20: 30S ribosomal protein S20

Chain QT:



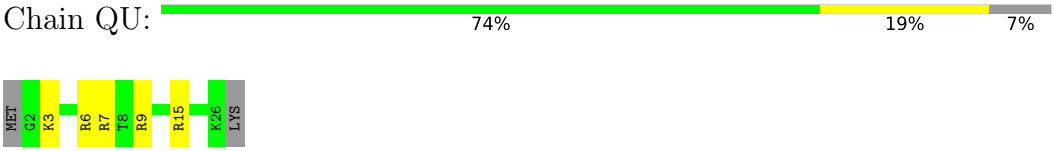
• Molecule 20: 30S ribosomal protein S20

Chain XT:



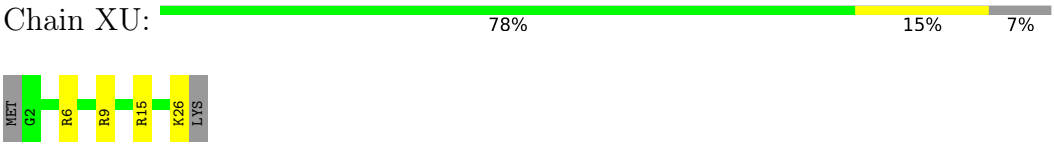
• Molecule 21: 30S ribosomal protein Thx

Chain QU:



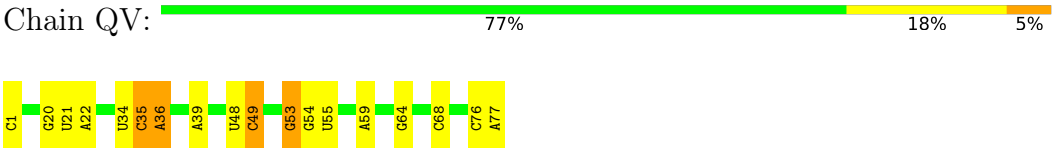
• Molecule 21: 30S ribosomal protein Thx

Chain XU:



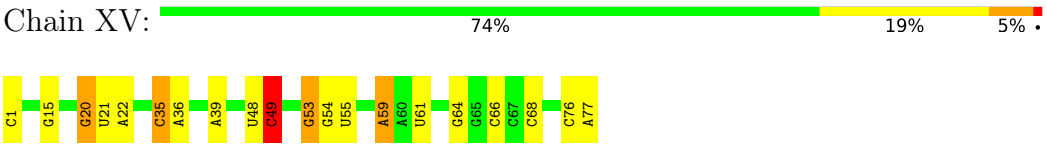
• Molecule 22: tRNA fMet

Chain QV:



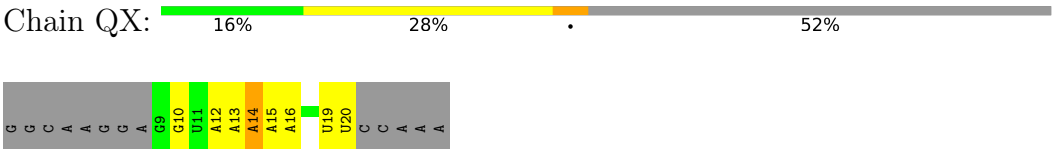
• Molecule 22: tRNA fMet

Chain XV:



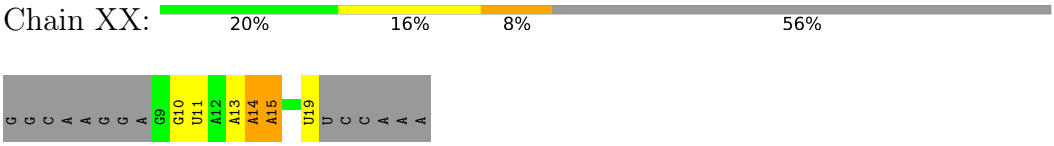
• Molecule 23: messenger RNA

Chain QX:



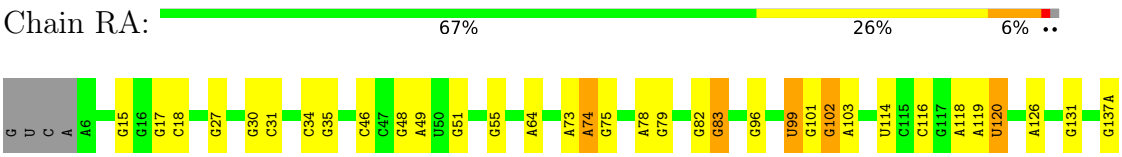
• Molecule 23: messenger RNA

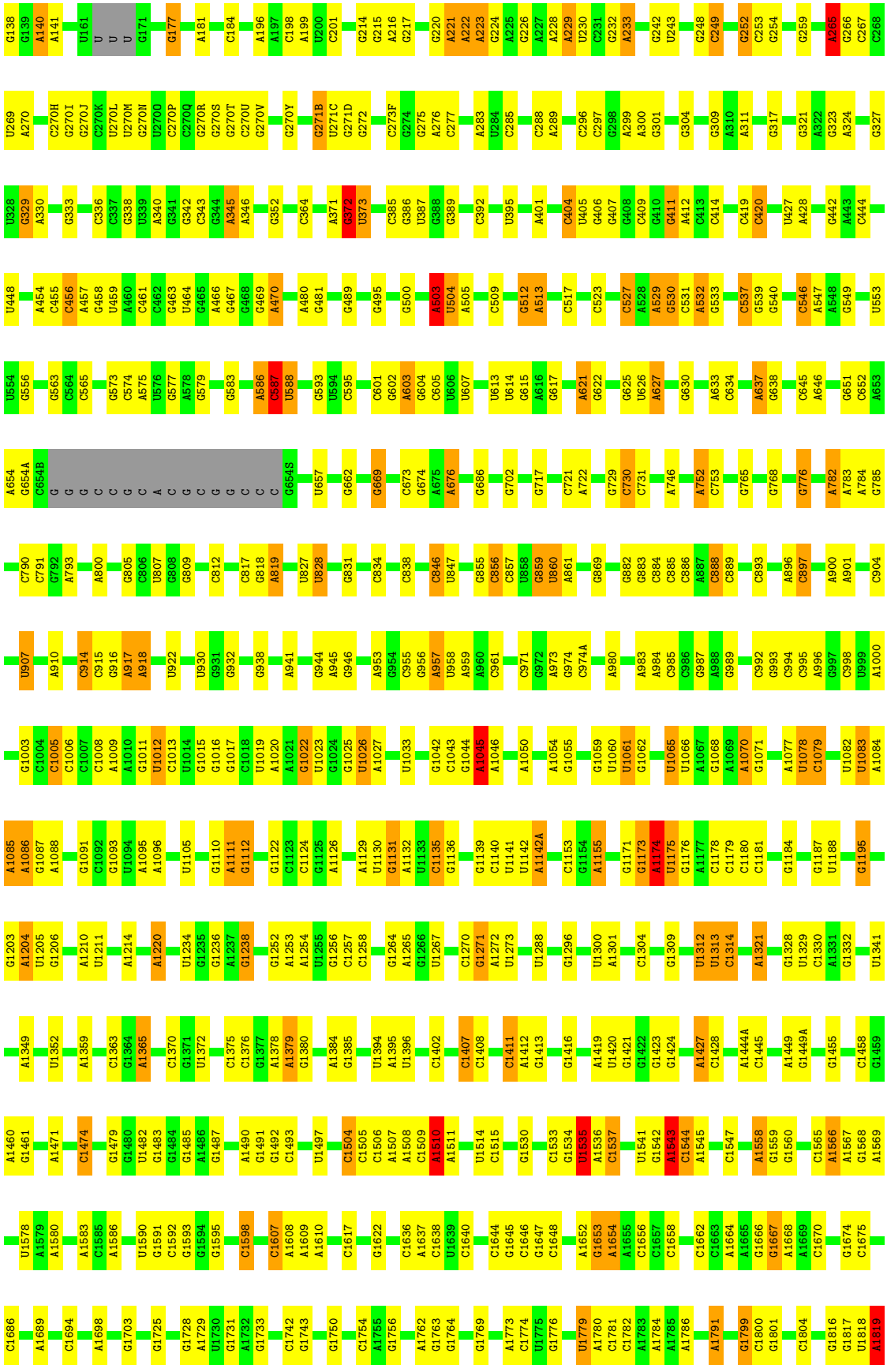
Chain XX:

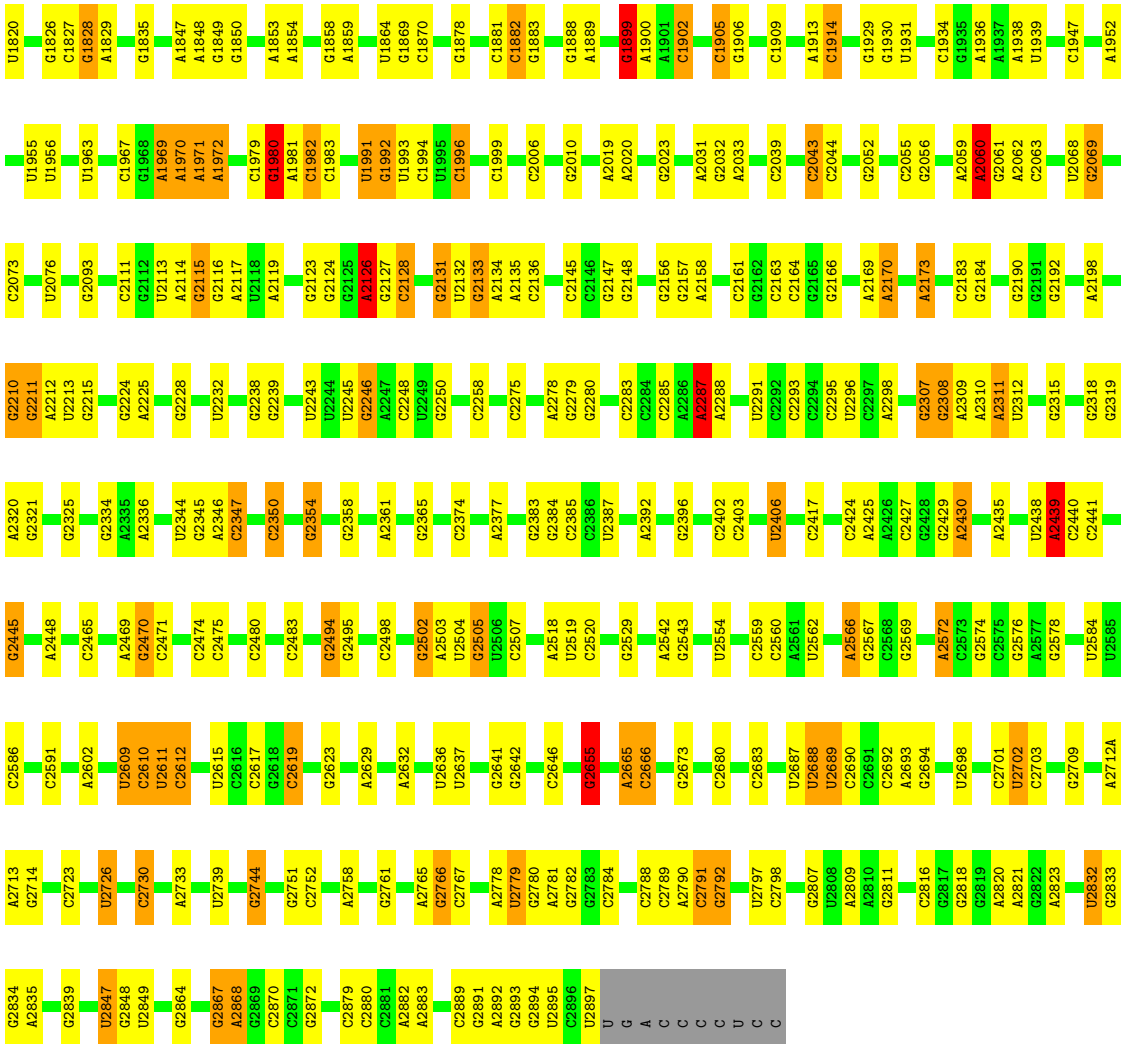


• Molecule 24: 23S rRNA

Chain RA:

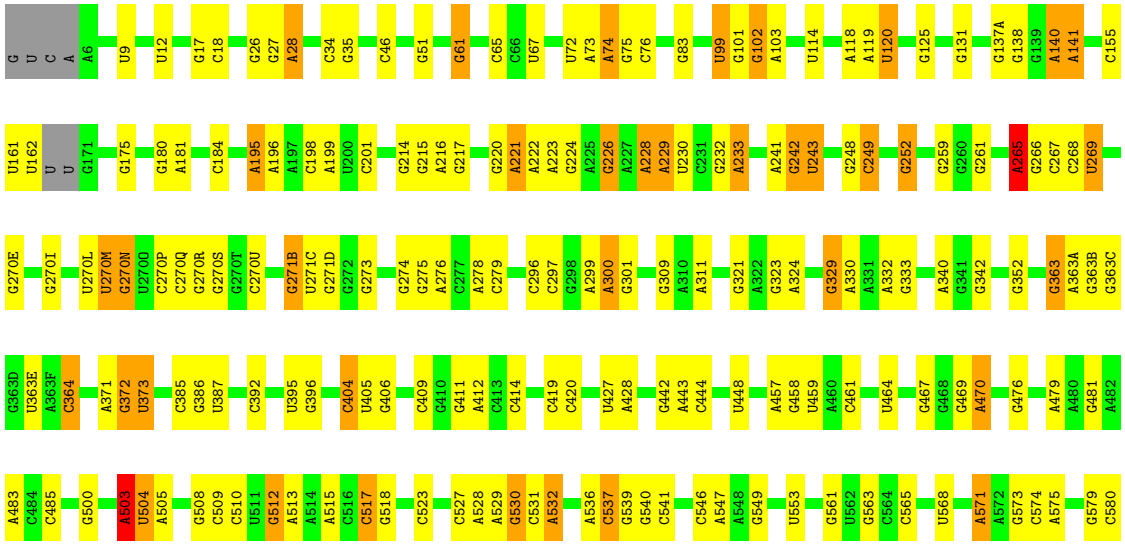


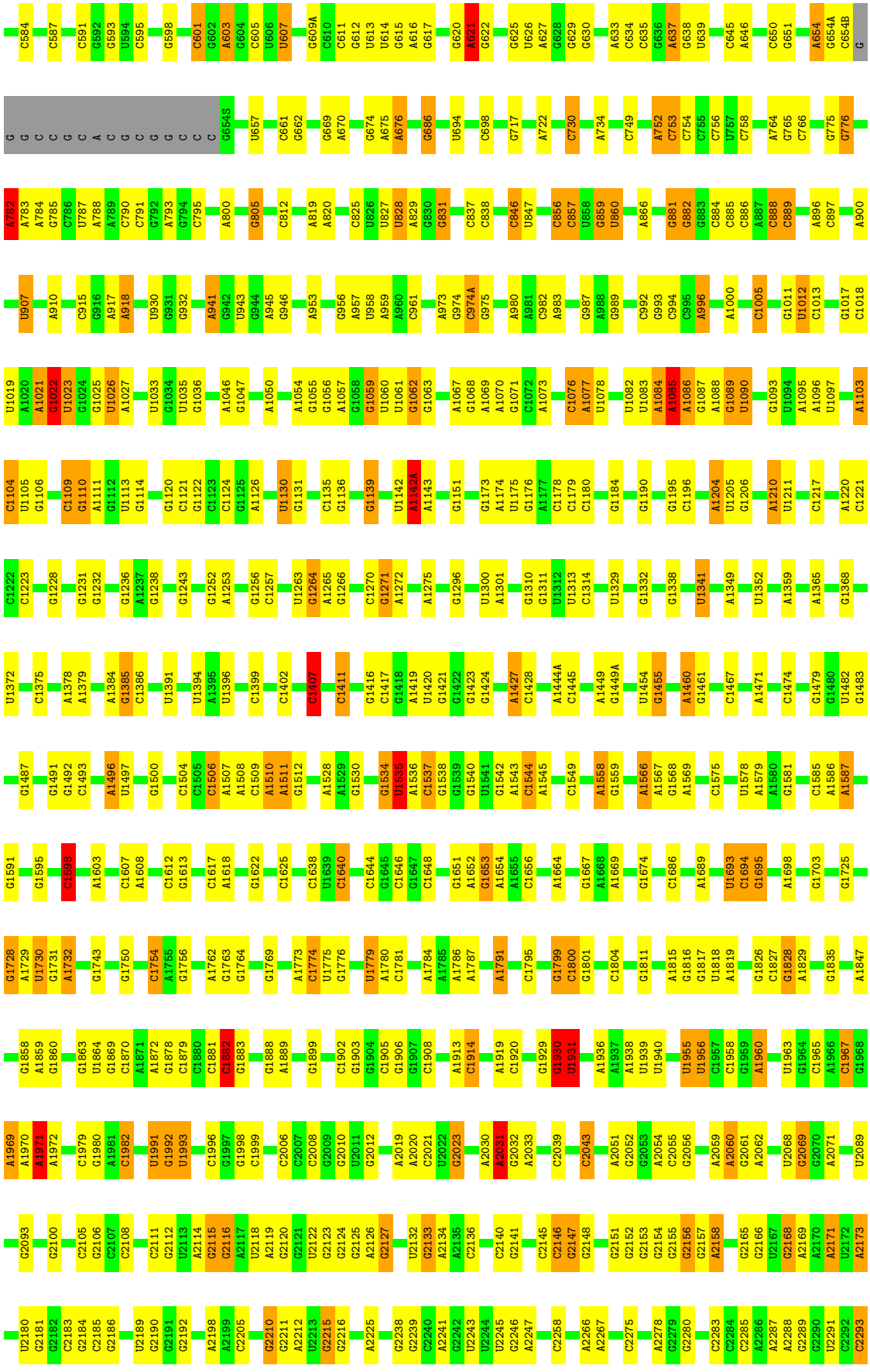


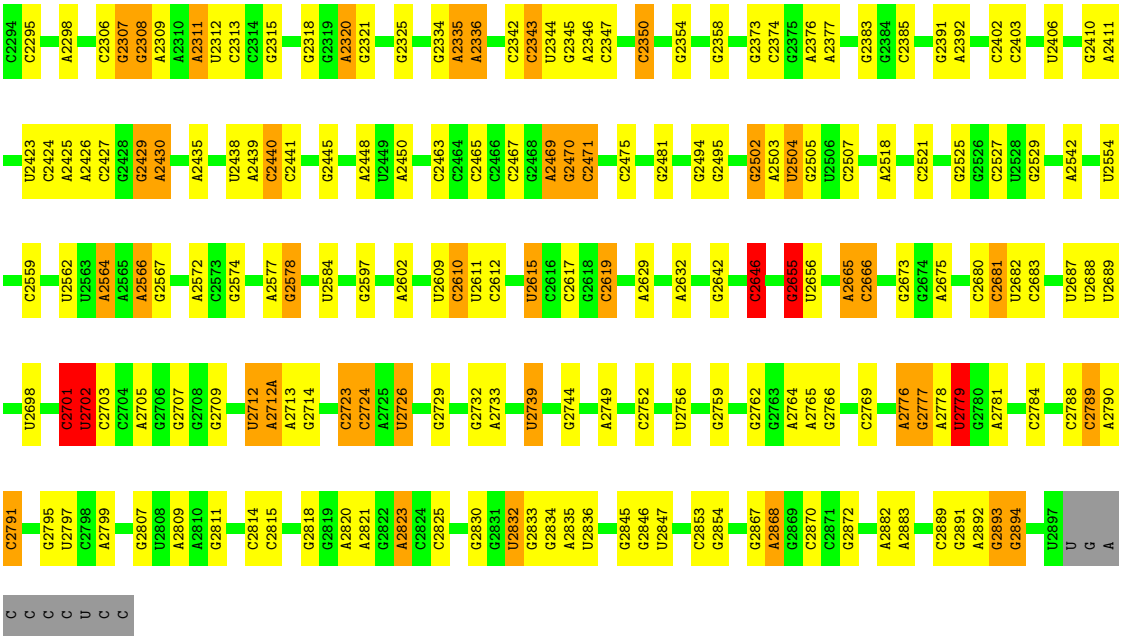


• Molecule 24: 23S rRNA

Chain YA:

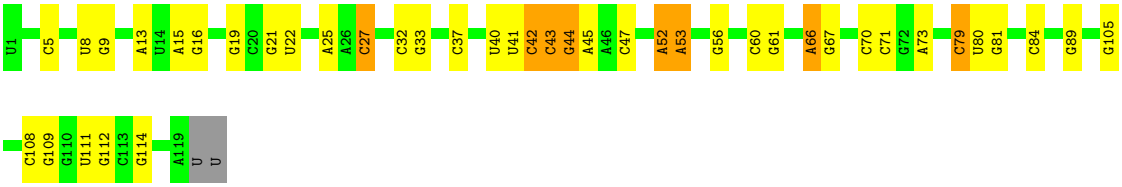






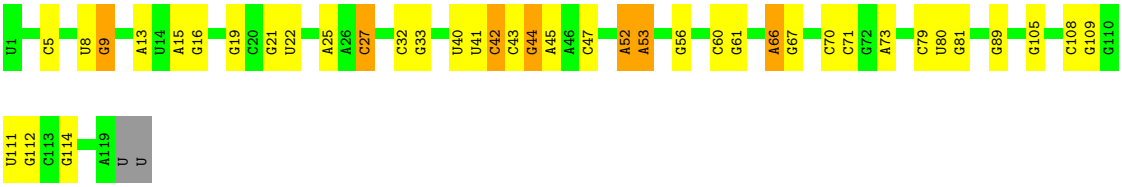
• Molecule 25: 5S rRNA

Chain RB:



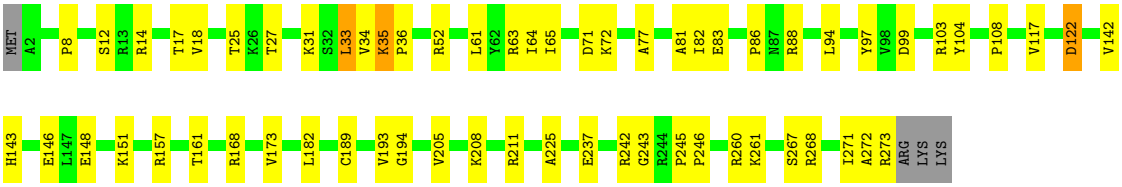
• Molecule 25: 5S rRNA

Chain YB:



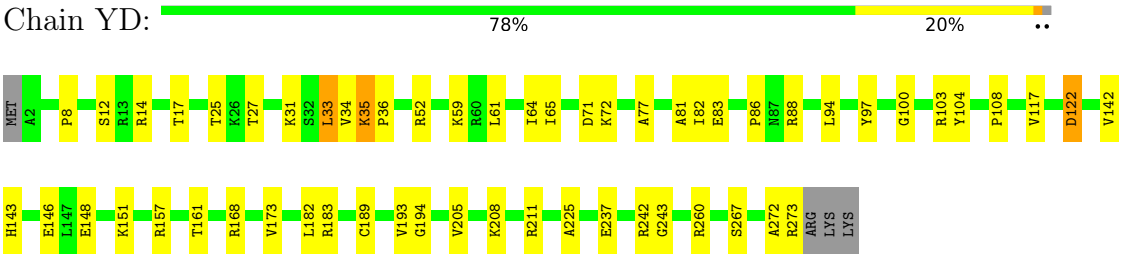
• Molecule 26: 50S ribosomal protein L2

Chain RD:



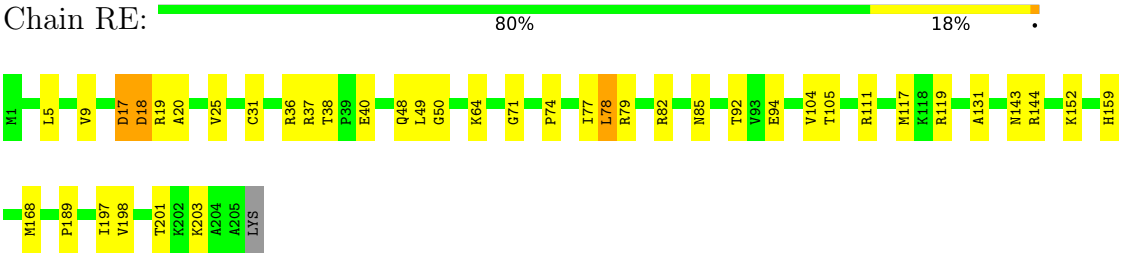
• Molecule 26: 50S ribosomal protein L2

Chain YD:



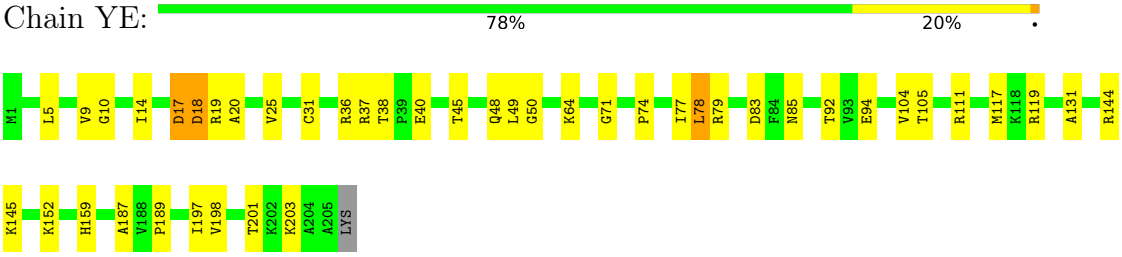
• Molecule 27: 50S ribosomal protein L3

Chain RE:



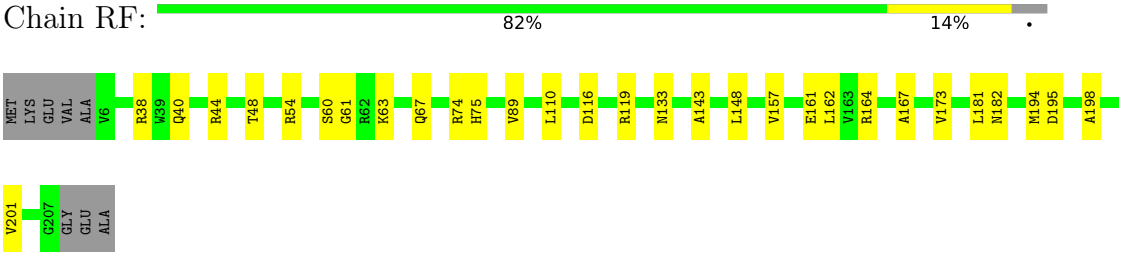
• Molecule 27: 50S ribosomal protein L3

Chain YE:



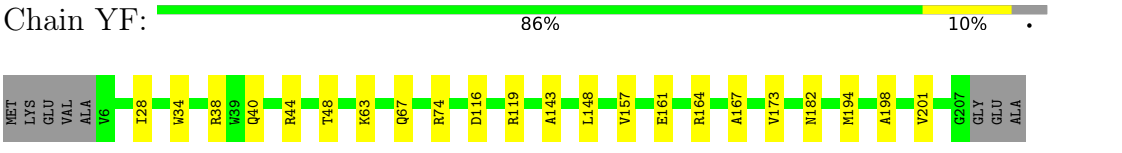
• Molecule 28: 50S ribosomal protein L4

Chain RF:



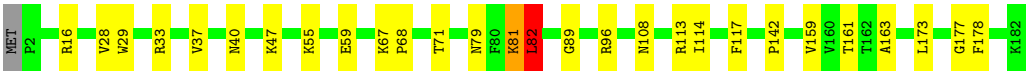
• Molecule 28: 50S ribosomal protein L4

Chain YF:



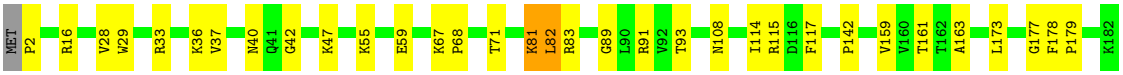
• Molecule 29: 50S ribosomal protein L5

Chain RG:



• Molecule 29: 50S ribosomal protein L5

Chain YG:

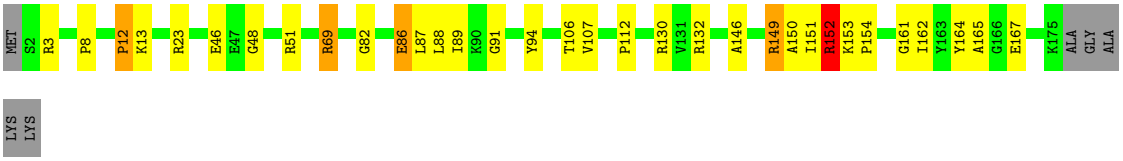


• Molecule 30: 50S ribosomal protein L6

Chain RH:

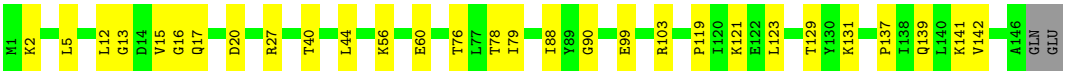
• Molecule 30: 50S ribosomal protein L6

Chain YH:



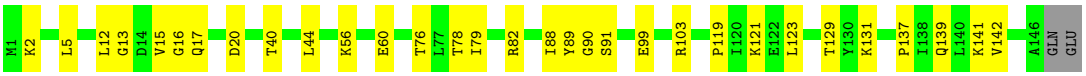
• Molecule 31: 50S ribosomal protein L9

Chain RI:



• Molecule 31: 50S ribosomal protein L9

Chain YI:

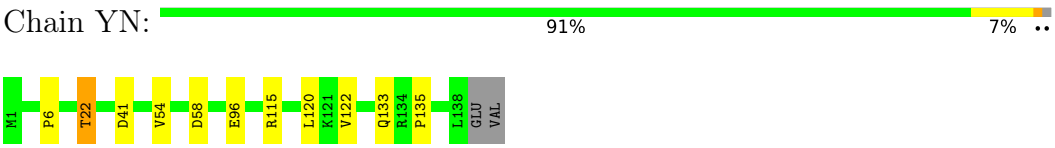


• Molecule 32: 50S ribosomal protein L13

Chain RN:

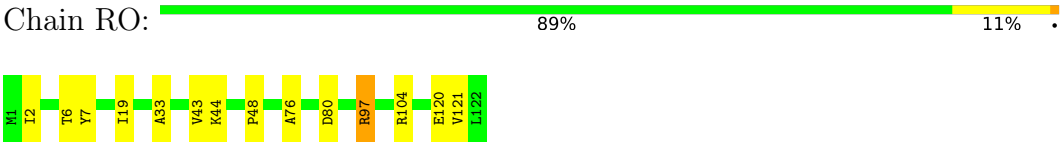
• Molecule 32: 50S ribosomal protein L13

Chain YN:



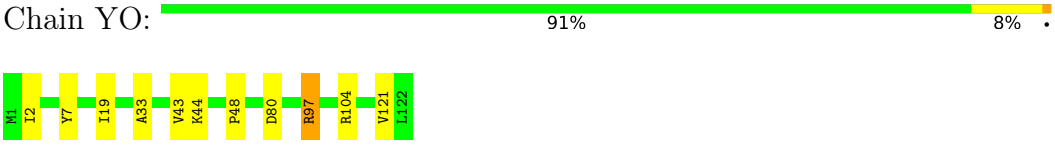
• Molecule 33: 50S ribosomal protein L14

Chain RO:



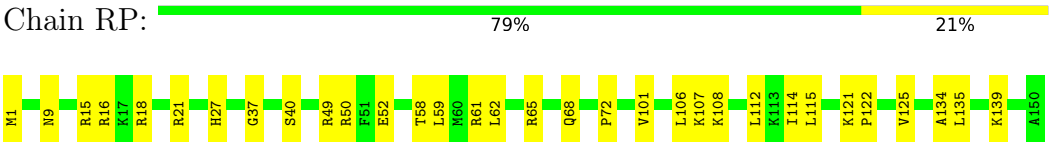
• Molecule 33: 50S ribosomal protein L14

Chain YO:



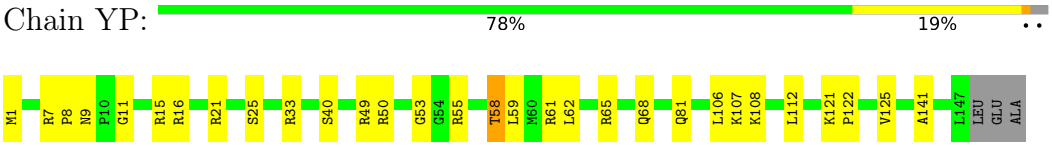
• Molecule 34: 50S ribosomal protein L15

Chain RP:



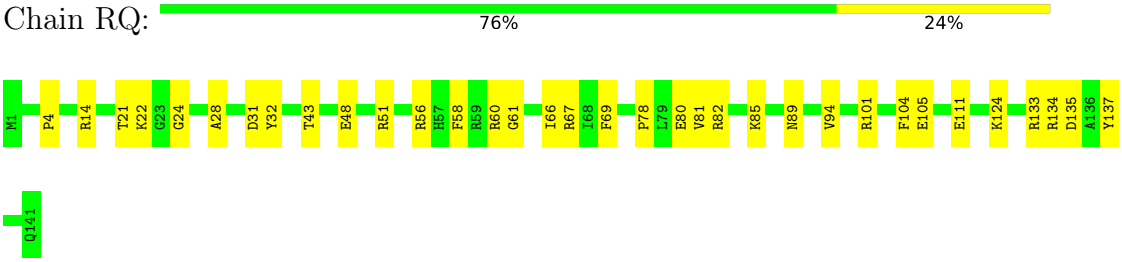
• Molecule 34: 50S ribosomal protein L15

Chain YP:



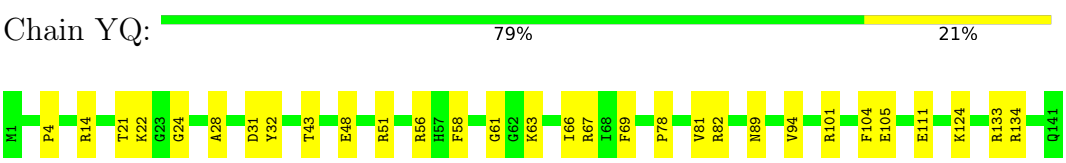
• Molecule 35: 50S ribosomal protein L16

Chain RQ:



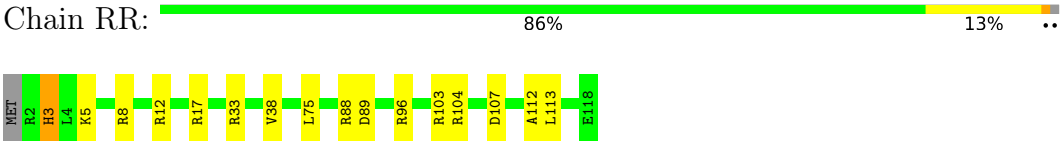
• Molecule 35: 50S ribosomal protein L16

Chain YQ:



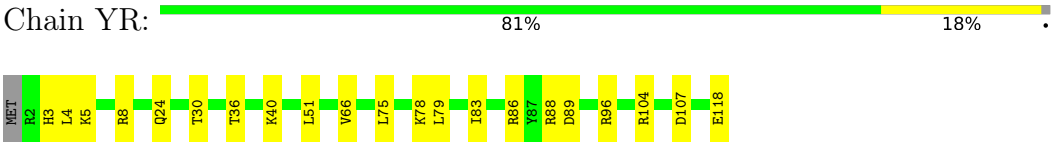
• Molecule 36: 50S ribosomal protein L17

Chain RR:



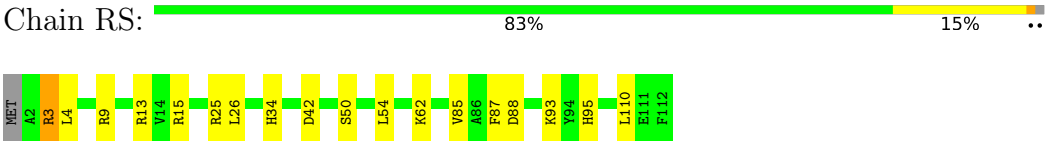
• Molecule 36: 50S ribosomal protein L17

Chain YR:



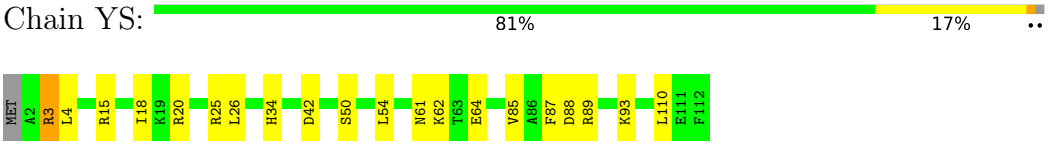
• Molecule 37: 50S ribosomal protein L18

Chain RS:



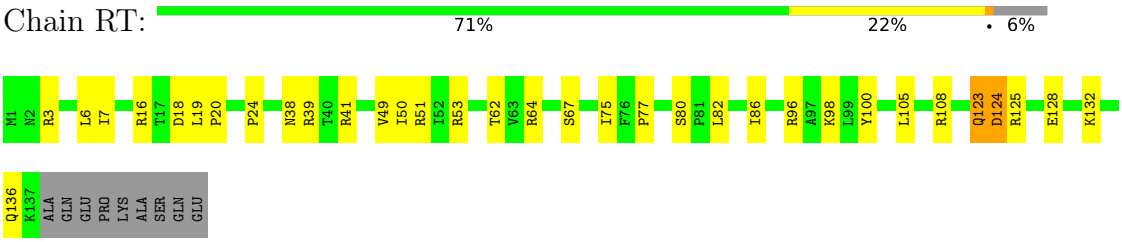
• Molecule 37: 50S ribosomal protein L18

Chain YS:



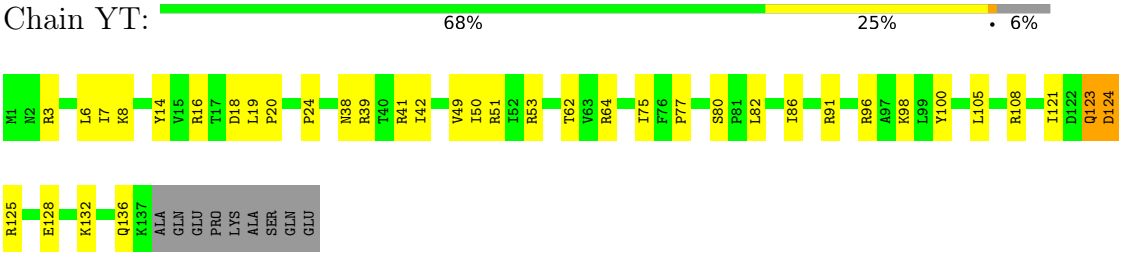
• Molecule 38: 50S ribosomal protein L19

Chain RT:



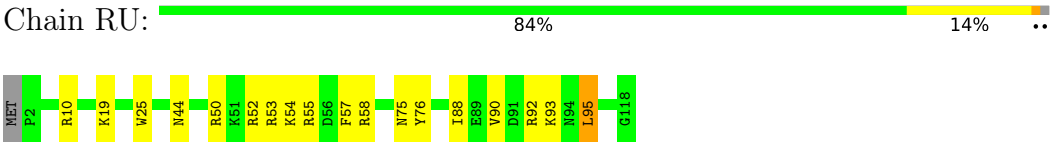
• Molecule 38: 50S ribosomal protein L19

Chain YT:



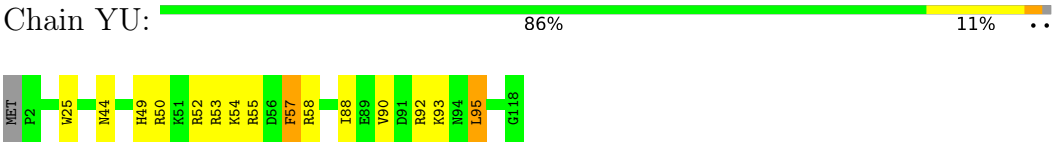
• Molecule 39: 50S ribosomal protein L20

Chain RU:



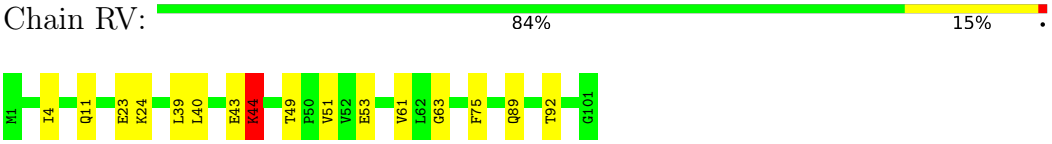
• Molecule 39: 50S ribosomal protein L20

Chain YU:



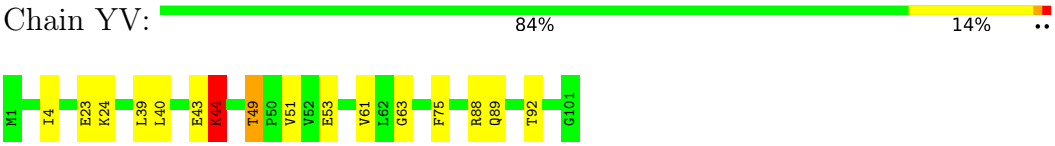
• Molecule 40: 50S ribosomal protein L21

Chain RV:



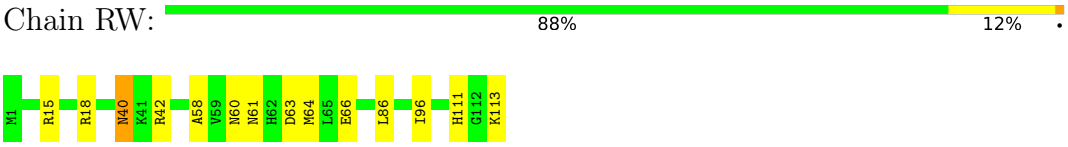
• Molecule 40: 50S ribosomal protein L21

Chain YV:



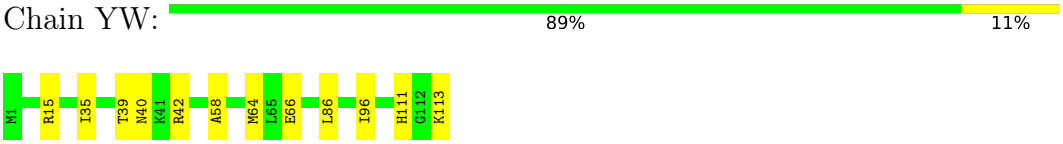
• Molecule 41: 50S ribosomal protein L22

Chain RW:



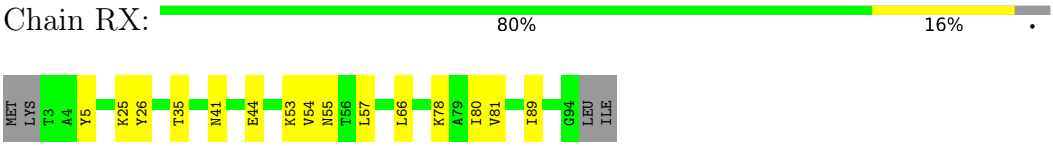
• Molecule 41: 50S ribosomal protein L22

Chain YW:



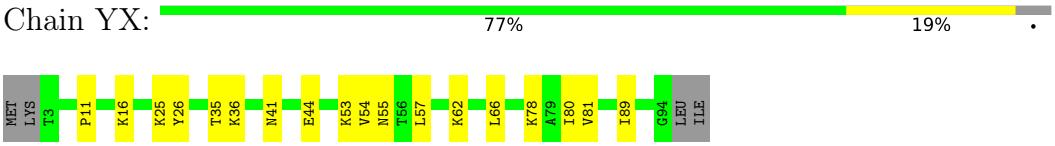
• Molecule 42: 50S ribosomal protein L23

Chain RX:



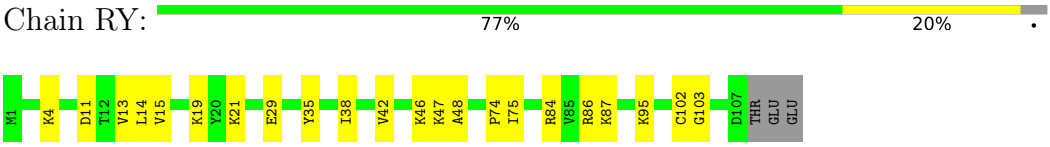
• Molecule 42: 50S ribosomal protein L23

Chain YX:



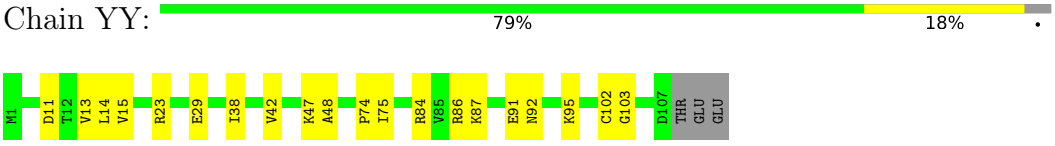
• Molecule 43: 50S ribosomal protein L24

Chain RY:



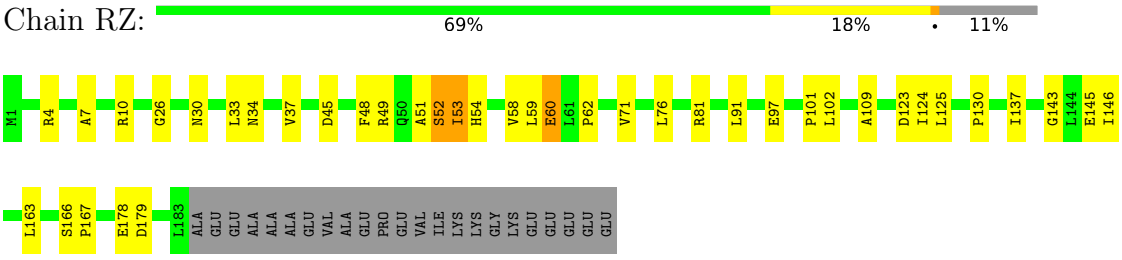
• Molecule 43: 50S ribosomal protein L24

Chain YY:



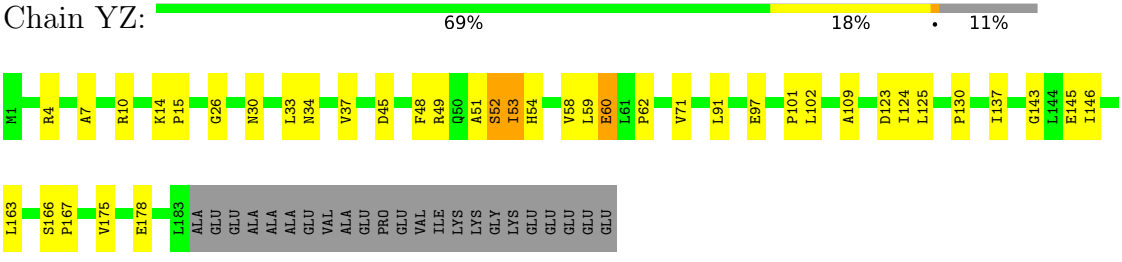
• Molecule 44: 50S ribosomal protein L25

Chain RZ:



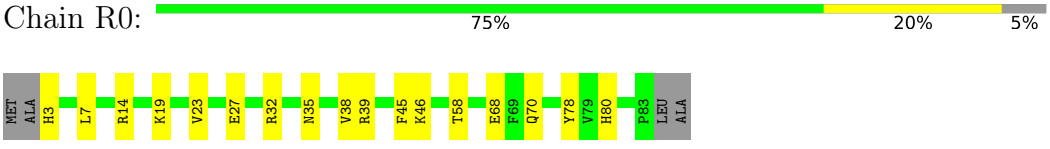
• Molecule 44: 50S ribosomal protein L25

Chain YZ:



• Molecule 45: 50S ribosomal protein L27

Chain R0:

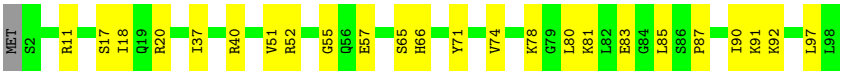


• Molecule 45: 50S ribosomal protein L27

Chain Y0:

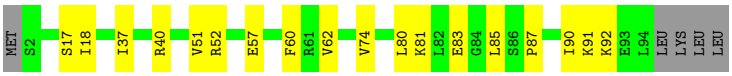
• Molecule 46: 50S ribosomal protein L28

Chain R1:



• Molecule 46: 50S ribosomal protein L28

Chain Y1:



• Molecule 47: 50S ribosomal protein L29

Chain R2:

• Molecule 47: 50S ribosomal protein L29

Chain Y2:

• Molecule 48: 50S ribosomal protein L30

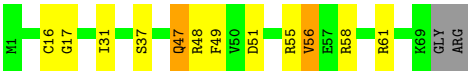
Chain R3:

• Molecule 48: 50S ribosomal protein L30

Chain Y3:

• Molecule 49: 50S ribosomal protein L31

Chain R4:



• Molecule 49: 50S ribosomal protein L31

Chain Y4:

• Molecule 50: 50S ribosomal protein L32

Chain R5:

• Molecule 50: 50S ribosomal protein L32

Chain Y5:

• Molecule 51: 50S ribosomal protein L33

Chain R6:

• Molecule 51: 50S ribosomal protein L33

Chain Y6:

• Molecule 52: 50S ribosomal protein L34

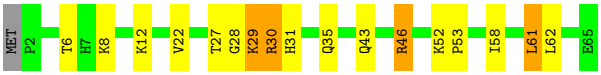
Chain R7:

• Molecule 52: 50S ribosomal protein L34

Chain Y7:

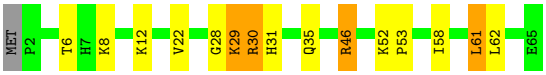
• Molecule 53: 50S ribosomal protein L35

Chain R8:



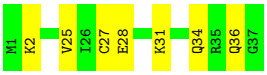
• Molecule 53: 50S ribosomal protein L35

Chain Y8:



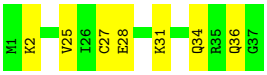
• Molecule 54: 50S ribosomal protein L36

Chain R9:



• Molecule 54: 50S ribosomal protein L36

Chain Y9:



4 Data and refinement statistics (i)

EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	209.65Å 447.95Å 618.80Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	124.48 – 3.18	Depositor
% Data completeness (in resolution range)	99.3 (124.48-3.18)	Depositor
R_{merge}	0.30	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.31 (at 3.19Å)	Xtriage
Refinement program	PHENIX 1.12	Depositor
R, R_{free}	0.232 , 0.251	Depositor
Wilson B-factor (Å^2)	76.7	Xtriage
Anisotropy	0.198	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.41$, $< L^2 > = 0.23$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	291753	wwPDB-VP
Average B, all atoms (Å^2)	104.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.67% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

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

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MG, SF4

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	QA	0.76	0/36046	1.03	110/56257 (0.2%)
1	XA	0.88	0/36097	1.04	113/56339 (0.2%)
2	QB	0.32	0/1942	0.58	0/2619
2	XB	0.37	0/1950	0.60	0/2630
3	QC	0.36	0/1629	0.53	0/2195
3	XC	0.36	0/1629	0.53	0/2195
4	QD	0.41	0/1733	0.55	0/2318
4	XD	0.41	0/1733	0.55	0/2318
5	QE	0.36	0/1171	0.55	0/1576
5	XE	0.36	0/1171	0.55	0/1576
6	QF	0.37	0/856	0.52	0/1154
6	XF	0.37	0/856	0.52	0/1154
7	QG	0.34	0/1276	0.47	0/1709
7	XG	0.33	0/1276	0.47	0/1709
8	QH	0.39	0/1128	0.54	0/1517
8	XH	0.39	0/1128	0.54	0/1517
9	QI	0.36	0/1029	0.60	0/1379
9	XI	0.43	1/1017 (0.1%)	0.62	0/1365
10	QJ	0.34	0/814	0.59	0/1095
10	XJ	0.39	0/790	0.60	0/1063
11	QK	0.38	0/900	0.55	0/1213
11	XK	0.43	0/879	0.56	0/1187
12	QL	0.45	0/991	0.64	0/1327
12	XL	0.54	0/972	0.66	0/1301
13	QM	0.36	0/965	0.61	0/1292
13	XM	0.37	0/956	0.63	0/1281
14	QN	0.43	0/501	0.64	1/664 (0.2%)
14	XN	0.43	0/501	0.64	1/664 (0.2%)
15	QO	0.32	0/745	0.51	0/992
15	XO	0.36	0/740	0.51	0/987
16	QP	0.43	0/721	0.56	0/970
16	XP	0.43	0/721	0.56	0/970

