



Full wwPDB EM Validation Report ⓘ

Feb 24, 2025 – 12:01 PM EST

PDB ID : 1FOQ
Title : PENTAMERIC MODEL OF THE BACTERIOPHAGE PHI29 PROHEAD
RNA
Authors : Simpson, A.A.; Tao, Y.; Leiman, P.G.; Badasso, M.O.; He, Y.; Jardine, P.J.;
Olson, N.H.; Morais, M.C.; Grimes, S.; Anderson, D.L.; Baker, T.S.; Ross-
mann, M.G.
Deposited on : 2000-08-28
Resolution : 20.00 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.41.4

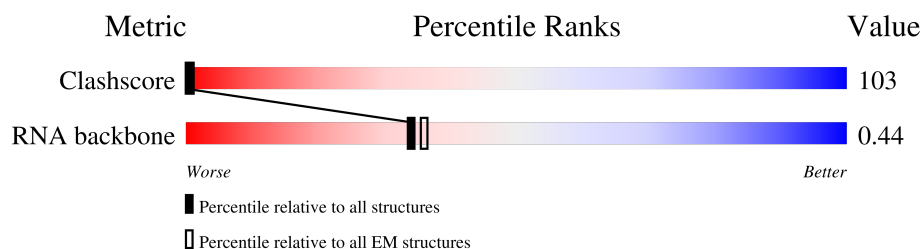
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 20.00 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
RNA backbone	6643	2191

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

Mol	Chain	Length	Quality of chain
1	A	120	
1	B	120	
1	C	120	
1	D	120	
1	E	120	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 12095 atoms, of which 545 are hydrogens and 0 are deuteriums.

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

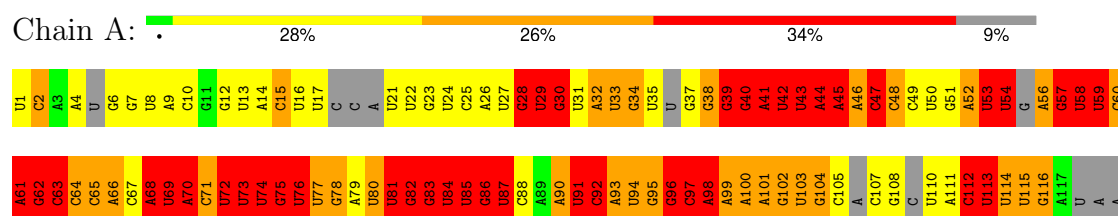
- Molecule 1 is a RNA chain called BACTERIOPHAGE PHI29 PROHEAD RNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		
1	B	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		
1	C	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		
1	D	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		
1	E	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		

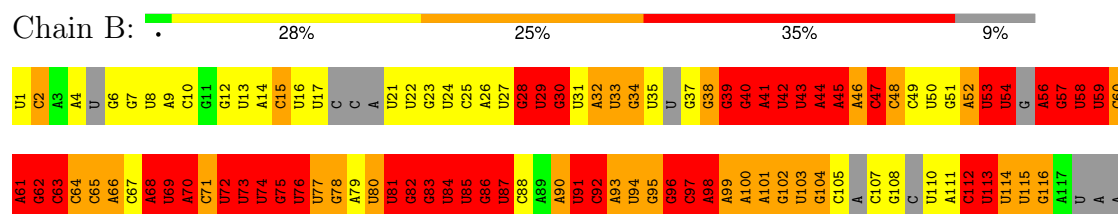
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

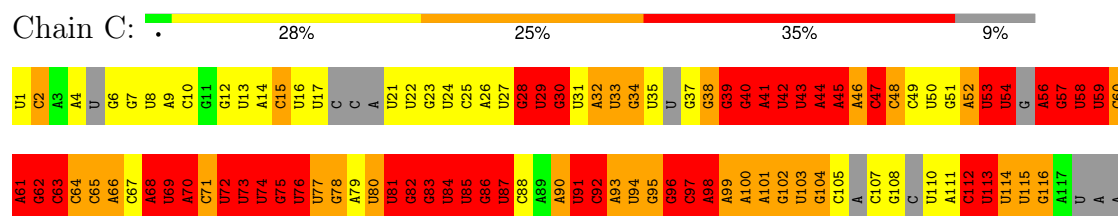
• Molecule 1: BACTERIOPHAGE PHI29 PROHEAD RNA



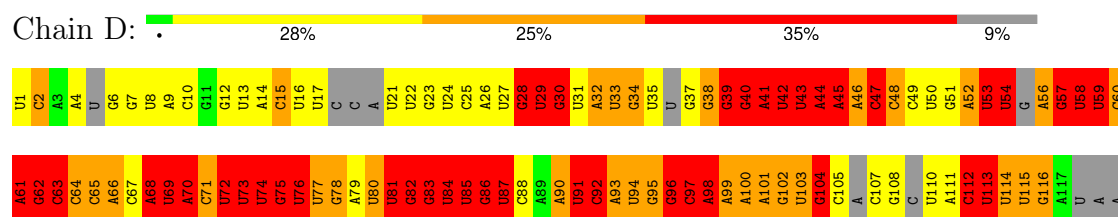
• Molecule 1: BACTERIOPHAGE PHI29 PROHEAD RNA



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• Molecule 1: BACTERIOPHAGE PHI29 PROHEAD RNA



U1	C2	A3	A4	U	G6	G7	U8	A9	C10	G11	G12	U13	A14	C15	U16	U17	C	C	A	U21	U22	G23	U24	C25	A26	U27	G28	U29	G30	U31	A32	U33	G34	U35	U	G37	G38	G39	G40	A41	U42	U43	A44	A45	A46	C47	C48	C49	U50	G51	A52	U53	U54	G	A56	G57	U58	U59	C60
A61	G62	C63	C64	C65	A66	C67	A68	U69	A70	C71	U72	U73	U74	G75	U76	U77	G78	A79	U80	U81	G82	G83	U84	U85	G86	U87	C88	A89	A90	U91	C92	A93	U94	G95	G96	C97	A98	A99	A100	A101	G102	U103	G104	C105	A	C107	G108	C	U110	A111	C112	U113	U114	U115	G116	A117	U	A	A

4 Data and refinement statistics

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

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	1.00Å 1.00Å 1.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	(Not available) – 20.00	Depositor
% Data completeness (in resolution range)	(Not available) ((Not available)-20.00)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	unknown	Depositor
R, R_{free}	(Not available) , (Not available)	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	12095	wwPDB-VP
Average B, all atoms (Å ²)	0.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

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	4.36	77/2567 (3.0%)	3.81	261/3966 (6.6%)
1	B	4.36	77/2567 (3.0%)	3.81	264/3966 (6.7%)
1	C	4.36	77/2567 (3.0%)	3.81	262/3966 (6.6%)
1	D	4.36	76/2567 (3.0%)	3.81	261/3966 (6.6%)
1	E	4.36	76/2567 (3.0%)	3.81	261/3966 (6.6%)
All	All	4.36	383/12835 (3.0%)	3.81	1309/19830 (6.6%)

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

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

All (383) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	44	A	O3'-P	49.39	2.20	1.61
1	C	44	A	O3'-P	49.38	2.20	1.61
1	A	44	A	O3'-P	49.36	2.20	1.61
1	E	44	A	O3'-P	49.35	2.20	1.61
1	D	44	A	O3'-P	49.31	2.20	1.61
1	B	34	G	O3'-P	44.63	2.14	1.61
1	E	34	G	O3'-P	44.60	2.14	1.61
1	A	34	G	O3'-P	44.57	2.14	1.61
1	D	34	G	O3'-P	44.55	2.14	1.61
1	C	34	G	O3'-P	44.49	2.14	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	53	U	O3'-P	42.05	2.11	1.61
1	A	53	U	O3'-P	42.00	2.11	1.61
1	C	53	U	O3'-P	41.99	2.11	1.61
1	B	53	U	O3'-P	41.98	2.11	1.61
1	E	53	U	O3'-P	41.95	2.11	1.61
1	E	98	A	O3'-P	40.75	2.10	1.61
1	D	98	A	O3'-P	40.75	2.10	1.61
1	C	98	A	O3'-P	40.75	2.10	1.61
1	A	98	A	O3'-P	40.75	2.10	1.61
1	B	98	A	O3'-P	40.75	2.10	1.61
1	E	48	C	O3'-P	40.38	2.09	1.61
1	D	39	G	O3'-P	-40.32	1.12	1.61
1	A	48	C	O3'-P	40.32	2.09	1.61
1	B	48	C	O3'-P	40.32	2.09	1.61
1	D	48	C	O3'-P	40.31	2.09	1.61
1	C	48	C	O3'-P	40.30	2.09	1.61
1	A	39	G	O3'-P	-40.29	1.12	1.61
1	E	39	G	O3'-P	-40.28	1.12	1.61
1	C	39	G	O3'-P	-40.28	1.12	1.61
1	B	39	G	O3'-P	-40.23	1.12	1.61
1	D	112	C	O3'-P	38.13	2.06	1.61
1	C	112	C	O3'-P	38.10	2.06	1.61
1	B	112	C	O3'-P	38.08	2.06	1.61
1	A	112	C	O3'-P	38.05	2.06	1.61
1	E	112	C	O3'-P	38.02	2.06	1.61
1	C	81	U	O3'-P	37.34	2.06	1.61
1	B	81	U	O3'-P	37.32	2.06	1.61
1	A	81	U	O3'-P	37.30	2.06	1.61
1	D	81	U	O3'-P	37.27	2.05	1.61
1	E	81	U	O3'-P	37.24	2.05	1.61
1	D	99	A	O3'-P	36.34	2.04	1.61
1	B	99	A	O3'-P	36.31	2.04	1.61
1	E	99	A	O3'-P	36.31	2.04	1.61
1	A	99	A	O3'-P	36.31	2.04	1.61
1	C	99	A	O3'-P	36.29	2.04	1.61
1	D	90	A	O3'-P	35.53	2.03	1.61
1	E	90	A	O3'-P	35.51	2.03	1.61
1	C	90	A	O3'-P	35.48	2.03	1.61
1	B	90	A	O3'-P	35.48	2.03	1.61
1	A	90	A	O3'-P	35.46	2.03	1.61
1	C	56	A	O3'-P	34.44	2.02	1.61
1	A	56	A	O3'-P	34.37	2.02	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	56	A	O3'-P	34.36	2.02	1.61
1	E	56	A	O3'-P	34.31	2.02	1.61
1	B	56	A	O3'-P	34.29	2.02	1.61
1	C	100	A	O3'-P	34.13	2.02	1.61
1	B	100	A	O3'-P	34.09	2.02	1.61
1	D	100	A	O3'-P	34.07	2.02	1.61
1	A	100	A	O3'-P	34.06	2.02	1.61
1	E	100	A	O3'-P	34.02	2.02	1.61
1	B	70	A	O3'-P	-33.64	1.20	1.61
1	C	70	A	O3'-P	-33.61	1.20	1.61
1	A	70	A	O3'-P	-33.58	1.20	1.61
1	E	70	A	O3'-P	-33.58	1.20	1.61
1	D	70	A	O3'-P	-33.56	1.20	1.61
1	C	93	A	O3'-P	33.20	2.00	1.61
1	E	93	A	O3'-P	33.19	2.00	1.61
1	A	93	A	O3'-P	33.15	2.00	1.61
1	D	93	A	O3'-P	33.14	2.00	1.61
1	B	93	A	O3'-P	33.11	2.00	1.61
1	C	60	C	O3'-P	-31.81	1.23	1.61
1	D	60	C	O3'-P	-31.79	1.23	1.61
1	B	60	C	O3'-P	-31.76	1.23	1.61
1	A	60	C	O3'-P	-31.75	1.23	1.61
1	E	60	C	O3'-P	-31.75	1.23	1.61
1	D	40	G	O3'-P	30.66	1.98	1.61
1	E	40	G	O3'-P	30.64	1.98	1.61
1	A	40	G	O3'-P	30.62	1.97	1.61
1	B	40	G	O3'-P	30.60	1.97	1.61
1	C	87	U	O3'-P	30.60	1.97	1.61
1	C	40	G	O3'-P	30.57	1.97	1.61
1	E	87	U	O3'-P	30.56	1.97	1.61
1	A	87	U	O3'-P	30.55	1.97	1.61
1	B	87	U	O3'-P	30.52	1.97	1.61
1	D	87	U	O3'-P	30.52	1.97	1.61
1	E	67	C	O3'-P	-30.06	1.25	1.61
1	D	105	C	P-O5'	30.05	1.89	1.59
1	E	105	C	P-O5'	30.03	1.89	1.59
1	A	105	C	P-O5'	30.02	1.89	1.59
1	C	105	C	P-O5'	30.01	1.89	1.59
1	B	67	C	O3'-P	-30.00	1.25	1.61
1	A	67	C	O3'-P	-29.99	1.25	1.61
1	B	105	C	P-O5'	29.99	1.89	1.59
1	C	67	C	O3'-P	-29.98	1.25	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	67	C	O3'-P	-29.96	1.25	1.61
1	E	95	G	O3'-P	29.68	1.96	1.61
1	A	95	G	O3'-P	29.63	1.96	1.61
1	D	95	G	O3'-P	29.63	1.96	1.61
1	C	95	G	O3'-P	29.61	1.96	1.61
1	B	95	G	O3'-P	29.61	1.96	1.61
1	B	64	C	O3'-P	-28.62	1.26	1.61
1	E	64	C	O3'-P	-28.62	1.26	1.61
1	A	64	C	O3'-P	-28.60	1.26	1.61
1	D	64	C	O3'-P	-28.60	1.26	1.61
1	C	64	C	O3'-P	-28.57	1.26	1.61
1	A	96	G	O3'-P	28.50	1.95	1.61
1	E	96	G	O3'-P	28.50	1.95	1.61
1	C	96	G	O3'-P	28.48	1.95	1.61
1	E	45	A	O3'-P	28.47	1.95	1.61
1	B	45	A	O3'-P	28.46	1.95	1.61
1	B	96	G	O3'-P	28.44	1.95	1.61
1	D	96	G	O3'-P	28.43	1.95	1.61
1	A	45	A	O3'-P	28.42	1.95	1.61
1	C	45	A	O3'-P	28.42	1.95	1.61
1	D	45	A	O3'-P	28.40	1.95	1.61
1	E	81	U	P-OP2	28.20	1.96	1.49
1	D	81	U	P-OP2	28.20	1.96	1.49
1	B	81	U	P-OP2	28.19	1.96	1.49
1	A	81	U	P-OP2	28.18	1.96	1.49
1	C	81	U	P-OP2	28.17	1.96	1.49
1	D	84	U	O3'-P	-27.66	1.27	1.61
1	B	63	C	O3'-P	27.61	1.94	1.61
1	C	63	C	O3'-P	27.61	1.94	1.61
1	E	63	C	O3'-P	27.60	1.94	1.61
1	A	84	U	O3'-P	-27.60	1.28	1.61
1	C	84	U	O3'-P	-27.59	1.28	1.61
1	A	63	C	O3'-P	27.57	1.94	1.61
1	E	84	U	O3'-P	-27.55	1.28	1.61
1	D	63	C	O3'-P	27.54	1.94	1.61
1	B	84	U	O3'-P	-27.53	1.28	1.61
1	C	92	C	O3'-P	27.31	1.94	1.61
1	A	92	C	O3'-P	27.26	1.93	1.61
1	D	92	C	O3'-P	27.25	1.93	1.61
1	E	92	C	O3'-P	27.23	1.93	1.61
1	B	92	C	O3'-P	27.19	1.93	1.61
1	E	101	A	O3'-P	27.02	1.93	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	101	A	O3'-P	27.00	1.93	1.61
1	D	101	A	O3'-P	26.99	1.93	1.61
1	B	101	A	O3'-P	26.98	1.93	1.61
1	A	101	A	O3'-P	26.98	1.93	1.61
1	E	103	U	O3'-P	26.46	1.93	1.61
1	A	103	U	O3'-P	26.46	1.92	1.61
1	D	103	U	O3'-P	26.43	1.92	1.61
1	B	103	U	O3'-P	26.43	1.92	1.61
1	C	103	U	O3'-P	26.41	1.92	1.61
1	E	59	U	O3'-P	-26.24	1.29	1.61
1	B	94	U	O3'-P	26.19	1.92	1.61
1	A	59	U	O3'-P	-26.16	1.29	1.61
1	D	94	U	O3'-P	26.16	1.92	1.61
1	B	59	U	O3'-P	-26.16	1.29	1.61
1	D	59	U	O3'-P	-26.14	1.29	1.61
1	A	94	U	O3'-P	26.14	1.92	1.61
1	C	59	U	O3'-P	-26.14	1.29	1.61
1	E	94	U	O3'-P	26.10	1.92	1.61
1	C	94	U	O3'-P	26.10	1.92	1.61
1	C	41	A	O3'-P	-25.86	1.30	1.61
1	B	41	A	O3'-P	-25.86	1.30	1.61
1	E	41	A	O3'-P	-25.85	1.30	1.61
1	A	41	A	O3'-P	-25.84	1.30	1.61
1	D	41	A	O3'-P	-25.80	1.30	1.61
1	A	110	U	O3'-P	24.88	1.91	1.61
1	E	110	U	O3'-P	24.87	1.91	1.61
1	C	58	U	O3'-P	24.87	1.91	1.61
1	C	110	U	O3'-P	24.87	1.91	1.61
1	B	110	U	O3'-P	24.87	1.91	1.61
1	D	110	U	O3'-P	24.85	1.91	1.61
1	D	58	U	O3'-P	24.83	1.91	1.61
1	A	58	U	O3'-P	24.83	1.91	1.61
1	B	58	U	O3'-P	24.79	1.91	1.61
1	E	58	U	O3'-P	24.79	1.90	1.61
1	E	33	U	O3'-P	-23.27	1.33	1.61
1	A	33	U	O3'-P	-23.23	1.33	1.61
1	D	33	U	O3'-P	-23.22	1.33	1.61
1	B	33	U	O3'-P	-23.20	1.33	1.61
1	C	33	U	O3'-P	-23.17	1.33	1.61
1	C	74	U	O3'-P	23.10	1.88	1.61
1	A	74	U	O3'-P	23.05	1.88	1.61
1	E	74	U	O3'-P	23.04	1.88	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	74	U	O3'-P	23.03	1.88	1.61
1	B	74	U	O3'-P	22.99	1.88	1.61
1	B	105	C	P-OP1	22.14	1.86	1.49
1	C	105	C	P-OP1	22.14	1.86	1.49
1	A	105	C	P-OP1	22.12	1.86	1.49
1	E	105	C	P-OP1	22.12	1.86	1.49
1	D	105	C	P-OP1	22.09	1.86	1.49
1	D	57	G	C3'-O3'	21.66	1.72	1.42
1	E	57	G	C3'-O3'	21.61	1.72	1.42
1	B	57	G	C3'-O3'	21.61	1.72	1.42
1	A	57	G	C3'-O3'	21.60	1.72	1.42
1	C	57	G	C3'-O3'	21.58	1.72	1.42
1	D	52	A	O3'-P	-20.99	1.35	1.61
1	E	52	A	O3'-P	-20.98	1.35	1.61
1	C	52	A	O3'-P	-20.96	1.36	1.61
1	A	52	A	O3'-P	-20.95	1.36	1.61
1	B	52	A	O3'-P	-20.94	1.36	1.61
1	C	87	U	P-O5'	20.65	1.80	1.59
1	D	87	U	P-O5'	20.63	1.80	1.59
1	A	87	U	P-O5'	20.61	1.80	1.59
1	E	73	U	O3'-P	20.60	1.85	1.61
1	E	87	U	P-O5'	20.59	1.80	1.59
1	B	87	U	P-O5'	20.58	1.80	1.59
1	C	73	U	O3'-P	20.57	1.85	1.61
1	A	73	U	O3'-P	20.53	1.85	1.61
1	D	73	U	O3'-P	20.52	1.85	1.61
1	B	73	U	O3'-P	20.50	1.85	1.61
1	D	61	A	O3'-P	-20.42	1.36	1.61
1	E	61	A	O3'-P	-20.41	1.36	1.61
1	C	61	A	O3'-P	-20.41	1.36	1.61
1	A	61	A	O3'-P	-20.38	1.36	1.61
1	B	61	A	O3'-P	-20.35	1.36	1.61
1	D	81	U	O5'-C5'	20.10	1.76	1.44
1	E	81	U	O5'-C5'	20.09	1.76	1.44
1	B	81	U	O5'-C5'	20.07	1.76	1.44
1	A	81	U	O5'-C5'	20.06	1.76	1.44
1	C	81	U	O5'-C5'	20.04	1.76	1.44
1	C	111	A	O3'-P	19.75	1.84	1.61
1	D	111	A	O3'-P	19.74	1.84	1.61
1	E	111	A	O3'-P	19.72	1.84	1.61
1	B	111	A	O3'-P	19.72	1.84	1.61
1	A	111	A	O3'-P	19.71	1.84	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	114	U	O3'-P	19.66	1.84	1.61
1	E	114	U	O3'-P	19.66	1.84	1.61
1	A	114	U	O3'-P	19.63	1.84	1.61
1	D	114	U	O3'-P	19.63	1.84	1.61
1	C	114	U	O3'-P	19.58	1.84	1.61
1	C	115	U	O3'-P	19.01	1.83	1.61
1	D	115	U	O3'-P	19.01	1.83	1.61
1	A	115	U	O3'-P	18.98	1.83	1.61
1	E	115	U	O3'-P	18.97	1.83	1.61
1	B	115	U	O3'-P	18.97	1.83	1.61
1	D	1	U	O3'-P	18.96	1.83	1.61
1	A	1	U	O3'-P	18.94	1.83	1.61
1	B	1	U	O3'-P	18.90	1.83	1.61
1	C	1	U	O3'-P	18.89	1.83	1.61
1	E	1	U	O3'-P	18.87	1.83	1.61
1	D	103	U	C3'-O3'	-18.15	1.16	1.42
1	A	103	U	C3'-O3'	-18.12	1.16	1.42
1	C	103	U	C3'-O3'	-18.11	1.16	1.42
1	E	103	U	C3'-O3'	-18.10	1.16	1.42
1	B	103	U	C3'-O3'	-18.09	1.16	1.42
1	E	79	A	O3'-P	17.97	1.82	1.61
1	D	79	A	O3'-P	17.96	1.82	1.61
1	A	79	A	O3'-P	17.93	1.82	1.61
1	B	79	A	O3'-P	17.93	1.82	1.61
1	C	79	A	O3'-P	17.89	1.82	1.61
1	E	77	U	O3'-P	17.47	1.82	1.61
1	C	77	U	O3'-P	17.47	1.82	1.61
1	D	77	U	O3'-P	17.47	1.82	1.61
1	A	77	U	O3'-P	17.46	1.82	1.61
1	B	77	U	O3'-P	17.44	1.82	1.61
1	D	105	C	P-OP2	15.37	1.75	1.49
1	A	105	C	P-OP2	15.36	1.75	1.49
1	C	105	C	P-OP2	15.33	1.75	1.49
1	E	105	C	P-OP2	15.32	1.75	1.49
1	B	105	C	P-OP2	15.29	1.75	1.49
1	E	28	G	O3'-P	-15.18	1.43	1.61
1	A	28	G	O3'-P	-15.16	1.43	1.61
1	B	28	G	O3'-P	-15.14	1.43	1.61
1	C	28	G	O3'-P	-15.13	1.43	1.61
1	D	28	G	O3'-P	-15.09	1.43	1.61
1	C	47	C	O3'-P	-15.02	1.43	1.61
1	E	47	C	O3'-P	-15.02	1.43	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	47	C	O3'-P	-14.99	1.43	1.61
1	A	47	C	O3'-P	-14.99	1.43	1.61
1	B	47	C	O3'-P	-14.93	1.43	1.61
1	C	86	G	O3'-P	-14.59	1.43	1.61
1	D	86	G	O3'-P	-14.54	1.43	1.61
1	A	86	G	O3'-P	-14.54	1.43	1.61
1	B	86	G	O3'-P	-14.53	1.43	1.61
1	E	86	G	O3'-P	-14.50	1.43	1.61
1	D	104	G	O3'-P	14.45	1.78	1.61
1	B	104	G	O3'-P	14.44	1.78	1.61
1	A	104	G	O3'-P	14.44	1.78	1.61
1	E	104	G	O3'-P	14.40	1.78	1.61
1	C	104	G	O3'-P	14.38	1.78	1.61
1	D	91	U	O3'-P	13.43	1.77	1.61
1	E	91	U	O3'-P	13.42	1.77	1.61
1	A	91	U	O3'-P	13.38	1.77	1.61
1	B	91	U	O3'-P	13.38	1.77	1.61
1	C	91	U	O3'-P	13.30	1.77	1.61
1	C	38	G	O3'-P	12.69	1.76	1.61
1	C	87	U	P-OP1	12.68	1.70	1.49
1	B	38	G	O3'-P	12.67	1.76	1.61
1	D	38	G	O3'-P	12.67	1.76	1.61
1	E	38	G	O3'-P	12.67	1.76	1.61
1	A	87	U	P-OP1	12.66	1.70	1.49
1	A	38	G	O3'-P	12.66	1.76	1.61
1	B	87	U	P-OP1	12.65	1.70	1.49
1	E	87	U	P-OP1	12.62	1.70	1.49
1	D	87	U	P-OP1	12.62	1.70	1.49
1	D	57	G	O3'-P	12.53	1.76	1.61
1	B	57	G	O3'-P	12.49	1.76	1.61
1	C	57	G	O3'-P	12.49	1.76	1.61
1	E	57	G	O3'-P	12.49	1.76	1.61
1	A	57	G	O3'-P	12.49	1.76	1.61
1	D	81	U	P-OP1	12.14	1.69	1.49
1	E	81	U	P-OP1	12.13	1.69	1.49
1	A	81	U	P-OP1	12.13	1.69	1.49
1	B	81	U	P-OP1	12.13	1.69	1.49
1	C	81	U	P-OP1	12.12	1.69	1.49
1	B	87	U	P-OP2	11.47	1.68	1.49
1	D	87	U	P-OP2	11.46	1.68	1.49
1	A	87	U	P-OP2	11.46	1.68	1.49
1	C	87	U	P-OP2	11.46	1.68	1.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	87	U	P-OP2	11.45	1.68	1.49
1	D	32	A	O3'-P	11.27	1.74	1.61
1	C	32	A	O3'-P	11.26	1.74	1.61
1	E	32	A	O3'-P	11.24	1.74	1.61
1	A	32	A	O3'-P	11.23	1.74	1.61
1	B	32	A	O3'-P	11.20	1.74	1.61
1	B	43	U	O3'-P	-11.05	1.47	1.61
1	D	43	U	O3'-P	-11.05	1.47	1.61
1	A	43	U	O3'-P	-11.03	1.48	1.61
1	E	43	U	O3'-P	-10.99	1.48	1.61
1	C	43	U	O3'-P	-10.98	1.48	1.61
1	C	87	U	C2'-O2'	10.36	1.55	1.41
1	D	87	U	C2'-O2'	10.34	1.55	1.41
1	A	87	U	C2'-O2'	10.34	1.55	1.41
1	B	87	U	C2'-O2'	10.31	1.55	1.41
1	E	87	U	C2'-O2'	10.31	1.55	1.41
1	D	75	G	O3'-P	-10.25	1.48	1.61
1	E	75	G	O3'-P	-10.23	1.48	1.61
1	A	75	G	O3'-P	-10.23	1.48	1.61
1	C	75	G	O3'-P	-10.21	1.48	1.61
1	B	75	G	O3'-P	-10.20	1.49	1.61
1	E	82	G	O3'-P	-9.30	1.50	1.61
1	B	82	G	O3'-P	-9.26	1.50	1.61
1	C	82	G	O3'-P	-9.25	1.50	1.61
1	A	82	G	O3'-P	-9.23	1.50	1.61
1	D	82	G	O3'-P	-9.21	1.50	1.61
1	B	30	G	O3'-P	-8.66	1.50	1.61
1	A	30	G	O3'-P	-8.65	1.50	1.61
1	E	30	G	O3'-P	-8.64	1.50	1.61
1	D	30	G	O3'-P	-8.63	1.50	1.61
1	C	30	G	O3'-P	-8.59	1.50	1.61
1	C	66	A	O3'-P	8.58	1.71	1.61
1	A	66	A	O3'-P	8.56	1.71	1.61
1	B	66	A	O3'-P	8.56	1.71	1.61
1	E	66	A	O3'-P	8.51	1.71	1.61
1	D	66	A	O3'-P	8.50	1.71	1.61
1	C	85	U	O3'-P	-8.23	1.51	1.61
1	B	85	U	O3'-P	-8.22	1.51	1.61
1	A	85	U	O3'-P	-8.19	1.51	1.61
1	D	85	U	O3'-P	-8.15	1.51	1.61
1	E	85	U	O3'-P	-8.13	1.51	1.61
1	E	113	U	O3'-P	-7.65	1.51	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	80	U	O3'-P	7.64	1.70	1.61
1	A	80	U	O3'-P	7.63	1.70	1.61
1	D	80	U	O3'-P	7.63	1.70	1.61
1	C	80	U	O3'-P	7.62	1.70	1.61
1	D	113	U	O3'-P	-7.60	1.52	1.61
1	E	80	U	O3'-P	7.59	1.70	1.61
1	A	113	U	O3'-P	-7.58	1.52	1.61
1	B	113	U	O3'-P	-7.56	1.52	1.61
1	C	113	U	O3'-P	-7.52	1.52	1.61
1	D	57	G	C8-N7	7.09	1.35	1.30
1	E	57	G	C8-N7	7.04	1.35	1.30
1	A	57	G	C8-N7	7.03	1.35	1.30
1	B	57	G	C8-N7	7.03	1.35	1.30
1	C	57	G	C8-N7	7.00	1.35	1.30
1	D	57	G	C6-N1	6.29	1.44	1.39
1	C	57	G	C6-N1	6.23	1.44	1.39
1	A	57	G	C6-N1	6.16	1.43	1.39
1	B	57	G	C6-N1	6.13	1.43	1.39
1	E	57	G	C6-N1	6.13	1.43	1.39
1	C	76	U	O3'-P	5.77	1.68	1.61
1	D	76	U	O3'-P	5.75	1.68	1.61
1	A	76	U	O3'-P	5.75	1.68	1.61
1	B	76	U	O3'-P	5.71	1.68	1.61
1	E	76	U	O3'-P	5.68	1.68	1.61
1	B	97	C	O3'-P	5.54	1.67	1.61
1	C	97	C	O3'-P	5.51	1.67	1.61
1	A	97	C	O3'-P	5.50	1.67	1.61
1	D	97	C	O3'-P	5.45	1.67	1.61
1	E	97	C	O3'-P	5.44	1.67	1.61
1	C	64	C	P-O5'	5.10	1.64	1.59
1	A	64	C	P-O5'	5.07	1.64	1.59
1	D	64	C	P-O5'	5.06	1.64	1.59
1	B	64	C	P-O5'	5.05	1.64	1.59
1	C	57	G	C2-N3	5.03	1.36	1.32
1	B	57	G	C2-N3	5.03	1.36	1.32
1	A	57	G	C2-N3	5.02	1.36	1.32
1	E	64	C	P-O5'	5.01	1.64	1.59

