Full wwPDB EM Validation Report ⓘ

Dec 11, 2022 – 09:30 am GMT

PDB ID	:	6S13
EMDB ID	:	EMD-10079
Title	:	Erythromycin Resistant Staphylococcus aureus 70S ribosome (delta R88 A89 uL22).
Authors	:	Halfon, Y.; Matozv, D.; Eyal, Z.; Bashan, A.; Zimmerman, E.; Kjeldgaard, J.; Ingmer, H.; Yonath, A.
Deposited on	:	2019-06-18
Resolution	:	3.58 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:

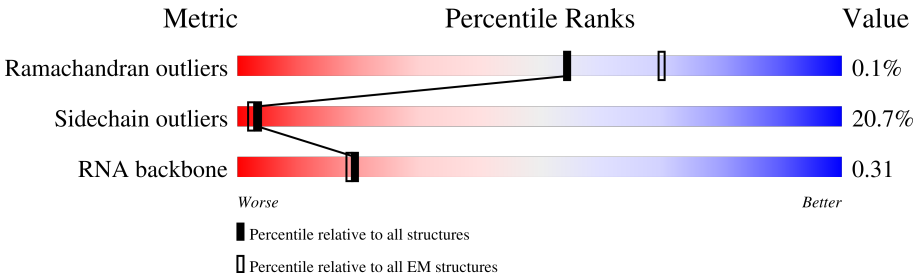
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance

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

The reported resolution of this entry is 3.58 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	2905	35% 45% 44% 10%
2	B	115	18% 55% 38% 7%
3	C	274	65% 82% 18%
4	D	215	55% 86% 14%
5	E	206	64% 79% 20%
6	F	175	88% 85% 15%
7	G	175	93% 87% 13%
8	H	145	48% 82% 17%

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Mol	Chain	Length	Quality of chain
9	I	122	62% 83% 17%
10	J	146	70% 91% 9%
11	K	137	59% 86% 14%
12	L	120	59% 88% 12%
13	M	119	63% 79% 20%
14	N	114	59% 88% 12%
15	O	116	54% 89% 11%
16	P	102	41% 78% 22%
17	Q	110	60% 73% 27%
18	R	89	72% 82% 18%
19	S	103	56% 79% 20%
20	T	94	81% 81% 19%
21	U	82	68% 78% 21%
22	V	58	78% 81% 19%
23	W	67	61% 88% 12%
24	X	58	41% 86% 14%
25	Y	59	88% 98%
26	Z	48	50% 75% 23%
27	1	47	77% 74% 26%
28	2	43	56% 91% 9%
29	3	64	66% 88% 12%
30	4	37	73% 76% 19% 5%
31	a	1539	70% 35% 54% 10%
32	b	226	93% 84% 15%
33	c	202	95% 86% 13%

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Mol	Chain	Length	Quality of chain
34	d	198	94% 81% 17%
35	e	156	91% 87% 13%
36	f	95	95% 81% 19%
37	g	152	92% 76% 22%
38	h	131	88% 82% 18%
39	i	127	87% 85% 15%
40	j	97	100% 82% 14%
41	k	114	85% 77% 21%
42	l	135	97% 75% 22%
43	m	104	95% 87% 12%
44	n	60	90% 70% 30%
45	o	88	93% 76% 22%
46	p	89	90% 81% 19%
47	q	80	81% 78% 18% 5%
48	r	54	80% 87% 13%
49	s	80	91% 74% 24%
50	t	81	91% 84% 16%
51	u	52	83% 75% 23%
52	v	162	99% 78% 21%

2 Entry composition

There are 52 unique types of molecules in this entry. The entry contains 233957 atoms, of which 93218 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 23S ribosomal RNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	P		
1	A	2905	93564	27803	31287	11387	20182	2905	0	0

- Molecule 2 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	P		
2	B	115	3685	1094	1240	436	801	114	0	0

- Molecule 3 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
3	C	274	4291	1301	2201	415	369	5	0	0

- Molecule 4 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
4	D	215	3294	1018	1667	299	305	5	0	0

- Molecule 5 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
5	E	206	3192	986	1620	288	296	2	0	0

- Molecule 6 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
6	F	175	2667	837	1342	227	255	6	0	0

- Molecule 7 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms						AltConf	Trace
7	G	175	Total	C	H	N	O	S	0	0
			2488	790	1225	239	231	3		

- Molecule 8 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms						AltConf	Trace
8	H	145	Total	C	H	N	O	S	0	0
			2277	714	1134	208	218	3		

- Molecule 9 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms						AltConf	Trace
9	I	122	Total	C	H	N	O	S	0	0
			1899	572	981	174	168	4		

- Molecule 10 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms						AltConf	Trace
10	J	146	Total	C	H	N	O	S	0	0
			2211	674	1125	214	197	1		

- Molecule 11 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms						AltConf	Trace
11	K	137	Total	C	H	N	O	S	0	0
			2194	689	1123	203	175	4		

- Molecule 12 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms						AltConf	Trace
12	L	120	Total	C	H	N	O	S	0	0
			1915	576	983	182	173	1		

- Molecule 13 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms						AltConf	Trace
13	M	119	Total	C	H	N	O	S	0	0
			1816	557	925	174	159	1		

- Molecule 14 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	114	Total	C	H	N	O	0	0
			1826	563	937	175	151		

- Molecule 15 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms						AltConf	Trace
15	O	116	Total	C	H	N	O	S	0	0
			1956	593	1014	189	156	4		

- Molecule 16 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms						AltConf	Trace
16	P	102	Total	C	H	N	O	S	0	0
			1620	503	830	142	144	1		

- Molecule 17 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms						AltConf	Trace
17	Q	110	Total	C	H	N	O	S	0	0
			1724	523	887	158	153	3		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	?	-	ARG	deletion	UNP A0A077UKF9
Q	?	-	ALA	deletion	UNP A0A077UKF9

- Molecule 18 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms						AltConf	Trace
18	R	89	Total	C	H	N	O	S	0	0
			1463	453	748	127	131	4		

- Molecule 19 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms						AltConf	Trace
19	S	103	Total	C	H	N	O	S	0	0
			1579	486	809	142	141	1		

- Molecule 20 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	94	Total	C	H	N	O	0	0
			1488	463	766	130	129		

- Molecule 21 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	U	82	Total	C	H	N	O	0	0
			1265	385	643	122	115		

- Molecule 22 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	58	Total	C	H	N	O	0	0
			911	277	466	96	72		

- Molecule 23 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	W	67	Total	C	H	N	O	0	0
			1104	333	563	102	106		

- Molecule 24 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	X	58	Total	C	H	N	O	0	0
			940	280	491	85	84		

- Molecule 25 is a protein called 50S ribosomal protein L31 type B.

Mol	Chain	Residues	Atoms						AltConf	Trace
25	Y	59	Total	C	H	N	O	S	0	0
			613	225	243	68	76	1		

- Molecule 26 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms						AltConf	Trace
26	Z	48	Total	C	H	N	O	S	0	0
			718	222	358	77	59	2		

- Molecule 27 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms						AltConf	Trace
27	1	47	Total	C	H	N	O	S	0	0
			784	238	394	78	70	4		

- Molecule 28 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms						AltConf	Trace
28	2	43	Total	C	H	N	O	S	0	0
			782	225	415	89	52	1		

- Molecule 29 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms						AltConf	Trace
29	3	64	Total	C	H	N	O	S	0	0
			1107	324	586	113	82	2		

- Molecule 30 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms						AltConf	Trace
30	4	37	Total	C	H	N	O	S	0	0
			635	186	340	60	44	5		

- Molecule 31 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
31	a	1539	Total	C	H	N	O	P	0	0
			49563	14719	16594	6017	10694	1539		

- Molecule 32 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms						AltConf	Trace
32	b	226	Total	C	H	N	O	S	0	0
			3705	1159	1886	317	335	8		

- Molecule 33 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms						AltConf	Trace
33	c	202	Total	C	H	N	O	S	0	0
			2965	945	1464	284	271	1		

- Molecule 34 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms						AltConf	Trace
34	d	198	Total	C	H	N	O	S	0	0
			2946	952	1449	275	268	2		

- Molecule 35 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms						AltConf	Trace
35	e	156	Total	C	H	N	O	S	0	0
			2347	723	1202	211	209	2		

- Molecule 36 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms						AltConf	Trace
36	f	95	Total	C	H	N	O	S	0	0
			1553	493	775	138	145	2		

- Molecule 37 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms						AltConf	Trace
37	g	152	Total	C	H	N	O	S	0	0
			2326	722	1165	218	217	4		

- Molecule 38 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms						AltConf	Trace
38	h	131	Total	C	H	N	O	S	0	0
			2103	650	1077	183	189	4		

- Molecule 39 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms						AltConf	Trace
39	i	127	Total	C	H	N	O	S	0	0
			1812	576	890	179	166	1		

- Molecule 40 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms						AltConf	Trace
40	j	97	Total	C	H	N	O	S	0	0
			1527	475	775	140	136	1		

- Molecule 41 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms						AltConf	Trace
41	k	114	Total	C	H	N	O	S	0	0
			1594	498	784	151	159	2		

- Molecule 42 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms						AltConf	Trace
42	l	135	Total	C	H	N	O	S	0	0
			2128	646	1091	211	178	2		

- Molecule 43 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	m	104	Total	C	H	N	O	0	0
			1401	453	674	139	135		

- Molecule 44 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms						AltConf	Trace
44	n	60	Total	C	H	N	O	S	0	0
			979	307	492	98	77	5		

- Molecule 45 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms						AltConf	Trace
45	o	88	Total	C	H	N	O	S	0	0
			1475	448	752	150	124	1		

- Molecule 46 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms						AltConf	Trace
46	p	89	Total	C	H	N	O	S	0	0
			1403	436	709	128	129	1		

- Molecule 47 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	q	80	Total	C	H	N	O	0	0
			1237	392	616	112	117		

- Molecule 48 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms						AltConf	Trace
48	r	54	Total	C	H	N	O	S	0	0
			927	284	482	86	73	2		

- Molecule 49 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms						AltConf	Trace
49	s	80	Total	C	H	N	O	S	0	0
			1262	410	626	113	111	2		

- Molecule 50 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms						AltConf	Trace
50	t	81	Total	C	H	N	O	S	0	0
			1207	358	616	117	115	1		

- Molecule 51 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	u	52	Total	C	H	N	O	0	0
			807	249	407	79	72		

- Molecule 52 is a protein called Ribosome hibernation promoting factor.

Mol	Chain	Residues	Atoms						AltConf	Trace
52	v	162	Total	C	H	N	O	S	0	0
			2682	835	1349	242	254	2		

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
v	?	-	GLU	deletion	UNP W8USK0
v	?	-	VAL	deletion	UNP W8USK0
v	?	-	PHE	deletion	UNP W8USK0
v	?	-	VAL	deletion	UNP W8USK0
v	?	-	ALA	deletion	UNP W8USK0
v	?	-	GLU	deletion	UNP W8USK0
v	?	-	LEU	deletion	UNP W8USK0
v	?	-	GLN	deletion	UNP W8USK0
v	?	-	GLU	deletion	UNP W8USK0
v	?	-	MET	deletion	UNP W8USK0
v	?	-	GLN	deletion	UNP W8USK0
v	?	-	GLU	deletion	UNP W8USK0

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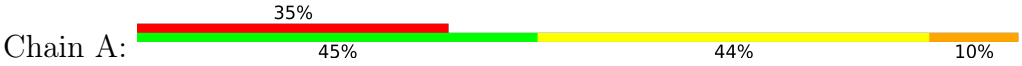
Chain	Residue	Modelled	Actual	Comment	Reference
v	?	-	THR	deletion	UNP W8USK0
v	?	-	GLN	deletion	UNP W8USK0
v	?	-	VAL	deletion	UNP W8USK0
v	?	-	ASP	deletion	UNP W8USK0
v	?	-	ASN	deletion	UNP W8USK0
v	?	-	ASP	deletion	UNP W8USK0
v	?	-	ALA	deletion	UNP W8USK0
v	?	-	TYR	deletion	UNP W8USK0
v	?	-	ASP	deletion	UNP W8USK0
v	?	-	ASP	deletion	UNP W8USK0
v	?	-	ASN	deletion	UNP W8USK0
v	?	-	GLU	deletion	UNP W8USK0

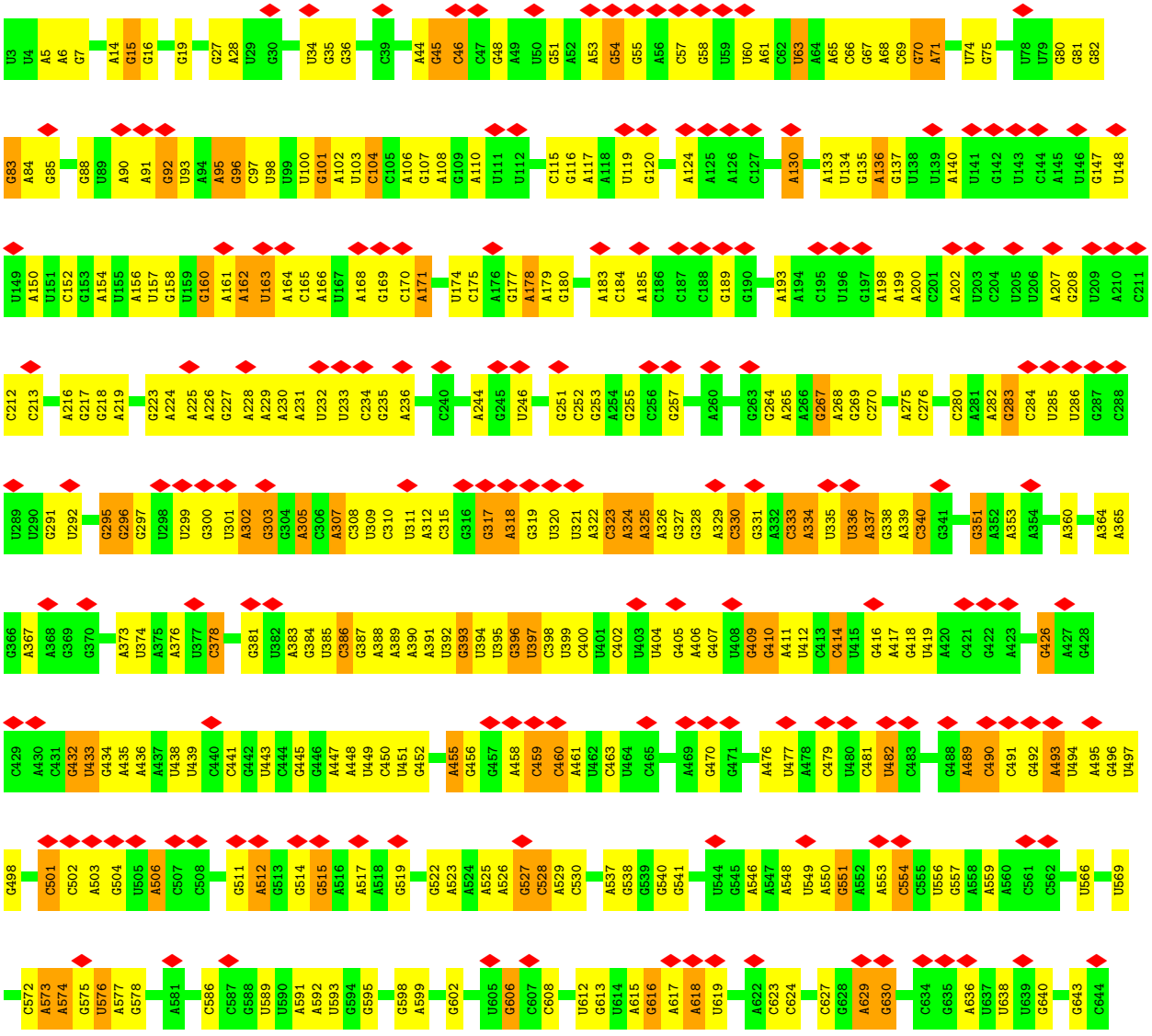
3 Residue-property plots (i)

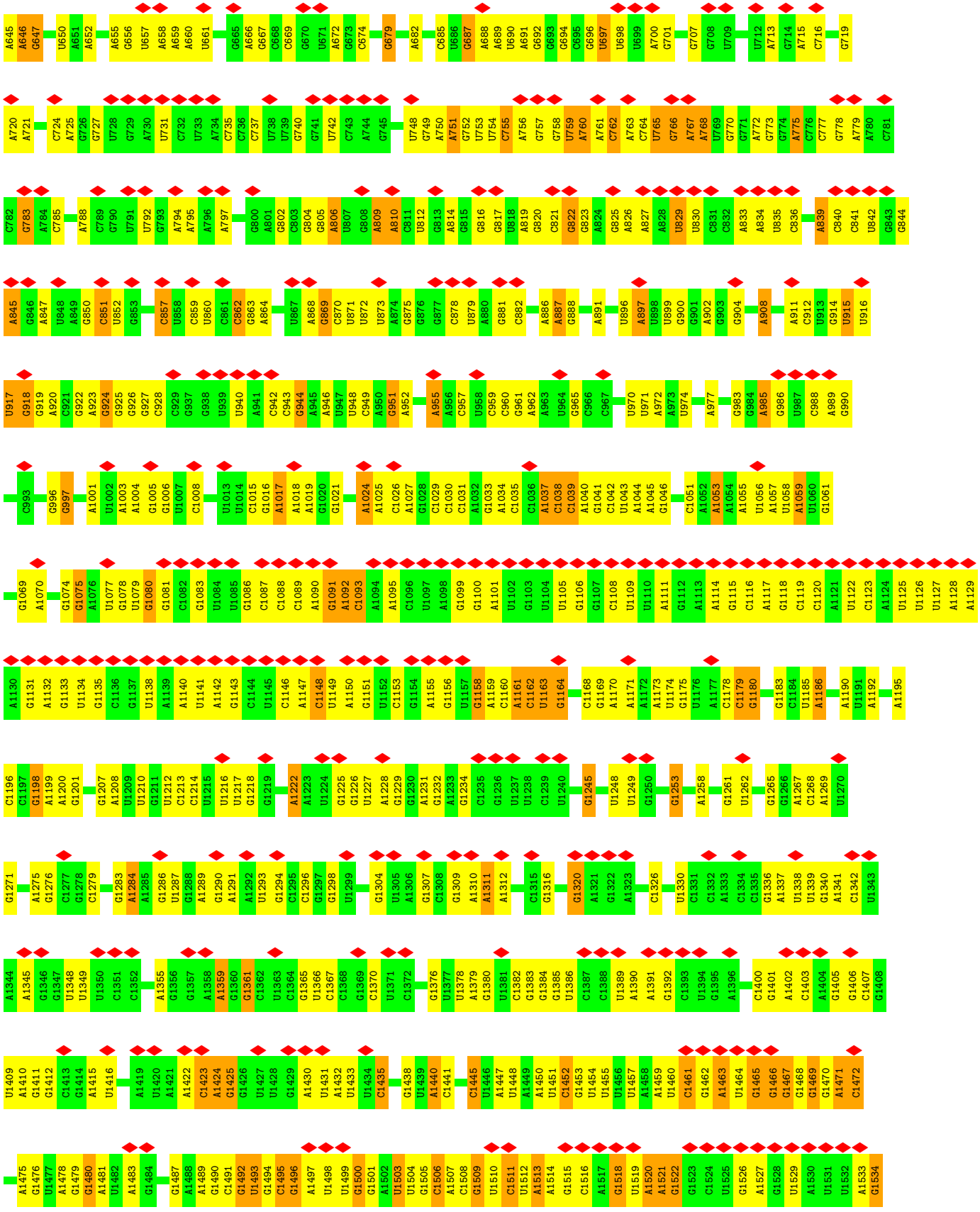
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 23S ribosomal RNA

Chain A:



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A720 A721 C724 A725 G726 G727 U728 G729 A730 U731 C732 U733 A734 C735 C736 C737 U738 U739 G740 G741 U742 C743 A744 G745 U748 G749 A750 A751 G752 U753 U754 C755 A756 G757 G758 U759 A760 A761 C762 A763 C764 U765 G766 A767 A768 U769 G770 G771 A772 G773 G774 A775 C776 C777 G778 A779 A780 C781
C782 G783 A784 C785 A788 C789 G790 U791 U792 G793 A794 A795 A796 A797 G800 A801 G802 C803 G804 G805 A806 U807 G808 A809 A810 C811 U812 G813 A814 G815 G816 G817 U818 A819 G820 C821 G822 G823 A824 G825 A826 A827 A828 U829 U830 C831 C832 A833 A834 U835 C836 A839 C840 C841 U842 G843 G844
A845 G846 A847 U848 A849 G850 C851 U852 G853 C857 U858 C859 U860 C861 C862 G863 A864 U867 A868 G869 C870 U871 U872 U873 A874 G875 G876 G877 C878 U879 A880 G881 C882 A886 A887 G888 A891 U896 A897 U898 U899 G900 G901 A902 G903 G904 A908 A911 C912 U913 G914 U915 U916
U917 G918 G919 A920 C921 G922 A923 G924 G925 G926 G927 C928 G929 G937 G938 U939 U940 A941 C942 C943 G944 A945 A946 U947 U948 C949 A950 G951 A952 A955 A956 C957 U958 C959 C960 G961 A962 A963 U964 G965 C966 C967 U970 U971 A972 A973 U974 A977 G983 G984 A985 G986 U987 C988 A989 G990
C993 G996 G997 A1001 U1002 A1003 A1004 G1005 G1006 U1007 C1008 U1013 U1014 C1015 G1016 A1017 A1018 A1019 G1020 G1021 A1024 A1025 C1026 A1027 G1028 C1029 C1030 C1031 A1032 G1033 A1034 C1035 C1036 A1037 C1038 C1039 A1040 G1041 C1042 U1043 A1044 A1045 G1046 C1051 A1052 A1053 A1054 A1055 U1056 A1057 U1058 A1059 U1060 G1061
G1069 A1070 G1074 G1075 A1076 U1077 G1078 U1079 G1080 G1081 C1082 G1083 U1084 U1085 G1086 C1087 C1088 C1089 A1090 G1091 A1092 C1093 A1094 A1095 C1096 U1097 A1098 G1099 G1100 A1101 U1102 G1103 U1104 U1105 G1106 G1107 C1108 U1109 U1110 A1111 G1112 A1113 A1114 G1115 C1116 A1117 G1118 C1119 C1120 A1121 A1121 U1122 C1123 A1124 U1125 U1126 U1127 A1128 A1129
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C1196 C1197 G1198 A1199 A1200 G1201 G1207 A1208 U1209 U1210 C1211 U1212 C1213 C1214 U1215 U1216 U1217 G1218 G1219 A1222 A1223 U1224 G1225 G1226 U1227 A1228 G1229 G1230 A1231 G1232 A1233 G1234 C1235 G1236 U1237 U1238 C1239 U1240 G1245 U1248 U1249 G1250 G1253 A1258 G1261 U1262 G1265 G1266 A1267 C1268 A1269 U1270
G1271 A1275 G1276 C1277 G1278 C1279 G1283 A1284 A1285 G1286 U1287 G1288 A1289 G1290 A1291 A1292 U1293 G1294 C1295 C1296 G1297 G1298 U1299 G1304 U1305 A1306 G1307 C1308 G1309 A1310 A1311 A1312 C1315 G1316 G1320 A1321 G1322 A1323 C1326 U1330 C1331 C1332 A1333 C1334 C1335 G1336 A1337 U1338 U1339 G1340 A1341 C1342 U1343
A1344 A1345 G1346 G1347 U1348 U1349 U1350 C1351 C1352 A1355 G1356 G1357 A1358 A1359 G1360 G1361 C1362 U1363 C1364 G1365 U1366 C1367 C1368 G1369 C1370 U1371 C1372 G1376 U1377 U1378 A1379 G1380 U1381 C1382 G1383 G1384 U1385 U1386 C1387 C1388 U1389 A1390 A1391 G1392 C1393 U1394 G1395 A1396 C1400 G1401 A1402 C1403 A1404 G1405 G1406 C1407 G1408
U1409 A1410 G1411 G1412 C1413 G1414 A1415 U1416 A1419 U1420 A1421 A1422 C1423 A1424 G1425 G1426 U1427 U1428 G1429 A1430 U1431 A1432 U1433 U1434 C1435 G1438 U1439 A1440 C1441 C1445 U1446 A1447 U1448 A1449 A1450 U1451 C1452 G1453 U1454 U1455 U1456 U1457 A1458 A1459 U1460 C1461 G1462 A1463 U1464 G1465 G1466 G1467 G1468 G1469 G1470 A1471 C1472
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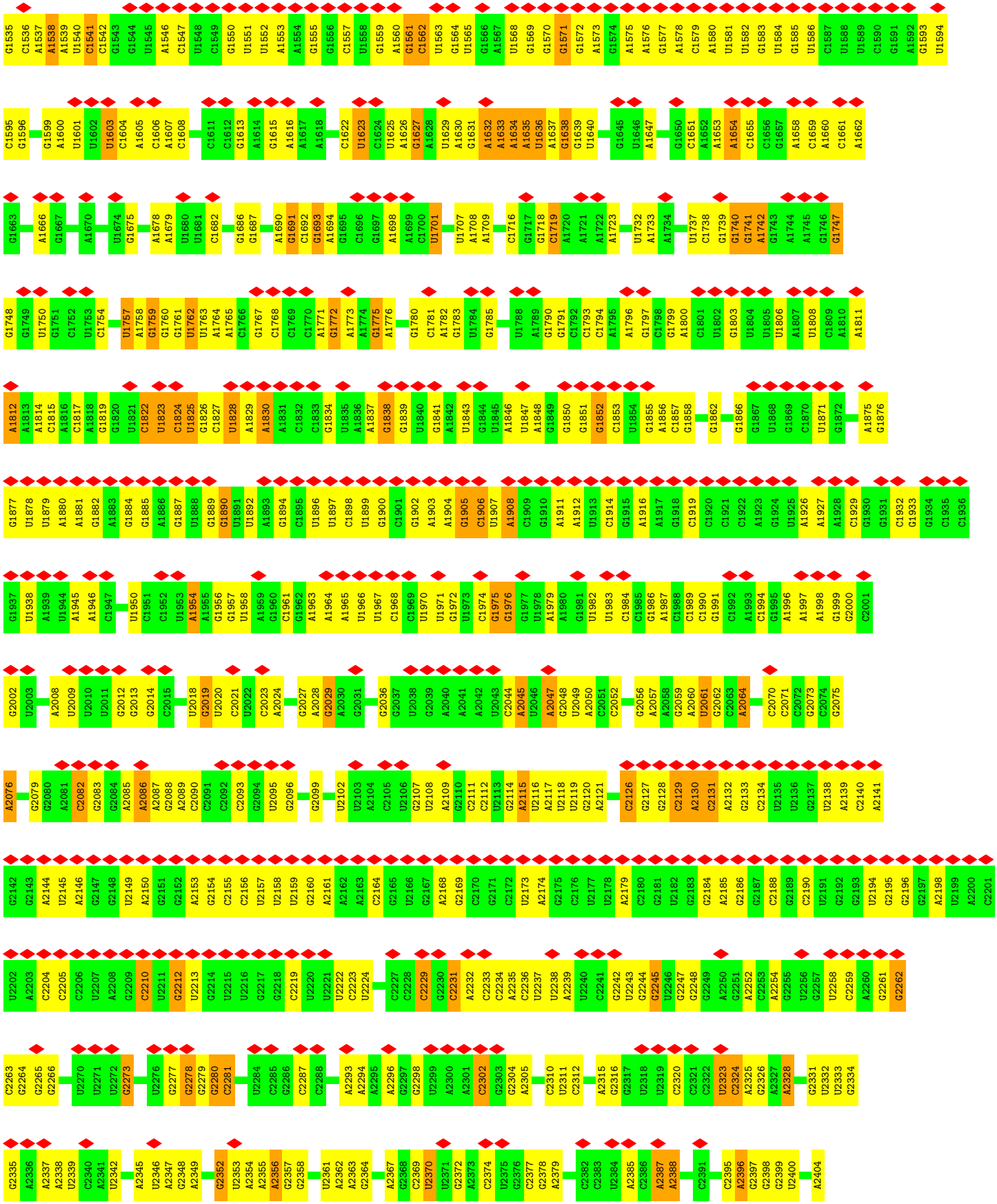
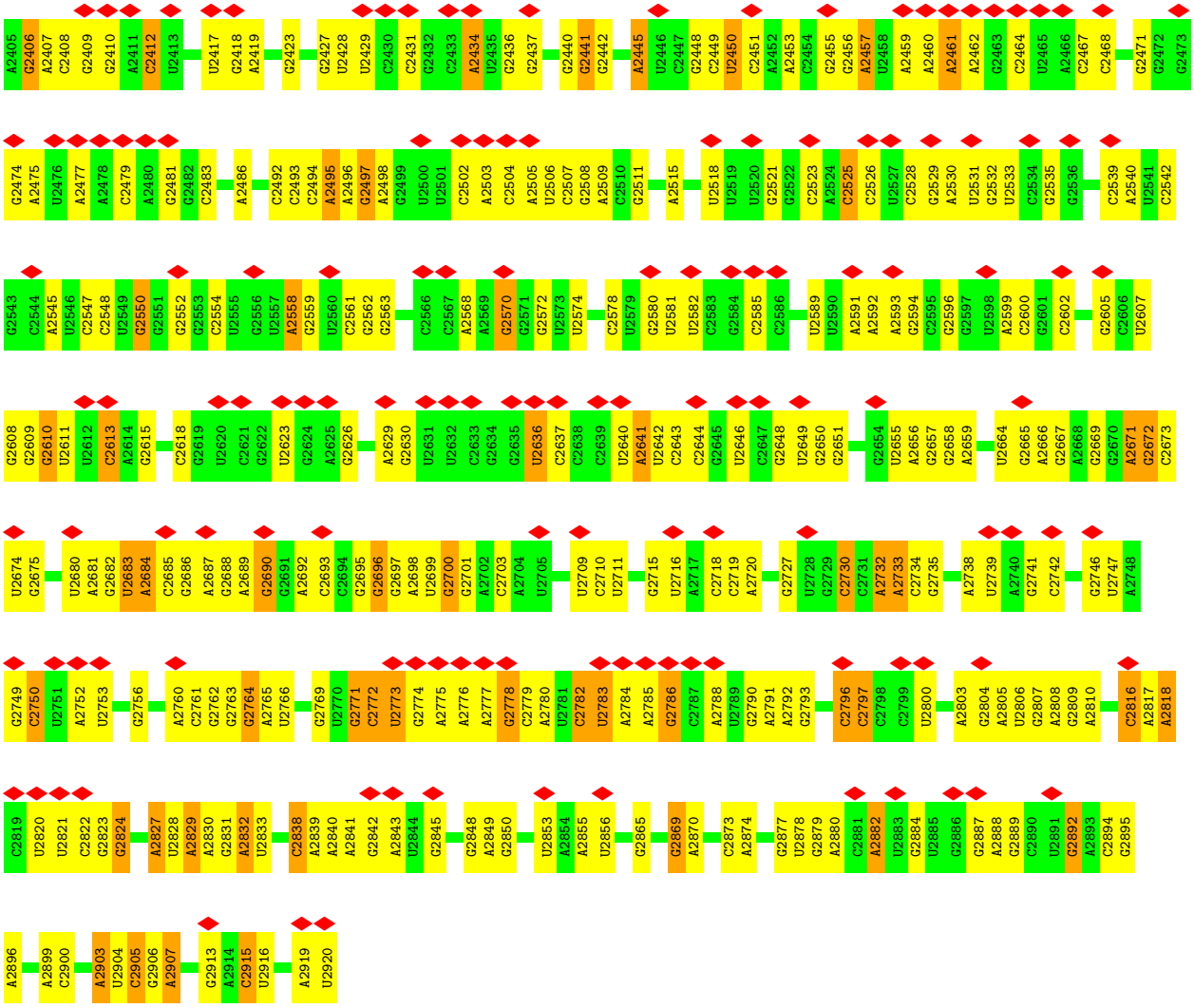
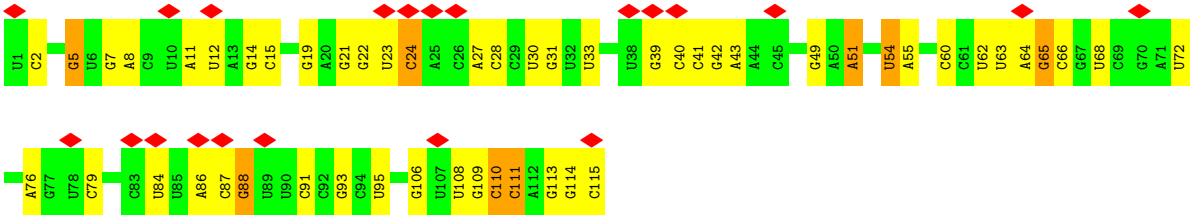




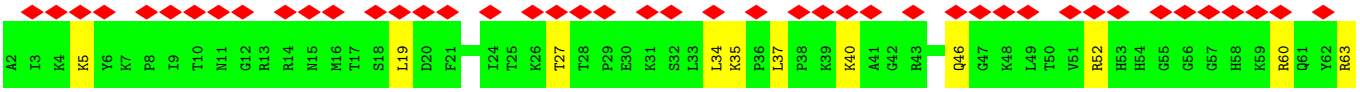
• Molecule 2: 5S ribosomal RNA

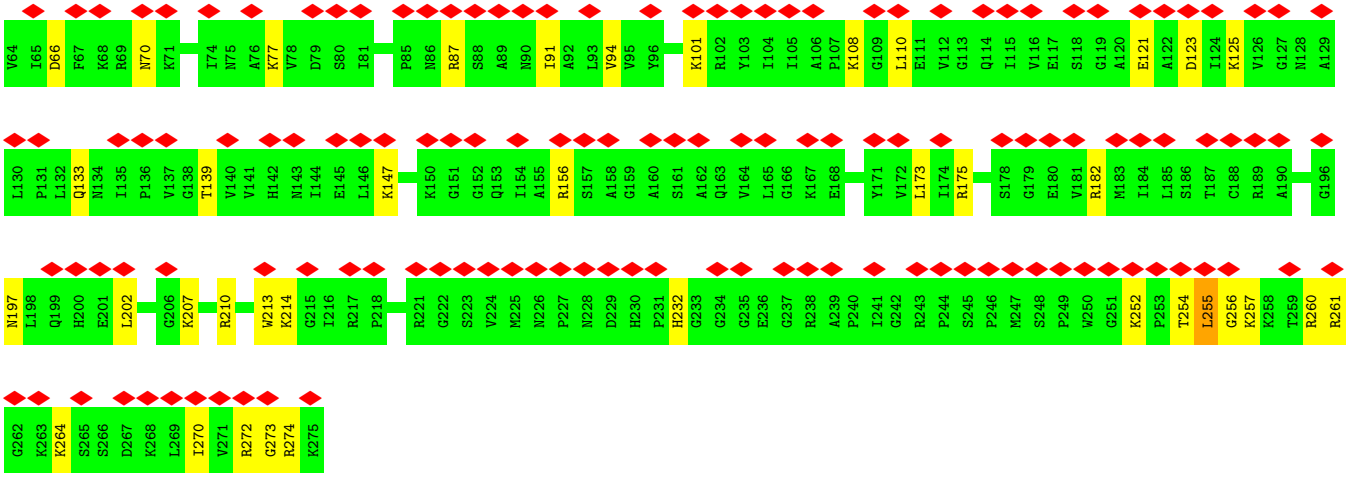
Chain B:



• Molecule 3: 50S ribosomal protein L2

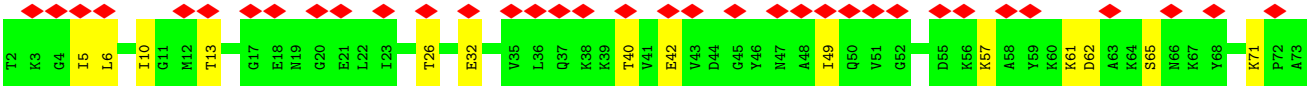
Chain C:





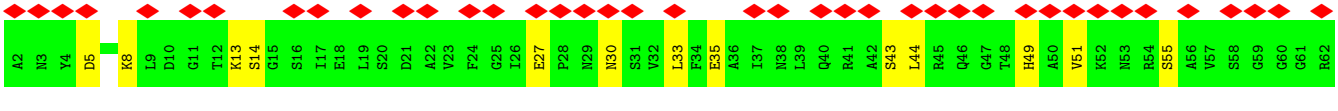
• Molecule 4: 50S ribosomal protein L3

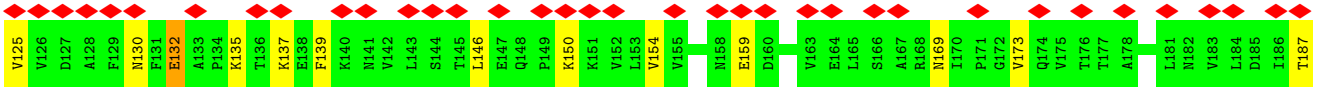
Chain D:

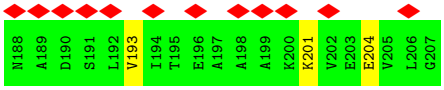


• Molecule 5: 50S ribosomal protein L4

Chain E:

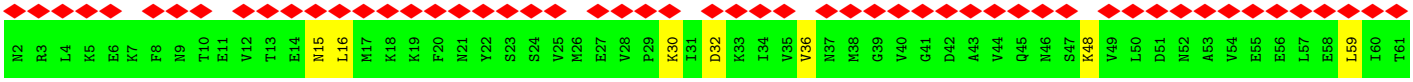


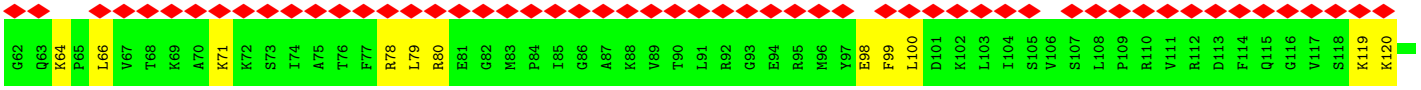


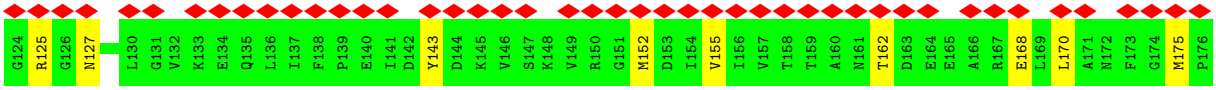


• Molecule 6: 50S ribosomal protein L5

Chain F:

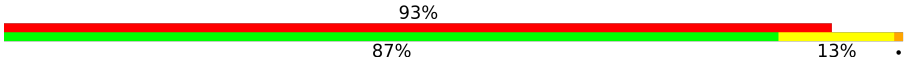


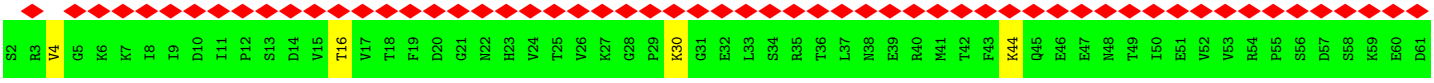


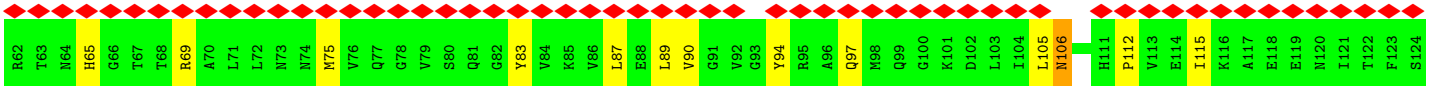


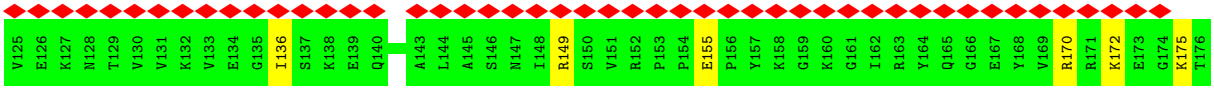
• Molecule 7: 50S ribosomal protein L6

Chain G:



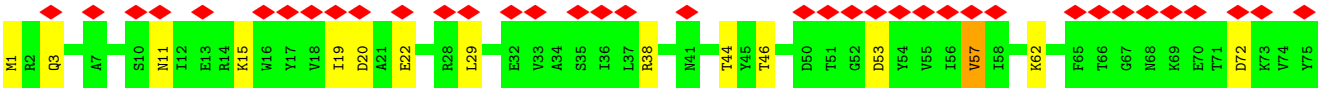


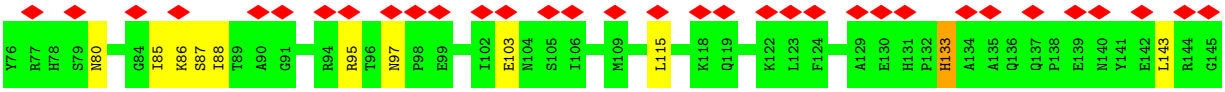




• Molecule 8: 50S ribosomal protein L13

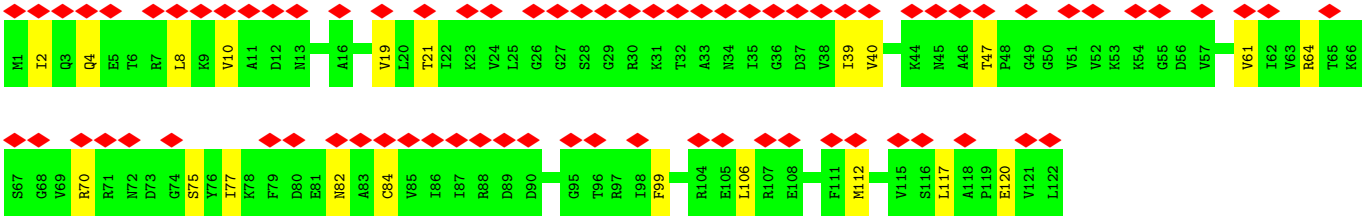
Chain H:



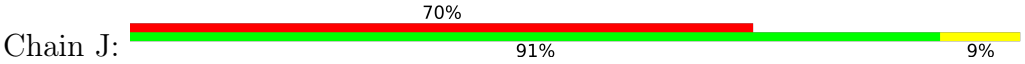


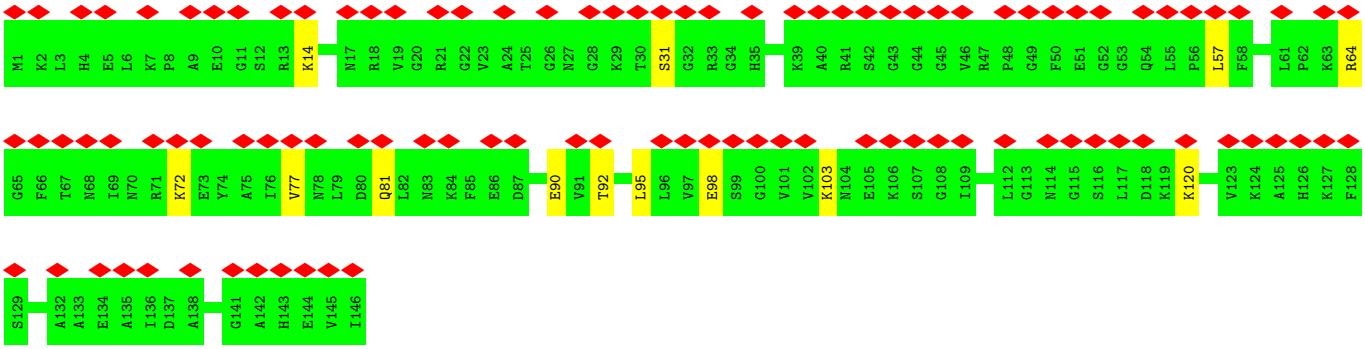
• Molecule 9: 50S ribosomal protein L14

Chain I:

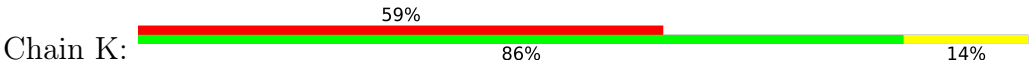


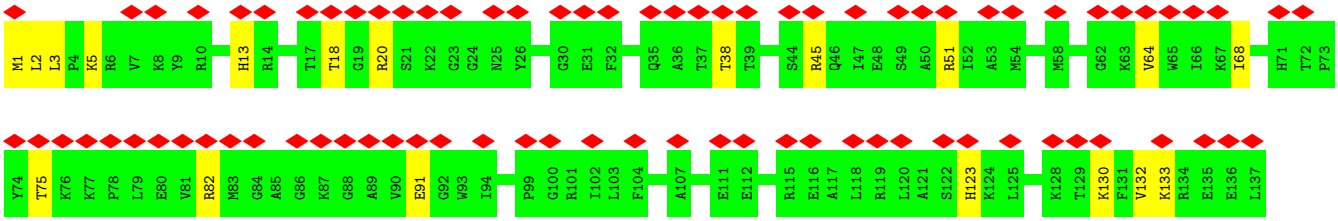
• Molecule 10: 50S ribosomal protein L15



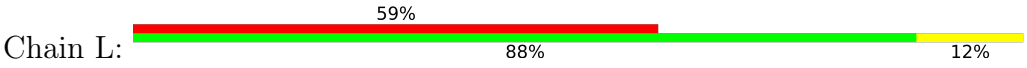


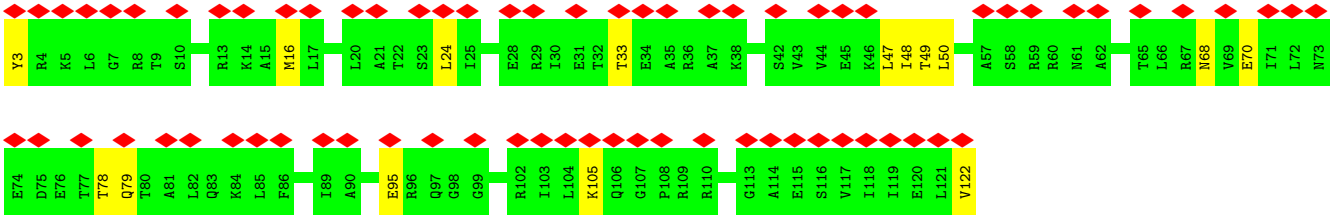
• Molecule 11: 50S ribosomal protein L16



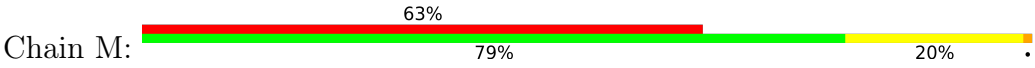


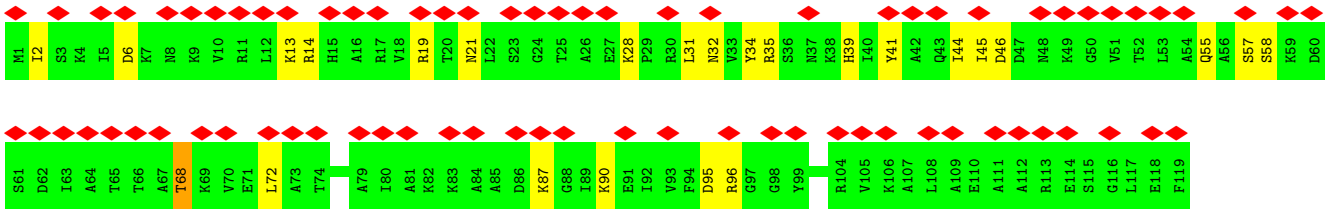
• Molecule 12: 50S ribosomal protein L17





