Full wwPDB EM Validation Report ⓘ

Dec 10, 2022 – 12:45 pm GMT

PDB ID	:	4UJD
EMDB ID	:	EMD-2682
Title	:	mammalian 80S HCV-IRES initiation complex with eIF5B PRE-like state
Authors	:	Yamamoto, H.; Unbehaun, A.; Loerke, J.; Behrmann, E.; Marianne, C.; Burger, J.; Mielke, T.; Spahn, C.M.T.
Deposited on	:	2014-06-18
Resolution	:	8.90 Å(reported)
Based on initial model	:	4CXC

This is a Full wwPDB EM Validation 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/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

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

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

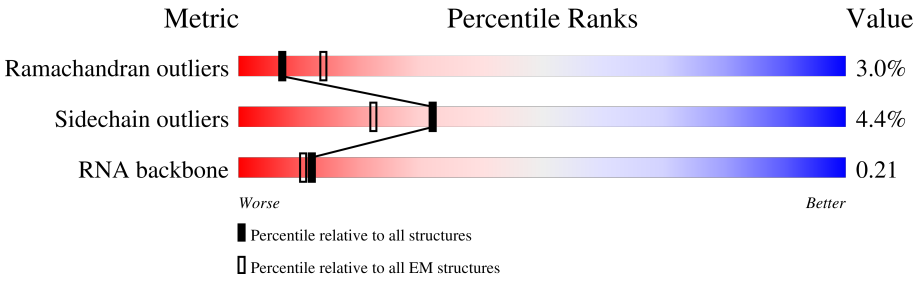
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 8.90 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)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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 EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A2	5025	8% 30% 41% · 28%
2	A3	194	6% 38% 41% · 19%
3	A4	121	40% 56% · ·
4	AA	257	58% 93% · ·
5	AB	403	43% 90% 7% ·
6	AC	427	35% 78% 6% · 15%
7	AD	297	24% 93% · ·
8	AE	158	44% 91% 9%

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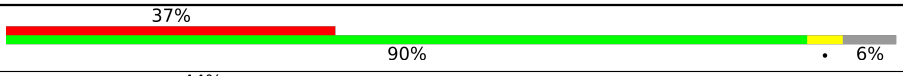
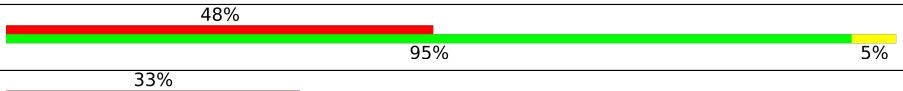
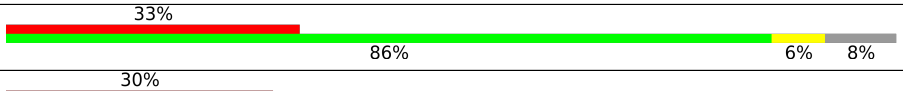
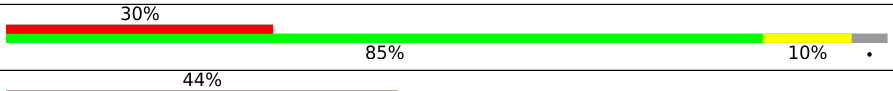
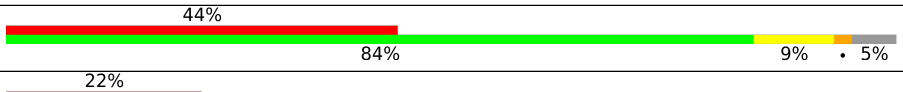
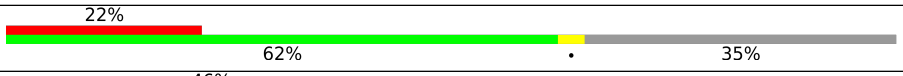
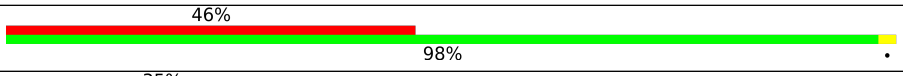
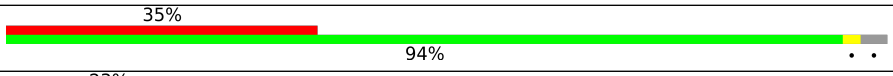
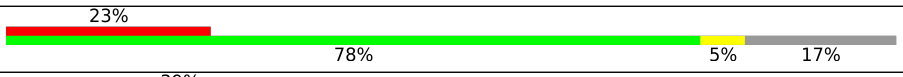
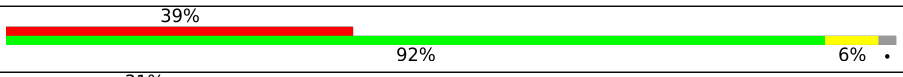
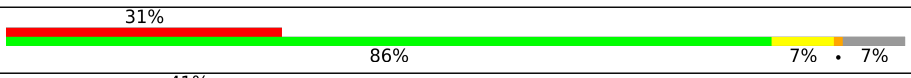
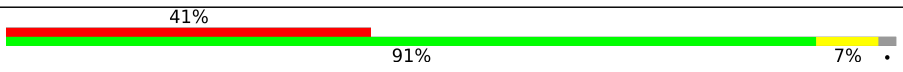
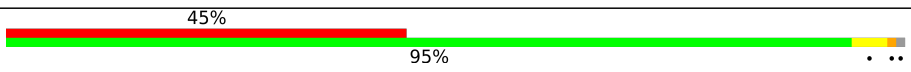
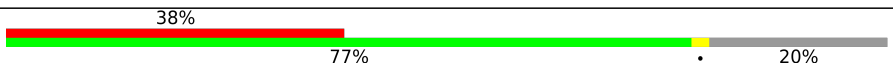
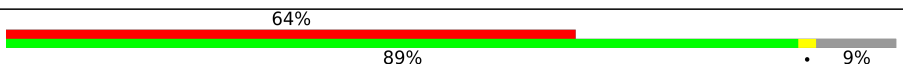
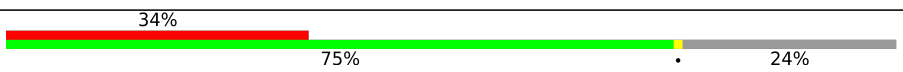
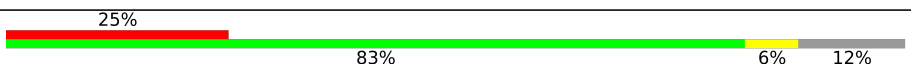
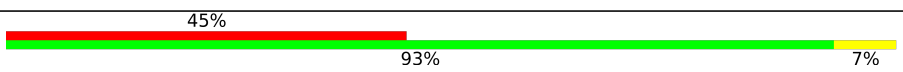
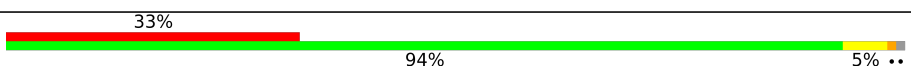
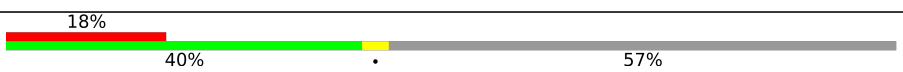
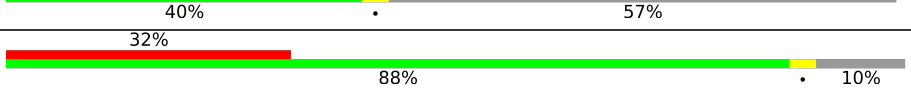
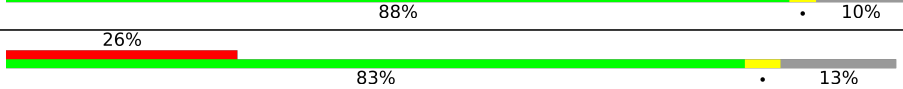
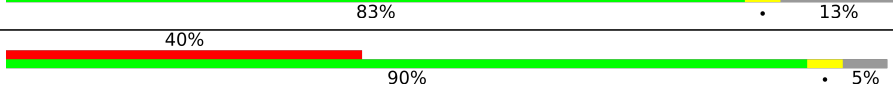
Mol	Chain	Length	Quality of chain
9	AF	248	
10	AG	266	
11	AH	192	
12	AI	214	
13	AJ	178	
14	AL	211	
15	AM	215	
16	AN	204	
17	AO	203	
18	AP	184	
19	AQ	188	
20	AR	196	
21	AS	176	
22	AT	160	
23	AU	128	
24	AV	140	
25	AW	157	
26	AX	156	
27	AY	145	
28	AZ	136	
29	Aa	148	
30	Ab	159	
31	Ac	115	
32	Ad	125	
33	Ae	135	

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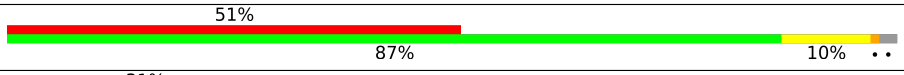
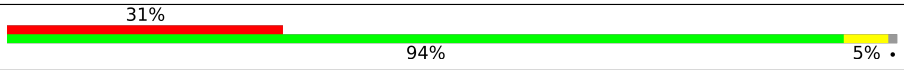
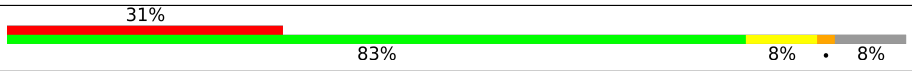
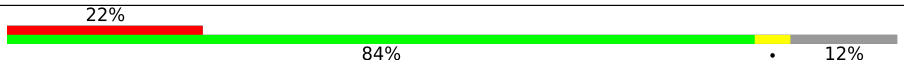
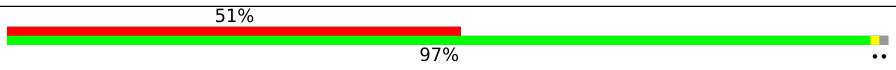
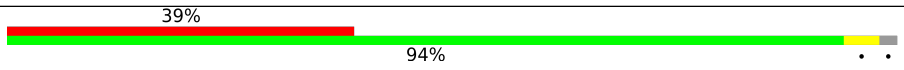
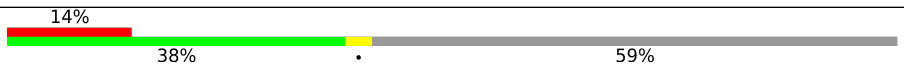
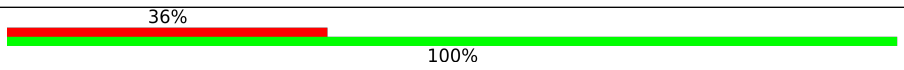
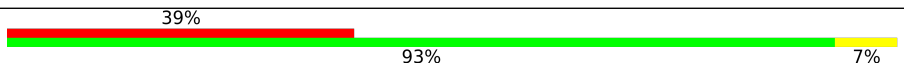
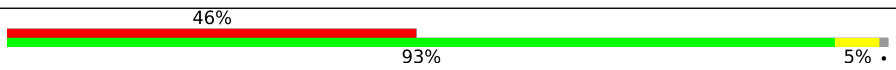
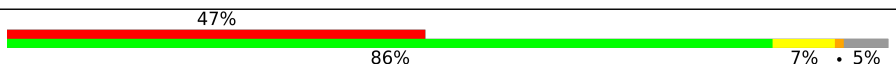
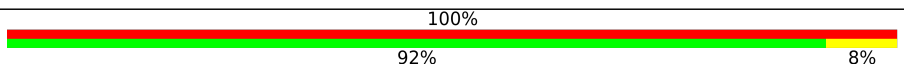
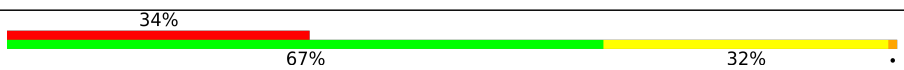
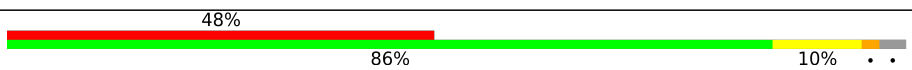
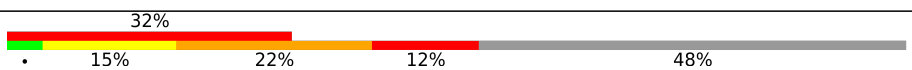
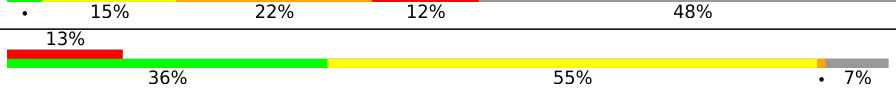
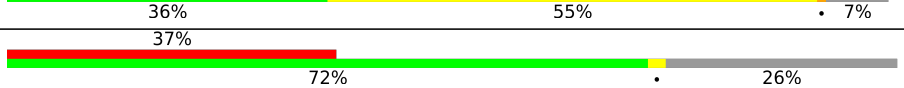
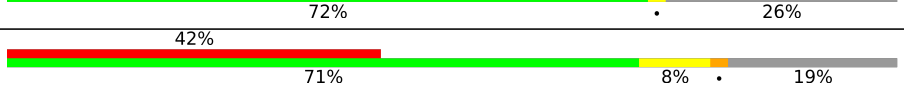
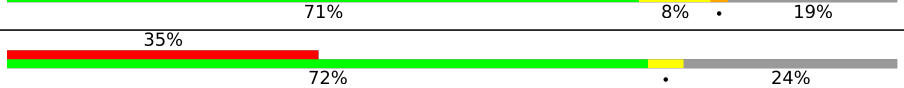
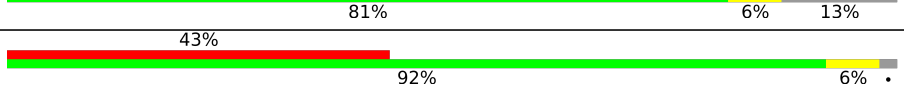
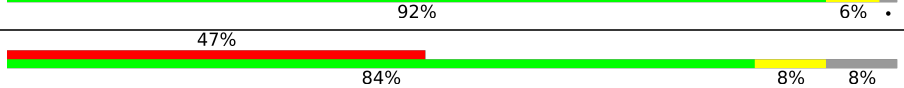
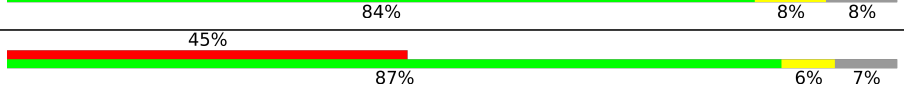
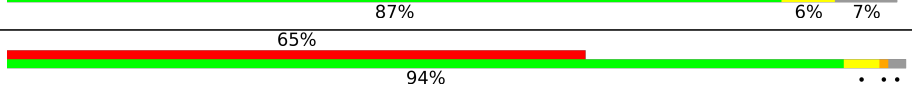
Mol	Chain	Length	Quality of chain
34	Af	110	
35	Ag	117	
36	Ah	123	
37	Ai	105	
38	Aj	97	
39	Ak	70	
40	Al	51	
41	Am	128	
42	An	25	
43	Ao	106	
44	Ap	92	
45	At	137	
46	Au	210	
47	BA	76	
48	BB	627	
49	BC	504	
50	C1	1869	
51	CA	295	
52	CB	264	
53	CC	293	
54	CD	243	
55	CE	263	
56	CF	204	
57	CG	249	
58	CH	194	

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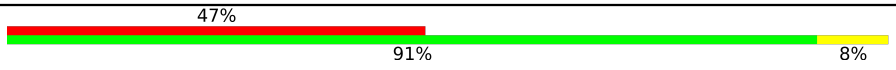
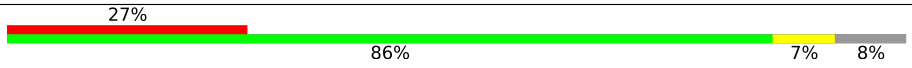
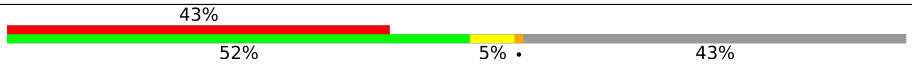
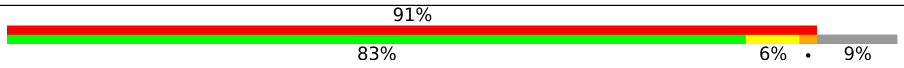
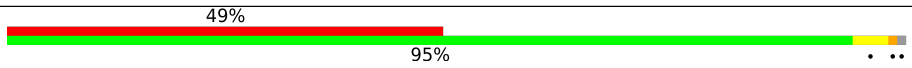
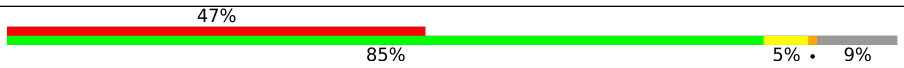
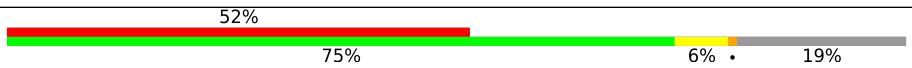
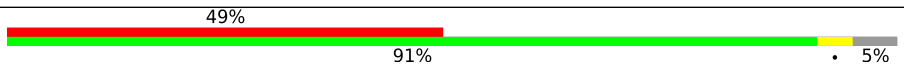
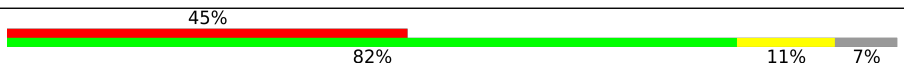
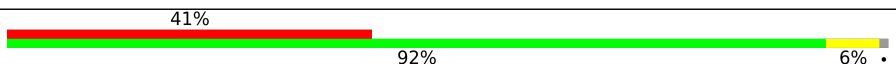
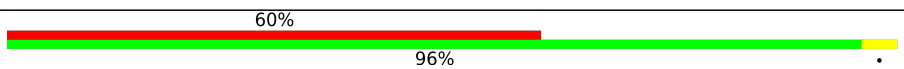
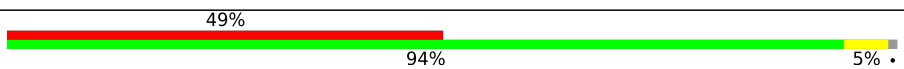
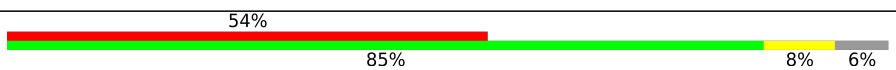
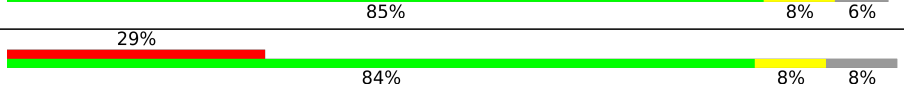
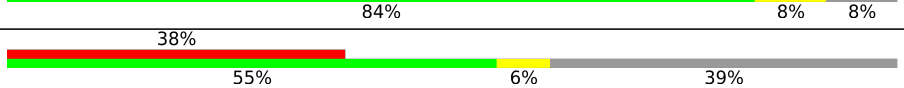
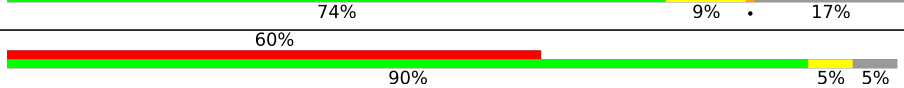
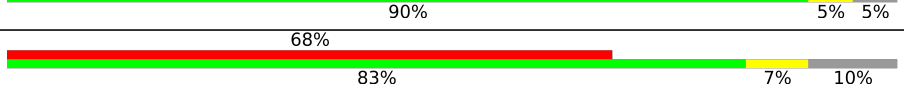
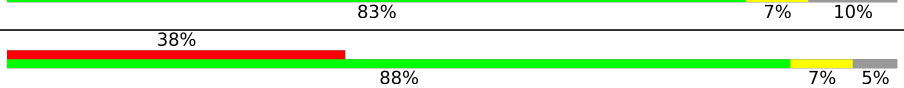
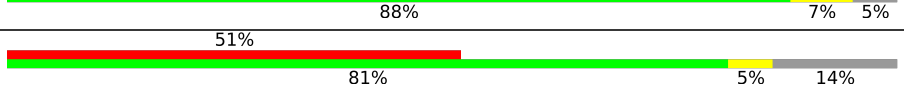
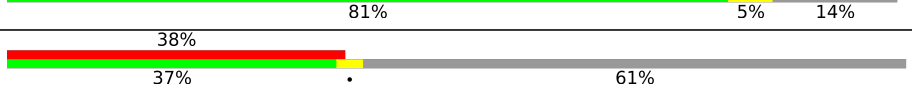
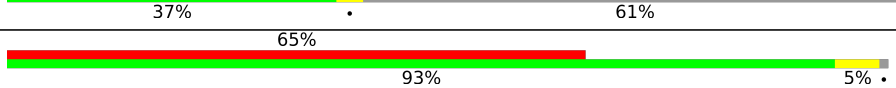
Mol	Chain	Length	Quality of chain
59	CI	208	
60	CJ	194	
61	CK	165	
62	CL	158	
63	CM	132	
64	CN	151	
65	CO	151	
66	CP	145	
67	CQ	146	
68	CR	135	
69	CS	152	
70	CT	145	
71	CU	119	
72	CV	83	
73	CW	130	
74	CX	143	
75	CY	133	
76	CZ	125	
77	Ca	115	
78	Cb	84	
79	Cc	69	
80	Cd	56	
81	Ce	59	
82	Cf	156	
83	Cg	317	

2 Entry composition

There are 85 unique types of molecules in this entry. The entry contains 223911 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 28S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A2	3616	77488	34508	14153	25212	3615	0	0

- Molecule 2 is a RNA chain called 5.8S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	A3	157	3334	1489	587	1102	156	0	0

- Molecule 3 is a RNA chain called 5S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	A4	119	2538	1132	454	834	118	0	0

- Molecule 4 is a protein called 60S RIBOSOMAL PROTEIN L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	AA	247	1888	1183	388	311	6	0	1

- Molecule 5 is a protein called 60S RIBOSOMAL PROTEIN L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	AB	396	3190	2030	601	545	14	0	1

- Molecule 6 is a protein called 60S RIBOSOMAL PROTEIN L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	AC	364	2889	1817	578	480	14	0	1

- Molecule 7 is a protein called 60S RIBOSOMAL PROTEIN L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AD	290	Total	C	N	O	S	0	0
			2362	1489	431	428	14		

- Molecule 8 is a protein called 60S RIBOSOMAL PROTEIN L6.

Mol	Chain	Residues	Atoms				AltConf	Trace
8	AE	158	Total	C	N	O	0	0
			1287	834	238	215		

- Molecule 9 is a protein called 60S RIBOSOMAL PROTEIN L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AF	234	Total	C	N	O	S	0	0
			1950	1252	376	313	9		

- Molecule 10 is a protein called 60S RIBOSOMAL PROTEIN L7A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AG	235	Total	C	N	O	S	0	1
			1881	1197	363	317	4		

- Molecule 11 is a protein called 60S RIBOSOMAL PROTEIN L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AH	192	Total	C	N	O	S	0	0
			1536	965	286	279	6		

- Molecule 12 is a protein called 60S RIBOSOMAL PROTEIN L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AI	196	Total	C	N	O	S	0	0
			1605	1022	308	263	12		

- Molecule 13 is a protein called 60S RIBOSOMAL PROTEIN L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AJ	170	Total	C	N	O	S	0	0
			1363	861	254	242	6		

- Molecule 14 is a protein called 60S RIBOSOMAL PROTEIN L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AL	200	Total	C	N	O	S	0	1
			1617	1013	335	265	4		

- Molecule 15 is a protein called 60S RIBOSOMAL PROTEIN L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AM	140	Total	C	N	O	S	0	1
			1139	730	219	183	7		

- Molecule 16 is a protein called 60S RIBOSOMAL PROTEIN L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AN	204	Total	C	N	O	S	0	0
			1709	1077	360	267	5		

- Molecule 17 is a protein called 60S RIBOSOMAL PROTEIN L13A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AO	196	Total	C	N	O	S	0	1
			1607	1034	316	252	5		

- Molecule 18 is a protein called 60S RIBOSOMAL PROTEIN L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AP	153	Total	C	N	O	S	0	1
			1234	771	241	213	9		

- Molecule 19 is a protein called 60S RIBOSOMAL PROTEIN L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AQ	184	Total	C	N	O	S	0	0
			1494	933	311	245	5		

- Molecule 20 is a protein called 60S RIBOSOMAL PROTEIN L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AR	183	Total	C	N	O	S	0	1
			1526	943	331	242	10		

- Molecule 21 is a protein called 60S RIBOSOMAL PROTEIN L18A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AS	173	Total	C	N	O	S	0	0
			1439	916	280	233	10		

- Molecule 22 is a protein called 60S RIBOSOMAL PROTEIN L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AT	159	Total	C	N	O	S	0	0
			1298	823	252	217	6		

- Molecule 23 is a protein called 60S RIBOSOMAL PROTEIN L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AU	102	Total	C	N	O	S	0	1
			827	529	146	150	2		

- Molecule 24 is a protein called 60S RIBOSOMAL PROTEIN L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AV	128	Total	C	N	O	S	0	0
			964	610	181	168	5		

- Molecule 25 is a protein called 60S RIBOSOMAL PROTEIN L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AW	64	Total	C	N	O	S	0	1
			529	337	104	85	3		

- Molecule 26 is a protein called 60S RIBOSOMAL PROTEIN L23A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	AX	119	Total	C	N	O	S	0	0
			976	624	183	168	1		

- Molecule 27 is a protein called 60S RIBOSOMAL PROTEIN L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	AY	128	Total	C	N	O	S	0	1
			1065	668	217	177	3		

- Molecule 28 is a protein called 60S RIBOSOMAL PROTEIN L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	AZ	136	Total	C	N	O	S	0	0
			1115	719	209	183	4		

- Molecule 29 is a protein called 60S RIBOSOMAL PROTEIN L27A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Aa	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

- Molecule 30 is a protein called 60S RIBOSOMAL PROTEIN L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Ab	69	Total	C	N	O	S	0	1
			560	344	123	90	3		

- Molecule 31 is a protein called 60S RIBOSOMAL PROTEIN L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Ac	104	Total	C	N	O	S	0	1
			802	508	142	145	7		

- Molecule 32 is a protein called 60S RIBOSOMAL PROTEIN L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Ad	109	Total	C	N	O	S	0	0
			905	570	174	159	2		

- Molecule 33 is a protein called 60S RIBOSOMAL PROTEIN L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Ae	128	Total	C	N	O	S	0	1
			1053	664	219	165	5		

- Molecule 34 is a protein called 60S RIBOSOMAL PROTEIN L35A.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Af	107	Total	C	N	O	S	0	0
			866	550	172	141	3		

- Molecule 35 is a protein called 60S RIBOSOMAL PROTEIN L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Ag	115	Total	C	N	O	S	0	1
			907	566	188	147	6		

- Molecule 36 is a protein called 60S RIBOSOMAL PROTEIN L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Ah	122	Total	C	N	O	S	0	0
			1015	641	205	168	1		

- Molecule 37 is a protein called 60S RIBOSOMAL PROTEIN L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Ai	97	Total	C	N	O	S	0	1
			783	488	168	122	5		

- Molecule 38 is a protein called 60S RIBOSOMAL PROTEIN L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Aj	85	Total	C	N	O	S	0	1
			690	423	153	109	5		

- Molecule 39 is a protein called 60S RIBOSOMAL PROTEIN L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Ak	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 40 is a protein called 60S RIBOSOMAL PROTEIN L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Al	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 41 is a protein called UBIQUITIN-60S RIBOSOMAL PROTEIN L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Am	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 42 is a protein called 60S RIBOSOMAL PROTEIN L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	An	25	Total	C	N	O	S	0	0
			240	145	64	28	3		

- Molecule 43 is a protein called 60S RIBOSOMAL PROTEIN L36A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Ao	106	Total	C	N	O	S	0	0
			871	547	176	141	7		

- Molecule 44 is a protein called 60S RIBOSOMAL PROTEIN L37A.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Ap	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 45 is a protein called 60S RIBOSOMAL PROTEIN L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	At	130	Total	C	N	O	S	0	1
			1043	646	220	172	5		

- Molecule 46 is a protein called 60S RIBOSOMAL PROTEIN L10A.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Au	210	Total	C	N	O	S	0	0
			1622	990	278	348	6		

- Molecule 47 is a RNA chain called TRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	BA	76	Total	C	N	O	P	0	0
			1619	723	290	531	75		

- Molecule 48 is a protein called EIF5B.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	BB	611	Total	C	N	O	S	0	0
			4846	3084	834	906	22		

- Molecule 49 is a RNA chain called HCV-IRES.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BC	261	Total	C	N	O	P	0	0
			5574	2485	1001	1828	260		

- Molecule 50 is a RNA chain called 18S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	C1	1742	Total	C	N	O	P	0	0
			37159	16589	6665	12164	1741		

- Molecule 51 is a protein called 40S RIBOSOMAL PROTEIN US2.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	CA	218	Total	C	N	O	S	0	0
			1719	1091	301	319	8		

- Molecule 52 is a protein called 40S RIBOSOMAL PROTEIN ES1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	CB	213	Total	C	N	O	S	0	0
			1729	1098	309	308	14		

- Molecule 53 is a protein called 40S RIBOSOMAL PROTEIN US5.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	CC	222	Total	C	N	O	S	0	0
			1724	1114	296	304	10		

- Molecule 54 is a protein called 40S RIBOSOMAL PROTEIN US3.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	CD	212	Total	C	N	O	S	0	0
			1646	1050	299	290	7		

- Molecule 55 is a protein called 40S RIBOSOMAL PROTEIN ES4.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	CE	257	Total	C	N	O	S	0	0
			2031	1298	381	344	8		

- Molecule 56 is a protein called 40S RIBOSOMAL PROTEIN US7.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	CF	188	Total	C	N	O	S	0	0
			1486	930	283	266	7		

- Molecule 57 is a protein called 40S RIBOSOMAL PROTEIN ES6.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	CG	232	Total	C	N	O	S	0	0
			1884	1176	379	322	7		

- Molecule 58 is a protein called 40S RIBOSOMAL PROTEIN ES7.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	CH	191	Total	C	N	O	S	0	0
			1535	978	282	274	1		

- Molecule 59 is a protein called 40S RIBOSOMAL PROTEIN ES8.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	CI	207	Total	C	N	O	S	0	0
			1695	1064	334	292	5		

- Molecule 60 is a protein called 40S RIBOSOMAL PROTEIN US4.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	CJ	179	Total	C	N	O	S	0	0
			1495	953	299	241	2		

- Molecule 61 is a protein called 40S RIBOSOMAL PROTEIN ES10.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	CK	94	Total	C	N	O	S	0	0
			791	519	138	129	5		

- Molecule 62 is a protein called 40S RIBOSOMAL PROTEIN US17.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	CL	146	Total	C	N	O	S	0	0
			1199	764	224	205	6		

- Molecule 63 is a protein called 40S RIBOSOMAL PROTEIN ES12.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	CM	120	Total	C	N	O	S	0	0
			931	584	164	174	9		

- Molecule 64 is a protein called 40S RIBOSOMAL PROTEIN ES15.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	CN	150	Total	C	N	O	S	0	0
			1207	773	229	204	1		

- Molecule 65 is a protein called 40S RIBOSOMAL PROTEIN ES11.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	CO	137	Total	C	N	O	S	0	0
			1023	627	200	190	6		

- Molecule 66 is a protein called 40S RIBOSOMAL PROTEIN US19.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	CP	118	Total	C	N	O	S	0	0
			981	625	183	166	7		

- Molecule 67 is a protein called 40S RIBOSOMAL PROTEIN US9.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	CQ	139	Total	C	N	O	S	0	0
			1108	704	210	191	3		

- Molecule 68 is a protein called 40S RIBOSOMAL PROTEIN ES17.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	CR	109	Total	C	N	O	S	0	0
			893	561	170	159	3		

- Molecule 69 is a protein called 40S RIBOSOMAL PROTEIN US13.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	CS	142	Total	C	N	O	S	0	0
			1172	736	236	199	1		

- Molecule 70 is a protein called 40S RIBOSOMAL PROTEIN ES19.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	CT	143	Total	C	N	O	S	0	0
			1112	697	214	198	3		

- Molecule 71 is a protein called 40S RIBOSOMAL PROTEIN US10.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	CU	101	Total	C	N	O	S	0	0
			803	502	153	144	4		

- Molecule 72 is a protein called 40S RIBOSOMAL PROTEIN ES21.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	CV	83	Total	C	N	O	S	0	0
			636	393	117	121	5		

- Molecule 73 is a protein called 40S RIBOSOMAL PROTEIN US8.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	CW	129	Total	C	N	O	S	0	0
			1033	659	193	175	6		

- Molecule 74 is a protein called 40S RIBOSOMAL PROTEIN US12.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	CX	134	Total	C	N	O	S	0	0
			1046	663	205	176	2		

- Molecule 75 is a protein called 40S RIBOSOMAL PROTEIN ES24.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	CY	122	Total	C	N	O	S	0	0
			1002	635	196	166	5		

- Molecule 76 is a protein called 40S RIBOSOMAL PROTEIN ES25.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	CZ	76	Total	C	N	O	S	0	0
			605	387	112	105	1		

- Molecule 77 is a protein called 40S RIBOSOMAL PROTEIN ES26.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Ca	96	Total	C	N	O	S	0	0
			767	476	159	127	5		

- Molecule 78 is a protein called 40S RIBOSOMAL PROTEIN ES27.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	Cb	80	Total	C	N	O	S	0	0
			625	391	116	111	7		

- Molecule 79 is a protein called 40S RIBOSOMAL PROTEIN ES28.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Cc	62	Total	C	N	O	S	0	0
			490	298	99	91	2		

- Molecule 80 is a protein called 40S RIBOSOMAL PROTEIN US14.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Cd	53	Total	C	N	O	S	0	0
			444	278	90	71	5		

- Molecule 81 is a protein called 40S RIBOSOMAL PROTEIN ES30.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Ce	51	Total	C	N	O	S	0	0
			412	258	90	63	1		

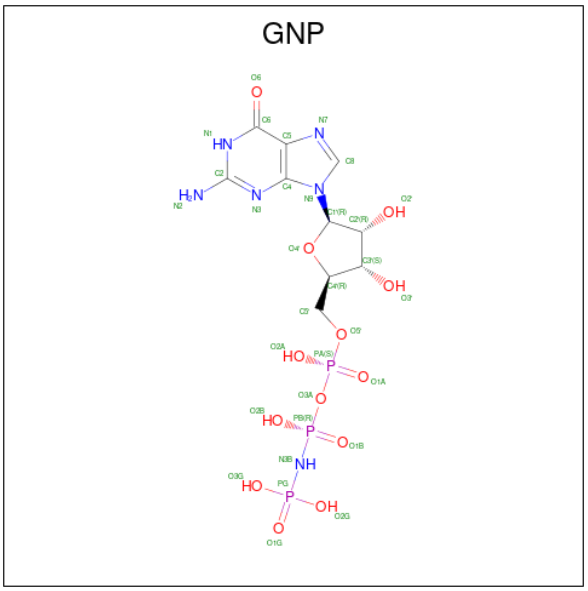
- Molecule 82 is a protein called 40S RIBOSOMAL PROTEIN ES31.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	Cf	61	Total	C	N	O	S	0	0
			497	312	94	84	7		

- Molecule 83 is a protein called 40S RIBOSOMAL PROTEIN RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	Cg	314	Total	C	N	O	S	0	0
			2440	1537	425	466	12		

- Molecule 84 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (three-letter code: GNP) (formula: $C_{10}H_{17}N_6O_{13}P_3$).



Mol	Chain	Residues	Atoms					AltConf
84	BB	1	Total	C	N	O	P	0
			32	10	6	13	3	

- Molecule 85 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

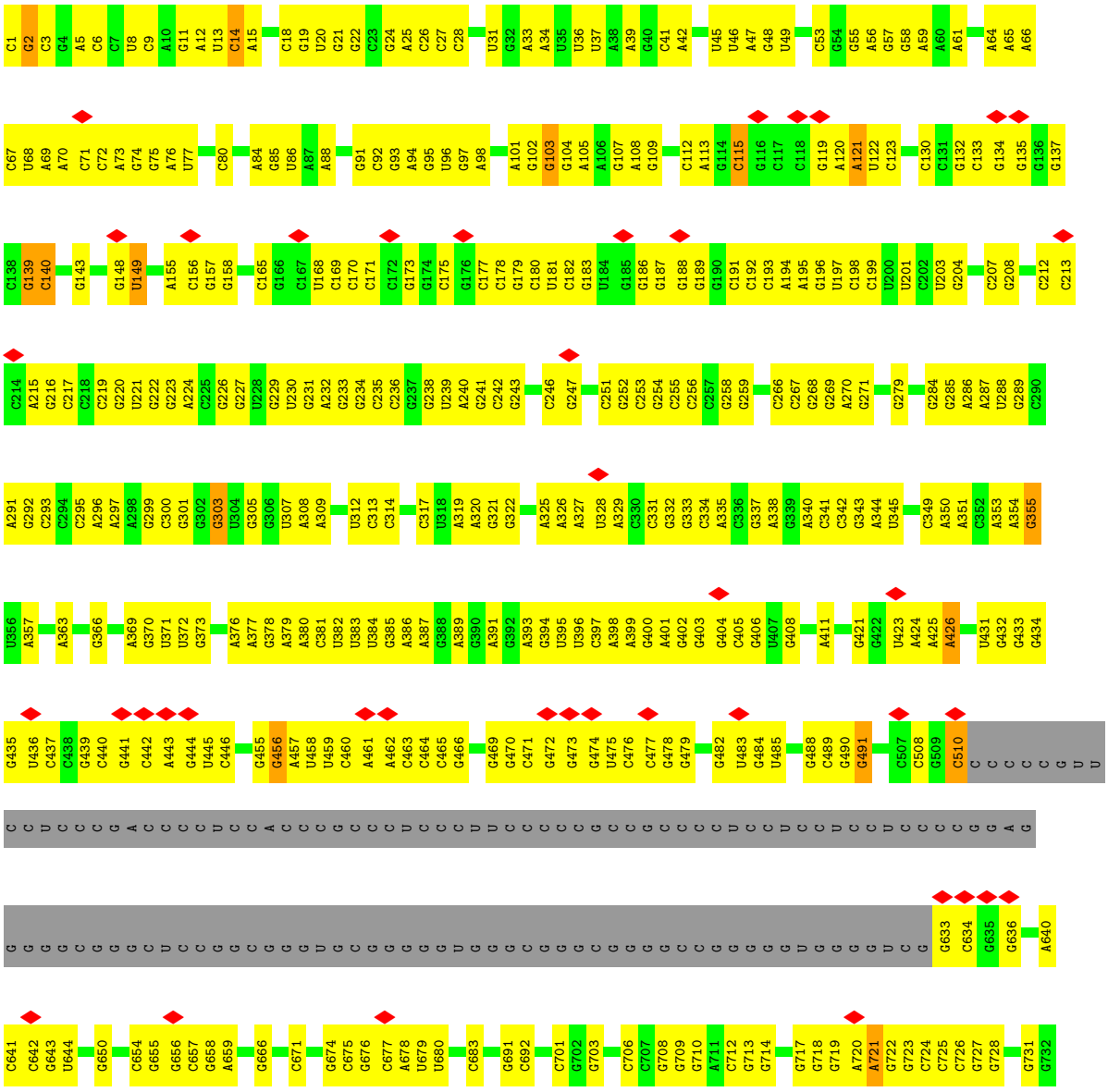
Mol	Chain	Residues	Atoms		AltConf
85	BB	1	Total	Mg	0
			1	1	

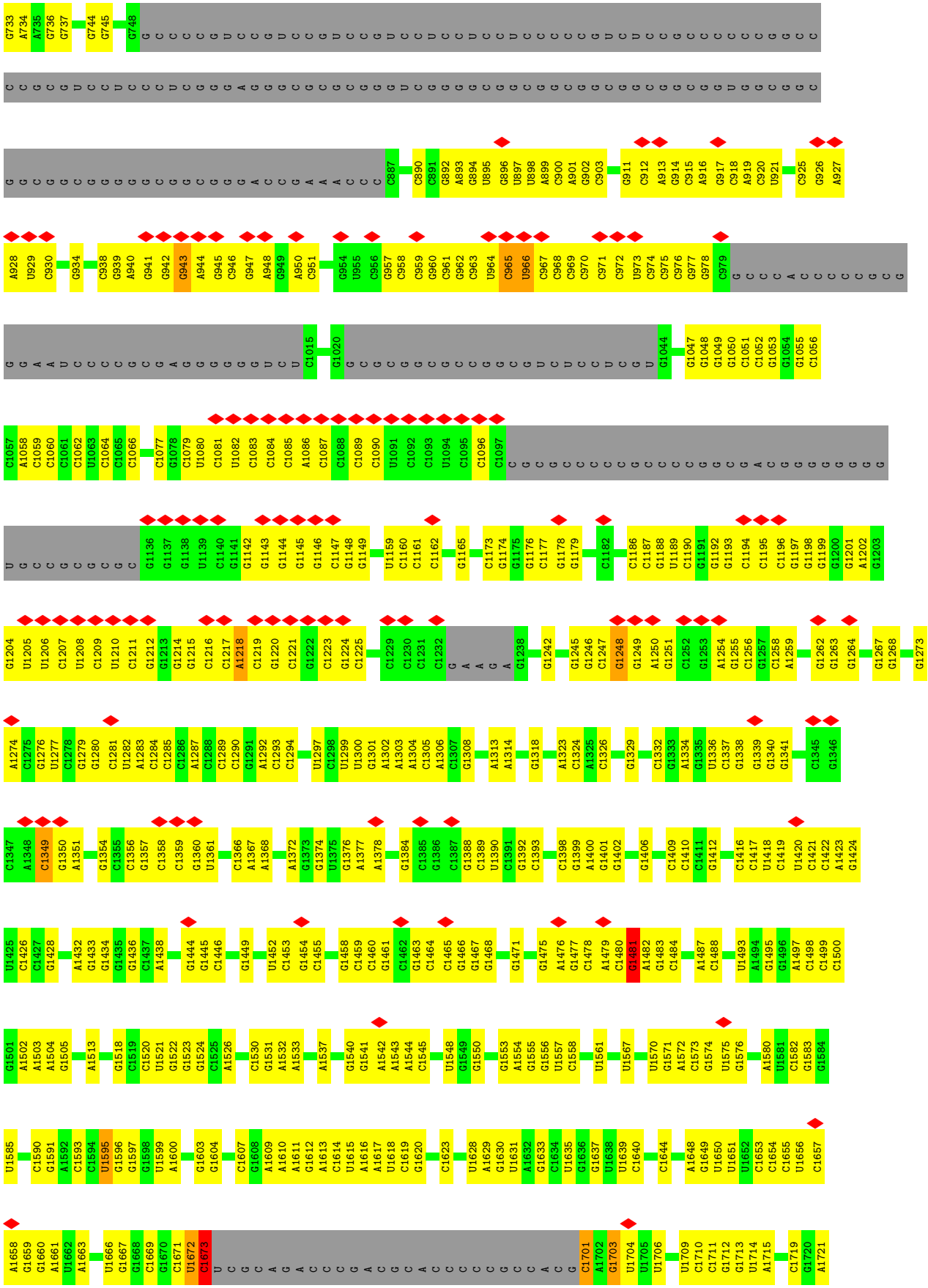
3 Residue-property plots (i)

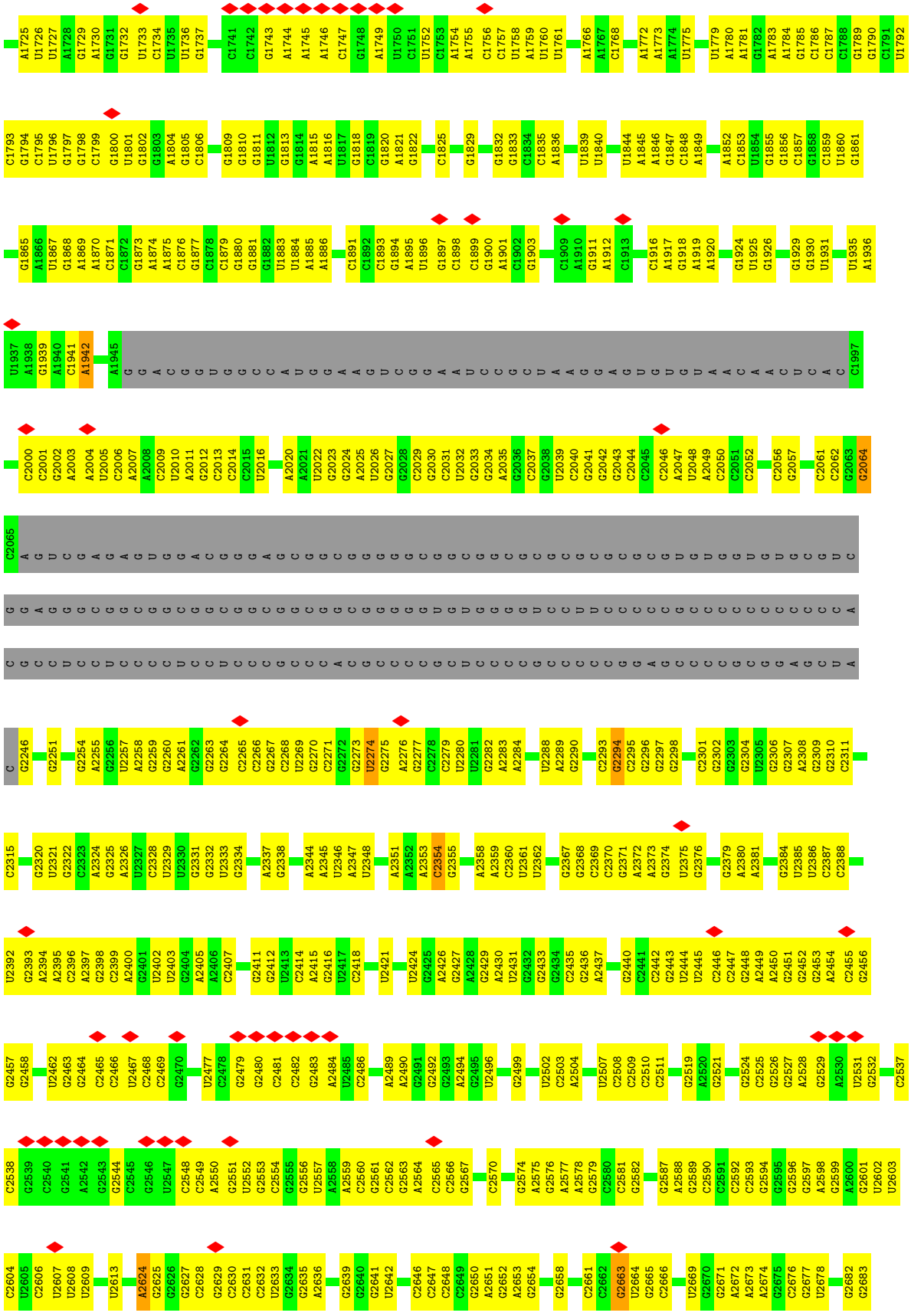
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

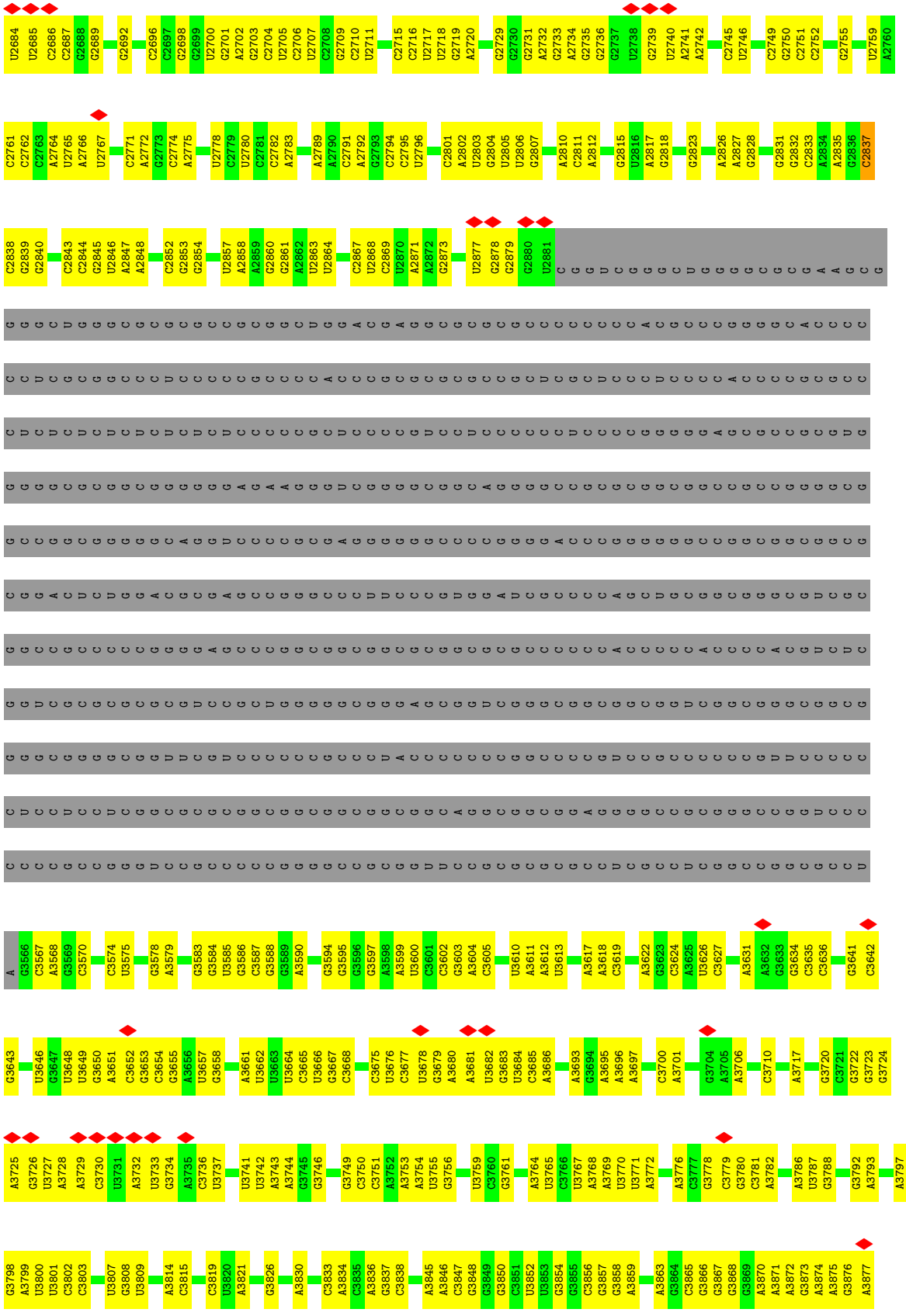
- Molecule 1: 28S Ribosomal RNA

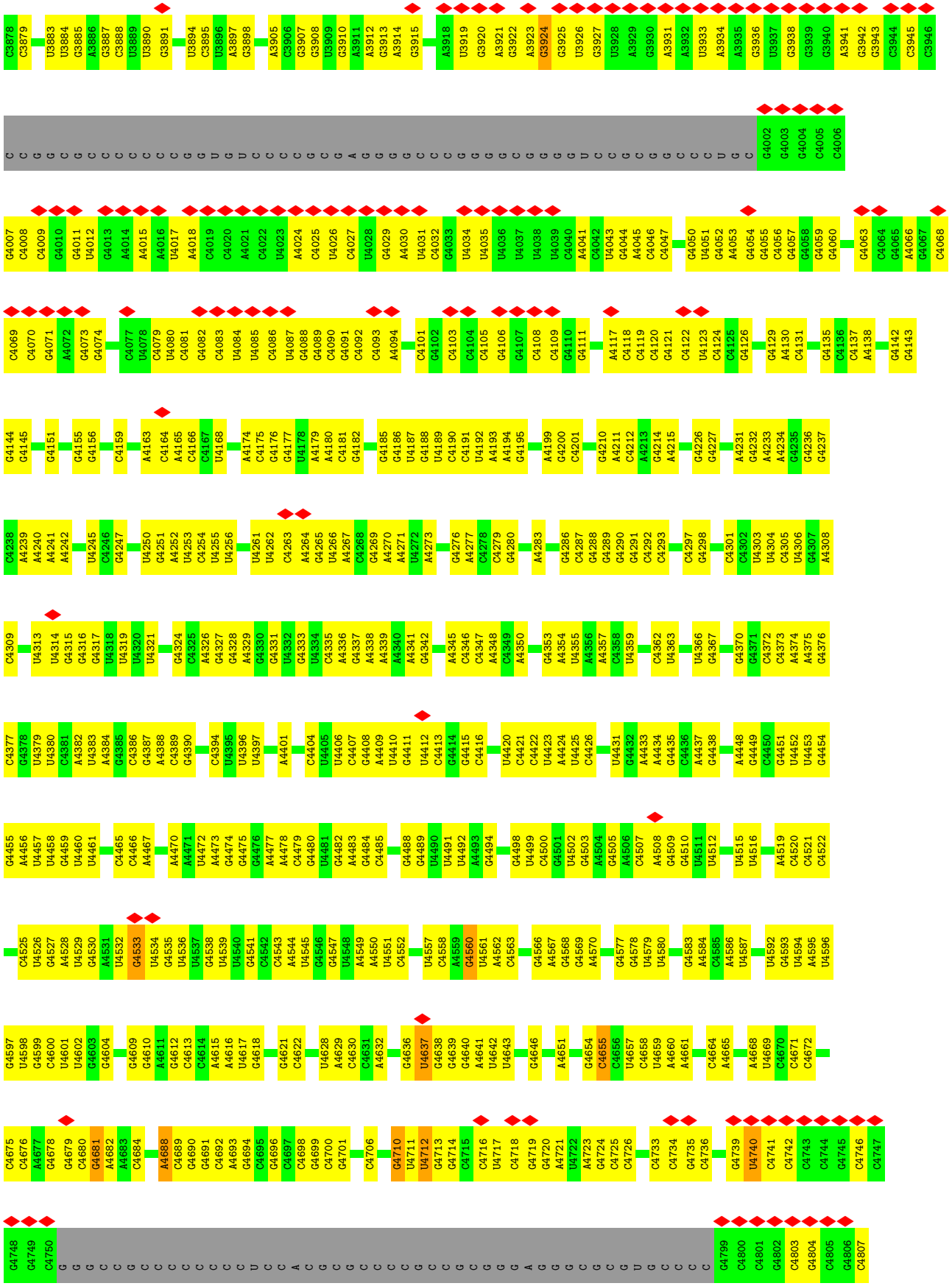
Chain A2:

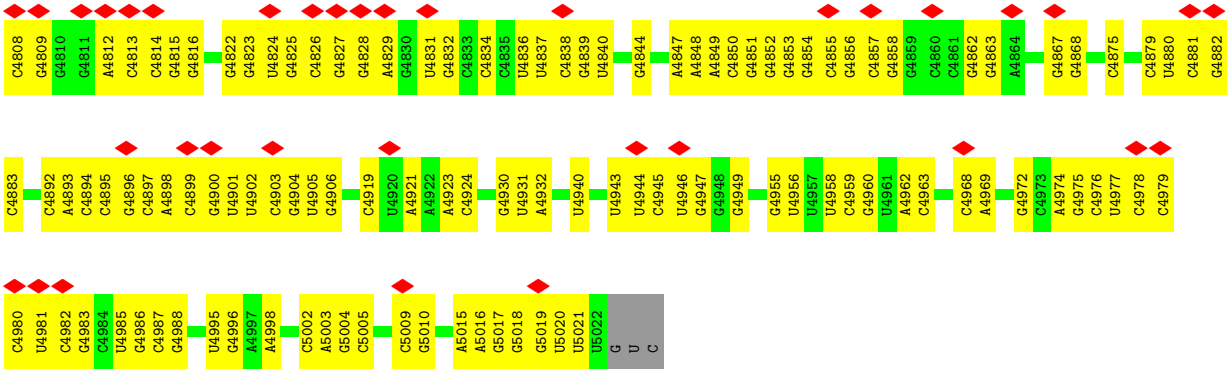






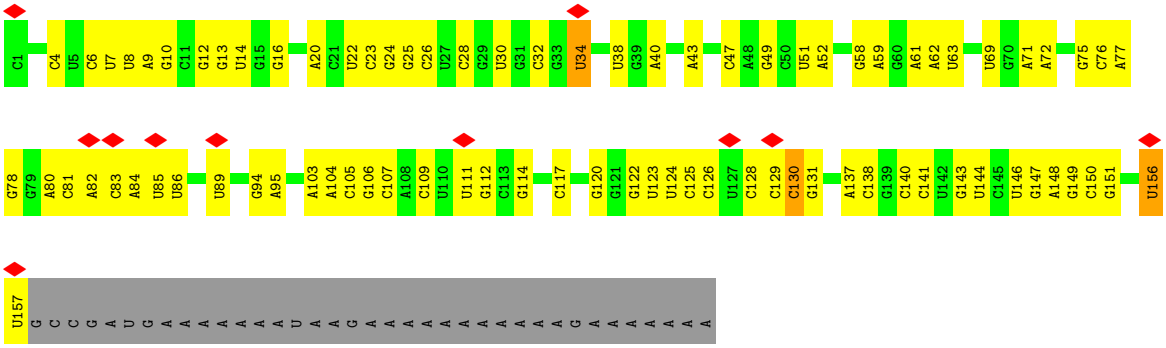






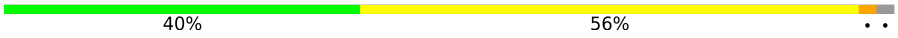
• Molecule 2: 5.8S Ribosomal RNA

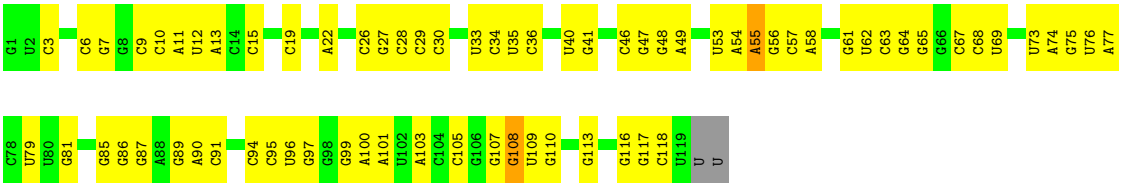
Chain A3:



• Molecule 3: 5S Ribosomal RNA

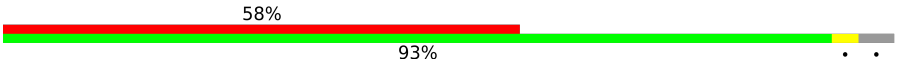
Chain A4:

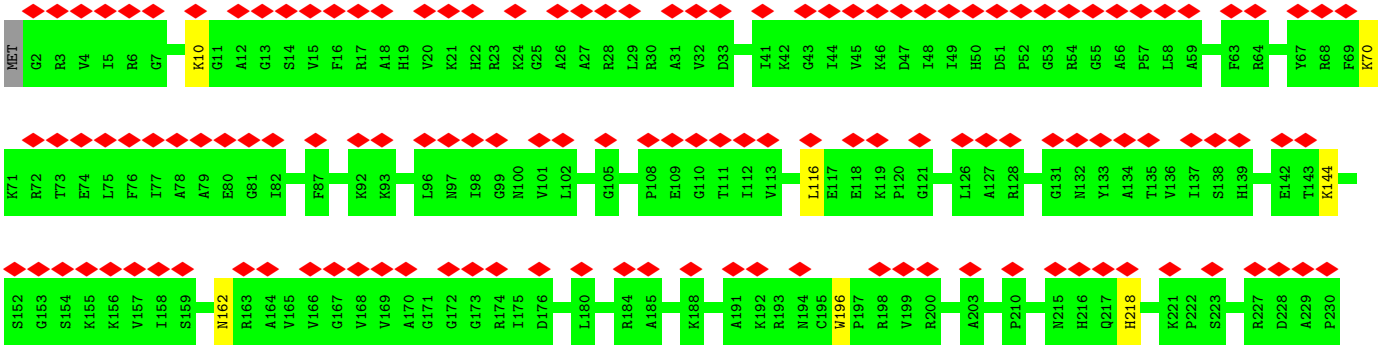


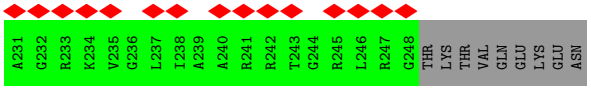


• Molecule 4: 60S RIBOSOMAL PROTEIN L8

Chain AA:

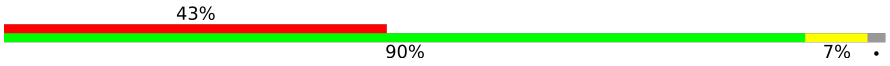


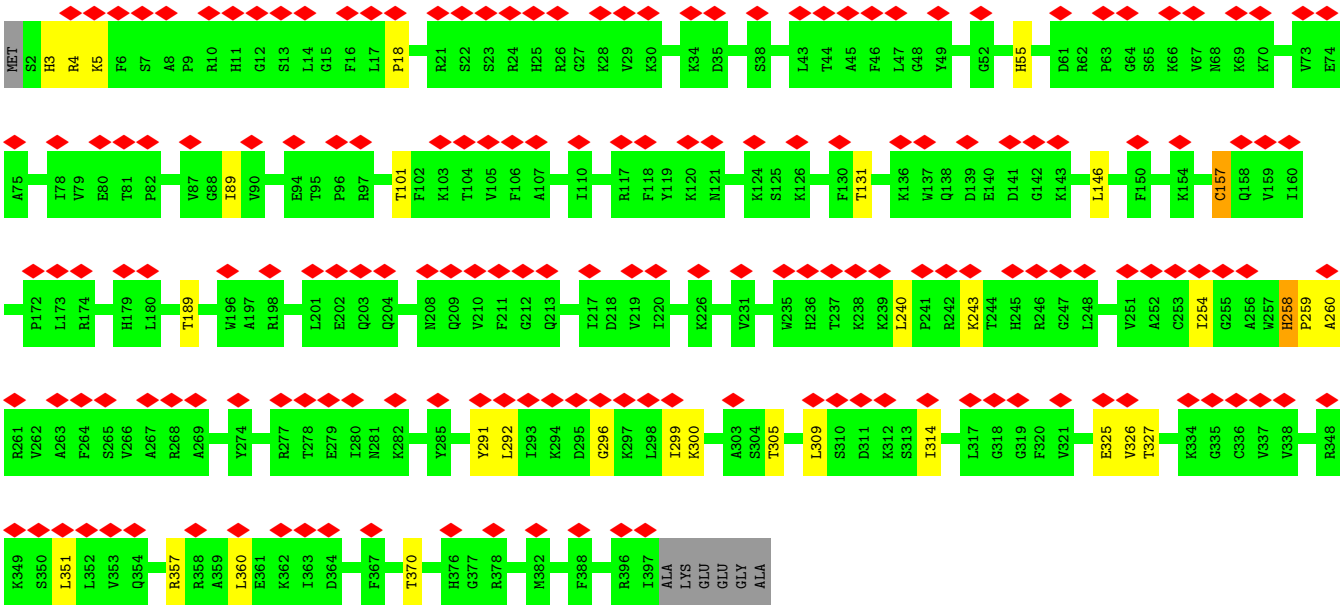




• Molecule 5: 60S RIBOSOMAL PROTEIN L3

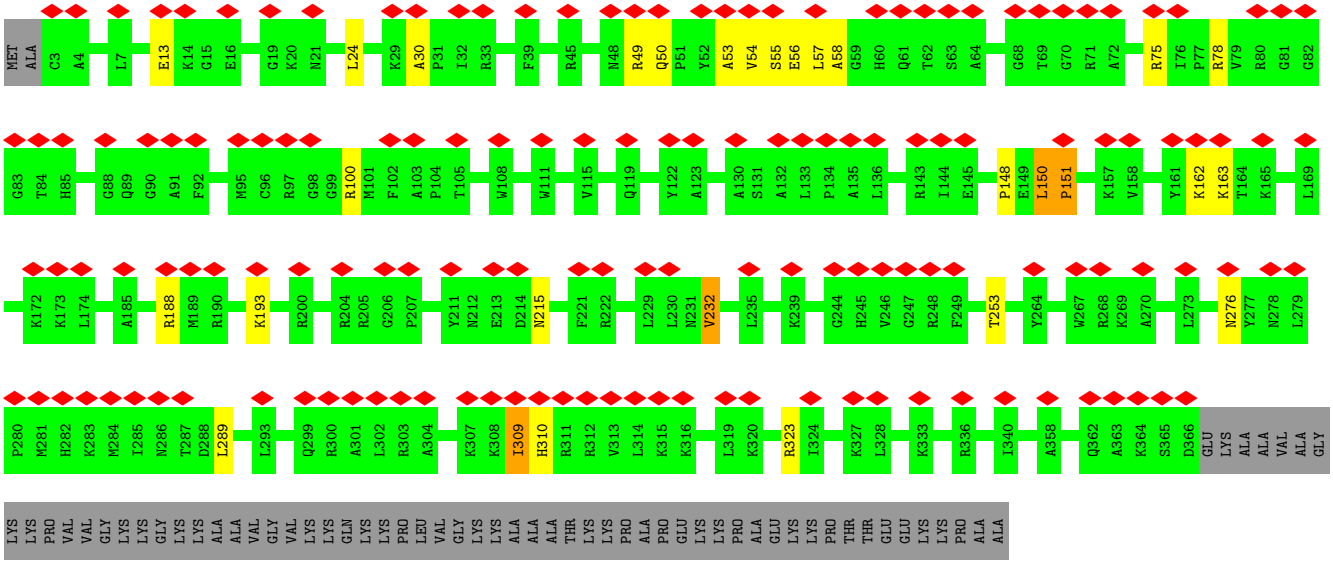
Chain AB:





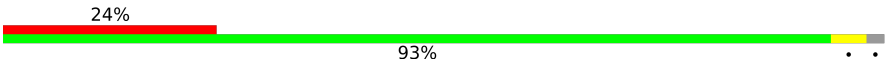
• Molecule 6: 60S RIBOSOMAL PROTEIN L4

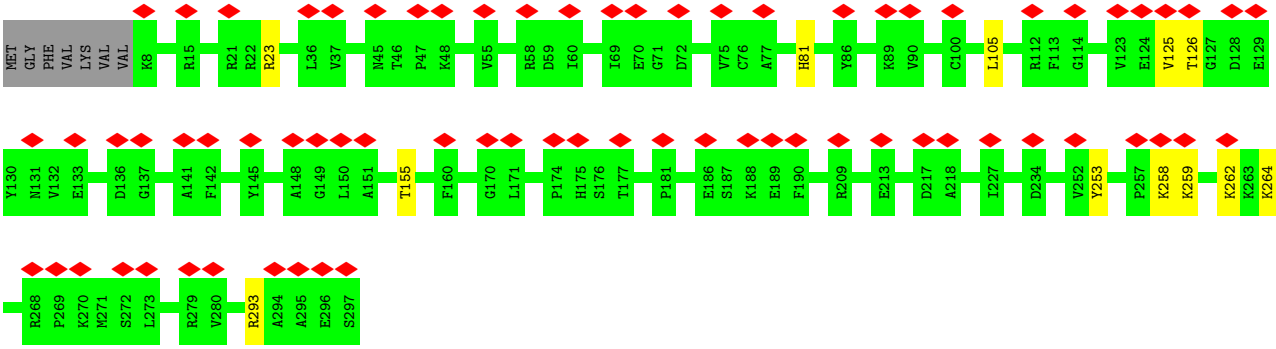
Chain AC:



• Molecule 7: 60S RIBOSOMAL PROTEIN L5

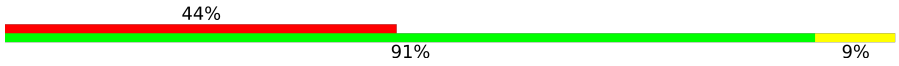
Chain AD:

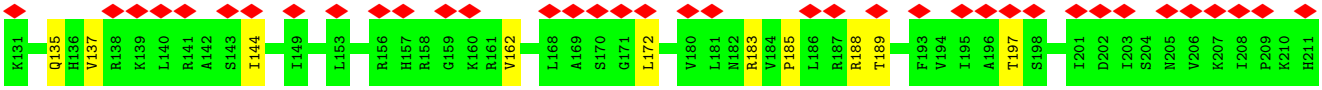


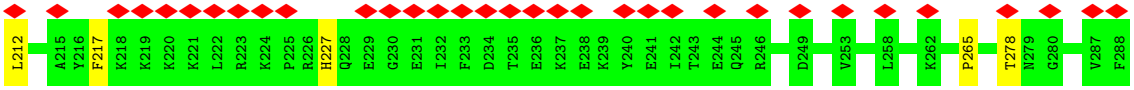


• Molecule 8: 60S RIBOSOMAL PROTEIN L6

Chain AE:

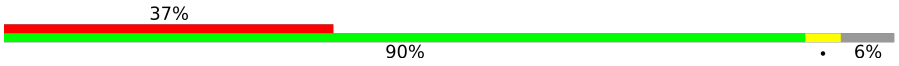


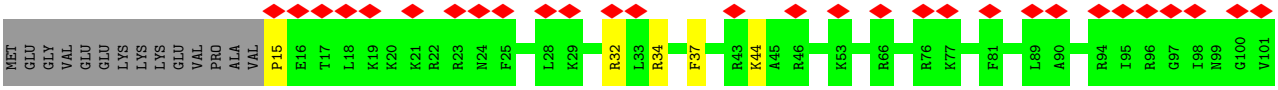


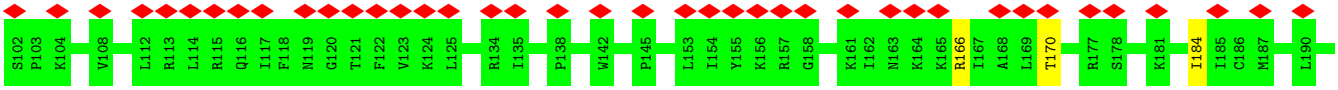


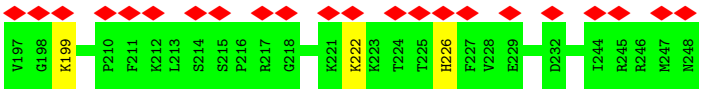
• Molecule 9: 60S RIBOSOMAL PROTEIN L7

Chain AF:



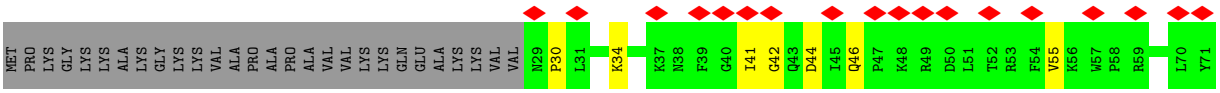


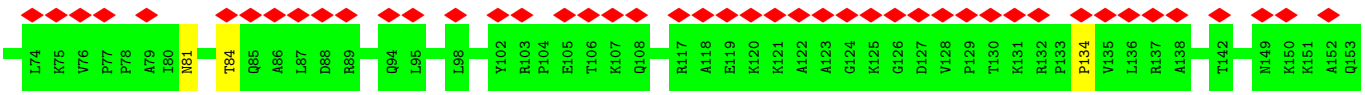


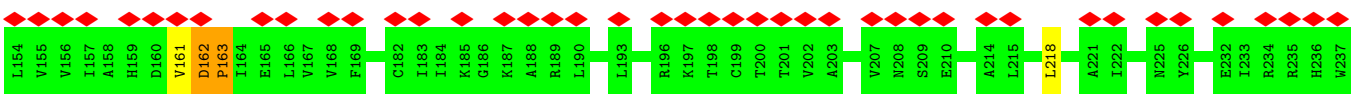


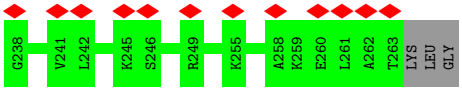
• Molecule 10: 60S RIBOSOMAL PROTEIN L7A

Chain AG:



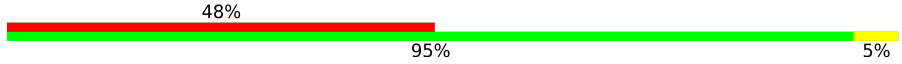


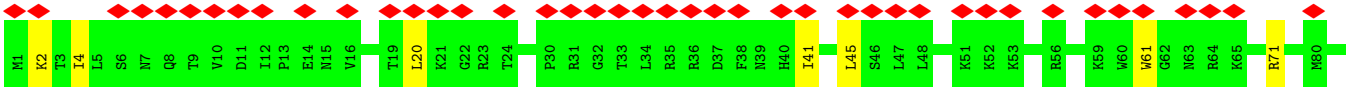


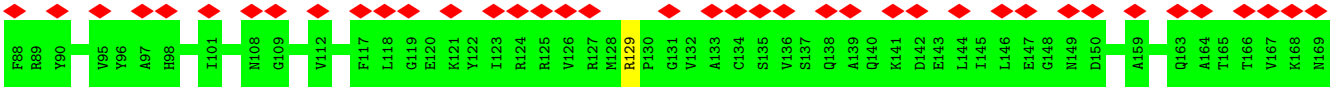


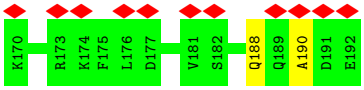
• Molecule 11: 60S RIBOSOMAL PROTEIN L9

Chain AH:



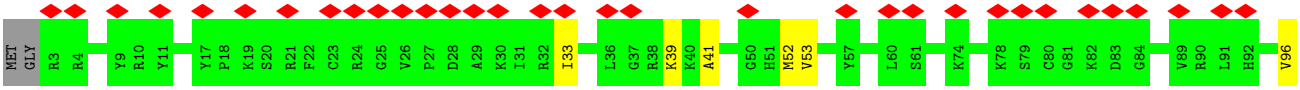


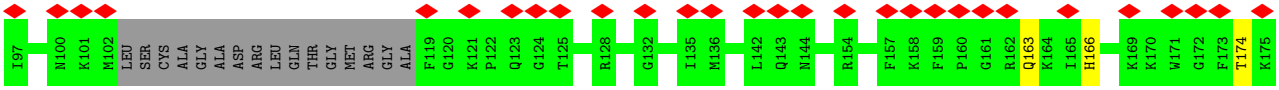


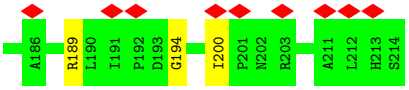


• Molecule 12: 60S RIBOSOMAL PROTEIN L10

Chain AI:

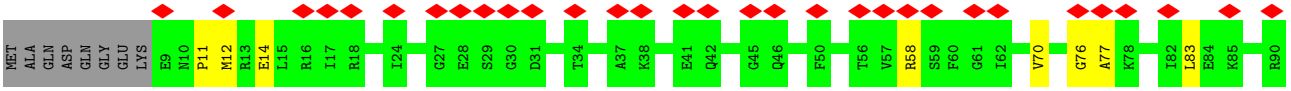


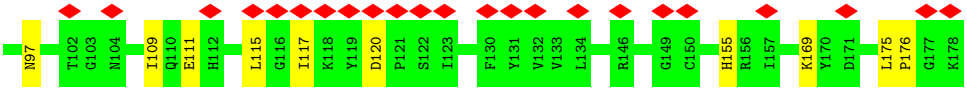




• Molecule 13: 60S RIBOSOMAL PROTEIN L11

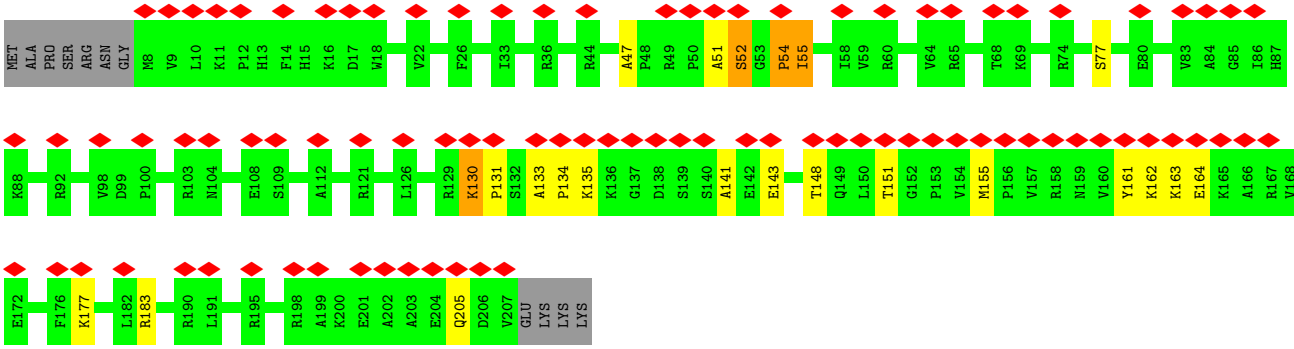
Chain AJ:





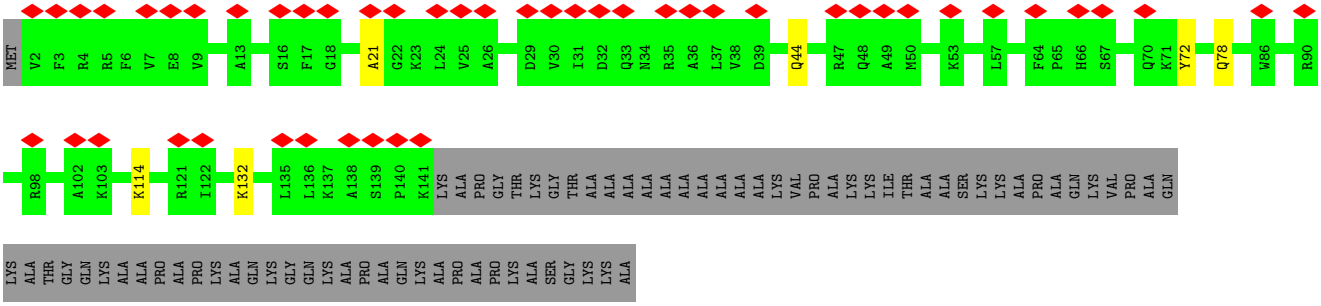
• Molecule 14: 60S RIBOSOMAL PROTEIN L13

Chain AL:



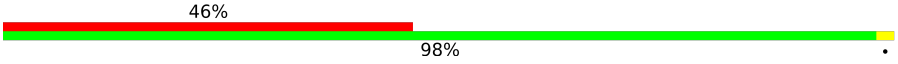
• Molecule 15: 60S RIBOSOMAL PROTEIN L14

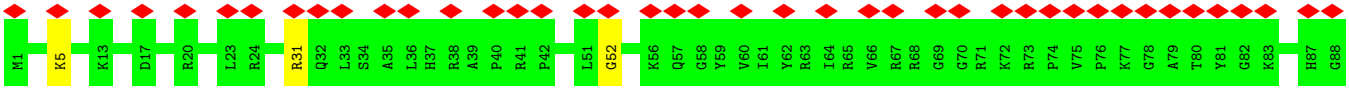
Chain AM:

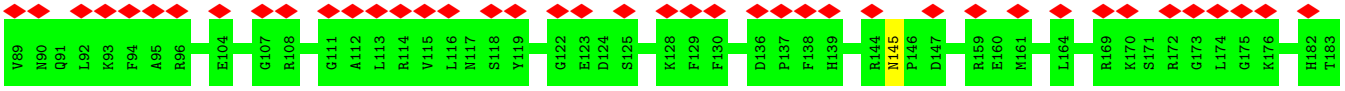


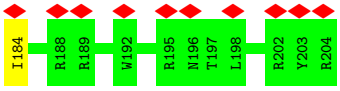
• Molecule 16: 60S RIBOSOMAL PROTEIN L15

Chain AN:



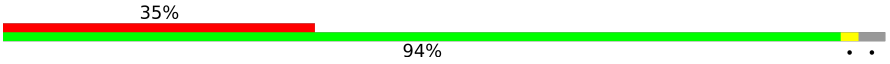


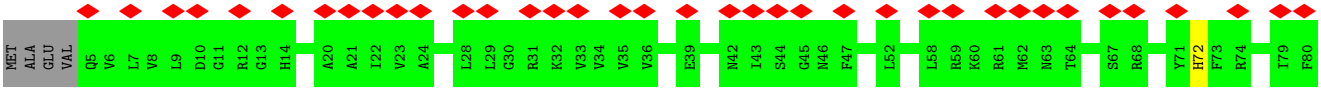


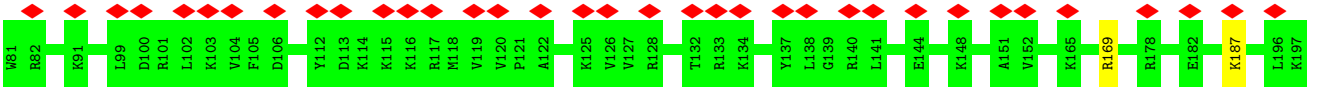


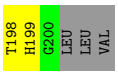
• Molecule 17: 60S RIBOSOMAL PROTEIN L13A

Chain AO:



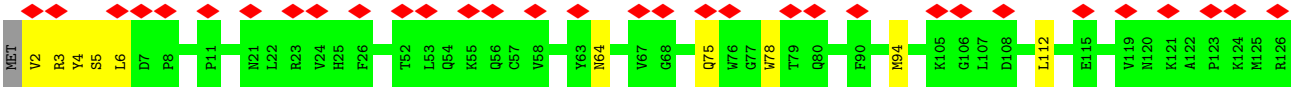


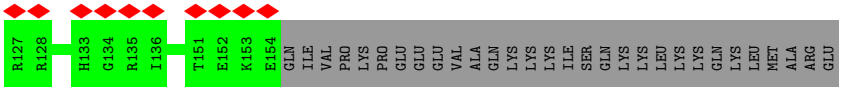




• Molecule 18: 60S RIBOSOMAL PROTEIN L17

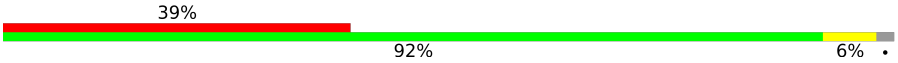
Chain AP:

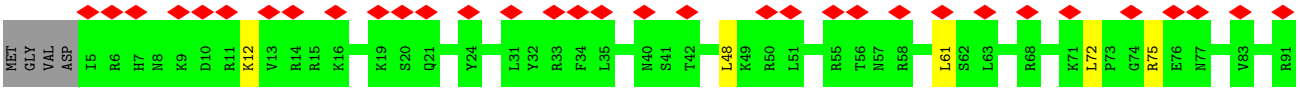


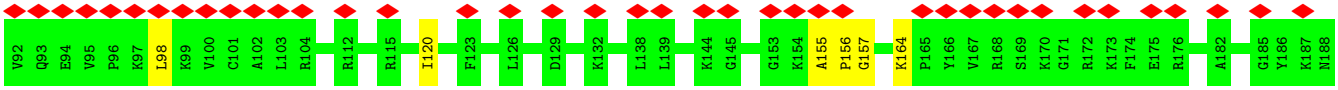


• Molecule 19: 60S RIBOSOMAL PROTEIN L18

Chain AQ:

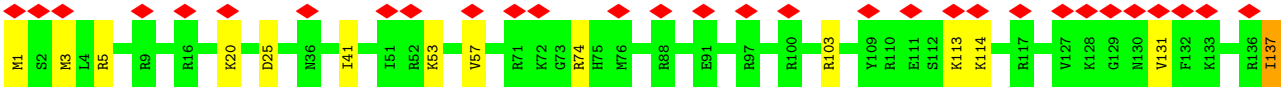


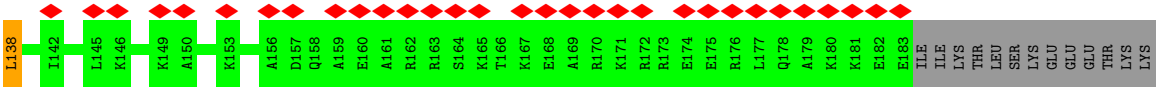




• Molecule 20: 60S RIBOSOMAL PROTEIN L19

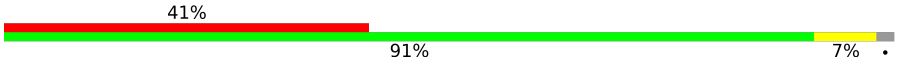
Chain AR:

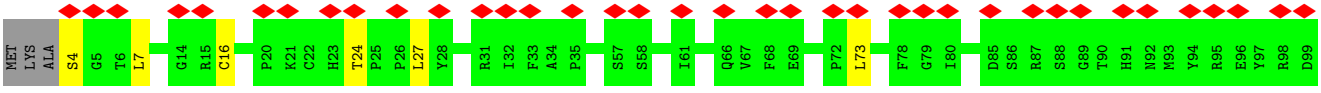


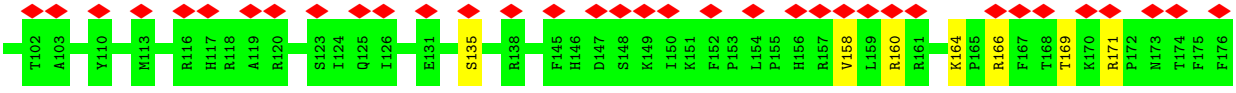


• Molecule 21: 60S RIBOSOMAL PROTEIN L18A

Chain AS:

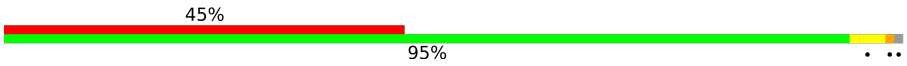


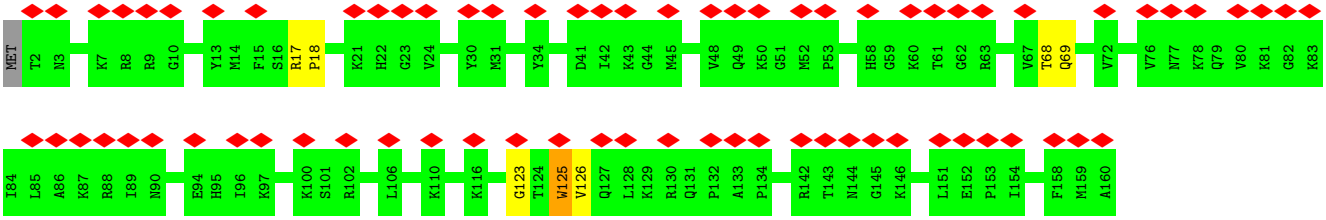




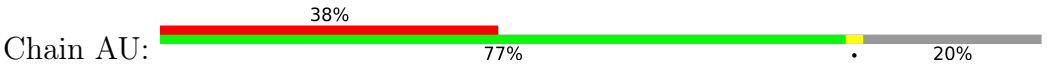
• Molecule 22: 60S RIBOSOMAL PROTEIN L21

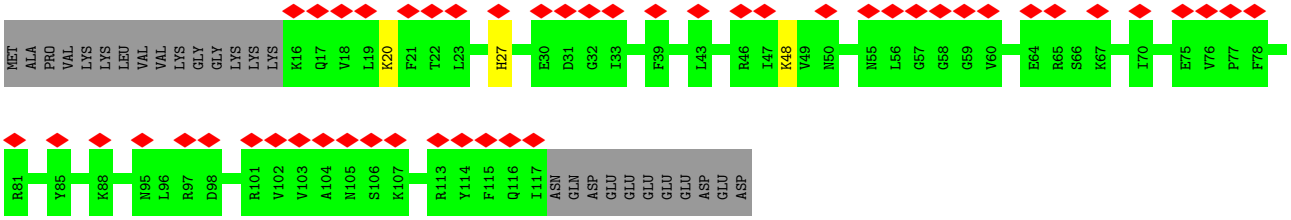
Chain AT:



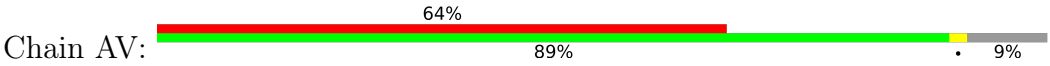


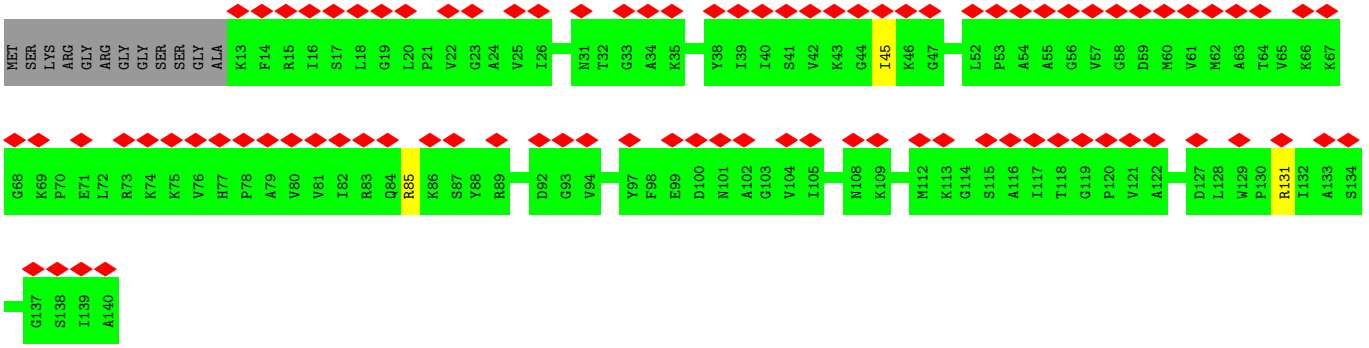
• Molecule 23: 60S RIBOSOMAL PROTEIN L22



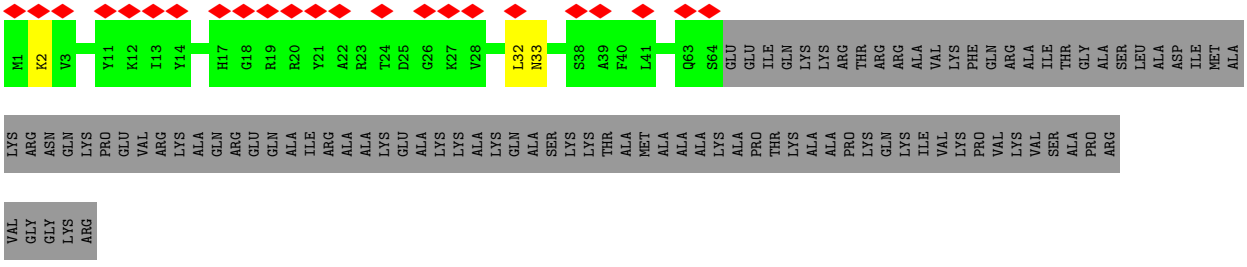


• Molecule 24: 60S RIBOSOMAL PROTEIN L23

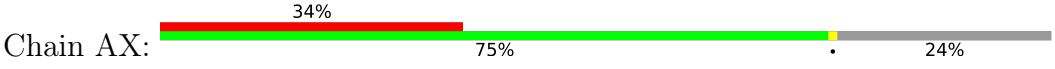


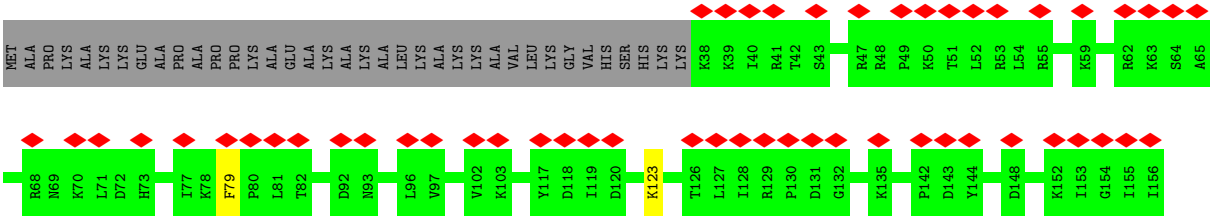


• Molecule 25: 60S RIBOSOMAL PROTEIN L24



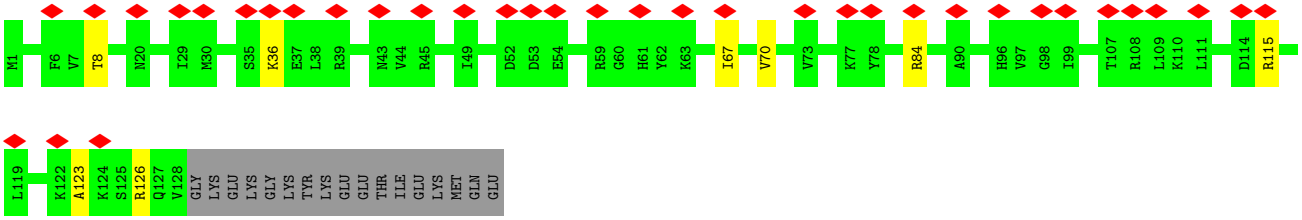
• Molecule 26: 60S RIBOSOMAL PROTEIN L23A





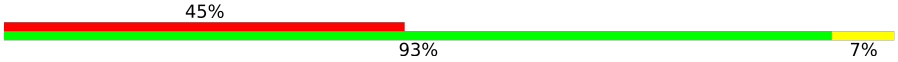
• Molecule 27: 60S RIBOSOMAL PROTEIN L26

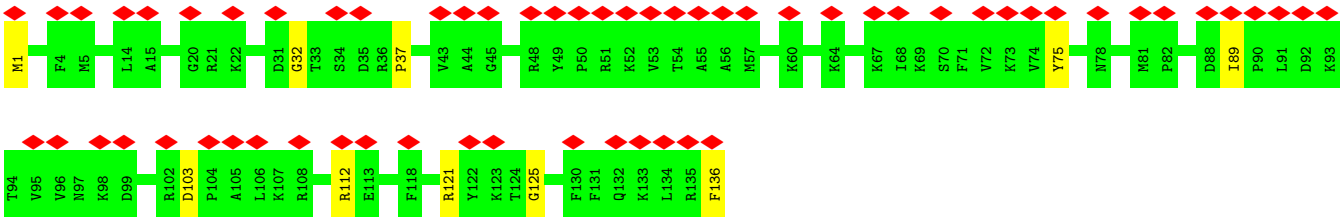
Chain AY:



• Molecule 28: 60S RIBOSOMAL PROTEIN L27

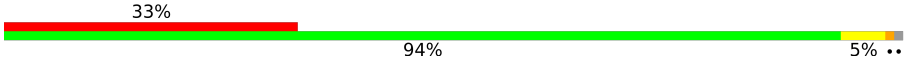
Chain AZ:

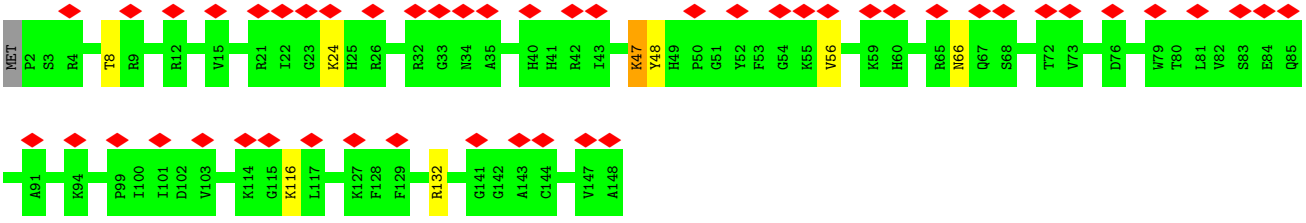




• Molecule 29: 60S RIBOSOMAL PROTEIN L27A

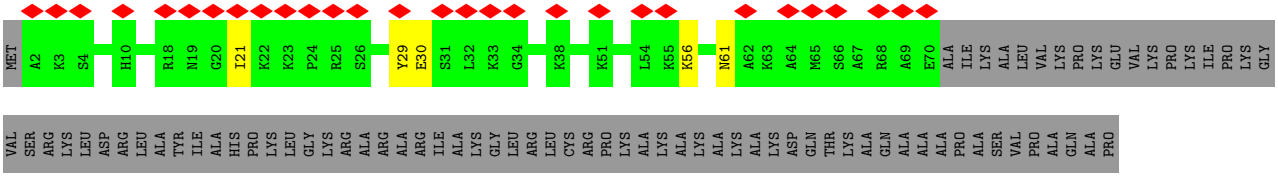
Chain Aa:





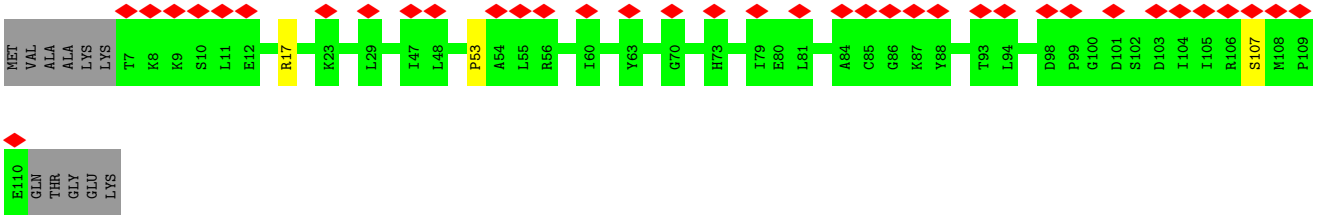
• Molecule 30: 60S RIBOSOMAL PROTEIN L29

Chain Ab:



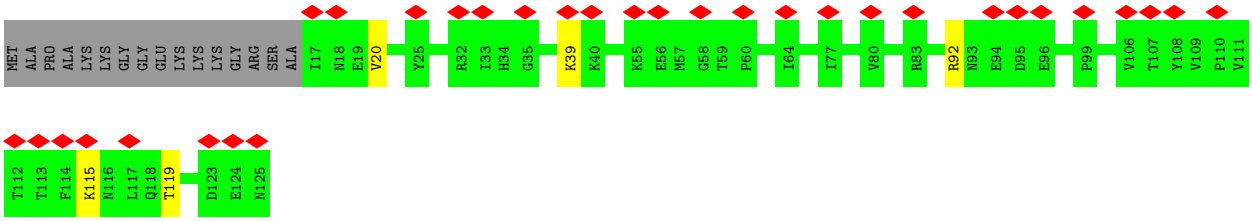
• Molecule 31: 60S RIBOSOMAL PROTEIN L30

Chain Ac:



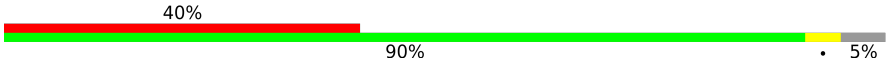
• Molecule 32: 60S RIBOSOMAL PROTEIN L31

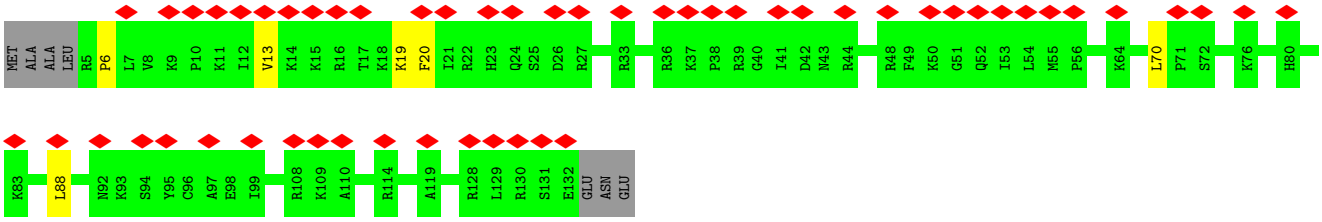
Chain Ad:



• Molecule 33: 60S RIBOSOMAL PROTEIN L32

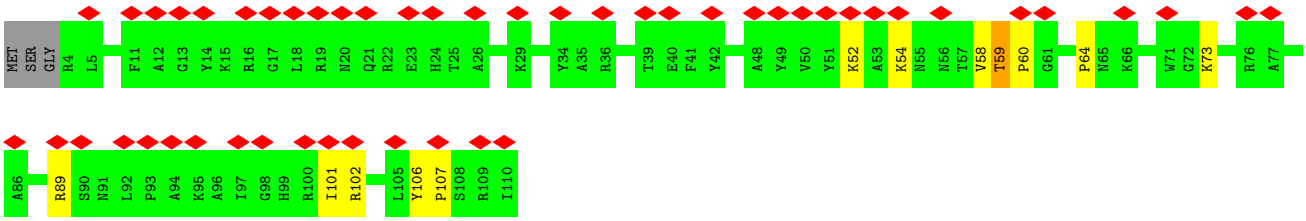
Chain Ae:





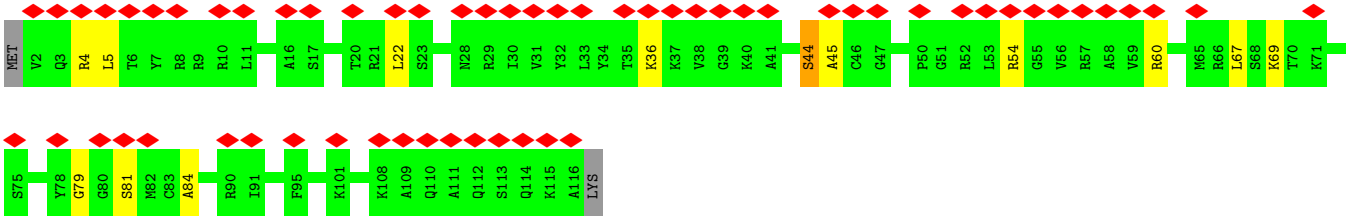
• Molecule 34: 60S RIBOSOMAL PROTEIN L35A

Chain Af:



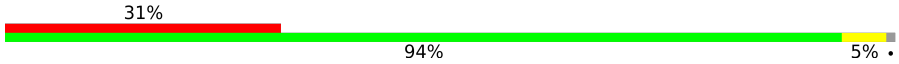
• Molecule 35: 60S RIBOSOMAL PROTEIN L34