All (1309) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	29	U	P-O3'-C3'	-41.87	69.46	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	29	U	P-O3'-C3'	-41.83	69.51	119.70
1	A	29	U	P-O3'-C3'	-41.82	69.51	119.70
1	E	29	U	P-O3'-C3'	-41.82	69.52	119.70
1	D	29	U	P-O3'-C3'	-41.80	69.54	119.70
1	D	112	C	P-O3'-C3'	-37.10	75.18	119.70
1	B	112	C	P-O3'-C3'	-37.09	75.19	119.70
1	C	112	C	P-O3'-C3'	-37.09	75.20	119.70
1	A	112	C	P-O3'-C3'	-37.08	75.20	119.70
1	E	112	C	P-O3'-C3'	-37.05	75.23	119.70
1	E	72	U	P-O3'-C3'	35.69	162.53	119.70
1	A	72	U	P-O3'-C3'	35.65	162.48	119.70
1	D	72	U	P-O3'-C3'	35.65	162.48	119.70
1	C	72	U	P-O3'-C3'	35.64	162.47	119.70
1	B	72	U	P-O3'-C3'	35.63	162.46	119.70
1	C	96	G	P-O3'-C3'	-34.85	77.88	119.70
1	A	96	G	P-O3'-C3'	-34.84	77.89	119.70
1	E	96	G	P-O3'-C3'	-34.84	77.89	119.70
1	B	85	U	P-O3'-C3'	34.83	161.50	119.70
1	D	96	G	P-O3'-C3'	-34.82	77.91	119.70
1	B	96	G	P-O3'-C3'	-34.82	77.92	119.70
1	A	85	U	P-O3'-C3'	34.79	161.45	119.70
1	D	85	U	P-O3'-C3'	34.79	161.45	119.70
1	C	85	U	P-O3'-C3'	34.79	161.44	119.70
1	E	85	U	P-O3'-C3'	34.77	161.42	119.70
1	C	64	C	P-O3'-C3'	33.36	159.74	119.70
1	A	64	C	P-O3'-C3'	33.33	159.69	119.70
1	E	64	C	P-O3'-C3'	33.33	159.69	119.70
1	D	64	C	P-O3'-C3'	33.31	159.67	119.70
1	B	64	C	P-O3'-C3'	33.29	159.65	119.70
1	B	41	A	O3'-P-O5'	32.96	166.62	104.00
1	D	41	A	O3'-P-O5'	32.95	166.60	104.00
1	A	41	A	O3'-P-O5'	32.94	166.59	104.00
1	C	41	A	O3'-P-O5'	32.93	166.56	104.00
1	E	41	A	O3'-P-O5'	32.92	166.55	104.00
1	B	38	G	P-O3'-C3'	31.21	157.16	119.70
1	D	38	G	P-O3'-C3'	31.20	157.14	119.70
1	A	38	G	P-O3'-C3'	31.20	157.14	119.70
1	E	38	G	P-O3'-C3'	31.19	157.13	119.70
1	C	38	G	P-O3'-C3'	31.17	157.10	119.70
1	B	75	G	P-O3'-C3'	-30.53	83.07	119.70
1	A	75	G	P-O3'-C3'	-30.51	83.09	119.70
1	D	75	G	P-O3'-C3'	-30.50	83.10	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	75	G	P-O3'-C3'	-30.49	83.11	119.70
1	E	75	G	P-O3'-C3'	-30.49	83.11	119.70
1	D	44	A	OP2-P-O3'	-30.36	38.40	105.20
1	A	44	A	OP2-P-O3'	-30.36	38.41	105.20
1	E	44	A	OP2-P-O3'	-30.36	38.41	105.20
1	B	44	A	OP2-P-O3'	-30.36	38.41	105.20
1	C	44	A	OP2-P-O3'	-30.36	38.41	105.20
1	C	40	G	O3'-P-O5'	30.11	161.21	104.00
1	A	40	G	O3'-P-O5'	30.10	161.19	104.00
1	B	40	G	O3'-P-O5'	30.10	161.19	104.00
1	D	40	G	O3'-P-O5'	30.10	161.18	104.00
1	E	40	G	O3'-P-O5'	30.09	161.18	104.00
1	A	64	C	OP2-P-O3'	-29.41	40.49	105.20
1	C	64	C	OP2-P-O3'	-29.41	40.49	105.20
1	D	64	C	OP2-P-O3'	-29.41	40.49	105.20
1	E	64	C	OP2-P-O3'	-29.41	40.50	105.20
1	B	64	C	OP2-P-O3'	-29.41	40.50	105.20
1	E	59	U	O3'-P-O5'	28.63	158.41	104.00
1	A	59	U	O3'-P-O5'	28.61	158.37	104.00
1	D	59	U	O3'-P-O5'	28.61	158.36	104.00
1	C	59	U	O3'-P-O5'	28.61	158.36	104.00
1	B	59	U	O3'-P-O5'	28.60	158.34	104.00
1	E	29	U	OP2-P-O3'	28.29	167.44	105.20
1	C	29	U	OP2-P-O3'	28.28	167.42	105.20
1	A	29	U	OP2-P-O3'	28.28	167.41	105.20
1	D	29	U	OP2-P-O3'	28.27	167.40	105.20
1	B	29	U	OP2-P-O3'	28.27	167.38	105.20
1	C	39	G	O3'-P-O5'	26.57	154.48	104.00
1	D	39	G	O3'-P-O5'	26.55	154.45	104.00
1	E	39	G	O3'-P-O5'	26.55	154.45	104.00
1	A	39	G	O3'-P-O5'	26.55	154.45	104.00
1	B	39	G	O3'-P-O5'	26.53	154.41	104.00
1	E	91	U	OP2-P-O3'	-25.93	48.16	105.20
1	B	91	U	OP2-P-O3'	-25.92	48.17	105.20
1	A	91	U	OP2-P-O3'	-25.92	48.19	105.20
1	D	91	U	OP2-P-O3'	-25.91	48.19	105.20
1	C	91	U	OP2-P-O3'	-25.91	48.21	105.20
1	C	47	C	P-O3'-C3'	25.42	150.21	119.70
1	C	70	A	P-O3'-C3'	-25.41	89.20	119.70
1	A	47	C	P-O3'-C3'	25.41	150.19	119.70
1	B	47	C	P-O3'-C3'	25.40	150.18	119.70
1	A	70	A	P-O3'-C3'	-25.39	89.24	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	47	C	P-O3'-C3'	25.39	150.16	119.70
1	D	47	C	P-O3'-C3'	25.38	150.16	119.70
1	D	70	A	P-O3'-C3'	-25.38	89.25	119.70
1	E	70	A	P-O3'-C3'	-25.36	89.27	119.70
1	B	70	A	P-O3'-C3'	-25.35	89.28	119.70
1	E	87	U	P-O3'-C3'	-23.76	91.19	119.70
1	C	87	U	P-O3'-C3'	-23.76	91.19	119.70
1	A	87	U	P-O3'-C3'	-23.74	91.21	119.70
1	B	87	U	P-O3'-C3'	-23.73	91.23	119.70
1	D	87	U	P-O3'-C3'	-23.73	91.23	119.70
1	E	44	A	O3'-P-O5'	23.38	148.43	104.00
1	A	44	A	O3'-P-O5'	23.37	148.41	104.00
1	C	44	A	O3'-P-O5'	23.36	148.39	104.00
1	D	44	A	O3'-P-O5'	23.36	148.39	104.00
1	B	44	A	O3'-P-O5'	23.36	148.38	104.00
1	E	80	U	O3'-P-O5'	23.17	148.02	104.00
1	A	80	U	O3'-P-O5'	23.16	148.01	104.00
1	D	80	U	O3'-P-O5'	23.15	147.99	104.00
1	B	80	U	O3'-P-O5'	23.15	147.98	104.00
1	C	80	U	O3'-P-O5'	23.15	147.98	104.00
1	E	69	U	P-O3'-C3'	-21.75	93.60	119.70
1	D	69	U	P-O3'-C3'	-21.74	93.61	119.70
1	A	57	G	O3'-P-O5'	21.74	145.31	104.00
1	E	57	G	O3'-P-O5'	21.74	145.30	104.00
1	D	57	G	O3'-P-O5'	21.73	145.29	104.00
1	C	57	G	O3'-P-O5'	21.73	145.29	104.00
1	B	69	U	P-O3'-C3'	-21.72	93.63	119.70
1	B	57	G	O3'-P-O5'	21.72	145.27	104.00
1	A	69	U	P-O3'-C3'	-21.71	93.65	119.70
1	C	69	U	P-O3'-C3'	-21.69	93.67	119.70
1	E	41	A	OP1-P-O3'	-21.55	57.79	105.20
1	C	41	A	OP1-P-O3'	-21.54	57.82	105.20
1	A	41	A	OP1-P-O3'	-21.54	57.82	105.20
1	D	41	A	OP1-P-O3'	-21.53	57.82	105.20
1	B	41	A	OP1-P-O3'	-21.53	57.84	105.20
1	D	91	U	O3'-P-O5'	21.42	144.69	104.00
1	E	91	U	O3'-P-O5'	21.41	144.68	104.00
1	C	91	U	O3'-P-O5'	21.41	144.67	104.00
1	A	91	U	O3'-P-O5'	21.41	144.67	104.00
1	B	91	U	O3'-P-O5'	21.40	144.66	104.00
1	B	34	G	O3'-P-O5'	-21.31	63.52	104.00
1	A	34	G	O3'-P-O5'	-21.30	63.53	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	34	G	O3'-P-O5'	-21.30	63.54	104.00
1	C	34	G	O3'-P-O5'	-21.29	63.54	104.00
1	D	34	G	O3'-P-O5'	-21.29	63.54	104.00
1	B	53	U	O3'-P-O5'	21.00	143.90	104.00
1	E	53	U	O3'-P-O5'	21.00	143.89	104.00
1	D	53	U	O3'-P-O5'	20.99	143.88	104.00
1	A	53	U	O3'-P-O5'	20.99	143.88	104.00
1	E	73	U	P-O3'-C3'	-20.98	94.52	119.70
1	C	53	U	O3'-P-O5'	20.98	143.87	104.00
1	C	73	U	P-O3'-C3'	-20.96	94.55	119.70
1	B	73	U	P-O3'-C3'	-20.95	94.56	119.70
1	A	73	U	P-O3'-C3'	-20.95	94.56	119.70
1	D	73	U	P-O3'-C3'	-20.94	94.57	119.70
1	D	113	U	P-O3'-C3'	20.90	144.78	119.70
1	B	113	U	P-O3'-C3'	20.88	144.75	119.70
1	A	113	U	P-O3'-C3'	20.86	144.74	119.70
1	E	113	U	P-O3'-C3'	20.86	144.73	119.70
1	C	113	U	P-O3'-C3'	20.83	144.70	119.70
1	C	29	U	OP1-P-O3'	-20.82	59.39	105.20
1	D	29	U	OP1-P-O3'	-20.82	59.40	105.20
1	A	29	U	OP1-P-O3'	-20.81	59.41	105.20
1	B	29	U	OP1-P-O3'	-20.81	59.41	105.20
1	E	29	U	OP1-P-O3'	-20.81	59.41	105.20
1	B	97	C	P-O3'-C3'	-20.35	95.28	119.70
1	C	97	C	P-O3'-C3'	-20.32	95.31	119.70
1	A	97	C	P-O3'-C3'	-20.31	95.33	119.70
1	D	97	C	P-O3'-C3'	-20.30	95.34	119.70
1	E	97	C	P-O3'-C3'	-20.30	95.34	119.70
1	C	102	G	P-O3'-C3'	-20.07	95.61	119.70
1	E	102	G	P-O3'-C3'	-20.07	95.62	119.70
1	A	102	G	P-O3'-C3'	-20.06	95.63	119.70
1	B	102	G	P-O3'-C3'	-20.05	95.65	119.70
1	D	102	G	P-O3'-C3'	-20.02	95.67	119.70
1	E	38	G	OP1-P-O3'	19.18	147.40	105.20
1	D	38	G	OP1-P-O3'	19.18	147.39	105.20
1	A	38	G	OP1-P-O3'	19.18	147.39	105.20
1	C	38	G	OP1-P-O3'	19.18	147.38	105.20
1	B	38	G	OP1-P-O3'	19.16	147.35	105.20
1	D	110	U	OP2-P-O3'	18.79	146.53	105.20
1	C	105	C	OP1-P-OP2	-18.78	91.42	119.60
1	D	105	C	OP1-P-OP2	-18.78	91.43	119.60
1	A	110	U	OP2-P-O3'	18.78	146.51	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	105	C	OP1-P-OP2	-18.78	91.43	119.60
1	E	110	U	OP2-P-O3'	18.77	146.50	105.20
1	A	105	C	OP1-P-OP2	-18.77	91.44	119.60
1	B	110	U	OP2-P-O3'	18.77	146.50	105.20
1	C	110	U	OP2-P-O3'	18.77	146.50	105.20
1	B	105	C	OP1-P-OP2	-18.75	91.47	119.60
1	E	56	A	O3'-P-O5'	18.69	139.50	104.00
1	B	56	A	O3'-P-O5'	18.68	139.49	104.00
1	A	56	A	O3'-P-O5'	18.68	139.49	104.00
1	D	56	A	O3'-P-O5'	18.68	139.49	104.00
1	C	56	A	O3'-P-O5'	18.67	139.47	104.00
1	D	69	U	OP2-P-O3'	18.41	145.70	105.20
1	C	69	U	OP2-P-O3'	18.40	145.69	105.20
1	B	69	U	OP2-P-O3'	18.40	145.68	105.20
1	A	69	U	OP2-P-O3'	18.39	145.67	105.20
1	E	69	U	OP2-P-O3'	18.39	145.66	105.20
1	D	53	U	P-O3'-C3'	-18.35	97.68	119.70
1	C	53	U	P-O3'-C3'	-18.35	97.68	119.70
1	A	53	U	P-O3'-C3'	-18.33	97.71	119.70
1	E	53	U	P-O3'-C3'	-18.31	97.72	119.70
1	B	53	U	P-O3'-C3'	-18.30	97.74	119.70
1	D	81	U	P-O3'-C3'	18.27	141.62	119.70
1	E	81	U	P-O3'-C3'	18.26	141.62	119.70
1	A	81	U	P-O3'-C3'	18.26	141.61	119.70
1	B	81	U	P-O3'-C3'	18.26	141.61	119.70
1	C	81	U	P-O3'-C3'	18.21	141.55	119.70
1	E	101	A	P-O3'-C3'	-18.12	97.96	119.70
1	B	101	A	P-O3'-C3'	-18.11	97.97	119.70
1	C	101	A	P-O3'-C3'	-18.11	97.97	119.70
1	D	101	A	P-O3'-C3'	-18.11	97.97	119.70
1	A	101	A	P-O3'-C3'	-18.10	97.98	119.70
1	B	102	G	OP1-P-O3'	18.04	144.89	105.20
1	A	102	G	OP1-P-O3'	18.03	144.86	105.20
1	D	102	G	OP1-P-O3'	18.02	144.85	105.20
1	E	102	G	OP1-P-O3'	18.02	144.84	105.20
1	C	102	G	OP1-P-O3'	18.02	144.84	105.20
1	D	74	U	OP1-P-O3'	-17.87	65.88	105.20
1	A	74	U	OP1-P-O3'	-17.87	65.89	105.20
1	C	74	U	OP1-P-O3'	-17.87	65.89	105.20
1	B	74	U	OP1-P-O3'	-17.85	65.92	105.20
1	E	74	U	OP1-P-O3'	-17.85	65.93	105.20
1	C	71	C	P-O3'-C3'	-17.57	98.61	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	71	C	P-O3'-C3'	-17.57	98.62	119.70
1	A	71	C	P-O3'-C3'	-17.56	98.63	119.70
1	D	71	C	P-O3'-C3'	-17.56	98.63	119.70
1	B	71	C	P-O3'-C3'	-17.54	98.65	119.70
1	B	75	G	OP2-P-O3'	17.45	143.58	105.20
1	D	75	G	OP2-P-O3'	17.43	143.55	105.20
1	A	75	G	OP2-P-O3'	17.43	143.54	105.20
1	C	75	G	OP2-P-O3'	17.42	143.53	105.20
1	E	75	G	OP2-P-O3'	17.41	143.51	105.20
1	A	103	U	OP1-P-O3'	-17.40	66.93	105.20
1	B	103	U	OP1-P-O3'	-17.39	66.93	105.20
1	E	103	U	OP1-P-O3'	-17.39	66.93	105.20
1	D	103	U	OP1-P-O3'	-17.39	66.94	105.20
1	C	103	U	OP1-P-O3'	-17.38	66.96	105.20
1	C	63	C	P-O3'-C3'	-17.17	99.10	119.70
1	E	63	C	P-O3'-C3'	-17.16	99.11	119.70
1	A	63	C	P-O3'-C3'	-17.16	99.11	119.70
1	D	63	C	P-O3'-C3'	-17.16	99.11	119.70
1	B	63	C	P-O3'-C3'	-17.15	99.11	119.70
1	D	68	A	P-O3'-C3'	16.96	140.06	119.70
1	C	68	A	P-O3'-C3'	16.95	140.04	119.70
1	E	68	A	P-O3'-C3'	16.94	140.03	119.70
1	A	68	A	P-O3'-C3'	16.93	140.02	119.70
1	B	68	A	P-O3'-C3'	16.91	140.00	119.70
1	C	32	A	O3'-P-O5'	-16.67	72.32	104.00
1	D	32	A	O3'-P-O5'	-16.67	72.33	104.00
1	A	32	A	O3'-P-O5'	-16.66	72.35	104.00
1	B	32	A	O3'-P-O5'	-16.65	72.36	104.00
1	E	32	A	O3'-P-O5'	-16.64	72.38	104.00
1	B	46	A	P-O3'-C3'	16.64	139.66	119.70
1	E	64	C	OP1-P-O3'	16.61	141.75	105.20
1	A	46	A	P-O3'-C3'	16.61	139.63	119.70
1	C	46	A	P-O3'-C3'	16.60	139.62	119.70
1	D	64	C	OP1-P-O3'	16.60	141.71	105.20
1	A	64	C	OP1-P-O3'	16.59	141.70	105.20
1	B	39	G	OP2-P-O3'	-16.59	68.70	105.20
1	C	64	C	OP1-P-O3'	16.59	141.70	105.20
1	D	46	A	P-O3'-C3'	16.59	139.60	119.70
1	C	39	G	OP2-P-O3'	-16.58	68.73	105.20
1	B	64	C	OP1-P-O3'	16.57	141.66	105.20
1	A	39	G	OP2-P-O3'	-16.57	68.75	105.20
1	E	46	A	P-O3'-C3'	16.57	139.58	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	39	G	OP2-P-O3'	-16.57	68.75	105.20
1	E	39	G	OP2-P-O3'	-16.55	68.78	105.20
1	A	80	U	P-O3'-C3'	-16.20	100.26	119.70
1	E	80	U	P-O3'-C3'	-16.19	100.27	119.70
1	D	80	U	P-O3'-C3'	-16.19	100.28	119.70
1	C	80	U	P-O3'-C3'	-16.18	100.29	119.70
1	B	80	U	P-O3'-C3'	-16.16	100.30	119.70
1	D	1	U	P-O3'-C3'	-15.90	100.62	119.70
1	A	1	U	P-O3'-C3'	-15.88	100.65	119.70
1	B	1	U	P-O3'-C3'	-15.86	100.67	119.70
1	C	1	U	P-O3'-C3'	-15.86	100.66	119.70
1	E	1	U	P-O3'-C3'	-15.85	100.67	119.70
1	B	110	U	P-O3'-C3'	-15.85	100.68	119.70
1	D	110	U	P-O3'-C3'	-15.84	100.70	119.70
1	E	110	U	P-O3'-C3'	-15.83	100.70	119.70
1	A	110	U	P-O3'-C3'	-15.83	100.71	119.70
1	C	110	U	P-O3'-C3'	-15.83	100.71	119.70
1	C	39	G	P-O3'-C3'	15.79	138.65	119.70
1	B	39	G	P-O3'-C3'	15.79	138.65	119.70
1	D	39	G	P-O3'-C3'	15.78	138.63	119.70
1	A	39	G	P-O3'-C3'	15.78	138.63	119.70
1	E	39	G	P-O3'-C3'	15.74	138.59	119.70
1	E	97	C	OP2-P-O3'	15.70	139.74	105.20
1	B	53	U	OP1-P-O3'	-15.69	70.68	105.20
1	C	97	C	OP2-P-O3'	15.69	139.72	105.20
1	A	97	C	OP2-P-O3'	15.69	139.71	105.20
1	B	97	C	OP2-P-O3'	15.68	139.69	105.20
1	E	53	U	OP1-P-O3'	-15.68	70.71	105.20
1	A	53	U	OP1-P-O3'	-15.68	70.72	105.20
1	D	53	U	OP1-P-O3'	-15.67	70.72	105.20
1	D	97	C	OP2-P-O3'	15.67	139.68	105.20
1	C	53	U	OP1-P-O3'	-15.67	70.73	105.20
1	B	82	G	P-O3'-C3'	15.46	138.26	119.70
1	C	83	G	OP2-P-O3'	-15.46	71.19	105.20
1	E	83	G	OP2-P-O3'	-15.46	71.19	105.20
1	D	83	G	OP2-P-O3'	-15.46	71.19	105.20
1	A	83	G	OP2-P-O3'	-15.46	71.19	105.20
1	B	83	G	OP2-P-O3'	-15.45	71.21	105.20
1	A	82	G	P-O3'-C3'	15.45	138.24	119.70
1	E	82	G	P-O3'-C3'	15.45	138.24	119.70
1	E	40	G	OP1-P-O3'	-15.44	71.23	105.20
1	C	82	G	P-O3'-C3'	15.43	138.22	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	82	G	P-O3'-C3'	15.43	138.22	119.70
1	A	40	G	OP1-P-O3'	-15.43	71.26	105.20
1	B	63	C	O3'-P-O5'	-15.43	74.69	104.00
1	E	63	C	O3'-P-O5'	-15.43	74.69	104.00
1	A	63	C	O3'-P-O5'	-15.42	74.70	104.00
1	B	40	G	OP1-P-O3'	-15.42	71.28	105.20
1	C	63	C	O3'-P-O5'	-15.42	74.70	104.00
1	C	40	G	OP1-P-O3'	-15.42	71.28	105.20
1	D	40	G	OP1-P-O3'	-15.42	71.28	105.20
1	D	63	C	O3'-P-O5'	-15.40	74.73	104.00
1	D	69	U	OP1-P-O3'	-15.29	71.57	105.20
1	B	69	U	OP1-P-O3'	-15.29	71.57	105.20
1	E	69	U	OP1-P-O3'	-15.29	71.57	105.20
1	A	69	U	OP1-P-O3'	-15.28	71.58	105.20
1	C	69	U	OP1-P-O3'	-15.28	71.58	105.20
1	B	114	U	P-O3'-C3'	-15.26	101.39	119.70
1	D	114	U	P-O3'-C3'	-15.24	101.41	119.70
1	A	114	U	P-O3'-C3'	-15.23	101.43	119.70
1	C	114	U	P-O3'-C3'	-15.21	101.45	119.70
1	E	76	U	OP1-P-O3'	15.20	138.63	105.20
1	E	114	U	P-O3'-C3'	-15.20	101.47	119.70
1	C	76	U	OP1-P-O3'	15.19	138.61	105.20
1	D	76	U	OP1-P-O3'	15.18	138.59	105.20
1	A	76	U	OP1-P-O3'	15.18	138.59	105.20
1	B	76	U	OP1-P-O3'	15.17	138.57	105.20
1	B	76	U	P-O3'-C3'	-15.17	101.50	119.70
1	A	76	U	P-O3'-C3'	-15.15	101.52	119.70
1	D	76	U	P-O3'-C3'	-15.14	101.53	119.70
