



wwPDB X-ray Structure Validation Summary Report ⓘ

Oct 10, 2023 – 08:20 PM EDT

PDB ID : 4WT8
Title : Crystal Structure of bactobolin A bound to 70S ribosome-tRNA complex
Authors : Amunts, A.; Fiedorczuk, K.; Ramakrishnan, V.
Deposited on : 2014-10-29
Resolution : 3.40 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35.1

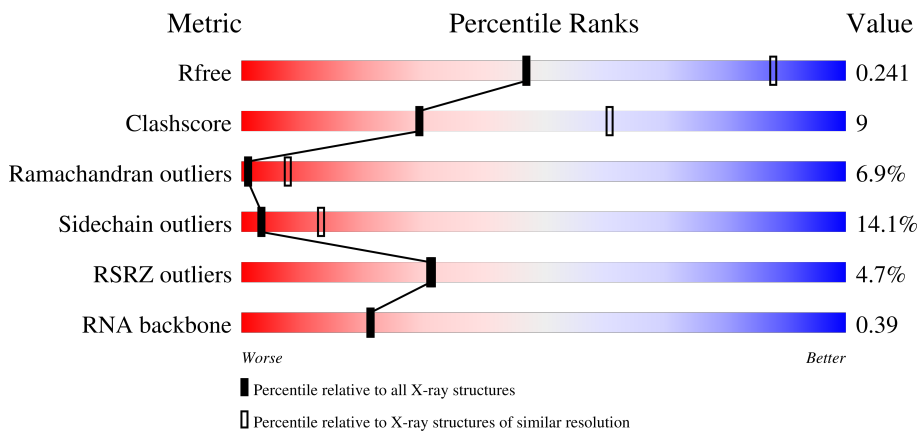
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 Å.

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






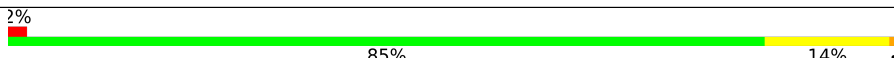
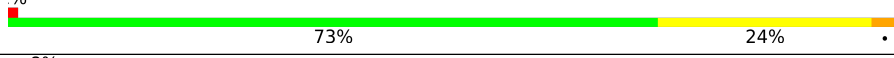

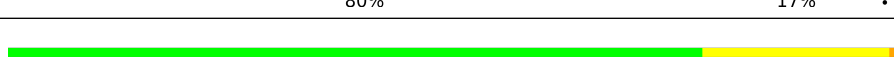



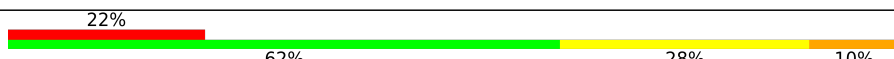



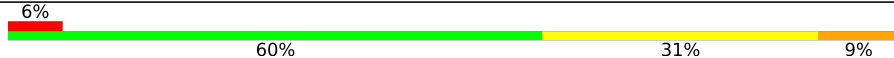

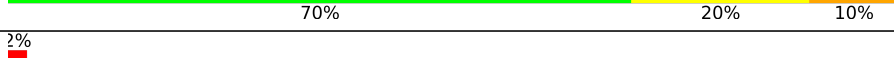






Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)
RNA backbone	3102	1006 (3.84-2.96)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A2	9	
2	AA	234	
2	BA	234	
3	AC	238	

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Mol	Chain	Length	Quality of chain
4	AD	208	 % 66% 26% 7%
4	BD	208	 % 70% 23% 6%
5	AE	150	 2% 69% 26%
5	BE	150	 % 68% 27% 5%
6	AF	101	 2% 85% 14%
6	BF	101	 % 73% 24%
7	AG	155	 8% 85% 14%
7	BG	155	 6% 80% 17%
8	AH	138	 % 78% 21%
8	BH	138	 % 72% 27%
9	AI	127	 6% 61% 32% 6%
9	BI	127	 13% 72% 24%
10	AJ	98	 13% 66% 26% 8%
10	BJ	98	 22% 62% 28% 10%
11	AK	119	 4% 74% 26%
11	BK	119	 5% 67% 31%
12	AL	124	 7% 60% 30% 10%
12	BL	124	 4% 67% 24% 7%
13	AM	124	 6% 60% 31% 9%
13	BM	124	 8% 56% 32% 11%
14	AN	60	 2% 70% 20% 10%
14	BN	60	 2% 65% 27% 7%
15	AO	88	 % 83% 15%
15	BO	88	% 78% 18%
16	AP	83	2% 73% 23%

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Mol	Chain	Length	Quality of chain
16	BP	83	4% 70% 28% .
17	AR	99	% 84% 15% .
17	BR	99	2% 74% 23% ..
18	AS	70	3% 61% 33% ..
18	BS	70	7% 64% 30% ..
19	AT	78	15% 44% 47% 8% .
19	BT	78	14% 46% 44% 8% .
20	AU	99	3% 72% 20% 7% .
20	BU	99	8% 69% 25% 6% .
21	AW	24	29% 79% 21%
21	BW	24	17% 67% 29% .
22	Ab	1504	2% 76% 22% .
22	Bb	1504	3% 75% 23% .
23	B2	10	30% 50% 20%
24	BC	206	3% 72% 24% .
25	C2	76	91% 54% 30% 14% .
25	C3	76	8% 43% 46% 11%
25	D3	76	4% 39% 37% 21% .
26	C4	77	38% 31% 30% .
27	CA	206	24% 76% 14% 8%
28	CB	271	59% 29% 10% .
28	DB	271	% 59% 30% 10% .
29	CC	204	3% 55% 36% 8% .
29	DC	204	% 49% 37% 12% .
30	CD	207	2% 57% 33% 9%

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Mol	Chain	Length	Quality of chain
30	DD	207	2% 64% 28% 8%
31	CE	181	4% 58% 33% 9%
31	DE	181	8% 57% 31% 8%
32	CF	159	21% 62% 26% 10%
32	DF	159	4% 58% 26% 13%
33	CI	145	3% 64% 29% 7%
33	DI	145	6% 65% 30% 5%
34	CJ	130	100%
34	DJ	130	95% 5%
35	CM	138	% 65% 24% 9%
35	DM	138	59% 30% 9%
36	CN	122	% 63% 31% 6%
36	DN	122	75% 19% 7%
37	CO	146	3% 38% 36% 19% 7%
37	DO	146	3% 39% 34% 21% 7%
38	CP	141	% 72% 24%
38	DP	141	% 63% 31% 6%
39	CQ	117	57% 37% 5%
39	DQ	117	56% 32% 12%
40	CR	98	3% 59% 30% 8%
40	DR	98	21% 47% 39% 12%
41	CS	137	4% 43% 34% 21%
41	DS	137	3% 45% 37% 12% 5%
42	CT	117	2% 60% 32% 8%
42	DT	117	% 59% 34% 6%

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Mol	Chain	Length	Quality of chain
43	CU	101	2% 54% 30% 12% .
43	DU	101	5% 50% 33% 12% 5%
44	CW	113	2% 70% 26% .
45	CX	92	68% 25% 7%
45	DX	92	68% 25% 7%
46	CY	100	23% 45% 31% 22% .
46	DY	100	13% 36% 43% 18% .
47	CZ	176	5% 69% 28% . .
47	DZ	176	9% 70% 25% 5% .
48	Ca	84	10% 88% 11% .
48	Da	84	11% 86% 13% .
49	CH	93	% 57% 32% 10% .
49	DH	93	% 66% 27% 6% .
50	CK	71	3% 65% 27% 8%
50	DK	71	3% 52% 39% 8%
51	CL	59	7% 80% 19% .
51	DL	59	8% 76% 22% .
52	C5	30	73% 23% .
52	D5	30	7% 37% 53% 10%
53	C6	59	8% 64% 27% . 5%
53	D6	59	7% 61% 29% 7% .
54	C7	44	30% 30% 50% 14% 7%
54	D7	44	41% 30% 45% 23% .
55	C8	48	4% 77% 21% .
55	D8	48	4% 71% 27% .

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Mol	Chain	Length	Quality of chain
56	C9	63	
56	D9	63	
57	C0	36	
57	D0	36	
58	C1	2899	
58	D1	2899	
59	Cs	119	
59	Ds	119	
60	D2	20	
61	D4	76	
62	DA	206	
63	DW	113	
64	DV	55	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
66	3V6	D1	3001	-	-	X	-
67	MG	D1	3002	-	-	X	-

2 Entry composition [i](#)

There are 67 unique types of molecules in this entry. The entry contains 295910 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 mRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	A2	9	173	76	29	59	9	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	AA	234	1901	1213	341	342	5	0	0	0
2	BA	234	1901	1213	341	342	5	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	AC	206	1612	1016	314	281	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	AD	208	1703	1066	339	291	7	0	0	0
4	BD	208	1703	1066	339	291	7	0	0	0

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

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

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

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

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

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

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

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

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

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AI	58	ARG	HIS	conflict	UNP P80374

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	AM	124	Total	C	N	O	S	0	0	0
			988	611	205	170	2			
13	BM	124	Total	C	N	O	S	0	0	0
			988	611	205	170	2			

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	AR	99	Total	C	N	O	S	0	0	0
			824	528	151	143	2			
17	BR	99	Total	C	N	O	S	0	0	0
			824	528	151	143	2			

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	AT	78	Total	C	N	O	S	0	0	0
			630	403	114	111	2			
19	BT	78	Total	C	N	O	S	0	0	0
			630	403	114	111	2			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	AU	99	Total	C	N	O	S	0	0	0
			763	470	162	129	2			
20	BU	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	AW	24	Total	C	N	O	0	0	0
			209	128	50	31			

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
21	BW	24	209	128	50	31	0	0	0

- Molecule 22 is a RNA chain called RNA (1504-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
22	Ab	1504	32329	14390	5992	10444	1503	0	0	0
22	Bb	1504	32329	14390	5992	10444	1503	0	0	0

- Molecule 23 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
23	B2	10	194	86	34	64	10	0	0	0

- Molecule 24 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
24	BC	206	1613	1016	314	282	1	0	0	0

- Molecule 25 is a RNA chain called A site tNA, E site tNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
25	C2	75	1597	713	285	525	74	0	0	0
25	C3	76	1619	723	290	531	75	0	0	0
25	D3	76	1619	723	290	531	75	0	0	0

- Molecule 26 is a RNA chain called P site trNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
26	C4	77	1640	732	297	535	76	0	0	0

- Molecule 27 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
27	CA	190	1156	706	220	230	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CA	106	ALA	GLY	conflict	UNP Q5SLP7

- Molecule 28 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
28	CB	271	2105	1329	416	357	3	0	0	0
28	DB	271	2105	1329	416	357	3	0	0	0

- Molecule 29 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
29	CC	204	1564	988	299	271	6	0	0	0
29	DC	204	1564	988	299	271	6	0	0	0

- Molecule 30 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
30	CD	207	1624	1035	303	283	3	0	0	0
30	DD	207	1624	1035	303	283	3	0	0	0

- Molecule 31 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
31	CE	181	1474	942	268	260	4	0	0	0
31	DE	181	1474	942	268	260	4	0	0	0

- Molecule 32 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
32	CF	159	Total	C	N	O	S	0	0	0
			1223	773	228	221	1			
32	DF	159	Total	C	N	O	S	0	0	0
			1223	773	228	221	1			

- Molecule 33 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
33	CI	145	Total	C	N	O	S	0	0	0
			1132	723	200	208	1			
33	DI	145	Total	C	N	O	S	0	0	0
			1132	723	200	208	1			

- Molecule 34 is a protein called ribosomal L10 protein.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
34	CJ	130	Total	C	N	O	0	0	0
			651	390	130	131			
34	DJ	130	Total	C	N	O	0	0	0
			651	390	130	131			

- Molecule 35 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
35	CM	138	Total	C	N	O	S	0	0	0
			1105	712	206	183	4			
35	DM	138	Total	C	N	O	S	0	0	0
			1105	712	206	183	4			

- Molecule 36 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
36	CN	122	Total	C	N	O	S	0	0	0
			933	588	171	170	4			
36	DN	122	Total	C	N	O	S	0	0	0
			933	588	171	170	4			

- Molecule 37 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
37	CO	146	Total	C	N	O	S	0	0	0
			1114	692	227	193	2			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
37	DO	146	1114	692	227	193	2	0	0	0

- Molecule 38 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
38	CP	141	1122	715	212	188	7	0	0	0
38	DP	141	1122	715	212	188	7	0	0	0

- Molecule 39 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
39	CQ	117	960	599	202	159	0	0	0
39	DQ	117	960	599	202	159	0	0	0

- Molecule 40 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
40	CR	98	771	486	154	131	0	0	0
40	DR	98	771	486	154	131	0	0	0

- Molecule 41 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
41	CS	137	1142	710	234	197	1	0	0	0
41	DS	137	1142	710	234	197	1	0	0	0

- Molecule 42 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
42	CT	117	958	604	202	151	1	0	0	0
42	DT	117	958	604	202	151	1	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CT	32	ALA	PHE	conflict	UNP P60491
DT	32	ALA	PHE	conflict	UNP P60491

- Molecule 43 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
43	CU	101	Total	C	N	O	S	0	0	0
			779	501	142	135	1			
43	DU	101	Total	C	N	O	S	0	0	0
			779	501	142	135	1			

- Molecule 44 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
44	CW	113	Total	C	N	O	S	0	0	0
			896	563	176	155	2			

- Molecule 45 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
45	CX	92	Total	C	N	O	0	0	0
			726	471	131	124			
45	DX	92	Total	C	N	O	0	0	0
			726	471	131	124			

- Molecule 46 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
46	CY	100	Total	C	N	O	S	0	0	0
			776	500	148	124	4			
46	DY	100	Total	C	N	O	S	0	0	0
			776	500	148	124	4			

- Molecule 47 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
47	CZ	176	Total	C	N	O	S	0	0	0
			1404	897	252	253	2			
47	DZ	176	Total	C	N	O	S	0	0	0
			1404	897	252	253	2			

- Molecule 48 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
48	Ca	84	Total	C	N	O	S	0	0	0
			662	410	140	111	1			
48	Da	84	Total	C	N	O	S	0	0	0
			662	410	140	111	1			

- Molecule 49 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
49	CH	93	Total	C	N	O	S	0	0	0
			734	460	147	126	1			
49	DH	93	Total	C	N	O	S	0	0	0
			734	460	147	126	1			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DH	81	ARG	LYS	conflict	UNP P60494

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
50	CK	71	Total	C	N	O	S	0	0	0
			598	370	121	106	1			
50	DK	71	Total	C	N	O	S	0	0	0
			598	370	121	106	1			

- Molecule 51 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
51	CL	59	Total	C	N	O	S	0	0	0
			468	298	90	79	1			
51	DL	59	Total	C	N	O	S	0	0	0
			468	298	90	79	1			

- Molecule 52 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
52	C5	30	Total	C	N	O	S	0	0	0
			226	142	36	44	4			
52	D5	30	Total	C	N	O	S	0	0	0
			226	142	36	44	4			

- Molecule 53 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
53	C6	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			
53	D6	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			

- Molecule 54 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
54	C7	44	Total	C	N	O	S	0	0	0
			381	235	77	65	4			
54	D7	44	Total	C	N	O	S	0	0	0
			381	235	77	65	4			

- Molecule 55 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
55	C8	48	Total	C	N	O	S	0	0	0
			419	257	104	56	2			
55	D8	48	Total	C	N	O	S	0	0	0
			419	257	104	56	2			

- Molecule 56 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
56	C9	63	Total	C	N	O	S	0	0	0
			508	326	101	79	2			
56	D9	63	Total	C	N	O	S	0	0	0
			508	326	101	79	2			

- Molecule 57 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
57	C0	36	Total	C	N	O	S	0	0	0
			299	183	67	46	3			
57	D0	36	Total	C	N	O	S	0	0	0
			299	183	67	46	3			

- Molecule 58 is a RNA chain called 23S rRNA (2899-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
58	C1	2807	Total	C	N	O	P	0	0	0
			60459	26907	11311	19435	2806			
58	D1	2807	Total	C	N	O	P	0	0	0
			60459	26907	11311	19435	2806			

- Molecule 59 is a RNA chain called 5S rRNA (119-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
59	Cs	119	Total	C	N	O	P	0	0	0
			2551	1136	471	826	118			
59	Ds	119	Total	C	N	O	P	0	0	0
			2551	1136	471	826	118			

- Molecule 60 is a RNA chain called tRNA (5'-D(*AP*UP*CP*CP*CP*CP*GP*UP*GP*UP*CP*CP*UP*UP*GP*GP*UP*UP*CP*G)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
60	D2	20	Total	C	N	O	P	0	0	0
			416	186	65	146	19			

- Molecule 61 is a RNA chain called tRNA (76-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
61	D4	76	Total	C	N	O	P	0	0	0
			1623	723	294	530	76			

- Molecule 62 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
62	DA	190	Total	C	N	O	0	0	0
			1155	705	220	230			

- Molecule 63 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
63	DW	113	Total	C	N	O	S	0	0	0
			896	563	176	155	2			

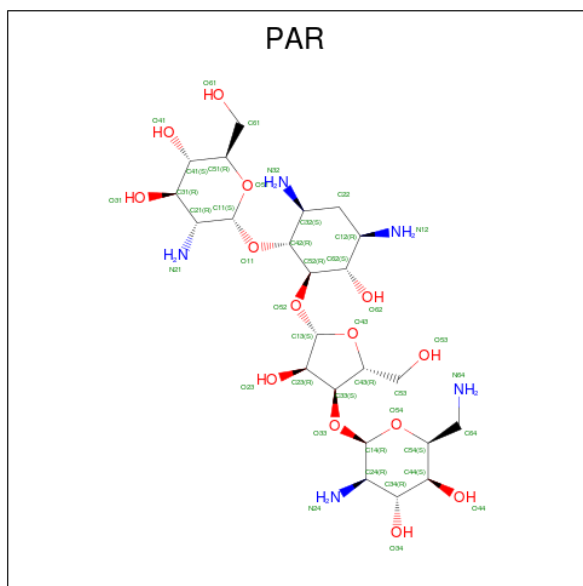
There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DW	113	ALA	-	expression tag	UNP Q5SHP3

- Molecule 64 is a RNA chain called DNA (55-MER).

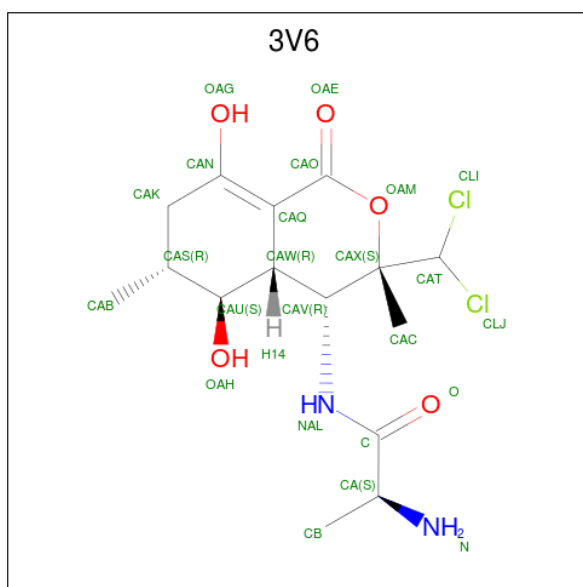
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
64	DV	55	1167	527	220	379	41	0	0	0

- Molecule 65 is PAROMOMYCIN (three-letter code: PAR) (formula: $C_{23}H_{45}N_5O_{14}$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
65	Ab	1	42	23	5	14	0	0
65	Bb	1	42	23	5	14	0	0

- Molecule 66 is Bactobolin A (three-letter code: 3V6) (formula: $C_{15}H_{22}Cl_2N_2O_5$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
66	C1	1	Total	C	Cl	N	O	0	0
			24	15	2	2	5		
66	D1	1	Total	C	Cl	N	O	0	0
			24	15	2	2	5		

- Molecule 67 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

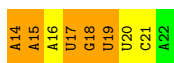
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
67	C1	1	Total	Mg	0	0
			1	1		
67	D1	1	Total	Mg	0	0
			1	1		

3 Residue-property plots [i](#)

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

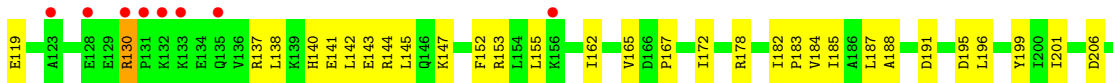
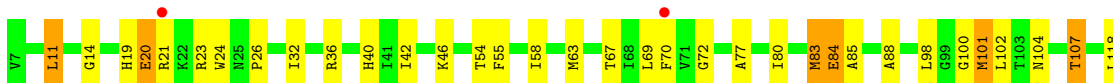
- Molecule 1: mRNA

Chain A2: 




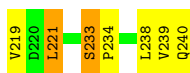
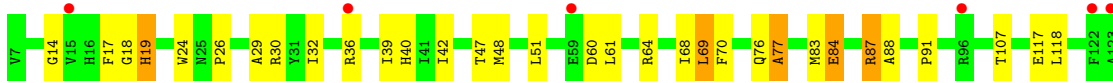
- Molecule 2: 30S ribosomal protein S2

Chain AA: 



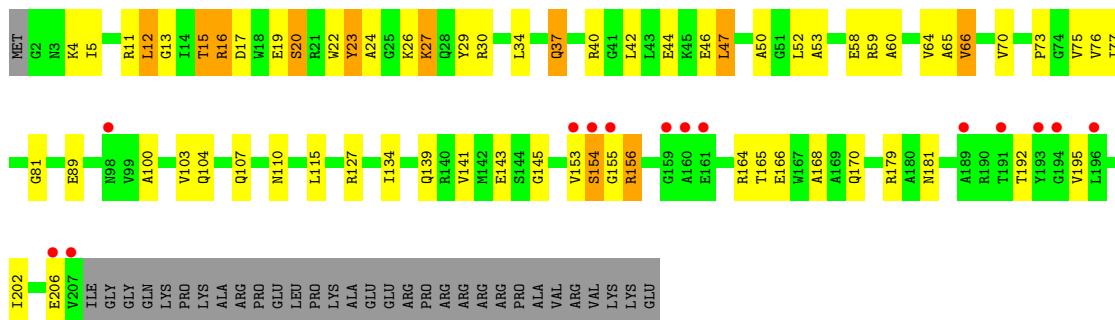
- Molecule 2: 30S ribosomal protein S2

Chain BA: 

