Full wwPDB X-ray Structure Validation Report (i)

Jan 31, 2016 – 11:28 PM GMT

PDB ID	:	1X8W
Title	:	Structure of the Tetrahymena Ribozyme: Base Triple Sandwich and Metal Ion at the Active Site
Authors	:	Guo, F.; Gooding, A.R.; Cech, T.R.
Deposited on	:	2004-08-18
Resolution	:	3.80 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
http://wwpdb.org/validation/2016/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

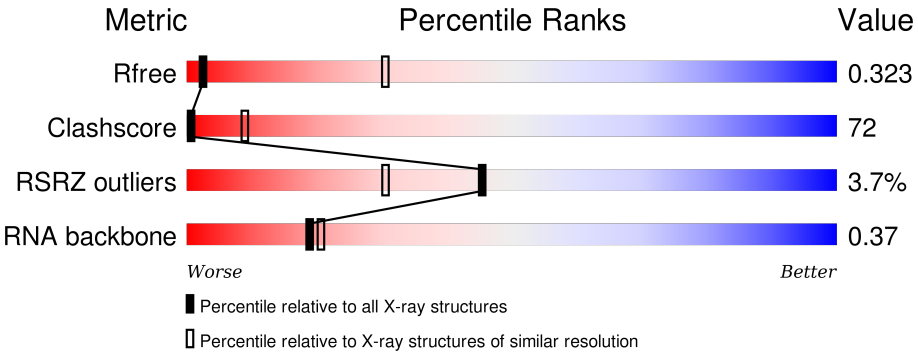
MolProbity	:	4.02b-467
Mogul	:	1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix)	:	1.9-1692
EDS	:	rb-20026688
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac	:	5.8.0135
CCP4	:	6.5.0
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	trunk26865

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.80 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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	91344	1317 (4.10-3.50)
Clashscore	102246	1458 (4.10-3.50)
RSRZ outliers	91569	1325 (4.10-3.50)
RNA backbone	2183	1070 (4.76-2.80)

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

Mol	Chain	Length	Quality of chain
1	A	247	2% 9% 54% 31%
1	B	247	2% 9% 45% 33% 13%
1	C	247	7% 5% 48% 36% 6%
1	D	247	3% 5% 53% 36%

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
2	MG	A	17	-	-	-	X

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 20792 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 Tetrahymena ribozyme RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	242	Total	C	N	O	P	0	0	0
			5189	2318	956	1674	241			
1	B	247	Total	C	N	O	P	0	0	0
			5294	2365	972	1711	246			
1	C	237	Total	C	N	O	P	0	0	0
			5082	2270	936	1640	236			
1	D	242	Total	C	N	O	P	0	0	0
			5189	2318	956	1674	241			

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

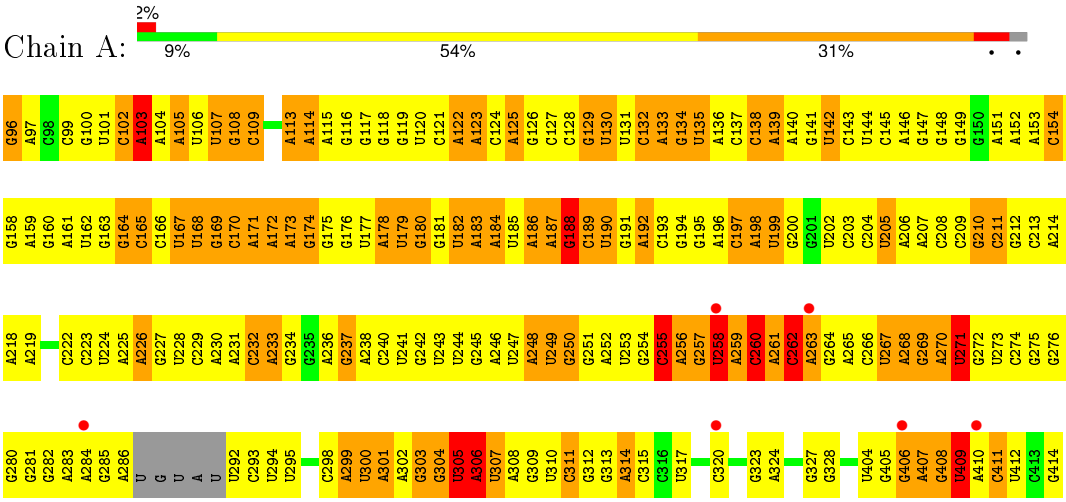
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	9	Total	Mg	0	0
			9	9		
2	A	10	Total	Mg	0	0
			10	10		
2	D	10	Total	Mg	0	0
			10	10		
2	C	9	Total	Mg	0	0
			9	9		

3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). 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.

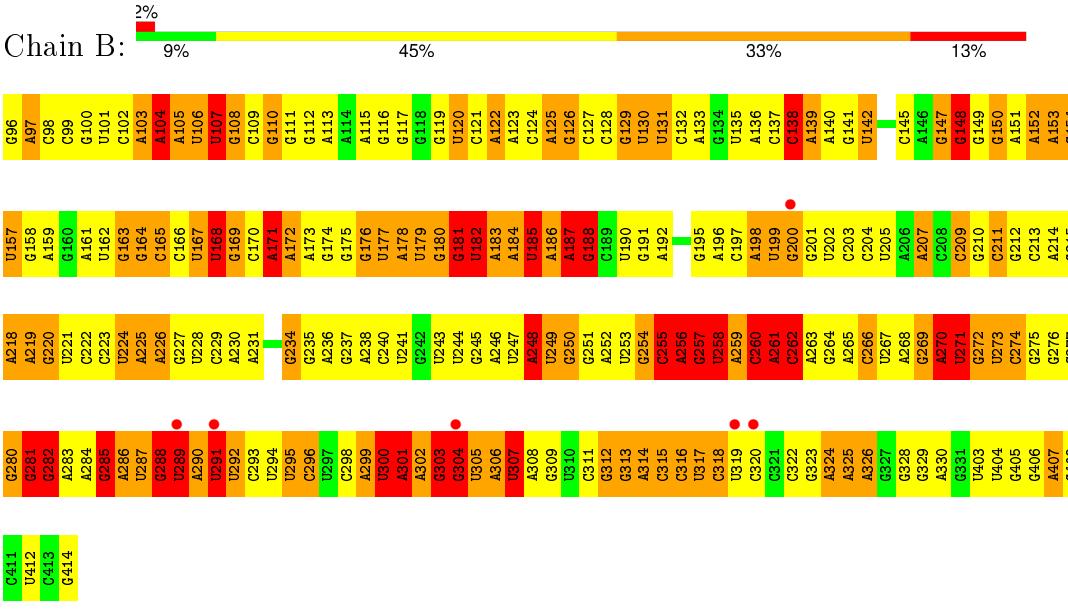
- Molecule 1: Tetrahymena ribozyme RNA

Chain A:



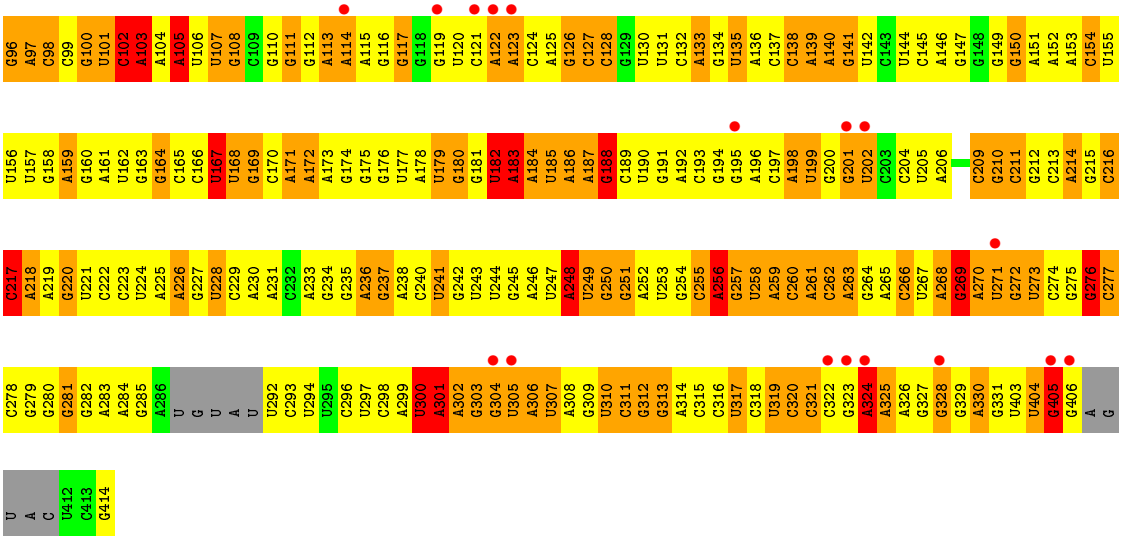
- Molecule 1: Tetrahymena ribozyme RNA

Chain B:



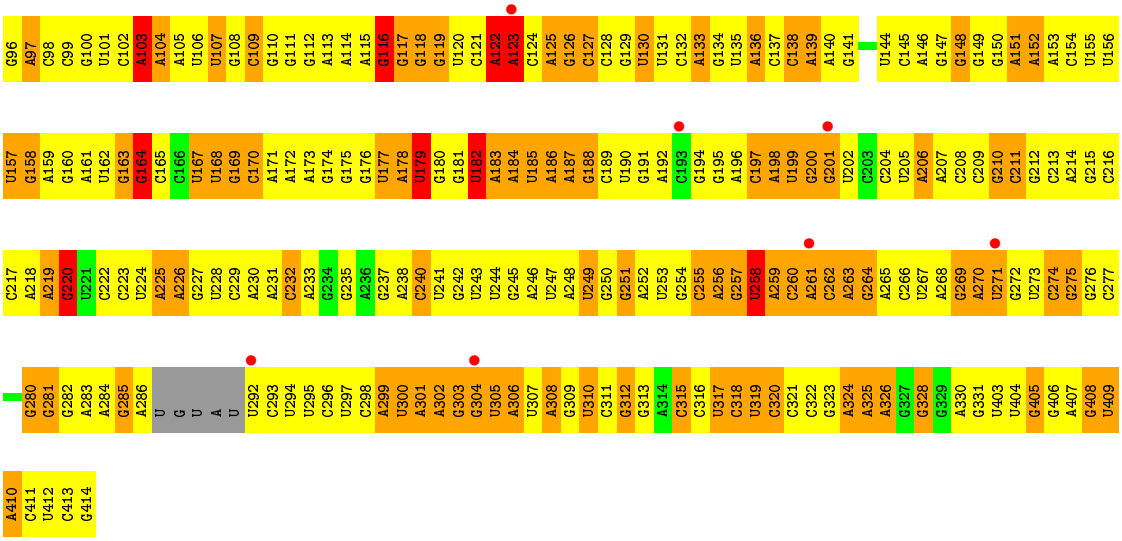
- Molecule 1: Tetrahymena ribozyme RNA

Chain C:



- Molecule 1: Tetrahymena ribozyme RNA

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α, β, γ	175.40Å 175.40Å 304.80Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 3.80 20.00 – 3.81	Depositor EDS
% Data completeness (in resolution range)	(Not available) (20.00-3.80) 93.6 (20.00-3.81)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.52 (at 3.82Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.263 , 0.320 0.263 , 0.323	Depositor DCC
R_{free} test set	3102 reflections (7.05%)	DCC
Wilson B-factor (Å^2)	147.3	Xtriage
Anisotropy	0.220	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.16 , 120.0	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Outliers	0 of 43972 reflections	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	20792	wwPDB-VP
Average B, all atoms (Å^2)	122.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.11% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG

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	0.60	0/5811	0.84	9/9060 (0.1%)
1	B	0.85	5/5929 (0.1%)	1.00	26/9246 (0.3%)
1	C	0.85	4/5690 (0.1%)	1.01	23/8869 (0.3%)
1	D	0.53	0/5811	0.83	10/9060 (0.1%)
All	All	0.72	9/23241 (0.0%)	0.93	68/36235 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	8
1	B	0	31
1	C	0	6
1	D	0	2
All	All	0	47

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	102	C	N1-C2	9.61	1.49	1.40
1	C	102	C	C4-C5	8.43	1.49	1.43
1	C	271	U	N1-C2	7.41	1.45	1.38
1	B	258	U	N1-C6	-6.07	1.32	1.38
1	B	258	U	P-OP2	5.80	1.58	1.49
1	B	105	A	C5-C6	-5.31	1.36	1.41
1	C	269	G	C5-C6	-5.21	1.37	1.42
1	B	304	G	C2-N3	-5.21	1.28	1.32
1	B	304	G	C5-C6	-5.03	1.37	1.42

All (68) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	248	A	N9-C1'-C2'	8.95	125.64	114.00
1	B	188	G	N9-C1'-C2'	8.82	125.46	114.00
1	B	248	A	N9-C1'-C2'	8.73	125.34	114.00
1	B	303	G	N9-C1'-C2'	-8.31	102.86	112.00
1	B	258	U	N1-C1'-C2'	-7.46	103.79	112.00
1	B	182	U	N1-C1'-C2'	7.44	123.67	114.00
1	D	122	A	C2'-C3'-O3'	7.23	125.40	109.50
1	C	188	G	N9-C1'-C2'	7.17	123.33	114.00
1	B	270	A	N9-C1'-C2'	7.14	123.28	114.00
1	B	184	A	O5'-P-OP1	-7.10	99.31	105.70
1	C	300	U	N1-C1'-C2'	7.05	123.17	114.00
1	D	179	U	N1-C1'-C2'	6.90	122.97	114.00
1	D	103	A	C2'-C3'-O3'	6.85	124.66	113.70
1	C	105	A	N9-C1'-C2'	-6.81	104.51	112.00
1	A	258	U	C2'-C3'-O3'	6.76	124.52	113.70
1	C	183	A	O5'-P-OP1	-6.70	99.67	105.70
1	D	164	G	N9-C1'-C2'	6.68	122.68	114.00
1	D	258	U	C2'-C3'-O3'	6.61	124.27	113.70
1	A	271	U	N1-C1'-C2'	-6.54	104.81	112.00
1	B	258	U	C2'-C3'-O3'	6.54	124.16	113.70
1	B	256	A	C2'-C3'-O3'	6.52	124.13	113.70
1	C	324	A	C2'-C3'-O3'	6.49	124.09	113.70
1	D	123	A	O5'-P-OP2	-6.49	99.86	105.70
1	A	188	G	N9-C1'-C2'	6.48	122.43	114.00
1	A	271	U	C3'-C2'-C1'	-6.48	96.32	101.50
1	C	405	G	C5'-C4'-C3'	-6.32	105.89	116.00
1	B	301	A	C5'-C4'-O4'	6.31	116.68	109.10
1	B	138	C	N1-C1'-C2'	6.29	122.17	114.00
1	B	289	U	O5'-P-OP2	6.28	118.23	110.70
1	C	272	G	N3-C2-N2	6.24	124.27	119.90
1	B	285	G	N9-C1'-C2'	-6.19	105.19	112.00
1	B	171	A	N9-C1'-C2'	6.17	122.03	114.00
1	D	122	A	OP2-P-O3'	6.10	118.63	105.20
1	C	167	U	C5'-C4'-O4'	-6.05	101.84	109.10
1	A	306	A	N9-C1'-C2'	6.01	121.81	114.00
1	B	262	C	N1-C1'-C2'	5.96	121.74	114.00
1	A	260	C	C2'-C3'-O3'	5.95	123.22	113.70
1	C	256	A	N9-C1'-C2'	5.91	121.69	114.00
1	B	187	A	N9-C1'-C2'	5.80	121.54	114.00
1	C	103	A	N9-C1'-C2'	5.80	121.54	114.00
1	B	272	G	O4'-C1'-N9	-5.76	103.59	108.20
1	C	272	G	N1-C2-N2	-5.76	111.02	116.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	103	A	N9-C1'-C2'	5.71	121.42	114.00
1	C	182	U	N1-C1'-C2'	5.64	121.33	114.00
1	C	182	U	OP2-P-O3'	5.62	117.57	105.20
1	B	281	G	N9-C1'-C2'	-5.61	105.83	112.00
1	D	182	U	N1-C1'-C2'	5.58	121.25	114.00
1	B	271	U	O4'-C1'-N1	5.52	112.62	108.20
1	C	404	U	N1-C1'-C2'	5.52	121.17	114.00
1	B	288	G	OP2-P-O3'	-5.50	93.10	105.20
1	C	301	A	N9-C1'-C2'	-5.49	105.96	112.00
1	C	217	C	C2'-C3'-O3'	5.40	122.34	113.70
1	C	248	A	C1'-O4'-C4'	-5.39	105.58	109.90
1	C	167	U	C2'-C3'-O3'	-5.36	97.71	109.50
1	C	102	C	N3-C2-O2	-5.33	118.17	121.90
1	A	305	U	N1-C1'-C2'	5.31	120.90	114.00
1	B	288	G	C3'-C2'-O2'	5.30	128.66	113.30
1	C	271	U	O4'-C1'-N1	5.29	112.43	108.20
1	B	301	A	O4'-C1'-N9	5.26	112.41	108.20
1	A	103	A	O4'-C1'-N9	5.23	112.38	108.20
1	B	254	G	O4'-C1'-N9	-5.22	104.02	108.20
1	C	102	C	N1-C1'-C2'	5.22	120.79	114.00
1	D	116	G	C2'-C3'-O3'	5.11	121.87	113.70
1	B	291	U	OP2-P-O3'	5.10	116.42	105.20
1	C	300	U	OP2-P-O3'	5.06	116.34	105.20
1	A	262	C	N1-C1'-C2'	5.05	120.56	114.00
1	B	282	G	O5'-P-OP1	-5.04	101.16	105.70
1	B	248	A	C1'-O4'-C4'	-5.01	105.89	109.90

There are no chirality outliers.

All (47) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	107	U	Sidechain
1	A	142	U	Sidechain
1	A	255	C	Sidechain
1	A	258	U	Sidechain
1	A	260	C	Sidechain
1	A	305	U	Sidechain
1	A	409	U	Sidechain
1	A	96	G	Sidechain
1	B	104	A	Sidechain
1	B	107	U	Sidechain
1	B	110	G	Sidechain

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Mol	Chain	Res	Type	Group
1	B	142	U	Sidechain
1	B	147	G	Sidechain
1	B	148	G	Sidechain
1	B	150	G	Sidechain
1	B	152	A	Sidechain
1	B	153	A	Sidechain
1	B	157	U	Sidechain
1	B	163	G	Sidechain
1	B	168	U	Sidechain
1	B	171	A	Sidechain
1	B	181	G	Sidechain
1	B	185	U	Sidechain
1	B	188	G	Sidechain
1	B	209	C	Sidechain
1	B	224	U	Sidechain
1	B	234	G	Sidechain
1	B	255	C	Sidechain
1	B	257	G	Sidechain
1	B	258	U	Sidechain
1	B	260	C	Sidechain
1	B	261	A	Sidechain
1	B	262	C	Sidechain
1	B	279	G	Sidechain
1	B	280	G	Sidechain
1	B	300	U	Sidechain
1	B	301	A	Sidechain
1	B	303	G	Sidechain
1	B	307	U	Sidechain
1	C	101	U	Sidechain
1	C	102	C	Sidechain
1	C	105	A	Sidechain
1	C	150	G	Sidechain
1	C	153	A	Sidechain
1	C	276	G	Sidechain
1	D	164	G	Sidechain
1	D	220	G	Sidechain

5.2 Too-close contacts (i)

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

the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5189	0	2615	463	0
1	B	5294	0	2666	608	0
1	C	5082	0	2561	639	0
1	D	5189	0	2615	556	0
2	A	10	0	0	0	0
2	B	9	0	0	0	0
2	C	9	0	0	0	0
2	D	10	0	0	0	0
All	All	20792	0	10457	2242	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 72.

