wwPDB EM Map/Model Validation Report (i)

Apr 10, 2016 – 01:59 PM BST

PDB ID	:	1FCW
Title	:	TRNA POSITIONS DURING THE ELONGATION CYCLE
Authors	:	Agrawal, R.K.; Spahn, C.M.T.; Penczek, P.; Grassucci, R.A.; Nierhaus, K.H.; Frank, J.
Deposited on	:	2000-07-19
Resolution	:	17.00 Å(reported)

This is a wwPDB EM Map/Model Validation Report for a publicly released PDB/EMDB entry.
For rigid body fitted models, validation errors reported here could
stem from errors in the original structure(s) used in the fitting.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
http://wwpdb.org/validation/2016/EMValidationReportHelp

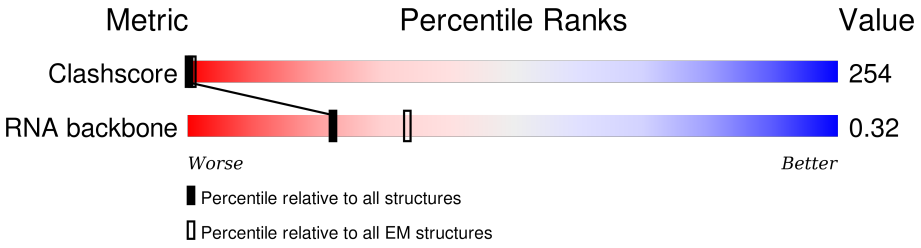
MolProbity	:	4.02b-467
Mogul	:	1.7.1 (RC1), CSD as537be (2016)
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP)	:	trunk27241

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 17.00 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)
Clashscore	114402	924
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. 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%

Mol	Chain	Length	Quality of chain
1	A	76	12% 59% 29%
1	B	76	• 9% 59% 30%
1	C	76	• 32% 37% 28%
1	D	76	• 16% 54% 28%
1	E	76	• 14% 57% 26%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	H2U	A	16	-	-	X	-
1	H2U	A	17	-	-	X	-
1	M2G	A	26	-	-	X	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	OMC	A	32	-	-	X	-
1	OMG	A	34	-	-	X	-
1	YG	A	37	X	-	X	-
1	PSU	A	39	-	-	X	-
1	5MC	A	40	-	-	X	-
1	7MG	A	46	-	-	X	-
1	5MC	A	49	-	-	X	-
1	5MU	A	54	-	-	X	-
1	PSU	A	55	-	-	X	-
1	1MA	A	58	-	-	X	-
1	2MG	B	10	-	-	X	-
1	H2U	B	16	-	-	X	-
1	H2U	B	17	-	-	X	-
1	M2G	B	26	-	-	X	-
1	OMC	B	32	-	-	X	-
1	OMG	B	34	-	-	X	-
1	YG	B	37	X	-	X	-
1	PSU	B	39	-	-	X	-
1	5MC	B	40	-	-	X	-
1	7MG	B	46	-	-	X	-
1	5MC	B	49	-	-	X	-
1	5MU	B	54	-	-	X	-
1	PSU	B	55	-	-	X	-
1	1MA	B	58	-	-	X	-
1	YG	C	37	X	-	-	-
1	2MG	D	10	-	-	X	-
1	H2U	D	17	-	-	X	-
1	M2G	D	26	-	-	X	-
1	YG	D	37	X	-	-	-
1	7MG	D	46	-	-	X	-
1	5MC	D	49	-	-	X	-
1	5MU	D	54	-	-	X	-
1	PSU	D	55	-	-	X	-
1	1MA	D	58	-	-	X	-
1	H2U	E	17	-	-	X	-
1	YG	E	37	X	-	-	-
1	5MC	E	49	-	-	X	-
1	5MU	E	54	-	-	X	-
1	1MA	E	58	-	-	X	-

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 8260 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 TRNAPHE.

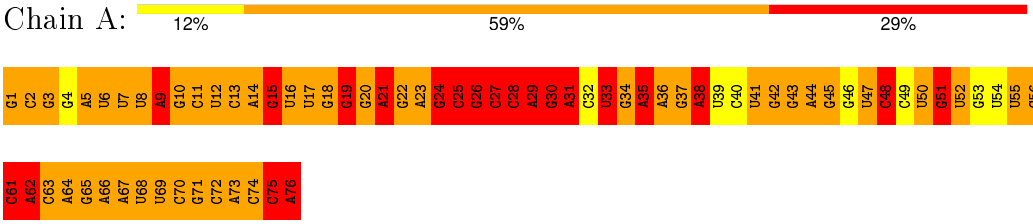
Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	76	Total	C	N	O	P	0	0
			1652	746	294	536	76		
1	B	76	Total	C	N	O	P	0	0
			1652	746	294	536	76		
1	C	76	Total	C	N	O	P	0	0
			1652	746	294	536	76		
1	D	76	Total	C	N	O	P	0	0
			1652	746	294	536	76		
1	E	76	Total	C	N	O	P	0	0
			1652	746	294	536	76		

3 Residue-property plots (i)

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

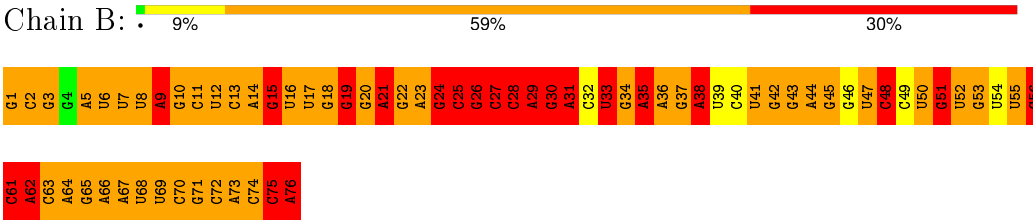
- Molecule 1: TRNAPHE

Chain A:



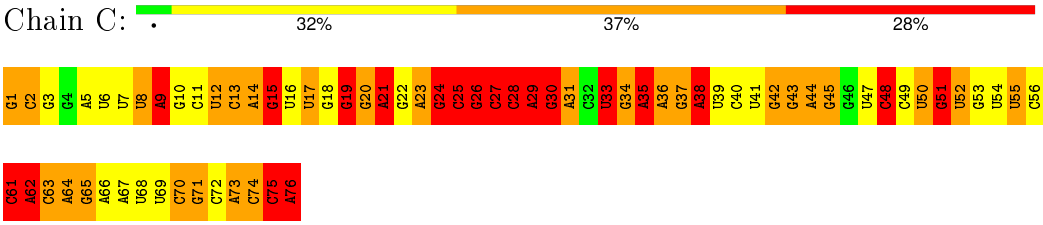
- Molecule 1: TRNAPHE

Chain B:



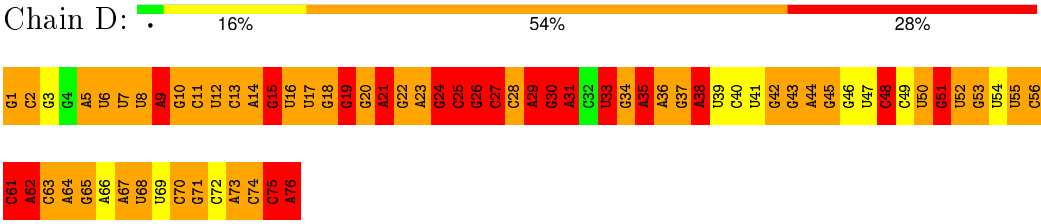
- Molecule 1: TRNAPHE

Chain C:



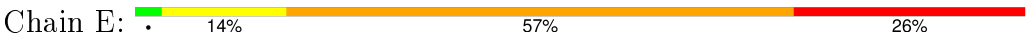
- Molecule 1: TRNAPHE

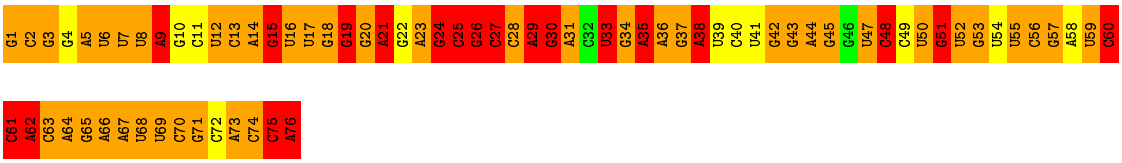
Chain D:



- Molecule 1: TRNAPHE

Chain E:




G1
C2
G3
G4
A5
U6
U7
U8
A9
G10
C11
U12
C13
A14
G15
U16
U17
C18
G19
G20
A21
G22
A23
G24
C25
G26
C27
C28
A29
G30
A31
C32
U33
G34
A35
A36
G37
A38
U39
C40
U41
G42
G43
A44
G45
G46
U47
C48
C49
U50
G51
U52
G53
U54
U55
C56
G57
A58
U59
C60
C61
A62
C63
A64
G65
A66
A67
U68
U69
C70
G71
C72
A73
C74
C75
A76

4 Experimental information (i)

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of images	Not provided	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	Not provided	Depositor
Microscope	Not provided	Depositor
Voltage (kV)	Not provided	Depositor
Electron dose ($e^-/Å^2$)	Not provided	Depositor
Minimum defocus (nm)	1200.	Depositor
Maximum defocus (nm)	2200.	Depositor
Magnification	Not provided	Depositor
Image detector	Not provided	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, 5MU, OMG, H2U, YG, 2MG, 5MC, 1MA, M2G, 7MG, 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	#$\|Z\|>2$	RMSZ	#$\|Z\|>2$
1	A	1.34	2/1487 (0.1%)	2.55	176/2315 (7.6%)
1	B	1.33	2/1487 (0.1%)	2.55	176/2315 (7.6%)
1	C	1.33	3/1487 (0.2%)	2.55	175/2315 (7.6%)
1	D	1.33	2/1487 (0.1%)	2.55	178/2315 (7.7%)
1	E	1.32	3/1487 (0.2%)	2.55	175/2315 (7.6%)
All	All	1.33	12/7435 (0.2%)	2.55	880/11575 (7.6%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	1	0
1	B	1	0
1	C	1	0
1	D	1	0
1	E	1	0
All	All	5	0

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	59	U	C4-O4	5.57	1.28	1.23
1	B	59	U	C4-O4	5.56	1.28	1.23
1	D	59	U	C4-O4	5.54	1.28	1.23
1	E	19	G	C2'-C1'	-5.53	1.47	1.53
1	E	59	U	C4-O4	5.37	1.27	1.23
1	A	19	G	C2'-C1'	-5.36	1.47	1.53
1	C	59	U	C4-O4	5.33	1.27	1.23
1	B	19	G	C2'-C1'	-5.33	1.47	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	19	G	C2'-C1'	-5.30	1.47	1.53
1	C	19	G	C2'-C1'	-5.24	1.47	1.53
1	C	50	U	C4-O4	5.04	1.27	1.23
1	E	33	U	C4-O4	5.04	1.27	1.23

All (880) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	18	G	P-O3'-C3'	13.16	135.49	119.70
1	B	18	G	P-O3'-C3'	13.13	135.45	119.70
1	D	18	G	P-O3'-C3'	13.03	135.33	119.70
1	E	18	G	P-O3'-C3'	13.02	135.32	119.70
1	C	18	G	P-O3'-C3'	12.99	135.29	119.70
1	B	24	G	P-O3'-C3'	10.28	132.04	119.70
1	E	24	G	P-O3'-C3'	10.26	132.01	119.70
1	A	24	G	P-O3'-C3'	10.25	132.00	119.70
1	C	24	G	P-O3'-C3'	10.25	132.00	119.70
1	D	24	G	P-O3'-C3'	10.20	131.94	119.70
1	C	64	A	P-O3'-C3'	-10.10	107.58	119.70
1	E	64	A	P-O3'-C3'	-10.10	107.58	119.70
1	A	64	A	P-O3'-C3'	-10.07	107.62	119.70
1	B	64	A	P-O3'-C3'	-10.06	107.63	119.70
1	D	64	A	P-O3'-C3'	-10.05	107.64	119.70
1	E	9	A	O4'-C1'-N9	9.73	115.98	108.20
1	D	9	A	O4'-C1'-N9	9.68	115.95	108.20
1	C	9	A	O4'-C1'-N9	9.66	115.93	108.20
1	A	9	A	O4'-C1'-N9	9.60	115.88	108.20
1	B	9	A	O4'-C1'-N9	9.59	115.88	108.20
1	B	59	U	P-O3'-C3'	9.52	131.12	119.70
1	A	59	U	P-O3'-C3'	9.50	131.10	119.70
1	C	59	U	P-O3'-C3'	9.45	131.04	119.70
1	D	59	U	P-O3'-C3'	9.40	130.99	119.70
1	D	21	A	P-O3'-C3'	9.36	130.93	119.70
1	B	21	A	P-O3'-C3'	9.35	130.92	119.70
1	A	21	A	P-O3'-C3'	9.31	130.87	119.70
1	C	21	A	P-O3'-C3'	9.31	130.87	119.70
1	E	59	U	P-O3'-C3'	9.31	130.87	119.70
1	E	21	A	P-O3'-C3'	9.28	130.83	119.70
1	E	10	2MG	P-O3'-C3'	9.11	130.63	119.70
1	A	10	2MG	P-O3'-C3'	9.09	130.61	119.70
1	B	10	2MG	P-O3'-C3'	9.07	130.58	119.70
1	C	41	U	N3-C4-C5	9.06	120.04	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	10	2MG	P-O3'-C3'	9.04	130.55	119.70
1	D	10	2MG	P-O3'-C3'	9.04	130.55	119.70
1	E	41	U	N3-C4-C5	9.03	120.02	114.60
1	D	41	U	N3-C4-C5	9.02	120.01	114.60
1	E	74	C	P-O3'-C3'	9.01	130.51	119.70
1	A	74	C	P-O3'-C3'	8.95	130.44	119.70
1	B	74	C	P-O3'-C3'	8.93	130.41	119.70
1	E	33	U	N3-C4-C5	8.88	119.93	114.60
1	B	33	U	N3-C4-C5	8.84	119.91	114.60
1	C	33	U	N3-C4-C5	8.84	119.91	114.60
1	D	74	C	P-O3'-C3'	8.83	130.30	119.70
1	A	33	U	N3-C4-C5	8.82	119.89	114.60
1	D	33	U	N3-C4-C5	8.81	119.89	114.60
1	C	74	C	P-O3'-C3'	8.81	130.27	119.70
1	A	41	U	N3-C4-C5	8.79	119.87	114.60
1	A	35	A	O4'-C1'-N9	8.77	115.21	108.20
1	B	41	U	N3-C4-C5	8.76	119.86	114.60
1	B	35	A	O4'-C1'-N9	8.74	115.19	108.20
1	C	35	A	O4'-C1'-N9	8.72	115.18	108.20
1	D	35	A	O4'-C1'-N9	8.63	115.11	108.20
1	E	35	A	O4'-C1'-N9	8.62	115.10	108.20
1	A	6	U	N3-C4-C5	8.56	119.74	114.60
1	C	6	U	N3-C4-C5	8.53	119.72	114.60
1	D	6	U	N3-C4-C5	8.50	119.70	114.60
1	B	6	U	N3-C4-C5	8.50	119.70	114.60
1	D	47	U	N3-C4-C5	8.45	119.67	114.60
1	E	6	U	N3-C4-C5	8.43	119.66	114.60
1	A	47	U	N3-C4-C5	8.40	119.64	114.60
1	D	47	U	C2-N3-C4	-8.39	121.97	127.00
1	B	47	U	N3-C4-C5	8.34	119.60	114.60
1	C	15	G	O4'-C1'-N9	8.34	114.87	108.20
1	D	15	G	O4'-C1'-N9	8.33	114.87	108.20
1	C	6	U	C2-N3-C4	-8.33	122.00	127.00
1	B	50	U	P-O3'-C3'	8.32	129.69	119.70
1	A	6	U	C2-N3-C4	-8.32	122.01	127.00
1	C	47	U	C2-N3-C4	-8.31	122.01	127.00
1	E	15	G	O4'-C1'-N9	8.31	114.85	108.20
1	D	59	U	C2-N3-C4	-8.29	122.03	127.00
1	B	6	U	C2-N3-C4	-8.28	122.03	127.00
1	D	50	U	P-O3'-C3'	8.28	129.64	119.70
1	A	50	U	P-O3'-C3'	8.27	129.63	119.70
1	E	47	U	C2-N3-C4	-8.26	122.04	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	47	U	C2-N3-C4	-8.26	122.05	127.00
1	C	50	U	P-O3'-C3'	8.26	129.61	119.70
1	D	6	U	C2-N3-C4	-8.24	122.05	127.00
1	E	47	U	N3-C4-C5	8.21	119.53	114.60
1	B	47	U	C2-N3-C4	-8.21	122.07	127.00
1	C	47	U	N3-C4-C5	8.20	119.52	114.60
1	A	15	G	O4'-C1'-N9	8.20	114.76	108.20
1	C	18	G	O4'-C1'-N9	8.17	114.73	108.20
1	B	15	G	O4'-C1'-N9	8.17	114.73	108.20
1	D	61	C	P-O3'-C3'	8.17	129.50	119.70
1	E	50	U	P-O3'-C3'	8.15	129.48	119.70
1	B	61	C	P-O3'-C3'	8.14	129.47	119.70
1	A	61	C	P-O3'-C3'	8.14	129.47	119.70
1	E	59	U	C2-N3-C4	-8.11	122.14	127.00
1	B	59	U	C2-N3-C4	-8.10	122.14	127.00
1	D	41	U	C2-N3-C4	-8.10	122.14	127.00
1	E	6	U	C2-N3-C4	-8.09	122.15	127.00
1	B	18	G	O4'-C1'-N9	8.09	114.67	108.20
1	C	68	U	O4'-C1'-N1	8.08	114.67	108.20
1	C	61	C	P-O3'-C3'	8.08	129.39	119.70
1	C	68	U	C2-N3-C4	-8.07	122.16	127.00
1	A	59	U	C2-N3-C4	-8.07	122.16	127.00
1	E	61	C	P-O3'-C3'	8.07	129.38	119.70
1	E	18	G	O4'-C1'-N9	8.05	114.64	108.20
1	A	18	G	O4'-C1'-N9	8.04	114.64	108.20
1	D	18	G	O4'-C1'-N9	8.04	114.63	108.20
1	D	68	U	O4'-C1'-N1	8.03	114.63	108.20
1	B	7	U	N3-C4-C5	8.03	119.42	114.60
1	E	41	U	C2-N3-C4	-8.01	122.19	127.00
1	A	7	U	N3-C4-C5	8.01	119.41	114.60
1	C	7	U	N3-C4-C5	8.00	119.40	114.60
1	C	41	U	C2-N3-C4	-8.00	122.20	127.00
1	E	68	U	O4'-C1'-N1	7.99	114.59	108.20
1	D	7	U	N3-C4-C5	7.99	119.39	114.60
1	A	68	U	O4'-C1'-N1	7.93	114.55	108.20
1	B	68	U	O4'-C1'-N1	7.93	114.54	108.20
1	D	59	U	N3-C4-C5	7.91	119.35	114.60
1	B	68	U	C2-N3-C4	-7.91	122.25	127.00
1	C	36	A	O4'-C1'-N9	7.90	114.52	108.20
1	E	7	U	N3-C4-C5	7.90	119.34	114.60
1	A	68	U	C2-N3-C4	-7.87	122.28	127.00
1	A	41	U	C2-N3-C4	-7.87	122.28	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	68	U	C2-N3-C4	-7.86	122.28	127.00
1	C	59	U	C2-N3-C4	-7.86	122.28	127.00
1	E	52	U	C2-N3-C4	-7.86	122.28	127.00
1	C	52	U	C2-N3-C4	-7.86	122.29	127.00
1	B	41	U	C2-N3-C4	-7.85	122.29	127.00
1	B	52	U	C2-N3-C4	-7.84	122.29	127.00
1	C	50	U	N3-C4-C5	7.84	119.30	114.60
1	A	52	U	C2-N3-C4	-7.83	122.30	127.00
1	D	36	A	O4'-C1'-N9	7.81	114.45	108.20
1	A	50	U	N3-C4-C5	7.80	119.28	114.60
1	B	50	U	N3-C4-C5	7.80	119.28	114.60
1	E	50	U	N3-C4-C5	7.79	119.27	114.60
1	A	59	U	N3-C4-C5	7.79	119.27	114.60
1	B	8	U	N3-C4-C5	7.78	119.27	114.60
1	B	36	A	O4'-C1'-N9	7.77	114.42	108.20
1	E	8	U	N3-C4-C5	7.77	119.26	114.60
1	A	36	A	O4'-C1'-N9	7.76	114.41	108.20
1	B	7	U	C2-N3-C4	-7.76	122.34	127.00
1	E	36	A	O4'-C1'-N9	7.75	114.40	108.20
1	B	59	U	N3-C4-C5	7.75	119.25	114.60
1	D	50	U	N3-C4-C5	7.73	119.24	114.60
1	C	12	U	C2-N3-C4	-7.73	122.36	127.00
1	A	8	U	N3-C4-C5	7.72	119.23	114.60
1	A	7	U	C2-N3-C4	-7.72	122.37	127.00
1	E	68	U	C2-N3-C4	-7.72	122.37	127.00
1	C	33	U	C2-N3-C4	-7.70	122.38	127.00
1	C	8	U	N3-C4-C5	7.70	119.22	114.60
1	E	33	U	C2-N3-C4	-7.69	122.39	127.00
1	E	12	U	C2-N3-C4	-7.67	122.40	127.00
1	D	52	U	C2-N3-C4	-7.66	122.40	127.00
1	D	12	U	C2-N3-C4	-7.66	122.41	127.00
1	A	12	U	N3-C4-C5	7.65	119.19	114.60
1	E	7	U	C2-N3-C4	-7.63	122.42	127.00
1	C	7	U	C2-N3-C4	-7.63	122.42	127.00
1	B	33	U	C2-N3-C4	-7.62	122.43	127.00
1	E	12	U	N3-C4-C5	7.62	119.17	114.60
1	D	7	U	C2-N3-C4	-7.60	122.44	127.00
1	D	33	U	C2-N3-C4	-7.60	122.44	127.00
1	C	59	U	N3-C4-C5	7.56	119.14	114.60
1	A	33	U	C2-N3-C4	-7.56	122.46	127.00
1	E	59	U	N3-C4-C5	7.56	119.14	114.60
1	B	12	U	N3-C4-C5	7.55	119.13	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	12	U	C2-N3-C4	-7.54	122.47	127.00
1	A	12	U	C2-N3-C4	-7.53	122.48	127.00
1	E	63	C	O4'-C1'-N1	7.52	114.22	108.20
1	C	12	U	N3-C4-C5	7.50	119.10	114.60
1	D	12	U	N3-C4-C5	7.50	119.10	114.60
1	A	63	C	O4'-C1'-N1	7.46	114.17	108.20
1	C	63	C	O4'-C1'-N1	7.46	114.17	108.20
1	D	8	U	N3-C4-C5	7.43	119.06	114.60
1	D	67	A	N1-C2-N3	-7.43	125.58	129.30
1	E	67	A	N1-C2-N3	-7.43	125.59	129.30
1	B	63	C	O4'-C1'-N1	7.42	114.13	108.20
1	C	52	U	N3-C4-C5	7.40	119.04	114.60
1	C	67	A	N1-C2-N3	-7.36	125.62	129.30
1	A	67	A	N1-C2-N3	-7.33	125.64	129.30
1	D	63	C	O4'-C1'-N1	7.29	114.03	108.20
1	B	67	A	N1-C2-N3	-7.28	125.66	129.30
1	E	57	G	C5-C6-N1	7.26	115.13	111.50
1	A	19	G	OP1-P-OP2	-7.22	108.77	119.60
1	B	52	U	N3-C4-C5	7.21	118.93	114.60
1	B	19	G	OP1-P-OP2	-7.21	108.78	119.60
1	E	36	A	N1-C2-N3	-7.20	125.70	129.30
1	D	36	A	N1-C2-N3	-7.18	125.71	129.30
1	A	52	U	N3-C4-C5	7.17	118.90	114.60
1	C	68	U	N3-C4-C5	7.14	118.88	114.60
1	D	52	U	N3-C4-C5	7.14	118.88	114.60
1	E	52	U	N3-C4-C5	7.13	118.88	114.60
1	B	36	A	N1-C2-N3	-7.09	125.75	129.30
1	E	50	U	C2-N3-C4	-7.09	122.75	127.00
1	D	19	G	OP1-P-OP2	-7.09	108.97	119.60
1	C	19	G	OP1-P-OP2	-7.08	108.99	119.60
1	E	8	U	C2-N3-C4	-7.07	122.76	127.00
1	E	19	G	OP1-P-OP2	-7.05	109.03	119.60
1	C	50	U	C2-N3-C4	-7.05	122.77	127.00
1	E	68	U	N3-C4-C5	7.04	118.83	114.60
1	A	36	A	N1-C2-N3	-7.04	125.78	129.30
1	C	36	A	N1-C2-N3	-7.03	125.78	129.30
1	D	23	A	N1-C2-N3	-7.02	125.79	129.30
1	D	48	C	O4'-C1'-N1	7.02	113.82	108.20
1	B	68	U	N3-C4-C5	7.01	118.81	114.60
1	D	51	G	P-O3'-C3'	7.01	128.11	119.70
1	A	50	U	C2-N3-C4	-7.00	122.80	127.00
1	B	8	U	C2-N3-C4	-6.99	122.80	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	23	A	N1-C2-N3	-6.99	125.80	129.30
1	B	57	G	C5-C6-N1	6.98	114.99	111.50
1	A	51	G	P-O3'-C3'	6.97	128.07	119.70
1	B	50	U	C2-N3-C4	-6.97	122.82	127.00
1	A	76	A	N1-C2-N3	-6.97	125.82	129.30
1	A	8	U	C2-N3-C4	-6.96	122.82	127.00
1	B	51	G	P-O3'-C3'	6.96	128.05	119.70
1	C	8	U	C2-N3-C4	-6.96	122.83	127.00
1	E	48	C	O4'-C1'-N1	6.96	113.76	108.20
1	A	68	U	N3-C4-C5	6.94	118.77	114.60
1	D	57	G	C5-C6-N1	6.94	114.97	111.50
1	D	7	U	C5-C4-O4	-6.94	121.74	125.90
1	D	69	U	N3-C4-C5	6.92	118.75	114.60
1	A	57	G	C5-C6-N1	6.92	114.96	111.50
1	C	57	G	C5-C6-N1	6.92	114.96	111.50
1	C	23	A	N1-C2-N3	-6.92	125.84	129.30
1	D	68	U	N3-C4-C5	6.90	118.74	114.60
1	B	76	A	N1-C2-N3	-6.89	125.85	129.30
1	C	69	U	N3-C4-C5	6.88	118.73	114.60
1	D	8	U	C2-N3-C4	-6.88	122.87	127.00
1	C	51	G	P-O3'-C3'	6.88	127.96	119.70
1	E	7	U	C5-C4-O4	-6.88	121.77	125.90
1	E	51	G	P-O3'-C3'	6.88	127.96	119.70
1	B	23	A	N1-C2-N3	-6.86	125.87	129.30
1	C	21	A	N1-C2-N3	-6.86	125.87	129.30
1	A	14	A	P-O3'-C3'	-6.84	111.49	119.70
1	A	23	A	N1-C2-N3	-6.84	125.88	129.30
1	C	7	U	C5-C4-O4	-6.84	121.80	125.90
1	B	48	C	O4'-C1'-N1	6.83	113.67	108.20
1	D	50	U	C2-N3-C4	-6.83	122.90	127.00
1	E	14	A	P-O3'-C3'	-6.83	111.50	119.70
1	E	62	A	N1-C2-N3	-6.82	125.89	129.30
1	B	14	A	P-O3'-C3'	-6.82	111.52	119.70
1	C	48	C	O4'-C1'-N1	6.80	113.64	108.20
1	A	48	C	O4'-C1'-N1	6.80	113.64	108.20
1	C	14	A	P-O3'-C3'	-6.80	111.54	119.70
1	E	69	U	N3-C4-C5	6.79	118.67	114.60
1	B	21	A	N1-C2-N3	-6.77	125.91	129.30
1	A	21	A	N1-C2-N3	-6.77	125.91	129.30
1	B	7	U	C5-C4-O4	-6.77	121.84	125.90
1	A	7	U	C5-C4-O4	-6.76	121.84	125.90
1	D	35	A	N1-C2-N3	-6.75	125.93	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	14	A	P-O3'-C3'	-6.74	111.61	119.70
1	E	76	A	N1-C2-N3	-6.73	125.94	129.30
1	E	61	C	N3-C4-C5	-6.72	119.21	121.90
1	C	62	A	N1-C2-N3	-6.71	125.95	129.30
1	D	74	C	N3-C4-C5	-6.70	119.22	121.90
1	B	68	U	N1-C1'-C2'	-6.69	104.64	112.00
1	A	38	A	N1-C2-N3	-6.68	125.96	129.30
1	D	21	A	N1-C2-N3	-6.68	125.96	129.30
1	C	65	G	O4'-C1'-N9	6.66	113.53	108.20
1	B	69	U	N3-C4-C5	6.66	118.59	114.60
1	B	38	A	N1-C2-N3	-6.65	125.98	129.30
1	C	68	U	N1-C1'-C2'	-6.64	104.70	112.00
1	A	68	U	N1-C1'-C2'	-6.63	104.71	112.00
1	C	76	A	N1-C2-N3	-6.63	125.99	129.30
1	E	68	U	N1-C1'-C2'	-6.62	104.72	112.00
1	A	35	A	N1-C2-N3	-6.62	125.99	129.30
1	D	76	A	N1-C2-N3	-6.61	126.00	129.30
1	C	38	A	N1-C2-N3	-6.61	126.00	129.30
1	A	69	U	N3-C4-C5	6.60	118.56	114.60
1	D	68	U	N1-C1'-C2'	-6.60	104.74	112.00
1	E	21	A	N1-C2-N3	-6.60	126.00	129.30
1	E	69	U	C2-N3-C4	-6.59	123.04	127.00
1	B	35	A	N1-C2-N3	-6.59	126.00	129.30
1	C	20	G	C5-C6-N1	6.58	114.79	111.50
1	C	69	U	C2-N3-C4	-6.57	123.06	127.00
1	E	65	G	O4'-C1'-N9	6.56	113.44	108.20
1	C	64	A	N1-C2-N3	-6.55	126.02	129.30
1	E	35	A	N1-C2-N3	-6.55	126.03	129.30
1	B	11	C	OP1-P-OP2	-6.54	109.79	119.60
1	E	11	C	OP1-P-OP2	-6.54	109.79	119.60
1	A	11	C	OP1-P-OP2	-6.54	109.79	119.60
1	A	20	G	C5-C6-N1	6.54	114.77	111.50
1	D	62	A	N1-C2-N3	-6.54	126.03	129.30
1	B	20	G	C5-C6-N1	6.54	114.77	111.50
1	D	61	C	N3-C4-C5	-6.52	119.29	121.90
1	C	11	C	OP1-P-OP2	-6.49	109.86	119.60
1	B	62	A	N1-C2-N3	-6.47	126.06	129.30
1	E	23	A	C5-C6-N1	-6.47	114.47	117.70
1	D	69	U	C2-N3-C4	-6.46	123.12	127.00
1	B	7	U	O4'-C1'-N1	6.46	113.37	108.20
1	D	65	G	O4'-C1'-N9	6.46	113.37	108.20
1	A	62	A	N1-C2-N3	-6.46	126.07	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	23	A	C5-C6-N1	-6.45	114.47	117.70
1	D	11	C	OP1-P-OP2	-6.45	109.92	119.60
1	A	23	A	C5-C6-N1	-6.45	114.47	117.70
1	D	43	G	C5-C6-N1	6.45	114.72	111.50
1	A	7	U	O4'-C1'-N1	6.44	113.35	108.20
1	E	74	C	N3-C4-C5	-6.43	119.33	121.90
1	B	23	A	C5-C6-N1	-6.43	114.48	117.70
1	D	20	G	C5-C6-N1	6.43	114.72	111.50
1	C	61	C	N3-C4-C5	-6.43	119.33	121.90
1	D	1	G	C5-C6-N1	6.43	114.71	111.50
1	E	7	U	O4'-C1'-N1	6.42	113.33	108.20
1	E	64	A	N1-C2-N3	-6.42	126.09	129.30
1	D	38	A	N1-C2-N3	-6.41	126.09	129.30
1	D	75	C	O4'-C1'-N1	6.41	113.33	108.20
1	D	19	G	O4'-C1'-N9	-6.41	103.07	108.20
1	B	1	G	C5-C6-N1	6.41	114.70	111.50
1	C	65	G	C5-C6-N1	6.40	114.70	111.50
1	E	65	G	C5-C6-N1	6.40	114.70	111.50
1	B	75	C	O4'-C1'-N1	6.39	113.32	108.20
1	C	19	G	O4'-C1'-N9	-6.39	103.08	108.20
1	A	75	C	O4'-C1'-N1	6.38	113.31	108.20
1	A	19	G	O4'-C1'-N9	-6.38	103.09	108.20
1	A	69	U	C2-N3-C4	-6.38	123.17	127.00
1	B	69	U	C2-N3-C4	-6.38	123.17	127.00
1	E	20	G	C5-C6-N1	6.38	114.69	111.50
1	E	44	A	OP1-P-OP2	-6.38	110.03	119.60
1	E	14	A	O5'-P-OP2	6.38	118.36	110.70
1	A	1	G	C5-C6-N1	6.38	114.69	111.50
1	A	14	A	O5'-P-OP2	6.37	118.35	110.70
1	B	19	G	O4'-C1'-N9	-6.37	103.10	108.20
1	D	14	A	O5'-P-OP2	6.37	118.35	110.70
1	B	14	A	O5'-P-OP2	6.37	118.35	110.70
1	B	65	G	O4'-C1'-N9	6.37	113.30	108.20
1	C	7	U	O4'-C1'-N1	6.37	113.30	108.20
1	C	75	C	O4'-C1'-N1	6.37	113.29	108.20
1	D	23	A	C6-N1-C2	6.37	122.42	118.60
1	A	5	A	C5-C6-N1	-6.36	114.52	117.70
1	A	65	G	O4'-C1'-N9	6.36	113.29	108.20
1	C	44	A	OP1-P-OP2	-6.36	110.06	119.60
1	E	75	C	O4'-C1'-N1	6.35	113.28	108.20
1	A	64	A	N1-C2-N3	-6.35	126.13	129.30
1	A	44	A	OP1-P-OP2	-6.33	110.11	119.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	65	G	C5-C6-N1	6.33	114.66	111.50
1	A	74	C	N3-C4-C5	-6.32	119.37	121.90
1	B	74	C	N3-C4-C5	-6.32	119.37	121.90
1	B	44	A	OP1-P-OP2	-6.32	110.12	119.60
1	B	23	A	C6-N1-C2	6.30	122.38	118.60
1	D	7	U	O4'-C1'-N1	6.30	113.24	108.20
1	A	23	A	C6-N1-C2	6.30	122.38	118.60
1	E	19	G	O4'-C1'-N9	-6.30	103.16	108.20
1	B	43	G	C5-C6-N1	6.30	114.65	111.50
1	C	35	A	N1-C2-N3	-6.29	126.15	129.30
1	B	5	A	C5-C6-N1	-6.29	114.56	117.70
1	B	64	A	N1-C2-N3	-6.29	126.16	129.30
1	C	23	A	C5-C6-N1	-6.29	114.56	117.70
1	C	14	A	O5'-P-OP2	6.28	118.23	110.70
1	C	74	C	N3-C4-C5	-6.28	119.39	121.90
1	E	23	A	C6-N1-C2	6.28	122.36	118.60
1	A	65	G	C5-C6-N1	6.27	114.63	111.50
1	D	64	A	N1-C2-N3	-6.26	126.17	129.30
1	B	29	A	N1-C2-N3	-6.26	126.17	129.30
1	D	44	A	OP1-P-OP2	-6.26	110.21	119.60
1	A	63	C	N3-C4-C5	-6.26	119.40	121.90
1	C	43	G	C5-C6-N1	6.24	114.62	111.50
1	E	1	G	C5-C6-N1	6.24	114.62	111.50
1	C	23	A	C6-N1-C2	6.23	122.34	118.60
1	D	5	A	C5-C6-N1	-6.23	114.58	117.70
1	E	43	G	C5-C6-N1	6.22	114.61	111.50
1	C	15	G	N9-C1'-C2'	-6.22	105.16	112.00
1	A	43	G	C5-C6-N1	6.21	114.60	111.50
1	A	29	A	N1-C2-N3	-6.19	126.20	129.30
1	C	1	G	C5-C6-N1	6.18	114.59	111.50
1	B	63	C	N3-C4-C5	-6.18	119.43	121.90
1	E	38	A	N1-C2-N3	-6.18	126.21	129.30
1	A	44	A	N1-C2-N3	-6.18	126.21	129.30
1	D	3	G	O4'-C1'-N9	6.17	113.14	108.20
1	D	65	G	C5-C6-N1	6.16	114.58	111.50
1	D	15	G	N9-C1'-C2'	-6.16	105.22	112.00
1	A	3	G	O4'-C1'-N9	6.15	113.12	108.20
1	B	19	G	C5-C6-N1	6.15	114.58	111.50
1	B	3	G	O4'-C1'-N9	6.15	113.12	108.20
1	B	61	C	N3-C4-C5	-6.14	119.44	121.90
1	E	15	G	N9-C1'-C2'	-6.14	105.24	112.00
1	B	44	A	N1-C2-N3	-6.14	126.23	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	3	G	O4'-C1'-N9	6.14	113.11	108.20
1	E	19	G	C5-C6-N1	6.13	114.56	111.50
1	A	61	C	N3-C4-C5	-6.13	119.45	121.90
1	A	19	G	C5-C6-N1	6.12	114.56	111.50
1	C	5	A	C5-C6-N1	-6.12	114.64	117.70
1	C	29	A	N1-C2-N3	-6.12	126.24	129.30
1	C	19	G	C5-C6-N1	6.12	114.56	111.50
1	B	42	G	O4'-C1'-N9	6.11	113.08	108.20
1	C	66	A	N1-C2-N3	-6.10	126.25	129.30
1	B	15	G	N9-C1'-C2'	-6.09	105.30	112.00
1	E	29	A	N1-C2-N3	-6.09	126.25	129.30
1	D	44	A	N1-C2-N3	-6.09	126.26	129.30
1	D	42	G	O4'-C1'-N9	6.08	113.07	108.20
1	E	31	A	C5-C6-N1	-6.08	114.66	117.70
1	A	15	G	N9-C1'-C2'	-6.08	105.31	112.00
1	A	42	G	O4'-C1'-N9	6.07	113.06	108.20
1	C	44	A	N1-C2-N3	-6.06	126.27	129.30
1	C	28	C	OP1-P-OP2	-6.04	110.53	119.60
1	C	3	G	O4'-C1'-N9	6.03	113.03	108.20
1	D	14	A	OP1-P-OP2	-6.01	110.58	119.60
1	E	5	A	C5-C6-N1	-6.01	114.70	117.70
1	E	44	A	N1-C2-N3	-6.00	126.30	129.30
1	D	29	A	N1-C2-N3	-6.00	126.30	129.30
1	C	42	G	O4'-C1'-N9	6.00	113.00	108.20
1	A	28	C	OP1-P-OP2	-5.98	110.62	119.60
1	B	66	A	N1-C2-N3	-5.98	126.31	129.30
1	C	63	C	N3-C4-C5	-5.98	119.51	121.90
1	D	28	C	OP1-P-OP2	-5.98	110.63	119.60
1	D	57	G	O5'-P-OP2	5.98	117.87	110.70
1	B	28	C	OP1-P-OP2	-5.98	110.64	119.60
1	C	44	A	C5-C6-N1	-5.97	114.71	117.70
1	C	14	A	OP1-P-OP2	-5.97	110.64	119.60
1	D	19	G	C5-C6-N1	5.96	114.48	111.50
1	A	14	A	OP1-P-OP2	-5.96	110.66	119.60
1	C	31	A	C5-C6-N1	-5.96	114.72	117.70
1	D	3	G	C5-C6-N1	5.96	114.48	111.50
1	E	14	A	OP1-P-OP2	-5.96	110.66	119.60
1	D	44	A	C5-C6-N1	-5.96	114.72	117.70
1	B	60	C	N3-C4-C5	-5.95	119.52	121.90
1	D	29	A	P-O3'-C3'	-5.95	112.56	119.70
1	D	73	A	N1-C2-N3	-5.95	126.32	129.30
1	A	44	A	C5-C6-N1	-5.95	114.72	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	45	G	C5-C6-N1	5.95	114.47	111.50
1	C	57	G	O5'-P-OP2	5.94	117.83	110.70
1	B	14	A	OP1-P-OP2	-5.94	110.69	119.60
1	E	72	C	N3-C4-C5	-5.94	119.52	121.90
1	E	3	G	C5-C6-N1	5.94	114.47	111.50
1	B	57	G	OP1-P-OP2	-5.93	110.70	119.60
1	D	66	A	N1-C2-N3	-5.93	126.33	129.30
1	E	28	C	OP1-P-OP2	-5.93	110.71	119.60
1	E	30	G	C5-C6-N1	5.93	114.46	111.50
1	E	57	G	OP1-P-OP2	-5.93	110.71	119.60
1	A	57	G	OP1-P-OP2	-5.93	110.71	119.60
1	B	44	A	C5-C6-N1	-5.92	114.74	117.70
1	D	63	C	N3-C4-C5	-5.91	119.53	121.90
1	E	42	G	O4'-C1'-N9	5.91	112.93	108.20
1	A	57	G	O5'-P-OP2	5.90	117.78	110.70
1	C	29	A	P-O3'-C3'	-5.90	112.62	119.70
1	A	60	C	N3-C4-C5	-5.89	119.54	121.90
1	B	30	G	C5-C6-N1	5.89	114.45	111.50
1	B	57	G	O5'-P-OP2	5.89	117.77	110.70
1	D	57	G	OP1-P-OP2	-5.89	110.76	119.60
1	C	30	G	C5-C6-N1	5.89	114.44	111.50
1	D	31	A	C5-C6-N1	-5.89	114.76	117.70
1	A	51	G	C5-C6-N1	5.88	114.44	111.50
1	B	51	G	C5-C6-N1	5.88	114.44	111.50
1	C	57	G	OP1-P-OP2	-5.88	110.78	119.60
1	A	45	G	C5-C6-N1	5.87	114.44	111.50
1	A	66	A	N1-C2-N3	-5.87	126.37	129.30
1	A	30	G	C5-C6-N1	5.86	114.43	111.50
1	E	29	A	P-O3'-C3'	-5.86	112.67	119.70
1	D	74	C	O4'-C1'-N1	5.85	112.88	108.20
1	B	9	A	C5-C6-N1	-5.84	114.78	117.70
1	B	45	G	C5-C6-N1	5.84	114.42	111.50
1	C	26	M2G	P-O3'-C3'	5.84	126.71	119.70
1	B	64	A	OP1-P-OP2	-5.84	110.84	119.60
1	E	60	C	N3-C4-C5	-5.84	119.56	121.90
1	B	29	A	P-O3'-C3'	-5.83	112.71	119.70
1	B	66	A	OP1-P-OP2	-5.82	110.86	119.60
1	D	64	A	OP1-P-OP2	-5.82	110.87	119.60
1	E	51	G	C5-C6-N1	5.82	114.41	111.50
1	A	29	A	P-O3'-C3'	-5.81	112.72	119.70
1	E	57	G	O5'-P-OP2	5.81	117.68	110.70
1	A	9	A	C5-C6-N1	-5.81	114.80	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	66	A	OP1-P-OP2	-5.81	110.89	119.60
1	E	31	A	C6-N1-C2	5.80	122.08	118.60
1	A	64	A	OP1-P-OP2	-5.80	110.90	119.60
1	B	26	M2G	P-O3'-C3'	5.79	126.65	119.70
1	A	26	M2G	P-O3'-C3'	5.79	126.65	119.70
1	E	66	A	OP1-P-OP2	-5.79	110.91	119.60
1	D	45	G	C5-C6-N1	5.79	114.39	111.50
1	E	64	A	OP1-P-OP2	-5.78	110.93	119.60
1	E	66	A	N1-C2-N3	-5.78	126.41	129.30
1	E	45	G	C5-C6-N1	5.78	114.39	111.50
1	E	63	C	N3-C4-C5	-5.78	119.59	121.90
1	C	64	A	OP1-P-OP2	-5.78	110.93	119.60
1	A	74	C	O4'-C1'-N1	5.78	112.82	108.20
1	C	51	G	C5-C6-N1	5.77	114.39	111.50
1	D	9	A	C5-C6-N1	-5.77	114.81	117.70
1	B	74	C	O4'-C1'-N1	5.77	112.82	108.20
1	E	35	A	C5-C6-N1	-5.77	114.81	117.70
1	C	74	C	O4'-C1'-N1	5.77	112.81	108.20
1	C	73	A	N1-C2-N3	-5.77	126.42	129.30
1	D	30	G	C5-C6-N1	5.76	114.38	111.50
1	B	73	A	N1-C2-N3	-5.75	126.43	129.30
1	D	26	M2G	P-O3'-C3'	5.74	126.59	119.70
1	E	11	C	N3-C4-C5	-5.74	119.60	121.90
1	D	51	G	C5-C6-N1	5.73	114.36	111.50
1	D	31	A	C6-N1-C2	5.73	122.04	118.60
1	E	65	G	P-O3'-C3'	-5.72	112.83	119.70
1	C	52	U	OP1-P-OP2	-5.72	111.02	119.60
1	C	3	G	C5-C6-N1	5.72	114.36	111.50
1	C	72	C	N3-C4-C5	-5.72	119.61	121.90
1	A	65	G	P-O3'-C3'	-5.71	112.84	119.70
1	E	73	A	N1-C2-N3	-5.71	126.44	129.30
1	A	11	C	N3-C4-C5	-5.71	119.62	121.90
1	A	31	A	C5-C6-N1	-5.71	114.84	117.70
1	D	65	G	P-O3'-C3'	-5.71	112.85	119.70
1	E	76	A	C5-C6-N1	-5.71	114.85	117.70
1	B	31	A	C5-C6-N1	-5.70	114.85	117.70
1	B	65	G	P-O3'-C3'	-5.70	112.86	119.70
1	D	9	A	N1-C2-N3	-5.70	126.45	129.30
1	D	56	C	OP1-P-OP2	-5.70	111.05	119.60
1	A	67	A	O4'-C1'-N9	5.70	112.76	108.20
1	A	52	U	OP1-P-OP2	-5.70	111.06	119.60
1	B	52	U	OP1-P-OP2	-5.70	111.06	119.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	31	A	N1-C2-N3	-5.69	126.45	129.30
1	E	44	A	C5-C6-N1	-5.69	114.85	117.70
1	A	73	A	N1-C2-N3	-5.69	126.45	129.30
1	E	52	U	OP1-P-OP2	-5.69	111.07	119.60
1	C	66	A	OP1-P-OP2	-5.69	111.07	119.60
1	B	31	A	C6-N1-C2	5.69	122.01	118.60
1	D	36	A	C5-C6-N1	-5.69	114.86	117.70
1	D	56	C	N3-C4-C5	-5.68	119.63	121.90
1	B	72	C	N3-C4-C5	-5.68	119.63	121.90
1	B	3	G	C5-C6-N1	5.68	114.34	111.50
1	C	56	C	OP1-P-OP2	-5.68	111.09	119.60
1	C	38	A	OP1-P-OP2	-5.67	111.09	119.60
1	E	56	C	N3-C4-C5	-5.67	119.63	121.90
1	D	66	A	OP1-P-OP2	-5.67	111.09	119.60
1	E	26	M2G	P-O3'-C3'	5.67	126.50	119.70
1	E	56	C	OP1-P-OP2	-5.67	111.10	119.60
1	A	31	A	C6-N1-C2	5.66	122.00	118.60
1	D	67	A	O4'-C1'-N9	5.65	112.72	108.20
1	B	25	C	OP1-P-OP2	-5.65	111.12	119.60
1	A	31	A	N1-C2-N3	-5.65	126.48	129.30
1	A	3	G	C5-C6-N1	5.65	114.32	111.50
1	C	31	A	C6-N1-C2	5.64	121.99	118.60
1	D	43	G	OP1-P-OP2	-5.64	111.13	119.60
1	D	65	G	N9-C1'-C2'	-5.64	105.79	112.00
1	A	76	A	C6-N1-C2	5.64	121.98	118.60
1	E	67	A	O4'-C1'-N9	5.64	112.71	108.20
1	C	76	A	C5-C6-N1	-5.64	114.88	117.70
1	D	12	U	OP1-P-OP2	-5.64	111.14	119.60
1	A	56	C	OP1-P-OP2	-5.63	111.15	119.60
1	C	65	G	N9-C1'-C2'	-5.63	105.80	112.00
1	E	38	A	OP1-P-OP2	-5.63	111.15	119.60
1	A	25	C	OP1-P-OP2	-5.63	111.16	119.60
1	B	56	C	OP1-P-OP2	-5.62	111.17	119.60
1	B	67	A	O4'-C1'-N9	5.62	112.70	108.20
1	C	67	A	C6-N1-C2	5.62	121.97	118.60
1	D	52	U	OP1-P-OP2	-5.62	111.17	119.60
1	B	43	G	OP1-P-OP2	-5.62	111.17	119.60
1	D	38	A	OP1-P-OP2	-5.62	111.17	119.60
1	E	12	U	OP1-P-OP2	-5.62	111.17	119.60
1	E	65	G	N9-C1'-C2'	-5.62	105.82	112.00
1	E	43	G	OP1-P-OP2	-5.62	111.18	119.60
1	A	38	A	OP1-P-OP2	-5.61	111.18	119.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	12	U	OP1-P-OP2	-5.61	111.18	119.60
1	A	12	U	OP1-P-OP2	-5.61	111.18	119.60
1	C	9	A	N1-C2-N3	-5.61	126.50	129.30
1	C	65	G	P-O3'-C3'	-5.61	112.97	119.70
1	A	13	C	N3-C4-C5	-5.61	119.66	121.90
1	A	43	G	OP1-P-OP2	-5.61	111.19	119.60
1	C	9	A	C5-C6-N1	-5.61	114.90	117.70
1	C	21	A	C6-N1-C2	5.61	121.96	118.60
1	D	31	A	N1-C2-N3	-5.60	126.50	129.30
1	E	35	A	C6-N1-C2	5.60	121.96	118.60
1	B	11	C	N3-C4-C5	-5.60	119.66	121.90
1	B	38	A	OP1-P-OP2	-5.60	111.20	119.60
1	C	22	G	C5-C6-N1	5.60	114.30	111.50
1	D	72	C	N3-C4-C5	-5.60	119.66	121.90
1	E	74	C	O4'-C1'-N1	5.59	112.67	108.20
1	A	72	C	N3-C4-C5	-5.59	119.67	121.90
1	E	9	A	N1-C2-N3	-5.59	126.51	129.30
1	A	67	A	C6-N1-C2	5.59	121.95	118.60
1	A	65	G	N9-C1'-C2'	-5.58	105.86	112.00
1	B	65	G	N9-C1'-C2'	-5.58	105.86	112.00
1	C	31	A	N1-C2-N3	-5.58	126.51	129.30
1	D	67	A	C6-N1-C2	5.58	121.95	118.60
1	D	48	C	N3-C4-C5	-5.58	119.67	121.90
1	C	12	U	OP1-P-OP2	-5.58	111.24	119.60
1	C	38	A	O4'-C1'-N9	5.57	112.66	108.20
1	E	36	A	C5-C6-N1	-5.57	114.91	117.70
1	A	76	A	C5-C6-N1	-5.57	114.92	117.70
1	C	67	A	O4'-C1'-N9	5.57	112.65	108.20
1	C	76	A	C6-N1-C2	5.57	121.94	118.60
1	D	25	C	OP1-P-OP2	-5.56	111.25	119.60
1	C	43	G	OP1-P-OP2	-5.56	111.26	119.60
1	B	13	C	N3-C4-C5	-5.56	119.68	121.90
1	A	27	C	OP1-P-OP2	-5.56	111.26	119.60
1	B	27	C	OP1-P-OP2	-5.56	111.26	119.60
1	A	60	C	OP1-P-OP2	-5.55	111.27	119.60
1	A	44	A	C6-N1-C2	5.55	121.93	118.60
1	B	76	A	C6-N1-C2	5.55	121.93	118.60
1	B	76	A	C5-C6-N1	-5.55	114.93	117.70
1	A	21	A	C6-N1-C2	5.54	121.93	118.60
1	B	67	A	C6-N1-C2	5.54	121.93	118.60
1	C	25	C	OP1-P-OP2	-5.54	111.29	119.60
1	D	76	A	C5-C6-N1	-5.54	114.93	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	21	A	C6-N1-C2	5.53	121.92	118.60
1	C	56	C	N3-C4-C5	-5.53	119.69	121.90
1	D	2	C	N3-C4-C5	-5.53	119.69	121.90
1	A	35	A	C6-N1-C2	5.53	121.92	118.60
1	D	14	A	C5-C6-N1	-5.53	114.94	117.70
1	E	9	A	C5-C6-N1	-5.53	114.94	117.70
1	B	14	A	C5-C6-N1	-5.53	114.94	117.70
1	B	60	C	OP1-P-OP2	-5.53	111.31	119.60
1	A	35	A	C5-C6-N1	-5.52	114.94	117.70
1	E	25	C	OP1-P-OP2	-5.52	111.32	119.60
1	E	31	A	N1-C2-N3	-5.52	126.54	129.30
1	C	44	A	C6-N1-C2	5.52	121.91	118.60
1	E	14	A	N1-C2-N3	-5.52	126.54	129.30
1	B	44	A	C6-N1-C2	5.51	121.91	118.60
1	E	59	U	N1-C2-N3	5.51	118.21	114.90
1	C	60	C	N3-C4-C5	-5.51	119.70	121.90
1	A	56	C	N3-C4-C5	-5.50	119.70	121.90
1	C	2	C	N3-C4-C5	-5.50	119.70	121.90
1	E	67	A	C6-N1-C2	5.50	121.90	118.60
1	D	35	A	C6-N1-C2	5.50	121.90	118.60
1	A	14	A	C5-C6-N1	-5.50	114.95	117.70
1	D	27	C	OP1-P-OP2	-5.50	111.35	119.60
1	E	38	A	O4'-C1'-N9	5.50	112.60	108.20
1	E	60	C	OP1-P-OP2	-5.50	111.35	119.60
1	C	27	C	OP1-P-OP2	-5.50	111.36	119.60
1	D	44	A	C6-N1-C2	5.49	121.90	118.60
1	B	9	A	N1-C2-N3	-5.49	126.56	129.30
1	B	56	C	N3-C4-C5	-5.49	119.70	121.90
1	D	38	A	O4'-C1'-N9	5.49	112.59	108.20
1	B	22	G	C5-C6-N1	5.49	114.24	111.50
1	E	27	C	OP1-P-OP2	-5.49	111.37	119.60
1	A	22	G	C5-C6-N1	5.48	114.24	111.50
1	E	72	C	O4'-C1'-N1	5.48	112.58	108.20
1	A	51	G	OP1-P-OP2	-5.48	111.39	119.60
1	E	42	G	C5-C6-N1	5.48	114.24	111.50
1	B	51	G	OP1-P-OP2	-5.48	111.39	119.60
1	D	13	C	N3-C4-C5	-5.48	119.71	121.90
1	B	2	C	N3-C4-C5	-5.47	119.71	121.90
1	D	74	C	C2-N3-C4	5.47	122.64	119.90
1	A	2	C	N3-C4-C5	-5.46	119.71	121.90
1	D	60	C	OP1-P-OP2	-5.46	111.41	119.60
1	B	38	A	O4'-C1'-N9	5.46	112.57	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	60	C	OP1-P-OP2	-5.46	111.41	119.60
1	B	35	A	C6-N1-C2	5.46	121.87	118.60
1	C	67	A	C5-C6-N1	-5.45	114.97	117.70
1	E	76	A	C6-N1-C2	5.45	121.87	118.60
1	C	14	A	C5-C6-N1	-5.45	114.97	117.70
1	D	75	C	OP1-P-OP2	-5.44	111.44	119.60
1	C	11	C	N3-C4-C5	-5.44	119.72	121.90
1	E	51	G	OP1-P-OP2	-5.43	111.45	119.60
1	E	2	C	N3-C4-C5	-5.43	119.73	121.90
1	E	60	C	P-O5'-C5'	-5.43	112.21	120.90
1	E	48	C	N3-C4-C5	-5.43	119.73	121.90
1	D	60	C	P-O5'-C5'	-5.42	112.22	120.90
1	D	11	C	N3-C4-C5	-5.42	119.73	121.90
1	A	67	A	OP1-P-OP2	-5.42	111.47	119.60
1	A	38	A	O4'-C1'-N9	5.42	112.53	108.20
1	C	35	A	C5-C6-N1	-5.42	114.99	117.70
1	D	76	A	C6-N1-C2	5.42	121.85	118.60
1	C	75	C	OP1-P-OP2	-5.41	111.48	119.60
1	B	67	A	OP1-P-OP2	-5.41	111.49	119.60
1	C	51	G	OP1-P-OP2	-5.41	111.49	119.60
1	D	36	A	C6-N1-C2	5.41	121.84	118.60
1	A	48	C	N3-C4-C5	-5.40	119.74	121.90
1	B	67	A	C5-C6-N1	-5.40	115.00	117.70
1	E	67	A	OP1-P-OP2	-5.40	111.49	119.60
1	C	60	C	P-O5'-C5'	-5.40	112.27	120.90
1	C	22	G	OP1-P-OP2	-5.39	111.51	119.60
1	A	75	C	OP1-P-OP2	-5.39	111.51	119.60
1	D	51	G	OP1-P-OP2	-5.39	111.52	119.60
1	A	14	A	N1-C2-N3	-5.39	126.61	129.30
1	D	31	A	OP1-P-OP2	-5.39	111.52	119.60
1	D	60	C	N3-C4-C5	-5.39	119.75	121.90
1	D	59	U	N1-C2-N3	5.38	118.13	114.90
1	E	13	C	N3-C4-C5	-5.38	119.75	121.90
1	B	75	C	OP1-P-OP2	-5.38	111.53	119.60
1	B	59	U	N1-C2-N3	5.38	118.13	114.90
1	C	67	A	OP1-P-OP2	-5.38	111.54	119.60
1	A	42	G	OP1-P-OP2	-5.37	111.54	119.60
1	B	35	A	C5-C6-N1	-5.37	115.01	117.70
1	D	72	C	P-O5'-C5'	-5.37	112.31	120.90
1	A	72	C	O4'-C1'-N1	5.37	112.49	108.20
1	B	14	A	N1-C2-N3	-5.37	126.62	129.30
1	C	71	G	C5-C6-N1	5.37	114.19	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	67	A	C5-C6-N1	-5.37	115.02	117.70
1	B	48	C	N3-C4-C5	-5.37	119.75	121.90
1	E	70	C	N3-C4-C5	-5.37	119.75	121.90
1	C	42	G	OP1-P-OP2	-5.36	111.55	119.60
1	E	71	G	C5-C6-N1	5.36	114.18	111.50
1	A	9	A	N1-C2-N3	-5.36	126.62	129.30
1	E	36	A	C6-N1-C2	5.36	121.82	118.60
1	A	63	C	C2-N3-C4	5.36	122.58	119.90
1	D	35	A	C5-C6-N1	-5.36	115.02	117.70
1	A	59	U	N1-C2-N3	5.36	118.11	114.90
1	B	42	G	OP1-P-OP2	-5.36	111.57	119.60
1	D	67	A	OP1-P-OP2	-5.36	111.57	119.60
1	E	42	G	OP1-P-OP2	-5.36	111.57	119.60
1	C	72	C	O4'-C1'-N1	5.35	112.48	108.20
1	D	59	U	OP1-P-OP2	-5.35	111.57	119.60
1	A	60	C	P-O5'-C5'	-5.35	112.34	120.90
1	B	59	U	OP1-P-OP2	-5.35	111.57	119.60
1	B	60	C	P-O5'-C5'	-5.35	112.34	120.90
1	B	72	C	O4'-C1'-N1	5.35	112.48	108.20
1	A	22	G	OP1-P-OP2	-5.35	111.57	119.60
1	E	14	A	C5-C6-N1	-5.35	115.03	117.70
1	E	30	G	O4'-C1'-N9	5.35	112.48	108.20
1	D	22	G	OP1-P-OP2	-5.35	111.58	119.60
1	B	22	G	OP1-P-OP2	-5.34	111.58	119.60
1	B	38	A	N9-C1'-C2'	-5.34	106.12	112.00
1	E	67	A	C5-C6-N1	-5.34	115.03	117.70
1	D	72	C	O4'-C1'-N1	5.34	112.47	108.20
1	E	75	C	OP1-P-OP2	-5.34	111.59	119.60
1	C	31	A	OP1-P-OP2	-5.34	111.59	119.60
1	D	67	A	C5-C6-N1	-5.34	115.03	117.70
1	E	72	C	P-O5'-C5'	-5.34	112.36	120.90
1	C	7	U	N1-C2-N3	5.34	118.10	114.90
1	A	59	U	OP1-P-OP2	-5.33	111.60	119.60
1	A	38	A	N9-C1'-C2'	-5.33	106.14	112.00
1	E	38	A	N9-C1'-C2'	-5.33	106.14	112.00
1	C	13	C	N3-C4-C5	-5.33	119.77	121.90
1	B	7	U	N1-C2-N3	5.33	118.09	114.90
1	A	9	A	OP1-P-OP2	-5.32	111.61	119.60
1	D	18	G	C5-C6-N1	5.32	114.16	111.50
1	E	22	G	C5-C6-N1	5.32	114.16	111.50
1	D	21	A	C6-N1-C2	5.32	121.79	118.60
1	E	44	A	C6-N1-C2	5.32	121.79	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	7	U	N1-C2-N3	5.32	118.09	114.90
1	B	18	G	C5-C6-N1	5.31	114.16	111.50
1	B	63	C	C2-N3-C4	5.31	122.56	119.90
1	A	31	A	OP1-P-OP2	-5.31	111.64	119.60
1	C	42	G	C5-C6-N1	5.31	114.15	111.50
1	E	7	U	N1-C2-N3	5.31	118.08	114.90
1	D	73	A	OP1-P-OP2	-5.31	111.64	119.60
1	A	5	A	C6-N1-C2	5.30	121.78	118.60
1	B	31	A	OP1-P-OP2	-5.30	111.64	119.60
1	C	18	G	C5-C6-N1	5.30	114.15	111.50
1	C	5	A	C6-N1-C2	5.30	121.78	118.60
1	C	72	C	P-O5'-C5'	-5.30	112.42	120.90
1	C	59	U	OP1-P-OP2	-5.30	111.65	119.60
1	E	22	G	OP1-P-OP2	-5.30	111.65	119.60
1	E	31	A	OP1-P-OP2	-5.30	111.65	119.60
1	C	59	U	N1-C2-N3	5.29	118.07	114.90
1	D	30	G	O4'-C1'-N9	5.28	112.43	108.20
1	B	18	G	OP1-P-OP2	-5.28	111.68	119.60
1	E	18	G	C5-C6-N1	5.28	114.14	111.50
1	A	35	A	OP1-P-OP2	-5.28	111.68	119.60
1	B	5	A	C6-N1-C2	5.28	121.77	118.60
1	B	30	G	O4'-C1'-N9	5.28	112.42	108.20
1	D	22	G	C5-C6-N1	5.28	114.14	111.50
1	A	18	G	C5-C6-N1	5.27	114.14	111.50
1	B	21	A	OP1-P-OP2	-5.27	111.69	119.60
1	E	21	A	C6-N1-C2	5.27	121.77	118.60
1	A	18	G	OP1-P-OP2	-5.27	111.69	119.60
1	B	9	A	OP1-P-OP2	-5.27	111.69	119.60
1	A	72	C	P-O5'-C5'	-5.27	112.47	120.90
1	B	35	A	OP1-P-OP2	-5.27	111.70	119.60
1	C	18	G	OP1-P-OP2	-5.27	111.70	119.60
1	C	66	A	C6-N1-C2	5.27	121.76	118.60
1	D	71	G	C5-C6-N1	5.27	114.14	111.50
1	E	33	U	O4'-C1'-N1	5.27	112.42	108.20
1	B	72	C	P-O5'-C5'	-5.27	112.47	120.90
1	D	42	G	OP1-P-OP2	-5.27	111.70	119.60
1	A	21	A	OP1-P-OP2	-5.26	111.70	119.60
1	D	35	A	OP1-P-OP2	-5.26	111.70	119.60
1	E	21	A	OP1-P-OP2	-5.26	111.70	119.60
1	C	5	A	N1-C2-N3	-5.26	126.67	129.30
1	D	9	A	OP1-P-OP2	-5.25	111.72	119.60
1	A	33	U	N1-C1'-C2'	-5.25	106.23	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	21	A	OP1-P-OP2	-5.25	111.73	119.60
1	E	59	U	OP1-P-OP2	-5.25	111.73	119.60
1	E	73	A	OP1-P-OP2	-5.25	111.73	119.60
1	A	36	A	C5-C6-N1	-5.24	115.08	117.70
1	C	52	U	C5-C4-O4	-5.24	122.75	125.90
1	C	21	A	OP1-P-OP2	-5.24	111.74	119.60
1	C	47	U	O4'-C1'-N1	5.24	112.39	108.20
1	A	76	A	OP1-P-OP2	-5.24	111.75	119.60
1	C	48	C	N3-C4-C5	-5.24	119.81	121.90
1	E	9	A	OP1-P-OP2	-5.24	111.75	119.60
1	A	73	A	OP1-P-OP2	-5.23	111.75	119.60
1	C	14	A	N1-C2-N3	-5.23	126.69	129.30
1	C	73	A	OP1-P-OP2	-5.23	111.76	119.60
1	D	15	G	C6-N1-C2	-5.23	121.96	125.10
1	C	35	A	C6-N1-C2	5.23	121.74	118.60
1	C	35	A	OP1-P-OP2	-5.23	111.76	119.60
1	D	5	A	C6-N1-C2	5.23	121.74	118.60
1	C	76	A	OP1-P-OP2	-5.23	111.76	119.60
1	B	36	A	C5-C6-N1	-5.22	115.09	117.70
1	B	71	G	C5-C6-N1	5.22	114.11	111.50
1	B	76	A	OP1-P-OP2	-5.22	111.77	119.60
1	C	9	A	OP1-P-OP2	-5.22	111.77	119.60
1	B	33	U	N1-C1'-C2'	-5.22	106.26	112.00
1	A	6	U	C5-C4-O4	-5.22	122.77	125.90
1	B	42	G	C5-C6-N1	5.22	114.11	111.50
1	B	36	A	C6-N1-C2	5.22	121.73	118.60
1	B	73	A	OP1-P-OP2	-5.21	111.78	119.60
1	B	70	C	N3-C4-C5	-5.21	119.81	121.90
1	E	33	U	N1-C1'-C2'	-5.21	106.27	112.00
1	E	35	A	OP1-P-OP2	-5.21	111.79	119.60
1	E	47	U	O4'-C1'-N1	5.21	112.36	108.20
1	C	36	A	C6-N1-C2	5.21	121.72	118.60
1	C	38	A	N9-C1'-C2'	-5.21	106.28	112.00
1	C	33	U	N1-C1'-C2'	-5.20	106.28	112.00
1	D	7	U	N1-C2-N3	5.20	118.02	114.90
1	A	5	A	N1-C2-N3	-5.20	126.70	129.30
1	E	18	G	OP1-P-OP2	-5.20	111.81	119.60
1	A	30	G	O4'-C1'-N9	5.19	112.35	108.20
1	D	33	U	N1-C1'-C2'	-5.19	106.29	112.00
1	E	76	A	OP1-P-OP2	-5.19	111.81	119.60
1	D	33	U	O4'-C1'-N1	5.19	112.35	108.20
1	A	42	G	C5-C6-N1	5.18	114.09	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	14	A	N1-C2-N3	-5.18	126.71	129.30
1	D	18	G	OP1-P-OP2	-5.18	111.82	119.60
1	D	42	G	C5-C6-N1	5.18	114.09	111.50
1	E	20	G	OP1-P-OP2	-5.18	111.82	119.60
1	B	5	A	N1-C2-N3	-5.18	126.71	129.30
1	E	5	A	N1-C2-N3	-5.18	126.71	129.30
1	A	74	C	C2-N3-C4	5.17	122.49	119.90
1	D	38	A	N9-C1'-C2'	-5.17	106.31	112.00
1	E	5	A	C6-N1-C2	5.17	121.70	118.60
1	A	5	A	OP1-P-OP2	-5.17	111.84	119.60
1	C	36	A	C5-C6-N1	-5.17	115.11	117.70
1	C	23	A	OP1-P-OP2	-5.17	111.85	119.60
1	D	47	U	O4'-C1'-N1	5.17	112.33	108.20
1	A	36	A	C6-N1-C2	5.16	121.70	118.60
1	D	70	C	N3-C4-C5	-5.16	119.83	121.90
1	A	62	A	OP1-P-OP2	-5.16	111.86	119.60
1	C	30	G	O4'-C1'-N9	5.16	112.33	108.20
1	E	23	A	OP1-P-OP2	-5.16	111.86	119.60
1	B	74	C	C2-N3-C4	5.16	122.48	119.90
1	C	73	A	O4'-C1'-N9	5.16	112.33	108.20
1	E	52	U	C5-C4-O4	-5.16	122.81	125.90
1	A	71	G	C5-C6-N1	5.15	114.08	111.50
1	D	76	A	OP1-P-OP2	-5.15	111.87	119.60
1	E	63	C	C2-N3-C4	5.15	122.48	119.90
1	C	66	A	C5-C6-N1	-5.15	115.12	117.70
1	D	23	A	OP1-P-OP2	-5.15	111.88	119.60
1	C	33	U	O4'-C1'-N1	5.15	112.32	108.20
1	B	5	A	OP1-P-OP2	-5.14	111.88	119.60
1	B	62	A	OP1-P-OP2	-5.14	111.88	119.60
1	B	66	A	C6-N1-C2	5.14	121.69	118.60
1	A	23	A	OP1-P-OP2	-5.14	111.89	119.60
1	A	70	C	N3-C4-C5	-5.14	119.84	121.90
1	B	23	A	OP1-P-OP2	-5.14	111.89	119.60
1	E	73	A	O4'-C1'-N9	5.14	112.31	108.20
1	B	6	U	C5-C4-O4	-5.13	122.82	125.90
1	A	20	G	OP1-P-OP2	-5.13	111.91	119.60
1	C	62	A	OP1-P-OP2	-5.12	111.92	119.60
1	B	21	A	C5-C6-N1	-5.12	115.14	117.70
1	B	20	G	OP1-P-OP2	-5.12	111.93	119.60
1	E	6	U	C5-C4-O4	-5.12	122.83	125.90
1	A	21	A	C5-C6-N1	-5.11	115.14	117.70
1	A	33	U	O4'-C1'-N1	5.11	112.29	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	5	A	OP1-P-OP2	-5.11	111.94	119.60
1	D	20	G	OP1-P-OP2	-5.11	111.94	119.60
1	C	5	A	OP1-P-OP2	-5.10	111.95	119.60
1	B	66	A	C5-C6-N1	-5.10	115.15	117.70
1	D	73	A	O4'-C1'-N9	5.10	112.28	108.20
1	A	66	A	C5-C6-N1	-5.10	115.15	117.70
1	C	38	A	C6-N1-C2	5.09	121.66	118.60
1	D	62	A	OP1-P-OP2	-5.09	111.96	119.60
1	E	5	A	OP1-P-OP2	-5.09	111.96	119.60
1	B	73	A	O4'-C1'-N9	5.09	112.27	108.20
1	E	62	A	OP1-P-OP2	-5.09	111.97	119.60
1	C	74	C	C2-N3-C4	5.08	122.44	119.90
1	B	33	U	O4'-C1'-N1	5.08	112.27	108.20
1	D	43	G	N9-C1'-C2'	-5.08	106.41	112.00
1	A	66	A	C6-N1-C2	5.08	121.65	118.60
1	E	57	G	C6-N1-C2	-5.07	122.06	125.10
1	E	66	A	C6-N1-C2	5.07	121.64	118.60
1	D	66	A	C6-N1-C2	5.07	121.64	118.60
1	C	43	G	N9-C1'-C2'	-5.06	106.44	112.00
1	E	3	G	C6-N1-C2	-5.05	122.07	125.10
1	D	9	A	C6-N1-C2	5.05	121.63	118.60
1	D	66	A	C5-C6-N1	-5.05	115.18	117.70
1	A	73	A	O4'-C1'-N9	5.04	112.24	108.20
1	A	43	G	O4'-C1'-N9	5.04	112.23	108.20
1	B	47	U	O4'-C1'-N1	5.04	112.23	108.20
1	D	3	G	C6-N1-C2	-5.04	122.07	125.10
1	D	57	G	C6-N1-C2	-5.04	122.08	125.10
1	B	43	G	O4'-C1'-N9	5.04	112.23	108.20
1	D	52	U	C5-C4-O4	-5.04	122.88	125.90
1	E	1	G	OP1-P-OP2	-5.03	112.05	119.60
1	C	33	U	OP1-P-OP2	-5.03	112.05	119.60
1	D	15	G	C5-C6-N1	5.03	114.02	111.50
1	A	47	U	O4'-C1'-N1	5.03	112.22	108.20
1	C	70	C	N3-C4-C5	-5.03	119.89	121.90
1	C	20	G	OP1-P-OP2	-5.02	112.06	119.60
1	A	52	U	C5-C4-O4	-5.02	122.89	125.90
1	C	43	G	O4'-C1'-N9	5.02	112.22	108.20
1	D	6	U	C5-C4-O4	-5.02	122.89	125.90
1	C	62	A	C6-N1-C2	5.02	121.61	118.60
1	B	62	A	C6-N1-C2	5.02	121.61	118.60
1	D	5	A	N1-C2-N3	-5.02	126.79	129.30
1	E	20	G	O4'-C1'-N9	5.02	112.21	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	66	A	C5-C6-N1	-5.02	115.19	117.70
1	B	52	U	C5-C4-O4	-5.01	122.89	125.90
1	A	24	G	C5-C6-N1	5.01	114.00	111.50
1	B	24	G	C5-C6-N1	5.01	114.00	111.50
1	A	62	A	C6-N1-C2	5.00	121.60	118.60
1	D	43	G	O4'-C1'-N9	5.00	112.20	108.20