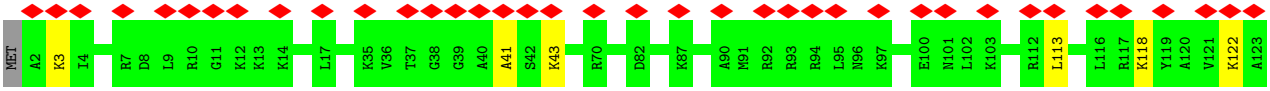
Chain Ag:



• Molecule 36: 60S RIBOSOMAL PROTEIN L35

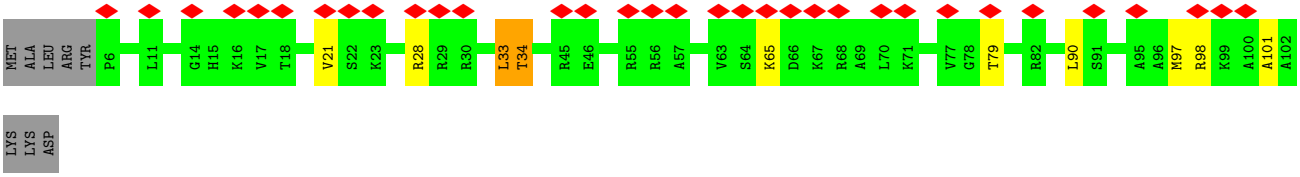
Chain Ah:





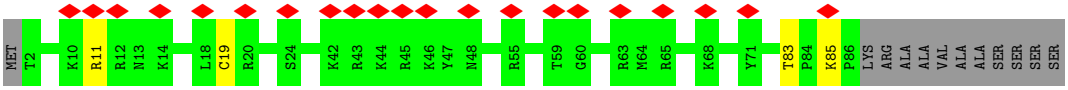
• Molecule 37: 60S RIBOSOMAL PROTEIN L36

Chain Ai:



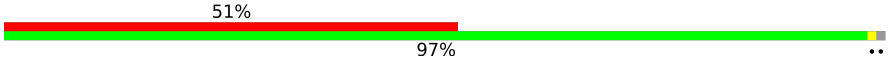
• Molecule 38: 60S RIBOSOMAL PROTEIN L37

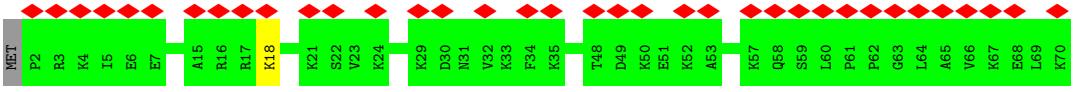
Chain Aj:



• Molecule 39: 60S RIBOSOMAL PROTEIN L38

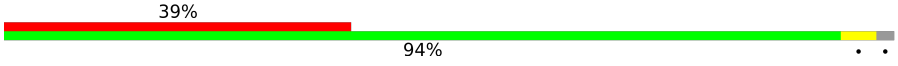
Chain Ak:

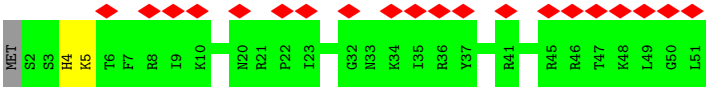




• Molecule 40: 60S RIBOSOMAL PROTEIN L39

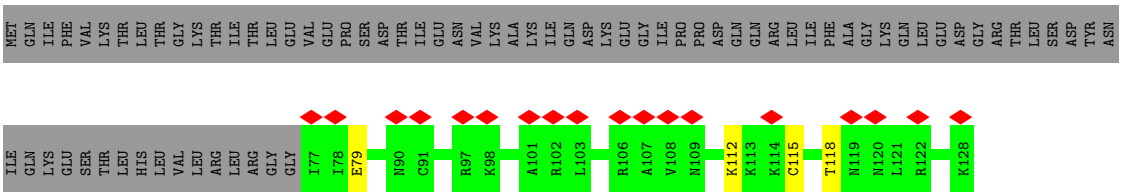
Chain Al:



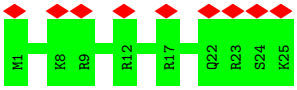


• Molecule 41: UBIQUITIN-60S RIBOSOMAL PROTEIN L40

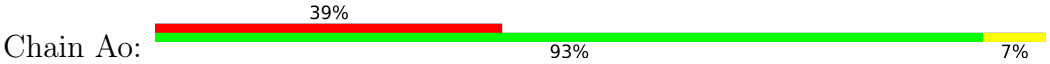
Chain Am:

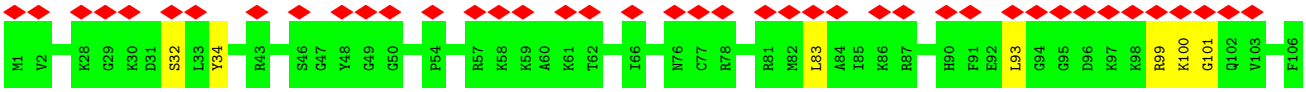


• Molecule 42: 60S RIBOSOMAL PROTEIN L41

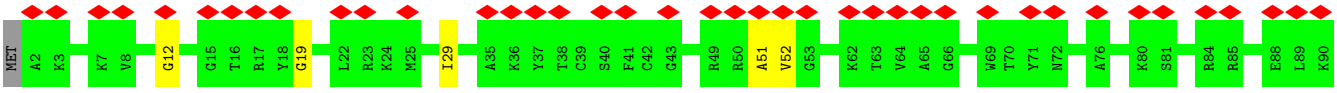


• Molecule 43: 60S RIBOSOMAL PROTEIN L36A

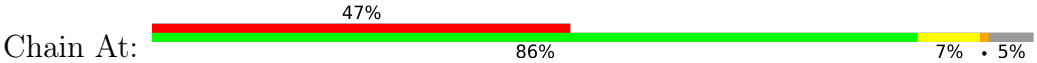


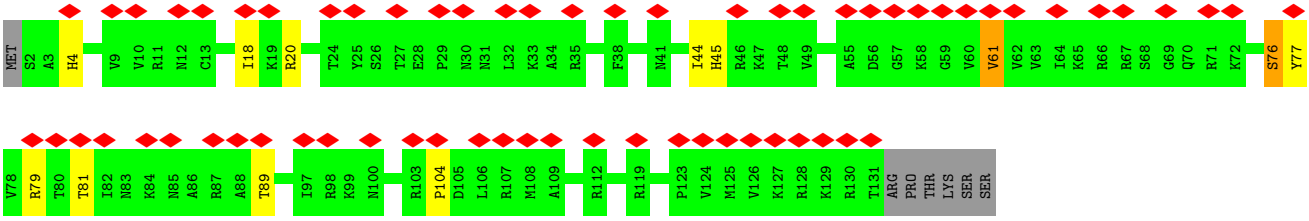


• Molecule 44: 60S RIBOSOMAL PROTEIN L37A

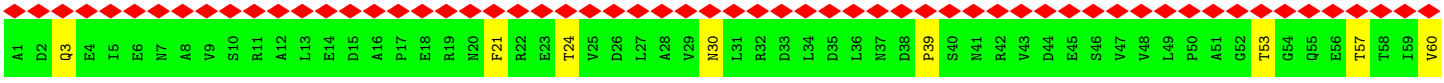


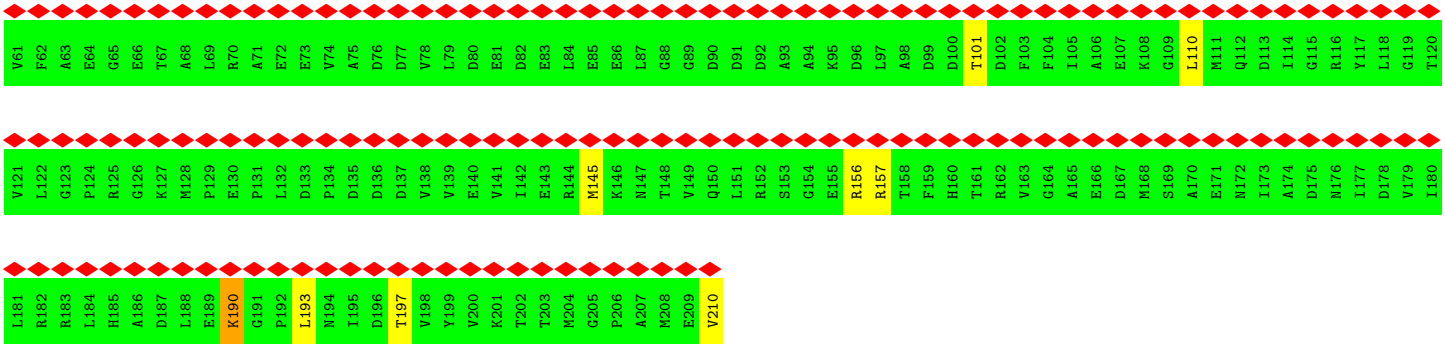
• Molecule 45: 60S RIBOSOMAL PROTEIN L28





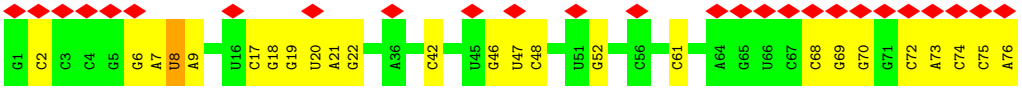
• Molecule 46: 60S RIBOSOMAL PROTEIN L10A





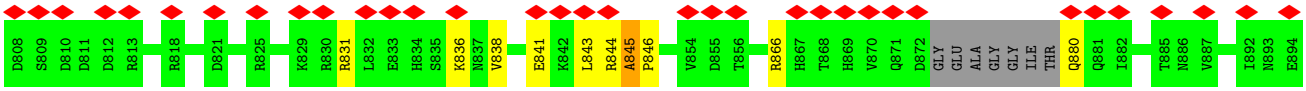
• Molecule 47: TRNA

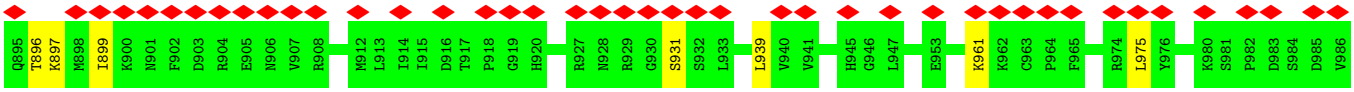
Chain BA:

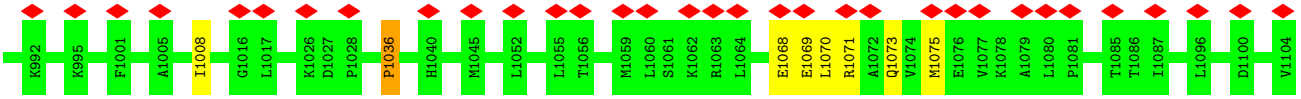


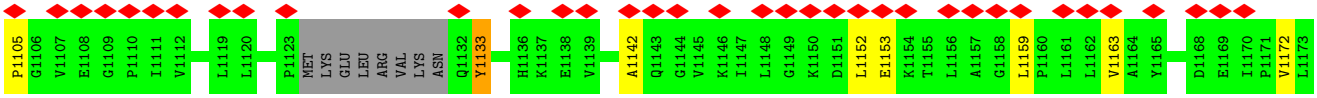
• Molecule 48: EIF5B

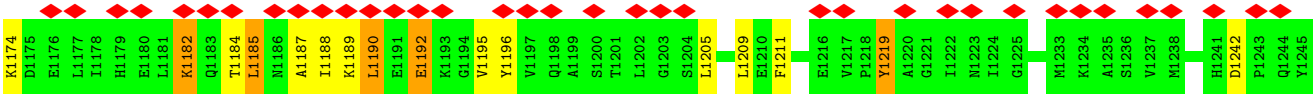
Chain BB:

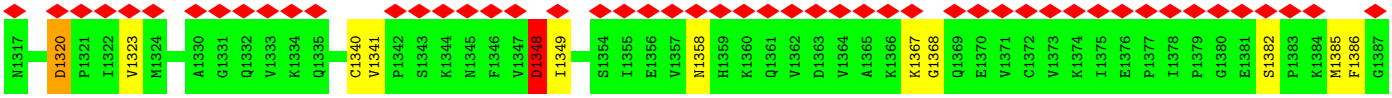


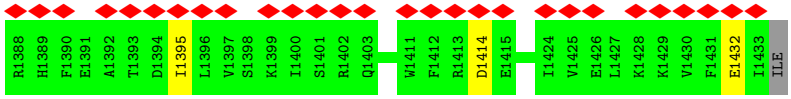






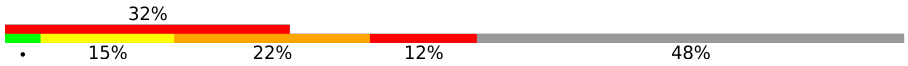


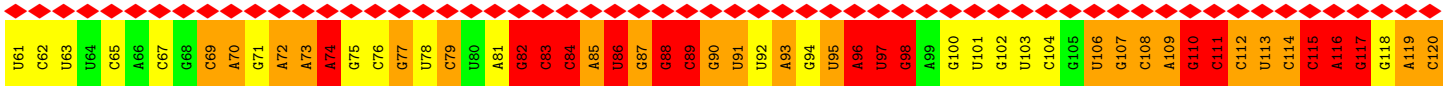


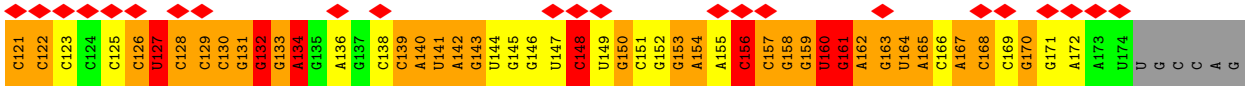


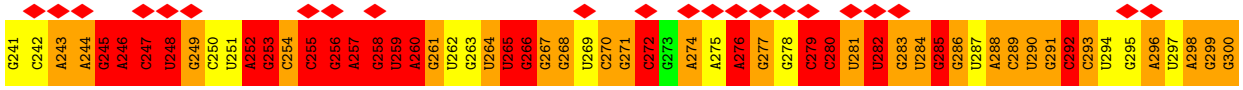
• Molecule 49: HCV-IRES

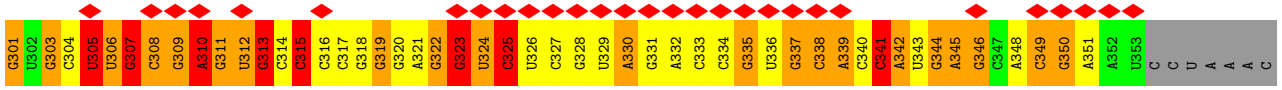
Chain BC:





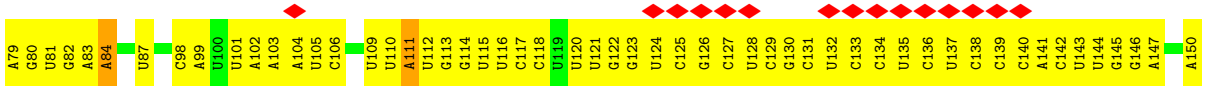


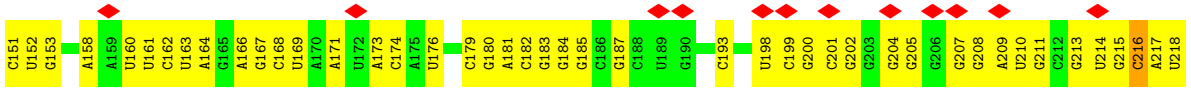


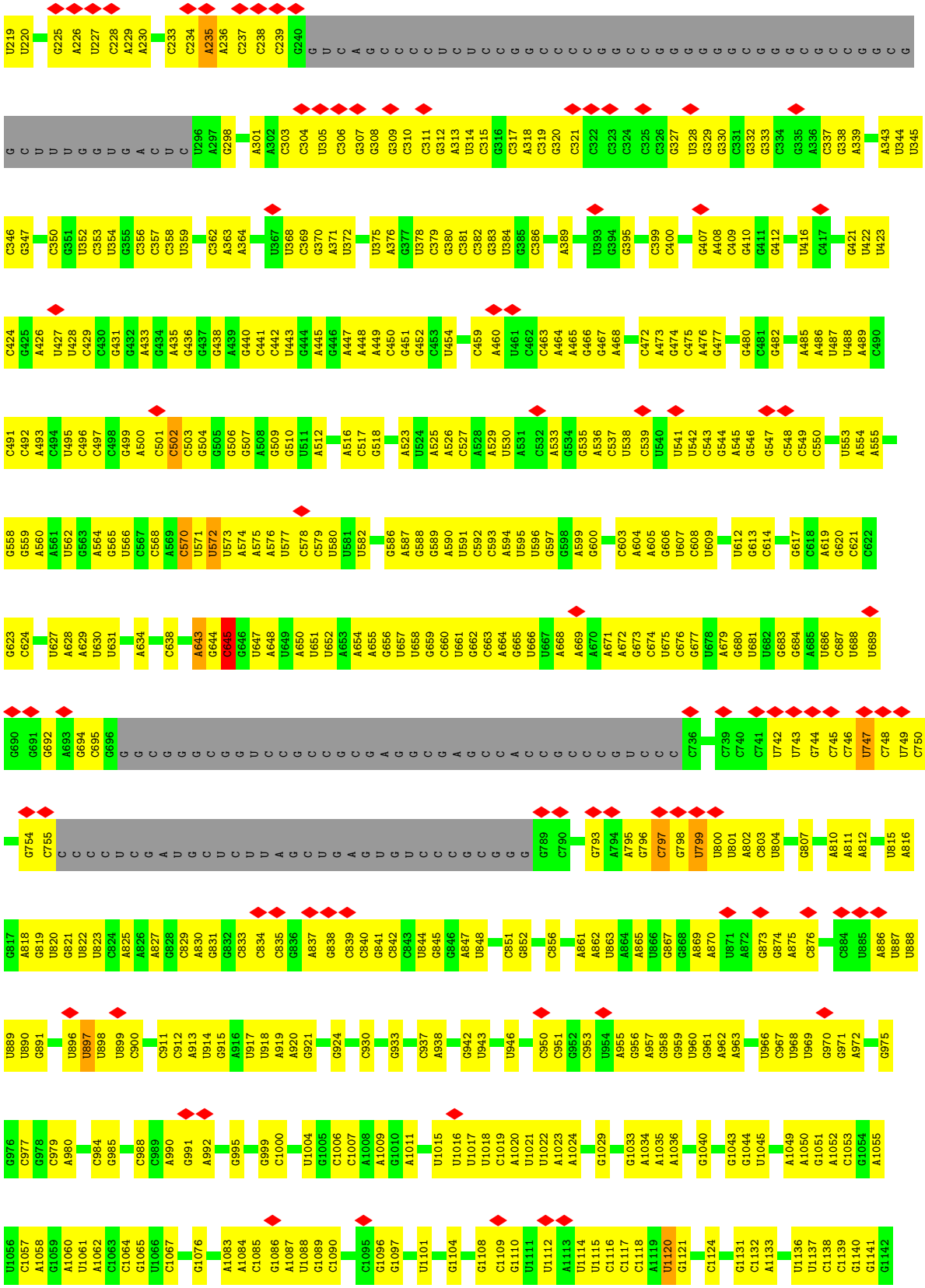


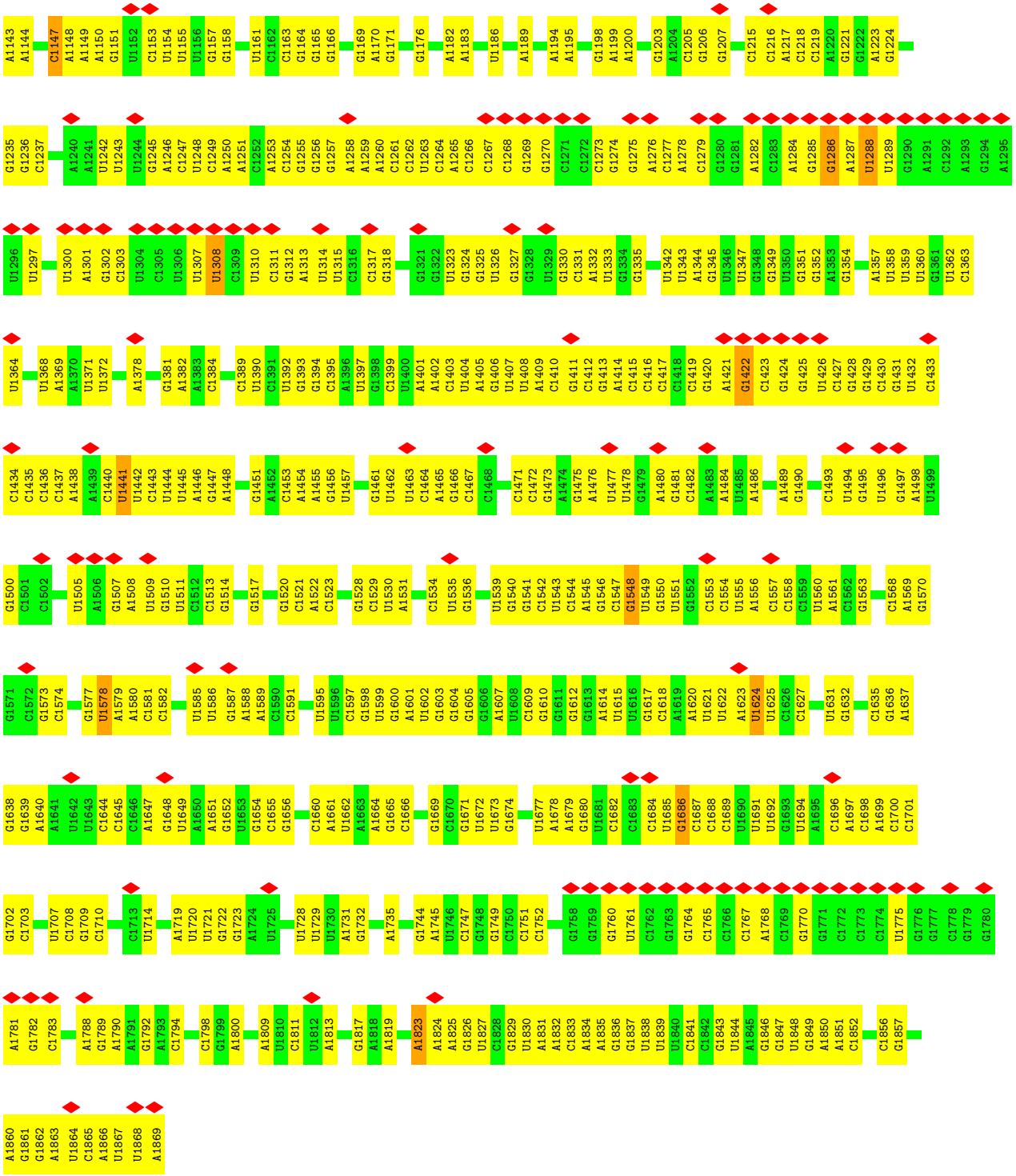
• Molecule 50: 18S Ribosomal RNA

Chain C1:



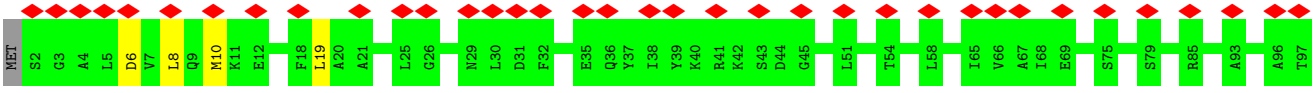


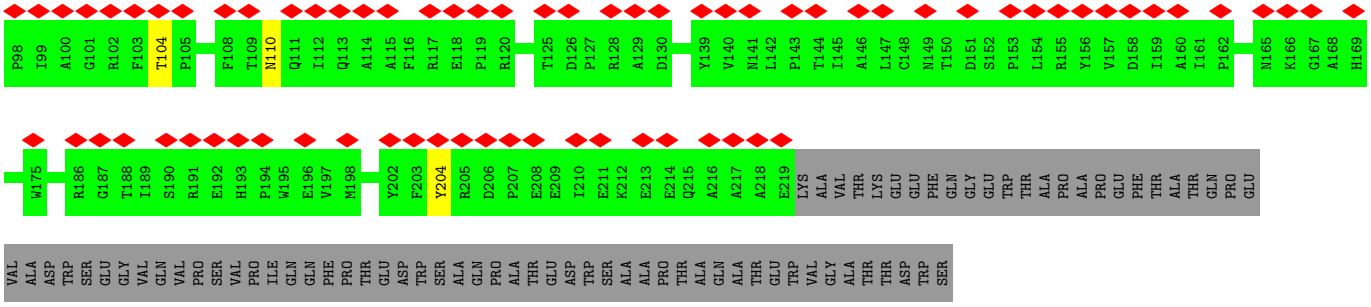




• Molecule 51: 40S RIBOSOMAL PROTEIN US2

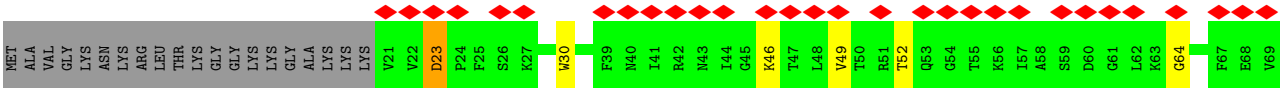
Chain CA:

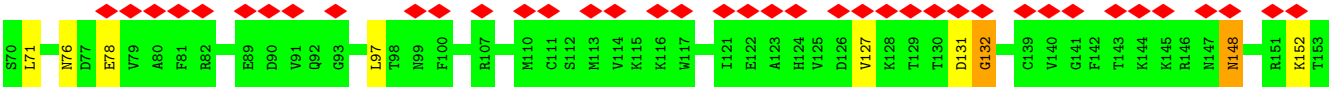


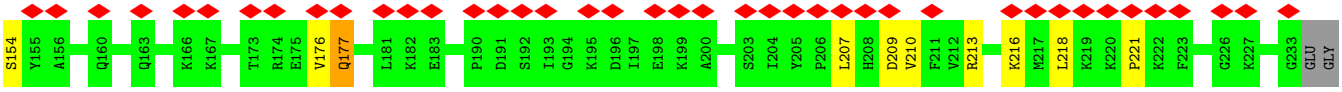


• Molecule 52: 40S RIBOSOMAL PROTEIN ES1

Chain CB:

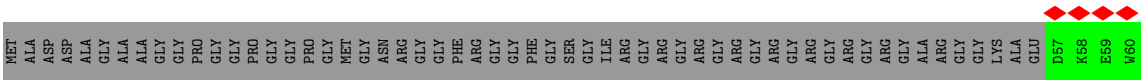


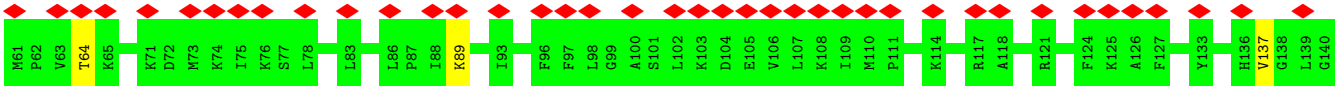


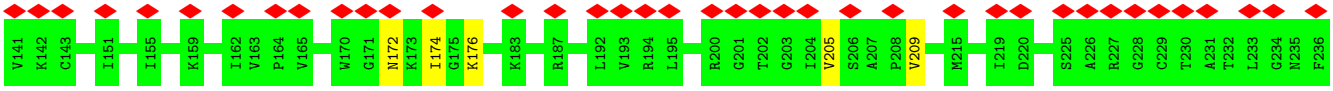


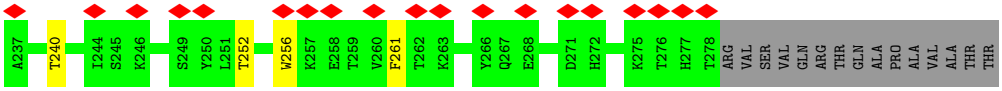
• Molecule 53: 40S RIBOSOMAL PROTEIN US5

Chain CC:



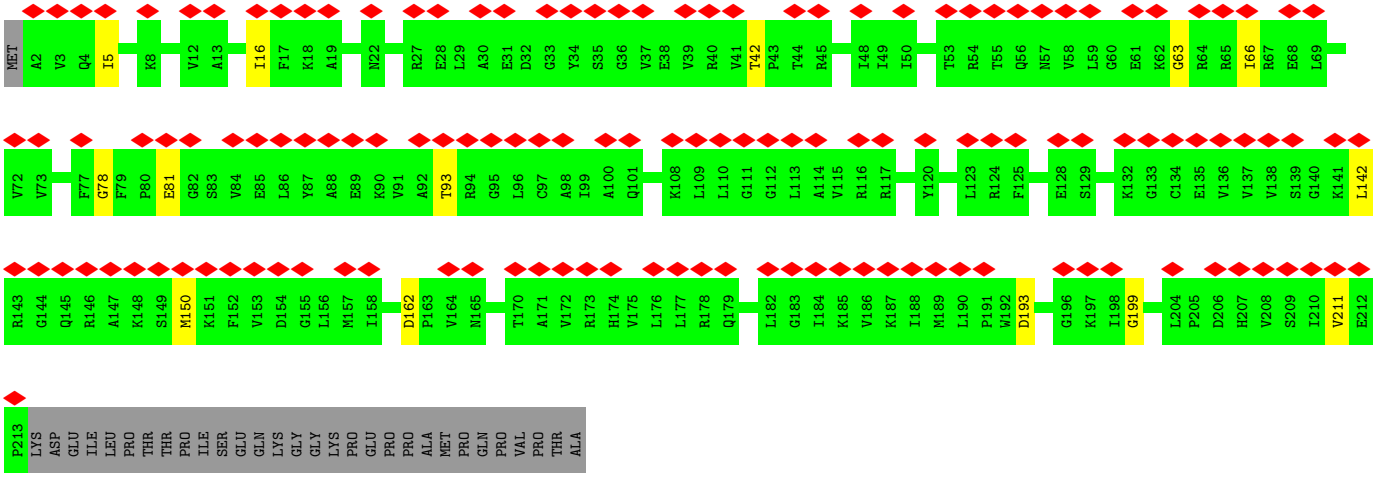






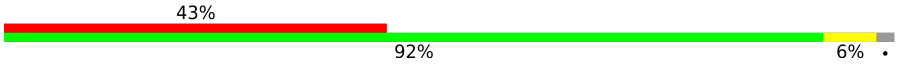
• Molecule 54: 40S RIBOSOMAL PROTEIN US3

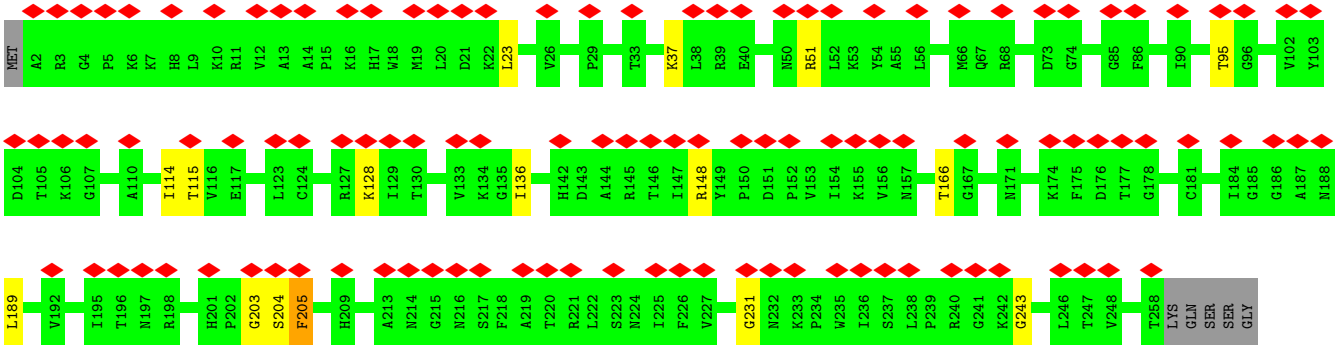
Chain CD:



• Molecule 55: 40S RIBOSOMAL PROTEIN ES4

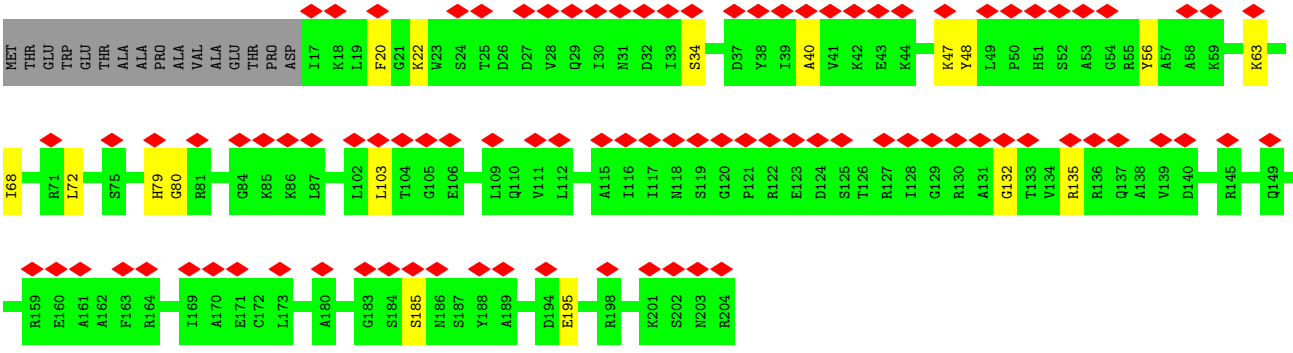
Chain CE:





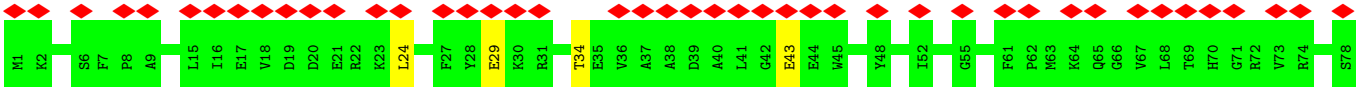
• Molecule 56: 40S RIBOSOMAL PROTEIN US7

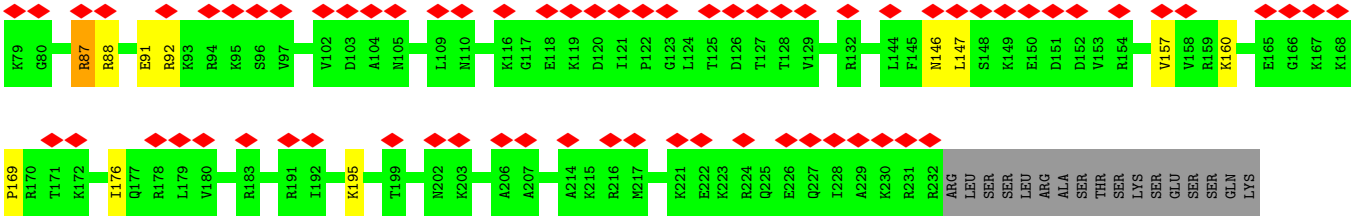
Chain CF:



• Molecule 57: 40S RIBOSOMAL PROTEIN ES6

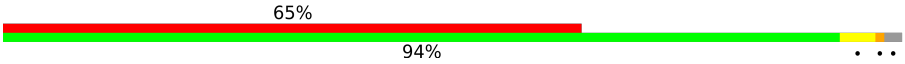
Chain CG:

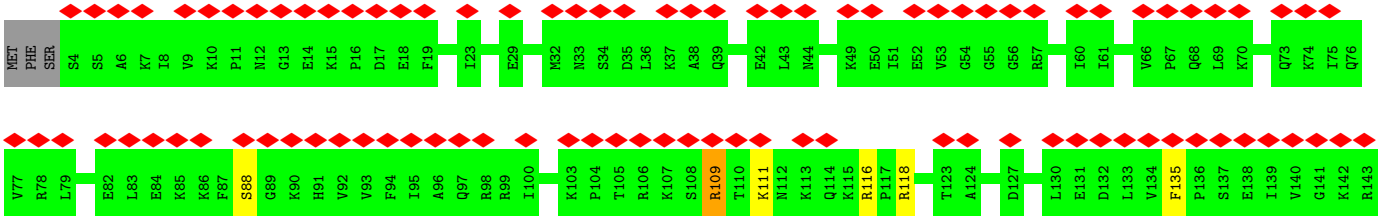




• Molecule 58: 40S RIBOSOMAL PROTEIN ES7

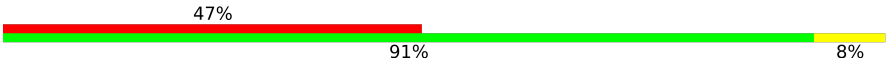
Chain CH:

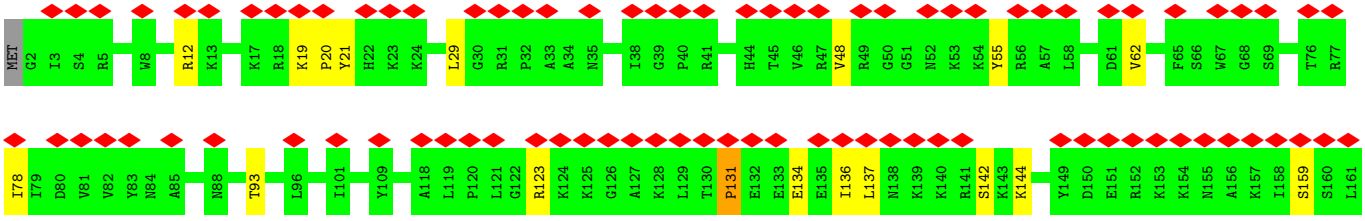




• Molecule 59: 40S RIBOSOMAL PROTEIN ES8

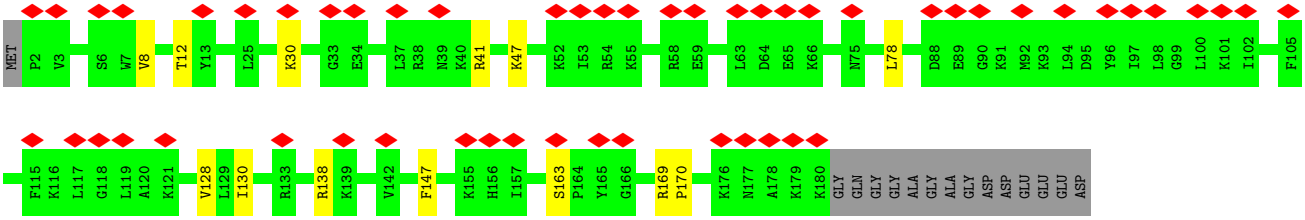
Chain CI:





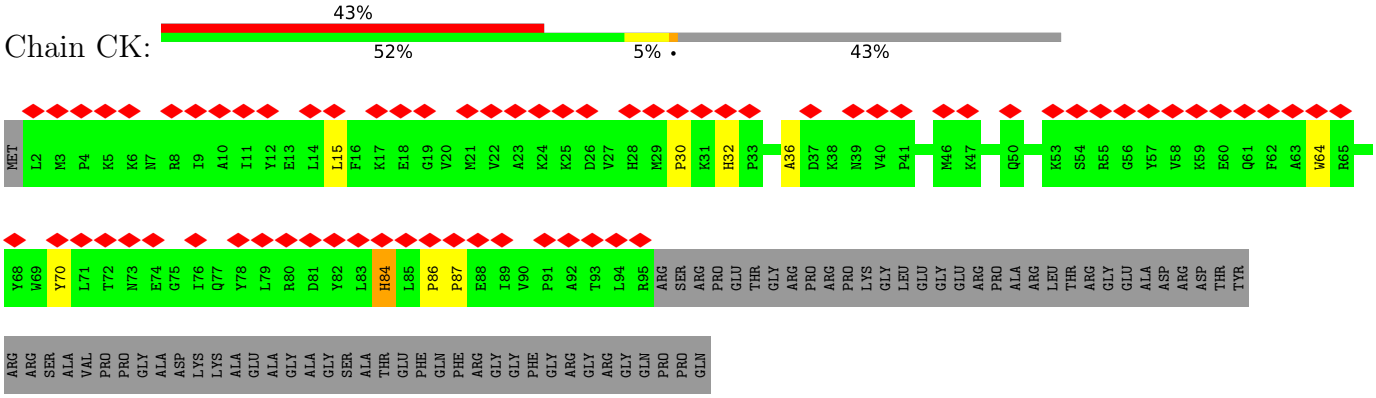
• Molecule 60: 40S RIBOSOMAL PROTEIN US4

Chain CJ:



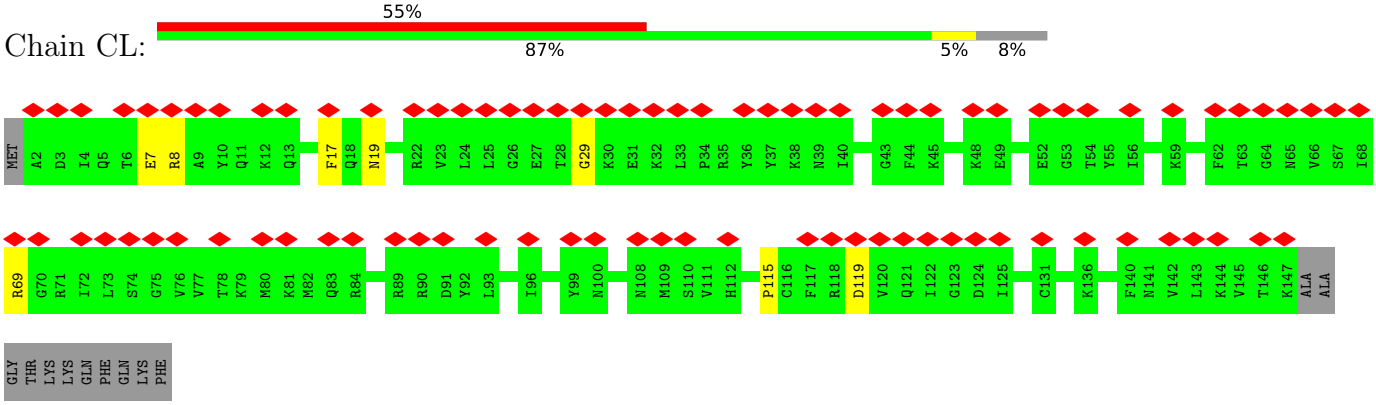
• Molecule 61: 40S RIBOSOMAL PROTEIN ES10

Chain CK:



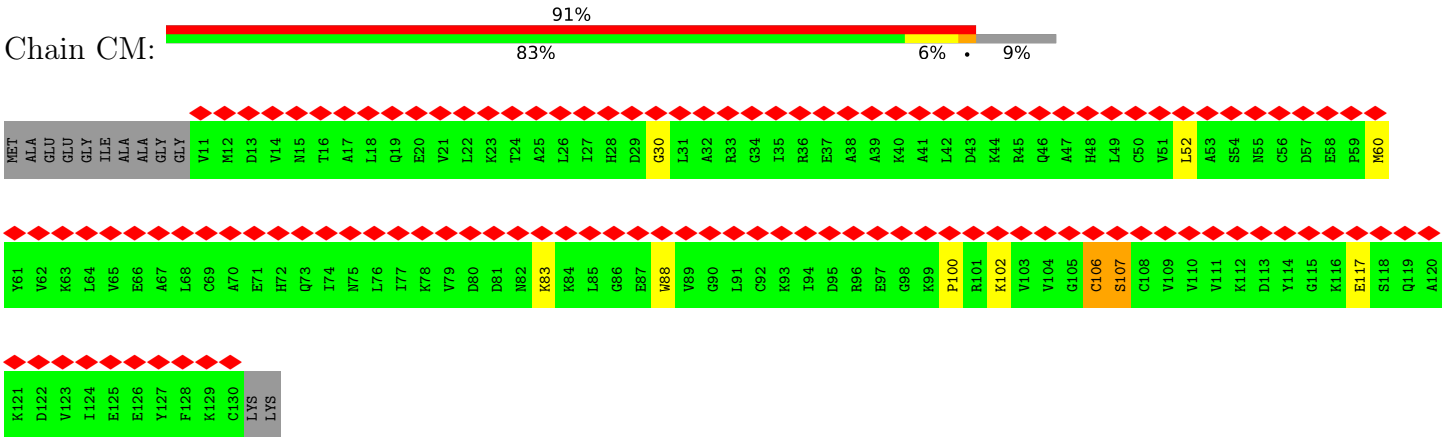
• Molecule 62: 40S RIBOSOMAL PROTEIN US17

Chain CL:



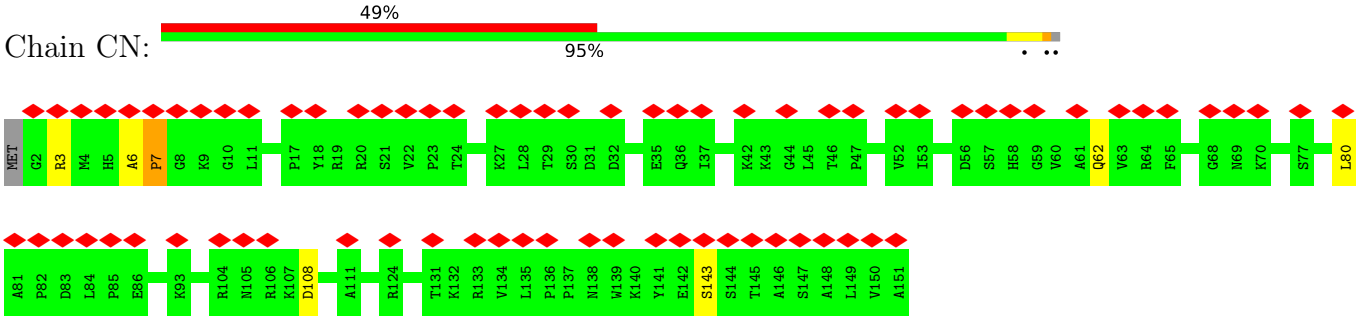
• Molecule 63: 40S RIBOSOMAL PROTEIN ES12

Chain CM:



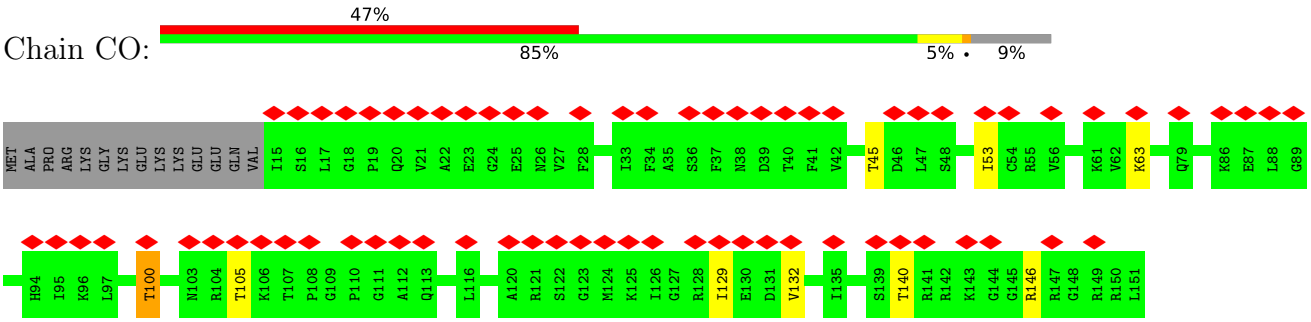
• Molecule 64: 40S RIBOSOMAL PROTEIN ES15

Chain CN:



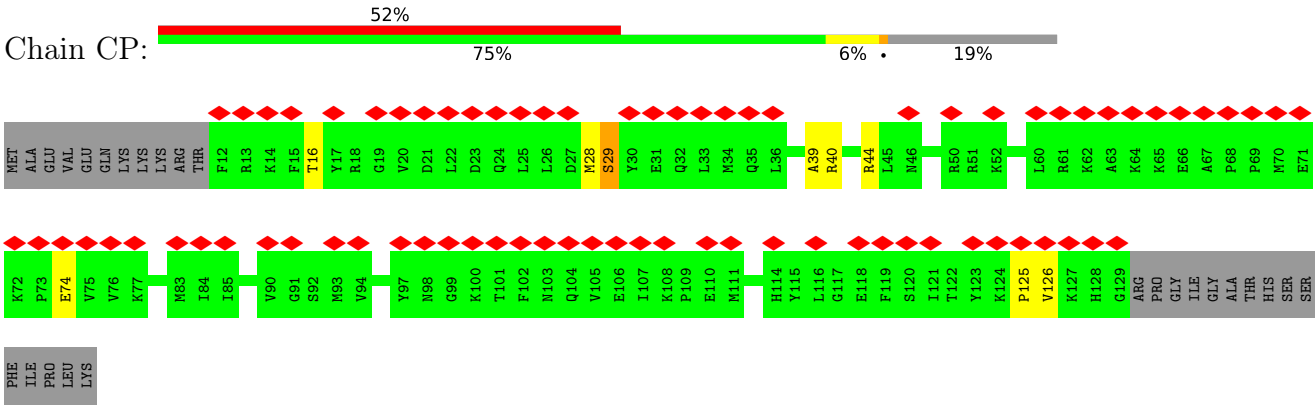
• Molecule 65: 40S RIBOSOMAL PROTEIN ES11

Chain CO:



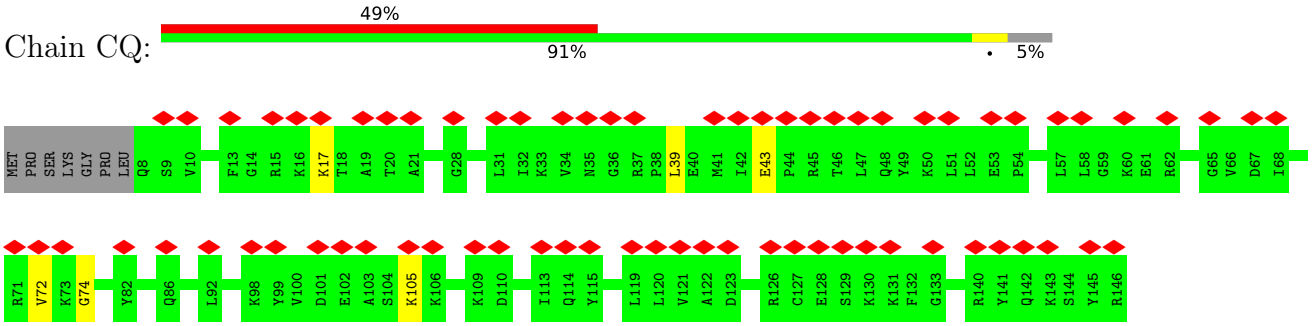
• Molecule 66: 40S RIBOSOMAL PROTEIN US19

Chain CP:



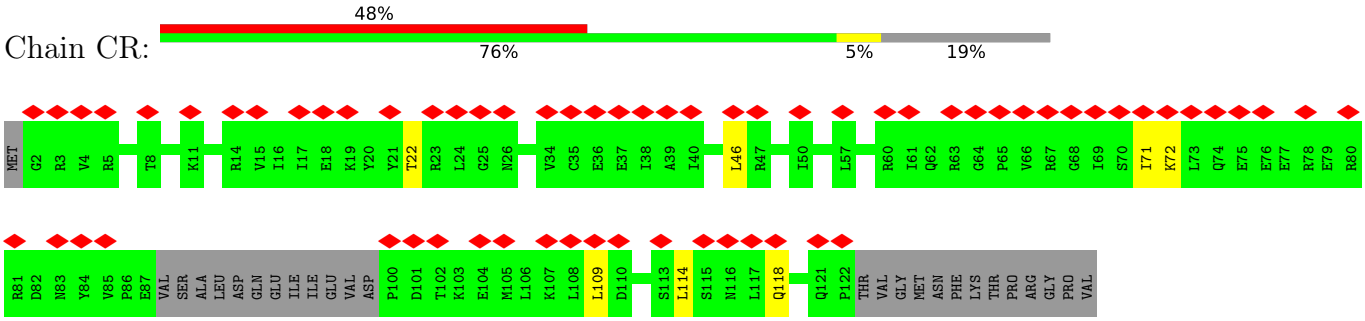
• Molecule 67: 40S RIBOSOMAL PROTEIN US9

Chain CQ:



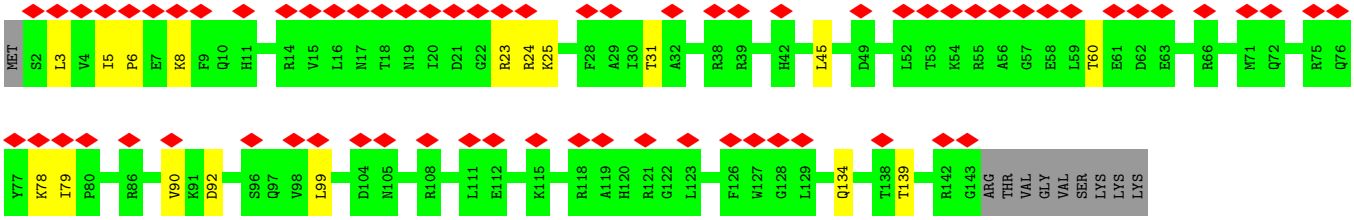
• Molecule 68: 40S RIBOSOMAL PROTEIN ES17

Chain CR:

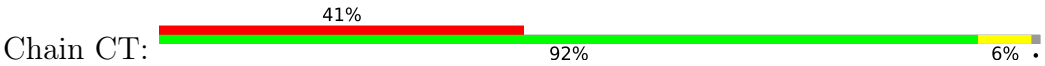


• Molecule 69: 40S RIBOSOMAL PROTEIN US13

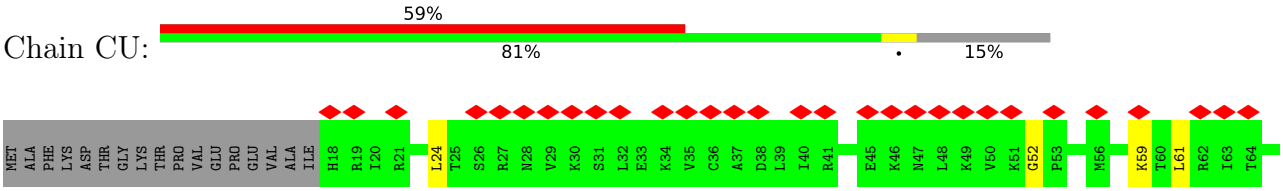
Chain CS:



• Molecule 70: 40S RIBOSOMAL PROTEIN ES19

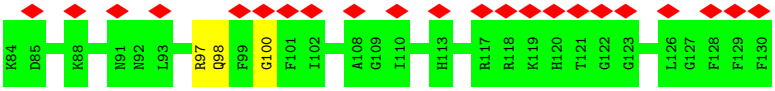


• Molecule 71: 40S RIBOSOMAL PROTEIN US10



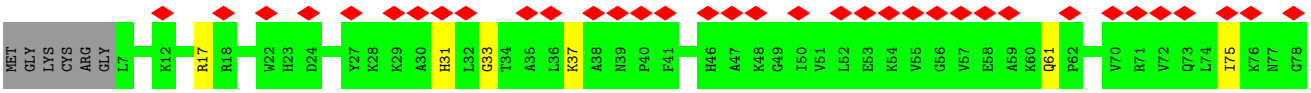
• Molecule 72: 40S RIBOSOMAL PROTEIN ES21

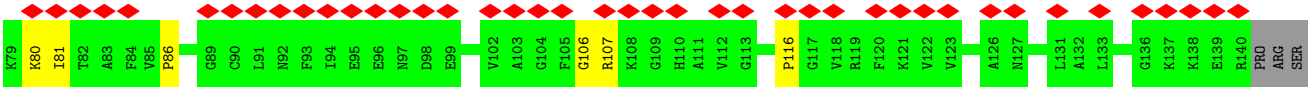
• Molecule 73: 40S RIBOSOMAL PROTEIN US8



• Molecule 74: 40S RIBOSOMAL PROTEIN US12

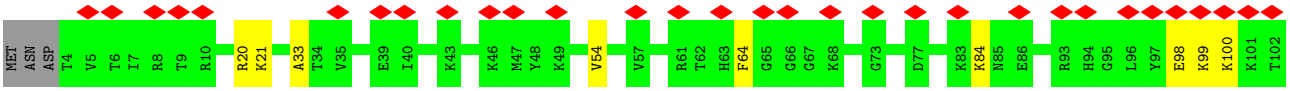
Chain CX:





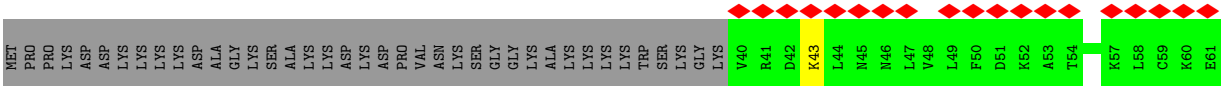
• Molecule 75: 40S RIBOSOMAL PROTEIN ES24

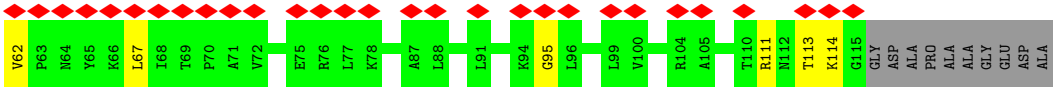
Chain CY:



• Molecule 76: 40S RIBOSOMAL PROTEIN ES25

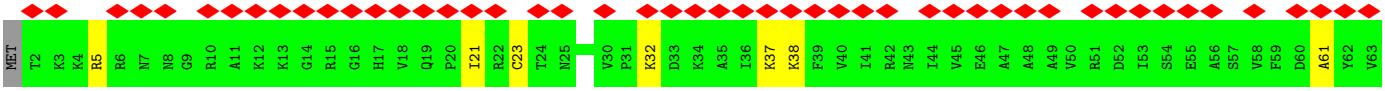
Chain CZ:

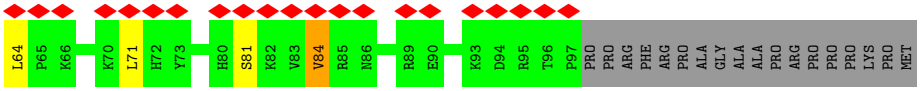




• Molecule 77: 40S RIBOSOMAL PROTEIN ES26

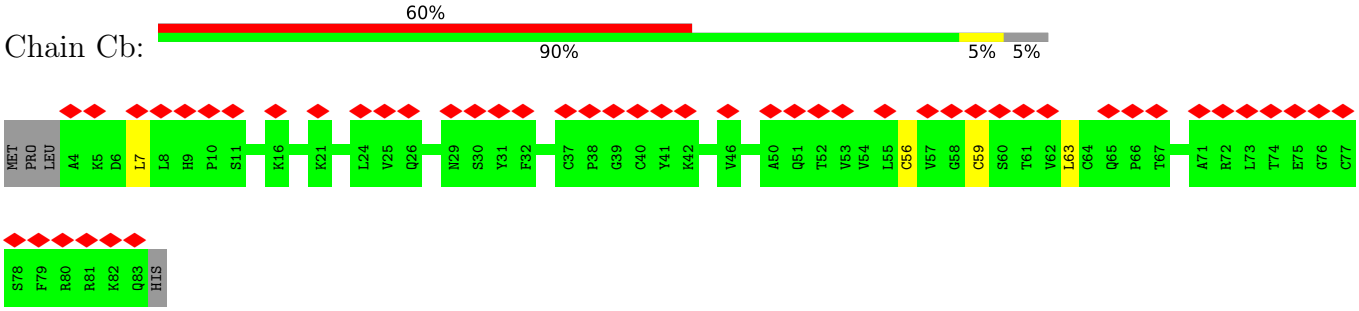
Chain Ca:





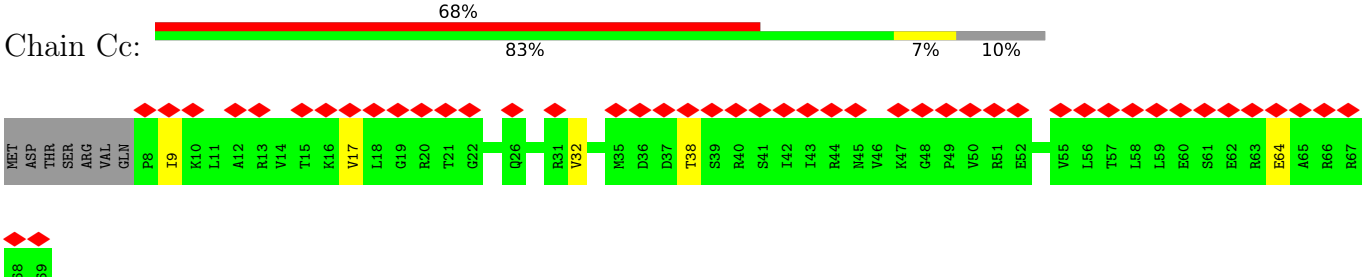
• Molecule 78: 40S RIBOSOMAL PROTEIN ES27

Chain Cb:



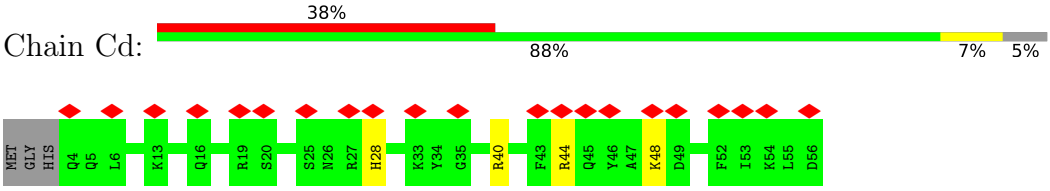
• Molecule 79: 40S RIBOSOMAL PROTEIN ES28

Chain Cc:



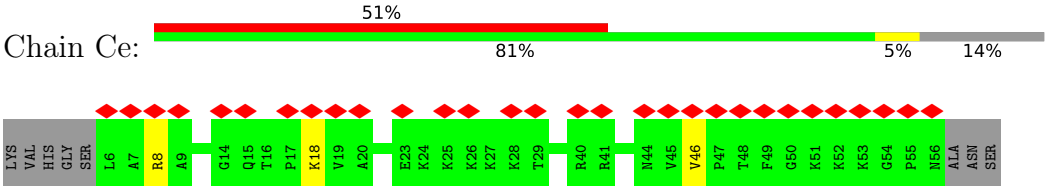
• Molecule 80: 40S RIBOSOMAL PROTEIN US14

Chain Cd:



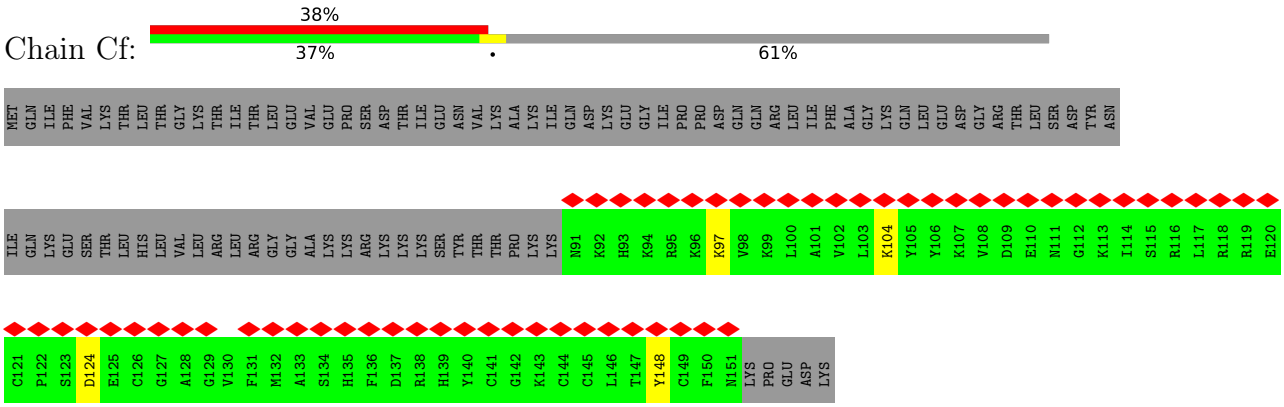
• Molecule 81: 40S RIBOSOMAL PROTEIN ES30

Chain Ce:



• Molecule 82: 40S RIBOSOMAL PROTEIN ES31

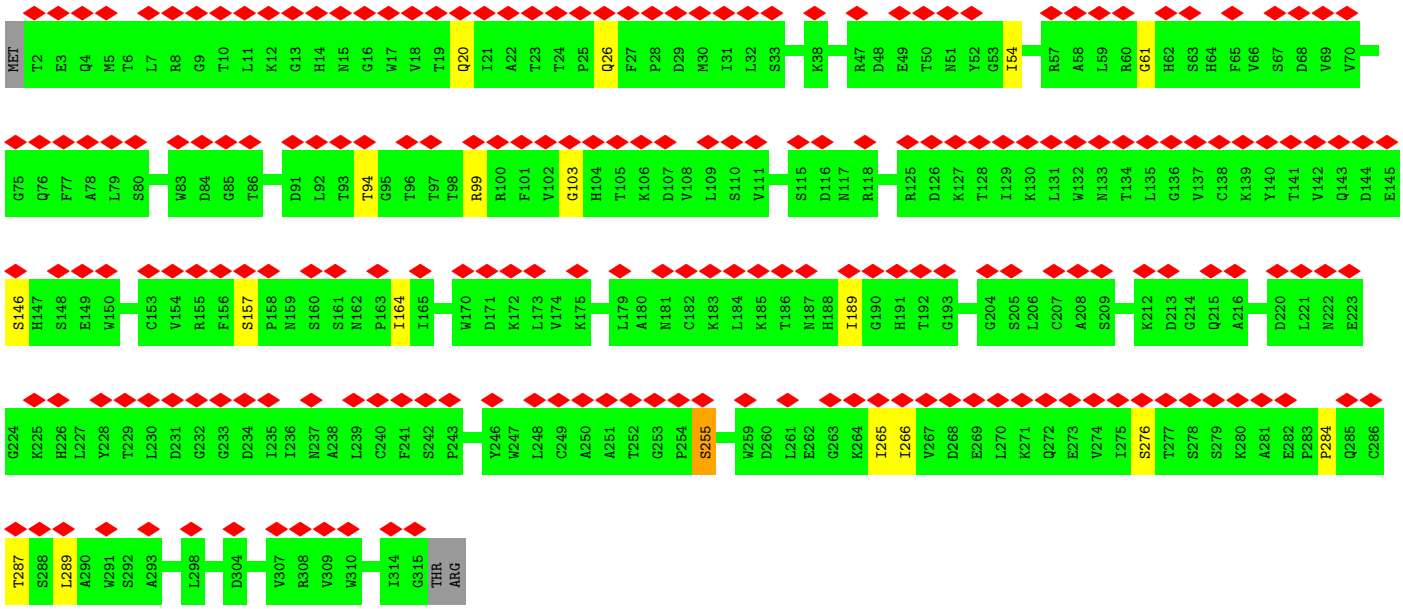
Chain Cf:



• Molecule 83: 40S RIBOSOMAL PROTEIN RACK1

Chain Cg:


65%
93%
5%


MET T2 E3 Q4 M5 T6 L7 R8 G9 T10 L11 K12 G13 H14 N15 G16 W17 V18 T19 Q20 I21 A22 T23 T24 P25 Q26 F27 P28 D29 M30 I31 L32 S33 K38 R47 D48 E49 T50 N51 Y52 G53 I54 R57 A58 L59 R60 G61 H62 S63 H64 F65 V66 S67 D68 V69 V70
G75 Q76 F77 A78 L79 S80 W83 D84 G85 T86 D91 L92 T93 T94 G95 T96 T97 T98 R99 R100 F101 V102 G103 H104 T105 K106 D107 V108 L109 S110 V111 S115 D116 N117 R118 R125 D126 K127 T128 I129 K130 L131 W132 N133 T134 L135 G136 V137 C138 K139 Y140 T141 V142 Q143 D144 E145
S146 H147 S148 E149 W150 C153 V154 R155 F156 S157 P158 N159 S160 S161 N162 P163 I164 I165 W170 D171 K172 L173 V174 K175 L179 A180 N181 C182 K183 L184 K185 T186 N187 H188 I189 G190 H191 T192 G193 G204 S205 L206 C207 A208 S209 K212 D213 G214 Q215 A216 D220 L221 N222 E223
G224 K225 H226 L227 Y228 T229 L230 D231 G232 G233 D234 I235 I236 N237 A238 L239 C240 F241 S242 P243 Y246 W247 L248 C249 A250 A251 T252 G253 P254 S255 W259 D260 L261 E262 G263 K264 I265 I266 V267 D268 E269 L270 K271 Q272 E273 V274 I275 S276 T277 S278 S279 K280 A281 E282 P283 P284 Q285 C286
T287 S288 L289 A290 W291 S292 A293 L298 D304 V307 R308 V309 W310 I314 G315 THR ARG

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	541570	Depositor
Resolution determination method	Not provided	
CTF correction method	CTFFIND3	Depositor
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	20	Depositor
Minimum defocus (nm)	2000	Depositor
Maximum defocus (nm)	4500	Depositor
Magnification	194805	Depositor
Image detector	TVIPS TEMCAM-F416 (4k x 4k)	Depositor
Maximum map value	11974.922	Depositor
Minimum map value	-3949.843	Depositor
Average map value	-27.770	Depositor
Map value standard deviation	1021.781	Depositor
Recommended contour level	4000.0	Depositor
Map size (Å)	453.6, 453.6, 453.6	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.26, 1.26, 1.26	Depositor

5 Model quality

5.1 Standard geometry

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A2	0.43	33/86671 (0.0%)	0.83	82/135194 (0.1%)
2	A3	0.36	0/3723	0.79	1/5800 (0.0%)
3	A4	0.38	0/2836	0.82	3/4421 (0.1%)
4	AA	0.44	0/1926	0.67	0/2583
5	AB	0.45	0/3258	0.73	2/4361 (0.0%)
6	AC	0.47	0/2943	0.73	0/3953
7	AD	0.49	2/2407 (0.1%)	0.70	1/3221 (0.0%)
8	AE	0.52	0/1312	0.73	0/1763
9	AF	0.44	0/1986	0.68	0/2644
10	AG	0.46	0/1914	0.72	0/2578
11	AH	0.43	0/1555	0.69	0/2089
12	AI	0.42	0/1643	0.67	0/2194
13	AJ	0.49	0/1386	0.71	0/1852
14	AL	0.53	2/1647 (0.1%)	0.73	3/2205 (0.1%)
15	AM	0.49	0/1162	0.70	0/1556
16	AN	0.43	0/1754	0.65	0/2348
17	AO	0.44	0/1639	0.69	0/2193
18	AP	0.44	0/1260	0.70	0/1691
19	AQ	0.45	0/1518	0.74	0/2026
20	AR	0.39	0/1541	0.64	0/2035
21	AS	0.45	0/1479	0.73	0/1985
22	AT	0.46	0/1326	0.71	0/1770
23	AU	0.47	0/841	0.71	0/1128
24	AV	0.44	0/978	0.63	0/1312
25	AW	0.43	0/542	0.60	0/722
26	AX	0.42	0/993	0.67	0/1334
27	AY	0.47	0/1082	0.72	1/1441 (0.1%)
28	AZ	0.47	0/1138	0.79	0/1517
29	Aa	0.45	0/1191	0.71	0/1591
30	Ab	0.45	0/570	0.72	0/752
31	Ac	0.46	0/813	0.70	0/1091
32	Ad	0.45	0/920	0.67	0/1238

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	Ae	0.46	0/1071	0.68	0/1428
34	Af	0.50	0/885	0.81	0/1185
35	Ag	0.48	0/917	0.74	0/1222
36	Ah	0.38	0/1023	0.64	0/1351
37	Ai	0.43	0/793	0.75	0/1048
38	Aj	0.50	0/704	0.76	0/931
39	Ak	0.43	0/575	0.73	0/761
40	Al	0.41	0/454	0.61	0/599
41	Am	0.42	0/435	0.70	0/575
42	An	0.40	0/241	0.51	0/305
43	Ao	0.45	0/885	0.74	0/1166
44	Ap	0.40	0/718	0.61	0/953
45	At	0.48	0/1058	0.75	0/1416
46	Au	0.45	0/1639	0.69	1/2222 (0.0%)
47	BA	0.53	0/1809	1.02	17/2819 (0.6%)
48	BB	0.65	1/4926 (0.0%)	1.15	29/6641 (0.4%)
49	BC	1.53	11/6230 (0.2%)	2.37	540/9712 (5.6%)
50	C1	0.37	2/41550 (0.0%)	0.80	6/64763 (0.0%)
51	CA	0.51	0/1756	0.68	0/2386
52	CB	0.51	0/1756	0.75	1/2350 (0.0%)
53	CC	0.42	0/1761	0.65	0/2379
54	CD	0.40	0/1672	0.66	0/2250
55	CE	0.47	0/2072	0.70	0/2793
56	CF	0.43	0/1507	0.74	0/2026
57	CG	0.48	0/1907	0.74	0/2538
58	CH	0.46	0/1558	0.74	1/2087 (0.0%)
59	CI	0.47	0/1724	0.72	0/2298
60	CJ	0.45	0/1520	0.77	0/2030
61	CK	0.48	0/815	0.68	0/1101
62	CL	0.45	0/1220	0.72	0/1633
63	CM	0.48	0/941	0.72	0/1264
64	CN	0.43	0/1231	0.73	1/1656 (0.1%)
65	CO	0.46	0/1036	0.71	0/1391
66	CP	0.43	0/1000	0.67	0/1335
67	CQ	0.43	0/1125	0.66	0/1506
68	CR	0.42	0/904	0.67	0/1208
69	CS	0.42	0/1190	0.68	0/1594
70	CT	0.44	0/1131	0.69	0/1515
71	CU	0.50	0/813	0.70	0/1092
72	CV	0.47	0/643	0.71	0/860
73	CW	0.44	0/1050	0.69	0/1406
74	CX	0.46	0/1063	0.70	0/1421
75	CY	0.45	0/1019	0.70	0/1354

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	CZ	0.46	0/611	0.71	0/820
77	Ca	0.48	0/778	0.75	1/1041 (0.1%)
78	Cb	0.48	0/637	0.68	0/854
79	Cc	0.46	0/492	0.74	0/657
80	Cd	0.51	0/454	0.77	0/603
81	Ce	0.45	0/417	0.69	0/548
82	Cf	0.53	0/507	0.84	1/673 (0.1%)
83	Cg	0.45	0/2497	0.67	0/3399
All	All	0.49	51/240674 (0.0%)	0.87	691/353753 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A2	0	35
2	A3	0	2
48	BB	0	12
49	BC	0	105
50	C1	0	23
All	All	0	177

All (51) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A2	1701	C	C5'-C4'	18.41	1.73	1.51
1	A2	1673	C	C3'-O3'	15.36	1.63	1.42
1	A2	1701	C	O5'-C5'	14.50	1.67	1.44
1	A2	1673	C	O3'-P	14.08	1.78	1.61
1	A2	1701	C	P-O5'	13.46	1.73	1.59
49	BC	349	C	O3'-P	-11.34	1.47	1.61
1	A2	1673	C	C5'-C4'	11.31	1.65	1.51
1	A2	3919	U	N1-C6	-10.60	1.28	1.38
1	A2	1701	C	O3'-P	10.28	1.73	1.61
1	A2	1701	C	C4'-C3'	10.13	1.64	1.53
49	BC	348	A	O3'-P	-9.97	1.49	1.61
1	A2	1673	C	C4'-C3'	9.90	1.64	1.53
1	A2	1673	C	P-O5'	8.79	1.68	1.59
1	A2	1673	C	O5'-C5'	8.71	1.58	1.44
1	A2	3914	A	O5'-C5'	-8.47	1.29	1.42
1	A2	3921	A	O3'-P	-8.19	1.51	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A2	3914	A	C3'-O3'	-8.12	1.30	1.42
1	A2	3919	U	N3-C4	7.95	1.45	1.38
1	A2	943	G	C5-C6	-7.82	1.34	1.42
1	A2	3919	U	C2-O2	7.54	1.29	1.22
1	A2	1701	C	C3'-O3'	7.40	1.52	1.42
1	A2	2663	G	C6-O6	-6.75	1.18	1.24
49	BC	338	C	N3-C4	-6.73	1.29	1.33
1	A2	1673	C	C2-N3	-6.67	1.30	1.35
49	BC	240	C	O3'-P	-6.67	1.53	1.61
1	A2	3913	G	O3'-P	-6.47	1.53	1.61
50	C1	992	A	C6-N6	-6.27	1.28	1.33
1	A2	1481	G	C2-N2	-5.95	1.28	1.34
7	AD	264	LYS	N-CA	5.89	1.58	1.46
14	AL	131	PRO	N-CD	5.64	1.55	1.47
1	A2	1673	C	N3-C4	-5.59	1.30	1.33
1	A2	3919	U	N1-C2	5.58	1.43	1.38
1	A2	1701	C	C4'-O4'	5.58	1.52	1.45
49	BC	167	A	N3-C4	5.44	1.38	1.34
49	BC	340	C	N3-C4	-5.39	1.30	1.33
50	C1	1286	G	C2-N2	-5.36	1.29	1.34
1	A2	3924	G	C2-N2	-5.36	1.29	1.34
49	BC	83	C	N3-C4	-5.34	1.30	1.33
14	AL	134	PRO	N-CD	5.31	1.55	1.47
48	BB	846	PRO	N-CD	5.29	1.55	1.47
49	BC	288	A	P-O5'	5.25	1.65	1.59
1	A2	3920	G	O3'-P	-5.24	1.54	1.61
49	BC	334	C	O5'-C5'	5.20	1.52	1.44
1	A2	1701	C	N1-C2	5.17	1.45	1.40
1	A2	4034	U	P-O5'	-5.12	1.54	1.59
49	BC	276	A	C4'-C3'	5.08	1.58	1.53
1	A2	456	G	C2-N2	-5.07	1.29	1.34
1	A2	4593	G	C2-N2	-5.03	1.29	1.34
7	AD	265	ARG	N-CA	5.01	1.56	1.46
49	BC	85	A	N3-C4	5.01	1.37	1.34
1	A2	1701	C	O4'-C1'	5.01	1.48	1.41

