



Full wwPDB EM Validation Report ⓘ

Mar 24, 2026 – 06:58 AM UTC

PDB ID : 1FCW / pdb_00001fcw
Title : TRNA POSITIONS DURING THE ELONGATION CYCLE
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Frank, J.
Deposited on : 2000-07-19
Resolution : 17.00 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

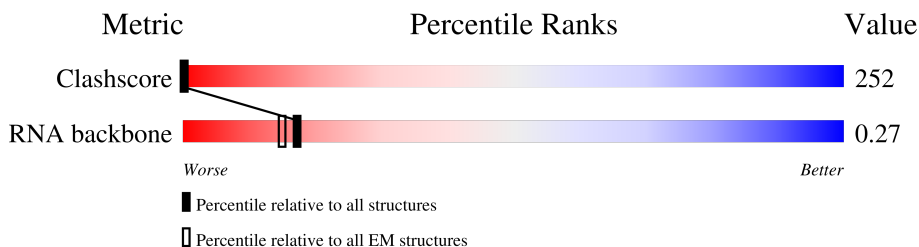
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 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	229148	23984
RNA backbone	8273	3508

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	76	
1	B	76	
1	C	76	
1	D	76	
1	E	76	

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	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	M2G	A	26	-	-	X	-
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	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	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.

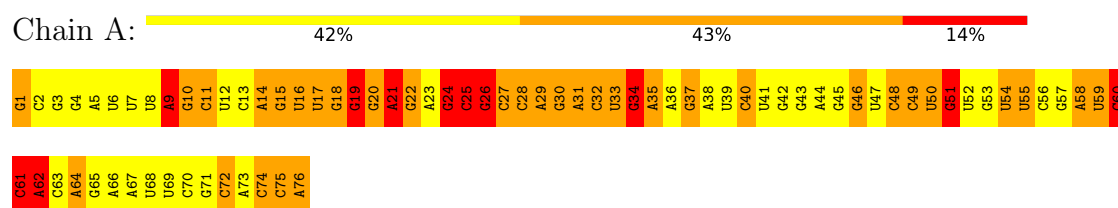
- Molecule 1 is a RNA chain called TRNAPHE.

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		

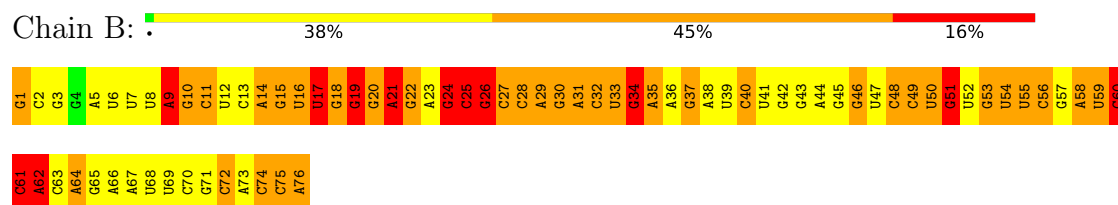
3 Residue-property plots

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

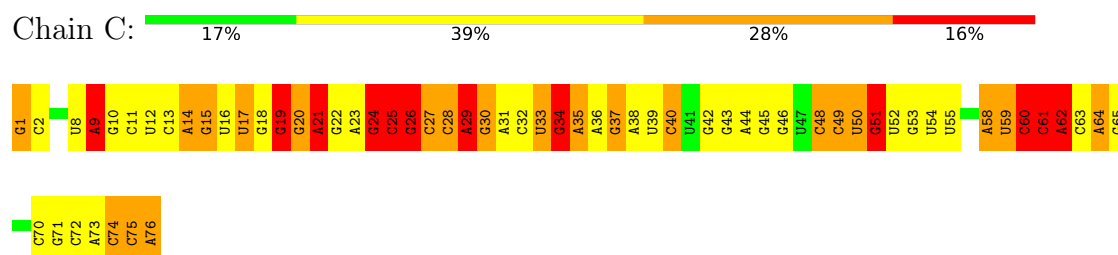
• Molecule 1: TRNAPHE



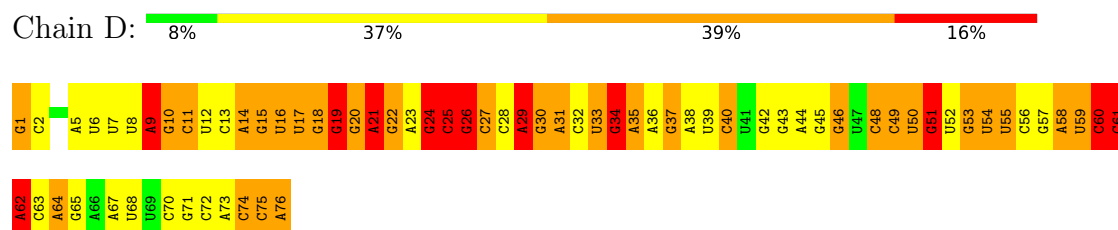
• Molecule 1: TRNAPHE



• Molecule 1: TRNAPHE



• Molecule 1: TRNAPHE



• Molecule 1: TRNAPHE



[illegible]

4 Data and refinement statistics

Xtriage (Phenix) and EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	1.00Å 1.00Å 1.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	(Not available) – 17.00	Depositor
% Data completeness (in resolution range)	(Not available) ((Not available)-17.00)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	unknown	Depositor
R, R_{free}	(Not available) , (Not available)	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	8260	wwPDB-VP
Average B, all atoms (Å ²)	14.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: H2U, M2G, OMC, PSU, YG, OMG, 7MG, 5MC, 1MA, 2MG, 5MU

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.97	1/1487 (0.1%)	1.50	23/2315 (1.0%)
1	B	0.97	1/1487 (0.1%)	1.50	23/2315 (1.0%)
1	C	0.97	1/1487 (0.1%)	1.50	24/2315 (1.0%)
1	D	0.97	1/1487 (0.1%)	1.50	24/2315 (1.0%)
1	E	0.97	1/1487 (0.1%)	1.50	23/2315 (1.0%)
All	All	0.97	5/7435 (0.1%)	1.50	117/11575 (1.0%)

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

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

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	1	G	OP3-P	7.27	1.62	1.48
1	C	1	G	OP3-P	7.20	1.62	1.48
1	A	1	G	OP3-P	7.17	1.62	1.48
1	B	1	G	OP3-P	7.16	1.62	1.48
1	D	1	G	OP3-P	7.16	1.62	1.48

All (117) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	18	G	P-O3'-C3'	10.19	135.49	120.20
1	B	18	G	P-O3'-C3'	10.17	135.45	120.20
1	D	18	G	P-O3'-C3'	10.09	135.33	120.20
1	E	18	G	P-O3'-C3'	10.08	135.32	120.20
1	C	18	G	P-O3'-C3'	10.06	135.29	120.20
1	C	64	A	P-O3'-C3'	-8.41	107.58	120.20
1	E	64	A	P-O3'-C3'	-8.41	107.58	120.20
1	A	64	A	P-O3'-C3'	-8.39	107.62	120.20
1	B	64	A	P-O3'-C3'	-8.38	107.63	120.20
1	D	64	A	P-O3'-C3'	-8.37	107.64	120.20
1	B	24	G	P-O3'-C3'	7.89	132.04	120.20
1	E	24	G	P-O3'-C3'	7.87	132.01	120.20
1	A	24	G	P-O3'-C3'	7.87	132.00	120.20
1	C	24	G	P-O3'-C3'	7.86	132.00	120.20
1	D	24	G	P-O3'-C3'	7.83	131.94	120.20
1	B	59	U	P-O3'-C3'	7.28	131.12	120.20
1	A	59	U	P-O3'-C3'	7.26	131.10	120.20
1	C	59	U	P-O3'-C3'	7.23	131.04	120.20
1	D	59	U	P-O3'-C3'	7.19	130.99	120.20
1	D	21	A	P-O3'-C3'	7.16	130.93	120.20
1	B	21	A	P-O3'-C3'	7.15	130.92	120.20
1	C	21	A	P-O3'-C3'	7.11	130.87	120.20
1	A	21	A	P-O3'-C3'	7.11	130.87	120.20
1	E	59	U	P-O3'-C3'	7.11	130.87	120.20
1	E	21	A	P-O3'-C3'	7.09	130.83	120.20
1	E	10	2MG	P-O3'-C3'	6.96	130.63	120.20
1	A	10	2MG	P-O3'-C3'	6.94	130.61	120.20
1	B	10	2MG	P-O3'-C3'	6.92	130.58	120.20
1	C	10	2MG	P-O3'-C3'	6.90	130.55	120.20
1	D	10	2MG	P-O3'-C3'	6.90	130.55	120.20
1	E	74	C	P-O3'-C3'	6.87	130.51	120.20
1	A	74	C	P-O3'-C3'	6.83	130.44	120.20
1	B	74	C	P-O3'-C3'	6.81	130.41	120.20
1	D	74	C	P-O3'-C3'	6.73	130.30	120.20
1	C	74	C	P-O3'-C3'	6.71	130.27	120.20
1	B	50	U	P-O3'-C3'	6.32	129.69	120.20
1	D	50	U	P-O3'-C3'	6.29	129.64	120.20
1	A	50	U	P-O3'-C3'	6.29	129.63	120.20
1	C	50	U	P-O3'-C3'	6.27	129.61	120.20
1	D	61	C	P-O3'-C3'	6.20	129.50	120.20
1	E	50	U	P-O3'-C3'	6.19	129.48	120.20
1	B	61	C	P-O3'-C3'	6.18	129.47	120.20
1	A	61	C	P-O3'-C3'	6.18	129.47	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	61	C	P-O3'-C3'	6.13	129.39	120.20
1	E	61	C	P-O3'-C3'	6.12	129.38	120.20
1	A	14	A	P-O3'-C3'	-5.81	111.49	120.20
1	E	14	A	P-O3'-C3'	-5.80	111.50	120.20
1	E	60	C	P-O5'-C5'	-5.79	112.21	120.90
1	D	60	C	P-O5'-C5'	-5.79	112.22	120.90
1	B	14	A	P-O3'-C3'	-5.79	111.52	120.20
1	C	14	A	P-O3'-C3'	-5.77	111.54	120.20
1	C	60	C	P-O5'-C5'	-5.76	112.27	120.90
1	E	11	C	O5'-C5'-C4'	-5.75	102.88	111.50
1	D	72	C	P-O5'-C5'	-5.73	112.31	120.90
1	D	14	A	P-O3'-C3'	-5.72	111.61	120.20
1	C	11	C	O5'-C5'-C4'	-5.72	102.92	111.50
1	A	60	C	P-O5'-C5'	-5.71	112.34	120.90
1	B	60	C	P-O5'-C5'	-5.71	112.34	120.90
1	E	72	C	P-O5'-C5'	-5.70	112.36	120.90
1	D	11	C	O5'-C5'-C4'	-5.69	102.96	111.50
1	A	11	C	O5'-C5'-C4'	-5.67	102.99	111.50
1	B	11	C	O5'-C5'-C4'	-5.65	103.02	111.50
1	C	72	C	P-O5'-C5'	-5.65	112.42	120.90
1	A	72	C	P-O5'-C5'	-5.62	112.47	120.90
1	B	72	C	P-O5'-C5'	-5.62	112.47	120.90
1	D	9	A	O5'-C5'-C4'	-5.42	103.57	111.70
1	C	9	A	O5'-C5'-C4'	-5.42	103.58	111.70
1	E	9	A	O5'-C5'-C4'	-5.41	103.59	111.70
1	B	9	A	O5'-C5'-C4'	-5.37	103.65	111.70
1	A	9	A	O5'-C5'-C4'	-5.36	103.67	111.70
1	B	24	G	O3'-P-O5'	5.35	112.03	104.00
1	A	24	G	O3'-P-O5'	5.33	111.99	104.00
1	D	20	G	O5'-C5'-C4'	-5.32	103.52	111.50
1	D	24	G	O3'-P-O5'	5.32	111.97	104.00
1	D	51	G	P-O3'-C3'	5.27	128.11	120.20
1	B	19	G	C3'-C2'-O2'	-5.27	106.70	114.60
1	A	19	G	C3'-C2'-O2'	-5.26	106.70	114.60
1	E	20	G	O5'-C5'-C4'	-5.26	103.61	111.50
1	B	20	G	O5'-C5'-C4'	-5.26	103.61	111.50
1	A	20	G	O5'-C5'-C4'	-5.25	103.62	111.50
1	C	20	G	O5'-C5'-C4'	-5.25	103.62	111.50
1	C	24	G	O3'-P-O5'	5.25	111.87	104.00
1	A	51	G	P-O3'-C3'	5.25	128.07	120.20
1	E	22	G	P-O5'-C5'	-5.24	113.04	120.90
1	B	51	G	P-O3'-C3'	5.23	128.05	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	24	G	O3'-P-O5'	5.23	111.85	104.00
1	C	22	G	P-O5'-C5'	-5.23	113.06	120.90
1	E	25	C	P-O5'-C5'	-5.21	113.08	120.90
1	B	22	G	P-O5'-C5'	-5.21	113.08	120.90
1	D	19	G	C3'-C2'-O2'	-5.21	106.78	114.60
1	A	24	G	P-O5'-C5'	-5.20	113.10	120.90
1	A	22	G	P-O5'-C5'	-5.20	113.10	120.90
1	A	25	C	P-O5'-C5'	-5.20	113.11	120.90
1	B	24	G	P-O5'-C5'	-5.19	113.11	120.90
1	E	19	G	C3'-C2'-O2'	-5.19	106.81	114.60
1	D	22	G	P-O5'-C5'	-5.19	113.12	120.90
1	E	9	A	O4'-C1'-N9	5.19	115.98	108.20
1	B	25	C	P-O5'-C5'	-5.19	113.12	120.90
1	C	25	C	P-O5'-C5'	-5.19	113.12	120.90
1	D	24	G	P-O5'-C5'	-5.18	113.13	120.90
1	C	51	G	P-O3'-C3'	5.17	127.96	120.20
1	D	25	C	P-O5'-C5'	-5.17	113.14	120.90
1	E	51	G	P-O3'-C3'	5.17	127.96	120.20
1	D	9	A	O4'-C1'-N9	5.16	115.95	108.20
1	C	24	G	P-O5'-C5'	-5.15	113.17	120.90
1	C	9	A	O4'-C1'-N9	5.15	115.93	108.20
1	E	24	G	P-O5'-C5'	-5.15	113.18	120.90
1	A	9	A	O4'-C1'-N9	5.12	115.88	108.20
1	C	19	G	C3'-C2'-O2'	-5.12	106.92	114.60
1	B	9	A	O4'-C1'-N9	5.12	115.88	108.20
1	A	62	A	O5'-C5'-C4'	-5.11	103.84	111.50
1	B	62	A	O5'-C5'-C4'	-5.10	103.85	111.50
1	D	29	A	P-O3'-C3'	-5.10	112.56	120.20
1	D	62	A	O5'-C5'-C4'	-5.09	103.86	111.50
1	C	29	A	P-O3'-C3'	-5.05	112.62	120.20
1	C	62	A	O5'-C5'-C4'	-5.03	103.95	111.50
1	E	29	A	P-O3'-C3'	-5.02	112.67	120.20

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

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	2007	0
1	B	1652	0	728	2063	0
1	C	1652	0	860	137	0
1	D	1652	0	814	805	0
1	E	1652	0	810	803	0
All	All	8260	0	3949	3065	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 252.

All (3065) 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
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:58:1MA:HM12	1:B:58:1MA:C4	1.05	1.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:13:C:C4	1:B:9:A:H8	1.23	1.54
1:A:26:M2G:HM23	1:B:44:A:C2	1.38	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:37:YG:C5	1:B:37:YG:C8	1.95	1.51
1:A:39:PSU:C6	1:B:39:PSU:N1	1.74	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: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:37:YG:C2	1:B:37:YG:C4	2.00	1.47
1:A:39:PSU:C5	1:B:39:PSU:N1	1.82	1.47
1:A:37:YG:H102	1:B:37:YG:C11	1.49	1.46
1:A:56:C:N4	1:B:19:G:N1	1.63	1.46
1:A:37:YG:H102	1:B:37:YG:N2	1.25	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:59:U:C2'	1:B:59:U:C5'	1.94	1.45
1:D:18:G:N2	1:E:6:U:N3	1.63	1.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:48:C:C3'	1:E:61:C:H3'	1.45	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:18:G:O2'	1:B:19:G:C8	1.70	1.43
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: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:39:PSU:C4	1:B:39:PSU:C2	2.06	1.43
1:A:68:U:C2	1:B:67:A:C2'	2.02	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:D:58:1MA:HM12	1:E:65:G:N2	1.33	1.42
1:A:70:C:H4'	1:B:69:U:C3'	0.95	1.41
1:A:39:PSU:C4	1:B:39:PSU:N3	1.88	1.41
1:A:39:PSU:C1'	1:B:38:A:C5	1.83	1.41
1:D:22:G:C4'	1:E:15:G:H21	1.31	1.41
1:D:26:M2G:HM23	1:E:17:H2U:C2	1.24	1.41
1:D:58:1MA:HM12	1:E:65:G:C2	1.54	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: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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:7:U:H2'	1:B:49:5MC:C5'	1.38	1.39
1:A:39:PSU:C5	1:B:39:PSU:C6	1.99	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:33:U:O2	1:B:35:A:C8	1.75	1.37
1:A:37:YG:C12	1:B:37:YG:C2	2.12	1.38
1:A:58:1MA:HM13	1:B:18:G:N3	1.39	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: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:40:5MC:N3	1:B:31:A:C2	1.92	1.36
1:A:59:U:O2'	1:B:59:U:C5'	1.74	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:46:7MG:N2	1:B:9:A:N3	1.73	1.35
1:A:34:OMG:C5	1:B:34:OMG:C2	2.14	1.35
1:B:1:G:N2	1:C:76:A:C4'	1.90	1.35
1:D:7:U:H2'	1:E:53:G:N1	1.40	1.35
1:D:51:G:O6	1:E:63:C:C3'	1.73	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:37:YG:H5''	1:B:36:A:O2'	1.23	1.34
1:A:62:A:H5''	1:B:62:A:C8	0.94	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:9:A:N7	1:B:9:A:N3	1.74	1.34
1:A:35:A:H3'	1:B:35:A:O4'	1.24	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:7:U:OP2	1:E:53:G:N7	1.61	1.33

