Full wwPDB EM Validation Report ⓘ

Sep 26, 2022 – 06:04 pm BST

PDB ID	:	7OW7
EMDB ID	:	EMD-13094
Title	:	EIF6-bound large subunit of the human ribosome
Authors	:	Faille, A.; Warren, A.J.
Deposited on	:	2021-06-16
Resolution	:	2.20 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

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

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

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

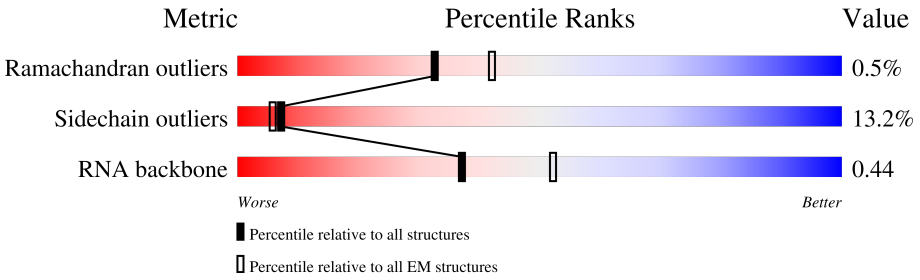
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.20 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	5070	33% 26% 6% 35%
2	B	121	66% 31%
3	C	157	55% 32% 7% 6%
4	D	257	82% 12%
5	E	430	78% 13% 8%
6	F	427	68% 14% 16%
7	G	297	6% 82% 16%
8	H	288	62% 14% 23%

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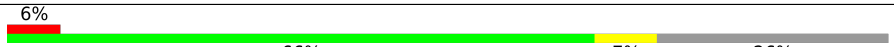
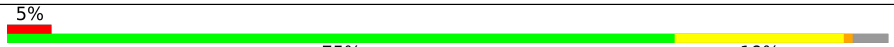
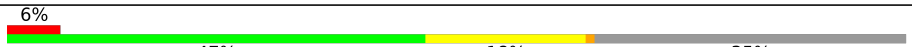
Mol	Chain	Length	Quality of chain
9	m	248	
10	n	266	
11	o	190	
12	p	214	
13	q	178	
14	r	211	
15	s	220	
16	t	204	
17	I	203	
18	J	184	
19	K	188	
20	L	196	
21	M	176	
22	N	160	
23	R	156	
24	S	145	
25	T	136	
26	U	148	
27	V	159	
28	W	115	
29	X	125	
30	Y	135	
31	Z	110	
32	a	117	
33	b	123	

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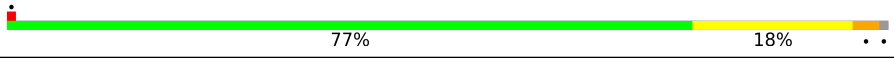
Mol	Chain	Length	Quality of chain
34	c	105	
35	d	97	
36	e	70	
37	f	157	
38	i	106	
39	j	92	
40	k	137	
41	P	245	
42	Q	140	
43	u	157	

2 Entry composition (i)

There are 49 unique types of molecules in this entry. The entry contains 137413 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A	3303	70929	31625	12982	23019	3303	1	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	B	120	2558	1141	456	842	119	0	0

- Molecule 3 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	C	148	3153	1408	564	1034	147	0	0

- Molecule 4 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	246	1887	1183	387	311	6	0	0

- Molecule 5 is a protein called 60S ribosomal protein L3 isoform a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	395	3194	2034	600	545	15	1	0

- Molecule 6 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	359	2855	1797	571	474	13	0	0

- Molecule 7 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	293	Total	C	N	O	S	0	0
			2376	1505	432	425	14		

- Molecule 8 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	221	Total	C	N	O	S	0	0
			1767	1138	335	290	4		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	40	ARG	GLY	conflict	UNP Q02878
H	41	ASN	LYS	conflict	UNP Q02878

- Molecule 9 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	m	225	Total	C	N	O	S	0	0
			1870	1202	358	301	9		

- Molecule 10 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	n	223	Total	C	N	O	S	0	0
			1809	1153	349	303	4		

- Molecule 11 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	o	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

- Molecule 12 is a protein called 60S ribosomal protein L10-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	p	158	Total	C	N	O	S	0	0
			1283	819	238	216	10		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
p	49	CYS	GLY	conflict	UNP Q96L21

- Molecule 13 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	q	170	Total	C	N	O	S	0	0
			1358	858	253	241	6		

- Molecule 14 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	r	206	Total	C	N	O	S	0	0
			1664	1041	345	274	4		

- Molecule 15 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	s	139	Total	C	N	O	S	0	0
			1138	730	218	183	7		

- Molecule 16 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	t	203	Total	C	N	O	S	2	0
			1720	1086	361	269	4		

- Molecule 17 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	I	199	Total	C	N	O	S	0	0
			1634	1053	319	257	5		

- Molecule 18 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	J	152	Total	C	N	O	S	0	0
			1233	771	240	213	9		

- Molecule 19 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	K	187	Total	C	N	O	S	0	0
			1513	944	314	250	5		

- Molecule 20 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	L	137	Total	C	N	O	S	0	0
			1137	716	235	178	8		

- Molecule 21 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	M	176	Total	C	N	O	S	0	0
			1461	930	284	236	11		

- Molecule 22 is a protein called 60S ribosomal protein L21.

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

- Molecule 23 is a protein called 60S ribosomal protein L23a.

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

- Molecule 24 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	S	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 25 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	T	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 26 is a protein called 60S ribosomal protein L27a.

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

- Molecule 27 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	V	104	Total	C	N	O	S	0	0
			837	518	185	130	4		

- Molecule 28 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	W	100	Total	C	N	O	S	0	0
			772	490	136	139	7		

- Molecule 29 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	X	106	Total	C	N	O	S	0	0
			868	551	170	145	2		

- Molecule 30 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Y	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 31 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Z	109	Total	C	N	O	S	1	0
			879	557	174	144	4		

- Molecule 32 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	a	112	Total	C	N	O	S	0	0
			888	555	183	144	6		

- Molecule 33 is a protein called 60S ribosomal protein L35.

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

- Molecule 34 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	c	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 35 is a protein called 60S ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	d	86	Total	C	N	O	S	1	0
			713	442	155	111	5		

- Molecule 36 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	e	29	Total	C	N	O	S	0	0
			249	163	47	38	1		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
e	16	PRO	ARG	conflict	UNP P63173
e	23	ILE	VAL	conflict	UNP P63173

- Molecule 37 is a protein called 60S ribosomal protein L39.

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

- Molecule 38 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	i	97	Total	C	N	O	S	0	0
			794	498	161	129	6		

- Molecule 39 is a protein called 60S ribosomal protein L37a.

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

- Molecule 40 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	k	124	Total	C	N	O	S	0	0
			992	615	206	167	4		

- Molecule 41 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	P	225	Total	C	N	O	S	0	0
			1712	1065	295	340	12		

- Molecule 42 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Q	134	Total	C	N	O	S	0	0
			993	625	187	176	5		

- Molecule 43 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	u	62	Total	C	N	O	S	0	0
			519	332	101	83	3		

- Molecule 44 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
44	A	209	Total	Mg	0
			209	209	
44	B	3	Total	Mg	0
			3	3	
44	C	6	Total	Mg	0
			6	6	
44	J	1	Total	Mg	0
			1	1	
44	L	2	Total	Mg	0
			2	2	
44	Q	2	Total	Mg	0
			2	2	

- Molecule 45 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
45	A	1	Total Zn 1 1	0
45	a	1	Total Zn 1 1	0
45	d	1	Total Zn 1 1	0
45	i	1	Total Zn 1 1	0
45	j	1	Total Zn 1 1	0

- Molecule 46 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	AltConf
46	A	139	Total K 139 139	0
46	B	1	Total K 1 1	0
46	D	3	Total K 3 3	0
46	o	1	Total K 1 1	0
46	p	1	Total K 1 1	0
46	t	1	Total K 1 1	0
46	J	1	Total K 1 1	0
46	N	1	Total K 1 1	0
46	V	1	Total K 1 1	0
46	Y	1	Total K 1 1	0
46	Z	1	Total K 1 1	0
46	f	1	Total K 1 1	0
46	i	1	Total K 1 1	0

- Molecule 47 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	AltConf
47	A	3	Total Na 3 3	0
47	t	1	Total Na 1 1	0

- Molecule 48 is BROMIDE ION (three-letter code: BR) (formula: Br).

Mol	Chain	Residues	Atoms	AltConf
48	G	1	Total Br 1 1	0

- Molecule 49 is water.

Mol	Chain	Residues	Atoms	AltConf
49	A	6577	Total O 6577 6577	0
49	B	132	Total O 132 132	0
49	C	280	Total O 280 280	0
49	D	109	Total O 109 109	0
49	E	139	Total O 139 139	0
49	F	182	Total O 182 182	0
49	G	34	Total O 34 34	0
49	H	36	Total O 36 36	0
49	m	101	Total O 101 101	0
49	n	35	Total O 35 35	0
49	o	11	Total O 11 11	0
49	p	12	Total O 12 12	0
49	q	5	Total O 5 5	0
49	r	84	Total O 84 84	0
49	s	14	Total O 14 14	0

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Mol	Chain	Residues	Atoms	AltConf
49	t	153	Total O 153 153	0
49	I	87	Total O 87 87	0
49	J	66	Total O 66 66	0
49	K	130	Total O 130 130	0
49	L	37	Total O 37 37	0
49	M	53	Total O 53 53	0
49	N	71	Total O 71 71	0
49	R	29	Total O 29 29	0
49	S	40	Total O 40 40	0
49	T	6	Total O 6 6	0
49	U	80	Total O 80 80	0
49	V	27	Total O 27 27	0
49	W	6	Total O 6 6	0
49	X	24	Total O 24 24	0
49	Y	96	Total O 96 96	0
49	Z	58	Total O 58 58	0
49	a	52	Total O 52 52	0
49	b	38	Total O 38 38	0
49	c	15	Total O 15 15	0
49	d	56	Total O 56 56	0
49	e	1	Total O 1 1	0

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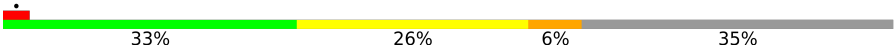
Mol	Chain	Residues	Atoms	AltConf
49	f	12	Total O 12 12	0
49	i	35	Total O 35 35	0
49	j	24	Total O 24 24	0
49	k	59	Total O 59 59	0
49	P	1	Total O 1 1	0
49	Q	31	Total O 31 31	0
49	u	6	Total O 6 6	0

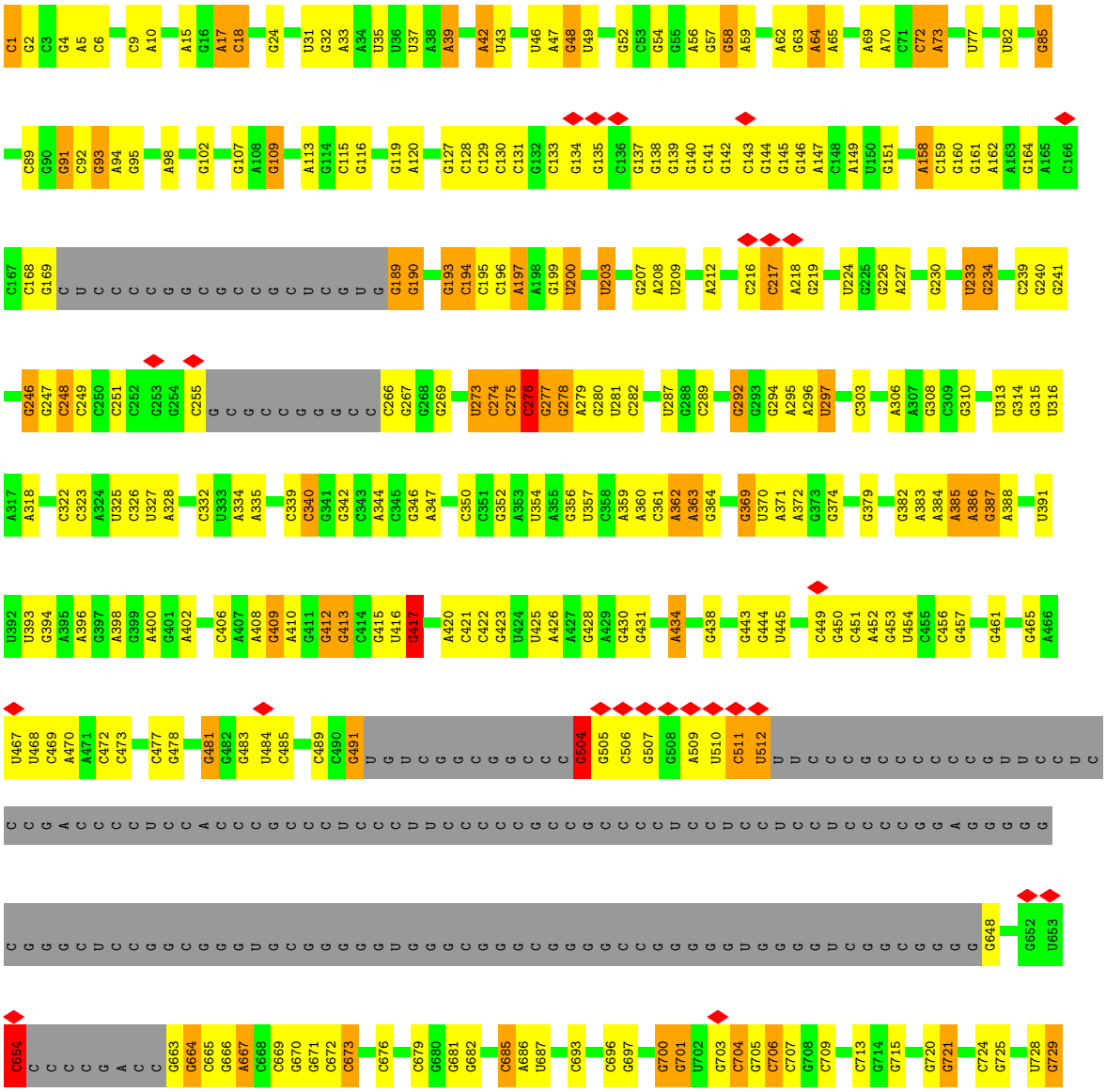
3 Residue-property plots (i)

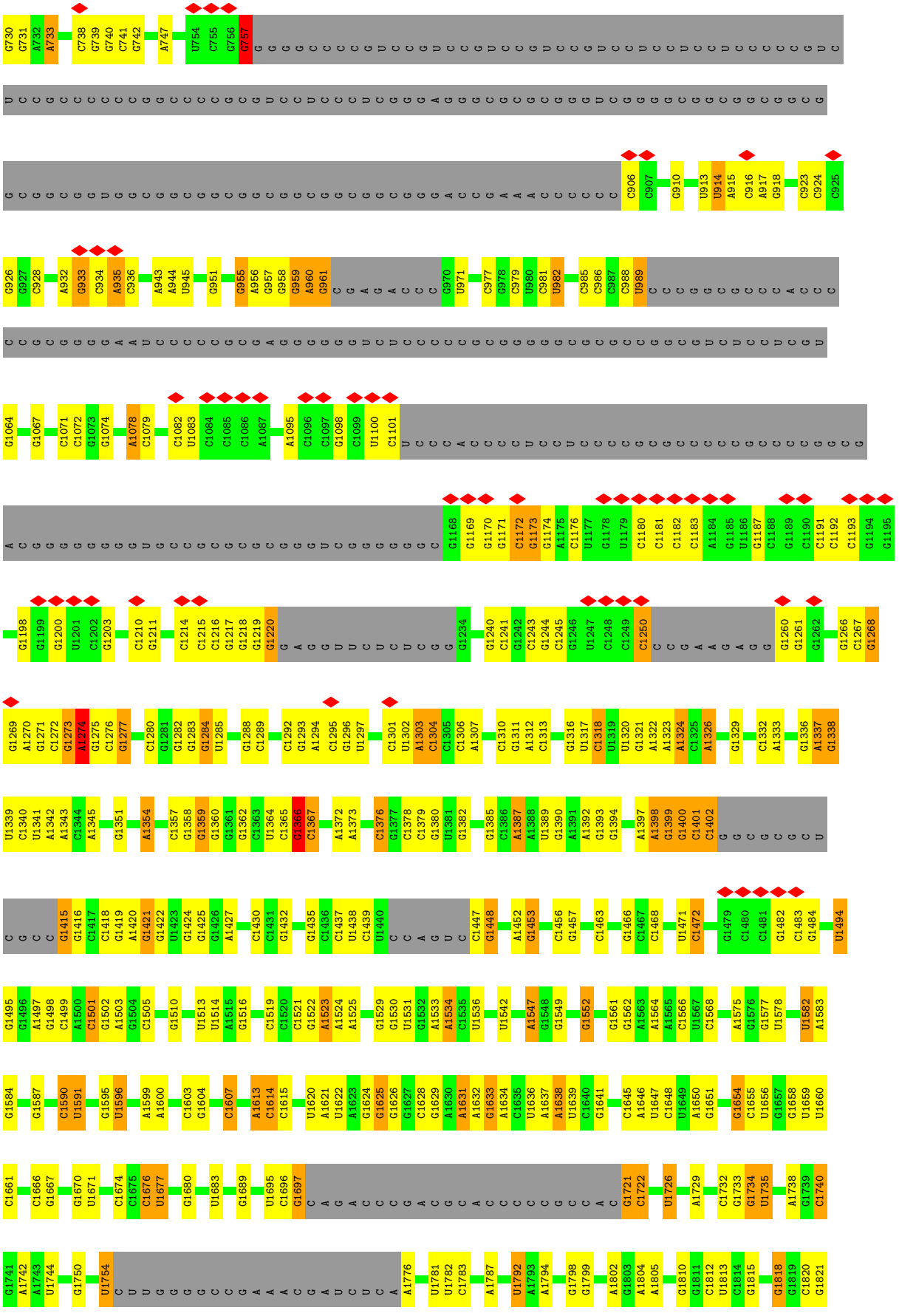
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

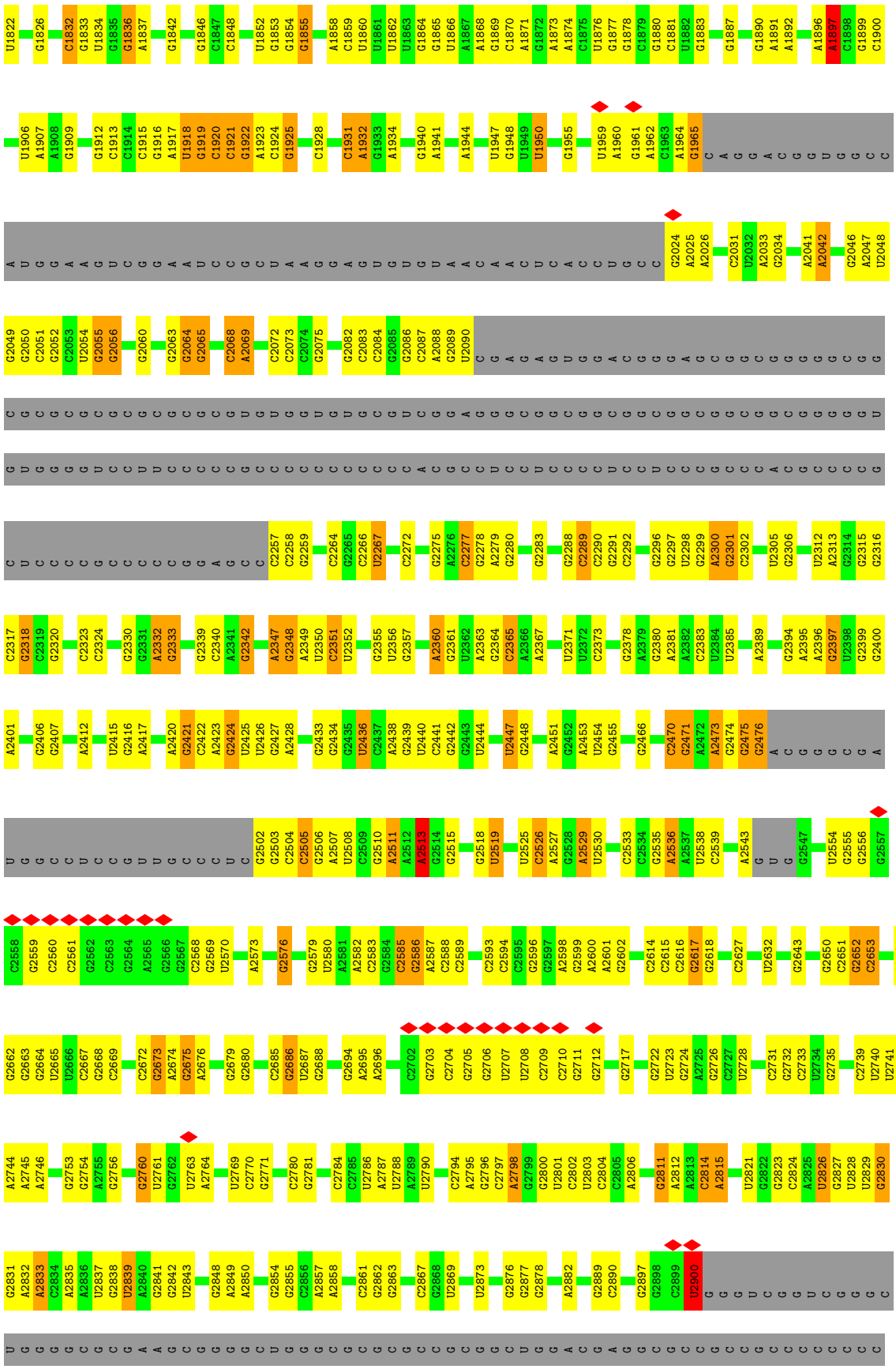
- Molecule 1: 28S rRNA

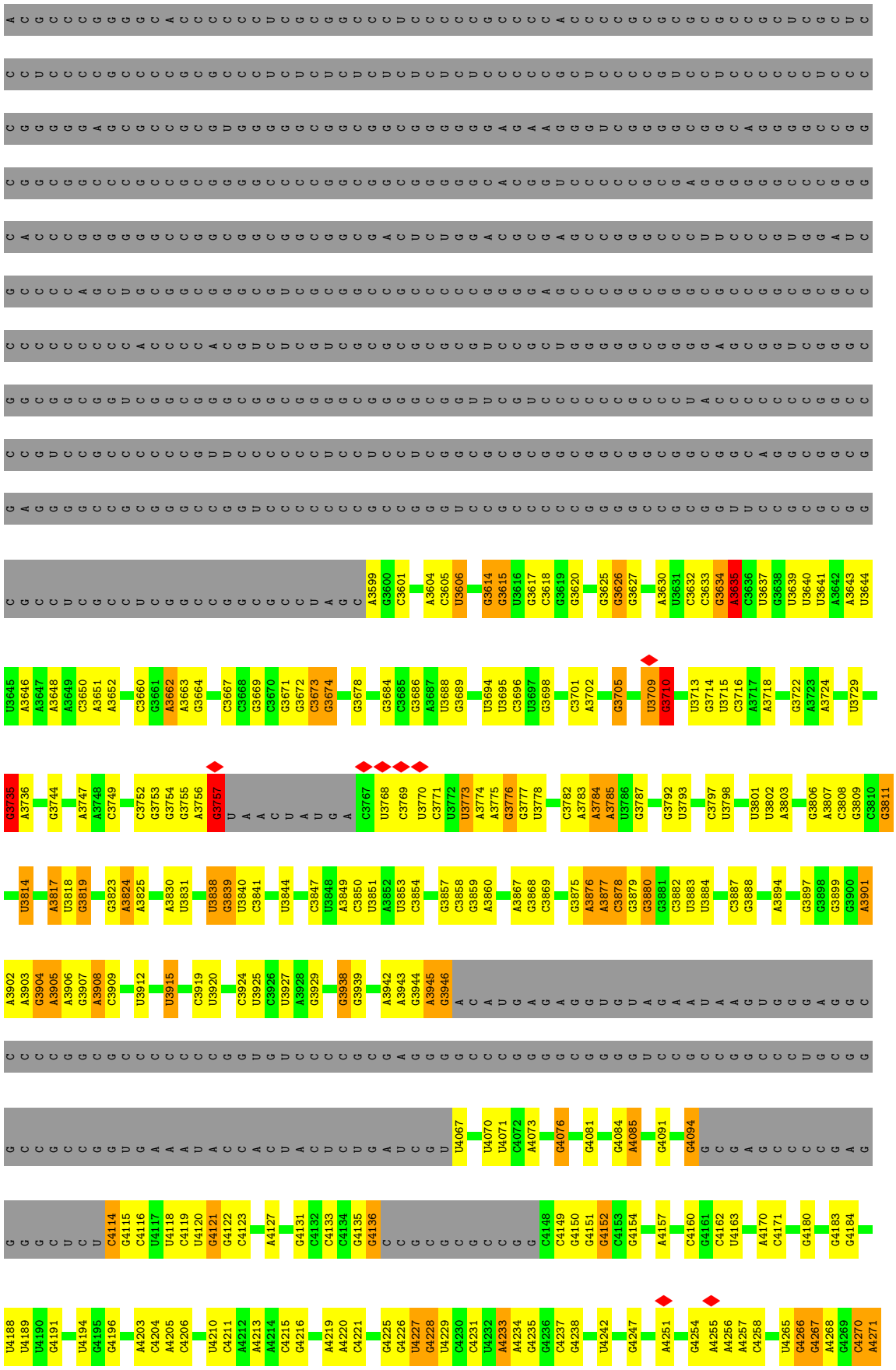
Chain A:

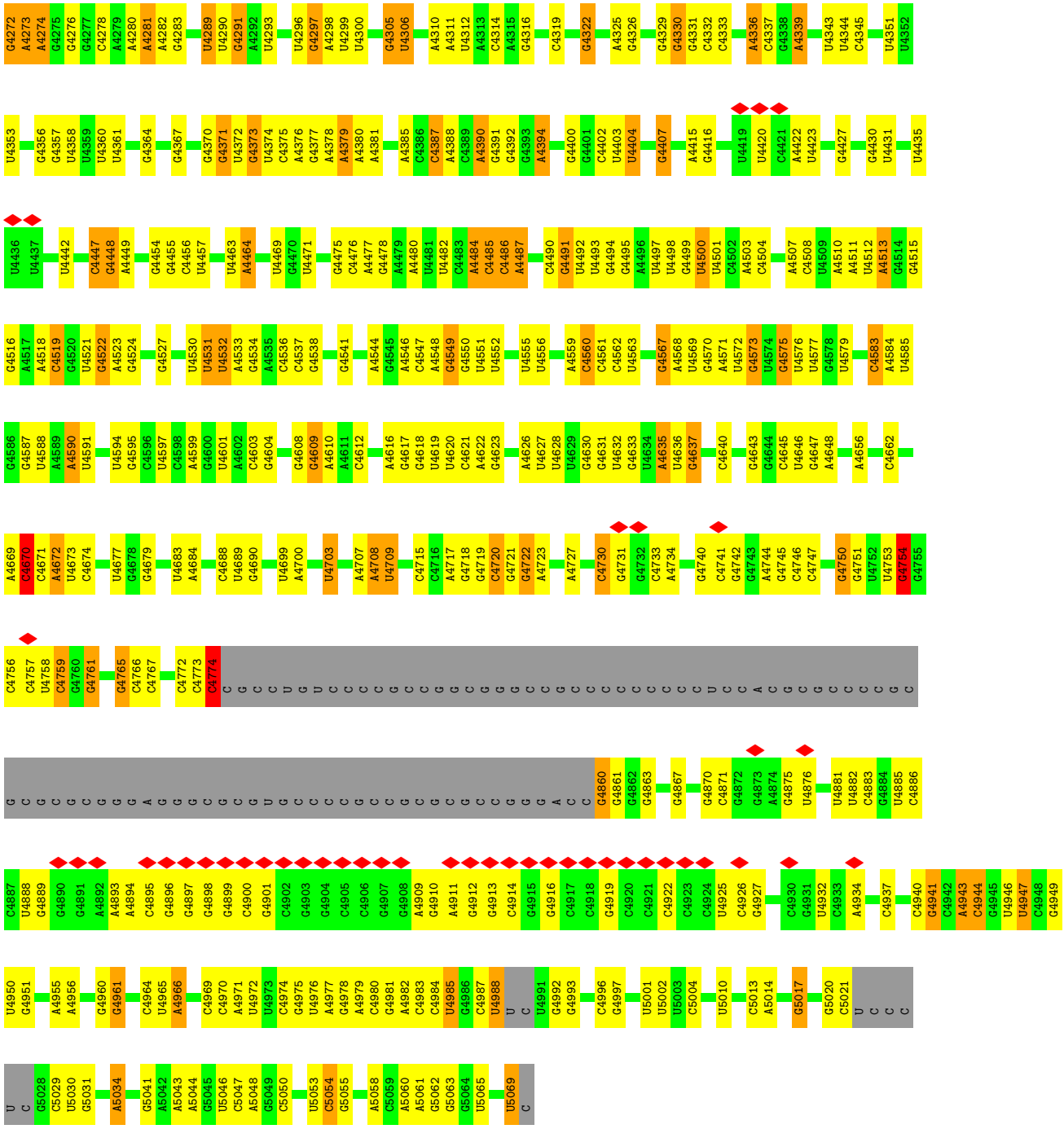






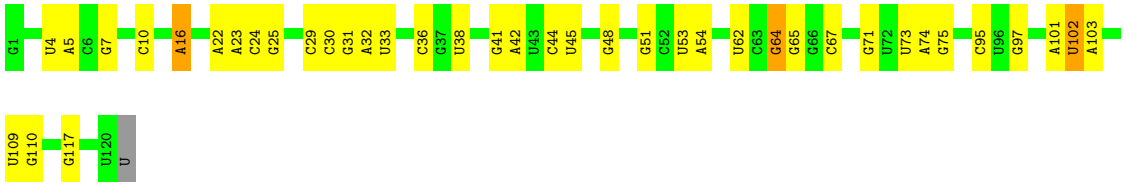






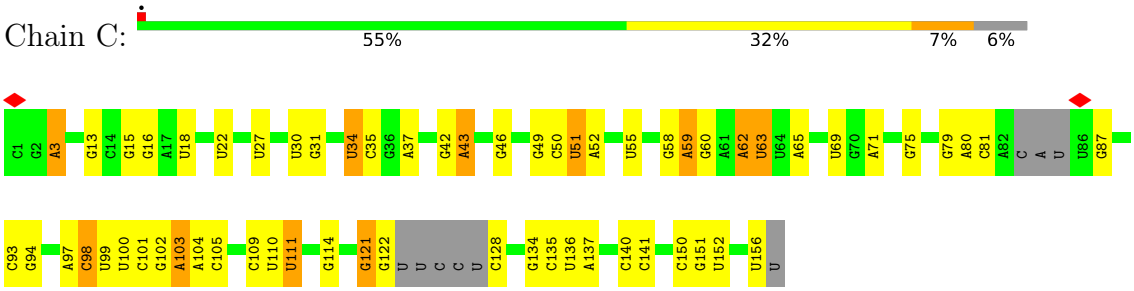
• Molecule 2: 5S rRNA

Chain B:



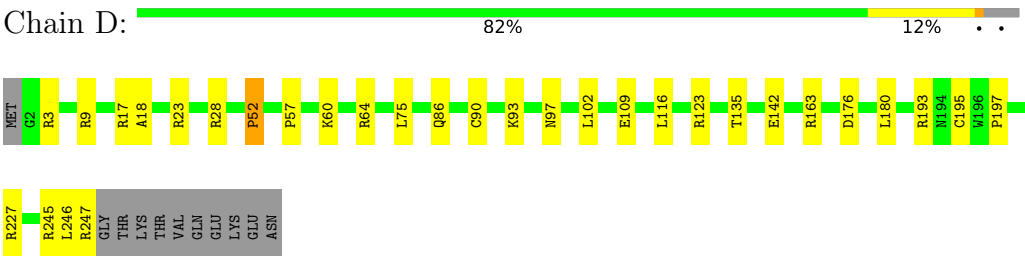
• Molecule 3: 5.8S ribosomal RNA

Chain C:



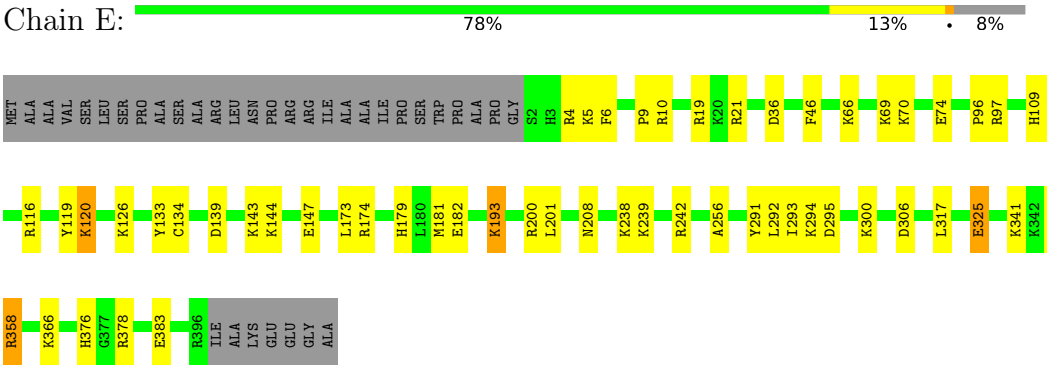
• Molecule 4: 60S ribosomal protein L8

Chain D:



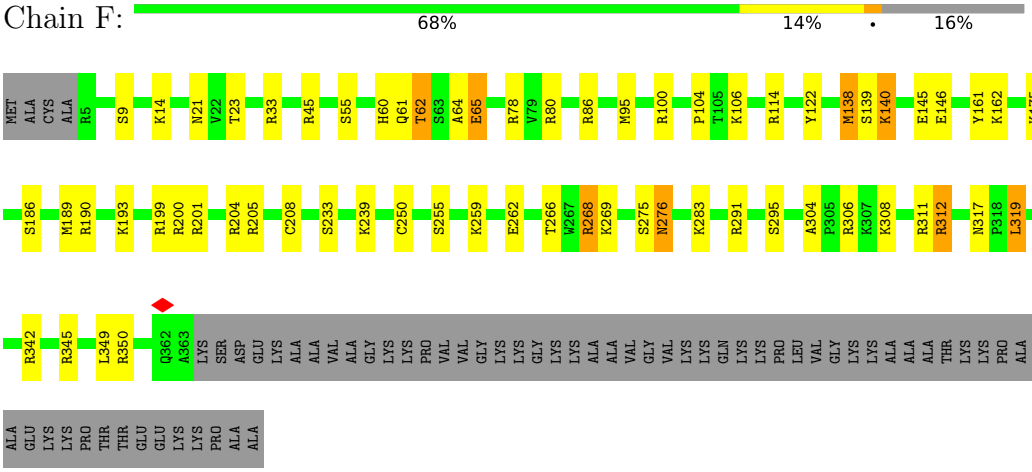
• Molecule 5: 60S ribosomal protein L3 isoform a

Chain E:



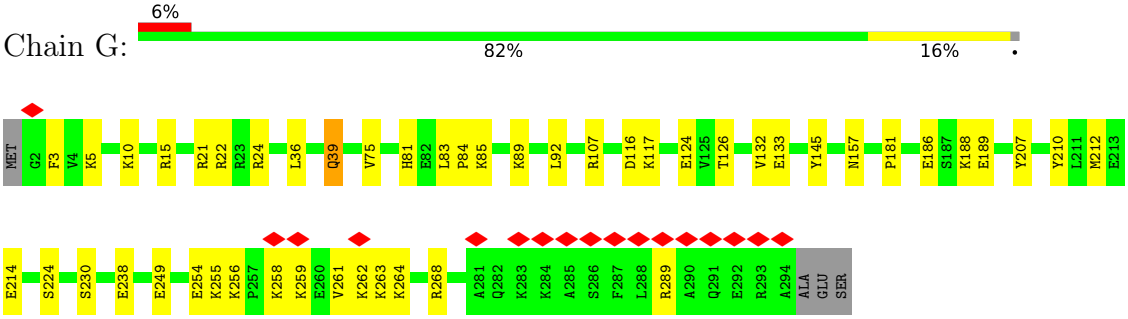
• Molecule 6: 60S ribosomal protein L4

Chain F:



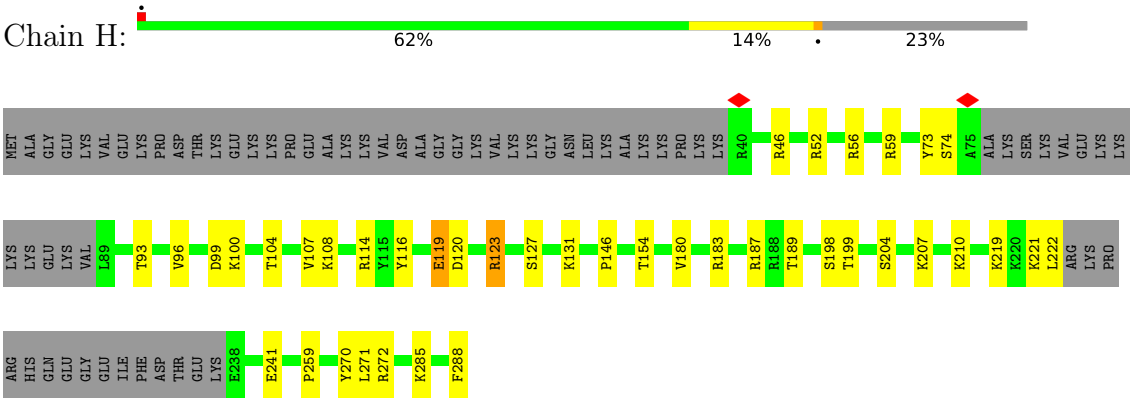
• Molecule 7: 60S ribosomal protein L5

Chain G:



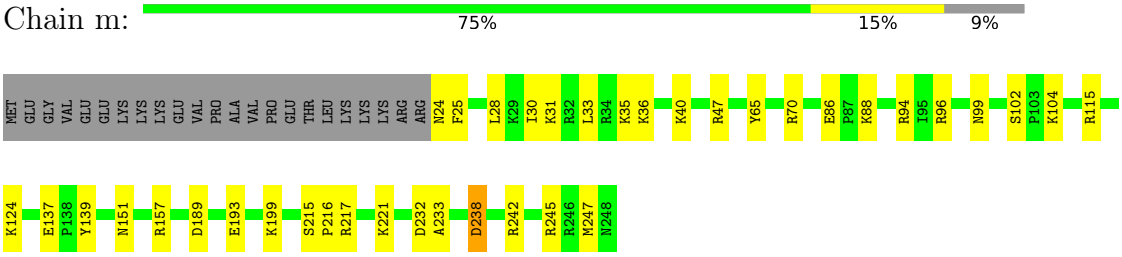
• Molecule 8: 60S ribosomal protein L6

Chain H:



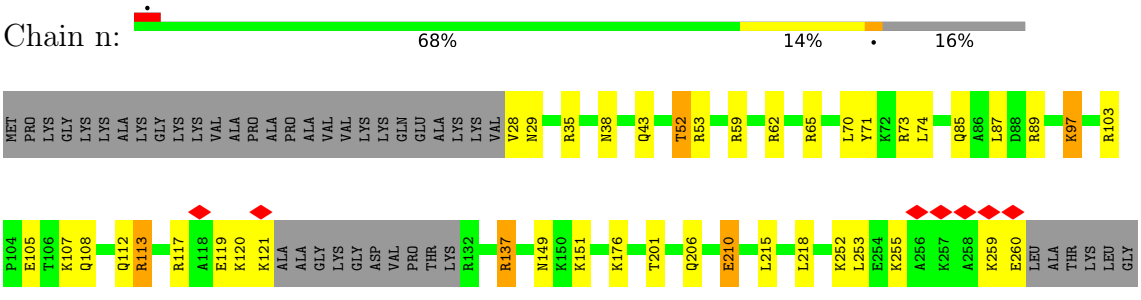
• Molecule 9: 60S ribosomal protein L7

Chain m:



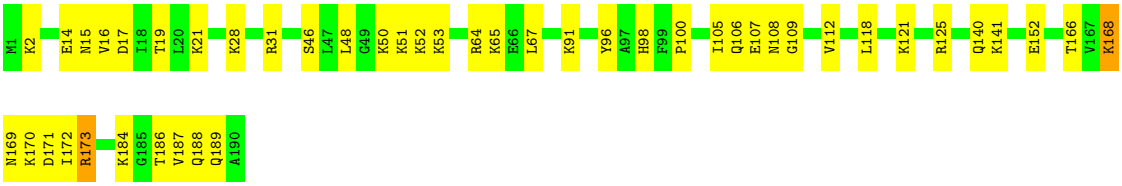
• Molecule 10: 60S ribosomal protein L7a

Chain n:

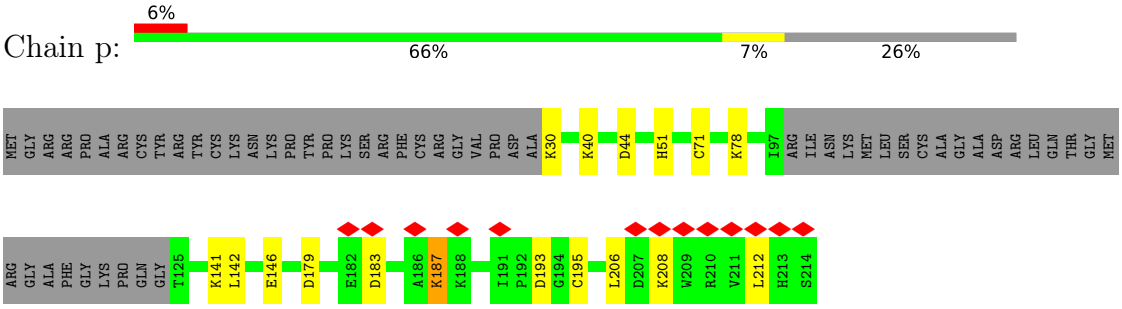


• Molecule 11: 60S ribosomal protein L9

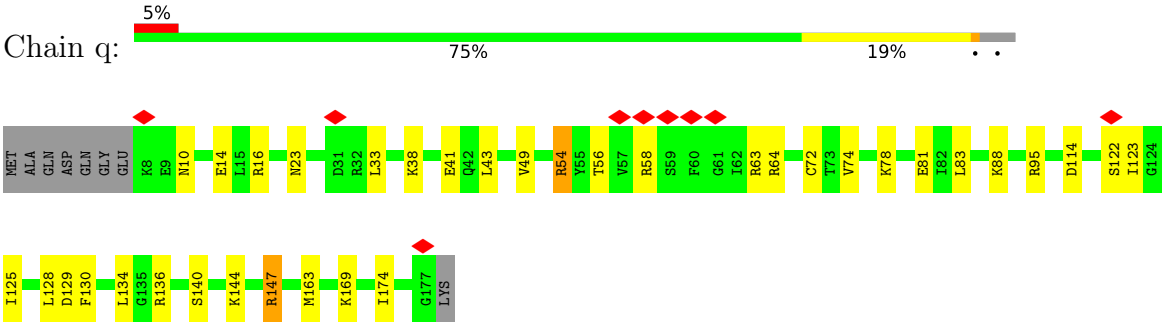
Chain o:



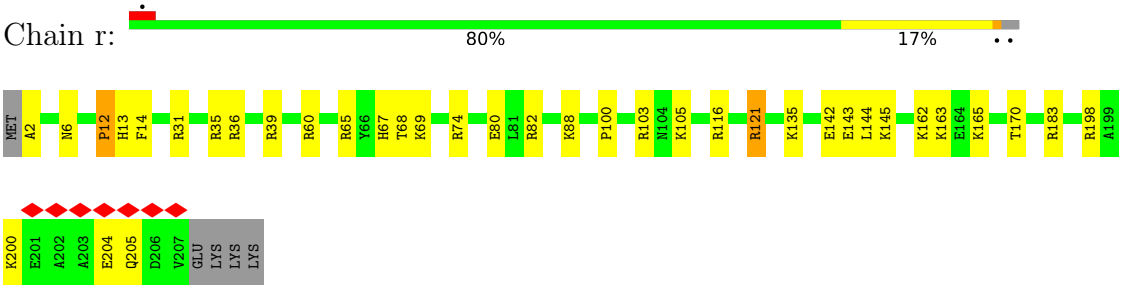
• Molecule 12: 60S ribosomal protein L10-like



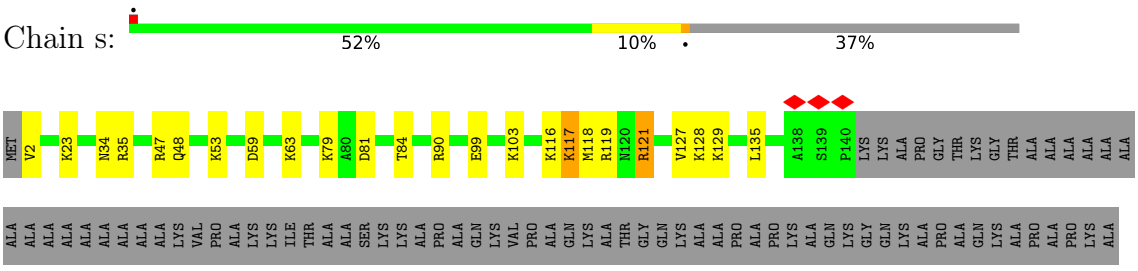
• Molecule 13: 60S ribosomal protein L11



• Molecule 14: 60S ribosomal protein L13

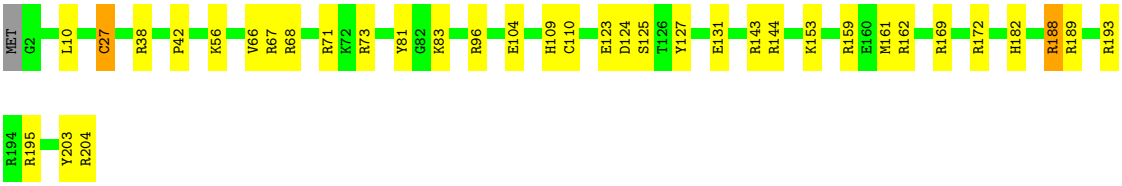


• Molecule 15: 60S ribosomal protein L14



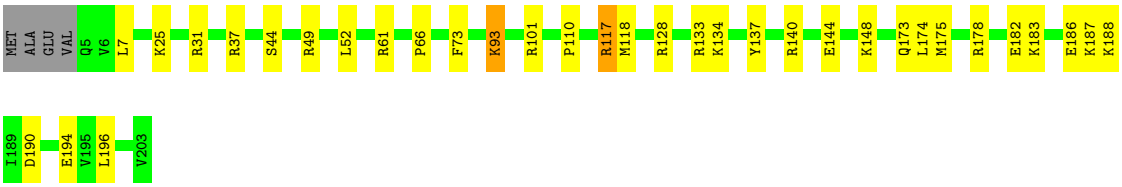
• Molecule 16: 60S ribosomal protein L15

Chain t:



• Molecule 17: 60S ribosomal protein L13a

Chain I:

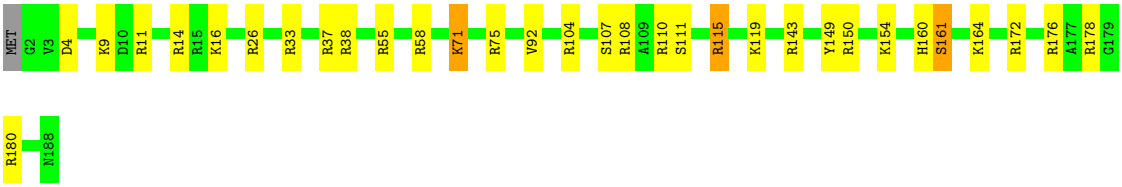


• Molecule 18: 60S ribosomal protein L17

Chain J:

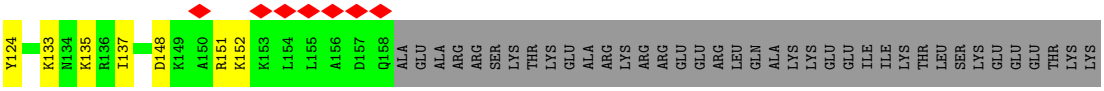
• Molecule 19: 60S ribosomal protein L18

Chain K:



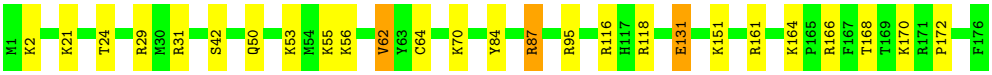
• Molecule 20: 60S ribosomal protein L19

Chain L:



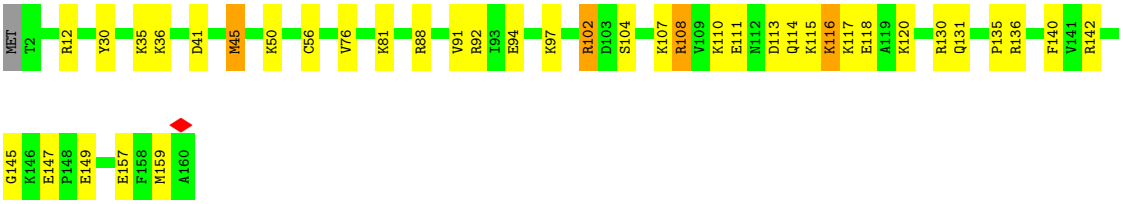
• Molecule 21: 60S ribosomal protein L18a

Chain M:



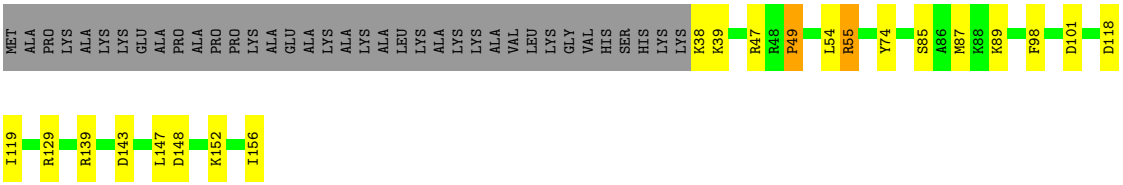
• Molecule 22: 60S ribosomal protein L21

Chain N:



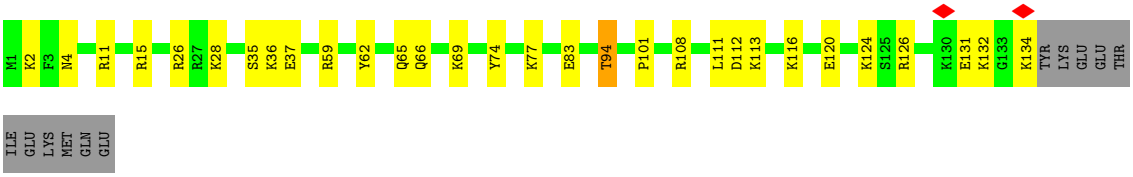
• Molecule 23: 60S ribosomal protein L23a

Chain R:



• Molecule 24: 60S ribosomal protein L26

Chain S:

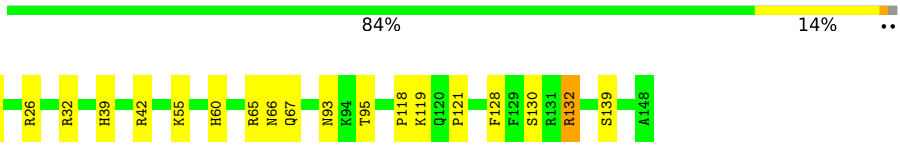


• Molecule 25: 60S ribosomal protein L27

Chain T:

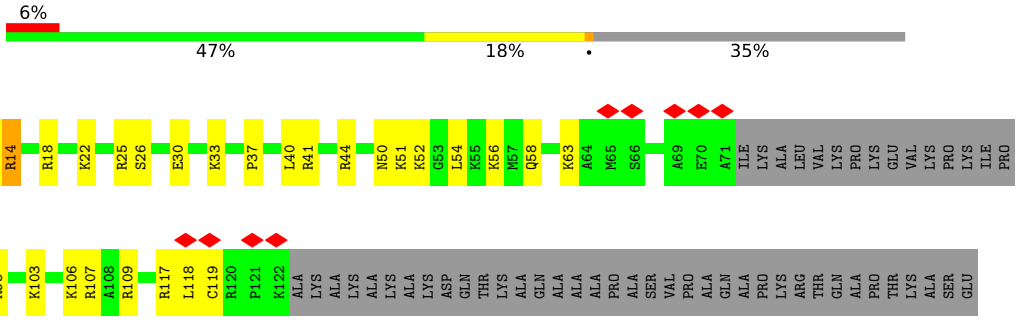
• Molecule 26: 60S ribosomal protein L27a

Chain U:



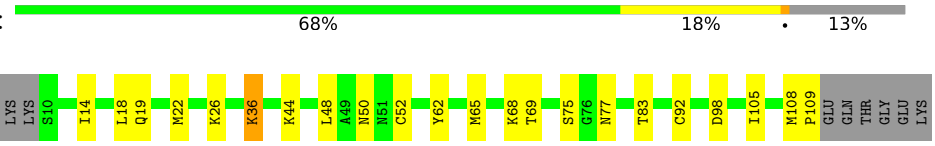
• Molecule 27: 60S ribosomal protein L29

Chain V:



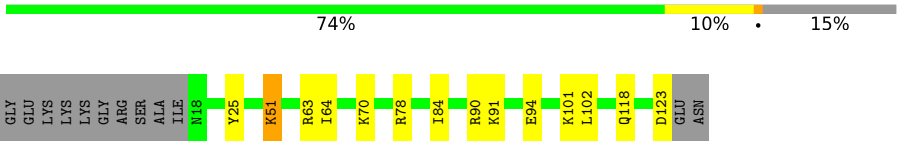
• Molecule 28: 60S ribosomal protein L30

Chain W:



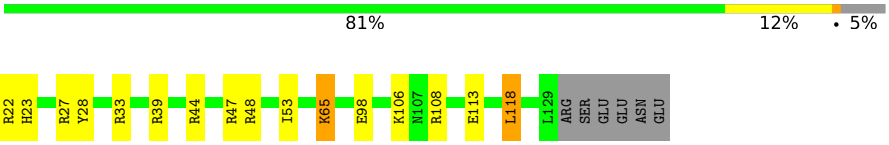
• Molecule 29: 60S ribosomal protein L31

Chain X:



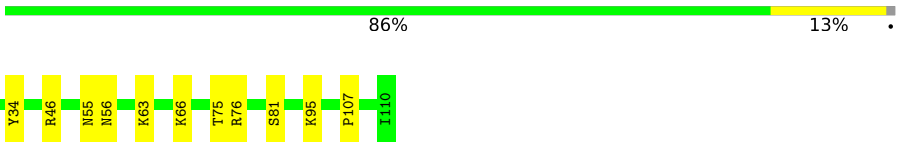
• Molecule 30: 60S ribosomal protein L32

Chain Y:



• Molecule 31: 60S ribosomal protein L35a

Chain Z:

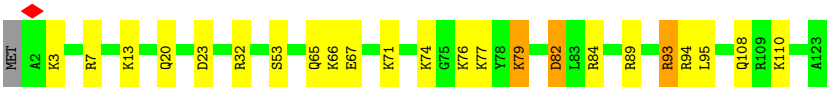


• Molecule 32: 60S ribosomal protein L34

Chain a:

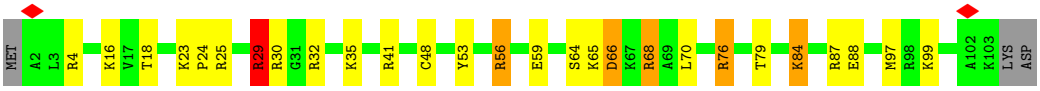
• Molecule 33: 60S ribosomal protein L35

Chain b:



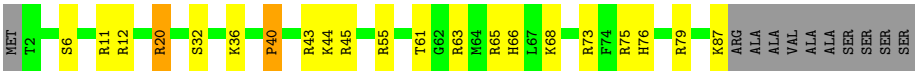
• Molecule 34: 60S ribosomal protein L36

Chain c:



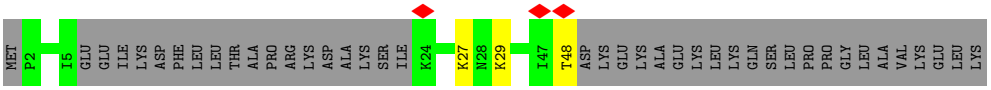
• Molecule 35: 60S ribosomal protein L37

Chain d:



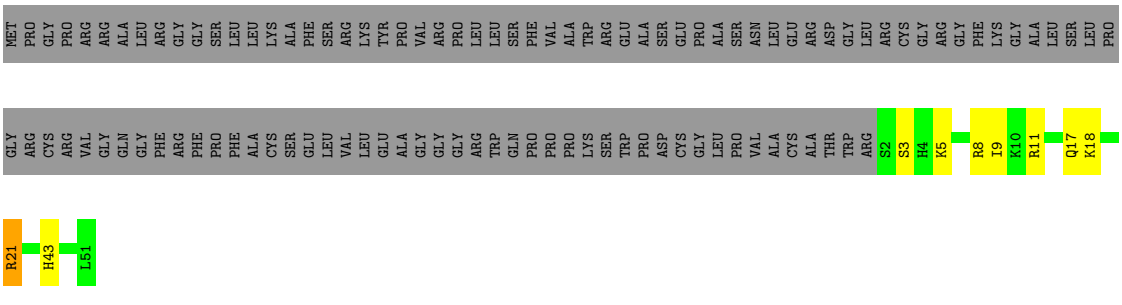
• Molecule 36: 60S ribosomal protein L38

Chain e:



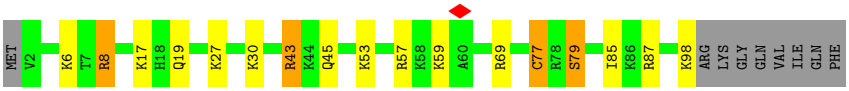
• Molecule 37: 60S ribosomal protein L39

Chain f:



• Molecule 38: 60S ribosomal protein L36a

Chain i:



• Molecule 39: 60S ribosomal protein L37a

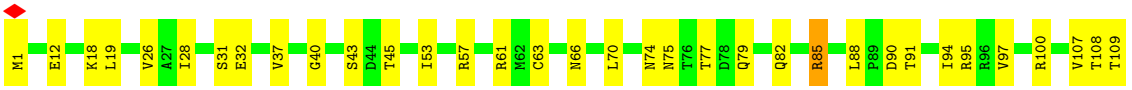
Chain j:

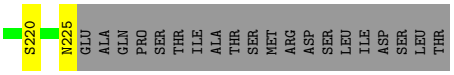
• Molecule 40: 60S ribosomal protein L28

Chain k:

• Molecule 41: Eukaryotic translation initiation factor 6

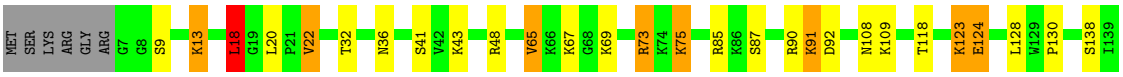
Chain P:





• Molecule 42: 60S ribosomal protein L23

Chain Q:



• Molecule 43: 60S ribosomal protein L24

Chain u:

ALA GLN ARG GLU GLN ALA ILE ARG ALA ALA LYS GLU ALA LYS LYS ALA LYS GLN ALA SER LYS LYS THR ALA MET ALA ALA ALA LYS ALA PRO THR LYS ALA ALA PRO LYS GLN LYS ILE VAL LYS PRO VAL LYS VAL SER ALA PRO ARG VAL GLY GLY LYS ARG

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	30000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.235	Depositor
Minimum map value	-0.004	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	424.96, 424.96, 424.96	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.83, 0.83, 0.83	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: BR, 5MC, NA, A2M, MG, OMC, ZN, K, OMG, 1MA, 6MZ, OMU, UR3, PSU

