Full wwPDB EM Validation Report ⓘ

Apr 16, 2024 – 01:44 am BST

PDB ID	:	6Q98
EMDB ID	:	EMD-4477
Title	:	Structure of tmRNA SmpB bound in P site of E. coli 70S ribosome
Authors	:	Rae, C.D.
Deposited on	:	2018-12-17
Resolution	:	4.30 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:

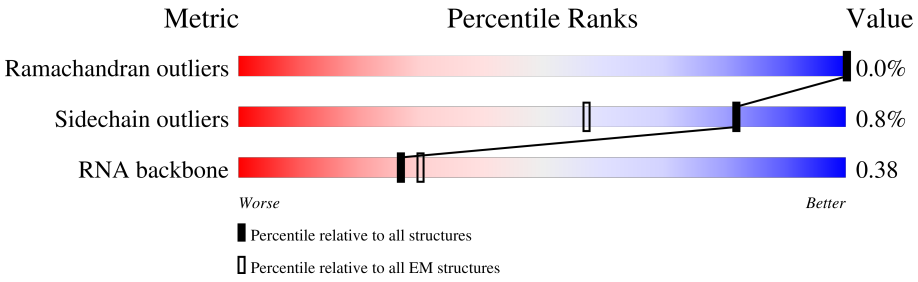
EMDB validation analysis	:	0.0.1.dev92
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 4.30 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	1	2904	6% 58% 37%
2	2	1535	10% 61% 34% 5%
3	3	120	7% 68% 28%
4	5	160	59% 92% 6%
5	6	22	77% 100%
6	B	273	29% 99%
7	C	209	20% 100%
8	D	201	31% 100%

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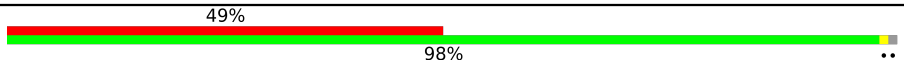
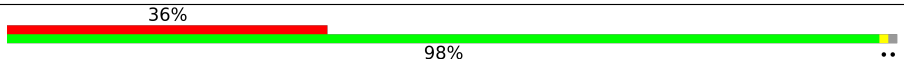
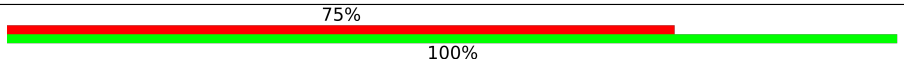
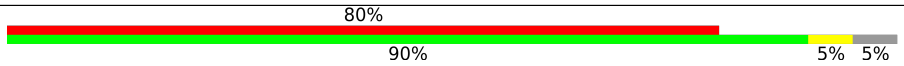
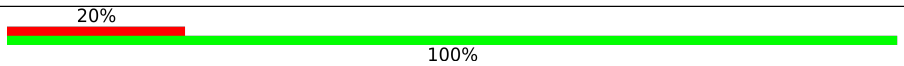
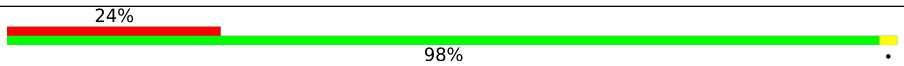
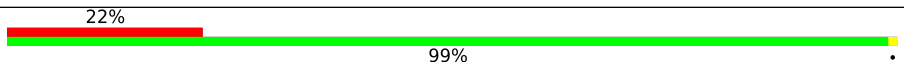
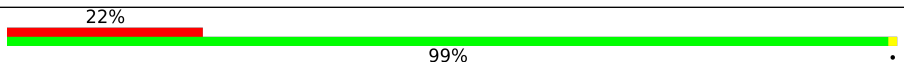
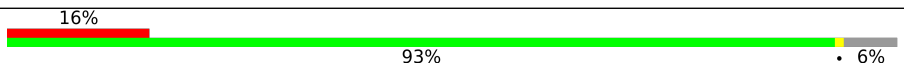
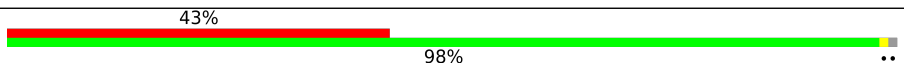
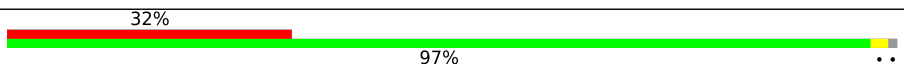
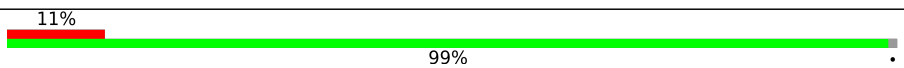
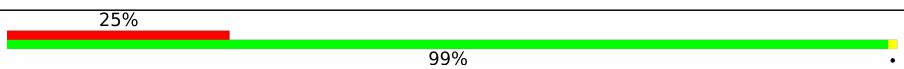
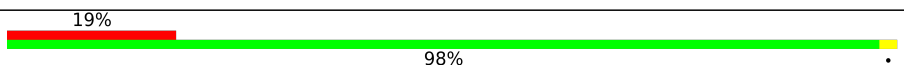
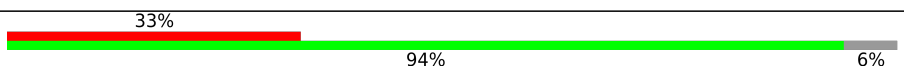
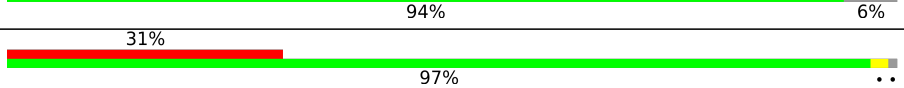
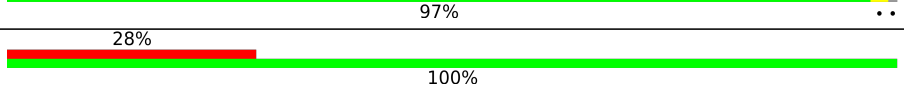
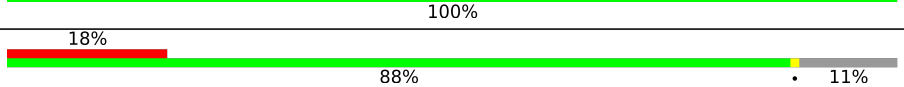
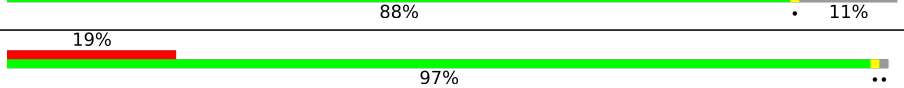
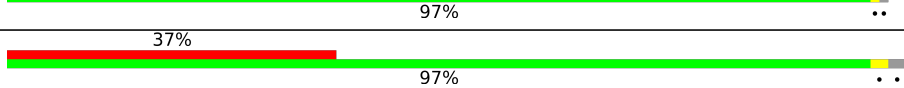
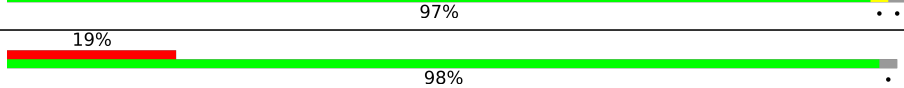
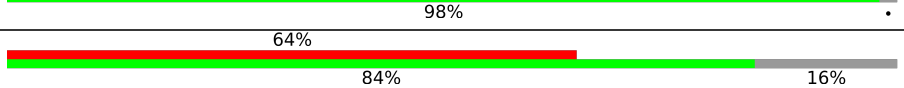
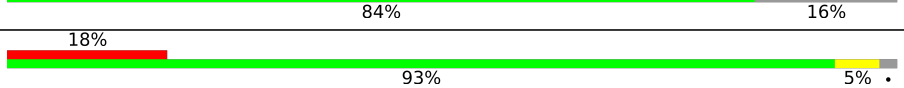
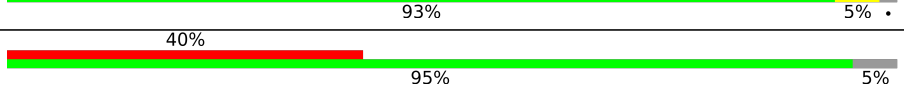
Mol	Chain	Length	Quality of chain
9	E	179	
10	F	177	
11	G	149	
12	H	165	
13	I	142	
14	J	142	
15	K	123	
16	L	144	
17	M	136	
18	N	127	
19	O	117	
20	P	115	
21	Q	118	
22	R	103	
23	S	110	
24	T	100	
25	U	104	
26	V	94	
27	W	85	
28	X	78	
29	Y	63	
30	Z	59	
31	a	70	
32	b	57	
33	c	55	

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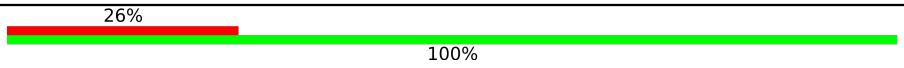
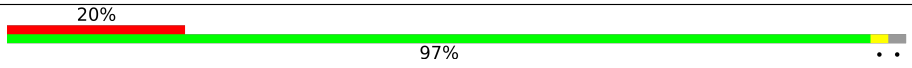
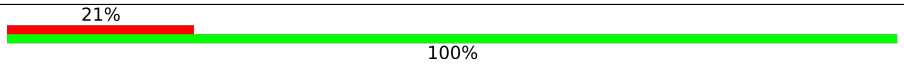
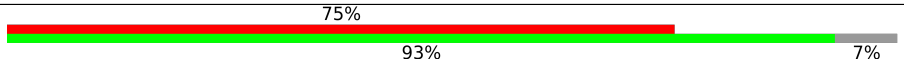
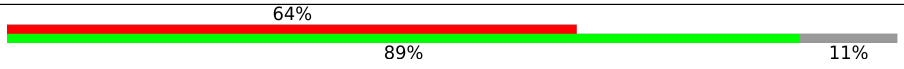
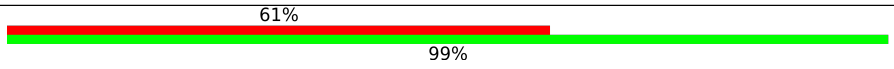
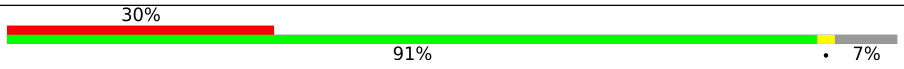
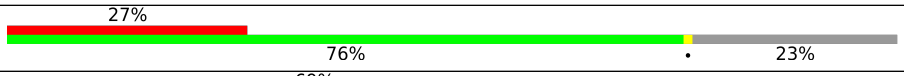
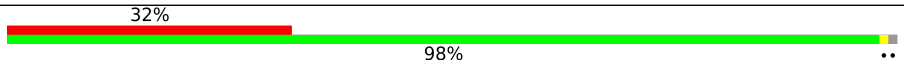
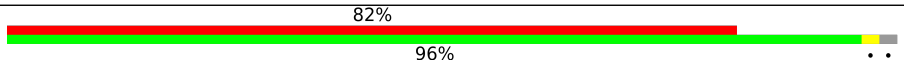
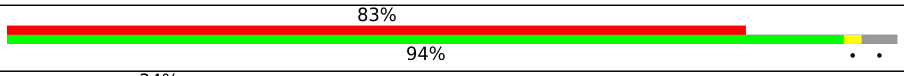
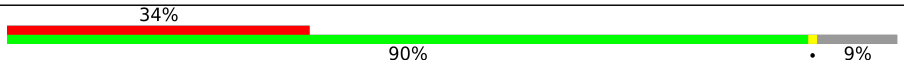
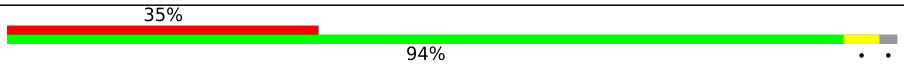
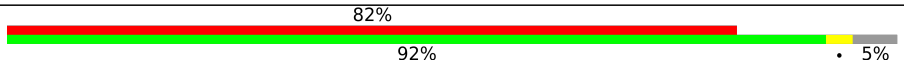
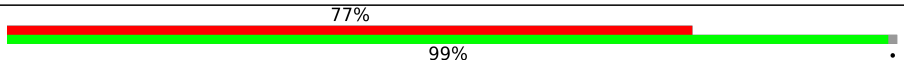
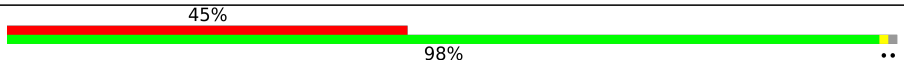
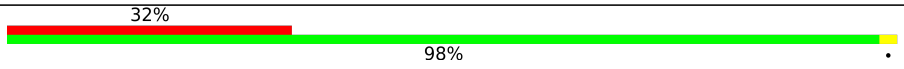
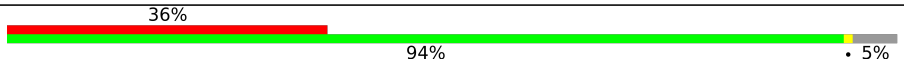
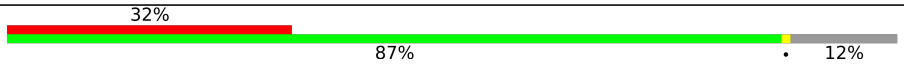
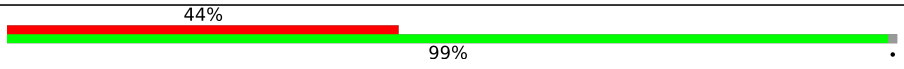
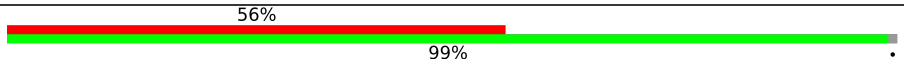
Mol	Chain	Length	Quality of chain
34	d	46	
35	e	65	
36	f	38	
37	g	241	
38	h	233	
39	i	206	
40	j	167	
41	k	135	
42	l	179	
43	m	130	
44	n	130	
45	o	103	
46	p	129	
47	q	124	
48	r	118	
49	s	101	
50	t	89	
51	u	82	
52	v	84	
53	w	75	
54	x	92	
55	y	87	
56	z	71	
57	4	363	

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

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	6MZ	1	1618	X	-	-	-
1	PSU	1	1911	X	-	-	-
1	3TD	1	1915	X	-	-	-
1	PSU	1	1917	X	-	-	-
1	6MZ	1	2030	X	-	-	-
1	G7M	1	2069	X	-	-	-
1	OMG	1	2251	X	-	-	-
1	PSU	1	2457	X	-	-	-
1	OMC	1	2498	X	-	-	-
1	2MA	1	2503	X	-	-	-
1	PSU	1	2504	X	-	-	-
1	OMU	1	2552	X	-	-	-
1	PSU	1	2580	X	-	-	-
1	PSU	1	2605	X	-	-	-

2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 153878 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	2903	62336	27816	11470	20147	2903	0	0

- Molecule 2 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	2	1534	32929	14693	6041	10661	1534	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	3	120	2569	1144	468	837	120	0	0

- Molecule 4 is a protein called SsrA-binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	5	150	1209	763	226	216	4	0	0

- Molecule 5 is a protein called Nascent peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
5	6	22	110	66	22	22	0	0

- Molecule 6 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	B	271	2082	1288	423	364	7	0	0

- Molecule 7 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	C	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 8 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	D	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 9 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	E	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 10 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	F	175	Total	C	N	O	S	0	0
			1313	826	241	244	2		

- Molecule 11 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	G	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 12 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	H	130	Total	C	N	O	S	0	0
			980	620	174	182	4		

- Molecule 13 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	I	135	Total	C	N	O	S	0	0
			984	622	171	185	6		

- Molecule 14 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	J	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 15 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	K	123	Total	C	N	O	S	0	0
			946	593	181	166	6		

- Molecule 16 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	L	144	Total	C	N	O	S	0	0
			1053	654	207	190	2		

- Molecule 17 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	M	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 18 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	N	119	Total	C	N	O	S	0	0
			951	588	195	163	5		

- Molecule 19 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	O	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 20 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	P	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 21 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	Q	117	Total 947	C 604	N 192	O 151	0	0

- Molecule 22 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	R	103	Total 816	C 516	N 153	O 145	S 2	0	0

- Molecule 23 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	S	110	Total 857	C 532	N 166	O 156	S 3	0	0

- Molecule 24 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	T	94	Total 746	C 470	N 140	O 134	S 2	0	0

- Molecule 25 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	U	103	Total 788	C 498	N 148	O 142	0	0

- Molecule 26 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	V	94	Total 753	C 479	N 137	O 134	S 3	0	0

- Molecule 27 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	W	76	Total 582	C 360	N 117	O 104	S 1	0	0

- Molecule 28 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	X	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 29 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Y	62	Total	C	N	O	S	0	0
			501	308	98	94	1		

- Molecule 30 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Z	58	Total	C	N	O	S	0	0
			448	281	87	78	2		

- Molecule 31 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	a	59	Total	C	N	O	S	0	0
			472	293	89	84	6		

- Molecule 32 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	b	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 33 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	c	52	Total	C	N	O	0	0
			426	275	78	73		

- Molecule 34 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	d	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 35 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	e	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 36 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	f	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 37 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	g	225	Total	C	N	O	S	0	0
			1760	1113	316	323	8		

- Molecule 38 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	h	208	Total	C	N	O	S	0	0
			1636	1036	307	290	3		

- Molecule 39 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	i	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 40 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	j	156	Total	C	N	O	S	0	0
			1152	717	217	212	6		

- Molecule 41 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	k	104	Total	C	N	O	S	0	0
			848	536	153	152	7		

- Molecule 42 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	l	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 43 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	m	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 44 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	n	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 45 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	o	99	Total	C	N	O	S	0	0
			790	495	151	143	1		

- Molecule 46 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	p	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 47 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	q	122	Total	C	N	O	S	0	0
			951	588	195	163	5		

- Molecule 48 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	r	112	Total	C	N	O	S	0	0
			867	535	175	154	3		

- Molecule 49 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	s	100	Total 805	C 499	N 164	O 139	S 3	0	0

- Molecule 50 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	t	88	Total 714	C 439	N 144	O 130	S 1	0	0

- Molecule 51 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	u	82	Total 649	C 406	N 128	O 114	S 1	0	0

- Molecule 52 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	v	80	Total 648	C 411	N 121	O 113	S 3	0	0

- Molecule 53 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	w	66	Total 544	C 344	N 102	O 97	S 1	0	0

- Molecule 54 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	x	83	Total 663	C 424	N 126	O 111	S 2	0	0

- Molecule 55 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	y	86	Total 669	C 414	N 138	O 114	S 3	0	0

- Molecule 56 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	z	70	Total 589	C 366	N 125	O 97	S 1	0	0

- Molecule 57 is a RNA chain called transfer-messenger RNA (tmRNA).

Mol	Chain	Residues	Atoms					AltConf	Trace
57	4	363	Total 7758	C 3465	N 1410	O 2520	P 363	0	0

- Molecule 58 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
58	1	283	Total 283	Mg 283	0
58	2	126	Total 126	Mg 126	0
58	3	8	Total 8	Mg 8	0
58	B	2	Total 2	Mg 2	0
58	C	1	Total 1	Mg 1	0
58	L	2	Total 2	Mg 2	0
58	N	1	Total 1	Mg 1	0
58	U	1	Total 1	Mg 1	0
58	f	1	Total 1	Mg 1	0
58	i	1	Total 1	Mg 1	0
58	r	2	Total 2	Mg 2	0
58	4	1	Total 1	Mg 1	0

- Molecule 59 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
59	a	1	Total 1	Zn 1	0

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Mol	Chain	Residues	Atoms	AltConf
59	f	1	Total Zn 1 1	0

- Molecule 60 is water.

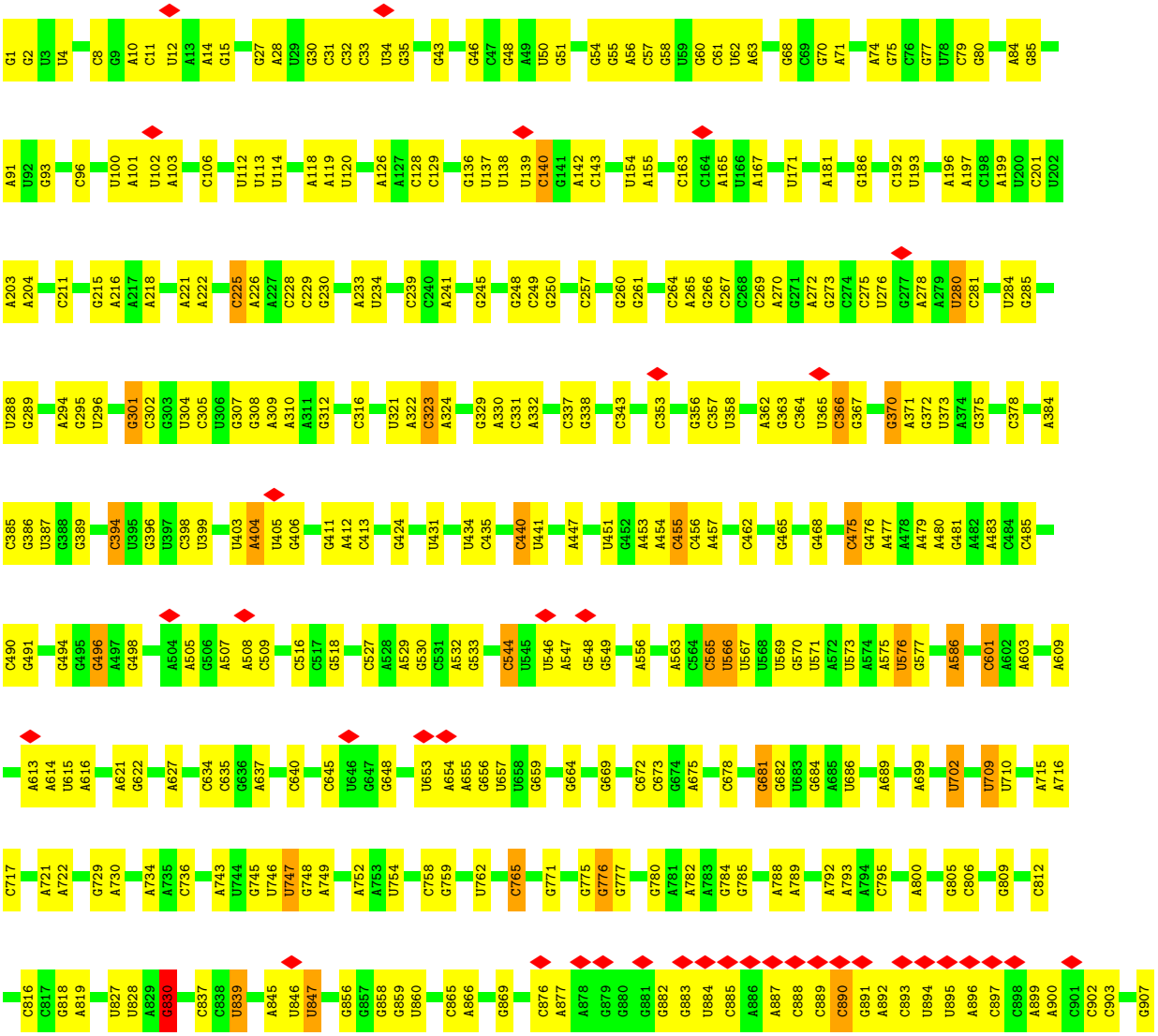
Mol	Chain	Residues	Atoms	AltConf
60	B	2	Total O 2 2	0

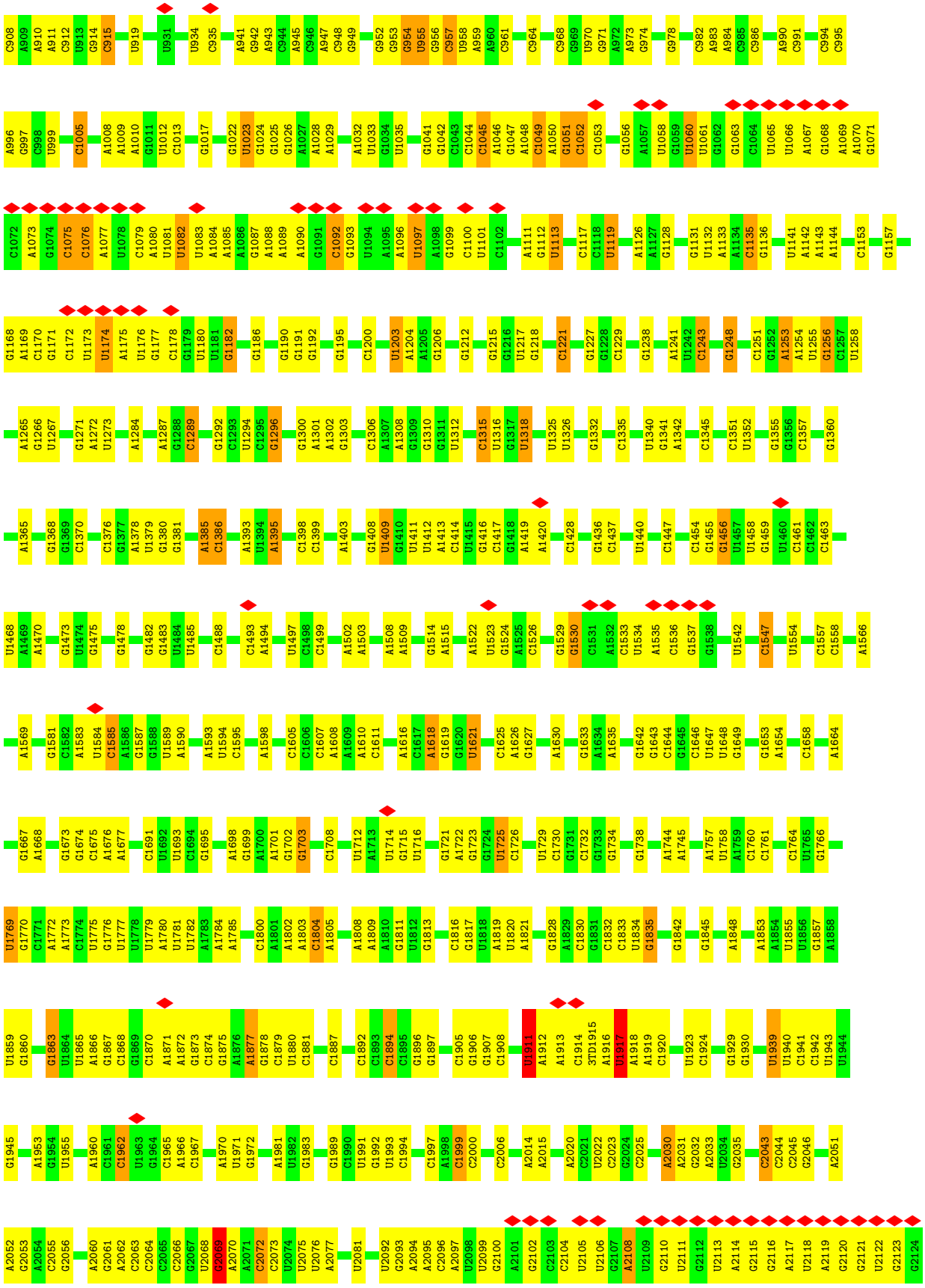
3 Residue-property plots (i)

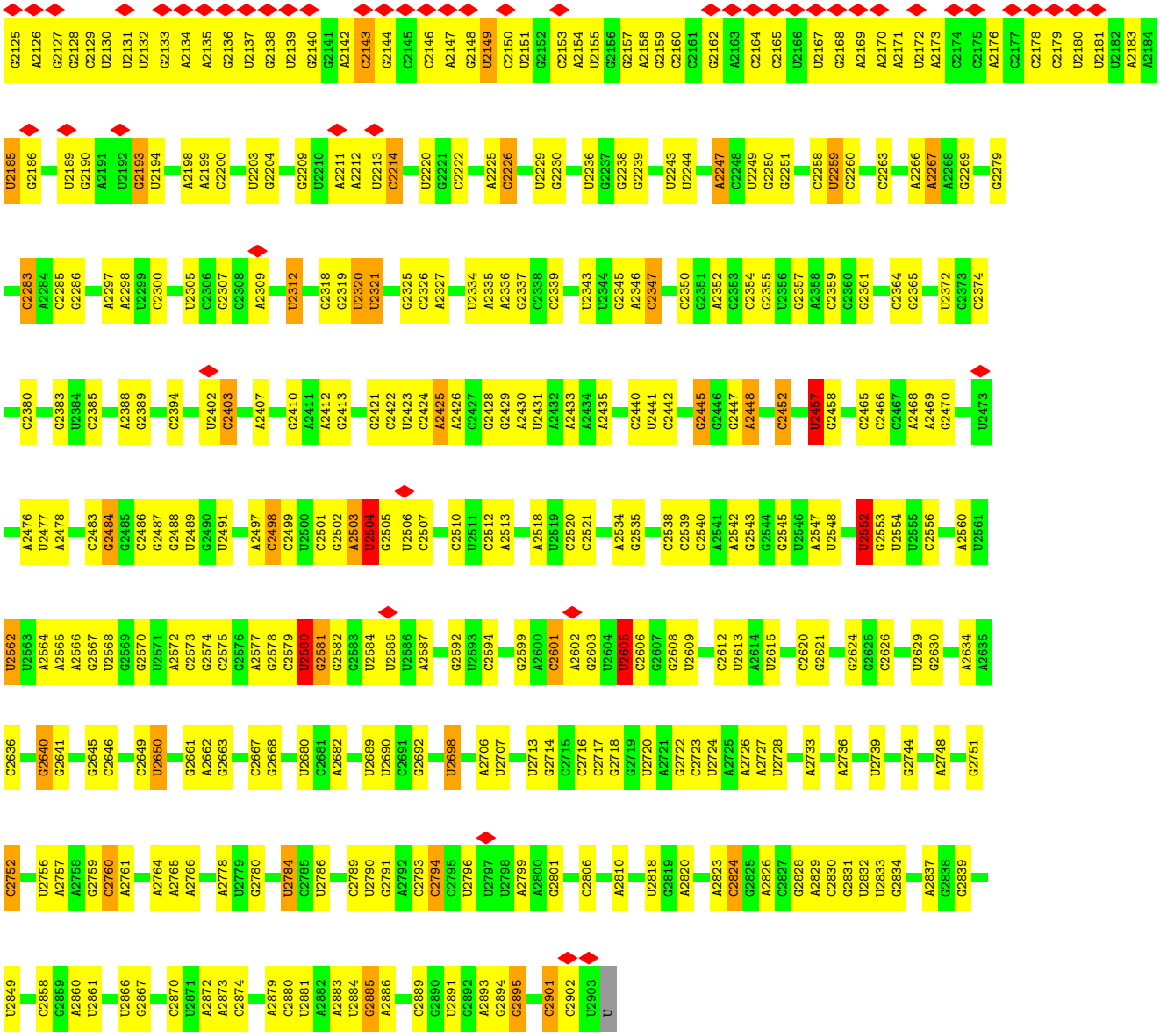
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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 1:

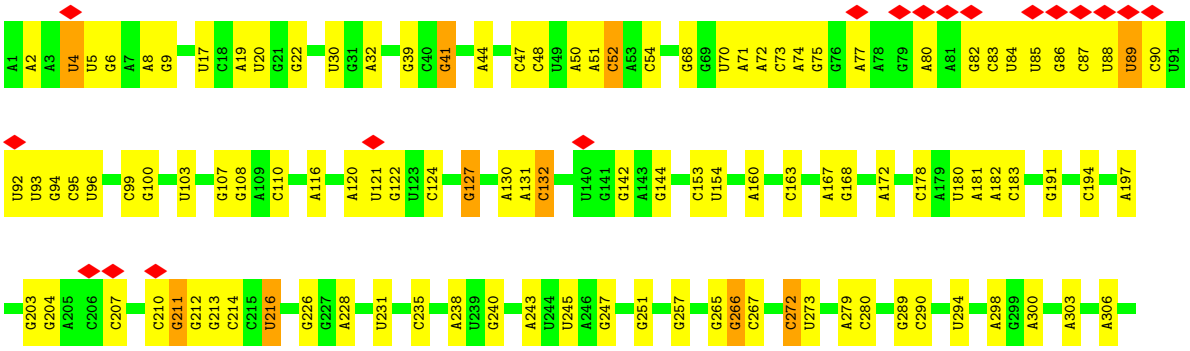


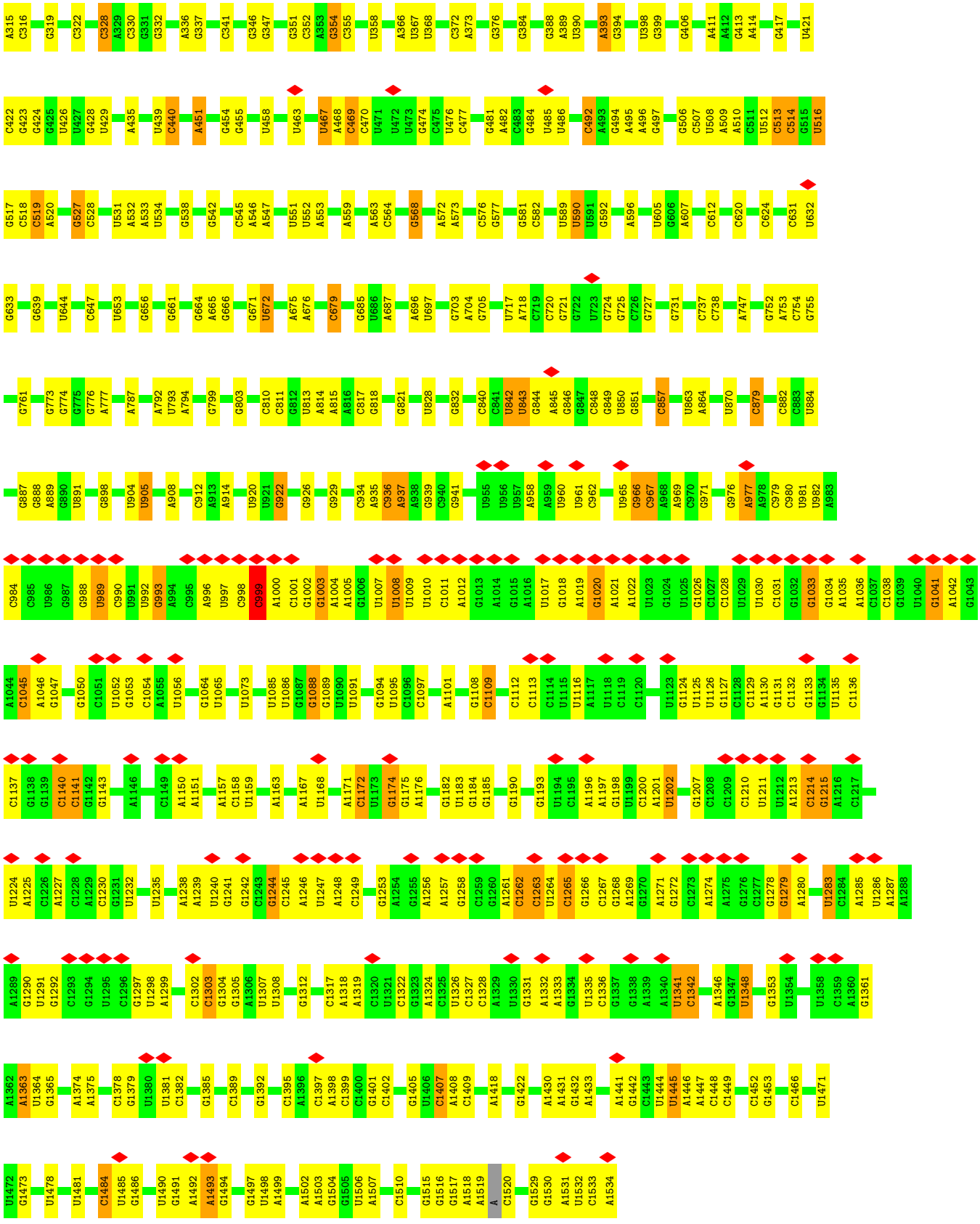




• Molecule 2: 16S ribosomal RNA

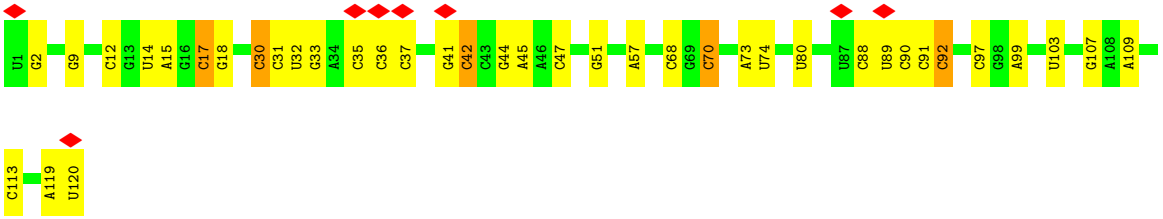
Chain 2:





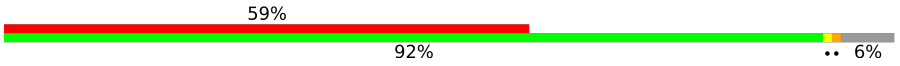
• Molecule 3: 5S ribosomal RNA

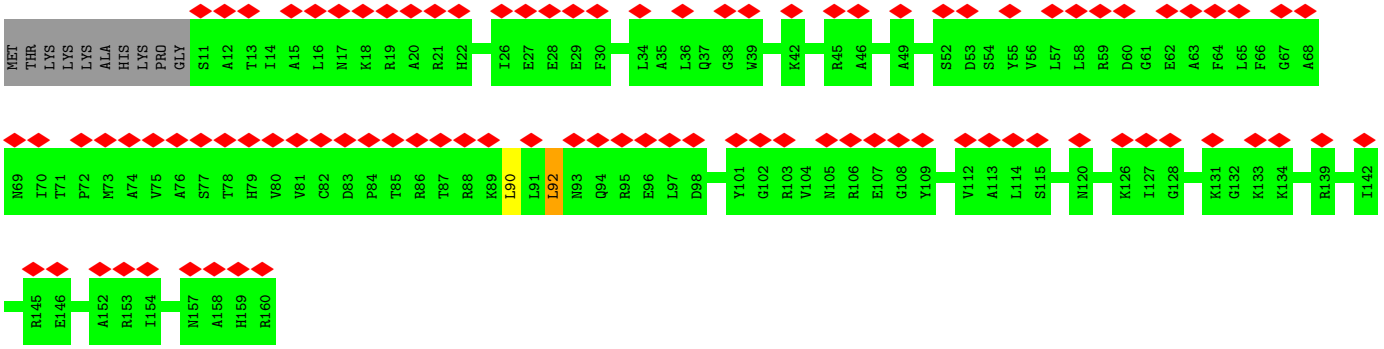
Chain 3:



• Molecule 4: SsrA-binding protein

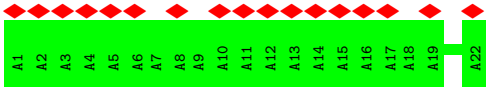
Chain 5:





