wwPDB X-ray Structure Validation Summary Report (i)

Sep 14, 2023 – 09:57 AM EDT

PDB ID	:	4W29
Title	:	70S ribosome translocation intermediate containing elongation factor EFG/GDP/fusidic acid, mRNA, and tRNAs trapped in the AP/AP pe/E chimeric hybrid state.
Authors	:	Zhou, J.; Lancaster, L.; Donohue, J.P.; Noller, H.F.
Deposited on	:	2014-07-02
Resolution	:	3.80 Å(reported)

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

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

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

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

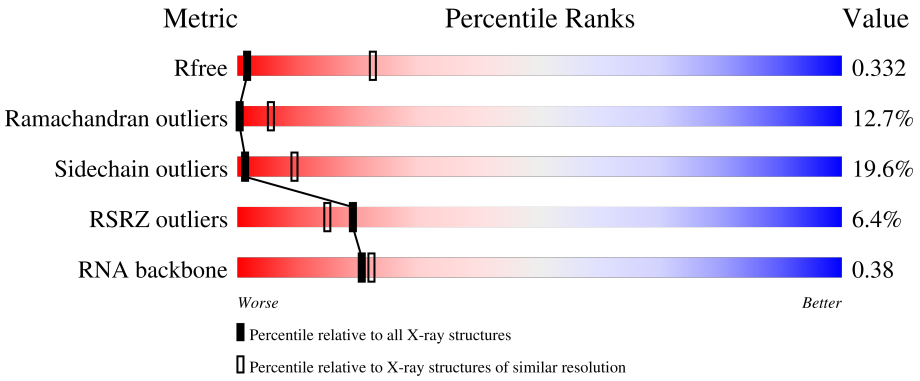
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh &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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.80 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	1212 (4.00-3.60)
Ramachandran outliers	138981	1243 (4.00-3.60)
Sidechain outliers	138945	1237 (4.00-3.60)
RSRZ outliers	127900	1121 (4.00-3.60)
RNA backbone	3102	1036 (4.60-3.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% 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	AB	235	2% 76% 22%
1	CB	235	% 75% 23%
2	AC	207	43% 72% 27%
2	CC	207	39% 75% 24%

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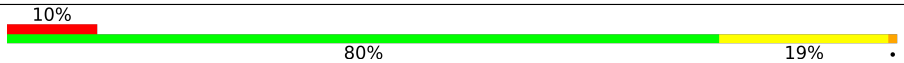
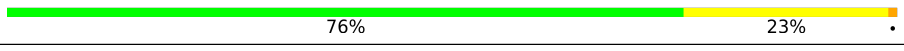
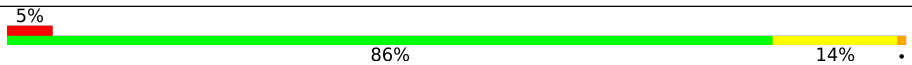
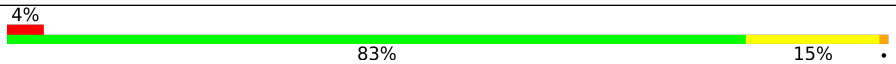
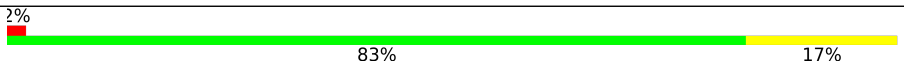
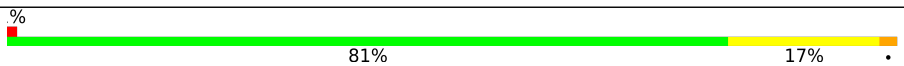
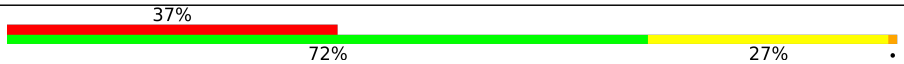
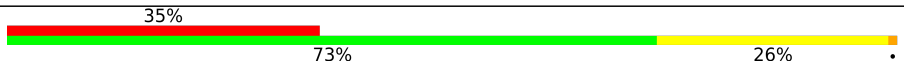
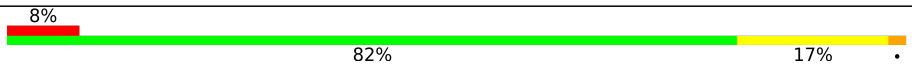
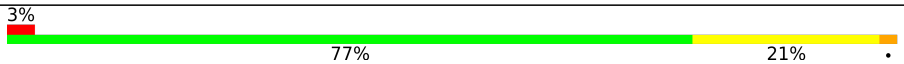
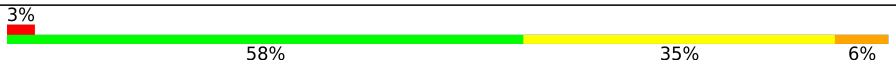
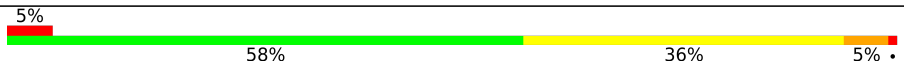
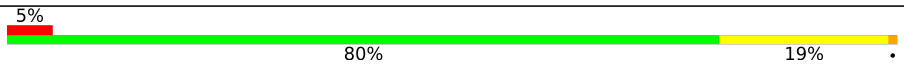
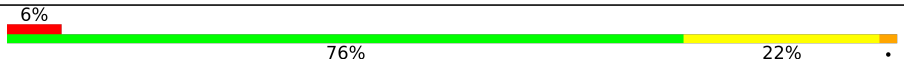
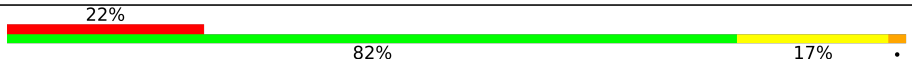
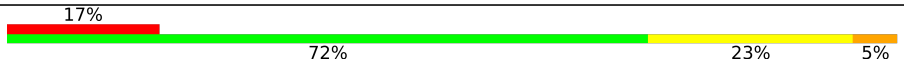
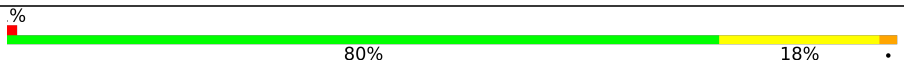
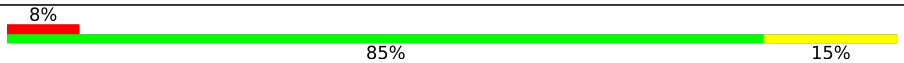
Mol	Chain	Length	Quality of chain
3	AD	208	
3	CD	208	
4	AE	151	
4	CE	151	
5	AF	101	
5	CF	101	
6	AG	155	
6	CG	155	
7	AH	138	
7	CH	138	
8	AI	127	
8	CI	127	
9	AJ	99	
9	CJ	99	
10	AK	119	
10	CK	119	
11	AL	125	
11	CL	125	
12	AM	125	
12	CM	125	
13	AN	60	
13	CN	60	
14	AO	88	
14	CO	88	
15	AP	84	

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Mol	Chain	Length	Quality of chain
15	CP	84	12% 76% 24%
16	AQ	100	80% 18%
16	CQ	100	2% 82% 16%
17	AR	70	6% 73% 24%
17	CR	70	4% 84% 16%
18	AS	79	% 70% 25% 5%
18	CS	79	6% 76% 24%
19	AT	99	5% 82% 16%
19	CT	99	16% 79% 19%
20	AY	687	3% 71% 23%
20	CY	687	3% 70% 24%
21	AA	1511	% 74% 24%
21	CA	1511	2% 71% 26%
22	AW	77	12% 42% 51% 8%
22	CW	77	9% 38% 52% 10%
23	AV	36	22% 19% 72% 8%
23	CV	36	44% 19% 64% 17%
24	AX	78	4% 50% 42% 8%
24	CX	78	3% 49% 42% 9%
25	BC	228	29% 58% 33% 8%
25	DC	228	21% 62% 32% 6%
26	BD	275	8% 74% 24%
26	DD	275	5% 74% 23%
27	BE	205	5% 74% 23%
27	DE	205	4% 69% 29%

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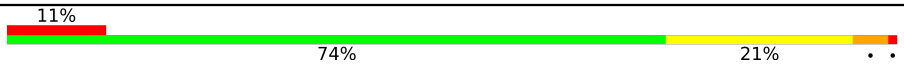
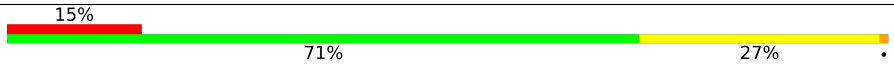
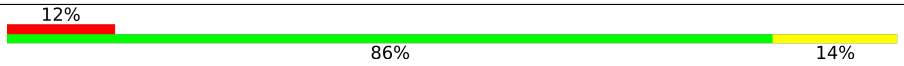
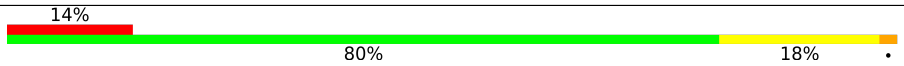
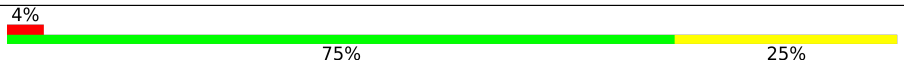
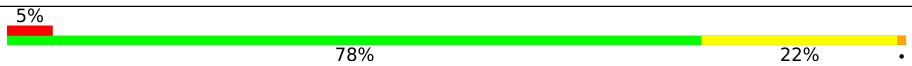
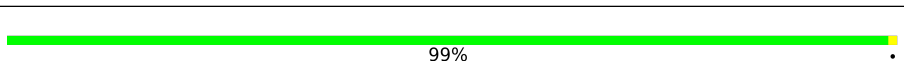
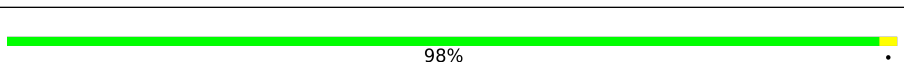
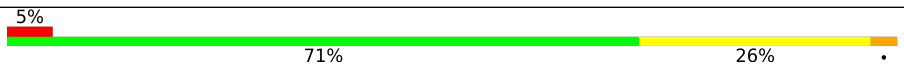
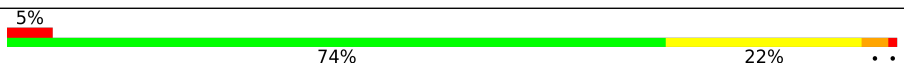
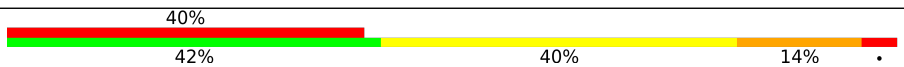
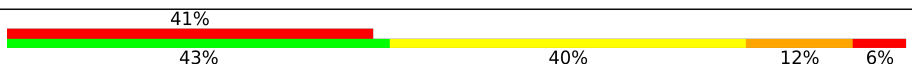
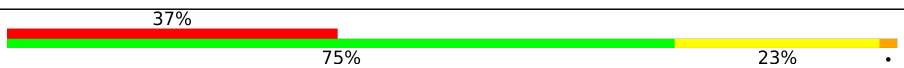
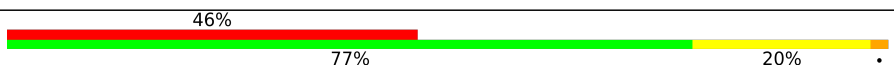
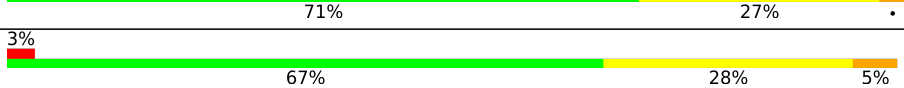
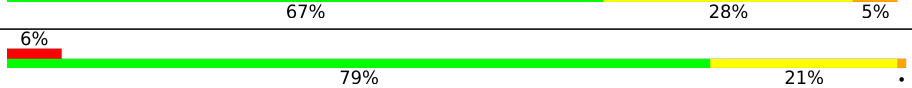
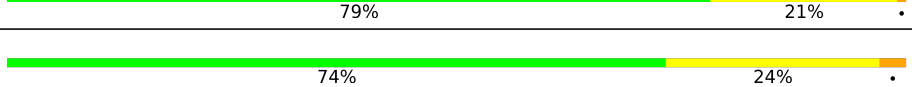
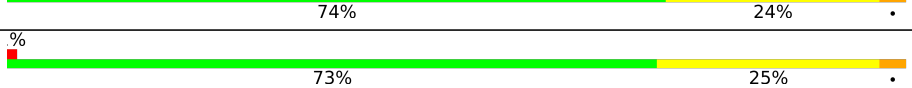
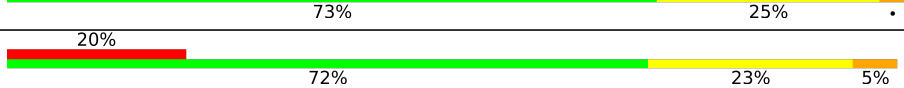
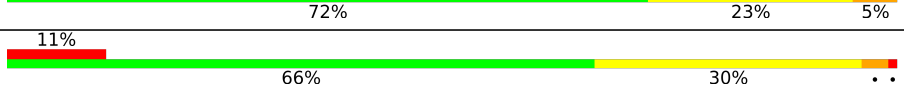
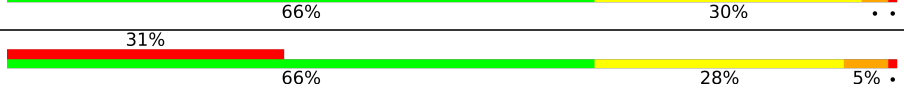
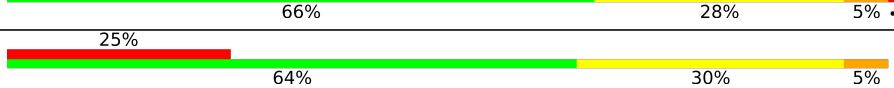
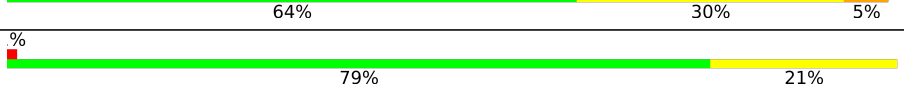
Mol	Chain	Length	Quality of chain
28	BF	208	
28	DF	208	
29	BG	181	
29	DG	181	
30	BH	167	
30	DH	167	
31	BJ	170	
31	DJ	170	
32	BK	140	
32	DK	140	
33	BN	139	
33	DN	139	
34	BO	122	
34	DO	122	
35	BP	146	
35	DP	146	
36	BQ	141	
36	DQ	141	
37	BR	117	
37	DR	117	
38	BS	99	
38	DS	99	
39	BT	138	
39	DT	138	
40	BU	117	

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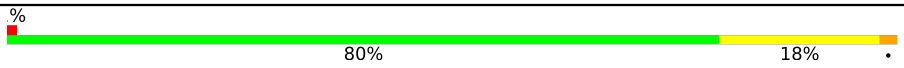
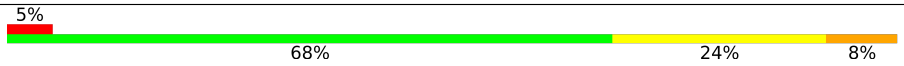
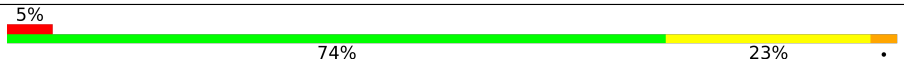
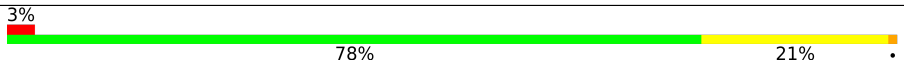
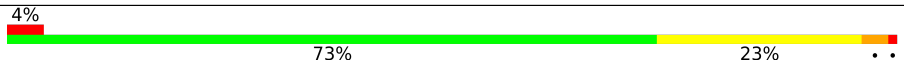
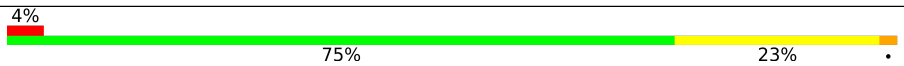
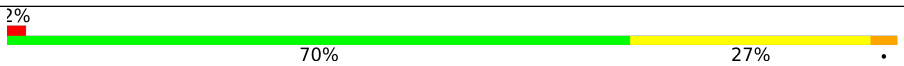
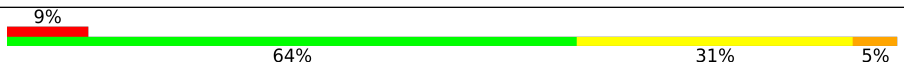
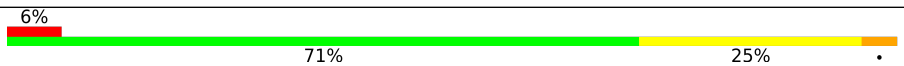
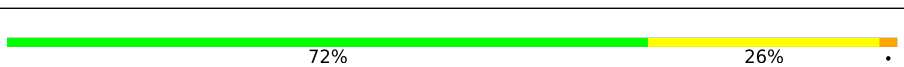
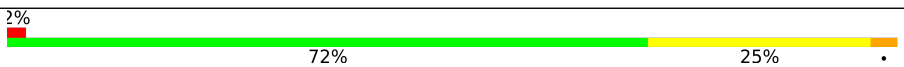
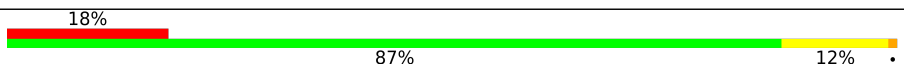
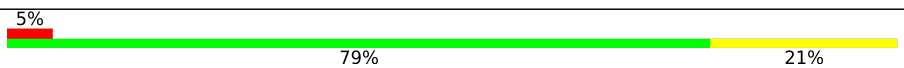
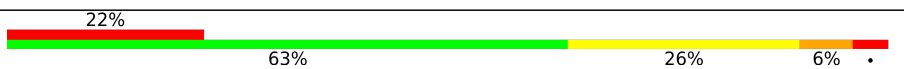
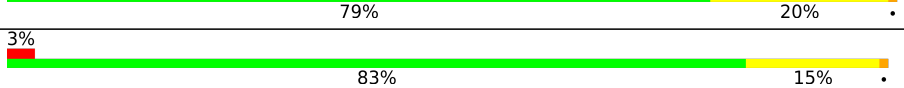
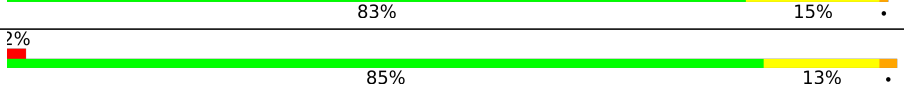
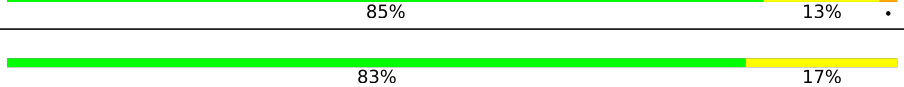
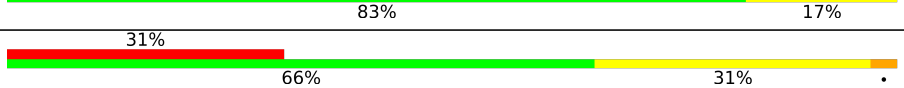
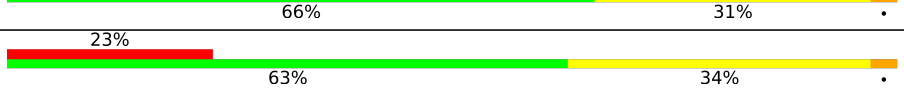
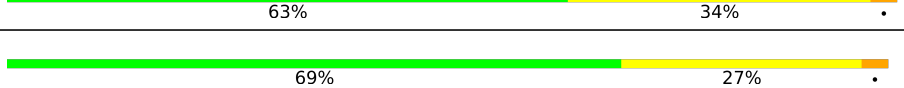
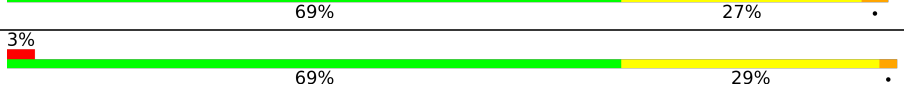
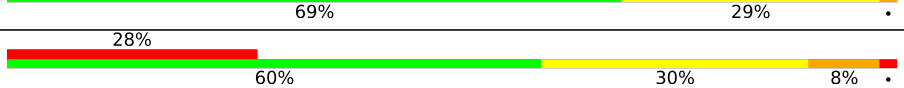
Mol	Chain	Length	Quality of chain
40	DU	117	
41	BV	101	
41	DV	101	
42	BW	113	
42	DW	113	
43	BX	93	
43	DX	93	
44	BY	107	
44	DY	107	
45	BZ	185	
45	DZ	185	
46	B0	84	
46	D0	84	
47	B1	93	
47	D1	93	
48	B2	71	
48	D2	71	
49	B3	60	
49	D3	60	
50	B4	35	
50	D4	35	
51	B5	59	
51	D5	59	
52	B6	50	
52	D6	50	

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Mol	Chain	Length	Quality of chain
53	B7	49	33% 80% 16%
53	D7	49	20% 76% 22%
54	B8	64	16% 70% 27%
54	D8	64	11% 66% 28% 6%
55	B9	37	3% 76% 24%
55	D9	37	84% 16%
56	Be	103	12% 86% 12%
56	De	103	9% 80% 19%
57	Bf	31	100%
57	Bg	31	100%
57	Df	31	100%
57	Dg	31	100%
58	Bh	30	100%
58	Dh	30	100%
59	BA	2879	% 71% 27%
59	DA	2879	% 71% 26%
60	BB	119	5% 67% 31%
60	DB	119	61% 38%

2 Entry composition (i)

There are 64 unique types of molecules in this entry. The entry contains 312066 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 protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	AB	235	Total	C	N	O	S	0	0	0
			1910	1218	342	345	5			
1	CB	235	Total	C	N	O	S	0	0	0
			1910	1218	342	345	5			

- Molecule 2 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	AC	207	Total	C	N	O	S	0	0	0
			1621	1022	315	283	1			
2	CC	207	Total	C	N	O	S	0	0	0
			1621	1022	315	283	1			

- Molecule 3 is a protein called 30S ribosomal protein S4.

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

- Molecule 4 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	AE	151	Total	C	N	O	S	0	0	0
			1156	729	218	205	4			
4	CE	151	Total	C	N	O	S	0	0	0
			1156	729	218	205	4			

- Molecule 5 is a protein called 30S ribosomal protein S6.

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

- Molecule 6 is a protein called 30S ribosomal protein S7.

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

- Molecule 7 is a protein called 30S ribosomal protein S8.

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

- Molecule 8 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
8	AI	127	Total	C	N	O	0	0	0
			1010	639	197	174			
8	CI	127	Total	C	N	O	0	0	0
			1010	639	197	174			

- Molecule 9 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	AJ	99	Total	C	N	O	S	0	0	0
			802	504	157	140	1			
9	CJ	99	Total	C	N	O	S	0	0	0
			802	504	157	140	1			

- Molecule 10 is a protein called 30S ribosomal protein S11.

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

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	CK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			

- Molecule 11 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	AL	125	Total	C	N	O	S	0	0	0
			976	614	196	165	1			
11	CL	125	Total	C	N	O	S	0	0	0
			976	614	196	165	1			

- Molecule 12 is a protein called 30S ribosomal protein S13.

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

- Molecule 13 is a protein called 30S ribosomal protein S14 type Z.

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

- Molecule 14 is a protein called 30S ribosomal protein S15.

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

- Molecule 15 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	AP	84	Total	C	N	O	S	0	0	0
			706	446	140	119	1			
15	CP	84	Total	C	N	O	S	0	0	0
			706	446	140	119	1			

- Molecule 16 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	AQ	100	Total	C	N	O	S	0	0	0
			835	534	155	144	2			
16	CQ	100	Total	C	N	O	S	0	0	0
			835	534	155	144	2			

- Molecule 17 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
17	AR	70	Total	C	N	O	0	0	0
			574	367	112	95			
17	CR	70	Total	C	N	O	0	0	0
			574	367	112	95			

- Molecule 18 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
18	AS	79	Total	C	N	O	S	0	0	0
			634	405	115	112	2			
18	CS	79	Total	C	N	O	S	0	0	0
			634	405	115	112	2			

- Molecule 19 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	AT	99	Total	C	N	O	S	0	0	0
			763	470	162	129	2			
19	CT	99	Total	C	N	O	S	0	0	0
			763	470	162	129	2			

- Molecule 20 is a protein called Elongation factor G.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	AY	661	Total	C	N	O	S	0	0	0
			5173	3288	884	983	18			
20	CY	661	Total	C	N	O	S	0	0	0
			5173	3288	884	983	18			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AY	40	THR	HIS	conflict	UNP Q72I01

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Chain	Residue	Modelled	Actual	Comment	Reference
AY	129	LYS	HIS	conflict	UNP Q72I01
AY	226	ASN	HIS	conflict	UNP Q72I01
CY	40	THR	HIS	conflict	UNP Q72I01
CY	129	LYS	HIS	conflict	UNP Q72I01
CY	226	ASN	HIS	conflict	UNP Q72I01

- Molecule 21 is a RNA chain called 16S Ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	AA	1511	Total	C	N	O	P	0	0	0
			32474	14455	6015	10494	1510			
21	CA	1511	Total	C	N	O	P	0	0	0
			32474	14455	6015	10494	1510			

- Molecule 22 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	AW	77	Total	C	N	O	P	0	0	0
			1635	732	291	536	76			
22	CW	77	Total	C	N	O	P	0	0	0
			1635	732	291	536	76			

- Molecule 23 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	AV	36	Total	C	N	O	P	0	0	0
			783	351	159	237	36			
23	CV	36	Total	C	N	O	P	0	0	0
			781	352	159	235	35			

- Molecule 24 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	AX	78	Total	C	N	O	P	0	0	0
			1629	730	293	531	75			
24	CX	78	Total	C	N	O	P	0	0	0
			1629	730	293	531	75			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AX	77	VAL	-	expression tag	GB 1154835240

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Chain	Residue	Modelled	Actual	Comment	Reference
AX	78	ACE	-	expression tag	GB 1154835240
CX	77	VAL	-	expression tag	GB 1154835240
CX	78	ACE	-	expression tag	GB 1154835240

- Molecule 25 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
25	BC	228	Total	C	N	O	S	0	0	0
			1742	1101	319	319	3			
25	DC	228	Total	C	N	O	S	0	0	0
			1742	1101	319	319	3			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
26	BD	275	Total	C	N	O	S	0	0	0
			2145	1353	428	361	3			
26	DD	275	Total	C	N	O	S	0	0	0
			2145	1353	428	361	3			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
27	BE	205	Total	C	N	O	S	0	0	0
			1569	991	300	272	6			
27	DE	205	Total	C	N	O	S	0	0	0
			1569	991	300	272	6			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
28	BF	208	Total	C	N	O	S	0	0	0
			1628	1037	304	284	3			
28	DF	208	Total	C	N	O	S	0	0	0
			1628	1037	304	284	3			

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

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	BH	167	Total	C	N	O	S	0	0	0
			1274	806	238	229	1			
30	DH	167	Total	C	N	O	S	0	0	0
			1274	806	238	229	1			

- Molecule 31 is a protein called 50S ribosomal protein l10.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
31	BJ	170	Total	C	N	O	0	0	0
			851	510	170	171			
31	DJ	170	Total	C	N	O	0	0	0
			851	510	170	171			

- Molecule 32 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
32	BK	140	Total	C	N	O	S	0	0	0
			1035	659	183	188	5			
32	DK	140	Total	C	N	O	S	0	0	0
			1035	659	183	188	5			

- Molecule 33 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
33	BN	139	Total	C	N	O	S	0	0	0
			1114	717	207	186	4			
33	DN	139	Total	C	N	O	S	0	0	0
			1114	717	207	186	4			

- Molecule 34 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
34	BO	122	Total	C	N	O	S	0	0	0
			933	588	171	170	4			
34	DO	122	Total	C	N	O	S	0	0	0
			933	588	171	170	4			

- Molecule 35 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
35	BP	146	Total	C	N	O	S	0	0	0
			1114	692	227	193	2			
35	DP	146	Total	C	N	O	S	0	0	0
			1114	692	227	193	2			

- Molecule 36 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
36	BQ	141	Total	C	N	O	S	0	0	0
			1122	715	212	188	7			
36	DQ	141	Total	C	N	O	S	0	0	0
			1122	715	212	188	7			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BQ	32	TYR	PHE	conflict	UNP Q72I11
DQ	32	TYR	PHE	conflict	UNP Q72I11

- Molecule 37 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
37	BR	117	Total	C	N	O	0	0	0
			960	599	202	159			
37	DR	117	Total	C	N	O	0	0	0
			960	599	202	159			

- Molecule 38 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
38	BS	99	Total	C	N	O	0	0	0
			775	488	155	132			
38	DS	99	Total	C	N	O	0	0	0
			775	488	155	132			

- Molecule 39 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	BT	138	Total	C	N	O	S	0	0	0
			1147	713	235	198	1			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	DT	138	Total	C	N	O	S	0	0	0
			1147	713	235	198	1			

- Molecule 40 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
40	BU	117	Total	C	N	O	S	0	0	0
			964	610	202	151	1			
40	DU	117	Total	C	N	O	S	0	0	0
			964	610	202	151	1			

- Molecule 41 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
41	BV	101	Total	C	N	O	S	0	0	0
			779	501	142	135	1			
41	DV	101	Total	C	N	O	S	0	0	0
			779	501	142	135	1			

- Molecule 42 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
42	BW	113	Total	C	N	O	S	0	0	0
			900	566	177	155	2			
42	DW	113	Total	C	N	O	S	0	0	0
			900	566	177	155	2			

- Molecule 43 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
43	BX	93	Total	C	N	O	0	0	0
			734	477	132	125			
43	DX	93	Total	C	N	O	0	0	0
			734	477	132	125			

- Molecule 44 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
44	BY	107	Total	C	N	O	S	0	0	0
			818	524	155	134	5			
44	DY	107	Total	C	N	O	S	0	0	0
			818	524	155	134	5			

- Molecule 45 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
45	BZ	185	Total	C	N	O	S	0	0	0
			1473	939	262	270	2			
45	DZ	185	Total	C	N	O	S	0	0	0
			1473	939	262	270	2			

- Molecule 46 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
46	B0	84	Total	C	N	O	S	0	0	0
			662	410	140	111	1			
46	D0	84	Total	C	N	O	S	0	0	0
			662	410	140	111	1			

- Molecule 47 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
47	B1	93	Total	C	N	O	S	0	0	0
			732	460	145	126	1			
47	D1	93	Total	C	N	O	S	0	0	0
			732	460	145	126	1			

- Molecule 48 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
48	B2	71	Total	C	N	O	S	0	0	0
			598	370	121	106	1			
48	D2	71	Total	C	N	O	S	0	0	0
			598	370	121	106	1			

- Molecule 49 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
49	B3	60	Total	C	N	O	S	0	0	0
			477	303	91	82	1			
49	D3	60	Total	C	N	O	S	0	0	0
			477	303	91	82	1			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
50	B4	35	Total	C	N	O	S	0	0	0
			271	174	44	50	3			
50	D4	35	Total	C	N	O	S	0	0	0
			271	174	44	50	3			

