



Full wwPDB EM Validation Report ⓘ

Dec 10, 2022 – 12:35 pm GMT

PDB ID : 4UJE
EMDB ID : EMD-2620
Title : Regulation of the mammalian elongation cycle by 40S subunit rolling: a eukaryotic-specific ribosome rearrangement
Authors : Budkevich, T.V.; Giesebrecht, J.; Behrmann, E.; Loerke, J.; Ramrath, D.J.F.; Mielke, T.; Ismer, J.; Hildebrand, P.; Tung, C.-S.; Nierhaus, K.H.; Sanbonmatsu, K.Y.; Spahn, C.M.T.
Deposited on : 2014-04-05
Resolution : 6.90 Å(reported)

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:

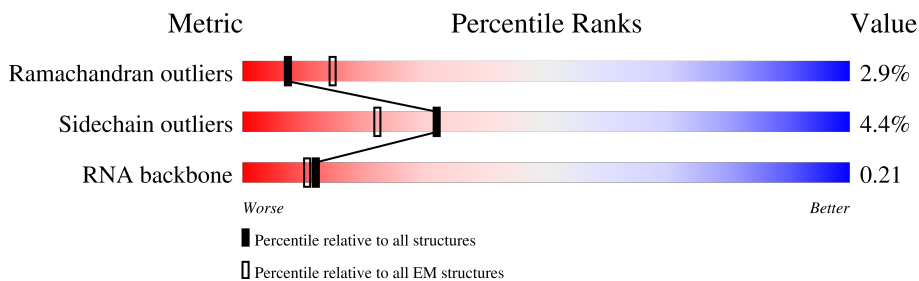
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation 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 6.90 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 $\leq 5\%$. 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	AV	76	
2	AW	76	
3	AX	28	
4	B1	1869	
5	BA	295	
6	BB	264	
7	BC	293	
8	BD	243	

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Mol	Chain	Length	Quality of chain
9	BE	263	10% 92% 6%
10	BF	204	20% 84% 8% 8%
11	BG	249	15% 87% 6% 7%
12	BH	194	52% 94% ...
13	BI	208	33% 91% 8%
14	BJ	194	9% 86% 7% 8%
15	BK	165	52% 5% 43%
16	BL	158	37% 87% 5% 8%
17	BM	132	58% 83% 7% 9%
18	BN	151	30% 95% ...
19	BO	151	26% 85% 5% 9%
20	BP	145	8% 75% 6% 19%
21	BQ	146	7% 91% 5%
22	BR	135	24% 76% 5% 19%
23	BS	152	9% 82% 11% 7%
24	BT	145	6% 92% 6%
25	BU	119	15% 81% 15%
26	BV	83	53% 96% .
27	BW	130	17% 94% 5%
28	BX	143	37% 85% 8% 6%
29	BY	133	9% 84% 8% 8%
30	BZ	125	11% 55% 6% 39%
31	Ba	115	30% 74% 9% 17%
32	Bb	84	27% 90% 5% 5%
33	Bc	69	29% 83% 7% 10%

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Mol	Chain	Length	Quality of chain
34	Bd	56	9% 88% 7% 5%
35	Be	59	20% 81% 5% 14%
36	Bf	156	19% 37% 61%
37	Bg	317	28% 93% 5%
38	CA	257	48% 93% .
39	CB	403	16% 90% 7%
40	CC	427	21% 78% 6% . 15%
41	CD	297	8% 93% .
42	CE	288	16% 50% 5% 45%
43	CF	248	26% 90% .
44	CG	266	24% 83% 5% . 12%
45	CH	192	13% 95% 5%
46	CI	214	28% 86% 6% 8%
47	CJ	178	8% 85% 10% .
48	CL	211	30% 84% 9% . 5%
49	CM	215	9% 62% .
50	CN	204	24% 98% .
51	CO	203	13% 94% .
52	CP	184	11% 78% 5% 17%
53	CQ	188	30% 92% 6%
54	CR	196	25% 86% 7% 7%
55	CS	176	19% 91% 7%
56	CT	160	26% 95% .
57	CU	128	26% 77% .
58	CV	140	36% 89% .

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Mol	Chain	Length	Quality of chain
59	CW	157	12% 39% 59%
60	CX	156	19% 75% 24%
61	CY	145	8% 83% 6% 12%
62	CZ	136	24% 93% 7%
63	Ca	148	24% 94% 5% ..
64	Cb	159	17% 40% 57%
65	Cc	115	32% 88% 10%
66	Cd	125	16% 83% 13%
67	Ce	135	33% 90% 5%
68	Cf	110	24% 86% 10% ..
69	Cg	117	31% 87% 10% ..
70	Ch	123	15% 94% 5% .
71	Ci	105	20% 83% 8% . 8%
72	Cj	97	20% 84% 12%
73	Ck	70	36% 97% ..
74	Cl	51	35% 94% ..
75	Cm	128	12% 38% 59%
76	Cn	25	44% 100%
77	Co	106	47% 93% 7%
78	Cp	92	41% 93% 5% .
79	Ct	137	36% 86% 7% . 5%
80	Cu	210	77% 92% 8%
81	A2	5025	5% 30% 41% 28%
82	A3	194	5% 39% 41% 19%
83	A4	121	40% 56% ..

2 Entry composition

There are 83 unique types of molecules in this entry. The entry contains 215620 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 TRNA-LYS.

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

- Molecule 2 is a RNA chain called TRNA-PHE.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	AW	76	1626	729	290	531	75	1	0

- Molecule 3 is a RNA chain called Messenger RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	AX	28	560	252	56	224	28	0	0

- Molecule 4 is a RNA chain called 18S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	B1	1742	37159	16589	6665	12164	1741	0	0

- Molecule 5 is a protein called 40S RIBOSOMAL PROTEIN SA.

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

- Molecule 6 is a protein called 40S RIBOSOMAL PROTEIN S3A.

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

- Molecule 7 is a protein called 40S RIBOSOMAL PROTEIN S2.

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

- Molecule 8 is a protein called 40S RIBOSOMAL PROTEIN S3.

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

- Molecule 9 is a protein called 40S RIBOSOMAL PROTEIN S4, Y ISOFORM 1.

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

- Molecule 10 is a protein called 40S RIBOSOMAL PROTEIN S5.

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

- Molecule 11 is a protein called 40S RIBOSOMAL PROTEIN S6.

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

- Molecule 12 is a protein called 40S RIBOSOMAL PROTEIN S7.

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

- Molecule 13 is a protein called 40S RIBOSOMAL PROTEIN S8.

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

- Molecule 14 is a protein called 40S RIBOSOMAL PROTEIN S9.

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

- Molecule 15 is a protein called 40S RIBOSOMAL PROTEIN S10.

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

- Molecule 16 is a protein called 40S RIBOSOMAL PROTEIN S11.

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

- Molecule 17 is a protein called 40S RIBOSOMAL PROTEIN S12.

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

- Molecule 18 is a protein called 40S RIBOSOMAL PROTEIN S13.

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

- Molecule 19 is a protein called 40S RIBOSOMAL PROTEIN S14.

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

- Molecule 20 is a protein called 40S RIBOSOMAL PROTEIN S15.

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

- Molecule 21 is a protein called 40S RIBOSOMAL PROTEIN S16.

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

- Molecule 22 is a protein called 40S RIBOSOMAL PROTEIN S17.

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

- Molecule 23 is a protein called 40S RIBOSOMAL PROTEIN S18.

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

- Molecule 24 is a protein called 40S RIBOSOMAL PROTEIN S19.

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

- Molecule 25 is a protein called 40S RIBOSOMAL PROTEIN S20.

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

- Molecule 26 is a protein called 40S RIBOSOMAL PROTEIN S21.

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

- Molecule 27 is a protein called 40S RIBOSOMAL PROTEIN S15A.

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

- Molecule 28 is a protein called 40S RIBOSOMAL PROTEIN S23.

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

- Molecule 29 is a protein called 40S RIBOSOMAL PROTEIN S24.

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

- Molecule 30 is a protein called 40S RIBOSOMAL PROTEIN S25.

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

- Molecule 31 is a protein called 40S RIBOSOMAL PROTEIN S26.

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

- Molecule 32 is a protein called 40S RIBOSOMAL PROTEIN S27.

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

- Molecule 33 is a protein called 40S RIBOSOMAL PROTEIN S28.

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

- Molecule 34 is a protein called 40S RIBOSOMAL PROTEIN S29.

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

- Molecule 35 is a protein called 40S RIBOSOMAL PROTEIN S30.

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

- Molecule 36 is a protein called UBIQUITIN-40S RIBOSOMAL PROTEIN S27A.

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

- Molecule 37 is a protein called GUANINE NUCLEOTIDE-BINDING PROTEIN SUBUNIT BETA-2-LIKE 1.

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

- Molecule 38 is a protein called 60S RIBOSOMAL PROTEIN L8.

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

- Molecule 39 is a protein called 60S RIBOSOMAL PROTEIN L3.

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

- Molecule 40 is a protein called 60S RIBOSOMAL PROTEIN L4.

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

- Molecule 41 is a protein called 60S RIBOSOMAL PROTEIN L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	CD	290	Total	C	N	O	S	0	0
			2361	1489	431	427	14		

- Molecule 42 is a protein called 60S RIBOSOMAL PROTEIN L6.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	CE	158	Total	C	N	O	0	0
			1286	834	238	214		

- Molecule 43 is a protein called 60S RIBOSOMAL PROTEIN L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	CF	234	Total	C	N	O	S	0	0
			1949	1252	376	312	9		

- Molecule 44 is a protein called 60S RIBOSOMAL PROTEIN L7A.

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

- Molecule 45 is a protein called 60S RIBOSOMAL PROTEIN L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	CH	192	Total	C	N	O	S	0	0
			1535	965	286	278	6		

- Molecule 46 is a protein called 60S RIBOSOMAL PROTEIN L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	CI	196	Total	C	N	O	S	0	0
			1604	1022	308	262	12		

- Molecule 47 is a protein called 60S RIBOSOMAL PROTEIN L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	CJ	170	Total	C	N	O	S	0	0
			1362	861	254	241	6		

- Molecule 48 is a protein called 60S RIBOSOMAL PROTEIN L13.

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

- Molecule 49 is a protein called 60S RIBOSOMAL PROTEIN L14.

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

- Molecule 50 is a protein called 60S RIBOSOMAL PROTEIN L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	CN	204	1708	1077	360	266	5	0	0

- Molecule 51 is a protein called 60S RIBOSOMAL PROTEIN L13A.

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

- Molecule 52 is a protein called 60S RIBOSOMAL PROTEIN L17.

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

- Molecule 53 is a protein called 60S RIBOSOMAL PROTEIN L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	CQ	184	1493	933	311	244	5	0	0

- Molecule 54 is a protein called 60S RIBOSOMAL PROTEIN L19.

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

- Molecule 55 is a protein called 60S RIBOSOMAL PROTEIN L18A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	CS	173	1438	916	280	232	10	0	0

- Molecule 56 is a protein called 60S RIBOSOMAL PROTEIN L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	CT	159	1297	823	252	216	6	0	0

- Molecule 57 is a protein called 60S RIBOSOMAL PROTEIN L22.

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

- Molecule 58 is a protein called 60S RIBOSOMAL PROTEIN L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	CV	128	963	610	181	167	5	0	0

- Molecule 59 is a protein called 60S RIBOSOMAL PROTEIN L24.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	CX	119	975	624	183	167	1	0	0

- Molecule 61 is a protein called 60S RIBOSOMAL PROTEIN L26.

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

- Molecule 62 is a protein called 60S RIBOSOMAL PROTEIN L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	CZ	136	1114	719	209	182	4	0	0

- Molecule 63 is a protein called 60S RIBOSOMAL PROTEIN L27A.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	Ca	147	Total	C	N	O	S	0	0
			1161	736	237	185	3		

- Molecule 64 is a protein called 60S RIBOSOMAL PROTEIN L29.

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

- Molecule 65 is a protein called 60S RIBOSOMAL PROTEIN L30.

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

- Molecule 66 is a protein called 60S RIBOSOMAL PROTEIN L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	Cd	109	Total	C	N	O	S	0	0
			904	570	174	158	2		

- Molecule 67 is a protein called 60S RIBOSOMAL PROTEIN L32.

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

- Molecule 68 is a protein called 60S RIBOSOMAL PROTEIN L35A.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Cf	107	Total	C	N	O	S	0	0
			865	550	172	140	3		

- Molecule 69 is a protein called 60S RIBOSOMAL PROTEIN L34.

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

- Molecule 70 is a protein called 60S RIBOSOMAL PROTEIN L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	Ch	122	Total	C	N	O	S	0	0
			1014	641	205	167	1		

- Molecule 71 is a protein called 60S RIBOSOMAL PROTEIN L36.

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

- Molecule 72 is a protein called 60S RIBOSOMAL PROTEIN L37.

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

- Molecule 73 is a protein called 60S RIBOSOMAL PROTEIN L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	Ck	69	Total	C	N	O	S	0	0
			568	366	103	98	1		

- Molecule 74 is a protein called 60S RIBOSOMAL PROTEIN L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	Cl	50	Total	C	N	O	S	0	0
			443	281	98	63	1		

- Molecule 75 is a protein called UBIQUITIN-60S RIBOSOMAL PROTEIN L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	Cm	52	Total	C	N	O	S	0	0
			428	266	90	66	6		

- Molecule 76 is a protein called 60S RIBOSOMAL PROTEIN L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	Cn	25	Total	C	N	O	S	0	0
			239	145	64	27	3		

- Molecule 77 is a protein called 60S RIBOSOMAL PROTEIN L36A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Co	106	Total	C	N	O	S	0	0
			870	547	176	140	7		

- Molecule 78 is a protein called 60S RIBOSOMAL PROTEIN L37A.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	Cp	91	Total	C	N	O	S	0	0
			707	445	136	119	7		

- Molecule 79 is a protein called 60S RIBOSOMAL PROTEIN L28.

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

- Molecule 80 is a protein called 60S RIBOSOMAL PROTEIN L10A.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Cu	210	Total	C	N	O	S	0	0
			1621	990	278	347	6		

- Molecule 81 is a RNA chain called 28S Ribosomal RNA.

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

- Molecule 82 is a RNA chain called 5.8S Ribosomal RNA.

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

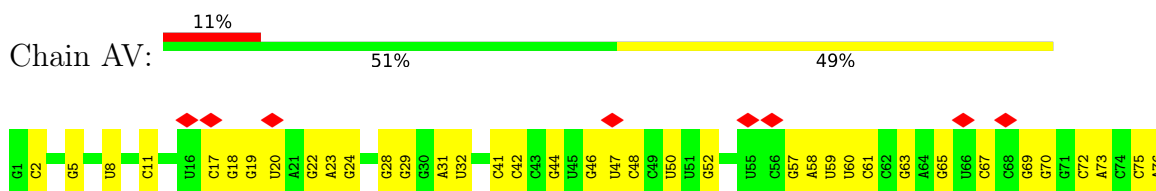
- Molecule 83 is a RNA chain called 5S Ribosomal RNA.

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

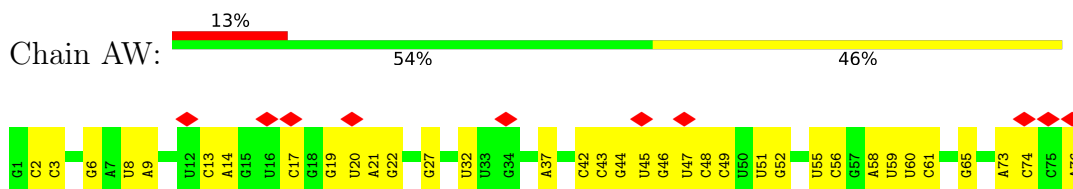
3 Residue-property plots i

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.

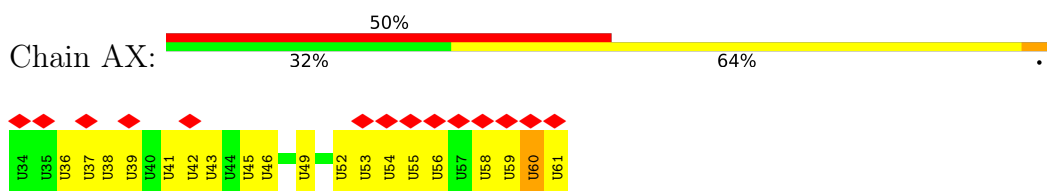
- Molecule 1: TRNA-LYS



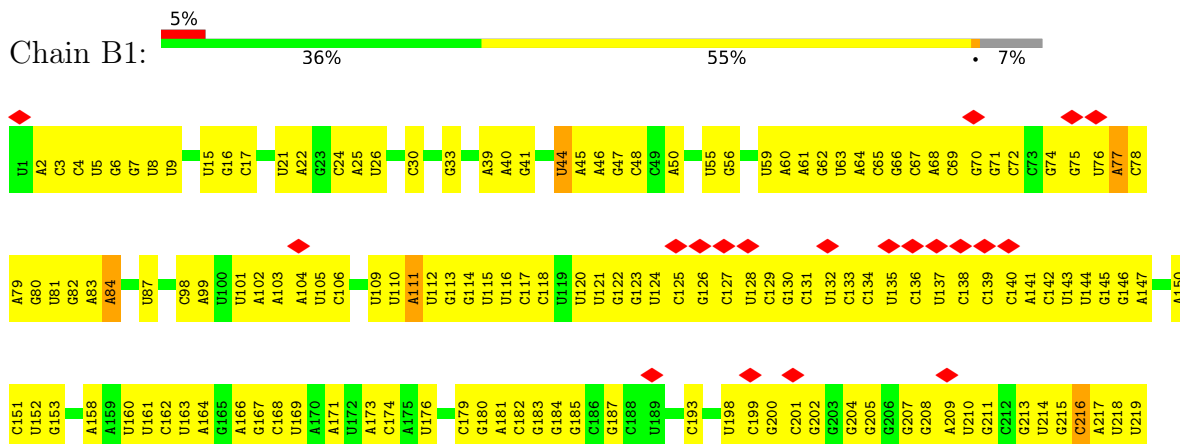
- Molecule 2: TRNA-PHE



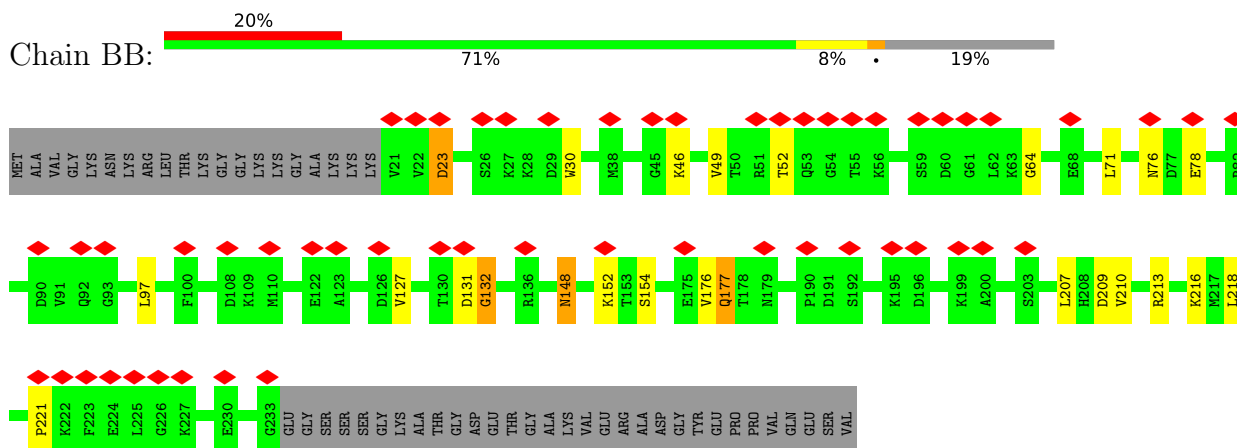
- Molecule 3: Messenger RNA



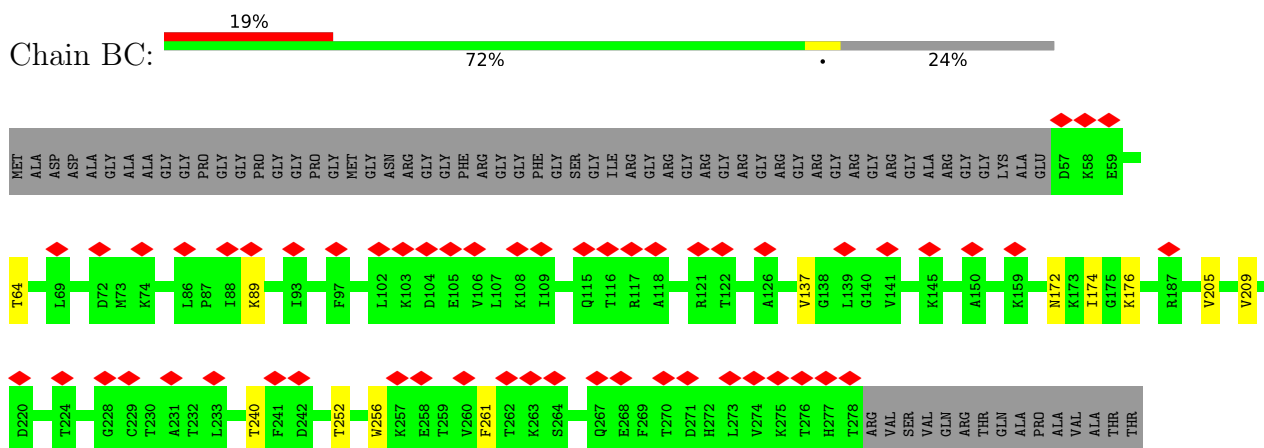
- Molecule 4: 18S Ribosomal RNA



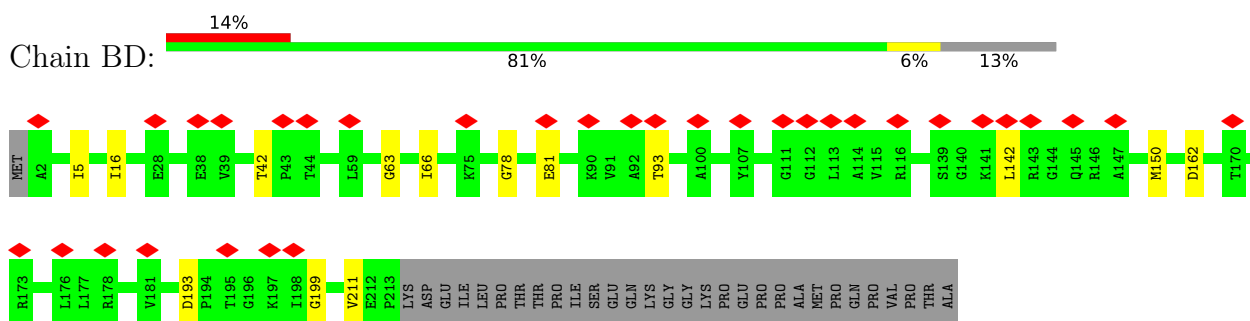
- Molecule 6: 40S RIBOSOMAL PROTEIN S3A



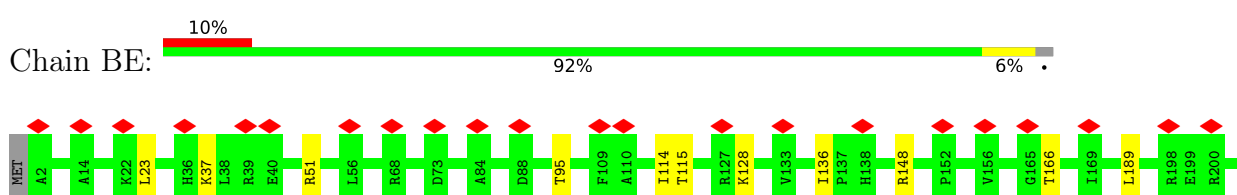
- Molecule 7: 40S RIBOSOMAL PROTEIN S2

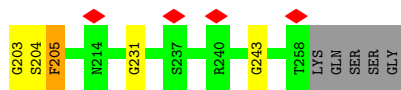


- Molecule 8: 40S RIBOSOMAL PROTEIN S3

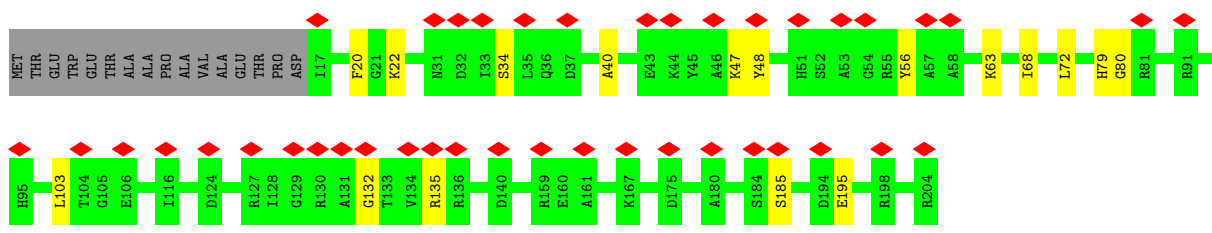
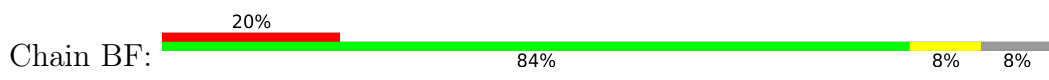


- Molecule 9: 40S RIBOSOMAL PROTEIN S4, Y ISOFORM 1

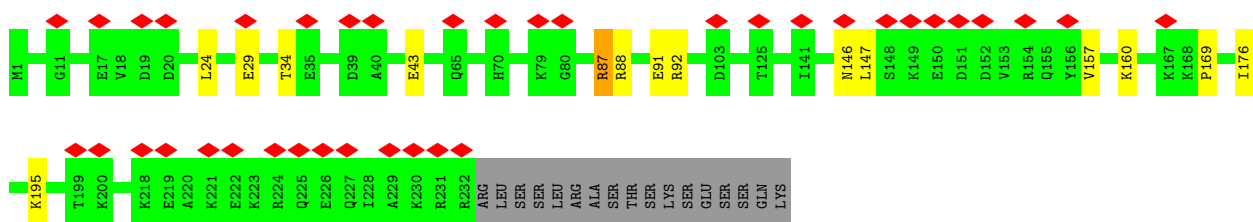
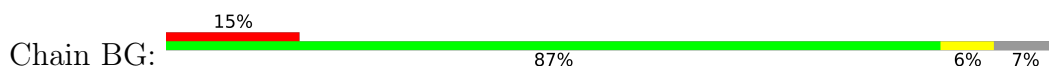




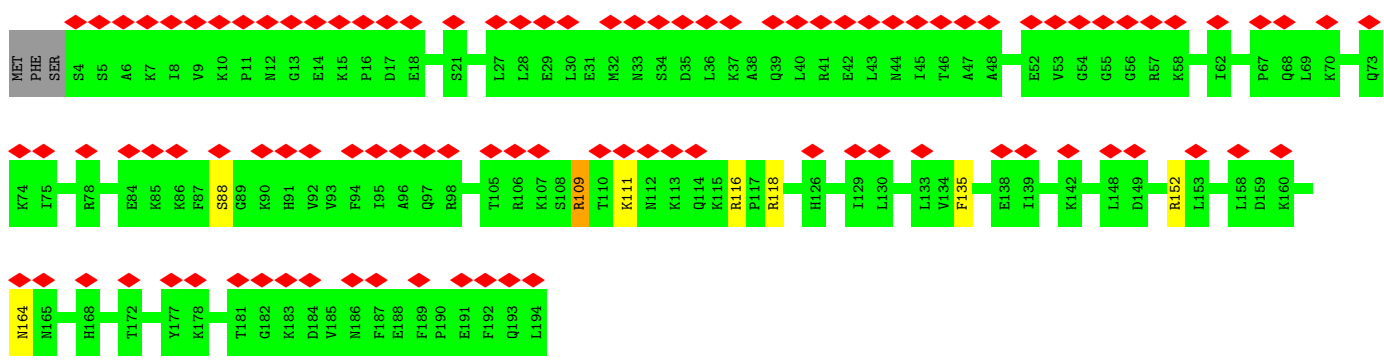
• Molecule 10: 40S RIBOSOMAL PROTEIN S5



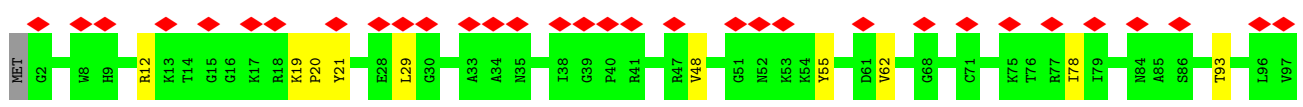
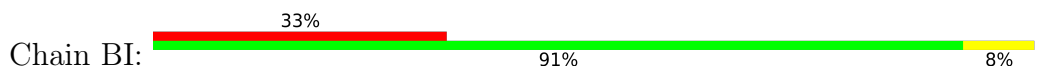
• Molecule 11: 40S RIBOSOMAL PROTEIN S6

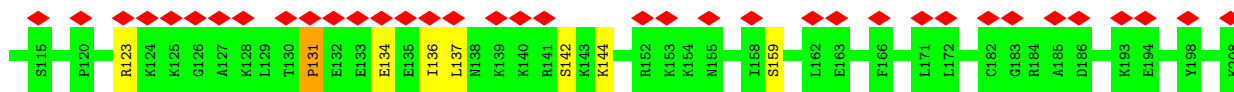


• Molecule 12: 40S RIBOSOMAL PROTEIN S7

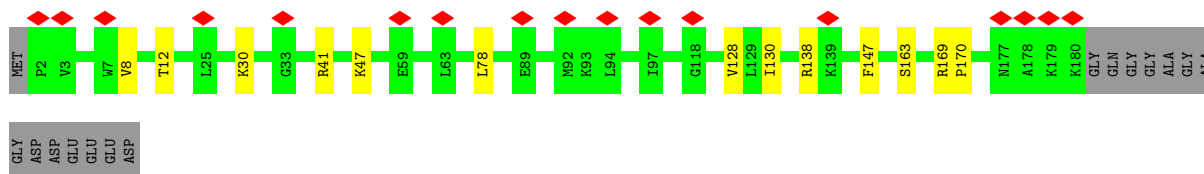
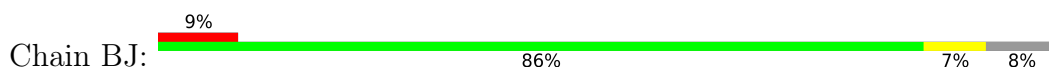


• Molecule 13: 40S RIBOSOMAL PROTEIN S8

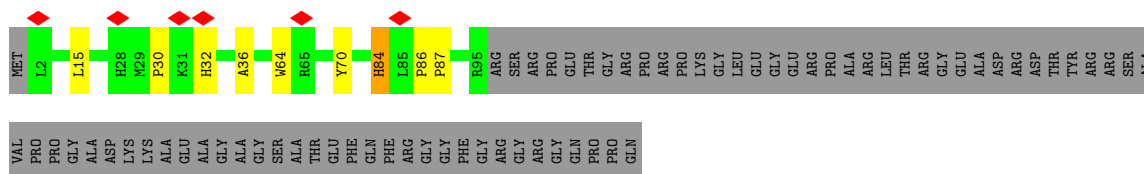




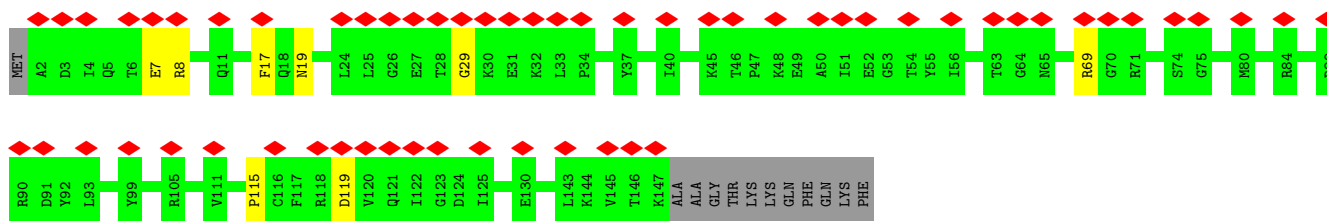
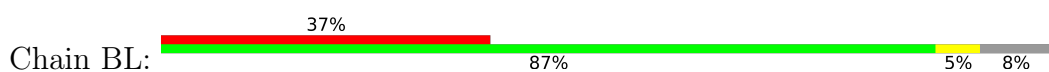
• Molecule 14: 40S RIBOSOMAL PROTEIN S9



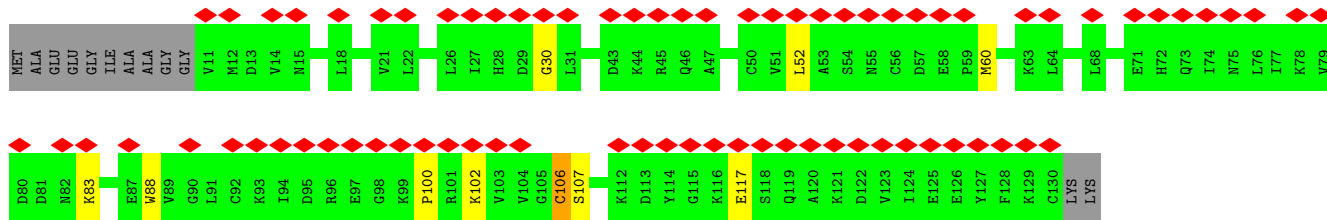
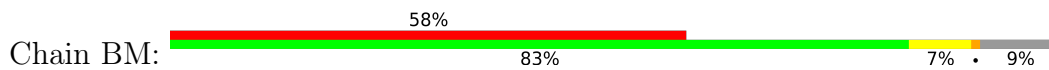
• Molecule 15: 40S RIBOSOMAL PROTEIN S10