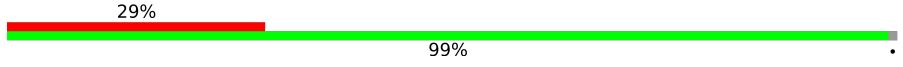
• Molecule 5: Nascent peptide

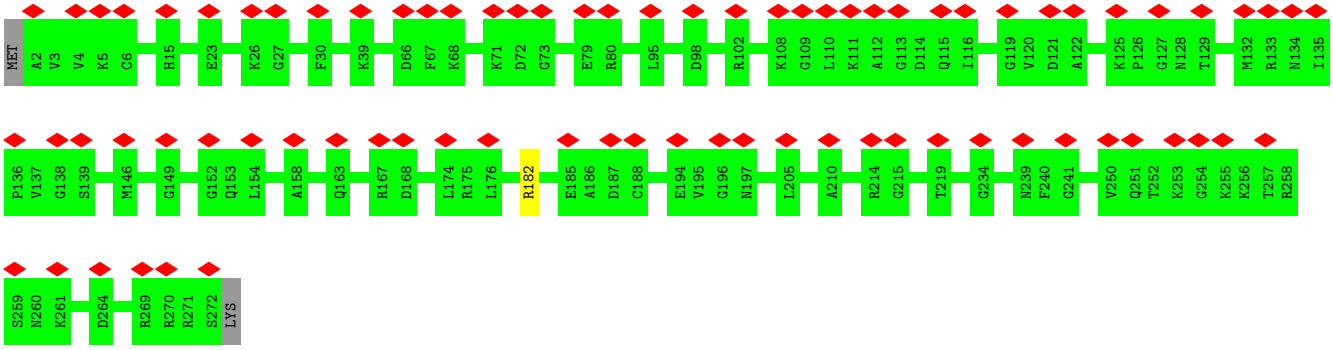
Chain 6:



• Molecule 6: 50S ribosomal protein L2

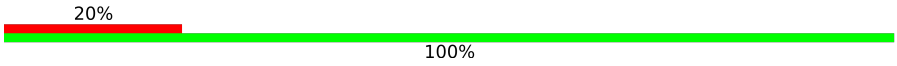
Chain B:

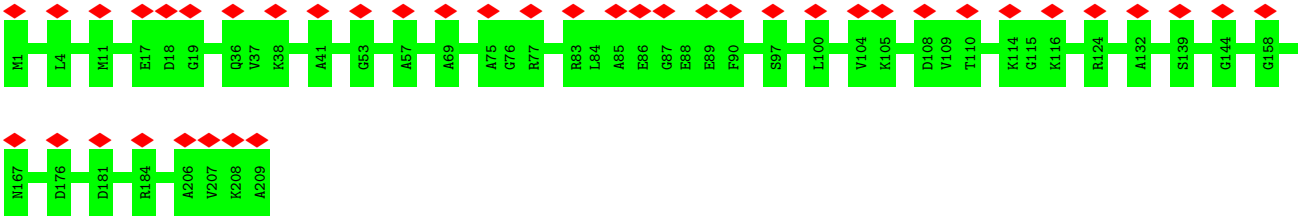




• Molecule 7: 50S ribosomal protein L3

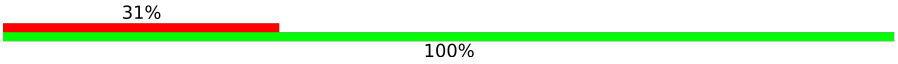
Chain C:

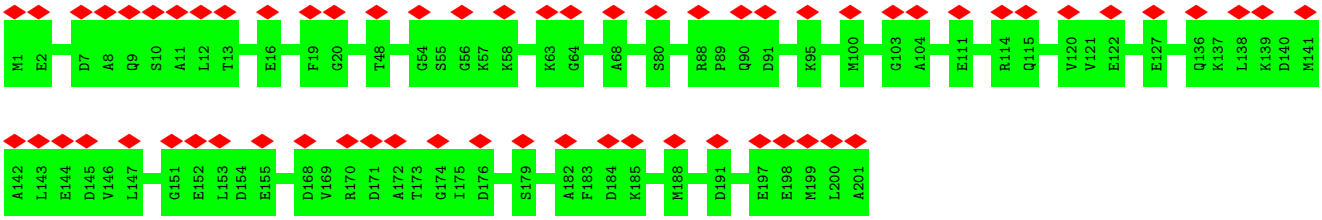




• Molecule 8: 50S ribosomal protein L4

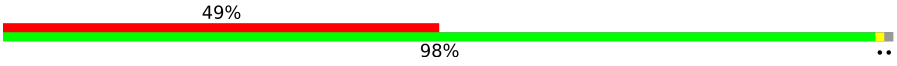
Chain D:

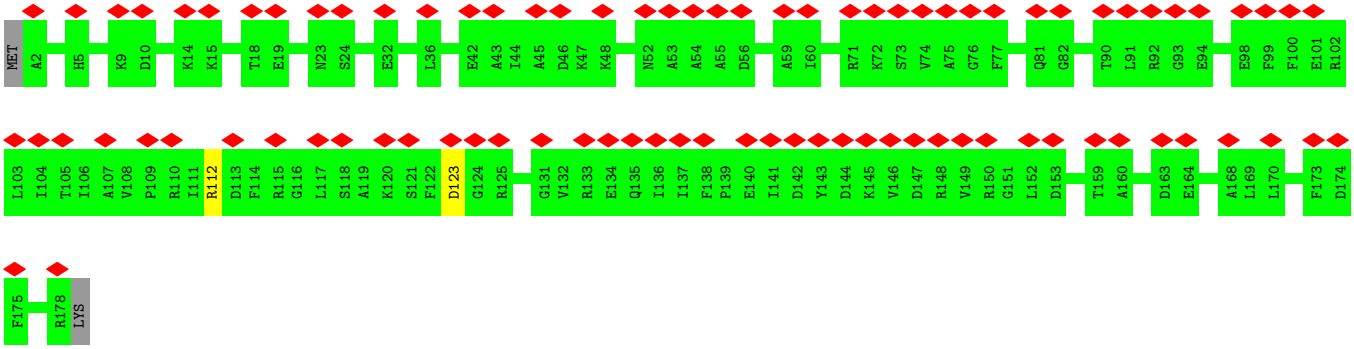




• Molecule 9: 50S ribosomal protein L5

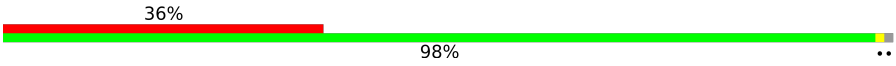
Chain E:

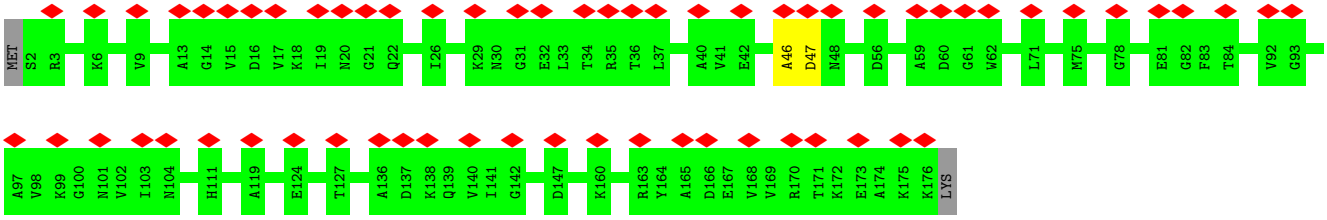




• Molecule 10: 50S ribosomal protein L6

Chain F:



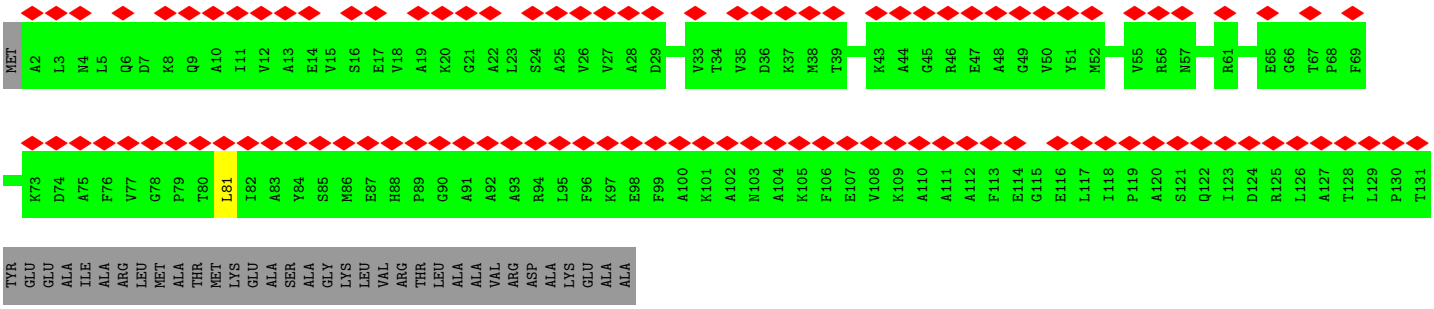


• Molecule 11: 50S ribosomal protein L9

Chain G:

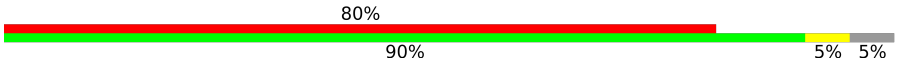
• Molecule 12: 50S ribosomal protein L10

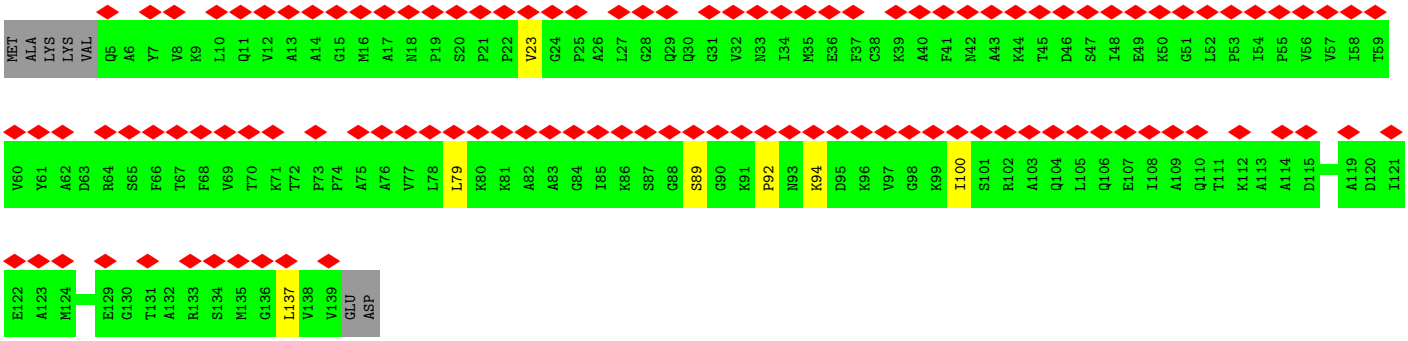
Chain H:



• Molecule 13: 50S ribosomal protein L11

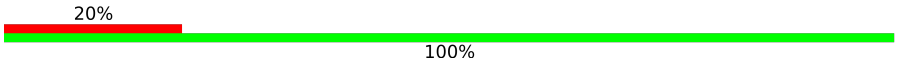
Chain I:

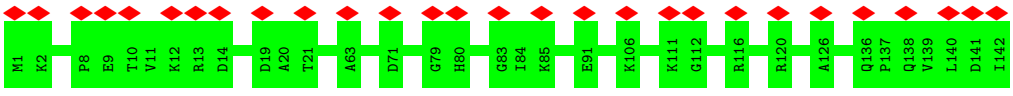




• Molecule 14: 50S ribosomal protein L13

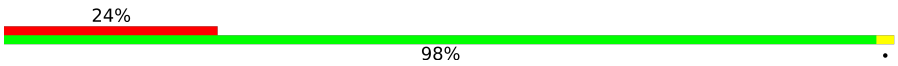
Chain J:

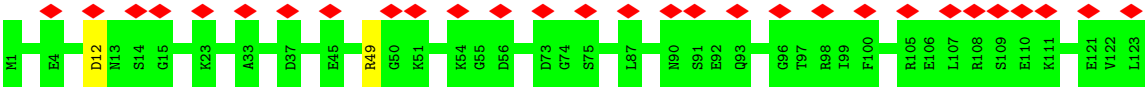




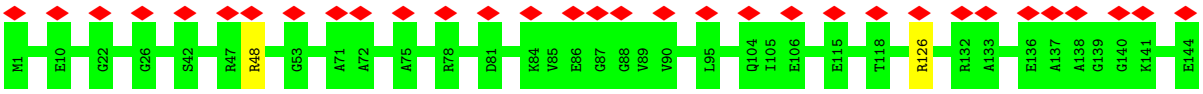
• Molecule 15: 50S ribosomal protein L14

Chain K:

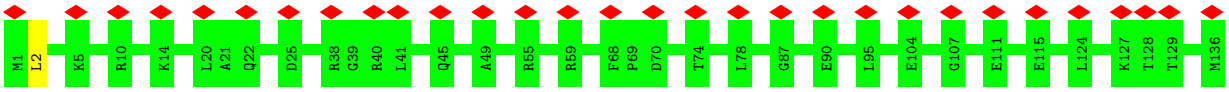




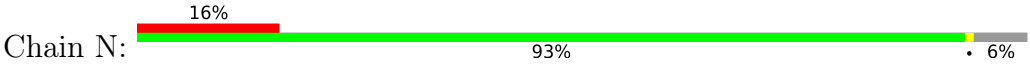
• Molecule 16: 50S ribosomal protein L15

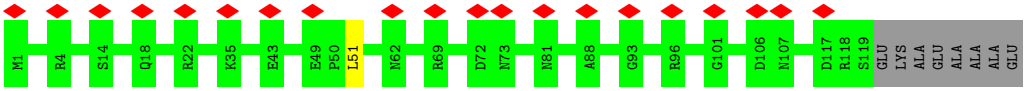


• Molecule 17: 50S ribosomal protein L16

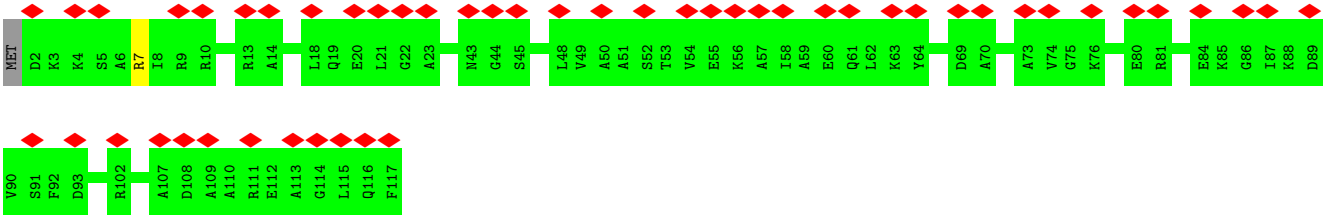


• Molecule 18: 50S ribosomal protein L17

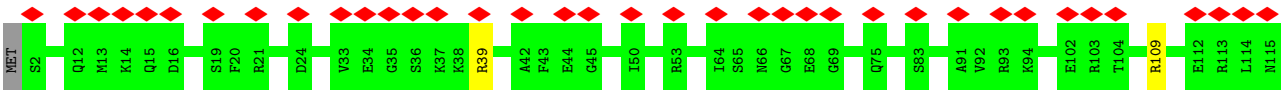




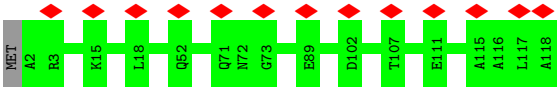
• Molecule 19: 50S ribosomal protein L18



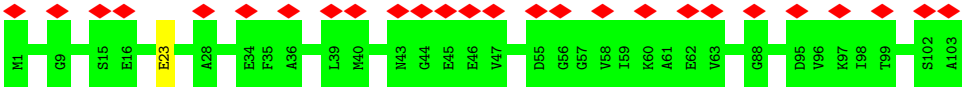
• Molecule 20: 50S ribosomal protein L19



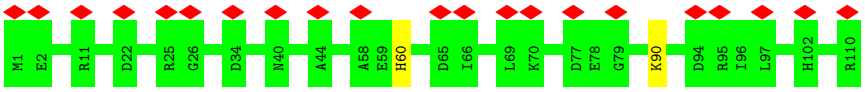
• Molecule 21: 50S ribosomal protein L20



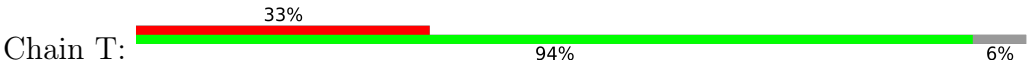
• Molecule 22: 50S ribosomal protein L21

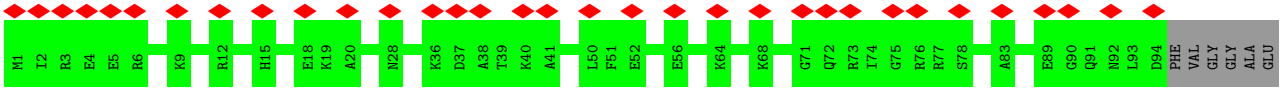


• Molecule 23: 50S ribosomal protein L22

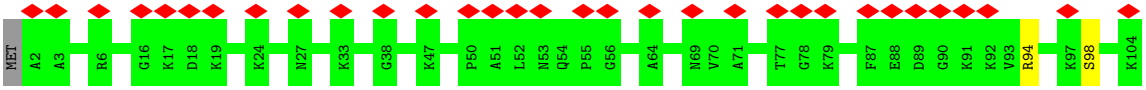


• Molecule 24: 50S ribosomal protein L23

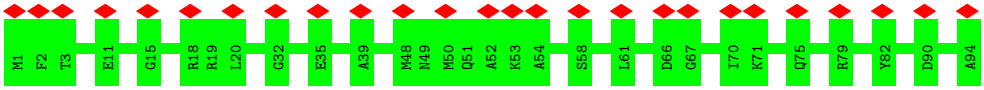




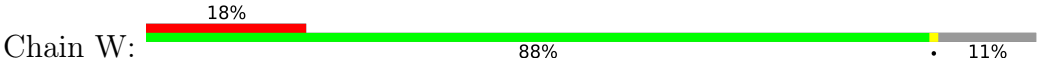
• Molecule 25: 50S ribosomal protein L24

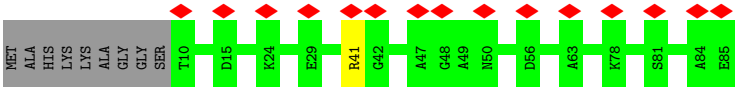


• Molecule 26: 50S ribosomal protein L25



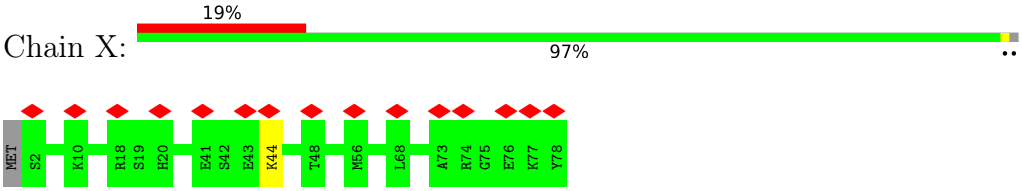
• Molecule 27: 50S ribosomal protein L27





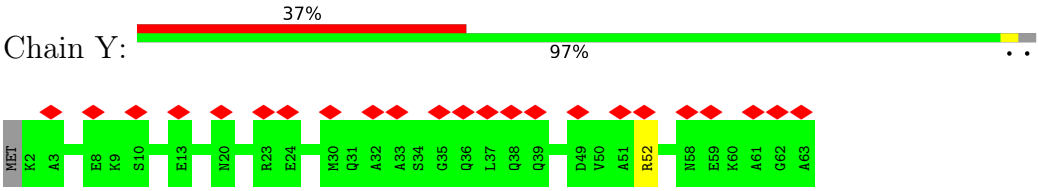
• Molecule 28: 50S ribosomal protein L28

Chain X:



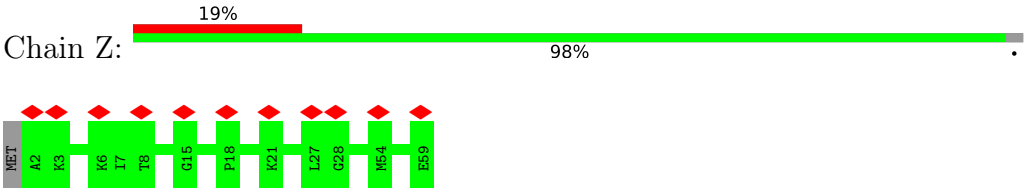
• Molecule 29: 50S ribosomal protein L29

Chain Y:



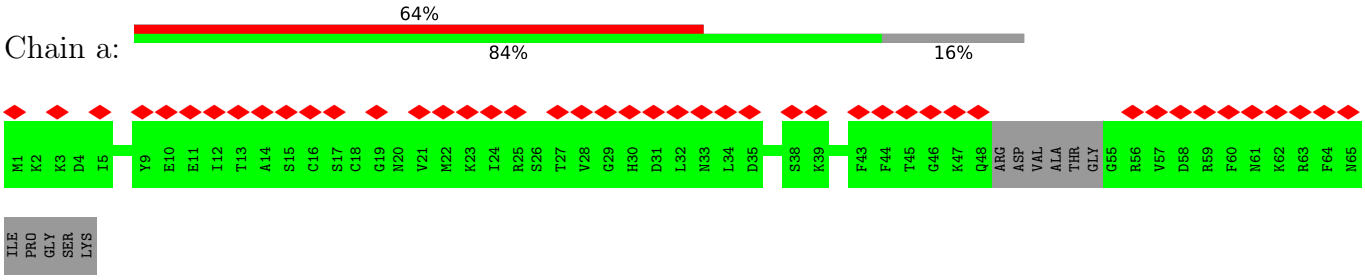
• Molecule 30: 50S ribosomal protein L30

Chain Z:



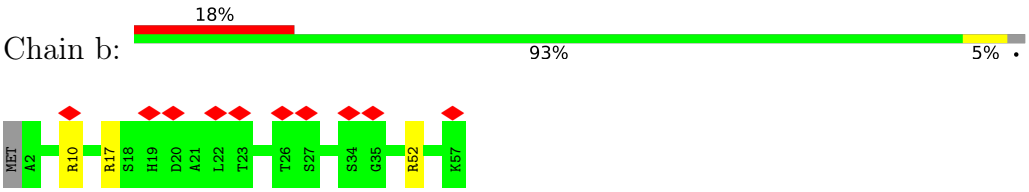
• Molecule 31: 50S ribosomal protein L31

Chain a:



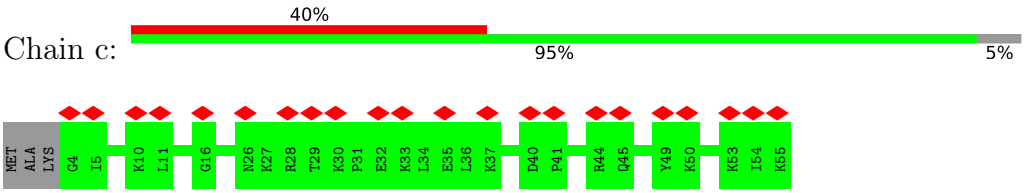
• Molecule 32: 50S ribosomal protein L32

Chain b:



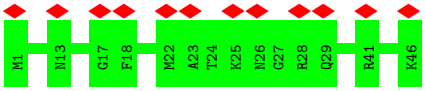
• Molecule 33: 50S ribosomal protein L33

Chain c:



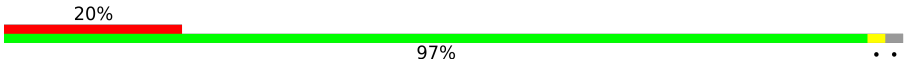
• Molecule 34: 50S ribosomal protein L34

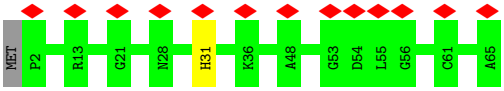
Chain d:



• Molecule 35: 50S ribosomal protein L35

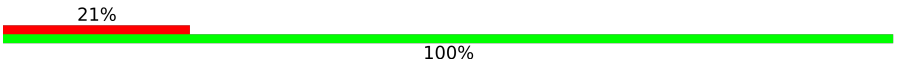
Chain e:

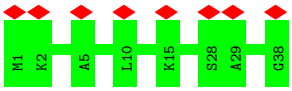




• Molecule 36: 50S ribosomal protein L36

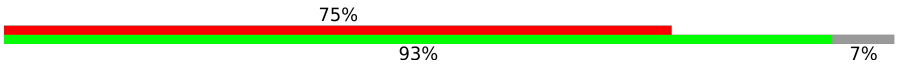
Chain f:

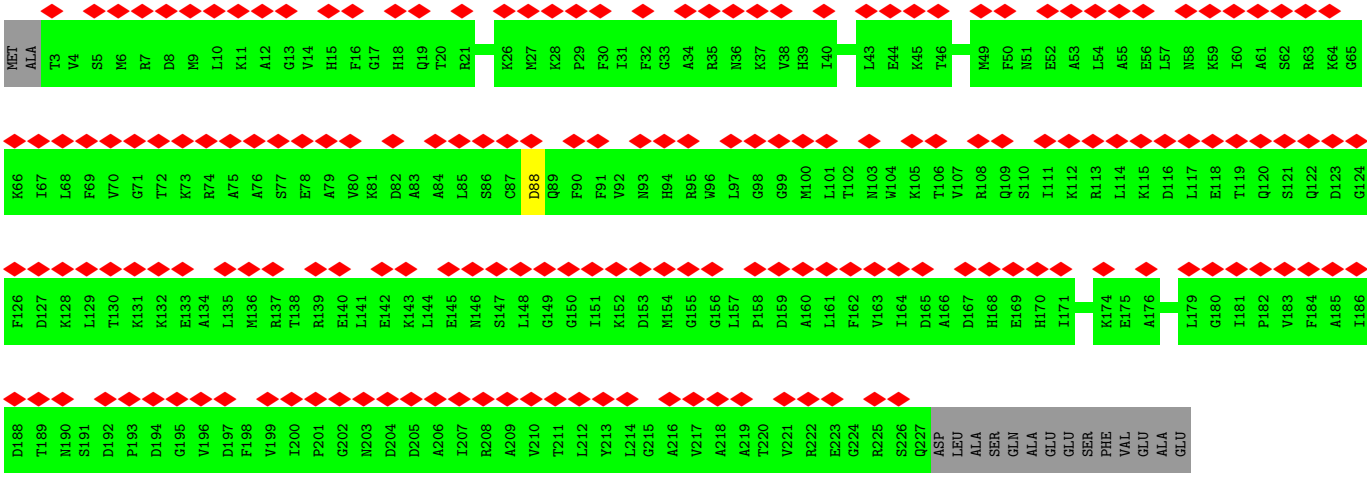




• Molecule 37: 30S ribosomal protein S2

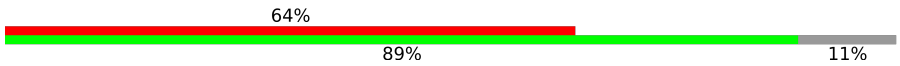
Chain g:

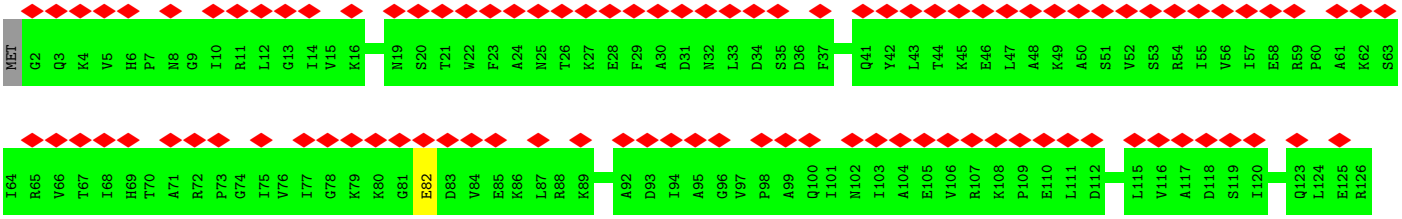


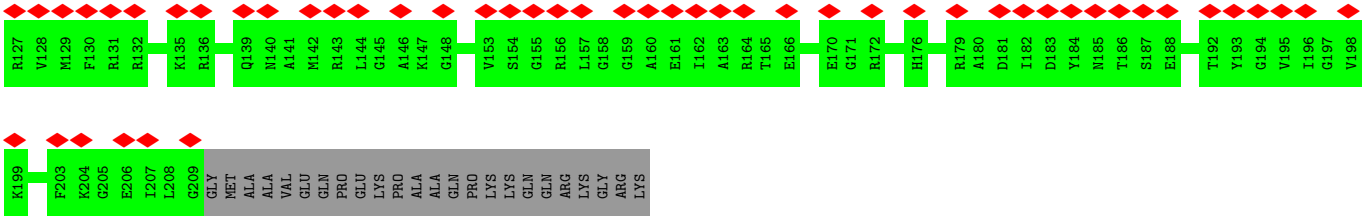


• Molecule 38: 30S ribosomal protein S3

Chain h:

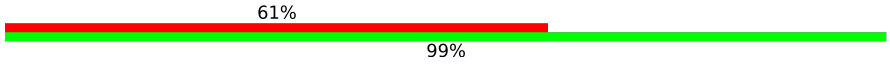


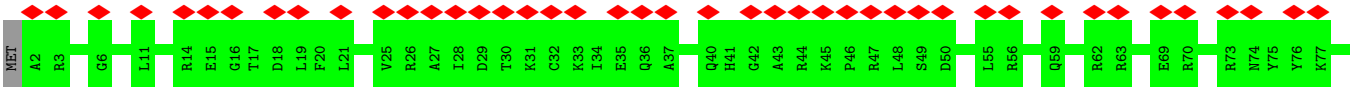


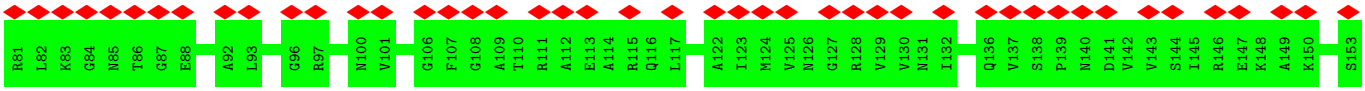


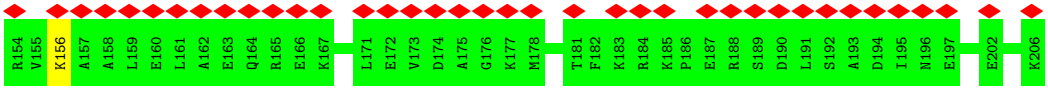
• Molecule 39: 30S ribosomal protein S4

Chain i:



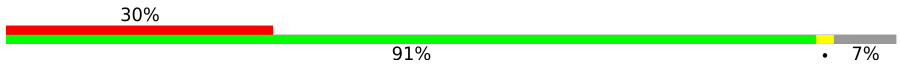


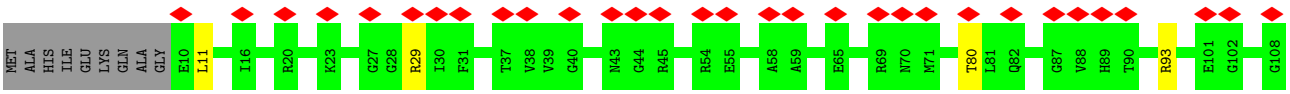


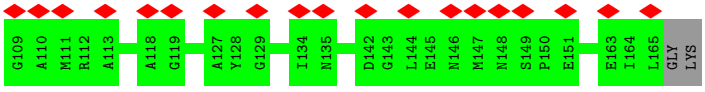


• Molecule 40: 30S ribosomal protein S5

Chain j:

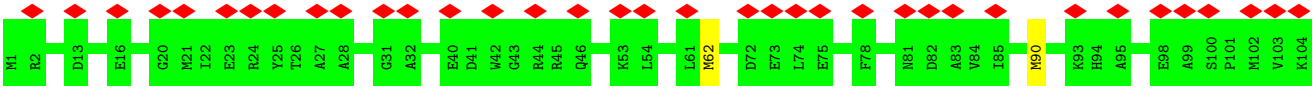






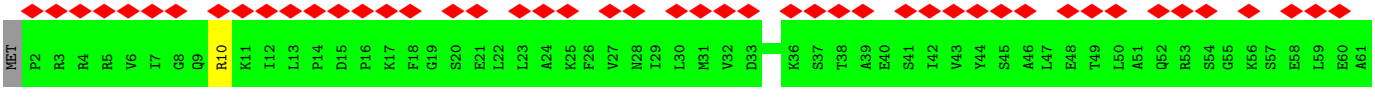
• Molecule 41: 30S ribosomal protein S6

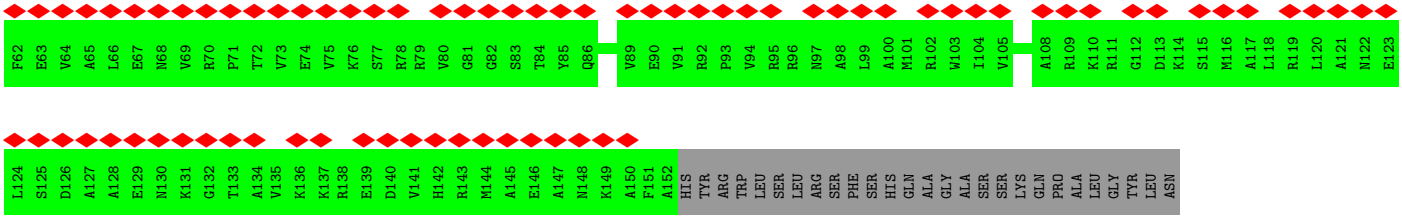
Chain k:



• Molecule 42: 30S ribosomal protein S7

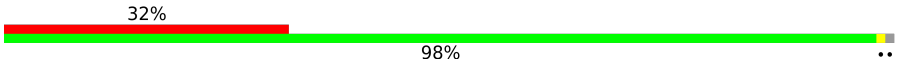
Chain l:

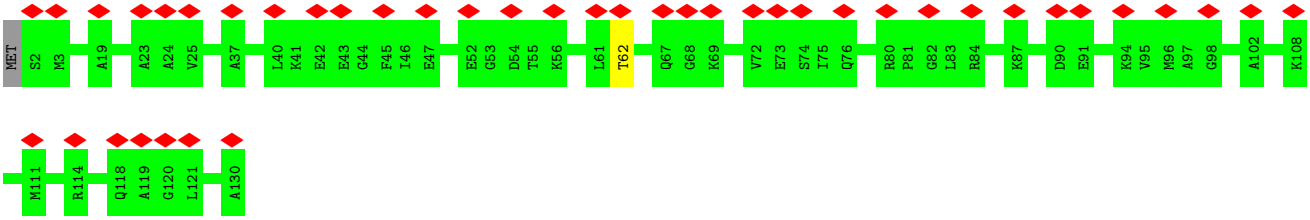




• Molecule 43: 30S ribosomal protein S8

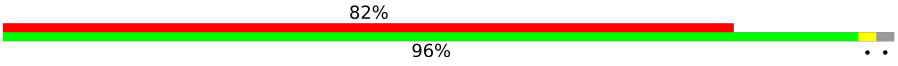
Chain m:

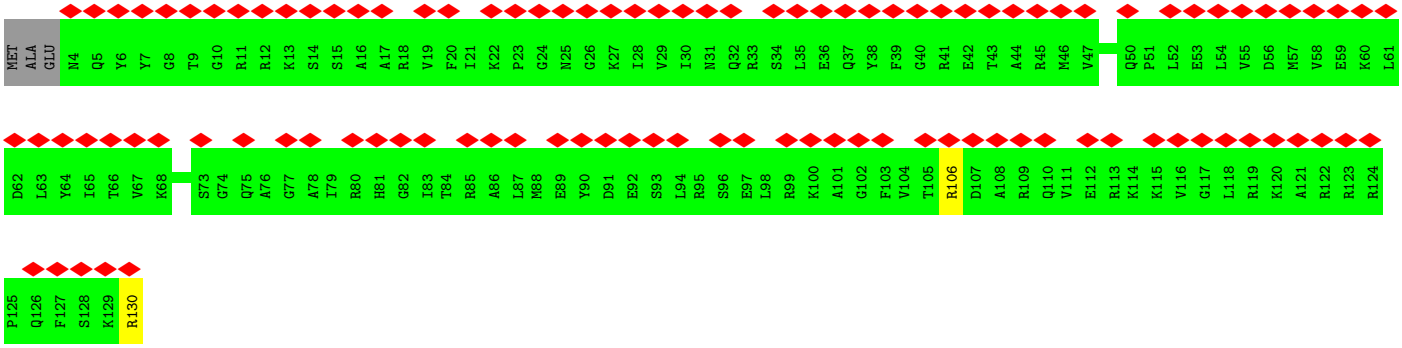




• Molecule 44: 30S ribosomal protein S9

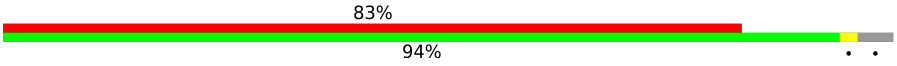
Chain n:

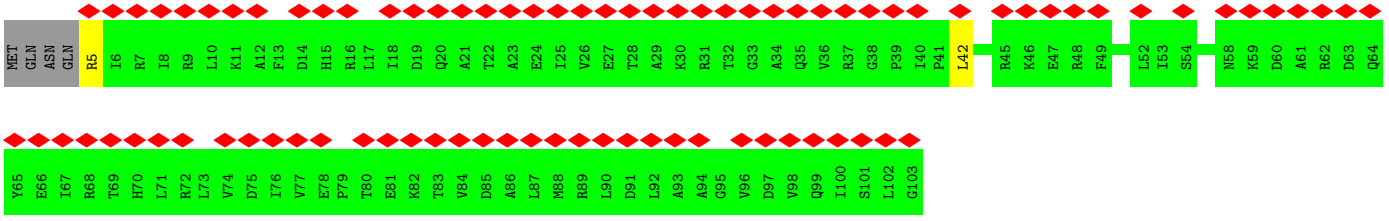




• Molecule 45: 30S ribosomal protein S10

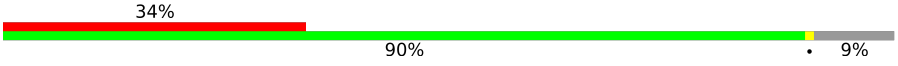
Chain o:

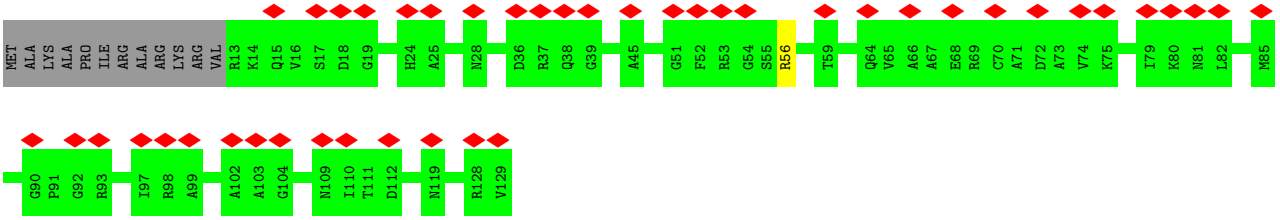




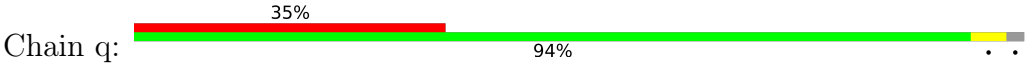
• Molecule 46: 30S ribosomal protein S11