All (2242) 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:C:110:G:H3'	1:C:111:G:H5"	1.21	1.20
1:B:219:A:H3'	1:B:220:G:C5'	1.72	1.19
1:D:124:C:H2'	1:D:125:A:H5"	1.27	1.15
1:B:219:A:H3'	1:B:220:G:H5"	1.17	1.15
1:B:278:C:H2'	1:B:279:G:H5"	1.17	1.12
1:A:259:A:H3'	1:A:260:C:H5"	1.16	1.11
1:C:132:C:H2'	1:C:133:A:H5"	1.27	1.11
1:A:132:C:H2'	1:A:133:A:H5"	1.25	1.10
1:A:304:G:H5'	1:A:305:U:OP2	1.52	1.09
1:B:286:A:H2'	1:B:287:U:O4'	1.50	1.09
1:B:220:G:H5'	1:B:220:G:C8	1.88	1.08
1:B:284:A:H2'	1:B:285:G:H8	1.13	1.08
1:D:259:A:H3'	1:D:260:C:H5"	1.10	1.08
1:B:219:A:C3'	1:B:220:G:H5"	1.83	1.08
1:B:220:G:H5'	1:B:220:G:H8	0.99	1.07
1:D:311:C:H2'	1:D:312:G:H5"	1.12	1.07
1:C:167:U:H1'	1:C:171:A:N6	1.70	1.06
1:B:316:C:H3'	1:B:317:U:H5"	1.11	1.06
1:A:102:C:H5'	1:A:103:A:OP2	1.56	1.04
1:C:133:A:H8	1:C:133:A:H5'	1.20	1.04
1:D:185:U:H4'	1:D:186:A:OP1	1.56	1.04
1:D:205:U:H2'	1:D:206:A:H5"	1.40	1.04
1:D:301:A:H3'	1:D:302:A:H5'	1.07	1.04
1:B:259:A:H3'	1:B:260:C:H5"	1.06	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:230:A:H2'	1:C:231:A:C8	1.93	1.03
1:C:132:C:C2'	1:C:133:A:H5"	1.89	1.03
1:B:247:U:O2'	1:C:228:U:H4'	1.58	1.03
1:A:132:C:C2'	1:A:133:A:H5"	1.89	1.03
1:C:302:A:H3'	1:C:303:G:H5"	1.37	1.01
1:D:132:C:H2'	1:D:133:A:H5"	1.38	1.01
1:B:279:G:H2'	1:B:280:G:H8	1.25	1.00
1:D:311:C:C2'	1:D:312:G:H5"	1.90	1.00
1:A:293:C:H2'	1:A:294:U:C6	1.95	1.00
1:C:280:G:H2'	1:C:281:G:H5'	1.41	1.00
1:C:164:G:H5"	1:C:165:C:H5	1.25	1.00
1:D:301:A:H3'	1:D:302:A:C5'	1.91	1.00
1:A:108:G:H3'	1:A:109:C:H5"	1.44	1.00
1:D:169:G:H2'	1:D:170:C:C6	1.96	0.99
1:D:96:G:H2'	1:D:97:A:C8	1.97	0.99
1:C:163:G:H3'	1:C:164:G:C8	1.97	0.99
1:A:96:G:H5'	1:A:300:U:O2'	1.61	0.99
1:D:303:G:H5'	1:D:304:G:OP2	1.63	0.99
1:C:151:A:H2	1:C:225:A:H4'	1.23	0.99
1:A:301:A:H5'	1:A:302:A:OP2	1.62	0.98
1:D:301:A:C3'	1:D:302:A:H5'	1.92	0.98
1:D:214:A:H2'	1:D:215:G:H5'	1.46	0.98
1:C:213:C:C2'	1:C:214:A:H5"	1.93	0.98
1:B:286:A:H3'	1:B:287:U:H5"	1.43	0.98
1:C:213:C:H2'	1:C:214:A:H5"	1.43	0.97
1:B:288:G:H4'	1:B:289:U:OP1	1.62	0.97
1:B:271:U:H2'	1:B:272:G:H8	1.27	0.96
1:C:101:U:C2	1:C:102:C:H5	1.83	0.96
1:A:232:C:H2'	1:A:233:A:H5"	1.47	0.96
1:D:259:A:H3'	1:D:260:C:C5'	1.95	0.96
1:A:405:G:O2'	1:A:406:G:H5'	1.65	0.96
1:C:318:C:C2'	1:C:319:U:H5"	1.96	0.96
1:C:182:U:H4'	1:C:186:A:N7	1.81	0.96
1:C:226:A:H3'	1:C:227:G:C8	2.00	0.96
1:B:259:A:C3'	1:B:260:C:H5"	1.96	0.96
1:C:201:G:H2'	1:C:202:U:C6	2.01	0.96
1:A:408:G:H2'	1:A:409:U:C6	2.01	0.95
1:D:301:A:N3	1:D:301:A:OP2	2.00	0.95
1:B:259:A:H3'	1:B:260:C:C5'	1.95	0.95
1:A:210:G:H5"	1:A:211:C:H5"	1.47	0.95
1:A:302:A:H3'	1:A:303:G:H4'	1.49	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:130:U:H2'	1:A:131:U:H5'	1.49	0.95
1:D:312:G:H2'	1:D:313:G:O4'	1.67	0.94
1:B:316:C:H3'	1:B:317:U:C5'	1.95	0.94
1:D:318:C:H2'	1:D:319:U:H5"	1.46	0.94
1:D:130:U:H2'	1:D:131:U:H5'	1.49	0.94
1:A:191:G:H2'	1:A:192:A:H5"	1.45	0.94
1:B:316:C:C3'	1:B:317:U:H5"	1.97	0.94
1:C:278:C:H2'	1:C:279:G:H5'	1.51	0.93
1:C:228:U:H2'	1:C:229:C:C6	2.04	0.93
1:B:284:A:H2'	1:B:285:G:C8	2.04	0.92
1:C:302:A:H3'	1:C:303:G:C5'	2.00	0.92
1:B:314:A:H3'	1:B:315:C:H5	1.34	0.92
1:A:298:C:H2'	1:A:299:A:C8	2.04	0.92
1:B:284:A:O2'	1:B:285:G:H5'	1.70	0.92
1:D:284:A:H2'	1:D:285:G:H5"	1.50	0.92
1:C:321:C:H2'	1:C:322:C:C6	2.05	0.91
1:C:226:A:H3'	1:C:227:G:H8	1.33	0.91
1:C:324:A:H3'	1:C:325:A:H8	1.33	0.91
1:A:259:A:C3'	1:A:260:C:H5"	1.99	0.91
1:C:228:U:H2'	1:C:229:C:H6	1.33	0.91
1:A:171:A:H4'	1:A:172:A:OP1	1.69	0.91
1:A:227:G:H1	1:A:247:U:H3	1.17	0.91
1:C:182:U:H4'	1:C:183:A:OP2	1.69	0.91
1:C:230:A:H2'	1:C:231:A:H8	1.30	0.90
1:C:278:C:C2'	1:C:279:G:H5'	2.02	0.90
1:C:229:C:H2'	1:C:230:A:C8	2.07	0.90
1:C:280:G:C2'	1:C:281:G:H5'	2.01	0.90
1:B:287:U:H3'	1:B:288:G:H8	1.35	0.90
1:B:100:G:O2'	1:B:101:U:H5'	1.70	0.90
1:B:289:U:H5"	1:B:290:A:OP2	1.71	0.90
1:C:270:A:H2'	1:C:271:U:O4'	1.71	0.90
1:B:303:G:H5'	1:B:304:G:OP2	1.72	0.90
1:D:325:A:H2'	1:D:326:A:C8	2.07	0.90
1:B:301:A:H3'	1:B:302:A:H5"	1.54	0.89
1:B:314:A:H3'	1:B:315:C:C5	2.07	0.89
1:B:281:G:H2'	1:B:282:G:H8	1.36	0.89
1:D:254:G:H5"	1:D:255:C:OP1	1.73	0.89
1:C:164:G:H21	1:C:186:A:H2	1.19	0.88
1:A:271:U:H1'	1:A:303:G:N7	1.89	0.88
1:B:278:C:C2'	1:B:279:G:H5"	2.02	0.88
1:A:294:U:H2'	1:A:295:U:C6	2.09	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:259:A:C3'	1:D:260:C:H5"	2.01	0.88
1:C:324:A:H8	1:C:324:A:OP1	1.57	0.88
1:A:104:A:H1'	1:A:218:A:H5'	1.55	0.87
1:B:97:A:H5'	1:B:98:C:OP2	1.74	0.87
1:C:151:A:C2	1:C:225:A:H4'	2.09	0.87
1:B:96:G:H2'	1:B:97:A:H8	1.38	0.87
1:D:408:G:H2'	1:D:409:U:C1'	2.04	0.87
1:B:304:G:C8	1:B:304:G:H3'	2.08	0.87
1:A:210:G:H5"	1:A:211:C:C5'	2.05	0.87
1:B:220:G:H8	1:B:220:G:C5'	1.87	0.86
1:B:255:C:O2'	1:B:273:U:H5"	1.74	0.86
1:B:129:G:H4'	1:B:130:U:OP1	1.75	0.86
1:C:259:A:H3'	1:C:260:C:H5"	1.57	0.86
1:C:133:A:C8	1:C:133:A:H5'	2.10	0.86
1:C:105:A:C2'	1:C:106:U:H5'	2.06	0.85
1:A:255:C:H1'	1:A:273:U:H4'	1.56	0.85
1:C:105:A:H2'	1:C:106:U:H5'	1.58	0.85
1:B:283:A:H2'	1:B:284:A:C8	2.11	0.85
1:C:269:G:H5"	1:C:269:G:H8	1.39	0.85
1:A:139:A:H5'	1:A:140:A:OP2	1.76	0.85
1:B:270:A:H3'	1:B:271:U:H6	1.41	0.85
1:C:324:A:OP1	1:C:324:A:C8	2.30	0.85
1:D:280:G:H2'	1:D:281:G:C8	2.11	0.85
1:B:315:C:H2'	1:B:316:C:O4'	1.76	0.85
1:A:292:U:O2'	1:A:293:C:H5'	1.76	0.84
1:A:242:G:H2'	1:A:243:U:C6	2.11	0.84
1:D:228:U:H2'	1:D:229:C:C6	2.12	0.84
1:C:116:G:H2'	1:C:117:G:H5"	1.57	0.84
1:B:270:A:C8	1:B:271:U:C4	2.66	0.84
1:A:302:A:C6	1:A:303:G:H1'	2.12	0.84
1:A:303:G:H5'	1:A:304:G:OP2	1.78	0.84
1:B:247:U:HO2'	1:C:228:U:H4'	1.43	0.84
1:B:209:C:H5"	1:B:210:G:OP2	1.77	0.84
1:D:149:G:H2'	1:D:150:G:H8	1.40	0.84
1:C:161:A:O2'	1:C:162:U:H5'	1.77	0.83
1:C:302:A:C3'	1:C:303:G:H5"	2.08	0.83
1:B:279:G:H2'	1:B:280:G:C8	2.13	0.83
1:D:247:U:O2'	1:D:248:A:H5'	1.76	0.83
1:A:202:U:H2'	1:A:203:C:C6	2.13	0.83
1:B:255:C:H1'	1:B:273:U:H4'	1.58	0.82
1:B:185:U:H4'	1:B:186:A:OP1	1.79	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:156:U:H2'	1:A:157:U:C6	2.15	0.82
1:C:164:G:H5"	1:C:165:C:C5	2.12	0.82
1:A:208:C:O2'	1:A:209:C:H5'	1.79	0.82
1:C:309:G:O2'	1:C:310:U:H5'	1.79	0.82
1:A:271:U:H1'	1:A:303:G:C5	2.16	0.81
1:C:270:A:C8	1:C:271:U:C5	2.68	0.81
1:C:115:A:H2'	1:C:116:G:C8	2.16	0.81
1:D:147:G:H1	1:D:156:U:H3	1.22	0.81
1:C:119:G:H22	1:C:202:U:H3	1.26	0.81
1:B:300:U:O2	1:B:300:U:H2'	1.79	0.81
1:A:198:A:H5"	1:A:199:U:OP1	1.81	0.81
1:D:403:U:H2'	1:D:404:U:H5'	1.62	0.81
1:C:260:C:H1'	1:C:305:U:C4	2.16	0.81
1:A:202:U:H2'	1:A:203:C:H6	1.44	0.81
1:C:217:C:HO2'	1:C:218:A:C5'	1.93	0.81
1:D:214:A:C2'	1:D:215:G:H5'	2.11	0.81
1:A:293:C:H2'	1:A:294:U:H6	1.46	0.81
1:B:287:U:H3'	1:B:288:G:C8	2.15	0.81
1:C:324:A:H3'	1:C:325:A:C8	2.15	0.81
1:D:205:U:C2'	1:D:206:A:H5"	2.10	0.80
1:B:151:A:C5	1:B:226:A:H1'	2.17	0.80
1:C:183:A:H5'	1:C:184:A:OP2	1.80	0.80
1:A:259:A:H3'	1:A:260:C:C5'	2.06	0.80
1:D:163:G:H3'	1:D:164:G:C8	2.16	0.80
1:B:287:U:H4'	1:B:288:G:OP2	1.79	0.80
1:B:290:A:H4'	1:B:291:U:OP1	1.80	0.80
1:D:408:G:H2'	1:D:409:U:H1'	1.62	0.80
1:B:286:A:C3'	1:B:287:U:H5"	2.10	0.80
1:C:110:G:C3'	1:C:111:G:H5"	2.07	0.80
1:C:321:C:H2'	1:C:322:C:H6	1.47	0.80
1:C:271:U:H2'	1:C:272:G:H5'	1.62	0.80
1:C:329:G:H2'	1:C:330:A:H5"	1.64	0.79
1:C:318:C:H2'	1:C:319:U:H5"	1.63	0.79
1:B:291:U:H2'	1:B:291:U:O2	1.82	0.79
1:D:301:A:H5'	1:D:302:A:OP2	1.81	0.79
1:D:132:C:C2'	1:D:133:A:H5"	2.11	0.79
1:A:209:C:H3'	1:A:210:G:H5'	1.65	0.79
1:B:284:A:C2'	1:B:285:G:H5'	2.11	0.79
1:C:270:A:N1	1:C:307:U:C5	2.51	0.79
1:B:307:U:H2'	1:B:308:A:C8	2.18	0.79
1:A:409:U:H2'	1:A:410:A:C8	2.17	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:318:C:C2'	1:D:319:U:H5"	2.13	0.79
1:C:229:C:H2'	1:C:230:A:H8	1.48	0.79
1:D:323:G:H2'	1:D:324:A:H5"	1.65	0.79
1:B:202:U:H2'	1:B:203:C:C6	2.18	0.79
1:B:271:U:H2'	1:B:272:G:C8	2.16	0.78
1:D:262:C:O2	1:D:262:C:H2'	1.83	0.78
1:A:279:G:H22	1:A:299:A:H2	1.28	0.78
1:C:115:A:H2'	1:C:116:G:H8	1.47	0.78
1:B:202:U:H2'	1:B:203:C:H6	1.48	0.78
1:D:255:C:H1'	1:D:273:U:H4'	1.62	0.78
1:D:261:A:H62	1:D:264:G:H3'	1.47	0.78
1:D:178:A:H4'	1:D:179:U:O5'	1.82	0.78
1:C:261:A:H4'	1:C:262:C:OP1	1.82	0.78
1:D:169:G:H2'	1:D:170:C:H6	1.49	0.78
1:C:182:U:C4'	1:C:186:A:N7	2.47	0.78
1:A:405:G:C2'	1:A:406:G:H5'	2.13	0.78
1:C:164:G:N2	1:C:186:A:H2	1.81	0.78
1:B:275:G:H2'	1:B:276:G:H8	1.49	0.78
1:B:280:G:O2'	1:B:281:G:H5'	1.84	0.77
1:C:318:C:O2'	1:C:319:U:H5"	1.83	0.77
1:A:174:G:H2'	1:A:175:G:C8	2.18	0.77
1:D:163:G:H4'	1:D:164:G:OP1	1.82	0.77
1:A:306:A:H1'	1:A:307:U:H5	1.49	0.77
1:B:166:C:OP2	1:B:167:U:H3'	1.85	0.77
1:C:279:G:H2'	1:C:280:G:O4'	1.85	0.77
1:A:101:U:H2'	1:A:102:C:C6	2.20	0.77
1:B:301:A:H5"	1:B:302:A:OP2	1.84	0.77
1:C:320:C:O2'	1:C:321:C:H5'	1.84	0.77
1:C:270:A:N7	1:C:271:U:C4	2.53	0.77
1:D:212:G:O2'	1:D:213:C:H5'	1.84	0.77
1:D:311:C:H2'	1:D:312:G:C5'	2.05	0.77
1:C:182:U:H3'	1:C:188:G:C8	2.20	0.76
1:A:270:A:H2'	1:A:271:U:C6	2.20	0.76
1:A:269:G:O5'	1:A:269:G:H8	1.69	0.76
1:B:319:U:H2'	1:B:320:C:H6	1.51	0.76
1:A:271:U:OP1	1:A:271:U:O4'	2.04	0.76
1:B:287:U:C3'	1:B:288:G:H8	1.98	0.76
1:C:323:G:N1	1:C:325:A:H5"	2.00	0.76
1:D:405:G:H2'	1:D:406:G:C8	2.22	0.75
1:A:159:A:H2'	1:A:160:G:C8	2.21	0.75
1:B:270:A:H3'	1:B:271:U:C6	2.22	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:302:A:N1	1:A:303:G:H1'	2.00	0.75
1:C:105:A:N7	1:C:106:U:C5	2.55	0.75
1:B:304:G:H8	1:B:304:G:H3'	1.50	0.75
1:C:132:C:C3'	1:C:133:A:H5"	2.15	0.75
1:B:230:A:H2'	1:B:231:A:H8	1.49	0.75
1:C:154:C:H2'	1:C:155:U:H6	1.51	0.75
1:D:126:G:H22	1:D:196:A:H2	1.32	0.75
1:D:270:A:H3'	1:D:271:U:H6	1.51	0.75
1:D:190:U:O2'	1:D:191:G:H5'	1.87	0.75
1:D:102:C:H5'	1:D:103:A:OP2	1.87	0.75
1:A:108:G:C3'	1:A:109:C:H5"	2.15	0.75
1:B:407:A:H2'	1:B:408:G:C8	2.22	0.75
1:B:243:U:O2'	1:B:244:U:H5'	1.86	0.75
1:B:269:G:H8	1:B:269:G:O5'	1.69	0.75
1:A:270:A:N1	1:A:304:G:N2	2.34	0.75
1:C:172:A:H2'	1:C:173:A:H8	1.52	0.74
1:D:317:U:H3	1:D:404:U:H3	1.36	0.74
1:D:211:C:O2'	1:D:212:G:H5'	1.87	0.74
1:B:211:C:OP2	1:B:260:C:N4	2.20	0.74
1:D:270:A:H3'	1:D:271:U:C6	2.22	0.74
1:D:319:U:H2'	1:D:320:C:C6	2.22	0.74
1:D:319:U:H2'	1:D:320:C:O4'	1.87	0.74
1:B:115:A:H2'	1:B:116:G:H8	1.51	0.74
1:C:271:U:H2'	1:C:272:G:C5'	2.16	0.74
1:B:136:A:H2'	1:B:137:C:O4'	1.87	0.74
1:C:218:A:H2'	1:C:219:A:H8	1.51	0.74
1:C:329:G:C3'	1:C:330:A:H5"	2.18	0.74
1:B:281:G:H2'	1:B:282:G:C8	2.22	0.74
1:A:406:G:O2'	1:A:407:A:H5'	1.87	0.74
1:A:196:A:H5'	1:A:197:C:OP1	1.88	0.74
1:D:243:U:H2'	1:D:244:U:C6	2.23	0.74
1:A:192:A:H2'	1:A:193:C:O4'	1.88	0.74
1:C:164:G:H8	1:C:164:G:OP2	1.71	0.73
1:D:210:G:H5"	1:D:211:C:H5'	1.70	0.73
1:A:139:A:H2'	1:A:139:A:N3	2.01	0.73
1:B:151:A:H2	1:B:225:A:H4'	1.52	0.73
1:B:256:A:OP1	1:B:256:A:C4	2.40	0.73
1:B:131:U:O2'	1:B:132:C:H5'	1.88	0.73
1:D:260:C:O2'	1:D:261:A:H5"	1.89	0.73
1:D:144:U:H2'	1:D:145:C:C6	2.22	0.73
1:C:304:G:P	1:C:304:G:O4'	2.46	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:183:A:H5'	1:D:184:A:P	2.29	0.73
1:C:271:U:C5	1:C:272:G:N7	2.57	0.73
1:B:303:G:H4'	1:B:304:G:OP1	1.87	0.73
1:D:253:U:H2'	1:D:254:G:H8	1.54	0.73
1:C:140:A:H2'	1:C:141:G:H8	1.53	0.73
1:D:284:A:C2'	1:D:285:G:H5"	2.19	0.73
1:A:124:C:H5	1:A:196:A:H61	1.35	0.73
1:B:405:G:H2'	1:B:406:G:O4'	1.89	0.73
1:A:244:U:H2'	1:A:245:G:C8	2.24	0.73
1:B:103:A:N6	1:B:269:G:N7	2.37	0.72
1:D:104:A:H1'	1:D:218:A:H5'	1.70	0.72
1:C:155:U:H2'	1:C:156:U:C6	2.23	0.72
1:D:167:U:O2	1:D:171:A:N7	2.21	0.72
1:C:97:A:C2	1:C:278:C:O2	2.41	0.72
1:A:305:U:H5'	1:A:306:A:OP1	1.88	0.72
1:D:218:A:C2	1:D:219:A:C4	2.77	0.72
1:C:240:C:H2'	1:C:241:U:C6	2.25	0.72
1:D:150:G:N2	1:D:152:A:H5"	2.03	0.72
1:C:310:U:H2'	1:C:311:C:O5'	1.89	0.72
1:D:168:U:H4'	1:D:170:C:OP1	1.89	0.72
1:C:210:G:H4'	1:C:211:C:OP2	1.87	0.72
1:C:329:G:C2'	1:C:330:A:H5"	2.19	0.72
1:C:272:G:C6	1:C:273:U:C5	2.78	0.72
1:C:101:U:C2	1:C:102:C:C5	2.73	0.72
1:B:255:C:N4	1:B:257:G:C4	2.58	0.72
1:B:141:G:H2'	1:B:142:U:C6	2.25	0.72
1:B:96:G:C2	1:B:97:A:N7	2.58	0.71
1:D:304:G:H5'	1:D:305:U:O5'	1.90	0.71
1:C:157:U:H2'	1:C:158:G:C8	2.24	0.71
1:C:112:G:H2'	1:C:113:A:O4'	1.90	0.71
1:D:124:C:C2'	1:D:125:A:H5"	2.16	0.71
1:C:318:C:H2'	1:C:319:U:C5'	2.20	0.71
1:A:262:C:H2'	1:A:263:A:H5"	1.73	0.71
1:D:262:C:H3'	1:D:263:A:H5"	1.73	0.71
1:C:155:U:H2'	1:C:156:U:H6	1.55	0.71
1:C:162:U:H2'	1:C:163:G:O4'	1.90	0.71
1:B:319:U:H2'	1:B:320:C:C6	2.25	0.71
1:B:102:C:H5'	1:B:103:A:OP2	1.90	0.71
1:D:256:A:C4	1:D:256:A:OP1	2.44	0.71
1:B:96:G:H2'	1:B:97:A:C8	2.25	0.71
1:A:189:C:H2'	1:A:190:U:C6	2.26	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:129:G:H4'	1:A:130:U:OP1	1.91	0.71
1:C:181:G:HO2'	1:C:186:A:N6	1.89	0.70
1:B:219:A:C3'	1:B:220:G:C5'	2.57	0.70
1:A:174:G:H2'	1:A:175:G:H8	1.55	0.70
1:B:304:G:C8	1:B:304:G:C3'	2.73	0.70
1:D:172:A:H8	1:D:173:A:C8	2.08	0.70
1:C:272:G:H2'	1:C:273:U:O5'	1.91	0.70
1:C:278:C:H2'	1:C:279:G:C5'	2.21	0.70
1:D:285:G:C6	1:D:286:A:N6	2.58	0.70
1:B:214:A:N6	1:B:215:G:C6	2.60	0.70
1:C:305:U:O2	1:C:305:U:H2'	1.91	0.70
1:A:159:A:H2'	1:A:160:G:H8	1.56	0.70
1:B:412:U:H6	1:B:412:U:O5'	1.72	0.70
1:D:238:A:C5	1:D:240:C:H1'	2.27	0.70
1:A:230:A:O2'	1:A:231:A:H5'	1.92	0.70
1:A:262:C:O2	1:A:262:C:H2'	1.89	0.70
1:D:96:G:H2'	1:D:97:A:H8	1.55	0.70
1:C:163:G:C5	1:C:164:G:C6	2.80	0.69
1:D:280:G:H2'	1:D:281:G:H8	1.56	0.69
1:D:255:C:N4	1:D:257:G:N3	2.40	0.69
1:B:141:G:H2'	1:B:142:U:H6	1.57	0.69
1:C:269:G:H5"	1:C:269:G:C8	2.25	0.69
1:B:97:A:N3	1:B:97:A:H2'	2.06	0.69
1:C:235:G:H3'	1:C:236:A:H5"	1.73	0.69
1:D:307:U:O2'	1:D:308:A:H5'	1.93	0.69
1:C:322:C:H2'	1:C:323:G:C8	2.27	0.69
1:C:259:A:H3'	1:C:260:C:C5'	2.22	0.69
1:A:167:U:H4'	1:A:168:U:O5'	1.92	0.69
1:B:184:A:H8	1:B:184:A:O5'	1.75	0.69
1:C:119:G:H2'	1:C:120:U:O4'	1.92	0.69
1:A:117:G:H2'	1:A:118:G:C8	2.27	0.69
1:D:200:G:H4'	1:D:201:G:OP1	1.91	0.69
1:C:211:C:O2'	1:C:212:G:H5'	1.92	0.69
1:D:270:A:C8	1:D:271:U:C4	2.81	0.69
1:D:139:A:N7	1:D:186:A:C8	2.61	0.69
1:B:154:C:O2'	1:B:155:U:H5'	1.93	0.69
1:C:218:A:O2'	1:C:219:A:H5'	1.92	0.69
1:C:275:G:H2'	1:C:276:G:H8	1.57	0.69
1:D:403:U:C2'	1:D:404:U:H5'	2.23	0.69
1:A:197:C:OP2	1:A:197:C:H6	1.74	0.69
1:C:99:C:H6	1:C:99:C:H5"	1.58	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:319:U:H2'	1:C:320:C:O5'	1.92	0.69
1:C:157:U:H2'	1:C:158:G:H8	1.58	0.69
1:B:228:U:H2'	1:B:229:C:H6	1.57	0.68
1:B:115:A:H2'	1:B:116:G:C8	2.27	0.68
1:C:233:A:O2'	1:C:234:G:H5'	1.93	0.68
1:C:303:G:O3'	1:C:304:G:C4'	2.41	0.68
1:A:302:A:C2	1:A:303:G:H1'	2.28	0.68
1:C:217:C:HO2'	1:C:218:A:H5'	1.57	0.68
1:C:110:G:H3'	1:C:111:G:C5'	2.12	0.68
1:A:232:C:OP1	1:A:232:C:H4'	1.92	0.68
1:A:178:A:H4'	1:A:179:U:H5"	1.74	0.68
1:C:306:A:O2'	1:C:307:U:H5'	1.94	0.68
1:C:272:G:C2	1:C:273:U:C6	2.82	0.68
1:D:159:A:H2'	1:D:160:G:H8	1.57	0.68
1:A:125:A:C5	1:A:324:A:H1'	2.28	0.68
1:C:282:G:O2'	1:C:283:A:H5'	1.94	0.68
1:A:182:U:H5"	1:A:188:G:N7	2.09	0.68
1:A:191:G:C2'	1:A:192:A:H5"	2.20	0.68
1:D:255:C:N4	1:D:257:G:C4	2.62	0.68
1:C:226:A:H5'	1:C:227:G:OP2	1.94	0.68
1:C:210:G:OP1	1:C:211:C:H5'	1.94	0.68
1:C:227:G:C6	1:C:228:U:C4	2.82	0.68
1:B:270:A:C8	1:B:271:U:N3	2.62	0.67
1:A:189:C:H5'	1:A:189:C:H6	1.59	0.67
1:B:125:A:C8	1:B:324:A:H1'	2.29	0.67
1:C:405:G:H2'	1:C:406:G:C8	2.29	0.67
1:A:205:U:H5'	1:A:206:A:OP2	1.93	0.67
1:B:409:U:H3'	1:B:410:A:H5"	1.75	0.67
1:B:286:A:OP1	1:B:286:A:C8	2.47	0.67
1:A:103:A:O2'	1:A:104:A:N7	2.26	0.67
1:D:407:A:H5"	1:D:408:G:OP2	1.93	0.67
1:C:132:C:H2'	1:C:133:A:C5'	2.17	0.67
1:C:323:G:C6	1:C:325:A:H5"	2.29	0.67
1:A:193:C:H2'	1:A:194:G:H8	1.57	0.67
1:A:251:G:O2'	1:A:252:A:H5'	1.95	0.67
1:C:272:G:C2'	1:C:273:U:O5'	2.43	0.67
1:B:271:U:O2'	1:B:303:G:N2	2.27	0.67
1:A:256:A:H5"	1:A:257:G:OP2	1.94	0.67
1:A:256:A:OP1	1:A:256:A:N3	2.27	0.67
1:B:151:A:C4	1:B:226:A:H1'	2.29	0.67
1:C:269:G:N2	1:C:270:A:C6	2.63	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:163:G:C6	1:C:164:G:N1	2.63	0.67
1:C:120:U:H2'	1:C:121:C:C5	2.30	0.67
1:C:126:G:H2'	1:C:126:G:N3	2.09	0.67
1:C:100:G:N1	1:C:101:U:C2	2.63	0.66
1:C:304:G:OP2	1:C:304:G:O4'	2.12	0.66
1:B:107:U:O2	1:B:108:G:C8	2.48	0.66
1:A:307:U:OP1	1:A:414:G:H3'	1.96	0.66
1:D:269:G:O5'	1:D:269:G:H8	1.78	0.66
1:B:302:A:H3'	1:B:303:G:H4'	1.76	0.66
1:D:178:A:H1'	1:D:180:G:C5	2.29	0.66
1:B:322:C:H2'	1:B:323:G:C8	2.30	0.66
1:C:279:G:C6	1:C:280:G:C4	2.83	0.66
1:A:238:A:O4'	1:D:276:G:H4'	1.96	0.66
1:C:96:G:O6	1:C:279:G:C6	2.49	0.66
1:C:310:U:C2'	1:C:311:C:O5'	2.44	0.66
1:D:103:A:O2'	1:D:104:A:C8	2.49	0.66
1:C:328:G:H2'	1:C:329:G:H8	1.59	0.66
1:D:150:G:H21	1:D:152:A:H5"	1.61	0.66
1:C:206:A:H8	1:C:206:A:O5'	1.79	0.66
1:C:150:G:N2	1:C:152:A:H3'	2.10	0.66
1:B:246:A:H2'	1:B:247:U:C6	2.31	0.66
1:A:151:A:C4	1:A:226:A:H1'	2.30	0.66
1:C:269:G:H8	1:C:269:G:C5'	2.07	0.66
1:D:219:A:C2	1:D:220:G:H1'	2.31	0.66
1:D:218:A:H2'	1:D:219:A:C8	2.30	0.66
1:B:409:U:C3'	1:B:410:A:H5"	2.25	0.66
1:C:96:G:HO5'	1:C:96:G:H8	1.43	0.66
1:B:223:C:C2	1:B:251:G:C2	2.83	0.66
1:C:327:G:H5"	1:C:328:G:OP2	1.96	0.66
1:D:248:A:O2'	1:D:249:U:C6	2.47	0.66
1:B:323:G:H21	1:B:326:A:H62	1.43	0.66
1:B:237:G:H2'	1:B:238:A:C8	2.31	0.66
1:B:271:U:H4'	1:B:303:G:C2	2.30	0.66
1:B:128:C:C2'	1:B:129:G:H5'	2.26	0.66
1:C:103:A:O4'	1:C:103:A:OP1	2.14	0.66
1:C:272:G:C2	1:C:273:U:C5	2.83	0.66
1:B:163:G:H3'	1:B:164:G:C8	2.31	0.66
1:D:107:U:H5'	1:D:108:G:OP2	1.96	0.66
1:B:228:U:H5'	1:C:248:A:H5'	1.78	0.66
1:C:199:U:H3'	1:C:200:G:C5'	2.26	0.66
1:A:153:A:H2	1:A:250:G:N3	1.93	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:112:G:H2'	1:B:113:A:O4'	1.96	0.66
1:B:302:A:H3'	1:B:304:G:OP1	1.96	0.66
1:B:128:C:H2'	1:B:129:G:H5'	1.78	0.66
1:B:280:G:C2	1:B:281:G:N7	2.65	0.65
1:D:150:G:C3'	1:D:151:A:H5"	2.26	0.65
1:C:267:U:H2'	1:C:268:A:O5'	1.95	0.65
1:C:253:U:H2'	1:C:254:G:C5'	2.26	0.65
1:A:237:G:N3	1:D:276:G:O2'	2.27	0.65
1:D:149:G:H2'	1:D:150:G:C8	2.29	0.65
1:D:258:U:H2'	1:D:259:A:O4'	1.96	0.65
1:B:261:A:C8	1:B:264:G:OP2	2.49	0.65
1:B:96:G:H5'	1:B:300:U:H2'	1.77	0.65
1:D:164:G:O2'	1:D:186:A:N6	2.26	0.65
1:A:114:A:H3'	1:A:115:A:H8	1.61	0.65
1:C:296:C:H2'	1:C:297:U:O4'	1.97	0.65
1:C:193:C:H2'	1:C:194:G:H8	1.61	0.65
1:D:114:A:H2'	1:D:115:A:O4'	1.96	0.65
1:B:260:C:C2'	1:B:261:A:OP2	2.45	0.65
1:A:227:G:H2'	1:A:228:U:O4'	1.97	0.65
1:D:209:C:H5"	1:D:210:G:OP2	1.95	0.65
1:D:164:G:H5"	1:D:165:C:H5	1.62	0.65
1:C:144:U:H2'	1:C:145:C:O4'	1.97	0.65
1:B:255:C:N4	1:B:257:G:N3	2.45	0.64
1:A:259:A:N6	1:A:260:C:N4	2.46	0.64
1:B:249:U:H2'	1:B:249:U:O2	1.96	0.64
1:A:108:G:C2	1:A:109:C:H1'	2.32	0.64
1:D:227:G:H2'	1:D:228:U:C6	2.32	0.64
1:C:272:G:C5	1:C:273:U:C5	2.84	0.64
1:B:167:U:H4'	1:B:168:U:O5'	1.96	0.64
1:A:222:C:H2'	1:A:223:C:H6	1.62	0.64
1:C:235:G:C3'	1:C:236:A:H5"	2.27	0.64
1:D:256:A:N7	1:D:273:U:OP1	2.31	0.64
1:D:304:G:H3'	1:D:305:U:H4'	1.80	0.64
1:C:252:A:O2'	1:C:253:U:H5'	1.96	0.64
1:D:172:A:C8	1:D:173:A:C8	2.85	0.64
1:C:158:G:H2'	1:C:159:A:C8	2.32	0.64
1:B:409:U:H2'	1:B:410:A:H5"	1.78	0.64
1:D:298:C:H2'	1:D:299:A:O4'	1.97	0.64
1:A:307:U:H2'	1:A:308:A:C8	2.32	0.64
1:A:165:C:H4'	1:A:181:G:O3'	1.96	0.64
1:B:269:G:N2	1:B:270:A:N7	2.46	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:270:A:H5"	1:D:271:U:C5	2.33	0.64
1:A:179:U:O2'	1:A:180:G:P	2.55	0.64
1:A:248:A:O2'	1:A:249:U:C6	2.51	0.64
1:D:257:G:C2'	1:D:258:U:H5'	2.28	0.64
1:B:154:C:H2'	1:B:155:U:H6	1.62	0.64
1:C:100:G:C4	1:C:275:G:N1	2.66	0.64
1:C:304:G:N2	1:C:307:U:C5	2.66	0.64
1:D:409:U:H2'	1:D:410:A:H5"	1.79	0.64
1:D:120:U:H2'	1:D:121:C:C5	2.32	0.64
1:D:219:A:C2'	1:D:220:G:O5'	2.45	0.64
1:C:154:C:O2'	1:C:155:U:H5'	1.98	0.64
1:C:145:C:H2'	1:C:146:A:C8	2.32	0.64
1:C:253:U:C2'	1:C:254:G:H5'	2.27	0.64
1:A:409:U:H2'	1:A:410:A:H8	1.58	0.64
1:C:323:G:H3'	1:C:324:A:C5'	2.27	0.64
1:C:328:G:H2'	1:C:329:G:C8	2.33	0.64
1:C:96:G:O2'	1:C:97:A:H5'	1.96	0.64
1:B:268:A:C2	1:B:308:A:N1	2.66	0.64
1:A:256:A:H8	1:A:272:G:H4'	1.63	0.64
1:A:270:A:N7	1:A:271:U:O4	2.31	0.64
1:A:127:C:O2'	1:A:128:C:H5'	1.98	0.64
1:A:211:C:H2'	1:A:212:G:O4'	1.98	0.63
1:D:302:A:H2'	1:D:303:G:H1'	1.81	0.63
1:B:204:C:O2'	1:B:205:U:H5'	1.98	0.63
1:C:130:U:H2'	1:C:131:U:H5'	1.78	0.63
1:C:218:A:C4	1:C:219:A:C8	2.86	0.63
1:B:300:U:H4'	1:B:300:U:OP2	1.97	0.63
1:D:408:G:H2'	1:D:409:U:O4'	1.97	0.63
1:C:303:G:O3'	1:C:304:G:H4'	1.97	0.63
1:D:144:U:H2'	1:D:145:C:H6	1.61	0.63
1:C:218:A:H2'	1:C:219:A:C8	2.32	0.63
1:B:301:A:H3'	1:B:302:A:C5'	2.28	0.63
1:D:107:U:H5	1:D:259:A:H4'	1.63	0.63
1:B:226:A:C5	1:B:227:G:C8	2.86	0.63
1:A:405:G:HO2'	1:A:406:G:H5'	1.62	0.63
1:B:167:U:H1'	1:B:171:A:N6	2.13	0.63
1:C:110:G:C2	1:C:212:G:C4	2.87	0.63
1:C:235:G:H3'	1:C:236:A:C5'	2.28	0.63
1:B:291:U:C2'	1:B:291:U:O2	2.46	0.63
1:D:104:A:H3'	1:D:105:A:C8	2.33	0.63
1:C:174:G:H2'	1:C:175:G:C8	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:96:G:H2'	1:A:97:A:C8	2.34	0.63
1:C:328:G:O2'	1:C:329:G:H5'	1.98	0.63
1:A:281:G:O2'	1:A:282:G:H5'	1.99	0.63
1:D:156:U:H2'	1:D:157:U:C6	2.34	0.63
1:B:322:C:H2'	1:B:323:G:H8	1.64	0.63
1:C:110:G:N2	1:C:212:G:H1'	2.14	0.63
1:B:261:A:H2'	1:B:262:C:H5"	1.81	0.63
1:B:303:G:H5'	1:B:304:G:P	2.38	0.63
1:C:154:C:H2'	1:C:155:U:C6	2.33	0.63
1:A:131:U:H2'	1:A:131:U:O2	1.99	0.63
1:B:120:U:H2'	1:B:121:C:H6	1.64	0.63
1:C:261:A:H62	1:C:264:G:H3'	1.64	0.63
1:C:237:G:C6	1:C:238:A:C6	2.86	0.63
1:A:183:A:H5'	1:A:188:G:C4	2.34	0.63
1:D:256:A:N6	1:D:273:U:OP1	2.32	0.63
1:B:224:U:O2	1:B:250:G:C2	2.52	0.63
1:C:323:G:N2	1:C:326:A:C8	2.67	0.63
1:B:96:G:O5'	1:B:97:A:P	2.57	0.63
1:D:285:G:H8	1:D:285:G:H5'	1.63	0.63
1:C:104:A:C6	1:C:105:A:C2	2.87	0.63
1:C:100:G:H1'	1:C:275:G:N2	2.14	0.62
1:A:189:C:C6	1:A:189:C:H5'	2.33	0.62
1:D:219:A:N6	1:D:254:G:H1'	2.14	0.62
1:A:232:C:C2'	1:A:233:A:H5"	2.25	0.62
1:C:319:U:C2'	1:C:320:C:O5'	2.47	0.62
1:D:319:U:H6	1:D:319:U:H5"	1.64	0.62
1:D:411:C:H2'	1:D:412:U:O4'	1.99	0.62
1:A:198:A:N7	1:B:122:A:N6	2.47	0.62
1:B:198:A:HO2'	1:B:199:U:H5"	1.64	0.62
1:D:296:C:H2'	1:D:297:U:O4'	1.99	0.62
1:C:163:G:H3'	1:C:164:G:H8	1.61	0.62
1:B:220:G:C8	1:B:220:G:C5'	2.72	0.62
1:B:307:U:H2'	1:B:308:A:H8	1.61	0.62
1:C:253:U:H2'	1:C:254:G:H5'	1.82	0.62
1:B:228:U:H2'	1:B:229:C:C6	2.34	0.62
1:D:281:G:O2'	1:D:282:G:H5'	1.99	0.62
1:A:130:U:C2'	1:A:131:U:H5'	2.26	0.62
1:A:226:A:H3'	1:A:227:G:C8	2.34	0.62
1:B:209:C:C5'	1:B:210:G:OP2	2.46	0.62
1:B:285:G:O2'	1:B:286:A:P	2.57	0.62