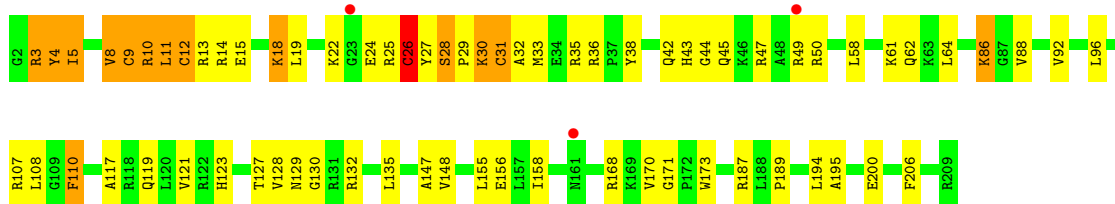


- Molecule 3: 30S ribosomal protein S3

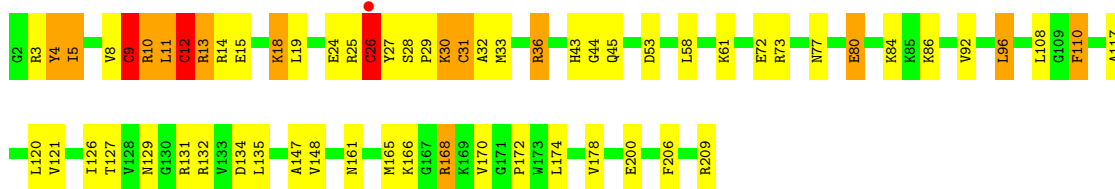
Chain AC: 



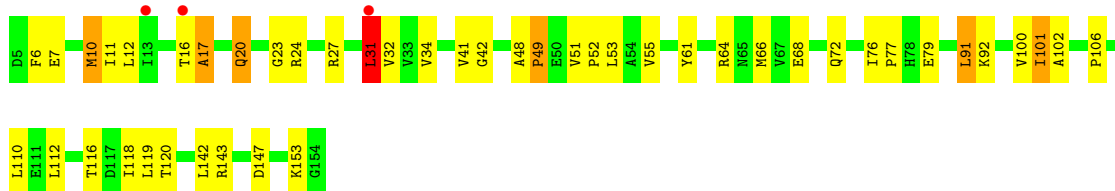
• Molecule 4: 30S ribosomal protein S4



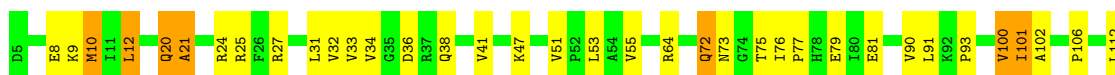
• Molecule 4: 30S ribosomal protein S4



• Molecule 5: 30S ribosomal protein S5

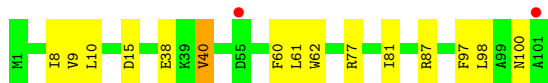
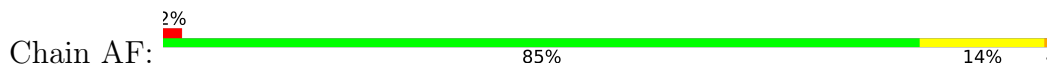


• Molecule 5: 30S ribosomal protein S5

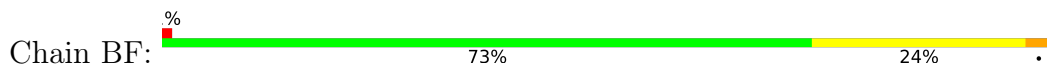




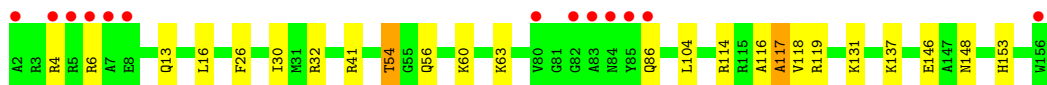
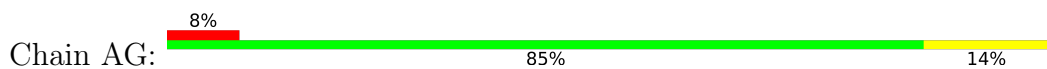
- Molecule 6: 30S ribosomal protein S6



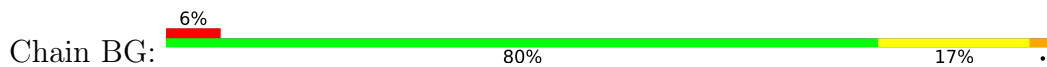
- Molecule 6: 30S ribosomal protein S6



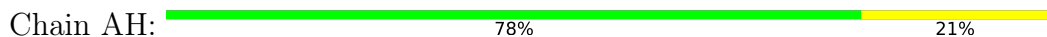
- Molecule 7: 30S ribosomal protein S7



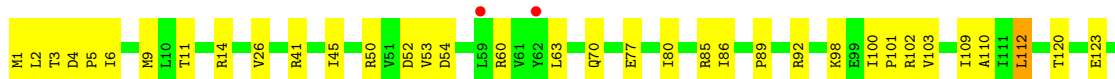
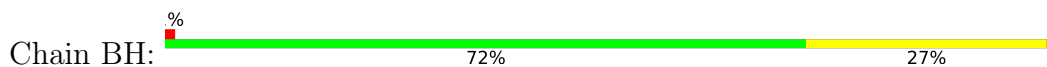
- Molecule 7: 30S ribosomal protein S7



- Molecule 8: 30S ribosomal protein S8

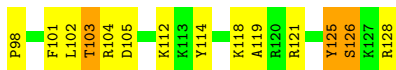
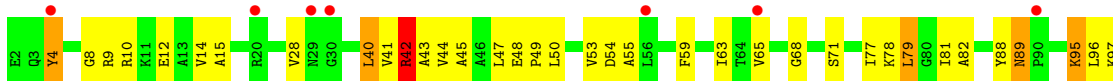


- Molecule 8: 30S ribosomal protein S8

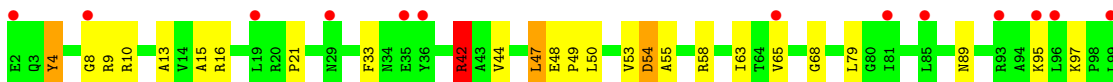
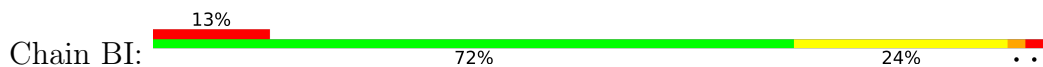




- Molecule 9: 30S ribosomal protein S9



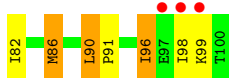
- Molecule 9: 30S ribosomal protein S9



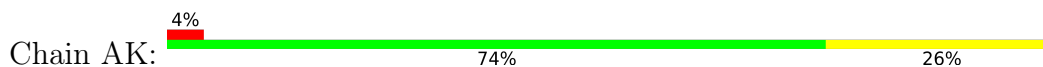
- Molecule 10: 30S ribosomal protein S10



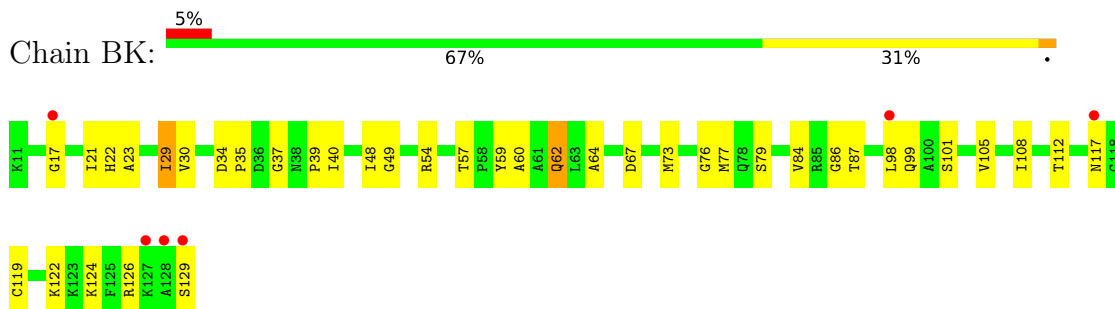
- Molecule 10: 30S ribosomal protein S10



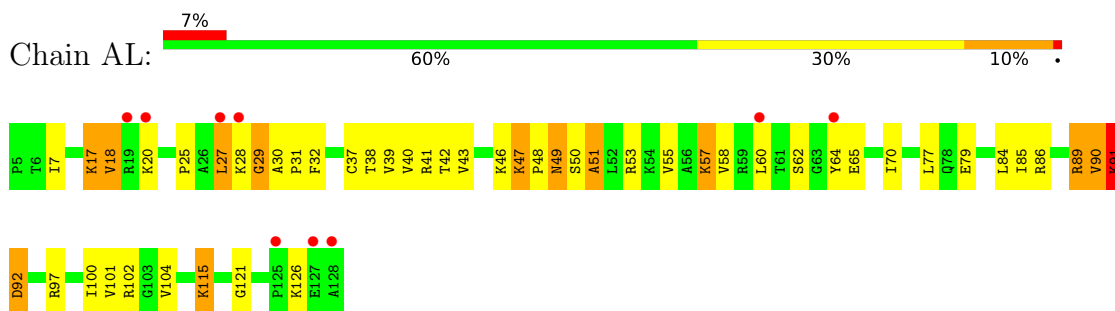
- Molecule 11: 30S ribosomal protein S11



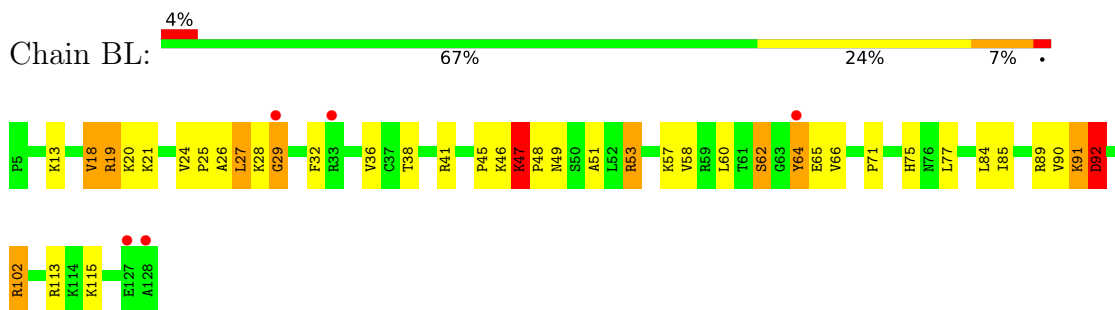
- Molecule 11: 30S ribosomal protein S11



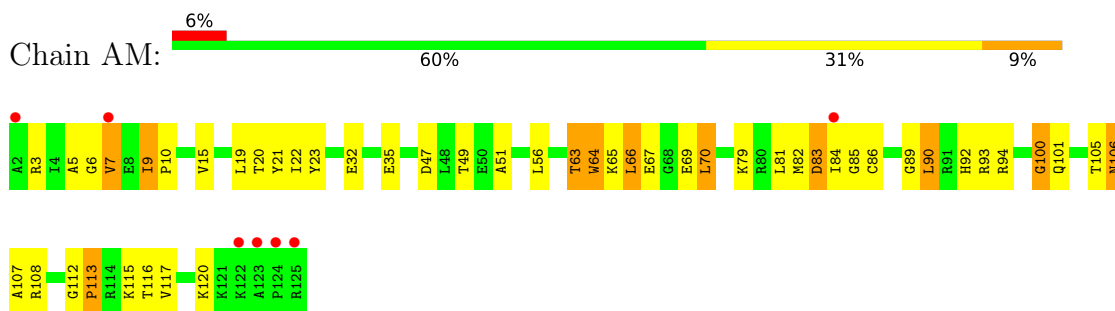
- Molecule 12: 30S ribosomal protein S12



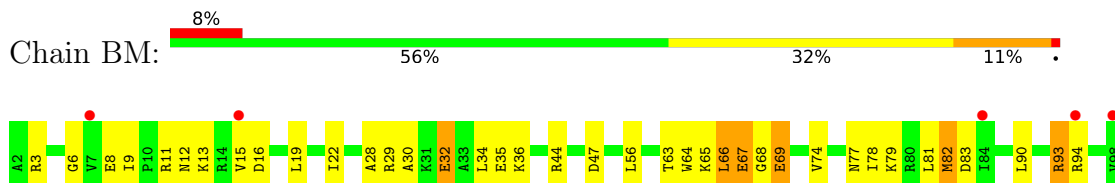
- Molecule 12: 30S ribosomal protein S12



- Molecule 13: 30S ribosomal protein S13

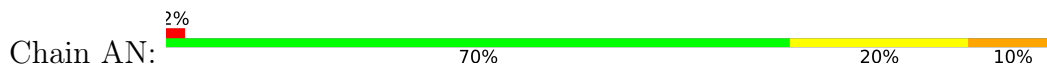


- Molecule 13: 30S ribosomal protein S13





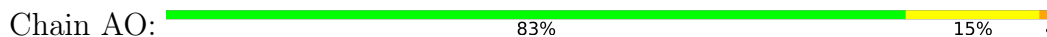
- Molecule 14: 30S ribosomal protein S14 type Z



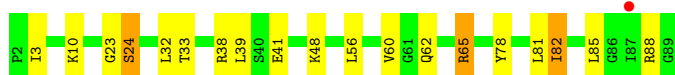
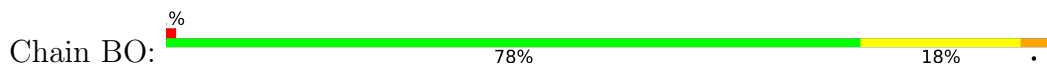
- Molecule 14: 30S ribosomal protein S14 type Z



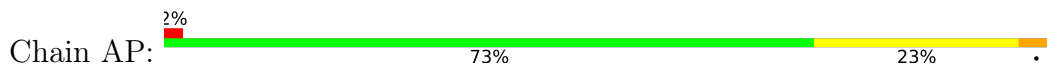
- Molecule 15: 30S ribosomal protein S15



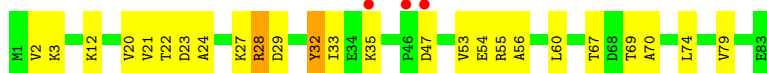
- Molecule 15: 30S ribosomal protein S15



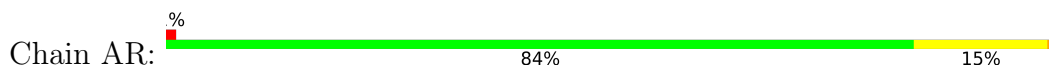
- Molecule 16: 30S ribosomal protein S16



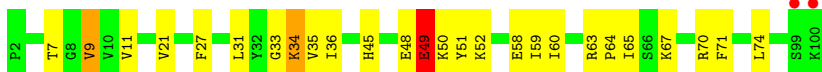
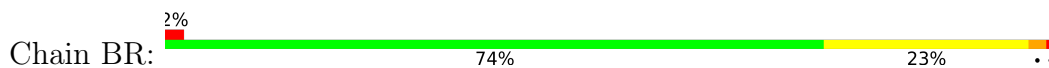
- Molecule 16: 30S ribosomal protein S16



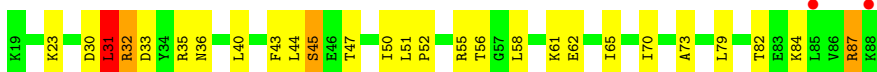
- Molecule 17: 30S ribosomal protein S17



- Molecule 17: 30S ribosomal protein S17



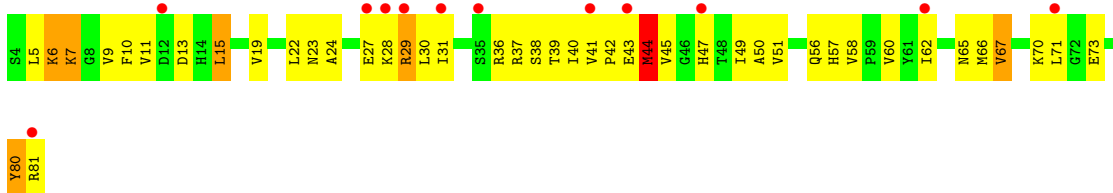
- Molecule 18: 30S ribosomal protein S18



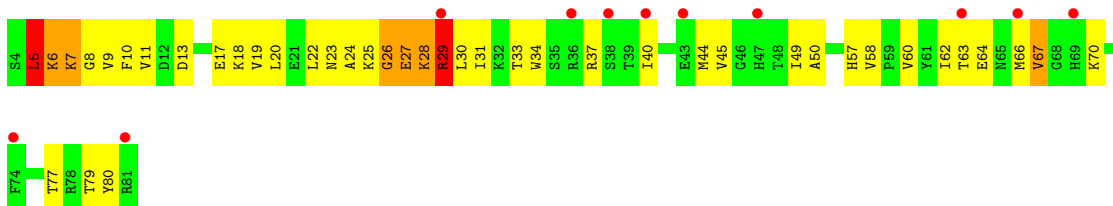
- Molecule 18: 30S ribosomal protein S18



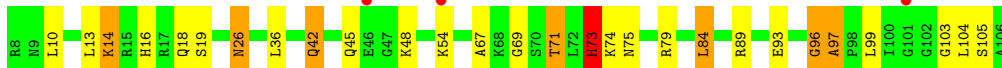
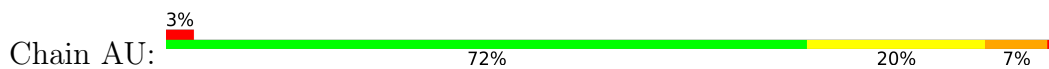
- Molecule 19: 30S ribosomal protein S19



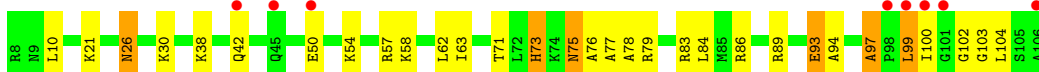
- Molecule 19: 30S ribosomal protein S19



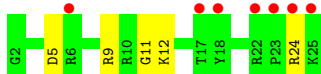
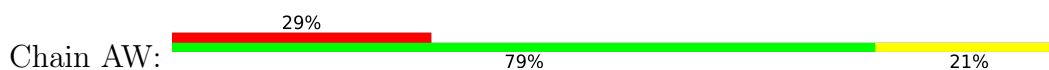
- Molecule 20: 30S ribosomal protein S20



- Molecule 20: 30S ribosomal protein S20



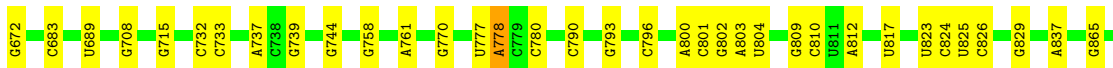
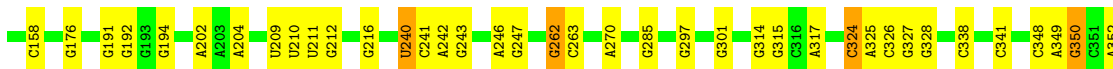
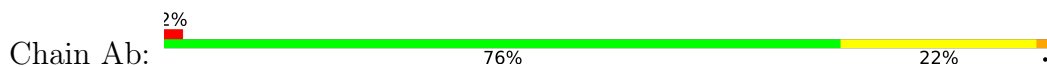
- Molecule 21: 30S ribosomal protein Thx

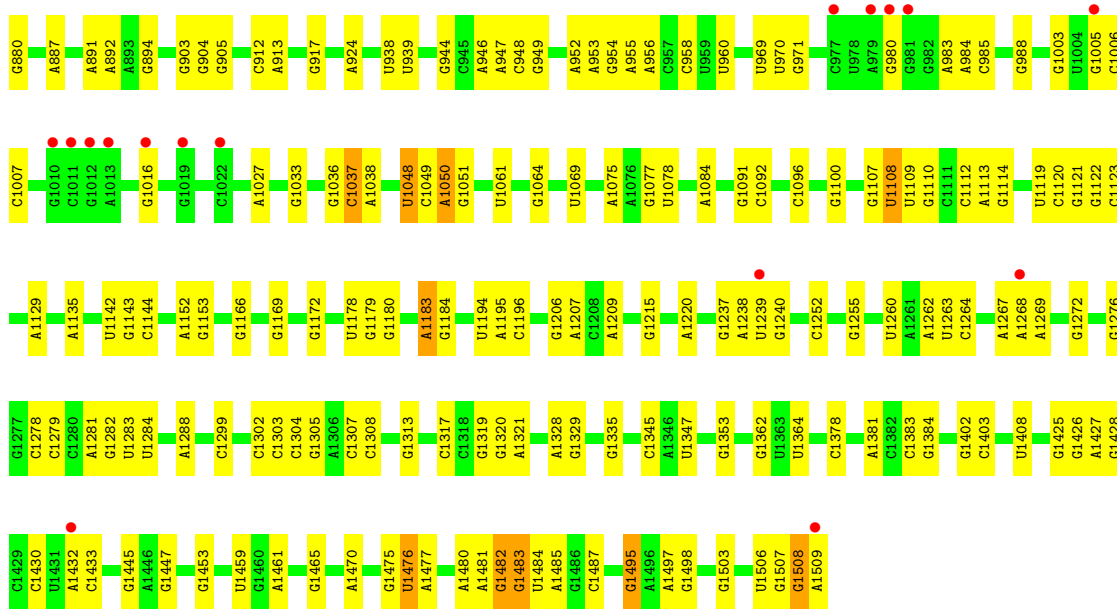


- Molecule 21: 30S ribosomal protein Thx

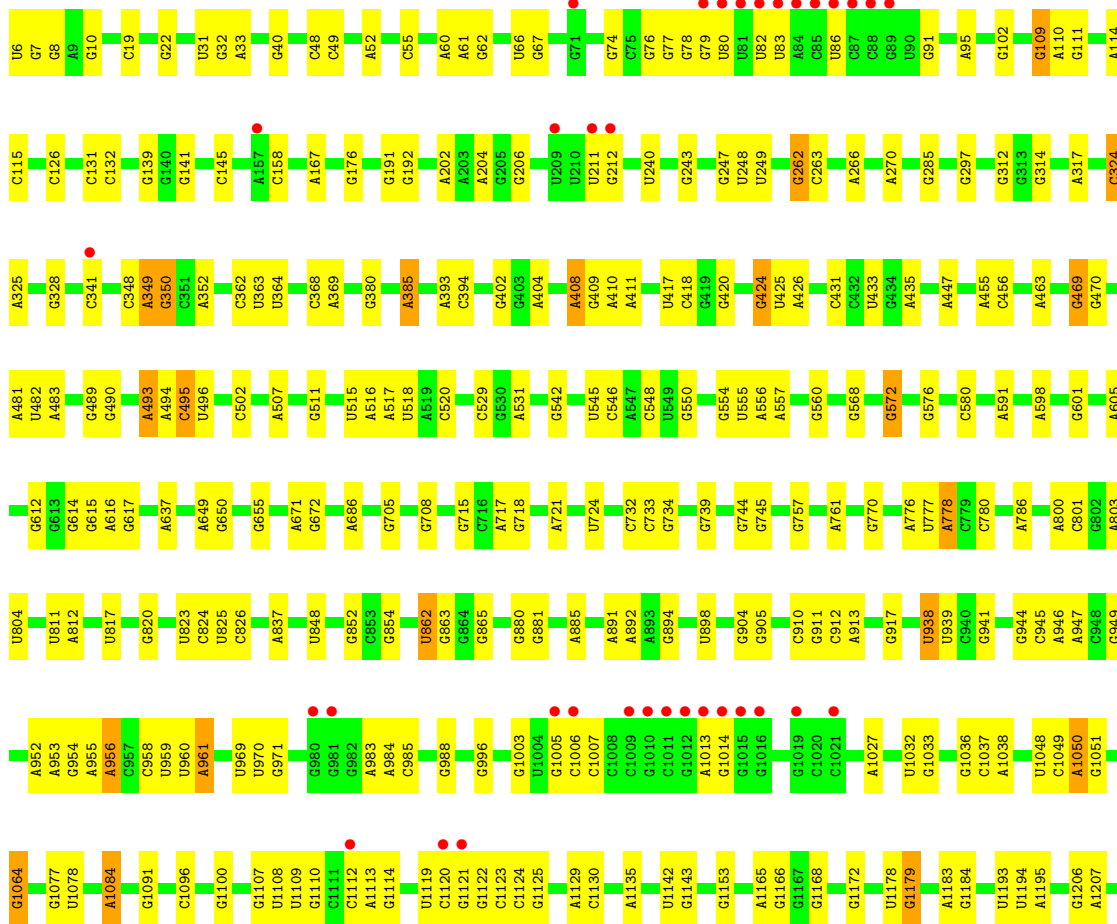
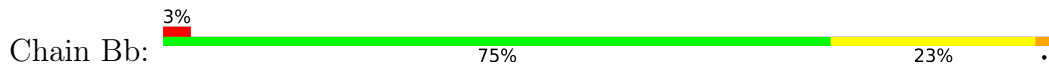