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
17	QQ	0.42	0/847	0.54	0/1131
17	XQ	0.42	0/847	0.54	0/1131
18	QR	0.36	0/579	0.56	0/768
18	XR	0.36	0/579	0.56	0/768
19	QS	0.33	0/680	0.67	0/915
19	XS	0.40	0/689	0.66	0/926
20	QT	0.32	0/765	0.57	0/1007
20	XT	0.32	0/765	0.56	0/1007
21	QU	0.40	0/221	0.69	0/288
21	XU	0.40	0/221	0.69	0/288
22	QV	0.85	1/1836 (0.1%)	1.01	6/2859 (0.2%)
22	XV	0.86	1/1836 (0.1%)	1.02	7/2859 (0.2%)
23	QX	0.59	0/290	1.08	2/450 (0.4%)
23	XX	0.65	0/268	0.84	0/416
24	RA	1.03	4/69521 (0.0%)	1.07	285/108529 (0.3%)
24	YA	1.16	8/69543 (0.0%)	1.11	344/108563 (0.3%)
25	RB	0.82	0/2878	1.01	6/4490 (0.1%)
25	YB	0.82	0/2878	1.01	5/4490 (0.1%)
26	RD	0.61	0/2165	0.71	1/2919 (0.0%)
26	YD	0.61	0/2165	0.71	1/2919 (0.0%)
27	RE	0.53	0/1601	0.71	2/2160 (0.1%)
27	YE	0.53	0/1601	0.71	2/2160 (0.1%)
28	RF	0.55	0/1620	0.59	0/2194
28	YF	0.55	0/1620	0.59	0/2194
29	RG	0.40	0/1499	0.65	2/2016 (0.1%)
29	YG	0.40	0/1499	0.65	2/2016 (0.1%)
30	RH	0.41	0/1362	0.65	0/1841
30	YH	0.41	0/1362	0.65	0/1841
31	RI	0.35	0/1151	0.66	0/1558
31	YI	0.35	0/1151	0.66	0/1558
32	RN	0.49	0/1131	0.65	1/1525 (0.1%)
32	YN	0.49	0/1131	0.65	1/1525 (0.1%)
33	RO	0.55	0/943	0.61	0/1269
33	YO	0.55	0/943	0.61	0/1269
34	RP	0.45	0/1162	0.76	1/1544 (0.1%)
34	YP	0.50	0/1139	0.79	1/1514 (0.1%)
35	RQ	0.50	0/1143	0.66	0/1527
35	YQ	0.50	0/1143	0.66	0/1527
36	RR	0.49	0/974	0.69	1/1302 (0.1%)
36	YR	0.51	0/974	0.67	1/1302 (0.1%)
37	RS	0.39	0/892	0.71	0/1187
37	YS	0.39	0/892	0.71	0/1187
38	RT	0.48	0/1155	0.66	1/1542 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
38	YT	0.47	0/1155	0.66	1/1542 (0.1%)
39	RU	0.52	0/982	0.61	0/1306
39	YU	0.52	0/982	0.61	0/1306
40	RV	0.46	0/790	0.67	0/1057
40	YV	0.46	0/790	0.67	0/1057
41	RW	0.54	0/911	0.61	0/1220
41	YW	0.54	0/911	0.61	0/1220
42	RX	0.53	0/739	0.58	0/993
42	YX	0.53	0/739	0.58	0/993
43	RY	0.50	0/831	0.55	0/1108
43	YY	0.50	0/831	0.55	0/1108
44	RZ	0.39	0/1493	0.71	0/2026
44	YZ	0.39	0/1493	0.70	0/2026
45	R0	0.47	0/652	0.56	0/867
45	Y0	0.56	0/607	0.60	0/809
46	R1	0.54	0/770	0.65	0/1022
46	Y1	0.54	0/736	0.65	0/978
47	R2	0.36	0/583	0.53	0/771
47	Y2	0.36	0/583	0.53	0/771
48	R3	0.44	0/474	0.61	0/635
48	Y3	0.43	0/474	0.61	0/635
49	R4	0.36	0/578	0.62	0/776
49	Y4	0.36	0/578	0.62	0/776
50	R5	0.49	0/473	0.56	0/639
50	Y5	0.49	0/473	0.56	0/639
51	R6	0.32	0/460	0.50	0/613
51	Y6	0.32	0/460	0.50	0/613
52	R7	0.52	0/417	0.56	0/550
52	Y7	0.62	0/426	0.59	0/561
53	R8	0.54	0/525	0.83	2/691 (0.3%)
53	Y8	0.54	0/525	0.82	2/691 (0.3%)
54	R9	0.41	0/310	0.49	0/407
54	Y9	0.41	0/310	0.49	0/407
All	All	0.88	15/315585 (0.0%)	0.97	902/471827 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
4	QD	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
4	XD	0	2
12	QL	0	2
12	XL	0	2
19	QS	0	1
26	RD	0	4
26	YD	0	4
27	RE	0	4
27	YE	0	4
29	RG	0	1
29	YG	0	1
30	RH	0	2
30	YH	0	2
31	RI	0	2
31	YI	0	2
32	RN	0	1
32	YN	0	1
34	RP	0	1
34	YP	0	3
35	RQ	0	1
35	YQ	0	1
39	RU	0	1
39	YU	0	1
40	RV	0	2
40	YV	0	2
44	RZ	0	4
44	YZ	0	4
47	R2	0	1
47	Y2	0	1
49	R4	0	2
49	Y4	0	2
53	R8	0	4
53	Y8	0	4
All	All	0	71

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	QV	1	C	OP3-P	-10.78	1.48	1.61
22	XV	1	C	OP3-P	-10.77	1.48	1.61
24	YA	1142(A)	A	N9-C4	-5.74	1.34	1.37
24	YA	528	A	N9-C4	-5.62	1.34	1.37
9	XI	121	ARG	C-N	-5.60	1.21	1.34

The worst 5 of 902 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	QA	1301	U	N1-C2-O2	13.33	132.13	122.80
1	XA	1158	C	N1-C2-O2	12.35	126.31	118.90
1	QA	1301	U	N3-C2-O2	-11.96	113.83	122.20
1	QA	1158	C	C2-N1-C1'	11.77	131.75	118.80
1	QA	1301	U	C2-N1-C1'	11.74	131.79	117.70

There are no chirality outliers.

5 of 71 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	QD	19	LEU	Peptide
4	QD	33	MET	Peptide
12	QL	104	VAL	Peptide
12	QL	47	LYS	Peptide
19	QS	41	VAL	Peptide

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	QA	32202	0	16255	204	0
1	XA	32246	0	16277	177	0
2	QB	1907	0	1958	20	0
2	XB	1915	0	1969	17	0
3	QC	1605	0	1668	21	0
3	XC	1605	0	1668	20	2
4	QD	1703	0	1766	17	0
4	XD	1703	0	1767	22	0
5	QE	1155	0	1213	11	0
5	XE	1155	0	1213	7	0
6	QF	843	0	857	10	0
6	XF	843	0	857	8	0
7	QG	1257	0	1296	11	0
7	XG	1257	0	1296	10	0
8	QH	1108	0	1164	16	0
8	XH	1108	0	1165	15	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	QI	1010	0	1037	26	0
9	XI	998	0	1023	16	0
10	QJ	801	0	849	18	0
10	XJ	777	0	816	19	0
11	QK	885	0	904	19	2
11	XK	864	0	881	15	0
12	QL	975	0	1062	12	0
12	XL	956	0	1046	16	0
13	QM	955	0	1021	14	0
13	XM	946	0	1008	17	0
14	QN	492	0	529	7	0
14	XN	492	0	529	8	0
15	QO	734	0	771	5	0
15	XO	729	0	768	4	0
16	QP	705	0	725	7	0
16	XP	705	0	725	4	0
17	QQ	834	0	904	6	0
17	XQ	834	0	904	13	0
18	QR	574	0	644	6	0
18	XR	574	0	644	7	0
19	QS	665	0	686	15	0
19	XS	674	0	699	8	0
20	QT	763	0	860	5	0
20	XT	763	0	861	5	0
21	QU	217	0	234	5	0
21	XU	217	0	234	4	0
22	QV	1644	0	836	3	0
22	XV	1644	0	836	4	0
23	QX	259	0	129	2	0
23	XX	239	0	119	1	0
24	RA	62071	0	31285	264	0
24	YA	62091	0	31293	267	0
25	RB	2573	0	1306	15	0
25	YB	2573	0	1306	13	0
26	RD	2115	0	2195	42	0
26	YD	2115	0	2195	40	0
27	RE	1568	0	1634	25	0
27	YE	1568	0	1634	26	0
28	RF	1585	0	1632	20	0
28	YF	1585	0	1632	15	0
29	RG	1474	0	1535	17	0
29	YG	1474	0	1535	20	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	RH	1336	0	1418	19	0
30	YH	1336	0	1418	20	1
31	RI	1136	0	1223	17	0
31	YI	1136	0	1223	19	0
32	RN	1104	0	1180	9	0
32	YN	1104	0	1180	5	0
33	RO	933	0	996	12	0
33	YO	933	0	996	10	0
34	RP	1145	0	1227	22	0
34	YP	1122	0	1206	22	0
35	RQ	1122	0	1179	25	0
35	YQ	1122	0	1179	21	0
36	RR	960	0	1021	9	0
36	YR	960	0	1021	13	0
37	RS	882	0	943	11	0
37	YS	882	0	943	14	0
38	RT	1141	0	1202	22	0
38	YT	1141	0	1202	23	0
39	RU	964	0	1022	19	0
39	YU	964	0	1021	18	0
40	RV	779	0	852	11	0
40	YV	779	0	852	10	3
41	RW	900	0	964	7	2
41	YW	900	0	964	5	0
42	RX	725	0	778	10	0
42	YX	725	0	778	13	0
43	RY	818	0	909	14	4
43	YY	818	0	909	12	3
44	RZ	1461	0	1493	22	0
44	YZ	1461	0	1493	21	0
45	R0	643	0	667	11	0
45	Y0	599	0	617	12	0
46	R1	763	0	848	16	0
46	Y1	729	0	802	9	0
47	R2	581	0	629	6	0
47	Y2	581	0	629	7	4
48	R3	469	0	518	8	0
48	Y3	469	0	518	6	0
49	R4	565	0	557	7	0
49	Y4	565	0	557	8	0
50	R5	459	0	476	8	0
50	Y5	459	0	479	8	3