1:A:240:C:H2'	1:A:241:U:H6	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:270:A:H8	1:B:271:U:C4	2.16	0.62
1:A:243:U:H2'	1:A:244:U:C6	2.34	0.62
1:A:219:A:H8	1:A:219:A:OP2	1.83	0.62
1:C:269:G:N2	1:C:270:A:C5	2.68	0.62
1:B:268:A:C2	1:B:308:A:C6	2.88	0.62
1:A:102:C:C5'	1:A:103:A:OP2	2.43	0.62
1:B:120:U:H2'	1:B:121:C:C6	2.35	0.62
1:C:292:U:O2'	1:C:293:C:H5'	2.00	0.62
1:D:307:U:C2'	1:D:308:A:H5'	2.30	0.61
1:B:227:G:H2'	1:B:228:U:C6	2.35	0.61
1:C:313:G:H5'	1:C:314:A:OP2	1.99	0.61
1:B:268:A:C2	1:B:308:A:C2	2.88	0.61
1:B:280:G:C2	1:B:281:G:C8	2.88	0.61
1:A:294:U:H2'	1:A:295:U:H6	1.62	0.61
1:C:330:A:C6	1:C:331:G:C5	2.88	0.61
1:D:226:A:H3'	1:D:227:G:H8	1.66	0.61
1:C:166:C:H2'	1:C:167:U:C5	2.35	0.61
1:A:242:G:H2'	1:A:243:U:H6	1.61	0.61
1:B:196:A:H2'	1:B:197:C:C5	2.34	0.61
1:A:237:G:N2	1:D:276:G:N3	2.47	0.61
1:A:271:U:C6	1:A:271:U:H5"	2.35	0.61
1:A:305:U:O2	1:A:305:U:H2'	2.01	0.61
1:A:298:C:H2'	1:A:299:A:H8	1.57	0.61
1:A:167:U:H4'	1:A:168:U:C5'	2.31	0.61
1:A:170:C:H3'	1:A:171:A:H8	1.66	0.61
1:C:181:G:O2'	1:C:186:A:N6	2.33	0.61
1:D:107:U:O4	1:D:259:A:H1'	2.01	0.61
1:C:240:C:H2'	1:C:241:U:H6	1.64	0.61
1:D:126:G:H2'	1:D:127:C:H6	1.66	0.61
1:B:96:G:N3	1:B:97:A:C8	2.68	0.61
1:A:214:A:H2'	1:A:215:G:H8	1.65	0.61
1:D:322:C:H2'	1:D:323:G:C8	2.36	0.61
1:D:238:A:C4	1:D:240:C:H1'	2.35	0.61
1:D:292:U:H2'	1:D:293:C:H6	1.66	0.61
1:D:405:G:H2'	1:D:406:G:H8	1.62	0.61
1:D:126:G:H2'	1:D:127:C:C6	2.36	0.61
1:C:253:U:O2'	1:C:254:G:H5'	2.01	0.61
1:C:322:C:O2'	1:C:323:G:H5'	2.00	0.61
1:A:243:U:H2'	1:A:244:U:H6	1.65	0.61
1:D:158:G:H2'	1:D:159:A:C8	2.35	0.61
1:B:204:C:H2'	1:B:205:U:O4'	2.01	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:281:G:O2'	1:C:282:G:H5'	2.01	0.61
1:B:184:A:C8	1:B:184:A:O5'	2.54	0.61
1:A:262:C:O2'	1:A:263:A:P	2.59	0.61
1:D:256:A:N7	1:D:272:G:O3'	2.34	0.61
1:D:325:A:H8	1:D:325:A:O5'	1.84	0.61
1:D:246:A:H2'	1:D:247:U:C6	2.36	0.61
1:A:122:A:OP2	1:A:122:A:O4'	2.19	0.61
1:C:271:U:C2'	1:C:272:G:H5'	2.30	0.60
1:D:302:A:C2	1:D:302:A:OP2	2.54	0.60
1:C:171:A:O2'	1:C:172:A:P	2.59	0.60
1:C:114:A:H5"	1:C:115:A:OP2	2.01	0.60
1:A:182:U:H4'	1:A:183:A:OP2	2.00	0.60
1:A:271:U:H6	1:A:271:U:OP1	1.83	0.60
1:D:184:A:O5'	1:D:185:U:H5"	2.01	0.60
1:D:150:G:C2'	1:D:151:A:H5"	2.32	0.60
1:C:303:G:O5'	1:C:304:G:OP1	2.19	0.60
1:A:163:G:C5	1:A:164:G:C6	2.89	0.60
1:A:164:G:O5'	1:A:164:G:H8	1.85	0.60
1:B:322:C:O2'	1:B:323:G:H5'	2.02	0.60
1:C:293:C:H2'	1:C:294:U:H6	1.66	0.60
1:B:302:A:C6	1:B:303:G:H1'	2.37	0.60
1:D:262:C:C5	1:D:414:G:C4	2.88	0.60
1:D:184:A:C8	1:D:184:A:OP2	2.54	0.60
1:D:242:G:O2'	1:D:243:U:H5'	2.01	0.60
1:B:145:C:O5'	1:B:145:C:H6	1.85	0.60
1:B:185:U:O2'	1:B:186:A:C5'	2.49	0.60
1:B:211:C:H2'	1:B:212:G:H8	1.66	0.60
1:A:183:A:H2'	1:A:184:A:C8	2.37	0.60
1:D:214:A:H2'	1:D:215:G:C5'	2.25	0.60
1:C:147:G:H1	1:C:156:U:H3	1.48	0.60
1:D:119:G:O2'	1:D:325:A:H1'	2.01	0.60
1:B:180:G:H2'	1:B:181:G:O5'	2.02	0.60
1:A:270:A:C5	1:A:271:U:O4	2.54	0.60
1:C:167:U:H1'	1:C:171:A:H62	1.64	0.60
1:A:172:A:N3	1:A:172:A:H2'	2.16	0.60
1:C:233:A:C2'	1:C:234:G:H5'	2.32	0.60
1:C:213:C:H2'	1:C:214:A:C5'	2.25	0.60
1:C:262:C:O2	1:C:262:C:H2'	2.01	0.60
1:C:279:G:C2	1:C:280:G:H1'	2.36	0.60
1:B:106:U:H5'	1:B:107:U:P	2.42	0.60
1:B:298:C:H2'	1:B:299:A:C1'	2.32	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:219:A:H61	1:D:254:G:H1'	1.66	0.60
1:D:302:A:O5'	1:D:303:G:O5'	2.20	0.60
1:C:257:G:O2'	1:C:258:U:OP1	2.19	0.60
1:C:119:G:N2	1:C:202:U:H3	1.98	0.60
1:C:140:A:H5'	1:C:140:A:H8	1.66	0.60
1:C:204:C:O2'	1:C:205:U:H5'	2.02	0.60
1:C:217:C:C6	1:C:217:C:H5"	2.36	0.60
1:A:264:G:O2'	1:A:265:A:H5'	2.01	0.60
1:C:151:A:H61	1:C:248:A:H61	1.49	0.60
1:A:96:G:H2'	1:A:97:A:H8	1.65	0.60
1:C:110:G:H21	1:C:212:G:H1'	1.67	0.60
1:C:311:C:C2'	1:C:312:G:O5'	2.49	0.60
1:A:241:U:N3	1:A:242:G:N7	2.49	0.60
1:A:117:G:H2'	1:A:118:G:H8	1.66	0.60
1:D:242:G:H2'	1:D:243:U:C6	2.36	0.60
1:B:260:C:O2'	1:B:261:A:OP2	2.20	0.59
1:D:302:A:H2'	1:D:303:G:C1'	2.32	0.59
1:D:182:U:O4'	1:D:186:A:C2	2.55	0.59
1:D:197:C:O2	1:D:200:G:H1'	2.02	0.59
1:D:107:U:C5	1:D:259:A:H4'	2.37	0.59
1:B:225:A:C5	1:B:247:U:C4	2.90	0.59
1:C:298:C:H2'	1:C:299:A:O4'	2.02	0.59
1:B:303:G:OP1	1:B:304:G:P	2.60	0.59
1:B:96:G:H2'	1:B:96:G:N3	2.16	0.59
1:A:187:A:N6	1:A:189:C:N4	2.49	0.59
1:D:255:C:O2'	1:D:256:A:OP1	2.21	0.59
1:D:269:G:O2'	1:D:270:A:P	2.60	0.59
1:A:105:A:H5'	1:A:106:U:OP2	2.01	0.59
1:D:96:G:C2	1:D:97:A:C5	2.90	0.59
1:C:329:G:H2'	1:C:330:A:C5'	2.31	0.59
1:D:319:U:H3'	1:D:320:C:C6	2.38	0.59
1:C:140:A:C4	1:C:141:G:C8	2.91	0.59
1:C:103:A:C4'	1:C:103:A:OP1	2.50	0.59
1:B:255:C:C4	1:B:257:G:C4	2.91	0.59
1:C:134:G:N2	1:C:190:U:C2	2.70	0.59
1:D:108:G:O6	1:D:214:A:C6	2.55	0.59
1:D:218:A:H2'	1:D:219:A:H8	1.67	0.59
1:C:171:A:O5'	1:C:171:A:H8	1.85	0.59
1:C:201:G:H2'	1:C:202:U:C5	2.38	0.59
1:D:281:G:H2'	1:D:282:G:H8	1.66	0.59
1:B:168:U:O2'	1:B:169:G:H5"	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:212:G:O2'	1:B:213:C:H5'	2.02	0.59
1:B:158:G:H2'	1:B:159:A:C8	2.38	0.59
1:A:194:G:H2'	1:A:195:G:H5'	1.85	0.59
1:D:104:A:N6	1:D:105:A:N1	2.50	0.59
1:D:261:A:N7	1:D:264:G:H5"	2.18	0.59
1:C:151:A:H2	1:C:225:A:C4'	2.07	0.59
1:C:222:C:O2'	1:C:223:C:H5'	2.02	0.59
1:A:292:U:H2'	1:A:293:C:H6	1.67	0.59
1:C:199:U:H3'	1:C:200:G:H5'	1.83	0.59
1:C:110:G:H2'	1:C:183:A:C2	2.38	0.59
1:B:164:G:O2'	1:B:186:A:N6	2.33	0.59
1:D:207:A:H3'	1:D:208:C:C6	2.37	0.59
1:D:255:C:O2'	1:D:273:U:H4'	2.02	0.59
1:B:270:A:C8	1:B:271:U:C2	2.91	0.59
1:A:269:G:O2'	1:A:270:A:OP1	2.21	0.59
1:D:183:A:C8	1:D:188:G:C6	2.90	0.59
1:A:256:A:OP1	1:A:256:A:C2	2.56	0.59
1:D:302:A:N3	1:D:303:G:O4'	2.36	0.59
1:B:151:A:C2	1:B:225:A:H4'	2.38	0.59
1:C:323:G:H8	1:C:323:G:O5'	1.85	0.59
1:D:229:C:O2'	1:D:230:A:H5'	2.02	0.59
1:D:135:U:H2'	1:D:136:A:C8	2.37	0.59
1:C:161:A:C2'	1:C:162:U:H5'	2.33	0.59
1:B:128:C:O2'	1:B:129:G:H5'	2.02	0.59
1:A:116:G:H1	1:A:205:U:H3	1.50	0.59
1:D:198:A:O2'	1:D:199:U:P	2.60	0.59
1:C:99:C:H3'	1:C:100:G:H5"	1.84	0.58
1:B:163:G:N7	1:B:164:G:C6	2.71	0.58
1:A:242:G:H2'	1:A:243:U:C5	2.36	0.58
1:D:186:A:OP1	1:D:187:A:OP2	2.21	0.58
1:B:227:G:C6	1:B:228:U:C4	2.91	0.58
1:B:197:C:H6	1:B:197:C:O5'	1.87	0.58
1:B:96:G:C2'	1:B:97:A:H8	2.15	0.58
1:D:173:A:H2'	1:D:174:G:H8	1.68	0.58
1:D:237:G:H2'	1:D:238:A:C8	2.38	0.58
1:A:147:G:C6	1:A:148:G:N7	2.72	0.58
1:B:281:G:C2	1:B:282:G:C4	2.91	0.58
1:B:287:U:O3'	1:B:288:G:H8	1.87	0.58
1:B:290:A:HO2'	1:B:291:U:C5'	2.16	0.58
1:D:261:A:C2'	1:D:262:C:OP1	2.50	0.58
1:A:282:G:O2'	1:A:283:A:H5'	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:261:A:C5	1:C:264:G:N7	2.72	0.58
1:B:182:U:H5"	1:B:188:G:N7	2.19	0.58
1:B:303:G:C5'	1:B:304:G:P	2.91	0.58
1:B:248:A:O2'	1:B:249:U:H3'	2.02	0.58
1:B:409:U:C2'	1:B:410:A:H5"	2.33	0.58
1:C:108:G:C2	1:C:214:A:N3	2.72	0.58
1:A:237:G:H21	1:D:276:G:H1'	1.67	0.58
1:D:276:G:H2'	1:D:277:C:C6	2.38	0.58
1:C:183:A:OP2	1:C:186:A:N7	2.37	0.58
1:C:275:G:H2'	1:C:276:G:C8	2.38	0.58
1:D:208:C:O2'	1:D:209:C:H5'	2.04	0.58
1:D:272:G:H2'	1:D:273:U:H5'	1.86	0.58
1:D:139:A:O2'	1:D:140:A:H5'	2.04	0.58
1:A:238:A:O5'	1:A:238:A:H8	1.87	0.58
1:C:269:G:H2'	1:C:270:A:H8	1.69	0.58
1:B:288:G:C2'	1:B:288:G:N3	2.67	0.58
1:A:104:A:C1'	1:A:218:A:H5'	2.31	0.58
1:C:178:A:H1'	1:C:180:G:C5	2.39	0.58
1:C:219:A:C4	1:C:220:G:C8	2.92	0.58
1:A:271:U:C4	1:A:272:G:C8	2.92	0.58
1:B:283:A:H2'	1:B:284:A:H8	1.63	0.58
1:A:408:G:H2'	1:A:409:U:C5	2.39	0.58
1:B:325:A:O5'	1:B:325:A:H8	1.87	0.58
1:B:176:G:H2'	1:B:176:G:N3	2.19	0.58
1:B:110:G:O2'	1:B:183:A:N3	2.35	0.57
1:A:132:C:H2'	1:A:133:A:C5'	2.18	0.57
1:D:149:G:C4	1:D:150:G:N7	2.72	0.57
1:C:235:G:H5'	1:C:236:A:OP2	2.04	0.57
1:D:304:G:H5"	1:D:304:G:H8	1.69	0.57
1:B:223:C:C2'	1:B:224:U:H5'	2.34	0.57
1:B:248:A:H5'	1:C:228:U:H5'	1.86	0.57
1:C:209:C:HO2'	1:C:210:G:P	2.27	0.57
1:A:256:A:C8	1:A:272:G:H4'	2.39	0.57
1:D:256:A:O2'	1:D:257:G:OP1	2.21	0.57
1:B:246:A:H2'	1:B:247:U:H6	1.65	0.57
1:C:250:G:H2'	1:C:251:G:H5'	1.85	0.57
1:C:315:C:H2'	1:C:316:C:O4'	2.04	0.57
1:C:270:A:C8	1:C:271:U:C4	2.92	0.57
1:C:272:G:N1	1:C:273:U:C5	2.72	0.57
1:B:163:G:C5	1:B:164:G:C6	2.92	0.57
1:A:183:A:H5'	1:A:188:G:C5	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:223:C:C2	1:B:251:G:N2	2.72	0.57
1:D:319:U:C5'	1:D:319:U:H6	2.17	0.57
1:D:251:G:H5'	1:D:251:G:H8	1.69	0.57
1:B:124:C:O2	1:B:125:A:N1	2.37	0.57
1:C:113:A:N3	1:C:113:A:H2'	2.18	0.57
1:D:270:A:H5"	1:D:271:U:H5	1.69	0.57
1:D:284:A:H2'	1:D:285:G:C5'	2.30	0.57
1:C:214:A:H8	1:C:214:A:H5'	1.69	0.57
1:C:281:G:H1	1:C:297:U:H3	1.51	0.57
1:C:96:G:O2'	1:C:97:A:C5'	2.52	0.57
1:B:163:G:C8	1:B:164:G:N7	2.73	0.57
1:C:172:A:H2'	1:C:173:A:C8	2.39	0.57
1:B:230:A:H2'	1:B:231:A:C8	2.36	0.57
1:B:119:G:H2'	1:B:120:U:H5'	1.87	0.57
1:C:264:G:H2'	1:C:265:A:O5'	2.04	0.57
1:C:272:G:C5	1:C:273:U:H5	2.21	0.57
1:D:257:G:C6	1:D:258:U:N3	2.72	0.57
1:C:248:A:C4	1:C:250:G:N7	2.73	0.57
1:C:318:C:C2'	1:C:319:U:C5'	2.76	0.57
1:C:329:G:H3'	1:C:330:A:H5"	1.86	0.57
1:C:127:C:O2'	1:C:128:C:P	2.62	0.57
1:C:262:C:C5	1:C:414:G:C4	2.92	0.57
1:B:103:A:O2'	1:B:104:A:C8	2.52	0.57
1:B:270:A:C8	1:B:271:U:C5	2.93	0.57
1:A:258:U:H2'	1:A:259:A:O4'	2.04	0.57
1:D:215:G:C5	1:D:216:C:C5	2.92	0.57
1:A:139:A:H1'	1:A:186:A:H5'	1.87	0.57
1:D:245:G:O2'	1:D:246:A:H5'	2.04	0.57
1:B:311:C:H2'	1:B:312:G:O4'	2.04	0.57
1:C:168:U:O2'	1:C:169:G:OP2	2.21	0.57
1:C:272:G:C4	1:C:273:U:C5	2.93	0.57
1:B:96:G:O5'	1:B:97:A:OP2	2.23	0.57
1:D:109:C:O2'	1:D:110:G:H5'	2.05	0.57
1:D:253:U:H2'	1:D:254:G:C8	2.38	0.57
1:D:257:G:H2'	1:D:258:U:H5'	1.87	0.57
1:C:170:C:O2'	1:C:171:A:H5'	2.04	0.57
1:A:103:A:O2'	1:A:104:A:C8	2.58	0.57
1:C:154:C:HO2'	1:C:155:U:H5'	1.67	0.57
1:A:138:C:C2	1:A:181:G:N2	2.73	0.57
1:D:153:A:H2'	1:D:154:C:O4'	2.04	0.57
1:C:110:G:H2'	1:C:183:A:H2	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:220:G:H5"	1:C:221:U:OP2	2.05	0.57
1:C:268:A:C6	1:C:269:G:N1	2.73	0.57
1:C:96:G:O6	1:C:279:G:C5	2.58	0.57
1:B:286:A:C2'	1:B:287:U:O4'	2.40	0.57
1:D:163:G:C6	1:D:164:G:N1	2.73	0.57
1:B:154:C:H2'	1:B:155:U:C6	2.40	0.57
1:A:163:G:H2'	1:A:164:G:C8	2.40	0.57
1:D:198:A:O2'	1:D:199:U:OP2	2.22	0.57
1:B:207:A:N3	1:B:207:A:H2'	2.20	0.57
1:C:271:U:C4	1:C:272:G:C5	2.93	0.56
1:B:275:G:H2'	1:B:276:G:C8	2.37	0.56
1:A:261:A:C4	1:A:306:A:C2	2.92	0.56
1:D:306:A:H1'	1:D:307:U:H5	1.70	0.56
1:C:243:U:O2'	1:C:244:U:H5'	2.05	0.56
1:D:321:C:O2'	1:D:322:C:H5'	2.05	0.56
1:D:222:C:H2'	1:D:223:C:C6	2.40	0.56
1:C:104:A:O2'	1:C:218:A:H5'	2.05	0.56
1:C:307:U:O2	1:C:308:A:C8	2.58	0.56
1:C:236:A:OP1	1:C:236:A:H8	1.87	0.56
1:D:205:U:C3'	1:D:206:A:H5"	2.35	0.56
1:D:154:C:H2'	1:D:155:U:C6	2.41	0.56
1:C:213:C:C3'	1:C:214:A:H5"	2.34	0.56
1:C:100:G:C6	1:C:275:G:O6	2.59	0.56
1:C:278:C:O2'	1:C:279:G:H5'	2.04	0.56
1:C:307:U:H2'	1:C:308:A:C8	2.40	0.56
1:B:258:U:H3'	1:B:259:A:C8	2.40	0.56
1:B:178:A:H2'	1:B:178:A:N3	2.20	0.56
1:A:210:G:H5"	1:A:211:C:O5'	2.05	0.56
1:D:301:A:C3'	1:D:302:A:C5'	2.67	0.56
1:C:251:G:O2'	1:C:252:A:H5'	2.05	0.56
1:A:141:G:C6	1:A:142:U:C4	2.93	0.56
1:A:178:A:H1'	1:A:180:G:C5	2.40	0.56
1:D:146:A:H2'	1:D:147:G:C8	2.40	0.56
1:B:198:A:O2'	1:B:199:U:H5"	2.05	0.56
1:A:198:A:H4'	1:A:199:U:O5'	2.05	0.56
1:C:127:C:O2'	1:C:128:C:OP1	2.23	0.56
1:A:143:C:H2'	1:A:144:U:C6	2.40	0.56
1:A:301:A:OP2	1:A:301:A:O4'	2.23	0.56
1:D:272:G:C6	1:D:273:U:C5	2.93	0.56
1:D:155:U:H2'	1:D:156:U:H6	1.71	0.56
1:C:307:U:H2'	1:C:307:U:O2	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:99:C:H1'	1:C:236:A:H61	1.70	0.56
1:B:314:A:C2'	1:B:315:C:OP1	2.53	0.56
1:B:151:A:H2'	1:B:152:A:O4'	2.06	0.56
1:B:223:C:H2'	1:B:224:U:H5'	1.88	0.56
1:D:321:C:H2'	1:D:322:C:O4'	2.05	0.56
1:B:123:A:N6	1:B:197:C:C4	2.73	0.56
1:D:200:G:O3'	1:D:201:G:O4'	2.24	0.56
1:B:179:U:C2'	1:B:180:G:OP1	2.54	0.56
1:D:302:A:O5'	1:D:303:G:P	2.64	0.56
1:C:320:C:C2'	1:C:321:C:O5'	2.54	0.56
1:D:145:C:O2'	1:D:146:A:H5'	2.04	0.56
1:D:223:C:H2'	1:D:224:U:O4'	2.05	0.56
1:C:314:A:C2'	1:C:315:C:H5'	2.34	0.56
1:A:265:A:C6	1:A:266:C:C4	2.93	0.56
1:D:208:C:OP1	1:D:305:U:OP2	2.24	0.56
1:D:281:G:H2'	1:D:282:G:C8	2.41	0.56
1:D:152:A:C6	1:D:153:A:C6	2.94	0.56
1:D:155:U:C2	1:D:156:U:C5	2.94	0.56
1:D:298:C:C4	1:D:299:A:N7	2.74	0.56
1:C:105:A:O2'	1:C:106:U:H5'	2.06	0.56
1:C:264:G:C2'	1:C:265:A:O5'	2.54	0.56
1:D:104:A:N3	1:D:217:C:O2'	2.34	0.56
1:A:104:A:C6	1:A:105:A:C6	2.94	0.56
1:D:169:G:H2'	1:D:170:C:C5	2.41	0.56
1:A:237:G:N2	1:D:276:G:H1'	2.20	0.56
1:C:110:G:N2	1:C:212:G:C4	2.73	0.56
1:C:216:C:C2'	1:C:217:C:O5'	2.54	0.56
1:B:281:G:N2	1:B:282:G:C4	2.73	0.56
1:A:270:A:C2	1:A:304:G:N2	2.74	0.56
1:C:134:G:H2'	1:C:135:U:H5'	1.87	0.56
1:B:286:A:O5'	1:B:287:U:OP2	2.23	0.56
1:D:108:G:H2'	1:D:109:C:O4'	2.05	0.56
1:A:140:A:H2'	1:A:141:G:O4'	2.06	0.56
1:C:216:C:H2'	1:C:217:C:O5'	2.06	0.56
1:B:163:G:H3'	1:B:164:G:H8	1.68	0.56
1:B:214:A:C5	1:B:215:G:N7	2.74	0.56
1:B:305:U:O5'	1:B:306:A:OP1	2.24	0.56
1:D:259:A:OP2	1:D:261:A:OP1	2.24	0.56
1:D:303:G:O3'	1:D:304:G:C4'	2.54	0.56
1:B:121:C:O2	1:B:123:A:H2	1.89	0.56
1:B:166:C:N3	1:B:167:U:O4	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:172:A:C2	1:B:173:A:C8	2.94	0.56
1:A:176:G:H2'	1:A:177:U:H6	1.71	0.56
1:C:96:G:C6	1:C:279:G:C5	2.94	0.55
1:B:304:G:H5'	1:B:305:U:OP2	2.05	0.55
1:B:97:A:N6	1:B:278:C:N3	2.54	0.55
1:D:303:G:OP1	1:D:304:G:OP1	2.23	0.55
1:C:123:A:N6	1:C:197:C:H42	2.04	0.55
1:B:238:A:H2	1:C:100:G:H1'	1.71	0.55
1:C:111:G:N2	1:C:211:C:C2	2.74	0.55
1:B:262:C:O2	1:B:262:C:H2'	2.05	0.55
1:D:262:C:H5'	1:D:263:A:OP2	2.05	0.55
1:B:317:U:H3	1:B:404:U:H3	1.54	0.55
1:A:408:G:O2'	1:A:409:U:O4'	2.22	0.55
1:D:299:A:OP1	1:D:299:A:C4'	2.54	0.55
1:B:328:G:O2'	1:B:329:G:H5'	2.06	0.55
1:B:269:G:HO2'	1:B:270:A:P	2.29	0.55
1:D:185:U:O2'	1:D:186:A:H5'	2.06	0.55
1:A:153:A:C2	1:A:250:G:N3	2.73	0.55
1:B:115:A:N3	1:B:116:G:N7	2.54	0.55
1:C:101:U:O2'	1:C:102:C:H5'	2.06	0.55
1:C:214:A:H2'	1:C:215:G:O4'	2.04	0.55
1:B:214:A:N7	1:B:215:G:N7	2.54	0.55
1:C:170:C:H2'	1:C:171:A:O4'	2.07	0.55
1:D:163:G:C3'	1:D:164:G:C8	2.89	0.55
1:D:181:G:H2'	1:D:186:A:N1	2.22	0.55
1:C:326:A:H2'	1:C:327:G:H5'	1.88	0.55
1:C:330:A:N6	1:C:331:G:C6	2.74	0.55
1:D:324:A:N3	1:D:324:A:H2'	2.21	0.55
1:D:408:G:H5'	1:D:409:U:OP2	2.07	0.55
1:C:258:U:O2'	1:C:259:A:OP1	2.23	0.55
1:C:270:A:H3'	1:C:271:U:H6	1.72	0.55
1:A:260:C:O2'	1:A:305:U:H2'	2.07	0.55
1:C:170:C:H2'	1:C:171:A:C5'	2.36	0.55
1:D:319:U:C2'	1:D:320:C:C6	2.89	0.55
1:D:130:U:H2'	1:D:131:U:C5'	2.30	0.55
1:D:149:G:C5	1:D:150:G:N7	2.75	0.55
1:D:153:A:C2	1:D:251:G:O4'	2.59	0.55
1:A:119:G:C6	1:A:120:U:C4	2.95	0.55
1:A:236:A:H2'	1:A:237:G:O4'	2.07	0.55
1:B:148:G:C6	1:B:149:G:C8	2.94	0.55
1:B:222:C:H6	1:B:222:C:O5'	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:276:G:H2'	1:A:277:C:O4'	2.06	0.55
1:B:186:A:O5'	1:B:186:A:H8	1.90	0.55
1:D:303:G:C5'	1:D:304:G:OP2	2.47	0.55
1:B:166:C:C4	1:B:167:U:C4	2.95	0.55
1:A:99:C:C2'	1:A:100:G:O5'	2.55	0.55
1:B:237:G:H22	1:C:99:C:H1'	1.71	0.55
1:A:183:A:O4'	1:A:188:G:C2	2.59	0.55
1:A:187:A:H5'	1:A:188:G:OP2	2.06	0.55
1:D:212:G:C2'	1:D:213:C:H5'	2.35	0.55
1:D:260:C:O2'	1:D:261:A:C5'	2.55	0.55
1:A:104:A:H2'	1:A:105:A:C8	2.42	0.55
1:D:187:A:O2'	1:D:188:G:OP1	2.25	0.55
1:C:331:G:N2	1:C:403:U:C2	2.75	0.55
1:A:194:G:C2'	1:A:195:G:H5'	2.36	0.55
1:D:407:A:C5'	1:D:408:G:OP2	2.55	0.55
1:B:182:U:H5"	1:B:188:G:C8	2.42	0.55
1:B:218:A:H5"	1:B:219:A:P	2.46	0.55
1:D:306:A:OP2	1:D:414:G:O2'	2.24	0.55
1:A:248:A:O2'	1:A:249:U:O5'	2.25	0.55
1:C:158:G:H2'	1:C:159:A:H8	1.72	0.55
1:D:299:A:H4'	1:D:299:A:OP1	2.07	0.55
1:C:267:U:C2'	1:C:268:A:O5'	2.54	0.55
1:B:107:U:O2'	1:B:108:G:P	2.65	0.55
1:B:270:A:N7	1:B:271:U:N3	2.55	0.55
1:A:262:C:O2'	1:A:263:A:OP1	2.24	0.55
1:A:303:G:OP1	1:A:304:G:OP1	2.24	0.55
1:B:287:U:O3'	1:B:288:G:C8	2.59	0.55
1:D:167:U:H1'	1:D:171:A:H62	1.70	0.55
1:A:412:U:C6	1:A:412:U:O5'	2.60	0.55
1:B:202:U:C2	1:B:203:C:C5	2.94	0.55
1:C:261:A:C6	1:C:264:G:N7	2.75	0.55
1:C:272:G:N3	1:C:273:U:C6	2.76	0.55
1:B:277:C:O2'	1:B:278:C:H5'	2.07	0.55
1:D:256:A:C2'	1:D:257:G:OP1	2.55	0.55
1:B:314:A:C3'	1:B:315:C:H5	2.14	0.55
1:D:164:G:C2'	1:D:186:A:N6	2.70	0.55
1:C:331:G:N1	1:C:403:U:C4	2.75	0.55
1:D:409:U:C2'	1:D:410:A:H5"	2.36	0.55
1:D:410:A:H3'	1:D:411:C:C6	2.42	0.55
1:D:223:C:H2'	1:D:224:U:C6	2.41	0.55
1:C:194:G:C2'	1:C:195:G:H5'	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:99:C:H2'	1:A:100:G:O5'	2.06	0.55
1:C:212:G:N2	1:C:213:C:C2	2.75	0.54
1:C:120:U:H2'	1:C:121:C:C6	2.42	0.54
1:A:173:A:N7	1:A:174:G:N7	2.55	0.54
1:C:124:C:H41	1:C:196:A:N6	2.05	0.54
1:B:261:A:C4	1:B:306:A:C2	2.95	0.54
1:C:248:A:HO2'	1:C:249:U:P	2.30	0.54
1:A:215:G:O2'	1:A:216:C:H5'	2.07	0.54
1:A:151:A:N3	1:A:226:A:H1'	2.22	0.54
1:D:134:G:H2'	1:D:135:U:C6	2.42	0.54
1:B:300:U:O2	1:B:300:U:C2'	2.50	0.54
1:D:108:G:H2'	1:D:109:C:O5'	2.06	0.54
1:C:318:C:C2	1:C:319:U:C5	2.96	0.54
1:B:179:U:H2'	1:B:180:G:OP1	2.07	0.54
1:B:184:A:H2	1:B:212:G:N3	2.05	0.54
1:D:304:G:H5'	1:D:305:U:P	2.47	0.54
1:D:139:A:N7	1:D:186:A:H8	2.06	0.54
1:C:105:A:H2'	1:C:106:U:C5'	2.35	0.54
1:C:245:G:O2'	1:C:246:A:H5'	2.08	0.54
1:A:170:C:H2'	1:A:170:C:O2	2.06	0.54
1:B:256:A:C2'	1:B:257:G:OP1	2.56	0.54
1:A:190:U:H6	1:A:190:U:O5'	1.91	0.54
1:A:167:U:O2'	1:A:168:U:OP2	2.22	0.54
1:B:119:G:C6	1:B:120:U:C4	2.96	0.54
1:A:269:G:O2'	1:A:270:A:O4'	2.25	0.54
1:A:271:U:H1'	1:A:303:G:C8	2.42	0.54
1:D:108:G:C2'	1:D:109:C:O5'	2.56	0.54
1:D:311:C:C3'	1:D:312:G:H5"	2.38	0.54
1:B:314:A:O2'	1:B:315:C:P	2.66	0.54
1:B:226:A:N7	1:B:227:G:N7	2.56	0.54
1:A:192:A:H2'	1:A:193:C:C6	2.42	0.54
1:B:260:C:O2'	1:B:261:A:H5'	2.08	0.54
1:A:168:U:O2'	1:A:169:G:OP2	2.23	0.54
1:D:150:G:H2'	1:D:151:A:H5"	1.89	0.54
1:A:116:G:H8	1:A:116:G:O5'	1.90	0.54
1:A:197:C:O2'	1:A:200:G:H1'	2.07	0.54
1:C:209:C:O2'	1:C:210:G:P	2.66	0.54
1:C:255:C:H1'	1:C:273:U:H5'	1.90	0.54
1:B:139:A:C2	1:B:140:A:C8	2.96	0.54
1:B:180:G:C2'	1:B:181:G:O5'	2.55	0.54
1:A:104:A:H1'	1:A:218:A:C5'	2.32	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:108:G:C2	1:A:109:C:C1'	2.91	0.54
1:C:320:C:H2'	1:C:321:C:O5'	2.07	0.54
1:C:200:G:O5'	1:C:200:G:H8	1.91	0.54
1:B:258:U:H2'	1:B:259:A:O4'	2.08	0.54
1:B:151:A:C2	1:B:226:A:C8	2.95	0.54
1:A:169:G:N2	1:A:170:C:H1'	2.23	0.54
1:A:158:G:H2'	1:A:159:A:C8	2.43	0.54
1:B:115:A:H8	1:B:115:A:O5'	1.90	0.54
1:C:157:U:O2'	1:C:158:G:H5'	2.08	0.54
1:A:253:U:O2'	1:A:254:G:H5'	2.09	0.53
1:C:293:C:O2'	1:C:294:U:H5'	2.08	0.53
1:B:234:G:C2'	1:B:235:G:H5'	2.38	0.53
1:A:187:A:C6	1:A:189:C:N4	2.76	0.53
1:D:219:A:H2'	1:D:220:G:O5'	2.08	0.53
1:C:102:C:C2'	1:C:103:A:OP1	2.55	0.53
1:C:139:A:H1'	1:C:186:A:H5'	1.90	0.53
1:A:270:A:C5	1:A:271:U:C4	2.97	0.53
1:D:112:G:H2'	1:D:113:A:O4'	2.07	0.53
1:D:269:G:C8	1:D:269:G:O5'	2.59	0.53
1:C:166:C:H2'	1:C:167:U:C6	2.43	0.53
1:D:185:U:O2'	1:D:186:A:C5'	2.56	0.53
1:B:155:U:C2'	1:B:156:U:O5'	2.56	0.53
1:B:249:U:O2	1:B:249:U:C2'	2.53	0.53
1:B:228:U:H4'	1:C:247:U:O2'	2.09	0.53
1:A:229:C:H2'	1:A:230:A:C8	2.42	0.53
1:B:197:C:H2'	1:B:198:A:H8	1.72	0.53
1:C:178:A:N3	1:C:180:G:N1	2.56	0.53
1:B:107:U:H4'	1:B:108:G:OP1	2.09	0.53
1:B:256:A:O2'	1:B:257:G:OP1	2.23	0.53
1:B:271:U:C5	1:B:272:G:N7	2.76	0.53
1:D:257:G:C6	1:D:258:U:C4	2.95	0.53
1:D:269:G:O2'	1:D:270:A:OP1	2.26	0.53
1:D:138:C:O2'	1:D:139:A:P	2.66	0.53
1:B:199:U:C2'	1:B:200:G:OP1	2.56	0.53
1:B:238:A:H2	1:C:100:G:C1'	2.21	0.53
1:D:113:A:O2'	1:D:207:A:N6	2.40	0.53
1:D:219:A:C4	1:D:220:G:C8	2.97	0.53
1:D:300:U:O2'	1:D:301:A:OP2	2.25	0.53
1:D:183:A:H5'	1:D:184:A:OP2	2.07	0.53
1:A:108:G:N2	1:A:109:C:H1'	2.22	0.53
1:D:319:U:O2'	1:D:320:C:OP1	2.25	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:159:A:C4	1:D:160:G:N7	2.76	0.53
1:B:167:U:H1'	1:B:171:A:C6	2.43	0.53
1:B:182:U:O2'	1:B:186:A:H2'	2.09	0.53
1:B:272:G:C2'	1:B:273:U:H5'	2.39	0.53
1:A:264:G:C2	1:A:265:A:C5	2.97	0.53
1:D:139:A:O2'	1:D:185:U:O2	2.25	0.53
1:B:212:G:C2'	1:B:213:C:H5'	2.39	0.53
1:B:218:A:N1	1:B:219:A:C2	2.77	0.53
1:D:269:G:C2'	1:D:270:A:O5'	2.56	0.53
1:D:164:G:H2'	1:D:186:A:N6	2.23	0.53
1:B:249:U:H4'	1:B:250:G:OP1	2.07	0.53
1:C:324:A:O2'	1:C:325:A:OP1	2.22	0.53
1:A:244:U:H2'	1:A:245:G:H8	1.72	0.53
1:B:157:U:C2	1:B:158:G:C8	2.97	0.53
1:D:248:A:O2'	1:D:249:U:O5'	2.25	0.53
1:C:313:G:H3'	1:C:314:A:H8	1.73	0.53
1:B:294:U:H2'	1:B:295:U:C6	2.43	0.53
1:C:110:G:N2	1:C:212:G:N9	2.57	0.53
1:B:307:U:H2'	1:B:308:A:O4'	2.09	0.53
1:A:303:G:N2	1:A:304:G:H1'	2.23	0.53
1:C:132:C:C3'	1:C:133:A:C5'	2.84	0.53
1:D:303:G:OP1	1:D:304:G:P	2.67	0.53
1:D:184:A:P	1:D:184:A:C8	3.02	0.53
1:C:222:C:N3	1:C:252:A:C2	2.77	0.53
1:C:329:G:H2'	1:C:330:A:C4'	2.39	0.53
1:A:157:U:H2'	1:A:158:G:H8	1.73	0.53
1:D:227:G:H2'	1:D:228:U:H6	1.73	0.53
1:B:295:U:C2'	1:B:296:C:O5'	2.57	0.53
1:D:194:G:H2'	1:D:195:G:O4'	2.08	0.53
1:D:130:U:H2'	1:D:130:U:O2	2.09	0.53
1:C:305:U:C2'	1:C:305:U:O2	2.56	0.53
1:C:116:G:C2'	1:C:117:G:H5"	2.36	0.53
1:D:157:U:O2	1:D:158:G:C8	2.62	0.53
1:B:125:A:N7	1:B:324:A:N3	2.56	0.53
1:B:170:C:H3'	1:B:171:A:H8	1.74	0.53
1:B:219:A:C8	1:B:220:G:C8	2.97	0.52
1:B:302:A:N1	1:B:303:G:H1'	2.24	0.52
1:D:270:A:H2'	1:D:271:U:O4'	2.08	0.52
1:C:270:A:H2'	1:C:271:U:C6	2.44	0.52
1:C:302:A:C3'	1:C:303:G:C5'	2.78	0.52
1:B:255:C:C4	1:B:257:G:N9	2.77	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:279:G:O2'	1:B:280:G:C5'	2.57	0.52
1:C:174:G:H2'	1:C:175:G:H8	1.73	0.52
1:C:127:C:H2'	1:C:128:C:H6	1.74	0.52
1:B:139:A:H5'	1:B:140:A:OP2	2.09	0.52
1:B:183:A:C2	1:B:184:A:C2	2.97	0.52
1:D:108:G:C6	1:D:214:A:N1	2.78	0.52
1:B:226:A:C4	1:B:227:G:C8	2.97	0.52
1:C:107:U:O2'	1:C:108:G:P	2.67	0.52
1:C:108:G:C2	1:C:214:A:C2	2.97	0.52
1:C:184:A:OP1	1:C:186:A:OP1	2.27	0.52
1:B:269:G:N2	1:B:270:A:C5	2.78	0.52
1:B:155:U:H2'	1:B:156:U:O5'	2.09	0.52
1:D:318:C:H2'	1:D:319:U:H6	1.74	0.52
1:D:325:A:C2	1:D:326:A:C2	2.97	0.52
1:A:116:G:O2'	1:A:117:G:H5'	2.09	0.52
1:B:294:U:O2'	1:B:295:U:H5'	2.08	0.52
1:D:231:A:H2'	1:D:232:C:O4'	2.10	0.52
1:B:108:G:C6	1:B:214:A:C2	2.97	0.52
1:C:151:A:C4	1:C:226:A:H1'	2.45	0.52
1:D:226:A:N3	1:D:226:A:H2'	2.24	0.52
1:C:105:A:C8	1:C:105:A:H3'	2.44	0.52
1:B:269:G:C2	1:B:270:A:N7	2.78	0.52
1:B:288:G:O2'	1:B:288:G:N3	2.41	0.52
1:D:242:G:H2'	1:D:243:U:H6	1.74	0.52
1:C:311:C:H2'	1:C:312:G:H8	1.75	0.52
1:B:299:A:HO2'	1:B:300:U:P	2.33	0.52
1:B:97:A:C2	1:B:98:C:C2	2.98	0.52
1:D:178:A:C2	1:D:180:G:N1	2.77	0.52
1:D:149:G:C4	1:D:150:G:C8	2.98	0.52
1:D:238:A:H2'	1:D:240:C:O4'	2.10	0.52