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	1.23	255/76620 (0.3%)	1.48	1340/119500 (1.1%)
2	B	0.95	8/2858 (0.3%)	1.27	28/4455 (0.6%)
3	C	1.26	13/3450 (0.4%)	1.51	58/5372 (1.1%)
4	D	0.82	3/1925 (0.2%)	1.63	28/2581 (1.1%)
5	E	0.72	1/3265 (0.0%)	1.46	35/4369 (0.8%)
6	F	0.80	4/2909 (0.1%)	1.66	68/3908 (1.7%)
7	G	0.52	0/2422	1.25	9/3244 (0.3%)
8	H	0.58	1/1801 (0.1%)	1.30	16/2418 (0.7%)
9	m	0.80	2/1905 (0.1%)	1.48	28/2539 (1.1%)
10	n	0.53	0/1840	1.29	14/2476 (0.6%)
11	o	0.45	0/1537	1.10	4/2066 (0.2%)
12	p	0.39	0/1312	0.94	2/1754 (0.1%)
13	q	0.42	0/1381	0.99	5/1848 (0.3%)
14	r	0.68	0/1695	1.41	21/2270 (0.9%)
15	s	0.54	0/1161	1.27	10/1554 (0.6%)
16	t	0.91	2/1766 (0.1%)	1.68	41/2366 (1.7%)
17	I	0.73	1/1666 (0.1%)	1.53	19/2228 (0.9%)
18	J	0.84	1/1259 (0.1%)	1.49	13/1689 (0.8%)
19	K	0.82	1/1537 (0.1%)	1.69	31/2052 (1.5%)
20	L	0.59	0/1150	1.30	6/1523 (0.4%)
21	M	0.67	0/1501	1.44	14/2013 (0.7%)
22	N	0.69	0/1326	1.52	20/1770 (1.1%)
23	R	0.62	0/993	1.43	10/1334 (0.7%)
24	S	0.79	1/1132 (0.1%)	1.52	10/1504 (0.7%)
25	T	0.49	0/1130	1.16	4/1507 (0.3%)
26	U	0.86	2/1191 (0.2%)	1.60	18/1591 (1.1%)
27	V	0.61	1/850 (0.1%)	1.46	13/1123 (1.2%)
28	W	0.52	0/783	1.19	3/1052 (0.3%)
29	X	0.65	0/883	1.35	5/1190 (0.4%)
30	Y	0.89	1/1071 (0.1%)	1.60	16/1429 (1.1%)
31	Z	0.82	0/901	1.54	10/1206 (0.8%)
32	a	0.79	1/898 (0.1%)	1.53	14/1197 (1.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	b	0.64	1/1023 (0.1%)	1.44	11/1351 (0.8%)
34	c	0.58	0/843	1.48	18/1115 (1.6%)
35	d	0.92	2/732 (0.3%)	1.76	22/968 (2.3%)
36	e	0.41	0/251	1.00	0/330
37	f	0.64	0/454	1.43	6/599 (1.0%)
38	i	0.56	0/807	1.42	10/1065 (0.9%)
39	j	0.84	1/718 (0.1%)	1.73	19/953 (2.0%)
40	k	0.80	1/1007 (0.1%)	1.49	11/1351 (0.8%)
41	P	0.41	0/1736	0.96	1/2362 (0.0%)
42	Q	0.83	0/1007	1.59	15/1350 (1.1%)
43	u	0.73	1/532 (0.2%)	1.30	3/708 (0.4%)
All	All	1.05	304/135228 (0.2%)	1.46	2029/199280 (1.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	59
3	C	0	2
8	H	0	1
21	M	0	1
33	b	0	1
34	c	0	2
43	u	0	1
All	All	0	67

All (304) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4273	A	O3'-P	18.99	1.83	1.61
32	a	2	VAL	N-CA	14.24	1.74	1.46
1	A	3823	G	O3'-P	13.95	1.77	1.61
1	A	3663	A	O3'-P	-10.66	1.48	1.61
3	C	150	C	O3'-P	-10.39	1.48	1.61
30	Y	98	GLU	CD-OE2	10.28	1.36	1.25
1	A	4270	C	O3'-P	-10.21	1.48	1.61
1	A	277	G	O3'-P	-9.80	1.49	1.61
1	A	2470	C	O3'-P	9.39	1.72	1.61
1	A	4300	U	O3'-P	-9.35	1.50	1.61
1	A	274	C	O3'-P	-9.33	1.50	1.61

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4547	C	O3'-P	9.24	1.72	1.61
1	A	2502	G	O3'-P	9.14	1.72	1.61
1	A	2072	C	O3'-P	-9.11	1.50	1.61
1	A	1415	G	O3'-P	9.11	1.72	1.61
1	A	4533	A	O3'-P	-9.09	1.50	1.61
1	A	275	C	O3'-P	8.98	1.72	1.61
1	A	4390	A	O3'-P	-8.90	1.50	1.61
1	A	239	C	O3'-P	-8.76	1.50	1.61
1	A	4532	PSU	O3'-P	8.74	1.71	1.61
1	A	4271	A	O3'-P	-8.50	1.50	1.61
3	C	81	C	O3'-P	8.38	1.71	1.61
4	D	193	ARG	CZ-NH1	8.16	1.43	1.33
1	A	1447	C	O3'-P	8.14	1.71	1.61
1	A	4400	G	O3'-P	-8.10	1.51	1.61
1	A	478	G	O3'-P	-8.05	1.51	1.61
1	A	189	G	O3'-P	8.03	1.70	1.61
1	A	4560	C	C4-N4	8.02	1.41	1.33
1	A	4114	C	O3'-P	7.96	1.70	1.61
40	k	2	SER	N-CA	7.84	1.62	1.46
1	A	1382	G	O3'-P	-7.81	1.51	1.61
1	A	3716	C	O3'-P	7.80	1.70	1.61
1	A	4373	G	O3'-P	7.75	1.70	1.61
1	A	5046	U	O3'-P	-7.66	1.51	1.61
1	A	17	A	C5-C6	7.66	1.48	1.41
1	A	1848	C	O3'-P	-7.64	1.51	1.61
1	A	3674	G	C5'-C4'	7.59	1.60	1.51
3	C	34	U	O3'-P	-7.53	1.52	1.61
1	A	1389	U	O3'-P	-7.43	1.52	1.61
1	A	4228	OMG	O3'-P	-7.42	1.52	1.61
1	A	704	C	O3'-P	-7.38	1.52	1.61
33	b	53	SER	CA-CB	-7.37	1.41	1.52
1	A	1866	U	O3'-P	-7.36	1.52	1.61
2	B	5	A	O3'-P	-7.32	1.52	1.61
1	A	4372	U	O3'-P	-7.26	1.52	1.61
1	A	1628	C	O3'-P	-7.25	1.52	1.61
1	A	3709	U	O3'-P	7.16	1.69	1.61
1	A	1547	A	O3'-P	-7.14	1.52	1.61
1	A	1466	G	O3'-P	7.12	1.69	1.61
2	B	45	U	O3'-P	-7.09	1.52	1.61
18	J	147	GLU	CD-OE2	7.09	1.33	1.25
2	B	67	C	O3'-P	-7.09	1.52	1.61
1	A	4977	A	O3'-P	-7.08	1.52	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	2780	C	O3'-P	-7.07	1.52	1.61
1	A	3860	A	P-OP1	-7.06	1.36	1.49
1	A	1320	U	O3'-P	-6.92	1.52	1.61
1	A	4231	C	O3'-P	-6.92	1.52	1.61
6	F	139	SER	CA-CB	-6.90	1.42	1.52
1	A	2506	G	O3'-P	-6.89	1.52	1.61
1	A	4076	G	O3'-P	-6.89	1.52	1.61
1	A	2510	G	O3'-P	-6.87	1.52	1.61
1	A	1721	G	O3'-P	6.86	1.69	1.61
1	A	1514	U	O3'-P	-6.83	1.52	1.61
1	A	94	A	O3'-P	-6.80	1.52	1.61
1	A	1521	C	P-OP1	-6.77	1.37	1.49
1	A	310	G	O3'-P	-6.77	1.53	1.61
1	A	359	A	P-OP2	-6.77	1.37	1.49
1	A	4469	U	O3'-P	-6.76	1.53	1.61
1	A	409	G	O3'-P	-6.75	1.53	1.61
1	A	1310	C	O3'-P	-6.73	1.53	1.61
1	A	1660	U	P-OP2	-6.67	1.37	1.49
1	A	4753	U	O3'-P	-6.66	1.53	1.61
1	A	370	U	O3'-P	-6.66	1.53	1.61
1	A	3689	G	O3'-P	-6.65	1.53	1.61
1	A	1599	A	O3'-P	-6.64	1.53	1.61
1	A	733	A	O3'-P	-6.63	1.53	1.61
1	A	1689	G	P-OP2	-6.63	1.37	1.49
1	A	3650	C	O3'-P	-6.63	1.53	1.61
6	F	233	SER	CA-CB	-6.60	1.43	1.52
3	C	27	U	O3'-P	-6.56	1.53	1.61
1	A	2518	G	O3'-P	-6.55	1.53	1.61
1	A	3945	A	O3'-P	6.54	1.69	1.61
1	A	1519	C	O3'-P	-6.53	1.53	1.61
3	C	62	A	O3'-P	6.51	1.69	1.61
1	A	234	G	O3'-P	6.50	1.69	1.61
1	A	4233	A	O3'-P	6.49	1.69	1.61
1	A	3669	G	O3'-P	6.48	1.69	1.61
1	A	1674	C	O3'-P	-6.46	1.53	1.61
1	A	384	A	O3'-P	-6.46	1.53	1.61
1	A	3824	A	O5'-C5'	-6.42	1.32	1.42
1	A	4944	C	O3'-P	-6.39	1.53	1.61
1	A	4970	C	O3'-P	-6.38	1.53	1.61
39	j	61	MET	CG-SD	6.35	1.97	1.81
1	A	17	A	C8-N7	6.34	1.35	1.31
1	A	5044	A	O3'-P	6.29	1.68	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	93	G	O3'-P	-6.28	1.53	1.61
1	A	1525	A	O3'-P	-6.26	1.53	1.61
1	A	1628	C	P-OP1	-6.23	1.38	1.49
1	A	3635	A	O3'-P	-6.21	1.53	1.61
1	A	1947	U	O3'-P	-6.21	1.53	1.61
1	A	287	U	O3'-P	-6.19	1.53	1.61
1	A	1577	G	O3'-P	-6.18	1.53	1.61
1	A	194	C	O3'-P	-6.16	1.53	1.61
1	A	1913	C	O3'-P	-6.15	1.53	1.61
1	A	2289	C	O3'-P	-6.15	1.53	1.61
1	A	1505	C	O3'-P	-6.14	1.53	1.61
1	A	224	U	O3'-P	-6.14	1.53	1.61
1	A	4980	C	O3'-P	-6.14	1.53	1.61
3	C	101	C	O3'-P	-6.12	1.53	1.61
1	A	4717	A	O3'-P	-6.12	1.53	1.61
2	B	44	C	O3'-P	-6.12	1.53	1.61
1	A	372	A	O3'-P	-6.07	1.53	1.61
1	A	1680	G	O3'-P	-6.07	1.53	1.61
1	A	137	G	O3'-P	6.05	1.68	1.61
43	u	23	ARG	CZ-NH2	6.05	1.41	1.33
1	A	1274	A	O3'-P	6.04	1.68	1.61
1	A	4993	G	O3'-P	6.03	1.68	1.61
3	C	65	A	O3'-P	-6.01	1.53	1.61
2	B	64	G	O3'-P	6.00	1.68	1.61
1	A	1852	U	O3'-P	-6.00	1.53	1.61
1	A	2515	G	C4'-C3'	-6.00	1.46	1.52
1	A	2665	U	O3'-P	-5.97	1.53	1.61
1	A	4978	G	P-OP2	-5.97	1.38	1.49
1	A	3899	OMG	O3'-P	-5.96	1.53	1.61
1	A	4495	G	O3'-P	-5.96	1.54	1.61
1	A	113	A	O3'-P	-5.95	1.54	1.61
1	A	2582	A	O3'-P	-5.95	1.54	1.61
1	A	1632	A	O3'-P	-5.95	1.54	1.61
1	A	1357	C	P-OP1	-5.94	1.38	1.49
1	A	4273	A	C3'-C2'	5.94	1.59	1.52
1	A	292	G	O3'-P	-5.94	1.54	1.61
1	A	1631	A	O3'-P	-5.94	1.54	1.61
1	A	1337	A	O3'-P	-5.91	1.54	1.61
1	A	4546	A	O3'-P	-5.91	1.54	1.61
1	A	3673	C	O3'-P	-5.90	1.54	1.61
1	A	4965	U	O3'-P	-5.89	1.54	1.61
1	A	1916	G	O3'-P	-5.88	1.54	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	208	GLU	CD-OE2	5.85	1.32	1.25
1	A	2576	G	O3'-P	5.84	1.68	1.61
1	A	2416	G	C5-C6	-5.83	1.36	1.42
1	A	1651	G	P-OP2	-5.82	1.39	1.49
1	A	2347	A	O3'-P	-5.82	1.54	1.61
1	A	4237	C	O3'-P	-5.81	1.54	1.61
1	A	1372	A	O3'-P	-5.78	1.54	1.61
1	A	2837	OMU	O3'-P	-5.78	1.54	1.61
1	A	2585	C	O3'-P	-5.77	1.54	1.61
1	A	3662	A	O3'-P	5.75	1.68	1.61
1	A	4534	G	P-OP2	-5.75	1.39	1.49
2	B	95	C	O3'-P	-5.71	1.54	1.61
1	A	1600	A	P-OP2	-5.69	1.39	1.49
1	A	4216	G	O3'-P	-5.69	1.54	1.61
1	A	1659	U	O3'-P	-5.68	1.54	1.61
1	A	2760	G	O3'-P	5.67	1.68	1.61
1	A	1311	G	P-OP1	-5.67	1.39	1.49
1	A	46	U	P-OP1	-5.67	1.39	1.49
1	A	1531	U	O3'-P	-5.67	1.54	1.61
1	A	3839	G	C4'-C3'	-5.67	1.46	1.52
1	A	4875	G	O3'-P	-5.65	1.54	1.61
1	A	1667	G	P-OP1	-5.64	1.39	1.49
1	A	3857	G	O3'-P	-5.62	1.54	1.61
1	A	5001	PSU	O3'-P	-5.61	1.54	1.61
19	K	107	SER	CA-CB	-5.61	1.44	1.52
1	A	1317	U	O3'-P	-5.60	1.54	1.61
1	A	2743	A	O3'-P	-5.60	1.54	1.61
1	A	2848	G	P-OP2	-5.59	1.39	1.49
1	A	4508	C	O3'-P	-5.59	1.54	1.61
1	A	2296	G	O3'-P	-5.58	1.54	1.61
27	V	13	SER	CA-CB	-5.58	1.44	1.52
17	I	44	SER	CA-CB	-5.58	1.44	1.52
1	A	3749	C	O3'-P	-5.57	1.54	1.61
1	A	2317	C	O3'-P	-5.57	1.54	1.61
1	A	2397	G	O3'-P	5.57	1.67	1.61
1	A	2473	A	O3'-P	-5.57	1.54	1.61
3	C	37	A	O3'-P	5.54	1.67	1.61
1	A	1591	U	O3'-P	-5.54	1.54	1.61
1	A	4567	G	O3'-P	-5.54	1.54	1.61
1	A	147	A	O3'-P	-5.53	1.54	1.61
1	A	2306	G	O3'-P	-5.53	1.54	1.61
1	A	4621	C	N1-C2	-5.52	1.34	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	2056	G	C5-C6	-5.52	1.36	1.42
1	A	3838	U	O3'-P	-5.51	1.54	1.61
1	A	1639	U	O3'-P	5.51	1.67	1.61
1	A	3818	OMU	O3'-P	-5.51	1.54	1.61
1	A	4330	G	O3'-P	5.51	1.67	1.61
1	A	2340	C	O3'-P	-5.50	1.54	1.61
1	A	4568	A	O3'-P	-5.49	1.54	1.61
1	A	2300	A	O3'-P	5.49	1.67	1.61
1	A	1358	G	C6-N1	5.48	1.43	1.39
1	A	1650	A	O3'-P	-5.47	1.54	1.61
1	A	2423	A	C2'-C1'	-5.46	1.47	1.53
1	A	5054	C	O3'-P	-5.46	1.54	1.61
6	F	255	SER	CA-CB	-5.45	1.44	1.52
1	A	2536	A	O3'-P	-5.45	1.54	1.61
1	A	332	C	O3'-P	-5.45	1.54	1.61
1	A	1499	C	O3'-P	-5.45	1.54	1.61
1	A	4391	G	N1-C2	-5.44	1.33	1.37
1	A	1337	A	P-OP1	-5.44	1.39	1.49
1	A	1323	A	O3'-P	-5.43	1.54	1.61
2	B	36	C	O3'-P	-5.43	1.54	1.61
1	A	3618	C	O3'-P	-5.43	1.54	1.61
1	A	289	C	O3'-P	5.42	1.67	1.61
1	A	4646	U	O3'-P	5.42	1.67	1.61
1	A	1505	C	P-OP1	-5.42	1.39	1.49
1	A	4544	A	P-OP1	-5.42	1.39	1.49
26	U	139	SER	CA-CB	-5.40	1.44	1.52
26	U	16	SER	CA-CB	-5.39	1.44	1.52
1	A	2381	A	O3'-P	5.39	1.67	1.61
1	A	4081	G	O3'-P	-5.38	1.54	1.61
1	A	1636	U	P-OP2	-5.38	1.39	1.49
1	A	1626	G	O3'-P	-5.37	1.54	1.61
1	A	1	C	O3'-P	5.36	1.67	1.61
1	A	4533	A	P-OP1	-5.36	1.39	1.49
1	A	951	G	O3'-P	-5.36	1.54	1.61
1	A	2373	C	O3'-P	-5.36	1.54	1.61
1	A	3859	G	O3'-P	-5.35	1.54	1.61
2	B	65	G	O3'-P	5.34	1.67	1.61
1	A	37	U	O3'-P	-5.34	1.54	1.61
16	t	109	HIS	CE1-NE2	5.34	1.45	1.32
1	A	2280	G	O3'-P	5.33	1.67	1.61
1	A	2539	C	O3'-P	-5.33	1.54	1.61
1	A	4709	U	O3'-P	-5.33	1.54	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1859	C	C4-N4	5.33	1.38	1.33
35	d	66	HIS	CE1-NE2	5.32	1.44	1.32
1	A	402	A	O3'-P	5.32	1.67	1.61
1	A	1354	A	O3'-P	5.32	1.67	1.61
1	A	4997	G	O3'-P	-5.32	1.54	1.61
1	A	1324	A	P-O5'	-5.31	1.54	1.59
1	A	1329	G	O3'-P	5.31	1.67	1.61
35	d	66	HIS	CG-ND1	5.31	1.50	1.38
1	A	2831	G	O3'-P	5.30	1.67	1.61
1	A	2594	C	O3'-P	-5.29	1.54	1.61
1	A	371	A	O3'-P	-5.29	1.54	1.61
1	A	1813	U	O3'-P	-5.29	1.54	1.61
1	A	2781	G	O3'-P	-5.29	1.54	1.61
3	C	15	G	C6-O6	-5.28	1.19	1.24
3	C	97	A	O3'-P	-5.28	1.54	1.61
1	A	667	A	O3'-P	5.28	1.67	1.61
1	A	2371	U	O3'-P	5.28	1.67	1.61
3	C	141	C	O3'-P	5.27	1.67	1.61
1	A	42	A	O3'-P	5.27	1.67	1.61
1	A	2352	U	O3'-P	-5.27	1.54	1.61
1	A	1394	G	O3'-P	-5.27	1.54	1.61
1	A	1292	C	O3'-P	-5.27	1.54	1.61
1	A	706	C	O3'-P	-5.26	1.54	1.61
1	A	1912	G	O3'-P	-5.26	1.54	1.61
1	A	2583	C	O3'-P	-5.25	1.54	1.61
1	A	1900	C	O3'-P	-5.25	1.54	1.61
1	A	379	G	O3'-P	-5.25	1.54	1.61
3	C	49	G	O3'-P	-5.25	1.54	1.61
24	S	35	SER	CA-CB	-5.24	1.45	1.52
1	A	2385	U	O3'-P	-5.24	1.54	1.61
1	A	2832	A	O3'-P	5.24	1.67	1.61
9	m	102	SER	CA-CB	-5.23	1.45	1.52
1	A	1812	C	O3'-P	-5.22	1.54	1.61
1	A	4204	C	O3'-P	-5.22	1.54	1.61
1	A	1542	U	P-OP1	-5.21	1.40	1.49
3	C	51	U	O3'-P	-5.21	1.54	1.61
16	t	125	SER	CA-CB	-5.21	1.45	1.52
1	A	1345	A	O3'-P	-5.20	1.54	1.61
1	A	4585	U	O3'-P	-5.20	1.54	1.61
1	A	1067	G	O3'-P	5.19	1.67	1.61
1	A	1316	OMG	O3'-P	-5.19	1.54	1.61
1	A	217	C	O3'-P	5.18	1.67	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1666	C	O3'-P	-5.17	1.54	1.61
1	A	1401	C	O3'-P	5.17	1.67	1.61
1	A	1658	G	P-OP1	-5.17	1.40	1.49
1	A	4756	C	C5'-C4'	5.17	1.57	1.51
1	A	1671	U	N1-C2	-5.16	1.33	1.38
1	A	434	A	O3'-P	-5.15	1.54	1.61
1	A	1321	G	P-OP2	-5.15	1.40	1.49
1	A	4364	G	O5'-C5'	-5.15	1.34	1.42
1	A	2739	C	O3'-P	-5.14	1.54	1.61
4	D	208	GLU	CD-OE1	5.14	1.31	1.25
1	A	275	C	C2'-C1'	5.14	1.59	1.53
1	A	2423	A	C5-C6	-5.14	1.36	1.41
1	A	2357	G	O3'-P	-5.14	1.54	1.61
5	E	179	HIS	CE1-NE2	5.13	1.44	1.32
1	A	3688	U	O3'-P	-5.13	1.54	1.61
1	A	3919	C	N1-C2	-5.12	1.35	1.40
1	A	4984	C	O3'-P	-5.11	1.55	1.61
6	F	186	SER	CA-CB	-5.11	1.45	1.52
1	A	2339	G	O3'-P	-5.11	1.55	1.61
9	m	86	GLU	CD-OE2	5.11	1.31	1.25
1	A	208	A	O3'-P	-5.10	1.55	1.61
1	A	82	U	O3'-P	-5.09	1.55	1.61
1	A	1890	G	N1-C2	-5.09	1.33	1.37
1	A	4587	G	O3'-P	-5.09	1.55	1.61
8	H	119	GLU	CD-OE2	5.08	1.31	1.25
1	A	4631	G	O3'-P	-5.07	1.55	1.61
1	A	4996	C	O3'-P	-5.07	1.55	1.61
1	A	3674	G	O3'-P	-5.06	1.55	1.61
1	A	2843	U	N1-C2	-5.06	1.33	1.38
1	A	4984	C	C4-C5	5.06	1.47	1.43
1	A	350	C	O3'-P	-5.05	1.55	1.61
1	A	77	U	O3'-P	-5.05	1.55	1.61
1	A	48	G	O4'-C1'	-5.04	1.35	1.41
1	A	2355	G	C5-C6	-5.04	1.37	1.42
1	A	247	G	C5'-C4'	5.04	1.57	1.51
1	A	415	G	P-OP2	-5.04	1.40	1.49
1	A	4500	PSU	O3'-P	-5.03	1.55	1.61
1	A	2050	G	O3'-P	-5.02	1.55	1.61
1	A	1862	PSU	O3'-P	-5.01	1.55	1.61
1	A	2438	A	P-OP1	-5.01	1.40	1.49
1	A	679	C	O3'-P	-5.00	1.55	1.61