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
51	R6	453	0	473	5	0
51	Y6	453	0	473	3	0
52	R7	409	0	454	2	0
52	Y7	418	0	467	5	0
53	R8	517	0	582	14	0
53	Y8	517	0	582	9	0
54	R9	307	0	335	4	0
54	Y9	307	0	335	4	0
55	QA	80	0	0	0	0
55	QC	1	0	0	0	0
55	QF	1	0	0	0	0
55	QH	1	0	0	0	0
55	QT	1	0	0	0	0
55	QV	6	0	0	0	0
55	R0	2	0	0	0	0
55	R8	1	0	0	0	0
55	RA	521	0	0	0	0
55	RB	11	0	0	0	0
55	RD	1	0	0	0	0
55	RE	4	0	0	0	0
55	RN	1	0	0	0	0
55	RO	1	0	0	0	0
55	RP	3	0	0	0	0
55	RQ	3	0	0	0	0
55	RR	2	0	0	0	0
55	RT	1	0	0	0	0
55	XA	98	0	0	0	0
55	XE	1	0	0	0	0
55	XL	2	0	0	0	0
55	XM	2	0	0	0	0
55	XQ	1	0	0	0	0
55	XS	1	0	0	0	0
55	XV	8	0	0	0	0
55	XX	1	0	0	0	0
55	Y0	2	0	0	0	0
55	Y1	1	0	0	0	0
55	Y5	1	0	0	0	0
55	Y7	1	0	0	0	0
55	Y8	2	0	0	0	0
55	YA	551	0	0	0	0
55	YB	12	0	0	0	0
55	YD	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	YE	4	0	0	0	0
55	YF	1	0	0	0	0
55	YO	1	0	0	0	0
55	YP	2	0	0	0	0
55	YQ	4	0	0	0	0
55	YU	1	0	0	0	0
55	YX	2	0	0	0	0
55	YY	1	0	0	0	0
56	QD	8	0	0	0	0
56	XD	8	0	0	0	0
57	QN	1	0	0	0	0
57	R4	1	0	0	0	0
57	R5	1	0	0	0	0
57	R6	1	0	0	0	0
57	R9	1	0	0	0	0
57	RY	1	0	0	0	0
57	XN	1	0	0	0	0
57	Y4	1	0	0	0	0
57	Y5	1	0	0	0	0
57	Y6	1	0	0	0	0
57	Y9	1	0	0	0	0
57	YY	1	0	0	0	0
All	All	291753	0	197645	1817	12

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 4.

The worst 5 of 1817 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)
24:RA:602:G:HO2'	24:RA:604:G:HO2'	1.26	0.80
46:Y1:91:LYS:HE2	46:Y1:92:LYS:HE2	1.69	0.74
1:QA:664:G:H22	1:QA:741:G:H1	1.36	0.74
1:XA:686:U:H1'	11:XK:42:TRP:HE1	1.54	0.73
24:RA:676:A:H8	24:RA:2069:G:H21	1.36	0.72

The worst 5 of 12 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)
43:RY:21:LYS:NZ	47:Y2:71:ASN:CB[3_555]	1.64	0.56
43:RY:19:LYS:O	47:Y2:71:ASN:ND2[3_555]	1.79	0.41
41:RW:63:ASP:OD1	43:YY:92:ASN:ND2[3_555]	1.88	0.32
40:YV:49:THR:O	50:Y5:59:GLU:OE2[4_445]	1.90	0.30
40:YV:49:THR:OG1	50:Y5:60:VAL:O[4_445]	1.91	0.29

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	QB	233/256 (91%)	205 (88%)	27 (12%)	1 (0%)	34 69
2	XB	234/256 (91%)	210 (90%)	24 (10%)	0	100 100
3	QC	203/239 (85%)	188 (93%)	15 (7%)	0	100 100
3	XC	203/239 (85%)	188 (93%)	15 (7%)	0	100 100
4	QD	206/209 (99%)	193 (94%)	13 (6%)	0	100 100
4	XD	206/209 (99%)	193 (94%)	13 (6%)	0	100 100
5	QE	149/162 (92%)	142 (95%)	6 (4%)	1 (1%)	22 60
5	XE	149/162 (92%)	142 (95%)	6 (4%)	1 (1%)	22 60
6	QF	99/101 (98%)	99 (100%)	0	0	100 100
6	XF	99/101 (98%)	99 (100%)	0	0	100 100
7	QG	153/156 (98%)	150 (98%)	3 (2%)	0	100 100
7	XG	153/156 (98%)	150 (98%)	3 (2%)	0	100 100
8	QH	135/138 (98%)	132 (98%)	3 (2%)	0	100 100
8	XH	135/138 (98%)	132 (98%)	3 (2%)	0	100 100
9	QI	125/128 (98%)	114 (91%)	11 (9%)	0	100 100
9	XI	124/128 (97%)	114 (92%)	10 (8%)	0	100 100
10	QJ	97/105 (92%)	88 (91%)	9 (9%)	0	100 100
10	XJ	94/105 (90%)	83 (88%)	11 (12%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	QK	117/129 (91%)	109 (93%)	8 (7%)	0	100	100
11	XK	114/129 (88%)	107 (94%)	7 (6%)	0	100	100
12	QL	123/132 (93%)	104 (85%)	19 (15%)	0	100	100
12	XL	120/132 (91%)	105 (88%)	14 (12%)	1 (1%)	19	56
13	QM	118/126 (94%)	101 (86%)	16 (14%)	1 (1%)	19	56
13	XM	117/126 (93%)	100 (86%)	17 (14%)	0	100	100
14	QN	58/61 (95%)	53 (91%)	4 (7%)	1 (2%)	9	40
14	XN	58/61 (95%)	53 (91%)	4 (7%)	1 (2%)	9	40
15	QO	86/89 (97%)	83 (96%)	3 (4%)	0	100	100
15	XO	85/89 (96%)	85 (100%)	0	0	100	100
16	QP	82/88 (93%)	81 (99%)	1 (1%)	0	100	100
16	XP	82/88 (93%)	81 (99%)	1 (1%)	0	100	100
17	QQ	98/105 (93%)	97 (99%)	1 (1%)	0	100	100
17	XQ	98/105 (93%)	97 (99%)	1 (1%)	0	100	100
18	QR	68/88 (77%)	66 (97%)	2 (3%)	0	100	100
18	XR	68/88 (77%)	66 (97%)	2 (3%)	0	100	100
19	QS	81/93 (87%)	71 (88%)	10 (12%)	0	100	100
19	XS	82/93 (88%)	66 (80%)	15 (18%)	1 (1%)	13	48
20	QT	97/106 (92%)	90 (93%)	7 (7%)	0	100	100
20	XT	97/106 (92%)	90 (93%)	7 (7%)	0	100	100
21	QU	23/27 (85%)	21 (91%)	2 (9%)	0	100	100
21	XU	23/27 (85%)	21 (91%)	2 (9%)	0	100	100
26	RD	270/276 (98%)	246 (91%)	23 (8%)	1 (0%)	34	69
26	YD	270/276 (98%)	246 (91%)	23 (8%)	1 (0%)	34	69
27	RE	203/206 (98%)	165 (81%)	37 (18%)	1 (0%)	29	66
27	YE	203/206 (98%)	165 (81%)	37 (18%)	1 (0%)	29	66
28	RF	200/210 (95%)	186 (93%)	14 (7%)	0	100	100
28	YF	200/210 (95%)	186 (93%)	14 (7%)	0	100	100
29	RG	179/182 (98%)	152 (85%)	26 (14%)	1 (1%)	25	63
29	YG	179/182 (98%)	152 (85%)	26 (14%)	1 (1%)	25	63
30	RH	172/180 (96%)	149 (87%)	19 (11%)	4 (2%)	6	32

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
30	YH	172/180 (96%)	149 (87%)	19 (11%)	4 (2%)	6 32
31	RI	144/148 (97%)	126 (88%)	16 (11%)	2 (1%)	11 44
31	YI	144/148 (97%)	126 (88%)	16 (11%)	2 (1%)	11 44
32	RN	136/140 (97%)	124 (91%)	11 (8%)	1 (1%)	22 60
32	YN	136/140 (97%)	124 (91%)	11 (8%)	1 (1%)	22 60
33	RO	120/122 (98%)	115 (96%)	5 (4%)	0	100 100
33	YO	120/122 (98%)	115 (96%)	5 (4%)	0	100 100
34	RP	148/150 (99%)	122 (82%)	25 (17%)	1 (1%)	22 60
34	YP	145/150 (97%)	115 (79%)	29 (20%)	1 (1%)	22 60
35	RQ	139/141 (99%)	117 (84%)	21 (15%)	1 (1%)	22 60
35	YQ	139/141 (99%)	117 (84%)	21 (15%)	1 (1%)	22 60
36	RR	115/118 (98%)	107 (93%)	8 (7%)	0	100 100
36	YR	115/118 (98%)	107 (93%)	7 (6%)	1 (1%)	17 54
37	RS	109/112 (97%)	91 (84%)	17 (16%)	1 (1%)	17 54
37	YS	109/112 (97%)	91 (84%)	17 (16%)	1 (1%)	17 54
38	RT	135/146 (92%)	120 (89%)	13 (10%)	2 (2%)	10 43
38	YT	135/146 (92%)	120 (89%)	13 (10%)	2 (2%)	10 43
39	RU	115/118 (98%)	107 (93%)	8 (7%)	0	100 100
39	YU	115/118 (98%)	107 (93%)	8 (7%)	0	100 100
40	RV	99/101 (98%)	84 (85%)	14 (14%)	1 (1%)	15 52
40	YV	99/101 (98%)	84 (85%)	14 (14%)	1 (1%)	15 52
41	RW	111/113 (98%)	105 (95%)	5 (4%)	1 (1%)	17 54
41	YW	111/113 (98%)	105 (95%)	5 (4%)	1 (1%)	17 54
42	RX	90/96 (94%)	87 (97%)	3 (3%)	0	100 100
42	YX	90/96 (94%)	86 (96%)	4 (4%)	0	100 100
43	RY	105/110 (96%)	98 (93%)	7 (7%)	0	100 100
43	YY	105/110 (96%)	98 (93%)	7 (7%)	0	100 100
44	RZ	181/206 (88%)	148 (82%)	30 (17%)	3 (2%)	9 40
44	YZ	181/206 (88%)	148 (82%)	30 (17%)	3 (2%)	9 40
45	R0	79/85 (93%)	76 (96%)	3 (4%)	0	100 100
45	Y0	73/85 (86%)	69 (94%)	4 (6%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
46	R1	95/98 (97%)	84 (88%)	11 (12%)	0	100	100
46	Y1	91/98 (93%)	80 (88%)	11 (12%)	0	100	100
47	R2	67/72 (93%)	62 (92%)	4 (6%)	1 (2%)	10	43
47	Y2	67/72 (93%)	62 (92%)	4 (6%)	1 (2%)	10	43
48	R3	57/60 (95%)	56 (98%)	1 (2%)	0	100	100
48	Y3	57/60 (95%)	56 (98%)	1 (2%)	0	100	100
49	R4	67/71 (94%)	55 (82%)	11 (16%)	1 (2%)	10	43
49	Y4	67/71 (94%)	55 (82%)	11 (16%)	1 (2%)	10	43
50	R5	57/60 (95%)	55 (96%)	2 (4%)	0	100	100
50	Y5	57/60 (95%)	55 (96%)	2 (4%)	0	100	100
51	R6	51/54 (94%)	49 (96%)	2 (4%)	0	100	100
51	Y6	51/54 (94%)	49 (96%)	2 (4%)	0	100	100
52	R7	45/49 (92%)	45 (100%)	0	0	100	100
52	Y7	46/49 (94%)	45 (98%)	1 (2%)	0	100	100
53	R8	62/65 (95%)	49 (79%)	11 (18%)	2 (3%)	4	23
53	Y8	62/65 (95%)	49 (79%)	11 (18%)	2 (3%)	4	23
54	R9	35/37 (95%)	35 (100%)	0	0	100	100
54	Y9	35/37 (95%)	35 (100%)	0	0	100	100
All	All	11452/12128 (94%)	10380 (91%)	1015 (9%)	57 (0%)	29	66