• Molecule 16: 40S RIBOSOMAL PROTEIN S11

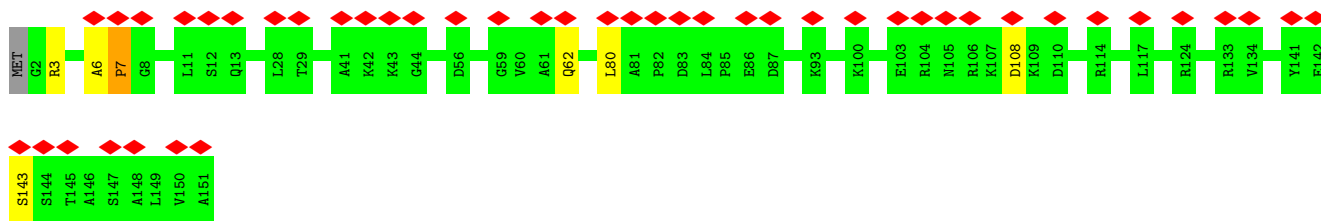


• Molecule 17: 40S RIBOSOMAL PROTEIN S12

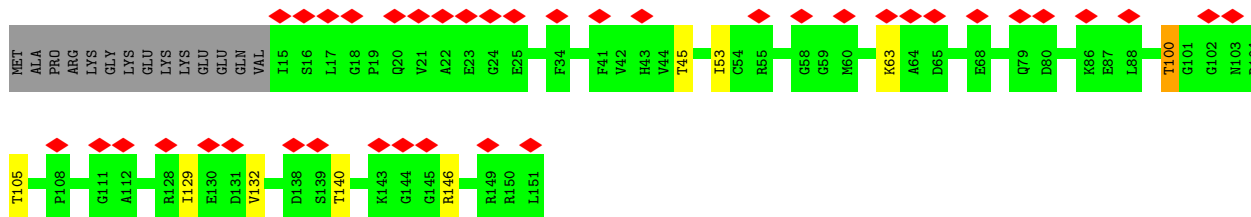
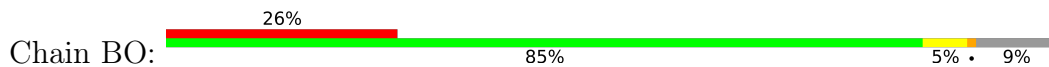


• Molecule 18: 40S RIBOSOMAL PROTEIN S13

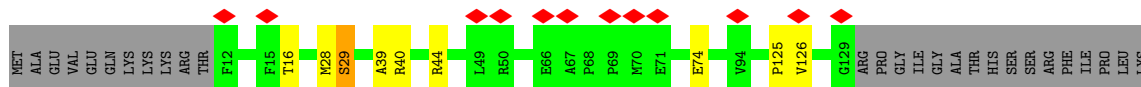
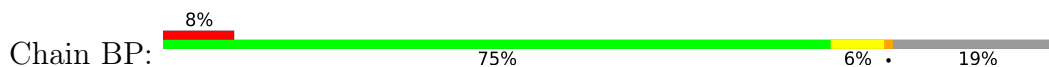




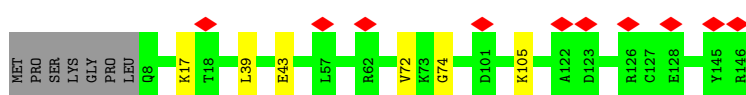
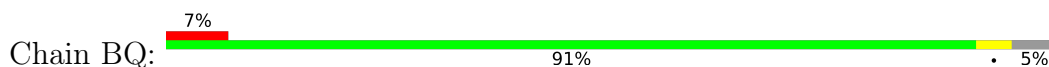
• Molecule 19: 40S RIBOSOMAL PROTEIN S14



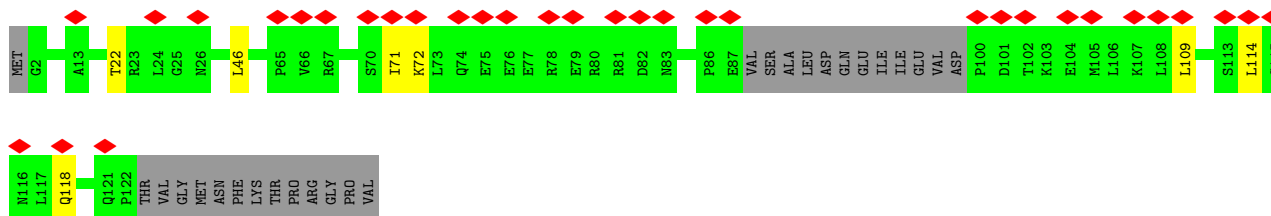
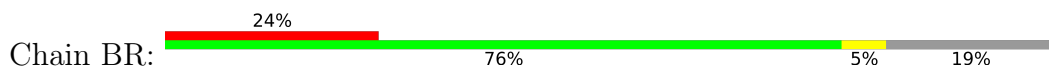
• Molecule 20: 40S RIBOSOMAL PROTEIN S15



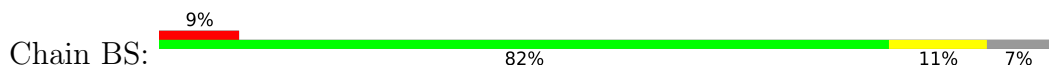
• Molecule 21: 40S RIBOSOMAL PROTEIN S16

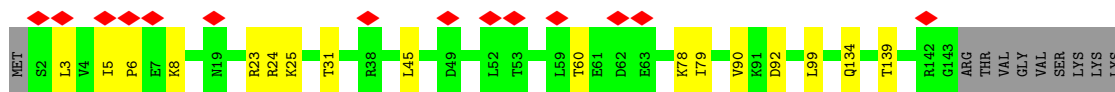


• Molecule 22: 40S RIBOSOMAL PROTEIN S17

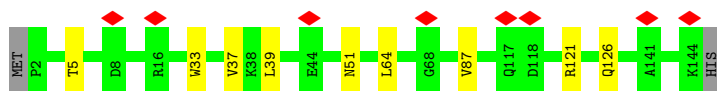


• Molecule 23: 40S RIBOSOMAL PROTEIN S18

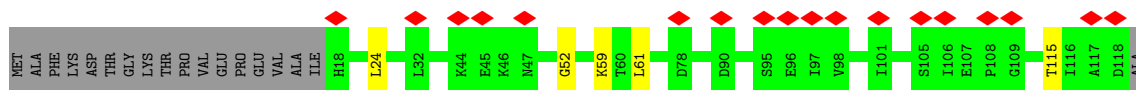
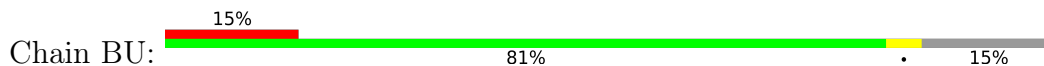




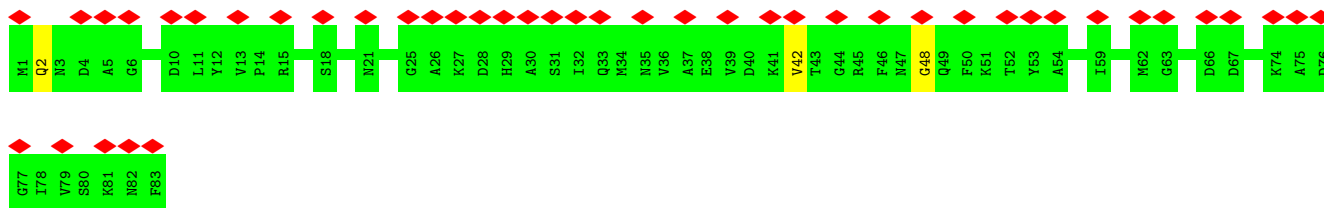
- Molecule 24: 40S RIBOSOMAL PROTEIN S19



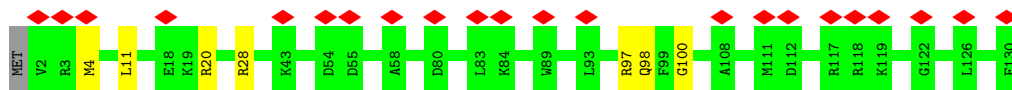
- Molecule 25: 40S RIBOSOMAL PROTEIN S20



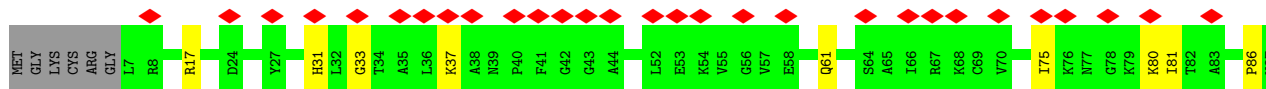
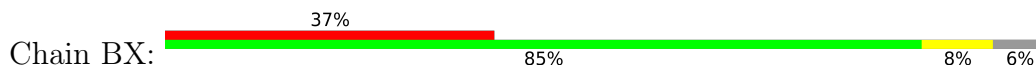
- Molecule 26: 40S RIBOSOMAL PROTEIN S21



- Molecule 27: 40S RIBOSOMAL PROTEIN S15A

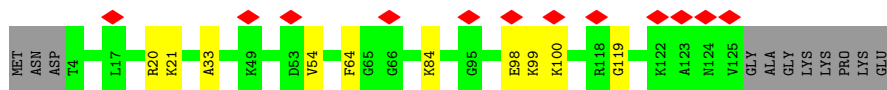
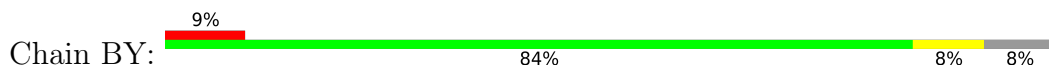


- Molecule 28: 40S RIBOSOMAL PROTEIN S23

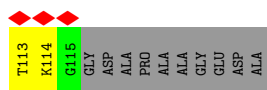
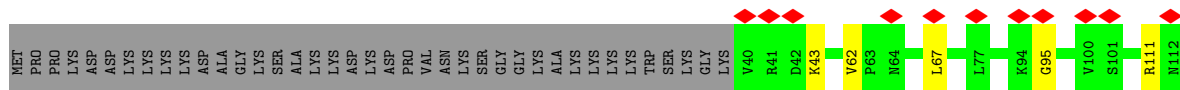


- Molecule 29: 40S RIBOSOMAL PROTEIN S24

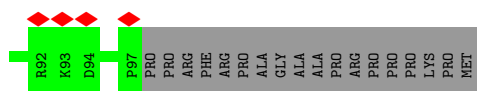
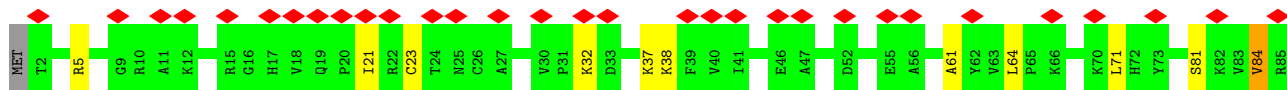
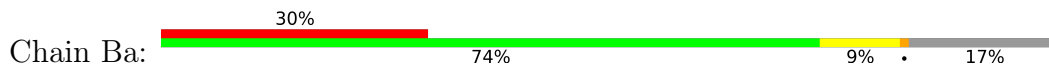




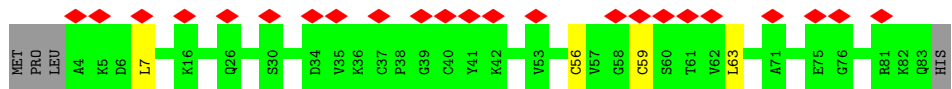
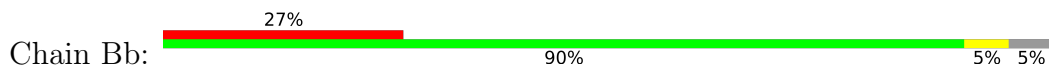
• Molecule 30: 40S RIBOSOMAL PROTEIN S25



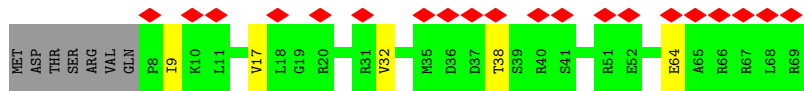
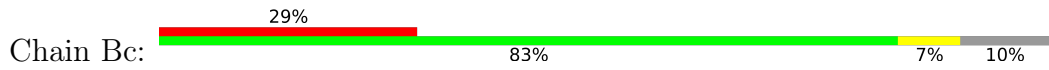
• Molecule 31: 40S RIBOSOMAL PROTEIN S26



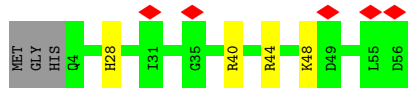
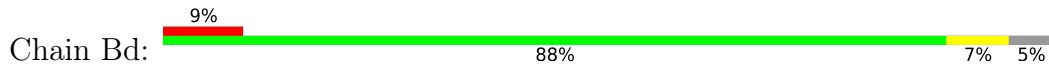
• Molecule 32: 40S RIBOSOMAL PROTEIN S27



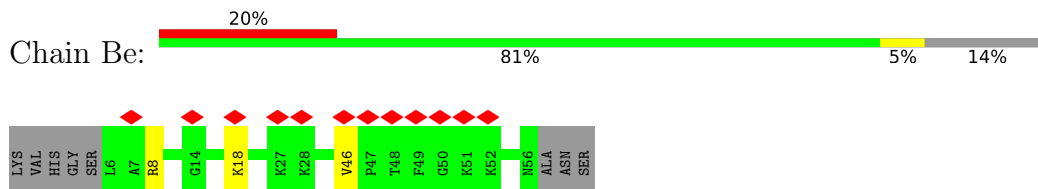
• Molecule 33: 40S RIBOSOMAL PROTEIN S28



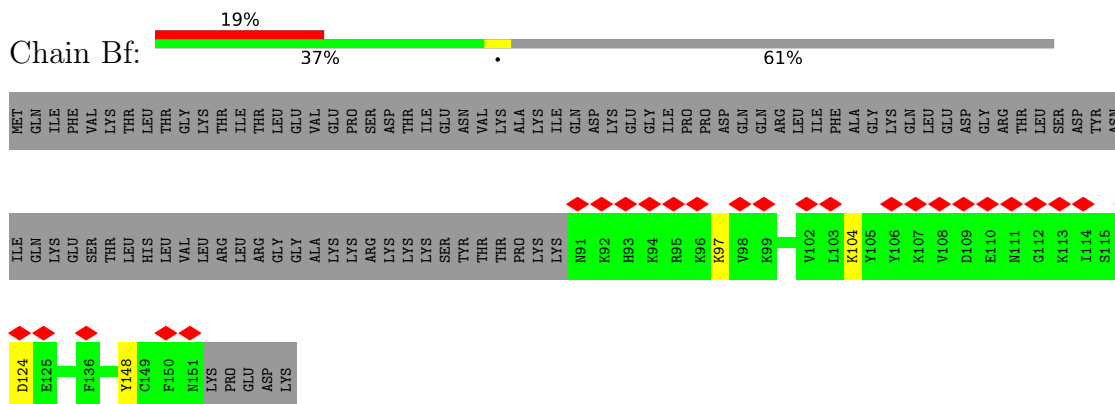
• Molecule 34: 40S RIBOSOMAL PROTEIN S29



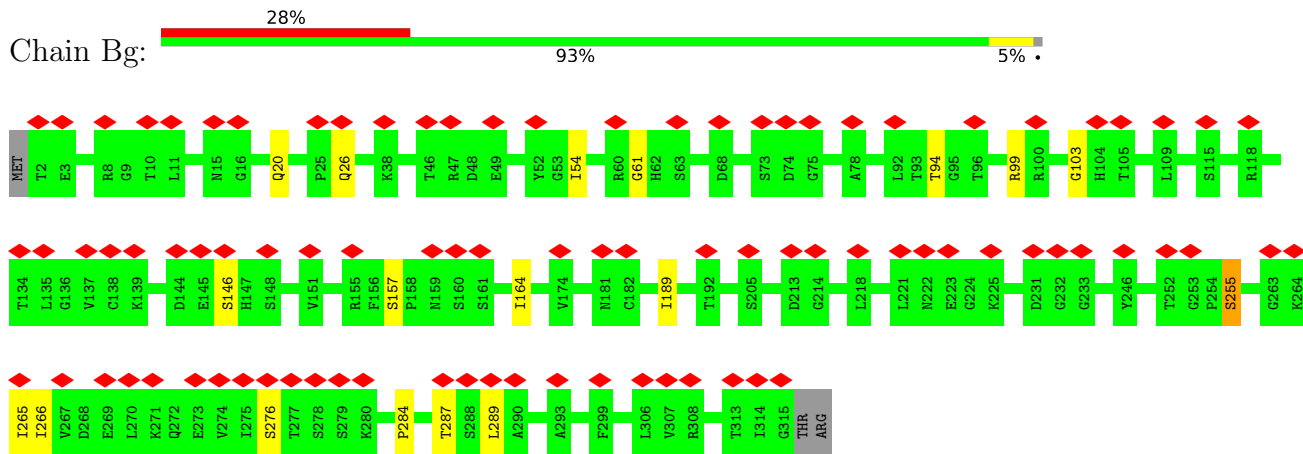
• Molecule 35: 40S RIBOSOMAL PROTEIN S30



• Molecule 36: UBIQUITIN-40S RIBOSOMAL PROTEIN S27A

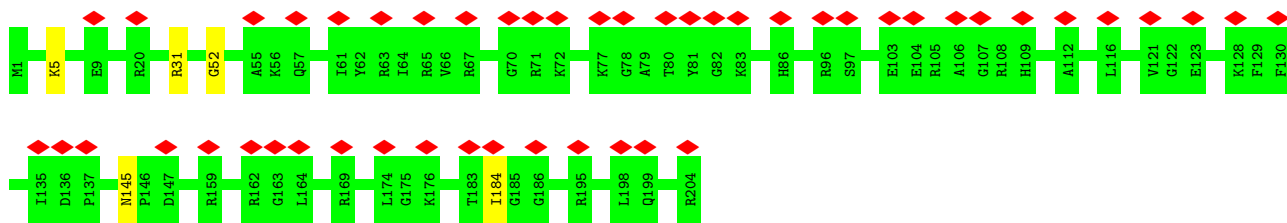


• Molecule 37: GUANINE NUCLEOTIDE-BINDING PROTEIN SUBUNIT BETA-2-LIKE 1

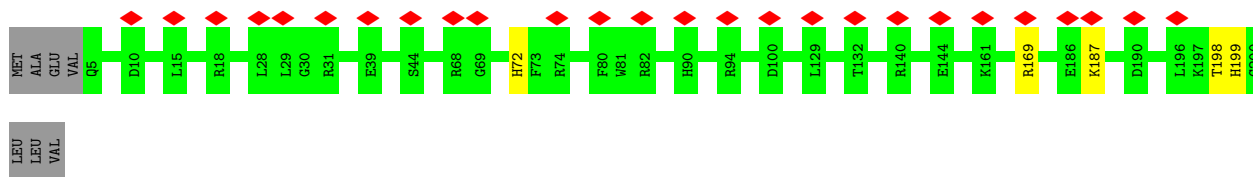


• Molecule 38: 60S RIBOSOMAL PROTEIN L8

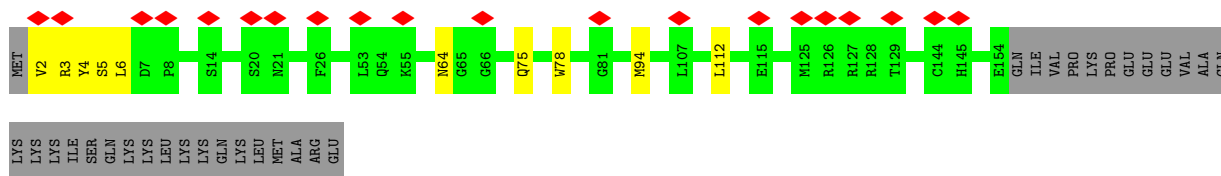
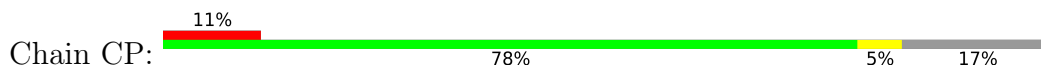




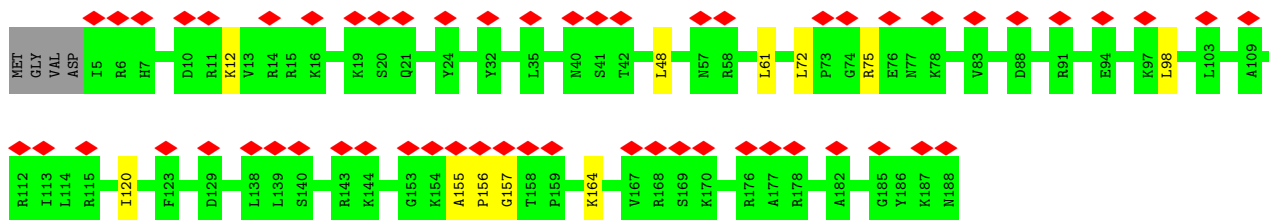
• Molecule 51: 60S RIBOSOMAL PROTEIN L13A



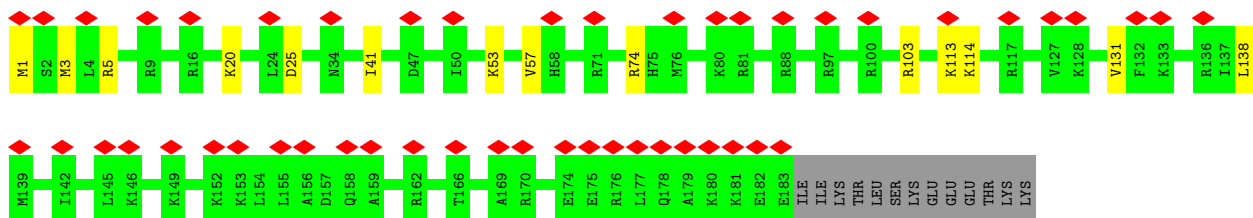
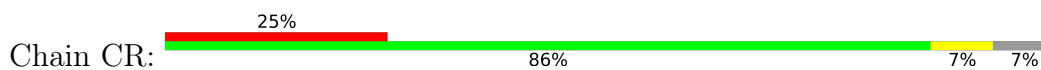
• Molecule 52: 60S RIBOSOMAL PROTEIN L17



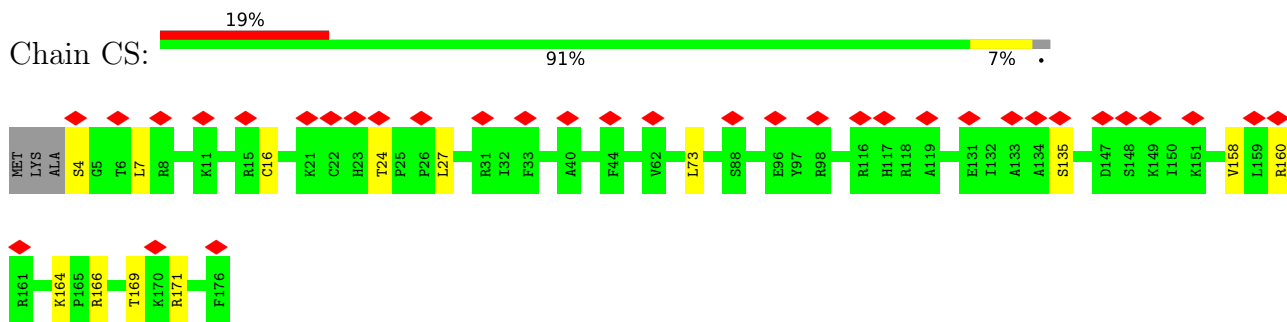
• Molecule 53: 60S RIBOSOMAL PROTEIN L18



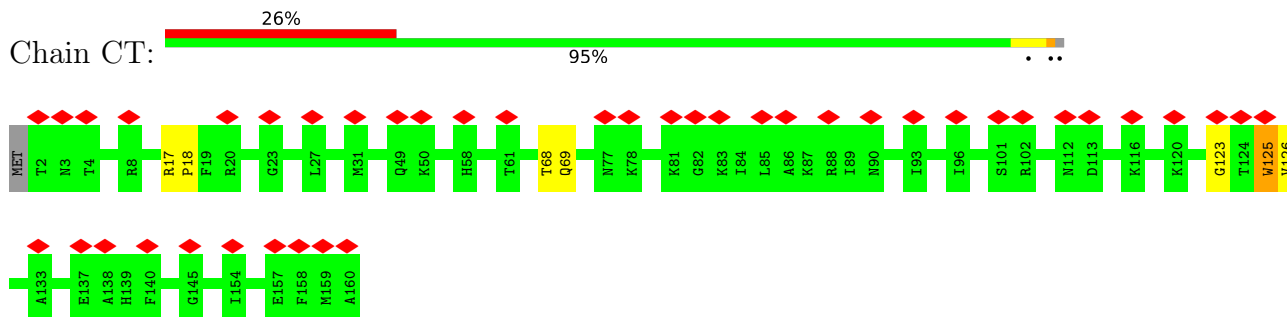
• Molecule 54: 60S RIBOSOMAL PROTEIN L19



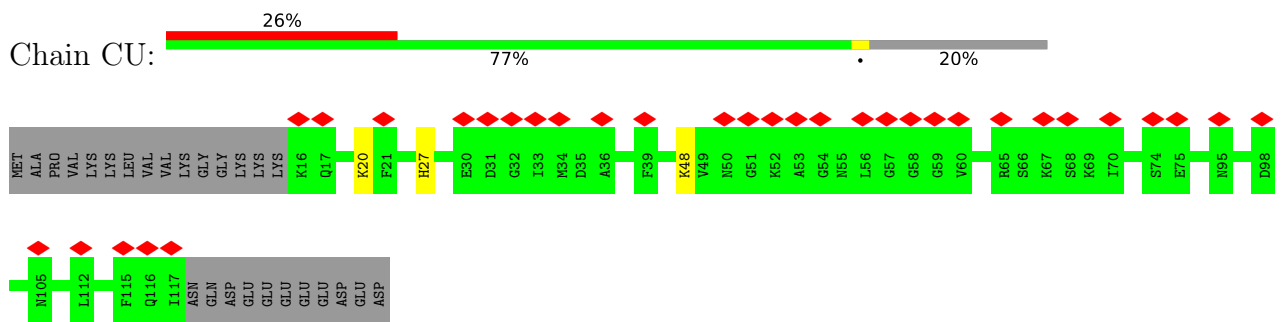
• Molecule 55: 60S RIBOSOMAL PROTEIN L18A



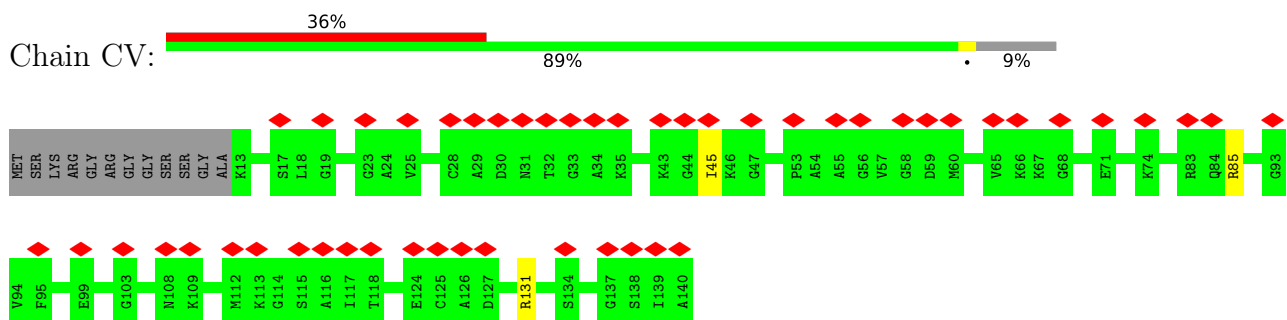
• Molecule 56: 60S RIBOSOMAL PROTEIN L21



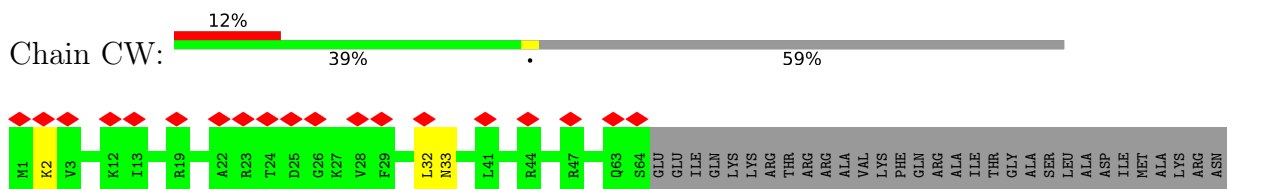
• Molecule 57: 60S RIBOSOMAL PROTEIN L22

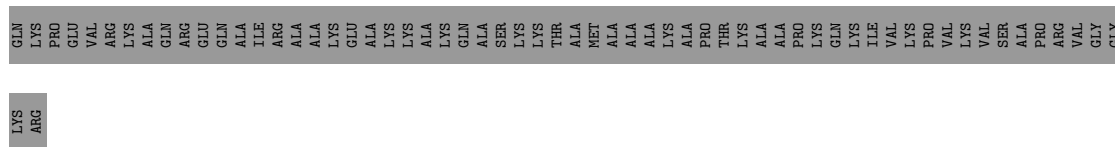


• Molecule 58: 60S RIBOSOMAL PROTEIN L23

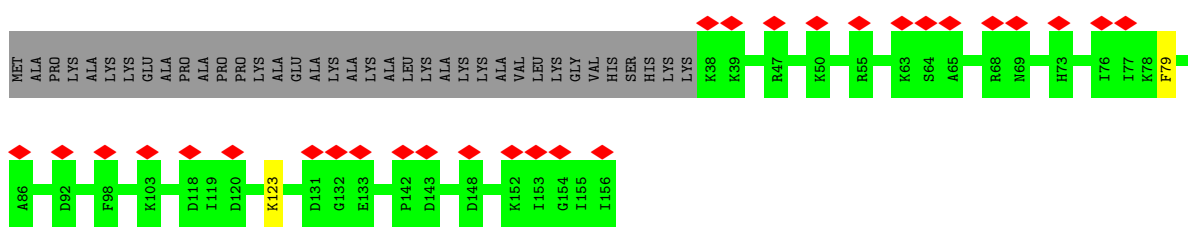
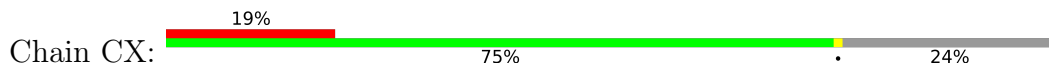


• Molecule 59: 60S RIBOSOMAL PROTEIN L24

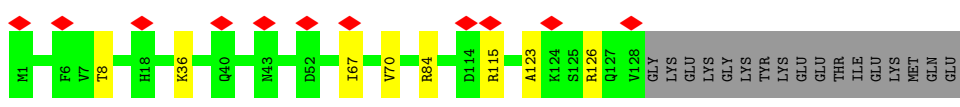
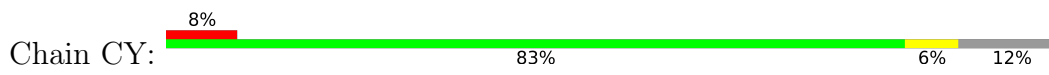




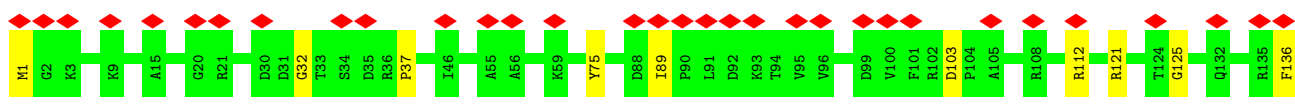
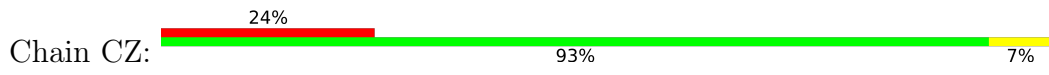
• Molecule 60: 60S RIBOSOMAL PROTEIN L23A