1:C:163:G:N7	1:C:164:G:C6	2.77	0.52
1:B:219:A:N7	1:B:220:G:N7	2.58	0.52
1:B:307:U:H6	1:B:307:U:H5'	1.75	0.52
1:A:260:C:O2'	1:A:261:A:O5'	2.28	0.52
1:D:165:C:H4'	1:D:181:G:O3'	2.10	0.52
1:C:326:A:C2'	1:C:327:G:H5'	2.39	0.52
1:D:318:C:C2	1:D:319:U:C5	2.97	0.52
1:B:167:U:OP1	1:B:167:U:H6	1.93	0.52
1:C:309:G:HO2'	1:C:310:U:H5'	1.72	0.52
1:D:104:A:H2	1:D:217:C:O2	1.93	0.52
1:D:324:A:C8	1:D:324:A:OP1	2.63	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:172:A:C2	1:A:173:A:C8	2.98	0.52
1:D:148:G:C6	1:D:149:G:N7	2.78	0.52
1:C:270:A:N1	1:C:307:U:C4	2.77	0.52
1:B:290:A:O2'	1:B:291:U:O5'	2.27	0.52
1:B:225:A:O2'	1:B:226:A:OP2	2.28	0.52
1:D:170:C:H2'	1:D:171:A:O4'	2.10	0.52
1:C:324:A:H2'	1:C:325:A:O4'	2.10	0.52
1:A:161:A:O2'	1:A:162:U:H5'	2.09	0.52
1:C:194:G:H2'	1:C:195:G:H5'	1.92	0.52
1:C:184:A:OP2	1:C:186:A:OP2	2.27	0.51
1:C:100:G:C6	1:C:275:G:C6	2.98	0.51
1:C:97:A:N1	1:C:278:C:C2	2.78	0.51
1:C:96:G:N3	1:C:97:A:C8	2.78	0.51
1:A:271:U:O4	1:A:272:G:C8	2.62	0.51
1:D:304:G:C3'	1:D:306:A:OP1	2.58	0.51
1:B:198:A:C2'	1:B:199:U:OP2	2.58	0.51
1:A:196:A:C6	1:A:197:C:N4	2.78	0.51
1:C:101:U:H3'	1:C:101:U:C6	2.44	0.51
1:C:261:A:C8	1:C:264:G:OP2	2.62	0.51
1:C:272:G:C6	1:C:273:U:C4	2.97	0.51
1:C:270:A:C2	1:C:307:U:C6	2.98	0.51
1:B:305:U:H2'	1:B:305:U:O2	2.09	0.51
1:A:132:C:O2'	1:A:133:A:OP1	2.23	0.51
1:D:103:A:C6	1:D:269:G:N7	2.78	0.51
1:A:96:G:C8	1:A:300:U:H1'	2.46	0.51
1:A:138:C:HO2'	1:A:139:A:P	2.33	0.51
1:D:160:G:O2'	1:D:161:A:H5'	2.10	0.51
1:B:147:G:H2'	1:B:148:G:O4'	2.10	0.51
1:C:107:U:N3	1:C:215:G:N2	2.58	0.51
1:C:255:C:O2'	1:C:256:A:O5'	2.24	0.51
1:C:311:C:H2'	1:C:312:G:O5'	2.10	0.51
1:A:306:A:H1'	1:A:307:U:C5	2.37	0.51
1:D:111:G:C6	1:D:211:C:N3	2.78	0.51
1:D:270:A:C8	1:D:271:U:N3	2.78	0.51
1:A:104:A:C2	1:A:105:A:C4	2.98	0.51
1:B:248:A:C8	1:B:250:G:N7	2.78	0.51
1:C:251:G:H8	1:C:251:G:H5'	1.76	0.51
1:B:166:C:H2'	1:B:167:U:OP1	2.10	0.51
1:A:114:A:H3'	1:A:115:A:C8	2.44	0.51
1:B:247:U:O2'	1:C:228:U:C4'	2.47	0.51
1:B:248:A:N7	1:B:250:G:C5	2.79	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:232:C:N4	1:A:233:A:N7	2.59	0.51
1:A:167:U:H4'	1:A:168:U:H5"	1.92	0.51
1:A:152:A:C2	1:A:248:A:N6	2.78	0.51
1:A:152:A:O2'	1:A:153:A:H5'	2.10	0.51
1:D:150:G:N2	1:D:152:A:C5'	2.73	0.51
1:D:251:G:C2'	1:D:252:A:O5'	2.59	0.51
1:B:215:G:O2'	1:B:216:C:H5'	2.10	0.51
1:B:300:U:H5'	1:B:301:A:H5'	1.91	0.51
1:A:182:U:H3'	1:A:188:G:C8	2.45	0.51
1:A:212:G:C2	1:A:213:C:C5	2.99	0.51
1:A:255:C:O2	1:A:273:U:H4'	2.11	0.51
1:A:313:G:H5'	1:A:314:A:OP1	2.10	0.51
1:D:163:G:O3'	1:D:164:G:C8	2.64	0.51
1:A:154:C:O2'	1:A:155:U:H5'	2.10	0.51
1:C:186:A:H5"	1:C:187:A:OP2	2.11	0.51
1:B:211:C:O2'	1:B:212:G:H5'	2.11	0.51
1:D:180:G:H2'	1:D:181:G:O4'	2.10	0.51
1:C:225:A:O2'	1:C:226:A:OP2	2.28	0.51
1:C:318:C:H2'	1:C:319:U:H6	1.75	0.51
1:A:194:G:O2'	1:A:195:G:H5'	2.10	0.51
1:B:124:C:H2'	1:B:125:A:C2	2.46	0.51
1:B:167:U:OP1	1:B:167:U:C6	2.64	0.51
1:C:220:G:N3	1:C:220:G:H2'	2.25	0.51
1:C:261:A:C5	1:C:264:G:C8	2.98	0.51
1:C:170:C:C2'	1:C:171:A:H5'	2.41	0.51
1:B:128:C:H2'	1:B:129:G:C5'	2.41	0.51
1:C:257:G:C6	1:C:258:U:C4	2.98	0.51
1:A:125:A:N7	1:A:324:A:H1'	2.25	0.51
1:B:323:G:N2	1:B:326:A:H62	2.08	0.51
1:C:124:C:H5	1:C:196:A:N6	2.08	0.51
1:C:301:A:C6	1:C:302:A:C2	2.99	0.51
1:C:311:C:H2'	1:C:312:G:O4'	2.09	0.51
1:B:270:A:C3'	1:B:271:U:C6	2.92	0.51
1:D:184:A:H3'	1:D:185:U:H5"	1.93	0.51
1:B:151:A:N1	1:B:152:A:C2	2.79	0.51
1:C:248:A:O2'	1:C:249:U:P	2.68	0.51
1:C:323:G:C2	1:C:325:A:C8	2.98	0.51
1:C:198:A:H1'	1:C:200:G:O4'	2.11	0.51
1:C:257:G:O2'	1:C:258:U:P	2.69	0.51
1:C:259:A:C3'	1:C:260:C:H5"	2.35	0.51
1:B:195:G:O2'	1:B:196:A:H5'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:204:C:C2	1:B:205:U:C6	2.99	0.51
1:B:286:A:H3'	1:B:287:U:C5'	2.29	0.51
1:D:269:G:N3	1:D:270:A:C8	2.79	0.51
1:D:148:G:C5	1:D:149:G:N7	2.79	0.51
1:B:168:U:O2'	1:B:169:G:OP2	2.28	0.51
1:C:127:C:H2'	1:C:128:C:C6	2.46	0.51
1:B:292:U:H2'	1:B:293:C:H5'	1.92	0.51
1:D:100:G:N3	1:D:275:G:C2	2.79	0.51
1:B:102:C:C5'	1:B:103:A:OP2	2.59	0.51
1:B:186:A:OP1	1:B:187:A:OP1	2.28	0.51
1:B:183:A:O4'	1:B:188:G:C2	2.64	0.51
1:B:248:A:C8	1:B:250:G:C5	2.99	0.51
1:A:412:U:H6	1:A:412:U:O5'	1.94	0.51
1:A:222:C:H2'	1:A:223:C:C6	2.44	0.51
1:A:327:G:H2'	1:A:328:G:H8	1.76	0.51
1:B:258:U:O4	1:B:259:A:C6	2.64	0.50
1:D:251:G:O2'	1:D:252:A:O5'	2.24	0.50
1:C:193:C:O2'	1:C:194:G:H5'	2.11	0.50
1:A:127:C:C2'	1:A:128:C:H5'	2.41	0.50
1:A:255:C:N4	1:A:257:G:H1'	2.26	0.50
1:A:265:A:O2'	1:A:266:C:H5'	2.10	0.50
1:A:292:U:H2'	1:A:293:C:C6	2.45	0.50
1:C:198:A:O2'	1:C:199:U:P	2.69	0.50
1:A:125:A:H5'	1:A:126:G:OP2	2.11	0.50
1:B:184:A:C2	1:B:212:G:N3	2.80	0.50
1:D:262:C:C3'	1:D:263:A:H5"	2.40	0.50
1:D:103:A:N6	1:D:269:G:C8	2.79	0.50
1:D:178:A:N3	1:D:180:G:N1	2.59	0.50
1:A:96:G:C2	1:A:97:A:C5	3.00	0.50
1:C:319:U:H2'	1:C:320:C:C5'	2.41	0.50
1:C:193:C:H2'	1:C:194:G:C8	2.45	0.50
1:B:235:G:N2	1:B:240:C:C4	2.79	0.50
1:D:231:A:C6	1:D:232:C:C4	3.00	0.50
1:C:138:C:O2'	1:C:139:A:OP2	2.20	0.50
1:A:271:U:C6	1:A:271:U:OP1	2.63	0.50
1:D:178:A:N3	1:D:180:G:C6	2.80	0.50
1:D:185:U:H6	1:D:185:U:O5'	1.93	0.50
1:A:407:A:OP2	1:A:408:G:OP1	2.29	0.50
1:C:319:U:C6	1:C:319:U:H5'	2.47	0.50
1:D:136:A:H2'	1:D:137:C:H5'	1.93	0.50
1:C:100:G:C2	1:C:275:G:C6	2.99	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:302:A:O5'	1:C:303:G:OP2	2.29	0.50
1:B:103:A:O2'	1:B:104:A:O5'	2.28	0.50
1:B:269:G:O2'	1:B:270:A:P	2.69	0.50
1:A:193:C:H2'	1:A:194:G:C8	2.44	0.50
1:D:150:G:H21	1:D:152:A:C5'	2.24	0.50
1:D:204:C:O2'	1:D:205:U:H5'	2.11	0.50
1:C:154:C:C2	1:C:155:U:C6	3.00	0.50
1:C:119:G:H1	1:C:202:U:H3	1.60	0.50
1:A:158:G:H2'	1:A:159:A:H8	1.75	0.50
1:B:410:A:OP1	1:B:410:A:H4'	2.12	0.50
1:C:100:G:C2	1:C:101:U:C2	3.00	0.50
1:B:107:U:O4'	1:B:107:U:OP1	2.30	0.50
1:B:271:U:C4	1:B:272:G:C5	3.00	0.50
1:D:254:G:C5'	1:D:255:C:OP1	2.55	0.50
1:A:214:A:H2'	1:A:215:G:C8	2.45	0.50
1:C:198:A:O2'	1:C:199:U:O5'	2.29	0.50
1:C:210:G:H5'	1:C:211:C:H5'	1.94	0.50
1:B:138:C:O2'	1:B:164:G:N2	2.44	0.50
1:A:187:A:C5	1:A:189:C:C4	3.00	0.50
1:C:132:C:H3'	1:C:133:A:C5'	2.42	0.50
1:D:109:C:N4	1:D:213:C:H42	2.10	0.50
1:D:312:G:N3	1:D:313:G:H1'	2.27	0.50
1:C:154:C:HO2'	1:C:251:G:HO2'	1.56	0.50
1:D:251:G:C4	1:D:252:A:C8	2.99	0.50
1:A:237:G:N2	1:D:99:C:O2	2.41	0.50
1:C:101:U:C3'	1:C:101:U:C6	2.95	0.50
1:B:258:U:C5	1:B:259:A:C5	2.99	0.50
1:A:255:C:N4	1:A:257:G:C4	2.80	0.50
1:D:219:A:H2'	1:D:220:G:O4'	2.12	0.50
1:D:258:U:O2'	1:D:259:A:OP1	2.27	0.50
1:D:268:A:H2'	1:D:269:G:C8	2.46	0.50
1:D:269:G:C2	1:D:270:A:N7	2.79	0.50
1:A:191:G:H2'	1:A:192:A:C5'	2.30	0.50
1:A:164:G:HO2'	1:A:165:C:P	2.34	0.50
1:A:226:A:H3'	1:A:227:G:H8	1.74	0.50
1:D:411:C:H6	1:D:411:C:O5'	1.95	0.50
1:B:245:G:H2'	1:B:246:A:O4'	2.12	0.49
1:C:321:C:O2'	1:C:322:C:H5'	2.11	0.49
1:D:130:U:C2'	1:D:131:U:H5'	2.34	0.49
1:A:168:U:O2'	1:A:169:G:P	2.70	0.49
1:D:153:A:C5	1:D:154:C:H1'	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:119:G:H1	1:A:202:U:H3	1.58	0.49
1:D:200:G:H2'	1:D:201:G:C1'	2.42	0.49
1:A:237:G:H1	1:D:99:C:H1'	1.77	0.49
1:A:275:G:C6	1:A:276:G:N7	2.79	0.49
1:B:281:G:O2'	1:B:282:G:OP1	2.29	0.49
1:B:228:U:C2	1:B:229:C:C5	2.99	0.49
1:C:222:C:N3	1:C:252:A:N1	2.59	0.49
1:A:214:A:O2'	1:A:215:G:H5'	2.12	0.49
1:B:219:A:C2'	1:B:220:G:H5"	2.39	0.49
1:B:287:U:C3'	1:B:288:G:C8	2.84	0.49
1:D:302:A:H3'	1:D:303:G:O4'	2.12	0.49
1:D:302:A:H3'	1:D:303:G:C4'	2.42	0.49
1:B:316:C:C3'	1:B:317:U:C5'	2.75	0.49
1:B:225:A:C6	1:B:247:U:C4	3.01	0.49
1:C:257:G:H5'	1:C:257:G:H8	1.76	0.49
1:D:225:A:O2'	1:D:226:A:OP2	2.29	0.49
1:D:222:C:C2	1:D:252:A:C2	3.00	0.49
1:B:132:C:C2'	1:B:133:A:O5'	2.60	0.49
1:C:105:A:N6	1:C:106:U:N3	2.60	0.49
1:C:281:G:H2'	1:C:282:G:O4'	2.11	0.49
1:B:102:C:O2'	1:B:219:A:H1'	2.12	0.49
1:D:300:U:OP2	1:D:300:U:O4'	2.30	0.49
1:C:170:C:O5'	1:C:170:C:H6	1.95	0.49
1:B:154:C:C2	1:B:155:U:C5	3.00	0.49
1:B:407:A:H4'	1:B:407:A:OP2	2.10	0.49
1:B:311:C:H2'	1:B:312:G:O5'	2.11	0.49
1:B:214:A:C6	1:B:215:G:C5	3.00	0.49
1:D:124:C:O2	1:D:125:A:C2	2.66	0.49
1:D:262:C:O2	1:D:262:C:C2'	2.55	0.49
1:D:184:A:P	1:D:184:A:H8	2.35	0.49
1:D:182:U:H5'	1:D:186:A:N1	2.27	0.49
1:A:163:G:N7	1:A:164:G:O6	2.46	0.49
1:A:172:A:H2	1:A:173:A:C8	2.30	0.49
1:B:199:U:O2'	1:B:200:G:OP1	2.28	0.49
1:B:408:G:H8	1:B:408:G:O5'	1.95	0.49
1:B:222:C:O2	1:B:252:A:C2	2.66	0.49
1:C:101:U:C4	1:C:102:C:N4	2.77	0.49
1:B:163:G:C5	1:B:164:G:C5	3.00	0.49
1:B:272:G:H2'	1:B:273:U:H5'	1.93	0.49
1:D:222:C:H2'	1:D:223:C:H6	1.77	0.49
1:C:271:U:C4	1:C:272:G:N7	2.80	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:307:U:O2'	1:C:308:A:H5'	2.12	0.49
1:B:261:A:N7	1:B:264:G:H5"	2.28	0.49
1:A:268:A:C2	1:A:308:A:C2	3.01	0.49
1:D:214:A:C6	1:D:215:G:C5	3.00	0.49
1:D:255:C:C4	1:D:257:G:C4	3.00	0.49
1:D:103:A:N6	1:D:269:G:N7	2.60	0.49
1:A:174:G:C5	1:A:175:G:N7	2.81	0.49
1:C:405:G:H2'	1:C:406:G:H8	1.74	0.49
1:C:314:A:H2'	1:C:315:C:H5'	1.93	0.49
1:D:135:U:H2'	1:D:136:A:H8	1.77	0.49
1:C:210:G:H5'	1:C:211:C:C5'	2.42	0.49
1:B:185:U:O2'	1:B:186:A:H5'	2.13	0.49
1:A:302:A:C2	1:A:303:G:C1'	2.95	0.49
1:C:132:C:H3'	1:C:133:A:H5"	1.93	0.49
1:C:176:G:C6	1:C:177:U:C4	3.01	0.49
1:C:96:G:H8	1:C:96:G:O5'	1.95	0.49
1:C:96:G:N2	1:C:97:A:C4	2.81	0.49
1:D:264:G:C2	1:D:265:A:N7	2.81	0.49
1:C:171:A:O2'	1:C:172:A:OP2	2.31	0.49
1:A:106:U:O4'	1:A:106:U:O2	2.28	0.49
1:D:317:U:O4	1:D:404:U:O4	2.31	0.49
1:C:124:C:C5	1:C:196:A:N6	2.79	0.49
1:C:314:A:O2'	1:C:315:C:H5'	2.12	0.49
1:B:219:A:H3'	1:B:220:G:H5'	1.81	0.49
1:D:262:C:C5'	1:D:263:A:OP2	2.60	0.49
1:D:255:C:C1'	1:D:273:U:H4'	2.38	0.49
1:A:104:A:N1	1:A:105:A:C2	2.81	0.49
1:B:226:A:C8	1:B:227:G:N7	2.80	0.49
1:C:154:C:O5'	1:C:154:C:H6	1.96	0.49
1:A:96:G:H5'	1:A:300:U:HO2'	1.74	0.49
1:D:319:U:C3'	1:D:320:C:C6	2.96	0.49
1:A:194:G:H2'	1:A:195:G:C5'	2.42	0.49
1:B:166:C:H2'	1:B:167:U:H5	1.77	0.49
1:C:298:C:H2'	1:C:299:A:C8	2.48	0.49
1:D:136:A:N6	1:D:137:C:C4	2.80	0.49
1:B:281:G:N3	1:B:282:G:C8	2.81	0.48
1:B:281:G:O2'	1:B:282:G:P	2.71	0.48
1:A:262:C:C2'	1:A:263:A:H5"	2.42	0.48
1:C:172:A:N3	1:C:173:A:C8	2.81	0.48
1:D:97:A:H3'	1:D:98:C:H6	1.78	0.48
1:D:148:G:C6	1:D:149:G:C5	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:199:U:H6	1:A:199:U:O5'	1.96	0.48
1:B:198:A:H1'	1:B:200:G:H1'	1.95	0.48
1:B:166:C:H2'	1:B:167:U:C5	2.48	0.48
1:B:240:C:H2'	1:B:241:U:H6	1.76	0.48
1:C:262:C:C2'	1:C:262:C:O2	2.61	0.48
1:C:261:A:O2'	1:C:262:C:O5'	2.24	0.48
1:C:269:G:O2'	1:C:270:A:O5'	2.31	0.48
1:C:270:A:H3'	1:C:271:U:C6	2.48	0.48
1:D:269:G:HO2'	1:D:270:A:C4'	2.26	0.48
1:A:104:A:H2'	1:A:105:A:C1'	2.42	0.48
1:A:240:C:H2'	1:A:241:U:C6	2.46	0.48
1:D:150:G:C3'	1:D:151:A:C5'	2.91	0.48
1:C:265:A:H2'	1:C:266:C:O4'	2.13	0.48
1:C:272:G:N1	1:C:273:U:C4	2.82	0.48
1:A:269:G:O5'	1:A:269:G:C8	2.58	0.48
1:D:302:A:O3'	1:D:303:G:H4'	2.12	0.48
1:B:227:G:C2	1:B:228:U:C2	3.01	0.48
1:B:248:A:H5'	1:C:228:U:C5'	2.43	0.48
1:C:200:G:H2'	1:C:201:G:C8	2.48	0.48
1:A:139:A:C2'	1:A:139:A:N3	2.74	0.48
1:D:246:A:H2'	1:D:247:U:H6	1.78	0.48
1:B:122:A:O2'	1:B:123:A:O4'	2.24	0.48
1:D:199:U:H2'	1:D:200:G:OP1	2.13	0.48
1:A:114:A:H2'	1:A:114:A:N3	2.28	0.48
1:C:162:U:C2	1:C:163:G:H1'	2.48	0.48
1:C:308:A:O2'	1:C:309:G:H5'	2.14	0.48
1:A:264:G:C2	1:A:265:A:N7	2.82	0.48
1:D:213:C:C2'	1:D:214:A:O5'	2.62	0.48
1:B:316:C:H2'	1:B:317:U:O4'	2.14	0.48
1:C:260:C:H1'	1:C:305:U:N3	2.28	0.48
1:B:326:A:H8	1:B:326:A:H3'	1.78	0.48
1:D:135:U:H2'	1:D:136:A:O4'	2.13	0.48
1:C:220:G:C4	1:C:221:U:C5	3.01	0.48
1:C:99:C:C5'	1:C:99:C:H6	2.25	0.48
1:B:139:A:H62	1:B:164:G:H1'	1.78	0.48
1:B:261:A:C2'	1:B:262:C:H5"	2.43	0.48
1:A:270:A:H2'	1:A:271:U:C5	2.48	0.48
1:D:173:A:C4	1:D:174:G:C8	3.01	0.48
1:A:409:U:C4	1:A:410:A:N6	2.82	0.48
1:D:410:A:C6	1:D:411:C:H1'	2.48	0.48
1:B:203:C:O2'	1:B:204:C:H5'	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:149:G:C2'	1:C:150:G:H5'	2.44	0.48
1:C:102:C:O2'	1:C:103:A:OP1	2.24	0.48
1:B:209:C:H3'	1:B:210:G:C5'	2.43	0.48
1:B:303:G:OP1	1:B:304:G:OP1	2.31	0.48
1:A:208:C:H6	1:A:208:C:O5'	1.97	0.48
1:D:300:U:HO2'	1:D:301:A:P	2.37	0.48
1:D:184:A:OP1	1:D:188:G:OP2	2.31	0.48
1:B:153:A:N7	1:B:154:C:C1'	2.77	0.48
1:B:248:A:O2'	1:B:249:U:O5'	2.25	0.48
1:A:245:G:O2'	1:A:246:A:H5'	2.14	0.48
1:C:103:A:O2'	1:C:104:A:C8	2.67	0.48
1:C:215:G:H2'	1:C:216:C:H5'	1.95	0.48
1:C:269:G:O2'	1:C:270:A:C5'	2.62	0.48
1:B:215:G:C2	1:B:216:C:C2	3.02	0.48
1:B:255:C:H1'	1:B:273:U:C4'	2.38	0.48
1:D:113:A:C2	1:D:208:C:N3	2.82	0.48
1:D:255:C:HO2'	1:D:256:A:P	2.36	0.48
1:D:319:U:C2	1:D:331:G:N2	2.82	0.48
1:A:279:G:O2'	1:A:280:G:H5'	2.14	0.48
1:A:155:U:H2'	1:A:156:U:C6	2.49	0.48
1:B:166:C:N3	1:B:167:U:C4	2.81	0.48
1:A:114:A:C8	1:A:207:A:C6	3.02	0.48
1:C:107:U:O2'	1:C:108:G:O5'	2.28	0.48
1:C:215:G:C6	1:C:216:C:C4	3.02	0.48
1:C:96:G:H5"	1:C:300:U:O2'	2.13	0.48
1:A:132:C:C3'	1:A:133:A:H5"	2.42	0.48
1:D:207:A:H5'	1:D:208:C:OP2	2.14	0.48
1:D:164:G:C2'	1:D:186:A:H62	2.26	0.48
1:C:323:G:H22	1:C:325:A:H3'	1.78	0.48
1:A:172:A:H2	1:A:173:A:C4	2.31	0.48
1:C:258:U:O2'	1:C:259:A:P	2.72	0.48
1:B:236:A:H8	1:B:236:A:OP1	1.95	0.48
1:C:105:A:C8	1:C:105:A:C3'	2.97	0.48
1:C:211:C:C2	1:C:212:G:C8	3.02	0.48
1:C:219:A:C5	1:C:220:G:N7	2.82	0.48
1:C:276:G:N3	1:C:276:G:H2'	2.28	0.48
1:B:270:A:N6	1:B:304:G:H22	2.12	0.48
1:A:262:C:C2'	1:A:263:A:C5'	2.91	0.48
1:D:208:C:OP1	1:D:305:U:P	2.71	0.48
1:D:133:A:H8	1:D:133:A:H5'	1.77	0.48
1:C:108:G:N2	1:C:214:A:C4	2.81	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:212:G:C2	1:C:213:C:C6	3.02	0.48
1:B:303:G:OP1	1:B:304:G:OP2	2.32	0.48
1:A:262:C:OP1	1:A:414:G:O2'	2.26	0.48
1:D:261:A:C4'	1:D:306:A:H5'	2.44	0.48
1:D:261:A:O2'	1:D:262:C:OP1	2.27	0.48
1:C:323:G:H2'	1:C:324:A:H5"	1.95	0.48
1:A:283:A:O2'	1:A:284:A:H5'	2.13	0.48
1:B:204:C:N3	1:B:205:U:C5	2.82	0.48
1:B:234:G:H2'	1:B:235:G:H5'	1.95	0.48
1:C:108:G:C2	1:C:214:A:C4	3.01	0.47
1:B:215:G:H2'	1:B:216:C:H6	1.79	0.47
1:B:265:A:H2'	1:B:266:C:O4'	2.13	0.47
1:D:204:C:H2'	1:D:205:U:C6	2.49	0.47
1:D:269:G:N2	1:D:270:A:C5	2.82	0.47
1:C:244:U:O2'	1:C:245:G:H5'	2.14	0.47
1:C:328:G:H2'	1:C:329:G:O4'	2.14	0.47
1:D:146:A:H2'	1:D:147:G:H8	1.78	0.47
1:C:276:G:H4'	1:C:277:C:OP1	2.15	0.47
1:B:270:A:N7	1:B:271:U:C2	2.82	0.47
1:B:100:G:H1'	1:B:275:G:N2	2.29	0.47
1:D:262:C:C4'	1:D:263:A:OP2	2.61	0.47
1:C:324:A:H2'	1:C:325:A:C8	2.48	0.47
1:D:319:U:O2'	1:D:320:C:P	2.72	0.47
1:D:153:A:C8	1:D:154:C:C6	3.02	0.47
1:D:251:G:H2'	1:D:252:A:O4'	2.14	0.47
1:C:100:G:N3	1:C:275:G:C2	2.82	0.47
1:C:110:G:H5'	1:C:111:G:OP2	2.14	0.47
1:C:210:G:H3'	1:C:210:G:C8	2.48	0.47
1:B:281:G:C2'	1:B:282:G:O5'	2.62	0.47
1:B:283:A:C2	1:B:284:A:C5	3.02	0.47
1:D:319:U:C3'	1:D:320:C:H6	2.27	0.47
1:D:155:U:N3	1:D:156:U:C5	2.82	0.47
1:D:250:G:H2'	1:D:251:G:H5'	1.95	0.47
1:C:96:G:C2	1:C:97:A:C8	3.02	0.47
1:B:96:G:C2	1:B:97:A:C8	3.01	0.47
1:D:262:C:H4'	1:D:263:A:OP2	2.14	0.47
1:B:153:A:N7	1:B:154:C:H1'	2.30	0.47
1:C:250:G:H2'	1:C:251:G:C5'	2.45	0.47
1:A:166:C:N3	1:A:167:U:C4	2.81	0.47
1:D:122:A:H4'	1:D:122:A:OP1	2.14	0.47
1:C:261:A:N7	1:C:264:G:H5"	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:271:U:H2'	1:C:272:G:O5'	2.14	0.47
1:B:180:G:O5'	1:B:180:G:H8	1.98	0.47
1:B:260:C:H1'	1:B:305:U:C4	2.49	0.47
1:B:156:U:H2'	1:B:157:U:H6	1.80	0.47
1:A:246:A:O2'	1:A:247:U:H5'	2.13	0.47
1:D:412:U:C4	1:D:413:C:N4	2.83	0.47
1:B:135:U:C4	1:B:136:A:N7	2.83	0.47
1:B:126:G:O2'	1:B:127:C:H5'	2.15	0.47
1:C:218:A:H2'	1:C:219:A:O5'	2.14	0.47
1:C:96:G:C6	1:C:279:G:C6	3.03	0.47
1:C:280:G:C2'	1:C:281:G:C5'	2.84	0.47
1:B:177:U:O3'	1:B:178:A:O4'	2.32	0.47
1:B:272:G:C3'	1:B:273:U:H5'	2.45	0.47
1:D:269:G:N2	1:D:270:A:N7	2.62	0.47
1:B:156:U:H2'	1:B:157:U:C6	2.49	0.47
1:A:216:C:H2'	1:A:217:C:H6	1.78	0.47
1:A:406:G:C2'	1:A:407:A:H5'	2.44	0.47
1:A:152:A:H2	1:A:248:A:N6	2.12	0.47
1:C:259:A:C3'	1:C:260:C:C5'	2.93	0.47
1:D:280:G:O2'	1:D:281:G:O5'	2.33	0.47
1:A:197:C:OP2	1:A:197:C:C6	2.61	0.47
1:B:190:U:H6	1:B:190:U:O5'	1.96	0.47
1:C:269:G:C5'	1:C:269:G:C8	2.93	0.47
1:C:264:G:C2	1:C:265:A:N7	2.82	0.47
1:B:103:A:N6	1:B:269:G:C5	2.83	0.47
1:B:139:A:N3	1:B:139:A:H2'	2.28	0.47
1:B:255:C:C1'	1:B:273:U:H4'	2.37	0.47
1:B:163:G:O5'	1:B:163:G:H8	1.97	0.47
1:B:216:C:C2	1:B:217:C:C5	3.02	0.47
1:A:268:A:H2'	1:A:269:G:C8	2.49	0.47
1:A:262:C:H2'	1:A:263:A:C5'	2.45	0.47
1:D:107:U:H5	1:D:259:A:C4'	2.27	0.47
1:D:255:C:O2'	1:D:273:U:C5'	2.63	0.47
1:D:300:U:H6	1:D:300:U:P	2.37	0.47
1:D:187:A:HO2'	1:D:188:G:P	2.37	0.47
1:C:253:U:C2'	1:C:254:G:C5'	2.91	0.47
1:B:227:G:H2'	1:B:228:U:H6	1.79	0.47
1:B:230:A:C4	1:B:231:A:C8	3.03	0.47
1:A:174:G:C6	1:A:175:G:C6	3.03	0.47
1:D:157:U:O2'	1:D:158:G:P	2.72	0.47
1:D:116:G:C2'	1:D:117:G:O5'	2.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:147:G:C5	1:A:148:G:N7	2.83	0.47
1:A:275:G:C6	1:A:276:G:C5	3.03	0.47
1:B:295:U:H2'	1:B:296:C:O5'	2.13	0.47
1:B:126:G:H2'	1:B:127:C:H6	1.79	0.47
1:C:107:U:C4	1:C:215:G:N2	2.83	0.47
1:C:110:G:N2	1:C:212:G:C1'	2.76	0.47
1:C:107:U:N3	1:C:215:G:C2	2.83	0.47
1:B:261:A:H8	1:B:264:G:OP2	1.94	0.47
1:A:151:A:H2'	1:A:152:A:C8	2.49	0.47
1:B:326:A:C8	1:B:326:A:H3'	2.49	0.47
1:B:299:A:H2'	1:B:300:U:OP1	2.14	0.47
1:D:103:A:H4'	1:D:103:A:OP1	2.14	0.47
1:D:160:G:C2'	1:D:161:A:H5'	2.45	0.47
1:B:167:U:C2	1:B:171:A:C6	3.03	0.47
1:C:150:G:H22	1:C:152:A:H3'	1.79	0.47
1:B:269:G:O5'	1:B:269:G:C8	2.60	0.47
1:D:214:A:N6	1:D:215:G:C6	2.83	0.47
1:D:272:G:C2'	1:D:273:U:H5'	2.45	0.47
1:C:254:G:H8	1:C:254:G:O5'	1.98	0.47
1:A:408:G:H4'	1:A:409:U:OP1	2.14	0.47
1:D:229:C:C2'	1:D:230:A:H5'	2.44	0.47
1:C:140:A:C8	1:C:140:A:H5'	2.50	0.47
1:A:148:G:O2'	1:A:149:G:H5'	2.14	0.47
1:D:100:G:H1'	1:D:275:G:N2	2.30	0.47
1:B:184:A:C2	1:B:213:C:O4'	2.69	0.46
1:B:281:G:C4	1:B:282:G:C8	3.02	0.46
1:A:303:G:H21	1:A:304:G:C1'	2.29	0.46
1:D:270:A:N7	1:D:271:U:N3	2.63	0.46
1:A:103:A:H5"	1:A:104:A:OP1	2.15	0.46
1:A:242:G:C2	1:A:243:U:C4	3.02	0.46
1:B:119:G:N3	1:B:325:A:H2	2.13	0.46
1:B:252:A:H2'	1:B:253:U:H5'	1.96	0.46
1:C:101:U:O4	1:C:102:C:N4	2.46	0.46
1:C:218:A:C5	1:C:219:A:N7	2.83	0.46
1:B:264:G:C2	1:B:265:A:C8	3.03	0.46
1:A:302:A:C3'	1:A:303:G:H4'	2.32	0.46
1:D:218:A:O2'	1:D:219:A:H5'	2.15	0.46
1:D:139:A:C2	1:D:140:A:C4	3.03	0.46
1:A:125:A:C8	1:A:324:A:O4'	2.68	0.46
1:B:197:C:P	1:B:197:C:H6	2.38	0.46
1:C:128:C:C2	1:C:195:G:N2	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:280:G:C2'	1:B:281:G:H5'	2.45	0.46
1:B:298:C:H2'	1:B:299:A:H1'	1.97	0.46
1:B:214:A:N6	1:B:215:G:C5	2.83	0.46
1:A:133:A:H3'	1:A:134:G:H8	1.80	0.46
1:C:171:A:O2'	1:C:172:A:O5'	2.34	0.46
1:C:151:A:C5	1:C:226:A:H1'	2.50	0.46
1:A:233:A:H2'	1:A:234:G:O4'	2.15	0.46
1:A:411:C:H2'	1:A:412:U:H6	1.81	0.46
1:B:295:U:H2'	1:B:296:C:H6	1.81	0.46
1:A:212:G:C2	1:A:213:C:C6	3.04	0.46
1:A:270:A:C2'	1:A:271:U:C6	2.97	0.46
1:D:108:G:C6	1:D:214:A:C6	3.04	0.46
1:D:256:A:N3	1:D:256:A:OP2	2.48	0.46
1:C:151:A:N6	1:C:248:A:H61	2.12	0.46
1:A:293:C:C2'	1:A:294:U:C6	2.84	0.46
1:A:108:G:C6	1:A:214:A:C6	3.03	0.46
1:C:293:C:H2'	1:C:294:U:C6	2.50	0.46
1:C:104:A:N6	1:C:105:A:N1	2.64	0.46
1:B:216:C:N3	1:B:217:C:C5	2.84	0.46
1:B:267:U:O2'	1:B:268:A:H5'	2.15	0.46
1:B:151:A:C4	1:B:226:A:C1'	2.97	0.46
1:A:198:A:C6	1:B:122:A:N7	2.84	0.46
1:C:177:U:H5'	1:C:178:A:OP1	2.16	0.46
1:C:163:G:N7	1:C:164:G:O6	2.48	0.46
1:B:165:C:O5'	1:B:165:C:H6	1.98	0.46
1:B:183:A:N1	1:B:184:A:N1	2.64	0.46
1:B:276:G:C6	1:B:277:C:N3	2.84	0.46
1:B:307:U:C2'	1:B:308:A:H8	2.27	0.46
1:A:262:C:HO2'	1:A:263:A:P	2.36	0.46
1:A:255:C:O2	1:A:273:U:C4'	2.64	0.46
1:B:286:A:C3'	1:B:287:U:C5'	2.89	0.46
1:D:303:G:O3'	1:D:304:G:H4'	2.15	0.46
1:A:104:A:N6	1:A:105:A:C6	2.84	0.46
1:D:167:U:O2	1:D:171:A:C5	2.68	0.46
1:A:162:U:C2'	1:A:163:G:H5'	2.44	0.46
1:A:123:A:N6	1:A:197:C:C4	2.83	0.46
1:A:114:A:C4	1:A:207:A:C2	3.04	0.46
1:D:121:C:O2'	1:D:123:A:O2'	2.27	0.46
1:A:136:A:C2	1:A:137:C:C2	3.03	0.46
1:B:238:A:C2	1:C:100:G:H1'	2.50	0.46
1:C:300:U:O2'	1:C:301:A:OP2	2.27	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:104:A:C5	1:B:105:A:C6	3.04	0.46
1:A:313:G:H3'	1:A:314:A:C8	2.51	0.46
1:B:283:A:N1	1:B:284:A:C6	2.83	0.46
1:D:104:A:C5	1:D:105:A:C5	3.04	0.46
1:D:104:A:H3'	1:D:105:A:H8	1.77	0.46
1:D:104:A:N6	1:D:105:A:C6	2.84	0.46
1:C:223:C:O2'	1:C:224:U:H5'	2.16	0.46
1:D:168:U:C2'	1:D:169:G:OP2	2.63	0.46
1:A:205:U:OP1	1:A:205:U:H4'	2.15	0.46
1:C:270:A:C2'	1:C:271:U:C6	2.99	0.46
1:C:278:C:C4	1:C:279:G:C8	3.03	0.46
1:C:309:G:H2'	1:C:310:U:H6	1.81	0.46
1:A:271:U:O2	1:A:271:U:H2'	2.16	0.46
1:D:108:G:C6	1:D:214:A:C2	3.04	0.46
1:D:182:U:O2'	1:D:183:A:OP1	2.26	0.46
1:A:130:U:H6	1:A:130:U:OP1	1.99	0.46
1:A:131:U:C2'	1:A:131:U:O2	2.64	0.46
1:A:193:C:C2	1:A:194:G:C8	3.04	0.46
1:A:249:U:HO2'	1:A:250:G:P	2.39	0.46
1:B:148:G:N3	1:B:148:G:H2'	2.30	0.46
1:B:261:A:H62	1:B:264:G:H3'	1.81	0.46
1:B:268:A:N3	1:B:308:A:C2	2.84	0.46
1:D:265:A:C6	1:D:266:C:N4	2.84	0.46
1:C:243:U:C2'	1:C:244:U:H5'	2.45	0.46
1:B:122:A:O2'	1:B:123:A:O5'	2.34	0.46
1:B:252:A:C2'	1:B:253:U:H5'	2.45	0.46
1:D:232:C:N4	1:D:233:A:N6	2.64	0.46
1:C:104:A:H1'	1:C:218:A:H5'	1.98	0.45
1:C:281:G:C2'	1:C:282:G:H5'	2.46	0.45
1:D:302:A:C6	1:D:303:G:C5	3.04	0.45
1:A:104:A:C6	1:A:105:A:C5	3.04	0.45
1:C:319:U:N3	1:C:320:C:C5	2.85	0.45
1:D:155:U:H2'	1:D:156:U:C6	2.50	0.45
1:B:204:C:C4	1:B:205:U:C5	3.04	0.45
1:C:104:A:N1	1:C:105:A:C2	2.84	0.45
1:C:279:G:C5	1:C:280:G:C4	3.04	0.45
1:C:262:C:OP1	1:C:414:G:O2'	2.34	0.45
1:A:262:C:O2	1:A:262:C:C2'	2.58	0.45
1:D:210:G:C5'	1:D:211:C:H5'	2.43	0.45
1:D:102:C:O2'	1:D:218:A:N3	2.49	0.45
1:C:174:G:H2'	1:C:175:G:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:319:U:H5'	1:C:319:U:H6	1.81	0.45
1:A:173:A:C5	1:A:174:G:C8	3.04	0.45
1:D:119:G:N3	1:D:119:G:H2'	2.31	0.45
1:B:119:G:C6	1:B:120:U:N3	2.84	0.45
1:B:323:G:H21	1:B:326:A:N6	2.11	0.45
1:C:177:U:C5'	1:C:178:A:OP1	2.65	0.45
1:B:240:C:H2'	1:B:241:U:C6	2.50	0.45
1:C:104:A:H2	1:C:217:C:O2	2.00	0.45
1:C:261:A:HO2'	1:C:262:C:P	2.40	0.45
1:C:236:A:N1	1:C:237:G:C2	2.84	0.45
1:B:288:G:H2'	1:B:288:G:N3	2.29	0.45
1:D:265:A:C6	1:D:266:C:C4	3.04	0.45
1:A:104:A:H2'	1:A:105:A:O4'	2.16	0.45
1:B:153:A:H4'	1:B:224:U:H4'	1.98	0.45
1:C:329:G:H2'	1:C:330:A:O4'	2.15	0.45
1:C:321:C:C2	1:C:329:G:N2	2.85	0.45
1:B:196:A:H2'	1:B:197:C:C4	2.51	0.45
1:C:159:A:O2'	1:C:160:G:H5'	2.17	0.45
1:C:204:C:C2'	1:C:205:U:H5'	2.46	0.45
