



wwPDB X-ray Structure Validation Summary Report

Nov 6, 2023 – 06:24 PM EST

PDB ID : 6ORD
Title : Crystal structure of tRNA^{Ala}(GGC) U32-A38 bound to cognate 70S A site
Authors : Nguyen, H.A.; Sunita, S.; Dunham, C.M.
Deposited on : 2019-04-30
Resolution : 3.10 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)
Xtrriage (Phenix) : 1.13
EDS : **FAILED**
buster-report : 1.1.7 (2018)
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) : 2.36

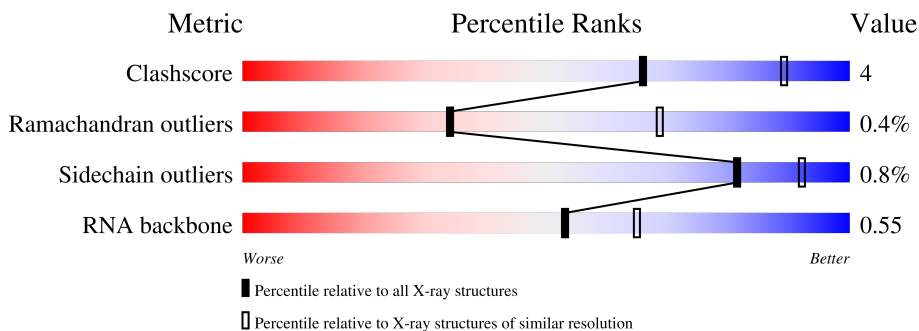
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 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	1184 (3.10-3.10)
Ramachandran outliers	138981	1141 (3.10-3.10)
Sidechain outliers	138945	1141 (3.10-3.10)
RNA backbone	3102	1116 (3.40-2.80)


























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 $\leq 5\%$.

Note EDS failed to run properly.

Mol	Chain	Length	Quality of chain
1	QA	1522	
1	XA	1522	
2	QB	256	
2	XB	256	
3	QC	239	
3	XC	239	









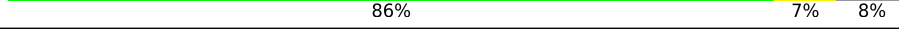

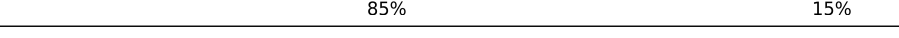
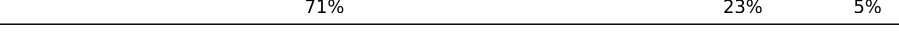

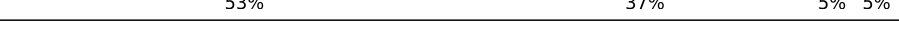


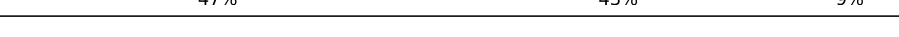

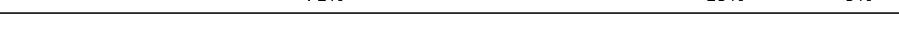






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Mol	Chain	Length	Quality of chain
4	QD	209	 80% 18%
4	XD	209	 84% 16%
5	QE	162	 76% 15% 9%
5	XE	162	 78% 14% 9%
6	QF	101	 87% 12%
6	XF	101	 77% 20%
7	QG	156	 81% 17%
7	XG	156	 91% 8%
8	QH	138	 80% 19%
8	XH	138	 84% 15%
9	QI	128	 74% 23%
9	XI	128	 73% 26%
10	QJ	105	 78% 14% 8%
10	XJ	105	 74% 17% 9%
11	QK	129	 74% 14% 12%
11	XK	129	 76% 12% 12%
12	QL	132	 77% 12% 8%
12	XL	132	 75% 16% 8%
13	QM	126	 75% 15% 8%
13	XM	126	 67% 22% 10%
14	QN	61	 85% 13%
14	XN	61	 84% 15%
15	QO	89	 93% 6%
15	XO	89	 92% 7%
16	QP	88	 78% 13% 7%









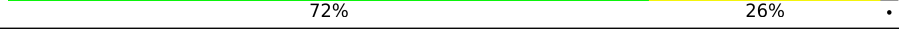

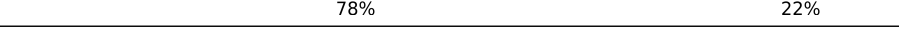
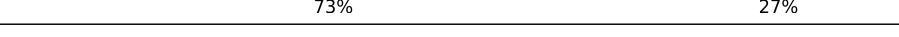

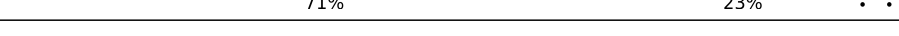


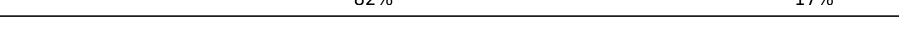

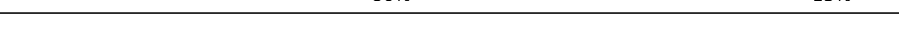






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Mol	Chain	Length	Quality of chain
16	XP	88	 72% 18% 7%
17	QQ	105	 81% 13% 6%
17	XQ	105	 78% 16% 6%
18	QR	88	 70% 7% 23%
18	XR	88	 64% 14% 23%
19	QS	93	 80% 9% 11%
19	XS	93	 76% 13% 11%
20	QT	106	 79% 11% 9%
20	XT	106	 86% 7% 8%
21	QU	27	 81% 15%
21	XU	27	 85% 15%
22	QV	77	 71% 23% 5%
22	XV	77	 77% 18% 5%
23	QX	19	 53% 37% 5% 5%
23	XX	19	 42% 47% 5% 5%
24	QY	76	 54% 36% 11%
24	XY	76	 47% 43% 9%
25	R0	85	 76% 13% 9%
25	Y0	85	 71% 19% 9%
26	R1	98	 86% 13%
26	Y1	98	 92% 7%
27	R2	72	 79% 18%
27	Y2	72	 85% 12%
28	R3	60	 92% 7%
28	Y3	60	 80% 18%

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Mol	Chain	Length	Quality of chain
29	R4	71	 77% 20% .
29	Y4	71	 68% 24%
30	R5	60	 85% 13% .
30	Y5	60	 85% 13% .
31	R6	54	 89% 9% .
31	Y6	54	 85% 13% .
32	R7	49	 86% 12% .
32	Y7	49	 84% 14% .
33	R8	65	 72% 26% .
33	Y8	65	 74% 25% .
34	R9	37	 78% 22%
34	Y9	37	 73% 27%
35	RA	2915	 71% 23% . .
35	YA	2915	 71% 23% . .
36	RB	122	 86% 10% . .
36	YB	122	 81% 16% . .
37	RD	276	 82% 17%
37	YD	276	 82% 18%
38	RE	206	 86% 13% .
38	YE	206	 82% 17% .
39	RF	210	 76% 20% .
39	YF	210	 78% 18% .
40	RG	182	 87% 12% . .
40	YG	182	 80% 19% . .
41	RH	180	 86% 10% . .





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Mol	Chain	Length	Quality of chain
41	YH	180	84% 12% . .
42	RI	148	94% 5% .
42	YI	148	93% 6% .
43	RN	140	84% 15% .
43	YN	140	91% 9%
44	RO	122	80% 20%
44	YO	122	79% 21%
45	RP	150	81% 18% .
45	YP	150	79% 20% .
46	RQ	141	82% 18%
46	YQ	141	87% 13%
47	RR	118	92% 8%
47	YR	118	89% 11%
48	RS	112	84% 13% . .
48	YS	112	88% 9% . .
49	RT	146	73% 16% . 10%
49	YT	146	75% 14% . 10%
50	RU	118	85% 12% . . .
50	YU	118	88% 8% . . .
51	RV	101	79% 18% .
51	YV	101	94% 5% .
52	RW	113	88% 11% .
52	YW	113	88% 12% .
53	RX	96	85% 14% .
53	YX	96	91% 8% .

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Mol	Chain	Length	Quality of chain
54	RY	110	 86% 11% •
54	YY	110	 79% 17% ••
55	RZ	206	 74% 12% 14%
55	YZ	206	 74% 11% • 14%

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 293819 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
			Total	C	N	O	P			
1	QA	1500	Total 32246	C 14358	N 5975	O 10413	P 1500	0	0	0
1	XA	1504	Total 32331	C 14396	N 5990	O 10441	P 1504	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	QB	231	Total 1842	C 1175	N 330	O 332	S 5	0	0	0
2	XB	231	Total 1825	C 1167	N 326	O 327	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	QC	206	Total 1558	C 979	N 305	O 273	S 1	0	0	0
3	XC	206	Total 1542	C 968	N 300	O 273	S 1	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	QD	208	Total 1665	C 1043	N 329	O 286	S 7	0	0	0
4	XD	208	Total 1668	C 1047	N 330	O 284	S 7	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	QE	148	Total	C	N	O	S	0	0	0
			1133	716	214	199	4			
5	XE	148	Total	C	N	O	S	0	0	0
			1133	716	214	199	4			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	QF	100	Total	C	N	O	S	0	0	0
			814	516	144	151	3			
6	XF	100	Total	C	N	O	S	0	0	0
			816	516	146	151	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
			1235	769	244	216	6			
7	XG	155	Total	C	N	O	S	0	0	0
			1229	766	241	216	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
			1098	694	210	192	2			
8	XH	137	Total	C	N	O	S	0	0	0
			1088	689	206	191	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
			986	625	193	168			
9	XI	126	Total	C	N	O	0	0	0
			966	613	186	167			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
10	QJ	97	Total	C	N	O	0	0	0
			719	446	142	131			

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
10	XJ	96	710	442	137	131	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	QK	114	834	520	156	155	3	0	0	0
11	XK	114	833	519	156	155	3	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	QL	122	932	586	185	159	2	0	0	0
12	XL	122	932	586	185	159	2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	QM	116	914	564	189	159	2	0	0	0
13	XM	114	895	550	186	157	2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	QN	60	492	312	104	72	4	0	0	0
14	XN	60	492	312	104	72	4	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	QO	88	728	456	144	126	2	0	0	0
15	XO	88	728	456	144	126	2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	QP	82	Total	C	N	O	S	0	0	0
			681	433	134	113	1			
16	XP	82	Total	C	N	O	S	0	0	0
			677	430	133	113	1			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	QQ	99	Total	C	N	O	S	0	0	0
			823	528	151	142	2			
17	XQ	99	Total	C	N	O	S	0	0	0
			823	528	151	142	2			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	QR	68	Total	C	N	O	0	0	0
			555	355	108	92			
18	XR	68	Total	C	N	O	0	0	0
			555	355	108	92			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	QS	83	Total	C	N	O	S	0	0	0
			648	415	120	111	2			
19	XS	83	Total	C	N	O	S	0	0	0
			645	410	118	115	2			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	QT	96	Total	C	N	O	S	0	0	0
			732	449	157	124	2			
20	XT	98	Total	C	N	O	S	0	0	0
			733	451	154	126	2			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
21	QU	23	Total	C	N	O	0	0	0
			199	122	48	29			
21	XU	23	Total	C	N	O	0	0	0
			199	122	48	29			

- Molecule 22 is a RNA chain called P-site tRNAfMet.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	QV	77	Total	C	N	O	P	0	0	0
			1640	732	297	535	76			
22	XV	77	Total	C	N	O	P	0	0	0
			1640	732	297	535	76			

- Molecule 23 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	QX	18	Total	C	N	O	P	0	0	0
			394	176	80	120	18			
23	XX	18	Total	C	N	O	P	0	0	0
			394	176	80	120	18			

- Molecule 24 is a RNA chain called A-site tRNAAla(GGC) U32-A38.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	QY	76	Total	C	N	O	P	0	0	0
			1625	724	293	532	76			
24	XY	76	Total	C	N	O	P	0	0	0
			1625	724	293	532	76			

- Molecule 25 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
25	R0	77	Total	C	N	O	S	0	0	0
			608	375	129	103	1			
25	Y0	77	Total	C	N	O	S	0	0	0
			608	375	129	103	1			

- Molecule 26 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
26	R1	97	Total	C	N	O	S	0	0	0
			754	475	148	130	1			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
26	Y1	97	759	478	149	131	1	0	0	0

- Molecule 27 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
27	R2	70	588	365	118	103	2	0	0	0
27	Y2	70	592	368	119	103	2	0	0	0

- Molecule 28 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
			Total	C	N	O				
28	R3	59	469	298	90	81		0	0	0
28	Y3	59	464	296	90	78		0	0	0

- Molecule 29 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
29	R4	69	546	346	96	99	5	0	0	0
29	Y4	69	536	342	98	91	5	0	0	0

- Molecule 30 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
30	R5	59	459	288	90	76	5	0	0	0
30	Y5	59	455	285	89	76	5	0	0	0

- Molecule 31 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
31	R6	53	453	281	91	77	4	0	0	0
31	Y6	53	449	279	91	75	4	0	0	0

- Molecule 32 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
32	R7	48	Total	C	N	O	S	0	0	0
			418	257	104	55	2			
32	Y7	48	Total	C	N	O	S	0	0	0
			418	257	104	55	2			

- Molecule 33 is a protein called 50S ribosomal protein L35.

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

- Molecule 34 is a protein called 50S ribosomal protein L36.