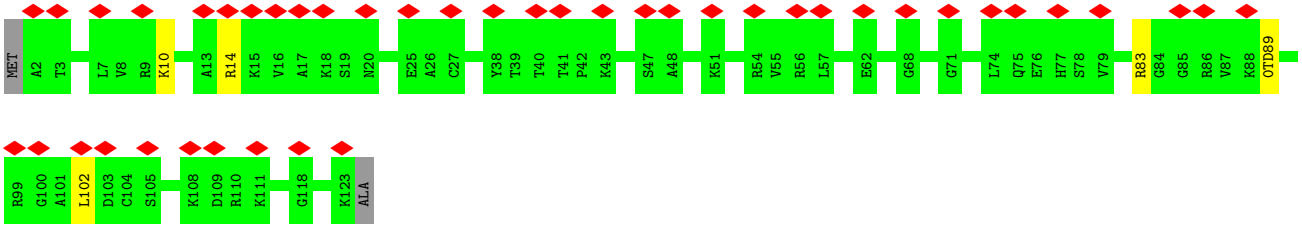
Chain p:



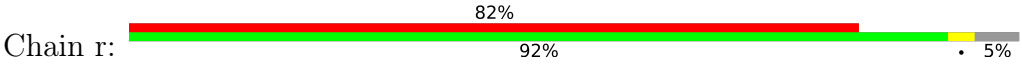


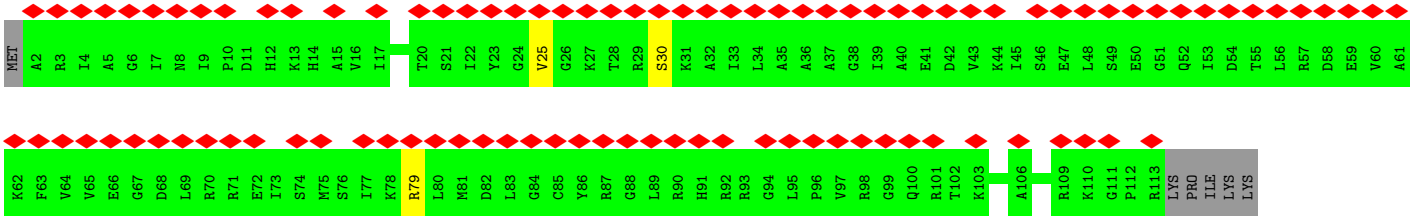
• Molecule 47: 30S ribosomal protein S12



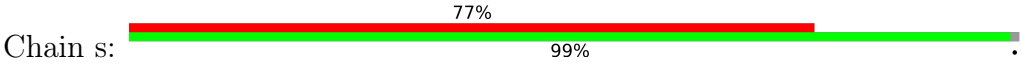


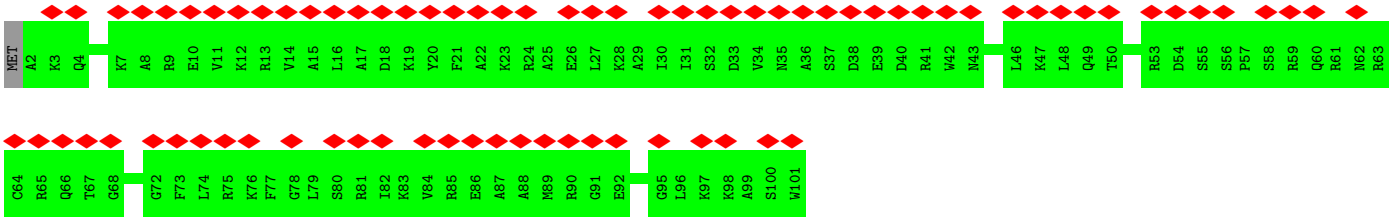
• Molecule 48: 30S ribosomal protein S13



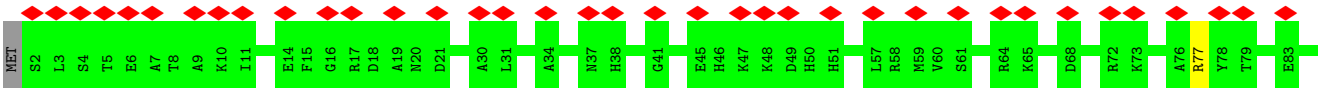


• Molecule 49: 30S ribosomal protein S14



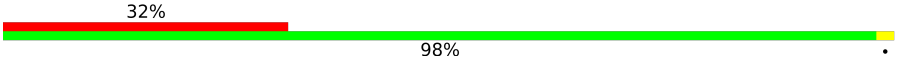


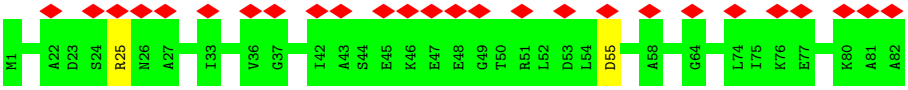
• Molecule 50: 30S ribosomal protein S15



• Molecule 51: 30S ribosomal protein S16

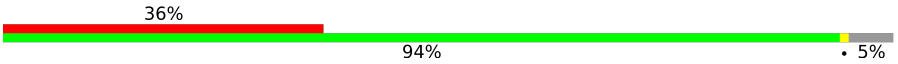
Chain u:

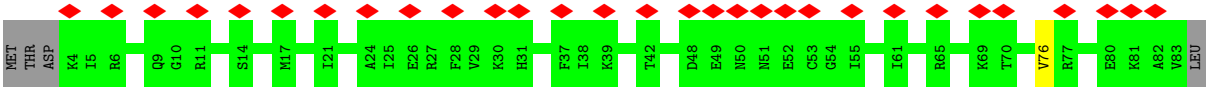




• Molecule 52: 30S ribosomal protein S17

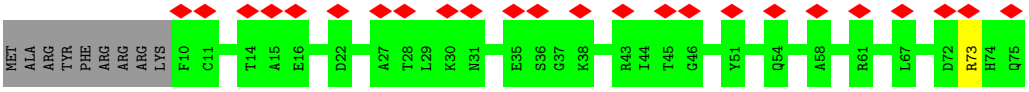
Chain v:





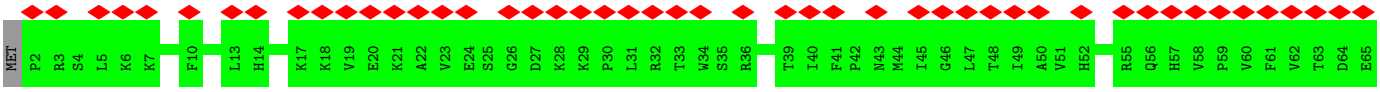
• Molecule 53: 30S ribosomal protein S18

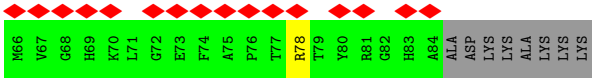
Chain w:



• Molecule 54: 30S ribosomal protein S19

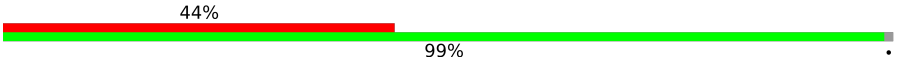
Chain x:

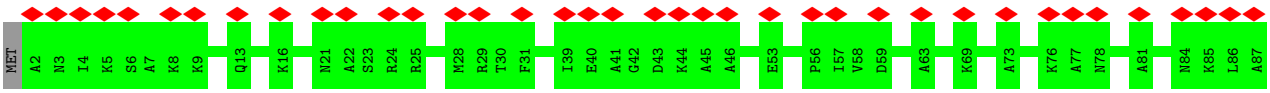




• Molecule 55: 30S ribosomal protein S20

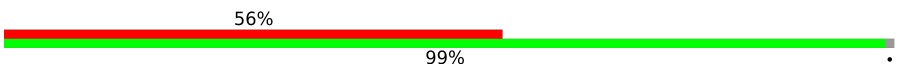
Chain y:

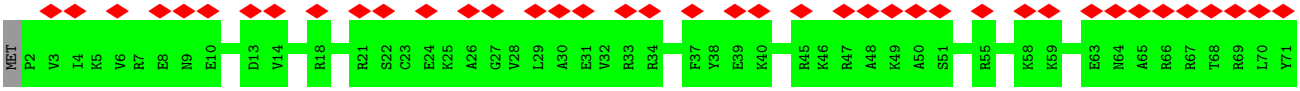




• Molecule 56: 30S ribosomal protein S21

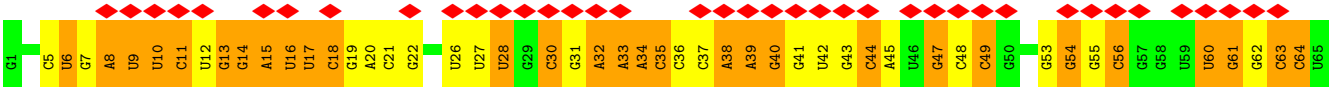
Chain z:

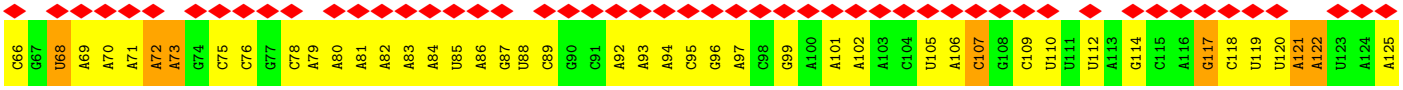


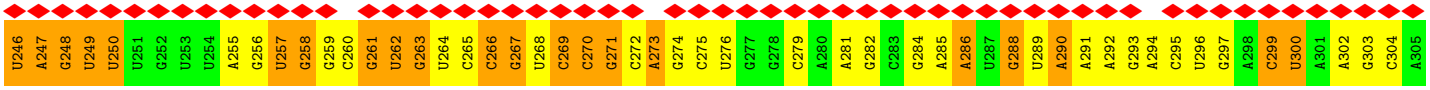


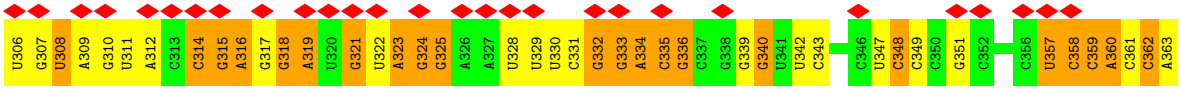
• Molecule 57: transfer-messenger RNA (tmRNA)

Chain 4:









4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	18018	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.407	Depositor
Minimum map value	-0.269	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.018	Depositor
Recommended contour level	0.0934	Depositor
Map size (Å)	437.0, 437.0, 437.0	wwPDB
Map dimensions	380, 380, 380	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.15, 1.15, 1.15	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: 4OC, 5MU, G7M, MG, ZN, OMC, 6MZ, 1MG, 5MC, OMG, 0TD, 2MG, 7MG, OMU, 2MA, UR3, 3TD, PSU, MA6

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	1	0.91	8/69285 (0.0%)	1.33	664/108083 (0.6%)
2	2	0.74	0/36587	1.28	306/57062 (0.5%)
3	3	0.73	0/2872	1.22	19/4478 (0.4%)
4	5	0.42	0/1231	0.67	0/1655
5	6	0.30	0/109	0.70	0/151
6	B	0.43	0/2121	0.62	0/2852
7	C	0.42	0/1586	0.63	0/2134
8	D	0.41	0/1571	0.59	0/2113
9	E	0.37	0/1434	0.62	0/1926
10	F	0.35	0/1333	0.59	0/1805
11	G	0.32	0/1122	0.59	0/1515
12	H	0.39	0/993	0.75	1/1340 (0.1%)
13	I	0.31	0/998	0.69	3/1348 (0.2%)
14	J	0.43	0/1152	0.57	0/1551
15	K	0.42	0/955	0.62	1/1279 (0.1%)
16	L	0.38	0/1062	0.61	0/1413
17	M	0.51	1/1093 (0.1%)	0.59	0/1460
18	N	0.43	0/964	0.69	2/1289 (0.2%)
19	O	0.35	0/902	0.53	0/1209
20	P	0.42	0/929	0.59	0/1242
21	Q	0.48	0/960	0.55	0/1278
22	R	0.45	0/829	0.60	0/1107
23	S	0.42	0/864	0.61	0/1156
24	T	0.37	0/752	0.55	0/1005
25	U	0.39	0/796	0.60	1/1062 (0.1%)
26	V	0.38	0/766	0.57	0/1025
27	W	0.42	0/589	0.59	0/779
28	X	0.40	0/635	0.57	0/848
29	Y	0.33	0/502	0.52	0/667
30	Z	0.36	0/452	0.59	0/605
31	a	0.31	0/480	0.52	0/638

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	b	0.42	0/450	0.66	0/599
33	c	0.38	0/433	0.61	0/576
34	d	0.39	0/380	0.62	0/498
35	e	0.42	0/513	0.67	0/676
36	f	0.44	0/303	0.62	0/397
37	g	0.33	0/1791	0.61	1/2413 (0.0%)
38	h	0.34	0/1663	0.59	0/2241
39	i	0.35	0/1665	0.53	0/2227
40	j	0.39	0/1165	0.64	0/1568
41	k	0.36	0/867	0.61	0/1171
42	l	0.31	0/1195	0.58	0/1602
43	m	0.39	0/989	0.62	0/1326
44	n	0.32	0/1034	0.60	0/1375
45	o	0.32	0/800	0.65	1/1082 (0.1%)
46	p	0.35	0/893	0.60	0/1205
47	q	0.40	0/954	0.68	0/1279
48	r	0.32	0/875	0.68	0/1170
49	s	0.31	0/817	0.52	0/1088
50	t	0.35	0/722	0.60	0/964
51	u	0.36	0/659	0.62	1/884 (0.1%)
52	v	0.38	0/657	0.62	0/881
53	w	0.36	0/553	0.50	0/743
54	x	0.32	0/680	0.56	0/915
55	y	0.30	0/675	0.50	0/895
56	z	0.35	0/597	0.53	0/792
57	4	0.80	3/8680 (0.0%)	2.16	591/13528 (4.4%)
All	All	0.74	12/165934 (0.0%)	1.23	1591/248170 (0.6%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1	26	1
2	2	0	1
4	5	0	1
10	F	0	1
13	I	0	2
22	R	0	1
23	S	0	1
35	e	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
38	h	0	1
43	m	0	1
47	q	0	1
53	w	0	1
All	All	26	13

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
17	M	2	LEU	C-N	-9.15	1.13	1.34
57	4	335	C	N1-C2	6.53	1.46	1.40
1	1	1253	A	N9-C4	-6.17	1.34	1.37
1	1	586	A	N9-C4	-6.08	1.34	1.37
57	4	237	U	N1-C2	6.07	1.44	1.38
1	1	978	G	C2-N3	-6.05	1.27	1.32
1	1	2448	A	N9-C4	-5.92	1.34	1.37
1	1	809	G	N7-C5	-5.11	1.36	1.39
57	4	32	A	N9-C4	5.11	1.41	1.37
1	1	2592	G	N7-C5	-5.10	1.36	1.39
1	1	2542	A	N9-C4	-5.10	1.34	1.37
1	1	2020	A	N9-C4	-5.08	1.34	1.37