1:C:218:A:C2'	1:C:219:A:O5'	2.65	0.45
1:B:106:U:H5'	1:B:107:U:OP1	2.16	0.45
1:B:217:C:O2'	1:B:218:A:OP1	2.24	0.45
1:B:305:U:O2	1:B:305:U:C2'	2.64	0.45
1:A:264:G:N2	1:A:265:A:C4	2.84	0.45
1:D:256:A:N7	1:D:273:U:P	2.89	0.45
1:C:151:A:H61	1:C:248:A:N6	2.13	0.45
1:A:216:C:O2'	1:A:217:C:H5'	2.17	0.45
1:D:168:U:O2'	1:D:169:G:H5"	2.17	0.45
1:B:120:U:O2'	1:B:121:C:H5'	2.16	0.45
1:A:252:A:H2'	1:A:253:U:O4'	2.16	0.45
1:C:126:G:C2'	1:C:126:G:N3	2.79	0.45
1:C:183:A:C5'	1:C:184:A:OP2	2.60	0.45
1:B:214:A:H2'	1:B:215:G:H5'	1.98	0.45
1:B:303:G:O4'	1:B:303:G:N3	2.48	0.45
1:A:259:A:N6	1:A:260:C:C4	2.85	0.45
1:A:312:G:C2	1:A:313:G:H1'	2.52	0.45
1:D:205:U:C3'	1:D:206:A:C5'	2.94	0.45
1:D:183:A:H5'	1:D:184:A:OP1	2.16	0.45
1:B:227:G:C4	1:B:228:U:C5	3.05	0.45
1:B:248:A:C8	1:B:250:G:C6	3.04	0.45
1:C:225:A:C2	1:C:248:A:C8	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:328:G:C2	1:C:329:G:C4	3.05	0.45
1:A:156:U:H2'	1:A:157:U:H6	1.75	0.45
1:B:198:A:H1'	1:B:200:G:C1'	2.47	0.45
1:C:178:A:C2	1:C:180:G:N1	2.84	0.45
1:C:100:G:N1	1:C:275:G:C6	2.85	0.45
1:C:97:A:H2'	1:C:98:C:C6	2.51	0.45
1:B:286:A:O4'	1:B:286:A:OP1	2.33	0.45
1:D:302:A:O5'	1:D:303:G:OP2	2.35	0.45
1:B:314:A:H2'	1:B:315:C:OP1	2.15	0.45
1:D:182:U:H4'	1:D:183:A:OP1	2.16	0.45
1:D:319:U:C5'	1:D:319:U:C6	2.98	0.45
1:A:165:C:N4	1:A:166:C:N4	2.64	0.45
1:C:140:A:C2'	1:C:141:G:H8	2.25	0.45
1:B:215:G:H2'	1:B:216:C:C6	2.52	0.45
1:D:258:U:H2'	1:D:259:A:C8	2.52	0.45
1:C:170:C:H3'	1:C:170:C:C6	2.51	0.45
1:B:152:A:C6	1:B:153:A:C2	3.05	0.45
1:B:157:U:N3	1:B:158:G:N7	2.65	0.45
1:C:252:A:C2'	1:C:253:U:H5'	2.46	0.45
1:A:185:U:C4	1:A:214:A:O2'	2.64	0.45
1:D:96:G:N1	1:D:97:A:C6	2.85	0.45
1:A:280:G:C2	1:A:281:G:N7	2.85	0.45
1:B:170:C:C5	1:B:171:A:N7	2.85	0.45
1:C:274:C:O2'	1:C:275:G:H5'	2.17	0.45
1:B:215:G:C6	1:B:216:C:C4	3.05	0.45
1:D:225:A:O2'	1:D:226:A:P	2.75	0.45
1:D:145:C:H2'	1:D:146:A:H8	1.81	0.45
1:D:154:C:H2'	1:D:155:U:H6	1.82	0.45
1:B:168:U:O2'	1:B:169:G:P	2.75	0.45
1:B:96:G:H5'	1:B:300:U:C2'	2.47	0.45
1:A:310:U:C4	1:A:311:C:C5	3.05	0.45
1:D:140:A:H2'	1:D:141:G:C5'	2.47	0.45
1:A:225:A:O2'	1:A:226:A:H8	1.99	0.45
1:B:120:U:O2'	1:B:121:C:C5'	2.64	0.45
1:B:173:A:H2'	1:B:174:G:O4'	2.16	0.45
1:A:237:G:H3'	1:A:238:A:C8	2.52	0.45
1:D:328:G:H2'	1:D:328:G:N3	2.32	0.45
1:D:213:C:H2'	1:D:214:A:O5'	2.17	0.45
1:D:219:A:H2'	1:D:220:G:H8	1.82	0.45
1:D:255:C:O2'	1:D:273:U:H5"	2.17	0.45
1:D:310:U:O2'	1:D:311:C:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:120:U:H2'	1:D:121:C:C6	2.52	0.45
1:C:191:G:C6	1:C:192:A:C5	3.04	0.45
1:C:280:G:C4	1:C:281:G:N7	2.85	0.44
1:B:163:G:N7	1:B:164:G:C5	2.86	0.44
1:B:219:A:C8	1:B:220:G:N7	2.85	0.44
1:D:257:G:C5	1:D:258:U:C4	3.05	0.44
1:D:270:A:C3'	1:D:271:U:C6	2.96	0.44
1:C:201:G:O2'	1:C:202:U:P	2.74	0.44
1:D:118:G:H5'	1:D:119:G:P	2.57	0.44
1:D:119:G:HO2'	1:D:325:A:H1'	1.81	0.44
1:B:119:G:C2'	1:B:120:U:H5'	2.47	0.44
1:C:123:A:N6	1:C:197:C:N4	2.66	0.44
1:B:190:U:H2'	1:B:191:G:C8	2.52	0.44
1:C:309:G:C4	1:C:310:U:C5	3.05	0.44
1:B:103:A:N6	1:B:269:G:C8	2.85	0.44
1:B:181:G:N3	1:B:186:A:H2	2.15	0.44
1:B:256:A:N7	1:B:273:U:OP1	2.51	0.44
1:A:267:U:H2'	1:A:268:A:C8	2.53	0.44
1:D:181:G:N3	1:D:186:A:C2	2.85	0.44
1:D:173:A:O2'	1:D:174:G:H5'	2.17	0.44
1:A:180:G:C6	1:A:181:G:C5	3.05	0.44
1:B:324:A:H2'	1:B:325:A:C8	2.52	0.44
1:C:100:G:C2	1:C:275:G:C5	3.06	0.44
1:B:272:G:H5"	1:B:272:G:C8	2.53	0.44
1:A:314:A:C2'	1:A:315:C:OP1	2.64	0.44
1:D:272:G:C2	1:D:273:U:C6	3.05	0.44
1:D:300:U:H6	1:D:300:U:OP2	2.00	0.44
1:C:223:C:C2'	1:C:224:U:H5'	2.46	0.44
1:D:172:A:C8	1:D:173:A:N7	2.85	0.44
1:D:318:C:H1'	1:D:403:U:O4	2.17	0.44
1:D:227:G:C6	1:D:228:U:C4	3.06	0.44
1:B:148:G:C5	1:B:149:G:C8	3.06	0.44
1:C:210:G:C3'	1:C:210:G:C8	3.00	0.44
1:C:210:G:O2'	1:C:211:C:OP2	2.31	0.44
1:D:110:G:C4	1:D:212:G:C2	3.05	0.44
1:A:283:A:H2'	1:A:284:A:O4'	2.18	0.44
1:A:223:C:C4	1:A:224:U:C5	3.05	0.44
1:C:279:G:C5	1:C:280:G:C5	3.06	0.44
1:C:262:C:P	1:C:414:G:O2'	2.76	0.44
1:B:214:A:C2'	1:B:215:G:H5'	2.48	0.44
1:A:264:G:N3	1:A:265:A:C8	2.85	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:171:A:C2'	1:C:172:A:OP2	2.66	0.44
1:A:215:G:H2'	1:A:216:C:C6	2.52	0.44
1:C:323:G:H1	1:C:325:A:C5'	2.31	0.44
1:A:146:A:N1	1:A:158:G:C6	2.86	0.44
1:A:259:A:C3'	1:A:260:C:C5'	2.80	0.44
1:A:305:U:O2	1:A:305:U:C2'	2.61	0.44
1:D:185:U:O2'	1:D:186:A:O5'	2.35	0.44
1:B:153:A:C8	1:B:154:C:C1'	3.01	0.44
1:D:170:C:O2'	1:D:171:A:H5'	2.17	0.44
1:D:129:G:O2'	1:D:130:U:C5	2.71	0.44
1:B:120:U:C2	1:B:121:C:C5	3.06	0.44
1:A:113:A:H2'	1:A:207:A:N6	2.33	0.44
1:B:104:A:C6	1:B:105:A:N1	2.85	0.44
1:B:210:G:N2	1:B:302:A:OP1	2.50	0.44
1:A:211:C:H5'	1:A:211:C:H6	1.82	0.44
1:A:303:G:OP1	1:A:304:G:P	2.75	0.44
1:A:311:C:C4	1:A:312:G:N7	2.86	0.44
1:B:158:G:H2'	1:B:159:A:H8	1.82	0.44
1:D:167:U:C1'	1:D:171:A:H62	2.31	0.44
1:D:318:C:H2'	1:D:319:U:C6	2.52	0.44
1:A:249:U:O2'	1:A:250:G:P	2.76	0.44
1:D:294:U:O2'	1:D:295:U:H5'	2.18	0.44
1:B:274:C:O2'	1:B:275:G:H5'	2.18	0.44
1:A:189:C:O2'	1:A:190:U:P	2.76	0.44
1:A:302:A:C5	1:A:303:G:H1'	2.50	0.44
1:A:307:U:OP1	1:A:414:G:C3'	2.65	0.44
1:D:186:A:H5"	1:D:187:A:P	2.57	0.44
1:C:322:C:H2'	1:C:323:G:H8	1.81	0.44
1:C:201:G:HO2'	1:C:202:U:P	2.41	0.44
1:A:169:G:H21	1:A:170:C:H1'	1.82	0.44
1:D:222:C:N3	1:D:252:A:N1	2.66	0.44
1:C:280:G:C4	1:C:281:G:C8	3.06	0.44
1:B:187:A:OP2	1:B:187:A:O3'	2.36	0.44
1:A:209:C:H3'	1:A:210:G:C5'	2.42	0.44
1:A:270:A:N9	1:A:271:U:C5	2.85	0.44
1:A:261:A:O2'	1:A:414:G:H2'	2.17	0.44
1:B:318:C:C2	1:B:403:U:O4	2.71	0.44
1:D:183:A:C8	1:D:188:G:O6	2.71	0.44
1:B:248:A:O3'	1:C:227:G:O2'	2.36	0.44
1:C:326:A:C3'	1:C:327:G:H5'	2.48	0.44
1:A:226:A:N7	1:A:227:G:C5	2.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:205:U:H5"	1:A:206:A:C8	2.53	0.44
1:B:145:C:C6	1:B:145:C:C3'	3.01	0.44
1:B:190:U:H2'	1:B:191:G:H8	1.81	0.44
1:C:276:G:C2	1:C:277:C:C2	3.06	0.43
1:C:280:G:H2'	1:C:281:G:H8	1.83	0.43
1:B:214:A:C5	1:B:215:G:C8	3.06	0.43
1:B:97:A:C5'	1:B:98:C:OP2	2.57	0.43
1:A:255:C:O2'	1:A:256:A:OP1	2.35	0.43
1:A:262:C:C5	1:A:414:G:H1'	2.53	0.43
1:A:262:C:N4	1:A:414:G:C4	2.86	0.43
1:A:307:U:H2'	1:A:308:A:H8	1.79	0.43
1:D:104:A:C6	1:D:105:A:C6	3.06	0.43
1:D:257:G:O2'	1:D:258:U:H5'	2.17	0.43
1:D:308:A:H2'	1:D:309:G:H5'	2.00	0.43
1:C:170:C:C3'	1:C:170:C:C6	3.01	0.43
1:D:140:A:H2'	1:D:141:G:H5'	1.99	0.43
1:C:112:G:C5	1:C:113:A:C8	3.06	0.43
1:B:145:C:H3'	1:B:145:C:C6	2.53	0.43
1:C:262:C:O2'	1:C:263:A:OP1	2.26	0.43
1:C:271:U:C2	1:C:272:G:C8	3.06	0.43
1:B:270:A:H61	1:B:304:G:H22	1.66	0.43
1:A:208:C:OP1	1:A:305:U:OP2	2.36	0.43
1:D:303:G:H4'	1:D:304:G:OP1	2.18	0.43
1:D:184:A:H8	1:D:184:A:OP2	1.99	0.43
1:C:154:C:C2	1:C:155:U:C5	3.06	0.43
1:A:108:G:C3'	1:A:109:C:C5'	2.94	0.43
1:D:319:U:C2'	1:D:320:C:O4'	2.63	0.43
1:A:227:G:H8	1:A:227:G:O5'	2.01	0.43
1:A:202:U:C2	1:A:203:C:C5	3.06	0.43
1:A:114:A:H5'	1:A:115:A:OP2	2.18	0.43
1:D:295:U:O2'	1:D:296:C:H5'	2.18	0.43
1:C:161:A:H2'	1:C:162:U:C5'	2.49	0.43
1:C:279:G:O6	1:C:280:G:C2	2.72	0.43
1:C:97:A:N7	1:C:300:U:O4	2.52	0.43
1:A:263:A:H62	1:A:313:G:H1'	1.83	0.43
1:C:133:A:C8	1:C:133:A:C5'	2.93	0.43
1:D:302:A:C2	1:D:303:G:C4	3.06	0.43
1:B:153:A:C4'	1:B:224:U:H4'	2.48	0.43
1:C:225:A:O2'	1:C:226:A:N7	2.39	0.43
1:A:407:A:O3'	1:A:408:G:C8	2.71	0.43
1:D:148:G:C4	1:D:149:G:C8	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:120:U:O2'	1:B:125:A:N6	2.51	0.43
1:B:116:G:H2'	1:B:117:G:O4'	2.18	0.43
1:C:191:G:O6	1:C:192:A:C6	2.71	0.43
1:B:259:A:C3'	1:B:260:C:C5'	2.72	0.43
1:B:270:A:C2	1:B:307:U:C2	3.06	0.43
1:B:281:G:C2	1:B:282:G:C8	3.07	0.43
1:B:281:G:C2	1:B:282:G:N9	2.86	0.43
1:D:304:G:H5"	1:D:304:G:C8	2.52	0.43
1:D:163:G:H5"	1:D:163:G:H8	1.83	0.43
1:B:153:A:C8	1:B:154:C:C6	3.07	0.43
1:B:226:A:H3'	1:B:227:G:H8	1.82	0.43
1:D:97:A:H2'	1:D:98:C:C6	2.54	0.43
1:A:232:C:C4	1:A:233:A:N7	2.87	0.43
1:C:273:U:C4	1:C:274:C:C4	3.07	0.43
1:B:265:A:C5	1:B:266:C:C5	3.06	0.43
1:B:271:U:C2'	1:B:272:G:O5'	2.66	0.43
1:B:100:G:O4'	1:C:238:A:H2	2.01	0.43
1:A:261:A:N6	1:A:264:G:C8	2.87	0.43
1:D:215:G:H2'	1:D:216:C:H6	1.84	0.43
1:D:259:A:C3'	1:D:260:C:C5'	2.73	0.43
1:A:192:A:H2'	1:A:193:C:H6	1.83	0.43
1:A:158:G:C2	1:A:159:A:C5	3.05	0.43
1:A:243:U:C2	1:A:244:U:C5	3.06	0.43
1:D:154:C:C2	1:D:155:U:C5	3.07	0.43
1:D:100:G:O2'	1:D:101:U:H5'	2.18	0.43
1:C:111:G:C2	1:C:211:C:N3	2.86	0.43
1:C:96:G:O2'	1:C:97:A:P	2.77	0.43
1:C:99:C:H5'	1:C:100:G:OP2	2.19	0.43
1:B:184:A:H2'	1:B:213:C:O2	2.17	0.43
1:B:271:U:C6	1:B:272:G:N7	2.86	0.43
1:B:273:U:C5	1:B:274:C:C5	3.06	0.43
1:A:273:U:C5	1:A:274:C:C5	3.06	0.43
1:D:264:G:C2	1:D:265:A:C8	3.06	0.43
1:C:252:A:H2'	1:C:253:U:C5'	2.49	0.43
1:A:203:C:H2'	1:A:204:C:C6	2.53	0.43
1:D:116:G:H2'	1:D:117:G:O5'	2.18	0.43
1:C:316:C:H5'	1:C:317:U:P	2.59	0.43
1:A:147:G:C6	1:A:148:G:C5	3.07	0.43
1:C:122:A:O4'	1:C:122:A:OP2	2.37	0.43
1:A:135:U:OP1	1:A:135:U:O4'	2.36	0.43
1:C:270:A:C3'	1:C:271:U:H6	2.30	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:216:C:H2'	1:B:217:C:H6	1.83	0.43
1:D:104:A:C6	1:D:105:A:C2	3.05	0.43
1:D:306:A:O2'	1:D:307:U:C6	2.70	0.43
1:D:163:G:C6	1:D:164:G:C2	3.06	0.43
1:C:226:A:C5'	1:C:227:G:OP2	2.65	0.43
1:C:222:C:H42	1:C:252:A:N6	2.17	0.43
1:D:281:G:H2'	1:D:282:G:O4'	2.19	0.43
1:B:168:U:O2'	1:B:169:G:C5'	2.67	0.43
1:B:175:G:C5	1:B:176:G:C8	3.06	0.43
1:C:137:C:C2	1:C:138:C:C5	3.07	0.43
1:C:215:G:C2'	1:C:216:C:H5'	2.49	0.43
1:C:303:G:O3'	1:C:304:G:O4'	2.36	0.43
1:B:281:G:O2'	1:B:282:G:O5'	2.37	0.43
1:A:262:C:O2'	1:A:263:A:O5'	2.36	0.43
1:D:212:G:HO2'	1:D:213:C:H5'	1.80	0.43
1:A:215:G:H2'	1:A:216:C:H6	1.83	0.43
1:A:153:A:N7	1:A:154:C:C2	2.87	0.43
1:D:149:G:N3	1:D:150:G:C8	2.87	0.43
1:A:203:C:H2'	1:A:204:C:H6	1.83	0.43
1:B:170:C:H3'	1:B:171:A:C8	2.54	0.43
1:B:166:C:C2	1:B:175:G:N2	2.87	0.43
1:C:101:U:H6	1:C:101:U:H3'	1.84	0.43
1:C:218:A:C6	1:C:219:A:C5	3.07	0.43
1:C:220:G:N2	1:C:221:U:C2	2.87	0.43
1:C:280:G:C5	1:C:281:G:N7	2.87	0.43
1:D:111:G:O2'	1:D:112:G:H5'	2.19	0.43
1:D:257:G:H2'	1:D:258:U:C5'	2.48	0.43
1:C:319:U:H6	1:C:319:U:C5'	2.32	0.43
1:C:323:G:H1	1:C:325:A:H5"	1.79	0.43
1:A:249:U:O2'	1:A:250:G:OP1	2.32	0.43
1:D:235:G:N2	1:D:240:C:C4	2.87	0.43
1:B:262:C:O5'	1:B:414:G:O2'	2.36	0.43
1:B:302:A:C2	1:B:303:G:H1'	2.54	0.43
1:A:270:A:C2'	1:A:271:U:C5	3.02	0.43
1:D:255:C:O2'	1:D:256:A:P	2.76	0.43
1:A:405:G:H2'	1:A:406:G:H5'	1.99	0.43
1:C:323:G:C8	1:C:324:A:H5'	2.54	0.43
1:C:198:A:C2'	1:C:199:U:OP2	2.67	0.43
1:A:139:A:C5'	1:A:140:A:OP2	2.57	0.43
1:A:181:G:N2	1:A:186:A:C2	2.81	0.43
1:D:160:G:H2'	1:D:161:A:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:118:G:H2'	1:A:119:G:H8	1.84	0.43
1:D:190:U:O2'	1:D:191:G:C5'	2.61	0.43
1:D:198:A:O2'	1:D:199:U:C5'	2.67	0.43
1:B:292:U:H2'	1:B:293:C:C5'	2.49	0.43
1:C:164:G:C2	1:C:186:A:H2	2.35	0.42
1:A:273:U:C4	1:A:274:C:C4	3.07	0.42
1:A:308:A:N6	1:A:309:G:C6	2.87	0.42
1:C:134:G:C2'	1:C:135:U:H5'	2.48	0.42
1:D:273:U:C4	1:D:274:C:C4	3.07	0.42
1:B:314:A:C3'	1:B:315:C:C5	2.93	0.42
1:D:177:U:C5'	1:D:178:A:OP1	2.67	0.42
1:D:185:U:HO2'	1:D:186:A:C5'	2.32	0.42
1:B:250:G:H2'	1:B:250:G:N3	2.33	0.42
1:B:204:C:C2'	1:B:205:U:H5'	2.49	0.42
1:A:196:A:C5	1:A:197:C:N4	2.87	0.42
1:C:220:G:H2'	1:C:221:U:C6	2.54	0.42
1:C:270:A:C8	1:C:271:U:C6	3.06	0.42
1:B:108:G:N2	1:B:185:U:OP1	2.50	0.42
1:B:153:A:C8	1:B:154:C:O4'	2.72	0.42
1:C:154:C:O2'	1:C:251:G:O2'	2.29	0.42
1:D:157:U:O2'	1:D:158:G:OP1	2.34	0.42
1:C:124:C:H3'	1:C:126:G:N7	2.34	0.42
1:C:298:C:H2'	1:C:299:A:H8	1.81	0.42
1:C:101:U:N3	1:C:102:C:C5	2.86	0.42
1:C:161:A:C2'	1:C:162:U:C5'	2.97	0.42
1:C:219:A:H2'	1:C:220:G:H8	1.83	0.42
1:C:261:A:H2'	1:C:262:C:H3'	2.01	0.42
1:C:307:U:O2	1:C:308:A:N7	2.53	0.42
1:C:135:U:H5'	1:C:135:U:H6	1.85	0.42
1:B:246:A:C6	1:B:247:U:C4	3.07	0.42
1:C:225:A:C2	1:C:248:A:N7	2.86	0.42
1:A:129:G:O2'	1:A:130:U:C6	2.72	0.42
1:A:152:A:N6	1:A:153:A:N1	2.67	0.42
1:D:154:C:O2	1:D:155:U:C6	2.73	0.42
1:D:222:C:O2	1:D:252:A:C2	2.72	0.42
1:C:141:G:N2	1:C:142:U:C2	2.87	0.42
1:B:409:U:H2'	1:B:410:A:O4'	2.20	0.42
1:B:328:G:C4	1:B:329:G:C8	3.07	0.42
1:C:163:G:C6	1:C:164:G:C2	3.08	0.42
1:C:212:G:N3	1:C:213:C:C6	2.87	0.42
1:B:183:A:OP1	1:B:186:A:OP2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:103:A:C6	1:D:269:G:C5	3.07	0.42
1:B:171:A:O2'	1:B:172:A:OP2	2.25	0.42
1:B:132:C:H2'	1:B:133:A:O5'	2.20	0.42
1:C:161:A:HO2'	1:C:162:U:H5'	1.81	0.42
1:C:187:A:C6	1:C:189:C:C4	3.08	0.42
1:C:209:C:N3	1:C:211:C:C5	2.88	0.42
1:C:270:A:C5	1:C:271:U:C2	3.07	0.42
1:A:270:A:OP1	1:A:270:A:H4'	2.19	0.42
1:A:301:A:C3'	1:A:302:A:H5'	2.50	0.42
1:D:181:G:H2'	1:D:186:A:C2	2.54	0.42
1:A:129:G:O2'	1:A:130:U:C5	2.71	0.42
1:B:202:U:H2'	1:B:203:C:C5	2.53	0.42
1:C:240:C:H2'	1:C:241:U:C5	2.55	0.42
1:C:186:A:C5'	1:C:187:A:OP2	2.67	0.42
1:B:270:A:C6	1:B:304:G:N2	2.87	0.42
1:B:301:A:H2'	1:B:302:A:O4'	2.20	0.42
1:B:96:G:N3	1:B:97:A:N7	2.68	0.42
1:A:269:G:HO2'	1:A:270:A:P	2.41	0.42
1:D:104:A:C2'	1:D:217:C:O2'	2.68	0.42
1:C:167:U:O2	1:C:171:A:C5	2.73	0.42
1:A:292:U:H2'	1:A:293:C:O4'	2.20	0.42
1:A:167:U:H6	1:A:167:U:O5'	2.02	0.42
1:C:127:C:O2'	1:C:128:C:O5'	2.37	0.42
1:C:178:A:H5"	1:C:179:U:OP1	2.19	0.42
1:C:122:A:O3'	1:C:123:A:O4'	2.37	0.42
1:A:276:G:H2'	1:A:277:C:C6	2.55	0.42
1:C:162:U:C2'	1:C:163:G:O5'	2.68	0.42
1:C:276:G:C2	1:C:277:C:N3	2.88	0.42
1:C:280:G:N3	1:C:281:G:C8	2.88	0.42
1:B:106:U:O2	1:B:258:U:H4'	2.20	0.42
1:D:302:A:H2'	1:D:303:G:O4'	2.20	0.42
1:C:170:C:C2'	1:C:171:A:C5'	2.98	0.42
1:A:408:G:H3'	1:A:408:G:C8	2.55	0.42
1:A:164:G:C8	1:A:164:G:O5'	2.67	0.42
1:A:126:G:O2'	1:A:203:C:H5'	2.20	0.42
1:C:112:G:C2	1:C:113:A:H1'	2.55	0.42
1:B:409:U:C4	1:B:410:A:N7	2.88	0.42
1:B:270:A:C3'	1:B:271:U:H6	2.23	0.42
1:A:261:A:HO2'	1:A:414:G:H2'	1.83	0.42
1:A:305:U:C5'	1:A:306:A:OP1	2.64	0.42
1:D:214:A:C2'	1:D:215:G:C5'	2.92	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:138:C:O2'	1:D:139:A:OP2	2.28	0.42
1:B:151:A:N1	1:B:226:A:C8	2.87	0.42
1:C:246:A:H2'	1:C:247:U:C6	2.54	0.42
1:C:320:C:O2'	1:C:321:C:C5'	2.60	0.42
1:A:157:U:C2'	1:A:158:G:O5'	2.68	0.42
1:A:230:A:C2'	1:A:231:A:H5'	2.48	0.42
1:B:115:A:C2'	1:B:116:G:C8	3.01	0.42
1:A:124:C:H5	1:A:196:A:N6	2.11	0.42
1:B:161:A:H2'	1:B:162:U:C6	2.55	0.42
1:C:264:G:C2	1:C:265:A:C8	3.08	0.42
1:B:218:A:H5"	1:B:219:A:OP2	2.19	0.42
1:A:314:A:H8	1:A:314:A:OP2	2.02	0.42
1:D:186:A:H5"	1:D:187:A:OP2	2.20	0.42
1:C:320:C:C2'	1:C:321:C:C5'	2.98	0.42
1:B:204:C:N3	1:B:205:U:C6	2.88	0.42
1:C:104:A:C1'	1:C:218:A:H5'	2.50	0.42
1:C:185:U:H5"	1:C:186:A:OP1	2.20	0.42
1:B:262:C:O2	1:B:262:C:C2'	2.68	0.42
1:B:303:G:P	1:B:304:G:OP1	2.78	0.42
1:A:267:U:C4	1:A:309:G:N2	2.87	0.42
1:D:306:A:O2'	1:D:307:U:C5	2.67	0.42
1:B:230:A:C4	1:B:231:A:N7	2.88	0.42
1:D:145:C:O2'	1:D:146:A:C5'	2.68	0.42
1:D:148:G:C5	1:D:149:G:C8	3.07	0.42
1:B:319:U:H2'	1:B:320:C:O4'	2.20	0.42
1:D:115:A:N1	1:D:116:G:C6	2.87	0.42
1:C:130:U:C2'	1:C:131:U:H5'	2.48	0.42
1:C:137:C:C4	1:C:138:C:N4	2.88	0.41
1:C:181:G:C2	1:C:182:U:C5	3.08	0.41
1:C:309:G:H2'	1:C:310:U:C6	2.55	0.41
1:B:299:A:N3	1:B:299:A:H2'	2.34	0.41
1:A:212:G:N1	1:A:213:C:C4	2.88	0.41
1:D:205:U:H3'	1:D:206:A:C5'	2.50	0.41
1:B:154:C:C2	1:B:155:U:C6	3.08	0.41
1:C:246:A:C5	1:C:247:U:C4	3.07	0.41
1:D:326:A:H8	1:D:326:A:O5'	2.02	0.41
1:D:226:A:C2	1:D:227:G:C1'	3.03	0.41
1:C:108:G:C6	1:C:214:A:N1	2.88	0.41
1:D:306:A:H1'	1:D:307:U:C5	2.54	0.41
1:A:104:A:H1'	1:A:218:A:O4'	2.20	0.41
1:A:163:G:N7	1:A:164:G:C6	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:172:A:N3	1:A:172:A:C2'	2.83	0.41
1:D:154:C:H2'	1:D:154:C:O2	2.19	0.41
1:B:203:C:H2'	1:B:203:C:O2	2.19	0.41
1:B:166:C:C2'	1:B:167:U:OP1	2.68	0.41
1:B:312:G:N2	1:B:313:G:H1'	2.34	0.41
1:B:222:C:C2	1:B:252:A:C2	3.08	0.41
1:B:126:G:C4	1:B:127:C:C5	3.08	0.41
1:C:255:C:H4'	1:C:256:A:OP1	2.20	0.41
1:B:108:G:C5	1:B:214:A:C2	3.08	0.41
1:B:258:U:H3'	1:B:259:A:H8	1.84	0.41
1:B:96:G:N1	1:B:279:G:C4	2.88	0.41
1:B:279:G:O2'	1:B:280:G:H5'	2.19	0.41
1:B:302:A:C5'	1:B:303:G:O5'	2.68	0.41
1:B:260:C:H1'	1:B:305:U:N3	2.35	0.41
1:A:260:C:O2'	1:A:305:U:C2	2.66	0.41
1:D:103:A:O2'	1:D:104:A:H8	1.98	0.41
1:D:269:G:O2'	1:D:270:A:O4'	2.31	0.41
1:D:271:U:H2'	1:D:272:G:C8	2.55	0.41
1:D:301:A:P	1:D:301:A:O4'	2.78	0.41
1:D:305:U:C2'	1:D:305:U:O2	2.68	0.41
1:A:108:G:O6	1:A:214:A:N6	2.53	0.41
1:A:408:G:C2'	1:A:409:U:C6	2.89	0.41
1:C:323:G:C2	1:C:327:G:C2	3.08	0.41
1:A:230:A:N1	1:A:245:G:C6	2.88	0.41
1:D:159:A:C5	1:D:160:G:N7	2.88	0.41
1:C:179:U:H2'	1:C:179:U:O2	2.20	0.41
1:B:165:C:H4'	1:B:182:U:OP1	2.21	0.41
1:B:219:A:N7	1:B:220:G:C8	2.88	0.41
1:B:96:G:O5'	1:B:97:A:OP1	2.37	0.41
1:B:100:G:H4'	1:C:238:A:C2	2.55	0.41
1:A:265:A:C2'	1:A:266:C:O5'	2.68	0.41
1:C:135:U:C2'	1:C:136:A:O5'	2.68	0.41
1:D:261:A:H4'	1:D:306:A:H5'	2.03	0.41
1:C:173:A:H2'	1:C:174:G:H8	1.85	0.41
1:C:320:C:H2'	1:C:321:C:C5'	2.50	0.41
1:B:240:C:C2	1:B:241:U:C6	3.09	0.41
1:B:240:C:N3	1:B:241:U:C5	2.88	0.41
1:B:255:C:O2'	1:B:256:A:OP1	2.26	0.41
1:B:257:G:H2'	1:B:258:U:O4'	2.21	0.41
1:A:264:G:C2	1:A:265:A:C8	3.09	0.41
1:A:265:A:N6	1:A:266:C:N4	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:284:A:O2'	1:B:285:G:C5'	2.56	0.41
1:D:304:G:C5'	1:D:305:U:OP2	2.68	0.41
1:B:403:U:C4	1:B:404:U:C4	3.09	0.41
1:A:130:U:H2'	1:A:130:U:O2	2.21	0.41
1:D:227:G:O2'	1:D:228:U:H5'	2.20	0.41
1:D:156:U:H2'	1:D:157:U:C5	2.55	0.41
1:D:248:A:C5	1:D:250:G:C5	3.08	0.41
1:A:199:U:H6	1:A:199:U:P	2.43	0.41
1:C:162:U:C2	1:C:163:G:C1'	3.04	0.41
1:C:261:A:C8	1:C:306:A:C2	3.08	0.41
1:C:304:G:N2	1:C:307:U:H5	2.14	0.41
1:B:106:U:C5'	1:B:107:U:OP1	2.69	0.41
1:A:271:U:C1'	1:A:303:G:N7	2.72	0.41
1:D:181:G:N3	1:D:186:A:H2	2.19	0.41
1:D:171:A:HO2'	1:D:172:A:P	2.44	0.41
1:A:162:U:H2'	1:A:163:G:H5'	2.02	0.41
1:A:172:A:O2'	1:A:173:A:H5'	2.21	0.41
1:A:120:U:O2'	1:A:121:C:H5'	2.21	0.41
1:B:325:A:O2'	1:B:326:A:O5'	2.38	0.41
1:B:201:G:C5	1:B:202:U:C4	3.09	0.41
1:D:198:A:H1'	1:D:200:G:C8	2.56	0.41
1:C:300:U:C2'	1:C:301:A:OP2	2.69	0.41
1:B:302:A:O4'	1:B:302:A:N3	2.54	0.41
1:D:261:A:H2'	1:D:262:C:OP1	2.20	0.41
1:D:269:G:H2'	1:D:270:A:O5'	2.20	0.41
1:C:170:C:N4	1:C:171:A:C2	2.89	0.41
1:C:171:A:C8	1:C:171:A:O5'	2.70	0.41
1:B:248:A:N7	1:B:250:G:C6	2.89	0.41
1:D:319:U:H3'	1:D:320:C:C5	2.55	0.41
1:D:151:A:C2	1:D:152:A:H1'	2.56	0.41
1:B:197:C:H2'	1:B:198:A:C8	2.52	0.41
1:B:166:C:OP2	1:B:167:U:C3'	2.61	0.41
1:C:158:G:C2	1:C:159:A:C5	3.08	0.41
1:A:176:G:O2'	1:A:177:U:H5'	2.21	0.41
1:B:149:G:C6	1:B:150:G:C5	3.08	0.41
1:C:107:U:H4'	1:C:108:G:OP1	2.20	0.41
1:A:184:A:H2	1:A:212:G:N3	2.18	0.41
1:A:211:C:H5'	1:A:211:C:C6	2.55	0.41
1:A:303:G:N3	1:A:303:G:C2'	2.83	0.41
1:A:102:C:O2	1:A:218:A:H2	2.04	0.41
1:C:230:A:C6	1:C:231:A:N6	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:167:U:H4'	1:D:168:U:O5'	2.21	0.41
1:D:320:C:H2'	1:D:321:C:O5'	2.20	0.41
1:A:225:A:C2	1:A:248:A:C5	3.09	0.41
1:D:127:C:H2'	1:D:128:C:C6	2.56	0.41
1:C:194:G:O2'	1:C:195:G:H5'	2.20	0.41
1:C:298:C:C4	1:C:299:A:C5	3.09	0.41
1:C:307:U:H2'	1:C:308:A:H8	1.82	0.41
1:C:163:G:C3'	1:C:164:G:C8	2.87	0.41
1:B:100:G:C2'	1:B:101:U:H5'	2.47	0.41
1:B:273:U:C6	1:B:274:C:C5	3.09	0.41
1:B:308:A:N6	1:B:309:G:C6	2.89	0.41
1:B:102:C:O2'	1:B:218:A:N3	2.30	0.41
1:B:270:A:O4'	1:B:271:U:C5	2.74	0.41
1:C:133:A:H2'	1:C:134:G:O4'	2.21	0.41
1:D:105:A:O2'	1:D:216:C:O2	2.37	0.41
1:D:302:A:N3	1:D:302:A:H3'	2.35	0.41
1:B:318:C:C2	1:B:403:U:C4	3.09	0.41
1:D:182:U:C2	1:D:187:A:C2	3.09	0.41
1:B:154:C:O2	1:B:155:U:C6	2.74	0.41
1:C:230:A:C2	1:C:245:G:C2	3.09	0.41
1:A:108:G:N2	1:A:185:U:OP1	2.52	0.41
1:D:97:A:H3'	1:D:98:C:C6	2.56	0.41
1:A:410:A:H2'	1:A:411:C:C6	2.56	0.41
1:A:170:C:C2'	1:A:170:C:O2	2.69	0.41
1:A:240:C:C2	1:A:241:U:C5	3.09	0.41
1:C:114:A:N3	1:C:114:A:H2'	2.36	0.41
1:B:326:A:C3'	1:B:326:A:C8	3.03	0.41
1:B:243:U:O2'	1:B:244:U:C5'	2.64	0.41
1:C:178:A:N3	1:C:180:G:C2	2.89	0.41
1:B:254:G:H8	1:B:254:G:O5'	2.03	0.41
1:D:315:C:C2'	1:D:316:C:O5'	2.69	0.41
1:C:100:G:H1'	1:C:275:G:H22	1.86	0.41
1:A:257:G:H2'	1:A:258:U:H5'	2.02	0.41
1:D:256:A:C5	1:D:273:U:OP1	2.73	0.41
1:A:104:A:C2	1:A:105:A:N3	2.89	0.41
1:A:408:G:O2'	1:A:409:U:O5'	2.38	0.41
1:D:319:U:H2'	1:D:320:C:C1'	2.50	0.41
1:A:225:A:O2'	1:A:227:G:O6	2.30	0.41
1:D:241:U:H2'	1:D:242:G:C8	2.56	0.41
1:C:104:A:C2	1:C:217:C:O2	2.74	0.40
1:B:140:A:H2'	1:B:140:A:N3	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:125:A:N3	1:D:125:A:H3'	2.36	0.40
1:A:212:G:N1	1:A:213:C:C5	2.89	0.40
1:D:211:C:H2'	1:D:212:G:H8	1.86	0.40
1:C:318:C:H2'	1:C:319:U:H5'	1.99	0.40
1:D:223:C:H2'	1:D:224:U:H6	1.83	0.40
1:B:240:C:C2	1:B:241:U:C5	3.09	0.40
1:B:264:G:N1	1:B:265:A:C5	2.89	0.40
1:B:264:G:N2	1:B:265:A:C4	2.89	0.40
1:B:289:U:H2'	1:B:290:A:C8	2.56	0.40
1:D:210:G:H5"	1:D:211:C:C5'	2.46	0.40
1:A:104:A:O2'	1:A:218:A:H5'	2.20	0.40
1:D:178:A:C4'	1:D:179:U:O5'	2.62	0.40
1:B:154:C:C2'	1:B:155:U:H5'	2.51	0.40
1:B:229:C:H2'	1:B:230:A:C8	2.56	0.40
1:A:293:C:C2	1:A:294:U:C5	3.10	0.40
1:D:175:G:C6	1:D:176:G:N7	2.90	0.40
1:C:264:G:O2'	1:C:265:A:H5'	2.22	0.40
1:C:97:A:N1	1:C:278:C:O2	2.55	0.40
1:B:163:G:C3'	1:B:164:G:C8	3.04	0.40
1:B:177:U:HO2'	1:B:178:A:H8	1.65	0.40
1:B:178:A:O2'	1:B:179:U:O5'	2.38	0.40
1:B:258:U:C4	1:B:259:A:C5	3.09	0.40
1:D:325:A:C8	1:D:325:A:O5'	2.69	0.40
1:B:129:G:H5"	1:B:130:U:P	2.62	0.40
1:A:199:U:C6	1:A:199:U:O5'	2.74	0.40
1:C:101:U:N3	1:C:102:C:H5	2.10	0.40
1:B:299:A:C2'	1:B:300:U:OP1	2.70	0.40
1:D:110:G:C4	1:D:212:G:N2	2.89	0.40
1:D:303:G:C5'	1:D:304:G:P	3.10	0.40
1:D:140:A:C5	1:D:141:G:C8	3.09	0.40
1:B:229:C:O2'	1:B:230:A:H5'	2.21	0.40
1:A:145:C:H2'	1:A:146:A:O4'	2.21	0.40
1:C:257:G:C5	1:C:258:U:C4	3.10	0.40
1:A:205:U:OP1	1:A:205:U:C4'	2.69	0.40
1:C:101:U:H6	1:C:101:U:O5'	2.04	0.40
1:C:216:C:H3'	1:C:216:C:C6	2.57	0.40
1:C:255:C:HO2'	1:C:256:A:P	2.44	0.40
1:B:267:U:H2'	1:B:268:A:O4'	2.22	0.40
1:B:271:U:H2'	1:B:272:G:O5'	2.21	0.40
1:D:113:A:C6	1:D:206:A:C6	3.10	0.40
1:D:179:U:C2'	1:D:179:U:O2	2.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:169:G:C2	1:A:170:C:C6	3.09	0.40
1:D:280:G:O2'	1:D:281:G:P	2.79	0.40
1:B:172:A:O2'	1:B:173:A:H5'	2.21	0.40
1:B:222:C:C6	1:B:222:C:H3'	2.57	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	240/247 (97%)	79 (32%)	25 (10%)
1	B	246/247 (99%)	95 (38%)	37 (15%)
1	C	235/247 (95%)	88 (37%)	34 (14%)
1	D	240/247 (97%)	96 (40%)	29 (12%)
All	All	961/988 (97%)	358 (37%)	125 (13%)