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

- Molecule 35 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
35	RA	2867	Total	C	N	O	P	0	0	0
			61758	27491	11552	19850	2865			
35	YA	2867	Total	C	N	O	P	0	0	0
			61758	27491	11552	19850	2865			

- Molecule 36 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
36	RB	120	Total	C	N	O	P	0	0	0
			2572	1145	476	832	119			
36	YB	120	Total	C	N	O	P	0	0	0
			2573	1146	476	832	119			

- Molecule 37 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
37	RD	275	Total	C	N	O	S	0	0	0
			2131	1346	422	360	3			
37	YD	275	Total	C	N	O	S	0	0	0
			2136	1349	423	361	3			

- Molecule 38 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
38	RE	204	Total	C	N	O	S	0	0	0
			1559	985	298	270	6			
38	YE	204	Total	C	N	O	S	0	0	0
			1559	985	298	270	6			

- Molecule 39 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	RF	202	Total	C	N	O	S	0	0	0
			1583	1009	297	275	2			
39	YF	202	Total	C	N	O	S	0	0	0
			1579	1007	296	274	2			

- Molecule 40 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
40	RG	181	Total	C	N	O	S	0	0	0
			1426	916	253	253	4			
40	YG	181	Total	C	N	O	S	0	0	0
			1424	912	259	249	4			

- Molecule 41 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
41	RH	174	Total	C	N	O	S	0	0	0
			1330	845	248	236	1			
41	YH	173	Total	C	N	O	S	0	0	0
			1324	842	247	234	1			

- Molecule 42 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
42	RI	147	Total	C	N	O	S	0	0	0
			1094	699	191	203	1			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
42	YI	146	Total	C	N	O	S	0	0	0
			1076	687	186	202	1			

- Molecule 43 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
43	RN	140	Total	C	N	O	S	0	0	0
			1121	722	208	187	4			
43	YN	140	Total	C	N	O	S	0	0	0
			1117	719	207	187	4			

- Molecule 44 is a protein called 50S ribosomal protein L14.

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

- Molecule 45 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
45	RP	149	Total	C	N	O	S	0	0	0
			1135	706	230	196	3			
45	YP	149	Total	C	N	O	S	0	0	0
			1135	706	230	196	3			

- Molecule 46 is a protein called 50S ribosomal protein L16.

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

- Molecule 47 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
47	RR	118	Total	C	N	O	S	0	0	0
			968	604	203	160	1			
47	YR	118	Total	C	N	O	S	0	0	0
			968	604	203	160	1			

- Molecule 48 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
48	RS	110	877	553	175	149	0	0	0
48	YS	110	870	549	173	148	0	0	0

- Molecule 49 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
49	RT	131	1091	680	225	185	1	0	0	0
49	YT	131	1083	675	224	183	1	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
50	RU	116	959	608	201	149	1	0	0	0
50	YU	116	959	608	201	149	1	0	0	0

- Molecule 51 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
51	RV	101	775	498	141	135	1	0	0	0
51	YV	101	771	495	140	135	1	0	0	0

- Molecule 52 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
52	RW	112	886	557	174	153	2	0	0	0
52	YW	112	886	557	174	153	2	0	0	0

- Molecule 53 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
53	RX	95	Total	C	N	O	S	0	0	0
			750	488	135	126	1			
53	YX	95	Total	C	N	O	S	0	0	0
			750	488	135	126	1			

- Molecule 54 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
54	RY	107	Total	C	N	O	S	0	0	0
			810	520	153	131	6			
54	YY	107	Total	C	N	O	S	0	0	0
			810	519	153	132	6			

- Molecule 55 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
55	RZ	178	Total	C	N	O	S	0	0	0
			1406	898	253	253	2			
55	YZ	177	Total	C	N	O	S	0	0	0
			1381	885	246	248	2			

- Molecule 56 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
56	QA	221	Total	Mg	0	0
			221	221		
56	QB	1	Total	Mg	0	0
			1	1		
56	QD	4	Total	Mg	0	0
			4	4		
56	QE	4	Total	Mg	0	0
			4	4		
56	QF	2	Total	Mg	0	0
			2	2		
56	QG	2	Total	Mg	0	0
			2	2		
56	QH	2	Total	Mg	0	0
			2	2		
56	QI	1	Total	Mg	0	0
			1	1		
56	QK	1	Total	Mg	0	0
			1	1		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
56	QL	3	Total 3	Mg 3	0	0
56	QN	1	Total 1	Mg 1	0	0
56	QO	2	Total 2	Mg 2	0	0
56	QP	1	Total 1	Mg 1	0	0
56	QT	1	Total 1	Mg 1	0	0
56	QV	5	Total 5	Mg 5	0	0
56	R0	3	Total 3	Mg 3	0	0
56	R1	1	Total 1	Mg 1	0	0
56	R3	3	Total 3	Mg 3	0	0
56	R5	2	Total 2	Mg 2	0	0
56	R6	1	Total 1	Mg 1	0	0
56	R7	3	Total 3	Mg 3	0	0
56	R9	1	Total 1	Mg 1	0	0
56	RA	709	Total 709	Mg 709	0	0
56	RB	17	Total 17	Mg 17	0	0
56	RD	8	Total 8	Mg 8	0	0
56	RE	4	Total 4	Mg 4	0	0
56	RF	4	Total 4	Mg 4	0	0
56	RG	4	Total 4	Mg 4	0	0
56	RH	2	Total 2	Mg 2	0	0
56	RN	2	Total 2	Mg 2	0	0

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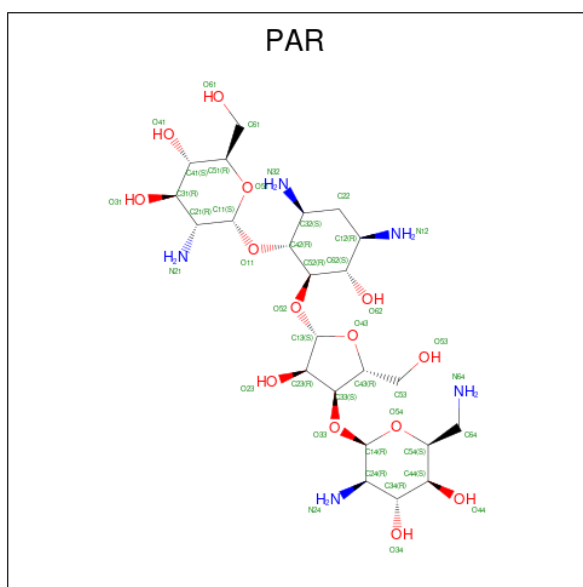
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	RO	1	Total Mg 1 1	0	0
56	RP	3	Total Mg 3 3	0	0
56	RQ	4	Total Mg 4 4	0	0
56	RR	2	Total Mg 2 2	0	0
56	RT	4	Total Mg 4 4	0	0
56	RU	2	Total Mg 2 2	0	0
56	RV	3	Total Mg 3 3	0	0
56	RW	1	Total Mg 1 1	0	0
56	RZ	1	Total Mg 1 1	0	0
56	XA	193	Total Mg 193 193	0	0
56	XE	2	Total Mg 2 2	0	0
56	XF	2	Total Mg 2 2	0	0
56	XJ	1	Total Mg 1 1	0	0
56	XL	2	Total Mg 2 2	0	0
56	XR	1	Total Mg 1 1	0	0
56	XT	1	Total Mg 1 1	0	0
56	XV	3	Total Mg 3 3	0	0
56	XY	1	Total Mg 1 1	0	0
56	Y0	1	Total Mg 1 1	0	0
56	Y1	2	Total Mg 2 2	0	0
56	Y3	1	Total Mg 1 1	0	0

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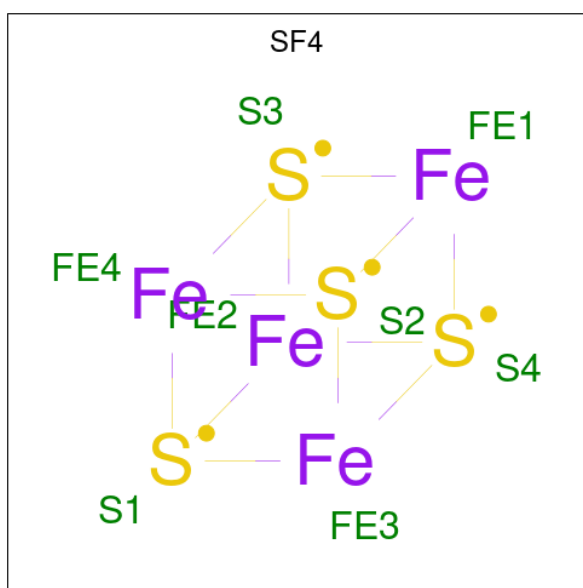
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
56	Y5	1	Total 1	Mg 1	0	0
56	Y6	1	Total 1	Mg 1	0	0
56	Y7	2	Total 2	Mg 2	0	0
56	Y8	1	Total 1	Mg 1	0	0
56	YA	707	Total 707	Mg 707	0	0
56	YB	20	Total 20	Mg 20	0	0
56	YD	7	Total 7	Mg 7	0	0
56	YE	5	Total 5	Mg 5	0	0
56	YF	3	Total 3	Mg 3	0	0
56	YG	3	Total 3	Mg 3	0	0
56	YI	1	Total 1	Mg 1	0	0
56	YN	1	Total 1	Mg 1	0	0
56	YO	1	Total 1	Mg 1	0	0
56	YP	2	Total 2	Mg 2	0	0
56	YQ	2	Total 2	Mg 2	0	0
56	YR	2	Total 2	Mg 2	0	0
56	YT	3	Total 3	Mg 3	0	0
56	YV	1	Total 1	Mg 1	0	0
56	YW	2	Total 2	Mg 2	0	0

- Molecule 57 is PAROMOMYCIN (three-letter code: PAR) (formula: C₂₃H₄₅N₅O₁₄).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
57	QA	1	42	23	5	14	0	0
57	XA	1	42	23	5	14	0	0

- Molecule 58 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄).



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

- Molecule 59 is ZINC ION (three-letter code: ZN) (formula: Zn).

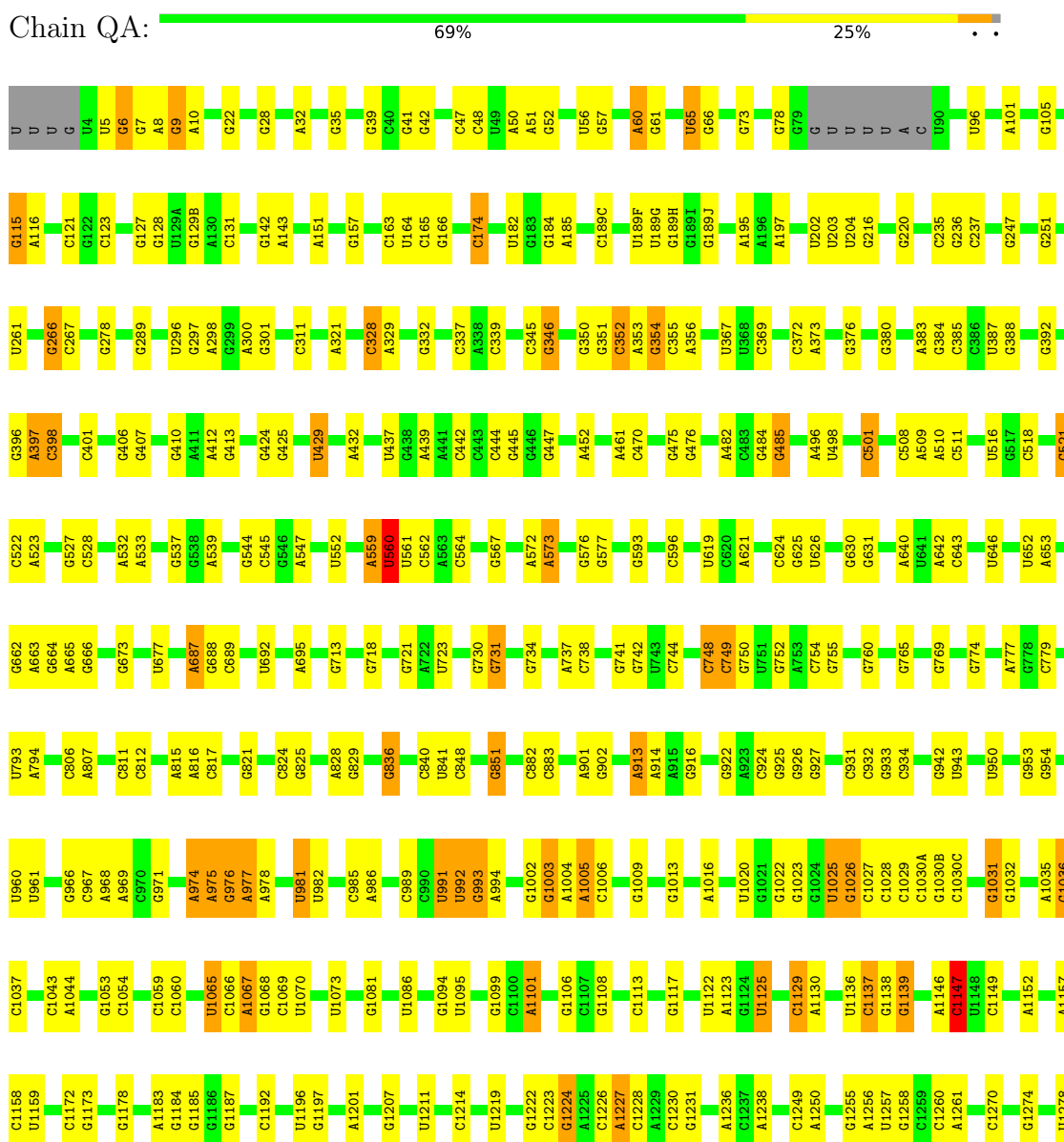
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
59	QN	1	Total 1	Zn 1	0	0
59	R4	1	Total 1	Zn 1	0	0
59	R5	1	Total 1	Zn 1	0	0
59	R6	1	Total 1	Zn 1	0	0
59	R9	1	Total 1	Zn 1	0	0
59	RY	1	Total 1	Zn 1	0	0
59	XN	1	Total 1	Zn 1	0	0
59	Y4	1	Total 1	Zn 1	0	0
59	Y5	1	Total 1	Zn 1	0	0
59	Y6	1	Total 1	Zn 1	0	0
59	Y9	1	Total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

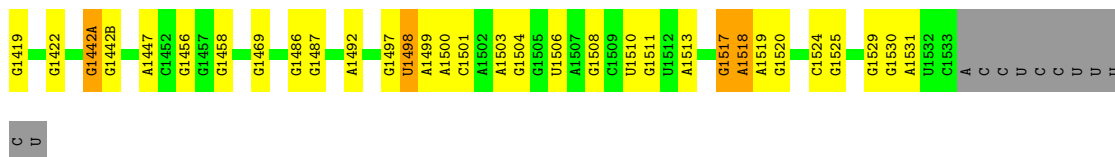
3 Residue-property plots [i](#)

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.