All (5) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	37	YG	C15
1	B	37	YG	C15
1	C	37	YG	C15
1	D	37	YG	C15
1	E	37	YG	C15

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1652	0	737	2017	0
1	B	1652	0	728	2071	0
1	C	1652	0	860	140	0
1	D	1652	0	814	809	0
1	E	1652	0	810	805	0
All	All	8260	0	3949	3083	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 254.

All (3083) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:73:A:P	1:C:75:C:H3'	1.34	1.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:70:C:C4'	1:B:69:U:H3'	1.23	1.63
1:A:37:YG:C8	1:B:36:A:H2'	1.20	1.61
1:A:28:C:H2'	1:B:29:A:C5'	1.28	1.60
1:A:37:YG:C13	1:B:37:YG:H142	1.19	1.60
1:A:37:YG:C3	1:B:37:YG:H1'	1.17	1.60
1:A:37:YG:H8	1:B:36:A:C2'	1.07	1.59
1:B:73:A:H5'	1:C:75:C:C5'	1.22	1.59
1:A:40:5MC:C2	1:B:31:A:C2	1.85	1.59
1:D:13:C:C2	1:E:58:1MA:H5'	1.37	1.58
1:A:62:A:C5'	1:B:62:A:C8	1.76	1.58
1:A:28:C:H2'	1:B:29:A:C4'	1.14	1.57
1:A:28:C:C2'	1:B:29:A:C5'	1.79	1.57
1:B:73:A:C5'	1:C:75:C:H5"	1.11	1.57
1:D:60:C:C2	1:E:49:5MC:C6	1.89	1.57
1:D:67:A:H2	1:E:54:5MU:C4'	1.09	1.57
1:A:7:U:C2'	1:B:49:5MC:C5'	1.82	1.57
1:A:7:U:C2'	1:B:49:5MC:H5'	1.28	1.56
1:A:17:H2U:H61	1:B:17:H2U:C2	1.33	1.56
1:A:13:C:N4	1:B:9:A:C8	1.72	1.55
1:A:37:YG:C11	1:B:37:YG:C2	1.93	1.55
1:A:58:1MA:CM1	1:B:58:1MA:C4	1.85	1.55
1:A:39:PSU:H1'	1:B:38:A:C6	1.40	1.55
1:D:67:A:C2	1:E:54:5MU:C5'	1.87	1.55
1:A:26:M2G:HM23	1:B:44:A:C2	1.38	1.54
1:A:13:C:C4	1:B:9:A:H8	1.23	1.54
1:A:35:A:C5	1:B:35:A:C4	1.95	1.54
1:D:62:A:C8	1:E:64:A:H3'	1.42	1.53
1:A:36:A:C5	1:B:36:A:C4	1.96	1.53
1:A:57:G:C5	1:B:57:G:H1'	1.44	1.52
1:A:35:A:N9	1:B:35:A:H1'	1.23	1.52
1:A:15:G:C5'	1:B:14:A:C4	1.90	1.52
1:A:21:A:H1'	1:B:21:A:C3'	1.09	1.51
1:A:39:PSU:C6	1:B:39:PSU:N1	1.74	1.51
1:A:37:YG:C5	1:B:37:YG:C8	1.95	1.51
1:A:71:G:H4'	1:B:71:G:N7	1.18	1.50
1:A:15:G:H5'	1:B:14:A:C4	0.98	1.50
1:A:40:5MC:C6	1:B:40:5MC:C5	2.00	1.50
1:A:23:A:C1'	1:B:23:A:H3'	1.43	1.49
1:A:40:5MC:C5	1:B:40:5MC:C4	1.99	1.49
1:A:37:YG:C6	1:B:37:YG:C5	1.98	1.49
1:A:58:1MA:HM12	1:B:58:1MA:C4	0.96	1.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:7:U:C5	1:E:53:G:H2'	1.37	1.49
1:A:9:A:C5	1:B:9:A:C2	2.01	1.48
1:A:35:A:N1	1:B:35:A:C2	1.81	1.48
1:A:35:A:C3'	1:B:35:A:C4'	1.80	1.48
1:A:68:U:C2	1:B:67:A:O2'	1.68	1.47
1:A:4:G:C5	1:B:67:A:N6	1.81	1.47
1:A:39:PSU:C5	1:B:39:PSU:N1	1.82	1.47
1:A:37:YG:C2	1:B:37:YG:C4	2.00	1.47
1:A:56:C:N4	1:B:19:G:N1	1.63	1.46
1:D:58:1MA:H2	1:E:49:5MC:N3	1.09	1.46
1:D:62:A:C8	1:E:64:A:C3'	1.98	1.46
1:D:67:A:C2	1:E:54:5MU:H4'	1.49	1.46
1:A:38:A:C4	1:B:38:A:C8	2.02	1.45
1:A:44:A:C8	1:B:43:G:C2'	1.95	1.45
1:A:40:5MC:P	1:B:40:5MC:HM51	1.54	1.45
1:A:59:U:C2'	1:B:59:U:C5'	1.94	1.45
1:D:58:1MA:HM12	1:E:65:G:C2	1.51	1.45
1:D:48:C:C3'	1:E:61:C:H3'	1.45	1.45
1:D:18:G:N2	1:E:6:U:N3	1.63	1.45
1:A:40:5MC:H5'	1:B:39:PSU:C2'	1.46	1.45
1:D:14:A:N6	1:E:59:U:H3'	1.28	1.45
1:A:34:OMG:C2	1:B:34:OMG:N2	1.85	1.44
1:A:40:5MC:C5'	1:B:39:PSU:C2'	1.96	1.44
1:A:36:A:N1	1:B:36:A:C2	1.86	1.44
1:D:45:G:C8	1:E:17:H2U:OP2	1.68	1.44
1:A:35:A:C6	1:B:35:A:C2	2.06	1.43
1:A:71:G:C5'	1:B:70:C:C5	1.84	1.43
1:A:18:G:O2'	1:B:19:G:C8	1.70	1.43
1:D:13:C:N4	1:E:18:G:N3	1.61	1.43
1:A:7:U:C3'	1:B:8:U:H5"	1.33	1.43
1:A:68:U:C2	1:B:67:A:C2'	2.02	1.43
1:A:39:PSU:C4	1:B:39:PSU:C2	2.06	1.43
1:A:34:OMG:C6	1:B:34:OMG:N1	1.84	1.43
1:A:15:G:H2'	1:B:15:G:N3	1.33	1.43
1:A:13:C:O5'	1:B:12:U:C6	1.72	1.42
1:A:24:G:C5'	1:B:24:G:O5'	1.66	1.42
1:A:6:U:H5'	1:B:6:U:C2'	1.48	1.42
1:A:35:A:H3'	1:B:35:A:C4'	1.14	1.42
1:A:36:A:N9	1:B:36:A:H1'	1.16	1.42
1:A:70:C:H4'	1:B:69:U:C3'	0.95	1.41
1:A:39:PSU:C1'	1:B:38:A:C5	1.83	1.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:39:PSU:C4	1:B:39:PSU:N3	1.88	1.41
1:D:26:M2G:HM23	1:E:17:H2U:C2	1.24	1.41
1:D:22:G:C4'	1:E:15:G:H21	1.31	1.41
1:D:60:C:C2	1:E:49:5MC:C5	1.92	1.41
1:A:40:5MC:O5'	1:B:40:5MC:C6	1.72	1.41
1:A:37:YG:C4	1:B:37:YG:N9	1.85	1.41
1:A:41:U:C5	1:B:41:U:C4	2.09	1.40
1:A:58:1MA:CM1	1:B:58:1MA:N3	1.80	1.40
1:A:6:U:O5'	1:B:7:U:C6	1.74	1.40
1:A:15:G:C2'	1:B:15:G:N3	1.83	1.40
1:A:58:1MA:HM13	1:B:18:G:C4	1.56	1.40
1:B:73:A:C5'	1:C:75:C:C5'	1.84	1.40
1:A:42:G:C8	1:B:41:U:C2	2.08	1.39
1:A:63:C:C2'	1:B:52:U:H1'	1.52	1.39
1:A:40:5MC:C6	1:B:40:5MC:C4	2.05	1.39
1:A:58:1MA:HM13	1:B:18:G:N3	1.12	1.39
1:A:71:G:H5'	1:B:70:C:C6	1.54	1.39
1:D:13:C:N1	1:E:58:1MA:H5'	1.12	1.39
1:A:39:PSU:C5	1:B:39:PSU:C6	1.99	1.39
1:A:7:U:H2'	1:B:49:5MC:C5'	1.38	1.39
1:A:13:C:N4	1:B:9:A:H2'	1.31	1.39
1:A:64:A:C1'	1:B:51:G:O2'	1.66	1.38
1:A:37:YG:C12	1:B:37:YG:C2	2.12	1.38
1:D:49:5MC:H2'	1:E:62:A:C4'	1.51	1.38
1:A:39:PSU:H1'	1:B:38:A:C5	1.46	1.37
1:A:33:U:O2	1:B:35:A:C8	1.75	1.37
1:D:58:1MA:CM1	1:E:65:G:C2	2.07	1.37
1:A:18:G:O6	1:B:57:G:C8	1.76	1.37
1:D:24:G:C4'	1:E:20:G:H5'	1.53	1.37
1:D:60:C:C6	1:E:49:5MC:N4	1.78	1.37
1:D:8:U:H5'	1:E:61:C:N1	1.40	1.37
1:A:59:U:O2'	1:B:59:U:C5'	1.74	1.36
1:A:40:5MC:N3	1:B:31:A:C2	1.92	1.36
1:D:54:5MU:C5'	1:E:2:C:OP2	1.71	1.36
1:A:37:YG:C2	1:B:37:YG:N3	1.93	1.36
1:A:31:A:O2'	1:B:32:OMC:C5'	1.70	1.35
1:D:18:G:N2	1:E:6:U:C4	1.94	1.35
1:A:58:1MA:HM12	1:B:58:1MA:N3	1.33	1.35
1:A:46:7MG:N2	1:B:9:A:N3	1.73	1.35
1:B:1:G:N2	1:C:76:A:C4'	1.90	1.35
1:A:34:OMG:C5	1:B:34:OMG:C2	2.14	1.35

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:51:G:O6	1:E:63:C:C3'	1.73	1.35
1:D:7:U:H2'	1:E:53:G:N1	1.40	1.35
1:A:17:H2U:C6	1:B:17:H2U:N3	1.86	1.35
1:A:21:A:C2	1:B:21:A:C5	2.15	1.35
1:A:35:A:C1'	1:B:35:A:H1'	1.55	1.35
1:A:61:C:H5'	1:B:58:1MA:C2	1.61	1.35
1:A:62:A:H5"	1:B:62:A:C8	0.94	1.34
1:A:37:YG:H5"	1:B:36:A:O2'	1.23	1.34
1:A:35:A:C2'	1:B:35:A:O2'	1.74	1.34
1:A:36:A:N6	1:B:36:A:C6	1.96	1.34
1:A:35:A:H3'	1:B:35:A:O4'	1.24	1.34
1:A:9:A:N7	1:B:9:A:N3	1.74	1.34
1:A:35:A:H3'	1:B:35:A:C1'	1.54	1.34
1:A:40:5MC:OP2	1:B:40:5MC:CM5	1.74	1.34
1:A:9:A:C6	1:B:9:A:C2	2.14	1.34
1:A:7:U:C6	1:B:7:U:O2'	1.79	1.33
1:D:7:U:C5	1:E:53:G:C2'	1.96	1.33
1:D:53:G:OP1	1:E:3:G:C5'	1.74	1.33
1:D:7:U:OP2	1:E:53:G:N7	1.61	1.33
1:A:32:OMC:CM2	1:B:32:OMC:HM22	1.58	1.33
1:A:37:YG:C13	1:B:37:YG:C14	2.04	1.33
1:D:62:A:N7	1:E:64:A:H3'	1.39	1.33
1:A:37:YG:H103	1:B:37:YG:N2	1.38	1.33
1:A:39:PSU:O4'	1:B:38:A:C4	1.82	1.33
1:A:21:A:C1'	1:B:21:A:H3'	1.09	1.33
1:A:64:A:P	1:B:51:G:H21	1.50	1.33
1:B:71:G:O2'	1:C:74:C:N3	1.59	1.33
1:A:35:A:N6	1:B:35:A:C6	1.97	1.32
1:A:37:YG:C4	1:B:37:YG:C8	2.15	1.32
1:A:8:U:N3	1:B:22:G:O6	1.60	1.32
1:A:13:C:C4	1:B:9:A:C8	2.11	1.32
1:A:38:A:C2	1:B:38:A:C4	2.16	1.32
1:A:5:A:H3'	1:B:7:U:C5	1.65	1.32
1:A:65:G:N2	1:B:50:U:C4'	1.92	1.32
1:A:17:H2U:C6	1:B:17:H2U:C2	2.07	1.32
1:A:16:H2U:C5'	1:B:15:G:O2'	1.78	1.32
1:D:13:C:C2	1:E:58:1MA:C5'	2.11	1.32
1:A:39:PSU:C5	1:B:39:PSU:C2	2.16	1.31
1:A:62:A:H5'	1:B:61:C:O2	1.23	1.31
1:A:5:A:O3'	1:B:6:U:H3'	1.23	1.31
1:A:17:H2U:H61	1:B:17:H2U:C4	1.58	1.31