All (691) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A2	3919	U	N1-C2-O2	-33.15	99.59	122.80
1	A2	3919	U	N3-C2-O2	32.84	145.19	122.20
1	A2	1701	C	O4'-C4'-C3'	-15.18	88.82	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A2	3914	A	O4'-C1'-N9	15.11	120.28	108.20
48	BB	1133	TYR	CB-CG-CD2	-14.74	112.15	121.00
5	AB	258	HIS	C-N-CD	-13.96	89.89	120.60
1	A2	3914	A	O4'-C4'-C3'	-13.95	90.05	104.00
47	BA	8	U	C5'-C4'-C3'	13.52	137.62	116.00
1	A2	1701	C	O4'-C1'-N1	12.31	118.05	108.20
49	BC	276	A	O4'-C1'-N9	12.26	118.01	108.20
49	BC	313	G	C5'-C4'-O4'	12.24	123.79	109.10
49	BC	276	A	C5-C6-N1	12.22	123.81	117.70
49	BC	259	U	O4'-C1'-N1	12.15	117.92	108.20
1	A2	1701	C	C4'-C3'-O3'	12.11	137.22	113.00
48	BB	1209	LEU	CB-CG-CD1	-11.98	90.63	111.00
1	A2	4035	U	P-O5'-C5'	-11.50	102.49	120.90
1	A2	3914	A	C5'-C4'-O4'	11.18	122.52	109.10
49	BC	276	A	N1-C6-N6	-10.99	112.01	118.60
47	BA	6	G	C4'-C3'-O3'	10.86	134.72	113.00
49	BC	162	A	N1-C6-N6	-10.76	112.15	118.60
1	A2	1701	C	C2'-C3'-O3'	-10.66	86.04	109.50
1	A2	3914	A	N9-C1'-C2'	-10.55	100.29	114.00
49	BC	298	A	N1-C6-N6	-10.44	112.34	118.60
49	BC	73	A	N1-C6-N6	-10.43	112.34	118.60
49	BC	255	C	O4'-C1'-N1	10.41	116.53	108.20
49	BC	284	U	O4'-C1'-N1	10.40	116.52	108.20
49	BC	296	A	C5-C6-N1	10.35	122.87	117.70
49	BC	57	A	N1-C6-N6	-10.19	112.48	118.60
49	BC	63	U	C4'-C3'-O3'	10.17	133.34	113.00
1	A2	3913	G	P-O3'-C3'	-10.14	107.53	119.70
49	BC	271	G	O4'-C1'-N9	10.13	116.30	108.20
49	BC	267	G	N1-C6-O6	-9.98	113.91	119.90
1	A2	3920	G	C4'-C3'-O3'	-9.98	88.44	109.40
49	BC	330	A	P-O3'-C3'	9.96	131.65	119.70
49	BC	312	U	C4'-C3'-C2'	-9.86	92.74	102.60
49	BC	50	A	N1-C6-N6	-9.76	112.74	118.60
49	BC	93	A	N1-C6-N6	-9.69	112.79	118.60
49	BC	281	U	N3-C2-O2	-9.68	115.42	122.20
1	A2	3919	U	O4'-C1'-N1	9.57	115.86	108.20
49	BC	335	G	N1-C6-O6	-9.55	114.17	119.90
49	BC	158	G	O4'-C1'-N9	9.53	115.83	108.20
49	BC	287	U	O4'-C1'-N1	9.52	115.82	108.20
49	BC	232	C	O4'-C1'-N1	9.50	115.80	108.20
49	BC	116	A	N1-C6-N6	-9.44	112.94	118.60
49	BC	54	A	N1-C6-N6	-9.42	112.94	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	275	A	N1-C6-N6	-9.42	112.95	118.60
49	BC	266	G	N1-C6-O6	-9.36	114.28	119.90
49	BC	155	A	N1-C6-N6	-9.34	113.00	118.60
49	BC	270	C	N3-C2-O2	-9.31	115.38	121.90
49	BC	337	G	N1-C6-O6	-9.28	114.33	119.90
49	BC	282	U	O4'-C1'-N1	9.27	115.61	108.20
1	A2	3914	A	C4'-C3'-O3'	-9.24	90.00	109.40
1	A2	4034	U	C5'-C4'-C3'	-9.20	101.29	116.00
49	BC	231	G	O4'-C1'-N9	9.19	115.55	108.20
49	BC	296	A	N1-C6-N6	-9.19	113.09	118.60
49	BC	276	A	C4'-C3'-C2'	-9.17	93.43	102.60
49	BC	72	A	N1-C6-N6	-9.04	113.17	118.60
49	BC	109	A	N1-C6-N6	-9.02	113.19	118.60
49	BC	156	C	O4'-C1'-N1	8.96	115.37	108.20
49	BC	342	A	C5-C6-N1	8.86	122.13	117.70
47	BA	8	U	P-O3'-C3'	8.86	130.33	119.70
49	BC	142	A	N1-C6-N6	-8.85	113.29	118.60
47	BA	74	C	C4'-C3'-O3'	8.84	130.69	113.00
49	BC	331	G	C5'-C4'-O4'	-8.82	98.52	109.10
49	BC	70	A	C5-C6-N1	8.81	122.10	117.70
1	A2	3914	A	C2'-C3'-O3'	-8.77	90.20	109.50
49	BC	257	A	C5-C6-N1	8.69	122.05	117.70
49	BC	81	A	N1-C6-N6	-8.68	113.39	118.60
1	A2	3919	U	C2-N3-C4	-8.65	121.81	127.00
49	BC	119	A	C5-C6-N1	8.64	122.02	117.70
49	BC	85	A	N1-C6-N6	-8.63	113.42	118.60
49	BC	246	A	C5-C6-N1	8.60	122.00	117.70
49	BC	234	U	O4'-C1'-N1	8.58	115.07	108.20
49	BC	345	A	C5-C6-N1	8.58	121.99	117.70
49	BC	51	G	N1-C6-O6	-8.56	114.76	119.90
49	BC	257	A	N1-C6-N6	-8.53	113.48	118.60
49	BC	305	U	P-O3'-C3'	8.51	129.91	119.70
49	BC	324	U	N3-C2-O2	-8.50	116.25	122.20
49	BC	344	G	N1-C6-O6	-8.50	114.80	119.90
49	BC	161	G	O4'-C1'-N9	8.50	115.00	108.20
49	BC	82	G	N1-C6-O6	-8.42	114.85	119.90
49	BC	340	C	N1-C2-O2	8.38	123.93	118.90
49	BC	256	G	N7-C8-N9	8.37	117.29	113.10
49	BC	299	G	N1-C6-O6	-8.37	114.88	119.90
49	BC	274	A	N1-C6-N6	-8.36	113.58	118.60
49	BC	350	G	O5'-C5'-C4'	-8.36	95.81	111.70
49	BC	345	A	N1-C6-N6	-8.34	113.60	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	126	C	N3-C2-O2	-8.30	116.09	121.90
49	BC	145	G	N1-C6-O6	-8.27	114.94	119.90
1	A2	3920	G	N9-C1'-C2'	-8.27	102.91	112.00
49	BC	307	G	N1-C6-O6	-8.26	114.95	119.90
49	BC	298	A	C5-C6-N1	8.24	121.82	117.70
49	BC	96	A	N1-C6-N6	-8.24	113.66	118.60
49	BC	260	A	N1-C6-N6	-8.22	113.67	118.60
49	BC	235	G	N1-C6-O6	-8.15	115.01	119.90
49	BC	155	A	O4'-C1'-N9	8.13	114.70	108.20
47	BA	69	G	C4'-C3'-O3'	-8.10	92.38	109.40
49	BC	261	G	N1-C6-O6	-8.08	115.05	119.90
49	BC	252	A	C5-C6-N1	8.08	121.74	117.70
49	BC	256	G	C3'-C2'-C1'	8.07	107.96	101.50
1	A2	1673	C	C5'-C4'-O4'	-8.05	99.44	109.10
49	BC	110	G	O4'-C1'-N9	8.04	114.63	108.20
49	BC	150	G	N1-C6-O6	-8.04	115.08	119.90
49	BC	340	C	N3-C2-O2	-8.04	116.27	121.90
49	BC	119	A	N1-C6-N6	-8.02	113.78	118.60
49	BC	88	G	N1-C6-O6	-8.01	115.09	119.90
49	BC	239	C	N3-C2-O2	-8.00	116.30	121.90
1	A2	3914	A	C8-N9-C1'	7.99	142.08	127.70
48	BB	1340	CYS	CA-CB-SG	-7.98	99.64	114.00
49	BC	276	A	C2-N3-C4	7.97	114.58	110.60
49	BC	243	A	N1-C6-N6	-7.94	113.83	118.60
48	BB	1348	ASP	CB-CG-OD2	7.94	125.44	118.30
49	BC	244	A	C5-C6-N1	7.94	121.67	117.70
1	A2	1701	C	C5'-C4'-C3'	7.94	128.70	116.00
49	BC	140	A	O4'-C1'-N9	7.93	114.55	108.20
47	BA	72	C	C4'-C3'-O3'	7.91	128.82	113.00
49	BC	331	G	C2'-C3'-O3'	7.89	126.87	109.50
49	BC	106	U	N3-C2-O2	-7.89	116.68	122.20
49	BC	243	A	C5-C6-N1	7.89	121.64	117.70
49	BC	257	A	C4-C5-C6	-7.89	113.06	117.00
1	A2	3914	A	C4-N9-C1'	-7.84	112.18	126.30
49	BC	81	A	C5-C6-N1	7.84	121.62	117.70
49	BC	75	G	N1-C6-O6	-7.83	115.20	119.90
49	BC	53	A	N1-C6-N6	-7.83	113.90	118.60
49	BC	74	A	N1-C6-N6	-7.83	113.90	118.60
49	BC	93	A	C5-C6-N1	7.83	121.61	117.70
49	BC	272	C	O4'-C1'-N1	7.82	114.45	108.20
1	A2	3915	G	P-O5'-C5'	-7.80	108.42	120.90
49	BC	163	G	O4'-C1'-N9	7.78	114.42	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	169	C	N3-C2-O2	-7.76	116.47	121.90
49	BC	107	G	N1-C6-O6	-7.75	115.25	119.90
49	BC	240	C	N3-C2-O2	-7.75	116.47	121.90
1	A2	4034	U	P-O3'-C3'	-7.72	110.44	119.70
49	BC	307	G	O4'-C1'-N9	7.71	114.36	108.20
49	BC	271	G	C3'-C2'-C1'	7.68	107.65	101.50
49	BC	73	A	C4-C5-C6	-7.67	113.17	117.00
49	BC	349	C	O3'-P-O5'	-7.66	89.45	104.00
49	BC	138	C	O4'-C1'-N1	7.65	114.32	108.20
49	BC	73	A	C5-C6-N1	7.63	121.51	117.70
49	BC	120	C	N3-C2-O2	-7.60	116.58	121.90
49	BC	116	A	C5-C6-N1	7.59	121.49	117.70
49	BC	248	U	C5'-C4'-O4'	7.57	118.18	109.10
49	BC	255	C	N3-C2-O2	-7.55	116.61	121.90
49	BC	83	C	O4'-C1'-N1	7.55	114.24	108.20
47	BA	69	G	C2'-C3'-O3'	7.54	126.10	109.50
49	BC	310	A	N1-C6-N6	-7.54	114.08	118.60
49	BC	54	A	C4-C5-C6	-7.53	113.23	117.00
48	BB	1348	ASP	CB-CG-OD1	-7.53	111.52	118.30
49	BC	258	G	N1-C6-O6	-7.52	115.39	119.90
49	BC	300	G	N1-C6-O6	-7.52	115.39	119.90
49	BC	110	G	N1-C6-O6	-7.51	115.39	119.90
49	BC	296	A	C4-C5-C6	-7.50	113.25	117.00
49	BC	247	C	N3-C2-O2	-7.50	116.65	121.90
48	BB	1172	VAL	CG1-CB-CG2	-7.50	98.90	110.90
49	BC	146	G	N1-C6-O6	-7.49	115.41	119.90
49	BC	283	G	N1-C6-O6	-7.47	115.42	119.90
1	A2	3920	G	O4'-C4'-C3'	-7.47	96.53	104.00
49	BC	85	A	C5-C6-N1	7.46	121.43	117.70
49	BC	256	G	N1-C6-O6	-7.46	115.43	119.90
49	BC	270	C	N1-C2-O2	7.45	123.37	118.90
49	BC	271	G	N1-C6-O6	-7.45	115.43	119.90
49	BC	154	A	N1-C6-N6	-7.38	114.17	118.60
49	BC	334	C	P-O5'-C5'	7.38	132.72	120.90
1	A2	3919	U	C6-N1-C1'	-7.38	110.86	121.20
49	BC	157	C	O4'-C1'-N1	7.36	114.09	108.20
49	BC	338	C	N3-C2-O2	-7.34	116.76	121.90
49	BC	168	C	N3-C2-O2	-7.33	116.77	121.90
49	BC	299	G	O4'-C1'-N9	7.33	114.06	108.20
49	BC	280	C	C6-N1-C2	-7.31	117.38	120.30
49	BC	315	C	N3-C2-O2	-7.29	116.80	121.90
49	BC	338	C	N3-C4-C5	7.26	124.81	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	70	A	N1-C6-N6	-7.26	114.25	118.60
49	BC	266	G	P-O3'-C3'	7.24	128.39	119.70
49	BC	62	C	C4'-C3'-O3'	-7.24	94.20	109.40
49	BC	256	G	C8-N9-C4	-7.23	103.51	106.40
49	BC	330	A	C4'-C3'-O3'	7.21	127.43	113.00
49	BC	133	G	O4'-C1'-N9	7.21	113.97	108.20
49	BC	317	C	N3-C2-O2	-7.20	116.86	121.90
49	BC	272	C	N3-C2-O2	-7.20	116.86	121.90
49	BC	57	A	C5-C6-N1	7.20	121.30	117.70
1	A2	3920	G	O3'-P-O5'	-7.17	90.37	104.00
49	BC	160	U	P-O3'-C3'	7.17	128.31	119.70
49	BC	349	C	C5'-C4'-O4'	-7.17	100.49	109.10
49	BC	316	C	N3-C2-O2	-7.17	116.88	121.90
1	A2	1673	C	O3'-P-O5'	7.16	117.60	104.00
49	BC	314	C	N3-C2-O2	-7.15	116.89	121.90
49	BC	163	G	N1-C6-O6	-7.14	115.62	119.90
49	BC	238	C	N3-C2-O2	-7.13	116.91	121.90
49	BC	77	G	N1-C6-O6	-7.13	115.62	119.90
49	BC	154	A	C5-C6-N1	7.13	121.27	117.70
49	BC	142	A	C5-C6-N1	7.12	121.26	117.70
49	BC	90	G	N1-C6-O6	-7.12	115.63	119.90
49	BC	243	A	C4-C5-C6	-7.12	113.44	117.00
49	BC	274	A	C5-C6-N1	7.12	121.26	117.70
49	BC	324	U	O4'-C1'-N1	7.11	113.89	108.20
49	BC	165	A	C5-C6-N1	7.10	121.25	117.70
1	A2	1673	C	C2-N1-C1'	-7.09	111.00	118.80
49	BC	250	C	N3-C2-O2	-7.09	116.94	121.90
49	BC	233	G	N1-C6-O6	-7.05	115.67	119.90
1	A2	3921	A	P-O5'-C5'	7.02	132.13	120.90
49	BC	313	G	O4'-C1'-N9	-7.01	102.59	108.20
2	A3	34	U	C3'-C2'-C1'	-7.00	95.90	101.50
49	BC	338	C	N1-C2-O2	6.99	123.09	118.90
49	BC	252	A	N1-C6-N6	-6.99	114.41	118.60
49	BC	321	A	C5-C6-N1	6.98	121.19	117.70
49	BC	147	U	O4'-C1'-N1	6.97	113.78	108.20
49	BC	138	C	N3-C2-O2	-6.97	117.02	121.90
49	BC	292	C	N3-C2-O2	-6.96	117.03	121.90
49	BC	275	A	C4-C5-C6	-6.94	113.53	117.00
49	BC	126	C	C4'-C3'-C2'	-6.94	95.66	102.60
49	BC	309	G	O4'-C1'-N9	6.92	113.74	108.20
49	BC	342	A	N1-C6-N6	-6.92	114.45	118.60
49	BC	171	G	N1-C6-O6	-6.91	115.75	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	349	C	P-O3'-C3'	6.89	127.97	119.70
49	BC	231	G	N1-C6-O6	-6.89	115.77	119.90
49	BC	285	G	O4'-C1'-N9	6.88	113.70	108.20
49	BC	132	G	N1-C6-O6	-6.87	115.78	119.90
49	BC	160	U	O4'-C1'-N1	6.86	113.69	108.20
49	BC	349	C	C5'-C4'-C3'	-6.86	105.02	116.00
49	BC	332	A	C2'-C3'-O3'	6.86	124.67	113.70
49	BC	167	A	O4'-C1'-N9	6.85	113.68	108.20
49	BC	257	A	P-O3'-C3'	6.83	127.90	119.70
49	BC	45	C	N3-C2-O2	-6.82	117.13	121.90
49	BC	116	A	C4-C5-C6	-6.82	113.59	117.00
49	BC	166	C	N3-C2-O2	-6.78	117.15	121.90
49	BC	289	C	N3-C2-O2	-6.78	117.16	121.90
49	BC	275	A	C6-C5-N7	6.78	137.04	132.30
49	BC	339	A	C5-C6-N1	6.77	121.08	117.70
49	BC	109	A	C5-C6-N1	6.76	121.08	117.70
49	BC	283	G	N3-C4-C5	-6.76	125.22	128.60
49	BC	117	G	N1-C6-O6	-6.76	115.84	119.90
49	BC	140	A	C4-C5-C6	-6.75	113.62	117.00
49	BC	119	A	O4'-C1'-N9	6.73	113.58	108.20
49	BC	258	G	C3'-C2'-C1'	-6.73	96.12	101.50
49	BC	294	U	O4'-C1'-N1	6.73	113.58	108.20
49	BC	242	C	N3-C2-O2	-6.71	117.20	121.90
49	BC	81	A	C4-C5-C6	-6.71	113.64	117.00
49	BC	249	G	N1-C6-O6	-6.71	115.88	119.90
49	BC	228	U	O4'-C1'-N1	6.71	113.56	108.20
49	BC	255	C	N1-C2-O2	6.70	122.92	118.90
49	BC	233	G	O4'-C1'-N9	6.70	113.56	108.20
1	A2	4034	U	P-O5'-C5'	-6.69	110.19	120.90
48	BB	1152	LEU	CB-CG-CD1	-6.67	99.66	111.00
49	BC	306	U	O4'-C1'-N1	6.66	113.53	108.20
49	BC	259	U	C6-N1-C2	-6.65	117.01	121.00
49	BC	109	A	O4'-C1'-N9	6.63	113.51	108.20
49	BC	97	U	O4'-C1'-N1	6.62	113.50	108.20
49	BC	301	G	N1-C6-O6	-6.62	115.93	119.90
49	BC	164	U	N3-C2-O2	-6.62	117.57	122.20
49	BC	82	G	O4'-C1'-N9	6.61	113.49	108.20
49	BC	308	C	N3-C2-O2	-6.61	117.27	121.90
1	A2	3921	A	C4'-C3'-O3'	-6.60	95.53	109.40
1	A2	4034	U	C2'-C3'-O3'	6.60	124.26	113.70
49	BC	108	C	N3-C2-O2	-6.60	117.28	121.90
49	BC	76	C	O4'-C1'-N1	6.60	113.48	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	131	G	N1-C6-O6	-6.58	115.95	119.90
49	BC	333	C	P-O3'-C3'	6.58	127.60	119.70
47	BA	9	A	P-O5'-C5'	6.58	131.43	120.90
49	BC	115	C	N3-C2-O2	-6.58	117.30	121.90
49	BC	136	A	P-O3'-C3'	6.57	127.58	119.70
49	BC	56	U	N3-C2-O2	-6.56	117.61	122.20
1	A2	1673	C	C5-C4-N4	6.55	124.79	120.20
49	BC	139	C	N3-C2-O2	-6.55	117.31	121.90
49	BC	133	G	N1-C6-O6	-6.55	115.97	119.90
49	BC	84	C	N3-C2-O2	-6.54	117.32	121.90
48	BB	1323	VAL	CG1-CB-CG2	-6.54	100.44	110.90
49	BC	327	C	N3-C2-O2	-6.53	117.33	121.90
49	BC	74	A	C5-C6-N1	6.53	120.96	117.70
49	BC	165	A	N1-C6-N6	-6.53	114.68	118.60
49	BC	49	G	N1-C6-O6	-6.52	115.99	119.90
49	BC	244	A	N1-C6-N6	-6.52	114.69	118.60
49	BC	254	C	C3'-C2'-C1'	6.51	106.71	101.50
49	BC	328	G	N1-C6-O6	-6.51	115.99	119.90
49	BC	318	G	N1-C6-O6	-6.50	116.00	119.90
49	BC	333	C	C2'-C3'-O3'	-6.50	95.20	109.50
49	BC	58	C	N3-C2-O2	-6.49	117.36	121.90
49	BC	234	U	C3'-C2'-C1'	6.49	106.69	101.50
49	BC	235	G	O4'-C1'-N9	6.49	113.39	108.20
49	BC	151	C	N3-C2-O2	-6.48	117.36	121.90
49	BC	238	C	N1-C2-O2	6.47	122.78	118.90
49	BC	140	A	C5-C6-N1	6.47	120.94	117.70
49	BC	282	U	N3-C2-O2	-6.47	117.67	122.20
49	BC	252	A	P-O3'-C3'	6.47	127.47	119.70
49	BC	254	C	N3-C2-O2	-6.46	117.38	121.90
49	BC	271	G	C8-N9-C4	-6.45	103.82	106.40
48	BB	1008	ILE	CG1-CB-CG2	-6.45	97.22	111.40
49	BC	153	G	C5'-C4'-O4'	6.45	116.83	109.10
49	BC	230	G	N1-C6-O6	-6.45	116.03	119.90
49	BC	118	G	N1-C6-O6	-6.44	116.04	119.90
49	BC	170	G	N1-C6-O6	-6.43	116.04	119.90
48	BB	1341	VAL	CG1-CB-CG2	-6.41	100.64	110.90
49	BC	276	A	C4-C5-C6	-6.41	113.79	117.00
49	BC	277	G	N1-C6-O6	-6.41	116.05	119.90
49	BC	267	G	C5-C6-O6	6.41	132.44	128.60
1	A2	3921	A	C2'-C3'-O3'	6.40	123.94	113.70
49	BC	162	A	C5-C6-N1	6.40	120.90	117.70
49	BC	127	U	N3-C2-O2	-6.40	117.72	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	109	A	C4-C5-C6	-6.40	113.80	117.00
49	BC	58	C	O4'-C1'-N1	6.40	113.32	108.20
49	BC	258	G	N9-C1'-C2'	6.40	122.31	114.00
49	BC	120	C	N1-C2-O2	6.39	122.74	118.90
48	BB	1211	PHE	CB-CG-CD1	-6.39	116.33	120.80
1	A2	139	G	C3'-C2'-C1'	-6.39	96.39	101.50
49	BC	107	G	N3-C4-C5	-6.37	125.41	128.60
49	BC	260	A	C5-C6-N1	6.37	120.89	117.70
1	A2	103	G	C3'-C2'-C1'	-6.37	96.40	101.50
49	BC	332	A	P-O3'-C3'	6.36	127.33	119.70
49	BC	275	A	O4'-C1'-N9	6.36	113.28	108.20
49	BC	48	U	N3-C2-O2	-6.35	117.75	122.20
49	BC	319	G	N1-C6-O6	-6.34	116.09	119.90
49	BC	169	C	N1-C2-O2	6.34	122.70	118.90
49	BC	130	C	N3-C2-O2	-6.34	117.46	121.90
49	BC	57	A	O4'-C1'-N9	6.33	113.27	108.20
49	BC	126	C	C5'-C4'-O4'	6.33	116.69	109.10
49	BC	330	A	O3'-P-O5'	-6.32	91.99	104.00
49	BC	279	C	N3-C2-O2	-6.32	117.48	121.90
49	BC	54	A	C5-C6-N1	6.31	120.86	117.70
49	BC	69	C	N3-C2-O2	-6.31	117.48	121.90
49	BC	237	C	N3-C2-O2	-6.31	117.48	121.90
1	A2	4688	A	C3'-C2'-C1'	-6.30	96.46	101.50
1	A2	3913	G	C4'-C3'-O3'	6.30	125.60	113.00
1	A2	3914	A	C4'-C3'-C2'	-6.30	96.30	102.60
49	BC	258	G	C5-C6-N1	6.29	114.65	111.50
49	BC	290	U	P-O3'-C3'	6.29	127.25	119.70
49	BC	298	A	C4-C5-C6	-6.29	113.85	117.00
49	BC	246	A	C4-C5-C6	-6.29	113.86	117.00
49	BC	285	G	N1-C6-O6	-6.29	116.13	119.90
49	BC	167	A	C5-C6-N1	6.29	120.84	117.70
49	BC	286	G	N1-C6-O6	-6.28	116.13	119.90
49	BC	52	G	N1-C6-O6	-6.27	116.14	119.90
49	BC	155	A	C5-C6-N1	6.27	120.83	117.70
49	BC	76	C	N3-C2-O2	-6.26	117.52	121.90
49	BC	315	C	C5'-C4'-O4'	6.25	116.61	109.10
49	BC	86	U	C3'-C2'-C1'	-6.25	96.50	101.50
49	BC	53	A	C5-C6-N1	6.25	120.83	117.70
49	BC	153	G	N1-C6-O6	-6.25	116.15	119.90
49	BC	111	C	O4'-C1'-N1	6.25	113.20	108.20
49	BC	278	G	O4'-C1'-N9	6.23	113.19	108.20
49	BC	50	A	C5-C6-N1	6.23	120.82	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	258	G	C4'-C3'-C2'	-6.23	96.37	102.60
49	BC	86	U	O4'-C1'-N1	6.22	113.18	108.20
49	BC	239	C	N1-C2-O2	6.22	122.63	118.90
49	BC	292	C	O4'-C1'-N1	6.22	113.17	108.20
49	BC	73	A	C6-C5-N7	6.21	136.65	132.30
49	BC	252	A	C4-C5-C6	-6.21	113.89	117.00
49	BC	228	U	C1'-O4'-C4'	-6.21	104.93	109.90
49	BC	70	A	C4-C5-C6	-6.21	113.90	117.00
49	BC	244	A	C4-C5-C6	-6.21	113.90	117.00
49	BC	98	G	O4'-C1'-N9	6.20	113.16	108.20
49	BC	89	C	N3-C2-O2	-6.20	117.56	121.90
49	BC	282	U	O5'-C5'-C4'	6.20	123.48	111.70
49	BC	291	G	C5'-C4'-C3'	-6.20	106.08	116.00
49	BC	341	C	N3-C4-C5	6.19	124.38	121.90
49	BC	320	G	N1-C6-O6	-6.19	116.19	119.90
1	A2	1673	C	N3-C4-N4	-6.18	113.67	118.00
49	BC	259	U	N3-C2-O2	-6.17	117.88	122.20
1	A2	4560	G	C3'-C2'-C1'	-6.17	96.56	101.50
49	BC	152	G	N1-C6-O6	-6.17	116.20	119.90
49	BC	95	U	O4'-C1'-N1	6.16	113.13	108.20
49	BC	234	U	N3-C2-O2	-6.16	117.89	122.20
49	BC	55	C	C6-N1-C2	-6.15	117.84	120.30
49	BC	275	A	C5-C6-N1	6.15	120.77	117.70
49	BC	79	C	N3-C2-O2	-6.13	117.61	121.90
49	BC	305	U	N3-C2-O2	-6.13	117.91	122.20
1	A2	3919	U	P-O3'-C3'	6.13	127.05	119.70
1	A2	1673	C	C4'-C3'-O3'	6.12	125.25	113.00
1	A2	1673	C	C6-N1-C1'	6.12	128.15	120.80
1	A2	1673	C	C4'-C3'-C2'	-6.12	96.48	102.60
47	BA	7	A	P-O5'-C5'	6.12	130.69	120.90
49	BC	94	G	N1-C6-O6	-6.11	116.24	119.90
49	BC	96	A	C5-C6-N1	6.11	120.75	117.70
49	BC	276	A	C5'-C4'-O4'	-6.11	101.77	109.10
49	BC	276	A	P-O3'-C3'	6.10	127.02	119.70
50	C1	502	C	C3'-C2'-C1'	-6.10	96.62	101.50
49	BC	291	G	N1-C6-O6	-6.10	116.24	119.90
49	BC	314	C	O4'-C1'-N1	6.10	113.08	108.20
49	BC	129	C	N3-C2-O2	-6.09	117.63	121.90
49	BC	111	C	N3-C2-O2	-6.09	117.64	121.90
49	BC	156	C	N3-C2-O2	-6.09	117.64	121.90
49	BC	112	C	O4'-C1'-N1	6.08	113.07	108.20
48	BB	1275	ILE	CG1-CB-CG2	6.08	124.77	111.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A2	1673	C	C5'-C4'-C3'	6.07	125.72	116.00
49	BC	94	G	O4'-C1'-C2'	-6.07	99.73	105.80
49	BC	60	G	N1-C6-O6	-6.06	116.26	119.90
49	BC	281	U	O5'-C5'-C4'	6.06	123.21	111.70
49	BC	155	A	C4-C5-C6	-6.05	113.98	117.00
49	BC	150	G	C5'-C4'-O4'	6.04	116.35	109.10
49	BC	74	A	O4'-C1'-N9	6.04	113.03	108.20
49	BC	142	A	C4-C5-C6	-6.03	113.98	117.00
1	A2	3921	A	C5'-C4'-C3'	-6.03	106.35	116.00
49	BC	114	C	N3-C2-O2	-6.02	117.68	121.90
49	BC	251	U	N3-C2-O2	-6.02	117.99	122.20
48	BB	1278	HIS	CG-CD2-NE2	6.01	120.62	109.20
49	BC	86	U	N3-C2-O2	-6.01	117.99	122.20
49	BC	321	A	N1-C6-N6	-6.01	114.99	118.60
49	BC	171	G	O4'-C1'-N9	6.00	113.00	108.20
49	BC	322	G	N1-C6-O6	-5.98	116.31	119.90
49	BC	324	U	P-O3'-C3'	5.97	126.87	119.70
49	BC	263	G	N1-C6-O6	-5.95	116.33	119.90
49	BC	148	C	O4'-C1'-N1	5.95	112.96	108.20
49	BC	253	G	N1-C6-O6	-5.95	116.33	119.90
49	BC	333	C	N1-C1'-C2'	-5.93	105.47	112.00
49	BC	168	C	N1-C2-O2	5.93	122.46	118.90
49	BC	340	C	N3-C4-C5	5.93	124.27	121.90
49	BC	93	A	C4-C5-C6	-5.92	114.04	117.00
49	BC	343	U	N3-C2-O2	-5.91	118.06	122.20
1	A2	683	C	C3'-C2'-C1'	-5.91	96.77	101.50
1	A2	3919	U	C2-N1-C1'	5.90	124.78	117.70
49	BC	119	A	C3'-C2'-C1'	-5.90	96.78	101.50
49	BC	314	C	C6-N1-C2	-5.89	117.94	120.30
49	BC	84	C	N3-C4-C5	5.89	124.26	121.90
49	BC	98	G	N1-C6-O6	-5.89	116.37	119.90
49	BC	148	C	N1-C2-O2	5.89	122.43	118.90
49	BC	288	A	N1-C6-N6	-5.88	115.07	118.60
49	BC	59	U	O4'-C1'-N1	5.87	112.90	108.20
49	BC	348	A	C4'-C3'-O3'	-5.87	97.08	109.40
49	BC	46	U	O4'-C1'-N1	5.86	112.88	108.20
49	BC	112	C	N3-C2-O2	-5.85	117.81	121.90
49	BC	290	U	N3-C2-O2	-5.84	118.11	122.20
1	A2	3677	C	C3'-C2'-C1'	-5.84	96.83	101.50
49	BC	136	A	O4'-C1'-N9	5.83	112.87	108.20
49	BC	263	G	C5'-C4'-O4'	5.83	116.10	109.10
49	BC	304	C	N3-C2-O2	-5.83	117.82	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	116	A	O4'-C1'-N9	5.83	112.86	108.20
49	BC	229	G	N1-C6-O6	-5.81	116.41	119.90
1	A2	1673	C	N1-C1'-C2'	5.81	121.56	114.00
49	BC	247	C	N1-C2-O2	5.81	122.38	118.90
49	BC	254	C	O4'-C1'-N1	5.80	112.84	108.20
49	BC	256	G	N3-C4-C5	-5.80	125.70	128.60
47	BA	8	U	C4'-C3'-O3'	5.79	124.58	113.00
1	A2	3742	U	C3'-C2'-C1'	-5.78	96.87	101.50
49	BC	72	A	C5-C6-N1	5.78	120.59	117.70
49	BC	111	C	C3'-C2'-C1'	5.78	106.12	101.50
49	BC	242	C	N1-C2-O2	5.78	122.37	118.90
1	A2	1942	A	N9-C1'-C2'	-5.77	105.65	112.00
49	BC	125	C	N3-C2-O2	-5.77	117.86	121.90
49	BC	289	C	N1-C2-O2	5.77	122.36	118.90
49	BC	150	G	N3-C4-C5	-5.75	125.72	128.60
49	BC	113	U	C5-C6-N1	-5.75	119.83	122.70
49	BC	53	A	O4'-C1'-N9	5.74	112.79	108.20
49	BC	55	C	N3-C2-O2	-5.74	117.88	121.90
49	BC	309	G	N1-C6-O6	-5.74	116.46	119.90
7	AD	265	ARG	N-CA-C	5.73	126.48	111.00
48	BB	1320	ASP	CB-CA-C	5.73	121.86	110.40
49	BC	325	C	O4'-C1'-N1	5.73	112.78	108.20
49	BC	310	A	C5-C6-N1	5.71	120.56	117.70
49	BC	168	C	O4'-C1'-N1	5.71	112.77	108.20
49	BC	255	C	C6-N1-C2	-5.70	118.02	120.30
49	BC	148	C	N3-C2-O2	-5.70	117.91	121.90
48	BB	975	LEU	CB-CG-CD1	-5.70	101.31	111.00
49	BC	322	G	C5-C6-N1	5.70	114.35	111.50
49	BC	138	C	N1-C2-O2	5.69	122.31	118.90
49	BC	341	C	C3'-C2'-C1'	-5.69	96.95	101.50
49	BC	348	A	O3'-P-O5'	-5.68	93.20	104.00
49	BC	260	A	C4-C5-C6	-5.68	114.16	117.00
49	BC	115	C	O4'-C1'-N1	5.67	112.74	108.20
49	BC	245	G	C5'-C4'-O4'	5.67	115.90	109.10
49	BC	313	G	O3'-P-O5'	-5.67	93.24	104.00
1	A2	943	G	C5-C6-O6	-5.66	125.20	128.60
49	BC	249	G	C5'-C4'-O4'	5.66	115.89	109.10
47	BA	6	G	C2'-C3'-O3'	-5.65	97.06	109.50
49	BC	57	A	C4-C5-C6	-5.65	114.17	117.00
48	BB	896	THR	OG1-CB-CG2	-5.65	97.00	110.00
49	BC	293	C	N3-C2-O2	-5.65	117.94	121.90
49	BC	324	U	C3'-C2'-C1'	-5.65	96.98	101.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	346	G	O3'-P-O5'	-5.65	93.27	104.00
49	BC	53	A	C4-C5-C6	-5.64	114.18	117.00
49	BC	119	A	C2-N3-C4	5.64	113.42	110.60
1	A2	4034	U	C5'-C4'-O4'	-5.64	102.33	109.10
49	BC	150	G	O4'-C1'-N9	5.64	112.71	108.20
50	C1	645	C	C3'-C2'-C1'	-5.63	96.99	101.50
49	BC	240	C	O4'-C1'-N1	5.63	112.70	108.20
49	BC	240	C	P-O3'-C3'	5.62	126.45	119.70
49	BC	324	U	C4'-C3'-C2'	-5.62	96.98	102.60
49	BC	323	G	N1-C6-O6	-5.62	116.53	119.90
47	BA	73	A	P-O5'-C5'	-5.61	111.92	120.90
48	BB	1133	TYR	CD1-CG-CD2	5.61	124.07	117.90
49	BC	265	U	C5-C6-N1	-5.60	119.90	122.70
49	BC	281	U	N1-C1'-C2'	5.60	121.28	114.00
49	BC	344	G	C5-C6-N1	5.60	114.30	111.50
49	BC	250	C	N1-C2-O2	5.60	122.26	118.90
50	C1	1441	U	C3'-C2'-C1'	-5.60	97.02	101.50
49	BC	299	G	C3'-C2'-C1'	5.59	105.98	101.50
1	A2	4031	U	N1-C1'-C2'	-5.59	105.85	112.00
1	A2	3920	G	O5'-C5'-C4'	5.59	122.32	111.70
1	A2	3919	U	C6-N1-C2	5.59	124.35	121.00
49	BC	336	U	O4'-C1'-N1	5.59	112.67	108.20
49	BC	291	G	N3-C4-C5	-5.58	125.81	128.60
49	BC	129	C	N1-C2-O2	5.58	122.25	118.90
1	A2	3868	G	C3'-C2'-C1'	-5.58	97.04	101.50
49	BC	139	C	O4'-C1'-N1	5.58	112.66	108.20
49	BC	265	U	P-O3'-C3'	5.58	126.40	119.70
48	BB	845	ALA	C-N-CD	5.58	140.12	128.40
49	BC	143	G	N1-C6-O6	-5.58	116.55	119.90
49	BC	303	G	C8-N9-C4	-5.58	104.17	106.40
49	BC	281	U	C5'-C4'-C3'	5.57	124.92	116.00
49	BC	145	G	C5-C6-N1	5.57	114.29	111.50
49	BC	265	U	N3-C2-O2	-5.57	118.30	122.20
48	BB	1159	LEU	CB-CG-CD1	-5.55	101.56	111.00
49	BC	49	G	N3-C4-C5	-5.55	125.82	128.60
49	BC	87	G	N1-C6-O6	-5.55	116.57	119.90
49	BC	315	C	C6-N1-C2	-5.54	118.08	120.30
49	BC	164	U	C4'-C3'-C2'	-5.54	97.06	102.60
48	BB	1308	MET	CG-SD-CE	5.54	109.06	100.20
49	BC	310	A	C4-C5-C6	-5.54	114.23	117.00
49	BC	108	C	O4'-C1'-N1	5.53	112.62	108.20
48	BB	1133	TYR	CG-CD1-CE1	-5.52	116.89	121.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A2	3920	G	O4'-C1'-N9	5.52	112.61	108.20
49	BC	345	A	C4-C5-C6	-5.49	114.25	117.00
49	BC	284	U	N3-C2-O2	-5.49	118.36	122.20
14	AL	133	ALA	C-N-CD	5.48	139.91	128.40
49	BC	134	A	C5-C6-N1	5.47	120.44	117.70
49	BC	54	A	C6-C5-N7	5.47	136.13	132.30
1	A2	4030	A	P-O3'-C3'	5.46	126.26	119.70
49	BC	152	G	C5'-C4'-O4'	5.45	115.64	109.10
49	BC	165	A	O4'-C1'-N9	5.45	112.56	108.20
49	BC	120	C	C6-N1-C2	-5.45	118.12	120.30
49	BC	340	C	N3-C4-N4	-5.44	114.19	118.00
1	A2	1703	G	O4'-C1'-C2'	-5.44	100.36	105.80
49	BC	126	C	N3-C4-C5	5.43	124.07	121.90
1	A2	2837	C	C3'-C2'-C1'	-5.43	97.16	101.50
47	BA	68	C	O3'-P-O5'	-5.43	93.68	104.00
49	BC	116	A	C2-N3-C4	5.43	113.31	110.60
49	BC	262	U	O4'-C1'-N1	5.43	112.54	108.20
49	BC	51	G	C6-C5-N7	5.42	133.66	130.40
47	BA	8	U	O5'-C5'-C4'	5.42	122.00	111.70
49	BC	171	G	N9-C4-C5	5.42	107.57	105.40
1	A2	1548	U	C3'-C2'-C1'	-5.42	97.16	101.50
49	BC	241	G	C5'-C4'-O4'	5.42	115.60	109.10
3	A4	108	G	O4'-C4'-C3'	-5.41	98.59	104.00
49	BC	89	C	C3'-C2'-C1'	5.41	105.83	101.50
49	BC	141	U	C5'-C4'-O4'	5.40	115.58	109.10
14	AL	130	LYS	C-N-CD	5.40	139.74	128.40
49	BC	233	G	C5-C6-N1	5.39	114.20	111.50
49	BC	254	C	N1-C2-O2	5.39	122.14	118.90
64	CN	6	ALA	N-CA-C	-5.38	96.48	111.00
49	BC	126	C	O4'-C1'-N1	5.36	112.49	108.20
49	BC	53	A	C6-C5-N7	5.36	136.05	132.30
49	BC	334	C	P-O3'-C3'	5.36	126.13	119.70
49	BC	109	A	C6-C5-N7	5.36	136.05	132.30
49	BC	281	U	N1-C2-N3	5.35	118.11	114.90
49	BC	171	G	C6-C5-N7	5.35	133.61	130.40
1	A2	28	C	C3'-C2'-C1'	-5.35	97.22	101.50
49	BC	74	A	C4-C5-C6	-5.34	114.33	117.00
49	BC	158	G	N1-C6-O6	-5.34	116.70	119.90
49	BC	167	A	N1-C6-N6	-5.34	115.40	118.60
3	A4	108	G	C5'-C4'-O4'	5.33	115.50	109.10
49	BC	279	C	O4'-C1'-N1	5.33	112.46	108.20
1	A2	4031	U	P-O5'-C5'	-5.33	112.38	120.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A2	4987	C	C3'-C2'-C1'	-5.33	97.24	101.50
49	BC	281	U	C6-N1-C2	-5.33	117.80	121.00
1	A2	4475	G	C3'-C2'-C1'	-5.33	97.24	101.50
49	BC	268	G	N3-C2-N2	-5.33	116.17	119.90
49	BC	267	G	O4'-C1'-N9	5.32	112.46	108.20
1	A2	1672	U	C3'-C2'-C1'	-5.32	97.25	101.50
49	BC	228	U	C5-C6-N1	-5.32	120.04	122.70
58	CH	109	ARG	N-CA-CB	5.31	120.17	110.60
49	BC	289	C	O4'-C1'-N1	5.31	112.45	108.20
48	BB	1133	TYR	CA-CB-CG	5.31	123.49	113.40
49	BC	262	U	C5-C6-N1	-5.30	120.05	122.70
49	BC	240	C	N1-C2-O2	5.29	122.07	118.90
49	BC	244	A	C5'-C4'-O4'	5.29	115.45	109.10
49	BC	122	C	N3-C2-O2	-5.28	118.20	121.90
49	BC	270	C	N3-C4-C5	5.27	124.01	121.90
49	BC	337	G	C5-C6-O6	5.27	131.76	128.60
49	BC	296	A	C3'-C2'-C1'	-5.27	97.29	101.50
49	BC	256	G	O4'-C1'-N9	5.25	112.40	108.20
1	A2	355	G	C3'-C2'-C1'	-5.25	97.30	101.50
1	A2	1432	A	C3'-C2'-C1'	-5.25	97.30	101.50
48	BB	961	LYS	CD-CE-NZ	5.25	123.77	111.70
49	BC	50	A	C4-C5-C6	-5.24	114.38	117.00
49	BC	166	C	O4'-C1'-N1	5.24	112.39	108.20
52	CB	132	GLY	N-CA-C	5.24	126.20	113.10
49	BC	324	U	O4'-C1'-C2'	-5.24	100.56	105.80
49	BC	337	G	N3-C4-C5	-5.24	125.98	128.60
49	BC	335	G	C5-C6-O6	5.23	131.74	128.60
49	BC	276	A	C6-N1-C2	-5.23	115.46	118.60
49	BC	94	G	C3'-C2'-C1'	-5.23	97.32	101.50
50	C1	797	C	N1-C1'-C2'	-5.23	106.25	112.00
49	BC	126	C	N1-C2-O2	5.23	122.03	118.90
49	BC	335	G	O4'-C1'-N9	5.22	112.38	108.20
49	BC	278	G	N1-C6-O6	-5.22	116.77	119.90
49	BC	84	C	C3'-C2'-C1'	5.21	105.67	101.50
49	BC	311	G	O4'-C1'-N9	5.21	112.37	108.20
49	BC	317	C	O4'-C1'-N1	5.21	112.37	108.20
49	BC	268	G	C5'-C4'-C3'	-5.21	107.67	116.00
50	C1	1422	G	C3'-C2'-C1'	-5.21	97.33	101.50
49	BC	79	C	O4'-C1'-N1	5.20	112.36	108.20
49	BC	125	C	O3'-P-O5'	-5.20	94.12	104.00
49	BC	252	A	C2-N3-C4	5.20	113.20	110.60
1	A2	4467	A	C3'-C2'-C1'	-5.19	97.35	101.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	119	A	C4-C5-C6	-5.19	114.40	117.00
49	BC	141	U	N1-C2-N3	5.19	118.01	114.90
49	BC	299	G	C5-C6-N1	5.19	114.09	111.50
1	A2	1595	U	C3'-C2'-C1'	-5.19	97.35	101.50
49	BC	69	C	N1-C2-O2	5.18	122.01	118.90
49	BC	114	C	N1-C2-O2	5.18	122.01	118.90
49	BC	327	C	O4'-C1'-N1	5.18	112.34	108.20
49	BC	127	U	C1'-O4'-C4'	5.18	114.04	109.90
49	BC	314	C	N1-C2-O2	5.18	122.01	118.90
49	BC	92	U	C5-C6-N1	-5.17	120.11	122.70
49	BC	324	U	N1-C2-O2	5.17	126.42	122.80
49	BC	253	G	C8-N9-C4	-5.17	104.33	106.40
49	BC	59	U	C5-C6-N1	-5.17	120.12	122.70
49	BC	261	G	C5-C6-O6	5.17	131.70	128.60
49	BC	309	G	N3-C2-N2	-5.17	116.28	119.90
49	BC	126	C	C6-N1-C2	-5.17	118.23	120.30
49	BC	157	C	N3-C4-C5	5.17	123.97	121.90
46	Au	157	ARG	N-CA-CB	-5.16	101.31	110.60
48	BB	1320	ASP	CB-CG-OD1	-5.16	113.66	118.30
47	BA	73	A	O3'-P-O5'	-5.16	94.20	104.00
49	BC	157	C	C3'-C2'-C1'	5.16	105.63	101.50
48	BB	1152	LEU	CA-CB-CG	-5.16	103.44	115.30
49	BC	120	C	O4'-C1'-C2'	-5.16	100.64	105.80
49	BC	315	C	N1-C2-O2	5.15	121.99	118.90
47	BA	70	G	O5'-C5'-C4'	-5.15	101.91	111.70
49	BC	165	A	C4-C5-C6	-5.14	114.43	117.00
82	Cf	124	ASP	N-CA-C	-5.14	97.12	111.00
49	BC	323	G	P-O3'-C3'	5.14	125.86	119.70
49	BC	321	A	C4-C5-C6	-5.14	114.43	117.00
49	BC	169	C	C3'-C2'-C1'	5.13	105.61	101.50
49	BC	228	U	N3-C2-O2	-5.13	118.61	122.20
49	BC	79	C	N1-C2-O2	5.12	121.97	118.90
49	BC	73	A	C3'-C2'-C1'	5.12	105.60	101.50
49	BC	85	A	C4-C5-C6	-5.12	114.44	117.00
49	BC	97	U	N3-C2-O2	-5.12	118.62	122.20
48	BB	1219	TYR	CB-CG-CD1	-5.12	117.93	121.00
50	C1	1147	C	C3'-C2'-C1'	-5.11	97.41	101.50
1	A2	303	G	C3'-C2'-C1'	-5.11	97.41	101.50
49	BC	150	G	C5-C6-N1	5.11	114.06	111.50
49	BC	235	G	C5-C6-O6	5.11	131.67	128.60
49	BC	298	A	O4'-C1'-N9	5.11	112.29	108.20
49	BC	133	G	C3'-C2'-C1'	5.11	105.58	101.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	BC	70	A	C3'-C2'-C1'	5.10	105.58	101.50
49	BC	116	A	C6-C5-N7	5.10	135.87	132.30
49	BC	157	C	N3-C2-O2	-5.10	118.33	121.90
49	BC	45	C	O4'-C1'-N1	5.10	112.28	108.20
49	BC	232	C	N3-C2-O2	-5.10	118.33	121.90
49	BC	335	G	C5-C6-N1	5.10	114.05	111.50
49	BC	83	C	N3-C4-C5	5.09	123.94	121.90
49	BC	294	U	C3'-C2'-C1'	5.09	105.58	101.50
1	A2	3914	A	P-O5'-C5'	5.09	129.05	120.90
49	BC	255	C	P-O3'-C3'	5.09	125.81	119.70
49	BC	49	G	C3'-C2'-C1'	5.08	105.57	101.50
49	BC	107	G	C8-N9-C4	-5.08	104.37	106.40
77	Ca	5	ARG	N-CA-CB	-5.08	101.46	110.60
49	BC	317	C	N1-C2-O2	5.08	121.95	118.90
49	BC	266	G	C5-C6-O6	5.08	131.65	128.60
49	BC	51	G	N3-C2-N2	-5.07	116.35	119.90
49	BC	257	A	C5'-C4'-O4'	-5.07	103.01	109.10
49	BC	49	G	C5-C6-N1	5.07	114.03	111.50
14	AL	55	ILE	N-CA-C	-5.06	97.33	111.00
49	BC	57	A	C3'-C2'-C1'	5.06	105.55	101.50
49	BC	277	G	C3'-C2'-C1'	5.06	105.55	101.50
49	BC	331	G	O3'-P-O5'	-5.06	94.39	104.00
1	A2	4547	G	C3'-C2'-C1'	-5.05	97.46	101.50
49	BC	318	G	C5'-C4'-O4'	5.05	115.17	109.10
49	BC	96	A	C3'-C2'-C1'	5.05	105.54	101.50
1	A2	14	C	OP2-P-O3'	5.05	116.31	105.20
5	AB	325	GLU	N-CA-C	5.05	124.64	111.00
49	BC	88	G	C5-C6-N1	5.05	114.03	111.50
49	BC	110	G	C5-C6-O6	5.05	131.63	128.60
1	A2	3920	G	C5'-C4'-O4'	5.05	115.16	109.10
49	BC	247	C	C5'-C4'-O4'	5.05	115.16	109.10
49	BC	249	G	C5-C6-N1	5.05	114.02	111.50
48	BB	1395	ILE	CA-CB-CG2	-5.04	100.82	110.90
49	BC	310	A	C5'-C4'-O4'	5.04	115.14	109.10
49	BC	69	C	C3'-C2'-C1'	5.04	105.53	101.50
47	BA	75	C	O4'-C1'-N1	5.03	112.23	108.20
49	BC	116	A	N1-C2-N3	-5.03	126.78	129.30
49	BC	128	C	N3-C2-O2	-5.03	118.38	121.90
49	BC	163	G	N3-C4-C5	-5.03	126.08	128.60
49	BC	264	U	C5-C6-N1	-5.03	120.18	122.70
49	BC	283	G	C5-C6-N1	5.03	114.02	111.50
49	BC	47	G	N1-C6-O6	-5.03	116.88	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
27	AY	126	ARG	CB-CA-C	-5.03	100.35	110.40
49	BC	95	U	N3-C2-O2	-5.03	118.68	122.20
49	BC	171	G	C4-C5-N7	-5.03	108.79	110.80
1	A2	491	G	C3'-C2'-C1'	-5.03	97.48	101.50
48	BB	1036	PRO	N-CA-CB	-5.02	97.08	102.60
49	BC	288	A	C5-C6-N1	5.02	120.21	117.70
49	BC	233	G	N3-C2-N2	-5.01	116.39	119.90
48	BB	1275	ILE	CA-CB-CG1	-5.01	101.48	111.00
1	A2	2261	A	C3'-C2'-C1'	-5.01	97.49	101.50
49	BC	291	G	C3'-C2'-C1'	5.01	105.51	101.50
49	BC	292	C	N1-C2-O2	5.01	121.91	118.90
49	BC	281	U	N1-C2-O2	5.01	126.31	122.80
49	BC	326	U	O4'-C1'-N1	5.01	112.21	108.20
3	A4	55	A	C3'-C2'-C1'	-5.00	97.50	101.50
49	BC	113	U	O4'-C1'-N1	5.00	112.20	108.20
49	BC	139	C	N1-C2-O2	5.00	121.90	118.90

There are no chirality outliers.

All (177) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A2	1	C	Sidechain
1	A2	115	C	Sidechain
1	A2	121	A	Sidechain
1	A2	1218	A	Sidechain
1	A2	1248	G	Sidechain
1	A2	1349	C	Sidechain
1	A2	140	C	Sidechain
1	A2	1481	G	Sidechain
1	A2	149	U	Sidechain
1	A2	1618	U	Sidechain
1	A2	1673	C	Sidechain
1	A2	2	G	Sidechain
1	A2	2064	G	Sidechain
1	A2	2246	G	Sidechain
1	A2	2274	U	Sidechain
1	A2	2294	G	Sidechain
1	A2	2338	G	Sidechain
1	A2	2354	C	Sidechain
1	A2	2570	C	Sidechain
1	A2	2581	C	Sidechain
1	A2	2624	A	Sidechain

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Mol	Chain	Res	Type	Group
1	A2	2795	C	Sidechain
1	A2	426	A	Sidechain
1	A2	4533	G	Sidechain
1	A2	4637	U	Sidechain
1	A2	4655	C	Sidechain
1	A2	4681	G	Sidechain
1	A2	4710	G	Sidechain
1	A2	4712	U	Sidechain
1	A2	4740	U	Sidechain
1	A2	510	C	Sidechain
1	A2	721	A	Sidechain
1	A2	902	G	Sidechain
1	A2	965	C	Sidechain
1	A2	966	U	Sidechain
2	A3	130	C	Sidechain
2	A3	156	U	Sidechain
48	BB	1105	PRO	Mainchain
48	BB	1133	TYR	Peptide,Sidechain
48	BB	1196	TYR	Sidechain
48	BB	1219	TYR	Sidechain
48	BB	1277	TYR	Sidechain
48	BB	1290	TYR	Sidechain
48	BB	1348	ASP	Mainchain,Peptide
48	BB	1385	MET	Peptide
48	BB	880	GLN	Mainchain
48	BB	899	ILE	Mainchain
49	BC	108	C	Sidechain
49	BC	109	A	Sidechain
49	BC	110	G	Sidechain
49	BC	111	C	Sidechain
49	BC	112	C	Sidechain
49	BC	113	U	Sidechain
49	BC	114	C	Sidechain
49	BC	115	C	Sidechain
49	BC	116	A	Sidechain
49	BC	117	G	Sidechain
49	BC	121	C	Sidechain
49	BC	122	C	Sidechain
49	BC	127	U	Sidechain
49	BC	128	C	Sidechain
49	BC	132	G	Sidechain
49	BC	134	A	Sidechain

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Mol	Chain	Res	Type	Group
49	BC	139	C	Sidechain
49	BC	143	G	Sidechain
49	BC	144	U	Sidechain
49	BC	148	C	Sidechain
49	BC	153	G	Sidechain
49	BC	156	C	Sidechain
49	BC	159	G	Sidechain
49	BC	160	U	Sidechain
49	BC	161	G	Sidechain
49	BC	162	A	Sidechain
49	BC	163	G	Sidechain
49	BC	232	C	Sidechain
49	BC	234	U	Sidechain
49	BC	236	C	Sidechain
49	BC	237	C	Sidechain
49	BC	240	C	Sidechain
49	BC	245	G	Sidechain
49	BC	246	A	Sidechain
49	BC	247	C	Sidechain
49	BC	248	U	Sidechain
49	BC	249	G	Sidechain
49	BC	252	A	Sidechain
49	BC	253	G	Sidechain
49	BC	254	C	Sidechain
49	BC	255	C	Sidechain
49	BC	256	G	Sidechain
49	BC	257	A	Sidechain
49	BC	258	G	Sidechain
49	BC	259	U	Sidechain
49	BC	260	A	Sidechain
49	BC	264	U	Sidechain
49	BC	265	U	Sidechain
49	BC	266	G	Sidechain
49	BC	269	U	Sidechain
49	BC	272	C	Sidechain
49	BC	274	A	Sidechain
49	BC	276	A	Sidechain
49	BC	279	C	Sidechain
49	BC	280	C	Sidechain
49	BC	281	U	Sidechain
49	BC	282	U	Sidechain
49	BC	283	G	Sidechain

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Mol	Chain	Res	Type	Group
49	BC	285	G	Sidechain
49	BC	286	G	Sidechain
49	BC	288	A	Sidechain
49	BC	292	C	Sidechain
49	BC	293	C	Sidechain
49	BC	303	G	Sidechain
49	BC	305	U	Sidechain
49	BC	307	G	Sidechain
49	BC	310	A	Sidechain
49	BC	313	G	Sidechain
49	BC	315	C	Sidechain
49	BC	323	G	Sidechain
49	BC	325	C	Sidechain
49	BC	335	G	Sidechain
49	BC	341	C	Sidechain
49	BC	46	U	Sidechain
49	BC	47	G	Sidechain
49	BC	48	U	Sidechain
49	BC	49	G	Sidechain
49	BC	50	A	Sidechain
49	BC	51	G	Sidechain
49	BC	52	G	Sidechain
49	BC	54	A	Sidechain
49	BC	55	C	Sidechain
49	BC	57	A	Sidechain
49	BC	58	C	Sidechain
49	BC	60	G	Sidechain
49	BC	69	C	Sidechain
49	BC	70	A	Sidechain
49	BC	71	G	Sidechain
49	BC	72	A	Sidechain
49	BC	73	A	Sidechain
49	BC	74	A	Sidechain
49	BC	78	U	Sidechain
49	BC	79	C	Sidechain
49	BC	82	G	Sidechain
49	BC	83	C	Sidechain
49	BC	84	C	Sidechain
49	BC	86	U	Sidechain
49	BC	87	G	Sidechain
49	BC	88	G	Sidechain
49	BC	89	C	Sidechain

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Mol	Chain	Res	Type	Group
49	BC	90	G	Sidechain
49	BC	91	U	Sidechain
49	BC	96	A	Sidechain
49	BC	97	U	Sidechain
49	BC	98	G	Sidechain
50	C1	111	A	Sidechain
50	C1	1120	U	Sidechain
50	C1	1288	U	Sidechain
50	C1	1308	U	Sidechain
50	C1	1414	A	Sidechain
50	C1	1548	G	Sidechain
50	C1	1578	U	Sidechain
50	C1	1624	U	Sidechain
50	C1	1686	G	Sidechain
50	C1	1823	A	Sidechain
50	C1	216	C	Sidechain
50	C1	235	A	Sidechain
50	C1	44	U	Sidechain
50	C1	570	C	Sidechain
50	C1	572	U	Sidechain
50	C1	643	A	Sidechain
50	C1	645	C	Sidechain
50	C1	747	U	Sidechain
50	C1	77	A	Sidechain
50	C1	799	U	Sidechain
50	C1	84	A	Sidechain
50	C1	867	G	Sidechain
50	C1	897	U	Sidechain

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 PDB entries followed by that with respect to all EM entries.

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	
4	AA	245/257 (95%)	236 (96%)	6 (2%)	3 (1%)	13	50
5	AB	394/403 (98%)	369 (94%)	11 (3%)	14 (4%)	3	25
6	AC	362/427 (85%)	338 (93%)	9 (2%)	15 (4%)	3	23
7	AD	288/297 (97%)	279 (97%)	4 (1%)	5 (2%)	9	42
8	AE	156/158 (99%)	141 (90%)	8 (5%)	7 (4%)	2	22
9	AF	232/248 (94%)	225 (97%)	3 (1%)	4 (2%)	9	42
10	AG	233/266 (88%)	216 (93%)	8 (3%)	9 (4%)	3	23
11	AH	190/192 (99%)	184 (97%)	3 (2%)	3 (2%)	9	44
12	AI	192/214 (90%)	187 (97%)	2 (1%)	3 (2%)	9	44
13	AJ	168/178 (94%)	153 (91%)	3 (2%)	12 (7%)	1	14
14	AL	198/211 (94%)	178 (90%)	9 (4%)	11 (6%)	2	19
15	AM	138/215 (64%)	132 (96%)	4 (3%)	2 (1%)	11	46
16	AN	202/204 (99%)	193 (96%)	6 (3%)	3 (2%)	10	46
17	AO	194/203 (96%)	187 (96%)	4 (2%)	3 (2%)	10	46
18	AP	151/184 (82%)	141 (93%)	7 (5%)	3 (2%)	7	38
19	AQ	182/188 (97%)	169 (93%)	7 (4%)	6 (3%)	4	26
20	AR	180/196 (92%)	172 (96%)	3 (2%)	5 (3%)	5	30
21	AS	171/176 (97%)	158 (92%)	7 (4%)	6 (4%)	3	25
22	AT	157/160 (98%)	150 (96%)	4 (2%)	3 (2%)	8	38
23	AU	100/128 (78%)	97 (97%)	3 (3%)	0	100	100
24	AV	126/140 (90%)	119 (94%)	5 (4%)	2 (2%)	9	44
25	AW	62/157 (40%)	61 (98%)	1 (2%)	0	100	100
26	AX	117/156 (75%)	113 (97%)	4 (3%)	0	100	100
27	AY	126/145 (87%)	119 (94%)	4 (3%)	3 (2%)	6	33
28	AZ	134/136 (98%)	125 (93%)	5 (4%)	4 (3%)	4	28
29	Aa	145/148 (98%)	134 (92%)	6 (4%)	5 (3%)	3	26
30	Ab	67/159 (42%)	60 (90%)	3 (4%)	4 (6%)	1	17
31	Ac	102/115 (89%)	99 (97%)	1 (1%)	2 (2%)	7	38
32	Ad	107/125 (86%)	103 (96%)	3 (3%)	1 (1%)	17	57
33	Ae	126/135 (93%)	117 (93%)	6 (5%)	3 (2%)	6	33

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
34	Af	105/110 (96%)	96 (91%)	4 (4%)	5 (5%)	2 21
35	Ag	113/117 (97%)	103 (91%)	6 (5%)	4 (4%)	3 25
36	Ah	120/123 (98%)	112 (93%)	5 (4%)	3 (2%)	5 32
37	Ai	95/105 (90%)	85 (90%)	4 (4%)	6 (6%)	1 17
38	Aj	83/97 (86%)	75 (90%)	6 (7%)	2 (2%)	6 33
39	Ak	67/70 (96%)	64 (96%)	2 (3%)	1 (2%)	10 46
40	Al	48/51 (94%)	46 (96%)	1 (2%)	1 (2%)	7 36
41	Am	50/128 (39%)	48 (96%)	1 (2%)	1 (2%)	7 38
42	An	23/25 (92%)	23 (100%)	0	0	100 100
43	Ao	104/106 (98%)	98 (94%)	4 (4%)	2 (2%)	8 38
44	Ap	89/92 (97%)	83 (93%)	3 (3%)	3 (3%)	3 26
45	At	128/137 (93%)	112 (88%)	9 (7%)	7 (6%)	2 19
46	Au	208/210 (99%)	199 (96%)	6 (3%)	3 (1%)	11 46
48	BB	605/627 (96%)	523 (86%)	51 (8%)	31 (5%)	2 19
51	CA	216/295 (73%)	209 (97%)	5 (2%)	2 (1%)	17 57
52	CB	211/264 (80%)	176 (83%)	18 (8%)	17 (8%)	1 12
53	CC	220/293 (75%)	213 (97%)	2 (1%)	5 (2%)	6 34
54	CD	210/243 (86%)	201 (96%)	4 (2%)	5 (2%)	6 33
55	CE	255/263 (97%)	237 (93%)	13 (5%)	5 (2%)	7 38
56	CF	186/204 (91%)	163 (88%)	13 (7%)	10 (5%)	2 19
57	CG	230/249 (92%)	216 (94%)	5 (2%)	9 (4%)	3 23
58	CH	189/194 (97%)	178 (94%)	7 (4%)	4 (2%)	7 36
59	CI	205/208 (99%)	184 (90%)	14 (7%)	7 (3%)	3 26
60	CJ	177/194 (91%)	169 (96%)	5 (3%)	3 (2%)	9 42
61	CK	92/165 (56%)	84 (91%)	1 (1%)	7 (8%)	1 13
62	CL	144/158 (91%)	133 (92%)	5 (4%)	6 (4%)	3 22
63	CM	118/132 (89%)	111 (94%)	1 (1%)	6 (5%)	2 19
64	CN	148/151 (98%)	138 (93%)	5 (3%)	5 (3%)	3 26
65	CO	135/151 (89%)	129 (96%)	3 (2%)	3 (2%)	6 35
66	CP	116/145 (80%)	106 (91%)	5 (4%)	5 (4%)	2 22
67	CQ	137/146 (94%)	129 (94%)	6 (4%)	2 (2%)	10 46

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
68	CR	105/135 (78%)	99 (94%)	4 (4%)	2 (2%)	8 38
69	CS	140/152 (92%)	125 (89%)	7 (5%)	8 (6%)	1 18
70	CT	141/145 (97%)	135 (96%)	4 (3%)	2 (1%)	11 46
71	CU	99/119 (83%)	95 (96%)	3 (3%)	1 (1%)	15 55
72	CV	81/83 (98%)	78 (96%)	1 (1%)	2 (2%)	5 32
73	CW	127/130 (98%)	118 (93%)	7 (6%)	2 (2%)	9 44
74	CX	132/143 (92%)	120 (91%)	5 (4%)	7 (5%)	2 19
75	CY	120/133 (90%)	114 (95%)	2 (2%)	4 (3%)	4 26
76	CZ	74/125 (59%)	71 (96%)	0	3 (4%)	3 23
77	Ca	94/115 (82%)	85 (90%)	5 (5%)	4 (4%)	2 22
78	Cb	78/84 (93%)	70 (90%)	8 (10%)	0	100 100
79	Cc	60/69 (87%)	57 (95%)	1 (2%)	2 (3%)	4 26
80	Cd	51/56 (91%)	44 (86%)	7 (14%)	0	100 100
81	Ce	49/59 (83%)	43 (88%)	5 (10%)	1 (2%)	7 38
82	Cf	59/156 (38%)	53 (90%)	6 (10%)	0	100 100
83	Cg	312/317 (98%)	291 (93%)	14 (4%)	7 (2%)	6 35
All	All	11794/13395 (88%)	10996 (93%)	442 (4%)	356 (3%)	7 28

All (356) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	AA	144	LYS
4	AA	196	TRP
5	AB	4	ARG
5	AB	5	LYS
5	AB	157	CYS
5	AB	259	PRO
5	AB	260	ALA
5	AB	360	LEU
6	AC	50	GLN
6	AC	53	ALA
6	AC	54	VAL
6	AC	151	PRO
6	AC	309	ILE
7	AD	258	LYS
8	AE	137	VAL

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Mol	Chain	Res	Type
8	AE	183	ARG
8	AE	185	PRO
9	AF	222	LYS
10	AG	41	ILE
10	AG	42	GLY
10	AG	162	ASP
11	AH	4	ILE
11	AH	61	TRP
12	AI	189	ARG
13	AJ	11	PRO
13	AJ	14	GLU
13	AJ	77	ALA
13	AJ	155	HIS
13	AJ	175	LEU
14	AL	47	ALA
14	AL	52	SER
14	AL	54	PRO
14	AL	77	SER
14	AL	205	GLN
15	AM	21	ALA
16	AN	184	ILE
18	AP	3	ARG
18	AP	6	LEU
19	AQ	98	LEU
19	AQ	155	ALA
20	AR	131	VAL
21	AS	171	ARG
22	AT	18	PRO
27	AY	67	ILE
28	AZ	32	GLY
28	AZ	103	ASP
28	AZ	125	GLY
29	Aa	48	TYR
30	Ab	30	GLU
30	Ab	56	LYS
31	Ac	107	SER
33	Ae	19	LYS
33	Ae	20	PHE
34	Af	60	PRO
34	Af	64	PRO
34	Af	106	TYR
34	Af	107	PRO

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Mol	Chain	Res	Type
35	Ag	84	ALA
36	Ah	122	LYS
37	Ai	28	ARG
37	Ai	33	LEU
37	Ai	34	THR
38	Aj	11	ARG
38	Aj	85	LYS
39	Ak	18	LYS
40	Al	4	HIS
45	At	44	ILE
45	At	61	VAL
45	At	76	SER
45	At	104	PRO
46	Au	190	LYS
48	BB	836	LYS
48	BB	843	LEU
48	BB	897	LYS
48	BB	931	SER
48	BB	1068	GLU
48	BB	1070	LEU
48	BB	1142	ALA
48	BB	1190	LEU
48	BB	1266	LEU
48	BB	1303	VAL
48	BB	1304	PHE
48	BB	1320	ASP
48	BB	1349	ILE
48	BB	1367	LYS
48	BB	1386	PHE
52	CB	76	ASN
52	CB	132	GLY
52	CB	148	ASN
52	CB	154	SER
52	CB	176	VAL
52	CB	177	GLN
52	CB	207	LEU
52	CB	221	PRO
53	CC	64	THR
53	CC	172	ASN
53	CC	176	LYS
54	CD	78	GLY
54	CD	199	GLY

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Mol	Chain	Res	Type
55	CE	204	SER
55	CE	205	PHE
56	CF	20	PHE
56	CF	22	LYS
56	CF	40	ALA
56	CF	48	TYR
56	CF	80	GLY
56	CF	132	GLY
56	CF	185	SER
57	CG	43	GLU
57	CG	146	ASN
57	CG	147	LEU
57	CG	169	PRO
58	CH	88	SER
58	CH	135	PHE
59	CI	123	ARG
59	CI	131	PRO
59	CI	134	GLU
59	CI	142	SER
59	CI	159	SER
61	CK	30	PRO
61	CK	32	HIS
61	CK	36	ALA
61	CK	84	HIS
61	CK	87	PRO
62	CL	8	ARG
62	CL	19	ASN
64	CN	7	PRO
64	CN	108	ASP
65	CO	100	THR
65	CO	146	ARG
66	CP	29	SER
66	CP	126	VAL
68	CR	72	LYS
69	CS	78	LYS
69	CS	79	ILE
69	CS	134	GLN
70	CT	37	VAL
71	CU	52	GLY
72	CV	42	VAL
73	CW	100	GLY
74	CX	61	GLN

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Mol	Chain	Res	Type
74	CX	106	GLY
74	CX	107	ARG
74	CX	116	PRO
75	CY	33	ALA
75	CY	98	GLU
76	CZ	95	GLY
83	Cg	255	SER
83	Cg	284	PRO
5	AB	299	ILE
5	AB	309	LEU
5	AB	357	ARG
6	AC	55	SER
6	AC	58	ALA
6	AC	148	PRO
6	AC	276	ASN
9	AF	166	ARG
9	AF	170	THR
10	AG	84	THR
11	AH	190	ALA
12	AI	41	ALA
12	AI	194	GLY
13	AJ	97	ASN
13	AJ	117	ILE
14	AL	51	ALA
14	AL	143	GLU
14	AL	162	LYS
19	AQ	157	GLY
20	AR	113	LYS
20	AR	137	ILE
20	AR	138	LEU
24	AV	85	ARG
27	AY	84	ARG
29	Aa	47	LYS
29	Aa	66	ASN
29	Aa	116	LYS
35	Ag	44	SER
35	Ag	45	ALA
43	Ao	34	TYR
44	Ap	12	GLY
48	BB	1153	GLU
48	BB	1185	LEU
48	BB	1195	VAL

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Mol	Chain	Res	Type
48	BB	1432	GLU
51	CA	6	ASP
52	CB	52	THR
52	CB	78	GLU
52	CB	127	VAL
52	CB	209	ASP
53	CC	174	ILE
54	CD	81	GLU
55	CE	231	GLY
55	CE	243	GLY
56	CF	34	SER
56	CF	56	TYR
57	CG	87	ARG
57	CG	157	VAL
58	CH	164	ASN
61	CK	64	TRP
62	CL	119	ASP
63	CM	30	GLY
63	CM	60	MET
63	CM	106	CYS
63	CM	107	SER
64	CN	143	SER
68	CR	114	LEU
69	CS	24	ARG
69	CS	31	THR
69	CS	90	VAL
69	CS	92	ASP
72	CV	48	GLY
77	Ca	61	ALA
83	Cg	276	SER
5	AB	292	LEU
5	AB	296	GLY
6	AC	57	LEU
6	AC	75	ARG
6	AC	150	LEU
7	AD	265	ARG
8	AE	135	GLN
8	AE	265	PRO
10	AG	161	VAL
10	AG	163	PRO
13	AJ	111	GLU
14	AL	141	ALA

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Mol	Chain	Res	Type
14	AL	161	TYR
14	AL	177	LYS
17	AO	72	HIS
17	AO	198	THR
17	AO	199	HIS
18	AP	5	SER
19	AQ	12	LYS
21	AS	135	SER
27	AY	123	ALA
28	AZ	37	PRO
30	Ab	29	TYR
36	Ah	41	ALA
37	Ai	101	ALA
41	Am	79	GLU
44	Ap	51	ALA
46	Au	3	GLN
48	BB	1302	ALA
48	BB	1414	ASP
52	CB	49	VAL
52	CB	213	ARG
54	CD	142	LEU
55	CE	203	GLY
56	CF	79	HIS
57	CG	91	GLU
57	CG	92	ARG
58	CH	109	ARG
62	CL	7	GLU
63	CM	102	LYS
64	CN	3	ARG
67	CQ	17	LYS
67	CQ	74	GLY
74	CX	33	GLY
74	CX	86	PRO
75	CY	64	PHE
76	CZ	113	THR
77	Ca	81	SER
79	Cc	38	THR
4	AA	70	LYS
7	AD	253	TYR
8	AE	227	HIS
10	AG	44	ASP
13	AJ	120	ASP

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Mol	Chain	Res	Type
13	AJ	176	PRO
15	AM	44	GLN
16	AN	145	ASN
19	AQ	164	LYS
21	AS	16	CYS
21	AS	158	VAL
21	AS	160	ARG
22	AT	125	TRP
31	Ac	53	PRO
36	Ah	3	LYS
45	At	79	ARG
45	At	89	THR
48	BB	841	GLU
48	BB	1182	LYS
48	BB	1187	ALA
48	BB	1348	ASP
48	BB	1358	ASN
64	CN	62	GLN
66	CP	39	ALA
73	CW	28	ARG
74	CX	75	ILE
75	CY	119	GLY
79	Cc	64	GLU
83	Cg	146	SER
5	AB	189	THR
6	AC	30	ALA
6	AC	56	GLU
10	AG	134	PRO
19	AQ	156	PRO
21	AS	164	LYS
45	At	45	HIS
46	Au	39	PRO
48	BB	845	ALA
48	BB	1192	GLU
48	BB	1242	ASP
53	CC	261	PHE
57	CG	88	ARG
60	CJ	138	ARG
60	CJ	169	ARG
62	CL	115	PRO
66	CP	28	MET
66	CP	125	PRO

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Mol	Chain	Res	Type
70	CT	51	ASN
76	CZ	114	LYS
77	Ca	38	LYS
81	Ce	8	ARG
5	AB	326	VAL
7	AD	125	VAL
7	AD	259	LYS
9	AF	184	ILE
13	AJ	58	ARG
20	AR	53	LYS
22	AT	123	GLY
29	Aa	24	LYS
30	Ab	21	ILE
34	Af	59	THR
37	Ai	21	VAL
37	Ai	65	LYS
51	CA	104	THR
52	CB	23	ASP
52	CB	210	VAL
59	CI	12	ARG
69	CS	6	PRO
77	Ca	84	VAL
10	AG	30	PRO
13	AJ	76	GLY
35	Ag	79	GLY
44	Ap	19	GLY
52	CB	64	GLY
60	CJ	170	PRO
61	CK	86	PRO
48	BB	1368	GLY
48	BB	1382	SER
59	CI	20	PRO
62	CL	29	GLY
63	CM	100	PRO
83	Cg	103	GLY
5	AB	18	PRO
6	AC	232	VAL
8	AE	144	ILE
32	Ad	20	VAL
65	CO	53	ILE
83	Cg	61	GLY
16	AN	52	GLY

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Mol	Chain	Res	Type
43	Ao	101	GLY
83	Cg	265	ILE
24	AV	45	ILE
33	Ae	6	PRO
54	CD	63	GLY

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 PDB entries followed by that with respect to all EM entries.