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:53:G:OP1	1:E:3:G:C5'	1.74	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:21:A:C1'	1:B:21:A:H3'	1.09	1.33
1:A:39:PSU:O4'	1:B:38:A:C4	1.82	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:5:A:H3'	1:B:7:U:C5	1.65	1.32
1:A:38:A:C2	1:B:38:A:C4	2.16	1.32
1:A:65:G:N2	1:B:50:U:C4'	1.92	1.32
1:A:16:H2U:C5'	1:B:15:G:O2'	1.78	1.32
1:A:17:H2U:C6	1:B:17:H2U:C2	2.07	1.32
1:D:13:C:C2	1:E:58:1MA:C5'	2.11	1.32
1:A:5:A:O3'	1:B:6:U:H3'	1.23	1.31
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:7:U:OP1	1:B:8:U:H6	1.10	1.31
1:A:17:H2U:H61	1:B:17:H2U:C4	1.58	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: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:35:A:H5''	1:B:35:A:C5'	1.59	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: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:36:A:C6	1:B:36:A:C4	2.18	1.30
1:A:60:C:C2	1:B:59:U:C5	2.20	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:A:58:1MA:CM1	1:B:18:G:N3	1.93	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:13:C:N3	1:B:9:A:C8	2.01	1.28
1:A:37:YG:C14	1:B:36:A:H61	1.46	1.28
1:A:64:A:P	1:B:51:G:N2	2.07	1.28
1:D:17:H2U:OP2	1:E:47:U:H2'	1.24	1.28
1:D:51:G:H1	1:E:64:A:P	1.54	1.28
1:A:26:M2G:CM2	1:B:44:A:H2	1.44	1.28
1:A:46:7MG:H1'	1:B:46:7MG:C5'	1.62	1.28
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:7:U:H3'	1:B:8:U:C5'	1.63	1.27
1:A:40:5MC:C5	1:B:40:5MC:N4	1.99	1.27
1:A:59:U:C2'	1:B:59:U:H5'	1.30	1.27
1:B:1:G:N2	1:C:76:A:H4'	0.98	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:37:YG:N2	1:B:37:YG:H32	1.47	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:24:G:H22	1:B:10:2MG:N2	1.31	1.26
1:A:35:A:C3'	1:B:35:A:C1'	2.12	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:36:A:H2'	1:B:36:A:O2'	1.27	1.26

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:YG:O23	1:B:37:YG:H242	1.30	1.26
1:A:40:5MC:H5''	1:B:40:5MC:C5'	1.47	1.26
1:D:20:G:O6	1:E:48:C:C1'	1.76	1.26
1:D:55:PSU:C3'	1:E:69:U:O4	1.83	1.26
1:D:55:PSU:H3'	1:E:69:U:O4	1.29	1.26
1:A:35:A:H5''	1:B:35:A:O5'	1.36	1.26
1:A:38:A:N9	1:B:38:A:C8	2.03	1.26
1:A:38:A:C8	1:B:37:YG:H3'	1.56	1.26
1:A:58:1MA:HM12	1:B:58:1MA:N3	0.94	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:A:37:YG:H32	1:B:37:YG:C1'	1.64	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:9:A:O3'	1:B:45:G:O2'	1.53	1.25
1:A:23:A:C2'	1:B:24:G:C8	2.20	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:21:A:N3	1:B:21:A:C8	2.07	1.23
1:A:46:7MG:C1'	1:B:46:7MG:H5''	1.68	1.23
1:D:21:A:C4'	1:E:15:G:N7	1.99	1.23
1:A:23:A:H2'	1:B:24:G:C8	1.73	1.23
1:A:34:OMG:C4	1:B:34:OMG:C2	2.26	1.23
1:A:36:A:C6	1:B:36:A:C2	2.25	1.23

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:58:1MA:HM13	1:B:18:G:C2	1.73	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:40:5MC:P	1:B:40:5MC:HM51	1.79	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:6:U:H5'	1:B:6:U:C3'	1.62	1.22
1:A:23:A:C2	1:B:23:A:C6	2.26	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: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:A:44:A:H8	1:B:43:G:O2'	0.87	1.22
1:B:73:A:P	1:C:75:C:C3'	2.28	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:37:YG:C10	1:B:37:YG:C11	2.21	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
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: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:48:C:C1'	1:B:21:A:H62	1.47	1.20
1:A:62:A:C5'	1:B:61:C:O2	1.88	1.20
1:A:72:C:H1'	1:B:2:C:C5	1.29	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:7:U:OP1	1:B:8:U:C6	1.95	1.20
1:A:14:A:OP1	1:B:13:C:H3'	1.07	1.20
1:A:23:A:O4'	1:B:23:A:H3'	1.41	1.20

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:YG:N1	1:B:37:YG:C4	2.10	1.20
1:A:37:YG:N3	1:B:37:YG:C1'	2.05	1.20
1:A:40:5MC:OP2	1:B:40:5MC:HM51	1.02	1.20
1:A:63:C:OP1	1:B:63:C:C6	1.94	1.20
1:D:14:A:C2	1:E:48:C:C5	2.30	1.20
1:D:24:G:O4'	1:E:20:G:C5'	1.88	1.20
1:D:58:1MA:P	1:E:5:A:N7	2.14	1.20
1:A:23:A:H5'	1:B:23:A:OP1	1.37	1.19
1:A:37:YG:C4	1:B:37:YG:C1'	2.24	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: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:A:42:G:H22	1:B:29:A:H1'	1.04	1.19
1:D:7:U:H2'	1:E:53:G:C2	1.77	1.19
1:A:23:A:C2'	1:B:23:A:H3'	1.68	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:28:C:C2'	1:B:29:A:C4'	2.07	1.19
1:A:58:1MA:HM13	1:B:18:G:C4	1.76	1.19
1:D:13:C:N1	1:E:58:1MA:C5'	2.03	1.19
1:D:60:C:H2'	1:E:49:5MC:N4	1.57	1.19
1:A:40:5MC:C4	1:B:40:5MC:N4	2.11	1.19
1:D:45:G:C8	1:E:17:H2U:P	2.35	1.19
1:D:58:1MA:N3	1:E:49:5MC:N4	1.89	1.19
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:9:A:C8	1:B:9:A:H1'	1.78	1.18
1:A:14:A:OP1	1:B:13:C:C3'	1.92	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:70:C:O2'	1:B:70:C:C5	1.97	1.17
1:A:59:U:C2	1:B:59:U:C6	2.31	1.17
1:D:48:C:C4'	1:E:61:C:H3'	1.51	1.17

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:60:C:N3	1:E:49:5MC:C6	1.70	1.17
1:A:4:G:C6	1:B:67:A:N6	2.10	1.17
1:A:35:A:N9	1:B:35:A:C1'	2.08	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:49:5MC:C2'	1:E:62:A:H5'	1.74	1.17
1:D:51:G:N1	1:E:64:A:P	2.16	1.17
1:D:62:A:H8	1:E:65:G:O4'	1.26	1.17
1:A:9:A:C5	1:B:9:A:N3	2.09	1.17
1:A:71:G:C4'	1:B:71:G:N7	2.07	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:23:A:O2'	1:B:23:A:C3'	1.92	1.16
1:A:40:5MC:O5'	1:B:40:5MC:H6	0.83	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: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:42:G:C8	1:B:41:U:N3	2.14	1.16
1:A:45:G:H3'	1:B:44:A:O3'	1.27	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:15:G:N7	1:B:8:U:O2	1.79	1.16
1:A:44:A:N7	1:B:43:G:H2'	1.60	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
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:35:A:C3'	1:B:35:A:O2'	1.94	1.15
1:A:42:G:H8	1:B:41:U:C2	1.50	1.15
1:D:20:G:C4	1:E:15:G:O6	2.00	1.15
1:A:28:C:H2'	1:B:29:A:O4'	1.46	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: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:6:U:OP1	1:B:7:U:P	2.05	1.15
1:A:24:G:N2	1:B:10:2MG:HN2	1.43	1.15
1:D:13:C:C6	1:E:58:1MA:H5'	1.82	1.15

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:60:C:C2'	1:E:49:5MC:C4	2.29	1.15
1:A:6:U:O5'	1:B:7:U:H6	0.82	1.14
1:A:32:OMC:C2	1:B:33:U:C2	2.34	1.14
1:D:58:1MA:C2	1:E:49:5MC:C4	2.35	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: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:23:A:C1'	1:B:23:A:C3'	2.24	1.14
1:A:37:YG:C5'	1:B:36:A:O2'	1.93	1.14
1:A:44:A:O5'	1:B:43:G:O2'	1.66	1.14
1:A:62:A:H5''	1:B:62:A:N9	1.09	1.14
1:D:49:5MC:C2'	1:E:62:A:C4'	2.17	1.14
1:A:9:A:N7	1:B:45:G:C2	1.84	1.13
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:D:49:5MC:H2'	1:E:62:A:H4'	1.18	1.13
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:A:61:C:H5'	1:B:60:C:H2'	1.20	1.13
1:B:73:A:O5'	1:C:75:C:C3'	1.94	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:18:G:N7	1:B:18:G:N3	1.97	1.12
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: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:23:A:C4'	1:B:23:A:C3'	2.27	1.12
1:A:41:U:H5''	1:B:41:U:C5'	1.77	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:40:5MC:N4	1:B:39:PSU:O2	1.82	1.12
1:A:61:C:H5''	1:B:60:C:H3'	1.26	1.12
1:D:20:G:O5'	1:E:8:U:C5	1.97	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: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:13:C:N4	1:B:9:A:C2'	2.11	1.11
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: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:6:U:P	1:B:6:U:H3'	1.88	1.11
1:A:15:G:OP1	1:B:14:A:C3'	1.97	1.11
1:A:39:PSU:C6	1:B:39:PSU:C2	2.34	1.11
1:A:9:A:C8	1:B:9:A:N3	2.18	1.11
1:C:75:C:H5'	1:C:76:A:H5'	1.30	1.11
1:D:45:G:H1'	1:E:17:H2U:C2	1.79	1.11
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:14:A:O5'	1:B:13:C:H2'	1.48	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: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: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:29:A:C8	1:B:30:G:OP2	1.92	1.10
1:A:34:OMG:N1	1:B:34:OMG:N2	2.00	1.10

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:A:41:U:C5	1:B:40:5MC:N3	2.18	1.10
1:A:48:C:C1'	1:B:21:A:N6	2.05	1.10
1:D:7:U:C4	1:E:53:G:C2'	2.34	1.10
1:A:32:OMC:O2'	1:B:32:OMC:HM22	1.50	1.09
1:A:35:A:C3'	1:B:35:A:H4'	1.45	1.09
1:A:13:C:N4	1:B:9:A:H8	1.18	1.09
1:A:37:YG:C11	1:B:37:YG:N2	2.10	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:35:A:N6	1:B:35:A:N1	2.00	1.09
1:A:58:1MA:HM12	1:B:58:1MA:C2	1.86	1.09
1:D:7:U:OP2	1:E:53:G:C5	2.06	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: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: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
1:A:29:A:O5'	1:B:29:A:H5''	1.49	1.08
1:A:64:A:OP1	1:B:64:A:H1'	1.52	1.08
1:A:15:G:C3'	1:B:15:G:N3	2.14	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:40:5MC:C2	1:B:40:5MC:N3	2.21	1.08
1:A:42:G:N7	1:B:41:U:N3	2.02	1.08
1:A:35:A:N6	1:B:34:OMG:C6	2.18	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:75:C:H5'	1:A:76:A:H5'	1.30	1.08
1:A:7:U:C3'	1:B:8:U:C5'	2.21	1.08
1:A:37:YG:C12	1:B:37:YG:C6	2.41	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:A:63:C:H5''	1:B:63:C:H1'	1.33	1.08
1:D:24:G:C5'	1:E:20:G:H5'	1.78	1.08
1:D:46:7MG:N3	1:E:18:G:H5'	1.67	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:39:PSU:C4	1:B:39:PSU:C4	2.42	1.08
1:A:62:A:O5'	1:B:61:C:N3	1.86	1.08
1:B:75:C:H5'	1:B:76:A:H5'	1.30	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:A:23:A:C5'	1:B:23:A:OP1	2.01	1.07
1:A:36:A:C6	1:B:36:A:C5	2.41	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:16:H2U:H5'	1:B:15:G:O2'	1.54	1.07
1:A:62:A:P	1:B:61:C:C2	2.41	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:O2	1:B:54:5MU:C4	2.07	1.07
1:A:61:C:C5'	1:B:60:C:C2'	2.32	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
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: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: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: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:8:U:O2	1:E:60:C:C6	2.09	1.06
1:D:12:U:N1	1:E:57:G:C1'	2.15	1.06
1:A:14:A:P	1:B:13:C:H3'	1.96	1.06
1:A:21:A:C2	1:B:21:A:C8	2.42	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:7:U:O2'	1:B:49:5MC:C5'	1.90	1.06
1:A:33:U:N3	1:B:35:A:C5'	2.18	1.06