- Molecule 51 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
51	B5	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			
51	D5	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			

- Molecule 52 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
52	B6	50	Total	C	N	O	S	0	0	0
			433	270	88	71	4			
52	D6	50	Total	C	N	O	S	0	0	0
			433	270	88	71	4			

- Molecule 53 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
53	B7	49	Total	C	N	O	S	0	0	0
			430	263	108	57	2			
53	D7	49	Total	C	N	O	S	0	0	0
			430	263	108	57	2			

- Molecule 54 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
54	B8	64	Total	C	N	O	S	0	0	0
			517	331	102	82	2			
54	D8	64	Total	C	N	O	S	0	0	0
			517	331	102	82	2			

- Molecule 55 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
55	B9	37	Total	C	N	O	S	0	0	0
			307	188	68	47	4			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
55	D9	37	Total	C	N	O	S	0	0	0
			307	188	68	47	4			

- Molecule 56 is a protein called 50S ribosomal protein L7/L12.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
56	Be	102	Total	C	N	O	0	0	0
			686	430	119	137			
56	De	102	Total	C	N	O	0	0	0
			686	430	119	137			

There are 62 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Be	1	UNK	-	expression tag	UNP Q72GS2
Be	2	UNK	-	expression tag	UNP Q72GS2
Be	3	UNK	-	expression tag	UNP Q72GS2
Be	4	UNK	-	expression tag	UNP Q72GS2
Be	5	UNK	-	expression tag	UNP Q72GS2
Be	6	UNK	-	expression tag	UNP Q72GS2
Be	7	UNK	-	expression tag	UNP Q72GS2
Be	8	UNK	-	expression tag	UNP Q72GS2
Be	9	UNK	-	expression tag	UNP Q72GS2
Be	10	UNK	-	expression tag	UNP Q72GS2
Be	11	UNK	-	expression tag	UNP Q72GS2
Be	12	UNK	-	expression tag	UNP Q72GS2
Be	13	UNK	-	expression tag	UNP Q72GS2
Be	14	UNK	-	expression tag	UNP Q72GS2
Be	15	UNK	-	expression tag	UNP Q72GS2
Be	16	UNK	-	expression tag	UNP Q72GS2
Be	17	UNK	-	expression tag	UNP Q72GS2
Be	18	UNK	-	expression tag	UNP Q72GS2
Be	19	UNK	-	expression tag	UNP Q72GS2
Be	20	UNK	-	expression tag	UNP Q72GS2
Be	21	UNK	-	expression tag	UNP Q72GS2
Be	22	UNK	-	expression tag	UNP Q72GS2
Be	23	UNK	-	expression tag	UNP Q72GS2
Be	24	UNK	-	expression tag	UNP Q72GS2
Be	25	UNK	-	expression tag	UNP Q72GS2
Be	26	UNK	-	expression tag	UNP Q72GS2
Be	27	UNK	-	expression tag	UNP Q72GS2
Be	28	UNK	-	expression tag	UNP Q72GS2

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Chain	Residue	Modelled	Actual	Comment	Reference
Be	29	UNK	-	expression tag	UNP Q72GS2
Be	30	UNK	-	expression tag	UNP Q72GS2
Be	31	UNK	-	expression tag	UNP Q72GS2
De	1	UNK	-	expression tag	UNP Q72GS2
De	2	UNK	-	expression tag	UNP Q72GS2
De	3	UNK	-	expression tag	UNP Q72GS2
De	4	UNK	-	expression tag	UNP Q72GS2
De	5	UNK	-	expression tag	UNP Q72GS2
De	6	UNK	-	expression tag	UNP Q72GS2
De	7	UNK	-	expression tag	UNP Q72GS2
De	8	UNK	-	expression tag	UNP Q72GS2
De	9	UNK	-	expression tag	UNP Q72GS2
De	10	UNK	-	expression tag	UNP Q72GS2
De	11	UNK	-	expression tag	UNP Q72GS2
De	12	UNK	-	expression tag	UNP Q72GS2
De	13	UNK	-	expression tag	UNP Q72GS2
De	14	UNK	-	expression tag	UNP Q72GS2
De	15	UNK	-	expression tag	UNP Q72GS2
De	16	UNK	-	expression tag	UNP Q72GS2
De	17	UNK	-	expression tag	UNP Q72GS2
De	18	UNK	-	expression tag	UNP Q72GS2
De	19	UNK	-	expression tag	UNP Q72GS2
De	20	UNK	-	expression tag	UNP Q72GS2
De	21	UNK	-	expression tag	UNP Q72GS2
De	22	UNK	-	expression tag	UNP Q72GS2
De	23	UNK	-	expression tag	UNP Q72GS2
De	24	UNK	-	expression tag	UNP Q72GS2
De	25	UNK	-	expression tag	UNP Q72GS2
De	26	UNK	-	expression tag	UNP Q72GS2
De	27	UNK	-	expression tag	UNP Q72GS2
De	28	UNK	-	expression tag	UNP Q72GS2
De	29	UNK	-	expression tag	UNP Q72GS2
De	30	UNK	-	expression tag	UNP Q72GS2
De	31	UNK	-	expression tag	UNP Q72GS2

- Molecule 57 is a protein called 50S ribosomal protein L7/L12.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
57	Bf	31	Total	C	N	O	0	0	0
			156	93	31	32			
57	Bg	31	Total	C	N	O	0	0	0
			156	93	31	32			

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
57	Df	31	Total	C	N	O	0	0	0
			156	93	31	32			
57	Dg	31	Total	C	N	O	0	0	0
			156	93	31	32			

- Molecule 58 is a protein called 50S ribosomal protein L7/L12.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
58	Bh	30	Total	C	N	O	0	0	0
			151	90	30	31			
58	Dh	30	Total	C	N	O	0	0	0
			151	90	30	31			

- Molecule 59 is a RNA chain called 23S Ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
59	BA	2879	Total	C	N	O	P	0	0	0
			61997	27594	11582	19943	2878			
59	DA	2879	Total	C	N	O	P	0	0	0
			61997	27594	11582	19943	2878			

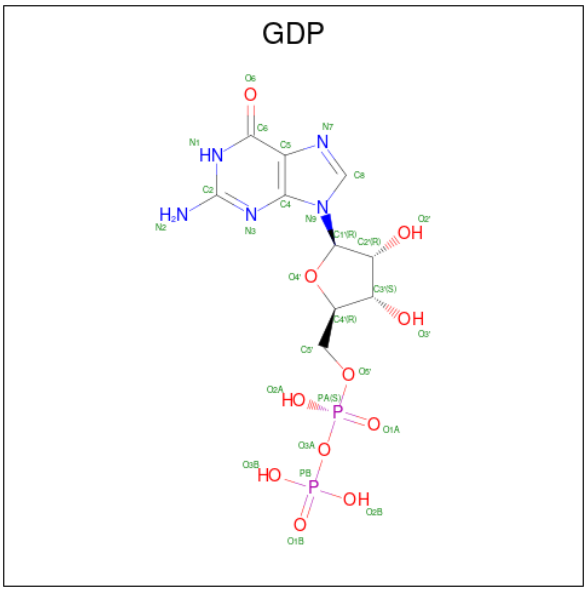
There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BA	1141A	U	C	conflict	GB 46197919
BA	2825	U	G	conflict	GB 46197919
DA	1141A	U	C	conflict	GB 46197919
DA	2825	U	G	conflict	GB 46197919

- Molecule 60 is a RNA chain called 5S Ribosomal RNA.

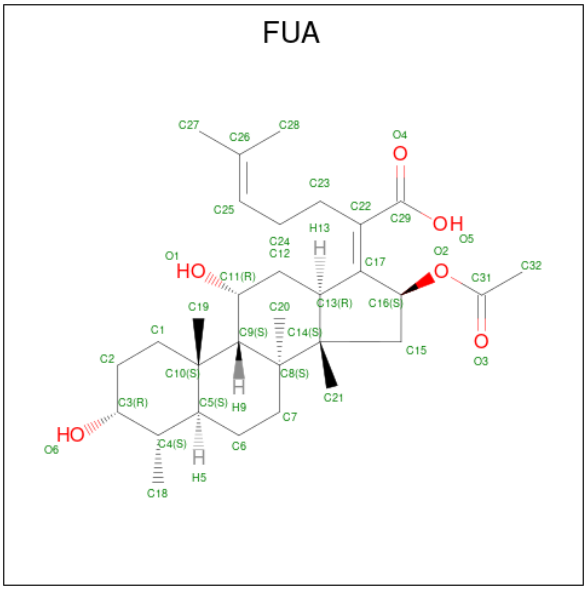
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
60	BB	119	Total	C	N	O	P	0	0	0
			2551	1136	471	826	118			
60	DB	119	Total	C	N	O	P	0	0	0
			2551	1136	471	826	118			

- Molecule 61 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



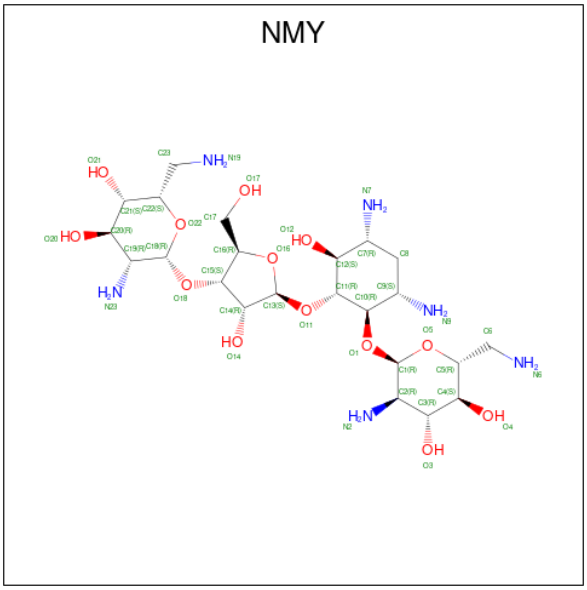
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
61	AY	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
61	CY	1	Total	C	N	O	P	0	0
			28	10	5	11	2		

- Molecule 62 is FUSIDIC ACID (three-letter code: FUA) (formula: $C_{31}H_{48}O_6$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
62	AY	1	Total	C	O	0	0
			37	31	6		
62	CY	1	Total	C	O	0	0
			37	31	6		

- Molecule 63 is NEOMYCIN (three-letter code: NMY) (formula: $C_{23}H_{46}N_6O_{13}$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
63	AA	1	Total C N O 42 23 6 13	0	0
63	BA	1	Total C N O 42 23 6 13	0	0
63	BA	1	Total C N O 42 23 6 13	0	0
63	BA	1	Total C N O 42 23 6 13	0	0
63	CA	1	Total C N O 42 23 6 13	0	0
63	DA	1	Total C N O 42 23 6 13	0	0

- Molecule 64 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

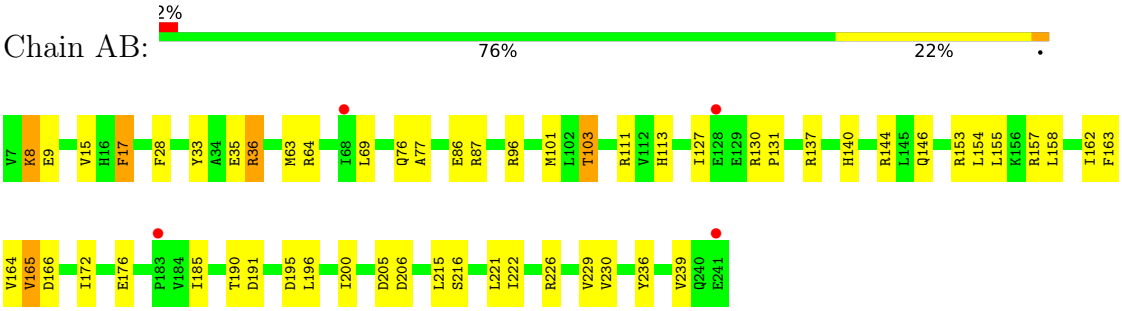
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
64	BA	1	Total Mg 1 1	0	0
64	CY	1	Total Mg 1 1	0	0

3 Residue-property plots (i)

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

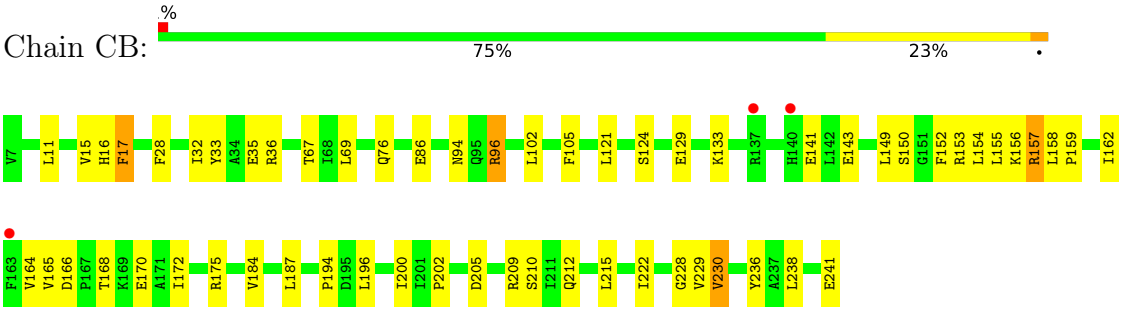
• Molecule 1: 30S ribosomal protein S2

Chain AB:



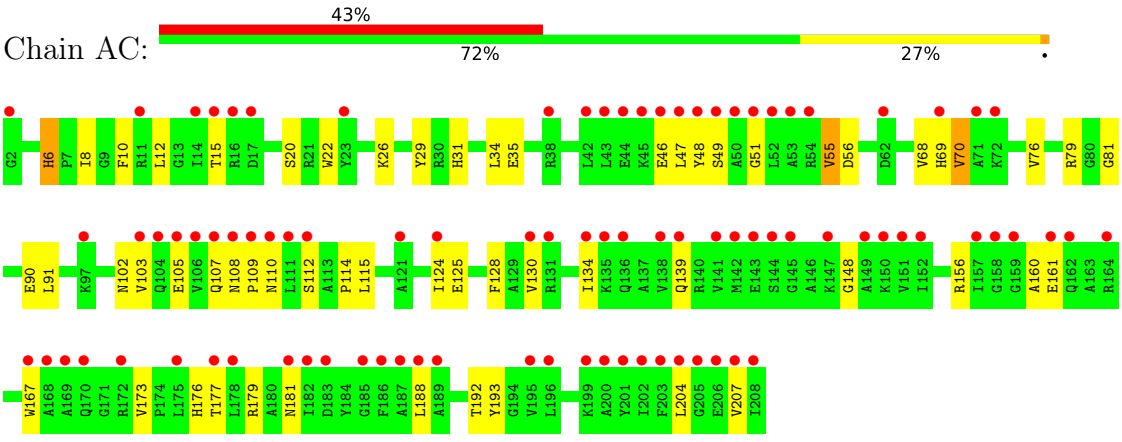
• Molecule 1: 30S ribosomal protein S2

Chain CB:



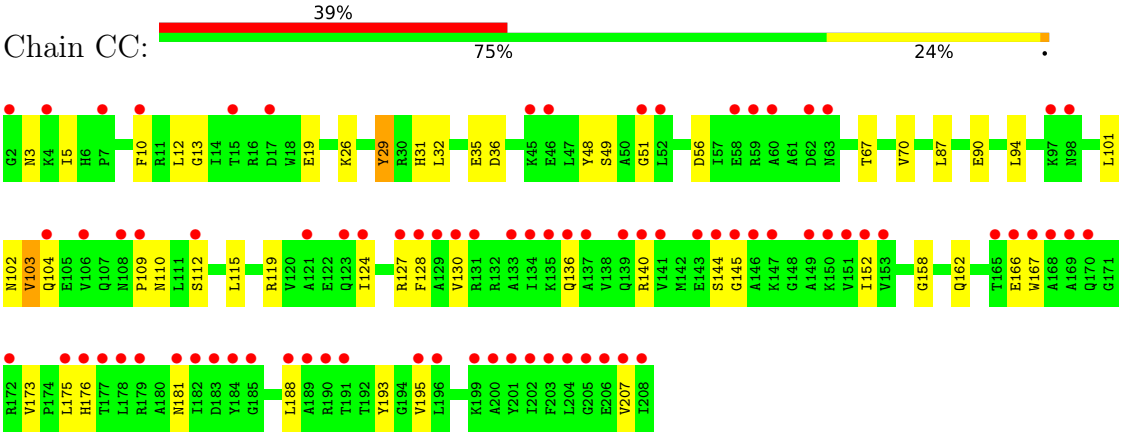
• Molecule 2: 30S ribosomal protein S3

Chain AC:



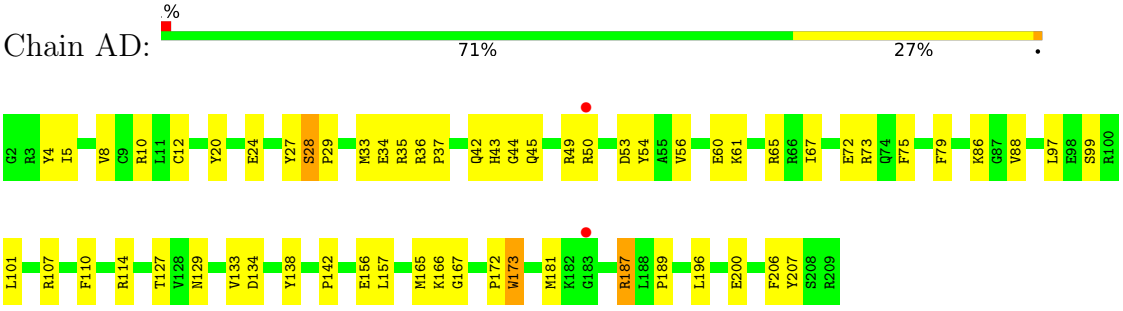
• Molecule 2: 30S ribosomal protein S3

Chain CC:



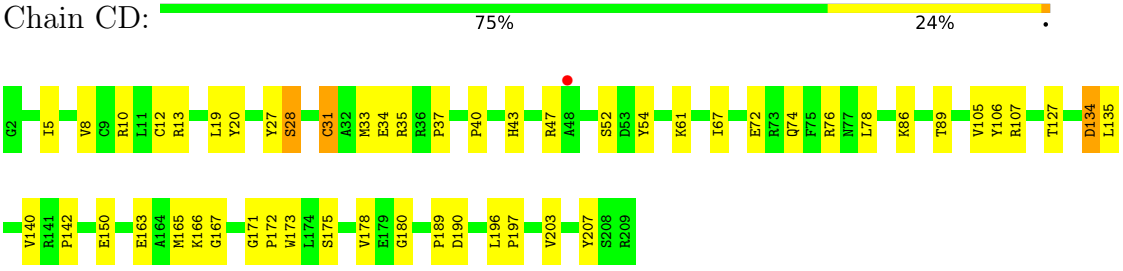
• Molecule 3: 30S ribosomal protein S4

Chain AD:



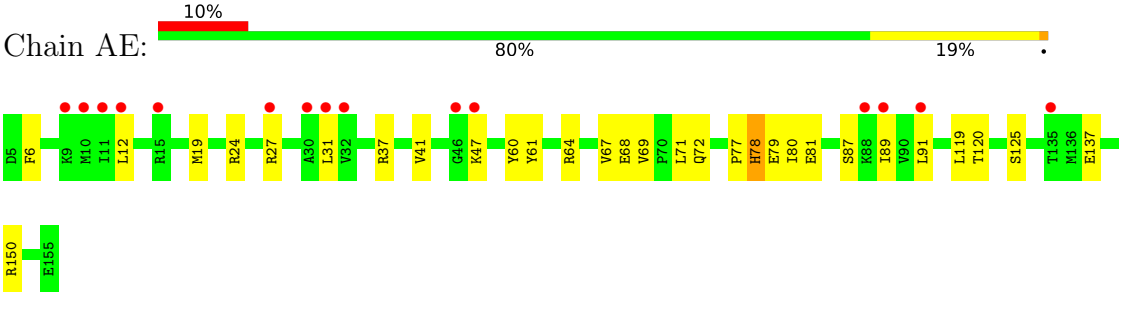
• Molecule 3: 30S ribosomal protein S4

Chain CD:



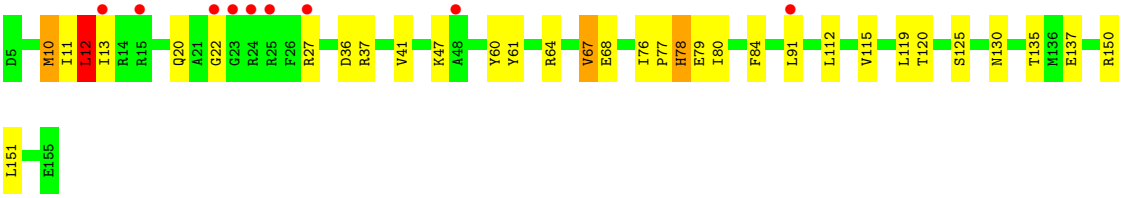
• Molecule 4: 30S ribosomal protein S5

Chain AE:

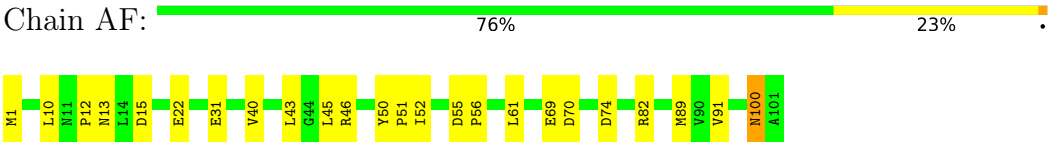


• Molecule 4: 30S ribosomal protein S5

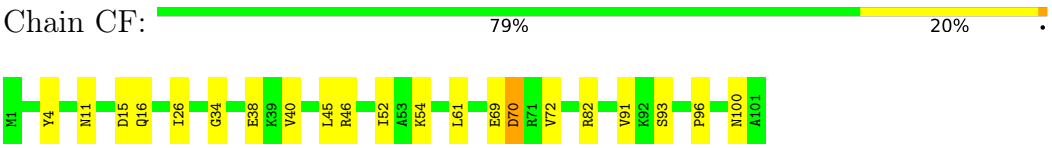
Chain CE:



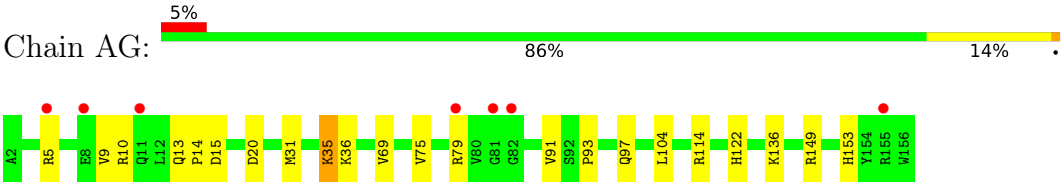
• Molecule 5: 30S ribosomal protein S6



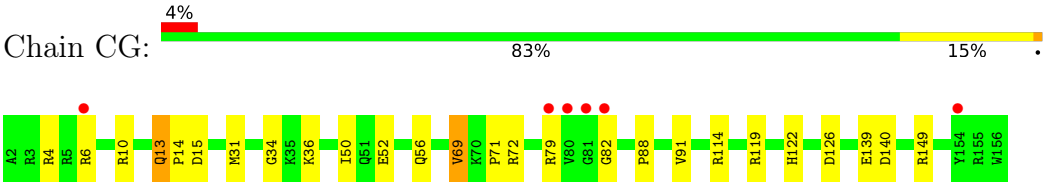
• Molecule 5: 30S ribosomal protein S6



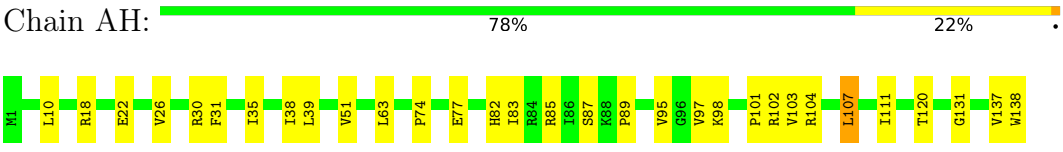
• Molecule 6: 30S ribosomal protein S7



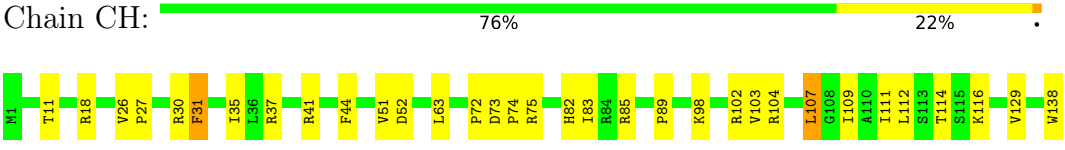
• Molecule 6: 30S ribosomal protein S7



• Molecule 7: 30S ribosomal protein S8

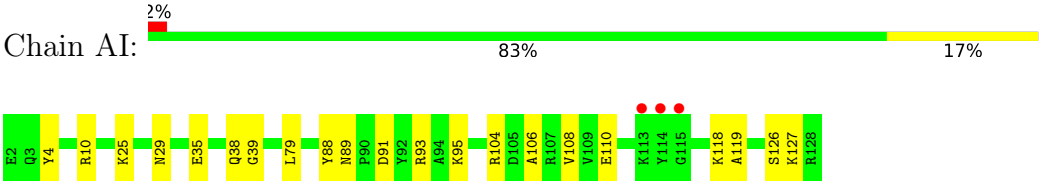


• Molecule 7: 30S ribosomal protein S8



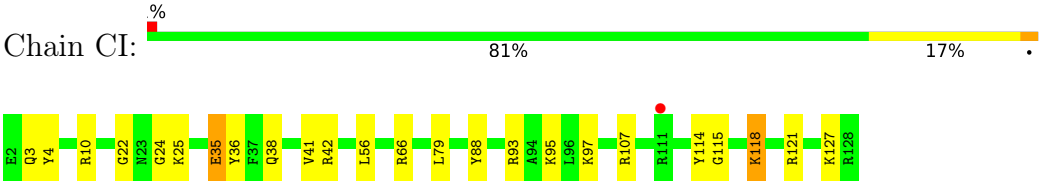
• Molecule 8: 30S ribosomal protein S9

Chain AI:



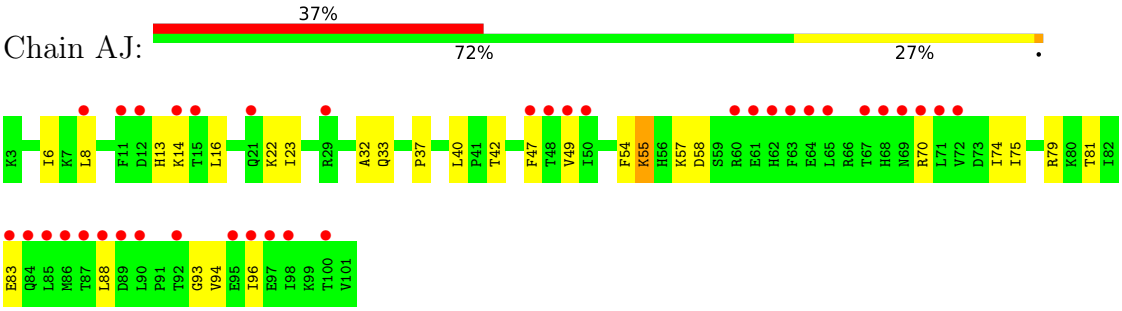
• Molecule 8: 30S ribosomal protein S9

Chain CI:



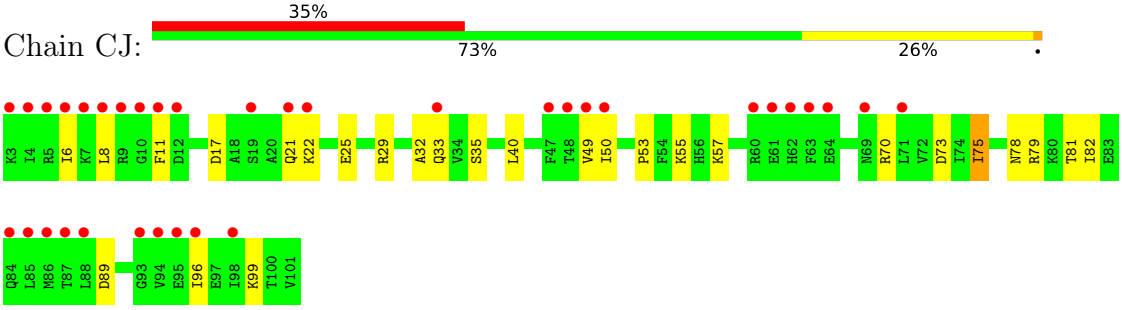
• Molecule 9: 30S ribosomal protein S10

Chain AJ:



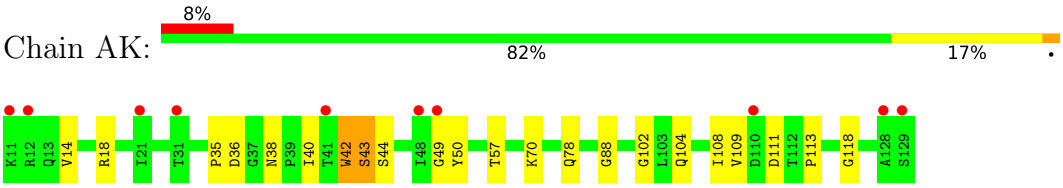
• Molecule 9: 30S ribosomal protein S10

Chain CJ:



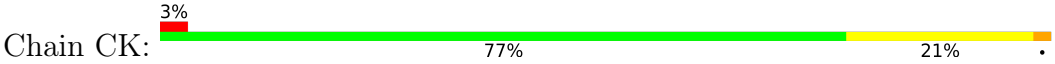
• Molecule 10: 30S ribosomal protein S11

Chain AK:

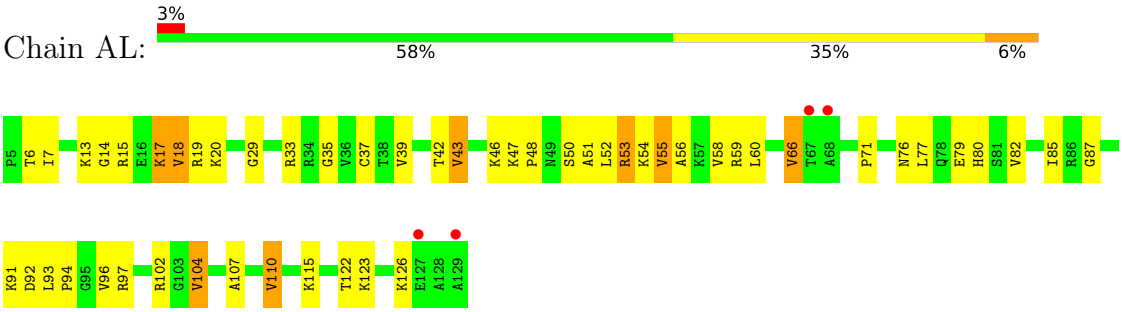


• Molecule 10: 30S ribosomal protein S11

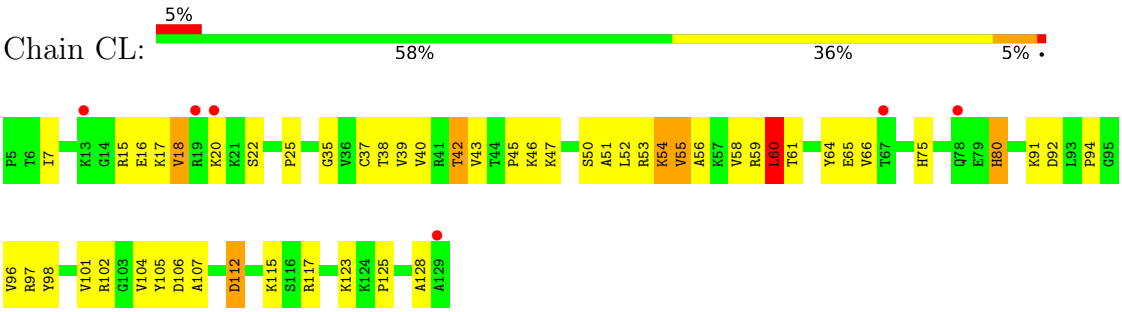
Chain CK:



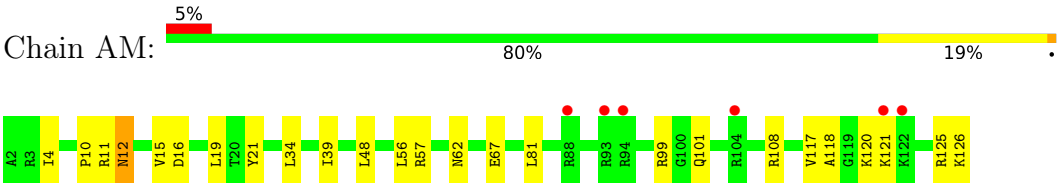
• Molecule 11: 30S ribosomal protein S12



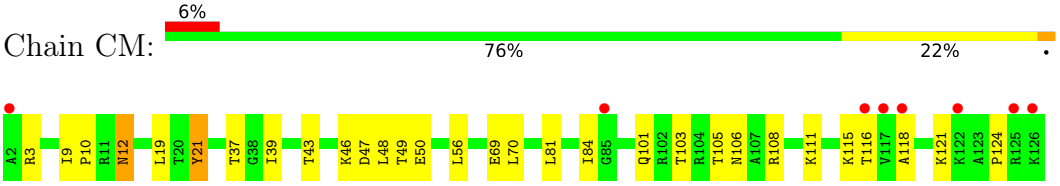
• Molecule 11: 30S ribosomal protein S12



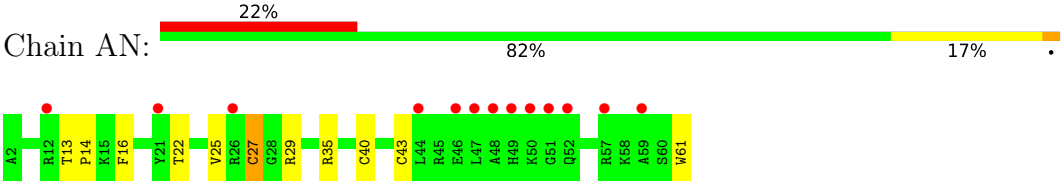
• Molecule 12: 30S ribosomal protein S13



• Molecule 12: 30S ribosomal protein S13

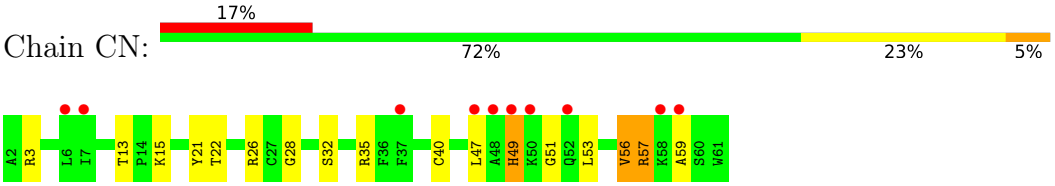


• Molecule 13: 30S ribosomal protein S14 type Z



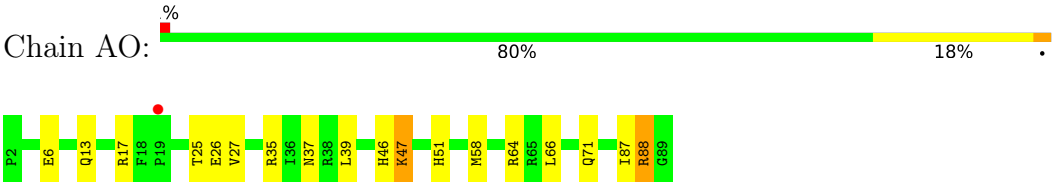
• Molecule 13: 30S ribosomal protein S14 type Z

Chain CN:



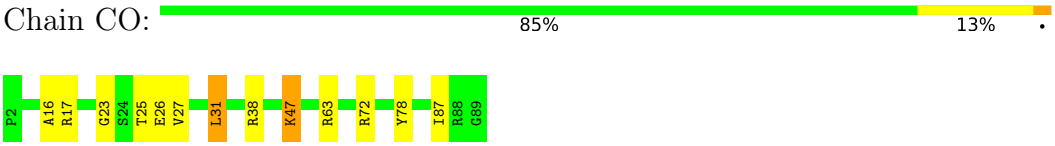
• Molecule 14: 30S ribosomal protein S15

Chain AO:



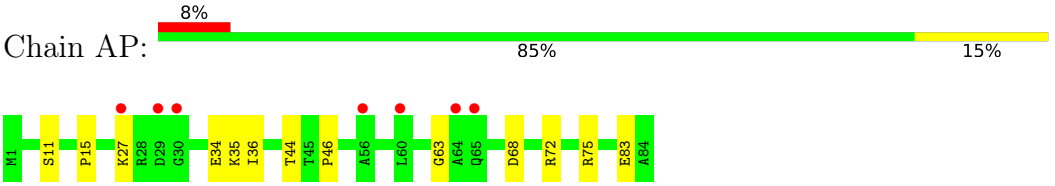
• Molecule 14: 30S ribosomal protein S15

Chain CO:



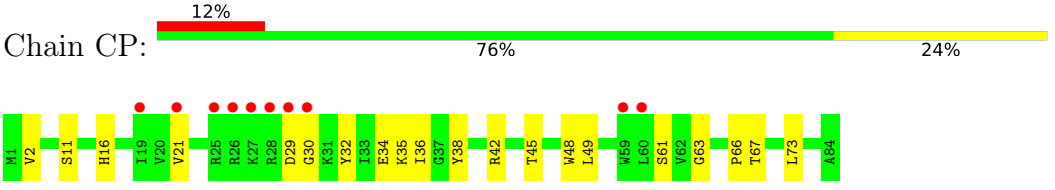
• Molecule 15: 30S ribosomal protein S16

Chain AP:



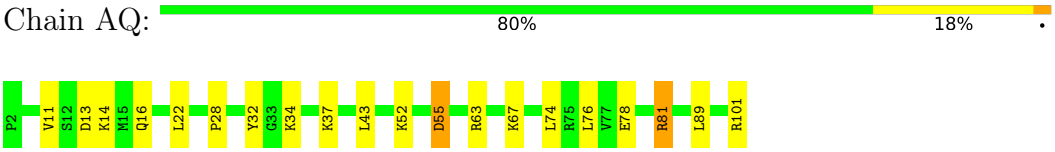
• Molecule 15: 30S ribosomal protein S16

Chain CP:



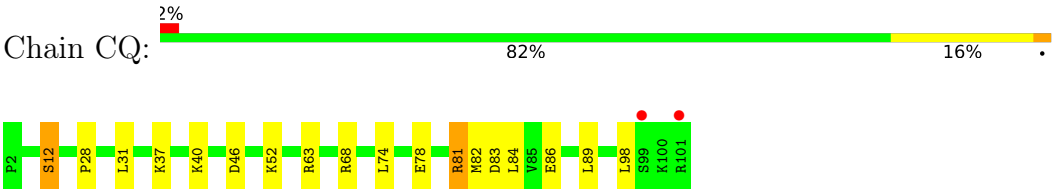
• Molecule 16: 30S ribosomal protein S17

Chain AQ:



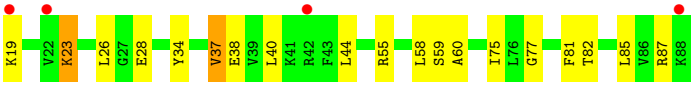
• Molecule 16: 30S ribosomal protein S17

Chain CQ:



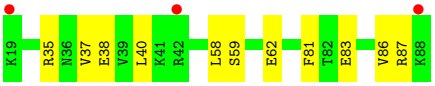
• Molecule 17: 30S ribosomal protein S18

Chain AR:



• Molecule 17: 30S ribosomal protein S18

Chain CR:

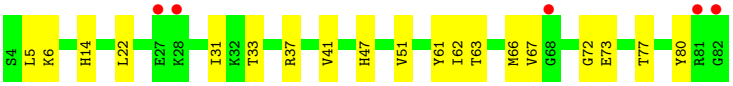


• Molecule 18: 30S ribosomal protein S19

Chain AS:

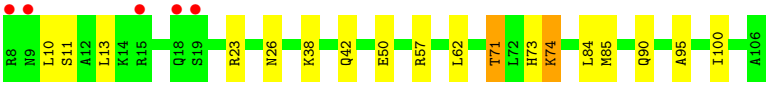
• Molecule 18: 30S ribosomal protein S19

Chain CS:



• Molecule 19: 30S ribosomal protein S20

Chain AT:

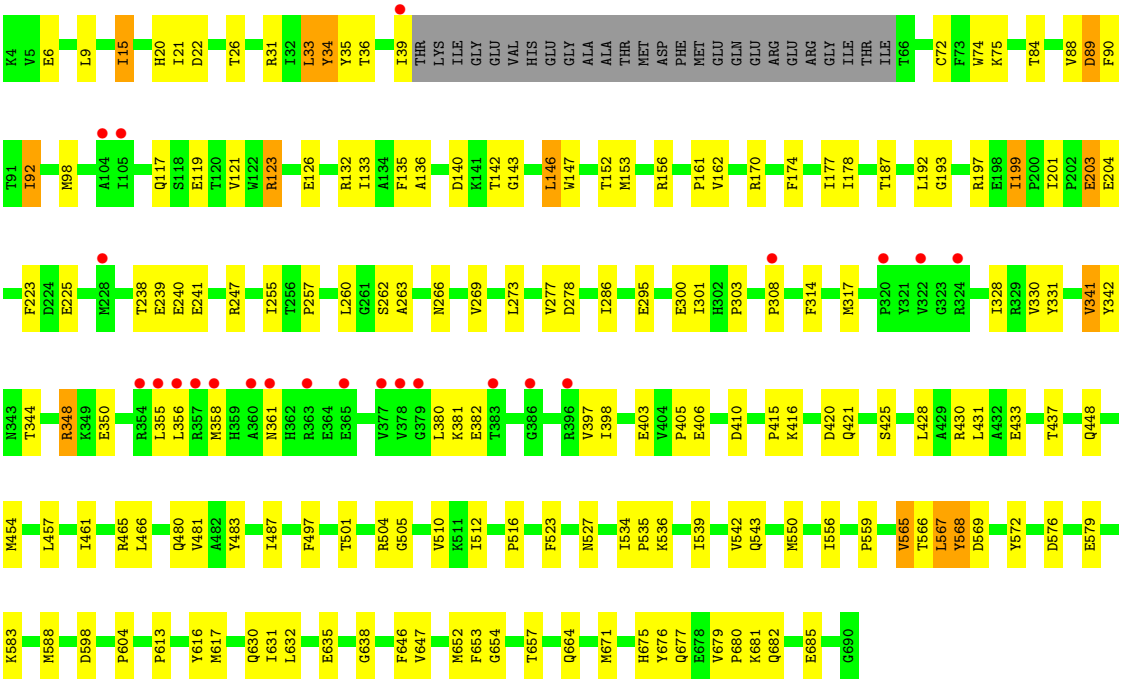


• Molecule 19: 30S ribosomal protein S20

Chain CT:

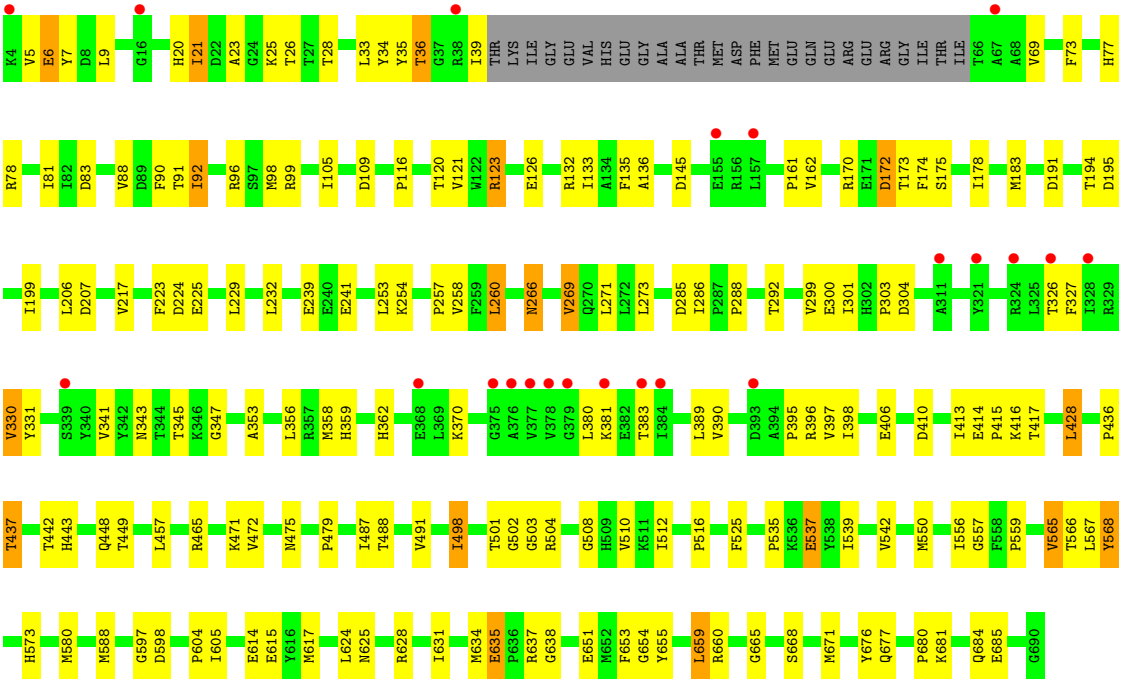
• Molecule 20: Elongation factor G

Chain AY:



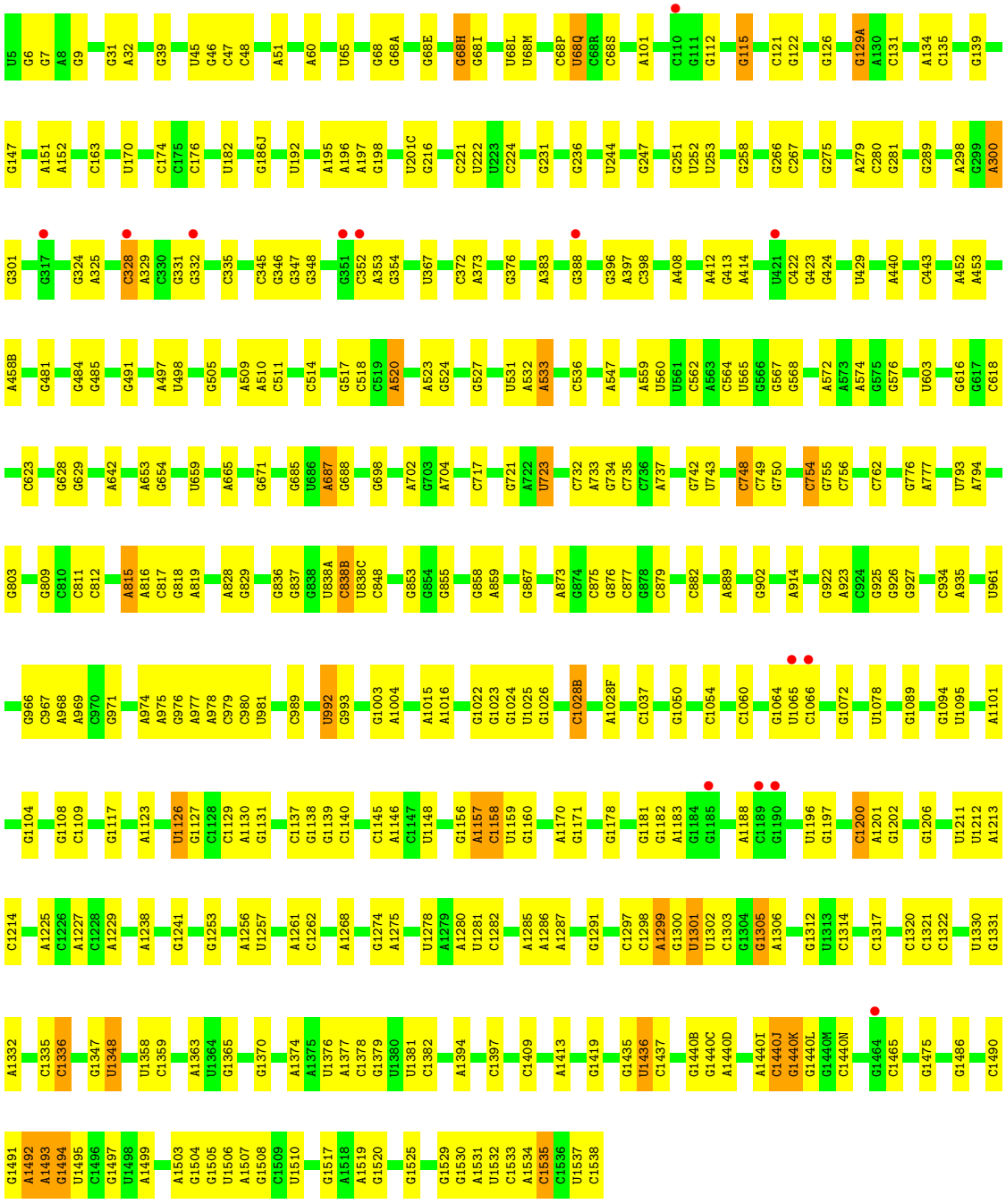
• Molecule 20: Elongation factor G

Chain CY:



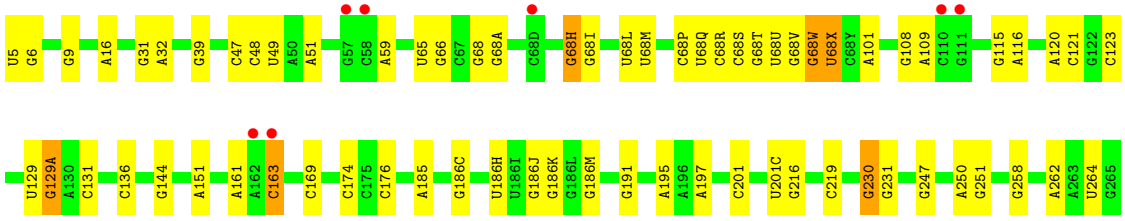
• Molecule 21: 16S Ribosomal RNA

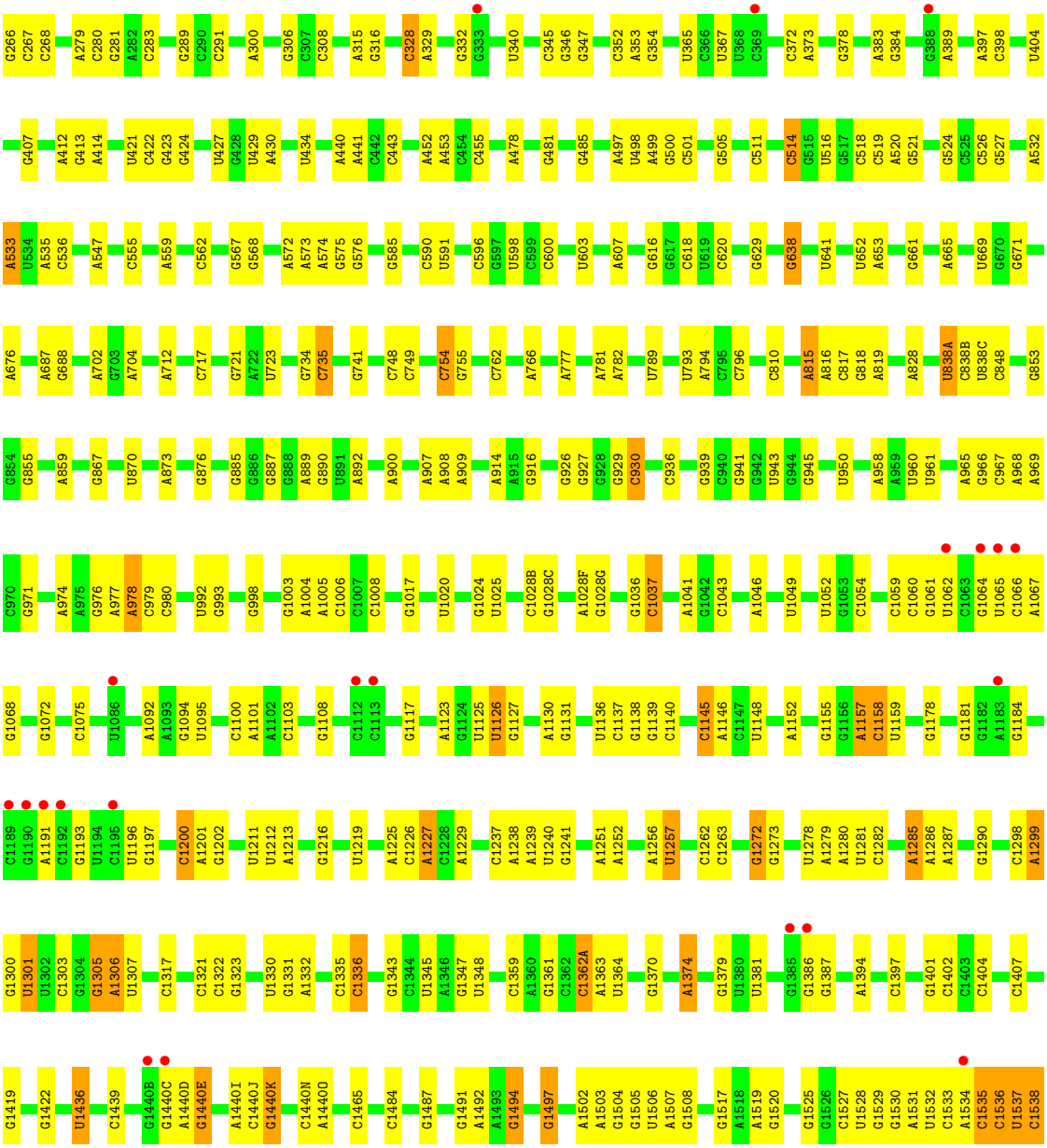
Chain AA:



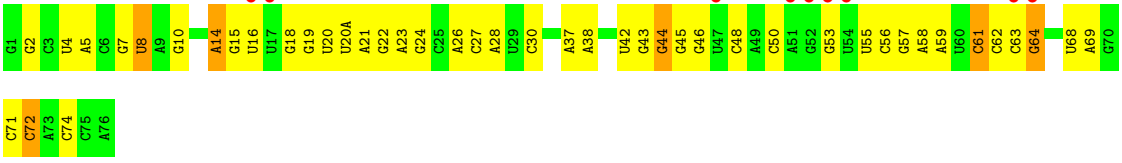
• Molecule 21: 16S Ribosomal RNA

Chain CA:





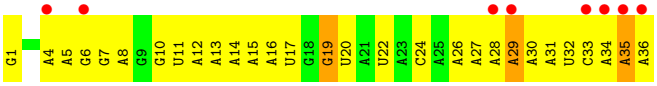
• Molecule 22: tRNA



• Molecule 22: tRNA

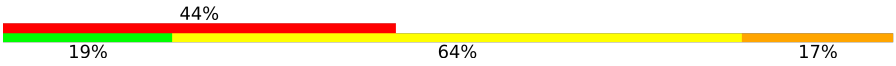
• Molecule 23: mRNA

Chain AV:



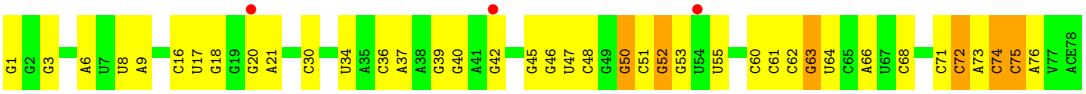
• Molecule 23: mRNA

Chain CV:



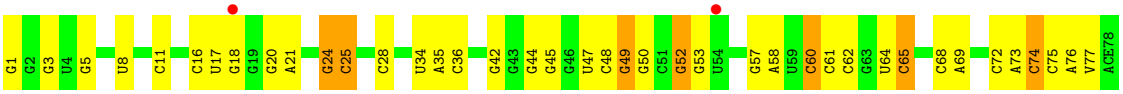
• Molecule 24: tRNA

Chain AX:



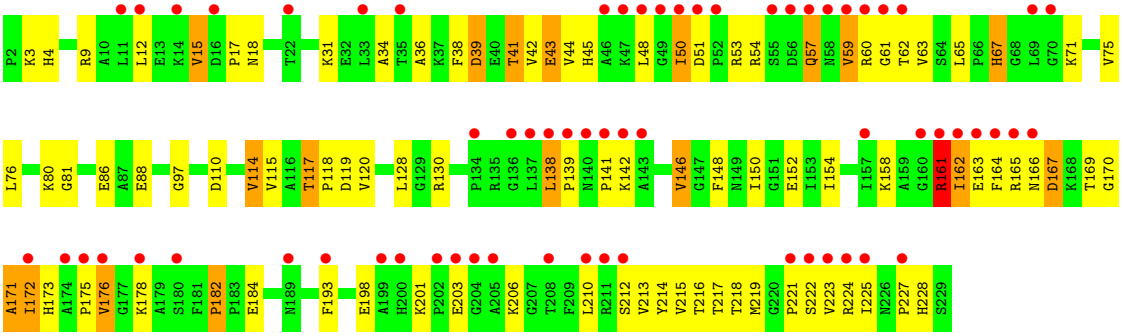
• Molecule 24: tRNA

Chain CX:



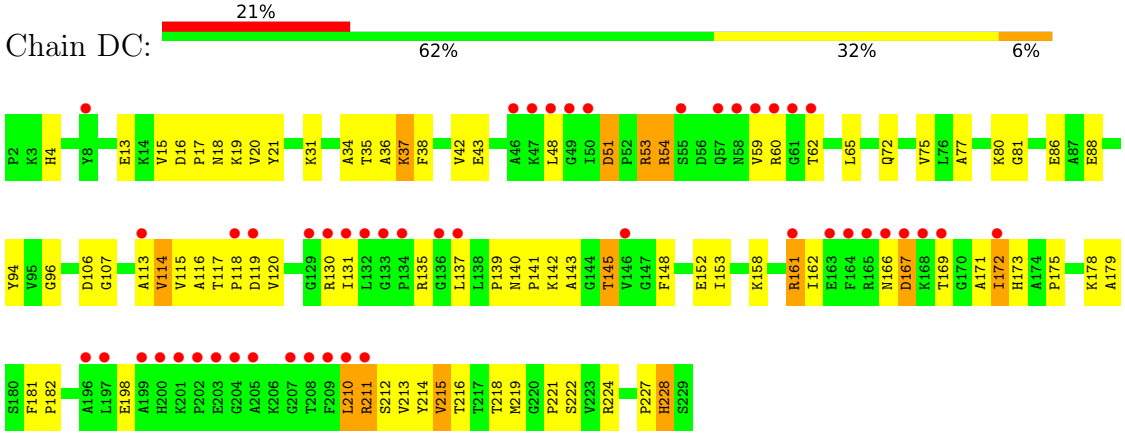
• Molecule 25: 50S ribosomal protein L1

Chain BC:



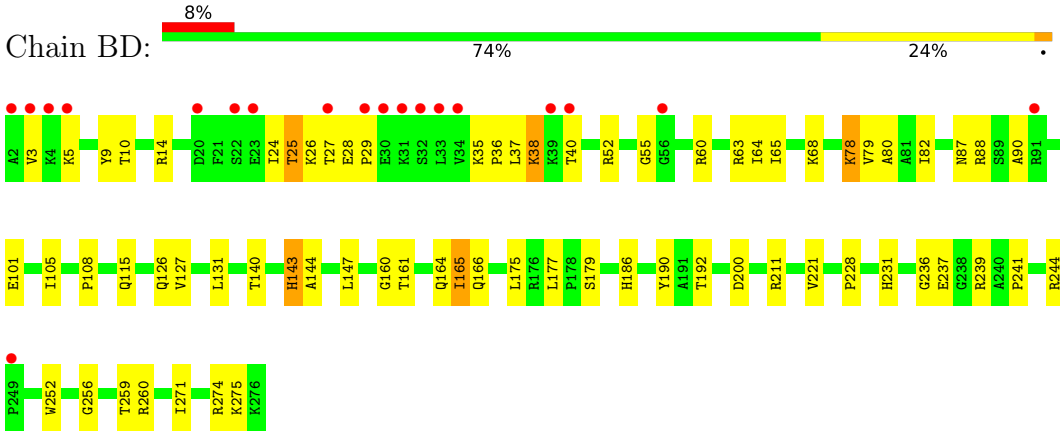
• Molecule 25: 50S ribosomal protein L1

Chain DC:



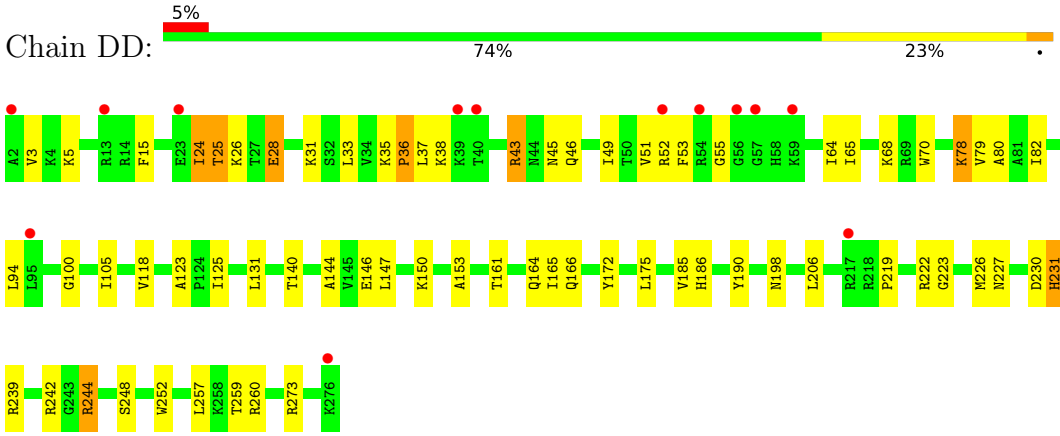
• Molecule 26: 50S ribosomal protein L2

Chain BD:



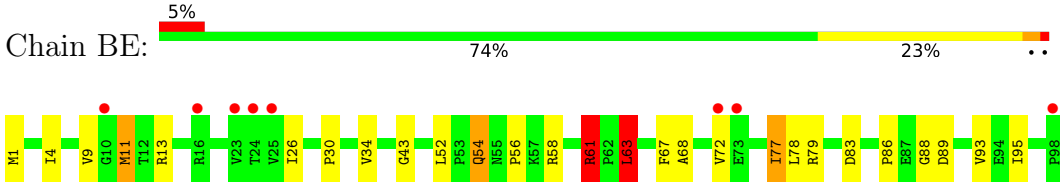
• Molecule 26: 50S ribosomal protein L2

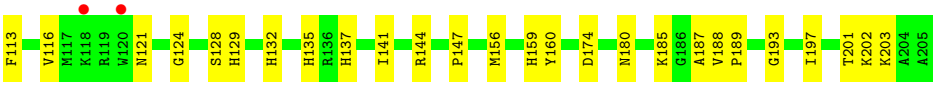
Chain DD:



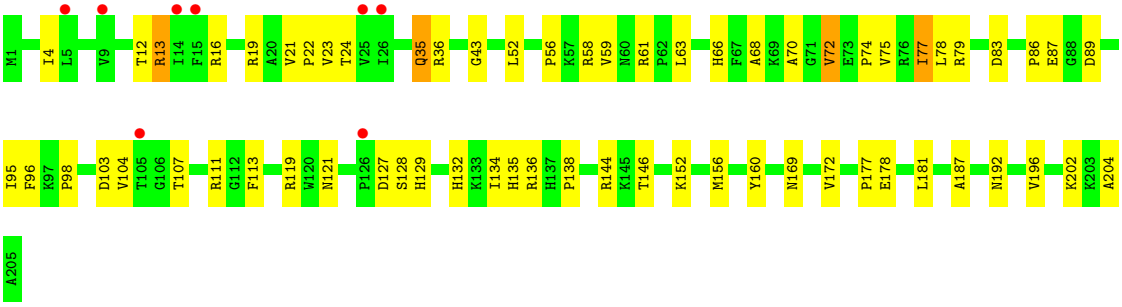
• Molecule 27: 50S ribosomal protein L3

Chain BE:

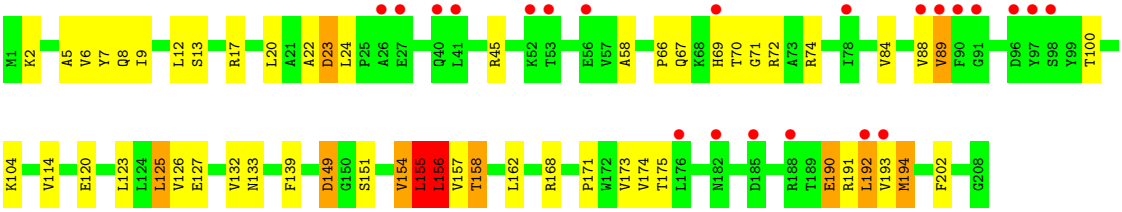




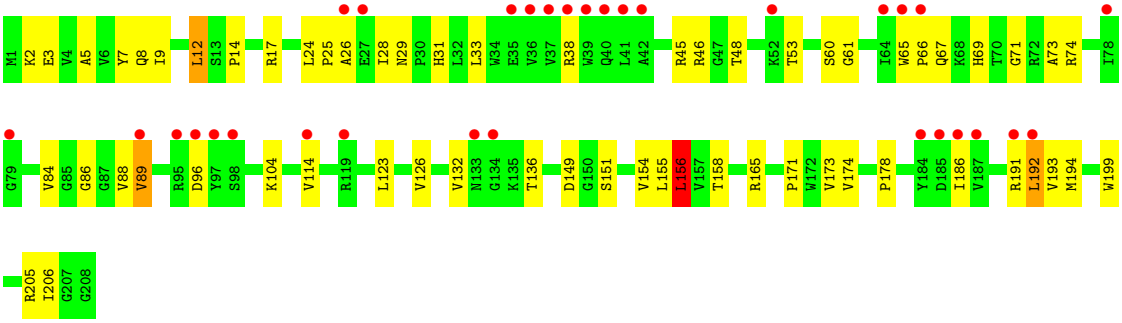
• Molecule 27: 50S ribosomal protein L3



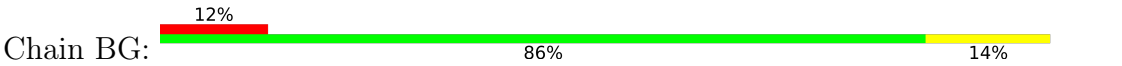
• Molecule 28: 50S ribosomal protein L4

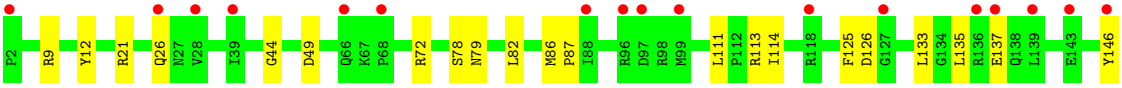


• Molecule 28: 50S ribosomal protein L4



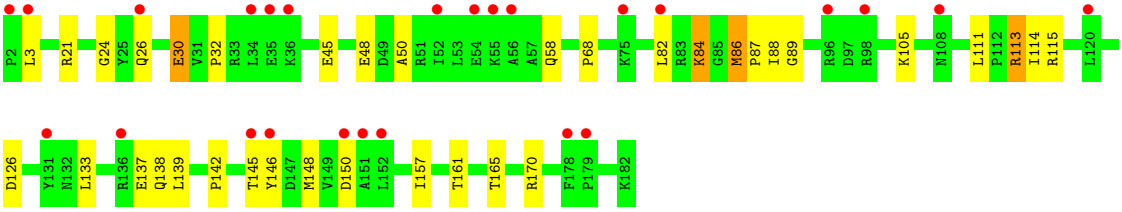
• Molecule 29: 50S ribosomal protein L5





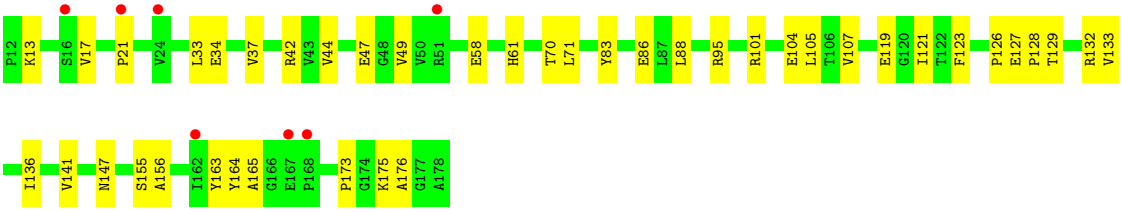
• Molecule 29: 50S ribosomal protein L5

Chain DG:



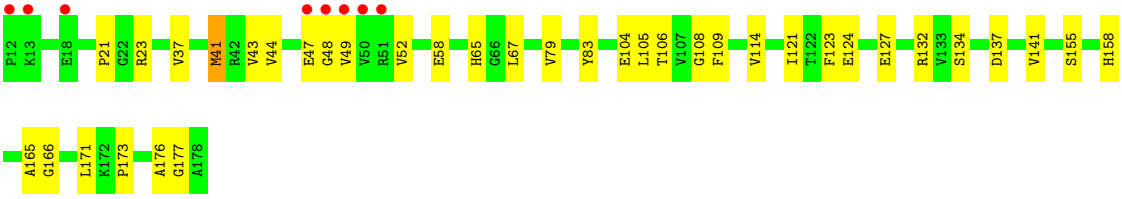
• Molecule 30: 50S ribosomal protein L6

Chain BH:



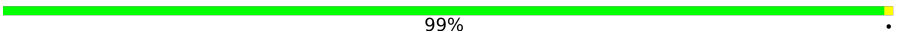
• Molecule 30: 50S ribosomal protein L6

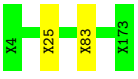
Chain DH:



• Molecule 31: 50S ribosomal protein l10

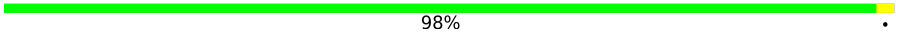
Chain BJ:

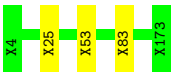




• Molecule 31: 50S ribosomal protein l10

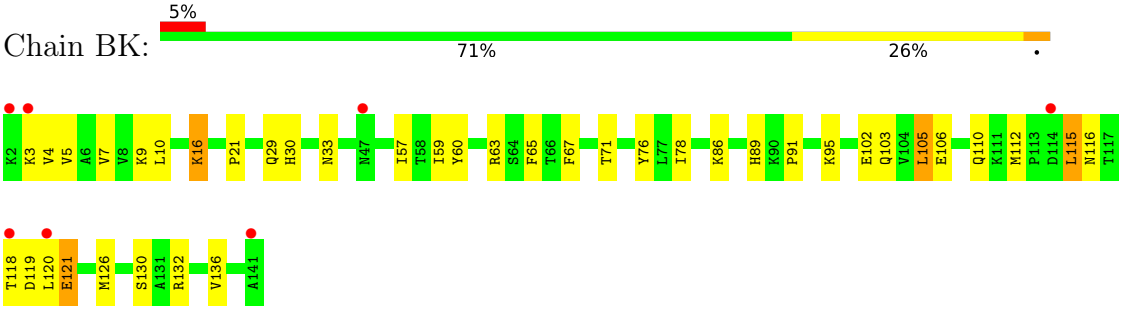
Chain DJ:





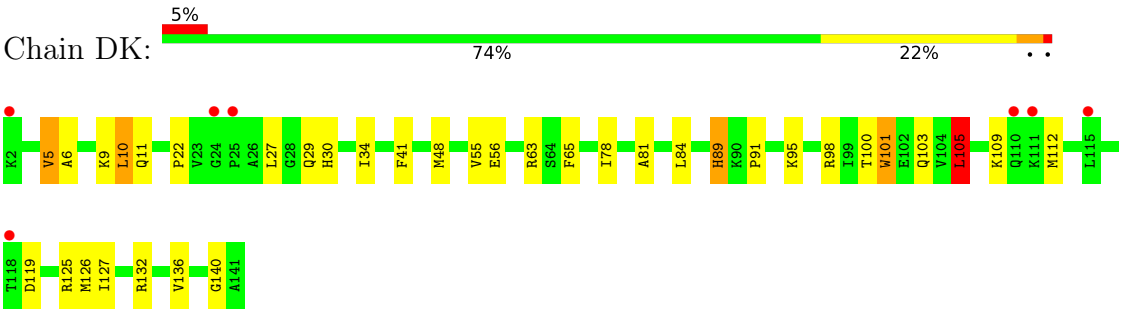
• Molecule 32: 50S ribosomal protein L11

Chain BK:



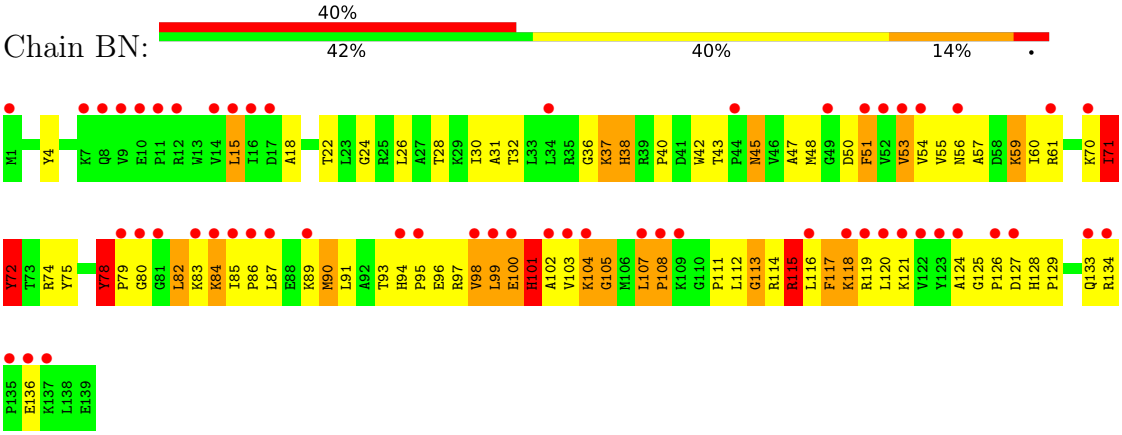
• Molecule 32: 50S ribosomal protein L11

Chain DK:



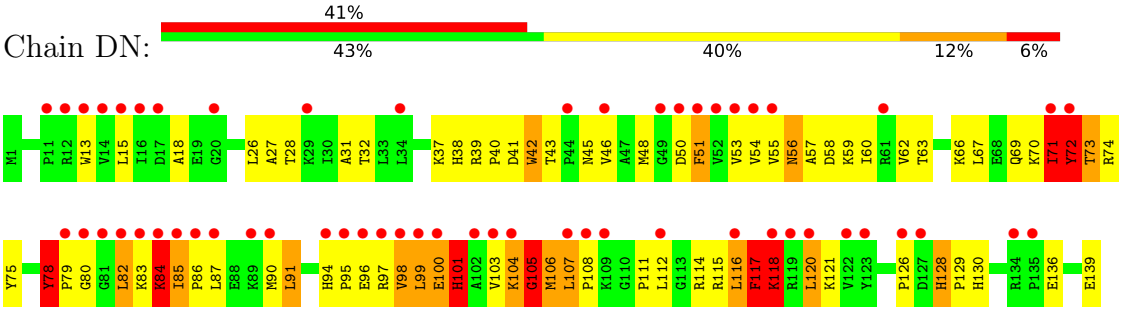
• Molecule 33: 50S ribosomal protein L13

Chain BN:



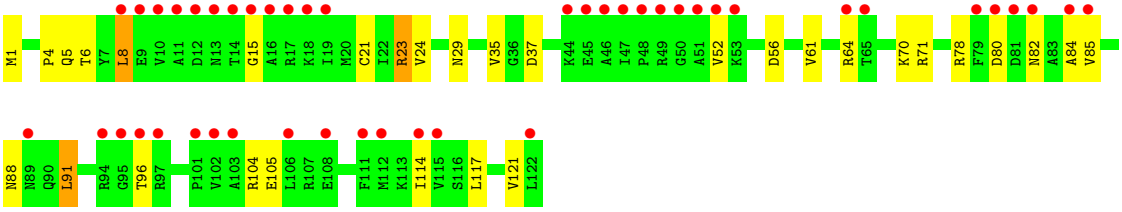
• Molecule 33: 50S ribosomal protein L13

Chain DN:



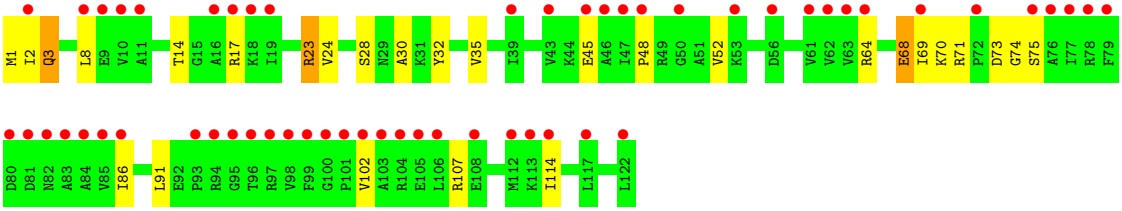
• Molecule 34: 50S ribosomal protein L14

Chain BO:



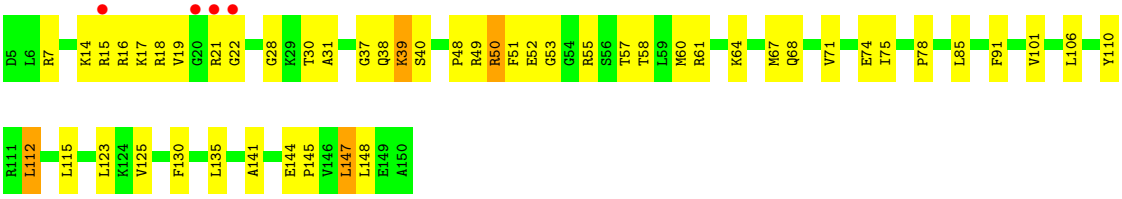
• Molecule 34: 50S ribosomal protein L14

Chain DO:



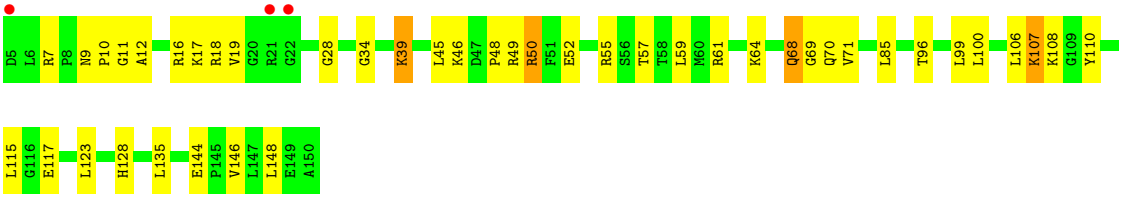
• Molecule 35: 50S ribosomal protein L15

Chain BP:



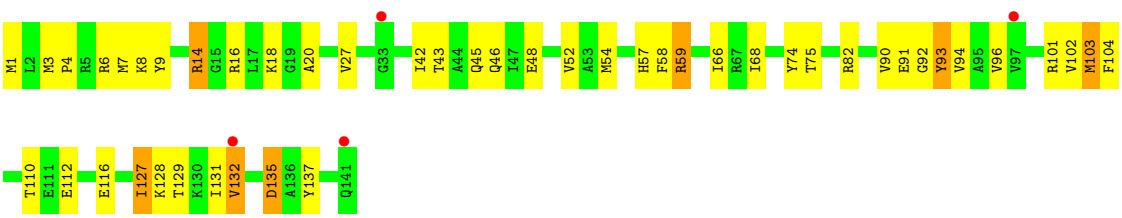
• Molecule 35: 50S ribosomal protein L15

Chain DP:



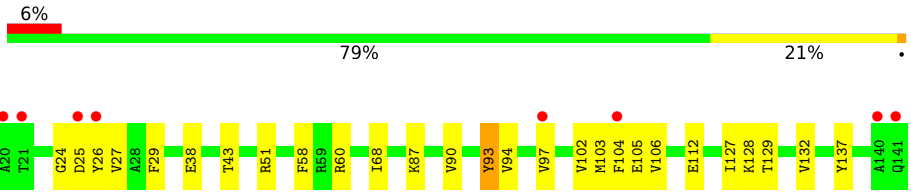
• Molecule 36: 50S ribosomal protein L16

Chain BQ:



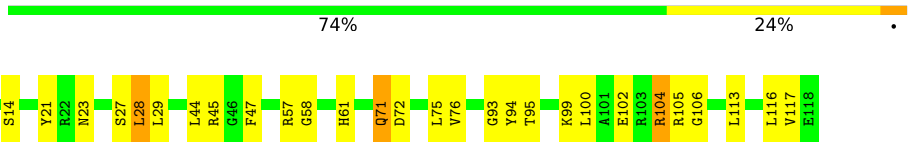
• Molecule 36: 50S ribosomal protein L16

Chain DQ:



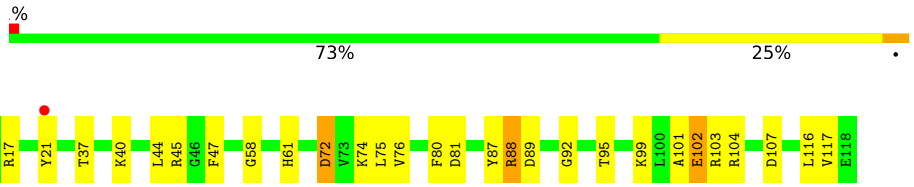
• Molecule 37: 50S ribosomal protein L17

Chain BR:



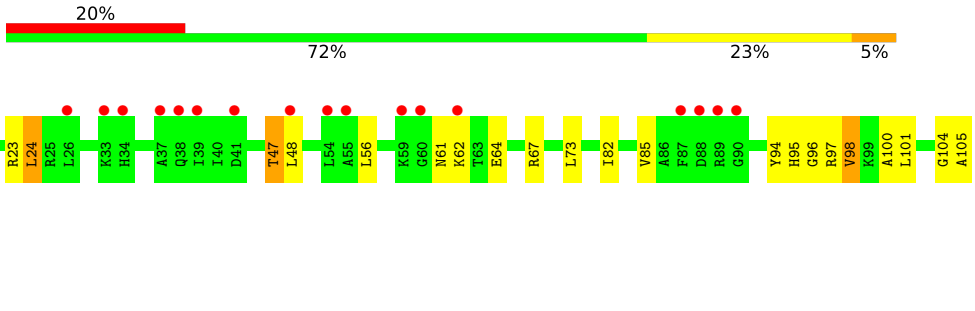
• Molecule 37: 50S ribosomal protein L17

Chain DR:



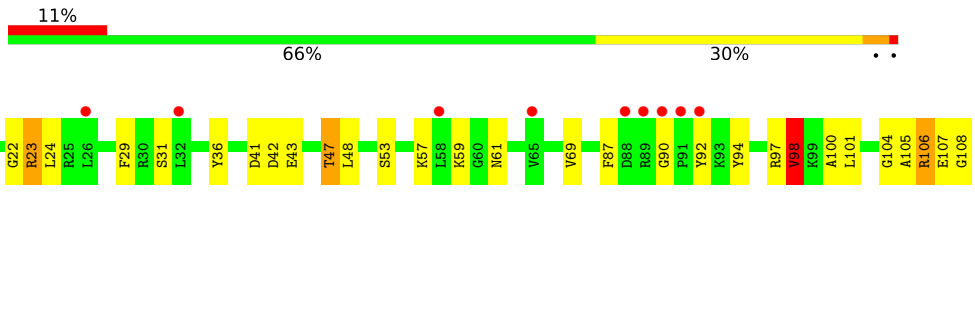
• Molecule 38: 50S ribosomal protein L18

Chain BS:



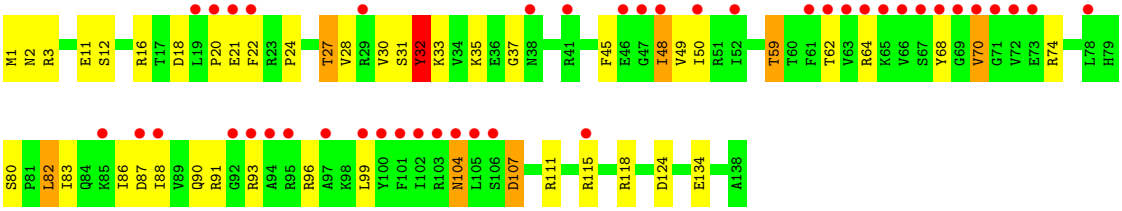
• Molecule 38: 50S ribosomal protein L18

Chain DS:

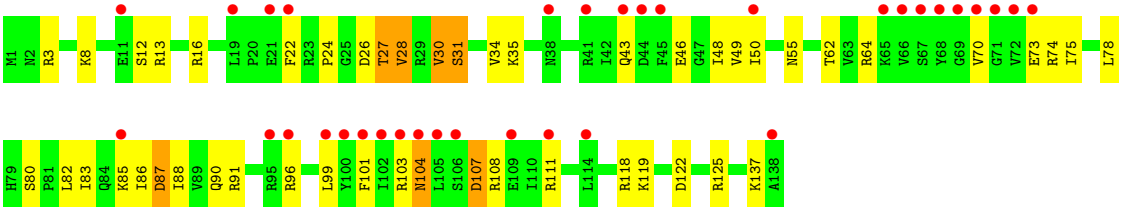


• Molecule 39: 50S ribosomal protein L19

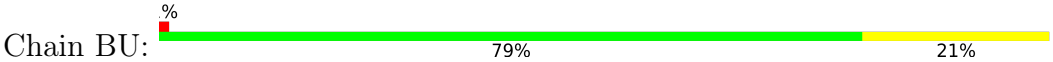
Chain BT:

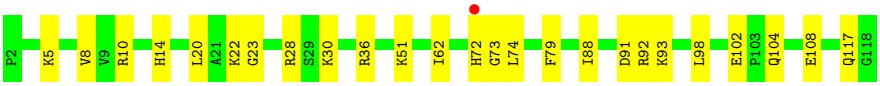


• Molecule 39: 50S ribosomal protein L19

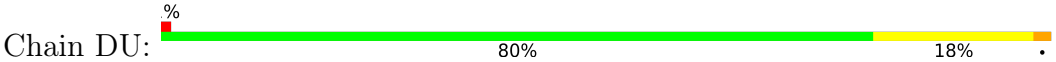


• Molecule 40: 50S ribosomal protein L20

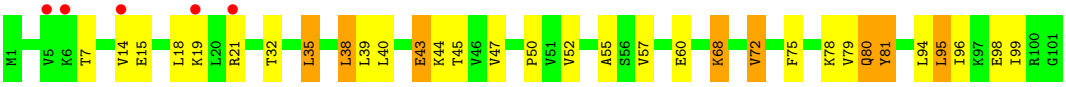




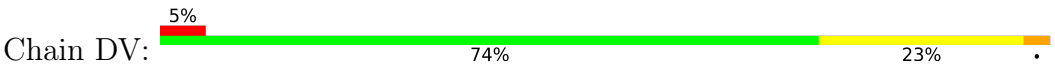
• Molecule 40: 50S ribosomal protein L20

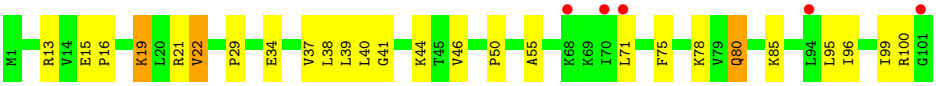


• Molecule 41: 50S ribosomal protein L21



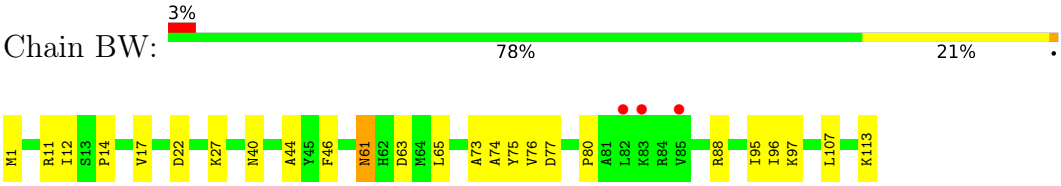
• Molecule 41: 50S ribosomal protein L21





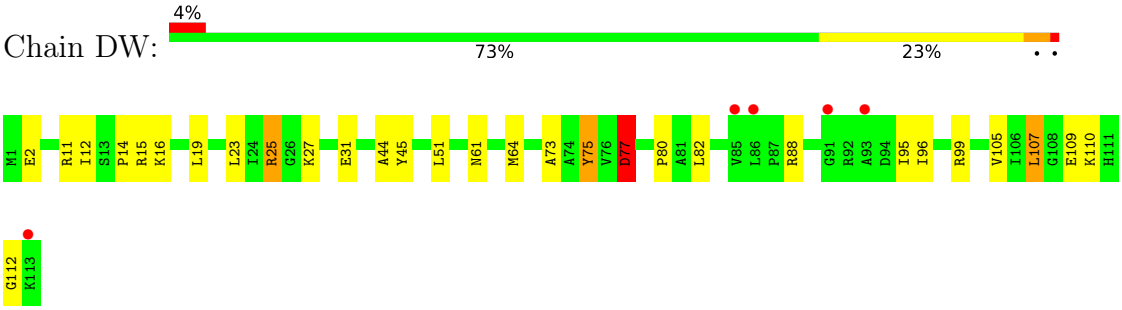
• Molecule 42: 50S ribosomal protein L22

Chain BW:



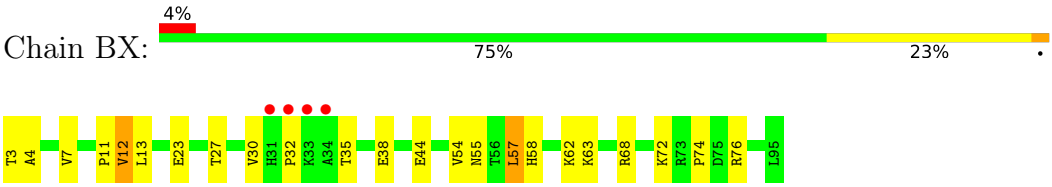
• Molecule 42: 50S ribosomal protein L22

Chain DW:



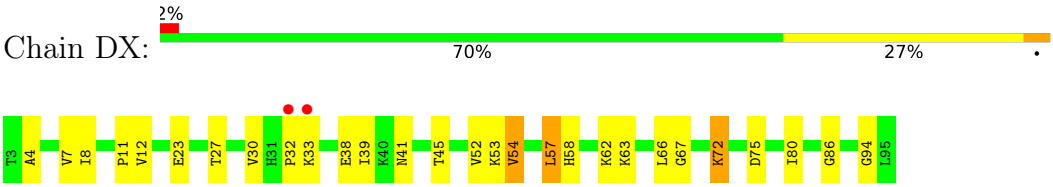
• Molecule 43: 50S ribosomal protein L23

Chain BX:



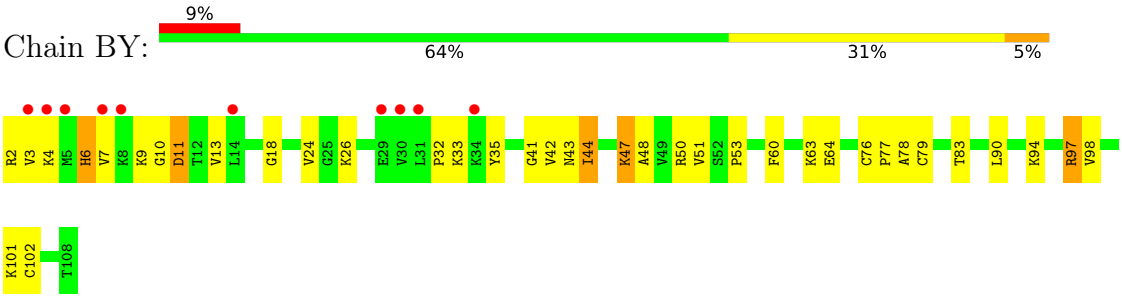
• Molecule 43: 50S ribosomal protein L23

Chain DX:



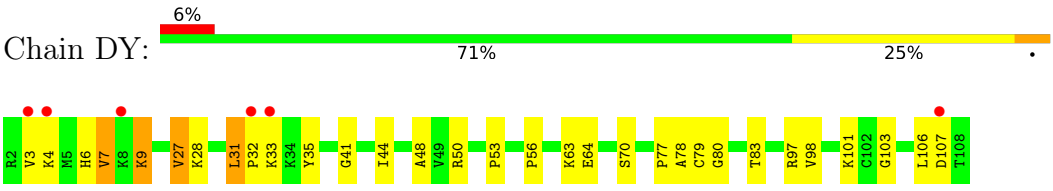
• Molecule 44: 50S ribosomal protein L24

Chain BY:



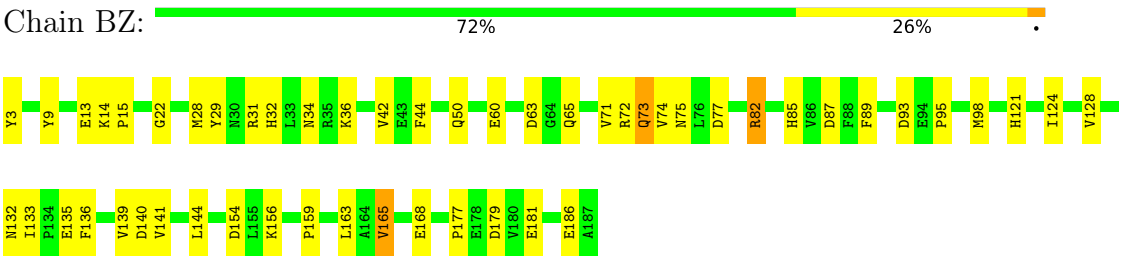
• Molecule 44: 50S ribosomal protein L24

Chain DY:



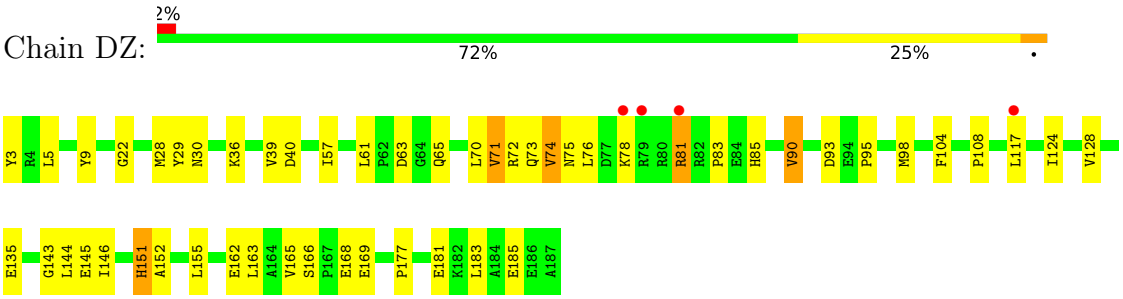
• Molecule 45: 50S ribosomal protein L25

Chain BZ:



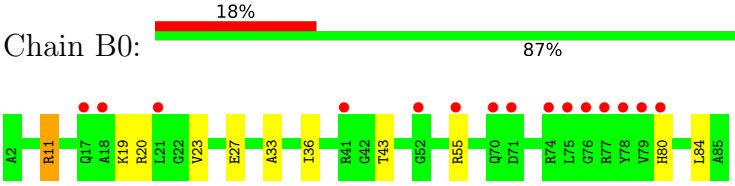
• Molecule 45: 50S ribosomal protein L25

Chain DZ:



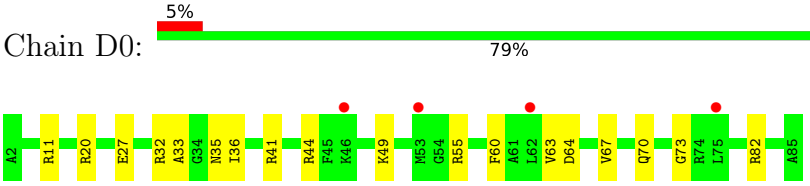
• Molecule 46: 50S ribosomal protein L27

Chain B0:



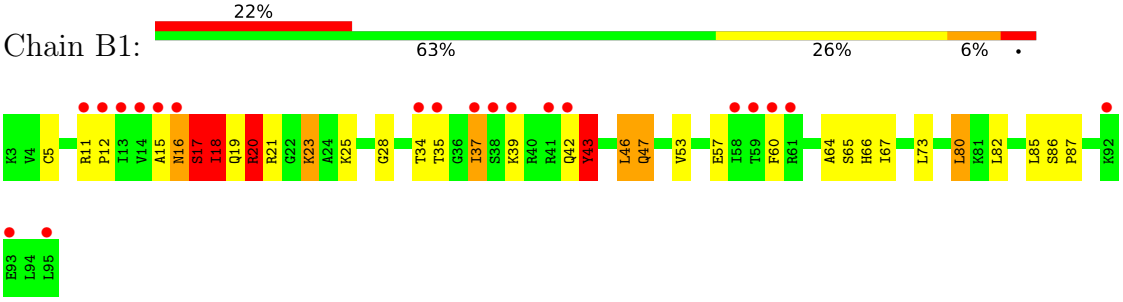
• Molecule 46: 50S ribosomal protein L27

Chain D0:



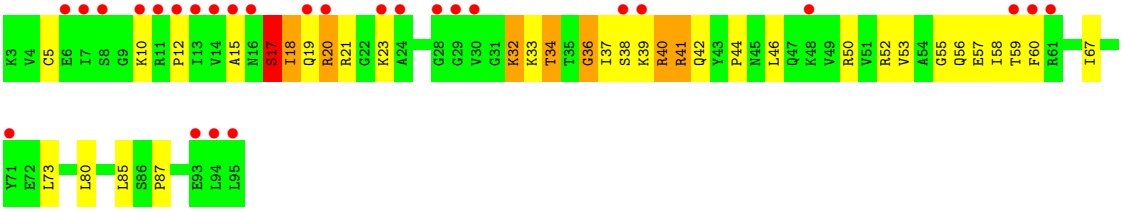
• Molecule 47: 50S ribosomal protein L28

Chain B1:

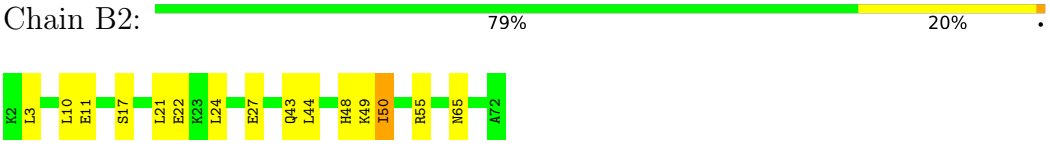


• Molecule 47: 50S ribosomal protein L28

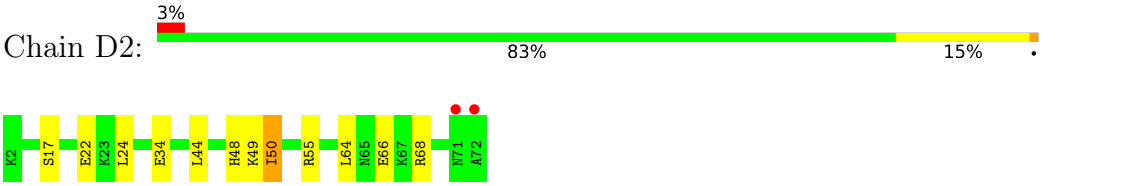
Chain D1:



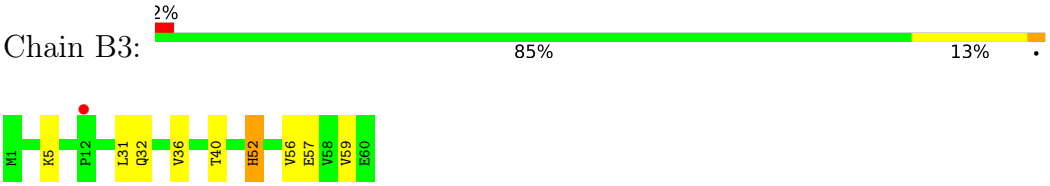
• Molecule 48: 50S ribosomal protein L29



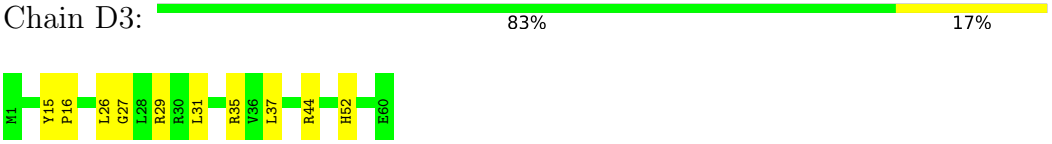
• Molecule 48: 50S ribosomal protein L29



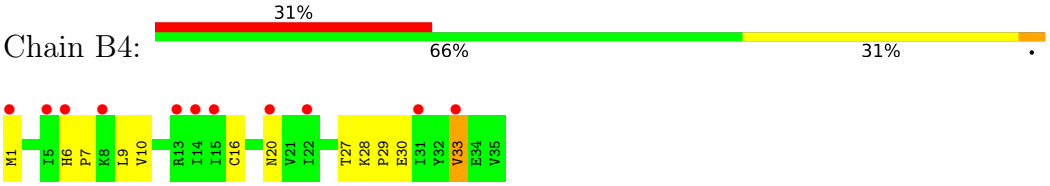
• Molecule 49: 50S ribosomal protein L30



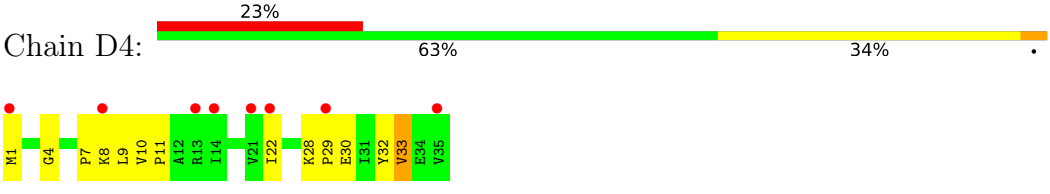
• Molecule 49: 50S ribosomal protein L30



• Molecule 50: 50S ribosomal protein L31

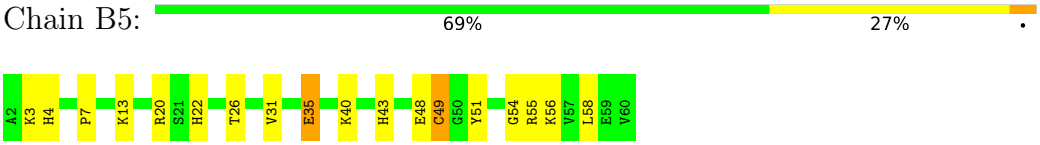


• Molecule 50: 50S ribosomal protein L31



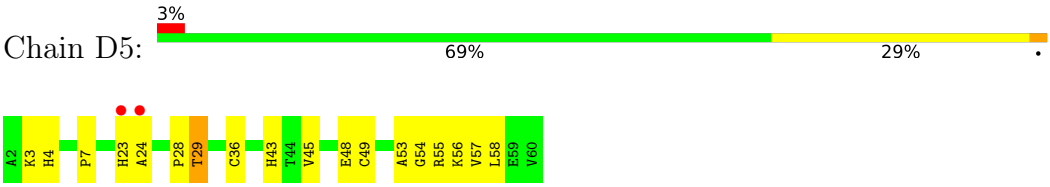
• Molecule 51: 50S ribosomal protein L32

Chain B5:



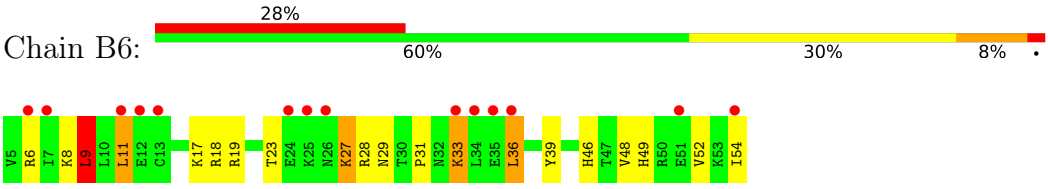
• Molecule 51: 50S ribosomal protein L32

Chain D5:



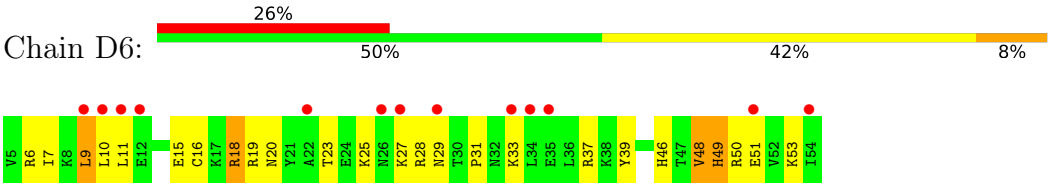
• Molecule 52: 50S ribosomal protein L33

Chain B6:



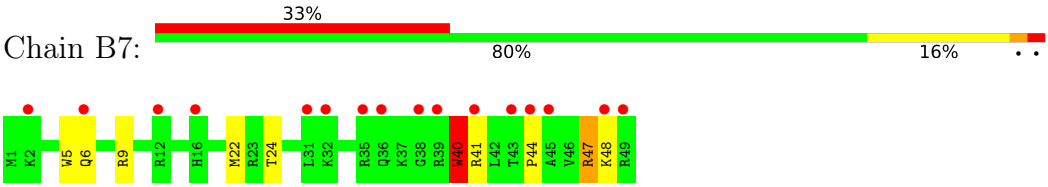
• Molecule 52: 50S ribosomal protein L33

Chain D6:



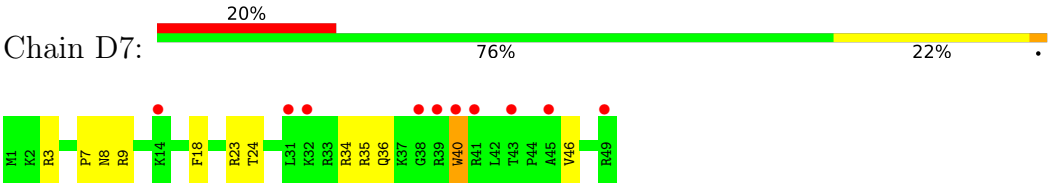
• Molecule 53: 50S ribosomal protein L34

Chain B7:



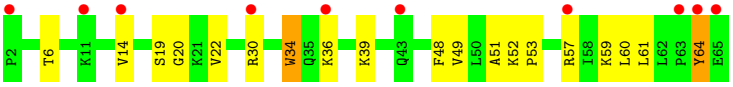
• Molecule 53: 50S ribosomal protein L34

Chain D7:



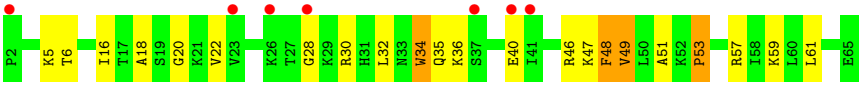
• Molecule 54: 50S ribosomal protein L35

Chain B8:



• Molecule 54: 50S ribosomal protein L35

Chain D8:

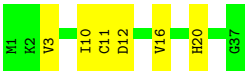


• Molecule 55: 50S ribosomal protein L36

Chain B9:

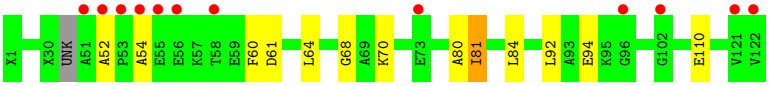
• Molecule 55: 50S ribosomal protein L36

Chain D9:



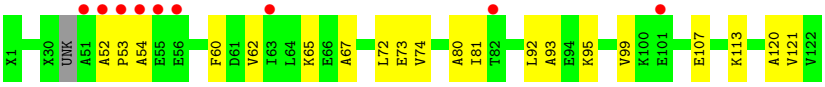
• Molecule 56: 50S ribosomal protein L7/L12

Chain Be:



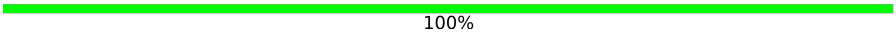
• Molecule 56: 50S ribosomal protein L7/L12

Chain De:



• Molecule 57: 50S ribosomal protein L7/L12

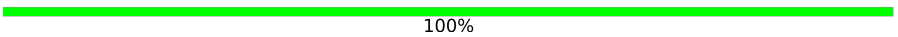
Chain Bf:



There are no outlier residues recorded for this chain.

• Molecule 57: 50S ribosomal protein L7/L12

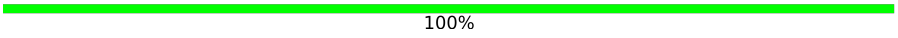
Chain Bg:



There are no outlier residues recorded for this chain.

• Molecule 57: 50S ribosomal protein L7/L12

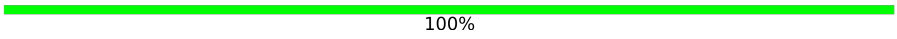
Chain Df:



There are no outlier residues recorded for this chain.

• Molecule 57: 50S ribosomal protein L7/L12

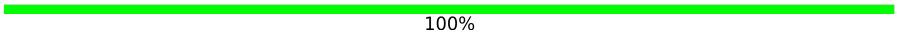
Chain Dg:



There are no outlier residues recorded for this chain.

• Molecule 58: 50S ribosomal protein L7/L12

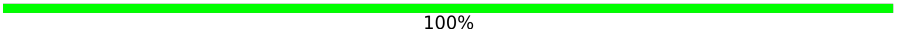
Chain Bh:



There are no outlier residues recorded for this chain.

• Molecule 58: 50S ribosomal protein L7/L12

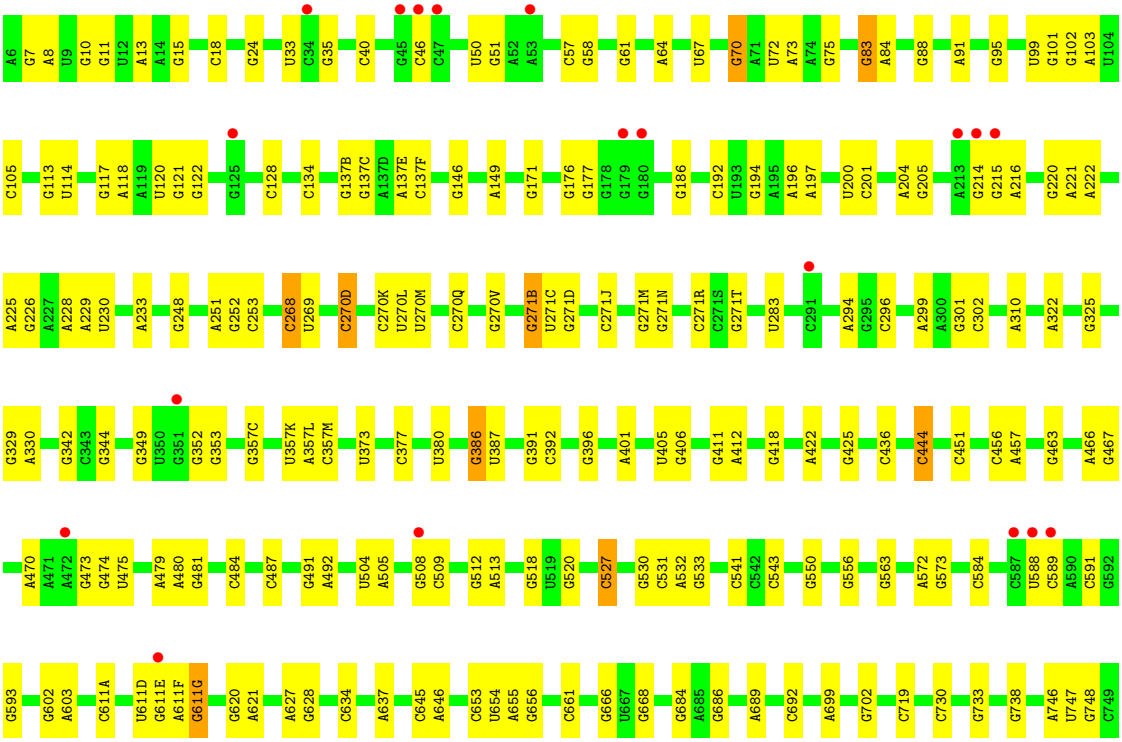
Chain Dh:

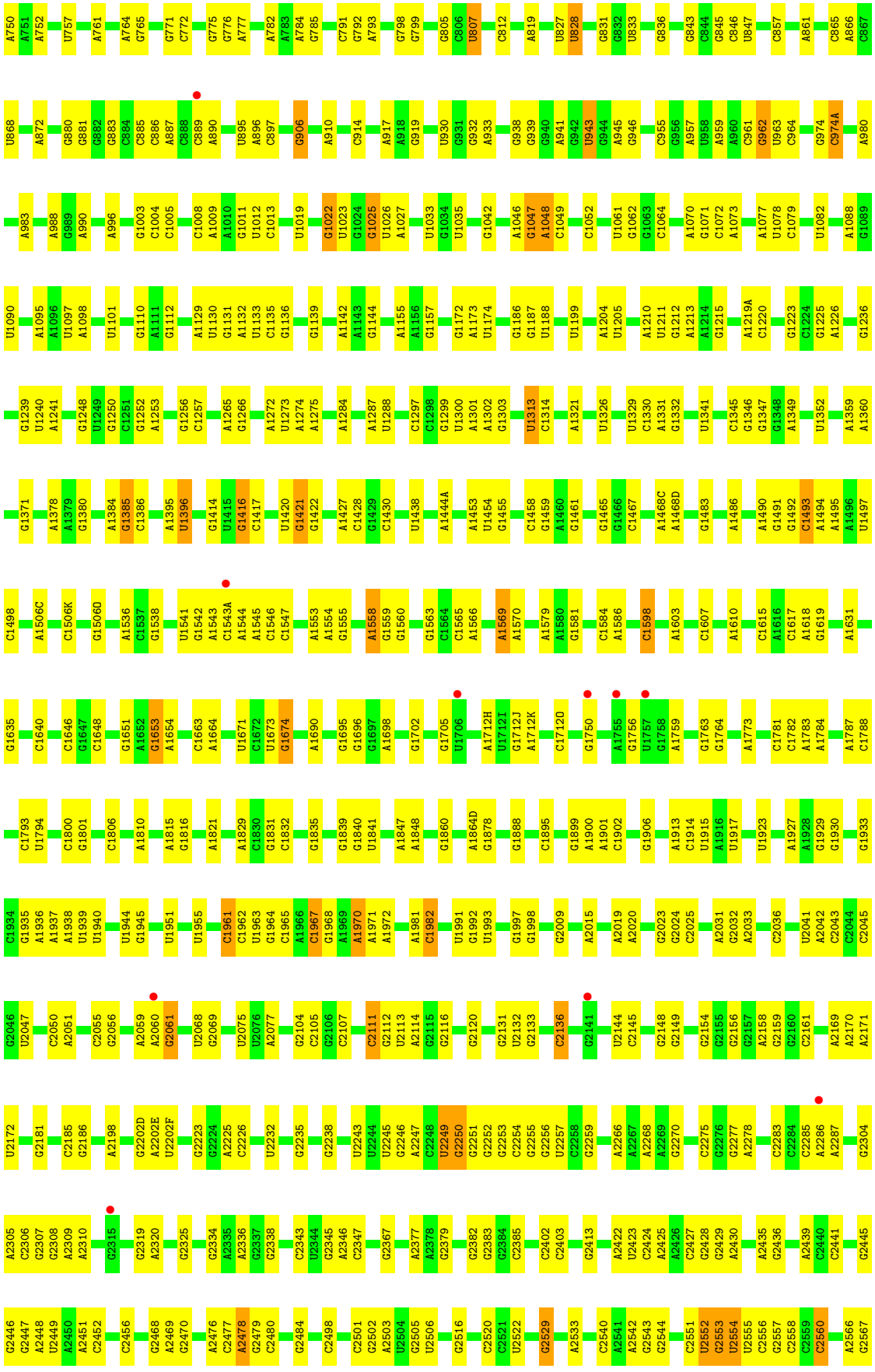


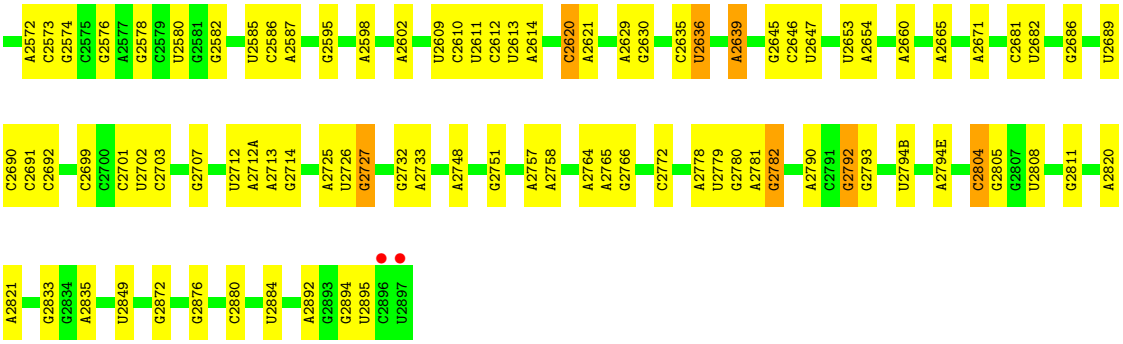
There are no outlier residues recorded for this chain.

• Molecule 59: 23S Ribosomal RNA

Chain BA:

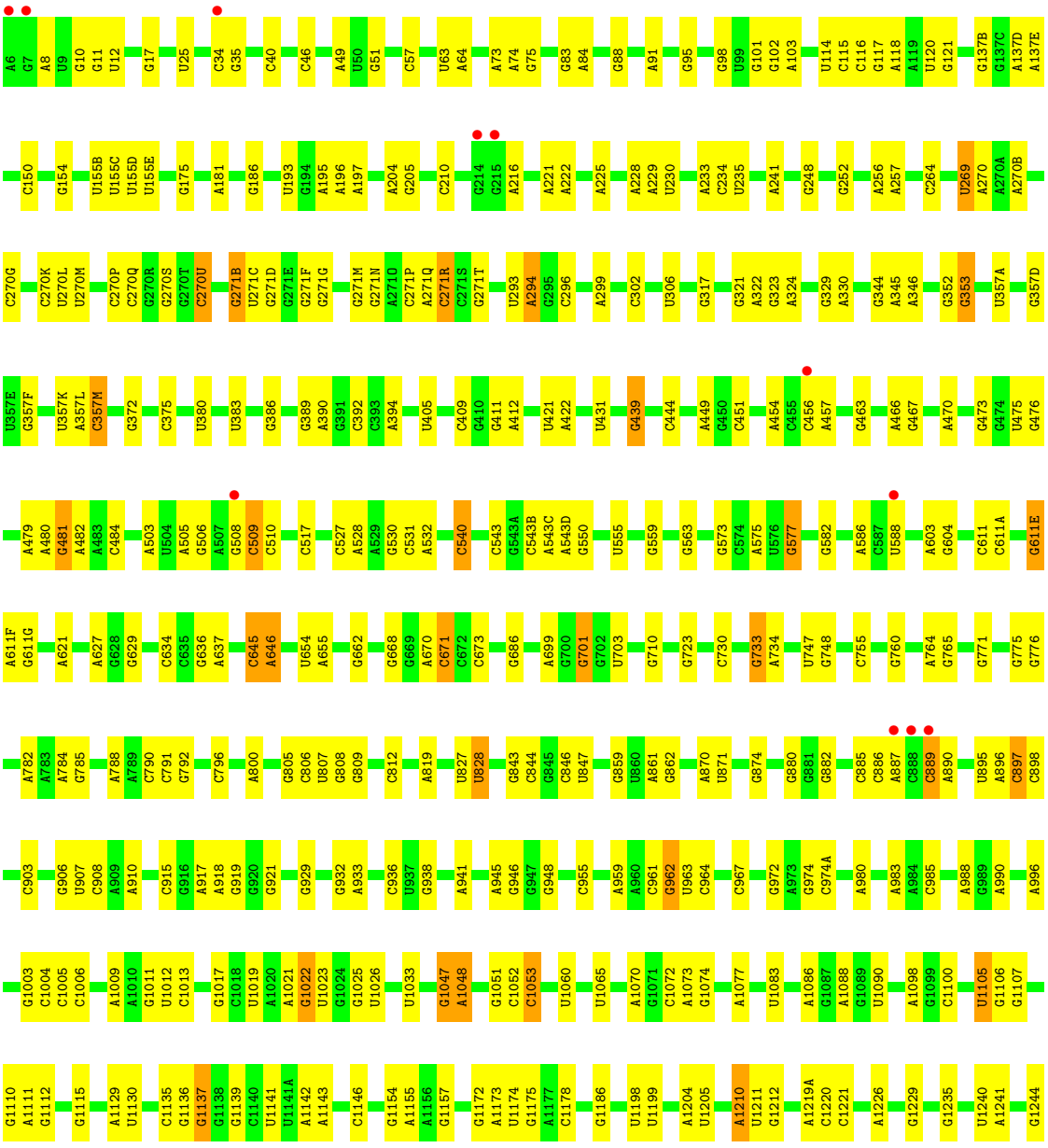


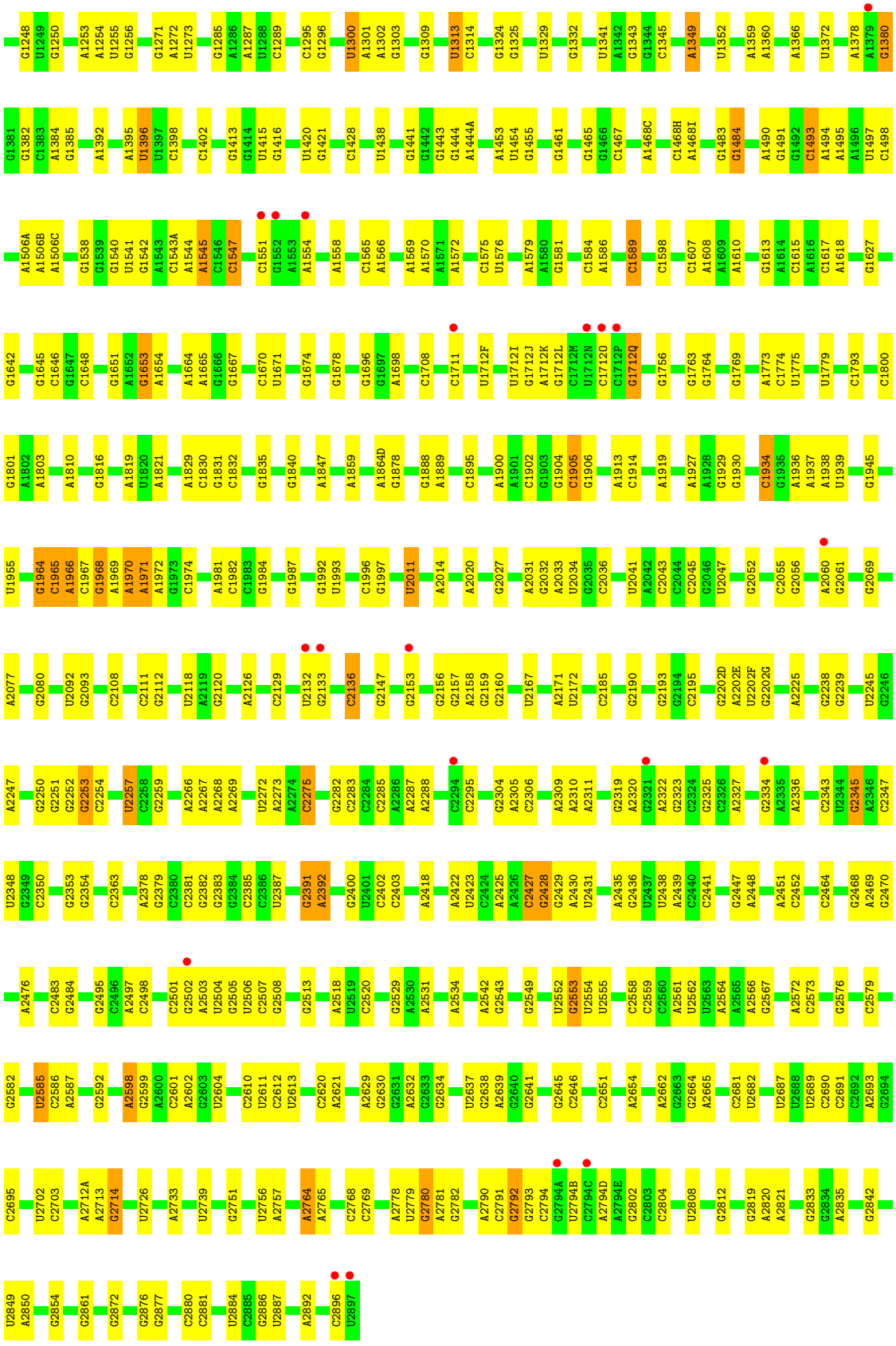




• Molecule 59: 23S Ribosomal RNA

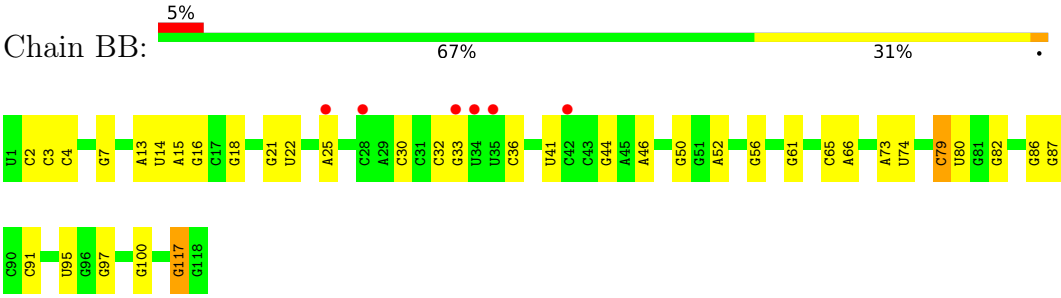
Chain DA:





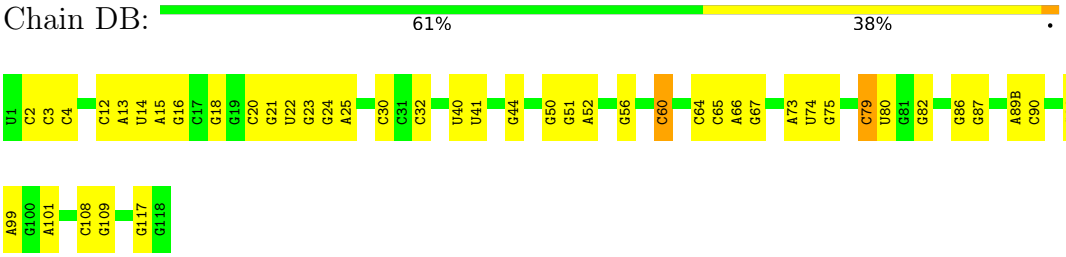
• Molecule 60: 5S Ribosomal RNA

Chain BB:



• Molecule 60: 5S Ribosomal RNA

Chain DB:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	306.92Å 677.00Å 356.78Å 90.00° 89.90° 90.00°	Depositor
Resolution (Å)	49.98 – 3.80 127.40 – 3.80	Depositor EDS
% Data completeness (in resolution range)	(Not available) (49.98-3.80) 60.2 (127.40-3.80)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.05 (at 3.78Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.9_1692)	Depositor
R, R_{free}	0.295 , 0.331 0.302 , 0.332	Depositor DCC
R_{free} test set	8467 reflections (1.98%)	wwPDB-VP
Wilson B-factor (Å^2)	66.8	Xtriage
Anisotropy	0.219	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.18 , -101.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.17$, $< L^2 > = 0.05$	Xtriage
Estimated twinning fraction	0.340 for h,-k,-l	Xtriage
F_o,F_c correlation	0.86	EDS
Total number of atoms	312066	wwPDB-VP
Average B, all atoms (Å^2)	85.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.07% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

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

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, FUA, NMY, ACE, GDP

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	AB	0.41	0/1945	0.69	0/2621
1	CB	0.41	0/1945	0.69	1/2621 (0.0%)
2	AC	0.27	0/1645	0.55	0/2216
2	CC	0.29	0/1645	0.56	0/2216
3	AD	0.31	0/1733	0.59	0/2318
3	CD	0.29	0/1733	0.61	1/2318 (0.0%)
4	AE	0.30	0/1172	0.57	0/1576
4	CE	0.30	0/1172	0.61	1/1576 (0.1%)
5	AF	0.28	0/856	0.56	0/1154
5	CF	0.30	0/856	0.59	0/1154
6	AG	0.27	0/1276	0.51	0/1709
6	CG	0.28	0/1276	0.51	0/1709
7	AH	0.29	0/1136	0.60	0/1527
7	CH	0.28	0/1136	0.55	0/1527
8	AI	0.27	0/1029	0.56	0/1379
8	CI	0.27	0/1029	0.50	0/1379
9	AJ	0.27	0/815	0.54	0/1095
9	CJ	0.28	0/815	0.56	0/1095
10	AK	0.38	0/900	0.62	0/1213
10	CK	0.39	0/900	0.61	0/1213
11	AL	0.43	0/992	0.80	0/1327
11	CL	0.45	0/992	0.81	1/1327 (0.1%)
12	AM	0.27	0/1008	0.53	0/1347
12	CM	0.27	0/1008	0.58	0/1347
13	AN	0.29	0/501	0.51	0/664
13	CN	0.34	0/501	0.57	0/664
14	AO	0.34	0/745	0.61	0/992
14	CO	0.33	0/745	0.57	1/992 (0.1%)
15	AP	0.32	0/722	0.61	0/970
15	CP	0.32	0/722	0.60	0/970
16	AQ	0.35	0/848	0.67	1/1131 (0.1%)
16	CQ	0.36	0/848	0.68	0/1131

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
17	AR	0.29	0/579	0.58	0/768
17	CR	0.29	0/579	0.57	0/768
18	AS	0.29	0/647	0.56	0/870
18	CS	0.26	0/647	0.53	0/870
19	AT	0.30	0/765	0.54	0/1007
19	CT	0.31	0/765	0.51	0/1007
20	AY	0.37	0/5270	0.66	1/7135 (0.0%)
20	CY	0.36	0/5270	0.67	3/7135 (0.0%)
21	AA	0.39	9/36351 (0.0%)	1.12	149/56736 (0.3%)
21	CA	0.42	6/36351 (0.0%)	1.17	239/56736 (0.4%)
22	AW	0.52	0/1827	1.42	41/2845 (1.4%)
22	CW	0.48	0/1827	1.36	23/2845 (0.8%)
23	AV	1.27	1/881 (0.1%)	1.42	12/1372 (0.9%)
23	CV	0.82	7/880 (0.8%)	2.11	42/1372 (3.1%)
24	AX	0.62	1/1815 (0.1%)	1.56	47/2826 (1.7%)
24	CX	0.60	3/1815 (0.2%)	1.54	43/2826 (1.5%)
25	BC	0.51	1/1774 (0.1%)	0.86	2/2391 (0.1%)
25	DC	0.51	0/1774	0.80	0/2391
26	BD	0.40	2/2195 (0.1%)	0.62	1/2955 (0.0%)
26	DD	0.31	0/2195	0.60	0/2955
27	BE	0.35	0/1602	0.69	2/2160 (0.1%)
27	DE	0.33	0/1602	0.67	0/2160
28	BF	0.39	0/1663	0.81	6/2249 (0.3%)
28	DF	0.38	0/1663	0.78	4/2249 (0.2%)
29	BG	0.27	0/1499	0.54	0/2016
29	DG	0.29	0/1499	0.58	0/2016
30	BH	0.28	0/1298	0.58	0/1751
30	DH	0.28	0/1298	0.55	0/1751
32	BK	0.28	0/1054	0.55	1/1427 (0.1%)
32	DK	0.31	0/1054	0.58	1/1427 (0.1%)
33	BN	0.81	3/1141 (0.3%)	1.39	16/1537 (1.0%)
33	DN	0.81	2/1141 (0.2%)	1.28	13/1537 (0.8%)
34	BO	0.32	0/943	0.63	2/1269 (0.2%)
34	DO	0.32	0/943	0.65	0/1269
35	BP	0.28	0/1131	0.64	2/1504 (0.1%)
35	DP	0.29	0/1131	0.63	0/1504
36	BQ	0.36	0/1143	0.67	0/1527
36	DQ	0.33	0/1143	0.63	0/1527
37	BR	0.33	0/974	0.64	1/1302 (0.1%)
37	DR	0.32	0/974	0.59	0/1302
38	BS	0.35	0/783	0.69	0/1041
38	DS	0.36	0/783	0.71	0/1041
39	BT	0.30	0/1161	0.63	0/1549

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
39	DT	0.30	0/1161	0.64	0/1549
40	BU	0.36	0/982	0.57	0/1306
40	DU	0.33	0/982	0.57	0/1306
41	BV	0.34	0/790	0.76	2/1057 (0.2%)
41	DV	0.31	0/790	0.65	1/1057 (0.1%)
42	BW	0.32	0/911	0.64	0/1220
42	DW	0.38	0/911	0.69	1/1220 (0.1%)
43	BX	0.28	0/748	0.56	1/1004 (0.1%)
43	DX	0.28	0/748	0.56	1/1004 (0.1%)
44	BY	0.28	0/831	0.54	0/1108
44	DY	0.27	0/831	0.57	1/1108 (0.1%)
45	BZ	0.28	0/1505	0.58	0/2042
45	DZ	0.29	0/1505	0.58	0/2042
46	B0	0.25	0/671	0.54	0/892
46	D0	0.25	0/671	0.50	0/892
47	B1	0.51	0/739	1.01	5/981 (0.5%)
47	D1	0.48	0/739	0.92	2/981 (0.2%)
48	B2	0.37	0/600	0.63	0/793
48	D2	0.34	0/600	0.65	0/793
49	B3	0.29	0/482	0.58	0/646
49	D3	0.26	0/482	0.58	0/646
50	B4	0.38	0/276	0.67	0/372
50	D4	0.37	0/276	0.68	0/372
51	B5	0.28	0/473	0.57	0/639
51	D5	0.32	0/473	0.62	0/639
52	B6	0.30	0/440	0.82	3/586 (0.5%)
52	D6	0.31	0/440	0.68	0/586
53	B7	1.14	6/438 (1.4%)	1.51	7/575 (1.2%)
53	D7	0.29	0/438	0.55	0/575
54	B8	0.31	0/525	0.58	0/691
54	D8	0.30	0/525	0.61	0/691
55	B9	0.28	0/310	0.55	0/407
55	D9	0.32	0/310	0.57	0/407
56	Be	0.25	0/538	0.53	0/715
56	De	0.27	0/538	0.51	0/715
59	BA	0.38	1/69437 (0.0%)	1.11	247/108401 (0.2%)
59	DA	0.40	2/69437 (0.0%)	1.14	333/108401 (0.3%)
60	BB	0.43	0/2853	1.28	29/4451 (0.7%)
60	DB	0.48	0/2853	1.34	49/4451 (1.1%)
All	All	0.40	44/334735 (0.0%)	1.04	1339/498724 (0.3%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected

by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	AB	0	1
3	CD	0	1
10	AK	0	1
10	CK	0	1
15	AP	0	1
15	CP	0	1
20	AY	0	2
25	BC	0	6
25	DC	0	5
26	BD	0	1
26	DD	0	1
27	BE	0	1
28	BF	0	4
28	DF	0	2
29	DG	0	1
31	BJ	0	2
31	DJ	0	3
33	BN	0	17
33	DN	0	15
34	BO	0	1
34	DO	0	1
36	BQ	0	1
38	BS	0	1
38	DS	0	1
39	BT	0	1
39	DT	0	1
42	BW	0	1
42	DW	0	2
45	BZ	0	1
45	DZ	0	1
47	B1	0	4
47	D1	0	3
53	B7	0	1
All	All	0	86

The worst 5 of 44 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	AV	1	G	P-O5'	35.77	1.95	1.59
53	B7	40	TRP	CD2-CE2	-12.82	1.25	1.41
21	AA	1126	U	C2-O2	-9.80	1.13	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	CA	1126	U	C2-O2	-9.32	1.14	1.22
53	B7	40	TRP	CE3-CZ3	8.92	1.53	1.38

The worst 5 of 1339 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
23	AV	1	G	O5'-P-OP2	24.05	139.56	110.70
23	CV	10	G	N1-C6-O6	-22.12	106.63	119.90
21	AA	1126	U	N1-C2-N3	18.77	126.16	114.90
53	B7	40	TRP	CE2-CD2-CG	18.75	122.30	107.30
21	CA	1126	U	N1-C2-N3	18.50	126.00	114.90

There are no chirality outliers.

5 of 86 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	AB	163	PHE	Peptide
10	AK	43	SER	Peptide
15	AP	34	GLU	Peptide
20	AY	34	TYR	Peptide
20	AY	630	GLN	Peptide

5.2 Too-close contacts (i)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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
1	AB	233/235 (99%)	168 (72%)	45 (19%)	20 (9%)	1 12
1	CB	233/235 (99%)	171 (73%)	45 (19%)	17 (7%)	1 16

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	AC	205/207 (99%)	137 (67%)	39 (19%)	29 (14%)	0 4
2	CC	205/207 (99%)	150 (73%)	35 (17%)	20 (10%)	0 10
3	AD	206/208 (99%)	140 (68%)	41 (20%)	25 (12%)	0 6
3	CD	206/208 (99%)	152 (74%)	33 (16%)	21 (10%)	0 9
4	AE	149/151 (99%)	122 (82%)	20 (13%)	7 (5%)	2 24
4	CE	149/151 (99%)	115 (77%)	24 (16%)	10 (7%)	1 19
5	AF	99/101 (98%)	76 (77%)	15 (15%)	8 (8%)	1 14
5	CF	99/101 (98%)	74 (75%)	16 (16%)	9 (9%)	1 12
6	AG	153/155 (99%)	123 (80%)	22 (14%)	8 (5%)	2 23
6	CG	153/155 (99%)	118 (77%)	23 (15%)	12 (8%)	1 15
7	AH	136/138 (99%)	102 (75%)	23 (17%)	11 (8%)	1 14
7	CH	136/138 (99%)	96 (71%)	30 (22%)	10 (7%)	1 16
8	AI	125/127 (98%)	97 (78%)	22 (18%)	6 (5%)	2 24
8	CI	125/127 (98%)	98 (78%)	21 (17%)	6 (5%)	2 24
9	AJ	97/99 (98%)	71 (73%)	15 (16%)	11 (11%)	0 7
9	CJ	97/99 (98%)	74 (76%)	16 (16%)	7 (7%)	1 17
10	AK	117/119 (98%)	83 (71%)	21 (18%)	13 (11%)	0 7
10	CK	117/119 (98%)	79 (68%)	21 (18%)	17 (14%)	0 4
11	AL	123/125 (98%)	41 (33%)	44 (36%)	38 (31%)	0 0
11	CL	123/125 (98%)	49 (40%)	37 (30%)	37 (30%)	0 0
12	AM	123/125 (98%)	94 (76%)	19 (15%)	10 (8%)	1 14
12	CM	123/125 (98%)	95 (77%)	17 (14%)	11 (9%)	1 12
13	AN	58/60 (97%)	38 (66%)	17 (29%)	3 (5%)	2 23
13	CN	58/60 (97%)	35 (60%)	14 (24%)	9 (16%)	0 4
14	AO	86/88 (98%)	72 (84%)	12 (14%)	2 (2%)	6 38
14	CO	86/88 (98%)	65 (76%)	18 (21%)	3 (4%)	3 31
15	AP	82/84 (98%)	58 (71%)	16 (20%)	8 (10%)	0 10
15	CP	82/84 (98%)	62 (76%)	13 (16%)	7 (8%)	1 12
16	AQ	98/100 (98%)	70 (71%)	22 (22%)	6 (6%)	1 20
16	CQ	98/100 (98%)	76 (78%)	16 (16%)	6 (6%)	1 20
17	AR	68/70 (97%)	50 (74%)	9 (13%)	9 (13%)	0 5

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
17	CR	68/70 (97%)	56 (82%)	8 (12%)	4 (6%)	1 21
18	AS	77/79 (98%)	43 (56%)	23 (30%)	11 (14%)	0 4
18	CS	77/79 (98%)	47 (61%)	27 (35%)	3 (4%)	3 28
19	AT	97/99 (98%)	72 (74%)	17 (18%)	8 (8%)	1 13
19	CT	97/99 (98%)	82 (84%)	10 (10%)	5 (5%)	2 23
20	AY	657/687 (96%)	407 (62%)	174 (26%)	76 (12%)	0 6
20	CY	657/687 (96%)	437 (66%)	135 (20%)	85 (13%)	0 5
25	BC	226/228 (99%)	107 (47%)	63 (28%)	56 (25%)	0 1
25	DC	226/228 (99%)	114 (50%)	52 (23%)	60 (26%)	0 0
26	BD	273/275 (99%)	174 (64%)	60 (22%)	39 (14%)	0 4
26	DD	273/275 (99%)	180 (66%)	59 (22%)	34 (12%)	0 6
27	BE	203/205 (99%)	134 (66%)	41 (20%)	28 (14%)	0 4
27	DE	203/205 (99%)	124 (61%)	49 (24%)	30 (15%)	0 4
28	BF	206/208 (99%)	139 (68%)	43 (21%)	24 (12%)	0 6
28	DF	206/208 (99%)	127 (62%)	51 (25%)	28 (14%)	0 4
29	BG	179/181 (99%)	131 (73%)	37 (21%)	11 (6%)	1 20
29	DG	179/181 (99%)	127 (71%)	37 (21%)	15 (8%)	1 13
30	BH	165/167 (99%)	117 (71%)	31 (19%)	17 (10%)	0 9
30	DH	165/167 (99%)	116 (70%)	30 (18%)	19 (12%)	0 7
32	BK	138/140 (99%)	91 (66%)	32 (23%)	15 (11%)	0 8
32	DK	138/140 (99%)	77 (56%)	44 (32%)	17 (12%)	0 6
33	BN	137/139 (99%)	52 (38%)	32 (23%)	53 (39%)	0 0
33	DN	137/139 (99%)	55 (40%)	28 (20%)	54 (39%)	0 0
34	BO	120/122 (98%)	89 (74%)	21 (18%)	10 (8%)	1 13
34	DO	120/122 (98%)	86 (72%)	22 (18%)	12 (10%)	0 9
35	BP	144/146 (99%)	84 (58%)	36 (25%)	24 (17%)	0 3
35	DP	144/146 (99%)	82 (57%)	39 (27%)	23 (16%)	0 3
36	BQ	139/141 (99%)	84 (60%)	35 (25%)	20 (14%)	0 4
36	DQ	139/141 (99%)	94 (68%)	34 (24%)	11 (8%)	1 14
37	BR	115/117 (98%)	80 (70%)	20 (17%)	15 (13%)	0 5
37	DR	115/117 (98%)	80 (70%)	22 (19%)	13 (11%)	0 7

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
38	BS	97/99 (98%)	52 (54%)	26 (27%)	19 (20%)	0 2
38	DS	97/99 (98%)	51 (53%)	27 (28%)	19 (20%)	0 2
39	BT	136/138 (99%)	81 (60%)	27 (20%)	28 (21%)	0 2
39	DT	136/138 (99%)	79 (58%)	31 (23%)	26 (19%)	0 2
40	BU	115/117 (98%)	88 (76%)	17 (15%)	10 (9%)	1 12
40	DU	115/117 (98%)	90 (78%)	17 (15%)	8 (7%)	1 17
41	BV	99/101 (98%)	56 (57%)	28 (28%)	15 (15%)	0 4
41	DV	99/101 (98%)	64 (65%)	21 (21%)	14 (14%)	0 4
42	BW	111/113 (98%)	74 (67%)	25 (22%)	12 (11%)	0 8
42	DW	111/113 (98%)	76 (68%)	23 (21%)	12 (11%)	0 8
43	BX	91/93 (98%)	71 (78%)	13 (14%)	7 (8%)	1 15
43	DX	91/93 (98%)	67 (74%)	10 (11%)	14 (15%)	0 4
44	BY	105/107 (98%)	54 (51%)	31 (30%)	20 (19%)	0 2
44	DY	105/107 (98%)	59 (56%)	26 (25%)	20 (19%)	0 2
45	BZ	183/185 (99%)	121 (66%)	43 (24%)	19 (10%)	0 9
45	DZ	183/185 (99%)	109 (60%)	45 (25%)	29 (16%)	0 3
46	B0	82/84 (98%)	63 (77%)	14 (17%)	5 (6%)	1 20
46	D0	82/84 (98%)	59 (72%)	18 (22%)	5 (6%)	1 20
47	B1	91/93 (98%)	48 (53%)	24 (26%)	19 (21%)	0 1
47	D1	91/93 (98%)	52 (57%)	20 (22%)	19 (21%)	0 1
48	B2	69/71 (97%)	51 (74%)	12 (17%)	6 (9%)	1 12
48	D2	69/71 (97%)	53 (77%)	12 (17%)	4 (6%)	1 21
49	B3	58/60 (97%)	49 (84%)	7 (12%)	2 (3%)	3 31
49	D3	58/60 (97%)	47 (81%)	8 (14%)	3 (5%)	2 23
50	B4	33/35 (94%)	15 (46%)	13 (39%)	5 (15%)	0 4
50	D4	33/35 (94%)	17 (52%)	11 (33%)	5 (15%)	0 4
51	B5	57/59 (97%)	36 (63%)	14 (25%)	7 (12%)	0 6
51	D5	57/59 (97%)	38 (67%)	6 (10%)	13 (23%)	0 1
52	B6	48/50 (96%)	24 (50%)	15 (31%)	9 (19%)	0 2
52	D6	48/50 (96%)	20 (42%)	17 (35%)	11 (23%)	0 1
53	B7	47/49 (96%)	33 (70%)	11 (23%)	3 (6%)	1 20

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
53	D7	47/49 (96%)	26 (55%)	14 (30%)	7 (15%)	0 4
54	B8	62/64 (97%)	34 (55%)	16 (26%)	12 (19%)	0 2
54	D8	62/64 (97%)	35 (56%)	13 (21%)	14 (23%)	0 1
55	B9	35/37 (95%)	29 (83%)	5 (14%)	1 (3%)	4 34
55	D9	35/37 (95%)	25 (71%)	7 (20%)	3 (9%)	1 12
56	Be	70/103 (68%)	39 (56%)	23 (33%)	8 (11%)	0 7
56	De	70/103 (68%)	40 (57%)	17 (24%)	13 (19%)	0 2
All	All	13246/13568 (98%)	8764 (66%)	2800 (21%)	1682 (13%)	0 5

5 of 1682 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	AB	76	GLN
1	AB	190	THR
2	AC	12	LEU
2	AC	110	ASN
2	AC	130	VAL

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
1	AB	203/203 (100%)	163 (80%)	40 (20%)	1 9
1	CB	203/203 (100%)	158 (78%)	45 (22%)	1 6
2	AC	161/161 (100%)	129 (80%)	32 (20%)	1 9
2	CC	161/161 (100%)	128 (80%)	33 (20%)	1 8
3	AD	180/180 (100%)	142 (79%)	38 (21%)	1 8
3	CD	180/180 (100%)	148 (82%)	32 (18%)	2 12
4	AE	116/116 (100%)	92 (79%)	24 (21%)	1 8
4	CE	116/116 (100%)	89 (77%)	27 (23%)	1 5
5	AF	90/90 (100%)	73 (81%)	17 (19%)	1 10

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	CF	90/90 (100%)	77 (86%)	13 (14%)	3 20
6	AG	126/126 (100%)	111 (88%)	15 (12%)	5 26
6	CG	126/126 (100%)	110 (87%)	16 (13%)	4 23
7	AH	119/119 (100%)	98 (82%)	21 (18%)	2 13
7	CH	119/119 (100%)	94 (79%)	25 (21%)	1 8
8	AI	98/98 (100%)	83 (85%)	15 (15%)	2 17
8	CI	98/98 (100%)	78 (80%)	20 (20%)	1 8
9	AJ	89/89 (100%)	71 (80%)	18 (20%)	1 9
9	CJ	89/89 (100%)	68 (76%)	21 (24%)	1 5
10	AK	90/90 (100%)	80 (89%)	10 (11%)	6 29
10	CK	90/90 (100%)	79 (88%)	11 (12%)	5 25
11	AL	104/104 (100%)	82 (79%)	22 (21%)	1 7
11	CL	104/104 (100%)	82 (79%)	22 (21%)	1 7
12	AM	100/100 (100%)	84 (84%)	16 (16%)	2 16
12	CM	100/100 (100%)	79 (79%)	21 (21%)	1 8
13	AN	49/49 (100%)	40 (82%)	9 (18%)	1 11
13	CN	49/49 (100%)	38 (78%)	11 (22%)	1 6
14	AO	79/79 (100%)	61 (77%)	18 (23%)	1 6
14	CO	79/79 (100%)	68 (86%)	11 (14%)	3 21
15	AP	72/72 (100%)	68 (94%)	4 (6%)	21 52
15	CP	72/72 (100%)	60 (83%)	12 (17%)	2 15
16	AQ	95/95 (100%)	80 (84%)	15 (16%)	2 17
16	CQ	95/95 (100%)	81 (85%)	14 (15%)	3 19
17	AR	61/61 (100%)	49 (80%)	12 (20%)	1 9
17	CR	61/61 (100%)	54 (88%)	7 (12%)	5 27
18	AS	69/69 (100%)	52 (75%)	17 (25%)	0 5
18	CS	69/69 (100%)	53 (77%)	16 (23%)	1 6
19	AT	76/76 (100%)	64 (84%)	12 (16%)	2 17
19	CT	76/76 (100%)	58 (76%)	18 (24%)	1 5
20	AY	558/579 (96%)	450 (81%)	108 (19%)	1 9
20	CY	558/579 (96%)	446 (80%)	112 (20%)	1 9

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
25	BC	180/180 (100%)	130 (72%)	50 (28%)	0 3
25	DC	180/180 (100%)	146 (81%)	34 (19%)	1 10
26	BD	217/217 (100%)	182 (84%)	35 (16%)	2 16
26	DD	217/217 (100%)	173 (80%)	44 (20%)	1 8
27	BE	165/165 (100%)	134 (81%)	31 (19%)	1 10
27	DE	165/165 (100%)	127 (77%)	38 (23%)	1 6
28	BF	165/165 (100%)	129 (78%)	36 (22%)	1 7
28	DF	165/165 (100%)	132 (80%)	33 (20%)	1 9
29	BG	155/155 (100%)	140 (90%)	15 (10%)	8 33
29	DG	155/155 (100%)	131 (84%)	24 (16%)	2 17
30	BH	136/136 (100%)	111 (82%)	25 (18%)	1 11
30	DH	136/136 (100%)	117 (86%)	19 (14%)	3 21
32	BK	105/105 (100%)	77 (73%)	28 (27%)	0 3
32	DK	105/105 (100%)	81 (77%)	24 (23%)	1 6
33	BN	118/118 (100%)	88 (75%)	30 (25%)	0 4
33	DN	118/118 (100%)	84 (71%)	34 (29%)	0 2
34	BO	100/100 (100%)	79 (79%)	21 (21%)	1 8
34	DO	100/100 (100%)	82 (82%)	18 (18%)	1 12
35	BP	112/112 (100%)	84 (75%)	28 (25%)	0 4
35	DP	112/112 (100%)	88 (79%)	24 (21%)	1 7
36	BQ	111/111 (100%)	78 (70%)	33 (30%)	0 2
36	DQ	111/111 (100%)	91 (82%)	20 (18%)	1 12
37	BR	100/100 (100%)	82 (82%)	18 (18%)	1 12
37	DR	100/100 (100%)	78 (78%)	22 (22%)	1 7
38	BS	77/77 (100%)	64 (83%)	13 (17%)	2 14
38	DS	77/77 (100%)	58 (75%)	19 (25%)	0 5
39	BT	120/120 (100%)	93 (78%)	27 (22%)	1 6
39	DT	120/120 (100%)	91 (76%)	29 (24%)	0 5
40	BU	93/93 (100%)	78 (84%)	15 (16%)	2 16
40	DU	93/93 (100%)	76 (82%)	17 (18%)	1 11
41	BV	82/82 (100%)	59 (72%)	23 (28%)	0 3

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
41	DV	82/82 (100%)	68 (83%)	14 (17%)	2 14
42	BW	92/92 (100%)	79 (86%)	13 (14%)	3 21
42	DW	92/92 (100%)	72 (78%)	20 (22%)	1 7
43	BX	75/75 (100%)	58 (77%)	17 (23%)	1 6
43	DX	75/75 (100%)	59 (79%)	16 (21%)	1 7
44	BY	88/88 (100%)	65 (74%)	23 (26%)	0 4
44	DY	88/88 (100%)	74 (84%)	14 (16%)	2 16
45	BZ	162/162 (100%)	127 (78%)	35 (22%)	1 7
45	DZ	162/162 (100%)	135 (83%)	27 (17%)	2 15
46	B0	66/66 (100%)	59 (89%)	7 (11%)	6 30
46	D0	66/66 (100%)	53 (80%)	13 (20%)	1 9
47	B1	78/78 (100%)	56 (72%)	22 (28%)	0 2
47	D1	78/78 (100%)	57 (73%)	21 (27%)	0 3
48	B2	66/66 (100%)	56 (85%)	10 (15%)	3 18
48	D2	66/66 (100%)	57 (86%)	9 (14%)	3 22
49	B3	52/52 (100%)	44 (85%)	8 (15%)	2 17
49	D3	52/52 (100%)	45 (86%)	7 (14%)	4 22
50	B4	31/31 (100%)	23 (74%)	8 (26%)	0 4
50	D4	31/31 (100%)	22 (71%)	9 (29%)	0 2
51	B5	51/51 (100%)	38 (74%)	13 (26%)	0 4
51	D5	51/51 (100%)	45 (88%)	6 (12%)	5 26
52	B6	49/49 (100%)	35 (71%)	14 (29%)	0 2
52	D6	49/49 (100%)	31 (63%)	18 (37%)	0 0
53	B7	42/42 (100%)	35 (83%)	7 (17%)	2 15
53	D7	42/42 (100%)	36 (86%)	6 (14%)	3 20
54	B8	54/54 (100%)	45 (83%)	9 (17%)	2 15
54	D8	54/54 (100%)	42 (78%)	12 (22%)	1 6
55	B9	34/34 (100%)	26 (76%)	8 (24%)	1 5
55	D9	34/34 (100%)	31 (91%)	3 (9%)	10 38
56	Be	54/54 (100%)	48 (89%)	6 (11%)	6 29
56	De	54/54 (100%)	47 (87%)	7 (13%)	4 23

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	11130/11172 (100%)	8951 (80%)	2179 (20%)	1 9

5 of 2179 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
35	DP	50	ARG
37	DR	89	ASP
35	DP	39	LYS
46	D0	82	ARG
36	BQ	66	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 79 such sidechains are listed below:

Mol	Chain	Res	Type
28	DF	75	HIS
42	DW	102	HIS
29	DG	138	GLN
34	DO	29	ASN
45	DZ	75	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
21	AA	1510/1511 (99%)	358 (23%)	16 (1%)
21	CA	1511/1511 (100%)	377 (24%)	16 (1%)
22	AW	76/77 (98%)	37 (48%)	1 (1%)
22	CW	76/77 (98%)	42 (55%)	2 (2%)
23	AV	35/36 (97%)	24 (68%)	9 (25%)
23	CV	35/36 (97%)	27 (77%)	7 (20%)
24	AX	75/78 (96%)	29 (38%)	1 (1%)
24	CX	75/78 (96%)	30 (40%)	0
59	BA	2878/2879 (99%)	748 (25%)	28 (0%)
59	DA	2878/2879 (99%)	715 (24%)	29 (1%)
60	BB	118/119 (99%)	27 (22%)	0
60	DB	118/119 (99%)	32 (27%)	0
All	All	9385/9400 (99%)	2446 (26%)	109 (1%)

5 of 2446 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
21	AA	6	G
21	AA	7	G
21	AA	9	G
21	AA	31	G
21	AA	32	A

5 of 109 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
21	CA	115	G
23	CV	14	A
59	DA	2422	A
21	CA	328	C
21	CA	1200	C

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 12 ligands modelled in this entry, 2 are monoatomic - leaving 10 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	$\#\|Z\| > 2$
63	NMY	BA	2903	-	45,45,45	0.60	0	63,67,67	0.97	4 (6%)
63	NMY	AA	1601	-	45,45,45	0.58	0	63,67,67	0.97	4 (6%)
63	NMY	BA	2904	-	45,45,45	0.59	0	63,67,67	0.97	4 (6%)
61	GDP	CY	701	-	24,30,30	1.30	3 (12%)	30,47,47	1.69	8 (26%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
63	NMY	CA	1601	-	45,45,45	0.58	0	63,67,67	0.97	4 (6%)
63	NMY	DA	2901	-	45,45,45	0.58	0	63,67,67	0.97	4 (6%)
63	NMY	BA	2902	-	45,45,45	0.58	0	63,67,67	0.97	4 (6%)
62	FUA	CY	702	-	39,40,40	1.67	7 (17%)	49,64,64	1.52	6 (12%)
62	FUA	AY	702	-	39,40,40	1.67	7 (17%)	49,64,64	1.52	6 (12%)
61	GDP	AY	701	-	24,30,30	1.37	4 (16%)	30,47,47	1.76	8 (26%)

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
63	NMY	BA	2903	-	-	12/18/94/94	0/4/4/4
63	NMY	AA	1601	-	-	12/18/94/94	0/4/4/4
63	NMY	BA	2904	-	-	12/18/94/94	0/4/4/4
61	GDP	CY	701	-	-	5/12/32/32	0/3/3/3
63	NMY	CA	1601	-	-	12/18/94/94	0/4/4/4
63	NMY	DA	2901	-	-	12/18/94/94	0/4/4/4
63	NMY	BA	2902	-	-	12/18/94/94	0/4/4/4
62	FUA	CY	702	-	-	6/15/92/92	0/4/4/4
62	FUA	AY	702	-	-	6/15/92/92	0/4/4/4
61	GDP	AY	701	-	-	3/12/32/32	0/3/3/3

The worst 5 of 21 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
62	CY	702	FUA	C23-C22	-4.39	1.39	1.51
62	AY	702	FUA	C23-C22	-4.33	1.40	1.51
62	AY	702	FUA	C23-C24	-4.28	1.39	1.53
62	CY	702	FUA	C23-C24	-4.26	1.39	1.53
61	AY	701	GDP	C5-C6	-4.22	1.38	1.47

The worst 5 of 52 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
62	CY	702	FUA	C13-C12-C11	-4.32	105.84	111.90
62	AY	702	FUA	C13-C12-C11	-4.31	105.87	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
62	AY	702	FUA	C16-O2-C31	-3.90	111.13	117.06
62	CY	702	FUA	C16-O2-C31	-3.88	111.16	117.06
61	CY	701	GDP	C2-N1-C6	-3.85	118.01	125.10

There are no chirality outliers.