All (358) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	102	C
1	A	103	A
1	A	105	A
1	A	107	U
1	A	108	G
1	A	109	C
1	A	113	A
1	A	114	A
1	A	122	A
1	A	123	A

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Mol	Chain	Res	Type
1	A	125	A
1	A	130	U
1	A	133	A
1	A	134	G
1	A	135	U
1	A	139	A
1	A	154	C
1	A	165	C
1	A	167	U
1	A	168	U
1	A	169	G
1	A	170	C
1	A	172	A
1	A	173	A
1	A	174	G
1	A	179	U
1	A	180	G
1	A	182	U
1	A	183	A
1	A	184	A
1	A	186	A
1	A	187	A
1	A	188	G
1	A	189	C
1	A	190	U
1	A	192	A
1	A	197	C
1	A	199	U
1	A	205	U
1	A	210	G
1	A	211	C
1	A	226	A
1	A	232	C
1	A	233	A
1	A	237	G
1	A	248	A
1	A	249	U
1	A	250	G
1	A	256	A
1	A	257	G
1	A	259	A
1	A	260	C

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Mol	Chain	Res	Type
1	A	261	A
1	A	262	C
1	A	263	A
1	A	268	A
1	A	270	A
1	A	271	U
1	A	278	C
1	A	285	G
1	A	286	A
1	A	299	A
1	A	300	U
1	A	301	A
1	A	303	G
1	A	304	G
1	A	305	U
1	A	306	A
1	A	307	U
1	A	311	C
1	A	314	A
1	A	317	U
1	A	320	C
1	A	323	G
1	A	404	U
1	A	406	G
1	A	407	A
1	A	409	U
1	A	411	C
1	B	97	A
1	B	103	A
1	B	104	A
1	B	106	U
1	B	107	U
1	B	108	G
1	B	109	C
1	B	111	G
1	B	120	U
1	B	122	A
1	B	125	A
1	B	126	G
1	B	130	U
1	B	131	U
1	B	139	A