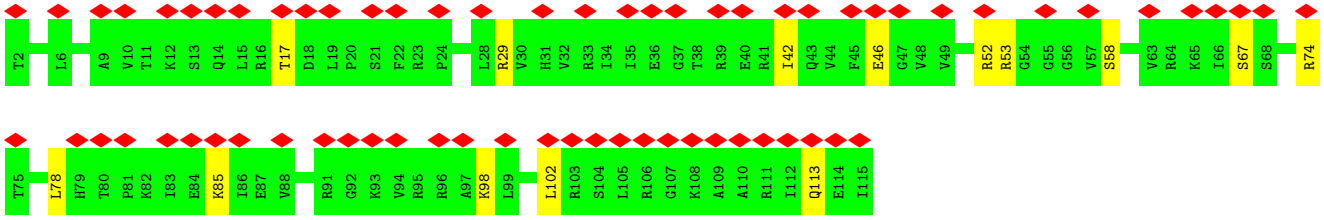
• Molecule 13: 50S ribosomal protein L18





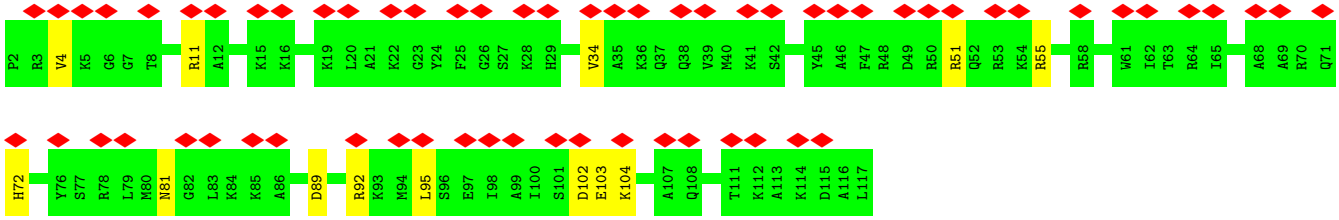
• Molecule 14: 50S ribosomal protein L19

Chain N:



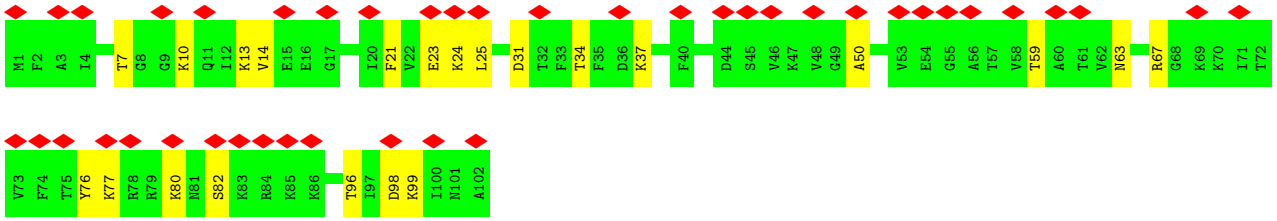
• Molecule 15: 50S ribosomal protein L20

Chain O:



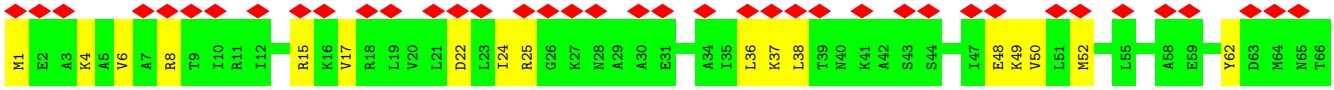
• Molecule 16: 50S ribosomal protein L21

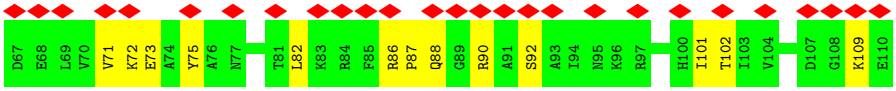
Chain P:



• Molecule 17: 50S ribosomal protein L22

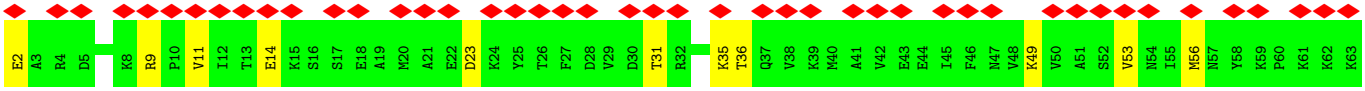
Chain Q:

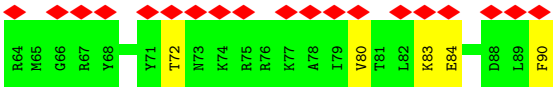




• Molecule 18: 50S ribosomal protein L23

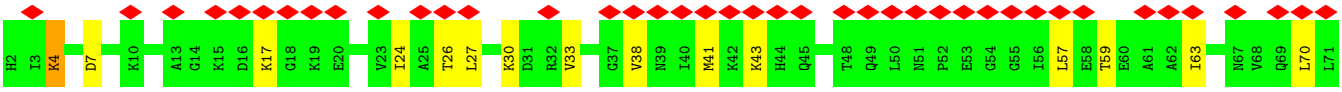
Chain R:

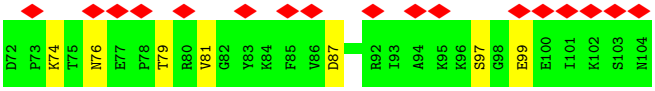




• Molecule 19: 50S ribosomal protein L24

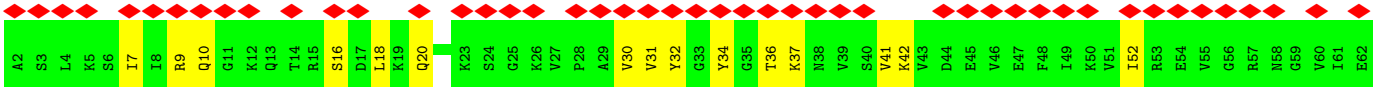
Chain S:

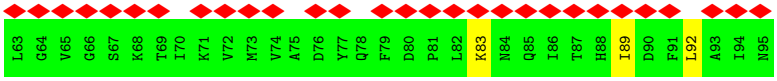




• Molecule 20: 50S ribosomal protein L25

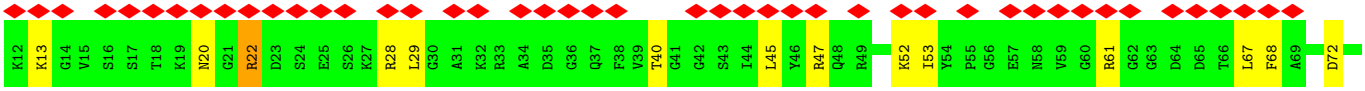
Chain T:

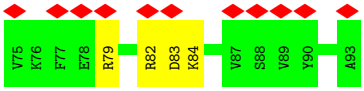




• Molecule 21: 50S ribosomal protein L27

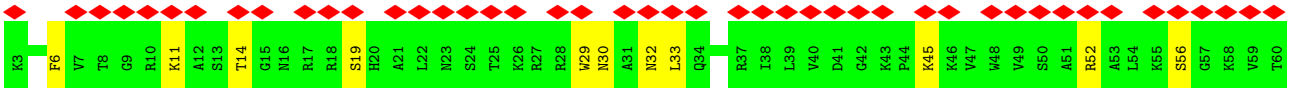
Chain U:





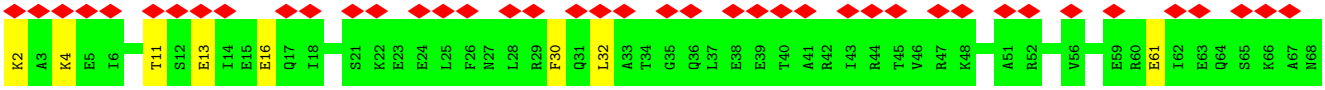
• Molecule 22: 50S ribosomal protein L28

Chain V:



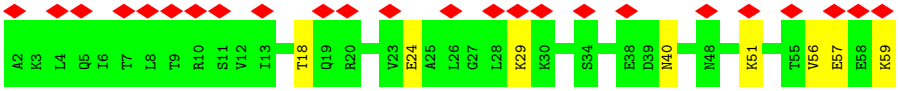
• Molecule 23: 50S ribosomal protein L29

Chain W:



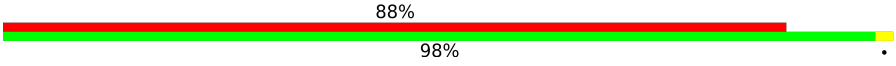
• Molecule 24: 50S ribosomal protein L30

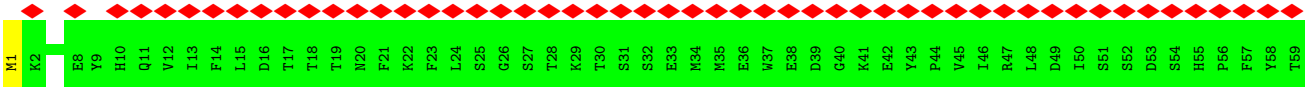
Chain X:



• Molecule 25: 50S ribosomal protein L31 type B

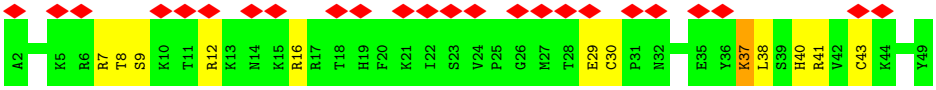
Chain Y:





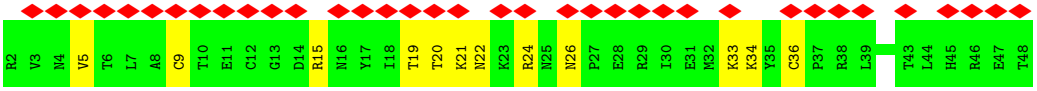
• Molecule 26: 50S ribosomal protein L32

Chain Z:



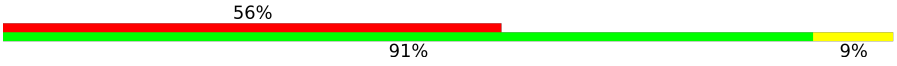
• Molecule 27: 50S ribosomal protein L33

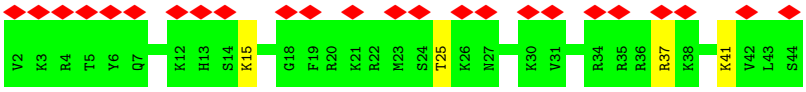
Chain 1:



• Molecule 28: 50S ribosomal protein L34

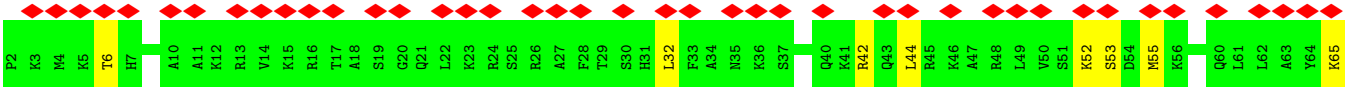
Chain 2:





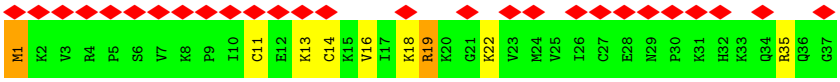
• Molecule 29: 50S ribosomal protein L35

Chain 3:



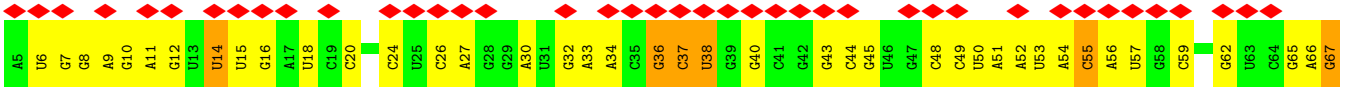
• Molecule 30: 50S ribosomal protein L36

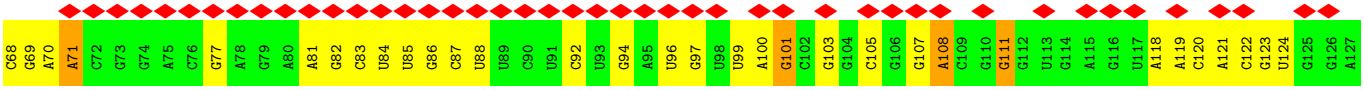
Chain 4:

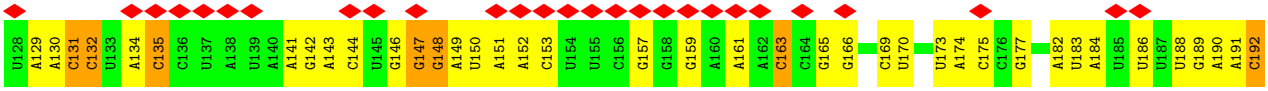


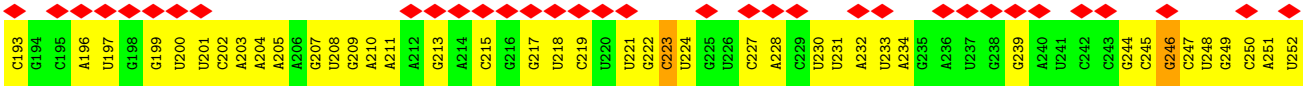
• Molecule 31: 16S ribosomal RNA

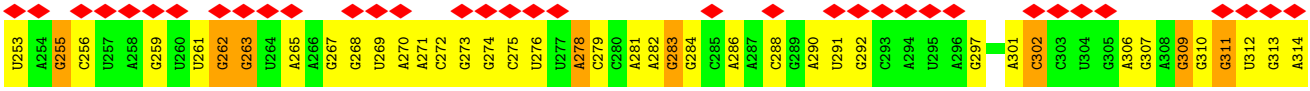
Chain a:

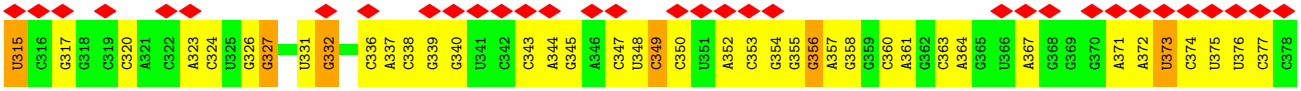


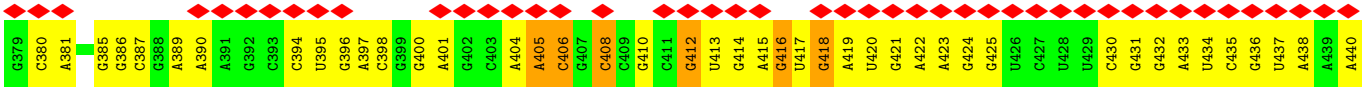


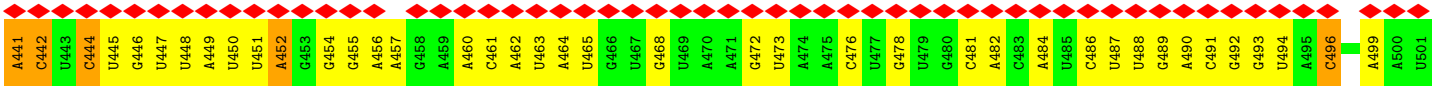


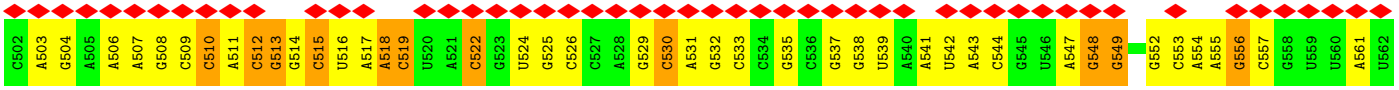


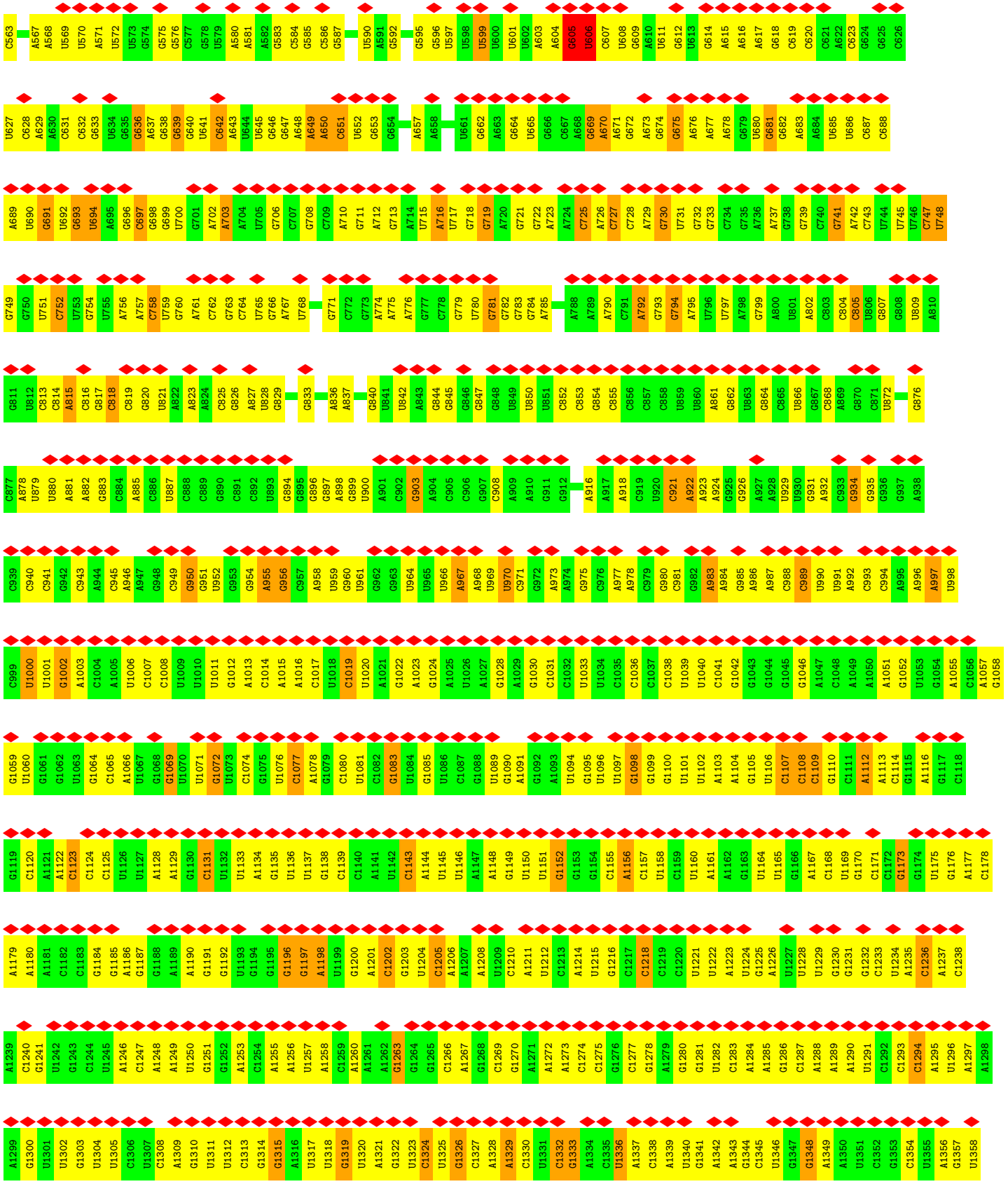








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G749 G750 U751 C752 U753 G754 U755 A756 A757 C758 U759 G760 A761 C762 G763 C764 U765 G766 A767 U768 G771 C772 G773 A774 A775 A776 G777 C778 G779 U780 G781 G782 G783 G784 A785 A788 A789 A790 C791 A792 G793 G794 A795 U796 U797 A798 G799 A800 U801 A802 C803 C804 C805 U806 G807 G808 U809 A810
G811 U812 C813 C814 A815 C816 G817 C818 C819 G820 U821 A822 A823 A824 C825 G826 A827 U828 G829 G833 A836 A837 G840 U841 U842 A843 G844 G845 G846 G847 G848 U849 U850 U851 C852 C853 G854 C855 C856 C857 C858 U859 U860 A861 G862 U863 G864 C865 U866 G867 C868 A869 G870 C871 U872 G876
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C999 U1000 U1001 G1002 A1003 C1004 A1005 U1006 C1007 C1008 U1009 U1010 U1011 G1012 A1013 C1014 A1015 A1016 C1017 U1018 C1019 U1020 A1021 G1022 A1023 G1024 A1025 U1026 A1027 G1028 A1029 G1030 C1031 C1032 U1033 U1034 C1035 C1036 C1037 C1038 U1039 U1040 C1041 G1042 G1043 G1044 G1045 G1046 A1047 C1048 A1049 A1050 A1051 G1052 U1053 G1054 A1055 C1056 A1057 G1058
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A1179 A1180 A1181 C1182 C1183 G1184 G1185 A1186 G1187 G1188 A1189 A1190 G1191 G1192 U1193 G1194 G1195 G1196 G1197 A1198 U1199 G1200 A1201 C1202 G1203 U1204 C1205 A1206 A1207 A1208 U1209 C1210 A1211 U1212 C1213 A1214 U1215 G1216 C1217 C1218 C1219 C1220 U1221 U1222 A1223 U1224 G1225 A1226 U1227 U1228 U1229 G1230 G1231 G1232 C1233 U1234 A1235 C1236 A1237 C1238
A1239 C1240 G1241 U1242 G1243 C1244 U1245 A1246 C1247 A1248 A1249 U1250 G1251 G1252 A1253 C1254 A1255 A1256 U1257 A1258 C1259 A1260 A1261 A1262 G1263 G1264 G1265 C1266 A1267 G1268 C1269 G1270 A1271 A1272 A1273 C1274 C1275 G1276 C1277 G1278 A1279 G1280 G1281 U1282 C1283 A1284 A1285 G1286 C1287 A1288 A1289 A1290 U1291 C1292 C1293 C1294 A1295 U1296 A1297 A1298
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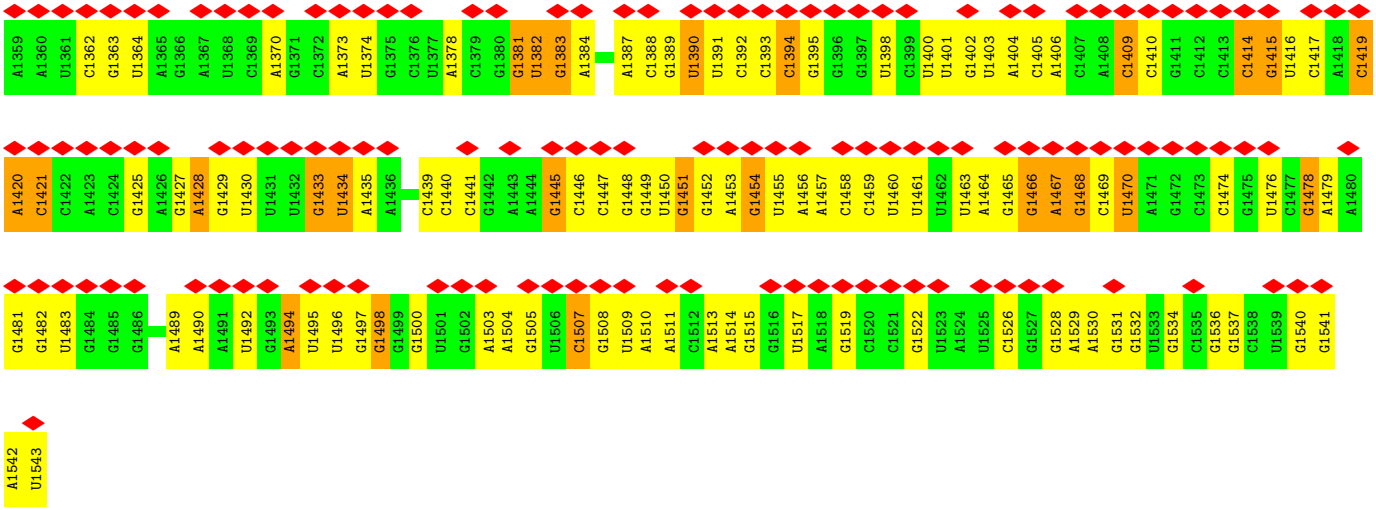
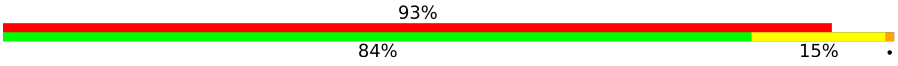
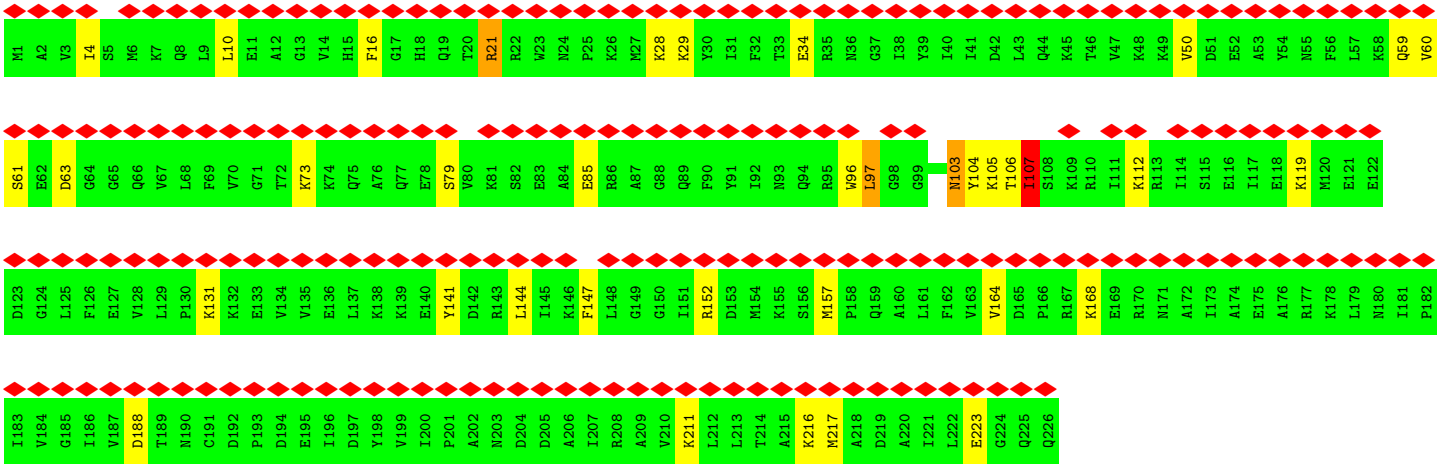


• Molecule 32: 30S ribosomal protein S2

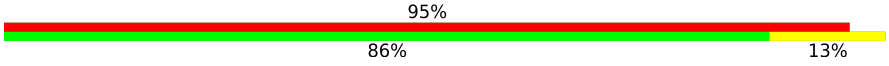
Chain b:

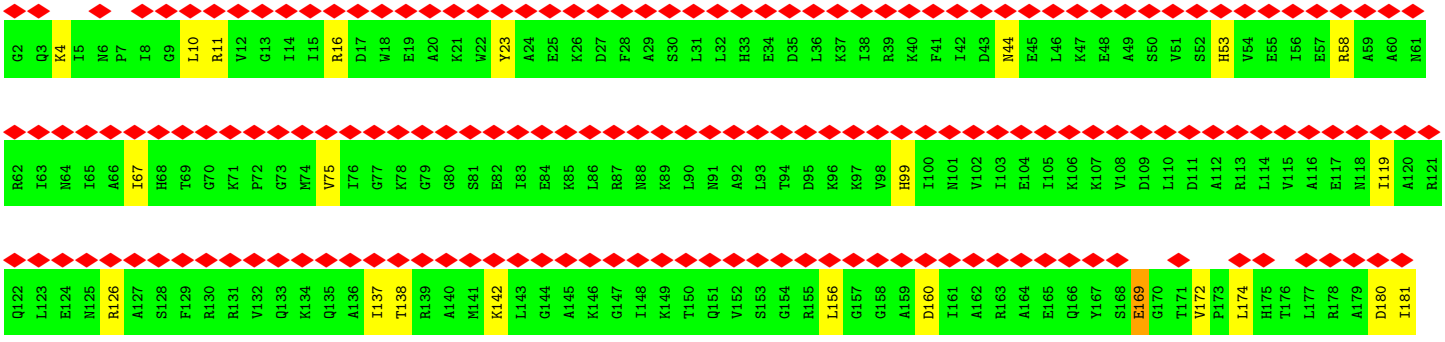


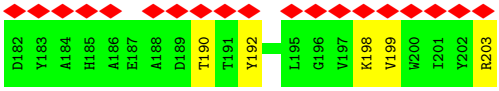


• Molecule 33: 30S ribosomal protein S3

Chain c:

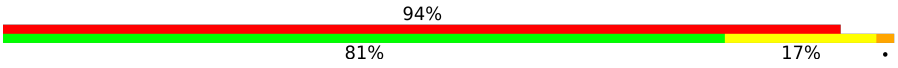


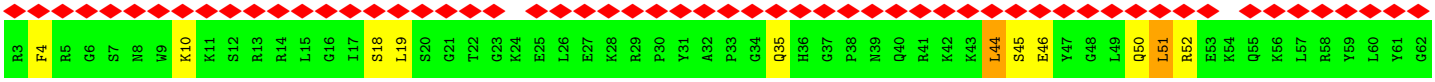


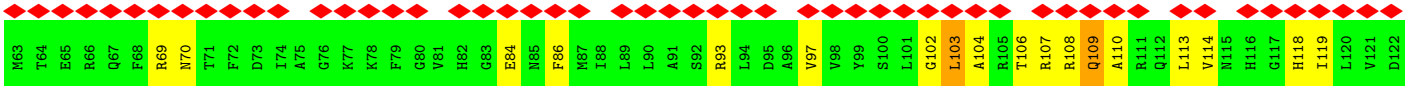


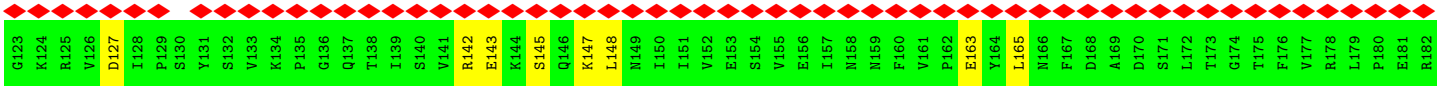
• Molecule 34: 30S ribosomal protein S4

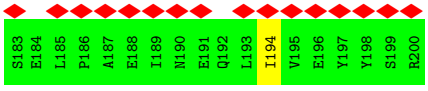
Chain d:





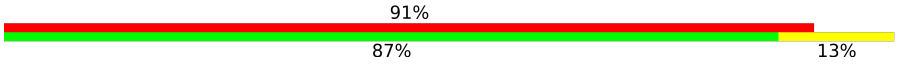


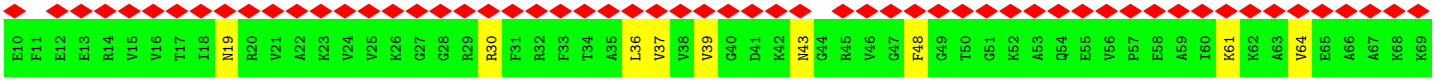


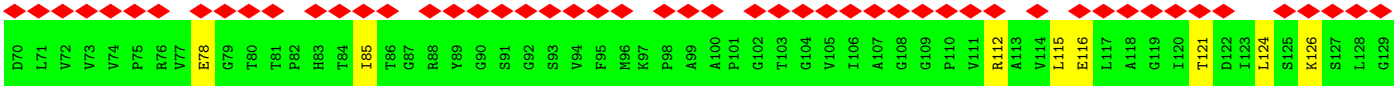


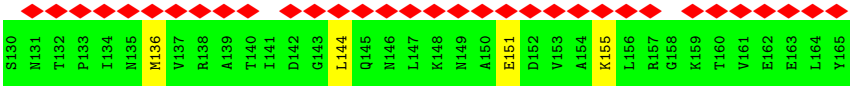
• Molecule 35: 30S ribosomal protein S5

Chain e:



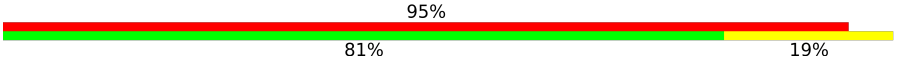


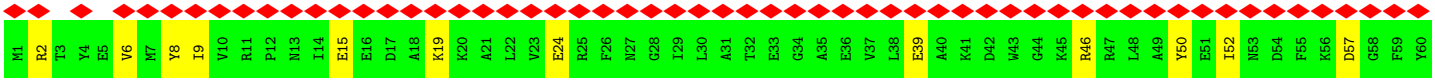


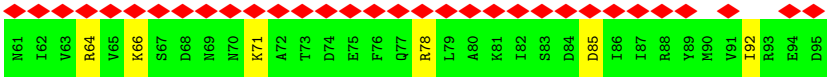


• Molecule 36: 30S ribosomal protein S6

Chain f:

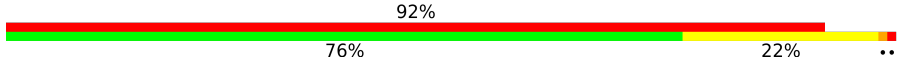


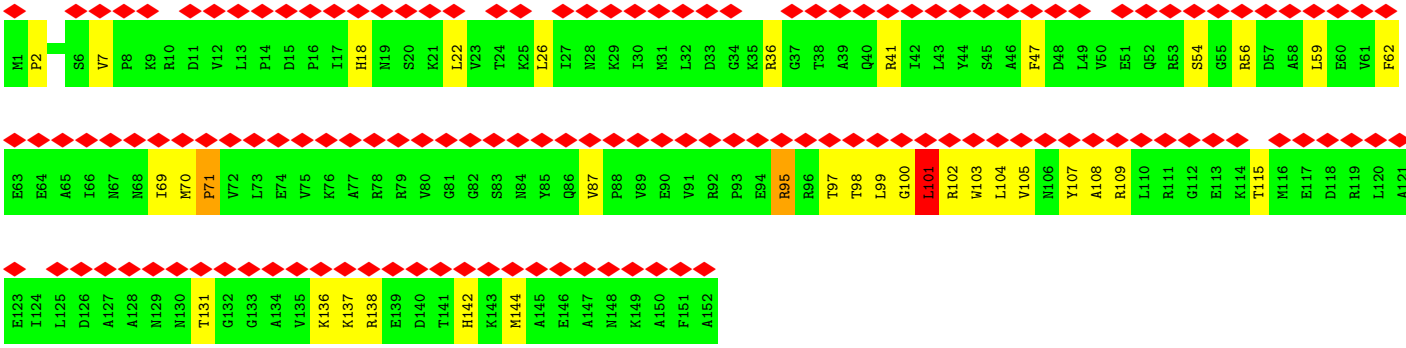




• Molecule 37: 30S ribosomal protein S7

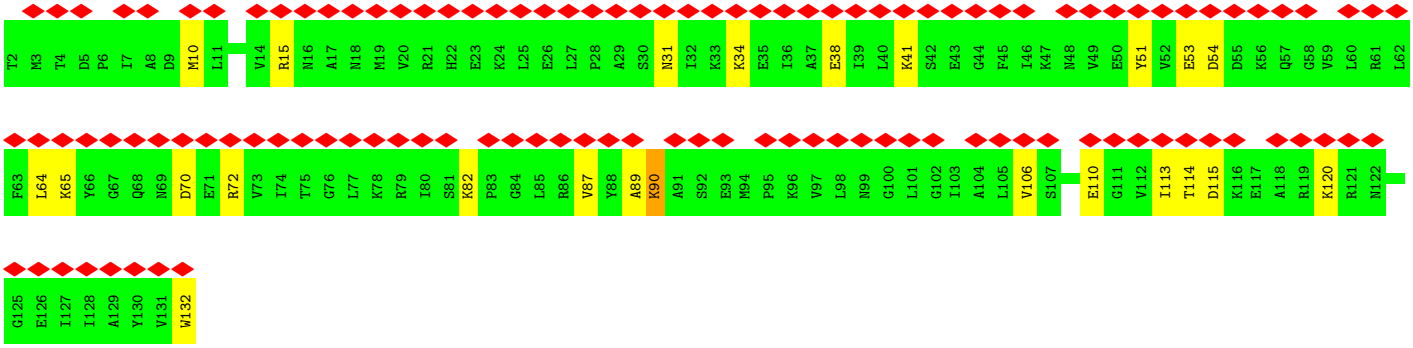
Chain g:





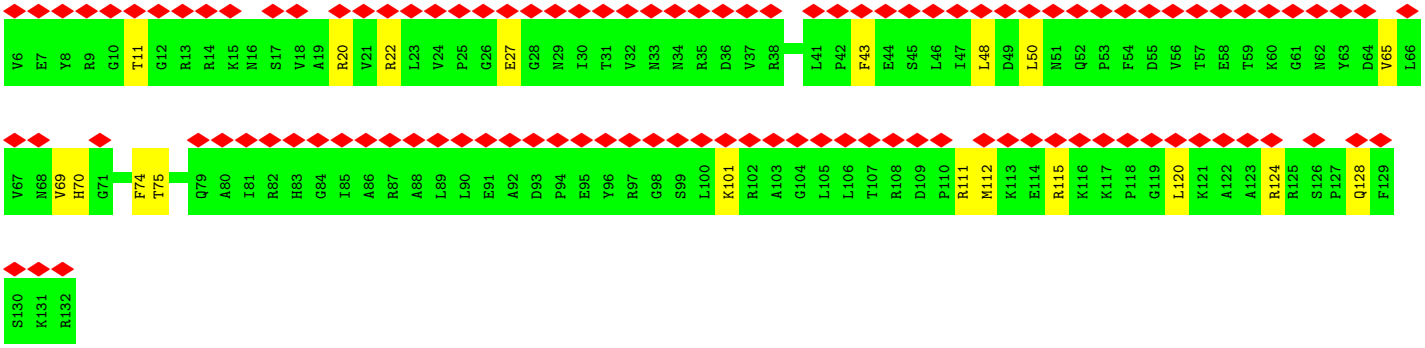
• Molecule 38: 30S ribosomal protein S8

Chain h:



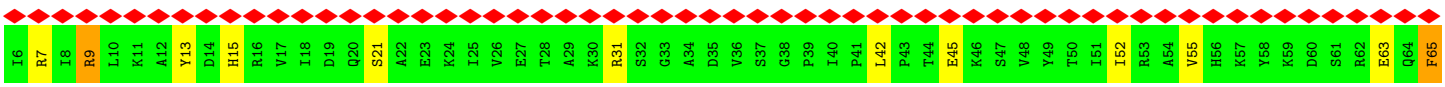
• Molecule 39: 30S ribosomal protein S9

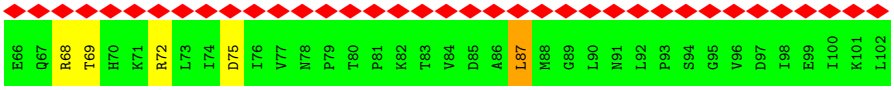
Chain i:



• Molecule 40: 30S ribosomal protein S10

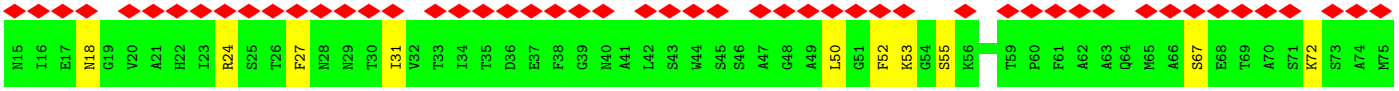
Chain j:

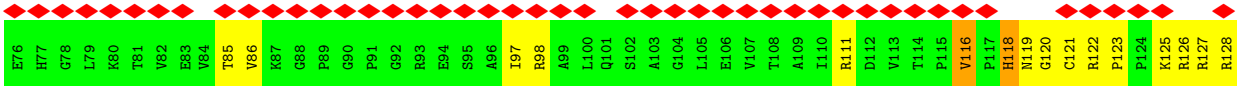




• Molecule 41: 30S ribosomal protein S11

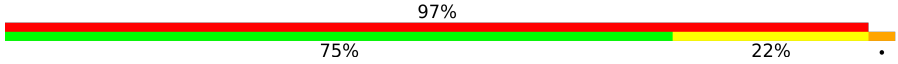
Chain k:

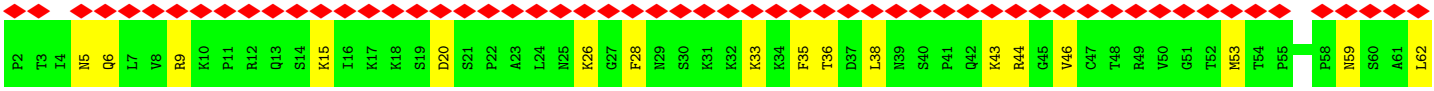


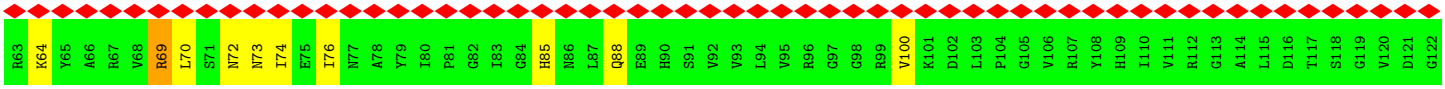


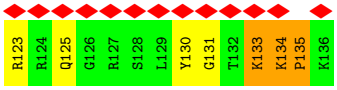
• Molecule 42: 30S ribosomal protein S12

Chain l:



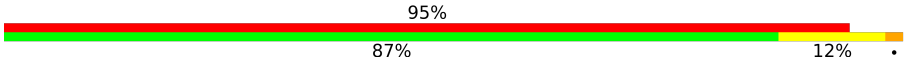


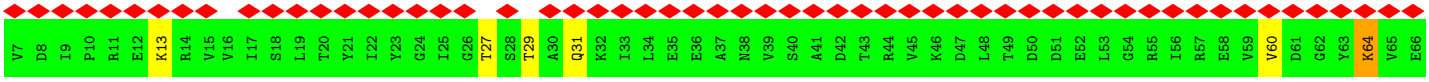


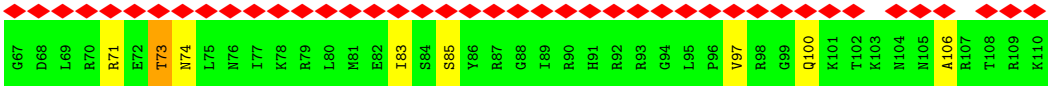


• Molecule 43: 30S ribosomal protein S13

Chain m:

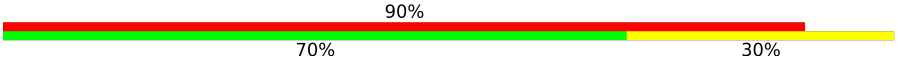


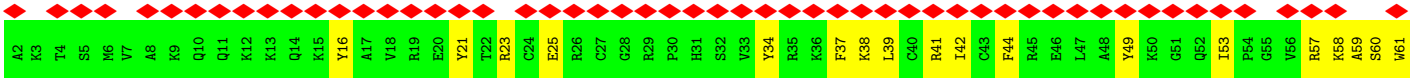




• Molecule 44: 30S ribosomal protein S14 type Z

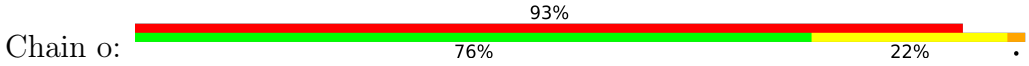
Chain n:

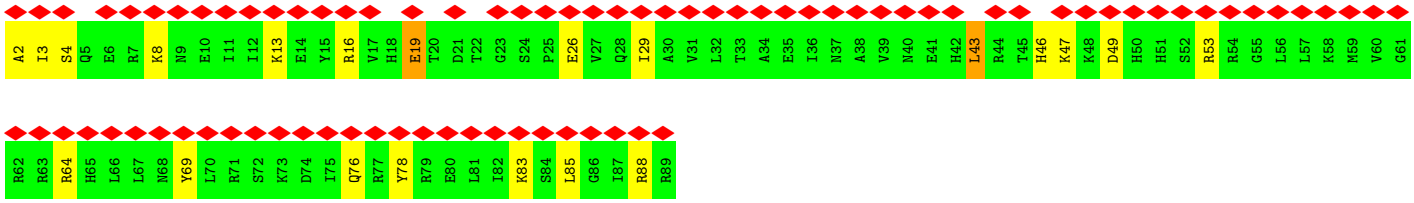




• Molecule 45: 30S ribosomal protein S15

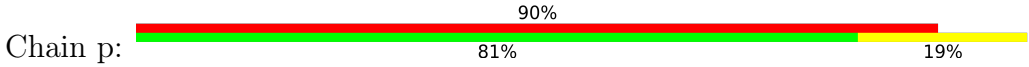
Chain o:

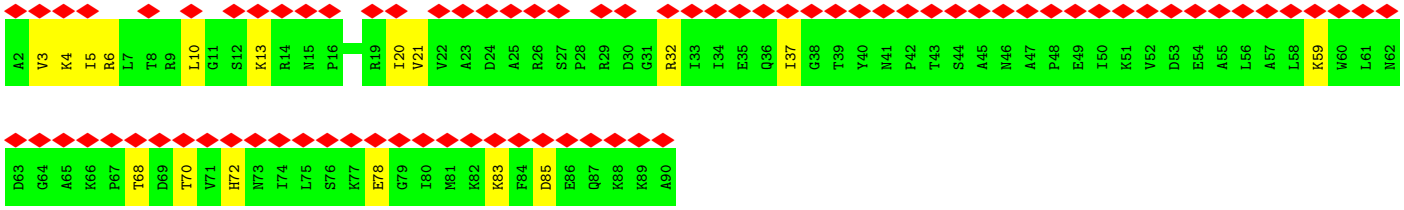




• Molecule 46: 30S ribosomal protein S16

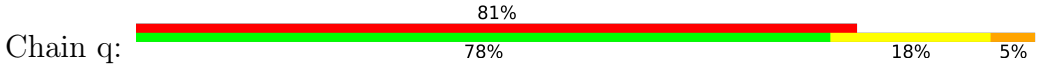
Chain p:

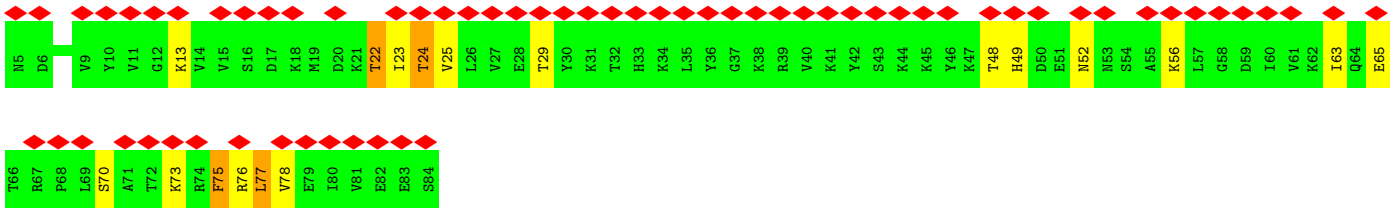




• Molecule 47: 30S ribosomal protein S17

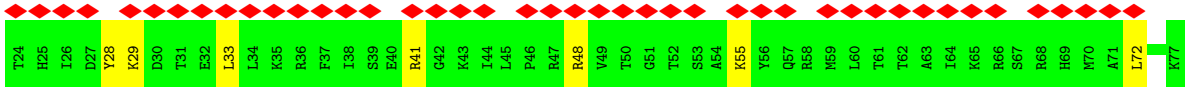
Chain q:





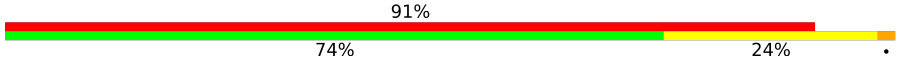
• Molecule 48: 30S ribosomal protein S18

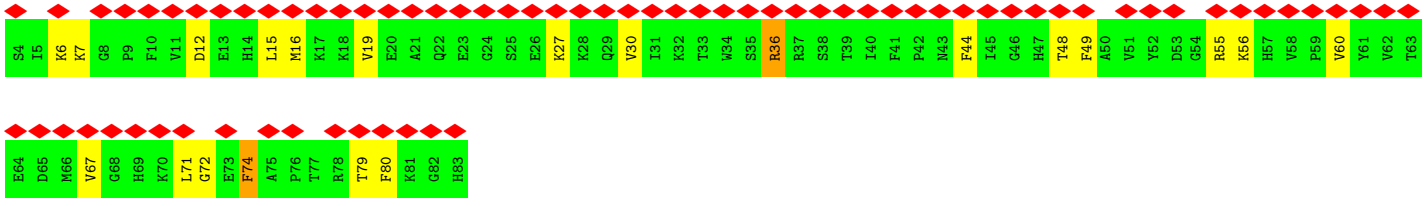
Chain r:



• Molecule 49: 30S ribosomal protein S19

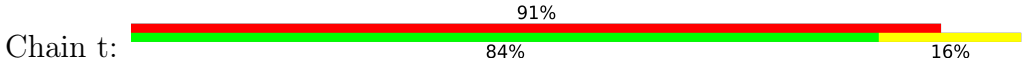
Chain s:

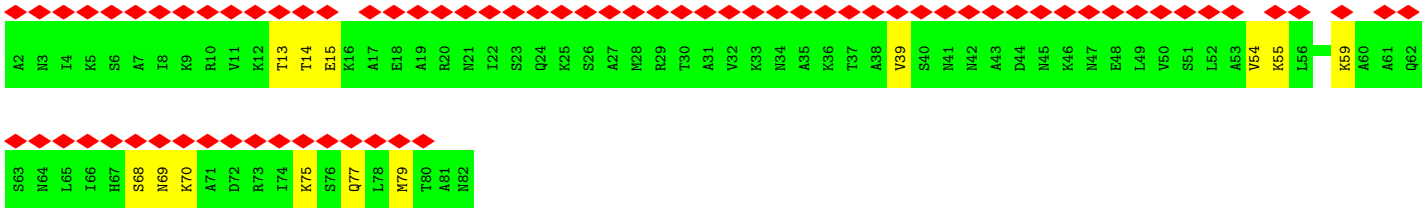




• Molecule 50: 30S ribosomal protein S20

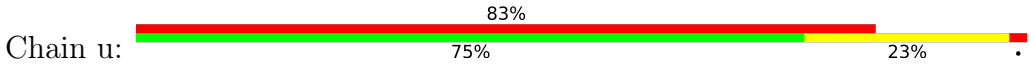
Chain t:

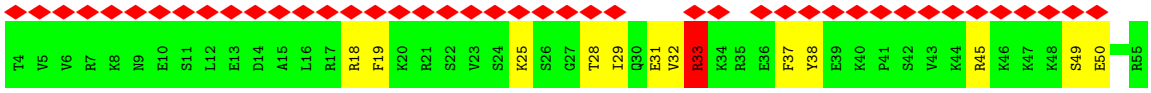




• Molecule 51: 30S ribosomal protein S21

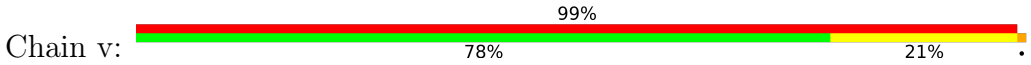
Chain u:

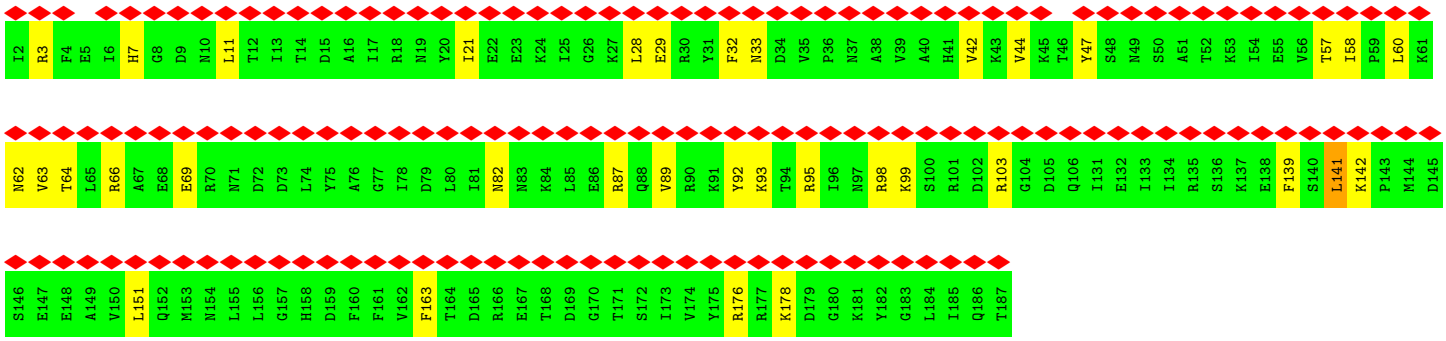




• Molecule 52: Ribosome hibernation promoting factor

Chain v:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	145897	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	1.076	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.223	Depositor
Minimum map value	-0.111	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.024	Depositor
Map size (Å)	430.4, 430.4, 430.4	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.076, 1.076, 1.076	Depositor

5 Model quality

5.1 Standard geometry

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	A	1.69	183/69739 (0.3%)	1.60	1291/108751 (1.2%)
2	B	1.04	0/2733	1.42	26/4257 (0.6%)
3	C	0.61	0/2125	0.82	2/2853 (0.1%)
4	D	0.70	0/1651	0.70	1/2215 (0.0%)
5	E	0.69	1/1595 (0.1%)	0.74	0/2154
6	F	0.37	0/1339	0.66	0/1805
7	G	0.38	0/1281	0.66	0/1736
8	H	0.66	0/1165	0.71	0/1570
9	I	0.65	0/925	0.80	0/1242
10	J	0.62	0/1100	0.71	0/1467
11	K	2.44	1/1095 (0.1%)	0.78	1/1472 (0.1%)
12	L	0.59	0/936	0.79	0/1253
13	M	0.45	0/900	0.70	0/1205
14	N	0.65	0/901	0.74	0/1209
15	O	0.71	0/954	0.76	0/1264
16	P	0.72	0/800	0.76	0/1070
17	Q	0.65	0/845	0.80	0/1140
18	R	0.60	0/723	0.68	0/966
19	S	0.49	0/779	0.69	0/1043
20	T	0.39	0/730	0.64	0/981
21	U	0.66	0/628	0.81	1/833 (0.1%)
22	V	0.49	0/451	0.76	0/603
23	W	0.45	0/542	0.73	0/722
24	X	0.64	0/451	0.71	0/606
25	Y	0.31	0/378	0.57	0/521
26	Z	0.63	0/366	0.85	0/489
27	1	0.44	0/395	0.77	0/530
28	2	0.78	0/371	0.81	0/484
29	3	0.60	0/526	0.83	1/690 (0.1%)
30	4	0.50	0/298	0.88	1/392 (0.3%)
31	a	2.36	45/36913 (0.1%)	1.54	698/57564 (1.2%)
32	b	1.12	1/1846 (0.1%)	0.63	1/2477 (0.0%)
33	c	0.29	0/1523	0.65	0/2062
34	d	0.31	0/1526	0.69	1/2063 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	e	0.32	0/1159	0.63	0/1566
36	f	0.36	0/789	0.66	0/1060
37	g	0.39	0/1175	0.87	2/1584 (0.1%)
38	h	1.16	4/1037 (0.4%)	0.96	7/1392 (0.5%)
39	i	0.34	0/937	0.71	0/1269
40	j	0.33	0/764	0.76	0/1034
41	k	0.34	0/824	0.75	1/1119 (0.1%)
42	l	6.63	7/1054 (0.7%)	0.87	4/1415 (0.3%)
43	m	0.32	0/732	0.71	0/991
44	n	6.34	3/497 (0.6%)	1.03	4/662 (0.6%)
45	o	0.33	0/732	0.72	1/979 (0.1%)
46	p	0.33	0/705	0.65	0/952
47	q	0.35	0/629	0.81	1/849 (0.1%)
48	r	0.35	0/452	0.72	0/604
49	s	6.45	8/654 (1.2%)	1.28	11/879 (1.3%)
50	t	0.37	0/591	0.73	0/793
51	u	0.45	0/403	0.83	1/535 (0.2%)
52	v	0.33	0/1350	0.72	1/1812 (0.1%)
All	All	1.85	253/153014 (0.2%)	1.41	2057/229184 (0.9%)

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	C	0	5
5	E	0	1
6	F	0	2
7	G	0	1
8	H	0	4
11	K	0	3
12	L	0	1
13	M	0	1
16	P	0	2
19	S	0	1
26	Z	0	2
30	4	0	2
31	a	0	2
32	b	0	4
33	c	0	1
34	d	0	7

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Mol	Chain	#Chirality outliers	#Planarity outliers
37	g	0	10
39	i	0	1
40	j	0	4
41	k	0	5
42	l	0	2
43	m	0	5
44	n	0	4
45	o	0	4
47	q	0	5
49	s	0	3
50	t	0	1
51	u	0	3
52	v	0	3
All	All	0	89

All (253) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
44	n	16	TYR	CB-CG	140.63	3.62	1.51
1	A	333	C	N1-C6	139.55	2.20	1.37
31	a	606	U	C2-N3	135.46	2.32	1.37
31	a	605	G	N3-C4	131.79	2.27	1.35
31	a	605	G	C2-N3	128.80	2.35	1.32
31	a	606	U	N1-C2	124.77	2.50	1.38
42	l	134	LYS	CD-CE	120.00	4.51	1.51
1	A	333	C	N3-C4	117.33	2.16	1.33
31	a	605	G	C6-N1	113.71	2.19	1.39
31	a	606	U	N1-C6	106.92	2.34	1.38
1	A	333	C	C2-N3	106.04	2.20	1.35
31	a	605	G	N1-C2	103.25	2.20	1.37
31	a	606	U	C4-C5	99.71	2.33	1.43
42	l	130	TYR	CD1-CE1	99.09	2.88	1.39
31	a	989	C	N1-C6	97.12	1.95	1.37
31	a	606	U	N3-C4	95.63	2.24	1.38
42	l	130	TYR	CD2-CE2	95.02	2.81	1.39
1	A	333	C	C4-C5	94.11	2.18	1.43
1	A	333	C	C5-C6	91.01	2.07	1.34
49	s	74	PHE	CD2-CE2	90.66	3.20	1.39
31	a	605	G	C5-C4	87.78	1.99	1.38
31	a	606	U	C5-C6	85.91	2.11	1.34
31	a	989	C	N3-C4	82.25	1.91	1.33
1	A	333	C	N1-C2	80.64	2.20	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	K	2	LEU	CG-CD1	78.91	4.43	1.51
31	a	989	C	C2-N3	74.72	1.95	1.35
49	s	74	PHE	CD1-CE1	73.03	2.85	1.39
31	a	605	G	C5-C6	70.56	2.12	1.42
49	s	74	PHE	CE1-CZ	70.36	2.71	1.37
49	s	74	PHE	CE2-CZ	67.60	2.65	1.37
1	A	393	G	C1'-N9	66.91	2.49	1.48
42	l	130	TYR	CE2-CZ	63.48	2.21	1.38
42	l	130	TYR	CE1-CZ	62.35	2.19	1.38
31	a	989	C	C4-C5	61.37	1.92	1.43
31	a	989	C	C5-C6	60.26	1.82	1.34
31	a	989	C	N1-C2	58.49	1.98	1.40
42	l	130	TYR	CG-CD1	50.42	2.04	1.39
42	l	130	TYR	CG-CD2	49.24	2.03	1.39
31	a	405	A	N9-C4	47.29	1.66	1.37
32	b	107	ILE	CG1-CD1	46.30	4.70	1.50
31	a	405	A	N7-C5	45.82	1.66	1.39
49	s	74	PHE	CG-CD1	42.95	2.03	1.38
49	s	74	PHE	CG-CD2	41.51	2.01	1.38
31	a	405	A	C8-N7	40.18	1.59	1.31
31	a	405	A	N9-C8	39.41	1.69	1.37
1	A	917	U	C2-N3	35.89	1.62	1.37
1	A	393	G	N9-C4	35.24	1.66	1.38
1	A	393	G	N9-C8	34.87	1.62	1.37
31	a	36	G	O3'-P	33.12	2.00	1.61
38	h	90	LYS	CA-C	29.85	2.30	1.52
1	A	917	U	N3-C4	28.67	1.64	1.38
31	a	1112	A	N3-C4	28.57	1.51	1.34
1	A	917	U	N1-C6	28.22	1.63	1.38
1	A	917	U	N1-C2	28.18	1.64	1.38
31	a	1112	A	C6-N1	27.92	1.55	1.35
1	A	917	U	C4-C5	26.44	1.67	1.43
31	a	405	A	C5-C4	25.48	1.56	1.38
1	A	917	U	C5-C6	25.29	1.56	1.34
31	a	36	G	C3'-O3'	22.72	1.74	1.42
1	A	393	G	N7-C5	-22.27	1.25	1.39
31	a	1112	A	N1-C2	20.36	1.52	1.34
49	s	36	ARG	CA-C	20.30	2.05	1.52
31	a	1112	A	C5-C4	18.29	1.51	1.38
31	a	1112	A	C2-N3	18.25	1.50	1.33
31	a	1112	A	C5-C6	17.78	1.57	1.41
38	h	90	LYS	N-CA	16.46	1.79	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	2497	G	C8-N7	-8.76	1.25	1.30
1	A	1465	G	N7-C5	-7.94	1.34	1.39
1	A	393	G	C8-N7	-7.81	1.26	1.30
44	n	16	TYR	CG-CD1	7.76	1.49	1.39
1	A	2497	G	N7-C5	-7.13	1.34	1.39
5	E	132	GLU	C-N	-7.12	1.17	1.34
1	A	461	A	C5-C6	-7.12	1.34	1.41
31	a	263	G	N9-C8	-7.11	1.32	1.37
1	A	393	G	C2'-C1'	6.78	1.60	1.53
38	h	90	LYS	CB-CG	6.77	1.70	1.52
1	A	629	A	N9-C4	-6.77	1.33	1.37
1	A	766	G	C8-N7	-6.70	1.26	1.30
1	A	1059	A	N9-C4	-6.68	1.33	1.37
1	A	1633	A	N7-C5	-6.57	1.35	1.39
1	A	1468	G	N7-C5	-6.53	1.35	1.39
1	A	2044	C	N1-C6	-6.47	1.33	1.37
1	A	554	C	N1-C6	-6.40	1.33	1.37
1	A	1634	A	C5-C6	-6.40	1.35	1.41
1	A	1823	U	C4-C5	-6.38	1.37	1.43
38	h	90	LYS	CA-CB	6.38	1.68	1.53
1	A	1850	G	C6-N1	-6.37	1.35	1.39
1	A	1850	G	N9-C4	-6.35	1.32	1.38
1	A	2045	A	N9-C4	-6.33	1.34	1.37
1	A	396	G	C8-N7	-6.33	1.27	1.30
1	A	2242	G	C8-N7	-6.31	1.27	1.30
1	A	2849	A	N9-C4	-6.26	1.34	1.37
1	A	985	A	N9-C4	-6.24	1.34	1.37
1	A	1521	A	N3-C4	-6.21	1.31	1.34
1	A	303	G	N9-C8	-6.20	1.33	1.37
1	A	490	C	N1-C6	-6.16	1.33	1.37
1	A	1159	A	N9-C4	-6.15	1.34	1.37
1	A	756	A	N7-C5	-6.14	1.35	1.39
1	A	1468	G	C8-N7	-6.13	1.27	1.30
44	n	16	TYR	CG-CD2	6.11	1.47	1.39
31	a	1205	C	C4-C5	-6.09	1.38	1.43
1	A	1410	A	N9-C4	-6.09	1.34	1.37
1	A	1492	G	N9-C4	-6.06	1.33	1.38
1	A	1500	G	N7-C5	-6.05	1.35	1.39
1	A	2388	A	N9-C4	-6.04	1.34	1.37
1	A	2477	A	N9-C4	-6.01	1.34	1.37
1	A	2771	G	N7-C5	-6.00	1.35	1.39
1	A	200	A	N9-C4	-5.97	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	491	C	N3-C4	-5.96	1.29	1.33
1	A	845	A	N9-C4	-5.96	1.34	1.37
1	A	1500	G	C8-N7	-5.95	1.27	1.30
1	A	825	G	N9-C4	-5.94	1.33	1.38
1	A	1694	A	N9-C4	-5.93	1.34	1.37
1	A	624	C	N1-C6	-5.93	1.33	1.37
1	A	2818	A	N7-C5	-5.91	1.35	1.39
1	A	2028	A	N9-C4	-5.90	1.34	1.37
1	A	755	C	C4-C5	-5.88	1.38	1.43
1	A	1480	G	C2-N2	-5.87	1.28	1.34
1	A	737	C	C4-C5	-5.87	1.38	1.43
31	a	605	G	C8-N7	5.84	1.34	1.30
1	A	1850	G	N1-C2	-5.84	1.33	1.37
1	A	461	A	C8-N7	-5.83	1.27	1.31
1	A	1852	G	N3-C4	-5.82	1.31	1.35
31	a	1489	A	N9-C4	-5.81	1.34	1.37
1	A	2915	C	C2-N3	-5.80	1.31	1.35
1	A	2848	G	N9-C4	-5.79	1.33	1.38
1	A	336	U	C4-C5	-5.78	1.38	1.43
1	A	845	A	C5-C6	-5.76	1.35	1.41
1	A	2651	G	N9-C4	-5.73	1.33	1.38
1	A	2248	G	N9-C4	-5.72	1.33	1.38
1	A	870	C	N1-C6	-5.72	1.33	1.37
1	A	864	A	N9-C4	-5.71	1.34	1.37
1	A	1841	G	N9-C4	-5.71	1.33	1.38
31	a	1478	G	C8-N7	-5.67	1.27	1.30
1	A	493	A	N9-C4	-5.67	1.34	1.37
1	A	2850	G	N9-C4	-5.67	1.33	1.38
1	A	721	A	N7-C5	-5.65	1.35	1.39
1	A	476	A	N9-C4	-5.63	1.34	1.37
1	A	727	G	N9-C4	-5.63	1.33	1.38
1	A	1759	G	N9-C8	-5.60	1.33	1.37
1	A	548	A	N9-C4	-5.60	1.34	1.37
1	A	461	A	C6-N1	-5.60	1.31	1.35
1	A	919	G	C6-N1	-5.60	1.35	1.39
1	A	2400	U	C4-C5	-5.58	1.38	1.43
1	A	154	A	N9-C4	-5.57	1.34	1.37
1	A	334	A	N7-C5	-5.56	1.35	1.39
1	A	1037	A	C6-N6	-5.56	1.29	1.33
1	A	1622	C	C4-C5	-5.54	1.38	1.43
1	A	2698	A	N9-C4	-5.54	1.34	1.37
1	A	2671	A	N9-C4	-5.52	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	108	A	N9-C4	-5.52	1.34	1.37
1	A	512	A	N9-C4	-5.51	1.34	1.37
1	A	2076	A	C6-N1	-5.48	1.31	1.35
49	s	36	ARG	CA-CB	5.46	1.66	1.53
1	A	2437	G	N3-C4	-5.46	1.31	1.35
1	A	2281	C	N1-C6	-5.44	1.33	1.37
1	A	1494	G	C2-N3	-5.42	1.28	1.32
1	A	1881	A	N9-C4	-5.41	1.34	1.37
1	A	557	G	N9-C4	-5.41	1.33	1.38
1	A	1467	G	C8-N7	-5.40	1.27	1.30
1	A	1400	C	C4-C5	-5.39	1.38	1.43
31	a	263	G	N7-C5	-5.37	1.36	1.39
1	A	461	A	N7-C5	-5.36	1.36	1.39
1	A	2542	C	N1-C6	-5.34	1.33	1.37
1	A	2907	A	C6-N1	-5.34	1.31	1.35
1	A	402	C	N1-C6	-5.34	1.33	1.37
31	a	263	G	C8-N7	-5.33	1.27	1.30
1	A	44	A	N9-C4	-5.32	1.34	1.37
1	A	1017	A	N9-C4	-5.31	1.34	1.37
1	A	862	C	N3-C4	-5.31	1.30	1.33
1	A	2029	G	N9-C4	-5.30	1.33	1.38
1	A	2387	A	N9-C4	-5.30	1.34	1.37
1	A	713	A	N9-C4	-5.30	1.34	1.37
31	a	1173	G	N7-C5	-5.29	1.36	1.39
1	A	2732	A	C8-N7	-5.29	1.27	1.31
1	A	2919	A	N9-C4	-5.29	1.34	1.37
1	A	1471	A	N9-C4	-5.29	1.34	1.37
1	A	1622	C	C5-C6	-5.28	1.30	1.34
1	A	2810	A	N9-C4	-5.25	1.34	1.37
1	A	2877	G	N9-C4	-5.25	1.33	1.38
31	a	301	A	N7-C5	-5.25	1.36	1.39
1	A	1823	U	C5'-C4'	5.25	1.57	1.51
1	A	721	A	C5-C6	-5.25	1.36	1.41
1	A	2907	A	C5-C6	-5.25	1.36	1.41
1	A	897	A	C5-C6	-5.25	1.36	1.41
31	a	263	G	P-O5'	5.25	1.65	1.59
1	A	1445	C	C4-C5	-5.24	1.38	1.43
1	A	951	G	C2-N3	-5.24	1.28	1.32
1	A	1015	C	C4-C5	-5.24	1.38	1.43
1	A	1466	G	N1-C2	-5.24	1.33	1.37
1	A	2907	A	C6-N6	-5.23	1.29	1.33
1	A	1561	G	C6-N1	-5.23	1.35	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	110	A	N9-C4	-5.22	1.34	1.37
1	A	1634	A	N7-C5	-5.22	1.36	1.39
1	A	1851	G	C2-N2	-5.22	1.29	1.34
1	A	2497	G	C6-N1	-5.21	1.35	1.39
1	A	1772	G	C8-N7	-5.21	1.27	1.30
1	A	882	C	N1-C6	-5.21	1.34	1.37
1	A	2071	C	C4-C5	-5.20	1.38	1.43
1	A	208	G	C2-N3	-5.19	1.28	1.32
1	A	2408	C	C4-C5	-5.19	1.38	1.43
31	a	1381	G	N1-C2	-5.18	1.33	1.37
1	A	503	A	N9-C4	-5.18	1.34	1.37
1	A	517	A	N9-C4	-5.17	1.34	1.37
1	A	1207	G	N9-C4	-5.17	1.33	1.38
1	A	198	A	N9-C4	-5.17	1.34	1.37
1	A	1044	A	N9-C4	-5.17	1.34	1.37
1	A	1817	C	N1-C6	-5.17	1.34	1.37
1	A	2666	A	N9-C4	-5.16	1.34	1.37
1	A	881	G	N9-C4	-5.16	1.33	1.38
1	A	2838	C	N3-C4	-5.15	1.30	1.33
1	A	495	A	N9-C4	-5.14	1.34	1.37
1	A	1198	G	N9-C8	-5.14	1.34	1.37
1	A	2082	C	N1-C6	-5.14	1.34	1.37
31	a	1478	G	N7-C5	-5.14	1.36	1.39
1	A	559	A	N9-C4	-5.14	1.34	1.37
1	A	1359	A	N9-C4	-5.13	1.34	1.37
1	A	2248	G	C2-N3	-5.13	1.28	1.32
1	A	1987	A	N3-C4	-5.12	1.31	1.34
1	A	501	C	N1-C6	-5.12	1.34	1.37
1	A	777	C	N1-C6	-5.12	1.34	1.37
1	A	1853	C	N1-C6	-5.11	1.34	1.37
1	A	1954	A	N9-C8	-5.11	1.33	1.37
1	A	96	G	N9-C4	-5.10	1.33	1.38
1	A	2036	G	N9-C4	-5.09	1.33	1.38
1	A	15	G	N9-C4	-5.09	1.33	1.38
1	A	823	G	N9-C4	-5.09	1.33	1.38
1	A	2752	A	C5-C6	-5.09	1.36	1.41
1	A	2483	C	N1-C6	-5.08	1.34	1.37
31	a	263	G	N9-C4	5.07	1.42	1.38
1	A	859	C	C4-C5	-5.07	1.38	1.43
1	A	2896	A	N9-C4	-5.07	1.34	1.37
1	A	983	G	N9-C4	-5.07	1.33	1.38
1	A	613	G	N9-C8	-5.06	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1851	G	C2-N3	-5.06	1.28	1.32
1	A	1693	G	N9-C4	-5.06	1.33	1.38
1	A	178	A	N9-C4	-5.06	1.34	1.37
1	A	1222	A	C5-C6	-5.06	1.36	1.41
1	A	1480	G	C2-N3	-5.06	1.28	1.32
1	A	2738	A	C6-N6	-5.05	1.29	1.33
1	A	624	C	N3-C4	-5.05	1.30	1.33
1	A	1031	C	N1-C6	-5.05	1.34	1.37
1	A	627	C	C4-C5	-5.04	1.39	1.43
1	A	2771	G	C5-C6	-5.04	1.37	1.42
31	a	1395	G	N7-C5	-5.04	1.36	1.39
1	A	2738	A	C5-C6	-5.04	1.36	1.41
1	A	2497	G	C5-C6	-5.04	1.37	1.42
1	A	1991	G	N9-C4	-5.03	1.33	1.38
1	A	996	G	N9-C4	-5.03	1.33	1.38
1	A	1538	A	N9-C8	-5.03	1.33	1.37
1	A	1042	C	N1-C6	-5.02	1.34	1.37
1	A	1415	A	N9-C4	-5.02	1.34	1.37
1	A	491	C	N1-C6	-5.00	1.34	1.37