All (2029) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	109	G	O5'-P-OP1	-31.06	73.42	110.70
1	A	277	G	O5'-P-OP1	-29.77	74.98	110.70
1	A	109	G	O5'-P-OP2	-29.56	75.23	110.70
4	D	193	ARG	NE-CZ-NH2	-27.76	106.42	120.30
1	A	2333	G	O5'-P-OP2	-22.64	83.54	110.70
1	A	1922	G	O5'-P-OP1	-20.68	85.89	110.70
1	A	73	A	O5'-P-OP1	-19.92	86.80	110.70
1	A	1398	A	O5'-P-OP1	-19.30	87.54	110.70
1	A	4274	A	O5'-P-OP1	-18.83	88.11	110.70
1	A	4271	A	O5'-P-OP1	-18.75	88.20	110.70
1	A	2333	G	O5'-P-OP1	18.65	133.08	110.70
1	A	1883	G	O5'-P-OP2	-18.34	88.69	110.70
5	E	21	ARG	NE-CZ-NH1	-18.06	111.27	120.30
1	A	4491	G	O5'-P-OP2	-17.29	89.95	110.70
1	A	4311	A	O5'-P-OP2	-17.17	90.10	110.70
1	A	959	G	O5'-P-OP1	-17.07	90.22	110.70
1	A	4271	A	O5'-P-OP2	17.02	131.13	110.70
1	A	3630	A	O5'-P-OP2	-16.30	91.03	105.70
1	A	1883	G	O5'-P-OP1	16.18	130.12	110.70
1	A	4570	G	O5'-P-OP2	-16.15	91.17	105.70
1	A	200	U	O5'-P-OP2	-15.89	91.40	105.70
1	A	1919	G	O5'-P-OP2	-15.55	91.70	105.70
1	A	1891	A	O5'-P-OP2	-15.54	91.71	105.70
1	A	2069	A	O5'-P-OP2	-15.28	91.95	105.70
1	A	226	G	O5'-P-OP1	-15.15	92.06	105.70
1	A	48	G	O5'-P-OP1	-15.08	92.12	105.70
1	A	10	A	O5'-P-OP2	-15.05	92.15	105.70
1	A	335	A	O5'-P-OP1	-14.90	92.29	105.70
1	A	2833	A	O5'-P-OP2	-14.73	92.44	105.70
3	C	63	U	O5'-P-OP2	-14.64	92.52	105.70
1	A	3878	C	O5'-P-OP2	-14.54	92.61	105.70
1	A	2830	G	O5'-P-OP2	-14.34	92.79	105.70
1	A	4387	C	O5'-P-OP1	-14.34	92.80	105.70
1	A	4761	G	O5'-P-OP2	-14.31	92.82	105.70
27	V	14	ARG	CB-CG-CD	-14.31	74.40	111.60
1	A	4684	A	O5'-P-OP2	-14.13	92.98	105.70
1	A	2651	C	O5'-P-OP1	-14.10	93.01	105.70
1	A	4720	C	O5'-P-OP1	-13.95	93.15	105.70
1	A	1920	C	O5'-P-OP1	-13.91	93.18	105.70
1	A	199	G	O5'-P-OP2	-13.61	93.45	105.70
3	C	135	C	O5'-P-OP1	-13.61	93.45	105.70
1	A	4311	A	O5'-P-OP1	13.49	126.89	110.70
3	C	150	C	O5'-P-OP2	-13.41	93.63	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2315	G	O5'-P-OP1	-13.30	93.73	105.70
1	A	276	C	O4'-C4'-C3'	-13.30	90.70	104.00
1	A	1925	G	O5'-P-OP2	-13.26	93.77	105.70
1	A	33	A	O5'-P-OP2	-13.16	93.85	105.70
1	A	1415	G	C4'-C3'-O3'	13.09	139.17	113.00
1	A	4367	G	O5'-P-OP2	-13.08	93.92	105.70
1	A	2049	G	O5'-P-OP1	-12.72	94.25	105.70
1	A	2441	C	O5'-P-OP1	-12.63	94.34	105.70
1	A	276	C	N1-C1'-C2'	12.52	130.27	114.00
1	A	3817	A	O5'-P-OP1	-12.50	94.45	105.70
1	A	4322	G	O5'-P-OP2	-12.47	94.48	105.70
1	A	1918	U	O5'-P-OP2	-12.34	94.59	105.70
1	A	4562	C	O5'-P-OP1	-12.23	94.70	105.70
1	A	2277	C	O5'-P-OP2	-12.17	94.75	105.70
1	A	979	C	O5'-P-OP2	-12.16	94.75	105.70
1	A	2889	G	O5'-P-OP2	-12.15	94.77	105.70
1	A	4492	U	O5'-P-OP1	-12.10	94.81	105.70
1	A	1399	G	O5'-P-OP1	-12.02	94.88	105.70
1	A	4297	G	O5'-P-OP2	12.00	125.10	110.70
1	A	326	C	O5'-P-OP2	-11.94	94.95	105.70
1	A	1655	C	O5'-P-OP1	-11.92	94.97	105.70
1	A	4297	G	O5'-P-OP1	-11.92	94.97	105.70
1	A	2652	G	C4'-C3'-O3'	-11.91	84.38	109.40
1	A	4273	A	C2'-C3'-O3'	11.83	135.53	109.50
1	A	209	U	C4'-C3'-O3'	-11.71	84.81	109.40
35	d	20	ARG	NE-CZ-NH1	-11.71	114.44	120.30
1	A	63	G	O5'-P-OP2	-11.69	95.17	105.70
33	b	32	ARG	CG-CD-NE	-11.69	87.26	111.80
1	A	72	C	O5'-P-OP1	-11.65	95.22	105.70
1	A	959	G	O5'-P-OP2	11.64	124.67	110.70
1	A	266	C	C4'-C3'-O3'	11.63	136.26	113.00
1	A	3854	C	O5'-P-OP1	-11.63	95.23	105.70
1	A	318	A	O5'-P-OP2	-11.61	95.25	105.70
1	A	4507	A	O5'-P-OP2	-11.61	95.25	105.70
1	A	3824	A	C5'-C4'-C3'	-11.59	97.46	116.00
1	A	277	G	C2'-C3'-O3'	-11.55	84.08	109.50
1	A	47	A	O4'-C1'-C2'	-11.52	94.28	105.80
1	A	957	G	O5'-P-OP1	-11.50	95.35	105.70
1	A	4215	C	O5'-P-OP2	-11.46	95.39	105.70
1	A	387	G	O5'-P-OP2	-11.38	95.46	105.70
1	A	2900	U	N1-C1'-C2'	-11.37	99.22	114.00
1	A	3806	G	O5'-P-OP1	-11.30	95.53	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	30	U	O5'-P-OP1	-11.30	95.53	105.70
1	A	2278	G	O5'-P-OP1	-11.28	95.55	105.70
1	A	2753	G	O5'-P-OP2	-11.21	95.61	105.70
1	A	1697	G	N9-C1'-C2'	11.19	128.55	114.00
19	K	55	ARG	NE-CZ-NH2	-11.14	114.73	120.30
1	A	1897	A	O5'-P-OP1	-11.13	95.68	105.70
1	A	277	G	N9-C1'-C2'	-11.11	99.55	114.00
1	A	1463	C	O5'-P-OP2	-11.11	95.70	105.70
1	A	386	A	O5'-P-OP1	-11.00	95.80	105.70
1	A	4722	G	C2'-C3'-O3'	-10.93	85.45	109.50
1	A	2060	G	O5'-P-OP2	-10.90	95.89	105.70
1	A	4684	A	O5'-P-OP1	10.88	123.76	110.70
1	A	2673	G	O5'-P-OP2	-10.85	95.93	105.70
1	A	2315	G	O5'-P-OP2	10.76	123.61	110.70
42	Q	22	VAL	C-N-CA	-10.68	99.88	122.30
1	A	275	C	O5'-P-OP2	-10.64	96.12	105.70
1	A	3838	U	O5'-P-OP2	-10.62	96.15	105.70
1	A	3880	G	O5'-P-OP2	10.59	123.41	110.70
5	E	21	ARG	NE-CZ-NH2	10.53	125.57	120.30
2	B	45	U	O5'-P-OP1	-10.52	96.23	105.70
1	A	18	C	O5'-P-OP2	-10.50	96.25	105.70
1	A	2090	U	C2'-C3'-O3'	10.49	132.58	109.50
1	A	956	A	O5'-P-OP2	-10.43	96.32	105.70
1	A	430	G	O5'-P-OP1	-10.28	96.45	105.70
1	A	3809	G	O5'-P-OP1	-10.28	96.45	105.70
1	A	277	G	C4-N9-C1'	-10.27	113.15	126.50
5	E	4	ARG	CG-CD-NE	-10.26	90.26	111.80
1	A	327	U	O5'-P-OP1	-10.23	96.49	105.70
4	D	193	ARG	NH1-CZ-NH2	10.22	130.64	119.40
1	A	385	A	O5'-P-OP1	-10.21	96.51	105.70
1	A	4646	U	O5'-P-OP1	10.21	122.95	110.70
6	F	266	THR	C-N-CA	-10.18	96.25	121.70
1	A	2455	G	O5'-P-OP2	10.17	122.90	110.70
1	A	1577	G	O5'-P-OP2	-10.15	96.56	105.70
1	A	308	G	O5'-P-OP2	-10.15	96.56	105.70
1	A	2288	G	O5'-P-OP2	-10.15	96.57	105.70
1	A	4635	A	O5'-P-OP2	-10.14	96.58	105.70
1	A	2674	A	O5'-P-OP2	-10.12	96.59	105.70
1	A	2421	G	O5'-P-OP2	-10.11	96.60	105.70
39	j	40	SER	N-CA-CB	-10.11	95.34	110.50
1	A	2073	C	O5'-P-OP2	-10.09	96.62	105.70
1	A	297	U	O5'-P-OP1	-10.07	96.64	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3630	A	O5'-P-OP1	10.06	122.78	110.70
1	A	276	C	C2'-C3'-O3'	10.05	131.60	109.50
1	A	4067	U	C4'-C3'-O3'	10.04	133.07	113.00
1	A	1919	G	O5'-P-OP1	10.00	122.70	110.70
6	F	190	ARG	NE-CZ-NH1	-9.99	115.30	120.30
1	A	4118	U	O5'-P-OP1	-9.97	96.73	105.70
1	A	1	C	N1-C1'-C2'	9.95	126.94	114.00
1	A	989	U	O4'-C1'-N1	9.93	116.14	108.20
1	A	1721	G	C4'-C3'-O3'	9.93	132.86	113.00
1	A	4276	G	O5'-P-OP1	-9.90	96.79	105.70
1	A	266	C	C2-N1-C1'	-9.89	107.92	118.80
1	A	1928	C	O5'-P-OP2	-9.80	96.88	105.70
22	N	136	ARG	CG-CD-NE	-9.80	91.22	111.80
10	n	137	ARG	CG-CD-NE	-9.80	91.23	111.80
1	A	276	C	C1'-C2'-O2'	-9.79	81.23	110.60
1	A	2428	A	O4'-C1'-C2'	-9.77	96.03	105.80
1	A	1754	U	C4'-C3'-O3'	9.72	132.44	113.00
1	A	2473	A	N9-C1'-C2'	-9.71	101.32	112.00
1	A	4273	A	C1'-C2'-O2'	-9.71	81.48	110.60
1	A	6	C	O5'-P-OP2	-9.70	96.97	105.70
1	A	3705	G	C5'-C4'-C3'	-9.67	100.52	116.00
1	A	1735	U	O5'-P-OP2	-9.67	97.00	105.70
1	A	2675	G	C2'-C3'-O3'	9.66	130.75	109.50
1	A	388	A	O5'-P-OP2	-9.66	97.01	105.70
1	A	3904	G	N9-C1'-C2'	-9.65	101.39	112.00
1	A	4270	C	C4'-C3'-O3'	-9.63	89.17	109.40
13	q	54	ARG	CG-CD-NE	9.62	132.01	111.80
19	K	150	ARG	NE-CZ-NH1	9.62	125.11	120.30
1	A	4987	C	O5'-P-OP2	-9.61	97.05	105.70
1	A	387	G	O5'-P-OP1	9.61	122.23	110.70
1	A	4513	A	O5'-P-OP1	-9.58	97.08	105.70
26	U	55	LYS	CB-CA-C	-9.58	91.25	110.40
1	A	3641	U	O5'-P-OP1	-9.57	97.08	105.70
1	A	5065	U	O5'-P-OP1	-9.56	97.09	105.70
1	A	4988	U	O5'-P-OP2	9.55	122.16	110.70
1	A	4547	C	O5'-P-OP2	-9.54	97.11	105.70
1	A	3877	A	O5'-P-OP1	-9.52	97.13	105.70
1	A	3618	C	C5'-C4'-C3'	-9.48	100.84	116.00
40	k	113	ARG	NE-CZ-NH2	9.47	125.04	120.30
30	Y	22	ARG	NE-CZ-NH2	-9.46	115.57	120.30
1	A	277	G	C8-N9-C1'	9.45	139.28	127.00
1	A	958	G	O5'-P-OP1	-9.45	97.20	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	F	306	ARG	CG-CD-NE	-9.44	91.97	111.80
1	A	2519	U	O5'-P-OP2	9.40	121.99	110.70
1	A	1289	C	O5'-P-OP2	-9.40	97.24	105.70
1	A	3632	C	O5'-P-OP1	-9.39	97.25	105.70
1	A	648	G	C4'-C3'-O3'	9.35	131.69	113.00
1	A	369	G	O5'-P-OP1	-9.34	97.29	105.70
1	A	4267	G	O5'-P-OP1	9.33	121.89	110.70
1	A	1549	G	O5'-P-OP1	-9.32	97.31	105.70
1	A	2586	G	O5'-P-OP2	-9.31	97.32	105.70
1	A	2580	U	O5'-P-OP1	-9.31	97.32	105.70
1	A	3784	A	O5'-P-OP2	-9.31	97.32	105.70
1	A	961	G	N9-C1'-C2'	9.29	126.08	114.00
1	A	193	G	C2'-C3'-O3'	9.27	129.90	109.50
39	j	50	ARG	CB-CA-C	9.26	128.92	110.40
1	A	3824	A	O5'-P-OP2	9.25	121.80	110.70
1	A	275	C	O5'-P-OP1	9.23	121.77	110.70
1	A	3883	U	O5'-P-OP1	-9.23	97.39	105.70
6	F	80	ARG	CB-CA-C	-9.23	91.94	110.40
6	F	65	GLU	CB-CA-C	-9.20	91.99	110.40
1	A	2814	C	O5'-P-OP2	-9.20	97.42	105.70
1	A	4561	C	O5'-P-OP2	9.20	121.74	110.70
1	A	2585	C	C2'-C3'-O3'	-9.20	89.26	109.50
1	A	5021	C	N1-C1'-C2'	-9.18	101.90	112.00
1	A	42	A	O5'-P-OP2	-9.17	97.44	105.70
1	A	4364	G	C5'-C4'-C3'	-9.17	101.32	116.00
3	C	3	A	O5'-P-OP1	-9.15	97.46	105.70
26	U	26	ARG	NE-CZ-NH1	-9.15	115.73	120.30
39	j	42	CYS	C-N-CA	-9.14	103.11	122.30
1	A	207	G	C1'-C2'-O2'	-9.14	83.19	110.60
1	A	1415	G	C4-N9-C1'	-9.13	114.63	126.50
1	A	4718	G	O5'-P-OP1	-9.13	97.48	105.70
1	A	4617	G	O5'-P-OP2	-9.10	97.51	105.70
1	A	1721	G	C2'-C3'-O3'	-9.09	89.50	109.50
16	t	195	ARG	NE-CZ-NH1	-9.09	115.76	120.30
1	A	359	A	O5'-P-OP2	-9.08	97.53	105.70
16	t	188	ARG	CG-CD-NE	9.08	130.88	111.80
39	j	41	PHE	CB-CG-CD1	-9.08	114.44	120.80
1	A	2396	A	C3'-C2'-O2'	-9.07	87.00	113.30
17	I	61	ARG	CB-CA-C	-9.06	92.27	110.40
1	A	352	G	O5'-P-OP2	-9.04	97.57	105.70
1	A	138	G	O5'-P-OP1	-9.03	97.58	105.70
3	C	151	G	O5'-P-OP2	9.02	121.53	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	F	100	ARG	CB-CG-CD	-9.02	88.16	111.60
26	U	26	ARG	NE-CZ-NH2	9.01	124.81	120.30
1	A	1864	G	O5'-P-OP1	-9.00	97.60	105.70
1	A	4337	C	O5'-P-OP1	-9.00	97.60	105.70
1	A	1615	C	O5'-P-OP1	-8.98	97.62	105.70
1	A	2087	C	O5'-P-OP1	8.97	121.47	110.70
1	A	2842	G	O5'-P-OP2	-8.96	97.64	105.70
1	A	4339	A	O5'-P-OP1	-8.96	97.64	105.70
1	A	2686	G	C2'-C3'-O3'	8.95	129.19	109.50
1	A	4490	C	O5'-P-OP1	-8.95	97.64	105.70
1	A	4491	G	O5'-P-OP1	8.95	121.44	110.70
1	A	4271	A	C2'-C3'-O3'	8.93	129.15	109.50
1	A	282	C	O5'-P-OP2	-8.92	97.67	105.70
1	A	3847	C	O5'-P-OP2	-8.89	97.70	105.70
3	C	13	G	O5'-P-OP1	-8.89	97.70	105.70
5	E	19	ARG	CG-CD-NE	-8.87	93.17	111.80
1	A	64	A	O5'-P-OP2	-8.87	97.72	105.70
1	A	1425	G	C5'-C4'-C3'	-8.86	101.82	116.00
1	A	1920	C	O5'-P-OP2	8.86	121.33	110.70
19	K	14	ARG	CG-CD-NE	-8.84	93.25	111.80
1	A	2301	G	O5'-P-OP1	-8.83	97.75	105.70
1	A	654	C	C2'-C3'-O3'	8.83	128.92	109.50
1	A	4988	U	O5'-P-OP1	-8.83	97.75	105.70
1	A	2087	C	C1'-C2'-O2'	-8.82	84.15	110.60
1	A	3809	G	O5'-P-OP2	8.82	121.28	110.70
42	Q	18	LEU	C-N-CA	-8.79	103.84	122.30
1	A	4270	C	C1'-C2'-O2'	-8.78	84.26	110.60
1	A	1304	C	O5'-P-OP1	8.78	121.23	110.70
1	A	4597	U	O5'-P-OP2	8.77	121.22	110.70
28	W	52	CYS	CB-CA-C	8.75	127.89	110.40
1	A	1799	G	O5'-P-OP2	-8.74	97.83	105.70
1	A	3877	A	O5'-P-OP2	8.74	121.19	110.70
1	A	4560	C	C2-N1-C1'	-8.74	109.19	118.80
1	A	1921	C	N1-C1'-C2'	8.72	125.34	114.00
1	A	386	A	C2'-C3'-O3'	8.71	128.67	109.50
34	c	30	ARG	CG-CD-NE	8.70	130.07	111.80
1	A	444	G	O5'-P-OP2	-8.70	97.88	105.70
1	A	2686	G	P-O5'-C5'	8.69	134.80	120.90
1	A	2399	G	O5'-P-OP1	-8.68	97.89	105.70
1	A	4718	G	N9-C1'-C2'	-8.66	102.47	112.00
1	A	4273	A	C3'-C2'-O2'	8.65	138.39	113.30
6	F	86	ARG	CG-CD-NE	-8.63	93.67	111.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
40	k	113	ARG	NE-CZ-NH1	-8.62	115.99	120.30
1	A	2863	G	O5'-P-OP1	-8.62	97.94	105.70
1	A	1907	A	O5'-P-OP1	-8.62	97.94	105.70
1	A	233	U	C4'-C3'-O3'	-8.61	91.31	109.40
1	A	654	C	N1-C1'-C2'	-8.61	102.53	112.00
1	A	2471	G	O4'-C1'-C2'	-8.60	97.20	105.80
32	a	90	ARG	NE-CZ-NH1	-8.60	116.00	120.30
1	A	3753	G	O5'-P-OP1	-8.60	97.96	105.70
1	A	4319	C	O5'-P-OP1	-8.59	97.97	105.70
24	S	15	ARG	NE-CZ-NH2	-8.58	116.01	120.30
1	A	4515	G	O5'-P-OP1	-8.57	97.98	105.70
1	A	2889	G	O5'-P-OP1	8.57	120.99	110.70
1	A	278	G	C5'-C4'-O4'	-8.54	98.85	109.10
6	F	78	ARG	NE-CZ-NH1	-8.54	116.03	120.30
32	a	90	ARG	CD-NE-CZ	-8.53	111.66	123.60
1	A	3938	G	O5'-P-OP1	-8.53	98.03	105.70
1	A	4560	C	C5-C4-N4	8.53	126.17	120.20
1	A	391	U	O5'-P-OP2	8.52	120.92	110.70
1	A	2412	A	O5'-P-OP1	8.51	120.91	110.70
19	K	161	SER	C-N-CA	-8.49	100.47	121.70
6	F	269	LYS	CB-CA-C	-8.49	93.43	110.40
1	A	1922	G	O5'-P-OP2	8.48	120.88	110.70
4	D	176	ASP	CB-CA-C	-8.48	93.45	110.40
3	C	46	G	C5'-C4'-C3'	-8.47	102.44	116.00
1	A	504	G	C8-N9-C1'	-8.43	116.04	127.00
1	A	4537	C	O5'-P-OP2	-8.43	98.11	105.70
1	A	4943	A	O5'-P-OP1	-8.41	98.13	105.70
14	r	65	ARG	CB-CG-CD	-8.41	89.74	111.60
1	A	413	G	O5'-P-OP1	8.40	120.78	110.70
1	A	4454	G	O5'-P-OP1	-8.38	98.15	105.70
1	A	979	C	O5'-P-OP1	8.37	120.75	110.70
1	A	1874	A	O5'-P-OP1	8.37	120.75	110.70
1	A	4375	C	C1'-C2'-O2'	-8.37	85.48	110.60
1	A	4171	C	O5'-P-OP1	-8.37	98.16	105.70
7	G	24	ARG	CG-CD-NE	8.37	129.37	111.80
1	A	4273	A	O5'-P-OP1	-8.36	98.17	105.70
1	A	2585	C	N1-C1'-C2'	-8.33	102.83	112.00
3	C	93	C	O5'-P-OP1	-8.32	98.21	105.70
1	A	1284	G	O5'-P-OP1	-8.32	98.22	105.70
1	A	209	U	C1'-C2'-O2'	-8.28	85.78	110.60
1	A	4326	G	O5'-P-OP1	8.27	120.63	110.70
1	A	2535	G	O5'-P-OP1	-8.27	98.26	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4298	A	O5'-P-OP1	-8.26	98.26	105.70
1	A	3946	G	N9-C1'-C2'	-8.26	102.92	112.00
14	r	36	ARG	CB-CG-CD	-8.25	90.14	111.60
19	K	26	ARG	CG-CD-NE	-8.25	94.47	111.80
1	A	1415	G	C2'-C3'-O3'	-8.24	91.36	109.50
3	C	150	C	O5'-P-OP1	8.24	120.59	110.70
1	A	4610	A	O5'-P-OP2	-8.24	98.28	105.70
32	a	93	ARG	CG-CD-NE	-8.24	94.50	111.80
1	A	234	G	O4'-C1'-C2'	-8.23	97.57	105.80
1	A	266	C	C6-N1-C1'	8.23	130.68	120.80
17	I	144	GLU	CB-CA-C	-8.23	93.95	110.40
1	A	1877	G	O5'-P-OP2	8.22	120.57	110.70
1	A	4683	U	O4'-C4'-C3'	-8.22	95.78	104.00
1	A	335	A	O5'-P-OP2	8.22	120.56	110.70
1	A	1722	C	O5'-P-OP1	-8.21	98.31	105.70
1	A	2832	A	O5'-P-OP1	-8.20	98.32	105.70
10	n	103	ARG	CB-CG-CD	8.20	132.92	111.60
1	A	5017	G	O5'-P-OP2	-8.19	98.33	105.70
1	A	4487	A	O5'-P-OP2	-8.19	98.33	105.70
15	s	53	LYS	CB-CA-C	-8.19	94.02	110.40
1	A	2426	U	C2'-C3'-O3'	-8.18	91.51	109.50
1	A	4597	U	O5'-P-OP1	-8.18	98.34	105.70
1	A	3626	G	P-O5'-C5'	8.16	133.96	120.90
1	A	209	U	P-O3'-C3'	8.16	129.49	119.70
1	A	2367	A	O5'-P-OP1	8.16	120.49	110.70
1	A	4404	U	O4'-C1'-N1	8.15	114.72	108.20
1	A	127	G	O5'-P-OP2	-8.15	98.37	105.70
38	i	19	GLN	CB-CA-C	-8.14	94.12	110.40
42	Q	85	ARG	CB-CG-CD	-8.12	90.48	111.60
1	A	1472	C	C5'-C4'-C3'	-8.12	103.01	116.00
1	A	4358	U	O5'-P-OP2	-8.11	98.40	105.70
1	A	5017	G	O5'-P-OP1	8.10	120.42	110.70
9	m	245	ARG	CG-CD-NE	-8.10	94.79	111.80
37	f	21	ARG	CG-CD-NE	8.09	128.79	111.80
1	A	3823	G	P-O3'-C3'	8.09	129.41	119.70
1	A	3814	U	O5'-P-OP1	-8.09	98.42	105.70
1	A	4345	C	O5'-P-OP2	-8.08	98.43	105.70
27	V	41	ARG	CB-CG-CD	-8.08	90.60	111.60
22	N	94	GLU	CB-CA-C	-8.07	94.25	110.40
3	C	60	G	O5'-P-OP1	-8.05	98.45	105.70
1	A	3905	A	C5'-C4'-C3'	-8.05	103.12	116.00
21	M	166	ARG	NE-CZ-NH1	-8.05	116.28	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1425	G	O5'-P-OP2	8.03	120.34	110.70
1	A	1387	A	O5'-P-OP1	8.03	120.33	110.70
6	F	189	MET	CB-CG-SD	-8.02	88.34	112.40
1	A	2753	G	O5'-P-OP1	8.02	120.32	110.70
2	B	102	U	O5'-P-OP1	8.01	120.32	110.70
1	A	315	G	O5'-P-OP1	-8.01	98.49	105.70
2	B	97	G	O5'-P-OP1	-8.00	98.50	105.70
1	A	2069	A	OP1-P-OP2	8.00	131.60	119.60
1	A	4753	U	O5'-P-OP2	-7.98	98.52	105.70
1	A	273	U	C2'-C3'-O3'	7.98	127.06	109.50
1	A	4267	G	O5'-P-OP2	-7.98	98.52	105.70
1	A	417	G	O4'-C1'-N9	7.98	114.58	108.20
4	D	28	ARG	CG-CD-NE	-7.98	95.05	111.80
2	B	48	G	O5'-P-OP1	7.97	120.27	110.70
1	A	352	G	O5'-P-OP1	7.97	120.27	110.70
39	j	61	MET	CG-SD-CE	7.97	112.95	100.20
1	A	4490	C	O5'-P-OP2	7.97	120.26	110.70
1	A	1921	C	C4'-C3'-O3'	-7.96	92.67	109.40
1	A	3696	C	O5'-P-OP2	-7.96	98.53	105.70
42	Q	36	ASN	CB-CA-C	-7.96	94.48	110.40
20	L	110	ARG	NE-CZ-NH1	-7.95	116.32	120.30
1	A	347	A	O5'-P-OP2	-7.95	98.55	105.70
1	A	1392	A	O5'-P-OP2	7.95	120.24	110.70
1	A	422	C	O5'-P-OP2	-7.95	98.55	105.70
1	A	189	G	C2'-C3'-O3'	7.94	126.97	109.50
1	A	3823	G	C4'-C3'-C2'	-7.94	94.66	102.60
42	Q	65	VAL	CG1-CB-CG2	7.93	123.59	110.90
1	A	2614	C	O5'-P-OP2	-7.93	98.56	105.70
1	A	240	G	O5'-P-OP1	-7.92	98.57	105.70
1	A	4272	G	O4'-C1'-C2'	-7.92	97.88	105.80
1	A	276	C	C6-N1-C1'	-7.92	111.30	120.80
1	A	1425	G	O5'-P-OP1	-7.91	98.58	105.70
1	A	1641	G	O5'-P-OP1	-7.90	98.59	105.70
1	A	1944	A	O5'-P-OP1	-7.90	98.59	105.70
1	A	4727	A	O5'-P-OP1	7.89	120.17	110.70
1	A	3652	A	O5'-P-OP1	7.88	120.16	110.70
33	b	94	ARG	CG-CD-NE	-7.88	95.24	111.80
1	A	1402	C	C4'-C3'-O3'	7.88	128.76	113.00
1	A	2826	U	C4'-C3'-O3'	-7.88	92.85	109.40
1	A	3776	G	C5'-C4'-C3'	-7.87	103.40	116.00
22	N	113	ASP	CB-CA-C	7.87	126.14	110.40
1	A	4622	A	O5'-P-OP2	-7.86	98.63	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3635	A	N9-C1'-C2'	-7.86	103.36	112.00
2	B	73	U	O5'-P-OP2	7.85	120.12	110.70
1	A	4507	A	C1'-C2'-O2'	-7.85	87.05	110.60
1	A	1734	G	C1'-C2'-O2'	-7.84	87.09	110.60
1	A	4560	C	O5'-P-OP1	-7.83	98.65	105.70
6	F	80	ARG	NE-CZ-NH2	-7.83	116.39	120.30
1	A	89	C	O5'-P-OP1	-7.82	98.66	105.70
1	A	3757	G	N9-C1'-C2'	-7.81	103.41	112.00
1	A	478	G	C5'-C4'-C3'	-7.81	103.51	116.00
1	A	4560	C	C6-N1-C1'	7.80	130.16	120.80
1	A	2318	G	N9-C1'-C2'	-7.80	103.42	112.00
1	A	39	A	O5'-P-OP1	-7.78	98.70	105.70
1	A	2598	A	O4'-C4'-C3'	-7.78	96.22	104.00
35	d	11	ARG	CG-CD-NE	-7.75	95.52	111.80
1	A	2436	U	O5'-P-OP1	-7.75	98.73	105.70
1	A	1721	G	C4-N9-C1'	-7.72	116.47	126.50
1	A	3880	G	O5'-P-OP1	-7.72	98.75	105.70
10	n	65	ARG	NE-CZ-NH1	-7.72	116.44	120.30
1	A	1392	A	O5'-P-OP1	-7.71	98.76	105.70
1	A	2367	A	O5'-P-OP2	-7.71	98.76	105.70
3	C	94	G	O5'-P-OP2	-7.71	98.76	105.70
40	k	94	ARG	CG-CD-NE	7.71	127.98	111.80
15	s	47	ARG	NE-CZ-NH2	-7.69	116.46	120.30
34	c	29	ARG	NE-CZ-NH1	7.68	124.14	120.30
1	A	1721	G	C8-N9-C1'	7.68	136.99	127.00
24	S	83	GLU	C-N-CA	-7.67	102.52	121.70
34	c	87	ARG	CB-CA-C	-7.67	95.06	110.40
18	J	74	LYS	CB-CA-C	-7.66	95.08	110.40
19	K	104	ARG	NE-CZ-NH1	-7.66	116.47	120.30
1	A	2877	G	O5'-P-OP2	7.63	119.86	110.70
1	A	2596	G	O5'-P-OP2	-7.63	98.83	105.70
1	A	4646	U	O5'-P-OP2	-7.62	98.84	105.70
1	A	977	C	O5'-P-OP2	7.61	119.83	110.70
1	A	1925	G	O5'-P-OP1	7.61	119.84	110.70
1	A	2068	C	O4'-C1'-N1	7.60	114.28	108.20
1	A	4273	A	C8-N9-C1'	-7.60	114.03	127.70
1	A	2264	C	O5'-P-OP2	-7.59	98.86	105.70
3	C	98	C	C2'-C3'-O3'	-7.59	92.79	109.50
1	A	4555	U	N1-C1'-C2'	7.59	123.87	114.00
1	A	2024	G	O5'-P-OP1	7.59	119.81	110.70
10	n	73	ARG	CG-CD-NE	-7.59	95.87	111.80
19	K	11	ARG	NE-CZ-NH2	-7.58	116.51	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
32	a	49	CYS	CB-CA-C	7.58	125.56	110.40
4	D	163	ARG	CG-CD-NE	-7.58	95.89	111.80
1	A	56	A	O5'-P-OP2	-7.57	98.88	105.70
1	A	4486	C	O5'-P-OP2	7.57	119.78	110.70
2	B	102	U	O5'-P-OP2	-7.56	98.89	105.70
1	A	1798	G	N9-C1'-C2'	-7.56	103.69	112.00
1	A	409	G	O5'-P-OP2	-7.56	98.90	105.70
1	A	1427	A	N9-C1'-C2'	-7.55	103.69	112.00
1	A	4670	C	O5'-P-OP2	-7.55	98.91	105.70
1	A	3757	G	O4'-C1'-C2'	-7.55	98.25	105.80
1	A	2668	G	O5'-P-OP2	-7.54	98.91	105.70
1	A	2470	C	N1-C1'-C2'	7.53	123.79	114.00
2	B	71	G	C5'-C4'-C3'	-7.53	103.95	116.00
17	I	128	ARG	NE-CZ-NH2	-7.53	116.53	120.30
24	S	108	ARG	CG-CD-NE	-7.52	96.00	111.80
23	R	49	PRO	CB-CA-C	-7.51	93.22	112.00
1	A	4941	G	O5'-P-OP1	7.51	119.71	110.70
1	A	2466	G	O5'-P-OP1	-7.49	98.96	105.70
16	t	71	ARG	CG-CD-NE	-7.49	96.08	111.80
1	A	2412	A	O5'-P-OP2	-7.48	98.96	105.70
1	A	2686	G	O5'-P-OP1	7.48	119.68	110.70
1	A	1740	C	O4'-C1'-N1	7.48	114.18	108.20
1	A	1854	G	O5'-P-OP1	-7.47	98.97	105.70
1	A	1376	C	N1-C1'-C2'	-7.47	103.79	112.00
1	A	1607	C	C2'-C3'-O3'	7.46	125.92	109.50
29	X	25	TYR	CB-CA-C	-7.46	95.48	110.40
43	u	19	ARG	CB-CG-CD	-7.46	92.21	111.60
1	A	663	G	C4'-C3'-O3'	7.45	127.90	113.00
1	A	227	A	O5'-P-OP1	-7.43	99.01	105.70
1	A	234	G	C3'-C2'-O2'	-7.43	91.75	113.30
1	A	4484	A	O5'-P-OP2	7.43	119.62	110.70
1	A	4722	G	O5'-P-OP1	-7.43	99.02	105.70
1	A	1873	A	O5'-P-OP2	-7.42	99.02	105.70
9	m	157	ARG	NE-CZ-NH1	-7.41	116.60	120.30
1	A	9	C	C5'-C4'-C3'	-7.40	104.15	116.00
1	A	1726	U	O5'-P-OP2	-7.40	99.04	105.70
1	A	3643	A	O5'-P-OP1	-7.39	99.05	105.70
1	A	1422	G	O5'-P-OP1	-7.39	99.05	105.70
1	A	1064	G	O5'-P-OP1	-7.38	99.05	105.70
1	A	1881	C	O5'-P-OP2	-7.38	99.06	105.70
1	A	957	G	C1'-C2'-O2'	-7.37	88.48	110.60
1	A	1812	C	O5'-P-OP1	-7.36	99.08	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1891	A	C5'-C4'-C3'	-7.36	104.22	116.00
33	b	110	LYS	CB-CA-C	-7.36	95.69	110.40
1	A	281	U	O5'-P-OP2	-7.35	99.08	105.70
1	A	4291	G	O4'-C1'-C2'	-7.35	98.45	105.80
1	A	2356	U	O4'-C4'-C3'	-7.35	96.65	104.00
1	A	1729	A	C5'-C4'-C3'	-7.34	104.25	116.00
1	A	3735	G	N9-C1'-C2'	-7.34	103.92	112.00
1	A	323	C	O5'-P-OP2	-7.34	99.09	105.70
1	A	1390	G	N9-C1'-C2'	-7.33	103.94	112.00
1	A	4946	U	C4'-C3'-O3'	-7.33	94.01	109.40
14	r	39	ARG	NE-CZ-NH1	7.31	123.95	120.30
9	m	217	ARG	NE-CZ-NH2	-7.31	116.65	120.30
1	A	4645	C	O4'-C4'-C3'	-7.30	96.70	104.00
1	A	391	U	O5'-P-OP1	-7.30	99.13	105.70
1	A	2674	A	O5'-P-OP1	7.30	119.46	110.70
1	A	2600	A	O5'-P-OP2	-7.30	99.13	105.70
1	A	3663	A	P-O5'-C5'	7.29	132.57	120.90
8	H	288	PHE	CB-CA-C	7.29	124.98	110.40
3	C	43	A	O5'-P-OP1	7.29	119.45	110.70
1	A	1607	C	O4'-C4'-C3'	-7.29	96.71	104.00
15	s	48	GLN	CB-CA-C	-7.29	95.83	110.40
1	A	2862	G	O5'-P-OP2	-7.29	99.14	105.70
1	A	4549	G	O5'-P-OP1	7.28	119.43	110.70
1	A	4402	C	O5'-P-OP1	-7.27	99.15	105.70
1	A	1583	A	O5'-P-OP2	7.27	119.43	110.70
1	A	4561	C	O5'-P-OP1	-7.27	99.16	105.70
1	A	4875	G	N9-C1'-C2'	-7.27	104.01	112.00
19	K	58	ARG	NE-CZ-NH1	-7.26	116.67	120.30
1	A	2835	A	O5'-P-OP2	7.26	119.42	110.70
16	t	169	ARG	NE-CZ-NH1	-7.26	116.67	120.30
1	A	426	A	C1'-C2'-O2'	-7.26	88.83	110.60
1	A	4206	C	C5'-C4'-C3'	-7.25	104.39	116.00
1	A	977	C	O5'-P-OP1	-7.25	99.17	105.70
3	C	150	C	C4'-C3'-O3'	7.25	127.50	113.00
20	L	94	THR	CA-CB-OG1	-7.24	93.79	109.00
1	A	4280	A	O5'-P-OP2	-7.24	99.18	105.70
16	t	68	ARG	CG-CD-NE	-7.24	96.60	111.80
1	A	2598	A	O5'-P-OP2	-7.24	99.19	105.70
35	d	40	PRO	N-CA-CB	-7.23	94.62	103.30
1	A	3747	A	O5'-P-OP1	-7.22	99.20	105.70
5	E	6	PHE	CB-CA-C	-7.22	95.97	110.40
16	t	143	ARG	NE-CZ-NH2	-7.21	116.69	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	Y	28	TYR	CB-CA-C	-7.21	95.99	110.40
1	A	1818	G	O5'-P-OP2	7.20	119.34	110.70
1	A	2850	A	O5'-P-OP1	-7.20	99.22	105.70
1	A	2801	U	N1-C1'-C2'	-7.19	104.09	112.00
29	X	118	GLN	CB-CA-C	-7.19	96.01	110.40
8	H	131	LYS	CB-CA-C	-7.19	96.02	110.40
26	U	132	ARG	CG-CD-NE	7.18	126.89	111.80
1	A	4971	A	O5'-P-OP1	-7.18	99.24	105.70
1	A	989	U	C2-N1-C1'	-7.17	109.10	117.70
1	A	3878	C	C1'-C2'-O2'	-7.16	89.11	110.60
1	A	4314	C	O5'-P-OP1	-7.16	99.25	105.70
1	A	1078	A	O4'-C4'-C3'	-7.16	96.84	104.00
1	A	504	G	C4-N9-C1'	7.15	135.79	126.50
15	s	117	LYS	N-CA-CB	7.14	123.46	110.60
1	A	1385	G	O5'-P-OP2	-7.14	99.27	105.70
1	A	386	A	C5'-C4'-C3'	-7.14	104.58	116.00
1	A	1503	A	O5'-P-OP2	-7.13	99.28	105.70
1	A	1494	U	O5'-P-OP2	7.13	119.26	110.70
1	A	1613	A	O4'-C1'-C2'	-7.12	98.68	105.80
1	A	2440	U	C1'-C2'-O2'	-7.12	89.23	110.60
1	A	4486	C	C2'-C3'-O3'	7.12	125.16	109.50
16	t	195	ARG	CG-CD-NE	-7.12	96.85	111.80
1	A	149	A	O5'-P-OP2	7.11	119.24	110.70
4	D	17	ARG	CG-CD-NE	-7.11	96.87	111.80
1	A	247	G	O5'-P-OP1	-7.11	99.30	105.70
19	K	108	ARG	CB-CG-CD	-7.10	93.14	111.60
1	A	17	A	O5'-P-OP2	7.10	119.22	110.70
1	A	193	G	O4'-C4'-C3'	-7.10	96.90	104.00
4	D	23	ARG	NE-CZ-NH1	-7.10	116.75	120.30
1	A	31	U	O5'-P-OP1	-7.10	99.31	105.70
1	A	933	G	O5'-P-OP1	-7.10	99.31	105.70
1	A	3819	G	O5'-P-OP2	7.10	119.22	110.70
1	A	5048	A	O5'-P-OP2	-7.09	99.32	105.70
1	A	1530	G	O5'-P-OP1	-7.09	99.32	105.70
1	A	4541	G	N9-C1'-C2'	-7.09	104.20	112.00
1	A	4688	C	O5'-P-OP1	-7.08	99.33	105.70
1	A	1603	C	O5'-P-OP1	-7.07	99.33	105.70
1	A	3868	G	C1'-C2'-O2'	-7.07	89.38	110.60
1	A	724	C	O4'-C4'-C3'	-7.07	96.94	104.00
1	A	5044	A	O5'-P-OP1	-7.06	99.34	105.70
1	A	705	G	C2'-C3'-O3'	7.06	125.03	109.50
1	A	4966	A	C4'-C3'-O3'	-7.05	94.59	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	648	G	C4-N9-C1'	-7.04	117.35	126.50
16	t	161	MET	CA-CB-CG	-7.04	101.34	113.30
1	A	4157	A	O5'-P-OP1	-7.03	99.37	105.70
1	A	4273	A	C4-N9-C1'	7.03	138.96	126.30
1	A	2300	A	P-O5'-C5'	-7.03	109.65	120.90
1	A	241	G	O5'-P-OP1	-7.03	99.37	105.70
1	A	757	G	N9-C1'-C2'	-7.03	104.27	112.00
3	C	140	C	O5'-P-OP2	7.03	119.13	110.70
1	A	2882	A	N9-C1'-C2'	-7.02	104.27	112.00
26	U	7	LYS	CB-CA-C	-7.02	96.36	110.40
1	A	1859	C	C2-N1-C1'	-7.02	111.08	118.80
1	A	4669	A	O5'-P-OP1	-7.01	99.39	105.70
1	A	3798	U	N1-C1'-C2'	-7.01	104.29	112.00
1	A	276	C	P-O5'-C5'	7.01	132.11	120.90
1	A	327	U	O5'-P-OP2	7.00	119.10	110.70
1	A	512	U	C4'-C3'-O3'	6.99	126.99	113.00
42	Q	75	LYS	CB-CA-C	-6.99	96.42	110.40
1	A	17	A	P-O5'-C5'	6.98	132.07	120.90
1	A	2438	A	C1'-C2'-O2'	-6.97	89.67	110.60
14	r	35	ARG	CG-CD-NE	-6.97	97.16	111.80
1	A	1336	G	P-O3'-C3'	6.97	128.06	119.70
1	A	2786	U	C1'-C2'-O2'	-6.97	89.69	110.60
1	A	4380	A	O5'-P-OP1	-6.97	99.43	105.70
26	U	118	PRO	CB-CA-C	-6.97	94.58	112.00
1	A	1818	G	C2'-C3'-O3'	-6.97	94.17	109.50
18	J	75	GLN	CB-CG-CD	6.96	129.69	111.60
1	A	1832	C	C2'-C3'-O3'	6.96	124.83	113.70
1	A	1285	U	O5'-P-OP1	-6.96	99.44	105.70
1	A	4569	U	O5'-P-OP2	-6.95	99.44	105.70
1	A	4984	C	O5'-P-OP1	-6.95	99.44	105.70
1	A	4407	G	C2'-C3'-O3'	6.95	124.82	113.70
1	A	2257	C	C4'-C3'-O3'	-6.95	94.81	109.40
1	A	2416	G	N3-C2-N2	6.95	124.76	119.90
34	c	76	ARG	CG-CD-NE	-6.95	97.21	111.80
3	C	37	A	O5'-P-OP2	-6.95	99.45	105.70
1	A	58	G	C1'-C2'-O2'	-6.94	89.78	110.60
1	A	342	G	C1'-C2'-O2'	-6.94	89.78	110.60
4	D	123	ARG	CG-CD-NE	-6.94	97.23	111.80
2	B	5	A	O5'-P-OP1	6.94	119.03	110.70
1	A	648	G	C8-N9-C1'	6.94	136.02	127.00
14	r	36	ARG	CG-CD-NE	-6.93	97.25	111.80
1	A	4622	A	O5'-P-OP1	6.92	119.01	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
22	N	92	ARG	NE-CZ-NH2	-6.92	116.84	120.30
1	A	2539	C	O5'-P-OP2	-6.91	99.48	105.70
1	A	3618	C	C4'-C3'-O3'	-6.90	94.90	109.40
1	A	4390	A	O4'-C4'-C3'	-6.90	97.10	104.00
1	A	278	G	O5'-P-OP1	-6.90	99.49	105.70
14	r	74	ARG	NE-CZ-NH1	-6.90	116.85	120.30
6	F	311	ARG	NE-CZ-NH2	-6.90	116.85	120.30
1	A	203	U	C2'-C3'-O3'	6.90	124.73	113.70
35	d	73	ARG	NE-CZ-NH2	-6.88	116.86	120.30
1	A	362	A	O5'-P-OP2	-6.88	99.51	105.70
1	A	1274	A	N9-C1'-C2'	-6.88	104.43	112.00
1	A	1421	G	P-O5'-C5'	-6.88	109.89	120.90
1	A	248	C	O4'-C4'-C3'	-6.88	97.12	104.00
1	A	322	C	C5'-C4'-C3'	-6.88	104.99	116.00
23	R	98	PHE	CB-CA-C	-6.88	96.64	110.40
26	U	128	PHE	CB-CA-C	-6.88	96.64	110.40
3	C	34	U	O5'-P-OP2	-6.88	99.51	105.70
14	r	103	ARG	CB-CG-CD	6.88	129.48	111.60
4	D	93	LYS	CB-CA-C	-6.87	96.66	110.40
9	m	242	ARG	CB-CG-CD	-6.87	93.74	111.60
1	A	4556	U	C4'-C3'-O3'	-6.86	94.99	109.40
30	Y	44	ARG	NE-CZ-NH1	-6.86	116.87	120.30
2	B	101	A	C1'-C2'-O2'	-6.85	90.04	110.60
35	d	63	ARG	N-CA-CB	-6.85	98.26	110.60
1	A	4291	G	P-O5'-C5'	-6.85	109.94	120.90
1	A	4513	A	C3'-C2'-O2'	-6.85	93.44	113.30
1	A	4484	A	O5'-P-OP1	-6.84	99.54	105.70
34	c	29	ARG	CB-CG-CD	6.84	129.37	111.60
1	A	1621	A	O5'-P-OP1	6.83	118.90	110.70
1	A	1378	C	O5'-P-OP1	-6.83	99.55	105.70
1	A	194	C	O4'-C4'-C3'	-6.83	97.17	104.00
27	V	50	ASN	CB-CA-C	-6.83	96.75	110.40
1	A	982	U	O5'-P-OP1	6.82	118.89	110.70
1	A	1950	U	O5'-P-OP2	-6.82	99.56	105.70
1	A	4266	G	C1'-C2'-O2'	-6.82	90.14	110.60
1	A	5053	U	C2'-C3'-O3'	-6.82	94.50	109.50
1	A	1273	G	C2'-C3'-O3'	6.82	124.61	113.70
34	c	29	ARG	NE-CZ-NH2	-6.81	116.89	120.30
1	A	1415	G	C8-N9-C1'	6.81	135.85	127.00
1	A	1472	C	O5'-P-OP2	6.81	118.87	110.70
1	A	280	G	O4'-C1'-C2'	-6.79	99.01	105.80
1	A	4273	A	O4'-C1'-N9	-6.79	102.77	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	295	A	O5'-P-OP1	-6.79	99.59	105.70
1	A	158	A	P-O5'-C5'	6.79	131.76	120.90
23	R	47	ARG	CB-CG-CD	-6.79	93.95	111.60
1	A	1250	C	N1-C1'-C2'	-6.79	104.54	112.00
1	A	2347	A	O5'-P-OP1	-6.78	99.59	105.70
1	A	2586	G	O5'-P-OP1	6.78	118.83	110.70
1	A	4730	C	O5'-P-OP1	-6.78	99.60	105.70
8	H	183	ARG	CG-CD-NE	6.78	126.03	111.80
5	E	4	ARG	CB-CA-C	6.77	123.94	110.40
1	A	1826	G	O5'-P-OP1	-6.77	99.61	105.70
14	r	121	ARG	NE-CZ-NH1	6.76	123.68	120.30
1	A	1629	G	O5'-P-OP1	-6.76	99.62	105.70
1	A	2740	U	C4'-C3'-O3'	-6.76	95.21	109.40
5	E	343	ARG	NE-CZ-NH1	-6.76	116.92	120.30
2	B	102	U	C5'-C4'-O4'	6.75	117.20	109.10
18	J	135	ARG	CG-CD-NE	-6.75	97.63	111.80
1	A	266	C	O4'-C1'-N1	6.74	113.59	108.20
1	A	3674	G	P-O5'-C5'	6.74	131.69	120.90
16	t	66	VAL	CG1-CB-CG2	-6.74	100.12	110.90
6	F	312	ARG	CB-CG-CD	-6.74	94.08	111.60
9	m	217	ARG	CG-CD-NE	-6.74	97.65	111.80
1	A	17	A	C2'-C3'-O3'	6.74	124.48	113.70
26	U	39	HIS	CA-CB-CG	-6.74	102.15	113.60
2	B	45	U	O5'-P-OP2	6.73	118.78	110.70
32	a	54	ARG	CG-CD-NE	-6.73	97.67	111.80
1	A	2535	G	O5'-P-OP2	6.72	118.77	110.70
1	A	1654	G	C1'-C2'-O2'	-6.72	90.44	110.60
1	A	1729	A	O5'-P-OP2	6.72	118.76	110.70
1	A	2814	C	C2'-C3'-O3'	-6.72	94.72	109.50
1	A	4708	A	O5'-P-OP2	-6.72	99.66	105.70
4	D	18	ALA	N-CA-CB	-6.72	100.70	110.10
1	A	4136	G	N9-C1'-C2'	-6.71	104.61	112.00
6	F	161	TYR	CB-CA-C	-6.71	96.97	110.40
17	I	110	PRO	CB-CA-C	-6.71	95.21	112.00
1	A	230	G	O5'-P-OP1	-6.71	99.66	105.70
19	K	38	ARG	NE-CZ-NH2	-6.71	116.95	120.30
1	A	4983	C	O5'-P-OP1	-6.71	99.66	105.70
34	c	41	ARG	CG-CD-NE	-6.71	97.72	111.80
39	j	70	THR	OG1-CB-CG2	-6.71	94.58	110.00
1	A	1497	A	C4'-C3'-O3'	-6.70	95.32	109.40
1	A	4860	G	C8-N9-C1'	-6.70	118.28	127.00
16	t	153	LYS	CB-CA-C	-6.70	97.00	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1503	A	O4'-C1'-C2'	-6.69	99.11	105.80
1	A	4310	A	C1'-C2'-O2'	-6.69	90.53	110.60
1	A	431	G	O5'-P-OP1	-6.69	99.68	105.70
21	M	62	VAL	CA-CB-CG1	6.69	120.93	110.90
35	d	12	ARG	CG-CD-NE	6.69	125.84	111.80
16	t	67	ARG	CB-CA-C	-6.68	97.03	110.40
1	A	3684	G	O5'-P-OP1	-6.68	99.69	105.70
1	A	240	G	O5'-P-OP2	6.68	118.72	110.70
1	A	3643	A	O5'-P-OP2	6.68	118.72	110.70
1	A	356	G	O5'-P-OP2	6.68	118.71	110.70
26	U	42	ARG	NE-CZ-NH1	-6.68	116.96	120.30
1	A	1268	G	C2'-C3'-O3'	6.68	124.38	113.70
1	A	906	C	O5'-P-OP1	6.67	118.71	110.70
1	A	17	A	N1-C6-N6	-6.67	114.60	118.60
6	F	200	ARG	NE-CZ-NH2	-6.67	116.97	120.30
1	A	4766	C	C2'-C3'-O3'	6.66	124.36	113.70
1	A	4374	U	O5'-P-OP2	-6.66	99.70	105.70
1	A	4326	G	C5'-C4'-C3'	-6.66	105.34	116.00
1	A	1650	A	O5'-P-OP2	-6.66	99.71	105.70
4	D	97	ASN	CB-CA-C	-6.66	97.08	110.40
40	k	20	ARG	CB-CA-C	6.66	123.72	110.40
1	A	2442	G	C5'-C4'-C3'	-6.66	105.35	116.00
1	A	266	C	C5'-C4'-O4'	-6.66	101.11	109.10
1	A	4371	G	C5'-C4'-C3'	-6.65	105.36	116.00
1	A	2475	G	N9-C1'-C2'	6.65	122.64	114.00
17	I	49	ARG	CG-CD-NE	-6.65	97.84	111.80
6	F	138	MET	CG-SD-CE	-6.64	89.57	100.20
1	A	295	A	N9-C1'-C2'	-6.64	104.70	112.00
8	H	59	ARG	NE-CZ-NH2	-6.64	116.98	120.30
1	A	4527	G	O5'-P-OP2	-6.64	99.72	105.70
9	m	189	ASP	CB-CA-C	-6.64	97.13	110.40
9	m	242	ARG	CB-CA-C	-6.63	97.14	110.40
1	A	2266	C	O5'-P-OP1	-6.63	99.73	105.70
1	A	4213	A	P-O5'-C5'	6.63	131.51	120.90
1	A	1909	G	O5'-P-OP1	-6.63	99.73	105.70
30	Y	48	ARG	CB-CG-CD	-6.63	94.37	111.60
1	A	294	G	C4'-C3'-O3'	-6.62	95.49	109.40
1	A	2317	C	O4'-C4'-C3'	-6.62	97.38	104.00
1	A	3850	C	O5'-P-OP1	-6.62	99.74	105.70
9	m	137	GLU	CB-CA-C	-6.62	97.16	110.40
1	A	2428	A	N9-C1'-C2'	6.62	122.60	114.00
1	A	4371	G	O4'-C1'-N9	6.61	113.49	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	6	C	O5'-P-OP1	6.61	118.63	110.70
1	A	2529	A	P-O5'-C5'	-6.61	110.33	120.90
1	A	2800	G	O4'-C4'-C3'	-6.61	97.39	104.00
1	A	4765	G	C2'-C3'-O3'	6.60	124.26	113.70
1	A	2579	G	N9-C1'-C2'	-6.60	104.74	112.00
1	A	2723	U	C4'-C3'-O3'	-6.60	95.54	109.40
1	A	2890	C	O5'-P-OP2	-6.60	99.76	105.70
1	A	4238	G	O5'-P-OP2	-6.60	99.76	105.70
1	A	2826	U	O5'-P-OP2	-6.59	99.77	105.70
1	A	421	C	O5'-P-OP2	-6.59	99.77	105.70
1	A	1735	U	O5'-P-OP1	6.59	118.61	110.70
17	I	133	ARG	CG-CD-NE	-6.59	97.96	111.80
1	A	4721	G	O5'-P-OP1	-6.59	99.77	105.70
5	E	9	PRO	N-CD-CG	-6.59	93.32	103.20
1	A	2744	A	O5'-P-OP1	-6.58	99.78	105.70
1	A	4670	C	N1-C1'-C2'	-6.58	104.76	112.00
1	A	2828	U	C4'-C3'-O3'	-6.57	95.60	109.40
3	C	80	A	C2'-C3'-O3'	6.57	124.21	113.70
1	A	2525	U	O5'-P-OP2	6.57	118.58	110.70
10	n	89	ARG	CB-CG-CD	6.57	128.67	111.60
1	A	334	A	C2'-C3'-O3'	-6.56	95.06	109.50
1	A	1452	A	C2'-C3'-O3'	6.56	124.20	113.70
1	A	2596	G	O4'-C4'-C3'	-6.56	97.44	104.00
1	A	2843	U	O5'-P-OP2	-6.56	99.79	105.70
1	A	5002	U	C1'-C2'-O2'	-6.56	90.92	110.60
1	A	2823	G	O4'-C4'-C3'	-6.55	97.45	104.00
42	Q	69	LYS	CB-CA-C	-6.54	97.31	110.40
1	A	4570	G	O5'-P-OP1	6.54	118.55	110.70
1	A	4572	U	N1-C1'-C2'	6.54	122.51	114.00
9	m	65	TYR	CB-CG-CD2	-6.54	117.07	121.00
1	A	113	A	O4'-C4'-C3'	-6.54	97.46	104.00
1	A	1944	A	O5'-P-OP2	6.54	118.55	110.70
1	A	1584	G	O5'-P-OP1	-6.54	99.82	105.70
1	A	4560	C	N3-C4-N4	-6.53	113.43	118.00
6	F	275	SER	C-N-CA	-6.53	105.37	121.70
1	A	2473	A	C1'-C2'-O2'	6.53	130.19	110.60
16	t	81[A]	TYR	CB-CA-C	-6.53	97.34	110.40
16	t	81[B]	TYR	CB-CA-C	-6.53	97.34	110.40
1	A	4464	A	N9-C1'-C2'	6.53	122.49	114.00
1	A	4616	A	O4'-C4'-C3'	-6.53	97.47	104.00
3	C	46	G	O5'-P-OP2	6.53	118.53	110.70
1	A	4121	G	C4'-C3'-O3'	-6.53	95.70	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4283	G	O5'-P-OP1	-6.52	99.83	105.70
30	Y	118	LEU	CB-CG-CD2	6.52	122.09	111.00
1	A	1399	G	O5'-P-OP2	6.52	118.53	110.70
1	A	3705	G	O5'-P-OP1	-6.52	99.83	105.70
1	A	1633	G	P-O3'-C3'	6.52	127.53	119.70
1	A	4758	U	O5'-P-OP1	6.52	118.53	110.70
1	A	2672	C	O5'-P-OP2	-6.52	99.83	105.70
9	m	115	ARG	NE-CZ-NH1	6.52	123.56	120.30
1	A	2312	U	O5'-P-OP2	-6.51	99.84	105.70
1	A	3671	G	C2'-C3'-O3'	6.51	124.12	113.70
1	A	3882	C	O5'-P-OP1	-6.51	99.84	105.70
8	H	59	ARG	CG-CD-NE	-6.51	98.12	111.80
6	F	276	ASN	CB-CA-C	6.51	123.42	110.40
9	m	199	LYS	CB-CA-C	-6.51	97.38	110.40
1	A	1432	G	C1'-C2'-O2'	-6.51	91.08	110.60
1	A	2083	C	C1'-C2'-O2'	-6.50	91.10	110.60
4	D	227	ARG	NE-CZ-NH2	-6.50	117.05	120.30
1	A	1078	A	C2'-C3'-O3'	6.50	124.10	113.70
1	A	2653	C	O5'-C5'-C4'	-6.50	99.36	111.70
7	G	207	TYR	CB-CG-CD2	-6.50	117.10	121.00
16	t	56	LYS	CB-CA-C	-6.49	97.41	110.40
1	A	1846	G	O5'-P-OP2	-6.49	99.86	105.70
1	A	2042	A	C3'-C2'-O2'	-6.49	94.49	113.30
1	A	2828	U	O5'-P-OP1	-6.49	99.86	105.70
1	A	2650	G	C2'-C3'-O3'	-6.48	95.24	109.50
2	B	117	G	O5'-P-OP1	6.48	118.48	110.70
1	A	1358	G	O5'-C5'-C4'	-6.47	99.40	111.70
6	F	193	LYS	CB-CA-C	-6.47	97.46	110.40
1	A	423	G	O5'-P-OP2	-6.47	99.88	105.70
1	A	1387	A	O5'-P-OP2	-6.47	99.88	105.70
1	A	4513	A	O5'-P-OP2	6.46	118.46	110.70
1	A	4375	C	O5'-P-OP2	-6.46	99.89	105.70
1	A	5069	U	O5'-P-OP1	-6.46	99.89	105.70
3	C	94	G	C2'-C3'-O3'	-6.45	95.32	109.50
1	A	234	G	C3'-C2'-C1'	6.45	106.66	101.50
1	A	670	G	O5'-P-OP2	-6.44	99.90	105.70
1	A	2289	C	O5'-C5'-C4'	-6.44	99.46	111.70
1	A	3787	G	C4'-C3'-O3'	-6.44	95.87	109.40
1	A	1338	G	C4'-C3'-O3'	-6.44	95.88	109.40
1	A	4750	G	O4'-C1'-N9	6.43	113.35	108.20
6	F	190	ARG	N-CA-CB	-6.43	99.02	110.60
1	A	4690	G	C4'-C3'-O3'	-6.43	95.89	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	K	150	ARG	CD-NE-CZ	6.43	132.61	123.60
5	E	96	PRO	N-CD-CG	-6.43	93.56	103.20
1	A	2821	U	C1'-C2'-O2'	-6.42	91.32	110.60
1	A	1341	U	O5'-P-OP1	6.42	118.41	110.70
1	A	701	G	N9-C1'-C2'	-6.42	104.94	112.00
2	B	73	U	O5'-P-OP1	-6.42	99.93	105.70
24	S	59	ARG	C-N-CA	-6.41	108.83	122.30
1	A	2332	A	C1'-C2'-O2'	-6.41	91.36	110.60
1	A	1818	G	O4'-C1'-N9	6.41	113.33	108.20
1	A	3617	G	C4'-C3'-O3'	-6.41	95.94	109.40
1	A	3776	G	P-O5'-C5'	-6.41	110.65	120.90
1	A	234	G	C1'-C2'-O2'	6.40	129.81	110.60
1	A	2798	A	C5'-C4'-C3'	-6.40	105.76	116.00
1	A	4123	C	O5'-P-OP1	-6.40	99.94	105.70
1	A	4291	G	O5'-P-OP1	-6.40	99.94	105.70
16	t	189	ARG	CB-CG-CD	-6.40	94.96	111.60
1	A	2538	U	O5'-P-OP2	-6.40	99.94	105.70
1	A	4094	G	C4'-C3'-O3'	6.40	125.80	113.00
2	B	32	A	O5'-P-OP1	-6.40	99.94	105.70
3	C	94	G	C1'-C2'-O2'	-6.40	91.41	110.60
1	A	443	G	C1'-C2'-O2'	-6.39	91.41	110.60
1	A	4555	U	O5'-P-OP1	6.39	118.37	110.70
1	A	3882	C	O5'-P-OP2	6.39	118.37	110.70
1	A	4531	U	O4'-C1'-C2'	-6.39	99.41	105.80
1	A	1621	A	O5'-P-OP2	-6.39	99.95	105.70
1	A	1620	U	O4'-C4'-C3'	-6.38	97.62	104.00
9	m	96	ARG	NE-CZ-NH2	-6.38	117.11	120.30
1	A	1590	C	C4'-C3'-O3'	6.38	125.76	113.00
10	n	35	ARG	CG-CD-NE	-6.38	98.41	111.80
39	j	4	ARG	CG-CD-NE	-6.38	98.41	111.80
3	C	135	C	C5'-C4'-C3'	-6.37	105.81	116.00
1	A	2728	U	O5'-P-OP2	6.36	118.33	110.70
1	A	2811	G	N9-C1'-C2'	-6.36	105.00	112.00
1	A	4573	G	C2'-C3'-O3'	6.36	123.88	113.70
1	A	4754	G	O5'-P-OP1	6.36	118.33	110.70
24	S	94	THR	CA-CB-OG1	-6.36	95.65	109.00
34	c	84	LYS	CB-CA-C	-6.36	97.68	110.40
1	A	3824	A	O5'-P-OP1	-6.35	99.98	105.70
25	T	36	ARG	CB-CG-CD	-6.35	95.09	111.60
1	A	2383	C	O5'-P-OP1	-6.35	99.99	105.70
1	A	4533	A	OP1-P-OP2	-6.34	110.08	119.60
2	B	29	C	O5'-P-OP2	-6.34	99.99	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	60	G	O5'-P-OP2	6.34	118.31	110.70
1	A	4094	G	N9-C1'-C2'	-6.34	105.02	112.00
3	C	137	A	O5'-P-OP2	-6.34	99.99	105.70
40	k	100	ASN	CB-CA-C	-6.34	97.72	110.40
1	A	4974	C	O5'-P-OP1	-6.34	100.00	105.70
17	I	140	ARG	NE-CZ-NH1	-6.34	117.13	120.30
1	A	296	A	C2'-C3'-O3'	6.34	123.84	113.70
1	A	707	C	O5'-P-OP2	-6.34	100.00	105.70
1	A	4766	C	C5'-C4'-C3'	-6.34	105.86	116.00
35	d	20	ARG	CD-NE-CZ	-6.34	114.73	123.60
1	A	700	G	C2'-C3'-O3'	6.33	123.83	113.70
34	c	68	ARG	CG-CD-NE	-6.33	98.51	111.80
1	A	352	G	N9-C1'-C2'	-6.33	105.04	112.00
37	f	5	LYS	CB-CA-C	-6.33	97.74	110.40
1	A	2024	G	O5'-P-OP2	6.33	118.29	110.70
1	A	4559	A	O5'-P-OP1	-6.32	100.01	105.70
5	E	10	ARG	NE-CZ-NH2	6.32	123.46	120.30
22	N	130	ARG	CG-CD-NE	-6.32	98.53	111.80
39	j	47	MET	CG-SD-CE	-6.32	90.09	100.20
1	A	1965	G	N9-C1'-C2'	6.32	122.21	114.00
1	A	17	A	C5-C6-N6	6.31	128.75	123.70
32	a	88	ARG	CG-CD-NE	-6.31	98.54	111.80
1	A	35	U	N1-C1'-C2'	-6.31	105.06	112.00
1	A	2441	C	C2'-C3'-O3'	6.31	123.80	113.70
31	Z	56	ASN	CB-CA-C	-6.31	97.78	110.40
1	A	1584	G	O5'-P-OP2	6.31	118.27	110.70
1	A	3663	A	C2'-C3'-O3'	-6.31	95.62	109.50
3	C	58	G	O4'-C1'-C2'	-6.31	99.49	105.80
1	A	1647	U	O5'-P-OP1	-6.30	100.03	105.70
1	A	1670	G	N9-C1'-C2'	-6.30	105.06	112.00
1	A	4549	G	O5'-P-OP2	-6.30	100.03	105.70
1	A	325	U	C1'-C2'-O2'	-6.30	91.71	110.60
1	A	4379	A	C1'-C2'-O2'	6.30	129.49	110.60
2	B	25	G	O5'-P-OP2	-6.30	100.03	105.70
20	L	108	ARG	CG-CD-NE	-6.30	98.58	111.80
1	A	308	G	C1'-C2'-O2'	-6.29	91.72	110.60
11	o	169	ASN	CB-CA-C	6.29	122.99	110.40
3	C	100	U	C4'-C3'-O3'	-6.29	96.19	109.40
40	k	24	THR	OG1-CB-CG2	-6.28	95.55	110.00
1	A	70	A	C1'-C2'-O2'	-6.28	91.76	110.60
1	A	1622	U	C1'-C2'-O2'	-6.28	91.77	110.60
1	A	4518	A	O4'-C1'-N9	-6.28	103.18	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2667	C	O5'-P-OP2	-6.27	100.06	105.70
6	F	138	MET	CB-CA-C	-6.27	97.86	110.40
26	U	132	ARG	CB-CG-CD	6.27	127.89	111.60
1	A	1855	G	O5'-P-OP1	6.26	118.22	110.70
31	Z	34	TYR	CB-CG-CD1	-6.26	117.24	121.00
1	A	3901	A	O5'-P-OP1	-6.26	100.06	105.70
6	F	268	ARG	CB-CG-CD	-6.26	95.32	111.60
7	G	15	ARG	CB-CA-C	-6.26	97.88	110.40
1	A	249	C	P-O5'-C5'	-6.26	110.89	120.90
1	A	2426	U	C4'-C3'-O3'	-6.26	96.26	109.40
1	A	4985	U	O5'-P-OP2	-6.25	100.07	105.70
1	A	2600	A	O4'-C1'-C2'	-6.25	99.55	105.80
27	V	109	ARG	CG-CD-NE	-6.25	98.67	111.80
1	A	4358	U	O5'-P-OP1	6.25	118.20	110.70
23	R	101	ASP	CB-CA-C	-6.25	97.91	110.40
40	k	84	LYS	CB-CA-C	-6.24	97.92	110.40
35	d	63	ARG	CG-CD-NE	-6.24	98.70	111.80
1	A	982	U	O5'-P-OP2	-6.24	100.08	105.70
1	A	2257	C	O5'-P-OP1	-6.24	100.09	105.70
6	F	86	ARG	N-CA-CB	-6.24	99.37	110.60
17	I	61	ARG	CG-CD-NE	6.24	124.90	111.80
6	F	200	ARG	CB-CA-C	-6.24	97.93	110.40
1	A	2272	C	C4'-C3'-C2'	-6.23	96.37	102.60
1	A	360	A	O4'-C1'-C2'	-6.23	99.57	105.80
16	t	169	ARG	CG-CD-NE	-6.23	98.72	111.80
1	A	3660	C	O4'-C4'-C3'	-6.23	97.77	104.00
39	j	41	PHE	CZ-CE2-CD2	-6.23	112.63	120.10
5	E	306	ASP	CB-CA-C	-6.22	97.95	110.40
6	F	138	MET	CA-CB-CG	-6.22	102.72	113.30
7	G	39	GLN	N-CA-CB	-6.22	99.40	110.60
35	d	20	ARG	CG-CD-NE	-6.22	98.74	111.80
1	A	275	C	O4'-C4'-C3'	6.21	111.07	106.10
1	A	3663	A	O4'-C1'-N9	6.21	113.17	108.20
4	D	28	ARG	NE-CZ-NH2	-6.21	117.19	120.30
1	A	388	A	O5'-P-OP1	6.21	118.16	110.70
1	A	4297	G	C5'-C4'-C3'	-6.21	106.06	116.00
1	A	4758	U	O5'-P-OP2	-6.21	100.11	105.70
1	A	364	G	O4'-C1'-C2'	-6.21	99.59	105.80
5	E	109	HIS	CB-CA-C	-6.21	97.98	110.40
1	A	3901	A	O5'-P-OP2	6.21	118.15	110.70
1	A	1516	G	O5'-P-OP1	-6.20	100.12	105.70
6	F	60	HIS	CB-CA-C	6.20	122.79	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	914	U	C2'-C3'-O3'	6.19	123.61	113.70
1	A	2812	A	O5'-P-OP2	-6.19	100.13	105.70
1	A	1339	U	O5'-P-OP1	-6.19	100.13	105.70
4	D	3	ARG	NE-CZ-NH2	-6.19	117.21	120.30
42	Q	13	LYS	N-CA-CB	-6.19	99.46	110.60
1	A	2031	C	C2'-C3'-O3'	6.18	123.59	113.70
16	t	144	ARG	NE-CZ-NH2	-6.18	117.21	120.30
1	A	199	G	C4'-C3'-O3'	-6.18	96.42	109.40
1	A	275	C	C2'-C3'-O3'	6.18	123.59	113.70
1	A	4538	G	C2'-C3'-O3'	6.18	123.59	113.70
18	J	139	TYR	CB-CG-CD2	-6.18	117.29	121.00
42	Q	73	ARG	C-N-CA	-6.18	106.25	121.70
1	A	1575	A	C3'-C2'-O2'	-6.18	95.39	113.30
1	A	57	G	O5'-P-OP2	6.17	118.11	110.70
3	C	152	U	C1'-C2'-O2'	-6.17	92.08	110.60
1	A	4519	C	O5'-P-OP1	6.17	118.11	110.70
16	t	42	PRO	N-CD-CG	-6.17	93.94	103.20
3	C	134	G	O5'-P-OP2	-6.17	100.15	105.70
1	A	2324	C	O4'-C4'-C3'	-6.17	97.83	104.00
1	A	4647	G	O5'-P-OP2	-6.16	100.15	105.70
1	A	2814	C	C5'-C4'-O4'	-6.16	101.70	109.10
2	B	48	G	O5'-P-OP2	-6.16	100.16	105.70
1	A	3625	G	O3'-P-O5'	-6.16	92.30	104.00
14	r	82	ARG	CG-CD-NE	6.16	124.73	111.80
35	d	65	ARG	NE-CZ-NH1	6.16	123.38	120.30
1	A	957	G	O5'-P-OP2	6.15	118.08	110.70
1	A	4379	A	O5'-P-OP1	6.15	118.08	110.70
1	A	3847	C	O4'-C4'-C3'	-6.15	97.85	104.00
1	A	3915	U	O5'-P-OP2	-6.15	100.17	105.70
3	C	135	C	O5'-P-OP2	6.15	118.08	110.70
1	A	393	U	O5'-P-OP1	-6.14	100.17	105.70
21	M	95	ARG	CG-CD-NE	-6.14	98.90	111.80
1	A	4609	G	O5'-P-OP2	-6.14	100.17	105.70
1	A	4402	C	O5'-P-OP2	6.14	118.07	110.70
19	K	160	HIS	CA-CB-CG	-6.13	103.17	113.60
1	A	2302	C	O4'-C4'-C3'	-6.13	97.87	104.00
1	A	2305	U	O5'-P-OP1	-6.13	100.18	105.70
1	A	4594	U	O5'-P-OP2	-6.13	100.18	105.70
1	A	1865	G	N9-C1'-C2'	-6.13	105.26	112.00
18	J	34	GLN	CB-CA-C	-6.13	98.14	110.40
1	A	4534	G	O5'-P-OP2	-6.13	100.19	105.70
14	r	12	PRO	N-CA-CB	-6.13	95.86	102.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
42	Q	65	VAL	CA-CB-CG1	6.12	120.09	110.90
1	A	374	G	N9-C1'-C2'	-6.12	105.27	112.00
1	A	1366	G	N9-C1'-C2'	-6.12	105.27	112.00
1	A	4551	U	O4'-C4'-C3'	-6.12	97.89	104.00
2	B	117	G	O5'-P-OP2	-6.12	100.20	105.70
1	A	95	G	O5'-P-OP2	6.11	118.04	110.70
1	A	1307	A	C1'-C2'-O2'	-6.11	92.26	110.60
42	Q	123	LYS	CB-CA-C	-6.11	98.17	110.40
1	A	1950	U	C2'-C3'-O3'	6.11	123.47	113.70
1	A	1366	G	O4'-C1'-N9	6.11	113.08	108.20
1	A	4774	C	C4'-C3'-O3'	6.10	125.20	113.00
21	M	50	GLN	CB-CA-C	-6.10	98.20	110.40
1	A	1351	G	C1'-C2'-O2'	-6.10	92.30	110.60
1	A	1870	C	O5'-P-OP2	-6.10	100.21	105.70
1	A	2428	A	O5'-P-OP1	-6.10	100.21	105.70
39	j	61	MET	CA-CB-CG	-6.10	102.94	113.30
3	C	101	C	C5'-C4'-C3'	-6.10	106.25	116.00
1	A	1854	G	O4'-C1'-C2'	-6.09	99.71	105.80
1	A	4497	U	C3'-C2'-O2'	-6.09	95.63	113.30
5	E	10	ARG	CG-CD-NE	-6.09	99.01	111.80
3	C	122	G	N9-C1'-C2'	-6.09	105.31	112.00
16	t	73	ARG	NE-CZ-NH2	-6.09	117.26	120.30
40	k	48	THR	OG1-CB-CG2	-6.08	96.01	110.00
39	j	59	SER	C-N-CA	-6.08	106.50	121.70
1	A	4774	C	N1-C1'-C2'	-6.08	105.31	112.00
1	A	4205	A	N9-C1'-C2'	-6.08	105.32	112.00
1	A	1732	C	O5'-P-OP2	-6.08	100.23	105.70
1	A	3615	G	C4'-C3'-O3'	-6.08	96.64	109.40
1	A	32	G	O5'-P-OP1	-6.07	100.23	105.70
1	A	4507	A	O4'-C4'-C3'	-6.07	97.93	104.00
1	A	1343	A	O4'-C4'-C3'	-6.07	97.93	104.00
1	A	2064	G	C2'-C3'-O3'	6.07	123.41	113.70
19	K	115	ARG	CB-CA-C	6.07	122.54	110.40
1	A	3858	C	O5'-P-OP1	-6.07	100.24	105.70
1	A	4572	U	C2'-C3'-O3'	6.07	123.41	113.70
6	F	33	ARG	NE-CZ-NH2	-6.07	117.27	120.30
31	Z	46	ARG	CG-CD-NE	6.07	124.54	111.80
1	A	2397	G	O5'-P-OP1	-6.07	100.24	105.70
1	A	2722	G	C2'-C3'-O3'	6.07	123.41	113.70
30	Y	48	ARG	NE-CZ-NH2	-6.07	117.27	120.30
35	d	63	ARG	CB-CG-CD	-6.07	95.83	111.60
1	A	1378	C	N1-C1'-C2'	6.06	121.88	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	K	143	ARG	NE-CZ-NH2	-6.06	117.27	120.30
1	A	3860	A	O5'-P-OP1	-6.06	100.25	105.70
1	A	4136	G	C4'-C3'-O3'	6.06	125.12	113.00
6	F	60	HIS	CA-CB-CG	-6.06	103.30	113.60
26	U	65	ARG	NE-CZ-NH2	-6.05	117.27	120.30
1	A	4690	G	O5'-P-OP2	-6.05	100.25	105.70
6	F	190	ARG	NE-CZ-NH2	6.05	123.33	120.30
16	t	110	CYS	CB-CA-C	6.05	122.50	110.40
1	A	422	C	C2-N1-C1'	-6.05	112.15	118.80
1	A	4329	G	O5'-P-OP2	-6.05	100.26	105.70