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:9:A:H8	1:B:9:A:H1'	1.12	1.05
1:A:34:OMG:C5	1:B:34:OMG:N1	2.17	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:D:48:C:C5'	1:E:61:C:C3'	2.33	1.05
1:A:40:5MC:H5''	1:B:40:5MC:O5'	1.56	1.05
1:A:44:A:N7	1:B:43:G:N3	1.79	1.05
1:A:17:H2U:C5	1:B:17:H2U:C4	2.35	1.05
1:A:24:G:H1'	1:B:24:G:H2'	1.36	1.05
1:A:24:G:H1'	1:B:24:G:C4	1.91	1.05
1:A:32:OMC:N1	1:B:33:U:C6	2.24	1.05
1:A:35:A:C4	1:B:35:A:C4	2.44	1.05
1:A:36:A:OP2	1:B:35:A:H5'	1.26	1.05
1:A:38:A:H1'	1:B:37:YG:C3	1.86	1.05
1:A:71:G:H1'	1:B:3:G:O6	1.57	1.05
1:E:75:C:H5'	1:E:76:A:H5'	1.30	1.05
1:A:36:A:C5	1:B:36:A:N9	2.23	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: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: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:40:5MC:O2	1:B:31:A:N3	1.88	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:8:U:H5'	1:E:61:C:C6	1.85	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:15:G:C4'	1:E:48:C:OP1	2.03	1.04
1:D:21:A:OP1	1:E:15:G:OP2	1.74	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:38:A:C5	1:B:38:A:C5	2.46	1.03
1:A:40:5MC:C4	1:B:40:5MC:C4	2.45	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: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:6:U:C5'	1:B:6:U:C2'	2.36	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:40:5MC:C2	1:B:40:5MC:C2	2.46	1.03
1:D:21:A:N3	1:E:59:U:O2	1.92	1.03
1:D:51:G:N7	1:E:63:C:OP1	1.91	1.03
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:15:G:C8	1:B:15:G:C4	2.46	1.03
1:A:17:H2U:C2'	1:B:19:G:OP2	2.00	1.03
1:A:37:YG:C6	1:B:37:YG:N7	2.24	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: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: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:40:5MC:O4'	1:B:39:PSU:O4	1.76	1.02
1:A:63:C:H3'	1:B:63:C:O2	1.59	1.02
1:A:33:U:H6	1:B:33:U:H3'	1.19	1.02
1:A:36:A:OP2	1:B:35:A:C5'	1.91	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:B:73:A:O5'	1:C:75:C:H5''	1.57	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:29:A:C6	1:B:29:A:C5	2.47	1.02
1:A:31:A:C2	1:B:31:A:C2	2.48	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:A:C5	1:B:35:A:C5	2.47	1.02
1:A:35:A:C8	1:B:35:A:C8	2.47	1.02
1:A:39:PSU:O4	1:B:39:PSU:C4	2.11	1.02
1:A:43:G:O6	1:B:42:G:N1	1.73	1.02
1:A:8:U:C4	1:B:8:U:C2	2.47	1.02
1:A:31:A:C6	1:B:31:A:N6	2.28	1.02
1:A:32:OMC:C2	1:B:33:U:N1	2.28	1.02
1:A:33:U:H3	1:B:35:A:H5''	1.12	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:43:G:C3'	1:B:43:G:O4'	2.07	1.02
1:A:48:C:H1'	1:B:21:A:N6	1.20	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:14:A:O5'	1:B:13:C:C2	2.06	1.01
1:A:18:G:H2'	1:B:57:G:H22	1.22	1.01
1:A:30:G:C6	1:B:30:G:C5	2.48	1.01
1:A:35:A:H3'	1:B:35:A:C2'	1.61	1.01
1:A:35:A:C2	1:B:35:A:C2	2.47	1.01
1:A:45:G:O5'	1:B:44:A:C3'	2.08	1.01
1:A:38:A:C1'	1:B:37:YG:H33	1.90	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:D:58:1MA:HM12	1:E:65:G:H22	1.23	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: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: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:9:A:C3'	1:B:45:G:O2'	1.68	1.00
1:A:23:A:H1'	1:B:23:A:C8	1.96	1.00
1:D:7:U:C2	1:E:54:5MU:O4'	2.04	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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: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:A:70:C:H4'	1:B:69:U:C4'	1.90	1.00
1:B:72:C:C6	1:C:75:C:H1'	1.82	1.00
1:D:48:C:C3'	1:E:61:C:C3'	2.33	1.00
1:A:35:A:C6	1:B:35:A:C6	2.50	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: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:38:A:C4	1:B:38:A:C5	2.50	1.00
1:A:60:C:C5	1:B:59:U:OP1	2.15	1.00
1:A:65:G:N2	1:B:50:U:H4'	1.15	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:18:G:H5'	1:B:60:C:N4	1.77	0.99
1:A:48:C:O2'	1:B:48:C:H6	1.30	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: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:18:G:N7	1:E:67:A:C8	2.28	0.99
1:D:19:G:H2'	1:E:8:U:OP2	1.62	0.99
1:D:58:1MA:CM1	1:E:65:G:N2	2.16	0.99
1:A:14:A:C5'	1:B:13:C:H2'	1.90	0.99
1:A:38:A:C4	1:B:38:A:N7	2.26	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:YG:H142	1:B:36:A:H61	1.24	0.98
1:A:18:G:H5'	1:B:60:C:C4	1.97	0.98
1:A:34:OMG:C8	1:B:34:OMG:N9	2.30	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: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
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:69:U:N1	1:B:67:A:H2'	1.60	0.97
1:A:73:A:O2'	1:A:74:C:H5'	1.63	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:41:U:C6	1:B:41:U:C4	2.51	0.97
1:A:46:7MG:N1	1:B:9:A:C2	2.32	0.97
1:D:58:1MA:H2	1:E:49:5MC:C4	1.77	0.97
1:A:31:A:C4'	1:B:31:A:H5''	1.94	0.97
1:A:45:G:H21	1:B:26:M2G:CM2	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: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:40:5MC:C5'	1:B:40:5MC:C5'	2.43	0.97
1:A:41:U:C6	1:B:41:U:C5	2.52	0.97
1:B:73:A:OP2	1:C:75:C:H3'	1.63	0.97
1:D:21:A:H1'	1:E:59:U:O2	1.65	0.97
1:D:22:G:C1'	1:E:48:C:H42	1.78	0.97
1:D:45:G:C2	1:E:17:H2U:O2'	2.17	0.97
1:A:5:A:N6	1:B:66:A:C6	2.31	0.97
1:A:11:C:H1'	1:B:10:2MG:CM2	1.94	0.97
1:A:38:A:H1'	1:B:37:YG:H33	0.99	0.97
1:D:6:U:OP2	1:E:52:U:C3'	2.00	0.97
1:D:21:A:C5'	1:E:15:G:N7	2.26	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:21:A:N6	1:B:46:7MG:H2'	1.76	0.96
1:A:35:A:C4	1:B:35:A:H1'	1.99	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:9:A:H5'	1:B:46:7MG:O5'	1.65	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: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:37:YG:C24	1:B:37:YG:H242	1.96	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:66:A:N1	1:B:49:5MC:O2'	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:22:G:N7	1:B:46:7MG:C6	2.34	0.95
1:A:31:A:C5	1:B:31:A:C5	2.54	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:28:C:P	1:B:29:A:OP2	2.24	0.95
1:A:37:YG:C6	1:B:37:YG:C6	2.54	0.95
1:D:12:U:C6	1:E:19:G:C2	2.47	0.95
1:A:33:U:O2	1:B:35:A:N9	1.98	0.95
1:A:36:A:C6	1:B:36:A:C6	2.55	0.95
1:A:61:C:C5'	1:B:60:C:H3'	1.96	0.95
1:D:58:1MA:C2	1:E:66:A:N1	2.19	0.95
1:D:58:1MA:OP1	1:E:5:A:C8	2.20	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
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:6:U:OP2	1:B:7:U:H5	1.49	0.95
1:A:8:U:H1'	1:B:21:A:C6	2.01	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:D:58:1MA:HM12	1:E:65:G:N1	1.73	0.95
1:A:40:5MC:CM5	1:B:40:5MC:CM5	2.45	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: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:37:YG:N3	1:B:37:YG:C4	2.34	0.95
1:A:41:U:C5	1:B:41:U:C5	2.55	0.94
1:A:58:1MA:CM1	1:B:18:G:C2	2.38	0.94
1:D:61:C:OP2	1:E:51:G:C5	2.19	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:B:75:C:H5'	1:B:76:A:C5'	1.98	0.94
1:D:56:C:H4'	1:E:70:C:C5	2.01	0.94
1:A:14:A:P	1:B:13:C:C2'	2.55	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:40:5MC:CM5	1:B:40:5MC:HM52	1.97	0.94
1:D:11:C:H2'	1:E:19:G:H1	1.32	0.94
1:D:46:7MG:C2	1:E:18:G:H5'	2.02	0.94
1:D:63:C:H41	1:E:63:C:H2'	1.29	0.94
1:A:42:G:C6	1:B:42:G:C2	2.55	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: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:9:A:H5'	1:B:46:7MG:C4'	1.97	0.94
1:A:61:C:C5'	1:B:60:C:C3'	2.43	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:23:A:H62	1:B:45:G:N2	1.66	0.93
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:18:G:C8	1:B:18:G:N3	2.35	0.93
1:A:37:YG:H141	1:B:36:A:N6	1.80	0.93
1:A:6:U:C5'	1:B:6:U:H2'	1.98	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:D:7:U:C4	1:E:53:G:H2'	1.99	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:C:29:A:C2'	1:C:30:G:H5'	1.99	0.93
1:D:58:1MA:C2	1:E:49:5MC:N4	2.35	0.93
1:A:13:C:P	1:B:12:U:H3'	2.09	0.93
1:A:41:U:C6	1:B:41:U:C6	2.56	0.93
1:A:72:C:O3'	1:B:1:G:N1	1.67	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:7:U:C6	1:E:53:G:H2'	2.03	0.93
1:D:7:U:N1	1:E:53:G:N2	2.06	0.93
1:D:46:7MG:N2	1:E:18:G:C5'	2.32	0.93
1:A:33:U:C5	1:B:33:U:C5	2.57	0.93
1:A:63:C:C3'	1:B:63:C:O2	2.16	0.93
1:A:6:U:P	1:B:7:U:H6	1.91	0.93
1:A:14:A:H4'	1:B:14:A:O4'	1.66	0.93
1:A:75:C:H5'	1:A:76:A:C5'	1.98	0.93
1:B:29:A:C2'	1:B:30:G:H5'	1.99	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:31:A:C4	1:B:31:A:C4	2.56	0.92
1:A:35:A:C6	1:B:35:A:C5	2.56	0.92
1:A:45:G:H3'	1:B:44:A:C3'	1.95	0.92
1:A:6:U:C5'	1:B:6:U:C3'	2.46	0.92
1:A:71:G:C5'	1:B:70:C:H5	1.77	0.92
1:C:33:U:H5''	1:C:34:OMG:OP2	1.69	0.92
1:D:60:C:H6	1:E:49:5MC:N4	1.42	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:O5'	1:B:29:A:C5'	2.17	0.91
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: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:45:G:O5'	1:B:44:A:O3'	1.86	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:23:A:C4	1:B:23:A:C5	2.58	0.91
1:A:36:A:C2'	1:B:36:A:C2'	2.47	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
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:5:A:H2	1:E:54:5MU:OP1	1.51	0.91
1:D:53:G:P	1:E:3:G:C5'	2.52	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:50:U:C5	1:B:50:U:O5'	2.24	0.91
1:A:64:A:C6	1:B:50:U:H2'	2.05	0.91
1:A:8:U:O5'	1:B:8:U:O3'	1.88	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:5:A:C3'	1:B:7:U:C5	2.55	0.90
1:A:8:U:H1'	1:B:21:A:H61	1.36	0.90
1:A:44:A:N7	1:B:43:G:C2'	2.23	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:O2	1:A:17:H2U:H2'	1.71	0.90
1:A:23:A:C5'	1:B:23:A:P	2.60	0.90
1:A:23:A:HO2'	1:B:24:G:H8	1.17	0.90
1:A:70:C:C2	1:B:68:U:C4	2.59	0.90
1:D:8:U:C5'	1:E:61:C:N1	2.30	0.90
1:D:17:H2U:H2'	1:D:17:H2U:O2	1.71	0.90
1:A:32:OMC:C5	1:B:32:OMC:C5	2.60	0.90
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: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:35:A:C5'	1:B:35:A:C5'	2.50	0.90
1:A:40:5MC:CM5	1:B:40:5MC:N4	2.35	0.90
1:A:41:U:C4	1:B:41:U:C4	2.60	0.90
1:A:5:A:H3'	1:B:7:U:H5	1.11	0.89
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:C:17:H2U:O2	1:C:17:H2U:H2'	1.71	0.89
1:D:45:G:N9	1:E:17:H2U:P	2.39	0.89
1:A:12:U:O2	1:B:24:G:N1	2.05	0.89
1:A:18:G:C5	1:B:18:G:C2	2.60	0.89
1:D:6:U:O2'	1:E:55:PSU:N1	2.04	0.89
1:D:54:5MU:OP2	1:E:3:G:OP2	1.78	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:24:G:C1'	1:B:24:G:C2'	2.45	0.89
1:A:24:G:N2	1:B:10:2MG:N2	2.07	0.89
1:A:45:G:P	1:B:44:A:C4'	2.61	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:28:C:C4	1:B:28:C:C2	2.61	0.89
1:A:35:A:H2'	1:B:35:A:C2'	2.00	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:A:36:A:C4	1:B:36:A:N9	2.41	0.89
1:A:36:A:C2	1:B:36:A:C2	2.57	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:9:A:C5'	1:B:46:7MG:O5'	2.21	0.88
1:A:50:U:OP2	1:B:47:U:O3'	1.89	0.88
1:D:23:A:O5'	1:E:20:G:C4	1.98	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:A:45:G:OP2	1:B:44:A:C5'	2.21	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:14:A:H5''	1:B:8:U:O4	1.72	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:46:7MG:C1'	1:B:46:7MG:C5'	2.35	0.88
1:A:18:G:C5'	1:B:60:C:N4	2.36	0.88
1:D:21:A:C2	1:E:59:U:H2'	2.08	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: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:35:A:C8	1:B:35:A:H1'	2.07	0.88
1:A:36:A:N7	1:B:36:A:N9	2.22	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:21:A:C2	1:B:21:A:C4	2.61	0.88
1:A:23:A:N6	1:B:45:G:N2	2.22	0.88
1:D:17:H2U:OP2	1:E:47:U:C2'	2.17	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:15:G:C5'	1:B:14:A:H2'	2.04	0.87
1:A:44:A:C3'	1:B:44:A:H4'	2.03	0.87
1:A:66:A:N1	1:B:49:5MC:C2'	2.37	0.87
1:D:14:A:N1	1:E:59:U:C6	2.40	0.87
1:D:45:G:C1'	1:E:17:H2U:H2'	2.05	0.87
1:D:51:G:N1	1:E:63:C:O3'	2.07	0.87
1:A:9:A:C8	1:B:9:A:C1'	2.58	0.87
1:A:39:PSU:C6	1:B:39:PSU:C6	2.45	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:23:A:N6	1:B:45:G:H22	1.73	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:D:54:5MU:P	1:E:2:C:H3'	2.13	0.87
1:A:16:H2U:H61	1:B:16:H2U:C2'	2.03	0.87
1:A:27:C:C5	1:B:27:C:C2	2.63	0.87
1:A:34:OMG:N1	1:B:34:OMG:C2	2.38	0.87
1:E:17:H2U:O2	1:E:17:H2U:H2'	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:9:A:N7	1:B:45:G:N2	2.21	0.86
1:A:30:G:C5	1:B:30:G:N7	2.42	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:56:C:O5'	1:B:56:C:O2'	1.91	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:44:A:H3'	1:B:44:A:C5'	2.04	0.86
1:A:58:1MA:H1'	1:B:59:U:OP1	1.76	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:46:7MG:N2	1:E:18:G:H5'	1.90	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
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:C:20:G:H5''	1:C:21:A:OP2	1.74	0.86
1:D:7:U:C6	1:E:54:5MU:C6	2.64	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:40:5MC:HM53	1:B:40:5MC:HM52	1.57	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:36:A:H2'	1:B:36:A:C1'	2.03	0.85
1:A:50:U:C2'	1:B:51:G:OP1	2.23	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:37:YG:H2'	1:D:38:A:O4'	1.77	0.85
1:D:49:5MC:H3'	1:E:62:A:C5'	1.82	0.85
1:A:25:C:C3'	1:B:26:M2G:H3'	2.07	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:40:5MC:C2	1:B:31:A:H2	1.56	0.85
1:C:37:YG:H2'	1:C:38:A:O4'	1.77	0.85
1:C:73:A:C2'	1:C:74:C:H5'	2.06	0.85
1:A:37:YG:H102	1:B:37:YG:C10	2.06	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: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:A:45:G:C3'	1:B:44:A:O3'	2.20	0.85
1:B:2:C:H42	1:B:71:G:H1	1.20	0.85
1:D:8:U:OP2	1:E:18:G:O6	1.93	0.85
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:7:U:OP1	1:B:8:U:O5'	1.92	0.85
1:A:42:G:C6	1:B:42:G:N1	2.44	0.85
1:A:61:C:H2'	1:A:62:A:H8	1.42	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:4:G:O6	1:B:67:A:C6	2.19	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:9:A:C6	1:B:9:A:H2	1.95	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:24:G:C1'	1:B:24:G:C4	2.59	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: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:36:A:C6	1:B:36:A:N1	2.43	0.84
1:A:37:YG:C8	1:B:36:A:C2'	2.03	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:37:YG:H2'	1:E:38:A:O4'	1.77	0.84
1:A:15:G:H5''	1:B:14:A:H2'	1.56	0.84
1:A:46:7MG:C2'	1:B:46:7MG:H5''	2.08	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:A:48:C:HO2'	1:B:48:C:H6	0.89	0.84
1:D:2:C:H42	1:D:71:G:H1	1.20	0.84
1:A:9:A:H5'	1:B:46:7MG:O4'	1.77	0.84
1:A:32:OMC:C2	1:B:32:OMC:N3	2.46	0.84
1:D:5:A:N1	1:E:54:5MU:OP1	2.11	0.84
1:D:10:2MG:C8	1:E:17:H2U:C6	2.61	0.84
1:D:55:PSU:O4	1:E:67:A:N6	2.09	0.84
1:A:13:C:C4	1:B:9:A:H2'	2.12	0.84
1:A:14:A:OP2	1:B:8:U:O4	1.94	0.84
1:A:40:5MC:C4	1:B:31:A:N1	2.45	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: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:A:43:G:C6	1:B:43:G:C4	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: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:B:14:A:C2'	1:B:15:G:H5'	2.08	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:A:58:1MA:CM1	1:B:58:1MA:N9	2.40	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:7:U:C6	1:B:49:5MC:C5'	2.56	0.83
1:A:43:G:C6	1:B:43:G:N3	2.47	0.83
1:D:5:A:C2	1:E:54:5MU:P	2.70	0.83
1:A:22:G:C8	1:B:46:7MG:O6	2.31	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:YG:C13	1:B:36:A:H61	1.92	0.83
1:A:22:G:N7	1:B:46:7MG:O6	2.12	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:D:12:U:C6	1:E:19:G:N1	2.47	0.83
1:D:14:A:C2'	1:D:15:G:H5'	2.08	0.83
1:A:6:U:P	1:B:7:U:C5	2.72	0.83
1:A:55:PSU:O2'	1:B:56:C:C2	2.31	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
1:A:6:U:P	1:B:7:U:P	2.76	0.82
1:A:21:A:C1'	1:B:21:A:C3'	1.95	0.82