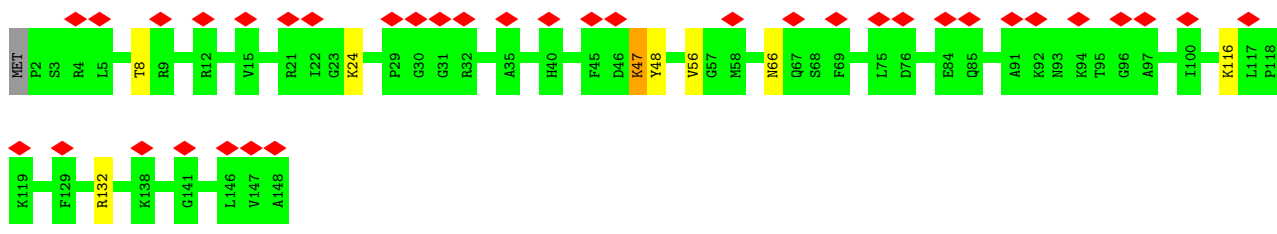
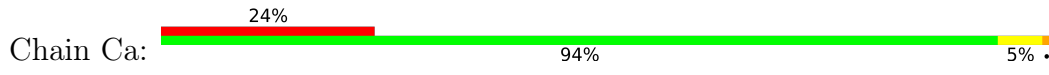
• Molecule 61: 60S RIBOSOMAL PROTEIN L26



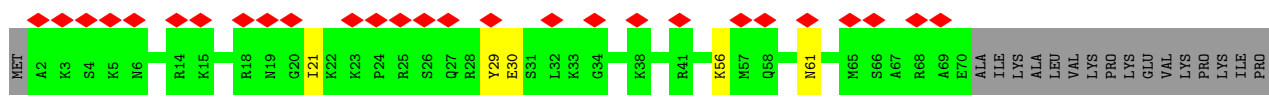
• Molecule 62: 60S RIBOSOMAL PROTEIN L27

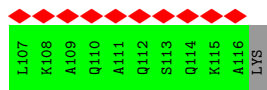


• Molecule 63: 60S RIBOSOMAL PROTEIN L27A

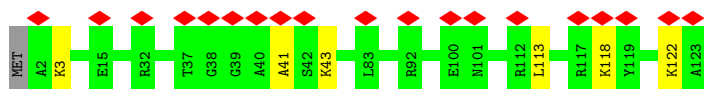


• Molecule 64: 60S RIBOSOMAL PROTEIN L29

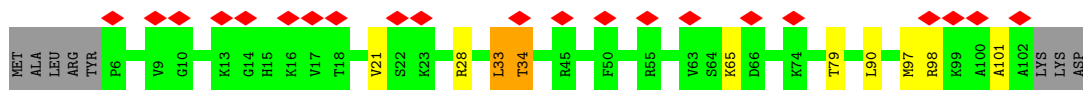
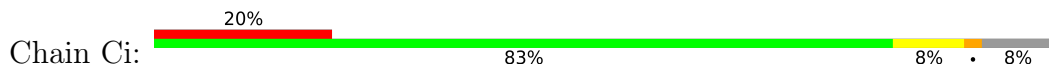




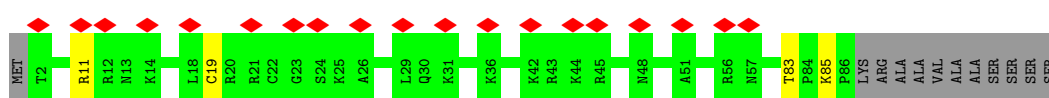
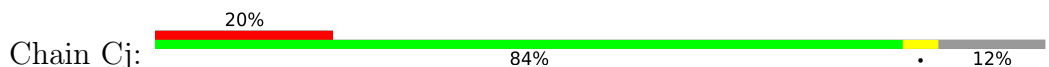
• Molecule 70: 60S RIBOSOMAL PROTEIN L35



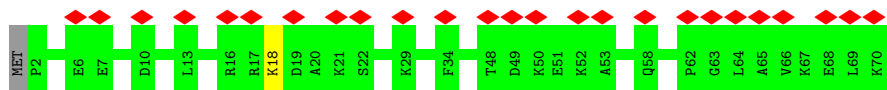
• Molecule 71: 60S RIBOSOMAL PROTEIN L36



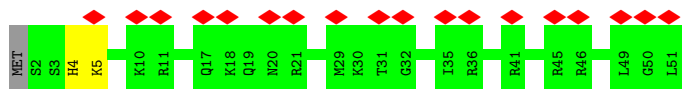
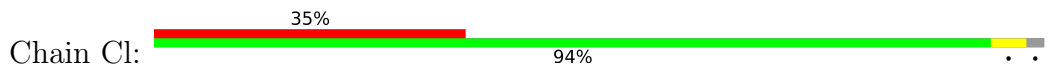
• Molecule 72: 60S RIBOSOMAL PROTEIN L37



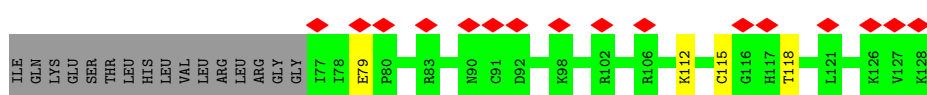
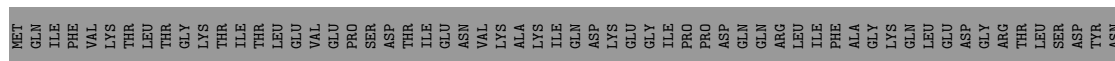
• Molecule 73: 60S RIBOSOMAL PROTEIN L38



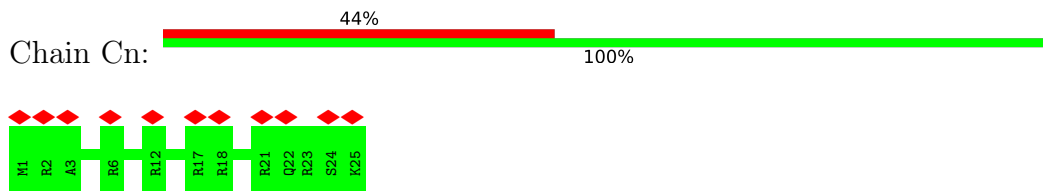
• Molecule 74: 60S RIBOSOMAL PROTEIN L39



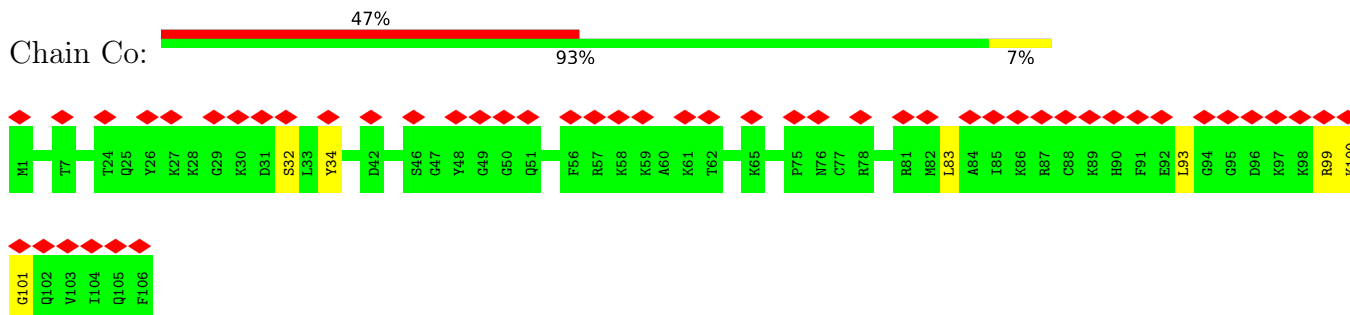
• Molecule 75: UBIQUITIN-60S RIBOSOMAL PROTEIN L40



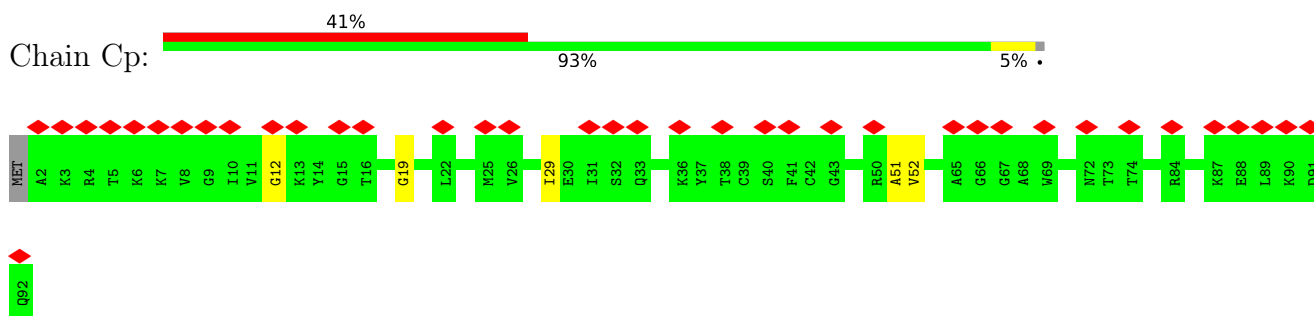
• Molecule 76: 60S RIBOSOMAL PROTEIN L41



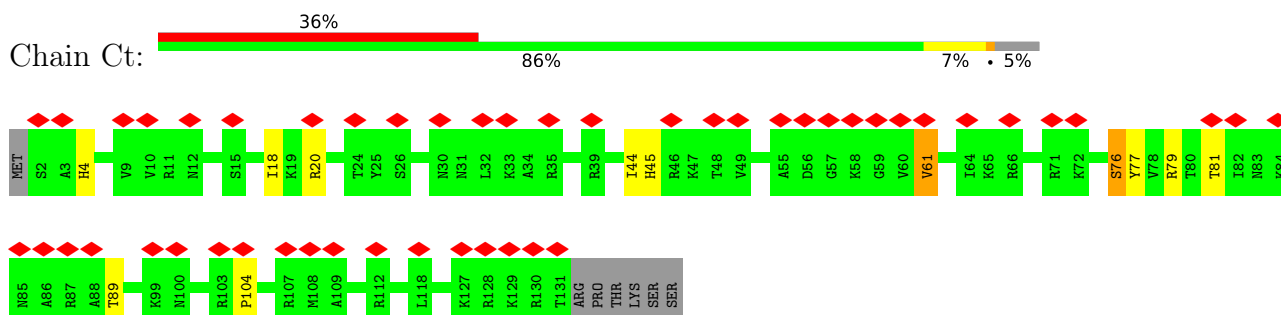
• Molecule 77: 60S RIBOSOMAL PROTEIN L36A



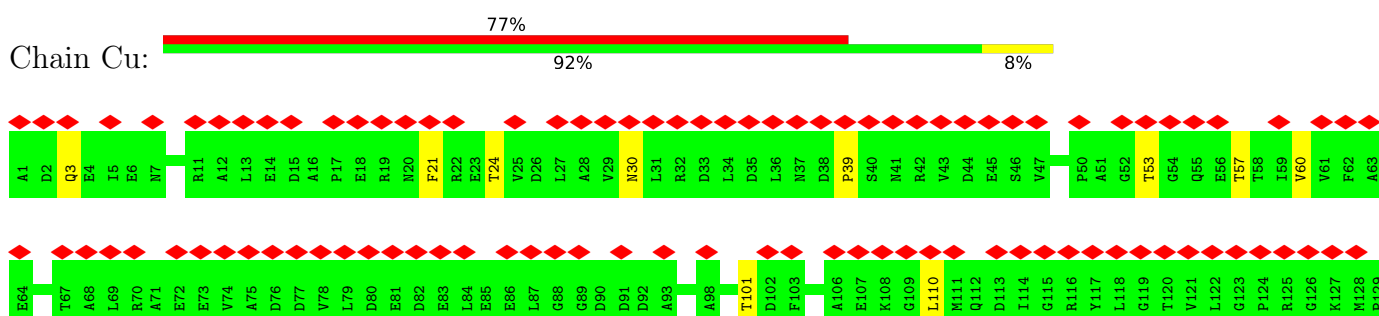
• Molecule 78: 60S RIBOSOMAL PROTEIN L37A

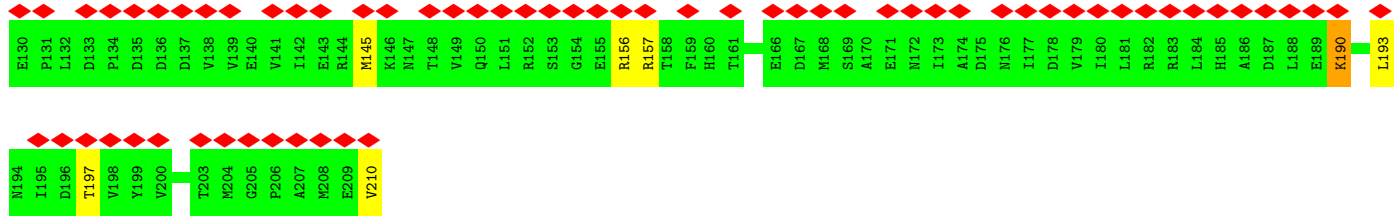


• Molecule 79: 60S RIBOSOMAL PROTEIN L28

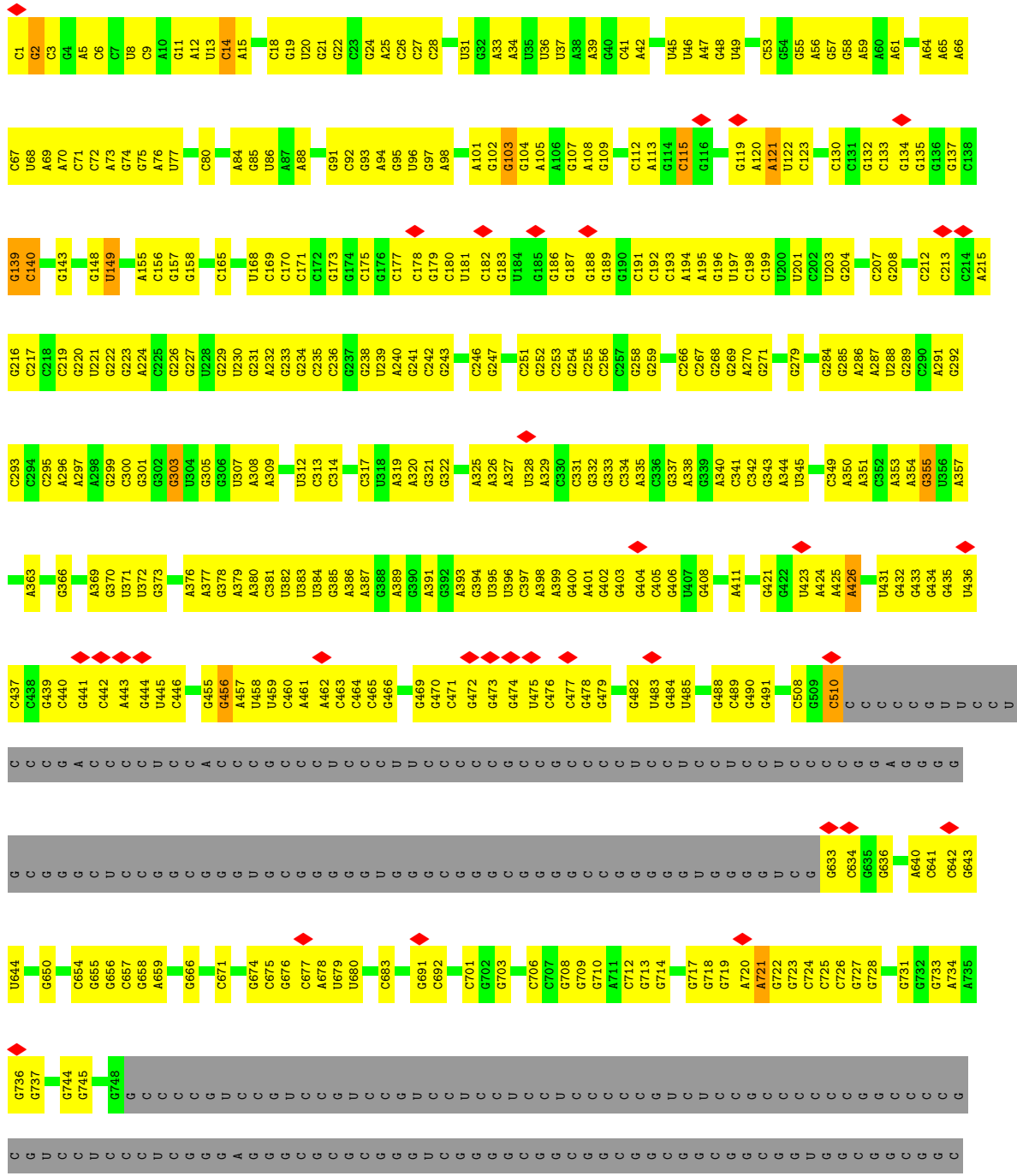


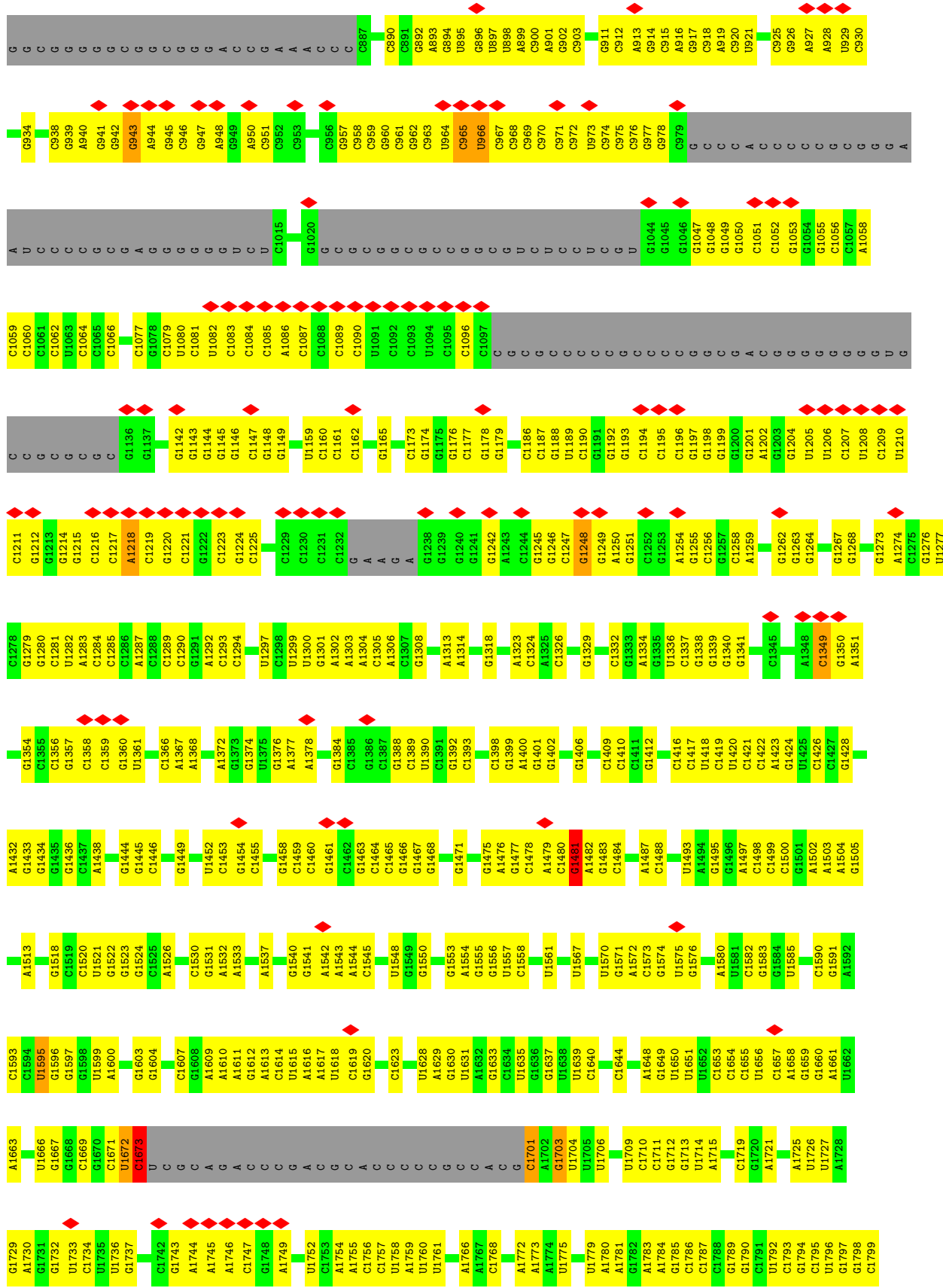
• Molecule 80: 60S RIBOSOMAL PROTEIN L10A





• Molecule 81: 28S Ribosomal RNA





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	236113	Depositor
Resolution determination method	Not provided	
CTF correction method	DEFOCUS GROUP	Depositor
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	20	Depositor
Minimum defocus (nm)	2000	Depositor
Maximum defocus (nm)	4000	Depositor
Magnification	65520	Depositor
Image detector	KODAK SO-163 FILM	Depositor
Maximum map value	14.352	Depositor
Minimum map value	-4.787	Depositor
Average map value	0.195	Depositor
Map value standard deviation	0.958	Depositor
Recommended contour level	3.5	Depositor
Map size (\AA)	453.6, 453.6, 453.6	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.26, 1.26, 1.26	Depositor

5 Model quality i

5.1 Standard geometry i

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

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	AV	0.29	0/1809	0.75	0/2819
2	AW	0.31	0/1783	0.76	0/2776
3	AX	0.42	1/615 (0.2%)	1.25	11/948 (1.2%)
4	B1	0.37	2/41550 (0.0%)	0.79	6/64763 (0.0%)
5	BA	0.51	0/1756	0.68	0/2386
6	BB	0.51	0/1756	0.75	1/2350 (0.0%)
7	BC	0.42	0/1761	0.65	0/2379
8	BD	0.40	0/1672	0.66	0/2250
9	BE	0.47	0/2072	0.70	0/2793
10	BF	0.43	0/1507	0.74	0/2026
11	BG	0.47	0/1907	0.74	0/2538
12	BH	0.46	0/1558	0.74	1/2087 (0.0%)
13	BI	0.47	0/1724	0.72	0/2298
14	BJ	0.45	0/1520	0.77	0/2030
15	BK	0.48	0/815	0.68	0/1101
16	BL	0.45	0/1220	0.72	0/1633
17	BM	0.48	0/941	0.72	0/1264
18	BN	0.43	0/1231	0.73	1/1656 (0.1%)
19	BO	0.46	0/1036	0.71	0/1391
20	BP	0.43	0/1000	0.67	0/1335
21	BQ	0.43	0/1125	0.66	0/1506
22	BR	0.42	0/904	0.67	0/1208
23	BS	0.42	0/1190	0.68	0/1594
24	BT	0.44	0/1131	0.69	0/1515
25	BU	0.50	0/813	0.70	0/1092
26	BV	0.47	0/643	0.71	0/860
27	BW	0.44	0/1050	0.69	0/1406
28	BX	0.46	0/1063	0.70	0/1421
29	BY	0.45	0/1019	0.70	0/1354
30	BZ	0.46	0/611	0.71	0/820
31	Ba	0.48	0/778	0.75	1/1041 (0.1%)
32	Bb	0.48	0/637	0.68	0/854

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	Bc	0.46	0/492	0.74	0/657
34	Bd	0.51	0/454	0.76	0/603
35	Be	0.45	0/417	0.69	0/548
36	Bf	0.53	0/507	0.84	1/673 (0.1%)
37	Bg	0.45	0/2497	0.67	0/3399
38	CA	0.44	0/1926	0.67	0/2583
39	CB	0.45	0/3258	0.73	2/4361 (0.0%)
40	CC	0.47	0/2943	0.73	0/3953
41	CD	0.49	1/2406 (0.0%)	0.70	1/3221 (0.0%)
42	CE	0.52	0/1311	0.73	0/1763
43	CF	0.45	0/1985	0.68	0/2644
44	CG	0.46	0/1914	0.72	0/2578
45	CH	0.43	0/1554	0.69	0/2089
46	CI	0.42	0/1642	0.67	0/2194
47	CJ	0.49	0/1385	0.71	0/1852
48	CL	0.53	2/1647 (0.1%)	0.73	3/2205 (0.1%)
49	CM	0.49	0/1162	0.70	0/1556
50	CN	0.43	0/1753	0.65	0/2348
51	CO	0.44	0/1639	0.69	0/2193
52	CP	0.44	0/1260	0.70	0/1691
53	CQ	0.45	0/1517	0.74	0/2026
54	CR	0.40	0/1542	0.64	0/2037
55	CS	0.44	0/1478	0.73	0/1985
56	CT	0.46	0/1325	0.71	0/1770
57	CU	0.47	0/841	0.71	0/1128
58	CV	0.43	0/977	0.63	0/1312
59	CW	0.43	0/542	0.59	0/722
60	CX	0.41	0/992	0.67	0/1334
61	CY	0.47	0/1082	0.72	1/1441 (0.1%)
62	CZ	0.47	0/1137	0.79	0/1517
63	Ca	0.44	0/1190	0.71	0/1591
64	Cb	0.45	0/570	0.72	0/752
65	Cc	0.46	0/813	0.70	0/1091
66	Cd	0.44	0/919	0.67	0/1238
67	Ce	0.45	0/1071	0.68	0/1428
68	Cf	0.50	0/884	0.81	0/1185
69	Cg	0.48	0/917	0.74	0/1222
70	Ch	0.38	0/1022	0.64	0/1351
71	Ci	0.43	0/793	0.75	0/1048
72	Cj	0.49	0/704	0.76	0/931
73	Ck	0.43	0/574	0.73	0/761
74	Cl	0.41	0/453	0.61	0/599
75	Cm	0.42	0/434	0.70	0/575

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	Cn	0.39	0/240	0.50	0/305
77	Co	0.45	0/884	0.74	0/1166
78	Cp	0.40	0/717	0.61	0/953
79	Ct	0.48	0/1058	0.75	0/1416
80	Cu	0.45	0/1638	0.69	1/2222 (0.0%)
81	A2	0.41	23/86672 (0.0%)	0.80	40/135198 (0.0%)
82	A3	0.35	0/3723	0.79	1/5800 (0.0%)
83	A4	0.37	0/2836	0.81	3/4421 (0.1%)
All	All	0.42	29/231894 (0.0%)	0.77	74/341130 (0.0%)

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
3	AX	1	0
4	B1	0	23
81	A2	0	35
82	A3	0	2
All	All	1	60

All (29) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
81	A2	1701	C	C5'-C4'	18.39	1.73	1.51
81	A2	1673	C	C3'-O3'	15.36	1.63	1.42
81	A2	1701	C	O5'-C5'	14.45	1.67	1.44
81	A2	1673	C	O3'-P	14.13	1.78	1.61
81	A2	1701	C	P-O5'	13.52	1.73	1.59
81	A2	1673	C	C5'-C4'	11.33	1.65	1.51
81	A2	1701	C	O3'-P	10.25	1.73	1.61
81	A2	1701	C	C4'-C3'	10.20	1.64	1.53
81	A2	1673	C	C4'-C3'	9.96	1.64	1.53
81	A2	1673	C	P-O5'	8.79	1.68	1.59
81	A2	1673	C	O5'-C5'	8.72	1.58	1.44
81	A2	943	G	C5-C6	-7.83	1.34	1.42
81	A2	1701	C	C3'-O3'	7.31	1.52	1.42
81	A2	2663	G	C6-O6	-6.79	1.18	1.24
81	A2	1673	C	C2-N3	-6.53	1.30	1.35
4	B1	992	A	C6-N6	-6.27	1.28	1.33
81	A2	1481	G	C2-N2	-5.95	1.28	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
41	CD	264	LYS	N-CA	5.89	1.58	1.46
81	A2	1673	C	N3-C4	-5.64	1.30	1.33
48	CL	131	PRO	N-CD	5.53	1.55	1.47
81	A2	1701	C	C4'-O4'	5.51	1.52	1.45
81	A2	3924	G	C2-N2	-5.37	1.29	1.34
4	B1	1286	G	C2-N2	-5.33	1.29	1.34
48	CL	134	PRO	N-CD	5.33	1.55	1.47
81	A2	1701	C	N1-C2	5.15	1.45	1.40
3	AX	60	U	O3'-P	5.07	1.67	1.61
81	A2	456	G	C2-N2	-5.06	1.29	1.34
81	A2	1701	C	O4'-C1'	5.04	1.48	1.41
81	A2	4593	G	C2-N2	-5.01	1.29	1.34

All (74) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
81	A2	1701	C	O4'-C4'-C3'	-15.19	88.81	104.00
39	CB	258	HIS	C-N-CD	-13.96	89.88	120.60
3	AX	58	U	P-O5'-C5'	12.68	141.18	120.90
81	A2	1701	C	O4'-C1'-N1	12.30	118.04	108.20
81	A2	1701	C	C4'-C3'-O3'	12.16	137.32	113.00
81	A2	1701	C	C2'-C3'-O3'	-10.65	86.07	109.50
3	AX	59	U	P-O5'-C5'	10.22	137.25	120.90
3	AX	58	U	C4'-C3'-O3'	9.33	131.65	113.00
3	AX	60	U	C5'-C4'-C3'	8.38	129.40	116.00
81	A2	1673	C	C5'-C4'-O4'	-8.00	99.50	109.10
81	A2	1701	C	C5'-C4'-C3'	7.93	128.68	116.00
81	A2	1673	C	O3'-P-O5'	7.15	117.58	104.00
81	A2	1673	C	C2-N1-C1'	-7.08	111.01	118.80
82	A3	34	U	C3'-C2'-C1'	-7.01	95.89	101.50
81	A2	1673	C	C5-C4-N4	6.52	124.77	120.20
3	AX	60	U	O5'-C5'-C4'	6.48	124.01	111.70
81	A2	139	G	C3'-C2'-C1'	-6.43	96.35	101.50
3	AX	59	U	O3'-P-O5'	-6.42	91.80	104.00
81	A2	103	G	C3'-C2'-C1'	-6.39	96.39	101.50
81	A2	1673	C	N3-C4-N4	-6.31	113.58	118.00
81	A2	4688	A	C3'-C2'-C1'	-6.25	96.50	101.50
3	AX	59	U	C4'-C3'-O3'	6.15	125.30	113.00
81	A2	1673	C	C4'-C3'-C2'	-6.14	96.46	102.60
3	AX	58	U	O3'-P-O5'	6.14	115.66	104.00
81	A2	4560	G	C3'-C2'-C1'	-6.13	96.59	101.50
81	A2	1673	C	C6-N1-C1'	6.11	128.13	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
81	A2	1673	C	C4'-C3'-O3'	6.10	125.21	113.00
4	B1	502	C	C3'-C2'-C1'	-6.09	96.63	101.50
81	A2	1673	C	C5'-C4'-C3'	6.06	125.69	116.00
81	A2	683	C	C3'-C2'-C1'	-5.90	96.78	101.50
81	A2	1673	C	N1-C1'-C2'	5.80	121.54	114.00
81	A2	3742	U	C3'-C2'-C1'	-5.79	96.87	101.50
81	A2	1942	A	N9-C1'-C2'	-5.76	105.66	112.00
3	AX	60	U	P-O5'-C5'	-5.75	111.70	120.90
81	A2	3677	C	C3'-C2'-C1'	-5.75	96.90	101.50
41	CD	265	ARG	N-CA-C	5.74	126.49	111.00
81	A2	943	G	C5-C6-O6	-5.62	125.23	128.60
4	B1	645	C	C3'-C2'-C1'	-5.61	97.01	101.50
4	B1	1441	U	C3'-C2'-C1'	-5.58	97.03	101.50
3	AX	58	U	C2'-C3'-O3'	5.53	122.54	113.70
81	A2	3868	G	C3'-C2'-C1'	-5.52	97.09	101.50
81	A2	2837	C	C3'-C2'-C1'	-5.47	97.12	101.50
48	CL	133	ALA	C-N-CD	5.46	139.87	128.40
81	A2	1703	G	O4'-C1'-C2'	-5.45	100.35	105.80
81	A2	1548	U	C3'-C2'-C1'	-5.45	97.14	101.50
48	CL	130	LYS	C-N-CD	5.39	139.72	128.40
18	BN	6	ALA	N-CA-C	-5.38	96.47	111.00
83	A4	108	G	O4'-C4'-C3'	-5.36	98.64	104.00
81	A2	4475	G	C3'-C2'-C1'	-5.34	97.23	101.50
81	A2	4987	C	C3'-C2'-C1'	-5.34	97.23	101.50
12	BH	109	ARG	N-CA-CB	5.30	120.15	110.60
81	A2	1672	U	C3'-C2'-C1'	-5.28	97.27	101.50
83	A4	108	G	C5'-C4'-O4'	5.28	115.44	109.10
81	A2	28	C	C3'-C2'-C1'	-5.28	97.28	101.50
6	BB	132	GLY	N-CA-C	5.26	126.26	113.10
3	AX	58	U	N1-C1'-C2'	5.26	120.83	114.00
4	B1	797	C	N1-C1'-C2'	-5.25	106.22	112.00
81	A2	355	G	C3'-C2'-C1'	-5.24	97.31	101.50
4	B1	1422	G	C3'-C2'-C1'	-5.23	97.32	101.50
81	A2	1432	A	C3'-C2'-C1'	-5.23	97.32	101.50
80	Cu	157	ARG	N-CA-CB	-5.15	101.34	110.60
36	Bf	124	ASP	N-CA-C	-5.13	97.16	111.00
81	A2	1595	U	C3'-C2'-C1'	-5.11	97.41	101.50
81	A2	303	G	C3'-C2'-C1'	-5.11	97.42	101.50
81	A2	4467	A	C3'-C2'-C1'	-5.09	97.42	101.50
4	B1	1147	C	C3'-C2'-C1'	-5.08	97.43	101.50
31	Ba	5	ARG	N-CA-CB	-5.07	101.47	110.60
48	CL	55	ILE	N-CA-C	-5.07	97.32	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
39	CB	325	GLU	N-CA-C	5.06	124.67	111.00
81	A2	14	C	OP2-P-O3'	5.05	116.31	105.20
61	CY	126	ARG	CB-CA-C	-5.04	100.31	110.40
83	A4	55	A	C3'-C2'-C1'	-5.03	97.48	101.50
81	A2	4547	G	C3'-C2'-C1'	-5.02	97.48	101.50
81	A2	1942	A	O4'-C1'-N9	5.01	112.21	108.20