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Mol	Chain	Res	Type
1	B	148	G
1	B	154	C
1	B	164	G
1	B	165	C
1	B	167	U
1	B	168	U
1	B	169	G
1	B	171	A
1	B	172	A
1	B	176	G
1	B	177	U
1	B	179	U
1	B	180	G
1	B	181	G
1	B	182	U
1	B	183	A
1	B	186	A
1	B	187	A
1	B	188	G
1	B	192	A
1	B	199	U
1	B	200	G
1	B	207	A
1	B	211	C
1	B	218	A
1	B	219	A
1	B	220	G
1	B	221	U
1	B	226	A
1	B	248	A
1	B	249	U
1	B	250	G
1	B	255	C
1	B	256	A
1	B	257	G
1	B	258	U
1	B	259	A
1	B	260	C
1	B	261	A
1	B	262	C
1	B	263	A
1	B	266	C

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Mol	Chain	Res	Type
1	B	270	A
1	B	271	U
1	B	273	U
1	B	274	C
1	B	279	G
1	B	281	G
1	B	282	G
1	B	285	G
1	B	286	A
1	B	287	U
1	B	288	G
1	B	289	U
1	B	290	A
1	B	291	U
1	B	292	U
1	B	296	C
1	B	299	A
1	B	300	U
1	B	301	A
1	B	302	A
1	B	303	G
1	B	304	G
1	B	305	U
1	B	306	A
1	B	307	U
1	B	312	G
1	B	313	G
1	B	314	A
1	B	315	C
1	B	316	C
1	B	317	U
1	B	318	C
1	B	324	A
1	B	325	A
1	B	326	A
1	B	330	A
1	B	407	A
1	B	410	A
1	C	97	A
1	C	98	C
1	C	100	G
1	C	103	A