All (2057) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	393	G	C8-N9-C4	-101.80	65.68	106.40
1	A	393	G	N7-C8-N9	65.13	145.66	113.10
1	A	393	G	N9-C4-C5	52.43	126.37	105.40
1	A	393	G	N3-C4-C5	-40.30	108.45	128.60
31	a	605	G	C2-N3-C4	36.17	129.98	111.90
31	a	36	G	P-O3'-C3'	34.97	161.66	119.70
31	a	605	G	N1-C2-N3	-34.92	102.95	123.90
31	a	605	G	C4-C5-N7	-33.51	97.40	110.80
31	a	405	A	N7-C8-N9	-32.87	97.37	113.80
31	a	605	G	N3-C2-N2	32.23	142.46	119.90
31	a	605	G	N3-C4-N9	30.80	144.48	126.00
31	a	605	G	N3-C4-C5	-29.37	113.92	128.60
31	a	1112	A	N1-C2-N3	-27.78	115.41	129.30
31	a	605	G	N7-C8-N9	26.27	126.23	113.10
1	A	1823	U	C5-C6-N1	25.11	135.26	122.70
1	A	393	G	C2-N3-C4	24.61	124.20	111.90
31	a	405	A	C5-N7-C8	24.42	116.11	103.90
31	a	405	A	C8-N9-C4	22.87	114.95	105.80
31	a	1112	A	C2-N3-C4	22.70	121.95	110.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	393	G	C4-C5-C6	20.16	130.90	118.80
1	A	1822	C	C6-N1-C2	-19.14	112.64	120.30
1	A	393	G	C5-N7-C8	-18.72	94.94	104.30
31	a	37	C	N1-C2-O2	17.49	129.40	118.90
1	A	1823	U	C6-N1-C2	-17.32	110.61	121.00
31	a	605	G	C5-C6-N1	16.80	119.90	111.50
1	A	393	G	C4-N9-C1'	16.79	148.32	126.50
31	a	697	C	OP1-P-OP2	16.58	144.47	119.60
1	A	1634	A	N1-C6-N6	15.72	128.03	118.60
1	A	393	G	O4'-C1'-N9	15.65	120.72	108.20
38	h	90	LYS	O-C-N	-15.30	98.22	122.70
31	a	696	G	OP2-P-O3'	-14.82	72.60	105.20
31	a	696	G	OP1-P-O3'	-14.70	72.87	105.20
1	A	393	G	C8-N9-C1'	14.60	145.97	127.00
31	a	989	C	C2-N3-C4	14.55	127.17	119.90
1	A	393	G	C6-C5-N7	-14.48	121.71	130.40
31	a	989	C	N1-C2-N3	-14.44	109.09	119.20
49	s	36	ARG	N-CA-CB	-14.44	84.61	110.60
31	a	1381	G	N1-C6-O6	-14.09	111.45	119.90
31	a	697	C	N1-C2-O2	13.70	127.12	118.90
31	a	263	G	N3-C4-N9	13.51	134.11	126.00
1	A	1906	C	N1-C2-O2	13.37	126.92	118.90
1	A	919	G	C5-C6-O6	13.20	136.52	128.60
1	A	393	G	N9-C1'-C2'	13.19	131.14	114.00
1	A	2262	G	O5'-P-OP1	-13.15	93.87	105.70
31	a	263	G	C4-N9-C1'	12.88	143.25	126.50
1	A	1228	A	OP1-P-O3'	-12.74	77.17	105.20
1	A	461	A	N9-C4-C5	-12.74	100.70	105.80
31	a	989	C	C6-N1-C2	12.64	125.36	120.30
31	a	1125	C	N1-C2-O2	12.61	126.47	118.90
31	a	263	G	C6-C5-N7	-12.54	122.88	130.40
31	a	605	G	N1-C6-O6	-12.47	112.42	119.90
31	a	556	G	N9-C4-C5	-12.34	100.46	105.40
1	A	1461	C	N1-C2-O2	12.24	126.24	118.90
31	a	1381	G	C8-N9-C4	-12.20	101.52	106.40
1	A	461	A	C4-C5-N7	12.17	116.78	110.70
1	A	919	G	N1-C6-O6	-12.15	112.61	119.90
31	a	556	G	N3-C2-N2	12.11	128.38	119.90
1	A	333	C	C6-N1-C2	12.02	125.11	120.30
49	s	36	ARG	CB-CA-C	11.95	134.29	110.40
1	A	2497	G	C6-C5-N7	-11.77	123.34	130.40
49	s	36	ARG	O-C-N	-11.64	104.08	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	556	G	C4-C5-N7	11.54	115.42	110.80
31	a	263	G	N7-C8-N9	11.51	118.86	113.10
31	a	1381	G	C2-N3-C4	11.46	117.63	111.90
1	A	878	C	N3-C2-O2	-11.46	113.88	121.90
31	a	649	A	C8-N9-C4	-11.26	101.30	105.80
1	A	1633	A	N1-C6-N6	11.23	125.34	118.60
1	A	1634	A	C5-C6-N6	-11.22	114.73	123.70
31	a	1381	G	N3-C4-C5	-11.16	123.02	128.60
31	a	38	U	N3-C2-O2	-11.15	114.39	122.20
1	A	333	C	N1-C2-N3	-11.07	111.45	119.20
1	A	1468	G	C6-C5-N7	-11.06	123.77	130.40
31	a	1381	G	C5-C6-O6	11.03	135.22	128.60
31	a	1112	A	C6-N1-C2	10.97	125.18	118.60
31	a	1196	G	N3-C2-N2	10.96	127.57	119.90
1	A	336	U	C5-C6-N1	10.94	128.17	122.70
31	a	1381	G	N9-C4-C5	10.91	109.76	105.40
1	A	1467	G	C4-C5-N7	10.87	115.15	110.80
1	A	1822	C	C2-N1-C1'	10.87	130.75	118.80
49	s	74	PHE	CB-CG-CD1	-10.76	113.27	120.80
31	a	263	G	C8-N9-C1'	-10.75	113.03	127.00
1	A	333	C	C2-N3-C4	10.72	125.26	119.90
1	A	1906	C	N3-C2-O2	-10.72	114.40	121.90
38	h	90	LYS	N-CA-CB	-10.67	91.39	110.60
1	A	2915	C	N3-C2-O2	-10.66	114.43	121.90
1	A	756	A	C6-C5-N7	-10.62	124.86	132.30
31	a	37	C	N3-C2-O2	-10.60	114.48	121.90
1	A	751	A	N1-C6-N6	10.56	124.94	118.60
31	a	263	G	N3-C4-C5	-10.51	123.35	128.60
31	a	606	U	C6-N1-C1'	-10.50	106.50	121.20
31	a	687	C	C6-N1-C2	-10.49	116.10	120.30
31	a	1405	C	N1-C2-O2	10.49	125.19	118.90
1	A	333	C	N3-C4-C5	-10.48	117.71	121.90
31	a	606	U	C2-N1-C1'	10.43	130.21	117.70
31	a	1205	C	N1-C2-O2	10.41	125.15	118.90
1	A	396	G	C4-N9-C1'	10.41	140.03	126.50
1	A	1823	U	O4'-C1'-N1	10.40	116.52	108.20
31	a	989	C	N3-C4-C5	-10.29	117.78	121.90
31	a	725	C	C6-N1-C2	-10.24	116.20	120.30
31	a	1155	C	N1-C2-O2	10.23	125.04	118.90
31	a	605	G	C6-C5-N7	10.19	136.52	130.40
1	A	1822	C	C5-C6-N1	10.18	126.09	121.00
1	A	1228	A	OP2-P-O3'	-10.18	82.81	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	1125	C	N3-C2-O2	-10.16	114.78	121.90
1	A	1480	G	N3-C2-N2	-10.14	112.80	119.90
1	A	806	A	N1-C6-N6	10.04	124.62	118.60
1	A	1906	C	C2-N1-C1'	10.04	129.84	118.80
31	a	1440	C	N3-C2-O2	-10.03	114.88	121.90
31	a	1405	C	C2-N1-C1'	10.01	129.81	118.80
1	A	1634	A	N9-C4-C5	-9.99	101.80	105.80
1	A	461	A	C6-C5-N7	-9.94	125.34	132.30
31	a	1173	G	C6-C5-N7	-9.94	124.44	130.40
1	A	396	G	N3-C4-N9	9.91	131.94	126.00
1	A	461	A	C5-N7-C8	-9.85	98.97	103.90
31	a	150	U	C5-C4-O4	-9.81	120.01	125.90
1	A	751	A	C5-C6-N6	-9.80	115.86	123.70
1	A	2525	C	N3-C2-O2	-9.78	115.05	121.90
31	a	1196	G	C4-C5-N7	9.77	114.71	110.80
1	A	2497	G	N9-C4-C5	-9.73	101.51	105.40
31	a	706	G	N9-C4-C5	-9.72	101.51	105.40
1	A	396	G	C8-N9-C1'	-9.69	114.41	127.00
31	a	1155	C	N3-C2-O2	-9.69	115.12	121.90
1	A	2782	C	C2-N1-C1'	9.68	129.45	118.80
1	A	1825	U	C5-C6-N1	9.66	127.53	122.70
1	A	2210	C	N3-C2-O2	-9.64	115.16	121.90
1	A	766	G	N9-C4-C5	-9.62	101.55	105.40
1	A	1467	G	N9-C4-C5	-9.62	101.55	105.40
31	a	605	G	N9-C4-C5	-9.61	101.56	105.40
31	a	1315	G	O4'-C1'-N9	9.61	115.89	108.20
1	A	2525	C	N1-C2-O2	9.59	124.65	118.90
1	A	333	C	C5-C4-N4	9.55	126.89	120.20
1	A	2734	C	N1-C2-O2	9.55	124.63	118.90
1	A	2797	C	N3-C2-O2	-9.55	115.22	121.90
49	s	74	PHE	CD1-CG-CD2	9.54	130.71	118.30
31	a	349	C	N1-C2-O2	9.54	124.62	118.90
31	a	758	C	N3-C2-O2	-9.51	115.24	121.90
1	A	1822	C	N3-C2-O2	-9.49	115.26	121.90
1	A	2361	U	C2-N1-C1'	9.48	129.08	117.70
1	A	2774	G	N1-C6-O6	-9.46	114.22	119.90
31	a	1019	C	N1-C2-O2	9.46	124.58	118.90
1	A	1823	U	C2-N3-C4	9.44	132.66	127.00
1	A	1461	C	N3-C2-O2	-9.44	115.29	121.90
1	A	2850	G	N3-C4-N9	-9.37	120.38	126.00
1	A	1467	G	C6-C5-N7	-9.37	124.78	130.40
1	A	1465	G	C8-N9-C4	-9.37	102.65	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	765	U	C5-C4-O4	-9.35	120.29	125.90
1	A	1850	G	N3-C4-C5	9.32	133.26	128.60
31	a	1382	U	C5-C6-N1	9.32	127.36	122.70
31	a	556	G	N3-C4-N9	9.32	131.59	126.00
1	A	284	C	C6-N1-C2	-9.27	116.59	120.30
31	a	989	C	N1-C2-O2	9.25	124.45	118.90
1	A	1500	G	C6-C5-N7	-9.23	124.86	130.40
31	a	697	C	N3-C2-O2	-9.22	115.44	121.90
1	A	1468	G	N7-C8-N9	9.19	117.69	113.10
1	A	1468	G	C4-C5-N7	9.18	114.47	110.80
1	A	2782	C	N1-C2-O2	9.16	124.40	118.90
1	A	756	A	N1-C6-N6	9.14	124.08	118.60
1	A	2210	C	N1-C2-O2	9.14	124.38	118.90
1	A	2907	A	N9-C4-C5	-9.13	102.15	105.80
42	l	130	TYR	CB-CG-CD2	-9.12	115.53	121.00
1	A	2497	G	C4-C5-N7	9.11	114.44	110.80
1	A	1500	G	C4-C5-N7	9.06	114.42	110.80
31	a	1395	G	C6-C5-N7	-9.06	124.97	130.40
1	A	917	U	C2-N1-C1'	-9.05	106.84	117.70
1	A	951	G	N3-C2-N2	-9.05	113.56	119.90
1	A	2150	A	C5-N7-C8	9.02	108.41	103.90
1	A	393	G	C4-C5-N7	-9.01	107.20	110.80
1	A	1822	C	P-O3'-C3'	8.98	130.48	119.70
1	A	897	A	N9-C4-C5	-8.97	102.21	105.80
1	A	1759	G	N7-C8-N9	8.97	117.59	113.10
1	A	2686	G	C8-N9-C4	-8.97	102.81	106.40
1	A	1824	C	C6-N1-C2	-8.97	116.71	120.30
31	a	1083	G	C6-C5-N7	-8.96	125.02	130.40
38	h	90	LYS	N-CA-C	8.97	135.21	111.00
31	a	706	G	C4-C5-N7	8.95	114.38	110.80
1	A	333	C	C4-C5-C6	8.93	121.87	117.40
1	A	2497	G	N3-C4-N9	8.92	131.35	126.00
31	a	1205	C	N3-C2-O2	-8.91	115.66	121.90
31	a	1196	G	N3-C4-N9	8.87	131.32	126.00
1	A	917	U	O4'-C1'-N1	8.86	115.28	108.20
31	a	1155	C	C2-N1-C1'	8.85	128.54	118.80
1	A	902	A	N1-C6-N6	8.85	123.91	118.60
31	a	781	G	C4-C5-N7	8.84	114.34	110.80
31	a	970	U	N3-C2-O2	-8.84	116.01	122.20
1	A	1467	G	N3-C2-N2	8.83	126.08	119.90
1	A	1823	U	N1-C2-O2	8.82	128.98	122.80
11	K	2	LEU	CB-CG-CD1	8.81	125.98	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	461	A	N1-C6-N6	8.81	123.88	118.60
31	a	1196	G	N9-C4-C5	-8.80	101.88	105.40
1	A	482	U	C5-C4-O4	-8.79	120.63	125.90
31	a	1382	U	C6-N1-C2	-8.74	115.75	121.00
1	A	160	G	N3-C4-C5	-8.73	124.23	128.60
1	A	623	C	N1-C2-O2	8.70	124.12	118.90
31	a	1028	G	N3-C4-N9	8.70	131.22	126.00
1	A	755	C	N1-C2-O2	8.66	124.09	118.90
1	A	414	C	N1-C2-O2	8.65	124.09	118.90
1	A	679	G	C6-C5-N7	-8.65	125.21	130.40
1	A	652	A	N1-C6-N6	8.63	123.78	118.60
31	a	1395	G	N3-C4-N9	8.62	131.17	126.00
31	a	135	C	C6-N1-C2	-8.62	116.85	120.30
1	A	1093	C	C6-N1-C2	-8.62	116.85	120.30
1	A	1492	G	N3-C4-N9	-8.61	120.83	126.00
31	a	605	G	C4-C5-C6	8.60	123.96	118.80
31	a	605	G	C5-N7-C8	8.60	108.60	104.30
31	a	606	U	C5-C6-N1	-8.58	118.41	122.70
31	a	122	C	C6-N1-C2	-8.58	116.87	120.30
31	a	1083	G	C4-C5-N7	8.57	114.23	110.80
1	A	1622	C	N1-C2-O2	8.56	124.04	118.90
31	a	967	A	N1-C6-N6	-8.52	113.49	118.60
1	A	393	G	C6-N1-C2	-8.52	119.99	125.10
31	a	405	A	C6-C5-N7	8.51	138.25	132.30
31	a	606	U	N3-C4-C5	8.50	119.70	114.60
1	A	1409	U	C5-C4-O4	-8.50	120.80	125.90
1	A	1222	A	N9-C4-C5	-8.48	102.41	105.80
44	n	16	TYR	CD1-CG-CD2	-8.48	108.57	117.90
1	A	917	U	C6-N1-C2	8.48	126.09	121.00
31	a	1421	C	C6-N1-C2	-8.46	116.92	120.30
31	a	549	G	C6-C5-N7	-8.46	125.32	130.40
31	a	1294	C	C6-N1-C2	-8.46	116.92	120.30
1	A	756	A	N9-C4-C5	-8.45	102.42	105.80
31	a	1293	C	N3-C2-O2	-8.44	115.99	121.90
31	a	150	U	N3-C4-O4	8.44	125.31	119.40
31	a	583	G	N3-C4-N9	-8.44	120.94	126.00
1	A	878	C	N1-C2-O2	8.41	123.95	118.90
1	A	988	C	N1-C2-O2	8.40	123.94	118.90
1	A	917	U	N1-C2-N3	-8.40	109.86	114.90
1	A	95	A	N1-C6-N6	8.40	123.64	118.60
1	A	433	U	C5-C4-O4	-8.38	120.87	125.90
1	A	917	U	N1-C2-O2	8.38	128.66	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1633	A	C5-C6-N6	-8.37	117.00	123.70
31	a	135	C	C2-N1-C1'	8.37	128.01	118.80
2	B	21	G	N3-C4-C5	8.36	132.78	128.60
31	a	344	A	N9-C4-C5	-8.36	102.46	105.80
3	C	256	GLY	N-CA-C	8.35	133.98	113.10
1	A	1851	G	N1-C6-O6	-8.34	114.89	119.90
1	A	2248	G	N3-C4-N9	-8.34	121.00	126.00
31	a	263	G	C4-C5-C6	8.33	123.80	118.80
1	A	2461	A	C5-C6-N6	-8.33	117.04	123.70
31	a	697	C	O5'-P-OP2	-8.33	98.21	105.70
31	a	1421	C	C5-C6-N1	8.33	125.16	121.00
1	A	1467	G	N3-C4-N9	8.32	130.99	126.00
1	A	2797	C	N1-C2-O2	8.31	123.89	118.90
1	A	942	C	N3-C2-O2	-8.30	116.09	121.90
1	A	752	G	N1-C6-O6	8.30	124.88	119.90
1	A	2915	C	N3-C4-N4	-8.30	112.19	118.00
1	A	2782	C	N3-C2-O2	-8.29	116.10	121.90
1	A	1759	G	C5-N7-C8	-8.29	100.16	104.30
1	A	1759	G	C6-C5-N7	-8.28	125.43	130.40
1	A	988	C	C2-N1-C1'	8.27	127.90	118.80
1	A	851	C	N1-C2-O2	8.27	123.86	118.90
31	a	1381	G	C4-N9-C1'	8.24	137.22	126.50
31	a	301	A	N7-C8-N9	8.22	117.91	113.80
31	a	332	G	C6-C5-N7	-8.22	125.47	130.40
31	a	350	C	N3-C2-O2	-8.22	116.15	121.90
1	A	1830	A	N1-C6-N6	8.21	123.53	118.60
31	a	1494	A	C5-C6-N6	-8.20	117.14	123.70
31	a	687	C	N3-C2-O2	-8.18	116.17	121.90
1	A	1823	U	C4-C5-C6	-8.18	114.79	119.70
31	a	599	U	N1-C2-O2	8.18	128.53	122.80
31	a	1348	G	C4-N9-C1'	8.18	137.13	126.50
1	A	766	G	N3-C4-N9	8.17	130.90	126.00
1	A	1607	A	C8-N9-C4	8.16	109.06	105.80
31	a	1382	U	O4'-C1'-N1	8.15	114.72	108.20
1	A	450	C	N3-C4-C5	8.13	125.15	121.90
49	s	74	PHE	CZ-CE2-CD2	-8.12	110.36	120.10
1	A	340	C	C6-N1-C2	-8.09	117.06	120.30
31	a	940	C	C6-N1-C2	-8.07	117.07	120.30
1	A	7	G	N3-C4-N9	-8.07	121.16	126.00
2	B	21	G	N3-C4-N9	-8.07	121.16	126.00
31	a	1381	G	C4-C5-N7	-8.06	107.57	110.80
1	A	942	C	N1-C2-O2	8.06	123.74	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	38	U	N1-C2-N3	8.06	119.74	114.90
1	A	2437	G	C2-N3-C4	8.05	115.93	111.90
1	A	2280	G	N7-C8-N9	8.05	117.12	113.10
1	A	265	A	N1-C6-N6	8.04	123.42	118.60
1	A	1823	U	N3-C2-O2	-8.04	116.57	122.20
31	a	1294	C	C6-N1-C1'	8.03	130.44	120.80
1	A	2130	A	O5'-P-OP2	-8.02	98.48	105.70
1	A	2907	A	C4-C5-N7	8.02	114.71	110.70
31	a	488	U	C2-N1-C1'	8.01	127.31	117.70
1	A	1850	G	C2-N3-C4	-8.00	107.90	111.90
1	A	1500	G	N7-C8-N9	8.00	117.10	113.10
1	A	751	A	C4-C5-N7	7.99	114.69	110.70
1	A	756	A	C4-C5-N7	7.99	114.69	110.70
1	A	2686	G	N7-C8-N9	7.98	117.09	113.10
1	A	1079	U	C5-C4-O4	7.98	130.69	125.90
31	a	1109	C	N1-C2-O2	7.97	123.68	118.90
1	A	1438	G	N3-C4-N9	-7.97	121.22	126.00
44	n	16	TYR	CB-CG-CD1	7.97	125.78	121.00
1	A	721	A	C5-N7-C8	-7.96	99.92	103.90
31	a	1395	G	N9-C4-C5	-7.96	102.22	105.40
1	A	1492	G	N3-C4-C5	7.94	132.57	128.60
31	a	135	C	N1-C2-O2	7.93	123.66	118.90
31	a	349	C	N3-C2-O2	-7.93	116.35	121.90
31	a	533	C	N1-C2-O2	7.92	123.65	118.90
31	a	651	C	C2-N3-C4	7.90	123.85	119.90
1	A	2461	A	N1-C6-N6	7.89	123.34	118.60
31	a	818	C	N3-C2-O2	-7.89	116.38	121.90
1	A	1441	C	C5-C6-N1	7.89	124.94	121.00
31	a	1028	G	N3-C2-N2	7.88	125.42	119.90
1	A	2248	G	N3-C4-C5	7.87	132.54	128.60
1	A	397	U	O5'-P-OP1	-7.87	98.62	105.70
31	a	1184	G	C4-C5-N7	7.87	113.95	110.80
1	A	2818	A	N1-C6-N6	7.87	123.32	118.60
1	A	460	C	O5'-P-OP2	-7.87	98.62	105.70
31	a	643	A	N9-C4-C5	-7.86	102.66	105.80
1	A	751	A	C5-N7-C8	-7.85	99.97	103.90
1	A	1851	G	N9-C4-C5	7.85	108.54	105.40
31	a	989	C	C4-C5-C6	7.85	121.32	117.40
44	n	16	TYR	CA-CB-CG	7.82	128.26	113.40
31	a	111	G	N3-C4-N9	-7.82	121.31	126.00
1	A	2730	C	N1-C2-O2	7.82	123.59	118.90
1	A	1468	G	N1-C6-O6	7.79	124.58	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	706	G	N3-C2-N2	7.79	125.35	119.90
1	A	2523	C	N3-C2-O2	-7.79	116.45	121.90
31	a	967	A	C5-C6-N6	7.78	129.93	123.70
1	A	95	A	C5-C6-N6	-7.78	117.48	123.70
31	a	122	C	C5-C6-N1	7.78	124.89	121.00
1	A	2563	G	N3-C4-N9	-7.77	121.34	126.00
31	a	344	A	C4-C5-N7	7.76	114.58	110.70
31	a	815	A	N1-C6-N6	7.76	123.26	118.60
1	A	1468	G	C5-N7-C8	-7.75	100.42	104.30
1	A	19	G	N1-C2-N2	-7.74	109.23	116.20
1	A	2696	G	N3-C4-N9	-7.74	121.36	126.00
1	A	2495	A	N1-C6-N6	-7.74	113.96	118.60
1	A	721	A	C4-C5-N7	7.74	114.57	110.70
1	A	924	G	C5-C6-O6	-7.73	123.96	128.60
1	A	284	C	C2-N1-C1'	7.72	127.30	118.80
31	a	148	G	C6-C5-N7	-7.72	125.77	130.40
31	a	1002	G	C6-C5-N7	-7.72	125.77	130.40
1	A	1391	A	N1-C6-N6	7.71	123.22	118.60
31	a	1098	G	N9-C4-C5	-7.71	102.32	105.40
1	A	897	A	C4-C5-N7	7.70	114.55	110.70
31	a	135	C	N3-C2-O2	-7.70	116.51	121.90
1	A	825	G	N3-C4-C5	7.70	132.45	128.60
1	A	1158	G	C5-C6-O6	-7.70	123.98	128.60
31	a	1332	C	C6-N1-C2	-7.69	117.22	120.30
1	A	2672	G	O4'-C1'-N9	7.69	114.35	108.20
1	A	104	C	N1-C2-O2	7.68	123.51	118.90
31	a	1152	G	N3-C4-N9	7.68	130.61	126.00
31	a	548	G	C6-C5-N7	-7.67	125.80	130.40
1	A	1441	C	C6-N1-C2	-7.67	117.23	120.30
1	A	1991	G	N3-C4-N9	-7.66	121.40	126.00
1	A	2131	C	C6-N1-C1'	7.66	129.99	120.80
31	a	1131	C	C2-N1-C1'	7.65	127.22	118.80
1	A	2778	G	N1-C6-O6	-7.65	115.31	119.90
1	A	2732	A	N9-C4-C5	-7.65	102.74	105.80
1	A	1607	A	N9-C4-C5	-7.64	102.74	105.80
1	A	767	A	N9-C4-C5	-7.63	102.75	105.80
1	A	951	G	N9-C4-C5	7.63	108.45	105.40
31	a	71	A	C5-C6-N6	-7.62	117.60	123.70
1	A	721	A	N7-C8-N9	7.61	117.61	113.80
1	A	1824	C	C5-C6-N1	7.61	124.81	121.00
1	A	208	G	N3-C2-N2	-7.61	114.58	119.90
31	a	781	G	C6-C5-N7	-7.61	125.83	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	1083	G	N9-C4-C5	-7.60	102.36	105.40
1	A	806	A	C5-C6-N6	-7.60	117.62	123.70
31	a	649	A	C2-N3-C4	7.59	114.40	110.60
31	a	606	U	N1-C2-N3	-7.58	110.35	114.90
1	A	924	G	C6-C5-N7	-7.58	125.85	130.40
44	n	16	TYR	CB-CG-CD2	7.57	125.54	121.00
1	A	1759	G	C4-C5-N7	7.57	113.83	110.80
31	a	807	G	N9-C4-C5	-7.56	102.38	105.40
1	A	2850	G	N3-C4-C5	7.56	132.38	128.60
1	A	1841	G	N3-C4-C5	7.55	132.37	128.60
2	B	76	A	C5-C6-N6	-7.55	117.66	123.70
31	a	583	G	C8-N9-C1'	7.55	136.81	127.00
31	a	1405	C	C6-N1-C1'	-7.53	111.76	120.80
1	A	1622	C	C5-C4-N4	-7.53	114.93	120.20
1	A	766	G	N3-C2-N2	7.53	125.17	119.90
1	A	1004	A	N1-C6-N6	7.52	123.11	118.60
1	A	165	C	C6-N1-C2	-7.52	117.29	120.30
1	A	721	A	C6-C5-N7	-7.52	127.03	132.30
1	A	1823	U	N3-C4-O4	7.52	124.66	119.40
31	a	332	G	C4-C5-N7	7.51	113.81	110.80
31	a	1155	C	C6-N1-C2	-7.51	117.29	120.30
51	u	33	ARG	NE-CZ-NH1	7.51	124.06	120.30
31	a	1098	G	C4-C5-N7	7.50	113.80	110.80
31	a	514	G	N3-C2-N2	7.50	125.15	119.90
1	A	2641	A	N1-C6-N6	-7.49	114.10	118.60
31	a	279	C	N1-C2-O2	7.47	123.39	118.90
1	A	988	C	C6-N1-C1'	-7.47	111.83	120.80
31	a	807	G	C4-C5-N7	7.46	113.78	110.80
31	a	921	C	N3-C2-O2	-7.45	116.68	121.90
31	a	1173	G	N3-C4-N9	7.45	130.47	126.00
1	A	1468	G	C4-N9-C1'	7.45	136.19	126.50
31	a	556	G	N1-C2-N2	-7.44	109.50	116.20
1	A	1634	A	C8-N9-C4	7.43	108.77	105.80
2	B	111	C	C6-N1-C2	-7.43	117.33	120.30
31	a	1112	A	C4-C5-N7	-7.43	106.98	110.70
1	A	1229	G	OP1-P-OP2	7.42	130.74	119.60
1	A	1851	G	C8-N9-C4	-7.42	103.43	106.40
2	B	111	C	N3-C2-O2	-7.42	116.71	121.90
31	a	556	G	C6-C5-N7	-7.41	125.95	130.40
1	A	1719	C	C5-C4-N4	-7.41	115.02	120.20
31	a	246	G	N9-C4-C5	-7.40	102.44	105.40
31	a	302	C	C5-C6-N1	7.40	124.70	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	37	C	OP1-P-OP2	-7.40	108.50	119.60
1	A	2696	G	N3-C4-C5	7.39	132.30	128.60
31	a	675	G	N1-C6-O6	-7.39	115.47	119.90
31	a	405	A	C4-C5-N7	-7.37	107.01	110.70
31	a	670	A	N9-C4-C5	-7.37	102.85	105.80
1	A	576	U	N1-C2-O2	7.37	127.96	122.80
1	A	679	G	N9-C4-C5	-7.37	102.45	105.40
31	a	1470	U	C5-C4-O4	-7.36	121.48	125.90
31	a	549	G	N3-C4-N9	7.36	130.41	126.00
31	a	643	A	C4-C5-N7	7.35	114.38	110.70
1	A	2734	C	N3-C2-O2	-7.34	116.76	121.90
1	A	2771	G	C5-C6-O6	-7.34	124.20	128.60
1	A	133	A	N9-C4-C5	-7.33	102.87	105.80
31	a	1395	G	C8-N9-C1'	-7.33	117.47	127.00
1	A	762	C	N1-C2-O2	7.33	123.30	118.90
1	A	459	C	C6-N1-C2	-7.32	117.37	120.30
1	A	735	C	N3-C2-O2	-7.32	116.77	121.90
1	A	817	G	N1-C6-O6	-7.32	115.51	119.90
1	A	340	C	N3-C2-O2	-7.32	116.78	121.90
31	a	719	G	N1-C6-O6	-7.32	115.51	119.90
1	A	655	A	N9-C4-C5	-7.32	102.87	105.80
31	a	1173	G	C4-C5-N7	7.32	113.73	110.80
1	A	1494	G	N3-C4-N9	-7.31	121.61	126.00
31	a	918	A	C5-C6-N6	-7.31	117.86	123.70
1	A	2259	C	N1-C2-O2	7.30	123.28	118.90
31	a	1405	C	N3-C2-O2	-7.30	116.79	121.90
1	A	685	C	N1-C2-O2	7.29	123.28	118.90
1	A	752	G	C5-C6-O6	-7.29	124.22	128.60
31	a	315	U	N3-C2-O2	-7.29	117.10	122.20
1	A	396	G	N3-C4-C5	-7.27	124.96	128.60
31	a	1125	C	C6-N1-C2	-7.27	117.39	120.30
31	a	1383	G	C4-N9-C1'	7.26	135.94	126.50
1	A	1906	C	C6-N1-C2	-7.26	117.40	120.30
31	a	1395	G	C4-N9-C1'	7.25	135.93	126.50
1	A	2877	G	N3-C4-N9	-7.25	121.65	126.00
31	a	599	U	N3-C2-O2	-7.25	117.13	122.20
31	a	1173	G	C4-N9-C1'	7.24	135.91	126.50
1	A	396	G	C5-C6-O6	-7.24	124.26	128.60
1	A	924	G	C4-C5-N7	7.23	113.69	110.80
31	a	1263	G	N1-C6-O6	-7.22	115.56	119.90
31	a	583	G	C4-N9-C1'	-7.22	117.11	126.50
31	a	1494	A	N1-C6-N6	7.22	122.93	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	344	A	C6-C5-N7	-7.22	127.25	132.30
1	A	1759	G	C4-N9-C1'	7.21	135.88	126.50
1	A	961	G	C4-C5-N7	7.20	113.68	110.80
31	a	1236	C	N3-C2-O2	-7.19	116.87	121.90
31	a	675	G	C5-C6-O6	7.19	132.91	128.60
1	A	902	A	C5-C6-N6	-7.18	117.95	123.70
1	A	2342	U	C5-C4-O4	-7.18	121.59	125.90
31	a	696	G	C8-N9-C1'	7.18	136.34	127.00
1	A	1608	C	C5-C6-N1	7.18	124.59	121.00
31	a	263	G	N9-C4-C5	-7.17	102.53	105.40
1	A	450	C	N3-C4-N4	-7.17	112.98	118.00
1	A	766	G	C4-C5-N7	7.17	113.67	110.80
38	h	90	LYS	CA-C-N	7.17	132.97	117.20
31	a	1083	G	N3-C4-N9	7.16	130.30	126.00
1	A	303	G	N7-C8-N9	7.16	116.68	113.10
1	A	1466	G	C2-N3-C4	-7.16	108.32	111.90
1	A	608	C	C5-C4-N4	-7.16	115.19	120.20
31	a	670	A	C4-C5-N7	7.16	114.28	110.70
31	a	670	A	C6-C5-N7	-7.16	127.29	132.30
31	a	794	G	N1-C6-O6	-7.15	115.61	119.90
31	a	1428	A	N1-C6-N6	-7.15	114.31	118.60
31	a	1440	C	C6-N1-C2	-7.15	117.44	120.30
1	A	1881	A	N3-C4-N9	-7.14	121.69	127.40
1	A	1069	G	N3-C2-N2	-7.13	114.91	119.90
31	a	344	A	C5-N7-C8	-7.13	100.34	103.90
31	a	344	A	N1-C6-N6	7.13	122.88	118.60
1	A	2436	G	N1-C6-O6	7.12	124.17	119.90
1	A	1021	G	N3-C4-C5	7.12	132.16	128.60
1	A	2131	C	C2-N1-C1'	-7.12	110.97	118.80
31	a	792	A	C6-N1-C2	-7.12	114.33	118.60
1	A	334	A	N1-C6-N6	7.11	122.87	118.60
1	A	724	C	C6-N1-C2	-7.11	117.45	120.30
1	A	623	C	N3-C2-O2	-7.10	116.93	121.90
1	A	1467	G	N1-C2-N2	-7.09	109.81	116.20
1	A	133	A	C4-C5-N7	7.09	114.25	110.70
1	A	1534	G	N3-C4-N9	-7.09	121.75	126.00
1	A	1823	U	C4'-C3'-O3'	7.09	127.18	113.00
31	a	71	A	N1-C6-N6	7.09	122.85	118.60
31	a	416	G	N3-C4-N9	-7.09	121.75	126.00
1	A	924	G	N1-C6-O6	7.08	124.15	119.90
31	a	514	G	N9-C4-C5	-7.08	102.57	105.40
31	a	1383	G	N1-C6-O6	-7.08	115.65	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2436	G	C4-C5-N7	7.07	113.63	110.80
1	A	919	G	N3-C4-N9	-7.07	121.76	126.00
31	a	1184	G	N9-C4-C5	-7.07	102.57	105.40
31	a	1196	G	C6-C5-N7	-7.06	126.16	130.40
31	a	706	G	N3-C4-N9	7.06	130.24	126.00
1	A	386	C	N3-C4-C5	7.05	124.72	121.90
1	A	414	C	N3-C2-O2	-7.05	116.97	121.90
31	a	994	C	N3-C2-O2	-7.05	116.97	121.90
31	a	1002	G	C4-N9-C1'	7.05	135.66	126.50
1	A	2703	C	N3-C2-O2	-7.04	116.97	121.90
31	a	1125	C	C2-N1-C1'	7.04	126.54	118.80
31	a	1395	G	C4-C5-N7	7.04	113.62	110.80
31	a	123	G	C4-C5-N7	7.04	113.61	110.80
31	a	1294	C	N3-C2-O2	-7.04	116.97	121.90
31	a	1421	C	C2-N3-C4	7.04	123.42	119.90
31	a	1131	C	C6-N1-C2	-7.03	117.49	120.30
31	a	36	G	C8-N9-C4	-7.02	103.59	106.40
1	A	2848	G	N3-C4-C5	7.02	132.11	128.60
1	A	2437	G	N9-C4-C5	7.02	108.21	105.40
1	A	2797	C	C6-N1-C2	-7.02	117.49	120.30
1	A	1881	A	C2-N3-C4	-7.01	107.10	110.60
1	A	1850	G	C6-N1-C2	7.00	129.30	125.10
1	A	2047	A	C5-C6-N6	-7.00	118.10	123.70
31	a	418	G	C4-N9-C1'	6.99	135.59	126.50
31	a	956	G	C4-N9-C1'	6.99	135.58	126.50
1	A	396	G	C6-C5-N7	-6.99	126.21	130.40
1	A	2361	U	N3-C2-O2	-6.99	117.31	122.20
1	A	1757	U	C2-N3-C4	6.98	131.19	127.00
1	A	1850	G	C5-C6-O6	6.98	132.79	128.60
31	a	518	A	N1-C6-N6	6.98	122.79	118.60
1	A	919	G	C6-N1-C2	6.98	129.29	125.10
1	A	1494	G	C5-C6-O6	6.97	132.78	128.60
1	A	1158	G	C4-C5-N7	6.97	113.59	110.80
1	A	489	A	N1-C6-N6	6.96	122.78	118.60
1	A	2782	C	C6-N1-C1'	-6.96	112.44	120.80
31	a	606	U	N3-C4-O4	-6.96	114.53	119.40
1	A	2610	G	O4'-C1'-N9	6.96	113.76	108.20
31	a	1098	G	C8-N9-C1'	-6.95	117.96	127.00
1	A	1148	C	N3-C2-O2	-6.95	117.03	121.90
31	a	696	G	C4-N9-C1'	-6.95	117.47	126.50
49	s	74	PHE	CB-CG-CD2	-6.95	115.94	120.80
31	a	781	G	N9-C4-C5	-6.94	102.62	105.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	19	G	N3-C2-N2	6.93	124.75	119.90
1	A	160	G	C4-N9-C1'	6.93	135.51	126.50
31	a	549	G	C4-N9-C1'	6.93	135.50	126.50
31	a	1123	C	C2-N1-C1'	6.92	126.42	118.80
31	a	1453	A	N1-C6-N6	6.92	122.75	118.60
1	A	751	A	C6-C5-N7	-6.91	127.46	132.30
1	A	1905	G	C4-N9-C1'	6.91	135.48	126.50
1	A	2786	G	N3-C2-N2	-6.91	115.06	119.90
31	a	1441	C	C6-N1-C2	-6.91	117.54	120.30
1	A	1179	C	N1-C2-O2	6.90	123.04	118.90
2	B	76	A	N1-C6-N6	6.89	122.73	118.60
31	a	1233	C	C6-N1-C2	-6.89	117.54	120.30
1	A	2525	C	C6-N1-C2	-6.88	117.55	120.30
31	a	122	C	N1-C2-O2	6.88	123.03	118.90
1	A	924	G	N9-C4-C5	-6.88	102.65	105.40
31	a	510	C	C6-N1-C2	-6.88	117.55	120.30
31	a	649	A	N7-C8-N9	6.88	117.24	113.80
31	a	1324	C	N1-C2-O2	6.88	123.03	118.90
31	a	1072	G	N9-C4-C5	-6.87	102.65	105.40
31	a	1348	G	C8-N9-C1'	-6.87	118.07	127.00
1	A	756	A	C4-C5-C6	6.87	120.43	117.00
31	a	1383	G	O4'-C1'-N9	6.86	113.69	108.20
1	A	1634	A	C4-C5-N7	6.86	114.13	110.70
1	A	721	A	N1-C6-N6	6.86	122.71	118.60
1	A	1500	G	C5-N7-C8	-6.85	100.87	104.30
31	a	535	G	N9-C4-C5	-6.85	102.66	105.40
1	A	1603	U	C5-C4-O4	-6.85	121.79	125.90
31	a	1123	C	C6-N1-C2	-6.85	117.56	120.30
1	A	1015	C	C6-N1-C2	-6.85	117.56	120.30
31	a	792	A	C5-C6-N6	-6.84	118.22	123.70
1	A	1207	G	N3-C4-C5	6.84	132.02	128.60
1	A	629	A	N1-C6-N6	-6.84	114.50	118.60
1	A	1438	G	N3-C4-C5	6.84	132.02	128.60
31	a	719	G	C5-C6-O6	6.83	132.70	128.60
1	A	1158	G	N1-C6-O6	6.83	124.00	119.90
1	A	1385	G	N3-C4-C5	6.83	132.01	128.60
2	B	51	A	N1-C6-N6	6.83	122.70	118.60
1	A	652	A	C5-C6-N6	-6.82	118.24	123.70
1	A	1222	A	C4-C5-N7	6.82	114.11	110.70
1	A	1986	G	N3-C4-N9	-6.82	121.91	126.00
1	A	95	A	C4-C5-N7	6.82	114.11	110.70
31	a	604	A	N9-C4-C5	-6.82	103.07	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	148	G	C4-N9-C1'	6.81	135.36	126.50
31	a	1098	G	N3-C4-N9	6.81	130.09	126.00
31	a	1173	G	N9-C4-C5	-6.81	102.68	105.40
31	a	510	C	C5-C6-N1	6.81	124.40	121.00
42	l	130	TYR	CD1-CG-CD2	6.81	125.39	117.90
1	A	2651	G	N3-C4-C5	6.81	132.00	128.60
1	A	1469	G	N7-C8-N9	6.80	116.50	113.10
1	A	721	A	C5-C6-N6	-6.80	118.26	123.70
1	A	1367	C	N1-C2-O2	6.80	122.98	118.90
1	A	1906	C	C6-N1-C1'	-6.80	112.64	120.80
31	a	1494	A	C4-C5-N7	6.80	114.10	110.70
31	a	727	C	O5'-P-OP2	-6.79	99.58	105.70
1	A	1268	C	N1-C2-O2	6.79	122.98	118.90
1	A	2915	C	C5-C4-N4	6.79	124.95	120.20
1	A	575	G	N1-C2-N2	-6.79	110.09	116.20
1	A	2877	G	N3-C4-C5	6.78	131.99	128.60
31	a	1453	A	N9-C4-C5	-6.78	103.09	105.80
1	A	2905	C	N1-C2-O2	6.77	122.96	118.90
1	A	92	G	C5-C6-O6	6.77	132.66	128.60
1	A	2397	G	N3-C4-N9	-6.77	121.94	126.00
31	a	246	G	C4-C5-N7	6.77	113.51	110.80
1	A	1518	G	O4'-C1'-N9	6.76	113.61	108.20
1	A	2280	G	C8-N9-C4	-6.75	103.70	106.40
1	A	857	C	N3-C4-C5	6.75	124.60	121.90
1	A	1627	G	C6-C5-N7	-6.75	126.35	130.40
31	a	643	A	N1-C6-N6	6.75	122.65	118.60
1	A	1838	G	N3-C4-N9	-6.75	121.95	126.00
31	a	519	C	C6-N1-C2	-6.74	117.60	120.30
1	A	944	G	C6-C5-N7	-6.74	126.36	130.40
31	a	1218	C	N3-C2-O2	-6.74	117.18	121.90
31	a	1294	C	O4'-C1'-N1	6.74	113.59	108.20
1	A	95	A	N9-C4-C5	-6.74	103.11	105.80
31	a	263	G	C8-N9-C4	-6.74	103.71	106.40
1	A	1075	G	C8-N9-C1'	6.73	135.75	127.00
1	A	756	A	N3-C4-N9	6.73	132.79	127.40
1	A	333	C	C2-N1-C1'	-6.73	111.40	118.80
1	A	919	G	N3-C4-C5	6.72	131.96	128.60
1	A	412	U	C5-C4-O4	-6.72	121.87	125.90
1	A	2690	G	C4-C5-N7	6.72	113.49	110.80
49	s	36	ARG	N-CA-C	6.71	129.12	111.00
1	A	751	A	N7-C8-N9	6.71	117.16	113.80
2	B	76	A	C4-C5-N7	6.71	114.05	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	1196	G	N1-C2-N2	-6.71	110.16	116.20
1	A	1283	G	N3-C4-N9	-6.70	121.98	126.00
31	a	1098	G	C6-C5-N7	-6.70	126.38	130.40
1	A	1075	G	C4-N9-C1'	-6.70	117.80	126.50
1	A	1480	G	N1-C2-N3	6.69	127.91	123.90
1	A	1851	G	C5-C6-O6	6.69	132.61	128.60
1	A	2764	G	C4-C5-N7	6.69	113.47	110.80
31	a	37	C	C2-N1-C1'	6.69	126.16	118.80
1	A	265	A	C5-C6-N6	-6.68	118.35	123.70
31	a	747	C	N3-C2-O2	-6.68	117.22	121.90
31	a	24	C	N3-C4-N4	-6.68	113.32	118.00
2	B	5	G	N3-C4-N9	-6.67	122.00	126.00
1	A	1603	U	N3-C4-O4	6.67	124.07	119.40
1	A	1024	A	C5-C6-N6	-6.67	118.36	123.70
1	A	755	C	C6-N1-C2	-6.67	117.63	120.30
1	A	7	G	N9-C4-C5	6.66	108.06	105.40
31	a	950	G	N9-C4-C5	6.65	108.06	105.40
31	a	111	G	N3-C2-N2	-6.65	115.25	119.90
31	a	514	G	N3-C4-N9	6.65	129.99	126.00
37	g	100	GLY	N-CA-C	6.63	129.68	113.10
1	A	96	G	N3-C4-N9	-6.63	122.02	126.00
1	A	2264	G	N3-C4-N9	-6.63	122.02	126.00
31	a	752	C	C6-N1-C2	-6.63	117.65	120.30
1	A	1410	A	N1-C6-N6	6.63	122.58	118.60
31	a	1072	G	C4-C5-N7	6.63	113.45	110.80
1	A	752	G	C4-C5-N7	6.63	113.45	110.80
31	a	416	G	C8-N9-C1'	6.63	135.61	127.00
1	A	1468	G	N9-C4-C5	-6.62	102.75	105.40
31	a	535	G	C4-C5-N7	6.62	113.45	110.80
31	a	725	C	N3-C2-O2	-6.62	117.26	121.90
31	a	903	G	N3-C4-C5	6.62	131.91	128.60
1	A	679	G	N3-C4-N9	6.62	129.97	126.00
38	h	90	LYS	CB-CA-C	6.62	123.64	110.40
31	a	1263	G	O4'-C1'-N9	6.62	113.49	108.20
1	A	1465	G	C4-N9-C1'	6.61	135.10	126.50
1	A	817	G	C5-C6-O6	6.61	132.57	128.60
1	A	2613	C	N3-C4-N4	-6.61	113.37	118.00
1	A	160	G	C8-N9-C4	-6.61	103.76	106.40
1	A	2408	C	N1-C2-O2	6.60	122.86	118.90
1	A	1986	G	C5-C6-O6	6.59	132.55	128.60
1	A	1822	C	N3-C4-C5	-6.58	119.27	121.90
1	A	1033	G	N1-C2-N2	-6.58	110.28	116.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1472	C	C6-N1-C2	-6.58	117.67	120.30
31	a	208	U	C5-C6-N1	6.57	125.99	122.70
1	A	16	G	N3-C4-C5	6.57	131.88	128.60
31	a	934	G	N7-C8-N9	6.57	116.38	113.10
1	A	878	C	N3-C4-N4	-6.56	113.41	118.00
31	a	1446	C	N3-C4-N4	6.55	122.59	118.00
31	a	37	C	C5-C6-N1	6.54	124.27	121.00
31	a	669	G	C4-N9-C1'	-6.54	117.99	126.50
1	A	2244	G	N9-C4-C5	6.54	108.02	105.40
1	A	2361	U	N1-C2-O2	6.54	127.38	122.80
31	a	794	G	N3-C4-C5	-6.54	125.33	128.60
31	a	549	G	C4-C5-N7	6.54	113.42	110.80
1	A	756	A	N7-C8-N9	6.54	117.07	113.80
1	A	2772	C	N3-C4-C5	6.54	124.51	121.90
1	A	2884	G	C4-C5-N7	6.53	113.41	110.80
31	a	213	G	C6-C5-N7	-6.53	126.48	130.40
31	a	1028	G	N9-C4-C5	-6.52	102.79	105.40
1	A	1213	C	C5-C4-N4	-6.52	115.64	120.20
1	A	1534	G	N3-C2-N2	-6.51	115.34	119.90
1	A	1608	C	N1-C2-O2	6.51	122.81	118.90
1	A	2326	G	C4-C5-N7	6.51	113.41	110.80
1	A	2727	G	C4-C5-N7	6.51	113.40	110.80
31	a	833	G	C5-C6-O6	6.51	132.50	128.60
31	a	833	G	N1-C6-O6	-6.51	116.00	119.90
1	A	1207	G	N3-C4-N9	-6.50	122.10	126.00
31	a	512	C	N1-C2-O2	6.50	122.80	118.90
1	A	2280	G	C4-N9-C1'	6.50	134.95	126.50
1	A	1495	C	C6-N1-C1'	6.49	128.59	120.80
1	A	1759	G	C8-N9-C1'	-6.49	118.56	127.00
1	A	2126	C	C6-N1-C2	-6.49	117.70	120.30
31	a	37	C	O5'-P-OP1	-6.49	99.86	105.70
1	A	2013	G	N3-C2-N2	6.48	124.44	119.90
31	a	416	G	C5-C6-O6	6.48	132.49	128.60
1	A	2013	G	C8-N9-C4	6.48	108.99	106.40
31	a	514	G	C4-C5-N7	6.48	113.39	110.80
31	a	807	G	N3-C4-N9	6.48	129.89	126.00
1	A	767	A	C4-C5-N7	6.48	113.94	110.70
1	A	918	G	N1-C6-O6	-6.47	116.02	119.90
1	A	2000	G	N3-C4-C5	6.47	131.84	128.60
31	a	301	A	C5-N7-C8	-6.47	100.66	103.90
1	A	208	G	O4'-C1'-N9	6.47	113.38	108.20
1	A	2398	G	N3-C4-C5	6.47	131.84	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	488	U	N3-C2-O2	-6.47	117.67	122.20
1	A	2651	G	C2-N3-C4	-6.47	108.67	111.90
31	a	1152	G	N3-C4-C5	-6.47	125.37	128.60
1	A	1701	U	N3-C4-O4	6.47	123.93	119.40
31	a	283	G	C5-C6-O6	-6.47	124.72	128.60
31	a	1453	A	C5-C6-N6	-6.46	118.53	123.70
1	A	1466	G	N1-C2-N2	-6.46	110.38	116.20
1	A	1828	U	N1-C2-O2	6.46	127.32	122.80
1	A	2436	G	N9-C4-C5	-6.46	102.82	105.40
31	a	989	C	N3-C2-O2	6.46	126.42	121.90
31	a	1098	G	C4-N9-C1'	6.46	134.90	126.50
31	a	548	G	C4-N9-C1'	6.46	134.89	126.50
1	A	528	C	N3-C4-N4	-6.45	113.48	118.00
1	A	2242	G	N9-C4-C5	-6.45	102.82	105.40
31	a	406	C	N1-C2-O2	6.45	122.77	118.90
1	A	410	G	C4-C5-N7	6.45	113.38	110.80
1	A	1635	A	O4'-C1'-N9	6.45	113.36	108.20
31	a	262	G	O4'-C1'-N9	6.45	113.36	108.20
31	a	956	G	C6-C5-N7	-6.45	126.53	130.40
1	A	882	C	C6-N1-C1'	-6.45	113.06	120.80
31	a	918	A	N1-C6-N6	6.45	122.47	118.60
1	A	1994	C	C2-N1-C1'	6.45	125.89	118.80
31	a	283	G	N1-C6-O6	6.45	123.77	119.90
31	a	1263	G	C5-C6-O6	6.45	132.47	128.60
31	a	263	G	N3-C2-N2	6.45	124.41	119.90
31	a	1441	C	N1-C2-N3	6.44	123.71	119.20
1	A	1954	A	N7-C8-N9	6.44	117.02	113.80
1	A	2818	A	C6-C5-N7	-6.44	127.79	132.30
1	A	2212	G	C5-C6-O6	6.44	132.46	128.60
31	a	669	G	C8-N9-C1'	6.44	135.37	127.00
31	a	1173	G	C8-N9-C1'	-6.44	118.63	127.00
1	A	96	G	N3-C4-C5	6.43	131.82	128.60
1	A	576	U	N3-C2-O2	-6.43	117.70	122.20
1	A	766	G	C6-C5-N7	-6.43	126.54	130.40
1	A	1467	G	C5-N7-C8	-6.43	101.08	104.30
2	B	51	A	C5-C6-N6	-6.43	118.55	123.70
31	a	649	A	C4-N9-C1'	6.43	137.88	126.30
31	a	1441	C	N3-C2-O2	-6.43	117.40	121.90
1	A	482	U	N3-C4-O4	6.43	123.90	119.40
31	a	1108	C	C6-N1-C2	-6.43	117.73	120.30
1	A	432	G	N3-C4-C5	-6.43	125.39	128.60
1	A	1496	G	O4'-C1'-N9	6.43	113.34	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	510	C	N1-C2-O2	6.43	122.76	118.90
31	a	747	C	C6-N1-C2	-6.42	117.73	120.30
1	A	2280	G	N3-C2-N2	-6.41	115.41	119.90
1	A	1654	A	N1-C6-N6	6.41	122.45	118.60
1	A	2064	A	C5-C6-N6	-6.41	118.57	123.70
31	a	1202	C	C6-N1-C2	-6.41	117.74	120.30
31	a	350	C	C6-N1-C2	-6.41	117.74	120.30
1	A	589	U	C5-C4-O4	-6.41	122.06	125.90
1	A	1410	A	C5-C6-N6	-6.41	118.58	123.70
1	A	1495	C	N1-C2-N3	6.41	123.68	119.20
1	A	1269	A	C4-C5-N7	6.40	113.90	110.70
31	a	571	A	N9-C4-C5	-6.40	103.24	105.80
31	a	758	C	C6-N1-C2	-6.40	117.74	120.30
32	b	97	LEU	CA-CB-CG	6.40	130.02	115.30
1	A	7	G	C5-C6-O6	6.40	132.44	128.60
1	A	788	A	N9-C4-C5	-6.39	103.24	105.80
1	A	1024	A	N1-C6-N6	6.39	122.44	118.60
1	A	1633	A	N9-C4-C5	-6.39	103.24	105.80
1	A	2036	G	N3-C4-C5	6.39	131.79	128.60
1	A	647	G	C4-C5-N7	6.38	113.35	110.80
1	A	426	G	C6-C5-N7	-6.38	126.57	130.40
1	A	2212	G	N1-C6-O6	-6.38	116.07	119.90
31	a	1510	A	N9-C4-C5	-6.38	103.25	105.80
1	A	1634	A	C6-C5-N7	-6.38	127.84	132.30
31	a	548	G	N1-C6-O6	6.37	123.72	119.90
52	v	141	LEU	CA-CB-CG	6.37	129.96	115.30
31	a	781	G	C5-N7-C8	-6.37	101.11	104.30
1	A	685	C	N3-C2-O2	-6.37	117.44	121.90
1	A	2771	G	C6-C5-N7	-6.36	126.58	130.40
31	a	696	G	O4'-C1'-N9	6.36	113.29	108.20
31	a	344	A	N7-C8-N9	6.36	116.98	113.80
1	A	765	U	N3-C4-O4	6.36	123.85	119.40
31	a	14	U	C5-C4-O4	-6.36	122.09	125.90
1	A	1890	G	C2-N3-C4	-6.36	108.72	111.90
1	A	2523	C	N1-C2-O2	6.35	122.71	118.90
31	a	513	G	N3-C4-N9	-6.35	122.19	126.00
31	a	716	A	O5'-P-OP1	-6.35	99.98	105.70
1	A	432	G	C8-N9-C4	-6.35	103.86	106.40
31	a	1000	U	N3-C2-O2	-6.34	117.76	122.20
1	A	640	G	C2-N3-C4	-6.34	108.73	111.90
1	A	2099	G	N1-C2-N2	-6.34	110.50	116.20
1	A	2247	G	N3-C4-C5	6.33	131.77	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	647	G	N9-C4-C5	-6.33	102.87	105.40
1	A	1463	A	C4-C5-N7	6.33	113.86	110.70
1	A	2715	G	N3-C4-C5	6.33	131.76	128.60
1	A	2773	U	C5-C6-N1	6.33	125.86	122.70
31	a	416	G	C4-N9-C1'	-6.33	118.28	126.50
49	s	36	ARG	CA-C-N	6.32	131.11	117.20
1	A	1823	U	C5'-C4'-C3'	6.32	126.11	116.00
1	A	162	A	C4-N9-C1'	6.32	137.67	126.30
1	A	759	U	O4'-C1'-N1	6.31	113.25	108.20
1	A	1908	A	O4'-C1'-N9	6.31	113.25	108.20
47	q	77	LEU	CA-CB-CG	6.31	129.82	115.30
1	A	53	A	N1-C6-N6	6.31	122.39	118.60
1	A	2036	G	C2-N3-C4	-6.30	108.75	111.90
1	A	1691	G	O5'-P-OP2	-6.30	100.03	105.70
1	A	882	C	C2-N1-C1'	6.30	125.73	118.80
1	A	629	A	C4-C5-C6	-6.29	113.85	117.00
31	a	263	G	C4-C5-N7	6.29	113.32	110.80
1	A	82	G	N3-C4-N9	-6.29	122.23	126.00
31	a	681	G	N1-C6-O6	-6.29	116.13	119.90
31	a	1072	G	N3-C4-N9	6.29	129.77	126.00
1	A	1075	G	N3-C4-N9	-6.28	122.23	126.00
31	a	1510	A	C5-C6-N6	-6.28	118.68	123.70
1	A	324	A	N1-C6-N6	6.27	122.36	118.60
1	A	333	C	N3-C2-O2	6.27	126.29	121.90
31	a	807	G	C5-C6-O6	-6.27	124.84	128.60
31	a	970	U	C2-N1-C1'	6.27	125.22	117.70
1	A	2610	G	C4-N9-C1'	-6.26	118.36	126.50
2	B	21	G	C2-N3-C4	-6.26	108.77	111.90
31	a	1002	G	C8-N9-C1'	-6.26	118.86	127.00
21	U	22	ARG	NE-CZ-NH2	6.26	123.43	120.30
1	A	823	G	N3-C4-C5	6.26	131.73	128.60
1	A	1470	G	C2-N3-C4	-6.25	108.77	111.90
1	A	997	G	N1-C2-N2	-6.25	110.57	116.20
1	A	1053	A	C4-C5-N7	6.25	113.83	110.70
1	A	2102	U	C5-C4-O4	-6.25	122.15	125.90
1	A	2442	G	N7-C8-N9	6.25	116.23	113.10
31	a	1333	G	N3-C4-N9	6.25	129.75	126.00
31	a	1494	A	N9-C4-C5	-6.24	103.30	105.80
1	A	2774	G	N3-C2-N2	6.24	124.27	119.90
1	A	1509	G	C8-N9-C4	-6.24	103.90	106.40
31	a	604	A	C4-C5-N7	6.24	113.82	110.70
1	A	2379	A	N9-C4-C5	-6.24	103.31	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	956	G	N3-C4-N9	6.24	129.74	126.00
1	A	1468	G	C8-N9-C1'	-6.24	118.89	127.00
1	A	1754	C	N1-C2-O2	6.24	122.64	118.90
1	A	95	A	C5-N7-C8	-6.23	100.78	103.90
1	A	1622	C	N3-C4-N4	6.23	122.36	118.00
1	A	15	G	C2-N3-C4	-6.23	108.78	111.90
1	A	1409	U	N3-C4-O4	6.23	123.76	119.40
31	a	970	U	C6-N1-C2	-6.23	117.26	121.00
1	A	1496	G	C5-C6-N1	6.23	114.61	111.50
1	A	1336	G	N3-C4-C5	6.23	131.71	128.60
31	a	123	G	N9-C4-C5	-6.22	102.91	105.40
31	a	833	G	N3-C4-N9	-6.22	122.27	126.00
31	a	1395	G	N3-C2-N2	6.22	124.25	119.90
1	A	2610	G	C8-N9-C1'	6.21	135.08	127.00
31	a	1382	U	O5'-P-OP2	-6.21	100.11	105.70
1	A	2441	G	N7-C8-N9	6.21	116.20	113.10
1	A	1440	A	C8-N9-C4	6.21	108.28	105.80
1	A	1825	U	C2-N1-C1'	6.21	125.15	117.70
31	a	213	G	N7-C8-N9	6.21	116.20	113.10
31	a	1019	C	N3-C2-O2	-6.21	117.55	121.90
31	a	1028	G	C6-C5-N7	-6.21	126.67	130.40
31	a	693	G	N3-C2-N2	-6.21	115.56	119.90
1	A	7	G	C8-N9-C4	-6.21	103.92	106.40
1	A	1311	A	N7-C8-N9	6.20	116.90	113.80
1	A	1169	G	N7-C8-N9	6.20	116.20	113.10
31	a	1294	C	C5-C4-N4	6.19	124.53	120.20
1	A	1164	G	N1-C6-O6	6.19	123.61	119.90
31	a	681	G	C8-N9-C1'	6.19	135.05	127.00
31	a	1434	U	C5-C6-N1	6.19	125.80	122.70
1	A	1654	A	C5-C6-N6	-6.19	118.75	123.70
31	a	122	C	C2-N3-C4	6.19	122.99	119.90
1	A	1261	G	N1-C2-N2	-6.18	110.64	116.20
2	B	76	A	C5-N7-C8	-6.18	100.81	103.90
1	A	317	G	C2-N3-C4	-6.18	108.81	111.90
31	a	1083	G	C4-N9-C1'	6.18	134.53	126.50
31	a	444	C	C6-N1-C2	-6.18	117.83	120.30
38	h	90	LYS	CA-CB-CG	6.18	126.99	113.40
1	A	917	U	C5-C6-N1	-6.18	119.61	122.70
1	A	1541	C	C6-N1-C2	-6.18	117.83	120.30
1	A	1822	C	N1-C2-O2	6.18	122.61	118.90
31	a	478	G	C4-N9-C1'	6.18	134.53	126.50
31	a	1028	G	C4-C5-N7	6.17	113.27	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2231	C	C6-N1-C2	-6.17	117.83	120.30
31	a	697	C	C5-C6-N1	6.17	124.08	121.00
31	a	1002	G	N3-C4-N9	6.17	129.70	126.00
1	A	2397	G	N1-C6-O6	-6.16	116.20	119.90
31	a	1173	G	N1-C6-O6	6.16	123.60	119.90
1	A	2408	C	C6-N1-C2	-6.16	117.84	120.30
31	a	1451	G	C4-C5-N7	6.16	113.26	110.80
1	A	1093	C	C5-C6-N1	6.16	124.08	121.00
31	a	192	C	C6-N1-C2	-6.16	117.84	120.30
31	a	1453	A	C4-C5-N7	6.16	113.78	110.70
31	a	1028	G	C4-N9-C1'	6.15	134.49	126.50
31	a	1077	C	C6-N1-C2	-6.15	117.84	120.30
1	A	284	C	C5-C6-N1	6.15	124.07	121.00
1	A	751	A	N9-C4-C5	-6.15	103.34	105.80
31	a	122	C	N3-C4-N4	6.15	122.30	118.00
1	A	1991	G	N3-C4-C5	6.14	131.67	128.60
1	A	2750	C	N3-C2-O2	-6.14	117.60	121.90
49	s	72	GLY	N-CA-C	6.14	128.46	113.10
1	A	2771	G	C4-C5-N7	6.14	113.26	110.80
31	a	163	C	N3-C2-O2	-6.14	117.60	121.90
31	a	332	G	N9-C4-C5	-6.14	102.94	105.40
1	A	1406	G	N3-C4-C5	6.14	131.67	128.60
1	A	814	A	C5-C6-N6	-6.14	118.79	123.70
1	A	1463	A	N9-C4-C5	-6.14	103.34	105.80
31	a	488	U	N1-C2-O2	6.13	127.09	122.80
1	A	162	A	N7-C8-N9	6.13	116.86	113.80
1	A	324	A	N7-C8-N9	6.13	116.86	113.80
1	A	160	G	C2-N3-C4	6.13	114.96	111.90
31	a	442	C	N3-C2-O2	-6.13	117.61	121.90
1	A	735	C	N1-C2-O2	6.12	122.58	118.90
1	A	825	G	C2-N3-C4	-6.12	108.84	111.90
31	a	1466	G	C4-N9-C1'	6.12	134.46	126.50
1	A	862	C	N1-C2-O2	6.12	122.58	118.90
1	A	2247	G	N3-C4-N9	-6.12	122.33	126.00
31	a	387	C	C2-N1-C1'	6.12	125.54	118.80
31	a	1107	C	N1-C2-O2	6.12	122.57	118.90
31	a	794	G	C4-C5-N7	-6.12	108.35	110.80
1	A	2816	C	N1-C2-O2	6.12	122.57	118.90
1	A	2021	C	C5-C4-N4	-6.12	115.92	120.20
31	a	148	G	N3-C4-N9	6.12	129.67	126.00
31	a	807	G	C6-C5-N7	-6.11	126.73	130.40
1	A	1380	G	C8-N9-C1'	-6.11	119.06	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1463	A	C6-C5-N7	-6.11	128.03	132.30
31	a	36	G	OP2-P-O3'	6.11	118.64	105.20
31	a	612	G	N3-C4-N9	6.10	129.66	126.00
31	a	815	A	N9-C4-C5	-6.10	103.36	105.80
1	A	2892	G	N3-C2-N2	-6.10	115.63	119.90
1	A	1286	G	N1-C2-N2	-6.09	110.72	116.20
31	a	36	G	C4'-C3'-O3'	6.09	125.18	113.00
1	A	2361	U	C6-N1-C1'	-6.09	112.68	121.20
31	a	781	G	N1-C6-O6	6.09	123.55	119.90
1	A	2783	U	OP1-P-O3'	6.08	118.58	105.20
31	a	553	C	N3-C2-O2	-6.08	117.64	121.90
1	A	307	A	N9-C4-C5	-6.08	103.37	105.80
1	A	589	U	N3-C4-O4	6.08	123.66	119.40
1	A	2733	A	N9-C4-C5	-6.08	103.37	105.80
1	A	1269	A	N9-C4-C5	-6.08	103.37	105.80
1	A	2816	C	C6-N1-C2	-6.08	117.87	120.30
31	a	1383	G	N3-C4-C5	-6.07	125.56	128.60
1	A	2764	G	N9-C4-C5	-6.07	102.97	105.40
1	A	2400	U	N3-C4-O4	6.07	123.65	119.40
1	A	2408	C	C2-N1-C1'	6.07	125.48	118.80
29	3	42	ARG	NE-CZ-NH2	6.07	123.33	120.30
1	A	983	G	C2-N3-C4	-6.07	108.87	111.90
1	A	1465	G	N7-C8-N9	6.07	116.13	113.10
1	A	1513	A	N7-C8-N9	6.06	116.83	113.80
1	A	2397	G	C6-C5-N7	6.06	134.04	130.40
1	A	679	G	C4-C5-N7	6.05	113.22	110.80
1	A	740	G	C2-N3-C4	-6.05	108.87	111.90
1	A	1380	G	C4-N9-C1'	6.05	134.37	126.50
31	a	1421	C	N1-C2-O2	6.05	122.53	118.90
1	A	107	G	N3-C4-C5	6.05	131.63	128.60
1	A	1834	G	N3-C4-N9	-6.05	122.37	126.00
1	A	1841	G	N3-C4-N9	-6.05	122.37	126.00
1	A	2644	C	C5-C4-N4	-6.05	115.97	120.20
1	A	1186	A	C5-C6-N6	-6.04	118.86	123.70
1	A	1825	U	C6-N1-C2	-6.04	117.38	121.00
1	A	2029	G	N3-C4-C5	6.04	131.62	128.60
1	A	1815	C	N3-C4-C5	6.04	124.31	121.90
1	A	1627	G	C4-C5-N7	6.03	113.21	110.80
1	A	624	C	C2-N1-C1'	6.03	125.43	118.80
1	A	546	A	N1-C6-N6	6.03	122.22	118.60
1	A	2277	G	N3-C2-N2	-6.03	115.68	119.90
31	a	1072	G	C6-C5-N7	-6.03	126.78	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1742	A	N1-C6-N6	6.03	122.22	118.60
31	a	315	U	C6-N1-C2	-6.03	117.39	121.00
31	a	1293	C	N1-C2-O2	6.03	122.52	118.90
31	a	642	C	C5-C4-N4	-6.02	115.98	120.20
31	a	263	G	C5-N7-C8	-6.02	101.29	104.30
31	a	643	A	C6-C5-N7	-6.02	128.09	132.30
31	a	815	A	C5-C6-N6	-6.01	118.89	123.70
1	A	1539	A	N1-C6-N6	-6.01	114.99	118.60
31	a	1028	G	C8-N9-C1'	-6.01	119.19	127.00
1	A	522	G	C2-N3-C4	-6.00	108.90	111.90
1	A	2497	G	N1-C6-O6	6.00	123.50	119.90
31	a	553	C	N1-C2-O2	6.00	122.50	118.90
1	A	1452	C	N3-C4-N4	-6.00	113.80	118.00
1	A	2675	G	N3-C2-N2	6.00	124.10	119.90
1	A	1004	A	C5-C6-N6	-6.00	118.90	123.70
1	A	2437	G	N1-C6-O6	-6.00	116.30	119.90
31	a	1451	G	N3-C4-N9	6.00	129.60	126.00
1	A	1719	C	N3-C4-N4	6.00	122.20	118.00
31	a	249	G	C4-C5-N7	5.99	113.20	110.80
31	a	583	G	C6-C5-N7	5.99	133.99	130.40
1	A	452	G	N3-C4-N9	-5.99	122.41	126.00
31	a	548	G	N3-C4-N9	5.99	129.59	126.00
31	a	1143	C	N3-C2-O2	-5.99	117.71	121.90
1	A	897	A	N1-C6-N6	5.99	122.19	118.60
1	A	303	G	C5-N7-C8	-5.98	101.31	104.30
31	a	496	C	N1-C2-O2	5.98	122.49	118.90
31	a	37	C	C2-N3-C4	5.98	122.89	119.90
1	A	756	A	C4-N9-C1'	5.98	137.06	126.30
1	A	1283	G	N3-C4-C5	5.97	131.59	128.60
31	a	955	A	O4'-C1'-N9	5.97	112.98	108.20
1	A	755	C	N3-C2-O2	-5.97	117.72	121.90
3	C	156	ARG	NE-CZ-NH1	5.97	123.29	120.30
1	A	1015	C	C5-C6-N1	5.97	123.98	121.00
1	A	1521	A	N1-C2-N3	-5.97	126.31	129.30
31	a	1197	G	P-O3'-C3'	5.97	126.86	119.70
31	a	918	A	C4-C5-N7	5.97	113.68	110.70
1	A	2448	G	N9-C4-C5	-5.97	103.01	105.40
1	A	1709	A	N7-C8-N9	5.97	116.78	113.80
1	A	1837	A	N1-C6-N6	5.96	122.18	118.60
1	A	2578	C	C6-N1-C2	5.96	122.69	120.30
1	A	1245	G	N3-C4-C5	5.96	131.58	128.60
1	A	636	A	C5-N7-C8	-5.96	100.92	103.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2115	A	C5-N7-C8	-5.96	100.92	103.90
1	A	2596	G	N3-C4-C5	5.96	131.58	128.60
1	A	92	G	N3-C4-N9	-5.96	122.42	126.00
1	A	851	C	N3-C2-O2	-5.96	117.73	121.90
1	A	1932	C	C2-N1-C1'	5.96	125.36	118.80
31	a	758	C	C5-C4-N4	5.96	124.37	120.20
1	A	546	A	C5-C6-N6	-5.96	118.94	123.70
1	A	918	G	C5-C6-O6	5.96	132.17	128.60
1	A	1480	G	C5-C6-O6	5.96	132.17	128.60
1	A	2842	G	N1-C2-N2	-5.96	110.84	116.20
31	a	794	G	N9-C4-C5	5.96	107.78	105.40
31	a	956	G	C8-N9-C1'	-5.96	119.26	127.00
1	A	506	A	N1-C6-N6	5.95	122.17	118.60
31	a	1478	G	C6-C5-N7	-5.95	126.83	130.40
1	A	768	A	N9-C4-C5	-5.95	103.42	105.80
1	A	1196	C	N1-C2-O2	5.95	122.47	118.90
31	a	549	G	C8-N9-C1'	-5.95	119.27	127.00
1	A	14	A	C5-C6-N6	-5.94	118.94	123.70
1	A	1021	G	C4-C5-N7	5.94	113.18	110.80
1	A	1838	G	N3-C4-C5	5.94	131.57	128.60
1	A	1079	U	N3-C4-O4	-5.94	115.24	119.40
1	A	27	G	N3-C4-C5	5.94	131.57	128.60
1	A	1709	A	N1-C6-N6	5.94	122.16	118.60
31	a	418	G	C8-N9-C1'	-5.94	119.28	127.00
1	A	45	G	C4-N9-C1'	-5.93	118.79	126.50
1	A	752	G	C5-N7-C8	-5.93	101.33	104.30
1	A	333	C	C5-C6-N1	-5.93	118.03	121.00
1	A	2778	G	C5-C6-O6	5.93	132.16	128.60
31	a	706	G	C6-C5-N7	-5.92	126.84	130.40
1	A	1030	C	C5-C4-N4	-5.92	116.06	120.20
1	A	2056	G	N3-C4-C5	5.92	131.56	128.60
1	A	2408	C	C5-C6-N1	5.92	123.96	121.00
31	a	159	G	N3-C4-N9	-5.92	122.45	126.00
1	A	2115	A	C4-C5-N7	5.92	113.66	110.70
1	A	461	A	N7-C8-N9	5.92	116.76	113.80
1	A	1908	A	N9-C4-C5	5.92	108.17	105.80
2	B	108	U	C2-N1-C1'	5.92	124.80	117.70
1	A	439	U	N1-C2-O2	5.92	126.94	122.80
1	A	1158	G	C6-C5-N7	-5.91	126.85	130.40
1	A	1511	C	C6-N1-C2	-5.91	117.93	120.30
1	A	768	A	C4-C5-N7	5.91	113.66	110.70