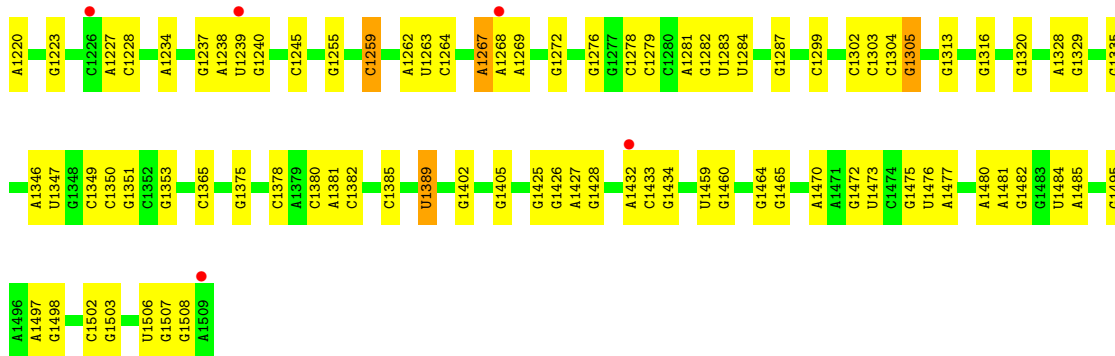
- Molecule 22: RNA (1504-MER)





● Molecule 22: RNA (1504-MER)

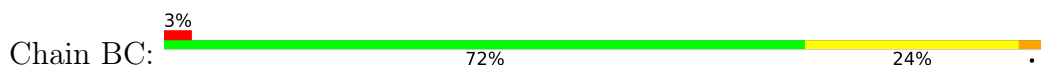




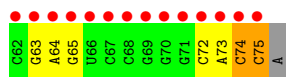
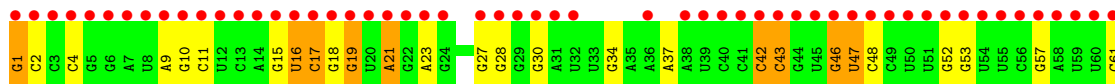
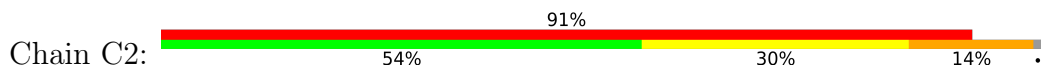
- Molecule 23: mRNA



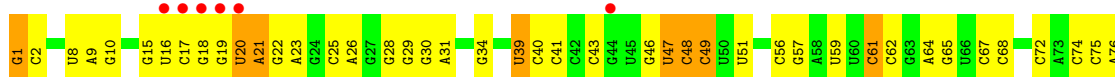
- Molecule 24: 30S ribosomal protein S3



- Molecule 25: A site tNA, E site tNA

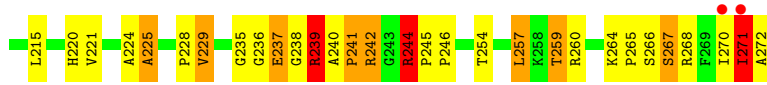


- Molecule 25: A site tNA, E site tNA

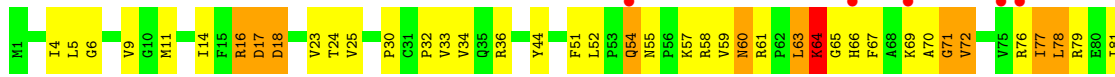


- Molecule 25: A site tNA, E site tNA

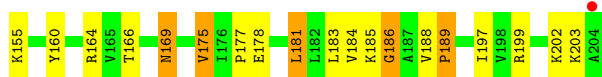
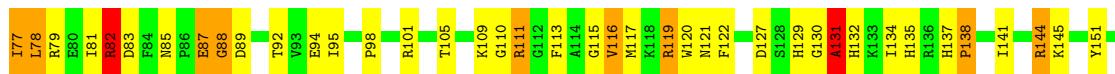




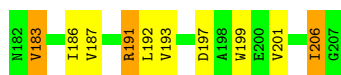
- Molecule 29: 50S ribosomal protein L3



- Molecule 29: 50S ribosomal protein L3

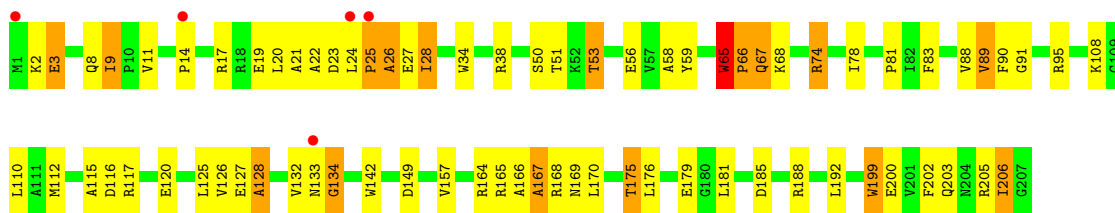


- Molecule 30: 50S ribosomal protein L4

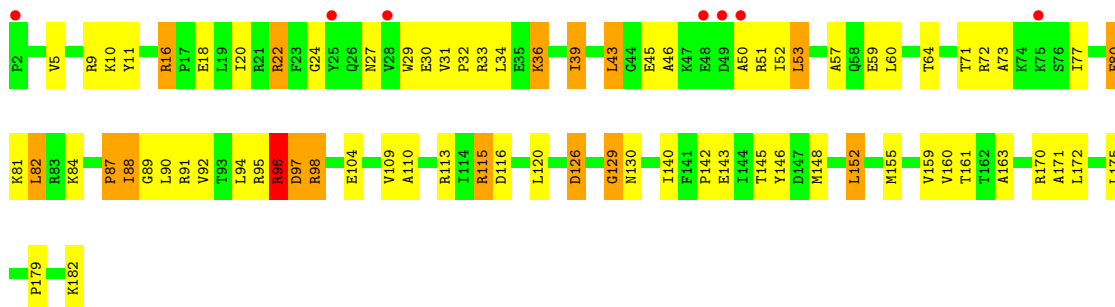


- Molecule 30: 50S ribosomal protein L4

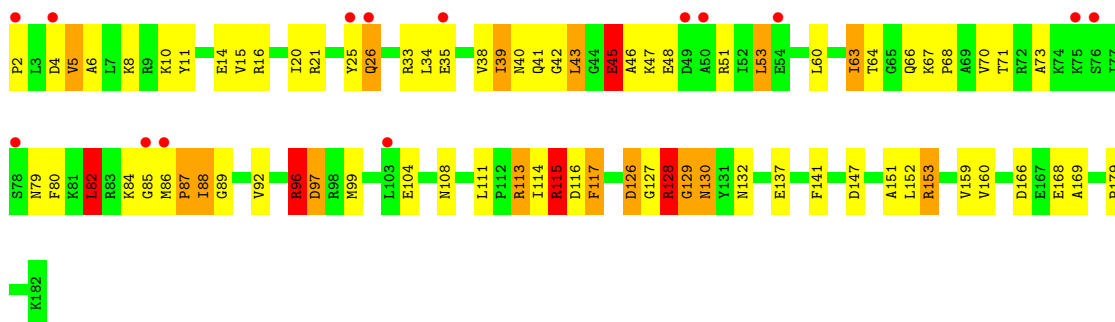




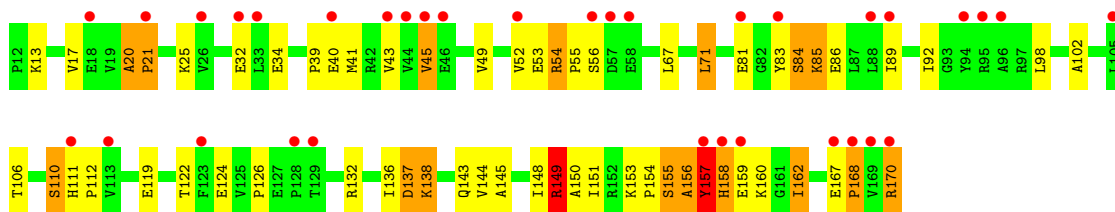
• Molecule 31: 50S ribosomal protein L5



• Molecule 31: 50S ribosomal protein L5

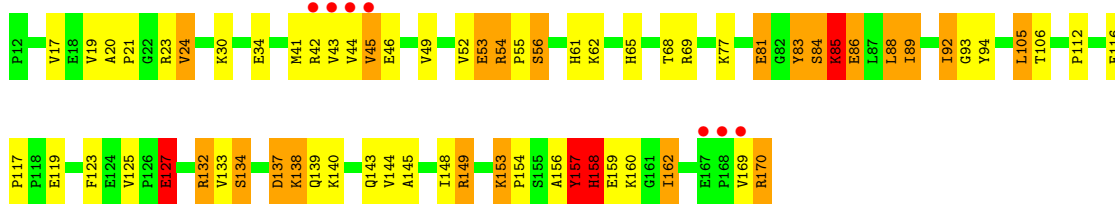


• Molecule 32: 50S ribosomal protein L6

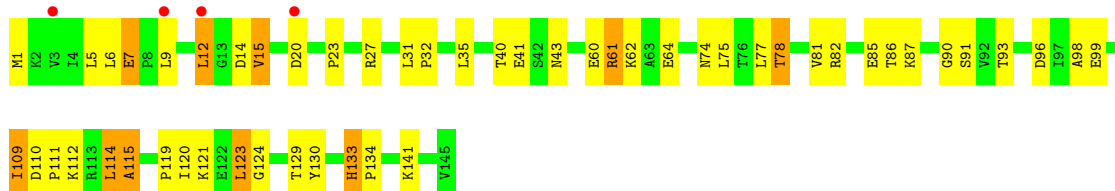


• Molecule 32: 50S ribosomal protein L6

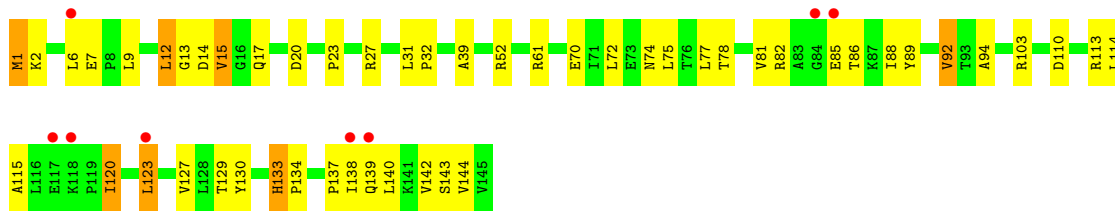




• Molecule 33: 50S ribosomal protein L9



• Molecule 33: 50S ribosomal protein L9



• Molecule 34: ribosomal L10 protein

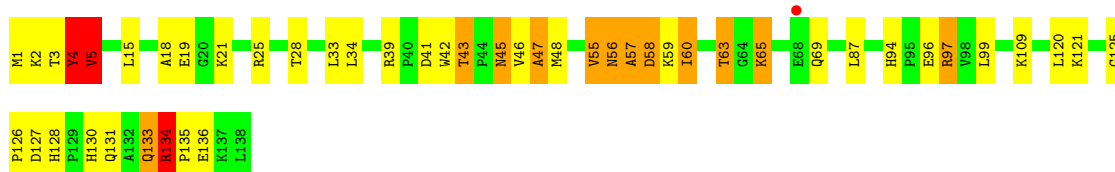


There are no outlier residues recorded for this chain.

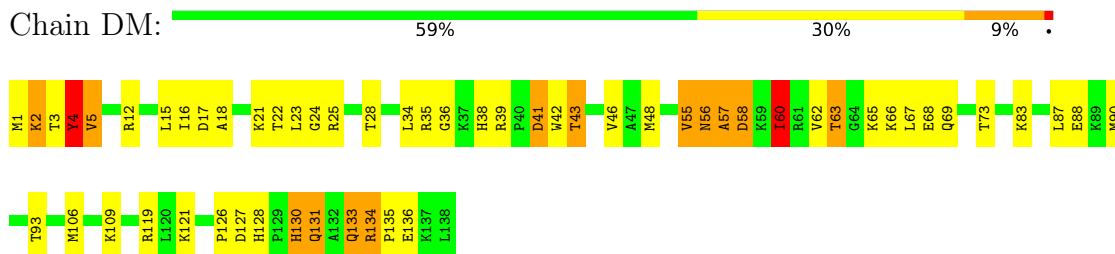
• Molecule 34: ribosomal L10 protein



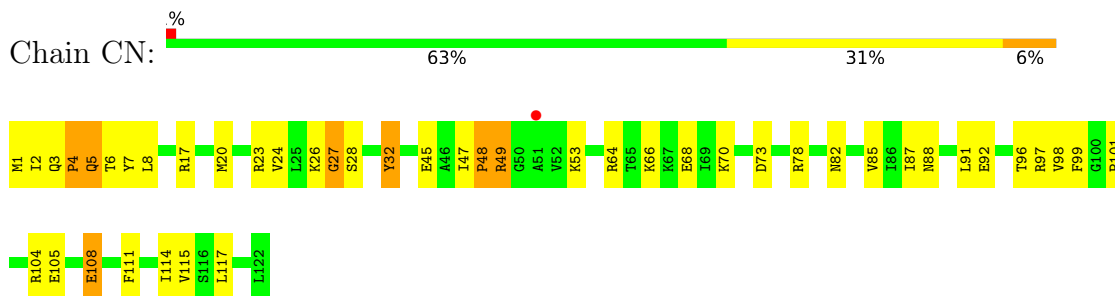
• Molecule 35: 50S ribosomal protein L13



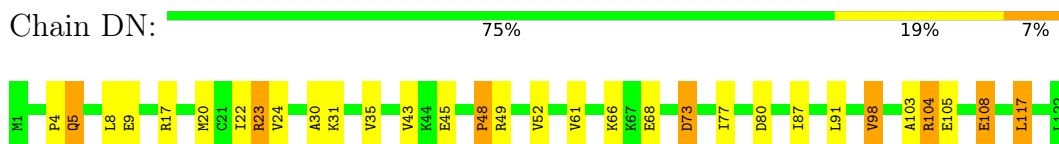
- Molecule 35: 50S ribosomal protein L13



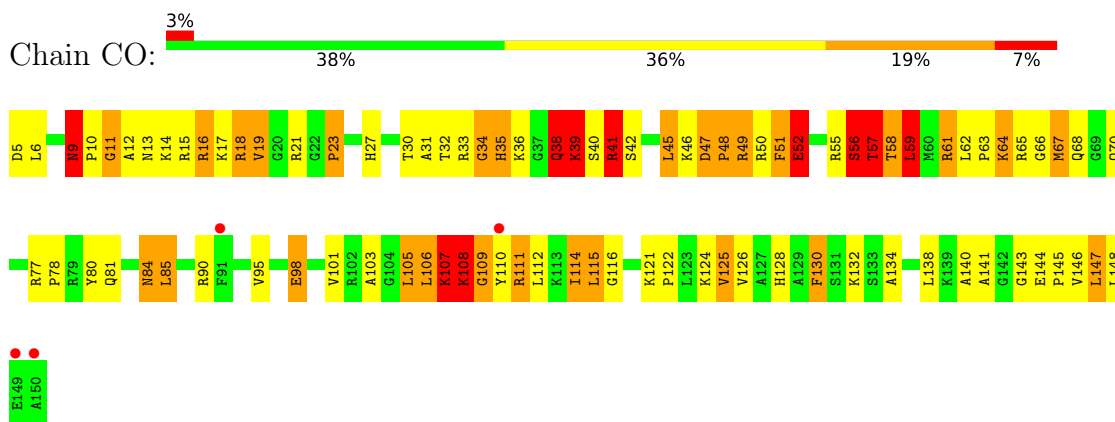
- Molecule 36: 50S ribosomal protein L14



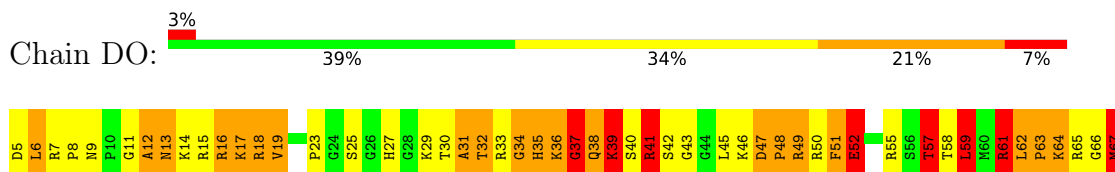
- Molecule 36: 50S ribosomal protein L14

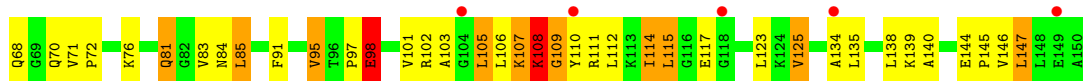


- Molecule 37: 50S ribosomal protein L15

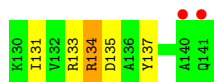
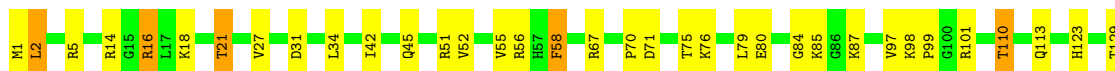
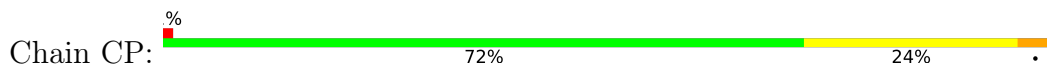


- Molecule 37: 50S ribosomal protein L15

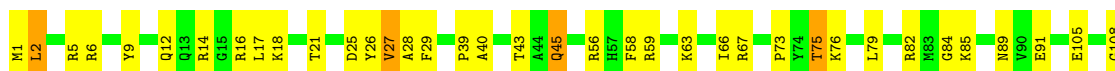




- Molecule 38: 50S ribosomal protein L16



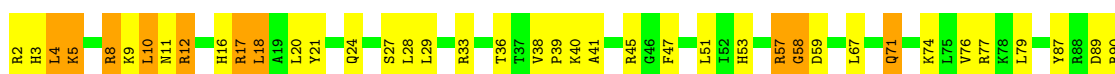
- Molecule 38: 50S ribosomal protein L16



- Molecule 39: 50S ribosomal protein L17

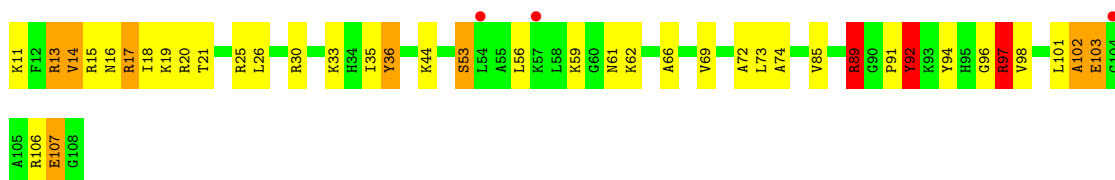


- Molecule 39: 50S ribosomal protein L17

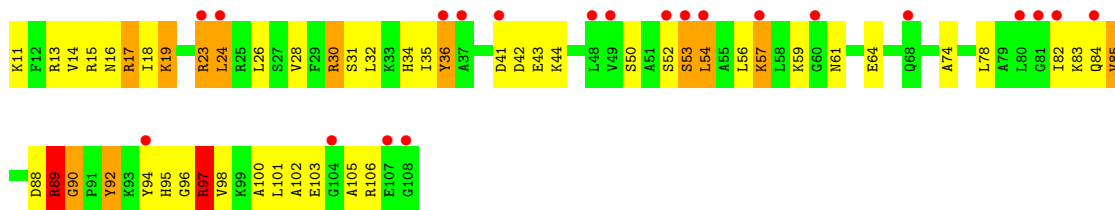


- Molecule 40: 50S ribosomal protein L18

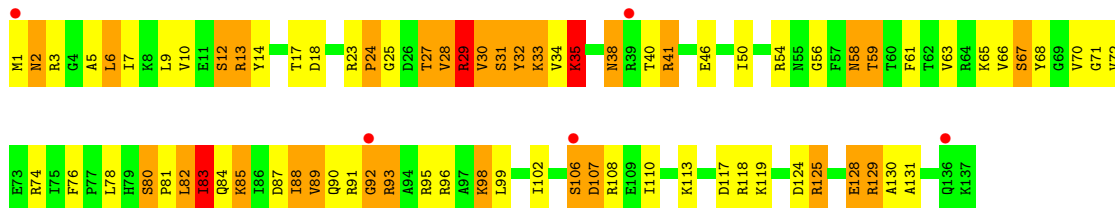




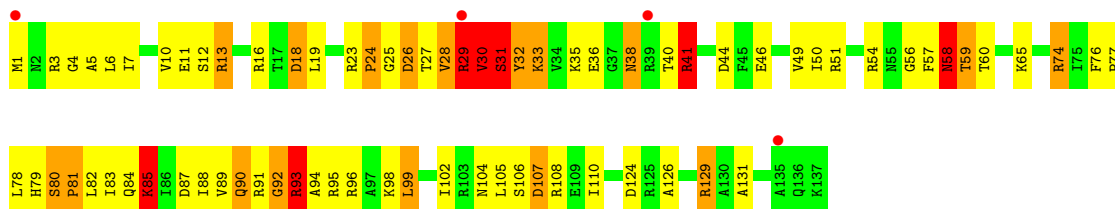
- Molecule 40: 50S ribosomal protein L18