5 of 57 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
27	RE	18	ASP
31	RI	15	VAL
38	RT	124	ASP
44	RZ	53	ILE
12	XL	105	TYR

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	QB	203/220 (92%)	202 (100%)	1 (0%)	88 95
2	XB	204/220 (93%)	200 (98%)	4 (2%)	55 79
3	QC	159/188 (85%)	159 (100%)	0	100 100
3	XC	159/188 (85%)	159 (100%)	0	100 100
4	QD	180/181 (99%)	180 (100%)	0	100 100
4	XD	180/181 (99%)	180 (100%)	0	100 100
5	QE	116/123 (94%)	115 (99%)	1 (1%)	78 91
5	XE	116/123 (94%)	115 (99%)	1 (1%)	78 91
6	QF	90/90 (100%)	90 (100%)	0	100 100
6	XF	90/90 (100%)	90 (100%)	0	100 100
7	QG	126/127 (99%)	125 (99%)	1 (1%)	81 92
7	XG	126/127 (99%)	125 (99%)	1 (1%)	81 92
8	QH	118/119 (99%)	118 (100%)	0	100 100
8	XH	118/119 (99%)	118 (100%)	0	100 100
9	QI	98/99 (99%)	96 (98%)	2 (2%)	55 79
9	XI	97/99 (98%)	97 (100%)	0	100 100
10	QJ	89/92 (97%)	89 (100%)	0	100 100
10	XJ	86/92 (94%)	86 (100%)	0	100 100
11	QK	90/99 (91%)	90 (100%)	0	100 100
11	XK	88/99 (89%)	88 (100%)	0	100 100
12	QL	104/109 (95%)	104 (100%)	0	100 100
12	XL	103/109 (94%)	103 (100%)	0	100 100
13	QM	96/101 (95%)	96 (100%)	0	100 100
13	XM	95/101 (94%)	95 (100%)	0	100 100
14	QN	49/50 (98%)	46 (94%)	3 (6%)	18 51
14	XN	49/50 (98%)	46 (94%)	3 (6%)	18 51
15	QO	79/80 (99%)	79 (100%)	0	100 100
15	XO	79/80 (99%)	79 (100%)	0	100 100
16	QP	72/74 (97%)	71 (99%)	1 (1%)	67 85
16	XP	72/74 (97%)	71 (99%)	1 (1%)	67 85
17	QQ	95/97 (98%)	95 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	XQ	95/97 (98%)	95 (100%)	0	100	100
18	QR	61/77 (79%)	61 (100%)	0	100	100
18	XR	61/77 (79%)	61 (100%)	0	100	100
19	QS	72/80 (90%)	72 (100%)	0	100	100
19	XS	73/80 (91%)	73 (100%)	0	100	100
20	QT	76/82 (93%)	76 (100%)	0	100	100
20	XT	76/82 (93%)	76 (100%)	0	100	100
21	QU	20/22 (91%)	20 (100%)	0	100	100
21	XU	20/22 (91%)	20 (100%)	0	100	100
26	RD	214/218 (98%)	211 (99%)	3 (1%)	67	85
26	YD	214/218 (98%)	211 (99%)	3 (1%)	67	85
27	RE	165/166 (99%)	165 (100%)	0	100	100
27	YE	165/166 (99%)	165 (100%)	0	100	100
28	RF	161/166 (97%)	159 (99%)	2 (1%)	71	87
28	YF	161/166 (97%)	159 (99%)	2 (1%)	71	87
29	RG	155/156 (99%)	154 (99%)	1 (1%)	86	94
29	YG	155/156 (99%)	154 (99%)	1 (1%)	86	94
30	RH	145/148 (98%)	141 (97%)	4 (3%)	43	73
30	YH	145/148 (98%)	141 (97%)	4 (3%)	43	73
31	RI	122/124 (98%)	122 (100%)	0	100	100
31	YI	122/124 (98%)	122 (100%)	0	100	100
32	RN	117/119 (98%)	116 (99%)	1 (1%)	78	91
32	YN	117/119 (98%)	116 (99%)	1 (1%)	78	91
33	RO	100/100 (100%)	99 (99%)	1 (1%)	76	89
33	YO	100/100 (100%)	99 (99%)	1 (1%)	76	89
34	RP	116/116 (100%)	116 (100%)	0	100	100
34	YP	114/116 (98%)	112 (98%)	2 (2%)	59	81
35	RQ	111/111 (100%)	111 (100%)	0	100	100
35	YQ	111/111 (100%)	111 (100%)	0	100	100
36	RR	100/101 (99%)	99 (99%)	1 (1%)	76	89
36	YR	100/101 (99%)	100 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
37	RS	87/88 (99%)	86 (99%)	1 (1%)	73 88
37	YS	87/88 (99%)	86 (99%)	1 (1%)	73 88
38	RT	120/127 (94%)	119 (99%)	1 (1%)	81 92
38	YT	120/127 (94%)	119 (99%)	1 (1%)	81 92
39	RU	93/94 (99%)	92 (99%)	1 (1%)	73 88
39	YU	93/94 (99%)	92 (99%)	1 (1%)	73 88
40	RV	82/82 (100%)	82 (100%)	0	100 100
40	YV	82/82 (100%)	82 (100%)	0	100 100
41	RW	92/92 (100%)	90 (98%)	2 (2%)	52 78
41	YW	92/92 (100%)	90 (98%)	2 (2%)	52 78
42	RX	74/78 (95%)	73 (99%)	1 (1%)	67 85
42	YX	74/78 (95%)	73 (99%)	1 (1%)	67 85
43	RY	88/91 (97%)	88 (100%)	0	100 100
43	YY	88/91 (97%)	88 (100%)	0	100 100
44	RZ	162/179 (90%)	161 (99%)	1 (1%)	86 94
44	YZ	162/179 (90%)	161 (99%)	1 (1%)	86 94
45	R0	65/67 (97%)	64 (98%)	1 (2%)	65 85
45	Y0	61/67 (91%)	60 (98%)	1 (2%)	62 83
46	R1	82/83 (99%)	82 (100%)	0	100 100
46	Y1	78/83 (94%)	78 (100%)	0	100 100
47	R2	64/67 (96%)	64 (100%)	0	100 100
47	Y2	64/67 (96%)	64 (100%)	0	100 100
48	R3	51/52 (98%)	50 (98%)	1 (2%)	55 79
48	Y3	51/52 (98%)	50 (98%)	1 (2%)	55 79
49	R4	62/63 (98%)	60 (97%)	2 (3%)	39 70
49	Y4	62/63 (98%)	60 (97%)	2 (3%)	39 70
50	R5	51/52 (98%)	51 (100%)	0	100 100
50	Y5	51/52 (98%)	51 (100%)	0	100 100
51	R6	51/52 (98%)	51 (100%)	0	100 100
51	Y6	51/52 (98%)	51 (100%)	0	100 100
52	R7	40/42 (95%)	40 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
52	Y7	41/42 (98%)	41 (100%)	0	100 100
53	R8	54/55 (98%)	54 (100%)	0	100 100
53	Y8	54/55 (98%)	54 (100%)	0	100 100
54	R9	34/34 (100%)	34 (100%)	0	100 100
54	Y9	34/34 (100%)	34 (100%)	0	100 100
All	All	9687/10066 (96%)	9619 (99%)	68 (1%)	84 93

5 of 68 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
37	YS	3	ARG
39	YU	57	PHE
48	Y3	30	ARG
39	RU	57	PHE
38	RT	38	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 41 such sidechains are listed below:

Mol	Chain	Res	Type
28	YF	40	GLN
39	YU	94	ASN
30	YH	74	ASN
35	YQ	123	HIS
47	Y2	46	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	QA	1496/1508 (99%)	280 (18%)	35 (2%)
1	XA	1498/1508 (99%)	281 (18%)	31 (2%)
22	QV	76/77 (98%)	14 (18%)	2 (2%)
22	XV	76/77 (98%)	14 (18%)	2 (2%)
23	QX	11/25 (44%)	5 (45%)	1 (9%)
23	XX	10/25 (40%)	6 (60%)	0
24	RA	2879/2915 (98%)	577 (20%)	38 (1%)
24	YA	2880/2915 (98%)	573 (19%)	40 (1%)
25	RB	119/122 (97%)	22 (18%)	2 (1%)
25	YB	119/122 (97%)	22 (18%)	2 (1%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
All	All	9164/9294 (98%)	1794 (19%)	153 (1%)

5 of 1794 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	QA	6	G
1	QA	9	G
1	QA	22	G
1	QA	32	A
1	QA	39	G

5 of 153 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
24	YA	271(B)	G
24	YA	1992	G
24	YA	503	A
24	YA	1130	U
24	YA	2867	G

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)

Of 1358 ligands modelled in this entry, 1356 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
56	SF4	XD	301	4	0,12,12	-	-	-		
56	SF4	QD	301	4	0,12,12	-	-	-		

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
56	SF4	XD	301	4	-	-	0/6/5/5
56	SF4	QD	301	4	-	-	0/6/5/5

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS failed to run properly - this section is therefore empty.

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

EDS failed to run properly - this section is therefore empty.

6.3 Carbohydrates

EDS failed to run properly - this section is therefore empty.

6.4 Ligands

EDS failed to run properly - this section is therefore empty.

6.5 Other polymers

EDS failed to run properly - this section is therefore empty.