1:D:46:7MG:OP2	1:E:16:H2U:C1'	2.26	0.82
1:A:11:C:C1'	1:B:10:2MG:CM2	2.56	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: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:A:36:A:H2'	1:B:36:A:HO2'	1.44	0.82
1:A:37:YG:C2	1:B:37:YG:H32	2.09	0.82
1:A:40:5MC:CM5	1:B:40:5MC:HN42	1.92	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: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:A:58:1MA:CM1	1:B:18:G:C4	2.51	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:20:G:C6	1:E:48:C:H1'	2.14	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:54:5MU:OP2	1:E:2:C:H3'	1.79	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:8:U:OP2	1:E:18:G:C6	2.32	0.82
1:D:20:G:C5	1:E:15:G:O6	2.33	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
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:40:5MC:C5'	1:B:40:5MC:O5'	2.28	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:D:14:A:H62	1:E:59:U:H3'	1.01	0.81
1:D:51:G:C6	1:E:63:C:C5'	2.63	0.81
1:E:61:C:H2'	1:E:62:A:H8	1.42	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:42:G:H5''	1:B:42:G:H5'	1.61	0.81
1:A:15:G:N7	1:B:8:U:C2	2.49	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:63:C:H1'	1:B:52:U:C1'	1.91	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:14:A:N6	1:E:59:U:C6	2.48	0.81
1:A:5:A:N3	1:B:6:U:O2	1.95	0.81
1:A:12:U:C2	1:B:12:U:C4	2.68	0.81
1:A:22:G:O5'	1:B:22:G:OP2	1.98	0.81
1:A:35:A:N7	1:B:35:A:N9	2.28	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: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:49:5MC:HM51	1:B:49:5MC:O5'	1.79	0.80
1:A:15:G:N9	1:B:15:G:C2	2.48	0.80
1:A:35:A:N7	1:B:35:A:C5	2.50	0.80
1:A:37:YG:H31	1:A:37:YG:H1'	1.63	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:58:1MA:CM1	1:B:58:1MA:C2	2.54	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: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: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:3:G:H4'	1:B:3:G:OP2	1.82	0.80
1:A:33:U:C5	1:B:33:U:C6	2.69	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:A:23:A:C2	1:B:23:A:N6	2.50	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:33:U:O4	1:B:35:A:H5''	1.62	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
1:A:51:G:N2	1:B:52:U:O5'	2.10	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:14:A:H61	1:E:59:U:C3'	1.94	0.79
1:D:15:G:C3'	1:E:48:C:OP1	2.30	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:55:PSU:H5''	1:B:55:PSU:C3'	2.13	0.78
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: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:A:17:H2U:H61	1:B:17:H2U:N1	1.98	0.78
1:D:21:A:H2'	1:E:59:U:N3	1.99	0.78
1:A:4:G:H2'	1:B:5:A:N6	1.96	0.78
1:A:40:5MC:C4	1:B:30:G:O6	2.35	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:32:OMC:HM23	1:B:32:OMC:HM22	1.64	0.78
1:A:48:C:H1'	1:B:21:A:H62	0.72	0.78
1:D:46:7MG:HN22	1:E:18:G:C4'	1.97	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:49:5MC:C3'	1:E:62:A:O4'	2.28	0.78
1:A:15:G:N7	1:B:15:G:N1	2.32	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: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: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
1:A:42:G:C8	1:B:42:G:N9	2.51	0.78
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:7:U:O4	1:E:53:G:O2'	2.02	0.78
1:D:45:G:O5'	1:E:17:H2U:OP2	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: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:15:G:N9	1:B:15:G:N3	2.33	0.77
1:A:26:M2G:HM22	1:A:44:A:C2	2.19	0.77
1:A:29:A:O2'	1:B:30:G:H5''	1.76	0.77
1:A:33:U:H3'	1:B:34:OMG:C3'	2.15	0.77
1:C:26:M2G:HM22	1:C:44:A:C2	2.19	0.77
1:D:56:C:H5'	1:E:70:C:H5	1.48	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: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:A:56:C:N4	1:B:19:G:N2	2.25	0.77
1:D:62:A:O5'	1:E:65:G:C4'	2.32	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:32:OMC:C6	1:B:32:OMC:C5	2.73	0.77
1:A:56:C:C4	1:B:19:G:C2	2.70	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:17:H2U:P	1:E:47:U:C2'	2.73	0.77
1:D:26:M2G:HM22	1:D:44:A:C2	2.19	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:23:A:N1	1:B:23:A:N6	2.33	0.76
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: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:28:C:C5	1:B:28:C:N1	2.53	0.76
1:A:55:PSU:H5''	1:B:55:PSU:H3'	1.66	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: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:46:7MG:N2	1:B:9:A:C4	2.49	0.76
1:A:59:U:C2'	1:B:59:U:O4'	2.34	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:63:C:C5'	1:B:63:C:H1'	2.13	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:4:G:N7	1:B:67:A:N6	2.15	0.75
1:A:9:A:C3'	1:B:10:2MG:OP1	2.30	0.75
1:A:13:C:C5	1:B:9:A:OP2	2.38	0.75
1:A:61:C:H2'	1:A:62:A:C8	2.20	0.75
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:D:18:G:C6	1:E:66:A:C6	2.73	0.75
1:D:46:7MG:C2	1:E:18:G:H5''	2.19	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:30:G:N3	1:B:30:G:H2'	2.01	0.75
1:A:37:YG:H32	1:B:37:YG:H1'	0.76	0.75
1:A:41:U:C5	1:B:41:U:N3	2.54	0.75
1:A:59:U:H2'	1:B:59:U:O4'	1.86	0.75
1:C:14:A:C3'	1:C:15:G:H5'	2.16	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:B:1:G:H21	1:C:76:A:C3'	1.98	0.75
1:B:14:A:C3'	1:B:15:G:H5'	2.15	0.75
1:A:7:U:H2'	1:B:49:5MC:H5'	0.76	0.75
1:A:46:7MG:N2	1:B:9:A:C2	2.52	0.75
1:D:21:A:O2'	1:E:15:G:C5	2.39	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:A:7:U:C1'	1:B:49:5MC:C5'	2.45	0.75
1:A:23:A:O2'	1:B:24:G:O5'	1.99	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:37:YG:H5''	1:B:36:A:HO2'	1.48	0.75
1:A:39:PSU:C5	1:B:38:A:C6	2.47	0.75
1:A:43:G:O6	1:B:43:G:C6	2.40	0.75
1:A:51:G:C5	1:B:51:G:OP2	2.39	0.75
1:A:66:A:H2	1:B:49:5MC:HO2'	1.26	0.75
1:D:56:C:N3	1:E:68:U:O2	2.19	0.75
1:A:22:G:C2	1:B:22:G:C5	2.75	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:32:OMC:O2'	1:B:32:OMC:CM2	2.33	0.75
1:B:75:C:C5'	1:B:76:A:H5'	2.15	0.75
1:A:32:OMC:N3	1:B:33:U:C2	2.36	0.74
1:A:41:U:C5	1:B:41:U:O4	2.40	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:8:U:C5	1:B:9:A:OP2	2.34	0.74
1:A:15:G:C5'	1:B:14:A:C5	2.65	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:45:G:H1'	1:B:44:A:N3	2.01	0.74
1:A:69:U:O4	1:B:67:A:O5'	2.06	0.74
1:D:14:A:C3'	1:D:15:G:H5'	2.16	0.74
1:A:9:A:O2'	1:B:10:2MG:N7	2.20	0.74
1:A:13:C:H4'	1:B:12:U:H2'	1.70	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:44:A:C2'	1:C:45:G:H5'	2.18	0.74
1:C:75:C:C5'	1:C:76:A:H5'	2.15	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:7:U:C6	1:B:49:5MC:H5'	2.10	0.74
1:A:42:G:N7	1:B:42:G:C4	2.56	0.74
1:A:44:A:C6	1:B:44:A:N3	2.56	0.74
1:A:59:U:C2	1:B:59:U:C5	2.68	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:D:39:PSU:H3'	1:D:40:5MC:HM53	1.70	0.73
1:A:11:C:O2'	1:B:11:C:C4'	2.35	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:8:U:OP2	1:E:58:1MA:N7	2.16	0.73
1:D:45:G:C8	1:E:17:H2U:OP1	2.41	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
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:34:OMG:N9	1:B:34:OMG:N3	2.36	0.73
1:A:44:A:H2'	1:A:45:G:H5'	1.71	0.73
1:D:58:1MA:N3	1:E:65:G:O6	2.22	0.73
1:A:13:C:C6	1:B:13:C:N4	2.55	0.73
1:A:24:G:HO2'	1:B:24:G:H2'	1.53	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:40:5MC:C5'	1:B:39:PSU:C3'	2.47	0.73
1:A:72:C:O3'	1:B:1:G:C2	2.40	0.73
1:B:2:C:O2	1:B:2:C:H2'	1.89	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:18:G:N2	1:E:7:U:O4	2.22	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:A:40:5MC:C4	1:B:39:PSU:O2	2.19	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: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:E:39:PSU:H3'	1:E:40:5MC:HM53	1.71	0.73
1:A:14:A:C5	1:B:14:A:N6	2.57	0.73
1:A:17:H2U:H61	1:B:17:H2U:C5	2.19	0.73
1:A:33:U:N1	1:B:33:U:C2	2.57	0.73
1:A:41:U:C4	1:B:41:U:N3	2.57	0.73
1:D:16:H2U:C5'	1:E:47:U:O2'	2.37	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:A:6:U:O2'	1:B:7:U:O3'	1.96	0.72
1:A:31:A:H62	1:B:32:OMC:HN41	1.37	0.72
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:A:44:A:C8	1:B:43:G:O2'	1.78	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:35:A:H8	1:B:34:OMG:C2'	2.02	0.72
1:A:44:A:C3'	1:B:44:A:C4'	2.60	0.72
1:C:44:A:H2'	1:C:45:G:H5'	1.71	0.72
1:D:18:G:N2	1:E:7:U:C4	2.58	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:D:14:A:C2	1:E:48:C:H5	1.91	0.72
1:E:14:A:H2'	1:E:15:G:H5'	1.72	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:12:U:N3	1:E:19:G:N3	2.37	0.72
1:D:20:G:H2'	1:E:15:G:C5	2.25	0.72
1:A:13:C:C4'	1:B:12:U:N1	2.53	0.71
1:A:37:YG:C3	1:B:37:YG:H32	2.20	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:39:PSU:H2'	1:D:40:5MC:C6	2.25	0.71
1:D:63:C:H41	1:E:63:C:C2'	1.88	0.71
1:E:2:C:O2	1:E:2:C:H2'	1.88	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:40:5MC:N3	1:B:31:A:C6	2.57	0.71
1:A:49:5MC:CM5	1:B:49:5MC:O5'	2.38	0.71
1:A:57:G:C8	1:B:57:G:O4'	2.43	0.71
1:A:37:YG:O6	1:B:37:YG:C5	2.42	0.71
1:A:52:U:C6	1:B:52:U:OP2	2.44	0.71
1:C:2:C:H2'	1:C:2:C:O2	1.88	0.71
1:D:22:G:O2'	1:E:48:C:N4	2.23	0.71
1:A:30:G:C8	1:B:30:G:C8	2.78	0.71
1:C:39:PSU:H2'	1:C:40:5MC:C6	2.25	0.71
1:D:12:U:OP2	1:E:55:PSU:O2'	2.09	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:C:39:PSU:H3'	1:C:40:5MC:HM53	1.71	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:2:C:O2	1:D:2:C:H2'	1.89	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: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:11:C:H3'	1:B:10:2MG:O3'	1.67	0.71
1:A:55:PSU:C2'	1:B:57:G:O4'	2.39	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:A:37:YG:C3	1:B:37:YG:C3	2.69	0.70
1:B:39:PSU:H2'	1:B:40:5MC:C6	2.25	0.70
1:D:7:U:P	1:E:53:G:C6	2.85	0.70
1:D:62:A:C5	1:E:64:A:C3'	2.64	0.70
1:A:30:G:C4	1:B:30:G:C8	2.79	0.70
1:A:55:PSU:C1'	1:B:57:G:O4'	2.39	0.70
1:A:2:C:O2	1:A:2:C:H2'	1.88	0.70
1:A:23:A:O2'	1:B:24:G:C5'	2.40	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:YG:H132	1:B:37:YG:C12	2.26	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: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: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:13:C:OP1	1:B:12:U:H3'	1.91	0.70
1:A:21:A:N3	1:B:21:A:N9	2.39	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:15:G:H5''	1:B:14:A:N3	1.98	0.70
1:A:55:PSU:C1'	1:B:57:G:H8	2.04	0.70
1:D:5:A:C4	1:E:53:G:H5''	2.27	0.70
1:D:13:C:C1'	1:E:58:1MA:C5'	2.69	0.70
1:D:14:A:C8	1:E:58:1MA:C4'	2.63	0.70
1:A:44:A:N1	1:B:44:A:N3	2.40	0.70
1:D:7:U:O5'	1:E:53:G:C6	2.45	0.70
1:D:9:A:O5'	1:E:18:G:O4'	2.05	0.70
1:D:18:G:C5	1:E:66:A:C5	2.76	0.70
1:D:49:5MC:H3'	1:E:62:A:O4'	1.91	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:5:A:O5'	1:B:6:U:C4	2.43	0.69
1:A:8:U:C4	1:B:22:G:O6	2.45	0.69
1:A:18:G:C2'	1:B:57:G:H21	1.59	0.69
1:A:15:G:O6	1:B:8:U:H1'	1.92	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:A:40:5MC:O5'	1:B:40:5MC:C5	2.42	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: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:A:71:G:C4'	1:B:71:G:C5	2.68	0.69
1:A:73:A:N3	1:B:1:G:OP2	2.24	0.69
1:B:58:1MA:C2	1:B:60:C:H2'	2.28	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:60:C:H5	1:B:59:U:OP1	1.73	0.69
1:D:21:A:H2	1:E:59:U:H2'	1.56	0.69
1:D:63:C:OP2	1:E:64:A:O2'	2.10	0.69
1:A:43:G:C2'	1:B:43:G:H1'	2.23	0.69
1:A:6:U:P	1:B:6:U:C3'	2.71	0.69
1:A:17:H2U:C5	1:B:17:H2U:N3	2.53	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
1:A:11:C:O4'	1:B:10:2MG:C2'	2.13	0.69
1:A:13:C:N4	1:B:9:A:C1'	2.54	0.69
1:A:18:G:C2'	1:B:57:G:H22	1.84	0.69
1:A:42:G:C5	1:B:42:G:C2	2.79	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:9:A:C5'	1:B:46:7MG:C4'	2.70	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:44:A:N7	1:B:43:G:C1'	2.55	0.69
1:A:59:U:O2'	1:B:59:U:O4'	2.11	0.69
1:B:14:A:H2'	1:B:15:G:H5'	1.72	0.69
1:D:46:7MG:O5'	1:E:17:H2U:C5'	2.35	0.69
1:A:15:G:C8	1:B:15:G:N3	2.60	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: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:8:U:H5'	1:E:61:C:C1'	2.20	0.68
1:D:13:C:N3	1:E:58:1MA:C4'	2.56	0.68
1:D:17:H2U:OP1	1:E:47:U:O2'	2.10	0.68
1:D:22:G:C2'	1:E:48:C:H42	2.05	0.68
1:A:10:2MG:H2'	1:B:10:2MG:C1'	2.22	0.68
1:A:59:U:C2	1:B:59:U:H6	2.04	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:26:M2G:HM23	1:B:44:A:H2	0.60	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:C:58:1MA:C2	1:C:60:C:H2'	2.28	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:A:27:C:C4	1:B:27:C:N3	2.61	0.68
1:A:63:C:H2'	1:B:52:U:C1'	2.19	0.68
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: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:58:1MA:CM1	1:B:58:1MA:C5	2.70	0.67
1:A:2:C:N4	1:A:71:G:H1	1.92	0.67
1:A:23:A:C2	1:B:23:A:C5	2.75	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:22:G:O6	1:B:46:7MG:C2	2.47	0.67
1:A:31:A:C2	1:B:31:A:C5	2.83	0.67
1:A:58:1MA:N6	1:B:58:1MA:N7	2.43	0.67
1:D:6:U:HO2'	1:E:55:PSU:HN1	1.42	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:39:PSU:O4'	1:B:38:A:C8	2.47	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:37:YG:O6	1:B:37:YG:C6	2.46	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: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
1:A:33:U:H3	1:B:35:A:H3'	1.60	0.67
1:A:33:U:H3'	1:B:34:OMG:P	2.35	0.67
1:D:11:C:C2'	1:E:19:G:H1	2.05	0.67
1:D:21:A:N6	1:E:60:C:C3'	2.44	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:15:G:C1'	1:B:15:G:N3	2.58	0.66
1:A:42:G:C4	1:B:42:G:N3	2.63	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:5:A:C8	1:B:7:U:O4	2.47	0.66
1:A:8:U:C4	1:B:8:U:O2	2.48	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:D:2:C:N4	1:D:71:G:H1	1.92	0.66
1:D:13:C:N3	1:E:58:1MA:O4'	2.29	0.66
1:A:63:C:C1'	1:B:52:U:C1'	2.31	0.66
1:A:71:G:C3'	1:B:71:G:C5	2.79	0.66
1:C:26:M2G:C2'	1:C:27:C:H5'	2.25	0.66
1:D:56:C:C5'	1:E:70:C:C4	2.79	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:4:G:C2'	1:B:5:A:N6	2.56	0.66
1:A:18:G:H8	1:B:18:G:C1'	2.08	0.66
1:A:58:1MA:HM13	1:B:58:1MA:C4	2.18	0.66
1:B:17:H2U:C2'	1:B:17:H2U:O2	2.44	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
1:D:6:U:O2'	1:E:54:5MU:C6	2.21	0.66
1:D:44:A:C2	1:E:17:H2U:N3	2.63	0.66
1:A:13:C:P	1:B:12:U:C6	2.88	0.65
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:D:60:C:C2	1:E:49:5MC:N1	2.58	0.65
1:A:9:A:H2'	1:B:9:A:H1'	1.78	0.65
1:A:17:H2U:C2'	1:A:17:H2U:O2	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: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: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:D:57:G:H21	1:E:7:U:C1'	2.09	0.65
1:A:17:H2U:C1'	1:B:19:G:OP2	2.43	0.65
1:A:29:A:O4'	1:B:29:A:C5'	2.22	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: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:6:U:H3	1:B:66:A:H2	1.45	0.65
1:A:42:G:H8	1:B:41:U:O2	1.41	0.65
1:D:61:C:H5'	1:E:65:G:H21	1.57	0.65
1:D:61:C:C3'	1:E:64:A:C2	2.76	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:YG:C8	1:B:36:A:C1'	2.63	0.65
1:D:8:U:H1'	1:E:60:C:OP2	1.96	0.65
1:D:12:U:C3'	1:E:57:G:C8	2.68	0.65
1:D:17:H2U:O2	1:D:17:H2U:C2'	2.44	0.65
1:D:58:1MA:H2	1:E:65:G:H1	1.36	0.65
1:A:5:A:H1'	1:B:5:A:N1	2.12	0.65
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:A:40:5MC:OP2	1:B:40:5MC:HM52	1.90	0.65
1:A:63:C:H2'	1:B:52:U:N1	2.09	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:33:U:H3	1:B:35:A:C3'	2.10	0.64
1:A:35:A:N3	1:B:35:A:N3	2.44	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:24:G:C4'	1:E:20:G:C5'	2.36	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: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:12:U:OP2	1:E:57:G:N7	2.30	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:A:69:U:C6	1:B:67:A:O2'	2.38	0.64