All (1591) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	335	C	N1-C2-O2	20.18	131.01	118.90
57	4	335	C	N3-C2-O2	-19.68	108.12	121.90
57	4	335	C	C6-N1-C2	-15.59	114.06	120.30
57	4	173	C	N1-C2-O2	15.35	128.11	118.90
57	4	30	C	C6-N1-C2	-15.28	114.19	120.30
57	4	154	C	N1-C2-O2	15.28	128.07	118.90
57	4	237	U	N3-C2-O2	-14.74	111.88	122.20
57	4	154	C	N3-C2-O2	-13.87	112.19	121.90
57	4	362	C	C6-N1-C2	-13.68	114.83	120.30
57	4	335	C	C2-N1-C1'	13.48	133.63	118.80
57	4	173	C	N3-C2-O2	-13.44	112.49	121.90
57	4	258	G	O5'-P-OP1	-13.19	93.83	105.70
57	4	154	C	C2-N1-C1'	12.97	133.07	118.80
57	4	266	C	C6-N1-C2	-12.96	115.11	120.30
57	4	30	C	C5-C6-N1	12.52	127.26	121.00
57	4	154	C	C6-N1-C2	-12.50	115.30	120.30
57	4	237	U	C2-N1-C1'	12.46	132.66	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	18	C	O4'-C1'-N1	12.36	118.08	108.20
57	4	155	C	C2-N1-C1'	12.11	132.12	118.80
57	4	237	U	N1-C2-O2	12.08	131.25	122.80
57	4	34	A	O5'-P-OP1	-12.00	94.90	105.70
57	4	155	C	N1-C2-O2	11.97	126.08	118.90
57	4	35	C	O5'-P-OP1	-11.89	95.00	105.70
57	4	266	C	C5-C6-N1	11.82	126.91	121.00
57	4	75	C	C5-C6-N1	11.65	126.83	121.00
57	4	245	C	C6-N1-C2	-11.61	115.66	120.30
57	4	209	C	C6-N1-C2	-11.60	115.66	120.30
57	4	224	A	O4'-C1'-N9	11.51	117.41	108.20
57	4	299	C	N1-C2-O2	11.41	125.75	118.90
57	4	75	C	C6-N1-C2	-11.33	115.77	120.30
2	2	467	U	N3-C2-O2	-11.30	114.29	122.20
2	2	467	U	C2-N1-C1'	11.22	131.17	117.70
57	4	173	C	C2-N1-C1'	11.17	131.09	118.80
57	4	173	C	C6-N1-C2	-10.99	115.90	120.30
1	1	1621	U	N1-C2-O2	10.92	130.44	122.80
57	4	270	C	C6-N1-C2	-10.89	115.94	120.30
57	4	157	C	C6-N1-C2	-10.85	115.96	120.30
2	2	467	U	N1-C2-O2	10.82	130.37	122.80
57	4	284	G	P-O3'-C3'	10.80	132.66	119.70
1	1	544	C	C2-N1-C1'	10.78	130.66	118.80
57	4	60	U	C5-C6-N1	10.77	128.08	122.70
1	1	1621	U	N3-C2-O2	-10.76	114.67	122.20
57	4	324	G	O4'-C1'-N9	10.75	116.80	108.20
57	4	137	C	C6-N1-C2	-10.68	116.03	120.30
1	1	544	C	N1-C2-O2	10.66	125.30	118.90
57	4	161	U	P-O3'-C3'	10.60	132.42	119.70
57	4	12	U	N1-C2-O2	10.59	130.21	122.80
57	4	237	U	C6-N1-C2	-10.57	114.66	121.00
57	4	245	C	C5-C6-N1	10.53	126.27	121.00
57	4	245	C	C2-N1-C1'	10.52	130.37	118.80
57	4	299	C	C2-N1-C1'	10.41	130.25	118.80
57	4	18	C	C2-N1-C1'	10.38	130.22	118.80
57	4	262	U	N1-C2-O2	10.36	130.05	122.80
57	4	12	U	C2-N1-C1'	10.29	130.04	117.70
1	1	830	G	O4'-C1'-N9	-10.27	99.98	108.20
1	1	1621	U	C2-N1-C1'	10.21	129.96	117.70
57	4	241	C	C6-N1-C2	-10.21	116.22	120.30
57	4	210	C	C6-N1-C2	-10.21	116.22	120.30
57	4	154	C	O5'-P-OP2	-10.16	96.56	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	304	C	C6-N1-C2	-10.06	116.28	120.30
57	4	137	C	P-O3'-C3'	9.98	131.68	119.70
57	4	48	C	C6-N1-C2	-9.98	116.31	120.30
2	2	1341	U	C2-N1-C1'	9.95	129.65	117.70
2	2	1341	U	N1-C2-O2	9.85	129.69	122.80
57	4	290	A	P-O3'-C3'	9.80	131.46	119.70
57	4	214	C	C5-C6-N1	9.76	125.88	121.00
57	4	263	G	C8-N9-C4	-9.70	102.52	106.40
2	2	1303	C	C2-N1-C1'	9.65	129.41	118.80
1	1	2075	U	N3-C4-O4	9.61	126.12	119.40
57	4	214	C	C6-N1-C2	-9.54	116.48	120.30
57	4	246	U	O5'-P-OP2	-9.53	97.13	105.70
1	1	2226	C	N1-C2-O2	9.52	124.61	118.90
2	2	99	C	N1-C2-O2	9.52	124.61	118.90
57	4	261	G	OP1-P-O3'	9.49	126.07	105.20
57	4	16	U	O5'-P-OP2	-9.47	97.18	105.70
57	4	222	U	N1-C2-O2	9.45	129.42	122.80
57	4	186	A	O4'-C1'-N9	9.39	115.72	108.20
57	4	245	C	N1-C2-O2	9.39	124.54	118.90
1	1	1075	C	C2-N1-C1'	9.38	129.12	118.80
57	4	109	C	C6-N1-C2	-9.36	116.56	120.30
57	4	12	U	N3-C2-O2	-9.35	115.66	122.20
1	1	569	U	N1-C2-O2	9.31	129.32	122.80
1	1	1999	C	C6-N1-C2	-9.31	116.58	120.30
57	4	159	C	C6-N1-C2	-9.31	116.58	120.30
1	1	1092	C	C2-N1-C1'	9.27	129.00	118.80
1	1	2075	U	C5-C4-O4	-9.26	120.34	125.90
57	4	118	C	C6-N1-C2	-9.26	116.60	120.30
57	4	222	U	C2-N1-C1'	9.23	128.78	117.70
1	1	544	C	N3-C2-O2	-9.19	115.47	121.90
57	4	120	U	N3-C2-O2	-9.17	115.78	122.20
57	4	300	U	N1-C2-O2	9.14	129.20	122.80
57	4	288	G	C8-N9-C4	-9.13	102.75	106.40
2	2	514	C	N3-C2-O2	-9.11	115.52	121.90
1	1	305	C	N3-C2-O2	-9.11	115.53	121.90
1	1	1075	C	N1-C2-O2	9.10	124.36	118.90
57	4	181	G	N3-C4-C5	-9.08	124.06	128.60
1	1	2752	C	N1-C2-O2	9.06	124.34	118.90
1	1	915	C	C2-N1-C1'	9.04	128.74	118.80
1	1	2902	C	N3-C2-O2	-9.02	115.59	121.90
57	4	155	C	C6-N1-C2	-9.00	116.70	120.30
57	4	300	U	N3-C2-O2	-8.99	115.91	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	186	A	C8-N9-C4	-8.99	102.20	105.80
57	4	299	C	N3-C2-O2	-8.99	115.61	121.90
57	4	155	C	N3-C2-O2	-8.98	115.61	121.90
57	4	332	G	C5'-C4'-O4'	-8.96	98.35	109.10
1	1	378	C	N1-C2-O2	8.95	124.27	118.90
57	4	335	C	O4'-C1'-N1	8.90	115.32	108.20
1	1	1376	C	N1-C2-O2	8.89	124.23	118.90
57	4	314	C	P-O3'-C3'	8.89	130.37	119.70
2	2	999	C	C6-N1-C2	-8.87	116.75	120.30
57	4	308	U	C5-C6-N1	8.84	127.12	122.70
57	4	308	U	P-O3'-C3'	8.82	130.28	119.70
2	2	1244	G	N3-C4-N9	-8.79	120.73	126.00
2	2	1109	C	C3'-C2'-C1'	8.75	108.50	101.50
57	4	265	C	C5-C6-N1	8.74	125.37	121.00
1	1	2902	C	N1-C2-O2	8.74	124.14	118.90
57	4	362	C	C5-C6-N1	8.73	125.37	121.00
1	1	2874	C	N1-C2-O2	8.71	124.13	118.90
2	2	672	U	N1-C2-O2	8.71	128.90	122.80
2	2	514	C	C6-N1-C2	-8.69	116.82	120.30
57	4	269	C	C6-N1-C2	-8.69	116.83	120.30
57	4	299	C	C6-N1-C2	-8.66	116.84	120.30
57	4	266	C	P-O3'-C3'	8.62	130.04	119.70
57	4	222	U	N3-C2-O2	-8.61	116.17	122.20
2	2	528	C	C6-N1-C2	-8.61	116.86	120.30
57	4	151	C	C6-N1-C2	-8.61	116.86	120.30
1	1	1045	C	O4'-C1'-N1	8.60	115.08	108.20
1	1	1376	C	C2-N1-C1'	8.59	128.25	118.80
57	4	233	A	P-O3'-C3'	8.54	129.95	119.70
1	1	1082	U	O4'-C1'-N1	8.53	115.02	108.20
1	1	1081	U	N3-C2-O2	-8.51	116.24	122.20
2	2	469	C	N1-C2-O2	8.51	124.01	118.90
57	4	26	U	C5-C6-N1	8.49	126.95	122.70
57	4	316	A	C8-N9-C4	-8.48	102.41	105.80
57	4	141	C	C6-N1-C2	-8.45	116.92	120.30
1	1	2072	C	C2-N1-C1'	8.45	128.09	118.80
57	4	155	C	C5-C6-N1	8.43	125.21	121.00
1	1	729	G	C4-N9-C1'	8.42	137.44	126.50
57	4	227	C	C6-N1-C2	-8.39	116.94	120.30
57	4	241	C	C5-C6-N1	8.37	125.19	121.00
2	2	1158	C	C6-N1-C2	-8.35	116.96	120.30
57	4	335	C	C5-C6-N1	8.35	125.17	121.00
1	1	1081	U	N1-C2-O2	8.34	128.64	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	349	C	C5-C6-N1	8.33	125.17	121.00
12	H	81	LEU	CA-CB-CG	8.32	134.44	115.30
1	1	62	U	C2-N1-C1'	8.31	127.67	117.70
1	1	1594	U	C2-N1-C1'	8.31	127.67	117.70
1	1	1726	C	C6-N1-C2	-8.30	116.98	120.30
57	4	17	U	N3-C2-O2	-8.30	116.39	122.20
2	2	1158	C	C2-N1-C1'	8.29	127.91	118.80
57	4	262	U	C2-N1-C1'	8.27	127.62	117.70
57	4	349	C	C6-N1-C2	-8.27	116.99	120.30
57	4	48	C	O3'-P-O5'	8.26	119.69	104.00
57	4	13	G	P-O3'-C3'	8.25	129.60	119.70
1	1	1941	C	N1-C2-O2	8.21	123.82	118.90
2	2	1262	C	N1-C2-O2	8.19	123.81	118.90
57	4	63	C	C2-N1-C1'	8.19	127.81	118.80
1	1	839	U	C2-N1-C1'	8.16	127.49	117.70
2	2	1033	G	C4-N9-C1'	8.16	137.10	126.50
1	1	62	U	N3-C2-O2	-8.15	116.49	122.20
57	4	224	A	O5'-P-OP1	-8.15	98.37	105.70
2	2	672	U	C2-N1-C1'	8.15	127.48	117.70
57	4	18	C	N1-C2-O2	8.15	123.79	118.90
57	4	271	G	C8-N9-C4	-8.14	103.14	106.40
2	2	857	C	C2-N1-C1'	8.14	127.75	118.80
57	4	273	A	N7-C8-N9	8.13	117.87	113.80
1	1	312	G	N3-C4-N9	8.11	130.87	126.00
57	4	147	C	C6-N1-C2	-8.11	117.06	120.30
2	2	754	C	N1-C2-O2	8.10	123.76	118.90
57	4	35	C	O4'-C1'-N1	8.10	114.68	108.20
2	2	1448	C	C2-N1-C1'	8.09	127.70	118.80
1	1	2810	A	N7-C8-N9	8.08	117.84	113.80
57	4	54	G	C4-N9-C1'	8.07	137.00	126.50
57	4	63	C	C6-N1-C2	-8.07	117.07	120.30
57	4	295	C	C6-N1-C2	-8.06	117.08	120.30
57	4	76	C	C6-N1-C2	-8.05	117.08	120.30
2	2	1484	C	C6-N1-C2	-8.05	117.08	120.30
57	4	40	G	C8-N9-C4	-8.05	103.18	106.40
1	1	1221	C	N1-C2-O2	8.05	123.73	118.90
57	4	269	C	N1-C2-O2	8.03	123.72	118.90
57	4	130	C	P-O3'-C3'	8.02	129.32	119.70
57	4	155	C	C6-N1-C1'	-8.02	111.18	120.80
57	4	11	C	N1-C2-O2	8.01	123.71	118.90
57	4	154	C	C6-N1-C1'	-8.00	111.20	120.80
3	3	17	C	C2-N1-C1'	8.00	127.60	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	9	U	O5'-P-OP1	-7.97	98.52	105.70
1	1	284	U	C2-N1-C1'	7.96	127.25	117.70
57	4	181	G	N3-C4-N9	7.95	130.77	126.00
57	4	209	C	C5-C6-N1	7.94	124.97	121.00
57	4	324	G	N3-C4-C5	-7.93	124.63	128.60
1	1	2063	C	C2-N1-C1'	7.93	127.52	118.80
57	4	267	G	C2-N3-C4	7.92	115.86	111.90
57	4	137	C	C5-C6-N1	7.92	124.96	121.00
57	4	18	C	C6-N1-C1'	-7.92	111.30	120.80
57	4	262	U	N3-C2-O2	-7.91	116.66	122.20
1	1	544	C	C6-N1-C2	-7.91	117.14	120.30
57	4	7	G	C8-N9-C4	-7.91	103.23	106.40
57	4	362	C	C6-N1-C1'	7.91	130.29	120.80
57	4	315	G	C4-N9-C1'	7.91	136.78	126.50
2	2	1341	U	N3-C2-O2	-7.91	116.67	122.20
57	4	76	C	C5-C6-N1	7.91	124.95	121.00
1	1	305	C	C6-N1-C2	-7.90	117.14	120.30
2	2	1448	C	C6-N1-C2	-7.90	117.14	120.30
2	2	672	U	N3-C2-O2	-7.90	116.67	122.20
57	4	334	A	O4'-C1'-N9	-7.88	101.89	108.20
1	1	2226	C	N3-C2-O2	-7.87	116.39	121.90
1	1	569	U	N3-C2-O2	-7.86	116.70	122.20
1	1	1092	C	N1-C2-O2	7.86	123.61	118.90
2	2	1303	C	N1-C2-O2	7.85	123.61	118.90
1	1	1376	C	N3-C2-O2	-7.85	116.41	121.90
57	4	267	G	N3-C4-C5	-7.84	124.68	128.60
1	1	62	U	N1-C2-O2	7.83	128.28	122.80
57	4	154	C	C5-C6-N1	7.83	124.92	121.00
1	1	1135	C	N1-C2-O2	7.81	123.58	118.90
57	4	166	C	O4'-C1'-N1	7.81	114.45	108.20
2	2	1158	C	N3-C2-O2	-7.81	116.44	121.90
2	2	1245	C	C6-N1-C2	-7.79	117.18	120.30
1	1	2594	C	N1-C2-O2	7.79	123.58	118.90
57	4	245	C	N3-C2-O2	-7.79	116.45	121.90
57	4	120	U	N1-C2-O2	7.78	128.25	122.80
1	1	1892	C	C6-N1-C2	-7.78	117.19	120.30
57	4	142	U	C5-C6-N1	7.76	126.58	122.70
57	4	120	U	C2-N1-C1'	7.76	127.01	117.70
2	2	998	C	C2-N1-C1'	7.75	127.33	118.80
57	4	153	U	O4'-C1'-N1	7.75	114.40	108.20
1	1	2810	A	C8-N9-C4	-7.74	102.70	105.80
2	2	194	C	C6-N1-C2	-7.74	117.20	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2259	U	C2-N1-C1'	7.71	126.96	117.70
57	4	332	G	C8-N9-C4	-7.71	103.31	106.40
57	4	265	C	C6-N1-C2	-7.70	117.22	120.30
57	4	324	G	C2-N3-C4	7.70	115.75	111.90
57	4	187	C	N1-C2-O2	7.69	123.51	118.90
2	2	1262	C	C6-N1-C2	-7.69	117.22	120.30
57	4	200	G	O4'-C1'-N9	7.67	114.34	108.20
1	1	2200	C	C6-N1-C2	-7.66	117.23	120.30
1	1	31	C	N3-C2-O2	-7.66	116.54	121.90
1	1	2354	C	C2-N1-C1'	7.65	127.21	118.80
57	4	38	A	OP1-P-O3'	7.65	122.02	105.20
1	1	1874	C	N1-C2-O2	7.64	123.49	118.90
1	1	2226	C	C2-N1-C1'	7.64	127.20	118.80
57	4	361	C	N3-C2-O2	-7.63	116.56	121.90
1	1	1414	C	C6-N1-C2	-7.62	117.25	120.30
57	4	199	C	O4'-C1'-N1	7.61	114.29	108.20
1	1	2063	C	N1-C2-O2	7.61	123.47	118.90
57	4	256	G	O4'-C1'-N9	7.61	114.28	108.20
1	1	1594	U	N1-C2-O2	7.60	128.12	122.80
57	4	223	G	P-O3'-C3'	7.60	128.82	119.70
57	4	286	A	P-O3'-C3'	7.60	128.82	119.70
2	2	1409	C	C5-C6-N1	7.59	124.79	121.00
57	4	237	U	C5-C6-N1	7.58	126.49	122.70
57	4	266	C	O3'-P-O5'	7.58	118.41	104.00
2	2	998	C	N1-C2-O2	7.57	123.44	118.90
57	4	161	U	O3'-P-O5'	7.57	118.39	104.00
57	4	229	U	OP1-P-O3'	7.57	121.85	105.20
57	4	229	U	N3-C2-O2	-7.56	116.91	122.20
2	2	99	C	C2-N1-C1'	7.56	127.12	118.80
2	2	469	C	N3-C2-O2	-7.55	116.62	121.90
1	1	729	G	C8-N9-C1'	-7.54	117.19	127.00
1	1	1621	U	C6-N1-C1'	-7.54	110.64	121.20
2	2	1341	U	C6-N1-C1'	-7.54	110.65	121.20
2	2	1132	C	C6-N1-C2	-7.53	117.29	120.30
57	4	229	U	N1-C2-O2	7.53	128.07	122.80
1	1	1370	C	N1-C2-O2	7.52	123.41	118.90
1	1	2364	C	C6-N1-C2	-7.52	117.29	120.30
2	2	272	C	N1-C2-O2	7.51	123.40	118.90
2	2	979	C	C2-N1-C1'	7.50	127.05	118.80
1	1	2072	C	C5-C6-N1	7.50	124.75	121.00
3	3	92	C	N1-C2-O2	7.50	123.40	118.90
1	1	2752	C	N3-C2-O2	-7.49	116.65	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2870	C	C6-N1-C2	-7.48	117.31	120.30
1	1	818	G	C6-C5-N7	-7.47	125.92	130.40
1	1	2556	C	N1-C2-O2	7.47	123.38	118.90
57	4	247	A	O4'-C1'-N9	7.47	114.18	108.20
57	4	269	C	C5-C6-N1	7.46	124.73	121.00
2	2	1303	C	C6-N1-C1'	-7.46	111.85	120.80
1	1	1941	C	C2-N1-C1'	7.45	127.00	118.80
57	4	223	G	C4-N9-C1'	7.45	136.18	126.50
1	1	485	C	N3-C2-O2	-7.44	116.69	121.90
57	4	60	U	C6-N1-C2	-7.44	116.54	121.00
1	1	1318	U	N1-C2-O2	7.44	128.01	122.80
1	1	1999	C	C5-C6-N1	7.43	124.72	121.00
1	1	2193	G	C4-N9-C1'	7.42	136.14	126.50
1	1	225	C	N1-C2-O2	7.42	123.35	118.90
1	1	2636	C	C2-N1-C1'	7.41	126.95	118.80
57	4	39	A	P-O3'-C3'	7.41	128.59	119.70
1	1	1595	C	C6-N1-C2	-7.40	117.34	120.30
2	2	979	C	N1-C2-O2	7.40	123.34	118.90
1	1	2072	C	C6-N1-C2	-7.39	117.34	120.30
57	4	299	C	C5-C6-N1	7.38	124.69	121.00
1	1	986	C	N3-C2-O2	-7.38	116.74	121.90
57	4	143	C	C6-N1-C2	-7.38	117.35	120.30
57	4	18	C	C6-N1-C2	-7.37	117.35	120.30
57	4	142	U	C6-N1-C2	-7.37	116.58	121.00
1	1	373	U	N3-C2-O2	-7.36	117.05	122.20
57	4	269	C	N3-C2-O2	-7.36	116.75	121.90
3	3	17	C	C6-N1-C2	-7.36	117.36	120.30
2	2	843	U	N1-C2-O2	7.35	127.95	122.80
57	4	157	C	C5-C6-N1	7.35	124.67	121.00
57	4	214	C	O4'-C1'-N1	7.35	114.08	108.20
1	1	1113	U	C2-N1-C1'	7.35	126.52	117.70
1	1	736	C	C6-N1-C2	-7.34	117.36	120.30
1	1	2581	G	C4-N9-C1'	7.33	136.03	126.50
2	2	1132	C	C5-C6-N1	7.33	124.66	121.00
1	1	1097	U	N3-C2-O2	-7.32	117.07	122.20
2	2	1265	C	C6-N1-C2	-7.32	117.37	120.30
57	4	163	G	O3'-P-O5'	7.31	117.89	104.00
57	4	297	G	N7-C8-N9	7.30	116.75	113.10
1	1	1097	U	N1-C2-O2	7.30	127.91	122.80
1	1	765	C	C2-N1-C1'	7.29	126.83	118.80
1	1	365	U	C5-C6-N1	7.29	126.35	122.70
2	2	1448	C	N3-C2-O2	-7.29	116.80	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	818	G	N7-C8-N9	7.28	116.74	113.10
2	2	1448	C	N1-C2-O2	7.28	123.27	118.90
2	2	754	C	N3-C2-O2	-7.27	116.81	121.90
57	4	247	A	P-O3'-C3'	7.26	128.41	119.70
1	1	544	C	C6-N1-C1'	-7.25	112.10	120.80
57	4	150	G	N3-C4-C5	-7.25	124.97	128.60
1	1	1289	C	N1-C2-O2	7.25	123.25	118.90
57	4	237	U	C6-N1-C1'	-7.24	111.06	121.20
1	1	1051	G	N3-C4-N9	7.24	130.34	126.00
1	1	2874	C	N3-C2-O2	-7.22	116.84	121.90
1	1	2063	C	N3-C2-O2	-7.22	116.85	121.90
57	4	61	G	P-O3'-C3'	7.22	128.37	119.70
1	1	171	U	N1-C2-O2	7.21	127.85	122.80
1	1	2789	C	C6-N1-C2	-7.21	117.42	120.30
57	4	36	C	C6-N1-C2	-7.20	117.42	120.30
1	1	1594	U	N3-C2-O2	-7.19	117.17	122.20
1	1	2267	A	N1-C6-N6	-7.19	114.28	118.60
57	4	139	C	C6-N1-C2	-7.19	117.42	120.30
1	1	2465	C	N3-C2-O2	-7.19	116.87	121.90
1	1	2259	U	N1-C2-O2	7.19	127.83	122.80
2	2	1279	G	C4-N9-C1'	7.19	135.84	126.50
1	1	2193	G	N3-C4-N9	7.18	130.31	126.00
1	1	31	C	N1-C2-O2	7.18	123.21	118.90
1	1	305	C	N1-C2-O2	7.17	123.20	118.90
57	4	316	A	N7-C8-N9	7.17	117.38	113.80
2	2	857	C	N1-C2-O2	7.16	123.20	118.90
2	2	1263	C	C6-N1-C2	-7.16	117.44	120.30
57	4	333	G	P-O3'-C3'	7.16	128.29	119.70
1	1	2312	U	N3-C2-O2	-7.15	117.20	122.20
57	4	193	A	C5'-C4'-O4'	-7.15	100.52	109.10
57	4	269	C	P-O3'-C3'	7.15	128.28	119.70
1	1	1456	G	C4-N9-C1'	7.14	135.79	126.50
57	4	15	A	O5'-P-OP1	7.14	119.27	110.70
57	4	197	A	O5'-P-OP2	-7.14	99.27	105.70
57	4	335	C	C6-N1-C1'	-7.14	112.23	120.80
57	4	210	C	C5-C6-N1	7.14	124.57	121.00
57	4	271	G	N7-C8-N9	7.14	116.67	113.10
2	2	1172	C	N1-C2-O2	7.13	123.18	118.90
57	4	269	C	O3'-P-O5'	7.13	117.55	104.00
2	2	1389	C	N3-C2-O2	-7.13	116.91	121.90
57	4	17	U	N1-C2-O2	7.13	127.79	122.80
57	4	308	U	C2-N1-C1'	7.12	126.25	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	99	C	N3-C2-O2	-7.12	116.91	121.90
1	1	984	A	C2-N3-C4	7.12	114.16	110.60
1	1	1411	U	N1-C2-O2	7.12	127.78	122.80
1	1	1335	C	C6-N1-C2	-7.12	117.45	120.30
1	1	569	U	C2-N1-C1'	7.10	126.22	117.70
57	4	263	G	N9-C4-C5	7.10	108.24	105.40
57	4	263	G	N3-C4-N9	-7.10	121.74	126.00
1	1	1023	U	N1-C2-O2	7.10	127.77	122.80
57	4	13	G	O4'-C1'-N9	7.10	113.88	108.20
57	4	137	C	O3'-P-O5'	7.09	117.48	104.00
57	4	173	C	C5-C6-N1	7.09	124.55	121.00
1	1	316	C	C6-N1-C2	-7.08	117.47	120.30
1	1	2581	G	C8-N9-C1'	-7.08	117.79	127.00
57	4	163	G	P-O3'-C3'	7.08	128.19	119.70
57	4	130	C	O5'-P-OP1	7.07	119.19	110.70
1	1	171	U	N3-C2-O2	-7.07	117.25	122.20
57	4	165	A	P-O3'-C3'	7.06	128.18	119.70
1	1	1318	U	C2-N1-C1'	7.06	126.17	117.70
57	4	159	C	C5-C6-N1	7.06	124.53	121.00
57	4	148	U	C5-C6-N1	7.05	126.23	122.70
57	4	316	A	C5'-C4'-O4'	-7.05	100.64	109.10
1	1	1905	C	C2-N1-C1'	7.05	126.55	118.80
2	2	1158	C	N1-C2-O2	7.05	123.13	118.90
1	1	1411	U	N3-C2-O2	-7.03	117.28	122.20
1	1	758	C	C6-N1-C2	-7.03	117.49	120.30
2	2	1033	G	C8-N9-C1'	-7.03	117.86	127.00
57	4	39	A	C2-N3-C4	7.02	114.11	110.60
57	4	246	U	OP2-P-O3'	7.02	120.65	105.20
57	4	343	C	C2-N1-C1'	7.02	126.53	118.80
57	4	246	U	N3-C2-O2	-7.02	117.28	122.20
1	1	1905	C	N1-C2-O2	7.02	123.11	118.90
1	1	1769	U	N1-C2-O2	7.01	127.71	122.80
2	2	936	C	C2-N1-C1'	7.01	126.52	118.80
57	4	181	G	P-O3'-C3'	7.01	128.12	119.70
1	1	1157	G	C6-C5-N7	-7.01	126.19	130.40
57	4	325	G	N3-C4-C5	-7.01	125.09	128.60
57	4	133	A	C5'-C4'-O4'	-7.00	100.69	109.10
2	2	1262	C	N3-C2-O2	-7.00	117.00	121.90
57	4	118	C	C5-C6-N1	7.00	124.50	121.00
57	4	297	G	C6-C5-N7	-7.00	126.20	130.40
1	1	1005	C	C2-N1-C1'	6.99	126.49	118.80
1	1	1585	C	N1-C2-O2	6.99	123.09	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	978	G	C8-N9-C4	-6.99	103.61	106.40
1	1	2072	C	N1-C2-O2	6.99	123.09	118.90
57	4	157	C	O4'-C1'-N1	6.99	113.79	108.20
57	4	18	C	C5-C6-N1	6.98	124.49	121.00
57	4	54	G	N3-C4-C5	-6.96	125.12	128.60
57	4	260	C	N3-C2-O2	-6.96	117.03	121.90
1	1	2824	C	N1-C2-O2	6.95	123.07	118.90
1	1	566	U	C2-N1-C1'	6.95	126.03	117.70
2	2	1009	U	N3-C2-O2	-6.95	117.34	122.20
1	1	378	C	N3-C2-O2	-6.94	117.04	121.90
2	2	1493	A	O4'-C1'-N9	6.94	113.75	108.20
1	1	2556	C	N3-C2-O2	-6.93	117.05	121.90
2	2	440	C	N1-C2-O2	6.93	123.06	118.90
2	2	1262	C	C2-N1-C1'	6.92	126.42	118.80
1	1	2760	C	N1-C2-O2	6.92	123.05	118.90
1	1	1075	C	N3-C2-O2	-6.92	117.06	121.90
1	1	1941	C	N3-C2-O2	-6.92	117.06	121.90
57	4	311	U	O4'-C1'-N1	6.92	113.73	108.20
1	1	1	G	N3-C4-N9	6.91	130.15	126.00
57	4	187	C	C5'-C4'-C3'	-6.91	104.94	116.00
1	1	1530	G	C4-N9-C1'	6.91	135.48	126.50
2	2	1132	C	C2-N1-C1'	6.91	126.40	118.80
57	4	321	G	C8-N9-C4	-6.90	103.64	106.40
57	4	297	G	C4-C5-N7	6.90	113.56	110.80
1	1	1051	G	N3-C4-C5	-6.89	125.15	128.60
57	4	357	U	C2-N1-C1'	6.89	125.97	117.70
2	2	843	U	N3-C2-O2	-6.89	117.38	122.20
2	2	513	C	N1-C2-O2	6.88	123.03	118.90
2	2	1033	G	N3-C4-N9	6.87	130.12	126.00
1	1	839	U	N1-C2-O2	6.87	127.61	122.80
1	1	485	C	C6-N1-C2	-6.87	117.55	120.30
57	4	260	C	N1-C2-O2	6.87	123.02	118.90
57	4	5	C	C6-N1-C2	-6.87	117.55	120.30
1	1	1351	C	N1-C2-O2	6.86	123.02	118.90
1	1	1409	U	C2-N1-C1'	6.86	125.94	117.70
57	4	163	G	C8-N9-C4	-6.86	103.66	106.40
1	1	225	C	C2-N1-C1'	6.86	126.34	118.80
1	1	2149	U	C2-N1-C1'	6.85	125.92	117.70
1	1	839	U	C5-C6-N1	6.84	126.12	122.70
2	2	467	U	C6-N1-C1'	-6.84	111.62	121.20
57	4	248	G	C4-N9-C1'	-6.84	117.61	126.50
1	1	284	U	N1-C2-O2	6.84	127.58	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	681	G	C6-C5-N7	-6.84	126.30	130.40
2	2	1348	U	C2-N1-C1'	6.83	125.90	117.70
57	4	47	G	C8-N9-C4	-6.83	103.67	106.40
57	4	181	G	C4-N9-C1'	6.83	135.38	126.50
1	1	356	G	C8-N9-C4	-6.83	103.67	106.40
57	4	27	U	N3-C2-O2	-6.83	117.42	122.20
1	1	681	G	C4-C5-N7	6.82	113.53	110.80
1	1	2193	G	N3-C4-C5	-6.82	125.19	128.60
57	4	189	C	P-O3'-C3'	6.82	127.89	119.70
57	4	227	C	C5-C6-N1	6.82	124.41	121.00
2	2	998	C	N3-C2-O2	-6.82	117.13	121.90
57	4	161	U	C5-C6-N1	6.81	126.11	122.70
1	1	1081	U	C2-N1-C1'	6.81	125.87	117.70
1	1	140	C	N1-C2-O2	6.79	122.97	118.90
1	1	2579	C	N1-C2-O2	6.79	122.97	118.90
1	1	2200	C	C2-N1-C1'	6.78	126.26	118.80
1	1	1075	C	C6-N1-C1'	-6.78	112.67	120.80
57	4	54	G	N3-C4-N9	6.78	130.06	126.00
57	4	340	G	C4-N9-C1'	6.77	135.30	126.50
57	4	343	C	N1-C2-O2	6.76	122.96	118.90
1	1	114	U	C2-N1-C1'	6.76	125.81	117.70
1	1	678	C	C6-N1-C2	-6.76	117.60	120.30
1	1	672	C	C6-N1-C2	-6.75	117.60	120.30
57	4	286	A	C4-N9-C1'	-6.75	114.15	126.30
57	4	68	U	P-O3'-C3'	6.75	127.80	119.70
57	4	190	A	P-O3'-C3'	6.74	127.79	119.70
57	4	328	U	N3-C2-O2	-6.74	117.48	122.20
2	2	1328	C	N3-C2-O2	-6.73	117.19	121.90
57	4	246	U	N1-C2-O2	6.73	127.51	122.80
1	1	2312	U	C5-C6-N1	6.73	126.06	122.70
57	4	183	C	C6-N1-C1'	6.73	128.87	120.80
57	4	361	C	N1-C2-O2	6.73	122.94	118.90
1	1	2601	C	C6-N1-C2	-6.72	117.61	120.30
2	2	273	U	C2-N1-C1'	6.71	125.76	117.70
1	1	1092	C	C6-N1-C1'	-6.71	112.74	120.80
1	1	106	C	C6-N1-C2	-6.71	117.62	120.30
57	4	315	G	C8-N9-C1'	-6.71	118.28	127.00
57	4	11	C	N3-C2-O2	-6.70	117.21	121.90
1	1	8	C	C5-C6-N1	6.70	124.35	121.00
57	4	48	C	C5-C6-N1	6.69	124.35	121.00
1	1	1411	U	C5-C6-N1	6.69	126.05	122.70
2	2	1348	U	N1-C2-O2	6.68	127.48	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	54	G	C8-N9-C1'	-6.68	118.32	127.00
1	1	601	C	C2-N1-C1'	6.68	126.14	118.80
1	1	516	C	N3-C2-O2	-6.67	117.23	121.90
1	1	2752	C	C2-N1-C1'	6.67	126.14	118.80
2	2	216	U	N3-C2-O2	-6.67	117.53	122.20
57	4	270	C	C5'-C4'-O4'	-6.67	101.10	109.10
57	4	63	C	N3-C2-O2	-6.66	117.24	121.90
1	1	986	C	C6-N1-C2	-6.66	117.64	120.30
57	4	11	C	C6-N1-C2	-6.66	117.64	120.30
57	4	12	U	C6-N1-C1'	-6.65	111.89	121.20
1	1	1760	C	C6-N1-C2	-6.64	117.64	120.30
1	1	2297	A	C2-N3-C4	6.64	113.92	110.60
2	2	439	U	N3-C2-O2	-6.63	117.56	122.20
57	4	195	A	P-O3'-C3'	6.63	127.66	119.70
1	1	1052	C	C5-C6-N1	6.62	124.31	121.00
1	1	2149	U	N1-C2-O2	6.62	127.43	122.80
2	2	993	G	N3-C4-N9	6.62	129.97	126.00
1	1	1874	C	N3-C2-O2	-6.61	117.27	121.90
1	1	2786	U	N1-C2-O2	6.61	127.43	122.80
2	2	178	C	N1-C2-O2	6.61	122.87	118.90
2	2	1172	C	N3-C2-O2	-6.61	117.27	121.90
57	4	120	U	C6-N1-C2	-6.61	117.03	121.00
57	4	324	G	N3-C4-N9	6.60	129.96	126.00
1	1	8	C	C6-N1-C2	-6.59	117.67	120.30
57	4	159	C	N3-C2-O2	-6.59	117.29	121.90
1	1	2726	A	C8-N9-C4	6.58	108.43	105.80
1	1	1776	G	C4-N9-C1'	6.57	135.04	126.50
57	4	267	G	C4-N9-C1'	6.57	135.05	126.50
57	4	299	C	C6-N1-C1'	-6.57	112.91	120.80
1	1	2312	U	C6-N1-C2	-6.57	117.06	121.00
2	2	476	U	C2-N1-C1'	6.57	125.58	117.70
18	N	51	LEU	CA-CB-CG	6.57	130.41	115.30
57	4	37	C	O4'-C1'-N1	6.57	113.45	108.20
57	4	129	G	C4-N9-C1'	6.57	135.04	126.50
1	1	1170	C	C2-N1-C1'	6.56	126.02	118.80
1	1	915	C	C6-N1-C1'	-6.56	112.93	120.80
1	1	2581	G	C6-C5-N7	-6.56	126.47	130.40
2	2	632	U	C2-N1-C1'	6.56	125.57	117.70
1	1	312	G	N3-C4-C5	-6.56	125.32	128.60
57	4	6	U	C6-N1-C2	-6.55	117.07	121.00
57	4	308	U	C5'-C4'-O4'	-6.55	101.23	109.10
1	1	1023	U	N3-C2-O2	-6.55	117.61	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	78	C	C6-N1-C2	-6.55	117.68	120.30
1	1	1887	C	C6-N1-C2	-6.54	117.68	120.30
57	4	286	A	C4-C5-C6	-6.54	113.73	117.00
1	1	709	U	C2-N1-C1'	6.53	125.54	117.70
2	2	1327	C	C2-N1-C1'	6.53	125.98	118.80
57	4	44	C	P-O3'-C3'	6.53	127.53	119.70
1	1	1180	U	N1-C2-O2	6.52	127.36	122.80
1	1	2592	G	C6-C5-N7	-6.52	126.49	130.40
1	1	2581	G	N3-C4-N9	6.51	129.91	126.00
1	1	1887	C	C5-C6-N1	6.51	124.25	121.00
57	4	271	G	C5'-C4'-O4'	-6.51	101.29	109.10
57	4	273	A	C5-N7-C8	-6.51	100.65	103.90
1	1	1526	C	C6-N1-C2	-6.50	117.70	120.30
3	3	30	C	C2-N1-C1'	6.50	125.95	118.80
13	I	79	LEU	CA-CB-CG	6.50	130.24	115.30
57	4	173	C	C6-N1-C1'	-6.50	113.00	120.80
57	4	63	C	N1-C2-O2	6.49	122.80	118.90
57	4	14	G	C8-N9-C4	-6.49	103.80	106.40
57	4	257	U	C5-C6-N1	6.49	125.94	122.70
57	4	270	C	N3-C2-O2	-6.49	117.36	121.90
57	4	262	U	C6-N1-C1'	-6.48	112.12	121.20
57	4	26	U	C6-N1-C2	-6.48	117.11	121.00
57	4	56	C	P-O3'-C3'	6.48	127.48	119.70
1	1	2465	C	N1-C2-O2	6.48	122.79	118.90
2	2	590	U	N3-C2-O2	-6.48	117.67	122.20
1	1	1542	U	N1-C2-O2	6.47	127.33	122.80
57	4	66	C	O4'-C1'-N1	6.47	113.38	108.20
2	2	440	C	C2-N1-C1'	6.47	125.92	118.80
1	1	2214	C	N1-C2-O2	6.47	122.78	118.90
2	2	1342	C	N3-C2-O2	-6.46	117.38	121.90
3	3	42	C	N3-C2-O2	-6.46	117.38	121.90
57	4	34	A	O3'-P-O5'	6.45	116.26	104.00
2	2	977	A	C2-N3-C4	6.45	113.83	110.60
1	1	186	G	C4-N9-C1'	6.45	134.88	126.50
57	4	33	A	OP1-P-O3'	6.45	119.38	105.20
1	1	2562	U	N3-C2-O2	-6.44	117.69	122.20
2	2	216	U	N1-C2-O2	6.44	127.31	122.80
1	1	1117	C	N1-C2-O2	6.44	122.77	118.90
2	2	1033	G	N3-C4-C5	-6.44	125.38	128.60
1	1	1170	C	N1-C2-O2	6.44	122.76	118.90
2	2	1020	G	N3-C4-N9	6.44	129.87	126.00
57	4	332	G	N7-C8-N9	6.43	116.32	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	669	G	C4-N9-C1'	6.43	134.86	126.50
2	2	393	A	C2-N3-C4	6.43	113.81	110.60
57	4	340	G	C8-N9-C1'	-6.42	118.65	127.00
1	1	394	C	N3-C2-O2	-6.42	117.41	121.90
1	1	1386	C	C6-N1-C2	-6.42	117.73	120.30
1	1	1399	C	C6-N1-C2	-6.42	117.73	120.30
57	4	132	U	P-O3'-C3'	6.42	127.40	119.70
57	4	189	C	N1-C2-O2	6.42	122.75	118.90
1	1	2717	C	N1-C2-O2	6.41	122.75	118.90
57	4	152	C	N3-C2-O2	-6.41	117.41	121.90
1	1	971	G	C8-N9-C1'	-6.41	118.67	127.00
2	2	1395	C	C2-N1-C1'	6.41	125.85	118.80
57	4	308	U	O4'-C1'-N1	-6.41	103.08	108.20
57	4	315	G	P-O3'-C3'	6.40	127.38	119.70
1	1	1868	C	C6-N1-C2	-6.40	117.74	120.30
1	1	1157	G	C4-N9-C1'	6.39	134.81	126.50
57	4	166	C	C6-N1-C2	-6.39	117.74	120.30
1	1	1157	G	C8-N9-C1'	-6.39	118.69	127.00
57	4	334	A	C8-N9-C4	-6.39	103.24	105.80
57	4	66	C	P-O3'-C3'	6.39	127.37	119.70
1	1	1060	U	C6-N1-C2	-6.38	117.17	121.00
2	2	936	C	C6-N1-C2	-6.38	117.75	120.30
1	1	1075	C	C6-N1-C2	-6.38	117.75	120.30
57	4	217	G	C8-N9-C4	-6.38	103.85	106.40
1	1	225	C	N3-C2-O2	-6.37	117.44	121.90
1	1	1595	C	C5-C6-N1	6.37	124.18	121.00
2	2	1244	G	N3-C4-C5	6.37	131.78	128.60
2	2	697	U	N3-C2-O2	-6.37	117.74	122.20
57	4	200	G	C8-N9-C4	-6.37	103.85	106.40
57	4	361	C	C6-N1-C2	-6.36	117.76	120.30
1	1	1999	C	C2-N1-C1'	6.36	125.79	118.80
1	1	2226	C	C6-N1-C2	-6.36	117.76	120.30
1	1	2354	C	C6-N1-C2	-6.35	117.76	120.30
2	2	41	G	C6-C5-N7	-6.35	126.59	130.40
57	4	189	C	C5-C6-N1	6.35	124.17	121.00
57	4	210	C	O4'-C1'-N1	6.34	113.27	108.20
57	4	37	C	P-O3'-C3'	6.33	127.30	119.70
1	1	2200	C	C5-C6-N1	6.33	124.17	121.00
2	2	328	C	N1-C2-O2	6.33	122.70	118.90
2	2	1172	C	C2-N1-C1'	6.33	125.77	118.80
1	1	2193	G	C8-N9-C1'	-6.33	118.77	127.00
1	1	373	U	N1-C2-O2	6.33	127.23	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	952	G	C6-C5-N7	-6.32	126.61	130.40
2	2	620	C	N1-C2-O2	6.32	122.69	118.90
2	2	857	C	C6-N1-C1'	-6.32	113.22	120.80
1	1	1585	C	N3-C2-O2	-6.32	117.48	121.90
1	1	2283	C	N1-C2-O2	6.32	122.69	118.90
2	2	467	U	C6-N1-C2	-6.32	117.21	121.00
1	1	915	C	N1-C2-O2	6.32	122.69	118.90
1	1	1414	C	N3-C2-O2	-6.32	117.48	121.90
2	2	1484	C	C5-C6-N1	6.30	124.15	121.00
57	4	41	G	O4'-C1'-N9	6.30	113.24	108.20
1	1	366	C	N1-C2-O2	6.30	122.68	118.90
1	1	2247	A	N7-C8-N9	6.29	116.95	113.80
57	4	14	G	P-O3'-C3'	6.29	127.25	119.70
1	1	2312	U	N1-C2-O2	6.29	127.20	122.80
1	1	257	C	N1-C2-O2	6.28	122.67	118.90
57	4	272	C	P-O3'-C3'	6.28	127.24	119.70
1	1	1351	C	N3-C2-O2	-6.28	117.50	121.90
1	1	2720	U	N3-C2-O2	-6.28	117.81	122.20
57	4	223	G	C8-N9-C1'	-6.28	118.84	127.00
57	4	206	A	O5'-P-OP1	6.28	118.23	110.70
2	2	1326	U	N3-C2-O2	-6.27	117.81	122.20
1	1	1052	C	C6-N1-C2	-6.27	117.79	120.30
57	4	136	G	P-O3'-C3'	6.27	127.22	119.70
1	1	2601	C	C5-C6-N1	6.27	124.13	121.00
1	1	2874	C	C6-N1-C2	-6.27	117.79	120.30
1	1	1542	U	N3-C2-O2	-6.27	117.81	122.20
1	1	269	C	N1-C2-O2	6.26	122.66	118.90
1	1	2717	C	C2-N1-C1'	6.26	125.68	118.80
1	1	2466	C	C6-N1-C2	-6.25	117.80	120.30
1	1	1526	C	N3-C2-O2	-6.25	117.53	121.90
57	4	189	C	C2-N1-C1'	6.25	125.67	118.80
57	4	297	G	C5-N7-C8	-6.25	101.18	104.30
57	4	146	C	C6-N1-C2	-6.25	117.80	120.30
57	4	336	G	O4'-C1'-N9	6.25	113.20	108.20
57	4	348	C	C2-N1-C1'	6.25	125.67	118.80
1	1	2556	C	C6-N1-C2	-6.25	117.80	120.30
57	4	358	C	N3-C2-O2	-6.25	117.53	121.90
1	1	186	G	C8-N9-C1'	-6.24	118.89	127.00
57	4	176	G	C5'-C4'-O4'	-6.24	101.62	109.10
1	1	2568	U	C5-C6-N1	6.24	125.82	122.70
2	2	1088	G	N3-C4-N9	6.24	129.74	126.00
2	2	1409	C	C6-N1-C2	-6.23	117.81	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	272	C	C6-N1-C2	-6.23	117.81	120.30
57	4	307	G	P-O3'-C3'	-6.23	112.22	119.70
2	2	1009	U	N1-C2-O2	6.23	127.16	122.80
57	4	237	U	OP2-P-O3'	6.23	118.90	105.20
1	1	1051	G	C4-N9-C1'	6.22	134.59	126.50
57	4	215	C	C6-N1-C2	-6.22	117.81	120.30
57	4	250	U	O4'-C1'-N1	6.22	113.18	108.20
1	1	1221	C	C2-N1-C1'	6.22	125.64	118.80
1	1	2539	C	C6-N1-C2	-6.22	117.81	120.30
57	4	236	U	N3-C2-O2	-6.21	117.85	122.20
57	4	42	U	C5-C6-N1	6.21	125.81	122.70
1	1	954	G	C8-N9-C1'	-6.21	118.93	127.00
1	1	234	U	N3-C2-O2	-6.20	117.86	122.20
2	2	1471	U	N3-C2-O2	-6.20	117.86	122.20
57	4	76	C	N1-C2-O2	6.20	122.62	118.90
57	4	290	A	O4'-C1'-N9	6.20	113.16	108.20
1	1	2285	C	N3-C2-O2	-6.19	117.56	121.90
2	2	513	C	C2-N1-C1'	6.19	125.61	118.80
1	1	2570	G	C2-N3-C4	-6.19	108.80	111.90
57	4	145	C	C6-N1-C2	-6.19	117.82	120.30
57	4	152	C	N1-C2-O2	6.19	122.61	118.90
1	1	818	G	C4-N9-C1'	6.19	134.54	126.50
1	1	1082	U	C2-N1-C1'	-6.19	110.28	117.70
57	4	281	A	C5'-C4'-O4'	6.18	116.52	109.10
1	1	284	U	N3-C2-O2	-6.18	117.87	122.20
3	3	17	C	N1-C2-O2	6.18	122.61	118.90
1	1	1060	U	C2-N1-C1'	6.18	125.11	117.70
1	1	2372	U	C2-N1-C1'	6.17	125.11	117.70
1	1	1557	C	N1-C2-N3	6.17	123.52	119.20
2	2	1471	U	C2-N1-C1'	6.17	125.11	117.70
2	2	1045	C	N1-C2-O2	6.17	122.60	118.90
1	1	566	U	N1-C2-O2	6.17	127.12	122.80
1	1	1318	U	N3-C2-O2	-6.17	117.88	122.20
1	1	1411	U	C2-N1-C1'	6.17	125.10	117.70
1	1	1082	U	C6-N1-C1'	6.17	129.83	121.20
57	4	16	U	N3-C2-O2	-6.15	117.89	122.20
1	1	1605	C	C6-N1-C2	-6.15	117.84	120.30
57	4	210	C	C6-N1-C1'	6.15	128.18	120.80
57	4	53	G	P-O3'-C3'	6.15	127.08	119.70
57	4	213	G	C8-N9-C4	-6.15	103.94	106.40
57	4	221	U	C5-C6-N1	6.15	125.77	122.70
57	4	334	A	C5'-C4'-O4'	-6.14	101.73	109.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2230	G	N3-C4-N9	6.14	129.69	126.00
2	2	1003	G	C6-C5-N7	-6.14	126.72	130.40
57	4	33	A	P-O3'-C3'	6.14	127.07	119.70
2	2	341	C	C2-N1-C1'	6.14	125.55	118.80
57	4	159	C	O4'-C1'-N1	6.13	113.11	108.20
57	4	262	U	O5'-P-OP1	-6.13	100.18	105.70
2	2	582	C	N1-C2-O2	6.13	122.58	118.90
1	1	2380	C	N3-C2-O2	-6.13	117.61	121.90
57	4	38	A	P-O3'-C3'	6.13	127.05	119.70
1	1	1436	G	N1-C2-N3	6.12	127.58	123.90
57	4	151	C	C5-C6-N1	6.12	124.06	121.00
1	1	776	G	C4-N9-C1'	6.12	134.46	126.50
1	1	1920	C	C6-N1-C2	-6.12	117.85	120.30
1	1	601	C	N1-C2-O2	6.12	122.57	118.90
2	2	697	U	N1-C2-O2	6.12	127.08	122.80
1	1	994	C	C5-C6-N1	6.12	124.06	121.00
1	1	2053	G	C6-C5-N7	-6.11	126.73	130.40
2	2	235	C	N3-C2-O2	-6.11	117.62	121.90
2	2	1038	C	C6-N1-C2	-6.11	117.86	120.30
3	3	17	C	C5-C6-N1	6.11	124.06	121.00
2	2	1279	G	C8-N9-C1'	-6.11	119.06	127.00
57	4	314	C	OP1-P-O3'	6.11	118.64	105.20
1	1	211	C	C6-N1-C2	-6.11	117.86	120.30
2	2	1389	C	C6-N1-C2	-6.11	117.86	120.30
57	4	288	G	N3-C4-C5	-6.11	125.55	128.60
1	1	2230	G	C6-C5-N7	-6.11	126.74	130.40
2	2	679	C	N1-C2-O2	6.11	122.56	118.90
1	1	2562	U	N1-C2-O2	6.10	127.07	122.80
57	4	49	C	C6-N1-C2	-6.09	117.86	120.30
57	4	144	U	C5-C6-N1	6.09	125.75	122.70
1	1	839	U	N3-C2-O2	-6.09	117.94	122.20
2	2	492	C	N1-C2-O2	6.09	122.55	118.90
1	1	702	U	N1-C2-O2	6.08	127.06	122.80
2	2	1244	G	C8-N9-C1'	6.08	134.91	127.00
57	4	11	C	C2-N1-C1'	6.08	125.49	118.80
57	4	247	A	N9-C1'-C2'	6.08	121.91	114.00
1	1	1289	C	N3-C2-O2	-6.08	117.64	121.90
1	1	2263	C	C2-N1-C1'	6.08	125.49	118.80
1	1	1376	C	C6-N1-C2	-6.07	117.87	120.30
1	1	2874	C	C2-N1-C1'	6.07	125.48	118.80
2	2	1348	U	N3-C2-O2	-6.07	117.95	122.20
1	1	1315	C	C2-N1-C1'	6.07	125.48	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	1003	G	N3-C4-N9	6.07	129.64	126.00
1	1	669	G	C8-N9-C1'	-6.06	119.12	127.00
57	4	270	C	C5-C6-N1	6.06	124.03	121.00
1	1	138	U	N3-C2-O2	-6.06	117.96	122.20
57	4	223	G	N3-C4-C5	-6.06	125.57	128.60
1	1	566	U	N3-C2-O2	-6.06	117.96	122.20
57	4	204	G	N9-C4-C5	-6.06	102.98	105.40
1	1	1256	G	C4-N9-C1'	6.04	134.36	126.50
2	2	178	C	N3-C2-O2	-6.04	117.67	121.90
2	2	476	U	N1-C2-O2	6.04	127.03	122.80
57	4	33	A	O5'-P-OP1	-6.04	100.26	105.70
1	1	2247	A	C8-N9-C4	-6.04	103.38	105.80
2	2	368	U	N3-C2-O2	-6.04	117.97	122.20
1	1	129	C	N1-C2-O2	6.04	122.52	118.90
1	1	1769	U	N3-C2-O2	-6.04	117.97	122.20
2	2	154	U	N3-C2-O2	-6.04	117.97	122.20
57	4	163	G	C5'-C4'-O4'	-6.04	101.85	109.10
1	1	1180	U	C5-C6-N1	6.03	125.72	122.70
57	4	321	G	N3-C4-N9	-6.03	122.38	126.00
1	1	1526	C	N1-C2-O2	6.03	122.52	118.90
57	4	32	A	C2-N3-C4	6.03	113.61	110.60
57	4	235	C	C6-N1-C2	-6.03	117.89	120.30
1	1	1308	A	C8-N9-C4	-6.02	103.39	105.80
57	4	36	C	C5-C6-N1	6.02	124.01	121.00
2	2	840	C	C5-C6-N1	6.02	124.01	121.00
57	4	72	A	C4-N9-C1'	6.02	137.14	126.30
1	1	2824	C	N3-C2-O2	-6.02	117.69	121.90
1	1	1994	C	N3-C2-O2	-6.02	117.69	121.90
1	1	378	C	C2-N1-C1'	6.02	125.42	118.80
1	1	1076	C	N1-C2-O2	6.01	122.51	118.90
1	1	2636	C	C6-N1-C2	-6.01	117.89	120.30
57	4	311	U	C5-C6-N1	6.01	125.71	122.70
57	4	181	G	C2-N3-C4	6.01	114.90	111.90
57	4	300	U	C5-C6-N1	6.01	125.70	122.70
57	4	221	U	P-O3'-C3'	6.01	126.91	119.70
57	4	267	G	N3-C4-N9	6.01	129.60	126.00
1	1	1170	C	N3-C2-O2	-6.00	117.70	121.90
1	1	2321	U	N3-C2-O2	-6.00	118.00	122.20
2	2	1088	G	C4-N9-C1'	6.00	134.30	126.50
1	1	1456	G	C8-N9-C1'	-5.99	119.21	127.00
57	4	18	C	N3-C2-O2	-5.99	117.71	121.90
2	2	1020	G	C4-N9-C1'	5.99	134.28	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	754	C	C2-N1-C1'	5.98	125.38	118.80
2	2	354	G	C8-N9-C1'	-5.98	119.22	127.00
57	4	236	U	N1-C2-O2	5.98	126.99	122.80
2	2	99	C	C6-N1-C1'	-5.98	113.62	120.80
2	2	843	U	C2-N1-C1'	5.98	124.88	117.70
57	4	187	C	C2-N1-C1'	5.98	125.38	118.80
57	4	286	A	C8-N9-C4	5.98	108.19	105.80
1	1	366	C	C2-N1-C1'	5.98	125.38	118.80
2	2	476	U	N3-C2-O2	-5.98	118.02	122.20
2	2	1244	G	C4-N9-C1'	-5.98	118.73	126.50
2	2	979	C	N3-C2-O2	-5.97	117.72	121.90
3	3	42	C	N1-C2-O2	5.97	122.48	118.90
57	4	183	C	C2-N1-C1'	-5.97	112.23	118.80
57	4	279	C	C5-C6-N1	5.97	123.99	121.00
1	1	2259	U	N3-C2-O2	-5.97	118.02	122.20
2	2	354	G	C4-N9-C1'	5.97	134.26	126.50
1	1	2108	A	C2-N3-C4	5.97	113.58	110.60
57	4	212	U	P-O3'-C3'	5.96	126.86	119.70
1	1	257	C	N3-C2-O2	-5.96	117.73	121.90
1	1	1060	U	C5-C6-N1	5.96	125.68	122.70
1	1	2043	C	C2-N1-C1'	5.96	125.36	118.80