1	C	76	U	P-O3'-C3'	-15.13	101.55	119.70
1	D	81	U	OP1-P-OP2	-15.13	96.91	119.60
1	E	76	U	P-O3'-C3'	-15.12	101.55	119.70
1	B	81	U	OP1-P-OP2	-15.12	96.92	119.60
1	E	81	U	OP1-P-OP2	-15.12	96.92	119.60
1	D	74	U	O3'-P-O5'	15.12	132.72	104.00
1	A	81	U	OP1-P-OP2	-15.11	96.93	119.60
1	E	74	U	O3'-P-O5'	15.11	132.72	104.00
1	A	74	U	O3'-P-O5'	15.11	132.71	104.00
1	C	74	U	O3'-P-O5'	15.10	132.69	104.00
1	B	74	U	O3'-P-O5'	15.09	132.67	104.00
1	C	81	U	OP1-P-OP2	-15.08	96.97	119.60
1	B	100	A	P-O3'-C3'	-14.89	101.83	119.70
1	E	100	A	P-O3'-C3'	-14.89	101.83	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	100	A	P-O3'-C3'	-14.89	101.84	119.70
1	A	100	A	P-O3'-C3'	-14.88	101.85	119.70
1	C	100	A	P-O3'-C3'	-14.88	101.85	119.70
1	C	58	U	OP2-P-O3'	-14.79	72.67	105.20
1	B	58	U	OP2-P-O3'	-14.79	72.67	105.20
1	D	58	U	OP2-P-O3'	-14.78	72.68	105.20
1	A	58	U	OP2-P-O3'	-14.78	72.68	105.20
1	E	58	U	OP2-P-O3'	-14.77	72.70	105.20
1	E	99	A	P-O3'-C3'	-14.72	102.03	119.70
1	B	99	A	P-O3'-C3'	-14.71	102.05	119.70
1	E	77	U	OP2-P-O3'	-14.71	72.84	105.20
1	B	77	U	OP2-P-O3'	-14.71	72.85	105.20
1	D	99	A	P-O3'-C3'	-14.70	102.06	119.70
1	D	77	U	OP2-P-O3'	-14.70	72.86	105.20
1	A	77	U	OP2-P-O3'	-14.70	72.86	105.20
1	A	99	A	P-O3'-C3'	-14.70	102.06	119.70
1	C	77	U	OP2-P-O3'	-14.69	72.88	105.20
1	C	99	A	P-O3'-C3'	-14.69	102.08	119.70
1	E	92	C	P-O3'-C3'	-14.58	102.21	119.70
1	D	92	C	P-O3'-C3'	-14.58	102.21	119.70
1	A	92	C	P-O3'-C3'	-14.57	102.21	119.70
1	B	92	C	P-O3'-C3'	-14.56	102.23	119.70
1	C	92	C	P-O3'-C3'	-14.56	102.23	119.70
1	D	98	A	P-O3'-C3'	-14.54	102.26	119.70
1	E	98	A	P-O3'-C3'	-14.53	102.26	119.70
1	A	98	A	P-O3'-C3'	-14.53	102.27	119.70
1	C	98	A	P-O3'-C3'	-14.52	102.28	119.70
1	B	98	A	P-O3'-C3'	-14.48	102.33	119.70
1	D	73	U	OP2-P-O3'	-14.43	73.45	105.20
1	B	73	U	OP2-P-O3'	-14.43	73.46	105.20
1	A	73	U	OP2-P-O3'	-14.42	73.47	105.20
1	C	73	U	OP2-P-O3'	-14.42	73.47	105.20
1	E	73	U	OP2-P-O3'	-14.42	73.48	105.20
1	E	59	U	OP2-P-O3'	-14.38	73.55	105.20
1	A	59	U	OP2-P-O3'	-14.38	73.56	105.20
1	B	59	U	OP2-P-O3'	-14.38	73.57	105.20
1	D	59	U	OP2-P-O3'	-14.38	73.58	105.20
1	C	59	U	OP2-P-O3'	-14.36	73.60	105.20
1	D	86	G	P-O3'-C3'	14.34	136.91	119.70
1	B	86	G	P-O3'-C3'	14.33	136.90	119.70
1	C	86	G	P-O3'-C3'	14.32	136.89	119.70
1	D	57	G	P-O3'-C3'	-14.32	102.51	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	57	G	P-O3'-C3'	-14.32	102.52	119.70
1	A	57	G	P-O3'-C3'	-14.32	102.52	119.70
1	A	86	G	P-O3'-C3'	14.31	136.88	119.70
1	C	57	G	P-O3'-C3'	-14.30	102.53	119.70
1	B	57	G	P-O3'-C3'	-14.29	102.55	119.70
1	E	86	G	P-O3'-C3'	14.29	136.84	119.70
1	C	93	A	P-O3'-C3'	-14.20	102.67	119.70
1	E	93	A	P-O3'-C3'	-14.20	102.67	119.70
1	A	93	A	P-O3'-C3'	-14.17	102.69	119.70
1	B	93	A	P-O3'-C3'	-14.17	102.70	119.70
1	C	110	U	OP1-P-O3'	-14.14	74.08	105.20
1	A	110	U	OP1-P-O3'	-14.14	74.09	105.20
1	D	93	A	P-O3'-C3'	-14.14	102.73	119.70
1	B	110	U	OP1-P-O3'	-14.13	74.10	105.20
1	D	110	U	OP1-P-O3'	-14.13	74.11	105.20
1	E	110	U	OP1-P-O3'	-14.13	74.12	105.20
1	D	115	U	P-O3'-C3'	-14.09	102.79	119.70
1	C	115	U	P-O3'-C3'	-14.09	102.79	119.70
1	E	115	U	P-O3'-C3'	-14.08	102.81	119.70
1	D	114	U	OP2-P-O3'	14.06	136.14	105.20
1	A	115	U	P-O3'-C3'	-14.06	102.83	119.70
1	B	115	U	P-O3'-C3'	-14.06	102.83	119.70
1	A	114	U	OP2-P-O3'	14.05	136.11	105.20
1	C	114	U	OP2-P-O3'	14.05	136.11	105.20
1	B	114	U	OP2-P-O3'	14.05	136.11	105.20
1	E	114	U	OP2-P-O3'	14.03	136.08	105.20
1	E	90	A	P-O3'-C3'	-13.86	103.07	119.70
1	B	90	A	P-O3'-C3'	-13.83	103.10	119.70
1	D	90	A	P-O3'-C3'	-13.82	103.11	119.70
1	A	90	A	P-O3'-C3'	-13.82	103.12	119.70
1	C	90	A	P-O3'-C3'	-13.81	103.13	119.70
1	B	38	G	OP2-P-O3'	-13.71	75.03	105.20
1	A	38	G	OP2-P-O3'	-13.71	75.04	105.20
1	C	38	G	OP2-P-O3'	-13.71	75.05	105.20
1	D	38	G	OP2-P-O3'	-13.70	75.06	105.20
1	E	38	G	OP2-P-O3'	-13.70	75.06	105.20
1	C	87	U	C1'-C2'-O2'	-13.68	69.57	110.60
1	A	87	U	C1'-C2'-O2'	-13.66	69.62	110.60
1	D	87	U	C1'-C2'-O2'	-13.65	69.64	110.60
1	B	87	U	C1'-C2'-O2'	-13.65	69.65	110.60
1	E	87	U	C1'-C2'-O2'	-13.64	69.67	110.60
1	D	40	G	P-O3'-C3'	-13.62	103.35	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	40	G	P-O3'-C3'	-13.61	103.36	119.70
1	C	40	G	P-O3'-C3'	-13.61	103.37	119.70
1	A	40	G	P-O3'-C3'	-13.60	103.38	119.70
1	B	40	G	P-O3'-C3'	-13.60	103.39	119.70
1	E	42	U	OP1-P-O3'	13.50	134.89	105.20
1	D	42	U	OP1-P-O3'	13.49	134.88	105.20
1	A	42	U	OP1-P-O3'	13.48	134.85	105.20
1	C	42	U	OP1-P-O3'	13.48	134.85	105.20
1	B	42	U	OP1-P-O3'	13.47	134.83	105.20
1	C	56	A	P-O3'-C3'	-13.34	103.69	119.70
1	A	56	A	P-O3'-C3'	-13.34	103.70	119.70
1	D	56	A	P-O3'-C3'	-13.33	103.71	119.70
1	E	56	A	P-O3'-C3'	-13.33	103.71	119.70
1	B	56	A	P-O3'-C3'	-13.32	103.71	119.70
1	E	77	U	OP1-P-O3'	13.26	134.38	105.20
1	D	77	U	OP1-P-O3'	13.26	134.37	105.20
1	C	77	U	OP1-P-O3'	13.26	134.36	105.20
1	B	77	U	OP1-P-O3'	13.25	134.35	105.20
1	A	77	U	OP1-P-O3'	13.24	134.33	105.20
1	C	47	C	OP1-P-O3'	13.21	134.26	105.20
1	D	47	C	OP1-P-O3'	13.20	134.24	105.20
1	B	47	C	OP1-P-O3'	13.20	134.23	105.20
1	E	47	C	OP1-P-O3'	13.19	134.22	105.20
1	A	47	C	OP1-P-O3'	13.19	134.22	105.20
1	B	48	C	OP2-P-O3'	13.16	134.16	105.20
1	A	48	C	OP2-P-O3'	13.15	134.14	105.20
1	C	48	C	OP2-P-O3'	13.15	134.14	105.20
1	E	48	C	OP2-P-O3'	13.15	134.13	105.20
1	C	56	A	OP1-P-O3'	-13.14	76.28	105.20
1	D	48	C	OP2-P-O3'	13.14	134.11	105.20
1	B	56	A	OP1-P-O3'	-13.13	76.32	105.20
1	E	56	A	OP1-P-O3'	-13.13	76.32	105.20
1	A	56	A	OP1-P-O3'	-13.13	76.32	105.20
1	D	56	A	OP1-P-O3'	-13.12	76.33	105.20
1	C	46	A	OP2-P-O3'	-13.04	76.51	105.20
1	B	46	A	OP2-P-O3'	-13.04	76.52	105.20
1	A	46	A	OP2-P-O3'	-13.03	76.53	105.20
1	D	46	A	OP2-P-O3'	-13.03	76.54	105.20
1	E	46	A	OP2-P-O3'	-13.02	76.55	105.20
1	B	60	C	P-O3'-C3'	13.02	135.33	119.70
1	C	60	C	P-O3'-C3'	13.01	135.31	119.70
1	E	60	C	P-O3'-C3'	13.00	135.30	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	60	C	P-O3'-C3'	12.99	135.29	119.70
1	A	60	C	P-O3'-C3'	12.99	135.29	119.70
1	D	1	U	OP2-P-O3'	12.90	133.58	105.20
1	E	1	U	OP2-P-O3'	12.90	133.57	105.20
1	B	1	U	OP2-P-O3'	12.89	133.56	105.20
1	A	1	U	OP2-P-O3'	12.88	133.55	105.20
1	C	1	U	OP2-P-O3'	12.87	133.50	105.20
1	B	84	U	OP2-P-O3'	-12.85	76.93	105.20
1	A	84	U	OP2-P-O3'	-12.85	76.93	105.20
1	E	84	U	OP2-P-O3'	-12.85	76.93	105.20
1	C	84	U	OP2-P-O3'	-12.84	76.95	105.20
1	D	84	U	OP2-P-O3'	-12.84	76.96	105.20
1	B	75	G	OP1-P-O3'	-12.82	76.98	105.20
1	D	93	A	OP1-P-O3'	12.82	133.40	105.20
1	A	93	A	OP1-P-O3'	12.81	133.38	105.20
1	B	93	A	OP1-P-O3'	12.81	133.38	105.20
1	A	75	G	OP1-P-O3'	-12.80	77.03	105.20
1	D	75	G	OP1-P-O3'	-12.80	77.03	105.20
1	E	75	G	OP1-P-O3'	-12.80	77.03	105.20
1	C	75	G	OP1-P-O3'	-12.80	77.03	105.20
1	C	93	A	OP1-P-O3'	12.80	133.36	105.20
1	E	93	A	OP1-P-O3'	12.80	133.35	105.20
1	D	84	U	O3'-P-O5'	12.68	128.09	104.00
1	C	84	U	O3'-P-O5'	12.67	128.07	104.00
1	B	84	U	O3'-P-O5'	12.66	128.05	104.00
1	B	101	A	OP1-P-O3'	12.66	133.05	105.20
1	A	84	U	O3'-P-O5'	12.65	128.04	104.00
1	E	84	U	O3'-P-O5'	12.65	128.03	104.00
1	D	101	A	OP1-P-O3'	12.64	133.02	105.20
1	A	101	A	OP1-P-O3'	12.64	133.01	105.20
1	C	101	A	OP1-P-O3'	12.64	133.01	105.20
1	E	101	A	OP1-P-O3'	12.64	133.00	105.20
1	E	94	U	OP1-P-O3'	12.56	132.84	105.20
1	C	94	U	OP1-P-O3'	12.56	132.83	105.20
1	A	94	U	OP1-P-O3'	12.55	132.82	105.20
1	B	94	U	OP2-P-O3'	-12.55	77.58	105.20
1	D	94	U	OP1-P-O3'	12.55	132.81	105.20
1	E	94	U	OP2-P-O3'	-12.55	77.59	105.20
1	A	94	U	OP2-P-O3'	-12.55	77.59	105.20
1	B	94	U	OP1-P-O3'	12.55	132.81	105.20
1	D	94	U	OP2-P-O3'	-12.55	77.60	105.20
1	C	94	U	OP2-P-O3'	-12.54	77.60	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	48	C	OP1-P-O3'	-12.53	77.63	105.20
1	B	48	C	OP1-P-O3'	-12.52	77.65	105.20
1	D	73	U	OP1-P-O3'	12.52	132.75	105.20
1	D	48	C	OP1-P-O3'	-12.52	77.66	105.20
1	A	48	C	OP1-P-O3'	-12.52	77.66	105.20
1	C	48	C	OP1-P-O3'	-12.51	77.67	105.20
1	C	73	U	OP1-P-O3'	12.51	132.73	105.20
1	E	73	U	OP1-P-O3'	12.51	132.73	105.20
1	A	73	U	OP1-P-O3'	12.51	132.72	105.20
1	B	73	U	OP1-P-O3'	12.51	132.72	105.20
1	A	62	G	OP2-P-O3'	-12.48	77.75	105.20
1	C	62	G	OP2-P-O3'	-12.48	77.75	105.20
1	E	62	G	OP2-P-O3'	-12.48	77.75	105.20
1	D	62	G	OP2-P-O3'	-12.47	77.75	105.20
1	B	62	G	OP2-P-O3'	-12.45	77.81	105.20
1	B	72	U	OP2-P-O3'	12.41	132.51	105.20
1	E	72	U	OP2-P-O3'	12.41	132.49	105.20
1	D	72	U	OP2-P-O3'	12.40	132.47	105.20
1	A	72	U	OP2-P-O3'	12.39	132.47	105.20
1	C	72	U	OP2-P-O3'	12.38	132.44	105.20
1	D	70	A	OP2-P-O3'	12.29	132.24	105.20
1	C	70	A	OP2-P-O3'	12.29	132.23	105.20
1	E	46	A	OP1-P-O3'	12.29	132.23	105.20
1	B	46	A	OP1-P-O3'	12.28	132.22	105.20
1	A	46	A	OP1-P-O3'	12.28	132.21	105.20
1	A	70	A	OP2-P-O3'	12.28	132.21	105.20
1	B	70	A	OP2-P-O3'	12.27	132.19	105.20
1	C	46	A	OP1-P-O3'	12.27	132.19	105.20
1	D	46	A	OP1-P-O3'	12.27	132.18	105.20
1	E	70	A	OP2-P-O3'	12.26	132.18	105.20
1	A	95	G	O3'-P-O5'	12.20	127.17	104.00
1	C	95	G	O3'-P-O5'	12.19	127.17	104.00
1	B	95	G	O3'-P-O5'	12.19	127.16	104.00
1	E	95	G	O3'-P-O5'	12.18	127.15	104.00
1	D	95	G	O3'-P-O5'	12.17	127.13	104.00
1	D	28	G	OP2-P-O3'	-12.10	78.58	105.20
1	C	28	G	OP2-P-O3'	-12.10	78.59	105.20
1	A	28	G	OP2-P-O3'	-12.09	78.60	105.20
1	E	28	G	OP2-P-O3'	-12.09	78.61	105.20
1	B	28	G	OP2-P-O3'	-12.09	78.61	105.20
1	D	66	A	OP1-P-O3'	11.95	131.50	105.20
1	E	66	A	OP1-P-O3'	11.95	131.48	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	66	A	OP1-P-O3'	11.94	131.48	105.20
1	A	66	A	OP1-P-O3'	11.94	131.47	105.20
1	B	66	A	OP1-P-O3'	11.94	131.47	105.20
1	D	103	U	C4'-C3'-O3'	11.75	136.50	113.00
1	C	103	U	C4'-C3'-O3'	11.74	136.48	113.00
1	B	103	U	C4'-C3'-O3'	11.74	136.48	113.00
1	A	103	U	C4'-C3'-O3'	11.73	136.46	113.00
1	E	103	U	C4'-C3'-O3'	11.70	136.41	113.00
1	C	81	U	OP2-P-O3'	-11.66	79.56	105.20
1	D	81	U	OP2-P-O3'	-11.65	79.56	105.20
1	A	81	U	OP2-P-O3'	-11.65	79.57	105.20
1	B	81	U	OP2-P-O3'	-11.65	79.58	105.20
1	E	81	U	OP2-P-O3'	-11.64	79.58	105.20
1	B	107	C	P-O3'-C3'	-11.41	106.00	119.70
1	E	107	C	P-O3'-C3'	-11.38	106.04	119.70
1	D	107	C	P-O3'-C3'	-11.38	106.05	119.70
1	A	107	C	P-O3'-C3'	-11.37	106.06	119.70
1	C	74	U	P-O3'-C3'	-11.36	106.07	119.70
1	A	74	U	P-O3'-C3'	-11.35	106.08	119.70
1	E	74	U	P-O3'-C3'	-11.35	106.08	119.70
1	B	74	U	P-O3'-C3'	-11.35	106.08	119.70
1	D	74	U	P-O3'-C3'	-11.35	106.09	119.70
1	E	100	A	OP1-P-O3'	11.34	130.14	105.20
1	D	100	A	OP1-P-O3'	11.33	130.13	105.20
1	A	100	A	OP1-P-O3'	11.33	130.12	105.20
1	C	100	A	OP1-P-O3'	11.32	130.12	105.20
1	B	100	A	OP1-P-O3'	11.32	130.10	105.20
1	C	107	C	P-O3'-C3'	-11.32	106.12	119.70
1	C	59	U	P-O3'-C3'	-11.30	106.14	119.70
1	D	59	U	P-O3'-C3'	-11.28	106.17	119.70
1	C	76	U	OP2-P-O3'	-11.26	80.42	105.20
1	A	76	U	OP2-P-O3'	-11.25	80.45	105.20
1	D	76	U	OP2-P-O3'	-11.25	80.45	105.20
1	A	59	U	P-O3'-C3'	-11.25	106.20	119.70
1	E	76	U	OP2-P-O3'	-11.25	80.46	105.20
1	B	76	U	OP2-P-O3'	-11.24	80.47	105.20
1	B	59	U	P-O3'-C3'	-11.23	106.22	119.70
1	E	59	U	P-O3'-C3'	-11.22	106.24	119.70
1	C	99	A	OP1-P-O3'	11.15	129.73	105.20
1	A	99	A	OP1-P-O3'	11.13	129.69	105.20
1	B	99	A	OP1-P-O3'	11.13	129.69	105.20
1	D	99	A	OP1-P-O3'	11.13	129.69	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	99	A	OP1-P-O3'	11.12	129.67	105.20
1	C	29	U	O3'-P-O5'	-11.03	83.05	104.00
1	A	29	U	O3'-P-O5'	-11.02	83.06	104.00
1	E	29	U	O3'-P-O5'	-11.02	83.06	104.00
1	B	29	U	O3'-P-O5'	-11.01	83.08	104.00
1	D	29	U	O3'-P-O5'	-11.01	83.09	104.00
1	B	102	G	OP2-P-O3'	-11.00	81.00	105.20
1	D	102	G	OP2-P-O3'	-10.99	81.02	105.20
1	A	102	G	OP2-P-O3'	-10.99	81.02	105.20
1	B	40	G	OP2-P-O3'	-10.99	81.02	105.20
1	A	40	G	OP2-P-O3'	-10.98	81.04	105.20
1	D	40	G	OP2-P-O3'	-10.98	81.04	105.20
1	E	102	G	OP2-P-O3'	-10.98	81.04	105.20
1	E	40	G	OP2-P-O3'	-10.98	81.05	105.20
1	C	102	G	OP2-P-O3'	-10.98	81.05	105.20
1	C	40	G	OP2-P-O3'	-10.97	81.06	105.20
1	A	32	A	OP2-P-O3'	10.95	129.30	105.20
1	B	32	A	OP2-P-O3'	10.95	129.29	105.20
1	C	32	A	OP2-P-O3'	10.94	129.28	105.20
1	D	32	A	OP2-P-O3'	10.94	129.27	105.20
1	E	32	A	OP2-P-O3'	10.93	129.25	105.20
1	B	83	G	P-O3'-C3'	10.92	132.80	119.70
1	D	83	G	P-O3'-C3'	10.91	132.80	119.70
1	E	83	G	P-O3'-C3'	10.91	132.79	119.70
1	C	83	G	P-O3'-C3'	10.90	132.78	119.70
1	A	83	G	P-O3'-C3'	10.90	132.78	119.70
1	B	58	U	P-O3'-C3'	10.89	132.77	119.70
1	D	73	U	O4'-C1'-N1	10.88	116.91	108.20
1	E	73	U	O4'-C1'-N1	10.87	116.90	108.20
1	C	73	U	O4'-C1'-N1	10.86	116.89	108.20
1	D	58	U	P-O3'-C3'	10.87	132.74	119.70
1	C	58	U	P-O3'-C3'	10.86	132.73	119.70
1	A	73	U	O4'-C1'-N1	10.85	116.88	108.20
1	A	58	U	P-O3'-C3'	10.84	132.71	119.70
1	B	73	U	O4'-C1'-N1	10.84	116.87	108.20
1	E	58	U	P-O3'-C3'	10.82	132.68	119.70
1	B	98	A	OP1-P-O3'	10.59	128.50	105.20
1	B	41	A	OP2-P-O3'	-10.59	81.90	105.20
1	C	98	A	OP1-P-O3'	10.59	128.49	105.20
1	D	41	A	OP2-P-O3'	-10.58	81.92	105.20
1	E	41	A	OP2-P-O3'	-10.58	81.92	105.20
1	A	98	A	OP1-P-O3'	10.58	128.48	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	98	A	OP1-P-O3'	10.58	128.47	105.20
1	A	41	A	OP2-P-O3'	-10.57	81.94	105.20
1	C	41	A	OP2-P-O3'	-10.57	81.95	105.20
1	E	98	A	OP1-P-O3'	10.57	128.45	105.20
1	C	103	U	OP2-P-O3'	10.48	128.25	105.20
1	D	103	U	OP2-P-O3'	10.47	128.24	105.20
1	A	103	U	OP2-P-O3'	10.47	128.22	105.20
1	B	103	U	OP2-P-O3'	10.46	128.21	105.20
1	E	103	U	OP2-P-O3'	10.46	128.21	105.20
1	B	81	U	OP1-P-O3'	10.40	128.09	105.20
1	E	81	U	OP1-P-O3'	10.40	128.09	105.20
1	A	81	U	OP1-P-O3'	10.40	128.07	105.20
1	D	81	U	OP1-P-O3'	10.40	128.08	105.20
1	E	68	A	OP2-P-O3'	-10.40	82.33	105.20
1	C	81	U	OP1-P-O3'	10.39	128.07	105.20