1	A	275	C	C3'-C2'-C1'	6.04	106.34	101.50
1	A	2688	G	O5'-P-OP1	6.04	117.95	110.70
1	A	2506	G	N9-C1'-C2'	-6.04	105.36	112.00
6	F	201	ARG	CB-CG-CD	6.04	127.30	111.60
1	A	4329	G	O5'-P-OP1	6.04	117.94	110.70
6	F	350	ARG	CB-CG-CD	-6.04	95.90	111.60
1	A	2034	G	C2'-C3'-O3'	6.04	123.36	113.70
1	A	4272	G	C2'-C3'-O3'	-6.04	96.22	109.50
32	a	4	ARG	NE-CZ-NH2	-6.03	117.28	120.30
1	A	3710	G	O5'-P-OP1	-6.03	100.27	105.70
22	N	135	PRO	N-CD-CG	-6.03	94.15	103.20
1	A	18	C	O5'-P-OP1	6.03	117.93	110.70
1	A	4984	C	C2-N1-C1'	-6.03	112.17	118.80
27	V	10	HIS	N-CA-CB	-6.03	99.75	110.60
1	A	274	C	P-O5'-C5'	-6.02	111.27	120.90
1	A	1533	A	O4'-C1'-C2'	-6.02	99.78	105.80
23	R	74	TYR	CB-CG-CD1	-6.02	117.39	121.00
1	A	1393	G	N9-C1'-C2'	-6.02	105.38	112.00
1	A	4427	G	N9-C1'-C2'	-6.02	105.38	112.00
6	F	311	ARG	CG-CD-NE	-6.02	99.16	111.80
38	i	69	ARG	CB-CG-CD	-6.02	95.95	111.60
1	A	4247	G	P-O5'-C5'	-6.02	111.27	120.90
1	A	303	C	O4'-C4'-C3'	-6.01	97.99	104.00
1	A	2257	C	N1-C1'-C2'	6.01	121.82	114.00
4	D	195	CYS	CA-CB-SG	6.01	124.81	114.00
1	A	1575	A	O4'-C1'-N9	-6.00	103.40	108.20
1	A	3875	G	O5'-P-OP1	-6.00	100.30	105.70
2	B	7	G	O5'-C5'-C4'	-6.00	100.29	111.70
10	n	59	ARG	CG-CD-NE	-6.00	99.19	111.80
18	J	40	HIS	N-CA-CB	-6.00	99.80	110.60
6	F	312	ARG	CB-CA-C	-6.00	98.40	110.40
1	A	2850	A	O5'-P-OP2	6.00	117.89	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	F	262	GLU	CB-CA-C	-6.00	98.41	110.40
19	K	178	ARG	NE-CZ-NH1	-6.00	117.30	120.30
22	N	35	LYS	N-CA-CB	-6.00	99.81	110.60
16	t	124	ASP	C-N-CA	-5.99	106.72	121.70
1	A	434	A	C5'-C4'-C3'	-5.99	106.42	116.00
1	A	4114	C	C4'-C3'-O3'	5.98	124.97	113.00
1	A	4560	C	C5'-C4'-O4'	-5.98	101.92	109.10
1	A	1354	A	O4'-C1'-C2'	-5.98	99.82	105.80
1	A	33	A	O5'-P-OP1	5.98	117.87	110.70
1	A	49	U	O4'-C4'-C3'	-5.98	98.02	104.00
1	A	478	G	O5'-P-OP2	5.97	117.87	110.70
1	A	1794	A	C5'-C4'-C3'	-5.97	106.44	116.00
1	A	226	G	O5'-C5'-C4'	-5.97	100.35	111.70
5	E	291	TYR	CB-CA-C	-5.97	98.46	110.40
5	E	366	LYS	CB-CA-C	-5.97	98.46	110.40
1	A	3635	A	C2'-C3'-O3'	5.97	123.25	113.70
9	m	47	ARG	NE-CZ-NH2	5.97	123.28	120.30
1	A	3945	A	C2'-C3'-O3'	5.97	123.25	113.70
1	A	4121	G	N9-C1'-C2'	5.97	121.75	114.00
10	n	97	LYS	CB-CA-C	5.97	122.33	110.40
6	F	100	ARG	CD-NE-CZ	-5.96	115.25	123.60
24	S	101	PRO	CB-CA-C	-5.96	97.09	112.00
1	A	3924	C	O5'-P-OP1	-5.96	100.33	105.70
1	A	1604	G	C1'-C2'-O2'	-5.96	92.72	110.60
31	Z	75	THR	OG1-CB-CG2	-5.96	96.29	110.00
38	i	6	LYS	CB-CA-C	-5.96	98.48	110.40
1	A	3888	G	O5'-P-OP2	-5.96	100.34	105.70
3	C	94	G	O5'-P-OP1	5.95	117.84	110.70
24	S	11	ARG	CB-CG-CD	-5.95	96.12	111.60
38	i	8	ARG	CG-CD-NE	-5.95	99.30	111.80
1	A	4555	U	O5'-P-OP2	-5.95	100.35	105.70
18	J	131	ARG	NE-CZ-NH2	-5.95	117.33	120.30
38	i	43	ARG	CB-CA-C	5.94	122.29	110.40
1	A	4970	C	C1'-C2'-O2'	-5.94	92.77	110.60
1	A	989	U	C6-N1-C1'	5.94	129.52	121.20
1	A	361	C	C4'-C3'-O3'	-5.94	96.93	109.40
1	A	2798	A	O5'-P-OP2	-5.94	100.36	105.70
1	A	491	G	N9-C1'-C2'	-5.94	105.47	112.00
8	H	123	ARG	CG-CD-NE	-5.94	99.33	111.80
16	t	188	ARG	NE-CZ-NH2	-5.93	117.33	120.30
1	A	721	G	O5'-P-OP2	5.93	117.82	110.70
1	A	721	G	C5'-C4'-C3'	-5.93	106.51	116.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
13	q	130	PHE	CB-CA-C	-5.93	98.54	110.40
15	s	119	ARG	CB-CG-CD	-5.93	96.18	111.60
16	t	131	GLU	CA-CB-CG	-5.93	100.35	113.40
19	K	71	LYS	CB-CA-C	-5.93	98.54	110.40
23	R	139	ARG	CB-CA-C	-5.93	98.55	110.40
32	a	32	TYR	CB-CA-C	-5.93	98.55	110.40
1	A	4507	A	O5'-P-OP1	5.92	117.81	110.70
4	D	60	LYS	CB-CA-C	-5.92	98.55	110.40
1	A	2290	C	O5'-P-OP2	5.92	117.81	110.70
1	A	4118	U	O5'-P-OP2	5.92	117.80	110.70
1	A	417	G	O4'-C1'-C2'	-5.92	99.88	105.80
1	A	2055	G	N9-C1'-C2'	-5.92	105.49	112.00
38	i	77	CYS	CB-CA-C	5.92	122.23	110.40
1	A	3807	A	O5'-P-OP2	-5.92	100.38	105.70
1	A	428	G	O5'-P-OP2	-5.91	100.38	105.70
1	A	1173	G	C2'-C3'-O3'	5.91	123.16	113.70
1	A	4619	U	C2'-C3'-O3'	5.91	123.16	113.70
6	F	205	ARG	CB-CA-C	-5.91	98.58	110.40
16	t	162	ARG	NE-CZ-NH2	-5.91	117.34	120.30
1	A	3876	A	C4'-C3'-O3'	-5.91	96.99	109.40
9	m	99	ASN	CB-CA-C	-5.91	98.58	110.40
1	A	4242	U	O5'-P-OP1	-5.91	100.38	105.70
19	K	143	ARG	CG-CD-NE	-5.91	99.39	111.80
1	A	306	A	C5'-C4'-C3'	-5.91	106.55	116.00
1	A	1338	G	O4'-C1'-C2'	-5.91	99.89	105.80
1	A	4491	G	C5'-C4'-O4'	5.91	116.19	109.10
40	k	17	LEU	N-CA-CB	-5.90	98.59	110.40
19	K	55	ARG	CD-NE-CZ	-5.90	115.34	123.60
1	A	52	G	OP1-P-OP2	-5.90	110.75	119.60
6	F	14	LYS	CB-CA-C	5.90	122.20	110.40
24	S	26	ARG	CG-CD-NE	-5.89	99.42	111.80
1	A	664	G	C2'-C3'-O3'	5.89	123.12	113.70
1	A	673	C	C2'-C3'-O3'	5.89	123.12	113.70
1	A	4281	A	O4'-C1'-C2'	-5.89	99.91	105.80
5	E	110	ILE	CB-CA-C	5.89	123.37	111.60
19	K	37	ARG	NE-CZ-NH2	-5.89	117.36	120.30
1	A	24	G	P-O5'-C5'	-5.88	111.48	120.90
1	A	1633	G	C4'-C3'-O3'	5.88	124.76	113.00
1	A	3667	C	N1-C1'-C2'	-5.88	105.53	112.00
1	A	4331	G	O4'-C1'-C2'	-5.88	99.92	105.80
19	K	161	SER	N-CA-CB	-5.88	101.68	110.50
17	I	52	LEU	CB-CA-C	-5.88	99.03	110.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	511	C	O5'-P-OP1	-5.87	100.41	105.70
1	A	2051	C	C1'-C2'-O2'	-5.87	92.98	110.60
39	j	47	MET	CB-CG-SD	-5.87	94.78	112.40
1	A	344	A	C5'-C4'-O4'	5.87	116.14	109.10
1	A	4379	A	O5'-P-OP2	-5.87	100.42	105.70
1	A	2444	U	C1'-C2'-O2'	-5.87	93.01	110.60
1	A	3803	A	N9-C1'-C2'	-5.86	105.55	112.00
1	A	2838	G	C5'-C4'-C3'	-5.86	106.62	116.00
1	A	4206	C	C2'-C3'-O3'	5.86	123.08	113.70
16	t	204	ARG	NE-CZ-NH2	-5.86	117.37	120.30
1	A	69	A	N9-C1'-C2'	5.86	121.61	114.00
1	A	356	G	O5'-P-OP1	-5.86	100.43	105.70
8	H	270	TYR	CB-CG-CD2	-5.86	117.49	121.00
18	J	45	THR	CA-CB-OG1	-5.86	96.70	109.00
37	f	21	ARG	CD-NE-CZ	5.86	131.80	123.60
39	j	84	ARG	CG-CD-NE	-5.85	99.51	111.80
1	A	116	G	C5'-C4'-C3'	-5.85	106.64	116.00
1	A	1519	C	P-O5'-C5'	5.85	130.26	120.90
1	A	2279	A	O5'-P-OP1	5.85	117.72	110.70
1	A	2741	U	O5'-P-OP1	-5.85	100.44	105.70
1	A	1513	U	O4'-C1'-N1	-5.85	103.52	108.20
1	A	733	A	N9-C1'-C2'	-5.85	105.57	112.00
17	I	73	PHE	CB-CA-C	-5.85	98.71	110.40
1	A	654	C	C4'-C3'-O3'	5.84	124.69	113.00
1	A	2470	C	P-O3'-C3'	5.84	126.71	119.70
1	A	1430	C	C1'-C2'-O2'	-5.84	93.08	110.60
5	E	4	ARG	NE-CZ-NH2	-5.84	117.38	120.30
1	A	664	G	C5'-C4'-O4'	5.84	116.11	109.10
1	A	2688	G	O5'-P-OP2	-5.84	100.44	105.70
26	U	42	ARG	NE-CZ-NH2	5.84	123.22	120.30
35	d	63	ARG	NE-CZ-NH2	-5.84	117.38	120.30
1	A	115	C	C2'-C3'-O3'	5.83	123.04	113.70
1	A	4351	U	O4'-C4'-C3'	-5.83	98.17	104.00
1	A	1924	C	C3'-C2'-O2'	-5.83	96.39	113.30
1	A	2447	U	O5'-P-OP1	-5.83	100.45	105.70
1	A	3888	G	O5'-P-OP1	5.83	117.70	110.70
33	b	89	ARG	NE-CZ-NH2	-5.83	117.39	120.30
6	F	204	ARG	CB-CA-C	5.83	122.06	110.40
37	f	43	HIS	CA-CB-CG	-5.83	103.69	113.60
1	A	2652	G	N9-C1'-C2'	-5.83	105.59	112.00
1	A	4226	G	O4'-C4'-C3'	-5.83	98.17	104.00
1	A	4448	G	C4'-C3'-O3'	-5.83	97.17	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	5004	C	C1'-C2'-O2'	-5.83	93.12	110.60
16	t	67	ARG	CG-CD-NE	5.83	124.03	111.80
1	A	4583	C	O4'-C1'-N1	5.82	112.86	108.20
1	A	4885	U	C2'-C3'-O3'	5.82	123.02	113.70
1	A	233	U	C1'-O4'-C4'	-5.82	105.24	109.90
1	A	2440	U	C4'-C3'-O3'	-5.82	97.18	109.40
1	A	3775	A	C4'-C3'-O3'	-5.82	97.18	109.40
19	K	55	ARG	CB-CG-CD	5.82	126.73	111.60
1	A	1891	A	C4'-C3'-O3'	-5.81	97.19	109.40
1	A	2803	U	C2'-C3'-O3'	5.81	123.00	113.70
1	A	412	G	O4'-C1'-C2'	-5.81	99.99	105.80
1	A	1078	A	C4'-C3'-O3'	5.81	124.62	113.00
1	A	1424	G	O5'-P-OP1	-5.80	100.48	105.70
1	A	2320	G	C1'-C2'-O2'	-5.80	93.19	110.60
1	A	1864	G	O5'-P-OP2	5.80	117.66	110.70
1	A	1064	G	C8-N9-C1'	-5.80	119.46	127.00
2	B	16	A	C2'-C3'-O3'	5.80	122.98	113.70
1	A	1304	C	O5'-P-OP2	-5.80	100.48	105.70
1	A	2361	G	P-O3'-C3'	5.80	126.66	119.70
1	A	4085	A	O4'-C1'-C2'	-5.80	100.00	105.80
2	B	74	A	O5'-P-OP1	5.80	117.66	110.70
18	J	62	ARG	NE-CZ-NH1	-5.80	117.40	120.30
1	A	2348	G	O4'-C1'-C2'	-5.80	100.00	105.80
1	A	4717	A	O5'-P-OP1	-5.80	100.48	105.70
27	V	11	ASN	N-CA-CB	5.80	121.03	110.60
1	A	1883	G	C2'-C3'-O3'	-5.79	96.75	109.50
5	E	181	MET	CG-SD-CE	5.79	109.47	100.20
1	A	115	C	C4'-C3'-O3'	-5.79	97.25	109.40
1	A	3606	U	C5'-C4'-C3'	-5.79	106.74	116.00
1	A	1501	C	N1-C1'-C2'	5.78	121.52	114.00
6	F	268	ARG	CG-CD-NE	5.78	123.94	111.80
1	A	2292	C	O4'-C4'-C3'	-5.78	98.22	104.00
1	A	4501	U	N1-C1'-C2'	-5.78	105.64	112.00
3	C	136	U	O5'-P-OP1	-5.78	100.50	105.70
1	A	209	U	O5'-C5'-C4'	-5.78	100.72	111.70
1	A	4969	C	O5'-P-OP2	-5.78	100.50	105.70
4	D	226	ARG	CB-CA-C	-5.77	98.85	110.40
1	A	4674	C	C1'-C2'-O2'	-5.77	93.30	110.60
6	F	162	LYS	CB-CA-C	-5.77	98.87	110.40
9	m	233	ALA	N-CA-CB	-5.76	102.03	110.10
1	A	1332	C	O4'-C4'-C3'	-5.76	98.24	104.00
1	A	2455	G	O5'-P-OP1	-5.76	100.52	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
34	c	48	CYS	CB-CA-C	-5.76	98.88	110.40
1	A	3801	U	C4'-C3'-O3'	-5.76	97.31	109.40
1	A	4504	C	O5'-P-OP1	-5.76	100.52	105.70
1	A	246	G	C4-N9-C1'	-5.75	119.02	126.50
38	i	57	ARG	CG-CD-NE	5.75	123.88	111.80
1	A	3839	G	O5'-P-OP1	-5.75	100.52	105.70
9	m	247	MET	CA-CB-CG	-5.75	103.52	113.30
27	V	44	ARG	CG-CD-NE	-5.75	99.72	111.80
1	A	17	A	O4'-C1'-N9	5.75	112.80	108.20
1	A	2407	G	O5'-P-OP1	-5.75	100.53	105.70
1	A	1891	A	C1'-C2'-O2'	-5.75	93.36	110.60
1	A	3634	G	N9-C1'-C2'	-5.75	105.68	112.00
1	A	4632	U	C4'-C3'-O3'	-5.75	97.33	109.40
1	A	109	G	OP1-P-OP2	5.75	128.22	119.60
1	A	2444	U	N1-C1'-C2'	-5.75	105.68	112.00
1	A	196	C	N1-C1'-C2'	-5.74	105.68	112.00
3	C	31	G	C2'-C3'-O3'	5.74	122.89	113.70
16	t	96	ARG	CG-CD-NE	-5.74	99.74	111.80
1	A	2086	G	O5'-P-OP1	-5.74	100.53	105.70
3	C	37	A	C4'-C3'-O3'	-5.74	97.34	109.40
1	A	3797	C	N1-C1'-C2'	-5.74	105.69	112.00
1	A	4085	A	C4'-C3'-O3'	-5.73	97.36	109.40
8	H	119	GLU	CB-CA-C	-5.73	98.93	110.40
1	A	1655	C	O5'-P-OP2	5.73	117.58	110.70
1	A	2333	G	C4'-C3'-C2'	-5.73	96.87	102.60
1	A	3903	A	O4'-C4'-C3'	-5.72	98.28	104.00
16	t	188	ARG	NE-CZ-NH1	5.72	123.16	120.30
1	A	1591	U	O5'-P-OP1	-5.72	100.56	105.70
22	N	91	VAL	CG1-CB-CG2	-5.72	101.75	110.90
31	Z	19	ARG	NE-CZ-NH2	-5.71	117.44	120.30
3	C	18	U	O5'-P-OP1	-5.71	100.56	105.70
1	A	709	C	O5'-P-OP1	-5.71	100.56	105.70
1	A	1676	C	C1'-C2'-O2'	-5.71	93.47	110.60
1	A	3831	U	O5'-P-OP2	-5.71	100.56	105.70
1	A	383	A	O5'-P-OP2	-5.71	100.56	105.70
1	A	757	G	O4'-C1'-C2'	-5.71	100.09	105.80
1	A	2042	A	N9-C1'-C2'	5.71	121.42	114.00
1	A	406	C	C1'-C2'-O2'	-5.71	93.47	110.60
1	A	1721	G	P-O5'-C5'	5.71	130.03	120.90
4	D	86	GLN	N-CA-CB	-5.71	100.33	110.60
1	A	2378	G	O5'-P-OP2	-5.70	100.57	105.70
1	A	2796	G	N9-C1'-C2'	5.70	121.42	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	29	C	O5'-P-OP1	5.70	117.54	110.70
6	F	146	GLU	CB-CA-C	-5.70	99.00	110.40
1	A	3823	G	C5'-C4'-O4'	5.70	115.94	109.10
1	A	3946	G	O5'-P-OP2	-5.70	100.57	105.70
1	A	354	U	O5'-P-OP2	-5.69	100.58	105.70
1	A	85	G	C4'-C3'-O3'	-5.69	97.45	109.40
1	A	278	G	P-O3'-C3'	5.69	126.53	119.70
1	A	2731	C	O5'-P-OP2	5.69	117.53	110.70
1	A	3710	G	O5'-C5'-C4'	-5.69	100.89	111.70
25	T	85	TYR	CB-CA-C	-5.69	99.02	110.40
1	A	2065	G	C5'-C4'-C3'	-5.69	106.90	116.00
1	A	315	G	C4'-C3'-O3'	-5.69	97.46	109.40
1	A	4322	G	O4'-C4'-C3'	-5.69	98.31	104.00
3	C	22	U	O4'-C1'-C2'	-5.68	100.12	105.80
1	A	197	A	O5'-P-OP1	5.68	117.52	110.70
1	A	4188	U	C1'-C2'-O2'	-5.68	93.56	110.60
1	A	5058	A	P-O5'-C5'	-5.68	111.81	120.90
15	s	117	LYS	CB-CA-C	-5.68	99.04	110.40
34	c	56	ARG	CG-CD-NE	5.68	123.73	111.80
1	A	2735	G	C2'-C3'-O3'	5.68	122.78	113.70
1	A	3823	G	C3'-C2'-O2'	-5.68	96.83	113.30
1	A	3905	A	C1'-C2'-O2'	-5.68	93.57	110.60
1	A	4617	G	O5'-P-OP1	5.68	117.51	110.70
1	A	2518	G	C4'-C3'-O3'	-5.67	97.49	109.40
1	A	4305	G	C1'-O4'-C4'	-5.67	105.36	109.90
1	A	2299	G	C1'-C2'-O2'	-5.67	93.58	110.60
6	F	45	ARG	NE-CZ-NH1	-5.67	117.47	120.30
1	A	1637	A	O5'-P-OP1	-5.67	100.60	105.70
1	A	2088	A	O4'-C1'-C2'	-5.67	100.13	105.80
1	A	3773	U	C4'-C3'-O3'	5.67	124.33	113.00
1	A	4550	G	N9-C1'-C2'	-5.67	105.77	112.00
9	m	245	ARG	NE-CZ-NH2	-5.67	117.47	120.30
1	A	2511	A	O4'-C1'-C2'	-5.66	100.14	105.80
1	A	3662	A	O4'-C1'-C2'	-5.66	100.14	105.80
6	F	62	THR	C-N-CA	-5.66	107.55	121.70
1	A	2510	G	C4'-C3'-O3'	-5.66	97.52	109.40
1	A	4152	G	C2'-C3'-O3'	5.66	122.75	113.70
1	A	35	U	O5'-P-OP2	-5.66	100.61	105.70
1	A	3929	G	O5'-P-OP1	5.66	117.49	110.70
1	A	233	U	C2'-C3'-O3'	-5.65	97.06	109.50
1	A	961	G	C3'-C2'-C1'	-5.65	96.98	101.50
1	A	1337	A	C2'-C3'-O3'	5.65	122.75	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3806	G	O5'-P-OP2	5.65	117.48	110.70
1	A	4987	C	O5'-P-OP1	5.65	117.48	110.70
16	t	159	ARG	CG-CD-NE	-5.65	99.93	111.80
1	A	2291	G	O5'-P-OP1	5.65	117.48	110.70
16	t	195	ARG	NE-CZ-NH2	5.65	123.12	120.30
27	V	52	LYS	CB-CA-C	-5.65	99.10	110.40
1	A	4671	C	O4'-C1'-C2'	-5.65	100.15	105.80
5	E	325	GLU	CB-CA-C	5.65	121.69	110.40
1	A	713	C	O5'-P-OP1	-5.64	100.62	105.70
9	m	151	ASN	CB-CA-C	-5.64	99.11	110.40
1	A	107	G	C1'-C2'-O2'	-5.64	93.67	110.60
3	C	140	C	O5'-P-OP1	-5.64	100.62	105.70
5	E	74	GLU	CB-CA-C	-5.64	99.12	110.40
1	A	54	G	O4'-C4'-C3'	-5.64	98.36	104.00
1	A	289	C	O5'-P-OP2	-5.64	100.63	105.70
1	A	715	G	O5'-P-OP2	-5.63	100.63	105.70
1	A	4575	G	C2'-C3'-O3'	5.63	122.72	113.70
3	C	30	U	O5'-P-OP2	5.63	117.46	110.70
27	V	14	ARG	CG-CD-NE	5.63	123.63	111.80
1	A	4591	U	O5'-P-OP1	-5.63	100.63	105.70
1	A	5053	U	C5'-C4'-O4'	5.63	115.86	109.10
1	A	425	U	O5'-P-OP1	-5.63	100.64	105.70
1	A	1366	G	O4'-C1'-C2'	-5.63	100.17	105.80
1	A	2448	G	O4'-C4'-C3'	-5.63	98.37	104.00
41	P	85	ARG	CB-CG-CD	-5.63	96.97	111.60
13	q	136	ARG	CB-CA-C	5.62	121.64	110.40
34	c	59	GLU	CB-CA-C	5.62	121.64	110.40
1	A	2685	C	C2'-C3'-O3'	5.62	122.69	113.70
5	E	193	LYS	CD-CE-NZ	-5.62	98.78	111.70
1	A	685	C	O5'-P-OP2	-5.62	100.65	105.70
1	A	2347	A	C1'-C2'-O2'	-5.62	93.75	110.60
1	A	2742	G	O5'-P-OP1	-5.61	100.65	105.70
19	K	149	TYR	CB-CG-CD1	-5.61	117.63	121.00
20	L	30	ASN	CB-CA-C	5.61	121.63	110.40
1	A	4643	G	N9-C1'-C2'	-5.61	105.83	112.00
3	C	111	U	O5'-P-OP2	5.61	117.43	110.70
22	N	108	ARG	N-CA-CB	5.61	120.70	110.60
1	A	4213	A	C1'-C2'-O2'	-5.61	93.77	110.60
6	F	100	ARG	NE-CZ-NH2	-5.61	117.50	120.30
26	U	2	PRO	CB-CA-C	-5.61	97.98	112.00
1	A	33	A	C5'-C4'-C3'	-5.61	107.03	116.00
6	F	312	ARG	CG-CD-NE	5.61	123.57	111.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	Y	118	LEU	CB-CG-CD1	5.60	120.52	111.00
34	c	53	TYR	CB-CG-CD2	5.60	124.36	121.00
1	A	200	U	O4'-C1'-C2'	-5.60	100.20	105.80
20	L	97	ARG	CG-CD-NE	5.60	123.56	111.80
14	r	2	ALA	N-CA-CB	-5.60	102.26	110.10
1	A	2617	G	C5'-C4'-O4'	5.60	115.82	109.10
8	H	52	ARG	CG-CD-NE	-5.60	100.04	111.80
18	J	82	ARG	NE-CZ-NH2	-5.60	117.50	120.30
1	A	1852	U	O5'-P-OP1	-5.59	100.67	105.70
1	A	4356	G	O5'-P-OP2	-5.59	100.67	105.70
1	A	4531	U	O4'-C1'-N1	5.59	112.68	108.20
1	A	1342	A	O4'-C4'-C3'	-5.59	98.41	104.00
13	q	23	ASN	CB-CA-C	-5.59	99.22	110.40
16	t	127	TYR	CB-CA-C	-5.59	99.22	110.40
33	b	93	ARG	CB-CA-C	-5.59	99.22	110.40
1	A	1648	C	O4'-C4'-C3'	-5.59	98.41	104.00
1	A	4677	U	C1'-C2'-O2'	-5.59	93.83	110.60
1	A	4961	G	C2'-C3'-O3'	5.59	122.64	113.70
16	t	172	ARG	NE-CZ-NH2	-5.59	117.51	120.30
1	A	2087	C	O5'-P-OP2	-5.58	100.68	105.70
2	B	23	A	C2'-C3'-O3'	5.58	122.63	113.70
1	A	1881	C	C4'-C3'-O3'	-5.58	97.69	109.40
1	A	4120	U	O5'-P-OP1	-5.58	100.68	105.70
6	F	114	ARG	NE-CZ-NH2	-5.58	117.51	120.30
1	A	4360	U	C2'-C3'-O3'	5.58	122.62	113.70
1	A	4344	U	P-O5'-C5'	5.58	129.82	120.90
38	i	53	LYS	CB-CA-C	-5.58	99.25	110.40
1	A	207	G	O5'-P-OP1	-5.57	100.68	105.70
1	A	1818	G	N9-C1'-C2'	-5.57	105.87	112.00
1	A	2530	U	O5'-P-OP1	-5.57	100.69	105.70
1	A	4662	C	O4'-C4'-C3'	-5.57	98.43	104.00
4	D	9	ARG	NE-CZ-NH2	-5.57	117.52	120.30
1	A	2740	U	C1'-C2'-O2'	-5.56	93.91	110.60
1	A	3625	G	C2'-C3'-O3'	5.56	122.60	113.70
19	K	176	ARG	CG-CD-NE	-5.56	100.12	111.80
1	A	1836	G	O5'-P-OP1	-5.56	100.70	105.70
6	F	335	MET	CG-SD-CE	-5.56	91.31	100.20
1	A	4559	A	C1'-C2'-O2'	-5.56	93.92	110.60
1	A	3776	G	O4'-C1'-N9	5.55	112.64	108.20
22	N	102	ARG	CG-CD-NE	5.55	123.47	111.80
1	A	4325	A	C4'-C3'-O3'	-5.55	97.74	109.40
5	E	120	LYS	CB-CA-C	-5.55	99.29	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4316	G	O4'-C4'-C3'	-5.55	98.45	104.00
1	A	1530	G	O5'-P-OP2	5.55	117.36	110.70
1	A	2349	A	C4'-C3'-O3'	-5.55	97.75	109.40
5	E	116	ARG	CB-CG-CD	-5.55	97.17	111.60
1	A	277	G	O5'-P-OP2	5.55	117.36	110.70
1	A	57	G	O5'-P-OP1	-5.55	100.71	105.70
1	A	4298	A	O5'-P-OP2	5.55	117.36	110.70
5	E	376	HIS	N-CA-CB	5.54	120.58	110.60
1	A	1360	G	O5'-P-OP2	5.54	117.35	110.70
1	A	2342	G	O5'-P-OP2	-5.54	100.71	105.70
1	A	1367	C	C2'-C3'-O3'	5.54	122.57	113.70
14	r	13	HIS	CA-CB-CG	5.54	123.02	113.60
21	M	56	LYS	CB-CG-CD	-5.54	97.19	111.60
1	A	2593	C	O5'-P-OP1	5.54	117.34	110.70
1	A	1510	G	C1'-C2'-O2'	-5.54	93.99	110.60
1	A	2854	G	N9-C1'-C2'	-5.54	105.91	112.00
1	A	4372	U	C2'-C3'-O3'	5.54	122.56	113.70
1	A	1696	C	O5'-P-OP2	-5.53	100.72	105.70
1	A	3757	G	C4'-C3'-O3'	5.53	124.06	113.00
1	A	4189	U	C2'-C3'-O3'	-5.53	97.33	109.50
39	j	39	CYS	C-N-CA	5.53	135.53	121.70
1	A	190	G	C5'-C4'-O4'	5.53	115.73	109.10
1	A	1880	G	O5'-P-OP1	-5.53	100.72	105.70
1	A	2731	C	O5'-P-OP1	-5.53	100.72	105.70
1	A	2617	G	C2'-C3'-O3'	5.53	122.54	113.70
1	A	2754	G	N9-C1'-C2'	-5.53	105.92	112.00
33	b	108	GLN	CB-CA-C	5.52	121.45	110.40
1	A	1922	G	O4'-C1'-N9	-5.52	103.78	108.20
10	n	210	GLU	CB-CA-C	-5.52	99.35	110.40
1	A	4356	G	O4'-C4'-C3'	-5.52	98.48	104.00
7	G	21	ARG	NE-CZ-NH1	-5.52	117.54	120.30
35	d	76	HIS	C-N-CA	-5.52	110.71	122.30
1	A	4635	A	O5'-P-OP1	5.52	117.32	110.70
22	N	30	TYR	CB-CA-C	-5.52	99.37	110.40
32	a	4	ARG	NE-CZ-NH1	5.52	123.06	120.30
3	C	137	A	P-O5'-C5'	-5.51	112.08	120.90
30	Y	39	ARG	CG-CD-NE	-5.51	100.22	111.80
42	Q	85	ARG	NE-CZ-NH2	-5.51	117.54	120.30
3	C	93	C	C2'-C3'-O3'	5.51	122.52	113.70
1	A	1802	A	O5'-P-OP2	-5.51	100.74	105.70
1	A	2510	G	C1'-C2'-O2'	-5.51	94.08	110.60
1	A	676	C	O5'-P-OP1	-5.50	100.75	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1645	C	O4'-C4'-C3'	-5.50	98.50	104.00
1	A	2416	G	N9-C1'-C2'	-5.50	105.95	112.00
1	A	2529	A	C5'-C4'-O4'	5.50	115.70	109.10
7	G	181	PRO	CB-CA-C	-5.50	98.25	112.00
1	A	412	G	C5'-C4'-O4'	-5.50	102.50	109.10
1	A	4233	A	C2'-C3'-O3'	-5.50	97.41	109.50
1	A	4430	G	P-O5'-C5'	5.50	129.70	120.90
1	A	2473	A	C3'-C2'-C1'	5.50	105.90	101.50
1	A	3694	U	O4'-C4'-C3'	-5.50	98.50	104.00
1	A	1303	A	C2'-C3'-O3'	5.49	122.49	113.70
1	A	1941	A	C5'-C4'-C3'	-5.49	107.21	116.00
1	A	3938	G	P-O5'-C5'	-5.49	112.11	120.90
1	A	4455	G	C1'-C2'-O2'	-5.49	94.12	110.60
30	Y	65	LYS	CB-CA-C	-5.49	99.42	110.40
1	A	1859	C	C6-N1-C1'	5.49	127.39	120.80
1	A	4984	C	O4'-C4'-C3'	-5.49	98.51	104.00
39	j	50	ARG	CB-CG-CD	-5.49	97.32	111.60
1	A	2781	G	C2'-C3'-O3'	-5.49	97.42	109.50
1	A	4627	U	C1'-C2'-O2'	-5.49	94.13	110.60
34	c	29	ARG	CD-NE-CZ	5.49	131.28	123.60
39	j	39	CYS	N-CA-CB	5.49	120.48	110.60
1	A	2298	U	O4'-C4'-C3'	-5.49	98.51	104.00
28	W	62	TYR	CB-CG-CD1	-5.48	117.71	121.00
1	A	39	A	C5'-C4'-O4'	-5.48	102.52	109.10
1	A	2383	C	O5'-P-OP2	5.48	117.28	110.70
1	A	4205	A	O5'-P-OP2	-5.48	100.77	105.70
1	A	3651	A	C1'-C2'-O2'	-5.48	94.17	110.60
1	A	4595	G	O5'-P-OP1	5.48	117.27	110.70
1	A	4211	C	C3'-C2'-O2'	-5.48	97.42	113.30
1	A	935	A	C1'-O4'-C4'	-5.47	105.52	109.90
3	C	111	U	O5'-P-OP1	-5.47	100.77	105.70
10	n	113	ARG	CG-CD-NE	-5.47	100.31	111.80
8	H	46	ARG	CG-CD-NE	-5.47	100.31	111.80
1	A	10	A	C5'-C4'-O4'	5.47	115.66	109.10
1	A	1303	A	N9-C1'-C2'	5.47	121.11	114.00
1	A	3678	G	O4'-C1'-C2'	-5.47	100.33	105.80
1	A	1858	A	C8-N9-C1'	-5.47	117.86	127.70
1	A	339	C	O5'-P-OP1	-5.47	100.78	105.70
1	A	340	C	O5'-P-OP2	5.47	117.26	110.70
1	A	363	A	C5'-C4'-O4'	-5.47	102.54	109.10
14	r	121	ARG	CD-NE-CZ	5.47	131.25	123.60
17	I	178	ARG	CG-CD-NE	5.47	123.28	111.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	102	G	P-O5'-C5'	5.46	129.64	120.90
1	A	383	A	O5'-P-OP1	-5.46	100.78	105.70
1	A	1859	C	C5-C4-N4	5.46	124.03	120.20
1	A	4759	C	O5'-P-OP2	-5.46	100.78	105.70
35	d	44	LYS	N-CA-CB	-5.46	100.77	110.60
34	c	66	ASP	CB-CA-C	-5.46	99.47	110.40
1	A	4703	U	C2'-C3'-O3'	5.46	122.44	113.70
1	A	3686	G	N9-C1'-C2'	-5.46	106.00	112.00
19	K	150	ARG	NE-CZ-NH2	-5.46	117.57	120.30
1	A	2897	G	O5'-P-OP2	5.46	117.25	110.70
6	F	345	ARG	NE-CZ-NH1	-5.45	117.57	120.30
31	Z	66	LYS	CB-CA-C	-5.45	99.49	110.40
17	I	133	ARG	NE-CZ-NH2	-5.45	117.58	120.30
1	A	1950	U	C1'-C2'-O2'	-5.45	94.26	110.60
6	F	100	ARG	N-CA-CB	-5.45	100.79	110.60
9	m	70	ARG	CG-CD-NE	-5.45	100.36	111.80
15	s	121	ARG	CG-CD-NE	5.45	123.24	111.80
1	A	960	A	C4'-C3'-O3'	-5.45	97.96	109.40
9	m	193	GLU	CB-CA-C	-5.45	99.50	110.40
23	R	129	ARG	CG-CD-NE	-5.45	100.36	111.80
1	A	149	A	O5'-P-OP1	-5.44	100.80	105.70
1	A	3626	G	O5'-C5'-C4'	-5.44	101.36	111.70
19	K	37	ARG	NE-CZ-NH1	5.44	123.02	120.30
1	A	1607	C	P-O5'-C5'	5.44	129.60	120.90
1	A	4278	C	C3'-C2'-O2'	-5.44	97.52	113.30
1	A	4280	A	C1'-C2'-O2'	-5.44	94.28	110.60
6	F	239	LYS	CB-CG-CD	5.44	125.75	111.60
3	C	50	C	C4'-C3'-O3'	-5.44	97.98	109.40
5	E	239	LYS	CB-CA-C	-5.44	99.53	110.40
1	A	1846	G	O5'-P-OP1	5.43	117.22	110.70
1	A	2378	G	N9-C1'-C2'	-5.43	106.02	112.00
42	Q	22	VAL	CA-C-N	5.43	127.07	116.20
1	A	2505	C	C4'-C3'-O3'	5.43	123.87	113.00
9	m	124	LYS	N-CA-CB	-5.43	100.82	110.60
10	n	52	THR	CA-CB-OG1	-5.43	97.59	109.00
17	I	137	TYR	CB-CA-C	-5.43	99.54	110.40
1	A	274	C	C2'-C3'-O3'	5.43	122.39	113.70
1	A	1697	G	C4-N9-C1'	-5.43	119.44	126.50
1	A	2082	G	O5'-P-OP1	-5.43	100.81	105.70
14	r	31	ARG	CB-CG-CD	5.43	125.72	111.60
1	A	4876	U	O5'-P-OP2	-5.43	100.81	105.70
1	A	4966	A	P-O5'-C5'	-5.43	112.22	120.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2333	G	C5'-C4'-O4'	5.43	115.61	109.10
1	A	2753	G	O4'-C4'-C3'	-5.43	98.57	104.00
1	A	4336	A	C4-N9-C1'	5.43	136.07	126.30
1	A	2526	C	C1'-C2'-O2'	-5.42	94.33	110.60
1	A	4981	G	C8-N9-C1'	-5.42	119.95	127.00
1	A	1494	U	C5'-C4'-C3'	-5.42	107.33	116.00
25	T	132	GLN	CB-CA-C	-5.42	99.56	110.40
6	F	114	ARG	CB-CA-C	-5.42	99.57	110.40
1	A	1603	C	O5'-P-OP2	5.41	117.20	110.70
1	A	277	G	OP1-P-OP2	5.41	127.72	119.60
1	A	2652	G	C1'-O4'-C4'	-5.41	105.57	109.90
1	A	2833	A	O5'-P-OP1	5.41	117.19	110.70
32	a	88	ARG	CB-CA-C	-5.41	99.58	110.40
1	A	2041	A	C5'-C4'-O4'	5.41	115.59	109.10
1	A	438	G	O4'-C4'-C3'	-5.41	98.59	104.00
11	o	168	LYS	CB-CA-C	5.41	121.21	110.40
1	A	2842	G	P-O5'-C5'	-5.40	112.25	120.90
9	m	139	TYR	CB-CG-CD2	-5.40	117.76	121.00
15	s	35	ARG	CG-CD-NE	5.40	123.14	111.80
23	R	55	ARG	CG-CD-NE	5.40	123.15	111.80
1	A	2686	G	C5'-C4'-O4'	5.40	115.58	109.10
26	U	67	GLN	CB-CA-C	-5.40	99.60	110.40
1	A	4305	G	O5'-P-OP2	-5.40	100.84	105.70
1	A	4503	A	O5'-P-OP2	-5.40	100.84	105.70
1	A	2330	G	O5'-P-OP1	-5.39	100.84	105.70
1	A	2400	G	N9-C1'-C2'	-5.39	106.07	112.00
1	A	2803	U	C5'-C4'-C3'	-5.39	107.37	116.00
31	Z	25	THR	CB-CA-C	-5.39	97.04	111.60
1	A	1456	C	O4'-C4'-C3'	-5.39	98.61	104.00
1	A	3709	U	C2'-C3'-O3'	5.39	122.33	113.70
19	K	38	ARG	NE-CZ-NH1	5.39	123.00	120.30
18	J	82	ARG	CG-CD-NE	-5.39	100.48	111.80
1	A	2454	U	O5'-P-OP1	5.39	117.17	110.70
3	C	62	A	O5'-C5'-C4'	-5.39	101.46	111.70
1	A	2360	A	C4'-C3'-O3'	-5.39	98.09	109.40
1	A	2510	G	N9-C1'-C2'	-5.39	106.07	112.00
1	A	4947	U	O5'-P-OP1	-5.39	100.85	105.70
4	D	116	LEU	N-CA-CB	-5.39	99.63	110.40
40	k	29	PRO	CB-CA-C	-5.39	98.53	112.00
1	A	1472	C	C5'-C4'-O4'	-5.38	102.64	109.10
6	F	239	LYS	CD-CE-NZ	5.38	124.08	111.70
1	A	328	A	O5'-P-OP1	5.38	117.16	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	E	182	GLU	CB-CA-C	-5.38	99.64	110.40
1	A	4385	A	O4'-C1'-N9	-5.38	103.90	108.20
1	A	2598	A	O5'-P-OP1	5.38	117.15	110.70
1	A	4546	A	C1'-C2'-O2'	-5.38	94.47	110.60
38	i	87	ARG	CB-CA-C	-5.38	99.64	110.40
1	A	1318	C	O4'-C1'-N1	5.38	112.50	108.20
1	A	4225	G	O4'-C1'-N9	5.38	112.50	108.20
35	d	75	ARG	CG-CD-NE	-5.38	100.51	111.80
1	A	279	A	O4'-C1'-C2'	-5.37	100.43	105.80
1	A	2047	A	C4'-C3'-O3'	-5.37	98.12	109.40
1	A	3614	G	C4'-C3'-O3'	5.37	123.75	113.00
43	u	6	CYS	CA-CB-SG	5.37	123.67	114.00
1	A	17	A	C3'-C2'-O2'	-5.37	97.72	113.30
33	b	20	GLN	CB-CA-C	-5.37	99.66	110.40
3	C	60	G	O4'-C1'-C2'	-5.37	100.43	105.80
1	A	208	A	C1'-C2'-O2'	-5.37	94.49	110.60
1	A	1776	A	C8-N9-C1'	-5.37	118.04	127.70
1	A	2323	C	O4'-C4'-C3'	-5.37	98.63	104.00
1	A	52	G	O5'-P-OP2	5.37	117.14	110.70
1	A	394	G	N9-C1'-C2'	-5.37	106.10	112.00
1	A	2536	A	O5'-P-OP2	5.37	117.14	110.70
1	A	2600	A	O4'-C1'-N9	-5.37	103.91	108.20
10	n	71	TYR	CB-CA-C	-5.37	99.67	110.40
35	d	55	ARG	NE-CZ-NH2	-5.37	117.62	120.30
1	A	1915	C	O4'-C1'-N1	-5.37	103.91	108.20
10	n	62	ARG	CB-CA-C	-5.37	99.67	110.40
1	A	1333	A	O4'-C4'-C3'	-5.36	98.64	104.00
1	A	1878	G	C4'-C3'-C2'	-5.36	97.24	102.60
1	A	4394	A	O5'-P-OP1	-5.36	100.87	105.70
30	Y	5	ARG	CB-CA-C	-5.36	99.67	110.40
14	r	121	ARG	NE-CZ-NH2	-5.36	117.62	120.30
16	t	203	TYR	CB-CG-CD1	-5.36	117.78	121.00
23	R	143	ASP	CB-CA-C	-5.36	99.68	110.40
1	A	1400	G	O5'-P-OP2	5.36	117.13	110.70
2	B	51	G	O5'-P-OP2	5.36	117.13	110.70
1	A	194	C	O5'-P-OP2	-5.36	100.88	105.70
1	A	4225	G	C5'-C4'-C3'	-5.36	107.43	116.00
1	A	4577	U	N1-C1'-C2'	-5.36	106.11	112.00
1	A	4888	U	C2'-C3'-O3'	5.36	122.27	113.70
1	A	189	G	C4-N9-C1'	-5.36	119.54	126.50
1	A	4610	A	O5'-P-OP1	5.36	117.13	110.70
1	A	2841	G	O4'-C4'-C3'	-5.35	98.65	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	S	62	TYR	CB-CA-C	-5.35	99.69	110.40
1	A	1342	A	O5'-P-OP2	5.35	117.12	110.70
11	o	100	PRO	CB-CA-C	-5.35	98.63	112.00
1	A	269	G	O5'-P-OP1	5.35	117.12	110.70
14	r	116	ARG	NE-CZ-NH2	-5.35	117.63	120.30
1	A	2439	G	O5'-P-OP2	-5.35	100.89	105.70
1	A	1430	C	O5'-P-OP1	-5.34	100.89	105.70
1	A	3599	A	O5'-P-OP2	5.34	117.11	110.70
8	H	116	TYR	CB-CG-CD2	-5.34	117.79	121.00
16	t	68	ARG	N-CA-CB	-5.34	100.98	110.60
22	N	45	MET	CB-CG-SD	-5.34	96.37	112.40
31	Z	107	PRO	CB-CA-C	-5.34	98.64	112.00
7	G	145	TYR	CB-CG-CD1	-5.34	117.79	121.00
1	A	1516	G	O5'-P-OP2	5.34	117.11	110.70
1	A	2068	C	C2'-C3'-O3'	-5.34	97.75	109.50
1	A	4289	U	O5'-P-OP1	-5.34	100.89	105.70
1	A	4720	C	C5'-C4'-O4'	-5.34	102.69	109.10
1	A	1656	U	C4'-C3'-C2'	-5.34	97.26	102.60
1	A	4527	G	P-O3'-C3'	5.34	126.10	119.70
22	N	41	ASP	CB-CA-C	-5.34	99.73	110.40
1	A	1306	C	C1'-C2'-O2'	-5.33	94.59	110.60
1	A	2350	U	C3'-C2'-O2'	-5.33	97.83	113.30
1	A	2434	G	O4'-C1'-N9	-5.33	103.93	108.20
1	A	1776	A	C4-N9-C1'	5.33	135.90	126.30
1	A	2599	G	O4'-C1'-N9	-5.33	103.94	108.20
1	A	2746	A	C4'-C3'-O3'	-5.33	98.20	109.40
1	A	151	G	O5'-P-OP2	-5.33	100.91	105.70
1	A	4388	A	O4'-C4'-C3'	-5.33	98.67	104.00
1	A	5002	U	C4'-C3'-O3'	-5.33	98.21	109.40
6	F	208	CYS	N-CA-CB	-5.33	101.01	110.60
26	U	121	PRO	N-CD-CG	-5.33	95.21	103.20
6	F	78	ARG	CD-NE-CZ	5.33	131.06	123.60
9	m	94	ARG	CG-CD-NE	-5.33	100.61	111.80
17	I	93	LYS	CB-CA-C	-5.33	99.75	110.40
1	A	431	G	O4'-C1'-N9	-5.32	103.94	108.20
1	A	1359	G	C4-N9-C1'	5.32	133.42	126.50
37	f	21	ARG	CB-CG-CD	-5.32	97.76	111.60
1	A	1614	C	O5'-P-OP1	-5.32	100.91	105.70
19	K	164	LYS	N-CA-CB	-5.32	101.02	110.60
1	A	195	C	C5'-C4'-C3'	-5.32	107.49	116.00
1	A	2857	A	C1'-C2'-O2'	-5.32	94.64	110.60
27	V	18	ARG	NE-CZ-NH2	5.32	122.96	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4640	C	O5'-P-OP2	5.32	117.08	110.70
1	A	4996	C	C5'-C4'-C3'	-5.32	107.49	116.00
6	F	200	ARG	NE-CZ-NH1	5.32	122.96	120.30
1	A	4357	G	C1'-C2'-O2'	-5.32	94.64	110.60
1	A	4563	U	O5'-P-OP1	-5.32	100.92	105.70
19	K	110	ARG	NE-CZ-NH2	-5.32	117.64	120.30
29	X	78	ARG	CG-CD-NE	-5.32	100.63	111.80
1	A	3849	A	OP1-P-OP2	-5.31	111.63	119.60
1	A	4290	U	C4'-C3'-O3'	-5.31	98.25	109.40
1	A	200	U	O5'-P-OP1	5.31	117.07	110.70
1	A	1393	G	C1'-C2'-O2'	-5.31	94.67	110.60
1	A	4633	G	O5'-C5'-C4'	-5.31	101.61	111.70
1	A	189	G	O4'-C1'-N9	5.31	112.45	108.20
1	A	416	U	O5'-P-OP1	-5.31	100.92	105.70
1	A	725	G	O5'-P-OP1	-5.30	100.93	105.70
3	C	152	U	C4'-C3'-O3'	-5.30	98.26	109.40
6	F	62	THR	OG1-CB-CG2	-5.30	97.80	110.00
6	F	145	GLU	CB-CG-CD	5.30	128.52	114.20
1	A	2360	A	O4'-C1'-C2'	-5.30	100.50	105.80
9	m	94	ARG	NE-CZ-NH1	-5.30	117.65	120.30
42	Q	90	ARG	CG-CD-NE	-5.30	100.67	111.80
21	M	116	ARG	CG-CD-NE	-5.30	100.67	111.80
1	A	4723	A	C1'-C2'-O2'	-5.30	94.71	110.60
1	A	1373	A	O4'-C4'-C3'	-5.29	98.70	104.00
1	A	1654	G	O5'-P-OP1	5.29	117.05	110.70
21	M	31	ARG	CB-CA-C	-5.29	99.81	110.40
1	A	1918	U	O5'-P-OP1	5.29	117.05	110.70
1	A	1385	G	N9-C1'-C2'	-5.29	106.18	112.00
3	C	121	G	C4'-C3'-O3'	5.29	123.58	113.00
22	N	81	LYS	C-N-CA	-5.29	111.19	122.30
29	X	90	ARG	CG-CD-NE	-5.29	100.69	111.80
30	Y	23	HIS	N-CA-CB	-5.29	101.08	110.60
1	A	2064	G	C4'-C3'-C2'	-5.29	97.31	102.60
40	k	52	GLU	CB-CA-C	-5.29	99.83	110.40
1	A	4337	C	O5'-P-OP2	5.28	117.04	110.70
1	A	4527	G	O4'-C1'-C2'	-5.28	100.52	105.80
1	A	4469	U	N1-C1'-C2'	-5.28	106.19	112.00
1	A	1172	C	C2'-C3'-O3'	5.28	122.15	113.70
17	I	117	ARG	NE-CZ-NH2	-5.28	117.66	120.30
25	T	21	ARG	CG-CD-NE	-5.28	100.71	111.80
1	A	1620	U	C4'-C3'-C2'	-5.28	97.32	102.60
6	F	138	MET	CB-CG-SD	-5.28	96.57	112.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	E	19	ARG	NE-CZ-NH2	-5.27	117.66	120.30
1	A	161	G	C1'-C2'-O2'	5.27	126.42	110.60
1	A	1468	C	C1'-C2'-O2'	-5.27	94.78	110.60
1	A	2735	G	C5'-C4'-C3'	-5.27	107.57	116.00
1	A	2802	C	C4'-C3'-O3'	-5.27	98.33	109.40
16	t	143	ARG	NE-CZ-NH1	5.27	122.93	120.30
1	A	4336	A	C8-N9-C1'	-5.27	118.22	127.70
35	d	6	SER	CB-CA-C	-5.27	100.09	110.10
28	W	36	LYS	CB-CA-C	-5.27	99.87	110.40
1	A	1596	U	P-O3'-C3'	5.26	126.02	119.70
1	A	4305	G	O4'-C1'-N9	5.26	112.41	108.20
19	K	75	ARG	CG-CD-NE	-5.26	100.74	111.80
29	X	51	LYS	CB-CA-C	5.26	120.92	110.40
37	f	11	ARG	CG-CD-NE	-5.26	100.75	111.80
1	A	2858	A	N9-C1'-C2'	-5.26	106.21	112.00
1	A	1897	A	O5'-C5'-C4'	-5.26	101.71	111.70
1	A	2451	A	O4'-C4'-C3'	-5.26	98.74	104.00
1	A	2599	G	O4'-C4'-C3'	-5.26	98.74	104.00
6	F	319	LEU	CB-CG-CD2	5.26	119.94	111.00
1	A	189	G	C8-N9-C1'	5.25	133.83	127.00
1	A	3698	G	C1'-C2'-O2'	-5.25	94.84	110.60
1	A	3912	U	O5'-P-OP1	-5.25	100.97	105.70
30	Y	27	ARG	NE-CZ-NH1	5.25	122.93	120.30
35	d	45	ARG	NE-CZ-NH1	-5.25	117.67	120.30
8	H	187	ARG	CB-CA-C	-5.25	99.90	110.40
1	A	1858	A	C4-N9-C1'	5.25	135.75	126.30
6	F	304	ALA	CB-CA-C	-5.25	102.22	110.10
32	a	9	ARG	NE-CZ-NH1	-5.25	117.67	120.30
1	A	1590	C	C2'-C3'-O3'	-5.25	97.96	109.50
1	A	4371	G	N9-C1'-C2'	5.25	120.82	114.00
1	A	4984	C	C6-N1-C1'	5.25	127.10	120.80
21	M	166	ARG	NE-CZ-NH2	5.25	122.92	120.30
1	A	1064	G	C4-N9-C1'	5.24	133.31	126.50
1	A	1321	G	C1'-C2'-O2'	-5.24	94.88	110.60
1	A	2745	A	C1'-C2'-O2'	-5.24	94.88	110.60
1	A	4210	U	C1'-C2'-O2'	-5.24	94.88	110.60
1	A	4583	C	C1'-C2'-O2'	5.24	126.32	110.60
3	C	60	G	C1'-C2'-O2'	-5.24	94.88	110.60
1	A	4333	C	O4'-C4'-C3'	-5.24	98.76	104.00
3	C	71	A	C1'-C2'-O2'	-5.24	94.89	110.60
1	A	35	U	O4'-C4'-C3'	-5.24	98.76	104.00
4	D	28	ARG	CB-CG-CD	-5.24	97.98	111.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2055	G	C2'-C3'-O3'	-5.24	97.98	109.50
1	A	481	G	O4'-C4'-C3'	-5.23	98.77	104.00
31	Z	55	ASN	CB-CA-C	-5.23	99.94	110.40
5	E	358	ARG	CG-CD-NE	-5.23	100.82	111.80
17	I	66	PRO	N-CD-CG	-5.23	95.36	103.20
16	t	204	ARG	NE-CZ-NH1	5.23	122.91	120.30
1	A	2502	G	O5'-P-OP1	5.23	116.97	110.70
1	A	1359	G	C8-N9-C1'	-5.22	120.21	127.00
1	A	3858	C	C4'-C3'-C2'	-5.22	97.38	102.60
1	A	1735	U	N1-C1'-C2'	-5.22	106.25	112.00
1	A	2275	G	O5'-P-OP1	-5.22	101.00	105.70
1	A	2732	G	O5'-P-OP2	-5.22	101.00	105.70
1	A	4343	U	C1'-C2'-O2'	-5.22	94.94	110.60
2	B	75	G	O4'-C1'-C2'	-5.22	100.58	105.80
21	M	62	VAL	CA-CB-CG2	5.22	118.73	110.90
35	d	68	LYS	CB-CA-C	5.22	120.84	110.40
1	A	5	A	O4'-C4'-C3'	-5.22	98.78	104.00
1	A	1887	G	C1'-C2'-O2'	-5.22	94.94	110.60
1	A	2471	G	N9-C1'-C2'	5.22	120.78	114.00
1	A	102	G	O4'-C4'-C3'	-5.22	98.78	104.00
1	A	346	G	O5'-P-OP1	-5.22	101.00	105.70
1	A	955	G	C3'-C2'-C1'	5.22	105.67	101.50
1	A	3752	C	C4'-C3'-O3'	-5.22	98.44	109.40
17	I	101	ARG	CG-CD-NE	-5.22	100.84	111.80
1	A	352	G	O4'-C1'-C2'	-5.21	100.58	105.80
16	t	83	LYS	CB-CA-C	5.21	120.83	110.40
1	A	2394	G	O4'-C1'-C2'	-5.21	100.59	105.80
1	A	2878	G	N9-C1'-C2'	-5.21	106.27	112.00
7	G	107	ARG	NE-CZ-NH2	-5.21	117.69	120.30
1	A	4537	C	O5'-P-OP1	5.21	116.95	110.70
1	A	1638	A	O5'-P-OP2	5.21	116.95	110.70
1	A	1734	G	O5'-P-OP1	-5.21	101.01	105.70
22	N	108	ARG	CG-CD-NE	-5.21	100.86	111.80
1	A	1277	G	C5'-C4'-C3'	-5.21	107.67	116.00
1	A	2784	C	C1'-C2'-O2'	-5.21	94.98	110.60
1	A	4519	C	N1-C1'-C2'	-5.21	106.27	112.00
22	N	116	LYS	CB-CA-C	5.21	120.81	110.40
1	A	409	G	C4'-C3'-O3'	-5.20	98.47	109.40
1	A	4508	C	N1-C1'-C2'	-5.20	106.28	112.00
17	I	148	LYS	CB-CA-C	-5.20	100.00	110.40
1	A	470	A	O5'-P-OP1	-5.20	101.02	105.70
1	A	1311	G	C1'-C2'-O2'	-5.20	95.00	110.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	E	174	ARG	CG-CD-NE	5.20	122.72	111.80
1	A	2869	U	C5'-C4'-C3'	-5.20	107.68	116.00
35	d	43	ARG	N-CA-CB	-5.20	101.25	110.60
1	A	313	U	C1'-C2'-O2'	-5.20	95.01	110.60
1	A	4435	U	C2'-C3'-O3'	5.19	122.01	113.70
1	A	2063	G	O4'-C4'-C3'	-5.19	98.81	104.00
30	Y	33	ARG	CB-CA-C	-5.19	100.02	110.40
1	A	42	A	O4'-C1'-C2'	-5.19	100.61	105.80
1	A	289	C	O5'-P-OP1	5.19	116.93	110.70
1	A	1917	A	C4'-C3'-O3'	-5.19	98.50	109.40
1	A	2533	C	C3'-C2'-O2'	-5.19	98.26	113.30
1	A	3802	U	C2-N1-C1'	-5.19	111.48	117.70
2	B	101	A	O5'-P-OP1	5.19	116.92	110.70
14	r	80	GLU	CB-CG-CD	5.19	128.21	114.20
1	A	4560	C	C1'-O4'-C4'	-5.18	105.75	109.90
6	F	199	ARG	NE-CZ-NH2	-5.18	117.71	120.30
30	Y	47	ARG	NE-CZ-NH2	-5.18	117.71	120.30
2	B	71	G	C3'-C2'-O2'	-5.18	98.27	113.30
1	A	1529	G	O4'-C4'-C3'	-5.18	98.82	104.00
1	A	1695	U	O5'-C5'-C4'	-5.18	101.86	111.70
1	A	1853	G	C1'-C2'-O2'	-5.18	95.06	110.60
1	A	2850	A	N9-C1'-C2'	5.18	120.73	114.00
20	L	124	TYR	CB-CG-CD1	-5.18	117.89	121.00
1	A	2735	G	O5'-P-OP1	-5.17	101.04	105.70
1	A	4076	G	C2'-C3'-O3'	-5.17	98.12	109.50
1	A	1282	G	O5'-P-OP1	5.17	116.91	110.70
1	A	2527	A	N9-C1'-C2'	-5.17	106.31	112.00
4	D	90	CYS	CB-CA-C	-5.17	100.05	110.40
1	A	4180	G	O5'-P-OP1	-5.17	101.05	105.70
1	A	1626	G	P-O5'-C5'	5.17	129.17	120.90
1	A	2033	A	N9-C1'-C2'	-5.17	106.31	112.00
1	A	1427	A	O5'-P-OP1	-5.17	101.05	105.70
14	r	60	ARG	CG-CD-NE	5.17	122.65	111.80
14	r	68	THR	CB-CA-C	-5.17	97.65	111.60
1	A	1516	G	C2'-C3'-O3'	5.17	121.97	113.70
3	C	102	G	C2'-C3'-O3'	-5.17	98.14	109.50
1	A	387	G	O4'-C1'-C2'	-5.16	100.64	105.80
22	N	92	ARG	CG-CD-NE	-5.16	100.95	111.80
1	A	1931	C	O5'-P-OP1	5.16	116.89	110.70
5	E	46	PHE	N-CA-CB	-5.16	101.31	110.60
1	A	212	A	O5'-P-OP1	-5.16	101.06	105.70
1	A	227	A	C5'-C4'-O4'	5.16	115.29	109.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
17	I	7	LEU	N-CA-CB	-5.16	100.08	110.40
31	Z	76	ARG	NE-CZ-NH1	-5.16	117.72	120.30
1	A	226	G	C8-N9-C1'	-5.16	120.30	127.00
1	A	1457	G	O5'-P-OP2	-5.16	101.06	105.70
1	A	1587	G	C4'-C3'-O3'	-5.16	98.57	109.40
1	A	2733	C	O5'-P-OP1	-5.16	101.06	105.70
1	A	3640	U	C1'-C2'-O2'	-5.16	95.14	110.60
4	D	52	PRO	C-N-CA	-5.16	111.47	122.30
21	M	172	PRO	CB-CA-C	-5.16	99.11	112.00
1	A	4956	A	C2'-C3'-O3'	5.15	121.95	113.70
5	E	119	TYR	CB-CA-C	-5.15	100.09	110.40
9	m	238	ASP	CA-CB-CG	-5.15	102.06	113.40
39	j	39	CYS	CA-CB-SG	-5.15	104.72	114.00
16	t	27	CYS	CB-CA-C	5.15	120.70	110.40
1	A	4205	A	O5'-P-OP1	5.15	116.88	110.70
1	A	4298	A	C3'-C2'-O2'	-5.15	98.37	113.30
30	Y	47	ARG	NE-CZ-NH1	5.15	122.88	120.30
1	A	1794	A	O5'-P-OP2	-5.15	101.07	105.70
43	u	19	ARG	NE-CZ-NH2	5.15	122.88	120.30
1	A	1312	A	N9-C1'-C2'	-5.15	106.34	112.00
1	A	1595	G	C1'-C2'-O2'	-5.14	95.17	110.60
1	A	1364	U	C5'-C4'-C3'	-5.14	107.77	116.00
1	A	2441	C	C4'-C3'-O3'	-5.14	98.61	109.40
1	A	2679	G	C2'-C3'-O3'	5.14	121.93	113.70
39	j	60	CYS	CB-CA-C	5.14	120.68	110.40
1	A	1552	G	O4'-C1'-N9	5.14	112.31	108.20
1	A	1897	A	N9-C1'-C2'	-5.14	106.35	112.00
1	A	3793	U	O5'-P-OP1	5.14	116.86	110.70
1	A	4992	G	N9-C1'-C2'	5.14	120.68	114.00
5	E	256	ALA	N-CA-CB	-5.14	102.91	110.10
1	A	1846	G	C4'-C3'-C2'	-5.13	97.47	102.60
21	M	131	GLU	CB-CA-C	5.13	120.67	110.40
22	N	140	PHE	CB-CA-C	-5.13	100.13	110.40
1	A	434	A	O5'-P-OP2	5.13	116.86	110.70
10	n	53	ARG	CB-CG-CD	5.13	124.95	111.60
27	V	44	ARG	CB-CG-CD	5.13	124.94	111.60
1	A	2075	G	O4'-C4'-C3'	-5.13	98.87	104.00
9	m	242	ARG	CG-CD-NE	-5.13	101.03	111.80
4	D	193	ARG	NE-CZ-NH1	5.13	122.86	120.30
32	a	70	THR	CA-CB-OG1	-5.13	98.23	109.00
1	A	2406	G	C1'-C2'-O2'	-5.12	95.22	110.60
1	A	4541	G	O5'-P-OP1	-5.12	101.09	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
38	i	45	GLN	CB-CA-C	-5.12	100.15	110.40
1	A	3783	A	O5'-C5'-C4'	-5.12	101.96	111.70
1	A	4703	U	C5'-C4'-C3'	-5.12	107.80	116.00
8	H	146	PRO	N-CD-CG	-5.12	95.51	103.20
1	A	4274	A	C1'-C2'-O2'	-5.12	95.23	110.60
1	A	4715	C	O5'-P-OP1	5.12	116.84	110.70
3	C	103	A	O4'-C4'-C3'	-5.12	98.88	104.00
15	s	34	ASN	CB-CA-C	-5.12	100.16	110.40
34	c	53	TYR	CB-CG-CD1	-5.12	117.93	121.00
1	A	1587	G	O5'-P-OP2	-5.12	101.09	105.70
23	R	89	LYS	CD-CE-NZ	5.12	123.48	111.70
1	A	1494	U	C5'-C4'-O4'	5.12	115.24	109.10
1	A	1646	A	O5'-P-OP1	5.12	116.84	110.70
1	A	3927	U	O5'-P-OP2	5.12	116.84	110.70
1	A	24	G	C2'-C3'-O3'	5.12	121.89	113.70
1	A	989	U	C3'-C2'-C1'	-5.12	97.41	101.50
1	A	1471	U	C4'-C3'-O3'	-5.11	98.66	109.40
1	A	2283	G	O4'-C4'-C3'	-5.11	98.89	104.00
26	U	32	ARG	CB-CA-C	-5.11	100.17	110.40
1	A	1453	G	C5'-C4'-C3'	-5.11	107.82	116.00
26	U	132	ARG	CD-NE-CZ	5.11	130.76	123.60
1	A	673	C	C5'-C4'-C3'	-5.11	107.82	116.00
1	A	1495	G	N9-C1'-C2'	-5.11	106.38	112.00
1	A	4588	U	O4'-C1'-N1	-5.11	104.11	108.20
5	E	242	ARG	NE-CZ-NH2	-5.11	117.75	120.30
22	N	12	ARG	NE-CZ-NH2	-5.11	117.74	120.30
1	A	1472	C	P-O5'-C5'	-5.11	112.73	120.90
1	A	2082	G	O5'-P-OP2	5.11	116.83	110.70
1	A	2420	A	C3'-C2'-O2'	-5.11	98.49	113.30
1	A	3811	G	O4'-C1'-C2'	-5.11	100.69	105.80
1	A	4516	G	O5'-P-OP1	-5.11	101.10	105.70
6	F	55	SER	N-CA-CB	-5.11	102.84	110.50
3	C	62	A	O5'-P-OP1	-5.11	101.11	105.70
4	D	52	PRO	N-CA-CB	-5.11	96.98	102.60
1	A	2433	G	O5'-P-OP1	-5.10	101.11	105.70
1	A	2615	C	O5'-P-OP2	5.10	116.82	110.70
35	d	79	ARG	CG-CD-NE	-5.10	101.08	111.80
1	A	303	C	C4'-C3'-O3'	-5.10	98.69	109.40
26	U	60	HIS	CA-CB-CG	-5.10	104.93	113.60
18	J	131	ARG	CB-CA-C	-5.10	100.20	110.40
21	M	166	ARG	CD-NE-CZ	-5.10	116.46	123.60
1	A	62	A	C4'-C3'-O3'	-5.10	98.69	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2476	G	C5'-C4'-C3'	5.10	124.16	116.00
1	A	2771	G	C4-N9-C1'	-5.10	119.87	126.50
5	E	193	LYS	CB-CA-C	5.10	120.59	110.40
15	s	129	LYS	CB-CA-C	-5.10	100.20	110.40
1	A	2348	G	C1'-C2'-O2'	-5.10	95.31	110.60
1	A	4511	A	N9-C1'-C2'	-5.10	106.39	112.00
1	A	3664	G	C1'-C2'-O2'	-5.09	95.31	110.60
1	A	3894	A	O5'-P-OP1	-5.09	101.11	105.70
6	F	64	ALA	N-CA-CB	-5.09	102.97	110.10
7	G	186	GLU	CB-CA-C	5.09	120.59	110.40
1	A	1382	G	O5'-P-OP2	5.09	116.81	110.70
1	A	2297	G	C3'-C2'-O2'	-5.09	98.53	113.30
1	A	3888	G	N9-C1'-C2'	-5.09	106.40	112.00
21	M	31	ARG	CB-CG-CD	-5.09	98.36	111.60
6	F	342	ARG	CG-CD-NE	-5.09	101.11	111.80
1	A	5043	A	O5'-P-OP1	-5.09	101.12	105.70
19	K	33	ARG	NE-CZ-NH2	-5.09	117.75	120.30
1	A	4727	A	N9-C1'-C2'	-5.09	106.40	112.00
1	A	1283	G	O4'-C1'-C2'	-5.09	100.71	105.80
22	N	142	ARG	CB-CA-C	-5.09	100.23	110.40
1	A	5034	A	C5'-C4'-O4'	5.08	115.20	109.10
1	A	664	G	C4-N9-C1'	5.08	133.11	126.50
3	C	79	G	C4-N9-C1'	-5.08	119.89	126.50
42	Q	124	GLU	CB-CA-C	-5.08	100.23	110.40
1	A	1738	A	O5'-P-OP2	5.08	116.80	110.70
1	A	1826	G	O5'-P-OP2	5.08	116.80	110.70
4	D	57	PRO	CB-CA-C	-5.08	99.30	112.00
14	r	14	PHE	CB-CA-C	-5.08	100.24	110.40
1	A	2882	A	O5'-P-OP1	5.08	116.80	110.70
1	A	282	C	O5'-P-OP1	5.08	116.80	110.70
1	A	328	A	O4'-C1'-N9	-5.08	104.14	108.20
33	b	84	ARG	NE-CZ-NH1	-5.08	117.76	120.30
1	A	2873	U	C1'-C2'-O2'	-5.08	95.37	110.60
1	A	1547	A	C5'-C4'-C3'	-5.08	107.88	116.00
1	A	4630	G	O5'-P-OP2	-5.08	101.13	105.70
1	A	4860	G	O4'-C1'-N9	-5.08	104.14	108.20
1	A	663	G	O4'-C1'-N9	5.07	112.26	108.20
1	A	4194	U	C4'-C3'-O3'	-5.07	98.74	109.40
1	A	4381	A	O5'-P-OP2	5.07	116.79	110.70
1	A	1896	A	P-O5'-C5'	5.07	129.01	120.90
12	p	187	LYS	CB-CA-C	5.07	120.54	110.40
16	t	123	GLU	CB-CA-C	-5.07	100.26	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	S	77	LYS	CB-CA-C	-5.07	100.25	110.40
1	A	189	G	C4'-C3'-O3'	5.07	123.14	113.00
1	A	720	G	O4'-C4'-C3'	-5.07	98.93	104.00
1	A	4767	C	P-O5'-C5'	-5.07	112.79	120.90
8	H	272	ARG	CB-CG-CD	5.07	124.78	111.60
1	A	663	G	C8-N9-C1'	5.07	133.59	127.00
1	A	4982	A	O5'-P-OP2	5.07	116.78	110.70
1	A	17	A	O4'-C4'-C3'	-5.07	98.94	104.00
16	t	67	ARG	CB-CG-CD	-5.07	98.43	111.60
18	J	127	ARG	NE-CZ-NH1	5.07	122.83	120.30
1	A	4672	A	C2'-C3'-O3'	5.06	121.80	113.70
1	A	1415	G	P-O5'-C5'	5.06	129.00	120.90
1	A	5047	C	C1'-C2'-O2'	-5.06	95.41	110.60
4	D	64	ARG	CB-CA-C	-5.06	100.28	110.40
1	A	989	U	N1-C1'-C2'	5.06	120.58	114.00
1	A	1738	A	O5'-P-OP1	-5.06	101.15	105.70
1	A	4367	G	O5'-P-OP1	5.06	116.77	110.70
6	F	250	CYS	CB-CA-C	-5.06	100.28	110.40
3	C	65	A	O5'-P-OP1	-5.06	101.15	105.70
27	V	18	ARG	CG-CD-NE	-5.06	101.18	111.80
1	A	445	U	C2'-C3'-O3'	5.06	121.79	113.70
1	A	1523	A	C5'-C4'-C3'	-5.06	107.91	116.00
1	A	1887	G	O4'-C4'-C3'	-5.05	98.95	104.00
4	D	197	PRO	CB-CA-C	-5.05	99.37	112.00
5	E	133	TYR	CB-CG-CD1	-5.05	117.97	121.00
34	c	68	ARG	CB-CG-CD	5.05	124.74	111.60
39	j	47	MET	N-CA-CB	-5.05	101.50	110.60
1	A	2513	A	O4'-C1'-N9	-5.05	104.16	108.20
13	q	136	ARG	N-CA-CB	-5.05	101.50	110.60
32	a	60	ARG	NE-CZ-NH2	-5.05	117.77	120.30
1	A	4322	G	N9-C1'-C2'	-5.05	106.44	112.00
1	A	4572	U	C5'-C4'-C3'	-5.05	107.92	116.00
16	t	203	TYR	CB-CA-C	-5.05	100.30	110.40
2	B	102	U	N1-C1'-C2'	-5.05	106.45	112.00
19	K	38	ARG	CB-CA-C	-5.05	100.30	110.40
32	a	8	ARG	CG-CD-NE	-5.05	101.20	111.80
1	A	1390	G	O4'-C4'-C3'	-5.05	98.95	104.00
1	A	1471	U	C1'-C2'-O2'	-5.05	95.46	110.60
1	A	477	C	C2'-C3'-O3'	5.05	121.78	113.70
1	A	3876	A	O4'-C1'-C2'	-5.05	100.75	105.80
6	F	140	LYS	C-N-CA	-5.05	111.70	122.30
1	A	4722	G	N9-C1'-C2'	-5.04	106.45	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	p	51	HIS	CB-CA-C	-5.04	100.31	110.40
1	A	72	C	O5'-P-OP2	5.04	116.75	110.70
6	F	106	LYS	CB-CA-C	-5.04	100.31	110.40
33	b	79	LYS	CB-CA-C	-5.04	100.31	110.40
1	A	2829	U	O5'-P-OP2	-5.04	101.16	105.70
1	A	1448	G	O5'-P-OP1	-5.04	101.16	105.70
14	r	183	ARG	NE-CZ-NH2	-5.04	117.78	120.30
8	H	154	THR	CB-CA-C	-5.04	98.00	111.60
1	A	2299	G	C2'-C3'-O3'	-5.03	98.42	109.50
1	A	4599	A	O5'-P-OP1	-5.03	101.17	105.70
27	V	18	ARG	NE-CZ-NH1	-5.03	117.78	120.30
1	A	1868	A	C2'-C3'-O3'	-5.03	98.43	109.50
1	A	2593	C	O5'-P-OP2	-5.03	101.17	105.70
1	A	4485	C	C2'-C3'-O3'	5.03	121.75	113.70
30	Y	22	ARG	NE-CZ-NH1	5.03	122.81	120.30
1	A	2849	A	O5'-P-OP1	-5.03	101.18	105.70
1	A	4626	A	C8-N9-C1'	-5.03	118.65	127.70
1	A	246	G	C8-N9-C1'	5.03	133.53	127.00
1	A	1934	A	C1'-C2'-O2'	-5.03	95.53	110.60
1	A	4522	G	C4'-C3'-O3'	-5.03	98.84	109.40
35	d	61	THR	CA-CB-OG1	5.03	119.55	109.00
9	m	157	ARG	CA-CB-CG	-5.02	102.35	113.40
1	A	1288	G	O4'-C1'-N9	5.02	112.22	108.20
34	c	30	ARG	N-CA-CB	5.02	119.64	110.60
1	A	326	C	C2'-C3'-O3'	-5.02	98.45	109.50
1	A	729	G	O5'-P-OP2	-5.02	101.18	105.70
1	A	2350	U	C1'-C2'-O2'	-5.02	95.54	110.60
3	C	42	G	O4'-C4'-C3'	-5.02	98.98	104.00
9	m	232	ASP	CB-CA-C	-5.02	100.36	110.40
1	A	4219	A	C1'-C2'-O2'	-5.02	95.54	110.60
33	b	93	ARG	CB-CG-CD	-5.02	98.55	111.60
1	A	2797	C	P-O3'-C3'	5.02	125.72	119.70
1	A	3648	A	O4'-C1'-C2'	-5.02	100.78	105.80
1	A	1552	G	O5'-P-OP1	-5.02	101.19	105.70
1	A	386	A	C4'-C3'-O3'	-5.01	98.87	109.40
1	A	1899	G	C2'-C3'-O3'	-5.01	98.47	109.50
1	A	2728	U	O5'-P-OP1	-5.01	101.19	105.70
1	A	4237	C	C4'-C3'-O3'	-5.01	98.87	109.40
11	o	173	ARG	NE-CZ-NH2	-5.01	117.79	120.30
1	A	47	A	O4'-C1'-N9	-5.01	104.19	108.20
1	A	443	G	N9-C1'-C2'	-5.01	106.49	112.00
1	A	3633	C	C4'-C3'-C2'	-5.01	97.59	102.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	H	183	ARG	NE-CZ-NH1	5.01	122.80	120.30
33	b	82	ASP	CB-CA-C	-5.01	100.38	110.40
1	A	1362	G	C1'-C2'-O2'	-5.01	95.58	110.60
1	A	1387	A	O4'-C1'-C2'	-5.01	100.79	105.80
1	A	162	A	N9-C1'-C2'	5.01	120.51	114.00
1	A	356	G	O4'-C4'-C3'	-5.01	98.99	104.00
1	A	3633	C	C2'-C3'-O3'	-5.01	98.48	109.50
21	M	95	ARG	NE-CZ-NH2	-5.01	117.80	120.30
1	A	728	U	P-O5'-C5'	-5.00	112.89	120.90
3	C	59	A	C4'-C3'-O3'	-5.00	98.89	109.40
6	F	266	THR	CA-CB-CG2	-5.00	105.39	112.40
1	A	3909	C	O5'-P-OP2	5.00	116.70	110.70