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	
4	AA	189/199 (95%)	185 (98%)	4 (2%)	53	72
5	AB	344/349 (99%)	326 (95%)	18 (5%)	23	48
6	AC	302/348 (87%)	284 (94%)	18 (6%)	19	44
7	AD	244/250 (98%)	237 (97%)	7 (3%)	42	64
8	AE	143/143 (100%)	135 (94%)	8 (6%)	21	46
9	AF	203/215 (94%)	196 (97%)	7 (3%)	37	60
10	AG	199/223 (89%)	192 (96%)	7 (4%)	36	59
11	AH	171/171 (100%)	164 (96%)	7 (4%)	30	55
12	AI	170/181 (94%)	161 (95%)	9 (5%)	22	47
13	AJ	143/149 (96%)	137 (96%)	6 (4%)	30	54
14	AL	167/177 (94%)	156 (93%)	11 (7%)	16	41
15	AM	118/161 (73%)	114 (97%)	4 (3%)	37	60
16	AN	172/172 (100%)	170 (99%)	2 (1%)	71	83
17	AO	168/174 (97%)	166 (99%)	2 (1%)	71	83
18	AP	133/163 (82%)	126 (95%)	7 (5%)	22	47
19	AQ	162/165 (98%)	157 (97%)	5 (3%)	40	62
20	AR	161/175 (92%)	149 (92%)	12 (8%)	13	38
21	AS	155/157 (99%)	148 (96%)	7 (4%)	27	52
22	AT	139/140 (99%)	134 (96%)	5 (4%)	35	59
23	AU	91/115 (79%)	88 (97%)	3 (3%)	38	61

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
24	AV	100/107 (94%)	99 (99%)	1 (1%)	76 86
25	AW	55/126 (44%)	52 (94%)	3 (6%)	21 47
26	AX	107/133 (80%)	105 (98%)	2 (2%)	57 75
27	AY	119/135 (88%)	115 (97%)	4 (3%)	37 60
28	AZ	118/118 (100%)	112 (95%)	6 (5%)	24 48
29	Aa	120/121 (99%)	116 (97%)	4 (3%)	38 61
30	Ab	58/126 (46%)	57 (98%)	1 (2%)	60 78
31	Ac	88/97 (91%)	87 (99%)	1 (1%)	73 84
32	Ad	100/110 (91%)	96 (96%)	4 (4%)	31 55
33	Ae	115/121 (95%)	112 (97%)	3 (3%)	46 66
34	Af	87/89 (98%)	79 (91%)	8 (9%)	9 29
35	Ag	98/100 (98%)	88 (90%)	10 (10%)	7 25
36	Ah	109/110 (99%)	106 (97%)	3 (3%)	43 65
37	Ai	82/89 (92%)	76 (93%)	6 (7%)	14 39
38	Aj	71/80 (89%)	69 (97%)	2 (3%)	43 65
39	Ak	64/65 (98%)	64 (100%)	0	100 100
40	Al	47/48 (98%)	46 (98%)	1 (2%)	53 72
41	Am	48/116 (41%)	45 (94%)	3 (6%)	18 43
42	An	24/24 (100%)	24 (100%)	0	100 100
43	Ao	94/94 (100%)	89 (95%)	5 (5%)	22 47
44	Ap	74/75 (99%)	72 (97%)	2 (3%)	44 65
45	At	113/121 (93%)	106 (94%)	7 (6%)	18 43
46	Au	177/177 (100%)	163 (92%)	14 (8%)	12 35
48	BB	540/552 (98%)	519 (96%)	21 (4%)	32 56
51	CA	181/243 (74%)	176 (97%)	5 (3%)	43 65
52	CB	194/231 (84%)	183 (94%)	11 (6%)	20 45
53	CC	188/225 (84%)	181 (96%)	7 (4%)	34 58
54	CD	175/202 (87%)	166 (95%)	9 (5%)	24 48
55	CE	220/225 (98%)	208 (94%)	12 (6%)	21 47
56	CF	158/170 (93%)	151 (96%)	7 (4%)	28 53
57	CG	202/218 (93%)	195 (96%)	7 (4%)	36 59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
58	CH	171/174 (98%)	167 (98%)	4 (2%)	50 70
59	CI	179/180 (99%)	167 (93%)	12 (7%)	16 41
60	CJ	160/168 (95%)	150 (94%)	10 (6%)	18 43
61	CK	85/136 (62%)	82 (96%)	3 (4%)	36 59
62	CL	133/142 (94%)	131 (98%)	2 (2%)	65 80
63	CM	102/108 (94%)	96 (94%)	6 (6%)	19 45
64	CN	130/131 (99%)	128 (98%)	2 (2%)	65 80
65	CO	107/119 (90%)	100 (94%)	7 (6%)	17 42
66	CP	107/130 (82%)	102 (95%)	5 (5%)	26 51
67	CQ	115/121 (95%)	111 (96%)	4 (4%)	36 59
68	CR	99/122 (81%)	94 (95%)	5 (5%)	24 48
69	CS	123/132 (93%)	114 (93%)	9 (7%)	14 39
70	CT	113/115 (98%)	106 (94%)	7 (6%)	18 43
71	CU	93/107 (87%)	89 (96%)	4 (4%)	29 53
72	CV	67/67 (100%)	66 (98%)	1 (2%)	65 80
73	CW	112/113 (99%)	107 (96%)	5 (4%)	27 52
74	CX	108/115 (94%)	103 (95%)	5 (5%)	27 52
75	CY	107/115 (93%)	101 (94%)	6 (6%)	21 46
76	CZ	67/103 (65%)	63 (94%)	4 (6%)	19 44
77	Ca	83/98 (85%)	76 (92%)	7 (8%)	11 33
78	Cb	72/76 (95%)	68 (94%)	4 (6%)	21 46
79	Cc	55/62 (89%)	52 (94%)	3 (6%)	21 47
80	Cd	47/49 (96%)	43 (92%)	4 (8%)	10 33
81	Ce	42/48 (88%)	40 (95%)	2 (5%)	25 51
82	Cf	54/140 (39%)	51 (94%)	3 (6%)	21 46
83	Cg	272/275 (99%)	260 (96%)	12 (4%)	28 53
All	All	10303/11421 (90%)	9849 (96%)	454 (4%)	32 53

All (454) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	AA	10	LYS
4	AA	116	LEU

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Mol	Chain	Res	Type
4	AA	162	ASN
4	AA	218	HIS
5	AB	3	HIS
5	AB	55	HIS
5	AB	89	ILE
5	AB	101	THR
5	AB	131	THR
5	AB	146	LEU
5	AB	157	CYS
5	AB	240	LEU
5	AB	243	LYS
5	AB	254	ILE
5	AB	258	HIS
5	AB	291	TYR
5	AB	300	LYS
5	AB	305	THR
5	AB	314	ILE
5	AB	327	THR
5	AB	351	LEU
5	AB	370	THR
6	AC	13	GLU
6	AC	24	LEU
6	AC	49	ARG
6	AC	78	ARG
6	AC	100	ARG
6	AC	150	LEU
6	AC	151	PRO
6	AC	162	LYS
6	AC	163	LYS
6	AC	188	ARG
6	AC	193	LYS
6	AC	215	ASN
6	AC	232	VAL
6	AC	253	THR
6	AC	289	LEU
6	AC	309	ILE
6	AC	310	HIS
6	AC	323	ARG
7	AD	23	ARG
7	AD	81	HIS
7	AD	105	LEU
7	AD	126	THR

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Mol	Chain	Res	Type
7	AD	155	THR
7	AD	262	LYS
7	AD	293	ARG
8	AE	162	VAL
8	AE	172	LEU
8	AE	188	ARG
8	AE	189	THR
8	AE	197	THR
8	AE	212	LEU
8	AE	217	PHE
8	AE	278	THR
9	AF	15	PRO
9	AF	32	ARG
9	AF	34	ARG
9	AF	37	PHE
9	AF	44	LYS
9	AF	199	LYS
9	AF	226	HIS
10	AG	34	LYS
10	AG	46	GLN
10	AG	55	VAL
10	AG	81	ASN
10	AG	162	ASP
10	AG	163	PRO
10	AG	218	LEU
11	AH	2	LYS
11	AH	20	LEU
11	AH	41	ILE
11	AH	45	LEU
11	AH	71	ARG
11	AH	129	ARG
11	AH	188	GLN
12	AI	33	ILE
12	AI	39	LYS
12	AI	52	MET
12	AI	53	VAL
12	AI	96	VAL
12	AI	163	GLN
12	AI	166	HIS
12	AI	174	THR
12	AI	200	ILE
13	AJ	12	MET

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Mol	Chain	Res	Type
13	AJ	70	VAL
13	AJ	83	LEU
13	AJ	109	ILE
13	AJ	115	LEU
13	AJ	169	LYS
14	AL	52	SER
14	AL	54	PRO
14	AL	55	ILE
14	AL	130	LYS
14	AL	135	LYS
14	AL	148	THR
14	AL	151	THR
14	AL	155	MET
14	AL	163	LYS
14	AL	164	GLU
14	AL	183	ARG
15	AM	72	TYR
15	AM	78	GLN
15	AM	114	LYS
15	AM	132	LYS
16	AN	5	LYS
16	AN	31	ARG
17	AO	169	ARG
17	AO	187	LYS
18	AP	2	VAL
18	AP	4	TYR
18	AP	64	ASN
18	AP	75	GLN
18	AP	78	TRP
18	AP	94	MET
18	AP	112	LEU
19	AQ	48	LEU
19	AQ	61	LEU
19	AQ	72	LEU
19	AQ	75	ARG
19	AQ	120	ILE
20	AR	1	MET
20	AR	3	MET
20	AR	5	ARG
20	AR	20	LYS
20	AR	25	ASP
20	AR	41	ILE

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Mol	Chain	Res	Type
20	AR	57	VAL
20	AR	74	ARG
20	AR	103	ARG
20	AR	114	LYS
20	AR	137	ILE
20	AR	138	LEU
21	AS	4	SER
21	AS	7	LEU
21	AS	24	THR
21	AS	27	LEU
21	AS	73	LEU
21	AS	166	ARG
21	AS	169	THR
22	AT	17	ARG
22	AT	68	THR
22	AT	69	GLN
22	AT	125	TRP
22	AT	126	VAL
23	AU	20	LYS
23	AU	27	HIS
23	AU	48	LYS
24	AV	131	ARG
25	AW	2	LYS
25	AW	32	LEU
25	AW	33	ASN
26	AX	79	PHE
26	AX	123	LYS
27	AY	8	THR
27	AY	36	LYS
27	AY	70	VAL
27	AY	115	ARG
28	AZ	1	MET
28	AZ	75	TYR
28	AZ	89	ILE
28	AZ	112	ARG
28	AZ	121	ARG
28	AZ	136	PHE
29	Aa	8	THR
29	Aa	47	LYS
29	Aa	56	VAL
29	Aa	132	ARG
30	Ab	61	ASN

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Mol	Chain	Res	Type
31	Ac	17	ARG
32	Ad	39	LYS
32	Ad	92	ARG
32	Ad	115	LYS
32	Ad	119	THR
33	Ae	13	VAL
33	Ae	70	LEU
33	Ae	88	LEU
34	Af	52	LYS
34	Af	54	LYS
34	Af	58	VAL
34	Af	59	THR
34	Af	73	LYS
34	Af	89	ARG
34	Af	101	ILE
34	Af	102	ARG
35	Ag	4	ARG
35	Ag	5	LEU
35	Ag	22	LEU
35	Ag	36	LYS
35	Ag	44	SER
35	Ag	54	ARG
35	Ag	60	ARG
35	Ag	67	LEU
35	Ag	69	LYS
35	Ag	81	SER
36	Ah	43	LYS
36	Ah	113	LEU
36	Ah	118	LYS
37	Ai	33	LEU
37	Ai	34	THR
37	Ai	79	THR
37	Ai	90	LEU
37	Ai	97	MET
37	Ai	98	ARG
38	Aj	19	CYS
38	Aj	83	THR
40	Al	5	LYS
41	Am	112	LYS
41	Am	115	CYS
41	Am	118	THR
43	Ao	32	SER

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Mol	Chain	Res	Type
43	Ao	83	LEU
43	Ao	93	LEU
43	Ao	99	ARG
43	Ao	100	LYS
44	Ap	29	ILE
44	Ap	52	VAL
45	At	4	HIS
45	At	18	ILE
45	At	20	ARG
45	At	61	VAL
45	At	76	SER
45	At	77	TYR
45	At	81	THR
46	Au	21	PHE
46	Au	24	THR
46	Au	30	ASN
46	Au	53	THR
46	Au	57	THR
46	Au	60	VAL
46	Au	101	THR
46	Au	110	LEU
46	Au	145	MET
46	Au	156	ARG
46	Au	190	LYS
46	Au	193	LEU
46	Au	197	THR
46	Au	210	VAL
48	BB	831	ARG
48	BB	838	VAL
48	BB	844	ARG
48	BB	866	ARG
48	BB	939	LEU
48	BB	1036	PRO
48	BB	1069	GLU
48	BB	1071	ARG
48	BB	1073	GLN
48	BB	1075	MET
48	BB	1163	VAL
48	BB	1174	LYS
48	BB	1182	LYS
48	BB	1184	THR
48	BB	1185	LEU

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Mol	Chain	Res	Type
48	BB	1188	ILE
48	BB	1189	LYS
48	BB	1190	LEU
48	BB	1192	GLU
48	BB	1205	LEU
48	BB	1303	VAL
51	CA	8	LEU
51	CA	10	MET
51	CA	19	LEU
51	CA	110	ASN
51	CA	204	TYR
52	CB	23	ASP
52	CB	30	TRP
52	CB	46	LYS
52	CB	71	LEU
52	CB	97	LEU
52	CB	131	ASP
52	CB	148	ASN
52	CB	152	LYS
52	CB	177	GLN
52	CB	216	LYS
52	CB	218	LEU
53	CC	89	LYS
53	CC	137	VAL
53	CC	205	VAL
53	CC	209	VAL
53	CC	240	THR
53	CC	252	THR
53	CC	256	TRP
54	CD	5	ILE
54	CD	16	ILE
54	CD	42	THR
54	CD	66	ILE
54	CD	93	THR
54	CD	150	MET
54	CD	162	ASP
54	CD	193	ASP
54	CD	211	VAL
55	CE	23	LEU
55	CE	37	LYS
55	CE	51	ARG
55	CE	95	THR

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Mol	Chain	Res	Type
55	CE	114	ILE
55	CE	115	THR
55	CE	128	LYS
55	CE	136	ILE
55	CE	148	ARG
55	CE	166	THR
55	CE	189	LEU
55	CE	205	PHE
56	CF	47	LYS
56	CF	63	LYS
56	CF	68	ILE
56	CF	72	LEU
56	CF	103	LEU
56	CF	135	ARG
56	CF	195	GLU
57	CG	24	LEU
57	CG	29	GLU
57	CG	34	THR
57	CG	87	ARG
57	CG	160	LYS
57	CG	176	ILE
57	CG	195	LYS
58	CH	111	LYS
58	CH	116	ARG
58	CH	118	ARG
58	CH	152	ARG
59	CI	19	LYS
59	CI	21	TYR
59	CI	29	LEU
59	CI	48	VAL
59	CI	55	TYR
59	CI	62	VAL
59	CI	78	ILE
59	CI	93	THR
59	CI	131	PRO
59	CI	136	ILE
59	CI	137	LEU
59	CI	144	LYS
60	CJ	8	VAL
60	CJ	12	THR
60	CJ	30	LYS
60	CJ	41	ARG

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Mol	Chain	Res	Type
60	CJ	47	LYS
60	CJ	78	LEU
60	CJ	128	VAL
60	CJ	130	ILE
60	CJ	147	PHE
60	CJ	163	SER
61	CK	15	LEU
61	CK	70	TYR
61	CK	84	HIS
62	CL	17	PHE
62	CL	69	ARG
63	CM	52	LEU
63	CM	83	LYS
63	CM	88	TRP
63	CM	106	CYS
63	CM	107	SER
63	CM	117	GLU
64	CN	7	PRO
64	CN	80	LEU
65	CO	45	THR
65	CO	63	LYS
65	CO	100	THR
65	CO	105	THR
65	CO	129	ILE
65	CO	132	VAL
65	CO	140	THR
66	CP	16	THR
66	CP	29	SER
66	CP	40	ARG
66	CP	44	ARG
66	CP	74	GLU
67	CQ	39	LEU
67	CQ	43	GLU
67	CQ	72	VAL
67	CQ	105	LYS
68	CR	22	THR
68	CR	46	LEU
68	CR	71	ILE
68	CR	109	LEU
68	CR	118	GLN
69	CS	3	LEU
69	CS	5	ILE

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Mol	Chain	Res	Type
69	CS	8	LYS
69	CS	23	ARG
69	CS	25	LYS
69	CS	45	LEU
69	CS	60	THR
69	CS	99	LEU
69	CS	139	THR
70	CT	5	THR
70	CT	33	TRP
70	CT	39	LEU
70	CT	64	LEU
70	CT	87	VAL
70	CT	121	ARG
70	CT	126	GLN
71	CU	24	LEU
71	CU	59	LYS
71	CU	61	LEU
71	CU	115	THR
72	CV	2	GLN
73	CW	4	MET
73	CW	11	LEU
73	CW	20	ARG
73	CW	97	ARG
73	CW	98	GLN
74	CX	17	ARG
74	CX	31	HIS
74	CX	37	LYS
74	CX	80	LYS
74	CX	81	ILE
75	CY	20	ARG
75	CY	21	LYS
75	CY	54	VAL
75	CY	84	LYS
75	CY	99	LYS
75	CY	100	LYS
76	CZ	43	LYS
76	CZ	62	VAL
76	CZ	67	LEU
76	CZ	111	ARG
77	Ca	21	ILE
77	Ca	23	CYS
77	Ca	32	LYS

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Mol	Chain	Res	Type
77	Ca	37	LYS
77	Ca	64	LEU
77	Ca	71	LEU
77	Ca	84	VAL
78	Cb	7	LEU
78	Cb	56	CYS
78	Cb	59	CYS
78	Cb	63	LEU
79	Cc	9	ILE
79	Cc	17	VAL
79	Cc	32	VAL
80	Cd	28	HIS
80	Cd	40	ARG
80	Cd	44	ARG
80	Cd	48	LYS
81	Ce	18	LYS
81	Ce	46	VAL
82	Cf	97	LYS
82	Cf	104	LYS
82	Cf	148	TYR
83	Cg	20	GLN
83	Cg	26	GLN
83	Cg	54	ILE
83	Cg	94	THR
83	Cg	99	ARG
83	Cg	157	SER
83	Cg	164	ILE
83	Cg	189	ILE
83	Cg	255	SER
83	Cg	266	ILE
83	Cg	287	THR
83	Cg	289	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (228) such sidechains are listed below:

Mol	Chain	Res	Type
4	AA	50	HIS
4	AA	97	ASN
4	AA	132	ASN
4	AA	209	HIS
5	AB	25	HIS
5	AB	167	GLN

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Mol	Chain	Res	Type
5	AB	175	GLN
5	AB	208	ASN
5	AB	213	GLN
5	AB	271	GLN
5	AB	328	ASN
5	AB	354	GLN
6	AC	43	ASN
6	AC	50	GLN
6	AC	187	GLN
6	AC	329	ASN
6	AC	347	HIS
6	AC	362	GLN
7	AD	191	ASN
7	AD	195	HIS
7	AD	244	HIS
7	AD	291	GLN
8	AE	135	GLN
8	AE	182	ASN
8	AE	205	ASN
8	AE	211	HIS
8	AE	228	GLN
8	AE	256	GLN
8	AE	279	ASN
9	AF	80	ASN
9	AF	116	GLN
9	AF	131	ASN
9	AF	151	ASN
10	AG	66	GLN
10	AG	108	GLN
11	AH	15	ASN
11	AH	162	GLN
12	AI	14	ASN
12	AI	51	HIS
12	AI	59	GLN
12	AI	144	ASN
13	AJ	97	ASN
13	AJ	112	HIS
13	AJ	167	GLN
13	AJ	168	GLN
14	AL	19	GLN
14	AL	27	ASN
14	AL	149	GLN

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Mol	Chain	Res	Type
15	AM	20	HIS
15	AM	33	GLN
15	AM	131	GLN
16	AN	139	HIS
16	AN	158	HIS
16	AN	181	HIS
16	AN	201	HIS
17	AO	180	GLN
18	AP	25	HIS
18	AP	54	GLN
18	AP	64	ASN
18	AP	120	ASN
19	AQ	40	ASN
19	AQ	45	GLN
20	AR	39	GLN
20	AR	40	GLN
20	AR	118	HIS
20	AR	141	HIS
21	AS	91	HIS
21	AS	117	HIS
21	AS	122	HIS
21	AS	125	GLN
21	AS	156	HIS
21	AS	173	ASN
22	AT	69	GLN
22	AT	127	GLN
22	AT	131	GLN
22	AT	139	HIS
22	AT	144	ASN
23	AU	17	GLN
23	AU	44	GLN
23	AU	116	GLN
24	AV	36	ASN
24	AV	84	GLN
24	AV	135	ASN
25	AW	48	GLN
25	AW	63	GLN
26	AX	93	ASN
26	AX	107	HIS
26	AX	111	GLN
26	AX	125	ASN
27	AY	66	GLN

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Mol	Chain	Res	Type
27	AY	72	GLN
27	AY	91	ASN
28	AZ	132	GLN
29	Aa	17	HIS
29	Aa	40	HIS
29	Aa	67	GLN
29	Aa	74	ASN
29	Aa	93	ASN
30	Ab	19	ASN
30	Ab	42	ASN
30	Ab	60	ASN
31	Ac	15	ASN
32	Ad	125	ASN
34	Af	21	GLN
34	Af	65	ASN
35	Ag	3	GLN
35	Ag	100	GLN
35	Ag	112	GLN
36	Ah	62	ASN
36	Ah	101	ASN
37	Ai	36	HIS
37	Ai	80	HIS
38	Aj	30	GLN
39	Ak	28	ASN
41	Am	87	GLN
41	Am	90	ASN
42	An	22	GLN
43	Ao	45	GLN
43	Ao	51	GLN
43	Ao	102	GLN
45	At	23	GLN
46	Au	3	GLN
46	Au	55	GLN
46	Au	194	ASN
48	BB	881	GLN
48	BB	895	GLN
48	BB	906	ASN
48	BB	928	ASN
48	BB	945	HIS
48	BB	950	GLN
48	BB	1015	GLN
48	BB	1073	GLN

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Mol	Chain	Res	Type
48	BB	1132	GLN
48	BB	1179	HIS
48	BB	1278	HIS
48	BB	1335	GLN
48	BB	1358	ASN
48	BB	1359	HIS
48	BB	1389	HIS
48	BB	1403	GLN
48	BB	1417	GLN
51	CA	50	ASN
51	CA	110	ASN
51	CA	215	GLN
52	CB	40	ASN
52	CB	53	GLN
52	CB	149	GLN
52	CB	157	GLN
52	CB	160	GLN
52	CB	177	GLN
52	CB	202	GLN
53	CC	267	GLN
54	CD	4	GLN
54	CD	56	GLN
54	CD	57	ASN
54	CD	101	GLN
54	CD	179	GLN
55	CE	36	HIS
55	CE	138	HIS
55	CE	188	ASN
55	CE	216	ASN
55	CE	230	ASN
56	CF	29	GLN
56	CF	82	ASN
56	CF	95	HIS
56	CF	107	ASN
56	CF	110	GLN
56	CF	114	ASN
56	CF	165	ASN
56	CF	203	ASN
57	CG	65	GLN
57	CG	81	HIS
57	CG	105	ASN
58	CH	25	GLN

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Mol	Chain	Res	Type
58	CH	76	GLN
58	CH	97	GLN
58	CH	112	ASN
59	CI	22	HIS
60	CJ	124	HIS
60	CJ	143	ASN
61	CK	44	HIS
61	CK	84	HIS
62	CL	5	GLN
62	CL	112	HIS
63	CM	19	GLN
64	CN	123	HIS
65	CO	32	HIS
65	CO	43	HIS
66	CP	35	GLN
66	CP	104	GLN
67	CQ	11	GLN
67	CQ	48	GLN
67	CQ	80	GLN
67	CQ	86	GLN
68	CR	62	GLN
69	CS	19	ASN
69	CS	42	HIS
69	CS	73	ASN
69	CS	85	ASN
69	CS	87	GLN
70	CT	63	HIS
70	CT	126	GLN
71	CU	100	GLN
72	CV	2	GLN
73	CW	24	GLN
73	CW	82	GLN
73	CW	113	HIS
74	CX	61	GLN
74	CX	73	GLN
74	CX	77	ASN
74	CX	97	ASN
75	CY	19	GLN
75	CY	22	GLN
75	CY	29	HIS
76	CZ	103	HIS
77	Ca	19	GLN

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Mol	Chain	Res	Type
78	Cb	49	HIS
79	Cc	45	ASN
80	Cd	5	GLN
80	Cd	16	GLN
80	Cd	26	ASN
80	Cd	41	GLN
81	Ce	22	GLN
81	Ce	44	ASN
83	Cg	20	GLN
83	Cg	64	HIS
83	Cg	117	ASN
83	Cg	196	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A2	3604/5025 (71%)	2040 (56%)	324 (8%)
2	A3	156/194 (80%)	82 (52%)	6 (3%)
3	A4	118/121 (97%)	68 (57%)	9 (7%)
47	BA	75/76 (98%)	14 (18%)	1 (1%)
49	BC	259/504 (51%)	135 (52%)	40 (15%)
50	C1	1738/1869 (92%)	1038 (59%)	152 (8%)
All	All	5950/7789 (76%)	3377 (56%)	532 (8%)

All (3377) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A2	2	G
1	A2	3	C
1	A2	5	A
1	A2	6	C
1	A2	8	U
1	A2	9	C
1	A2	11	G
1	A2	12	A
1	A2	13	U
1	A2	14	C
1	A2	15	A
1	A2	18	C
1	A2	19	G
1	A2	20	U

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Mol	Chain	Res	Type
1	A2	21	G
1	A2	22	G
1	A2	24	G
1	A2	25	A
1	A2	26	C
1	A2	27	C
1	A2	31	U
1	A2	33	A
1	A2	34	A
1	A2	36	U
1	A2	37	U
1	A2	39	A
1	A2	41	C
1	A2	42	A
1	A2	45	U
1	A2	46	U
1	A2	47	A
1	A2	48	G
1	A2	49	U
1	A2	53	C
1	A2	55	G
1	A2	56	A
1	A2	57	G
1	A2	58	G
1	A2	59	A
1	A2	61	A
1	A2	64	A
1	A2	65	A
1	A2	66	A
1	A2	67	C
1	A2	68	U
1	A2	69	A
1	A2	70	A
1	A2	71	C
1	A2	72	C
1	A2	73	A
1	A2	74	G
1	A2	75	G
1	A2	76	A
1	A2	77	U
1	A2	80	C
1	A2	84	A

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Mol	Chain	Res	Type
1	A2	85	G
1	A2	86	U
1	A2	88	A
1	A2	91	G
1	A2	92	C
1	A2	93	G
1	A2	94	A
1	A2	95	G
1	A2	96	U
1	A2	97	G
1	A2	98	A
1	A2	101	A
1	A2	102	G
1	A2	103	G
1	A2	104	G
1	A2	105	A
1	A2	107	G
1	A2	108	A
1	A2	109	G
1	A2	112	C
1	A2	113	A
1	A2	115	C
1	A2	119	G
1	A2	120	A
1	A2	121	A
1	A2	122	U
1	A2	123	C
1	A2	130	C
1	A2	132	G
1	A2	133	C
1	A2	134	G
1	A2	135	G
1	A2	137	G
1	A2	139	G
1	A2	140	C
1	A2	143	G
1	A2	148	G
1	A2	149	U
1	A2	155	A
1	A2	156	C
1	A2	157	G
1	A2	158	G

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Mol	Chain	Res	Type
1	A2	165	C
1	A2	168	U
1	A2	169	C
1	A2	170	C
1	A2	171	C
1	A2	173	G
1	A2	175	C
1	A2	177	C
1	A2	178	C
1	A2	179	G
1	A2	180	C
1	A2	181	U
1	A2	182	C
1	A2	183	G
1	A2	186	G
1	A2	187	G
1	A2	188	G
1	A2	189	G
1	A2	191	C
1	A2	193	C
1	A2	194	A
1	A2	195	A
1	A2	196	G
1	A2	197	U
1	A2	198	C
1	A2	199	C
1	A2	201	U
1	A2	203	U
1	A2	204	G
1	A2	207	C
1	A2	208	G
1	A2	212	C
1	A2	213	C
1	A2	215	A
1	A2	216	G
1	A2	217	C
1	A2	219	C
1	A2	220	G
1	A2	221	U
1	A2	222	G
1	A2	223	G
1	A2	224	A

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Mol	Chain	Res	Type
1	A2	226	G
1	A2	227	G
1	A2	229	G
1	A2	230	U
1	A2	231	G
1	A2	232	A
1	A2	233	G
1	A2	234	G
1	A2	235	C
1	A2	236	C
1	A2	238	G
1	A2	239	U
1	A2	240	A
1	A2	241	G
1	A2	242	C
1	A2	243	G
1	A2	246	C
1	A2	247	G
1	A2	251	C
1	A2	252	G
1	A2	253	C
1	A2	254	G
1	A2	255	C
1	A2	256	C
1	A2	258	G
1	A2	259	G
1	A2	266	C
1	A2	267	C
1	A2	268	G
1	A2	269	G
1	A2	270	A
1	A2	271	G
1	A2	279	G
1	A2	284	G
1	A2	285	G
1	A2	286	A
1	A2	287	A
1	A2	288	U
1	A2	289	G
1	A2	291	A
1	A2	292	G
1	A2	293	C

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Mol	Chain	Res	Type
1	A2	295	C
1	A2	296	A
1	A2	297	A
1	A2	299	G
1	A2	300	C
1	A2	301	G
1	A2	303	G
1	A2	305	G
1	A2	307	U
1	A2	308	A
1	A2	309	A
1	A2	312	U
1	A2	313	C
1	A2	314	C
1	A2	317	C
1	A2	319	A
1	A2	320	A
1	A2	321	G
1	A2	322	G
1	A2	325	A
1	A2	326	A
1	A2	327	A
1	A2	328	U
1	A2	329	A
1	A2	331	C
1	A2	332	G
1	A2	333	G
1	A2	334	C
1	A2	335	A
1	A2	337	G
1	A2	338	A
1	A2	340	A
1	A2	341	C
1	A2	342	C
1	A2	343	G
1	A2	344	A
1	A2	345	U
1	A2	349	C
1	A2	350	A
1	A2	351	A
1	A2	353	A
1	A2	354	A

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Mol	Chain	Res	Type
1	A2	355	G
1	A2	357	A
1	A2	363	A
1	A2	366	G
1	A2	369	A
1	A2	370	G
1	A2	372	U
1	A2	373	G
1	A2	376	A
1	A2	377	A
1	A2	378	G
1	A2	379	A
1	A2	380	A
1	A2	381	C
1	A2	382	U
1	A2	383	U
1	A2	384	U
1	A2	385	G
1	A2	386	A
1	A2	387	A
1	A2	389	A
1	A2	391	A
1	A2	393	A
1	A2	394	G
1	A2	395	U
1	A2	396	U
1	A2	397	C
1	A2	398	A
1	A2	399	A
1	A2	400	G
1	A2	401	A
1	A2	402	G
1	A2	403	G
1	A2	404	G
1	A2	405	C
1	A2	406	G
1	A2	408	G
1	A2	411	A
1	A2	421	G
1	A2	423	U
1	A2	424	A
1	A2	425	A

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Mol	Chain	Res	Type
1	A2	426	A
1	A2	431	U
1	A2	432	G
1	A2	433	G
1	A2	434	G
1	A2	435	G
1	A2	436	U
1	A2	437	C
1	A2	439	G
1	A2	440	C
1	A2	441	G
1	A2	442	C
1	A2	443	A
1	A2	444	G
1	A2	445	U
1	A2	446	C
1	A2	455	G
1	A2	456	G
1	A2	457	A
1	A2	458	U
1	A2	459	U
1	A2	460	C
1	A2	461	A
1	A2	462	A
1	A2	463	C
1	A2	464	C
1	A2	465	C
1	A2	466	G
1	A2	469	G
1	A2	470	G
1	A2	471	C
1	A2	472	G
1	A2	473	G
1	A2	474	G
1	A2	475	U
1	A2	476	C
1	A2	477	C
1	A2	478	G
1	A2	479	G
1	A2	482	G
1	A2	483	U
1	A2	484	G

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Mol	Chain	Res	Type
1	A2	485	U
1	A2	488	G
1	A2	489	C
1	A2	490	G
1	A2	491	G
1	A2	508	C
1	A2	510	C
1	A2	634	C
1	A2	636	G
1	A2	640	A
1	A2	641	C
1	A2	642	C
1	A2	643	G
1	A2	644	U
1	A2	650	G
1	A2	654	C
1	A2	655	G
1	A2	656	G
1	A2	657	C
1	A2	658	G
1	A2	659	A
1	A2	666	G
1	A2	671	C
1	A2	674	G
1	A2	675	C
1	A2	676	G
1	A2	677	C
1	A2	678	A
1	A2	679	U
1	A2	680	U
1	A2	691	G
1	A2	692	C
1	A2	701	C
1	A2	703	G
1	A2	706	C
1	A2	708	G
1	A2	709	G
1	A2	710	G
1	A2	712	C
1	A2	713	G
1	A2	714	G
1	A2	717	G

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Mol	Chain	Res	Type
1	A2	718	G
1	A2	719	G
1	A2	720	A
1	A2	721	A
1	A2	722	G
1	A2	723	G
1	A2	724	C
1	A2	725	C
1	A2	726	C
1	A2	727	G
1	A2	728	G
1	A2	731	G
1	A2	733	G
1	A2	734	A
1	A2	736	G
1	A2	737	G
1	A2	744	G
1	A2	745	G
1	A2	890	C
1	A2	892	G
1	A2	893	A
1	A2	894	G
1	A2	895	U
1	A2	896	G
1	A2	897	U
1	A2	898	U
1	A2	899	A
1	A2	900	C
1	A2	901	A
1	A2	903	C
1	A2	911	G
1	A2	912	C
1	A2	913	A
1	A2	914	G
1	A2	915	C
1	A2	916	A
1	A2	917	G
1	A2	918	C
1	A2	919	A
1	A2	920	C
1	A2	921	U
1	A2	925	C

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Mol	Chain	Res	Type
1	A2	926	G
1	A2	927	A
1	A2	928	A
1	A2	929	U
1	A2	930	C
1	A2	934	G
1	A2	938	C
1	A2	939	G
1	A2	940	A
1	A2	941	G
1	A2	942	G
1	A2	943	G
1	A2	944	A
1	A2	945	G
1	A2	946	C
1	A2	947	G
1	A2	948	A
1	A2	950	A
1	A2	951	C
1	A2	957	G
1	A2	958	C
1	A2	959	C
1	A2	960	G
1	A2	961	C
1	A2	962	G
1	A2	963	C
1	A2	964	U
1	A2	965	C
1	A2	966	U
1	A2	967	C
1	A2	968	C
1	A2	969	C
1	A2	970	C
1	A2	971	C
1	A2	972	C
1	A2	973	U
1	A2	974	C
1	A2	975	C
1	A2	976	C
1	A2	977	G
1	A2	978	G
1	A2	1047	G

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Mol	Chain	Res	Type
1	A2	1048	G
1	A2	1049	G
1	A2	1050	G
1	A2	1051	C
1	A2	1052	C
1	A2	1053	G
1	A2	1055	G
1	A2	1056	C
1	A2	1058	A
1	A2	1059	C
1	A2	1060	C
1	A2	1062	C
1	A2	1064	C
1	A2	1066	C
1	A2	1077	C
1	A2	1079	C
1	A2	1080	U
1	A2	1081	C
1	A2	1082	U
1	A2	1083	C
1	A2	1084	C
1	A2	1085	C
1	A2	1086	A
1	A2	1087	C
1	A2	1089	C
1	A2	1090	C
1	A2	1096	C
1	A2	1142	G
1	A2	1143	G
1	A2	1144	G
1	A2	1145	G
1	A2	1146	G
1	A2	1147	C
1	A2	1148	G
1	A2	1149	G
1	A2	1159	U
1	A2	1160	C
1	A2	1161	C
1	A2	1162	C
1	A2	1165	G
1	A2	1173	C
1	A2	1174	G

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Mol	Chain	Res	Type
1	A2	1176	G
1	A2	1177	C
1	A2	1178	G
1	A2	1179	G
1	A2	1186	C
1	A2	1187	C
1	A2	1188	G
1	A2	1189	U
1	A2	1190	C
1	A2	1192	G
1	A2	1193	G
1	A2	1194	C
1	A2	1195	C
1	A2	1196	C
1	A2	1197	G
1	A2	1198	G
1	A2	1199	G
1	A2	1201	G
1	A2	1202	A
1	A2	1204	G
1	A2	1205	U
1	A2	1206	U
1	A2	1207	C
1	A2	1208	U
1	A2	1209	C
1	A2	1210	U
1	A2	1212	G
1	A2	1214	G
1	A2	1215	G
1	A2	1216	C
1	A2	1217	C
1	A2	1218	A
1	A2	1219	C
1	A2	1220	G
1	A2	1221	C
1	A2	1223	C
1	A2	1224	G
1	A2	1225	C
1	A2	1242	G
1	A2	1245	G
1	A2	1246	G
1	A2	1247	C

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Mol	Chain	Res	Type
1	A2	1248	G
1	A2	1249	G
1	A2	1250	A
1	A2	1251	G
1	A2	1254	A
1	A2	1255	G
1	A2	1256	C
1	A2	1258	C
1	A2	1259	A
1	A2	1262	G
1	A2	1263	G
1	A2	1264	G
1	A2	1267	G
1	A2	1268	G
1	A2	1273	G
1	A2	1274	A
1	A2	1276	G
1	A2	1277	U
1	A2	1279	G
1	A2	1280	G
1	A2	1281	C
1	A2	1282	U
1	A2	1283	A
1	A2	1284	C
1	A2	1285	C
1	A2	1287	A
1	A2	1289	C
1	A2	1290	C
1	A2	1292	A
1	A2	1293	C
1	A2	1294	C
1	A2	1297	U
1	A2	1299	U
1	A2	1300	U
1	A2	1301	G
1	A2	1302	A
1	A2	1303	A
1	A2	1305	C
1	A2	1306	A
1	A2	1308	G
1	A2	1313	A
1	A2	1314	A

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Mol	Chain	Res	Type
1	A2	1318	G
1	A2	1323	A
1	A2	1324	C
1	A2	1326	C
1	A2	1329	G
1	A2	1332	C
1	A2	1334	A
1	A2	1336	U
1	A2	1337	C
1	A2	1338	G
1	A2	1339	G
1	A2	1340	G
1	A2	1341	G
1	A2	1349	C
1	A2	1350	G
1	A2	1351	A
1	A2	1354	G
1	A2	1356	C
1	A2	1357	G
1	A2	1358	C
1	A2	1359	C
1	A2	1360	G
1	A2	1361	U
1	A2	1366	C
1	A2	1367	A
1	A2	1368	A
1	A2	1372	A
1	A2	1374	G
1	A2	1376	G
1	A2	1377	A
1	A2	1378	A
1	A2	1384	G
1	A2	1388	G
1	A2	1389	C
1	A2	1390	U
1	A2	1392	G
1	A2	1393	C
1	A2	1398	C
1	A2	1399	G
1	A2	1400	A
1	A2	1401	G
1	A2	1402	G

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Mol	Chain	Res	Type
1	A2	1406	G
1	A2	1409	C
1	A2	1410	C
1	A2	1412	G
1	A2	1416	C
1	A2	1417	C
1	A2	1418	U
1	A2	1419	C
1	A2	1420	U
1	A2	1421	C
1	A2	1422	C
1	A2	1423	A
1	A2	1424	G
1	A2	1426	C
1	A2	1428	G
1	A2	1433	G
1	A2	1434	G
1	A2	1436	G
1	A2	1438	A
1	A2	1444	G
1	A2	1445	G
1	A2	1446	C
1	A2	1449	G
1	A2	1452	U
1	A2	1454	G
1	A2	1455	C
1	A2	1459	C
1	A2	1460	C
1	A2	1461	G
1	A2	1463	G
1	A2	1464	C
1	A2	1465	C
1	A2	1466	G
1	A2	1467	G
1	A2	1468	G
1	A2	1471	G
1	A2	1476	A
1	A2	1477	G
1	A2	1478	C
1	A2	1479	A
1	A2	1480	C
1	A2	1481	G

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Mol	Chain	Res	Type
1	A2	1482	A
1	A2	1483	G
1	A2	1484	C
1	A2	1487	A
1	A2	1488	C
1	A2	1493	U
1	A2	1495	G
1	A2	1498	C
1	A2	1499	C
1	A2	1500	C
1	A2	1502	A
1	A2	1503	A
1	A2	1504	A
1	A2	1505	G
1	A2	1513	A
1	A2	1518	G
1	A2	1520	C
1	A2	1521	U
1	A2	1522	G
1	A2	1523	G
1	A2	1524	G
1	A2	1526	A
1	A2	1530	C
1	A2	1531	G
1	A2	1532	A
1	A2	1533	A
1	A2	1537	A
1	A2	1540	G
1	A2	1541	G
1	A2	1542	A
1	A2	1543	A
1	A2	1544	A
1	A2	1545	C
1	A2	1550	G
1	A2	1553	G
1	A2	1554	A
1	A2	1555	G
1	A2	1556	G
1	A2	1557	U
1	A2	1558	C
1	A2	1561	U
1	A2	1567	U

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Mol	Chain	Res	Type
1	A2	1570	U
1	A2	1571	G
1	A2	1572	A
1	A2	1573	C
1	A2	1574	G
1	A2	1575	U
1	A2	1576	G
1	A2	1580	A
1	A2	1582	C
1	A2	1583	G
1	A2	1585	U
1	A2	1590	C
1	A2	1591	G
1	A2	1593	C
1	A2	1595	U
1	A2	1596	G
1	A2	1597	G
1	A2	1599	U
1	A2	1600	A
1	A2	1603	G
1	A2	1604	G
1	A2	1607	C
1	A2	1609	A
1	A2	1610	A
1	A2	1611	A
1	A2	1612	G
1	A2	1613	A
1	A2	1614	C
1	A2	1615	U
1	A2	1616	A
1	A2	1617	A
1	A2	1620	G
1	A2	1623	C
1	A2	1629	A
1	A2	1630	G
1	A2	1631	U
1	A2	1633	G
1	A2	1635	U
1	A2	1637	G
1	A2	1639	U
1	A2	1640	C
1	A2	1644	C

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Mol	Chain	Res	Type
1	A2	1648	A
1	A2	1649	G
1	A2	1650	U
1	A2	1651	U
1	A2	1653	C
1	A2	1654	C
1	A2	1655	C
1	A2	1656	U
1	A2	1657	C
1	A2	1658	A
1	A2	1659	G
1	A2	1660	G
1	A2	1661	A
1	A2	1663	A
1	A2	1666	U
1	A2	1667	G
1	A2	1669	C
1	A2	1671	C
1	A2	1672	U
1	A2	1673	C
1	A2	1701	C
1	A2	1703	G
1	A2	1704	U
1	A2	1706	U
1	A2	1709	U
1	A2	1710	C
1	A2	1711	C
1	A2	1712	G
1	A2	1713	G
1	A2	1714	U
1	A2	1715	A
1	A2	1719	C
1	A2	1721	A
1	A2	1725	A
1	A2	1726	U
1	A2	1727	U
1	A2	1729	G
1	A2	1730	A
1	A2	1732	G
1	A2	1733	U
1	A2	1734	C
1	A2	1736	U

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Mol	Chain	Res	Type
1	A2	1737	G
1	A2	1743	G
1	A2	1744	A
1	A2	1745	A
1	A2	1746	A
1	A2	1747	C
1	A2	1749	A
1	A2	1752	U
1	A2	1754	A
1	A2	1755	A
1	A2	1757	C
1	A2	1758	U
1	A2	1759	A
1	A2	1760	U
1	A2	1761	U
1	A2	1766	A
1	A2	1768	C
1	A2	1772	A
1	A2	1773	A
1	A2	1775	U
1	A2	1779	U
1	A2	1780	A
1	A2	1781	A
1	A2	1783	A
1	A2	1784	A
1	A2	1785	G
1	A2	1786	C
1	A2	1787	C
1	A2	1789	G
1	A2	1790	G
1	A2	1792	U
1	A2	1793	C
1	A2	1794	G
1	A2	1795	C
1	A2	1796	U
1	A2	1797	G
1	A2	1798	G
1	A2	1799	C
1	A2	1800	G
1	A2	1801	U
1	A2	1802	G
1	A2	1804	A

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Mol	Chain	Res	Type
1	A2	1805	G
1	A2	1806	C
1	A2	1809	G
1	A2	1810	G
1	A2	1811	G
1	A2	1813	G
1	A2	1815	A
1	A2	1816	A
1	A2	1818	G
1	A2	1820	G
1	A2	1821	A
1	A2	1822	G
1	A2	1825	C
1	A2	1829	G
1	A2	1832	G
1	A2	1833	G
1	A2	1835	C
1	A2	1836	A
1	A2	1839	U
1	A2	1840	U
1	A2	1844	U
1	A2	1845	A
1	A2	1846	A
1	A2	1847	G
1	A2	1848	C
1	A2	1849	A
1	A2	1852	A
1	A2	1853	C
1	A2	1855	G
1	A2	1856	G
1	A2	1857	C
1	A2	1859	C
1	A2	1860	U
1	A2	1861	G
1	A2	1865	G
1	A2	1867	U
1	A2	1868	G
1	A2	1869	A
1	A2	1870	A
1	A2	1871	C
1	A2	1873	G
1	A2	1874	A

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Mol	Chain	Res	Type
1	A2	1875	A
1	A2	1876	C
1	A2	1877	G
1	A2	1879	C
1	A2	1880	G
1	A2	1881	G
1	A2	1883	U
1	A2	1884	U
1	A2	1885	A
1	A2	1886	A
1	A2	1891	C
1	A2	1893	C
1	A2	1894	G
1	A2	1895	A
1	A2	1896	U
1	A2	1897	G
1	A2	1898	C
1	A2	1899	C
1	A2	1900	G
1	A2	1901	A
1	A2	1903	G
1	A2	1911	G
1	A2	1912	A
1	A2	1917	A
1	A2	1918	G
1	A2	1919	A
1	A2	1920	A
1	A2	1924	G
1	A2	1925	U
1	A2	1926	G
1	A2	1929	G
1	A2	1930	G
1	A2	1931	U
1	A2	1935	U
1	A2	1936	A
1	A2	1939	G
1	A2	1941	C
1	A2	1942	A
1	A2	2000	C
1	A2	2001	C
1	A2	2002	G
1	A2	2004	A

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Mol	Chain	Res	Type
1	A2	2005	U
1	A2	2006	C
1	A2	2007	A
1	A2	2009	C
1	A2	2010	U
1	A2	2011	A
1	A2	2012	G
1	A2	2013	C
1	A2	2014	C
1	A2	2016	U
1	A2	2020	A
1	A2	2022	U
1	A2	2023	G
1	A2	2024	G
1	A2	2025	A
1	A2	2026	U
1	A2	2027	G
1	A2	2029	C
1	A2	2030	G
1	A2	2031	C
1	A2	2032	U
1	A2	2033	G
1	A2	2035	A
1	A2	2037	C
1	A2	2039	U
1	A2	2040	C
1	A2	2041	G
1	A2	2042	G
1	A2	2043	G
1	A2	2044	C
1	A2	2046	C
1	A2	2047	A
1	A2	2048	U
1	A2	2049	A
1	A2	2050	C
1	A2	2052	C
1	A2	2056	C
1	A2	2057	G
1	A2	2061	C
1	A2	2062	C
1	A2	2064	G
1	A2	2251	G

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Mol	Chain	Res	Type
1	A2	2254	G
1	A2	2255	A
1	A2	2257	U
1	A2	2258	A
1	A2	2259	G
1	A2	2260	G
1	A2	2263	G
1	A2	2264	G
1	A2	2265	C
1	A2	2266	C
1	A2	2267	G
1	A2	2268	C
1	A2	2269	U
1	A2	2270	G
1	A2	2271	C
1	A2	2273	G
1	A2	2274	U
1	A2	2275	G
1	A2	2276	A
1	A2	2277	G
1	A2	2279	C
1	A2	2280	U
1	A2	2282	G
1	A2	2283	A
1	A2	2284	A
1	A2	2288	U
1	A2	2289	A
1	A2	2290	G
1	A2	2293	C
1	A2	2294	G
1	A2	2295	C
1	A2	2296	G
1	A2	2297	G
1	A2	2298	G
1	A2	2301	C
1	A2	2302	G
1	A2	2304	G
1	A2	2306	G
1	A2	2307	G
1	A2	2308	A
1	A2	2309	G
1	A2	2310	G

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Mol	Chain	Res	Type
1	A2	2311	C
1	A2	2315	C
1	A2	2320	G
1	A2	2321	U
1	A2	2322	G
1	A2	2325	G
1	A2	2326	A
1	A2	2328	C
1	A2	2329	U
1	A2	2331	G
1	A2	2332	G
1	A2	2333	U
1	A2	2334	G
1	A2	2337	A
1	A2	2344	A
1	A2	2345	A
1	A2	2346	U
1	A2	2347	A
1	A2	2348	U
1	A2	2351	A
1	A2	2353	A
1	A2	2354	C
1	A2	2355	G
1	A2	2358	A
1	A2	2359	A
1	A2	2360	C
1	A2	2361	U
1	A2	2362	U
1	A2	2367	G
1	A2	2368	G
1	A2	2369	C
1	A2	2370	C
1	A2	2371	G
1	A2	2372	A
1	A2	2373	A
1	A2	2374	G
1	A2	2376	G
1	A2	2379	G
1	A2	2380	A
1	A2	2381	A
1	A2	2384	G
1	A2	2385	U