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:7:U:OP1	1:B:8:U:H6	1.10	1.31
1:A:40:5MC:C5'	1:B:39:PSU:H2'	1.56	1.31
1:A:9:A:N7	1:B:9:A:C4	1.98	1.31
1:A:35:A:H5"	1:B:35:A:C5'	1.59	1.31
1:A:7:U:O2'	1:B:49:5MC:H5"	1.24	1.31
1:A:7:U:H6	1:B:7:U:O2'	1.05	1.31
1:A:65:G:H22	1:B:50:U:C4'	1.44	1.30
1:D:60:C:O2'	1:E:49:5MC:N3	1.65	1.30
1:A:37:YG:C10	1:B:37:YG:N2	1.91	1.30
1:D:24:G:N2	1:E:19:G:C4	1.93	1.30
1:A:37:YG:N2	1:B:37:YG:H33	1.43	1.30
1:A:34:OMG:C8	1:B:34:OMG:C4	2.19	1.30
1:A:68:U:N1	1:B:67:A:O2'	1.64	1.30
1:D:12:U:C2	1:E:19:G:N3	1.98	1.30
1:A:60:C:C2	1:B:59:U:C5	2.20	1.30
1:A:36:A:C6	1:B:36:A:C4	2.18	1.30
1:D:45:G:H1'	1:E:17:H2U:O2	1.30	1.30
1:A:4:G:C6	1:B:67:A:C6	2.19	1.29
1:A:37:YG:C3	1:B:37:YG:C1'	2.09	1.29
1:A:38:A:N3	1:B:38:A:C4	2.01	1.29
1:A:39:PSU:C2	1:B:39:PSU:O2	1.86	1.29
1:A:17:H2U:H61	1:B:17:H2U:N3	0.98	1.29
1:A:64:A:OP2	1:B:51:G:N2	1.66	1.29
1:A:58:1MA:CM1	1:B:18:G:N3	1.93	1.28
1:A:40:5MC:O2	1:B:31:A:C2	1.81	1.28
1:A:44:A:H8	1:B:43:G:C2'	1.36	1.28
1:D:15:G:H4'	1:E:48:C:OP1	1.29	1.28
1:D:58:1MA:OP2	1:E:5:A:N7	1.65	1.28
1:D:67:A:C2	1:E:54:5MU:C4'	2.01	1.28
1:A:15:G:P	1:B:14:A:H3'	1.70	1.28
1:A:34:OMG:C4	1:B:34:OMG:N3	2.00	1.28
1:D:21:A:H4'	1:E:15:G:N7	1.44	1.28
1:A:64:A:P	1:B:64:A:H1'	1.72	1.28
1:D:67:A:H2	1:E:54:5MU:C5'	1.28	1.28
1:A:37:YG:C14	1:B:36:A:H61	1.46	1.28
1:A:13:C:N3	1:B:9:A:C8	2.01	1.28
1:A:64:A:P	1:B:51:G:N2	2.07	1.28
1:D:51:G:H1	1:E:64:A:P	1.54	1.28
1:D:17:H2U:OP2	1:E:47:U:H2'	1.24	1.28
1:A:46:7MG:H1'	1:B:46:7MG:C5'	1.62	1.28
1:A:26:M2G:CM2	1:B:44:A:H2	1.44	1.28

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:70:C:C4'	1:B:69:U:C3'	1.88	1.28
1:D:14:A:N6	1:E:59:U:C3'	1.95	1.28
1:A:59:U:C2'	1:B:59:U:H5'	1.30	1.27
1:A:40:5MC:C5	1:B:40:5MC:N4	1.99	1.27
1:A:7:U:H3'	1:B:8:U:C5'	1.63	1.27
1:B:1:G:N2	1:C:76:A:H4'	0.98	1.27
1:A:40:5MC:CM5	1:B:40:5MC:HM52	1.63	1.27
1:D:45:G:N3	1:E:17:H2U:O2	1.65	1.27
1:D:49:5MC:C3'	1:E:62:A:C5'	2.12	1.27
1:A:34:OMG:C6	1:B:34:OMG:C2	2.23	1.27
1:A:39:PSU:C1'	1:B:38:A:C4	2.16	1.27
1:A:36:A:C4	1:B:36:A:H1'	1.68	1.27
1:A:34:OMG:N7	1:B:34:OMG:C5	2.03	1.26
1:A:38:A:C5	1:B:38:A:N7	2.01	1.26
1:D:5:A:C2	1:E:54:5MU:OP1	1.88	1.26
1:A:37:YG:C12	1:B:37:YG:N1	2.02	1.26
1:A:58:1MA:N6	1:B:58:1MA:C8	2.02	1.26
1:A:35:A:C3'	1:B:35:A:C1'	2.12	1.26
1:A:24:G:H22	1:B:10:2MG:N2	1.31	1.26
1:A:40:5MC:H5"	1:B:40:5MC:C5'	1.47	1.26
1:A:36:A:H2'	1:B:36:A:O2'	1.27	1.26
1:A:37:YG:O23	1:B:37:YG:H242	1.30	1.26
1:D:55:PSU:C3'	1:E:69:U:O4	1.83	1.26
1:D:20:G:O6	1:E:48:C:C1'	1.76	1.26
1:D:55:PSU:H3'	1:E:69:U:O4	1.29	1.26
1:A:38:A:C8	1:B:37:YG:H3'	1.56	1.26
1:A:38:A:N9	1:B:38:A:C8	2.03	1.26
1:A:35:A:H5"	1:B:35:A:O5'	1.36	1.26
1:D:24:G:C5'	1:E:20:G:C5'	2.05	1.26
1:A:56:C:N4	1:B:19:G:C2	2.03	1.25
1:A:36:A:N9	1:B:36:A:C1'	1.97	1.25
1:A:45:G:O5'	1:B:44:A:H4'	1.34	1.25
1:D:58:1MA:C2	1:E:49:5MC:N3	2.04	1.25
1:D:61:C:O5'	1:E:64:A:C2	1.70	1.25
1:A:40:5MC:H5'	1:B:39:PSU:O2'	1.15	1.25
1:A:59:U:O2'	1:B:59:U:H5'	1.07	1.25
1:D:60:C:C2'	1:E:49:5MC:N3	1.99	1.25
1:D:58:1MA:OP2	1:E:5:A:C5	1.87	1.25
1:A:37:YG:H131	1:B:37:YG:C14	1.63	1.25
1:D:18:G:N3	1:E:7:U:N3	1.83	1.25
1:A:23:A:C2'	1:B:24:G:C8	2.20	1.25

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:9:A:O3'	1:B:45:G:O2'	1.53	1.25
1:A:15:G:C5'	1:B:14:A:N3	1.73	1.24
1:A:36:A:C2'	1:B:36:A:O2'	1.85	1.24
1:D:12:U:C2	1:E:57:G:H1'	1.72	1.24
1:D:56:C:C5	1:E:68:U:C6	2.23	1.24
1:D:57:G:C3'	1:E:5:A:C6	2.02	1.24
1:A:40:5MC:N3	1:B:31:A:N1	1.82	1.24
1:D:20:G:O6	1:E:48:C:H1'	1.19	1.24
1:A:36:A:C1'	1:B:36:A:H1'	1.65	1.24
1:A:45:G:P	1:B:44:A:H4'	1.78	1.24
1:A:33:U:C2	1:B:35:A:C8	2.25	1.23
1:A:41:U:C5'	1:B:40:5MC:O2'	1.86	1.23
1:A:46:7MG:C1'	1:B:46:7MG:H5"	1.68	1.23
1:A:21:A:N3	1:B:21:A:C8	2.07	1.23
1:D:21:A:C4'	1:E:15:G:N7	1.99	1.23
1:A:36:A:C6	1:B:36:A:C2	2.25	1.23
1:A:23:A:H2'	1:B:24:G:C8	1.73	1.23
1:A:37:YG:C10	1:B:37:YG:C11	2.21	1.23
1:A:34:OMG:C4	1:B:34:OMG:C2	2.26	1.23
1:A:38:A:C8	1:B:37:YG:C3'	2.19	1.23
1:A:71:G:H5'	1:B:70:C:C5	1.29	1.23
1:D:24:G:O4'	1:E:20:G:H5'	1.08	1.23
1:D:60:C:H2'	1:E:49:5MC:C4	1.71	1.23
1:A:63:C:O2'	1:B:52:U:H1'	1.08	1.23
1:D:51:G:O6	1:E:63:C:H3'	1.12	1.23
1:D:54:5MU:OP1	1:E:2:C:C6	1.91	1.23
1:A:21:A:C2	1:B:21:A:N7	2.07	1.22
1:A:42:G:C8	1:B:41:U:O2	1.87	1.22
1:A:24:G:N1	1:B:10:2MG:N1	1.71	1.22
1:A:37:YG:N2	1:B:37:YG:C3	2.00	1.22
1:A:23:A:C2	1:B:23:A:C6	2.26	1.22
1:A:6:U:H5'	1:B:6:U:C3'	1.62	1.22
1:D:14:A:H2	1:E:48:C:C5	1.57	1.22
1:A:42:G:H22	1:B:29:A:C1'	1.42	1.22
1:A:4:G:O6	1:B:67:A:C5	1.91	1.22
1:B:73:A:P	1:C:75:C:C3'	2.28	1.22
1:A:44:A:H8	1:B:43:G:O2'	0.87	1.22
1:A:11:C:O2'	1:B:11:C:O4'	1.52	1.21
1:A:37:YG:N3	1:B:37:YG:H1'	1.54	1.21
1:A:62:A:O5'	1:B:61:C:C2	1.93	1.21
1:A:26:M2G:CM2	1:B:44:A:C2	2.21	1.21

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:A:H5”	1:B:35:A:C4’	1.68	1.21
1:A:18:G:C5’	1:B:19:G:OP1	1.72	1.21
1:D:48:C:C4’	1:E:61:C:C3’	2.12	1.21
1:A:72:C:H1’	1:B:2:C:C5	1.29	1.20
1:A:62:A:C5’	1:B:61:C:O2	1.88	1.20
1:A:48:C:C1’	1:B:21:A:H62	1.47	1.20
1:A:9:A:H3’	1:B:10:2MG:OP1	1.41	1.20
1:A:18:G:C2’	1:B:57:G:N2	1.96	1.20
1:A:57:G:O6	1:B:57:G:C4	1.95	1.20
1:A:72:C:C1’	1:B:2:C:C5	2.24	1.20
1:A:6:U:P	1:B:7:U:OP2	1.99	1.20
1:B:73:A:O5’	1:C:75:C:H3’	1.40	1.20
1:D:23:A:C5’	1:E:20:G:C4	2.23	1.20
1:A:37:YG:N1	1:B:37:YG:C4	2.10	1.20
1:A:14:A:OP1	1:B:13:C:H3’	1.07	1.20
1:A:7:U:OP1	1:B:8:U:C6	1.95	1.20
1:A:23:A:O4’	1:B:23:A:H3’	1.41	1.20
1:A:37:YG:N3	1:B:37:YG:C1’	2.05	1.20
1:A:63:C:OP1	1:B:63:C:C6	1.94	1.20
1:D:58:1MA:P	1:E:5:A:N7	2.14	1.20
1:D:24:G:O4’	1:E:20:G:C5’	1.88	1.20
1:D:14:A:C2	1:E:48:C:C5	2.30	1.20
1:A:37:YG:C4	1:B:37:YG:C1’	2.24	1.19
1:A:23:A:H5’	1:B:23:A:OP1	1.37	1.19
1:A:57:G:C6	1:B:57:G:N3	2.10	1.19
1:D:21:A:H4’	1:E:15:G:C5	1.72	1.19
1:A:42:G:H22	1:B:29:A:H1’	1.04	1.19
1:A:15:G:OP1	1:B:15:G:OP2	1.54	1.19
1:A:16:H2U:H61	1:B:16:H2U:C1’	1.70	1.19
1:D:7:U:H2’	1:E:53:G:C2	1.77	1.19
1:A:32:OMC:C6	1:B:33:U:C6	2.30	1.19
1:A:35:A:H2’	1:B:35:A:O2’	1.33	1.19
1:A:63:C:C2’	1:B:52:U:C1’	2.19	1.19
1:A:23:A:C2’	1:B:23:A:H3’	1.68	1.19
1:A:28:C:C2’	1:B:29:A:C4’	2.07	1.19
1:D:60:C:H2’	1:E:49:5MC:N4	1.57	1.19
1:D:13:C:N1	1:E:58:1MA:C5’	2.03	1.19
1:A:40:5MC:C4	1:B:40:5MC:N4	2.11	1.19
1:D:58:1MA:N3	1:E:49:5MC:N4	1.89	1.19
1:D:45:G:C8	1:E:17:H2U:P	2.35	1.19
1:A:58:1MA:HM12	1:B:58:1MA:C5	1.79	1.18

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:5:A:O3'	1:B:6:U:C3'	1.90	1.18
1:D:53:G:P	1:E:3:G:H5"	1.82	1.18
1:D:23:A:H5"	1:E:20:G:C4	1.77	1.18
1:D:46:7MG:O4'	1:E:18:G:OP2	1.58	1.18
1:A:14:A:OP1	1:B:13:C:C3'	1.92	1.18
1:A:9:A:C8	1:B:9:A:H1'	1.78	1.18
1:A:23:A:C2'	1:B:24:G:H8	1.57	1.18
1:A:48:C:O2'	1:B:48:C:O4'	1.62	1.18
1:A:61:C:O2	1:B:54:5MU:O4	1.61	1.17
1:D:12:U:H3'	1:E:57:G:C8	1.77	1.17
1:A:9:A:C8	1:B:45:G:C2	2.31	1.17
1:A:35:A:C3'	1:B:35:A:C2'	2.21	1.17
1:A:59:U:C2	1:B:59:U:C6	2.31	1.17
1:D:60:C:N3	1:E:49:5MC:C6	1.70	1.17
1:D:48:C:C4'	1:E:61:C:H3'	1.51	1.17
1:A:35:A:N9	1:B:35:A:C1'	2.08	1.17
1:A:4:G:C6	1:B:67:A:N6	2.10	1.17
1:A:35:A:C2'	1:B:35:A:H1'	1.73	1.17
1:A:69:U:C2	1:B:67:A:H2'	1.79	1.17
1:D:62:A:H8	1:E:65:G:O4'	1.26	1.17
1:D:51:G:N1	1:E:64:A:P	2.16	1.17
1:D:49:5MC:C2'	1:E:62:A:H5'	1.74	1.17
1:A:71:G:C4'	1:B:71:G:N7	2.07	1.17
1:A:9:A:C5	1:B:9:A:N3	2.09	1.17
1:D:22:G:H4'	1:E:15:G:H21	1.04	1.17
1:D:58:1MA:CM1	1:E:65:G:N1	2.08	1.17
1:A:40:5MC:O5'	1:B:40:5MC:H6	0.83	1.16
1:A:23:A:O2'	1:B:23:A:C3'	1.92	1.16
1:D:45:G:N2	1:E:19:G:OP2	1.77	1.16
1:A:37:YG:C5	1:B:37:YG:N7	2.13	1.16
1:A:37:YG:H32	1:B:37:YG:H31	1.21	1.16
1:A:48:C:O2'	1:B:48:C:C6	1.92	1.16
1:B:72:C:C6	1:C:75:C:O2'	1.98	1.16
1:A:45:G:H3'	1:B:44:A:O3'	1.27	1.16
1:A:42:G:C8	1:B:41:U:N3	2.14	1.16
1:D:21:A:H5'	1:E:15:G:C8	1.79	1.16
1:D:67:A:C2	1:E:54:5MU:H5'	1.73	1.16
1:A:44:A:N7	1:B:43:G:H2'	1.60	1.16
1:A:15:G:N7	1:B:8:U:O2	1.79	1.16
1:A:15:G:OP1	1:B:14:A:H3'	1.01	1.16
1:D:18:G:N2	1:E:6:U:O4	1.74	1.16

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:58:1MA:C2	1:E:65:G:N1	2.14	1.16
1:A:11:C:H2'	1:B:11:C:C6	1.80	1.15
1:A:70:C:O2'	1:B:70:C:C5	1.97	1.15
1:A:38:A:H1'	1:B:37:YG:H31	1.17	1.15
1:A:42:G:H8	1:B:41:U:C2	1.50	1.15
1:A:35:A:C3'	1:B:35:A:O2'	1.94	1.15
1:D:20:G:C4	1:E:15:G:O6	2.00	1.15
1:A:36:A:C2'	1:B:36:A:C1'	2.24	1.15
1:A:36:A:N7	1:B:36:A:C8	2.13	1.15
1:A:28:C:H2'	1:B:29:A:O4'	1.46	1.15
1:A:57:G:N7	1:B:57:G:H1'	1.60	1.15
1:D:45:G:N3	1:E:17:H2U:H2'	1.58	1.15
1:A:24:G:C1'	1:B:24:G:H2'	1.76	1.15
1:A:46:7MG:O3'	1:B:46:7MG:H5'	1.46	1.15
1:A:24:G:N2	1:B:10:2MG:HN2	1.43	1.15
1:A:6:U:OP1	1:B:7:U:P	2.05	1.15
1:D:60:C:C2'	1:E:49:5MC:C4	2.29	1.15
1:D:13:C:C6	1:E:58:1MA:H5'	1.82	1.15
1:A:32:OMC:C2	1:B:33:U:C2	2.34	1.14
1:A:6:U:O5'	1:B:7:U:H6	0.82	1.14
1:D:58:1MA:C2	1:E:49:5MC:C4	2.35	1.14
1:A:40:5MC:OP2	1:B:40:5MC:HM51	0.99	1.14
1:A:37:YG:C13	1:B:37:YG:C12	2.29	1.14
1:A:38:A:N1	1:B:38:A:C6	2.16	1.14
1:A:57:G:O6	1:B:57:G:N3	1.79	1.14
1:D:62:A:C5	1:E:64:A:H3'	1.74	1.14
1:D:58:1MA:HM11	1:E:65:G:N2	1.61	1.14
1:A:17:H2U:C6	1:B:17:H2U:C4	2.20	1.14
1:A:44:A:C8	1:B:43:G:H2'	1.74	1.14
1:D:45:G:C4	1:E:17:H2U:O2	2.00	1.14
1:D:45:G:H8	1:E:17:H2U:OP2	0.99	1.14
1:A:37:YG:C5'	1:B:36:A:O2'	1.93	1.14
1:A:62:A:H5"	1:B:62:A:N9	1.09	1.14
1:A:23:A:C1'	1:B:23:A:C3'	2.24	1.14
1:A:44:A:O5'	1:B:43:G:O2'	1.66	1.14
1:D:49:5MC:C2'	1:E:62:A:C4'	2.17	1.14
1:A:23:A:C4'	1:B:23:A:H3'	1.62	1.13
1:A:45:G:OP2	1:B:44:A:H5"	1.47	1.13
1:A:9:A:N7	1:B:45:G:C2	1.84	1.13
1:D:49:5MC:H2'	1:E:62:A:H4'	1.18	1.13
1:A:58:1MA:HM13	1:B:18:G:C2	1.83	1.13

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:17:H2U:O2'	1:B:19:G:OP2	1.64	1.13
1:A:35:A:C2'	1:B:35:A:C1'	2.26	1.13
1:B:73:A:O5'	1:C:75:C:C3'	1.94	1.13
1:A:61:C:H5'	1:B:60:C:H2'	1.20	1.13
1:D:22:G:H1'	1:E:48:C:N4	1.63	1.13
1:A:11:C:C2'	1:B:11:C:O4'	1.96	1.13
1:D:24:G:N2	1:E:19:G:N3	1.95	1.13
1:D:49:5MC:C2'	1:E:62:A:C5'	2.24	1.13
1:A:68:U:H2'	1:B:67:A:O2'	1.49	1.13
1:D:12:U:C2	1:E:19:G:C2	2.25	1.13
1:A:8:U:H1'	1:B:21:A:N6	1.64	1.13
1:A:36:A:C2'	1:B:36:A:H1'	1.76	1.13
1:A:41:U:H5'	1:B:40:5MC:O2'	1.36	1.13
1:A:18:G:N7	1:B:18:G:N3	1.97	1.12
1:A:37:YG:H131	1:B:37:YG:C12	1.84	1.12
1:D:58:1MA:N1	1:E:65:G:N1	1.97	1.12
1:A:41:U:H5"	1:B:41:U:C5'	1.77	1.12
1:A:23:A:C4'	1:B:23:A:C3'	2.27	1.12
1:A:61:C:C5'	1:B:60:C:H2'	1.77	1.12
1:A:70:C:H4'	1:B:69:U:C2'	1.78	1.12
1:A:61:C:H5"	1:B:60:C:H3'	1.26	1.12
1:A:40:5MC:N4	1:B:39:PSU:O2	1.82	1.12
1:D:22:G:C4'	1:E:15:G:N2	2.11	1.12
1:D:63:C:N4	1:E:63:C:C2'	2.12	1.12
1:D:20:G:O5'	1:E:8:U:C5	1.97	1.12
1:A:56:C:C4	1:B:19:G:N2	2.17	1.12
1:A:61:C:C5'	1:B:58:1MA:C2	2.33	1.12
1:D:13:C:H2'	1:E:58:1MA:C5'	1.78	1.12
1:A:31:A:C4	1:B:31:A:C5	2.38	1.11
1:A:31:A:N1	1:B:31:A:C6	2.19	1.11
1:A:13:C:N4	1:B:9:A:C2'	2.11	1.11
1:D:13:C:C2'	1:E:58:1MA:H5"	1.80	1.11
1:D:14:A:N1	1:E:59:U:H6	1.47	1.11
1:D:21:A:O2'	1:E:15:G:C6	2.02	1.11
1:D:67:A:N1	1:E:54:5MU:H5"	1.65	1.11
1:A:15:G:OP1	1:B:14:A:C3'	1.97	1.11
1:A:6:U:P	1:B:6:U:H3'	1.88	1.11
1:A:39:PSU:C6	1:B:39:PSU:C2	2.34	1.11
1:C:75:C:H5'	1:C:76:A:H5'	1.30	1.11
1:A:9:A:C8	1:B:9:A:N3	2.18	1.11
1:D:45:G:H1'	1:E:17:H2U:C2	1.79	1.11

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:49:5MC:C3'	1:E:62:A:H5'	1.75	1.11
1:A:31:A:C2	1:B:31:A:N1	2.17	1.11
1:A:64:A:N1	1:B:50:U:H2'	1.65	1.11
1:D:45:G:N3	1:E:17:H2U:C2'	2.13	1.11
1:A:39:PSU:N3	1:B:39:PSU:C2	2.16	1.10
1:A:66:A:C2	1:B:49:5MC:O2'	2.03	1.10
1:A:18:G:H1'	1:B:19:G:O4'	1.51	1.10
1:A:33:U:N3	1:B:35:A:H5"	1.58	1.10
1:A:14:A:O5'	1:B:13:C:H2'	1.48	1.10
1:D:8:U:O2	1:E:60:C:C5	2.04	1.10
1:D:49:5MC:H2'	1:E:62:A:C5'	1.80	1.10
1:A:57:G:N7	1:B:57:G:C1'	2.14	1.10
1:A:16:H2U:C5'	1:B:15:G:O3'	2.00	1.10
1:A:36:A:C2	1:B:36:A:N3	2.20	1.10
1:A:37:YG:N2	1:B:37:YG:N3	1.98	1.10
1:A:38:A:C4	1:B:38:A:N9	2.19	1.10
1:D:21:A:O2'	1:E:15:G:N1	1.83	1.10
1:A:38:A:C6	1:B:38:A:C5	2.39	1.10
1:A:48:C:C1'	1:B:21:A:N6	2.05	1.10
1:A:29:A:C8	1:B:30:G:OP2	1.92	1.10
1:A:41:U:C5	1:B:40:5MC:N3	2.18	1.10
1:A:34:OMG:N1	1:B:34:OMG:N2	2.00	1.10
1:A:35:A:C6	1:B:35:A:C4	2.39	1.10
1:A:36:A:C6	1:B:36:A:N3	2.20	1.10
1:D:7:U:C4	1:E:53:G:C2'	2.34	1.10
1:A:35:A:C3'	1:B:35:A:H4'	1.45	1.09
1:A:32:OMC:O2'	1:B:32:OMC:HM22	1.50	1.09
1:A:48:C:H5'	1:B:47:U:O3'	1.46	1.09
1:A:48:C:N4	1:B:21:A:O4'	1.84	1.09
1:A:37:YG:C11	1:B:37:YG:N2	2.10	1.09
1:A:13:C:N4	1:B:9:A:H8	1.18	1.09
1:A:35:A:N6	1:B:35:A:N1	2.00	1.09
1:D:7:U:OP2	1:E:53:G:C5	2.06	1.09
1:A:44:A:N7	1:B:43:G:C4	2.20	1.09
1:A:63:C:OP1	1:B:62:A:H2'	1.51	1.09
1:A:31:A:C2	1:B:31:A:C6	2.40	1.09
1:A:35:A:C6	1:B:35:A:N1	2.21	1.09
1:D:46:7MG:N3	1:E:18:G:C5'	2.16	1.09
1:D:61:C:H3'	1:E:64:A:C2	1.88	1.09
1:A:36:A:C4	1:B:36:A:C1'	2.36	1.09
1:A:45:G:O5'	1:B:44:A:C4'	2.00	1.09

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:64:A:OP1	1:B:64:A:H1'	1.52	1.08
1:A:29:A:O5'	1:B:29:A:H5"	1.49	1.08
1:A:58:1MA:HM11	1:B:58:1MA:N3	1.63	1.08
1:A:40:5MC:C2	1:B:40:5MC:N3	2.21	1.08
1:A:18:G:H2'	1:B:57:G:N2	1.68	1.08
1:A:28:C:O5'	1:B:28:C:H5"	1.43	1.08
1:A:37:YG:N1	1:B:37:YG:C5	2.19	1.08
1:A:15:G:C3'	1:B:15:G:N3	2.14	1.08
1:A:42:G:N7	1:B:41:U:N3	2.02	1.08
1:A:35:A:C8	1:B:35:A:N9	2.22	1.08
1:A:63:C:O2'	1:B:52:U:C1'	2.01	1.08
1:A:35:A:N6	1:B:34:OMG:C6	2.18	1.08
1:A:75:C:H5'	1:A:76:A:H5'	1.30	1.08
1:A:37:YG:C12	1:B:37:YG:C6	2.41	1.08
1:A:63:C:H5"	1:B:63:C:H1'	1.33	1.08
1:A:7:U:C3'	1:B:8:U:C5'	2.21	1.08
1:A:38:A:C2	1:B:38:A:C5	2.42	1.08
1:A:59:U:O2	1:B:59:U:C6	2.07	1.08
1:D:46:7MG:N3	1:E:18:G:H5'	1.67	1.08
1:D:24:G:C5'	1:E:20:G:H5'	1.78	1.08
1:A:62:A:O5'	1:B:61:C:N3	1.86	1.08
1:A:39:PSU:C4	1:B:39:PSU:C4	2.42	1.08
1:D:46:7MG:O5'	1:E:17:H2U:H5"	1.50	1.08
1:D:51:G:C8	1:E:63:C:OP1	2.07	1.08
1:B:75:C:H5'	1:B:76:A:H5'	1.30	1.08
1:A:36:A:C6	1:B:36:A:C5	2.41	1.07
1:A:23:A:C5'	1:B:23:A:OP1	2.01	1.07
1:A:37:YG:C14	1:B:36:A:N6	2.15	1.07
1:A:44:A:C6	1:B:44:A:C4	2.42	1.07
1:D:67:A:N1	1:E:54:5MU:C5'	2.17	1.07
1:A:62:A:P	1:B:61:C:C2	2.41	1.07
1:A:16:H2U:H5'	1:B:15:G:O2'	1.54	1.07
1:D:51:G:C6	1:E:64:A:OP2	2.07	1.07
1:A:18:G:O2'	1:B:19:G:N9	1.85	1.07
1:A:61:C:C5'	1:B:60:C:C2'	2.32	1.07
1:A:61:C:O2	1:B:54:5MU:C4	2.07	1.07
1:B:73:A:O4'	1:C:75:C:H5'	1.53	1.07
1:D:45:G:C1'	1:E:17:H2U:O2	2.02	1.07
1:A:39:PSU:C4	1:B:38:A:N6	2.22	1.07
1:A:61:C:H5"	1:B:60:C:C3'	1.82	1.07
1:D:8:U:H5'	1:E:61:C:C2	1.88	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:75:C:H5'	1:D:76:A:H5'	1.30	1.07
1:A:21:A:O4'	1:B:21:A:H5'	1.55	1.06
1:A:37:YG:C14	1:B:37:YG:H142	1.85	1.06
1:A:59:U:N3	1:B:59:U:C5	2.23	1.06
1:A:60:C:H3'	1:B:60:C:OP2	1.53	1.06
1:A:40:5MC:C6	1:B:40:5MC:C6	2.42	1.06
1:A:58:1MA:C6	1:B:58:1MA:C8	2.44	1.06
1:D:48:C:H3'	1:E:61:C:H3'	1.31	1.06
1:A:37:YG:N3	1:B:37:YG:N9	2.03	1.06
1:A:57:G:C5	1:B:57:G:C1'	2.39	1.06
1:D:12:U:N1	1:E:57:G:C1'	2.15	1.06
1:D:8:U:O2	1:E:60:C:C6	2.09	1.06
1:A:21:A:C2	1:B:21:A:C8	2.42	1.06
1:A:14:A:P	1:B:13:C:H3'	1.96	1.06
1:A:31:A:O2'	1:B:32:OMC:H5"	1.25	1.06
1:A:54:5MU:H2'	1:B:57:G:OP2	1.55	1.06
1:D:22:G:O4'	1:E:15:G:N2	1.88	1.06
1:D:57:G:H3'	1:E:5:A:C6	1.35	1.06
1:A:33:U:N3	1:B:35:A:C5'	2.18	1.06
1:A:7:U:O2'	1:B:49:5MC:C5'	1.90	1.06
1:D:19:G:C2'	1:E:8:U:OP2	2.03	1.06
1:D:58:1MA:P	1:E:5:A:C5	2.48	1.06
1:D:67:A:C2	1:E:54:5MU:H5"	1.87	1.06
1:A:32:OMC:C6	1:B:33:U:C5	2.22	1.05
1:A:36:A:C8	1:B:36:A:C8	2.44	1.05
1:A:41:U:H5	1:B:40:5MC:N3	1.50	1.05
1:D:61:C:O5'	1:E:64:A:H2	1.03	1.05
1:A:35:A:C6	1:B:35:A:N3	2.24	1.05
1:A:39:PSU:C2	1:B:39:PSU:C2	2.43	1.05
1:A:34:OMG:C5	1:B:34:OMG:N1	2.17	1.05
1:A:9:A:H8	1:B:9:A:H1'	1.12	1.05
1:D:48:C:C5'	1:E:61:C:C3'	2.33	1.05
1:A:44:A:N7	1:B:43:G:N3	1.79	1.05
1:A:40:5MC:H5"	1:B:40:5MC:O5'	1.56	1.05
1:A:24:G:H1'	1:B:24:G:H2'	1.36	1.05
1:A:32:OMC:N1	1:B:33:U:C6	2.24	1.05
1:A:36:A:OP2	1:B:35:A:H5'	1.26	1.05
1:A:71:G:H1'	1:B:3:G:O6	1.57	1.05
1:A:35:A:C4	1:B:35:A:C4	2.44	1.05
1:A:24:G:H1'	1:B:24:G:C4	1.91	1.05
1:A:17:H2U:C5	1:B:17:H2U:C4	2.35	1.05