1	B	68	A	OP2-P-O3'	-10.38	82.36	105.20
1	C	68	A	OP2-P-O3'	-10.38	82.36	105.20
1	D	68	A	OP2-P-O3'	-10.38	82.36	105.20
1	A	68	A	OP2-P-O3'	-10.38	82.37	105.20
1	D	79	A	P-O3'-C3'	-10.36	107.27	119.70
1	E	79	A	P-O3'-C3'	-10.35	107.28	119.70
1	C	113	U	P-O5'-C5'	-10.35	104.34	120.90
1	D	113	U	P-O5'-C5'	-10.35	104.34	120.90
1	A	113	U	P-O5'-C5'	-10.35	104.35	120.90
1	A	79	A	P-O3'-C3'	-10.34	107.29	119.70
1	C	79	A	P-O3'-C3'	-10.34	107.29	119.70
1	B	79	A	P-O3'-C3'	-10.32	107.31	119.70
1	E	113	U	P-O5'-C5'	-10.32	104.38	120.90
1	B	113	U	P-O5'-C5'	-10.32	104.39	120.90
1	E	104	G	OP1-P-O3'	10.29	127.84	105.20
1	A	104	G	OP1-P-O3'	10.29	127.84	105.20
1	B	104	G	OP1-P-O3'	10.29	127.84	105.20
1	D	104	G	OP1-P-O3'	10.29	127.83	105.20
1	C	104	G	OP1-P-O3'	10.28	127.81	105.20
1	B	81	U	O5'-P-OP2	10.24	122.99	110.70
1	D	81	U	O5'-P-OP2	10.24	122.98	110.70
1	A	81	U	O5'-P-OP2	10.22	122.96	110.70
1	C	81	U	O5'-P-OP2	10.21	122.95	110.70
1	E	81	U	O5'-P-OP2	10.21	122.95	110.70
1	C	112	C	OP1-P-O3'	-10.05	83.08	105.20
1	D	112	C	OP1-P-O3'	-10.05	83.08	105.20
1	B	112	C	OP1-P-O3'	-10.05	83.10	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	112	C	OP1-P-O3'	-10.04	83.10	105.20
1	A	112	C	OP1-P-O3'	-10.04	83.11	105.20
1	D	57	G	OP2-P-O3'	-10.02	83.16	105.20
1	C	57	G	OP2-P-O3'	-10.02	83.17	105.20
1	A	57	G	OP2-P-O3'	-10.01	83.17	105.20
1	B	57	G	OP2-P-O3'	-10.01	83.17	105.20
1	E	57	G	OP2-P-O3'	-10.01	83.19	105.20
1	A	90	A	O3'-P-O5'	9.96	122.93	104.00
1	B	90	A	O3'-P-O5'	9.96	122.93	104.00
1	E	90	A	O3'-P-O5'	9.96	122.93	104.00
1	D	90	A	O3'-P-O5'	9.96	122.92	104.00
1	C	90	A	O3'-P-O5'	9.95	122.91	104.00
1	E	28	G	OP1-P-O3'	9.95	127.09	105.20
1	B	28	G	OP1-P-O3'	9.95	127.08	105.20
1	A	28	G	OP1-P-O3'	9.94	127.08	105.20
1	C	28	G	OP1-P-O3'	9.94	127.07	105.20
1	D	28	G	OP1-P-O3'	9.93	127.04	105.20
1	B	107	C	OP2-P-O3'	9.90	126.97	105.20
1	A	107	C	OP2-P-O3'	9.89	126.97	105.20
1	C	107	C	OP2-P-O3'	9.89	126.97	105.20
1	D	107	C	OP2-P-O3'	9.89	126.97	105.20
1	E	107	C	OP2-P-O3'	9.89	126.97	105.20
1	D	80	U	OP2-P-O3'	-9.88	83.45	105.20
1	A	80	U	OP2-P-O3'	-9.88	83.46	105.20
1	E	80	U	OP2-P-O3'	-9.88	83.46	105.20
1	B	80	U	OP2-P-O3'	-9.88	83.46	105.20
1	C	80	U	OP2-P-O3'	-9.87	83.48	105.20
1	C	42	U	P-O3'-C3'	-9.86	107.87	119.70
1	D	42	U	P-O3'-C3'	-9.86	107.87	119.70
1	E	42	U	P-O3'-C3'	-9.86	107.87	119.70
1	B	115	U	OP2-P-O3'	9.86	126.89	105.20
1	D	115	U	OP2-P-O3'	9.85	126.88	105.20
1	A	115	U	OP2-P-O3'	9.85	126.87	105.20
1	A	42	U	P-O3'-C3'	-9.84	107.89	119.70
1	E	115	U	OP2-P-O3'	9.84	126.86	105.20
1	C	115	U	OP2-P-O3'	9.84	126.84	105.20
1	B	42	U	P-O3'-C3'	-9.82	107.91	119.70
1	D	45	A	P-O3'-C3'	9.77	131.43	119.70
1	A	45	A	P-O3'-C3'	9.76	131.41	119.70
1	B	45	A	P-O3'-C3'	9.75	131.40	119.70
1	C	45	A	P-O3'-C3'	9.74	131.39	119.70
1	E	45	A	P-O3'-C3'	9.73	131.38	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	87	U	P-O5'-C5'	-9.72	105.35	120.90
1	A	87	U	P-O5'-C5'	-9.71	105.36	120.90
1	C	87	U	P-O5'-C5'	-9.71	105.36	120.90
1	B	87	U	P-O5'-C5'	-9.71	105.37	120.90
1	D	87	U	P-O5'-C5'	-9.69	105.39	120.90
1	C	83	G	O3'-P-O5'	9.66	122.35	104.00
1	D	83	G	O3'-P-O5'	9.66	122.36	104.00
1	E	83	G	O3'-P-O5'	9.66	122.35	104.00
1	A	83	G	O3'-P-O5'	9.65	122.34	104.00
1	E	33	U	OP2-P-O3'	9.64	126.40	105.20
1	B	33	U	OP2-P-O3'	9.63	126.39	105.20
1	C	33	U	OP2-P-O3'	9.63	126.40	105.20
1	A	33	U	OP2-P-O3'	9.63	126.39	105.20
1	D	33	U	OP2-P-O3'	9.63	126.39	105.20
1	B	83	G	O3'-P-O5'	9.62	122.29	104.00
1	D	33	U	O3'-P-O5'	-9.58	85.79	104.00
1	C	33	U	O3'-P-O5'	-9.58	85.80	104.00
1	A	33	U	O3'-P-O5'	-9.57	85.81	104.00
1	E	42	U	O3'-P-O5'	-9.57	85.81	104.00
1	B	33	U	O3'-P-O5'	-9.56	85.83	104.00
1	C	42	U	O3'-P-O5'	-9.56	85.83	104.00
1	E	33	U	O3'-P-O5'	-9.56	85.83	104.00
1	A	42	U	O3'-P-O5'	-9.56	85.84	104.00
1	D	42	U	O3'-P-O5'	-9.56	85.84	104.00
1	B	42	U	O3'-P-O5'	-9.55	85.85	104.00
1	C	86	G	N7-C8-N9	9.52	117.86	113.10
1	B	95	G	P-O3'-C3'	9.49	131.09	119.70
1	D	95	G	P-O3'-C3'	9.49	131.08	119.70
1	A	95	G	P-O3'-C3'	9.48	131.07	119.70
1	C	95	G	P-O3'-C3'	9.47	131.07	119.70
1	E	95	G	P-O3'-C3'	9.47	131.06	119.70
1	B	40	G	N7-C8-N9	9.47	117.83	113.10
1	A	86	G	N7-C8-N9	9.45	117.83	113.10
1	D	86	G	N7-C8-N9	9.45	117.82	113.10
1	E	86	G	N7-C8-N9	9.45	117.82	113.10
1	D	30	G	O3'-P-O5'	-9.44	86.07	104.00
1	E	30	G	O3'-P-O5'	-9.42	86.09	104.00
1	B	30	G	O3'-P-O5'	-9.42	86.10	104.00
1	B	86	G	N7-C8-N9	9.42	117.81	113.10
1	C	30	G	O3'-P-O5'	-9.42	86.10	104.00
1	A	30	G	O3'-P-O5'	-9.42	86.11	104.00
1	E	40	G	N7-C8-N9	9.41	117.80	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	40	G	N7-C8-N9	9.35	117.78	113.10
1	A	40	G	N7-C8-N9	9.34	117.77	113.10
1	B	80	U	OP1-P-O3'	-9.34	84.64	105.20
1	E	80	U	OP1-P-O3'	-9.34	84.65	105.20
1	A	80	U	OP1-P-O3'	-9.34	84.65	105.20
1	D	80	U	OP1-P-O3'	-9.34	84.65	105.20
1	C	80	U	OP1-P-O3'	-9.33	84.68	105.20
1	C	40	G	N7-C8-N9	9.31	117.75	113.10
1	D	86	G	OP1-P-O3'	9.30	125.67	105.20
1	A	86	G	OP1-P-O3'	9.29	125.63	105.20
1	B	86	G	OP1-P-O3'	9.29	125.63	105.20
1	E	86	G	OP1-P-O3'	9.28	125.61	105.20
1	C	86	G	OP1-P-O3'	9.28	125.61	105.20
1	E	112	C	O3'-P-O5'	9.27	121.62	104.00
1	A	112	C	O3'-P-O5'	9.27	121.62	104.00
1	C	112	C	O3'-P-O5'	9.27	121.61	104.00
1	D	112	C	O3'-P-O5'	9.27	121.61	104.00
1	B	112	C	O3'-P-O5'	9.26	121.59	104.00
1	C	87	U	O3'-P-O5'	-9.26	86.41	104.00
1	D	87	U	O3'-P-O5'	-9.24	86.44	104.00
1	A	87	U	O3'-P-O5'	-9.24	86.45	104.00
1	E	87	U	O3'-P-O5'	-9.23	86.46	104.00
1	E	87	U	O5'-P-OP1	9.23	121.77	110.70
1	A	87	U	O5'-P-OP1	9.22	121.76	110.70
1	C	87	U	O5'-P-OP1	9.22	121.76	110.70
1	B	87	U	O5'-P-OP1	9.22	121.76	110.70
1	D	90	A	OP1-P-O3'	-9.21	84.93	105.20
1	B	87	U	O3'-P-O5'	-9.21	86.50	104.00
1	D	87	U	O5'-P-OP1	9.21	121.75	110.70
1	B	90	A	OP1-P-O3'	-9.21	84.95	105.20
1	E	90	A	OP1-P-O3'	-9.21	84.95	105.20
1	A	90	A	OP1-P-O3'	-9.20	84.96	105.20
1	C	90	A	OP1-P-O3'	-9.20	84.96	105.20
1	B	62	G	O3'-P-O5'	8.96	121.02	104.00
1	E	62	G	O3'-P-O5'	8.94	120.98	104.00
1	A	62	G	O3'-P-O5'	8.94	120.98	104.00
1	D	62	G	O3'-P-O5'	8.93	120.97	104.00
1	C	62	G	O3'-P-O5'	8.92	120.95	104.00
1	E	58	U	O3'-P-O5'	8.83	120.77	104.00
1	D	58	U	O3'-P-O5'	8.82	120.76	104.00
1	E	95	G	OP2-P-O3'	-8.81	85.81	105.20
1	A	58	U	O3'-P-O5'	8.81	120.74	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	95	G	OP2-P-O3'	-8.81	85.82	105.20
1	C	58	U	O3'-P-O5'	8.81	120.73	104.00
1	B	95	G	OP2-P-O3'	-8.81	85.83	105.20
1	B	58	U	O3'-P-O5'	8.80	120.72	104.00
1	D	95	G	OP2-P-O3'	-8.80	85.84	105.20
1	C	95	G	OP2-P-O3'	-8.80	85.84	105.20
1	A	114	U	OP1-P-O3'	-8.72	86.01	105.20
1	B	114	U	OP1-P-O3'	-8.72	86.01	105.20
1	C	114	U	OP1-P-O3'	-8.72	86.02	105.20
1	D	114	U	OP1-P-O3'	-8.72	86.01	105.20
1	E	114	U	OP1-P-O3'	-8.72	86.02	105.20
1	B	33	U	P-O3'-C3'	-8.68	109.28	119.70
1	C	33	U	P-O3'-C3'	-8.68	109.28	119.70
1	A	111	A	P-O3'-C3'	-8.66	109.31	119.70
1	A	33	U	P-O3'-C3'	-8.65	109.31	119.70
1	C	111	A	P-O3'-C3'	-8.65	109.31	119.70
1	D	33	U	P-O3'-C3'	-8.65	109.31	119.70
1	E	33	U	P-O3'-C3'	-8.65	109.31	119.70
1	E	111	A	P-O3'-C3'	-8.65	109.31	119.70
1	B	111	A	P-O3'-C3'	-8.65	109.32	119.70
1	D	111	A	P-O3'-C3'	-8.63	109.34	119.70
1	C	59	U	OP1-P-O3'	-8.63	86.21	105.20
1	D	59	U	OP1-P-O3'	-8.63	86.21	105.20
1	A	59	U	OP1-P-O3'	-8.62	86.23	105.20
1	B	59	U	OP1-P-O3'	-8.62	86.23	105.20
1	E	59	U	OP1-P-O3'	-8.62	86.24	105.20
1	D	30	G	OP2-P-O3'	8.61	124.14	105.20
1	C	30	G	OP2-P-O3'	8.61	124.13	105.20
1	A	30	G	OP2-P-O3'	8.60	124.13	105.20
1	E	30	G	OP2-P-O3'	8.60	124.12	105.20
1	B	30	G	OP2-P-O3'	8.59	124.09	105.20
1	B	94	U	P-O3'-C3'	-8.55	109.44	119.70
1	B	104	G	P-O3'-C3'	-8.53	109.46	119.70
1	D	94	U	P-O3'-C3'	-8.53	109.46	119.70
1	A	94	U	P-O3'-C3'	-8.53	109.47	119.70
1	D	104	G	P-O3'-C3'	-8.53	109.47	119.70
1	C	104	G	P-O3'-C3'	-8.52	109.47	119.70
1	A	104	G	P-O3'-C3'	-8.52	109.48	119.70
1	E	94	U	P-O3'-C3'	-8.51	109.49	119.70
1	E	104	G	P-O3'-C3'	-8.51	109.49	119.70
1	C	94	U	P-O3'-C3'	-8.51	109.49	119.70
1	B	57	G	C8-N9-C4	-8.46	103.02	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	57	G	C8-N9-C4	-8.41	103.04	106.40
1	A	57	G	C8-N9-C4	-8.40	103.04	106.40
1	E	57	G	C8-N9-C4	-8.38	103.05	106.40
1	D	57	G	C8-N9-C4	-8.33	103.07	106.40
1	C	34	G	OP2-P-O3'	8.24	123.32	105.20
1	B	34	G	OP2-P-O3'	8.23	123.31	105.20
1	D	34	G	OP2-P-O3'	8.23	123.31	105.20
1	E	34	G	OP2-P-O3'	8.23	123.30	105.20
1	A	34	G	OP2-P-O3'	8.22	123.29	105.20
1	C	77	U	P-O3'-C3'	-8.22	109.84	119.70
1	A	77	U	P-O3'-C3'	-8.22	109.84	119.70
1	B	77	U	P-O3'-C3'	-8.20	109.86	119.70
1	D	77	U	P-O3'-C3'	-8.20	109.86	119.70
1	E	77	U	P-O3'-C3'	-8.20	109.87	119.70
1	D	97	C	OP1-P-O3'	-7.91	87.81	105.20
1	A	97	C	OP1-P-O3'	-7.90	87.82	105.20
1	E	97	C	OP1-P-O3'	-7.90	87.82	105.20
1	C	97	C	OP1-P-O3'	-7.90	87.82	105.20
1	B	97	C	OP1-P-O3'	-7.89	87.84	105.20
1	D	29	U	C2-N3-C4	-7.86	122.28	127.00
1	C	87	U	OP1-P-OP2	-7.86	107.81	119.60
1	B	87	U	OP1-P-OP2	-7.85	107.83	119.60
1	A	87	U	OP1-P-OP2	-7.84	107.84	119.60
1	E	87	U	OP1-P-OP2	-7.83	107.85	119.60
1	D	87	U	OP1-P-OP2	-7.83	107.86	119.60
1	D	74	U	C2-N3-C4	-7.81	122.31	127.00
1	E	29	U	C2-N3-C4	-7.80	122.32	127.00
1	A	29	U	C2-N3-C4	-7.79	122.32	127.00
1	B	81	U	N3-C4-C5	7.79	119.27	114.60
1	C	29	U	C2-N3-C4	-7.79	122.33	127.00
1	E	43	U	OP2-P-O3'	-7.77	88.10	105.20
1	B	29	U	C2-N3-C4	-7.76	122.34	127.00
1	C	81	U	N3-C4-C5	7.76	119.26	114.60
1	A	43	U	OP2-P-O3'	-7.76	88.12	105.20
1	C	81	U	C2-N3-C4	-7.76	122.34	127.00
1	B	43	U	OP2-P-O3'	-7.76	88.14	105.20
1	D	43	U	OP2-P-O3'	-7.76	88.14	105.20
1	B	81	U	C2-N3-C4	-7.75	122.35	127.00
1	C	43	U	OP2-P-O3'	-7.75	88.14	105.20
1	A	74	U	C2-N3-C4	-7.75	122.35	127.00
1	C	74	U	C2-N3-C4	-7.75	122.35	127.00
1	A	81	U	N3-C4-C5	7.74	119.25	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	81	U	C2-N3-C4	-7.74	122.36	127.00
1	A	81	U	C2-N3-C4	-7.73	122.36	127.00
1	E	81	U	N3-C4-C5	7.72	119.23	114.60
1	E	81	U	C2-N3-C4	-7.71	122.38	127.00
1	D	68	A	OP1-P-O3'	7.69	122.12	105.20
1	C	68	A	OP1-P-O3'	7.69	122.11	105.20
1	A	68	A	OP1-P-O3'	7.68	122.10	105.20
1	E	68	A	OP1-P-O3'	7.68	122.10	105.20
1	B	68	A	OP1-P-O3'	7.68	122.09	105.20
1	B	58	U	OP1-P-O3'	7.67	122.08	105.20
1	B	74	U	C2-N3-C4	-7.66	122.40	127.00
1	E	74	U	C2-N3-C4	-7.66	122.40	127.00
1	D	58	U	OP1-P-O3'	7.66	122.06	105.20
1	A	58	U	OP1-P-O3'	7.66	122.05	105.20
1	C	58	U	OP1-P-O3'	7.66	122.05	105.20
1	E	58	U	OP1-P-O3'	7.66	122.04	105.20
1	A	111	A	OP2-P-O3'	7.65	122.02	105.20
1	D	111	A	OP2-P-O3'	7.65	122.03	105.20
1	E	111	A	OP2-P-O3'	7.63	122.00	105.20
1	D	29	U	N3-C4-C5	7.63	119.18	114.60
1	D	81	U	N3-C4-C5	7.63	119.18	114.60
1	C	111	A	OP2-P-O3'	7.62	121.97	105.20
1	B	111	A	OP2-P-O3'	7.62	121.97	105.20
1	A	74	U	N3-C4-C5	7.62	119.17	114.60
1	E	74	U	N3-C4-C5	7.60	119.16	114.60
1	E	54	U	C2-N3-C4	-7.59	122.44	127.00
1	E	29	U	N3-C4-C5	7.59	119.15	114.60
1	D	74	U	N3-C4-C5	7.58	119.15	114.60
1	A	29	U	N3-C4-C5	7.58	119.15	114.60
1	A	54	U	C2-N3-C4	-7.58	122.45	127.00
1	D	54	U	C2-N3-C4	-7.58	122.45	127.00
1	C	74	U	N3-C4-C5	7.58	119.15	114.60
1	C	29	U	N3-C4-C5	7.57	119.14	114.60
1	B	107	C	OP1-P-O3'	-7.57	88.54	105.20
1	D	54	U	N3-C4-C5	7.57	119.14	114.60
1	D	107	C	OP1-P-O3'	-7.57	88.55	105.20
1	B	29	U	N3-C4-C5	7.55	119.13	114.60
1	A	107	C	OP1-P-O3'	-7.55	88.59	105.20
1	E	54	U	N3-C4-C5	7.55	119.13	114.60
1	E	107	C	OP1-P-O3'	-7.55	88.59	105.20
1	B	74	U	N3-C4-C5	7.54	119.13	114.60
1	C	107	C	OP1-P-O3'	-7.54	88.61	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	54	U	N3-C4-C5	7.53	119.12	114.60
1	B	54	U	C2-N3-C4	-7.53	122.48	127.00
1	B	54	U	N3-C4-C5	7.53	119.11	114.60
1	C	54	U	C2-N3-C4	-7.51	122.49	127.00
1	C	54	U	N3-C4-C5	7.50	119.10	114.60
1	E	86	G	C4'-C3'-O3'	7.46	127.92	113.00
1	D	86	G	C4'-C3'-O3'	7.46	127.92	113.00
1	A	86	G	C4'-C3'-O3'	7.45	127.90	113.00
1	C	86	G	C4'-C3'-O3'	7.44	127.89	113.00
1	D	93	A	OP2-P-O3'	-7.43	88.84	105.20
1	A	93	A	OP2-P-O3'	-7.43	88.86	105.20
1	E	93	A	OP2-P-O3'	-7.43	88.85	105.20
1	B	86	G	C4'-C3'-O3'	7.43	127.85	113.00
1	B	93	A	OP2-P-O3'	-7.42	88.87	105.20
1	C	93	A	OP2-P-O3'	-7.42	88.87	105.20
1	E	44	A	OP1-P-O3'	-7.42	88.87	105.20
1	C	44	A	OP1-P-O3'	-7.42	88.89	105.20
1	B	44	A	OP1-P-O3'	-7.42	88.89	105.20
1	A	44	A	OP1-P-O3'	-7.41	88.89	105.20
1	B	72	U	OP1-P-O3'	-7.40	88.91	105.20
1	D	44	A	OP1-P-O3'	-7.40	88.92	105.20
1	E	72	U	OP1-P-O3'	-7.39	88.94	105.20
1	A	72	U	OP1-P-O3'	-7.39	88.95	105.20
1	C	72	U	OP1-P-O3'	-7.38	88.97	105.20
1	D	72	U	OP1-P-O3'	-7.36	89.00	105.20
1	C	83	G	OP1-P-O3'	7.36	121.38	105.20
1	B	83	G	OP1-P-O3'	7.34	121.36	105.20
1	A	83	G	OP1-P-O3'	7.34	121.35	105.20
1	D	83	G	OP1-P-O3'	7.34	121.34	105.20
1	E	83	G	OP1-P-O3'	7.33	121.34	105.20
1	C	103	U	O3'-P-O5'	7.33	117.93	104.00
1	D	103	U	O3'-P-O5'	7.33	117.93	104.00
1	A	103	U	O3'-P-O5'	7.32	117.90	104.00
1	B	103	U	O3'-P-O5'	7.32	117.90	104.00
1	E	103	U	O3'-P-O5'	7.31	117.90	104.00
1	E	67	C	O3'-P-O5'	7.23	117.73	104.00
1	A	67	C	O3'-P-O5'	7.21	117.70	104.00
1	C	67	C	O3'-P-O5'	7.20	117.68	104.00
1	B	67	C	O3'-P-O5'	7.20	117.68	104.00
1	D	67	C	O3'-P-O5'	7.19	117.67	104.00
1	C	97	C	O3'-P-O5'	-7.04	90.63	104.00
1	A	97	C	O3'-P-O5'	-7.03	90.64	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	97	C	O3'-P-O5'	-7.01	90.67	104.00
1	E	97	C	O3'-P-O5'	-7.01	90.68	104.00
1	D	97	C	O3'-P-O5'	-7.00	90.69	104.00
1	E	66	A	O3'-P-O5'	-6.99	90.72	104.00
1	A	66	A	O3'-P-O5'	-6.99	90.73	104.00
1	C	66	A	O3'-P-O5'	-6.98	90.74	104.00
1	D	66	A	O3'-P-O5'	-6.97	90.75	104.00
1	B	102	G	O3'-P-O5'	-6.97	90.76	104.00
1	B	66	A	O3'-P-O5'	-6.97	90.76	104.00
1	C	102	G	O3'-P-O5'	-6.97	90.76	104.00