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Mol	Chain	Res	Type
1	A2	2386	U
1	A2	2387	C
1	A2	2388	C
1	A2	2392	U
1	A2	2393	G
1	A2	2394	A
1	A2	2395	A
1	A2	2396	C
1	A2	2397	A
1	A2	2398	G
1	A2	2399	C
1	A2	2400	A
1	A2	2402	U
1	A2	2403	U
1	A2	2405	A
1	A2	2407	C
1	A2	2411	G
1	A2	2412	G
1	A2	2414	C
1	A2	2415	A
1	A2	2416	G
1	A2	2418	C
1	A2	2421	U
1	A2	2424	U
1	A2	2426	A
1	A2	2427	G
1	A2	2429	G
1	A2	2430	A
1	A2	2431	U
1	A2	2433	G
1	A2	2435	C
1	A2	2436	G
1	A2	2437	A
1	A2	2440	G
1	A2	2442	C
1	A2	2443	G
1	A2	2444	U
1	A2	2445	U
1	A2	2446	C
1	A2	2447	C
1	A2	2448	G
1	A2	2449	A

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Mol	Chain	Res	Type
1	A2	2450	A
1	A2	2451	G
1	A2	2452	G
1	A2	2453	G
1	A2	2455	C
1	A2	2456	G
1	A2	2457	G
1	A2	2458	G
1	A2	2462	U
1	A2	2463	G
1	A2	2464	G
1	A2	2465	C
1	A2	2466	C
1	A2	2467	U
1	A2	2468	C
1	A2	2469	C
1	A2	2477	U
1	A2	2479	G
1	A2	2480	G
1	A2	2481	C
1	A2	2482	C
1	A2	2483	G
1	A2	2484	A
1	A2	2486	C
1	A2	2490	A
1	A2	2492	G
1	A2	2494	A
1	A2	2496	U
1	A2	2499	G
1	A2	2502	U
1	A2	2503	C
1	A2	2504	A
1	A2	2507	U
1	A2	2508	C
1	A2	2509	C
1	A2	2510	C
1	A2	2511	C
1	A2	2519	G
1	A2	2521	G
1	A2	2524	G
1	A2	2525	C
1	A2	2526	G

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Mol	Chain	Res	Type
1	A2	2527	G
1	A2	2528	A
1	A2	2529	G
1	A2	2531	U
1	A2	2532	G
1	A2	2537	C
1	A2	2538	C
1	A2	2544	G
1	A2	2548	C
1	A2	2549	C
1	A2	2550	A
1	A2	2552	U
1	A2	2553	G
1	A2	2554	C
1	A2	2556	G
1	A2	2557	U
1	A2	2559	A
1	A2	2560	C
1	A2	2561	G
1	A2	2562	C
1	A2	2563	G
1	A2	2564	A
1	A2	2565	C
1	A2	2566	C
1	A2	2567	G
1	A2	2574	G
1	A2	2575	A
1	A2	2576	G
1	A2	2577	A
1	A2	2578	A
1	A2	2579	G
1	A2	2582	G
1	A2	2587	G
1	A2	2588	A
1	A2	2589	G
1	A2	2590	C
1	A2	2592	C
1	A2	2593	C
1	A2	2594	G
1	A2	2596	G
1	A2	2597	G
1	A2	2598	A

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Mol	Chain	Res	Type
1	A2	2599	G
1	A2	2601	G
1	A2	2602	U
1	A2	2603	U
1	A2	2604	C
1	A2	2607	U
1	A2	2608	U
1	A2	2609	U
1	A2	2613	U
1	A2	2624	A
1	A2	2625	G
1	A2	2627	G
1	A2	2628	C
1	A2	2629	G
1	A2	2630	C
1	A2	2631	C
1	A2	2632	C
1	A2	2633	U
1	A2	2635	G
1	A2	2636	A
1	A2	2639	G
1	A2	2641	G
1	A2	2642	U
1	A2	2646	C
1	A2	2647	C
1	A2	2648	C
1	A2	2651	A
1	A2	2652	G
1	A2	2653	A
1	A2	2654	G
1	A2	2658	G
1	A2	2661	C
1	A2	2663	G
1	A2	2664	U
1	A2	2665	G
1	A2	2666	C
1	A2	2669	U
1	A2	2671	G
1	A2	2672	A
1	A2	2673	A
1	A2	2674	A
1	A2	2676	C

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Mol	Chain	Res	Type
1	A2	2677	G
1	A2	2678	U
1	A2	2682	G
1	A2	2683	G
1	A2	2684	U
1	A2	2685	U
1	A2	2686	C
1	A2	2687	C
1	A2	2689	G
1	A2	2692	G
1	A2	2696	C
1	A2	2698	G
1	A2	2700	U
1	A2	2701	G
1	A2	2702	A
1	A2	2703	G
1	A2	2704	C
1	A2	2705	U
1	A2	2706	C
1	A2	2707	U
1	A2	2709	G
1	A2	2710	C
1	A2	2711	U
1	A2	2715	C
1	A2	2716	C
1	A2	2717	U
1	A2	2718	U
1	A2	2719	G
1	A2	2720	A
1	A2	2729	G
1	A2	2731	G
1	A2	2732	A
1	A2	2733	G
1	A2	2734	A
1	A2	2735	G
1	A2	2736	G
1	A2	2739	G
1	A2	2740	U
1	A2	2741	A
1	A2	2742	A
1	A2	2745	C
1	A2	2746	U

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Mol	Chain	Res	Type
1	A2	2750	G
1	A2	2751	C
1	A2	2752	C
1	A2	2755	G
1	A2	2759	U
1	A2	2761	C
1	A2	2762	C
1	A2	2764	A
1	A2	2765	U
1	A2	2766	A
1	A2	2767	U
1	A2	2771	C
1	A2	2772	A
1	A2	2774	C
1	A2	2775	A
1	A2	2778	U
1	A2	2780	U
1	A2	2782	C
1	A2	2783	A
1	A2	2789	A
1	A2	2791	C
1	A2	2792	A
1	A2	2794	C
1	A2	2796	U
1	A2	2801	C
1	A2	2802	A
1	A2	2803	U
1	A2	2804	G
1	A2	2805	U
1	A2	2806	U
1	A2	2807	G
1	A2	2810	A
1	A2	2811	C
1	A2	2812	A
1	A2	2815	G
1	A2	2817	A
1	A2	2818	G
1	A2	2823	G
1	A2	2826	A
1	A2	2827	A
1	A2	2828	G
1	A2	2831	G

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Mol	Chain	Res	Type
1	A2	2832	G
1	A2	2833	C
1	A2	2835	A
1	A2	2837	C
1	A2	2839	G
1	A2	2840	G
1	A2	2843	C
1	A2	2844	C
1	A2	2845	G
1	A2	2846	U
1	A2	2847	A
1	A2	2848	A
1	A2	2852	C
1	A2	2853	G
1	A2	2854	G
1	A2	2857	U
1	A2	2858	A
1	A2	2860	G
1	A2	2861	G
1	A2	2863	U
1	A2	2864	U
1	A2	2867	C
1	A2	2868	U
1	A2	2869	C
1	A2	2871	A
1	A2	2873	G
1	A2	2877	U
1	A2	2878	G
1	A2	2879	G
1	A2	3567	C
1	A2	3568	A
1	A2	3570	C
1	A2	3574	C
1	A2	3575	U
1	A2	3578	G
1	A2	3579	A
1	A2	3583	G
1	A2	3584	G
1	A2	3585	U
1	A2	3586	G
1	A2	3587	C
1	A2	3588	G

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Mol	Chain	Res	Type
1	A2	3590	A
1	A2	3594	G
1	A2	3595	G
1	A2	3597	G
1	A2	3599	A
1	A2	3600	U
1	A2	3602	C
1	A2	3603	G
1	A2	3604	A
1	A2	3605	C
1	A2	3610	U
1	A2	3611	A
1	A2	3612	A
1	A2	3613	U
1	A2	3617	A
1	A2	3618	A
1	A2	3619	C
1	A2	3622	A
1	A2	3624	C
1	A2	3626	U
1	A2	3627	C
1	A2	3631	A
1	A2	3634	G
1	A2	3635	C
1	A2	3636	C
1	A2	3641	G
1	A2	3642	C
1	A2	3643	G
1	A2	3646	U
1	A2	3649	U
1	A2	3650	G
1	A2	3651	A
1	A2	3652	C
1	A2	3653	G
1	A2	3654	C
1	A2	3655	G
1	A2	3657	U
1	A2	3658	G
1	A2	3661	A
1	A2	3662	U
1	A2	3664	U
1	A2	3665	C

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Mol	Chain	Res	Type
1	A2	3666	U
1	A2	3667	G
1	A2	3668	C
1	A2	3675	C
1	A2	3676	U
1	A2	3678	U
1	A2	3679	G
1	A2	3680	A
1	A2	3681	A
1	A2	3682	U
1	A2	3683	G
1	A2	3684	U
1	A2	3685	C
1	A2	3686	A
1	A2	3693	A
1	A2	3695	A
1	A2	3696	A
1	A2	3697	A
1	A2	3700	C
1	A2	3701	A
1	A2	3706	A
1	A2	3710	C
1	A2	3717	A
1	A2	3720	G
1	A2	3722	G
1	A2	3723	G
1	A2	3724	G
1	A2	3725	A
1	A2	3726	G
1	A2	3727	U
1	A2	3728	A
1	A2	3729	A
1	A2	3730	C
1	A2	3732	A
1	A2	3733	U
1	A2	3734	G
1	A2	3736	C
1	A2	3737	U
1	A2	3741	U
1	A2	3743	A
1	A2	3744	A
1	A2	3746	G

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Mol	Chain	Res	Type
1	A2	3749	G
1	A2	3750	C
1	A2	3751	C
1	A2	3753	A
1	A2	3754	A
1	A2	3755	U
1	A2	3756	G
1	A2	3759	U
1	A2	3761	G
1	A2	3764	A
1	A2	3765	U
1	A2	3767	U
1	A2	3768	A
1	A2	3769	A
1	A2	3770	U
1	A2	3771	U
1	A2	3772	A
1	A2	3776	A
1	A2	3778	G
1	A2	3779	C
1	A2	3780	G
1	A2	3781	C
1	A2	3782	A
1	A2	3786	A
1	A2	3787	U
1	A2	3788	G
1	A2	3792	G
1	A2	3793	A
1	A2	3797	A
1	A2	3798	G
1	A2	3799	A
1	A2	3800	U
1	A2	3801	U
1	A2	3802	C
1	A2	3803	C
1	A2	3807	U
1	A2	3808	G
1	A2	3809	U
1	A2	3814	A
1	A2	3815	C
1	A2	3819	C
1	A2	3826	G

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Mol	Chain	Res	Type
1	A2	3830	A
1	A2	3833	C
1	A2	3834	A
1	A2	3836	A
1	A2	3837	G
1	A2	3838	C
1	A2	3845	A
1	A2	3846	A
1	A2	3847	C
1	A2	3848	G
1	A2	3850	G
1	A2	3852	U
1	A2	3854	G
1	A2	3856	C
1	A2	3857	G
1	A2	3858	G
1	A2	3859	A
1	A2	3863	A
1	A2	3866	G
1	A2	3867	G
1	A2	3870	A
1	A2	3871	A
1	A2	3872	A
1	A2	3873	G
1	A2	3874	A
1	A2	3875	A
1	A2	3876	G
1	A2	3877	A
1	A2	3879	C
1	A2	3883	U
1	A2	3884	U
1	A2	3885	G
1	A2	3887	G
1	A2	3888	C
1	A2	3890	U
1	A2	3891	G
1	A2	3894	U
1	A2	3895	C
1	A2	3897	A
1	A2	3898	G
1	A2	3905	A
1	A2	3907	G

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Mol	Chain	Res	Type
1	A2	3908	G
1	A2	3910	G
1	A2	3912	A
1	A2	3922	G
1	A2	3923	A
1	A2	3924	G
1	A2	3925	G
1	A2	3926	U
1	A2	3927	G
1	A2	3931	A
1	A2	3933	U
1	A2	3934	A
1	A2	3936	G
1	A2	3938	G
1	A2	3941	A
1	A2	3942	G
1	A2	3943	G
1	A2	3945	C
1	A2	4007	G
1	A2	4008	C
1	A2	4009	C
1	A2	4011	G
1	A2	4012	U
1	A2	4015	A
1	A2	4018	A
1	A2	4024	A
1	A2	4025	C
1	A2	4026	U
1	A2	4027	C
1	A2	4029	G
1	A2	4032	C
1	A2	4041	A
1	A2	4044	G
1	A2	4045	A
1	A2	4046	C
1	A2	4047	C
1	A2	4050	G
1	A2	4051	U
1	A2	4052	G
1	A2	4053	A
1	A2	4054	G
1	A2	4055	G

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Mol	Chain	Res	Type
1	A2	4056	C
1	A2	4057	G
1	A2	4059	G
1	A2	4060	G
1	A2	4063	G
1	A2	4066	A
1	A2	4068	C
1	A2	4069	C
1	A2	4070	C
1	A2	4071	G
1	A2	4073	G
1	A2	4074	G
1	A2	4079	C
1	A2	4080	U
1	A2	4081	C
1	A2	4082	G
1	A2	4083	C
1	A2	4084	U
1	A2	4085	U
1	A2	4086	C
1	A2	4087	U
1	A2	4089	G
1	A2	4090	C
1	A2	4092	C
1	A2	4093	C
1	A2	4094	A
1	A2	4101	C
1	A2	4103	C
1	A2	4105	C
1	A2	4106	G
1	A2	4108	C
1	A2	4109	C
1	A2	4111	G
1	A2	4117	A
1	A2	4118	C
1	A2	4119	C
1	A2	4120	C
1	A2	4121	G
1	A2	4122	C
1	A2	4123	U
1	A2	4124	C
1	A2	4126	G

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Mol	Chain	Res	Type
1	A2	4129	G
1	A2	4130	A
1	A2	4131	C
1	A2	4135	G
1	A2	4137	C
1	A2	4138	A
1	A2	4142	G
1	A2	4143	G
1	A2	4144	G
1	A2	4145	G
1	A2	4151	G
1	A2	4155	G
1	A2	4156	G
1	A2	4159	C
1	A2	4163	A
1	A2	4164	C
1	A2	4165	A
1	A2	4166	C
1	A2	4168	U
1	A2	4174	A
1	A2	4175	C
1	A2	4176	G
1	A2	4177	G
1	A2	4179	A
1	A2	4180	A
1	A2	4181	C
1	A2	4182	G
1	A2	4185	G
1	A2	4186	G
1	A2	4187	U
1	A2	4188	G
1	A2	4189	U
1	A2	4190	C
1	A2	4191	C
1	A2	4192	U
1	A2	4193	A
1	A2	4194	A
1	A2	4195	G
1	A2	4199	A
1	A2	4200	G
1	A2	4201	C
1	A2	4210	G

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Mol	Chain	Res	Type
1	A2	4211	A
1	A2	4212	C
1	A2	4214	G
1	A2	4215	A
1	A2	4226	G
1	A2	4227	G
1	A2	4231	A
1	A2	4232	G
1	A2	4233	A
1	A2	4234	A
1	A2	4236	G
1	A2	4237	G
1	A2	4239	A
1	A2	4240	A
1	A2	4241	A
1	A2	4242	A
1	A2	4245	U
1	A2	4247	G
1	A2	4250	U
1	A2	4251	G
1	A2	4252	A
1	A2	4253	U
1	A2	4254	C
1	A2	4255	U
1	A2	4256	U
1	A2	4261	U
1	A2	4262	U
1	A2	4263	C
1	A2	4264	A
1	A2	4265	G
1	A2	4266	U
1	A2	4267	A
1	A2	4269	G
1	A2	4270	A
1	A2	4271	A
1	A2	4273	A
1	A2	4276	G
1	A2	4277	A
1	A2	4279	C
1	A2	4280	G
1	A2	4283	A
1	A2	4286	G

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Mol	Chain	Res	Type
1	A2	4287	C
1	A2	4288	G
1	A2	4289	G
1	A2	4290	G
1	A2	4291	G
1	A2	4292	C
1	A2	4293	C
1	A2	4297	C
1	A2	4298	G
1	A2	4301	C
1	A2	4303	U
1	A2	4304	U
1	A2	4305	C
1	A2	4306	U
1	A2	4308	A
1	A2	4309	C
1	A2	4313	U
1	A2	4314	U
1	A2	4315	G
1	A2	4316	G
1	A2	4317	G
1	A2	4319	U
1	A2	4321	U
1	A2	4324	G
1	A2	4326	A
1	A2	4327	G
1	A2	4328	G
1	A2	4329	A
1	A2	4331	G
1	A2	4333	G
1	A2	4335	C
1	A2	4336	A
1	A2	4337	G
1	A2	4338	A
1	A2	4339	A
1	A2	4341	A
1	A2	4342	G
1	A2	4345	A
1	A2	4346	C
1	A2	4347	C
1	A2	4348	A
1	A2	4350	A

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Mol	Chain	Res	Type
1	A2	4353	G
1	A2	4354	A
1	A2	4355	U
1	A2	4357	A
1	A2	4359	U
1	A2	4362	C
1	A2	4363	U
1	A2	4366	U
1	A2	4367	G
1	A2	4370	G
1	A2	4372	C
1	A2	4373	C
1	A2	4375	A
1	A2	4376	G
1	A2	4377	C
1	A2	4379	U
1	A2	4380	U
1	A2	4382	A
1	A2	4383	U
1	A2	4384	A
1	A2	4386	C
1	A2	4387	G
1	A2	4388	A
1	A2	4389	C
1	A2	4390	G
1	A2	4394	C
1	A2	4396	U
1	A2	4397	U
1	A2	4401	A
1	A2	4404	C
1	A2	4406	U
1	A2	4407	C
1	A2	4408	G
1	A2	4409	A
1	A2	4410	U
1	A2	4411	G
1	A2	4412	U
1	A2	4413	C
1	A2	4415	G
1	A2	4416	C
1	A2	4420	U
1	A2	4421	C

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Mol	Chain	Res	Type
1	A2	4422	C
1	A2	4423	U
1	A2	4424	A
1	A2	4425	U
1	A2	4426	C
1	A2	4431	U
1	A2	4433	A
1	A2	4434	A
1	A2	4435	G
1	A2	4437	A
1	A2	4438	G
1	A2	4448	A
1	A2	4449	G
1	A2	4451	G
1	A2	4452	U
1	A2	4453	U
1	A2	4454	G
1	A2	4455	G
1	A2	4456	A
1	A2	4457	U
1	A2	4458	U
1	A2	4459	G
1	A2	4460	U
1	A2	4461	U
1	A2	4465	C
1	A2	4466	C
1	A2	4470	A
1	A2	4472	U
1	A2	4473	A
1	A2	4474	G
1	A2	4477	A
1	A2	4478	A
1	A2	4479	C
1	A2	4480	G
1	A2	4482	G
1	A2	4483	A
1	A2	4484	G
1	A2	4488	G
1	A2	4489	G
1	A2	4491	U
1	A2	4492	U
1	A2	4494	G

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Mol	Chain	Res	Type
1	A2	4498	G
1	A2	4499	U
1	A2	4500	C
1	A2	4502	U
1	A2	4503	G
1	A2	4505	G
1	A2	4507	C
1	A2	4508	A
1	A2	4509	G
1	A2	4510	G
1	A2	4512	U
1	A2	4515	U
1	A2	4516	U
1	A2	4519	A
1	A2	4520	C
1	A2	4521	C
1	A2	4522	C
1	A2	4525	C
1	A2	4526	U
1	A2	4527	G
1	A2	4528	A
1	A2	4529	U
1	A2	4530	G
1	A2	4532	U
1	A2	4533	G
1	A2	4534	U
1	A2	4535	G
1	A2	4536	U
1	A2	4538	G
1	A2	4539	U
1	A2	4541	G
1	A2	4543	C
1	A2	4544	A
1	A2	4545	U
1	A2	4549	A
1	A2	4550	A
1	A2	4551	U
1	A2	4552	C
1	A2	4557	U
1	A2	4558	C
1	A2	4560	G
1	A2	4561	U

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Mol	Chain	Res	Type
1	A2	4562	A
1	A2	4563	C
1	A2	4566	G
1	A2	4567	A
1	A2	4568	G
1	A2	4569	G
1	A2	4570	A
1	A2	4577	G
1	A2	4578	G
1	A2	4579	U
1	A2	4580	U
1	A2	4583	G
1	A2	4584	A
1	A2	4586	A
1	A2	4587	U
1	A2	4592	U
1	A2	4594	U
1	A2	4595	A
1	A2	4596	U
1	A2	4597	G
1	A2	4598	U
1	A2	4599	G
1	A2	4600	C
1	A2	4601	U
1	A2	4602	U
1	A2	4604	G
1	A2	4609	G
1	A2	4610	G
1	A2	4612	G
1	A2	4613	C
1	A2	4615	A
1	A2	4616	A
1	A2	4617	U
1	A2	4618	G
1	A2	4621	G
1	A2	4622	C
1	A2	4628	U
1	A2	4629	A
1	A2	4630	C
1	A2	4632	A
1	A2	4636	G
1	A2	4637	U

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Mol	Chain	Res	Type
1	A2	4638	G
1	A2	4639	G
1	A2	4640	G
1	A2	4641	A
1	A2	4642	U
1	A2	4643	U
1	A2	4646	G
1	A2	4651	A
1	A2	4654	G
1	A2	4655	C
1	A2	4657	U
1	A2	4658	C
1	A2	4659	U
1	A2	4660	A
1	A2	4661	A
1	A2	4664	C
1	A2	4665	A
1	A2	4668	A
1	A2	4669	U
1	A2	4671	C
1	A2	4672	C
1	A2	4675	C
1	A2	4676	C
1	A2	4678	G
1	A2	4679	G
1	A2	4680	C
1	A2	4681	G
1	A2	4682	A
1	A2	4684	C
1	A2	4688	A
1	A2	4689	C
1	A2	4690	G
1	A2	4691	G
1	A2	4692	C
1	A2	4693	A
1	A2	4694	G
1	A2	4696	G
1	A2	4698	C
1	A2	4699	G
1	A2	4700	C
1	A2	4701	G
1	A2	4706	C

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Mol	Chain	Res	Type
1	A2	4710	G
1	A2	4711	U
1	A2	4712	U
1	A2	4713	G
1	A2	4714	G
1	A2	4716	C
1	A2	4718	C
1	A2	4719	G
1	A2	4720	G
1	A2	4721	A
1	A2	4723	A
1	A2	4724	G
1	A2	4725	C
1	A2	4726	C
1	A2	4733	C
1	A2	4734	C
1	A2	4735	G
1	A2	4736	C
1	A2	4739	G
1	A2	4740	U
1	A2	4741	C
1	A2	4742	C
1	A2	4746	C
1	A2	4803	C
1	A2	4804	G
1	A2	4807	C
1	A2	4808	C
1	A2	4809	G
1	A2	4812	A
1	A2	4813	C
1	A2	4814	C
1	A2	4815	G
1	A2	4816	G
1	A2	4822	G
1	A2	4824	U
1	A2	4825	G
1	A2	4826	C
1	A2	4827	G
1	A2	4828	G
1	A2	4829	A
1	A2	4831	U
1	A2	4832	G

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Mol	Chain	Res	Type
1	A2	4834	C
1	A2	4836	U
1	A2	4838	C
1	A2	4839	G
1	A2	4840	U
1	A2	4844	G
1	A2	4847	A
1	A2	4848	A
1	A2	4849	A
1	A2	4850	C
1	A2	4851	G
1	A2	4852	G
1	A2	4853	G
1	A2	4854	G
1	A2	4855	C
1	A2	4856	G
1	A2	4857	C
1	A2	4858	G
1	A2	4862	G
1	A2	4863	G
1	A2	4867	G
1	A2	4868	G
1	A2	4875	C
1	A2	4879	C
1	A2	4880	U
1	A2	4881	C
1	A2	4882	G
1	A2	4883	C
1	A2	4892	C
1	A2	4893	A
1	A2	4894	C
1	A2	4895	C
1	A2	4896	G
1	A2	4897	C
1	A2	4898	A
1	A2	4899	C
1	A2	4900	G
1	A2	4901	U
1	A2	4902	U
1	A2	4903	C
1	A2	4904	G
1	A2	4905	U

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Mol	Chain	Res	Type
1	A2	4906	G
1	A2	4919	C
1	A2	4921	A
1	A2	4923	A
1	A2	4924	C
1	A2	4930	G
1	A2	4931	U
1	A2	4932	A
1	A2	4940	U
1	A2	4943	U
1	A2	4944	U
1	A2	4945	C
1	A2	4946	U
1	A2	4947	G
1	A2	4949	G
1	A2	4955	G
1	A2	4956	U
1	A2	4958	U
1	A2	4959	C
1	A2	4960	G
1	A2	4962	A
1	A2	4963	C
1	A2	4968	C
1	A2	4969	A
1	A2	4972	G
1	A2	4974	A
1	A2	4975	G
1	A2	4976	C
1	A2	4978	C
1	A2	4979	C
1	A2	4980	C
1	A2	4981	U
1	A2	4982	C
1	A2	4983	G
1	A2	4985	U
1	A2	4986	G
1	A2	4988	G
1	A2	4995	U
1	A2	4996	G
1	A2	4998	A
1	A2	5002	C
1	A2	5003	A

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Mol	Chain	Res	Type
1	A2	5005	C
1	A2	5009	C
1	A2	5010	G
1	A2	5015	A
1	A2	5016	A
1	A2	5017	G
1	A2	5018	G
1	A2	5019	G
1	A2	5020	U
1	A2	5021	U
2	A3	4	C
2	A3	6	C
2	A3	7	U
2	A3	8	U
2	A3	9	A
2	A3	10	G
2	A3	12	G
2	A3	13	G
2	A3	14	U
2	A3	16	G
2	A3	20	A
2	A3	23	C
2	A3	24	G
2	A3	25	G
2	A3	26	C
2	A3	28	C
2	A3	30	U
2	A3	32	C
2	A3	34	U
2	A3	38	U
2	A3	40	A
2	A3	43	A
2	A3	47	C
2	A3	49	G
2	A3	51	U
2	A3	52	A
2	A3	58	G
2	A3	59	A
2	A3	61	A
2	A3	62	A
2	A3	63	U
2	A3	69	U

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Mol	Chain	Res	Type
2	A3	71	A
2	A3	72	A
2	A3	75	G
2	A3	76	C
2	A3	77	A
2	A3	78	G
2	A3	80	A
2	A3	81	C
2	A3	82	A
2	A3	83	C
2	A3	84	A
2	A3	85	U
2	A3	86	U
2	A3	89	U
2	A3	94	G
2	A3	95	A
2	A3	103	A
2	A3	104	A
2	A3	105	C
2	A3	106	G
2	A3	107	C
2	A3	109	C
2	A3	111	U
2	A3	112	G
2	A3	114	G
2	A3	117	C
2	A3	120	G
2	A3	122	G
2	A3	123	U
2	A3	124	U
2	A3	125	C
2	A3	126	C
2	A3	128	C
2	A3	129	C
2	A3	130	C
2	A3	131	G
2	A3	137	A
2	A3	138	C
2	A3	140	C
2	A3	141	C
2	A3	143	G
2	A3	144	U

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Mol	Chain	Res	Type
2	A3	146	U
2	A3	147	G
2	A3	148	A
2	A3	149	G
2	A3	150	C
2	A3	151	G
2	A3	156	U
2	A3	157	U
3	A4	3	C
3	A4	6	C
3	A4	7	G
3	A4	9	C
3	A4	10	C
3	A4	11	A
3	A4	12	U
3	A4	13	A
3	A4	15	C
3	A4	19	C
3	A4	22	A
3	A4	27	G
3	A4	28	C
3	A4	29	C
3	A4	30	C
3	A4	33	U
3	A4	34	C
3	A4	35	U
3	A4	36	C
3	A4	40	U
3	A4	41	G
3	A4	46	C
3	A4	47	G
3	A4	48	G
3	A4	49	A
3	A4	53	U
3	A4	54	A
3	A4	55	A
3	A4	56	G
3	A4	57	C
3	A4	58	A
3	A4	61	G
3	A4	62	U
3	A4	63	C

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Mol	Chain	Res	Type
3	A4	64	G
3	A4	65	G
3	A4	67	C
3	A4	68	C
3	A4	69	U
3	A4	73	U
3	A4	74	A
3	A4	75	G
3	A4	76	U
3	A4	77	A
3	A4	79	U
3	A4	81	G
3	A4	85	G
3	A4	86	G
3	A4	87	G
3	A4	89	G
3	A4	91	C
3	A4	94	C
3	A4	95	C
3	A4	96	U
3	A4	97	G
3	A4	99	G
3	A4	100	A
3	A4	101	A
3	A4	103	A
3	A4	105	C
3	A4	107	G
3	A4	108	G
3	A4	109	U
3	A4	110	G
3	A4	113	G
3	A4	116	G
3	A4	117	G
3	A4	118	C
47	BA	2	C
47	BA	17	C
47	BA	18	G
47	BA	19	G
47	BA	20	U
47	BA	21	A
47	BA	22	G
47	BA	42	C

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Mol	Chain	Res	Type
47	BA	46	G
47	BA	47	U
47	BA	48	C
47	BA	52	G
47	BA	61	C
47	BA	76	A
49	BC	45	C
49	BC	46	U
49	BC	49	G
49	BC	54	A
49	BC	55	C
49	BC	57	A
49	BC	60	G
49	BC	61	U
49	BC	65	C
49	BC	67	C
49	BC	74	A
49	BC	77	G
49	BC	82	G
49	BC	83	C
49	BC	84	C
49	BC	85	A
49	BC	86	U
49	BC	88	G
49	BC	89	C
49	BC	91	U
49	BC	93	A
49	BC	96	A
49	BC	97	U
49	BC	98	G
49	BC	100	G
49	BC	101	U
49	BC	102	G
49	BC	103	U
49	BC	104	C
49	BC	106	U
49	BC	107	G
49	BC	110	G
49	BC	111	C
49	BC	115	C
49	BC	116	A
49	BC	117	G

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Mol	Chain	Res	Type
49	BC	119	A
49	BC	120	C
49	BC	121	C
49	BC	123	C
49	BC	127	U
49	BC	129	C
49	BC	130	C
49	BC	131	G
49	BC	133	G
49	BC	134	A
49	BC	140	A
49	BC	141	U
49	BC	142	A
49	BC	148	C
49	BC	149	U
49	BC	150	G
49	BC	154	A
49	BC	157	C
49	BC	158	G
49	BC	159	G
49	BC	161	G
49	BC	164	U
49	BC	165	A
49	BC	167	A
49	BC	168	C
49	BC	170	G
49	BC	172	A
49	BC	226	U
49	BC	227	U
49	BC	228	U
49	BC	229	G
49	BC	231	G
49	BC	232	C
49	BC	233	G
49	BC	234	U
49	BC	235	G
49	BC	236	C
49	BC	243	A
49	BC	244	A
49	BC	245	G
49	BC	246	A
49	BC	247	C

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Mol	Chain	Res	Type
49	BC	248	U
49	BC	252	A
49	BC	253	G
49	BC	255	C
49	BC	256	G
49	BC	257	A
49	BC	258	G
49	BC	259	U
49	BC	260	A
49	BC	261	G
49	BC	266	G
49	BC	267	G
49	BC	268	G
49	BC	270	C
49	BC	271	G
49	BC	272	C
49	BC	276	A
49	BC	277	G
49	BC	279	C
49	BC	280	C
49	BC	282	U
49	BC	284	U
49	BC	285	G
49	BC	289	C
49	BC	291	G
49	BC	292	C
49	BC	295	G
49	BC	296	A
49	BC	297	U
49	BC	298	A
49	BC	299	G
49	BC	300	G
49	BC	305	U
49	BC	306	U
49	BC	307	G
49	BC	308	C
49	BC	310	A
49	BC	311	G
49	BC	312	U
49	BC	313	G
49	BC	315	C
49	BC	319	G

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Mol	Chain	Res	Type
49	BC	322	G
49	BC	324	U
49	BC	325	C
49	BC	329	U
49	BC	330	A
49	BC	337	G
49	BC	338	C
49	BC	339	A
49	BC	341	C
49	BC	342	A
49	BC	344	G
49	BC	345	A
49	BC	346	G
49	BC	350	G
49	BC	351	A
50	C1	2	A
50	C1	3	C
50	C1	4	C
50	C1	5	U
50	C1	6	G
50	C1	7	G
50	C1	8	U
50	C1	9	U
50	C1	15	U
50	C1	16	G
50	C1	17	C
50	C1	21	U
50	C1	22	A
50	C1	24	C
50	C1	25	A
50	C1	26	U
50	C1	30	C
50	C1	33	G
50	C1	39	A
50	C1	40	A
50	C1	41	G
50	C1	44	U
50	C1	45	A
50	C1	46	A
50	C1	47	G
50	C1	48	C
50	C1	50	A

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Mol	Chain	Res	Type
50	C1	55	U
50	C1	56	G
50	C1	59	U
50	C1	60	A
50	C1	61	A
50	C1	62	G
50	C1	63	U
50	C1	64	A
50	C1	65	C
50	C1	66	G
50	C1	67	C
50	C1	68	A
50	C1	69	C
50	C1	70	G
50	C1	71	G
50	C1	72	C
50	C1	74	G
50	C1	75	G
50	C1	76	U
50	C1	77	A
50	C1	78	C
50	C1	79	A
50	C1	80	G
50	C1	81	U
50	C1	82	G
50	C1	83	A
50	C1	84	A
50	C1	87	U
50	C1	98	C
50	C1	99	A
50	C1	101	U
50	C1	103	A
50	C1	104	A
50	C1	105	U
50	C1	106	C
50	C1	109	U
50	C1	110	U
50	C1	111	A
50	C1	112	U
50	C1	113	G
50	C1	114	G
50	C1	115	U

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Mol	Chain	Res	Type
50	C1	116	U
50	C1	117	C
50	C1	118	C
50	C1	120	U
50	C1	121	U
50	C1	122	G
50	C1	123	G
50	C1	124	U
50	C1	125	C
50	C1	126	G
50	C1	127	C
50	C1	128	U
50	C1	129	C
50	C1	130	G
50	C1	131	C
50	C1	132	U
50	C1	133	C
50	C1	134	C
50	C1	135	U
50	C1	136	C
50	C1	137	U
50	C1	138	C
50	C1	139	C
50	C1	140	C
50	C1	141	A
50	C1	142	C
50	C1	143	U
50	C1	144	U
50	C1	145	G
50	C1	146	G
50	C1	147	A
50	C1	150	A
50	C1	151	C
50	C1	152	U
50	C1	153	G
50	C1	158	A
50	C1	160	U
50	C1	161	U
50	C1	162	C
50	C1	163	U
50	C1	164	A
50	C1	166	A

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Mol	Chain	Res	Type
50	C1	167	G
50	C1	168	C
50	C1	169	U
50	C1	171	A
50	C1	173	A
50	C1	174	C
50	C1	176	U
50	C1	179	C
50	C1	180	G
50	C1	181	A
50	C1	182	C
50	C1	183	G
50	C1	184	G
50	C1	185	G
50	C1	187	G
50	C1	193	C
50	C1	198	U
50	C1	199	C
50	C1	200	G
50	C1	201	C
50	C1	202	G
50	C1	204	G
50	C1	205	G
50	C1	207	G
50	C1	208	G
50	C1	209	A
50	C1	210	U
50	C1	211	G
50	C1	213	G
50	C1	214	U
50	C1	215	G
50	C1	216	C
50	C1	217	A
50	C1	218	U
50	C1	219	U
50	C1	220	U
50	C1	225	G
50	C1	226	A
50	C1	227	U
50	C1	228	C
50	C1	229	A
50	C1	230	A

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Mol	Chain	Res	Type
50	C1	233	C
50	C1	234	C
50	C1	235	A
50	C1	236	A
50	C1	237	C
50	C1	238	C
50	C1	239	C
50	C1	298	G
50	C1	301	A
50	C1	303	C
50	C1	304	C
50	C1	305	U
50	C1	306	C
50	C1	307	G
50	C1	308	G
50	C1	309	G
50	C1	310	C
50	C1	311	C
50	C1	312	G
50	C1	313	A
50	C1	314	U
50	C1	315	C
50	C1	317	C
50	C1	318	A
50	C1	319	C
50	C1	320	G
50	C1	321	C
50	C1	327	G
50	C1	328	U
50	C1	329	G
50	C1	330	G
50	C1	332	G
50	C1	333	G
50	C1	337	C
50	C1	338	G
50	C1	339	A
50	C1	343	A
50	C1	344	U
50	C1	345	U
50	C1	346	C
50	C1	347	G
50	C1	350	C

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Mol	Chain	Res	Type
50	C1	352	U
50	C1	353	C
50	C1	354	U
50	C1	356	C
50	C1	357	C
50	C1	358	C
50	C1	359	U
50	C1	362	C
50	C1	363	A
50	C1	364	A
50	C1	368	U
50	C1	369	C
50	C1	371	A
50	C1	372	U
50	C1	375	U
50	C1	376	A
50	C1	378	U
50	C1	379	C
50	C1	380	G
50	C1	381	C
50	C1	382	C
50	C1	383	G
50	C1	384	U
50	C1	386	C
50	C1	389	A
50	C1	395	G
50	C1	399	C
50	C1	400	C
50	C1	407	G
50	C1	408	A
50	C1	409	C
50	C1	410	G
50	C1	412	G
50	C1	416	U
50	C1	421	G
50	C1	422	U
50	C1	423	U
50	C1	424	C
50	C1	426	A
50	C1	427	U
50	C1	429	C
50	C1	431	G

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Mol	Chain	Res	Type
50	C1	433	A
50	C1	435	A
50	C1	436	G
50	C1	438	G
50	C1	440	G
50	C1	441	C
50	C1	442	C
50	C1	443	U
50	C1	445	A
50	C1	447	A
50	C1	448	A
50	C1	449	A
50	C1	450	C
50	C1	451	G
50	C1	452	G
50	C1	454	U
50	C1	459	C
50	C1	460	A
50	C1	463	C
50	C1	464	A
50	C1	465	A
50	C1	466	G
50	C1	467	G
50	C1	468	A
50	C1	472	C
50	C1	473	A
50	C1	474	G
50	C1	475	C
50	C1	476	A
50	C1	477	G
50	C1	480	G
50	C1	482	G
50	C1	485	A
50	C1	487	U
50	C1	488	U
50	C1	489	A
50	C1	491	C
50	C1	492	C
50	C1	493	A
50	C1	495	U
50	C1	496	C
50	C1	497	C

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Mol	Chain	Res	Type
50	C1	499	G
50	C1	500	A
50	C1	501	C
50	C1	502	C
50	C1	503	C
50	C1	504	G
50	C1	506	G
50	C1	507	G
50	C1	509	G
50	C1	510	G
50	C1	512	A
50	C1	516	A
50	C1	517	C
50	C1	518	G
50	C1	523	A
50	C1	525	A
50	C1	526	A
50	C1	527	C
50	C1	529	A
50	C1	530	U
50	C1	533	A
50	C1	535	G
50	C1	536	A
50	C1	537	C
50	C1	538	U
50	C1	539	C
50	C1	541	U
50	C1	542	U
50	C1	543	C
50	C1	544	G
50	C1	545	A
50	C1	546	G
50	C1	547	G
50	C1	548	C
50	C1	549	C
50	C1	550	C
50	C1	553	U
50	C1	554	A
50	C1	555	A
50	C1	559	G
50	C1	560	A
50	C1	562	U

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Mol	Chain	Res	Type
50	C1	564	A
50	C1	565	G
50	C1	566	U
50	C1	568	C
50	C1	570	C
50	C1	571	U
50	C1	572	U
50	C1	573	U
50	C1	574	A
50	C1	575	A
50	C1	576	A
50	C1	577	U
50	C1	578	C
50	C1	579	C
50	C1	580	U
50	C1	582	U
50	C1	586	G
50	C1	587	A
50	C1	588	G
50	C1	589	G
50	C1	590	A
50	C1	591	U
50	C1	592	C
50	C1	593	C
50	C1	594	A
50	C1	595	U
50	C1	596	U
50	C1	597	G
50	C1	599	A
50	C1	600	G
50	C1	603	C
50	C1	604	A
50	C1	605	A
50	C1	606	G
50	C1	607	U
50	C1	608	C
50	C1	609	U
50	C1	612	U
50	C1	613	G
50	C1	614	C
50	C1	617	G
50	C1	619	A

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Mol	Chain	Res	Type
50	C1	620	G
50	C1	621	C
50	C1	623	G
50	C1	624	C
50	C1	627	U
50	C1	628	A
50	C1	629	A
50	C1	630	U
50	C1	631	U
50	C1	634	A
50	C1	638	C
50	C1	643	A
50	C1	644	G
50	C1	645	C
50	C1	647	U
50	C1	648	A
50	C1	650	A
50	C1	651	U
50	C1	652	U
50	C1	654	A
50	C1	655	A
50	C1	656	G
50	C1	657	U
50	C1	658	U
50	C1	659	G
50	C1	660	C
50	C1	661	U
50	C1	663	C
50	C1	664	A
50	C1	665	G
50	C1	666	U
50	C1	668	A
50	C1	669	A
50	C1	671	A
50	C1	672	A
50	C1	673	G
50	C1	674	C
50	C1	675	U
50	C1	676	C
50	C1	677	G
50	C1	679	A
50	C1	680	G

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Mol	Chain	Res	Type
50	C1	681	U
50	C1	683	G
50	C1	684	G
50	C1	686	U
50	C1	688	U
50	C1	689	U
50	C1	692	G
50	C1	694	G
50	C1	695	C
50	C1	742	U
50	C1	743	U
50	C1	744	G
50	C1	745	C
50	C1	746	C
50	C1	747	U
50	C1	748	C
50	C1	749	U
50	C1	750	C
50	C1	754	G
50	C1	755	C
50	C1	793	G
50	C1	795	A
50	C1	796	G
50	C1	797	C
50	C1	798	G
50	C1	799	U
50	C1	800	U
50	C1	801	U
50	C1	802	A
50	C1	803	C
50	C1	804	U
50	C1	807	G
50	C1	810	A
50	C1	812	A
50	C1	815	U
50	C1	816	A
50	C1	818	A
50	C1	819	G
50	C1	820	U
50	C1	821	G
50	C1	822	U
50	C1	823	U

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Mol	Chain	Res	Type
50	C1	825	A
50	C1	827	A
50	C1	829	C
50	C1	830	A
50	C1	831	G
50	C1	834	C
50	C1	835	C
50	C1	837	A
50	C1	838	G
50	C1	839	C
50	C1	840	C
50	C1	841	G
50	C1	842	C
50	C1	844	U
50	C1	845	G
50	C1	847	A
50	C1	848	U
50	C1	851	C
50	C1	852	G
50	C1	856	C
50	C1	861	A
50	C1	862	A
50	C1	863	U
50	C1	865	A
50	C1	869	A
50	C1	870	A
50	C1	873	G
50	C1	874	G
50	C1	875	A
50	C1	876	C
50	C1	886	A
50	C1	887	U
50	C1	888	U
50	C1	889	U
50	C1	890	U
50	C1	891	G
50	C1	896	U
50	C1	897	U
50	C1	898	U
50	C1	899	U
50	C1	900	C
50	C1	911	C

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Mol	Chain	Res	Type
50	C1	912	C
50	C1	913	A
50	C1	914	U
50	C1	915	G
50	C1	917	U
50	C1	918	U
50	C1	919	A
50	C1	920	A
50	C1	921	G
50	C1	924	G
50	C1	930	C
50	C1	933	G
50	C1	937	C
50	C1	938	A
50	C1	942	G
50	C1	943	U
50	C1	946	U
50	C1	950	C
50	C1	951	C
50	C1	953	C
50	C1	955	A
50	C1	956	G
50	C1	957	A
50	C1	958	G
50	C1	959	G
50	C1	960	U
50	C1	961	G
50	C1	962	A
50	C1	963	A
50	C1	966	U
50	C1	967	C
50	C1	968	U
50	C1	969	U
50	C1	970	G
50	C1	971	G
50	C1	972	A
50	C1	975	G
50	C1	977	C
50	C1	979	C
50	C1	980	A
50	C1	984	C
50	C1	985	G

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Mol	Chain	Res	Type
50	C1	988	C
50	C1	990	A
50	C1	991	G
50	C1	995	G
50	C1	999	G
50	C1	1000	C
50	C1	1004	U
50	C1	1006	C
50	C1	1007	C
50	C1	1009	A
50	C1	1011	A
50	C1	1015	U
50	C1	1016	U
50	C1	1017	U
50	C1	1018	U
50	C1	1019	C
50	C1	1020	A
50	C1	1021	U
50	C1	1022	U
50	C1	1023	A
50	C1	1024	A
50	C1	1029	G
50	C1	1033	G
50	C1	1034	A
50	C1	1035	A
50	C1	1036	A
50	C1	1040	G
50	C1	1044	G
50	C1	1045	U
50	C1	1049	A
50	C1	1050	A
50	C1	1051	G
50	C1	1052	A
50	C1	1053	C
50	C1	1055	A
50	C1	1057	C
50	C1	1058	A
50	C1	1060	A
50	C1	1061	U
50	C1	1062	A
50	C1	1064	C
50	C1	1065	G

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Mol	Chain	Res	Type
50	C1	1067	C
50	C1	1076	G
50	C1	1083	A
50	C1	1084	A
50	C1	1085	C
50	C1	1086	G
50	C1	1087	A
50	C1	1088	U
50	C1	1089	G
50	C1	1090	C
50	C1	1096	G
50	C1	1097	G
50	C1	1101	U
50	C1	1104	G
50	C1	1108	G
50	C1	1109	C
50	C1	1110	G
50	C1	1112	U
50	C1	1115	U
50	C1	1116	C
50	C1	1117	C
50	C1	1118	C
50	C1	1120	U
50	C1	1121	G
50	C1	1124	C
50	C1	1131	G
50	C1	1132	C
50	C1	1133	A
50	C1	1136	U
50	C1	1137	U
50	C1	1139	C
50	C1	1140	G
50	C1	1141	G
50	C1	1143	A
50	C1	1144	A
50	C1	1147	C
50	C1	1148	A
50	C1	1149	A
50	C1	1150	A
50	C1	1151	G
50	C1	1153	C
50	C1	1154	U

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Mol	Chain	Res	Type
50	C1	1155	U
50	C1	1157	G
50	C1	1158	G
50	C1	1161	U
50	C1	1163	C
50	C1	1164	G
50	C1	1165	G
50	C1	1166	G
50	C1	1169	G
50	C1	1170	A
50	C1	1171	G
50	C1	1176	G
50	C1	1182	A
50	C1	1183	A
50	C1	1186	U
50	C1	1189	A
50	C1	1194	A
50	C1	1195	A
50	C1	1198	G
50	C1	1199	A
50	C1	1200	A
50	C1	1203	G
50	C1	1205	C
50	C1	1206	G
50	C1	1207	G
50	C1	1215	C
50	C1	1216	C
50	C1	1217	A
50	C1	1218	C
50	C1	1219	C
50	C1	1221	G
50	C1	1223	A
50	C1	1224	G
50	C1	1235	G
50	C1	1236	G
50	C1	1237	C
50	C1	1242	U
50	C1	1243	U
50	C1	1245	G
50	C1	1246	A
50	C1	1247	C
50	C1	1248	U

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Mol	Chain	Res	Type
50	C1	1249	C
50	C1	1251	A
50	C1	1253	A
50	C1	1254	C
50	C1	1255	G
50	C1	1256	G
50	C1	1257	G
50	C1	1258	A
50	C1	1259	A
50	C1	1260	A
50	C1	1261	C
50	C1	1262	C
50	C1	1263	U
50	C1	1264	C
50	C1	1265	A
50	C1	1266	C
50	C1	1267	C
50	C1	1268	C
50	C1	1269	G
50	C1	1270	G
50	C1	1273	C
50	C1	1274	G
50	C1	1275	G
50	C1	1276	A
50	C1	1277	C
50	C1	1278	A
50	C1	1279	C
50	C1	1282	A
50	C1	1284	A
50	C1	1285	G
50	C1	1286	G
50	C1	1287	A
50	C1	1288	U
50	C1	1289	U
50	C1	1297	U
50	C1	1300	U
50	C1	1301	A
50	C1	1302	G
50	C1	1303	C
50	C1	1307	U
50	C1	1308	U
50	C1	1310	U

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Mol	Chain	Res	Type
50	C1	1311	C
50	C1	1312	G
50	C1	1313	A
50	C1	1314	U
50	C1	1315	U
50	C1	1317	C
50	C1	1318	G
50	C1	1323	U
50	C1	1324	G
50	C1	1325	G
50	C1	1326	U
50	C1	1327	G
50	C1	1330	G
50	C1	1331	C
50	C1	1332	A
50	C1	1333	U
50	C1	1335	G
50	C1	1343	U
50	C1	1344	A
50	C1	1345	G
50	C1	1347	U
50	C1	1349	G
50	C1	1351	G
50	C1	1352	G
50	C1	1354	G
50	C1	1357	A
50	C1	1358	U
50	C1	1359	U
50	C1	1360	U
50	C1	1363	C
50	C1	1364	U
50	C1	1368	U
50	C1	1369	A
50	C1	1371	U
50	C1	1372	U
50	C1	1378	A
50	C1	1381	G
50	C1	1382	A
50	C1	1384	C
50	C1	1389	C
50	C1	1390	U
50	C1	1392	U

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Mol	Chain	Res	Type
50	C1	1393	G
50	C1	1394	G
50	C1	1395	C
50	C1	1397	U
50	C1	1399	C
50	C1	1401	A
50	C1	1402	A
50	C1	1403	C
50	C1	1404	U
50	C1	1405	A
50	C1	1406	G
50	C1	1407	U
50	C1	1408	U
50	C1	1409	A
50	C1	1410	C
50	C1	1411	G
50	C1	1412	C
50	C1	1413	G
50	C1	1415	C
50	C1	1416	C
50	C1	1417	C
50	C1	1419	C
50	C1	1420	G
50	C1	1421	A
50	C1	1422	G
50	C1	1423	C
50	C1	1424	G
50	C1	1425	G
50	C1	1426	U
50	C1	1427	C
50	C1	1428	G
50	C1	1429	G
50	C1	1430	C
50	C1	1431	G
50	C1	1432	U
50	C1	1433	C
50	C1	1434	C
50	C1	1435	C
50	C1	1436	C
50	C1	1437	C
50	C1	1438	A
50	C1	1440	C

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Mol	Chain	Res	Type
50	C1	1441	U
50	C1	1442	U
50	C1	1443	C
50	C1	1444	U
50	C1	1445	U
50	C1	1446	A
50	C1	1447	G
50	C1	1448	A
50	C1	1451	G
50	C1	1453	C
50	C1	1454	A
50	C1	1455	A
50	C1	1456	G
50	C1	1457	U
50	C1	1461	G
50	C1	1462	U
50	C1	1463	U
50	C1	1464	C
50	C1	1465	A
50	C1	1466	G
50	C1	1467	C
50	C1	1471	C
50	C1	1472	C
50	C1	1473	G
50	C1	1475	G
50	C1	1476	A
50	C1	1477	U
50	C1	1478	U
50	C1	1480	A
50	C1	1481	G
50	C1	1482	C
50	C1	1484	A
50	C1	1486	A
50	C1	1489	A
50	C1	1490	G
50	C1	1493	C
50	C1	1494	U
50	C1	1495	G
50	C1	1496	U
50	C1	1498	A
50	C1	1500	G
50	C1	1505	U