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:38:A:H1'	1:B:37:YG:C3	1.86	1.05
1:E:75:C:H5'	1:E:76:A:H5'	1.30	1.05
1:A:36:A:N1	1:B:36:A:N3	2.04	1.05
1:A:38:A:H8	1:B:37:YG:C3'	1.62	1.05
1:A:51:G:N7	1:B:51:G:OP2	1.89	1.05
1:A:36:A:C5	1:B:36:A:N9	2.23	1.05
1:D:62:A:C8	1:E:65:G:O4'	2.10	1.05
1:A:35:A:C5'	1:B:35:A:C4'	2.35	1.04
1:A:37:YG:N7	1:B:37:YG:C8	2.25	1.04
1:A:43:G:N2	1:B:28:C:C1'	2.19	1.04
1:D:53:G:OP1	1:E:3:G:H5"	0.88	1.04
1:A:40:5MC:O2	1:B:31:A:N3	1.88	1.04
1:A:37:YG:H32	1:B:37:YG:H1'	1.09	1.04
1:A:37:YG:C2	1:B:37:YG:C3	2.41	1.04
1:A:37:YG:H132	1:B:37:YG:C14	1.85	1.04
1:A:58:1MA:C6	1:B:58:1MA:N9	2.10	1.04
1:A:40:5MC:C1'	1:B:39:PSU:O4	1.90	1.04
1:D:54:5MU:H5'	1:E:2:C:OP2	0.87	1.04
1:A:44:A:H3'	1:B:44:A:C4'	1.86	1.04
1:A:59:U:O2'	1:B:59:U:C4'	2.04	1.04
1:D:21:A:OP1	1:E:15:G:OP2	1.74	1.04
1:D:8:U:H5'	1:E:61:C:C6	1.85	1.04
1:D:15:G:C4'	1:E:48:C:OP1	2.03	1.04
1:D:46:7MG:P	1:E:17:H2U:H5"	1.96	1.04
1:A:34:OMG:C5	1:B:34:OMG:C6	2.45	1.04
1:A:24:G:H5'	1:B:24:G:P	1.94	1.03
1:A:40:5MC:C4	1:B:40:5MC:C4	2.45	1.03
1:A:38:A:C5	1:B:38:A:C5	2.46	1.03
1:D:58:1MA:CM1	1:E:65:G:N2	2.16	1.03
1:A:28:C:C2'	1:B:29:A:H5'	1.62	1.03
1:A:43:G:O5'	1:B:43:G:H5'	1.58	1.03
1:A:9:A:N6	1:B:9:A:N1	2.04	1.03
1:A:15:G:C4	1:B:15:G:C2	2.46	1.03
1:A:23:A:H4'	1:B:23:A:C3'	1.88	1.03
1:A:23:A:N3	1:B:23:A:C5	2.27	1.03
1:A:35:A:C5	1:B:35:A:N3	2.26	1.03
1:A:38:A:C6	1:B:38:A:C6	2.46	1.03
1:A:6:U:C5'	1:B:6:U:C2'	2.36	1.03
1:A:40:5MC:C2	1:B:40:5MC:C2	2.46	1.03
1:D:51:G:N7	1:E:63:C:OP1	1.91	1.03
1:D:21:A:N3	1:E:59:U:O2	1.92	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:YG:H132	1:B:37:YG:C6	1.93	1.03
1:D:21:A:O2'	1:E:15:G:C2	2.10	1.03
1:A:17:H2U:C2'	1:B:19:G:OP2	2.00	1.03
1:A:37:YG:H31	1:B:37:YG:H1'	1.35	1.03
1:A:15:G:C8	1:B:15:G:C4	2.46	1.03
1:A:37:YG:C6	1:B:37:YG:N7	2.24	1.03
1:D:45:G:N3	1:E:17:H2U:O2'	1.89	1.03
1:D:60:C:O2'	1:E:49:5MC:C2	2.10	1.03
1:D:6:U:OP2	1:E:52:U:H3'	1.53	1.03
1:D:18:G:C4	1:E:67:A:C2	2.44	1.03
1:A:21:A:C4	1:B:21:A:C8	2.46	1.02
1:A:33:U:C2	1:B:33:U:C2	2.47	1.02
1:A:63:C:H3'	1:B:63:C:O2	1.59	1.02
1:A:40:5MC:O4'	1:B:39:PSU:O4	1.76	1.02
1:A:43:G:N2	1:B:28:C:H1'	1.74	1.02
1:A:66:A:H62	1:B:65:G:N2	1.57	1.02
1:A:33:U:H6	1:B:33:U:H3'	1.19	1.02
1:B:73:A:O5'	1:C:75:C:H5"	1.57	1.02
1:A:36:A:OP2	1:B:35:A:C5'	1.91	1.02
1:D:8:U:O4	1:E:58:1MA:O5'	1.72	1.02
1:A:16:H2U:C6	1:B:16:H2U:O4'	1.96	1.02
1:A:31:A:C2	1:B:31:A:C2	2.48	1.02
1:A:35:A:C8	1:B:35:A:C8	2.47	1.02
1:A:29:A:C6	1:B:29:A:C5	2.47	1.02
1:A:39:PSU:O4	1:B:39:PSU:C4	2.11	1.02
1:A:35:A:C5	1:B:35:A:C5	2.47	1.02
1:A:43:G:O6	1:B:42:G:N1	1.73	1.02
1:A:32:OMC:C2	1:B:33:U:N1	2.28	1.02
1:A:8:U:C4	1:B:8:U:C2	2.47	1.02
1:A:33:U:H3	1:B:35:A:H5"	1.12	1.02
1:A:31:A:C6	1:B:31:A:N6	2.28	1.02
1:A:37:YG:C6	1:B:37:YG:C4	2.46	1.02
1:D:7:U:C2'	1:E:53:G:N2	2.23	1.02
1:D:12:U:N1	1:E:57:G:H1'	1.42	1.02
1:D:21:A:N6	1:E:60:C:O3'	1.91	1.02
1:A:48:C:H1'	1:B:21:A:N6	1.20	1.02
1:A:43:G:C3'	1:B:43:G:O4'	2.07	1.02
1:D:45:G:C4	1:E:17:H2U:H2'	1.95	1.02
1:D:46:7MG:C2	1:E:18:G:C5'	2.43	1.02
1:A:30:G:C6	1:B:30:G:C5	2.48	1.01
1:A:45:G:O5'	1:B:44:A:C3'	2.08	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:18:G:H2'	1:B:57:G:H22	1.22	1.01
1:A:14:A:O5'	1:B:13:C:C2	2.06	1.01
1:A:35:A:C2	1:B:35:A:C2	2.47	1.01
1:A:35:A:H3'	1:B:35:A:C2'	1.61	1.01
1:A:39:PSU:C1'	1:B:38:A:C6	2.23	1.01
1:D:48:C:H5'	1:E:61:C:O3'	1.58	1.01
1:A:32:OMC:C2	1:B:32:OMC:C2	2.48	1.01
1:A:35:A:C3'	1:B:35:A:O4'	1.86	1.01
1:A:36:A:C4	1:B:36:A:C4	2.48	1.01
1:A:40:5MC:C5'	1:B:40:5MC:H6	1.65	1.01
1:A:14:A:P	1:B:8:U:O4	2.18	1.01
1:A:18:G:C8	1:B:18:G:H1'	1.95	1.01
1:A:23:A:H1'	1:B:23:A:N9	1.74	1.01
1:D:60:C:H2'	1:E:49:5MC:N3	1.70	1.01
1:A:40:5MC:H5"	1:B:40:5MC:H5'	1.40	1.01
1:A:64:A:OP2	1:B:64:A:N9	1.94	1.01
1:A:66:A:N6	1:B:65:G:H22	1.58	1.01
1:B:73:A:C4'	1:C:75:C:H5'	1.90	1.01
1:A:23:A:H1'	1:B:23:A:C8	1.96	1.00
1:A:9:A:C3'	1:B:45:G:O2'	1.68	1.00
1:D:7:U:C2	1:E:54:5MU:O4'	2.04	1.00
1:D:23:A:H3'	1:E:20:G:C8	1.95	1.00
1:A:11:C:H1'	1:B:10:2MG:HM22	1.40	1.00
1:B:72:C:C6	1:C:75:C:H1'	1.82	1.00
1:A:18:G:C6	1:B:18:G:N2	2.30	1.00
1:A:34:OMG:C5	1:B:34:OMG:C4	2.50	1.00
1:A:70:C:H4'	1:B:69:U:C4'	1.90	1.00
1:A:37:YG:C8	1:B:37:YG:C8	2.49	1.00
1:A:68:U:C2'	1:B:67:A:O2'	2.10	1.00
1:D:48:C:C3'	1:E:61:C:C3'	2.33	1.00
1:A:36:A:C5	1:B:36:A:C5	2.49	1.00
1:A:38:A:C8	1:B:38:A:C8	2.49	1.00
1:A:40:5MC:HM53	1:B:40:5MC:HN42	1.23	1.00
1:A:35:A:C6	1:B:35:A:C6	2.50	1.00
1:A:70:C:C5'	1:B:69:U:H3'	1.89	1.00
1:A:13:C:O5'	1:B:12:U:H6	1.39	1.00
1:A:30:G:N1	1:B:30:G:C6	2.29	1.00
1:A:41:U:H5"	1:B:41:U:H5'	1.03	1.00
1:A:18:G:H5"	1:B:19:G:OP1	1.21	1.00
1:A:37:YG:C13	1:B:37:YG:N1	2.25	1.00
1:A:37:YG:H101	1:B:37:YG:C11	1.95	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:38:A:C4	1:B:38:A:C5	2.50	1.00
1:A:65:G:N2	1:B:50:U:H4'	1.15	1.00
1:A:60:C:C5	1:B:59:U:OP1	2.15	1.00
1:A:17:H2U:H52	1:B:17:H2U:C4	1.92	0.99
1:A:31:A:C6	1:B:31:A:C6	2.49	0.99
1:D:22:G:H1'	1:E:48:C:H42	1.17	0.99
1:A:36:A:C8	1:B:36:A:N9	2.31	0.99
1:A:50:U:H2'	1:B:51:G:OP1	1.61	0.99
1:A:71:G:H4'	1:B:71:G:C5	1.96	0.99
1:A:48:C:O2'	1:B:48:C:H6	1.30	0.99
1:A:18:G:H5'	1:B:60:C:N4	1.77	0.99
1:D:21:A:C2	1:E:60:C:C6	2.49	0.99
1:A:33:U:O4	1:B:35:A:C5'	2.10	0.99
1:A:35:A:N7	1:B:35:A:C8	2.30	0.99
1:D:7:U:C2'	1:E:53:G:C2	2.44	0.99
1:D:19:G:H2'	1:E:8:U:OP2	1.62	0.99
1:D:18:G:N7	1:E:67:A:C8	2.28	0.99
1:A:38:A:C4	1:B:38:A:N7	2.26	0.99
1:A:14:A:C5'	1:B:13:C:H2'	1.90	0.99
1:D:58:1MA:OP2	1:E:5:A:C6	2.15	0.99
1:A:34:OMG:C2	1:B:34:OMG:C2	2.50	0.99
1:A:36:A:H2'	1:B:36:A:C2'	1.93	0.99
1:A:37:YG:H142	1:B:36:A:H61	1.24	0.98
1:A:34:OMG:C8	1:B:34:OMG:N9	2.30	0.98
1:A:18:G:H5'	1:B:60:C:C4	1.97	0.98
1:D:51:G:O6	1:E:64:A:OP2	1.79	0.98
1:A:16:H2U:H5"	1:B:15:G:O3'	1.03	0.98
1:A:39:PSU:O4'	1:B:38:A:N9	1.96	0.98
1:A:60:C:C6	1:B:59:U:OP1	2.15	0.98
1:A:40:5MC:HM51	1:B:40:5MC:CM5	1.91	0.98
1:A:31:A:HO2'	1:B:32:OMC:C5'	1.63	0.98
1:A:6:U:P	1:B:7:U:C6	2.56	0.98
1:C:73:A:O2'	1:C:74:C:H5'	1.63	0.98
1:D:14:A:H2	1:E:48:C:H5	1.12	0.98
1:D:21:A:C4'	1:E:15:G:C5	2.33	0.98
1:D:7:U:H2'	1:E:53:G:H1	1.24	0.98
1:A:18:G:O6	1:B:57:G:N9	1.66	0.98
1:A:23:A:C1'	1:B:23:A:C8	2.47	0.98
1:A:38:A:C2	1:B:38:A:N3	2.31	0.98
1:D:73:A:O2'	1:D:74:C:H5'	1.63	0.98
1:A:41:U:C2'	1:B:41:U:O2	2.08	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:24:G:H5'	1:E:20:G:C5'	1.50	0.98
1:A:32:OMC:C2	1:B:33:U:C6	2.52	0.98
1:A:33:U:H3	1:B:35:A:C5'	1.74	0.98
1:D:20:G:O5'	1:E:8:U:H5	1.17	0.98
1:A:35:A:C2	1:B:35:A:N3	2.31	0.97
1:A:38:A:C4	1:B:38:A:C4	2.51	0.97
1:A:38:A:N3	1:B:38:A:N9	2.09	0.97
1:A:43:G:C6	1:B:43:G:C2	2.52	0.97
1:D:62:A:C8	1:E:65:G:H8	1.82	0.97
1:A:37:YG:N2	1:B:37:YG:C2	2.30	0.97
1:A:63:C:H3'	1:B:51:G:N2	1.78	0.97
1:A:9:A:C8	1:B:9:A:C4	2.51	0.97
1:A:16:H2U:H61	1:B:16:H2U:O4'	1.58	0.97
1:E:73:A:O2'	1:E:74:C:H5'	1.63	0.97
1:A:16:H2U:H5"	1:B:15:G:C3'	1.88	0.97
1:A:35:A:C4	1:B:35:A:N3	2.33	0.97
1:A:42:G:N2	1:B:29:A:C1'	2.14	0.97
1:D:10:2MG:C8	1:E:17:H2U:H62	1.98	0.97
1:D:62:A:O5'	1:E:65:G:O4'	1.82	0.97
1:A:73:A:O2'	1:A:74:C:H5'	1.63	0.97
1:A:69:U:N1	1:B:67:A:H2'	1.60	0.97
1:D:62:A:N7	1:E:65:G:H8	1.61	0.97
1:A:23:A:H5'	1:B:23:A:P	2.05	0.97
1:A:46:7MG:N1	1:B:9:A:C2	2.32	0.97
1:A:41:U:C6	1:B:41:U:C4	2.51	0.97
1:D:58:1MA:H2	1:E:49:5MC:C4	1.77	0.97
1:A:46:7MG:H1'	1:B:46:7MG:H5"	1.00	0.97
1:A:63:C:OP1	1:B:63:C:N1	1.96	0.97
1:A:45:G:H21	1:B:26:M2G:CM2	1.77	0.97
1:A:31:A:C4'	1:B:31:A:H5"	1.94	0.97
1:D:48:C:C5'	1:E:61:C:H3'	1.91	0.97
1:A:15:G:H5'	1:B:14:A:N3	1.15	0.97
1:A:41:U:C6	1:B:41:U:C5	2.52	0.97
1:A:40:5MC:C5'	1:B:40:5MC:C5'	2.43	0.97
1:B:73:A:OP2	1:C:75:C:H3'	1.63	0.97
1:D:45:G:C2	1:E:17:H2U:O2'	2.17	0.97
1:D:22:G:C1'	1:E:48:C:H42	1.78	0.97
1:D:21:A:H1'	1:E:59:U:O2	1.65	0.97
1:A:11:C:H1'	1:B:10:2MG:CM2	1.94	0.97
1:A:5:A:N6	1:B:66:A:C6	2.31	0.97
1:D:21:A:C5'	1:E:15:G:N7	2.26	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:6:U:OP2	1:E:52:U:C3'	2.00	0.97
1:A:36:A:C8	1:B:36:A:C1'	2.48	0.97
1:A:16:H2U:C2	1:B:16:H2U:O4'	1.94	0.96
1:A:35:A:C4	1:B:35:A:H1'	1.99	0.96
1:A:21:A:N6	1:B:46:7MG:H2'	1.76	0.96
1:A:35:A:C2'	1:B:35:A:C2'	2.42	0.96
1:A:39:PSU:O4	1:B:38:A:N6	1.98	0.96
1:D:7:U:C2	1:E:53:G:N2	2.33	0.96
1:A:6:U:H5'	1:B:6:U:H2'	1.45	0.96
1:A:42:G:O5'	1:B:42:G:O4'	1.81	0.96
1:A:6:U:OP2	1:B:7:U:C5	2.18	0.96
1:A:38:A:C5	1:B:38:A:C8	2.50	0.96
1:A:14:A:O4'	1:B:13:C:O2	1.83	0.96
1:A:38:A:C2	1:B:38:A:C2	2.53	0.96
1:A:43:G:C5	1:B:43:G:C4	2.54	0.96
1:A:9:A:H5'	1:B:46:7MG:O5'	1.65	0.96
1:D:51:G:C6	1:E:64:A:P	2.58	0.96
1:A:14:A:C4	1:B:14:A:C6	2.52	0.96
1:A:24:G:H5'	1:B:24:G:O5'	0.78	0.96
1:A:39:PSU:H1'	1:B:38:A:C4	1.91	0.96
1:A:62:A:C5'	1:B:61:C:C2	2.46	0.96
1:A:66:A:N1	1:B:49:5MC:O2'	1.96	0.96
1:A:37:YG:C24	1:B:37:YG:H242	1.96	0.96
1:D:23:A:H5"	1:E:20:G:H2'	1.46	0.96
1:A:31:A:O2'	1:B:31:A:O3'	1.69	0.96
1:A:33:U:C4	1:B:33:U:C4	2.53	0.96
1:A:31:A:C5	1:B:31:A:C5	2.54	0.95
1:A:22:G:N7	1:B:46:7MG:C6	2.34	0.95
1:A:70:C:O2'	1:B:70:C:C6	2.15	0.95
1:D:13:C:C4	1:E:58:1MA:O4'	2.18	0.95
1:A:7:U:C1'	1:B:49:5MC:H5'	1.82	0.95
1:A:37:YG:C6	1:B:37:YG:C6	2.54	0.95
1:A:28:C:P	1:B:29:A:OP2	2.24	0.95
1:D:12:U:C6	1:E:19:G:C2	2.47	0.95
1:A:36:A:C6	1:B:36:A:C6	2.55	0.95
1:A:33:U:O2	1:B:35:A:N9	1.98	0.95
1:A:61:C:C5'	1:B:60:C:H3'	1.96	0.95
1:D:58:1MA:OP1	1:E:5:A:C8	2.20	0.95
1:D:58:1MA:C2	1:E:66:A:N1	2.19	0.95
1:A:23:A:O2'	1:B:24:G:H8	1.48	0.95
1:A:35:A:C5'	1:B:35:A:O5'	2.14	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:72:C:C6	1:C:75:C:C1'	2.50	0.95
1:D:21:A:C5'	1:E:15:G:C8	2.49	0.95
1:D:46:7MG:N2	1:E:18:G:C4'	2.30	0.95
1:D:58:1MA:C2	1:E:65:G:C6	2.55	0.95
1:D:60:C:N1	1:E:49:5MC:C4	1.90	0.95
1:A:38:A:N1	1:B:38:A:C5	2.34	0.95
1:A:39:PSU:H1'	1:B:38:A:N1	1.80	0.95
1:A:8:U:H1'	1:B:21:A:C6	2.01	0.95
1:A:6:U:OP2	1:B:7:U:H5	1.49	0.95
1:A:42:G:N2	1:B:29:A:H1'	1.78	0.95
1:A:59:U:H2'	1:B:59:U:C5'	1.94	0.95
1:A:37:YG:N3	1:B:37:YG:C4	2.34	0.95
1:A:31:A:C5'	1:B:31:A:H5"	1.97	0.95
1:A:33:U:H3'	1:B:34:OMG:H3'	1.48	0.95
1:A:58:1MA:CM1	1:B:18:G:C2	2.38	0.94
1:A:41:U:C5	1:B:41:U:C5	2.55	0.94
1:D:61:C:OP2	1:E:51:G:C5	2.19	0.94
1:A:37:YG:H103	1:B:37:YG:C11	1.91	0.94
1:A:24:G:N2	1:B:10:2MG:HN1	1.66	0.94
1:A:41:U:C5'	1:B:41:U:H5'	1.97	0.94
1:B:73:A:C5'	1:C:75:C:H5'	1.89	0.94
1:D:57:G:O6	1:E:67:A:H2'	1.67	0.94
1:A:33:U:C6	1:B:33:U:H3'	2.01	0.94
1:A:35:A:C8	1:B:35:A:C1'	2.49	0.94
1:A:13:C:N3	1:B:9:A:N7	2.14	0.94
1:D:56:C:H4'	1:E:70:C:C5	2.01	0.94
1:B:75:C:H5'	1:B:76:A:C5'	1.98	0.94
1:A:33:U:C6	1:B:33:U:C6	2.56	0.94
1:A:35:A:C1'	1:B:35:A:C1'	2.43	0.94
1:A:14:A:P	1:B:13:C:C2'	2.55	0.94
1:D:46:7MG:C2	1:E:18:G:H5'	2.02	0.94
1:D:11:C:H2'	1:E:19:G:H1	1.32	0.94
1:D:63:C:H41	1:E:63:C:H2'	1.29	0.94
1:A:40:5MC:HM51	1:B:40:5MC:HM52	0.96	0.94
1:A:43:G:H3'	1:B:43:G:O4'	1.22	0.94
1:A:60:C:H6	1:B:59:U:P	1.89	0.94
1:A:42:G:C6	1:B:42:G:C2	2.55	0.94
1:A:15:G:C8	1:B:15:G:C5	2.55	0.94
1:A:42:G:C5'	1:B:42:G:O4'	2.13	0.94
1:A:40:5MC:CM5	1:B:40:5MC:CM5	2.45	0.94
1:A:61:C:C5'	1:B:60:C:C3'	2.43	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:9:A:H5'	1:B:46:7MG:C4'	1.97	0.94
1:A:23:A:HO2'	1:B:24:G:H8	1.10	0.94
1:D:8:U:C5'	1:E:61:C:C6	2.31	0.94
1:A:18:G:H8	1:B:18:G:H1'	1.33	0.94
1:A:41:U:N1	1:B:41:U:C2	2.35	0.94
1:D:13:C:C2'	1:E:58:1MA:C5'	2.43	0.94
1:E:29:A:C2'	1:E:30:G:H5'	1.98	0.94
1:A:32:OMC:C4	1:B:32:OMC:C4	2.55	0.94
1:A:34:OMG:C8	1:B:34:OMG:C5	2.49	0.94
1:A:37:YG:C13	1:B:37:YG:C6	2.50	0.94
1:A:41:U:O5'	1:B:41:U:C6	2.21	0.94
1:A:64:A:P	1:B:64:A:C1'	2.55	0.94
1:D:25:C:C5	1:E:19:G:O2'	2.20	0.94
1:D:75:C:H5'	1:D:76:A:C5'	1.98	0.94
1:A:34:OMG:C4	1:B:34:OMG:C4	2.55	0.93
1:A:35:A:C4'	1:B:35:A:C4'	2.46	0.93
1:A:23:A:H62	1:B:45:G:N2	1.66	0.93
1:D:58:1MA:HM11	1:E:65:G:H22	1.30	0.93
1:A:37:YG:H141	1:B:36:A:N6	1.80	0.93
1:A:18:G:C8	1:B:18:G:N3	2.35	0.93
1:A:28:C:C5	1:B:28:C:C6	2.56	0.93
1:A:51:G:N2	1:B:52:U:H6	1.66	0.93
1:A:6:U:C5'	1:B:6:U:H2'	1.98	0.93
1:D:7:U:C4	1:E:53:G:H2'	1.99	0.93
1:A:44:A:N6	1:B:44:A:C5	2.37	0.93
1:D:13:C:H2'	1:E:58:1MA:H5"	0.94	0.93
1:A:15:G:OP1	1:B:15:G:P	2.26	0.93
1:A:44:A:C8	1:B:43:G:C1'	2.51	0.93
1:D:58:1MA:C2	1:E:49:5MC:N4	2.35	0.93
1:C:29:A:C2'	1:C:30:G:H5'	1.99	0.93
1:A:13:C:P	1:B:12:U:H3'	2.09	0.93
1:A:72:C:O3'	1:B:1:G:N1	1.67	0.93
1:A:41:U:C6	1:B:41:U:C6	2.56	0.93
1:D:18:G:N7	1:E:67:A:N9	1.93	0.93
1:A:34:OMG:N9	1:B:34:OMG:C4	2.36	0.93
1:C:75:C:H5'	1:C:76:A:C5'	1.98	0.93
1:D:61:C:H5'	1:E:65:G:N2	1.77	0.93
1:A:40:5MC:P	1:B:40:5MC:CM5	2.50	0.93
1:D:46:7MG:N2	1:E:18:G:C5'	2.32	0.93
1:D:7:U:N1	1:E:53:G:N2	2.06	0.93
1:D:7:U:C6	1:E:53:G:H2'	2.03	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:63:C:C3’	1:B:63:C:O2	2.16	0.93
1:A:33:U:C5	1:B:33:U:C5	2.57	0.93
1:A:14:A:H4’	1:B:14:A:O4’	1.66	0.93
1:B:29:A:C2’	1:B:30:G:H5’	1.99	0.93
1:A:6:U:P	1:B:7:U:H6	1.91	0.93
1:A:75:C:H5’	1:A:76:A:C5’	1.98	0.93
1:A:40:5MC:C5	1:B:40:5MC:C5	2.43	0.92
1:E:75:C:H5’	1:E:76:A:C5’	1.98	0.92
1:A:21:A:O4’	1:B:21:A:C5’	2.15	0.92
1:A:35:A:C6	1:B:35:A:C5	2.56	0.92
1:A:31:A:C4	1:B:31:A:C4	2.56	0.92
1:A:45:G:H3’	1:B:44:A:C3’	1.95	0.92
1:A:71:G:C5’	1:B:70:C:H5	1.77	0.92
1:A:6:U:C5’	1:B:6:U:C3’	2.46	0.92
1:D:60:C:H6	1:E:49:5MC:N4	1.42	0.92
1:C:33:U:H5”	1:C:34:OMG:OP2	1.69	0.92
1:D:29:A:C2’	1:D:30:G:H5’	1.98	0.92
1:E:33:U:H5”	1:E:34:OMG:OP2	1.69	0.92
1:A:36:A:N6	1:B:36:A:N1	2.16	0.92
1:D:13:C:N4	1:E:18:G:C2	2.35	0.92
1:A:28:C:H2’	1:B:29:A:H4’	1.49	0.92
1:A:35:A:C4’	1:B:35:A:O4’	2.18	0.92
1:D:56:C:H5’	1:E:70:C:C5	2.05	0.92
1:A:18:G:C1’	1:B:19:G:O4’	2.17	0.92
1:A:26:M2G:CM1	1:B:27:C:H1’	1.91	0.92
1:A:43:G:P	1:B:43:G:H5’	2.09	0.92
1:D:56:C:C2	1:E:68:U:O2	2.23	0.92
1:A:29:A:C2’	1:A:30:G:H5’	1.99	0.91
1:A:37:YG:C4	1:B:37:YG:C4	2.56	0.91
1:A:70:C:C2’	1:B:70:C:C5	2.53	0.91
1:A:29:A:O5’	1:B:29:A:C5’	2.17	0.91
1:A:45:G:O5’	1:B:44:A:O3’	1.86	0.91
1:A:5:A:N6	1:B:66:A:N1	2.18	0.91
1:A:36:A:N6	1:B:36:A:C5	2.37	0.91
1:A:70:C:C4’	1:B:69:U:C4’	2.39	0.91
1:B:1:G:H21	1:C:76:A:H4’	1.09	0.91
1:A:36:A:C2’	1:B:36:A:C2’	2.47	0.91
1:A:23:A:C4	1:B:23:A:C5	2.58	0.91
1:A:34:OMG:C5	1:B:34:OMG:C5	2.59	0.91
1:A:61:C:H5”	1:B:60:C:C2’	1.98	0.91
1:A:32:OMC:C6	1:B:32:OMC:C6	2.59	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:48:C:H5'	1:E:61:C:C3'	1.97	0.91
1:D:57:G:OP2	1:E:69:U:N3	2.01	0.91
1:A:40:5MC:C5'	1:B:39:PSU:O2'	2.09	0.91
1:A:70:C:O3'	1:B:70:C:OP2	1.88	0.91
1:D:21:A:H2'	1:E:59:U:H3	1.31	0.91
1:D:33:U:H5"	1:D:34:OMG:OP2	1.69	0.91
1:A:60:C:O2	1:B:59:U:C4	2.24	0.91
1:D:53:G:P	1:E:3:G:C5'	2.52	0.91
1:D:5:A:H2	1:E:54:5MU:OP1	1.51	0.91
1:D:61:C:OP2	1:E:51:G:C6	2.24	0.91
1:A:15:G:N7	1:B:15:G:C6	2.38	0.91
1:A:23:A:C4	1:B:23:A:N7	2.38	0.91
1:A:30:G:C6	1:B:30:G:C6	2.57	0.91
1:A:64:A:C6	1:B:50:U:H2'	2.05	0.91
1:A:50:U:C5	1:B:50:U:O5'	2.24	0.91
1:A:37:YG:C5	1:B:37:YG:C5	2.51	0.91
1:A:41:U:C6	1:B:40:5MC:O2	2.23	0.91
1:A:63:C:C5	1:B:51:G:C6	2.58	0.91
1:A:8:U:O5'	1:B:8:U:O3'	1.88	0.91
1:D:58:1MA:N3	1:E:49:5MC:C4	2.36	0.91
1:A:14:A:P	1:B:13:C:C3'	2.58	0.90
1:A:63:C:H6	1:B:62:A:N1	1.68	0.90
1:A:8:U:C1'	1:B:21:A:H61	1.85	0.90
1:A:13:C:H41	1:B:9:A:C2'	1.81	0.90
1:A:23:A:O2'	1:B:23:A:C2'	2.19	0.90
1:A:34:OMG:C6	1:B:34:OMG:C6	2.58	0.90
1:A:8:U:H1'	1:B:21:A:H61	1.36	0.90
1:A:37:YG:H32	1:B:37:YG:C3	2.01	0.90
1:A:44:A:N7	1:B:43:G:C2'	2.23	0.90
1:A:5:A:C3'	1:B:7:U:C5	2.55	0.90
1:D:62:A:C8	1:E:64:A:C2'	2.54	0.90
1:A:1:G:H22	1:B:1:G:H8	1.09	0.90
1:A:30:G:N2	1:B:30:G:C2	2.40	0.90
1:D:5:A:C8	1:E:53:G:H5'	2.06	0.90
1:A:11:C:H2'	1:B:11:C:O4'	1.72	0.90
1:A:17:H2U:H2'	1:A:17:H2U:O2	1.71	0.90
1:A:23:A:C5'	1:B:23:A:P	2.60	0.90
1:A:70:C:C2	1:B:68:U:C4	2.59	0.90
1:D:17:H2U:O2	1:D:17:H2U:H2'	1.71	0.90
1:D:8:U:C5'	1:E:61:C:N1	2.30	0.90
1:A:32:OMC:C5	1:B:32:OMC:C5	2.60	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:34:OMG:N7	1:B:34:OMG:C6	2.39	0.90
1:A:48:C:H4'	1:B:47:U:H3'	1.54	0.90
1:A:58:1MA:HM12	1:B:58:1MA:C2	2.07	0.90
1:A:44:A:C8	1:B:43:G:O2'	1.78	0.90
1:D:60:C:C1'	1:E:49:5MC:C4	2.54	0.90
1:A:15:G:H2'	1:B:15:G:C2	2.07	0.90
1:A:40:5MC:CM5	1:B:40:5MC:N4	2.35	0.90
1:A:35:A:C5'	1:B:35:A:C5'	2.50	0.90
1:A:41:U:C4	1:B:41:U:C4	2.60	0.90
1:A:58:1MA:CM1	1:B:58:1MA:C2	2.54	0.90
1:A:24:G:H22	1:B:10:2MG:HN2	0.96	0.89
1:A:63:C:C6	1:B:62:A:N1	2.40	0.89
1:A:64:A:H1'	1:B:51:G:O2'	0.97	0.89
1:A:5:A:H3'	1:B:7:U:H5	1.11	0.89
1:D:45:G:N9	1:E:17:H2U:P	2.39	0.89
1:C:17:H2U:H2'	1:C:17:H2U:O2	1.71	0.89
1:A:18:G:C5	1:B:18:G:C2	2.60	0.89
1:A:12:U:O2	1:B:24:G:N1	2.05	0.89
1:D:54:5MU:OP2	1:E:3:G:OP2	1.78	0.89
1:D:6:U:O2'	1:E:55:PSU:N1	2.04	0.89
1:A:31:A:N3	1:B:31:A:C4	2.41	0.89
1:A:35:A:C4'	1:B:35:A:H4'	2.02	0.89
1:C:2:C:H42	1:C:71:G:H1	1.20	0.89
1:A:40:5MC:C4'	1:B:39:PSU:H2'	2.03	0.89
1:A:45:G:P	1:B:44:A:C4'	2.61	0.89
1:A:24:G:N2	1:B:10:2MG:N2	2.07	0.89
1:A:24:G:C1'	1:B:24:G:C2'	2.45	0.89
1:A:35:A:H2'	1:B:35:A:C2'	2.00	0.89
1:A:28:C:C4	1:B:28:C:C2	2.61	0.89
1:A:38:A:H8	1:B:37:YG:H3'	0.90	0.89
1:D:51:G:O6	1:E:63:C:O3'	1.90	0.89
1:D:58:1MA:HM11	1:E:65:G:C2	2.01	0.89
1:A:36:A:C2	1:B:36:A:C2	2.57	0.89
1:A:36:A:C4	1:B:36:A:N9	2.41	0.89
1:A:41:U:O5'	1:B:41:U:H6	1.54	0.89
1:D:56:C:C5'	1:E:70:C:C5	2.56	0.89
1:A:30:G:H5'	1:B:30:G:O5'	1.73	0.89
1:A:35:A:N7	1:B:35:A:C4	2.39	0.89
1:D:23:A:H5"	1:E:20:G:N3	1.86	0.89
1:D:46:7MG:N3	1:E:18:G:H5"	1.86	0.89
1:A:50:U:OP2	1:B:47:U:O3'	1.89	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:9:A:C5'	1:B:46:7MG:O5'	2.21	0.88
1:A:37:YG:C3	1:B:37:YG:H31	2.02	0.88
1:D:23:A:O5'	1:E:20:G:C4	1.98	0.88
1:A:45:G:OP2	1:B:44:A:C5'	2.21	0.88
1:A:8:U:O4	1:B:8:U:C2	2.26	0.88
1:A:14:A:OP2	1:B:8:U:C4	2.26	0.88
1:D:24:G:OP1	1:E:20:G:O2'	1.75	0.88
1:D:57:G:O6	1:E:67:A:C2'	2.19	0.88
1:D:58:1MA:N1	1:E:65:G:C6	2.41	0.88
1:A:39:PSU:O4	1:B:39:PSU:N3	2.07	0.88
1:D:13:C:C4	1:E:18:G:N3	2.20	0.88
1:A:46:7MG:C1'	1:B:46:7MG:C5'	2.35	0.88
1:A:16:H2U:OP2	1:B:15:G:N3	2.06	0.88
1:A:43:G:H2'	1:B:43:G:H1'	1.53	0.88
1:A:14:A:H5"	1:B:8:U:O4	1.72	0.88
1:A:18:G:C5'	1:B:60:C:N4	2.36	0.88
1:D:46:7MG:P	1:E:17:H2U:C5'	2.60	0.88
1:D:51:G:C6	1:E:63:C:O3'	2.26	0.88
1:D:21:A:C2	1:E:59:U:H2'	2.08	0.88
1:A:35:A:N6	1:B:34:OMG:N1	2.08	0.88
1:D:63:C:N4	1:E:63:C:H2'	1.85	0.88
1:A:36:A:N7	1:B:36:A:N9	2.22	0.88
1:A:35:A:C8	1:B:35:A:H1'	2.07	0.88
1:B:1:G:H21	1:C:76:A:C4'	1.69	0.88
1:D:51:G:O6	1:E:64:A:P	2.32	0.88
1:E:2:C:H42	1:E:71:G:H1	1.20	0.88
1:A:23:A:N6	1:B:45:G:N2	2.22	0.88
1:A:21:A:C2	1:B:21:A:C4	2.61	0.88
1:D:17:H2U:OP2	1:E:47:U:C2'	2.17	0.88
1:D:58:1MA:C4'	1:E:7:U:C5	2.54	0.88
1:A:11:C:H2'	1:B:11:C:H6	1.35	0.87
1:A:16:H2U:H61	1:B:16:H2U:N1	1.88	0.87
1:A:31:A:HO2'	1:B:32:OMC:H5"	1.05	0.87
1:D:16:H2U:H5'	1:E:47:U:O2'	1.73	0.87
1:D:60:C:H2'	1:E:49:5MC:HN41	1.31	0.87
1:A:13:C:N1	1:B:13:C:C4	2.42	0.87
1:A:14:A:O5'	1:B:13:C:C2'	2.22	0.87
1:A:44:A:C3'	1:B:44:A:H4'	2.03	0.87
1:A:15:G:C5'	1:B:14:A:H2'	2.04	0.87
1:A:66:A:N1	1:B:49:5MC:C2'	2.37	0.87
1:D:45:G:C1'	1:E:17:H2U:H2'	2.05	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:14:A:N1	1:E:59:U:C6	2.40	0.87
1:D:51:G:N1	1:E:63:C:O3'	2.07	0.87
1:A:39:PSU:C6	1:B:39:PSU:C6	2.45	0.87
1:A:9:A:C8	1:B:9:A:C1'	2.58	0.87
1:A:42:G:C5	1:B:42:G:C4	2.63	0.87
1:D:51:G:C6	1:E:63:C:H5"	2.09	0.87
1:A:20:G:H5"	1:A:21:A:OP2	1.74	0.87
1:A:28:C:O5'	1:B:29:A:OP2	1.90	0.87
1:A:30:G:C2	1:B:30:G:C2	2.62	0.87
1:A:23:A:N6	1:B:45:G:H22	1.73	0.87
1:D:54:5MU:P	1:E:2:C:H3'	2.13	0.87
1:A:27:C:C5	1:B:27:C:C2	2.63	0.87
1:A:16:H2U:H61	1:B:16:H2U:C2'	2.03	0.87
1:A:34:OMG:N1	1:B:34:OMG:C2	2.38	0.87
1:E:17:H2U:H2'	1:E:17:H2U:O2	1.71	0.87
1:A:15:G:C4	1:B:15:G:N2	2.42	0.87
1:A:23:A:H1'	1:B:23:A:C2'	2.03	0.87
1:A:64:A:OP1	1:B:64:A:C1'	2.22	0.87
1:B:73:A:C4'	1:C:75:C:C5'	2.49	0.87
1:D:25:C:C6	1:E:19:G:O2'	2.28	0.87
1:A:17:H2U:C5'	1:B:17:H2U:OP1	2.23	0.87
1:A:72:C:H1'	1:B:2:C:H5	1.05	0.87
1:D:20:G:H5"	1:D:21:A:OP2	1.74	0.87
1:D:67:A:N3	1:E:54:5MU:H4'	1.89	0.87
1:A:5:A:O3'	1:B:6:U:C2'	2.21	0.86
1:A:36:A:H62	1:B:35:A:H61	1.23	0.86
1:A:46:7MG:O3'	1:B:46:7MG:C5'	2.22	0.86
1:A:56:C:O5'	1:B:56:C:O2'	1.91	0.86
1:A:30:G:C5	1:B:30:G:N7	2.42	0.86
1:A:9:A:N7	1:B:45:G:N2	2.21	0.86
1:B:72:C:C5	1:C:75:C:O2'	2.28	0.86
1:D:29:A:H2'	1:D:30:G:H5'	1.57	0.86
1:A:58:1MA:H1'	1:B:59:U:OP1	1.76	0.86
1:A:44:A:H3'	1:B:44:A:C5'	2.04	0.86
1:A:24:G:O6	1:B:45:G:N2	2.09	0.86
1:A:62:A:OP1	1:B:61:C:H2'	1.75	0.86
1:A:2:C:H42	1:A:71:G:H1	1.20	0.86
1:A:18:G:O2'	1:B:57:G:N2	2.06	0.86
1:D:21:A:C1'	1:E:59:U:O2	2.23	0.86
1:D:51:G:N7	1:E:63:C:P	2.48	0.86
1:D:58:1MA:C4'	1:E:7:U:H5	1.87	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:46:7MG:N2	1:E:18:G:H5'	1.90	0.86
1:E:29:A:H2'	1:E:30:G:H5'	1.57	0.86
1:A:35:A:N1	1:B:35:A:N3	2.23	0.86
1:D:7:U:C6	1:E:54:5MU:C6	2.64	0.86
1:C:20:G:H5"	1:C:21:A:OP2	1.74	0.86
1:D:62:A:C8	1:E:65:G:C8	2.63	0.86
1:A:57:G:C6	1:B:57:G:C4	2.60	0.86
1:A:64:A:OP2	1:B:64:A:C1'	2.22	0.86
1:A:70:C:O2'	1:B:69:U:H2'	1.76	0.86
1:D:73:A:C2'	1:D:74:C:H5'	2.06	0.86
1:A:61:C:O2	1:B:54:5MU:N3	2.07	0.86
1:D:7:U:O2'	1:E:53:G:N2	2.07	0.86
1:A:18:G:C5	1:B:18:G:N2	2.44	0.85
1:A:28:C:O5'	1:B:28:C:C5'	2.23	0.85
1:E:73:A:C2'	1:E:74:C:H5'	2.06	0.85
1:A:18:G:N7	1:B:18:G:C2	2.43	0.85
1:A:36:A:C3'	1:B:36:A:O2'	2.24	0.85
1:A:37:YG:H131	1:B:37:YG:H142	0.88	0.85
1:A:21:A:H2	1:B:21:A:C5	1.93	0.85
1:A:50:U:C2'	1:B:51:G:OP1	2.23	0.85
1:A:36:A:H2'	1:B:36:A:C1'	2.03	0.85
1:D:17:H2U:P	1:E:47:U:H2'	2.15	0.85
1:D:51:G:C5	1:E:63:C:H5"	2.12	0.85
1:A:73:A:C2'	1:A:74:C:H5'	2.06	0.85
1:D:7:U:C4	1:E:53:G:O2'	2.29	0.85
1:D:49:5MC:H3'	1:E:62:A:C5'	1.82	0.85
1:D:37:YG:H2'	1:D:38:A:O4'	1.77	0.85
1:A:25:C:C3'	1:B:26:M2G:H3'	2.07	0.85
1:A:40:5MC:C2	1:B:31:A:H2	1.56	0.85
1:C:73:A:C2'	1:C:74:C:H5'	2.06	0.85
1:C:37:YG:H2'	1:C:38:A:O4'	1.77	0.85
1:A:37:YG:O23	1:B:37:YG:C24	2.23	0.85
1:A:41:U:H2'	1:B:41:U:O2	1.11	0.85
1:A:45:G:C2	1:B:45:G:C4	2.64	0.85
1:A:34:OMG:C8	1:B:34:OMG:C8	2.65	0.85
1:A:40:5MC:H5'	1:B:39:PSU:HO2'	1.06	0.85
1:A:40:5MC:N4	1:B:30:G:O6	2.10	0.85
1:A:15:G:C5	1:B:15:G:C2	2.64	0.85
1:B:2:C:H42	1:B:71:G:H1	1.20	0.85
1:A:45:G:C3'	1:B:44:A:O3'	2.20	0.85
1:D:8:U:OP2	1:E:18:G:O6	1.93	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:24:G:O6	1:E:19:G:O5'	1.95	0.85
1:A:8:U:C1'	1:B:21:A:N6	2.38	0.85
1:A:61:C:H2'	1:A:62:A:H8	1.42	0.85
1:A:42:G:C6	1:B:42:G:N1	2.44	0.85
1:A:7:U:OP1	1:B:8:U:O5'	1.92	0.85
1:A:13:C:N4	1:B:9:A:N9	2.25	0.84
1:A:13:C:O5'	1:B:12:U:H3'	1.77	0.84
1:A:30:G:C5	1:B:30:G:C5	2.65	0.84
1:A:43:G:N2	1:B:28:C:C2'	2.39	0.84
1:D:11:C:H2'	1:E:19:G:N1	1.88	0.84
1:D:45:G:OP1	1:E:16:H2U:O2'	1.95	0.84
1:A:16:H2U:OP1	1:B:16:H2U:OP2	1.95	0.84
1:A:44:A:C4	1:B:44:A:H1'	2.12	0.84
1:A:4:G:O6	1:B:67:A:C6	2.19	0.84
1:A:13:C:H41	1:B:9:A:H2'	1.04	0.84
1:A:23:A:H1'	1:B:23:A:C3'	2.06	0.84
1:A:28:C:N4	1:B:28:C:C4	2.46	0.84
1:A:29:A:H2'	1:A:30:G:H5'	1.58	0.84
1:A:41:U:C5'	1:B:41:U:C5'	2.54	0.84
1:A:9:A:C6	1:B:9:A:H2	1.95	0.84
1:A:24:G:C1'	1:B:24:G:C4	2.59	0.84
1:A:58:1MA:N1	1:B:58:1MA:C4	2.45	0.84
1:A:60:C:C3'	1:B:60:C:OP2	2.24	0.84
1:A:63:C:OP2	1:B:63:C:C4	2.30	0.84
1:A:37:YG:C8	1:B:36:A:C2'	2.03	0.84
1:A:36:A:C6	1:B:36:A:N1	2.43	0.84
1:A:63:C:H1'	1:B:52:U:C2'	2.07	0.84
1:D:12:U:C2	1:E:57:G:C1'	2.58	0.84
1:E:37:YG:H2'	1:E:38:A:O4'	1.77	0.84
1:A:46:7MG:C2'	1:B:46:7MG:H5"	2.08	0.84
1:A:15:G:H5"	1:B:14:A:H2'	1.56	0.84
1:A:70:C:O2'	1:B:69:U:C2	2.21	0.84
1:A:11:C:C1'	1:B:10:2MG:C2'	2.27	0.84
1:A:15:G:C5	1:B:15:G:N1	2.44	0.84
1:D:2:C:H42	1:D:71:G:H1	1.20	0.84
1:A:32:OMC:C2	1:B:32:OMC:N3	2.46	0.84
1:A:9:A:H5'	1:B:46:7MG:O4'	1.77	0.84
1:D:55:PSU:O4	1:E:67:A:N6	2.09	0.84
1:D:10:2MG:C8	1:E:17:H2U:C6	2.61	0.84
1:D:5:A:N1	1:E:54:5MU:OP1	2.11	0.84
1:A:14:A:OP2	1:B:8:U:O4	1.94	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:40:5MC:HM53	1:B:40:5MC:N4	1.92	0.84
1:A:40:5MC:C4	1:B:31:A:N1	2.45	0.84
1:A:13:C:C4	1:B:9:A:H2'	2.12	0.84
1:D:51:G:C6	1:E:63:C:C3'	2.60	0.84
1:A:61:C:H5'	1:B:58:1MA:N3	1.92	0.84
1:C:61:C:H2'	1:C:62:A:H8	1.42	0.84
1:A:43:G:C6	1:B:43:G:C4	2.66	0.84
1:A:9:A:N7	1:B:9:A:C2	2.32	0.84
1:A:15:G:C8	1:B:15:G:C2	2.66	0.84
1:C:14:A:C2'	1:C:15:G:H5'	2.08	0.84
1:A:45:G:H21	1:B:26:M2G:HM23	1.41	0.83