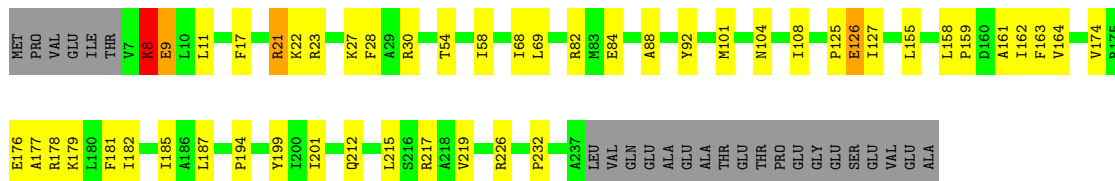
Note EDS failed to run properly.

- Molecule 1: 16S rRNA

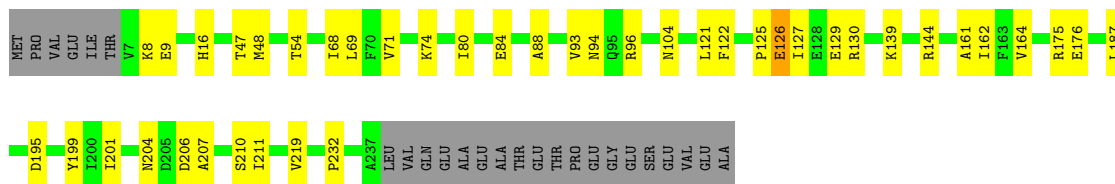
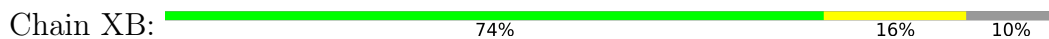




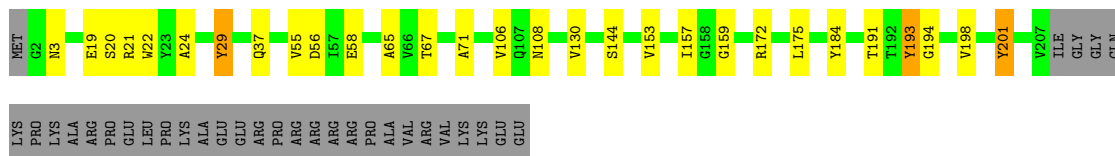
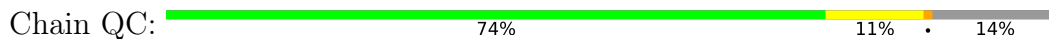
• Molecule 2: 30S ribosomal protein S2



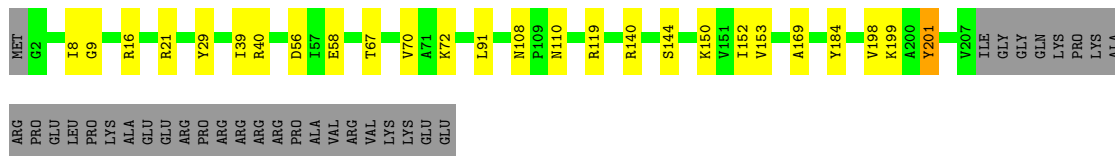
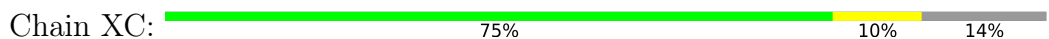
• Molecule 2: 30S ribosomal protein S2



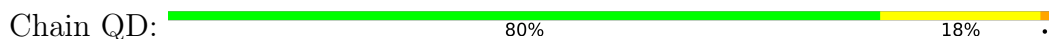
• Molecule 3: 30S ribosomal protein S3

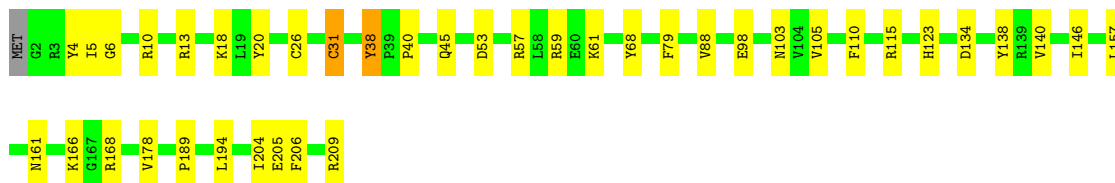


• Molecule 3: 30S ribosomal protein S3



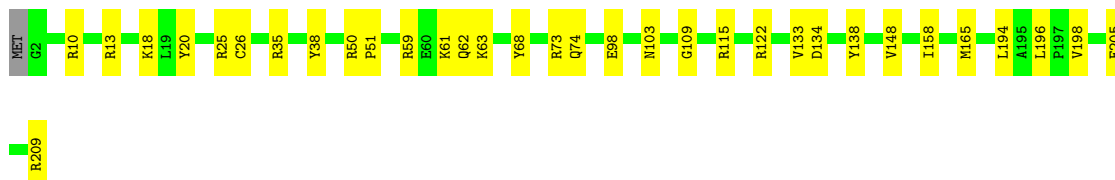
• Molecule 4: 30S ribosomal protein S4





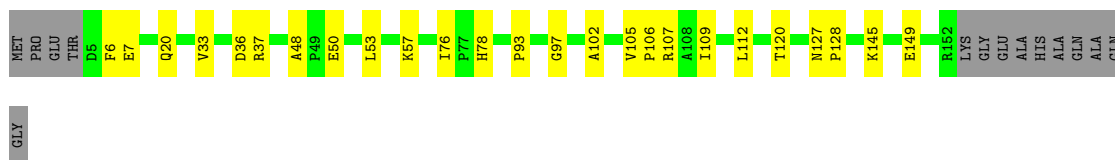
- Molecule 4: 30S ribosomal protein S4

Chain XD: 84% 16%



- Molecule 5: 30S ribosomal protein S5

Chain QE: 76% 15% 9%



- Molecule 5: 30S ribosomal protein S5

Chain XE: 78% 14% 9%



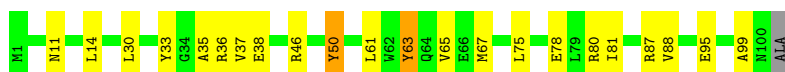
- Molecule 6: 30S ribosomal protein S6

Chain QF: 87% 12%




- Molecule 6: 30S ribosomal protein S6

Chain XF: 77% 20% 3%



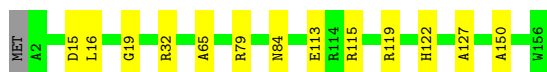
- Molecule 7: 30S ribosomal protein S7

Chain QG:  81% 17% ..




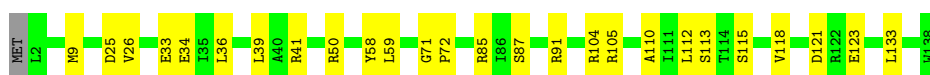
- Molecule 7: 30S ribosomal protein S7

Chain XG:  91% 8% .




- Molecule 8: 30S ribosomal protein S8

Chain QH:  80% 19% .



- Molecule 8: 30S ribosomal protein S8

Chain XH:  84% 15% .



- Molecule 9: 30S ribosomal protein S9

Chain QI:  74% 23% ..




- Molecule 9: 30S ribosomal protein S9

Chain XI:  73% 26% .



- Molecule 10: 30S ribosomal protein S10

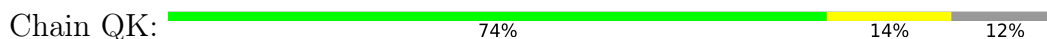
Chain QJ:  78% 14% 8%



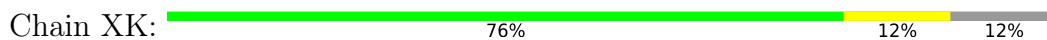
- Molecule 10: 30S ribosomal protein S10



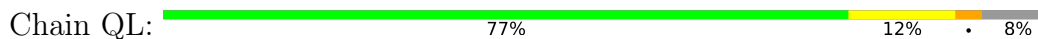
- Molecule 11: 30S ribosomal protein S11



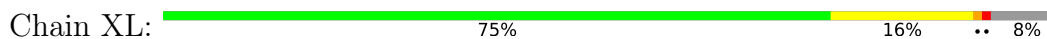
- Molecule 11: 30S ribosomal protein S11



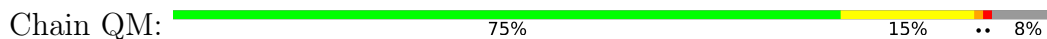
- Molecule 12: 30S ribosomal protein S12



- Molecule 12: 30S ribosomal protein S12

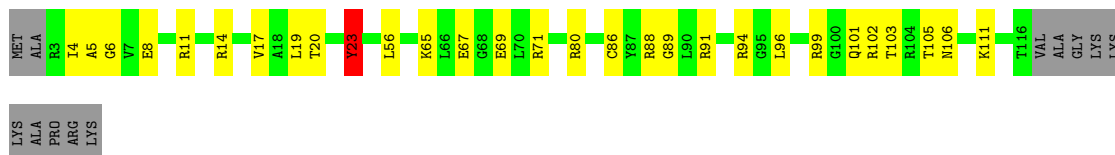


- Molecule 13: 30S ribosomal protein S13



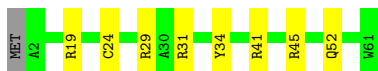
- Molecule 13: 30S ribosomal protein S13





- Molecule 14: 30S ribosomal protein S14 type Z

Chain QN: 85% 13%



- Molecule 14: 30S ribosomal protein S14 type Z

Chain XN: 84% 15%



- Molecule 15: 30S ribosomal protein S15

Chain QO: 93% 6%



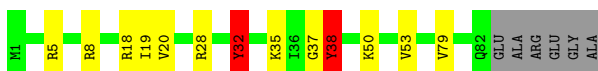
- Molecule 15: 30S ribosomal protein S15

Chain XO: 92% 7%



- Molecule 16: 30S ribosomal protein S16

Chain QP: 78% 13% 7%




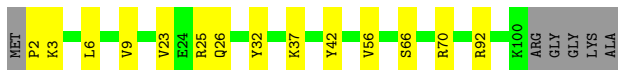
- Molecule 16: 30S ribosomal protein S16

Chain XP: 72% 18% 7%




- Molecule 17: 30S ribosomal protein S17

Chain QQ:  81% 13% 6%



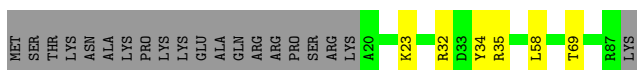
- Molecule 17: 30S ribosomal protein S17

Chain XQ:  78% 16% 6%



- Molecule 18: 30S ribosomal protein S18

Chain QR:  70% 7% 23%




- Molecule 18: 30S ribosomal protein S18

Chain XR:  64% 14% 23%




- Molecule 19: 30S ribosomal protein S19

Chain QS:  80% 9% 11%




- Molecule 19: 30S ribosomal protein S19

Chain XS:  76% 13% 11%




- Molecule 20: 30S ribosomal protein S20

Chain QT:  79% 11% 9%




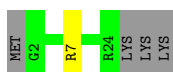
- Molecule 20: 30S ribosomal protein S20

Chain XT:  86% 7% 8%




- Molecule 21: 30S ribosomal protein Thx

Chain QU:  81% 0% 15%



- Molecule 21: 30S ribosomal protein Thx

Chain XU:  85% 0% 15%




- Molecule 22: P-site tRNA^{fMet}

Chain QV:  71% 23% 5%



- Molecule 22: P-site tRNA^{fMet}

Chain XV:  77% 18% 0% 0%



- Molecule 23: mRNA

Chain QX:  53% 37% 5% 5%



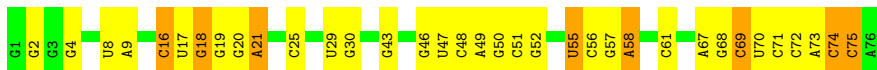
- Molecule 23: mRNA

Chain XX:  42% 47% 5% 5%



- Molecule 24: A-site tRNA^{Ala}(GGC) U32-A38

Chain QY:  54% 36% 11%




- Molecule 24: A-site tRNAAla(GGC) U32-A38

Chain XY:  47% 43% 9%



- Molecule 25: 50S ribosomal protein L27

Chain R0:  76% 13% 9%




- Molecule 25: 50S ribosomal protein L27

Chain Y0:  71% 19% 9%



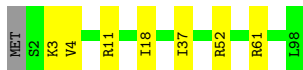
- Molecule 26: 50S ribosomal protein L28

Chain R1:  86% 13% 9%




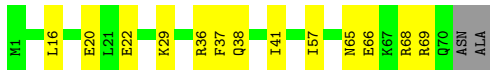
- Molecule 26: 50S ribosomal protein L28

Chain Y1:  92% 7% 9%




- Molecule 27: 50S ribosomal protein L29

Chain R2:  79% 18% 9%



- Molecule 27: 50S ribosomal protein L29

Chain Y2:  85% 12%




- Molecule 28: 50S ribosomal protein L30

Chain R3:  92% 7%




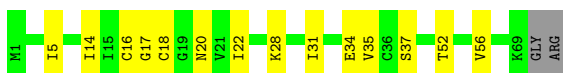
- Molecule 28: 50S ribosomal protein L30

Chain Y3:  80% 18%



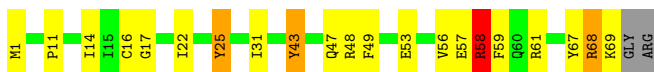
- Molecule 29: 50S ribosomal protein L31