1	A	1008	C	N3-C4-N4	-5.91	113.86	118.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2441	G	C8-N9-C4	-5.91	104.04	106.40
31	a	1383	G	C8-N9-C1'	-5.91	119.32	127.00
31	a	1394	C	N1-C2-O2	5.91	122.44	118.90
31	a	101	G	N3-C4-N9	-5.91	122.46	126.00
1	A	1400	C	C5-C4-N4	-5.90	116.07	120.20
1	A	2763	G	N3-C2-N2	5.90	124.03	119.90
1	A	396	G	N9-C4-C5	-5.90	103.04	105.40
1	A	439	U	N3-C2-O2	-5.90	118.07	122.20
31	a	681	G	N9-C4-C5	5.90	107.76	105.40
31	a	1507	C	C6-N1-C1'	5.90	127.88	120.80
1	A	881	G	N3-C4-N9	-5.89	122.46	126.00
31	a	583	G	N3-C2-N2	-5.89	115.77	119.90
31	a	650	A	N1-C6-N6	-5.89	115.06	118.60
1	A	1850	G	N3-C4-N9	-5.89	122.47	126.00
1	A	1500	G	C8-N9-C4	-5.89	104.05	106.40
1	A	2845	G	N3-C4-C5	5.89	131.54	128.60
1	A	1222	A	C8-N9-C4	5.89	108.15	105.80
1	A	46	C	C6-N1-C2	-5.88	117.95	120.30
1	A	951	G	C8-N9-C4	-5.88	104.05	106.40
1	A	160	G	N3-C4-N9	5.88	129.53	126.00
1	A	1400	C	N1-C2-O2	5.88	122.43	118.90
1	A	1687	G	N3-C4-C5	5.88	131.54	128.60
1	A	1637	A	C4-C5-N7	5.88	113.64	110.70
1	A	2727	G	N3-C2-N2	5.87	124.01	119.90
31	a	515	C	C6-N1-C2	-5.87	117.95	120.30
1	A	988	C	N3-C2-O2	-5.87	117.79	121.90
1	A	1286	G	N3-C2-N2	5.87	124.01	119.90
1	A	1268	C	N3-C2-O2	-5.87	117.79	121.90
1	A	2261	G	O3'-P-O5'	5.87	115.15	104.00
1	A	2323	U	O4'-C1'-N1	5.87	112.89	108.20
31	a	1184	G	C6-C5-N7	-5.87	126.88	130.40
1	A	1905	G	C8-N9-C1'	-5.86	119.38	127.00
31	a	175	C	C6-N1-C2	-5.86	117.95	120.30
31	a	263	G	N1-C2-N2	-5.86	110.92	116.20
1	A	280	C	C6-N1-C2	-5.86	117.95	120.30
1	A	2102	U	N3-C4-O4	5.86	123.50	119.40
1	A	1038	C	N3-C4-C5	5.86	124.24	121.90
1	A	2019	G	N1-C2-N2	-5.86	110.93	116.20
1	A	1823	U	N3-C4-C5	-5.86	111.09	114.60
31	a	1489	A	N3-C4-N9	-5.86	122.71	127.40
31	a	696	G	C6-C5-N7	5.86	133.91	130.40
1	A	470	G	N3-C4-N9	-5.85	122.49	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1226	G	C2-N3-C4	-5.85	108.97	111.90
1	A	897	A	C6-C5-N7	-5.85	128.20	132.30
1	A	2771	G	N9-C4-C5	-5.85	103.06	105.40
31	a	681	G	C6-C5-N7	5.85	133.91	130.40
2	B	79	C	N3-C4-C5	5.85	124.24	121.90
1	A	1495	C	C6-N1-C2	-5.85	117.96	120.30
31	a	1510	A	C4-C5-N7	5.85	113.62	110.70
1	A	1475	A	C4-C5-N7	5.84	113.62	110.70
31	a	818	C	C6-N1-C2	-5.84	117.96	120.30
1	A	961	G	C5-N7-C8	-5.84	101.38	104.30
1	A	1296	C	N1-C2-O2	5.84	122.41	118.90
1	A	2061	U	C5-C4-O4	-5.84	122.39	125.90
31	a	442	C	C5-C4-N4	5.84	124.29	120.20
1	A	450	C	C6-N1-C2	5.84	122.64	120.30
1	A	655	A	C4-C5-N7	5.83	113.62	110.70
1	A	1361	G	O4'-C1'-N9	5.83	112.87	108.20
1	A	2796	C	C6-N1-C2	-5.83	117.97	120.30
31	a	1002	G	C4-C5-N7	5.83	113.13	110.80
1	A	252	C	C5-C4-N4	-5.83	116.12	120.20
1	A	636	A	C4-C5-N7	5.83	113.62	110.70
1	A	1759	G	N9-C4-C5	-5.83	103.07	105.40
1	A	2442	G	C5-N7-C8	-5.83	101.38	104.30
31	a	1446	C	C5-C4-N4	-5.83	116.12	120.20
1	A	2223	C	C2-N3-C4	5.83	122.81	119.90
31	a	530	C	N1-C2-O2	5.83	122.40	118.90
31	a	1109	C	N3-C2-O2	-5.83	117.82	121.90
1	A	687	G	N3-C4-C5	5.83	131.51	128.60
31	a	478	G	C8-N9-C1'	-5.83	119.43	127.00
31	a	994	C	N1-C2-O2	5.83	122.39	118.90
1	A	80	G	C5-N7-C8	-5.82	101.39	104.30
1	A	325	A	C5-C6-N1	5.82	120.61	117.70
31	a	246	G	C5-C6-O6	-5.82	125.11	128.60
1	A	2436	G	C5-C6-O6	-5.82	125.11	128.60
1	A	1468	G	N3-C4-N9	5.81	129.49	126.00
1	A	2596	G	N3-C4-N9	-5.81	122.51	126.00
31	a	1382	U	C5'-C4'-O4'	5.81	116.08	109.10
1	A	396	G	N1-C6-O6	5.81	123.39	119.90
1	A	770	G	N3-C2-N2	-5.81	115.83	119.90
1	A	2750	C	N1-C2-O2	5.81	122.39	118.90
1	A	2874	A	C4-C5-C6	-5.81	114.09	117.00
31	a	643	A	C5-C6-N6	-5.81	119.05	123.70
1	A	2548	C	N1-C2-O2	5.81	122.39	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2865	G	C2-N3-C4	-5.81	108.99	111.90
31	a	752	C	N3-C2-O2	-5.81	117.83	121.90
31	a	1294	C	N1-C2-N3	5.81	123.27	119.20
31	a	583	G	N3-C4-C5	5.81	131.50	128.60
1	A	135	G	N3-C2-N2	5.80	123.96	119.90
31	a	725	C	N1-C2-O2	5.80	122.38	118.90
31	a	111	G	N3-C4-C5	5.80	131.50	128.60
31	a	697	C	O5'-P-OP1	-5.80	100.48	105.70
1	A	2352	G	N3-C4-C5	5.80	131.50	128.60
1	A	1336	G	N3-C4-N9	-5.79	122.52	126.00
31	a	1394	C	N3-C2-O2	-5.79	117.84	121.90
1	A	162	A	N1-C6-N6	5.79	122.08	118.60
1	A	2052	C	N1-C2-O2	5.79	122.38	118.90
31	a	669	G	O4'-C1'-N9	5.79	112.83	108.20
31	a	1419	C	C6-N1-C2	-5.79	117.98	120.30
31	a	670	A	N7-C8-N9	5.79	116.69	113.80
1	A	470	G	N3-C4-C5	5.79	131.50	128.60
1	A	1410	A	C5-N7-C8	-5.79	101.01	103.90
1	A	737	C	C5-C4-N4	-5.79	116.15	120.20
1	A	1518	G	N1-C6-O6	-5.79	116.43	119.90
1	A	2719	C	N1-C2-O2	5.78	122.37	118.90
1	A	574	A	C5-C6-N6	-5.78	119.07	123.70
1	A	2746	G	N3-C4-N9	-5.78	122.53	126.00
31	a	604	A	C5-C6-N6	-5.78	119.08	123.70
31	a	1287	C	C6-N1-C2	-5.78	117.99	120.30
31	a	1445	G	O4'-C1'-N9	5.78	112.83	108.20
1	A	2648	G	C4-C5-N7	5.78	113.11	110.80
31	a	148	G	C8-N9-C1'	-5.78	119.49	127.00
1	A	2131	C	O4'-C1'-N1	-5.77	103.58	108.20
1	A	2684	A	C5-C6-N6	-5.77	119.08	123.70
1	A	455	A	C4-C5-N7	5.77	113.58	110.70
1	A	1767	G	C4-N9-C1'	5.77	134.00	126.50
1	A	1908	A	N1-C6-N6	-5.77	115.14	118.60
31	a	693	G	N3-C4-N9	-5.77	122.54	126.00
1	A	2423	G	N3-C4-C5	5.76	131.48	128.60
1	A	1391	A	C5-C6-N6	-5.76	119.09	123.70
31	a	1505	G	C8-N9-C1'	-5.76	119.51	127.00
1	A	452	G	N3-C4-C5	5.76	131.48	128.60
1	A	1638	G	N3-C2-N2	5.76	123.93	119.90
1	A	2397	G	N9-C4-C5	5.76	107.70	105.40
2	B	24	C	C6-N1-C2	-5.76	118.00	120.30
1	A	2763	G	C2-N3-C4	-5.76	109.02	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2326	G	C5-N7-C8	-5.76	101.42	104.30
1	A	863	G	N3-C4-C5	5.75	131.48	128.60
1	A	2400	U	C5-C6-N1	5.75	125.58	122.70
1	A	1016	G	C8-N9-C4	-5.75	104.10	106.40
1	A	2839	A	N9-C4-C5	-5.75	103.50	105.80
1	A	2882	A	N9-C4-C5	-5.75	103.50	105.80
31	a	1152	G	C4-N9-C1'	5.75	133.98	126.50
1	A	162	A	C8-N9-C1'	-5.75	117.35	127.70
1	A	1560	A	C2-N3-C4	5.75	113.47	110.60
31	a	926	G	N3-C4-N9	-5.75	122.55	126.00
31	a	1440	C	N1-C2-N3	5.75	123.22	119.20
1	A	2326	G	C6-C5-N7	-5.74	126.95	130.40
31	a	1083	G	C8-N9-C1'	-5.74	119.54	127.00
31	a	604	A	N3-C4-N9	5.74	131.99	127.40
1	A	694	G	N1-C6-O6	5.73	123.34	119.90
1	A	1520	A	P-O3'-C3'	5.73	126.58	119.70
1	A	2258	U	C5-C4-O4	-5.73	122.46	125.90
31	a	670	A	C5-N7-C8	-5.73	101.03	103.90
1	A	461	A	C6-N1-C2	5.73	122.04	118.60
1	A	924	G	N3-C4-N9	5.73	129.44	126.00
31	a	1420	A	N9-C4-C5	5.73	108.09	105.80
1	A	755	C	C2-N1-C1'	5.72	125.10	118.80
1	A	2845	G	C2-N3-C4	-5.72	109.04	111.90
1	A	809	A	O4'-C1'-N9	5.72	112.78	108.20
1	A	1480	G	N3-C4-N9	-5.72	122.57	126.00
1	A	2450	U	P-O3'-C3'	5.72	126.56	119.70
31	a	36	G	O3'-P-O5'	5.72	114.87	104.00
31	a	725	C	C5-C6-N1	5.72	123.86	121.00
1	A	1440	A	N9-C4-C5	-5.72	103.51	105.80
31	a	311	G	C4-C5-N7	5.72	113.09	110.80
1	A	2278	G	N3-C4-N9	5.72	129.43	126.00
1	A	2298	G	C2-N3-C4	-5.71	109.04	111.90
1	A	305	A	N1-C6-N6	5.71	122.03	118.60
1	A	1424	A	N9-C4-C5	-5.71	103.52	105.80
1	A	1623	U	C5-C6-N1	5.71	125.55	122.70
1	A	2229	C	O4'-C1'-N1	5.71	112.77	108.20
31	a	131	C	N3-C2-O2	-5.71	117.91	121.90
1	A	2655	U	N3-C2-O2	-5.70	118.21	122.20
31	a	968	A	N1-C6-N6	-5.70	115.18	118.60
31	a	675	G	N9-C4-C5	5.70	107.68	105.40
1	A	2497	G	N3-C2-N2	5.70	123.89	119.90
31	a	442	C	N3-C4-N4	-5.70	114.01	118.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	454	G	N9-C4-C5	-5.70	103.12	105.40
1	A	162	A	C6-C5-N7	-5.70	128.31	132.30
1	A	2550	G	N3-C4-N9	-5.70	122.58	126.00
31	a	669	G	N3-C4-N9	-5.70	122.58	126.00
31	a	612	G	N9-C4-C5	-5.70	103.12	105.40
1	A	296	G	C8-N9-C1'	5.69	134.40	127.00
1	A	727	G	N3-C4-C5	5.69	131.45	128.60
31	a	1466	G	C8-N9-C1'	-5.69	119.60	127.00
1	A	806	A	C5-N7-C8	-5.69	101.06	103.90
1	A	919	G	C6-C5-N7	5.69	133.81	130.40
1	A	1615	G	N3-C4-N9	-5.69	122.59	126.00
31	a	122	C	C2-N1-C1'	5.69	125.06	118.80
31	a	1112	A	C6-C5-N7	5.69	136.28	132.30
1	A	1627	G	C4-N9-C1'	5.69	133.90	126.50
31	a	147	G	N9-C4-C5	5.69	107.67	105.40
1	A	515	G	C2-N3-C4	-5.69	109.06	111.90
31	a	1505	G	C4-C5-N7	5.68	113.07	110.80
31	a	549	G	N3-C2-N2	5.68	123.88	119.90
1	A	2273	G	C2-N3-C4	-5.68	109.06	111.90
1	A	1069	G	N1-C2-N2	5.68	121.31	116.20
1	A	1881	A	N3-C4-C5	5.68	130.77	126.80
1	A	452	G	C2-N3-C4	-5.67	109.06	111.90
1	A	902	A	C5-N7-C8	-5.67	101.06	103.90
1	A	2738	A	C4-C5-N7	5.67	113.53	110.70
1	A	223	G	N3-C4-C5	5.67	131.44	128.60
1	A	496	G	C2-N3-C4	-5.67	109.06	111.90
1	A	1424	A	C4-C5-N7	5.67	113.53	110.70
1	A	2915	C	N1-C2-O2	5.67	122.30	118.90
1	A	655	A	C8-N9-C4	5.66	108.07	105.80
31	a	1173	G	N7-C8-N9	5.66	115.93	113.10
38	h	89	ALA	CA-C-O	-5.66	108.21	120.10
1	A	1466	G	N3-C2-N2	5.66	123.86	119.90
1	A	1622	C	C2-N1-C1'	5.66	125.03	118.80
1	A	608	C	N3-C4-C5	5.66	124.16	121.90
1	A	2434	A	N9-C4-C5	-5.66	103.54	105.80
31	a	861	A	N9-C4-C5	-5.66	103.54	105.80
1	A	1469	G	C5-N7-C8	-5.66	101.47	104.30
1	A	1975	G	C4-C5-N7	5.66	113.06	110.80
1	A	15	G	N3-C4-C5	5.66	131.43	128.60
1	A	575	G	O4'-C1'-N9	5.66	112.73	108.20
31	a	548	G	C8-N9-C1'	-5.66	119.64	127.00
1	A	133	A	C5-N7-C8	-5.66	101.07	103.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	301	A	C6-C5-N7	-5.65	128.34	132.30
1	A	337	A	O4'-C1'-N9	5.65	112.72	108.20
1	A	762	C	N3-C2-O2	-5.65	117.94	121.90
1	A	2486	A	N9-C4-C5	-5.65	103.54	105.80
1	A	1742	A	N9-C4-C5	-5.65	103.54	105.80
1	A	1812	A	C5-C6-N6	-5.65	119.18	123.70
1	A	2326	G	N1-C6-O6	5.65	123.29	119.90
1	A	2436	G	N3-C4-C5	5.65	131.43	128.60
31	a	278	A	N1-C6-N6	5.65	121.99	118.60
31	a	1114	C	N3-C4-C5	5.65	124.16	121.90
31	a	1416	U	O4'-C1'-N1	5.65	112.72	108.20
31	a	165	G	N3-C4-N9	-5.65	122.61	126.00
31	a	815	A	C4-C5-N7	5.65	113.52	110.70
1	A	165	C	C2-N1-C1'	5.64	125.01	118.80
1	A	721	A	N1-C2-N3	5.64	132.12	129.30
1	A	340	C	N1-C2-O2	5.64	122.28	118.90
31	a	1468	G	O4'-C1'-N9	5.64	112.71	108.20
37	g	101	LEU	N-CA-C	5.64	126.22	111.00
31	a	132	C	N3-C2-O2	-5.64	117.95	121.90
1	A	1494	G	N3-C4-C5	5.63	131.42	128.60
31	a	263	G	N1-C6-O6	5.63	123.28	119.90
1	A	624	C	C5-C6-N1	5.63	123.82	121.00
1	A	1747	G	N3-C4-C5	5.63	131.42	128.60
1	A	2370	U	C6-N1-C1'	5.63	129.09	121.20
1	A	1307	G	N3-C4-N9	-5.63	122.62	126.00
31	a	522	C	C6-N1-C2	-5.63	118.05	120.30
1	A	1534	G	C8-N9-C1'	5.63	134.32	127.00
1	A	1701	U	C2-N1-C1'	5.63	124.45	117.70
1	A	2497	G	C4-C5-C6	5.63	122.18	118.80
1	A	2262	G	C4-C5-N7	5.63	113.05	110.80
31	a	54	A	N9-C4-C5	-5.63	103.55	105.80
31	a	249	G	N9-C4-C5	-5.63	103.15	105.40
31	a	1419	C	O4'-C1'-N1	5.63	112.70	108.20
31	a	441	A	N7-C8-N9	5.62	116.61	113.80
31	a	1294	C	C2-N1-C1'	-5.62	112.61	118.80
1	A	881	G	N3-C4-C5	5.62	131.41	128.60
1	A	1521	A	C5-C6-N6	5.62	128.20	123.70
1	A	1647	A	N1-C6-N6	-5.62	115.23	118.60
1	A	432	G	N1-C2-N2	-5.62	111.14	116.20
1	A	2396	A	C4-C5-N7	5.62	113.51	110.70
1	A	2302	C	C6-N1-C2	-5.62	118.05	120.30
1	A	527	G	O4'-C1'-N9	5.62	112.69	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	249	G	C6-C5-N7	-5.62	127.03	130.40
1	A	602	G	C2-N3-C4	-5.61	109.09	111.90
1	A	1987	A	N9-C4-C5	5.61	108.05	105.80
31	a	533	C	N3-C2-O2	-5.61	117.97	121.90
1	A	636	A	C5-C6-N6	-5.61	119.21	123.70
1	A	759	U	C2-N1-C1'	5.61	124.43	117.70
1	A	1092	A	C4-N9-C1'	5.61	136.40	126.30
1	A	1636	U	C5-C6-N1	5.61	125.50	122.70
1	A	1438	G	C2-N3-C4	-5.60	109.10	111.90
31	a	921	C	N1-C2-O2	5.60	122.26	118.90
1	A	1227	U	C2-N1-C1'	5.60	124.42	117.70
31	a	696	G	N3-C4-N9	-5.60	122.64	126.00
1	A	1087	C	N3-C2-O2	-5.60	117.98	121.90
1	A	1365	G	C2-N3-C4	-5.60	109.10	111.90
1	A	2636	U	N1-C2-O2	5.60	126.72	122.80
1	A	1004	A	N9-C4-C5	-5.60	103.56	105.80
1	A	2690	G	C5-N7-C8	-5.60	101.50	104.30
31	a	703	A	N1-C2-N3	5.60	132.10	129.30
31	a	950	G	N3-C4-N9	-5.60	122.64	126.00
1	A	1033	G	N7-C8-N9	5.60	115.90	113.10
1	A	902	A	C4-C5-N7	5.59	113.50	110.70
1	A	2494	C	N3-C2-O2	-5.59	117.98	121.90
31	a	970	U	N1-C2-N3	5.59	118.26	114.90
1	A	1081	G	C2-N3-C4	-5.59	109.10	111.90
1	A	1087	C	O4'-C1'-N1	5.59	112.67	108.20
1	A	1701	U	C5-C6-N1	5.59	125.50	122.70
1	A	1723	A	C4-C5-N7	5.59	113.50	110.70
31	a	1505	G	C4-N9-C1'	5.59	133.77	126.50
1	A	330	C	N1-C2-O2	5.59	122.25	118.90
1	A	2865	G	N1-C2-N2	-5.59	111.17	116.20
1	A	1709	A	C5-N7-C8	-5.59	101.11	103.90
30	4	19	ARG	NE-CZ-NH1	5.59	123.09	120.30
1	A	595	G	N3-C4-N9	-5.59	122.65	126.00
31	a	556	G	C8-N9-C1'	-5.59	119.74	127.00
1	A	962	A	N1-C6-N6	5.58	121.95	118.60
1	A	2481	G	N1-C6-O6	-5.58	116.55	119.90
31	a	1326	G	C4-N9-C1'	5.58	133.76	126.50
31	a	1416	U	N3-C2-O2	-5.58	118.29	122.20
31	a	344	A	C5-C6-N6	-5.58	119.23	123.70
1	A	844	G	C8-N9-C4	-5.58	104.17	106.40
1	A	19	G	C4-N9-C1'	5.58	133.75	126.50
1	A	1501	G	C5-N7-C8	-5.58	101.51	104.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2771	G	N1-C6-O6	5.58	123.25	119.90
1	A	1183	G	N3-C4-C5	5.57	131.39	128.60
1	A	2013	G	N1-C2-N2	-5.57	111.18	116.20
31	a	818	C	N1-C2-O2	5.57	122.24	118.90
1	A	2818	A	C4-C5-C6	5.57	119.79	117.00
1	A	575	G	C4-N9-C1'	5.57	133.74	126.50
1	A	961	G	C6-C5-N7	-5.57	127.06	130.40
1	A	1991	G	C8-N9-C1'	5.57	134.24	127.00
31	a	1198	A	C8-N9-C4	-5.57	103.57	105.80
1	A	396	G	N7-C8-N9	5.57	115.88	113.10
1	A	636	A	N1-C6-N6	5.57	121.94	118.60
31	a	452	A	N1-C6-N6	5.57	121.94	118.60
1	A	2014	G	N3-C4-C5	5.56	131.38	128.60
31	a	1007	C	C2-N1-C1'	5.56	124.92	118.80
31	a	1155	C	C6-N1-C1'	-5.56	114.13	120.80
1	A	768	A	N1-C6-N6	5.56	121.94	118.60
31	a	279	C	N3-C2-O2	-5.56	118.01	121.90
31	a	1336	U	P-O3'-C3'	5.56	126.37	119.70
1	A	806	A	C6-C5-N7	-5.56	128.41	132.30
1	A	351	G	N3-C4-N9	-5.56	122.67	126.00
1	A	1496	G	C8-N9-C4	5.56	108.62	106.40
31	a	548	G	C5-C6-O6	-5.56	125.27	128.60
1	A	2747	U	C6-N1-C2	-5.55	117.67	121.00
31	a	649	A	N3-C4-C5	-5.55	122.91	126.80
1	A	630	G	O4'-C1'-N9	5.55	112.64	108.20
1	A	280	C	C5-C6-N1	5.55	123.78	121.00
1	A	2763	G	N1-C2-N2	-5.55	111.20	116.20
34	d	51	LEU	CA-CB-CG	5.55	128.07	115.30
1	A	2150	A	N7-C8-N9	5.55	116.58	113.80
1	A	323	C	C2-N3-C4	5.55	122.67	119.90
31	a	412	G	C4-N9-C1'	5.55	133.71	126.50
1	A	1691	G	OP1-P-OP2	5.55	127.92	119.60
1	A	2099	G	N3-C2-N2	5.55	123.78	119.90
1	A	2326	G	N9-C4-C5	-5.55	103.18	105.40
31	a	549	G	N7-C8-N9	5.55	115.87	113.10
31	a	1007	C	C6-N1-C2	-5.55	118.08	120.30
1	A	887	A	C5-N7-C8	-5.54	101.13	103.90
1	A	1465	G	C6-C5-N7	-5.54	127.08	130.40
1	A	814	A	N1-C6-N6	5.54	121.92	118.60
1	A	897	A	C5-N7-C8	-5.54	101.13	103.90
1	A	410	G	N9-C4-C5	-5.54	103.19	105.40
1	A	2342	U	N3-C4-O4	5.54	123.28	119.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	396	G	OP1-P-O3'	5.54	117.38	105.20
1	A	756	A	C5-N7-C8	-5.54	101.13	103.90
1	A	1633	A	C6-C5-N7	-5.54	128.43	132.30
1	A	1742	A	C5-C6-N6	-5.54	119.27	123.70
31	a	278	A	N9-C4-C5	-5.53	103.59	105.80
31	a	1125	C	C5-C6-N1	5.53	123.77	121.00
1	A	557	G	N3-C2-N2	-5.53	116.03	119.90
1	A	819	A	C5-C6-N6	-5.53	119.28	123.70
1	A	1307	G	N3-C4-C5	5.53	131.37	128.60
31	a	1420	A	N1-C6-N6	-5.53	115.28	118.60
31	a	1415	G	N3-C2-N2	-5.53	116.03	119.90
1	A	1627	G	N3-C4-N9	5.53	129.32	126.00
1	A	2464	C	N1-C2-O2	5.53	122.22	118.90
1	A	1633	A	C4-C5-C6	5.52	119.76	117.00
1	A	857	C	C2-N3-C4	-5.52	117.14	119.90
1	A	1723	A	C5-C6-N6	-5.52	119.28	123.70
2	B	65	G	N3-C2-N2	5.52	123.77	119.90
31	a	548	G	N7-C8-N9	5.52	115.86	113.10
1	A	1091	G	O4'-C1'-N9	5.52	112.62	108.20
1	A	2774	G	C5-C6-N1	5.52	114.26	111.50
2	B	88	G	N3-C4-C5	5.52	131.36	128.60
1	A	1378	U	N1-C2-O2	5.52	126.66	122.80
1	A	1441	C	C2-N1-C1'	5.52	124.87	118.80
1	A	2262	G	C5-N7-C8	-5.52	101.54	104.30
1	A	1480	G	N9-C4-C5	5.52	107.61	105.40
1	A	1520	A	C5-C6-N6	5.52	128.11	123.70
1	A	212	C	N1-C2-O2	5.51	122.21	118.90
1	A	1815	C	C6-N1-C2	5.51	122.51	120.30
31	a	983	A	C8-N9-C4	-5.51	103.59	105.80
31	a	1233	C	C5-C6-N1	5.51	123.76	121.00
1	A	66	C	N1-C2-O2	5.51	122.21	118.90
1	A	101	G	N3-C2-N2	5.51	123.76	119.90
1	A	1016	G	N7-C8-N9	5.51	115.86	113.10
1	A	2832	A	N9-C4-C5	-5.51	103.59	105.80
31	a	123	G	N3-C4-N9	5.51	129.31	126.00
31	a	956	G	N7-C8-N9	5.51	115.86	113.10
31	a	518	A	C5-C6-N6	-5.51	119.29	123.70
1	A	2129	C	P-O3'-C3'	5.51	126.31	119.70
1	A	806	A	C4-C5-N7	5.50	113.45	110.70
1	A	130	A	N9-C4-C5	-5.50	103.60	105.80
1	A	503	A	C5-N7-C8	-5.50	101.15	103.90
1	A	1376	G	C8-N9-C4	5.50	108.60	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1186	A	N1-C6-N6	5.50	121.90	118.60
1	A	2445	A	C8-N9-C4	5.50	108.00	105.80
1	A	2849	A	C8-N9-C4	5.50	108.00	105.80
1	A	554	C	N1-C2-O2	5.50	122.20	118.90
1	A	1465	G	N3-C4-C5	-5.50	125.85	128.60
1	A	1655	C	C6-N1-C2	-5.50	118.10	120.30
1	A	2782	C	C6-N1-C2	-5.50	118.10	120.30
1	A	459	C	C2-N1-C1'	5.49	124.84	118.80
1	A	919	G	C4-C5-C6	-5.49	115.50	118.80
1	A	1776	A	C4-C5-N7	5.49	113.45	110.70
1	A	2434	A	C4-C5-N7	5.49	113.45	110.70
1	A	2056	G	C2-N3-C4	-5.49	109.16	111.90
1	A	2328	A	N1-C6-N6	5.49	121.89	118.60
31	a	1108	C	OP1-P-O3'	5.49	117.28	105.20
1	A	378	C	C5-C4-N4	-5.49	116.36	120.20
31	a	941	C	N1-C2-O2	5.49	122.19	118.90
1	A	426	G	C4-C5-N7	5.49	112.99	110.80
1	A	2764	G	C5-C6-O6	-5.49	125.31	128.60
31	a	922	A	P-O3'-C3'	5.49	126.28	119.70
1	A	694	G	C6-C5-N7	-5.48	127.11	130.40
1	A	1391	A	C6-C5-N7	-5.48	128.46	132.30
1	A	2827	A	C5-C6-N1	5.48	120.44	117.70
1	A	2710	C	N3-C2-O2	-5.48	118.06	121.90
31	a	36	G	C5'-C4'-O4'	-5.48	102.52	109.10
1	A	1410	A	C4-C5-N7	5.48	113.44	110.70
1	A	1520	A	C2-N3-C4	-5.48	107.86	110.60
1	A	2711	U	C5-C4-O4	-5.48	122.61	125.90
31	a	315	U	N1-C2-O2	5.48	126.63	122.80
31	a	326	G	N1-C6-O6	5.48	123.19	119.90
31	a	681	G	C4-N9-C1'	-5.48	119.38	126.50
1	A	816	G	N3-C4-N9	-5.48	122.71	126.00
1	A	2061	U	N3-C4-O4	5.48	123.23	119.40
1	A	624	C	C6-N1-C2	-5.47	118.11	120.30
1	A	1053	A	C5-N7-C8	-5.47	101.16	103.90
1	A	137	G	N7-C8-N9	5.47	115.84	113.10
1	A	2047	A	C5-C6-N1	5.47	120.44	117.70
1	A	2869	G	N3-C4-C5	5.47	131.34	128.60
31	a	263	G	OP1-P-OP2	-5.47	111.39	119.60
1	A	2715	G	C2-N3-C4	-5.47	109.17	111.90
1	A	788	A	C5-N7-C8	-5.47	101.17	103.90
1	A	2273	G	N3-C4-C5	5.47	131.33	128.60
1	A	2818	A	N9-C4-C5	-5.46	103.61	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	643	A	C5-N7-C8	-5.46	101.17	103.90
31	a	651	C	N1-C2-N3	-5.46	115.38	119.20
1	A	862	C	N3-C2-O2	-5.46	118.08	121.90
1	A	2618	C	N3-C4-N4	-5.46	114.18	118.00
1	A	1232	G	N1-C2-N2	-5.46	111.28	116.20
1	A	1841	G	C4-N9-C1'	-5.46	119.40	126.50
1	A	2442	G	C2-N3-C4	-5.46	109.17	111.90
31	a	1494	A	C5-N7-C8	-5.46	101.17	103.90
1	A	2764	G	N1-C6-O6	5.46	123.18	119.90
1	A	2884	G	N9-C4-C5	-5.46	103.22	105.40
1	A	426	G	N9-C4-C5	-5.46	103.22	105.40
1	A	223	G	N3-C4-N9	-5.46	122.73	126.00
1	A	395	U	C6-N1-C1'	5.46	128.84	121.20
1	A	2727	G	N9-C4-C5	-5.46	103.22	105.40
31	a	861	A	N1-C6-N6	5.46	121.87	118.60
1	A	432	G	N7-C8-N9	5.46	115.83	113.10
1	A	2572	G	N3-C4-N9	-5.46	122.73	126.00
1	A	1158	G	N9-C4-C5	-5.45	103.22	105.40
1	A	2457	A	C4-C5-N7	5.45	113.42	110.70
31	a	1116	A	N9-C4-C5	-5.45	103.62	105.80
1	A	679	G	N1-C6-O6	5.45	123.17	119.90
1	A	860	U	C5-C4-O4	-5.45	122.63	125.90
1	A	918	G	C5-N7-C8	5.45	107.02	104.30
31	a	302	C	C6-N1-C2	-5.45	118.12	120.30
1	A	16	G	C2-N3-C4	-5.44	109.18	111.90
1	A	163	U	N3-C4-O4	-5.44	115.59	119.40
1	A	1476	G	C4-C5-N7	5.44	112.98	110.80
1	A	2210	C	C6-N1-C2	-5.44	118.12	120.30
1	A	863	G	C2-N3-C4	-5.44	109.18	111.90
1	A	1081	G	N3-C4-C5	5.44	131.32	128.60
1	A	1506	C	C5-C4-N4	5.44	124.01	120.20
31	a	670	A	N3-C4-N9	5.44	131.75	127.40
1	A	80	G	C4-C5-N7	5.44	112.97	110.80
1	A	1161	A	N1-C6-N6	5.44	121.86	118.60
1	A	2720	A	C4-C5-N7	5.44	113.42	110.70
1	A	1627	G	N9-C4-C5	-5.43	103.23	105.40
1	A	1823	U	O4'-C4'-C3'	-5.43	98.57	104.00
1	A	2431	C	N3-C2-O2	-5.43	118.10	121.90
2	B	8	A	C8-N9-C4	5.43	107.97	105.80
1	A	1834	G	N3-C4-C5	5.43	131.31	128.60
1	A	63	U	N3-C2-O2	-5.43	118.40	122.20
1	A	2752	A	C4-C5-N7	5.43	113.42	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2746	G	N3-C4-C5	5.43	131.31	128.60
31	a	951	G	N3-C4-N9	5.43	129.26	126.00
2	B	111	C	N1-C2-O2	5.42	122.16	118.90
1	A	45	G	C8-N9-C1'	5.42	134.05	127.00
1	A	822	G	N3-C4-N9	-5.42	122.75	126.00
1	A	2842	G	N3-C2-N2	5.42	123.69	119.90
31	a	758	C	N1-C2-O2	5.42	122.15	118.90
1	A	1898	C	C6-N1-C2	-5.42	118.13	120.30
1	A	2231	C	O4'-C1'-N1	5.42	112.53	108.20
31	a	255	G	N3-C2-N2	-5.42	116.11	119.90
31	a	1510	A	O4'-C1'-N9	-5.42	103.86	108.20
1	A	2896	A	C4-C5-N7	5.42	113.41	110.70
31	a	55	C	C2-N1-C1'	5.42	124.76	118.80
31	a	636	G	N7-C8-N9	5.42	115.81	113.10
1	A	996	G	N3-C4-C5	5.41	131.31	128.60
1	A	1008	C	N3-C4-C5	5.41	124.07	121.90
1	A	1733	A	C5-C6-N6	-5.41	119.37	123.70
1	A	2832	A	C4-C5-N7	5.41	113.41	110.70
1	A	2563	G	N3-C4-C5	5.41	131.31	128.60
1	A	2738	A	C5-C6-N1	5.41	120.41	117.70
1	A	496	G	N3-C4-C5	5.41	131.31	128.60
1	A	2497	G	C4-N9-C1'	5.41	133.53	126.50
1	A	756	A	C8-N9-C1'	-5.41	117.97	127.70
1	A	1081	G	N3-C4-N9	-5.41	122.76	126.00
1	A	1828	U	N3-C2-O2	-5.40	118.42	122.20
1	A	2848	G	N3-C4-N9	-5.40	122.76	126.00
1	A	397	U	C5-C6-N1	5.40	125.40	122.70
1	A	955	A	N9-C4-C5	5.40	107.96	105.80
31	a	239	G	N3-C4-N9	-5.40	122.76	126.00
1	A	768	A	C5-C6-N6	-5.40	119.38	123.70
1	A	961	G	N9-C4-C5	-5.40	103.24	105.40
1	A	1051	C	C5-C4-N4	-5.40	116.42	120.20
1	A	1534	G	C4-N9-C1'	-5.40	119.48	126.50
1	A	1723	A	C5-N7-C8	-5.40	101.20	103.90
31	a	583	G	N9-C4-C5	5.40	107.56	105.40
31	a	148	G	C4-C5-C6	5.40	122.04	118.80
31	a	549	G	N9-C4-C5	-5.40	103.24	105.40
1	A	2259	C	C5-C4-N4	-5.39	116.42	120.20
1	A	2073	G	N3-C2-N2	-5.39	116.12	119.90
1	A	2824	G	C2-N3-C4	-5.39	109.20	111.90
31	a	741	G	N3-C2-N2	-5.39	116.13	119.90
1	A	395	U	C2-N1-C1'	-5.39	111.23	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	887	A	C4-C5-N7	5.39	113.39	110.70
1	A	2328	A	C4-C5-N7	5.39	113.39	110.70
1	A	2397	G	C8-N9-C1'	5.39	134.01	127.00
1	A	2558	A	C2-N3-C4	5.39	113.30	110.60
1	A	351	G	C8-N9-C1'	5.39	134.00	127.00
1	A	997	G	C2-N3-C4	-5.39	109.21	111.90
1	A	2326	G	N7-C8-N9	5.39	115.79	113.10
31	a	842	U	C5-C4-O4	-5.38	122.67	125.90
1	A	1509	G	O4'-C1'-N9	5.38	112.51	108.20
1	A	624	C	N1-C2-O2	5.38	122.13	118.90
1	A	2783	U	P-O3'-C3'	5.38	126.16	119.70
31	a	669	G	C6-C5-N7	5.38	133.63	130.40
1	A	2735	G	C5-N7-C8	-5.38	101.61	104.30
1	A	766	G	C8-N9-C1'	-5.38	120.01	127.00
1	A	1691	G	C4-N9-C1'	5.38	133.49	126.50
1	A	295	G	C4-N9-C1'	5.38	133.49	126.50
31	a	166	G	N3-C4-C5	5.38	131.29	128.60
31	a	1364	U	C5-C6-N1	5.38	125.39	122.70
1	A	810	A	C4-C5-N7	5.38	113.39	110.70
1	A	2437	G	C8-N9-C4	-5.38	104.25	106.40
1	A	2328	A	C5-C6-N6	-5.37	119.40	123.70
1	A	2747	U	C5-C6-N1	5.37	125.39	122.70
31	a	36	G	N1-C6-O6	-5.37	116.67	119.90
1	A	656	G	N3-C4-C5	5.37	131.29	128.60
1	A	2684	A	C5-C6-N1	5.37	120.39	117.70
31	a	604	A	C5-C6-N1	5.37	120.39	117.70
1	A	1776	A	N9-C4-C5	-5.37	103.65	105.80
1	A	758	G	C8-N9-C4	-5.37	104.25	106.40
31	a	301	A	C2-N3-C4	-5.37	107.92	110.60
31	a	415	A	O4'-C1'-N9	5.37	112.49	108.20
31	a	1481	G	N3-C4-N9	-5.37	122.78	126.00
1	A	576	U	P-O3'-C3'	5.36	126.14	119.70
31	a	694	U	O4'-C1'-N1	5.36	112.49	108.20
1	A	1385	G	N3-C4-N9	-5.36	122.78	126.00
1	A	2658	G	N3-C4-C5	5.36	131.28	128.60
1	A	1469	G	C2-N3-C4	-5.36	109.22	111.90
1	A	2052	C	C2-N1-C1'	5.36	124.70	118.80
31	a	1090	G	O4'-C1'-N9	-5.36	103.91	108.20
1	A	1775	G	C4-C5-N7	5.36	112.94	110.80
1	A	669	C	C5-C4-N4	-5.36	116.45	120.20
1	A	2833	U	N3-C2-O2	-5.36	118.45	122.20
31	a	639	G	O4'-C1'-N9	5.36	112.49	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	1205	C	C5-C4-N4	-5.36	116.45	120.20
31	a	1324	C	N3-C2-O2	-5.36	118.15	121.90
31	a	246	G	C6-C5-N7	-5.35	127.19	130.40
1	A	336	U	C4-C5-C6	-5.35	116.49	119.70
1	A	2756	G	C2-N3-C4	-5.35	109.22	111.90
31	a	1152	G	C8-N9-C1'	-5.35	120.05	127.00
31	a	1414	C	C6-N1-C2	-5.35	118.16	120.30
1	A	2641	A	C5-C6-N1	5.35	120.37	117.70
1	A	2896	A	N9-C4-C5	-5.35	103.66	105.80
31	a	940	C	C5-C6-N1	5.35	123.67	121.00
31	a	1059	G	N1-C6-O6	5.35	123.11	119.90
1	A	83	G	C8-N9-C4	-5.34	104.26	106.40
31	a	571	A	C8-N9-C1'	-5.34	118.08	127.70
31	a	693	G	C8-N9-C1'	5.34	133.95	127.00
1	A	1479	G	O4'-C1'-N9	5.34	112.47	108.20
1	A	1557	C	N3-C2-O2	-5.34	118.16	121.90
31	a	108	A	C8-N9-C4	-5.34	103.66	105.80
1	A	616	G	C2-N3-C4	-5.34	109.23	111.90
1	A	627	C	C5-C4-N4	-5.34	116.47	120.20
1	A	1750	U	C5-C4-O4	-5.34	122.70	125.90
1	A	2304	G	N3-C4-C5	5.34	131.27	128.60
1	A	2873	C	N1-C2-O2	5.34	122.10	118.90
31	a	1131	C	N1-C2-O2	5.34	122.10	118.90
1	A	1627	G	C8-N9-C1'	-5.33	120.07	127.00
31	a	24	C	C5-C4-N4	5.33	123.93	120.20
31	a	1505	G	N9-C4-C5	-5.33	103.27	105.40
1	A	1492	G	C8-N9-C1'	5.33	133.93	127.00
31	a	549	G	N1-C6-O6	5.33	123.10	119.90
1	A	207	A	C8-N9-C4	5.33	107.93	105.80
1	A	1615	G	C8-N9-C1'	5.33	133.93	127.00
1	A	2245	G	C4-C5-N7	5.33	112.93	110.80
1	A	2720	A	N9-C4-C5	-5.33	103.67	105.80
31	a	1409	C	O4'-C1'-N1	5.33	112.46	108.20
1	A	810	A	N9-C4-C5	-5.33	103.67	105.80
1	A	1905	G	N3-C4-C5	-5.33	125.94	128.60
1	A	15	G	C8-N9-C4	5.33	108.53	106.40
1	A	1406	G	N3-C4-N9	-5.33	122.81	126.00
1	A	1826	G	C4-C5-N7	5.33	112.93	110.80
1	A	2508	G	C8-N9-C4	5.33	108.53	106.40
31	a	743	C	N1-C2-O2	5.33	122.09	118.90
1	A	2440	G	N1-C2-N2	-5.32	111.41	116.20
31	a	165	G	N3-C4-C5	5.32	131.26	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	918	A	N9-C4-C5	-5.32	103.67	105.80
1	A	2498	A	N1-C6-N6	5.32	121.79	118.60
1	A	2548	C	N3-C2-O2	-5.32	118.18	121.90
2	B	54	U	C5-C6-N1	5.32	125.36	122.70
1	A	1378	U	C2-N1-C1'	5.32	124.08	117.70
31	a	255	G	N9-C4-C5	5.32	107.53	105.40
1	A	2829	A	C4-C5-N7	5.31	113.36	110.70
1	A	955	A	N1-C6-N6	-5.31	115.41	118.60
31	a	1000	U	N1-C2-O2	5.31	126.52	122.80
1	A	302	A	C8-N9-C4	5.31	107.92	105.80
1	A	814	A	C4-C5-N7	5.31	113.35	110.70
31	a	1390	U	N3-C2-O2	-5.31	118.48	122.20
1	A	829	U	O4'-C1'-N1	-5.30	103.96	108.20
31	a	612	G	C5-C6-O6	-5.30	125.42	128.60
31	a	687	C	N1-C2-O2	5.30	122.08	118.90
1	A	461	A	C5-C6-N6	-5.30	119.46	123.70
1	A	1701	U	C5-C4-O4	-5.30	122.72	125.90
31	a	373	U	C2-N1-C1'	5.30	124.06	117.70
1	A	2248	G	C2-N3-C4	-5.30	109.25	111.90
1	A	257	G	C8-N9-C4	5.30	108.52	106.40
1	A	839	A	C5-C6-N1	5.30	120.35	117.70
1	A	1571	G	N3-C4-C5	-5.30	125.95	128.60
1	A	1637	A	N9-C4-C5	-5.30	103.68	105.80
31	a	1319	G	N3-C4-N9	5.30	129.18	126.00
1	A	2021	C	N3-C4-N4	5.29	121.71	118.00
1	A	541	G	N3-C4-C5	5.29	131.25	128.60
1	A	1435	C	N1-C2-O2	5.29	122.08	118.90
1	A	2494	C	N1-C2-O2	5.29	122.08	118.90
1	A	2643	C	C5-C4-N4	-5.29	116.50	120.20
1	A	19	G	C8-N9-C1'	-5.29	120.12	127.00
41	k	120	GLY	N-CA-C	5.29	126.33	113.10
1	A	851	C	N3-C4-C5	5.29	124.02	121.90
1	A	1465	G	C4-C5-C6	5.29	121.97	118.80
1	A	2715	G	N3-C4-N9	-5.29	122.83	126.00
2	B	110	C	N3-C4-N4	-5.29	114.30	118.00
31	a	861	A	C6-C5-N7	-5.29	128.60	132.30
31	a	1083	G	N7-C8-N9	5.29	115.74	113.10
1	A	70	G	N3-C4-C5	5.29	131.24	128.60
1	A	432	G	N3-C4-N9	5.29	129.17	126.00
1	A	788	A	C4-C5-N7	5.29	113.34	110.70
31	a	950	G	N3-C2-N2	-5.29	116.20	119.90
1	A	1232	G	N3-C2-N2	5.28	123.60	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1608	C	C6-N1-C2	-5.28	118.19	120.30
31	a	997	A	N1-C6-N6	-5.28	115.43	118.60
1	A	575	G	N3-C2-N2	5.28	123.60	119.90
1	A	869	G	N3-C4-N9	-5.28	122.83	126.00
31	a	758	C	N3-C4-N4	-5.28	114.30	118.00
1	A	2352	G	N3-C4-N9	-5.28	122.83	126.00
1	A	2827	A	C4-C5-C6	-5.28	114.36	117.00
1	A	1501	G	N3-C4-N9	-5.28	122.83	126.00
1	A	2089	A	N1-C6-N6	5.28	121.77	118.60
1	A	685	C	C6-N1-C2	-5.27	118.19	120.30
1	A	1180	G	N3-C4-N9	-5.27	122.84	126.00
1	A	1284	A	C5-C6-N6	-5.27	119.48	123.70
1	A	2877	G	N3-C2-N2	-5.27	116.21	119.90
31	a	1313	C	C6-N1-C2	-5.27	118.19	120.30
1	A	1772	G	C8-N9-C1'	-5.27	120.15	127.00
1	A	915	U	C5-C6-N1	5.27	125.33	122.70
1	A	1425	G	C4-C5-N7	5.27	112.91	110.80
1	A	296	G	O4'-C1'-N9	5.27	112.42	108.20
1	A	707	G	C2-N3-C4	-5.27	109.27	111.90
1	A	1383	G	N3-C4-N9	-5.27	122.84	126.00
1	A	1479	G	C4-N9-C1'	-5.27	119.65	126.50
1	A	2849	A	C4-C5-C6	-5.27	114.37	117.00
1	A	1261	G	C2-N3-C4	-5.26	109.27	111.90
1	A	2497	G	C8-N9-C1'	-5.26	120.16	127.00
31	a	1467	A	C5-C6-N6	-5.26	119.49	123.70
1	A	707	G	N3-C4-C5	5.26	131.23	128.60
31	a	730	G	C4-N9-C1'	5.26	133.34	126.50
1	A	130	A	C4-C5-N7	5.26	113.33	110.70
1	A	551	G	O4'-C1'-N9	5.26	112.41	108.20
31	a	311	G	N9-C4-C5	-5.26	103.30	105.40
31	a	1421	C	C2-N1-C1'	5.26	124.58	118.80
1	A	742	U	C5-C4-O4	-5.25	122.75	125.90
1	A	2643	C	N1-C2-O2	5.25	122.05	118.90
1	A	606	G	C2-N3-C4	-5.25	109.27	111.90
1	A	1179	C	C2-N1-C1'	5.25	124.58	118.80
1	A	1218	G	N1-C6-O6	-5.25	116.75	119.90
1	A	1850	G	C4-C5-C6	-5.25	115.65	118.80
1	A	2115	A	C6-C5-N7	-5.25	128.62	132.30
1	A	2355	A	C6-N1-C2	-5.25	115.45	118.60
1	A	1492	G	N3-C2-N2	-5.25	116.22	119.90
1	A	2231	C	C5-C6-N1	5.25	123.63	121.00
31	a	1433	G	N3-C4-N9	-5.25	122.85	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	886	A	N9-C4-C5	-5.25	103.70	105.80
1	A	2816	C	N3-C2-O2	-5.25	118.22	121.90
31	a	122	C	N3-C4-C5	-5.25	119.80	121.90
31	a	1131	C	C5-C6-N1	5.25	123.62	121.00
1	A	1148	C	N1-C2-O2	5.25	122.05	118.90
31	a	691	G	N9-C4-C5	5.25	107.50	105.40
31	a	1028	G	N3-C4-C5	-5.25	125.98	128.60
1	A	351	G	C4-N9-C1'	-5.25	119.68	126.50
1	A	2013	G	N3-C4-C5	5.25	131.22	128.60
31	a	283	G	C4-C5-N7	5.25	112.90	110.80
31	a	950	G	N1-C6-O6	-5.25	116.75	119.90
1	A	101	G	N1-C2-N2	-5.24	111.48	116.20
1	A	479	C	N3-C2-O2	-5.24	118.23	121.90
31	a	292	G	N3-C4-C5	5.24	131.22	128.60
1	A	2786	G	C8-N9-C4	-5.24	104.31	106.40
1	A	455	A	N9-C4-C5	-5.24	103.71	105.80
1	A	1622	C	N3-C2-O2	-5.24	118.24	121.90
1	A	2686	G	C6-C5-N7	-5.24	127.26	130.40
45	o	43	LEU	CA-CB-CG	5.24	127.34	115.30
1	A	2115	A	N7-C8-N9	5.23	116.42	113.80
1	A	383	A	N1-C6-N6	5.23	121.74	118.60
1	A	1045	A	N1-C6-N6	5.23	121.74	118.60
1	A	1994	C	C6-N1-C1'	-5.23	114.52	120.80
1	A	2412	C	N3-C2-O2	-5.23	118.24	121.90
31	a	416	G	N9-C4-C5	5.23	107.49	105.40
1	A	116	G	N3-C4-C5	5.23	131.22	128.60
1	A	432	G	N3-C2-N2	5.23	123.56	119.90
1	A	1183	G	N3-C4-N9	-5.23	122.86	126.00
31	a	1451	G	C5-C6-O6	-5.23	125.46	128.60
1	A	65	A	N9-C4-C5	-5.23	103.71	105.80
1	A	778	G	C2-N3-C4	-5.23	109.29	111.90
1	A	1759	G	C5-C6-N1	-5.23	108.89	111.50
1	A	160	G	C8-N9-C1'	-5.23	120.20	127.00
1	A	1162	C	N3-C2-O2	-5.23	118.24	121.90
1	A	1767	G	N3-C4-N9	5.23	129.14	126.00
1	A	2356	A	C5-N7-C8	-5.23	101.29	103.90
31	a	1348	G	N3-C4-C5	-5.23	125.99	128.60
1	A	2064	A	N1-C6-N6	5.23	121.74	118.60
31	a	309	G	N3-C4-N9	-5.23	122.86	126.00
1	A	1686	G	C2-N3-C4	-5.22	109.29	111.90
31	a	223	C	C6-N1-C2	-5.22	118.21	120.30
1	A	441	C	N1-C2-O2	5.22	122.03	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	608	C	C2-N3-C4	-5.22	117.29	119.90
1	A	944	G	C4-N9-C1'	5.22	133.29	126.50
1	A	1268	C	N3-C4-C5	5.22	123.99	121.90
1	A	1490	G	O4'-C1'-N9	5.22	112.38	108.20
1	A	2689	A	N1-C6-N6	5.22	121.73	118.60
1	A	646	A	N1-C6-N6	5.22	121.73	118.60
31	a	36	G	N9-C4-C5	5.22	107.49	105.40
31	a	671	A	N1-C6-N6	5.22	121.73	118.60
31	a	1405	C	C2-N3-C4	5.22	122.51	119.90
31	a	792	A	N1-C6-N6	5.22	121.73	118.60
1	A	2747	U	N3-C2-O2	-5.22	118.55	122.20
31	a	54	A	C4-C5-N7	5.22	113.31	110.70
1	A	212	C	C2-N1-C1'	5.21	124.54	118.80
31	a	934	G	C8-N9-C4	-5.21	104.31	106.40
1	A	1776	A	C5-C6-N6	-5.21	119.53	123.70
1	A	2845	G	N3-C4-N9	-5.21	122.87	126.00
1	A	503	A	N1-C6-N6	5.21	121.73	118.60
31	a	548	G	C4-C5-N7	5.21	112.89	110.80
31	a	748	U	N3-C2-O2	-5.21	118.55	122.20
1	A	1494	G	C4-N9-C1'	-5.21	119.73	126.50
1	A	1799	G	N3-C4-C5	5.21	131.21	128.60
1	A	1163	U	N3-C2-O2	-5.21	118.55	122.20
1	A	2431	C	N1-C2-O2	5.21	122.03	118.90
1	A	2526	C	C5-C4-N4	-5.21	116.55	120.20
1	A	160	G	N7-C8-N9	5.21	115.70	113.10
1	A	1390	A	C5-C6-N1	5.21	120.30	117.70
1	A	2397	G	C5-C6-O6	5.21	131.72	128.60
2	B	60	C	N1-C2-O2	5.21	122.02	118.90
31	a	794	G	C2-N3-C4	5.21	114.50	111.90
1	A	1762	U	N3-C2-O2	5.20	125.84	122.20
1	A	2406	G	N9-C4-C5	-5.20	103.32	105.40
1	A	2771	G	N3-C4-N9	5.20	129.12	126.00
1	A	2869	G	C4-N9-C1'	-5.20	119.74	126.50
31	a	255	G	O4'-C1'-N9	5.20	112.36	108.20
1	A	334	A	C5-C6-N1	-5.20	115.10	117.70
1	A	822	G	N3-C4-C5	5.20	131.20	128.60
1	A	1687	G	N3-C4-N9	-5.20	122.88	126.00
1	A	1986	G	N1-C6-O6	-5.20	116.78	119.90
1	A	1762	U	N1-C2-O2	-5.20	119.16	122.80
1	A	2261	G	P-O3'-C3'	-5.20	113.46	119.70
31	a	794	G	C8-N9-C4	-5.20	104.32	106.40
31	a	1002	G	N9-C4-C5	-5.20	103.32	105.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	512	C	N3-C2-O2	-5.20	118.26	121.90
1	A	506	A	C5-C6-N6	-5.20	119.54	123.70
1	A	1989	C	C6-N1-C2	-5.20	118.22	120.30
1	A	27	G	C2-N3-C4	-5.19	109.30	111.90
1	A	1812	A	N1-C6-N6	5.19	121.72	118.60
1	A	2047	A	C4-C5-N7	5.19	113.30	110.70
31	a	1002	G	N1-C6-O6	5.19	123.02	119.90
31	a	1348	G	N3-C4-N9	5.19	129.12	126.00
31	a	408	C	N1-C2-O2	5.19	122.01	118.90
1	A	2400	U	C5-C4-O4	-5.19	122.79	125.90
1	A	305	A	N9-C4-C5	-5.19	103.73	105.80
31	a	693	G	C4-N9-C1'	-5.19	119.76	126.50
1	A	922	G	N3-C4-N9	-5.18	122.89	126.00
1	A	1316	G	C4-C5-N7	5.18	112.87	110.80
1	A	1991	G	N3-C2-N2	-5.18	116.27	119.90
1	A	162	A	C4-C5-C6	5.18	119.59	117.00
1	A	573	A	C5-C6-N1	5.18	120.29	117.70
1	A	806	A	N9-C4-C5	-5.18	103.73	105.80
1	A	2636	U	C2-N1-C1'	5.18	123.92	117.70
1	A	955	A	N3-C4-N9	-5.18	123.26	127.40
1	A	1253	G	C4-N9-C1'	5.18	133.23	126.50
31	a	356	G	N1-C2-N2	-5.18	111.54	116.20
1	A	284	C	N3-C2-O2	-5.17	118.28	121.90
1	A	1015	C	N1-C2-O2	5.17	122.00	118.90
1	A	1467	G	C8-N9-C1'	-5.17	120.27	127.00
1	A	1991	G	C4-N9-C1'	-5.17	119.77	126.50
31	a	488	U	C6-N1-C1'	-5.17	113.96	121.20
31	a	1482	G	N3-C4-N9	-5.17	122.90	126.00
1	A	267	G	N3-C4-C5	5.17	131.19	128.60
1	A	1740	G	N3-C4-C5	5.17	131.19	128.60
1	A	2735	G	C4-C5-N7	5.17	112.87	110.80
31	a	514	G	C6-C5-N7	-5.17	127.30	130.40
31	a	649	A	O4'-C1'-N9	5.17	112.34	108.20
1	A	1694	A	C8-N9-C4	5.17	107.87	105.80
31	a	67	G	C6-C5-N7	-5.17	127.30	130.40
31	a	457	A	C4-N9-C1'	5.17	135.60	126.30
1	A	1283	G	N3-C2-N2	-5.17	116.28	119.90
1	A	1481	A	C4-C5-C6	-5.17	114.42	117.00
1	A	2895	G	C2-N3-C4	-5.17	109.32	111.90
31	a	159	G	N3-C4-C5	5.17	131.18	128.60
1	A	1987	A	N1-C6-N6	-5.16	115.50	118.60
1	A	2703	C	N1-C2-O2	5.16	122.00	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	725	C	C2-N1-C1'	5.16	124.48	118.80
1	A	1198	G	C2-N3-C4	-5.16	109.32	111.90
1	A	2086	A	O4'-C1'-N9	5.16	112.33	108.20
31	a	1498	G	N3-C4-C5	5.16	131.18	128.60
31	a	213	G	N1-C6-O6	5.16	122.99	119.90
42	l	134	LYS	CA-CB-CG	5.16	124.74	113.40
1	A	1986	G	C2-N3-C4	-5.15	109.32	111.90
1	A	2764	G	C6-C5-N7	-5.15	127.31	130.40
1	A	775	A	N9-C4-C5	-5.15	103.74	105.80
1	A	1407	C	N3-C4-C5	5.15	123.96	121.90
1	A	908	A	C5-N7-C8	-5.15	101.32	103.90
31	a	326	G	N3-C4-C5	5.15	131.18	128.60
31	a	1329	A	P-O3'-C3'	5.15	125.88	119.70
42	l	69	ARG	NE-CZ-NH2	5.15	122.87	120.30
1	A	384	G	N1-C2-N2	-5.15	111.57	116.20
1	A	1793	C	N3-C4-N4	-5.15	114.40	118.00
1	A	95	A	C6-C5-N7	-5.14	128.70	132.30
1	A	575	G	C8-N9-C1'	-5.14	120.31	127.00
1	A	778	G	N3-C4-C5	5.14	131.17	128.60
1	A	1039	C	N3-C2-O2	-5.14	118.30	121.90
1	A	1905	G	N3-C4-N9	5.14	129.09	126.00
1	A	1503	U	P-O3'-C3'	5.14	125.87	119.70
1	A	1534	G	N9-C4-C5	5.14	107.46	105.40
1	A	165	C	N3-C2-O2	-5.14	118.30	121.90
1	A	759	U	C5'-C4'-O4'	5.14	115.27	109.10
31	a	522	C	C5-C6-N1	5.14	123.57	121.00
49	s	36	ARG	CA-CB-CG	5.14	124.71	113.40
31	a	1333	G	N9-C4-C5	-5.14	103.34	105.40
31	a	556	G	C8-N9-C4	5.14	108.45	106.40
1	A	1053	A	N9-C4-C5	-5.13	103.75	105.80
1	A	2907	A	C5-N7-C8	-5.13	101.33	103.90
1	A	1198	G	N3-C4-C5	5.13	131.17	128.60
31	a	452	A	C5-C6-N6	-5.13	119.59	123.70
1	A	15	G	C4-C5-N7	5.13	112.85	110.80
1	A	618	A	C5-C6-N6	-5.13	119.60	123.70
1	A	756	A	C5-C6-N6	-5.13	119.60	123.70
1	A	2907	A	C6-C5-N7	-5.13	128.71	132.30
31	a	213	G	C4-N9-C1'	5.13	133.17	126.50
1	A	2774	G	C8-N9-C4	5.12	108.45	106.40
2	B	5	G	N3-C4-C5	5.12	131.16	128.60
31	a	670	A	N1-C6-N6	5.12	121.67	118.60
1	A	878	C	C5-C4-N4	5.12	123.79	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	513	G	C8-N9-C1'	5.12	133.66	127.00
1	A	253	G	C2-N3-C4	-5.12	109.34	111.90
1	A	2112	C	N1-C2-O2	5.12	121.97	118.90
1	A	136	A	N7-C8-N9	5.12	116.36	113.80
1	A	2742	C	C2-N1-C1'	5.12	124.43	118.80
31	a	693	G	N1-C2-N2	5.12	120.81	116.20
31	a	1028	G	N1-C2-N2	-5.12	111.59	116.20
1	A	450	C	N1-C2-O2	5.12	121.97	118.90
1	A	2324	C	C2-N3-C4	5.12	122.46	119.90
1	A	804	G	N3-C4-N9	-5.11	122.93	126.00
31	a	940	C	C2-N1-C1'	5.11	124.42	118.80
1	A	71	A	N1-C6-N6	5.11	121.67	118.60
1	A	1080	G	C6-C5-N7	-5.11	127.33	130.40
1	A	2248	G	C8-N9-C1'	5.11	133.65	127.00
2	B	114	G	N7-C8-N9	5.11	115.66	113.10
31	a	1156	A	N1-C6-N6	-5.11	115.53	118.60
1	A	640	G	N3-C4-C5	5.11	131.16	128.60
1	A	1378	U	N3-C2-O2	-5.11	118.62	122.20
31	a	805	C	N3-C2-O2	-5.11	118.32	121.90
31	a	1510	A	N3-C4-N9	5.11	131.49	127.40
1	A	1733	A	N1-C6-N6	5.11	121.67	118.60
1	A	2747	U	C2-N1-C1'	5.11	123.83	117.70
1	A	951	G	N3-C4-N9	-5.11	122.94	126.00
31	a	123	G	C6-C5-N7	-5.11	127.33	130.40
1	A	2903	A	C5-C6-N1	5.10	120.25	117.70
1	A	1411	G	N3-C2-N2	5.10	123.47	119.90
2	B	108	U	C5-C6-N1	5.10	125.25	122.70
1	A	2905	C	N3-C2-O2	-5.10	118.33	121.90
1	A	983	G	N3-C4-C5	5.10	131.15	128.60
1	A	1383	G	N3-C4-C5	5.10	131.15	128.60
1	A	104	C	C2-N3-C4	5.10	122.45	119.90
1	A	1538	A	N7-C8-N9	5.10	116.35	113.80
1	A	845	A	C5-C6-N6	-5.10	119.62	123.70
31	a	387	C	N3-C2-O2	-5.09	118.33	121.90
1	A	2602	C	N3-C4-C5	5.09	123.94	121.90
1	A	760	A	O4'-C1'-N9	5.09	112.27	108.20
1	A	1632	A	C3'-C2'-C1'	5.09	105.57	101.50
31	a	681	G	C4-C5-N7	-5.09	108.76	110.80
1	A	1493	U	N1-C2-O2	5.09	126.36	122.80
1	A	1571	G	C4-N9-C1'	5.09	133.12	126.50
1	A	2895	G	N3-C4-C5	5.09	131.15	128.60
31	a	478	G	N3-C4-N9	5.09	129.05	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	1143	C	N1-C2-O2	5.09	121.95	118.90
1	A	1021	G	N1-C6-O6	5.09	122.95	119.90
1	A	1320	G	N3-C4-C5	5.09	131.14	128.60
1	A	2441	G	C5-N7-C8	-5.09	101.76	104.30
1	A	697	U	P-O3'-C3'	5.08	125.80	119.70
1	A	860	U	N3-C4-O4	5.08	122.96	119.40
1	A	1423	C	N3-C2-O2	-5.08	118.34	121.90
1	A	1466	G	N3-C4-C5	5.08	131.14	128.60
1	A	727	G	C2-N3-C4	-5.08	109.36	111.90
1	A	1445	C	C2-N3-C4	5.08	122.44	119.90
31	a	649	A	N9-C4-C5	5.08	107.83	105.80
1	A	1741	G	N3-C4-N9	-5.08	122.95	126.00
1	A	1906	C	C5-C6-N1	5.08	123.54	121.00
1	A	783	G	N3-C4-C5	5.08	131.14	128.60
1	A	1037	A	C5-C6-N6	-5.08	119.64	123.70
1	A	1794	C	N3-C4-N4	-5.08	114.45	118.00
1	A	2829	A	N9-C4-C5	-5.08	103.77	105.80
1	A	887	A	N9-C4-C5	-5.08	103.77	105.80
1	A	1041	G	N3-C4-C5	5.08	131.14	128.60
1	A	1637	A	C5-N7-C8	-5.08	101.36	103.90
1	A	1638	G	C4-C5-N7	5.08	112.83	110.80
1	A	2064	A	C4-C5-N7	5.08	113.24	110.70
1	A	2570	G	C2-N3-C4	-5.08	109.36	111.90
1	A	2671	A	C4-C5-C6	-5.08	114.46	117.00
31	a	1002	G	N7-C8-N9	5.08	115.64	113.10
1	A	515	G	N9-C4-C5	-5.07	103.37	105.40
1	A	1830	A	N7-C8-N9	5.07	116.34	113.80
1	A	1501	G	N3-C4-C5	5.07	131.14	128.60
31	a	1441	C	C6-N1-C1'	5.07	126.89	120.80
1	A	1759	G	C2-N3-C4	-5.07	109.36	111.90
31	a	444	C	C5-C6-N1	5.07	123.53	121.00
31	a	681	G	N9-C1'-C2'	5.07	120.59	114.00
31	a	722	G	C4-N9-C1'	5.07	133.09	126.50
31	a	1445	G	C4-N9-C1'	-5.07	119.91	126.50
1	A	1976	G	N3-C4-C5	5.07	131.13	128.60
1	A	115	C	N3-C4-C5	5.07	123.93	121.90
1	A	886	A	C4-C5-N7	5.07	113.23	110.70
1	A	1822	C	O3'-P-O5'	5.07	113.62	104.00
31	a	246	G	N3-C4-N9	5.07	129.04	126.00
1	A	1534	G	C6-C5-N7	5.06	133.44	130.40
31	a	1083	G	C5-N7-C8	-5.06	101.77	104.30
1	A	1492	G	C2-N3-C4	-5.06	109.37	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	213	G	C5-N7-C8	-5.06	101.77	104.30
31	a	612	G	C6-C5-N7	-5.06	127.36	130.40
1	A	410	G	C5-N7-C8	-5.06	101.77	104.30
31	a	332	G	N7-C8-N9	5.06	115.63	113.10
1	A	171	A	N9-C4-C5	-5.06	103.78	105.80
1	A	1087	C	C6-N1-C1'	5.06	126.87	120.80
31	a	327	G	O4'-C1'-N9	5.06	112.25	108.20
31	a	765	U	C5-C6-N1	5.06	125.23	122.70
31	a	1205	C	N3-C4-N4	5.06	121.54	118.00
31	a	1398	U	O4'-C1'-N1	5.06	112.25	108.20
1	A	725	A	C5-C6-N6	-5.06	119.66	123.70
1	A	1380	G	C4-C5-N7	5.06	112.82	110.80
1	A	1723	A	N1-C6-N6	5.06	121.63	118.60
1	A	1320	G	C2-N3-C4	-5.05	109.37	111.90
1	A	2818	A	C5-C6-N6	-5.05	119.66	123.70
31	a	571	A	C4-N9-C1'	5.05	135.40	126.30
31	a	606	U	N3-C2-O2	5.05	125.74	122.20
31	a	1173	G	C4-C5-C6	5.05	121.83	118.80
1	A	917	U	C5-C4-O4	5.05	128.93	125.90
1	A	1500	G	N1-C6-O6	5.05	122.93	119.90
1	A	283	G	C4-C5-N7	5.05	112.82	110.80
1	A	660	A	N1-C6-N6	-5.05	115.57	118.60
1	A	674	C	C6-N1-C2	5.05	122.32	120.30
1	A	1494	G	C8-N9-C1'	5.05	133.57	127.00
1	A	1848	A	C4-C5-N7	5.05	113.23	110.70
31	a	1319	G	C4-C5-N7	5.05	112.82	110.80
31	a	1510	A	C5-C6-N1	5.05	120.23	117.70
1	A	1819	G	C2-N3-C4	-5.05	109.38	111.90
1	A	2261	G	OP1-P-O3'	-5.05	94.09	105.20
1	A	2669	G	N3-C4-C5	5.05	131.12	128.60
31	a	515	C	N3-C2-O2	-5.05	118.37	121.90
31	a	1453	A	C6-C5-N7	-5.05	128.77	132.30
1	A	7	G	C8-N9-C1'	5.05	133.56	127.00
1	A	1213	C	N3-C4-N4	5.05	121.53	118.00
1	A	1228	A	C5-N7-C8	-5.05	101.38	103.90
1	A	54	G	N3-C2-N2	5.05	123.43	119.90
31	a	1381	G	C6-C5-N7	5.05	133.43	130.40
31	a	1390	U	C5-C4-O4	5.05	128.93	125.90
1	A	384	G	N3-C2-N2	5.04	123.43	119.90
1	A	135	G	C4-C5-N7	5.04	112.82	110.80
31	a	283	G	C6-C5-N7	-5.04	127.37	130.40
1	A	257	G	C2-N3-C4	-5.04	109.38	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1053	A	C6-C5-N7	-5.04	128.77	132.30
1	A	1231	A	N9-C4-C5	-5.04	103.78	105.80
31	a	1454	G	N3-C4-N9	5.04	129.03	126.00
31	a	1505	G	N3-C4-N9	5.04	129.03	126.00
1	A	318	A	O4'-C1'-N9	5.04	112.23	108.20
31	a	1020	U	C5-C4-O4	-5.04	122.88	125.90
31	a	1333	G	N3-C2-N2	5.04	123.43	119.90
1	A	1423	C	N1-C2-O2	5.04	121.92	118.90
31	a	548	G	N9-C4-C5	-5.04	103.38	105.40
31	a	1072	G	N3-C2-N2	5.04	123.43	119.90
1	A	752	G	C6-C5-N7	-5.04	127.38	130.40
1	A	1513	A	C4-N9-C1'	5.04	135.37	126.30
31	a	262	G	P-O3'-C3'	5.04	125.74	119.70
31	a	781	G	N7-C8-N9	5.04	115.62	113.10
1	A	2896	A	C5-N7-C8	-5.03	101.38	103.90
31	a	36	G	C5-C6-O6	5.03	131.62	128.60
1	A	554	C	C6-N1-C2	5.03	122.31	120.30
1	A	888	G	N3-C4-C5	5.03	131.11	128.60
1	A	1196	C	C6-N1-C2	-5.03	118.29	120.30
1	A	2882	A	C4-C5-N7	5.03	113.21	110.70
31	a	1218	C	C6-N1-C2	-5.03	118.29	120.30
1	A	1195	A	C5-N7-C8	-5.03	101.39	103.90
1	A	2064	A	C5-N7-C8	-5.03	101.39	103.90
31	a	24	C	N3-C2-O2	-5.03	118.38	121.90
31	a	350	C	N1-C2-O2	5.03	121.92	118.90
31	a	513	G	C6-C5-N7	5.03	133.42	130.40
31	a	1069	G	O4'-C1'-N9	5.03	112.22	108.20
1	A	330	C	N3-C2-O2	-5.03	118.38	121.90
1	A	522	G	C8-N9-C4	5.03	108.41	106.40
1	A	719	G	N1-C2-N2	-5.03	111.68	116.20
31	a	394	C	C6-N1-C2	-5.03	118.29	120.30
31	a	101	G	N3-C4-C5	5.02	131.11	128.60
4	D	133	ARG	NE-CZ-NH1	5.02	122.81	120.30
31	a	111	G	N1-C2-N2	5.02	120.72	116.20
1	A	193	A	C5-C6-N1	5.02	120.21	117.70
1	A	193	A	C5-C6-N6	-5.02	119.69	123.70
1	A	1287	U	C2-N1-C1'	5.02	123.72	117.70
1	A	1852	G	N9-C4-C5	5.02	107.41	105.40
1	A	2690	G	N9-C4-C5	-5.02	103.39	105.40
31	a	967	A	C6-N1-C2	5.02	121.61	118.60
31	a	1326	G	N3-C4-N9	5.02	129.01	126.00
1	A	1857	C	N1-C2-O2	5.02	121.91	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	a	1428	A	C5-C6-N6	5.02	127.71	123.70
1	A	1021	G	N9-C4-C5	-5.01	103.39	105.40
1	A	1481	A	O4'-C1'-N9	5.01	112.21	108.20
1	A	1562	C	N3-C2-O2	-5.01	118.39	121.90
1	A	1987	A	C6-C5-N7	5.01	135.81	132.30
1	A	1123	C	N1-C2-O2	5.01	121.91	118.90
1	A	1522	G	N3-C4-C5	5.01	131.11	128.60
1	A	2683	U	N3-C2-O2	-5.01	118.69	122.20
2	B	19	G	C2-N3-C4	-5.01	109.39	111.90
1	A	2457	A	C5-C6-N6	-5.01	119.69	123.70
1	A	2671	A	N3-C4-C5	5.01	130.31	126.80
1	A	252	C	N3-C4-C5	5.01	123.90	121.90
1	A	409	G	N3-C2-N2	5.01	123.41	119.90
1	A	1740	G	N3-C4-N9	-5.01	123.00	126.00
1	A	997	G	N3-C2-N2	5.00	123.40	119.90
1	A	2700	G	N3-C4-C5	5.00	131.10	128.60
1	A	265	A	N9-C4-C5	-5.00	103.80	105.80
1	A	661	U	C5-C4-O4	-5.00	122.90	125.90
1	A	1179	C	N3-C2-O2	-5.00	118.40	121.90
1	A	1279	C	N1-C2-O2	5.00	121.90	118.90
1	A	2002	G	N9-C4-C5	-5.00	103.40	105.40
31	a	385	G	N3-C4-N9	-5.00	123.00	126.00