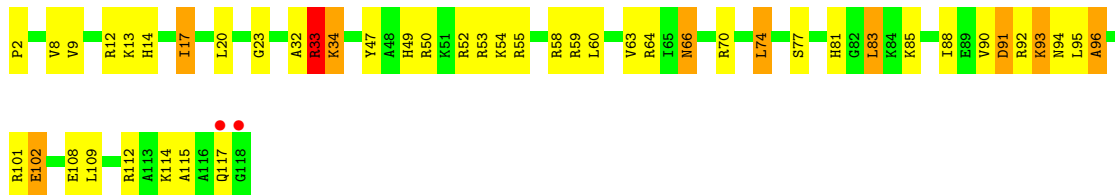
- Molecule 41: 50S ribosomal protein L19



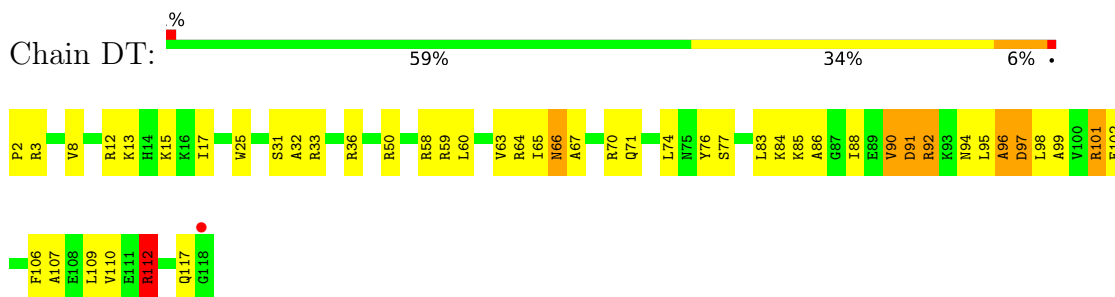
- Molecule 41: 50S ribosomal protein L19



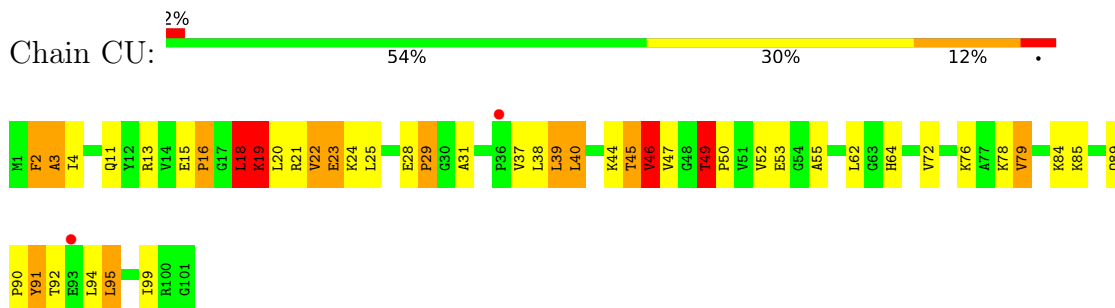
- Molecule 42: 50S ribosomal protein L20



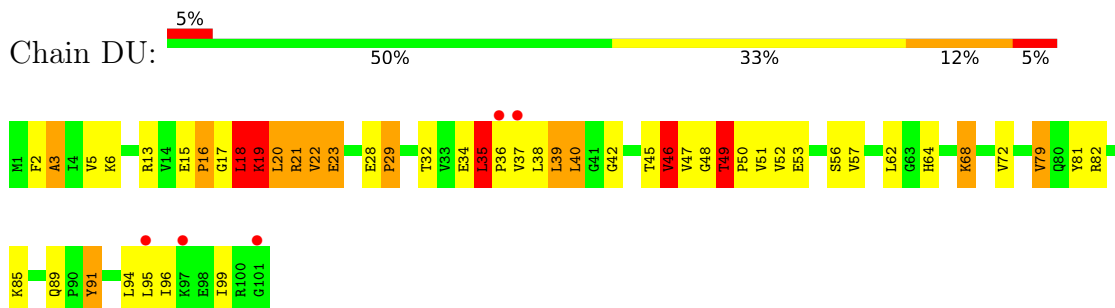
- Molecule 42: 50S ribosomal protein L20



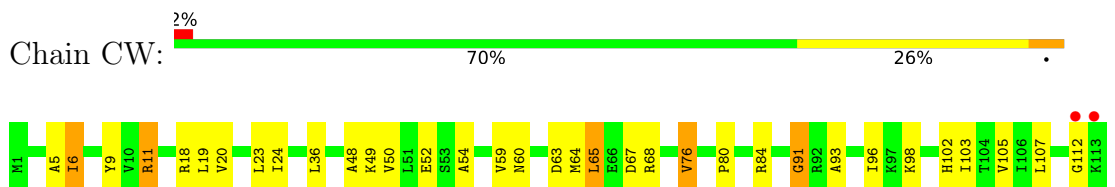
- Molecule 43: 50S ribosomal protein L21



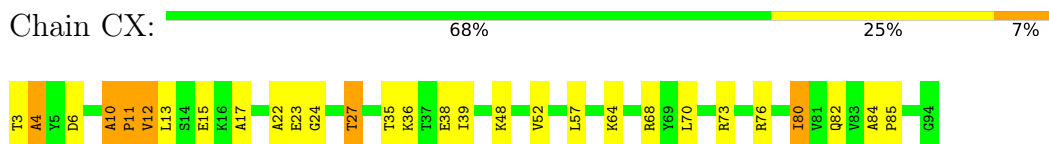
- Molecule 43: 50S ribosomal protein L21



- Molecule 44: 50S ribosomal protein L22

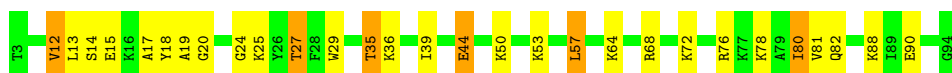


- Molecule 45: 50S ribosomal protein L23

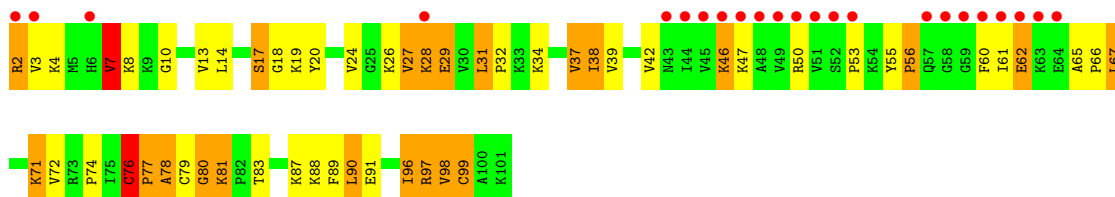


- Molecule 45: 50S ribosomal protein L23

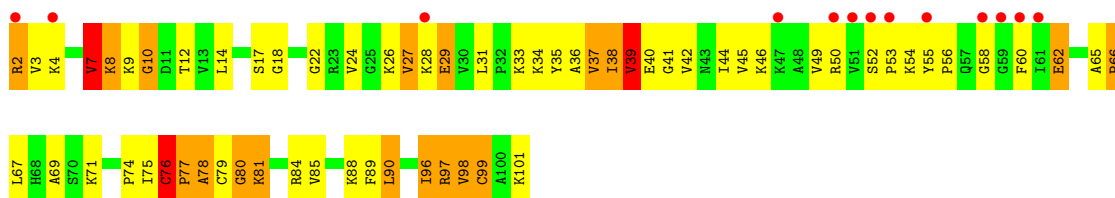




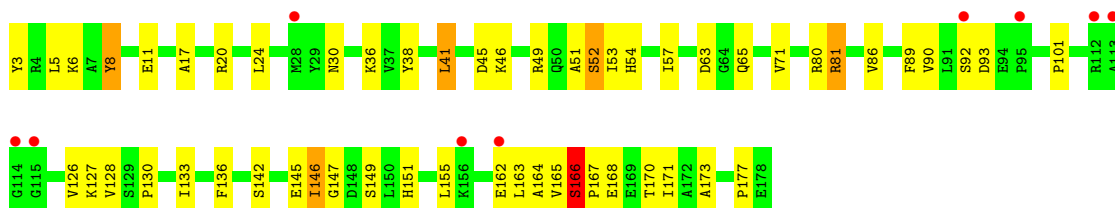
- Molecule 46: 50S ribosomal protein L24



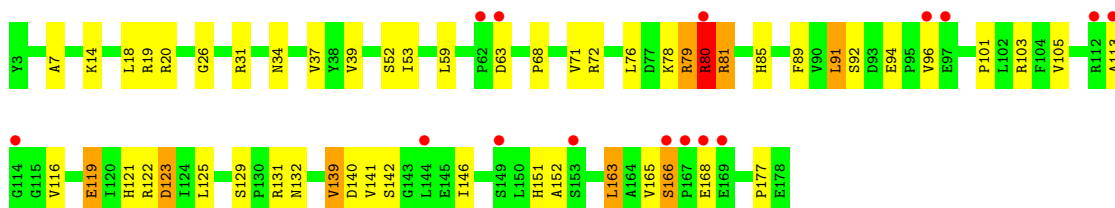
- Molecule 46: 50S ribosomal protein L24



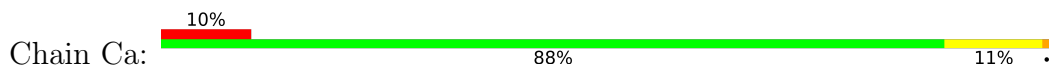
- Molecule 47: 50S ribosomal protein L25



- Molecule 47: 50S ribosomal protein L25

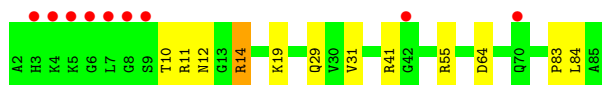
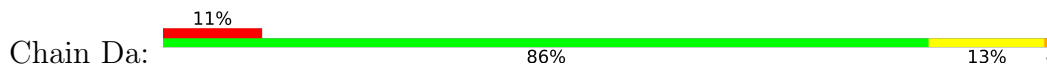


- Molecule 48: 50S ribosomal protein L27

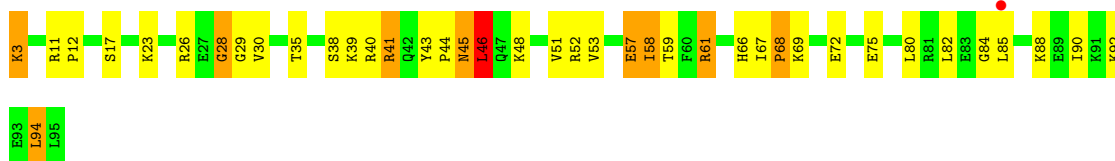




- Molecule 48: 50S ribosomal protein L27



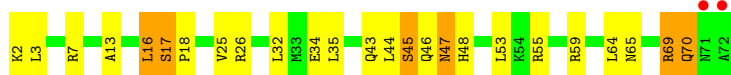
- Molecule 49: 50S ribosomal protein L28



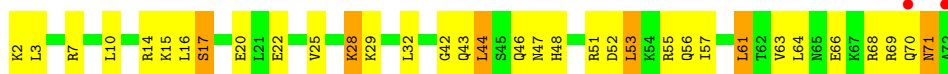
- Molecule 49: 50S ribosomal protein L28



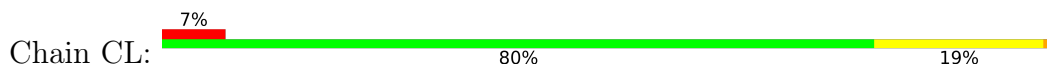
- Molecule 50: 50S ribosomal protein L29



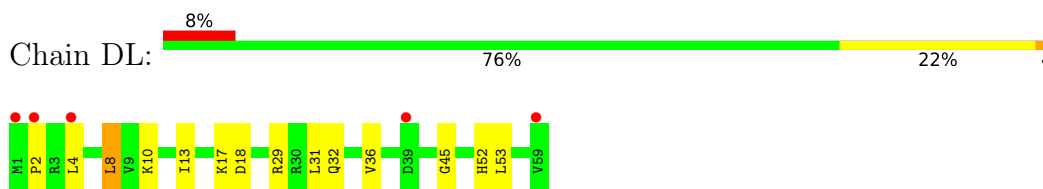
- Molecule 50: 50S ribosomal protein L29



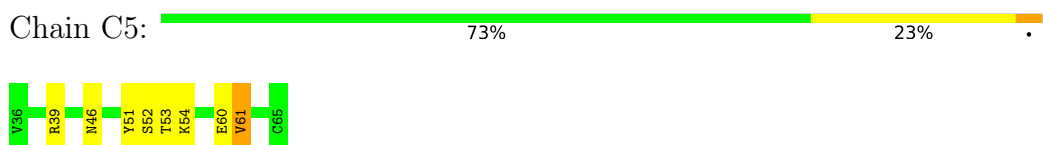
- Molecule 51: 50S ribosomal protein L30



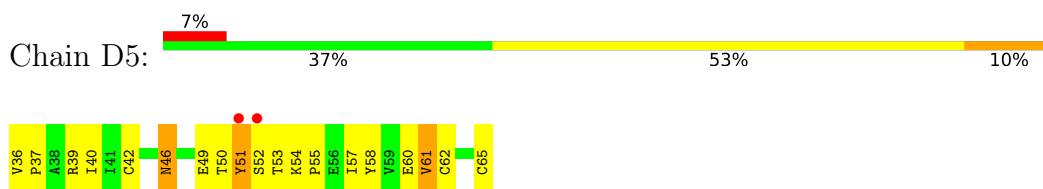
- Molecule 51: 50S ribosomal protein L30



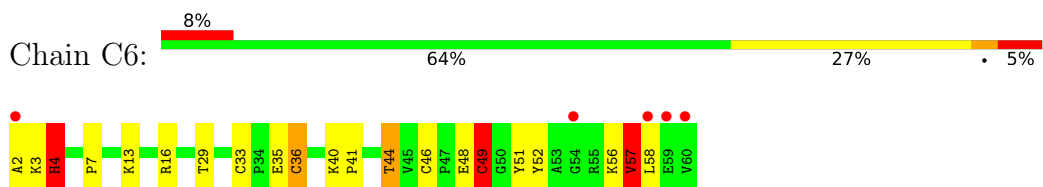
- Molecule 52: 50S ribosomal protein L31



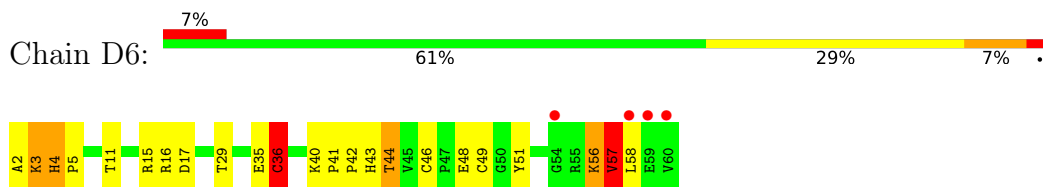
- Molecule 52: 50S ribosomal protein L31



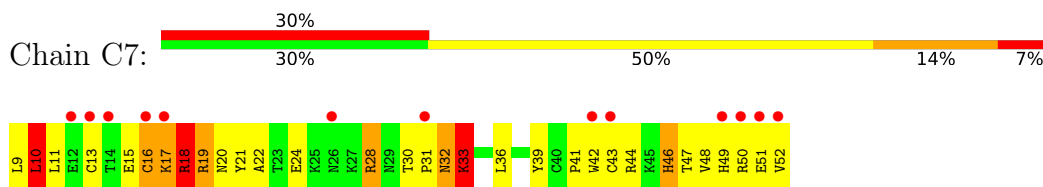
- Molecule 53: 50S ribosomal protein L32



- Molecule 53: 50S ribosomal protein L32

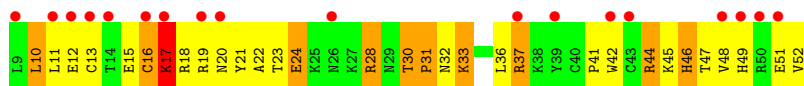


- Molecule 54: 50S ribosomal protein L33

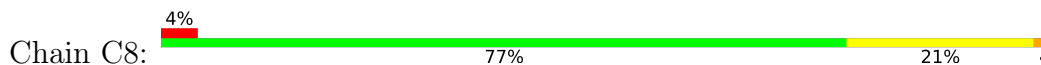


- Molecule 54: 50S ribosomal protein L33

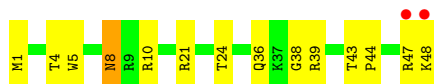
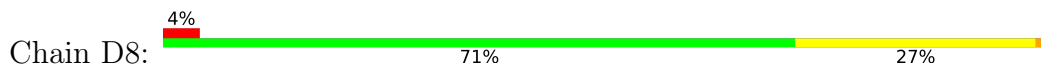




- Molecule 55: 50S ribosomal protein L34



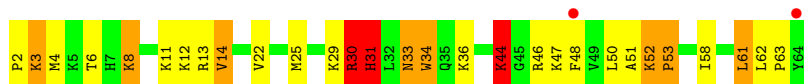
- Molecule 55: 50S ribosomal protein L34



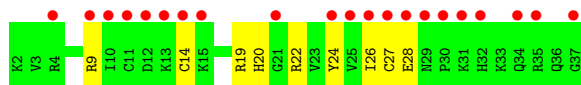
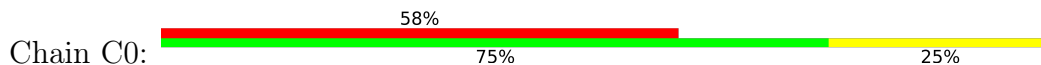
- Molecule 56: 50S ribosomal protein L35



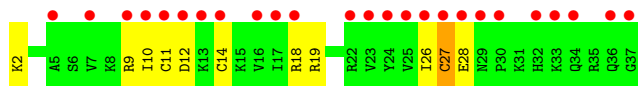
- Molecule 56: 50S ribosomal protein L35



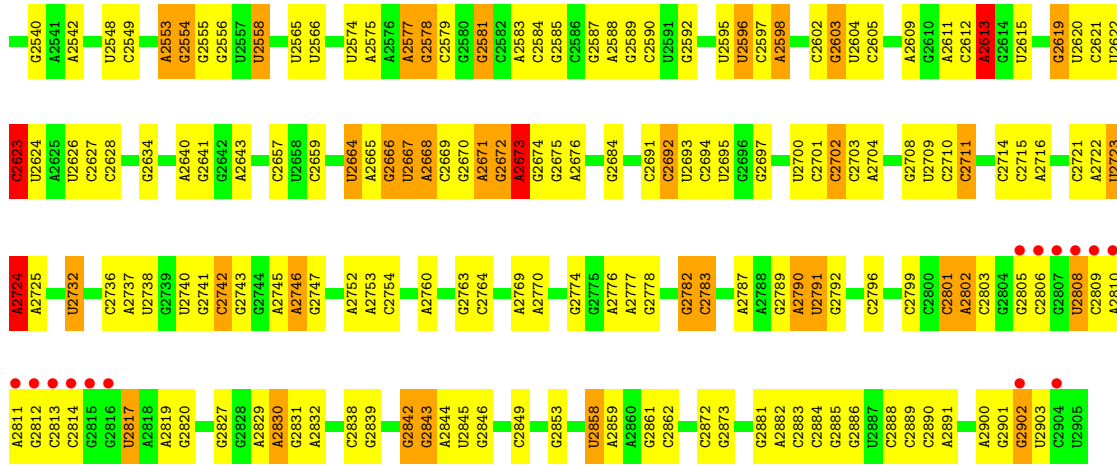
- Molecule 57: 50S ribosomal protein L36



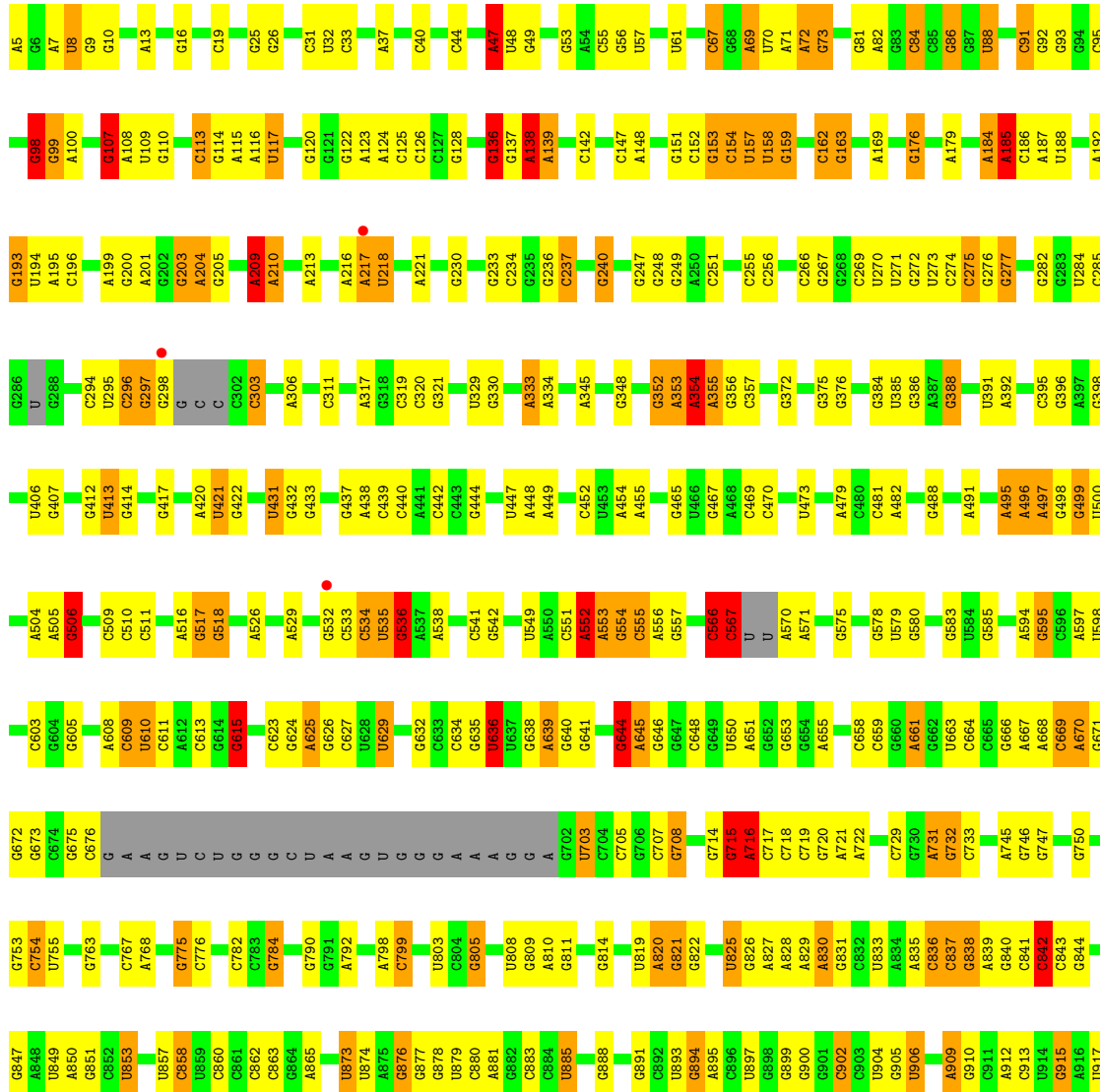
- Molecule 57: 50S ribosomal protein L36