1	A	102	G	O3'-P-O5'	-6.96	90.77	104.00
1	D	102	G	O3'-P-O5'	-6.96	90.78	104.00
1	E	102	G	O3'-P-O5'	-6.96	90.78	104.00
1	D	85	U	OP1-P-O3'	-6.88	90.07	105.20
1	C	85	U	OP1-P-O3'	-6.87	90.09	105.20
1	E	85	U	OP1-P-O3'	-6.86	90.11	105.20
1	A	85	U	OP1-P-O3'	-6.86	90.11	105.20
1	B	85	U	OP1-P-O3'	-6.84	90.15	105.20
1	C	1	U	OP1-P-O3'	-6.79	90.26	105.20
1	E	87	U	OP2-P-O3'	6.79	120.14	105.20
1	A	1	U	OP1-P-O3'	-6.79	90.27	105.20
1	B	1	U	OP1-P-O3'	-6.79	90.27	105.20
1	B	87	U	OP2-P-O3'	6.79	120.13	105.20
1	C	87	U	OP2-P-O3'	6.79	120.13	105.20
1	D	87	U	OP2-P-O3'	6.79	120.13	105.20
1	E	1	U	OP1-P-O3'	-6.79	90.27	105.20
1	A	87	U	OP2-P-O3'	6.78	120.12	105.20
1	D	1	U	OP1-P-O3'	-6.78	90.28	105.20
1	C	113	U	O3'-P-O5'	-6.62	91.43	104.00
1	C	104	G	O3'-P-O5'	6.60	116.53	104.00
1	E	113	U	O3'-P-O5'	-6.59	91.48	104.00
1	B	113	U	O3'-P-O5'	-6.59	91.48	104.00
1	A	113	U	O3'-P-O5'	-6.59	91.49	104.00
1	E	104	G	O3'-P-O5'	6.58	116.51	104.00
1	D	104	G	O3'-P-O5'	6.58	116.50	104.00
1	A	104	G	O3'-P-O5'	6.58	116.50	104.00
1	B	104	G	O3'-P-O5'	6.57	116.48	104.00
1	D	113	U	O3'-P-O5'	-6.56	91.53	104.00
1	B	40	G	C8-N9-C4	-6.53	103.79	106.40
1	E	40	G	C8-N9-C4	-6.53	103.79	106.40
1	C	86	G	C8-N9-C4	-6.52	103.79	106.40
1	D	40	G	C8-N9-C4	-6.49	103.81	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	40	G	C8-N9-C4	-6.48	103.81	106.40
1	E	86	G	C8-N9-C4	-6.47	103.81	106.40
1	D	86	G	C8-N9-C4	-6.46	103.82	106.40
1	A	86	G	C8-N9-C4	-6.45	103.82	106.40
1	A	40	G	C8-N9-C4	-6.44	103.82	106.40
1	B	47	C	O3'-P-O5'	-6.42	91.80	104.00
1	A	47	C	O3'-P-O5'	-6.41	91.82	104.00
1	D	47	C	O3'-P-O5'	-6.41	91.82	104.00
1	E	111	A	OP1-P-O3'	-6.41	91.11	105.20
1	C	47	C	O3'-P-O5'	-6.40	91.83	104.00
1	E	47	C	O3'-P-O5'	-6.40	91.83	104.00
1	C	111	A	OP1-P-O3'	-6.39	91.13	105.20
1	A	111	A	OP1-P-O3'	-6.39	91.14	105.20
1	B	111	A	OP1-P-O3'	-6.39	91.14	105.20
1	C	66	A	P-O3'-C3'	6.39	127.37	119.70
1	B	66	A	P-O3'-C3'	6.39	127.36	119.70
1	D	111	A	OP1-P-O3'	-6.39	91.15	105.20
1	B	86	G	C8-N9-C4	-6.38	103.85	106.40
1	E	66	A	P-O3'-C3'	6.38	127.35	119.70
1	A	66	A	P-O3'-C3'	6.37	127.35	119.70
1	A	34	G	OP1-P-O3'	6.37	119.20	105.20
1	D	66	A	P-O3'-C3'	6.36	127.33	119.70
1	C	34	G	OP1-P-O3'	6.36	119.18	105.20
1	D	34	G	OP1-P-O3'	6.36	119.18	105.20
1	E	34	G	OP1-P-O3'	6.35	119.17	105.20
1	B	34	G	OP1-P-O3'	6.35	119.16	105.20
1	E	57	G	OP1-P-O3'	-6.32	91.29	105.20
1	B	57	G	OP1-P-O3'	-6.32	91.31	105.20
1	D	57	G	OP1-P-O3'	-6.31	91.32	105.20
1	A	57	G	OP1-P-O3'	-6.30	91.33	105.20
1	C	57	G	OP1-P-O3'	-6.30	91.34	105.20
1	E	63	C	OP2-P-O3'	6.27	119.00	105.20
1	C	63	C	OP2-P-O3'	6.27	119.00	105.20
1	D	63	C	OP2-P-O3'	6.27	118.99	105.20
1	A	63	C	OP2-P-O3'	6.27	118.99	105.20
1	D	101	A	OP2-P-O3'	-6.27	91.41	105.20
1	B	101	A	OP2-P-O3'	-6.26	91.42	105.20
1	E	101	A	OP2-P-O3'	-6.26	91.42	105.20
1	A	101	A	OP2-P-O3'	-6.26	91.42	105.20
1	C	101	A	OP2-P-O3'	-6.26	91.43	105.20
1	B	63	C	OP2-P-O3'	6.26	118.97	105.20
1	C	62	G	OP1-P-O3'	6.25	118.96	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	62	G	OP1-P-O3'	6.25	118.96	105.20
1	A	62	G	OP1-P-O3'	6.24	118.92	105.20
1	E	62	G	OP1-P-O3'	6.23	118.91	105.20
1	B	62	G	OP1-P-O3'	6.22	118.89	105.20
1	C	56	A	N1-C2-N3	-6.22	126.19	129.30
1	E	56	A	N1-C2-N3	-6.20	126.20	129.30
1	B	56	A	N1-C2-N3	-6.19	126.21	129.30
1	E	44	A	N1-C2-N3	-6.17	126.21	129.30
1	A	56	A	N1-C2-N3	-6.16	126.22	129.30
1	A	44	A	N1-C2-N3	-6.13	126.24	129.30
1	B	44	A	N1-C2-N3	-6.12	126.24	129.30
1	E	86	G	OP2-P-O3'	-6.11	91.75	105.20
1	B	86	G	OP2-P-O3'	-6.11	91.76	105.20
1	E	41	A	N1-C2-N3	-6.11	126.25	129.30
1	A	86	G	OP2-P-O3'	-6.10	91.79	105.20
1	D	86	G	OP2-P-O3'	-6.09	91.80	105.20
1	C	41	A	N1-C2-N3	-6.09	126.26	129.30
1	C	44	A	N1-C2-N3	-6.08	126.26	129.30
1	C	86	G	OP2-P-O3'	-6.08	91.83	105.20
1	E	79	A	OP1-P-O3'	-6.08	91.83	105.20
1	D	41	A	N1-C2-N3	-6.08	126.26	129.30
1	D	44	A	N1-C2-N3	-6.07	126.26	129.30
1	D	79	A	OP1-P-O3'	-6.07	91.84	105.20
1	C	79	A	OP1-P-O3'	-6.07	91.85	105.20
1	A	79	A	OP1-P-O3'	-6.07	91.86	105.20
1	B	79	A	OP1-P-O3'	-6.07	91.85	105.20
1	D	56	A	N1-C2-N3	-6.06	126.27	129.30
1	A	45	A	OP1-P-O3'	6.04	118.50	105.20
1	D	45	A	OP1-P-O3'	6.04	118.50	105.20
1	D	113	U	OP1-P-O3'	6.04	118.48	105.20
1	E	45	A	OP1-P-O3'	6.03	118.47	105.20
1	B	45	A	OP1-P-O3'	6.03	118.47	105.20
1	B	41	A	N1-C2-N3	-6.03	126.29	129.30
1	E	113	U	OP1-P-O3'	6.03	118.46	105.20
1	C	45	A	OP1-P-O3'	6.02	118.45	105.20
1	A	41	A	N1-C2-N3	-6.02	126.29	129.30
1	B	113	U	OP1-P-O3'	6.02	118.45	105.20
1	A	113	U	OP1-P-O3'	6.02	118.44	105.20
1	C	113	U	OP1-P-O3'	6.00	118.40	105.20
1	D	115	U	OP1-P-O3'	-5.87	92.29	105.20
1	C	115	U	OP1-P-O3'	-5.87	92.30	105.20
1	E	115	U	OP1-P-O3'	-5.86	92.31	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	115	U	OP1-P-O3'	-5.85	92.32	105.20
1	B	115	U	OP1-P-O3'	-5.85	92.33	105.20
1	D	2	C	OP2-P-O3'	5.82	118.00	105.20
1	A	2	C	OP2-P-O3'	5.81	117.97	105.20
1	B	2	C	OP2-P-O3'	5.80	117.97	105.20
1	E	2	C	OP2-P-O3'	5.80	117.97	105.20
1	C	2	C	OP2-P-O3'	5.80	117.96	105.20
1	E	78	G	OP2-P-O3'	5.77	117.90	105.20
1	E	92	C	OP1-P-OP2	-5.76	110.95	119.60
1	D	44	A	C5-C6-N1	-5.76	114.82	117.70
1	E	47	C	OP2-P-O3'	-5.76	92.53	105.20
1	B	47	C	OP2-P-O3'	-5.76	92.53	105.20
1	B	92	C	OP1-P-OP2	-5.76	110.97	119.60
1	C	78	G	OP2-P-O3'	5.76	117.86	105.20
1	A	78	G	OP2-P-O3'	5.75	117.86	105.20
1	A	47	C	OP2-P-O3'	-5.75	92.55	105.20
1	C	70	A	OP1-P-O3'	-5.75	92.55	105.20
1	D	92	C	OP1-P-OP2	-5.75	110.97	119.60
1	C	29	U	O4'-C1'-N1	5.74	112.79	108.20
1	D	70	A	OP1-P-O3'	-5.74	92.56	105.20
1	A	92	C	OP1-P-OP2	-5.74	110.99	119.60
1	D	47	C	OP2-P-O3'	-5.74	92.57	105.20
1	A	70	A	OP1-P-O3'	-5.74	92.57	105.20
1	B	78	G	OP2-P-O3'	5.74	117.83	105.20
1	C	47	C	OP2-P-O3'	-5.74	92.58	105.20
1	B	44	A	C5-C6-N1	-5.73	114.83	117.70
1	C	116	G	OP2-P-O3'	5.73	117.81	105.20
1	E	116	G	OP2-P-O3'	5.73	117.81	105.20
1	A	116	G	OP2-P-O3'	5.73	117.81	105.20
1	E	70	A	OP1-P-O3'	-5.73	92.59	105.20
1	E	29	U	O4'-C1'-N1	5.73	112.78	108.20
1	D	78	G	OP2-P-O3'	5.73	117.80	105.20
1	B	116	G	OP2-P-O3'	5.73	117.80	105.20
1	D	116	G	OP2-P-O3'	5.72	117.80	105.20
1	C	92	C	OP1-P-OP2	-5.72	111.02	119.60
1	D	29	U	O4'-C1'-N1	5.72	112.78	108.20
1	B	29	U	O4'-C1'-N1	5.72	112.77	108.20
1	A	29	U	O4'-C1'-N1	5.71	112.77	108.20
1	B	70	A	OP1-P-O3'	-5.71	92.63	105.20
1	E	38	G	O3'-P-O5'	-5.71	93.16	104.00
1	A	38	G	O3'-P-O5'	-5.70	93.17	104.00
1	C	38	G	O3'-P-O5'	-5.70	93.17	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	38	G	O3'-P-O5'	-5.70	93.18	104.00
1	D	15	C	OP2-P-O3'	5.69	117.72	105.20
1	D	38	G	O3'-P-O5'	-5.69	93.19	104.00
1	E	40	G	C2'-C3'-O3'	5.68	122.79	113.70
1	C	15	C	OP2-P-O3'	5.68	117.69	105.20
1	A	15	C	OP2-P-O3'	5.67	117.68	105.20
1	E	15	C	OP2-P-O3'	5.67	117.68	105.20
1	E	44	A	C5-C6-N1	-5.67	114.86	117.70
1	B	56	A	C5-C6-N1	-5.67	114.87	117.70
1	B	15	C	OP2-P-O3'	5.67	117.66	105.20
1	D	40	G	C2'-C3'-O3'	5.67	122.77	113.70
1	D	92	C	O4'-C1'-N1	5.67	112.73	108.20
1	C	40	G	C2'-C3'-O3'	5.66	122.76	113.70
1	A	40	G	C2'-C3'-O3'	5.66	122.76	113.70
1	B	40	G	C2'-C3'-O3'	5.66	122.75	113.70
1	A	44	A	C5-C6-N1	-5.66	114.87	117.70
1	C	44	A	C5-C6-N1	-5.66	114.87	117.70
1	C	92	C	O4'-C1'-N1	5.63	112.71	108.20
1	E	92	C	O4'-C1'-N1	5.63	112.70	108.20
1	A	92	C	O4'-C1'-N1	5.63	112.70	108.20
1	B	92	C	O4'-C1'-N1	5.62	112.70	108.20
1	E	56	A	C5-C6-N1	-5.60	114.90	117.70
1	D	56	A	C5-C6-N1	-5.58	114.91	117.70
1	A	56	A	C5-C6-N1	-5.58	114.91	117.70
1	E	41	A	P-O3'-C3'	-5.54	113.05	119.70
1	A	41	A	P-O3'-C3'	-5.54	113.05	119.70
1	C	56	A	C5-C6-N1	-5.54	114.93	117.70
1	C	41	A	P-O3'-C3'	-5.53	113.07	119.70
1	B	41	A	P-O3'-C3'	-5.52	113.07	119.70
1	E	44	A	C6-N1-C2	5.52	121.91	118.60
1	D	44	A	C6-N1-C2	5.51	121.91	118.60
1	D	41	A	P-O3'-C3'	-5.51	113.09	119.70
1	B	92	C	N3-C4-C5	-5.50	119.70	121.90
1	B	41	A	C5-C6-N1	-5.49	114.96	117.70
1	C	92	C	N3-C4-C5	-5.49	119.71	121.90
1	D	86	G	C5-N7-C8	-5.48	101.56	104.30
1	E	92	C	N3-C4-C5	-5.48	119.71	121.90
1	D	92	C	N3-C4-C5	-5.47	119.71	121.90
1	A	44	A	C6-N1-C2	5.47	121.88	118.60
1	B	40	G	C5-N7-C8	-5.47	101.56	104.30
1	B	44	A	C6-N1-C2	5.47	121.88	118.60
1	B	86	G	C5-N7-C8	-5.47	101.56	104.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	41	A	C5-C6-N1	-5.47	114.97	117.70
1	C	96	G	OP1-P-O3'	-5.47	93.17	105.20
1	E	96	G	OP1-P-O3'	-5.46	93.19	105.20
1	A	41	A	C5-C6-N1	-5.46	114.97	117.70
1	A	96	G	OP1-P-O3'	-5.45	93.20	105.20
1	A	86	G	C5-N7-C8	-5.45	101.58	104.30
1	B	96	G	OP1-P-O3'	-5.45	93.22	105.20
1	C	41	A	C5-C6-N1	-5.45	114.98	117.70
1	C	44	A	C6-N1-C2	5.45	121.87	118.60
1	D	96	G	OP1-P-O3'	-5.45	93.22	105.20
1	C	79	A	OP2-P-O3'	5.43	117.16	105.20
1	A	92	C	N3-C4-C5	-5.43	119.73	121.90
1	C	100	A	OP2-P-O3'	-5.43	93.26	105.20
1	D	41	A	C5-C6-N1	-5.43	114.98	117.70
1	E	68	A	O3'-P-O5'	5.43	114.31	104.00
1	D	79	A	OP2-P-O3'	5.42	117.13	105.20
1	D	100	A	OP2-P-O3'	-5.42	93.28	105.20
1	A	79	A	OP2-P-O3'	5.42	117.12	105.20
1	E	79	A	OP2-P-O3'	5.42	117.12	105.20
1	A	100	A	OP2-P-O3'	-5.42	93.29	105.20
1	B	68	A	O3'-P-O5'	5.42	114.29	104.00
1	B	100	A	OP2-P-O3'	-5.42	93.29	105.20
1	D	68	A	O3'-P-O5'	5.42	114.29	104.00
1	A	68	A	O3'-P-O5'	5.41	114.28	104.00
1	B	79	A	OP2-P-O3'	5.41	117.09	105.20
1	D	87	U	C5-C6-N1	-5.41	120.00	122.70
1	E	100	A	OP2-P-O3'	-5.40	93.32	105.20
1	C	68	A	O3'-P-O5'	5.39	114.25	104.00
1	C	86	G	C5-N7-C8	-5.39	101.61	104.30
1	E	40	G	C5-N7-C8	-5.39	101.61	104.30
1	A	84	U	P-O3'-C3'	5.39	126.16	119.70
1	E	84	U	P-O3'-C3'	5.39	126.16	119.70
1	B	74	U	O4'-C1'-N1	5.38	112.51	108.20
1	A	87	U	C5-C6-N1	-5.38	120.01	122.70
1	B	87	U	C5-C6-N1	-5.38	120.01	122.70
1	A	40	G	C5-N7-C8	-5.37	101.61	104.30
1	C	84	U	P-O3'-C3'	5.37	126.14	119.70
1	C	40	G	C5-N7-C8	-5.36	101.62	104.30
1	D	84	U	P-O3'-C3'	5.36	126.13	119.70
1	A	74	U	O4'-C1'-N1	5.36	112.48	108.20
1	B	84	U	P-O3'-C3'	5.36	126.13	119.70
1	B	2	C	P-O3'-C3'	-5.35	113.28	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	87	U	C5-C6-N1	-5.35	120.02	122.70
1	E	86	G	C5-N7-C8	-5.34	101.63	104.30
1	D	74	U	O4'-C1'-N1	5.34	112.47	108.20
1	E	74	U	O4'-C1'-N1	5.34	112.47	108.20
1	C	87	U	C5-C6-N1	-5.33	120.03	122.70
1	D	40	G	C5-N7-C8	-5.33	101.63	104.30
1	C	74	U	O4'-C1'-N1	5.33	112.47	108.20
1	A	2	C	P-O3'-C3'	-5.32	113.32	119.70
1	E	2	C	P-O3'-C3'	-5.32	113.32	119.70
1	C	2	C	P-O3'-C3'	-5.31	113.33	119.70
1	B	56	A	C6-N1-C2	5.31	121.78	118.60
1	D	2	C	P-O3'-C3'	-5.30	113.34	119.70
1	E	56	A	C6-N1-C2	5.30	121.78	118.60
1	A	73	U	C3'-C2'-C1'	5.28	105.72	101.50
1	E	73	U	C3'-C2'-C1'	5.28	105.72	101.50
1	C	73	U	C3'-C2'-C1'	5.27	105.72	101.50
1	B	54	U	O4'-C1'-N1	5.26	112.41	108.20
1	D	73	U	C3'-C2'-C1'	5.26	105.71	101.50
1	C	56	A	C6-N1-C2	5.25	121.75	118.60
1	E	41	A	C6-N1-C2	5.25	121.75	118.60
1	A	56	A	C6-N1-C2	5.25	121.75	118.60
1	B	73	U	C3'-C2'-C1'	5.24	105.69	101.50
1	C	41	A	C6-N1-C2	5.24	121.74	118.60
1	D	39	G	OP1-P-O3'	-5.24	93.68	105.20
1	E	39	G	OP1-P-O3'	-5.24	93.68	105.20
1	D	56	A	C6-N1-C2	5.23	121.74	118.60
1	E	54	U	O4'-C1'-N1	5.23	112.39	108.20
1	B	41	A	C6-N1-C2	5.23	121.74	118.60
1	C	39	G	OP1-P-O3'	-5.23	93.69	105.20
1	A	39	G	OP1-P-O3'	-5.23	93.70	105.20
1	B	39	G	OP1-P-O3'	-5.22	93.72	105.20
1	D	54	U	O4'-C1'-N1	5.22	112.37	108.20
1	A	54	U	O4'-C1'-N1	5.21	112.37	108.20
1	A	41	A	C6-N1-C2	5.20	121.72	118.60
1	D	41	A	C6-N1-C2	5.19	121.72	118.60
1	E	101	A	O3'-P-O5'	-5.19	94.15	104.00
1	D	101	A	O3'-P-O5'	-5.18	94.15	104.00
1	C	101	A	O3'-P-O5'	-5.18	94.15	104.00
1	A	101	A	O3'-P-O5'	-5.18	94.16	104.00
1	B	101	A	O3'-P-O5'	-5.18	94.16	104.00
1	C	54	U	O4'-C1'-N1	5.16	112.33	108.20
1	C	74	U	OP1-P-OP2	-5.11	111.93	119.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	86	G	C2'-C3'-O3'	5.11	121.88	113.70
1	D	54	U	OP1-P-OP2	-5.11	111.93	119.60
1	C	54	U	OP1-P-OP2	-5.11	111.94	119.60
1	B	86	G	C2'-C3'-O3'	5.09	121.84	113.70
1	E	42	U	OP2-P-O3'	-5.09	94.01	105.20
1	A	86	G	C2'-C3'-O3'	5.08	121.83	113.70
1	B	42	U	OP2-P-O3'	-5.08	94.02	105.20
1	A	54	U	OP1-P-OP2	-5.08	111.98	119.60
1	A	74	U	OP1-P-OP2	-5.08	111.98	119.60
1	D	86	G	C2'-C3'-O3'	5.08	121.83	113.70
1	A	42	U	OP2-P-O3'	-5.08	94.03	105.20
1	E	54	U	OP1-P-OP2	-5.08	111.98	119.60
1	B	54	U	OP1-P-OP2	-5.08	111.99	119.60
1	D	42	U	OP2-P-O3'	-5.07	94.04	105.20
1	D	70	A	O3'-P-O5'	-5.07	94.36	104.00
1	C	42	U	OP2-P-O3'	-5.07	94.04	105.20
1	E	74	U	OP1-P-OP2	-5.07	112.00	119.60
1	D	74	U	OP1-P-OP2	-5.07	112.00	119.60
1	A	52	A	OP1-P-O3'	5.06	116.33	105.20
1	A	70	A	O3'-P-O5'	-5.06	94.39	104.00
1	B	56	A	OP1-P-OP2	-5.05	112.02	119.60
1	B	74	U	OP1-P-OP2	-5.05	112.02	119.60
1	C	52	A	OP1-P-O3'	5.05	116.31	105.20
1	C	56	A	OP1-P-OP2	-5.05	112.03	119.60
1	D	52	A	OP1-P-O3'	5.05	116.31	105.20
1	E	86	G	C2'-C3'-O3'	5.05	121.78	113.70
1	B	103	U	P-O3'-C3'	5.05	125.76	119.70
1	E	70	A	O3'-P-O5'	-5.05	94.41	104.00
1	B	70	A	O3'-P-O5'	-5.04	94.42	104.00
1	C	103	U	P-O3'-C3'	5.04	125.75	119.70
1	E	52	A	OP1-P-O3'	5.04	116.29	105.20
1	B	52	A	OP1-P-O3'	5.04	116.28	105.20
1	C	70	A	O3'-P-O5'	-5.04	94.43	104.00
1	D	41	A	OP1-P-OP2	-5.04	112.05	119.60
1	A	56	A	OP1-P-OP2	-5.03	112.06	119.60
1	D	103	U	P-O3'-C3'	5.03	125.73	119.70
1	A	41	A	OP1-P-OP2	-5.02	112.06	119.60
1	A	103	U	P-O3'-C3'	5.02	125.73	119.70
1	B	41	A	OP1-P-OP2	-5.02	112.07	119.60
1	E	103	U	P-O3'-C3'	5.02	125.72	119.70
1	E	41	A	OP1-P-OP2	-5.01	112.09	119.60
1	E	56	A	OP1-P-OP2	-5.01	112.09	119.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	57	G	C4'-C3'-C2'	-5.01	97.59	102.60
1	C	41	A	OP1-P-OP2	-5.01	112.09	119.60
1	C	57	G	C4'-C3'-C2'	-5.01	97.59	102.60
1	B	57	G	N7-C8-N9	5.00	115.60	113.10
1	D	57	G	N1-C6-O6	-5.00	116.90	119.90
1	B	57	G	N1-C6-O6	-5.00	116.90	119.90