1:A:50:U:C5	1:B:50:U:C5'	2.80	0.64
1:A:62:A:C5'	1:B:62:A:N9	1.95	0.64
1:A:62:A:H5'	1:B:62:A:C8	2.17	0.64
1:A:73:A:H5'	1:B:1:G:C4	2.33	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:37:YG:H32	1:B:37:YG:H33	1.80	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:A:37:YG:H32	1:A:38:A:H1'	1.78	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:5:A:N7	1:B:66:A:N6	2.44	0.64
1:A:50:U:C5	1:B:50:U:P	2.90	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:51:G:C8	1:B:51:G:OP1	2.51	0.64
1:A:58:1MA:HM11	1:B:18:G:N3	2.08	0.64
1:A:73:A:O4'	1:B:1:G:C8	2.50	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:51:G:C4	1:B:51:G:H5''	2.33	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
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:C:60:C:H4'	1:C:61:C:OP2	1.97	0.63
1:D:7:U:OP2	1:E:53:G:C6	2.50	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:22:G:C1'	1:E:48:C:N4	2.46	0.63
1:D:62:A:C8	1:E:64:A:H2'	2.32	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:17:H2U:C3'	1:E:49:5MC:H4'	2.29	0.63
1:D:56:C:N3	1:E:68:U:C2	2.62	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:48:C:C4'	1:B:47:U:H3'	2.25	0.63
1:C:51:G:H2'	1:C:52:U:C6	2.34	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:D:18:G:N3	1:E:7:U:C2	2.65	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:26:M2G:O2'	1:E:27:C:H5'	1.97	0.63
1:A:29:A:C4	1:B:30:G:C5'	2.36	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:8:U:C3'	1:B:46:7MG:H1'	2.27	0.63
1:A:46:7MG:O5'	1:B:45:G:C5'	2.46	0.63
1:A:51:G:H2'	1:A:52:U:C6	2.34	0.63
1:B:51:G:H2'	1:B:52:U:C6	2.34	0.63
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:A:42:G:C5	1:B:42:G:C5	2.87	0.62
1:B:23:A:H2'	1:B:24:G:H8	1.62	0.62
1:A:18:G:C6	1:B:18:G:C2	2.87	0.62
1:A:23:A:H2'	1:A:24:G:H8	1.62	0.62
1:A:23:A:C2	1:B:23:A:N1	2.66	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:30:G:C5'	1:B:30:G:O5'	2.45	0.62
1:A:60:C:C6	1:B:59:U:O5'	2.52	0.62
1:D:20:G:N2	1:E:14:A:N6	2.46	0.62
1:D:56:C:OP2	1:E:69:U:O4	1.90	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:C:17:H2U:O2	1:C:17:H2U:C2'	2.44	0.62
1:D:23:A:C5'	1:E:21:A:H4'	2.29	0.62
1:D:46:7MG:C1'	1:E:18:G:OP2	2.47	0.62
1:D:51:G:H2'	1:D:52:U:C6	2.34	0.62
1:A:7:U:C5	1:B:7:U:O2'	2.29	0.62
1:A:33:U:N3	1:B:33:U:N3	2.48	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:20:G:H3'	1:B:20:G:O3'	2.00	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:73:A:O4'	1:B:1:G:N9	2.32	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
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: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:69:U:N3	1:B:67:A:C8	2.68	0.62
1:A:23:A:N3	1:B:23:A:C6	2.53	0.61
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:6:U:N3	1:B:66:A:C2	2.64	0.61
1:A:43:G:N9	1:B:43:G:H1'	2.15	0.61
1:A:52:U:H1'	1:B:52:U:P	2.40	0.61
1:A:62:A:OP1	1:B:61:C:C2'	2.48	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:9:A:C8	1:B:9:A:N9	2.68	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:39:PSU:N1	1:B:38:A:OP2	2.32	0.61
1:C:23:A:H2'	1:C:24:G:H8	1.61	0.61
1:E:37:YG:C2'	1:E:38:A:O4'	2.48	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:22:G:C5	1:B:46:7MG:N1	2.69	0.61
1:A:29:A:C4	1:B:30:G:O5'	2.46	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:E:23:A:H2'	1:E:24:G:H8	1.62	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:36:A:N7	1:B:36:A:N7	2.46	0.61
1:A:38:A:N7	1:B:38:A:N7	2.45	0.61
1:D:20:G:H2'	1:D:20:G:N3	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
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:48:C:C2'	1:B:48:C:H6	2.14	0.61
1:A:61:C:H4'	1:B:58:1MA:N1	2.13	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:14:A:OP2	1:B:13:C:C5	2.48	0.60
1:A:23:A:N3	1:B:23:A:C4	2.69	0.60
1:A:42:G:N1	1:B:42:G:C2	2.69	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: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:C:1:G:H2'	1:C:2:C:H6	1.66	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:A:14:A:OP2	1:B:8:U:C5	2.53	0.60
1:A:31:A:N3	1:B:31:A:C2	2.69	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:D:50:U:C2	1:E:63:C:P	2.94	0.60
1:C:1:G:C5	1:C:2:C:C5	2.90	0.60
1:D:7:U:P	1:E:53:G:C5	2.94	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1:G:C5	1:A:2:C:C5	2.90	0.60
1:A:4:G:C4	1:B:67:A:N6	2.62	0.60
1:A:7:U:HO2'	1:B:49:5MC:H5''	1.57	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:D:8:U:C1'	1:E:60:C:OP2	2.49	0.60
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:41:U:C4	1:B:41:U:O4	2.55	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:D:21:A:C2'	1:E:59:U:O2	2.50	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:A:30:G:C2	1:B:30:G:C5	2.90	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: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:D:1:G:C5	1:D:2:C:C5	2.90	0.60
1:D:5:A:C8	1:E:53:G:C5'	2.84	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:A:31:A:C4	1:B:31:A:C8	2.89	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:D:73:A:HO2'	1:D:74:C:H5'	1.65	0.60
1:E:1:G:C5	1:E:2:C:C5	2.90	0.60
1:A:37:YG:H102	1:B:37:YG:H101	1.84	0.59
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:28:C:N3	1:B:28:C:C2	2.69	0.59
1:A:32:OMC:CM2	1:B:33:U:C1'	2.79	0.59
1:C:20:G:H2'	1:C:20:G:N3	2.15	0.59
1:C:37:YG:C2'	1:C:38:A:O4'	2.48	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:A:24:G:C5'	1:B:24:G:C5'	2.78	0.59
1:A:25:C:H1'	1:B:25:C:C2	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:40:5MC:N3	1:B:30:G:O6	2.35	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
1:A:70:C:O4'	1:B:69:U:O4'	2.09	0.59
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:A:39:PSU:C3'	1:B:40:5MC:HM52	2.32	0.59
1:D:1:G:H2'	1:D:2:C:C6	2.37	0.59
1:D:60:C:H3'	1:E:65:G:N1	2.17	0.59
1:A:3:G:C4'	1:B:3:G:OP2	2.51	0.59
1:A:13:C:H1'	1:B:23:A:N1	2.18	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:19:G:OP2	1:E:7:U:O3'	2.12	0.59
1:D:24:G:C2	1:E:19:G:N3	2.53	0.59
1:D:62:A:OP2	1:E:64:A:N3	2.36	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:C:1:G:H2'	1:C:2:C:C6	2.37	0.59
1:D:62:A:C6	1:E:64:A:O5'	2.55	0.59
1:D:67:A:N1	1:E:54:5MU:H5'	2.01	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:23:A:C4	1:B:23:A:C8	2.91	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:45:G:N2	1:B:26:M2G:CM2	2.59	0.59
1:A:51:G:C8	1:B:51:G:P	2.96	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:52:U:N1	1:B:52:U:OP2	2.36	0.59
1:B:1:G:C5	1:B:2:C:C5	2.90	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
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:9:A:H1'	1:E:17:H2U:O2'	2.03	0.58
1:D:25:C:C4	1:E:19:G:H2'	2.38	0.58
1:D:57:G:H5'	1:E:4:G:N1	2.18	0.58
1:E:17:H2U:O2	1:E:17:H2U:C2'	2.44	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:8:U:H4'	1:B:46:7MG:H1'	1.86	0.58
1:A:9:A:C4	1:B:9:A:N3	2.68	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:71:G:H2'	1:B:2:C:N4	2.19	0.58
1:D:58:1MA:H4'	1:E:7:U:C5	2.28	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:48:C:H41	1:B:21:A:H5''	1.69	0.58
1:A:57:G:C8	1:B:57:G:H1'	2.33	0.58
1:B:39:PSU:C6	1:B:40:5MC:HM52	2.38	0.58
1:B:73:A:O3'	1:C:76:A:C2	2.52	0.58
1:C:37:YG:H33	1:C:37:YG:C1'	2.34	0.58
1:E:37:YG:H33	1:E:37:YG:C1'	2.34	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:7:U:H2'	1:B:49:5MC:H5''	1.51	0.58
1:A:23:A:C2'	1:B:24:G:N7	2.62	0.58
1:A:23:A:O5'	1:B:23:A:P	2.60	0.58
1:A:28:C:C1'	1:B:29:A:O4'	2.48	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:30:G:H5'	1:B:30:G:C5'	2.34	0.58
1:A:45:G:N2	1:B:26:M2G:HM23	2.14	0.58
1:A:70:C:H4'	1:B:69:U:H3'	0.58	0.58
1:D:37:YG:C1'	1:D:37:YG:H33	2.34	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
1:A:17:H2U:C5'	1:B:17:H2U:P	2.92	0.57
1:A:34:OMG:N3	1:B:34:OMG:N3	2.50	0.57
1:A:56:C:N3	1:B:19:G:N2	2.51	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:18:G:OP1	1:B:18:G:O5'	2.08	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:37:YG:H32	1:B:37:YG:C3	2.33	0.57
1:A:59:U:O2	1:B:59:U:N1	2.38	0.57
1:D:15:G:C8	1:E:59:U:OP2	2.57	0.57
1:D:45:G:C2'	1:E:17:H2U:H2'	2.35	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:16:H2U:H61	1:B:16:H2U:H2'	1.84	0.57
1:A:40:5MC:C6	1:B:40:5MC:CM5	2.84	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:14:A:N3	1:B:14:A:N1	2.53	0.57
1:A:15:G:C8	1:B:15:G:N1	2.73	0.57
1:A:16:H2U:P	1:B:15:G:C4	2.96	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:B:73:A:N7	1:C:75:C:O2'	2.37	0.57
1:D:25:C:H2'	1:D:25:C:O2	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:8:U:C2	1:E:60:C:OP2	2.57	0.57
1:D:16:H2U:C4'	1:E:47:U:O2'	2.49	0.57
1:A:14:A:N3	1:B:14:A:C2	2.73	0.57
1:A:29:A:N1	1:B:29:A:C2	2.73	0.57
1:A:30:G:C4	1:B:30:G:C5	2.91	0.57
1:A:36:A:H5''	1:B:36:A:O4'	2.04	0.57
1:A:42:G:C5'	1:B:42:G:H5'	2.34	0.57
1:A:66:A:H2	1:B:49:5MC:O2'	1.73	0.57
1:C:25:C:O2	1:C:25:C:H2'	2.03	0.57
1:D:57:G:C4	1:E:68:U:O2	2.32	0.57
1:A:6:U:O4'	1:B:7:U:C6	2.55	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: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:48:C:H4'	1:B:47:U:C3'	2.32	0.57
1:A:7:U:C2'	1:B:8:U:C5'	2.83	0.57
1:A:23:A:H5'	1:B:23:A:H5''	1.86	0.57
1:A:26:M2G:C8	1:B:26:M2G:C2'	2.88	0.57
1:A:33:U:N1	1:B:33:U:N1	2.51	0.57
1:A:61:C:C6	1:B:60:C:OP2	2.58	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:58:1MA:HM11	1:B:58:1MA:N3	2.05	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:A:28:C:N1	1:B:29:A:O5'	2.36	0.56
1:B:37:YG:C1'	1:B:37:YG:H33	2.34	0.56
1:A:14:A:N6	1:B:46:7MG:HN1	2.02	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:A:37:YG:H33	1:B:37:YG:H32	1.87	0.56
1:A:45:G:C1'	1:B:44:A:N3	2.63	0.56
1:A:48:C:H5'	1:B:47:U:C3'	2.34	0.56
1:A:49:5MC:C2	1:B:49:5MC:O2'	2.59	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:9:A:C5'	1:B:46:7MG:O4'	2.53	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:15:G:N3	1:B:15:G:N2	2.53	0.56
1:A:37:YG:H31	1:A:37:YG:C1'	2.34	0.56
1:A:7:U:O2'	1:B:49:5MC:C4'	2.52	0.56
1:A:32:OMC:N1	1:B:32:OMC:N1	2.53	0.56
1:A:40:5MC:CM5	1:B:40:5MC:C5	2.86	0.56
1:B:25:C:O2	1:B:25:C:H2'	2.03	0.56
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: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:C:37:YG:C2'	1:C:37:YG:H33	2.36	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: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:A:70:C:C2'	1:B:70:C:H5	2.13	0.56
1:D:14:A:H61	1:E:59:U:C2'	2.19	0.56
1:A:5:A:C2'	1:B:6:U:C2'	2.51	0.56
1:A:25:C:C2'	1:B:26:M2G:C8	2.52	0.56
1:A:44:A:N1	1:B:44:A:C2	2.73	0.56
1:D:22:G:C4	1:E:59:U:C6	2.51	0.56
1:D:45:G:C1'	1:E:17:H2U:C2'	2.83	0.56
1:D:61:C:P	1:E:51:G:C4	2.99	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: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:D:19:G:O2'	1:E:8:U:OP2	2.24	0.55
1:D:56:C:C5'	1:E:70:C:N4	2.70	0.55
1:E:64:A:H5''	1:E:65:G:OP2	2.07	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:46:7MG:C4	1:B:46:7MG:C8	2.95	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:14:A:H5'	1:B:13:C:H2'	1.81	0.55
1:A:18:G:C8	1:B:18:G:C1'	2.80	0.55
1:A:27:C:C6	1:B:27:C:C2	2.92	0.55
1:A:35:A:OP2	1:B:35:A:H8	1.88	0.55
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:B:39:PSU:C5	1:B:40:5MC:HM52	2.42	0.55
1:C:64:A:H5''	1:C:65:G:OP2	2.07	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: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:37:YG:H33	1:D:37:YG:C2'	2.36	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:23:A:H62	1:B:45:G:H22	1.32	0.55
1:A:37:YG:H132	1:B:37:YG:C13	2.35	0.55
1:A:45:G:C6	1:B:45:G:C5	2.95	0.55
1:A:45:G:C5	1:B:45:G:C8	2.95	0.55
1:D:8:U:C5'	1:E:61:C:C2	2.79	0.55
1:A:9:A:H4'	1:B:45:G:O3'	2.07	0.55
1:A:18:G:C5'	1:B:60:C:C4	2.79	0.55
1:A:26:M2G:HM13	1:B:27:C:C1'	2.34	0.55
1:A:56:C:H6	1:B:56:C:H1'	1.72	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:10:2MG:N7	1:E:17:H2U:C6	2.70	0.54
1:E:37:YG:C2'	1:E:37:YG:H33	2.36	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:47:U:OP2	1:B:46:7MG:OP1	2.24	0.54
1:A:63:C:P	1:B:63:C:C5	3.00	0.54
1:D:13:C:N3	1:E:58:1MA:H5'	2.10	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:A:74:C:OP1	1:B:74:C:O2'	2.26	0.54
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:5:A:H1'	1:B:5:A:C2	2.43	0.54
1:A:24:G:N1	1:B:10:2MG:C6	2.10	0.54
1:A:31:A:C2'	1:B:32:OMC:C4'	2.84	0.54
1:A:31:A:H5''	1:B:31:A:H5''	1.88	0.54
1:A:55:PSU:C1'	1:B:57:G:C8	2.88	0.54
1:A:64:A:O5'	1:B:51:G:N2	2.22	0.54
1:D:12:U:H6	1:E:56:C:N3	2.06	0.54
1:D:20:G:H2'	1:E:15:G:N7	2.22	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: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: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: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: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:C:51:G:H2'	1:C:52:U:H6	1.73	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: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:58:1MA:H1'	1:B:59:U:P	2.48	0.53
1:A:70:C:C5'	1:B:69:U:C3'	2.49	0.53
1:D:5:A:H5''	1:E:52:U:O3'	2.02	0.53
1:A:32:OMC:HM22	1:B:33:U:H1'	1.89	0.53
1:A:39:PSU:C5	1:B:39:PSU:N3	2.48	0.53
1:A:60:C:O4'	1:B:59:U:C6	2.61	0.53
1:A:69:U:O4	1:B:67:A:C8	2.61	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:17:H2U:H1'	1:B:19:G:OP2	2.06	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:D:64:A:C6	1:E:63:C:O3'	2.53	0.53
1:A:8:U:C4'	1:B:46:7MG:H1'	2.38	0.53
1:A:24:G:C5	1:B:24:G:C6	2.96	0.53
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:39:PSU:O5'	1:B:39:PSU:C6	2.62	0.53
1:A:57:G:O6	1:B:19:G:C6	2.51	0.53
1:A:63:C:HO2'	1:B:52:U:H1'	1.57	0.53
1:D:17:H2U:P	1:E:47:U:HO2'	2.32	0.53
1:A:40:5MC:C5'	1:B:40:5MC:H5'	2.27	0.53
1:A:63:C:H5	1:B:62:A:N6	1.99	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:30:G:C2	1:B:30:G:N1	2.76	0.53
1:A:51:G:H2'	1:A:52:U:H6	1.73	0.53
1:A:9:A:O2'	1:B:10:2MG:C8	2.60	0.53
1:A:22:G:C6	1:B:46:7MG:N1	2.77	0.53
1:A:30:G:N1	1:B:30:G:N1	2.56	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:63:C:N4	1:B:51:G:N7	2.57	0.53
1:C:49:5MC:O2'	1:C:50:U:H5'	2.09	0.53
1:D:51:G:N7	1:E:63:C:O5'	2.41	0.53
1:D:60:C:O2	1:E:49:5MC:C6	2.51	0.53
1:A:21:A:C1'	1:B:21:A:C5'	2.86	0.53
1:A:23:A:HO2'	1:B:23:A:H2'	1.74	0.53
1:D:17:H2U:C5'	1:E:47:U:C5	2.92	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:A:58:1MA:C5	1:B:58:1MA:C2'	2.82	0.53
1:D:60:C:H2'	1:E:65:G:N1	2.23	0.53
1:A:15:G:C6	1:B:48:C:C2	2.96	0.53
1:A:29:A:C8	1:B:29:A:H5''	2.32	0.53
1:A:45:G:C6	1:B:45:G:N7	2.77	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:32:OMC:N4	1:B:32:OMC:N4	2.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:A:41:U:H6	1:B:41:U:C6	2.19	0.52
1:B:1:G:H22	1:C:76:A:C4'	1.90	0.52
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:9:A:H4'	1:B:46:7MG:O5'	2.08	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: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:O2'	1:B:48:C:C6	2.63	0.52
1:A:59:U:C5	1:B:21:A:O4'	2.63	0.52
1:A:22:G:P	1:B:22:G:OP2	2.68	0.52
1:A:24:G:H5''	1:B:24:G:O5'	1.95	0.52
1:A:31:A:C1'	1:B:31:A:N9	2.71	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:16:H2U:OP1	1:B:15:G:N9	2.42	0.52
1:A:21:A:O5'	1:B:21:A:OP1	2.28	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:26:M2G:HM22	1:B:44:A:C2	2.37	0.52
1:A:39:PSU:O4'	1:B:38:A:H2'	1.87	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:18:G:C6	1:E:66:A:C5	2.98	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:A:5:A:H1'	1:B:5:A:C6	2.46	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