1:D:61:C:H2'	1:D:62:A:H8	1.42	0.83
1:B:14:A:C2'	1:B:15:G:H5'	2.08	0.83
1:A:36:A:C1'	1:B:36:A:C1'	2.44	0.83
1:A:39:PSU:N1	1:B:39:PSU:C2	2.46	0.83
1:D:54:5MU:H5'	1:E:2:C:P	2.18	0.83
1:E:14:A:C2'	1:E:15:G:H5'	2.08	0.83
1:A:21:A:N1	1:B:21:A:N7	2.26	0.83
1:A:31:A:C8	1:B:31:A:C8	2.66	0.83
1:C:29:A:H2'	1:C:30:G:H5'	1.58	0.83
1:A:13:C:C5'	1:B:12:U:C6	2.60	0.83
1:A:26:M2G:HM13	1:B:27:C:H1'	1.58	0.83
1:D:21:A:C4'	1:E:15:G:C8	2.60	0.83
1:A:43:G:C6	1:B:43:G:N3	2.47	0.83
1:A:7:U:C6	1:B:49:5MC:C5'	2.56	0.83
1:D:5:A:C2	1:E:54:5MU:P	2.70	0.83
1:A:37:YG:C13	1:B:36:A:H61	1.92	0.83
1:A:22:G:C8	1:B:46:7MG:O6	2.31	0.83
1:A:35:A:C5	1:B:35:A:N9	2.46	0.83
1:A:37:YG:C2	1:B:37:YG:C2	2.64	0.83
1:A:39:PSU:N3	1:B:39:PSU:O2	2.08	0.83
1:A:22:G:N7	1:B:46:7MG:O6	2.12	0.83
1:D:14:A:C2'	1:D:15:G:H5'	2.08	0.83
1:D:12:U:C6	1:E:19:G:N1	2.47	0.83
1:A:55:PSU:O2'	1:B:56:C:C2	2.31	0.83
1:A:6:U:P	1:B:7:U:C5	2.72	0.83
1:A:70:C:C3'	1:B:69:U:H3'	2.08	0.83
1:A:48:C:C5'	1:B:47:U:O3'	2.24	0.83
1:A:63:C:C3'	1:B:51:G:N2	2.42	0.83
1:B:61:C:H2'	1:B:62:A:H8	1.42	0.83
1:A:61:C:N1	1:B:61:C:N4	2.21	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:21:A:C1'	1:B:21:A:C3'	1.95	0.82
1:A:49:5MC:HM51	1:B:49:5MC:O5'	1.79	0.82
1:A:6:U:P	1:B:7:U:P	2.76	0.82
1:D:46:7MG:OP2	1:E:16:H2U:C1'	2.26	0.82
1:A:23:A:O2'	1:B:23:A:O3'	1.86	0.82
1:A:29:A:C6	1:B:29:A:C4	2.68	0.82
1:A:39:PSU:C4	1:B:38:A:C6	2.67	0.82
1:A:11:C:C1'	1:B:10:2MG:CM2	2.56	0.82
1:A:40:5MC:N1	1:B:40:5MC:N3	2.23	0.82
1:A:64:A:N1	1:B:50:U:C2'	2.42	0.82
1:D:58:1MA:P	1:E:5:A:C8	2.71	0.82
1:A:29:A:N7	1:B:29:A:C8	2.47	0.82
1:D:20:G:C4	1:E:15:G:C6	2.59	0.82
1:D:62:A:OP2	1:E:64:A:C2'	2.27	0.82
1:A:10:2MG:HN2	1:B:26:M2G:H1'	1.42	0.82
1:A:58:1MA:CM1	1:B:18:G:C4	2.51	0.82
1:A:18:G:H1'	1:B:19:G:C4'	2.06	0.82
1:A:37:YG:C2	1:B:36:A:N1	2.37	0.82
1:A:44:A:H3'	1:B:44:A:H4'	1.56	0.82
1:D:10:2MG:OP2	1:E:18:G:OP1	1.97	0.82
1:A:52:U:O2	1:B:53:G:OP2	1.97	0.82
1:A:63:C:C2'	1:B:52:U:N1	2.23	0.82
1:B:72:C:H6	1:C:75:C:H1'	1.44	0.82
1:B:72:C:N1	1:C:75:C:O2'	2.13	0.82
1:D:54:5MU:OP2	1:E:2:C:H3'	1.79	0.82
1:D:20:G:C6	1:E:48:C:H1'	2.14	0.82
1:A:32:OMC:N1	1:B:32:OMC:C2	2.47	0.82
1:A:41:U:C6	1:B:41:U:C2	2.68	0.82
1:A:52:U:O4'	1:B:52:U:OP1	1.98	0.82
1:A:35:A:C3'	1:B:35:A:HO2'	1.89	0.82
1:B:73:A:H5'	1:C:75:C:H5'	1.47	0.82
1:A:23:A:N9	1:B:23:A:C8	2.48	0.82
1:A:63:C:P	1:B:63:C:C6	2.73	0.82
1:D:20:G:C5	1:E:15:G:O6	2.33	0.82
1:D:8:U:OP2	1:E:18:G:C6	2.32	0.82
1:A:31:A:C5	1:B:31:A:N7	2.48	0.81
1:A:37:YG:N1	1:B:37:YG:C6	2.46	0.81
1:D:56:C:C6	1:E:69:U:C5	2.32	0.81
1:D:58:1MA:C4	1:E:65:G:O6	2.33	0.81
1:A:17:H2U:N1	1:B:17:H2U:C2	2.42	0.81
1:A:34:OMG:N7	1:B:34:OMG:C4	2.33	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:57:G:C6	1:B:57:G:H1'	2.15	0.81
1:D:58:1MA:C2	1:E:65:G:O6	2.34	0.81
1:A:41:U:C2	1:B:41:U:C2	2.69	0.81
1:A:61:C:C4'	1:B:58:1MA:N1	2.38	0.81
1:A:40:5MC:C5'	1:B:40:5MC:O5'	2.28	0.81
1:D:51:G:C6	1:E:63:C:C5'	2.63	0.81
1:D:14:A:H62	1:E:59:U:H3'	1.01	0.81
1:E:61:C:H2'	1:E:62:A:H8	1.42	0.81
1:A:36:A:H2'	1:B:36:A:HO2'	1.45	0.81
1:A:37:YG:N9	1:B:37:YG:C8	2.49	0.81
1:D:58:1MA:OP2	1:E:5:A:N6	2.12	0.81
1:A:36:A:C5	1:B:36:A:N3	2.43	0.81
1:D:26:M2G:CM2	1:E:17:H2U:N1	2.43	0.81
1:D:64:A:N1	1:E:63:C:H5"	1.96	0.81
1:A:23:A:C2'	1:B:23:A:C3'	2.42	0.81
1:A:29:A:N3	1:B:29:A:H2'	1.45	0.81
1:A:40:5MC:CM5	1:B:40:5MC:HN42	1.92	0.81
1:A:42:G:H5"	1:B:42:G:H5'	1.61	0.81
1:A:63:C:H1'	1:B:52:U:C1'	1.91	0.81
1:A:36:A:H2'	1:B:36:A:H1'	1.62	0.81
1:A:39:PSU:C5	1:B:39:PSU:C4	2.68	0.81
1:A:42:G:N7	1:B:42:G:C5	2.48	0.81
1:A:15:G:N7	1:B:8:U:C2	2.49	0.81
1:A:37:YG:H132	1:B:37:YG:O6	1.79	0.81
1:A:59:U:C2'	1:B:59:U:O5'	2.29	0.81
1:B:72:C:C6	1:C:75:C:C2'	2.63	0.81
1:D:13:C:C2	1:E:58:1MA:C4'	2.64	0.81
1:D:14:A:N6	1:E:59:U:C6	2.48	0.81
1:A:12:U:C2	1:B:12:U:C4	2.68	0.81
1:A:35:A:N7	1:B:35:A:N9	2.28	0.81
1:A:5:A:N3	1:B:6:U:O2	1.95	0.81
1:A:22:G:O5'	1:B:22:G:OP2	1.98	0.81
1:B:37:YG:H1'	1:B:37:YG:H31	1.63	0.81
1:D:62:A:N7	1:E:65:G:C8	2.46	0.81
1:A:15:G:P	1:B:14:A:C3'	2.46	0.80
1:A:35:A:N6	1:B:34:OMG:O6	2.11	0.80
1:A:37:YG:H31	1:A:37:YG:H1'	1.62	0.80
1:D:22:G:H4'	1:E:15:G:N2	1.87	0.80
1:A:4:G:O6	1:B:67:A:N7	2.13	0.80
1:A:37:YG:N1	1:B:37:YG:C2	2.49	0.80
1:A:15:G:N9	1:B:15:G:C2	2.48	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:A:N7	1:B:35:A:C5	2.50	0.80
1:A:27:C:C4	1:B:27:C:C2	2.70	0.80
1:A:37:YG:H131	1:B:37:YG:C13	2.11	0.80
1:A:60:C:O2	1:B:59:U:C5	2.35	0.80
1:D:10:2MG:H8	1:E:17:H2U:H62	1.44	0.80
1:D:14:A:C6	1:E:59:U:H6	1.99	0.80
1:A:33:U:C6	1:B:33:U:N1	2.50	0.80
1:D:37:YG:H1'	1:D:37:YG:H31	1.62	0.80
1:A:14:A:OP1	1:B:14:A:OP2	2.00	0.80
1:A:37:YG:C12	1:B:37:YG:C12	2.65	0.80
1:A:61:C:C4'	1:B:58:1MA:C2	2.63	0.80
1:B:73:A:O4'	1:C:75:C:C5'	2.28	0.80
1:A:58:1MA:HM12	1:B:58:1MA:N9	1.90	0.80
1:A:44:A:P	1:B:43:G:O2'	2.39	0.80
1:D:20:G:O6	1:E:48:C:C2'	2.29	0.80
1:A:33:U:C5	1:B:33:U:C6	2.69	0.80
1:A:3:G:H4'	1:B:3:G:OP2	1.82	0.80
1:D:18:G:N7	1:E:66:A:C4	2.37	0.80
1:D:61:C:H3'	1:E:64:A:N3	1.97	0.80
1:E:37:YG:H1'	1:E:37:YG:H31	1.62	0.80
1:A:30:G:C4	1:B:30:G:C4	2.70	0.80
1:A:37:YG:C19	1:B:37:YG:H192	2.12	0.80
1:A:23:A:C2	1:B:23:A:N6	2.50	0.80
1:A:15:G:H5'	1:B:14:A:C5	2.05	0.79
1:A:63:C:H1'	1:B:52:U:H2'	1.64	0.79
1:A:14:A:C5'	1:B:8:U:O4	2.29	0.79
1:A:15:G:OP2	1:B:14:A:C8	2.06	0.79
1:A:37:YG:C5	1:B:37:YG:C4	2.68	0.79
1:A:70:C:C4	1:B:68:U:C5	2.69	0.79
1:A:37:YG:C8	1:B:37:YG:H8	1.98	0.79
1:D:46:7MG:OP2	1:E:16:H2U:H1'	1.81	0.79
1:D:46:7MG:HN22	1:E:18:G:H5'	1.47	0.79
1:C:37:YG:H1'	1:C:37:YG:H31	1.62	0.79
1:A:43:G:N1	1:B:43:G:C2	2.50	0.79
1:A:29:A:H8	1:B:29:A:C5'	1.96	0.79
1:A:68:U:C6	1:B:67:A:O2'	2.36	0.79
1:D:61:C:OP1	1:E:51:G:N9	2.15	0.79
1:A:30:G:C5	1:B:30:G:C8	2.71	0.79
1:A:31:A:H2'	1:B:32:OMC:O4'	1.82	0.79
1:A:35:A:C5'	1:B:35:A:O4'	2.31	0.79
1:A:43:G:O6	1:B:42:G:C6	2.36	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:51:G:N2	1:B:52:U:O5'	2.10	0.79
1:A:33:U:O4	1:B:35:A:H5"	1.62	0.79
1:B:73:A:O5'	1:C:76:A:P	2.31	0.79
1:D:12:U:H3'	1:E:57:G:H8	1.46	0.79
1:D:15:G:C3'	1:E:48:C:OP1	2.30	0.79
1:D:14:A:H61	1:E:59:U:C3'	1.94	0.79
1:A:32:OMC:HM21	1:B:32:OMC:HM22	1.62	0.79
1:A:34:OMG:O6	1:B:34:OMG:N1	2.15	0.79
1:D:54:5MU:C5'	1:E:2:C:P	2.71	0.79
1:D:56:C:H5	1:E:68:U:C6	2.00	0.79
1:A:57:G:O6	1:B:57:G:C2	2.35	0.79
1:D:18:G:C4	1:E:67:A:N3	2.40	0.79
1:A:7:U:C2'	1:B:49:5MC:H5"	1.72	0.79
1:A:40:5MC:O4'	1:B:39:PSU:H2'	1.83	0.79
1:A:41:U:H6	1:B:40:5MC:O2	1.66	0.79
1:A:60:C:C2	1:B:59:U:H5	2.00	0.78
1:A:63:C:H5	1:B:62:A:H61	1.25	0.78
1:A:55:PSU:H5"	1:B:55:PSU:C3'	2.13	0.78
1:A:17:H2U:H61	1:B:17:H2U:N1	1.98	0.78
1:A:7:U:H3'	1:B:8:U:H5"	0.81	0.78
1:A:14:A:C4'	1:B:14:A:O4'	2.29	0.78
1:D:21:A:H2'	1:E:59:U:N3	1.99	0.78
1:A:40:5MC:C4	1:B:30:G:O6	2.35	0.78
1:A:4:G:H2'	1:B:5:A:N6	1.96	0.78
1:A:31:A:N1	1:B:31:A:N6	2.30	0.78
1:A:33:U:O2'	1:B:34:OMG:C5	2.37	0.78
1:A:28:C:C2'	1:B:29:A:O4'	2.18	0.78
1:A:48:C:H1'	1:B:21:A:H62	0.72	0.78
1:A:32:OMC:HM23	1:B:32:OMC:HM22	1.64	0.78
1:D:46:7MG:HN22	1:E:18:G:C4'	1.97	0.78
1:D:49:5MC:C3'	1:E:62:A:O4'	2.28	0.78
1:A:29:A:N6	1:B:29:A:C5	2.52	0.78
1:A:40:5MC:C6	1:B:40:5MC:N3	2.52	0.78
1:A:59:U:C2'	1:B:59:U:C4'	2.60	0.78
1:A:15:G:N7	1:B:15:G:N1	2.32	0.78
1:B:72:C:H5'	1:C:74:C:C4	2.19	0.78
1:A:2:C:C4	1:B:1:G:OP3	2.36	0.78
1:A:42:G:C8	1:B:42:G:N9	2.51	0.78
1:A:17:H2U:H52	1:B:17:H2U:O4	1.82	0.78
1:A:23:A:C1'	1:B:24:G:C8	2.65	0.78
1:A:29:A:C5	1:B:29:A:C4	2.72	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:44:A:C8	1:B:44:A:O4'	2.36	0.78
1:A:46:7MG:C2	1:B:9:A:N3	2.51	0.78
1:D:45:G:O5'	1:E:17:H2U:OP2	2.02	0.78
1:D:7:U:O4	1:E:53:G:O2'	2.02	0.78
1:E:26:M2G:HM22	1:E:44:A:C2	2.19	0.78
1:A:29:A:H8	1:B:29:A:H5"	1.49	0.78
1:A:14:A:N9	1:B:14:A:C5	2.50	0.78
1:A:24:G:C4	1:B:24:G:C6	2.71	0.78
1:A:30:G:C2	1:B:30:G:C4	2.72	0.78
1:D:46:7MG:HN22	1:E:18:G:C5'	1.97	0.77
1:A:15:G:N9	1:B:15:G:N3	2.33	0.77
1:A:33:U:H3'	1:B:34:OMG:C3'	2.15	0.77
1:A:26:M2G:HM22	1:A:44:A:C2	2.19	0.77
1:A:9:A:H8	1:B:9:A:C1'	1.92	0.77
1:A:15:G:C8	1:B:15:G:C6	2.72	0.77
1:A:29:A:O2'	1:B:30:G:H5"	1.76	0.77
1:D:56:C:H5'	1:E:70:C:H5	1.48	0.77
1:C:26:M2G:HM22	1:C:44:A:C2	2.19	0.77
1:A:37:YG:H193	1:B:37:YG:H192	1.64	0.77
1:A:57:G:N7	1:B:57:G:O4'	2.16	0.77
1:D:18:G:N3	1:E:7:U:C4	2.53	0.77
1:A:23:A:H1'	1:B:23:A:C1'	2.15	0.77
1:A:42:G:N2	1:B:29:A:C2'	2.47	0.77
1:D:14:A:N6	1:E:59:U:C4'	2.41	0.77
1:D:45:G:N9	1:E:17:H2U:O2	2.16	0.77
1:B:1:G:H22	1:C:76:A:H4'	0.98	0.77
1:A:56:C:N4	1:B:19:G:N2	2.25	0.77
1:A:9:A:C6	1:B:9:A:N1	2.50	0.77
1:A:29:A:C8	1:B:29:A:C5'	2.65	0.77
1:D:62:A:O5'	1:E:65:G:C4'	2.32	0.77
1:A:56:C:C4	1:B:19:G:C2	2.70	0.77
1:A:32:OMC:C6	1:B:32:OMC:C5	2.73	0.77
1:B:61:C:H2'	1:B:62:A:C8	2.20	0.77
1:D:15:G:O3'	1:E:48:C:OP1	2.03	0.77
1:A:36:A:C4	1:B:36:A:N3	2.53	0.77
1:D:64:A:N1	1:E:63:C:C5'	2.40	0.77
1:A:17:H2U:C6	1:B:17:H2U:C5	2.63	0.77
1:A:18:G:N7	1:B:18:G:C4	2.52	0.77
1:A:33:U:C3'	1:B:34:OMG:P	2.53	0.77
1:D:14:A:C2	1:E:48:C:C4	2.72	0.77
1:D:26:M2G:HM22	1:D:44:A:C2	2.19	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:17:H2U:P	1:E:47:U:C2'	2.73	0.77
1:D:50:U:C5'	1:E:62:A:H5'	2.12	0.77
1:A:35:A:C4	1:B:35:A:C1'	2.64	0.77
1:A:31:A:N9	1:B:31:A:C8	2.53	0.76
1:A:44:A:H3'	1:B:44:A:H5'	1.65	0.76
1:A:23:A:N1	1:B:23:A:N6	2.33	0.76
1:D:46:7MG:N2	1:E:18:G:H4'	1.99	0.76
1:A:32:OMC:C5	1:B:32:OMC:C4	2.72	0.76
1:A:39:PSU:H1'	1:B:38:A:C2	2.19	0.76
1:A:44:A:N6	1:B:44:A:C4	2.53	0.76
1:D:14:A:C8	1:E:58:1MA:H4'	2.20	0.76
1:D:23:A:H5"	1:E:20:G:C2'	2.15	0.76
1:A:55:PSU:H5"	1:B:55:PSU:H3'	1.66	0.76
1:A:28:C:C5	1:B:28:C:N1	2.53	0.76
1:D:22:G:O2'	1:E:21:A:H1'	1.85	0.76
1:D:61:C:OP1	1:E:51:G:C8	2.38	0.76
1:A:70:C:C4'	1:B:69:U:C1'	2.58	0.76
1:A:5:A:N6	1:B:66:A:C2	2.54	0.76
1:A:18:G:C1'	1:B:19:G:C4'	2.63	0.76
1:B:73:A:C2'	1:B:74:C:H5'	2.06	0.76
1:D:62:A:C4	1:E:64:A:C3'	2.65	0.76
1:A:35:A:H5"	1:B:35:A:O4'	1.85	0.76
1:D:60:C:C2'	1:E:49:5MC:N4	2.42	0.76
1:D:39:PSU:H3'	1:D:40:5MC:HM51	1.67	0.76
1:A:6:U:C5'	1:B:7:U:H6	1.98	0.76
1:A:46:7MG:N1	1:B:9:A:H2	1.82	0.76
1:A:59:U:C2'	1:B:59:U:O4'	2.34	0.76
1:A:46:7MG:N2	1:B:9:A:C4	2.49	0.76
1:D:56:C:H4'	1:E:70:C:C6	2.21	0.76
1:D:58:1MA:H4'	1:E:7:U:H5	1.49	0.76
1:B:73:A:O5'	1:C:75:C:C5'	2.23	0.76
1:A:63:C:C5'	1:B:63:C:H1'	2.13	0.76
1:C:39:PSU:H3'	1:C:40:5MC:HM51	1.67	0.76
1:A:62:A:P	1:B:61:C:N3	2.49	0.75
1:D:13:C:C1'	1:E:58:1MA:H5'	2.16	0.75
1:A:13:C:C5	1:B:9:A:OP2	2.38	0.75
1:A:4:G:N7	1:B:67:A:N6	2.15	0.75
1:A:61:C:H2'	1:A:62:A:C8	2.20	0.75
1:A:9:A:C3'	1:B:10:2MG:OP1	2.30	0.75
1:D:46:7MG:C2	1:E:18:G:H5"	2.19	0.75
1:D:18:G:C6	1:E:66:A:C6	2.73	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:75:C:C5'	1:A:76:A:H5'	2.15	0.75
1:C:61:C:H2'	1:C:62:A:C8	2.20	0.75
1:A:30:G:N3	1:B:30:G:H2'	2.01	0.75
1:A:59:U:H2'	1:B:59:U:O4'	1.86	0.75
1:A:17:H2U:H5"	1:B:17:H2U:OP1	1.86	0.75
1:A:28:C:OP2	1:B:29:A:OP2	2.04	0.75
1:A:41:U:C5	1:B:41:U:N3	2.54	0.75
1:D:19:G:OP1	1:E:49:5MC:H5'	1.86	0.75
1:D:57:G:O3'	1:E:5:A:C5	2.22	0.75
1:C:14:A:C3'	1:C:15:G:H5'	2.16	0.75
1:A:37:YG:H5"	1:B:36:A:HO2'	1.48	0.75
1:A:41:U:H5'	1:B:40:5MC:HO2'	1.48	0.75
1:B:14:A:C3'	1:B:15:G:H5'	2.15	0.75
1:B:1:G:H21	1:C:76:A:C3'	1.98	0.75
1:A:46:7MG:N2	1:B:9:A:C2	2.52	0.75
1:A:7:U:H2'	1:B:49:5MC:H5'	0.76	0.75
1:D:23:A:C5'	1:E:20:G:N9	2.48	0.75
1:E:14:A:C3'	1:E:15:G:H5'	2.15	0.75
1:D:21:A:O2'	1:E:15:G:C5	2.39	0.75
1:A:23:A:O2'	1:B:24:G:O5'	1.99	0.75
1:A:7:U:C1'	1:B:49:5MC:C5'	2.45	0.75
1:A:9:A:H3'	1:B:10:2MG:P	2.27	0.75
1:A:55:PSU:O2'	1:B:57:G:C8	2.39	0.75
1:D:13:C:C6	1:E:58:1MA:C5'	2.60	0.75
1:D:61:C:H2'	1:D:62:A:C8	2.20	0.75
1:A:24:G:N2	1:B:10:2MG:N1	2.28	0.75
1:A:43:G:O6	1:B:43:G:C6	2.40	0.75
1:A:39:PSU:C5	1:B:38:A:C6	2.47	0.75
1:A:66:A:H2	1:B:49:5MC:HO2'	1.26	0.75
1:A:51:G:C5	1:B:51:G:OP2	2.39	0.75
1:D:56:C:N3	1:E:68:U:O2	2.19	0.75
1:E:39:PSU:H3'	1:E:40:5MC:HM51	1.67	0.75
1:A:32:OMC:O2'	1:B:32:OMC:CM2	2.33	0.75
1:A:22:G:C2	1:B:22:G:C5	2.75	0.75
1:B:75:C:C5'	1:B:76:A:H5'	2.15	0.75
1:A:41:U:C5	1:B:41:U:O4	2.40	0.74
1:A:32:OMC:N3	1:B:33:U:C2	2.36	0.74
1:A:46:7MG:C2	1:B:46:7MG:C5	2.75	0.74
1:D:62:A:C8	1:E:64:A:O3'	2.17	0.74
1:A:40:5MC:H5'	1:B:39:PSU:C3'	2.14	0.74
1:A:15:G:C5'	1:B:14:A:C5	2.65	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:8:U:C5	1:B:9:A:OP2	2.34	0.74
1:D:26:M2G:HM22	1:D:44:A:N1	2.03	0.74
1:E:26:M2G:HM22	1:E:44:A:N1	2.02	0.74
1:A:28:C:C2'	1:B:29:A:H4'	2.11	0.74
1:A:41:U:C6	1:B:40:5MC:C2	2.75	0.74
1:A:69:U:O4	1:B:67:A:O5'	2.06	0.74
1:A:45:G:H1'	1:B:44:A:N3	2.01	0.74
1:D:14:A:C3'	1:D:15:G:H5'	2.16	0.74
1:A:13:C:H4'	1:B:12:U:H2'	1.70	0.74
1:A:9:A:O2'	1:B:10:2MG:N7	2.20	0.74
1:A:13:C:C4'	1:B:12:U:C2	2.65	0.74
1:A:27:C:C5	1:B:27:C:N1	2.56	0.74
1:A:34:OMG:N3	1:B:34:OMG:C2	2.55	0.74
1:A:68:U:C1'	1:B:67:A:O2'	2.35	0.74
1:C:75:C:C5'	1:C:76:A:H5'	2.15	0.74
1:C:44:A:C2'	1:C:45:G:H5'	2.18	0.74
1:A:37:YG:H31	1:A:37:YG:C1'	2.18	0.74
1:A:29:A:C5	1:B:29:A:C8	2.76	0.74
1:D:14:A:C6	1:E:59:U:C6	2.75	0.74
1:A:50:U:C1'	1:B:51:G:OP1	2.36	0.74
1:A:51:G:N2	1:B:52:U:C6	2.55	0.74
1:D:58:1MA:C6	1:E:65:G:C6	2.75	0.74
1:A:42:G:N7	1:B:42:G:C4	2.56	0.74
1:A:7:U:C6	1:B:49:5MC:H5'	2.10	0.74
1:A:59:U:C2	1:B:59:U:C5	2.68	0.74
1:A:44:A:C6	1:B:44:A:N3	2.56	0.74
1:E:37:YG:H31	1:E:37:YG:C1'	2.18	0.74
1:C:26:M2G:HM22	1:C:44:A:N1	2.02	0.74
1:A:23:A:H2'	1:A:24:G:C8	2.23	0.73
1:A:33:U:C3'	1:B:34:OMG:H3'	2.18	0.73
1:A:47:U:P	1:B:46:7MG:OP1	2.41	0.73
1:B:29:A:H2'	1:B:30:G:H5'	1.57	0.73
1:C:23:A:H2'	1:C:24:G:C8	2.23	0.73
1:A:11:C:O2'	1:B:11:C:C4'	2.35	0.73
1:A:26:M2G:N1	1:B:44:A:C2	2.55	0.73
1:A:29:A:N6	1:B:29:A:C6	2.55	0.73
1:D:45:G:C8	1:E:17:H2U:OP1	2.41	0.73
1:D:8:U:OP2	1:E:58:1MA:N7	2.16	0.73
1:A:13:C:C4'	1:B:12:U:C6	2.59	0.73
1:D:44:A:C2'	1:D:45:G:H5'	2.18	0.73
1:A:42:G:C8	1:B:42:G:C4	2.76	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:71:G:O3'	1:B:71:G:C6	2.40	0.73
1:D:26:M2G:HM23	1:E:17:H2U:N1	1.99	0.73
1:A:44:A:H2'	1:A:45:G:H5'	1.71	0.73
1:A:34:OMG:N9	1:B:34:OMG:N3	2.36	0.73
1:D:58:1MA:N3	1:E:65:G:O6	2.22	0.73
1:A:26:M2G:HM22	1:A:44:A:N1	2.03	0.73
1:A:29:A:P	1:B:29:A:H5'	2.28	0.73
1:A:72:C:O3'	1:B:1:G:C2	2.40	0.73
1:A:13:C:C6	1:B:13:C:N4	2.55	0.73
1:B:2:C:O2	1:B:2:C:H2'	1.89	0.73
1:A:40:5MC:C5'	1:B:39:PSU:C3'	2.47	0.73
1:D:56:C:C2	1:E:68:U:C2	2.77	0.73
1:D:60:C:C2'	1:E:65:G:N1	2.52	0.73
1:A:13:C:P	1:B:12:U:H6	2.12	0.73
1:D:51:G:N1	1:E:64:A:OP1	2.15	0.73
1:D:56:C:C4'	1:E:70:C:C5	2.70	0.73
1:D:18:G:N2	1:E:7:U:O4	2.22	0.73
1:A:44:A:C2'	1:A:45:G:H5'	2.18	0.73
1:B:23:A:H2'	1:B:24:G:C8	2.23	0.73
1:A:40:5MC:C4	1:B:39:PSU:O2	2.19	0.73
1:D:23:A:H3'	1:E:20:G:N9	1.99	0.73
1:E:44:A:H2'	1:E:45:G:H5'	1.71	0.73
1:A:24:G:H1'	1:B:24:G:C2'	2.15	0.73
1:A:30:G:N3	1:B:30:G:C4	2.57	0.73
1:A:63:C:C4	1:B:51:G:C5	2.77	0.73
1:A:71:G:O5'	1:B:70:C:C5	2.42	0.73
1:D:8:U:O2	1:E:60:C:H6	1.69	0.73
1:C:37:YG:C1'	1:C:37:YG:H31	2.18	0.73
1:A:17:H2U:H61	1:B:17:H2U:C5	2.19	0.73
1:A:41:U:C4	1:B:41:U:N3	2.57	0.73
1:A:14:A:C5	1:B:14:A:N6	2.57	0.73
1:A:33:U:N1	1:B:33:U:C2	2.57	0.73
1:D:16:H2U:C5'	1:E:47:U:O2'	2.37	0.73
1:E:44:A:C2'	1:E:45:G:H5'	2.18	0.73
1:A:18:G:C2'	1:B:19:G:O4'	2.36	0.72
1:A:38:A:C2	1:B:38:A:C6	2.74	0.72
1:A:41:U:P	1:B:41:U:O5'	2.35	0.72
1:D:21:A:N3	1:E:59:U:C2	2.56	0.72
1:A:23:A:H2'	1:B:24:G:N7	2.02	0.72
1:D:37:YG:H31	1:D:37:YG:C1'	2.18	0.72
1:A:31:A:H62	1:B:32:OMC:HN41	1.37	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:60:C:C6	1:B:59:U:P	2.75	0.72
1:D:45:G:N3	1:E:17:H2U:C2	2.49	0.72
1:D:50:U:H6	1:E:62:A:H5"	1.54	0.72
1:E:23:A:H2'	1:E:24:G:C8	2.23	0.72
1:B:37:YG:C1'	1:B:37:YG:H31	2.18	0.72
1:A:51:G:H1	1:B:52:U:H5	1.35	0.72
1:D:8:U:O2	1:E:60:C:H5	1.64	0.72
1:A:37:YG:H31	1:B:37:YG:C1'	2.00	0.72
1:A:44:A:C3'	1:B:44:A:C4'	2.60	0.72
1:A:35:A:H8	1:B:34:OMG:C2'	2.02	0.72
1:D:18:G:N2	1:E:7:U:C4	2.58	0.72
1:C:44:A:H2'	1:C:45:G:H5'	1.71	0.72
1:A:30:G:H5'	1:B:30:G:P	2.29	0.72
1:A:37:YG:C13	1:B:37:YG:C13	2.66	0.72
1:A:52:U:C1'	1:B:52:U:OP1	2.38	0.72
1:E:14:A:H2'	1:E:15:G:H5'	1.72	0.72
1:D:14:A:C2	1:E:48:C:H5	1.91	0.72
1:A:11:C:C1'	1:B:10:2MG:HM22	2.19	0.72
1:D:44:A:H2'	1:D:45:G:H5'	1.71	0.72
1:D:64:A:N6	1:E:63:C:O2'	2.13	0.72
1:D:75:C:C5'	1:D:76:A:H5'	2.15	0.72
1:E:75:C:C5'	1:E:76:A:H5'	2.15	0.72
1:A:32:OMC:O2	1:B:33:U:C2	2.43	0.72
1:A:59:U:H2'	1:B:59:U:O5'	1.88	0.72
1:D:20:G:H2'	1:E:15:G:C5	2.25	0.72
1:D:12:U:N3	1:E:19:G:N3	2.37	0.72
1:A:13:C:C4'	1:B:12:U:N1	2.53	0.71
1:D:60:C:H3'	1:E:64:A:N1	2.05	0.71
1:A:46:7MG:C2	1:B:9:A:C2	2.77	0.71
1:A:48:C:O2'	1:B:48:C:C1'	2.37	0.71
1:D:63:C:H41	1:E:63:C:C2'	1.88	0.71
1:E:2:C:H2'	1:E:2:C:O2	1.88	0.71
1:D:39:PSU:H2'	1:D:40:5MC:C6	2.25	0.71
1:E:39:PSU:H2'	1:E:40:5MC:C6	2.25	0.71
1:A:28:C:O3'	1:B:29:A:H5'	1.53	0.71
1:A:49:5MC:CM5	1:B:49:5MC:O5'	2.38	0.71
1:A:40:5MC:N3	1:B:31:A:C6	2.57	0.71
1:A:57:G:C8	1:B:57:G:O4'	2.43	0.71
1:A:37:YG:H32	1:B:37:YG:C1'	2.00	0.71
1:A:52:U:C6	1:B:52:U:OP2	2.44	0.71
1:A:37:YG:O6	1:B:37:YG:C5	2.42	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:22:G:O2'	1:E:48:C:N4	2.23	0.71
1:C:2:C:H2'	1:C:2:C:O2	1.88	0.71
1:A:30:G:C8	1:B:30:G:C8	2.78	0.71
1:D:12:U:OP2	1:E:55:PSU:O2'	2.09	0.71
1:C:39:PSU:H2'	1:C:40:5MC:C6	2.25	0.71
1:A:14:A:P	1:B:13:C:H2'	2.26	0.71
1:A:26:M2G:HM23	1:B:44:A:N3	2.03	0.71
1:A:44:A:N6	1:B:44:A:C6	2.58	0.71
1:D:56:C:H6	1:E:69:U:C5	1.56	0.71
1:D:60:C:C3'	1:E:64:A:N1	2.53	0.71
1:D:26:M2G:HM21	1:E:17:H2U:C6	1.82	0.71
1:D:60:C:H6	1:E:49:5MC:HN42	0.98	0.71
1:D:2:C:O2	1:D:2:C:H2'	1.89	0.71
1:A:9:A:C8	1:B:45:G:N2	2.57	0.71
1:A:35:A:C4	1:B:35:A:N9	2.59	0.71
1:A:71:G:C3'	1:B:71:G:C6	2.41	0.71
1:B:73:A:P	1:C:75:C:H5"	2.31	0.71
1:A:9:A:H5'	1:B:46:7MG:C5'	2.19	0.71
1:A:40:5MC:N1	1:B:40:5MC:C4	2.56	0.71
1:A:46:7MG:O5'	1:B:45:G:H5"	1.79	0.71
1:A:61:C:C2	1:B:54:5MU:O4	2.43	0.71
1:A:55:PSU:C2'	1:B:57:G:O4'	2.39	0.71
1:A:11:C:H3'	1:B:10:2MG:O3'	1.67	0.71
1:C:14:A:H2'	1:C:15:G:H5'	1.72	0.71
1:A:58:1MA:N1	1:B:18:G:N3	2.34	0.70
1:B:39:PSU:H2'	1:B:40:5MC:C6	2.25	0.70
1:D:62:A:C5	1:E:64:A:C3'	2.64	0.70
1:D:7:U:P	1:E:53:G:C6	2.85	0.70
1:A:55:PSU:C1'	1:B:57:G:O4'	2.39	0.70
1:A:30:G:C4	1:B:30:G:C8	2.79	0.70
1:A:23:A:O2'	1:B:24:G:C5'	2.40	0.70
1:A:2:C:H2'	1:A:2:C:O2	1.88	0.70
1:A:37:YG:H132	1:B:37:YG:C12	2.26	0.70
1:D:23:A:H4'	1:E:21:A:O5'	1.91	0.70
1:D:50:U:H6	1:E:62:A:C5'	1.82	0.70
1:D:7:U:C1'	1:E:53:G:N2	2.54	0.70
1:D:22:G:OP1	1:E:14:A:C6	2.44	0.70
1:A:60:C:C2	1:B:59:U:C4	2.79	0.70
1:A:72:C:H5'	1:B:71:G:C6	2.27	0.70
1:A:13:C:C6	1:B:13:C:C4	2.78	0.70
1:A:21:A:N3	1:B:21:A:N9	2.39	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:13:C:OP1	1:B:12:U:H3'	1.91	0.70
1:D:8:U:P	1:E:18:G:O6	2.49	0.70
1:D:55:PSU:C3'	1:E:69:U:C4	2.74	0.70
1:A:55:PSU:C1'	1:B:57:G:H8	2.04	0.70
1:A:15:G:H5"	1:B:14:A:N3	1.98	0.70
1:D:5:A:C4	1:E:53:G:H5"	2.27	0.70
1:D:14:A:C8	1:E:58:1MA:C4'	2.63	0.70
1:D:13:C:C1'	1:E:58:1MA:C5'	2.69	0.70
1:A:44:A:N1	1:B:44:A:N3	2.40	0.70
1:D:9:A:O5'	1:E:18:G:O4'	2.05	0.70
1:D:7:U:O5'	1:E:53:G:C6	2.45	0.70
1:D:49:5MC:H3'	1:E:62:A:O4'	1.91	0.70
1:D:18:G:C5	1:E:66:A:C5	2.76	0.70
1:A:6:U:H5'	1:B:6:U:O2'	1.91	0.70
1:D:14:A:H2'	1:D:15:G:H5'	1.72	0.70
1:D:21:A:H4'	1:E:15:G:C6	2.26	0.70
1:A:18:G:C2'	1:B:57:G:H21	1.59	0.69
1:A:8:U:C4	1:B:22:G:O6	2.45	0.69
1:A:5:A:O5'	1:B:6:U:C4	2.43	0.69
1:A:15:G:O6	1:B:8:U:H1'	1.92	0.69
1:A:40:5MC:O5'	1:B:40:5MC:C5	2.42	0.69
1:A:24:G:C1'	1:B:24:G:N9	2.55	0.69
1:A:39:PSU:N1	1:B:39:PSU:O2	2.26	0.69
1:D:45:G:H1'	1:E:17:H2U:H2'	1.72	0.69
1:D:45:G:P	1:E:16:H2U:O2'	2.50	0.69
1:A:73:A:N3	1:B:1:G:OP2	2.24	0.69
1:A:34:OMG:N3	1:B:34:OMG:N2	2.40	0.69
1:A:44:A:C5	1:B:44:A:N9	2.61	0.69
1:B:58:1MA:C2	1:B:60:C:H2'	2.28	0.69
1:A:71:G:C4'	1:B:71:G:C5	2.68	0.69
1:D:20:G:O6	1:E:48:C:O2'	2.10	0.69
1:D:48:C:H5'	1:E:61:C:H3'	1.65	0.69
1:A:60:C:H5	1:B:59:U:OP1	1.73	0.69
1:D:63:C:OP2	1:E:64:A:O2'	2.10	0.69
1:D:21:A:H2	1:E:59:U:H2'	1.56	0.69
1:A:43:G:C2'	1:B:43:G:H1'	2.23	0.69
1:A:17:H2U:C5	1:B:17:H2U:N3	2.53	0.69
1:A:6:U:P	1:B:6:U:C3'	2.71	0.69
1:A:23:A:O2'	1:B:23:A:H2'	1.92	0.69
1:B:19:G:H4'	1:B:20:G:OP2	1.92	0.69
1:D:57:G:C8	1:E:5:A:N1	2.60	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:13:C:N4	1:B:9:A:C1'	2.54	0.69
1:A:42:G:C5	1:B:42:G:C2	2.79	0.69
1:A:18:G:C2'	1:B:57:G:H22	1.84	0.69
1:A:11:C:O4'	1:B:10:2MG:C2'	2.13	0.69
1:D:48:C:C5'	1:E:61:C:O3'	2.33	0.69
1:D:50:U:C4	1:E:62:A:O2'	2.34	0.69
1:A:15:G:C5	1:B:8:U:O2	2.46	0.69
1:A:17:H2U:C6	1:B:17:H2U:N1	2.56	0.69
1:A:32:OMC:CM2	1:B:32:OMC:CM2	2.54	0.69
1:A:41:U:C6	1:B:41:U:N3	2.60	0.69
1:A:42:G:C8	1:B:42:G:C8	2.81	0.69
1:A:59:U:O2'	1:B:59:U:O4'	2.11	0.69
1:A:9:A:C5'	1:B:46:7MG:C4'	2.70	0.69
1:B:14:A:H2'	1:B:15:G:H5'	1.72	0.69
1:A:44:A:N7	1:B:43:G:C1'	2.55	0.69
1:D:46:7MG:O5'	1:E:17:H2U:C5'	2.35	0.69
1:A:29:A:P	1:B:29:A:C5'	2.81	0.69
1:A:37:YG:C11	1:B:37:YG:C11	2.72	0.69
1:A:15:G:C8	1:B:15:G:N3	2.60	0.69
1:A:43:G:H2'	1:B:43:G:C1'	2.22	0.68
1:A:58:1MA:C2	1:A:60:C:H2'	2.28	0.68
1:D:17:H2U:OP1	1:E:47:U:O2'	2.10	0.68
1:D:8:U:H5'	1:E:61:C:C1'	2.20	0.68
1:D:22:G:C2'	1:E:48:C:H42	2.05	0.68
1:D:13:C:N3	1:E:58:1MA:C4'	2.56	0.68
1:A:59:U:C2	1:B:59:U:H6	2.04	0.68
1:A:10:2MG:H2'	1:B:10:2MG:C1'	2.22	0.68
1:A:64:A:OP2	1:B:64:A:H1'	1.89	0.68
1:D:14:A:H2	1:E:48:C:C4	2.07	0.68
1:D:21:A:H2	1:E:60:C:C6	2.10	0.68
1:D:58:1MA:C2	1:D:60:C:H2'	2.27	0.68
1:A:18:G:O2'	1:B:19:G:C1'	2.41	0.68
1:A:32:OMC:C4	1:B:32:OMC:N4	2.60	0.68
1:A:41:U:C5	1:B:40:5MC:C2	2.82	0.68
1:A:26:M2G:HM23	1:B:44:A:H2	0.60	0.68
1:D:14:A:H61	1:E:59:U:C1'	2.07	0.68
1:D:45:G:C2'	1:E:17:H2U:C2'	2.71	0.68
1:D:54:5MU:P	1:E:2:C:C3'	2.81	0.68
1:C:58:1MA:C2	1:C:60:C:H2'	2.28	0.68
1:A:63:C:H2'	1:B:52:U:C1'	2.19	0.68
1:A:27:C:C4	1:B:27:C:N3	2.61	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:19:G:H4'	1:C:20:G:OP2	1.93	0.68
1:A:33:U:C2	1:B:33:U:O2	2.46	0.68
1:A:33:U:C6	1:B:33:U:C3'	2.60	0.68
1:A:23:A:HO2'	1:B:23:A:H2'	1.59	0.68
1:C:2:C:N4	1:C:71:G:H1	1.92	0.68
1:A:35:A:N6	1:B:35:A:C5	2.58	0.68
1:A:71:G:O5'	1:B:70:C:H5	1.74	0.68
1:D:62:A:OP2	1:E:64:A:O2'	2.12	0.68
1:A:6:U:OP1	1:B:7:U:OP2	0.68	0.68
1:A:30:G:C4	1:B:30:G:N9	2.62	0.68
1:A:35:A:C5'	1:B:35:A:H4'	2.11	0.68
1:D:49:5MC:C3'	1:E:62:A:C4'	2.64	0.68
1:A:21:A:N6	1:B:46:7MG:C2'	2.43	0.67
1:A:38:A:C6	1:B:38:A:N6	2.61	0.67
1:A:43:G:C8	1:B:43:G:C1'	2.77	0.67
1:A:55:PSU:C4'	1:B:55:PSU:H2'	2.23	0.67
1:A:23:A:C2	1:B:23:A:C5	2.75	0.67
1:A:2:C:N4	1:A:71:G:H1	1.92	0.67
1:A:35:A:H2'	1:B:35:A:C1'	2.18	0.67
1:A:56:C:C5'	1:B:56:C:O2'	2.42	0.67
1:A:30:G:C4	1:B:30:G:H2'	2.28	0.67
1:A:32:OMC:CM2	1:B:33:U:H1'	2.22	0.67
1:D:19:G:C3'	1:E:8:U:OP2	2.43	0.67
1:A:37:YG:C13	1:B:36:A:N6	2.53	0.67
1:D:57:G:C5'	1:E:4:G:N1	2.57	0.67
1:A:18:G:C8	1:B:18:G:C4	2.82	0.67
1:A:58:1MA:N6	1:B:58:1MA:N7	2.43	0.67
1:A:31:A:C2	1:B:31:A:C5	2.83	0.67
1:A:22:G:O6	1:B:46:7MG:C2	2.47	0.67
1:D:6:U:HO2'	1:E:55:PSU:HN1	1.42	0.67
1:A:39:PSU:O4'	1:B:38:A:C8	2.47	0.67
1:A:24:G:N9	1:B:24:G:C5	2.63	0.67
1:A:29:A:C5	1:B:29:A:N9	2.63	0.67
1:A:42:G:C5'	1:B:42:G:C4'	2.73	0.67
1:D:58:1MA:OP1	1:E:5:A:N7	2.23	0.67
1:A:42:G:H5"	1:B:42:G:C5'	2.24	0.67
1:A:73:A:C2	1:B:1:G:OP2	2.47	0.67
1:B:2:C:N4	1:B:71:G:H1	1.92	0.67
1:A:37:YG:O6	1:B:37:YG:C6	2.46	0.67
1:D:16:H2U:H5'	1:E:47:U:C2'	2.23	0.67
1:D:45:G:N2	1:E:17:H2U:O2'	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:33:U:H3'	1:B:34:OMG:P	2.35	0.67
1:A:33:U:H3	1:B:35:A:H3'	1.60	0.67
1:D:21:A:N6	1:E:60:C:C3'	2.44	0.67
1:D:11:C:C2'	1:E:19:G:H1	2.05	0.67
1:D:60:C:C2'	1:E:65:G:H1	2.08	0.67
1:E:26:M2G:C2'	1:E:27:C:H5'	2.25	0.67
1:A:29:A:C6	1:B:29:A:C6	2.83	0.67
1:A:45:G:N1	1:B:45:G:C5	2.63	0.67
1:D:24:G:H5'	1:E:20:G:H5"	1.69	0.67
1:A:42:G:C4	1:B:42:G:N3	2.63	0.66
1:A:15:G:C1'	1:B:15:G:N3	2.58	0.66
1:A:54:5MU:C2'	1:B:57:G:OP2	2.36	0.66
1:D:26:M2G:C2'	1:D:27:C:H5'	2.25	0.66
1:D:51:G:C5	1:E:63:C:C5'	2.78	0.66
1:E:2:C:N4	1:E:71:G:H1	1.92	0.66
1:A:21:A:C4'	1:B:21:A:H5'	2.24	0.66
1:A:22:G:C4	1:B:22:G:C8	2.82	0.66
1:A:5:A:C8	1:B:7:U:O4	2.47	0.66
1:A:6:U:O2'	1:B:7:U:O3'	1.96	0.66
1:A:8:U:C4	1:B:8:U:O2	2.48	0.66
1:D:13:C:N3	1:E:58:1MA:O4'	2.29	0.66