2	2	620	C	N3-C2-O2	-5.96	117.73	121.90
2	2	1045	C	C6-N1-C2	-5.95	117.92	120.30
57	4	146	C	O4'-C1'-N1	5.95	112.96	108.20
2	2	922	G	C4-N9-C1'	5.95	134.24	126.50
1	1	2320	U	N1-C2-O2	-5.95	118.64	122.80
1	1	2312	U	C2-N1-C1'	5.95	124.84	117.70
2	2	1008	U	C2-N1-C1'	5.95	124.84	117.70
57	4	325	G	C8-N9-C4	-5.95	104.02	106.40
1	1	2594	C	N3-C2-O2	-5.94	117.74	121.90
57	4	306	U	C5-C6-N1	5.94	125.67	122.70
1	1	912	C	N3-C2-O2	-5.94	117.74	121.90
1	1	1192	G	N1-C6-O6	-5.94	116.34	119.90
1	1	1908	C	C6-N1-C2	-5.93	117.93	120.30
1	1	2717	C	N3-C2-O2	-5.93	117.75	121.90
57	4	241	C	N3-C2-O2	-5.93	117.75	121.90
57	4	189	C	C6-N1-C2	-5.93	117.93	120.30
1	1	1221	C	N3-C2-O2	-5.92	117.75	121.90
3	3	74	U	C5-C6-N1	5.92	125.66	122.70
1	1	1775	U	N3-C2-O2	-5.92	118.06	122.20
2	2	679	C	C2-N1-C1'	5.92	125.31	118.80
57	4	117	G	N7-C8-N9	5.92	116.06	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	462	C	N3-C2-O2	-5.92	117.76	121.90
1	1	971	G	C6-C5-N7	-5.92	126.85	130.40
57	4	349	C	C2-N1-C1'	5.92	125.31	118.80
57	4	245	C	C6-N1-C1'	-5.92	113.70	120.80
1	1	1045	C	C6-N1-C2	-5.91	117.94	120.30
57	4	10	U	O5'-P-OP1	5.91	117.80	110.70
1	1	673	C	N3-C2-O2	-5.91	117.76	121.90
2	2	937	A	N1-C6-N6	5.91	122.14	118.60
57	4	73	A	C4-N9-C1'	5.91	136.94	126.30
1	1	1776	G	C8-N9-C4	-5.91	104.04	106.40
1	1	816	C	N1-C2-O2	5.90	122.44	118.90
1	1	818	G	C8-N9-C4	-5.90	104.04	106.40
2	2	936	C	N1-C2-O2	5.90	122.44	118.90
57	4	30	C	N3-C4-N4	5.90	122.13	118.00
2	2	1172	C	C6-N1-C2	-5.90	117.94	120.30
57	4	281	A	O4'-C1'-N9	5.90	112.92	108.20
1	1	2452	C	C2-N1-C1'	5.89	125.28	118.80
1	1	1135	C	C2-N1-C1'	5.89	125.28	118.80
1	1	2636	C	C5-C6-N1	5.89	123.94	121.00
1	1	2786	U	N3-C2-O2	-5.89	118.08	122.20
1	1	954	G	C4-N9-C1'	5.88	134.15	126.50
2	2	328	C	N3-C2-O2	-5.88	117.78	121.90
57	4	144	U	O4'-C1'-N1	5.88	112.91	108.20
1	1	1157	G	N3-C4-N9	5.88	129.53	126.00
57	4	232	A	C8-N9-C4	-5.88	103.45	105.80
1	1	1370	C	N3-C2-O2	-5.88	117.78	121.90
57	4	209	C	N3-C2-O2	-5.88	117.78	121.90
2	2	4	U	C2-N1-C1'	5.88	124.75	117.70
57	4	223	G	N3-C4-N9	5.88	129.53	126.00
57	4	132	U	C5-C6-N1	5.88	125.64	122.70
3	3	92	C	C2-N1-C1'	5.87	125.26	118.80
2	2	341	C	N1-C2-O2	5.87	122.42	118.90
1	1	2615	U	C2-N1-C1'	5.87	124.74	117.70
2	2	492	C	C2-N1-C1'	5.87	125.26	118.80
2	2	879	C	N1-C2-O2	5.87	122.42	118.90
1	1	2209	G	C6-C5-N7	-5.87	126.88	130.40
2	2	4	U	N1-C2-O2	5.86	126.90	122.80
57	4	273	A	C8-N9-C4	-5.86	103.45	105.80
1	1	1859	U	N3-C2-O2	-5.86	118.10	122.20
2	2	1174	G	N3-C4-N9	5.86	129.51	126.00
57	4	200	G	N7-C8-N9	5.86	116.03	113.10
57	4	214	C	C4-C5-C6	-5.86	114.47	117.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	229	U	C2-N1-C1'	5.86	124.73	117.70
57	4	229	U	C5-C6-N1	5.86	125.63	122.70
57	4	340	G	C6-C5-N7	-5.86	126.89	130.40
2	2	1510	C	C6-N1-C2	-5.85	117.96	120.30
1	1	1376	C	C6-N1-C1'	-5.85	113.78	120.80
2	2	1008	U	N1-C2-O2	5.85	126.89	122.80
1	1	1804	C	C6-N1-C2	-5.85	117.96	120.30
57	4	167	G	P-O3'-C3'	5.85	126.72	119.70
57	4	304	C	C5-C6-N1	5.84	123.92	121.00
57	4	304	C	O4'-C1'-N1	5.84	112.88	108.20
57	4	159	C	N1-C2-O2	5.84	122.41	118.90
1	1	1725	U	C2-N1-C1'	5.83	124.70	117.70
57	4	5	C	O4'-C1'-N1	5.83	112.86	108.20
2	2	1327	C	C6-N1-C2	-5.83	117.97	120.30
2	2	1003	G	C4-N9-C1'	5.83	134.08	126.50
57	4	117	G	C8-N9-C4	-5.83	104.07	106.40
57	4	204	G	C4-C5-N7	5.83	113.13	110.80
2	2	467	U	C5-C6-N1	5.83	125.61	122.70
1	1	2789	C	C5-C6-N1	5.82	123.91	121.00
1	1	709	U	N3-C2-O2	-5.82	118.12	122.20
1	1	2025	C	C2-N1-C1'	5.82	125.20	118.80
2	2	737	C	C5-C6-N1	5.82	123.91	121.00
57	4	129	G	C8-N9-C1'	-5.82	119.44	127.00
1	1	1920	C	C5-C6-N1	5.82	123.91	121.00
1	1	565	C	C6-N1-C2	-5.81	117.97	120.30
57	4	297	G	N1-C6-O6	5.81	123.39	119.90
57	4	27	U	C5-C6-N1	5.81	125.61	122.70
57	4	163	G	N7-C8-N9	5.81	116.01	113.10
1	1	2594	C	C5-C6-N1	5.81	123.91	121.00
57	4	263	G	N3-C2-N2	-5.81	115.83	119.90
57	4	232	A	N7-C8-N9	5.81	116.70	113.80
1	1	269	C	C6-N1-C2	-5.81	117.98	120.30
1	1	729	G	N3-C4-C5	-5.80	125.70	128.60
57	4	31	G	O4'-C1'-N9	5.80	112.84	108.20
57	4	223	G	OP1-P-O3'	5.80	117.96	105.20
1	1	143	C	N3-C2-O2	-5.80	117.84	121.90
1	1	729	G	N3-C4-N9	5.80	129.48	126.00
57	4	199	C	C6-N1-C2	-5.80	117.98	120.30
57	4	122	A	C5-C6-N1	5.79	120.60	117.70
57	4	319	A	P-O3'-C3'	5.79	126.65	119.70
1	1	2425	A	P-O3'-C3'	5.79	126.64	119.70
1	1	2006	C	C6-N1-C2	-5.79	117.98	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	263	G	P-O3'-C3'	5.79	126.64	119.70
2	2	882	C	C6-N1-C2	-5.78	117.99	120.30
1	1	1873	G	N7-C8-N9	5.78	115.99	113.10
57	4	48	C	P-O3'-C3'	5.78	126.64	119.70
1	1	2149	U	N3-C2-O2	-5.78	118.16	122.20
1	1	2185	U	C5-C6-N1	5.78	125.59	122.70
1	1	1894	C	N3-C2-O2	-5.77	117.86	121.90
1	1	2548	U	N3-C2-O2	-5.77	118.16	122.20
1	1	971	G	C4-N9-C1'	5.77	134.00	126.50
57	4	56	C	O5'-P-OP2	-5.77	100.51	105.70
1	1	1357	C	N3-C2-O2	-5.77	117.86	121.90
57	4	27	U	N1-C2-O2	5.77	126.84	122.80
57	4	289	U	C6-N1-C2	-5.77	117.54	121.00
1	1	2889	C	C2-N1-C1'	5.76	125.14	118.80
2	2	272	C	N3-C2-O2	-5.76	117.87	121.90
1	1	818	G	N1-C2-N2	-5.76	111.02	116.20
1	1	860	U	N3-C2-O2	-5.76	118.17	122.20
1	1	1945	G	N3-C4-N9	5.76	129.45	126.00
57	4	204	G	C5-C6-O6	-5.76	125.15	128.60
1	1	860	U	N1-C2-O2	5.75	126.83	122.80
1	1	648	G	C4-N9-C1'	5.75	133.98	126.50
1	1	765	C	C5-C6-N1	5.75	123.87	121.00
1	1	1153	C	C6-N1-C2	-5.75	118.00	120.30
57	4	311	U	C6-N1-C2	-5.75	117.55	121.00
2	2	937	A	C5-N7-C8	-5.75	101.03	103.90
1	1	2649	C	C2-N1-C1'	5.75	125.12	118.80
57	4	6	U	C5'-C4'-O4'	-5.75	102.21	109.10
57	4	40	G	N7-C8-N9	5.75	115.97	113.10
57	4	267	G	C8-N9-C4	-5.74	104.10	106.40
1	1	2200	C	N1-C2-O2	5.74	122.34	118.90
1	1	404	A	P-O3'-C3'	5.73	126.58	119.70
1	1	1170	C	C6-N1-C2	-5.73	118.01	120.30
1	1	1859	U	C2-N1-C1'	5.73	124.58	117.70
1	1	138	U	C2-N1-C1'	5.73	124.58	117.70
57	4	175	A	O3'-P-O5'	5.73	114.89	104.00
1	1	2000	C	C5-C6-N1	5.73	123.86	121.00
57	4	229	U	P-O3'-C3'	5.73	126.57	119.70
1	1	171	U	C2-N1-C1'	5.73	124.57	117.70
57	4	222	U	C6-N1-C1'	-5.73	113.18	121.20
1	1	2885	G	N3-C4-N9	5.72	129.44	126.00
1	1	2901	C	C5-C6-N1	5.72	123.86	121.00
1	1	2902	C	C6-N1-C2	-5.72	118.01	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	3	30	C	N1-C2-O2	5.72	122.33	118.90
57	4	275	C	O4'-C1'-N1	5.72	112.78	108.20
2	2	519	C	N1-C2-O2	5.72	122.33	118.90
1	1	1557	C	C2-N3-C4	-5.72	117.04	119.90
57	4	263	G	C5'-C4'-C3'	5.72	125.15	116.00
1	1	280	U	N3-C2-O2	-5.72	118.20	122.20
1	1	860	U	C2-N1-C1'	5.72	124.56	117.70
1	1	2650	U	N1-C2-O2	5.72	126.80	122.80
57	4	73	A	N7-C8-N9	5.72	116.66	113.80
57	4	200	G	N3-C4-C5	-5.72	125.74	128.60
57	4	222	U	C5-C6-N1	5.72	125.56	122.70
57	4	73	A	C8-N9-C4	-5.71	103.52	105.80
2	2	492	C	C6-N1-C2	-5.71	118.02	120.30
57	4	144	U	OP2-P-O3'	5.71	117.76	105.20
57	4	248	G	C8-N9-C1'	5.71	134.43	127.00
1	1	2229	U	C6-N1-C2	-5.71	117.58	121.00
2	2	989	U	N1-C2-O2	5.71	126.80	122.80
1	1	2540	C	N3-C2-O2	-5.70	117.91	121.90
2	2	469	C	C6-N1-C2	-5.70	118.02	120.30
2	2	1020	G	N3-C4-C5	-5.70	125.75	128.60
1	1	544	C	C5-C6-N1	5.69	123.85	121.00
1	1	1092	C	C6-N1-C2	-5.69	118.02	120.30
57	4	17	U	P-O3'-C3'	5.69	126.53	119.70
2	2	738	C	C6-N1-C2	-5.69	118.02	120.30
57	4	122	A	N1-C6-N6	-5.69	115.19	118.60
1	1	2786	U	C2-N1-C1'	5.69	124.52	117.70
2	2	528	C	C5-C6-N1	5.68	123.84	121.00
57	4	257	U	OP1-P-O3'	5.68	117.70	105.20
1	1	269	C	N3-C2-O2	-5.68	117.92	121.90
1	1	1243	C	N1-C2-O2	5.68	122.31	118.90
1	1	2760	C	N3-C2-O2	-5.68	117.92	121.90
57	4	336	G	P-O5'-C5'	-5.68	111.81	120.90
2	2	612	C	C6-N1-C2	-5.68	118.03	120.30
1	1	876	C	C5-C6-N1	5.67	123.84	121.00
1	1	2680	U	C2-N1-C1'	5.67	124.51	117.70
57	4	199	C	N3-C2-O2	-5.67	117.93	121.90
57	4	211	C	P-O3'-C3'	5.67	126.51	119.70
1	1	2063	C	C6-N1-C2	-5.67	118.03	120.30
57	4	329	U	C5-C6-N1	5.67	125.54	122.70
1	1	2488	G	C4-N9-C1'	5.67	133.87	126.50
2	2	341	C	C5-C6-N1	5.67	123.83	121.00
1	1	1804	C	C5-C6-N1	5.67	123.83	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2064	C	C6-N1-C2	-5.67	118.03	120.30
3	3	92	C	N3-C2-O2	-5.67	117.93	121.90
57	4	144	U	C6-N1-C2	-5.67	117.60	121.00
1	1	2452	C	N1-C2-O2	5.67	122.30	118.90
2	2	439	U	N1-C2-O2	5.67	126.77	122.80
1	1	31	C	C6-N1-C2	-5.66	118.03	120.30
57	4	141	C	C5-C6-N1	5.66	123.83	121.00
2	2	1303	C	N3-C2-O2	-5.66	117.94	121.90
2	2	1533	C	C6-N1-C2	-5.66	118.04	120.30
1	1	635	C	C6-N1-C2	-5.66	118.04	120.30
1	1	942	G	N1-C2-N2	-5.66	111.11	116.20
1	1	323	C	C2-N1-C1'	5.65	125.02	118.80
1	1	1097	U	C2-N1-C1'	5.65	124.48	117.70
1	1	462	C	C6-N1-C2	-5.65	118.04	120.30
1	1	816	C	N3-C2-O2	-5.65	117.95	121.90
57	4	132	U	O5'-P-OP2	-5.65	100.62	105.70
57	4	335	C	C5-C4-N4	5.65	124.15	120.20
1	1	1075	C	C5-C6-N1	5.64	123.82	121.00
1	1	1594	U	C6-N1-C1'	-5.64	113.30	121.20
1	1	2624	G	C8-N9-C4	-5.64	104.14	106.40
57	4	53	G	OP2-P-O3'	-5.64	92.79	105.20
1	1	1	G	N3-C4-C5	-5.64	125.78	128.60
1	1	968	C	C6-N1-C2	-5.64	118.05	120.30
1	1	2885	G	C4-N9-C1'	5.64	133.83	126.50
2	2	1008	U	N3-C2-O2	-5.64	118.25	122.20
2	2	1073	U	N3-C2-O2	-5.63	118.26	122.20
57	4	241	C	N1-C2-O2	5.63	122.28	118.90
1	1	2214	C	N3-C2-O2	-5.63	117.96	121.90
57	4	335	C	P-O3'-C3'	5.63	126.46	119.70
2	2	1116	U	N1-C2-O2	5.63	126.74	122.80
57	4	229	U	C6-N1-C2	-5.63	117.62	121.00
57	4	12	U	C5-C6-N1	5.62	125.51	122.70
57	4	187	C	N3-C2-O2	-5.62	117.96	121.90
1	1	1357	C	N1-C2-O2	5.62	122.27	118.90
1	1	2403	C	C2-N1-C1'	5.62	124.98	118.80
1	1	1905	C	N3-C2-O2	-5.62	117.97	121.90
57	4	321	G	N9-C4-C5	5.62	107.65	105.40
1	1	709	U	N1-C2-O2	5.61	126.73	122.80
2	2	993	G	C4-N9-C1'	5.61	133.80	126.50
1	1	957	C	N1-C2-O2	5.61	122.27	118.90
1	1	1117	C	N3-C2-O2	-5.61	117.97	121.90
1	1	1547	C	N3-C2-O2	-5.61	117.97	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1859	U	N1-C2-O2	5.61	126.73	122.80
1	1	2484	G	C8-N9-C1'	-5.61	119.71	127.00
2	2	582	C	N3-C2-O2	-5.61	117.98	121.90
1	1	1157	G	C4-C5-N7	5.60	113.04	110.80
2	2	1009	U	C2-N1-C1'	5.60	124.42	117.70
1	1	2488	G	N3-C4-N9	5.60	129.36	126.00
2	2	727	G	C6-C5-N7	-5.60	127.04	130.40
2	2	979	C	C6-N1-C2	-5.60	118.06	120.30
2	2	1245	C	C5-C6-N1	5.60	123.80	121.00
57	4	134	G	C8-N9-C4	-5.60	104.16	106.40
1	1	1725	U	N3-C2-O2	-5.60	118.28	122.20
1	1	2283	C	N3-C2-O2	-5.60	117.98	121.90
1	1	2507	C	C6-N1-C2	-5.60	118.06	120.30
57	4	304	C	N3-C2-O2	-5.59	117.98	121.90
18	N	51	LEU	CB-CG-CD1	-5.59	101.50	111.00
1	1	648	G	C6-C5-N7	-5.59	127.05	130.40
1	1	1725	U	N1-C2-O2	5.59	126.71	122.80
1	1	1351	C	C2-N1-C1'	5.59	124.94	118.80
57	4	13	G	OP1-P-O3'	5.58	117.49	105.20
57	4	16	U	N1-C2-O2	5.58	126.71	122.80
57	4	330	U	C5-C6-N1	5.58	125.49	122.70
57	4	333	G	C4-N9-C1'	5.58	133.75	126.50
57	4	248	G	O4'-C1'-N9	5.58	112.66	108.20
1	1	2347	C	N1-C2-O2	5.57	122.24	118.90
1	1	1385	A	O4'-C1'-N9	5.57	112.66	108.20
1	1	2667	C	N1-C2-O2	5.57	122.24	118.90
2	2	937	A	C4-C5-N7	5.57	113.49	110.70
57	4	358	C	N1-C2-O2	5.57	122.24	118.90
1	1	876	C	C6-N1-C2	-5.56	118.08	120.30
1	1	2889	C	C6-N1-C2	-5.56	118.08	120.30
1	1	1447	C	C6-N1-C2	-5.56	118.08	120.30
57	4	343	C	N3-C2-O2	-5.56	118.01	121.90
57	4	146	C	C5-C6-N1	5.56	123.78	121.00
2	2	1215	G	C4-N9-C1'	5.55	133.72	126.50
57	4	49	C	P-O5'-C5'	5.55	129.79	120.90
1	1	2510	C	N3-C2-O2	-5.55	118.01	121.90
1	1	2562	U	C2-N1-C1'	5.55	124.36	117.70
1	1	2594	C	C2-N1-C1'	5.55	124.90	118.80
2	2	470	C	N3-C2-O2	-5.55	118.02	121.90
2	2	1471	U	N1-C2-O2	5.55	126.68	122.80
1	1	2552	OMU	P-O3'-C3'	5.55	126.36	119.70
2	2	1262	C	C5-C6-N1	5.55	123.77	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	492	C	C5-C6-N1	5.54	123.77	121.00
2	2	563	A	C4-N9-C1'	5.54	136.27	126.30
2	2	451	A	C4-N9-C1'	5.54	136.27	126.30
1	1	2620	C	C6-N1-C2	-5.54	118.08	120.30
57	4	323	A	C8-N9-C4	-5.54	103.58	105.80
1	1	2720	U	N1-C2-O2	5.54	126.67	122.80
2	2	1041	G	C5-C6-O6	5.53	131.92	128.60
1	1	281	C	C6-N1-C2	-5.53	118.09	120.30
1	1	2698	U	C5-C6-N1	5.53	125.47	122.70
1	1	295	G	N3-C4-N9	5.53	129.32	126.00
1	1	2339	C	C2-N1-C1'	5.53	124.88	118.80
2	2	989	U	C5-C6-N1	5.53	125.46	122.70
57	4	152	C	O4'-C1'-N1	5.53	112.62	108.20
57	4	300	U	C6-N1-C2	-5.53	117.68	121.00
1	1	307	G	C8-N9-C4	-5.53	104.19	106.40
57	4	137	C	N1-C2-O2	5.53	122.22	118.90
2	2	1003	G	C4-C5-N7	5.52	113.01	110.80
1	1	269	C	C2-N1-C1'	5.52	124.88	118.80
1	1	2300	C	C6-N1-C2	-5.52	118.09	120.30
2	2	1244	G	N3-C2-N2	-5.52	116.03	119.90
57	4	66	C	C6-N1-C2	-5.52	118.09	120.30
1	1	77	G	C4-N9-C1'	5.52	133.68	126.50
1	1	1153	C	C2-N1-C1'	5.52	124.87	118.80
1	1	1182	G	C6-C5-N7	-5.52	127.09	130.40
1	1	1119	U	N3-C2-O2	-5.51	118.34	122.20
1	1	1785	A	C8-N9-C4	-5.51	103.59	105.80
1	1	1892	C	C5-C6-N1	5.51	123.76	121.00
3	3	68	C	N1-C2-O2	5.51	122.21	118.90
57	4	36	C	O4'-C1'-N1	5.51	112.61	108.20
1	1	1894	C	N1-C2-O2	5.51	122.20	118.90
1	1	1200	C	C6-N1-C2	-5.51	118.10	120.30
2	2	1097	C	C6-N1-C2	-5.51	118.10	120.30
1	1	669	G	N3-C4-N9	5.50	129.30	126.00
57	4	132	U	C6-N1-C2	-5.50	117.70	121.00
1	1	155	A	N9-C4-C5	-5.50	103.60	105.80
1	1	2457	PSU	P-O3'-C3'	5.50	126.30	119.70
1	1	2698	U	C2-N1-C1'	5.50	124.30	117.70
57	4	286	A	C8-N9-C1'	5.50	137.59	127.70
1	1	455	C	C6-N1-C2	-5.49	118.10	120.30
2	2	1445	U	N1-C2-O2	5.49	126.64	122.80
57	4	249	U	P-O3'-C3'	5.49	126.29	119.70
25	U	98	SER	C-N-CA	5.49	135.43	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	333	G	C6-C5-N7	-5.49	127.11	130.40
1	1	681	G	N9-C4-C5	-5.49	103.20	105.40
37	g	88	ASP	CB-CG-OD1	5.49	123.24	118.30
57	4	127	C	C6-N1-C2	-5.49	118.11	120.30
57	4	148	U	C6-N1-C2	-5.49	117.71	121.00
57	4	273	A	C6-C5-N7	-5.49	128.46	132.30
2	2	1132	C	N1-C2-O2	5.49	122.19	118.90
1	1	1611	C	N1-C2-O2	5.48	122.19	118.90
2	2	266	G	C4-C5-N7	5.48	112.99	110.80
2	2	842	U	N1-C2-O2	5.48	126.64	122.80
57	4	144	U	P-O3'-C3'	5.48	126.28	119.70
1	1	1399	C	C5-C6-N1	5.48	123.74	121.00
1	1	2321	U	N1-C2-O2	5.48	126.63	122.80
2	2	54	C	N3-C2-O2	-5.48	118.07	121.90
1	1	1135	C	N3-C2-O2	-5.48	118.07	121.90
57	4	172	U	O4'-C1'-N1	5.47	112.58	108.20
2	2	211	G	C4-N9-C1'	5.47	133.62	126.50
2	2	936	C	N3-C2-O2	-5.47	118.07	121.90
57	4	150	G	N3-C4-N9	5.47	129.28	126.00
2	2	4	U	N3-C2-O2	-5.47	118.37	122.20
1	1	780	G	C6-C5-N7	-5.46	127.12	130.40
1	1	1023	U	C2-N1-C1'	5.46	124.26	117.70
1	1	1267	U	N1-C2-O2	5.46	126.63	122.80
1	1	2512	C	C5-C6-N1	5.46	123.73	121.00
2	2	842	U	N3-C2-O2	-5.46	118.38	122.20
2	2	1264	U	C5-C6-N1	5.46	125.43	122.70
57	4	186	A	N7-C8-N9	5.46	116.53	113.80
57	4	246	U	C2-N1-C1'	5.46	124.26	117.70
1	1	1296	G	C6-C5-N7	-5.46	127.12	130.40
57	4	120	U	C5-C6-N1	5.46	125.43	122.70
1	1	702	U	C2-N1-C1'	5.46	124.25	117.70
1	1	2901	C	C6-N1-C2	-5.46	118.12	120.30
1	1	312	G	C4-N9-C1'	5.46	133.59	126.50
2	2	1445	U	N3-C2-O2	-5.46	118.38	122.20
1	1	301	G	O4'-C1'-N9	5.46	112.56	108.20
1	1	721	A	C4-C5-N7	5.46	113.43	110.70
1	1	1557	C	N3-C2-O2	-5.45	118.08	121.90
2	2	1020	G	C8-N9-C1'	-5.45	119.91	127.00
1	1	1092	C	N3-C2-O2	-5.45	118.08	121.90
2	2	632	U	N3-C2-O2	-5.45	118.39	122.20
1	1	1664	A	C4-N9-C1'	5.45	136.11	126.30
2	2	110	C	C2-N1-C1'	5.45	124.79	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	153	U	OP2-P-O3'	5.45	117.19	105.20
1	1	1675	C	C6-N1-C2	-5.45	118.12	120.30
1	1	952	G	N7-C8-N9	5.45	115.82	113.10
1	1	2761	A	O4'-C1'-N9	5.45	112.56	108.20
57	4	38	A	O4'-C1'-N9	5.45	112.56	108.20
57	4	48	C	N3-C2-O2	-5.44	118.09	121.90
57	4	193	A	O4'-C1'-N9	5.44	112.56	108.20
1	1	1157	G	N9-C4-C5	-5.44	103.22	105.40
2	2	590	U	N1-C2-O2	5.44	126.61	122.80
2	2	738	C	C5-C6-N1	5.44	123.72	121.00
3	3	30	C	C5-C6-N1	5.44	123.72	121.00
1	1	129	C	N3-C2-O2	-5.44	118.09	121.90
57	4	36	C	P-O3'-C3'	5.44	126.22	119.70
2	2	647	C	C6-N1-C2	-5.43	118.13	120.30
57	4	359	C	C6-N1-C2	-5.43	118.13	120.30
1	1	485	C	N1-C2-O2	5.43	122.16	118.90
1	1	991	C	C2-N1-C1'	5.43	124.77	118.80
2	2	1088	G	C8-N9-C1'	-5.43	119.94	127.00
2	2	358	U	N3-C2-O2	-5.43	118.40	122.20
57	4	286	A	N7-C8-N9	-5.43	111.09	113.80
57	4	121	A	P-O3'-C3'	5.43	126.21	119.70
1	1	1267	U	N3-C2-O2	-5.42	118.40	122.20
1	1	1916	A	N7-C8-N9	5.42	116.51	113.80
1	1	2488	G	N3-C4-C5	-5.42	125.89	128.60
1	1	2592	G	C4-C5-N7	5.42	112.97	110.80
1	1	1605	C	N1-C2-O2	5.42	122.15	118.90
57	4	76	C	C2-N1-C1'	5.42	124.76	118.80
1	1	373	U	C2-N1-C1'	5.42	124.20	117.70
2	2	1346	A	OP1-P-O3'	5.41	117.11	105.20
2	2	1174	G	N9-C4-C5	-5.41	103.24	105.40
1	1	1547	C	C6-N1-C2	-5.41	118.14	120.30
1	1	2624	G	C6-N1-C2	-5.41	121.86	125.10
57	4	48	C	O4'-C1'-N1	5.41	112.53	108.20
2	2	294	U	C2-N1-C1'	5.41	124.19	117.70
57	4	240	U	O4'-C1'-N1	5.41	112.52	108.20
1	1	1174	U	N1-C2-O2	5.40	126.58	122.80
1	1	1605	C	N3-C2-O2	-5.40	118.12	121.90
1	1	2594	C	C6-N1-C2	-5.40	118.14	120.30
2	2	993	G	C8-N9-C1'	-5.40	119.98	127.00
2	2	1533	C	N1-C2-O2	5.40	122.14	118.90
57	4	290	A	O3'-P-O5'	5.40	114.26	104.00
1	1	1785	A	N7-C8-N9	5.40	116.50	113.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2063	C	C6-N1-C1'	-5.40	114.32	120.80
1	1	2794	C	C2-N1-C1'	5.40	124.74	118.80
1	1	2222	C	C6-N1-C2	-5.40	118.14	120.30
57	4	289	U	N3-C2-O2	-5.40	118.42	122.20
57	4	147	C	C5-C6-N1	5.40	123.70	121.00
1	1	2259	U	C6-N1-C1'	-5.39	113.65	121.20
1	1	2285	C	N1-C2-O2	5.39	122.14	118.90
1	1	1456	G	C6-C5-N7	-5.39	127.17	130.40
57	4	141	C	O4'-C1'-N1	5.39	112.51	108.20
1	1	143	C	N1-C2-O2	5.39	122.13	118.90
1	1	2380	C	N1-C2-O2	5.39	122.13	118.90
2	2	1113	C	C6-N1-C2	-5.39	118.14	120.30
57	4	121	A	O4'-C1'-N9	-5.39	103.89	108.20
2	2	20	U	N3-C2-O2	-5.38	118.43	122.20
57	4	27	U	C6-N1-C2	-5.38	117.77	121.00
57	4	214	C	C6-N1-C1'	5.38	127.26	120.80
1	1	284	U	C5-C6-N1	5.38	125.39	122.70
57	4	16	U	C6-N1-C2	-5.38	117.77	121.00
1	1	702	U	N3-C2-O2	-5.38	118.43	122.20
1	1	1941	C	C6-N1-C1'	-5.38	114.34	120.80
1	1	1530	G	N3-C4-N9	5.38	129.23	126.00
1	1	1190	G	C8-N9-C4	-5.38	104.25	106.40
1	1	2601	C	C2-N1-C1'	5.38	124.72	118.80
1	1	1881	C	N3-C2-O2	-5.38	118.14	121.90
57	4	132	U	O3'-P-O5'	5.38	114.21	104.00
2	2	879	C	N3-C2-O2	-5.37	118.14	121.90
2	2	1163	A	N9-C4-C5	-5.37	103.65	105.80
57	4	284	G	P-O5'-C5'	5.37	129.50	120.90
57	4	288	G	N7-C8-N9	5.37	115.79	113.10
1	1	1456	G	N3-C4-N9	5.37	129.22	126.00
2	2	1392	G	C6-C5-N7	-5.37	127.18	130.40
2	2	1038	C	C5-C6-N1	5.37	123.68	121.00
57	4	360	A	O5'-C5'-C4'	5.37	121.90	111.70
1	1	284	U	C6-N1-C1'	-5.37	113.69	121.20
1	1	847	U	C2-N1-C1'	5.37	124.14	117.70
1	1	2512	C	C6-N1-C2	-5.37	118.15	120.30
1	1	2874	C	C5-C6-N1	5.37	123.68	121.00
2	2	1088	G	N3-C4-C5	-5.37	125.92	128.60
2	2	1163	A	C4-C5-N7	5.37	113.38	110.70
57	4	189	C	O3'-P-O5'	5.37	114.19	104.00
1	1	1547	C	C2-N1-C1'	5.36	124.70	118.80
1	1	1658	C	C5-C6-N1	5.36	123.68	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1945	G	C4-N9-C1'	5.36	133.47	126.50
1	1	1873	G	C6-C5-N7	-5.36	127.19	130.40
2	2	476	U	C5-C6-N1	5.36	125.38	122.70
57	4	273	A	C4-C5-N7	5.36	113.38	110.70
1	1	358	U	C6-N1-C2	-5.35	117.79	121.00
1	1	2236	U	N3-C2-O2	-5.35	118.45	122.20
1	1	2902	C	C2-N1-C1'	5.35	124.69	118.80
2	2	1283	U	N3-C2-O2	-5.35	118.45	122.20
57	4	137	C	C2-N1-C1'	5.35	124.69	118.80
57	4	328	U	C6-N1-C2	-5.35	117.79	121.00
1	1	1999	C	N3-C2-O2	-5.35	118.16	121.90
1	1	2556	C	C2-N1-C1'	5.35	124.68	118.80
1	1	1530	G	N7-C8-N9	5.34	115.77	113.10
2	2	1382	C	C6-N1-C2	-5.34	118.16	120.30
1	1	475	C	N1-C2-O2	5.34	122.10	118.90
2	2	455	G	N3-C4-N9	5.34	129.20	126.00
2	2	1531	A	C8-N9-C4	-5.34	103.66	105.80
57	4	237	U	C5'-C4'-O4'	-5.34	102.69	109.10
57	4	191	A	O3'-P-O5'	5.34	114.14	104.00
57	4	213	G	N7-C8-N9	5.33	115.77	113.10
1	1	1776	G	N3-C4-C5	-5.33	125.93	128.60
1	1	2760	C	C2-N1-C1'	5.33	124.67	118.80
2	2	52	C	N3-C2-O2	-5.33	118.17	121.90
2	2	273	U	N3-C2-O2	-5.33	118.47	122.20
1	1	2752	C	C6-N1-C2	-5.33	118.17	120.30
2	2	568	G	C4-N9-C1'	5.33	133.42	126.50
2	2	998	C	C6-N1-C1'	-5.33	114.41	120.80
1	1	1113	U	N1-C2-O2	5.32	126.53	122.80
57	4	35	C	P-O3'-C3'	5.32	126.09	119.70
57	4	259	G	C8-N9-C4	-5.32	104.27	106.40
57	4	224	A	C5'-C4'-O4'	5.32	115.49	109.10
1	1	1306	C	N3-C2-O2	-5.32	118.18	121.90
57	4	193	A	O5'-C5'-C4'	5.32	121.81	111.70
2	2	672	U	C6-N1-C1'	-5.32	113.75	121.20
2	2	1141	C	O4'-C1'-N1	5.32	112.45	108.20
57	4	142	U	C5'-C4'-O4'	-5.32	102.72	109.10
1	1	999	U	N3-C2-O2	-5.31	118.48	122.20
1	1	1092	C	C5-C6-N1	5.31	123.66	121.00
57	4	131	U	P-O5'-C5'	5.31	129.40	120.90
13	I	137	LEU	CA-CB-CG	5.31	127.52	115.30
57	4	16	U	C5-C6-N1	5.31	125.36	122.70
1	1	62	U	C6-N1-C2	-5.31	117.81	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1547	C	N1-C2-O2	5.31	122.09	118.90
1	1	1916	A	C8-N9-C4	-5.31	103.68	105.80
2	2	272	C	C6-N1-C2	-5.31	118.18	120.30
57	4	60	U	C5'-C4'-O4'	-5.31	102.73	109.10
57	4	117	G	C6-C5-N7	-5.31	127.21	130.40
2	2	17	U	N3-C2-O2	-5.31	118.48	122.20
2	2	1008	U	C5-C6-N1	5.31	125.35	122.70
1	1	370	G	N1-C2-N2	-5.30	111.43	116.20
1	1	994	C	C6-N1-C2	-5.30	118.18	120.30
1	1	1877	A	N1-C6-N6	-5.30	115.42	118.60
57	4	47	G	N7-C8-N9	5.30	115.75	113.10
1	1	1463	C	C5-C6-N1	5.30	123.65	121.00
57	4	155	C	C2-N3-C4	5.30	122.55	119.90
1	1	681	G	C8-N9-C1'	-5.30	120.11	127.00
1	1	1605	C	C5-C6-N1	5.30	123.65	121.00
1	1	2539	C	C5-C6-N1	5.30	123.65	121.00
57	4	75	C	C2-N3-C4	5.30	122.55	119.90
1	1	2723	C	N3-C2-O2	-5.29	118.19	121.90
57	4	176	G	C8-N9-C4	-5.29	104.28	106.40
57	4	328	U	N1-C2-O2	5.29	126.50	122.80
1	1	2108	A	N3-C4-N9	5.29	131.63	127.40
57	4	246	U	P-O3'-C3'	-5.29	113.35	119.70
1	1	1530	G	C8-N9-C1'	-5.29	120.13	127.00
57	4	184	A	O5'-P-OP1	-5.29	100.94	105.70
57	4	297	G	C5-C6-O6	-5.29	125.43	128.60
57	4	56	C	O4'-C1'-N1	5.29	112.43	108.20
1	1	915	C	C6-N1-C2	-5.28	118.19	120.30
1	1	1530	G	C6-C5-N7	-5.28	127.23	130.40
1	1	765	C	C6-N1-C2	-5.28	118.19	120.30
1	1	1192	G	C5-C6-O6	5.28	131.77	128.60
1	1	576	U	N1-C2-O2	5.28	126.50	122.80
1	1	1294	U	C2-N1-C1'	5.28	124.04	117.70
1	1	1436	G	C6-N1-C2	-5.28	121.93	125.10
1	1	565	C	C2-N1-C1'	5.28	124.60	118.80
1	1	1051	G	C8-N9-C1'	-5.27	120.15	127.00
57	4	78	C	N1-C2-O2	5.27	122.06	118.90
1	1	440	C	C6-N1-C2	-5.27	118.19	120.30
1	1	2072	C	C6-N1-C1'	-5.27	114.48	120.80
1	1	2072	C	N3-C2-O2	-5.27	118.21	121.90
2	2	1003	G	C8-N9-C1'	-5.27	120.15	127.00
2	2	336	A	N7-C8-N9	5.27	116.43	113.80
57	4	191	A	P-O3'-C3'	5.27	126.02	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1499	C	C2-N1-C1'	5.26	124.59	118.80
1	1	1664	A	C8-N9-C1'	-5.26	118.22	127.70
1	1	455	C	N1-C2-O2	5.26	122.06	118.90
1	1	681	G	C4-N9-C1'	5.26	133.34	126.50
1	1	678	C	C2-N1-C1'	5.26	124.59	118.80
2	2	89	U	N3-C2-O2	-5.26	118.52	122.20
57	4	129	G	C8-N9-C4	-5.26	104.30	106.40
1	1	890	C	C6-N1-C2	-5.26	118.20	120.30
57	4	329	U	N3-C2-O2	-5.26	118.52	122.20
1	1	837	C	N3-C2-O2	-5.26	118.22	121.90
1	1	2698	U	N3-C2-O2	-5.25	118.52	122.20
57	4	330	U	N3-C2-O2	-5.25	118.52	122.20
1	1	1409	U	N1-C2-O2	5.25	126.48	122.80
2	2	1232	U	N3-C2-O2	-5.25	118.52	122.20
57	4	315	G	N3-C4-N9	5.25	129.15	126.00
1	1	978	G	N9-C4-C5	5.25	107.50	105.40
57	4	78	C	C5-C6-N1	5.25	123.62	121.00
57	4	249	U	C2-N1-C1'	-5.25	111.40	117.70
1	1	356	G	N7-C8-N9	5.25	115.72	113.10
1	1	1180	U	N3-C2-O2	-5.25	118.53	122.20
2	2	273	U	N1-C2-O2	5.25	126.47	122.80
57	4	255	A	N7-C8-N9	5.25	116.42	113.80
1	1	1878	G	C8-N9-C4	-5.25	104.30	106.40
2	2	1210	C	N1-C2-O2	5.25	122.05	118.90
1	1	154	U	C5-C6-N1	5.24	125.32	122.70
1	1	496	G	N1-C6-O6	-5.24	116.75	119.90
1	1	912	C	C6-N1-C2	-5.24	118.20	120.30
2	2	1116	U	C2-N1-C1'	5.24	123.99	117.70
57	4	171	A	C8-N9-C4	-5.24	103.70	105.80
57	4	185	A	P-O3'-C3'	5.24	125.99	119.70
1	1	971	G	N9-C4-C5	-5.24	103.31	105.40
2	2	864	A	N7-C8-N9	5.24	116.42	113.80
2	2	538	G	N1-C2-N3	5.24	127.04	123.90
57	4	324	G	C5'-C4'-O4'	5.24	115.38	109.10
57	4	191	A	C8-N9-C4	-5.23	103.71	105.80
1	1	758	C	N3-C2-O2	-5.23	118.24	121.90
1	1	2143	C	N1-C2-O2	5.23	122.04	118.90
2	2	1214	C	P-O3'-C3'	5.23	125.98	119.70
1	1	1294	U	N3-C2-O2	-5.23	118.54	122.20
1	1	2484	G	C4-N9-C1'	5.23	133.30	126.50
2	2	1283	U	N1-C2-O2	5.23	126.46	122.80
1	1	1296	G	C4-C5-N7	5.23	112.89	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	127	G	C8-N9-C4	-5.22	104.31	106.40
1	1	1113	U	C6-N1-C1'	-5.22	113.89	121.20
51	u	55	ASP	CB-CG-OD1	5.22	123.00	118.30
1	1	943	A	N7-C8-N9	5.22	116.41	113.80
1	1	1817	G	O5'-P-OP2	-5.22	101.00	105.70
57	4	318	G	N3-C4-C5	-5.22	125.99	128.60
2	2	962	C	C2-N1-C1'	5.22	124.54	118.80
1	1	1053	C	N1-C2-O2	5.22	122.03	118.90
1	1	2784	U	C2-N1-C1'	5.22	123.96	117.70
2	2	1244	G	N9-C4-C5	5.22	107.49	105.40
3	3	47	C	N1-C2-O2	5.22	122.03	118.90
57	4	181	G	C8-N9-C1'	-5.22	120.22	127.00
1	1	302	C	N1-C2-O2	5.21	122.03	118.90
57	4	294	A	N1-C6-N6	-5.21	115.47	118.60
1	1	2442	C	N3-C2-O2	-5.21	118.25	121.90
2	2	272	C	C2-N1-C1'	5.21	124.53	118.80
1	1	1708	C	C2-N1-C1'	5.21	124.53	118.80
1	1	1805	A	C5-C6-N1	5.21	120.30	117.70
2	2	1116	U	N3-C2-O2	-5.21	118.56	122.20
57	4	28	U	P-O3'-C3'	5.21	125.95	119.70
57	4	261	G	P-O5'-C5'	5.21	129.23	120.90
57	4	41	G	C8-N9-C4	-5.20	104.32	106.40
1	1	1248	G	C6-C5-N7	-5.20	127.28	130.40
57	4	138	C	C6-N1-C2	-5.20	118.22	120.30
1	1	1308	A	N7-C8-N9	5.20	116.40	113.80
1	1	2326	C	C2-N1-C1'	5.20	124.52	118.80
1	1	2582	G	N3-C4-N9	5.20	129.12	126.00
57	4	109	C	N3-C2-O2	-5.20	118.26	121.90
57	4	145	C	O4'-C1'-N1	5.20	112.36	108.20
1	1	2260	C	C6-N1-C2	-5.20	118.22	120.30
1	1	2626	C	C6-N1-C2	-5.20	118.22	120.30
57	4	357	U	C6-N1-C1'	-5.20	113.93	121.20
2	2	999	C	N3-C2-O2	-5.19	118.26	121.90
1	1	1	G	C4-N9-C1'	5.19	133.25	126.50
2	2	132	C	C6-N1-C2	-5.19	118.22	120.30
2	2	1230	C	C6-N1-C2	-5.19	118.22	120.30
2	2	368	U	N1-C2-O2	5.19	126.43	122.80
57	4	331	C	O4'-C1'-N1	5.19	112.35	108.20
3	3	97	C	C6-N1-C2	-5.19	118.22	120.30
1	1	999	U	C2-N1-C1'	5.19	123.93	117.70
1	1	968	C	C5-C6-N1	5.19	123.59	121.00
1	1	8	C	C2-N1-C1'	5.18	124.50	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1760	C	N3-C2-O2	-5.18	118.27	121.90
1	1	2465	C	C6-N1-C2	-5.18	118.23	120.30
57	4	75	C	C2-N1-C1'	5.18	124.50	118.80
1	1	912	C	N1-C2-O2	5.18	122.01	118.90
1	1	2560	A	N7-C8-N9	5.18	116.39	113.80
1	1	1703	G	N3-C4-N9	5.18	129.11	126.00
57	4	343	C	C6-N1-C2	-5.18	118.23	120.30
57	4	130	C	C6-N1-C2	-5.17	118.23	120.30
57	4	232	A	C5-C6-N1	5.17	120.29	117.70
1	1	640	C	C6-N1-C2	-5.17	118.23	120.30
57	4	133	A	P-O3'-C3'	5.17	125.91	119.70
57	4	157	C	C6-N1-C1'	5.17	127.01	120.80
57	4	204	G	C8-N9-C1'	-5.17	120.28	127.00
1	1	2483	C	C6-N1-C2	-5.17	118.23	120.30
1	1	2650	U	N3-C2-O2	-5.17	118.58	122.20
1	1	1370	C	C2-N1-C1'	5.17	124.48	118.80
1	1	496	G	C5-C6-O6	5.16	131.70	128.60
1	1	2466	C	N3-C2-O2	-5.16	118.29	121.90
57	4	72	A	C8-N9-C1'	-5.16	118.41	127.70
57	4	306	U	C6-N1-C2	-5.16	117.90	121.00
2	2	180	U	C2-N1-C1'	5.16	123.89	117.70
2	2	1363	A	O4'-C1'-N9	5.16	112.33	108.20
57	4	240	U	C5'-C4'-O4'	5.16	115.30	109.10
2	2	440	C	C5-C6-N1	5.16	123.58	121.00
57	4	53	G	OP1-P-O3'	5.16	116.55	105.20
57	4	266	C	N3-C4-N4	5.15	121.61	118.00
1	1	1437	C	C6-N1-C2	-5.15	118.24	120.30
57	4	133	A	C8-N9-C4	-5.15	103.74	105.80
1	1	1832	C	C6-N1-C2	-5.15	118.24	120.30
1	1	2000	C	C6-N1-C2	-5.15	118.24	120.30
1	1	795	C	C6-N1-C2	-5.15	118.24	120.30
57	4	6	U	C5-C6-N1	5.15	125.27	122.70
57	4	22	G	N7-C8-N9	5.15	115.67	113.10
2	2	761	G	C4-N9-C1'	5.15	133.19	126.50
1	1	2108	A	C4-N9-C1'	5.14	135.56	126.30
1	1	2347	C	C6-N1-C2	-5.14	118.24	120.30
1	1	2579	C	N3-C2-O2	-5.14	118.30	121.90
1	1	2230	G	N3-C4-C5	-5.14	126.03	128.60
57	4	110	U	N1-C2-O2	5.14	126.40	122.80
1	1	140	C	N3-C2-O2	-5.14	118.31	121.90
2	2	52	C	N1-C2-O2	5.14	121.98	118.90
45	o	42	LEU	CA-CB-CG	5.14	127.11	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	4	9	U	OP1-P-O3'	5.13	116.50	105.20
1	1	305	C	C5-C6-N1	5.13	123.57	121.00
1	1	1530	G	N3-C4-C5	-5.13	126.03	128.60
2	2	1244	G	C6-C5-N7	5.13	133.48	130.40
1	1	635	C	C5-C6-N1	5.13	123.56	121.00
57	4	37	C	C6-N1-C2	-5.13	118.25	120.30
57	4	263	G	N1-C2-N2	5.13	120.82	116.20
1	1	77	G	C8-N9-C1'	-5.13	120.33	127.00
2	2	103	U	N3-C2-O2	-5.13	118.61	122.20
57	4	64	C	P-O5'-C5'	5.13	129.10	120.90
1	1	1180	U	C2-N1-C1'	5.12	123.85	117.70
2	2	1140	C	O4'-C1'-N1	5.12	112.30	108.20
1	1	2540	C	C6-N1-C2	-5.12	118.25	120.30
1	1	2723	C	C6-N1-C2	-5.12	118.25	120.30
57	4	192	A	O4'-C1'-N9	5.12	112.30	108.20
1	1	2605	PSU	OP2-P-O3'	5.12	116.47	105.20
57	4	318	G	O4'-C1'-N9	5.12	112.30	108.20
1	1	1296	G	C4-N9-C1'	5.12	133.16	126.50
1	1	1488	C	C2-N1-C1'	5.12	124.43	118.80
57	4	212	U	C6-N1-C2	-5.12	117.93	121.00
2	2	1333	A	N7-C8-N9	5.12	116.36	113.80
57	4	288	G	C2-N3-C4	5.12	114.46	111.90
1	1	754	U	C5-C6-N1	5.12	125.26	122.70
1	1	1395	A	O4'-C1'-N9	5.12	112.29	108.20
2	2	1009	U	C6-N1-C2	-5.12	117.93	121.00
57	4	342	U	C5-C6-N1	5.12	125.26	122.70
2	2	1327	C	N3-C2-O2	-5.11	118.32	121.90
57	4	263	G	C2-N3-C4	5.11	114.46	111.90
2	2	589	U	N3-C2-O2	-5.11	118.62	122.20
2	2	632	U	N1-C2-O2	5.11	126.38	122.80
2	2	563	A	C8-N9-C1'	-5.11	118.51	127.70
2	2	1448	C	C5-C6-N1	5.11	123.55	121.00
57	4	6	U	O4'-C1'-N1	5.11	112.29	108.20
1	1	2698	U	C6-N1-C2	-5.11	117.94	121.00
57	4	332	G	P-O3'-C3'	5.11	125.83	119.70
57	4	216	U	P-O3'-C3'	5.10	125.83	119.70
1	1	672	C	N3-C2-O2	-5.10	118.33	121.90
1	1	2640	G	C4-C5-N7	5.10	112.84	110.80
2	2	624	C	C6-N1-C2	-5.10	118.26	120.30
2	2	891	U	N3-C2-O2	-5.10	118.63	122.20
2	2	1515	G	N3-C4-C5	-5.10	126.05	128.60
1	1	358	U	N3-C2-O2	-5.10	118.63	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2885	G	N3-C4-C5	-5.10	126.05	128.60
1	1	2073	C	C6-N1-C2	-5.09	118.26	120.30
1	1	2895	G	C6-C5-N7	-5.09	127.34	130.40
57	4	184	A	O4'-C1'-N9	5.09	112.28	108.20
57	4	315	G	N3-C4-C5	-5.09	126.05	128.60
2	2	990	C	N1-C2-O2	5.09	121.95	118.90
2	2	998	C	C6-N1-C2	-5.09	118.26	120.30
57	4	142	U	O4'-C1'-N1	5.09	112.27	108.20
1	1	288	U	C5-C6-N1	5.09	125.25	122.70
2	2	929	G	N3-C4-N9	-5.09	122.95	126.00
2	2	1327	C	N1-C2-O2	5.09	121.95	118.90
57	4	324	G	N1-C6-O6	-5.09	116.85	119.90
1	1	2507	C	C2-N1-C1'	5.09	124.40	118.80
2	2	20	U	N1-C2-O2	5.09	126.36	122.80
2	2	980	C	C2-N1-C1'	5.09	124.40	118.80
2	2	1002	G	N7-C8-N9	5.09	115.64	113.10
57	4	14	G	N7-C8-N9	5.09	115.64	113.10
1	1	2521	C	N1-C2-O2	5.08	121.95	118.90
1	1	1611	C	C2-N1-C1'	5.08	124.39	118.80
1	1	2053	G	C4-N9-C1'	5.08	133.11	126.50
57	4	154	C	C2-N3-C4	5.08	122.44	119.90
1	1	1256	G	C8-N9-C1'	-5.08	120.40	127.00
2	2	54	C	N1-C2-O2	5.08	121.95	118.90
2	2	1202	U	N1-C2-O2	5.08	126.35	122.80
1	1	468	G	C5-C6-O6	5.08	131.65	128.60
1	1	565	C	N1-C2-O2	5.08	121.94	118.90
1	1	1296	G	N7-C8-N9	5.07	115.64	113.10
15	K	12	ASP	CB-CG-OD1	5.07	122.87	118.30
2	2	1322	C	N1-C2-O2	5.07	121.94	118.90
2	2	1174	G	C4-C5-N7	5.07	112.83	110.80
2	2	341	C	C6-N1-C2	-5.07	118.27	120.30
57	4	126	C	C5-C4-N4	-5.07	116.65	120.20
1	1	743	A	N7-C8-N9	5.07	116.33	113.80
2	2	458	U	C2-N1-C1'	5.07	123.78	117.70
57	4	276	U	O4'-C1'-N1	5.07	112.25	108.20
2	2	904	U	N3-C2-O2	-5.06	118.66	122.20
2	2	1449	C	N1-C2-O2	5.06	121.94	118.90
2	2	905	U	N1-C2-O2	5.06	126.34	122.80
57	4	323	A	C2-N3-C4	5.06	113.13	110.60
57	4	32	A	P-O3'-C3'	5.05	125.77	119.70
1	1	62	U	C5-C6-N1	5.05	125.23	122.70
1	1	280	U	N1-C2-O2	5.05	126.34	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	439	U	C2-N1-C1'	5.05	123.76	117.70
13	I	100	ILE	CG1-CB-CG2	-5.05	100.28	111.40
1	1	2457	PSU	OP2-P-O3'	5.05	116.31	105.20
1	1	2895	G	C4-N9-C1'	5.05	133.07	126.50
2	2	605	U	N3-C2-O2	-5.05	118.66	122.20
57	4	330	U	C6-N1-C2	-5.05	117.97	121.00
1	1	1409	U	C5-C6-N1	5.05	125.22	122.70
2	2	110	C	N1-C2-O2	5.05	121.93	118.90
3	3	92	C	C5-C6-N1	5.05	123.52	121.00
57	4	331	C	P-O3'-C3'	5.05	125.76	119.70
1	1	2510	C	N1-C2-O2	5.04	121.93	118.90
1	1	1119	U	N1-C2-O2	5.04	126.33	122.80
1	1	2230	G	C4-N9-C1'	5.04	133.06	126.50
2	2	458	U	C5-C6-N1	5.04	125.22	122.70
1	1	809	G	N1-C6-O6	-5.04	116.88	119.90
1	1	1049	C	N3-C2-O2	-5.04	118.37	121.90
1	1	776	G	C8-N9-C1'	-5.04	120.45	127.00
1	1	1203	U	N3-C2-O2	-5.04	118.68	122.20
1	1	1243	C	N3-C2-O2	-5.04	118.38	121.90
1	1	1412	U	N3-C2-O2	-5.03	118.68	122.20
57	4	110	U	N3-C2-O2	-5.03	118.68	122.20
57	4	181	G	C8-N9-C4	-5.03	104.39	106.40
1	1	952	G	C4-C5-N7	5.03	112.81	110.80
2	2	514	C	N1-C2-O2	5.03	121.92	118.90
1	1	1488	C	C6-N1-C2	-5.03	118.29	120.30
57	4	107	C	OP2-P-O3'	5.03	116.26	105.20
2	2	937	A	C5-C6-N6	-5.02	119.68	123.70
57	4	325	G	C4-N9-C1'	5.02	133.03	126.50
1	1	1658	C	C6-N1-C2	-5.02	118.29	120.30
1	1	1999	C	N1-C2-O2	5.02	121.91	118.90
3	3	70	C	C6-N1-C2	-5.02	118.29	120.30
57	4	160	U	N3-C2-O2	-5.02	118.69	122.20
57	4	335	C	C4'-C3'-O3'	5.02	123.05	113.00
1	1	1530	G	C8-N9-C4	-5.02	104.39	106.40
1	1	2045	C	C6-N1-C2	-5.02	118.29	120.30
1	1	2806	C	C2-N1-C1'	5.02	124.32	118.80
1	1	570	G	C6-C5-N7	-5.02	127.39	130.40
1	1	2442	C	N1-C2-O2	5.02	121.91	118.90
2	2	153	C	C6-N1-C2	-5.02	118.29	120.30
2	2	1515	G	C6-C5-N7	-5.02	127.39	130.40
1	1	1459	G	C8-N9-C4	-5.02	104.39	106.40
1	1	1905	C	C6-N1-C1'	-5.02	114.78	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	300	A	C8-N9-C4	-5.02	103.79	105.80
57	4	112	U	N3-C2-O2	-5.02	118.69	122.20
1	1	1863	G	N3-C4-C5	5.02	131.11	128.60
57	4	180	G	N3-C4-C5	-5.02	126.09	128.60
1	1	2108	A	N3-C4-C5	-5.01	123.29	126.80
2	2	882	C	N3-C2-O2	-5.01	118.39	121.90
57	4	9	U	P-O3'-C3'	5.01	125.72	119.70
57	4	266	C	C5'-C4'-O4'	-5.01	103.08	109.10
1	1	1303	G	N1-C6-O6	-5.01	116.89	119.90
2	2	857	C	C5-C6-N1	5.01	123.51	121.00
57	4	348	C	N3-C4-N4	5.01	121.51	118.00
2	2	41	G	C4-C5-N7	5.01	112.81	110.80
57	4	137	C	N3-C2-O2	-5.01	118.39	121.90
57	4	266	C	C5-C4-N4	-5.01	116.69	120.20
1	1	2831	G	N3-C4-N9	-5.01	122.99	126.00
1	1	312	G	C8-N9-C1'	-5.01	120.49	127.00
3	3	30	C	C6-N1-C2	-5.01	118.30	120.30
57	4	73	A	O4'-C1'-N9	-5.00	104.20	108.20
1	1	1398	C	C2-N1-C1'	5.00	124.30	118.80
57	4	8	A	O4'-C1'-N9	5.00	112.20	108.20