There are no chirality outliers.

All (89) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
30	4	1	MET	Peptide
30	4	13	LYS	Peptide
3	C	173	LEU	Peptide
3	C	255	LEU	Peptide
3	C	257	LYS	Peptide
3	C	273	GLY	Peptide
3	C	40	LYS	Peptide
5	E	132	GLU	Peptide
6	F	16	LEU	Peptide
6	F	170	LEU	Peptide
7	G	106	ASN	Peptide
8	H	11	ASN	Peptide
8	H	133	HIS	Peptide
8	H	57	VAL	Peptide
8	H	80	ASN	Peptide

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Mol	Chain	Res	Type	Group
11	K	1	MET	Peptide
11	K	3	LEU	Peptide
11	K	68	ILE	Peptide
12	L	95	GLU	Peptide
13	M	68	THR	Peptide
16	P	50	ALA	Peptide
16	P	77	LYS	Peptide
19	S	4	LYS	Peptide
26	Z	37	LYS	Peptide
26	Z	43	CYS	Peptide
31	a	605	G	Sidechain
31	a	606	U	Sidechain
32	b	103	ASN	Peptide
32	b	104	TYR	Peptide
32	b	107	ILE	Peptide
32	b	21	ARG	Peptide
33	c	169	GLU	Peptide
34	d	102	GLY	Peptide
34	d	103	LEU	Peptide
34	d	104	ALA	Peptide
34	d	109	GLN	Peptide
34	d	44	LEU	Peptide
34	d	45	SER	Peptide
34	d	97	VAL	Peptide
37	g	101	LEU	Peptide
37	g	102	ARG	Peptide
37	g	105	VAL	Peptide
37	g	108	ALA	Peptide
37	g	138	ARG	Peptide
37	g	144	MET	Peptide
37	g	2	PRO	Peptide
37	g	70	MET	Peptide
37	g	71	PRO	Peptide
37	g	95	ARG	Peptide
39	i	128	GLN	Peptide
40	j	15	HIS	Peptide
40	j	65	PHE	Peptide
40	j	87	LEU	Peptide
40	j	9	ARG	Peptide
41	k	116	VAL	Peptide
41	k	118	HIS	Peptide
41	k	122	ARG	Peptide

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Mol	Chain	Res	Type	Group
41	k	123	PRO	Peptide
41	k	126	ARG	Peptide
42	l	133	LYS	Peptide
42	l	135	PRO	Peptide
43	m	106	ALA	Peptide
43	m	27	THR	Peptide
43	m	64	LYS	Peptide
43	m	73	THR	Peptide
43	m	74	ASN	Peptide
44	n	25	GLU	Peptide
44	n	34	TYR	Peptide
44	n	58	LYS	Peptide
44	n	59	ALA	Peptide
45	o	19	GLU	Peptide
45	o	2	ALA	Peptide
45	o	46	HIS	Peptide
45	o	47	LYS	Peptide
47	q	22	THR	Peptide
47	q	24	THR	Peptide
47	q	63	ILE	Peptide
47	q	65	GLU	Peptide
47	q	75	PHE	Peptide
49	s	71	LEU	Peptide
49	s	79	THR	Peptide
49	s	80	PHE	Peptide
50	t	69	ASN	Peptide
51	u	32	VAL	Peptide
51	u	33	ARG	Peptide
51	u	49	SER	Peptide
52	v	33	ASN	Peptide
52	v	92	TYR	Peptide
52	v	93	LYS	Peptide

5.2 Too-close contacts (i)

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

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	
3	C	272/274 (99%)	215 (79%)	57 (21%)	0	100	100
4	D	213/215 (99%)	166 (78%)	47 (22%)	0	100	100
5	E	204/206 (99%)	175 (86%)	29 (14%)	0	100	100
6	F	173/175 (99%)	141 (82%)	32 (18%)	0	100	100
7	G	173/175 (99%)	140 (81%)	33 (19%)	0	100	100
8	H	143/145 (99%)	118 (82%)	25 (18%)	0	100	100
9	I	120/122 (98%)	104 (87%)	16 (13%)	0	100	100
10	J	144/146 (99%)	124 (86%)	20 (14%)	0	100	100
11	K	135/137 (98%)	113 (84%)	22 (16%)	0	100	100
12	L	118/120 (98%)	101 (86%)	17 (14%)	0	100	100
13	M	117/119 (98%)	98 (84%)	19 (16%)	0	100	100
14	N	112/114 (98%)	94 (84%)	18 (16%)	0	100	100
15	O	114/116 (98%)	105 (92%)	9 (8%)	0	100	100
16	P	100/102 (98%)	85 (85%)	15 (15%)	0	100	100
17	Q	108/110 (98%)	90 (83%)	17 (16%)	1 (1%)	17	57
18	R	87/89 (98%)	70 (80%)	17 (20%)	0	100	100
19	S	101/103 (98%)	82 (81%)	19 (19%)	0	100	100
20	T	92/94 (98%)	82 (89%)	10 (11%)	0	100	100
21	U	80/82 (98%)	70 (88%)	10 (12%)	0	100	100
22	V	56/58 (97%)	46 (82%)	10 (18%)	0	100	100
23	W	65/67 (97%)	58 (89%)	7 (11%)	0	100	100
24	X	56/58 (97%)	49 (88%)	7 (12%)	0	100	100
25	Y	57/59 (97%)	48 (84%)	9 (16%)	0	100	100
26	Z	46/48 (96%)	29 (63%)	17 (37%)	0	100	100
27	1	45/47 (96%)	37 (82%)	8 (18%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
28	2	41/43 (95%)	38 (93%)	3 (7%)	0	100	100
29	3	62/64 (97%)	50 (81%)	12 (19%)	0	100	100
30	4	35/37 (95%)	21 (60%)	14 (40%)	0	100	100
32	b	224/226 (99%)	193 (86%)	31 (14%)	0	100	100
33	c	200/202 (99%)	161 (80%)	39 (20%)	0	100	100
34	d	196/198 (99%)	136 (69%)	59 (30%)	1 (0%)	29	67
35	e	154/156 (99%)	133 (86%)	21 (14%)	0	100	100
36	f	93/95 (98%)	75 (81%)	18 (19%)	0	100	100
37	g	149/152 (98%)	99 (66%)	50 (34%)	0	100	100
38	h	127/131 (97%)	98 (77%)	29 (23%)	0	100	100
39	i	125/127 (98%)	86 (69%)	39 (31%)	0	100	100
40	j	95/97 (98%)	59 (62%)	35 (37%)	1 (1%)	14	53
41	k	112/114 (98%)	81 (72%)	31 (28%)	0	100	100
42	l	133/135 (98%)	102 (77%)	29 (22%)	2 (2%)	10	47
43	m	100/104 (96%)	62 (62%)	38 (38%)	0	100	100
44	n	58/60 (97%)	36 (62%)	22 (38%)	0	100	100
45	o	86/88 (98%)	71 (83%)	15 (17%)	0	100	100
46	p	87/89 (98%)	68 (78%)	19 (22%)	0	100	100
47	q	78/80 (98%)	51 (65%)	27 (35%)	0	100	100
48	r	52/54 (96%)	43 (83%)	9 (17%)	0	100	100
49	s	78/80 (98%)	58 (74%)	20 (26%)	0	100	100
50	t	79/81 (98%)	59 (75%)	20 (25%)	0	100	100
51	u	50/52 (96%)	32 (64%)	18 (36%)	0	100	100
52	v	158/162 (98%)	117 (74%)	41 (26%)	0	100	100
All	All	5503/5608 (98%)	4369 (79%)	1129 (20%)	5 (0%)	54	84

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
42	l	131	GLY
34	d	110	ALA
40	j	7	ARG
17	Q	87	PRO
42	l	135	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
3	C	220/221 (100%)	177 (80%)	43 (20%)	1 9
4	D	173/173 (100%)	144 (83%)	29 (17%)	2 13
5	E	168/168 (100%)	126 (75%)	42 (25%)	0 4
6	F	141/154 (92%)	116 (82%)	25 (18%)	2 11
7	G	124/153 (81%)	101 (82%)	23 (18%)	1 10
8	H	122/123 (99%)	98 (80%)	24 (20%)	1 9
9	I	100/100 (100%)	79 (79%)	21 (21%)	1 7
10	J	109/112 (97%)	96 (88%)	13 (12%)	5 27
11	K	108/114 (95%)	93 (86%)	15 (14%)	3 22
12	L	96/101 (95%)	82 (85%)	14 (15%)	3 20
13	M	86/95 (90%)	61 (71%)	25 (29%)	0 3
14	N	93/100 (93%)	79 (85%)	14 (15%)	3 19
15	O	96/96 (100%)	83 (86%)	13 (14%)	4 23
16	P	84/86 (98%)	64 (76%)	20 (24%)	0 5
17	Q	88/90 (98%)	59 (67%)	29 (33%)	0 2
18	R	78/80 (98%)	62 (80%)	16 (20%)	1 8
19	S	81/88 (92%)	59 (73%)	22 (27%)	0 3
20	T	78/82 (95%)	60 (77%)	18 (23%)	1 5
21	U	63/64 (98%)	45 (71%)	18 (29%)	0 3
22	V	44/49 (90%)	33 (75%)	11 (25%)	0 4
23	W	58/60 (97%)	50 (86%)	8 (14%)	3 22
24	X	52/52 (100%)	44 (85%)	8 (15%)	2 18
25	Y	23/56 (41%)	22 (96%)	1 (4%)	29 63
26	Z	35/44 (80%)	24 (69%)	11 (31%)	0 2
27	1	44/45 (98%)	32 (73%)	12 (27%)	0 3
28	2	39/39 (100%)	35 (90%)	4 (10%)	7 34

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
29	3	55/55 (100%)	48 (87%)	7 (13%)	4 24
30	4	35/35 (100%)	27 (77%)	8 (23%)	1 6
32	b	196/196 (100%)	160 (82%)	36 (18%)	1 10
33	c	138/164 (84%)	110 (80%)	28 (20%)	1 8
34	d	147/174 (84%)	114 (78%)	33 (22%)	1 6
35	e	118/122 (97%)	97 (82%)	21 (18%)	2 11
36	f	80/83 (96%)	62 (78%)	18 (22%)	1 6
37	g	118/128 (92%)	90 (76%)	28 (24%)	1 5
38	h	111/112 (99%)	88 (79%)	23 (21%)	1 8
39	i	86/105 (82%)	68 (79%)	18 (21%)	1 7
40	j	81/87 (93%)	66 (82%)	15 (18%)	1 10
41	k	82/90 (91%)	60 (73%)	22 (27%)	0 3
42	l	111/117 (95%)	80 (72%)	31 (28%)	0 3
43	m	62/92 (67%)	51 (82%)	11 (18%)	2 11
44	n	48/52 (92%)	35 (73%)	13 (27%)	0 3
45	o	77/80 (96%)	59 (77%)	18 (23%)	1 5
46	p	73/75 (97%)	56 (77%)	17 (23%)	1 5
47	q	65/75 (87%)	49 (75%)	16 (25%)	0 5
48	r	48/49 (98%)	41 (85%)	7 (15%)	3 20
49	s	67/70 (96%)	50 (75%)	17 (25%)	0 4
50	t	61/67 (91%)	49 (80%)	12 (20%)	1 9
51	u	40/48 (83%)	29 (72%)	11 (28%)	0 3
52	v	147/147 (100%)	115 (78%)	32 (22%)	1 6
All	All	4449/4768 (93%)	3528 (79%)	921 (21%)	3 8

All (921) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	C	5	LYS
3	C	19	LEU
3	C	27	THR
3	C	34	LEU
3	C	35	LYS
3	C	37	LEU

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Mol	Chain	Res	Type
3	C	46	GLN
3	C	52	ARG
3	C	60	ARG
3	C	63	ARG
3	C	66	ASP
3	C	70	ASN
3	C	77	LYS
3	C	87	ARG
3	C	91	ILE
3	C	94	VAL
3	C	101	LYS
3	C	108	LYS
3	C	110	LEU
3	C	121	GLU
3	C	123	ASP
3	C	125	LYS
3	C	133	GLN
3	C	139	THR
3	C	147	LYS
3	C	175	ARG
3	C	182	ARG
3	C	197	ASN
3	C	202	LEU
3	C	207	LYS
3	C	210	ARG
3	C	213	TRP
3	C	214	LYS
3	C	232	HIS
3	C	252	LYS
3	C	254	THR
3	C	255	LEU
3	C	260	ARG
3	C	261	ARG
3	C	264	LYS
3	C	270	ILE
3	C	272	ARG
3	C	274	ARG
4	D	5	ILE
4	D	6	LEU
4	D	10	ILE
4	D	13	THR
4	D	26	THR

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Mol	Chain	Res	Type
4	D	32	GLU
4	D	40	THR
4	D	42	GLU
4	D	49	ILE
4	D	57	LYS
4	D	61	LYS
4	D	62	ASP
4	D	65	SER
4	D	71	LYS
4	D	78	LYS
4	D	81	ASP
4	D	100	GLU
4	D	104	GLU
4	D	108	ASP
4	D	122	SER
4	D	131	ILE
4	D	137	SER
4	D	169	MET
4	D	176	ASN
4	D	178	VAL
4	D	183	LEU
4	D	194	VAL
4	D	201	VAL
4	D	211	ILE
5	E	5	ASP
5	E	8	LYS
5	E	13	LYS
5	E	14	SER
5	E	27	GLU
5	E	30	ASN
5	E	33	LEU
5	E	35	GLU
5	E	43	SER
5	E	44	LEU
5	E	49	HIS
5	E	51	VAL
5	E	55	SER
5	E	72	ARG
5	E	82	GLN
5	E	99	TYR
5	E	100	LYS
5	E	101	MET

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Mol	Chain	Res	Type
5	E	105	MET
5	E	108	LEU
5	E	111	ARG
5	E	112	SER
5	E	114	LEU
5	E	116	PHE
5	E	117	LYS
5	E	119	GLN
5	E	121	ASN
5	E	125	VAL
5	E	130	ASN
5	E	135	LYS
5	E	137	LYS
5	E	139	PHE
5	E	146	LEU
5	E	150	LYS
5	E	154	VAL
5	E	159	GLU
5	E	169	ASN
5	E	173	VAL
5	E	187	THR
5	E	193	VAL
5	E	201	LYS
5	E	204	GLU
6	F	15	ASN
6	F	30	LYS
6	F	32	ASP
6	F	36	VAL
6	F	48	LYS
6	F	59	LEU
6	F	64	LYS
6	F	66	LEU
6	F	71	LYS
6	F	78	ARG
6	F	79	LEU
6	F	80	ARG
6	F	98	GLU
6	F	99	PHE
6	F	100	LEU
6	F	119	LYS
6	F	120	LYS
6	F	125	ARG

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Mol	Chain	Res	Type
6	F	127	ASN
6	F	143	TYR
6	F	152	MET
6	F	155	VAL
6	F	162	THR
6	F	168	GLU
6	F	175	MET
7	G	4	VAL
7	G	16	THR
7	G	30	LYS
7	G	44	LYS
7	G	65	HIS
7	G	69	ARG
7	G	75	MET
7	G	83	TYR
7	G	87	LEU
7	G	89	LEU
7	G	90	VAL
7	G	94	TYR
7	G	97	GLN
7	G	105	LEU
7	G	106	ASN
7	G	112	PRO
7	G	115	ILE
7	G	136	ILE
7	G	149	ARG
7	G	155	GLU
7	G	170	ARG
7	G	172	LYS
7	G	175	LYS
8	H	1	MET
8	H	3	GLN
8	H	15	LYS
8	H	19	ILE
8	H	20	ASP
8	H	22	GLU
8	H	29	LEU
8	H	38	ARG
8	H	44	THR
8	H	46	THR
8	H	53	ASP
8	H	57	VAL

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Mol	Chain	Res	Type
8	H	62	LYS
8	H	72	ASP
8	H	85	ILE
8	H	86	LYS
8	H	87	SER
8	H	88	ILE
8	H	95	ARG
8	H	97	ASN
8	H	103	GLU
8	H	115	LEU
8	H	133	HIS
8	H	143	LEU
9	I	2	ILE
9	I	4	GLN
9	I	8	LEU
9	I	10	VAL
9	I	19	VAL
9	I	21	THR
9	I	39	ILE
9	I	40	VAL
9	I	47	THR
9	I	61	VAL
9	I	64	ARG
9	I	70	ARG
9	I	75	SER
9	I	77	ILE
9	I	82	ASN
9	I	84	CYS
9	I	99	PHE
9	I	106	LEU
9	I	112	MET
9	I	117	LEU
9	I	120	GLU
10	J	14	LYS
10	J	31	SER
10	J	57	LEU
10	J	64	ARG
10	J	72	LYS
10	J	77	VAL
10	J	81	GLN
10	J	90	GLU
10	J	92	THR