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	AX	58	U	C3'

All (60) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
81	A2	1	C	Sidechain
81	A2	115	C	Sidechain
81	A2	121	A	Sidechain
81	A2	1218	A	Sidechain
81	A2	1248	G	Sidechain
81	A2	1349	C	Sidechain
81	A2	140	C	Sidechain
81	A2	1481	G	Sidechain
81	A2	149	U	Sidechain
81	A2	1618	U	Sidechain
81	A2	1673	C	Sidechain
81	A2	2	G	Sidechain
81	A2	2064	G	Sidechain
81	A2	2246	G	Sidechain
81	A2	2274	U	Sidechain
81	A2	2294	G	Sidechain
81	A2	2338	G	Sidechain
81	A2	2354	C	Sidechain
81	A2	2570	C	Sidechain
81	A2	2581	C	Sidechain
81	A2	2624	A	Sidechain
81	A2	2795	C	Sidechain
81	A2	426	A	Sidechain
81	A2	4533	G	Sidechain
81	A2	4637	U	Sidechain
81	A2	4655	C	Sidechain
81	A2	4681	G	Sidechain

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Mol	Chain	Res	Type	Group
81	A2	4710	G	Sidechain
81	A2	4712	U	Sidechain
81	A2	4740	U	Sidechain
81	A2	510	C	Sidechain
81	A2	721	A	Sidechain
81	A2	902	G	Sidechain
81	A2	965	C	Sidechain
81	A2	966	U	Sidechain
82	A3	130	C	Sidechain
82	A3	156	U	Sidechain
4	B1	111	A	Sidechain
4	B1	1120	U	Sidechain
4	B1	1288	U	Sidechain
4	B1	1308	U	Sidechain
4	B1	1414	A	Sidechain
4	B1	1548	G	Sidechain
4	B1	1578	U	Sidechain
4	B1	1624	U	Sidechain
4	B1	1686	G	Sidechain
4	B1	1823	A	Sidechain
4	B1	216	C	Sidechain
4	B1	235	A	Sidechain
4	B1	44	U	Sidechain
4	B1	570	C	Sidechain
4	B1	572	U	Sidechain
4	B1	643	A	Sidechain
4	B1	645	C	Sidechain
4	B1	747	U	Sidechain
4	B1	77	A	Sidechain
4	B1	799	U	Sidechain
4	B1	84	A	Sidechain
4	B1	867	G	Sidechain
4	B1	897	U	Sidechain

5.2 Too-close contacts

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

5.3 Torsion angles

5.3.1 Protein backbone

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	
5	BA	216/295 (73%)	209 (97%)	5 (2%)	2 (1%)	17	57
6	BB	211/264 (80%)	176 (83%)	18 (8%)	17 (8%)	1	12
7	BC	220/293 (75%)	213 (97%)	2 (1%)	5 (2%)	6	34
8	BD	210/243 (86%)	201 (96%)	4 (2%)	5 (2%)	6	33
9	BE	255/263 (97%)	237 (93%)	13 (5%)	5 (2%)	7	38
10	BF	186/204 (91%)	163 (88%)	13 (7%)	10 (5%)	2	19
11	BG	230/249 (92%)	216 (94%)	5 (2%)	9 (4%)	3	23
12	BH	189/194 (97%)	178 (94%)	7 (4%)	4 (2%)	7	36
13	BI	205/208 (99%)	184 (90%)	14 (7%)	7 (3%)	3	26
14	BJ	177/194 (91%)	169 (96%)	5 (3%)	3 (2%)	9	42
15	BK	92/165 (56%)	84 (91%)	1 (1%)	7 (8%)	1	13
16	BL	144/158 (91%)	133 (92%)	5 (4%)	6 (4%)	3	22
17	BM	118/132 (89%)	111 (94%)	1 (1%)	6 (5%)	2	19
18	BN	148/151 (98%)	138 (93%)	5 (3%)	5 (3%)	3	26
19	BO	135/151 (89%)	129 (96%)	3 (2%)	3 (2%)	6	35
20	BP	116/145 (80%)	106 (91%)	5 (4%)	5 (4%)	2	22
21	BQ	137/146 (94%)	129 (94%)	6 (4%)	2 (2%)	10	46
22	BR	105/135 (78%)	99 (94%)	4 (4%)	2 (2%)	8	38
23	BS	140/152 (92%)	125 (89%)	7 (5%)	8 (6%)	1	18
24	BT	141/145 (97%)	135 (96%)	4 (3%)	2 (1%)	11	46
25	BU	99/119 (83%)	95 (96%)	3 (3%)	1 (1%)	15	54
26	BV	81/83 (98%)	78 (96%)	1 (1%)	2 (2%)	5	32
27	BW	127/130 (98%)	118 (93%)	7 (6%)	2 (2%)	9	44
28	BX	132/143 (92%)	120 (91%)	5 (4%)	7 (5%)	2	19
29	BY	120/133 (90%)	114 (95%)	2 (2%)	4 (3%)	4	26

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	BZ	74/125 (59%)	71 (96%)	0	3 (4%)	3	22
31	Ba	94/115 (82%)	85 (90%)	5 (5%)	4 (4%)	2	22
32	Bb	78/84 (93%)	70 (90%)	8 (10%)	0	100	100
33	Bc	60/69 (87%)	57 (95%)	1 (2%)	2 (3%)	4	26
34	Bd	51/56 (91%)	44 (86%)	7 (14%)	0	100	100
35	Be	49/59 (83%)	43 (88%)	5 (10%)	1 (2%)	7	38
36	Bf	59/156 (38%)	53 (90%)	6 (10%)	0	100	100
37	Bg	312/317 (98%)	291 (93%)	14 (4%)	7 (2%)	6	35
38	CA	245/257 (95%)	236 (96%)	6 (2%)	3 (1%)	13	50
39	CB	394/403 (98%)	369 (94%)	11 (3%)	14 (4%)	3	25
40	CC	362/427 (85%)	338 (93%)	9 (2%)	15 (4%)	3	22
41	CD	288/297 (97%)	279 (97%)	4 (1%)	5 (2%)	9	42
42	CE	156/288 (54%)	141 (90%)	8 (5%)	7 (4%)	2	22
43	CF	232/248 (94%)	225 (97%)	3 (1%)	4 (2%)	9	42
44	CG	233/266 (88%)	217 (93%)	7 (3%)	9 (4%)	3	23
45	CH	190/192 (99%)	184 (97%)	3 (2%)	3 (2%)	9	44
46	CI	192/214 (90%)	187 (97%)	2 (1%)	3 (2%)	9	44
47	CJ	168/178 (94%)	153 (91%)	3 (2%)	12 (7%)	1	14
48	CL	198/211 (94%)	178 (90%)	9 (4%)	11 (6%)	2	18
49	CM	138/215 (64%)	132 (96%)	4 (3%)	2 (1%)	11	46
50	CN	202/204 (99%)	193 (96%)	6 (3%)	3 (2%)	10	46
51	CO	194/203 (96%)	187 (96%)	4 (2%)	3 (2%)	10	46
52	CP	151/184 (82%)	141 (93%)	7 (5%)	3 (2%)	7	38
53	CQ	182/188 (97%)	169 (93%)	7 (4%)	6 (3%)	4	26
54	CR	181/196 (92%)	175 (97%)	3 (2%)	3 (2%)	9	42
55	CS	171/176 (97%)	158 (92%)	7 (4%)	6 (4%)	3	25
56	CT	157/160 (98%)	150 (96%)	4 (2%)	3 (2%)	8	38
57	CU	100/128 (78%)	97 (97%)	3 (3%)	0	100	100
58	CV	126/140 (90%)	119 (94%)	5 (4%)	2 (2%)	9	44
59	CW	62/157 (40%)	61 (98%)	1 (2%)	0	100	100
60	CX	117/156 (75%)	113 (97%)	4 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
61	CY	126/145 (87%)	119 (94%)	4 (3%)	3 (2%)	6	33
62	CZ	134/136 (98%)	125 (93%)	5 (4%)	4 (3%)	4	28
63	Ca	145/148 (98%)	134 (92%)	6 (4%)	5 (3%)	3	26
64	Cb	67/159 (42%)	60 (90%)	3 (4%)	4 (6%)	1	17
65	Cc	102/115 (89%)	99 (97%)	1 (1%)	2 (2%)	7	38
66	Cd	107/125 (86%)	103 (96%)	3 (3%)	1 (1%)	17	57
67	Ce	126/135 (93%)	117 (93%)	6 (5%)	3 (2%)	6	33
68	Cf	105/110 (96%)	96 (91%)	4 (4%)	5 (5%)	2	21
69	Cg	113/117 (97%)	103 (91%)	6 (5%)	4 (4%)	3	25
70	Ch	120/123 (98%)	112 (93%)	5 (4%)	3 (2%)	5	32
71	Ci	95/105 (90%)	85 (90%)	4 (4%)	6 (6%)	1	17
72	Cj	83/97 (86%)	75 (90%)	6 (7%)	2 (2%)	6	33
73	Ck	67/70 (96%)	64 (96%)	2 (3%)	1 (2%)	10	46
74	Cl	48/51 (94%)	46 (96%)	1 (2%)	1 (2%)	7	36
75	Cm	50/128 (39%)	48 (96%)	1 (2%)	1 (2%)	7	38
76	Cn	23/25 (92%)	23 (100%)	0	0	100	100
77	Co	104/106 (98%)	98 (94%)	4 (4%)	2 (2%)	8	38
78	Cp	89/92 (97%)	83 (93%)	3 (3%)	3 (3%)	3	26
79	Ct	128/137 (93%)	112 (88%)	9 (7%)	7 (6%)	2	19
80	Cu	208/210 (99%)	199 (96%)	6 (3%)	3 (1%)	11	46
All	All	11190/12898 (87%)	10477 (94%)	390 (4%)	323 (3%)	7	29

All (323) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	BB	76	ASN
6	BB	132	GLY
6	BB	148	ASN
6	BB	154	SER
6	BB	176	VAL
6	BB	177	GLN
6	BB	207	LEU
6	BB	221	PRO
7	BC	64	THR
7	BC	172	ASN

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Mol	Chain	Res	Type
7	BC	176	LYS
8	BD	78	GLY
8	BD	199	GLY
9	BE	204	SER
9	BE	205	PHE
10	BF	20	PHE
10	BF	22	LYS
10	BF	40	ALA
10	BF	48	TYR
10	BF	80	GLY
10	BF	132	GLY
10	BF	185	SER
11	BG	43	GLU
11	BG	146	ASN
11	BG	147	LEU
11	BG	169	PRO
12	BH	88	SER
12	BH	135	PHE
13	BI	123	ARG
13	BI	131	PRO
13	BI	134	GLU
13	BI	142	SER
13	BI	159	SER
15	BK	30	PRO
15	BK	32	HIS
15	BK	36	ALA
15	BK	84	HIS
15	BK	87	PRO
16	BL	8	ARG
16	BL	19	ASN
18	BN	7	PRO
18	BN	108	ASP
19	BO	100	THR
19	BO	146	ARG
20	BP	29	SER
20	BP	126	VAL
22	BR	72	LYS
23	BS	78	LYS
23	BS	79	ILE
23	BS	134	GLN
24	BT	37	VAL
25	BU	52	GLY

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Mol	Chain	Res	Type
26	BV	42	VAL
27	BW	100	GLY
28	BX	61	GLN
28	BX	106	GLY
28	BX	107	ARG
28	BX	116	PRO
29	BY	33	ALA
29	BY	98	GLU
30	BZ	95	GLY
37	Bg	255	SER
37	Bg	284	PRO
38	CA	144	LYS
38	CA	196	TRP
39	CB	4	ARG
39	CB	5	LYS
39	CB	157	CYS
39	CB	259	PRO
39	CB	260	ALA
39	CB	360	LEU
40	CC	50	GLN
40	CC	53	ALA
40	CC	54	VAL
40	CC	151	PRO
40	CC	309	ILE
41	CD	258	LYS
42	CE	137	VAL
42	CE	183	ARG
42	CE	185	PRO
43	CF	222	LYS
44	CG	41	ILE
44	CG	42	GLY
44	CG	162	ASP
45	CH	4	ILE
45	CH	61	TRP
46	CI	189	ARG
47	CJ	11	PRO
47	CJ	14	GLU
47	CJ	77	ALA
47	CJ	155	HIS
47	CJ	175	LEU
48	CL	47	ALA
48	CL	52	SER

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Mol	Chain	Res	Type
48	CL	54	PRO
48	CL	77	SER
48	CL	205	GLN
49	CM	21	ALA
50	CN	184	ILE
52	CP	3	ARG
52	CP	6	LEU
53	CQ	98	LEU
53	CQ	155	ALA
54	CR	131	VAL
55	CS	171	ARG
56	CT	18	PRO
61	CY	67	ILE
62	CZ	32	GLY
62	CZ	103	ASP
62	CZ	125	GLY
63	Ca	48	TYR
64	Cb	30	GLU
64	Cb	56	LYS
65	Cc	107	SER
67	Ce	19	LYS
67	Ce	20	PHE
68	Cf	60	PRO
68	Cf	64	PRO
68	Cf	106	TYR
68	Cf	107	PRO
69	Cg	84	ALA
70	Ch	122	LYS
71	Ci	28	ARG
71	Ci	33	LEU
71	Ci	34	THR
72	Cj	11	ARG
72	Cj	85	LYS
73	Ck	18	LYS
74	Cl	4	HIS
79	Ct	44	ILE
79	Ct	61	VAL
79	Ct	76	SER
79	Ct	104	PRO
80	Cu	190	LYS
5	BA	6	ASP
6	BB	52	THR

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Mol	Chain	Res	Type
6	BB	78	GLU
6	BB	127	VAL
6	BB	209	ASP
7	BC	174	ILE
8	BD	81	GLU
9	BE	231	GLY
9	BE	243	GLY
10	BF	34	SER
10	BF	56	TYR
11	BG	87	ARG
11	BG	157	VAL
12	BH	164	ASN
15	BK	64	TRP
16	BL	119	ASP
17	BM	30	GLY
17	BM	60	MET
17	BM	106	CYS
17	BM	107	SER
18	BN	143	SER
22	BR	114	LEU
23	BS	24	ARG
23	BS	31	THR
23	BS	90	VAL
23	BS	92	ASP
26	BV	48	GLY
31	Ba	61	ALA
37	Bg	276	SER
39	CB	299	ILE
39	CB	309	LEU
39	CB	357	ARG
40	CC	55	SER
40	CC	58	ALA
40	CC	148	PRO
40	CC	276	ASN
43	CF	166	ARG
43	CF	170	THR
44	CG	84	THR
45	CH	190	ALA
46	CI	41	ALA
46	CI	194	GLY
47	CJ	97	ASN
47	CJ	117	ILE

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Mol	Chain	Res	Type
48	CL	51	ALA
48	CL	143	GLU
48	CL	162	LYS
53	CQ	157	GLY
54	CR	113	LYS
58	CV	85	ARG
61	CY	84	ARG
63	Ca	47	LYS
63	Ca	66	ASN
63	Ca	116	LYS
69	Cg	44	SER
69	Cg	45	ALA
77	Co	34	TYR
78	Cp	12	GLY
6	BB	49	VAL
6	BB	213	ARG
8	BD	142	LEU
9	BE	203	GLY
10	BF	79	HIS
11	BG	91	GLU
11	BG	92	ARG
12	BH	109	ARG
16	BL	7	GLU
17	BM	102	LYS
18	BN	3	ARG
21	BQ	17	LYS
21	BQ	74	GLY
28	BX	33	GLY
28	BX	86	PRO
29	BY	64	PHE
30	BZ	113	THR
31	Ba	81	SER
33	Bc	38	THR
39	CB	292	LEU
39	CB	296	GLY
40	CC	57	LEU
40	CC	75	ARG
40	CC	150	LEU
41	CD	265	ARG
42	CE	135	GLN
42	CE	265	PRO
44	CG	161	VAL

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Mol	Chain	Res	Type
44	CG	163	PRO
47	CJ	111	GLU
48	CL	141	ALA
48	CL	161	TYR
48	CL	177	LYS
51	CO	72	HIS
51	CO	198	THR
51	CO	199	HIS
52	CP	5	SER
53	CQ	12	LYS
55	CS	135	SER
61	CY	123	ALA
62	CZ	37	PRO
64	Cb	29	TYR
70	Ch	41	ALA
71	Ci	101	ALA
75	Cm	79	GLU
78	Cp	51	ALA
80	Cu	3	GLN
18	BN	62	GLN
20	BP	39	ALA
27	BW	28	ARG
28	BX	75	ILE
29	BY	119	GLY
33	Bc	64	GLU
37	Bg	146	SER
38	CA	70	LYS
41	CD	253	TYR
42	CE	227	HIS
44	CG	44	ASP
47	CJ	120	ASP
47	CJ	176	PRO
49	CM	44	GLN
50	CN	145	ASN
53	CQ	164	LYS
55	CS	16	CYS
55	CS	158	VAL
55	CS	160	ARG
56	CT	125	TRP
65	Cc	53	PRO
70	Ch	3	LYS
79	Ct	79	ARG

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Mol	Chain	Res	Type
79	Ct	89	THR
7	BC	261	PHE
11	BG	88	ARG
14	BJ	138	ARG
14	BJ	169	ARG
16	BL	115	PRO
20	BP	28	MET
20	BP	125	PRO
24	BT	51	ASN
30	BZ	114	LYS
31	Ba	38	LYS
35	Be	8	ARG
39	CB	189	THR
40	CC	30	ALA
40	CC	56	GLU
44	CG	134	PRO
53	CQ	156	PRO
55	CS	164	LYS
79	Ct	45	HIS
80	Cu	39	PRO
5	BA	104	THR
6	BB	23	ASP
6	BB	210	VAL
13	BI	12	ARG
23	BS	6	PRO
31	Ba	84	VAL
39	CB	326	VAL
41	CD	125	VAL
41	CD	259	LYS
43	CF	184	ILE
47	CJ	58	ARG
47	CJ	76	GLY
54	CR	53	LYS
56	CT	123	GLY
63	Ca	24	LYS
64	Cb	21	ILE
68	Cf	59	THR
71	Ci	21	VAL
71	Ci	65	LYS
6	BB	64	GLY
14	BJ	170	PRO
15	BK	86	PRO

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Mol	Chain	Res	Type
44	CG	30	PRO
69	Cg	79	GLY
78	Cp	19	GLY
13	BI	20	PRO
16	BL	29	GLY
17	BM	100	PRO
37	Bg	103	GLY
19	BO	53	ILE
37	Bg	61	GLY
39	CB	18	PRO
40	CC	232	VAL
42	CE	144	ILE
66	Cd	20	VAL
37	Bg	265	ILE
50	CN	52	GLY
77	Co	101	GLY
8	BD	63	GLY
58	CV	45	ILE
67	Ce	6	PRO

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
5	BA	181/243 (74%)	176 (97%)	5 (3%)	43 65
6	BB	194/231 (84%)	183 (94%)	11 (6%)	20 45
7	BC	188/225 (84%)	181 (96%)	7 (4%)	34 58
8	BD	175/202 (87%)	166 (95%)	9 (5%)	24 48
9	BE	220/225 (98%)	208 (94%)	12 (6%)	21 47
10	BF	158/170 (93%)	151 (96%)	7 (4%)	28 53
11	BG	202/218 (93%)	195 (96%)	7 (4%)	36 59
12	BH	171/174 (98%)	167 (98%)	4 (2%)	50 70
13	BI	179/180 (99%)	167 (93%)	12 (7%)	16 41

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
14	BJ	160/168 (95%)	150 (94%)	10 (6%)	18	43
15	BK	85/136 (62%)	82 (96%)	3 (4%)	36	59
16	BL	133/142 (94%)	131 (98%)	2 (2%)	65	80
17	BM	102/108 (94%)	97 (95%)	5 (5%)	25	50
18	BN	130/131 (99%)	128 (98%)	2 (2%)	65	80
19	BO	107/119 (90%)	100 (94%)	7 (6%)	17	42
20	BP	107/130 (82%)	102 (95%)	5 (5%)	26	51
21	BQ	115/121 (95%)	111 (96%)	4 (4%)	36	59
22	BR	99/122 (81%)	94 (95%)	5 (5%)	24	48
23	BS	123/132 (93%)	114 (93%)	9 (7%)	14	39
24	BT	113/115 (98%)	106 (94%)	7 (6%)	18	43
25	BU	93/107 (87%)	89 (96%)	4 (4%)	29	53
26	BV	67/67 (100%)	66 (98%)	1 (2%)	65	80
27	BW	112/113 (99%)	107 (96%)	5 (4%)	27	52
28	BX	108/115 (94%)	103 (95%)	5 (5%)	27	52
29	BY	107/115 (93%)	101 (94%)	6 (6%)	21	46
30	BZ	67/103 (65%)	63 (94%)	4 (6%)	19	44
31	Ba	83/98 (85%)	76 (92%)	7 (8%)	11	33
32	Bb	72/76 (95%)	68 (94%)	4 (6%)	21	46
33	Bc	55/62 (89%)	52 (94%)	3 (6%)	21	47
34	Bd	47/49 (96%)	43 (92%)	4 (8%)	10	33
35	Be	42/48 (88%)	40 (95%)	2 (5%)	25	51
36	Bf	54/140 (39%)	51 (94%)	3 (6%)	21	46
37	Bg	272/275 (99%)	260 (96%)	12 (4%)	28	53
38	CA	189/199 (95%)	185 (98%)	4 (2%)	53	72
39	CB	344/349 (99%)	326 (95%)	18 (5%)	23	48
40	CC	302/348 (87%)	284 (94%)	18 (6%)	19	44
41	CD	244/250 (98%)	237 (97%)	7 (3%)	42	64
42	CE	143/252 (57%)	135 (94%)	8 (6%)	21	46
43	CF	203/215 (94%)	196 (97%)	7 (3%)	37	60
44	CG	199/223 (89%)	192 (96%)	7 (4%)	36	59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
45	CH	171/171 (100%)	164 (96%)	7 (4%)	30	55
46	CI	170/181 (94%)	161 (95%)	9 (5%)	22	47
47	CJ	143/149 (96%)	137 (96%)	6 (4%)	30	54
48	CL	167/177 (94%)	156 (93%)	11 (7%)	16	41
49	CM	118/161 (73%)	114 (97%)	4 (3%)	37	60
50	CN	172/172 (100%)	170 (99%)	2 (1%)	71	83
51	CO	168/174 (97%)	166 (99%)	2 (1%)	71	83
52	CP	133/163 (82%)	126 (95%)	7 (5%)	22	47
53	CQ	162/165 (98%)	157 (97%)	5 (3%)	40	62
54	CR	161/175 (92%)	150 (93%)	11 (7%)	16	41
55	CS	155/157 (99%)	148 (96%)	7 (4%)	27	52
56	CT	139/140 (99%)	134 (96%)	5 (4%)	35	59
57	CU	91/115 (79%)	88 (97%)	3 (3%)	38	61
58	CV	100/107 (94%)	99 (99%)	1 (1%)	76	86
59	CW	55/126 (44%)	52 (94%)	3 (6%)	21	47
60	CX	107/133 (80%)	105 (98%)	2 (2%)	57	75
61	CY	119/135 (88%)	115 (97%)	4 (3%)	37	60
62	CZ	118/118 (100%)	112 (95%)	6 (5%)	24	48
63	Ca	120/121 (99%)	116 (97%)	4 (3%)	38	61
64	Cb	58/126 (46%)	57 (98%)	1 (2%)	60	78
65	Cc	88/97 (91%)	87 (99%)	1 (1%)	73	84
66	Cd	100/110 (91%)	96 (96%)	4 (4%)	31	55
67	Ce	115/121 (95%)	112 (97%)	3 (3%)	46	66
68	Cf	87/89 (98%)	79 (91%)	8 (9%)	9	29
69	Cg	98/100 (98%)	88 (90%)	10 (10%)	7	25
70	Ch	109/110 (99%)	106 (97%)	3 (3%)	43	65
71	Ci	82/89 (92%)	76 (93%)	6 (7%)	14	39
72	Cj	71/80 (89%)	69 (97%)	2 (3%)	43	65
73	Ck	64/65 (98%)	64 (100%)	0	100	100
74	Cl	47/48 (98%)	46 (98%)	1 (2%)	53	72
75	Cm	48/116 (41%)	45 (94%)	3 (6%)	18	43

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
76	Cn	24/24 (100%)	24 (100%)	0	100	100
77	Co	94/94 (100%)	89 (95%)	5 (5%)	22	47
78	Cp	74/75 (99%)	72 (97%)	2 (3%)	44	65
79	Ct	113/121 (93%)	106 (94%)	7 (6%)	18	43
80	Cu	177/177 (100%)	163 (92%)	14 (8%)	12	35
All	All	9763/10978 (89%)	9332 (96%)	431 (4%)	32	53

All (431) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	BA	8	LEU
5	BA	10	MET
5	BA	19	LEU
5	BA	110	ASN
5	BA	204	TYR
6	BB	23	ASP
6	BB	30	TRP
6	BB	46	LYS
6	BB	71	LEU
6	BB	97	LEU
6	BB	131	ASP
6	BB	148	ASN
6	BB	152	LYS
6	BB	177	GLN
6	BB	216	LYS
6	BB	218	LEU
7	BC	89	LYS
7	BC	137	VAL
7	BC	205	VAL
7	BC	209	VAL
7	BC	240	THR
7	BC	252	THR
7	BC	256	TRP
8	BD	5	ILE
8	BD	16	ILE
8	BD	42	THR
8	BD	66	ILE
8	BD	93	THR
8	BD	150	MET
8	BD	162	ASP

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Mol	Chain	Res	Type
8	BD	193	ASP
8	BD	211	VAL
9	BE	23	LEU
9	BE	37	LYS
9	BE	51	ARG
9	BE	95	THR
9	BE	114	ILE
9	BE	115	THR
9	BE	128	LYS
9	BE	136	ILE
9	BE	148	ARG
9	BE	166	THR
9	BE	189	LEU
9	BE	205	PHE
10	BF	47	LYS
10	BF	63	LYS
10	BF	68	ILE
10	BF	72	LEU
10	BF	103	LEU
10	BF	135	ARG
10	BF	195	GLU
11	BG	24	LEU
11	BG	29	GLU
11	BG	34	THR
11	BG	87	ARG
11	BG	160	LYS
11	BG	176	ILE
11	BG	195	LYS
12	BH	111	LYS
12	BH	116	ARG
12	BH	118	ARG
12	BH	152	ARG
13	BI	19	LYS
13	BI	21	TYR
13	BI	29	LEU
13	BI	48	VAL
13	BI	55	TYR
13	BI	62	VAL
13	BI	78	ILE
13	BI	93	THR
13	BI	131	PRO
13	BI	136	ILE

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Mol	Chain	Res	Type
13	BI	137	LEU
13	BI	144	LYS
14	BJ	8	VAL
14	BJ	12	THR
14	BJ	30	LYS
14	BJ	41	ARG
14	BJ	47	LYS
14	BJ	78	LEU
14	BJ	128	VAL
14	BJ	130	ILE
14	BJ	147	PHE
14	BJ	163	SER
15	BK	15	LEU
15	BK	70	TYR
15	BK	84	HIS
16	BL	17	PHE
16	BL	69	ARG
17	BM	52	LEU
17	BM	83	LYS
17	BM	88	TRP
17	BM	106	CYS
17	BM	117	GLU
18	BN	7	PRO
18	BN	80	LEU
19	BO	45	THR
19	BO	63	LYS
19	BO	100	THR
19	BO	105	THR
19	BO	129	ILE
19	BO	132	VAL
19	BO	140	THR
20	BP	16	THR
20	BP	29	SER
20	BP	40	ARG
20	BP	44	ARG
20	BP	74	GLU
21	BQ	39	LEU
21	BQ	43	GLU
21	BQ	72	VAL
21	BQ	105	LYS
22	BR	22	THR
22	BR	46	LEU

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Mol	Chain	Res	Type
22	BR	71	ILE
22	BR	109	LEU
22	BR	118	GLN
23	BS	3	LEU
23	BS	5	ILE
23	BS	8	LYS
23	BS	23	ARG
23	BS	25	LYS
23	BS	45	LEU
23	BS	60	THR
23	BS	99	LEU
23	BS	139	THR
24	BT	5	THR
24	BT	33	TRP
24	BT	39	LEU
24	BT	64	LEU
24	BT	87	VAL
24	BT	121	ARG
24	BT	126	GLN
25	BU	24	LEU
25	BU	59	LYS
25	BU	61	LEU
25	BU	115	THR
26	BV	2	GLN
27	BW	4	MET
27	BW	11	LEU
27	BW	20	ARG
27	BW	97	ARG
27	BW	98	GLN
28	BX	17	ARG
28	BX	31	HIS
28	BX	37	LYS
28	BX	80	LYS
28	BX	81	ILE
29	BY	20	ARG
29	BY	21	LYS
29	BY	54	VAL
29	BY	84	LYS
29	BY	99	LYS
29	BY	100	LYS
30	BZ	43	LYS
30	BZ	62	VAL

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Mol	Chain	Res	Type
30	BZ	67	LEU
30	BZ	111	ARG
31	Ba	21	ILE
31	Ba	23	CYS
31	Ba	32	LYS
31	Ba	37	LYS
31	Ba	64	LEU
31	Ba	71	LEU
31	Ba	84	VAL
32	Bb	7	LEU
32	Bb	56	CYS
32	Bb	59	CYS
32	Bb	63	LEU
33	Bc	9	ILE
33	Bc	17	VAL
33	Bc	32	VAL
34	Bd	28	HIS
34	Bd	40	ARG
34	Bd	44	ARG
34	Bd	48	LYS
35	Be	18	LYS
35	Be	46	VAL
36	Bf	97	LYS
36	Bf	104	LYS
36	Bf	148	TYR
37	Bg	20	GLN
37	Bg	26	GLN
37	Bg	54	ILE
37	Bg	94	THR
37	Bg	99	ARG
37	Bg	157	SER
37	Bg	164	ILE
37	Bg	189	ILE
37	Bg	255	SER
37	Bg	266	ILE
37	Bg	287	THR
37	Bg	289	LEU
38	CA	10	LYS
38	CA	116	LEU
38	CA	162	ASN
38	CA	218	HIS
39	CB	3	HIS

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Mol	Chain	Res	Type
39	CB	55	HIS
39	CB	89	ILE
39	CB	101	THR
39	CB	131	THR
39	CB	146	LEU
39	CB	157	CYS
39	CB	240	LEU
39	CB	243	LYS
39	CB	254	ILE
39	CB	258	HIS
39	CB	291	TYR
39	CB	300	LYS
39	CB	305	THR
39	CB	314	ILE
39	CB	327	THR
39	CB	351	LEU
39	CB	370	THR
40	CC	13	GLU
40	CC	24	LEU
40	CC	49	ARG
40	CC	78	ARG
40	CC	100	ARG
40	CC	150	LEU
40	CC	151	PRO
40	CC	162	LYS
40	CC	163	LYS
40	CC	188	ARG
40	CC	193	LYS
40	CC	215	ASN
40	CC	232	VAL
40	CC	253	THR
40	CC	289	LEU
40	CC	309	ILE
40	CC	310	HIS
40	CC	323	ARG
41	CD	23	ARG
41	CD	81	HIS
41	CD	105	LEU
41	CD	126	THR
41	CD	155	THR
41	CD	262	LYS
41	CD	293	ARG

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Mol	Chain	Res	Type
42	CE	162	VAL
42	CE	172	LEU
42	CE	188	ARG
42	CE	189	THR
42	CE	197	THR
42	CE	212	LEU
42	CE	217	PHE
42	CE	278	THR
43	CF	15	PRO
43	CF	32	ARG
43	CF	34	ARG
43	CF	37	PHE
43	CF	44	LYS
43	CF	199	LYS
43	CF	226	HIS
44	CG	34	LYS
44	CG	46	GLN
44	CG	55	VAL
44	CG	81	ASN
44	CG	162	ASP
44	CG	163	PRO
44	CG	218	LEU
45	CH	2	LYS
45	CH	20	LEU
45	CH	41	ILE
45	CH	45	LEU
45	CH	71	ARG
45	CH	129	ARG
45	CH	188	GLN
46	CI	33	ILE
46	CI	39	LYS
46	CI	52	MET
46	CI	53	VAL
46	CI	96	VAL
46	CI	163	GLN
46	CI	166	HIS
46	CI	174	THR
46	CI	200	ILE
47	CJ	12	MET
47	CJ	70	VAL
47	CJ	83	LEU
47	CJ	109	ILE