Chain R4:  77% 20%




- Molecule 29: 50S ribosomal protein L31

Chain Y4:  68% 24%




- Molecule 30: 50S ribosomal protein L32

Chain R5:  85% 13%



- Molecule 30: 50S ribosomal protein L32

Chain Y5:  85% 13%




- Molecule 31: 50S ribosomal protein L33

Chain R6:  89% 9%




- Molecule 31: 50S ribosomal protein L33

Chain Y6:  85% 13%




- Molecule 32: 50S ribosomal protein L34

Chain R7:  86% 12%



- Molecule 32: 50S ribosomal protein L34

Chain Y7:  84% 14%




- Molecule 33: 50S ribosomal protein L35

Chain R8:  72% 26%




- Molecule 33: 50S ribosomal protein L35

Chain Y8:  74% 25%



- Molecule 34: 50S ribosomal protein L36


Chain R9:  78% 22%



- Molecule 34: 50S ribosomal protein L36


A2225	A2118	C1979	G1816	G1583	U1394	A1220	C1092	A1009	G892	G775	G649	G549	G396
U2233	A2119	G1984	G1824	U	A1395	G1223	C1092	U1012	C893	G776	A652C	U557	U405
G2238	G2120	G1992	C1827	A	G1400	A1226	A1095	C1013	C894	A782	A652D	C560	G411
G2239	U2122	U1993	G1828	C1536	G1401	A1236	U1097	G1022	U895	A783	G652F	C563	A412
U2249	G2126	C1996	A1829	G1538	U1415	G1236	A1098	U1023	C897	A784	G	C564	C413
G2250	A2127	G1997	C1830	U1540	G1416	G1243	G1099	G1024	G906	G785	C	C565	C414
G2251	C2128	C1999	G1835	G1541	A1418	G1243	C1102	U1025	U907	G786	C	C566	A415
A2269	C2129	G2010	A1847	A1542	G1419	G1250	A1103	U1026	C	A787	C	C567	C420
C2275	U2130	U2011	A1848	C1546	U1420	A1253	G1105	U1033	A	A788	C	C574	A428
A2278	U2132	G2012	A1853	C1547	G1422	A1256	G1106	U1034	C	A789	C	A575	A428
G2279	G2133	U2016	A1858	A1558	G1423	G1256	G1107	U1035	G	G792	C	C579	C444
C2283	A2134	A2019	G1877	A1566	G1424	A1265	U1108	C1038	C	A793	C	C582	C451
A2287	A2135	A2020	A1878	A1567	U1425	G1266	G1109	C1041	G	G794	C	C585	G452
A2288	C2136	C1879	C1879	G1568	A1427	G1271	G1110	C1045	C	C795	C	C600	C453
U2291	U2144	C1882	C1882	A1569	C1437	A1272	A1111	A1046	C	A802	C	C601	A454
C2292	C2145	A1889	A1900	A1572	A1445A	U1273	G1112	G1047	C	G805	C	C602	C455
A2298	C2146	A1890	G1889	U1578	G1450A	G1277	G1113	C1052	C	U807	C	C603	A456
G2302	G2147	A1905	A1900	A1579	G1450A	A1278	G1114	A1054	C	C812	C	C605	G458
A2305	G2148	U1911	C1905	A1580	U1453	U1288	G1125	G1055	C	C815	C	U607	G463
C2306	C2151	C1914	C1905	A1581	G1455	A1288	G1125	G1056	C	C816	C	U613	A466
G2307	C2155	U1915	C1905	A1582	G1455	U1300	G1125	G1057	C	C817	C	U614	A466
G2308	A2158	U1916	U1915	A1583	G1459	A1301	G1125	A1057	C	C825	C	U614A	G467
A2309	C2161	C1917	C1914	G1583	A1460	G1309	G1125	U1060	C	U826	C	U614C	G468
C2312	C2164	C1920	U1915	G1584	G1466	U1309	G1125	U	C	U827	C	U614D	G469
C2313	G2165	G1929	U1915	A1603	G1467	U1314	G1125	C1062	C	U828	C	U615	G481
G2315	G2166	G1930	U1917	A1609	C1467	C1314	G1125	G1064	C	U829	C	U616	C618
G2318	U2167	G1936	C1917	C1611	G1470	C1315	G1125	U1065	C	U830	C	U618	C618
G2319	G2168	C1942	C1920	C1611	A1471	A1317	G1125	U1066	C	G831	C	U619	A483
A2320	A2171	U1936	A1936	G1622	G1471	A1317	G1125	U1067	C	C838	C	U620	C484
G2321	U2172	A1938	A1938	C1640	G1482	C1327	G1125	A1067	C	U838	C	U621	C485
A2322	A2173	U1939	U1939	C1644	G1482	U1352	G1125	U1069	C	U847	C	U622	A505
G2325	C2179	C1942	C1942	C1644	A1490	A1353	G1125	G1071	C	U854	C	U624	G508
A2328	G2182	U1955	U1955	C1647	C1493	A1353	G1125	C1072	C	G855	C	U625	C509
G2329	G2189	U1955	U1955	C1648	A1494	A1359	G1125	A1073	C	C856	C	U627	C510
G2334	A2186	C1962	C1962	C1651	A1508	A1360	G1125	G1074	C	C857	C	U630	U511
A2335	G2206	U1963	U1963	C1652	C1509A	A1360	G1125	G1075	C	U858	C	U631	G512
A2336	G2207	C1967	C1967	C1656	A1509B	A1365	G1125	C1076	C	U859	C	U632	A526
C2342	A2208	A1970	A1970	C1657	G1520	A1368	G1125	U1077	C	U860	C	U633	G530
C2343	U2218	A1971	A1971	C1657	G1525	G1368	G1125	U1078	C	U869	C	U634	C551
A646	G645	A764	A764	C1085	C1006	C1087	C1006	U1081	C	A637	C	U635	A532
G765	A646	G765	G765	C1088	C1006	C1088	C1006	U1082	C	A638	C	U636	G533
				C1089	C1006	C1089	C1006	U1083	C	A639	C	U637	U534
				C1090	C1006	C1090	C1006	U1084	C	A640	C	U638	C535
				C1091	C1006	C1091	C1006	A1085	C	A641	C	U639	G545
				C1092	C1006	C1092	C1006	A1086	C	A642	C	U640	C
				C1093	C1006	C1093	C1006	A1087	C	A643	C	U641	C
				C1094	C1006	C1094	C1006	A1088	C	A644	C	U642	C
				C1095	C1006	C1095	C1006	A1089	C	A645	C	U643	C
				C1096	C1006	C1096	C1006	A1090	C	A646	C	U644	C
				C1097	C1006	C1097	C1006	A1091	C	A647	C	U645	C
				C1098	C1006	C1098	C1006	A1092	C	A648	C	U646	C
				C1099	C1006	C1099	C1006	A1093	C	A649	C	U647	C
				C1100	C1006	C1100	C1006	A1094	C	A650	C	U648	C
				C1101	C1006	C1101	C1006	A1095	C	A651	C	U649	C
				C1102	C1006	C1102	C1006	A1096	C	A652	C	U650	C
				C1103	C1006	C1103	C1006	A1097	C	A653	C	U651	C
				C1104	C1006	C1104	C1006	A1098	C	A654	C	U652	C
				C1105	C1006	C1105	C1006	A1099	C	A655	C	U653	C
				C1106	C1006	C1106	C1006	A1100	C	A656	C	U654	C
				C1107	C1006	C1107	C1006	A1101	C	A657	C	U655	C
				C1108	C1006	C1108	C1006	A1102	C	A658	C	U656	C
				C1109	C1006	C1109	C1006	A1103	C	A659	C	U657	C
				C1110	C1006	C1110	C1006	A1104	C	A660	C	U658	C
				C1111	C1006	C1111	C1006	A1105	C	A661	C	U659	C
				C1112	C1006	C1112	C1006	A1106	C	A662	C	U660	C
				C1113	C1006	C1113	C1006	A1107	C	A663	C	U661	C
				C1114	C1006	C1114	C1006	A1108	C	A664	C	U662	C
				C1115	C1006	C1115	C1006	A1109	C	A665	C	U663	C
				C1116	C1006	C1116	C1006	A1110	C	A666	C	U664	C
				C1117	C1006	C1117	C1006	A1111	C	A667	C	U665	C
				C1118	C1006	C1118	C1006	A1112	C	A668	C	U666	C
				C1119	C1006	C1119	C1006	A1113	C	A669	C	U667	C
				C1120	C1006	C1120	C1006	A1114	C	A670	C	U668	C
				C1121	C1006	C1121	C1006	A1115	C	A671	C	U669	C
				C1122	C1006	C1122	C1006	A1116	C	A672	C	U670	C
				C1123	C1006	C1123	C1006	A1117	C	A673	C	U671	C
				C1124	C1006	C1124	C1006	A1118	C	A674	C	U672	C
				C1125	C1006	C1125	C1006	A1119	C	A675	C	U673	C
				C1126	C1006	C1126	C1006	A1120	C	A676	C	U674	C
				C1127	C1006	C1127	C1006	A1121	C	A677	C	U675	C
				C1128	C1006	C1128	C1006	A1122	C	A678	C	U676	C
				C1129	C1006	C1129	C1006	A1123	C	A679	C	U677	C
				C1130	C1006	C1130	C1006	A1124	C	A680	C	U678	C
				C1131	C1006	C1131	C1006	A1125	C	A681	C	U679	C
				C1132	C1006	C1132	C1006	A1126	C	A682	C	U680	C
				C1133	C1006	C1133	C1006	A1127	C	A683	C	U681	C
				C1134	C1006	C1134	C1006	A1128	C	A684	C	U682	C
				C1135	C1006	C1135	C1006	A1129	C	A685	C	U683	C
				C1136	C1006	C1136	C1006	A1130	C	A686	C	U684	C
				C1137	C1006	C1137	C1006	A1131	C	A687	C	U685	C
				C1138	C1006	C1138	C1006	A1132	C	A688	C	U686	C
				C1139	C1006	C1139	C1006	A1133	C	A689	C	U687	C
				C1140	C1006	C1140	C1006	A1134	C	A690	C	U688	C
				C1141	C1006	C1141	C1006	A1135	C	A691	C	U689	C
				C1142	C1006	C1142	C1006	A1136	C	A692	C	U690	C
				C1143	C1006	C1143	C1006	A1137	C	A693	C	U691	C
				C1144	C1006	C1144	C1006	A1138	C	A694	C	U692	C
				C1145	C1006	C1145	C1006	A1139	C	A695	C	U693	C
				C1146	C1006	C1146	C1006	A1140	C	A696	C	U694	C
				C1147	C1006	C1147	C1006	A1141	C	A697	C	U695	C
				C1148	C1006	C1148	C1006	A1142	C	A698	C	U696	C
				C1149	C1006	C1149	C1006	A1143	C	A699	C	U697	C
				C1150	C1006	C1150	C1006	A1144	C	A700	C	U698	C
				C1151	C1006	C1151	C1006	A1145	C	A701	C	U699	C
				C1152	C1006	C1152	C1006	A1146	C	A702	C	U700	C
				C1153	C1006	C1153	C1006	A1147	C	A703	C	U701	C
				C1154	C1006	C1154	C1006	A1148	C	A704	C	U702	C
				C1155	C1006	C1155	C1006	A1149	C	A705	C	U703	C
				C1156	C1006	C1156	C1006	A1150	C	A706	C	U704	C
				C1157	C1006	C1157	C1006	A1151	C	A707	C	U705	C
				C1158	C1006	C1158	C1006	A1152	C	A708	C	U706	C
				C1159	C1006	C1159	C1006	A1153	C	A709	C	U707	C
				C1160	C1006	C1160	C1006	A1154	C	A710	C	U708	C
				C1161	C1006	C1161	C1006	A1155	C	A711	C	U709	C
				C									

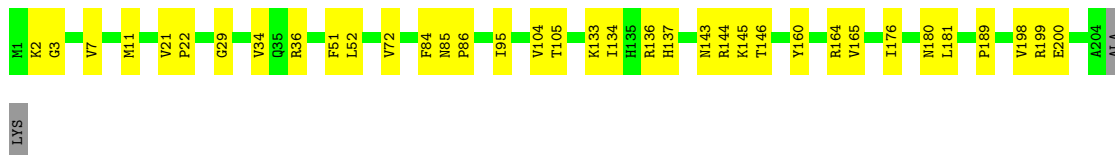
- Molecule 38: 50S ribosomal protein L3

Chain RE:  86% 13%




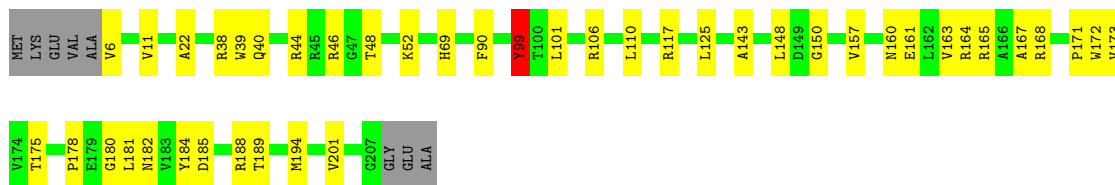
- Molecule 38: 50S ribosomal protein L3

Chain YE:  82% 17%




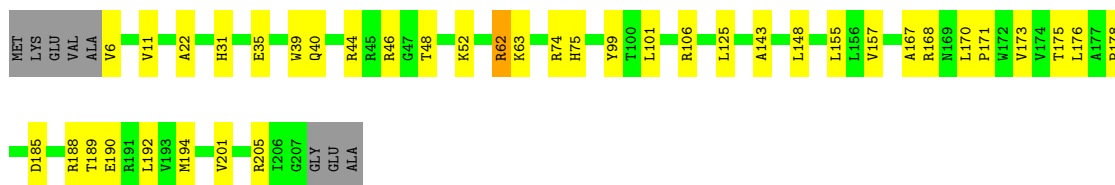
- Molecule 39: 50S ribosomal protein L4

Chain RF:  76% 20%




- Molecule 39: 50S ribosomal protein L4

Chain YF:  78% 18%




- Molecule 40: 50S ribosomal protein L5

Chain RG:  87% 12%



- Molecule 40: 50S ribosomal protein L5

Chain YG:  80% 19%





- Molecule 41: 50S ribosomal protein L6

Chain RH: 86% 10% ..



- Molecule 41: 50S ribosomal protein L6

Chain YH: 84% 12% ..



- Molecule 42: 50S ribosomal protein L9

Chain RI: 94% 5% ..



- Molecule 42: 50S ribosomal protein L9

Chain YI: 93% 6% ..