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Mol	Chain	Res	Type
50	C1	1507	G
50	C1	1508	A
50	C1	1509	U
50	C1	1510	G
50	C1	1511	U
50	C1	1513	C
50	C1	1514	G
50	C1	1517	G
50	C1	1520	G
50	C1	1521	C
50	C1	1522	A
50	C1	1523	C
50	C1	1528	G
50	C1	1529	C
50	C1	1530	U
50	C1	1531	A
50	C1	1535	U
50	C1	1536	G
50	C1	1539	U
50	C1	1540	G
50	C1	1541	G
50	C1	1542	C
50	C1	1543	U
50	C1	1544	C
50	C1	1545	A
50	C1	1546	G
50	C1	1547	C
50	C1	1548	G
50	C1	1549	U
50	C1	1550	G
50	C1	1551	U
50	C1	1553	C
50	C1	1554	C
50	C1	1555	U
50	C1	1556	A
50	C1	1557	C
50	C1	1558	C
50	C1	1560	U
50	C1	1561	A
50	C1	1563	G
50	C1	1568	C
50	C1	1569	A

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Mol	Chain	Res	Type
50	C1	1570	G
50	C1	1573	G
50	C1	1574	C
50	C1	1577	G
50	C1	1578	U
50	C1	1579	A
50	C1	1580	A
50	C1	1581	C
50	C1	1582	C
50	C1	1585	U
50	C1	1586	U
50	C1	1587	G
50	C1	1588	A
50	C1	1589	A
50	C1	1591	C
50	C1	1595	U
50	C1	1597	C
50	C1	1598	G
50	C1	1599	U
50	C1	1600	G
50	C1	1601	A
50	C1	1602	U
50	C1	1603	G
50	C1	1604	G
50	C1	1605	G
50	C1	1607	A
50	C1	1609	C
50	C1	1610	G
50	C1	1612	G
50	C1	1614	A
50	C1	1615	U
50	C1	1617	G
50	C1	1618	C
50	C1	1620	A
50	C1	1621	U
50	C1	1622	U
50	C1	1623	A
50	C1	1624	U
50	C1	1625	U
50	C1	1627	C
50	C1	1631	U
50	C1	1632	G

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Mol	Chain	Res	Type
50	C1	1635	C
50	C1	1636	G
50	C1	1637	A
50	C1	1638	G
50	C1	1639	G
50	C1	1640	A
50	C1	1644	C
50	C1	1645	C
50	C1	1647	A
50	C1	1648	G
50	C1	1649	U
50	C1	1651	A
50	C1	1652	G
50	C1	1654	G
50	C1	1655	C
50	C1	1656	G
50	C1	1660	C
50	C1	1661	A
50	C1	1662	U
50	C1	1664	A
50	C1	1665	G
50	C1	1666	C
50	C1	1669	G
50	C1	1671	G
50	C1	1672	U
50	C1	1673	U
50	C1	1674	G
50	C1	1677	U
50	C1	1678	A
50	C1	1679	A
50	C1	1680	G
50	C1	1682	C
50	C1	1684	C
50	C1	1685	U
50	C1	1686	G
50	C1	1687	C
50	C1	1688	C
50	C1	1689	C
50	C1	1691	U
50	C1	1692	U
50	C1	1694	U
50	C1	1696	C

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Mol	Chain	Res	Type
50	C1	1697	A
50	C1	1698	C
50	C1	1699	A
50	C1	1700	C
50	C1	1701	C
50	C1	1702	G
50	C1	1703	C
50	C1	1707	U
50	C1	1708	C
50	C1	1709	G
50	C1	1710	C
50	C1	1714	U
50	C1	1719	A
50	C1	1720	U
50	C1	1721	U
50	C1	1722	G
50	C1	1723	G
50	C1	1728	U
50	C1	1729	U
50	C1	1731	A
50	C1	1732	G
50	C1	1735	A
50	C1	1744	G
50	C1	1745	A
50	C1	1747	C
50	C1	1749	G
50	C1	1751	C
50	C1	1752	C
50	C1	1760	G
50	C1	1761	U
50	C1	1764	G
50	C1	1765	C
50	C1	1767	C
50	C1	1768	A
50	C1	1770	G
50	C1	1775	U
50	C1	1781	A
50	C1	1782	G
50	C1	1783	C
50	C1	1788	A
50	C1	1789	G
50	C1	1790	A

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Mol	Chain	Res	Type
50	C1	1792	G
50	C1	1794	C
50	C1	1798	C
50	C1	1800	A
50	C1	1809	A
50	C1	1811	C
50	C1	1813	A
50	C1	1817	G
50	C1	1819	A
50	C1	1823	A
50	C1	1824	A
50	C1	1825	A
50	C1	1826	G
50	C1	1827	U
50	C1	1829	G
50	C1	1831	A
50	C1	1832	A
50	C1	1833	C
50	C1	1834	A
50	C1	1835	A
50	C1	1836	G
50	C1	1837	G
50	C1	1838	U
50	C1	1839	U
50	C1	1841	C
50	C1	1843	G
50	C1	1844	U
50	C1	1846	G
50	C1	1847	G
50	C1	1849	G
50	C1	1850	A
50	C1	1851	A
50	C1	1852	C
50	C1	1856	C
50	C1	1857	G
50	C1	1860	A
50	C1	1861	G
50	C1	1862	G
50	C1	1863	A
50	C1	1864	U
50	C1	1865	C
50	C1	1866	A

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Mol	Chain	Res	Type
50	C1	1867	U
50	C1	1868	U
50	C1	1869	A

All (532) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A2	13	U
1	A2	14	C
1	A2	19	G
1	A2	48	G
1	A2	64	A
1	A2	69	A
1	A2	70	A
1	A2	96	U
1	A2	156	C
1	A2	181	U
1	A2	188	G
1	A2	192	C
1	A2	193	C
1	A2	196	G
1	A2	207	C
1	A2	212	C
1	A2	215	A
1	A2	216	G
1	A2	221	U
1	A2	229	G
1	A2	266	C
1	A2	287	A
1	A2	292	G
1	A2	300	C
1	A2	328	U
1	A2	331	C
1	A2	333	G
1	A2	334	C
1	A2	342	C
1	A2	366	G
1	A2	371	U
1	A2	379	A
1	A2	381	C
1	A2	386	A
1	A2	398	A

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Mol	Chain	Res	Type
1	A2	402	G
1	A2	424	A
1	A2	433	G
1	A2	441	G
1	A2	443	A
1	A2	444	G
1	A2	458	U
1	A2	459	U
1	A2	460	C
1	A2	461	A
1	A2	462	A
1	A2	473	G
1	A2	474	G
1	A2	477	C
1	A2	482	G
1	A2	633	G
1	A2	658	G
1	A2	717	G
1	A2	718	G
1	A2	719	G
1	A2	720	A
1	A2	721	A
1	A2	727	G
1	A2	736	G
1	A2	897	U
1	A2	914	G
1	A2	916	A
1	A2	927	A
1	A2	928	A
1	A2	939	G
1	A2	941	G
1	A2	943	G
1	A2	944	A
1	A2	947	G
1	A2	957	G
1	A2	959	C
1	A2	967	C
1	A2	973	U
1	A2	974	C
1	A2	1082	U
1	A2	1147	C
1	A2	1177	C

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Mol	Chain	Res	Type
1	A2	1193	G
1	A2	1196	C
1	A2	1197	G
1	A2	1204	G
1	A2	1205	U
1	A2	1207	C
1	A2	1208	U
1	A2	1209	C
1	A2	1211	C
1	A2	1216	C
1	A2	1217	C
1	A2	1218	A
1	A2	1219	C
1	A2	1249	G
1	A2	1280	G
1	A2	1282	U
1	A2	1293	C
1	A2	1299	U
1	A2	1304	A
1	A2	1340	G
1	A2	1349	C
1	A2	1357	G
1	A2	1358	C
1	A2	1360	G
1	A2	1367	A
1	A2	1377	A
1	A2	1388	G
1	A2	1400	A
1	A2	1421	C
1	A2	1423	A
1	A2	1444	G
1	A2	1453	C
1	A2	1458	G
1	A2	1475	G
1	A2	1476	A
1	A2	1478	C
1	A2	1481	G
1	A2	1497	A
1	A2	1502	A
1	A2	1523	G
1	A2	1530	C
1	A2	1532	A

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Mol	Chain	Res	Type
1	A2	1553	G
1	A2	1554	A
1	A2	1604	G
1	A2	1612	G
1	A2	1619	C
1	A2	1628	U
1	A2	1639	U
1	A2	1659	G
1	A2	1673	C
1	A2	1703	G
1	A2	1732	G
1	A2	1744	A
1	A2	1745	A
1	A2	1756	C
1	A2	1783	A
1	A2	1786	C
1	A2	1802	G
1	A2	1805	G
1	A2	1836	A
1	A2	1846	A
1	A2	1855	G
1	A2	1859	C
1	A2	1860	U
1	A2	1868	G
1	A2	1870	A
1	A2	1874	A
1	A2	1883	U
1	A2	1885	A
1	A2	1900	G
1	A2	1916	C
1	A2	1918	G
1	A2	1924	G
1	A2	1930	G
1	A2	2000	C
1	A2	2003	A
1	A2	2006	C
1	A2	2009	C
1	A2	2011	A
1	A2	2023	G
1	A2	2024	G
1	A2	2034	G
1	A2	2046	C

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Mol	Chain	Res	Type
1	A2	2048	U
1	A2	2270	G
1	A2	2294	G
1	A2	2309	G
1	A2	2310	G
1	A2	2324	A
1	A2	2333	U
1	A2	2347	A
1	A2	2348	U
1	A2	2358	A
1	A2	2360	C
1	A2	2369	C
1	A2	2371	G
1	A2	2373	A
1	A2	2375	U
1	A2	2394	A
1	A2	2395	A
1	A2	2396	C
1	A2	2405	A
1	A2	2411	G
1	A2	2415	A
1	A2	2450	A
1	A2	2454	A
1	A2	2465	C
1	A2	2481	C
1	A2	2489	A
1	A2	2502	U
1	A2	2508	C
1	A2	2548	C
1	A2	2551	G
1	A2	2561	G
1	A2	2564	A
1	A2	2606	C
1	A2	2607	U
1	A2	2650	G
1	A2	2673	A
1	A2	2684	U
1	A2	2702	A
1	A2	2703	G
1	A2	2716	C
1	A2	2718	U
1	A2	2735	G

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Mol	Chain	Res	Type
1	A2	2740	U
1	A2	2741	A
1	A2	2745	C
1	A2	2749	C
1	A2	2802	A
1	A2	2803	U
1	A2	2838	C
1	A2	3578	G
1	A2	3583	G
1	A2	3584	G
1	A2	3585	U
1	A2	3648	U
1	A2	3666	U
1	A2	3684	U
1	A2	3696	A
1	A2	3724	G
1	A2	3727	U
1	A2	3729	A
1	A2	3733	U
1	A2	3743	A
1	A2	3753	A
1	A2	3754	A
1	A2	3769	A
1	A2	3770	U
1	A2	3802	C
1	A2	3821	A
1	A2	3845	A
1	A2	3865	C
1	A2	3866	G
1	A2	3873	G
1	A2	3876	G
1	A2	3887	G
1	A2	3907	G
1	A2	3926	U
1	A2	3933	U
1	A2	4017	U
1	A2	4043	U
1	A2	4044	G
1	A2	4081	C
1	A2	4083	C
1	A2	4084	U
1	A2	4085	U

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Mol	Chain	Res	Type
1	A2	4088	G
1	A2	4091	G
1	A2	4105	C
1	A2	4117	A
1	A2	4122	C
1	A2	4130	A
1	A2	4155	G
1	A2	4181	C
1	A2	4211	A
1	A2	4226	G
1	A2	4236	G
1	A2	4252	A
1	A2	4254	C
1	A2	4292	C
1	A2	4336	A
1	A2	4338	A
1	A2	4354	A
1	A2	4374	A
1	A2	4387	G
1	A2	4388	A
1	A2	4396	U
1	A2	4408	G
1	A2	4409	A
1	A2	4433	A
1	A2	4437	A
1	A2	4454	G
1	A2	4455	G
1	A2	4485	C
1	A2	4515	U
1	A2	4533	G
1	A2	4551	U
1	A2	4561	U
1	A2	4562	A
1	A2	4566	G
1	A2	4596	U
1	A2	4597	G
1	A2	4609	G
1	A2	4616	A
1	A2	4628	U
1	A2	4636	G
1	A2	4637	U
1	A2	4659	U

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Mol	Chain	Res	Type
1	A2	4660	A
1	A2	4675	C
1	A2	4680	C
1	A2	4688	A
1	A2	4690	G
1	A2	4692	C
1	A2	4693	A
1	A2	4699	G
1	A2	4711	U
1	A2	4712	U
1	A2	4717	U
1	A2	4723	A
1	A2	4733	C
1	A2	4740	U
1	A2	4807	C
1	A2	4813	C
1	A2	4823	G
1	A2	4824	U
1	A2	4825	G
1	A2	4827	G
1	A2	4837	U
1	A2	4847	A
1	A2	4848	A
1	A2	4849	A
1	A2	4854	G
1	A2	4862	G
1	A2	4867	G
1	A2	4895	C
1	A2	4930	G
1	A2	4943	U
1	A2	4944	U
1	A2	4977	U
1	A2	4978	C
1	A2	4980	C
1	A2	5002	C
1	A2	5004	G
1	A2	5019	G
2	A3	22	U
2	A3	71	A
2	A3	84	A
2	A3	105	C
2	A3	111	U

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Mol	Chain	Res	Type
2	A3	125	C
3	A4	12	U
3	A4	26	C
3	A4	54	A
3	A4	63	C
3	A4	74	A
3	A4	75	G
3	A4	90	A
3	A4	108	G
3	A4	109	U
47	BA	8	U
49	BC	83	C
49	BC	85	A
49	BC	95	U
49	BC	110	G
49	BC	119	A
49	BC	120	C
49	BC	126	C
49	BC	132	G
49	BC	133	G
49	BC	140	A
49	BC	156	C
49	BC	158	G
49	BC	160	U
49	BC	161	G
49	BC	164	U
49	BC	167	A
49	BC	228	U
49	BC	230	G
49	BC	231	G
49	BC	232	C
49	BC	234	U
49	BC	252	A
49	BC	256	G
49	BC	257	A
49	BC	259	U
49	BC	265	U
49	BC	266	G
49	BC	271	G
49	BC	276	A
49	BC	284	U
49	BC	290	U

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Mol	Chain	Res	Type
49	BC	291	G
49	BC	301	G
49	BC	305	U
49	BC	309	G
49	BC	323	G
49	BC	324	U
49	BC	344	G
49	BC	349	C
49	BC	350	G
50	C1	24	C
50	C1	44	U
50	C1	61	A
50	C1	64	A
50	C1	66	G
50	C1	68	A
50	C1	77	A
50	C1	78	C
50	C1	102	A
50	C1	111	A
50	C1	113	G
50	C1	124	U
50	C1	131	C
50	C1	136	C
50	C1	139	C
50	C1	140	C
50	C1	147	A
50	C1	162	C
50	C1	181	A
50	C1	183	G
50	C1	199	C
50	C1	200	G
50	C1	207	G
50	C1	209	A
50	C1	227	U
50	C1	304	C
50	C1	307	G
50	C1	308	G
50	C1	310	C
50	C1	312	G
50	C1	317	C
50	C1	319	C
50	C1	332	G

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Mol	Chain	Res	Type
50	C1	338	G
50	C1	356	C
50	C1	363	A
50	C1	368	U
50	C1	370	G
50	C1	383	G
50	C1	399	C
50	C1	428	U
50	C1	448	A
50	C1	465	A
50	C1	475	C
50	C1	486	A
50	C1	487	U
50	C1	501	C
50	C1	517	C
50	C1	544	G
50	C1	546	G
50	C1	547	G
50	C1	558	G
50	C1	577	U
50	C1	578	C
50	C1	589	G
50	C1	590	A
50	C1	593	C
50	C1	604	A
50	C1	656	G
50	C1	662	G
50	C1	671	A
50	C1	687	C
50	C1	743	U
50	C1	799	U
50	C1	811	A
50	C1	821	G
50	C1	822	U
50	C1	833	C
50	C1	834	C
50	C1	840	C
50	C1	899	U
50	C1	913	A
50	C1	970	G
50	C1	971	G
50	C1	1015	U

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Mol	Chain	Res	Type
50	C1	1016	U
50	C1	1020	A
50	C1	1021	U
50	C1	1043	G
50	C1	1060	A
50	C1	1088	U
50	C1	1108	G
50	C1	1114	U
50	C1	1115	U
50	C1	1138	C
50	C1	1150	A
50	C1	1164	G
50	C1	1198	G
50	C1	1215	C
50	C1	1242	U
50	C1	1247	C
50	C1	1250	A
50	C1	1253	A
50	C1	1257	G
50	C1	1259	A
50	C1	1261	C
50	C1	1264	C
50	C1	1277	C
50	C1	1285	G
50	C1	1301	A
50	C1	1307	U
50	C1	1308	U
50	C1	1311	C
50	C1	1313	A
50	C1	1326	U
50	C1	1342	U
50	C1	1351	G
50	C1	1362	U
50	C1	1401	A
50	C1	1404	U
50	C1	1406	G
50	C1	1411	G
50	C1	1456	G
50	C1	1476	A
50	C1	1477	U
50	C1	1494	U
50	C1	1497	G

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Mol	Chain	Res	Type
50	C1	1508	A
50	C1	1520	G
50	C1	1534	C
50	C1	1542	C
50	C1	1543	U
50	C1	1555	U
50	C1	1556	A
50	C1	1578	U
50	C1	1586	U
50	C1	1603	G
50	C1	1624	U
50	C1	1631	U
50	C1	1635	C
50	C1	1637	A
50	C1	1638	G
50	C1	1644	C
50	C1	1648	G
50	C1	1654	G
50	C1	1655	C
50	C1	1673	U
50	C1	1697	A
50	C1	1698	C
50	C1	1700	C
50	C1	1721	U
50	C1	1781	A
50	C1	1823	A
50	C1	1824	A
50	C1	1830	U
50	C1	1833	C
50	C1	1834	A
50	C1	1836	G
50	C1	1848	U
50	C1	1860	A
50	C1	1862	G
50	C1	1867	U

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 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	$\#\|Z\| > 2$
84	GNP	BB	2435	85	29,34,34	2.16	8 (27%)	33,54,54	2.26	8 (24%)

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
84	GNP	BB	2435	85	-	2/14/38/38	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
84	BB	2435	GNP	C2'-C1'	-6.46	1.44	1.53
84	BB	2435	GNP	C6-N1	5.34	1.42	1.33
84	BB	2435	GNP	C4-N3	2.86	1.40	1.35
84	BB	2435	GNP	PB-O3A	-2.61	1.55	1.59
84	BB	2435	GNP	PB-N3B	-2.47	1.56	1.63
84	BB	2435	GNP	C8-N7	-2.41	1.30	1.34
84	BB	2435	GNP	C2-N1	2.37	1.39	1.35
84	BB	2435	GNP	PG-N3B	-2.27	1.57	1.63

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
84	BB	2435	GNP	C5-C6-N1	-7.05	113.79	123.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
84	BB	2435	GNP	C2-N1-C6	5.20	124.19	115.93
84	BB	2435	GNP	N3-C2-N1	-3.58	122.44	127.22
84	BB	2435	GNP	O1B-PB-N3B	3.38	116.75	111.77
84	BB	2435	GNP	C4-C5-C6	-2.99	117.95	120.80
84	BB	2435	GNP	C1'-N9-C4	-2.75	121.81	126.64
84	BB	2435	GNP	O2G-PG-O1G	2.42	119.53	113.45
84	BB	2435	GNP	O3A-PB-N3B	2.21	112.73	106.59

There are no chirality outliers.

All (2) torsion outliers are listed below:

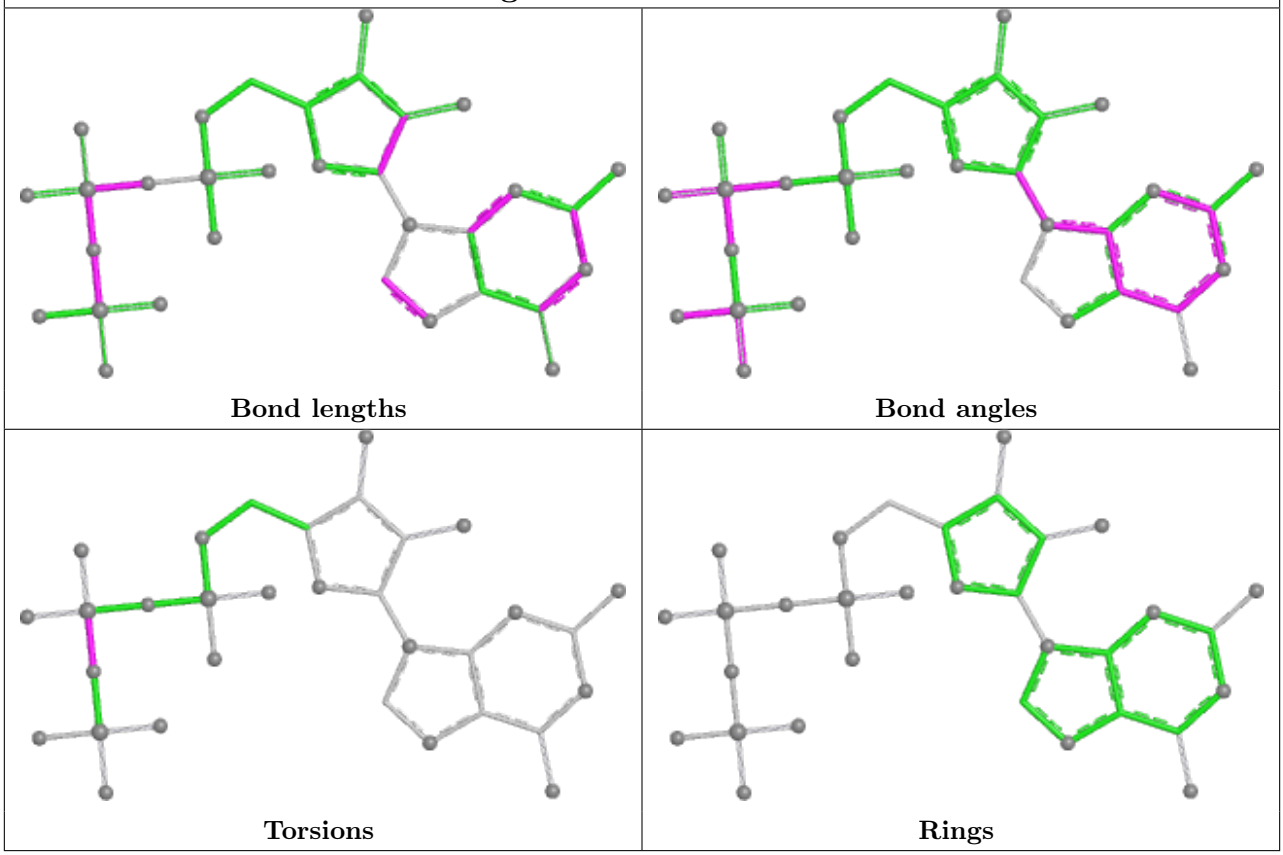
Mol	Chain	Res	Type	Atoms
84	BB	2435	GNP	PG-N3B-PB-O1B
84	BB	2435	GNP	PG-N3B-PB-O3A

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 GNP BB 2435



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
20	AR	1
1	A2	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	AR	182:GLU	C	183:GLU	N	5.96
1	A2	4036:U	O3'	4037:U	P	4.57

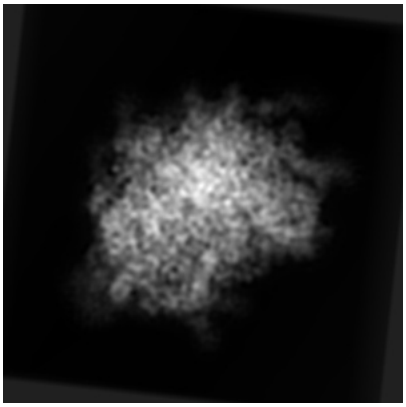
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-2682. These allow visual inspection of the internal detail of the map and identification of artifacts.

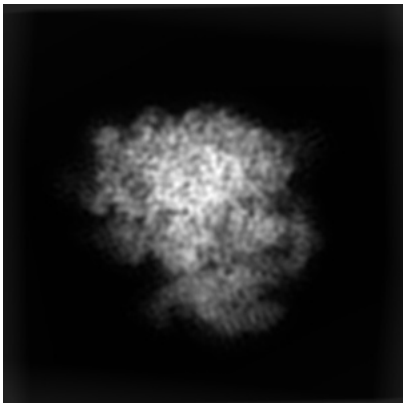
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

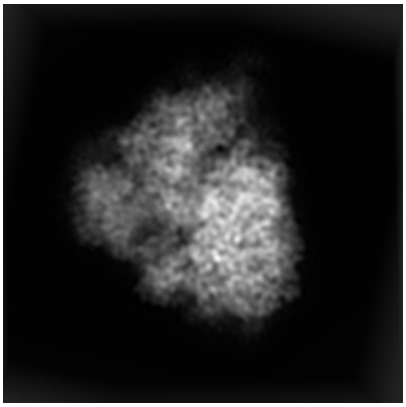
6.1.1 Primary map



X



Y

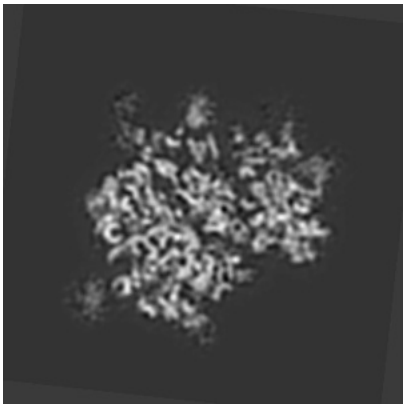


Z

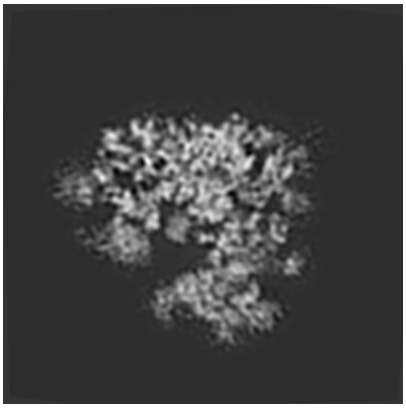
The images above show the map projected in three orthogonal directions.

6.2 Central slices

6.2.1 Primary map



X Index: 180



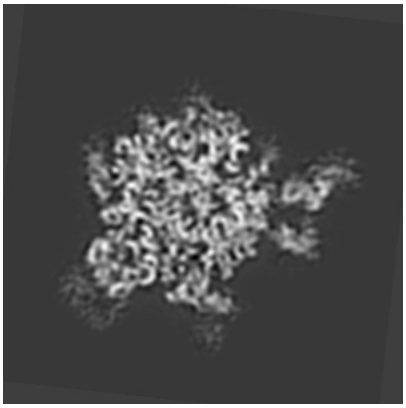
Y Index: 180

Z Index: 180

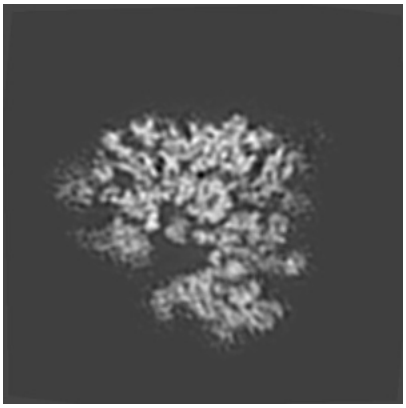
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

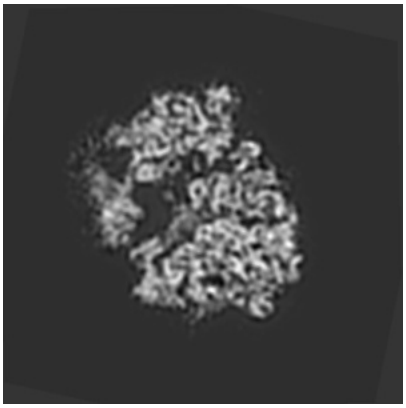
6.3.1 Primary map



X Index: 214



Y Index: 182



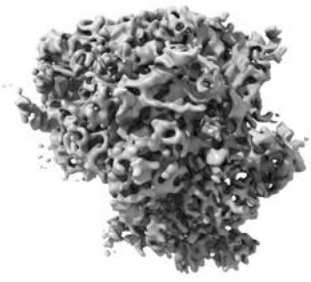
Z Index: 169

The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X



Y

Z

The images above show the 3D surface view of the map at the recommended contour level 4000.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

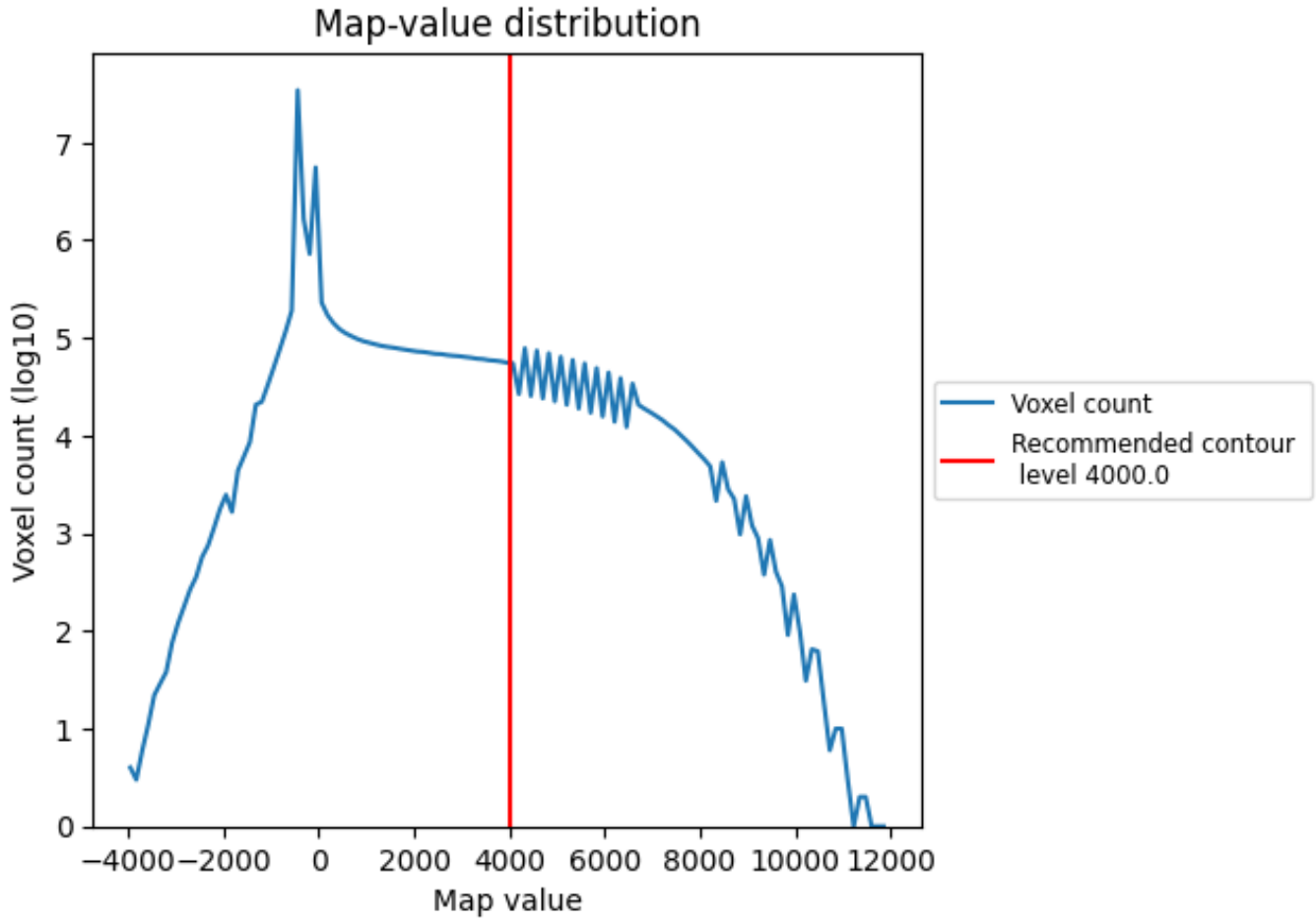
6.5 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

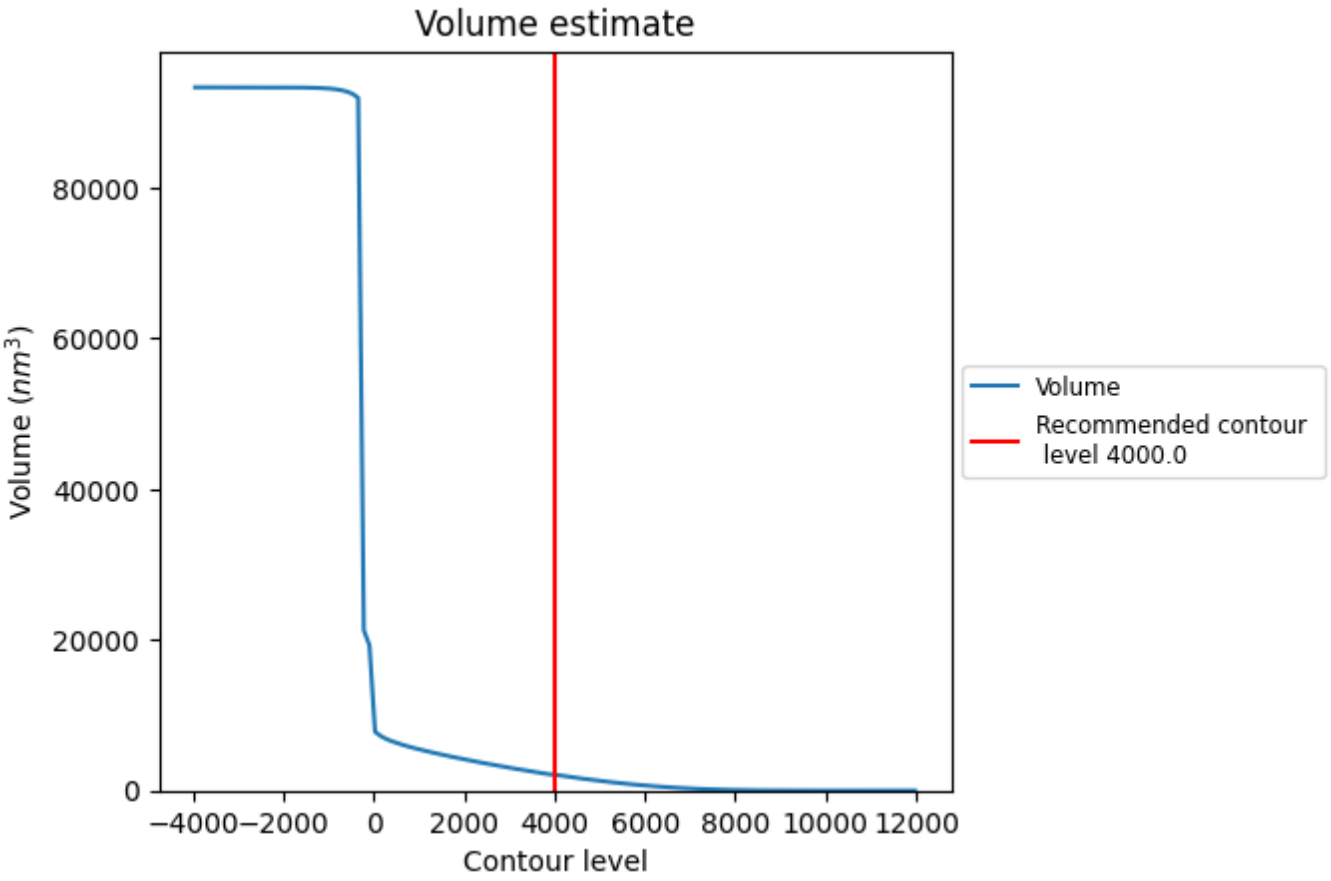
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

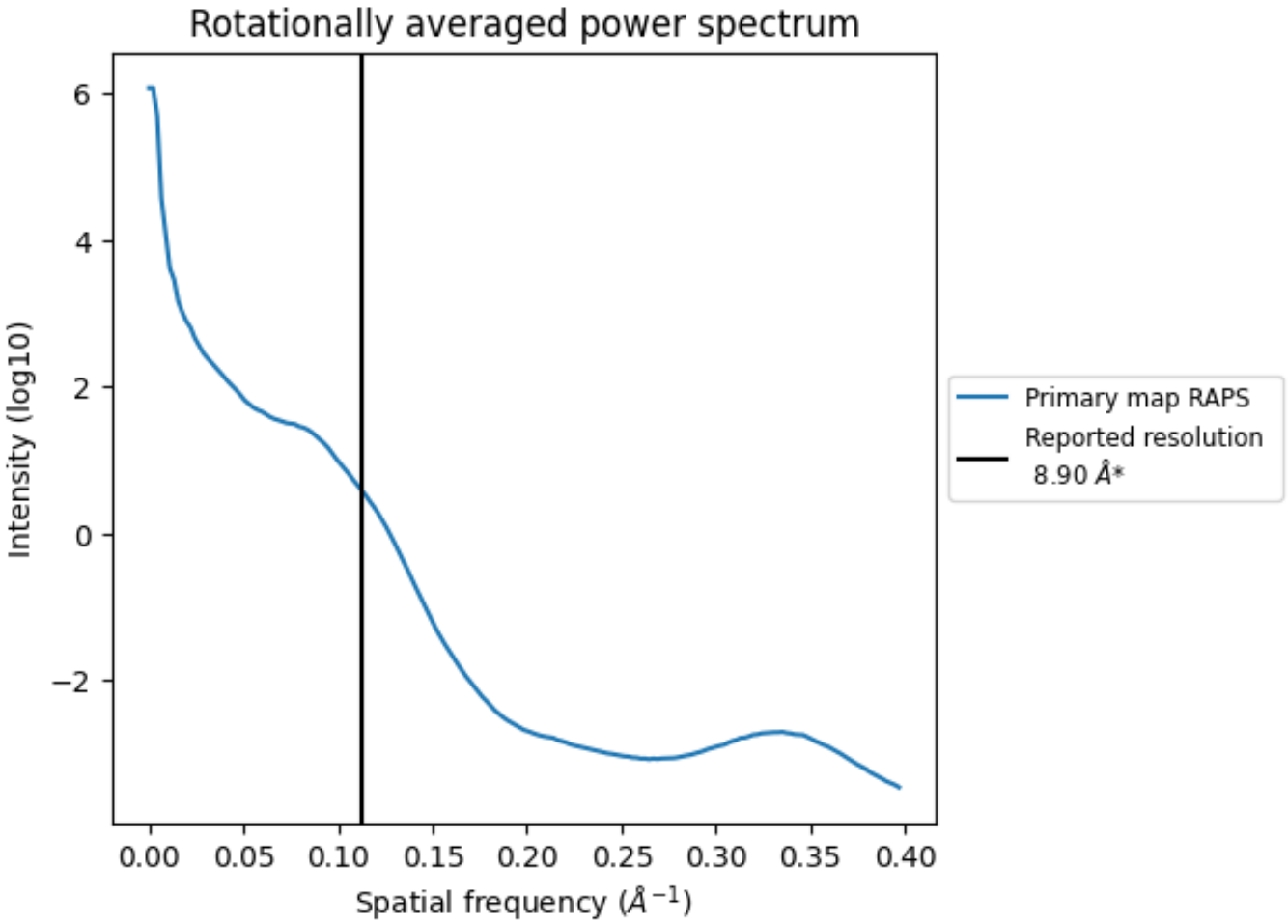
7.2 Volume estimate



The volume at the recommended contour level is 2109 nm^3; this corresponds to an approximate mass of 1905 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)



*Reported resolution corresponds to spatial frequency of 0.112 Å^{-1}

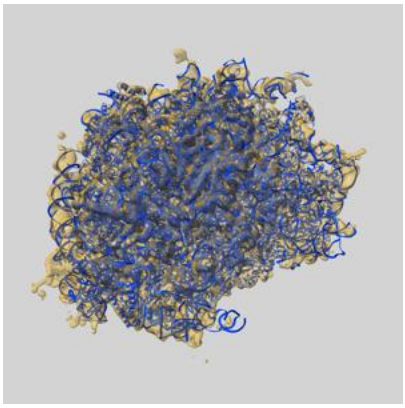
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

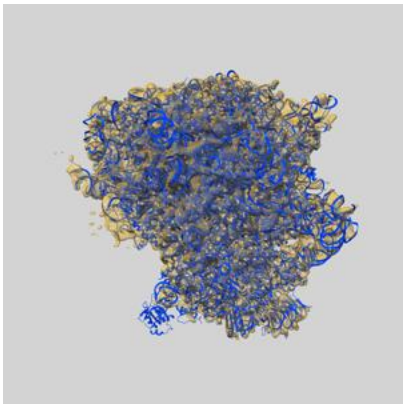
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-2682 and PDB model 4UJD. Per-residue inclusion information can be found in section 3 on page 19.

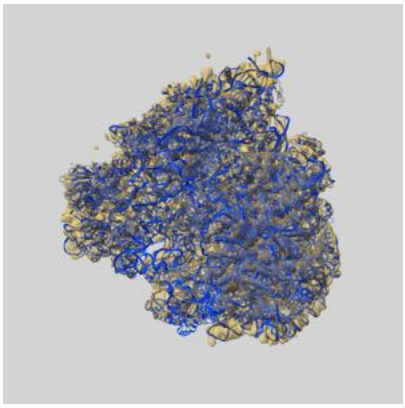
9.1 Map-model overlay



X



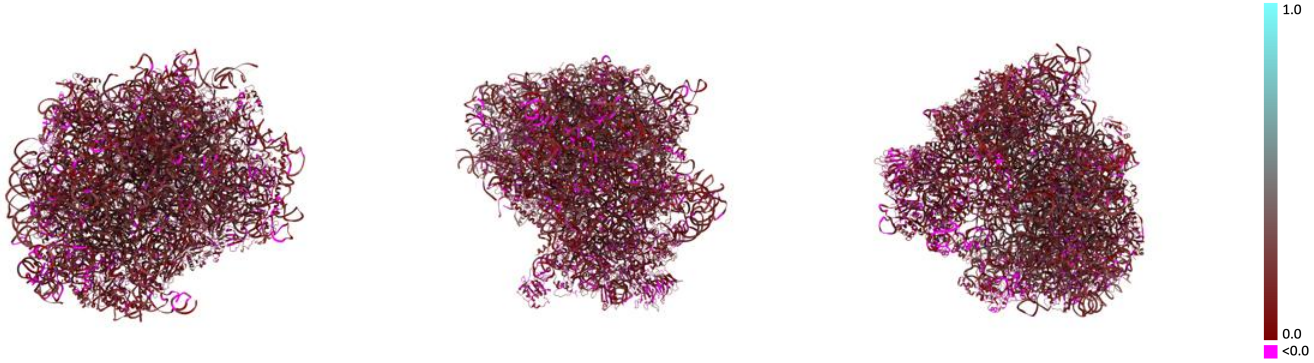
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 4000.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

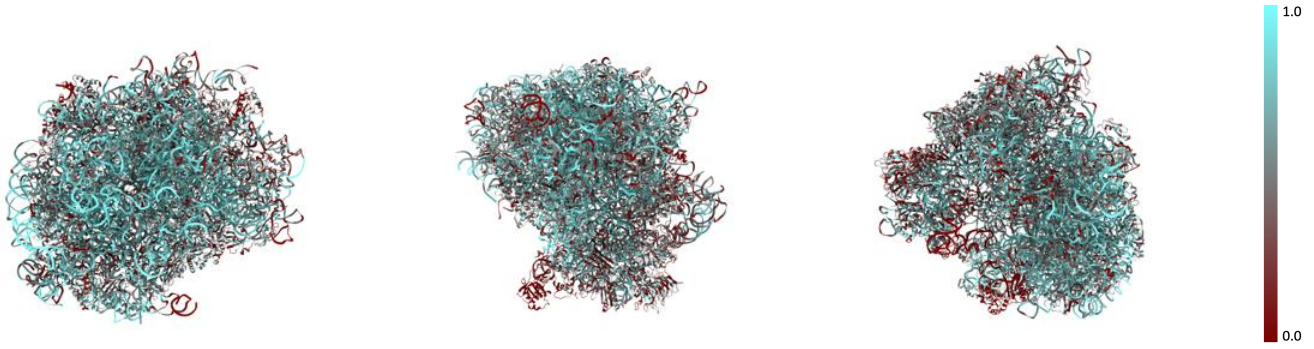
9.2 Q-score mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

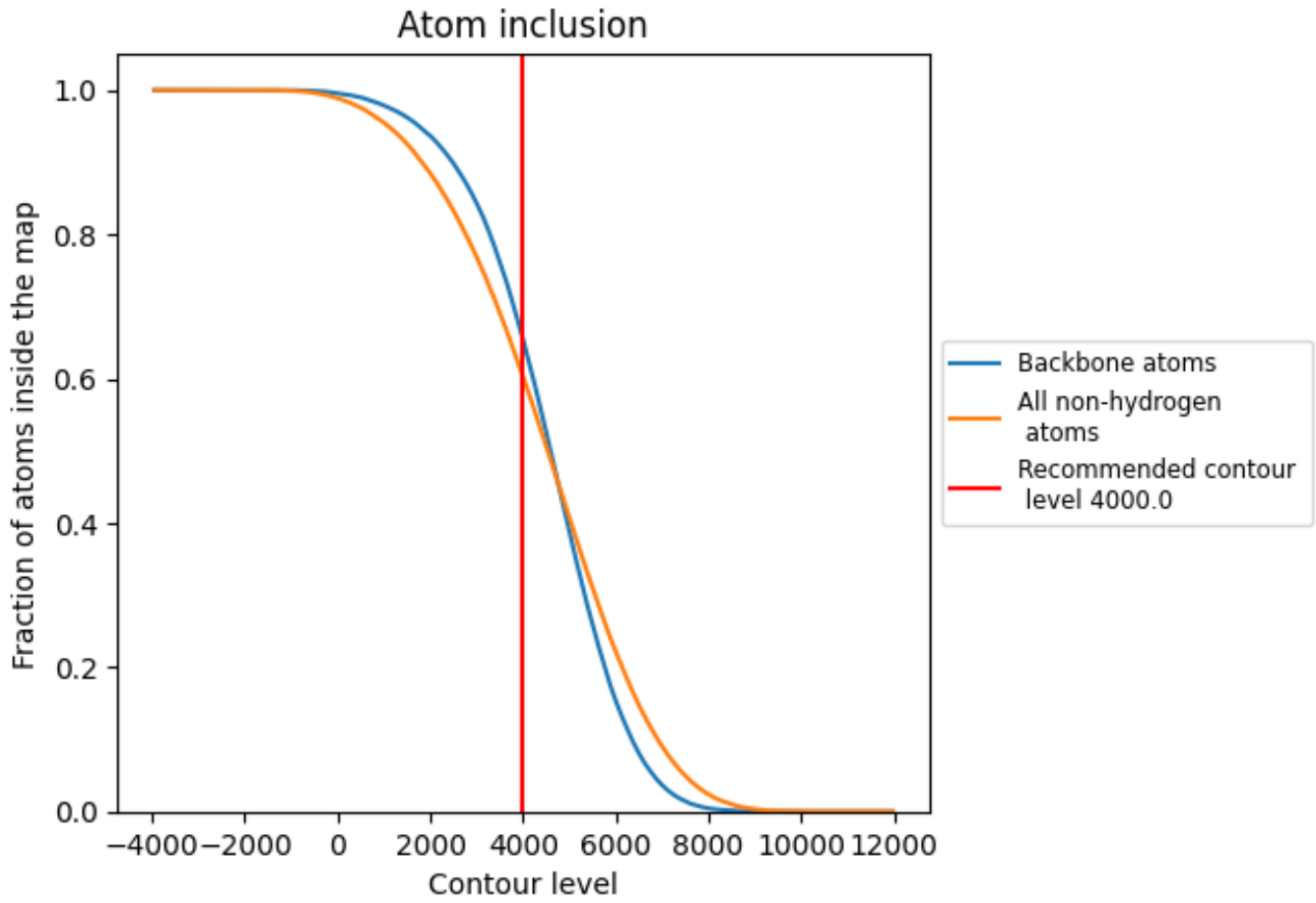
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (4000.0).

9.4 Atom inclusion (i)



At the recommended contour level, 65% of all backbone atoms, 60% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (4000.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6029	0.1400
A2	0.7733	0.1740
A3	0.8107	0.1810
A4	0.8822	0.1860
AA	0.3693	0.0980
AB	0.4364	0.1060
AC	0.4688	0.0950
AD	0.5646	0.1180
AE	0.4257	0.1110
AF	0.4721	0.1090
AG	0.3941	0.1190
AH	0.4052	0.1260
AI	0.4695	0.1190
AJ	0.5454	0.1210
AL	0.4472	0.1070
AM	0.5298	0.1270
AN	0.4681	0.0890
AO	0.4752	0.1200
AP	0.5309	0.0990
AQ	0.4913	0.1120
AR	0.5058	0.1100
AS	0.4448	0.1100
AT	0.4347	0.1120
AU	0.4153	0.1150
AV	0.2601	0.1050
AW	0.5118	0.1190
AX	0.4563	0.1250
AY	0.5554	0.1120
AZ	0.4366	0.1140
Aa	0.5159	0.1030
Ab	0.4945	0.0950
Ac	0.5096	0.1340
Ad	0.5355	0.1220
Ae	0.4443	0.1190
Af	0.4339	0.0890

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Chain	Atom inclusion	Q-score
Ag	0.3805	0.0930
Ah	0.4985	0.1240
Ai	0.5053	0.1240
Aj	0.5890	0.0940
Ak	0.4039	0.1290
Al	0.4586	0.1280
Am	0.5108	0.1350
An	0.4566	0.0870
Ao	0.4627	0.1150
Ap	0.4360	0.1160
At	0.4660	0.0870
Au	0.0050	0.0190
BA	0.5503	0.1590
BB	0.4055	0.1210
BC	0.3357	0.0940
C1	0.7245	0.1580
CA	0.4017	0.1280
CB	0.3902	0.1300
CC	0.4196	0.1220
CD	0.2820	0.1000
CE	0.4545	0.0970
CF	0.3952	0.0940
CG	0.4274	0.0970
CH	0.2742	0.1210
CI	0.4108	0.0920
CJ	0.5185	0.1270
CK	0.2264	0.0740
CL	0.3600	0.1090
CM	0.0022	0.0180
CN	0.4082	0.1170
CO	0.4074	0.1010
CP	0.2881	0.0910
CQ	0.3983	0.0730
CR	0.3445	0.1000
CS	0.4260	0.0970
CT	0.4787	0.0800
CU	0.2864	0.0850
CV	0.3746	0.1200
CW	0.4133	0.1270
CX	0.3500	0.1280
CY	0.5463	0.0980
CZ	0.3169	0.1280

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Chain	Atom inclusion	Q-score
Ca	0.2575	0.0590
Cb	0.3295	0.1140
Cc	0.2468	0.0720
Cd	0.5587	0.0860
Ce	0.3501	0.1000
Cf	0.0290	0.0390
Cg	0.2939	0.0750