All (5) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	40	G	C3'
1	B	40	G	C3'
1	C	40	G	C3'
1	D	40	G	C3'
1	E	40	G	C3'

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	87	U	Sidechain
1	B	87	U	Sidechain
1	C	87	U	Sidechain
1	D	87	U	Sidechain
1	E	87	U	Sidechain

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2310	109	1181	368	0
1	B	2310	109	1183	370	0
1	C	2310	109	1182	367	0
1	D	2310	109	1182	367	0
1	E	2310	109	1181	369	0
All	All	11550	545	5909	1788	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 103.

All (1788) 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:A:29:U:C6	1:A:30:G:H4'	1.31	1.66
1:B:29:U:C6	1:B:30:G:H4'	1.31	1.66
1:D:29:U:C6	1:D:30:G:H4'	1.31	1.66
1:C:29:U:C6	1:C:30:G:H4'	1.31	1.65
1:C:28:G:H4'	1:C:29:U:C5'	1.22	1.62
1:E:29:U:C6	1:E:30:G:H4'	1.31	1.58
1:D:28:G:H4'	1:D:29:U:C5'	1.22	1.58
1:B:28:G:H4'	1:B:29:U:C5'	1.22	1.57
1:E:28:G:H4'	1:E:29:U:C5'	1.22	1.57
1:A:28:G:H4'	1:A:29:U:C5'	1.22	1.55
1:B:112:C:H3'	1:B:113:U:P	1.53	1.48
1:C:112:C:H3'	1:C:113:U:P	1.53	1.48
1:E:112:C:H3'	1:E:113:U:P	1.53	1.48
1:A:112:C:H3'	1:A:113:U:P	1.53	1.47
1:D:112:C:H3'	1:D:113:U:P	1.53	1.45
1:B:46:A:N6	1:C:84:U:H3	1.13	1.43
1:A:29:U:O5'	1:A:30:G:C8	1.74	1.41
1:D:29:U:O5'	1:D:30:G:C8	1.74	1.40
1:E:29:U:C6	1:E:30:G:C4'	2.05	1.40
1:C:29:U:O5'	1:C:30:G:C8	1.74	1.40
1:D:29:U:C6	1:D:30:G:C4'	2.05	1.40
1:B:29:U:O5'	1:B:30:G:C8	1.74	1.39
1:A:29:U:C6	1:A:30:G:C4'	2.05	1.38
1:B:29:U:C6	1:B:30:G:C4'	2.05	1.38
1:E:29:U:O5'	1:E:30:G:C8	1.74	1.38
1:C:57:G:O3'	1:C:57:G:C3'	1.72	1.38
1:C:29:U:C6	1:C:30:G:C4'	2.05	1.37
1:A:43:U:C5'	1:A:44:A:H5''	1.55	1.37
1:D:57:G:C3'	1:D:57:G:O3'	1.72	1.37
1:E:43:U:C5'	1:E:44:A:H5''	1.55	1.37
1:C:40:G:N2	1:C:62:G:N7	1.73	1.36
1:E:57:G:C3'	1:E:57:G:O3'	1.72	1.36
1:A:40:G:N2	1:A:62:G:N7	1.73	1.36
1:C:65:C:H2'	1:C:66:A:P	1.66	1.36
1:D:65:C:H2'	1:D:66:A:P	1.66	1.36
1:A:65:C:H2'	1:A:66:A:P	1.66	1.35
1:B:40:G:N2	1:B:62:G:N7	1.73	1.35
1:B:65:C:H2'	1:B:66:A:P	1.66	1.35