- Molecule 43: 50S ribosomal protein L13

Chain RN: 84% 15% ..



- Molecule 43: 50S ribosomal protein L13

Chain YN: 91% 9% ..

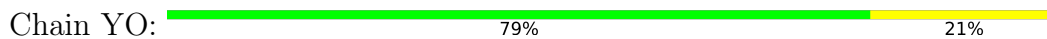


- Molecule 44: 50S ribosomal protein L14

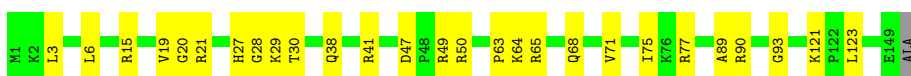
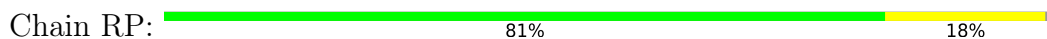
Chain RO: 80% 20% ..



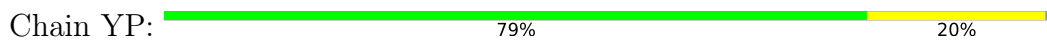
- Molecule 44: 50S ribosomal protein L14



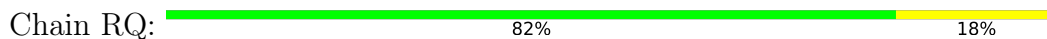
- Molecule 45: 50S ribosomal protein L15



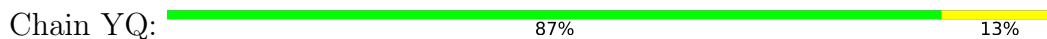
- Molecule 45: 50S ribosomal protein L15



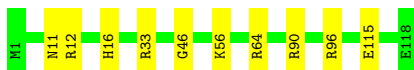
- Molecule 46: 50S ribosomal protein L16



- Molecule 46: 50S ribosomal protein L16



- Molecule 47: 50S ribosomal protein L17

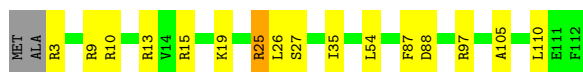
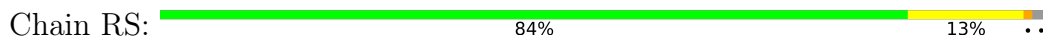


- Molecule 47: 50S ribosomal protein L17

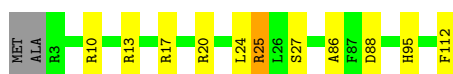
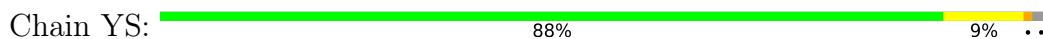




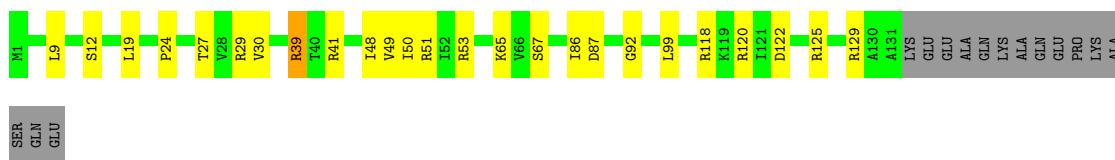
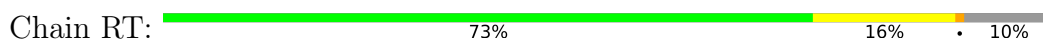
- Molecule 48: 50S ribosomal protein L18



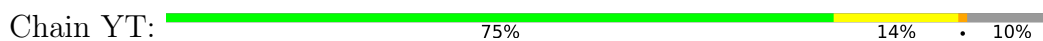
- Molecule 48: 50S ribosomal protein L18



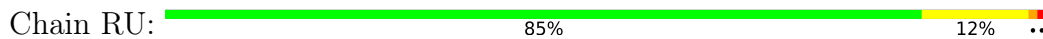
- Molecule 49: 50S ribosomal protein L19



- Molecule 49: 50S ribosomal protein L19




- Molecule 50: 50S ribosomal protein L20

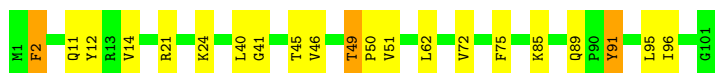


- Molecule 50: 50S ribosomal protein L20



- Molecule 51: 50S ribosomal protein L21

Chain RV:  79% 18%




- Molecule 51: 50S ribosomal protein L21

Chain YV:  94% 5%




- Molecule 52: 50S ribosomal protein L22

Chain RW:  88% 11%




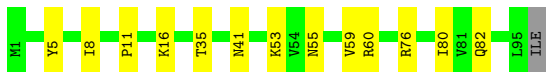
- Molecule 52: 50S ribosomal protein L22

Chain YW:  88% 12%



- Molecule 53: 50S ribosomal protein L23

Chain RX:  85% 14%




- Molecule 53: 50S ribosomal protein L23

Chain YX:  91% 8%




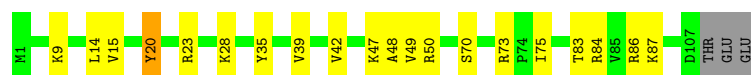
- Molecule 54: 50S ribosomal protein L24

Chain RY:  86% 11%




- Molecule 54: 50S ribosomal protein L24

Chain YY:  79% 17%




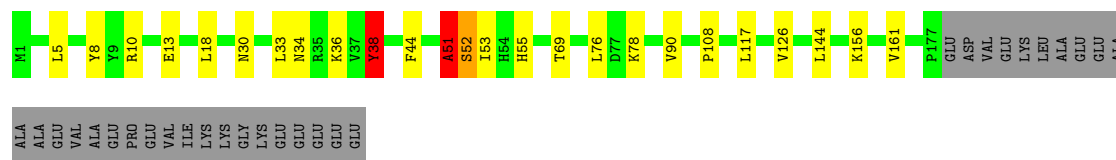
- Molecule 55: 50S ribosomal protein L25

Chain RZ:  74% 12% 14%



- Molecule 55: 50S ribosomal protein L25

Chain YZ:  74% 11% 14%



4 Data and refinement statistics

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	209.38Å 445.83Å 616.03Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 3.10	Depositor
% Data completeness (in resolution range)	95.2 (50.00-3.10)	Depositor
R_{merge}	0.20	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.06 (at 3.01Å)	Xtrriage
Refinement program	PHENIX 1.15_3459	Depositor
R, R_{free}	0.231 , 0.268	Depositor
Wilson B-factor (Å ²)	68.0	Xtrriage
Anisotropy	0.273	Xtrriage
L-test for twinning ²	$\langle L \rangle = 0.39$, $\langle L^2 \rangle = 0.22$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	293819	wwPDB-VP
Average B, all atoms (Å ²)	91.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.98% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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

Bond lengths and bond angles in the following residue types are not validated in this section: 0TD, 2MA, PSU, MG, MA6, 4OC, 5MC, M2G, ZN, OMG, PAR, 5MU, 2MG, G7M, UR3, OMU, SF4, OMC

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	0.71	0/35795	0.97	64/55864 (0.1%)
1	XA	0.76	3/35890 (0.0%)	0.99	84/56012 (0.1%)
2	QB	0.45	0/1876	0.78	3/2533 (0.1%)
2	XB	0.44	0/1860	0.75	2/2518 (0.1%)
3	QC	0.42	0/1582	0.65	2/2137 (0.1%)
3	XC	0.49	0/1566	0.70	2/2119 (0.1%)
4	QD	0.54	0/1695	0.71	1/2274 (0.0%)
4	XD	0.48	0/1698	0.66	1/2277 (0.0%)
5	QE	0.40	0/1149	0.63	0/1548
5	XE	0.42	0/1149	0.63	0/1548
6	QF	0.53	0/827	0.69	2/1120 (0.2%)
6	XF	0.54	0/829	0.67	1/1123 (0.1%)
7	QG	0.44	0/1254	0.61	0/1683
7	XG	0.49	0/1248	0.63	0/1676
8	QH	0.45	0/1118	0.66	0/1506
8	XH	0.45	0/1108	0.64	0/1494
9	QI	0.42	1/1005 (0.1%)	0.70	1/1351 (0.1%)
9	XI	0.41	0/985	0.67	0/1329
10	QJ	0.42	0/732	0.72	0/993
10	XJ	0.45	0/723	0.65	0/984
11	QK	0.42	0/849	0.60	0/1150
11	XK	0.41	0/848	0.60	1/1149 (0.1%)
12	QL	0.55	0/937	0.81	3/1260 (0.2%)
12	XL	0.58	1/937 (0.1%)	0.84	3/1260 (0.2%)
13	QM	0.44	0/924	0.76	2/1242 (0.2%)
13	XM	0.47	0/905	0.76	1/1217 (0.1%)
14	QN	0.44	0/501	0.66	0/664
14	XN	0.46	0/501	0.66	0/664
15	QO	0.45	0/739	0.64	0/985
15	XO	0.43	0/739	0.62	0/985
16	QP	0.48	0/697	0.77	2/939 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
16	XP	0.49	0/693	0.76	1/935 (0.1%)
17	QQ	0.48	0/836	0.62	0/1117
17	XQ	0.47	0/836	0.66	1/1117 (0.1%)
18	QR	0.42	0/560	0.59	0/746
18	XR	0.48	0/560	0.60	0/746
19	QS	0.44	0/663	0.67	0/895
19	XS	0.41	0/660	0.68	0/893
20	QT	0.37	0/734	0.60	0/969
20	XT	0.37	0/736	0.56	0/976
21	QU	0.38	0/203	0.58	0/266
21	XU	0.39	0/203	0.59	0/266
22	QV	0.64	0/1832	1.00	6/2855 (0.2%)
22	XV	0.70	0/1832	1.01	6/2855 (0.2%)
23	QX	0.59	0/443	1.07	3/690 (0.4%)
23	XX	0.61	0/443	1.12	2/690 (0.3%)
24	QY	0.56	0/1816	1.07	8/2830 (0.3%)
24	XY	0.58	0/1816	1.08	11/2830 (0.4%)
25	R0	0.49	0/616	0.72	0/821
25	Y0	0.52	0/616	0.74	0/821
26	R1	0.47	0/761	0.61	0/1013
26	Y1	0.51	0/766	0.61	0/1018
27	R2	0.45	0/590	0.57	0/781
27	Y2	0.48	0/594	0.65	0/785
28	R3	0.45	0/474	0.64	0/635
28	Y3	0.51	0/469	0.63	0/630
29	R4	0.54	0/559	0.85	1/754 (0.1%)
29	Y4	0.54	0/549	0.94	5/741 (0.7%)
30	R5	0.59	1/473 (0.2%)	0.68	0/639
30	Y5	0.54	0/469	0.64	0/635
31	R6	0.55	0/460	0.67	0/613
31	Y6	0.57	0/456	0.65	0/608
32	R7	0.50	0/426	0.69	0/561
32	Y7	0.52	0/426	0.69	0/561
33	R8	0.47	0/525	0.58	0/691
33	Y8	0.50	0/525	0.59	0/691
34	R9	0.54	0/310	0.66	0/407
34	Y9	0.58	0/310	0.66	0/407
35	RA	0.83	0/68903	1.02	168/107552 (0.2%)
35	YA	0.92	0/68903	1.03	186/107552 (0.2%)
36	RB	0.71	0/2876	1.03	13/4486 (0.3%)
36	YB	0.84	0/2878	1.05	11/4490 (0.2%)
37	RD	0.54	0/2181	0.71	1/2940 (0.0%)
37	YD	0.57	0/2186	0.70	1/2944 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
38	RE	0.48	0/1592	0.67	0/2149
38	YE	0.53	0/1592	0.68	0/2149
39	RF	0.54	0/1618	0.68	1/2191 (0.0%)
39	YF	0.54	0/1614	0.66	0/2186
40	RG	0.47	0/1451	0.67	1/1961 (0.1%)
40	YG	0.47	0/1449	0.67	0/1957
41	RH	0.45	0/1356	0.65	1/1834 (0.1%)
41	YH	0.53	0/1350	0.61	0/1826
42	RI	0.43	0/1109	0.68	0/1512
42	YI	0.48	0/1091	0.63	1/1490 (0.1%)
43	RN	0.49	1/1148 (0.1%)	0.58	0/1547
43	YN	0.51	0/1144	0.61	0/1543
44	RO	0.51	0/943	0.66	0/1269
44	YO	0.55	0/943	0.65	0/1269
45	RP	0.47	0/1152	0.70	0/1533
45	YP	0.53	0/1152	0.70	0/1533
46	RQ	0.45	0/1143	0.65	0/1527
46	YQ	0.49	0/1143	0.66	1/1527 (0.1%)
47	RR	0.45	0/982	0.65	0/1312
47	YR	0.47	0/982	0.65	0/1312
48	RS	0.45	0/887	0.66	0/1180
48	YS	0.48	0/880	0.61	0/1172
49	RT	0.47	0/1105	0.65	0/1477
49	YT	0.48	0/1097	0.66	0/1468
50	RU	0.49	0/977	0.69	2/1301 (0.2%)
50	YU	0.54	0/977	0.71	3/1301 (0.2%)
51	RV	0.55	0/786	0.78	3/1053 (0.3%)
51	YV	0.54	0/782	0.69	0/1049
52	RW	0.47	0/897	0.59	0/1205
52	YW	0.51	0/897	0.59	0/1205
53	RX	0.49	0/764	0.63	0/1025
53	YX	0.49	0/764	0.64	0/1025
54	RY	0.46	0/823	0.66	0/1099
54	YY	0.53	0/823	0.67	0/1100
55	RZ	0.45	0/1438	0.76	1/1955 (0.1%)
55	YZ	0.50	0/1413	0.77	2/1924 (0.1%)
All	All	0.74	7/316097 (0.0%)	0.94	615/473222 (0.1%)

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	XA	1042	G	C5-C4	9.41	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	XA	1042	G	C6-N1	6.72	1.44	1.39
30	R5	59	GLU	CD-OE1	5.69	1.31	1.25
1	XA	1042	G	N9-C4	-5.68	1.33	1.38
9	QI	121	ARG	C-N	-5.32	1.21	1.34

The worst 5 of 615 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	XA	999	C	N1-C2-O2	15.66	128.30	118.90
1	XA	999	C	C5-C6-N1	13.88	127.94	121.00
1	XA	1042	G	C6-N1-C2	12.73	132.74	125.10
2	QB	232	PRO	C-N-CA	12.22	152.25	121.70
1	XA	1042	G	C5-C6-N1	-12.10	105.45	111.50

There are no chirality outliers.