There are no chirality outliers.

All (67) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1220	G	Sidechain
1	A	1274	A	Sidechain
1	A	1318	C	Sidechain
1	A	1366	G	Sidechain
1	A	1523	A	Sidechain
1	A	1552	G	Sidechain
1	A	1740	C	Sidechain
1	A	1818	G	Sidechain
1	A	1892	A	Sidechain
1	A	1897	A	Sidechain
1	A	1932	A	Sidechain
1	A	2054	U	Sidechain
1	A	2267	U	Sidechain
1	A	2318	G	Sidechain
1	A	2342	G	Sidechain
1	A	2473	A	Sidechain
1	A	2513	A	Sidechain
1	A	2526	C	Sidechain
1	A	275	C	Sidechain
1	A	276	C	Sidechain
1	A	2806	A	Sidechain
1	A	2811	G	Sidechain
1	A	2900	U	Sidechain
1	A	292	G	Sidechain
1	A	314	G	Sidechain

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Mol	Chain	Res	Type	Group
1	A	3634	G	Sidechain
1	A	3635	A	Sidechain
1	A	369	G	Sidechain
1	A	3710	G	Sidechain
1	A	3735	G	Sidechain
1	A	3757	G	Sidechain
1	A	382	G	Sidechain
1	A	3880	G	Sidechain
1	A	3904	G	Sidechain
1	A	3908	A	Sidechain
1	A	3946	G	Sidechain
1	A	4136	G	Sidechain
1	A	417	G	Sidechain
1	A	420	A	Sidechain
1	A	4322	G	Sidechain
1	A	4390	A	Sidechain
1	A	4404	U	Sidechain
1	A	4463	U	Sidechain
1	A	4510	A	Sidechain
1	A	4522	G	Sidechain
1	A	4531	U	Sidechain
1	A	4560	C	Sidechain
1	A	4583	C	Sidechain
1	A	4670	C	Sidechain
1	A	4754	G	Sidechain
1	A	4774	C	Sidechain
1	A	4860	G	Sidechain
1	A	491	G	Sidechain
1	A	4975	G	Sidechain
1	A	504	G	Sidechain
1	A	654	C	Sidechain
1	A	757	G	Sidechain
1	A	91	G	Sidechain
1	A	93	G	Sidechain
3	C	128	C	Sidechain
3	C	16	G	Sidechain
8	H	73	TYR	Peptide
21	M	87	ARG	Peptide
33	b	93	ARG	Sidechain
34	c	24	PRO	Peptide
34	c	29	ARG	Peptide
43	u	7	SER	Peptide

5.2 Too-close contacts

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

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
4	D	244/257 (95%)	234 (96%)	9 (4%)	1 (0%)	34 37
5	E	394/430 (92%)	373 (95%)	20 (5%)	1 (0%)	41 46
6	F	357/427 (84%)	341 (96%)	16 (4%)	0	100 100
7	G	291/297 (98%)	280 (96%)	10 (3%)	1 (0%)	41 46
8	H	215/288 (75%)	202 (94%)	13 (6%)	0	100 100
9	m	223/248 (90%)	214 (96%)	9 (4%)	0	100 100
10	n	219/266 (82%)	202 (92%)	15 (7%)	2 (1%)	17 16
11	o	188/190 (99%)	169 (90%)	12 (6%)	7 (4%)	3 1
12	p	154/214 (72%)	146 (95%)	8 (5%)	0	100 100
13	q	168/178 (94%)	157 (94%)	10 (6%)	1 (1%)	25 26
14	r	204/211 (97%)	195 (96%)	9 (4%)	0	100 100
15	s	137/220 (62%)	128 (93%)	9 (7%)	0	100 100
16	t	203/204 (100%)	196 (97%)	7 (3%)	0	100 100
17	I	197/203 (97%)	192 (98%)	5 (2%)	0	100 100
18	J	150/184 (82%)	148 (99%)	2 (1%)	0	100 100
19	K	185/188 (98%)	176 (95%)	9 (5%)	0	100 100
20	L	133/196 (68%)	130 (98%)	1 (1%)	2 (2%)	10 8
21	M	174/176 (99%)	170 (98%)	4 (2%)	0	100 100
22	N	157/160 (98%)	146 (93%)	10 (6%)	1 (1%)	25 26
23	R	117/156 (75%)	116 (99%)	1 (1%)	0	100 100
24	S	132/145 (91%)	124 (94%)	7 (5%)	1 (1%)	19 19

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
25	T	133/136 (98%)	122 (92%)	11 (8%)	0	100 100
26	U	145/148 (98%)	140 (97%)	4 (3%)	1 (1%)	22 22
27	V	100/159 (63%)	91 (91%)	9 (9%)	0	100 100
28	W	98/115 (85%)	91 (93%)	7 (7%)	0	100 100
29	X	104/125 (83%)	100 (96%)	4 (4%)	0	100 100
30	Y	126/135 (93%)	125 (99%)	1 (1%)	0	100 100
31	Z	108/110 (98%)	108 (100%)	0	0	100 100
32	a	110/117 (94%)	105 (96%)	5 (4%)	0	100 100
33	b	120/123 (98%)	118 (98%)	2 (2%)	0	100 100
34	c	100/105 (95%)	93 (93%)	4 (4%)	3 (3%)	4 2
35	d	85/97 (88%)	82 (96%)	3 (4%)	0	100 100
36	e	25/70 (36%)	24 (96%)	1 (4%)	0	100 100
37	f	48/157 (31%)	45 (94%)	3 (6%)	0	100 100
38	i	95/106 (90%)	87 (92%)	6 (6%)	2 (2%)	7 4
39	j	89/92 (97%)	81 (91%)	7 (8%)	1 (1%)	14 12
40	k	122/137 (89%)	121 (99%)	1 (1%)	0	100 100
41	P	223/245 (91%)	173 (78%)	44 (20%)	6 (3%)	5 2
42	Q	132/140 (94%)	122 (92%)	7 (5%)	3 (2%)	6 3
43	u	60/157 (38%)	56 (93%)	3 (5%)	1 (2%)	9 6
All	All	6265/7312 (86%)	5923 (94%)	308 (5%)	34 (0%)	32 31

All (34) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
11	o	98	HIS
11	o	187	VAL
11	o	188	GLN
38	i	79	SER
39	j	39	CYS
41	P	201	ASP
42	Q	22	VAL
43	u	8	PHE
11	o	108	ASN
11	o	172	ILE
13	q	147	ARG

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Mol	Chain	Res	Type
20	L	19	LYS
22	N	145	GLY
34	c	64	SER
41	P	139	ARG
42	Q	91	LYS
7	G	157	ASN
10	n	52	THR
11	o	107	GLU
41	P	40	GLY
4	D	180	LEU
10	n	210	GLU
26	U	15	VAL
34	c	35	LYS
41	P	32	GLU
11	o	109	GLY
24	S	112	ASP
34	c	25	ARG
38	i	77	CYS
42	Q	18	LEU
5	E	139	ASP
41	P	192	VAL
41	P	37	VAL
20	L	78	ILE

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	D	189/199 (95%)	178 (94%)	11 (6%)	20 23
5	E	345/368 (94%)	312 (90%)	33 (10%)	8 8
6	F	297/348 (85%)	270 (91%)	27 (9%)	9 9
7	G	245/250 (98%)	206 (84%)	39 (16%)	2 2
8	H	193/253 (76%)	165 (86%)	28 (14%)	3 2
9	m	194/215 (90%)	179 (92%)	15 (8%)	13 13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
10	n	193/223 (86%)	162 (84%)	31 (16%)	2 2
11	o	169/169 (100%)	132 (78%)	37 (22%)	1 1
12	p	138/182 (76%)	122 (88%)	16 (12%)	5 5
13	q	142/149 (95%)	109 (77%)	33 (23%)	1 0
14	r	172/177 (97%)	151 (88%)	21 (12%)	5 4
15	s	118/161 (73%)	101 (86%)	17 (14%)	3 2
16	t	173/172 (101%)	166 (96%)	7 (4%)	31 40
17	I	171/174 (98%)	153 (90%)	18 (10%)	7 6
18	J	133/163 (82%)	122 (92%)	11 (8%)	11 11
19	K	164/165 (99%)	152 (93%)	12 (7%)	14 15
20	L	121/175 (69%)	102 (84%)	19 (16%)	2 2
21	M	157/157 (100%)	138 (88%)	19 (12%)	5 4
22	N	139/140 (99%)	115 (83%)	24 (17%)	2 1
23	R	107/133 (80%)	94 (88%)	13 (12%)	5 4
24	S	124/135 (92%)	105 (85%)	19 (15%)	2 2
25	T	117/118 (99%)	96 (82%)	21 (18%)	2 1
26	U	120/121 (99%)	113 (94%)	7 (6%)	20 23
27	V	83/126 (66%)	62 (75%)	21 (25%)	0 0
28	W	84/97 (87%)	64 (76%)	20 (24%)	0 0
29	X	93/110 (84%)	83 (89%)	10 (11%)	6 6
30	Y	114/121 (94%)	107 (94%)	7 (6%)	18 21
31	Z	89/89 (100%)	85 (96%)	4 (4%)	27 34
32	a	96/100 (96%)	85 (88%)	11 (12%)	5 5
33	b	109/110 (99%)	95 (87%)	14 (13%)	4 3
34	c	86/89 (97%)	69 (80%)	17 (20%)	1 1
35	d	74/80 (92%)	69 (93%)	5 (7%)	16 17
36	e	29/65 (45%)	26 (90%)	3 (10%)	7 6
37	f	47/130 (36%)	41 (87%)	6 (13%)	4 3
38	i	86/94 (92%)	77 (90%)	9 (10%)	7 6
39	j	74/75 (99%)	64 (86%)	10 (14%)	4 3
40	k	107/121 (88%)	101 (94%)	6 (6%)	21 25

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
41	P	195/213 (92%)	129 (66%)	66 (34%)	0 0
42	Q	102/107 (95%)	79 (78%)	23 (22%)	1 1
43	u	54/126 (43%)	46 (85%)	8 (15%)	3 2
All	All	5443/6200 (88%)	4725 (87%)	718 (13%)	7 3

All (718) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	D	52	PRO
4	D	75	LEU
4	D	102	LEU
4	D	109	GLU
4	D	135	THR
4	D	142	GLU
4	D	208	GLU
4	D	222	PRO
4	D	245	ARG
4	D	246	LEU
4	D	247	ARG
5	E	5	LYS
5	E	36	ASP
5	E	66	LYS
5	E	69	LYS
5	E	70	LYS
5	E	97	ARG
5	E	111	SER
5	E	113	GLU
5	E	120	LYS
5	E	126	LYS
5	E	134	CYS
5	E	143	LYS
5	E	144	LYS
5	E	147	GLU
5	E	173	LEU
5	E	193	LYS
5	E	200	ARG
5	E	201	LEU
5	E	208	ASN
5	E	238	LYS
5	E	292	LEU
5	E	293	ILE

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Mol	Chain	Res	Type
5	E	294	LYS
5	E	295	ASP
5	E	300	LYS
5	E	317	LEU
5	E	325	GLU
5	E	341	LYS
5	E	356	LYS
5	E	357	ARG
5	E	358	ARG
5	E	378	ARG
5	E	383	GLU
6	F	9	SER
6	F	21	ASN
6	F	23	THR
6	F	61	GLN
6	F	62	THR
6	F	65	GLU
6	F	95	MET
6	F	104	PRO
6	F	122	TYR
6	F	138	MET
6	F	140	LYS
6	F	175	LYS
6	F	178	ASN
6	F	182	LYS
6	F	259	LYS
6	F	268	ARG
6	F	276	ASN
6	F	283	LYS
6	F	291	ARG
6	F	295	SER
6	F	308	LYS
6	F	312	ARG
6	F	317	ASN
6	F	319	LEU
6	F	329	ASN
6	F	336	ARG
6	F	349	LEU
7	G	3	PHE
7	G	5	LYS
7	G	10	LYS
7	G	22	ARG

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Mol	Chain	Res	Type
7	G	36	LEU
7	G	39	GLN
7	G	75	VAL
7	G	81	HIS
7	G	83	LEU
7	G	84	PRO
7	G	85	LYS
7	G	89	LYS
7	G	92	LEU
7	G	116	ASP
7	G	117	LYS
7	G	124	GLU
7	G	126	THR
7	G	132	VAL
7	G	133	GLU
7	G	188	LYS
7	G	189	GLU
7	G	210	TYR
7	G	212	MET
7	G	214	GLU
7	G	224	SER
7	G	230	SER
7	G	238	GLU
7	G	249	GLU
7	G	254	GLU
7	G	255	LYS
7	G	256	LYS
7	G	258	LYS
7	G	259	LYS
7	G	261	VAL
7	G	262	LYS
7	G	263	LYS
7	G	264	LYS
7	G	268	ARG
7	G	289	ARG
8	H	56	ARG
8	H	74	SER
8	H	93	THR
8	H	96	VAL
8	H	99	ASP
8	H	100	LYS
8	H	104	THR

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Mol	Chain	Res	Type
8	H	107	VAL
8	H	108	LYS
8	H	114	ARG
8	H	119	GLU
8	H	120	ASP
8	H	123	ARG
8	H	127	SER
8	H	180	VAL
8	H	189	THR
8	H	198	SER
8	H	199	THR
8	H	204	SER
8	H	207	LYS
8	H	210	LYS
8	H	219	LYS
8	H	221	LYS
8	H	222	LEU
8	H	241	GLU
8	H	259	PRO
8	H	271	LEU
8	H	285	LYS
9	m	24	ASN
9	m	25	PHE
9	m	28	LEU
9	m	30	ILE
9	m	31	LYS
9	m	33	LEU
9	m	35	LYS
9	m	36	LYS
9	m	40	LYS
9	m	88	LYS
9	m	104	LYS
9	m	215	SER
9	m	216	PRO
9	m	221	LYS
9	m	238	ASP
10	n	28	VAL
10	n	29	ASN
10	n	38	ASN
10	n	43	GLN
10	n	70	LEU
10	n	74	LEU

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Mol	Chain	Res	Type
10	n	85	GLN
10	n	87	LEU
10	n	97	LYS
10	n	105	GLU
10	n	107	LYS
10	n	108	GLN
10	n	112	GLN
10	n	113	ARG
10	n	117	ARG
10	n	119	GLU
10	n	120	LYS
10	n	121	LYS
10	n	137	ARG
10	n	149	ASN
10	n	151	LYS
10	n	176	LYS
10	n	201	THR
10	n	206	GLN
10	n	215	LEU
10	n	218	LEU
10	n	252	LYS
10	n	253	LEU
10	n	255	LYS
10	n	259	LYS
10	n	260	GLU
11	o	2	LYS
11	o	14	GLU
11	o	15	ASN
11	o	16	VAL
11	o	17	ASP
11	o	19	THR
11	o	21	LYS
11	o	28	LYS
11	o	31	ARG
11	o	46	SER
11	o	48	LEU
11	o	50	LYS
11	o	51	LYS
11	o	52	LYS
11	o	53	LYS
11	o	64	ARG
11	o	65	LYS

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Mol	Chain	Res	Type
11	o	67	LEU
11	o	91	LYS
11	o	96	TYR
11	o	105	ILE
11	o	106	GLN
11	o	112	VAL
11	o	118	LEU
11	o	121	LYS
11	o	125	ARG
11	o	140	GLN
11	o	141	LYS
11	o	152	GLU
11	o	166	THR
11	o	168	LYS
11	o	170	LYS
11	o	171	ASP
11	o	173	ARG
11	o	184	LYS
11	o	186	THR
11	o	189	GLN
12	p	30	LYS
12	p	40	LYS
12	p	44	ASP
12	p	71	CYS
12	p	78	LYS
12	p	141	LYS
12	p	142	LEU
12	p	146	GLU
12	p	179	ASP
12	p	183	ASP
12	p	187	LYS
12	p	193	ASP
12	p	195	CYS
12	p	206	LEU
12	p	208	LYS
12	p	212	LEU
13	q	10	ASN
13	q	14	GLU
13	q	16	ARG
13	q	33	LEU
13	q	38	LYS
13	q	41	GLU

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Mol	Chain	Res	Type
13	q	43	LEU
13	q	49	VAL
13	q	54	ARG
13	q	56	THR
13	q	58	ARG
13	q	63	ARG
13	q	64	ARG
13	q	72	CYS
13	q	74	VAL
13	q	78	LYS
13	q	81	GLU
13	q	83	LEU
13	q	88	LYS
13	q	95	ARG
13	q	114	ASP
13	q	122	SER
13	q	123	ILE
13	q	125	ILE
13	q	128	LEU
13	q	129	ASP
13	q	134	LEU
13	q	140	SER
13	q	144	LYS
13	q	147	ARG
13	q	163	MET
13	q	169	LYS
13	q	174	ILE
14	r	6	ASN
14	r	12	PRO
14	r	67	HIS
14	r	69	LYS
14	r	88	LYS
14	r	100	PRO
14	r	105	LYS
14	r	121	ARG
14	r	135	LYS
14	r	142	GLU
14	r	143	GLU
14	r	144	LEU
14	r	145	LYS
14	r	162	LYS
14	r	163	LYS

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Mol	Chain	Res	Type
14	r	165	LYS
14	r	170	THR
14	r	198	ARG
14	r	200	LYS
14	r	204	GLU
14	r	205	GLN
15	s	2	VAL
15	s	23	LYS
15	s	59	ASP
15	s	63	LYS
15	s	79	LYS
15	s	81	ASP
15	s	84	THR
15	s	90	ARG
15	s	99	GLU
15	s	103	LYS
15	s	116	LYS
15	s	117	LYS
15	s	118	MET
15	s	121	ARG
15	s	127	VAL
15	s	128	LYS
15	s	135	LEU
16	t	10	LEU
16	t	27	CYS
16	t	38	ARG
16	t	104	GLU
16	t	182	HIS
16	t	188	ARG
16	t	193	ARG
17	I	25	LYS
17	I	31	ARG
17	I	37	ARG
17	I	93	LYS
17	I	117	ARG
17	I	118	MET
17	I	134	LYS
17	I	173	GLN
17	I	174	LEU
17	I	175	MET
17	I	182	GLU
17	I	183	LYS

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Mol	Chain	Res	Type
17	I	186	GLU
17	I	187	LYS
17	I	188	LYS
17	I	190	ASP
17	I	194	GLU
17	I	196	LEU
18	J	2	VAL
18	J	10	ASN
18	J	57	CYS
18	J	94	MET
18	J	100	SER
18	J	111	SER
18	J	112	LEU
18	J	115	GLU
18	J	125	MET
18	J	128	ARG
18	J	142	SER
19	K	4	ASP
19	K	9	LYS
19	K	16	LYS
19	K	71	LYS
19	K	92	VAL
19	K	111	SER
19	K	115	ARG
19	K	119	LYS
19	K	154	LYS
19	K	161	SER
19	K	172	ARG
19	K	180	ARG
20	L	5	ARG
20	L	7	GLN
20	L	8	LYS
20	L	12	SER
20	L	15	LEU
20	L	24	LEU
20	L	28	GLU
20	L	29	THR
20	L	30	ASN
20	L	38	ARG
20	L	44	LEU
20	L	111	GLU
20	L	113	LYS

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Mol	Chain	Res	Type
20	L	133	LYS
20	L	135	LYS
20	L	137	ILE
20	L	148	ASP
20	L	151	ARG
20	L	152	LYS
21	M	2	LYS
21	M	21	LYS
21	M	24	THR
21	M	29	ARG
21	M	42	SER
21	M	53	LYS
21	M	55	LYS
21	M	62	VAL
21	M	64	CYS
21	M	70	LYS
21	M	84	TYR
21	M	87	ARG
21	M	118	ARG
21	M	131	GLU
21	M	151	LYS
21	M	161	ARG
21	M	164	LYS
21	M	168	THR
21	M	170	LYS
22	N	36	LYS
22	N	45	MET
22	N	50	LYS
22	N	56	CYS
22	N	76	VAL
22	N	88	ARG
22	N	97	LYS
22	N	102	ARG
22	N	104	SER
22	N	107	LYS
22	N	108	ARG
22	N	110	LYS
22	N	111	GLU
22	N	114	GLN
22	N	115	LYS
22	N	116	LYS
22	N	117	LYS

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Mol	Chain	Res	Type
22	N	118	GLU
22	N	120	LYS
22	N	131	GLN
22	N	147	GLU
22	N	149	GLU
22	N	157	GLU
22	N	159	MET
23	R	38	LYS
23	R	39	LYS
23	R	49	PRO
23	R	54	LEU
23	R	55	ARG
23	R	85	SER
23	R	87	MET
23	R	118	ASP
23	R	119	ILE
23	R	147	LEU
23	R	148	ASP
23	R	152	LYS
23	R	156	ILE
24	S	2	LYS
24	S	4	ASN
24	S	28	LYS
24	S	36	LYS
24	S	37	GLU
24	S	65	GLN
24	S	66	GLN
24	S	69	LYS
24	S	74	TYR
24	S	94	THR
24	S	111	LEU
24	S	113	LYS
24	S	116	LYS
24	S	120	GLU
24	S	124	LYS
24	S	126	ARG
24	S	131	GLU
24	S	132	LYS
24	S	134	LYS
25	T	9	LYS
25	T	29	ILE
25	T	34	SER

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Mol	Chain	Res	Type
25	T	35	ASP
25	T	39	SER
25	T	46	ILE
25	T	52	LYS
25	T	59	LYS
25	T	60	LYS
25	T	73	LYS
25	T	84	ARG
25	T	86	SER
25	T	93	LYS
25	T	100	VAL
25	T	106	LEU
25	T	112	ARG
25	T	113	GLU
25	T	116	VAL
25	T	120	GLU
25	T	126	LYS
25	T	133	LYS
26	U	7	LYS
26	U	66	ASN
26	U	93	ASN
26	U	95	THR
26	U	119	LYS
26	U	130	SER
26	U	132	ARG
27	V	14	ARG
27	V	22	LYS
27	V	25	ARG
27	V	26	SER
27	V	30	GLU
27	V	33	LYS
27	V	37	PRO
27	V	40	LEU
27	V	51	LYS
27	V	54	LEU
27	V	56	LYS
27	V	58	GLN
27	V	63	LYS
27	V	92	LYS
27	V	95	ARG
27	V	103	LYS
27	V	106	LYS

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Mol	Chain	Res	Type
27	V	107	ARG
27	V	117	ARG
27	V	118	LEU
27	V	119	CYS
28	W	14	ILE
28	W	18	LEU
28	W	19	GLN
28	W	22	MET
28	W	26	LYS
28	W	36	LYS
28	W	44	LYS
28	W	48	LEU
28	W	50	ASN
28	W	65	MET
28	W	68	LYS
28	W	69	THR
28	W	75	SER
28	W	77	ASN
28	W	83	THR
28	W	92	CYS
28	W	98	ASP
28	W	105	ILE
28	W	108	MET
28	W	109	PRO
29	X	51	LYS
29	X	63	ARG
29	X	64	ILE
29	X	70	LYS
29	X	84	ILE
29	X	91	LYS
29	X	94	GLU
29	X	101	LYS
29	X	102	LEU
29	X	123	ASP
30	Y	11	LYS
30	Y	53	ILE
30	Y	65	LYS
30	Y	106	LYS
30	Y	108	ARG
30	Y	113	GLU
30	Y	118	LEU
31	Z	2	SER

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Mol	Chain	Res	Type
31	Z	63	LYS
31	Z	81	SER
31	Z	95	LYS
32	a	3	GLN
32	a	23	SER
32	a	43	LYS
32	a	46	CYS
32	a	62	LYS
32	a	73	HIS
32	a	85	LYS
32	a	97	ILE
32	a	105	LYS
32	a	106	VAL
32	a	108	LYS
33	b	3	LYS
33	b	7	ARG
33	b	13	LYS
33	b	23	ASP
33	b	65	GLN
33	b	66	LYS
33	b	67	GLU
33	b	71	LYS
33	b	74	LYS
33	b	76	LYS
33	b	77	LYS
33	b	79	LYS
33	b	82	ASP
33	b	95	LEU
34	c	4	ARG
34	c	16	LYS
34	c	18	THR
34	c	23	LYS
34	c	29	ARG
34	c	32	ARG
34	c	56	ARG
34	c	65	LYS
34	c	66	ASP
34	c	68	ARG
34	c	70	LEU
34	c	76	ARG
34	c	79	THR
34	c	84	LYS

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Mol	Chain	Res	Type
34	c	88	GLU
34	c	97	MET
34	c	99	LYS
35	d	20	ARG
35	d	32	SER
35	d	36	LYS
35	d	40	PRO
35	d	87	LYS
36	e	27	LYS
36	e	29	LYS
36	e	48	THR
37	f	3	SER
37	f	8	ARG
37	f	9	ILE
37	f	17	GLN
37	f	18	LYS
37	f	21	ARG
38	i	8	ARG
38	i	17	LYS
38	i	27	LYS
38	i	30	LYS
38	i	43	ARG
38	i	59	LYS
38	i	79	SER
38	i	85	ILE
38	i	98	LYS
39	j	7	LYS
39	j	28	LYS
39	j	30	GLU
39	j	40	SER
39	j	42	CYS
39	j	46	LYS
39	j	72	ASN
39	j	88	GLU
39	j	90	LYS
39	j	92	GLN
40	k	20	ARG
40	k	37	SER
40	k	46	ARG
40	k	56	ASP
40	k	119	ARG
40	k	124	VAL

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Mol	Chain	Res	Type
41	P	1	MET
41	P	12	GLU
41	P	18	LYS
41	P	19	LEU
41	P	26	VAL
41	P	28	ILE
41	P	31	SER
41	P	43	SER
41	P	45	THR
41	P	53	ILE
41	P	57	ARG
41	P	61	ARG
41	P	63	CYS
41	P	66	ASN
41	P	70	LEU
41	P	74	ASN
41	P	75	ASN
41	P	77	THR
41	P	79	GLN
41	P	82	GLN
41	P	85	ARG
41	P	88	LEU
41	P	90	ASP
41	P	91	THR
41	P	94	ILE
41	P	95	ARG
41	P	97	VAL
41	P	100	ARG
41	P	107	VAL
41	P	108	THR
41	P	109	THR
41	P	114	VAL
41	P	117	VAL
41	P	118	HIS
41	P	121	LEU
41	P	123	ARG
41	P	125	THR
41	P	126	GLU
41	P	129	LEU
41	P	131	ASP
41	P	135	VAL
41	P	139	ARG

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Mol	Chain	Res	Type
41	P	140	GLN
41	P	142	VAL
41	P	148	VAL
41	P	153	VAL
41	P	156	ASN
41	P	162	HIS
41	P	167	ILE
41	P	173	LEU
41	P	175	SER
41	P	176	LEU
41	P	177	LEU
41	P	179	VAL
41	P	186	VAL
41	P	191	GLU
41	P	198	VAL
41	P	199	VAL
41	P	208	LEU
41	P	209	ASP
41	P	212	SER
41	P	213	THR
41	P	215	LEU
41	P	216	SER
41	P	220	SER
41	P	225	ASN
42	Q	9	SER
42	Q	13	LYS
42	Q	18	LEU
42	Q	20	LEU
42	Q	32	THR
42	Q	41	SER
42	Q	43	LYS
42	Q	48	ARG
42	Q	65	VAL
42	Q	67	LYS
42	Q	73	ARG
42	Q	75	LYS
42	Q	87	SER
42	Q	91	LYS
42	Q	92	ASP
42	Q	108	ASN
42	Q	109	LYS
42	Q	118	THR

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Mol	Chain	Res	Type
42	Q	123	LYS
42	Q	124	GLU
42	Q	128	LEU
42	Q	130	PRO
42	Q	138	SER
43	u	2	LYS
43	u	3	VAL
43	u	9	SER
43	u	19	ARG
43	u	23	ARG
43	u	48	GLN
43	u	54	LEU
43	u	56	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (144) such sidechains are listed below:

Mol	Chain	Res	Type
4	D	50	HIS
4	D	83	HIS
4	D	97	ASN
4	D	132	ASN
4	D	187	HIS
4	D	205	ASN
4	D	216	HIS
4	D	218	HIS
5	E	3	HIS
5	E	42	HIS
5	E	204	GLN
5	E	208	ASN
5	E	236	HIS
5	E	258	HIS
5	E	315	ASN
5	E	376	HIS
6	F	38	ASN
6	F	41	HIS
6	F	50	GLN
6	F	112	HIS
6	F	178	ASN
6	F	317	ASN
6	F	329	ASN
7	G	57	ASN
7	G	81	HIS

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Mol	Chain	Res	Type
7	G	198	HIS
7	G	222	GLN
7	G	229	ASN
8	H	128	HIS
8	H	135	GLN
8	H	190	HIS
8	H	191	GLN
8	H	266	GLN
9	m	39	GLN
9	m	110	GLN
9	m	119	ASN
9	m	192	HIS
9	m	206	ASN
9	m	248	ASN
10	n	29	ASN
10	n	38	ASN
10	n	85	GLN
10	n	208	ASN
11	o	15	ASN
11	o	40	HIS
11	o	156	ASN
11	o	189	GLN
12	p	51	HIS
12	p	92	HIS
12	p	166	HIS
13	q	10	ASN
13	q	65	ASN
13	q	104	ASN
13	q	112	HIS
14	r	6	ASN
14	r	175	ASN
15	s	33	GLN
15	s	66	HIS
15	s	70	GLN
15	s	75	GLN
15	s	125	ASN
16	t	29	GLN
16	t	32	GLN
16	t	149	GLN
16	t	156	HIS
16	t	158	HIS
16	t	182	HIS

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Mol	Chain	Res	Type
16	t	196	ASN
17	I	72	HIS
17	I	173	GLN
17	I	184	ASN
18	J	21	ASN
18	J	25	HIS
18	J	34	GLN
18	J	80	GLN
18	J	97	ASN
18	J	116	HIS
19	K	7	HIS
19	K	44	ASN
19	K	125	GLN
19	K	160	HIS
20	L	7	GLN
20	L	34	ASN
20	L	130	ASN
21	M	77	ASN
21	M	108	GLN
21	M	122	HIS
21	M	146	HIS
21	M	156	HIS
22	N	90	ASN
23	R	73	HIS
23	R	151	ASN
24	S	4	ASN
24	S	56	GLN
24	S	65	GLN
24	S	86	GLN
25	T	78	ASN
26	U	14	HIS
26	U	17	HIS
26	U	28	HIS
26	U	39	HIS
26	U	62	HIS
26	U	66	ASN
27	V	7	HIS
27	V	10	HIS
27	V	17	HIS
27	V	60	ASN
28	W	50	ASN
28	W	73	HIS

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Mol	Chain	Res	Type
28	W	77	ASN
29	X	69	ASN
30	Y	23	HIS
30	Y	43	ASN
30	Y	80	HIS
30	Y	101	HIS
30	Y	107	ASN
30	Y	117	GLN
31	Z	56	ASN
31	Z	80	ASN
32	a	100	GLN
33	b	101	ASN
33	b	107	GLN
34	c	80	HIS
35	d	57	ASN
35	d	66	HIS
37	f	19	GLN
38	i	21	HIS
38	i	45	GLN
38	i	51	GLN
39	j	33	GLN
39	j	56	HIS
39	j	72	ASN
40	k	4	HIS
40	k	41	ASN
40	k	100	ASN
41	P	9	ASN
41	P	66	ASN
41	P	82	GLN
41	P	86	ASN
41	P	162	HIS
42	Q	27	ASN
42	Q	135	ASN
43	u	17	HIS
43	u	48	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	3280/5070 (64%)	711 (21%)	151 (4%)
2	B	119/121 (98%)	16 (13%)	6 (5%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
3	C	145/157 (92%)	21 (14%)	4 (2%)
All	All	3544/5348 (66%)	748 (21%)	161 (4%)

All (748) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	2	G
1	A	4	G
1	A	15	A
1	A	17	A
1	A	18	C
1	A	39	A
1	A	42	A
1	A	43	U
1	A	48	G
1	A	59	A
1	A	64	A
1	A	65	A
1	A	72	C
1	A	73	A
1	A	85	G
1	A	91	G
1	A	98	A
1	A	109	G
1	A	119	G
1	A	120	A
1	A	128	C
1	A	129	C
1	A	130	C
1	A	131	C
1	A	133	C
1	A	134	G
1	A	135	G
1	A	139	G
1	A	140	G
1	A	141	C
1	A	142	G
1	A	143	C
1	A	144	G
1	A	145	G
1	A	146	G
1	A	158	A

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Mol	Chain	Res	Type
1	A	159	C
1	A	160	G
1	A	164	G
1	A	168	C
1	A	169	G
1	A	190	G
1	A	193	G
1	A	194	C
1	A	197	A
1	A	200	U
1	A	216	C
1	A	217	C
1	A	218	A
1	A	219	G
1	A	233	U
1	A	234	G
1	A	251	C
1	A	255	C
1	A	267	G
1	A	274	C
1	A	276	C
1	A	277	G
1	A	278	G
1	A	297	U
1	A	316	U
1	A	340	C
1	A	357	U
1	A	362	A
1	A	363	A
1	A	386	A
1	A	387	G
1	A	396	A
1	A	409	G
1	A	410	A
1	A	412	G
1	A	413	G
1	A	434	A
1	A	449	C
1	A	450	G
1	A	451	C
1	A	452	A
1	A	453	G

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Mol	Chain	Res	Type
1	A	454	U
1	A	456	C
1	A	457	G
1	A	461	G
1	A	465	G
1	A	467	U
1	A	468	U
1	A	469	C
1	A	472	C
1	A	473	C
1	A	481	G
1	A	483	G
1	A	484	U
1	A	485	C
1	A	489	C
1	A	505	G
1	A	506	C
1	A	507	G
1	A	509	A
1	A	510	U
1	A	511	C
1	A	512	U
1	A	654	C
1	A	664	G
1	A	665	C
1	A	666	G
1	A	667	A
1	A	669	C
1	A	671	G
1	A	672	C
1	A	673	C
1	A	682	G
1	A	685	C
1	A	686	A
1	A	687	U
1	A	693	C
1	A	696	C
1	A	697	G
1	A	700	G
1	A	701	G
1	A	703	G
1	A	704	C

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Mol	Chain	Res	Type
1	A	706	C
1	A	721	G
1	A	730	G
1	A	731	G
1	A	733	A
1	A	738	C
1	A	739	G
1	A	740	G
1	A	741	C
1	A	742	G
1	A	747	A
1	A	757	G
1	A	910	G
1	A	913	U
1	A	914	U
1	A	915	A
1	A	916	C
1	A	917	A
1	A	918	G
1	A	923	C
1	A	924	C
1	A	926	G
1	A	928	C
1	A	932	A
1	A	933	G
1	A	934	C
1	A	935	A
1	A	936	C
1	A	943	A
1	A	944	A
1	A	945	U
1	A	959	G
1	A	960	A
1	A	961	G
1	A	971	U
1	A	981	C
1	A	982	U
1	A	985	C
1	A	986	C
1	A	988	C
1	A	989	U
1	A	1071	C

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Mol	Chain	Res	Type
1	A	1072	C
1	A	1074	G
1	A	1078	A
1	A	1079	C
1	A	1083	U
1	A	1095	A
1	A	1098	G
1	A	1100	U
1	A	1101	C
1	A	1169	G
1	A	1170	G
1	A	1171	G
1	A	1172	C
1	A	1174	G
1	A	1176	C
1	A	1180	C
1	A	1181	C
1	A	1182	C
1	A	1183	C
1	A	1187	G
1	A	1191	C
1	A	1192	C
1	A	1193	C
1	A	1198	G
1	A	1200	G
1	A	1203	G
1	A	1210	C
1	A	1211	G
1	A	1214	C
1	A	1215	C
1	A	1216	C
1	A	1217	G
1	A	1218	G
1	A	1219	G
1	A	1220	G
1	A	1241	C
1	A	1243	C
1	A	1244	G
1	A	1245	C
1	A	1250	C
1	A	1261	G
1	A	1266	G

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Mol	Chain	Res	Type
1	A	1267	C
1	A	1268	G
1	A	1269	G
1	A	1270	A
1	A	1271	G
1	A	1272	C
1	A	1273	G
1	A	1274	A
1	A	1275	G
1	A	1276	C
1	A	1277	G
1	A	1280	C
1	A	1284	G
1	A	1293	G
1	A	1294	A
1	A	1295	C
1	A	1296	G
1	A	1297	U
1	A	1301	C
1	A	1302	U
1	A	1303	A
1	A	1304	C
1	A	1313	C
1	A	1326	A2M
1	A	1337	A
1	A	1338	G
1	A	1354	A
1	A	1359	G
1	A	1365	C
1	A	1366	G
1	A	1367	C
1	A	1379	C
1	A	1387	A
1	A	1397	A
1	A	1398	A
1	A	1399	G
1	A	1400	G
1	A	1401	C
1	A	1402	C
1	A	1416	G
1	A	1418	C
1	A	1419	G

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Mol	Chain	Res	Type
1	A	1420	A
1	A	1421	G
1	A	1435	G
1	A	1437	C
1	A	1439	C
1	A	1448	G
1	A	1453	G
1	A	1472	C
1	A	1482	G
1	A	1483	C
1	A	1484	G
1	A	1494	U
1	A	1498	G
1	A	1502	G
1	A	1534	A2M
1	A	1547	A
1	A	1561	G
1	A	1562	G
1	A	1564	A
1	A	1566	C
1	A	1568	C
1	A	1578	U
1	A	1582	PSU
1	A	1591	U
1	A	1596	U
1	A	1607	C
1	A	1613	A
1	A	1614	C
1	A	1624	G
1	A	1625	OMG
1	A	1631	A
1	A	1633	G
1	A	1634	A
1	A	1638	A
1	A	1654	G
1	A	1661	C
1	A	1676	C
1	A	1677	PSU
1	A	1697	G
1	A	1722	C
1	A	1726	U
1	A	1734	G

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Mol	Chain	Res	Type
1	A	1735	U
1	A	1742	A
1	A	1750	G
1	A	1754	U
1	A	1787	A
1	A	1792	PSU
1	A	1804	A
1	A	1805	A
1	A	1810	G
1	A	1815	G
1	A	1820	C
1	A	1821	G
1	A	1822	U
1	A	1833	G
1	A	1834	U
1	A	1836	G
1	A	1837	A
1	A	1842	G
1	A	1855	G
1	A	1869	G
1	A	1876	U
1	A	1897	A
1	A	1906	U
1	A	1918	U
1	A	1919	G
1	A	1920	C
1	A	1921	C
1	A	1922	G
1	A	1923	A
1	A	1925	G
1	A	1931	C
1	A	1932	A
1	A	1940	G
1	A	1948	G
1	A	1955	G
1	A	1959	U
1	A	1960	A
1	A	1961	G
1	A	1962	A
1	A	1964	A
1	A	1965	G
1	A	2025	A

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Mol	Chain	Res	Type
1	A	2026	A
1	A	2042	A
1	A	2046	G
1	A	2048	U
1	A	2052	G
1	A	2055	G
1	A	2056	G
1	A	2065	G
1	A	2069	A
1	A	2084	C
1	A	2089	G
1	A	2258	C
1	A	2259	G
1	A	2277	C
1	A	2289	C
1	A	2300	A
1	A	2301	G
1	A	2313	A
1	A	2316	G
1	A	2332	A
1	A	2333	G
1	A	2348	G
1	A	2351	OMC
1	A	2360	A
1	A	2365	OMC
1	A	2380	G
1	A	2389	A
1	A	2395	A
1	A	2397	G
1	A	2417	A
1	A	2421	G
1	A	2424	OMG
1	A	2425	U
1	A	2427	G
1	A	2447	U
1	A	2453	A
1	A	2470	C
1	A	2471	G
1	A	2474	G
1	A	2475	G
1	A	2476	G
1	A	2503	G

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Mol	Chain	Res	Type
1	A	2504	C
1	A	2505	C
1	A	2507	A
1	A	2511	A
1	A	2513	A
1	A	2519	U
1	A	2529	A
1	A	2536	A
1	A	2543	A
1	A	2554	U
1	A	2555	G
1	A	2556	G
1	A	2559	G
1	A	2560	C
1	A	2561	C
1	A	2568	C
1	A	2569	G
1	A	2570	U
1	A	2573	A
1	A	2576	G
1	A	2586	G
1	A	2587	A
1	A	2588	C
1	A	2589	C
1	A	2601	A
1	A	2602	G
1	A	2616	C
1	A	2617	G
1	A	2618	G
1	A	2627	C
1	A	2643	G
1	A	2652	G
1	A	2653	C
1	A	2662	G
1	A	2663	G
1	A	2664	G
1	A	2669	C
1	A	2673	G
1	A	2675	G
1	A	2676	A
1	A	2680	G
1	A	2686	G

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Mol	Chain	Res	Type
1	A	2687	U
1	A	2694	G
1	A	2695	A
1	A	2696	A
1	A	2703	G
1	A	2704	C
1	A	2705	G
1	A	2706	G
1	A	2707	U
1	A	2708	U
1	A	2709	C
1	A	2710	C
1	A	2711	G
1	A	2712	G
1	A	2717	G
1	A	2724	G
1	A	2726	G
1	A	2743	A
1	A	2756	G
1	A	2761	U
1	A	2763	U
1	A	2764	A
1	A	2769	U
1	A	2770	C
1	A	2788	U
1	A	2790	U
1	A	2794	C
1	A	2795	A
1	A	2814	C
1	A	2815	A2M
1	A	2826	U
1	A	2827	G
1	A	2830	G
1	A	2833	A
1	A	2839	PSU
1	A	2855	G
1	A	2867	C
1	A	2900	U
1	A	3601	C
1	A	3604	A
1	A	3605	C
1	A	3606	U

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Mol	Chain	Res	Type
1	A	3614	G
1	A	3615	G
1	A	3626	G
1	A	3635	A
1	A	3644	U
1	A	3662	A
1	A	3673	C
1	A	3674	G
1	A	3702	A
1	A	3705	G
1	A	3709	U
1	A	3710	G
1	A	3713	U
1	A	3714	G
1	A	3722	G
1	A	3735	G
1	A	3736	A
1	A	3754	G
1	A	3755	G
1	A	3756	A
1	A	3757	G
1	A	3768	U
1	A	3769	C
1	A	3770	U
1	A	3771	C
1	A	3773	U
1	A	3774	A
1	A	3776	G
1	A	3777	G
1	A	3778	U
1	A	3784	A
1	A	3785	A2M
1	A	3811	G
1	A	3814	U
1	A	3817	A
1	A	3819	G
1	A	3824	A
1	A	3838	U
1	A	3839	G
1	A	3840	U
1	A	3876	A
1	A	3877	A

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Mol	Chain	Res	Type
1	A	3878	C
1	A	3879	G
1	A	3897	G
1	A	3901	A
1	A	3902	A
1	A	3905	A
1	A	3906	A
1	A	3907	G
1	A	3908	A
1	A	3915	U
1	A	3939	G
1	A	3942	A
1	A	3943	A
1	A	3944	G
1	A	3945	A
1	A	4070	U
1	A	4073	A
1	A	4076	G
1	A	4084	G
1	A	4085	A
1	A	4091	G
1	A	4094	G
1	A	4115	G
1	A	4116	C
1	A	4119	C
1	A	4121	G
1	A	4122	G
1	A	4127	A
1	A	4131	G
1	A	4133	C
1	A	4135	G
1	A	4149	C
1	A	4150	G
1	A	4151	G
1	A	4152	G
1	A	4154	G
1	A	4160	C
1	A	4162	C
1	A	4163	U
1	A	4170	A
1	A	4183	G
1	A	4184	G

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Mol	Chain	Res	Type
1	A	4191	G
1	A	4203	A
1	A	4221	C
1	A	4227	OMU
1	A	4228	OMG
1	A	4229	U
1	A	4233	A
1	A	4234	A
1	A	4235	G
1	A	4251	A
1	A	4254	G
1	A	4255	A
1	A	4256	A
1	A	4257	A
1	A	4258	C
1	A	4266	G
1	A	4267	G
1	A	4268	A
1	A	4272	G
1	A	4273	A
1	A	4274	A
1	A	4281	A
1	A	4282	A
1	A	4291	G
1	A	4297	G
1	A	4305	G
1	A	4306	OMU
1	A	4330	G
1	A	4332	C
1	A	4336	A
1	A	4339	A
1	A	4371	G
1	A	4373	G
1	A	4376	A
1	A	4377	G
1	A	4378	A
1	A	4379	A
1	A	4387	C
1	A	4394	A
1	A	4415	A
1	A	4416	G
1	A	4422	A

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Mol	Chain	Res	Type
1	A	4448	G
1	A	4464	A
1	A	4475	G
1	A	4476	C
1	A	4477	A
1	A	4478	G
1	A	4480	A
1	A	4482	U
1	A	4484	A
1	A	4487	A
1	A	4491	G
1	A	4500	PSU
1	A	4512	U
1	A	4513	A
1	A	4519	C
1	A	4524	G
1	A	4548	A
1	A	4549	G
1	A	4567	G
1	A	4573	G
1	A	4575	G
1	A	4584	A
1	A	4590	A2M
1	A	4601	U
1	A	4603	C
1	A	4604	G
1	A	4608	G
1	A	4609	G
1	A	4612	C
1	A	4635	A
1	A	4636	U
1	A	4637	OMG
1	A	4648	A
1	A	4656	A
1	A	4670	C
1	A	4672	A
1	A	4679	G
1	A	4700	A
1	A	4703	U
1	A	4707	A
1	A	4708	A
1	A	4709	U

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Mol	Chain	Res	Type
1	A	4719	G
1	A	4720	C
1	A	4730	C
1	A	4731	G
1	A	4733	C
1	A	4734	A
1	A	4740	G
1	A	4741	C
1	A	4742	G
1	A	4744	A
1	A	4745	G
1	A	4746	C
1	A	4747	C
1	A	4750	G
1	A	4751	G
1	A	4754	G
1	A	4757	C
1	A	4759	C
1	A	4761	G
1	A	4765	G
1	A	4772	C
1	A	4773	C
1	A	4774	C
1	A	4861	G
1	A	4863	G
1	A	4867	G
1	A	4870	G
1	A	4871	C
1	A	4882	U
1	A	4883	C
1	A	4886	C
1	A	4889	G
1	A	4893	A
1	A	4894	A
1	A	4895	C
1	A	4896	G
1	A	4897	G
1	A	4898	G
1	A	4899	G
1	A	4900	C
1	A	4901	G
1	A	4910	G

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Mol	Chain	Res	Type
1	A	4911	A
1	A	4912	G
1	A	4913	G
1	A	4914	C
1	A	4916	G
1	A	4919	G
1	A	4922	C
1	A	4925	U
1	A	4926	C
1	A	4932	U
1	A	4934	A
1	A	4937	C
1	A	4940	C
1	A	4941	G
1	A	4943	A
1	A	4944	C
1	A	4947	U
1	A	4949	G
1	A	4950	U
1	A	4951	G
1	A	4955	A
1	A	4960	G
1	A	4961	G
1	A	4964	C
1	A	4966	A
1	A	4976	U
1	A	4979	A
1	A	4985	U
1	A	4988	U
1	A	5013	C
1	A	5014	A
1	A	5017	G
1	A	5029	C
1	A	5030	U
1	A	5031	G
1	A	5034	A
1	A	5041	G
1	A	5050	C
1	A	5054	C
1	A	5055	G
1	A	5060	A
1	A	5061	A

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Mol	Chain	Res	Type
1	A	5062	G
1	A	5063	G
1	A	5069	U
2	B	4	U
2	B	10	C
2	B	22	A
2	B	24	C
2	B	30	C
2	B	31	G
2	B	33	U
2	B	38	U
2	B	41	G
2	B	42	A
2	B	53	U
2	B	54	A
2	B	64	G
2	B	102	U
2	B	103	A
2	B	110	G
3	C	3	A
3	C	34	U
3	C	35	C
3	C	43	A
3	C	51	U
3	C	52	A
3	C	59	A
3	C	62	A
3	C	63	U
3	C	87	G
3	C	98	C
3	C	99	U
3	C	103	A
3	C	104	A
3	C	105	C
3	C	109	C
3	C	110	U
3	C	111	U
3	C	114	G
3	C	121	G
3	C	156	U

All (161) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	1	C
1	A	17	A
1	A	42	A
1	A	48	G
1	A	58	G
1	A	92	C
1	A	119	G
1	A	131	C
1	A	134	G
1	A	145	G
1	A	189	G
1	A	193	G
1	A	203	U
1	A	234	G
1	A	246	G
1	A	248	C
1	A	273	U
1	A	276	C
1	A	277	G
1	A	278	G
1	A	385	A
1	A	408	A
1	A	417	G
1	A	449	C
1	A	452	A
1	A	504	G
1	A	664	G
1	A	681	G
1	A	700	G
1	A	703	G
1	A	729	G
1	A	913	U
1	A	914	U
1	A	935	A
1	A	955	G
1	A	959	G
1	A	1078	A
1	A	1082	C
1	A	1083	U
1	A	1173	G
1	A	1240	G
1	A	1260	G
1	A	1269	G

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Mol	Chain	Res	Type
1	A	1274	A
1	A	1303	A
1	A	1324	A
1	A	1365	C
1	A	1366	G
1	A	1376	C
1	A	1380	G
1	A	1399	G
1	A	1401	C
1	A	1415	G
1	A	1419	G
1	A	1438	U
1	A	1482	G
1	A	1483	C
1	A	1501	C
1	A	1590	C
1	A	1607	C
1	A	1613	A
1	A	1625	OMG
1	A	1633	G
1	A	1677	PSU
1	A	1721	G
1	A	1733	G
1	A	1783	C
1	A	1804	A
1	A	1832	C
1	A	1918	U
1	A	1919	G
1	A	1921	C
1	A	1950	U
1	A	2064	G
1	A	2068	C
1	A	2089	G
1	A	2267	U
1	A	2347	A
1	A	2351	OMC
1	A	2436	U
1	A	2475	G
1	A	2585	C
1	A	2587	A
1	A	2660	A
1	A	2673	G

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Mol	Chain	Res	Type
1	A	2675	G
1	A	2686	G
1	A	2696	A
1	A	2707	U
1	A	2708	U
1	A	2760	G
1	A	2790	U
1	A	2794	C
1	A	2798	A
1	A	2827	G
1	A	3614	G
1	A	3620	G
1	A	3646	A
1	A	3672	G
1	A	3673	C
1	A	3709	U
1	A	3713	U
1	A	3735	G
1	A	3773	U
1	A	3876	A
1	A	3901	A
1	A	3938	G
1	A	3942	A
1	A	3945	A
1	A	4070	U
1	A	4071	U
1	A	4076	G
1	A	4114	C
1	A	4115	G
1	A	4135	G
1	A	4228	OMG
1	A	4233	A
1	A	4254	G
1	A	4256	A
1	A	4265	U
1	A	4266	G
1	A	4270	C
1	A	4271	A
1	A	4273	A
1	A	4281	A
1	A	4289	U
1	A	4291	G

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Mol	Chain	Res	Type
1	A	4378	A
1	A	4407	G
1	A	4447	5MC
1	A	4449	A
1	A	4464	A
1	A	4485	C
1	A	4486	C
1	A	4532	PSU
1	A	4635	A
1	A	4699	U
1	A	4722	G
1	A	4733	C
1	A	4740	G
1	A	4870	G
1	A	4881	U
1	A	4909	A
1	A	4910	G
1	A	4913	G
1	A	4927	G
1	A	5013	C
1	A	5020	G
1	A	5054	C
1	A	5060	A
1	A	5061	A
2	B	16	A
2	B	41	G
2	B	53	U
2	B	62	U
2	B	102	U
2	B	109	U
3	C	51	U
3	C	98	C
3	C	109	C
3	C	110	U

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

117 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	OMG	A	4392	1	18,26,27	1.70	5 (27%)	19,38,41	3.30	6 (31%)
1	1MA	A	1322	44,1	16,25,26	2.29	6 (37%)	18,37,40	2.59	7 (38%)
1	PSU	A	4312	1	18,21,22	1.79	6 (33%)	22,30,33	3.63	12 (54%)
1	OMC	A	4536	1	19,22,23	2.11	9 (47%)	26,31,34	2.51	12 (46%)
1	PSU	A	4423	1	18,21,22	1.61	2 (11%)	22,30,33	2.00	5 (22%)
1	OMG	A	3792	1	18,26,27	1.73	4 (22%)	19,38,41	2.08	6 (31%)
1	A2M	A	3825	1	18,25,26	1.36	3 (16%)	18,36,39	2.63	7 (38%)
1	OMG	A	4494	1	18,26,27	2.10	7 (38%)	19,38,41	3.01	8 (42%)
1	OMG	A	2424	1	18,26,27	1.96	7 (38%)	19,38,41	4.36	12 (63%)
1	OMG	A	1316	1,46	18,26,27	1.85	6 (33%)	19,38,41	2.87	8 (42%)
1	OMG	A	3744	1	18,26,27	1.57	5 (27%)	19,38,41	2.45	11 (57%)
1	PSU	A	4521	44,1,46	18,21,22	2.44	8 (44%)	22,30,33	4.68	13 (59%)
1	OMG	A	4499	1	18,26,27	1.50	4 (22%)	19,38,41	1.68	4 (21%)
1	PSU	A	1582	1	18,21,22	1.92	3 (16%)	22,30,33	4.03	15 (68%)
1	UR3	A	4530	1	19,22,23	2.00	5 (26%)	26,32,35	2.91	14 (53%)
1	OMU	A	4620	1	19,22,23	2.06	6 (31%)	26,31,34	4.12	14 (53%)
1	OMG	A	1522	1	18,26,27	2.44	6 (33%)	19,38,41	2.60	9 (47%)
1	5MC	A	3782	44,1	18,22,23	1.67	4 (22%)	26,32,35	1.79	4 (15%)
1	OMU	A	4227	1	19,22,23	1.76	5 (26%)	26,31,34	5.63	16 (61%)
1	PSU	A	4299	1	18,21,22	2.27	6 (33%)	22,30,33	4.39	10 (45%)
1	OMG	A	4623	1	18,26,27	2.66	6 (33%)	19,38,41	2.76	7 (36%)
3	OMG	C	75	3	18,26,27	1.27	1 (5%)	19,38,41	1.55	5 (26%)
1	OMC	A	2861	1	19,22,23	1.53	4 (21%)	26,31,34	1.07	3 (11%)
3	PSU	C	55	3	18,21,22	1.41	3 (16%)	22,30,33	3.59	10 (45%)
1	PSU	A	3695	1,46	18,21,22	1.88	5 (27%)	22,30,33	2.50	7 (31%)
1	OMC	A	3887	1	19,22,23	1.18	1 (5%)	26,31,34	3.82	13 (50%)
1	PSU	A	1677	1,46	18,21,22	3.32	11 (61%)	22,30,33	3.93	10 (45%)
1	PSU	A	4471	1	18,21,22	1.42	5 (27%)	22,30,33	3.37	9 (40%)
1	6MZ	A	4220	1	18,25,26	1.51	4 (22%)	16,36,39	4.45	6 (37%)
1	OMU	A	2415	1	19,22,23	1.63	5 (26%)	26,31,34	5.14	12 (46%)
1	PSU	A	4576	1	18,21,22	1.61	5 (27%)	22,30,33	3.23	12 (54%)
1	A2M	A	3830	1	18,25,26	1.72	4 (22%)	18,36,39	1.98	3 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	OMC	A	2365	44,1	19,22,23	1.46	4 (21%)	26,31,34	2.49	10 (38%)
1	OMG	A	3899	1	18,26,27	2.57	7 (38%)	19,38,41	1.54	3 (15%)
1	PSU	A	3639	1	18,21,22	2.56	6 (33%)	22,30,33	4.59	12 (54%)
1	OMG	A	2364	1	18,26,27	2.34	7 (38%)	19,38,41	3.48	13 (68%)
1	A2M	A	398	1	18,25,26	2.08	4 (22%)	18,36,39	2.40	5 (27%)
1	A2M	A	400	1	18,25,26	1.53	3 (16%)	18,36,39	2.24	5 (27%)
1	OMG	A	4637	1,46	18,26,27	1.61	3 (16%)	19,38,41	2.55	6 (31%)
1	PSU	A	4552	1	18,21,22	1.83	7 (38%)	22,30,33	4.53	14 (63%)
1	A2M	A	2787	44,1,46	18,25,26	1.59	4 (22%)	18,36,39	3.24	10 (55%)
1	PSU	A	2508	1	18,21,22	1.97	7 (38%)	22,30,33	3.11	10 (45%)
1	PSU	A	3851	1	18,21,22	1.64	4 (22%)	22,30,33	4.68	16 (72%)
1	PSU	A	4296	1	18,21,22	1.80	5 (27%)	22,30,33	3.04	13 (59%)
1	A2M	A	4590	1	18,25,26	2.13	5 (27%)	18,36,39	2.79	10 (55%)
1	PSU	A	4628	1	18,21,22	2.41	6 (33%)	22,30,33	4.28	14 (63%)
1	PSU	A	2632	1	18,21,22	1.72	3 (16%)	22,30,33	2.03	7 (31%)
1	OMC	A	2422	44,1	19,22,23	2.58	6 (31%)	26,31,34	9.61	12 (46%)
1	PSU	A	3844	1	18,21,22	2.32	5 (27%)	22,30,33	4.20	13 (59%)
1	A2M	A	1534	44,1	18,25,26	2.25	6 (33%)	18,36,39	2.19	6 (33%)
1	PSU	A	3715	1	18,21,22	1.94	4 (22%)	22,30,33	1.86	7 (31%)
1	OMU	A	3818	1,46	19,22,23	1.93	6 (31%)	26,31,34	3.62	11 (42%)
1	5MC	A	4447	1,46	18,22,23	1.88	2 (11%)	26,32,35	3.20	14 (53%)
1	PSU	A	4431	1,46	18,21,22	1.26	2 (11%)	22,30,33	2.49	6 (27%)
1	PSU	A	3920	44,1	18,21,22	2.52	9 (50%)	22,30,33	4.23	13 (59%)
1	PSU	A	4403	1,46	18,21,22	2.32	6 (33%)	22,30,33	3.73	10 (45%)
1	PSU	A	1792	1,46	18,21,22	1.36	1 (5%)	22,30,33	2.27	7 (31%)
1	PSU	A	4457	1	18,21,22	2.02	6 (33%)	22,30,33	3.47	9 (40%)
1	PSU	A	4493	1,46	18,21,22	1.30	2 (11%)	22,30,33	7.39	13 (59%)
1	OMU	A	4498	1,46	19,22,23	1.35	3 (15%)	26,31,34	2.60	9 (34%)
1	A2M	A	3718	1	18,25,26	1.57	3 (16%)	18,36,39	1.94	6 (33%)
1	A2M	A	3785	1	18,25,26	1.31	2 (11%)	18,36,39	2.52	7 (38%)
1	OMC	A	3841	1	19,22,23	2.07	6 (31%)	26,31,34	1.96	7 (26%)
1	A2M	A	3724	1	18,25,26	1.49	3 (16%)	18,36,39	1.60	4 (22%)
1	OMU	A	2837	1	19,22,23	2.33	6 (31%)	26,31,34	3.98	11 (42%)
1	PSU	A	3884	1,46	18,21,22	2.87	10 (55%)	22,30,33	4.09	14 (63%)
1	PSU	A	4293	1	18,21,22	1.53	4 (22%)	22,30,33	3.96	12 (54%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	A2M	A	1871	44,1,46	18,25,26	1.67	4 (22%)	18,36,39	2.38	7 (38%)
1	A2M	A	4523	44,1	18,25,26	1.76	6 (33%)	18,36,39	2.68	7 (38%)
1	PSU	A	4689	1	18,21,22	1.86	5 (27%)	22,30,33	3.06	11 (50%)
1	OMC	A	2804	1	19,22,23	1.54	3 (15%)	26,31,34	1.91	9 (34%)
1	A2M	A	2401	1	18,25,26	1.35	2 (11%)	18,36,39	2.51	10 (55%)
1	PSU	A	1860	1	18,21,22	1.88	3 (16%)	22,30,33	3.07	4 (18%)
1	OMU	A	3925	1	19,22,23	1.74	5 (26%)	26,31,34	3.99	13 (50%)
1	PSU	A	4972	1,46	18,21,22	2.31	6 (33%)	22,30,33	4.72	14 (63%)
1	A2M	A	1326	1	18,25,26	1.74	3 (16%)	18,36,39	2.64	6 (33%)
1	PSU	A	3729	1	18,21,22	1.85	5 (27%)	22,30,33	2.96	9 (40%)
1	OMC	A	3869	1	19,22,23	2.00	6 (31%)	26,31,34	2.63	8 (30%)
1	OMG	A	2876	1	18,26,27	2.01	1 (5%)	19,38,41	2.31	3 (15%)
1	A2M	A	2363	44,1	18,25,26	1.73	4 (22%)	18,36,39	3.32	8 (44%)
1	PSU	A	4673	1,46	18,21,22	2.18	5 (27%)	22,30,33	4.58	13 (59%)
1	PSU	A	2839	1	18,21,22	1.77	4 (22%)	22,30,33	3.73	15 (68%)
1	OMU	A	4306	1	19,22,23	2.46	6 (31%)	26,31,34	3.34	13 (50%)
1	PSU	A	1683	1,46	18,21,22	2.86	10 (55%)	22,30,33	4.18	13 (59%)
1	OMG	A	4228	1	18,26,27	3.20	9 (50%)	19,38,41	5.35	14 (73%)
1	PSU	A	5010	1	18,21,22	1.49	2 (11%)	22,30,33	2.12	5 (22%)
3	PSU	C	69	3	18,21,22	2.05	4 (22%)	22,30,33	2.92	9 (40%)
1	PSU	A	1744	1,46	18,21,22	1.78	2 (11%)	22,30,33	2.71	8 (36%)
1	PSU	A	1782	1	18,21,22	2.55	4 (22%)	22,30,33	3.13	9 (40%)
1	OMC	A	3808	1,46	19,22,23	1.24	1 (5%)	26,31,34	1.91	7 (26%)
1	PSU	A	4442	1	18,21,22	1.85	3 (16%)	22,30,33	4.30	9 (40%)
1	OMC	A	1340	1	19,22,23	1.45	5 (26%)	26,31,34	2.73	12 (46%)
1	OMC	A	2351	44,1	19,22,23	2.43	9 (47%)	26,31,34	2.55	13 (50%)
1	OMG	A	4196	44,1	18,26,27	1.40	1 (5%)	19,38,41	1.90	4 (21%)
1	A2M	A	3867	1	18,25,26	1.81	4 (22%)	18,36,39	1.57	4 (22%)
1	A2M	A	2815	1	18,25,26	1.50	3 (16%)	18,36,39	1.80	3 (16%)
1	PSU	A	4500	1,46	18,21,22	1.75	5 (27%)	22,30,33	4.02	9 (40%)
1	PSU	A	3637	1,46	18,21,22	2.21	7 (38%)	22,30,33	4.12	12 (54%)
1	PSU	A	4579	1	18,21,22	1.70	4 (22%)	22,30,33	3.51	11 (50%)
1	OMG	A	1625	1,46	18,26,27	1.67	5 (27%)	19,38,41	3.29	12 (63%)
1	OMG	A	4370	44,1	18,26,27	1.45	4 (22%)	19,38,41	3.67	7 (36%)
1	PSU	A	1536	1	18,21,22	2.70	8 (44%)	22,30,33	4.92	13 (59%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	OMC	A	2824	1	19,22,23	1.51	5 (26%)	26,31,34	2.81	13 (50%)
1	PSU	A	5001	1,46	18,21,22	1.69	5 (27%)	22,30,33	3.58	12 (54%)
1	A2M	A	4571	1	18,25,26	1.38	1 (5%)	18,36,39	2.87	9 (50%)
1	OMG	A	3627	1	18,26,27	1.78	5 (27%)	19,38,41	2.78	5 (26%)
1	PSU	A	4361	1,46	18,21,22	1.69	5 (27%)	22,30,33	3.92	9 (40%)
1	PSU	A	4353	1,46	18,21,22	2.53	7 (38%)	22,30,33	4.81	14 (63%)
1	PSU	A	1862	1	18,21,22	1.70	3 (16%)	22,30,33	3.15	11 (50%)
1	PSU	A	4420	1	18,21,22	1.62	2 (11%)	22,30,33	2.13	6 (27%)
1	OMC	A	4456	1	19,22,23	1.74	5 (26%)	26,31,34	2.64	14 (53%)
1	PSU	A	3853	44,1	18,21,22	2.65	10 (55%)	22,30,33	5.12	11 (50%)
1	PSU	A	4532	1,46	18,21,22	2.86	9 (50%)	22,30,33	4.16	17 (77%)
1	PSU	A	1781	1	18,21,22	2.03	3 (16%)	22,30,33	2.83	6 (27%)
1	OMC	A	3701	1,46	19,22,23	1.49	3 (15%)	26,31,34	2.25	9 (34%)
1	OMG	A	4618	1,46	18,26,27	1.94	4 (22%)	19,38,41	3.03	8 (42%)
1	A2M	A	1524	1	18,25,26	2.03	6 (33%)	18,36,39	3.08	6 (33%)