5 of 92 torsion outliers are listed below:

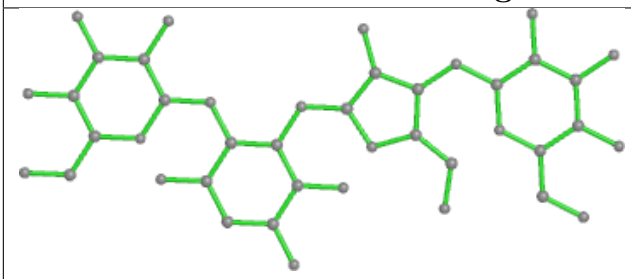
Mol	Chain	Res	Type	Atoms
61	AY	701	GDP	PA-O3A-PB-O3B
61	CY	701	GDP	C5'-O5'-PA-O3A
61	CY	701	GDP	C5'-O5'-PA-O1A
61	CY	701	GDP	C5'-O5'-PA-O2A
61	CY	701	GDP	O4'-C4'-C5'-O5'

There are no ring outliers.

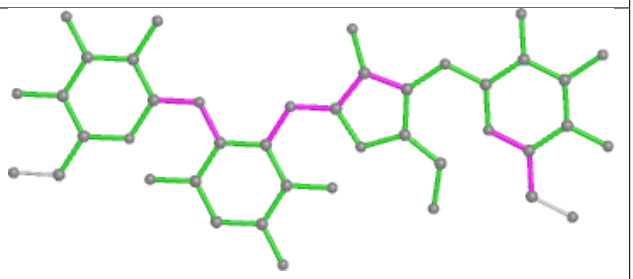
No monomer is involved in short contacts.

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 then 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.

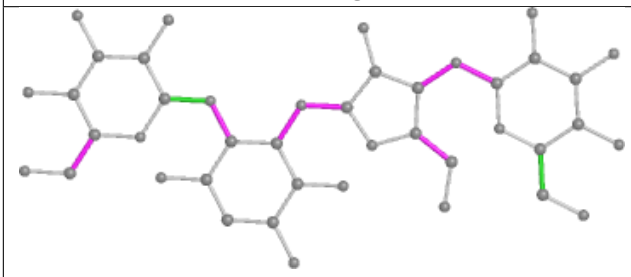
Ligand NMY BA 2903



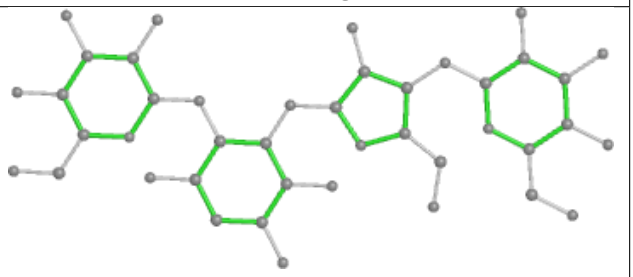
Bond lengths



Bond angles

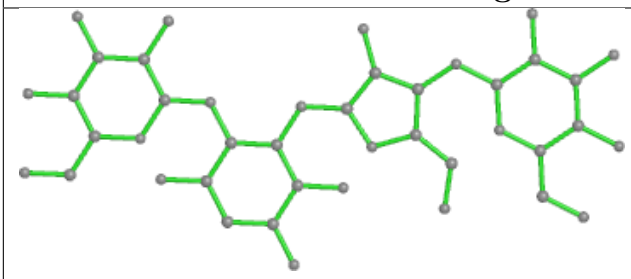


Torsions



Rings

Ligand NMY AA 1601



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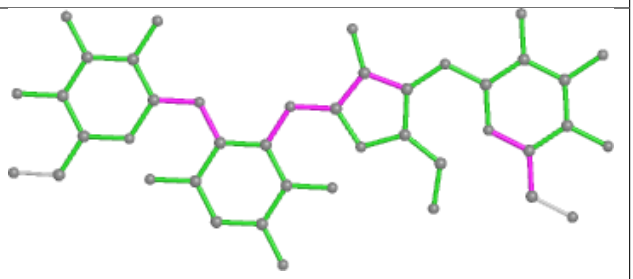
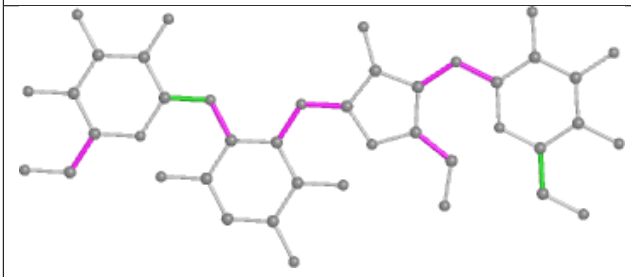
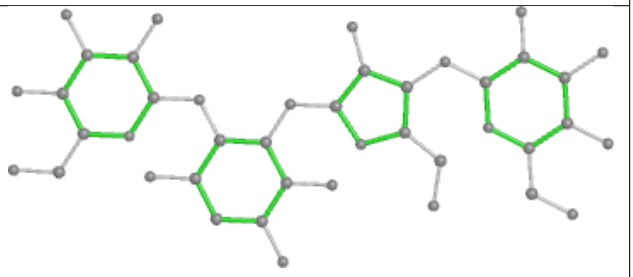


Bond angles

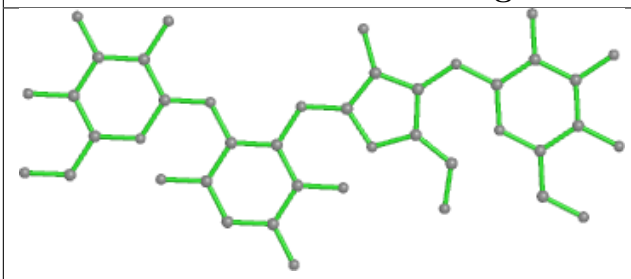


Torsions

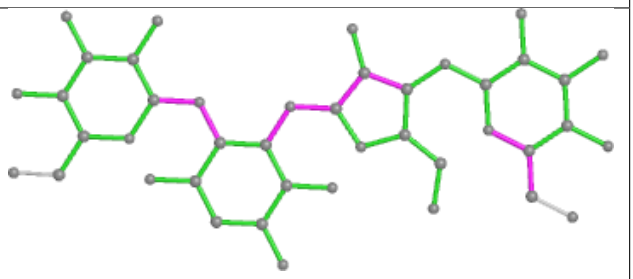


Rings

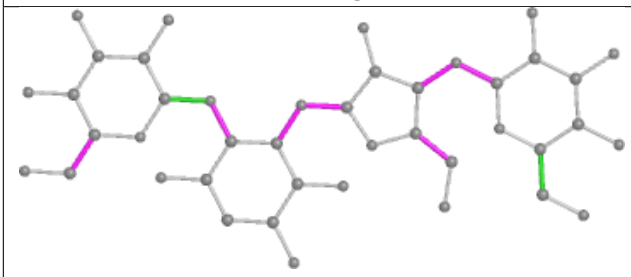
Ligand NMY BA 2904



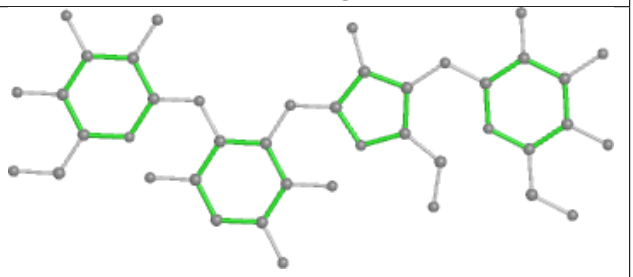
Bond lengths



Bond angles

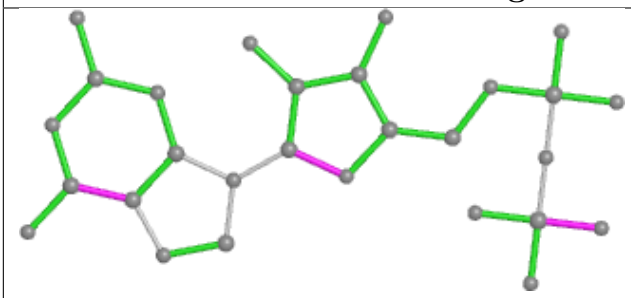


Torsions

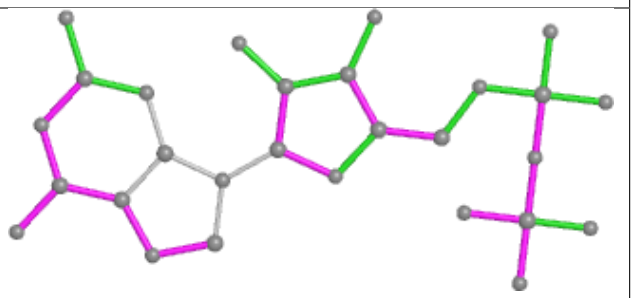


Rings

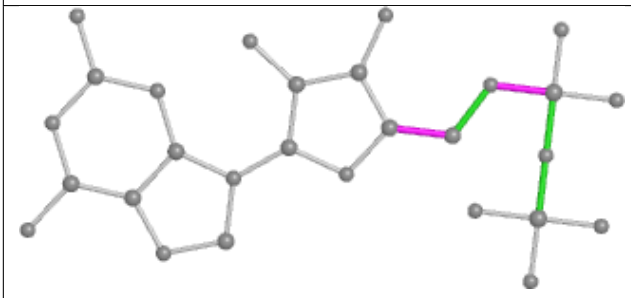
Ligand GDP CY 701



Bond lengths



Bond angles



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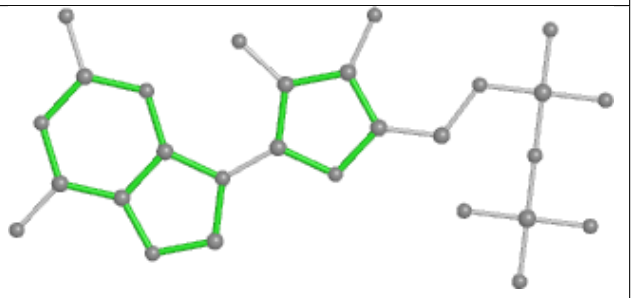
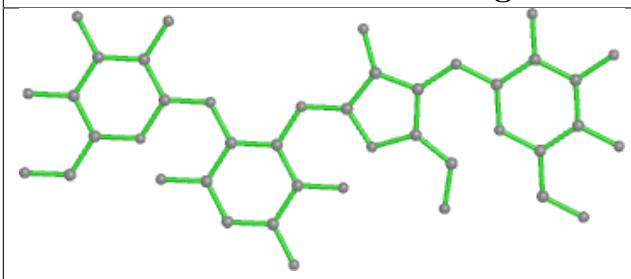


Rings

Ligand NMY CA 1601



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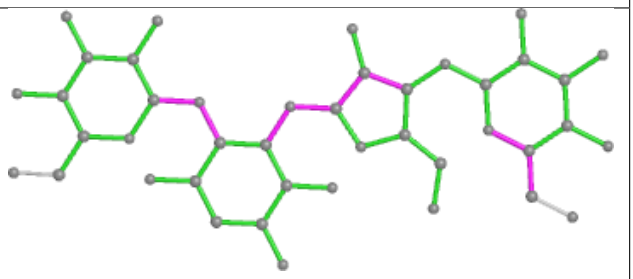
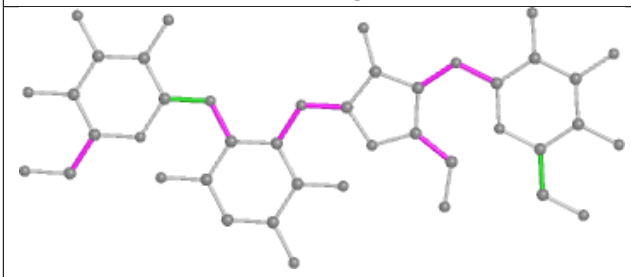
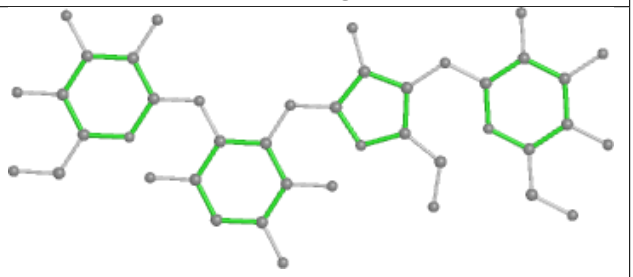


Bond angles

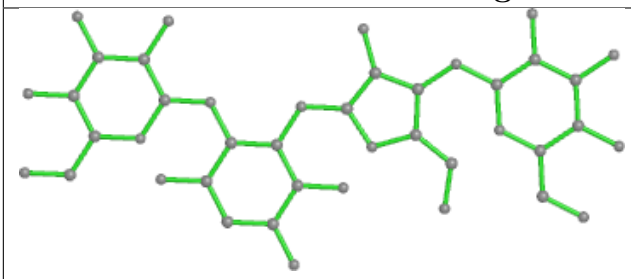


Torsions



Rings

Ligand NMY DA 2901



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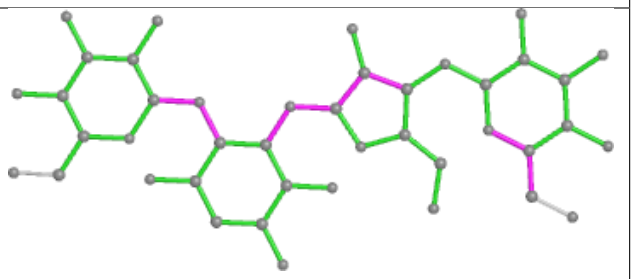
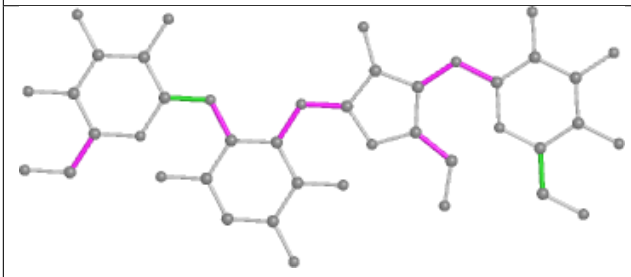
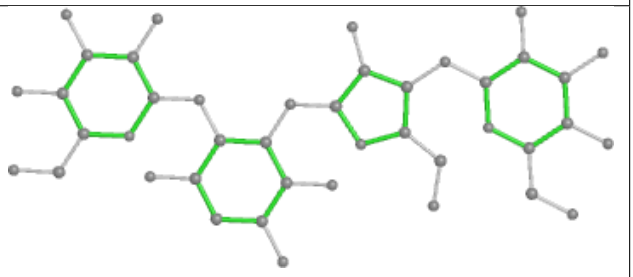


Bond angles

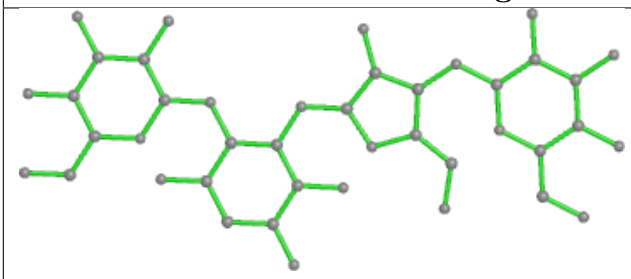


Torsions

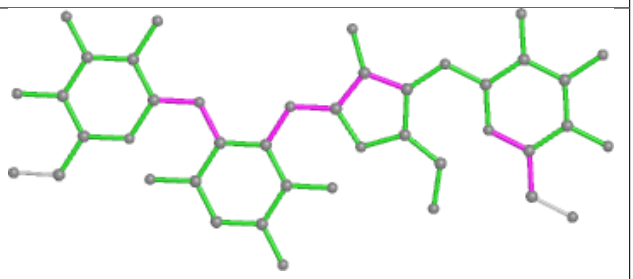


Rings

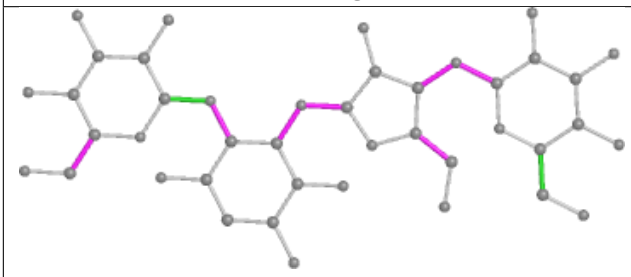
Ligand NMY BA 2902



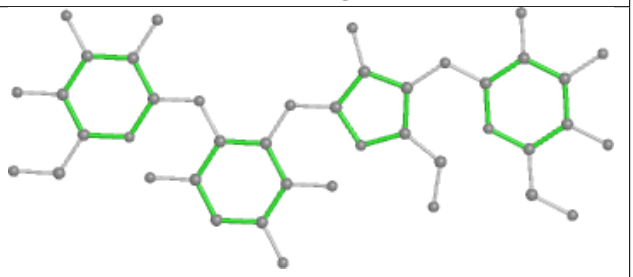
Bond lengths



Bond angles

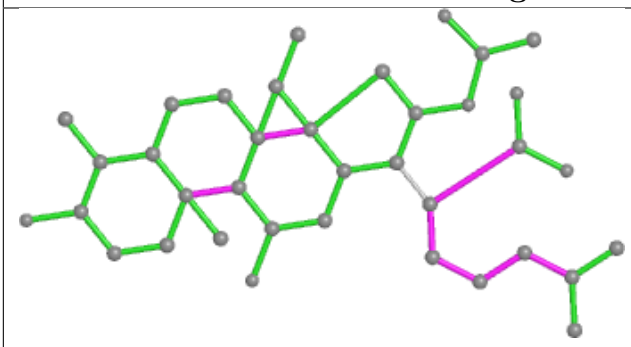


Torsions

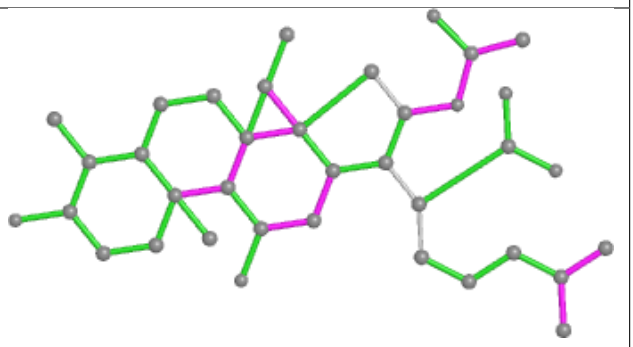


Rings

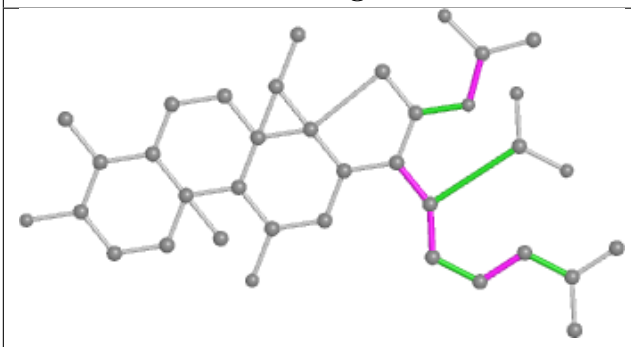
Ligand FUA CY 702



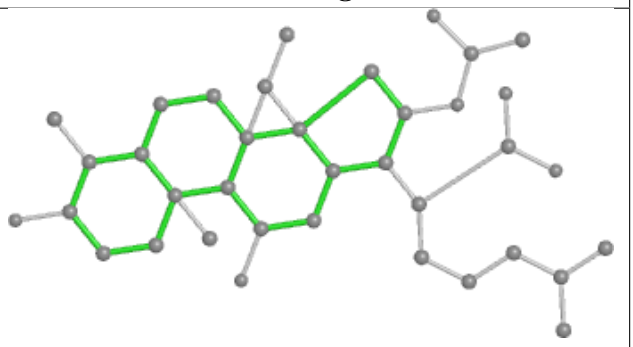
Bond lengths



Bond angles

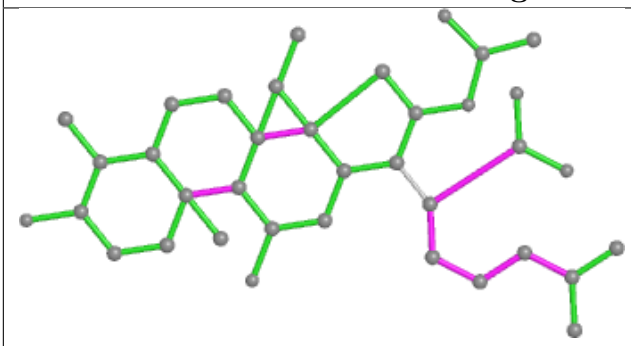


Torsions

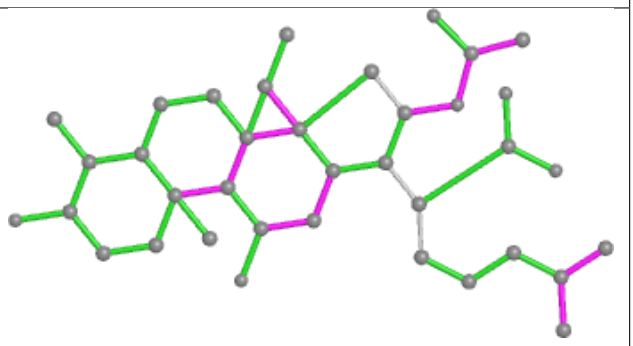


Rings

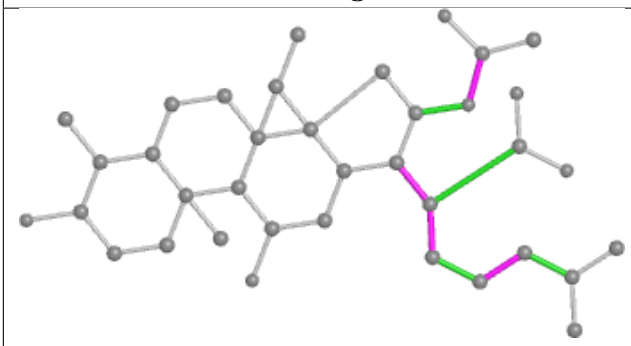
Ligand FUA AY 702



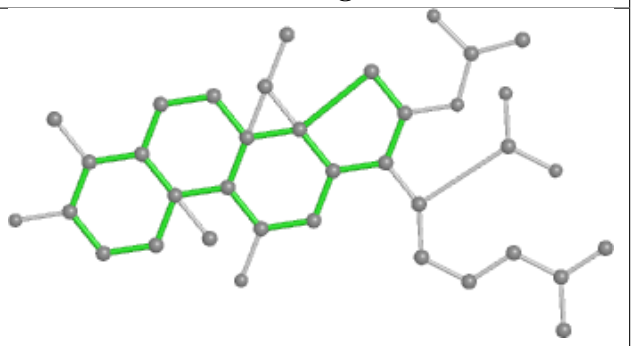
Bond lengths



Bond angles

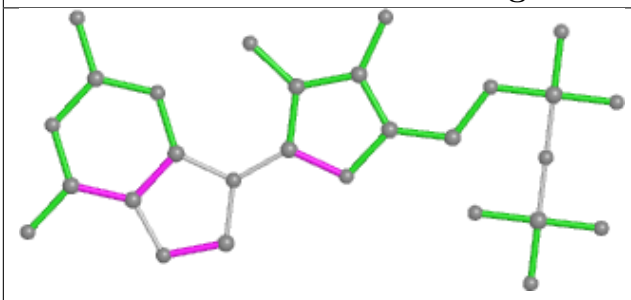


Torsions

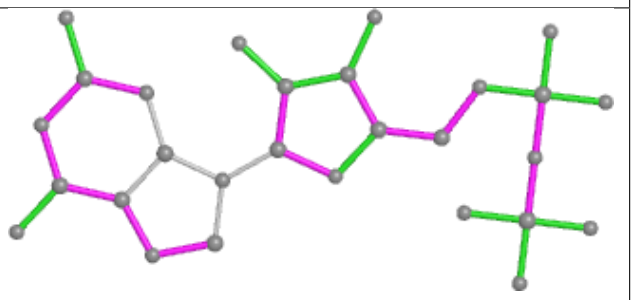


Rings

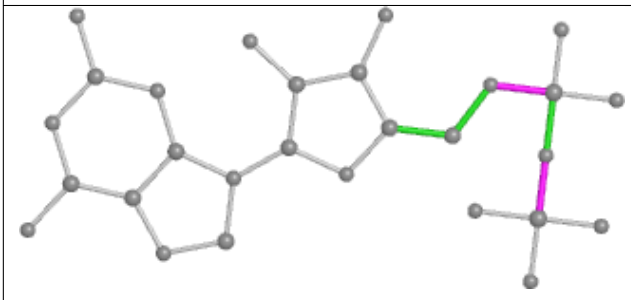
Ligand GDP AY 701



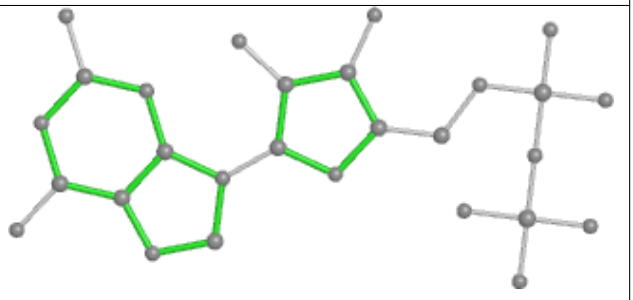
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
24	CX	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	CX	76:A	O3'	77:VAL	N	3.06