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:40:G:N2	1:D:62:G:N7	1.73	1.35
1:A:57:G:C3'	1:A:57:G:O3'	1.72	1.35
1:B:43:U:C5'	1:B:44:A:H5''	1.55	1.34
1:B:57:G:C3'	1:B:57:G:O3'	1.72	1.34
1:C:28:G:C4'	1:C:29:U:C5'	2.05	1.34
1:D:43:U:C5'	1:D:44:A:H5''	1.55	1.34
1:E:65:C:H2'	1:E:66:A:P	1.66	1.34
1:B:28:G:C4'	1:B:29:U:C5'	2.06	1.33
1:C:81:U:C5'	1:C:81:U:O5'	1.76	1.33
1:E:40:G:N2	1:E:62:G:N7	1.73	1.33
1:D:28:G:C4'	1:D:29:U:C5'	2.06	1.33
1:E:81:U:O5'	1:E:81:U:C5'	1.76	1.33
1:A:81:U:C5'	1:A:81:U:O5'	1.76	1.32
1:A:28:G:C4'	1:A:29:U:C5'	2.05	1.32
1:C:43:U:C5'	1:C:44:A:H5''	1.55	1.32
1:A:85:U:OP2	1:A:86:G:N7	1.62	1.32
1:B:65:C:C2'	1:B:66:A:P	2.18	1.32
1:E:85:U:OP2	1:E:86:G:N7	1.62	1.32
1:A:65:C:C2'	1:A:66:A:P	2.18	1.31
1:D:65:C:C2'	1:D:66:A:P	2.18	1.31
1:D:85:U:OP2	1:D:86:G:N7	1.62	1.31
1:E:28:G:C4'	1:E:29:U:C5'	2.05	1.31
1:B:81:U:O5'	1:B:81:U:C5'	1.76	1.31
1:B:112:C:C3'	1:B:113:U:P	2.19	1.31
1:D:81:U:C5'	1:D:81:U:O5'	1.76	1.31
1:A:30:G:H3'	1:A:30:G:OP2	1.20	1.30
1:E:65:C:C2'	1:E:66:A:P	2.18	1.30
1:C:85:U:OP2	1:C:86:G:N7	1.62	1.30
1:A:112:C:C3'	1:A:113:U:P	2.19	1.30
1:B:46:A:N6	1:C:84:U:N3	1.71	1.29
1:C:65:C:C2'	1:C:66:A:P	2.18	1.29
1:C:65:C:C3'	1:C:66:A:P	2.20	1.29
1:E:30:G:H3'	1:E:30:G:OP2	1.20	1.29
1:E:65:C:C3'	1:E:66:A:P	2.20	1.29
1:B:65:C:C3'	1:B:66:A:P	2.20	1.29
1:B:85:U:OP2	1:B:86:G:N7	1.62	1.29
1:D:30:G:H3'	1:D:30:G:OP2	1.20	1.29
1:E:112:C:C3'	1:E:113:U:P	2.19	1.29
1:A:65:C:C3'	1:A:66:A:P	2.20	1.29
1:C:112:C:C3'	1:C:113:U:P	2.19	1.29
1:C:30:G:H3'	1:C:30:G:OP2	1.20	1.28

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:65:C:C3'	1:D:66:A:P	2.20	1.28
1:D:71:C:H5''	1:D:72:U:OP2	1.27	1.28
1:D:112:C:C3'	1:D:113:U:P	2.19	1.28
1:B:71:C:H5''	1:B:72:U:OP2	1.27	1.27
1:B:30:G:H3'	1:B:30:G:OP2	1.20	1.27
1:C:71:C:H5''	1:C:72:U:OP2	1.27	1.26
1:E:71:C:H5''	1:E:72:U:OP2	1.27	1.26
1:E:43:U:H5'	1:E:44:A:C5'	1.65	1.25
1:A:43:U:H5'	1:A:44:A:C5'	1.65	1.25
1:A:44:A:C5'	1:A:46:A:OP1	1.85	1.25
1:B:43:U:H5'	1:B:44:A:C5'	1.65	1.25
1:B:44:A:C5'	1:B:46:A:OP1	1.85	1.25
1:C:44:A:C5'	1:C:46:A:OP1	1.85	1.25
1:D:43:U:H5'	1:D:44:A:C5'	1.65	1.25
1:D:47:C:N4	1:E:83:G:H1	1.32	1.25
1:A:81:U:O4	1:E:46:A:N7	1.68	1.24
1:A:29:U:N1	1:A:30:G:H4'	1.45	1.24
1:C:40:G:N2	1:C:62:G:C5	2.06	1.24
1:A:71:C:H5''	1:A:72:U:OP2	1.27	1.24
1:B:40:G:N2	1:B:62:G:C5	2.06	1.24
1:D:44:A:C5'	1:D:46:A:OP1	1.85	1.24
1:B:29:U:N1	1:B:30:G:H4'	1.45	1.24
1:C:43:U:H5'	1:C:44:A:C5'	1.65	1.24
1:E:81:U:P	1:E:81:U:OP2	1.96	1.24
1:B:81:U:P	1:B:81:U:OP2	1.96	1.23
1:D:65:C:O3'	1:D:66:A:OP1	1.57	1.23
1:E:95:G:O3'	1:E:96:G:P	1.96	1.23
1:C:65:C:O3'	1:C:66:A:OP1	1.57	1.23
1:A:65:C:O3'	1:A:66:A:OP1	1.57	1.23
1:D:95:G:O3'	1:D:96:G:P	1.96	1.23
1:E:41:A:OP1	1:E:48:C:OP2	1.57	1.23
1:A:40:G:N2	1:A:62:G:C5	2.06	1.23
1:B:87:U:O3'	1:B:88:C:P	1.97	1.23
1:D:40:G:N2	1:D:62:G:C5	2.06	1.23
1:B:95:G:O3'	1:B:96:G:P	1.96	1.23
1:C:95:G:O3'	1:C:96:G:P	1.96	1.23
1:E:44:A:C5'	1:E:46:A:OP1	1.85	1.22
1:E:65:C:O3'	1:E:66:A:OP1	1.57	1.22
1:E:87:U:O3'	1:E:88:C:P	1.97	1.22
1:B:65:C:O3'	1:B:66:A:OP1	1.57	1.22
1:D:40:G:O3'	1:D:41:A:P	1.97	1.22

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:29:U:N1	1:E:30:G:H4'	1.45	1.22
1:C:81:U:P	1:C:81:U:OP2	1.96	1.22
1:C:87:U:O3'	1:C:88:C:P	1.97	1.22
1:D:87:U:O3'	1:D:88:C:P	1.97	1.22
1:E:40:G:N2	1:E:62:G:C5	2.06	1.22
1:A:40:G:O3'	1:A:41:A:P	1.97	1.22
1:A:46:A:N7	1:B:81:U:O4	1.72	1.22
1:A:87:U:O3'	1:A:88:C:P	1.97	1.22
1:B:40:G:H8	1:B:40:G:OP2	1.23	1.22
1:E:40:G:O3'	1:E:41:A:P	1.97	1.22
1:A:81:U:OP2	1:A:81:U:P	1.96	1.22
1:B:40:G:O3'	1:B:41:A:P	1.97	1.22
1:D:81:U:OP2	1:D:81:U:P	1.96	1.22
1:C:29:U:N1	1:C:30:G:H4'	1.45	1.21
1:C:40:G:H8	1:C:40:G:OP2	1.23	1.21
1:A:95:G:O3'	1:A:96:G:P	1.96	1.21
1:C:41:A:OP1	1:C:48:C:OP2	1.57	1.21
1:E:40:G:H8	1:E:40:G:OP2	1.23	1.20
1:A:29:U:C3'	1:A:30:G:O4'	1.89	1.20
1:D:41:A:OP1	1:D:48:C:OP2	1.57	1.20
1:B:41:A:OP1	1:B:48:C:OP2	1.57	1.20
1:C:40:G:O3'	1:C:41:A:P	1.97	1.20
1:D:29:U:N1	1:D:30:G:H4'	1.45	1.20
1:E:80:U:N3	1:E:86:G:O6	1.75	1.20
1:A:44:A:H4'	1:A:46:A:OP1	1.42	1.19
1:D:93:A:O3'	1:D:94:U:P	2.00	1.19
1:E:93:A:O3'	1:E:94:U:P	2.01	1.19
1:A:29:U:OP1	1:A:30:G:C5	1.95	1.19
1:A:41:A:OP1	1:A:48:C:OP2	1.57	1.19
1:D:40:G:H8	1:D:40:G:OP2	1.23	1.19
1:B:29:U:C3'	1:B:30:G:O4'	1.88	1.19
1:B:29:U:OP1	1:B:30:G:C5	1.95	1.19
1:B:93:A:O3'	1:B:94:U:P	2.00	1.19
1:A:40:G:H8	1:A:40:G:OP2	1.23	1.19
1:E:29:U:C3'	1:E:30:G:O4'	1.88	1.19
1:E:29:U:OP1	1:E:30:G:C5	1.95	1.18
1:C:29:U:C3'	1:C:30:G:O4'	1.89	1.18
1:C:93:A:O3'	1:C:94:U:P	2.01	1.18
1:B:100:A:O3'	1:B:101:A:P	2.02	1.18
1:D:56:A:O3'	1:D:57:G:P	2.02	1.18
1:A:56:A:O3'	1:A:57:G:P	2.02	1.18