There are no planarity outliers.

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	32246	0	16295	169	0
1	XA	32331	0	16337	177	0
2	QB	1842	0	1861	26	0
2	XB	1825	0	1828	22	0
3	QC	1558	0	1557	29	0
3	XC	1542	0	1517	16	0
4	QD	1665	0	1691	33	0
4	XD	1668	0	1707	26	0
5	QE	1133	0	1191	16	0
5	XE	1133	0	1191	14	0
6	QF	814	0	808	7	0
6	XF	816	0	808	19	0
7	QG	1235	0	1249	17	0
7	XG	1229	0	1238	8	0
8	QH	1098	0	1143	18	0
8	XH	1088	0	1126	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	QI	986	0	990	24	0
9	XI	966	0	953	24	0
10	QJ	719	0	672	10	0
10	XJ	710	0	661	13	0
11	QK	834	0	838	12	0
11	XK	833	0	836	11	0
12	QL	932	0	981	17	0
12	XL	932	0	981	11	0
13	QM	914	0	954	14	0
13	XM	895	0	920	22	0
14	QN	492	0	529	10	0
14	XN	492	0	529	10	0
15	QO	728	0	760	2	0
15	XO	728	0	760	3	0
16	QP	681	0	697	20	0
16	XP	677	0	686	22	0
17	QQ	823	0	891	10	0
17	XQ	823	0	891	10	0
18	QR	555	0	618	4	0
18	XR	555	0	618	11	0
19	QS	648	0	658	7	0
19	XS	645	0	635	15	0
20	QT	732	0	809	8	0
20	XT	733	0	795	8	0
21	QU	199	0	208	1	0
21	XU	199	0	208	0	0
22	QV	1640	0	837	5	0
22	XV	1640	0	837	5	0
23	QX	394	0	197	1	0
23	XX	394	0	197	1	0
24	QY	1625	0	822	5	0
24	XY	1625	0	822	5	0
25	R0	608	0	622	8	0
25	Y0	608	0	622	12	0
26	R1	754	0	823	10	0
26	Y1	759	0	837	5	0
27	R2	588	0	643	8	0
27	Y2	592	0	654	6	0
28	R3	469	0	518	2	0
28	Y3	464	0	514	8	0
29	R4	546	0	522	9	0
29	Y4	536	0	514	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	R5	459	0	476	8	0
30	Y5	455	0	465	6	0
31	R6	453	0	473	3	0
31	Y6	449	0	469	4	0
32	R7	418	0	466	5	0
32	Y7	418	0	466	4	0
33	R8	517	0	582	14	0
33	Y8	517	0	582	13	0
34	R9	307	0	335	5	0
34	Y9	307	0	335	7	0
35	RA	61758	0	31137	265	0
35	YA	61758	0	31138	256	0
36	RB	2572	0	1304	3	0
36	YB	2573	0	1306	6	0
37	RD	2131	0	2205	41	0
37	YD	2136	0	2217	43	0
38	RE	1559	0	1618	20	0
38	YE	1559	0	1618	33	0
39	RF	1583	0	1624	43	0
39	YF	1579	0	1618	27	0
40	RG	1426	0	1445	13	0
40	YG	1424	0	1441	22	0
41	RH	1330	0	1407	16	0
41	YH	1324	0	1402	14	0
42	RI	1094	0	1127	4	0
42	YI	1076	0	1094	4	0
43	RN	1121	0	1195	16	0
43	YN	1117	0	1184	8	0
44	RO	933	0	996	15	0
44	YO	933	0	996	18	0
45	RP	1135	0	1212	22	0
45	YP	1135	0	1212	24	0
46	RQ	1122	0	1179	19	0
46	YQ	1122	0	1179	14	0
47	RR	968	0	1033	8	0
47	YR	968	0	1033	10	0
48	RS	877	0	938	10	0
48	YS	870	0	923	8	0
49	RT	1091	0	1151	16	0
49	YT	1083	0	1136	15	0
50	RU	959	0	1019	15	0
50	YU	959	0	1019	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
51	RV	775	0	841	14	0
51	YV	771	0	830	8	0
52	RW	886	0	940	8	0
52	YW	886	0	940	9	0
53	RX	750	0	814	11	0
53	YX	750	0	814	6	0
54	RY	810	0	892	7	0
54	YY	810	0	887	14	0
55	RZ	1406	0	1418	17	0
55	YZ	1381	0	1386	15	0
56	QA	221	0	0	0	0
56	QB	1	0	0	0	0
56	QD	4	0	0	0	0
56	QE	4	0	0	0	0
56	QF	2	0	0	0	0
56	QG	2	0	0	0	0
56	QH	2	0	0	0	0
56	QI	1	0	0	0	0
56	QK	1	0	0	0	0
56	QL	3	0	0	0	0
56	QN	1	0	0	0	0
56	QO	2	0	0	0	0
56	QP	1	0	0	0	0
56	QT	1	0	0	0	0
56	QV	5	0	0	0	0
56	R0	3	0	0	0	0
56	R1	1	0	0	0	0
56	R3	3	0	0	0	0
56	R5	2	0	0	0	0
56	R6	1	0	0	0	0
56	R7	3	0	0	0	0
56	R9	1	0	0	0	0
56	RA	709	0	0	0	0
56	RB	17	0	0	0	0
56	RD	8	0	0	0	0
56	RE	4	0	0	0	0
56	RF	4	0	0	0	0
56	RG	4	0	0	0	0
56	RH	2	0	0	0	0
56	RN	2	0	0	0	0
56	RO	1	0	0	0	0
56	RP	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	RQ	4	0	0	0	0
56	RR	2	0	0	0	0
56	RT	4	0	0	0	0
56	RU	2	0	0	0	0
56	RV	3	0	0	0	0
56	RW	1	0	0	0	0
56	RZ	1	0	0	0	0
56	XA	193	0	0	0	0
56	XE	2	0	0	0	0
56	XF	2	0	0	0	0
56	XJ	1	0	0	0	0
56	XL	2	0	0	0	0
56	XR	1	0	0	0	0
56	XT	1	0	0	0	0
56	XV	3	0	0	0	0
56	XY	1	0	0	0	0
56	Y0	1	0	0	0	0
56	Y1	2	0	0	0	0
56	Y3	1	0	0	0	0
56	Y5	1	0	0	0	0
56	Y6	1	0	0	0	0
56	Y7	2	0	0	0	0
56	Y8	1	0	0	0	0
56	YA	707	0	0	0	0
56	YB	20	0	0	0	0
56	YD	7	0	0	0	0
56	YE	5	0	0	0	0
56	YF	3	0	0	0	0
56	YG	3	0	0	0	0
56	YI	1	0	0	0	0
56	YN	1	0	0	0	0
56	YO	1	0	0	0	0
56	YP	2	0	0	0	0
56	YQ	2	0	0	0	0
56	YR	2	0	0	0	0
56	YT	3	0	0	0	0
56	YV	1	0	0	0	0
56	YW	2	0	0	0	0
57	QA	42	0	45	1	0
57	XA	42	0	45	1	0
58	QD	8	0	0	0	0
58	XD	8	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
59	QN	1	0	0	0	0
59	R4	1	0	0	0	0
59	R5	1	0	0	0	0
59	R6	1	0	0	0	0
59	R9	1	0	0	0	0
59	RY	1	0	0	0	0
59	XN	1	0	0	0	0
59	Y4	1	0	0	0	0
59	Y5	1	0	0	0	0
59	Y6	1	0	0	0	0
59	Y9	1	0	0	0	0
59	YY	1	0	0	0	0
All	All	293819	0	196213	1738	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

The worst 5 of 1738 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)
55:RZ:8:TYR:HB2	55:RZ:38:TYR:CE1	1.78	1.17
16:QP:20:VAL:HG21	16:QP:32:TYR:HD2	1.09	1.13
55:RZ:8:TYR:HB2	55:RZ:38:TYR:CD1	1.90	1.07
35:RA:660:G:H5'	39:RF:99:TYR:CE2	1.94	1.03
16:QP:20:VAL:HG21	16:QP:32:TYR:CD2	1.94	1.02

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	229/256 (90%)	202 (88%)	19 (8%)	8 (4%)	3	20
2	XB	229/256 (90%)	204 (89%)	22 (10%)	3 (1%)	12	42
3	QC	204/239 (85%)	197 (97%)	7 (3%)	0	100	100
3	XC	204/239 (85%)	195 (96%)	9 (4%)	0	100	100
4	QD	206/209 (99%)	195 (95%)	10 (5%)	1 (0%)	29	64
4	XD	206/209 (99%)	199 (97%)	7 (3%)	0	100	100
5	QE	146/162 (90%)	140 (96%)	6 (4%)	0	100	100
5	XE	146/162 (90%)	141 (97%)	5 (3%)	0	100	100
6	QF	98/101 (97%)	98 (100%)	0	0	100	100
6	XF	98/101 (97%)	97 (99%)	1 (1%)	0	100	100
7	QG	153/156 (98%)	149 (97%)	4 (3%)	0	100	100
7	XG	153/156 (98%)	147 (96%)	6 (4%)	0	100	100
8	QH	135/138 (98%)	132 (98%)	3 (2%)	0	100	100
8	XH	135/138 (98%)	133 (98%)	2 (2%)	0	100	100
9	QI	125/128 (98%)	110 (88%)	15 (12%)	0	100	100
9	XI	124/128 (97%)	111 (90%)	13 (10%)	0	100	100
10	QJ	95/105 (90%)	81 (85%)	11 (12%)	3 (3%)	4	22
10	XJ	94/105 (90%)	84 (89%)	8 (8%)	2 (2%)	7	30
11	QK	112/129 (87%)	107 (96%)	5 (4%)	0	100	100
11	XK	112/129 (87%)	108 (96%)	4 (4%)	0	100	100
12	QL	119/132 (90%)	105 (88%)	12 (10%)	2 (2%)	9	36
12	XL	119/132 (90%)	109 (92%)	6 (5%)	4 (3%)	3	21
13	QM	114/126 (90%)	107 (94%)	4 (4%)	3 (3%)	5	26
13	XM	112/126 (89%)	106 (95%)	6 (5%)	0	100	100
14	QN	58/61 (95%)	57 (98%)	1 (2%)	0	100	100
14	XN	58/61 (95%)	57 (98%)	1 (2%)	0	100	100
15	QO	86/89 (97%)	82 (95%)	3 (4%)	1 (1%)	13	44
15	XO	86/89 (97%)	83 (96%)	3 (4%)	0	100	100
16	QP	80/88 (91%)	79 (99%)	1 (1%)	0	100	100
16	XP	80/88 (91%)	76 (95%)	4 (5%)	0	100	100
17	QQ	97/105 (92%)	90 (93%)	7 (7%)	0	100	100
17	XQ	97/105 (92%)	92 (95%)	5 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
18	QR	66/88 (75%)	66 (100%)	0	0	100	100
18	XR	66/88 (75%)	66 (100%)	0	0	100	100
19	QS	81/93 (87%)	78 (96%)	3 (4%)	0	100	100
19	XS	81/93 (87%)	77 (95%)	4 (5%)	0	100	100
20	QT	94/106 (89%)	91 (97%)	3 (3%)	0	100	100
20	XT	96/106 (91%)	92 (96%)	4 (4%)	0	100	100
21	QU	21/27 (78%)	20 (95%)	1 (5%)	0	100	100
21	XU	21/27 (78%)	20 (95%)	1 (5%)	0	100	100
25	R0	75/85 (88%)	74 (99%)	1 (1%)	0	100	100
25	Y0	75/85 (88%)	74 (99%)	1 (1%)	0	100	100
26	R1	95/98 (97%)	93 (98%)	2 (2%)	0	100	100
26	Y1	95/98 (97%)	94 (99%)	1 (1%)	0	100	100
27	R2	68/72 (94%)	68 (100%)	0	0	100	100
27	Y2	68/72 (94%)	68 (100%)	0	0	100	100
28	R3	57/60 (95%)	56 (98%)	1 (2%)	0	100	100
28	Y3	57/60 (95%)	56 (98%)	1 (2%)	0	100	100
29	R4	67/71 (94%)	59 (88%)	7 (10%)	1 (2%)	10	39
29	Y4	67/71 (94%)	54 (81%)	8 (12%)	5 (8%)	1	6
30	R5	57/60 (95%)	56 (98%)	1 (2%)	0	100	100
30	Y5	57/60 (95%)	56 (98%)	1 (2%)	0	100	100
31	R6	51/54 (94%)	49 (96%)	2 (4%)	0	100	100
31	Y6	51/54 (94%)	49 (96%)	2 (4%)	0	100	100
32	R7	46/49 (94%)	46 (100%)	0	0	100	100
32	Y7	46/49 (94%)	46 (100%)	0	0	100	100
33	R8	62/65 (95%)	61 (98%)	1 (2%)	0	100	100
33	Y8	62/65 (95%)	60 (97%)	2 (3%)	0	100	100
34	R9	35/37 (95%)	35 (100%)	0	0	100	100
34	Y9	35/37 (95%)	35 (100%)	0	0	100	100
37	RD	273/276 (99%)	263 (96%)	10 (4%)	0	100	100
37	YD	273/276 (99%)	264 (97%)	9 (3%)	0	100	100
38	RE	202/206 (98%)	195 (96%)	6 (3%)	1 (0%)	29	64