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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, 95^{th} 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	AB	235/235 (100%)	-0.33	4 (1%) 70 62	17, 55, 103, 129	0
1	CB	235/235 (100%)	-0.09	3 (1%) 77 70	17, 63, 111, 140	0
2	AC	207/207 (100%)	1.77	89 (42%) 0 0	18, 52, 99, 118	0
2	CC	207/207 (100%)	1.85	81 (39%) 0 0	15, 58, 99, 132	0
3	AD	208/208 (100%)	-0.46	2 (0%) 82 76	14, 59, 107, 137	0
3	CD	208/208 (100%)	-0.32	1 (0%) 91 87	20, 52, 102, 136	0
4	AE	151/151 (100%)	0.08	15 (9%) 7 6	26, 62, 96, 129	0
4	CE	151/151 (100%)	-0.05	9 (5%) 21 17	19, 56, 99, 143	0
5	AF	101/101 (100%)	-0.60	0 100 100	22, 57, 111, 128	0
5	CF	101/101 (100%)	-0.65	0 100 100	19, 56, 106, 128	0
6	AG	155/155 (100%)	-0.28	7 (4%) 33 28	26, 78, 122, 150	0
6	CG	155/155 (100%)	-0.32	6 (3%) 39 32	38, 85, 120, 147	0
7	AH	138/138 (100%)	-0.75	0 100 100	16, 43, 87, 109	0
7	CH	138/138 (100%)	-0.63	0 100 100	10, 49, 86, 102	0
8	AI	127/127 (100%)	-0.59	3 (2%) 59 50	30, 64, 101, 127	0
8	CI	127/127 (100%)	-0.59	1 (0%) 86 81	9, 77, 108, 134	0
9	AJ	99/99 (100%)	1.69	37 (37%) 0 0	34, 64, 104, 146	0
9	CJ	99/99 (100%)	1.63	35 (35%) 0 0	22, 57, 107, 115	0
10	AK	119/119 (100%)	0.03	10 (8%) 11 9	13, 74, 139, 160	0
10	CK	119/119 (100%)	-0.03	3 (2%) 57 49	21, 71, 125, 161	0
11	AL	125/125 (100%)	-0.27	4 (3%) 47 38	15, 73, 145, 164	0
11	CL	125/125 (100%)	0.00	6 (4%) 30 26	27, 85, 148, 170	0
12	AM	125/125 (100%)	0.06	6 (4%) 30 26	43, 86, 129, 159	0
12	CM	125/125 (100%)	-0.10	8 (6%) 19 15	27, 63, 103, 139	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
13	AN	60/60 (100%)	1.04	13 (21%) 0 1	33, 70, 116, 128	0
13	CN	60/60 (100%)	0.81	10 (16%) 1 2	30, 58, 105, 128	0
14	AO	88/88 (100%)	-0.36	1 (1%) 80 74	26, 53, 99, 110	0
14	CO	88/88 (100%)	-0.42	0 100 100	8, 44, 84, 109	0
15	AP	84/84 (100%)	0.40	7 (8%) 11 9	33, 71, 110, 143	0
15	CP	84/84 (100%)	0.45	10 (11%) 4 5	39, 69, 111, 165	0
16	AQ	100/100 (100%)	-0.52	0 100 100	27, 62, 107, 131	0
16	CQ	100/100 (100%)	-0.34	2 (2%) 65 58	22, 66, 120, 135	0
17	AR	70/70 (100%)	-0.30	4 (5%) 23 19	19, 61, 102, 130	0
17	CR	70/70 (100%)	-0.29	3 (4%) 35 30	24, 56, 100, 125	0
18	AS	79/79 (100%)	-0.49	1 (1%) 77 70	17, 69, 111, 124	0
18	CS	79/79 (100%)	-0.13	5 (6%) 20 15	28, 65, 108, 130	0
19	AT	99/99 (100%)	-0.17	5 (5%) 28 24	17, 51, 85, 128	0
19	CT	99/99 (100%)	0.52	16 (16%) 1 2	26, 69, 110, 139	0
20	AY	661/687 (96%)	-0.44	23 (3%) 44 36	19, 64, 113, 178	0
20	CY	661/687 (96%)	-0.36	22 (3%) 46 38	11, 66, 108, 152	0
21	AA	1511/1511 (100%)	-0.46	14 (0%) 84 79	10, 90, 161, 248	0
21	CA	1511/1511 (100%)	-0.47	28 (1%) 66 59	10, 88, 160, 242	0
22	AW	77/77 (100%)	-0.15	9 (11%) 4 5	15, 71, 130, 150	0
22	CW	77/77 (100%)	0.09	7 (9%) 9 7	30, 88, 145, 178	0
23	AV	36/36 (100%)	1.73	8 (22%) 0 0	32, 89, 137, 186	0
23	CV	36/36 (100%)	3.53	16 (44%) 0 0	23, 139, 232, 237	0
24	AX	77/78 (98%)	-0.49	3 (3%) 39 32	3, 65, 233, 320	0
24	CX	77/78 (98%)	-0.36	2 (2%) 56 47	37, 123, 185, 285	0
25	BC	228/228 (100%)	1.24	65 (28%) 0 0	54, 104, 139, 159	0
25	DC	228/228 (100%)	0.75	48 (21%) 1 1	37, 90, 130, 169	0
26	BD	275/275 (100%)	-0.08	21 (7%) 13 11	10, 61, 103, 125	0
26	DD	275/275 (100%)	-0.03	14 (5%) 28 24	16, 57, 100, 127	0
27	BE	205/205 (100%)	0.16	10 (4%) 29 25	21, 60, 107, 131	0
27	DE	205/205 (100%)	0.15	8 (3%) 39 32	22, 57, 97, 142	0
28	BF	208/208 (100%)	0.37	22 (10%) 6 5	20, 67, 108, 149	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
28	DF	208/208 (100%)	0.58	31 (14%) 2 2	23, 75, 120, 140	0
29	BG	181/181 (100%)	0.77	22 (12%) 4 4	28, 69, 113, 148	0
29	DG	181/181 (100%)	0.67	25 (13%) 2 3	25, 71, 113, 148	0
30	BH	167/167 (100%)	0.00	7 (4%) 36 30	29, 65, 108, 121	0
30	DH	167/167 (100%)	-0.01	8 (4%) 30 26	24, 59, 100, 132	0
31	BJ	0/170	-	-	-	-
31	DJ	0/170	-	-	-	-
32	BK	140/140 (100%)	-0.28	7 (5%) 28 25	32, 71, 114, 126	0
32	DK	140/140 (100%)	-0.08	7 (5%) 28 25	34, 77, 113, 138	0
33	BN	139/139 (100%)	2.00	56 (40%) 0 0	23, 105, 298, 334	0
33	DN	139/139 (100%)	2.07	57 (41%) 0 0	16, 116, 252, 312	0
34	BO	122/122 (100%)	1.65	45 (36%) 0 0	12, 50, 93, 111	0
34	DO	122/122 (100%)	2.17	56 (45%) 0 0	28, 59, 103, 132	0
35	BP	146/146 (100%)	-0.51	4 (2%) 54 45	25, 63, 106, 123	0
35	DP	146/146 (100%)	-0.45	3 (2%) 63 55	25, 67, 104, 131	0
36	BQ	141/141 (100%)	-0.35	4 (2%) 53 43	5, 54, 93, 109	0
36	DQ	141/141 (100%)	0.02	8 (5%) 23 19	27, 70, 113, 141	0
37	BR	117/117 (100%)	-0.62	0 100 100	29, 65, 116, 145	0
37	DR	117/117 (100%)	-0.71	1 (0%) 84 79	27, 62, 97, 126	0
38	BS	99/99 (100%)	1.00	20 (20%) 1 1	14, 70, 108, 117	0
38	DS	99/99 (100%)	0.78	11 (11%) 5 5	19, 52, 96, 120	0
39	BT	138/138 (100%)	1.23	43 (31%) 0 0	16, 59, 101, 123	0
39	DT	138/138 (100%)	1.14	34 (24%) 0 0	15, 51, 109, 140	0
40	BU	117/117 (100%)	-0.48	1 (0%) 84 79	20, 56, 96, 121	0
40	DU	117/117 (100%)	-0.45	1 (0%) 84 79	13, 53, 94, 142	0
41	BV	101/101 (100%)	0.22	5 (4%) 28 25	21, 66, 108, 127	0
41	DV	101/101 (100%)	0.13	5 (4%) 28 25	15, 65, 101, 126	0
42	BW	113/113 (100%)	-0.42	3 (2%) 54 45	13, 54, 99, 111	0
42	DW	113/113 (100%)	-0.35	5 (4%) 34 29	15, 64, 116, 148	0
43	BX	93/93 (100%)	-0.25	4 (4%) 35 30	20, 54, 96, 115	0
43	DX	93/93 (100%)	-0.34	2 (2%) 62 54	13, 45, 87, 126	0
44	BY	107/107 (100%)	0.31	10 (9%) 8 7	29, 58, 109, 149	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
44	DY	107/107 (100%)	0.10	6 (5%) 24 20	25, 62, 97, 138	0
45	BZ	185/185 (100%)	-0.34	0 100 100	17, 58, 97, 113	0
45	DZ	185/185 (100%)	-0.22	4 (2%) 62 54	33, 64, 101, 138	0
46	B0	84/84 (100%)	0.60	15 (17%) 1 1	26, 75, 117, 131	0
46	D0	84/84 (100%)	0.06	4 (4%) 30 26	19, 65, 108, 116	0
47	B1	93/93 (100%)	1.11	20 (21%) 0 1	21, 84, 140, 156	0
47	D1	93/93 (100%)	1.41	27 (29%) 0 0	31, 103, 148, 181	0
48	B2	71/71 (100%)	-0.72	0 100 100	23, 55, 95, 116	0
48	D2	71/71 (100%)	-0.44	2 (2%) 53 43	35, 61, 103, 118	0
49	B3	60/60 (100%)	-0.50	1 (1%) 70 62	29, 60, 99, 112	0
49	D3	60/60 (100%)	-0.39	0 100 100	36, 68, 94, 110	0
50	B4	35/35 (100%)	1.49	11 (31%) 0 0	26, 71, 110, 122	0
50	D4	35/35 (100%)	1.26	8 (22%) 0 0	64, 109, 144, 185	0
51	B5	59/59 (100%)	-0.69	0 100 100	24, 63, 106, 123	0
51	D5	59/59 (100%)	-0.64	2 (3%) 45 37	31, 68, 113, 138	0
52	B6	50/50 (100%)	1.20	14 (28%) 0 0	13, 57, 107, 154	0
52	D6	50/50 (100%)	0.96	13 (26%) 0 0	26, 65, 120, 154	0
53	B7	49/49 (100%)	1.24	16 (32%) 0 0	46, 91, 136, 164	0
53	D7	49/49 (100%)	0.91	10 (20%) 1 1	51, 73, 109, 134	0
54	B8	64/64 (100%)	1.05	10 (15%) 2 2	26, 58, 109, 132	0
54	D8	64/64 (100%)	0.61	7 (10%) 5 5	30, 64, 104, 118	0
55	B9	37/37 (100%)	-0.34	1 (2%) 54 45	39, 64, 109, 116	0
55	D9	37/37 (100%)	-0.62	0 100 100	34, 65, 116, 134	0
56	Be	72/103 (69%)	0.63	12 (16%) 1 2	15, 49, 122, 163	0
56	De	72/103 (69%)	0.69	9 (12%) 3 4	14, 57, 118, 157	0
57	Bf	0/31	-	-	-	-
57	Bg	0/31	-	-	-	-
57	Df	0/31	-	-	-	-
57	Dg	0/31	-	-	-	-
58	Bh	0/30	-	-	-	-
58	Dh	0/30	-	-	-	-
59	BA	2879/2879 (100%)	-0.49	31 (1%) 80 74	11, 89, 164, 284	0
59	DA	2879/2879 (100%)	-0.49	31 (1%) 80 74	9, 88, 171, 274	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
60	BB	119/119 (100%)	-0.37	6 (5%) 28 25	18, 80, 158, 172	0
60	DB	119/119 (100%)	-0.36	0 100 100	30, 88, 150, 175	0
All	All	22852/23492 (97%)	-0.09	1472 (6%) 19 15	3, 73, 146, 334	0

The worst 5 of 1472 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
23	CV	36	A	21.2
23	CV	34	A	20.9
23	CV	35	A	18.6
23	AV	35	A	18.0
23	AV	34	A	13.7

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(Å^2)	Q<0.9
64	MG	CY	703	1/1	0.74	0.18	6,6,6,6	0
64	MG	BA	2901	1/1	0.75	0.12	2,2,2,2	0
63	NMY	BA	2904	42/42	0.79	0.26	42,50,59,62	42
61	GDP	AY	701	28/28	0.80	0.24	179,183,185,185	0
62	FUA	AY	702	37/37	0.81	0.69	198,199,200,201	0
63	NMY	DA	2901	42/42	0.81	0.24	31,42,51,53	42
62	FUA	CY	702	37/37	0.82	0.89	194,196,197,197	0
63	NMY	BA	2902	42/42	0.82	0.22	14,24,43,44	42
63	NMY	AA	1601	42/42	0.87	0.31	16,27,36,38	42
63	NMY	BA	2903	42/42	0.87	0.28	18,29,38,41	42

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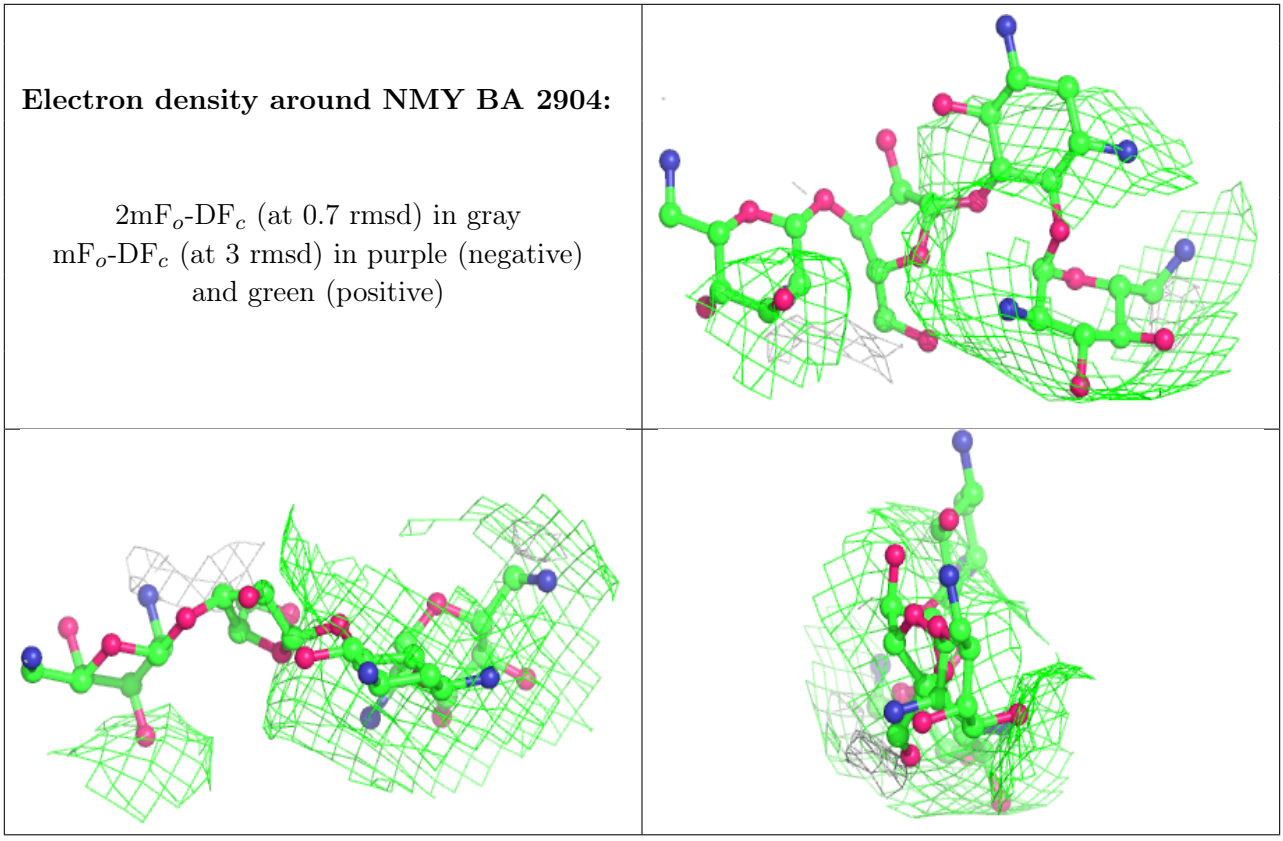
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
61	GDP	CY	701	28/28	0.88	0.14	104,108,109,110	0
63	NMY	CA	1601	42/42	0.90	0.23	14,25,34,37	42

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.

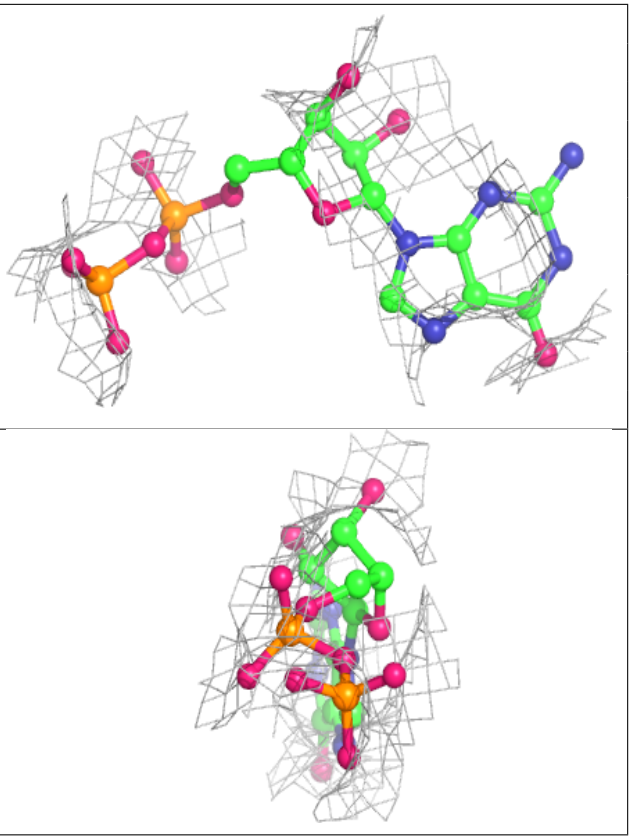
Electron density around NMY BA 2904:

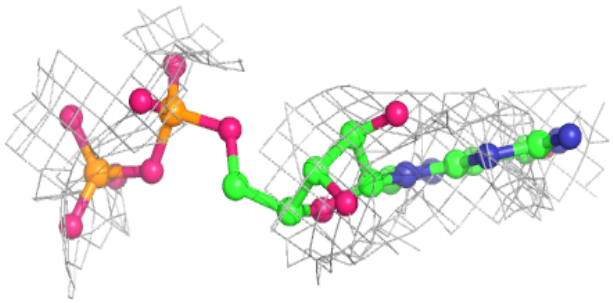
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around GDP AY 701:

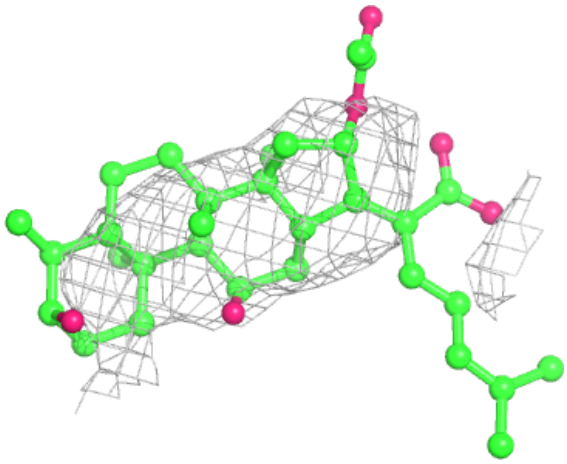
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

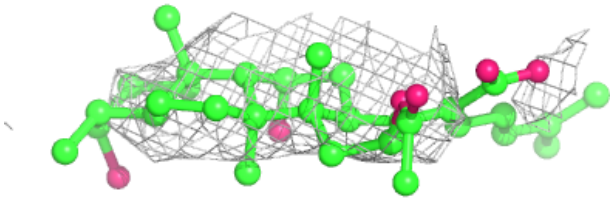


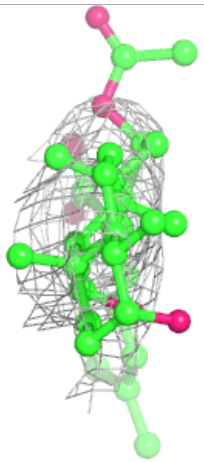


Electron density around FUA AY 702:

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

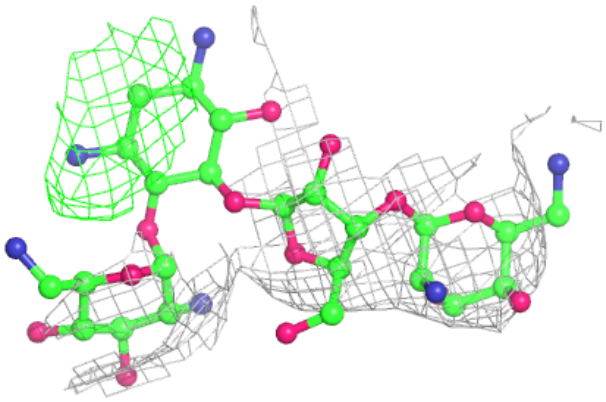


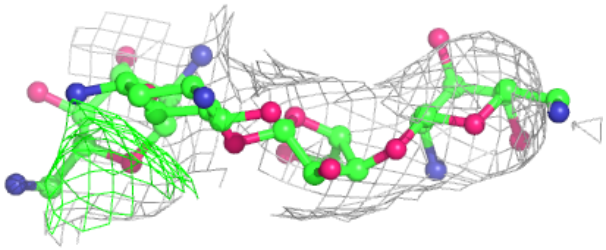


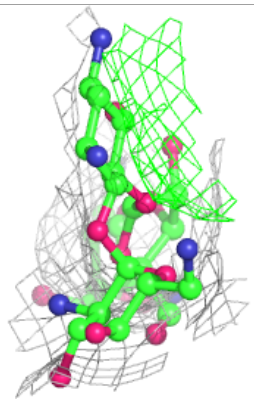


Electron density around NMY DA 2901:

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

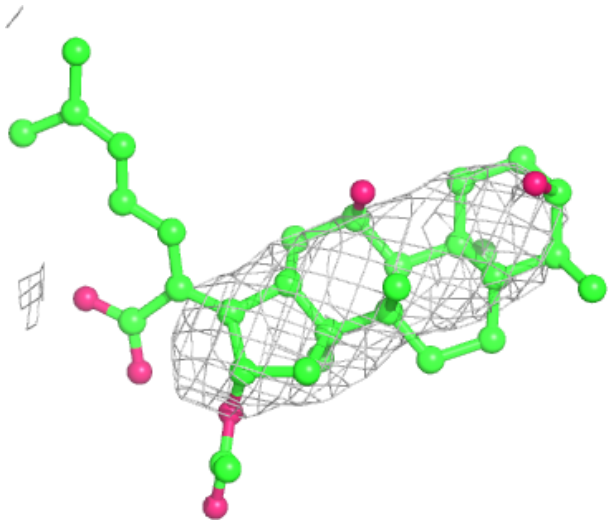


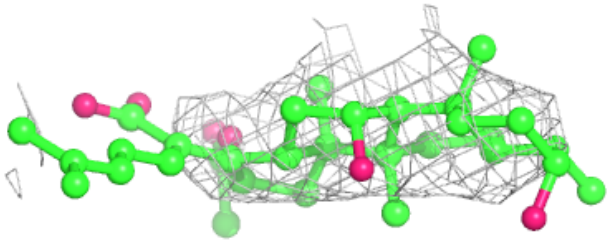


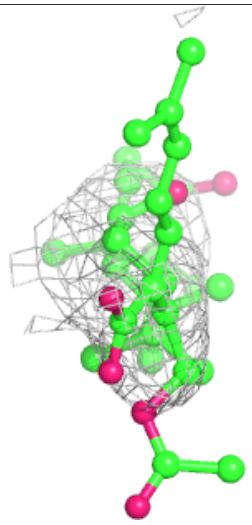


Electron density around FUA CY 702:

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

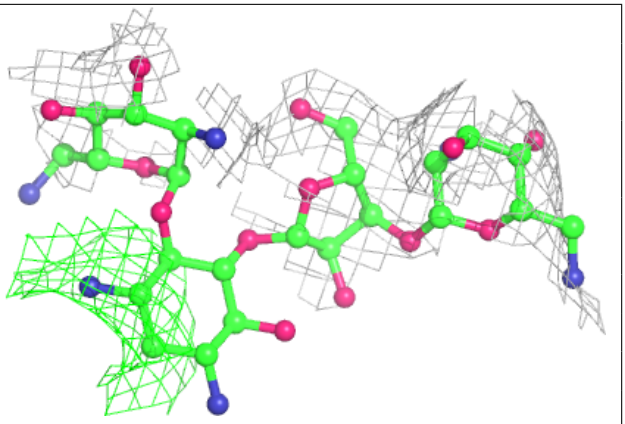


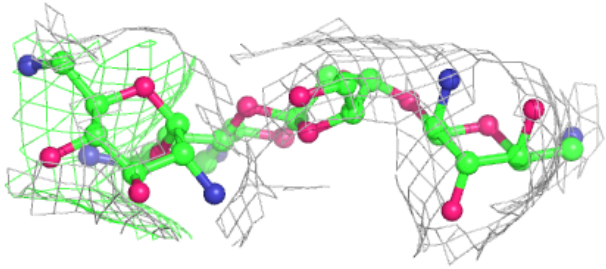


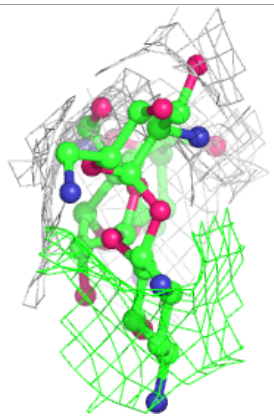


Electron density around NMY BA 2902:

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

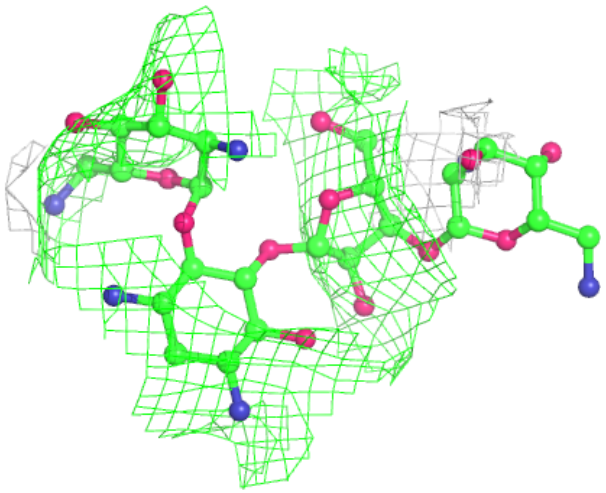


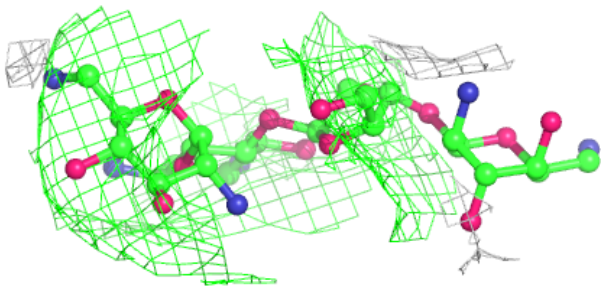


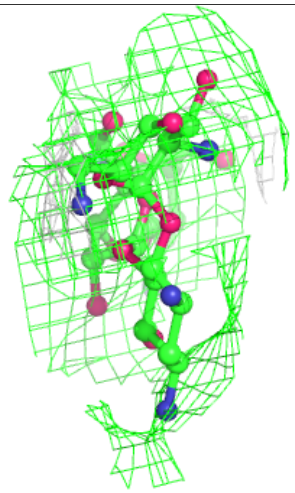


Electron density around NMY AA 1601:

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

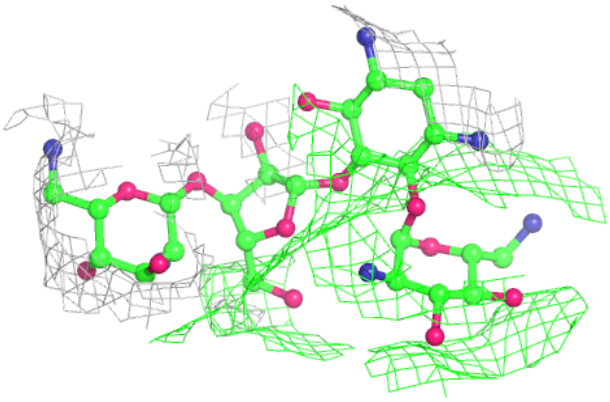


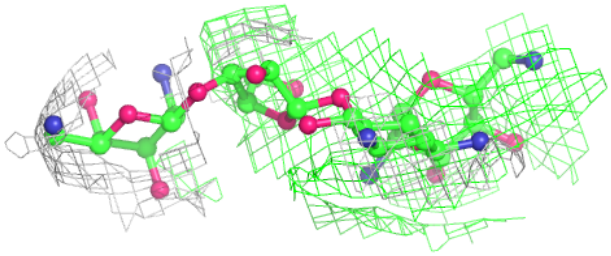


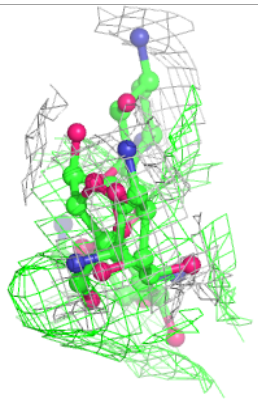


Electron density around NMY BA 2903:

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

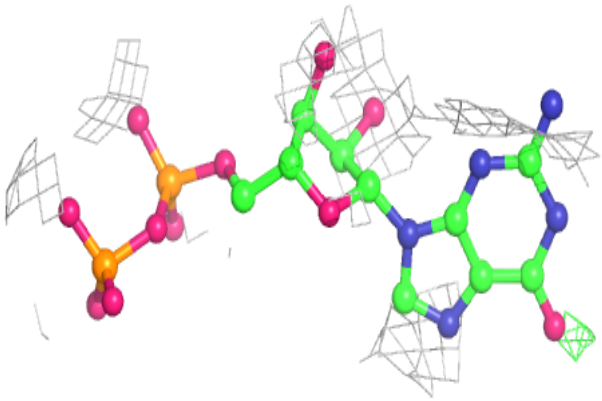


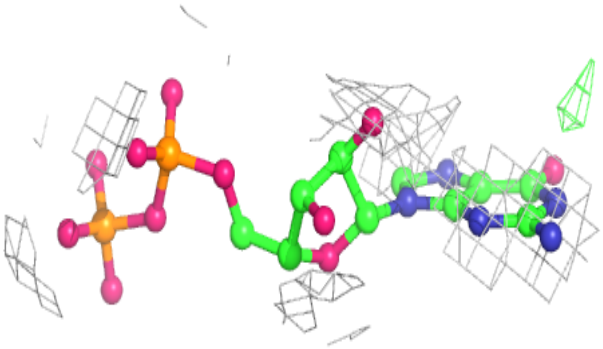


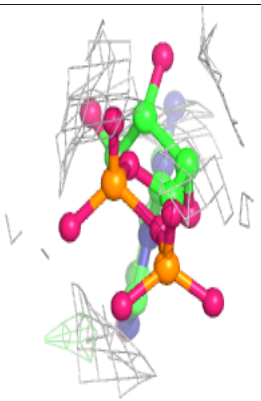


Electron density around GDP CY 701:

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

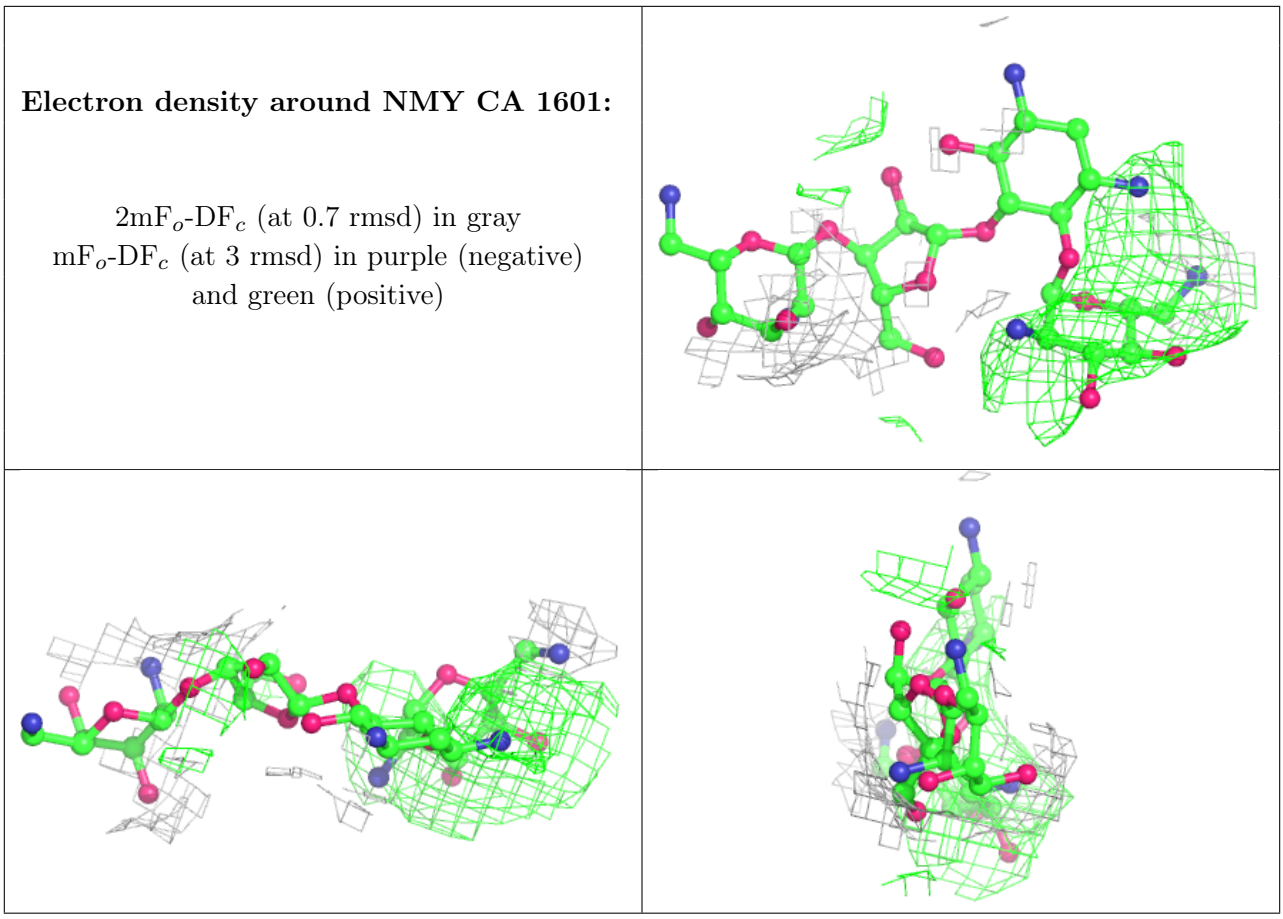






Electron density around NMY CA 1601:

$2mF_o$-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

There are no such residues in this entry.