1:D:2:C:N4	1:D:71:G:H1	1.92	0.66
1:A:63:C:C1'	1:B:52:U:C1'	2.31	0.66
1:A:24:G:HO2'	1:B:24:G:H2'	1.59	0.66
1:A:71:G:C3'	1:B:71:G:C5	2.79	0.66
1:D:56:C:C5'	1:E:70:C:C4	2.79	0.66
1:C:26:M2G:C2'	1:C:27:C:H5'	2.25	0.66
1:A:35:A:N1	1:B:35:A:H2	1.83	0.66
1:D:20:G:C2	1:E:21:A:H2	2.14	0.66
1:D:57:G:N2	1:E:7:U:H1'	2.11	0.66
1:A:24:G:C4	1:B:24:G:C5	2.82	0.66
1:D:58:1MA:C2	1:E:66:A:C2	2.83	0.66
1:A:41:U:C6	1:B:41:U:N1	2.64	0.66
1:A:60:C:H6	1:B:59:U:O5'	1.79	0.66
1:A:68:U:C2	1:B:67:A:H1'	1.34	0.66
1:D:18:G:OP2	1:E:50:U:H5'	1.96	0.66
1:A:18:G:H8	1:B:18:G:C1'	2.08	0.66
1:B:17:H2U:C2'	1:B:17:H2U:O2	2.44	0.66
1:A:4:G:C2'	1:B:5:A:N6	2.56	0.66
1:A:7:U:C2'	1:B:49:5MC:C4'	2.72	0.66
1:A:63:C:H2'	1:B:52:U:H1'	1.68	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:44:A:C2	1:E:17:H2U:N3	2.63	0.66
1:D:6:U:O2'	1:E:54:5MU:C6	2.21	0.66
1:A:33:U:H3	1:B:35:A:C4'	2.08	0.65
1:A:69:U:C4	1:B:67:A:C8	2.84	0.65
1:A:13:C:P	1:B:12:U:C6	2.88	0.65
1:D:60:C:C2	1:E:49:5MC:N1	2.58	0.65
1:A:17:H2U:O2	1:A:17:H2U:C2'	2.44	0.65
1:A:30:G:N1	1:B:30:G:C5	2.60	0.65
1:A:33:U:C4	1:B:33:U:N3	2.63	0.65
1:A:68:U:N3	1:B:67:A:C2'	1.77	0.65
1:A:9:A:H2'	1:B:9:A:H1'	1.78	0.65
1:D:55:PSU:C4	1:E:68:U:O4	2.45	0.65
1:A:18:G:N7	1:B:57:G:C5	2.28	0.65
1:A:33:U:C5	1:B:33:U:C4	2.83	0.65
1:A:38:A:N6	1:B:38:A:N6	2.44	0.65
1:D:62:A:OP2	1:E:64:A:H2'	1.94	0.65
1:A:64:A:OP2	1:B:64:A:C8	2.49	0.65
1:A:70:C:N3	1:B:68:U:C5	2.64	0.65
1:D:57:G:H21	1:E:7:U:C1'	2.09	0.65
1:D:8:U:P	1:E:18:G:C6	2.90	0.65
1:D:18:G:C5	1:E:66:A:C4	2.84	0.65
1:A:17:H2U:C1'	1:B:19:G:OP2	2.43	0.65
1:A:42:G:O4'	1:B:41:U:O2	2.14	0.65
1:A:44:A:C5	1:B:44:A:C4	2.85	0.65
1:A:29:A:O4'	1:B:29:A:C5'	2.22	0.65
1:A:8:U:C4	1:B:8:U:N1	2.62	0.65
1:A:60:C:N1	1:B:59:U:C6	2.65	0.65
1:A:42:G:H8	1:B:41:U:O2	1.41	0.65
1:A:6:U:H3	1:B:66:A:H2	1.45	0.65
1:D:61:C:C3'	1:E:64:A:C2	2.76	0.65
1:D:61:C:H5'	1:E:65:G:H21	1.57	0.65
1:A:18:G:O2'	1:B:19:G:O4'	2.14	0.65
1:D:60:C:H4'	1:D:61:C:OP2	1.96	0.65
1:A:37:YG:C8	1:B:36:A:C1'	2.63	0.65
1:D:17:H2U:O2	1:D:17:H2U:C2'	2.44	0.65
1:D:12:U:C3'	1:E:57:G:C8	2.68	0.65
1:D:8:U:H1'	1:E:60:C:OP2	1.96	0.65
1:D:58:1MA:H2	1:E:65:G:H1	1.36	0.65
1:A:37:YG:C3	1:B:37:YG:C3	2.69	0.65
1:A:5:A:H1'	1:B:5:A:N1	2.12	0.65
1:A:63:C:H2'	1:B:52:U:N1	2.09	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:24:G:C2'	1:B:24:G:H2'	2.27	0.65
1:A:37:YG:C5'	1:B:36:A:C2'	2.74	0.65
1:B:73:A:OP2	1:C:75:C:C3'	2.37	0.65
1:D:24:G:C1'	1:E:20:G:H5'	2.24	0.65
1:A:35:A:N3	1:B:35:A:N3	2.44	0.64
1:A:33:U:H3	1:B:35:A:C3'	2.10	0.64
1:A:60:C:N1	1:B:59:U:C5	2.65	0.64
1:A:64:A:OP2	1:B:64:A:C4	2.49	0.64
1:B:73:A:H5'	1:C:75:C:H5"	0.67	0.64
1:D:57:G:H3'	1:E:5:A:N6	2.02	0.64
1:D:61:C:OP2	1:E:51:G:C4	2.50	0.64
1:D:24:G:C4'	1:E:20:G:C5'	2.36	0.64
1:A:56:C:H3'	1:B:56:C:O2'	1.98	0.64
1:B:60:C:H4'	1:B:61:C:OP2	1.96	0.64
1:D:26:M2G:O2'	1:D:27:C:H5'	1.97	0.64
1:D:56:C:H5"	1:E:70:C:N4	2.11	0.64
1:D:12:U:OP2	1:E:57:G:N7	2.30	0.64
1:A:69:U:C6	1:B:67:A:O2'	2.38	0.64
1:A:62:A:C5'	1:B:62:A:N9	1.95	0.64
1:A:73:A:H5'	1:B:1:G:C4	2.33	0.64
1:A:50:U:C5	1:B:50:U:C5'	2.80	0.64
1:A:62:A:H5'	1:B:62:A:C8	2.17	0.64
1:D:22:G:OP1	1:E:14:A:N1	2.31	0.64
1:A:27:C:C5	1:B:27:C:C6	2.84	0.64
1:A:50:U:H5	1:B:50:U:P	2.20	0.64
1:D:55:PSU:C2'	1:E:69:U:O4	2.43	0.64
1:C:26:M2G:O2'	1:C:27:C:H5'	1.97	0.64
1:A:18:G:OP1	1:B:17:H2U:O3'	2.15	0.64
1:D:61:C:OP1	1:E:51:G:C4	2.50	0.64
1:A:73:A:O4'	1:B:1:G:C8	2.50	0.64
1:A:50:U:C5	1:B:50:U:P	2.90	0.64
1:A:51:G:C8	1:B:51:G:OP1	2.51	0.64
1:A:5:A:N7	1:B:66:A:N6	2.44	0.64
1:A:51:G:C4	1:B:51:G:H5"	2.33	0.64
1:A:31:A:N3	1:B:31:A:C5	2.62	0.64
1:A:48:C:O5'	1:B:47:U:H4'	1.98	0.64
1:A:24:G:H1'	1:B:24:G:N9	2.11	0.64
1:A:32:OMC:C2'	1:B:33:U:C6	2.76	0.64
1:A:11:C:O4'	1:B:10:2MG:C1'	2.37	0.63
1:B:73:A:O5'	1:C:75:C:C4'	2.46	0.63
1:D:17:H2U:H3'	1:E:49:5MC:H4'	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:56:C:C6	1:E:68:U:C2	2.87	0.63
1:A:30:G:O4'	1:B:30:G:O5'	2.07	0.63
1:A:46:7MG:N2	1:B:46:7MG:C4	2.66	0.63
1:D:18:G:C2	1:E:66:A:N6	2.66	0.63
1:D:21:A:N3	1:E:59:U:H2'	2.12	0.63
1:D:62:A:C8	1:E:64:A:H2'	2.32	0.63
1:D:7:U:OP2	1:E:53:G:C6	2.50	0.63
1:D:22:G:C1'	1:E:48:C:N4	2.46	0.63
1:C:60:C:H4'	1:C:61:C:OP2	1.97	0.63
1:A:16:H2U:C6	1:B:16:H2U:C2'	2.77	0.63
1:A:24:G:C8	1:B:24:G:N7	2.66	0.63
1:A:40:5MC:N3	1:B:40:5MC:N3	2.46	0.63
1:A:42:G:H5"	1:B:42:G:C4'	2.28	0.63
1:D:54:5MU:H73	1:D:55:PSU:O2	1.98	0.63
1:D:56:C:N3	1:E:68:U:C2	2.62	0.63
1:D:17:H2U:C3'	1:E:49:5MC:H4'	2.29	0.63
1:D:54:5MU:H5"	1:E:2:C:P	2.38	0.63
1:A:9:A:C4'	1:B:46:7MG:O5'	2.45	0.63
1:A:52:U:C1'	1:B:52:U:P	2.87	0.63
1:A:57:G:C8	1:B:57:G:C1'	2.82	0.63
1:A:6:U:N3	1:B:66:A:H2	1.95	0.63
1:A:70:C:H4'	1:B:69:U:C1'	2.24	0.63
1:A:70:C:H2'	1:B:70:C:C5	2.33	0.63
1:A:14:A:C5	1:B:14:A:C6	2.86	0.63
1:A:16:H2U:P	1:B:16:H2U:OP2	2.57	0.63
1:A:36:A:H62	1:B:35:A:N6	1.93	0.63
1:A:54:5MU:H73	1:A:55:PSU:O2	1.98	0.63
1:A:48:C:C4'	1:B:47:U:H3'	2.25	0.63
1:D:18:G:N3	1:E:7:U:C2	2.65	0.63
1:D:7:U:H2'	1:E:53:G:N2	2.01	0.63
1:D:7:U:C2'	1:E:53:G:H22	1.97	0.63
1:E:26:M2G:O2'	1:E:27:C:H5'	1.97	0.63
1:C:51:G:H2'	1:C:52:U:C6	2.34	0.63
1:C:54:5MU:H73	1:C:55:PSU:O2	1.98	0.63
1:A:44:A:C4	1:B:44:A:C1'	2.81	0.63
1:A:70:C:C4'	1:B:69:U:C2'	2.56	0.63
1:A:29:A:C4	1:B:30:G:C5'	2.36	0.63
1:A:51:G:H2'	1:A:52:U:C6	2.34	0.63
1:A:46:7MG:O5'	1:B:45:G:C5'	2.46	0.63
1:A:8:U:C3'	1:B:46:7MG:H1'	2.27	0.63
1:B:51:G:H2'	1:B:52:U:C6	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:42:G:C5	1:B:42:G:C5	2.87	0.62
1:A:5:A:C2'	1:B:6:U:H2'	2.28	0.62
1:A:24:G:N2	1:B:10:2MG:C2	2.54	0.62
1:B:23:A:H2'	1:B:24:G:H8	1.62	0.62
1:A:23:A:C2	1:B:23:A:N1	2.66	0.62
1:A:23:A:H2'	1:A:24:G:H8	1.62	0.62
1:A:18:G:C6	1:B:18:G:C2	2.87	0.62
1:B:73:A:C8	1:C:75:C:O2'	2.50	0.62
1:D:21:A:C4	1:E:59:U:O2	2.52	0.62
1:D:23:A:C3'	1:E:20:G:N9	2.58	0.62
1:A:60:C:C6	1:B:59:U:O5'	2.52	0.62
1:A:30:G:C5'	1:B:30:G:O5'	2.45	0.62
1:B:54:5MU:H73	1:B:55:PSU:O2	1.98	0.62
1:D:56:C:OP2	1:E:69:U:O4	1.90	0.62
1:D:20:G:N2	1:E:14:A:N6	2.46	0.62
1:A:21:A:N1	1:B:21:A:C5	2.62	0.62
1:A:61:C:C6	1:B:61:C:N4	2.67	0.62
1:D:21:A:OP1	1:E:14:A:H5"	1.99	0.62
1:E:51:G:H2'	1:E:52:U:C6	2.34	0.62
1:A:18:G:C5	1:B:18:G:N3	2.62	0.62
1:A:42:G:C5	1:B:42:G:N3	2.66	0.62
1:D:51:G:H2'	1:D:52:U:C6	2.34	0.62
1:D:46:7MG:C1'	1:E:18:G:OP2	2.47	0.62
1:D:23:A:C5'	1:E:21:A:H4'	2.29	0.62
1:C:17:H2U:O2	1:C:17:H2U:C2'	2.44	0.62
1:A:33:U:N3	1:B:33:U:N3	2.48	0.62
1:A:7:U:C5	1:B:7:U:O2'	2.29	0.62
1:D:56:C:O2	1:E:69:U:O4'	1.82	0.62
1:A:17:H2U:O4'	1:B:17:H2U:C2	2.44	0.62
1:A:21:A:H1'	1:B:21:A:C4'	2.16	0.62
1:A:43:G:O6	1:B:43:G:N1	2.33	0.62
1:A:46:7MG:C2	1:B:46:7MG:C4	2.87	0.62
1:A:63:C:C5	1:B:62:A:N6	2.63	0.62
1:A:73:A:O4'	1:B:1:G:N9	2.32	0.62
1:A:20:G:H3'	1:B:20:G:O3'	2.00	0.62
1:B:73:A:H5'	1:C:75:C:P	2.40	0.62
1:D:45:G:N9	1:E:17:H2U:H2'	2.13	0.62
1:A:20:G:O5'	1:B:20:G:O3'	2.18	0.62
1:A:48:C:C5'	1:B:47:U:C3'	2.78	0.62
1:A:30:G:C2	1:B:30:G:N3	2.66	0.62
1:A:36:A:N7	1:B:36:A:C4	2.55	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:12:U:O2	1:E:19:G:N3	2.30	0.62
1:A:12:U:O2	1:B:24:G:C2	2.52	0.62
1:A:69:U:N3	1:B:67:A:C8	2.68	0.62
1:A:16:H2U:C6	1:B:16:H2U:C1'	2.58	0.62
1:A:26:M2G:H5'	1:B:26:M2G:C4'	1.96	0.62
1:A:25:C:H3'	1:B:26:M2G:H3'	1.81	0.61
1:A:36:A:N7	1:B:36:A:C5	2.66	0.61
1:A:57:G:N1	1:B:57:G:N3	2.47	0.61
1:A:59:U:H2'	1:B:59:U:C4'	2.27	0.61
1:A:23:A:N3	1:B:23:A:C6	2.53	0.61
1:A:43:G:N9	1:B:43:G:H1'	2.15	0.61
1:A:62:A:OP1	1:B:61:C:C2'	2.48	0.61
1:A:6:U:N3	1:B:66:A:C2	2.64	0.61
1:A:52:U:H1'	1:B:52:U:P	2.40	0.61
1:D:60:C:H4'	1:E:51:G:C6	2.35	0.61
1:A:71:G:O3'	1:B:71:G:C5	2.53	0.61
1:D:23:A:H5'	1:E:21:A:H4'	1.82	0.61
1:A:31:A:C6	1:B:31:A:C5	2.86	0.61
1:A:37:YG:C15	1:B:37:YG:H142	2.13	0.61
1:B:71:G:O2'	1:C:74:C:C2	2.50	0.61
1:A:24:G:O4'	1:B:24:G:C8	2.54	0.61
1:A:38:A:C8	1:B:38:A:H8	2.15	0.61
1:A:9:A:C8	1:B:9:A:N9	2.68	0.61
1:A:39:PSU:N1	1:B:38:A:OP2	2.32	0.61
1:E:37:YG:C2'	1:E:38:A:O4'	2.48	0.61
1:C:23:A:H2'	1:C:24:G:H8	1.61	0.61
1:A:31:A:O2'	1:B:31:A:C2'	2.41	0.61
1:D:12:U:N3	1:E:19:G:C4	2.68	0.61
1:D:18:G:N7	1:E:67:A:C1'	2.63	0.61
1:A:40:5MC:N4	1:B:40:5MC:N4	2.48	0.61
1:A:46:7MG:C6	1:B:46:7MG:CM7	2.83	0.61
1:A:29:A:C4	1:B:30:G:O5'	2.46	0.61
1:A:22:G:C5	1:B:46:7MG:N1	2.69	0.61
1:E:23:A:H2'	1:E:24:G:H8	1.62	0.61
1:A:14:A:C4	1:B:14:A:C5	2.89	0.61
1:A:31:A:C4	1:B:31:A:N7	2.66	0.61
1:A:38:A:N7	1:B:38:A:N7	2.45	0.61
1:A:36:A:N7	1:B:36:A:N7	2.46	0.61
1:D:20:G:N3	1:D:20:G:H2'	2.15	0.61
1:D:62:A:P	1:E:64:A:O2'	2.58	0.61
1:A:20:G:N3	1:A:20:G:H2'	2.15	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:60:C:N4	1:B:20:G:OP2	2.34	0.61
1:D:56:C:O2	1:E:69:U:C1'	2.47	0.61
1:A:61:C:H4'	1:B:58:1MA:N1	2.13	0.61
1:A:40:5MC:O5'	1:B:40:5MC:HM51	2.00	0.61
1:A:48:C:C2'	1:B:48:C:H6	2.14	0.61
1:A:63:C:H3'	1:B:51:G:H22	1.59	0.61
1:A:72:C:OP1	1:B:72:C:C5	2.50	0.61
1:A:26:M2G:CM2	1:B:44:A:N3	2.64	0.60
1:A:31:A:N6	1:B:31:A:N6	2.48	0.60
1:A:23:A:N3	1:B:23:A:C4	2.69	0.60
1:A:14:A:OP2	1:B:13:C:C5	2.48	0.60
1:A:73:A:H5'	1:B:1:G:N3	2.16	0.60
1:B:1:G:H2'	1:B:2:C:H6	1.66	0.60
1:A:42:G:N1	1:B:42:G:C2	2.69	0.60
1:D:22:G:N2	1:E:59:U:OP1	2.33	0.60
1:D:60:C:O2'	1:E:65:G:N2	2.34	0.60
1:A:60:C:C1'	1:B:59:U:C6	2.84	0.60
1:A:70:C:C2	1:B:68:U:O4	2.54	0.60
1:D:16:H2U:H5'	1:E:47:U:O3'	2.02	0.60
1:D:49:5MC:H3'	1:E:62:A:C4'	2.29	0.60
1:D:55:PSU:C2'	1:E:69:U:C4	2.85	0.60
1:D:57:G:N2	1:E:7:U:C1'	2.65	0.60
1:D:62:A:N6	1:E:64:A:OP2	2.34	0.60
1:E:20:G:H2'	1:E:20:G:N3	2.15	0.60
1:C:1:G:H2'	1:C:2:C:H6	1.66	0.60
1:A:37:YG:H142	1:B:36:A:N6	2.02	0.60
1:A:38:A:C6	1:B:38:A:N7	2.58	0.60
1:A:44:A:N7	1:B:43:G:N9	2.50	0.60
1:A:31:A:N3	1:B:31:A:C2	2.69	0.60
1:A:14:A:OP2	1:B:8:U:C5	2.53	0.60
1:D:50:U:C2	1:E:63:C:P	2.94	0.60
1:D:7:U:P	1:E:53:G:C5	2.94	0.60
1:C:1:G:C5	1:C:2:C:C5	2.90	0.60
1:A:31:A:HO2'	1:B:32:OMC:C4'	2.13	0.60
1:A:44:A:C8	1:B:43:G:H1'	2.34	0.60
1:A:1:G:C5	1:A:2:C:C5	2.90	0.60
1:A:24:G:O4'	1:B:24:G:N9	2.35	0.60
1:A:44:A:C5	1:B:44:A:C1'	2.85	0.60
1:A:7:U:HO2'	1:B:49:5MC:H5"	1.57	0.60
1:A:4:G:C4	1:B:67:A:N6	2.62	0.60
1:D:8:U:C1'	1:E:60:C:OP2	2.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:8:U:N1	1:E:60:C:OP2	2.35	0.60
1:A:33:U:O2	1:B:35:A:N7	2.31	0.60
1:A:51:G:N7	1:B:51:G:P	2.74	0.60
1:A:56:C:N4	1:B:19:G:C6	2.63	0.60
1:A:58:1MA:HM11	1:B:58:1MA:C2	2.27	0.60
1:A:41:U:C4	1:B:41:U:O4	2.55	0.60
1:D:22:G:H1'	1:E:48:C:C4	2.36	0.60
1:D:54:5MU:OP1	1:E:2:C:H6	1.73	0.60
1:D:21:A:C2'	1:E:59:U:O2	2.50	0.60
1:A:30:G:C2	1:B:30:G:C5	2.90	0.60
1:A:43:G:C4	1:B:43:G:H1'	2.36	0.60
1:A:60:C:C2	1:B:59:U:C6	2.88	0.60
1:A:35:A:N7	1:B:35:A:N7	2.49	0.60
1:A:38:A:H2	1:B:38:A:C2	2.17	0.60
1:A:41:U:H5"	1:B:40:5MC:O2'	1.98	0.60
1:D:48:C:H3'	1:E:61:C:C3'	2.18	0.60
1:D:62:A:N7	1:E:64:A:C3'	2.30	0.60
1:D:5:A:C8	1:E:53:G:C5'	2.84	0.60
1:D:1:G:C5	1:D:2:C:C5	2.90	0.60
1:A:32:OMC:N3	1:B:32:OMC:N3	2.49	0.60
1:A:63:C:OP1	1:B:63:C:C1'	2.50	0.60
1:A:31:A:C4	1:B:31:A:C8	2.89	0.60
1:E:1:G:C5	1:E:2:C:C5	2.90	0.60
1:D:73:A:HO2'	1:D:74:C:H5'	1.65	0.60
1:A:63:C:P	1:B:63:C:C4	2.95	0.59
1:E:1:G:H2'	1:E:2:C:H6	1.66	0.59
1:A:32:OMC:CM2	1:B:33:U:C1'	2.79	0.59
1:A:28:C:N3	1:B:28:C:C2	2.69	0.59
1:C:20:G:N3	1:C:20:G:H2'	2.15	0.59
1:D:10:2MG:N7	1:E:17:H2U:H1'	2.16	0.59
1:D:10:2MG:P	1:E:18:G:OP1	2.60	0.59
1:D:26:M2G:HM21	1:E:17:H2U:N1	2.09	0.59
1:C:37:YG:C2'	1:C:38:A:O4'	2.48	0.59
1:A:24:G:C5'	1:B:24:G:C5'	2.78	0.59
1:A:40:5MC:N3	1:B:30:G:O6	2.35	0.59
1:A:70:C:O4'	1:B:69:U:O4'	2.09	0.59
1:A:25:C:H1'	1:B:25:C:C2	2.37	0.59
1:A:34:OMG:N2	1:B:34:OMG:N2	2.47	0.59
1:A:37:YG:C15	1:B:37:YG:C14	2.78	0.59
1:A:55:PSU:OP1	1:B:56:C:OP2	2.19	0.59
1:A:70:C:C4'	1:B:69:U:O4'	2.49	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1:G:H2'	1:D:2:C:H6	1.66	0.59
1:A:1:G:H2'	1:A:2:C:C6	2.37	0.59
1:A:39:PSU:O4'	1:B:38:A:C2'	2.48	0.59
1:D:60:C:H3'	1:E:65:G:N1	2.17	0.59
1:D:1:G:H2'	1:D:2:C:C6	2.37	0.59
1:A:13:C:H1'	1:B:23:A:N1	2.18	0.59
1:A:3:G:C4'	1:B:3:G:OP2	2.51	0.59
1:A:62:A:C8	1:B:61:C:N4	2.68	0.59
1:B:1:G:H2'	1:B:2:C:C6	2.37	0.59
1:B:73:A:O5'	1:C:75:C:O3'	2.19	0.59
1:D:62:A:OP2	1:E:64:A:N3	2.36	0.59
1:D:24:G:C2	1:E:19:G:N3	2.53	0.59
1:D:19:G:OP2	1:E:7:U:O3'	2.12	0.59
1:A:20:G:H22	1:B:22:G:H5'	1.67	0.59
1:A:29:A:C2	1:B:29:A:N3	2.71	0.59
1:A:48:C:C2	1:B:48:C:C5	2.91	0.59
1:D:67:A:N1	1:E:54:5MU:H5'	2.01	0.59
1:D:62:A:C6	1:E:64:A:O5'	2.55	0.59
1:C:1:G:H2'	1:C:2:C:C6	2.37	0.59
1:A:13:C:N4	1:B:9:A:O5'	2.33	0.59
1:A:22:G:C2	1:B:22:G:C4	2.90	0.59
1:A:46:7MG:C3'	1:B:46:7MG:C5'	2.81	0.59
1:E:1:G:H2'	1:E:2:C:C6	2.37	0.59
1:A:42:G:C6	1:B:42:G:C6	2.90	0.59
1:A:60:C:H6	1:B:59:U:OP1	1.68	0.59
1:A:70:C:C4	1:B:68:U:H5	2.18	0.59
1:D:21:A:H5'	1:E:15:G:H8	1.57	0.59
1:A:12:U:O2	1:B:24:G:N2	2.36	0.59
1:A:13:C:O5'	1:B:12:U:C3'	2.50	0.59
1:A:38:A:OP1	1:B:37:YG:OP1	2.20	0.59
1:A:45:G:C4	1:B:45:G:C8	2.91	0.59
1:A:48:C:HO2'	1:B:48:C:H6	0.63	0.59
1:A:51:G:C8	1:B:51:G:P	2.96	0.59
1:B:1:G:C5	1:B:2:C:C5	2.90	0.59
1:A:23:A:C4	1:B:23:A:C8	2.91	0.59
1:A:45:G:N2	1:B:26:M2G:CM2	2.59	0.59
1:A:52:U:N1	1:B:52:U:OP2	2.36	0.59
1:D:18:G:C2	1:E:7:U:C4	2.91	0.59
1:D:55:PSU:O2	1:E:4:G:N7	2.36	0.59
1:A:38:A:N9	1:B:38:A:H8	1.90	0.58
1:D:10:2MG:C8	1:E:17:H2U:C5	2.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:32:OMC:C1'	1:B:32:OMC:C2	2.85	0.58
1:A:43:G:C2'	1:B:43:G:C1'	2.80	0.58
1:A:51:G:C5	1:B:51:G:P	2.96	0.58
1:D:21:A:O2'	1:E:15:G:C4	2.56	0.58
1:A:25:C:C5'	1:B:25:C:H5"	2.03	0.58
1:A:29:A:O4'	1:B:29:A:H5"	2.03	0.58
1:D:25:C:C4	1:E:19:G:H2'	2.38	0.58
1:D:9:A:H1'	1:E:17:H2U:O2'	2.03	0.58
1:E:17:H2U:C2'	1:E:17:H2U:O2	2.44	0.58
1:D:57:G:H5'	1:E:4:G:N1	2.18	0.58
1:D:60:C:O2'	1:E:50:U:C6	2.52	0.58
1:A:15:G:OP2	1:B:14:A:N7	2.27	0.58
1:A:43:G:N7	1:B:43:G:C8	2.71	0.58
1:D:50:U:C6	1:E:62:A:C5'	2.67	0.58
1:A:1:G:H2'	1:A:2:C:H6	1.66	0.58
1:A:71:G:H2'	1:B:2:C:N4	2.19	0.58
1:A:8:U:H4'	1:B:46:7MG:H1'	1.86	0.58
1:A:16:H2U:OP2	1:B:15:G:C4	2.56	0.58
1:A:29:A:C5	1:B:29:A:C5	2.91	0.58
1:A:9:A:C4	1:B:9:A:N3	2.68	0.58
1:D:58:1MA:H4'	1:E:7:U:C5	2.28	0.58
1:A:48:C:H41	1:B:21:A:H5"	1.69	0.58
1:A:24:G:O2'	1:B:24:G:H2'	2.02	0.58
1:A:31:A:H2'	1:B:32:OMC:C4'	2.31	0.58
1:A:57:G:C8	1:B:57:G:H1'	2.33	0.58
1:B:73:A:O3'	1:C:76:A:C2	2.52	0.58
1:A:33:U:O2'	1:B:34:OMG:N7	2.36	0.58
1:A:43:G:C8	1:B:43:G:O4'	2.57	0.58
1:D:14:A:N1	1:E:59:U:O4'	2.37	0.58
1:A:23:A:C2'	1:B:24:G:N7	2.62	0.58
1:A:30:G:H5'	1:B:30:G:C5'	2.34	0.58
1:A:70:C:H4'	1:B:69:U:H3'	0.58	0.58
1:A:7:U:H2'	1:B:49:5MC:H5"	1.51	0.58
1:A:23:A:O5'	1:B:23:A:P	2.60	0.58
1:A:45:G:N2	1:B:26:M2G:HM23	2.14	0.58
1:A:28:C:C1'	1:B:29:A:O4'	2.48	0.58
1:A:38:A:N1	1:B:38:A:N1	2.50	0.58
1:A:45:G:N2	1:B:45:G:N3	2.52	0.58
1:A:48:C:C4'	1:B:47:U:C3'	2.82	0.58
1:D:22:G:C5'	1:E:15:G:H21	2.11	0.58
1:A:70:C:N3	1:B:68:U:C4	2.72	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:17:H2U:C5'	1:B:17:H2U:P	2.92	0.57
1:A:56:C:N3	1:B:19:G:N2	2.51	0.57
1:A:34:OMG:N3	1:B:34:OMG:N3	2.50	0.57
1:A:57:G:OP2	1:B:57:G:H5'	2.04	0.57
1:D:19:G:H3'	1:E:8:U:OP2	2.04	0.57
1:A:30:G:C6	1:B:30:G:N7	2.70	0.57
1:A:31:A:C2'	1:B:32:OMC:O4'	2.51	0.57
1:A:59:U:O2	1:B:59:U:N1	2.38	0.57
1:A:18:G:OP1	1:B:18:G:O5'	2.08	0.57
1:D:45:G:C2'	1:E:17:H2U:H2'	2.35	0.57
1:D:15:G:C8	1:E:59:U:OP2	2.57	0.57
1:D:60:C:H2'	1:E:65:G:H1	1.69	0.57
1:A:19:G:H2'	1:B:19:G:O2'	2.03	0.57
1:A:26:M2G:H5'	1:B:26:M2G:C5'	2.35	0.57
1:D:37:YG:C2'	1:D:38:A:O4'	2.48	0.57
1:A:40:5MC:C6	1:B:40:5MC:CM5	2.84	0.57
1:A:16:H2U:H61	1:B:16:H2U:H2'	1.84	0.57
1:A:43:G:O6	1:B:28:C:C4	2.46	0.57
1:D:19:G:H2'	1:E:8:U:P	2.44	0.57
1:A:15:G:C8	1:B:15:G:N1	2.73	0.57
1:A:36:A:C5	1:B:36:A:C8	2.81	0.57
1:A:67:A:N7	1:B:66:A:O2'	2.21	0.57
1:A:14:A:N3	1:B:14:A:N1	2.53	0.57
1:A:16:H2U:P	1:B:15:G:C4	2.96	0.57
1:B:73:A:N7	1:C:75:C:O2'	2.37	0.57
1:D:25:C:O2	1:D:25:C:H2'	2.03	0.57
1:D:56:C:C2	1:E:69:U:C1'	2.63	0.57
1:E:25:C:O2	1:E:25:C:H2'	2.03	0.57
1:A:37:YG:H32	1:A:38:A:H1'	1.86	0.57
1:A:6:U:C5'	1:B:7:U:C6	2.81	0.57
1:A:23:A:H5'	1:B:23:A:C5'	2.33	0.57
1:A:71:G:C5'	1:B:70:C:C6	2.47	0.57
1:D:16:H2U:C4'	1:E:47:U:O2'	2.49	0.57
1:D:8:U:C2	1:E:60:C:OP2	2.57	0.57
1:A:14:A:N3	1:B:14:A:C2	2.73	0.57
1:A:30:G:C4	1:B:30:G:C5	2.91	0.57
1:A:29:A:N1	1:B:29:A:C2	2.73	0.57
1:A:36:A:H5"	1:B:36:A:O4'	2.04	0.57
1:A:37:YG:H101	1:B:37:YG:C10	2.35	0.57
1:A:40:5MC:C5'	1:B:39:PSU:HO2'	1.99	0.57
1:A:42:G:C5'	1:B:42:G:H5'	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:66:A:H2	1:B:49:5MC:O2'	1.73	0.57
1:D:57:G:C4	1:E:68:U:O2	2.32	0.57
1:E:37:YG:H32	1:E:38:A:H1'	1.86	0.57
1:C:25:C:H2'	1:C:25:C:O2	2.03	0.57
1:A:48:C:H4'	1:B:47:U:C3'	2.32	0.57
1:A:8:U:H1'	1:B:21:A:N1	2.19	0.57
1:A:24:G:H1'	1:B:24:G:N3	2.18	0.57
1:A:38:A:C1'	1:B:37:YG:C3	2.73	0.57
1:A:40:5MC:C5'	1:B:40:5MC:P	2.93	0.57
1:A:43:G:N7	1:B:43:G:N9	2.53	0.57
1:A:6:U:O4'	1:B:7:U:C6	2.55	0.57
1:A:23:A:H5'	1:B:23:A:H5"	1.86	0.57
1:A:33:U:N1	1:B:33:U:N1	2.51	0.57
1:A:37:YG:C10	1:B:37:YG:C10	2.81	0.57
1:A:61:C:C6	1:B:60:C:OP2	2.58	0.57
1:A:26:M2G:C8	1:B:26:M2G:C2'	2.88	0.57
1:A:7:U:C2'	1:B:8:U:C5'	2.83	0.57
1:D:48:C:H5'	1:E:62:A:P	2.44	0.57
1:D:50:U:C6	1:E:62:A:H5"	2.38	0.57
1:A:8:U:O5'	1:B:9:A:P	2.63	0.56
1:A:36:A:N3	1:B:36:A:N3	2.52	0.56
1:A:63:C:H2'	1:B:52:U:C2	2.28	0.56
1:D:56:C:H5"	1:E:70:C:C4	2.40	0.56
1:D:37:YG:H32	1:D:38:A:H1'	1.86	0.56
1:A:28:C:N1	1:B:29:A:O5'	2.36	0.56
1:A:48:C:H5'	1:B:47:U:C3'	2.34	0.56
1:A:45:G:C1'	1:B:44:A:N3	2.63	0.56
1:A:14:A:N6	1:B:46:7MG:HN1	2.02	0.56
1:A:49:5MC:C2	1:B:49:5MC:O2'	2.59	0.56
1:A:30:G:N7	1:B:30:G:C8	2.74	0.56
1:A:34:OMG:O6	1:B:34:OMG:C6	2.57	0.56
1:B:37:YG:H32	1:B:38:A:H1'	1.86	0.56
1:A:69:U:H2'	1:B:68:U:C6	2.39	0.56
1:D:62:A:H3'	1:E:64:A:O2'	2.05	0.56
1:A:7:U:H3'	1:B:8:U:C4'	2.32	0.56
1:A:15:G:N3	1:B:15:G:N2	2.53	0.56
1:A:9:A:C5'	1:B:46:7MG:O4'	2.53	0.56
1:A:32:OMC:N1	1:B:32:OMC:N1	2.53	0.56
1:A:7:U:O2'	1:B:49:5MC:C4'	2.52	0.56
1:B:25:C:O2	1:B:25:C:H2'	2.03	0.56
1:A:40:5MC:CM5	1:B:40:5MC:C5	2.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:57:G:C5	1:E:68:U:C1'	2.85	0.56
1:A:12:U:N1	1:B:12:U:C5	2.73	0.56
1:A:33:U:C2	1:B:35:A:H8	2.01	0.56
1:A:37:YG:N9	1:B:36:A:H2'	2.04	0.56
1:C:37:YG:H32	1:C:38:A:H1'	1.86	0.56
1:A:40:5MC:C4	1:B:40:5MC:N3	2.73	0.56
1:A:68:U:N3	1:B:67:A:N3	2.38	0.56
1:A:28:C:O5'	1:B:28:C:C3'	2.53	0.56
1:A:55:PSU:O2'	1:B:56:C:N1	2.38	0.56
1:D:6:U:O2'	1:E:55:PSU:C2	2.59	0.56
1:A:70:C:C2'	1:B:70:C:H5	2.13	0.56
1:A:30:G:C2	1:B:30:G:C6	2.94	0.56
1:A:31:A:N3	1:B:31:A:N3	2.53	0.56
1:A:35:A:H2'	1:B:35:A:H1'	1.76	0.56
1:A:57:G:C4	1:B:57:G:H1'	2.26	0.56
1:D:14:A:H61	1:E:59:U:C2'	2.19	0.56
1:A:25:C:C2'	1:B:26:M2G:C8	2.52	0.56
1:A:5:A:C2'	1:B:6:U:C2'	2.51	0.56
1:A:44:A:N1	1:B:44:A:C2	2.73	0.56
1:D:61:C:P	1:E:51:G:C4	2.99	0.56
1:D:45:G:C1'	1:E:17:H2U:C2'	2.83	0.56
1:D:22:G:C4	1:E:59:U:C6	2.51	0.56
1:A:60:C:N3	1:B:59:U:H5	2.03	0.55
1:D:7:U:O4	1:E:53:G:C2'	2.54	0.55
1:A:21:A:N3	1:B:46:7MG:O6	2.16	0.55
1:A:40:5MC:OP2	1:B:40:5MC:HM53	1.97	0.55
1:D:60:C:O2	1:E:50:U:C5	2.43	0.55
1:D:68:U:O2'	1:E:55:PSU:OP1	2.18	0.55
1:E:64:A:H5"	1:E:65:G:OP2	2.07	0.55
1:D:56:C:C5'	1:E:70:C:N4	2.70	0.55
1:D:19:G:O2'	1:E:8:U:OP2	2.24	0.55
1:A:46:7MG:C4	1:B:46:7MG:C8	2.95	0.55
1:A:7:U:H2'	1:B:8:U:H5'	1.88	0.55
1:A:9:A:C5'	1:B:46:7MG:H4'	2.35	0.55
1:A:71:G:C3'	1:B:71:G:N7	2.69	0.55
1:D:60:C:H3'	1:E:65:G:C6	2.41	0.55
1:D:58:1MA:HM11	1:E:65:G:N1	2.08	0.55
1:A:18:G:C8	1:B:18:G:C1'	2.80	0.55
1:A:35:A:OP2	1:B:35:A:H8	1.88	0.55
1:A:14:A:H5'	1:B:13:C:H2'	1.81	0.55
1:A:27:C:C6	1:B:27:C:C2	2.92	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:64:A:H5"	1:B:65:G:OP2	2.07	0.55
1:D:21:A:C2'	1:E:59:U:C2	2.90	0.55
1:A:18:G:O6	1:B:57:G:C4	2.29	0.55
1:A:42:G:O6	1:B:42:G:N1	2.40	0.55
1:A:60:C:H5"	1:B:58:1MA:O3'	2.05	0.55
1:D:10:2MG:N7	1:E:17:H2U:N1	2.55	0.55
1:D:61:C:P	1:E:51:G:C5	2.99	0.55
1:C:64:A:H5"	1:C:65:G:OP2	2.07	0.55
1:A:28:C:N4	1:B:28:C:N3	2.53	0.55
1:A:42:G:C4	1:B:42:G:C4	2.94	0.55
1:D:64:A:H5"	1:D:65:G:OP2	2.07	0.55
1:A:13:C:H4'	1:B:12:U:C2	2.42	0.55
1:A:15:G:H21	1:B:21:A:C2'	1.85	0.55
1:A:37:YG:H132	1:B:37:YG:C13	2.35	0.55
1:A:45:G:C5	1:B:45:G:C8	2.95	0.55
1:A:45:G:C6	1:B:45:G:C5	2.95	0.55
1:A:23:A:H62	1:B:45:G:H22	1.32	0.55
1:D:8:U:C5'	1:E:61:C:C2	2.79	0.55
1:A:26:M2G:HM13	1:B:27:C:C1'	2.34	0.55
1:A:9:A:H4'	1:B:45:G:O3'	2.07	0.55
1:A:56:C:H6	1:B:56:C:H1'	1.72	0.55
1:A:18:G:C5'	1:B:60:C:C4	2.79	0.55
1:D:7:U:O4	1:E:53:G:H1'	2.07	0.55
1:A:24:G:O2'	1:B:25:C:P	2.63	0.54
1:D:58:1MA:HM12	1:E:65:G:N3	2.12	0.54
1:D:10:2MG:N7	1:E:17:H2U:C6	2.70	0.54
1:A:22:G:N2	1:B:22:G:C2	2.75	0.54
1:A:31:A:H1'	1:B:31:A:N9	2.05	0.54
1:A:40:5MC:H5"	1:B:40:5MC:P	2.46	0.54
1:A:42:G:C2	1:B:42:G:N2	2.75	0.54
1:D:9:A:O5'	1:E:18:G:C4'	2.51	0.54
1:A:11:C:C3'	1:B:10:2MG:O3'	2.39	0.54
1:A:42:G:N9	1:B:41:U:O2	2.38	0.54
1:A:43:G:C5	1:B:43:G:N3	2.71	0.54
1:A:2:C:OP2	1:B:66:A:OP1	2.25	0.54
1:A:63:C:P	1:B:63:C:C5	3.00	0.54
1:A:47:U:OP2	1:B:46:7MG:OP1	2.24	0.54
1:D:60:C:C3'	1:E:65:G:N1	2.71	0.54
1:D:68:U:O2	1:E:54:5MU:OP1	2.24	0.54
1:D:13:C:N3	1:E:58:1MA:H5'	2.10	0.54
1:A:74:C:OP1	1:B:74:C:O2'	2.26	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:10:2MG:HN2	1:B:26:M2G:C1'	2.18	0.54
1:A:29:A:C2	1:B:29:A:C2	2.95	0.54
1:A:63:C:C4	1:B:51:G:C6	2.95	0.54
1:A:55:PSU:C1'	1:B:57:G:C8	2.88	0.54
1:A:5:A:H1'	1:B:5:A:C2	2.43	0.54
1:A:64:A:O5'	1:B:51:G:N2	2.22	0.54
1:A:24:G:N1	1:B:10:2MG:C6	2.10	0.54
1:A:31:A:H5'	1:B:31:A:H5"	1.88	0.54
1:A:31:A:C2'	1:B:32:OMC:C4'	2.84	0.54
1:D:20:G:H2'	1:E:15:G:N7	2.22	0.54
1:D:12:U:H6	1:E:56:C:N3	2.06	0.54
1:D:22:G:C2	1:E:59:U:OP1	2.61	0.54
1:A:64:A:H5"	1:A:65:G:OP2	2.07	0.54
1:A:40:5MC:C5	1:B:40:5MC:HM52	2.40	0.54
1:D:8:U:OP2	1:E:18:G:N1	2.41	0.54
1:D:57:G:H8	1:E:5:A:N1	2.06	0.54
1:A:42:G:N1	1:B:42:G:N2	2.56	0.54
1:A:70:C:C2	1:B:68:U:C5	2.96	0.54
1:A:17:H2U:H62	1:B:17:H2U:H51	1.90	0.54
1:A:28:C:C4	1:B:28:C:N3	2.76	0.54
1:B:72:C:C2	1:C:75:C:H4'	2.43	0.54
1:A:66:A:N1	1:B:49:5MC:C1'	2.71	0.54
1:D:19:G:OP1	1:E:49:5MC:C5'	2.56	0.54
1:D:23:A:H4'	1:E:21:A:P	2.48	0.54
1:D:62:A:P	1:E:64:A:H2'	2.48	0.54
1:C:51:G:H2'	1:C:52:U:H6	1.73	0.54
1:A:28:C:C4	1:B:28:C:N1	2.76	0.53
1:A:38:A:C2	1:B:38:A:N1	2.75	0.53
1:A:40:5MC:O4'	1:B:40:5MC:C6	2.51	0.53
1:A:70:C:C5'	1:B:69:U:C3'	2.49	0.53
1:A:58:1MA:H1'	1:B:59:U:P	2.48	0.53
1:D:5:A:H5"	1:E:52:U:O3'	2.02	0.53
1:A:39:PSU:C5	1:B:39:PSU:N3	2.48	0.53
1:A:69:U:O4	1:B:67:A:C8	2.61	0.53
1:A:32:OMC:HM22	1:B:33:U:H1'	1.89	0.53
1:A:60:C:O4'	1:B:59:U:C6	2.61	0.53
1:A:19:G:N7	1:B:19:G:C1'	2.64	0.53
1:A:48:C:N4	1:B:21:A:C4'	2.71	0.53
1:A:17:H2U:H1'	1:B:19:G:OP2	2.06	0.53
1:D:64:A:C6	1:E:63:C:O3'	2.53	0.53
1:A:24:G:C5	1:B:24:G:C6	2.96	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:31:A:H2'	1:B:32:OMC:C1'	2.36	0.53
1:A:33:U:O2	1:B:35:A:C4	2.61	0.53
1:A:35:A:OP2	1:B:35:A:O4'	2.25	0.53
1:A:57:G:O6	1:B:19:G:C6	2.51	0.53
1:A:39:PSU:O5'	1:B:39:PSU:C6	2.62	0.53
1:A:8:U:C4'	1:B:46:7MG:H1'	2.38	0.53
1:D:17:H2U:P	1:E:47:U:HO2'	2.32	0.53
1:A:63:C:H5	1:B:62:A:N6	1.99	0.53
1:A:40:5MC:C5'	1:B:40:5MC:H5'	2.27	0.53
1:D:18:G:O4'	1:E:49:5MC:C2	2.57	0.53
1:D:50:U:H5'	1:E:62:A:H5'	1.88	0.53
1:A:51:G:H2'	1:A:52:U:H6	1.73	0.53
1:A:30:G:C2	1:B:30:G:N1	2.76	0.53
1:A:22:G:C6	1:B:46:7MG:N1	2.77	0.53
1:A:40:5MC:N4	1:B:40:5MC:HN41	2.06	0.53
1:A:48:C:O2'	1:B:48:C:N1	2.37	0.53
1:A:9:A:O2'	1:B:10:2MG:C8	2.60	0.53
1:A:30:G:N1	1:B:30:G:N1	2.56	0.53
1:A:63:C:N4	1:B:51:G:N7	2.57	0.53
1:D:60:C:O2	1:E:49:5MC:C6	2.51	0.53
1:D:51:G:N7	1:E:63:C:O5'	2.41	0.53
1:C:49:5MC:O2'	1:C:50:U:H5'	2.09	0.53
1:A:21:A:C1'	1:B:21:A:C5'	2.86	0.53
1:D:17:H2U:C5'	1:E:47:U:C5	2.92	0.53
1:A:58:1MA:C5	1:B:58:1MA:C2'	2.82	0.53
1:A:22:G:O5'	1:B:22:G:P	2.67	0.53
1:A:35:A:OP2	1:B:35:A:C8	2.62	0.53
1:C:73:A:HO2'	1:C:74:C:H5'	1.69	0.53
1:D:60:C:H2'	1:E:65:G:N1	2.23	0.53
1:A:29:A:C8	1:B:29:A:H5"	2.32	0.53
1:A:51:G:C4	1:B:51:G:C5'	2.91	0.53
1:B:21:A:C2	1:B:48:C:C2	2.97	0.53
1:A:45:G:C6	1:B:45:G:N7	2.77	0.53
1:A:15:G:C6	1:B:48:C:C2	2.96	0.53
1:A:32:OMC:N4	1:B:32:OMC:N4	2.57	0.52
1:A:48:C:C2'	1:B:48:C:C6	2.89	0.52
1:B:49:5MC:O2'	1:B:50:U:H5'	2.09	0.52