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Mol	Chain	Res	Type
47	CJ	115	LEU
47	CJ	169	LYS
48	CL	52	SER
48	CL	54	PRO
48	CL	55	ILE
48	CL	130	LYS
48	CL	135	LYS
48	CL	148	THR
48	CL	151	THR
48	CL	155	MET
48	CL	163	LYS
48	CL	164	GLU
48	CL	183	ARG
49	CM	72	TYR
49	CM	78	GLN
49	CM	114	LYS
49	CM	132	LYS
50	CN	5	LYS
50	CN	31	ARG
51	CO	169	ARG
51	CO	187	LYS
52	CP	2	VAL
52	CP	4	TYR
52	CP	64	ASN
52	CP	75	GLN
52	CP	78	TRP
52	CP	94	MET
52	CP	112	LEU
53	CQ	48	LEU
53	CQ	61	LEU
53	CQ	72	LEU
53	CQ	75	ARG
53	CQ	120	ILE
54	CR	1	MET
54	CR	3	MET
54	CR	5	ARG
54	CR	20	LYS
54	CR	25	ASP
54	CR	41	ILE
54	CR	57	VAL
54	CR	74	ARG
54	CR	103	ARG

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Mol	Chain	Res	Type
54	CR	114	LYS
54	CR	138	LEU
55	CS	4	SER
55	CS	7	LEU
55	CS	24	THR
55	CS	27	LEU
55	CS	73	LEU
55	CS	166	ARG
55	CS	169	THR
56	CT	17	ARG
56	CT	68	THR
56	CT	69	GLN
56	CT	125	TRP
56	CT	126	VAL
57	CU	20	LYS
57	CU	27	HIS
57	CU	48	LYS
58	CV	131	ARG
59	CW	2	LYS
59	CW	32	LEU
59	CW	33	ASN
60	CX	79	PHE
60	CX	123	LYS
61	CY	8	THR
61	CY	36	LYS
61	CY	70	VAL
61	CY	115	ARG
62	CZ	1	MET
62	CZ	75	TYR
62	CZ	89	ILE
62	CZ	112	ARG
62	CZ	121	ARG
62	CZ	136	PHE
63	Ca	8	THR
63	Ca	47	LYS
63	Ca	56	VAL
63	Ca	132	ARG
64	Cb	61	ASN
65	Cc	17	ARG
66	Cd	39	LYS
66	Cd	92	ARG
66	Cd	115	LYS

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Mol	Chain	Res	Type
66	Cd	119	THR
67	Ce	13	VAL
67	Ce	70	LEU
67	Ce	88	LEU
68	Cf	52	LYS
68	Cf	54	LYS
68	Cf	58	VAL
68	Cf	59	THR
68	Cf	73	LYS
68	Cf	89	ARG
68	Cf	101	ILE
68	Cf	102	ARG
69	Cg	4	ARG
69	Cg	5	LEU
69	Cg	22	LEU
69	Cg	36	LYS
69	Cg	44	SER
69	Cg	54	ARG
69	Cg	60	ARG
69	Cg	67	LEU
69	Cg	69	LYS
69	Cg	81	SER
70	Ch	43	LYS
70	Ch	113	LEU
70	Ch	118	LYS
71	Ci	33	LEU
71	Ci	34	THR
71	Ci	79	THR
71	Ci	90	LEU
71	Ci	97	MET
71	Ci	98	ARG
72	Cj	19	CYS
72	Cj	83	THR
74	Cl	5	LYS
75	Cm	112	LYS
75	Cm	115	CYS
75	Cm	118	THR
77	Co	32	SER
77	Co	83	LEU
77	Co	93	LEU
77	Co	99	ARG
77	Co	100	LYS

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Mol	Chain	Res	Type
78	Cp	29	ILE
78	Cp	52	VAL
79	Ct	4	HIS
79	Ct	18	ILE
79	Ct	20	ARG
79	Ct	61	VAL
79	Ct	76	SER
79	Ct	77	TYR
79	Ct	81	THR
80	Cu	21	PHE
80	Cu	24	THR
80	Cu	30	ASN
80	Cu	53	THR
80	Cu	57	THR
80	Cu	60	VAL
80	Cu	101	THR
80	Cu	110	LEU
80	Cu	145	MET
80	Cu	156	ARG
80	Cu	190	LYS
80	Cu	193	LEU
80	Cu	197	THR
80	Cu	210	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (210) such sidechains are listed below:

Mol	Chain	Res	Type
5	BA	50	ASN
5	BA	110	ASN
5	BA	215	GLN
6	BB	40	ASN
6	BB	53	GLN
6	BB	149	GLN
6	BB	157	GLN
6	BB	160	GLN
6	BB	177	GLN
7	BC	267	GLN
8	BD	4	GLN
8	BD	56	GLN
8	BD	57	ASN
8	BD	101	GLN
8	BD	179	GLN

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Mol	Chain	Res	Type
9	BE	36	HIS
9	BE	138	HIS
9	BE	188	ASN
9	BE	216	ASN
9	BE	230	ASN
10	BF	29	GLN
10	BF	82	ASN
10	BF	95	HIS
10	BF	107	ASN
10	BF	110	GLN
10	BF	114	ASN
10	BF	165	ASN
10	BF	203	ASN
11	BG	65	GLN
11	BG	81	HIS
11	BG	105	ASN
12	BH	25	GLN
12	BH	76	GLN
12	BH	97	GLN
12	BH	112	ASN
13	BI	22	HIS
14	BJ	124	HIS
14	BJ	143	ASN
15	BK	44	HIS
15	BK	84	HIS
16	BL	5	GLN
16	BL	112	HIS
17	BM	19	GLN
19	BO	32	HIS
19	BO	43	HIS
20	BP	35	GLN
20	BP	104	GLN
21	BQ	48	GLN
21	BQ	80	GLN
21	BQ	86	GLN
22	BR	62	GLN
23	BS	19	ASN
23	BS	42	HIS
23	BS	73	ASN
23	BS	85	ASN
23	BS	87	GLN
24	BT	63	HIS

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Mol	Chain	Res	Type
24	BT	126	GLN
25	BU	100	GLN
26	BV	2	GLN
27	BW	24	GLN
27	BW	82	GLN
27	BW	113	HIS
28	BX	61	GLN
28	BX	73	GLN
28	BX	77	ASN
29	BY	19	GLN
29	BY	22	GLN
29	BY	29	HIS
30	BZ	103	HIS
31	Ba	19	GLN
31	Ba	43	ASN
32	Bb	49	HIS
33	Bc	45	ASN
34	Bd	5	GLN
34	Bd	16	GLN
34	Bd	26	ASN
34	Bd	41	GLN
35	Be	22	GLN
35	Be	44	ASN
37	Bg	20	GLN
37	Bg	26	GLN
37	Bg	64	HIS
37	Bg	117	ASN
37	Bg	196	ASN
38	CA	50	HIS
38	CA	97	ASN
38	CA	132	ASN
38	CA	209	HIS
39	CB	25	HIS
39	CB	167	GLN
39	CB	175	GLN
39	CB	208	ASN
39	CB	213	GLN
39	CB	271	GLN
39	CB	328	ASN
39	CB	354	GLN
40	CC	43	ASN
40	CC	50	GLN

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Mol	Chain	Res	Type
40	CC	187	GLN
40	CC	329	ASN
40	CC	347	HIS
40	CC	362	GLN
41	CD	57	ASN
41	CD	191	ASN
41	CD	244	HIS
41	CD	291	GLN
42	CE	135	GLN
42	CE	182	ASN
42	CE	205	ASN
42	CE	211	HIS
42	CE	228	GLN
42	CE	256	GLN
42	CE	279	ASN
43	CF	80	ASN
43	CF	116	GLN
43	CF	131	ASN
43	CF	151	ASN
44	CG	66	GLN
44	CG	108	GLN
44	CG	195	HIS
45	CH	15	ASN
45	CH	162	GLN
46	CI	14	ASN
46	CI	51	HIS
46	CI	59	GLN
46	CI	144	ASN
47	CJ	97	ASN
47	CJ	112	HIS
47	CJ	167	GLN
47	CJ	168	GLN
48	CL	19	GLN
48	CL	27	ASN
48	CL	149	GLN
49	CM	20	HIS
49	CM	33	GLN
49	CM	131	GLN
50	CN	139	HIS
50	CN	158	HIS
50	CN	181	HIS
50	CN	201	HIS

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Mol	Chain	Res	Type
51	CO	180	GLN
52	CP	25	HIS
52	CP	54	GLN
52	CP	64	ASN
52	CP	120	ASN
53	CQ	40	ASN
53	CQ	45	GLN
54	CR	39	GLN
54	CR	40	GLN
54	CR	118	HIS
54	CR	141	HIS
55	CS	91	HIS
55	CS	117	HIS
55	CS	122	HIS
55	CS	125	GLN
55	CS	156	HIS
55	CS	173	ASN
56	CT	69	GLN
56	CT	127	GLN
56	CT	131	GLN
56	CT	139	HIS
56	CT	144	ASN
57	CU	17	GLN
57	CU	44	GLN
57	CU	116	GLN
58	CV	84	GLN
58	CV	135	ASN
59	CW	48	GLN
59	CW	63	GLN
60	CX	93	ASN
60	CX	107	HIS
60	CX	111	GLN
60	CX	125	ASN
61	CY	66	GLN
61	CY	72	GLN
61	CY	91	ASN
62	CZ	132	GLN
63	Ca	17	HIS
63	Ca	40	HIS
63	Ca	67	GLN
63	Ca	74	ASN
63	Ca	93	ASN

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Mol	Chain	Res	Type
64	Cb	12	GLN
64	Cb	42	ASN
64	Cb	60	ASN
65	Cc	15	ASN
66	Cd	125	ASN
68	Cf	21	GLN
68	Cf	65	ASN
69	Cg	3	GLN
69	Cg	100	GLN
69	Cg	112	GLN
70	Ch	62	ASN
70	Ch	101	ASN
71	Ci	36	HIS
71	Ci	80	HIS
72	Cj	30	GLN
73	Ck	28	ASN
75	Cm	87	GLN
75	Cm	90	ASN
76	Cn	22	GLN
77	Co	45	GLN
77	Co	51	GLN
77	Co	102	GLN
79	Ct	23	GLN
80	Cu	3	GLN
80	Cu	37	ASN
80	Cu	55	GLN
80	Cu	194	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AV	75/76 (98%)	37 (49%)	2 (2%)
2	AW	74/76 (97%)	33 (44%)	5 (6%)
3	AX	27/28 (96%)	15 (55%)	4 (14%)
4	B1	1738/1869 (92%)	1038 (59%)	152 (8%)
81	A2	3605/5025 (71%)	2042 (56%)	325 (9%)
82	A3	156/194 (80%)	81 (51%)	6 (3%)
83	A4	118/121 (97%)	68 (57%)	9 (7%)
All	All	5793/7389 (78%)	3314 (57%)	503 (8%)

All (3314) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AV	2	C
1	AV	5	G
1	AV	8	U
1	AV	11	C
1	AV	17	C
1	AV	18	G
1	AV	19	G
1	AV	20	U
1	AV	22	G
1	AV	23	A
1	AV	24	G
1	AV	28	G
1	AV	29	G
1	AV	31	A
1	AV	32	U
1	AV	41	C
1	AV	42	C
1	AV	44	G
1	AV	46	G
1	AV	47	U
1	AV	48	C
1	AV	50	U
1	AV	52	G
1	AV	57	G
1	AV	58	A
1	AV	59	U
1	AV	60	U
1	AV	61	C
1	AV	63	G
1	AV	65	G
1	AV	67	C
1	AV	69	G
1	AV	70	G
1	AV	72	C
1	AV	73	A
1	AV	75	C
1	AV	76	A
2	AW	2	C
2	AW	3	C
2	AW	6	G
2	AW	9	A
2	AW	13	C
2	AW	14	A

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Mol	Chain	Res	Type
2	AW	17	C
2	AW	19	G
2	AW	20	U
2	AW	21	A
2	AW	22	G
2	AW	27	G
2	AW	32	U
2	AW	42	C
2	AW	43	C
2	AW	44	G
2	AW	45	U
2	AW	46	G
2	AW	47	U
2	AW	48	C
2	AW	49	C
2	AW	51	U
2	AW	52	G
2	AW	55	U
2	AW	56	C
2	AW	58	A
2	AW	59	U
2	AW	60	U
2	AW	61	C
2	AW	65	G
2	AW	73	A
2	AW	74	C
2	AW	76	A
3	AX	36	U
3	AX	37	U
3	AX	38	U
3	AX	39	U
3	AX	41	U
3	AX	42	U
3	AX	43	U
3	AX	45	U
3	AX	46	U
3	AX	49	U
3	AX	52	U
3	AX	54	U
3	AX	55	U
3	AX	56	U
3	AX	61	U

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Mol	Chain	Res	Type
4	B1	2	A
4	B1	3	C
4	B1	4	C
4	B1	5	U
4	B1	6	G
4	B1	7	G
4	B1	8	U
4	B1	9	U
4	B1	15	U
4	B1	16	G
4	B1	17	C
4	B1	21	U
4	B1	22	A
4	B1	24	C
4	B1	25	A
4	B1	26	U
4	B1	30	C
4	B1	33	G
4	B1	39	A
4	B1	40	A
4	B1	41	G
4	B1	44	U
4	B1	45	A
4	B1	46	A
4	B1	47	G
4	B1	48	C
4	B1	50	A
4	B1	55	U
4	B1	56	G
4	B1	59	U
4	B1	60	A
4	B1	61	A
4	B1	62	G
4	B1	63	U
4	B1	64	A
4	B1	65	C
4	B1	66	G
4	B1	67	C
4	B1	68	A
4	B1	69	C
4	B1	70	G
4	B1	71	G

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Mol	Chain	Res	Type
4	B1	72	C
4	B1	74	G
4	B1	75	G
4	B1	76	U
4	B1	77	A
4	B1	78	C
4	B1	79	A
4	B1	80	G
4	B1	81	U
4	B1	82	G
4	B1	83	A
4	B1	84	A
4	B1	87	U
4	B1	98	C
4	B1	99	A
4	B1	101	U
4	B1	103	A
4	B1	104	A
4	B1	105	U
4	B1	106	C
4	B1	109	U
4	B1	110	U
4	B1	111	A
4	B1	112	U
4	B1	113	G
4	B1	114	G
4	B1	115	U
4	B1	116	U
4	B1	117	C
4	B1	118	C
4	B1	120	U
4	B1	121	U
4	B1	122	G
4	B1	123	G
4	B1	124	U
4	B1	125	C
4	B1	126	G
4	B1	127	C
4	B1	128	U
4	B1	129	C
4	B1	130	G
4	B1	131	C

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Mol	Chain	Res	Type
4	B1	132	U
4	B1	133	C
4	B1	134	C
4	B1	135	U
4	B1	136	C
4	B1	137	U
4	B1	138	C
4	B1	139	C
4	B1	140	C
4	B1	141	A
4	B1	142	C
4	B1	143	U
4	B1	144	U
4	B1	145	G
4	B1	146	G
4	B1	147	A
4	B1	150	A
4	B1	151	C
4	B1	152	U
4	B1	153	G
4	B1	158	A
4	B1	160	U
4	B1	161	U
4	B1	162	C
4	B1	163	U
4	B1	164	A
4	B1	166	A
4	B1	167	G
4	B1	168	C
4	B1	169	U
4	B1	171	A
4	B1	173	A
4	B1	174	C
4	B1	176	U
4	B1	179	C
4	B1	180	G
4	B1	181	A
4	B1	182	C
4	B1	183	G
4	B1	184	G
4	B1	185	G
4	B1	187	G

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Mol	Chain	Res	Type
4	B1	193	C
4	B1	198	U
4	B1	199	C
4	B1	200	G
4	B1	201	C
4	B1	202	G
4	B1	204	G
4	B1	205	G
4	B1	207	G
4	B1	208	G
4	B1	209	A
4	B1	210	U
4	B1	211	G
4	B1	213	G
4	B1	214	U
4	B1	215	G
4	B1	216	C
4	B1	217	A
4	B1	218	U
4	B1	219	U
4	B1	220	U
4	B1	225	G
4	B1	226	A
4	B1	227	U
4	B1	228	C
4	B1	229	A
4	B1	230	A
4	B1	233	C
4	B1	234	C
4	B1	235	A
4	B1	236	A
4	B1	237	C
4	B1	238	C
4	B1	239	C
4	B1	298	G
4	B1	301	A
4	B1	303	C
4	B1	304	C
4	B1	305	U
4	B1	306	C
4	B1	307	G
4	B1	308	G

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Mol	Chain	Res	Type
4	B1	309	G
4	B1	310	C
4	B1	311	C
4	B1	312	G
4	B1	313	A
4	B1	314	U
4	B1	315	C
4	B1	317	C
4	B1	318	A
4	B1	319	C
4	B1	320	G
4	B1	321	C
4	B1	327	G
4	B1	328	U
4	B1	329	G
4	B1	330	G
4	B1	332	G
4	B1	333	G
4	B1	337	C
4	B1	338	G
4	B1	339	A
4	B1	343	A
4	B1	344	U
4	B1	345	U
4	B1	346	C
4	B1	347	G
4	B1	350	C
4	B1	352	U
4	B1	353	C
4	B1	354	U
4	B1	356	C
4	B1	357	C
4	B1	358	C
4	B1	359	U
4	B1	362	C
4	B1	363	A
4	B1	364	A
4	B1	368	U
4	B1	369	C
4	B1	371	A
4	B1	372	U
4	B1	375	U

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Mol	Chain	Res	Type
4	B1	376	A
4	B1	378	U
4	B1	379	C
4	B1	380	G
4	B1	381	C
4	B1	382	C
4	B1	383	G
4	B1	384	U
4	B1	386	C
4	B1	389	A
4	B1	395	G
4	B1	399	C
4	B1	400	C
4	B1	407	G
4	B1	408	A
4	B1	409	C
4	B1	410	G
4	B1	412	G
4	B1	416	U
4	B1	421	G
4	B1	422	U
4	B1	423	U
4	B1	424	C
4	B1	426	A
4	B1	427	U
4	B1	429	C
4	B1	431	G
4	B1	433	A
4	B1	435	A
4	B1	436	G
4	B1	438	G
4	B1	440	G
4	B1	441	C
4	B1	442	C
4	B1	443	U
4	B1	445	A
4	B1	447	A
4	B1	448	A
4	B1	449	A
4	B1	450	C
4	B1	451	G
4	B1	452	G

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Mol	Chain	Res	Type
4	B1	454	U
4	B1	459	C
4	B1	460	A
4	B1	463	C
4	B1	464	A
4	B1	465	A
4	B1	466	G
4	B1	467	G
4	B1	468	A
4	B1	472	C
4	B1	473	A
4	B1	474	G
4	B1	475	C
4	B1	476	A
4	B1	477	G
4	B1	480	G
4	B1	482	G
4	B1	485	A
4	B1	487	U
4	B1	488	U
4	B1	489	A
4	B1	491	C
4	B1	492	C
4	B1	493	A
4	B1	495	U
4	B1	496	C
4	B1	497	C
4	B1	499	G
4	B1	500	A
4	B1	501	C
4	B1	502	C
4	B1	503	C
4	B1	504	G
4	B1	506	G
4	B1	507	G
4	B1	509	G
4	B1	510	G
4	B1	512	A
4	B1	516	A
4	B1	517	C
4	B1	518	G
4	B1	523	A

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Mol	Chain	Res	Type
4	B1	525	A
4	B1	526	A
4	B1	527	C
4	B1	529	A
4	B1	530	U
4	B1	533	A
4	B1	535	G
4	B1	536	A
4	B1	537	C
4	B1	538	U
4	B1	539	C
4	B1	541	U
4	B1	542	U
4	B1	543	C
4	B1	544	G
4	B1	545	A
4	B1	546	G
4	B1	547	G
4	B1	548	C
4	B1	549	C
4	B1	550	C
4	B1	553	U
4	B1	554	A
4	B1	555	A
4	B1	559	G
4	B1	560	A
4	B1	562	U
4	B1	564	A
4	B1	565	G
4	B1	566	U
4	B1	568	C
4	B1	570	C
4	B1	571	U
4	B1	572	U
4	B1	573	U
4	B1	574	A
4	B1	575	A
4	B1	576	A
4	B1	577	U
4	B1	578	C
4	B1	579	C
4	B1	580	U

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Mol	Chain	Res	Type
4	B1	582	U
4	B1	586	G
4	B1	587	A
4	B1	588	G
4	B1	589	G
4	B1	590	A
4	B1	591	U
4	B1	592	C
4	B1	593	C
4	B1	594	A
4	B1	595	U
4	B1	596	U
4	B1	597	G
4	B1	599	A
4	B1	600	G
4	B1	603	C
4	B1	604	A
4	B1	605	A
4	B1	606	G
4	B1	607	U
4	B1	608	C
4	B1	609	U
4	B1	612	U
4	B1	613	G
4	B1	614	C
4	B1	617	G
4	B1	619	A
4	B1	620	G
4	B1	621	C
4	B1	623	G
4	B1	624	C
4	B1	627	U
4	B1	628	A
4	B1	629	A
4	B1	630	U
4	B1	631	U
4	B1	634	A
4	B1	638	C
4	B1	643	A
4	B1	644	G
4	B1	645	C
4	B1	647	U

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Mol	Chain	Res	Type
4	B1	648	A
4	B1	650	A
4	B1	651	U
4	B1	652	U
4	B1	654	A
4	B1	655	A
4	B1	656	G
4	B1	657	U
4	B1	658	U
4	B1	659	G
4	B1	660	C
4	B1	661	U
4	B1	663	C
4	B1	664	A
4	B1	665	G
4	B1	666	U
4	B1	668	A
4	B1	669	A
4	B1	671	A
4	B1	672	A
4	B1	673	G
4	B1	674	C
4	B1	675	U
4	B1	676	C
4	B1	677	G
4	B1	679	A
4	B1	680	G
4	B1	681	U
4	B1	683	G
4	B1	684	G
4	B1	686	U
4	B1	688	U
4	B1	689	U
4	B1	692	G
4	B1	694	G
4	B1	695	C
4	B1	742	U
4	B1	743	U
4	B1	744	G
4	B1	745	C
4	B1	746	C
4	B1	747	U

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Mol	Chain	Res	Type
4	B1	748	C
4	B1	749	U
4	B1	750	C
4	B1	754	G
4	B1	755	C
4	B1	793	G
4	B1	795	A
4	B1	796	G
4	B1	797	C
4	B1	798	G
4	B1	799	U
4	B1	800	U
4	B1	801	U
4	B1	802	A
4	B1	803	C
4	B1	804	U
4	B1	807	G
4	B1	810	A
4	B1	812	A
4	B1	815	U
4	B1	816	A
4	B1	818	A
4	B1	819	G
4	B1	820	U
4	B1	821	G
4	B1	822	U
4	B1	823	U
4	B1	825	A
4	B1	827	A
4	B1	829	C
4	B1	830	A
4	B1	831	G
4	B1	834	C
4	B1	835	C
4	B1	837	A
4	B1	838	G
4	B1	839	C
4	B1	840	C
4	B1	841	G
4	B1	842	C
4	B1	844	U
4	B1	845	G

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Mol	Chain	Res	Type
4	B1	847	A
4	B1	848	U
4	B1	851	C
4	B1	852	G
4	B1	856	C
4	B1	861	A
4	B1	862	A
4	B1	863	U
4	B1	865	A
4	B1	869	A
4	B1	870	A
4	B1	873	G
4	B1	874	G
4	B1	875	A
4	B1	876	C
4	B1	886	A
4	B1	887	U
4	B1	888	U
4	B1	889	U
4	B1	890	U
4	B1	891	G
4	B1	896	U
4	B1	897	U
4	B1	898	U
4	B1	899	U
4	B1	900	C
4	B1	911	C
4	B1	912	C
4	B1	913	A
4	B1	914	U
4	B1	915	G
4	B1	917	U
4	B1	918	U
4	B1	919	A
4	B1	920	A
4	B1	921	G
4	B1	924	G
4	B1	930	C
4	B1	933	G
4	B1	937	C
4	B1	938	A
4	B1	942	G

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Mol	Chain	Res	Type
4	B1	943	U
4	B1	946	U
4	B1	950	C
4	B1	951	C
4	B1	953	C
4	B1	955	A
4	B1	956	G
4	B1	957	A
4	B1	958	G
4	B1	959	G
4	B1	960	U
4	B1	961	G
4	B1	962	A
4	B1	963	A
4	B1	966	U
4	B1	967	C
4	B1	968	U
4	B1	969	U
4	B1	970	G
4	B1	971	G
4	B1	972	A
4	B1	975	G
4	B1	977	C
4	B1	979	C
4	B1	980	A
4	B1	984	C
4	B1	985	G
4	B1	988	C
4	B1	990	A
4	B1	991	G
4	B1	995	G
4	B1	999	G
4	B1	1000	C
4	B1	1004	U
4	B1	1006	C
4	B1	1007	C
4	B1	1009	A
4	B1	1011	A
4	B1	1015	U
4	B1	1016	U
4	B1	1017	U
4	B1	1018	U

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Mol	Chain	Res	Type
4	B1	1019	C
4	B1	1020	A
4	B1	1021	U
4	B1	1022	U
4	B1	1023	A
4	B1	1024	A
4	B1	1029	G
4	B1	1033	G
4	B1	1034	A
4	B1	1035	A
4	B1	1036	A
4	B1	1040	G
4	B1	1044	G
4	B1	1045	U
4	B1	1049	A
4	B1	1050	A
4	B1	1051	G
4	B1	1052	A
4	B1	1053	C
4	B1	1055	A
4	B1	1057	C
4	B1	1058	A
4	B1	1060	A
4	B1	1061	U
4	B1	1062	A
4	B1	1064	C
4	B1	1065	G
4	B1	1067	C
4	B1	1076	G
4	B1	1083	A
4	B1	1084	A
4	B1	1085	C
4	B1	1086	G
4	B1	1087	A
4	B1	1088	U
4	B1	1089	G
4	B1	1090	C
4	B1	1096	G
4	B1	1097	G
4	B1	1101	U
4	B1	1104	G
4	B1	1108	G

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Mol	Chain	Res	Type
4	B1	1109	C
4	B1	1110	G
4	B1	1112	U
4	B1	1115	U
4	B1	1116	C
4	B1	1117	C
4	B1	1118	C
4	B1	1120	U
4	B1	1121	G
4	B1	1124	C
4	B1	1131	G
4	B1	1132	C
4	B1	1133	A
4	B1	1136	U
4	B1	1137	U
4	B1	1139	C
4	B1	1140	G
4	B1	1141	G
4	B1	1143	A
4	B1	1144	A
4	B1	1147	C
4	B1	1148	A
4	B1	1149	A
4	B1	1150	A
4	B1	1151	G
4	B1	1153	C
4	B1	1154	U
4	B1	1155	U
4	B1	1157	G
4	B1	1158	G
4	B1	1161	U
4	B1	1163	C
4	B1	1164	G
4	B1	1165	G
4	B1	1166	G
4	B1	1169	G
4	B1	1170	A
4	B1	1171	G
4	B1	1176	G
4	B1	1182	A
4	B1	1183	A
4	B1	1186	U

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Mol	Chain	Res	Type
4	B1	1189	A
4	B1	1194	A
4	B1	1195	A
4	B1	1198	G
4	B1	1199	A
4	B1	1200	A
4	B1	1203	G
4	B1	1205	C
4	B1	1206	G
4	B1	1207	G
4	B1	1215	C
4	B1	1216	C
4	B1	1217	A
4	B1	1218	C
4	B1	1219	C
4	B1	1221	G
4	B1	1223	A
4	B1	1224	G
4	B1	1235	G
4	B1	1236	G
4	B1	1237	C
4	B1	1242	U
4	B1	1243	U
4	B1	1245	G
4	B1	1246	A
4	B1	1247	C
4	B1	1248	U
4	B1	1249	C
4	B1	1251	A
4	B1	1253	A
4	B1	1254	C
4	B1	1255	G
4	B1	1256	G
4	B1	1257	G
4	B1	1258	A
4	B1	1259	A
4	B1	1260	A
4	B1	1261	C
4	B1	1262	C
4	B1	1263	U
4	B1	1264	C
4	B1	1265	A

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Mol	Chain	Res	Type
4	B1	1266	C
4	B1	1267	C
4	B1	1268	C
4	B1	1269	G
4	B1	1270	G
4	B1	1273	C
4	B1	1274	G
4	B1	1275	G
4	B1	1276	A
4	B1	1277	C
4	B1	1278	A
4	B1	1279	C
4	B1	1282	A
4	B1	1284	A
4	B1	1285	G
4	B1	1286	G
4	B1	1287	A
4	B1	1288	U
4	B1	1289	U
4	B1	1297	U
4	B1	1300	U
4	B1	1301	A
4	B1	1302	G
4	B1	1303	C
4	B1	1307	U
4	B1	1308	U
4	B1	1310	U
4	B1	1311	C
4	B1	1312	G
4	B1	1313	A
4	B1	1314	U
4	B1	1315	U
4	B1	1317	C
4	B1	1318	G
4	B1	1323	U
4	B1	1324	G
4	B1	1325	G
4	B1	1326	U
4	B1	1327	G
4	B1	1330	G
4	B1	1331	C
4	B1	1332	A

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Mol	Chain	Res	Type
4	B1	1333	U
4	B1	1335	G
4	B1	1343	U
4	B1	1344	A
4	B1	1345	G
4	B1	1347	U
4	B1	1349	G
4	B1	1351	G
4	B1	1352	G
4	B1	1354	G
4	B1	1357	A
4	B1	1358	U
4	B1	1359	U
4	B1	1360	U
4	B1	1363	C
4	B1	1364	U
4	B1	1368	U
4	B1	1369	A
4	B1	1371	U
4	B1	1372	U
4	B1	1378	A
4	B1	1381	G
4	B1	1382	A
4	B1	1384	C
4	B1	1389	C
4	B1	1390	U
4	B1	1392	U
4	B1	1393	G
4	B1	1394	G
4	B1	1395	C
4	B1	1397	U
4	B1	1399	C
4	B1	1401	A
4	B1	1402	A
4	B1	1403	C
4	B1	1404	U
4	B1	1405	A
4	B1	1406	G
4	B1	1407	U
4	B1	1408	U
4	B1	1409	A
4	B1	1410	C

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Mol	Chain	Res	Type
4	B1	1411	G
4	B1	1412	C
4	B1	1413	G
4	B1	1415	C
4	B1	1416	C
4	B1	1417	C
4	B1	1419	C
4	B1	1420	G
4	B1	1421	A
4	B1	1422	G
4	B1	1423	C
4	B1	1424	G
4	B1	1425	G
4	B1	1426	U
4	B1	1427	C
4	B1	1428	G
4	B1	1429	G
4	B1	1430	C
4	B1	1431	G
4	B1	1432	U
4	B1	1433	C
4	B1	1434	C
4	B1	1435	C
4	B1	1436	C
4	B1	1437	C
4	B1	1438	A
4	B1	1440	C
4	B1	1441	U
4	B1	1442	U
4	B1	1443	C
4	B1	1444	U
4	B1	1445	U
4	B1	1446	A
4	B1	1447	G
4	B1	1448	A
4	B1	1451	G
4	B1	1453	C
4	B1	1454	A
4	B1	1455	A
4	B1	1456	G
4	B1	1457	U
4	B1	1461	G

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Mol	Chain	Res	Type
4	B1	1462	U
4	B1	1463	U
4	B1	1464	C
4	B1	1465	A
4	B1	1466	G
4	B1	1467	C
4	B1	1471	C
4	B1	1472	C
4	B1	1473	G
4	B1	1475	G
4	B1	1476	A
4	B1	1477	U
4	B1	1478	U
4	B1	1480	A
4	B1	1481	G
4	B1	1482	C
4	B1	1484	A
4	B1	1486	A
4	B1	1489	A
4	B1	1490	G
4	B1	1493	C
4	B1	1494	U
4	B1	1495	G
4	B1	1496	U
4	B1	1498	A
4	B1	1500	G
4	B1	1505	U
4	B1	1507	G
4	B1	1508	A
4	B1	1509	U
4	B1	1510	G
4	B1	1511	U
4	B1	1513	C
4	B1	1514	G
4	B1	1517	G
4	B1	1520	G
4	B1	1521	C
4	B1	1522	A
4	B1	1523	C
4	B1	1528	G
4	B1	1529	C
4	B1	1530	U

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Mol	Chain	Res	Type
4	B1	1531	A
4	B1	1535	U
4	B1	1536	G
4	B1	1539	U
4	B1	1540	G
4	B1	1541	G
4	B1	1542	C
4	B1	1543	U
4	B1	1544	C
4	B1	1545	A
4	B1	1546	G
4	B1	1547	C
4	B1	1548	G
4	B1	1549	U
4	B1	1550	G
4	B1	1551	U
4	B1	1553	C
4	B1	1554	C
4	B1	1555	U
4	B1	1556	A
4	B1	1557	C
4	B1	1558	C
4	B1	1560	U
4	B1	1561	A
4	B1	1563	G
4	B1	1568	C
4	B1	1569	A
4	B1	1570	G
4	B1	1573	G
4	B1	1574	C
4	B1	1577	G
4	B1	1578	U
4	B1	1579	A
4	B1	1580	A
4	B1	1581	C
4	B1	1582	C
4	B1	1585	U
4	B1	1586	U
4	B1	1587	G
4	B1	1588	A
4	B1	1589	A
4	B1	1591	C