All (26) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	1	1618	6MZ	C2',C3'
1	1	1911	PSU	C4',C3'
1	1	1915	3TD	C3'
1	1	1917	PSU	C4',C3'
1	1	2030	6MZ	C2',C3'
1	1	2069	G7M	C4',C2',C3'
1	1	2251	OMG	C2'
1	1	2457	PSU	C4',C3'
1	1	2498	OMC	C4'
1	1	2503	2MA	C2',C3'
1	1	2504	PSU	C4',C3'
1	1	2552	OMU	C2',C3'
1	1	2580	PSU	C4',C3'
1	1	2605	PSU	C4',C3'

All (13) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	1	830	G	Sidechain
2	2	999	C	Sidechain
4	5	90	LEU	Mainchain
10	F	46	ALA	Peptide
13	I	89	SER	Peptide
13	I	94	LYS	Peptide
22	R	23	GLU	Peptide
23	S	60	HIS	Peptide
35	e	31	HIS	Peptide
38	h	82	GLU	Peptide
43	m	62	THR	Peptide
47	q	102	LEU	Peptide
53	w	73	ARG	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
4	5	148/160 (92%)	127 (86%)	20 (14%)	1 (1%)	22 62
5	6	20/22 (91%)	12 (60%)	8 (40%)	0	100 100
6	B	269/273 (98%)	236 (88%)	33 (12%)	0	100 100
7	C	207/209 (99%)	183 (88%)	24 (12%)	0	100 100
8	D	199/201 (99%)	177 (89%)	22 (11%)	0	100 100
9	E	175/179 (98%)	152 (87%)	23 (13%)	0	100 100
10	F	173/177 (98%)	154 (89%)	18 (10%)	1 (1%)	25 65
11	G	147/149 (99%)	128 (87%)	19 (13%)	0	100 100
12	H	128/165 (78%)	94 (73%)	34 (27%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	I	133/142 (94%)	104 (78%)	28 (21%)	1 (1%)	19	60
14	J	140/142 (99%)	125 (89%)	15 (11%)	0	100	100
15	K	121/123 (98%)	109 (90%)	12 (10%)	0	100	100
16	L	142/144 (99%)	122 (86%)	20 (14%)	0	100	100
17	M	134/136 (98%)	116 (87%)	18 (13%)	0	100	100
18	N	117/127 (92%)	106 (91%)	11 (9%)	0	100	100
19	O	114/117 (97%)	98 (86%)	16 (14%)	0	100	100
20	P	112/115 (97%)	103 (92%)	9 (8%)	0	100	100
21	Q	115/118 (98%)	108 (94%)	7 (6%)	0	100	100
22	R	101/103 (98%)	86 (85%)	15 (15%)	0	100	100
23	S	108/110 (98%)	97 (90%)	11 (10%)	0	100	100
24	T	92/100 (92%)	84 (91%)	8 (9%)	0	100	100
25	U	101/104 (97%)	90 (89%)	11 (11%)	0	100	100
26	V	92/94 (98%)	83 (90%)	9 (10%)	0	100	100
27	W	74/85 (87%)	63 (85%)	11 (15%)	0	100	100
28	X	75/78 (96%)	71 (95%)	4 (5%)	0	100	100
29	Y	60/63 (95%)	56 (93%)	4 (7%)	0	100	100
30	Z	56/59 (95%)	50 (89%)	6 (11%)	0	100	100
31	a	55/70 (79%)	47 (86%)	8 (14%)	0	100	100
32	b	54/57 (95%)	45 (83%)	9 (17%)	0	100	100
33	c	50/55 (91%)	44 (88%)	6 (12%)	0	100	100
34	d	44/46 (96%)	41 (93%)	3 (7%)	0	100	100
35	e	62/65 (95%)	52 (84%)	10 (16%)	0	100	100
36	f	36/38 (95%)	32 (89%)	4 (11%)	0	100	100
37	g	223/241 (92%)	195 (87%)	28 (13%)	0	100	100
38	h	206/233 (88%)	179 (87%)	27 (13%)	0	100	100
39	i	203/206 (98%)	185 (91%)	18 (9%)	0	100	100
40	j	154/167 (92%)	135 (88%)	19 (12%)	0	100	100
41	k	102/135 (76%)	97 (95%)	5 (5%)	0	100	100
42	l	149/179 (83%)	135 (91%)	14 (9%)	0	100	100
43	m	127/130 (98%)	113 (89%)	14 (11%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
44	n	125/130 (96%)	110 (88%)	15 (12%)	0	100	100
45	o	97/103 (94%)	88 (91%)	9 (9%)	0	100	100
46	p	115/129 (89%)	102 (89%)	13 (11%)	0	100	100
47	q	119/124 (96%)	99 (83%)	20 (17%)	0	100	100
48	r	110/118 (93%)	89 (81%)	21 (19%)	0	100	100
49	s	98/101 (97%)	90 (92%)	8 (8%)	0	100	100
50	t	86/89 (97%)	77 (90%)	9 (10%)	0	100	100
51	u	80/82 (98%)	71 (89%)	9 (11%)	0	100	100
52	v	78/84 (93%)	67 (86%)	11 (14%)	0	100	100
53	w	64/75 (85%)	61 (95%)	3 (5%)	0	100	100
54	x	81/92 (88%)	66 (82%)	15 (18%)	0	100	100
55	y	84/87 (97%)	83 (99%)	1 (1%)	0	100	100
56	z	68/71 (96%)	60 (88%)	8 (12%)	0	100	100
All	All	6023/6402 (94%)	5297 (88%)	723 (12%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
10	F	47	ASP
4	5	92	LEU
13	I	92	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	
4	5	125/133 (94%)	124 (99%)	1 (1%)	81	89
6	B	216/218 (99%)	215 (100%)	1 (0%)	88	93
7	C	164/164 (100%)	164 (100%)	0	100	100
8	D	165/165 (100%)	165 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
9	E	148/150 (99%)	146 (99%)	2 (1%)	67 81
10	F	136/138 (99%)	136 (100%)	0	100 100
11	G	114/114 (100%)	114 (100%)	0	100 100
12	H	99/123 (80%)	99 (100%)	0	100 100
13	I	104/110 (94%)	103 (99%)	1 (1%)	76 86
14	J	116/116 (100%)	116 (100%)	0	100 100
15	K	104/104 (100%)	103 (99%)	1 (1%)	76 86
16	L	103/103 (100%)	101 (98%)	2 (2%)	57 75
17	M	109/109 (100%)	109 (100%)	0	100 100
18	N	99/103 (96%)	99 (100%)	0	100 100
19	O	86/87 (99%)	85 (99%)	1 (1%)	71 84
20	P	99/100 (99%)	97 (98%)	2 (2%)	55 73
21	Q	89/90 (99%)	89 (100%)	0	100 100
22	R	84/84 (100%)	84 (100%)	0	100 100
23	S	93/93 (100%)	92 (99%)	1 (1%)	73 85
24	T	81/84 (96%)	81 (100%)	0	100 100
25	U	84/85 (99%)	83 (99%)	1 (1%)	71 84
26	V	78/78 (100%)	78 (100%)	0	100 100
27	W	58/63 (92%)	57 (98%)	1 (2%)	60 78
28	X	67/68 (98%)	66 (98%)	1 (2%)	65 80
29	Y	54/55 (98%)	53 (98%)	1 (2%)	57 75
30	Z	48/49 (98%)	48 (100%)	0	100 100
31	a	54/62 (87%)	54 (100%)	0	100 100
32	b	47/48 (98%)	44 (94%)	3 (6%)	17 44
33	c	47/49 (96%)	47 (100%)	0	100 100
34	d	38/38 (100%)	38 (100%)	0	100 100
35	e	51/52 (98%)	51 (100%)	0	100 100
36	f	34/34 (100%)	34 (100%)	0	100 100
37	g	187/199 (94%)	187 (100%)	0	100 100
38	h	171/190 (90%)	171 (100%)	0	100 100
39	i	172/173 (99%)	171 (99%)	1 (1%)	86 92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
40	j	119/126 (94%)	115 (97%)	4 (3%)	37 61
41	k	91/116 (78%)	89 (98%)	2 (2%)	52 71
42	l	124/147 (84%)	123 (99%)	1 (1%)	81 89
43	m	104/105 (99%)	104 (100%)	0	100 100
44	n	105/107 (98%)	103 (98%)	2 (2%)	57 75
45	o	86/90 (96%)	85 (99%)	1 (1%)	71 84
46	p	90/99 (91%)	89 (99%)	1 (1%)	73 85
47	q	102/103 (99%)	99 (97%)	3 (3%)	42 64
48	r	90/96 (94%)	87 (97%)	3 (3%)	38 62
49	s	83/84 (99%)	83 (100%)	0	100 100
50	t	76/77 (99%)	75 (99%)	1 (1%)	69 82
51	u	65/65 (100%)	64 (98%)	1 (2%)	65 80
52	v	74/78 (95%)	73 (99%)	1 (1%)	67 81
53	w	57/65 (88%)	57 (100%)	0	100 100
54	x	72/79 (91%)	71 (99%)	1 (1%)	67 81
55	y	65/66 (98%)	65 (100%)	0	100 100
56	z	60/61 (98%)	60 (100%)	0	100 100
All	All	4987/5195 (96%)	4946 (99%)	41 (1%)	82 89

All (41) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	5	92	LEU
6	B	182	ARG
9	E	112	ARG
9	E	123	ASP
13	I	23	VAL
15	K	49	ARG
16	L	48	ARG
16	L	126	ARG
19	O	7	ARG
20	P	39	ARG
20	P	109	ARG
23	S	90	LYS
25	U	94	ARG
27	W	41	ARG

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Mol	Chain	Res	Type
28	X	44	LYS
29	Y	52	ARG
32	b	10	ARG
32	b	17	ARG
32	b	52	ARG
39	i	156	LYS
40	j	11	LEU
40	j	29	ARG
40	j	80	THR
40	j	93	ARG
41	k	62	MET
41	k	90	MET
42	l	10	ARG
44	n	106	ARG
44	n	130	ARG
45	o	5	ARG
46	p	56	ARG
47	q	10	LYS
47	q	14	ARG
47	q	83	ARG
48	r	25	VAL
48	r	30	SER
48	r	79	ARG
50	t	77	ARG
51	u	25	ARG
52	v	76	VAL
54	x	78	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (55) such sidechains are listed below:

Mol	Chain	Res	Type
4	5	93	ASN
4	5	148	GLN
6	B	70	ASN
6	B	134	ASN
7	C	150	GLN
7	C	173	GLN
8	D	97	ASN
8	D	115	GLN
8	D	163	ASN
10	F	22	GLN
10	F	73	ASN

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Mol	Chain	Res	Type
11	G	11	ASN
11	G	28	ASN
15	K	93	GLN
17	M	45	GLN
17	M	60	GLN
19	O	61	GLN
20	P	12	GLN
20	P	15	GLN
23	S	40	ASN
23	S	57	ASN
23	S	60	HIS
23	S	61	ASN
23	S	102	HIS
24	T	15	HIS
24	T	59	ASN
27	W	76	ASN
29	Y	15	ASN
31	a	41	HIS
31	a	61	ASN
31	a	65	ASN
32	b	19	HIS
34	d	29	GLN
35	e	26	HIS
37	g	42	ASN
37	g	109	GLN
38	h	32	ASN
38	h	123	GLN
38	h	185	ASN
39	i	71	GLN
39	i	152	GLN
40	j	70	ASN
41	k	46	GLN
42	l	68	ASN
43	m	16	ASN
44	n	31	ASN
45	o	15	HIS
48	r	14	HIS
49	s	66	GLN
49	s	71	HIS
54	x	83	HIS
55	y	3	ASN
55	y	52	ASN

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Mol	Chain	Res	Type
55	y	55	GLN
55	y	68	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	2897/2904 (99%)	989 (34%)	22 (0%)
2	2	1526/1535 (99%)	495 (32%)	7 (0%)
3	3	119/120 (99%)	35 (29%)	0
57	4	361/363 (99%)	211 (58%)	31 (8%)
All	All	4903/4922 (99%)	1730 (35%)	60 (1%)

All (1730) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	2	G
1	1	4	U
1	1	10	A
1	1	11	C
1	1	12	U
1	1	14	A
1	1	15	G
1	1	27	G
1	1	28	A
1	1	30	G
1	1	32	C
1	1	33	C
1	1	34	U
1	1	35	G
1	1	43	G
1	1	46	G
1	1	48	G
1	1	50	U
1	1	51	G
1	1	54	G
1	1	55	G
1	1	57	C
1	1	58	G
1	1	60	G
1	1	61	C
1	1	63	A

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Mol	Chain	Res	Type
1	1	68	G
1	1	71	A
1	1	74	A
1	1	75	G
1	1	79	C
1	1	80	G
1	1	84	A
1	1	85	G
1	1	91	A
1	1	93	G
1	1	96	C
1	1	100	U
1	1	101	A
1	1	102	U
1	1	103	A
1	1	112	U
1	1	113	U
1	1	118	A
1	1	119	A
1	1	120	U
1	1	126	A
1	1	128	C
1	1	136	G
1	1	137	U
1	1	139	U
1	1	140	C
1	1	142	A
1	1	163	C
1	1	165	A
1	1	167	A
1	1	181	A
1	1	192	C
1	1	193	U
1	1	196	A
1	1	197	A
1	1	199	A
1	1	201	C
1	1	203	A
1	1	204	A
1	1	215	G
1	1	216	A
1	1	218	A

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Mol	Chain	Res	Type
1	1	221	A
1	1	222	A
1	1	225	C
1	1	226	A
1	1	228	C
1	1	229	C
1	1	230	G
1	1	233	A
1	1	239	C
1	1	241	A
1	1	245	G
1	1	248	G
1	1	249	C
1	1	250	G
1	1	260	G
1	1	261	G
1	1	264	C
1	1	265	A
1	1	266	G
1	1	267	C
1	1	270	A
1	1	272	A
1	1	273	G
1	1	275	C
1	1	276	U
1	1	278	A
1	1	280	U
1	1	285	G
1	1	289	G
1	1	294	A
1	1	296	U
1	1	301	G
1	1	304	U
1	1	308	G
1	1	309	A
1	1	310	A
1	1	321	U
1	1	322	A
1	1	323	C
1	1	324	A
1	1	329	G
1	1	330	A

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Mol	Chain	Res	Type
1	1	331	C
1	1	332	A
1	1	337	C
1	1	338	G
1	1	343	C
1	1	353	C
1	1	357	C
1	1	362	A
1	1	363	G
1	1	364	C
1	1	366	C
1	1	367	G
1	1	370	G
1	1	371	A
1	1	372	G
1	1	375	G
1	1	384	A
1	1	385	C
1	1	386	G
1	1	387	U
1	1	389	G
1	1	394	C
1	1	396	G
1	1	398	C
1	1	399	U
1	1	403	U
1	1	404	A
1	1	405	U
1	1	406	G
1	1	411	G
1	1	412	A
1	1	413	C
1	1	424	G
1	1	431	U
1	1	434	U
1	1	435	C
1	1	440	C
1	1	441	U
1	1	447	A
1	1	451	U
1	1	453	A
1	1	454	A

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Mol	Chain	Res	Type
1	1	455	C
1	1	456	C
1	1	457	A
1	1	465	G
1	1	475	C
1	1	476	G
1	1	477	A
1	1	479	A
1	1	480	A
1	1	481	G
1	1	483	A
1	1	490	C
1	1	491	G
1	1	494	G
1	1	496	G
1	1	498	G
1	1	505	A
1	1	507	A
1	1	508	A
1	1	509	C
1	1	518	G
1	1	527	C
1	1	529	A
1	1	530	G
1	1	532	A
1	1	533	G
1	1	544	C
1	1	546	U
1	1	547	A
1	1	548	G
1	1	549	G
1	1	556	A
1	1	563	A
1	1	565	C
1	1	566	U
1	1	567	U
1	1	571	U
1	1	573	U
1	1	575	A
1	1	576	U
1	1	577	G
1	1	586	A

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Mol	Chain	Res	Type
1	1	601	C
1	1	603	A
1	1	609	A
1	1	613	A
1	1	614	A
1	1	615	U
1	1	616	A
1	1	621	A
1	1	622	G
1	1	627	A
1	1	634	C
1	1	637	A
1	1	645	C
1	1	653	U
1	1	654	A
1	1	655	A
1	1	656	G
1	1	657	U
1	1	659	G
1	1	664	G
1	1	675	A
1	1	681	G
1	1	682	G
1	1	684	G
1	1	686	U
1	1	689	A
1	1	699	A
1	1	702	U
1	1	709	U
1	1	710	U
1	1	715	A
1	1	716	A
1	1	717	C
1	1	722	A
1	1	730	A
1	1	734	A
1	1	747	5MU
1	1	748	G
1	1	749	A
1	1	752	A
1	1	759	G
1	1	762	U

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Mol	Chain	Res	Type
1	1	765	C
1	1	771	G
1	1	775	G
1	1	776	G
1	1	777	G
1	1	782	A
1	1	784	G
1	1	785	G
1	1	788	A
1	1	789	A
1	1	792	A
1	1	793	A
1	1	800	A
1	1	805	G
1	1	806	C
1	1	812	C
1	1	819	A
1	1	827	U
1	1	828	U
1	1	830	G
1	1	839	U
1	1	845	A
1	1	846	U
1	1	847	U
1	1	856	G
1	1	858	G
1	1	859	G
1	1	865	C
1	1	866	A
1	1	869	G
1	1	877	A
1	1	882	G
1	1	884	U
1	1	885	C
1	1	887	A
1	1	888	C
1	1	889	C
1	1	890	C
1	1	891	G
1	1	892	A
1	1	893	C
1	1	895	U

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Mol	Chain	Res	Type
1	1	896	A
1	1	897	C
1	1	899	A
1	1	900	A
1	1	902	C
1	1	903	C
1	1	907	G
1	1	908	C
1	1	910	A
1	1	911	A
1	1	914	G
1	1	915	C
1	1	919	U
1	1	934	U
1	1	935	C
1	1	941	A
1	1	945	A
1	1	947	A
1	1	948	C
1	1	949	G
1	1	953	G
1	1	954	G
1	1	955	PSU
1	1	956	G
1	1	957	C
1	1	958	U
1	1	959	A
1	1	961	C
1	1	964	C
1	1	970	U
1	1	973	A
1	1	974	G
1	1	982	C
1	1	983	A
1	1	990	A
1	1	995	C
1	1	996	A
1	1	997	G
1	1	1005	C
1	1	1008	A
1	1	1009	A
1	1	1010	A

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Mol	Chain	Res	Type
1	1	1012	U
1	1	1013	C
1	1	1017	G
1	1	1022	G
1	1	1023	U
1	1	1024	G
1	1	1025	G
1	1	1026	G
1	1	1028	A
1	1	1029	A
1	1	1032	A
1	1	1033	U
1	1	1035	U
1	1	1041	G
1	1	1042	G
1	1	1044	C
1	1	1045	C
1	1	1046	A
1	1	1047	G
1	1	1048	A
1	1	1049	C
1	1	1050	A
1	1	1051	G
1	1	1052	C
1	1	1056	G
1	1	1058	U
1	1	1060	U
1	1	1061	U
1	1	1063	G
1	1	1065	U
1	1	1066	U
1	1	1067	A
1	1	1068	G
1	1	1069	A
1	1	1070	A
1	1	1071	G
1	1	1073	A
1	1	1075	C
1	1	1076	C
1	1	1077	A
1	1	1079	C
1	1	1080	A

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Mol	Chain	Res	Type
1	1	1082	U
1	1	1083	U
1	1	1084	A
1	1	1085	A
1	1	1087	G
1	1	1088	A
1	1	1089	A
1	1	1090	A
1	1	1092	C
1	1	1093	G
1	1	1096	A
1	1	1097	U
1	1	1099	G
1	1	1100	C
1	1	1101	U
1	1	1111	A
1	1	1112	G
1	1	1113	U
1	1	1119	U
1	1	1126	A
1	1	1128	G
1	1	1131	G
1	1	1132	U
1	1	1133	A
1	1	1135	C
1	1	1136	G
1	1	1141	U
1	1	1142	A
1	1	1143	A
1	1	1144	A
1	1	1168	G
1	1	1169	A
1	1	1171	G
1	1	1172	C
1	1	1173	U
1	1	1174	U
1	1	1175	A
1	1	1176	U
1	1	1177	G
1	1	1178	C
1	1	1182	G
1	1	1186	G

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Mol	Chain	Res	Type
1	1	1191	G
1	1	1195	G
1	1	1203	U
1	1	1204	A
1	1	1206	G
1	1	1212	G
1	1	1215	G
1	1	1217	U
1	1	1218	G
1	1	1221	C
1	1	1227	G
1	1	1229	C
1	1	1238	G
1	1	1241	A
1	1	1243	C
1	1	1248	G
1	1	1251	C
1	1	1253	A
1	1	1254	A
1	1	1255	U
1	1	1256	G
1	1	1258	U
1	1	1265	A
1	1	1266	G
1	1	1271	G
1	1	1272	A
1	1	1273	U
1	1	1284	A
1	1	1287	A
1	1	1289	C
1	1	1292	G
1	1	1296	G
1	1	1300	G
1	1	1301	A
1	1	1302	A
1	1	1310	G
1	1	1312	U
1	1	1315	C
1	1	1316	U
1	1	1318	U
1	1	1325	U
1	1	1326	U

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Mol	Chain	Res	Type
1	1	1332	G
1	1	1340	U
1	1	1341	G
1	1	1342	A
1	1	1345	C
1	1	1352	U
1	1	1355	G
1	1	1360	G
1	1	1365	A
1	1	1368	G
1	1	1378	A
1	1	1379	U
1	1	1380	G
1	1	1381	G
1	1	1385	A
1	1	1386	C
1	1	1393	A
1	1	1395	A
1	1	1403	A
1	1	1408	G
1	1	1409	U
1	1	1413	A
1	1	1416	G
1	1	1417	C
1	1	1419	A
1	1	1420	A
1	1	1428	C
1	1	1440	U
1	1	1454	C
1	1	1455	G
1	1	1456	G
1	1	1458	U
1	1	1461	C
1	1	1468	U
1	1	1470	A
1	1	1473	G
1	1	1475	G
1	1	1478	G
1	1	1482	G
1	1	1483	G
1	1	1485	U
1	1	1493	C

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Mol	Chain	Res	Type
1	1	1494	A
1	1	1497	U
1	1	1502	A
1	1	1503	A
1	1	1508	A
1	1	1509	A
1	1	1514	G
1	1	1515	A
1	1	1522	A
1	1	1523	U
1	1	1524	G
1	1	1529	G
1	1	1530	G
1	1	1533	C
1	1	1534	U
1	1	1535	A
1	1	1536	C
1	1	1537	G
1	1	1547	C
1	1	1554	U
1	1	1558	C
1	1	1566	A
1	1	1569	A
1	1	1581	G
1	1	1583	A
1	1	1584	U
1	1	1585	C
1	1	1587	G
1	1	1589	U
1	1	1590	A
1	1	1593	A
1	1	1598	A
1	1	1607	C
1	1	1608	A
1	1	1610	A
1	1	1616	A
1	1	1619	G
1	1	1621	U
1	1	1625	C
1	1	1626	A
1	1	1627	G
1	1	1630	A

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Mol	Chain	Res	Type
1	1	1633	G
1	1	1635	A
1	1	1642	G
1	1	1643	G
1	1	1644	C
1	1	1646	C
1	1	1647	U
1	1	1648	U
1	1	1649	G
1	1	1653	G
1	1	1654	A
1	1	1667	G
1	1	1668	A
1	1	1673	G
1	1	1674	G
1	1	1676	A
1	1	1677	A
1	1	1691	C
1	1	1693	U
1	1	1695	G
1	1	1698	A
1	1	1699	G
1	1	1701	A
1	1	1702	G
1	1	1703	G
1	1	1712	U
1	1	1714	U
1	1	1715	G
1	1	1716	U
1	1	1721	G
1	1	1722	A
1	1	1723	G
1	1	1725	U
1	1	1729	U
1	1	1730	C
1	1	1732	C
1	1	1734	G
1	1	1738	G
1	1	1744	A
1	1	1745	A
1	1	1757	A
1	1	1758	U

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Mol	Chain	Res	Type
1	1	1761	C
1	1	1764	C
1	1	1766	G
1	1	1769	U
1	1	1770	G
1	1	1772	A
1	1	1773	A
1	1	1777	U
1	1	1779	U
1	1	1780	A
1	1	1781	U
1	1	1782	U
1	1	1784	A
1	1	1800	C
1	1	1802	A
1	1	1803	A
1	1	1804	C
1	1	1808	A
1	1	1809	A
1	1	1811	G
1	1	1813	G
1	1	1816	C
1	1	1819	A
1	1	1820	U
1	1	1821	A
1	1	1828	G
1	1	1830	C
1	1	1833	C
1	1	1834	U
1	1	1835	2MG
1	1	1842	G
1	1	1845	G
1	1	1848	A
1	1	1853	A
1	1	1855	U
1	1	1857	G
1	1	1860	G
1	1	1863	G
1	1	1865	U
1	1	1866	A
1	1	1867	G
1	1	1870	C

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Mol	Chain	Res	Type
1	1	1871	A
1	1	1872	A
1	1	1875	G
1	1	1877	A
1	1	1879	C
1	1	1880	U
1	1	1894	C
1	1	1896	G
1	1	1897	G
1	1	1906	G
1	1	1907	G
1	1	1911	PSU
1	1	1912	A
1	1	1913	A
1	1	1914	C
1	1	1917	PSU
1	1	1918	A
1	1	1919	A
1	1	1923	U
1	1	1924	C
1	1	1929	G
1	1	1930	G
1	1	1939	5MU
1	1	1940	U
1	1	1942	C
1	1	1943	U
1	1	1953	A
1	1	1955	U
1	1	1960	A
1	1	1962	5MC
1	1	1965	C
1	1	1966	A
1	1	1967	C
1	1	1970	A
1	1	1971	U
1	1	1972	G
1	1	1981	A
1	1	1983	G
1	1	1989	G
1	1	1991	U
1	1	1992	G
1	1	1993	U

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Mol	Chain	Res	Type
1	1	1997	C
1	1	1999	C
1	1	2014	A
1	1	2015	A
1	1	2022	U
1	1	2023	C
1	1	2031	A
1	1	2032	G
1	1	2033	A
1	1	2035	G
1	1	2043	C
1	1	2044	C
1	1	2046	G
1	1	2051	A
1	1	2052	A
1	1	2055	C
1	1	2056	G
1	1	2060	A
1	1	2061	G
1	1	2062	A
1	1	2066	C
1	1	2068	U
1	1	2069	G7M
1	1	2070	A
1	1	2072	C
1	1	2076	U
1	1	2077	A
1	1	2081	U
1	1	2092	U
1	1	2093	G
1	1	2094	A
1	1	2095	A
1	1	2096	C
1	1	2097	A
1	1	2099	U
1	1	2100	G
1	1	2102	G
1	1	2104	C
1	1	2105	U
1	1	2106	U
1	1	2108	A
1	1	2110	G

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Mol	Chain	Res	Type
1	1	2111	U
1	1	2113	U
1	1	2114	A
1	1	2115	G
1	1	2116	G
1	1	2117	A
1	1	2118	U
1	1	2119	A
1	1	2120	G
1	1	2121	G
1	1	2122	U
1	1	2123	G
1	1	2125	G
1	1	2126	A
1	1	2127	G
1	1	2128	G
1	1	2129	C
1	1	2130	U
1	1	2131	U
1	1	2132	U
1	1	2133	G
1	1	2134	A
1	1	2135	A
1	1	2136	G
1	1	2137	U
1	1	2138	G
1	1	2139	U
1	1	2140	G
1	1	2142	A
1	1	2143	C
1	1	2144	G
1	1	2146	C
1	1	2147	A
1	1	2148	G
1	1	2149	U
1	1	2150	C
1	1	2151	U
1	1	2153	C
1	1	2154	A
1	1	2155	U
1	1	2157	G
1	1	2158	A

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Mol	Chain	Res	Type
1	1	2159	G
1	1	2160	C
1	1	2162	G
1	1	2164	C
1	1	2165	C
1	1	2167	U
1	1	2168	G
1	1	2169	A
1	1	2170	A
1	1	2171	A
1	1	2172	U
1	1	2173	A
1	1	2176	A
1	1	2178	C
1	1	2179	C
1	1	2180	U
1	1	2181	U
1	1	2183	A
1	1	2185	U
1	1	2186	G
1	1	2189	U
1	1	2190	G
1	1	2193	G
1	1	2194	U
1	1	2198	A
1	1	2199	A
1	1	2203	U
1	1	2204	G
1	1	2211	A
1	1	2212	A
1	1	2213	U
1	1	2214	C
1	1	2220	U
1	1	2225	A
1	1	2226	C
1	1	2238	G
1	1	2239	G
1	1	2243	U
1	1	2244	U
1	1	2247	A
1	1	2249	U
1	1	2250	G

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Mol	Chain	Res	Type
1	1	2258	C
1	1	2259	U
1	1	2266	A
1	1	2267	A
1	1	2269	G
1	1	2279	G
1	1	2283	C
1	1	2286	G
1	1	2298	A
1	1	2305	U
1	1	2307	G
1	1	2309	A
1	1	2312	U
1	1	2318	G
1	1	2319	G
1	1	2320	U
1	1	2321	U
1	1	2325	G
1	1	2327	A
1	1	2334	U
1	1	2335	A
1	1	2336	A
1	1	2337	G
1	1	2343	U
1	1	2345	G
1	1	2346	A
1	1	2347	C
1	1	2350	C
1	1	2352	A
1	1	2355	G
1	1	2357	G
1	1	2359	C
1	1	2361	G
1	1	2365	G
1	1	2374	C
1	1	2383	G
1	1	2385	C
1	1	2388	A
1	1	2389	G
1	1	2394	C
1	1	2402	U
1	1	2403	C