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	OMG	A	4392	1	-	0/5/27/28	0/3/3/3
1	1MA	A	1322	44,1	-	0/3/25/26	0/3/3/3
1	PSU	A	4312	1	-	0/7/25/26	0/2/2/2
1	OMC	A	4536	1	-	0/9/27/28	0/2/2/2
1	PSU	A	4423	1	-	0/7/25/26	0/2/2/2
1	OMG	A	3792	1	-	0/5/27/28	0/3/3/3
1	A2M	A	3825	1	-	1/5/27/28	0/3/3/3
1	OMG	A	4494	1	-	0/5/27/28	0/3/3/3
1	OMG	A	2424	1	-	2/5/27/28	0/3/3/3
1	OMG	A	1316	1,46	-	0/5/27/28	0/3/3/3
1	OMG	A	3744	1	-	0/5/27/28	0/3/3/3
1	PSU	A	4521	44,1,46	-	0/7/25/26	0/2/2/2
1	OMG	A	4499	1	-	0/5/27/28	0/3/3/3
1	PSU	A	1582	1	-	1/7/25/26	0/2/2/2
1	UR3	A	4530	1	-	1/7/25/26	0/2/2/2
1	OMU	A	4620	1	-	0/9/27/28	0/2/2/2
1	OMG	A	1522	1	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	5MC	A	3782	44,1	-	0/7/25/26	0/2/2/2
1	OMU	A	4227	1	-	2/9/27/28	0/2/2/2
1	PSU	A	4299	1	-	0/7/25/26	0/2/2/2
1	OMG	A	4623	1	-	0/5/27/28	0/3/3/3
3	OMG	C	75	3	-	1/5/27/28	0/3/3/3
1	OMC	A	2861	1	-	0/9/27/28	0/2/2/2
3	PSU	C	55	3	-	0/7/25/26	0/2/2/2
1	PSU	A	3695	1,46	-	0/7/25/26	0/2/2/2
1	OMC	A	3887	1	-	0/9/27/28	0/2/2/2
1	PSU	A	1677	1,46	-	1/7/25/26	0/2/2/2
1	PSU	A	4471	1	-	0/7/25/26	0/2/2/2
1	6MZ	A	4220	1	-	0/5/27/28	0/3/3/3
1	OMU	A	2415	1	-	1/9/27/28	0/2/2/2
1	PSU	A	4576	1	-	0/7/25/26	0/2/2/2
1	A2M	A	3830	1	-	3/5/27/28	0/3/3/3
1	OMC	A	2365	44,1	-	2/9/27/28	0/2/2/2
1	OMG	A	3899	1	-	0/5/27/28	0/3/3/3
1	PSU	A	3639	1	-	0/7/25/26	0/2/2/2
1	OMG	A	2364	1	-	2/5/27/28	0/3/3/3
1	A2M	A	398	1	-	1/5/27/28	0/3/3/3
1	A2M	A	400	1	-	1/5/27/28	0/3/3/3
1	OMG	A	4637	1,46	-	0/5/27/28	0/3/3/3
1	PSU	A	4552	1	-	0/7/25/26	0/2/2/2
1	A2M	A	2787	44,1,46	-	0/5/27/28	0/3/3/3
1	PSU	A	2508	1	-	0/7/25/26	0/2/2/2
1	PSU	A	3851	1	-	1/7/25/26	0/2/2/2
1	PSU	A	4296	1	-	1/7/25/26	0/2/2/2
1	A2M	A	4590	1	-	1/5/27/28	0/3/3/3
1	PSU	A	4628	1	-	0/7/25/26	0/2/2/2
1	PSU	A	2632	1	-	0/7/25/26	0/2/2/2
1	OMC	A	2422	44,1	-	1/9/27/28	0/2/2/2
1	PSU	A	3844	1	-	1/7/25/26	0/2/2/2
1	A2M	A	1534	44,1	-	2/5/27/28	0/3/3/3
1	PSU	A	3715	1	-	0/7/25/26	0/2/2/2
1	OMU	A	3818	1,46	-	1/9/27/28	0/2/2/2
1	5MC	A	4447	1,46	-	4/7/25/26	0/2/2/2
1	PSU	A	4431	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	3920	44,1	-	0/7/25/26	0/2/2/2
1	PSU	A	4403	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	1792	1,46	-	2/7/25/26	0/2/2/2
1	PSU	A	4457	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	PSU	A	4493	1,46	-	0/7/25/26	0/2/2/2
1	OMU	A	4498	1,46	-	0/9/27/28	0/2/2/2
1	A2M	A	3718	1	-	1/5/27/28	0/3/3/3
1	A2M	A	3785	1	-	2/5/27/28	0/3/3/3
1	OMC	A	3841	1	-	0/9/27/28	0/2/2/2
1	A2M	A	3724	1	-	0/5/27/28	0/3/3/3
1	OMU	A	2837	1	-	0/9/27/28	0/2/2/2
1	PSU	A	3884	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	4293	1	-	0/7/25/26	0/2/2/2
1	A2M	A	1871	44,1,46	-	0/5/27/28	0/3/3/3
1	A2M	A	4523	44,1	-	0/5/27/28	0/3/3/3
1	PSU	A	4689	1	-	1/7/25/26	0/2/2/2
1	OMC	A	2804	1	-	0/9/27/28	0/2/2/2
1	A2M	A	2401	1	-	0/5/27/28	0/3/3/3
1	PSU	A	1860	1	-	0/7/25/26	0/2/2/2
1	OMU	A	3925	1	-	0/9/27/28	0/2/2/2
1	PSU	A	4972	1,46	-	2/7/25/26	0/2/2/2
1	A2M	A	1326	1	-	0/5/27/28	0/3/3/3
1	PSU	A	3729	1	-	1/7/25/26	0/2/2/2
1	OMC	A	3869	1	-	1/9/27/28	0/2/2/2
1	OMG	A	2876	1	-	0/5/27/28	0/3/3/3
1	A2M	A	2363	44,1	-	0/5/27/28	0/3/3/3
1	PSU	A	4673	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	2839	1	-	2/7/25/26	0/2/2/2
1	OMU	A	4306	1	-	0/9/27/28	0/2/2/2
1	PSU	A	1683	1,46	-	0/7/25/26	0/2/2/2
1	OMG	A	4228	1	-	1/5/27/28	0/3/3/3
1	PSU	A	5010	1	-	0/7/25/26	0/2/2/2
3	PSU	C	69	3	-	0/7/25/26	0/2/2/2
1	PSU	A	1744	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	1782	1	-	0/7/25/26	0/2/2/2
1	OMC	A	3808	1,46	-	1/9/27/28	0/2/2/2
1	PSU	A	4442	1	-	0/7/25/26	0/2/2/2
1	OMC	A	1340	1	-	0/9/27/28	0/2/2/2
1	OMC	A	2351	44,1	-	2/9/27/28	0/2/2/2
1	OMG	A	4196	44,1	-	1/5/27/28	0/3/3/3
1	A2M	A	3867	1	-	0/5/27/28	0/3/3/3
1	A2M	A	2815	1	-	3/5/27/28	0/3/3/3
1	PSU	A	4500	1,46	-	3/7/25/26	0/2/2/2
1	PSU	A	3637	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	4579	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMG	A	1625	1,46	-	1/5/27/28	0/3/3/3
1	OMG	A	4370	44,1	-	2/5/27/28	0/3/3/3
1	PSU	A	1536	1	-	0/7/25/26	0/2/2/2
1	OMC	A	2824	1	-	0/9/27/28	0/2/2/2
1	PSU	A	5001	1,46	-	1/7/25/26	0/2/2/2
1	A2M	A	4571	1	-	0/5/27/28	0/3/3/3
1	OMG	A	3627	1	-	0/5/27/28	0/3/3/3
1	PSU	A	4361	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	4353	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	1862	1	-	0/7/25/26	0/2/2/2
1	PSU	A	4420	1	-	0/7/25/26	0/2/2/2
1	OMC	A	4456	1	-	0/9/27/28	0/2/2/2
1	PSU	A	3853	44,1	-	0/7/25/26	0/2/2/2
1	PSU	A	4532	1,46	-	0/7/25/26	0/2/2/2
1	PSU	A	1781	1	-	0/7/25/26	0/2/2/2
1	OMC	A	3701	1,46	-	5/9/27/28	0/2/2/2
1	OMG	A	4618	1,46	-	0/5/27/28	0/3/3/3
1	A2M	A	1524	1	-	1/5/27/28	0/3/3/3

All (559) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4228	OMG	O4'-C1'	-9.74	1.27	1.41
1	A	4623	OMG	C6-N1	-8.25	1.25	1.37
1	A	1782	PSU	C6-C5	8.00	1.44	1.35
1	A	1677	PSU	C2'-C1'	-7.78	1.43	1.53
1	A	2422	OMC	C5-C4	7.46	1.60	1.42
1	A	3899	OMG	C6-N1	-7.24	1.27	1.37
1	A	2876	OMG	C6-N1	-7.17	1.27	1.37
1	A	4353	PSU	C2-N3	-6.82	1.25	1.37
1	A	1522	OMG	C6-N1	-6.77	1.27	1.37
1	A	4972	PSU	C6-C5	6.71	1.43	1.35
1	A	2364	OMG	C6-N1	-6.69	1.27	1.37
1	A	1781	PSU	C6-C5	6.67	1.43	1.35
1	A	3639	PSU	C2-N3	-6.59	1.26	1.37
1	A	4306	OMU	C4-N3	-6.53	1.26	1.38
1	A	398	A2M	C2-N3	6.30	1.42	1.32
1	A	3884	PSU	C4-N3	-6.10	1.27	1.38
1	A	1683	PSU	C4-N3	-6.07	1.27	1.38
1	A	1534	A2M	C4-N3	-6.02	1.27	1.35
1	A	4532	PSU	C6-C5	5.91	1.42	1.35
1	A	4299	PSU	C4-N3	-5.91	1.27	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	3715	PSU	C6-C5	5.90	1.42	1.35
1	A	4590	A2M	C2-N3	5.86	1.41	1.32
1	A	4442	PSU	C6-C5	5.77	1.42	1.35
1	A	3844	PSU	C4-N3	-5.71	1.28	1.38
1	A	1524	A2M	C4-N3	-5.63	1.27	1.35
1	A	1860	PSU	C6-C5	5.52	1.41	1.35
1	A	4447	5MC	C6-N1	-5.50	1.28	1.38
1	A	1744	PSU	C6-C5	5.40	1.41	1.35
1	A	4299	PSU	C2-N3	-5.38	1.28	1.37
1	A	4306	OMU	C2-N3	-5.36	1.28	1.38
1	A	1683	PSU	C2'-C1'	-5.33	1.46	1.53
1	A	1582	PSU	C4-N3	-5.32	1.29	1.38
1	A	4530	UR3	C2-N1	-5.27	1.31	1.38
1	A	4532	PSU	O3'-C3'	5.21	1.55	1.43
1	A	3841	OMC	C6-C5	5.19	1.47	1.35
1	A	4423	PSU	C6-C5	5.16	1.41	1.35
1	A	4420	PSU	C6-C5	5.15	1.41	1.35
1	A	1536	PSU	C2'-C1'	-5.14	1.47	1.53
1	A	1677	PSU	C6-C5	-5.08	1.29	1.35
1	A	4403	PSU	C2'-C1'	-5.05	1.47	1.53
1	A	3853	PSU	C2-N1	-5.02	1.29	1.36
1	A	2424	OMG	C4-N3	-5.01	1.25	1.37
1	A	3830	A2M	C8-N7	4.99	1.43	1.34
3	C	69	PSU	C2-N1	-4.99	1.30	1.36
1	A	3637	PSU	C2-N1	-4.97	1.30	1.36
1	A	3899	OMG	C4-N3	-4.97	1.25	1.37
1	A	2837	OMU	C2-N3	-4.95	1.29	1.38
1	A	1677	PSU	O4'-C1'	-4.87	1.37	1.43
1	A	4521	PSU	C2-N3	-4.85	1.29	1.37
1	A	2632	PSU	C6-C5	4.81	1.40	1.35
1	A	2351	OMC	C6-N1	-4.80	1.26	1.38
1	A	4673	PSU	C4-N3	-4.80	1.29	1.38
1	A	1326	A2M	C3'-C4'	-4.76	1.40	1.53
1	A	1862	PSU	C4-N3	-4.74	1.30	1.38
1	A	4457	PSU	C4-N3	-4.73	1.30	1.38
1	A	3920	PSU	C2'-C1'	-4.68	1.47	1.53
1	A	4628	PSU	C2'-C1'	-4.65	1.47	1.53
1	A	3884	PSU	C2-N3	-4.63	1.29	1.37
1	A	2839	PSU	C4-N3	-4.63	1.30	1.38
1	A	1322	1MA	C2'-C1'	-4.62	1.46	1.53
1	A	4618	OMG	C6-N1	-4.61	1.31	1.37
1	A	4628	PSU	C2-N1	-4.61	1.30	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1782	PSU	C2-N1	4.58	1.42	1.36
1	A	3844	PSU	C6-C5	4.55	1.40	1.35
1	A	4618	OMG	C2-N1	-4.52	1.26	1.37
1	A	4196	OMG	C6-N1	-4.52	1.31	1.37
1	A	4579	PSU	C2-N1	-4.52	1.30	1.36
1	A	1536	PSU	C2-N3	-4.51	1.29	1.37
1	A	2363	A2M	C4-N3	-4.51	1.29	1.35
1	A	3695	PSU	C4-N3	-4.51	1.30	1.38
1	A	3869	OMC	O2-C2	-4.50	1.15	1.23
1	A	4623	OMG	C5-C6	-4.49	1.38	1.47
1	A	4673	PSU	C2'-C1'	-4.49	1.47	1.53
1	A	2422	OMC	C2-N3	4.48	1.45	1.36
1	A	3818	OMU	C5-C4	-4.47	1.33	1.43
1	A	4353	PSU	C4-N3	-4.46	1.30	1.38
1	A	3920	PSU	C2-N3	-4.44	1.29	1.37
1	A	1322	1MA	C2-N1	-4.43	1.27	1.35
1	A	4637	OMG	C6-N1	-4.41	1.31	1.37
1	A	2837	OMU	C6-C5	4.41	1.45	1.35
1	A	2351	OMC	O5'-C5'	-4.40	1.34	1.44
1	A	4628	PSU	C4-N3	-4.37	1.30	1.38
1	A	3639	PSU	C4-N3	-4.34	1.30	1.38
1	A	3792	OMG	C4-N3	-4.30	1.26	1.37
1	A	4620	OMU	C6-C5	4.27	1.45	1.35
1	A	1683	PSU	C6-C5	4.27	1.40	1.35
1	A	3853	PSU	C2'-C1'	-4.27	1.48	1.53
1	A	4499	OMG	C6-N1	-4.23	1.31	1.37
1	A	2351	OMC	C5-C4	-4.23	1.33	1.42
1	A	5010	PSU	C6-C5	4.23	1.40	1.35
1	A	1677	PSU	O5'-C5'	-4.21	1.34	1.44
1	A	3627	OMG	C6-N1	-4.20	1.31	1.37
1	A	3884	PSU	C2'-C1'	-4.17	1.48	1.53
1	A	1683	PSU	C2-N3	-4.17	1.30	1.37
1	A	3853	PSU	O5'-C5'	-4.16	1.34	1.44
1	A	4571	A2M	O4'-C1'	4.16	1.46	1.41
1	A	398	A2M	C8-N7	4.16	1.42	1.34
1	A	4532	PSU	C4-C5	4.15	1.56	1.44
1	A	2508	PSU	C2-N3	-4.15	1.30	1.37
1	A	4536	OMC	C2'-C1'	-4.15	1.42	1.53
1	A	3729	PSU	C6-C5	4.13	1.40	1.35
1	A	4620	OMU	C4-N3	-4.11	1.31	1.38
1	A	3782	5MC	C6-N1	-4.11	1.31	1.38
1	A	1860	PSU	C4-N3	-4.09	1.31	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4689	PSU	C6-C5	4.09	1.40	1.35
1	A	3639	PSU	C2-N1	-4.08	1.31	1.36
1	A	4403	PSU	C4-N3	-4.07	1.31	1.38
1	A	1534	A2M	O4'-C1'	-4.05	1.35	1.41
1	A	1536	PSU	C1'-C5	-4.03	1.41	1.50
1	A	1536	PSU	O2-C2	-3.99	1.15	1.23
1	A	3851	PSU	C4-N3	-3.99	1.31	1.38
1	A	4312	PSU	C2-N3	-3.97	1.30	1.37
1	A	3718	A2M	O4'-C1'	3.97	1.46	1.41
1	A	3637	PSU	O4'-C1'	-3.96	1.38	1.43
1	A	4228	OMG	C3'-C2'	-3.95	1.44	1.52
1	A	3724	A2M	O4'-C1'	3.91	1.46	1.41
1	A	4521	PSU	O4-C4	-3.90	1.16	1.23
1	A	4521	PSU	C2-N1	-3.90	1.31	1.36
1	A	2837	OMU	C4-N3	-3.89	1.31	1.38
1	A	4457	PSU	C6-C5	3.89	1.39	1.35
1	A	4494	OMG	C2-N1	-3.89	1.28	1.37
1	A	3639	PSU	C2'-C1'	-3.88	1.48	1.53
1	A	3884	PSU	C2-N1	-3.86	1.31	1.36
1	A	2824	OMC	C6-C5	3.85	1.44	1.35
1	A	3869	OMC	C2-N3	-3.85	1.28	1.36
1	A	4500	PSU	C6-C5	3.85	1.39	1.35
1	A	4521	PSU	C4-N3	-3.85	1.31	1.38
1	A	2351	OMC	O2-C2	-3.83	1.16	1.23
1	A	1781	PSU	C4-C5	3.83	1.55	1.44
1	A	1522	OMG	C2-N1	-3.81	1.28	1.37
1	A	4403	PSU	C2-N3	-3.80	1.31	1.37
1	A	3925	OMU	C4-N3	-3.79	1.31	1.38
1	A	4536	OMC	C6-C5	3.79	1.43	1.35
1	A	1782	PSU	C4-C5	3.77	1.54	1.44
1	A	4361	PSU	C2-N3	-3.74	1.31	1.37
1	A	4532	PSU	C2'-C1'	3.73	1.58	1.53
1	A	2839	PSU	C2-N3	-3.69	1.31	1.37
1	A	4628	PSU	C6-N1	-3.65	1.30	1.36
1	A	3627	OMG	C8-N7	3.65	1.41	1.35
1	A	4228	OMG	C2-N1	-3.65	1.28	1.37
1	A	4447	5MC	O2'-C2'	3.63	1.51	1.43
1	A	3920	PSU	C4-N3	-3.63	1.32	1.38
1	A	4306	OMU	C3'-C4'	-3.63	1.43	1.53
1	A	1326	A2M	C5-N7	-3.63	1.26	1.39
1	A	4620	OMU	C5-C4	-3.62	1.35	1.43
1	A	2401	A2M	C4-N3	-3.62	1.30	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4521	PSU	O4'-C1'	-3.60	1.38	1.43
1	A	1316	OMG	C6-N1	-3.60	1.32	1.37
1	A	4523	A2M	O4'-C1'	3.59	1.46	1.41
1	A	5001	PSU	C2-N3	-3.58	1.31	1.37
1	A	4972	PSU	C2'-C1'	-3.58	1.49	1.53
1	A	2787	A2M	C4-N3	-3.57	1.30	1.35
1	A	4673	PSU	C3'-C4'	-3.57	1.43	1.53
1	A	4532	PSU	C2-N1	3.56	1.41	1.36
1	A	3853	PSU	C6-C5	3.56	1.39	1.35
1	A	4403	PSU	C2-N1	-3.55	1.31	1.36
1	A	2632	PSU	C4-C5	3.55	1.54	1.44
1	A	1522	OMG	O5'-C5'	-3.55	1.36	1.44
1	A	4296	PSU	O2-C2	3.54	1.30	1.23
1	A	3844	PSU	C2-N3	-3.53	1.31	1.37
1	A	3853	PSU	O4'-C4'	-3.52	1.37	1.45
1	A	1871	A2M	O5'-C5'	-3.52	1.36	1.44
1	A	4689	PSU	C4-C5	3.51	1.54	1.44
1	A	1534	A2M	C5-N7	-3.50	1.27	1.39
1	A	4498	OMU	C2-N3	-3.49	1.31	1.38
1	A	3884	PSU	O5'-C5'	-3.49	1.36	1.44
1	A	4370	OMG	C4-N3	-3.47	1.28	1.37
1	A	3744	OMG	C6-N1	-3.45	1.32	1.37
1	A	3884	PSU	O4-C4	-3.45	1.17	1.23
1	A	1536	PSU	O5'-C5'	-3.45	1.36	1.44
1	A	1677	PSU	C2-N3	-3.44	1.31	1.37
1	A	2422	OMC	C3'-C2'	-3.44	1.45	1.52
1	A	1524	A2M	C2-N3	3.43	1.37	1.32
1	A	3695	PSU	C2-N1	-3.42	1.32	1.36
1	A	3851	PSU	C2-N3	-3.42	1.31	1.37
1	A	2364	OMG	C4-N3	-3.41	1.29	1.37
1	A	2508	PSU	C4-N3	-3.41	1.32	1.38
1	A	4523	A2M	C3'-C2'	-3.41	1.45	1.52
3	C	69	PSU	C2-N3	-3.40	1.31	1.37
1	A	4228	OMG	C6-N1	-3.40	1.32	1.37
1	A	3637	PSU	C3'-C4'	-3.40	1.44	1.53
1	A	4220	6MZ	C2-N3	3.40	1.37	1.32
1	A	4403	PSU	C1'-C5	-3.39	1.42	1.50
1	A	4494	OMG	O5'-C5'	-3.38	1.36	1.44
1	A	1316	OMG	O3'-C3'	-3.36	1.35	1.43
1	A	4552	PSU	C4-N3	-3.35	1.32	1.38
1	A	5001	PSU	C6-C5	3.34	1.39	1.35
1	A	4456	OMC	C6-N1	-3.34	1.29	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4227	OMU	C6-C5	3.34	1.42	1.35
1	A	1322	1MA	C4-N3	-3.33	1.27	1.37
1	A	4392	OMG	C6-N1	-3.33	1.32	1.37
1	A	1536	PSU	C4-N3	-3.32	1.32	1.38
1	A	3867	A2M	O5'-C5'	-3.32	1.36	1.44
1	A	4494	OMG	C6-N1	-3.31	1.32	1.37
1	A	4673	PSU	C2-N3	-3.31	1.31	1.37
1	A	4227	OMU	C3'-C4'	-3.31	1.44	1.53
1	A	3867	A2M	C4-N3	-3.31	1.31	1.35
1	A	2415	OMU	C2'-C1'	-3.31	1.44	1.53
1	A	3920	PSU	O4'-C1'	-3.29	1.39	1.43
1	A	2837	OMU	C2-N1	3.29	1.43	1.38
1	A	1536	PSU	C2-N1	-3.29	1.32	1.36
1	A	1522	OMG	C5-C6	-3.26	1.40	1.47
1	A	4552	PSU	C6-C5	-3.25	1.31	1.35
1	A	3818	OMU	C2-N3	-3.23	1.32	1.38
1	A	4590	A2M	C4-N3	-3.23	1.31	1.35
1	A	1871	A2M	C4-N3	-3.22	1.31	1.35
3	C	69	PSU	C2'-C1'	-3.21	1.49	1.53
1	A	1677	PSU	O4-C4	3.21	1.29	1.23
1	A	3825	A2M	C5-N7	-3.21	1.28	1.39
3	C	55	PSU	C2-N3	-3.21	1.32	1.37
1	A	4353	PSU	C2-N1	-3.19	1.32	1.36
1	A	4220	6MZ	O4'-C1'	3.19	1.45	1.41
1	A	3701	OMC	C6-N1	-3.18	1.30	1.38
1	A	4312	PSU	C4-N3	-3.18	1.32	1.38
1	A	4972	PSU	C4-C5	3.17	1.53	1.44
1	A	3920	PSU	O5'-C5'	-3.15	1.37	1.44
1	A	3637	PSU	C2-N3	-3.13	1.32	1.37
1	A	1683	PSU	C2-N1	-3.12	1.32	1.36
1	A	3920	PSU	O2-C2	-3.12	1.16	1.23
1	A	3724	A2M	C2-N3	3.11	1.37	1.32
1	A	2837	OMU	O5'-C5'	-3.09	1.37	1.44
1	A	4361	PSU	C2-N1	-3.08	1.32	1.36
1	A	2424	OMG	O4'-C1'	3.07	1.45	1.41
1	A	3715	PSU	C4-C5	3.07	1.52	1.44
1	A	1316	OMG	O5'-C5'	-3.06	1.37	1.44
1	A	4420	PSU	C4-C5	3.06	1.52	1.44
1	A	3729	PSU	C2'-C1'	-3.05	1.49	1.53
1	A	4456	OMC	C2-N1	-3.04	1.33	1.40
1	A	2422	OMC	C2-N1	3.03	1.46	1.40
1	A	3627	OMG	O5'-C5'	-3.03	1.37	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1677	PSU	C4-N3	-3.03	1.33	1.38
1	A	3718	A2M	C5-C4	3.02	1.48	1.40
1	A	4689	PSU	O4-C4	3.01	1.29	1.23
1	A	3853	PSU	O2-C2	-3.01	1.17	1.23
1	A	4353	PSU	O2-C2	-3.00	1.17	1.23
1	A	2422	OMC	O5'-C5'	-3.00	1.37	1.44
1	A	4536	OMC	C3'-C2'	-3.00	1.46	1.52
1	A	1677	PSU	C4-C5	2.99	1.52	1.44
1	A	4494	OMG	O2'-C2'	-2.99	1.35	1.42
1	A	4620	OMU	C6-N1	-2.98	1.30	1.38
1	A	4637	OMG	C2-N1	-2.98	1.30	1.37
1	A	2815	A2M	C3'-C4'	-2.98	1.45	1.53
1	A	4228	OMG	C8-N7	2.98	1.40	1.35
1	A	3782	5MC	O4'-C4'	-2.98	1.38	1.45
1	A	1871	A2M	O4'-C1'	2.97	1.45	1.41
1	A	4623	OMG	O5'-C5'	-2.96	1.37	1.44
1	A	1683	PSU	O4'-C4'	-2.96	1.38	1.45
1	A	1536	PSU	O4-C4	-2.96	1.18	1.23
1	A	4423	PSU	C4-C5	2.95	1.52	1.44
1	A	4293	PSU	C2'-C1'	-2.94	1.49	1.53
1	A	4431	PSU	C4-N3	-2.93	1.33	1.38
1	A	1316	OMG	C2-N1	-2.92	1.30	1.37
1	A	4579	PSU	C6-C5	2.92	1.38	1.35
1	A	398	A2M	O4'-C1'	2.90	1.45	1.41
1	A	2815	A2M	C8-N7	2.90	1.39	1.34
3	C	55	PSU	C2'-C1'	-2.89	1.50	1.53
1	A	1582	PSU	O2-C2	2.89	1.29	1.23
1	A	4442	PSU	C4-N3	-2.89	1.33	1.38
1	A	4523	A2M	C5-N7	-2.89	1.29	1.39
1	A	3782	5MC	C6-C5	2.88	1.39	1.34
1	A	3925	OMU	C3'-C4'	-2.88	1.45	1.53
1	A	2839	PSU	O4'-C1'	-2.88	1.39	1.43
1	A	4972	PSU	C6-N1	-2.88	1.31	1.36
1	A	4228	OMG	O2'-C2'	2.87	1.50	1.42
1	A	2508	PSU	C6-N1	-2.87	1.31	1.36
1	A	1625	OMG	C2-N1	-2.87	1.30	1.37
1	A	4306	OMU	C5-C4	-2.86	1.37	1.43
1	A	3785	A2M	O4'-C1'	-2.86	1.37	1.41
1	A	1322	1MA	O5'-C5'	-2.86	1.37	1.44
1	A	3830	A2M	C3'-C2'	-2.86	1.46	1.52
1	A	4620	OMU	C2-N3	-2.85	1.32	1.38
1	A	1677	PSU	C1'-C5	-2.84	1.43	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4456	OMC	C6-C5	2.84	1.41	1.35
1	A	4590	A2M	C8-N7	2.84	1.39	1.34
1	A	4312	PSU	O4-C4	2.84	1.29	1.23
1	A	3818	OMU	O4'-C4'	-2.83	1.38	1.45
1	A	4576	PSU	C2'-C1'	-2.82	1.50	1.53
1	A	4293	PSU	C2-N1	-2.82	1.32	1.36
1	A	2415	OMU	C2-N1	2.82	1.43	1.38
1	A	4532	PSU	C3'-C4'	2.82	1.60	1.53
1	A	4628	PSU	C2-N3	-2.81	1.32	1.37
3	C	75	OMG	C6-N1	-2.81	1.33	1.37
1	A	4579	PSU	C2'-C1'	-2.81	1.50	1.53
1	A	3729	PSU	C4-C5	2.81	1.52	1.44
1	A	1326	A2M	C4-N3	-2.80	1.31	1.35
1	A	1677	PSU	O4'-C4'	-2.80	1.38	1.45
1	A	4521	PSU	C6-C5	-2.79	1.32	1.35
1	A	4296	PSU	O4-C4	2.78	1.28	1.23
1	A	1744	PSU	C4-C5	2.78	1.52	1.44
1	A	2861	OMC	C6-C5	2.78	1.41	1.35
1	A	4552	PSU	C2-N3	-2.78	1.32	1.37
1	A	3808	OMC	C5-C4	-2.77	1.36	1.42
1	A	2401	A2M	O4'-C1'	2.76	1.44	1.41
1	A	1677	PSU	C2-N1	-2.76	1.33	1.36
1	A	4457	PSU	C2'-C1'	-2.76	1.50	1.53
1	A	4293	PSU	C6-C5	2.76	1.38	1.35
1	A	2365	OMC	C2-N3	-2.76	1.30	1.36
1	A	4228	OMG	O5'-C5'	2.75	1.51	1.44
1	A	2804	OMC	C6-C5	2.74	1.41	1.35
1	A	3899	OMG	O5'-C5'	-2.74	1.38	1.44
1	A	3695	PSU	C2'-C1'	-2.74	1.50	1.53
1	A	4392	OMG	C2-N2	-2.74	1.27	1.34
1	A	4392	OMG	C2-N1	-2.73	1.30	1.37
1	A	2351	OMC	O2'-C2'	-2.73	1.35	1.42
1	A	4296	PSU	C1'-C5	-2.73	1.44	1.50
1	A	2508	PSU	O4-C4	2.73	1.28	1.23
1	A	4689	PSU	C2'-C1'	-2.72	1.50	1.53
1	A	3695	PSU	C2-N3	-2.72	1.32	1.37
1	A	3899	OMG	O4'-C4'	-2.72	1.38	1.45
1	A	4392	OMG	O6-C6	-2.71	1.17	1.23
1	A	4227	OMU	C5-C4	2.71	1.49	1.43
1	A	3841	OMC	C5-C4	-2.71	1.36	1.42
1	A	3844	PSU	C2-N1	-2.71	1.33	1.36
1	A	2424	OMG	O5'-C5'	-2.71	1.38	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1625	OMG	O5'-C5'	-2.70	1.38	1.44
1	A	4673	PSU	O4'-C1'	-2.70	1.40	1.43
1	A	4494	OMG	C2-N3	-2.70	1.26	1.33
1	A	5001	PSU	C4-N3	-2.69	1.33	1.38
1	A	2837	OMU	C2'-C1'	-2.69	1.46	1.53
1	A	2824	OMC	C6-N1	-2.68	1.31	1.38
1	A	3639	PSU	O2-C2	-2.68	1.17	1.23
1	A	4552	PSU	C4-C5	2.67	1.51	1.44
1	A	4370	OMG	C2-N3	2.66	1.39	1.33
3	C	69	PSU	C4-N3	-2.66	1.33	1.38
1	A	3869	OMC	C2-N1	-2.66	1.34	1.40
1	A	3639	PSU	O4'-C4'	-2.66	1.39	1.45
1	A	4227	OMU	C2-N1	2.65	1.42	1.38
1	A	1625	OMG	C6-N1	-2.64	1.33	1.37
3	C	55	PSU	C4-N3	-2.64	1.33	1.38
1	A	4361	PSU	O2-C2	-2.62	1.17	1.23
1	A	1524	A2M	O5'-C5'	-2.62	1.38	1.44
1	A	3718	A2M	C2-N1	2.62	1.38	1.33
1	A	4972	PSU	C4-N3	-2.62	1.34	1.38
1	A	2364	OMG	C3'-C4'	-2.61	1.46	1.53
1	A	4532	PSU	O4'-C4'	2.61	1.50	1.45
1	A	4306	OMU	C6-N1	-2.61	1.31	1.38
1	A	3869	OMC	O3'-C3'	-2.60	1.36	1.43
1	A	4536	OMC	C6-N1	-2.60	1.31	1.38
1	A	4498	OMU	C6-C5	2.60	1.41	1.35
1	A	4471	PSU	C4-C5	2.60	1.51	1.44
1	A	4312	PSU	C2-N1	-2.60	1.33	1.36
1	A	3884	PSU	C3'-C4'	-2.59	1.46	1.53
1	A	5010	PSU	C4-C5	2.59	1.51	1.44
1	A	2415	OMU	C6-N1	-2.58	1.31	1.38
1	A	4293	PSU	C2-N3	-2.58	1.33	1.37
1	A	4576	PSU	O2-C2	2.58	1.28	1.23
1	A	3920	PSU	C3'-C2'	-2.58	1.46	1.53
1	A	2861	OMC	O2-C2	2.58	1.28	1.23
1	A	2508	PSU	C2'-C1'	-2.57	1.50	1.53
1	A	4689	PSU	C3'-C4'	-2.57	1.46	1.53
1	A	3729	PSU	C4-N3	-2.56	1.34	1.38
1	A	4623	OMG	C3'-C2'	-2.56	1.47	1.52
1	A	4353	PSU	C3'-C2'	-2.56	1.46	1.53
1	A	4618	OMG	C5-C6	-2.55	1.42	1.47
1	A	4227	OMU	O4'-C4'	2.54	1.50	1.45
1	A	3867	A2M	C5-N7	-2.54	1.30	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4590	A2M	C5-N7	-2.54	1.30	1.39
1	A	3785	A2M	C4-N3	-2.54	1.32	1.35
1	A	3744	OMG	C2-N1	-2.54	1.31	1.37
1	A	3853	PSU	C3'-C4'	-2.53	1.46	1.53
1	A	4623	OMG	C4-N3	-2.53	1.31	1.37
1	A	3729	PSU	O2-C2	2.53	1.28	1.23
1	A	4618	OMG	O5'-C5'	-2.53	1.38	1.44
1	A	400	A2M	O4'-C1'	-2.53	1.37	1.41
1	A	4536	OMC	C5-C4	-2.52	1.37	1.42
1	A	3830	A2M	C5-N7	-2.52	1.30	1.39
1	A	3851	PSU	C3'-C4'	-2.52	1.46	1.53
1	A	1683	PSU	O4-C4	-2.52	1.18	1.23
1	A	3637	PSU	C4-N3	-2.52	1.34	1.38
1	A	4306	OMU	C2'-C1'	-2.51	1.46	1.53
1	A	3925	OMU	C2-N3	-2.51	1.33	1.38
1	A	2861	OMC	C5-C4	-2.50	1.37	1.42
1	A	4431	PSU	C6-C5	2.49	1.38	1.35
1	A	3841	OMC	C3'-C4'	-2.49	1.46	1.53
1	A	3637	PSU	C6-N1	-2.49	1.32	1.36
1	A	4576	PSU	C6-C5	2.48	1.38	1.35
1	A	3695	PSU	C6-N1	-2.48	1.32	1.36
1	A	2422	OMC	C6-C5	2.48	1.40	1.35
1	A	3925	OMU	C6-N1	-2.48	1.32	1.38
1	A	4628	PSU	C6-C5	2.48	1.38	1.35
1	A	3867	A2M	C8-N7	2.47	1.39	1.34
1	A	3841	OMC	O2'-C2'	-2.47	1.36	1.42
1	A	4361	PSU	O2'-C2'	2.47	1.48	1.43
1	A	3744	OMG	C5-C6	-2.47	1.42	1.47
1	A	2365	OMC	C5-C4	-2.47	1.37	1.42
1	A	4442	PSU	C6-N1	-2.47	1.32	1.36
1	A	3884	PSU	O2'-C2'	-2.46	1.37	1.43
1	A	1683	PSU	O2-C2	-2.46	1.18	1.23
1	A	400	A2M	C4-N3	-2.46	1.32	1.35
1	A	2364	OMG	C2-N3	-2.45	1.27	1.33
1	A	3818	OMU	C2-N1	2.44	1.42	1.38
1	A	2363	A2M	O4'-C1'	2.44	1.44	1.41
1	A	2424	OMG	C6-N1	-2.44	1.34	1.37
1	A	4532	PSU	C3'-C2'	2.43	1.60	1.53
1	A	3715	PSU	O2-C2	2.43	1.28	1.23
1	A	4536	OMC	C4-N3	-2.43	1.29	1.34
1	A	4296	PSU	C2-N1	-2.43	1.33	1.36
1	A	4523	A2M	C4-N3	-2.42	1.32	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	3887	OMC	C3'-C4'	-2.42	1.46	1.53
1	A	4530	UR3	O5'-C5'	-2.42	1.38	1.44
1	A	2351	OMC	O4'-C1'	-2.41	1.36	1.42
1	A	4471	PSU	C6-C5	2.40	1.38	1.35
1	A	2861	OMC	C6-N1	-2.40	1.32	1.38
1	A	2632	PSU	O4-C4	2.39	1.28	1.23
1	A	4576	PSU	C4-N3	-2.39	1.34	1.38
1	A	3818	OMU	C4-N3	-2.39	1.34	1.38
1	A	4536	OMC	C4-N4	-2.39	1.28	1.33
1	A	4296	PSU	O4'-C1'	-2.38	1.40	1.43
1	A	3899	OMG	C2-N2	2.37	1.39	1.34
1	A	2365	OMC	C6-N1	-2.37	1.32	1.38
1	A	3869	OMC	C6-C5	2.36	1.40	1.35
1	A	4370	OMG	O2'-C2'	2.36	1.48	1.42
1	A	4228	OMG	O2'-CM2	2.36	1.50	1.42
1	A	2351	OMC	C2-N3	-2.36	1.31	1.36
1	A	4457	PSU	O2'-C2'	2.36	1.48	1.43
1	A	3853	PSU	O4-C4	-2.36	1.19	1.23
1	A	2363	A2M	C5-N7	-2.36	1.31	1.39
1	A	3841	OMC	C6-N1	-2.36	1.32	1.38
1	A	2815	A2M	C5-N7	-2.35	1.31	1.39
1	A	1683	PSU	C3'-C4'	-2.35	1.47	1.53
1	A	2415	OMU	O4-C4	2.35	1.29	1.24
1	A	2804	OMC	O3'-C3'	-2.35	1.37	1.43
1	A	1582	PSU	C6-C5	2.34	1.38	1.35
1	A	3830	A2M	O3'-C3'	2.34	1.48	1.43
1	A	4532	PSU	C6-N1	2.34	1.40	1.36
1	A	4552	PSU	O5'-C5'	-2.34	1.39	1.44
1	A	2364	OMG	C5-C4	-2.34	1.37	1.43
1	A	2839	PSU	C6-C5	2.34	1.38	1.35
1	A	4493	PSU	C2-N3	2.33	1.41	1.37
1	A	3715	PSU	O4-C4	2.33	1.28	1.23
1	A	3925	OMU	C6-C5	2.31	1.40	1.35
1	A	4552	PSU	O4'-C1'	-2.31	1.40	1.43
1	A	2824	OMC	C2'-C1'	-2.31	1.47	1.53
1	A	1322	1MA	C8-N7	-2.30	1.31	1.35
1	A	3825	A2M	C2-N1	-2.30	1.29	1.33
1	A	3744	OMG	C8-N7	2.30	1.38	1.35
1	A	1522	OMG	O6-C6	-2.30	1.18	1.23
1	A	4494	OMG	C3'-C4'	-2.30	1.47	1.53
1	A	4299	PSU	C3'-C4'	-2.30	1.47	1.53
1	A	4299	PSU	C2-N1	-2.29	1.33	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	3627	OMG	C2-N1	-2.29	1.32	1.37
1	A	2364	OMG	O5'-C5'	-2.28	1.39	1.44
1	A	2351	OMC	C3'-C2'	-2.27	1.47	1.52
1	A	4500	PSU	O3'-C3'	-2.27	1.37	1.43
1	A	1524	A2M	C3'-C4'	-2.27	1.47	1.53
1	A	4456	OMC	C5-C4	-2.27	1.37	1.42
1	A	3844	PSU	O2-C2	2.26	1.28	1.23
1	A	4530	UR3	C2-N3	-2.26	1.34	1.39
1	A	2351	OMC	C6-C5	2.25	1.40	1.35
1	A	3920	PSU	C5'-C4'	2.25	1.58	1.51
1	A	1862	PSU	C2-N3	-2.25	1.33	1.37
1	A	2787	A2M	C3'-C2'	-2.24	1.47	1.52
1	A	4228	OMG	C3'-C4'	-2.24	1.47	1.53
1	A	4456	OMC	O2'-C2'	-2.24	1.36	1.42
1	A	3884	PSU	C4-C5	-2.24	1.37	1.44
1	A	3701	OMC	C3'-C2'	-2.24	1.48	1.52
1	A	4530	UR3	C4-N3	-2.24	1.35	1.40
1	A	2787	A2M	C3'-C4'	-2.23	1.47	1.53
1	A	3744	OMG	O3'-C3'	2.23	1.48	1.43
1	A	2508	PSU	O5'-C5'	-2.23	1.39	1.44
1	A	2415	OMU	C3'-C4'	-2.23	1.47	1.53
1	A	1860	PSU	C4-C5	2.22	1.50	1.44
1	A	4471	PSU	C2'-C1'	-2.22	1.50	1.53
1	A	4499	OMG	O4'-C1'	2.22	1.44	1.41
1	A	4312	PSU	O5'-C5'	-2.22	1.39	1.44
1	A	4471	PSU	C2-N3	-2.22	1.33	1.37
1	A	3899	OMG	C3'-C2'	-2.21	1.48	1.52
1	A	3782	5MC	O5'-C5'	-2.21	1.39	1.44
1	A	4299	PSU	C1'-C5	-2.21	1.45	1.50
1	A	1340	OMC	O3'-C3'	-2.20	1.37	1.43
1	A	1782	PSU	C4-N3	-2.19	1.34	1.38
1	A	2424	OMG	C5-C4	-2.19	1.37	1.43
1	A	1340	OMC	C6-C5	2.19	1.40	1.35
1	A	1340	OMC	O4'-C4'	-2.19	1.40	1.45
1	A	3627	OMG	C4-N3	-2.19	1.32	1.37
1	A	4552	PSU	C2-N1	-2.19	1.33	1.36
1	A	4500	PSU	O4'-C1'	2.19	1.46	1.43
1	A	1534	A2M	O2'-C2'	-2.19	1.37	1.42
1	A	4499	OMG	C8-N7	2.18	1.38	1.35
1	A	2508	PSU	O2-C2	2.18	1.28	1.23
1	A	4579	PSU	C2-N3	-2.18	1.33	1.37
1	A	4637	OMG	C8-N7	2.18	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1625	OMG	O3'-C3'	2.17	1.48	1.43
1	A	2424	OMG	C3'-C4'	-2.16	1.47	1.53
1	A	4576	PSU	C1'-C5	-2.16	1.45	1.50
1	A	1862	PSU	C4-C5	2.16	1.50	1.44
1	A	5001	PSU	O3'-C3'	-2.16	1.37	1.43
1	A	4361	PSU	O4'-C1'	-2.15	1.40	1.43
1	A	4620	OMU	O5'-C5'	2.15	1.50	1.44
1	A	3851	PSU	C2'-C1'	-2.15	1.51	1.53
1	A	1340	OMC	C3'-C2'	-2.15	1.48	1.52
1	A	4493	PSU	C1'-C5	-2.15	1.45	1.50
1	A	3724	A2M	C5-C4	2.15	1.46	1.40
1	A	1524	A2M	C8-N7	2.14	1.38	1.34
1	A	4370	OMG	C2-N2	2.14	1.39	1.34
1	A	3869	OMC	O4'-C4'	-2.14	1.40	1.45
1	A	3920	PSU	C3'-C4'	-2.14	1.47	1.53
1	A	4494	OMG	C3'-C2'	-2.14	1.48	1.52
1	A	3853	PSU	O4'-C1'	-2.13	1.40	1.43
1	A	1524	A2M	C5-C4	2.13	1.46	1.40
1	A	3899	OMG	C2-N1	-2.13	1.32	1.37
1	A	1340	OMC	C2-N1	-2.13	1.35	1.40
1	A	4521	PSU	C6-N1	-2.13	1.32	1.36
1	A	4353	PSU	O4'-C4'	-2.12	1.40	1.45
1	A	4523	A2M	C8-N7	2.12	1.38	1.34
1	A	4353	PSU	C2'-C1'	-2.12	1.51	1.53
1	A	4500	PSU	C2-N1	-2.11	1.33	1.36
1	A	4403	PSU	O4-C4	-2.11	1.19	1.23
1	A	3884	PSU	C6-N1	-2.11	1.32	1.36
1	A	4392	OMG	O4'-C4'	-2.11	1.40	1.45
1	A	3792	OMG	C8-N7	2.11	1.38	1.35
1	A	3637	PSU	O4-C4	-2.10	1.19	1.23
1	A	3853	PSU	C3'-C2'	-2.10	1.47	1.53
1	A	2364	OMG	O2'-CM2	2.10	1.49	1.42
1	A	4299	PSU	O5'-C5'	-2.10	1.39	1.44
1	A	1781	PSU	C2-N1	2.09	1.39	1.36
1	A	4471	PSU	C4-N3	-2.09	1.35	1.38
1	A	2424	OMG	C5-C6	-2.09	1.43	1.47
1	A	2804	OMC	C2-N1	-2.08	1.35	1.40
1	A	4312	PSU	O4'-C1'	-2.08	1.41	1.43
1	A	398	A2M	C5-C4	2.07	1.46	1.40
1	A	1625	OMG	O2'-CM2	2.07	1.49	1.42
1	A	4457	PSU	O5'-C5'	-2.07	1.39	1.44
1	A	4536	OMC	O5'-C5'	-2.07	1.39	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4623	OMG	C2-N3	2.07	1.38	1.33
1	A	4521	PSU	O4'-C4'	-2.07	1.40	1.45
1	A	4500	PSU	C2-N3	2.06	1.41	1.37
1	A	4457	PSU	O2-C2	2.06	1.27	1.23
1	A	1522	OMG	C4-N3	-2.06	1.32	1.37
1	A	2365	OMC	C2-N1	-2.06	1.35	1.40
1	A	4536	OMC	C5'-C4'	2.06	1.58	1.51
1	A	1322	1MA	O4'-C4'	-2.06	1.40	1.45
1	A	1316	OMG	C5-C6	-2.05	1.43	1.47
1	A	2824	OMC	C1'-N1	-2.05	1.41	1.47
1	A	4220	6MZ	C5-C4	2.05	1.46	1.40
1	A	400	A2M	C3'-C2'	-2.05	1.48	1.52
1	A	3841	OMC	O2-C2	-2.05	1.19	1.23
1	A	3792	OMG	C2-N1	-2.05	1.32	1.37
1	A	3701	OMC	C4-N4	2.04	1.38	1.33
1	A	4972	PSU	C3'-C4'	-2.04	1.47	1.53
1	A	1792	PSU	C2-N3	-2.04	1.34	1.37
1	A	1534	A2M	C6-N1	-2.04	1.28	1.37
1	A	1534	A2M	C5-C4	2.03	1.46	1.40
1	A	4499	OMG	C2-N1	-2.03	1.32	1.37
1	A	1871	A2M	C5-N7	-2.03	1.32	1.39
1	A	4220	6MZ	O5'-C5'	-2.03	1.39	1.44
1	A	4530	UR3	C6-N1	-2.03	1.33	1.38
1	A	1683	PSU	O5'-C5'	-2.02	1.39	1.44
1	A	3818	OMU	C3'-C2'	-2.02	1.48	1.52
1	A	2787	A2M	C5'-C4'	2.02	1.57	1.51
1	A	3792	OMG	O4'-C1'	2.02	1.43	1.41
1	A	4523	A2M	O4'-C4'	-2.02	1.40	1.45
1	A	4498	OMU	O4-C4	2.02	1.28	1.24
1	A	1316	OMG	O2'-C2'	-2.02	1.37	1.42
1	A	2363	A2M	C3'-C4'	-2.02	1.47	1.53
1	A	2824	OMC	C5-C4	-2.01	1.38	1.42
1	A	3825	A2M	C6-C5	-2.00	1.35	1.43
1	A	4590	A2M	C3'-C4'	-2.00	1.47	1.53
1	A	5001	PSU	C2-N1	-2.00	1.34	1.36