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Mol	Chain	Res	Type
4	B1	1595	U
4	B1	1597	C
4	B1	1598	G
4	B1	1599	U
4	B1	1600	G
4	B1	1601	A
4	B1	1602	U
4	B1	1603	G
4	B1	1604	G
4	B1	1605	G
4	B1	1607	A
4	B1	1609	C
4	B1	1610	G
4	B1	1612	G
4	B1	1614	A
4	B1	1615	U
4	B1	1617	G
4	B1	1618	C
4	B1	1620	A
4	B1	1621	U
4	B1	1622	U
4	B1	1623	A
4	B1	1624	U
4	B1	1625	U
4	B1	1627	C
4	B1	1631	U
4	B1	1632	G
4	B1	1635	C
4	B1	1636	G
4	B1	1637	A
4	B1	1638	G
4	B1	1639	G
4	B1	1640	A
4	B1	1644	C
4	B1	1645	C
4	B1	1647	A
4	B1	1648	G
4	B1	1649	U
4	B1	1651	A
4	B1	1652	G
4	B1	1654	G
4	B1	1655	C

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Mol	Chain	Res	Type
4	B1	1656	G
4	B1	1660	C
4	B1	1661	A
4	B1	1662	U
4	B1	1664	A
4	B1	1665	G
4	B1	1666	C
4	B1	1669	G
4	B1	1671	G
4	B1	1672	U
4	B1	1673	U
4	B1	1674	G
4	B1	1677	U
4	B1	1678	A
4	B1	1679	A
4	B1	1680	G
4	B1	1682	C
4	B1	1684	C
4	B1	1685	U
4	B1	1686	G
4	B1	1687	C
4	B1	1688	C
4	B1	1689	C
4	B1	1691	U
4	B1	1692	U
4	B1	1694	U
4	B1	1696	C
4	B1	1697	A
4	B1	1698	C
4	B1	1699	A
4	B1	1700	C
4	B1	1701	C
4	B1	1702	G
4	B1	1703	C
4	B1	1707	U
4	B1	1708	C
4	B1	1709	G
4	B1	1710	C
4	B1	1714	U
4	B1	1719	A
4	B1	1720	U
4	B1	1721	U

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Mol	Chain	Res	Type
4	B1	1722	G
4	B1	1723	G
4	B1	1728	U
4	B1	1729	U
4	B1	1731	A
4	B1	1732	G
4	B1	1735	A
4	B1	1744	G
4	B1	1745	A
4	B1	1747	C
4	B1	1749	G
4	B1	1751	C
4	B1	1752	C
4	B1	1760	G
4	B1	1761	U
4	B1	1764	G
4	B1	1765	C
4	B1	1767	C
4	B1	1768	A
4	B1	1770	G
4	B1	1775	C
4	B1	1781	A
4	B1	1782	G
4	B1	1783	C
4	B1	1788	A
4	B1	1789	G
4	B1	1790	A
4	B1	1792	G
4	B1	1794	C
4	B1	1798	C
4	B1	1800	A
4	B1	1809	A
4	B1	1811	C
4	B1	1813	A
4	B1	1817	G
4	B1	1819	A
4	B1	1823	A
4	B1	1824	A
4	B1	1825	A
4	B1	1826	G
4	B1	1827	U
4	B1	1829	G

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Mol	Chain	Res	Type
4	B1	1831	A
4	B1	1832	A
4	B1	1833	C
4	B1	1834	A
4	B1	1835	A
4	B1	1836	G
4	B1	1837	G
4	B1	1838	U
4	B1	1839	U
4	B1	1841	C
4	B1	1843	G
4	B1	1844	U
4	B1	1846	G
4	B1	1847	G
4	B1	1849	G
4	B1	1850	A
4	B1	1851	A
4	B1	1852	C
4	B1	1856	C
4	B1	1857	G
4	B1	1860	A
4	B1	1861	G
4	B1	1862	G
4	B1	1863	A
4	B1	1864	U
4	B1	1865	C
4	B1	1866	A
4	B1	1867	U
4	B1	1868	U
4	B1	1869	A
81	A2	2	G
81	A2	3	C
81	A2	5	A
81	A2	6	C
81	A2	8	U
81	A2	9	C
81	A2	11	G
81	A2	12	A
81	A2	13	U
81	A2	14	C
81	A2	15	A
81	A2	18	C

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Mol	Chain	Res	Type
81	A2	19	G
81	A2	20	U
81	A2	21	G
81	A2	22	G
81	A2	24	G
81	A2	25	A
81	A2	26	C
81	A2	27	C
81	A2	31	U
81	A2	33	A
81	A2	34	A
81	A2	36	U
81	A2	37	U
81	A2	39	A
81	A2	41	C
81	A2	42	A
81	A2	45	U
81	A2	46	U
81	A2	47	A
81	A2	48	G
81	A2	49	U
81	A2	53	C
81	A2	55	G
81	A2	56	A
81	A2	57	G
81	A2	58	G
81	A2	59	A
81	A2	61	A
81	A2	64	A
81	A2	65	A
81	A2	66	A
81	A2	67	C
81	A2	68	U
81	A2	69	A
81	A2	70	A
81	A2	71	C
81	A2	72	C
81	A2	73	A
81	A2	74	G
81	A2	75	G
81	A2	76	A
81	A2	77	U

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Mol	Chain	Res	Type
81	A2	80	C
81	A2	84	A
81	A2	85	G
81	A2	86	U
81	A2	88	A
81	A2	91	G
81	A2	92	C
81	A2	93	G
81	A2	94	A
81	A2	95	G
81	A2	96	U
81	A2	97	G
81	A2	98	A
81	A2	101	A
81	A2	102	G
81	A2	103	G
81	A2	104	G
81	A2	105	A
81	A2	107	G
81	A2	108	A
81	A2	109	G
81	A2	112	C
81	A2	113	A
81	A2	115	C
81	A2	119	G
81	A2	120	A
81	A2	121	A
81	A2	122	U
81	A2	123	C
81	A2	130	C
81	A2	132	G
81	A2	133	C
81	A2	134	G
81	A2	135	G
81	A2	137	G
81	A2	139	G
81	A2	140	C
81	A2	143	G
81	A2	148	G
81	A2	149	U
81	A2	155	A
81	A2	156	C

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Mol	Chain	Res	Type
81	A2	157	G
81	A2	158	G
81	A2	165	C
81	A2	168	U
81	A2	169	C
81	A2	170	C
81	A2	171	C
81	A2	173	G
81	A2	175	C
81	A2	177	C
81	A2	178	C
81	A2	179	G
81	A2	180	C
81	A2	181	U
81	A2	182	C
81	A2	183	G
81	A2	186	G
81	A2	187	G
81	A2	188	G
81	A2	189	G
81	A2	191	C
81	A2	193	C
81	A2	194	A
81	A2	195	A
81	A2	196	G
81	A2	197	U
81	A2	198	C
81	A2	199	C
81	A2	201	U
81	A2	203	U
81	A2	204	G
81	A2	207	C
81	A2	208	G
81	A2	212	C
81	A2	213	C
81	A2	215	A
81	A2	216	G
81	A2	217	C
81	A2	219	C
81	A2	220	G
81	A2	221	U
81	A2	222	G

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Mol	Chain	Res	Type
81	A2	223	G
81	A2	224	A
81	A2	226	G
81	A2	227	G
81	A2	229	G
81	A2	230	U
81	A2	231	G
81	A2	232	A
81	A2	233	G
81	A2	234	G
81	A2	235	C
81	A2	236	C
81	A2	238	G
81	A2	239	U
81	A2	240	A
81	A2	241	G
81	A2	242	C
81	A2	243	G
81	A2	246	C
81	A2	247	G
81	A2	251	C
81	A2	252	G
81	A2	253	C
81	A2	254	G
81	A2	255	C
81	A2	256	C
81	A2	258	G
81	A2	259	G
81	A2	266	C
81	A2	267	C
81	A2	268	G
81	A2	269	G
81	A2	270	A
81	A2	271	G
81	A2	279	G
81	A2	284	G
81	A2	285	G
81	A2	286	A
81	A2	287	A
81	A2	288	U
81	A2	289	G
81	A2	291	A

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Mol	Chain	Res	Type
81	A2	292	G
81	A2	293	C
81	A2	295	C
81	A2	296	A
81	A2	297	A
81	A2	299	G
81	A2	300	C
81	A2	301	G
81	A2	303	G
81	A2	305	G
81	A2	307	U
81	A2	308	A
81	A2	309	A
81	A2	312	U
81	A2	313	C
81	A2	314	C
81	A2	317	C
81	A2	319	A
81	A2	320	A
81	A2	321	G
81	A2	322	G
81	A2	325	A
81	A2	326	A
81	A2	327	A
81	A2	328	U
81	A2	329	A
81	A2	331	C
81	A2	332	G
81	A2	333	G
81	A2	334	C
81	A2	335	A
81	A2	337	G
81	A2	338	A
81	A2	340	A
81	A2	341	C
81	A2	342	C
81	A2	343	G
81	A2	344	A
81	A2	345	U
81	A2	349	C
81	A2	350	A
81	A2	351	A

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Mol	Chain	Res	Type
81	A2	353	A
81	A2	354	A
81	A2	355	G
81	A2	357	A
81	A2	363	A
81	A2	366	G
81	A2	369	A
81	A2	370	G
81	A2	372	U
81	A2	373	G
81	A2	376	A
81	A2	377	A
81	A2	378	G
81	A2	379	A
81	A2	380	A
81	A2	381	C
81	A2	382	U
81	A2	383	U
81	A2	384	U
81	A2	385	G
81	A2	386	A
81	A2	387	A
81	A2	389	A
81	A2	391	A
81	A2	393	A
81	A2	394	G
81	A2	395	U
81	A2	396	U
81	A2	397	C
81	A2	398	A
81	A2	399	A
81	A2	400	G
81	A2	401	A
81	A2	402	G
81	A2	403	G
81	A2	404	G
81	A2	405	C
81	A2	406	G
81	A2	408	G
81	A2	411	A
81	A2	421	G
81	A2	423	U

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Mol	Chain	Res	Type
81	A2	424	A
81	A2	425	A
81	A2	426	A
81	A2	431	U
81	A2	432	G
81	A2	433	G
81	A2	434	G
81	A2	435	G
81	A2	436	U
81	A2	437	C
81	A2	439	G
81	A2	440	C
81	A2	441	G
81	A2	442	C
81	A2	443	A
81	A2	444	G
81	A2	445	U
81	A2	446	C
81	A2	455	G
81	A2	456	G
81	A2	457	A
81	A2	458	U
81	A2	459	U
81	A2	460	C
81	A2	461	A
81	A2	462	A
81	A2	463	C
81	A2	464	C
81	A2	465	C
81	A2	466	G
81	A2	469	G
81	A2	470	G
81	A2	471	C
81	A2	472	G
81	A2	473	G
81	A2	474	G
81	A2	475	U
81	A2	476	C
81	A2	477	C
81	A2	478	G
81	A2	479	G
81	A2	482	G

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Mol	Chain	Res	Type
81	A2	483	U
81	A2	484	G
81	A2	485	U
81	A2	488	G
81	A2	489	C
81	A2	490	G
81	A2	491	G
81	A2	508	C
81	A2	510	C
81	A2	634	C
81	A2	636	G
81	A2	640	A
81	A2	641	C
81	A2	642	C
81	A2	643	G
81	A2	644	U
81	A2	650	G
81	A2	654	C
81	A2	655	G
81	A2	656	G
81	A2	657	C
81	A2	658	G
81	A2	659	A
81	A2	666	G
81	A2	671	C
81	A2	674	G
81	A2	675	C
81	A2	676	G
81	A2	677	C
81	A2	678	A
81	A2	679	U
81	A2	680	U
81	A2	691	G
81	A2	692	C
81	A2	701	C
81	A2	703	G
81	A2	706	C
81	A2	708	G
81	A2	709	G
81	A2	710	G
81	A2	712	C
81	A2	713	G

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Mol	Chain	Res	Type
81	A2	714	G
81	A2	717	G
81	A2	718	G
81	A2	719	G
81	A2	720	A
81	A2	721	A
81	A2	722	G
81	A2	723	G
81	A2	724	C
81	A2	725	C
81	A2	726	C
81	A2	727	G
81	A2	728	G
81	A2	731	G
81	A2	733	G
81	A2	734	A
81	A2	736	G
81	A2	737	G
81	A2	744	G
81	A2	745	G
81	A2	890	C
81	A2	892	G
81	A2	893	A
81	A2	894	G
81	A2	895	U
81	A2	896	G
81	A2	897	U
81	A2	898	U
81	A2	899	A
81	A2	900	C
81	A2	901	A
81	A2	903	C
81	A2	911	G
81	A2	912	C
81	A2	913	A
81	A2	914	G
81	A2	915	C
81	A2	916	A
81	A2	917	G
81	A2	918	C
81	A2	919	A
81	A2	920	C

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Mol	Chain	Res	Type
81	A2	921	U
81	A2	925	C
81	A2	926	G
81	A2	927	A
81	A2	928	A
81	A2	929	U
81	A2	930	C
81	A2	934	G
81	A2	938	C
81	A2	939	G
81	A2	940	A
81	A2	941	G
81	A2	942	G
81	A2	943	G
81	A2	944	A
81	A2	945	G
81	A2	946	C
81	A2	947	G
81	A2	948	A
81	A2	950	A
81	A2	951	C
81	A2	957	G
81	A2	958	C
81	A2	959	C
81	A2	960	G
81	A2	961	C
81	A2	962	G
81	A2	963	C
81	A2	964	U
81	A2	965	C
81	A2	966	U
81	A2	967	C
81	A2	968	C
81	A2	969	C
81	A2	970	C
81	A2	971	C
81	A2	972	C
81	A2	973	U
81	A2	974	C
81	A2	975	C
81	A2	976	C
81	A2	977	G

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Mol	Chain	Res	Type
81	A2	978	G
81	A2	1047	G
81	A2	1048	G
81	A2	1049	G
81	A2	1050	G
81	A2	1051	C
81	A2	1052	C
81	A2	1053	G
81	A2	1055	G
81	A2	1056	C
81	A2	1058	A
81	A2	1059	C
81	A2	1060	C
81	A2	1062	C
81	A2	1064	C
81	A2	1066	C
81	A2	1077	C
81	A2	1079	C
81	A2	1080	U
81	A2	1081	C
81	A2	1082	U
81	A2	1083	C
81	A2	1084	C
81	A2	1085	C
81	A2	1086	A
81	A2	1087	C
81	A2	1089	C
81	A2	1090	C
81	A2	1096	C
81	A2	1142	G
81	A2	1143	G
81	A2	1144	G
81	A2	1145	G
81	A2	1146	G
81	A2	1147	C
81	A2	1148	G
81	A2	1149	G
81	A2	1159	U
81	A2	1160	C
81	A2	1161	C
81	A2	1162	C
81	A2	1165	G

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Mol	Chain	Res	Type
81	A2	1173	C
81	A2	1174	G
81	A2	1176	G
81	A2	1177	C
81	A2	1178	G
81	A2	1179	G
81	A2	1186	C
81	A2	1187	C
81	A2	1188	G
81	A2	1189	U
81	A2	1190	C
81	A2	1192	G
81	A2	1193	G
81	A2	1194	C
81	A2	1195	C
81	A2	1196	C
81	A2	1197	G
81	A2	1198	G
81	A2	1199	G
81	A2	1201	G
81	A2	1202	A
81	A2	1204	G
81	A2	1205	U
81	A2	1206	U
81	A2	1207	C
81	A2	1208	U
81	A2	1209	C
81	A2	1210	U
81	A2	1212	G
81	A2	1214	G
81	A2	1215	G
81	A2	1216	C
81	A2	1217	C
81	A2	1218	A
81	A2	1219	C
81	A2	1220	G
81	A2	1221	C
81	A2	1223	C
81	A2	1224	G
81	A2	1225	C
81	A2	1242	G
81	A2	1245	G

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Mol	Chain	Res	Type
81	A2	1246	G
81	A2	1247	C
81	A2	1248	G
81	A2	1249	G
81	A2	1250	A
81	A2	1251	G
81	A2	1254	A
81	A2	1255	G
81	A2	1256	C
81	A2	1258	C
81	A2	1259	A
81	A2	1262	G
81	A2	1263	G
81	A2	1264	G
81	A2	1267	G
81	A2	1268	G
81	A2	1273	G
81	A2	1274	A
81	A2	1276	G
81	A2	1277	U
81	A2	1279	G
81	A2	1280	G
81	A2	1281	C
81	A2	1282	U
81	A2	1283	A
81	A2	1284	C
81	A2	1285	C
81	A2	1287	A
81	A2	1289	C
81	A2	1290	C
81	A2	1292	A
81	A2	1293	C
81	A2	1294	C
81	A2	1297	U
81	A2	1299	U
81	A2	1300	U
81	A2	1301	G
81	A2	1302	A
81	A2	1303	A
81	A2	1305	C
81	A2	1306	A
81	A2	1308	G

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Mol	Chain	Res	Type
81	A2	1313	A
81	A2	1314	A
81	A2	1318	G
81	A2	1323	A
81	A2	1324	C
81	A2	1326	C
81	A2	1329	G
81	A2	1332	C
81	A2	1334	A
81	A2	1336	U
81	A2	1337	C
81	A2	1338	G
81	A2	1339	G
81	A2	1340	G
81	A2	1341	G
81	A2	1349	C
81	A2	1350	G
81	A2	1351	A
81	A2	1354	G
81	A2	1356	C
81	A2	1357	G
81	A2	1358	C
81	A2	1359	C
81	A2	1360	G
81	A2	1361	U
81	A2	1366	C
81	A2	1367	A
81	A2	1368	A
81	A2	1372	A
81	A2	1374	G
81	A2	1376	G
81	A2	1377	A
81	A2	1378	A
81	A2	1384	G
81	A2	1388	G
81	A2	1389	C
81	A2	1390	U
81	A2	1392	G
81	A2	1393	C
81	A2	1398	C
81	A2	1399	G
81	A2	1400	A

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Mol	Chain	Res	Type
81	A2	1401	G
81	A2	1402	G
81	A2	1406	G
81	A2	1409	C
81	A2	1410	C
81	A2	1412	G
81	A2	1416	C
81	A2	1417	C
81	A2	1418	U
81	A2	1419	C
81	A2	1420	U
81	A2	1421	C
81	A2	1422	C
81	A2	1423	A
81	A2	1424	G
81	A2	1426	C
81	A2	1428	G
81	A2	1433	G
81	A2	1434	G
81	A2	1436	G
81	A2	1438	A
81	A2	1444	G
81	A2	1445	G
81	A2	1446	C
81	A2	1449	G
81	A2	1452	U
81	A2	1454	G
81	A2	1455	C
81	A2	1459	C
81	A2	1460	C
81	A2	1461	G
81	A2	1463	G
81	A2	1464	C
81	A2	1465	C
81	A2	1466	G
81	A2	1467	G
81	A2	1468	G
81	A2	1471	G
81	A2	1476	A
81	A2	1477	G
81	A2	1478	C
81	A2	1479	A

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Mol	Chain	Res	Type
81	A2	1480	C
81	A2	1481	G
81	A2	1482	A
81	A2	1483	G
81	A2	1484	C
81	A2	1487	A
81	A2	1488	C
81	A2	1493	U
81	A2	1495	G
81	A2	1498	C
81	A2	1499	C
81	A2	1500	C
81	A2	1502	A
81	A2	1503	A
81	A2	1504	A
81	A2	1505	G
81	A2	1513	A
81	A2	1518	G
81	A2	1520	C
81	A2	1521	U
81	A2	1522	G
81	A2	1523	G
81	A2	1524	G
81	A2	1526	A
81	A2	1530	C
81	A2	1531	G
81	A2	1532	A
81	A2	1533	A
81	A2	1537	A
81	A2	1540	G
81	A2	1541	G
81	A2	1542	A
81	A2	1543	A
81	A2	1544	A
81	A2	1545	C
81	A2	1550	G
81	A2	1553	G
81	A2	1554	A
81	A2	1555	G
81	A2	1556	G
81	A2	1557	U
81	A2	1558	C

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Mol	Chain	Res	Type
81	A2	1561	U
81	A2	1567	U
81	A2	1570	U
81	A2	1571	G
81	A2	1572	A
81	A2	1573	C
81	A2	1574	G
81	A2	1575	U
81	A2	1576	G
81	A2	1580	A
81	A2	1582	C
81	A2	1583	G
81	A2	1585	U
81	A2	1590	C
81	A2	1591	G
81	A2	1593	C
81	A2	1595	U
81	A2	1596	G
81	A2	1597	G
81	A2	1599	U
81	A2	1600	A
81	A2	1603	G
81	A2	1604	G
81	A2	1607	C
81	A2	1609	A
81	A2	1610	A
81	A2	1611	A
81	A2	1612	G
81	A2	1613	A
81	A2	1614	C
81	A2	1615	U
81	A2	1616	A
81	A2	1617	A
81	A2	1620	G
81	A2	1623	C
81	A2	1629	A
81	A2	1630	G
81	A2	1631	U
81	A2	1633	G
81	A2	1635	U
81	A2	1637	G
81	A2	1639	U

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Mol	Chain	Res	Type
81	A2	1640	C
81	A2	1644	C
81	A2	1648	A
81	A2	1649	G
81	A2	1650	U
81	A2	1651	U
81	A2	1653	C
81	A2	1654	C
81	A2	1655	C
81	A2	1656	U
81	A2	1657	C
81	A2	1658	A
81	A2	1659	G
81	A2	1660	G
81	A2	1661	A
81	A2	1663	A
81	A2	1666	U
81	A2	1667	G
81	A2	1669	C
81	A2	1671	C
81	A2	1672	U
81	A2	1673	C
81	A2	1701	C
81	A2	1703	G
81	A2	1704	U
81	A2	1706	U
81	A2	1709	U
81	A2	1710	C
81	A2	1711	C
81	A2	1712	G
81	A2	1713	G
81	A2	1714	U
81	A2	1715	A
81	A2	1719	C
81	A2	1721	A
81	A2	1725	A
81	A2	1726	U
81	A2	1727	U
81	A2	1729	G
81	A2	1730	A
81	A2	1732	G
81	A2	1733	U

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Mol	Chain	Res	Type
81	A2	1734	C
81	A2	1736	U
81	A2	1737	G
81	A2	1743	G
81	A2	1744	A
81	A2	1745	A
81	A2	1746	A
81	A2	1747	C
81	A2	1749	A
81	A2	1752	U
81	A2	1754	A
81	A2	1755	A
81	A2	1757	C
81	A2	1758	U
81	A2	1759	A
81	A2	1760	U
81	A2	1761	U
81	A2	1766	A
81	A2	1768	C
81	A2	1772	A
81	A2	1773	A
81	A2	1775	U
81	A2	1779	U
81	A2	1780	A
81	A2	1781	A
81	A2	1783	A
81	A2	1784	A
81	A2	1785	G
81	A2	1786	C
81	A2	1787	C
81	A2	1789	G
81	A2	1790	G
81	A2	1792	U
81	A2	1793	C
81	A2	1794	G
81	A2	1795	C
81	A2	1796	U
81	A2	1797	G
81	A2	1798	G
81	A2	1799	C
81	A2	1800	G
81	A2	1801	U

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Mol	Chain	Res	Type
81	A2	1802	G
81	A2	1804	A
81	A2	1805	G
81	A2	1806	C
81	A2	1809	G
81	A2	1810	G
81	A2	1811	G
81	A2	1813	G
81	A2	1815	A
81	A2	1816	A
81	A2	1818	G
81	A2	1820	G
81	A2	1821	A
81	A2	1822	G
81	A2	1825	C
81	A2	1829	G
81	A2	1832	G
81	A2	1833	G
81	A2	1835	C
81	A2	1836	A
81	A2	1839	U
81	A2	1840	U
81	A2	1844	U
81	A2	1845	A
81	A2	1846	A
81	A2	1847	G
81	A2	1848	C
81	A2	1849	A
81	A2	1852	A
81	A2	1853	C
81	A2	1855	G
81	A2	1856	G
81	A2	1857	C
81	A2	1859	C
81	A2	1860	U
81	A2	1861	G
81	A2	1865	G
81	A2	1867	U
81	A2	1868	G
81	A2	1869	A
81	A2	1870	A
81	A2	1871	C

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Mol	Chain	Res	Type
81	A2	1873	G
81	A2	1874	A
81	A2	1875	A
81	A2	1876	C
81	A2	1877	G
81	A2	1879	C
81	A2	1880	G
81	A2	1881	G
81	A2	1883	U
81	A2	1884	U
81	A2	1885	A
81	A2	1886	A
81	A2	1891	C
81	A2	1893	C
81	A2	1894	G
81	A2	1895	A
81	A2	1896	U
81	A2	1897	G
81	A2	1898	C
81	A2	1899	C
81	A2	1900	G
81	A2	1901	A
81	A2	1903	G
81	A2	1911	G
81	A2	1912	A
81	A2	1917	A
81	A2	1918	G
81	A2	1919	A
81	A2	1920	A
81	A2	1924	G
81	A2	1925	U
81	A2	1926	G
81	A2	1929	G
81	A2	1930	G
81	A2	1931	U
81	A2	1935	U
81	A2	1936	A
81	A2	1939	G
81	A2	1941	C
81	A2	1942	A
81	A2	2000	C
81	A2	2001	C

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Mol	Chain	Res	Type
81	A2	2002	G
81	A2	2004	A
81	A2	2005	U
81	A2	2006	C
81	A2	2007	A
81	A2	2009	C
81	A2	2010	U
81	A2	2011	A
81	A2	2012	G
81	A2	2013	C
81	A2	2014	C
81	A2	2016	U
81	A2	2020	A
81	A2	2022	U
81	A2	2023	G
81	A2	2024	G
81	A2	2025	A
81	A2	2026	U
81	A2	2027	G
81	A2	2029	C
81	A2	2030	G
81	A2	2031	C
81	A2	2032	U
81	A2	2033	G
81	A2	2035	A
81	A2	2037	C
81	A2	2039	U
81	A2	2040	C
81	A2	2041	G
81	A2	2042	G
81	A2	2043	G
81	A2	2044	C
81	A2	2046	C
81	A2	2047	A
81	A2	2048	U
81	A2	2049	A
81	A2	2050	C
81	A2	2052	C
81	A2	2056	C
81	A2	2057	G
81	A2	2061	C
81	A2	2062	C

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Mol	Chain	Res	Type
81	A2	2064	G
81	A2	2251	G
81	A2	2254	G
81	A2	2255	A
81	A2	2257	U
81	A2	2258	A
81	A2	2259	G
81	A2	2260	G
81	A2	2263	G
81	A2	2264	G
81	A2	2265	C
81	A2	2266	C
81	A2	2267	G
81	A2	2268	C
81	A2	2269	U
81	A2	2270	G
81	A2	2271	C
81	A2	2273	G
81	A2	2274	U
81	A2	2275	G
81	A2	2276	A
81	A2	2277	G
81	A2	2279	C
81	A2	2280	U
81	A2	2282	G
81	A2	2283	A
81	A2	2284	A
81	A2	2288	U
81	A2	2289	A
81	A2	2290	G
81	A2	2293	C
81	A2	2294	G
81	A2	2295	C
81	A2	2296	G
81	A2	2297	G
81	A2	2298	G
81	A2	2301	C
81	A2	2302	G
81	A2	2304	G
81	A2	2306	G
81	A2	2307	G
81	A2	2308	A

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Mol	Chain	Res	Type
81	A2	2309	G
81	A2	2310	G
81	A2	2311	C
81	A2	2315	C
81	A2	2320	G
81	A2	2321	U
81	A2	2322	G
81	A2	2325	G
81	A2	2326	A
81	A2	2328	C
81	A2	2329	U
81	A2	2331	G
81	A2	2332	G
81	A2	2333	U
81	A2	2334	G
81	A2	2337	A
81	A2	2344	A
81	A2	2345	A
81	A2	2346	U
81	A2	2347	A
81	A2	2348	U
81	A2	2351	A
81	A2	2353	A
81	A2	2354	C
81	A2	2355	G
81	A2	2358	A
81	A2	2359	A
81	A2	2360	C
81	A2	2361	U
81	A2	2362	U
81	A2	2367	G
81	A2	2368	G
81	A2	2369	C
81	A2	2370	C
81	A2	2371	G
81	A2	2372	A
81	A2	2373	A
81	A2	2374	G
81	A2	2376	G
81	A2	2379	G
81	A2	2380	A
81	A2	2381	A

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Mol	Chain	Res	Type
81	A2	2384	G
81	A2	2385	U
81	A2	2386	U
81	A2	2387	C
81	A2	2388	C
81	A2	2392	U
81	A2	2393	G
81	A2	2394	A
81	A2	2395	A
81	A2	2396	C
81	A2	2397	A
81	A2	2398	G
81	A2	2399	C
81	A2	2400	A
81	A2	2402	U
81	A2	2403	U
81	A2	2405	A
81	A2	2407	C
81	A2	2411	G
81	A2	2412	G
81	A2	2414	C
81	A2	2415	A
81	A2	2416	G
81	A2	2418	C
81	A2	2421	U
81	A2	2424	U
81	A2	2426	A
81	A2	2427	G
81	A2	2429	G
81	A2	2430	A
81	A2	2431	U
81	A2	2433	G
81	A2	2435	C
81	A2	2436	G
81	A2	2437	A
81	A2	2440	G
81	A2	2442	C
81	A2	2443	G
81	A2	2444	U
81	A2	2445	U
81	A2	2446	C
81	A2	2447	C

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Mol	Chain	Res	Type
81	A2	2448	G
81	A2	2449	A
81	A2	2450	A
81	A2	2451	G
81	A2	2452	G
81	A2	2453	G
81	A2	2455	C
81	A2	2456	G
81	A2	2457	G
81	A2	2458	G
81	A2	2462	U
81	A2	2463	G
81	A2	2464	G
81	A2	2465	C
81	A2	2466	C
81	A2	2467	U
81	A2	2468	C
81	A2	2469	C
81	A2	2477	U
81	A2	2479	G
81	A2	2480	G
81	A2	2481	C
81	A2	2482	C
81	A2	2483	G
81	A2	2484	A
81	A2	2486	C
81	A2	2490	A
81	A2	2492	G
81	A2	2494	A
81	A2	2496	U
81	A2	2499	G
81	A2	2502	U
81	A2	2503	C
81	A2	2504	A
81	A2	2507	U
81	A2	2508	C
81	A2	2509	C
81	A2	2510	C
81	A2	2511	C
81	A2	2519	G
81	A2	2521	G
81	A2	2524	G

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Mol	Chain	Res	Type
81	A2	2525	C
81	A2	2526	G
81	A2	2527	G
81	A2	2528	A
81	A2	2529	G
81	A2	2531	U
81	A2	2532	G
81	A2	2537	C
81	A2	2538	C
81	A2	2544	G
81	A2	2548	C
81	A2	2549	C
81	A2	2550	A
81	A2	2552	U
81	A2	2553	G
81	A2	2554	C
81	A2	2556	G
81	A2	2557	U
81	A2	2559	A
81	A2	2560	C
81	A2	2561	G
81	A2	2562	C
81	A2	2563	G
81	A2	2564	A
81	A2	2565	C
81	A2	2566	C
81	A2	2567	G
81	A2	2574	G
81	A2	2575	A
81	A2	2576	G
81	A2	2577	A
81	A2	2578	A
81	A2	2579	G
81	A2	2582	G
81	A2	2587	G
81	A2	2588	A
81	A2	2589	G
81	A2	2590	C
81	A2	2592	C
81	A2	2593	C
81	A2	2594	G
81	A2	2596	G

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Mol	Chain	Res	Type
81	A2	2597	G
81	A2	2598	A
81	A2	2599	G
81	A2	2601	G
81	A2	2602	U
81	A2	2603	U
81	A2	2604	C
81	A2	2607	U
81	A2	2608	U
81	A2	2609	U
81	A2	2613	U
81	A2	2624	A
81	A2	2625	G
81	A2	2627	G
81	A2	2628	C
81	A2	2629	G
81	A2	2630	C
81	A2	2631	C
81	A2	2632	C
81	A2	2633	U
81	A2	2635	G
81	A2	2636	A
81	A2	2639	G
81	A2	2641	G
81	A2	2642	U
81	A2	2646	C
81	A2	2647	C
81	A2	2648	C
81	A2	2651	A
81	A2	2652	G
81	A2	2653	A
81	A2	2654	G
81	A2	2658	G
81	A2	2661	C
81	A2	2663	G
81	A2	2664	U
81	A2	2665	G
81	A2	2666	C
81	A2	2669	U
81	A2	2671	G
81	A2	2672	A
81	A2	2673	A

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Mol	Chain	Res	Type
81	A2	2674	A
81	A2	2676	C
81	A2	2677	G
81	A2	2678	U
81	A2	2682	G
81	A2	2683	G
81	A2	2684	U
81	A2	2685	U
81	A2	2686	C
81	A2	2687	C
81	A2	2689	G
81	A2	2692	G
81	A2	2696	C
81	A2	2698	G
81	A2	2700	U
81	A2	2701	G
81	A2	2702	A
81	A2	2703	G
81	A2	2704	C
81	A2	2705	U
81	A2	2706	C
81	A2	2707	U
81	A2	2709	G
81	A2	2710	C
81	A2	2711	U
81	A2	2715	C
81	A2	2716	C
81	A2	2717	U
81	A2	2718	U
81	A2	2719	G
81	A2	2720	A
81	A2	2729	G
81	A2	2731	G
81	A2	2732	A
81	A2	2733	G
81	A2	2734	A
81	A2	2735	G
81	A2	2736	G
81	A2	2739	G
81	A2	2740	U
81	A2	2741	A
81	A2	2742	A