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Mol	Chain	Res	Type
1	1	2407	A
1	1	2410	G
1	1	2412	A
1	1	2413	G
1	1	2421	G
1	1	2422	C
1	1	2423	U
1	1	2424	C
1	1	2425	A
1	1	2426	A
1	1	2428	G
1	1	2429	G
1	1	2430	A
1	1	2431	U
1	1	2433	A
1	1	2435	A
1	1	2440	C
1	1	2441	U
1	1	2445	2MG
1	1	2447	G
1	1	2448	A
1	1	2452	C
1	1	2457	PSU
1	1	2458	G
1	1	2468	A
1	1	2469	A
1	1	2470	G
1	1	2476	A
1	1	2477	U
1	1	2478	A
1	1	2484	G
1	1	2486	C
1	1	2487	G
1	1	2489	U
1	1	2491	U
1	1	2497	A
1	1	2498	OMC
1	1	2499	C
1	1	2501	C
1	1	2502	G
1	1	2504	PSU
1	1	2505	G

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Mol	Chain	Res	Type
1	1	2506	U
1	1	2513	A
1	1	2518	A
1	1	2520	C
1	1	2534	A
1	1	2535	G
1	1	2538	C
1	1	2543	G
1	1	2545	G
1	1	2547	A
1	1	2552	OMU
1	1	2553	G
1	1	2554	U
1	1	2562	U
1	1	2564	A
1	1	2565	A
1	1	2566	A
1	1	2567	G
1	1	2572	A
1	1	2573	C
1	1	2574	G
1	1	2575	C
1	1	2577	A
1	1	2578	G
1	1	2580	PSU
1	1	2581	G
1	1	2584	U
1	1	2585	U
1	1	2587	A
1	1	2599	G
1	1	2601	C
1	1	2602	A
1	1	2603	G
1	1	2605	PSU
1	1	2606	C
1	1	2608	G
1	1	2609	U
1	1	2612	C
1	1	2613	U
1	1	2621	G
1	1	2629	U
1	1	2630	G

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Mol	Chain	Res	Type
1	1	2634	A
1	1	2640	G
1	1	2641	G
1	1	2645	G
1	1	2646	C
1	1	2650	U
1	1	2661	G
1	1	2662	A
1	1	2663	G
1	1	2668	G
1	1	2682	A
1	1	2689	U
1	1	2690	U
1	1	2692	G
1	1	2698	U
1	1	2706	A
1	1	2707	U
1	1	2713	U
1	1	2714	G
1	1	2716	C
1	1	2718	G
1	1	2722	G
1	1	2724	U
1	1	2727	A
1	1	2728	U
1	1	2733	A
1	1	2736	A
1	1	2739	U
1	1	2744	G
1	1	2748	A
1	1	2751	G
1	1	2752	C
1	1	2757	A
1	1	2759	G
1	1	2760	C
1	1	2764	A
1	1	2765	A
1	1	2766	A
1	1	2778	A
1	1	2780	G
1	1	2784	U
1	1	2790	U

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Mol	Chain	Res	Type
1	1	2791	G
1	1	2793	C
1	1	2794	C
1	1	2796	U
1	1	2799	A
1	1	2801	G
1	1	2818	U
1	1	2820	A
1	1	2823	A
1	1	2824	C
1	1	2826	A
1	1	2828	G
1	1	2829	A
1	1	2830	C
1	1	2832	U
1	1	2833	U
1	1	2834	G
1	1	2837	A
1	1	2839	G
1	1	2849	U
1	1	2858	C
1	1	2860	A
1	1	2861	U
1	1	2866	U
1	1	2867	G
1	1	2872	A
1	1	2873	A
1	1	2879	A
1	1	2880	C
1	1	2881	U
1	1	2883	A
1	1	2884	U
1	1	2885	G
1	1	2886	A
1	1	2891	U
1	1	2893	A
1	1	2894	G
1	1	2895	G
1	1	2901	C
2	2	2	A
2	2	4	U
2	2	5	U

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Mol	Chain	Res	Type
2	2	6	G
2	2	9	G
2	2	19	A
2	2	22	G
2	2	30	U
2	2	32	A
2	2	39	G
2	2	41	G
2	2	44	A
2	2	47	C
2	2	48	C
2	2	50	A
2	2	51	A
2	2	52	C
2	2	68	G
2	2	70	U
2	2	71	A
2	2	72	A
2	2	73	C
2	2	74	A
2	2	75	G
2	2	77	A
2	2	80	A
2	2	82	G
2	2	83	C
2	2	84	U
2	2	85	U
2	2	86	G
2	2	87	C
2	2	88	U
2	2	89	U
2	2	90	C
2	2	92	U
2	2	93	U
2	2	94	G
2	2	95	C
2	2	96	U
2	2	100	G
2	2	107	G
2	2	108	G
2	2	116	A
2	2	120	A

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Mol	Chain	Res	Type
2	2	121	U
2	2	122	G
2	2	124	C
2	2	127	G
2	2	130	A
2	2	131	A
2	2	132	C
2	2	142	G
2	2	144	G
2	2	160	A
2	2	163	C
2	2	167	A
2	2	168	G
2	2	172	A
2	2	181	A
2	2	182	A
2	2	183	C
2	2	191	G
2	2	197	A
2	2	203	G
2	2	204	G
2	2	207	C
2	2	210	C
2	2	211	G
2	2	212	G
2	2	213	G
2	2	214	C
2	2	216	U
2	2	226	G
2	2	228	A
2	2	231	U
2	2	238	A
2	2	240	G
2	2	243	A
2	2	245	U
2	2	247	G
2	2	251	G
2	2	257	G
2	2	265	G
2	2	266	G
2	2	267	C
2	2	272	C

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Mol	Chain	Res	Type
2	2	279	A
2	2	280	C
2	2	289	G
2	2	290	C
2	2	298	A
2	2	303	A
2	2	306	A
2	2	315	A
2	2	316	C
2	2	319	G
2	2	322	C
2	2	328	C
2	2	330	C
2	2	332	G
2	2	337	G
2	2	346	G
2	2	347	G
2	2	351	G
2	2	352	C
2	2	354	G
2	2	355	C
2	2	366	A
2	2	367	U
2	2	372	C
2	2	373	A
2	2	376	G
2	2	384	G
2	2	388	G
2	2	389	A
2	2	390	U
2	2	393	A
2	2	394	G
2	2	398	U
2	2	399	G
2	2	406	G
2	2	411	A
2	2	413	G
2	2	414	A
2	2	417	G
2	2	421	U
2	2	422	C
2	2	423	G

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Mol	Chain	Res	Type
2	2	424	G
2	2	426	U
2	2	428	G
2	2	429	U
2	2	435	A
2	2	440	C
2	2	451	A
2	2	454	G
2	2	463	U
2	2	467	U
2	2	468	A
2	2	469	C
2	2	474	G
2	2	477	C
2	2	481	G
2	2	482	A
2	2	484	G
2	2	485	U
2	2	486	U
2	2	492	C
2	2	494	G
2	2	495	A
2	2	496	A
2	2	497	G
2	2	506	G
2	2	507	C
2	2	508	U
2	2	509	A
2	2	510	A
2	2	513	C
2	2	514	C
2	2	516	PSU
2	2	517	G
2	2	518	C
2	2	519	C
2	2	520	A
2	2	527	7MG
2	2	531	U
2	2	532	A
2	2	533	A
2	2	534	U
2	2	542	G

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Mol	Chain	Res	Type
2	2	545	C
2	2	546	A
2	2	547	A
2	2	551	U
2	2	552	U
2	2	553	A
2	2	559	A
2	2	564	C
2	2	568	G
2	2	572	A
2	2	573	A
2	2	576	C
2	2	577	G
2	2	581	G
2	2	590	U
2	2	592	G
2	2	596	A
2	2	607	A
2	2	631	C
2	2	633	G
2	2	639	G
2	2	644	U
2	2	653	U
2	2	656	G
2	2	661	G
2	2	664	G
2	2	665	A
2	2	666	G
2	2	671	G
2	2	672	U
2	2	675	A
2	2	676	A
2	2	679	C
2	2	685	G
2	2	687	A
2	2	696	A
2	2	703	G
2	2	704	A
2	2	705	G
2	2	717	U
2	2	718	A
2	2	720	C

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Mol	Chain	Res	Type
2	2	721	G
2	2	724	G
2	2	725	G
2	2	731	G
2	2	747	A
2	2	752	G
2	2	753	A
2	2	755	G
2	2	773	G
2	2	774	G
2	2	776	G
2	2	777	A
2	2	787	A
2	2	792	A
2	2	793	U
2	2	794	A
2	2	799	G
2	2	803	G
2	2	810	C
2	2	811	C
2	2	813	U
2	2	814	A
2	2	815	A
2	2	817	C
2	2	818	G
2	2	821	G
2	2	828	U
2	2	832	G
2	2	842	U
2	2	843	U
2	2	844	G
2	2	845	A
2	2	846	G
2	2	848	C
2	2	849	G
2	2	850	U
2	2	851	G
2	2	857	C
2	2	863	U
2	2	870	U
2	2	879	C
2	2	887	G

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Mol	Chain	Res	Type
2	2	888	G
2	2	889	A
2	2	898	G
2	2	905	U
2	2	908	A
2	2	912	C
2	2	914	A
2	2	920	U
2	2	922	G
2	2	926	G
2	2	934	C
2	2	935	A
2	2	936	C
2	2	937	A
2	2	939	G
2	2	941	G
2	2	958	A
2	2	960	U
2	2	961	U
2	2	965	U
2	2	966	2MG
2	2	967	5MC
2	2	969	A
2	2	971	G
2	2	976	G
2	2	977	A
2	2	981	U
2	2	982	U
2	2	984	C
2	2	988	G
2	2	989	U
2	2	992	U
2	2	993	G
2	2	996	A
2	2	997	U
2	2	999	C
2	2	1000	A
2	2	1001	C
2	2	1003	G
2	2	1004	A
2	2	1005	A
2	2	1007	U

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Mol	Chain	Res	Type
2	2	1008	U
2	2	1010	U
2	2	1011	C
2	2	1012	A
2	2	1017	U
2	2	1018	G
2	2	1019	A
2	2	1020	G
2	2	1021	A
2	2	1022	A
2	2	1026	G
2	2	1028	C
2	2	1030	U
2	2	1031	C
2	2	1033	G
2	2	1034	G
2	2	1035	A
2	2	1036	A
2	2	1041	G
2	2	1042	A
2	2	1045	C
2	2	1046	A
2	2	1047	G
2	2	1050	G
2	2	1052	U
2	2	1053	G
2	2	1054	C
2	2	1056	U
2	2	1064	G
2	2	1065	U
2	2	1085	U
2	2	1086	U
2	2	1088	G
2	2	1089	G
2	2	1091	U
2	2	1094	G
2	2	1095	U
2	2	1101	A
2	2	1108	G
2	2	1112	C
2	2	1124	G
2	2	1125	U

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Mol	Chain	Res	Type
2	2	1126	U
2	2	1127	G
2	2	1129	C
2	2	1130	A
2	2	1131	G
2	2	1133	G
2	2	1135	U
2	2	1136	C
2	2	1137	C
2	2	1140	C
2	2	1141	C
2	2	1143	G
2	2	1150	A
2	2	1151	A
2	2	1157	A
2	2	1159	U
2	2	1167	A
2	2	1168	U
2	2	1171	A
2	2	1172	C
2	2	1174	G
2	2	1175	G
2	2	1176	A
2	2	1182	G
2	2	1183	U
2	2	1184	G
2	2	1185	G
2	2	1190	G
2	2	1193	G
2	2	1196	A
2	2	1197	A
2	2	1198	G
2	2	1200	C
2	2	1201	A
2	2	1202	U
2	2	1211	U
2	2	1213	A
2	2	1214	C
2	2	1215	G
2	2	1224	U
2	2	1225	A
2	2	1227	A

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Mol	Chain	Res	Type
2	2	1235	U
2	2	1238	A
2	2	1239	A
2	2	1240	U
2	2	1241	G
2	2	1242	G
2	2	1244	G
2	2	1246	A
2	2	1247	U
2	2	1248	A
2	2	1249	C
2	2	1253	G
2	2	1256	A
2	2	1257	A
2	2	1258	G
2	2	1261	A
2	2	1262	C
2	2	1263	C
2	2	1265	C
2	2	1266	G
2	2	1267	C
2	2	1268	G
2	2	1269	A
2	2	1271	A
2	2	1272	G
2	2	1274	A
2	2	1278	G
2	2	1279	G
2	2	1280	A
2	2	1283	U
2	2	1285	A
2	2	1286	U
2	2	1287	A
2	2	1290	G
2	2	1291	U
2	2	1292	G
2	2	1297	G
2	2	1298	U
2	2	1299	A
2	2	1302	C
2	2	1303	C
2	2	1304	G

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Mol	Chain	Res	Type
2	2	1305	G
2	2	1307	U
2	2	1308	U
2	2	1312	G
2	2	1317	C
2	2	1318	A
2	2	1319	A
2	2	1324	A
2	2	1331	G
2	2	1332	A
2	2	1335	U
2	2	1336	C
2	2	1341	U
2	2	1342	C
2	2	1348	U
2	2	1353	G
2	2	1361	G
2	2	1363	A
2	2	1364	U
2	2	1365	G
2	2	1374	A
2	2	1375	A
2	2	1378	C
2	2	1379	G
2	2	1381	U
2	2	1385	G
2	2	1397	C
2	2	1398	A
2	2	1399	C
2	2	1401	G
2	2	1405	G
2	2	1407	5MC
2	2	1408	A
2	2	1418	A
2	2	1422	G
2	2	1430	A
2	2	1431	A
2	2	1432	G
2	2	1433	A
2	2	1441	A
2	2	1442	G
2	2	1444	U

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Mol	Chain	Res	Type
2	2	1445	U
2	2	1446	A
2	2	1447	A
2	2	1452	C
2	2	1453	G
2	2	1466	C
2	2	1473	G
2	2	1478	U
2	2	1481	U
2	2	1484	C
2	2	1485	U
2	2	1486	G
2	2	1490	U
2	2	1491	G
2	2	1492	A
2	2	1493	A
2	2	1494	G
2	2	1497	G
2	2	1499	A
2	2	1502	A
2	2	1503	A
2	2	1504	G
2	2	1506	U
2	2	1507	A
2	2	1517	G
2	2	1520	C
2	2	1529	G
2	2	1530	G
2	2	1532	U
2	2	1534	A
3	3	2	G
3	3	9	G
3	3	12	C
3	3	14	U
3	3	15	A
3	3	17	C
3	3	18	G
3	3	30	C
3	3	31	C
3	3	32	U
3	3	33	G
3	3	35	C

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Mol	Chain	Res	Type
3	3	36	C
3	3	37	C
3	3	41	G
3	3	42	C
3	3	44	G
3	3	45	A
3	3	51	G
3	3	57	A
3	3	70	C
3	3	73	A
3	3	80	U
3	3	88	C
3	3	89	U
3	3	90	C
3	3	91	C
3	3	92	C
3	3	99	A
3	3	103	U
3	3	107	G
3	3	109	A
3	3	113	C
3	3	119	A
3	3	120	U
57	4	6	U
57	4	8	A
57	4	9	U
57	4	10	U
57	4	11	C
57	4	13	G
57	4	14	G
57	4	15	A
57	4	16	U
57	4	17	U
57	4	18	C
57	4	19	G
57	4	20	A
57	4	21	C
57	4	28	U
57	4	30	C
57	4	32	A
57	4	33	A
57	4	34	A

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Mol	Chain	Res	Type
57	4	35	C
57	4	38	A
57	4	39	A
57	4	40	G
57	4	43	G
57	4	44	C
57	4	45	A
57	4	47	G
57	4	49	C
57	4	54	G
57	4	55	G
57	4	56	C
57	4	60	U
57	4	61	G
57	4	62	G
57	4	63	C
57	4	64	C
57	4	68	U
57	4	69	A
57	4	70	A
57	4	71	A
57	4	72	A
57	4	73	A
57	4	79	A
57	4	80	A
57	4	81	A
57	4	82	A
57	4	83	A
57	4	84	A
57	4	85	U
57	4	86	A
57	4	87	G
57	4	88	U
57	4	89	C
57	4	92	A
57	4	93	A
57	4	94	A
57	4	95	C
57	4	96	G
57	4	97	A
57	4	99	G
57	4	101	A

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Mol	Chain	Res	Type
57	4	102	A
57	4	105	U
57	4	106	A
57	4	107	C
57	4	114	G
57	4	117	G
57	4	119	U
57	4	121	A
57	4	122	A
57	4	125	A
57	4	127	C
57	4	129	G
57	4	130	C
57	4	131	U
57	4	132	U
57	4	133	A
57	4	138	C
57	4	143	C
57	4	145	C
57	4	149	A
57	4	150	G
57	4	151	C
57	4	154	C
57	4	155	C
57	4	156	G
57	4	158	U
57	4	162	A
57	4	164	G
57	4	165	A
57	4	166	C
57	4	168	G
57	4	169	G
57	4	170	G
57	4	172	U
57	4	173	C
57	4	174	A
57	4	175	A
57	4	176	G
57	4	180	G
57	4	181	G
57	4	182	U
57	4	183	C

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Mol	Chain	Res	Type
57	4	184	A
57	4	185	A
57	4	186	A
57	4	188	C
57	4	189	C
57	4	190	A
57	4	191	A
57	4	192	A
57	4	193	A
57	4	194	G
57	4	195	A
57	4	197	A
57	4	198	U
57	4	199	C
57	4	200	G
57	4	203	U
57	4	204	G
57	4	205	G
57	4	206	A
57	4	207	A
57	4	210	C
57	4	211	C
57	4	213	G
57	4	216	U
57	4	218	G
57	4	219	G
57	4	222	U
57	4	223	G
57	4	224	A
57	4	225	A
57	4	226	G
57	4	227	C
57	4	228	G
57	4	229	U
57	4	230	U
57	4	231	A
57	4	233	A
57	4	234	A
57	4	235	C
57	4	236	U
57	4	237	U
57	4	238	A

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Mol	Chain	Res	Type
57	4	239	A
57	4	241	C
57	4	242	A
57	4	244	G
57	4	245	C
57	4	246	U
57	4	247	A
57	4	248	G
57	4	249	U
57	4	250	U
57	4	257	U
57	4	258	G
57	4	261	G
57	4	262	U
57	4	263	G
57	4	264	U
57	4	266	C
57	4	267	G
57	4	268	U
57	4	269	C
57	4	270	C
57	4	271	G
57	4	273	A
57	4	274	G
57	4	282	G
57	4	285	A
57	4	286	A
57	4	288	G
57	4	291	A
57	4	292	A
57	4	293	G
57	4	296	U
57	4	299	C
57	4	300	U
57	4	302	A
57	4	303	G
57	4	308	U
57	4	309	A
57	4	310	G
57	4	312	A
57	4	315	G
57	4	316	A

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Mol	Chain	Res	Type
57	4	317	G
57	4	318	G
57	4	319	A
57	4	321	G
57	4	322	U
57	4	323	A
57	4	324	G
57	4	325	G
57	4	332	G
57	4	333	G
57	4	334	A
57	4	335	C
57	4	336	G
57	4	339	G
57	4	340	G
57	4	347	U
57	4	348	C
57	4	351	G
57	4	357	U
57	4	358	C
57	4	359	C
57	4	360	A
57	4	362	C
57	4	363	A

All (60) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	56	A
1	1	70	G
1	1	404	A
1	1	613	A
1	1	784	G
1	1	882	G
1	1	883	G
1	1	894	U
1	1	955	PSU
1	1	1379	U
1	1	1911	PSU
1	1	1917	PSU
1	1	2132	U
1	1	2146	C

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Mol	Chain	Res	Type
1	1	2425	A
1	1	2457	PSU
1	1	2498	OMC
1	1	2504	PSU
1	1	2580	PSU
1	1	2605	PSU
1	1	2706	A
1	1	2756	U
2	2	8	A
2	2	83	C
2	2	512	U
2	2	516	PSU
2	2	884	U
2	2	1109	C
2	2	1214	C
57	4	9	U
57	4	10	U
57	4	13	G
57	4	14	G
57	4	15	A
57	4	17	U
57	4	19	G
57	4	20	A
57	4	32	A
57	4	33	A
57	4	38	A
57	4	61	G
57	4	68	U
57	4	130	C
57	4	153	U
57	4	183	C
57	4	212	U
57	4	223	G
57	4	229	U
57	4	233	A
57	4	237	U
57	4	245	C
57	4	247	A
57	4	249	U
57	4	257	U
57	4	261	G
57	4	290	A

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Mol	Chain	Res	Type
57	4	308	U
57	4	314	C
57	4	332	G
57	4	333	G

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

34 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
1	PSU	1	955	1	18,21,22	1.43	3 (16%)	22,30,33	2.08	5 (22%)
1	PSU	1	2504	1	18,21,22	2.05	6 (33%)	22,30,33	2.15	5 (22%)
1	5MU	1	1939	58,1	19,22,23	1.41	4 (21%)	28,32,35	2.35	7 (25%)
1	3TD	1	1915	1	18,22,23	2.71	7 (38%)	22,32,35	1.45	1 (4%)
1	5MU	1	747	1	19,22,23	1.41	5 (26%)	28,32,35	2.17	7 (25%)
1	5MC	1	1962	1	18,22,23	2.08	3 (16%)	26,32,35	1.59	2 (7%)
1	PSU	1	2457	1	18,21,22	1.96	5 (27%)	22,30,33	2.30	5 (22%)
2	5MC	2	1407	2	18,22,23	2.13	3 (16%)	26,32,35	1.40	3 (11%)
2	2MG	2	1207	2	18,26,27	2.95	5 (27%)	16,38,41	1.29	4 (25%)
1	2MG	1	2445	1	18,26,27	2.98	6 (33%)	16,38,41	1.53	3 (18%)
1	PSU	1	1911	1	18,21,22	1.96	5 (27%)	22,30,33	2.14	4 (18%)
1	PSU	1	746	1	18,21,22	1.40	2 (11%)	22,30,33	2.23	6 (27%)
1	OMU	1	2552	1	19,22,23	2.60	7 (36%)	26,31,34	2.09	7 (26%)
2	MA6	2	1518	2	18,26,27	0.85	0	19,38,41	1.59	4 (21%)
2	MA6	2	1519	2	18,26,27	0.90	0	19,38,41	1.44	2 (10%)
2	4OC	2	1402	2	20,23,24	0.83	1 (5%)	26,32,35	1.33	4 (15%)
47	0TD	q	89	47	7,9,10	1.40	1 (14%)	6,11,13	2.63	3 (50%)
1	OMG	1	2251	1,57	18,26,27	3.02	7 (38%)	19,38,41	1.50	4 (21%)
1	1MG	1	745	1	18,26,27	0.99	0	19,39,42	1.28	2 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	2MG	2	1516	2	18,26,27	2.93	5 (27%)	16,38,41	1.33	3 (18%)
1	OMC	1	2498	58,1	19,22,23	1.86	6 (31%)	26,31,34	2.16	6 (23%)
2	5MC	2	967	2	18,22,23	2.07	3 (16%)	26,32,35	1.43	4 (15%)
2	UR3	2	1498	58,2	19,22,23	2.76	6 (31%)	26,32,35	1.23	2 (7%)
2	PSU	2	516	58,2	18,21,22	1.44	3 (16%)	22,30,33	2.14	5 (22%)
1	PSU	1	2580	1	18,21,22	2.07	5 (27%)	22,30,33	2.35	6 (27%)
1	6MZ	1	1618	1	18,25,26	1.92	1 (5%)	16,36,39	2.53	4 (25%)
1	PSU	1	1917	58,1	18,21,22	2.00	5 (27%)	22,30,33	1.95	5 (22%)
1	6MZ	1	2030	1	18,25,26	1.92	2 (11%)	16,36,39	3.37	5 (31%)
2	7MG	2	527	2	22,26,27	1.37	4 (18%)	29,39,42	2.59	8 (27%)
1	G7M	1	2069	1	20,26,27	1.19	2 (10%)	17,39,42	0.94	1 (5%)
1	PSU	1	2605	1	18,21,22	1.93	5 (27%)	22,30,33	2.09	3 (13%)
1	2MA	1	2503	58,1	17,25,26	1.63	3 (17%)	17,37,40	1.38	2 (11%)
1	2MG	1	1835	1	18,26,27	2.88	6 (33%)	16,38,41	1.60	4 (25%)
2	2MG	2	966	2	18,26,27	2.87	5 (27%)	16,38,41	1.42	3 (18%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	1	955	1	-	3/7/25/26	0/2/2/2
1	PSU	1	2504	1	2/2/5/5	4/7/25/26	0/2/2/2
1	5MU	1	1939	58,1	-	0/7/25/26	0/2/2/2
1	3TD	1	1915	1	1/1/5/5	4/7/25/26	0/2/2/2
1	5MU	1	747	1	-	0/7/25/26	0/2/2/2
1	5MC	1	1962	1	-	2/7/25/26	0/2/2/2
1	PSU	1	2457	1	2/2/5/5	0/7/25/26	0/2/2/2
2	5MC	2	1407	2	-	2/7/25/26	0/2/2/2
2	2MG	2	1207	2	-	2/5/27/28	0/3/3/3
1	2MG	1	2445	1	-	4/5/27/28	0/3/3/3
1	PSU	1	1911	1	2/2/5/5	3/7/25/26	0/2/2/2
1	OMU	1	2552	1	2/2/5/5	3/9/27/28	0/2/2/2
1	PSU	1	746	1	-	2/7/25/26	0/2/2/2
2	MA6	2	1518	2	-	3/7/29/30	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MA6	2	1519	2	-	3/7/29/30	0/3/3/3
2	4OC	2	1402	2	-	3/9/29/30	0/2/2/2
47	0TD	q	89	47	-	2/7/12/14	-
1	OMG	1	2251	1,57	1/1/5/5	2/5/27/28	0/3/3/3
1	1MG	1	745	1	-	0/3/25/26	0/3/3/3
2	2MG	2	1516	2	-	1/5/27/28	0/3/3/3
1	OMC	1	2498	58,1	1/1/5/5	5/9/27/28	0/2/2/2
2	5MC	2	967	2	-	3/7/25/26	0/2/2/2
2	UR3	2	1498	58,2	-	6/7/25/26	0/2/2/2
2	PSU	2	516	58,2	-	3/7/25/26	0/2/2/2
1	PSU	1	2580	1	2/2/5/5	2/7/25/26	0/2/2/2
1	6MZ	1	1618	1	2/2/5/6	5/5/27/28	0/3/3/3
1	PSU	1	1917	58,1	2/2/5/5	1/7/25/26	0/2/2/2
1	6MZ	1	2030	1	2/2/5/6	4/5/27/28	0/3/3/3
2	7MG	2	527	2	-	2/7/37/38	0/3/3/3
1	G7M	1	2069	1	3/3/5/5	2/3/25/26	0/3/3/3
1	PSU	1	2605	1	2/2/5/5	3/7/25/26	0/2/2/2
1	2MA	1	2503	58,1	2/2/5/5	3/3/25/26	0/3/3/3
1	2MG	1	1835	1	-	3/5/27/28	0/3/3/3
2	2MG	2	966	2	-	0/5/27/28	0/3/3/3

All (131) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	966	2MG	O6-C6	8.97	1.41	1.23
2	2	1207	2MG	O6-C6	8.83	1.41	1.23
1	1	2251	OMG	O6-C6	8.78	1.41	1.23
2	2	1516	2MG	O6-C6	8.70	1.41	1.23
1	1	2445	2MG	O6-C6	8.54	1.40	1.23
2	2	1498	UR3	O4-C4	8.46	1.41	1.23
1	1	1835	2MG	O6-C6	8.30	1.40	1.23
1	1	1915	3TD	O4-C4	8.18	1.40	1.23
1	1	2552	OMU	O4-C4	7.95	1.39	1.24
1	1	1618	6MZ	C6-N6	7.18	1.46	1.35
1	1	2030	6MZ	C6-N6	6.56	1.45	1.35
2	2	967	5MC	C4-N4	6.43	1.50	1.34
1	1	1962	5MC	C4-N4	6.21	1.50	1.34
2	2	1407	5MC	C4-N4	6.15	1.50	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	966	2MG	C2-N2	6.08	1.46	1.33
2	2	1516	2MG	C2-N2	5.81	1.46	1.33
2	2	1207	2MG	C2-N2	5.75	1.46	1.33
1	1	1835	2MG	C2-N2	5.41	1.45	1.33
2	2	1407	5MC	C2-N1	-5.12	1.28	1.40
1	1	2445	2MG	C2-N2	4.99	1.44	1.33
1	1	1962	5MC	C2-N1	-4.89	1.29	1.40
1	1	2251	OMG	C2-N2	4.88	1.45	1.34
1	1	2504	PSU	C4-N3	-4.87	1.29	1.38
1	1	2445	2MG	C6-N1	-4.79	1.30	1.37
2	2	967	5MC	C2-N1	-4.71	1.29	1.40
1	1	2498	OMC	C4-N4	4.71	1.45	1.33
1	1	2457	PSU	C4-N3	-4.61	1.30	1.38
1	1	2605	PSU	C4-N3	-4.58	1.30	1.38
1	1	2580	PSU	C2-N1	-4.45	1.30	1.36
1	1	2251	OMG	C6-N1	-4.44	1.31	1.37
1	1	1917	PSU	C6-C5	4.42	1.40	1.35
1	1	1911	PSU	C4-N3	-4.41	1.30	1.38
1	1	2580	PSU	C4-N3	-4.34	1.30	1.38
1	1	1917	PSU	C4-N3	-4.33	1.30	1.38
1	1	1915	3TD	C2-N1	-4.21	1.31	1.37
2	2	1498	UR3	C4-N3	-4.12	1.31	1.40
2	2	1498	UR3	C2-N1	-4.11	1.32	1.38
1	1	1835	2MG	C6-N1	-4.09	1.31	1.37
1	1	2552	OMU	C4-N3	-3.91	1.31	1.38
1	1	2503	2MA	C6-N6	3.89	1.44	1.28
2	2	1207	2MG	C6-N1	-3.87	1.32	1.37
1	1	2580	PSU	C6-N1	-3.81	1.29	1.36
1	1	2445	2MG	C2-N1	-3.79	1.30	1.36
1	1	2605	PSU	C6-C5	3.78	1.39	1.35
2	2	1516	2MG	C6-N1	-3.77	1.32	1.37
1	1	2580	PSU	C6-C5	3.75	1.39	1.35
1	1	2457	PSU	C6-C5	3.73	1.39	1.35
2	2	1516	2MG	C5-C6	-3.67	1.39	1.47
1	1	2504	PSU	C2-N1	-3.61	1.31	1.36
1	1	1911	PSU	C6-C5	3.61	1.39	1.35
1	1	1911	PSU	C2-N1	-3.60	1.31	1.36
1	1	2504	PSU	C6-C5	3.53	1.39	1.35
1	1	2251	OMG	C5-C6	-3.50	1.40	1.47
2	2	527	7MG	C4-N9	-3.49	1.33	1.37
1	1	2445	2MG	C5-C6	-3.49	1.40	1.47
1	1	2552	OMU	C2-N3	-3.46	1.31	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1917	PSU	C2-N1	-3.45	1.32	1.36
1	1	2457	PSU	C6-N1	-3.43	1.30	1.36
1	1	1835	2MG	C5-C6	-3.42	1.40	1.47
2	2	1207	2MG	C5-C6	-3.41	1.40	1.47
1	1	2552	OMU	C2-N1	-3.33	1.33	1.38
1	1	2457	PSU	C2-N1	-3.31	1.32	1.36
1	1	1911	PSU	C6-N1	-3.30	1.30	1.36
1	1	1915	3TD	C4-N3	-3.29	1.33	1.40
1	1	1835	2MG	C2-N1	-3.27	1.31	1.36
1	1	2504	PSU	C6-N1	-3.22	1.30	1.36
1	1	2605	PSU	C6-N1	-3.21	1.30	1.36
2	2	1498	UR3	C2-N3	-3.21	1.32	1.39
1	1	746	PSU	C6-C5	3.19	1.39	1.35
1	1	1917	PSU	C6-N1	-3.19	1.30	1.36
1	1	1915	3TD	C6-C5	3.12	1.39	1.35
1	1	2498	OMC	O2-C2	-3.09	1.18	1.23
2	2	1498	UR3	O2-C2	-3.08	1.16	1.22
1	1	2605	PSU	C2-N1	-3.06	1.32	1.36
2	2	516	PSU	C6-C5	3.03	1.38	1.35
1	1	955	PSU	C4-N3	-3.02	1.33	1.38
2	2	516	PSU	C4-N3	-2.99	1.33	1.38
1	1	2069	G7M	C5-C4	2.96	1.45	1.39
2	2	966	2MG	C6-N1	-2.95	1.33	1.37
1	1	1939	5MU	C4-N3	-2.94	1.33	1.38
1	1	1915	3TD	C2-N3	-2.89	1.32	1.38
1	1	2503	2MA	C6-N1	-2.89	1.31	1.38
1	1	2069	G7M	C6-N1	-2.89	1.33	1.37
1	1	747	5MU	C6-C5	2.82	1.39	1.34
2	2	1207	2MG	C2-N1	-2.82	1.32	1.36
2	2	966	2MG	C5-C6	-2.82	1.41	1.47
1	1	2251	OMG	C5-C4	-2.79	1.36	1.43
1	1	746	PSU	C4-N3	-2.79	1.33	1.38
1	1	955	PSU	C6-C5	2.78	1.38	1.35
1	1	747	5MU	C4-N3	-2.77	1.33	1.38
2	2	527	7MG	C5-C4	2.76	1.47	1.38
2	2	1498	UR3	C6-N1	-2.68	1.31	1.38
2	2	1407	5MC	C2-N3	-2.66	1.30	1.36
1	1	2251	OMG	C2-N1	-2.62	1.31	1.37
1	1	2251	OMG	O2'-CM2	-2.62	1.33	1.42
1	1	1939	5MU	C6-N1	-2.61	1.33	1.38
1	1	2503	2MA	C5-C4	-2.61	1.36	1.43
1	1	2498	OMC	C2-N1	-2.55	1.34	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	2498	OMC	C5-C4	-2.52	1.37	1.42
1	1	2498	OMC	C2-N3	-2.48	1.31	1.36
1	1	1915	3TD	C6-N1	-2.46	1.32	1.36
1	1	2552	OMU	C6-N1	-2.46	1.32	1.38
1	1	1962	5MC	C2-N3	-2.44	1.31	1.36
2	2	527	7MG	C6-N1	-2.43	1.34	1.38
1	1	1939	5MU	C2-N3	-2.41	1.33	1.38
1	1	1939	5MU	C6-C5	2.41	1.38	1.34
2	2	1516	2MG	C2-N1	-2.38	1.32	1.36
1	1	2504	PSU	C2-N3	-2.36	1.33	1.37
1	1	2552	OMU	O2-C2	-2.36	1.18	1.23
1	1	2580	PSU	C2-N3	-2.32	1.33	1.37
1	1	747	5MU	C4-C5	2.31	1.48	1.44
1	1	1911	PSU	C2-N3	-2.30	1.33	1.37
1	1	2498	OMC	C4-N3	-2.29	1.30	1.34
1	1	2605	PSU	C2-N3	-2.29	1.33	1.37
1	1	1835	2MG	C5-C4	-2.26	1.37	1.43
2	2	516	PSU	C2-N3	-2.24	1.33	1.37
1	1	747	5MU	C6-N1	-2.22	1.34	1.38
2	2	527	7MG	C5-N7	-2.20	1.33	1.35
2	2	967	5MC	C2-N3	-2.20	1.31	1.36
1	1	2552	OMU	C5-C4	-2.19	1.38	1.43
1	1	955	PSU	C2-N3	-2.19	1.33	1.37
1	1	1915	3TD	O2-C2	-2.18	1.19	1.23
1	1	2504	PSU	O4'-C1'	-2.16	1.40	1.43
2	2	966	2MG	C2-N1	-2.14	1.33	1.36
1	1	1917	PSU	O4'-C1'	-2.11	1.40	1.43
1	1	747	5MU	C2-N3	-2.07	1.34	1.38
1	1	2457	PSU	C2-N3	-2.03	1.34	1.37
2	2	1402	4OC	C6-N1	-2.03	1.33	1.38
1	1	2030	6MZ	C2'-C1'	-2.02	1.50	1.53
1	1	2445	2MG	C5-C4	-2.01	1.37	1.43
47	q	89	0TD	CSB-SB	-2.00	1.75	1.79