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:31:A:C8	1:B:31:A:N7	2.77	0.51
1:A:38:A:C8	1:B:37:YG:C4'	2.92	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:41:U:H6	1:B:40:5MC:C2	2.25	0.51
1:D:23:A:H4'	1:E:21:A:H4'	1.92	0.51
1:D:51:G:H2'	1:D:52:U:H6	1.73	0.51
1:A:65:G:N2	1:B:50:U:C3'	2.60	0.51
1:A:2:C:H1'	1:B:2:C:P	2.28	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:C:39:PSU:H2'	1:C:40:5MC:H6	1.74	0.51
1:D:13:C:N3	1:E:58:1MA:C5'	2.71	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:7:U:C2'	1:E:53:G:H1	2.11	0.51
1:D:20:G:H2'	1:E:15:G:C6	2.46	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:46:7MG:N3	1:B:46:7MG:C8	2.78	0.51
1:A:63:C:H5''	1:B:63:C:C1'	2.24	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:N3	1:E:66:A:N1	2.51	0.51
1:D:58:1MA:C5'	1:E:7:U:C5	2.93	0.51
1:E:24:G:C6	1:E:25:C:C4	2.99	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:70:C:C2'	1:B:69:U:N3	2.48	0.51
1:A:73:A:H2'	1:A:74:C:O4'	2.11	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
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:62:A:H8	1:B:61:C:N3	2.07	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:C:24:G:C6	1:C:25:C:C4	2.99	0.50
1:C:58:1MA:H4'	1:C:59:U:OP1	2.10	0.50
1:D:5:A:N9	1:E:53:G:H5''	2.27	0.50
1:D:12:U:C4	1:E:19:G:C4	3.00	0.50
1:D:61:C:H4'	1:E:65:G:O2'	2.10	0.50
1:D:63:C:N4	1:E:64:A:O4'	2.41	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:22:G:HO2'	1:E:21:A:H1'	1.77	0.50
1:D:29:A:C3'	1:D:30:G:H5'	2.41	0.50
1:D:51:G:O6	1:E:63:C:C5'	2.59	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:O2'	1:E:50:U:C6	2.52	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: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:E:37:YG:H33	1:E:37:YG:H1'	1.94	0.50
1:A:18:G:OP1	1:B:18:G:P	2.70	0.50
1:A:24:G:C6	1:A:25:C:C4	2.99	0.50
1:A:52:U:H1'	1:B:52:U:OP1	2.09	0.50
1:A:58:1MA:H4'	1:A:59:U:OP1	2.10	0.50
1:C:37:YG:H33	1:C:37:YG:H1'	1.94	0.50
1:A:7:U:OP2	1:B:49:5MC:OP2	2.30	0.50
1:A:29:A:C4	1:B:29:A:C4	3.00	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:YG:N7	1:B:37:YG:N7	2.47	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
1:A:6:U:C4'	1:B:6:U:H2'	2.42	0.49
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: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: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:D:36:A:H2'	1:D:36:A:N3	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:36:A:N6	1:B:35:A:H61	2.01	0.49
1:A:71:G:C8	1:B:69:U:O4	2.66	0.49
1:B:37:YG:H1'	1:B:37:YG:H33	1.94	0.49
1:C:29:A:C3'	1:C:30:G:H5'	2.42	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:29:A:C3'	1:E:30:G:H5'	2.42	0.49
1:E:44:A:O2'	1:E:45:G:H5'	2.12	0.49
1:E:73:A:H2'	1:E:74:C:O4'	2.11	0.49
1:A:30:G:N2	1:B:30:G:N2	2.60	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: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: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:A:34:OMG:C8	1:B:34:OMG:N7	2.79	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:34:OMG:H2'	1:E:35:A:C8	2.48	0.49
1:A:13:C:C5	1:B:13:C:N4	2.80	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:B:74:C:C6	1:C:76:A:OP2	2.65	0.49
1:A:8:U:N3	1:B:8:U:O2	2.46	0.49
1:A:36:A:H2'	1:A:36:A:N3	2.28	0.49
1:A:50:U:N1	1:B:51:G:OP1	2.06	0.49
1:A:69:U:N3	1:B:67:A:C2'	2.63	0.49
1:C:44:A:H2'	1:C:45:G:C5'	2.42	0.49
1:D:21:A:H3'	1:E:15:G:H2'	1.94	0.49
1:D:63:C:N4	1:E:64:A:H8	2.10	0.49
1:D:63:C:H41	1:E:64:A:H8	1.61	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:31:A:N7	1:B:31:A:N7	2.60	0.49
1:A:31:A:O5'	1:B:31:A:H5''	2.12	0.49
1:A:37:YG:C14	1:B:37:YG:C14	2.70	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: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: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:42:G:N2	1:B:29:A:H2'	2.28	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: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:38:A:C3'	1:B:38:A:H8	2.26	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:D:5:A:H2'	1:E:53:G:H5''	1.94	0.48
1:D:60:C:O2'	1:E:49:5MC:O2	2.28	0.48
1:D:73:A:C2'	1:D:74:C:C5'	2.87	0.48
1:A:34:OMG:H8	1:B:34:OMG:C8	2.29	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:46:7MG:C5	1:B:46:7MG:CM7	2.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:48:C:O5'	1:B:47:U:C4'	2.61	0.48
1:D:37:YG:H2'	1:D:38:A:C1'	2.43	0.48
1:D:37:YG:H33	1:D:37:YG:H1'	1.94	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:A:7:U:OP1	1:B:8:U:C5	2.57	0.48
1:A:17:H2U:C6	1:B:17:H2U:H51	2.38	0.48
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:D:34:OMG:H2'	1:D:35:A:C8	2.48	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:A:7:U:C2'	1:B:8:U:H5'	2.44	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:C:36:A:H2'	1:C:36:A:N3	2.28	0.48
1:D:23:A:C3'	1:E:20:G:C8	2.83	0.48
1:D:62:A:C8	1:E:65:G:C4'	2.91	0.48
1:D:62:A:C6	1:E:64:A:P	3.07	0.48
1:A:12:U:C2	1:B:12:U:C5	3.02	0.48
1:A:14:A:C8	1:B:14:A:N7	2.81	0.48
1:D:20:G:C2'	1:E:15:G:N7	2.77	0.48
1:D:48:C:C2'	1:E:61:C:OP2	2.37	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:8:U:C6	1:E:61:C:N4	2.81	0.48
1:D:49:5MC:CM5	1:E:53:G:N2	2.77	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:6:U:O3'	1:B:8:U:P	2.57	0.47
1:A:40:5MC:CM5	1:B:40:5MC:HM53	2.39	0.47
1:A:55:PSU:OP1	1:B:56:C:H5''	2.11	0.47
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:D:58:1MA:HM12	1:E:65:G:H1	1.63	0.47
1:E:35:A:N3	1:E:35:A:H2'	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:C:37:YG:H2'	1:C:38:A:C8	2.49	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: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:36:A:H2'	1:E:36:A:N3	2.28	0.47
1:E:37:YG:H2'	1:E:38:A:C8	2.49	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:51:G:N1	1:B:52:U:H5	2.08	0.47
1:A:55:PSU:O4'	1:B:55:PSU:H2'	2.13	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:C:35:A:H2'	1:C:35:A:N3	2.29	0.47
1:D:60:C:C4'	1:E:64:A:N1	2.77	0.47
1:A:13:C:H4'	1:B:13:C:O4'	2.15	0.47
1:A:38:A:OP2	1:B:37:YG:H3'	2.14	0.47
1:A:44:A:O5'	1:B:44:A:H5'	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:C:42:G:O2'	1:C:43:G:H5'	2.15	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:A:29:A:C8	1:B:29:A:C8	3.01	0.47
1:A:36:A:C5'	1:B:36:A:O4'	2.54	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:43:G:C6	1:B:43:G:C5	3.03	0.47
1:A:49:5MC:N4	1:B:49:5MC:H2'	2.04	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
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:H32	1:B:37:YG:C2'	2.39	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:42:G:O2'	1:D:43:G:H5'	2.15	0.47
1:D:44:A:N1	1:E:17:H2U:N3	2.44	0.47
1:A:27:C:N4	1:B:27:C:N3	2.64	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:38:A:C3'	1:B:38:A:C8	2.90	0.46
1:A:60:C:O3'	1:B:60:C:C2'	2.57	0.46
1:B:1:G:H21	1:C:76:A:C2'	2.27	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:A:71:G:P	1:B:70:C:OP2	2.73	0.46
1:B:19:G:C4'	1:B:20:G:OP2	2.60	0.46
1:D:54:5MU:OP1	1:E:2:C:O4'	2.33	0.46
1:A:4:G:N2	1:B:69:U:C2	2.84	0.46
1:A:19:G:C6	1:B:19:G:N3	2.83	0.46
1:A:24:G:C8	1:B:24:G:C5	3.03	0.46
1:A:42:G:O2'	1:A:43:G:H5'	2.15	0.46
1:A:13:C:O3'	1:B:13:C:C3'	2.63	0.46
1:A:14:A:C8	1:B:14:A:C5	3.03	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:A:42:G:OP2	1:B:41:U:C6	2.69	0.46
1:A:43:G:O6	1:B:28:C:N4	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:D:8:U:C2'	1:E:60:C:C6	2.98	0.46
1:D:46:7MG:N2	1:E:60:C:C4	2.47	0.46
1:E:21:A:C2	1:E:48:C:N3	2.84	0.46
1:A:14:A:O5'	1:B:8:U:O4	2.33	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:D:35:A:N3	1:D:35:A:H2'	2.29	0.46
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:A:9:A:H5''	1:B:46:7MG:H4'	1.96	0.46
1:A:21:A:C1'	1:B:21:A:C4'	2.87	0.46
1:A:72:C:O5'	1:B:1:G:O6	2.08	0.46
1:B:72:C:H5'	1:C:74:C:N3	2.30	0.46
1:D:14:A:N1	1:E:48:C:C5	2.81	0.46
1:D:23:A:H5''	1:E:20:G:N9	2.16	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:C:21:A:C2	1:C:48:C:N3	2.84	0.46
1:E:60:C:H5''	1:E:61:C:H5	1.81	0.46
1:A:37:YG:C4'	1:B:36:A:O2'	2.58	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: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:A:55:PSU:H4'	1:B:55:PSU:H2'	1.96	0.45
1:B:35:A:N3	1:B:35:A:H2'	2.30	0.45
1:C:58:1MA:H2	1:C:60:C:H2'	1.79	0.45
1:D:18:G:O4'	1:E:49:5MC:C6	2.42	0.45
1:D:21:A:C2	1:D:48:C:N3	2.84	0.45
1:D:56:C:O4'	1:E:69:U:H3'	2.15	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:71:G:P	1:B:70:C:H5	2.39	0.45
1:C:12:U:C2'	1:C:13:C:O5'	2.64	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: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
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:23:A:O2'	1:B:24:G:C8	2.37	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:46:7MG:O2'	1:B:46:7MG:H5''	2.17	0.45
1:A:51:G:N2	1:B:52:U:C5'	2.80	0.45
1:A:59:U:C4	1:B:59:U:C5	3.02	0.45
1:A:62:A:C5	1:B:52:U:O4	2.69	0.45
1:B:1:G:H2'	1:B:2:C:O4'	2.17	0.45
1:C:60:C:H5''	1:C:61:C:H5	1.82	0.45
1:D:45:G:H1'	1:E:17:H2U:C2'	2.42	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: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:2:C:C5	1:B:1:G:OP3	2.69	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:33:U:N3	1:B:33:U:C2	2.79	0.45
1:C:37:YG:H1'	1:C:37:YG:C3	2.47	0.45
1:A:19:G:C6	1:B:19:G:C4	3.04	0.45
1:A:40:5MC:O4'	1:B:39:PSU:C2'	2.58	0.45
1:D:9:A:O5'	1:E:18:G:C2'	2.64	0.45
1:D:44:A:H2'	1:D:45:G:C5'	2.42	0.45
1:D:55:PSU:O4	1:E:68:U:O4	2.34	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:D:14:A:C6	1:E:59:U:O4'	2.65	0.44
1:D:37:YG:H1'	1:D:37:YG:C3	2.47	0.44
1:E:37:YG:H1'	1:E:37:YG:C3	2.47	0.44
1:A:7:U:P	1:B:49:5MC:OP2	2.75	0.44
1:A:24:G:N9	1:B:24:G:C4	2.83	0.44
1:B:37:YG:H1'	1:B:37:YG:C3	2.47	0.44
1:D:58:1MA:C5	1:E:65:G:O6	2.70	0.44
1:D:60:C:C2	1:E:49:5MC:C4	2.64	0.44
1:A:13:C:C2	1:B:13:C:N3	2.86	0.44
1:A:33:U:H3'	1:B:34:OMG:C5'	2.42	0.44
1:A:50:U:C4	1:B:50:U:O5'	2.58	0.44
1:C:1:G:H2'	1:C:2:C:O4'	2.17	0.44
1:D:18:G:C2	1:E:7:U:O4	2.70	0.44
1:A:24:G:N3	1:B:24:G:C2	2.86	0.44
1:D:1:G:H2'	1:D:2:C:O4'	2.17	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: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:B:12:U:C2'	1:B:13:C:O5'	2.64	0.44
1:D:7:U:O4	1:E:53:G:C1'	2.66	0.44
1:D:17:H2U:O5'	1:E:47:U:C5	2.68	0.44
1:D:26:M2G:CM2	1:E:17:H2U:C2	1.84	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:C10	1:B:37:YG:C10	2.81	0.44
1:A:37:YG:O4'	1:B:36:A:C2'	2.66	0.44
1:D:20:G:C6	1:E:15:G:O6	2.71	0.44
1:D:20:G:N2	1:E:21:A:H2	2.15	0.44
1:A:30:G:C2'	1:B:31:A:O4'	2.64	0.43
1:A:42:G:C2	1:B:42:G:C2	3.06	0.43
1:A:59:U:H3	1:B:15:G:N2	2.16	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:70:C:C5	1:B:68:U:C5	3.06	0.43
1:B:24:G:C6	1:B:25:C:C4	2.99	0.43
1:D:5:A:N1	1:E:54:5MU:P	2.89	0.43
1:D:18:G:C8	1:E:67:A:C4	2.88	0.43
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:6:U:C4'	1:B:7:U:C6	2.97	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: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:21:A:O4'	1:B:21:A:H5''	2.10	0.43
1:A:23:A:HO2'	1:B:24:G:C5'	2.30	0.43
1:A:35:A:C8	1:B:34:OMG:C2'	2.91	0.43
1:A:43:G:N1	1:B:43:G:N3	2.65	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:1:G:N2	1:B:1:G:H8	1.93	0.43
1:A:26:M2G:C8	1:B:26:M2G:C4	3.07	0.43
1:A:33:U:N3	1:B:35:A:H3'	2.31	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:7:U:O2	1:B:49:5MC:O2'	2.37	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:C:37:YG:C1'	1:C:37:YG:C3	2.97	0.43
1:E:37:YG:C1'	1:E:37:YG:C3	2.97	0.43
1:A:13:C:C6	1:B:13:C:C5	3.06	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:73:A:H1'	1:B:1:G:O4'	2.17	0.43
1:C:8:U:H5'	1:C:49:5MC:OP2	2.19	0.43
1:D:24:G:N2	1:E:19:G:C2	2.78	0.43
1:A:8:U:H5'	1:A:49:5MC:OP2	2.19	0.43
1:A:23:A:HO2'	1:B:24:G:C4'	2.32	0.43
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:31:A:N6	1:B:32:OMC:HN41	2.05	0.42
1:A:37:YG:C3	1:A:37:YG:C1'	2.97	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:B:73:A:C2'	1:C:76:A:O4'	2.56	0.42
1:A:8:U:O3'	1:B:46:7MG:H1'	2.18	0.42
1:A:31:A:N6	1:B:31:A:H62	2.17	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:40:5MC:P	1:B:40:5MC:HM52	2.52	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:23:A:C6	1:B:23:A:N6	2.87	0.42
1:A:66:A:N1	1:B:49:5MC:H2'	2.29	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:19:G:H3'	1:E:8:U:P	2.59	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: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:58:1MA:HM11	1:B:18:G:C4	2.49	0.42
1:A:60:C:O3'	1:B:60:C:H2'	2.20	0.42
1:A:63:C:C2'	1:B:52:U:C2	2.01	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:D:9:A:C2	1:D:45:G:C6	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:41:U:N3	1:B:41:U:N3	2.67	0.42
1:D:8:U:H2'	1:E:60:C:C6	2.55	0.42
1:D:14:A:C2	1:E:59:U:C5'	3.00	0.42
1:D:35:A:C8	1:D:35:A:OP2	2.73	0.42
1:D:45:G:H2'	1:E:17:H2U:H3'	1.72	0.42
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:70:C:H2'	1:D:71:G:C8	2.55	0.42
1:A:5:A:C6	1:B:66:A:N1	2.84	0.41
1:A:15:G:H8	1:B:15:G:C4	2.27	0.41
1:A:23:A:O2'	1:B:24:G:H5'	2.19	0.41
1:A:70:C:O2	1:B:68:U:O4	2.38	0.41
1:B:63:C:H2'	1:B:64:A:C8	2.55	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:37:YG:C1'	1:D:37:YG:C3	2.97	0.41
1:D:56:C:N1	1:E:68:U:C2	2.88	0.41
1:E:9:A:C2	1:E:45:G:C6	3.08	0.41
1:E:35:A:C8	1:E:35:A:OP2	2.73	0.41
1:A:16:H2U:H52	1:B:16:H2U:H51	2.02	0.41
1:A:34:OMG:H2'	1:B:34:OMG:N3	2.35	0.41
1:A:38:A:C1'	1:B:37:YG:C3	2.73	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:C:63:C:H2'	1:C:64:A:C8	2.55	0.41
1:D:61:C:O2	1:E:65:G:H3'	2.20	0.41
1:A:55:PSU:H5''	1:B:56:C:OP2	2.13	0.41
1:A:73:A:C5'	1:C:76:A:H1'	2.51	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:35:A:OP2	1:D:35:A:H8	2.04	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:C:70:C:H2'	1:C:71:G:C8	2.55	0.41
1:A:8:U:O4	1:B:8:U:N3	2.53	0.41
1:A:15:G:O6	1:B:8:U:O2'	2.39	0.41
1:A:17:H2U:N1	1:B:17:H2U:O2	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:18:G:C4'	1:B:60:C:N4	2.83	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:68:U:O4	1:B:66:A:H2'	2.21	0.41
1:C:9:A:C2	1:C:45:G:C6	3.08	0.41
1:D:48:C:H1'	1:E:60:C:H3'	1.09	0.41
1:A:31:A:H2	1:B:32:OMC:H1'	1.63	0.41
1:A:40:5MC:C4'	1:B:39:PSU:C2'	2.78	0.41
1:A:63:C:H2'	1:A:64:A:C8	2.55	0.41
1:D:15:G:N7	1:E:58:1MA:O3'	2.54	0.41
1:D:16:H2U:H4'	1:E:50:U:P	2.37	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:15:G:H21	1:B:21:A:H1'	1.04	0.41
1:A:17:H2U:C5	1:B:17:H2U:O4	2.50	0.41
1:A:30:G:C4	1:B:30:G:C2'	2.96	0.41
1:A:36:A:N6	1:B:36:A:N6	2.58	0.41
1:A:39:PSU:C5	1:B:39:PSU:C5	2.43	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: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: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:C8	1:A:35:A:OP2	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:36:A:C1'	1:B:36:A:O4'	2.61	0.40
1:A:58:1MA:N6	1:B:58:1MA:C4	2.88	0.40
1:A:31:A:C2	1:B:31:A:C4	3.02	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:B:30:G:H2'	1:B:31:A:O4'	2.21	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:C:27:C:H2'	1:C:28:C:C6	2.57	0.40
1:C:35:A:OP2	1:C:35:A:H8	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:8:U:C5'	1:E:61:C:C1'	2.95	0.40
1:D:21:A:H3'	1:E:16:H2U:OP2	2.22	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
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:58:1MA:HM13	1:B:58:1MA:C5	2.52	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	73/76 (96%)	26 (35%)	1 (1%)
1	B	73/76 (96%)	27 (36%)	1 (1%)
1	C	73/76 (96%)	26 (35%)	1 (1%)
1	D	73/76 (96%)	26 (35%)	1 (1%)
1	E	73/76 (96%)	26 (35%)	1 (1%)
All	All	365/380 (96%)	131 (35%)	5 (1%)