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	YE	202/206 (98%)	192 (95%)	9 (4%)	1 (0%)	29	64
39	RF	200/210 (95%)	196 (98%)	4 (2%)	0	100	100
39	YF	200/210 (95%)	198 (99%)	2 (1%)	0	100	100
40	RG	179/182 (98%)	163 (91%)	13 (7%)	3 (2%)	9	36
40	YG	179/182 (98%)	161 (90%)	16 (9%)	2 (1%)	14	46
41	RH	172/180 (96%)	166 (96%)	6 (4%)	0	100	100
41	YH	171/180 (95%)	165 (96%)	6 (4%)	0	100	100
42	RI	145/148 (98%)	134 (92%)	11 (8%)	0	100	100
42	YI	144/148 (97%)	140 (97%)	4 (3%)	0	100	100
43	RN	138/140 (99%)	133 (96%)	5 (4%)	0	100	100
43	YN	138/140 (99%)	133 (96%)	5 (4%)	0	100	100
44	RO	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
44	YO	120/122 (98%)	114 (95%)	6 (5%)	0	100	100
45	RP	147/150 (98%)	139 (95%)	8 (5%)	0	100	100
45	YP	147/150 (98%)	139 (95%)	8 (5%)	0	100	100
46	RQ	139/141 (99%)	134 (96%)	5 (4%)	0	100	100
46	YQ	139/141 (99%)	136 (98%)	3 (2%)	0	100	100
47	RR	116/118 (98%)	112 (97%)	4 (3%)	0	100	100
47	YR	116/118 (98%)	114 (98%)	2 (2%)	0	100	100
48	RS	108/112 (96%)	103 (95%)	5 (5%)	0	100	100
48	YS	108/112 (96%)	106 (98%)	2 (2%)	0	100	100
49	RT	129/146 (88%)	121 (94%)	8 (6%)	0	100	100
49	YT	129/146 (88%)	126 (98%)	3 (2%)	0	100	100
50	RU	114/118 (97%)	111 (97%)	3 (3%)	0	100	100
50	YU	114/118 (97%)	112 (98%)	2 (2%)	0	100	100
51	RV	99/101 (98%)	93 (94%)	5 (5%)	1 (1%)	15	49
51	YV	99/101 (98%)	91 (92%)	7 (7%)	1 (1%)	15	49
52	RW	110/113 (97%)	107 (97%)	3 (3%)	0	100	100
52	YW	110/113 (97%)	109 (99%)	1 (1%)	0	100	100
53	RX	93/96 (97%)	90 (97%)	3 (3%)	0	100	100
53	YX	93/96 (97%)	90 (97%)	3 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
54	RY	105/110 (96%)	102 (97%)	3 (3%)	0	100	100
54	YY	105/110 (96%)	98 (93%)	7 (7%)	0	100	100
55	RZ	176/206 (85%)	164 (93%)	11 (6%)	1 (1%)	25	59
55	YZ	175/206 (85%)	165 (94%)	8 (5%)	2 (1%)	14	46
All	All	11389/12128 (94%)	10866 (95%)	478 (4%)	45 (0%)	34	69

5 of 45 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	QB	17	PHE
2	QB	127	ILE
4	QD	5	ILE
10	QJ	32	ALA
10	QJ	79	ARG

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	191/220 (87%)	188 (98%)	3 (2%)	62	84
2	XB	187/220 (85%)	184 (98%)	3 (2%)	62	84
3	QC	144/188 (77%)	143 (99%)	1 (1%)	84	93
3	XC	140/188 (74%)	138 (99%)	2 (1%)	67	86
4	QD	171/181 (94%)	168 (98%)	3 (2%)	59	82
4	XD	172/181 (95%)	172 (100%)	0	100	100
5	QE	114/123 (93%)	113 (99%)	1 (1%)	78	91
5	XE	114/123 (93%)	113 (99%)	1 (1%)	78	91
6	QF	85/90 (94%)	85 (100%)	0	100	100
6	XF	85/90 (94%)	84 (99%)	1 (1%)	71	88
7	QG	120/127 (94%)	118 (98%)	2 (2%)	60	83
7	XG	119/127 (94%)	117 (98%)	2 (2%)	60	83

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	QH	116/119 (98%)	116 (100%)	0	100	100
8	XH	114/119 (96%)	113 (99%)	1 (1%)	78	91
9	QI	91/99 (92%)	91 (100%)	0	100	100
9	XI	88/99 (89%)	88 (100%)	0	100	100
10	QJ	68/92 (74%)	68 (100%)	0	100	100
10	XJ	68/92 (74%)	68 (100%)	0	100	100
11	QK	83/99 (84%)	83 (100%)	0	100	100
11	XK	83/99 (84%)	82 (99%)	1 (1%)	71	88
12	QL	96/108 (89%)	95 (99%)	1 (1%)	76	90
12	XL	96/108 (89%)	95 (99%)	1 (1%)	76	90
13	QM	90/101 (89%)	89 (99%)	1 (1%)	73	89
13	XM	87/101 (86%)	85 (98%)	2 (2%)	50	77
14	QN	49/50 (98%)	49 (100%)	0	100	100
14	XN	49/50 (98%)	49 (100%)	0	100	100
15	QO	78/80 (98%)	77 (99%)	1 (1%)	69	87
15	XO	78/80 (98%)	77 (99%)	1 (1%)	69	87
16	QP	69/74 (93%)	67 (97%)	2 (3%)	42	72
16	XP	68/74 (92%)	65 (96%)	3 (4%)	28	61
17	QQ	94/97 (97%)	94 (100%)	0	100	100
17	XQ	94/97 (97%)	94 (100%)	0	100	100
18	QR	59/77 (77%)	59 (100%)	0	100	100
18	XR	59/77 (77%)	59 (100%)	0	100	100
19	QS	68/80 (85%)	67 (98%)	1 (2%)	65	85
19	XS	67/80 (84%)	67 (100%)	0	100	100
20	QT	71/82 (87%)	71 (100%)	0	100	100
20	XT	70/82 (85%)	70 (100%)	0	100	100
21	QU	18/22 (82%)	18 (100%)	0	100	100
21	XU	18/22 (82%)	18 (100%)	0	100	100
25	R0	61/67 (91%)	59 (97%)	2 (3%)	38	69
25	Y0	61/67 (91%)	60 (98%)	1 (2%)	62	84
26	R1	79/83 (95%)	79 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
26	Y1	81/83 (98%)	81 (100%)	0	100	100
27	R2	65/67 (97%)	64 (98%)	1 (2%)	65	85
27	Y2	66/67 (98%)	65 (98%)	1 (2%)	65	85
28	R3	51/52 (98%)	51 (100%)	0	100	100
28	Y3	50/52 (96%)	49 (98%)	1 (2%)	55	80
29	R4	58/63 (92%)	58 (100%)	0	100	100
29	Y4	54/63 (86%)	52 (96%)	2 (4%)	34	66
30	R5	51/52 (98%)	51 (100%)	0	100	100
30	Y5	50/52 (96%)	49 (98%)	1 (2%)	55	80
31	R6	51/52 (98%)	51 (100%)	0	100	100
31	Y6	50/52 (96%)	49 (98%)	1 (2%)	55	80
32	R7	41/42 (98%)	41 (100%)	0	100	100
32	Y7	41/42 (98%)	41 (100%)	0	100	100
33	R8	54/55 (98%)	54 (100%)	0	100	100
33	Y8	54/55 (98%)	54 (100%)	0	100	100
34	R9	34/34 (100%)	34 (100%)	0	100	100
34	Y9	34/34 (100%)	34 (100%)	0	100	100
37	RD	214/218 (98%)	213 (100%)	1 (0%)	88	94
37	YD	215/218 (99%)	214 (100%)	1 (0%)	88	94
38	RE	164/166 (99%)	164 (100%)	0	100	100
38	YE	164/166 (99%)	164 (100%)	0	100	100
39	RF	160/166 (96%)	158 (99%)	2 (1%)	69	87
39	YF	159/166 (96%)	157 (99%)	2 (1%)	69	87
40	RG	144/156 (92%)	143 (99%)	1 (1%)	84	93
40	YG	142/156 (91%)	142 (100%)	0	100	100
41	RH	144/148 (97%)	144 (100%)	0	100	100
41	YH	143/148 (97%)	142 (99%)	1 (1%)	84	93
42	RI	111/124 (90%)	111 (100%)	0	100	100
42	YI	108/124 (87%)	107 (99%)	1 (1%)	78	91
43	RN	119/119 (100%)	117 (98%)	2 (2%)	60	83
43	YN	118/119 (99%)	118 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
44	RO	100/100 (100%)	99 (99%)	1 (1%)	76	90
44	YO	100/100 (100%)	99 (99%)	1 (1%)	76	90
45	RP	115/116 (99%)	115 (100%)	0	100	100
45	YP	115/116 (99%)	115 (100%)	0	100	100
46	RQ	111/111 (100%)	111 (100%)	0	100	100
46	YQ	111/111 (100%)	111 (100%)	0	100	100
47	RR	101/101 (100%)	101 (100%)	0	100	100
47	YR	101/101 (100%)	101 (100%)	0	100	100
48	RS	87/88 (99%)	86 (99%)	1 (1%)	73	89
48	YS	85/88 (97%)	84 (99%)	1 (1%)	71	88
49	RT	115/127 (91%)	113 (98%)	2 (2%)	60	83
49	YT	113/127 (89%)	112 (99%)	1 (1%)	78	91
50	RU	93/94 (99%)	91 (98%)	2 (2%)	52	78
50	YU	93/94 (99%)	91 (98%)	2 (2%)	52	78
51	RV	81/82 (99%)	80 (99%)	1 (1%)	71	88
51	YV	80/82 (98%)	79 (99%)	1 (1%)	69	87
52	RW	90/92 (98%)	90 (100%)	0	100	100
52	YW	90/92 (98%)	90 (100%)	0	100	100
53	RX	77/78 (99%)	77 (100%)	0	100	100
53	YX	77/78 (99%)	77 (100%)	0	100	100
54	RY	86/91 (94%)	86 (100%)	0	100	100
54	YY	86/91 (94%)	84 (98%)	2 (2%)	50	77
55	RZ	152/179 (85%)	149 (98%)	3 (2%)	55	80
55	YZ	148/179 (83%)	146 (99%)	2 (1%)	67	86
All	All	9329/10064 (93%)	9254 (99%)	75 (1%)	81	92

5 of 75 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
29	Y4	68	ARG
54	YY	20	TYR
31	Y6	18	ARG
44	YO	49	ARG
43	RN	114	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 36 such sidechains are listed below:

Mol	Chain	Res	Type
13	XM	106	ASN
55	YZ	121	HIS
15	XO	37	ASN
45	YP	70	GLN
15	QO	37	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	QA	1494/1522 (98%)	238 (15%)	15 (1%)
1	XA	1498/1522 (98%)	230 (15%)	15 (1%)
22	QV	76/77 (98%)	15 (19%)	0
22	XV	76/77 (98%)	13 (17%)	0
23	QX	17/19 (89%)	6 (35%)	1 (5%)
23	XX	17/19 (89%)	8 (47%)	1 (5%)
24	QY	75/76 (98%)	31 (41%)	0
24	XY	75/76 (98%)	33 (44%)	0
35	RA	2857/2915 (98%)	452 (15%)	16 (0%)
35	YA	2857/2915 (98%)	454 (15%)	15 (0%)
36	RB	119/122 (97%)	10 (8%)	0
36	YB	119/122 (97%)	11 (9%)	0
All	All	9280/9462 (98%)	1501 (16%)	63 (0%)

5 of 1501 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	QA	5	U
1	QA	6	G
1	QA	9	G
1	QA	22	G
1	QA	32	A

5 of 63 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
35	RA	2172	U
35	YA	1073	A
1	XA	266	G
35	YA	1065	U
35	YA	2171	A