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Mol	Chain	Res	Type
81	A2	2745	C
81	A2	2746	U
81	A2	2750	G
81	A2	2751	C
81	A2	2752	C
81	A2	2755	G
81	A2	2759	U
81	A2	2761	C
81	A2	2762	C
81	A2	2764	A
81	A2	2765	U
81	A2	2766	A
81	A2	2767	U
81	A2	2771	C
81	A2	2772	A
81	A2	2774	C
81	A2	2775	A
81	A2	2778	U
81	A2	2780	U
81	A2	2782	C
81	A2	2783	A
81	A2	2789	A
81	A2	2791	C
81	A2	2792	A
81	A2	2794	C
81	A2	2796	U
81	A2	2801	C
81	A2	2802	A
81	A2	2803	U
81	A2	2804	G
81	A2	2805	U
81	A2	2806	U
81	A2	2807	G
81	A2	2810	A
81	A2	2811	C
81	A2	2812	A
81	A2	2815	G
81	A2	2817	A
81	A2	2818	G
81	A2	2823	G
81	A2	2826	A
81	A2	2827	A

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Mol	Chain	Res	Type
81	A2	2828	G
81	A2	2831	G
81	A2	2832	G
81	A2	2833	C
81	A2	2835	A
81	A2	2837	C
81	A2	2839	G
81	A2	2840	G
81	A2	2843	C
81	A2	2844	C
81	A2	2845	G
81	A2	2846	U
81	A2	2847	A
81	A2	2848	A
81	A2	2852	C
81	A2	2853	G
81	A2	2854	G
81	A2	2857	U
81	A2	2858	A
81	A2	2860	G
81	A2	2861	G
81	A2	2863	U
81	A2	2864	U
81	A2	2867	C
81	A2	2868	U
81	A2	2869	C
81	A2	2871	A
81	A2	2873	G
81	A2	2877	U
81	A2	2878	G
81	A2	2879	G
81	A2	3567	C
81	A2	3568	A
81	A2	3570	C
81	A2	3574	C
81	A2	3575	U
81	A2	3578	G
81	A2	3579	A
81	A2	3583	G
81	A2	3584	G
81	A2	3585	U
81	A2	3586	G

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Mol	Chain	Res	Type
81	A2	3587	C
81	A2	3588	G
81	A2	3590	A
81	A2	3594	G
81	A2	3595	G
81	A2	3597	G
81	A2	3599	A
81	A2	3600	U
81	A2	3602	C
81	A2	3603	G
81	A2	3604	A
81	A2	3605	C
81	A2	3610	U
81	A2	3611	A
81	A2	3612	A
81	A2	3613	U
81	A2	3617	A
81	A2	3618	A
81	A2	3619	C
81	A2	3622	A
81	A2	3624	C
81	A2	3626	U
81	A2	3627	C
81	A2	3631	A
81	A2	3634	G
81	A2	3635	C
81	A2	3636	C
81	A2	3641	G
81	A2	3642	C
81	A2	3643	G
81	A2	3646	U
81	A2	3649	U
81	A2	3650	G
81	A2	3651	A
81	A2	3652	C
81	A2	3653	G
81	A2	3654	C
81	A2	3655	G
81	A2	3657	U
81	A2	3658	G
81	A2	3661	A
81	A2	3662	U

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Mol	Chain	Res	Type
81	A2	3664	U
81	A2	3665	C
81	A2	3666	U
81	A2	3667	G
81	A2	3668	C
81	A2	3675	C
81	A2	3676	U
81	A2	3678	U
81	A2	3679	G
81	A2	3680	A
81	A2	3681	A
81	A2	3682	U
81	A2	3683	G
81	A2	3684	U
81	A2	3685	C
81	A2	3686	A
81	A2	3693	A
81	A2	3695	A
81	A2	3696	A
81	A2	3697	A
81	A2	3700	C
81	A2	3706	A
81	A2	3710	C
81	A2	3717	A
81	A2	3720	G
81	A2	3722	G
81	A2	3723	G
81	A2	3724	G
81	A2	3725	A
81	A2	3726	G
81	A2	3727	U
81	A2	3728	A
81	A2	3729	A
81	A2	3730	C
81	A2	3732	A
81	A2	3733	U
81	A2	3734	G
81	A2	3736	C
81	A2	3737	U
81	A2	3741	U
81	A2	3743	A
81	A2	3744	A

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Mol	Chain	Res	Type
81	A2	3746	G
81	A2	3749	G
81	A2	3750	C
81	A2	3751	C
81	A2	3753	A
81	A2	3754	A
81	A2	3755	U
81	A2	3756	G
81	A2	3759	U
81	A2	3761	G
81	A2	3764	A
81	A2	3765	U
81	A2	3767	U
81	A2	3768	A
81	A2	3769	A
81	A2	3770	U
81	A2	3771	U
81	A2	3772	A
81	A2	3776	A
81	A2	3778	G
81	A2	3779	C
81	A2	3780	G
81	A2	3781	C
81	A2	3782	A
81	A2	3786	A
81	A2	3787	U
81	A2	3788	G
81	A2	3792	G
81	A2	3793	A
81	A2	3797	A
81	A2	3798	G
81	A2	3799	A
81	A2	3800	U
81	A2	3801	U
81	A2	3802	C
81	A2	3803	C
81	A2	3807	U
81	A2	3808	G
81	A2	3809	U
81	A2	3814	A
81	A2	3815	C
81	A2	3819	C

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Mol	Chain	Res	Type
81	A2	3826	G
81	A2	3830	A
81	A2	3833	C
81	A2	3834	A
81	A2	3836	A
81	A2	3837	G
81	A2	3838	C
81	A2	3845	A
81	A2	3846	A
81	A2	3847	C
81	A2	3848	G
81	A2	3850	G
81	A2	3852	U
81	A2	3854	G
81	A2	3856	C
81	A2	3857	G
81	A2	3858	G
81	A2	3859	A
81	A2	3863	A
81	A2	3866	G
81	A2	3867	G
81	A2	3870	A
81	A2	3871	A
81	A2	3872	A
81	A2	3873	G
81	A2	3874	A
81	A2	3875	A
81	A2	3876	G
81	A2	3877	A
81	A2	3879	C
81	A2	3883	U
81	A2	3884	U
81	A2	3885	G
81	A2	3887	G
81	A2	3888	C
81	A2	3890	U
81	A2	3891	G
81	A2	3894	U
81	A2	3895	C
81	A2	3897	A
81	A2	3898	G
81	A2	3905	A

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Mol	Chain	Res	Type
81	A2	3907	G
81	A2	3908	G
81	A2	3910	G
81	A2	3912	A
81	A2	3913	G
81	A2	3919	U
81	A2	3922	G
81	A2	3923	A
81	A2	3924	G
81	A2	3925	G
81	A2	3926	U
81	A2	3927	G
81	A2	3931	A
81	A2	3933	U
81	A2	3934	A
81	A2	3936	G
81	A2	3938	G
81	A2	3941	A
81	A2	3942	G
81	A2	3943	G
81	A2	3945	C
81	A2	4007	G
81	A2	4008	C
81	A2	4009	C
81	A2	4011	G
81	A2	4012	U
81	A2	4015	A
81	A2	4018	A
81	A2	4024	A
81	A2	4025	C
81	A2	4026	U
81	A2	4027	C
81	A2	4029	G
81	A2	4032	C
81	A2	4033	G
81	A2	4041	A
81	A2	4044	G
81	A2	4045	A
81	A2	4046	C
81	A2	4047	C
81	A2	4050	G
81	A2	4051	U

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Mol	Chain	Res	Type
81	A2	4052	G
81	A2	4053	A
81	A2	4054	G
81	A2	4055	G
81	A2	4056	C
81	A2	4057	G
81	A2	4059	G
81	A2	4060	G
81	A2	4063	G
81	A2	4066	A
81	A2	4068	C
81	A2	4069	C
81	A2	4070	C
81	A2	4071	G
81	A2	4073	G
81	A2	4074	G
81	A2	4079	C
81	A2	4080	U
81	A2	4081	C
81	A2	4082	G
81	A2	4083	C
81	A2	4084	U
81	A2	4085	U
81	A2	4086	C
81	A2	4087	U
81	A2	4089	G
81	A2	4090	C
81	A2	4092	C
81	A2	4093	C
81	A2	4094	A
81	A2	4101	C
81	A2	4103	C
81	A2	4105	C
81	A2	4106	G
81	A2	4108	C
81	A2	4109	C
81	A2	4111	G
81	A2	4117	A
81	A2	4118	C
81	A2	4119	C
81	A2	4120	C
81	A2	4121	G

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Mol	Chain	Res	Type
81	A2	4122	C
81	A2	4123	U
81	A2	4124	C
81	A2	4126	G
81	A2	4129	G
81	A2	4130	A
81	A2	4131	C
81	A2	4135	G
81	A2	4137	C
81	A2	4138	A
81	A2	4142	G
81	A2	4143	G
81	A2	4144	G
81	A2	4145	G
81	A2	4151	G
81	A2	4155	G
81	A2	4156	G
81	A2	4159	C
81	A2	4163	A
81	A2	4164	C
81	A2	4165	A
81	A2	4166	C
81	A2	4168	U
81	A2	4174	A
81	A2	4175	C
81	A2	4176	G
81	A2	4177	G
81	A2	4179	A
81	A2	4180	A
81	A2	4181	C
81	A2	4182	G
81	A2	4185	G
81	A2	4186	G
81	A2	4187	U
81	A2	4188	G
81	A2	4189	U
81	A2	4190	C
81	A2	4191	C
81	A2	4192	U
81	A2	4193	A
81	A2	4194	A
81	A2	4195	G

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Mol	Chain	Res	Type
81	A2	4199	A
81	A2	4200	G
81	A2	4201	C
81	A2	4210	G
81	A2	4211	A
81	A2	4212	C
81	A2	4214	G
81	A2	4215	A
81	A2	4226	G
81	A2	4227	G
81	A2	4231	A
81	A2	4232	G
81	A2	4233	A
81	A2	4234	A
81	A2	4236	G
81	A2	4237	G
81	A2	4239	A
81	A2	4240	A
81	A2	4241	A
81	A2	4242	A
81	A2	4245	U
81	A2	4247	G
81	A2	4250	U
81	A2	4251	G
81	A2	4252	A
81	A2	4253	U
81	A2	4254	C
81	A2	4255	U
81	A2	4256	U
81	A2	4261	U
81	A2	4262	U
81	A2	4263	C
81	A2	4264	A
81	A2	4265	G
81	A2	4266	U
81	A2	4267	A
81	A2	4269	G
81	A2	4270	A
81	A2	4271	A
81	A2	4273	A
81	A2	4276	G
81	A2	4277	A

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Mol	Chain	Res	Type
81	A2	4279	C
81	A2	4280	G
81	A2	4283	A
81	A2	4286	G
81	A2	4287	C
81	A2	4288	G
81	A2	4289	G
81	A2	4290	G
81	A2	4291	G
81	A2	4292	C
81	A2	4293	C
81	A2	4297	C
81	A2	4298	G
81	A2	4301	C
81	A2	4303	U
81	A2	4304	U
81	A2	4305	C
81	A2	4306	U
81	A2	4308	A
81	A2	4309	C
81	A2	4313	U
81	A2	4314	U
81	A2	4315	G
81	A2	4316	G
81	A2	4317	G
81	A2	4319	U
81	A2	4321	U
81	A2	4324	G
81	A2	4326	A
81	A2	4327	G
81	A2	4328	G
81	A2	4329	A
81	A2	4331	G
81	A2	4333	G
81	A2	4335	C
81	A2	4336	A
81	A2	4337	G
81	A2	4338	A
81	A2	4339	A
81	A2	4341	A
81	A2	4342	G
81	A2	4345	A

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Mol	Chain	Res	Type
81	A2	4346	C
81	A2	4347	C
81	A2	4348	A
81	A2	4350	A
81	A2	4353	G
81	A2	4354	A
81	A2	4355	U
81	A2	4357	A
81	A2	4359	U
81	A2	4362	C
81	A2	4363	U
81	A2	4366	U
81	A2	4367	G
81	A2	4370	G
81	A2	4372	C
81	A2	4373	C
81	A2	4375	A
81	A2	4376	G
81	A2	4377	C
81	A2	4379	U
81	A2	4380	U
81	A2	4382	A
81	A2	4383	U
81	A2	4384	A
81	A2	4386	C
81	A2	4387	G
81	A2	4388	A
81	A2	4389	C
81	A2	4390	G
81	A2	4394	C
81	A2	4396	U
81	A2	4397	U
81	A2	4401	A
81	A2	4404	C
81	A2	4406	U
81	A2	4407	C
81	A2	4408	G
81	A2	4409	A
81	A2	4410	U
81	A2	4411	G
81	A2	4412	U
81	A2	4413	C

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Mol	Chain	Res	Type
81	A2	4415	G
81	A2	4416	C
81	A2	4420	U
81	A2	4421	C
81	A2	4422	C
81	A2	4423	U
81	A2	4424	A
81	A2	4425	U
81	A2	4426	C
81	A2	4431	U
81	A2	4433	A
81	A2	4434	A
81	A2	4435	G
81	A2	4437	A
81	A2	4438	G
81	A2	4448	A
81	A2	4449	G
81	A2	4451	G
81	A2	4452	U
81	A2	4453	U
81	A2	4454	G
81	A2	4455	G
81	A2	4456	A
81	A2	4457	U
81	A2	4458	U
81	A2	4459	G
81	A2	4460	U
81	A2	4461	U
81	A2	4465	C
81	A2	4466	C
81	A2	4470	A
81	A2	4472	U
81	A2	4473	A
81	A2	4474	G
81	A2	4477	A
81	A2	4478	A
81	A2	4479	C
81	A2	4480	G
81	A2	4482	G
81	A2	4483	A
81	A2	4484	G
81	A2	4488	G

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Mol	Chain	Res	Type
81	A2	4489	G
81	A2	4491	U
81	A2	4492	U
81	A2	4494	G
81	A2	4498	G
81	A2	4499	U
81	A2	4500	C
81	A2	4502	U
81	A2	4503	G
81	A2	4505	G
81	A2	4507	C
81	A2	4508	A
81	A2	4509	G
81	A2	4510	G
81	A2	4512	U
81	A2	4515	U
81	A2	4516	U
81	A2	4519	A
81	A2	4520	C
81	A2	4521	C
81	A2	4522	C
81	A2	4525	C
81	A2	4526	U
81	A2	4527	G
81	A2	4528	A
81	A2	4529	U
81	A2	4530	G
81	A2	4532	U
81	A2	4533	G
81	A2	4534	U
81	A2	4535	G
81	A2	4536	U
81	A2	4538	G
81	A2	4539	U
81	A2	4541	G
81	A2	4543	C
81	A2	4544	A
81	A2	4545	U
81	A2	4549	A
81	A2	4550	A
81	A2	4551	U
81	A2	4552	C

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Mol	Chain	Res	Type
81	A2	4557	U
81	A2	4558	C
81	A2	4560	G
81	A2	4561	U
81	A2	4562	A
81	A2	4563	C
81	A2	4566	G
81	A2	4567	A
81	A2	4568	G
81	A2	4569	G
81	A2	4570	A
81	A2	4577	G
81	A2	4578	G
81	A2	4579	U
81	A2	4580	U
81	A2	4583	G
81	A2	4584	A
81	A2	4586	A
81	A2	4587	U
81	A2	4592	U
81	A2	4594	U
81	A2	4595	A
81	A2	4596	U
81	A2	4597	G
81	A2	4598	U
81	A2	4599	G
81	A2	4600	C
81	A2	4601	U
81	A2	4602	U
81	A2	4604	G
81	A2	4609	G
81	A2	4610	G
81	A2	4612	G
81	A2	4613	C
81	A2	4615	A
81	A2	4616	A
81	A2	4617	U
81	A2	4618	G
81	A2	4621	G
81	A2	4622	C
81	A2	4628	U
81	A2	4629	A

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Mol	Chain	Res	Type
81	A2	4630	C
81	A2	4632	A
81	A2	4636	G
81	A2	4637	U
81	A2	4638	G
81	A2	4639	G
81	A2	4640	G
81	A2	4641	A
81	A2	4642	U
81	A2	4643	U
81	A2	4646	G
81	A2	4651	A
81	A2	4654	G
81	A2	4655	C
81	A2	4657	U
81	A2	4658	C
81	A2	4659	U
81	A2	4660	A
81	A2	4661	A
81	A2	4664	C
81	A2	4665	A
81	A2	4668	A
81	A2	4669	U
81	A2	4671	C
81	A2	4672	C
81	A2	4675	C
81	A2	4676	C
81	A2	4678	G
81	A2	4679	G
81	A2	4680	C
81	A2	4681	G
81	A2	4682	A
81	A2	4684	C
81	A2	4688	A
81	A2	4689	C
81	A2	4690	G
81	A2	4691	G
81	A2	4692	C
81	A2	4693	A
81	A2	4694	G
81	A2	4696	G
81	A2	4698	C

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Mol	Chain	Res	Type
81	A2	4699	G
81	A2	4700	C
81	A2	4701	G
81	A2	4706	C
81	A2	4710	G
81	A2	4711	U
81	A2	4712	U
81	A2	4713	G
81	A2	4714	G
81	A2	4716	C
81	A2	4718	C
81	A2	4719	G
81	A2	4720	G
81	A2	4721	A
81	A2	4723	A
81	A2	4724	G
81	A2	4725	C
81	A2	4726	C
81	A2	4733	C
81	A2	4734	C
81	A2	4735	G
81	A2	4736	C
81	A2	4739	G
81	A2	4740	U
81	A2	4741	C
81	A2	4742	C
81	A2	4746	C
81	A2	4803	C
81	A2	4804	G
81	A2	4807	C
81	A2	4808	C
81	A2	4809	G
81	A2	4812	A
81	A2	4813	C
81	A2	4814	C
81	A2	4815	G
81	A2	4816	G
81	A2	4822	G
81	A2	4824	U
81	A2	4825	G
81	A2	4826	C
81	A2	4827	G

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Mol	Chain	Res	Type
81	A2	4828	G
81	A2	4829	A
81	A2	4831	U
81	A2	4832	G
81	A2	4834	C
81	A2	4836	U
81	A2	4838	C
81	A2	4839	G
81	A2	4840	U
81	A2	4844	G
81	A2	4847	A
81	A2	4848	A
81	A2	4849	A
81	A2	4850	C
81	A2	4851	G
81	A2	4852	G
81	A2	4853	G
81	A2	4854	G
81	A2	4855	C
81	A2	4856	G
81	A2	4857	C
81	A2	4858	G
81	A2	4862	G
81	A2	4863	G
81	A2	4867	G
81	A2	4868	G
81	A2	4875	C
81	A2	4879	C
81	A2	4880	U
81	A2	4881	C
81	A2	4882	G
81	A2	4883	C
81	A2	4892	C
81	A2	4893	A
81	A2	4894	C
81	A2	4895	C
81	A2	4896	G
81	A2	4897	C
81	A2	4898	A
81	A2	4899	C
81	A2	4900	G
81	A2	4901	U

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Mol	Chain	Res	Type
81	A2	4902	U
81	A2	4903	C
81	A2	4904	G
81	A2	4905	U
81	A2	4906	G
81	A2	4919	C
81	A2	4921	A
81	A2	4923	A
81	A2	4924	C
81	A2	4930	G
81	A2	4931	U
81	A2	4932	A
81	A2	4940	U
81	A2	4943	U
81	A2	4944	U
81	A2	4945	C
81	A2	4946	U
81	A2	4947	G
81	A2	4949	G
81	A2	4955	G
81	A2	4956	U
81	A2	4958	U
81	A2	4959	C
81	A2	4960	G
81	A2	4962	A
81	A2	4963	C
81	A2	4968	C
81	A2	4969	A
81	A2	4972	G
81	A2	4974	A
81	A2	4975	G
81	A2	4976	C
81	A2	4978	C
81	A2	4979	C
81	A2	4980	C
81	A2	4981	U
81	A2	4982	C
81	A2	4983	G
81	A2	4985	U
81	A2	4986	G
81	A2	4988	G
81	A2	4995	U

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Mol	Chain	Res	Type
81	A2	4996	G
81	A2	4998	A
81	A2	5002	C
81	A2	5003	A
81	A2	5005	C
81	A2	5009	C
81	A2	5010	G
81	A2	5015	A
81	A2	5016	A
81	A2	5017	G
81	A2	5018	G
81	A2	5019	G
81	A2	5020	U
81	A2	5021	U
82	A3	4	C
82	A3	6	C
82	A3	7	U
82	A3	8	U
82	A3	9	A
82	A3	10	G
82	A3	12	G
82	A3	13	G
82	A3	14	U
82	A3	16	G
82	A3	20	A
82	A3	23	C
82	A3	24	G
82	A3	25	G
82	A3	26	C
82	A3	28	C
82	A3	30	U
82	A3	32	C
82	A3	34	U
82	A3	38	U
82	A3	43	A
82	A3	47	C
82	A3	49	G
82	A3	51	U
82	A3	52	A
82	A3	58	G
82	A3	59	A
82	A3	61	A

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Mol	Chain	Res	Type
82	A3	62	A
82	A3	63	U
82	A3	69	U
82	A3	71	A
82	A3	72	A
82	A3	75	G
82	A3	76	C
82	A3	77	A
82	A3	78	G
82	A3	80	A
82	A3	81	C
82	A3	82	A
82	A3	83	C
82	A3	84	A
82	A3	85	U
82	A3	86	U
82	A3	89	U
82	A3	94	G
82	A3	95	A
82	A3	103	A
82	A3	104	A
82	A3	105	C
82	A3	106	G
82	A3	107	C
82	A3	109	C
82	A3	111	U
82	A3	112	G
82	A3	114	G
82	A3	117	C
82	A3	120	G
82	A3	122	G
82	A3	123	U
82	A3	124	U
82	A3	125	C
82	A3	126	C
82	A3	128	C
82	A3	129	C
82	A3	130	C
82	A3	131	G
82	A3	137	A
82	A3	138	C
82	A3	140	C

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Mol	Chain	Res	Type
82	A3	141	C
82	A3	143	G
82	A3	144	U
82	A3	146	U
82	A3	147	G
82	A3	148	A
82	A3	149	G
82	A3	150	C
82	A3	151	G
82	A3	156	U
82	A3	157	U
83	A4	3	C
83	A4	6	C
83	A4	7	G
83	A4	9	C
83	A4	10	C
83	A4	11	A
83	A4	12	U
83	A4	13	A
83	A4	15	C
83	A4	19	C
83	A4	22	A
83	A4	27	G
83	A4	28	C
83	A4	29	C
83	A4	30	C
83	A4	33	U
83	A4	34	C
83	A4	35	U
83	A4	36	C
83	A4	40	U
83	A4	41	G
83	A4	46	C
83	A4	47	G
83	A4	48	G
83	A4	49	A
83	A4	53	U
83	A4	54	A
83	A4	55	A
83	A4	56	G
83	A4	57	C
83	A4	58	A

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Mol	Chain	Res	Type
83	A4	61	G
83	A4	62	U
83	A4	63	C
83	A4	64	G
83	A4	65	G
83	A4	67	C
83	A4	68	C
83	A4	69	U
83	A4	73	U
83	A4	74	A
83	A4	75	G
83	A4	76	U
83	A4	77	A
83	A4	79	U
83	A4	81	G
83	A4	85	G
83	A4	86	G
83	A4	87	G
83	A4	89	G
83	A4	91	C
83	A4	94	C
83	A4	95	C
83	A4	96	U
83	A4	97	G
83	A4	99	G
83	A4	100	A
83	A4	101	A
83	A4	103	A
83	A4	105	C
83	A4	107	G
83	A4	108	G
83	A4	109	U
83	A4	110	G
83	A4	113	G
83	A4	116	G
83	A4	117	G
83	A4	118	C

All (503) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	AV	19	G

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Mol	Chain	Res	Type
1	AV	57	G
2	AW	2	C
2	AW	8	U
2	AW	19	G
2	AW	42	C
2	AW	46	G
3	AX	42	U
3	AX	45	U
3	AX	53	U
3	AX	60	U
4	B1	24	C
4	B1	44	U
4	B1	61	A
4	B1	64	A
4	B1	66	G
4	B1	68	A
4	B1	77	A
4	B1	78	C
4	B1	102	A
4	B1	111	A
4	B1	113	G
4	B1	124	U
4	B1	131	C
4	B1	136	C
4	B1	139	C
4	B1	140	C
4	B1	147	A
4	B1	162	C
4	B1	181	A
4	B1	183	G
4	B1	199	C
4	B1	200	G
4	B1	207	G
4	B1	209	A
4	B1	227	U
4	B1	304	C
4	B1	307	G
4	B1	308	G
4	B1	310	C
4	B1	312	G
4	B1	317	C
4	B1	319	C

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Mol	Chain	Res	Type
4	B1	332	G
4	B1	338	G
4	B1	356	C
4	B1	363	A
4	B1	368	U
4	B1	370	G
4	B1	383	G
4	B1	399	C
4	B1	428	U
4	B1	448	A
4	B1	465	A
4	B1	475	C
4	B1	486	A
4	B1	487	U
4	B1	501	C
4	B1	517	C
4	B1	544	G
4	B1	546	G
4	B1	547	G
4	B1	558	G
4	B1	577	U
4	B1	578	C
4	B1	589	G
4	B1	590	A
4	B1	593	C
4	B1	604	A
4	B1	656	G
4	B1	662	G
4	B1	671	A
4	B1	687	C
4	B1	743	U
4	B1	799	U
4	B1	811	A
4	B1	821	G
4	B1	822	U
4	B1	833	C
4	B1	834	C
4	B1	840	C
4	B1	899	U
4	B1	913	A
4	B1	970	G
4	B1	971	G

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Mol	Chain	Res	Type
4	B1	1015	U
4	B1	1016	U
4	B1	1020	A
4	B1	1021	U
4	B1	1043	G
4	B1	1060	A
4	B1	1088	U
4	B1	1108	G
4	B1	1114	U
4	B1	1115	U
4	B1	1138	C
4	B1	1150	A
4	B1	1164	G
4	B1	1198	G
4	B1	1215	C
4	B1	1242	U
4	B1	1247	C
4	B1	1250	A
4	B1	1253	A
4	B1	1257	G
4	B1	1259	A
4	B1	1261	C
4	B1	1264	C
4	B1	1277	C
4	B1	1285	G
4	B1	1301	A
4	B1	1307	U
4	B1	1308	U
4	B1	1311	C
4	B1	1313	A
4	B1	1326	U
4	B1	1342	U
4	B1	1351	G
4	B1	1362	U
4	B1	1401	A
4	B1	1404	U
4	B1	1406	G
4	B1	1411	G
4	B1	1456	G
4	B1	1476	A
4	B1	1477	U
4	B1	1494	U

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Mol	Chain	Res	Type
4	B1	1497	G
4	B1	1508	A
4	B1	1520	G
4	B1	1534	C
4	B1	1542	C
4	B1	1543	U
4	B1	1555	U
4	B1	1556	A
4	B1	1578	U
4	B1	1586	U
4	B1	1603	G
4	B1	1624	U
4	B1	1631	U
4	B1	1635	C
4	B1	1637	A
4	B1	1638	G
4	B1	1644	C
4	B1	1648	G
4	B1	1654	G
4	B1	1655	C
4	B1	1673	U
4	B1	1697	A
4	B1	1698	C
4	B1	1700	C
4	B1	1721	U
4	B1	1781	A
4	B1	1823	A
4	B1	1824	A
4	B1	1830	U
4	B1	1833	C
4	B1	1834	A
4	B1	1836	G
4	B1	1848	U
4	B1	1860	A
4	B1	1862	G
4	B1	1867	U
81	A2	13	U
81	A2	14	C
81	A2	19	G
81	A2	48	G
81	A2	64	A
81	A2	69	A

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Mol	Chain	Res	Type
81	A2	70	A
81	A2	96	U
81	A2	156	C
81	A2	181	U
81	A2	188	G
81	A2	192	C
81	A2	193	C
81	A2	196	G
81	A2	207	C
81	A2	212	C
81	A2	215	A
81	A2	216	G
81	A2	221	U
81	A2	229	G
81	A2	266	C
81	A2	287	A
81	A2	292	G
81	A2	300	C
81	A2	328	U
81	A2	331	C
81	A2	333	G
81	A2	334	C
81	A2	342	C
81	A2	366	G
81	A2	371	U
81	A2	379	A
81	A2	381	C
81	A2	386	A
81	A2	398	A
81	A2	402	G
81	A2	424	A
81	A2	433	G
81	A2	441	G
81	A2	443	A
81	A2	444	G
81	A2	458	U
81	A2	459	U
81	A2	460	C
81	A2	461	A
81	A2	462	A
81	A2	473	G
81	A2	474	G

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Mol	Chain	Res	Type
81	A2	477	C
81	A2	482	G
81	A2	633	G
81	A2	658	G
81	A2	717	G
81	A2	718	G
81	A2	719	G
81	A2	720	A
81	A2	721	A
81	A2	727	G
81	A2	736	G
81	A2	897	U
81	A2	914	G
81	A2	916	A
81	A2	927	A
81	A2	928	A
81	A2	939	G
81	A2	941	G
81	A2	943	G
81	A2	944	A
81	A2	947	G
81	A2	957	G
81	A2	959	C
81	A2	967	C
81	A2	973	U
81	A2	974	C
81	A2	1082	U
81	A2	1147	C
81	A2	1177	C
81	A2	1193	G
81	A2	1196	C
81	A2	1197	G
81	A2	1204	G
81	A2	1205	U
81	A2	1207	C
81	A2	1208	U
81	A2	1209	C
81	A2	1211	C
81	A2	1216	C
81	A2	1217	C
81	A2	1218	A
81	A2	1219	C

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Mol	Chain	Res	Type
81	A2	1249	G
81	A2	1280	G
81	A2	1282	U
81	A2	1293	C
81	A2	1299	U
81	A2	1304	A
81	A2	1340	G
81	A2	1349	C
81	A2	1357	G
81	A2	1358	C
81	A2	1360	G
81	A2	1367	A
81	A2	1377	A
81	A2	1388	G
81	A2	1400	A
81	A2	1421	C
81	A2	1423	A
81	A2	1444	G
81	A2	1453	C
81	A2	1458	G
81	A2	1475	G
81	A2	1476	A
81	A2	1478	C
81	A2	1481	G
81	A2	1497	A
81	A2	1502	A
81	A2	1523	G
81	A2	1530	C
81	A2	1532	A
81	A2	1553	G
81	A2	1554	A
81	A2	1604	G
81	A2	1612	G
81	A2	1619	C
81	A2	1628	U
81	A2	1639	U
81	A2	1659	G
81	A2	1673	C
81	A2	1703	G
81	A2	1732	G
81	A2	1744	A
81	A2	1745	A

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Mol	Chain	Res	Type
81	A2	1756	C
81	A2	1783	A
81	A2	1786	C
81	A2	1802	G
81	A2	1805	G
81	A2	1836	A
81	A2	1846	A
81	A2	1855	G
81	A2	1859	C
81	A2	1860	U
81	A2	1868	G
81	A2	1870	A
81	A2	1874	A
81	A2	1883	U
81	A2	1885	A
81	A2	1900	G
81	A2	1916	C
81	A2	1918	G
81	A2	1924	G
81	A2	1930	G
81	A2	2000	C
81	A2	2003	A
81	A2	2006	C
81	A2	2009	C
81	A2	2011	A
81	A2	2023	G
81	A2	2024	G
81	A2	2034	G
81	A2	2046	C
81	A2	2048	U
81	A2	2270	G
81	A2	2294	G
81	A2	2309	G
81	A2	2310	G
81	A2	2324	A
81	A2	2333	U
81	A2	2347	A
81	A2	2348	U
81	A2	2358	A
81	A2	2360	C
81	A2	2369	C
81	A2	2371	G

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Mol	Chain	Res	Type
81	A2	2373	A
81	A2	2375	U
81	A2	2394	A
81	A2	2395	A
81	A2	2396	C
81	A2	2405	A
81	A2	2411	G
81	A2	2415	A
81	A2	2450	A
81	A2	2454	A
81	A2	2465	C
81	A2	2481	C
81	A2	2489	A
81	A2	2502	U
81	A2	2508	C
81	A2	2548	C
81	A2	2551	G
81	A2	2561	G
81	A2	2564	A
81	A2	2606	C
81	A2	2607	U
81	A2	2650	G
81	A2	2673	A
81	A2	2684	U
81	A2	2702	A
81	A2	2703	G
81	A2	2716	C
81	A2	2718	U
81	A2	2735	G
81	A2	2740	U
81	A2	2741	A
81	A2	2745	C
81	A2	2749	C
81	A2	2802	A
81	A2	2803	U
81	A2	2838	C
81	A2	3578	G
81	A2	3583	G
81	A2	3584	G
81	A2	3585	U
81	A2	3648	U
81	A2	3666	U

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Mol	Chain	Res	Type
81	A2	3684	U
81	A2	3696	A
81	A2	3724	G
81	A2	3727	U
81	A2	3729	A
81	A2	3733	U
81	A2	3743	A
81	A2	3753	A
81	A2	3754	A
81	A2	3769	A
81	A2	3770	U
81	A2	3802	C
81	A2	3821	A
81	A2	3845	A
81	A2	3865	C
81	A2	3866	G
81	A2	3873	G
81	A2	3876	G
81	A2	3887	G
81	A2	3907	G
81	A2	3926	U
81	A2	3933	U
81	A2	4017	U
81	A2	4033	G
81	A2	4043	U
81	A2	4044	G
81	A2	4081	C
81	A2	4083	C
81	A2	4084	U
81	A2	4085	U
81	A2	4088	G
81	A2	4091	G
81	A2	4105	C
81	A2	4117	A
81	A2	4122	C
81	A2	4130	A
81	A2	4155	G
81	A2	4181	C
81	A2	4211	A
81	A2	4226	G
81	A2	4236	G
81	A2	4252	A

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Mol	Chain	Res	Type
81	A2	4254	C
81	A2	4292	C
81	A2	4336	A
81	A2	4338	A
81	A2	4354	A
81	A2	4374	A
81	A2	4387	G
81	A2	4388	A
81	A2	4396	U
81	A2	4408	G
81	A2	4409	A
81	A2	4433	A
81	A2	4437	A
81	A2	4454	G
81	A2	4455	G
81	A2	4485	C
81	A2	4515	U
81	A2	4533	G
81	A2	4551	U
81	A2	4561	U
81	A2	4562	A
81	A2	4566	G
81	A2	4596	U
81	A2	4597	G
81	A2	4609	G
81	A2	4616	A
81	A2	4628	U
81	A2	4636	G
81	A2	4637	U
81	A2	4659	U
81	A2	4660	A
81	A2	4675	C
81	A2	4680	C
81	A2	4688	A
81	A2	4690	G
81	A2	4692	C
81	A2	4693	A
81	A2	4699	G
81	A2	4711	U
81	A2	4712	U
81	A2	4717	U
81	A2	4723	A

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Mol	Chain	Res	Type
81	A2	4733	C
81	A2	4740	U
81	A2	4807	C
81	A2	4813	C
81	A2	4823	G
81	A2	4824	U
81	A2	4825	G
81	A2	4827	G
81	A2	4837	U
81	A2	4847	A
81	A2	4848	A
81	A2	4849	A
81	A2	4854	G
81	A2	4862	G
81	A2	4867	G
81	A2	4895	C
81	A2	4930	G
81	A2	4943	U
81	A2	4944	U
81	A2	4977	U
81	A2	4978	C
81	A2	4980	C
81	A2	5002	C
81	A2	5004	G
81	A2	5019	G
82	A3	22	U
82	A3	71	A
82	A3	84	A
82	A3	105	C
82	A3	111	U
82	A3	125	C
83	A4	12	U
83	A4	26	C
83	A4	54	A
83	A4	63	C
83	A4	74	A
83	A4	75	G
83	A4	90	A
83	A4	108	G
83	A4	109	U

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	MIA	AW	37	2	24,31,32	2.05	5 (20%)	26,44,47	3.30	8 (30%)

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
2	MIA	AW	37	2	-	6/11/33/34	0/3/3/3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	AW	37	MIA	C13-C14	6.16	1.50	1.32
2	AW	37	MIA	C2-S10	4.30	1.79	1.75
2	AW	37	MIA	C12-C13	-3.27	1.33	1.48
2	AW	37	MIA	C6-N1	2.71	1.36	1.32
2	AW	37	MIA	C4-N3	-2.46	1.31	1.35

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	AW	37	MIA	C11-S10-C2	11.40	110.78	102.27
2	AW	37	MIA	C2-N3-C4	-6.18	106.80	115.32
2	AW	37	MIA	C12-N6-C6	-6.02	113.64	122.55
2	AW	37	MIA	C5-C6-N1	-5.98	115.84	120.81
2	AW	37	MIA	C12-C13-C14	-3.39	120.54	127.14
2	AW	37	MIA	C4-C5-N7	2.34	111.84	109.40
2	AW	37	MIA	O4'-C1'-C2'	2.22	110.17	106.93
2	AW	37	MIA	S10-C2-N3	-2.01	109.13	116.10

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	AW	37	MIA	N1-C2-S10-C11
2	AW	37	MIA	N3-C2-S10-C11
2	AW	37	MIA	O4'-C4'-C5'-O5'
2	AW	37	MIA	C3'-C4'-C5'-O5'
2	AW	37	MIA	N6-C12-C13-C14
2	AW	37	MIA	C12-C13-C14-C15

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

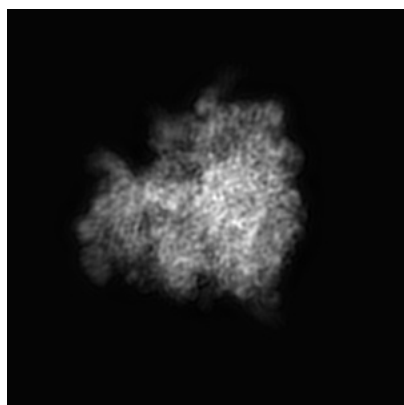
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-2620. These allow visual inspection of the internal detail of the map and identification of artifacts.