1:A:64:A:C2'	1:B:51:G:O2'	2.51	0.52
1:D:7:U:H6	1:E:54:5MU:C6	2.22	0.52
1:B:1:G:H22	1:C:76:A:C4'	1.90	0.52
1:A:41:U:H6	1:B:41:U:C6	2.19	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:74:C:H6	1:C:76:A:OP2	1.93	0.52
1:C:21:A:C2	1:C:48:C:C2	2.97	0.52
1:E:39:PSU:H2'	1:E:40:5MC:H6	1.74	0.52
1:A:21:A:C4	1:B:21:A:H8	2.23	0.52
1:A:35:A:N6	1:B:35:A:N6	2.54	0.52
1:A:9:A:H4'	1:B:46:7MG:O5'	2.08	0.52
1:A:4:G:N2	1:B:68:U:C2	2.56	0.52
1:D:19:G:OP1	1:E:49:5MC:OP2	2.27	0.52
1:D:58:1MA:C5'	1:E:7:U:H5	2.22	0.52
1:A:23:A:C5'	1:B:23:A:H5"	2.39	0.52
1:A:28:C:O2'	1:B:29:A:H4'	2.09	0.52
1:D:39:PSU:H2'	1:D:40:5MC:H6	1.74	0.52
1:A:33:U:N3	1:B:35:A:C4'	2.71	0.52
1:A:59:U:C5	1:B:21:A:O4'	2.63	0.52
1:A:59:U:O2'	1:B:48:C:C6	2.63	0.52
1:A:22:G:P	1:B:22:G:OP2	2.68	0.52
1:A:31:A:C1'	1:B:31:A:N9	2.71	0.52
1:A:24:G:H5"	1:B:24:G:O5'	1.95	0.52
1:A:69:U:N3	1:B:67:A:N9	2.57	0.52
1:A:11:C:H2'	1:B:11:C:C1'	2.40	0.52
1:A:21:A:O5'	1:B:21:A:OP1	2.28	0.52
1:A:16:H2U:OP1	1:B:15:G:N9	2.42	0.52
1:A:23:A:N9	1:B:23:A:N7	2.53	0.52
1:D:21:A:C2	1:E:60:C:O5'	2.63	0.52
1:A:39:PSU:O4'	1:B:38:A:H2'	1.87	0.52
1:A:26:M2G:HM22	1:B:44:A:C2	2.37	0.52
1:B:72:C:O3'	1:C:75:C:C5'	2.55	0.52
1:D:54:5MU:OP1	1:E:2:C:N1	2.38	0.52
1:D:58:1MA:H4'	1:D:59:U:OP1	2.10	0.52
1:A:5:A:N6	1:B:66:A:C5	2.73	0.51
1:B:71:G:O2'	1:C:74:C:C4	2.55	0.51
1:D:14:A:C2	1:E:48:C:N4	2.78	0.51
1:D:49:5MC:O2'	1:D:50:U:H5'	2.09	0.51
1:A:26:M2G:O2'	1:A:27:C:H5'	1.98	0.51
1:A:70:C:O2'	1:B:69:U:C2'	2.54	0.51
1:D:18:G:C2	1:E:66:A:C6	2.99	0.51
1:D:49:5MC:H2'	1:E:62:A:H5'	1.53	0.51
1:D:18:G:C6	1:E:66:A:C5	2.98	0.51
1:A:13:C:C5'	1:B:12:U:C5	2.92	0.51
1:A:43:G:O6	1:B:43:G:C2	2.63	0.51
1:B:51:G:H2'	1:B:52:U:H6	1.73	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:5:A:H1'	1:B:5:A:C6	2.46	0.51
1:E:21:A:C2	1:E:48:C:C2	2.97	0.51
1:A:19:G:C5	1:B:19:G:H1'	2.46	0.51
1:A:38:A:C8	1:B:37:YG:C4'	2.92	0.51
1:A:31:A:C8	1:B:31:A:N7	2.77	0.51
1:A:41:U:C2	1:B:41:U:N3	2.77	0.51
1:D:63:C:N4	1:E:63:C:O2'	2.42	0.51
1:A:19:G:C4	1:B:19:G:H1'	2.46	0.51
1:A:37:YG:H31	1:B:37:YG:O4'	2.10	0.51
1:A:41:U:H6	1:B:40:5MC:C2	2.25	0.51
1:D:51:G:H2'	1:D:52:U:H6	1.73	0.51
1:D:23:A:H4'	1:E:21:A:H4'	1.92	0.51
1:A:65:G:N2	1:B:50:U:C3'	2.60	0.51
1:A:21:A:C2	1:B:21:A:N9	2.77	0.51
1:A:42:G:O6	1:B:42:G:C6	2.63	0.51
1:A:2:C:H1'	1:B:2:C:P	2.28	0.51
1:D:13:C:N3	1:E:58:1MA:C5'	2.71	0.51
1:C:39:PSU:H2'	1:C:40:5MC:H6	1.74	0.51
1:A:68:U:N3	1:B:67:A:H2'	2.09	0.51
1:B:73:A:H2'	1:B:74:C:O4'	2.11	0.51
1:D:20:G:H2'	1:E:15:G:C6	2.46	0.51
1:D:7:U:C2'	1:E:53:G:H1	2.11	0.51
1:A:14:A:O4'	1:B:13:C:C2	2.61	0.51
1:A:21:A:C6	1:B:21:A:N7	2.78	0.51
1:A:32:OMC:HM22	1:B:33:U:C1'	2.41	0.51
1:A:63:C:H5"	1:B:63:C:C1'	2.24	0.51
1:A:46:7MG:N3	1:B:46:7MG:C8	2.78	0.51
1:D:23:A:H61	1:E:57:G:N2	2.08	0.51
1:D:24:G:C6	1:D:25:C:C4	2.99	0.51
1:D:58:1MA:C5'	1:E:7:U:C5	2.93	0.51
1:D:58:1MA:N3	1:E:66:A:N1	2.51	0.51
1:E:24:G:C6	1:E:25:C:C4	2.99	0.51
1:A:45:G:P	1:B:44:A:C5'	2.97	0.51
1:A:63:C:OP2	1:B:63:C:C5	2.62	0.51
1:A:73:A:H2'	1:A:74:C:O4'	2.11	0.51
1:A:17:H2U:O4'	1:B:17:H2U:O2	2.28	0.51
1:A:31:A:N1	1:B:31:A:N1	2.46	0.51
1:A:70:C:C2'	1:B:69:U:N3	2.48	0.51
1:D:11:C:N4	1:E:57:G:H22	2.08	0.51
1:D:13:C:H5"	1:E:58:1MA:OP2	2.10	0.51
1:D:21:A:C2'	1:E:59:U:N3	2.72	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:62:A:H8	1:B:61:C:N3	2.07	0.50
1:A:6:U:O4'	1:B:6:U:H2'	2.11	0.50
1:A:19:G:N7	1:B:19:G:N9	2.59	0.50
1:A:32:OMC:N3	1:B:32:OMC:C4	2.79	0.50
1:A:49:5MC:O2	1:B:50:U:H5"	1.23	0.50
1:A:37:YG:N3	1:B:37:YG:C3	2.72	0.50
1:A:63:C:O4'	1:B:62:A:H2	1.94	0.50
1:D:7:U:C2'	1:E:53:G:N1	2.36	0.50
1:D:63:C:N4	1:E:64:A:O4'	2.41	0.50
1:D:12:U:C4	1:E:19:G:C4	3.00	0.50
1:D:5:A:N9	1:E:53:G:H5"	2.27	0.50
1:D:61:C:H4'	1:E:65:G:O2'	2.10	0.50
1:C:58:1MA:H4'	1:C:59:U:OP1	2.10	0.50
1:C:24:G:C6	1:C:25:C:C4	2.99	0.50
1:A:38:A:H3'	1:B:38:A:H8	1.76	0.50
1:A:44:A:O3'	1:B:44:A:H4'	2.10	0.50
1:D:51:G:O6	1:E:63:C:C5'	2.59	0.50
1:D:29:A:C3'	1:D:30:G:H5'	2.41	0.50
1:A:44:A:O2'	1:A:45:G:H5'	2.12	0.50
1:D:21:A:N6	1:E:60:C:O2'	2.34	0.50
1:D:60:C:H3'	1:E:65:G:C2	2.47	0.50
1:A:33:U:C6	1:B:33:U:C2	2.99	0.50
1:A:37:YG:H103	1:B:37:YG:C10	2.42	0.50
1:A:13:C:C2	1:B:13:C:C4	3.00	0.50
1:C:73:A:H2'	1:C:74:C:O4'	2.12	0.50
1:D:7:U:P	1:E:53:G:O6	2.69	0.50
1:D:73:A:H2'	1:D:74:C:O4'	2.11	0.50
1:A:24:G:C6	1:A:25:C:C4	2.99	0.50
1:A:58:1MA:H4'	1:A:59:U:OP1	2.10	0.50
1:A:18:G:OP1	1:B:18:G:P	2.70	0.50
1:A:52:U:H1'	1:B:52:U:OP1	2.09	0.50
1:A:29:A:C4	1:B:29:A:C4	3.00	0.50
1:A:37:YG:N7	1:B:37:YG:N7	2.47	0.50
1:A:7:U:OP2	1:B:49:5MC:OP2	2.30	0.50
1:D:53:G:O2'	1:E:2:C:H5'	2.08	0.50
1:D:62:A:P	1:E:64:A:C2'	3.00	0.50
1:E:58:1MA:H4'	1:E:59:U:OP1	2.10	0.50
1:A:9:A:N6	1:B:9:A:C2	2.46	0.49
1:A:42:G:C5'	1:B:42:G:C5'	2.89	0.49
1:D:14:A:C2	1:E:59:U:H5'	2.47	0.49
1:E:51:G:H2'	1:E:52:U:H6	1.73	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:18:G:O6	1:B:57:G:C5	2.63	0.49
1:A:23:A:O4'	1:B:23:A:C3'	2.16	0.49
1:A:6:U:C4'	1:B:6:U:H2'	2.42	0.49
1:D:13:C:C2	1:E:58:1MA:H4'	2.45	0.49
1:D:21:A:C6	1:E:60:C:O3'	2.63	0.49
1:C:19:G:C4'	1:C:20:G:OP2	2.60	0.49
1:C:44:A:O2'	1:C:45:G:H5'	2.12	0.49
1:D:36:A:N3	1:D:36:A:H2'	2.28	0.49
1:A:15:G:N2	1:B:21:A:C2'	2.47	0.49
1:A:22:G:N3	1:B:22:G:C4	2.81	0.49
1:A:71:G:C8	1:B:69:U:O4	2.66	0.49
1:A:36:A:N6	1:B:35:A:H61	2.01	0.49
1:C:73:A:C2'	1:C:74:C:C5'	2.87	0.49
1:D:5:A:C4	1:E:53:G:C5'	2.95	0.49
1:D:5:A:C5'	1:E:52:U:O3'	2.55	0.49
1:E:73:A:H2'	1:E:74:C:O4'	2.11	0.49
1:E:29:A:C3'	1:E:30:G:H5'	2.42	0.49
1:C:29:A:C3'	1:C:30:G:H5'	2.42	0.49
1:E:44:A:O2'	1:E:45:G:H5'	2.12	0.49
1:A:43:G:C5	1:B:43:G:N9	2.79	0.49
1:A:57:G:C6	1:B:57:G:C2	2.95	0.49
1:A:30:G:N2	1:B:30:G:N2	2.60	0.49
1:A:61:C:C2	1:B:61:C:N4	2.81	0.49
1:D:11:C:C4	1:E:57:G:N2	2.81	0.49
1:D:14:A:N1	1:E:48:C:C4	2.80	0.49
1:E:49:5MC:O2'	1:E:50:U:H5'	2.09	0.49
1:A:10:2MG:C2'	1:B:10:2MG:O4'	2.52	0.49
1:A:34:OMG:C8	1:B:34:OMG:N7	2.79	0.49
1:A:11:C:C2'	1:B:11:C:H6	2.18	0.49
1:A:13:C:N1	1:B:13:C:N4	2.60	0.49
1:B:72:C:C4	1:C:75:C:O2'	2.65	0.49
1:D:9:A:H1'	1:E:17:H2U:C2'	2.40	0.49
1:E:34:OMG:H2'	1:E:35:A:C8	2.48	0.49
1:C:54:5MU:H73	1:C:55:PSU:C2	2.48	0.49
1:A:22:G:C2	1:B:22:G:C6	3.01	0.49
1:A:37:YG:O4'	1:B:36:A:O2'	2.30	0.49
1:A:43:G:N2	1:B:28:C:H2'	2.25	0.49
1:A:64:A:OP1	1:B:64:A:O4'	2.31	0.49
1:A:13:C:C5	1:B:13:C:N4	2.80	0.49
1:B:74:C:C6	1:C:76:A:OP2	2.65	0.49
1:A:36:A:H2'	1:A:36:A:N3	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:54:5MU:H73	1:A:55:PSU:C2	2.48	0.49
1:A:69:U:N3	1:B:67:A:C2'	2.63	0.49
1:A:8:U:N3	1:B:8:U:O2	2.46	0.49
1:A:50:U:N1	1:B:51:G:OP1	2.06	0.49
1:D:21:A:H3'	1:E:15:G:H2'	1.94	0.49
1:D:63:C:H41	1:E:64:A:H8	1.61	0.49
1:D:63:C:N4	1:E:64:A:H8	2.10	0.49
1:C:44:A:H2'	1:C:45:G:C5'	2.42	0.49
1:B:71:G:O3'	1:C:74:C:N4	2.45	0.49
1:D:5:A:N9	1:E:53:G:C5'	2.76	0.49
1:A:37:YG:C14	1:B:37:YG:C14	2.70	0.49
1:A:31:A:O5'	1:B:31:A:H5"	2.12	0.49
1:A:31:A:N7	1:B:31:A:N7	2.60	0.49
1:B:54:5MU:H73	1:B:55:PSU:C2	2.48	0.49
1:C:37:YG:H2'	1:C:38:A:C1'	2.43	0.49
1:E:37:YG:H2'	1:E:38:A:C1'	2.42	0.49
1:A:34:OMG:H2'	1:A:35:A:C8	2.48	0.48
1:A:38:A:H8	1:B:37:YG:O5'	1.95	0.48
1:A:63:C:C5	1:B:51:G:O6	2.66	0.48
1:A:73:A:C2'	1:A:74:C:C5'	2.87	0.48
1:A:17:H2U:H62	1:B:17:H2U:C5	2.41	0.48
1:A:23:A:C1'	1:B:23:A:C2'	2.72	0.48
1:A:42:G:N2	1:B:29:A:H2'	2.28	0.48
1:A:15:G:H2'	1:B:15:G:N2	2.28	0.48
1:A:29:A:C4	1:B:29:A:N9	2.81	0.48
1:A:40:5MC:O5'	1:B:40:5MC:CM5	2.60	0.48
1:A:40:5MC:N3	1:B:30:G:C6	2.81	0.48
1:A:38:A:C3'	1:B:38:A:H8	2.26	0.48
1:D:54:5MU:H73	1:D:55:PSU:C2	2.48	0.48
1:D:60:C:O2'	1:E:49:5MC:O2	2.28	0.48
1:D:5:A:H2'	1:E:53:G:H5"	1.94	0.48
1:D:73:A:C2'	1:D:74:C:C5'	2.87	0.48
1:A:37:YG:C11	1:B:37:YG:C12	3.00	0.48
1:A:40:5MC:C6	1:B:40:5MC:C2	2.90	0.48
1:A:48:C:O5'	1:B:47:U:C4'	2.61	0.48
1:A:34:OMG:H8	1:B:34:OMG:C8	2.29	0.48
1:A:46:7MG:C5	1:B:46:7MG:CM7	2.96	0.48
1:D:51:G:O6	1:E:63:C:C4'	2.57	0.48
1:D:53:G:OP1	1:E:3:G:H5'	1.97	0.48
1:D:37:YG:H2'	1:D:38:A:C1'	2.43	0.48
1:A:17:H2U:C6	1:B:17:H2U:H51	2.38	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:31:A:H62	1:B:32:OMC:N4	2.00	0.48
1:A:37:YG:H132	1:B:37:YG:H141	1.85	0.48
1:A:43:G:O5'	1:B:43:G:C5'	2.48	0.48
1:A:7:U:OP1	1:B:8:U:C5	2.57	0.48
1:D:44:A:O2'	1:D:45:G:H5'	2.12	0.48
1:D:60:C:O2'	1:E:65:G:N1	2.46	0.48
1:D:34:OMG:H2'	1:D:35:A:C8	2.48	0.48
1:A:33:U:C6	1:B:34:OMG:H3'	2.49	0.48
1:A:43:G:N1	1:B:43:G:N2	2.61	0.48
1:A:45:G:O5'	1:B:44:A:C2'	2.61	0.48
1:A:7:U:C2'	1:B:8:U:H5'	2.44	0.48
1:D:62:A:C6	1:E:64:A:P	3.07	0.48
1:D:62:A:C8	1:E:65:G:C4'	2.91	0.48
1:D:23:A:C3'	1:E:20:G:C8	2.83	0.48
1:C:36:A:N3	1:C:36:A:H2'	2.28	0.48
1:A:14:A:C8	1:B:14:A:N7	2.81	0.48
1:A:12:U:C2	1:B:12:U:C5	3.02	0.48
1:D:48:C:C2'	1:E:61:C:OP2	2.37	0.48
1:D:20:G:C2'	1:E:15:G:N7	2.77	0.48
1:D:48:C:H1'	1:E:60:C:H5"	1.35	0.48
1:A:21:A:C2	1:B:21:A:C6	2.93	0.48
1:A:44:A:H2'	1:A:45:G:C5'	2.42	0.48
1:D:49:5MC:CM5	1:E:53:G:N2	2.77	0.48
1:D:8:U:C6	1:E:61:C:N4	2.81	0.48
1:A:43:G:N7	1:B:43:G:C4	2.81	0.48
1:C:34:OMG:H2'	1:C:35:A:C8	2.48	0.48
1:E:44:A:H2'	1:E:45:G:C5'	2.42	0.48
1:A:16:H2U:O5'	1:B:16:H2U:OP2	2.32	0.48
1:A:33:U:H3'	1:B:34:OMG:C4'	2.44	0.48
1:B:73:A:O2'	1:C:76:A:O4'	2.32	0.48
1:D:8:U:OP1	1:E:18:G:O6	2.30	0.48
1:A:14:A:C4	1:B:14:A:N1	2.82	0.48
1:A:60:C:O4'	1:B:59:U:C1'	2.53	0.48
1:D:56:C:O4'	1:E:69:U:C3'	2.52	0.48
1:A:14:A:OP1	1:B:14:A:P	2.71	0.47
1:A:14:A:C2	1:B:14:A:N1	2.82	0.47
1:A:25:C:C6	1:B:25:C:C5	3.02	0.47
1:D:18:G:C8	1:E:67:A:H1'	2.49	0.47
1:D:18:G:O5'	1:E:49:5MC:O2	2.20	0.47
1:A:55:PSU:OP1	1:B:56:C:H5"	2.11	0.47
1:A:6:U:O3'	1:B:8:U:P	2.57	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:64:A:N6	1:B:50:U:H2'	2.28	0.47
1:D:17:H2U:P	1:E:47:U:O2'	2.69	0.47
1:E:35:A:H2'	1:E:35:A:N3	2.29	0.47
1:A:27:C:N4	1:B:27:C:C4	2.82	0.47
1:A:33:U:C2'	1:B:34:OMG:H3'	2.43	0.47
1:D:8:U:H1'	1:E:60:C:H5"	1.96	0.47
1:D:37:YG:H2'	1:D:38:A:C8	2.49	0.47
1:C:37:YG:H2'	1:C:38:A:C8	2.49	0.47
1:A:5:A:N7	1:B:7:U:O4	2.48	0.47
1:D:60:C:H4'	1:E:51:G:O6	2.14	0.47
1:E:37:YG:H2'	1:E:38:A:C8	2.49	0.47
1:E:36:A:H2'	1:E:36:A:N3	2.28	0.47
1:A:20:G:H22	1:B:22:G:C5'	2.27	0.47
1:A:43:G:N9	1:B:43:G:C1'	2.78	0.47
1:A:55:PSU:O4'	1:B:55:PSU:H2'	2.13	0.47
1:A:51:G:N1	1:B:52:U:H5	2.08	0.47
1:D:12:U:C6	1:E:56:C:N3	2.82	0.47
1:A:43:G:C8	1:B:43:G:N9	2.82	0.47
1:A:56:C:C6	1:B:56:C:H1'	2.49	0.47
1:B:58:1MA:H2	1:B:60:C:H2'	1.79	0.47
1:D:60:C:C4'	1:E:64:A:N1	2.77	0.47
1:C:35:A:H2'	1:C:35:A:N3	2.29	0.47
1:A:38:A:OP2	1:B:37:YG:H3'	2.14	0.47
1:A:50:U:H5	1:B:50:U:OP1	1.98	0.47
1:A:59:U:H2'	1:B:59:U:H6	1.80	0.47
1:A:62:A:H5'	1:B:61:C:C2	2.15	0.47
1:A:13:C:H4'	1:B:13:C:O4'	2.15	0.47
1:A:44:A:O5'	1:B:44:A:H5'	2.14	0.47
1:D:13:C:OP2	1:E:57:G:H8	1.97	0.47
1:D:57:G:C5	1:E:68:U:H1'	2.49	0.47
1:C:42:G:O2'	1:C:43:G:H5'	2.15	0.47
1:A:36:A:C5'	1:B:36:A:O4'	2.54	0.47
1:A:49:5MC:N4	1:B:49:5MC:H2'	2.04	0.47
1:A:29:A:C8	1:B:29:A:C8	3.01	0.47
1:A:43:G:C6	1:B:43:G:C5	3.03	0.47
1:D:5:A:C2'	1:E:53:G:H5"	2.45	0.47
1:D:20:G:N1	1:E:21:A:C2	2.83	0.47
1:D:48:C:O3'	1:E:61:C:C3'	2.63	0.47
1:D:50:U:H2'	1:E:63:C:OP1	2.13	0.47
1:A:35:A:H2'	1:A:35:A:N3	2.30	0.47
1:A:39:PSU:C3'	1:B:39:PSU:O5'	2.55	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:42:G:O2'	1:E:43:G:H5'	2.15	0.47
1:A:22:G:N3	1:B:23:A:C8	2.79	0.47
1:A:37:YG:C10	1:B:37:YG:H102	2.44	0.47
1:A:37:YG:O4'	1:B:36:A:H2'	2.15	0.47
1:D:12:U:H3'	1:E:57:G:N9	2.24	0.47
1:D:44:A:N1	1:E:17:H2U:N3	2.44	0.47
1:D:42:G:O2'	1:D:43:G:H5'	2.15	0.47
1:A:27:C:N4	1:B:27:C:N3	2.64	0.46
1:A:38:A:C3'	1:B:38:A:C8	2.90	0.46
1:B:1:G:H21	1:C:76:A:C2'	2.27	0.46
1:A:34:OMG:N9	1:B:34:OMG:N9	2.59	0.46
1:A:37:YG:C12	1:B:36:A:N6	2.66	0.46
1:A:60:C:O3'	1:B:60:C:C2'	2.57	0.46
1:D:21:A:C3'	1:E:15:G:H2'	2.41	0.46
1:D:60:C:O2	1:E:49:5MC:H3'	2.15	0.46
1:A:22:G:C8	1:B:22:G:H5"	2.37	0.46
1:A:44:A:N7	1:B:44:A:C8	2.83	0.46
1:B:73:A:P	1:C:75:C:C5'	3.00	0.46
1:A:20:G:N1	1:B:22:G:P	2.85	0.46
1:A:55:PSU:O2'	1:B:57:G:O4'	2.32	0.46
1:B:19:G:C4'	1:B:20:G:OP2	2.60	0.46
1:A:71:G:P	1:B:70:C:OP2	2.73	0.46
1:D:54:5MU:OP1	1:E:2:C:O4'	2.33	0.46
1:A:19:G:C6	1:B:19:G:N3	2.83	0.46
1:A:42:G:O2'	1:A:43:G:H5'	2.15	0.46
1:A:4:G:N2	1:B:69:U:C2	2.84	0.46
1:A:24:G:C8	1:B:24:G:C5	3.03	0.46
1:A:14:A:C8	1:B:14:A:C5	3.03	0.46
1:A:42:G:OP2	1:B:41:U:C6	2.69	0.46
1:A:13:C:O3'	1:B:13:C:C3'	2.63	0.46
1:A:43:G:O6	1:B:28:C:N4	2.48	0.46
1:A:71:G:C2'	1:B:2:C:N4	2.79	0.46
1:B:2:C:O2	1:B:2:C:C2'	2.59	0.46
1:A:32:OMC:C6	1:B:32:OMC:N1	2.83	0.46
1:A:41:U:P	1:B:41:U:H6	2.38	0.46
1:D:8:U:C2'	1:E:60:C:C6	2.98	0.46
1:E:21:A:C2	1:E:48:C:N3	2.84	0.46
1:D:46:7MG:N2	1:E:60:C:C4	2.47	0.46
1:A:43:G:C3'	1:B:43:G:C1'	2.93	0.46
1:A:63:C:O4'	1:B:62:A:C2	2.69	0.46
1:A:14:A:O5'	1:B:8:U:O4	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:57:G:N2	1:E:7:U:C2	2.84	0.46
1:E:73:A:C2'	1:E:74:C:C5'	2.87	0.46
1:D:35:A:H2'	1:D:35:A:N3	2.29	0.46
1:A:21:A:C1'	1:B:21:A:C4'	2.87	0.46
1:A:9:A:H5"	1:B:46:7MG:H4'	1.96	0.46
1:A:72:C:O5'	1:B:1:G:O6	2.08	0.46
1:A:49:5MC:HM51	1:B:49:5MC:C5'	2.46	0.46
1:B:72:C:H5'	1:C:74:C:N3	2.30	0.46
1:D:23:A:H5"	1:E:20:G:N9	2.16	0.46
1:D:14:A:N1	1:E:48:C:C5	2.81	0.46
1:A:46:7MG:N1	1:B:46:7MG:C5	2.84	0.46
1:B:73:A:P	1:C:75:C:C4'	3.00	0.46
1:D:26:M2G:HM22	1:E:17:H2U:HN3	0.71	0.46
1:D:49:5MC:C5'	1:E:61:C:O2	2.61	0.46
1:B:21:A:C2	1:B:48:C:N3	2.84	0.46
1:E:60:C:H5"	1:E:61:C:H5	1.81	0.46
1:C:21:A:C2	1:C:48:C:N3	2.84	0.46
1:A:40:5MC:C4	1:B:31:A:C6	3.04	0.46
1:A:69:U:C4	1:B:67:A:N9	2.84	0.46
1:A:37:YG:C4'	1:B:36:A:O2'	2.58	0.46
1:D:23:A:C4'	1:E:21:A:H4'	2.46	0.46
1:D:50:U:C2	1:E:63:C:OP1	2.69	0.46
1:A:28:C:O5'	1:B:28:C:C4'	2.65	0.45
1:A:38:A:N3	1:B:38:A:C1'	2.78	0.45
1:B:35:A:N3	1:B:35:A:H2'	2.30	0.45
1:A:55:PSU:H4'	1:B:55:PSU:H2'	1.96	0.45
1:D:21:A:C2	1:D:48:C:N3	2.84	0.45
1:D:18:G:O4'	1:E:49:5MC:C6	2.42	0.45
1:D:56:C:O4'	1:E:69:U:H3'	2.15	0.45
1:C:58:1MA:H2	1:C:60:C:H2'	1.79	0.45
1:A:30:G:N9	1:B:30:G:C8	2.85	0.45
1:B:72:C:O2	1:C:75:C:H4'	2.16	0.45
1:A:2:C:C1'	1:B:2:C:P	2.88	0.45
1:A:36:A:C8	1:B:35:A:H2'	2.50	0.45
1:A:71:G:P	1:B:70:C:H5	2.39	0.45
1:D:10:2MG:N7	1:E:17:H2U:C5	2.79	0.45
1:D:11:C:N4	1:E:57:G:N2	2.65	0.45
1:D:39:PSU:C6	1:D:40:5MC:HM52	2.51	0.45
1:C:12:U:C2'	1:C:13:C:O5'	2.64	0.45
1:A:41:U:C2	1:B:41:U:O2	2.69	0.45
1:A:59:U:N3	1:B:59:U:H5	2.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:15:G:C8	1:E:59:U:P	3.09	0.45
1:D:49:5MC:N4	1:E:62:A:N3	2.65	0.45
1:A:37:YG:C8	1:B:36:A:C3'	2.94	0.45
1:A:44:A:C6	1:B:44:A:C2	3.04	0.45
1:A:51:G:N2	1:B:52:U:C5'	2.80	0.45
1:A:62:A:C5	1:B:52:U:O4	2.69	0.45
1:A:23:A:O2'	1:B:24:G:C8	2.37	0.45
1:B:1:G:H2'	1:B:2:C:O4'	2.17	0.45
1:A:40:5MC:HM53	1:B:40:5MC:CM5	2.44	0.45
1:A:46:7MG:O2'	1:B:46:7MG:H5"	2.17	0.45
1:A:59:U:C4	1:B:59:U:C5	3.02	0.45
1:D:45:G:H1'	1:E:17:H2U:C2'	2.42	0.45
1:C:60:C:H5"	1:C:61:C:H5	1.82	0.45
1:A:13:C:H4'	1:B:12:U:N1	2.29	0.45
1:A:52:U:N1	1:B:52:U:P	2.89	0.45
1:D:7:U:C4	1:E:53:G:C1'	2.75	0.45
1:E:39:PSU:C6	1:E:40:5MC:HM52	2.51	0.45
1:A:31:A:N9	1:B:31:A:N9	2.64	0.45
1:D:26:M2G:HM21	1:E:17:H2U:C2	1.89	0.45
1:D:62:A:O5'	1:E:65:G:C1'	2.64	0.45
1:A:33:U:N3	1:B:33:U:C2	2.79	0.45
1:A:16:H2U:C6	1:B:16:H2U:H2'	2.47	0.45
1:A:17:H2U:C4	1:B:17:H2U:N3	2.80	0.45
1:A:2:C:C5	1:B:1:G:OP3	2.69	0.45
1:A:40:5MC:O4'	1:B:39:PSU:C2'	2.58	0.45
1:A:19:G:C6	1:B:19:G:C4	3.04	0.45
1:D:44:A:H2'	1:D:45:G:C5'	2.42	0.45
1:D:9:A:O5'	1:E:18:G:C2'	2.64	0.45
1:D:55:PSU:O4	1:E:68:U:O4	2.34	0.45
1:C:39:PSU:C6	1:C:40:5MC:HM52	2.51	0.45
1:E:12:U:C2'	1:E:13:C:O5'	2.64	0.45
1:A:24:G:N3	1:B:24:G:N1	2.65	0.45
1:D:10:2MG:C8	1:E:17:H2U:H1'	2.51	0.45
1:A:45:G:N2	1:B:45:G:C4	2.85	0.44
1:A:60:C:H5"	1:A:61:C:H5	1.81	0.44
1:A:1:G:H2'	1:A:2:C:O4'	2.17	0.44
1:A:16:H2U:C5'	1:B:16:H2U:OP2	2.61	0.44
1:A:28:C:C4	1:B:28:C:C6	3.06	0.44
1:A:42:G:C1'	1:B:41:U:O2	2.66	0.44
1:A:50:U:P	1:B:47:U:O3'	2.74	0.44
1:D:10:2MG:N7	1:E:17:H2U:C1'	2.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:14:A:C6	1:E:59:U:O4’	2.65	0.44
1:A:24:G:N9	1:B:24:G:C4	2.83	0.44
1:A:7:U:P	1:B:49:5MC:OP2	2.75	0.44
1:D:60:C:C2	1:E:49:5MC:C4	2.64	0.44
1:D:58:1MA:C5	1:E:65:G:O6	2.70	0.44
1:A:13:C:C2	1:B:13:C:N3	2.86	0.44
1:A:50:U:C4	1:B:50:U:O5’	2.58	0.44
1:A:33:U:H3’	1:B:34:OMG:C5’	2.42	0.44
1:A:54:5MU:O4’	1:B:54:5MU:H73	2.18	0.44
1:D:18:G:C2	1:E:7:U:O4	2.70	0.44
1:C:1:G:H2’	1:C:2:C:O4’	2.17	0.44
1:A:24:G:N3	1:B:24:G:C2	2.86	0.44
1:D:13:C:C2	1:E:58:1MA:H5”	2.38	0.44
1:D:60:C:H5”	1:D:61:C:H5	1.81	0.44
1:D:1:G:H2’	1:D:2:C:O4’	2.17	0.44
1:B:12:U:C2’	1:B:13:C:O5’	2.64	0.44
1:A:27:C:C6	1:B:28:C:P	3.11	0.44
1:A:44:A:C5	1:B:44:A:H1’	2.50	0.44
1:A:71:G:C5’	1:B:71:G:N7	2.79	0.44
1:D:7:U:O4	1:E:53:G:C1’	2.66	0.44
1:D:26:M2G:CM2	1:E:17:H2U:C2	1.84	0.44
1:D:17:H2U:O5’	1:E:47:U:C5	2.68	0.44
1:B:72:C:C2	1:C:75:C:O2’	2.55	0.44
1:D:50:U:O4	1:E:62:A:H2’	2.17	0.44
1:D:53:G:O2’	1:E:2:C:C5’	2.64	0.44
1:E:1:G:H2’	1:E:2:C:O4’	2.17	0.44
1:A:23:A:H1’	1:B:24:G:C8	2.52	0.44
1:A:28:C:C4	1:B:28:C:C4	3.05	0.44
1:A:37:YG:O4’	1:B:36:A:C2’	2.66	0.44
1:A:40:5MC:HM51	1:B:39:PSU:C5	2.28	0.44
1:D:20:G:N2	1:E:21:A:H2	2.15	0.44
1:D:20:G:C6	1:E:15:G:O6	2.71	0.44
1:A:30:G:C2’	1:B:31:A:O4’	2.64	0.43
1:A:59:U:H3	1:B:15:G:N2	2.16	0.43
1:B:24:G:C6	1:B:25:C:C4	2.99	0.43
1:A:37:YG:H101	1:B:37:YG:H102	1.99	0.43
1:A:42:G:C2	1:B:42:G:C2	3.06	0.43
1:A:70:C:C5	1:B:68:U:C5	3.06	0.43
1:D:18:G:C8	1:E:67:A:C4	2.88	0.43
1:D:5:A:N1	1:E:54:5MU:P	2.89	0.43
1:D:37:YG:C2’	1:D:37:YG:H31	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:43:G:P	1:B:43:G:C5'	2.94	0.43
1:A:65:G:H22	1:B:50:U:H4'	0.49	0.43
1:D:51:G:C5	1:E:63:C:O5'	2.72	0.43
1:A:17:H2U:C1'	1:B:17:H2U:C2	2.95	0.43
1:A:23:A:C1'	1:B:24:G:H8	2.15	0.43
1:A:46:7MG:C3'	1:B:46:7MG:H5"	2.48	0.43
1:D:50:U:N1	1:E:63:C:OP1	2.49	0.43
1:A:25:C:C5	1:B:25:C:C4	3.06	0.43
1:A:40:5MC:C2	1:B:40:5MC:C4	2.95	0.43
1:A:49:5MC:H4'	1:B:47:U:H6	1.29	0.43
1:A:58:1MA:C6	1:B:58:1MA:C4	2.89	0.43
1:A:6:U:C4'	1:B:7:U:C6	2.97	0.43
1:A:21:A:O4'	1:B:21:A:H5"	2.10	0.43
1:A:43:G:N1	1:B:43:G:N3	2.65	0.43
1:A:5:A:C8	1:B:7:U:C4	3.05	0.43
1:A:17:H2U:C5'	1:B:17:H2U:O5'	2.66	0.43
1:A:20:G:O5'	1:B:20:G:C3'	2.35	0.43
1:A:35:A:C8	1:B:34:OMG:C2'	2.91	0.43
1:A:51:G:N1	1:B:52:U:C5	2.79	0.43
1:A:60:C:O4'	1:B:59:U:N1	2.51	0.43
1:D:18:G:C8	1:E:67:A:C1'	3.01	0.43
1:D:57:G:H1'	1:E:6:U:H1'	1.71	0.43
1:A:26:M2G:C8	1:B:26:M2G:C4	3.07	0.43
1:A:1:G:N2	1:B:1:G:H8	1.93	0.43
1:A:33:U:N3	1:B:35:A:H3'	2.31	0.43
1:A:40:5MC:HM53	1:B:40:5MC:HM52	1.83	0.43
1:D:22:G:C4'	1:E:59:U:O4	2.66	0.43
1:A:61:C:H41	1:B:58:1MA:H3'	1.30	0.43
1:D:9:A:O3'	1:E:18:G:OP1	2.36	0.43
1:A:37:YG:H31	1:A:37:YG:C2'	2.48	0.43
1:A:45:G:C2	1:B:45:G:N9	2.86	0.43
1:A:54:5MU:H5"	1:B:54:5MU:OP2	2.19	0.43
1:A:7:U:O2	1:B:49:5MC:O2'	2.37	0.43
1:C:37:YG:H31	1:C:37:YG:C2'	2.48	0.43
1:A:25:C:H1'	1:B:25:C:H2'	1.13	0.43
1:A:58:1MA:H2	1:A:60:C:H2'	1.79	0.43
1:A:13:C:C6	1:B:13:C:C5	3.06	0.43
1:A:73:A:H1'	1:B:1:G:O4'	2.17	0.43
1:D:24:G:N2	1:E:19:G:C2	2.78	0.43
1:C:8:U:H5'	1:C:49:5MC:OP2	2.19	0.43
1:A:8:U:H5'	1:A:49:5MC:OP2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:71:G:C2'	1:B:2:C:H42	2.31	0.43
1:A:24:G:C1'	1:B:24:G:C8	3.02	0.42
1:A:38:A:H8	1:B:37:YG:C4'	2.24	0.42
1:A:54:5MU:H1'	1:B:54:5MU:C5	2.53	0.42
1:A:59:U:C5	1:B:21:A:C1'	3.01	0.42
1:A:31:A:N6	1:B:32:OMC:HN41	2.05	0.42
1:B:73:A:C2'	1:C:76:A:O4'	2.56	0.42
1:A:31:A:N6	1:B:31:A:H62	2.17	0.42
1:A:8:U:O3'	1:B:46:7MG:H1'	2.18	0.42
1:B:39:PSU:C6	1:B:40:5MC:HM52	2.51	0.42
1:E:8:U:H5'	1:E:49:5MC:OP2	2.19	0.42
1:A:11:C:H2'	1:B:11:C:N1	2.25	0.42
1:A:24:G:C2	1:B:24:G:N1	2.88	0.42
1:A:44:A:H3'	1:B:44:A:O4'	2.18	0.42
1:D:57:G:H5'	1:E:4:G:H1	1.83	0.42
1:A:42:G:C5	1:B:42:G:C6	3.08	0.42
1:A:58:1MA:N6	1:B:58:1MA:N9	2.34	0.42
1:A:73:A:O4'	1:B:1:G:C1'	2.68	0.42
1:D:48:C:H2'	1:E:61:C:OP2	2.17	0.42
1:A:66:A:N1	1:B:49:5MC:H2'	2.29	0.42
1:A:23:A:C6	1:B:23:A:N6	2.87	0.42
1:A:69:U:C2	1:B:67:A:C4	3.08	0.42
1:A:60:C:N3	1:B:59:U:C5	2.71	0.42
1:D:51:G:C6	1:E:63:C:C4'	3.02	0.42
1:D:63:C:H2'	1:D:64:A:C8	2.55	0.42
1:D:45:G:P	1:E:16:H2U:HO2'	2.34	0.42
1:D:19:G:H3'	1:E:8:U:P	2.59	0.42
1:E:37:YG:C2'	1:E:37:YG:H31	2.48	0.42
1:A:70:C:H2'	1:A:71:G:C8	2.55	0.42
1:B:8:U:H5'	1:B:49:5MC:OP2	2.19	0.42
1:E:70:C:H2'	1:E:71:G:C8	2.55	0.42
1:A:60:C:O3'	1:B:60:C:H2'	2.20	0.42
1:A:63:C:H3'	1:B:51:G:C2	2.51	0.42
1:A:63:C:OP2	1:B:63:C:N3	2.53	0.42
1:A:63:C:C2'	1:B:52:U:C2	2.01	0.42
1:D:9:A:C2	1:D:45:G:C6	3.08	0.42
1:A:41:U:N3	1:B:41:U:N3	2.67	0.42
1:D:14:A:C2	1:E:59:U:C5'	3.00	0.42
1:D:45:G:H2'	1:E:17:H2U:H3'	1.72	0.42
1:D:8:U:H2'	1:E:60:C:C6	2.55	0.42
1:D:35:A:C8	1:D:35:A:OP2	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:43:G:O6	1:B:43:G:C5	2.72	0.42
1:A:45:G:C1'	1:B:45:G:O4'	2.59	0.42
1:A:71:G:O3'	1:B:71:G:N7	2.53	0.42
1:D:48:C:C2'	1:E:60:C:H5'	2.40	0.42
1:D:60:C:HO2'	1:E:65:G:N2	2.18	0.42
1:D:70:C:H2'	1:D:71:G:C8	2.55	0.42
1:A:23:A:O2'	1:B:24:G:H5'	2.19	0.41
1:A:15:G:H8	1:B:15:G:C4	2.27	0.41
1:B:63:C:H2'	1:B:64:A:C8	2.55	0.41
1:A:5:A:C6	1:B:66:A:N1	2.84	0.41
1:A:70:C:O2	1:B:68:U:O4	2.38	0.41
1:C:60:C:C4'	1:C:61:C:OP2	2.62	0.41
1:A:32:OMC:C6	1:B:32:OMC:C4	3.06	0.41
1:A:33:U:N1	1:B:35:A:C8	2.64	0.41
1:D:25:C:C4	1:E:19:G:C2'	3.02	0.41
1:D:56:C:N1	1:E:68:U:C2	2.88	0.41
1:E:35:A:C8	1:E:35:A:OP2	2.73	0.41
1:E:9:A:C2	1:E:45:G:C6	3.08	0.41
1:A:16:H2U:H52	1:B:16:H2U:H51	2.02	0.41
1:A:38:A:H3'	1:B:38:A:C8	2.53	0.41
1:A:46:7MG:O4'	1:B:45:G:H3'	2.20	0.41
1:A:34:OMG:H2'	1:B:34:OMG:N3	2.35	0.41
1:D:61:C:O2	1:E:65:G:H3'	2.20	0.41
1:C:63:C:H2'	1:C:64:A:C8	2.55	0.41
1:A:73:A:C5'	1:C:76:A:H1'	2.51	0.41
1:A:55:PSU:H5"	1:B:56:C:OP2	2.13	0.41
1:B:70:C:H2'	1:B:71:G:C8	2.55	0.41
1:D:5:A:O5'	1:E:52:U:O3'	2.38	0.41
1:D:61:C:OP2	1:E:51:G:N1	2.53	0.41
1:E:63:C:H2'	1:E:64:A:C8	2.55	0.41
1:D:35:A:H8	1:D:35:A:OP2	2.04	0.41
1:C:70:C:H2'	1:C:71:G:C8	2.55	0.41
1:A:17:H2U:N1	1:B:17:H2U:O2	2.54	0.41
1:A:8:U:O4	1:B:8:U:N3	2.53	0.41
1:A:26:M2G:P	1:B:26:M2G:H3'	2.61	0.41
1:A:29:A:N1	1:B:29:A:C4	2.89	0.41
1:A:18:G:C4'	1:B:60:C:N4	2.83	0.41
1:A:68:U:O4	1:B:66:A:H2'	2.21	0.41
1:A:15:G:O6	1:B:8:U:O2'	2.39	0.41
1:D:48:C:H1'	1:E:60:C:H3'	1.09	0.41
1:C:9:A:C2	1:C:45:G:C6	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:31:A:H2	1:B:32:OMC:H1'	1.63	0.41
1:A:63:C:H2'	1:A:64:A:C8	2.55	0.41
1:A:73:A:HO2'	1:A:74:C:H5'	1.78	0.41
1:A:40:5MC:C4'	1:B:39:PSU:C2'	2.78	0.41
1:D:16:H2U:H4'	1:E:50:U:P	2.37	0.41
1:D:15:G:N7	1:E:58:1MA:O3'	2.54	0.41
1:A:33:U:O2	1:B:35:A:C5	2.73	0.41
1:A:58:1MA:N6	1:B:58:1MA:C5	2.89	0.41
1:A:71:G:C4'	1:B:71:G:C6	2.89	0.41
1:D:13:C:C4	1:E:58:1MA:H5'	2.55	0.41
1:A:15:G:C2'	1:B:15:G:C4	2.66	0.41
1:A:30:G:C4	1:B:30:G:C2'	2.96	0.41
1:A:39:PSU:C5	1:B:39:PSU:C5	2.43	0.41
1:A:60:C:C5'	1:B:58:1MA:O3'	2.68	0.41
1:B:73:A:O4'	1:C:75:C:C4'	2.69	0.41
1:A:15:G:H21	1:B:21:A:H1'	1.04	0.41
1:A:36:A:N6	1:B:36:A:N6	2.58	0.41
1:A:17:H2U:C5	1:B:17:H2U:O4	2.50	0.41
1:A:44:A:N9	1:B:44:A:O4'	2.52	0.41
1:A:60:C:H3'	1:B:58:1MA:H1'	2.02	0.41
1:C:35:A:C8	1:C:35:A:OP2	2.73	0.41
1:D:30:G:H2'	1:D:31:A:O4'	2.21	0.41
1:A:15:G:O6	1:B:48:C:C2	2.73	0.41
1:A:35:A:OP2	1:A:35:A:C8	2.73	0.41
1:B:73:A:H2'	1:B:74:C:H5'	1.98	0.41
1:A:19:G:C5	1:B:19:G:C4	3.09	0.40
1:A:58:1MA:N6	1:B:58:1MA:C4	2.88	0.40
1:A:36:A:C1'	1:B:36:A:O4'	2.61	0.40
1:A:31:A:C2	1:B:31:A:C4	3.02	0.40
1:B:30:G:H2'	1:B:31:A:O4'	2.21	0.40
1:A:37:YG:C1'	1:B:36:A:H2'	2.51	0.40
1:A:52:U:C2	1:B:52:U:OP2	2.75	0.40
1:D:60:C:O2'	1:E:65:G:C2	2.74	0.40
1:A:37:YG:H131	1:B:37:YG:C11	2.47	0.40
1:D:21:A:H3'	1:E:16:H2U:OP2	2.22	0.40
1:D:8:U:C5'	1:E:61:C:C1'	2.95	0.40
1:C:35:A:OP2	1:C:35:A:H8	2.04	0.40
1:C:27:C:H2'	1:C:28:C:C6	2.57	0.40
1:A:16:H2U:C2	1:B:16:H2U:P	3.09	0.40
1:D:51:G:C6	1:E:63:C:O5'	2.74	0.40
1:D:68:U:H1'	1:E:54:5MU:O3'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:35:A:OP2	1:E:35:A:H8	2.04	0.40
1:A:24:G:C8	1:B:24:G:C8	3.10	0.40
1:A:28:C:C6	1:B:29:A:O5'	2.75	0.40
1:A:54:5MU:C1'	1:B:54:5MU:H73	2.51	0.40
1:D:58:1MA:C4	1:E:7:U:O4	2.70	0.40
1:D:68:U:C2	1:E:54:5MU:H5'	2.57	0.40
1:D:73:A:H2'	1:D:74:C:H5'	1.98	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