All (1103) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2422	OMC	N4-C4-N3	-27.53	69.65	117.97
1	A	2422	OMC	C4-N3-C2	-23.05	83.03	120.25
1	A	4493	PSU	C4-N3-C2	-19.76	97.87	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2422	OMC	C5-C4-N4	18.62	149.88	120.57
1	A	4493	PSU	N1-C2-N3	16.91	134.29	115.13
1	A	2415	OMU	C4-N3-C2	-15.97	105.51	126.58
1	A	4493	PSU	O2-C2-N1	-15.29	105.95	122.79
1	A	4227	OMU	C4-N3-C2	-14.92	106.90	126.58
1	A	2422	OMC	C5-C6-N1	-14.65	97.27	121.81
1	A	2422	OMC	N1-C2-N3	14.63	145.46	118.81
1	A	4972	PSU	N1-C2-N3	14.02	131.02	115.13
1	A	3853	PSU	N1-C2-N3	13.83	130.80	115.13
1	A	4220	6MZ	C2-N1-C6	13.69	128.33	116.59
1	A	4299	PSU	N1-C2-N3	13.66	130.61	115.13
1	A	4500	PSU	O2-C2-N1	-13.59	107.82	122.79
1	A	3639	PSU	N1-C2-N3	13.24	130.13	115.13
1	A	4353	PSU	N1-C2-N3	13.05	129.91	115.13
1	A	3851	PSU	N1-C2-N3	12.71	129.53	115.13
1	A	4521	PSU	C6-C5-C4	-12.60	109.39	118.20
1	A	1536	PSU	N1-C2-N3	12.16	128.91	115.13
1	A	4552	PSU	C4-N3-C2	-12.04	109.00	126.34
1	A	1683	PSU	N1-C2-N3	12.02	128.75	115.13
1	A	1536	PSU	C4-N3-C2	-11.88	109.23	126.34
1	A	4442	PSU	N1-C2-N3	11.84	128.54	115.13
1	A	1677	PSU	O2'-C2'-C1'	-11.71	83.32	111.23
1	A	3637	PSU	N1-C2-N3	11.65	128.33	115.13
1	A	4228	OMG	O2'-C2'-C1'	11.52	131.94	109.09
1	A	4227	OMU	N3-C2-N1	11.45	130.09	114.89
1	A	2422	OMC	C5-C4-N3	11.25	140.47	121.33
1	A	4673	PSU	N1-C2-N3	11.20	127.82	115.13
1	A	3851	PSU	C4-N3-C2	-11.19	110.22	126.34
1	A	4673	PSU	C4-N3-C2	-11.17	110.25	126.34
1	A	3920	PSU	N1-C2-N3	10.76	127.32	115.13
1	A	2415	OMU	N3-C2-N1	10.73	129.14	114.89
1	A	3844	PSU	N1-C2-N3	10.64	127.19	115.13
1	A	3818	OMU	O2'-C2'-C1'	-10.60	88.39	109.08
1	A	4552	PSU	N1-C2-N3	10.58	127.12	115.13
1	A	4620	OMU	N3-C2-N1	10.52	128.86	114.89
1	A	4293	PSU	C4-N3-C2	-10.50	111.21	126.34
1	A	4361	PSU	N1-C2-N3	10.49	127.02	115.13
1	A	4353	PSU	C4-N3-C2	-10.48	111.24	126.34
1	A	2424	OMG	N2-C2-N3	-10.47	99.35	119.74
1	A	4361	PSU	C4-N3-C2	-10.47	111.25	126.34
1	A	4972	PSU	C4-N3-C2	-10.35	111.43	126.34
1	A	3925	OMU	C4-N3-C2	-10.13	113.21	126.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3884	PSU	N1-C2-N3	10.11	126.58	115.13
1	A	4628	PSU	N1-C2-N3	10.06	126.53	115.13
1	A	2837	OMU	N3-C2-N1	10.05	128.24	114.89
1	A	4293	PSU	N1-C2-N3	9.97	126.42	115.13
1	A	3853	PSU	C4-N3-C2	-9.89	112.09	126.34
1	A	1582	PSU	C4-N3-C2	-9.85	112.16	126.34
1	A	4628	PSU	C6-N1-C2	-9.81	112.65	122.68
1	A	1582	PSU	N1-C2-N3	9.80	126.23	115.13
1	A	1860	PSU	N1-C2-N3	9.76	126.19	115.13
3	C	55	PSU	C4-N3-C2	-9.74	112.31	126.34
1	A	2839	PSU	N1-C2-N3	9.74	126.16	115.13
1	A	2422	OMC	O2-C2-N3	-9.74	106.49	122.33
3	C	55	PSU	N1-C2-N3	9.69	126.11	115.13
1	A	4521	PSU	C4-N3-C2	-9.67	112.40	126.34
1	A	1536	PSU	O2-C2-N1	-9.61	112.20	122.79
1	A	2837	OMU	C4-N3-C2	-9.60	113.91	126.58
1	A	4493	PSU	O4-C4-C5	-9.59	98.96	124.05
1	A	4403	PSU	N1-C2-N3	9.59	125.99	115.13
1	A	1782	PSU	N1-C2-N3	9.58	125.98	115.13
1	A	4532	PSU	C3'-C2'-C1'	9.56	112.78	101.64
1	A	4353	PSU	O2-C2-N1	-9.51	112.31	122.79
1	A	4299	PSU	C4-N3-C2	-9.43	112.75	126.34
1	A	3925	OMU	O2-C2-N1	-9.33	110.38	122.79
1	A	4442	PSU	C6-N1-C2	-9.32	113.15	122.68
1	A	4972	PSU	O2-C2-N1	-9.23	112.63	122.79
1	A	3887	OMC	O4'-C4'-C3'	-9.21	86.88	105.11
1	A	3884	PSU	C4-N3-C2	-9.20	113.09	126.34
1	A	4312	PSU	N1-C2-N3	9.17	125.52	115.13
1	A	3925	OMU	N3-C2-N1	9.11	126.98	114.89
1	A	4471	PSU	N1-C2-N3	9.09	125.43	115.13
1	A	4579	PSU	N1-C2-N3	9.04	125.37	115.13
1	A	4312	PSU	C4-N3-C2	-9.03	113.33	126.34
1	A	2424	OMG	C2-N1-C6	-9.03	108.48	125.10
1	A	5001	PSU	N1-C2-N3	9.02	125.35	115.13
1	A	4227	OMU	O4'-C4'-C3'	-8.97	87.37	105.11
1	A	1781	PSU	N1-C2-N3	8.95	125.27	115.13
1	A	3853	PSU	O2-C2-N1	-8.91	112.98	122.79
1	A	1677	PSU	N1-C2-N3	8.74	125.03	115.13
1	A	4471	PSU	C4-N3-C2	-8.73	113.76	126.34
1	A	3853	PSU	C6-C5-C4	-8.72	112.10	118.20
1	A	4228	OMG	O6-C6-N1	-8.64	110.45	120.65
1	A	4620	OMU	C4-N3-C2	-8.52	115.34	126.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4392	OMG	C5-C6-N1	8.39	128.76	113.95
1	A	2363	A2M	N3-C2-N1	-8.38	115.58	128.68
1	A	2415	OMU	C5-C4-N3	8.38	127.37	114.84
1	A	4521	PSU	N1-C2-N3	8.36	124.60	115.13
1	A	4227	OMU	O2-C2-N1	-8.32	111.72	122.79
1	A	4403	PSU	C4-N3-C2	-8.31	114.36	126.34
1	A	4530	UR3	C3U-N3-C4	8.20	129.62	117.89
1	A	3637	PSU	C4-N3-C2	-8.20	114.53	126.34
1	A	4457	PSU	N1-C2-N3	8.10	124.31	115.13
1	A	4618	OMG	C5-C6-N1	8.09	128.24	113.95
1	A	4306	OMU	N3-C2-N1	8.08	125.61	114.89
1	A	3639	PSU	C4-N3-C2	-8.03	114.77	126.34
1	A	4227	OMU	O4'-C1'-C2'	-7.95	92.62	106.57
1	A	4457	PSU	C6-C5-C4	-7.90	112.67	118.20
1	A	2415	OMU	O2-C2-N1	-7.89	112.30	122.79
1	A	4228	OMG	C5-C6-N1	7.78	127.69	113.95
1	A	3695	PSU	N1-C2-N3	7.78	123.94	115.13
1	A	4494	OMG	O2'-C2'-C1'	-7.74	93.75	109.09
1	A	3920	PSU	C4-N3-C2	-7.71	115.23	126.34
1	A	4532	PSU	C6-C5-C4	-7.69	112.82	118.20
1	A	1744	PSU	N1-C2-N3	7.64	123.79	115.13
1	A	4576	PSU	C4-N3-C2	-7.62	115.36	126.34
1	A	3887	OMC	C4-N3-C2	-7.61	107.97	120.25
1	A	4370	OMG	C2-N1-C6	-7.60	111.11	125.10
1	A	4579	PSU	C4-N3-C2	-7.58	115.41	126.34
1	A	4220	6MZ	N3-C2-N1	-7.58	116.83	128.68
1	A	4620	OMU	O2-C2-N1	-7.56	112.74	122.79
1	A	4442	PSU	C3'-C2'-C1'	7.52	110.39	101.64
3	C	69	PSU	N1-C2-N3	7.51	123.64	115.13
1	A	2839	PSU	C4-N3-C2	-7.49	115.55	126.34
1	A	4370	OMG	O6-C6-C5	-7.49	109.75	124.37
1	A	4493	PSU	C5-C4-N3	7.49	133.51	116.58
1	A	4403	PSU	O2'-C2'-C1'	-7.48	93.40	111.23
1	A	4299	PSU	O2-C2-N3	-7.47	107.72	121.82
1	A	4500	PSU	N1-C2-N3	7.47	123.60	115.13
1	A	4689	PSU	N1-C2-N3	7.45	123.58	115.13
1	A	3639	PSU	C6-N1-C2	-7.45	115.07	122.68
1	A	1683	PSU	C4-N3-C2	-7.44	115.62	126.34
1	A	4571	A2M	O2'-C2'-C1'	-7.42	94.38	109.09
1	A	2824	OMC	O2-C2-N3	-7.39	110.31	122.33
1	A	2415	OMU	O4-C4-C5	-7.36	112.21	125.16
1	A	4228	OMG	O4'-C4'-C3'	7.35	119.66	105.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1322	1MA	N1-C2-N3	-7.35	117.45	126.02
1	A	1862	PSU	N1-C2-N3	7.34	123.44	115.13
1	A	2508	PSU	N1-C2-N3	7.33	123.44	115.13
1	A	3818	OMU	C2'-C1'-N1	-7.31	100.03	114.22
1	A	3869	OMC	O2-C2-N3	-7.30	110.46	122.33
1	A	4457	PSU	C4-N3-C2	-7.21	115.95	126.34
1	A	4370	OMG	C5-C6-N1	7.14	126.56	113.95
1	A	4227	OMU	C5-C4-N3	7.13	125.51	114.84
1	A	1326	A2M	N3-C2-N1	-7.09	117.60	128.68
1	A	3639	PSU	C6-C5-C4	-7.09	113.24	118.20
1	A	1677	PSU	C4-N3-C2	-7.07	116.15	126.34
1	A	4576	PSU	N1-C2-N3	7.07	123.14	115.13
1	A	4493	PSU	C5-C6-N1	-7.01	111.60	122.11
1	A	3853	PSU	C6-N1-C2	-6.93	115.59	122.68
1	A	3920	PSU	C6-N1-C2	-6.91	115.62	122.68
1	A	4552	PSU	C6-C5-C4	-6.90	113.37	118.20
1	A	3825	A2M	N3-C2-N1	-6.87	117.94	128.68
1	A	4228	OMG	C5'-C4'-C3'	-6.85	89.49	115.18
1	A	4306	OMU	C4-N3-C2	-6.85	117.54	126.58
1	A	3627	OMG	C5-C6-N1	6.85	126.05	113.95
1	A	1625	OMG	CM2-O2'-C2'	6.83	132.46	114.52
1	A	5001	PSU	C4-N3-C2	-6.80	116.55	126.34
1	A	4620	OMU	O4'-C4'-C3'	-6.73	91.79	105.11
1	A	3844	PSU	C6-N1-C2	-6.67	115.86	122.68
1	A	3844	PSU	O2-C2-N3	-6.67	109.23	121.82
1	A	4447	5MC	O2'-C2'-C1'	-6.64	87.80	110.02
1	A	2508	PSU	C4-N3-C2	-6.62	116.81	126.34
1	A	4306	OMU	O4'-C4'-C3'	-6.59	92.08	105.11
1	A	1782	PSU	C4-N3-C2	-6.58	116.85	126.34
1	A	4628	PSU	C3'-C2'-C1'	6.58	109.30	101.64
1	A	1316	OMG	C5-C6-N1	6.54	125.50	113.95
1	A	4392	OMG	O2'-C2'-C1'	-6.52	96.16	109.09
1	A	3920	PSU	O2-C2-N1	-6.52	115.61	122.79
1	A	1524	A2M	O4'-C1'-C2'	-6.48	95.34	106.59
1	A	3920	PSU	C6-C5-C4	-6.48	113.67	118.20
1	A	2787	A2M	N3-C2-N1	-6.45	118.59	128.68
1	A	4673	PSU	O2-C2-N3	-6.44	109.68	121.82
1	A	3818	OMU	C5-C4-N3	6.39	124.41	114.84
1	A	4673	PSU	O4'-C1'-C2'	-6.39	96.13	105.14
1	A	4637	OMG	C5-C6-N1	6.39	125.23	113.95
1	A	4498	OMU	N3-C2-N1	6.34	123.31	114.89
1	A	4447	5MC	C3'-C2'-C1'	6.33	113.46	101.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3729	PSU	N1-C2-N3	6.31	122.28	115.13
1	A	2837	OMU	C2'-C1'-N1	-6.31	101.97	114.22
1	A	2837	OMU	C5-C6-N1	-6.29	111.28	121.81
1	A	3785	A2M	N3-C2-N1	-6.28	118.86	128.68
1	A	4431	PSU	N1-C2-N3	6.28	122.24	115.13
1	A	4228	OMG	O4'-C4'-C5'	-6.27	88.74	109.37
1	A	4689	PSU	C4-N3-C2	-6.21	117.39	126.34
1	A	4532	PSU	C4-N3-C2	-6.20	117.41	126.34
1	A	4228	OMG	O3'-C3'-C4'	6.19	128.96	111.05
1	A	1683	PSU	O2-C2-N3	-6.17	110.17	121.82
1	A	2363	A2M	O2'-C2'-C1'	-6.17	96.86	109.09
1	A	1524	A2M	O2'-C2'-C1'	-6.13	96.94	109.09
1	A	1781	PSU	C4-N3-C2	-6.13	117.51	126.34
1	A	3884	PSU	C6-C5-C4	-6.09	113.94	118.20
1	A	4628	PSU	O2'-C2'-C1'	-6.08	96.73	111.23
1	A	4220	6MZ	C9-N6-C6	-6.08	117.64	122.87
1	A	3844	PSU	C6-C5-C4	-6.07	113.95	118.20
1	A	4370	OMG	O3'-C3'-C4'	-6.06	93.52	111.05
1	A	3818	OMU	O4-C4-C5	-6.04	114.54	125.16
1	A	4536	OMC	O4'-C4'-C3'	-6.03	93.19	105.11
1	A	3887	OMC	O4'-C1'-C2'	-6.02	96.00	106.57
1	A	2876	OMG	C5-C6-N1	6.01	124.56	113.95
1	A	1871	A2M	O2'-C2'-C1'	-6.00	97.20	109.09
1	A	3844	PSU	C4-N3-C2	-5.97	117.73	126.34
1	A	3639	PSU	O2-C2-N1	-5.97	116.22	122.79
1	A	4423	PSU	N1-C2-N3	5.95	121.87	115.13
1	A	2422	OMC	C6-C5-C4	5.95	127.10	117.50
1	A	2839	PSU	C3'-C2'-C1'	5.93	108.54	101.64
1	A	3782	5MC	C5-C4-N4	-5.92	112.63	121.48
1	A	2364	OMG	N2-C2-N3	-5.91	108.23	119.74
1	A	4521	PSU	C5-C4-N3	5.89	129.90	116.58
1	A	4623	OMG	C5-C6-N1	5.89	124.35	113.95
1	A	4392	OMG	O6-C6-C5	-5.86	112.92	124.37
1	A	4227	OMU	O2'-C2'-C1'	5.86	120.50	109.08
1	A	2632	PSU	N1-C2-N3	5.85	121.76	115.13
1	A	1340	OMC	N1-C2-N3	5.83	129.43	118.81
1	A	1860	PSU	O2-C2-N3	-5.83	110.83	121.82
1	A	4618	OMG	O6-C6-C5	-5.80	113.05	124.37
1	A	3729	PSU	C4-N3-C2	-5.79	117.99	126.34
1	A	2824	OMC	C5-C4-N4	5.79	129.69	120.57
1	A	4498	OMU	C4-N3-C2	-5.79	118.94	126.58
1	A	3808	OMC	O2-C2-N3	-5.79	112.92	122.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2364	OMG	C2-N1-C6	-5.77	114.47	125.10
1	A	1316	OMG	C2-N1-C6	-5.77	114.47	125.10
1	A	1860	PSU	C4-N3-C2	-5.76	118.05	126.34
1	A	398	A2M	C4-C5-N7	-5.75	103.40	109.40
1	A	4227	OMU	C5-C6-N1	-5.75	112.18	121.81
1	A	3887	OMC	O2-C2-N3	-5.75	112.98	122.33
1	A	2415	OMU	C5-C6-N1	-5.74	112.20	121.81
1	A	4623	OMG	O4'-C4'-C3'	-5.71	93.81	105.11
1	A	4523	A2M	C4-C5-N7	-5.70	103.46	109.40
1	A	4552	PSU	O2-C2-N1	-5.70	116.52	122.79
1	A	4420	PSU	N1-C2-N3	5.69	121.57	115.13
1	A	3701	OMC	O3'-C3'-C4'	-5.68	94.61	111.05
1	A	1744	PSU	C4-N3-C2	-5.68	118.16	126.34
1	A	1522	OMG	C5-C6-N1	5.65	123.92	113.95
1	A	2351	OMC	O2'-C2'-C1'	-5.65	98.07	109.08
1	A	4442	PSU	C4-N3-C2	-5.64	118.22	126.34
1	A	2424	OMG	O6-C6-C5	-5.64	113.36	124.37
1	A	1536	PSU	C6-C5-C4	-5.63	114.26	118.20
1	A	4590	A2M	C4-C5-N7	-5.63	103.53	109.40
3	C	69	PSU	O2'-C2'-C1'	-5.63	97.81	111.23
1	A	2876	OMG	O6-C6-C5	-5.62	113.39	124.37
1	A	5001	PSU	O2-C2-N3	-5.62	111.22	121.82
1	A	4500	PSU	C4-N3-C2	-5.60	118.27	126.34
3	C	69	PSU	C4-N3-C2	-5.60	118.28	126.34
1	A	2508	PSU	C3'-C2'-C1'	5.58	108.13	101.64
1	A	400	A2M	C4-C5-N7	-5.57	103.59	109.40
1	A	1862	PSU	C4-N3-C2	-5.55	118.34	126.34
1	A	3637	PSU	C6-N1-C2	-5.55	117.01	122.68
1	A	5010	PSU	N1-C2-N3	5.54	121.40	115.13
1	A	4361	PSU	O2-C2-N3	-5.51	111.43	121.82
1	A	3869	OMC	N1-C2-N3	5.50	128.82	118.81
1	A	1534	A2M	C5-C6-N6	5.48	128.68	120.35
1	A	4227	OMU	O4-C4-N3	-5.45	111.30	119.31
1	A	4456	OMC	N1-C2-N3	5.43	128.70	118.81
1	A	3637	PSU	C6-C5-C4	-5.43	114.40	118.20
1	A	3887	OMC	O4'-C1'-N1	-5.42	95.97	108.36
1	A	4552	PSU	C5-C4-N3	5.42	128.85	116.58
1	A	4227	OMU	O4'-C1'-N1	-5.42	95.98	108.36
1	A	2363	A2M	C2-N1-C6	5.40	128.00	118.75
1	A	4500	PSU	O3'-C3'-C4'	-5.38	95.49	111.05
1	A	2837	OMU	C5-C4-N3	5.38	122.89	114.84
1	A	1862	PSU	C2'-C3'-C4'	-5.36	92.23	102.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4523	A2M	O4'-C4'-C3'	-5.36	94.51	105.11
1	A	2837	OMU	O2-C2-N3	-5.34	111.56	121.50
1	A	3627	OMG	C2-N1-C6	-5.29	115.35	125.10
1	A	4673	PSU	C5-C4-N3	5.29	128.54	116.58
1	A	4471	PSU	O2-C2-N1	-5.27	116.99	122.79
1	A	4442	PSU	O2-C2-N1	-5.26	117.00	122.79
1	A	2422	OMC	O2-C2-N1	-5.26	108.04	118.89
1	A	2424	OMG	N1-C2-N3	5.23	133.09	123.32
1	A	1683	PSU	C6-N1-C2	-5.23	117.34	122.68
1	A	4618	OMG	C2-N1-C6	-5.22	115.49	125.10
1	A	4447	5MC	C5-C6-N1	-5.21	117.98	123.34
1	A	4296	PSU	C2'-C3'-C4'	-5.20	92.55	102.64
1	A	3925	OMU	C5-C6-N1	-5.19	113.12	121.81
1	A	4431	PSU	O2-C2-N1	-5.19	117.08	122.79
1	A	4620	OMU	O4'-C1'-C2'	-5.19	97.47	106.57
1	A	4521	PSU	O2'-C2'-C1'	-5.18	98.88	111.23
1	A	4431	PSU	C4-N3-C2	-5.17	118.89	126.34
1	A	1582	PSU	O4-C4-C5	-5.16	110.54	124.05
1	A	4306	OMU	O2-C2-N1	-5.16	115.93	122.79
1	A	3887	OMC	N1-C2-N3	5.16	128.20	118.81
1	A	2787	A2M	O4'-C4'-C3'	-5.15	94.91	105.11
1	A	4494	OMG	N2-C2-N3	-5.14	109.73	119.74
1	A	4228	OMG	C2-N1-C6	-5.13	115.65	125.10
1	A	1340	OMC	C6-C5-C4	5.13	125.78	117.50
1	A	1625	OMG	O6-C6-C5	-5.12	114.37	124.37
1	A	4447	5MC	O3'-C3'-C4'	-5.11	96.28	111.05
1	A	4228	OMG	O5'-C5'-C4'	5.10	126.36	108.99
1	A	1326	A2M	O4'-C1'-C2'	-5.10	97.73	106.59
1	A	2424	OMG	N2-C2-N1	5.09	127.55	116.71
1	A	3627	OMG	O6-C6-N1	-5.09	114.64	120.65
1	A	1316	OMG	O4'-C1'-C2'	-5.09	97.77	106.59
1	A	2364	OMG	O4'-C1'-C2'	-5.08	97.77	106.59
1	A	4689	PSU	C5-C6-N1	-5.06	114.52	122.11
1	A	3844	PSU	O4'-C1'-C2'	-5.06	98.02	105.14
1	A	3729	PSU	O2-C2-N1	-5.05	117.23	122.79
1	A	2837	OMU	O4-C4-N3	-5.04	111.90	119.31
1	A	1524	A2M	O4'-C4'-C3'	-5.03	95.16	105.11
1	A	3884	PSU	C5-C4-N3	5.03	127.96	116.58
1	A	4623	OMG	C2-N1-C6	-5.01	115.86	125.10
1	A	1536	PSU	C5-C4-N3	5.01	127.91	116.58
1	A	1340	OMC	O4'-C4'-C3'	-5.00	95.21	105.11
1	A	1683	PSU	O4'-C1'-C2'	-5.00	98.09	105.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3744	OMG	C5-C6-N1	4.99	122.77	113.95
1	A	4536	OMC	O2-C2-N1	-4.96	108.66	118.89
1	A	2365	OMC	O4'-C1'-C2'	-4.94	97.90	106.57
1	A	4392	OMG	C2-N1-C6	-4.94	116.01	125.10
1	A	4521	PSU	O2-C2-N1	-4.92	117.37	122.79
1	A	4523	A2M	N3-C2-N1	-4.88	121.05	128.68
1	A	2815	A2M	C4-C5-N7	-4.87	104.32	109.40
1	A	3695	PSU	C4-N3-C2	-4.86	119.34	126.34
1	A	4493	PSU	C3'-C2'-C1'	4.86	107.29	101.64
1	A	4293	PSU	O2-C2-N3	-4.85	112.68	121.82
1	A	3851	PSU	O2-C2-N1	-4.84	117.46	122.79
1	A	4296	PSU	C4-N3-C2	-4.82	119.39	126.34
1	A	4296	PSU	N1-C2-N3	4.82	120.59	115.13
1	A	4361	PSU	C2'-C3'-C4'	-4.81	93.29	102.64
1	A	4620	OMU	C6-N1-C2	-4.80	114.85	120.99
1	A	4637	OMG	O6-C6-C5	-4.80	115.00	124.37
1	A	4296	PSU	O2-C2-N1	-4.79	117.52	122.79
1	A	1625	OMG	C5-C6-N1	4.77	122.38	113.95
1	A	1340	OMC	O2-C2-N1	-4.77	109.06	118.89
1	A	4620	OMU	C5-C4-N3	4.76	121.97	114.84
1	A	1862	PSU	C5-C6-N1	-4.76	114.97	122.11
1	A	3925	OMU	C5-C4-N3	4.76	121.95	114.84
1	A	4457	PSU	O2-C2-N3	-4.75	112.86	121.82
1	A	5001	PSU	O4'-C1'-C2'	-4.75	98.45	105.14
1	A	2424	OMG	C5-C6-N1	4.74	122.32	113.95
1	A	4306	OMU	O4'-C1'-C2'	-4.72	98.29	106.57
1	A	1582	PSU	C5-C4-N3	4.71	127.24	116.58
1	A	400	A2M	O3'-C3'-C4'	-4.70	97.45	111.05
1	A	3627	OMG	O2'-C2'-C1'	-4.70	99.77	109.09
1	A	4353	PSU	O2'-C2'-C1'	-4.69	100.05	111.23
1	A	2787	A2M	CM'-O2'-C2'	-4.69	102.22	114.52
1	A	1792	PSU	O2'-C2'-C1'	-4.68	100.06	111.23
1	A	3851	PSU	O2-C2-N3	-4.68	112.99	121.82
1	A	3853	PSU	O4'-C4'-C3'	-4.68	95.86	105.11
1	A	2365	OMC	N1-C2-N3	4.66	127.29	118.81
1	A	4579	PSU	O2'-C2'-C1'	-4.65	100.14	111.23
1	A	1860	PSU	C6-N1-C2	-4.64	117.93	122.68
3	C	55	PSU	O2-C2-N3	-4.64	113.06	121.82
1	A	4530	UR3	O4'-C4'-C3'	-4.64	95.94	105.11
1	A	4532	PSU	O4'-C1'-C2'	-4.64	98.61	105.14
1	A	4312	PSU	O2-C2-N3	-4.61	113.12	121.82
1	A	3637	PSU	O2-C2-N3	-4.58	113.18	121.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3825	A2M	C4-C5-N7	-4.58	104.63	109.40
1	A	3851	PSU	O2'-C2'-C1'	-4.58	100.32	111.23
1	A	2364	OMG	O6-C6-C5	-4.57	115.45	124.37
1	A	5010	PSU	C4-N3-C2	-4.57	119.76	126.34
1	A	2365	OMC	C4-N3-C2	-4.56	112.89	120.25
1	A	3887	OMC	C5-C6-N1	-4.56	114.17	121.81
1	A	3844	PSU	C3'-C2'-C1'	4.56	106.94	101.64
1	A	3884	PSU	O2-C2-N3	-4.55	113.23	121.82
1	A	3887	OMC	C4'-O4'-C1'	4.54	119.50	109.47
1	A	4579	PSU	C3'-C2'-C1'	4.54	106.93	101.64
1	A	2787	A2M	O2'-C2'-C1'	-4.54	100.10	109.09
1	A	3729	PSU	C3'-C2'-C1'	4.53	106.92	101.64
1	A	1782	PSU	O2-C2-N3	-4.53	113.27	121.82
1	A	4494	OMG	O6-C6-C5	-4.53	115.52	124.37
1	A	2351	OMC	N1-C2-N3	4.53	127.06	118.81
1	A	5001	PSU	C5'-C4'-C3'	-4.53	98.21	115.18
1	A	4299	PSU	C5-C6-N1	-4.52	115.33	122.11
1	A	4532	PSU	O2'-C2'-C1'	-4.52	100.45	111.23
1	A	4494	OMG	C2-N1-C6	-4.52	116.78	125.10
1	A	4403	PSU	O4'-C4'-C3'	-4.51	96.18	105.11
1	A	2787	A2M	C2-N1-C6	4.51	126.47	118.75
1	A	4628	PSU	O4'-C1'-C2'	-4.50	98.80	105.14
1	A	3701	OMC	O4'-C1'-C2'	-4.50	98.68	106.57
1	A	4227	OMU	O3'-C3'-C4'	4.49	124.04	111.05
1	A	3792	OMG	C2-N1-C6	-4.49	116.83	125.10
1	A	3718	A2M	C1'-N9-C4	-4.48	118.76	126.64
1	A	2422	OMC	C1'-N1-C2	-4.48	108.42	118.42
1	A	4590	A2M	N3-C2-N1	-4.48	121.67	128.68
1	A	3830	A2M	C4-C5-N7	-4.48	104.73	109.40
1	A	4370	OMG	O3'-C3'-C2'	-4.47	98.46	111.17
1	A	398	A2M	C5-C6-N6	-4.47	113.56	120.35
1	A	4498	OMU	O2-C2-N1	-4.45	116.87	122.79
1	A	2415	OMU	CM2-O2'-C2'	4.45	126.20	114.52
1	A	4293	PSU	C5-C4-N3	4.45	126.64	116.58
1	A	4571	A2M	O3'-C3'-C4'	-4.44	98.22	111.05
1	A	2364	OMG	C5-C6-N1	4.43	121.78	113.95
1	A	4447	5MC	C4-N3-C2	-4.43	114.70	120.69
1	A	4532	PSU	C6-N1-C2	4.42	127.21	122.68
1	A	4299	PSU	C6-N1-C2	-4.42	118.16	122.68
1	A	1536	PSU	C3'-C2'-C1'	4.42	106.78	101.64
1	A	1582	PSU	O2-C2-N1	-4.41	117.94	122.79
1	A	2401	A2M	O2'-C2'-C1'	-4.39	100.38	109.09

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3851	PSU	C5-C4-N3	4.39	126.52	116.58
1	A	3637	PSU	C3'-C2'-C1'	4.39	106.74	101.64
1	A	1316	OMG	O6-C6-C5	-4.38	115.81	124.37
1	A	4447	5MC	O4'-C1'-N1	4.38	118.37	108.36
1	A	1871	A2M	N3-C2-N1	-4.38	121.83	128.68
1	A	2401	A2M	O4'-C1'-C2'	-4.38	98.99	106.59
1	A	1683	PSU	C3'-C2'-C1'	4.37	106.72	101.64
1	A	3818	OMU	C4-N3-C2	-4.37	120.82	126.58
1	A	4576	PSU	O2-C2-N1	-4.36	117.98	122.79
1	A	4196	OMG	C5-C6-N1	4.35	121.62	113.95
1	A	2364	OMG	O2'-C2'-C1'	-4.34	100.48	109.09
1	A	3639	PSU	O2-C2-N3	-4.33	113.65	121.82
1	A	3715	PSU	N1-C2-N3	4.33	120.03	115.13
1	A	1625	OMG	C2-N1-C6	-4.32	117.14	125.10
1	A	2824	OMC	O2'-C2'-C1'	-4.32	100.65	109.08
1	A	4442	PSU	C2'-C3'-C4'	-4.32	94.25	102.64
1	A	2365	OMC	C2'-C1'-N1	-4.31	105.84	114.22
1	A	4312	PSU	C5-C6-N1	-4.31	115.65	122.11
1	A	3887	OMC	C2'-C1'-N1	-4.30	105.88	114.22
1	A	4576	PSU	C5-C6-N1	-4.30	115.67	122.11
1	A	4530	UR3	C3U-N3-C2	-4.28	109.81	117.31
1	A	4689	PSU	C6-C5-C4	4.27	121.19	118.20
1	A	4306	OMU	C4'-O4'-C1'	4.27	118.89	109.47
1	A	4447	5MC	N1-C2-N3	4.26	126.57	118.81
1	A	3869	OMC	C6-N1-C2	-4.26	113.10	120.49
1	A	4618	OMG	O2'-C2'-C1'	-4.26	100.65	109.09
1	A	1744	PSU	O2-C2-N1	-4.26	118.11	122.79
1	A	4530	UR3	C4-N3-C2	-4.26	120.56	124.56
1	A	1522	OMG	O4'-C1'-C2'	-4.25	99.21	106.59
1	A	2364	OMG	C3'-C2'-C1'	4.25	110.87	102.89
1	A	1524	A2M	C4-C5-N7	4.24	113.82	109.40
1	A	1625	OMG	O4'-C1'-C2'	-4.24	99.22	106.59
1	A	4296	PSU	C5-C6-N1	-4.24	115.75	122.11
1	A	4353	PSU	C3'-C2'-C1'	4.24	106.57	101.64
1	A	4353	PSU	C5-C4-N3	4.21	126.11	116.58
1	A	4623	OMG	O4'-C1'-C2'	-4.21	99.28	106.59
1	A	3818	OMU	O4'-C1'-N1	4.21	117.98	108.36
1	A	3884	PSU	O4'-C1'-C2'	-4.21	99.21	105.14
1	A	3841	OMC	N1-C2-N3	4.20	126.46	118.81
1	A	4456	OMC	O4'-C1'-N1	-4.18	98.81	108.36
1	A	3729	PSU	O2'-C2'-C3'	-4.17	98.32	111.82
1	A	2351	OMC	C6-C5-C4	4.17	124.23	117.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4228	OMG	C2'-C3'-C4'	-4.16	92.95	101.99
1	A	4590	A2M	C5'-C4'-C3'	-4.15	99.62	115.18
1	A	4494	OMG	C5-C6-N1	4.15	121.27	113.95
1	A	4499	OMG	C5-C6-N1	4.14	121.26	113.95
1	A	1792	PSU	N1-C2-N3	4.14	119.81	115.13
1	A	4673	PSU	O4-C4-C5	-4.13	113.25	124.05
1	A	1524	A2M	C3'-C2'-C1'	4.12	110.64	102.89
1	A	1792	PSU	C4-N3-C2	-4.12	120.41	126.34
1	A	4579	PSU	C6-C5-C4	-4.11	115.32	118.20
1	A	4532	PSU	O3'-C3'-C2'	4.11	125.12	111.82
1	A	3925	OMU	O4'-C1'-C2'	-4.10	99.37	106.57
1	A	1862	PSU	C3'-C2'-C1'	4.10	106.41	101.64
1	A	4536	OMC	N1-C2-N3	4.10	126.27	118.81
1	A	2424	OMG	O4'-C1'-C2'	-4.10	99.48	106.59
1	A	2415	OMU	O4'-C1'-C2'	-4.09	99.40	106.57
1	A	4403	PSU	O2-C2-N3	-4.08	114.12	121.82
1	A	4628	PSU	C6-C5-C4	-4.08	115.34	118.20
1	A	3841	OMC	C6-N1-C2	-4.08	113.42	120.49
1	A	4530	UR3	C6-N1-C2	-4.08	118.14	121.79
1	A	4532	PSU	C5-C4-N3	4.07	125.80	116.58
1	A	3853	PSU	O4-C4-C5	-4.07	113.41	124.05
1	A	1862	PSU	O2-C2-N3	-4.06	114.16	121.82
1	A	4293	PSU	O4-C4-C5	-4.06	113.42	124.05
1	A	398	A2M	C2-N1-C6	-4.06	111.81	118.75
1	A	2401	A2M	N3-C2-N1	-4.06	122.33	128.68
1	A	3884	PSU	C6-N1-C2	-4.06	118.53	122.68
1	A	1744	PSU	C5-C6-N1	-4.05	116.04	122.11
1	A	4457	PSU	C5-C4-N3	4.04	125.73	116.58
1	A	4196	OMG	O6-C6-N1	-4.04	115.88	120.65
1	A	4420	PSU	O2-C2-N1	-4.04	118.34	122.79
1	A	3785	A2M	O4'-C4'-C5'	-4.04	96.09	109.37
1	A	2839	PSU	C6-N1-C2	-4.03	118.56	122.68
1	A	4306	OMU	C5-C4-N3	4.03	120.87	114.84
1	A	2876	OMG	C2-N1-C6	-4.02	117.69	125.10
1	A	4530	UR3	C4'-O4'-C1'	4.01	118.32	109.47
1	A	2787	A2M	O4'-C1'-C2'	-4.01	99.64	106.59
1	A	4420	PSU	C4-N3-C2	-4.00	120.57	126.34
1	A	4673	PSU	O2'-C2'-C1'	-4.00	101.70	111.23
1	A	2508	PSU	O2-C2-N3	-3.99	114.30	121.82
1	A	1322	1MA	O3'-C3'-C4'	-3.98	99.55	111.05
1	A	3782	5MC	N4-C4-N3	3.97	125.72	118.48
1	A	4293	PSU	C5-C6-N1	-3.97	116.16	122.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2363	A2M	C1'-N9-C4	-3.96	119.69	126.64
1	A	4620	OMU	O4'-C1'-N1	-3.96	99.32	108.36
1	A	4628	PSU	O2-C2-N1	-3.95	118.44	122.79
1	A	3830	A2M	C3'-C2'-C1'	3.94	110.30	102.89
1	A	1625	OMG	O3'-C3'-C4'	-3.94	99.65	111.05
1	A	4353	PSU	O3'-C3'-C4'	-3.94	99.65	111.05
1	A	3637	PSU	O2-C2-N1	-3.94	118.45	122.79
1	A	3851	PSU	C5-C6-N1	-3.93	116.21	122.11
1	A	4576	PSU	O4-C4-C5	-3.93	113.76	124.05
1	A	4392	OMG	O4'-C1'-C2'	-3.93	99.77	106.59
1	A	1522	OMG	C3'-C2'-C1'	3.92	110.27	102.89
1	A	3920	PSU	O4-C4-C5	-3.92	113.78	124.05
1	A	4628	PSU	C4-N3-C2	-3.92	120.69	126.34
1	A	1781	PSU	C5-C6-N1	-3.91	116.24	122.11
1	A	4423	PSU	C4-N3-C2	-3.91	120.70	126.34
1	A	4361	PSU	C5-C6-N1	-3.90	116.26	122.11
1	A	4442	PSU	O2-C2-N3	-3.90	114.46	121.82
1	A	3830	A2M	O4'-C1'-C2'	-3.90	99.82	106.59
1	A	3715	PSU	O2-C2-N3	-3.90	114.47	121.82
1	A	1326	A2M	O4'-C4'-C3'	-3.89	97.41	105.11
1	A	2815	A2M	O5'-C5'-C4'	3.89	122.24	108.99
1	A	4296	PSU	O4-C4-C5	-3.89	113.87	124.05
1	A	3887	OMC	C5-C4-N3	3.89	127.94	121.33
1	A	1792	PSU	C3'-C2'-C1'	3.88	106.16	101.64
1	A	4571	A2M	O4'-C4'-C3'	-3.88	97.44	105.11
1	A	3887	OMC	N4-C4-N3	-3.87	111.17	117.97
1	A	2508	PSU	O4'-C1'-C2'	-3.87	99.69	105.14
1	A	2401	A2M	C3'-C2'-C1'	3.87	110.16	102.89
1	A	4312	PSU	O2'-C2'-C1'	-3.86	102.03	111.23
1	A	3844	PSU	C4'-O4'-C1'	3.86	118.25	108.55
1	A	4532	PSU	O3'-C3'-C4'	3.85	122.19	111.05
1	A	2804	OMC	N1-C2-N3	3.85	125.82	118.81
1	A	4552	PSU	C2'-C3'-C4'	-3.84	95.18	102.64
1	A	4456	OMC	C6-C5-C4	3.83	123.68	117.50
3	C	55	PSU	C5-C4-N3	3.83	125.23	116.58
1	A	3869	OMC	CM2-O2'-C2'	3.82	124.56	114.52
1	A	4498	OMU	O4'-C1'-N1	-3.82	99.63	108.36
1	A	1534	A2M	O4'-C1'-C2'	-3.82	99.97	106.59
1	A	4689	PSU	O4'-C4'-C3'	-3.81	97.57	105.11
1	A	3920	PSU	C5-C4-N3	3.81	125.20	116.58
1	A	2415	OMU	O4'-C4'-C3'	-3.80	97.59	105.11
1	A	4493	PSU	O4-C4-N3	3.80	127.40	120.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4361	PSU	C5-C4-N3	3.80	125.18	116.58
1	A	2839	PSU	O2-C2-N3	-3.80	114.66	121.82
1	A	3851	PSU	C3'-C2'-C1'	3.79	106.05	101.64
1	A	3637	PSU	O2'-C2'-C1'	-3.78	102.22	111.23
1	A	4456	OMC	C5-C4-N3	-3.78	114.90	121.33
1	A	4296	PSU	O4-C4-N3	3.77	127.35	120.12
1	A	2824	OMC	N4-C4-N3	-3.77	111.35	117.97
1	A	1677	PSU	O2'-C2'-C3'	-3.77	99.62	111.82
1	A	1782	PSU	C5-C6-N1	-3.77	116.46	122.11
1	A	4498	OMU	O4-C4-C5	-3.77	118.54	125.16
1	A	4673	PSU	C2'-C3'-C4'	-3.76	95.34	102.64
1	A	4521	PSU	C3'-C2'-C1'	3.76	106.01	101.64
1	A	1683	PSU	C6-C5-C4	-3.75	115.57	118.20
1	A	1536	PSU	O4'-C4'-C3'	-3.75	97.70	105.11
1	A	3869	OMC	C2'-C1'-N1	-3.74	106.96	114.22
1	A	1322	1MA	C8-N7-C5	3.74	110.12	102.99
1	A	5001	PSU	C6-C5-C4	-3.74	115.58	118.20
1	A	2632	PSU	C4-N3-C2	-3.74	120.95	126.34
1	A	4456	OMC	O4'-C4'-C3'	-3.73	97.74	105.11
1	A	1781	PSU	O2-C2-N3	-3.72	114.80	121.82
1	A	1871	A2M	C4-C5-N7	-3.72	105.52	109.40
1	A	3899	OMG	C8-N7-C5	3.71	110.05	102.99
1	A	2837	OMU	O4'-C4'-C3'	-3.70	97.80	105.11
1	A	3785	A2M	O4'-C4'-C3'	3.70	112.43	105.11
1	A	3844	PSU	O4'-C4'-C3'	-3.69	97.82	105.11
1	A	1582	PSU	O4'-C4'-C3'	-3.67	97.84	105.11
1	A	4532	PSU	N1-C2-N3	3.67	119.29	115.13
1	A	4299	PSU	O2'-C2'-C1'	-3.67	102.48	111.23
1	A	2508	PSU	C2'-C3'-C4'	-3.67	95.51	102.64
1	A	4620	OMU	O2'-C2'-C1'	-3.67	101.92	109.08
1	A	4628	PSU	O2-C2-N3	-3.67	114.91	121.82
1	A	1326	A2M	C4-C5-N7	-3.66	105.58	109.40
1	A	2839	PSU	O4-C4-C5	-3.65	114.49	124.05
1	A	1536	PSU	O4'-C1'-C2'	-3.65	99.99	105.14
1	A	3851	PSU	O2'-C2'-C3'	-3.64	100.04	111.82
1	A	2787	A2M	C2'-C3'-C4'	3.64	109.89	101.99
1	A	3639	PSU	O4'-C4'-C3'	-3.64	97.92	105.11
1	A	4552	PSU	O4'-C1'-C2'	-3.63	100.03	105.14
1	A	1534	A2M	O4'-C4'-C3'	-3.62	97.94	105.11
1	A	4571	A2M	C1'-N9-C4	-3.62	120.28	126.64
1	A	2804	OMC	O4'-C4'-C3'	-3.61	97.97	105.11
1	A	2415	OMU	C4'-O4'-C1'	3.60	117.41	109.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3841	OMC	O2-C2-N1	-3.59	111.48	118.89
1	A	1582	PSU	C6-C5-C4	-3.59	115.69	118.20
3	C	69	PSU	C3'-C2'-C1'	3.58	105.80	101.64
1	A	5010	PSU	C5-C6-N1	-3.58	116.75	122.11
1	A	4500	PSU	O2-C2-N3	3.58	128.56	121.82
1	A	4403	PSU	C5-C6-N1	-3.57	116.75	122.11
1	A	3825	A2M	O4'-C1'-C2'	-3.57	100.39	106.59
1	A	1340	OMC	C5-C6-N1	-3.57	115.84	121.81
1	A	4552	PSU	O4-C4-N3	-3.57	113.28	120.12
1	A	4312	PSU	C5-C4-N3	3.56	124.64	116.58
1	A	4456	OMC	C6-N1-C2	-3.56	114.32	120.49
1	A	1522	OMG	N2-C2-N1	3.56	124.29	116.71
1	A	3853	PSU	C5-C4-N3	3.56	124.62	116.58
3	C	55	PSU	C5-C6-N1	-3.55	116.78	122.11
1	A	4590	A2M	C2'-C3'-C4'	-3.55	94.28	101.99
1	A	4590	A2M	C1'-N9-C4	-3.55	120.41	126.64
1	A	4493	PSU	C2'-C3'-C4'	-3.54	95.75	102.64
1	A	4576	PSU	O2'-C2'-C1'	-3.54	102.78	111.23
1	A	3920	PSU	O4'-C1'-C2'	-3.54	100.15	105.14
1	A	2839	PSU	C5-C4-N3	3.54	124.59	116.58
1	A	4493	PSU	O2'-C2'-C1'	-3.54	102.80	111.23
1	A	4590	A2M	CM'-O2'-C2'	-3.53	105.26	114.52
1	A	4972	PSU	O4'-C1'-C2'	-3.52	100.18	105.14
1	A	4523	A2M	O4'-C1'-C2'	-3.52	100.48	106.59
1	A	4447	5MC	O4'-C1'-C2'	-3.52	98.98	106.64
1	A	3851	PSU	O5'-C5'-C4'	-3.51	97.06	108.99
1	A	2824	OMC	N1-C2-N3	3.51	125.20	118.81
1	A	1677	PSU	O2-C2-N1	-3.51	118.93	122.79
1	A	2351	OMC	O2-C2-N3	-3.50	116.63	122.33
1	A	1625	OMG	C5'-C4'-C3'	-3.50	102.06	115.18
1	A	2365	OMC	C1'-N1-C6	3.50	128.47	120.84
1	A	3818	OMU	O4'-C4'-C3'	-3.49	98.20	105.11
1	A	5001	PSU	O4'-C4'-C3'	-3.49	98.21	105.11
1	A	2804	OMC	C4'-O4'-C1'	3.48	117.16	109.47
1	A	4296	PSU	C4'-O4'-C1'	-3.48	99.79	108.55
1	A	4637	OMG	O2'-C2'-C1'	-3.48	102.19	109.09
1	A	4227	OMU	O3'-C3'-C2'	3.48	121.04	111.17
1	A	2422	OMC	C6-N1-C2	3.48	126.53	120.49
1	A	4353	PSU	C5-C6-N1	-3.47	116.90	122.11
1	A	1625	OMG	N2-C2-N1	3.47	124.10	116.71
1	A	4628	PSU	C4'-O4'-C1'	3.46	117.26	108.55
1	A	4536	OMC	O3'-C3'-C4'	-3.46	101.04	111.05

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3792	OMG	C5-C6-N1	3.46	120.05	113.95
1	A	4579	PSU	O2-C2-N3	-3.45	115.31	121.82
1	A	4293	PSU	O2'-C2'-C3'	-3.44	100.68	111.82
1	A	3825	A2M	C2-N1-C6	3.44	124.64	118.75
1	A	3724	A2M	N3-C2-N1	-3.44	123.30	128.68
1	A	4673	PSU	C5-C6-N1	-3.44	116.95	122.11
1	A	5001	PSU	C3'-C2'-C1'	3.43	105.63	101.64
1	A	4532	PSU	O4-C4-N3	-3.43	113.55	120.12
1	A	3744	OMG	O4'-C1'-C2'	-3.42	100.66	106.59
1	A	1340	OMC	C4-N3-C2	-3.41	114.74	120.25
1	A	2824	OMC	O4'-C4'-C3'	-3.41	98.36	105.11
1	A	4296	PSU	O4'-C4'-C3'	-3.41	98.36	105.11
1	A	4312	PSU	O4'-C4'-C5'	3.41	120.58	109.37
1	A	2365	OMC	O4'-C1'-N1	3.41	116.15	108.36
1	A	3744	OMG	C2'-C3'-C4'	-3.40	94.61	101.99
1	A	4532	PSU	C2'-C3'-C4'	-3.38	96.07	102.64
1	A	1862	PSU	C6-C5-C4	3.37	120.56	118.20
1	A	1522	OMG	O6-C6-C5	-3.37	117.79	124.37
1	A	3792	OMG	O6-C6-C5	-3.37	117.79	124.37
1	A	2365	OMC	O2-C2-N1	-3.37	111.94	118.89
1	A	4456	OMC	C5-C4-N4	3.36	125.87	120.57
1	A	4471	PSU	C6-C5-C4	-3.36	115.85	118.20
1	A	3851	PSU	O4'-C1'-C2'	-3.35	100.42	105.14
1	A	3729	PSU	C5-C6-N1	-3.35	117.09	122.11
1	A	3729	PSU	O4'-C1'-C2'	-3.34	100.44	105.14
1	A	4498	OMU	C2'-C1'-N1	-3.34	107.74	114.22
1	A	4227	OMU	C2'-C1'-N1	3.34	120.70	114.22
1	A	4423	PSU	O2-C2-N1	-3.33	119.12	122.79
1	A	1536	PSU	C5-C6-N1	-3.33	117.11	122.11
1	A	4972	PSU	C3'-C2'-C1'	3.33	105.52	101.64
1	A	1683	PSU	C4'-O4'-C1'	3.33	116.92	108.55
1	A	4306	OMU	C5-C6-N1	-3.33	116.24	121.81
1	A	4498	OMU	C5-C4-N3	3.32	119.81	114.84
1	A	2839	PSU	O2-C2-N1	-3.31	119.14	122.79
1	A	3925	OMU	C6-C5-C4	3.31	124.04	119.52
1	A	4457	PSU	O4-C4-C5	-3.30	115.41	124.05
3	C	69	PSU	O2-C2-N1	-3.30	119.15	122.79
1	A	4689	PSU	O2-C2-N1	-3.30	119.16	122.79
1	A	3925	OMU	C1'-N1-C2	-3.30	111.61	117.57
1	A	3695	PSU	O2-C2-N3	-3.29	115.61	121.82
1	A	3701	OMC	O4'-C4'-C3'	-3.29	98.61	105.11
1	A	3841	OMC	CM2-O2'-C2'	3.28	123.13	114.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4447	5MC	N4-C4-N3	3.27	124.44	118.48
1	A	4673	PSU	C6-C5-C4	-3.26	115.92	118.20
1	A	2363	A2M	O3'-C3'-C4'	3.26	120.48	111.05
1	A	1677	PSU	O4-C4-N3	-3.26	113.86	120.12
1	A	4431	PSU	O2'-C2'-C3'	-3.26	101.28	111.82
1	A	4447	5MC	O2-C2-N3	-3.26	117.03	122.33
1	A	2364	OMG	C2'-C3'-C4'	-3.26	94.92	101.99
1	A	4579	PSU	O2'-C2'-C3'	-3.25	101.32	111.82
1	A	4196	OMG	C8-N7-C5	3.24	109.17	102.99
1	A	2837	OMU	CM2-O2'-C2'	3.24	123.01	114.52
1	A	4521	PSU	C6-N1-C2	-3.23	119.38	122.68
1	A	4571	A2M	N6-C6-N1	3.22	125.27	118.57
1	A	3724	A2M	O2'-C2'-C1'	3.22	115.48	109.09
1	A	3785	A2M	C2-N1-C6	3.21	124.25	118.75
1	A	2804	OMC	C1'-N1-C6	3.21	127.84	120.84
1	A	4471	PSU	C5-C4-N3	3.21	123.84	116.58
1	A	3701	OMC	O2'-C2'-C1'	-3.21	102.82	109.08
1	A	1683	PSU	C5-C4-N3	3.21	123.84	116.58
1	A	4431	PSU	C5-C6-N1	-3.21	117.30	122.11
1	A	1582	PSU	O2-C2-N3	-3.21	115.77	121.82
1	A	3744	OMG	C3'-C2'-C1'	3.20	108.91	102.89
1	A	4457	PSU	C6-N1-C2	-3.20	119.41	122.68
1	A	398	A2M	O3'-C3'-C2'	3.20	120.25	111.17
1	A	4293	PSU	C6-C5-C4	-3.20	115.96	118.20
1	A	2351	OMC	C4'-O4'-C1'	3.20	116.52	109.47
1	A	2364	OMG	O3'-C3'-C2'	-3.19	102.09	111.17
1	A	3844	PSU	O3'-C3'-C2'	3.19	122.13	111.82
1	A	2804	OMC	O4'-C1'-C2'	-3.18	100.98	106.57
1	A	4353	PSU	C6-C5-C4	-3.18	115.97	118.20
1	A	1683	PSU	O4-C4-N3	-3.18	114.03	120.12
1	A	1582	PSU	C5'-C4'-C3'	-3.18	103.28	115.18
1	A	5001	PSU	C4'-O4'-C1'	3.18	116.54	108.55
1	A	4521	PSU	O4-C4-N3	-3.17	114.04	120.12
1	A	3869	OMC	O4'-C1'-C2'	-3.17	101.01	106.57
1	A	4361	PSU	C6-C5-C4	-3.16	115.99	118.20
1	A	4689	PSU	O4'-C1'-C2'	-3.16	100.68	105.14
1	A	4623	OMG	O6-C6-C5	-3.16	118.20	124.37
1	A	4628	PSU	C5-C6-N1	3.16	126.84	122.11
1	A	4579	PSU	O2-C2-N1	-3.16	119.31	122.79
1	A	3899	OMG	C5-C6-N1	3.16	119.53	113.95
1	A	3639	PSU	C4'-O4'-C1'	3.15	116.48	108.55
1	A	3782	5MC	O2'-C2'-C3'	-3.15	101.62	111.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4442	PSU	O4'-C1'-C2'	-3.15	100.70	105.14
1	A	2363	A2M	O4'-C1'-C2'	-3.15	101.12	106.59
1	A	3637	PSU	O4'-C1'-C2'	-3.15	100.70	105.14
1	A	4972	PSU	C5-C6-N1	-3.14	117.40	122.11
1	A	4530	UR3	O2-C2-N1	-3.14	115.37	122.72
1	A	4532	PSU	C5-C6-N1	-3.13	117.41	122.11
1	A	4637	OMG	O4'-C1'-C2'	-3.13	101.16	106.59
1	A	2839	PSU	O2'-C2'-C1'	-3.13	103.78	111.23
1	A	1862	PSU	O4'-C1'-C2'	-3.12	100.74	105.14
1	A	4299	PSU	C5-C4-N3	3.12	123.63	116.58
1	A	4420	PSU	O4'-C1'-C2'	3.12	109.54	105.14
1	A	2415	OMU	C6-C5-C4	3.12	123.77	119.52
1	A	4620	OMU	C2'-C3'-C4'	-3.11	95.23	101.99
1	A	4521	PSU	O4-C4-C5	-3.11	115.91	124.05
1	A	3925	OMU	C1'-N1-C6	3.11	127.62	120.84
1	A	2424	OMG	O6-C6-N1	3.10	124.31	120.65
1	A	3744	OMG	C8-N7-C5	3.10	108.90	102.99
1	A	4471	PSU	C5-C6-N1	-3.10	117.46	122.11
1	A	1677	PSU	O2-C2-N3	-3.10	115.98	121.82
1	A	3867	A2M	N3-C2-N1	-3.10	123.84	128.68
1	A	4493	PSU	O4'-C1'-C2'	-3.10	100.78	105.14
1	A	2351	OMC	O5'-C5'-C4'	-3.10	98.46	108.99
1	A	4312	PSU	O4'-C1'-C2'	-3.09	100.78	105.14
3	C	75	OMG	O3'-C3'-C2'	3.09	119.94	111.17
1	A	4457	PSU	O4'-C4'-C3'	-3.09	99.01	105.11
1	A	4579	PSU	O4-C4-C5	-3.08	116.00	124.05
1	A	3701	OMC	C2'-C3'-C4'	3.07	108.67	101.99
1	A	3701	OMC	O2-C2-N3	-3.07	117.34	122.33
1	A	3920	PSU	C3'-C2'-C1'	3.05	105.19	101.64
1	A	4576	PSU	C5-C4-N3	3.05	123.47	116.58
1	A	4972	PSU	O4'-C4'-C3'	-3.03	99.11	105.11
1	A	4296	PSU	O5'-C5'-C4'	-3.03	98.69	108.99
1	A	1522	OMG	O3'-C3'-C4'	-3.03	102.29	111.05
1	A	3639	PSU	C5-C4-N3	3.03	123.43	116.58
1	A	4447	5MC	C5-C4-N3	-3.03	118.41	121.67
1	A	4536	OMC	O4'-C4'-C5'	3.03	119.33	109.37
1	A	3825	A2M	O3'-C3'-C2'	3.02	119.75	111.17
1	A	3718	A2M	N6-C6-N1	3.02	124.85	118.57
1	A	1744	PSU	O2'-C2'-C1'	-3.02	104.03	111.23
1	A	1862	PSU	O3'-C3'-C2'	-3.02	102.05	111.82
1	A	2787	A2M	C5'-C4'-C3'	-3.02	103.86	115.18
1	A	4579	PSU	C5-C4-N3	3.02	123.41	116.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3925	OMU	O3'-C3'-C4'	-3.01	102.35	111.05
1	A	4972	PSU	O2'-C2'-C1'	-3.00	104.07	111.23
1	A	1340	OMC	O3'-C3'-C2'	3.00	119.69	111.17
1	A	3818	OMU	C6-C5-C4	-3.00	115.42	119.52
1	A	4227	OMU	C5'-C4'-C3'	-3.00	103.94	115.18
1	A	3853	PSU	O2-C2-N3	-2.99	116.17	121.82
1	A	4536	OMC	O3'-C3'-C2'	-2.99	102.68	111.17
1	A	1322	1MA	CM1-N1-C6	-2.98	115.75	120.27
1	A	4353	PSU	C6-N1-C2	-2.98	119.64	122.68
1	A	1862	PSU	O3'-C3'-C4'	-2.97	102.45	111.05
1	A	2508	PSU	O2'-C2'-C1'	-2.97	104.14	111.23
1	A	2363	A2M	O3'-C3'-C2'	-2.97	102.72	111.17
1	A	4590	A2M	C2-N1-C6	2.97	123.83	118.75
1	A	4620	OMU	C1'-N1-C6	2.97	127.31	120.84
1	A	3884	PSU	O2'-C2'-C1'	-2.97	104.15	111.23
1	A	4972	PSU	O2-C2-N3	-2.97	116.22	121.82
1	A	1316	OMG	C2'-C3'-C4'	-2.96	95.56	101.99
1	A	3808	OMC	C5-C6-N1	-2.96	116.85	121.81
3	C	69	PSU	O3'-C3'-C4'	-2.96	102.49	111.05
1	A	4532	PSU	O5'-C5'-C4'	2.96	119.06	108.99
1	A	4500	PSU	O4'-C4'-C5'	2.96	119.11	109.37
1	A	5001	PSU	O2'-C2'-C1'	-2.96	104.18	111.23
1	A	1322	1MA	O4'-C1'-C2'	-2.95	102.61	106.93
1	A	4403	PSU	C5-C4-N3	2.95	123.26	116.58
1	A	4456	OMC	O3'-C3'-C2'	2.95	119.54	111.17
1	A	4576	PSU	O4'-C1'-C2'	-2.95	100.99	105.14
1	A	3851	PSU	O4-C4-C5	-2.95	116.34	124.05
1	A	3925	OMU	O4-C4-C5	-2.94	119.99	125.16
1	A	3920	PSU	C4'-O4'-C1'	2.94	115.95	108.55
1	A	2364	OMG	N1-C2-N3	2.94	128.81	123.32
1	A	4552	PSU	O3'-C3'-C4'	-2.94	102.56	111.05
1	A	3884	PSU	C4'-O4'-C1'	2.94	115.94	108.55
3	C	69	PSU	C5-C6-N1	-2.93	117.71	122.11
1	A	1792	PSU	O2'-C2'-C3'	-2.93	102.34	111.82
1	A	2351	OMC	C5-C6-N1	-2.93	116.91	121.81
1	A	4576	PSU	C3'-C2'-C1'	2.93	105.05	101.64
1	A	4403	PSU	O4-C4-C5	-2.93	116.40	124.05
1	A	3729	PSU	O4'-C4'-C3'	-2.92	99.33	105.11
1	A	1582	PSU	O3'-C3'-C2'	2.92	121.28	111.82
1	A	4196	OMG	C2-N1-C6	-2.92	119.72	125.10
1	A	2839	PSU	C2'-C3'-C4'	-2.92	96.97	102.64
1	A	3841	OMC	C1'-N1-C6	2.92	127.21	120.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3851	PSU	C4'-O4'-C1'	2.91	115.88	108.55
1	A	3639	PSU	O4'-C1'-C2'	-2.91	101.04	105.14
1	A	3715	PSU	O4'-C1'-C2'	2.91	109.25	105.14
1	A	2364	OMG	N2-C2-N1	2.91	122.90	116.71
1	A	4972	PSU	C4'-O4'-C1'	2.91	115.86	108.55
1	A	1582	PSU	O2'-C2'-C1'	2.91	118.16	111.23
1	A	1316	OMG	O4'-C4'-C3'	-2.90	99.37	105.11
1	A	2415	OMU	C3'-C2'-C1'	2.90	108.34	102.89
1	A	2804	OMC	O3'-C3'-C2'	2.90	119.40	111.17
1	A	4552	PSU	O2-C2-N3	-2.90	116.35	121.82
1	A	4447	5MC	C5-C4-N4	-2.90	117.15	121.48
1	A	1536	PSU	C4'-O4'-C1'	2.90	115.83	108.55
1	A	4571	A2M	O4'-C4'-C5'	2.90	118.90	109.37
1	A	4420	PSU	C5-C6-N1	-2.89	117.78	122.11
1	A	4972	PSU	C6-N1-C2	-2.88	119.74	122.68
1	A	4498	OMU	C5-C6-N1	-2.88	116.98	121.81
3	C	55	PSU	O4-C4-C5	-2.88	116.52	124.05
1	A	2508	PSU	O4-C4-C5	-2.88	116.52	124.05
1	A	1625	OMG	N2-C2-N3	-2.87	114.14	119.74
1	A	2351	OMC	C5-C4-N4	2.87	125.09	120.57
1	A	1522	OMG	C2-N1-C6	-2.87	119.82	125.10
1	A	3744	OMG	N1-C2-N3	-2.87	117.96	123.32
1	A	1340	OMC	O4'-C1'-C2'	-2.87	101.54	106.57
1	A	4227	OMU	O4'-C4'-C5'	2.86	118.79	109.37
1	A	1582	PSU	C2'-C3'-C4'	2.86	108.20	102.64
1	A	4499	OMG	O6-C6-N1	-2.86	117.27	120.65
1	A	3718	A2M	N3-C2-N1	-2.86	124.22	128.68
1	A	3920	PSU	O4'-C4'-C3'	-2.85	99.47	105.11
1	A	4471	PSU	C5'-C4'-C3'	-2.85	104.50	115.18
1	A	4637	OMG	C2-N1-C6	-2.85	119.85	125.10
1	A	4590	A2M	O4'-C1'-C2'	-2.85	101.65	106.59
1	A	1792	PSU	C6-C5-C4	-2.84	116.21	118.20
1	A	2839	PSU	C6-C5-C4	-2.84	116.21	118.20
1	A	4521	PSU	O5'-C5'-C4'	-2.84	99.34	108.99
1	A	2351	OMC	O4'-C4'-C3'	-2.84	99.50	105.11
1	A	1536	PSU	O4-C4-C5	-2.83	116.66	124.05
1	A	1582	PSU	C4'-O4'-C1'	2.82	115.65	108.55
1	A	1792	PSU	O4'-C4'-C5'	2.82	118.64	109.37
1	A	2424	OMG	C5'-C4'-C3'	-2.82	104.63	115.18
1	A	3808	OMC	C6-C5-C4	2.81	122.03	117.50
1	A	4456	OMC	O2-C2-N3	-2.80	117.77	122.33
1	A	4494	OMG	N2-C2-N1	2.80	122.67	116.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3844	PSU	O4-C4-N3	-2.80	114.75	120.12
1	A	3884	PSU	O4'-C4'-C3'	-2.79	99.60	105.11
1	A	4296	PSU	C6-C5-C4	2.78	120.14	118.20
1	A	4499	OMG	C8-N7-C5	2.78	108.28	102.99
1	A	2365	OMC	C4'-O4'-C1'	2.78	115.60	109.47
1	A	4530	UR3	O3'-C3'-C2'	2.78	120.80	111.82
1	A	2401	A2M	C5'-C4'-C3'	-2.77	104.78	115.18
1	A	3851	PSU	C5'-C4'-C3'	-2.77	104.79	115.18
1	A	4689	PSU	C4'-O4'-C1'	2.77	115.52	108.55
1	A	4532	PSU	O2-C2-N3	-2.77	116.59	121.82
1	A	3844	PSU	C5-C4-N3	2.76	122.83	116.58
1	A	4403	PSU	O2-C2-N1	-2.76	119.76	122.79
1	A	4456	OMC	C1'-N1-C6	2.75	126.84	120.84
1	A	4673	PSU	O2'-C2'-C3'	2.75	120.71	111.82
1	A	3744	OMG	O6-C6-N1	-2.74	117.41	120.65
1	A	4673	PSU	C4'-O4'-C1'	2.74	115.45	108.55
1	A	5001	PSU	C5-C4-N3	2.74	122.78	116.58
1	A	3792	OMG	C8-N7-C5	2.74	108.21	102.99
1	A	1677	PSU	O3'-C3'-C4'	-2.74	103.14	111.05
1	A	2632	PSU	C5-C6-N1	-2.73	118.01	122.11
1	A	4689	PSU	C5'-C4'-C3'	-2.73	104.94	115.18
1	A	3884	PSU	O4-C4-N3	-2.73	114.89	120.12
1	A	4623	OMG	O6-C6-N1	-2.72	117.44	120.65
1	A	2824	OMC	C6-C5-C4	2.72	121.89	117.50
1	A	4312	PSU	O3'-C3'-C4'	-2.72	103.19	111.05
1	A	4447	5MC	CM5-C5-C6	2.72	126.47	122.85
1	A	1871	A2M	C2-N1-C6	2.72	123.40	118.75
1	A	4431	PSU	C3'-C2'-C1'	2.71	104.80	101.64
1	A	398	A2M	O2'-C2'-C1'	-2.71	103.72	109.09
1	A	1625	OMG	O2'-C2'-C1'	-2.71	103.72	109.09
1	A	3637	PSU	O4-C4-C5	-2.70	116.98	124.05
1	A	3853	PSU	C4'-O4'-C1'	2.70	115.35	108.55
1	A	4299	PSU	O4-C4-C5	-2.70	116.98	124.05
3	C	69	PSU	O2-C2-N3	-2.70	116.72	121.82
1	A	5010	PSU	C3'-C2'-C1'	2.69	104.77	101.64
1	A	1625	OMG	C8-N7-C5	2.69	108.12	102.99
1	A	3639	PSU	O4-C4-C5	-2.69	117.01	124.05
1	A	1683	PSU	O4'-C4'-C3'	-2.69	99.79	105.11
1	A	4493	PSU	O2'-C2'-C3'	-2.69	103.13	111.82
1	A	2401	A2M	C5-C6-N6	-2.68	116.28	120.35
1	A	4620	OMU	C2'-C1'-N1	-2.68	109.03	114.22
1	A	2824	OMC	O2-C2-N1	2.68	124.42	118.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3718	A2M	C2-N1-C6	2.67	123.33	118.75
1	A	4220	6MZ	O2'-C2'-C1'	-2.67	101.00	110.85
3	C	75	OMG	C2-N1-C6	-2.66	120.19	125.10
1	A	1582	PSU	C5-C6-N1	-2.66	118.12	122.11
1	A	2401	A2M	C4-C5-N7	-2.66	106.63	109.40
1	A	4536	OMC	C4-N3-C2	-2.66	115.96	120.25
1	A	3818	OMU	O2-C2-N3	-2.66	116.55	121.50
1	A	3792	OMG	O3'-C3'-C4'	-2.65	103.38	111.05
1	A	4370	OMG	N2-C2-N3	-2.65	114.57	119.74
1	A	4523	A2M	O3'-C3'-C4'	-2.65	103.39	111.05
1	A	3627	OMG	O6-C6-C5	-2.65	119.20	124.37
1	A	2824	OMC	C4'-O4'-C1'	2.65	115.32	109.47
1	A	2824	OMC	C5-C6-N1	-2.65	117.37	121.81
3	C	75	OMG	C5-C6-N1	2.65	118.63	113.95
1	A	2351	OMC	C1'-N1-C6	2.64	126.60	120.84
1	A	2364	OMG	C8-N7-C5	2.64	108.02	102.99
1	A	4536	OMC	C2'-C1'-N1	-2.64	109.10	114.22
1	A	4353	PSU	C2'-C3'-C4'	-2.64	97.52	102.64
1	A	3884	PSU	O4-C4-C5	-2.64	117.15	124.05
1	A	3695	PSU	O2'-C2'-C1'	-2.64	104.95	111.23
1	A	1782	PSU	O2'-C2'-C1'	2.63	117.49	111.23
1	A	2839	PSU	O4'-C1'-C2'	-2.62	101.44	105.14
1	A	2365	OMC	C1'-N1-C2	-2.62	112.57	118.42
1	A	2824	OMC	O4'-C1'-C2'	-2.62	101.97	106.57
1	A	3785	A2M	O5'-C5'-C4'	-2.62	100.09	108.99
1	A	3841	OMC	C5-C4-N3	-2.61	116.88	121.33
1	A	1340	OMC	C2'-C1'-N1	2.61	119.30	114.22
1	A	4456	OMC	O2-C2-N1	-2.61	113.51	118.89
1	A	2824	OMC	O3'-C3'-C4'	-2.61	103.51	111.05
1	A	4500	PSU	C3'-C2'-C1'	-2.60	98.60	101.64
1	A	1781	PSU	O2-C2-N1	-2.60	119.93	122.79
1	A	4296	PSU	C6-N1-C2	2.60	125.34	122.68
1	A	2401	A2M	CM'-O2'-C2'	2.59	121.33	114.52
1	A	3853	PSU	O4'-C1'-C2'	-2.59	101.49	105.14
1	A	4571	A2M	C4-C5-N7	-2.59	106.70	109.40
1	A	4456	OMC	C2'-C1'-N1	-2.59	109.20	114.22
1	A	1524	A2M	C1'-N9-C4	-2.59	122.10	126.64
1	A	4392	OMG	O4'-C4'-C3'	-2.58	100.00	105.11
1	A	4530	UR3	C5'-C4'-C3'	-2.58	105.50	115.18
1	A	3808	OMC	O2-C2-N1	2.58	124.22	118.89
1	A	400	A2M	C1'-N9-C4	-2.58	122.11	126.64
1	A	3639	PSU	O3'-C3'-C2'	-2.57	103.50	111.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	3825	A2M	O4'-C4'-C3'	-2.57	100.03	105.11
1	A	4530	UR3	O2'-C2'-C3'	-2.57	103.51	111.82
1	A	3637	PSU	C5-C4-N3	2.57	122.39	116.58
1	A	2837	OMU	C6-C5-C4	2.57	123.02	119.52
1	A	4370	OMG	O6-C6-N1	2.56	123.67	120.65
1	A	4312	PSU	O4-C4-C5	-2.56	117.35	124.05
1	A	4972	PSU	O4-C4-N3	-2.55	115.22	120.12
1	A	4576	PSU	C2'-C3'-C4'	-2.55	97.70	102.64
1	A	3792	OMG	O2'-C2'-C1'	-2.54	104.05	109.09
1	A	4220	6MZ	C3'-C2'-C1'	2.54	104.81	100.98
3	C	75	OMG	C8-N7-C5	2.54	107.83	102.99
1	A	2508	PSU	C5-C4-N3	2.54	122.32	116.58
1	A	4530	UR3	O4'-C1'-N1	-2.53	102.58	108.36
1	A	3899	OMG	C2-N1-C6	-2.53	120.44	125.10
1	A	2861	OMC	O4'-C1'-N1	-2.52	102.60	108.36
1	A	3718	A2M	CM'-O2'-C2'	2.52	121.14	114.52
1	A	3920	PSU	O2-C2-N3	-2.52	117.06	121.82
1	A	4552	PSU	C3'-C2'-C1'	2.51	104.56	101.64
1	A	1782	PSU	O4-C4-N3	-2.51	115.30	120.12
1	A	4220	6MZ	O4'-C1'-C2'	-2.51	103.26	106.93
1	A	3884	PSU	C3'-C2'-C1'	2.51	104.56	101.64
1	A	4972	PSU	C5'-C4'-C3'	-2.51	105.78	115.18
1	A	2351	OMC	C4-N3-C2	-2.51	116.21	120.25
1	A	1340	OMC	C5-C4-N3	-2.51	117.06	121.33
1	A	3744	OMG	O3'-C3'-C4'	-2.50	103.82	111.05
1	A	1782	PSU	O4'-C1'-C2'	2.50	108.66	105.14
1	A	4628	PSU	O4'-C4'-C3'	-2.49	100.18	105.11
1	A	3841	OMC	C5-C4-N4	2.49	124.49	120.57
1	A	4228	OMG	CM2-O2'-C2'	2.49	121.05	114.52
1	A	3851	PSU	C6-N1-C2	-2.48	120.14	122.68
1	A	3869	OMC	O3'-C3'-C2'	-2.48	104.11	111.17
1	A	4403	PSU	O3'-C3'-C2'	2.48	119.84	111.82
1	A	3808	OMC	O5'-C5'-C4'	2.47	117.41	108.99
1	A	4972	PSU	C5-C4-N3	2.47	122.17	116.58
1	A	1536	PSU	O4-C4-N3	-2.47	115.39	120.12
1	A	3785	A2M	O4'-C1'-C2'	-2.46	102.31	106.59
1	A	3724	A2M	O4'-C4'-C5'	2.46	117.45	109.37
1	A	3925	OMU	CM2-O2'-C2'	2.45	120.97	114.52
1	A	2815	A2M	N3-C2-N1	-2.45	124.85	128.68
1	A	3701	OMC	C5-C4-N4	2.44	124.41	120.57
1	A	5010	PSU	O2-C2-N3	-2.44	117.22	121.82
1	A	1322	1MA	C3'-C2'-C1'	2.44	104.65	100.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	55	PSU	O4'-C1'-C2'	-2.44	101.71	105.14
1	A	4620	OMU	C4'-O4'-C1'	2.43	114.84	109.47
1	A	3715	PSU	O2-C2-N1	2.43	125.47	122.79
1	A	4552	PSU	C5-C6-N1	-2.43	118.46	122.11
1	A	4293	PSU	O4'-C4'-C3'	-2.43	100.30	105.11
1	A	2508	PSU	C6-C5-C4	-2.43	116.50	118.20
1	A	1871	A2M	C5-C6-N6	2.42	124.03	120.35
1	A	1677	PSU	C3'-C2'-C1'	2.42	104.45	101.64
1	A	4353	PSU	O4-C4-N3	-2.42	115.48	120.12
1	A	4530	UR3	O4'-C1'-C2'	-2.41	101.38	106.64
1	A	4689	PSU	O2-C2-N3	-2.41	117.27	121.82
1	A	2424	OMG	O4'-C4'-C3'	-2.41	100.34	105.11
1	A	3925	OMU	C2'-C3'-C4'	-2.41	96.76	101.99
1	A	3884	PSU	O2-C2-N1	-2.41	120.14	122.79
1	A	3818	OMU	O2-C2-N1	2.41	125.99	122.79
1	A	4536	OMC	C4'-O4'-C1'	2.40	114.78	109.47
1	A	3844	PSU	O2'-C2'-C3'	-2.40	104.06	111.82
1	A	4620	OMU	O4-C4-C5	-2.39	120.95	125.16
3	C	55	PSU	O2'-C2'-C1'	-2.38	105.55	111.23
1	A	5001	PSU	C5-C6-N1	-2.38	118.53	122.11
1	A	3744	OMG	C2-N1-C6	-2.38	120.71	125.10
1	A	3867	A2M	O5'-C5'-C4'	-2.38	100.89	108.99
1	A	2632	PSU	O2-C2-N3	-2.38	117.33	121.82
1	A	3695	PSU	C6-N1-C2	-2.38	120.25	122.68
1	A	4312	PSU	C4'-O4'-C1'	2.38	114.53	108.55
1	A	4312	PSU	O4'-C4'-C3'	-2.37	100.42	105.11
1	A	1534	A2M	C5-C6-N1	-2.37	114.97	120.35
1	A	4530	UR3	C1'-N1-C6	2.37	126.01	120.84
1	A	2839	PSU	O3'-C3'-C2'	-2.37	104.16	111.82
1	A	3887	OMC	C2'-C3'-C4'	2.37	107.14	101.99
1	A	2424	OMG	O2'-C2'-C1'	-2.37	104.40	109.09
1	A	4579	PSU	O3'-C3'-C4'	2.37	117.89	111.05
1	A	4552	PSU	O4-C4-C5	-2.37	117.86	124.05
1	A	4471	PSU	O4-C4-N3	-2.36	115.58	120.12
1	A	3729	PSU	O4-C4-N3	-2.36	115.59	120.12
1	A	1340	OMC	O3'-C3'-C4'	-2.36	104.22	111.05
1	A	4673	PSU	C6-N1-C2	-2.36	120.27	122.68
1	A	3744	OMG	O6-C6-C5	-2.36	119.77	124.37
1	A	1536	PSU	O2'-C2'-C3'	-2.35	104.21	111.82
1	A	4536	OMC	C1'-N1-C6	2.35	125.97	120.84
1	A	2632	PSU	O4'-C1'-C2'	2.34	108.44	105.14
1	A	2424	OMG	C8-N7-C5	2.33	107.43	102.99