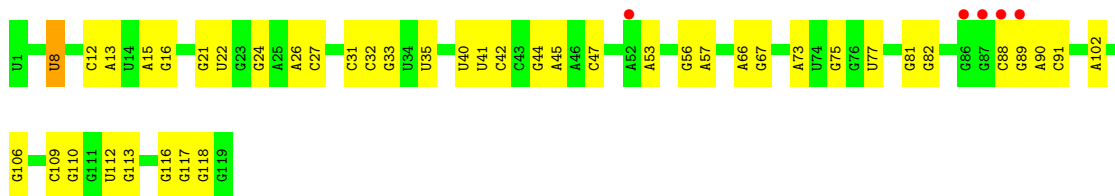
- Molecule 58: 23S rRNA (2899-MER)



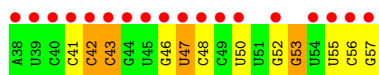
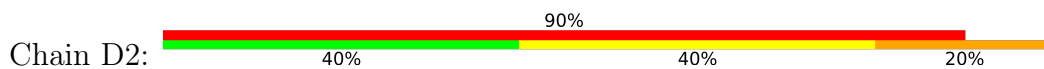
● Molecule 58: 23S rRNA (2899-MER)



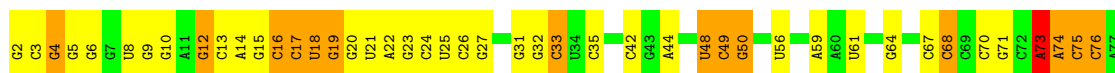
G1985	C1986	A1987	C1988	G1989	A1990	C1991	A1992	C1993	A1994	G1995	C1996	A1997	C1998	G1999	A2000	C2001	G2002	A2003	C2004	G2005	A2006	C2007	G2008	C2009	A2010	G2011	C2012	A2013	G2014	C2015	A2016	G2017	C2018	A2019	G2020	C2021	A2022	G2023	C2027	G2028	C2029	A2036	G2037	C2038	G2042	A2043	C2044	G2045	C2046	A2047	G2048	C2049	G2050	A2051	C2052	G2053	A2054	C2055	G2056	C2057	G2060																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
U1828	G1829	C1830	A1831	G1832	C1833	A1834	G1835	C1836	A1837	G1838	C1839	A1840	G1841	C1842	A1843	G1844	C1845	A1846	G1847	C1848	A1849	G1850	C1851	A1852	G1853	C1854	A1855	G1856	C1857	A1858	G1859	C1862	A1863	G1864	C1865	A1866	G1867	C1868	A1869	G1870	C1873	A1874	G1875	C1876	A1877	G1878	C1879	A1880	G1881	C1882	A1883	G1884	C1885	A1886	G1887	C1888	A1889	G1890	C1893	A1894	G1895	C1896	A1897	G1898	C1899	A1901	G1902	C1903	A1904	G1905	C1906	A1907	G1908	C1909	A1910	G1911	C1912	A1913	G1914	C1915	A1916	G1917	C1918	A1919	G1920	C1921	A1922	G1923	C1924	A1925	G1926	C1927	A1933	G1934	C1935	A1936	G1937	C1938	A1939	G1940	C1941	A1942	G1943	C1944	A1945	G1946	C1947	A1948	G1949	C1950	A1951	G1952	C1953	A1954	G1955	C1956	A1957	G1958	C1959	A1960	G1961	C1962	A1965	G1966	C1968	A1969	G1970	C1971	A1972	G1973	C1974	A1975	G1976	C1977	A1978	G1979	C1980	A1981	G1982	C1983	A1984	G1985	C1986	A1987	G1988	C1989	A1990	G1991	C1992	A1993	G1994	C1995	A1996	G1997	C1998	A1999	G2000	C2001	A2002	G2003	C2004	A2005	G2006	C2007	A2008	G2009	C2010	A2011	G2012	C2013	A2014	G2015	C2016	A2017	G2018	C2019	A2020	G2021	C2022	A2023	G2024	C2025	A2026	G2027	C2028	A2029	G2030	C2031	A2032	G2033	C2034	A2035	G2036	C2037	A2038	G2039	C2040	A2041	G2042	C2043	A2044	G2045	C2046	A2047	G2048	C2049	A2050	G2051	C2052	A2053	G2054	C2055	A2056	G2057	C2058	A2059	G2060																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
U1732	G1733	C1734	A1735	G1736	C1737	A1738	G1739	C1740	A1741	G1742	C1743	A1744	G1745	C1746	A1747	G1748	C1749	A1750	G1751	C1752	A1753	G1754	C1755	A1756	G1757	C1758	A1759	G1760	C1761	A1762	G1763	C1764	A1765	G1766	C1767	A1768	G1769	C1770	A1771	G1772	C1773	A1774	G1775	C1776	A1777	G1778	C1779	A1780	G1781	C1782	A1783	G1784	C1785	A1786	G1787	C1788	A1789	G1790	C1791	A1792	G1793	C1794	A1795	G1796	C1797	A1798	G1799	C1800	A1801	G1802	C1803	A1804	G1805	C1806	A1807	G1808	C1809	A1810	G1811	C1812	A1813	G1814	C1815	A1816	G1817	C1818	A1819	G1820	C1821	A1822	G1823	C1824	A1825	G1826	C1827	A1828	G1829	C1830	A1831	G1832	C1833	A1834	G1835	C1836	A1837	G1838	C1839	A1840	G1841	C1842	A1843	G1844	C1845	A1846	G1847	C1848	A1849	G1850	C1851	A1852	G1853	C1854	A1855	G1856	C1857	A1858	G1859	C1860	A1861	G1862	C1863	A1864	G1865	C1866	A1867	G1868	C1869	A1869	G1870	C1871	A1872	G1873	C1874	A1875	G1876	C1877	A1878	G1879	C1880	A1881	G1882	C1883	A1884	G1885	C1886	A1887	G1888	C1889	A1890	G1891	C1892	A1893	G1894	C1895	A1896	G1897	C1898	A1899	G1900	C1901	A1902	G1903	C1904	A1905	G1906	C1907	A1908	G1909	C1910	A1911	G1912	C1913	A1914	G1915	C1916	A1917	G1918	C1919	A1920	G1921	C1922	A1923	G1924	C1925	A1926	G1927	C1928	A1929	G1930	C1931	A1932	G1933	C1934	A1935	G1936	C1937	A1938	G1939	C1940	A1941	G1942	C1943	A1944	G1945	C1946	A1947	G1948	C1949	A1950	G1951	C1952	A1953	G1954	C1955	A1956	G1957	C1958	A1959	G1960	C1961	A1962	G1963	C1964	A1965	G1966	C1967	A1968	G1969	C1970	A1971	G1972	C1973	A1974	G1975	C1976	A1977	G1978	C1979	A1980	G1981	C1982	A1983	G1984	C1985	A1986	G1987	C1988	A1989	G1990	C1991	A1992	G1993	C1994	A1995	G1996	C1997	A1998	G1999	C1999	A2000	G2001	C2002	A2003	G2004	C2005	A2006	G2007	C2008	A2009	G2010	C2011	A2012	G2013	C2014	A2015	G2016	C2017	A2018	G2019	C2020	A2021	G2022	C2023	A2024	G2025	C2026	A2027	G2028	C2029	A2030	G2031	C2032	A2033	G2034	C2035	A2036	G2037	C2038	A2039	G2040	C2041	A2042	G2043	C2044	A2045	G2046	C2047	A2048	G2049	C2050	A2051	G2052	C2053	A2054	G2055	C2056	A2057	G2058	C2059	A2060	G2061	C2062	A2063	G2064	C2065	A2066	G2067	C2068	A2069	G2070	C2071	A2072	G2073	C2074	A2075	G2076	C2077	A2078	G2079	C2080	A2081	G2082	C2083	A2084	G2085	C2086	A2087	G2088	C2089	A2089	G2090	C2091	A2092	G2093	C2094	A2095	G2096	C2097	A2098	G2099	C2100	A2099	G2101	C2102	A2100	G2103	C2104	A2101	G2105	C2106	A2102	G2107	C2108	A2103	G2109	C2109	A2104	G2110	C2110	A2105	G2111	C2111	A2106	G2112	C2112	A2107	G2113	C2113	A2108	G2114	C2114	A2109	G2115	C2115	A2110	G2116	C2116	A2111	G2117	C2117	A2112	G2118	C2118	A2113	G2119	C2119	A2114	G2120	C2120	A2115	G2121	C2121	A2116	G2122	C2122	A2117	G2123	C2123	A2118	G2124	C2124	A2119	G2125	C2125	A2120	G2126	C2126	A2121	G2127	C2127	A2122	G2128	C2128	A2123	G2129	C2129	A2124	G2130	C2130	A2125	G2131	C2131	A2126	G2132	C2132	A2127	G2133	C2133	A2128	G2134	C2134	A2129	G2135	C2135	A2130	G2136	C2136	A2131	G2137	C2137	A2132	G2138	C2138	A2133	G2139	C2139	A2134	G2140	C2140	A2135	G2141	C2141	A2136	G2142	C2142	A2137	G2143	C2143	A2138	G2144	C2144	A2139	G2145	C2145	A2140	G2146	C2146	A2141	G2147	C2147	A2142	G2148	C2148	A2143	G2149	C2149	A2144	G2150	C2150	A2145	G2151	C2151	A2146	G2152	C2152	A2147	G2153	C2153	A2148	G2154	C2154	A2149	G2155	C2155	A2150	G2156	C2156	A2151	G2157	C2157	A2152	G2158	C2158	A2153	G2159	C2159	A2154	G2160	C2160	A2155	G2161	C2161	A2156	G2162	C2162	A2157	G2163	C2163	A2158	G2164	C2164	A2159	G2165	C2165	A2160	G2166	C2166	A2161	G2167	C2167	A2162	G2168	C2168	A2163	G2169	C2169	A2164	G2170	C2170	A2165	G2171	C2171	A2166	G2172	C2172	A2167	G2173	C2173	A2168	G2174	C2174	A2169	G2175	C2175	A2170	G2176	C2176	A2171	G2177	C2177	A2172	G2178	C2178	A2173	G2179	C2179	A2174	G2180	C2180	A2175	G2181	C2181	A2176	G2182	C2182	A2177	G2183	C2183	A2178	G2184	C2184	A2179	G2185	C2185	A2180	G2186	C2186	A2181	G2187	C2187	A2182	G2188	C2188	A2183	G2189	C2189	A2184	G2190	C2190	A2185	G2191	C2191	A2186	G2192	C2192	A2187	G2193	C2193	A2188	G2194	C2194	A2189	G2195	C2195	A2190	G2196	C2196	A2191	G2197	C2197	A2192	G2198	C2198	A2193	G2199	C2199	A2194	G2200	C2200	A2195	G2201	C2201	A2196	G2202	C2202	A2197	G2203	C2203	A2198	G2204	C2204	A2199	G2205	C2205	A2200	G2206	C2206	A2201	G2207	C2207	A2202	G2208	C2208	A2203	G2209	C2209	A2204	G2210	C2210	A2205	G2211	C2211	A2206	G2212	C2212	A2207	G2213	C2213	A2208	G2214	C2214	A2209	G2215	C2215	A2210	G2216	C2216	A2211	G2217	C2217	A2212	G2218	C2218	A2213	G2219	C2219	A2214	G2220	C2220	A2215	G2221	C2221	A2216	G2222	C2222	A2217	G2223	C2223	A2218	G2224	C2224	A2219	G2225	C2225	A2220	G2226	C2226	A2221	G2227	C2227	A2222	G2228	C2228	A2223	G2229	C2229	A2224	G2230	C2230	A2225	G2231	C2231	A2226	G2232	C2232	A2227	G2233	C2233	A2228	G2234	C2234	A2229	G2235	C2235	A2230	G2236	C2236	A2231	G2237	C2237	A2232	G2238	C2238	A2233	G2239	C2239	A2234	G2240	C2240	A2235	G2241	C2241	A2236	G2242	C2242	A2237	G2243	C2243	A2238	G2244	C2244	A2239	G2245	C2245	A2240	G2246	C2246	A2241	G2247	C2247	A2242	G2248	C2248	A2243	G2249	C2249	A2244	G2250	C2250	A2245	G2251	C2251	A2246	G2252	C2252	A2247	G2253	C2253	A2248	G2254	C2254	A2249	G2255	C2255	A2250	G2256	C2256	A2251	G2257	C2257	A2252	G2258	C2258	A2253	G2259	C2259	A2254	G2260	C2260	A2255	G2261	C2261	A2256	G2262	C2262	A2257	G2263	C2263	A2258	G2264	C2264	A2259	G2265	C2265	A2260	G2266	C2266	A2261	G2267	C2267	A2262	G2268	C2268	A2263	G2269	C2269	A2264	G2270	C2270	A2265	G2271	C2271	A2266	G2272	C2272	A2267	G2273	C2273	A2268	G2274	C2274	A2269	G2275	C2275	A2270	G2276	C2276	A2271	G2277	C2277	A2272	G2278	C2278	A2273	G2279	C2279	A2274	G2280	C2280	A2275	G2281	C2281	A2276	G2282	C2282	A2277	G2283	C2283	A2278	G2284	C2284	A2279	G2285	C2285	A2280	G2286	C2286	A2281	G2287	C2287	A2282	G2288	C2288	A2283	G2289	C2289	A2284	G2290	C2290	A2285	G2291	C2291	A2286	G2292	C2292	A2287	G2293	C2293	A2288	G2294	C2294	A2289	G2295	C2295	A2290	G2296	C2296	A2291	G2297	C2297	A2292	G2298	C2298	A2293	G2299	C2299	A2294	G2300	C2300	A2295	G2301	C2301	A2296	G2302	C2302	A2297	G2303	C2303	A2298	G2304	C2304	A2299	G2305	C2305	A2300	G2306	C2306	A2301	G2307	C2307	A2302	G2308	C2308	A2303	G2309	C2309	A2304	G2310	C2310	A2305	G2311	C2311	A2306	G2312	C2312	A2307	G2313	C2313	A2308	G2314	C2314	A2309	G2315	C2315	A2310	G2316	C2316	A2311	G2317	C2317	A2312	G2318	C2318	A2313	G2319	C2319	A2314	G2320	C2320	A2315	G2321	C2321	A2316	G2322	C2322	A2317	G2323	C2323	A2318	G2324	C2324	A2319	G2325	C2325	A2320	G2326	C2326	A2321	G2327	C2327	A2322	G2328	C2328	A2323	G2329	C2329	A2324	G2330	C2330	A2325	G2331	C2331	A2326	G2332	C2332	A2327	G2333	C2333	A2328	G2334	C2334	A2329	G2335	C2335	A2330	G2336	C2336	A2331	G2337	C2337	A2332	G2338	C2338	A2333	G2339	C2339	A



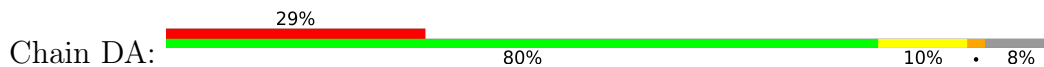
- Molecule 60: tRNA (5'-D(*AP*UP*CP*CP*CP*CP*GP*UP*GP*UP*CP*CP*UP*UP*GP*G P*UP*UP*CP*G)-3')



- Molecule 61: tRNA (76-MER)



- Molecule 62: 50S ribosomal protein L1



- Molecule 63: 50S ribosomal protein L22



- Molecule 64: DNA (55-MER)



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	214.21Å 457.45Å 639.66Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.91 – 3.40 49.91 – 3.40	Depositor EDS
% Data completeness (in resolution range)	98.5 (49.91-3.40) 98.6 (49.91-3.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.28	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.46 (at 3.40Å)	Xtrriage
Refinement program	REFMAC 5.8.0073	Depositor
R, R_{free}	0.204 , 0.241 0.207 , 0.241	Depositor DCC
R_{free} test set	41975 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å ²)	74.2	Xtrriage
Anisotropy	0.256	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.28 , 78.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.44$, $\langle L^2 \rangle = 0.27$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	295910	wwPDB-VP
Average B, all atoms (Å ²)	82.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.91% 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: PAR, MG, 3V6

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	A2	0.48	0/192	0.82	0/297
2	AA	0.51	0/1936	0.74	0/2609
2	BA	0.50	0/1936	0.72	0/2609
3	AC	0.62	0/1636	0.82	2/2205 (0.1%)
4	AD	0.64	1/1733 (0.1%)	0.88	2/2318 (0.1%)
4	BD	0.68	2/1733 (0.1%)	0.98	9/2318 (0.4%)
5	AE	0.56	0/1163	0.82	1/1564 (0.1%)
5	BE	0.52	0/1163	0.78	0/1564
6	AF	0.52	0/856	0.78	0/1154
6	BF	0.56	0/856	0.81	0/1154
7	AG	0.51	0/1276	0.75	0/1709
7	BG	0.56	0/1276	0.78	2/1709 (0.1%)
8	AH	0.52	0/1136	0.75	0/1527
8	BH	0.52	0/1136	0.79	0/1527
9	AI	0.57	0/1029	0.82	0/1378
9	BI	0.54	0/1029	0.77	0/1378
10	AJ	0.58	0/808	0.84	0/1085
10	BJ	0.60	0/808	0.81	0/1085
11	AK	0.59	0/900	0.81	0/1213
11	BK	0.54	0/900	0.74	0/1213
12	AL	0.61	0/987	0.86	0/1320
12	BL	0.65	0/987	0.91	1/1320 (0.1%)
13	AM	0.57	0/999	0.86	1/1336 (0.1%)
13	BM	0.59	0/999	0.88	0/1336
14	AN	0.60	0/501	0.91	1/664 (0.2%)
14	BN	0.64	0/501	1.00	2/664 (0.3%)
15	AO	0.51	0/745	0.70	0/992
15	BO	0.53	0/745	0.80	0/992
16	AP	0.59	0/717	0.83	0/963
16	BP	0.56	0/717	0.81	0/963
17	AR	0.55	0/837	0.81	0/1117
17	BR	0.49	0/837	0.75	0/1117