There are no protein molecules in this entry.

5.3.2 Protein sidechains (i)

There are no protein molecules in this entry.

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	75/76 (98%)	28 (37%)	1 (1%)
1	B	75/76 (98%)	29 (38%)	1 (1%)
1	C	75/76 (98%)	28 (37%)	1 (1%)
1	D	75/76 (98%)	28 (37%)	1 (1%)
1	E	75/76 (98%)	28 (37%)	1 (1%)
All	All	375/380 (98%)	141 (37%)	5 (1%)

All (141) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	9	A
1	A	15	G
1	A	16	H2U
1	A	17	H2U
1	A	19	G
1	A	21	A

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Mol	Chain	Res	Type
1	A	24	G
1	A	25	C
1	A	26	M2G
1	A	27	C
1	A	28	C
1	A	29	A
1	A	30	G
1	A	31	A
1	A	33	U
1	A	34	OMG
1	A	35	A
1	A	37	YG
1	A	38	A
1	A	48	C
1	A	51	G
1	A	53	G
1	A	55	PSU
1	A	60	C
1	A	61	C
1	A	62	A
1	A	75	C
1	A	76	A
1	B	9	A
1	B	15	G
1	B	16	H2U
1	B	17	H2U
1	B	19	G
1	B	21	A
1	B	24	G
1	B	25	C
1	B	26	M2G
1	B	27	C
1	B	28	C
1	B	29	A
1	B	30	G
1	B	31	A
1	B	33	U
1	B	34	OMG
1	B	35	A
1	B	37	YG
1	B	38	A
1	B	48	C

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Mol	Chain	Res	Type
1	B	51	G
1	B	53	G
1	B	55	PSU
1	B	56	C
1	B	60	C
1	B	61	C
1	B	62	A
1	B	75	C
1	B	76	A
1	C	9	A
1	C	15	G
1	C	16	H2U
1	C	17	H2U
1	C	19	G
1	C	21	A
1	C	24	G
1	C	25	C
1	C	26	M2G
1	C	27	C
1	C	28	C
1	C	29	A
1	C	30	G
1	C	31	A
1	C	33	U
1	C	34	OMG
1	C	35	A
1	C	37	YG
1	C	38	A
1	C	48	C
1	C	51	G
1	C	53	G
1	C	55	PSU
1	C	60	C
1	C	61	C
1	C	62	A
1	C	75	C
1	C	76	A
1	D	9	A
1	D	15	G
1	D	16	H2U
1	D	17	H2U
1	D	19	G

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Mol	Chain	Res	Type
1	D	21	A
1	D	24	G
1	D	25	C
1	D	26	M2G
1	D	27	C
1	D	28	C
1	D	29	A
1	D	30	G
1	D	31	A
1	D	33	U
1	D	34	OMG
1	D	35	A
1	D	37	YG
1	D	38	A
1	D	48	C
1	D	51	G
1	D	53	G
1	D	55	PSU
1	D	60	C
1	D	61	C
1	D	62	A
1	D	75	C
1	D	76	A
1	E	9	A
1	E	15	G
1	E	16	H2U
1	E	17	H2U
1	E	19	G
1	E	21	A
1	E	24	G
1	E	25	C
1	E	26	M2G
1	E	27	C
1	E	28	C
1	E	29	A
1	E	30	G
1	E	31	A
1	E	33	U
1	E	34	OMG
1	E	35	A
1	E	37	YG
1	E	38	A

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Mol	Chain	Res	Type
1	E	48	C
1	E	51	G
1	E	53	G
1	E	55	PSU
1	E	60	C
1	E	61	C
1	E	62	A
1	E	75	C
1	E	76	A

All (5) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	75	C
1	B	75	C
1	C	75	C
1	D	75	C
1	E	75	C

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

70 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	2MG	A	10	1	18,26,27	1.19	2 (11%)	21,38,41	3.48	5 (23%)
1	H2U	A	16	1	17,21,22	0.74	0	23,30,33	1.13	2 (8%)
1	H2U	A	17	1	17,21,22	0.67	0	23,30,33	0.82	0
1	M2G	A	26	1	18,27,28	1.09	2 (11%)	22,40,43	2.92	8 (36%)
1	OMC	A	32	1	15,22,23	1.13	1 (6%)	20,31,34	2.07	3 (15%)
1	OMG	A	34	1	18,26,27	1.33	4 (22%)	21,38,41	2.81	4 (19%)
1	YG	A	37	1	28,42,43	2.94	5 (17%)	28,62,65	2.54	10 (35%)
1	PSU	A	39	1	15,21,22	1.46	3 (20%)	16,30,33	3.58	1 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	5MC	A	40	1	14,22,23	0.85	1 (7%)	17,32,35	1.11	1 (5%)
1	7MG	A	46	1	20,26,27	1.77	3 (15%)	23,39,42	1.94	2 (8%)
1	5MC	A	49	1	14,22,23	0.93	1 (7%)	17,32,35	1.19	1 (5%)
1	5MU	A	54	1	13,22,23	1.13	2 (15%)	16,32,35	3.07	2 (12%)
1	PSU	A	55	1	15,21,22	1.52	3 (20%)	16,30,33	3.81	3 (18%)
1	1MA	A	58	1	15,25,26	1.23	1 (6%)	15,37,40	1.53	3 (20%)
1	2MG	B	10	1	18,26,27	1.20	2 (11%)	21,38,41	3.48	5 (23%)
1	H2U	B	16	1	17,21,22	0.72	0	23,30,33	1.13	2 (8%)
1	H2U	B	17	1	17,21,22	0.67	0	23,30,33	0.82	0
1	M2G	B	26	1	18,27,28	1.10	2 (11%)	22,40,43	2.92	8 (36%)
1	OMC	B	32	1	15,22,23	1.13	1 (6%)	20,31,34	2.07	3 (15%)
1	OMG	B	34	1	18,26,27	1.32	4 (22%)	21,38,41	2.81	4 (19%)
1	YG	B	37	1	28,42,43	2.93	5 (17%)	28,62,65	2.54	10 (35%)
1	PSU	B	39	1	15,21,22	1.45	3 (20%)	16,30,33	3.57	1 (6%)
1	5MC	B	40	1	14,22,23	0.86	1 (7%)	17,32,35	1.11	1 (5%)
1	7MG	B	46	1	20,26,27	1.77	3 (15%)	23,39,42	1.95	2 (8%)
1	5MC	B	49	1	14,22,23	0.93	1 (7%)	17,32,35	1.19	1 (5%)
1	5MU	B	54	1	13,22,23	1.13	2 (15%)	16,32,35	3.08	2 (12%)
1	PSU	B	55	1	15,21,22	1.53	3 (20%)	16,30,33	3.80	3 (18%)
1	1MA	B	58	1	15,25,26	1.23	1 (6%)	15,37,40	1.53	3 (20%)
1	2MG	C	10	1	18,26,27	1.19	3 (16%)	21,38,41	3.45	5 (23%)
1	H2U	C	16	1	17,21,22	0.72	0	23,30,33	1.15	2 (8%)
1	H2U	C	17	1	17,21,22	0.67	0	23,30,33	0.84	0
1	M2G	C	26	1	18,27,28	1.08	2 (11%)	22,40,43	2.93	8 (36%)
1	OMC	C	32	1	15,22,23	1.13	1 (6%)	20,31,34	2.07	3 (15%)
1	OMG	C	34	1	18,26,27	1.32	3 (16%)	21,38,41	2.85	4 (19%)
1	YG	C	37	1	28,42,43	2.91	5 (17%)	28,62,65	2.53	10 (35%)
1	PSU	C	39	1	15,21,22	1.47	3 (20%)	16,30,33	3.54	1 (6%)
1	5MC	C	40	1	14,22,23	0.90	1 (7%)	17,32,35	1.11	1 (5%)
1	7MG	C	46	1	20,26,27	1.77	3 (15%)	23,39,42	1.93	2 (8%)
1	5MC	C	49	1	14,22,23	0.93	1 (7%)	17,32,35	1.21	1 (5%)
1	5MU	C	54	1	13,22,23	1.09	1 (7%)	16,32,35	3.07	2 (12%)
1	PSU	C	55	1	15,21,22	1.53	3 (20%)	16,30,33	3.81	3 (18%)
1	1MA	C	58	1	15,25,26	1.25	2 (13%)	15,37,40	1.51	3 (20%)
1	2MG	D	10	1	18,26,27	1.19	2 (11%)	21,38,41	3.47	5 (23%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	H2U	D	16	1	17,21,22	0.74	0	23,30,33	1.14	2 (8%)
1	H2U	D	17	1	17,21,22	0.67	0	23,30,33	0.81	0
1	M2G	D	26	1	18,27,28	1.10	2 (11%)	22,40,43	2.93	8 (36%)
1	OMC	D	32	1	15,22,23	1.14	1 (6%)	20,31,34	2.07	3 (15%)
1	OMG	D	34	1	18,26,27	1.33	3 (16%)	21,38,41	2.83	4 (19%)
1	YG	D	37	1	28,42,43	2.92	5 (17%)	28,62,65	2.55	10 (35%)
1	PSU	D	39	1	15,21,22	1.44	3 (20%)	16,30,33	3.54	1 (6%)
1	5MC	D	40	1	14,22,23	0.93	1 (7%)	17,32,35	1.10	1 (5%)
1	7MG	D	46	1	20,26,27	1.76	3 (15%)	23,39,42	1.91	2 (8%)
1	5MC	D	49	1	14,22,23	0.91	1 (7%)	17,32,35	1.20	1 (5%)
1	5MU	D	54	1	13,22,23	1.10	1 (7%)	16,32,35	3.09	2 (12%)
1	PSU	D	55	1	15,21,22	1.54	3 (20%)	16,30,33	3.80	3 (18%)
1	1MA	D	58	1	15,25,26	1.23	2 (13%)	15,37,40	1.52	3 (20%)
1	2MG	E	10	1	18,26,27	1.19	3 (16%)	21,38,41	3.47	5 (23%)
1	H2U	E	16	1	17,21,22	0.69	0	23,30,33	1.14	2 (8%)
1	H2U	E	17	1	17,21,22	0.68	0	23,30,33	0.84	0
1	M2G	E	26	1	18,27,28	1.08	2 (11%)	22,40,43	2.91	8 (36%)
1	OMC	E	32	1	15,22,23	1.15	1 (6%)	20,31,34	2.08	3 (15%)
1	OMG	E	34	1	18,26,27	1.34	3 (16%)	21,38,41	2.83	4 (19%)
1	YG	E	37	1	28,42,43	2.92	5 (17%)	28,62,65	2.54	10 (35%)
1	PSU	E	39	1	15,21,22	1.47	3 (20%)	16,30,33	3.54	1 (6%)
1	5MC	E	40	1	14,22,23	0.92	1 (7%)	17,32,35	1.09	1 (5%)
1	7MG	E	46	1	20,26,27	1.74	3 (15%)	23,39,42	1.93	2 (8%)
1	5MC	E	49	1	14,22,23	0.96	1 (7%)	17,32,35	1.20	1 (5%)
1	5MU	E	54	1	13,22,23	1.10	1 (7%)	16,32,35	3.04	2 (12%)
1	PSU	E	55	1	15,21,22	1.53	3 (20%)	16,30,33	3.78	3 (18%)
1	1MA	E	58	1	15,25,26	1.26	1 (6%)	15,37,40	1.52	3 (20%)

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	2MG	A	10	1	-	0/5/27/28	0/3/3/3
1	H2U	A	16	1	-	0/7/38/39	0/2/2/2
1	H2U	A	17	1	-	0/7/38/39	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	M2G	A	26	1	-	0/7/29/30	0/3/3/3
1	OMC	A	32	1	-	0/5/27/28	0/2/2/2
1	OMG	A	34	1	-	0/5/27/28	0/3/3/3
1	YG	A	37	1	1/1/8/9	0/20/42/43	0/4/4/4
1	PSU	A	39	1	-	0/7/25/26	0/2/2/2
1	5MC	A	40	1	-	0/3/25/26	0/2/2/2
1	7MG	A	46	1	-	0/7/37/38	0/3/3/3
1	5MC	A	49	1	-	0/3/25/26	0/2/2/2
1	5MU	A	54	1	-	0/3/25/26	0/2/2/2
1	PSU	A	55	1	-	0/7/25/26	0/2/2/2
1	1MA	A	58	1	-	0/3/25/26	0/3/3/3
1	2MG	B	10	1	-	0/5/27/28	0/3/3/3
1	H2U	B	16	1	-	0/7/38/39	0/2/2/2
1	H2U	B	17	1	-	0/7/38/39	0/2/2/2
1	M2G	B	26	1	-	0/7/29/30	0/3/3/3
1	OMC	B	32	1	-	0/5/27/28	0/2/2/2
1	OMG	B	34	1	-	0/5/27/28	0/3/3/3
1	YG	B	37	1	1/1/8/9	0/20/42/43	0/4/4/4
1	PSU	B	39	1	-	0/7/25/26	0/2/2/2
1	5MC	B	40	1	-	0/3/25/26	0/2/2/2
1	7MG	B	46	1	-	0/7/37/38	0/3/3/3
1	5MC	B	49	1	-	0/3/25/26	0/2/2/2
1	5MU	B	54	1	-	0/3/25/26	0/2/2/2
1	PSU	B	55	1	-	0/7/25/26	0/2/2/2
1	1MA	B	58	1	-	0/3/25/26	0/3/3/3
1	2MG	C	10	1	-	0/5/27/28	0/3/3/3
1	H2U	C	16	1	-	0/7/38/39	0/2/2/2
1	H2U	C	17	1	-	0/7/38/39	0/2/2/2
1	M2G	C	26	1	-	0/7/29/30	0/3/3/3
1	OMC	C	32	1	-	0/5/27/28	0/2/2/2
1	OMG	C	34	1	-	0/5/27/28	0/3/3/3
1	YG	C	37	1	1/1/8/9	0/20/42/43	0/4/4/4
1	PSU	C	39	1	-	0/7/25/26	0/2/2/2
1	5MC	C	40	1	-	0/3/25/26	0/2/2/2
1	7MG	C	46	1	-	0/7/37/38	0/3/3/3
1	5MC	C	49	1	-	0/3/25/26	0/2/2/2
1	5MU	C	54	1	-	0/3/25/26	0/2/2/2
1	PSU	C	55	1	-	0/7/25/26	0/2/2/2
1	1MA	C	58	1	-	0/3/25/26	0/3/3/3
1	2MG	D	10	1	-	0/5/27/28	0/3/3/3
1	H2U	D	16	1	-	0/7/38/39	0/2/2/2
1	H2U	D	17	1	-	0/7/38/39	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	M2G	D	26	1	-	0/7/29/30	0/3/3/3
1	OMC	D	32	1	-	0/5/27/28	0/2/2/2
1	OMG	D	34	1	-	0/5/27/28	0/3/3/3
1	YG	D	37	1	1/1/8/9	0/20/42/43	0/4/4/4
1	PSU	D	39	1	-	0/7/25/26	0/2/2/2
1	5MC	D	40	1	-	0/3/25/26	0/2/2/2
1	7MG	D	46	1	-	0/7/37/38	0/3/3/3
1	5MC	D	49	1	-	0/3/25/26	0/2/2/2
1	5MU	D	54	1	-	0/3/25/26	0/2/2/2
1	PSU	D	55	1	-	0/7/25/26	0/2/2/2
1	1MA	D	58	1	-	0/3/25/26	0/3/3/3
1	2MG	E	10	1	-	0/5/27/28	0/3/3/3
1	H2U	E	16	1	-	0/7/38/39	0/2/2/2
1	H2U	E	17	1	-	0/7/38/39	0/2/2/2
1	M2G	E	26	1	-	0/7/29/30	0/3/3/3
1	OMC	E	32	1	-	0/5/27/28	0/2/2/2
1	OMG	E	34	1	-	0/5/27/28	0/3/3/3
1	YG	E	37	1	1/1/8/9	0/20/42/43	0/4/4/4
1	PSU	E	39	1	-	0/7/25/26	0/2/2/2
1	5MC	E	40	1	-	0/3/25/26	0/2/2/2
1	7MG	E	46	1	-	0/7/37/38	0/3/3/3
1	5MC	E	49	1	-	0/3/25/26	0/2/2/2
1	5MU	E	54	1	-	0/3/25/26	0/2/2/2
1	PSU	E	55	1	-	0/7/25/26	0/2/2/2
1	1MA	E	58	1	-	0/3/25/26	0/3/3/3

All (138) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	37	YG	C3-N3	-8.65	1.37	1.49
1	B	37	YG	C3-N3	-8.60	1.37	1.49
1	E	37	YG	C3-N3	-8.53	1.37	1.49
1	D	37	YG	C3-N3	-8.53	1.37	1.49
1	C	37	YG	C3-N3	-8.45	1.37	1.49
1	C	46	7MG	C8-N9	-5.82	1.37	1.45
1	D	46	7MG	C8-N9	-5.82	1.37	1.45
1	B	46	7MG	C8-N9	-5.78	1.37	1.45
1	A	46	7MG	C8-N9	-5.77	1.37	1.45
1	E	46	7MG	C8-N9	-5.70	1.37	1.45
1	A	32	OMC	O2'-CM2	-3.51	1.29	1.42
1	D	32	OMC	O2'-CM2	-3.49	1.29	1.42
1	B	32	OMC	O2'-CM2	-3.49	1.29	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	32	OMC	O2'-CM2	-3.47	1.29	1.42
1	A	34	OMG	O2'-CM2	-3.44	1.29	1.42
1	C	32	OMC	O2'-CM2	-3.44	1.29	1.42
1	B	34	OMG	O2'-CM2	-3.43	1.29	1.42
1	E	34	OMG	O2'-CM2	-3.42	1.29	1.42
1	C	34	OMG	O2'-CM2	-3.40	1.29	1.42
1	D	34	OMG	O2'-CM2	-3.40	1.29	1.42
1	D	37	YG	C4-N3	-3.27	1.35	1.39
1	C	37	YG	C4-N3	-3.23	1.35	1.39
1	E	37	YG	C4-N3	-3.21	1.35	1.39
1	B	37	YG	C4-N3	-3.02	1.35	1.39
1	A	37	YG	C4-N3	-3.01	1.35	1.39
1	C	39	PSU	C5-C1'	-3.01	1.49	1.52
1	D	55	PSU	C5-C1'	-2.95	1.49	1.52
1	E	39	PSU	C5-C1'	-2.94	1.49	1.52
1	D	39	PSU	C5-C1'	-2.90	1.49	1.52
1	C	55	PSU	C5-C1'	-2.89	1.49	1.52
1	B	55	PSU	C5-C1'	-2.86	1.49	1.52
1	A	55	PSU	C6-C5	-2.84	1.34	1.38
1	B	55	PSU	C6-C5	-2.84	1.34	1.38
1	A	39	PSU	C5-C1'	-2.81	1.49	1.52
1	B	39	PSU	C5-C1'	-2.77	1.49	1.52
1	E	55	PSU	C5-C1'	-2.77	1.49	1.52
1	A	55	PSU	C5-C1'	-2.77	1.49	1.52
1	C	55	PSU	C6-C5	-2.77	1.34	1.38
1	D	55	PSU	C6-C5	-2.74	1.34	1.38
1	C	46	7MG	C8-N7	-2.69	1.31	1.43
1	E	55	PSU	C6-C5	-2.69	1.34	1.38
1	A	46	7MG	C8-N7	-2.66	1.31	1.43
1	D	46	7MG	C8-N7	-2.66	1.31	1.43
1	B	46	7MG	C8-N7	-2.66	1.31	1.43
1	E	46	7MG	C8-N7	-2.65	1.31	1.43
1	A	39	PSU	C6-C5	-2.54	1.34	1.38
1	B	39	PSU	C6-C5	-2.49	1.34	1.38
1	D	39	PSU	C6-C5	-2.42	1.35	1.38
1	C	39	PSU	C6-C5	-2.41	1.35	1.38
1	E	39	PSU	C6-C5	-2.40	1.35	1.38
1	D	26	M2G	CM2-N2	-2.27	1.40	1.45
1	C	26	M2G	CM2-N2	-2.23	1.40	1.45
1	A	54	5MU	C6-C5	-2.23	1.34	1.40
1	A	26	M2G	CM2-N2	-2.23	1.40	1.45
1	B	54	5MU	C6-C5	-2.23	1.34	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	26	M2G	CM2-N2	-2.21	1.40	1.45
1	D	54	5MU	C6-C5	-2.17	1.34	1.40
1	D	40	5MC	C6-C5	-2.16	1.34	1.40
1	E	40	5MC	C6-C5	-2.16	1.34	1.40
1	E	26	M2G	CM2-N2	-2.14	1.40	1.45
1	E	54	5MU	C6-C5	-2.14	1.34	1.40
1	C	40	5MC	C6-C5	-2.14	1.34	1.40
1	C	49	5MC	C6-C5	-2.11	1.34	1.40
1	B	40	5MC	C6-C5	-2.11	1.34	1.40
1	E	49	5MC	C6-C5	-2.11	1.34	1.40
1	A	40	5MC	C6-C5	-2.09	1.34	1.40
1	C	54	5MU	C6-C5	-2.08	1.34	1.40
1	A	49	5MC	C6-C5	-2.07	1.34	1.40
1	D	49	5MC	C6-C5	-2.07	1.34	1.40
1	B	49	5MC	C6-C5	-2.05	1.34	1.40
1	E	10	2MG	C8-N7	-2.03	1.30	1.34
1	C	10	2MG	C8-N7	-2.03	1.30	1.34
1	A	34	OMG	C8-N7	-2.02	1.30	1.34
1	B	34	OMG	C8-N7	-2.01	1.30	1.34
1	D	58	1MA	C6-N6	2.02	1.32	1.29
1	C	58	1MA	C6-N6	2.06	1.32	1.29
1	A	54	5MU	C4-N3	2.07	1.36	1.33
1	B	54	5MU	C4-N3	2.07	1.36	1.33
1	C	10	2MG	O4'-C1'	2.14	1.44	1.41
1	D	10	2MG	O4'-C1'	2.15	1.44	1.41
1	E	10	2MG	O4'-C1'	2.19	1.44	1.41
1	C	34	OMG	O4'-C1'	2.24	1.44	1.41
1	A	58	1MA	O4'-C1'	2.24	1.44	1.41
1	A	10	2MG	O4'-C1'	2.25	1.44	1.41
1	B	10	2MG	O4'-C1'	2.27	1.44	1.41
1	E	34	OMG	O4'-C1'	2.28	1.44	1.41
1	B	58	1MA	O4'-C1'	2.29	1.44	1.41
1	D	58	1MA	O4'-C1'	2.29	1.44	1.41
1	B	34	OMG	O4'-C1'	2.30	1.44	1.41
1	D	34	OMG	O4'-C1'	2.31	1.44	1.41
1	A	34	OMG	O4'-C1'	2.34	1.44	1.41
1	E	58	1MA	O4'-C1'	2.38	1.44	1.41
1	C	58	1MA	O4'-C1'	2.41	1.44	1.41
1	C	34	OMG	C6-N1	2.47	1.37	1.33
1	A	34	OMG	C6-N1	2.48	1.37	1.33
1	B	34	OMG	C6-N1	2.49	1.37	1.33
1	D	34	OMG	C6-N1	2.51	1.37	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	10	2MG	C6-N1	2.53	1.37	1.33
1	D	10	2MG	C6-N1	2.54	1.37	1.33
1	A	10	2MG	C6-N1	2.55	1.37	1.33
1	B	10	2MG	C6-N1	2.60	1.37	1.33
1	C	10	2MG	C6-N1	2.61	1.37	1.33
1	E	34	OMG	C6-N1	2.63	1.37	1.33
1	E	46	7MG	C6-N1	2.68	1.37	1.33
1	E	26	M2G	C6-N1	2.69	1.37	1.33
1	A	26	M2G	C6-N1	2.72	1.37	1.33
1	C	26	M2G	C6-N1	2.73	1.38	1.33
1	B	26	M2G	C6-N1	2.73	1.38	1.33
1	D	46	7MG	C6-N1	2.74	1.38	1.33
1	A	46	7MG	C6-N1	2.74	1.38	1.33
1	B	46	7MG	C6-N1	2.76	1.38	1.33
1	D	26	M2G	C6-N1	2.78	1.38	1.33
1	C	46	7MG	C6-N1	2.82	1.38	1.33
1	C	55	PSU	C4-N3	3.22	1.38	1.33
1	C	39	PSU	C4-N3	3.23	1.38	1.33
1	A	39	PSU	C4-N3	3.24	1.38	1.33
1	B	55	PSU	C4-N3	3.24	1.38	1.33
1	E	55	PSU	C4-N3	3.25	1.38	1.33
1	A	55	PSU	C4-N3	3.25	1.38	1.33
1	D	39	PSU	C4-N3	3.25	1.38	1.33
1	E	39	PSU	C4-N3	3.28	1.38	1.33
1	B	39	PSU	C4-N3	3.28	1.39	1.33
1	D	55	PSU	C4-N3	3.31	1.39	1.33
1	B	37	YG	O18-C16	4.30	1.44	1.33
1	A	37	YG	O18-C16	4.30	1.44	1.33
1	C	37	YG	O18-C16	4.30	1.44	1.33
1	E	37	YG	O18-C16	4.33	1.44	1.33
1	D	37	YG	O18-C16	4.35	1.44	1.33
1	C	37	YG	O23-C21	6.87	1.43	1.34
1	D	37	YG	O23-C21	6.91	1.43	1.34
1	E	37	YG	O23-C21	6.92	1.43	1.34
1	A	37	YG	O23-C21	7.10	1.43	1.34
1	B	37	YG	O23-C21	7.12	1.43	1.34
1	A	37	YG	C2-N2	8.15	1.47	1.35
1	E	37	YG	C2-N2	8.16	1.47	1.35
1	B	37	YG	C2-N2	8.17	1.47	1.35
1	D	37	YG	C2-N2	8.21	1.47	1.35
1	C	37	YG	C2-N2	8.24	1.47	1.35

All (225) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	10	2MG	CM2-N2-C2	-12.83	108.60	123.03
1	B	10	2MG	CM2-N2-C2	-12.81	108.62	123.03
1	E	10	2MG	CM2-N2-C2	-12.73	108.72	123.03
1	D	10	2MG	CM2-N2-C2	-12.72	108.73	123.03
1	C	10	2MG	CM2-N2-C2	-12.60	108.86	123.03
1	D	26	M2G	CM1-N2-C2	-8.92	112.38	121.34
1	C	26	M2G	CM1-N2-C2	-8.91	112.38	121.34
1	A	26	M2G	CM1-N2-C2	-8.83	112.47	121.34
1	B	26	M2G	CM1-N2-C2	-8.77	112.52	121.34
1	E	26	M2G	CM1-N2-C2	-8.68	112.62	121.34
1	B	54	5MU	C5-C4-N3	-7.93	118.69	125.35
1	A	54	5MU	C5-C4-N3	-7.91	118.71	125.35
1	D	54	5MU	C5-C4-N3	-7.90	118.71	125.35
1	C	54	5MU	C5-C4-N3	-7.82	118.79	125.35
1	E	54	5MU	C5-C4-N3	-7.75	118.84	125.35
1	D	34	OMG	C5-C6-N1	-7.28	114.00	123.52
1	C	34	OMG	C5-C6-N1	-7.26	114.04	123.52
1	E	34	OMG	C5-C6-N1	-7.21	114.10	123.52
1	A	34	OMG	C5-C6-N1	-7.15	114.17	123.52
1	B	34	OMG	C5-C6-N1	-7.14	114.19	123.52
1	B	26	M2G	C5-C6-N1	-7.03	114.33	123.52
1	A	26	M2G	C5-C6-N1	-7.01	114.36	123.52
1	E	26	M2G	C5-C6-N1	-7.00	114.37	123.52
1	D	26	M2G	C5-C6-N1	-6.98	114.40	123.52
1	C	26	M2G	C5-C6-N1	-6.89	114.52	123.52
1	C	10	2MG	C5-C6-N1	-6.68	114.78	123.52
1	E	10	2MG	C5-C6-N1	-6.67	114.80	123.52
1	B	10	2MG	C5-C6-N1	-6.65	114.82	123.52
1	D	10	2MG	C5-C6-N1	-6.64	114.84	123.52
1	A	10	2MG	C5-C6-N1	-6.63	114.86	123.52
1	B	46	7MG	C5-C6-N1	-6.21	114.14	123.39
1	C	46	7MG	C5-C6-N1	-6.20	114.17	123.39
1	A	46	7MG	C5-C6-N1	-6.19	114.17	123.39
1	E	46	7MG	C5-C6-N1	-6.14	114.25	123.39
1	D	46	7MG	C5-C6-N1	-6.09	114.33	123.39
1	B	37	YG	C24-O23-C21	-4.78	109.68	115.65
1	A	37	YG	C24-O23-C21	-4.78	109.69	115.65
1	D	37	YG	C6-C5-C4	-4.69	116.58	119.93
1	E	37	YG	C24-O23-C21	-4.68	109.81	115.65
1	D	37	YG	C24-O23-C21	-4.67	109.82	115.65
1	C	37	YG	C24-O23-C21	-4.65	109.84	115.65
1	E	37	YG	C6-C5-C4	-4.65	116.61	119.93
1	C	37	YG	C6-C5-C4	-4.53	116.70	119.93

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	37	YG	C6-C5-C4	-4.45	116.75	119.93
1	A	37	YG	C6-C5-C4	-4.42	116.77	119.93
1	B	37	YG	O23-C21-O22	-4.24	118.66	124.61
1	A	37	YG	O23-C21-O22	-4.23	118.67	124.61
1	D	37	YG	O23-C21-O22	-4.21	118.70	124.61
1	C	37	YG	O23-C21-O22	-4.20	118.71	124.61
1	E	37	YG	O23-C21-O22	-4.17	118.75	124.61
1	E	58	1MA	C2-N3-C4	-3.43	111.24	116.44
1	B	58	1MA	C2-N3-C4	-3.32	111.40	116.44
1	A	58	1MA	C2-N3-C4	-3.32	111.40	116.44
1	C	58	1MA	C2-N3-C4	-3.32	111.40	116.44
1	D	58	1MA	C2-N3-C4	-3.32	111.41	116.44
1	A	16	H2U	C6-N1-C2	-3.26	117.12	122.16
1	D	10	2MG	C2-N3-C4	-3.26	111.41	114.99
1	B	16	H2U	C6-N1-C2	-3.25	117.14	122.16
1	E	10	2MG	C2-N3-C4	-3.23	111.44	114.99
1	C	10	2MG	C2-N3-C4	-3.22	111.46	114.99
1	C	16	H2U	C6-N1-C2	-3.22	117.19	122.16
1	E	16	H2U	C6-N1-C2	-3.19	117.23	122.16
1	D	16	H2U	C6-N1-C2	-3.18	117.24	122.16
1	E	26	M2G	C2-N3-C4	-3.14	111.54	114.99
1	C	26	M2G	C2-N3-C4	-3.13	111.55	114.99
1	B	10	2MG	C2-N3-C4	-3.12	111.56	114.99
1	A	10	2MG	C2-N3-C4	-3.11	111.57	114.99
1	D	26	M2G	C2-N3-C4	-3.10	111.59	114.99
1	D	37	YG	C19-O18-C16	-3.07	108.68	115.97
1	C	37	YG	C19-O18-C16	-3.04	108.75	115.97
1	E	37	YG	C19-O18-C16	-3.02	108.79	115.97
1	B	26	M2G	C2-N3-C4	-3.00	111.70	114.99
1	B	37	YG	C19-O18-C16	-2.99	108.87	115.97
1	A	37	YG	C19-O18-C16	-2.97	108.90	115.97
1	A	26	M2G	C2-N3-C4	-2.97	111.73	114.99
1	B	34	OMG	C6-C5-C4	-2.88	117.56	120.86
1	E	34	OMG	C6-C5-C4	-2.88	117.57	120.86
1	C	34	OMG	C6-C5-C4	-2.86	117.58	120.86
1	A	34	OMG	C6-C5-C4	-2.85	117.60	120.86
1	D	10	2MG	C6-C5-C4	-2.74	117.72	120.86
1	D	34	OMG	C6-C5-C4	-2.73	117.73	120.86
1	E	37	YG	C13-C12-C11	-2.71	127.22	131.05
1	E	10	2MG	C6-C5-C4	-2.68	117.79	120.86
1	C	37	YG	C13-C12-C11	-2.68	127.27	131.05
1	B	32	OMC	C2'-C1'-N1	-2.64	105.92	113.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	32	OMC	C2'-C1'-N1	-2.64	105.94	113.48
1	C	26	M2G	C6-C5-C4	-2.63	117.85	120.86
1	C	32	OMC	C2'-C1'-N1	-2.62	105.97	113.48
1	A	37	YG	C13-C12-C11	-2.62	127.35	131.05
1	A	10	2MG	C6-C5-C4	-2.62	117.86	120.86
1	C	10	2MG	C6-C5-C4	-2.62	117.87	120.86
1	B	10	2MG	C6-C5-C4	-2.60	117.88	120.86
1	E	32	OMC	C2'-C1'-N1	-2.59	106.08	113.48
1	D	32	OMC	C2'-C1'-N1	-2.59	106.08	113.48
1	B	37	YG	C13-C12-C11	-2.58	127.41	131.05
1	D	37	YG	C13-C12-C11	-2.58	127.42	131.05
1	A	26	M2G	C6-C5-C4	-2.57	117.92	120.86
1	B	26	M2G	C6-C5-C4	-2.54	117.95	120.86
1	E	26	M2G	CM2-N2-C2	-2.52	118.80	121.34
1	D	26	M2G	C6-C5-C4	-2.51	117.99	120.86
1	B	26	M2G	CM2-N2-C2	-2.49	118.83	121.34
1	D	58	1MA	C1'-N9-C4	-2.49	124.03	126.81
1	C	26	M2G	CM2-N2-C2	-2.48	118.84	121.34
1	E	26	M2G	C6-C5-C4	-2.48	118.03	120.86
1	A	26	M2G	CM2-N2-C2	-2.47	118.85	121.34
1	B	58	1MA	C1'-N9-C4	-2.45	124.07	126.81
1	D	26	M2G	CM2-N2-C2	-2.44	118.89	121.34
1	A	58	1MA	C1'-N9-C4	-2.42	124.10	126.81
1	C	58	1MA	C1'-N9-C4	-2.41	124.12	126.81
1	E	58	1MA	C1'-N9-C4	-2.37	124.16	126.81
1	E	26	M2G	N3-C2-N2	-2.36	114.54	117.14
1	E	16	H2U	C5-C6-N1	-2.30	108.24	110.76
1	C	16	H2U	C5-C6-N1	-2.28	108.26	110.76
1	B	37	YG	O18-C16-O17	-2.26	119.01	123.77
1	A	37	YG	O18-C16-O17	-2.26	119.02	123.77
1	D	37	YG	O18-C16-O17	-2.26	119.02	123.77
1	C	37	YG	O18-C16-O17	-2.24	119.05	123.77
1	E	37	YG	O18-C16-O17	-2.23	119.07	123.77
1	B	16	H2U	C5-C6-N1	-2.23	108.32	110.76
1	D	26	M2G	N3-C2-N2	-2.23	114.69	117.14
1	B	26	M2G	N3-C2-N2	-2.22	114.69	117.14
1	A	55	PSU	C5-C1'-C2'	-2.22	111.66	115.44
1	D	55	PSU	C5-C1'-C2'	-2.22	111.67	115.44
1	A	16	H2U	C5-C6-N1	-2.21	108.34	110.76
1	C	26	M2G	N3-C2-N2	-2.20	114.71	117.14
1	B	55	PSU	C5-C1'-C2'	-2.20	111.70	115.44
1	A	26	M2G	N3-C2-N2	-2.19	114.72	117.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	55	PSU	C5-C1'-C2'	-2.17	111.76	115.44
1	D	16	H2U	C5-C6-N1	-2.16	108.40	110.76
1	E	55	PSU	C5-C1'-C2'	-2.09	111.89	115.44
1	C	40	5MC	C2'-C1'-N1	-2.04	107.97	113.46
1	A	40	5MC	C2'-C1'-N1	-2.04	107.98	113.46
1	E	40	5MC	C2'-C1'-N1	-2.03	108.00	113.46
1	B	40	5MC	C2'-C1'-N1	-2.03	108.00	113.46
1	D	40	5MC	C2'-C1'-N1	-2.02	108.04	113.46
1	A	49	5MC	O4'-C1'-N1	2.43	112.71	108.10
1	B	49	5MC	O4'-C1'-N1	2.43	112.71	108.10
1	C	37	YG	C3-N3-C2	2.45	122.10	118.41
1	C	49	5MC	O4'-C1'-N1	2.46	112.78	108.10
1	D	49	5MC	O4'-C1'-N1	2.47	112.80	108.10
1	E	49	5MC	O4'-C1'-N1	2.48	112.81	108.10
1	E	37	YG	C3-N3-C2	2.50	122.17	118.41
1	D	37	YG	C3-N3-C2	2.50	122.19	118.41
1	A	32	OMC	O4'-C1'-N1	2.52	112.89	108.10
1	B	37	YG	C3-N3-C2	2.52	122.22	118.41
1	C	32	OMC	O4'-C1'-N1	2.52	112.90	108.10
1	B	26	M2G	O4'-C1'-N9	2.52	112.88	108.11
1	D	26	M2G	O4'-C1'-N9	2.53	112.88	108.11
1	E	26	M2G	O4'-C1'-N9	2.54	112.90	108.11
1	A	37	YG	C3-N3-C2	2.54	122.24	118.41
1	A	26	M2G	O4'-C1'-N9	2.54	112.91	108.11
1	B	32	OMC	O4'-C1'-N1	2.55	112.94	108.10
1	C	26	M2G	O4'-C1'-N9	2.55	112.92	108.11
1	E	32	OMC	O4'-C1'-N1	2.58	113.00	108.10
1	D	32	OMC	O4'-C1'-N1	2.59	113.03	108.10
1	D	55	PSU	O4'-C1'-C2'	2.71	107.62	104.69
1	C	55	PSU	O4'-C1'-C2'	2.80	107.72	104.69
1	B	55	PSU	O4'-C1'-C2'	2.85	107.77	104.69
1	A	55	PSU	O4'-C1'-C2'	2.85	107.77	104.69
1	E	55	PSU	O4'-C1'-C2'	2.91	107.84	104.69
1	D	37	YG	O18-C16-C15	3.15	119.63	111.41
1	E	58	1MA	O4'-C1'-N9	3.16	114.07	108.11
1	C	58	1MA	O4'-C1'-N9	3.17	114.09	108.11
1	C	37	YG	O18-C16-C15	3.17	119.66	111.41
1	D	58	1MA	O4'-C1'-N9	3.17	114.09	108.11
1	E	37	YG	O18-C16-C15	3.17	119.68	111.41
1	A	37	YG	O18-C16-C15	3.20	119.74	111.41
1	A	58	1MA	O4'-C1'-N9	3.20	114.15	108.11
1	B	37	YG	O18-C16-C15	3.21	119.76	111.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	58	1MA	O4'-C1'-N9	3.21	114.17	108.11
1	E	26	M2G	CM2-N2-CM1	3.86	128.58	115.96
1	B	26	M2G	CM2-N2-CM1	3.88	128.64	115.96
1	A	26	M2G	CM2-N2-CM1	3.89	128.67	115.96
1	D	26	M2G	CM2-N2-CM1	3.91	128.73	115.96
1	C	26	M2G	CM2-N2-CM1	3.92	128.77	115.96
1	C	37	YG	O23-C21-N20	4.32	119.57	110.84
1	B	37	YG	O23-C21-N20	4.32	119.57	110.84
1	E	37	YG	O23-C21-N20	4.32	119.58	110.84
1	A	37	YG	O23-C21-N20	4.33	119.58	110.84
1	D	37	YG	O23-C21-N20	4.34	119.62	110.84
1	A	10	2MG	C6-N1-C2	4.56	121.77	115.24
1	C	10	2MG	C6-N1-C2	4.56	121.78	115.24
1	B	10	2MG	C6-N1-C2	4.57	121.78	115.24
1	E	10	2MG	C6-N1-C2	4.57	121.79	115.24
1	D	10	2MG	C6-N1-C2	4.60	121.83	115.24
1	D	46	7MG	C6-N1-C2	5.43	122.25	115.88
1	C	46	7MG	C6-N1-C2	5.49	122.31	115.88
1	E	46	7MG	C6-N1-C2	5.51	122.33	115.88
1	A	46	7MG	C6-N1-C2	5.57	122.41	115.88
1	B	46	7MG	C6-N1-C2	5.59	122.43	115.88
1	A	34	OMG	C6-N1-C2	5.91	122.81	115.88
1	B	34	OMG	C6-N1-C2	5.93	122.83	115.88
1	E	34	OMG	C6-N1-C2	5.95	122.86	115.88
1	D	34	OMG	C6-N1-C2	6.00	122.92	115.88
1	C	34	OMG	C6-N1-C2	6.10	123.03	115.88
1	C	37	YG	C3-N3-C4	6.41	128.08	118.41
1	D	37	YG	C3-N3-C4	6.42	128.10	118.41
1	E	37	YG	C3-N3-C4	6.42	128.10	118.41
1	B	37	YG	C3-N3-C4	6.45	128.14	118.41
1	A	37	YG	C3-N3-C4	6.48	128.18	118.41
1	A	32	OMC	CM2-O2'-C2'	7.81	136.46	114.58
1	B	34	OMG	CM2-O2'-C2'	7.81	136.47	114.58
1	B	32	OMC	CM2-O2'-C2'	7.81	136.47	114.58
1	A	34	OMG	CM2-O2'-C2'	7.82	136.50	114.58
1	C	32	OMC	CM2-O2'-C2'	7.82	136.51	114.58
1	D	34	OMG	CM2-O2'-C2'	7.83	136.54	114.58
1	D	32	OMC	CM2-O2'-C2'	7.84	136.55	114.58
1	C	34	OMG	CM2-O2'-C2'	7.85	136.58	114.58
1	E	32	OMC	CM2-O2'-C2'	7.86	136.61	114.58
1	E	34	OMG	CM2-O2'-C2'	7.87	136.63	114.58
1	E	54	5MU	C4-N3-C2	8.53	122.27	115.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	54	5MU	C4-N3-C2	8.54	122.29	115.16
1	B	54	5MU	C4-N3-C2	8.59	122.32	115.16
1	D	54	5MU	C4-N3-C2	8.62	122.35	115.16
1	C	54	5MU	C4-N3-C2	8.65	122.37	115.16
1	C	39	PSU	C4-N3-C2	13.80	126.67	115.16
1	D	39	PSU	C4-N3-C2	13.80	126.68	115.16
1	E	39	PSU	C4-N3-C2	13.81	126.68	115.16
1	B	39	PSU	C4-N3-C2	13.90	126.76	115.16
1	A	39	PSU	C4-N3-C2	13.95	126.80	115.16
1	E	55	PSU	C4-N3-C2	14.50	127.25	115.16
1	B	55	PSU	C4-N3-C2	14.55	127.30	115.16
1	D	55	PSU	C4-N3-C2	14.57	127.31	115.16
1	A	55	PSU	C4-N3-C2	14.58	127.33	115.16
1	C	55	PSU	C4-N3-C2	14.59	127.33	115.16

All (5) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	B	37	YG	C15
1	D	37	YG	C15
1	A	37	YG	C15
1	C	37	YG	C15
1	E	37	YG	C15

There are no torsion outliers.

There are no ring outliers.

62 monomers are involved in 984 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	10	2MG	4	0
1	A	16	H2U	25	0
1	A	17	H2U	34	0
1	A	26	M2G	19	0
1	A	32	OMC	35	0
1	A	34	OMG	35	0
1	A	37	YG	119	0
1	A	39	PSU	40	0
1	A	40	5MC	83	0
1	A	46	7MG	28	0
1	A	49	5MC	8	0
1	A	54	5MU	8	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	55	PSU	18	0
1	A	58	1MA	32	0
1	B	10	2MG	25	0
1	B	16	H2U	16	0
1	B	17	H2U	30	0
1	B	26	M2G	14	0
1	B	32	OMC	36	0
1	B	34	OMG	50	0
1	B	37	YG	106	0
1	B	39	PSU	42	0
1	B	40	5MC	65	0
1	B	46	7MG	45	0
1	B	49	5MC	32	0
1	B	54	5MU	10	0
1	B	55	PSU	7	0
1	B	58	1MA	32	0
1	C	17	H2U	2	0
1	C	26	M2G	4	0
1	C	34	OMG	2	0
1	C	37	YG	8	0
1	C	39	PSU	4	0
1	C	40	5MC	4	0
1	C	49	5MC	2	0
1	C	54	5MU	2	0
1	C	55	PSU	2	0
1	C	58	1MA	3	0
1	D	10	2MG	12	0
1	D	16	H2U	6	0
1	D	17	H2U	13	0
1	D	26	M2G	12	0
1	D	34	OMG	2	0
1	D	37	YG	8	0
1	D	39	PSU	4	0
1	D	40	5MC	4	0
1	D	46	7MG	22	0
1	D	49	5MC	18	0
1	D	54	5MU	15	0
1	D	55	PSU	11	0
1	D	58	1MA	47	0
1	E	16	H2U	6	0
1	E	17	H2U	55	0
1	E	26	M2G	4	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	E	34	OMG	2	0
1	E	37	YG	8	0
1	E	39	PSU	4	0
1	E	40	5MC	4	0
1	E	49	5MC	39	0
1	E	54	5MU	23	0
1	E	55	PSU	5	0
1	E	58	1MA	28	0

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.