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Mol	Chain	Res	Type
1	C	108	G
1	C	111	G
1	C	114	A
1	C	117	G
1	C	122	A
1	C	123	A
1	C	125	A
1	C	126	G
1	C	128	C
1	C	133	A
1	C	135	U
1	C	139	A
1	C	140	A
1	C	141	G
1	C	154	C
1	C	159	A
1	C	164	G
1	C	167	U
1	C	168	U
1	C	169	G
1	C	172	A
1	C	179	U
1	C	180	G
1	C	183	A
1	C	184	A
1	C	186	A
1	C	187	A
1	C	188	G
1	C	198	A
1	C	199	U
1	C	202	U
1	C	210	G
1	C	211	C
1	C	214	A
1	C	216	C
1	C	218	A
1	C	220	G
1	C	226	A
1	C	228	U
1	C	236	A
1	C	237	G
1	C	242	G

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Mol	Chain	Res	Type
1	C	248	A
1	C	249	U
1	C	250	G
1	C	251	G
1	C	256	A
1	C	257	G
1	C	258	U
1	C	259	A
1	C	260	C
1	C	261	A
1	C	262	C
1	C	263	A
1	C	266	C
1	C	268	A
1	C	269	G
1	C	270	A
1	C	273	U
1	C	276	G
1	C	277	C
1	C	281	G
1	C	284	A
1	C	285	G
1	C	301	A
1	C	302	A
1	C	303	G
1	C	304	G
1	C	305	U
1	C	306	A
1	C	307	U
1	C	311	C
1	C	312	G
1	C	313	G
1	C	317	U
1	C	319	U
1	C	320	C
1	C	321	C
1	C	324	A
1	C	325	A
1	C	328	G
1	C	330	A
1	C	404	U
1	C	405	G

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Mol	Chain	Res	Type
1	D	97	A
1	D	103	A
1	D	104	A
1	D	106	U
1	D	107	U
1	D	109	C
1	D	117	G
1	D	118	G
1	D	119	G
1	D	122	A
1	D	123	A
1	D	125	A
1	D	126	G
1	D	127	C
1	D	130	U
1	D	133	A
1	D	136	A
1	D	138	C
1	D	139	A
1	D	148	G
1	D	151	A
1	D	152	A
1	D	158	G
1	D	163	G
1	D	164	G
1	D	167	U
1	D	168	U
1	D	169	G
1	D	170	C
1	D	177	U
1	D	178	A
1	D	179	U
1	D	183	A
1	D	184	A
1	D	185	U
1	D	186	A
1	D	187	A
1	D	188	G
1	D	189	C
1	D	192	A
1	D	197	C
1	D	199	U

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Mol	Chain	Res	Type
1	D	200	G
1	D	201	G
1	D	202	U
1	D	206	A
1	D	210	G
1	D	211	C
1	D	220	G
1	D	226	A
1	D	232	C
1	D	240	C
1	D	249	U
1	D	251	G
1	D	255	C
1	D	256	A
1	D	257	G
1	D	259	A
1	D	260	C
1	D	261	A
1	D	262	C
1	D	263	A
1	D	264	G
1	D	267	U
1	D	270	A
1	D	271	U
1	D	274	C
1	D	275	G
1	D	281	G
1	D	283	A
1	D	285	G
1	D	299	A
1	D	300	U
1	D	301	A
1	D	302	A
1	D	303	G
1	D	304	G
1	D	305	U
1	D	306	A
1	D	308	A
1	D	310	U
1	D	312	G
1	D	315	C
1	D	317	U

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Mol	Chain	Res	Type
1	D	318	C
1	D	319	U
1	D	320	C
1	D	324	A
1	D	325	A
1	D	326	A
1	D	328	G
1	D	330	A
1	D	405	G
1	D	408	G
1	D	409	U
1	D	410	A

All (125) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	129	G
1	A	132	C
1	A	138	C
1	A	164	G
1	A	167	U
1	A	168	U
1	A	169	G
1	A	171	A
1	A	178	A
1	A	179	U
1	A	182	U
1	A	189	C
1	A	198	A
1	A	232	C
1	A	248	A
1	A	249	U
1	A	255	C
1	A	256	A
1	A	258	U
1	A	260	C
1	A	262	C
1	A	267	U
1	A	269	G
1	A	305	U
1	A	408	G
1	B	103	A

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Mol	Chain	Res	Type
1	B	107	U
1	B	129	G
1	B	138	C
1	B	164	G
1	B	167	U
1	B	168	U
1	B	178	A
1	B	179	U
1	B	180	G
1	B	182	U
1	B	185	U
1	B	188	G
1	B	198	A
1	B	199	U
1	B	217	C
1	B	225	A
1	B	248	A
1	B	249	U
1	B	255	C
1	B	256	A
1	B	258	U
1	B	260	C
1	B	261	A
1	B	262	C
1	B	269	G
1	B	279	G
1	B	281	G
1	B	285	G
1	B	287	U
1	B	288	G
1	B	290	A
1	B	295	U
1	B	299	A
1	B	303	G
1	B	314	A
1	B	325	A
1	C	96	G
1	C	102	C
1	C	107	U
1	C	113	A
1	C	127	C
1	C	133	A

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Mol	Chain	Res	Type
1	C	138	C
1	C	167	U
1	C	168	U
1	C	171	A
1	C	182	U
1	C	185	U
1	C	188	G
1	C	198	A
1	C	201	G
1	C	209	C
1	C	210	G
1	C	217	C
1	C	241	U
1	C	248	A
1	C	255	C
1	C	256	A
1	C	257	G
1	C	258	U
1	C	261	A
1	C	262	C
1	C	269	G
1	C	276	G
1	C	300	U
1	C	302	A
1	C	310	U
1	C	311	C
1	C	319	U
1	C	324	A
1	D	103	A
1	D	116	G
1	D	122	A
1	D	126	G
1	D	138	C
1	D	157	U
1	D	162	U
1	D	163	G
1	D	167	U
1	D	177	U
1	D	178	A
1	D	179	U
1	D	182	U
1	D	185	U

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Mol	Chain	Res	Type
1	D	187	A
1	D	198	A
1	D	200	G
1	D	219	A
1	D	225	A
1	D	256	A
1	D	258	U
1	D	261	A
1	D	262	C
1	D	269	G
1	D	280	G
1	D	300	U
1	D	303	G
1	D	319	U
1	D	325	A

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

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

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

Of 38 ligands modelled in this entry, 38 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	242/247 (97%)	0.02	6 (2%)	61	44	46, 101, 232, 400	0
1	B	247/247 (100%)	-0.06	6 (2%)	62	46	10, 78, 262, 400	0
1	C	237/247 (95%)	0.13	17 (7%)	18	11	17, 87, 290, 400	0
1	D	242/247 (97%)	0.17	7 (2%)	55	38	48, 131, 292, 400	0
All	All	968/988 (97%)	0.06	36 (3%)	45	30	10, 102, 278, 400	0

All (36) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	324	A	6.3
1	D	304	G	5.3
1	C	305	U	4.8
1	C	304	G	4.8
1	B	320	C	4.6
1	A	284	A	4.1
1	C	406	G	4.0
1	A	320	C	3.8
1	A	406	G	3.7
1	D	292	U	3.6
1	D	123	A	3.6
1	B	200	G	3.4
1	C	119	G	3.3
1	D	193	C	3.1
1	C	123	A	2.9
1	C	195	G	2.9
1	C	122	A	2.9
1	C	322	C	2.8
1	C	201	G	2.7
1	B	304	G	2.5
1	A	410	A	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	328	G	2.5
1	C	121	C	2.5
1	C	405	G	2.4
1	D	201	G	2.3
1	B	319	U	2.2
1	C	271	U	2.2
1	D	261	A	2.2
1	A	258	U	2.1
1	C	323	G	2.1
1	B	289	U	2.1
1	A	263	A	2.1
1	D	271	U	2.1
1	B	291	U	2.0
1	C	202	U	2.0
1	C	114	A	2.0

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

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

6.3 Carbohydrates (i)

There are no carbohydrates in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å^2)	Q<0.9
2	MG	A	17	1/1	0.80	0.35	3.14	58,58,58,58	0
2	MG	B	16	1/1	0.79	0.34	1.14	171,171,171,171	0
2	MG	C	1	1/1	0.95	0.23	0.75	25,25,25,25	0
2	MG	A	9	1/1	0.92	0.19	0.02	112,112,112,112	0
2	MG	A	3	1/1	0.92	0.26	0.02	10,10,10,10	0
2	MG	C	7	1/1	0.98	0.12	-0.85	83,83,83,83	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å^2)	Q<0.9
2	MG	D	4	1/1	0.98	0.16	-1.06	65,65,65,65	0
2	MG	B	9	1/1	0.24	0.17	-1.07	149,149,149,149	0
2	MG	B	2	1/1	0.99	0.13	-3.02	49,49,49,49	0
2	MG	B	6	1/1	0.87	0.20	-	10,10,10,10	0
2	MG	D	415	1/1	0.15	0.16	-	174,174,174,174	0
2	MG	C	18	1/1	0.95	0.80	-	68,68,68,68	0
2	MG	D	8	1/1	0.96	0.12	-	106,106,106,106	0
2	MG	D	416	1/1	0.30	0.14	-	130,130,130,130	0
2	MG	B	3	1/1	0.37	0.42	-	100,100,100,100	0
2	MG	C	16	1/1	0.56	1.22	-	104,104,104,104	0
2	MG	A	415	1/1	0.23	0.31	-	148,148,148,148	0
2	MG	B	13	1/1	0.96	0.26	-	48,48,48,48	0
2	MG	D	12	1/1	0.99	0.47	-	108,108,108,108	0
2	MG	C	10	1/1	0.94	0.13	-	16,16,16,16	0
2	MG	C	20	1/1	0.90	0.38	-	50,50,50,50	0
2	MG	C	6	1/1	0.77	0.49	-	84,84,84,84	0
2	MG	B	21	1/1	0.94	0.24	-	26,26,26,26	0
2	MG	D	15	1/1	0.77	1.19	-	119,119,119,119	0
2	MG	A	12	1/1	0.68	0.59	-	169,169,169,169	0
2	MG	B	5	1/1	0.93	0.13	-	53,53,53,53	0
2	MG	A	11	1/1	0.62	0.30	-	127,127,127,127	0
2	MG	D	22	1/1	0.69	0.19	-	157,157,157,157	0
2	MG	D	417	1/1	0.57	0.39	-	130,130,130,130	0
2	MG	D	13	1/1	0.78	2.08	-	105,105,105,105	0
2	MG	C	11	1/1	0.07	1.69	-	105,105,105,105	0
2	MG	A	2	1/1	0.92	0.68	-	110,110,110,110	0
2	MG	A	14	1/1	0.82	0.25	-	138,138,138,138	0
2	MG	A	1	1/1	0.16	0.52	-	113,113,113,113	0
2	MG	C	415	1/1	0.84	0.16	-	138,138,138,138	0
2	MG	B	415	1/1	0.91	0.93	-	97,97,97,97	0
2	MG	A	7	1/1	0.84	0.59	-	108,108,108,108	0
2	MG	D	19	1/1	0.94	0.20	-	64,64,64,64	0

6.5 Other polymers (i)

There are no such residues in this entry.