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
18	AS	0.52	0/579	0.75	0/768
18	BS	0.54	0/579	0.73	0/768
19	AT	0.60	0/643	0.78	1/865 (0.1%)
19	BT	0.55	0/643	0.79	1/865 (0.1%)
20	AU	0.55	0/765	0.85	1/1007 (0.1%)
20	BU	0.50	0/765	0.80	0/1007
21	AW	0.61	0/213	0.90	0/277
21	BW	0.72	0/213	0.88	0/277
22	Ab	0.47	4/36190 (0.0%)	0.82	64/56486 (0.1%)
22	Bb	0.47	3/36190 (0.0%)	0.82	66/56486 (0.1%)
23	B2	0.42	0/216	0.86	0/334
24	BC	0.53	0/1637	0.76	1/2205 (0.0%)
25	C2	0.31	0/1784	0.72	1/2780 (0.0%)
25	C3	0.40	0/1809	0.77	3/2819 (0.1%)
25	D3	0.38	1/1809 (0.1%)	0.74	1/2819 (0.0%)
26	C4	0.49	0/1832	0.95	5/2855 (0.2%)
27	CA	0.55	0/646	0.72	0/869
28	CB	0.73	0/2155	0.99	3/2905 (0.1%)
28	DB	0.80	2/2155 (0.1%)	1.01	6/2905 (0.2%)
29	CC	0.70	1/1597 (0.1%)	0.93	2/2153 (0.1%)
29	DC	0.74	2/1597 (0.1%)	0.96	4/2153 (0.2%)
30	CD	0.65	0/1659	0.89	0/2244
30	DD	0.71	1/1659 (0.1%)	0.93	0/2244
31	CE	0.57	0/1499	0.84	0/2016
31	DE	0.58	0/1499	0.80	0/2016
32	CF	0.59	1/1246 (0.1%)	0.77	1/1682 (0.1%)
32	DF	0.69	1/1246 (0.1%)	0.92	2/1682 (0.1%)
33	CI	0.57	0/1147	0.84	1/1551 (0.1%)
33	DI	0.57	0/1147	0.81	0/1551
35	CM	0.60	0/1132	0.86	1/1525 (0.1%)
35	DM	0.63	0/1132	0.87	0/1525
36	CN	0.64	0/943	0.89	0/1269
36	DN	0.64	0/943	0.87	0/1269
37	CO	0.82	0/1131	1.17	4/1504 (0.3%)
37	DO	0.87	0/1131	1.16	2/1504 (0.1%)
38	CP	0.57	0/1143	0.80	0/1527
38	DP	0.63	0/1143	0.89	0/1527
39	CQ	0.67	0/974	0.99	2/1302 (0.2%)
39	DQ	0.74	0/974	1.08	6/1302 (0.5%)
40	CR	0.64	0/779	0.96	2/1036 (0.2%)
40	DR	0.71	0/779	1.04	2/1036 (0.2%)
41	CS	0.69	0/1156	1.04	0/1542
41	DS	0.73	0/1156	1.12	4/1542 (0.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
42	CT	0.64	0/975	0.92	1/1297 (0.1%)
42	DT	0.75	0/975	1.07	4/1297 (0.3%)
43	CU	0.56	0/790	0.88	0/1057
43	DU	0.63	0/790	0.96	1/1057 (0.1%)
44	CW	0.64	0/907	0.89	0/1216
45	CX	0.63	0/740	0.85	0/993
45	DX	0.69	1/740 (0.1%)	1.01	2/993 (0.2%)
46	CY	0.75	0/789	0.98	0/1051
46	DY	0.80	0/789	1.00	1/1051 (0.1%)
47	CZ	0.51	0/1436	0.77	0/1949
47	DZ	0.53	0/1436	0.77	1/1949 (0.1%)
48	Ca	0.61	0/671	0.87	1/892 (0.1%)
48	Da	0.67	0/671	0.96	1/892 (0.1%)
49	CH	0.65	0/741	0.95	1/984 (0.1%)
49	DH	0.60	0/741	0.89	0/984
50	CK	0.54	0/600	0.83	0/793
50	DK	0.59	0/600	0.84	0/793
51	CL	0.54	0/473	0.80	0/634
51	DL	0.60	0/473	0.83	0/634
52	C5	0.63	0/229	0.86	0/309
52	D5	0.61	0/229	0.80	0/309
53	C6	0.67	0/473	0.91	1/639 (0.2%)
53	D6	0.64	0/473	0.94	1/639 (0.2%)
54	C7	0.89	0/387	1.06	1/515 (0.2%)
54	D7	0.71	0/387	1.01	1/515 (0.2%)
55	C8	0.72	0/427	1.01	1/561 (0.2%)
55	D8	0.78	0/427	0.99	1/561 (0.2%)
56	C9	0.74	0/516	1.08	0/679
56	D9	0.73	0/516	1.04	1/679 (0.1%)
57	C0	0.53	0/302	0.70	0/397
57	D0	0.59	0/302	0.87	0/397
58	C1	0.55	15/67709 (0.0%)	0.91	250/105690 (0.2%)
58	D1	0.58	32/67709 (0.0%)	0.96	353/105690 (0.3%)
59	Cs	0.45	0/2853	0.80	3/4451 (0.1%)
59	Ds	0.49	0/2853	0.85	4/4451 (0.1%)
60	D2	0.34	0/459	0.74	0/712
61	D4	0.48	0/1813	0.86	7/2825 (0.2%)
62	DA	0.55	0/645	0.73	0/867
63	DW	0.66	0/907	0.95	1/1216 (0.1%)
64	DV	0.28	0/1269	0.65	0/1956
All	All	0.56	67/318931 (0.0%)	0.89	845/476973 (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
2	AA	0	1
3	AC	0	1
12	AL	0	1
13	AM	0	1
13	BM	0	1
14	BN	0	1
18	BS	0	1
19	AT	0	1
20	AU	0	1
22	Ab	1	0
22	Bb	1	0
25	C3	1	0
25	D3	1	0
28	CB	0	4
28	DB	0	3
29	DC	0	2
30	CD	0	1
31	CE	0	2
32	DF	0	1
33	CI	0	1
34	DJ	0	1
37	CO	0	6
37	DO	0	6
39	DQ	0	1
41	CS	0	1
41	DS	0	3
42	CT	0	1
42	DT	0	1
46	CY	0	1
46	DY	0	2
47	DZ	0	1
48	Da	0	1
53	C6	0	1
54	C7	0	1
54	D7	0	1
56	D9	0	1
58	C1	20	0
58	D1	21	0
All	All	45	52

The worst 5 of 67 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	C1	296	C	O3'-P	8.28	1.71	1.61
28	DB	237	GLU	CG-CD	8.11	1.64	1.51
29	DC	127	ASP	CB-CG	8.00	1.68	1.51
58	D1	1346	A	O3'-P	7.44	1.70	1.61
58	D1	1429	A	O3'-P	-7.22	1.52	1.61

The worst 5 of 845 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
26	C4	36	A	O5'-P-OP2	-17.36	89.87	110.70
58	D1	2028	C	O5'-P-OP2	-16.34	90.99	105.70
58	D1	2603	G	O5'-P-OP2	-16.16	91.15	105.70
58	D1	598	U	O5'-P-OP2	-13.61	93.45	105.70
58	C1	2613	A	O5'-P-OP1	-12.83	94.15	105.70

5 of 45 chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
22	Ab	408	A	C1'
22	Bb	408	A	C1'
25	C3	47	U	C1'
58	C1	98	G	C1'
58	C1	715	G	C4',C3',C1'

5 of 52 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	AA	23	ARG	Peptide
3	AC	26	LYS	Peptide
12	AL	91	LYS	Peptide
13	AM	69	GLU	Peptide
19	AT	28	LYS	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	A2	173	0	85	16	0
2	AA	1901	0	1951	33	0
2	BA	1901	0	1951	32	0
3	AC	1612	0	1677	30	0
4	AD	1703	0	1763	41	0
4	BD	1703	0	1763	43	0
5	AE	1147	0	1207	27	0
5	BE	1147	0	1207	23	0
6	AF	843	0	857	6	0
6	BF	843	0	857	19	0
7	AG	1257	0	1296	8	0
7	BG	1257	0	1296	15	0
8	AH	1116	0	1177	11	0
8	BH	1116	0	1177	17	0
9	AI	1011	0	1043	29	0
9	BI	1011	0	1043	18	0
10	AJ	795	0	840	22	0
10	BJ	795	0	840	21	0
11	AK	885	0	904	13	0
11	BK	885	0	904	21	0
12	AL	971	0	1057	24	0
12	BL	971	0	1057	17	0
13	AM	988	0	1059	35	0
13	BM	988	0	1059	27	0
14	AN	492	0	529	20	0
14	BN	492	0	529	13	0
15	AO	734	0	771	7	0
15	BO	734	0	771	8	0
16	AP	701	0	720	10	0
16	BP	701	0	720	14	0
17	AR	824	0	891	5	0
17	BR	824	0	891	14	0
18	AS	574	0	644	17	0
18	BS	574	0	644	15	0
19	AT	630	0	652	24	0
19	BT	630	0	652	26	0
20	AU	763	0	861	16	0
20	BU	763	0	861	13	0
21	AW	209	0	221	1	0
21	BW	209	0	221	3	0
22	Ab	32329	0	16318	0	0
22	Bb	32329	0	16318	0	1
23	B2	194	0	95	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	BC	1613	0	1677	26	0
25	C2	1597	0	811	18	0
25	C3	1619	0	822	28	0
25	D3	1619	0	822	46	0
26	C4	1640	0	837	56	0
27	CA	1156	0	755	15	0
28	CB	2105	0	2182	95	0
28	DB	2105	0	2182	88	0
29	CC	1564	0	1629	60	0
29	DC	1564	0	1629	79	0
30	CD	1624	0	1677	61	0
30	DD	1624	0	1677	47	0
31	CE	1474	0	1535	44	0
31	DE	1474	0	1535	57	0
32	CF	1223	0	1282	26	0
32	DF	1223	0	1282	49	0
33	CI	1132	0	1218	25	1
33	DI	1132	0	1218	29	0
34	CJ	651	0	155	0	0
34	DJ	651	0	155	4	0
35	CM	1105	0	1180	34	0
35	DM	1105	0	1180	37	0
36	CN	933	0	996	23	0
36	DN	933	0	996	21	0
37	CO	1114	0	1187	84	0
37	DO	1114	0	1187	103	0
38	CP	1122	0	1179	26	0
38	DP	1122	0	1179	37	0
39	CQ	960	0	1021	30	0
39	DQ	960	0	1021	34	0
40	CR	771	0	832	29	0
40	DR	771	0	832	29	0
41	CS	1142	0	1202	79	0
41	DS	1142	0	1202	80	0
42	CT	958	0	1018	45	0
42	DT	958	0	1018	44	0
43	CU	779	0	852	44	0
43	DU	779	0	852	45	0
44	CW	896	0	953	22	0
45	CX	726	0	778	17	0
45	DX	726	0	778	19	0
46	CY	776	0	870	50	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
46	DY	776	0	868	60	0
47	CZ	1404	0	1432	34	0
47	DZ	1404	0	1432	23	0
48	Ca	662	0	688	0	0
48	Da	662	0	688	0	0
49	CH	734	0	808	16	0
49	DH	734	0	808	17	0
50	CK	598	0	653	11	0
50	DK	598	0	653	17	0
51	CL	468	0	523	9	0
51	DL	468	0	523	8	0
52	C5	226	0	229	2	0
52	D5	226	0	229	11	0
53	C6	459	0	478	13	0
53	D6	459	0	477	15	0
54	C7	381	0	390	17	0
54	D7	381	0	390	21	0
55	C8	419	0	467	8	0
55	D8	419	0	467	5	0
56	C9	508	0	576	36	0
56	D9	508	0	576	33	0
57	C0	299	0	326	4	0
57	D0	299	0	324	5	0
58	C1	60459	0	30486	641	0
58	D1	60459	0	30488	729	0
59	Cs	2551	0	1295	0	0
59	Ds	2551	0	1295	0	0
60	D2	416	0	215	8	0
61	D4	1623	0	825	46	0
62	DA	1155	0	757	14	0
63	DW	896	0	956	19	0
64	DV	1167	0	624	15	0
65	Ab	42	0	45	0	0
65	Bb	42	0	45	0	0
66	C1	24	0	20	5	0
66	D1	24	0	21	11	0
67	C1	1	0	0	0	0
67	D1	1	0	0	2	0
All	All	295910	0	199849	3935	1

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 9.

The worst 5 of 3935 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)
61:D4:2:G:C2	61:D4:73:A:N3	1.85	1.31
58:C1:1331:A:O2'	58:C1:1333:U:OP2	1.54	1.25
58:D1:927:G:O2'	64:DV:19:G:C6	1.93	1.22
58:C1:2492:G:O2'	58:C1:2493:G:OP2	1.60	1.17
29:DC:132:HIS:ND1	58:D1:1704:C:OP1	1.79	1.16

All (1) 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)
22:Bb:364:U:OP1	33:Cl:91:SER:OG[4_455]	2.14	0.06

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	AA	232/234 (99%)	174 (75%)	47 (20%)	11 (5%)	2	15
2	BA	232/234 (99%)	180 (78%)	41 (18%)	11 (5%)	2	15
3	AC	204/238 (86%)	145 (71%)	42 (21%)	17 (8%)	1	5
4	AD	206/208 (99%)	161 (78%)	33 (16%)	12 (6%)	1	11
4	BD	206/208 (99%)	168 (82%)	27 (13%)	11 (5%)	2	13
5	AE	148/150 (99%)	130 (88%)	15 (10%)	3 (2%)	7	30
5	BE	148/150 (99%)	130 (88%)	14 (10%)	4 (3%)	5	26
6	AF	99/101 (98%)	92 (93%)	5 (5%)	2 (2%)	7	30
6	BF	99/101 (98%)	89 (90%)	9 (9%)	1 (1%)	15	46
7	AG	153/155 (99%)	124 (81%)	26 (17%)	3 (2%)	7	30
7	BG	153/155 (99%)	135 (88%)	17 (11%)	1 (1%)	22	55

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	AH	136/138 (99%)	110 (81%)	24 (18%)	2 (2%)	10	36
8	BH	136/138 (99%)	116 (85%)	19 (14%)	1 (1%)	22	55
9	AI	125/127 (98%)	97 (78%)	23 (18%)	5 (4%)	3	18
9	BI	125/127 (98%)	98 (78%)	22 (18%)	5 (4%)	3	18
10	AJ	96/98 (98%)	79 (82%)	13 (14%)	4 (4%)	3	18
10	BJ	96/98 (98%)	76 (79%)	15 (16%)	5 (5%)	2	13
11	AK	117/119 (98%)	102 (87%)	14 (12%)	1 (1%)	17	49
11	BK	117/119 (98%)	93 (80%)	20 (17%)	4 (3%)	3	21
12	AL	122/124 (98%)	92 (75%)	20 (16%)	10 (8%)	1	5
12	BL	122/124 (98%)	94 (77%)	16 (13%)	12 (10%)	0	4
13	AM	122/124 (98%)	83 (68%)	26 (21%)	13 (11%)	0	3
13	BM	122/124 (98%)	83 (68%)	26 (21%)	13 (11%)	0	3
14	AN	58/60 (97%)	43 (74%)	12 (21%)	3 (5%)	2	13
14	BN	58/60 (97%)	41 (71%)	14 (24%)	3 (5%)	2	13
15	AO	86/88 (98%)	73 (85%)	9 (10%)	4 (5%)	2	15
15	BO	86/88 (98%)	72 (84%)	13 (15%)	1 (1%)	13	41
16	AP	81/83 (98%)	63 (78%)	15 (18%)	3 (4%)	3	20
16	BP	81/83 (98%)	67 (83%)	14 (17%)	0	100	100
17	AR	97/99 (98%)	89 (92%)	5 (5%)	3 (3%)	4	23
17	BR	97/99 (98%)	84 (87%)	10 (10%)	3 (3%)	4	23
18	AS	68/70 (97%)	57 (84%)	5 (7%)	6 (9%)	1	5
18	BS	68/70 (97%)	54 (79%)	10 (15%)	4 (6%)	1	11
19	AT	76/78 (97%)	61 (80%)	7 (9%)	8 (10%)	0	3
19	BT	76/78 (97%)	55 (72%)	13 (17%)	8 (10%)	0	3
20	AU	97/99 (98%)	77 (79%)	14 (14%)	6 (6%)	1	10
20	BU	97/99 (98%)	75 (77%)	19 (20%)	3 (3%)	4	23
21	AW	22/24 (92%)	19 (86%)	2 (9%)	1 (4%)	2	16
21	BW	22/24 (92%)	17 (77%)	3 (14%)	2 (9%)	1	4
24	BC	204/206 (99%)	153 (75%)	41 (20%)	10 (5%)	2	14
27	CA	83/206 (40%)	56 (68%)	22 (26%)	5 (6%)	1	10
28	CB	269/271 (99%)	210 (78%)	39 (14%)	20 (7%)	1	7

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
28	DB	269/271 (99%)	209 (78%)	38 (14%)	22 (8%)	1	5
29	CC	202/204 (99%)	143 (71%)	43 (21%)	16 (8%)	1	6
29	DC	202/204 (99%)	145 (72%)	32 (16%)	25 (12%)	0	2
30	CD	205/207 (99%)	162 (79%)	30 (15%)	13 (6%)	1	9
30	DD	205/207 (99%)	166 (81%)	24 (12%)	15 (7%)	1	7
31	CE	179/181 (99%)	132 (74%)	32 (18%)	15 (8%)	1	5
31	DE	179/181 (99%)	139 (78%)	28 (16%)	12 (7%)	1	8
32	CF	157/159 (99%)	112 (71%)	25 (16%)	20 (13%)	0	2
32	DF	157/159 (99%)	113 (72%)	26 (17%)	18 (12%)	0	3
33	CI	143/145 (99%)	112 (78%)	22 (15%)	9 (6%)	1	9
33	DI	143/145 (99%)	104 (73%)	29 (20%)	10 (7%)	1	7
35	CM	136/138 (99%)	103 (76%)	24 (18%)	9 (7%)	1	8
35	DM	136/138 (99%)	96 (71%)	30 (22%)	10 (7%)	1	7
36	CN	120/122 (98%)	106 (88%)	10 (8%)	4 (3%)	4	22
36	DN	120/122 (98%)	110 (92%)	8 (7%)	2 (2%)	9	34
37	CO	144/146 (99%)	84 (58%)	29 (20%)	31 (22%)	0	0
37	DO	144/146 (99%)	86 (60%)	26 (18%)	32 (22%)	0	0
38	CP	139/141 (99%)	118 (85%)	17 (12%)	4 (3%)	4	24
38	DP	139/141 (99%)	117 (84%)	17 (12%)	5 (4%)	3	21
39	CQ	115/117 (98%)	93 (81%)	14 (12%)	8 (7%)	1	7
39	DQ	115/117 (98%)	98 (85%)	11 (10%)	6 (5%)	2	13
40	CR	96/98 (98%)	62 (65%)	23 (24%)	11 (12%)	0	3
40	DR	96/98 (98%)	66 (69%)	15 (16%)	15 (16%)	0	0
41	CS	135/137 (98%)	92 (68%)	24 (18%)	19 (14%)	0	1
41	DS	135/137 (98%)	89 (66%)	28 (21%)	18 (13%)	0	1
42	CT	115/117 (98%)	103 (90%)	10 (9%)	2 (2%)	9	34
42	DT	115/117 (98%)	93 (81%)	15 (13%)	7 (6%)	1	10
43	CU	99/101 (98%)	75 (76%)	11 (11%)	13 (13%)	0	1
43	DU	99/101 (98%)	72 (73%)	13 (13%)	14 (14%)	0	1
44	CW	111/113 (98%)	92 (83%)	12 (11%)	7 (6%)	1	9
45	CX	90/92 (98%)	77 (86%)	7 (8%)	6 (7%)	1	8

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
45	DX	90/92 (98%)	79 (88%)	9 (10%)	2 (2%)	6	29
46	CY	98/100 (98%)	60 (61%)	17 (17%)	21 (21%)	0	0
46	DY	98/100 (98%)	60 (61%)	18 (18%)	20 (20%)	0	0
47	CZ	174/176 (99%)	121 (70%)	42 (24%)	11 (6%)	1	9
47	DZ	174/176 (99%)	136 (78%)	28 (16%)	10 (6%)	1	12
48	Ca	82/84 (98%)	72 (88%)	9 (11%)	1 (1%)	13	41
48	Da	82/84 (98%)	74 (90%)	7 (8%)	1 (1%)	13	41
49	CH	91/93 (98%)	73 (80%)	10 (11%)	8 (9%)	1	5
49	DH	91/93 (98%)	73 (80%)	12 (13%)	6 (7%)	1	8
50	CK	69/71 (97%)	50 (72%)	12 (17%)	7 (10%)	0	4
50	DK	69/71 (97%)	54 (78%)	11 (16%)	4 (6%)	1	11
51	CL	57/59 (97%)	51 (90%)	5 (9%)	1 (2%)	8	32
51	DL	57/59 (97%)	52 (91%)	3 (5%)	2 (4%)	3	21
52	C5	28/30 (93%)	20 (71%)	5 (18%)	3 (11%)	0	3
52	D5	28/30 (93%)	18 (64%)	7 (25%)	3 (11%)	0	3
53	C6	57/59 (97%)	48 (84%)	5 (9%)	4 (7%)	1	7
53	D6	57/59 (97%)	46 (81%)	7 (12%)	4 (7%)	1	7
54	C7	40/44 (91%)	22 (55%)	9 (22%)	9 (22%)	0	0
54	D7	40/44 (91%)	21 (52%)	8 (20%)	11 (28%)	0	0
55	C8	46/48 (96%)	42 (91%)	4 (9%)	0	100	100
55	D8	46/48 (96%)	45 (98%)	1 (2%)	0	100	100
56	C9	61/63 (97%)	47 (77%)	11 (18%)	3 (5%)	2	14
56	D9	61/63 (97%)	41 (67%)	15 (25%)	5 (8%)	1	5
57	C0	34/36 (94%)	32 (94%)	2 (6%)	0	100	100
57	D0	34/36 (94%)	32 (94%)	2 (6%)	0	100	100
62	DA	83/206 (40%)	52 (63%)	28 (34%)	3 (4%)	3	21
63	DW	111/113 (98%)	94 (85%)	11 (10%)	6 (5%)	2	13
All	All	11440/11918 (96%)	8901 (78%)	1752 (15%)	787 (7%)	1	8

5 of 787 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	AA	83	MET

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Mol	Chain	Res	Type
2	AA	165	VAL
3	AC	4	LYS
3	AC	12	LEU
3	AC	47	LEU

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	AA	202/202 (100%)	180 (89%)	22 (11%)	6	23
2	BA	202/202 (100%)	181 (90%)	21 (10%)	7	25
3	AC	160/187 (86%)	142 (89%)	18 (11%)	6	21
4	AD	180/180 (100%)	162 (90%)	18 (10%)	7	27
4	BD	180/180 (100%)	160 (89%)	20 (11%)	6	22
5	AE	115/115 (100%)	101 (88%)	14 (12%)	5	18
5	BE	115/115 (100%)	102 (89%)	13 (11%)	6	21
6	AF	90/90 (100%)	85 (94%)	5 (6%)	21	51
6	BF	90/90 (100%)	86 (96%)	4 (4%)	28	58
7	AG	126/126 (100%)	113 (90%)	13 (10%)	7	26
7	BG	126/126 (100%)	114 (90%)	12 (10%)	8	29
8	AH	119/119 (100%)	104 (87%)	15 (13%)	4	17
8	BH	119/119 (100%)	104 (87%)	15 (13%)	4	17
9	AI	98/98 (100%)	82 (84%)	16 (16%)	2	9
9	BI	98/98 (100%)	88 (90%)	10 (10%)	7	26
10	AJ	88/88 (100%)	77 (88%)	11 (12%)	4	17
10	BJ	88/88 (100%)	77 (88%)	11 (12%)	4	17
11	AK	90/90 (100%)	82 (91%)	8 (9%)	9	33
11	BK	90/90 (100%)	82 (91%)	8 (9%)	9	33
12	AL	104/104 (100%)	87 (84%)	17 (16%)	2	9

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
12	BL	104/104 (100%)	88 (85%)	16 (15%)	2	11
13	AM	99/99 (100%)	87 (88%)	12 (12%)	5	18
13	BM	99/99 (100%)	82 (83%)	17 (17%)	2	8
14	AN	49/49 (100%)	45 (92%)	4 (8%)	11	37
14	BN	49/49 (100%)	43 (88%)	6 (12%)	5	18
15	AO	79/79 (100%)	75 (95%)	4 (5%)	24	54
15	BO	79/79 (100%)	72 (91%)	7 (9%)	9	33
16	AP	72/72 (100%)	65 (90%)	7 (10%)	8	28
16	BP	72/72 (100%)	62 (86%)	10 (14%)	3	13
17	AR	94/94 (100%)	90 (96%)	4 (4%)	29	59
17	BR	94/94 (100%)	87 (93%)	7 (7%)	13	42
18	AS	61/61 (100%)	56 (92%)	5 (8%)	11	37
18	BS	61/61 (100%)	53 (87%)	8 (13%)	4	15
19	AT	69/69 (100%)	55 (80%)	14 (20%)	1	3
19	BT	69/69 (100%)	54 (78%)	15 (22%)	1	3
20	AU	76/76 (100%)	68 (90%)	8 (10%)	7	25
20	BU	76/76 (100%)	63 (83%)	13 (17%)	2	8
21	AW	19/19 (100%)	17 (90%)	2 (10%)	7	25
21	BW	19/19 (100%)	17 (90%)	2 (10%)	7	25
24	BC	160/160 (100%)	141 (88%)	19 (12%)	5	19
27	CA	61/74 (82%)	53 (87%)	8 (13%)	4	15
28	CB	213/213 (100%)	179 (84%)	34 (16%)	2	10
28	DB	213/213 (100%)	179 (84%)	34 (16%)	2	10
29	CC	165/165 (100%)	137 (83%)	28 (17%)	2	8
29	DC	165/165 (100%)	142 (86%)	23 (14%)	3	13
30	CD	165/165 (100%)	139 (84%)	26 (16%)	2	10
30	DD	165/165 (100%)	139 (84%)	26 (16%)	2	10
31	CE	155/155 (100%)	140 (90%)	15 (10%)	8	28
31	DE	155/155 (100%)	123 (79%)	32 (21%)	1	3
32	CF	132/132 (100%)	113 (86%)	19 (14%)	3	13
32	DF	132/132 (100%)	110 (83%)	22 (17%)	2	8