All (131) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	9	A

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

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Mol	Chain	Res	Type
1	B	48	C
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	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
1	D	21	A

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Mol	Chain	Res	Type
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	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	48	C
1	E	51	G
1	E	53	G
1	E	55	PSU
1	E	60	C

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Mol	Chain	Res	Type
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	7MG	D	46	1	23,26,27	3.02	3 (13%)	27,39,42	1.92	3 (11%)
1	OMC	E	32	1	19,22,23	0.96	1 (5%)	25,31,34	2.06	3 (12%)
1	YG	E	37	1	38,42,43	2.42	9 (23%)	45,62,65	2.21	13 (28%)
1	2MG	A	10	1	23,26,27	0.75	0	33,38,41	1.49	3 (9%)
1	OMC	A	32	1	19,22,23	0.96	1 (5%)	25,31,34	2.05	3 (12%)
1	YG	A	37	1	38,42,43	2.42	9 (23%)	45,62,65	2.20	13 (28%)
1	1MA	B	58	1	21,25,26	0.81	0	30,37,40	0.79	1 (3%)
1	7MG	A	46	1	23,26,27	3.01	3 (13%)	27,39,42	1.91	3 (11%)
1	OMG	E	34	1	23,26,27	0.98	1 (4%)	32,38,41	1.65	1 (3%)
1	5MU	D	54	1	19,22,23	0.72	0	27,32,35	1.42	3 (11%)
1	H2U	A	17	1	18,21,22	0.66	0	19,30,33	0.83	0
1	OMG	C	34	1	23,26,27	0.97	1 (4%)	32,38,41	1.63	1 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	PSU	B	55	1	18,21,22	0.53	0	21,30,33	0.86	0
1	2MG	E	10	1	23,26,27	0.73	0	33,38,41	1.49	3 (9%)
1	M2G	A	26	1	24,27,28	0.59	0	33,40,43	1.23	3 (9%)
1	OMG	A	34	1	23,26,27	0.98	1 (4%)	32,38,41	1.64	1 (3%)
1	5MU	C	54	1	19,22,23	0.74	0	27,32,35	1.41	2 (7%)
1	2MG	D	10	1	23,26,27	0.74	0	33,38,41	1.49	3 (9%)
1	H2U	C	17	1	18,21,22	0.66	0	19,30,33	0.82	0
1	YG	C	37	1	38,42,43	2.41	9 (23%)	45,62,65	2.19	13 (28%)
1	7MG	C	46	1	23,26,27	3.03	3 (13%)	27,39,42	1.91	3 (11%)
1	5MC	D	49	1	19,22,23	0.91	1 (5%)	26,32,35	0.89	0
1	1MA	E	58	1	21,25,26	0.82	0	30,37,40	0.79	1 (3%)
1	OMC	B	32	1	19,22,23	0.95	1 (5%)	25,31,34	2.05	3 (12%)
1	5MC	A	49	1	19,22,23	0.86	1 (5%)	26,32,35	0.90	0
1	OMC	C	32	1	19,22,23	0.95	1 (5%)	25,31,34	2.05	3 (12%)
1	PSU	D	39	1	18,21,22	0.54	0	21,30,33	0.70	0
1	5MC	E	49	1	19,22,23	0.87	1 (5%)	26,32,35	0.89	0
1	H2U	B	17	1	18,21,22	0.66	0	19,30,33	0.83	1 (5%)
1	5MU	A	54	1	19,22,23	0.72	0	27,32,35	1.41	3 (11%)
1	PSU	C	39	1	18,21,22	0.57	0	21,30,33	0.72	0
1	PSU	E	55	1	18,21,22	0.55	0	21,30,33	0.84	0
1	M2G	B	26	1	24,27,28	0.59	0	33,40,43	1.23	2 (6%)
1	5MC	A	40	1	19,22,23	0.84	1 (5%)	26,32,35	0.84	0
1	5MC	C	49	1	19,22,23	0.81	1 (5%)	26,32,35	0.90	0
1	OMG	B	34	1	23,26,27	0.98	1 (4%)	32,38,41	1.64	1 (3%)
1	PSU	D	55	1	18,21,22	0.52	0	21,30,33	0.84	0
1	5MC	E	40	1	19,22,23	0.89	1 (5%)	26,32,35	0.81	0
1	H2U	A	16	1	18,21,22	0.74	0	19,30,33	0.81	0
1	PSU	A	39	1	18,21,22	0.57	0	21,30,33	0.73	0
1	PSU	C	55	1	18,21,22	0.54	0	21,30,33	0.86	0
1	PSU	A	55	1	18,21,22	0.53	0	21,30,33	0.86	0
1	YG	B	37	1	38,42,43	2.43	9 (23%)	45,62,65	2.20	13 (28%)
1	7MG	B	46	1	23,26,27	3.01	3 (13%)	27,39,42	1.91	3 (11%)
1	H2U	C	16	1	18,21,22	0.72	0	19,30,33	0.83	0
1	5MC	B	49	1	19,22,23	0.87	1 (5%)	26,32,35	0.90	0
1	YG	D	37	1	38,42,43	2.42	9 (23%)	45,62,65	2.21	13 (28%)
1	H2U	E	16	1	18,21,22	0.69	0	19,30,33	0.83	0
1	5MU	B	54	1	19,22,23	0.72	0	27,32,35	1.41	3 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	1MA	A	58	1	21,25,26	0.81	0	30,37,40	0.79	1 (3%)
1	H2U	E	17	1	18,21,22	0.66	0	19,30,33	0.85	1 (5%)
1	M2G	E	26	1	24,27,28	0.59	0	33,40,43	1.22	3 (9%)
1	1MA	D	58	1	21,25,26	0.81	0	30,37,40	0.79	1 (3%)
1	1MA	C	58	1	21,25,26	0.82	1 (4%)	30,37,40	0.79	1 (3%)
1	2MG	C	10	1	23,26,27	0.74	0	33,38,41	1.49	3 (9%)
1	7MG	E	46	1	23,26,27	2.98	3 (13%)	27,39,42	1.92	3 (11%)
1	5MC	D	40	1	19,22,23	0.85	1 (5%)	26,32,35	0.82	0
1	PSU	B	39	1	18,21,22	0.57	0	21,30,33	0.72	0
1	5MU	E	54	1	19,22,23	0.72	0	27,32,35	1.44	3 (11%)
1	H2U	D	16	1	18,21,22	0.74	0	19,30,33	0.83	0
1	H2U	D	17	1	18,21,22	0.66	0	19,30,33	0.80	0
1	M2G	D	26	1	24,27,28	0.59	0	33,40,43	1.24	2 (6%)
1	5MC	B	40	1	19,22,23	0.85	1 (5%)	26,32,35	0.84	0
1	OMG	D	34	1	23,26,27	0.98	1 (4%)	32,38,41	1.63	1 (3%)
1	H2U	B	16	1	18,21,22	0.73	0	19,30,33	0.80	0
1	OMC	D	32	1	19,22,23	0.96	1 (5%)	25,31,34	2.05	3 (12%)
1	2MG	B	10	1	23,26,27	0.75	0	33,38,41	1.49	3 (9%)
1	PSU	E	39	1	18,21,22	0.59	0	21,30,33	0.70	0
1	M2G	C	26	1	24,27,28	0.60	0	33,40,43	1.25	3 (9%)
1	5MC	C	40	1	19,22,23	0.87	1 (5%)	26,32,35	0.84	0

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	7MG	D	46	1	-	1/7/37/38	0/3/3/3
1	OMC	E	32	1	-	0/9/27/28	0/2/2/2
1	2MG	A	10	1	-	2/9/27/28	0/3/3/3
1	OMC	A	32	1	-	0/9/27/28	0/2/2/2
1	YG	A	37	1	1/1/8/9	12/24/42/43	0/4/4/4
1	1MA	B	58	1	-	0/7/25/26	0/3/3/3
1	7MG	A	46	1	-	1/7/37/38	0/3/3/3
1	OMG	E	34	1	-	2/9/27/28	0/3/3/3
1	M2G	C	26	1	-	2/11/29/30	0/3/3/3
1	5MU	D	54	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	H2U	A	17	1	-	2/7/38/39	0/2/2/2
1	OMG	C	34	1	-	2/9/27/28	0/3/3/3
1	PSU	B	55	1	-	2/7/25/26	0/2/2/2
1	2MG	E	10	1	-	2/9/27/28	0/3/3/3
1	M2G	A	26	1	-	2/11/29/30	0/3/3/3
1	OMG	A	34	1	-	2/9/27/28	0/3/3/3
1	5MU	C	54	1	-	0/7/25/26	0/2/2/2
1	2MG	D	10	1	-	2/9/27/28	0/3/3/3
1	H2U	C	17	1	-	2/7/38/39	0/2/2/2
1	YG	C	37	1	1/1/8/9	12/24/42/43	0/4/4/4
1	7MG	C	46	1	-	1/7/37/38	0/3/3/3
1	5MC	D	49	1	-	0/7/25/26	0/2/2/2
1	1MA	E	58	1	-	0/7/25/26	0/3/3/3
1	OMC	B	32	1	-	0/9/27/28	0/2/2/2
1	5MC	A	49	1	-	0/7/25/26	0/2/2/2
1	OMC	C	32	1	-	0/9/27/28	0/2/2/2
1	PSU	D	39	1	-	0/7/25/26	0/2/2/2
1	5MC	E	49	1	-	0/7/25/26	0/2/2/2
1	H2U	B	17	1	-	2/7/38/39	0/2/2/2
1	5MU	A	54	1	-	0/7/25/26	0/2/2/2
1	PSU	C	39	1	-	0/7/25/26	0/2/2/2
1	PSU	E	55	1	-	2/7/25/26	0/2/2/2
1	M2G	B	26	1	-	2/11/29/30	0/3/3/3
1	5MC	A	40	1	-	0/7/25/26	0/2/2/2
1	5MC	C	49	1	-	0/7/25/26	0/2/2/2
1	OMG	B	34	1	-	2/9/27/28	0/3/3/3
1	PSU	D	55	1	-	2/7/25/26	0/2/2/2
1	5MC	E	40	1	-	0/7/25/26	0/2/2/2
1	H2U	A	16	1	-	6/7/38/39	0/2/2/2
1	PSU	A	39	1	-	0/7/25/26	0/2/2/2
1	PSU	C	55	1	-	2/7/25/26	0/2/2/2
1	PSU	A	55	1	-	2/7/25/26	0/2/2/2
1	YG	B	37	1	1/1/8/9	12/24/42/43	0/4/4/4
1	7MG	B	46	1	-	1/7/37/38	0/3/3/3
1	H2U	C	16	1	-	6/7/38/39	0/2/2/2
1	YG	D	37	1	1/1/8/9	12/24/42/43	0/4/4/4
1	5MC	B	49	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	H2U	E	16	1	-	6/7/38/39	0/2/2/2
1	5MU	B	54	1	-	0/7/25/26	0/2/2/2
1	1MA	A	58	1	-	0/7/25/26	0/3/3/3
1	H2U	E	17	1	-	2/7/38/39	0/2/2/2
1	M2G	E	26	1	-	2/11/29/30	0/3/3/3
1	1MA	D	58	1	-	0/7/25/26	0/3/3/3
1	1MA	C	58	1	-	0/7/25/26	0/3/3/3
1	2MG	C	10	1	-	2/9/27/28	0/3/3/3
1	7MG	E	46	1	-	1/7/37/38	0/3/3/3
1	5MC	D	40	1	-	0/7/25/26	0/2/2/2
1	PSU	B	39	1	-	0/7/25/26	0/2/2/2
1	5MU	E	54	1	-	0/7/25/26	0/2/2/2
1	H2U	D	16	1	-	6/7/38/39	0/2/2/2
1	H2U	D	17	1	-	2/7/38/39	0/2/2/2
1	M2G	D	26	1	-	2/11/29/30	0/3/3/3
1	5MC	B	40	1	-	0/7/25/26	0/2/2/2
1	OMG	D	34	1	-	2/9/27/28	0/3/3/3
1	H2U	B	16	1	-	6/7/38/39	0/2/2/2
1	OMC	D	32	1	-	0/9/27/28	0/2/2/2
1	2MG	B	10	1	-	2/9/27/28	0/3/3/3
1	PSU	E	39	1	-	0/7/25/26	0/2/2/2
1	YG	E	37	1	1/1/8/9	12/24/42/43	0/4/4/4
1	5MC	C	40	1	-	0/7/25/26	0/2/2/2

All (81) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	46	7MG	C8-N9	-13.69	1.37	1.45
1	D	46	7MG	C8-N9	-13.69	1.37	1.45
1	B	46	7MG	C8-N9	-13.60	1.37	1.45
1	A	46	7MG	C8-N9	-13.58	1.37	1.45
1	E	46	7MG	C8-N9	-13.43	1.37	1.45
1	C	37	YG	C2-N2	8.09	1.47	1.33
1	D	37	YG	C2-N2	8.07	1.47	1.33
1	B	37	YG	C2-N2	8.03	1.47	1.33
1	E	37	YG	C2-N2	8.03	1.47	1.33
1	A	37	YG	C2-N2	8.02	1.47	1.33
1	B	37	YG	O23-C21	5.61	1.43	1.34
1	A	37	YG	O23-C21	5.59	1.43	1.34
1	A	37	YG	C3-N3	-5.58	1.37	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	37	YG	C3-N3	-5.53	1.37	1.47
1	E	37	YG	C3-N3	-5.48	1.37	1.47
1	D	37	YG	C3-N3	-5.48	1.37	1.47
1	E	37	YG	O23-C21	5.45	1.43	1.34
1	D	37	YG	O23-C21	5.44	1.43	1.34
1	C	37	YG	C3-N3	-5.42	1.37	1.47
1	C	37	YG	O23-C21	5.41	1.43	1.34
1	E	37	YG	C12-N1	-4.55	1.30	1.40
1	D	37	YG	O18-C16	4.54	1.44	1.33
1	E	37	YG	O18-C16	4.52	1.44	1.33
1	C	37	YG	C12-N1	-4.52	1.30	1.40
1	C	37	YG	O18-C16	4.50	1.44	1.33
1	A	37	YG	O18-C16	4.49	1.44	1.33
1	B	37	YG	O18-C16	4.49	1.44	1.33
1	D	37	YG	C12-N1	-4.49	1.30	1.40
1	A	37	YG	C12-N1	-4.41	1.30	1.40
1	B	37	YG	C12-N1	-4.40	1.30	1.40
1	A	32	OMC	O2'-CM2	-3.80	1.29	1.42
1	D	32	OMC	O2'-CM2	-3.79	1.29	1.42
1	B	32	OMC	O2'-CM2	-3.78	1.29	1.42
1	E	32	OMC	O2'-CM2	-3.75	1.29	1.42
1	A	34	OMG	O2'-CM2	-3.73	1.29	1.42
1	C	32	OMC	O2'-CM2	-3.73	1.29	1.42
1	B	34	OMG	O2'-CM2	-3.71	1.29	1.42
1	E	34	OMG	O2'-CM2	-3.70	1.29	1.42
1	C	34	OMG	O2'-CM2	-3.68	1.29	1.42
1	D	34	OMG	O2'-CM2	-3.68	1.29	1.42
1	D	37	YG	C6-N1	-3.29	1.34	1.42
1	C	37	YG	C6-N1	-3.25	1.34	1.42
1	B	37	YG	C6-N1	-3.24	1.34	1.42
1	E	37	YG	C6-N1	-3.23	1.34	1.42
1	A	37	YG	C6-N1	-3.22	1.34	1.42
1	E	40	5MC	C5-C4	-2.99	1.41	1.44
1	D	49	5MC	C5-C4	-2.97	1.41	1.44
1	B	40	5MC	C5-C4	-2.88	1.41	1.44
1	C	40	5MC	C5-C4	-2.88	1.41	1.44
1	A	40	5MC	C5-C4	-2.85	1.41	1.44
1	C	37	YG	C2-N3	-2.82	1.34	1.38
1	D	37	YG	C2-N3	-2.81	1.34	1.38
1	C	46	7MG	C5-N7	2.80	1.39	1.35
1	E	37	YG	C2-N3	-2.80	1.34	1.38
1	B	46	7MG	C5-N7	2.79	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	40	5MC	C5-C4	-2.79	1.42	1.44
1	A	46	7MG	C5-N7	2.78	1.39	1.35
1	D	46	7MG	C5-N7	2.77	1.39	1.35
1	A	37	YG	C2-N1	-2.77	1.34	1.38
1	E	49	5MC	C5-C4	-2.72	1.42	1.44
1	E	46	7MG	C5-N7	2.72	1.39	1.35
1	B	37	YG	C2-N1	-2.71	1.34	1.38
1	B	37	YG	C2-N3	-2.69	1.34	1.38
1	A	37	YG	C2-N3	-2.66	1.34	1.38
1	B	49	5MC	C5-C4	-2.66	1.42	1.44
1	B	37	YG	C11-N2	-2.64	1.32	1.38
1	A	49	5MC	C5-C4	-2.62	1.42	1.44
1	D	37	YG	C11-N2	-2.61	1.32	1.38
1	A	37	YG	C11-N2	-2.57	1.32	1.38
1	C	37	YG	C11-N2	-2.55	1.32	1.38
1	C	37	YG	C2-N1	-2.55	1.34	1.38
1	E	37	YG	C2-N1	-2.51	1.34	1.38
1	D	37	YG	C2-N1	-2.51	1.34	1.38
1	E	37	YG	C11-N2	-2.49	1.33	1.38
1	C	49	5MC	C5-C4	-2.45	1.42	1.44
1	C	46	7MG	C8-N7	-2.31	1.31	1.42
1	A	46	7MG	C8-N7	-2.29	1.31	1.42
1	D	46	7MG	C8-N7	-2.28	1.31	1.42
1	B	46	7MG	C8-N7	-2.28	1.31	1.42
1	E	46	7MG	C8-N7	-2.27	1.31	1.42
1	C	58	1MA	C6-N6	2.00	1.32	1.28