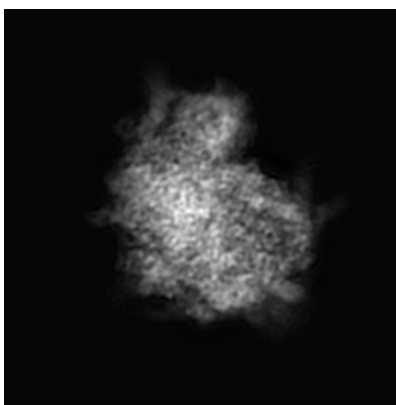
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

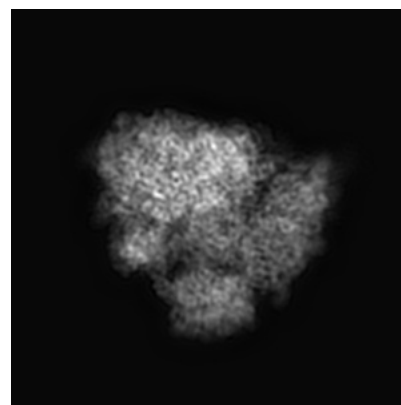
6.1.1 Primary map



X



Y

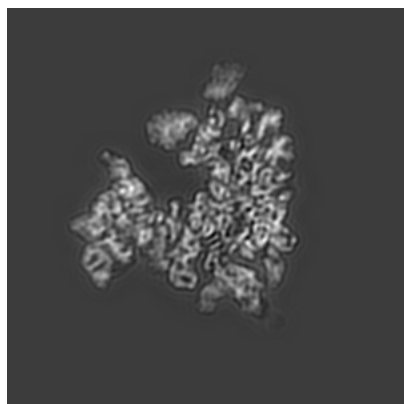


Z

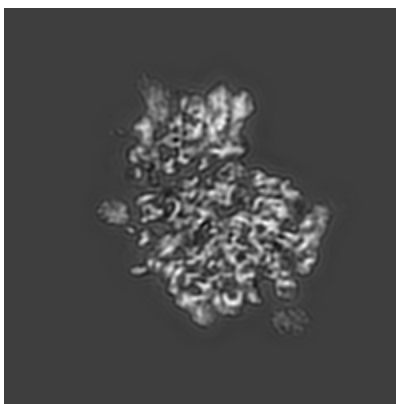
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

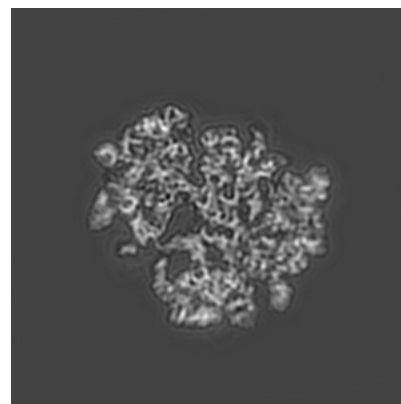
6.2.1 Primary map



X Index: 180



Y Index: 180

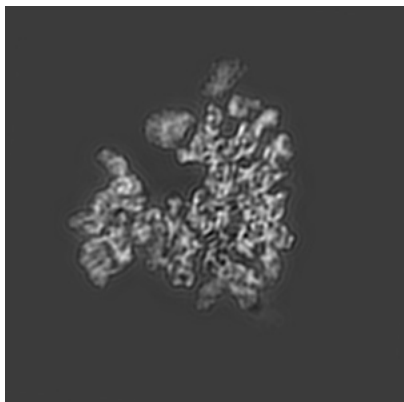


Z Index: 180

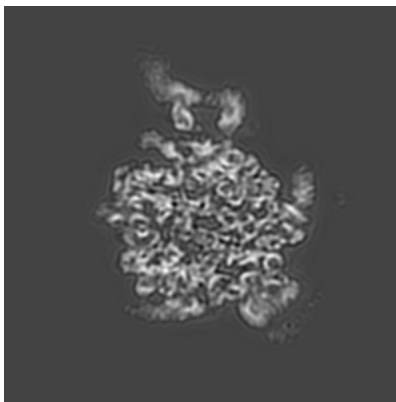
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

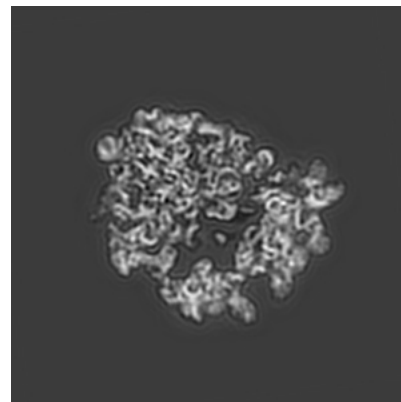
6.3.1 Primary map



X Index: 182



Y Index: 217



Z Index: 190

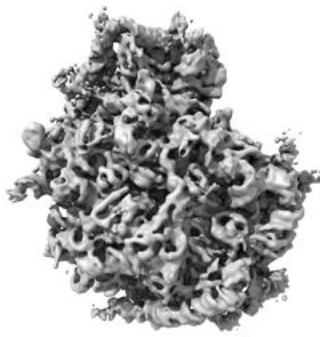
The images above show the largest variance slices of the map in three orthogonal directions.

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 3.5. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

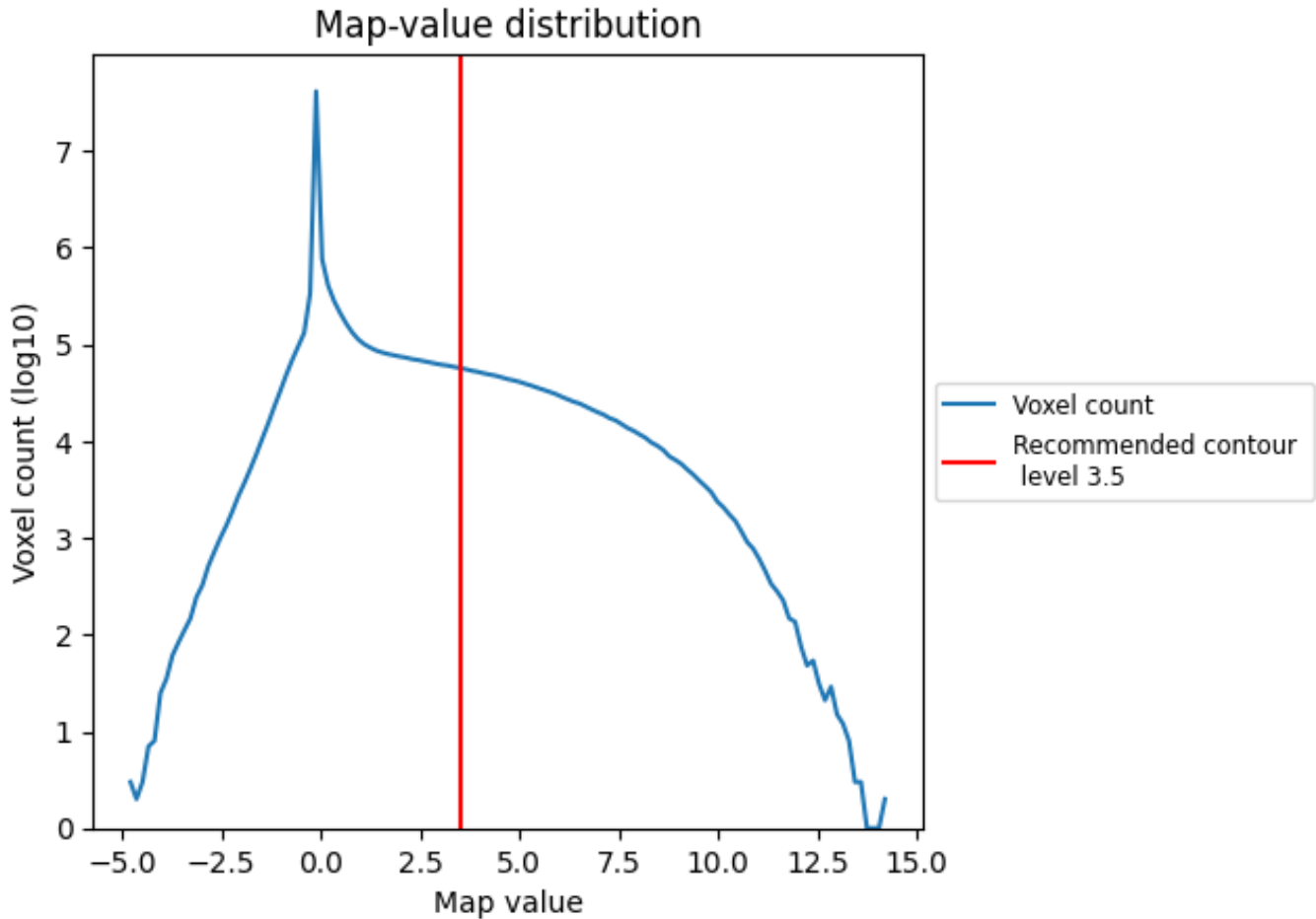
6.5 Mask visualisation

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

7 Map analysis [i](#)

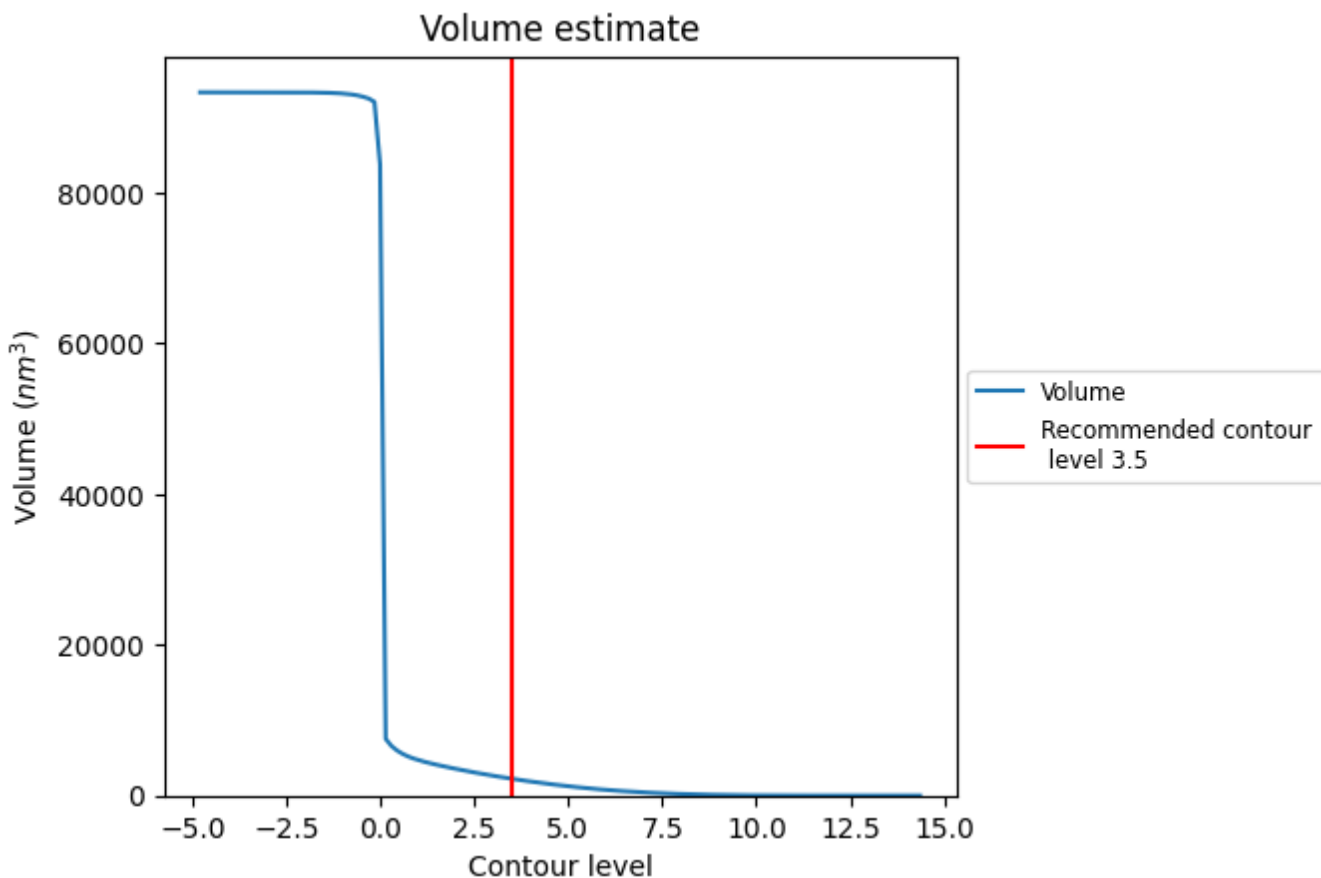
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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.

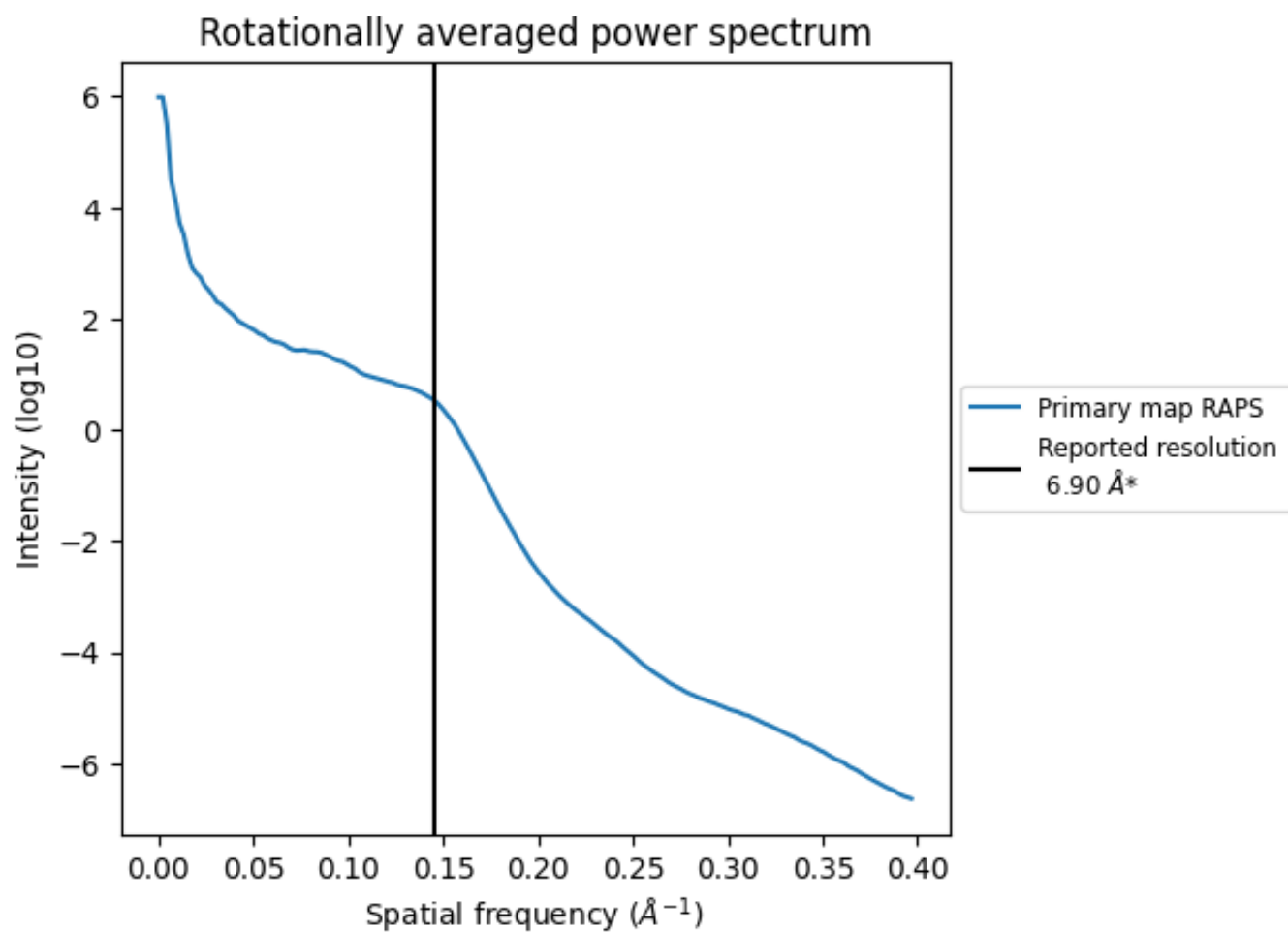
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2230 nm^3 ; this corresponds to an approximate mass of 2014 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 0.145 Å⁻¹

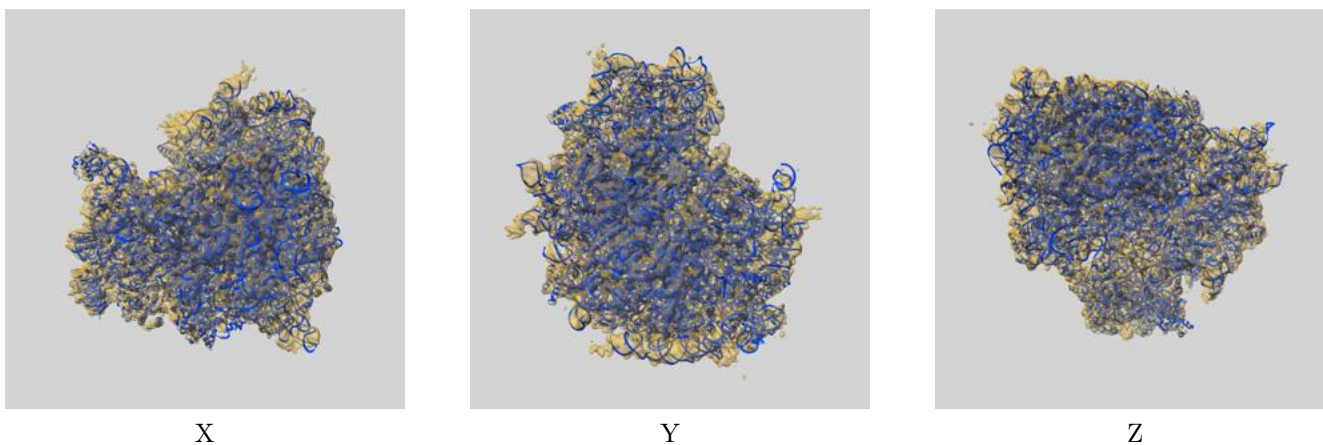
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

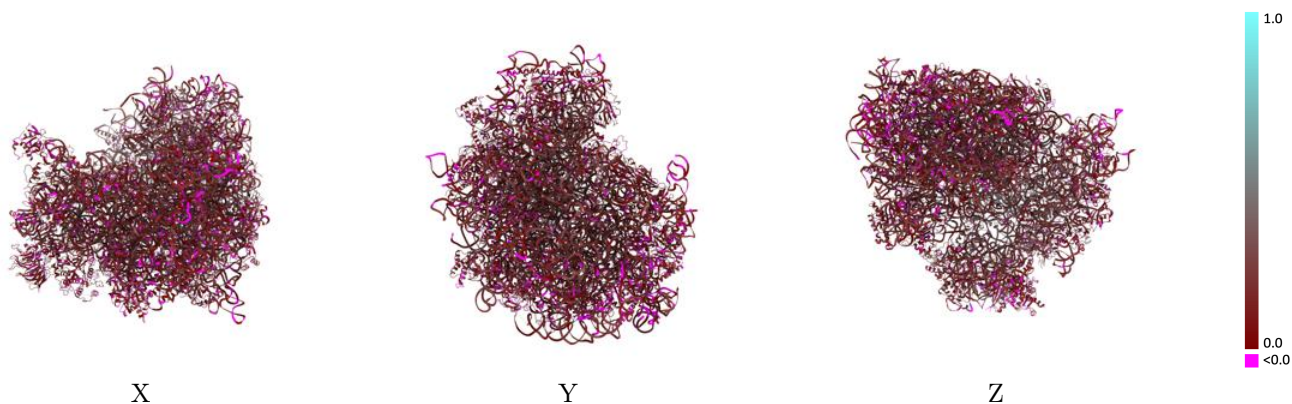
This section contains information regarding the fit between EMDB map EMD-2620 and PDB model 4UJE. Per-residue inclusion information can be found in section 3 on page 18.

9.1 Map-model overlay [i](#)



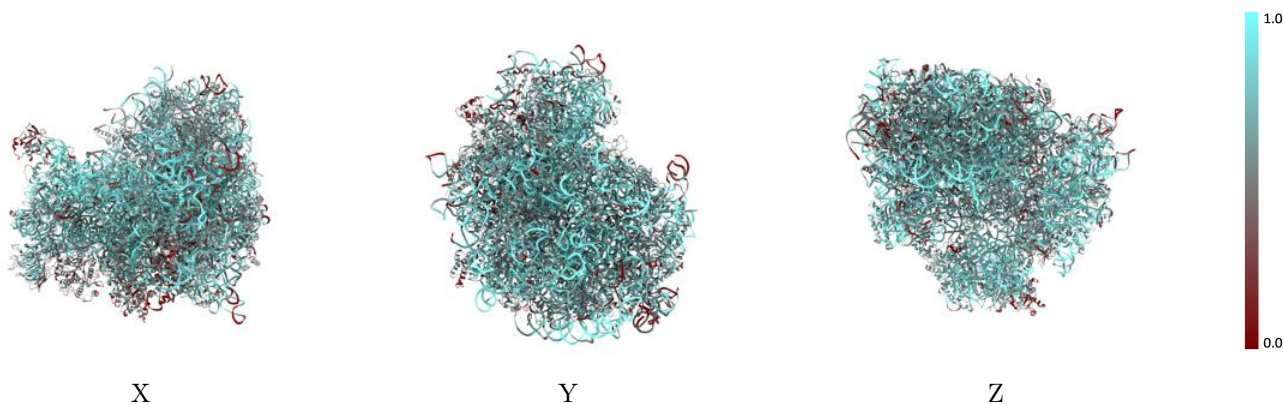
The images above show the 3D surface view of the map at the recommended contour level 3.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



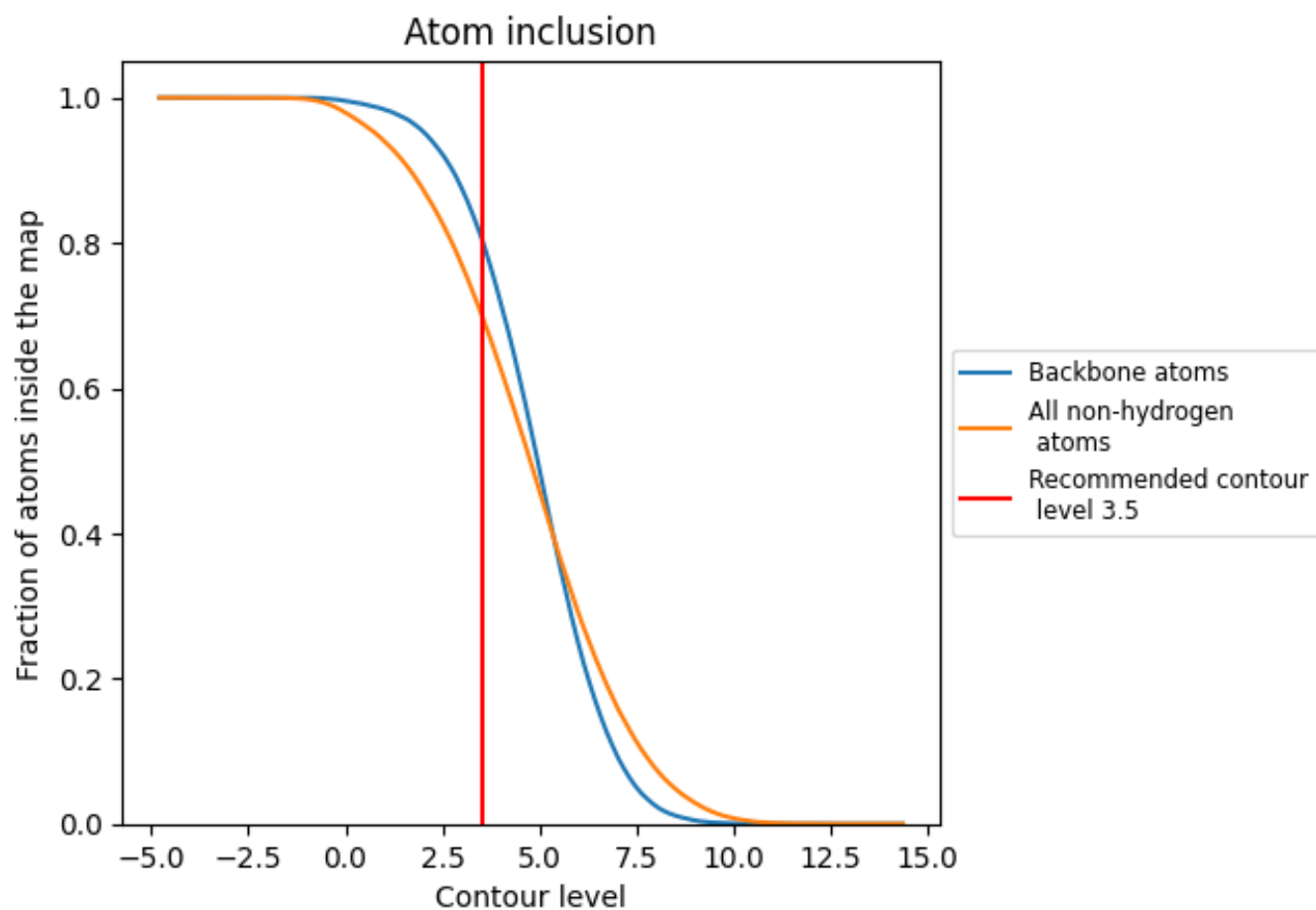
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 [i](#)



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 (3.5).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 70% 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 (3.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7022	 0.1710
A2	 0.8020	 0.1990
A3	 0.8335	 0.2060
A4	 0.9338	 0.2240
AV	 0.6980	 0.1980
AW	 0.6538	 0.1800
AX	 0.4393	 0.1920
B1	 0.8421	 0.1980
BA	 0.4631	 0.1340
BB	 0.5468	 0.1440
BC	 0.5272	 0.1500
BD	 0.6232	 0.1450
BE	 0.6505	 0.1470
BF	 0.5931	 0.1430
BG	 0.6194	 0.1270
BH	 0.3625	 0.1240
BI	 0.4994	 0.1140
BJ	 0.6913	 0.1330
BK	 0.7038	 0.1420
BL	 0.4553	 0.1310
BM	 0.2748	 0.0910
BN	 0.5081	 0.1320
BO	 0.5352	 0.1440
BP	 0.6625	 0.1470
BQ	 0.6735	 0.1220
BR	 0.5191	 0.1350
BS	 0.6767	 0.1460
BT	 0.7486	 0.1450
BU	 0.6317	 0.1180
BV	 0.3923	 0.1150
BW	 0.5798	 0.1400
BX	 0.4418	 0.1450
BY	 0.6821	 0.1330
BZ	 0.5780	 0.1520
Ba	 0.4946	 0.0950

















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Chain	Atom inclusion	Q-score
Bb	0.5024	0.1420
Bc	0.4596	0.1380
Bd	0.7042	0.1140
Be	0.5567	0.1360
Bf	0.4327	0.1020
Bg	0.5612	0.1360
CA	0.4329	0.1330
CB	0.5867	0.1480
CC	0.5340	0.1210
CD	0.6805	0.1550
CE	0.5334	0.1100
CF	0.5175	0.1280
CG	0.5348	0.1330
CH	0.6206	0.1420
CI	0.5103	0.1400
CJ	0.6533	0.1430
CL	0.5206	0.1100
CM	0.6588	0.1560
CN	0.5556	0.1340
CO	0.5860	0.1330
CP	0.5710	0.1350
CQ	0.5112	0.1140
CR	0.5353	0.1250
CS	0.5887	0.1320
CT	0.5357	0.1400
CU	0.4759	0.1410
CV	0.4431	0.1460
CW	0.5118	0.1220
CX	0.5422	0.1390
CY	0.6352	0.1300
CZ	0.5898	0.1460
Ca	0.5492	0.1380
Cb	0.4761	0.1260
Cc	0.4841	0.1410
Cd	0.5750	0.1500
Ce	0.5054	0.1580
Cf	0.5560	0.1140
Cg	0.5161	0.1320
Ch	0.5663	0.1230
Ci	0.5598	0.1380
Cj	0.5556	0.1160
Ck	0.4856	0.1230

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Chain	Atom inclusion	Q-score
Cl	 0.4976	 0.1130
Cm	 0.5362	 0.1320
Cn	 0.4358	 0.1070
Co	 0.4360	 0.1130
Cp	 0.4440	 0.1140
Ct	 0.5290	 0.0840
Cu	 0.2247	 0.0560