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
33	CI	122/122 (100%)	109 (89%)	13 (11%)	6	24
33	DI	122/122 (100%)	110 (90%)	12 (10%)	8	28
35	CM	117/117 (100%)	96 (82%)	21 (18%)	2	6
35	DM	117/117 (100%)	95 (81%)	22 (19%)	1	4
36	CN	100/100 (100%)	84 (84%)	16 (16%)	2	10
36	DN	100/100 (100%)	88 (88%)	12 (12%)	5	19
37	CO	112/112 (100%)	82 (73%)	30 (27%)	0	1
37	DO	112/112 (100%)	83 (74%)	29 (26%)	0	2
38	CP	111/111 (100%)	99 (89%)	12 (11%)	6	24
38	DP	111/111 (100%)	97 (87%)	14 (13%)	4	17
39	CQ	100/100 (100%)	81 (81%)	19 (19%)	1	4
39	DQ	100/100 (100%)	83 (83%)	17 (17%)	2	8
40	CR	77/77 (100%)	60 (78%)	17 (22%)	1	2
40	DR	77/77 (100%)	58 (75%)	19 (25%)	0	2
41	CS	120/120 (100%)	92 (77%)	28 (23%)	1	2
41	DS	120/120 (100%)	100 (83%)	20 (17%)	2	8
42	CT	92/92 (100%)	79 (86%)	13 (14%)	3	13
42	DT	92/92 (100%)	81 (88%)	11 (12%)	5	19
43	CU	82/82 (100%)	69 (84%)	13 (16%)	2	10
43	DU	82/82 (100%)	61 (74%)	21 (26%)	0	2
44	CW	91/92 (99%)	82 (90%)	9 (10%)	8	27
45	CX	74/74 (100%)	63 (85%)	11 (15%)	3	12
45	DX	74/74 (100%)	60 (81%)	14 (19%)	1	4
46	CY	84/84 (100%)	67 (80%)	17 (20%)	1	3
46	DY	84/84 (100%)	68 (81%)	16 (19%)	1	4
47	CZ	155/155 (100%)	142 (92%)	13 (8%)	11	36
47	DZ	155/155 (100%)	136 (88%)	19 (12%)	4	17
48	Ca	66/66 (100%)	57 (86%)	9 (14%)	3	14
48	Da	66/66 (100%)	56 (85%)	10 (15%)	3	11
49	CH	78/78 (100%)	56 (72%)	22 (28%)	0	1
49	DH	78/78 (100%)	62 (80%)	16 (20%)	1	3

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
50	CK	66/66 (100%)	55 (83%)	11 (17%)	2	8
50	DK	66/66 (100%)	53 (80%)	13 (20%)	1	4
51	CL	51/51 (100%)	49 (96%)	2 (4%)	32	61
51	DL	51/51 (100%)	48 (94%)	3 (6%)	19	49
52	C5	27/27 (100%)	24 (89%)	3 (11%)	6	22
52	D5	27/27 (100%)	21 (78%)	6 (22%)	1	2
53	C6	51/51 (100%)	43 (84%)	8 (16%)	2	10
53	D6	51/51 (100%)	42 (82%)	9 (18%)	2	6
54	C7	43/43 (100%)	36 (84%)	7 (16%)	2	9
54	D7	43/43 (100%)	35 (81%)	8 (19%)	1	5
55	C8	41/41 (100%)	37 (90%)	4 (10%)	8	28
55	D8	41/41 (100%)	32 (78%)	9 (22%)	1	3
56	C9	53/53 (100%)	40 (76%)	13 (24%)	0	2
56	D9	53/53 (100%)	43 (81%)	10 (19%)	1	4
57	C0	33/33 (100%)	30 (91%)	3 (9%)	9	32
57	D0	33/33 (100%)	27 (82%)	6 (18%)	1	6
62	DA	61/74 (82%)	53 (87%)	8 (13%)	4	15
63	DW	91/91 (100%)	86 (94%)	5 (6%)	21	51
All	All	9654/9708 (99%)	8293 (86%)	1361 (14%)	3	13

5 of 1361 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
28	DB	168	ARG
40	DR	11	LYS
29	DC	119	ARG
28	DB	166	GLN
33	DI	1	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 195 such sidechains are listed below:

Mol	Chain	Res	Type
45	CX	41	ASN
31	DE	26	GLN
47	CZ	132	ASN

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Mol	Chain	Res	Type
28	DB	116	GLN
35	DM	128	HIS

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A2	8/9 (88%)	4 (50%)	2 (25%)
22	Ab	1503/1504 (99%)	324 (21%)	0
22	Bb	1503/1504 (99%)	339 (22%)	0
23	B2	8/10 (80%)	4 (50%)	1 (12%)
25	C2	74/76 (97%)	24 (32%)	4 (5%)
25	C3	75/76 (98%)	19 (25%)	1 (1%)
25	D3	75/76 (98%)	31 (41%)	3 (4%)
26	C4	76/77 (98%)	36 (47%)	4 (5%)
58	C1	2800/2899 (96%)	802 (28%)	155 (5%)
58	D1	2800/2899 (96%)	818 (29%)	149 (5%)
59	Cs	118/119 (99%)	35 (29%)	0
59	Ds	118/119 (99%)	40 (33%)	0
60	D2	19/20 (95%)	8 (42%)	1 (5%)
61	D4	75/76 (98%)	23 (30%)	5 (6%)
64	DV	41/55 (74%)	14 (34%)	1 (2%)
All	All	9293/9519 (97%)	2521 (27%)	326 (3%)

5 of 2521 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A2	15	A
1	A2	17	U
1	A2	18	G
1	A2	19	U
22	Ab	10	G

5 of 326 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
58	D1	1254	A
58	D1	2193	U
58	D1	1423	A
58	D1	1740	C
58	D1	2458	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 6 ligands modelled in this entry, 2 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
66	3V6	C1	3001	67	21,25,25	2.10	8 (38%)	21,39,39	2.07	6 (28%)
66	3V6	D1	3001	67	21,25,25	2.33	9 (42%)	21,39,39	2.98	8 (38%)
65	PAR	Bb	1601	-	45,45,45	1.52	7 (15%)	64,67,67	2.16	20 (31%)
65	PAR	Ab	1601	-	45,45,45	1.41	5 (11%)	64,67,67	1.82	13 (20%)

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
66	3V6	C1	3001	67	-	2/12/53/53	0/2/2/2
66	3V6	D1	3001	67	-	4/12/53/53	0/2/2/2
65	PAR	Bb	1601	-	-	9/18/94/94	0/4/4/4
65	PAR	Ab	1601	-	-	7/18/94/94	2/4/4/4

The worst 5 of 29 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
65	Bb	1601	PAR	C41-C51	5.97	1.65	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
66	D1	3001	3V6	CAK-CAN	-5.26	1.42	1.49
65	Ab	1601	PAR	C34-C24	-5.17	1.47	1.53
66	C1	3001	3V6	CAK-CAS	4.31	1.64	1.53
66	D1	3001	3V6	CAS-CAU	3.99	1.59	1.52

The worst 5 of 47 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
65	Ab	1601	PAR	O52-C13-O43	-8.43	102.30	111.43
65	Bb	1601	PAR	O54-C54-C64	-8.17	90.80	106.01
66	D1	3001	3V6	OAM-CAO-OAE	8.11	127.88	117.58
66	D1	3001	3V6	OAG-CAN-CAQ	-5.45	114.56	123.13
65	Bb	1601	PAR	O52-C13-O43	-5.39	105.59	111.43

There are no chirality outliers.

5 of 22 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
65	Ab	1601	PAR	C23-C13-O52-C52
65	Ab	1601	PAR	O43-C13-O52-C52
65	Bb	1601	PAR	C21-C11-O11-C42
66	C1	3001	3V6	NAL-C-CA-CB
66	D1	3001	3V6	O-C-CA-CB

All (2) ring outliers are listed below:

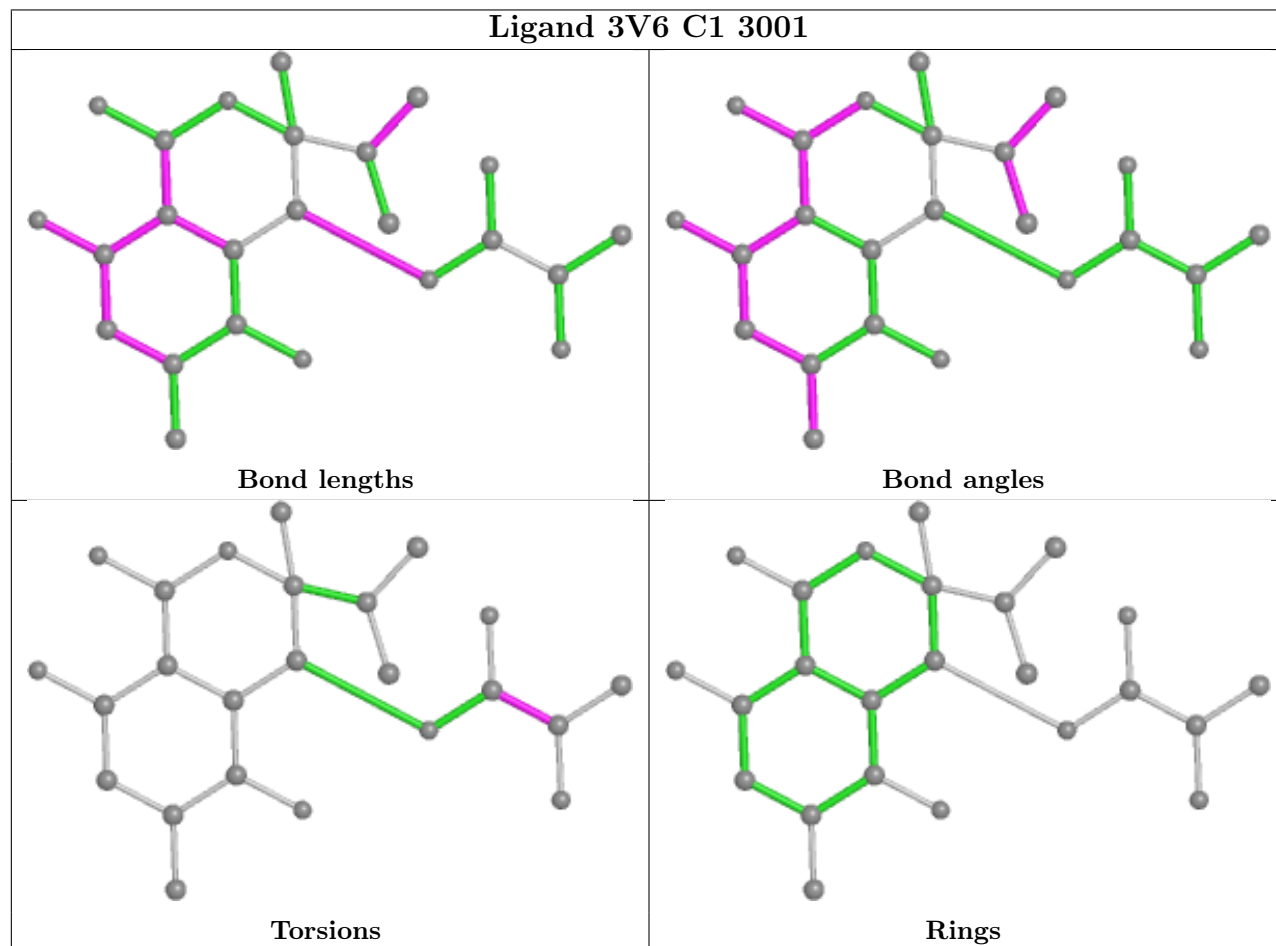
Mol	Chain	Res	Type	Atoms
65	Ab	1601	PAR	C14-C24-C34-C44-C54-O54
65	Ab	1601	PAR	C12-C22-C32-C42-C52-C62

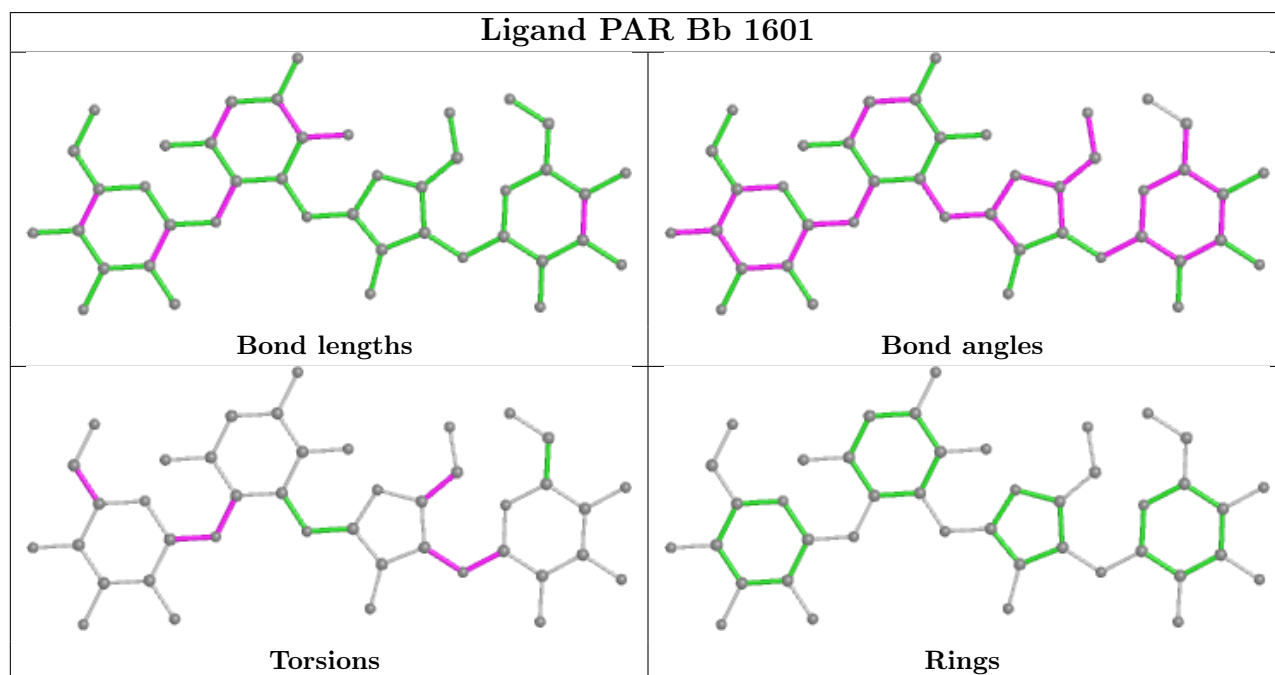
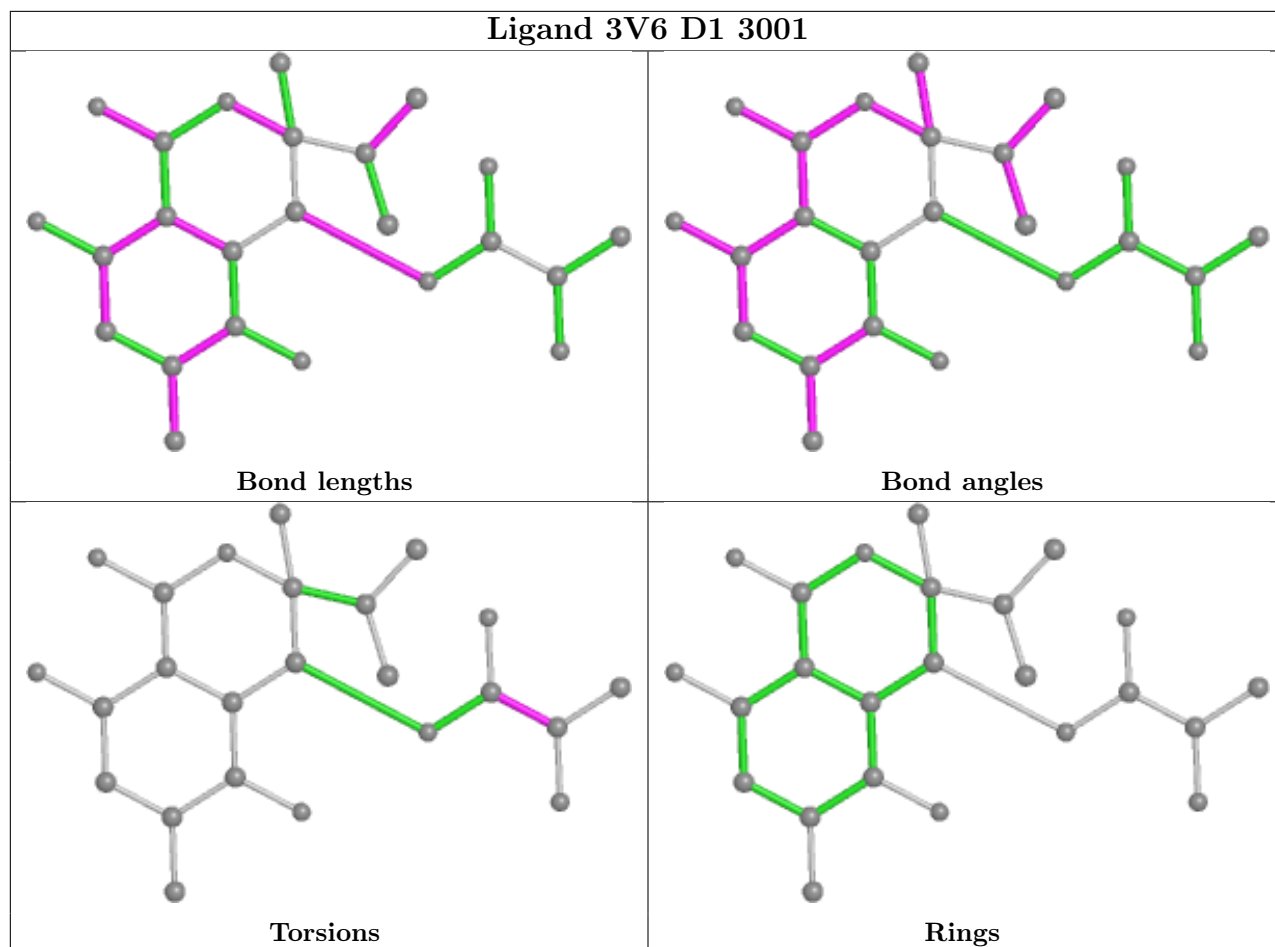
2 monomers are involved in 16 short contacts:

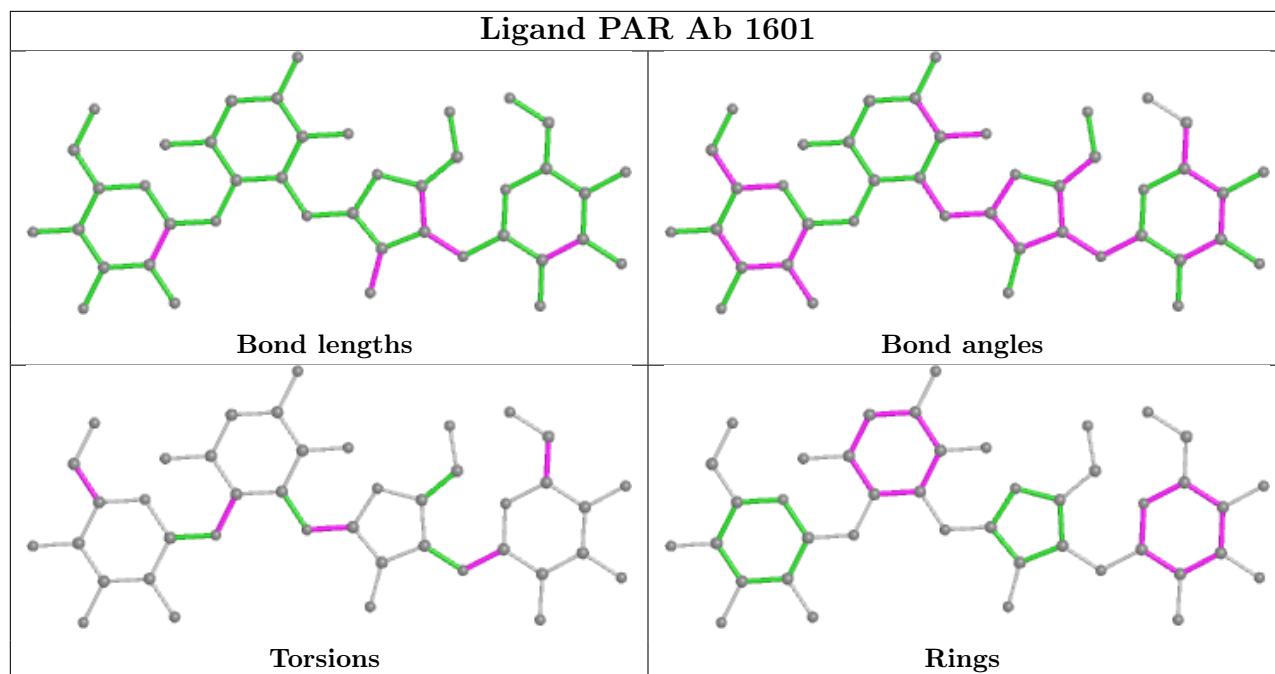
Mol	Chain	Res	Type	Clashes	Symm-Clashes
66	C1	3001	3V6	5	0
66	D1	3001	3V6	11	0

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](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
62	DA	2
27	CA	2
54	D7	1
54	C7	1
58	D1	1
58	C1	1

The worst 5 of 8 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	DA	110:PHE	C	119:UNK	N	14.86
1	CA	110:PHE	C	119:UNK	N	12.87
1	CA	136:UNK	C	139:UNK	N	8.88
1	D7	46:HIS	C	47:THR	N	7.64
1	C7	46:HIS	C	47:THR	N	7.62