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

48 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
35	5MC	YA	1942	35	18,22,23	0.94	1 (5%)	26,32,35	1.31	4 (15%)
35	PSU	RA	1911	35	18,21,22	1.41	4 (22%)	22,30,33	1.94	3 (13%)
1	G7M	QA	527	1,56	20,26,27	2.49	4 (20%)	17,39,42	0.95	1 (5%)
1	2MG	XA	1207	1	18,26,27	0.96	1 (5%)	16,38,41	1.18	3 (18%)
1	4OC	XA	1402	1	20,23,24	0.80	0	26,32,35	1.02	1 (3%)
1	MA6	XA	1518	1	19,26,27	0.99	1 (5%)	18,38,41	1.90	4 (22%)
35	5MC	RA	1942	35	18,22,23	0.97	2 (11%)	26,32,35	1.23	3 (11%)
1	4OC	QA	1402	1	20,23,24	0.79	0	26,32,35	1.11	2 (7%)
12	0TD	XL	92	12	7,9,10	1.36	2 (28%)	6,11,13	1.47	1 (16%)
1	5MC	QA	1404	1	18,22,23	0.94	2 (11%)	26,32,35	1.12	3 (11%)
1	5MC	XA	1400	1	18,22,23	0.97	2 (11%)	26,32,35	1.22	2 (7%)
35	OMC	RA	1920	35	19,22,23	0.85	1 (5%)	26,31,34	1.15	3 (11%)
1	5MC	QA	1407	1	18,22,23	0.93	2 (11%)	26,32,35	1.42	3 (11%)
35	PSU	YA	1917	56,35	18,21,22	1.44	4 (22%)	22,30,33	1.87	3 (13%)
35	5MC	RA	1962	56,35	18,22,23	0.96	2 (11%)	26,32,35	1.25	1 (3%)
35	OMC	YA	1920	35	19,22,23	0.88	2 (10%)	26,31,34	1.18	4 (15%)
1	PSU	QA	516	1	18,21,22	1.38	4 (22%)	22,30,33	1.74	3 (13%)
1	PSU	XA	516	1	18,21,22	1.42	4 (22%)	22,30,33	1.91	4 (18%)
35	5MU	RA	1915	35	19,22,23	1.54	5 (26%)	28,32,35	2.62	9 (32%)
35	PSU	YA	2605	35	18,21,22	1.50	4 (22%)	22,30,33	1.95	4 (18%)
35	OMG	RA	2251	56,35,22	18,26,27	1.02	1 (5%)	19,38,41	1.05	2 (10%)
1	5MC	QA	967	1	18,22,23	0.94	2 (11%)	26,32,35	1.18	3 (11%)
35	5MC	YA	1962	56,35	18,22,23	0.94	2 (11%)	26,32,35	1.19	2 (7%)
35	5MU	RA	1939	35	19,22,23	1.42	4 (21%)	28,32,35	2.28	6 (21%)
35	5MU	YA	1915	35	19,22,23	1.49	5 (26%)	28,32,35	2.61	9 (32%)
1	G7M	XA	527	1,56	20,26,27	2.47	4 (20%)	17,39,42	1.04	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	MA6	QA	1519	1	19,26,27	0.90	1 (5%)	18,38,41	1.85	6 (33%)
1	5MC	XA	1407	1	18,22,23	0.91	1 (5%)	26,32,35	1.26	2 (7%)
35	PSU	RA	1917	56,35	18,21,22	1.42	4 (22%)	22,30,33	1.82	4 (18%)
35	OMU	RA	2552	56,35	19,22,23	1.30	2 (10%)	26,31,34	1.79	5 (19%)
35	OMG	YA	2251	56,35,22	18,26,27	1.02	1 (5%)	19,38,41	1.10	2 (10%)
35	5MU	YA	1939	35	19,22,23	1.40	4 (21%)	28,32,35	2.25	6 (21%)
1	2MG	QA	1207	1	18,26,27	0.96	1 (5%)	16,38,41	1.19	3 (18%)
1	M2G	XA	966	1	20,27,28	1.27	3 (15%)	22,40,43	0.94	2 (9%)
1	5MC	XA	1404	1	18,22,23	0.96	1 (5%)	26,32,35	1.18	3 (11%)
1	M2G	QA	966	1	20,27,28	1.31	3 (15%)	22,40,43	0.90	1 (4%)
12	0TD	QL	92	12	7,9,10	0.95	0	6,11,13	2.25	3 (50%)
1	MA6	XA	1519	1	19,26,27	0.90	1 (5%)	18,38,41	1.96	6 (33%)
1	5MC	QA	1400	1	18,22,23	0.95	2 (11%)	26,32,35	1.19	2 (7%)
35	2MA	YA	2503	56,35	17,25,26	1.03	1 (5%)	17,37,40	1.01	2 (11%)
35	PSU	RA	2605	35	18,21,22	1.46	4 (22%)	22,30,33	1.88	4 (18%)
35	OMU	YA	2552	56,35	19,22,23	1.33	2 (10%)	26,31,34	1.79	5 (19%)
35	2MA	RA	2503	56,35	17,25,26	1.05	1 (5%)	17,37,40	1.02	2 (11%)
35	PSU	YA	1911	35	18,21,22	1.43	4 (22%)	22,30,33	1.89	4 (18%)
1	UR3	XA	1498	1	19,22,23	0.98	2 (10%)	26,32,35	1.42	2 (7%)
1	UR3	QA	1498	1	19,22,23	0.93	1 (5%)	26,32,35	1.40	1 (3%)
1	MA6	QA	1518	1	19,26,27	0.97	1 (5%)	18,38,41	1.81	4 (22%)
1	5MC	XA	967	1	18,22,23	0.93	1 (5%)	26,32,35	1.18	3 (11%)

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
35	5MC	YA	1942	35	-	0/7/25/26	0/2/2/2
35	PSU	RA	1911	35	-	0/7/25/26	0/2/2/2
1	G7M	QA	527	1,56	-	2/3/25/26	0/3/3/3
1	2MG	XA	1207	1	-	0/5/27/28	0/3/3/3
1	4OC	XA	1402	1	-	2/9/29/30	0/2/2/2
1	MA6	XA	1518	1	-	3/7/29/30	0/3/3/3
35	5MC	RA	1942	35	-	0/7/25/26	0/2/2/2
1	4OC	QA	1402	1	-	2/9/29/30	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
12	0TD	XL	92	12	-	3/7/12/14	-
1	5MC	QA	1404	1	-	2/7/25/26	0/2/2/2
1	5MC	XA	1400	1	-	2/7/25/26	0/2/2/2
35	OMC	RA	1920	35	-	0/9/27/28	0/2/2/2
1	5MC	QA	1407	1	-	0/7/25/26	0/2/2/2
35	PSU	YA	1917	56,35	-	0/7/25/26	0/2/2/2
35	5MC	RA	1962	56,35	-	0/7/25/26	0/2/2/2
35	OMC	YA	1920	35	-	0/9/27/28	0/2/2/2
1	PSU	QA	516	1	-	0/7/25/26	0/2/2/2
1	PSU	XA	516	1	-	0/7/25/26	0/2/2/2
35	5MU	RA	1915	35	-	2/7/25/26	0/2/2/2
35	PSU	YA	2605	35	-	0/7/25/26	0/2/2/2
35	OMG	RA	2251	56,35,22	-	0/5/27/28	0/3/3/3
1	5MC	QA	967	1	-	0/7/25/26	0/2/2/2
35	5MC	YA	1962	56,35	-	1/7/25/26	0/2/2/2
35	5MU	RA	1939	35	-	0/7/25/26	0/2/2/2
35	5MU	YA	1915	35	-	2/7/25/26	0/2/2/2
1	G7M	XA	527	1,56	-	3/3/25/26	0/3/3/3
1	MA6	QA	1519	1	-	3/7/29/30	0/3/3/3
1	5MC	XA	1407	1	-	0/7/25/26	0/2/2/2
35	PSU	RA	1917	56,35	-	0/7/25/26	0/2/2/2
35	OMU	RA	2552	56,35	-	1/9/27/28	0/2/2/2
35	OMG	YA	2251	56,35,22	-	0/5/27/28	0/3/3/3
35	5MU	YA	1939	35	-	0/7/25/26	0/2/2/2
1	2MG	QA	1207	1	-	0/5/27/28	0/3/3/3
1	M2G	XA	966	1	-	0/7/29/30	0/3/3/3
1	5MC	XA	1404	1	-	0/7/25/26	0/2/2/2
1	M2G	QA	966	1	-	0/7/29/30	0/3/3/3
12	0TD	QL	92	12	-	1/7/12/14	-
1	MA6	XA	1519	1	-	3/7/29/30	0/3/3/3
1	5MC	QA	1400	1	-	2/7/25/26	0/2/2/2
35	2MA	YA	2503	56,35	-	1/3/25/26	0/3/3/3
35	PSU	RA	2605	35	-	0/7/25/26	0/2/2/2
35	OMU	YA	2552	56,35	-	0/9/27/28	0/2/2/2
35	2MA	RA	2503	56,35	-	1/3/25/26	0/3/3/3
35	PSU	YA	1911	35	-	0/7/25/26	0/2/2/2
1	UR3	XA	1498	1	-	0/7/25/26	0/2/2/2
1	UR3	QA	1498	1	-	0/7/25/26	0/2/2/2
1	MA6	QA	1518	1	-	3/7/29/30	0/3/3/3
1	5MC	XA	967	1	-	0/7/25/26	0/2/2/2

The worst 5 of 106 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	QA	527	G7M	C8-N9	7.17	1.46	1.33
1	XA	527	G7M	C8-N9	7.15	1.46	1.33
1	QA	527	G7M	C8-N7	6.57	1.45	1.33
1	XA	527	G7M	C8-N7	6.29	1.44	1.33
1	XA	527	G7M	C5-C4	4.04	1.47	1.39

The worst 5 of 156 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
35	RA	1915	5MU	C1'-N1-C2	6.32	129.00	117.57
35	YA	1915	5MU	C1'-N1-C2	6.23	128.84	117.57
35	RA	1911	PSU	N1-C2-N3	6.08	122.02	115.13
35	YA	2605	PSU	N1-C2-N3	5.93	121.84	115.13
1	XA	516	PSU	N1-C2-N3	5.90	121.81	115.13

There are no chirality outliers.

5 of 39 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	QA	1518	MA6	C5-C6-N6-C9
1	QA	1518	MA6	C5-C6-N6-C10
1	XA	1518	MA6	C5-C6-N6-C9
1	XA	1518	MA6	C5-C6-N6-C10
1	QA	1519	MA6	O4'-C4'-C5'-O5'

There are no ring outliers.

12 monomers are involved in 13 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	XA	1518	MA6	1	0
35	RA	1962	5MC	1	0
35	YA	1962	5MC	1	0
35	RA	1939	5MU	1	0
1	QA	1519	MA6	1	0
1	XA	966	M2G	1	0
12	QL	92	0TD	1	0
35	YA	2503	2MA	2	0
35	RA	2503	2MA	2	0
1	XA	1498	UR3	1	0
1	QA	1518	MA6	1	0
1	XA	967	5MC	1	0

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 2027 ligands modelled in this entry, 2023 are monoatomic - leaving 4 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
58	SF4	QD	302	-	0,12,12	-	-	-		
57	PAR	XA	1794	-	45,45,45	0.66	0	64,67,67	1.23	6 (9%)
58	SF4	XD	301	-	0,12,12	-	-	-		
57	PAR	QA	1821	-	45,45,45	0.68	0	64,67,67	1.49	11 (17%)

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
58	SF4	QD	302	-	-	-	0/6/5/5
57	PAR	XA	1794	-	-	3/18/94/94	0/4/4/4
58	SF4	XD	301	-	-	-	0/6/5/5
57	PAR	QA	1821	-	-	4/18/94/94	0/4/4/4

There are no bond length outliers.

The worst 5 of 17 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	QA	1821	PAR	C44-C34-C24	4.78	119.30	111.07
57	QA	1821	PAR	O52-C13-C23	3.44	115.09	107.96
57	XA	1794	PAR	C13-O52-C52	-3.34	109.70	117.96
57	QA	1821	PAR	C13-O52-C52	-3.33	109.73	117.96
57	XA	1794	PAR	C14-O33-C33	-2.90	110.79	117.96

There are no chirality outliers.

5 of 7 torsion outliers are listed below:

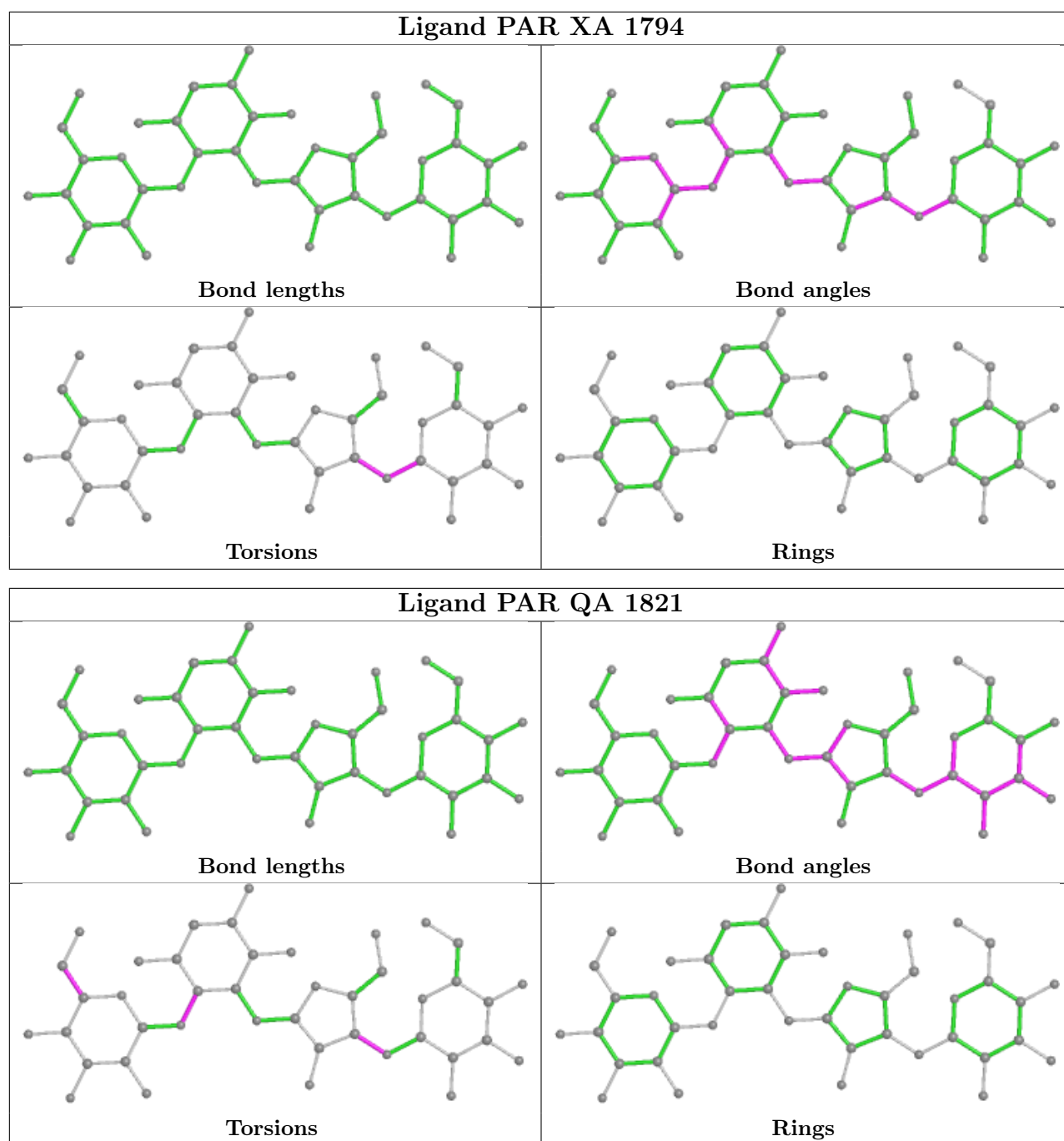
Mol	Chain	Res	Type	Atoms
57	QA	1821	PAR	O51-C51-C61-O61
57	QA	1821	PAR	C41-C51-C61-O61
57	QA	1821	PAR	C23-C33-O33-C14
57	XA	1794	PAR	O54-C14-O33-C33
57	QA	1821	PAR	C52-C42-O11-C11

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
57	XA	1794	PAR	1	0
58	XD	301	SF4	1	0
57	QA	1821	PAR	1	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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

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

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

6.3 Carbohydrates [i](#)

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

6.4 Ligands [i](#)

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

6.5 Other polymers [i](#)

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