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Mol	Chain	Res	Type
10	J	95	LEU
10	J	98	GLU
10	J	103	LYS
10	J	120	LYS
11	K	5	LYS
11	K	13	HIS
11	K	18	THR
11	K	20	ARG
11	K	38	THR
11	K	45	ARG
11	K	51	ARG
11	K	64	VAL
11	K	75	THR
11	K	82	ARG
11	K	91	GLU
11	K	123	HIS
11	K	130	LYS
11	K	132	VAL
11	K	133	LYS
12	L	3	TYR
12	L	16	MET
12	L	24	LEU
12	L	33	THR
12	L	47	LEU
12	L	48	ILE
12	L	49	THR
12	L	50	LEU
12	L	68	ASN
12	L	70	GLU
12	L	78	THR
12	L	79	GLN
12	L	105	LYS
12	L	122	VAL
13	M	2	ILE
13	M	6	ASP
13	M	13	LYS
13	M	14	ARG
13	M	19	ARG
13	M	21	ASN
13	M	28	LYS
13	M	31	LEU
13	M	32	ASN

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Mol	Chain	Res	Type
13	M	34	TYR
13	M	35	ARG
13	M	39	HIS
13	M	41	TYR
13	M	44	ILE
13	M	45	ILE
13	M	46	ASP
13	M	55	GLN
13	M	57	SER
13	M	58	SER
13	M	68	THR
13	M	72	LEU
13	M	87	LYS
13	M	90	LYS
13	M	95	ASP
13	M	96	ARG
14	N	17	THR
14	N	29	ARG
14	N	42	ILE
14	N	46	GLU
14	N	52	ARG
14	N	53	ARG
14	N	58	SER
14	N	67	SER
14	N	74	ARG
14	N	78	LEU
14	N	85	LYS
14	N	98	LYS
14	N	102	LEU
14	N	113	GLN
15	O	4	VAL
15	O	11	ARG
15	O	34	VAL
15	O	51	ARG
15	O	55	ARG
15	O	72	HIS
15	O	81	ASN
15	O	89	ASP
15	O	92	ARG
15	O	95	LEU
15	O	102	ASP
15	O	103	GLU

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Mol	Chain	Res	Type
15	O	104	LYS
16	P	7	THR
16	P	10	LYS
16	P	13	LYS
16	P	14	VAL
16	P	21	PHE
16	P	23	GLU
16	P	24	LYS
16	P	25	LEU
16	P	31	ASP
16	P	34	THR
16	P	37	LYS
16	P	59	THR
16	P	63	ASN
16	P	67	ARG
16	P	76	TYR
16	P	80	LYS
16	P	82	SER
16	P	96	THR
16	P	98	ASP
16	P	99	LYS
17	Q	1	MET
17	Q	4	LYS
17	Q	6	VAL
17	Q	8	ARG
17	Q	15	ARG
17	Q	17	VAL
17	Q	22	ASP
17	Q	24	ILE
17	Q	25	ARG
17	Q	36	LEU
17	Q	37	LYS
17	Q	38	LEU
17	Q	48	GLU
17	Q	49	LYS
17	Q	50	VAL
17	Q	52	MET
17	Q	62	TYR
17	Q	71	VAL
17	Q	72	LYS
17	Q	73	GLU
17	Q	75	TYR

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Mol	Chain	Res	Type
17	Q	82	LEU
17	Q	86	ARG
17	Q	88	GLN
17	Q	90	ARG
17	Q	92	SER
17	Q	101	ILE
17	Q	102	THR
17	Q	109	LYS
18	R	2	GLU
18	R	9	ARG
18	R	11	VAL
18	R	14	GLU
18	R	23	ASP
18	R	31	THR
18	R	35	LYS
18	R	36	THR
18	R	49	LYS
18	R	53	VAL
18	R	56	MET
18	R	72	THR
18	R	80	VAL
18	R	83	LYS
18	R	84	GLU
18	R	90	PHE
19	S	4	LYS
19	S	7	ASP
19	S	17	LYS
19	S	24	ILE
19	S	26	THR
19	S	27	LEU
19	S	30	LYS
19	S	33	VAL
19	S	38	VAL
19	S	41	MET
19	S	43	LYS
19	S	57	LEU
19	S	59	THR
19	S	63	ILE
19	S	70	LEU
19	S	74	LYS
19	S	76	ASN
19	S	79	THR

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Mol	Chain	Res	Type
19	S	81	VAL
19	S	87	ASP
19	S	97	SER
19	S	99	GLU
20	T	7	ILE
20	T	9	ARG
20	T	10	GLN
20	T	16	SER
20	T	18	LEU
20	T	20	GLN
20	T	30	VAL
20	T	31	VAL
20	T	32	TYR
20	T	34	TYR
20	T	36	THR
20	T	37	LYS
20	T	41	VAL
20	T	42	LYS
20	T	52	ILE
20	T	83	LYS
20	T	89	ILE
20	T	92	LEU
21	U	13	LYS
21	U	20	ASN
21	U	22	ARG
21	U	28	ARG
21	U	29	LEU
21	U	40	THR
21	U	45	LEU
21	U	47	ARG
21	U	52	LYS
21	U	53	ILE
21	U	61	ARG
21	U	67	LEU
21	U	68	PHE
21	U	72	ASP
21	U	79	ARG
21	U	82	ARG
21	U	83	ASP
21	U	84	LYS
22	V	6	PHE
22	V	11	LYS

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Mol	Chain	Res	Type
22	V	14	THR
22	V	19	SER
22	V	29	TRP
22	V	30	ASN
22	V	32	ASN
22	V	33	LEU
22	V	45	LYS
22	V	52	ARG
22	V	56	SER
23	W	2	LYS
23	W	4	LYS
23	W	11	THR
23	W	13	GLU
23	W	16	GLU
23	W	30	PHE
23	W	32	LEU
23	W	61	GLU
24	X	18	THR
24	X	24	GLU
24	X	29	LYS
24	X	40	ASN
24	X	51	LYS
24	X	56	VAL
24	X	57	GLU
24	X	59	LYS
25	Y	1	MET
26	Z	7	ARG
26	Z	8	THR
26	Z	9	SER
26	Z	12	ARG
26	Z	16	ARG
26	Z	29	GLU
26	Z	30	CYS
26	Z	37	LYS
26	Z	38	LEU
26	Z	40	HIS
26	Z	41	ARG
27	1	5	VAL
27	1	9	CYS
27	1	15	ARG
27	1	19	THR
27	1	20	THR

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Mol	Chain	Res	Type
27	1	21	LYS
27	1	22	ASN
27	1	24	ARG
27	1	26	ASN
27	1	33	LYS
27	1	34	LYS
27	1	36	CYS
28	2	15	LYS
28	2	25	THR
28	2	37	ARG
28	2	41	LYS
29	3	6	THR
29	3	32	LEU
29	3	44	LEU
29	3	52	LYS
29	3	53	SER
29	3	55	MET
29	3	65	LYS
30	4	1	MET
30	4	11	CYS
30	4	14	CYS
30	4	16	VAL
30	4	18	LYS
30	4	19	ARG
30	4	22	LYS
30	4	35	ARG
32	b	4	ILE
32	b	10	LEU
32	b	16	PHE
32	b	21	ARG
32	b	28	LYS
32	b	29	LYS
32	b	34	GLU
32	b	50	VAL
32	b	59	GLN
32	b	60	VAL
32	b	61	SER
32	b	63	ASP
32	b	73	LYS
32	b	79	SER
32	b	85	GLU
32	b	96	TRP

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Mol	Chain	Res	Type
32	b	97	LEU
32	b	103	ASN
32	b	105	LYS
32	b	106	THR
32	b	107	ILE
32	b	112	LYS
32	b	119	LYS
32	b	131	LYS
32	b	141	TYR
32	b	144	LEU
32	b	147	PHE
32	b	152	ARG
32	b	157	MET
32	b	164	VAL
32	b	168	LYS
32	b	188	ASP
32	b	211	LYS
32	b	216	LYS
32	b	217	MET
32	b	223	GLU
33	c	4	LYS
33	c	10	LEU
33	c	11	ARG
33	c	16	ARG
33	c	23	TYR
33	c	44	ASN
33	c	53	HIS
33	c	58	ARG
33	c	67	ILE
33	c	75	VAL
33	c	99	HIS
33	c	119	ILE
33	c	126	ARG
33	c	137	ILE
33	c	138	THR
33	c	142	LYS
33	c	156	LEU
33	c	160	ASP
33	c	169	GLU
33	c	172	VAL
33	c	174	LEU
33	c	180	ASP

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Mol	Chain	Res	Type
33	c	181	ILE
33	c	190	THR
33	c	192	TYR
33	c	198	LYS
33	c	199	VAL
33	c	203	ARG
34	d	4	PHE
34	d	10	LYS
34	d	18	SER
34	d	19	LEU
34	d	35	GLN
34	d	44	LEU
34	d	46	GLU
34	d	50	GLN
34	d	51	LEU
34	d	52	ARG
34	d	69	ARG
34	d	70	ASN
34	d	84	GLU
34	d	86	PHE
34	d	93	ARG
34	d	103	LEU
34	d	106	THR
34	d	107	ARG
34	d	108	ARG
34	d	109	GLN
34	d	113	LEU
34	d	114	VAL
34	d	118	HIS
34	d	119	ILE
34	d	127	ASP
34	d	142	ARG
34	d	143	GLU
34	d	145	SER
34	d	147	LYS
34	d	148	LEU
34	d	163	GLU
34	d	165	LEU
34	d	194	ILE
35	e	19	ASN
35	e	30	ARG
35	e	36	LEU

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Mol	Chain	Res	Type
35	e	37	VAL
35	e	39	VAL
35	e	43	ASN
35	e	48	PHE
35	e	61	LYS
35	e	64	VAL
35	e	78	GLU
35	e	85	ILE
35	e	112	ARG
35	e	115	LEU
35	e	116	GLU
35	e	121	THR
35	e	124	LEU
35	e	126	LYS
35	e	136	MET
35	e	144	LEU
35	e	151	GLU
35	e	155	LYS
36	f	2	ARG
36	f	6	VAL
36	f	8	TYR
36	f	9	ILE
36	f	15	GLU
36	f	19	LYS
36	f	24	GLU
36	f	39	GLU
36	f	46	ARG
36	f	50	TYR
36	f	52	ILE
36	f	57	ASP
36	f	64	ARG
36	f	66	LYS
36	f	71	LYS
36	f	78	ARG
36	f	85	ASP
36	f	92	ILE
37	g	7	VAL
37	g	18	HIS
37	g	22	LEU
37	g	26	LEU
37	g	36	ARG
37	g	41	ARG

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Mol	Chain	Res	Type
37	g	47	PHE
37	g	54	SER
37	g	56	ARG
37	g	59	LEU
37	g	62	PHE
37	g	69	ILE
37	g	71	PRO
37	g	87	VAL
37	g	95	ARG
37	g	97	THR
37	g	98	THR
37	g	99	LEU
37	g	101	LEU
37	g	103	TRP
37	g	104	LEU
37	g	107	TYR
37	g	109	ARG
37	g	115	THR
37	g	131	THR
37	g	136	LYS
37	g	137	LYS
37	g	142	HIS
38	h	10	MET
38	h	15	ARG
38	h	31	ASN
38	h	34	LYS
38	h	38	GLU
38	h	41	LYS
38	h	51	TYR
38	h	53	GLU
38	h	54	ASP
38	h	64	LEU
38	h	65	LYS
38	h	70	ASP
38	h	72	ARG
38	h	82	LYS
38	h	87	VAL
38	h	90	LYS
38	h	106	VAL
38	h	110	GLU
38	h	113	ILE
38	h	114	THR

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Mol	Chain	Res	Type
38	h	115	ASP
38	h	120	LYS
38	h	132	TRP
39	i	11	THR
39	i	20	ARG
39	i	22	ARG
39	i	27	GLU
39	i	43	PHE
39	i	48	LEU
39	i	50	LEU
39	i	65	VAL
39	i	69	VAL
39	i	70	HIS
39	i	74	PHE
39	i	75	THR
39	i	101	LYS
39	i	111	ARG
39	i	112	MET
39	i	115	ARG
39	i	120	LEU
39	i	124	ARG
40	j	9	ARG
40	j	13	TYR
40	j	21	SER
40	j	31	ARG
40	j	42	LEU
40	j	45	GLU
40	j	52	ILE
40	j	55	VAL
40	j	63	GLU
40	j	65	PHE
40	j	68	ARG
40	j	69	THR
40	j	72	ARG
40	j	75	ASP
40	j	87	LEU
41	k	18	ASN
41	k	24	ARG
41	k	27	PHE
41	k	31	ILE
41	k	50	LEU
41	k	52	PHE

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Mol	Chain	Res	Type
41	k	53	LYS
41	k	55	SER
41	k	67	SER
41	k	72	LYS
41	k	85	THR
41	k	86	VAL
41	k	97	ILE
41	k	98	ARG
41	k	111	ARG
41	k	116	VAL
41	k	118	HIS
41	k	119	ASN
41	k	121	CYS
41	k	125	LYS
41	k	127	ARG
41	k	128	ARG
42	l	5	ASN
42	l	6	GLN
42	l	9	ARG
42	l	15	LYS
42	l	20	ASP
42	l	26	LYS
42	l	28	PHE
42	l	33	LYS
42	l	35	PHE
42	l	36	THR
42	l	38	LEU
42	l	43	LYS
42	l	44	ARG
42	l	46	VAL
42	l	53	MET
42	l	59	ASN
42	l	62	LEU
42	l	64	LYS
42	l	69	ARG
42	l	70	LEU
42	l	72	ASN
42	l	73	ASN
42	l	74	ILE
42	l	76	ILE
42	l	85	HIS
42	l	88	GLN

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Mol	Chain	Res	Type
42	l	100	VAL
42	l	123	ARG
42	l	125	GLN
42	l	133	LYS
42	l	134	LYS
43	m	13	LYS
43	m	29	THR
43	m	31	GLN
43	m	60	VAL
43	m	64	LYS
43	m	71	ARG
43	m	73	THR
43	m	83	ILE
43	m	85	SER
43	m	97	VAL
43	m	100	GLN
44	n	21	TYR
44	n	23	ARG
44	n	37	PHE
44	n	38	LYS
44	n	39	LEU
44	n	41	ARG
44	n	42	ILE
44	n	44	PHE
44	n	49	TYR
44	n	53	ILE
44	n	57	ARG
44	n	60	SER
44	n	61	TRP
45	o	3	ILE
45	o	4	SER
45	o	8	LYS
45	o	13	LYS
45	o	16	ARG
45	o	19	GLU
45	o	26	GLU
45	o	29	ILE
45	o	43	LEU
45	o	49	ASP
45	o	53	ARG
45	o	64	ARG
45	o	69	TYR

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Mol	Chain	Res	Type
45	o	76	GLN
45	o	78	TYR
45	o	83	LYS
45	o	85	LEU
45	o	88	ARG
46	p	3	VAL
46	p	4	LYS
46	p	5	ILE
46	p	6	ARG
46	p	10	LEU
46	p	13	LYS
46	p	20	ILE
46	p	21	VAL
46	p	32	ARG
46	p	37	ILE
46	p	59	LYS
46	p	68	THR
46	p	70	THR
46	p	72	HIS
46	p	78	GLU
46	p	83	LYS
46	p	85	ASP
47	q	13	LYS
47	q	22	THR
47	q	23	ILE
47	q	24	THR
47	q	25	VAL
47	q	29	THR
47	q	48	THR
47	q	49	HIS
47	q	52	ASN
47	q	56	LYS
47	q	70	SER
47	q	73	LYS
47	q	75	PHE
47	q	76	ARG
47	q	77	LEU
47	q	78	VAL
48	r	28	TYR
48	r	29	LYS
48	r	33	LEU
48	r	41	ARG

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Mol	Chain	Res	Type
48	r	48	ARG
48	r	55	LYS
48	r	72	LEU
49	s	6	LYS
49	s	7	LYS
49	s	12	ASP
49	s	15	LEU
49	s	16	MET
49	s	19	VAL
49	s	27	LYS
49	s	30	VAL
49	s	36	ARG
49	s	44	PHE
49	s	48	THR
49	s	49	PHE
49	s	55	ARG
49	s	56	LYS
49	s	60	VAL
49	s	67	VAL
49	s	74	PHE
50	t	13	THR
50	t	14	THR
50	t	15	GLU
50	t	39	VAL
50	t	54	VAL
50	t	55	LYS
50	t	59	LYS
50	t	68	SER
50	t	70	LYS
50	t	75	LYS
50	t	77	GLN
50	t	79	MET
51	u	18	ARG
51	u	19	PHE
51	u	25	LYS
51	u	28	THR
51	u	29	ILE
51	u	31	GLU
51	u	33	ARG
51	u	37	PHE
51	u	38	TYR
51	u	45	ARG

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Mol	Chain	Res	Type
51	u	50	GLU
52	v	3	ARG
52	v	7	HIS
52	v	11	LEU
52	v	21	ILE
52	v	28	LEU
52	v	29	GLU
52	v	32	PHE
52	v	42	VAL
52	v	44	VAL
52	v	47	TYR
52	v	57	THR
52	v	58	ILE
52	v	60	LEU
52	v	62	ASN
52	v	63	VAL
52	v	64	THR
52	v	66	ARG
52	v	69	GLU
52	v	82	ASN
52	v	87	ARG
52	v	89	VAL
52	v	95	ARG
52	v	98	ARG
52	v	99	LYS
52	v	103	ARG
52	v	139	PHE
52	v	141	LEU
52	v	142	LYS
52	v	151	LEU
52	v	163	PHE
52	v	176	ARG
52	v	178	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (37) such sidechains are listed below:

Mol	Chain	Res	Type
3	C	54	HIS
3	C	70	ASN
4	D	47	ASN
4	D	66	ASN
4	D	176	ASN

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Mol	Chain	Res	Type
5	E	30	ASN
5	E	119	GLN
7	G	23	HIS
7	G	97	GLN
8	H	136	GLN
9	I	4	GLN
10	J	68	ASN
10	J	81	GLN
10	J	143	HIS
12	L	79	GLN
12	L	106	GLN
21	U	20	ASN
22	V	23	ASN
22	V	34	GLN
23	W	31	GLN
29	3	43	GLN
30	4	34	GLN
32	b	203	ASN
34	d	109	GLN
34	d	149	ASN
35	e	145	GLN
38	h	22	HIS
41	k	40	ASN
41	k	119	ASN
43	m	31	GLN
45	o	68	ASN
46	p	46	ASN
46	p	62	ASN
49	s	83	HIS
50	t	69	ASN
52	v	49	ASN
52	v	152	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	2896/2905 (99%)	1223 (42%)	55 (1%)
2	B	114/115 (99%)	44 (38%)	0
31	a	1537/1539 (99%)	918 (59%)	0
All	All	4547/4559 (99%)	2185 (48%)	55 (1%)

All (2185) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	5	A
1	A	6	A
1	A	15	G
1	A	28	A
1	A	34	U
1	A	35	G
1	A	36	G
1	A	45	G
1	A	46	C
1	A	48	G
1	A	51	G
1	A	54	G
1	A	55	G
1	A	57	C
1	A	58	G
1	A	60	U
1	A	61	A
1	A	63	U
1	A	67	G
1	A	68	A
1	A	70	G
1	A	71	A
1	A	74	U
1	A	75	G
1	A	81	G
1	A	83	G
1	A	84	A
1	A	85	G
1	A	88	G
1	A	90	A
1	A	91	A
1	A	92	G
1	A	93	U
1	A	95	A
1	A	96	G
1	A	97	C
1	A	98	U
1	A	100	U
1	A	101	G
1	A	102	A
1	A	103	U
1	A	104	C
1	A	106	A

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Mol	Chain	Res	Type
1	A	117	A
1	A	119	U
1	A	120	G
1	A	124	A
1	A	130	A
1	A	134	U
1	A	136	A
1	A	140	A
1	A	147	G
1	A	148	U
1	A	150	A
1	A	152	C
1	A	156	A
1	A	157	U
1	A	158	G
1	A	160	G
1	A	161	A
1	A	162	A
1	A	163	U
1	A	164	A
1	A	166	A
1	A	168	A
1	A	169	G
1	A	170	C
1	A	171	A
1	A	174	U
1	A	175	C
1	A	177	G
1	A	178	A
1	A	179	A
1	A	180	G
1	A	183	A
1	A	184	C
1	A	185	A
1	A	189	G
1	A	199	A
1	A	202	A
1	A	213	C
1	A	216	A
1	A	217	G
1	A	218	G
1	A	219	A

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Mol	Chain	Res	Type
1	A	224	A
1	A	225	A
1	A	226	A
1	A	227	G
1	A	228	A
1	A	229	A
1	A	230	A
1	A	231	A
1	A	232	U
1	A	233	U
1	A	234	C
1	A	235	G
1	A	236	A
1	A	244	A
1	A	246	U
1	A	251	G
1	A	255	G
1	A	264	G
1	A	268	A
1	A	269	G
1	A	270	C
1	A	275	A
1	A	276	C
1	A	283	G
1	A	285	U
1	A	286	U
1	A	292	U
1	A	295	G
1	A	296	G
1	A	297	G
1	A	299	U
1	A	300	G
1	A	301	U
1	A	302	A
1	A	303	G
1	A	305	A
1	A	307	A
1	A	308	C
1	A	309	U
1	A	310	C
1	A	311	U
1	A	312	A

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Mol	Chain	Res	Type
1	A	315	C
1	A	317	G
1	A	318	A
1	A	319	G
1	A	320	U
1	A	321	U
1	A	322	A
1	A	323	C
1	A	324	A
1	A	325	A
1	A	326	A
1	A	327	G
1	A	328	G
1	A	329	A
1	A	330	C
1	A	331	G
1	A	333	C
1	A	334	A
1	A	335	U
1	A	336	U
1	A	337	A
1	A	338	G
1	A	339	A
1	A	340	C
1	A	351	G
1	A	353	A
1	A	360	A
1	A	364	A
1	A	365	A
1	A	367	A
1	A	373	A
1	A	374	U
1	A	376	A
1	A	378	C
1	A	381	G
1	A	386	C
1	A	387	G
1	A	388	A
1	A	389	A
1	A	390	A
1	A	391	A
1	A	392	U

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Mol	Chain	Res	Type
1	A	393	G
1	A	394	U
1	A	396	G
1	A	397	U
1	A	398	C
1	A	399	U
1	A	400	C
1	A	404	U
1	A	405	G
1	A	406	A
1	A	407	G
1	A	409	G
1	A	410	G
1	A	411	A
1	A	414	C
1	A	416	G
1	A	417	A
1	A	418	G
1	A	419	U
1	A	426	G
1	A	432	G
1	A	433	U
1	A	434	G
1	A	435	A
1	A	436	A
1	A	438	U
1	A	443	U
1	A	445	G
1	A	447	A
1	A	448	A
1	A	449	U
1	A	451	U
1	A	455	A
1	A	456	G
1	A	458	A
1	A	459	C
1	A	460	C
1	A	463	C
1	A	477	U
1	A	481	C
1	A	482	U
1	A	489	A

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Mol	Chain	Res	Type
1	A	490	C
1	A	492	G
1	A	493	A
1	A	494	U
1	A	497	U
1	A	498	G
1	A	501	C
1	A	502	C
1	A	504	G
1	A	506	A
1	A	511	G
1	A	512	A
1	A	514	G
1	A	515	G
1	A	519	G
1	A	523	A
1	A	525	A
1	A	526	A
1	A	527	G
1	A	528	C
1	A	529	A
1	A	530	C
1	A	537	A
1	A	538	G
1	A	540	G
1	A	549	U
1	A	550	A
1	A	551	G
1	A	553	A
1	A	554	C
1	A	556	U
1	A	566	U
1	A	569	U
1	A	572	C
1	A	573	A
1	A	574	A
1	A	576	U
1	A	577	A
1	A	578	G
1	A	586	C
1	A	591	A
1	A	592	A

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Mol	Chain	Res	Type
1	A	593	U
1	A	598	G
1	A	599	A
1	A	606	G
1	A	612	U
1	A	615	A
1	A	616	G
1	A	617	A
1	A	618	A
1	A	619	U
1	A	629	A
1	A	630	G
1	A	638	U
1	A	643	G
1	A	645	A
1	A	646	A
1	A	647	G
1	A	650	U
1	A	657	U
1	A	658	A
1	A	659	A
1	A	666	A
1	A	667	G
1	A	672	A
1	A	679	G
1	A	682	A
1	A	687	G
1	A	689	A
1	A	690	U
1	A	691	A
1	A	692	G
1	A	696	G
1	A	698	U
1	A	700	A
1	A	701	G
1	A	715	A
1	A	716	C
1	A	720	A
1	A	731	U
1	A	748	U
1	A	749	G
1	A	750	A

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Mol	Chain	Res	Type
1	A	751	A
1	A	753	U
1	A	754	U
1	A	755	C
1	A	757	G
1	A	759	U
1	A	760	A
1	A	761	A
1	A	762	C
1	A	763	A
1	A	764	C
1	A	765	U
1	A	766	G
1	A	767	A
1	A	768	A
1	A	772	A
1	A	773	G
1	A	775	A
1	A	779	A
1	A	783	G
1	A	785	C
1	A	792	U
1	A	794	A
1	A	795	A
1	A	797	A
1	A	802	G
1	A	805	G
1	A	806	A
1	A	809	A
1	A	810	A
1	A	820	G
1	A	821	C
1	A	822	G
1	A	826	A
1	A	827	A
1	A	829	U
1	A	830	U
1	A	833	A
1	A	834	A
1	A	835	U
1	A	836	C
1	A	839	A

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Mol	Chain	Res	Type
1	A	841	C
1	A	842	U
1	A	845	A
1	A	847	A
1	A	850	G
1	A	851	C
1	A	852	U
1	A	857	C
1	A	862	C
1	A	868	A
1	A	869	G
1	A	871	U
1	A	872	U
1	A	873	U
1	A	875	G
1	A	879	U
1	A	887	A
1	A	891	A
1	A	896	U
1	A	897	A
1	A	899	U
1	A	900	G
1	A	904	G
1	A	908	A
1	A	911	A
1	A	912	C
1	A	914	G
1	A	915	U
1	A	916	U
1	A	917	U
1	A	918	G
1	A	920	A
1	A	923	A
1	A	924	G
1	A	925	G
1	A	926	G
1	A	927	G
1	A	928	C
1	A	940	U
1	A	943	C
1	A	944	G
1	A	946	A

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Mol	Chain	Res	Type
1	A	948	U
1	A	949	C
1	A	951	G
1	A	952	A
1	A	955	A
1	A	957	C
1	A	959	C
1	A	960	C
1	A	965	G
1	A	970	U
1	A	971	U
1	A	972	A
1	A	974	U
1	A	977	A
1	A	985	A
1	A	986	G
1	A	989	A
1	A	990	G
1	A	997	G
1	A	1001	A
1	A	1003	A
1	A	1005	G
1	A	1006	G
1	A	1017	A
1	A	1018	A
1	A	1019	A
1	A	1024	A
1	A	1025	A
1	A	1027	A
1	A	1029	C
1	A	1034	A
1	A	1035	C
1	A	1037	A
1	A	1038	C
1	A	1039	C
1	A	1040	A
1	A	1043	U
1	A	1046	G
1	A	1053	A
1	A	1055	A
1	A	1056	U
1	A	1057	A

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Mol	Chain	Res	Type
1	A	1058	U
1	A	1059	A
1	A	1061	G
1	A	1070	A
1	A	1074	G
1	A	1077	U
1	A	1078	G
1	A	1080	G
1	A	1083	G
1	A	1086	G
1	A	1088	C
1	A	1089	C
1	A	1090	A
1	A	1091	G
1	A	1092	A
1	A	1093	C
1	A	1095	A
1	A	1099	G
1	A	1100	G
1	A	1101	A
1	A	1105	U
1	A	1106	G
1	A	1109	U
1	A	1111	A
1	A	1114	A
1	A	1115	G
1	A	1116	C
1	A	1117	A
1	A	1118	G
1	A	1119	C
1	A	1120	C
1	A	1122	U
1	A	1125	U
1	A	1126	U
1	A	1127	U
1	A	1128	A
1	A	1129	A
1	A	1131	G
1	A	1132	A
1	A	1133	G
1	A	1134	U
1	A	1135	G

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Mol	Chain	Res	Type
1	A	1138	U
1	A	1140	A
1	A	1141	U
1	A	1142	A
1	A	1143	G
1	A	1146	C
1	A	1147	A
1	A	1148	C
1	A	1149	U
1	A	1150	A
1	A	1151	G
1	A	1153	C
1	A	1155	A
1	A	1156	G
1	A	1158	G
1	A	1160	C
1	A	1161	A
1	A	1162	C
1	A	1163	U
1	A	1164	G
1	A	1168	C
1	A	1170	A
1	A	1171	A
1	A	1173	A
1	A	1174	U
1	A	1175	G
1	A	1178	C
1	A	1179	C
1	A	1180	G
1	A	1185	U
1	A	1186	A
1	A	1192	A
1	A	1199	A
1	A	1200	A
1	A	1201	G
1	A	1208	A
1	A	1210	U
1	A	1212	U
1	A	1214	C
1	A	1216	U
1	A	1217	U
1	A	1222	A

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Mol	Chain	Res	Type
1	A	1225	G
1	A	1234	G
1	A	1245	G
1	A	1248	U
1	A	1249	U
1	A	1253	G
1	A	1258	A
1	A	1262	U
1	A	1265	G
1	A	1267	A
1	A	1271	G
1	A	1275	A
1	A	1276	G
1	A	1284	A
1	A	1289	A
1	A	1290	G
1	A	1291	A
1	A	1293	U
1	A	1294	G
1	A	1298	G
1	A	1304	G
1	A	1309	G
1	A	1310	A
1	A	1311	A
1	A	1312	A
1	A	1320	G
1	A	1326	C
1	A	1330	U
1	A	1337	A
1	A	1338	U
1	A	1339	U
1	A	1340	G
1	A	1341	A
1	A	1342	C
1	A	1345	A
1	A	1348	U
1	A	1349	U
1	A	1355	A
1	A	1359	A
1	A	1361	G
1	A	1366	U
1	A	1370	C

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Mol	Chain	Res	Type
1	A	1379	A
1	A	1382	C
1	A	1384	G
1	A	1386	U
1	A	1389	U
1	A	1392	G
1	A	1401	G
1	A	1402	A
1	A	1403	C
1	A	1405	G
1	A	1412	G
1	A	1416	U
1	A	1422	A
1	A	1423	C
1	A	1424	A
1	A	1425	G
1	A	1430	A
1	A	1431	U
1	A	1432	A
1	A	1433	U
1	A	1435	C
1	A	1440	A
1	A	1445	C
1	A	1447	A
1	A	1448	U
1	A	1450	A
1	A	1451	U
1	A	1452	C
1	A	1453	G
1	A	1454	U
1	A	1455	U
1	A	1457	U
1	A	1459	A
1	A	1460	U
1	A	1461	C
1	A	1462	G
1	A	1463	A
1	A	1464	U
1	A	1465	G
1	A	1466	G
1	A	1467	G
1	A	1469	G

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Mol	Chain	Res	Type
1	A	1471	A
1	A	1472	C
1	A	1478	A
1	A	1480	G
1	A	1483	A
1	A	1487	G
1	A	1491	C
1	A	1492	G
1	A	1493	U
1	A	1495	C
1	A	1496	G
1	A	1497	A
1	A	1498	U
1	A	1499	U
1	A	1500	G
1	A	1503	U
1	A	1504	U
1	A	1505	G
1	A	1506	C
1	A	1507	A
1	A	1508	C
1	A	1509	G
1	A	1510	U
1	A	1511	C
1	A	1512	U
1	A	1513	A
1	A	1514	A
1	A	1515	G
1	A	1516	C
1	A	1518	G
1	A	1519	U
1	A	1520	A
1	A	1521	A
1	A	1522	G
1	A	1526	G
1	A	1527	A
1	A	1529	U
1	A	1533	A
1	A	1534	G
1	A	1535	G
1	A	1536	C
1	A	1537	A

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Mol	Chain	Res	Type
1	A	1538	A
1	A	1540	U
1	A	1541	C
1	A	1542	C
1	A	1546	A
1	A	1547	C
1	A	1550	G
1	A	1551	U
1	A	1552	U
1	A	1553	A
1	A	1555	G
1	A	1559	G
1	A	1561	G
1	A	1562	C
1	A	1563	U
1	A	1564	G
1	A	1565	U
1	A	1568	U
1	A	1569	G
1	A	1570	G
1	A	1571	G
1	A	1572	G
1	A	1573	A
1	A	1575	A
1	A	1576	A
1	A	1577	G
1	A	1578	A
1	A	1579	C
1	A	1580	A
1	A	1581	U
1	A	1582	U
1	A	1583	G
1	A	1584	U
1	A	1585	G
1	A	1586	U
1	A	1593	G
1	A	1594	U
1	A	1595	C
1	A	1596	G
1	A	1599	G
1	A	1600	A
1	A	1601	U

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Mol	Chain	Res	Type
1	A	1603	U
1	A	1604	C
1	A	1605	A
1	A	1606	C
1	A	1613	G
1	A	1616	A
1	A	1623	U
1	A	1625	U
1	A	1626	A
1	A	1627	G
1	A	1629	U
1	A	1630	A
1	A	1631	G
1	A	1632	A
1	A	1633	A
1	A	1634	A
1	A	1635	A
1	A	1636	U
1	A	1638	G
1	A	1639	G
1	A	1640	U
1	A	1651	C
1	A	1653	A
1	A	1654	A
1	A	1658	A
1	A	1659	C
1	A	1660	A
1	A	1661	C
1	A	1662	A
1	A	1666	A
1	A	1675	G
1	A	1678	A
1	A	1679	A
1	A	1682	C
1	A	1690	A
1	A	1691	G
1	A	1692	C
1	A	1693	G
1	A	1698	A
1	A	1701	U
1	A	1707	U
1	A	1708	A

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Mol	Chain	Res	Type
1	A	1716	C
1	A	1718	G
1	A	1719	C
1	A	1732	U
1	A	1737	U
1	A	1738	C
1	A	1739	G
1	A	1740	G
1	A	1741	G
1	A	1742	A
1	A	1747	G
1	A	1748	G
1	A	1757	U
1	A	1758	A
1	A	1759	G
1	A	1760	G
1	A	1761	G
1	A	1762	U
1	A	1763	U
1	A	1764	A
1	A	1765	A
1	A	1768	C
1	A	1771	A
1	A	1772	G
1	A	1773	A
1	A	1775	G
1	A	1780	G
1	A	1781	C
1	A	1782	A
1	A	1783	G
1	A	1785	G
1	A	1790	G
1	A	1791	G
1	A	1796	A
1	A	1797	G
1	A	1800	A
1	A	1803	G
1	A	1806	U
1	A	1808	U
1	A	1811	A
1	A	1812	A
1	A	1814	A

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Mol	Chain	Res	Type
1	A	1822	C
1	A	1823	U
1	A	1824	C
1	A	1825	U
1	A	1827	C
1	A	1828	U
1	A	1829	A
1	A	1830	A
1	A	1838	G
1	A	1839	G
1	A	1843	U
1	A	1846	A
1	A	1847	U
1	A	1852	G
1	A	1855	G
1	A	1856	A
1	A	1858	G
1	A	1862	G
1	A	1866	G
1	A	1871	U
1	A	1875	A
1	A	1876	G
1	A	1877	G
1	A	1878	U
1	A	1879	U
1	A	1880	A
1	A	1882	G
1	A	1884	G
1	A	1885	G
1	A	1887	G
1	A	1889	G
1	A	1890	G
1	A	1892	U
1	A	1894	G
1	A	1896	U
1	A	1897	U
1	A	1899	U
1	A	1900	G
1	A	1902	G
1	A	1903	A
1	A	1904	A
1	A	1905	G

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Mol	Chain	Res	Type
1	A	1906	C
1	A	1907	U
1	A	1908	A
1	A	1911	A
1	A	1912	A
1	A	1914	C
1	A	1916	A
1	A	1919	C
1	A	1926	A
1	A	1927	A
1	A	1929	C
1	A	1933	G
1	A	1938	U
1	A	1945	A
1	A	1946	A
1	A	1950	U
1	A	1954	A
1	A	1956	G
1	A	1957	G
1	A	1958	U
1	A	1961	C
1	A	1963	A
1	A	1964	A
1	A	1965	A
1	A	1966	U
1	A	1967	U
1	A	1968	C
1	A	1970	U
1	A	1971	U
1	A	1972	G
1	A	1974	C
1	A	1976	G
1	A	1979	A
1	A	1982	U
1	A	1983	U
1	A	1984	C
1	A	1990	C
1	A	1996	A
1	A	1997	A
1	A	1998	A
1	A	1999	G
1	A	2008	A

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Mol	Chain	Res	Type
1	A	2009	U
1	A	2012	G
1	A	2018	U
1	A	2019	G
1	A	2020	U
1	A	2023	C
1	A	2024	A
1	A	2027	G
1	A	2029	G
1	A	2045	A
1	A	2047	A
1	A	2048	G
1	A	2049	U
1	A	2050	A
1	A	2057	A
1	A	2059	G
1	A	2060	A
1	A	2061	U
1	A	2062	G
1	A	2064	A
1	A	2070	C
1	A	2075	G
1	A	2076	A
1	A	2079	G
1	A	2082	C
1	A	2083	G
1	A	2085	A
1	A	2086	A
1	A	2087	A
1	A	2088	G
1	A	2090	C
1	A	2093	C
1	A	2095	U
1	A	2096	G
1	A	2107	G
1	A	2108	U
1	A	2109	A
1	A	2111	C
1	A	2114	G
1	A	2115	A
1	A	2116	U
1	A	2117	A

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Mol	Chain	Res	Type
1	A	2118	U
1	A	2119	U
1	A	2120	G
1	A	2121	A
1	A	2126	C
1	A	2128	G
1	A	2129	C
1	A	2130	A
1	A	2131	C
1	A	2132	A
1	A	2133	G
1	A	2134	C
1	A	2138	U
1	A	2139	A
1	A	2140	C
1	A	2141	A
1	A	2144	A
1	A	2145	U
1	A	2146	A
1	A	2149	U
1	A	2153	A
1	A	2154	G
1	A	2155	C
1	A	2156	C
1	A	2157	U
1	A	2158	U
1	A	2159	U
1	A	2160	G
1	A	2161	A
1	A	2164	C
1	A	2168	A
1	A	2169	G
1	A	2173	U
1	A	2174	A
1	A	2179	A
1	A	2184	G
1	A	2185	A
1	A	2186	G
1	A	2188	C
1	A	2190	C
1	A	2194	U
1	A	2195	G

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Mol	Chain	Res	Type
1	A	2196	G
1	A	2198	A
1	A	2204	C
1	A	2205	C
1	A	2210	C
1	A	2212	G
1	A	2213	U
1	A	2219	C
1	A	2222	U
1	A	2224	U
1	A	2229	C
1	A	2231	C
1	A	2232	A
1	A	2233	C
1	A	2234	C
1	A	2235	A
1	A	2236	C
1	A	2237	U
1	A	2238	U
1	A	2239	A
1	A	2243	U
1	A	2245	G
1	A	2252	A
1	A	2254	A
1	A	2262	G
1	A	2263	C
1	A	2265	G
1	A	2266	G
1	A	2273	G
1	A	2278	G
1	A	2279	G
1	A	2280	G
1	A	2281	C
1	A	2287	C
1	A	2293	A
1	A	2294	A
1	A	2296	A
1	A	2305	A
1	A	2310	C
1	A	2311	U
1	A	2312	C
1	A	2315	A

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Mol	Chain	Res	Type
1	A	2316	G
1	A	2320	C
1	A	2323	U
1	A	2324	C
1	A	2325	A
1	A	2328	A
1	A	2331	G
1	A	2332	U
1	A	2333	U
1	A	2334	G
1	A	2335	G
1	A	2337	A
1	A	2338	A
1	A	2339	U
1	A	2345	A
1	A	2346	U
1	A	2347	A
1	A	2348	G
1	A	2349	A
1	A	2352	G
1	A	2353	U
1	A	2354	A
1	A	2356	A
1	A	2357	G
1	A	2358	G
1	A	2362	A
1	A	2363	A
1	A	2364	G
1	A	2367	A
1	A	2369	C
1	A	2370	U
1	A	2372	G
1	A	2374	C
1	A	2377	C
1	A	2378	G
1	A	2385	A
1	A	2387	A
1	A	2388	A
1	A	2395	C
1	A	2396	A
1	A	2399	G
1	A	2404	A

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Mol	Chain	Res	Type
1	A	2406	G
1	A	2407	A
1	A	2409	G
1	A	2410	G
1	A	2412	C
1	A	2417	U
1	A	2418	G
1	A	2419	A
1	A	2427	G
1	A	2429	U
1	A	2434	A
1	A	2441	G
1	A	2445	A
1	A	2449	C
1	A	2450	U
1	A	2451	C
1	A	2453	A
1	A	2455	G
1	A	2456	G
1	A	2457	A
1	A	2459	A
1	A	2460	A
1	A	2461	A
1	A	2462	A
1	A	2467	C
1	A	2468	C
1	A	2471	G
1	A	2474	G
1	A	2475	A
1	A	2479	C
1	A	2492	C
1	A	2493	C
1	A	2495	A
1	A	2496	A
1	A	2497	G
1	A	2502	C
1	A	2503	A
1	A	2504	C
1	A	2505	A
1	A	2506	U
1	A	2507	C
1	A	2509	A

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Mol	Chain	Res	Type
1	A	2511	G
1	A	2515	A
1	A	2518	U
1	A	2521	G
1	A	2525	C
1	A	2528	C
1	A	2529	G
1	A	2530	A
1	A	2531	U
1	A	2532	G
1	A	2533	U
1	A	2535	G
1	A	2539	C
1	A	2540	A
1	A	2545	A
1	A	2547	C
1	A	2550	G
1	A	2552	G
1	A	2554	C
1	A	2558	A
1	A	2559	G
1	A	2561	C
1	A	2562	G
1	A	2568	A
1	A	2570	G
1	A	2574	U
1	A	2580	G
1	A	2581	U
1	A	2582	U
1	A	2585	C
1	A	2589	U
1	A	2591	A
1	A	2592	A
1	A	2593	A
1	A	2594	G
1	A	2599	A
1	A	2600	C
1	A	2605	G
1	A	2607	U
1	A	2609	G
1	A	2610	G
1	A	2611	U

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Mol	Chain	Res	Type
1	A	2613	C
1	A	2615	G
1	A	2623	U
1	A	2626	G
1	A	2629	A
1	A	2630	G
1	A	2636	U
1	A	2637	C
1	A	2640	U
1	A	2641	A
1	A	2642	U
1	A	2646	U
1	A	2649	U
1	A	2650	G
1	A	2656	A
1	A	2657	G
1	A	2659	A
1	A	2664	U
1	A	2665	G
1	A	2667	G
1	A	2671	A
1	A	2672	G
1	A	2673	C
1	A	2674	U
1	A	2680	U
1	A	2681	A
1	A	2682	G
1	A	2683	U
1	A	2684	A
1	A	2685	C
1	A	2687	A
1	A	2688	G
1	A	2690	G
1	A	2692	A
1	A	2693	C
1	A	2695	G
1	A	2696	G
1	A	2697	G
1	A	2699	U
1	A	2700	G
1	A	2701	G
1	A	2709	U

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Mol	Chain	Res	Type
1	A	2716	U
1	A	2718	C
1	A	2730	C
1	A	2732	A
1	A	2733	A
1	A	2739	U
1	A	2741	G
1	A	2750	C
1	A	2753	U
1	A	2760	A
1	A	2761	C
1	A	2762	G
1	A	2764	G
1	A	2765	A
1	A	2766	U
1	A	2769	G
1	A	2771	G
1	A	2772	C
1	A	2773	U
1	A	2775	A
1	A	2776	A
1	A	2777	A
1	A	2778	G
1	A	2779	C
1	A	2780	A
1	A	2782	C
1	A	2783	U
1	A	2784	A
1	A	2785	A
1	A	2786	G
1	A	2788	A
1	A	2790	G
1	A	2791	A
1	A	2792	A
1	A	2793	G
1	A	2796	C
1	A	2797	C
1	A	2800	U
1	A	2803	A
1	A	2804	G
1	A	2805	A
1	A	2806	U

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Mol	Chain	Res	Type
1	A	2807	G
1	A	2808	A
1	A	2809	G
1	A	2816	C
1	A	2817	A
1	A	2818	A
1	A	2820	U
1	A	2821	U
1	A	2822	C
1	A	2823	G
1	A	2824	G
1	A	2827	A
1	A	2828	U
1	A	2829	A
1	A	2830	A
1	A	2831	G
1	A	2832	A
1	A	2838	C
1	A	2840	A
1	A	2841	A
1	A	2843	A
1	A	2853	U
1	A	2855	A
1	A	2856	U
1	A	2869	G
1	A	2870	A
1	A	2878	U
1	A	2879	G
1	A	2880	A
1	A	2882	A
1	A	2887	G
1	A	2888	A
1	A	2889	G
1	A	2892	G
1	A	2894	C
1	A	2899	A
1	A	2900	C
1	A	2903	A
1	A	2904	U
1	A	2905	C
1	A	2906	G
1	A	2907	A

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Mol	Chain	Res	Type
1	A	2913	G
1	A	2915	C
1	A	2916	U
1	A	2920	U
2	B	2	C
2	B	5	G
2	B	7	G
2	B	11	A
2	B	12	U
2	B	14	G
2	B	15	C
2	B	22	G
2	B	23	U
2	B	24	C
2	B	27	A
2	B	28	C
2	B	30	U
2	B	31	G
2	B	33	U
2	B	39	G
2	B	40	C
2	B	41	C
2	B	42	G
2	B	43	A
2	B	49	G
2	B	51	A
2	B	54	U
2	B	55	A
2	B	62	U
2	B	63	U
2	B	64	A
2	B	65	G
2	B	66	C
2	B	68	U
2	B	72	U
2	B	84	U
2	B	86	A
2	B	87	C
2	B	88	G
2	B	91	C
2	B	93	G
2	B	95	U

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Mol	Chain	Res	Type
2	B	106	G
2	B	109	G
2	B	110	C
2	B	111	C
2	B	113	G
2	B	115	C
31	a	6	U
31	a	7	G
31	a	8	G
31	a	9	A
31	a	10	G
31	a	11	A
31	a	12	G
31	a	14	U
31	a	15	U
31	a	16	G
31	a	18	U
31	a	20	C
31	a	26	C
31	a	27	A
31	a	30	A
31	a	32	G
31	a	33	A
31	a	34	A
31	a	36	G
31	a	37	C
31	a	38	U
31	a	40	G
31	a	43	G
31	a	44	C
31	a	45	G
31	a	48	C
31	a	49	C
31	a	50	U
31	a	51	A
31	a	52	A
31	a	53	U
31	a	55	C
31	a	56	A
31	a	57	U
31	a	59	C
31	a	62	G

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Mol	Chain	Res	Type
31	a	65	G
31	a	66	A
31	a	67	G
31	a	68	C
31	a	69	G
31	a	70	A
31	a	71	A
31	a	77	G
31	a	81	A
31	a	82	G
31	a	83	C
31	a	84	U
31	a	85	U
31	a	86	G
31	a	87	C
31	a	88	U
31	a	92	C
31	a	94	G
31	a	96	U
31	a	97	G
31	a	99	U
31	a	100	A
31	a	101	G
31	a	103	G
31	a	105	C
31	a	107	G
31	a	108	A
31	a	111	G
31	a	118	A
31	a	119	A
31	a	120	C
31	a	121	A
31	a	124	U
31	a	129	A
31	a	130	A
31	a	131	C
31	a	132	C
31	a	134	A
31	a	135	C
31	a	141	A
31	a	142	G
31	a	143	A