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

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

In the following table, the column labelled '#RSRZ > 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q < 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A2	9/9 (100%)	0.01	0 100 100	50, 89, 110, 114	0
2	AA	234/234 (100%)	0.24	10 (4%) 35 35	78, 124, 168, 197	0
2	BA	234/234 (100%)	0.34	17 (7%) 15 17	80, 130, 179, 209	0
3	AC	206/238 (86%)	0.23	14 (6%) 17 19	65, 108, 148, 173	0
4	AD	208/208 (100%)	-0.07	3 (1%) 75 74	51, 86, 123, 147	0
4	BD	208/208 (100%)	-0.15	1 (0%) 91 90	48, 78, 117, 144	0
5	AE	150/150 (100%)	-0.00	3 (2%) 65 64	66, 91, 124, 144	0
5	BE	150/150 (100%)	0.03	0 100 100	57, 83, 122, 141	0
6	AF	101/101 (100%)	-0.29	2 (1%) 65 64	55, 85, 109, 170	0
6	BF	101/101 (100%)	-0.17	1 (0%) 82 81	52, 96, 130, 158	0
7	AG	155/155 (100%)	0.06	13 (8%) 11 13	58, 86, 125, 181	0
7	BG	155/155 (100%)	0.46	10 (6%) 18 20	78, 112, 154, 184	0
8	AH	138/138 (100%)	-0.00	0 100 100	60, 90, 117, 184	0
8	BH	138/138 (100%)	0.27	2 (1%) 75 74	63, 95, 123, 145	0
9	AI	127/127 (100%)	0.46	7 (5%) 25 25	62, 108, 150, 175	0
9	BI	127/127 (100%)	0.88	17 (13%) 3 4	77, 131, 179, 215	0
10	AJ	98/98 (100%)	0.78	13 (13%) 3 4	77, 121, 176, 188	0
10	BJ	98/98 (100%)	1.15	22 (22%) 0 1	65, 134, 173, 202	0
11	AK	119/119 (100%)	-0.02	5 (4%) 36 35	39, 76, 110, 158	0
11	BK	119/119 (100%)	0.49	6 (5%) 28 29	47, 94, 141, 193	0
12	AL	124/124 (100%)	0.34	9 (7%) 15 17	49, 82, 125, 180	0
12	BL	124/124 (100%)	0.07	5 (4%) 38 37	41, 60, 104, 158	0
13	AM	124/124 (100%)	0.30	7 (5%) 24 25	66, 98, 144, 197	0
13	BM	124/124 (100%)	0.73	10 (8%) 12 13	66, 113, 164, 204	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
14	AN	60/60 (100%)	0.25	1 (1%) 70 68	65, 103, 130, 142	0
14	BN	60/60 (100%)	0.30	1 (1%) 70 68	59, 94, 119, 134	0
15	AO	88/88 (100%)	-0.07	0 100 100	46, 76, 112, 123	0
15	BO	88/88 (100%)	0.06	1 (1%) 80 79	55, 94, 120, 132	0
16	AP	83/83 (100%)	0.11	2 (2%) 59 57	52, 73, 101, 136	0
16	BP	83/83 (100%)	0.40	3 (3%) 42 42	59, 89, 135, 152	0
17	AR	99/99 (100%)	0.03	1 (1%) 82 81	59, 80, 108, 115	0
17	BR	99/99 (100%)	0.16	2 (2%) 65 64	65, 94, 126, 135	0
18	AS	70/70 (100%)	0.26	2 (2%) 51 50	56, 88, 119, 156	0
18	BS	70/70 (100%)	0.58	5 (7%) 16 18	66, 94, 142, 180	0
19	AT	78/78 (100%)	0.85	12 (15%) 2 2	67, 110, 164, 180	0
19	BT	78/78 (100%)	1.04	11 (14%) 2 3	79, 118, 161, 184	0
20	AU	99/99 (100%)	0.29	3 (3%) 50 49	62, 86, 125, 146	0
20	BU	99/99 (100%)	0.60	8 (8%) 12 13	64, 107, 146, 154	0
21	AW	24/24 (100%)	1.67	7 (29%) 0 0	63, 80, 112, 138	0
21	BW	24/24 (100%)	1.22	4 (16%) 1 2	64, 91, 132, 163	0
22	Ab	1504/1504 (100%)	-0.17	24 (1%) 72 70	30, 75, 154, 300	0
22	Bb	1504/1504 (100%)	-0.04	39 (2%) 56 54	31, 81, 165, 318	0
23	B2	10/10 (100%)	0.29	0 100 100	60, 107, 138, 172	0
24	BC	206/206 (100%)	0.13	7 (3%) 45 44	64, 105, 149, 169	0
25	C2	75/76 (98%)	7.29	69 (92%) 0 0	99, 250, 345, 377	0
25	C3	76/76 (100%)	0.33	6 (7%) 12 14	60, 130, 198, 227	0
25	D3	76/76 (100%)	0.49	3 (3%) 39 38	59, 147, 212, 228	0
26	C4	77/77 (100%)	-0.31	0 100 100	44, 79, 132, 159	0
27	CA	87/206 (42%)	3.10	49 (56%) 0 0	98, 186, 221, 241	0
28	CB	271/271 (100%)	-0.33	0 100 100	23, 48, 83, 150	0
28	DB	271/271 (100%)	-0.24	4 (1%) 73 72	20, 52, 86, 158	0
29	CC	204/204 (100%)	0.11	6 (2%) 51 50	31, 68, 123, 150	0
29	DC	204/204 (100%)	-0.00	3 (1%) 73 72	24, 61, 124, 169	0
30	CD	207/207 (100%)	-0.27	4 (1%) 66 65	29, 64, 133, 194	0
30	DD	207/207 (100%)	-0.09	5 (2%) 59 57	20, 65, 146, 223	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
31	CE	181/181 (100%)	0.04	7 (3%) 39 38	59, 92, 137, 213	0
31	DE	181/181 (100%)	0.50	14 (7%) 13 15	76, 117, 154, 198	0
32	CF	159/159 (100%)	1.10	34 (21%) 0 1	82, 134, 175, 219	0
32	DF	159/159 (100%)	0.11	7 (4%) 34 34	45, 85, 126, 178	0
33	CI	145/145 (100%)	0.28	4 (2%) 53 51	40, 88, 128, 150	0
33	DI	145/145 (100%)	0.29	8 (5%) 25 25	60, 108, 139, 165	0
34	CJ	0/130	-	-	-	-
34	DJ	0/130	-	-	-	-
35	CM	138/138 (100%)	0.04	1 (0%) 87 87	47, 78, 118, 130	0
35	DM	138/138 (100%)	-0.05	0 100 100	36, 73, 121, 151	0
36	CN	122/122 (100%)	-0.11	1 (0%) 86 85	35, 66, 89, 111	0
36	DN	122/122 (100%)	-0.35	0 100 100	27, 51, 75, 107	0
37	CO	146/146 (100%)	0.25	4 (2%) 54 53	34, 77, 127, 168	0
37	DO	146/146 (100%)	0.28	5 (3%) 45 44	31, 87, 123, 165	0
38	CP	141/141 (100%)	-0.03	2 (1%) 75 74	44, 75, 111, 192	0
38	DP	141/141 (100%)	-0.10	2 (1%) 75 74	42, 71, 106, 219	0
39	CQ	117/117 (100%)	-0.20	0 100 100	38, 63, 94, 127	0
39	DQ	117/117 (100%)	-0.05	0 100 100	27, 61, 99, 130	0
40	CR	98/98 (100%)	0.39	3 (3%) 49 48	47, 89, 130, 176	0
40	DR	98/98 (100%)	1.24	21 (21%) 0 1	68, 113, 143, 163	0
41	CS	137/137 (100%)	0.04	5 (3%) 42 42	45, 79, 142, 200	0
41	DS	137/137 (100%)	0.04	4 (2%) 51 50	43, 71, 148, 192	0
42	CT	117/117 (100%)	-0.10	2 (1%) 70 68	37, 66, 116, 138	0
42	DT	117/117 (100%)	-0.16	1 (0%) 84 83	31, 68, 111, 153	0
43	CU	101/101 (100%)	0.05	2 (1%) 65 64	35, 92, 122, 134	0
43	DU	101/101 (100%)	0.22	5 (4%) 28 29	26, 86, 123, 196	0
44	CW	113/113 (100%)	-0.15	2 (1%) 68 67	38, 54, 90, 182	0
45	CX	92/92 (100%)	-0.28	0 100 100	39, 65, 89, 109	0
45	DX	92/92 (100%)	-0.28	0 100 100	33, 55, 88, 115	0
46	CY	100/100 (100%)	1.16	23 (23%) 0 1	58, 94, 168, 214	0
46	DY	100/100 (100%)	0.83	13 (13%) 3 4	48, 81, 193, 251	0
47	CZ	176/176 (100%)	0.33	9 (5%) 28 28	76, 118, 157, 233	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
47	DZ	176/176 (100%)	0.47	15 (8%) 10 12	69, 119, 173, 203	0
48	Ca	84/84 (100%)	0.62	8 (9%) 8 10	44, 67, 127, 170	0
48	Da	84/84 (100%)	0.60	9 (10%) 6 7	49, 82, 137, 167	0
49	CH	93/93 (100%)	-0.10	1 (1%) 80 79	30, 54, 102, 140	0
49	DH	93/93 (100%)	0.08	1 (1%) 80 79	29, 66, 121, 179	0
50	CK	71/71 (100%)	0.00	2 (2%) 53 51	42, 85, 125, 180	0
50	DK	71/71 (100%)	-0.02	2 (2%) 53 51	37, 68, 124, 179	0
51	CL	59/59 (100%)	0.62	4 (6%) 17 19	45, 72, 111, 223	0
51	DL	59/59 (100%)	0.35	5 (8%) 10 12	48, 79, 120, 213	0
52	C5	30/30 (100%)	-0.31	0 100 100	76, 99, 130, 155	0
52	D5	30/30 (100%)	0.39	2 (6%) 17 19	99, 128, 155, 167	0
53	C6	59/59 (100%)	0.33	5 (8%) 10 12	34, 63, 160, 206	0
53	D6	59/59 (100%)	0.06	4 (6%) 17 19	28, 65, 172, 205	0
54	C7	44/44 (100%)	1.55	13 (29%) 0 0	54, 101, 146, 183	0
54	D7	44/44 (100%)	2.16	18 (40%) 0 0	84, 125, 165, 181	0
55	C8	48/48 (100%)	-0.13	2 (4%) 36 35	26, 40, 79, 139	0
55	D8	48/48 (100%)	-0.17	2 (4%) 36 35	21, 34, 77, 135	0
56	C9	63/63 (100%)	-0.01	1 (1%) 72 70	34, 54, 90, 123	0
56	D9	63/63 (100%)	0.08	2 (3%) 47 46	39, 66, 102, 136	0
57	C0	36/36 (100%)	3.05	21 (58%) 0 0	93, 125, 175, 177	0
57	D0	36/36 (100%)	2.88	25 (69%) 0 0	73, 106, 141, 145	0
58	C1	2807/2899 (96%)	-0.25	30 (1%) 80 79	21, 54, 148, 279	0
58	D1	2807/2899 (96%)	-0.22	44 (1%) 72 70	16, 52, 155, 267	0
59	Cs	119/119 (100%)	-0.25	2 (1%) 70 68	58, 83, 138, 197	0
59	Ds	119/119 (100%)	0.20	5 (4%) 36 35	62, 104, 147, 172	0
60	D2	20/20 (100%)	3.87	18 (90%) 0 0	133, 235, 281, 283	0
61	D4	76/76 (100%)	-0.24	0 100 100	37, 79, 120, 201	0
62	DA	87/206 (42%)	3.23	60 (68%) 0 0	118, 190, 257, 309	0
63	DW	113/113 (100%)	-0.17	2 (1%) 68 67	33, 51, 100, 159	0
64	DV	55/55 (100%)	6.54	50 (90%) 0 0	110, 248, 297, 345	0
All	All	20982/21697 (96%)	0.11	991 (4%) 31 31	16, 77, 159, 377	0

The worst 5 of 991 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
25	C2	70	G	23.4
64	DV	50	G	21.8
25	C2	71	G	21.6
25	C2	17	C	20.5
25	C2	3	C	20.1

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

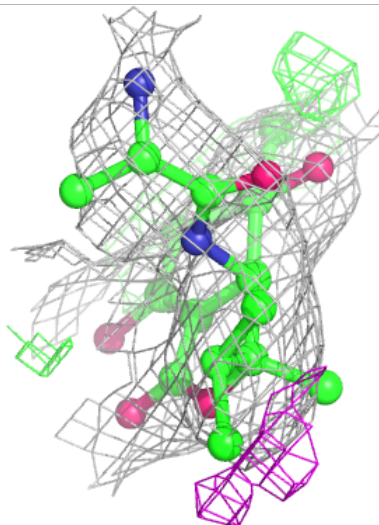
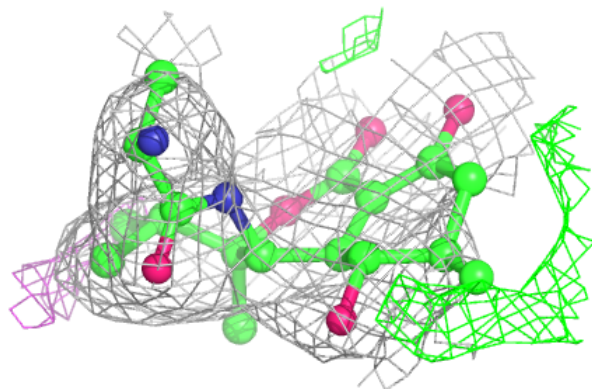
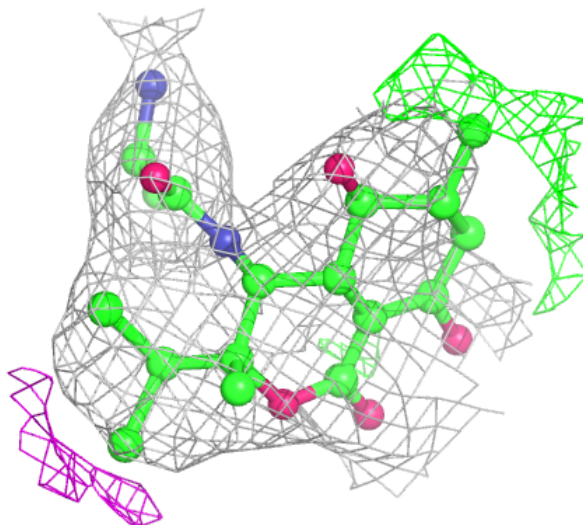
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
66	3V6	C1	3001	24/24	0.92	0.25	46,63,76,91	0
65	PAR	Ab	1601	42/42	0.93	0.20	51,65,75,91	0
67	MG	D1	3002	1/1	0.93	0.24	40,40,40,40	0
66	3V6	D1	3001	24/24	0.94	0.24	32,55,75,86	0
67	MG	C1	3002	1/1	0.95	0.22	41,41,41,41	0
65	PAR	Bb	1601	42/42	0.96	0.20	42,50,56,67	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

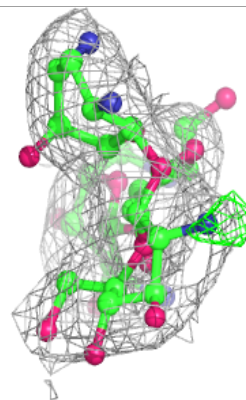
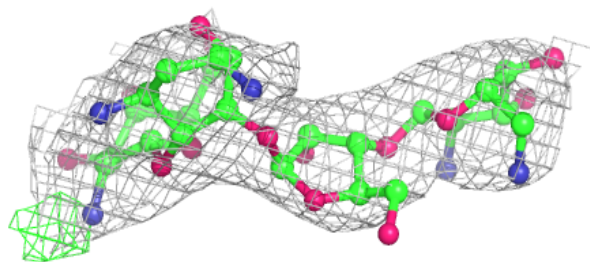
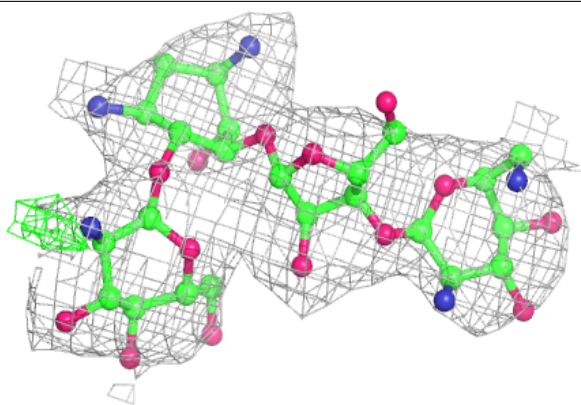
Electron density around 3V6 C1 3001:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



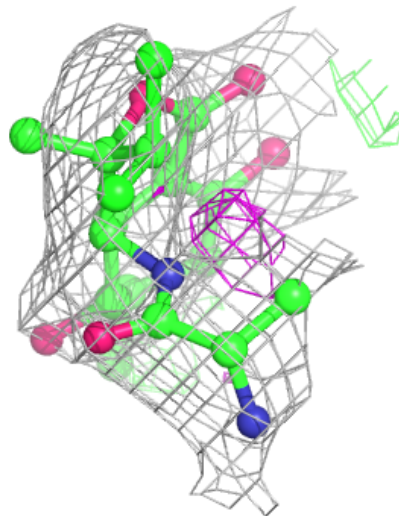
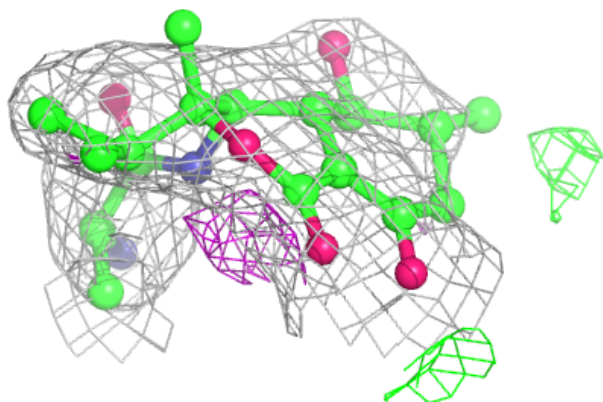
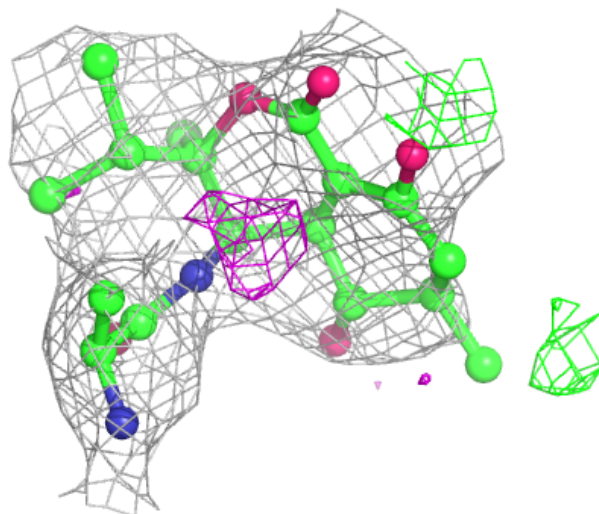
Electron density around PAR Ab 1601:

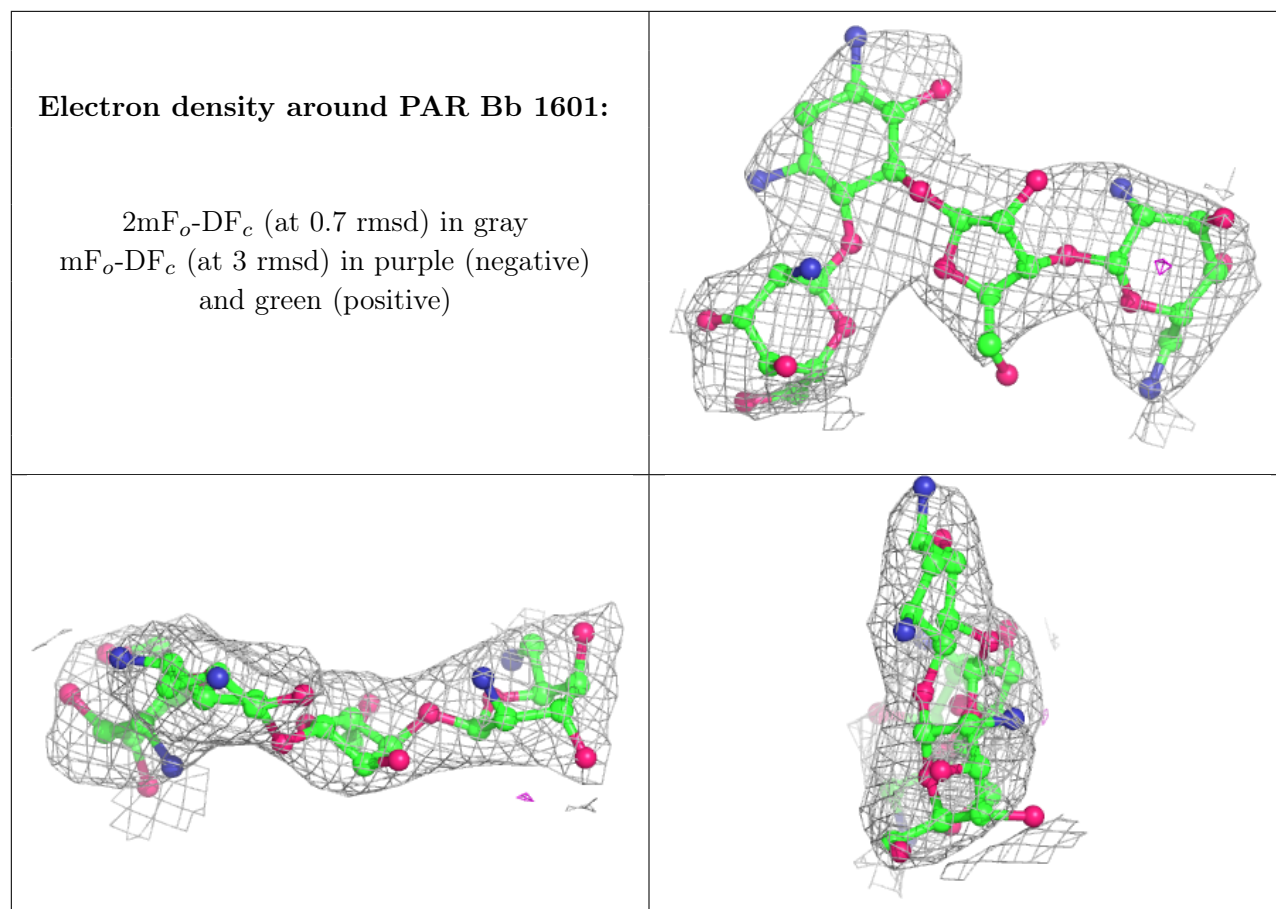
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around 3V6 D1 3001:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





6.5 Other polymers [i](#)

There are no such residues in this entry.