All (149) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	34	OMG	CM2-O2'-C2'	8.63	136.63	114.47
1	E	32	OMC	CM2-O2'-C2'	8.62	136.61	114.47
1	C	34	OMG	CM2-O2'-C2'	8.61	136.58	114.47
1	D	32	OMC	CM2-O2'-C2'	8.60	136.55	114.47
1	D	34	OMG	CM2-O2'-C2'	8.59	136.54	114.47
1	C	32	OMC	CM2-O2'-C2'	8.58	136.51	114.47
1	A	34	OMG	CM2-O2'-C2'	8.58	136.50	114.47
1	B	32	OMC	CM2-O2'-C2'	8.57	136.47	114.47
1	B	34	OMG	CM2-O2'-C2'	8.56	136.47	114.47
1	A	32	OMC	CM2-O2'-C2'	8.56	136.46	114.47
1	C	46	7MG	N9-C8-N7	7.45	113.92	103.37
1	D	46	7MG	N9-C8-N7	7.45	113.91	103.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	46	7MG	N9-C8-N7	7.42	113.88	103.37
1	A	46	7MG	N9-C8-N7	7.41	113.87	103.37
1	E	46	7MG	N9-C8-N7	7.41	113.86	103.37
1	A	10	2MG	CM2-N2-C2	-7.01	108.60	123.65
1	B	10	2MG	CM2-N2-C2	-6.99	108.62	123.65
1	E	10	2MG	CM2-N2-C2	-6.95	108.72	123.65
1	D	10	2MG	CM2-N2-C2	-6.94	108.73	123.65
1	C	10	2MG	CM2-N2-C2	-6.88	108.86	123.65
1	D	37	YG	N1-C2-N2	-6.41	104.85	114.03
1	C	37	YG	N1-C2-N2	-6.36	104.92	114.03
1	E	37	YG	N1-C2-N2	-6.35	104.94	114.03
1	B	37	YG	N1-C2-N2	-6.28	105.03	114.03
1	A	37	YG	N1-C2-N2	-6.25	105.08	114.03
1	D	37	YG	O23-C21-N20	5.26	119.62	110.77
1	A	37	YG	O23-C21-N20	5.24	119.58	110.77
1	E	37	YG	O23-C21-N20	5.23	119.58	110.77
1	B	37	YG	O23-C21-N20	5.23	119.57	110.77
1	C	37	YG	O23-C21-N20	5.23	119.57	110.77
1	B	37	YG	C24-O23-C21	-5.15	109.68	115.63
1	A	37	YG	C24-O23-C21	-5.14	109.69	115.63
1	E	37	YG	C24-O23-C21	-5.03	109.81	115.63
1	D	37	YG	C24-O23-C21	-5.02	109.82	115.63
1	C	37	YG	C24-O23-C21	-5.00	109.84	115.63
1	E	37	YG	C5-C4-N3	4.99	128.05	123.99
1	D	37	YG	C5-C4-N3	4.98	128.04	123.99
1	A	37	YG	C5-C4-N3	4.92	127.99	123.99
1	B	37	YG	C5-C4-N3	4.86	127.94	123.99
1	C	37	YG	C5-C4-N3	4.81	127.90	123.99
1	B	32	OMC	C2'-C1'-N1	-4.39	105.92	114.24
1	A	32	OMC	C2'-C1'-N1	-4.37	105.94	114.24
1	C	32	OMC	C2'-C1'-N1	-4.35	105.97	114.24
1	E	32	OMC	C2'-C1'-N1	-4.30	106.08	114.24
1	D	32	OMC	C2'-C1'-N1	-4.30	106.08	114.24
1	E	46	7MG	C4-C5-N7	4.26	110.40	105.38
1	A	46	7MG	C4-C5-N7	4.20	110.33	105.38
1	B	46	7MG	C4-C5-N7	4.20	110.33	105.38
1	D	46	7MG	C4-C5-N7	4.18	110.31	105.38
1	C	46	7MG	C4-C5-N7	4.12	110.25	105.38
1	B	37	YG	O23-C21-O22	-4.10	118.66	124.62
1	A	37	YG	O23-C21-O22	-4.09	118.67	124.62
1	D	37	YG	O23-C21-O22	-4.07	118.70	124.62
1	C	37	YG	O23-C21-O22	-4.06	118.71	124.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	54	5MU	C5-C4-N3	4.04	118.84	115.32
1	C	26	M2G	CM2-N2-CM1	4.04	128.77	115.87
1	E	37	YG	O23-C21-O22	-4.03	118.75	124.62
1	D	26	M2G	CM1-N2-C2	-4.03	112.38	120.61
1	D	26	M2G	CM2-N2-CM1	4.02	128.73	115.87
1	C	26	M2G	CM1-N2-C2	-4.02	112.38	120.61
1	A	26	M2G	CM2-N2-CM1	4.01	128.67	115.87
1	B	26	M2G	CM2-N2-CM1	4.00	128.64	115.87
1	C	54	5MU	C5-C4-N3	3.98	118.79	115.32
1	A	26	M2G	CM1-N2-C2	-3.98	112.47	120.61
1	E	26	M2G	CM2-N2-CM1	3.98	128.58	115.87
1	B	26	M2G	CM1-N2-C2	-3.95	112.52	120.61
1	E	26	M2G	CM1-N2-C2	-3.91	112.62	120.61
1	D	54	5MU	C5-C4-N3	3.90	118.71	115.32
1	A	54	5MU	C5-C4-N3	3.89	118.71	115.32
1	B	54	5MU	C5-C4-N3	3.88	118.69	115.32
1	E	54	5MU	C4-N3-C2	-3.86	122.27	127.34
1	A	54	5MU	C4-N3-C2	-3.85	122.29	127.34
1	B	54	5MU	C4-N3-C2	-3.83	122.32	127.34
1	D	54	5MU	C4-N3-C2	-3.81	122.35	127.34
1	C	54	5MU	C4-N3-C2	-3.79	122.37	127.34
1	B	37	YG	O18-C16-C15	3.25	119.76	111.49
1	A	37	YG	O18-C16-C15	3.24	119.74	111.49
1	E	37	YG	O18-C16-C15	3.22	119.68	111.49
1	C	37	YG	O18-C16-C15	3.21	119.66	111.49
1	D	37	YG	O18-C16-C15	3.20	119.63	111.49
1	D	37	YG	C19-O18-C16	-3.19	108.68	115.92
1	C	37	YG	C19-O18-C16	-3.16	108.75	115.92
1	E	37	YG	C19-O18-C16	-3.14	108.79	115.92
1	B	37	YG	C19-O18-C16	-3.11	108.87	115.92
1	A	37	YG	C19-O18-C16	-3.09	108.90	115.92
1	C	10	2MG	N2-C2-N3	-3.01	116.68	120.51
1	C	37	YG	C14-C13-C12	-3.00	107.22	113.36
1	E	37	YG	C14-C13-C12	-2.98	107.26	113.36
1	D	37	YG	C14-C13-C12	-2.98	107.28	113.36
1	B	37	YG	C14-C13-C12	-2.96	107.32	113.36
1	A	37	YG	C14-C13-C12	-2.95	107.34	113.36
1	D	10	2MG	N2-C2-N3	-2.93	116.77	120.51
1	E	10	2MG	N2-C2-N3	-2.92	116.79	120.51
1	B	10	2MG	N2-C2-N3	-2.83	116.91	120.51
1	A	10	2MG	N2-C2-N3	-2.81	116.94	120.51
1	A	37	YG	C3-N3-C4	2.61	128.18	123.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	37	YG	C3-N3-C4	2.59	128.14	123.11
1	E	37	YG	C3-N3-C4	2.57	128.10	123.11
1	D	37	YG	C3-N3-C4	2.57	128.10	123.11
1	B	58	1MA	O4'-C1'-N9	2.56	114.17	108.36
1	C	37	YG	C3-N3-C4	2.56	128.08	123.11
1	A	58	1MA	O4'-C1'-N9	2.56	114.15	108.36
1	D	58	1MA	O4'-C1'-N9	2.53	114.09	108.36
1	C	58	1MA	O4'-C1'-N9	2.53	114.09	108.36
1	E	58	1MA	O4'-C1'-N9	2.52	114.07	108.36
1	B	37	YG	O18-C16-O17	-2.49	119.01	123.85
1	A	37	YG	O18-C16-O17	-2.48	119.02	123.85
1	D	37	YG	O18-C16-O17	-2.48	119.02	123.85
1	C	37	YG	O18-C16-O17	-2.46	119.05	123.85
1	E	46	7MG	C6-C5-C4	-2.46	118.08	122.40
1	E	37	YG	O18-C16-O17	-2.46	119.07	123.85
1	D	46	7MG	C6-C5-C4	-2.42	118.14	122.40
1	A	46	7MG	C6-C5-C4	-2.41	118.17	122.40
1	B	46	7MG	C6-C5-C4	-2.40	118.18	122.40
1	C	46	7MG	C6-C5-C4	-2.34	118.28	122.40
1	A	10	2MG	C2-N1-C6	-2.30	121.77	124.55
1	C	10	2MG	C2-N1-C6	-2.29	121.78	124.55
1	B	10	2MG	C2-N1-C6	-2.29	121.78	124.55
1	E	10	2MG	C2-N1-C6	-2.28	121.79	124.55
1	A	37	YG	N9-C4-N3	-2.28	125.76	129.45
1	D	37	YG	C10-C11-N2	2.26	123.86	119.32
1	B	37	YG	C10-C11-N2	2.25	123.84	119.32
1	D	10	2MG	C2-N1-C6	-2.25	121.83	124.55
1	B	37	YG	N9-C4-N3	-2.25	125.81	129.45
1	A	37	YG	C10-C11-N2	2.24	123.82	119.32
1	E	37	YG	N9-C4-N3	-2.24	125.83	129.45
1	E	37	YG	C10-C11-N2	2.22	123.77	119.32
1	D	37	YG	N9-C4-N3	-2.21	125.87	129.45
1	C	37	YG	C10-C11-N2	2.19	123.72	119.32
1	E	37	YG	C2-N1-C12	2.17	113.84	109.94
1	C	37	YG	N9-C4-N3	-2.17	125.94	129.45
1	D	37	YG	C2-N1-C12	2.14	113.78	109.94
1	C	37	YG	C2-N1-C12	2.11	113.72	109.94
1	A	37	YG	C2-N1-C12	2.08	113.68	109.94
1	E	17	H2U	O2-C2-N1	2.08	125.60	123.10
1	B	37	YG	C2-N1-C12	2.08	113.67	109.94
1	E	54	5MU	N3-C2-N1	2.07	117.59	114.89
1	D	32	OMC	O4'-C1'-N1	2.06	113.03	108.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	32	OMC	O4'-C1'-N1	2.05	113.00	108.36
1	A	54	5MU	N3-C2-N1	2.04	117.54	114.89
1	B	54	5MU	N3-C2-N1	2.02	117.53	114.89
1	B	32	OMC	O4'-C1'-N1	2.02	112.94	108.36
1	C	26	M2G	O4'-C1'-N9	2.02	112.92	108.36
1	A	26	M2G	O4'-C1'-N9	2.01	112.91	108.36
1	D	54	5MU	N3-C2-N1	2.01	117.50	114.89
1	E	26	M2G	O4'-C1'-N9	2.01	112.90	108.36
1	B	17	H2U	O2-C2-N1	2.01	125.52	123.10
1	C	32	OMC	O4'-C1'-N1	2.00	112.90	108.36
1	A	32	OMC	O4'-C1'-N1	2.00	112.89	108.36

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

All (145) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	16	H2U	O4'-C1'-N1-C6
1	A	16	H2U	C2'-C1'-N1-C2
1	A	34	OMG	C1'-C2'-O2'-CM2
1	A	37	YG	N20-C21-O23-C24
1	A	37	YG	O22-C21-O23-C24
1	B	16	H2U	O4'-C1'-N1-C6
1	B	16	H2U	C2'-C1'-N1-C2
1	B	34	OMG	C1'-C2'-O2'-CM2
1	B	37	YG	N20-C21-O23-C24
1	B	37	YG	O22-C21-O23-C24
1	C	16	H2U	O4'-C1'-N1-C6
1	C	16	H2U	C2'-C1'-N1-C2
1	C	34	OMG	C1'-C2'-O2'-CM2
1	C	37	YG	N20-C21-O23-C24
1	C	37	YG	O22-C21-O23-C24
1	D	16	H2U	O4'-C1'-N1-C6
1	D	16	H2U	C2'-C1'-N1-C2
1	D	34	OMG	C1'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
1	D	37	YG	N20-C21-O23-C24
1	D	37	YG	O22-C21-O23-C24
1	E	16	H2U	O4'-C1'-N1-C6
1	E	16	H2U	C2'-C1'-N1-C2
1	E	34	OMG	C1'-C2'-O2'-CM2
1	E	37	YG	N20-C21-O23-C24
1	E	37	YG	O22-C21-O23-C24
1	A	37	YG	O17-C16-O18-C19
1	B	37	YG	O17-C16-O18-C19
1	C	37	YG	O17-C16-O18-C19
1	D	37	YG	O17-C16-O18-C19
1	E	37	YG	O17-C16-O18-C19
1	A	37	YG	C15-C16-O18-C19
1	B	37	YG	C15-C16-O18-C19
1	C	37	YG	C15-C16-O18-C19
1	D	37	YG	C15-C16-O18-C19
1	E	37	YG	C15-C16-O18-C19
1	A	37	YG	C13-C14-C15-N20
1	B	37	YG	C13-C14-C15-N20
1	C	37	YG	C13-C14-C15-N20
1	D	37	YG	C13-C14-C15-N20
1	E	37	YG	C13-C14-C15-N20
1	A	16	H2U	C2'-C1'-N1-C6
1	B	16	H2U	C2'-C1'-N1-C6
1	A	17	H2U	C2'-C1'-N1-C2
1	B	17	H2U	C2'-C1'-N1-C2
1	C	17	H2U	C2'-C1'-N1-C2
1	D	17	H2U	C2'-C1'-N1-C2
1	E	17	H2U	C2'-C1'-N1-C2
1	A	55	PSU	O4'-C4'-C5'-O5'
1	B	55	PSU	O4'-C4'-C5'-O5'
1	C	55	PSU	O4'-C4'-C5'-O5'
1	D	55	PSU	O4'-C4'-C5'-O5'
1	E	55	PSU	O4'-C4'-C5'-O5'
1	A	17	H2U	C2'-C1'-N1-C6
1	B	17	H2U	C2'-C1'-N1-C6
1	C	16	H2U	C2'-C1'-N1-C6
1	C	17	H2U	C2'-C1'-N1-C6
1	D	16	H2U	C2'-C1'-N1-C6
1	D	17	H2U	C2'-C1'-N1-C6
1	E	16	H2U	C2'-C1'-N1-C6
1	E	17	H2U	C2'-C1'-N1-C6

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Mol	Chain	Res	Type	Atoms
1	A	37	YG	C13-C14-C15-C16
1	B	37	YG	C13-C14-C15-C16
1	C	37	YG	C13-C14-C15-C16
1	D	37	YG	C13-C14-C15-C16
1	E	37	YG	C13-C14-C15-C16
1	A	37	YG	C12-C13-C14-C15
1	B	37	YG	C12-C13-C14-C15
1	C	37	YG	C12-C13-C14-C15
1	D	37	YG	C12-C13-C14-C15
1	E	37	YG	C12-C13-C14-C15
1	A	37	YG	C14-C15-N20-C21
1	B	37	YG	C14-C15-N20-C21
1	C	37	YG	C14-C15-N20-C21
1	D	37	YG	C14-C15-N20-C21
1	E	37	YG	C14-C15-N20-C21
1	A	16	H2U	C3'-C4'-C5'-O5'
1	A	37	YG	C3'-C4'-C5'-O5'
1	A	55	PSU	C3'-C4'-C5'-O5'
1	B	16	H2U	C3'-C4'-C5'-O5'
1	B	37	YG	C3'-C4'-C5'-O5'
1	B	55	PSU	C3'-C4'-C5'-O5'
1	C	16	H2U	C3'-C4'-C5'-O5'
1	C	37	YG	C3'-C4'-C5'-O5'
1	C	55	PSU	C3'-C4'-C5'-O5'
1	D	16	H2U	C3'-C4'-C5'-O5'
1	D	37	YG	C3'-C4'-C5'-O5'
1	D	55	PSU	C3'-C4'-C5'-O5'
1	E	16	H2U	C3'-C4'-C5'-O5'
1	E	37	YG	C3'-C4'-C5'-O5'
1	E	55	PSU	C3'-C4'-C5'-O5'
1	A	37	YG	O4'-C4'-C5'-O5'
1	B	37	YG	O4'-C4'-C5'-O5'
1	C	37	YG	O4'-C4'-C5'-O5'
1	D	37	YG	O4'-C4'-C5'-O5'
1	E	37	YG	O4'-C4'-C5'-O5'
1	A	37	YG	N20-C15-C16-O17
1	B	37	YG	N20-C15-C16-O17
1	C	37	YG	N20-C15-C16-O17
1	D	37	YG	N20-C15-C16-O17
1	E	37	YG	N20-C15-C16-O17
1	A	26	M2G	O4'-C4'-C5'-O5'
1	B	26	M2G	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	C	26	M2G	O4'-C4'-C5'-O5'
1	D	26	M2G	O4'-C4'-C5'-O5'
1	E	26	M2G	O4'-C4'-C5'-O5'
1	A	37	YG	N20-C15-C16-O18
1	B	37	YG	N20-C15-C16-O18
1	C	37	YG	N20-C15-C16-O18
1	D	37	YG	N20-C15-C16-O18
1	E	37	YG	N20-C15-C16-O18
1	A	34	OMG	O4'-C4'-C5'-O5'
1	B	34	OMG	O4'-C4'-C5'-O5'
1	D	34	OMG	O4'-C4'-C5'-O5'
1	E	34	OMG	O4'-C4'-C5'-O5'
1	A	26	M2G	C3'-C4'-C5'-O5'
1	B	26	M2G	C3'-C4'-C5'-O5'
1	C	26	M2G	C3'-C4'-C5'-O5'
1	C	34	OMG	O4'-C4'-C5'-O5'
1	D	26	M2G	C3'-C4'-C5'-O5'
1	E	26	M2G	C3'-C4'-C5'-O5'
1	A	46	7MG	C2'-C1'-N9-C8
1	B	46	7MG	C2'-C1'-N9-C8
1	C	46	7MG	C2'-C1'-N9-C8
1	D	46	7MG	C2'-C1'-N9-C8
1	E	46	7MG	C2'-C1'-N9-C8
1	E	16	H2U	O4'-C4'-C5'-O5'
1	A	16	H2U	O4'-C4'-C5'-O5'
1	B	16	H2U	O4'-C4'-C5'-O5'
1	C	16	H2U	O4'-C4'-C5'-O5'
1	D	16	H2U	O4'-C4'-C5'-O5'
1	A	10	2MG	C3'-C4'-C5'-O5'
1	B	10	2MG	C3'-C4'-C5'-O5'
1	C	10	2MG	C3'-C4'-C5'-O5'
1	D	10	2MG	C3'-C4'-C5'-O5'
1	E	10	2MG	C3'-C4'-C5'-O5'
1	C	16	H2U	O4'-C1'-N1-C2
1	D	16	H2U	O4'-C1'-N1-C2
1	E	16	H2U	O4'-C1'-N1-C2
1	A	16	H2U	O4'-C1'-N1-C2
1	B	16	H2U	O4'-C1'-N1-C2
1	A	10	2MG	O4'-C4'-C5'-O5'
1	B	10	2MG	O4'-C4'-C5'-O5'
1	C	10	2MG	O4'-C4'-C5'-O5'
1	D	10	2MG	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	E	10	2MG	O4'-C4'-C5'-O5'

There are no ring outliers.

60 monomers are involved in 965 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	D	46	7MG	22	0
1	E	37	YG	9	0
1	A	10	2MG	4	0
1	A	32	OMC	35	0
1	A	37	YG	116	0
1	B	58	1MA	33	0
1	A	46	7MG	28	0
1	E	34	OMG	2	0
1	D	54	5MU	13	0
1	A	17	H2U	34	0
1	C	34	OMG	2	0
1	B	55	PSU	5	0
1	A	26	M2G	19	0
1	A	34	OMG	35	0
1	D	10	2MG	12	0
1	C	17	H2U	2	0
1	C	37	YG	9	0
1	D	49	5MC	18	0
1	E	58	1MA	28	0
1	B	32	OMC	36	0
1	A	49	5MC	7	0
1	D	39	PSU	3	0
1	E	49	5MC	39	0
1	B	17	H2U	30	0
1	A	54	5MU	4	0
1	C	39	PSU	3	0
1	E	55	PSU	5	0
1	B	26	M2G	14	0
1	A	40	5MC	75	0
1	C	49	5MC	2	0
1	B	34	OMG	50	0
1	D	55	PSU	9	0
1	E	40	5MC	3	0
1	A	16	H2U	25	0
1	A	39	PSU	41	0
1	A	55	PSU	16	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	37	YG	104	0
1	B	46	7MG	45	0
1	B	49	5MC	31	0
1	D	37	YG	9	0
1	E	16	H2U	5	0
1	B	54	5MU	6	0
1	A	58	1MA	35	0
1	E	17	H2U	55	0
1	E	26	M2G	4	0
1	D	58	1MA	46	0
1	C	58	1MA	3	0
1	D	40	5MC	3	0
1	B	39	PSU	40	0
1	E	54	5MU	23	0
1	D	16	H2U	6	0
1	D	17	H2U	13	0
1	D	26	M2G	12	0
1	B	40	5MC	61	0
1	D	34	OMG	2	0
1	B	16	H2U	16	0
1	B	10	2MG	25	0
1	E	39	PSU	3	0
1	C	26	M2G	4	0
1	C	40	5MC	3	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides 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.