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Mol	Chain	Res	Type
31	a	144	C
31	a	146	G
31	a	147	G
31	a	148	G
31	a	149	A
31	a	151	A
31	a	152	A
31	a	153	C
31	a	157	G
31	a	161	A
31	a	163	C
31	a	169	C
31	a	170	U
31	a	173	U
31	a	174	A
31	a	177	G
31	a	182	A
31	a	183	U
31	a	184	A
31	a	186	U
31	a	188	U
31	a	189	G
31	a	190	A
31	a	191	A
31	a	192	C
31	a	193	C
31	a	196	A
31	a	197	U
31	a	199	G
31	a	200	U
31	a	201	U
31	a	202	C
31	a	203	A
31	a	204	A
31	a	205	A
31	a	207	G
31	a	209	G
31	a	210	A
31	a	211	A
31	a	215	C
31	a	217	G
31	a	218	U

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Mol	Chain	Res	Type
31	a	219	C
31	a	221	U
31	a	222	G
31	a	223	C
31	a	224	U
31	a	227	C
31	a	228	A
31	a	230	U
31	a	231	U
31	a	232	A
31	a	233	U
31	a	234	A
31	a	244	G
31	a	245	C
31	a	246	G
31	a	247	C
31	a	248	U
31	a	250	C
31	a	251	A
31	a	252	U
31	a	253	U
31	a	255	G
31	a	256	C
31	a	259	G
31	a	261	U
31	a	262	G
31	a	263	G
31	a	265	A
31	a	267	G
31	a	268	G
31	a	269	U
31	a	270	A
31	a	271	A
31	a	272	C
31	a	273	G
31	a	274	G
31	a	275	C
31	a	276	U
31	a	278	A
31	a	281	A
31	a	282	A
31	a	283	G

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Mol	Chain	Res	Type
31	a	284	G
31	a	286	A
31	a	288	C
31	a	290	A
31	a	291	U
31	a	297	G
31	a	302	C
31	a	306	A
31	a	307	G
31	a	309	G
31	a	310	G
31	a	311	G
31	a	312	U
31	a	313	G
31	a	314	A
31	a	315	U
31	a	317	G
31	a	320	C
31	a	323	A
31	a	324	C
31	a	327	G
31	a	331	U
31	a	332	G
31	a	336	C
31	a	337	A
31	a	338	C
31	a	339	G
31	a	340	G
31	a	343	C
31	a	345	G
31	a	347	C
31	a	348	U
31	a	349	C
31	a	352	A
31	a	353	C
31	a	354	G
31	a	355	G
31	a	356	G
31	a	357	A
31	a	358	G
31	a	360	C
31	a	361	A

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Mol	Chain	Res	Type
31	a	363	C
31	a	364	A
31	a	367	A
31	a	371	A
31	a	372	A
31	a	373	U
31	a	374	C
31	a	375	U
31	a	376	U
31	a	377	C
31	a	380	C
31	a	381	A
31	a	386	G
31	a	389	A
31	a	390	A
31	a	395	U
31	a	396	G
31	a	397	A
31	a	398	C
31	a	400	G
31	a	401	A
31	a	404	A
31	a	405	A
31	a	406	C
31	a	408	C
31	a	410	G
31	a	412	G
31	a	413	U
31	a	414	G
31	a	416	G
31	a	417	U
31	a	418	G
31	a	419	A
31	a	420	U
31	a	421	G
31	a	422	A
31	a	423	A
31	a	424	G
31	a	425	G
31	a	430	C
31	a	431	G
31	a	432	G

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Mol	Chain	Res	Type
31	a	433	A
31	a	434	U
31	a	435	C
31	a	436	G
31	a	437	U
31	a	438	A
31	a	440	A
31	a	441	A
31	a	442	C
31	a	444	C
31	a	445	U
31	a	446	G
31	a	447	U
31	a	448	U
31	a	449	A
31	a	450	U
31	a	451	U
31	a	452	A
31	a	455	G
31	a	456	A
31	a	460	A
31	a	461	C
31	a	462	A
31	a	463	U
31	a	464	A
31	a	465	U
31	a	468	G
31	a	472	G
31	a	473	U
31	a	476	C
31	a	481	C
31	a	482	A
31	a	484	A
31	a	486	C
31	a	487	U
31	a	489	G
31	a	490	A
31	a	491	C
31	a	492	G
31	a	493	G
31	a	494	U
31	a	496	C

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Mol	Chain	Res	Type
31	a	499	A
31	a	503	A
31	a	504	G
31	a	506	A
31	a	507	A
31	a	508	G
31	a	509	C
31	a	510	C
31	a	511	A
31	a	512	C
31	a	513	G
31	a	515	C
31	a	516	U
31	a	517	A
31	a	518	A
31	a	519	C
31	a	522	C
31	a	524	U
31	a	525	G
31	a	526	C
31	a	529	G
31	a	530	C
31	a	531	A
31	a	532	G
31	a	537	G
31	a	538	G
31	a	539	U
31	a	541	A
31	a	542	U
31	a	543	A
31	a	544	C
31	a	547	A
31	a	548	G
31	a	549	G
31	a	552	G
31	a	554	A
31	a	555	A
31	a	556	G
31	a	557	C
31	a	561	A
31	a	563	C
31	a	567	A

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Mol	Chain	Res	Type
31	a	568	A
31	a	569	U
31	a	570	U
31	a	572	U
31	a	575	G
31	a	576	G
31	a	580	A
31	a	581	A
31	a	584	C
31	a	585	G
31	a	586	C
31	a	587	G
31	a	590	U
31	a	592	G
31	a	595	G
31	a	596	G
31	a	597	U
31	a	599	U
31	a	601	U
31	a	603	A
31	a	605	G
31	a	606	U
31	a	607	C
31	a	608	U
31	a	609	G
31	a	611	U
31	a	614	G
31	a	615	A
31	a	616	A
31	a	617	A
31	a	618	G
31	a	619	C
31	a	620	C
31	a	623	C
31	a	627	U
31	a	628	C
31	a	629	A
31	a	631	C
31	a	632	C
31	a	633	G
31	a	636	G
31	a	637	A

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Mol	Chain	Res	Type
31	a	638	G
31	a	639	G
31	a	640	G
31	a	641	U
31	a	642	C
31	a	645	U
31	a	646	G
31	a	647	G
31	a	648	A
31	a	649	A
31	a	650	A
31	a	651	C
31	a	652	U
31	a	653	G
31	a	657	A
31	a	662	G
31	a	664	G
31	a	665	U
31	a	669	G
31	a	670	A
31	a	672	G
31	a	673	A
31	a	674	G
31	a	675	G
31	a	676	A
31	a	677	A
31	a	678	A
31	a	680	U
31	a	681	G
31	a	682	G
31	a	683	A
31	a	685	U
31	a	686	U
31	a	688	C
31	a	689	A
31	a	690	U
31	a	691	G
31	a	692	U
31	a	693	G
31	a	694	U
31	a	697	C
31	a	698	G

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Mol	Chain	Res	Type
31	a	699	G
31	a	700	U
31	a	702	A
31	a	703	A
31	a	708	G
31	a	710	A
31	a	711	G
31	a	712	A
31	a	713	G
31	a	715	U
31	a	716	A
31	a	717	U
31	a	718	G
31	a	719	G
31	a	721	G
31	a	723	A
31	a	725	C
31	a	726	A
31	a	727	C
31	a	728	C
31	a	729	A
31	a	730	G
31	a	731	U
31	a	732	G
31	a	733	G
31	a	737	A
31	a	739	G
31	a	741	G
31	a	742	A
31	a	745	U
31	a	747	C
31	a	748	U
31	a	749	G
31	a	751	U
31	a	752	C
31	a	754	G
31	a	756	A
31	a	757	A
31	a	758	C
31	a	759	U
31	a	760	G
31	a	761	A

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Mol	Chain	Res	Type
31	a	762	C
31	a	763	G
31	a	764	C
31	a	766	G
31	a	767	A
31	a	768	U
31	a	771	G
31	a	774	A
31	a	775	A
31	a	776	A
31	a	779	G
31	a	780	U
31	a	781	G
31	a	782	G
31	a	783	G
31	a	784	G
31	a	785	A
31	a	790	A
31	a	792	A
31	a	793	G
31	a	794	G
31	a	795	A
31	a	797	U
31	a	799	G
31	a	802	A
31	a	804	C
31	a	805	C
31	a	809	U
31	a	813	C
31	a	814	C
31	a	815	A
31	a	816	C
31	a	817	G
31	a	818	C
31	a	819	C
31	a	820	G
31	a	821	U
31	a	823	A
31	a	825	C
31	a	826	G
31	a	827	A
31	a	828	U

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Mol	Chain	Res	Type
31	a	829	G
31	a	836	A
31	a	837	A
31	a	840	G
31	a	844	G
31	a	845	G
31	a	847	G
31	a	850	U
31	a	852	C
31	a	853	C
31	a	854	G
31	a	855	C
31	a	862	G
31	a	864	G
31	a	866	U
31	a	868	C
31	a	872	U
31	a	876	G
31	a	878	A
31	a	879	U
31	a	880	U
31	a	881	A
31	a	882	A
31	a	883	G
31	a	885	A
31	a	887	U
31	a	894	G
31	a	896	G
31	a	897	G
31	a	898	A
31	a	899	G
31	a	900	U
31	a	903	G
31	a	908	C
31	a	916	A
31	a	921	C
31	a	922	A
31	a	923	A
31	a	924	A
31	a	929	U
31	a	931	G
31	a	932	A

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Mol	Chain	Res	Type
31	a	934	G
31	a	935	G
31	a	943	C
31	a	945	C
31	a	946	A
31	a	949	C
31	a	950	G
31	a	952	U
31	a	954	G
31	a	955	A
31	a	956	G
31	a	958	A
31	a	959	U
31	a	960	G
31	a	961	U
31	a	964	U
31	a	966	U
31	a	967	A
31	a	969	U
31	a	970	U
31	a	971	C
31	a	973	A
31	a	975	G
31	a	977	A
31	a	978	A
31	a	980	G
31	a	981	C
31	a	983	A
31	a	984	A
31	a	985	G
31	a	986	A
31	a	987	A
31	a	988	C
31	a	989	C
31	a	990	U
31	a	991	U
31	a	992	A
31	a	993	C
31	a	996	A
31	a	997	A
31	a	998	U
31	a	1000	U

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Mol	Chain	Res	Type
31	a	1001	U
31	a	1002	G
31	a	1003	A
31	a	1006	U
31	a	1008	C
31	a	1011	U
31	a	1012	G
31	a	1013	A
31	a	1014	C
31	a	1015	A
31	a	1016	A
31	a	1017	C
31	a	1019	C
31	a	1022	G
31	a	1023	A
31	a	1024	G
31	a	1030	G
31	a	1031	C
31	a	1033	U
31	a	1036	C
31	a	1038	C
31	a	1039	U
31	a	1040	U
31	a	1041	C
31	a	1042	G
31	a	1046	G
31	a	1051	A
31	a	1052	G
31	a	1055	A
31	a	1057	A
31	a	1058	G
31	a	1060	U
31	a	1064	G
31	a	1065	C
31	a	1066	A
31	a	1069	G
31	a	1071	U
31	a	1072	G
31	a	1074	C
31	a	1076	U
31	a	1077	C
31	a	1078	A

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Mol	Chain	Res	Type
31	a	1080	C
31	a	1081	U
31	a	1083	G
31	a	1085	G
31	a	1089	U
31	a	1091	A
31	a	1094	U
31	a	1095	G
31	a	1096	U
31	a	1097	U
31	a	1098	G
31	a	1099	G
31	a	1100	G
31	a	1101	U
31	a	1102	U
31	a	1103	A
31	a	1104	A
31	a	1105	G
31	a	1106	U
31	a	1107	C
31	a	1108	C
31	a	1109	C
31	a	1110	G
31	a	1112	A
31	a	1113	A
31	a	1120	C
31	a	1122	A
31	a	1123	C
31	a	1124	C
31	a	1128	A
31	a	1129	A
31	a	1131	C
31	a	1133	U
31	a	1134	A
31	a	1135	G
31	a	1136	U
31	a	1137	U
31	a	1138	G
31	a	1139	C
31	a	1143	C
31	a	1144	A
31	a	1145	U

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Mol	Chain	Res	Type
31	a	1146	U
31	a	1148	A
31	a	1149	G
31	a	1150	U
31	a	1151	U
31	a	1152	G
31	a	1156	A
31	a	1157	C
31	a	1158	U
31	a	1160	U
31	a	1161	A
31	a	1164	U
31	a	1165	U
31	a	1167	A
31	a	1168	C
31	a	1169	U
31	a	1170	G
31	a	1171	C
31	a	1173	G
31	a	1175	U
31	a	1176	G
31	a	1177	A
31	a	1178	C
31	a	1179	A
31	a	1180	A
31	a	1185	G
31	a	1186	A
31	a	1187	G
31	a	1190	A
31	a	1191	G
31	a	1192	G
31	a	1196	G
31	a	1197	G
31	a	1198	A
31	a	1200	G
31	a	1201	A
31	a	1202	C
31	a	1203	G
31	a	1204	U
31	a	1205	C
31	a	1206	A
31	a	1208	A

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Mol	Chain	Res	Type
31	a	1210	C
31	a	1211	A
31	a	1212	U
31	a	1214	A
31	a	1215	U
31	a	1216	G
31	a	1218	C
31	a	1221	U
31	a	1222	U
31	a	1223	A
31	a	1224	U
31	a	1225	G
31	a	1226	A
31	a	1228	U
31	a	1229	U
31	a	1230	G
31	a	1231	G
31	a	1232	G
31	a	1234	U
31	a	1235	A
31	a	1236	C
31	a	1237	A
31	a	1238	C
31	a	1240	C
31	a	1241	G
31	a	1246	A
31	a	1247	C
31	a	1248	A
31	a	1249	A
31	a	1250	U
31	a	1251	G
31	a	1253	A
31	a	1255	A
31	a	1256	A
31	a	1257	U
31	a	1258	A
31	a	1260	A
31	a	1263	G
31	a	1266	C
31	a	1267	A
31	a	1269	C
31	a	1270	G

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Mol	Chain	Res	Type
31	a	1272	A
31	a	1273	A
31	a	1274	C
31	a	1275	C
31	a	1277	C
31	a	1278	G
31	a	1280	G
31	a	1281	G
31	a	1282	U
31	a	1283	C
31	a	1284	A
31	a	1285	A
31	a	1286	G
31	a	1288	A
31	a	1289	A
31	a	1290	A
31	a	1291	U
31	a	1294	C
31	a	1295	A
31	a	1296	U
31	a	1297	A
31	a	1300	G
31	a	1302	U
31	a	1303	G
31	a	1304	U
31	a	1305	U
31	a	1308	C
31	a	1309	A
31	a	1310	G
31	a	1311	U
31	a	1312	U
31	a	1314	G
31	a	1315	G
31	a	1317	U
31	a	1318	U
31	a	1319	G
31	a	1320	U
31	a	1321	A
31	a	1322	G
31	a	1323	U
31	a	1324	C
31	a	1325	U

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Mol	Chain	Res	Type
31	a	1326	G
31	a	1327	C
31	a	1328	A
31	a	1329	A
31	a	1330	C
31	a	1332	C
31	a	1333	G
31	a	1336	U
31	a	1337	A
31	a	1338	C
31	a	1339	A
31	a	1340	U
31	a	1341	G
31	a	1342	A
31	a	1343	A
31	a	1344	G
31	a	1345	C
31	a	1346	U
31	a	1348	G
31	a	1349	A
31	a	1354	C
31	a	1356	A
31	a	1357	G
31	a	1358	U
31	a	1362	C
31	a	1363	G
31	a	1370	A
31	a	1373	A
31	a	1374	U
31	a	1378	A
31	a	1381	G
31	a	1382	U
31	a	1383	G
31	a	1384	A
31	a	1387	A
31	a	1388	C
31	a	1389	G
31	a	1390	U
31	a	1391	U
31	a	1392	C
31	a	1393	C
31	a	1394	C

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Mol	Chain	Res	Type
31	a	1400	U
31	a	1401	U
31	a	1402	G
31	a	1403	U
31	a	1404	A
31	a	1406	A
31	a	1409	C
31	a	1410	C
31	a	1414	C
31	a	1415	G
31	a	1417	C
31	a	1419	C
31	a	1420	A
31	a	1421	C
31	a	1425	G
31	a	1427	G
31	a	1428	A
31	a	1429	G
31	a	1430	U
31	a	1433	G
31	a	1434	U
31	a	1435	A
31	a	1439	C
31	a	1445	G
31	a	1447	C
31	a	1448	G
31	a	1449	G
31	a	1450	U
31	a	1451	G
31	a	1452	G
31	a	1454	G
31	a	1455	U
31	a	1456	A
31	a	1457	A
31	a	1458	C
31	a	1459	C
31	a	1460	U
31	a	1461	U
31	a	1463	U
31	a	1464	A
31	a	1465	G
31	a	1466	G

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Mol	Chain	Res	Type
31	a	1467	A
31	a	1468	G
31	a	1469	C
31	a	1470	U
31	a	1474	C
31	a	1476	U
31	a	1478	G
31	a	1479	A
31	a	1483	U
31	a	1490	A
31	a	1492	U
31	a	1494	A
31	a	1495	U
31	a	1496	U
31	a	1497	G
31	a	1498	G
31	a	1500	G
31	a	1503	A
31	a	1504	A
31	a	1507	C
31	a	1508	G
31	a	1509	U
31	a	1511	A
31	a	1513	A
31	a	1514	A
31	a	1515	G
31	a	1517	U
31	a	1519	G
31	a	1522	G
31	a	1526	C
31	a	1528	G
31	a	1529	A
31	a	1530	A
31	a	1531	G
31	a	1532	G
31	a	1534	G
31	a	1536	G
31	a	1537	G
31	a	1540	G
31	a	1541	G
31	a	1542	A
31	a	1543	U

All (55) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	69	C
1	A	233	U
1	A	267	G
1	A	282	A
1	A	291	G
1	A	320	U
1	A	327	G
1	A	385	U
1	A	396	G
1	A	416	G
1	A	432	G
1	A	433	U
1	A	576	U
1	A	657	U
1	A	688	A
1	A	690	U
1	A	697	U
1	A	748	U
1	A	759	U
1	A	809	A
1	A	812	U
1	A	835	U
1	A	840	C
1	A	1024	A
1	A	1026	C
1	A	1075	G
1	A	1077	U
1	A	1092	A
1	A	1108	C
1	A	1190	A
1	A	1198	G
1	A	1460	U
1	A	1489	A
1	A	1496	G
1	A	1503	U
1	A	1520	A
1	A	1521	A
1	A	1626	A
1	A	1632	A
1	A	1658	A
1	A	1707	U
1	A	1823	U

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Mol	Chain	Res	Type
1	A	1975	G
1	A	2117	A
1	A	2127	G
1	A	2237	U
1	A	2302	C
1	A	2323	U
1	A	2428	U
1	A	2450	U
1	A	2455	G
1	A	2608	G
1	A	2749	G
1	A	2783	U
1	A	2816	C

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

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)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	8
31	a	2
52	v	1

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Mol	Chain	Number of breaks
43	m	1
37	g	1
38	h	1
5	E	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	v	106:GLN	C	131:ILE	N	30.98
1	A	2207:U	O3'	2208:A	P	12.82
1	A	1939:A	O3'	1944:U	P	12.52
1	a	465:U	O3'	466:G	P	11.00
1	A	929:C	O3'	937:G	P	9.63
1	A	1096:C	O3'	1097:U	P	7.26
1	m	93:ARG	C	94:GLY	N	6.43
1	A	1153:C	O3'	1154:G	P	5.83
1	g	1:MET	C	2:PRO	N	4.64
1	A	2217:G	O3'	2218:G	P	4.18
1	A	770:G	O3'	771:G	P	4.05
1	A	1448:U	O3'	1449:A	P	3.78
1	h	89:ALA	C	90:LYS	N	2.12
1	a	36:G	O3'	37:C	P	2.00
1	E	132:GLU	C	133:ALA	N	1.17

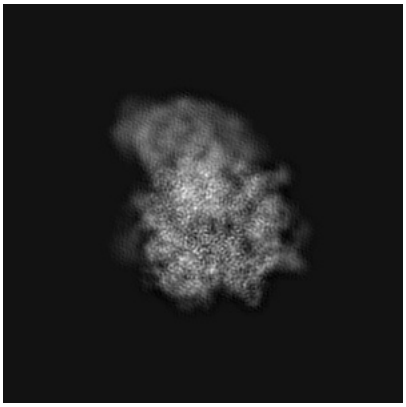
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-10079. These allow visual inspection of the internal detail of the map and identification of artifacts.

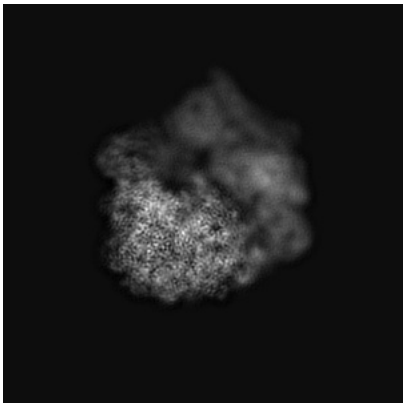
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

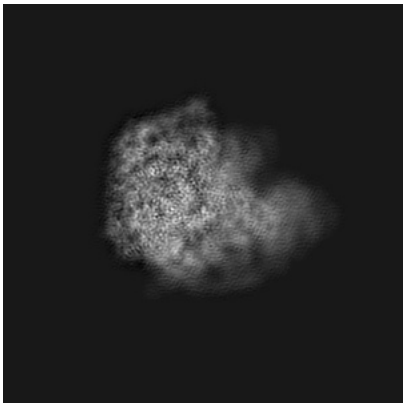
6.1.1 Primary map



X



Y

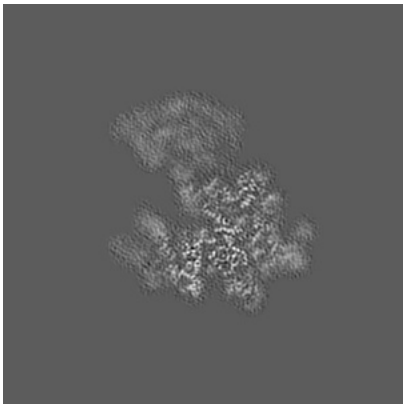


Z

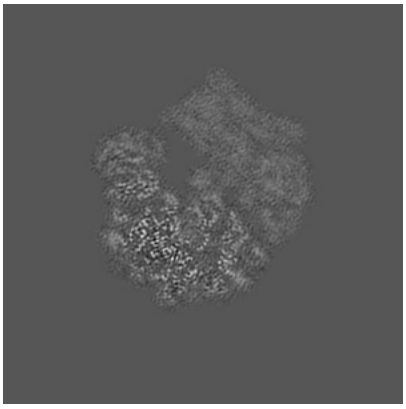
The images above show the map projected in three orthogonal directions.

6.2 Central slices

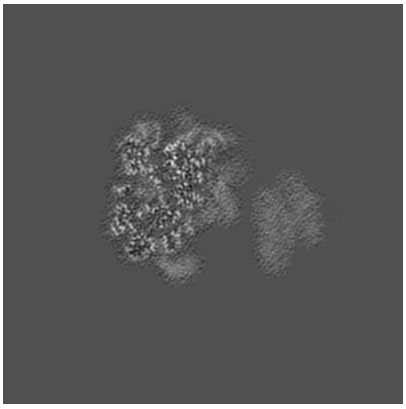
6.2.1 Primary map



X Index: 200



Y Index: 200

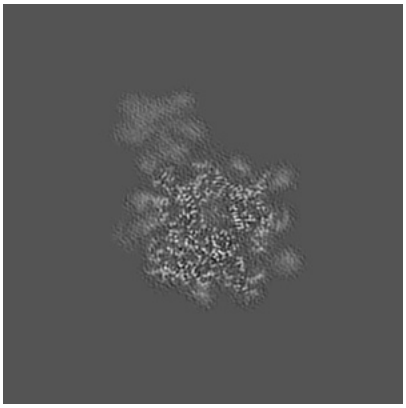


Z Index: 200

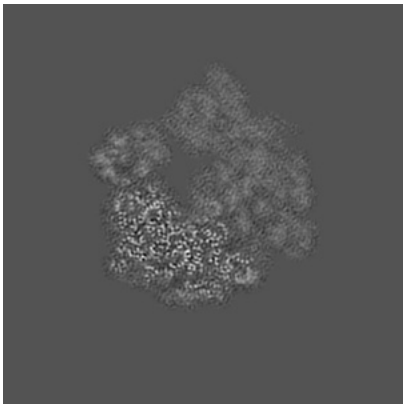
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

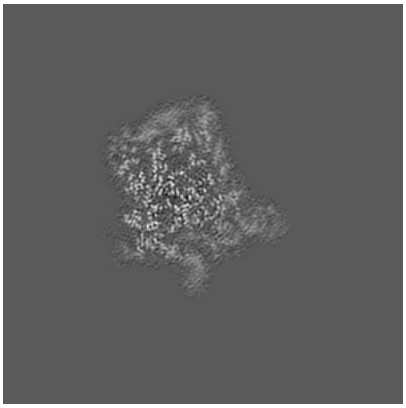
6.3.1 Primary map



X Index: 163



Y Index: 184

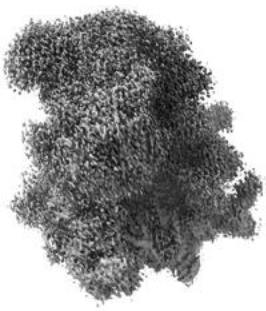


Z Index: 145

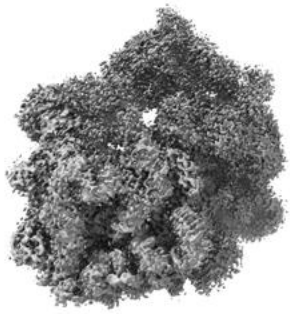
The images above show the largest variance slices of the map in three orthogonal directions.

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

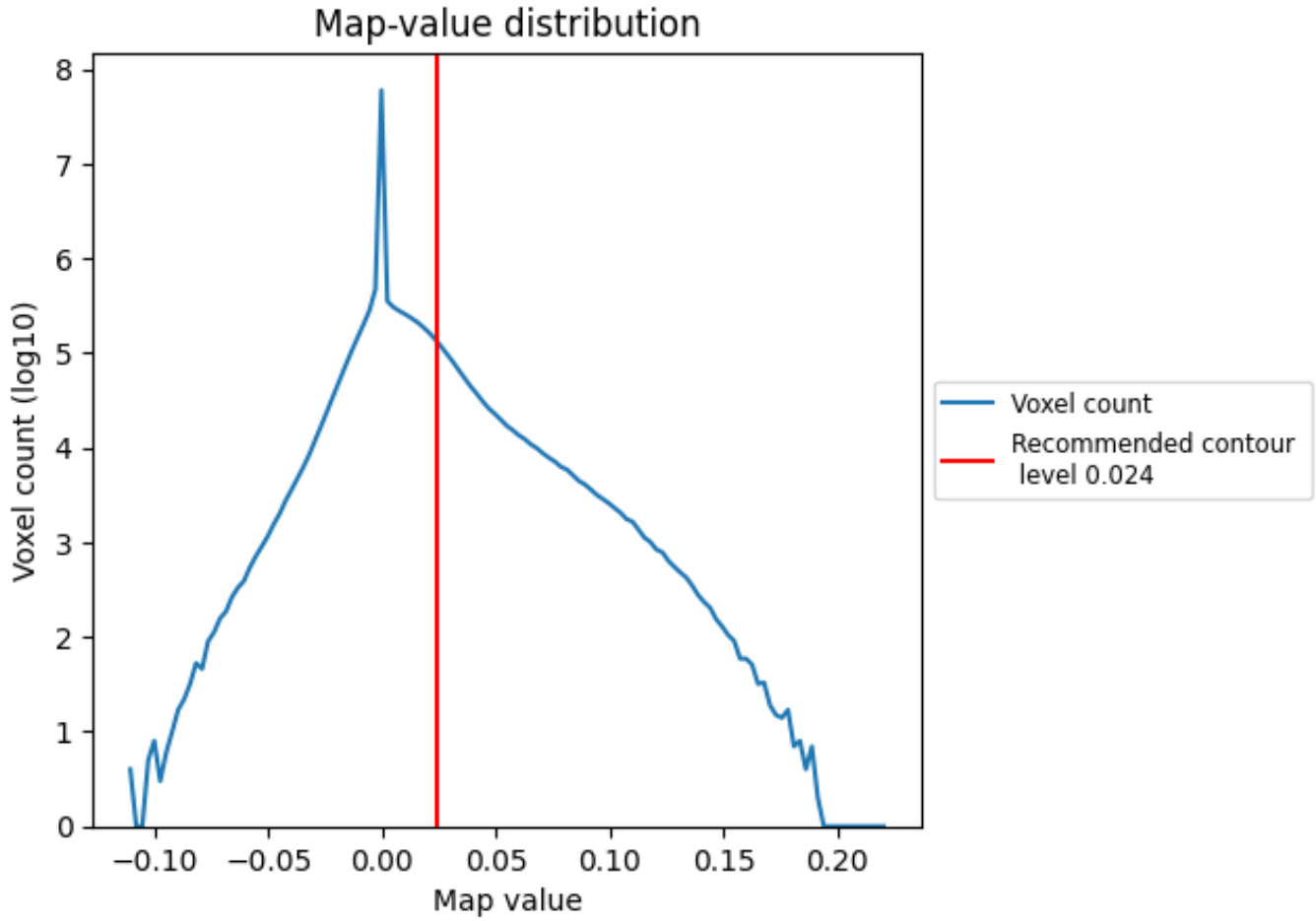
6.5 Mask visualisation (i)

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

7 Map analysis

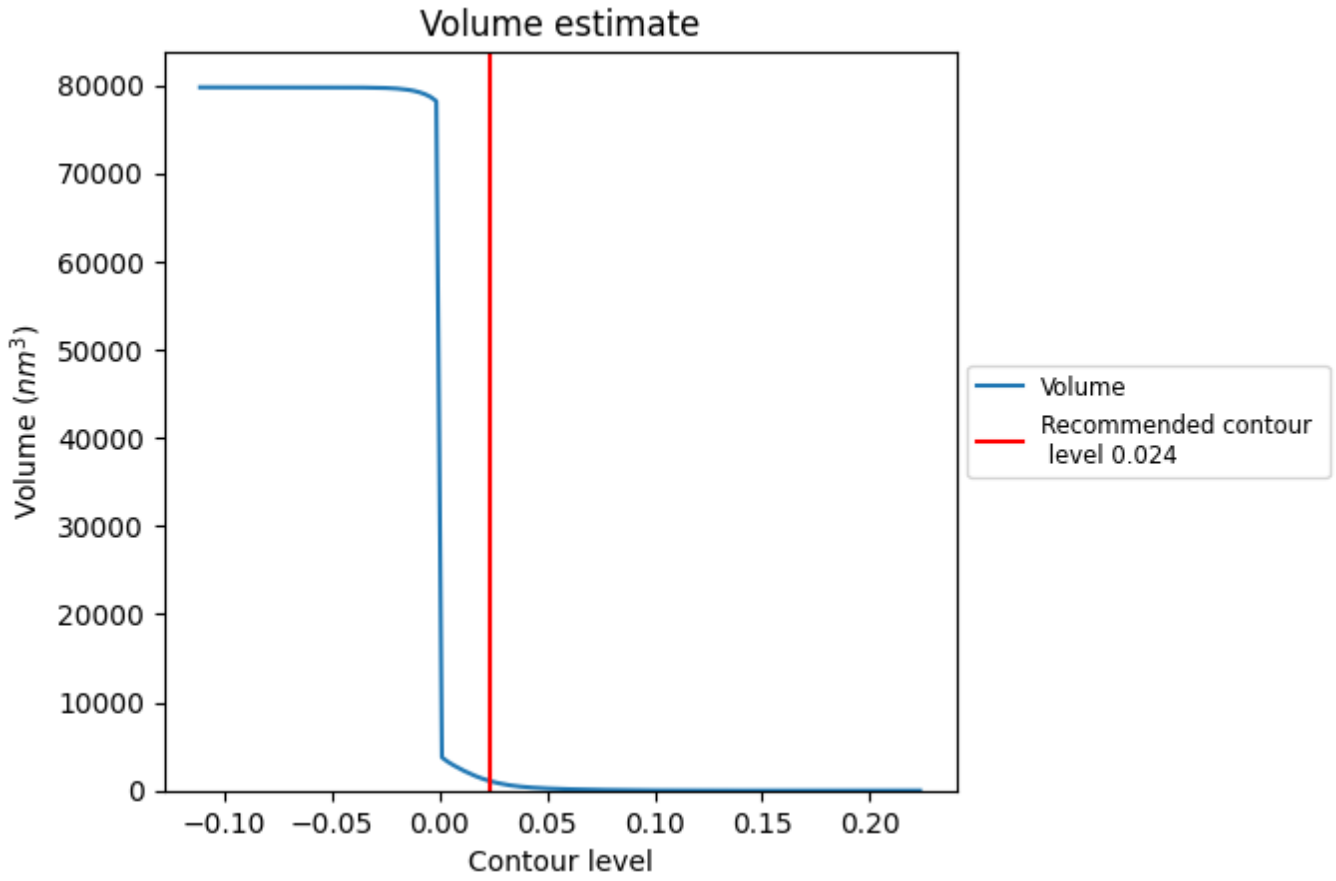
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

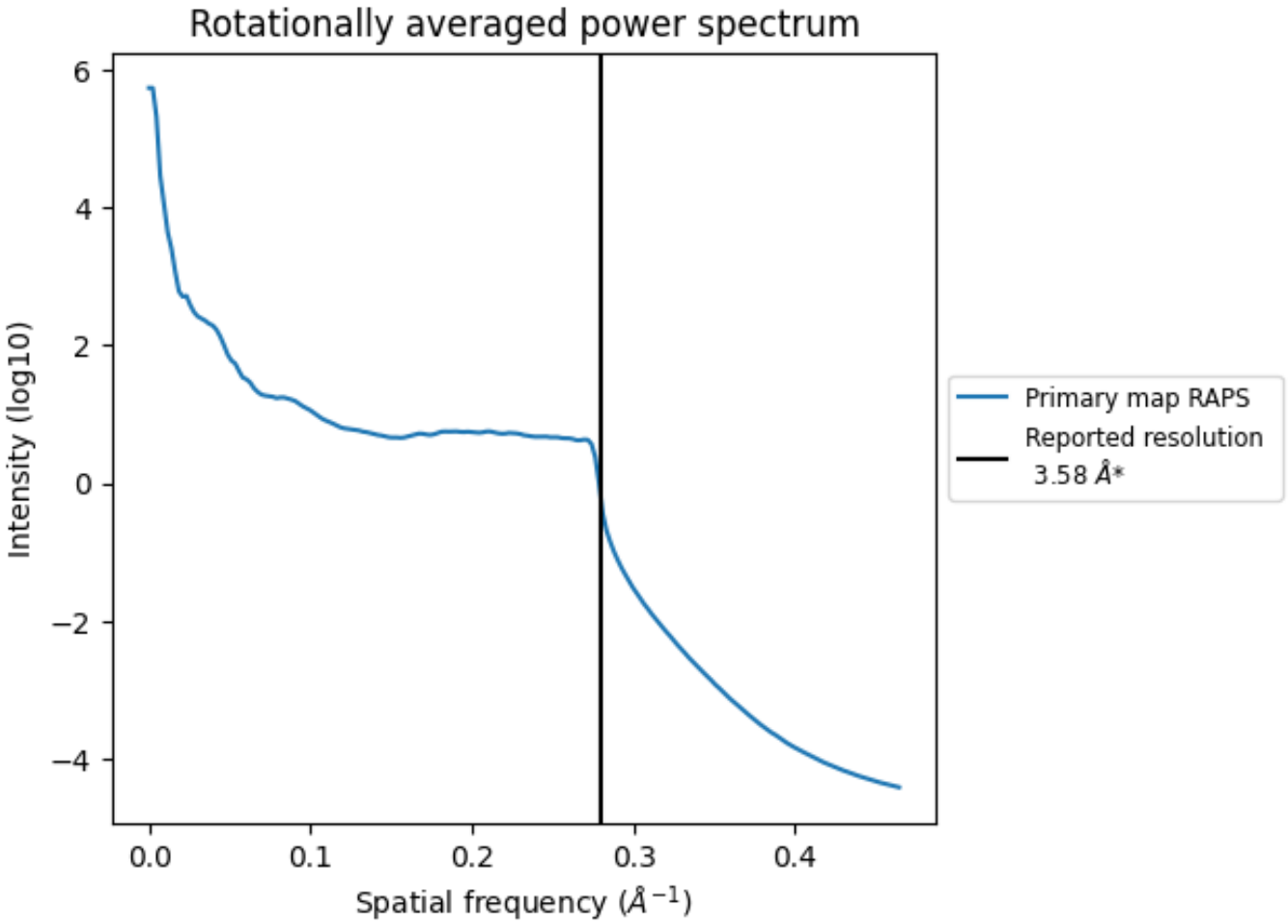
7.2 Volume estimate



The volume at the recommended contour level is 1057 nm^3; this corresponds to an approximate mass of 955 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 0.279 Å^{-1}

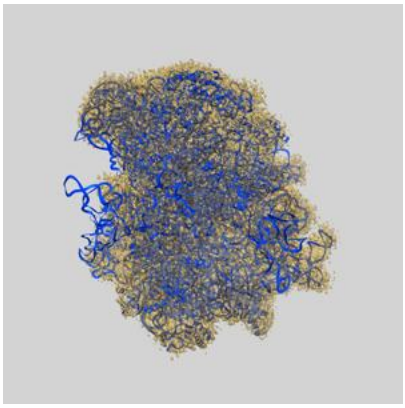
8 Fourier-Shell correlation (i)

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

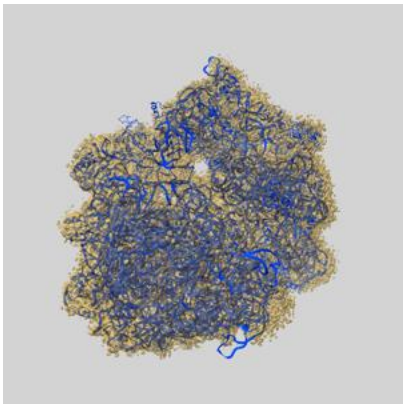
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-10079 and PDB model 6S13. Per-residue inclusion information can be found in section 3 on page 14.

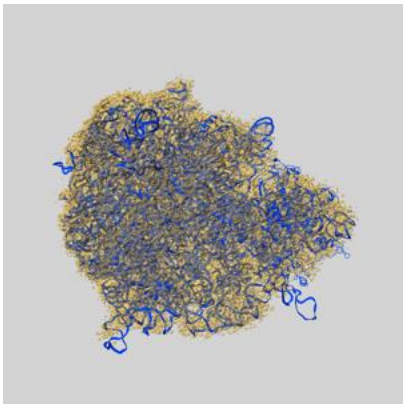
9.1 Map-model overlay



X



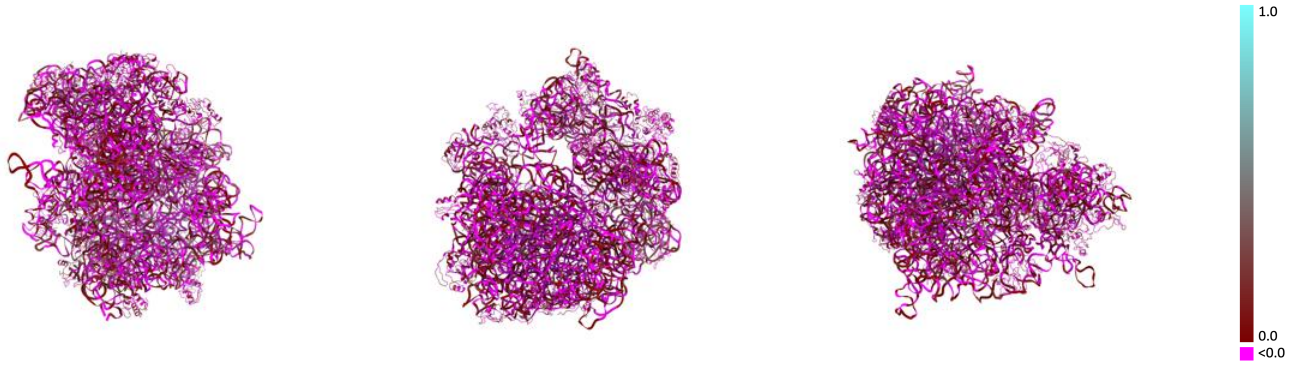
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.024 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.

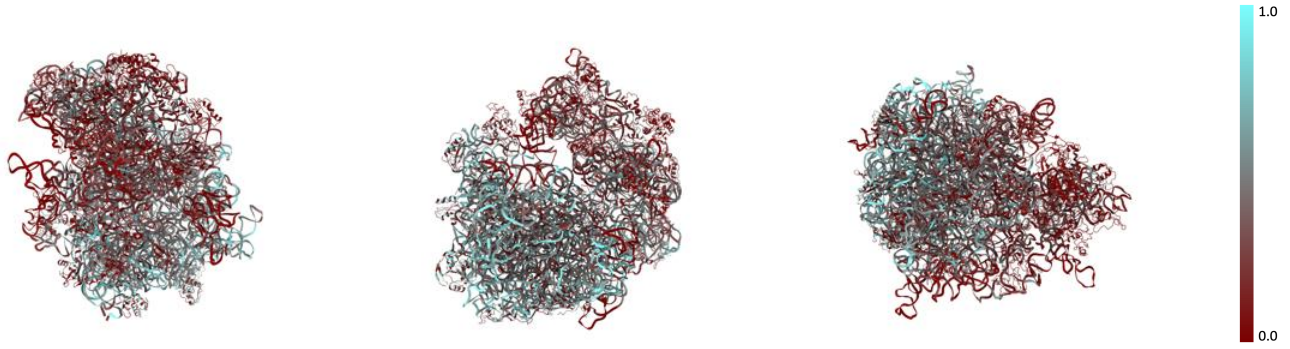
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

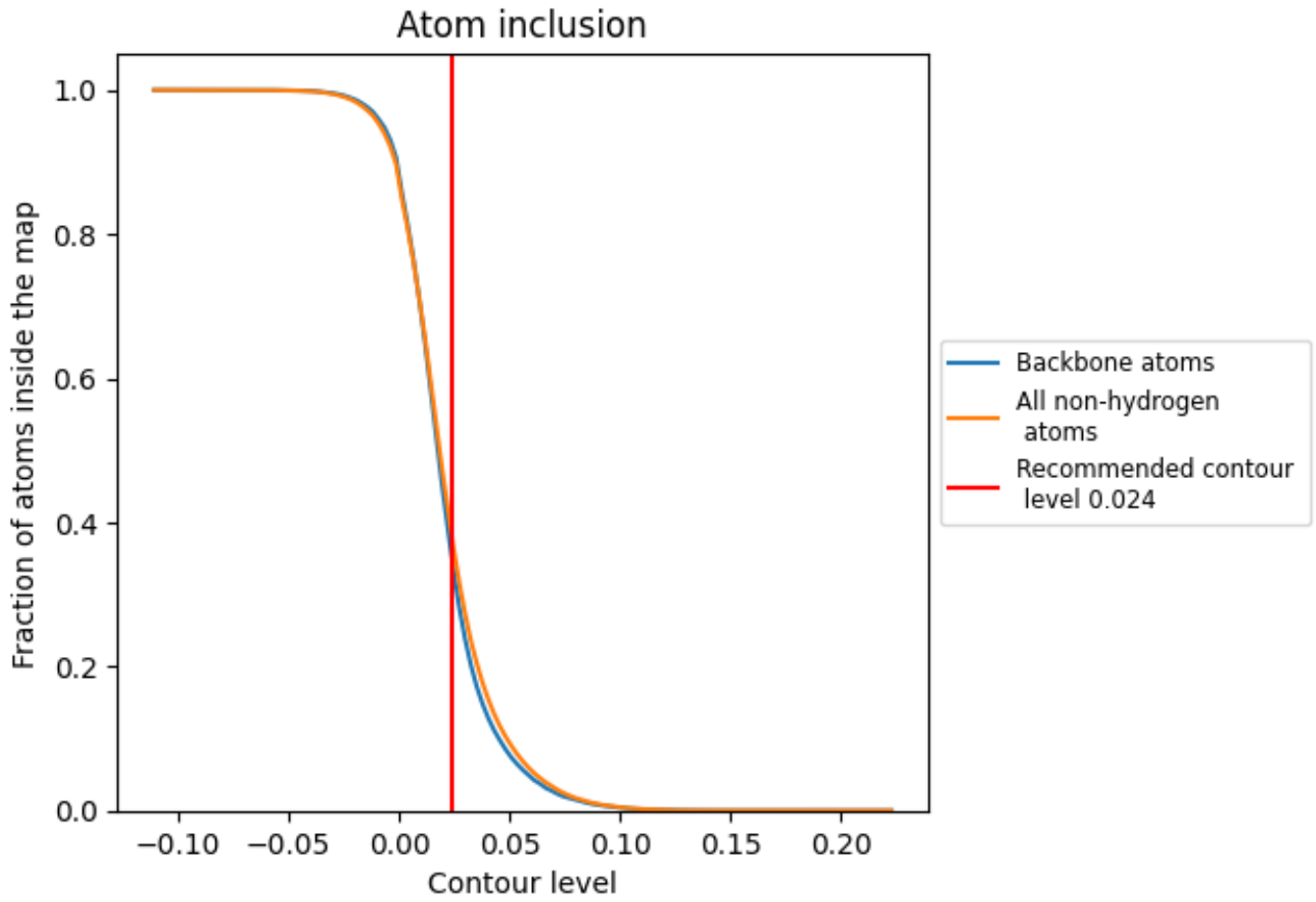
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.024).

9.4 Atom inclusion (i)



At the recommended contour level, 35% of all backbone atoms, 38% 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 (0.024) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.3784	0.0000
1	0.2293	-0.0040
2	0.3497	-0.0540
3	0.3127	-0.0380
4	0.2976	-0.0180
A	0.4742	-0.0050
B	0.5730	0.0480
C	0.2989	-0.0630
D	0.3768	-0.0010
E	0.3472	-0.0200
F	0.1908	0.0070
G	0.0866	0.0210
H	0.4270	0.0400
I	0.3464	-0.0150
J	0.2963	-0.0570
K	0.3748	0.0310
L	0.3726	-0.0090
M	0.3257	0.0230
N	0.3690	0.0090
O	0.4070	-0.0140
P	0.4679	0.0640
Q	0.3611	0.0150
R	0.3147	-0.0280
S	0.3775	0.0320
T	0.2116	0.0450
U	0.2736	-0.0630
V	0.2564	-0.0090
W	0.3752	0.0050
X	0.4444	0.0470
Y	0.1304	0.0480
Z	0.4467	0.0150
a	0.3059	0.0100
b	0.0942	-0.0110
c	0.0956	0.0130
d	0.1575	0.0010

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Chain	Atom inclusion	Q-score
e	0.1374	-0.0050
f	0.0995	-0.0310
g	0.1184	0.0080
h	0.1735	0.0040
i	0.1862	0.0240
j	0.0682	-0.0030
k	0.1957	-0.0190
l	0.0587	0.0220
m	0.1018	-0.0340
n	0.1545	-0.0110
o	0.1236	-0.0240
p	0.1846	0.0060
q	0.2294	-0.0070
r	0.2196	-0.0020
s	0.1340	-0.0130
t	0.1201	-0.0030
u	0.1835	0.0260
v	0.0602	0.0240