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	2363	A2M	C3'-C2'-C1'	2.33	107.26	102.89
1	A	1871	A2M	CM'-O2'-C2'	2.33	120.63	114.52
1	A	3701	OMC	N1-C2-N3	2.32	123.04	118.81
1	A	3867	A2M	O4'-C4'-C5'	2.32	117.01	109.37
1	A	4500	PSU	O4-C4-C5	-2.32	117.98	124.05
1	A	4618	OMG	C2'-C3'-C4'	-2.31	96.98	101.99
1	A	4420	PSU	C2'-C3'-C4'	2.31	107.13	102.64
1	A	4590	A2M	O2'-C2'-C1'	2.31	113.67	109.09
1	A	2401	A2M	N6-C6-N1	2.31	123.36	118.57
3	C	75	OMG	O2'-C2'-C1'	-2.30	104.53	109.09
1	A	4532	PSU	C4'-O4'-C1'	2.30	114.34	108.55
1	A	2861	OMC	O4'-C4'-C3'	-2.30	100.56	105.11
1	A	3808	OMC	O3'-C3'-C2'	2.30	117.69	111.17
1	A	3695	PSU	O3'-C3'-C4'	-2.30	104.41	111.05
1	A	400	A2M	O4'-C1'-C2'	-2.29	102.62	106.59
1	A	4494	OMG	N1-C2-N3	2.28	127.59	123.32
1	A	4499	OMG	O2'-C2'-C1'	-2.28	104.57	109.09
1	A	2787	A2M	O3'-C3'-C4'	-2.28	104.45	111.05
1	A	4296	PSU	O2'-C2'-C3'	-2.28	104.45	111.82
1	A	4471	PSU	O2-C2-N3	-2.28	117.52	121.82
1	A	2632	PSU	C5'-C4'-C3'	-2.28	106.64	115.18
1	A	2351	OMC	CM2-O2'-C2'	2.28	120.50	114.52
1	A	1782	PSU	C6-C5-C4	2.28	119.79	118.20
1	A	4456	OMC	O4'-C1'-C2'	-2.27	102.58	106.57
1	A	2364	OMG	CM2-O2'-C2'	-2.27	108.56	114.52
1	A	3869	OMC	O2'-C2'-C1'	2.27	113.51	109.08
1	A	4552	PSU	O2'-C2'-C1'	-2.27	105.82	111.23
1	A	4299	PSU	C5'-C4'-C3'	-2.26	106.72	115.18
1	A	1522	OMG	N2-C2-N3	-2.26	115.34	119.74
1	A	1582	PSU	C6-N1-C2	-2.25	120.38	122.68
1	A	3867	A2M	O4'-C4'-C3'	-2.25	100.67	105.11
1	A	4532	PSU	O4'-C4'-C3'	2.24	109.55	105.11
1	A	400	A2M	O2'-C2'-C1'	-2.24	104.65	109.09
1	A	4523	A2M	C5-C6-N6	2.24	123.75	120.35
1	A	4521	PSU	O3'-C3'-C4'	-2.24	104.58	111.05
1	A	2365	OMC	C5-C6-N1	-2.24	118.06	121.81
1	A	4628	PSU	O4'-C4'-C5'	2.23	116.72	109.37
1	A	4618	OMG	N2-C2-N3	-2.23	115.39	119.74
1	A	4523	A2M	C2-N1-C6	2.23	122.57	118.75
1	A	1316	OMG	CM2-O2'-C2'	-2.23	108.67	114.52
1	A	3782	5MC	C5-C6-N1	-2.23	121.05	123.34
1	A	4299	PSU	O4'-C4'-C3'	-2.23	100.71	105.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4493	PSU	C6-C5-C4	2.22	119.75	118.20
1	A	3920	PSU	O2'-C2'-C1'	-2.22	105.94	111.23
1	A	4689	PSU	C6-N1-C2	2.22	124.95	122.68
1	A	3851	PSU	O4'-C4'-C3'	-2.21	100.73	105.11
1	A	2787	A2M	C5-C6-N1	-2.21	115.34	120.35
1	A	2824	OMC	C1'-N1-C6	2.21	125.65	120.84
1	A	1625	OMG	O6-C6-N1	2.20	123.25	120.65
1	A	1340	OMC	C6-N1-C2	-2.20	116.67	120.49
1	A	3715	PSU	C4-N3-C2	-2.20	123.17	126.34
1	A	1782	PSU	O4'-C4'-C5'	2.20	116.61	109.37
1	A	4576	PSU	O4'-C4'-C3'	-2.20	100.77	105.11
1	A	1744	PSU	O2'-C2'-C3'	2.19	118.91	111.82
1	A	4353	PSU	O2-C2-N3	-2.19	117.69	121.82
1	A	4227	OMU	C3'-C2'-C1'	2.19	107.00	102.89
1	A	4442	PSU	C5-C6-N1	2.18	125.38	122.11
1	A	2632	PSU	C2'-C3'-C4'	2.18	106.87	102.64
1	A	1326	A2M	C5'-C4'-C3'	-2.17	107.03	115.18
1	A	1322	1MA	C5-C6-N1	2.17	117.14	113.90
1	A	2804	OMC	O2-C2-N1	-2.17	114.41	118.89
1	A	2351	OMC	O4'-C1'-C2'	-2.17	102.76	106.57
1	A	4576	PSU	O2'-C2'-C3'	-2.17	104.80	111.82
1	A	3808	OMC	N1-C2-N3	2.17	122.76	118.81
1	A	4361	PSU	O4-C4-C5	-2.17	118.37	124.05
1	A	4571	A2M	N3-C2-N1	-2.17	125.29	128.68
1	A	4423	PSU	C5-C6-N1	-2.17	118.86	122.11
1	A	4353	PSU	O4-C4-C5	-2.17	118.38	124.05
1	A	1683	PSU	C5-C6-N1	-2.15	118.88	122.11
1	A	4618	OMG	O4'-C1'-C2'	-2.15	102.86	106.59
1	A	4500	PSU	O4-C4-N3	2.15	124.24	120.12
1	A	4571	A2M	C5-C6-N6	-2.15	117.08	120.35
1	A	1744	PSU	C6-C5-C4	2.15	119.70	118.20
1	A	3724	A2M	C4-C5-N7	-2.15	107.16	109.40
1	A	2839	PSU	C5-C6-N1	-2.15	118.89	122.11
1	A	3715	PSU	C5-C6-N1	-2.15	118.89	122.11
1	A	2837	OMU	C4'-O4'-C1'	2.15	114.21	109.47
1	A	3695	PSU	O2-C2-N1	-2.14	120.43	122.79
1	A	4536	OMC	O4'-C1'-C2'	-2.14	102.81	106.57
1	A	4228	OMG	C3'-C2'-C1'	2.14	106.91	102.89
1	A	2804	OMC	O3'-C3'-C4'	-2.13	104.88	111.05
1	A	3701	OMC	CM2-O2'-C2'	-2.13	108.93	114.52
3	C	55	PSU	C3'-C2'-C1'	2.13	104.11	101.64
1	A	4306	OMU	C6-N1-C2	-2.13	118.27	120.99

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4228	OMG	C8-N7-C5	2.12	107.03	102.99
1	A	3785	A2M	N6-C6-N1	2.12	122.97	118.57
1	A	2401	A2M	O3'-C3'-C2'	2.12	117.17	111.17
1	A	4293	PSU	O4'-C1'-C2'	-2.11	102.17	105.14
1	A	3744	OMG	N2-C2-N1	2.10	121.19	116.71
1	A	3825	A2M	O2'-C2'-C1'	-2.10	104.93	109.09
1	A	3715	PSU	C2'-C3'-C4'	2.10	106.71	102.64
1	A	4637	OMG	CM2-O2'-C2'	-2.09	109.03	114.52
1	A	2861	OMC	C4'-O4'-C1'	2.09	114.09	109.47
1	A	4306	OMU	O3'-C3'-C4'	-2.09	105.02	111.05
1	A	1683	PSU	O2'-C2'-C3'	-2.09	105.08	111.82
1	A	4457	PSU	C5'-C4'-C3'	2.08	122.97	115.18
1	A	1326	A2M	CM'-O2'-C2'	2.08	119.97	114.52
1	A	4306	OMU	O4-C4-C5	-2.07	121.51	125.16
1	A	1744	PSU	O3'-C3'-C2'	2.07	118.53	111.82
1	A	4536	OMC	C5-C6-N1	-2.07	118.34	121.81
1	A	2422	OMC	C2'-C3'-C4'	-2.07	97.51	101.99
1	A	3637	PSU	O5'-C5'-C4'	2.06	116.01	108.99
1	A	4447	5MC	C4'-O4'-C1'	2.06	114.02	109.47
1	A	3887	OMC	O2'-C2'-C1'	2.06	113.10	109.08
1	A	2839	PSU	C4'-O4'-C1'	2.06	113.73	108.55
1	A	4361	PSU	O4'-C1'-C2'	-2.06	102.24	105.14
1	A	4306	OMU	C5'-C4'-C3'	-2.06	107.47	115.18
1	A	4293	PSU	C3'-C2'-C1'	2.06	104.03	101.64
1	A	1534	A2M	C4-C5-N7	-2.05	107.26	109.40
1	A	4530	UR3	C2'-C3'-C4'	2.05	106.63	102.64
1	A	4494	OMG	O6-C6-N1	2.05	123.07	120.65
1	A	4423	PSU	O3'-C3'-C4'	2.05	116.96	111.05
1	A	1871	A2M	O4'-C4'-C3'	-2.04	101.07	105.11
1	A	1534	A2M	O3'-C3'-C4'	-2.04	105.16	111.05
1	A	4306	OMU	O4'-C1'-N1	-2.03	103.72	108.36
1	A	3718	A2M	C3'-C2'-C1'	-2.03	99.07	102.89
1	A	4590	A2M	C5-C6-N6	2.03	123.44	120.35
1	A	1677	PSU	O4'-C1'-C2'	2.03	108.01	105.14
1	A	4498	OMU	C2'-C3'-C4'	-2.03	97.59	101.99
1	A	4456	OMC	O5'-C5'-C4'	-2.03	102.11	108.99
1	A	2804	OMC	C4-N3-C2	-2.02	116.99	120.25
1	A	1316	OMG	C3'-C2'-C1'	2.02	106.69	102.89
1	A	4618	OMG	O5'-C5'-C4'	2.02	115.86	108.99
1	A	4628	PSU	O2'-C2'-C3'	-2.02	105.29	111.82
1	A	4623	OMG	O2'-C2'-C1'	-2.02	105.09	109.09
3	C	55	PSU	C4'-O4'-C1'	2.01	113.62	108.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	4521	PSU	O2-C2-N3	-2.01	118.02	121.82
1	A	4293	PSU	O2'-C2'-C1'	-2.01	106.44	111.23
1	A	1781	PSU	C6-C5-C4	2.01	119.60	118.20
1	A	3818	OMU	O3'-C3'-C4'	-2.01	105.25	111.05
3	C	69	PSU	O4'-C1'-C2'	-2.00	102.32	105.14
1	A	1862	PSU	O2'-C2'-C1'	-2.00	106.45	111.23
1	A	1522	OMG	O6-C6-N1	-2.00	118.28	120.65
1	A	4228	OMG	N2-C2-N1	2.00	120.97	116.71

There are no chirality outliers.

All (64) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	400	A2M	C1'-C2'-O2'-CM'
1	A	1582	PSU	C3'-C4'-C5'-O5'
1	A	1625	OMG	C3'-C2'-O2'-CM2
1	A	2415	OMU	C1'-C2'-O2'-CM2
1	A	2424	OMG	O4'-C4'-C5'-O5'
1	A	2815	A2M	C1'-C2'-O2'-CM'
1	A	3701	OMC	C2'-C1'-N1-C2
1	A	3701	OMC	C2'-C1'-N1-C6
1	A	3785	A2M	O4'-C4'-C5'-O5'
1	A	3830	A2M	C1'-C2'-O2'-CM'
1	A	3869	OMC	C1'-C2'-O2'-CM2
1	A	4196	OMG	C1'-C2'-O2'-CM2
1	A	4227	OMU	O4'-C4'-C5'-O5'
1	A	4228	OMG	C3'-C2'-O2'-CM2
1	A	4370	OMG	C1'-C2'-O2'-CM2
1	A	4447	5MC	C2'-C1'-N1-C6
1	A	4590	A2M	C4'-C5'-O5'-P
3	C	75	OMG	C1'-C2'-O2'-CM2
1	A	2365	OMC	C3'-C4'-C5'-O5'
1	A	2424	OMG	C3'-C4'-C5'-O5'
1	A	3785	A2M	C3'-C4'-C5'-O5'
1	A	4227	OMU	C3'-C4'-C5'-O5'
1	A	4972	PSU	O4'-C4'-C5'-O5'
1	A	5001	PSU	O4'-C4'-C5'-O5'
1	A	1792	PSU	C3'-C4'-C5'-O5'
1	A	1792	PSU	O4'-C4'-C5'-O5'
1	A	2365	OMC	O4'-C4'-C5'-O5'
1	A	2815	A2M	O4'-C4'-C5'-O5'
1	A	2815	A2M	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	A	4500	PSU	O4'-C4'-C5'-O5'
1	A	4689	PSU	O4'-C4'-C5'-O5'
1	A	398	A2M	O4'-C4'-C5'-O5'
1	A	2364	OMG	O4'-C4'-C5'-O5'
1	A	2839	PSU	O4'-C4'-C5'-O5'
1	A	4500	PSU	C3'-C4'-C5'-O5'
1	A	4447	5MC	C2'-C1'-N1-C2
1	A	2839	PSU	C3'-C4'-C5'-O5'
1	A	4370	OMG	O4'-C4'-C5'-O5'
1	A	4447	5MC	O4'-C1'-N1-C6
1	A	3818	OMU	C4'-C5'-O5'-P
1	A	4500	PSU	C4'-C5'-O5'-P
1	A	2364	OMG	C3'-C4'-C5'-O5'
1	A	3830	A2M	O4'-C4'-C5'-O5'
1	A	3830	A2M	C3'-C4'-C5'-O5'
1	A	3825	A2M	C3'-C4'-C5'-O5'
1	A	4296	PSU	O4'-C4'-C5'-O5'
1	A	1534	A2M	C4'-C5'-O5'-P
1	A	4447	5MC	O4'-C1'-N1-C2
1	A	3808	OMC	O4'-C4'-C5'-O5'
1	A	3701	OMC	O4'-C1'-N1-C6
1	A	3701	OMC	O4'-C1'-N1-C2
1	A	3851	PSU	O4'-C4'-C5'-O5'
1	A	3701	OMC	C3'-C2'-O2'-CM2
1	A	3729	PSU	O4'-C4'-C5'-O5'
1	A	4530	UR3	O4'-C4'-C5'-O5'
1	A	4972	PSU	C3'-C4'-C5'-O5'
1	A	3718	A2M	C1'-C2'-O2'-CM'
1	A	2422	OMC	C3'-C4'-C5'-O5'
1	A	1677	PSU	O4'-C1'-C5-C6
1	A	1534	A2M	O4'-C4'-C5'-O5'
1	A	2351	OMC	O4'-C4'-C5'-O5'
1	A	1524	A2M	C3'-C2'-O2'-CM'
1	A	2351	OMC	C3'-C4'-C5'-O5'
1	A	3844	PSU	C4'-C5'-O5'-P

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

Of 386 ligands modelled in this entry, 386 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

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	4273:A	O3'	4274:A	P	1.83
1	A	3823:G	O3'	3824:A	P	1.77

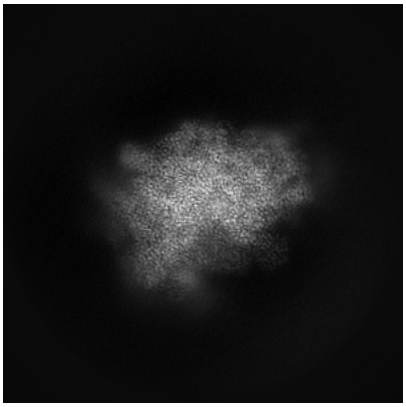
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-13094. These allow visual inspection of the internal detail of the map and identification of artifacts.

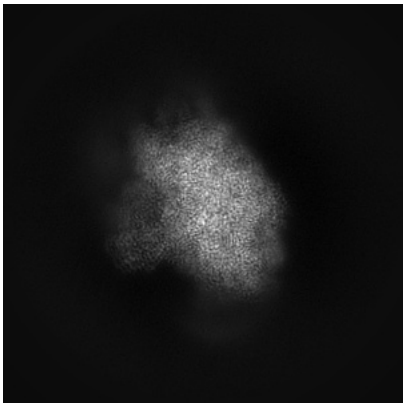
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

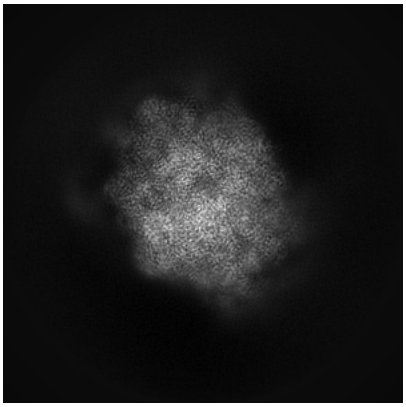
6.1.1 Primary map



X



Y

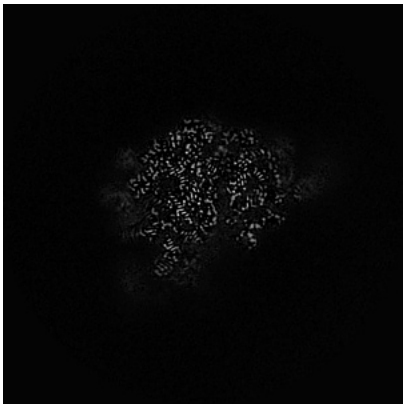


Z

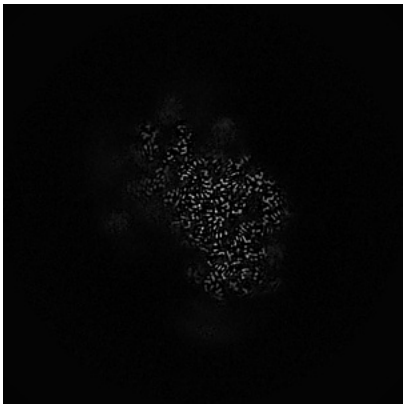
The images above show the map projected in three orthogonal directions.

6.2 Central slices

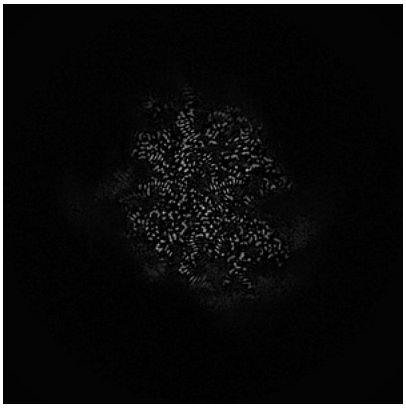
6.2.1 Primary map



X Index: 256



Y Index: 256

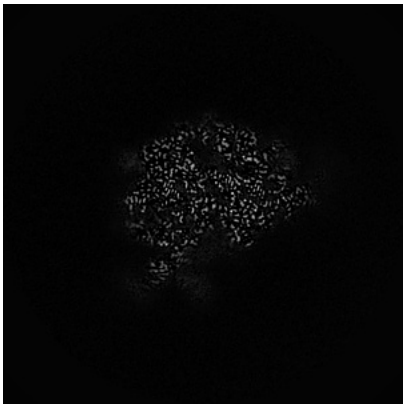


Z Index: 256

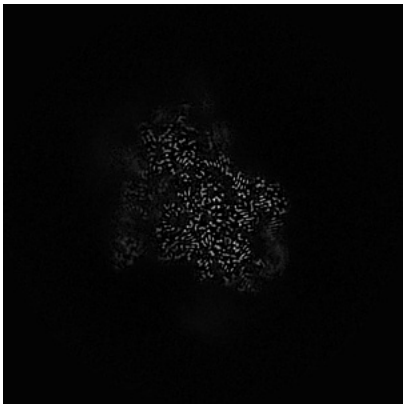
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

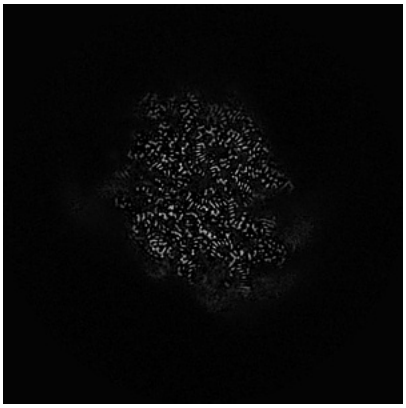
6.3.1 Primary map



X Index: 239



Y Index: 238

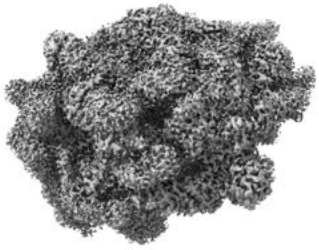


Z Index: 261

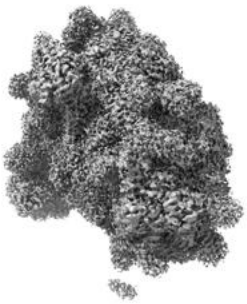
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

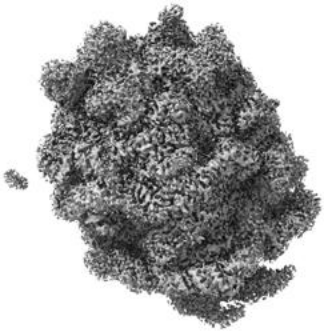
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

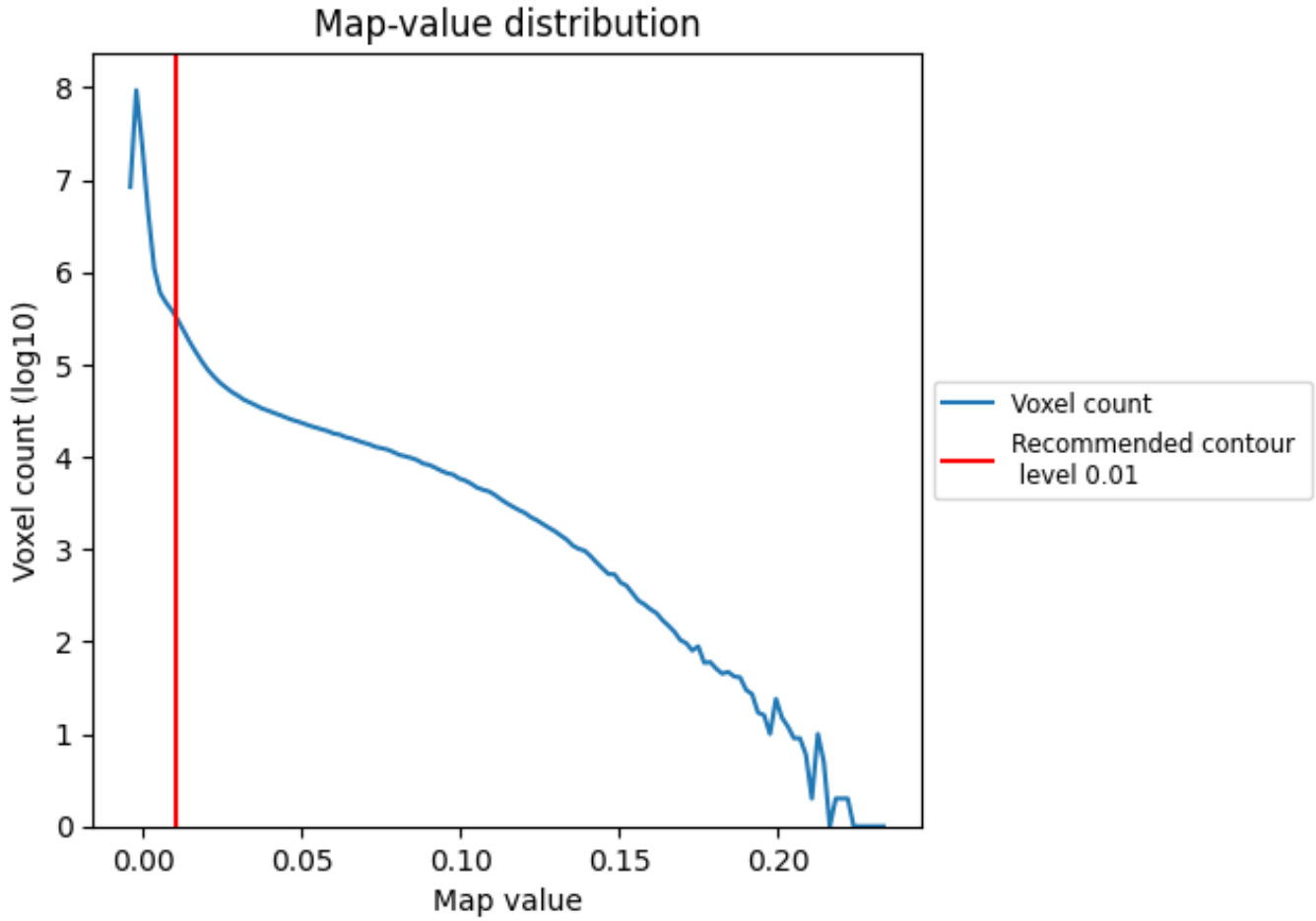
6.5 Mask visualisation (i)

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

7 Map analysis

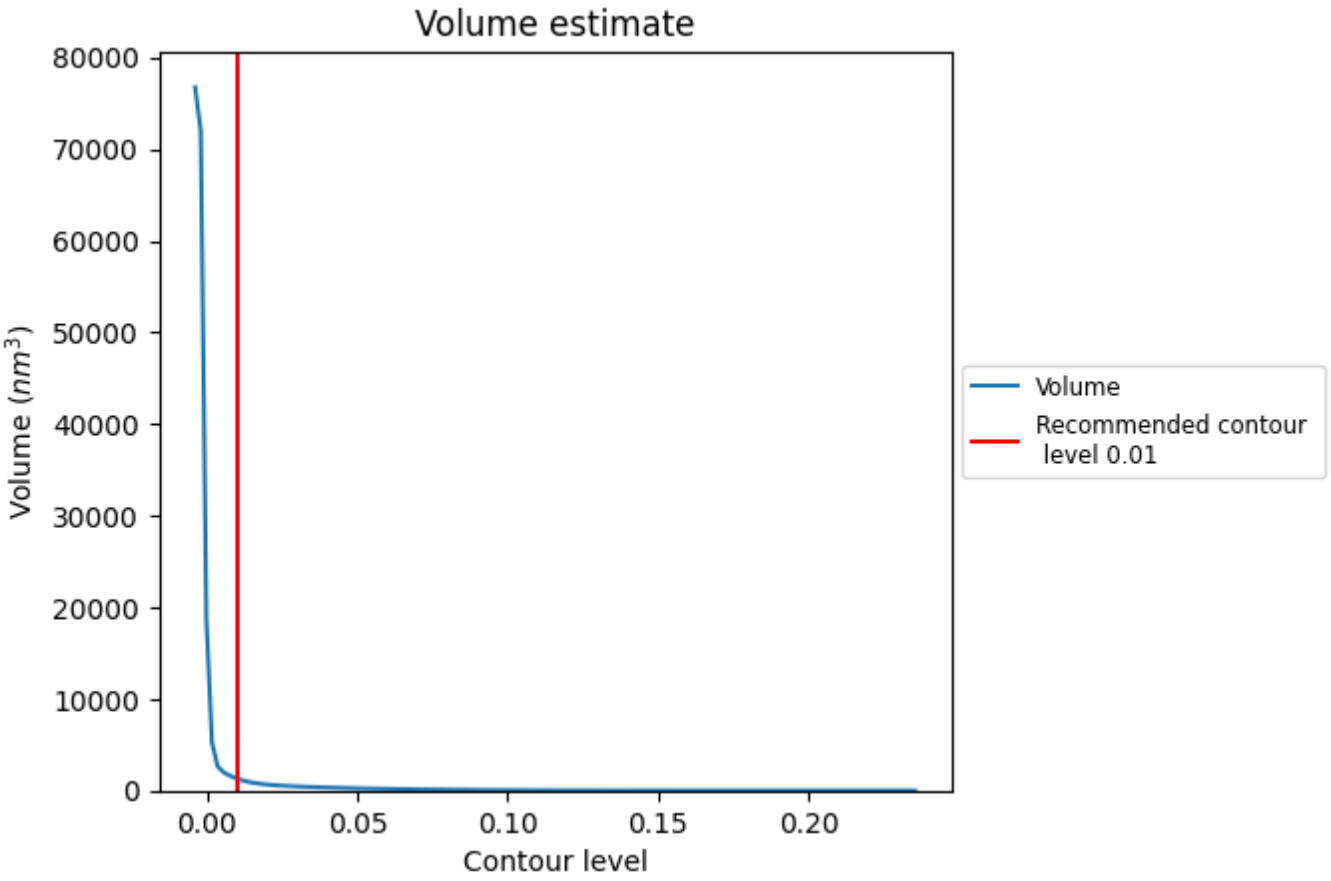
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

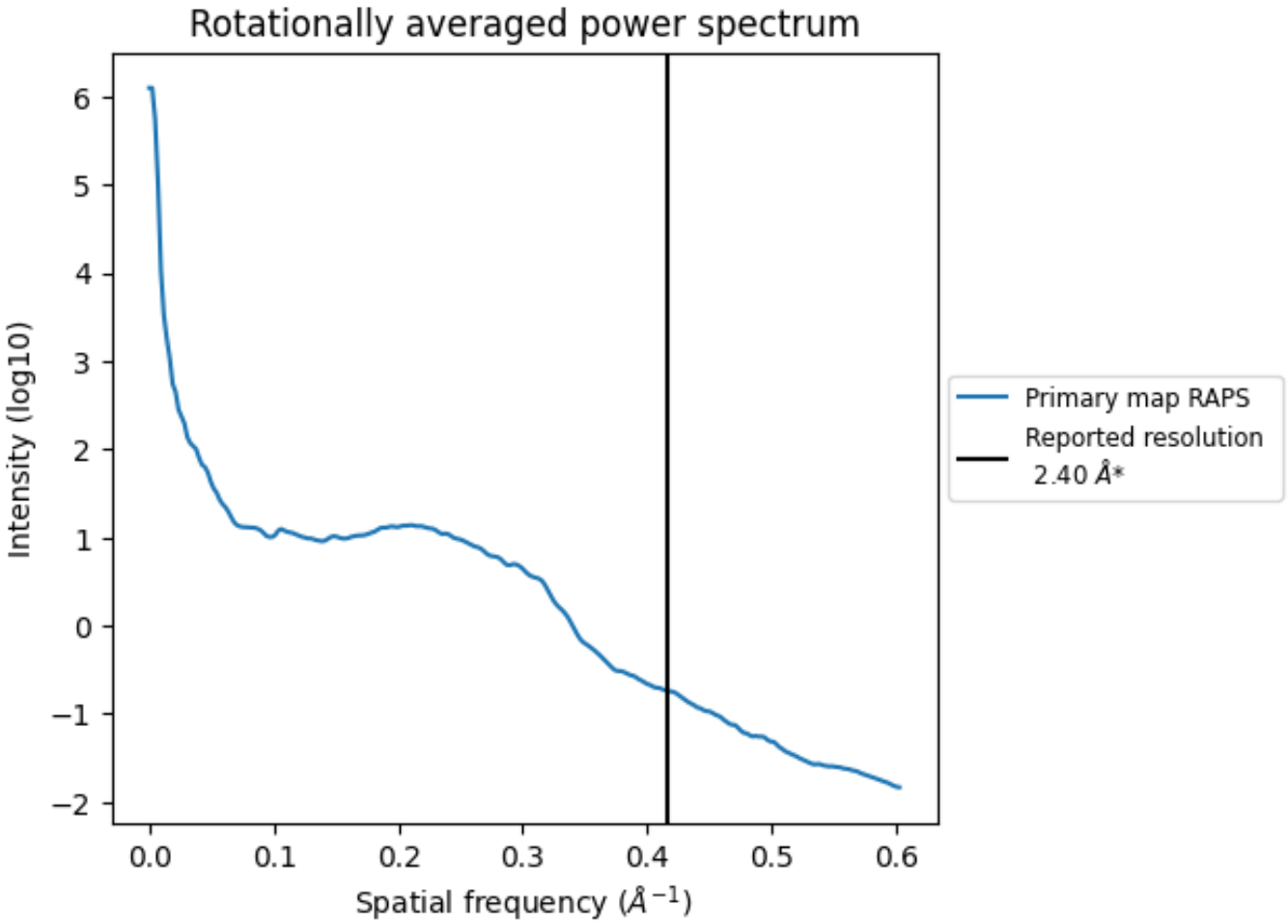
7.2 Volume estimate



The volume at the recommended contour level is 1295 nm^3; this corresponds to an approximate mass of 1170 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)

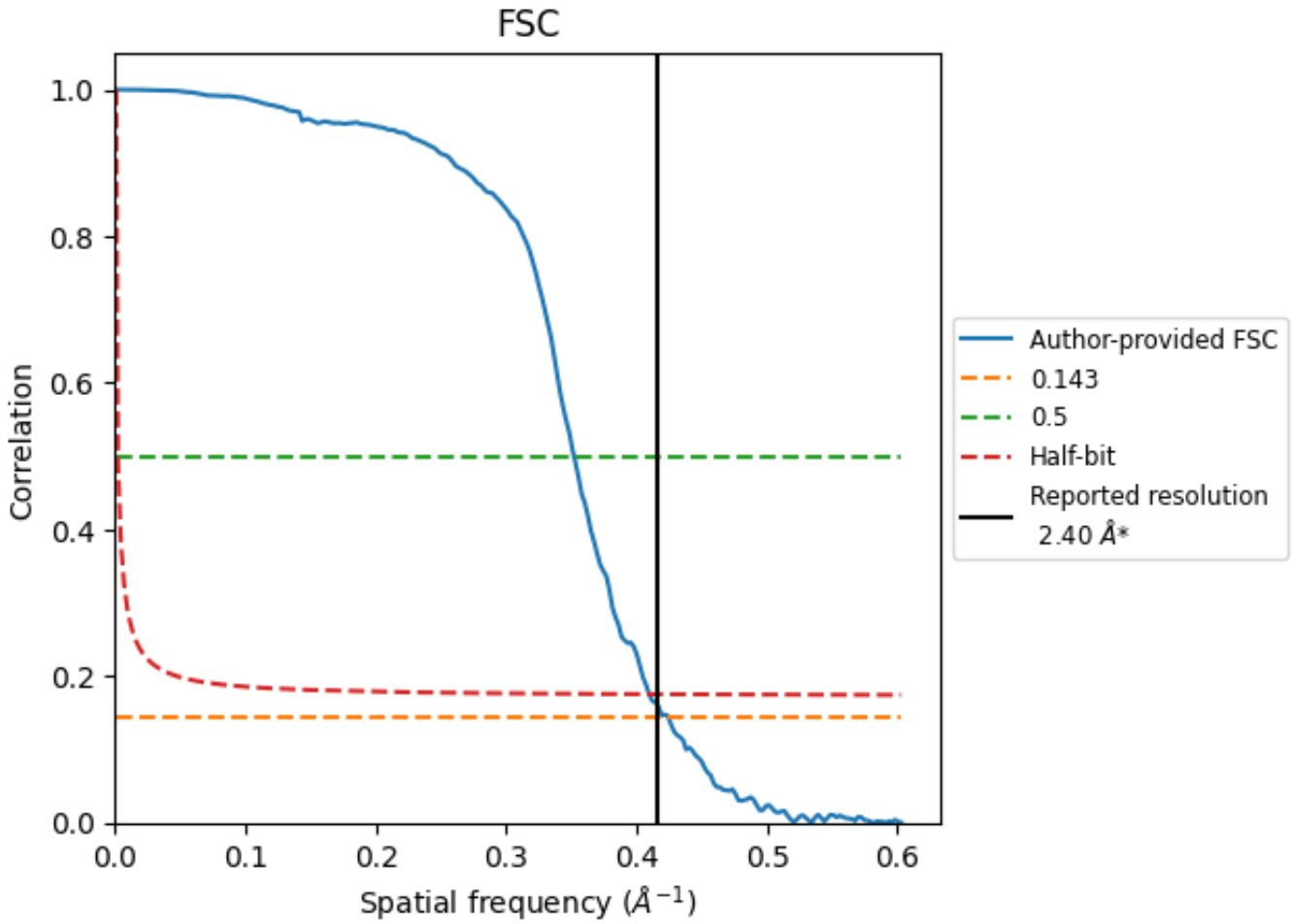


*Reported resolution corresponds to spatial frequency of 0.417 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.417 Å^{-1}

8.2 Resolution estimates (i)

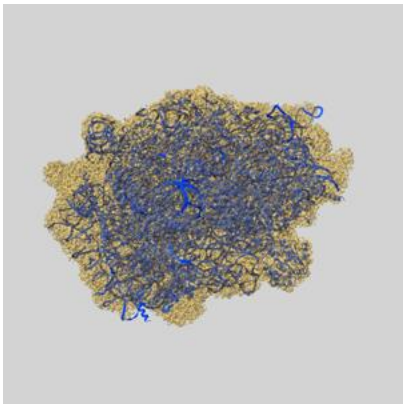
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.40	-	-
Author-provided FSC curve	2.36	2.84	2.44
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

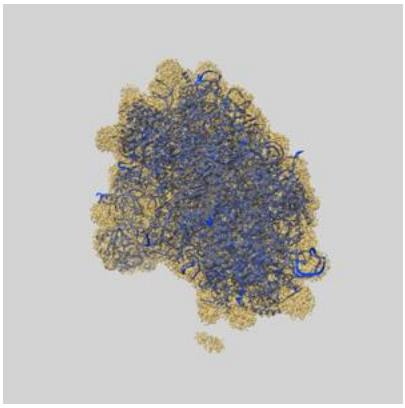
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-13094 and PDB model 7OW7. Per-residue inclusion information can be found in section 3 on page 16.

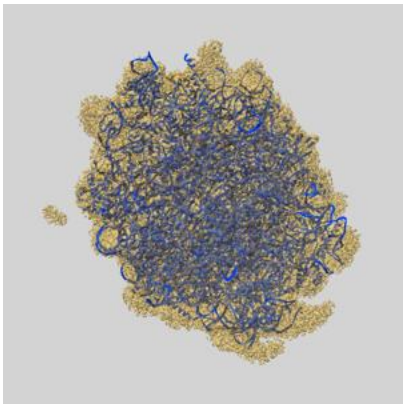
9.1 Map-model overlay



X



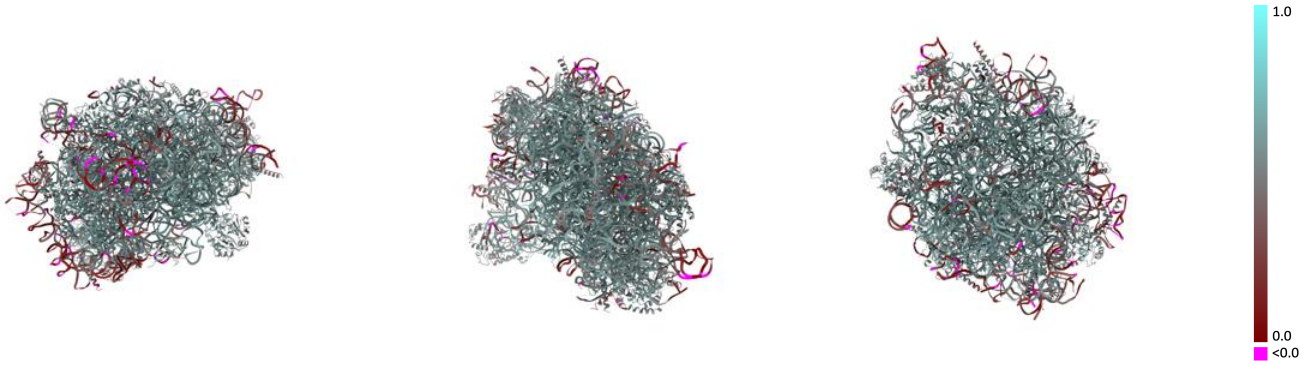
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

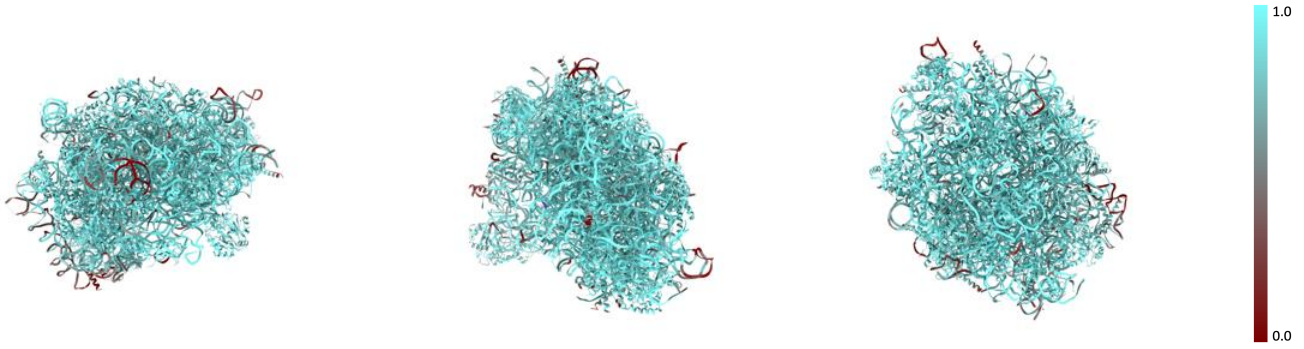
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

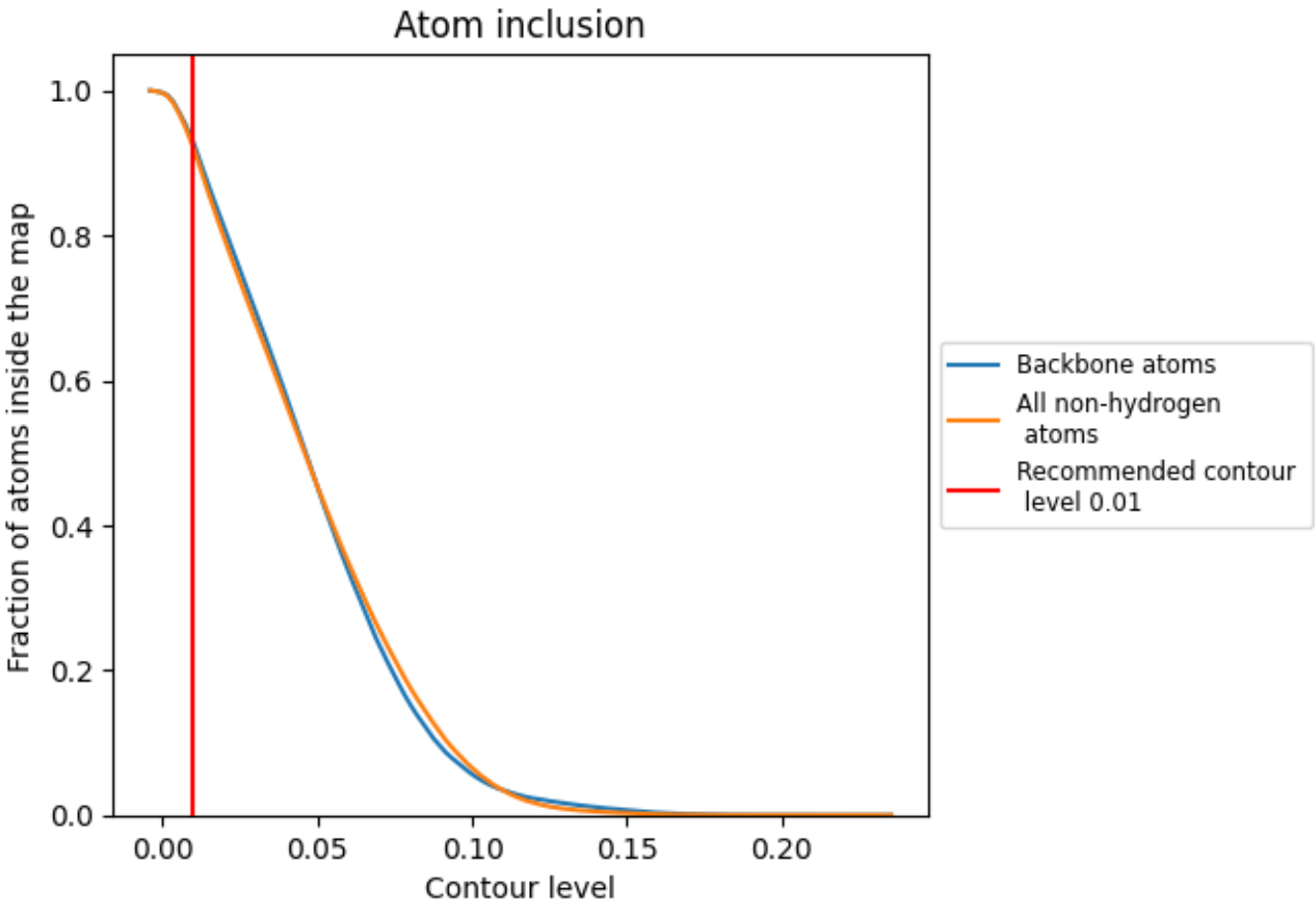
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.01).

9.4 Atom inclusion (i)



At the recommended contour level, 93% of all backbone atoms, 92% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9204	0.5390
A	0.9099	0.5170
B	0.9824	0.5800
C	0.9718	0.5680
D	0.9797	0.6120
E	0.9512	0.5750
F	0.9699	0.6060
G	0.8787	0.5420
H	0.9237	0.5500
I	0.9513	0.5810
J	0.9708	0.5870
K	0.9786	0.6260
L	0.8905	0.5270
M	0.9659	0.5890
N	0.9533	0.5920
P	0.8819	0.5290
Q	0.9609	0.5910
R	0.9484	0.5570
S	0.9239	0.5500
T	0.8984	0.5210
U	0.9717	0.6220
V	0.8637	0.5150
W	0.9099	0.5350
X	0.9355	0.5560
Y	0.9745	0.6060
Z	0.9822	0.6150
a	0.9155	0.5470
b	0.9185	0.5540
c	0.8897	0.5400
d	0.9747	0.6080
e	0.7386	0.4490
f	0.9458	0.5630
i	0.9301	0.5710
j	0.9332	0.5590
k	0.9706	0.6020

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Chain	Atom inclusion	Q-score
m	0.9657	0.6060
n	0.9043	0.5520
o	0.9034	0.5300
p	0.7928	0.4490
q	0.8102	0.4810
r	0.9198	0.5760
s	0.9151	0.5410
t	0.9883	0.6240
u	0.9220	0.5420