All (139) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	2030	6MZ	C9-N6-C6	-9.62	114.59	122.87
2	2	527	7MG	N9-C4-N3	8.69	138.46	125.47
1	1	2498	OMC	O2-C2-N3	-6.85	111.18	122.33
1	1	2457	PSU	N1-C2-N3	6.77	122.80	115.13
2	2	516	PSU	N1-C2-N3	6.77	122.80	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1962	5MC	C5-C6-N1	-6.46	116.69	123.34
1	1	2580	PSU	N1-C2-N3	6.41	122.39	115.13
1	1	746	PSU	N1-C2-N3	6.39	122.37	115.13
1	1	2605	PSU	N1-C2-N3	6.36	122.33	115.13
1	1	955	PSU	N1-C2-N3	6.35	122.32	115.13
1	1	1911	PSU	N1-C2-N3	6.25	122.21	115.13
1	1	1618	6MZ	C9-N6-C6	-6.15	117.58	122.87
1	1	2504	PSU	N1-C2-N3	6.14	122.09	115.13
1	1	2030	6MZ	C2-N1-C6	5.94	121.69	116.59
1	1	2030	6MZ	N3-C2-N1	-5.75	119.69	128.68
1	1	1939	5MU	C4-N3-C2	-5.66	120.02	127.35
1	1	1917	PSU	N1-C2-N3	5.65	121.53	115.13
2	2	527	7MG	N9-C8-N7	-5.61	95.35	103.38
1	1	1915	3TD	N1-C2-N3	5.41	120.41	116.14
2	2	527	7MG	C5-C4-N3	-5.34	117.96	128.13
1	1	747	5MU	N3-C2-N1	5.28	121.89	114.89
1	1	2580	PSU	O2-C2-N1	-5.25	117.01	122.79
2	2	967	5MC	C5-C6-N1	-5.22	117.97	123.34
1	1	747	5MU	C4-N3-C2	-5.17	120.66	127.35
1	1	1618	6MZ	C2-N1-C6	5.14	121.00	116.59
2	2	1407	5MC	C5-C6-N1	-5.06	118.13	123.34
1	1	1939	5MU	C5-C4-N3	5.03	119.61	115.31
1	1	2552	OMU	N3-C2-N1	5.01	121.54	114.89
1	1	1939	5MU	N3-C2-N1	4.97	121.48	114.89
2	2	1519	MA6	N3-C2-N1	-4.82	121.14	128.68
1	1	2552	OMU	C4-N3-C2	-4.81	120.24	126.58
1	1	2457	PSU	O2-C2-N1	-4.64	117.68	122.79
1	1	2457	PSU	C4-N3-C2	-4.59	119.73	126.34
1	1	1939	5MU	C5-C6-N1	-4.56	118.65	123.34
2	2	1518	MA6	N3-C2-N1	-4.52	121.61	128.68
1	1	1618	6MZ	N3-C2-N1	-4.49	121.66	128.68
1	1	2605	PSU	C4-N3-C2	-4.49	119.87	126.34
1	1	955	PSU	C4-N3-C2	-4.38	120.03	126.34
1	1	2498	OMC	C1'-N1-C2	4.36	128.14	118.42
1	1	1939	5MU	O4-C4-C5	-4.34	119.87	124.90
1	1	2504	PSU	C4-N3-C2	-4.29	120.16	126.34
1	1	1911	PSU	O2-C2-N1	-4.17	118.20	122.79
2	2	516	PSU	C4-N3-C2	-4.13	120.39	126.34
1	1	747	5MU	C5-C4-N3	4.12	118.83	115.31
1	1	746	PSU	C4-N3-C2	-4.11	120.41	126.34
47	q	89	0TD	OD2-CG-CB	4.10	122.01	113.15
2	2	527	7MG	C2-N3-C4	4.09	119.59	112.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1911	PSU	C4-N3-C2	-4.06	120.49	126.34
1	1	2503	2MA	C5-C6-N1	4.05	121.02	114.02
1	1	2498	OMC	O2-C2-N1	3.99	127.12	118.89
1	1	2445	2MG	CM2-N2-C2	-3.86	115.33	123.86
1	1	1835	2MG	C5-C6-N1	3.84	120.73	113.95
1	1	2580	PSU	C4-N3-C2	-3.79	120.89	126.34
2	2	1498	UR3	C4-N3-C2	-3.78	121.01	124.56
1	1	2504	PSU	O2-C2-N1	-3.76	118.65	122.79
1	1	747	5MU	C5-C6-N1	-3.73	119.50	123.34
1	1	1917	PSU	O2-C2-N1	-3.73	118.69	122.79
1	1	747	5MU	O4-C4-C5	-3.71	120.60	124.90
1	1	2580	PSU	C6-C5-C4	-3.68	115.63	118.20
1	1	2552	OMU	C5-C4-N3	3.61	120.25	114.84
1	1	1917	PSU	C4-N3-C2	-3.57	121.20	126.34
2	2	516	PSU	O2-C2-N1	-3.55	118.88	122.79
1	1	955	PSU	O2-C2-N1	-3.49	118.95	122.79
1	1	1618	6MZ	C4-C5-N7	-3.48	105.78	109.40
1	1	746	PSU	O2'-C2'-C1'	-3.46	102.98	111.23
2	2	1402	4OC	C2'-C1'-N1	-3.46	107.51	114.22
1	1	1939	5MU	O2-C2-N1	-3.41	118.25	122.79
1	1	746	PSU	O2-C2-N1	-3.40	119.04	122.79
2	2	966	2MG	C5-C6-N1	3.36	119.88	113.95
1	1	2251	OMG	C5-C6-N1	3.35	119.87	113.95
47	q	89	0TD	CSB-SB-CB	3.30	108.41	102.44
1	1	747	5MU	O2-C2-N1	-3.29	118.41	122.79
1	1	2605	PSU	O2-C2-N1	-3.24	119.22	122.79
1	1	2445	2MG	C5-C6-N1	3.20	119.59	113.95
1	1	2552	OMU	CM2-O2'-C2'	-3.18	106.19	114.52
1	1	2498	OMC	C6-N1-C2	-3.15	115.02	120.49
1	1	1835	2MG	CM2-N2-C2	-3.10	117.02	123.86
47	q	89	0TD	OD1-CG-CB	-3.06	116.03	122.44
1	1	2251	OMG	C2-N1-C6	-3.05	119.49	125.10
2	2	1516	2MG	C5-C6-N1	2.97	119.20	113.95
1	1	2552	OMU	O4-C4-C5	-2.88	120.09	125.16
1	1	2580	PSU	C6-N1-C2	-2.86	119.76	122.68
2	2	1407	5MC	O2-C2-N3	-2.86	117.69	122.33
2	2	1207	2MG	C5-C6-N1	2.85	118.99	113.95
1	1	2069	G7M	C3'-C2'-C1'	2.83	105.23	100.98
1	1	2030	6MZ	C1'-N9-C4	-2.82	121.69	126.64
2	2	516	PSU	O3'-C3'-C2'	2.81	120.93	111.82
2	2	1518	MA6	C4-C5-N7	-2.78	106.50	109.40
1	1	2030	6MZ	C4-C5-N7	-2.77	106.51	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	745	1MG	C8-N7-C5	2.76	108.25	102.99
1	1	1835	2MG	C8-N7-C5	2.75	108.24	102.99
2	2	1516	2MG	O6-C6-C5	-2.72	119.07	124.37
1	1	2503	2MA	C8-N7-C5	2.71	108.15	102.99
2	2	966	2MG	C8-N7-C5	2.69	108.11	102.99
2	2	1402	4OC	O4'-C1'-N1	2.67	114.46	108.36
1	1	2552	OMU	O3'-C3'-C4'	2.66	118.74	111.05
2	2	527	7MG	O3'-C3'-C4'	2.65	118.72	111.05
1	1	2251	OMG	O6-C6-C5	-2.64	119.22	124.37
2	2	967	5MC	O2-C2-N3	-2.63	118.06	122.33
1	1	747	5MU	C2'-C1'-N1	-2.63	105.78	113.22
1	1	1939	5MU	O3'-C3'-C4'	-2.62	103.47	111.05
1	1	2251	OMG	CM2-O2'-C2'	-2.62	107.66	114.52
2	2	527	7MG	C5-C6-N1	2.61	115.59	110.99
2	2	1519	MA6	C4-C5-N7	-2.61	106.68	109.40
2	2	1518	MA6	C1'-N9-C4	2.57	131.16	126.64
1	1	1962	5MC	O2-C2-N3	-2.55	118.18	122.33
1	1	1911	PSU	C6-N1-C2	-2.54	120.08	122.68
1	1	955	PSU	C2'-C3'-C4'	2.53	107.56	102.64
2	2	1207	2MG	CM2-N2-C2	-2.48	118.38	123.86
1	1	745	1MG	C5-C6-N1	2.47	117.61	113.90
1	1	746	PSU	O3'-C3'-C2'	2.43	119.69	111.82
1	1	746	PSU	C5-C6-N1	-2.41	118.50	122.11
2	2	1518	MA6	C9-N6-C6	2.40	126.78	119.51
1	1	2445	2MG	C8-N7-C5	2.40	107.55	102.99
2	2	1207	2MG	C8-N7-C5	2.37	107.50	102.99
2	2	1498	UR3	C3U-N3-C2	2.31	121.36	117.31
2	2	1516	2MG	CM2-N2-C2	-2.30	118.79	123.86
1	1	2498	OMC	CM2-O2'-C2'	-2.29	108.53	114.52
2	2	1402	4OC	C6-C5-C4	2.28	119.75	116.96
2	2	966	2MG	O6-C6-C5	-2.27	119.94	124.37
2	2	967	5MC	C5-C4-N3	-2.24	119.25	121.67
2	2	527	7MG	O6-C6-C5	-2.23	122.06	127.54
2	2	967	5MC	N1-C2-N3	2.22	122.86	118.81
1	1	1835	2MG	O6-C6-C5	-2.22	120.03	124.37
1	1	2504	PSU	C6-N1-C2	-2.22	120.41	122.68
1	1	2457	PSU	O3'-C3'-C4'	2.20	117.40	111.05
1	1	1917	PSU	C6-N1-C2	-2.17	120.47	122.68
1	1	2457	PSU	C6-N1-C2	-2.15	120.48	122.68
2	2	516	PSU	O2'-C2'-C1'	-2.14	106.12	111.23
1	1	2552	OMU	O2-C2-N3	-2.14	117.51	121.50
2	2	527	7MG	C5-C4-N9	-2.14	103.57	106.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1917	PSU	C6-C5-C4	-2.12	116.72	118.20
2	2	1207	2MG	O6-C6-C5	-2.08	120.30	124.37
1	1	2580	PSU	C3'-C2'-C1'	-2.07	99.22	101.64
1	1	955	PSU	C5-C6-N1	-2.07	119.00	122.11
2	2	1407	5MC	N1-C2-N3	2.06	122.56	118.81
1	1	2504	PSU	O4-C4-C5	-2.02	118.77	124.05
1	1	2498	OMC	C4-N3-C2	2.01	123.51	120.25
2	2	1402	4OC	CM4-N4-C4	-2.01	118.53	122.45

All (26) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	1	1618	6MZ	C2'
1	1	1618	6MZ	C3'
1	1	1911	PSU	C4'
1	1	1911	PSU	C3'
1	1	1915	3TD	C3'
1	1	1917	PSU	C4'
1	1	1917	PSU	C3'
1	1	2030	6MZ	C2'
1	1	2030	6MZ	C3'
1	1	2069	G7M	C4'
1	1	2069	G7M	C2'
1	1	2069	G7M	C3'
1	1	2251	OMG	C2'
1	1	2457	PSU	C4'
1	1	2457	PSU	C3'
1	1	2498	OMC	C4'
1	1	2503	2MA	C2'
1	1	2503	2MA	C3'
1	1	2504	PSU	C4'
1	1	2504	PSU	C3'
1	1	2552	OMU	C2'
1	1	2552	OMU	C3'
1	1	2580	PSU	C4'
1	1	2580	PSU	C3'
1	1	2605	PSU	C4'
1	1	2605	PSU	C3'

All (85) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	1	955	PSU	C2'-C1'-C5-C4
1	1	955	PSU	C4'-C5'-O5'-P
1	1	1618	6MZ	C5-C6-N6-C9
1	1	1618	6MZ	N1-C6-N6-C9
1	1	1618	6MZ	O4'-C4'-C5'-O5'
1	1	1618	6MZ	C3'-C4'-C5'-O5'
1	1	1835	2MG	N1-C2-N2-CM2
1	1	1835	2MG	N3-C2-N2-CM2
1	1	1911	PSU	C4'-C5'-O5'-P
1	1	1915	3TD	O4'-C1'-C5-C4
1	1	1915	3TD	O4'-C1'-C5-C6
1	1	1962	5MC	O4'-C4'-C5'-O5'
1	1	1962	5MC	C3'-C4'-C5'-O5'
1	1	2030	6MZ	N1-C6-N6-C9
1	1	2030	6MZ	O4'-C4'-C5'-O5'
1	1	2030	6MZ	C3'-C4'-C5'-O5'
1	1	2069	G7M	C3'-C4'-C5'-O5'
1	1	2445	2MG	C3'-C4'-C5'-O5'
1	1	2445	2MG	N1-C2-N2-CM2
1	1	2445	2MG	N3-C2-N2-CM2
1	1	2498	OMC	C3'-C4'-C5'-O5'
1	1	2498	OMC	C4'-C5'-O5'-P
1	1	2504	PSU	C2'-C1'-C5-C6
1	1	2552	OMU	O4'-C4'-C5'-O5'
1	1	2580	PSU	C2'-C1'-C5-C4
1	1	2580	PSU	C2'-C1'-C5-C6
1	1	2605	PSU	C3'-C4'-C5'-O5'
2	2	516	PSU	O4'-C1'-C5-C4
2	2	516	PSU	O4'-C1'-C5-C6
2	2	516	PSU	C4'-C5'-O5'-P
2	2	527	7MG	C3'-C4'-C5'-O5'
2	2	967	5MC	O4'-C4'-C5'-O5'
2	2	967	5MC	C3'-C4'-C5'-O5'
2	2	1207	2MG	N1-C2-N2-CM2
2	2	1207	2MG	N3-C2-N2-CM2
2	2	1402	4OC	C1'-C2'-O2'-CM2
2	2	1407	5MC	O4'-C4'-C5'-O5'
2	2	1516	2MG	N3-C2-N2-CM2
2	2	1518	MA6	O4'-C4'-C5'-O5'
2	2	1518	MA6	C3'-C4'-C5'-O5'
2	2	1519	MA6	C5-C6-N6-C10
1	1	2504	PSU	C4'-C5'-O5'-P
1	1	1915	3TD	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	1	2503	2MA	O4'-C4'-C5'-O5'
1	1	2503	2MA	C3'-C4'-C5'-O5'
1	1	2504	PSU	C3'-C4'-C5'-O5'
1	1	2552	OMU	C3'-C4'-C5'-O5'
2	2	1407	5MC	C3'-C4'-C5'-O5'
1	1	2445	2MG	O4'-C4'-C5'-O5'
1	1	2504	PSU	O4'-C4'-C5'-O5'
1	1	2605	PSU	O4'-C4'-C5'-O5'
2	2	527	7MG	O4'-C4'-C5'-O5'
2	2	1519	MA6	N1-C6-N6-C10
1	1	1911	PSU	C3'-C4'-C5'-O5'
1	1	1915	3TD	C3'-C4'-C5'-O5'
1	1	2069	G7M	O4'-C4'-C5'-O5'
1	1	2251	OMG	O4'-C4'-C5'-O5'
1	1	1917	PSU	C4'-C5'-O5'-P
1	1	2498	OMC	O4'-C4'-C5'-O5'
1	1	2605	PSU	C4'-C5'-O5'-P
2	2	1402	4OC	C4'-C5'-O5'-P
1	1	2030	6MZ	C5-C6-N6-C9
1	1	1911	PSU	O4'-C4'-C5'-O5'
1	1	2498	OMC	C2'-C1'-N1-C6
1	1	1618	6MZ	C4'-C5'-O5'-P
1	1	2552	OMU	C4'-C5'-O5'-P
47	q	89	0TD	SB-CB-CG-OD1
2	2	1402	4OC	C3'-C2'-O2'-CM2
2	2	1498	UR3	C2'-C1'-N1-C6
1	1	2498	OMC	C2'-C1'-N1-C2
2	2	1519	MA6	C5-C6-N6-C9
2	2	967	5MC	C4'-C5'-O5'-P
1	1	2503	2MA	C4'-C5'-O5'-P
1	1	746	PSU	O4'-C1'-C5-C4
1	1	955	PSU	C3'-C4'-C5'-O5'
2	2	1498	UR3	O4'-C1'-N1-C6
47	q	89	0TD	CA-CB-SB-CSB
1	1	1835	2MG	O4'-C4'-C5'-O5'
1	1	2251	OMG	C3'-C4'-C5'-O5'
2	2	1498	UR3	O4'-C4'-C5'-O5'
2	2	1518	MA6	C4'-C5'-O5'-P
1	1	746	PSU	O4'-C1'-C5-C6
2	2	1498	UR3	C2'-C1'-N1-C2
2	2	1498	UR3	O4'-C1'-N1-C2
2	2	1498	UR3	C3'-C4'-C5'-O5'

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 431 ligands modelled in this entry, 431 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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
2	2	3
57	4	1
1	1	1
17	M	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	4	342:U	O3'	343:C	P	3.61
1	2	1276:G	O3'	1277:C	P	3.26
1	1	2314:A	O3'	2315:G	P	3.25
1	2	147:G	O3'	148:G	P	3.25

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	2	1383:C	O3'	1384:C	P	3.17
1	M	2:LEU	C	3:GLN	N	1.13

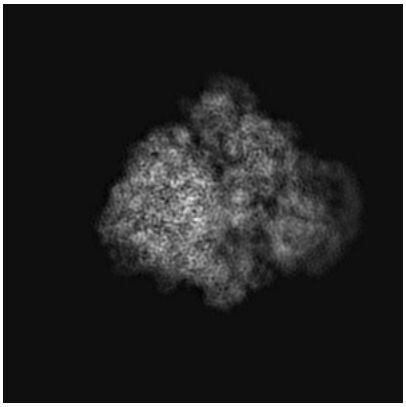
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-4477. These allow visual inspection of the internal detail of the map and identification of artifacts.

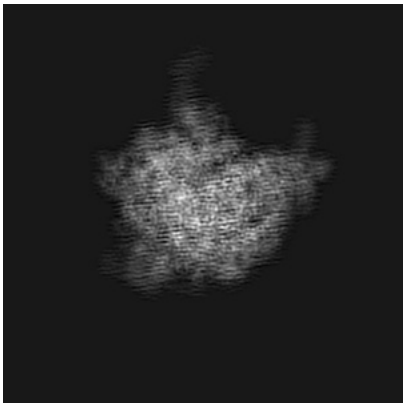
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

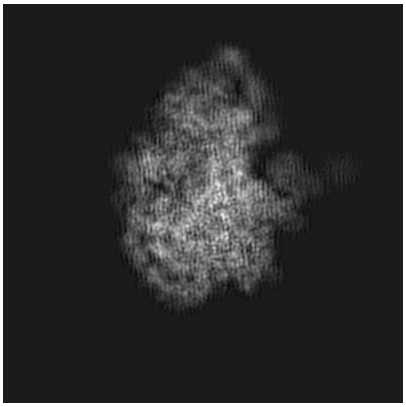
6.1.1 Primary map



X



Y

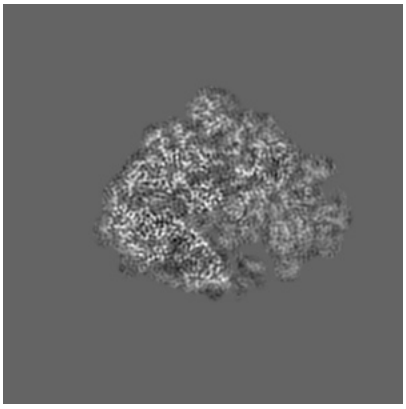


Z

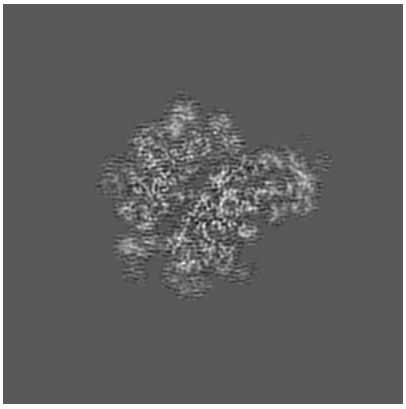
The images above show the map projected in three orthogonal directions.

6.2 Central slices

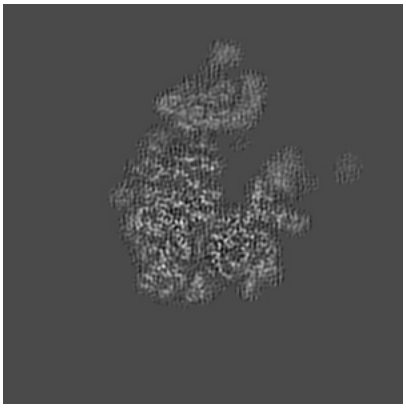
6.2.1 Primary map



X Index: 190



Y Index: 190

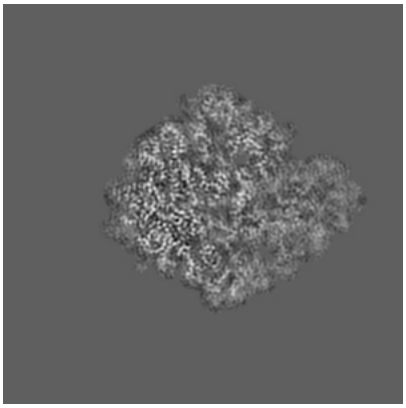


Z Index: 190

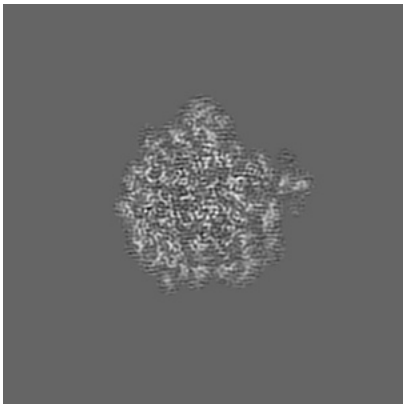
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

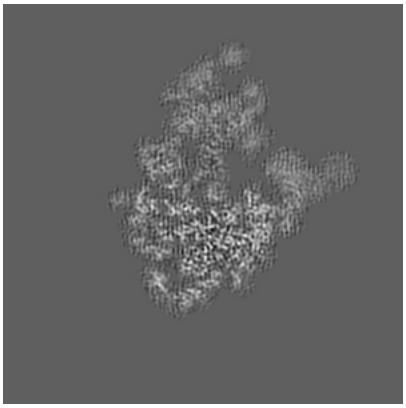
6.3.1 Primary map



X Index: 199



Y Index: 176

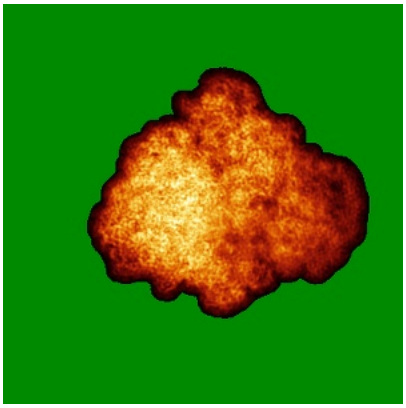


Z Index: 174

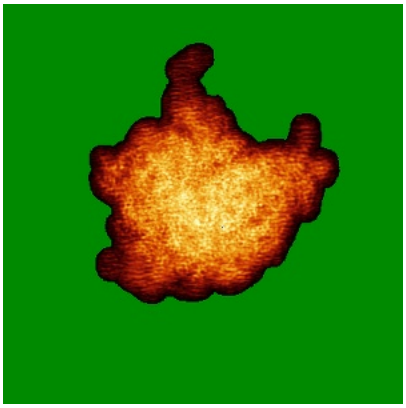
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

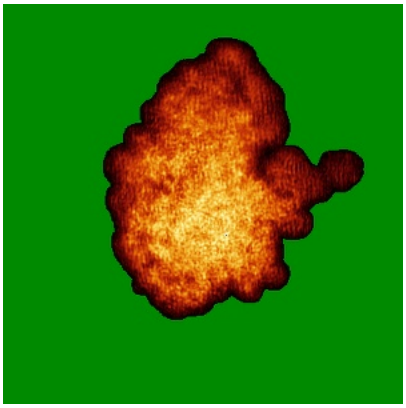
6.4.1 Primary map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0934. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

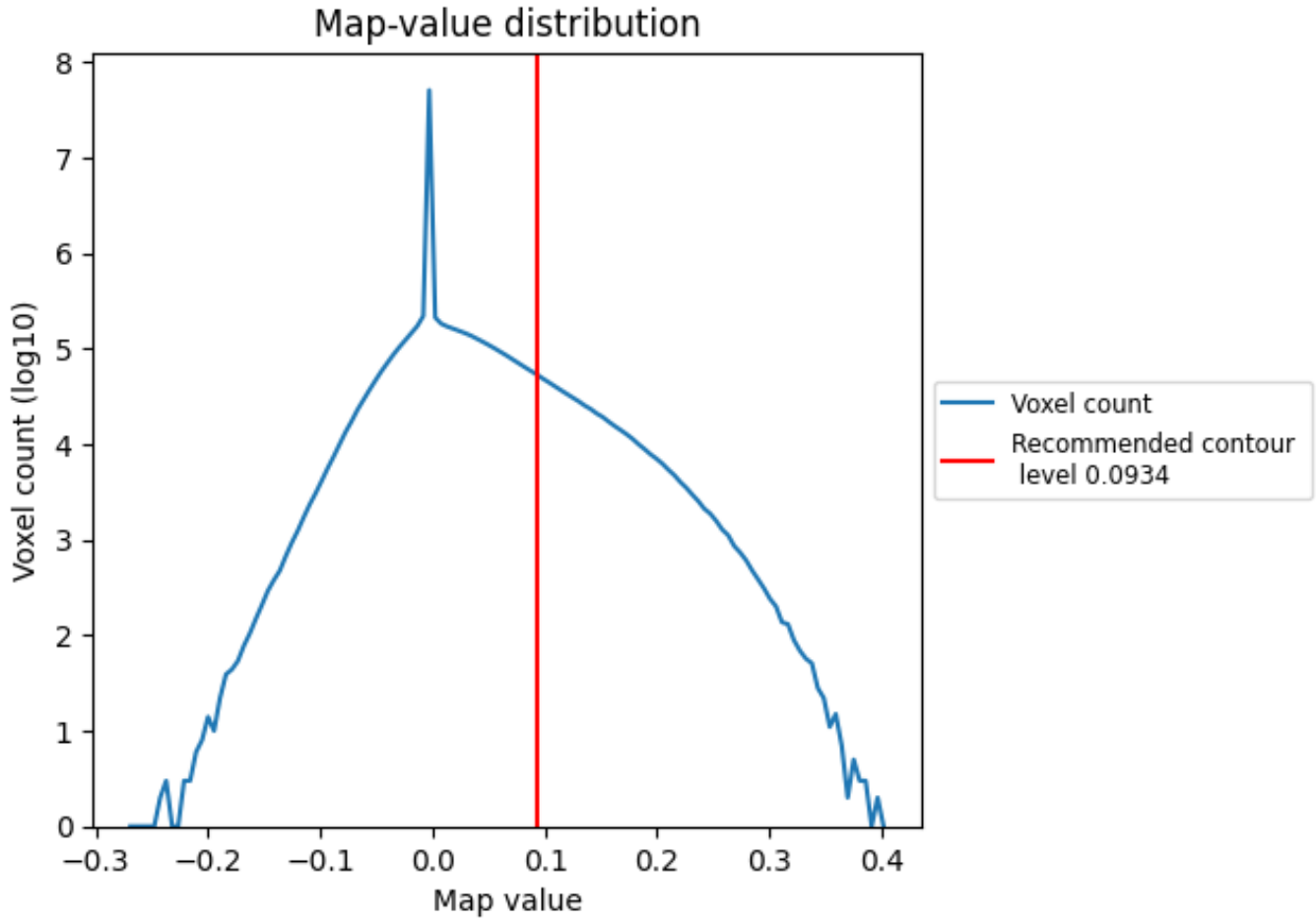
6.6 Mask visualisation (i)

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

7 Map analysis

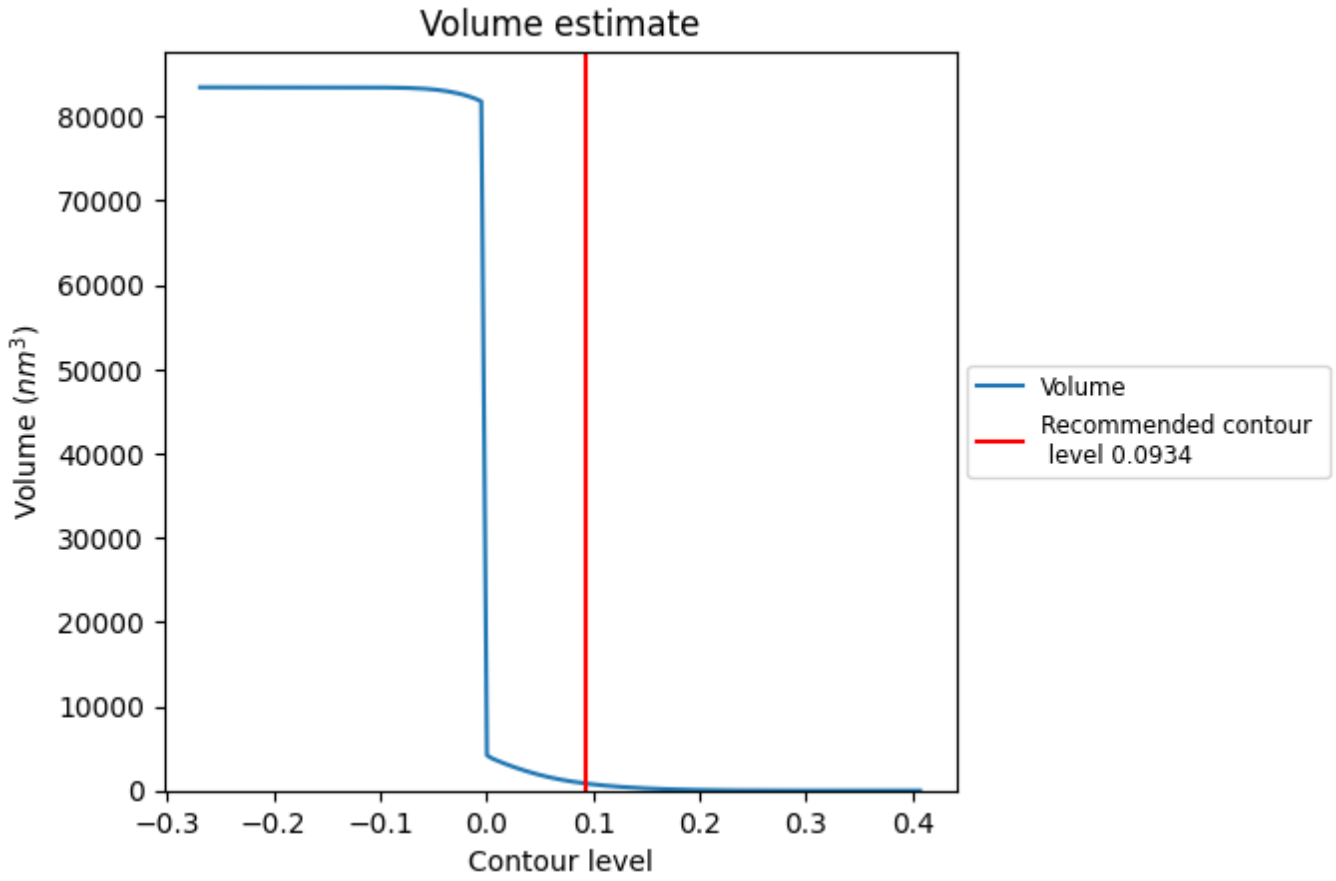
This section contains the results of statistical analysis of the map.

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.

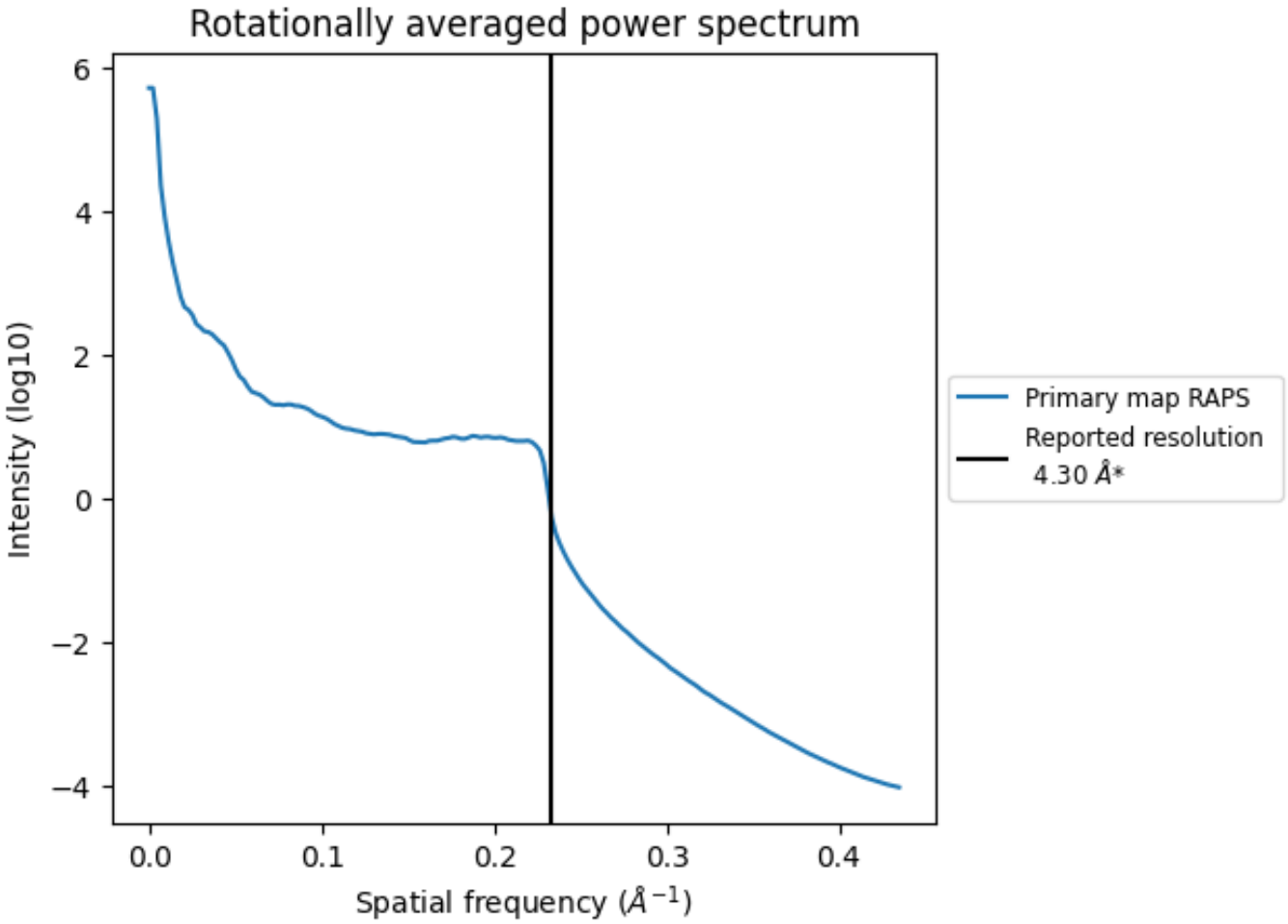
7.2 Volume estimate



The volume at the recommended contour level is 836 nm^3; this corresponds to an approximate mass of 755 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 0.233 $Å^{-1}$

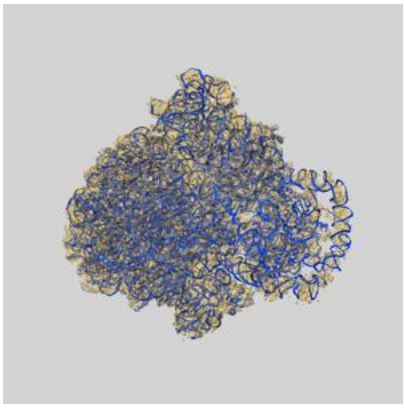
8 Fourier-Shell correlation

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

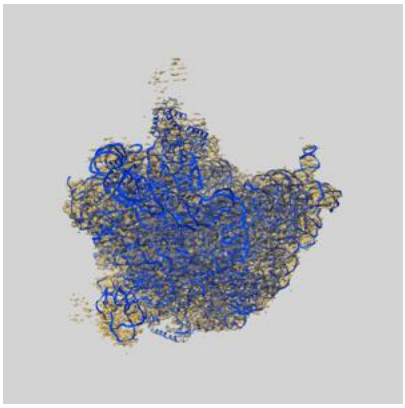
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-4477 and PDB model 6Q98. Per-residue inclusion information can be found in section 3 on page 16.

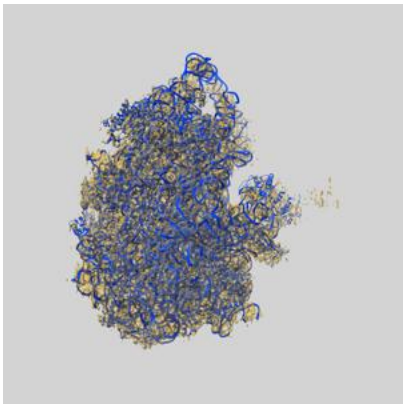
9.1 Map-model overlay



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0934 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.

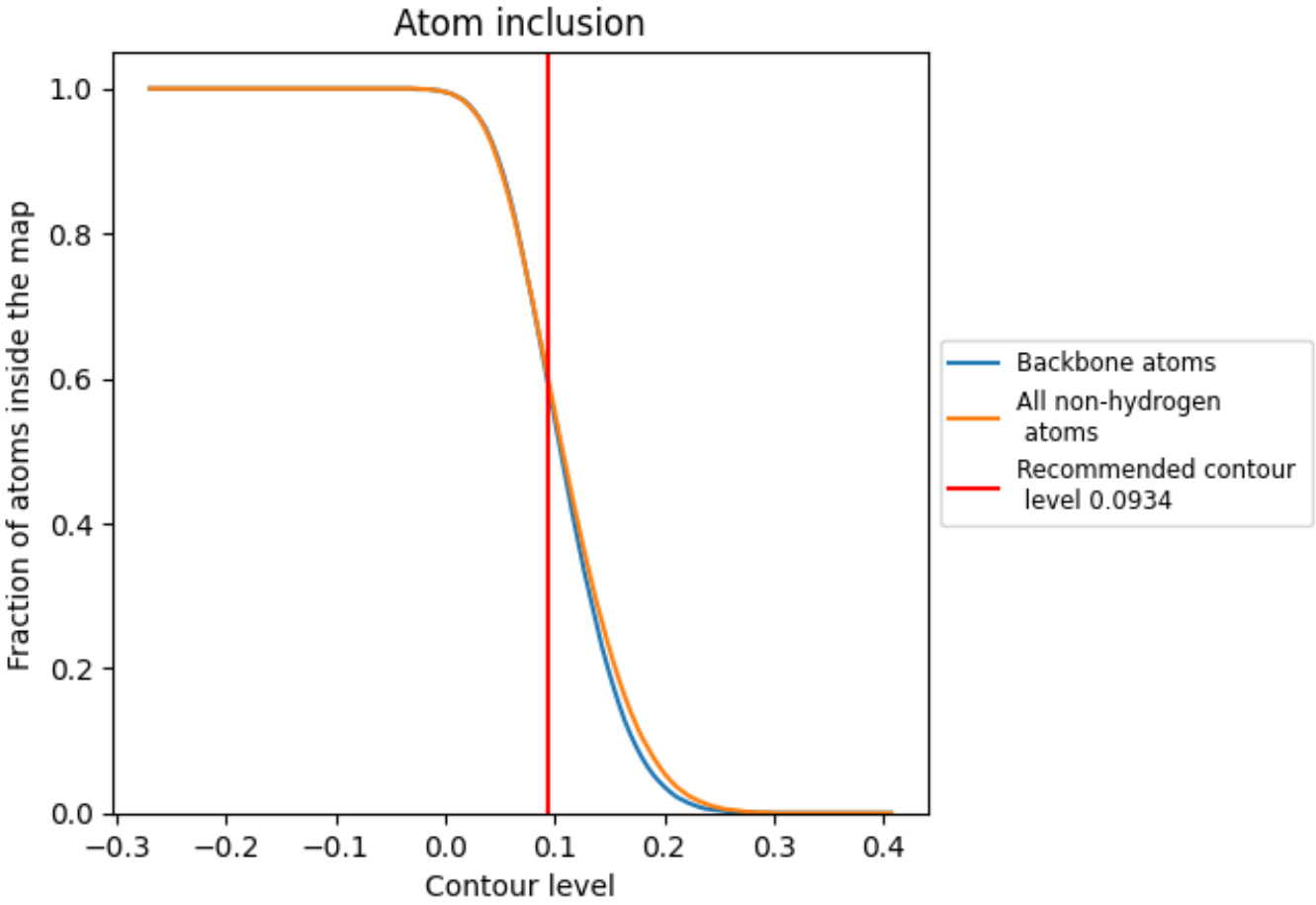
9.2 Q-score mapped to coordinate model

This section was not generated.

9.3 Atom inclusion mapped to coordinate model

This section was not generated.

9.4 Atom inclusion



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

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.0934) and Q-score for the entire model and for each chain.

Chain	Atom inclusion
All	0.6050
1	0.7470
2	0.6730
3	0.7410
4	0.2510
5	0.3400
6	0.1910
B	0.5360
C	0.5700
D	0.5280
E	0.3970
F	0.4770
G	0.2300
H	0.1950
I	0.1690
J	0.5620
K	0.5360
L	0.5580
M	0.5440
N	0.5940
O	0.4770
P	0.4830
Q	0.6410
R	0.5480
S	0.5730
T	0.5000
U	0.5020
V	0.5470
W	0.5620
X	0.5440
Y	0.4930
Z	0.5620
a	0.2390
b	0.5940
c	0.4330

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Chain	Atom inclusion
d	0.5630
e	0.5930
f	0.5750
g	0.2340
h	0.2910
i	0.3530
j	0.4890
k	0.4870
l	0.2300
m	0.4980
n	0.2160
o	0.1920
p	0.4850
q	0.4700
r	0.1890
s	0.2520
t	0.4940
u	0.4880
v	0.4710
w	0.4910
x	0.2100
y	0.4680
z	0.3790