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:100:A:O3'	1:A:101:A:P	2.02	1.18
1:B:56:A:O3'	1:B:57:G:P	2.02	1.18
1:C:29:U:OP1	1:C:30:G:C5	1.95	1.18
1:C:80:U:N3	1:C:86:G:O6	1.75	1.18
1:A:93:A:O3'	1:A:94:U:P	2.00	1.17
1:C:56:A:O3'	1:C:57:G:P	2.02	1.17
1:E:56:A:O3'	1:E:57:G:P	2.02	1.17
1:E:63:C:P	1:E:63:C:O4'	2.02	1.17
1:C:28:G:H4'	1:C:29:U:O5'	1.21	1.17
1:C:100:A:O3'	1:C:101:A:P	2.02	1.17
1:D:63:C:P	1:D:63:C:O4'	2.02	1.17
1:D:100:A:O3'	1:D:101:A:P	2.02	1.17
1:B:46:A:N6	1:C:84:U:C4	2.13	1.17
1:D:29:U:OP1	1:D:30:G:C5	1.95	1.17
1:B:47:C:N4	1:C:83:G:H1	1.42	1.17
1:B:90:A:O3'	1:B:91:U:P	2.03	1.17
1:D:44:A:H4'	1:D:46:A:OP1	1.42	1.17
1:B:80:U:N3	1:B:86:G:O6	1.75	1.17
1:D:80:U:N3	1:D:86:G:O6	1.75	1.17
1:A:63:C:P	1:A:63:C:O4'	2.02	1.16
1:C:44:A:H4'	1:C:46:A:OP1	1.42	1.16
1:C:90:A:O3'	1:C:91:U:P	2.03	1.16
1:A:46:A:C5	1:B:81:U:O4	1.98	1.16
1:C:63:C:P	1:C:63:C:O4'	2.02	1.16
1:A:90:A:O3'	1:A:91:U:P	2.03	1.16
1:B:99:A:O3'	1:B:100:A:P	2.04	1.16
1:B:29:U:H3'	1:B:30:G:O4'	1.39	1.16
1:E:100:A:O3'	1:E:101:A:P	2.02	1.16
1:A:99:A:O3'	1:A:100:A:P	2.04	1.15
1:C:99:A:O3'	1:C:100:A:P	2.04	1.15
1:E:90:A:O3'	1:E:91:U:P	2.03	1.15
1:B:63:C:P	1:B:63:C:O4'	2.02	1.15
1:D:99:A:O3'	1:D:100:A:P	2.04	1.15
1:A:31:U:O3'	1:A:32:A:H5'	1.45	1.15
1:A:46:A:N6	1:B:81:U:O4	1.79	1.15
1:D:90:A:O3'	1:D:91:U:P	2.03	1.15
1:E:99:A:O3'	1:E:100:A:P	2.04	1.15
1:A:80:U:N3	1:A:86:G:O6	1.75	1.15
1:B:44:A:H4'	1:B:46:A:OP1	1.42	1.15
1:C:28:G:C4'	1:C:29:U:H5''	1.76	1.15
1:D:29:U:C3'	1:D:30:G:O4'	1.89	1.15

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:28:G:C4'	1:A:29:U:H5''	1.76	1.14
1:C:81:U:O3'	1:C:82:G:P	2.06	1.14
1:D:81:U:O3'	1:D:82:G:P	2.05	1.14
1:E:44:A:H4'	1:E:46:A:OP1	1.42	1.14
1:B:81:U:O3'	1:B:82:G:P	2.05	1.14
1:E:112:C:H3'	1:E:113:U:OP2	1.47	1.14
1:A:81:U:O3'	1:A:82:G:P	2.05	1.14
1:D:81:U:H5'	1:D:83:G:OP2	1.47	1.14
1:B:31:U:O3'	1:B:32:A:H5'	1.45	1.14
1:C:31:U:O3'	1:C:32:A:H5'	1.45	1.14
1:A:29:U:H3'	1:A:30:G:O4'	1.39	1.13
1:E:31:U:O3'	1:E:32:A:H5'	1.45	1.13
1:E:81:U:H5'	1:E:83:G:OP2	1.47	1.13
1:A:73:U:C5'	1:A:74:U:OP2	1.95	1.13
1:A:81:U:H5'	1:A:83:G:OP2	1.47	1.13
1:C:43:U:H5'	1:C:44:A:H5''	1.16	1.13
1:D:31:U:O3'	1:D:32:A:H5'	1.45	1.13
1:E:73:U:C5'	1:E:74:U:OP2	1.95	1.13
1:E:81:U:O3'	1:E:82:G:P	2.05	1.13
1:B:73:U:C5'	1:B:74:U:OP2	1.95	1.13
1:D:112:C:O3'	1:D:113:U:P	2.06	1.13
1:E:28:G:H4'	1:E:29:U:O5'	1.21	1.13
1:C:81:U:H5'	1:C:83:G:OP2	1.47	1.13
1:D:28:G:C4'	1:D:29:U:H5''	1.76	1.13
1:D:43:U:H5'	1:D:44:A:H5''	1.16	1.13
1:C:49:C:O3'	1:C:50:U:H5'	1.49	1.12
1:C:112:C:O3'	1:C:113:U:P	2.06	1.12
1:E:29:U:P	1:E:30:G:C5	2.42	1.12
1:B:81:U:H5'	1:B:83:G:OP2	1.47	1.12
1:D:44:A:C4'	1:D:46:A:OP1	1.97	1.12
1:D:73:U:C5'	1:D:74:U:OP2	1.95	1.12
1:A:29:U:P	1:A:30:G:C5	2.42	1.12
1:A:112:C:H3'	1:A:113:U:OP2	1.47	1.12
1:B:29:U:P	1:B:30:G:C5	2.42	1.12
1:C:44:A:C4'	1:C:46:A:OP1	1.97	1.12
1:B:112:C:H3'	1:B:113:U:OP2	1.47	1.12
1:B:112:C:O3'	1:B:113:U:P	2.06	1.12
1:D:49:C:O3'	1:D:50:U:H5'	1.49	1.12
1:E:44:A:C4'	1:E:46:A:OP1	1.97	1.12
1:E:112:C:O3'	1:E:113:U:P	2.06	1.12
1:A:112:C:O3'	1:A:113:U:P	2.06	1.11

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:29:U:P	1:C:30:G:C5	2.42	1.11
1:B:44:A:C4'	1:B:46:A:OP1	1.97	1.11
1:C:73:U:C5'	1:C:74:U:OP2	1.95	1.11
1:C:112:C:H3'	1:C:113:U:OP2	1.47	1.11
1:E:29:U:H3'	1:E:30:G:O4'	1.39	1.11
1:A:44:A:C4'	1:A:46:A:OP1	1.97	1.11
1:B:30:G:OP2	1:B:30:G:C3'	1.99	1.11
1:A:46:A:N1	1:B:84:U:N3	1.97	1.11
1:D:29:U:P	1:D:30:G:C5	2.42	1.11
1:E:30:G:OP2	1:E:30:G:C3'	1.99	1.11
1:D:29:U:H3'	1:D:30:G:O4'	1.39	1.10
1:D:112:C:H3'	1:D:113:U:OP2	1.47	1.10
1:A:30:G:OP2	1:A:30:G:C3'	1.99	1.10
1:A:48:C:O3'	1:A:49:C:P	2.09	1.10
1:B:49:C:O3'	1:B:50:U:H5'	1.49	1.10
1:D:48:C:O3'	1:D:49:C:P	2.09	1.10
1:E:57:G:OP1	1:E:57:G:O4'	1.70	1.10
1:E:98:A:O3'	1:E:99:A:P	2.10	1.10
1:A:98:A:O3'	1:A:99:A:P	2.10	1.10
1:B:28:G:C4'	1:B:29:U:H5''	1.76	1.10
1:C:43:U:H5''	1:C:44:A:H5''	1.33	1.10
1:E:49:C:O3'	1:E:50:U:H5'	1.49	1.10
1:A:84:U:N3	1:E:46:A:N1	1.73	1.10
1:A:49:C:O3'	1:A:50:U:H5'	1.49	1.09
1:B:98:A:O3'	1:B:99:A:P	2.10	1.09
1:E:48:C:O3'	1:E:49:C:P	2.09	1.09
1:C:30:G:OP2	1:C:30:G:C3'	1.99	1.09
1:B:48:C:O3'	1:B:49:C:P	2.09	1.09
1:C:48:C:O3'	1:C:49:C:P	2.09	1.09
1:C:98:A:O3'	1:C:99:A:P	2.10	1.09
1:D:30:G:OP2	1:D:30:G:C3'	1.99	1.09
1:B:43:U:H5'	1:B:44:A:H5''	1.16	1.09
1:C:57:G:OP1	1:C:57:G:O4'	1.70	1.09
1:D:57:G:OP1	1:D:57:G:O4'	1.70	1.09
1:D:98:A:O3'	1:D:99:A:P	2.10	1.09
1:A:57:G:O4'	1:A:57:G:OP1	1.70	1.08
1:B:57:G:O4'	1:B:57:G:OP1	1.70	1.08
1:E:53:U:O3'	1:E:54:U:P	2.11	1.08
1:A:53:U:O3'	1:A:54:U:P	2.11	1.08
1:B:43:U:H5''	1:B:44:A:H5''	1.33	1.08
1:E:73:U:C4'	1:E:74:U:OP2	1.97	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:29:U:H3'	1:C:30:G:O4'	1.39	1.07
1:C:53:U:O3'	1:C:54:U:P	2.11	1.07
1:A:28:G:H4'	1:A:29:U:O5'	1.21	1.07
1:D:53:U:O3'	1:D:54:U:P	2.11	1.07
1:E:28:G:O2'	1:E:29:U:H5''	1.54	1.07
1:B:53:U:O3'	1:B:54:U:P	2.11	1.07
1:C:28:G:O2'	1:C:29:U:H5''	1.54	1.07
1:E:28:G:C4'	1:E:29:U:H5''	1.75	1.07
1:A:28:G:O2'	1:A:29:U:H5''	1.54	1.06
1:B:28:G:H4'	1:B:29:U:C4'	1.84	1.06
1:B:28:G:O2'	1:B:29:U:H5''	1.54	1.06
1:A:28:G:H4'	1:A:29:U:C4'	1.84	1.06
1:C:28:G:H4'	1:C:29:U:C4'	1.85	1.06
1:D:43:U:H5''	1:D:44:A:H5''	1.33	1.06
1:C:34:G:O3'	1:C:35:U:P	2.14	1.06
1:C:56:A:O2'	1:C:57:G:C8	2.09	1.06
1:D:28:G:H4'	1:D:29:U:C4'	1.84	1.06
1:D:28:G:H4'	1:D:29:U:O5'	1.21	1.06
1:E:34:G:O3'	1:E:35:U:P	2.14	1.06
1:D:28:G:O2'	1:D:29:U:H5''	1.54	1.05
1:B:28:G:H4'	1:B:29:U:O5'	1.21	1.05
1:B:34:G:O3'	1:B:35:U:P	2.14	1.05
1:D:29:U:OP1	1:D:30:G:C6	2.10	1.05
1:D:34:G:O3'	1:D:35:U:P	2.14	1.05
1:A:45:A:N1	1:B:85:U:O4	1.89	1.05
1:B:29:U:OP1	1:B:30:G:C6	2.10	1.05
1:D:56:A:O2'	1:D:57:G:C8	2.09	1.05
1:E:29:U:OP1	1:E:30:G:C6	2.09	1.05
1:A:29:U:OP1	1:A:30:G:C6	2.10	1.05
1:B:56:A:O2'	1:B:57:G:C8	2.09	1.05
1:E:28:G:H4'	1:E:29:U:C4'	1.84	1.05
1:A:46:A:C6	1:B:81:U:O4	2.09	1.04
1:A:34:G:O3'	1:A:35:U:P	2.14	1.04
1:C:87:U:C3'	1:C:88:C:P	2.46	1.04
1:E:40:G:OP2	1:E:40:G:C8	2.10	1.04
1:E:56:A:O2'	1:E:57:G:C8	2.09	1.04
1:A:56:A:O2'	1:A:57:G:C8	2.09	1.04
1:C:29:U:OP1	1:C:30:G:C6	2.10	1.04
1:C:40:G:OP2	1:C:40:G:C8	2.10	1.04
1:D:40:G:OP2	1:D:40:G:C8	2.10	1.04
1:A:40:G:OP2	1:A:40:G:C8	2.10	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:81:U:C5'	1:D:83:G:OP2	2.06	1.04
1:B:40:G:OP2	1:B:40:G:C8	2.10	1.03
1:C:48:C:N4	1:D:82:G:O6	1.91	1.03
1:E:73:U:H4'	1:E:74:U:OP1	1.21	1.03
1:A:81:U:C5'	1:A:83:G:OP2	2.06	1.03
1:B:81:U:C5'	1:B:83:G:OP2	2.06	1.03
1:C:81:U:C5'	1:C:83:G:OP2	2.06	1.03
1:E:81:U:C5'	1:E:83:G:OP2	2.06	1.03
1:E:87:U:C3'	1:E:88:C:P	2.46	1.03
1:A:87:U:C3'	1:A:88:C:P	2.46	1.03
1:B:87:U:C3'	1:B:88:C:P	2.46	1.03
1:E:43:U:H5''	1:E:44:A:H5''	1.33	1.03
1:A:43:U:H5''	1:A:44:A:H5''	1.33	1.02
1:D:87:U:C3'	1:D:88:C:P	2.46	1.02
1:B:29:U:C5	1:B:30:G:H4'	1.95	1.02
1:E:43:U:H5'	1:E:44:A:H5''	1.16	1.02
1:A:28:G:C4'	1:A:29:U:O5'	2.04	1.01
1:A:44:A:O5'	1:A:46:A:OP1	1.78	1.01
1:B:34:G:O3'	1:B:35:U:H5'	1.60	1.01
1:E:29:U:C5	1:E:30:G:H4'	1.95	1.01
1:E:34:G:O3'	1:E:35:U:H5'	1.60	1.01
1:E:44:A:O5'	1:E:46:A:OP1	1.78	1.01
1:B:73:U:C4'	1:B:74:U:OP2	1.97	1.01
1:B:93:A:H3'	1:B:94:U:OP2	1.61	1.01
1:C:29:U:C5	1:C:30:G:H4'	1.95	1.01
1:C:75:G:OP1	1:C:76:U:OP2	1.78	1.01
1:E:28:G:C4'	1:E:29:U:O5'	2.04	1.01
1:A:73:U:C4'	1:A:74:U:OP2	1.97	1.01
1:A:93:A:H3'	1:A:94:U:OP2	1.61	1.00
1:C:93:A:H3'	1:C:94:U:OP2	1.61	1.00
1:A:34:G:O3'	1:A:35:U:H5'	1.60	1.00
1:D:75:G:OP1	1:D:76:U:OP2	1.78	1.00
1:C:34:G:O3'	1:C:35:U:H5'	1.60	1.00
1:D:34:G:O3'	1:D:35:U:H5'	1.60	1.00
1:B:73:U:H4'	1:B:74:U:OP1	1.21	1.00
1:D:29:U:C5	1:D:30:G:H4'	1.95	1.00
1:D:73:U:C4'	1:D:74:U:OP2	1.97	1.00
1:D:93:A:H3'	1:D:94:U:OP2	1.61	1.00
1:A:29:U:C5	1:A:30:G:H4'	1.95	1.00
1:A:75:G:H1	1:A:91:U:H3	1.00	1.00
1:D:44:A:O5'	1:D:46:A:OP1	1.78	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:75:G:H1	1:E:91:U:H3	1.00	1.00
1:B:44:A:O5'	1:B:46:A:OP1	1.78	0.99
1:C:46:A:N6	1:D:84:U:O4	1.95	0.99
1:C:28:G:H4'	1:C:29:U:H5''	1.36	0.99
1:E:47:C:H2'	1:E:48:C:C6	1.98	0.99
1:A:47:C:N3	1:B:83:G:N1	2.10	0.99
1:D:28:G:C4'	1:D:29:U:O5'	2.04	0.99
1:A:47:C:H2'	1:A:48:C:C6	1.98	0.99
1:B:29:U:C4'	1:B:30:G:O4'	2.11	0.99
1:A:38:G:H2'	1:A:39:G:C8	1.98	0.98
1:B:38:G:H2'	1:B:39:G:C8	1.98	0.98
1:C:73:U:C4'	1:C:74:U:OP2	1.97	0.98
1:C:47:C:H2'	1:C:48:C:C6	1.98	0.98
1:D:75:G:H1	1:D:91:U:H3	1.00	0.98
1:B:47:C:H2'	1:B:48:C:C6	1.98	0.98
1:D:47:C:N4	1:E:83:G:N1	1.99	0.98
1:C:29:U:H5'	1:C:30:G:C1'	1.94	0.98
1:E:38:G:H2'	1:E:39:G:C8	1.98	0.98
1:E:29:U:C4'	1:E:30:G:O4'	2.11	0.98
1:E:93:A:H3'	1:E:94:U:OP2	1.61	0.98
1:A:29:U:C4'	1:A:30:G:O4'	2.11	0.98
1:C:44:A:O5'	1:C:46:A:OP1	1.78	0.97
1:D:47:C:H2'	1:D:48:C:C6	1.97	0.97
1:D:29:U:C4'	1:D:30:G:O4'	2.11	0.97
1:A:44:A:O5'	1:A:46:A:P	2.23	0.97
1:C:44:A:O5'	1:C:46:A:P	2.23	0.97
1:D:29:U:H5'	1:D:30:G:C1'	1.94	0.97
1:D:37:G:OP2	1:D:60:C:O3'	1.83	0.97
1:D:40:G:H5'	1:D:47:C:H5''	1.47	0.97
1:D:44:A:O5'	1:D:46:A:P	2.23	0.97
1:B:29:U:H5'	1:B:30:G:C1'	1.94	0.97
1:B:75:G:OP1	1:B:76:U:OP2	1.78	0.97
1:A:37:G:OP2	1:A:60:C:O3'	1.83	0.97
1:C:29:U:C4'	1:C:30:G:O4'	2.11	0.97
1:E:75:G:OP1	1:E:76:U:OP2	1.78	0.97
1:C:37:G:OP2	1:C:60:C:O3'	1.83	0.97
1:C:40:G:H5'	1:C:47:C:H5''	1.46	0.97
1:B:44:A:O5'	1:B:46:A:P	2.23	0.97
1:D:38:G:H2'	1:D:39:G:C8	1.98	0.97
1:A:29:U:H5'	1:A:30:G:C1'	1.94	0.97
1:D:112:C:HO3'	1:D:113:U:P	1.87	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:28:G:C4'	1:B:29:U:O5'	2.04	0.96
1:C:38:G:H2'	1:C:39:G:C8	1.98	0.96
1:A:87:U:H3'	1:A:88:C:P	2.05	0.96
1:E:29:U:H5'	1:E:30:G:C1'	1.94	0.96
1:B:75:G:H1	1:B:91:U:H3	1.00	0.96
1:E:37:G:OP2	1:E:60:C:O3'	1.83	0.96
1:C:34:G:O3'	1:C:35:U:C5'	2.14	0.96
1:A:34:G:O3'	1:A:35:U:C5'	2.14	0.96
1:B:34:G:O3'	1:B:35:U:C5'	2.14	0.96
1:B:28:G:C4'	1:B:29:U:H4'	1.96	0.96
1:D:28:G:C4'	1:D:29:U:H4'	1.96	0.96
1:D:45:A:N6	1:E:85:U:O4	1.99	0.95
1:E:87:U:H3'	1:E:88:C:P	2.05	0.95
1:B:37:G:OP2	1:B:60:C:O3'	1.83	0.95
1:D:34:G:O3'	1:D:35:U:C5'	2.14	0.95
1:E:28:G:C4'	1:E:29:U:H4'	1.96	0.95
1:E:28:G:C2'	1:E:29:U:H5''	1.97	0.95
1:E:34:G:O3'	1:E:35:U:C5'	2.14	0.95
1:E:44:A:O5'	1:E:46:A:P	2.23	0.95
1:A:28:G:C4'	1:A:29:U:H4'	1.96	0.95
1:A:28:G:C2'	1:A:29:U:H5''	1.97	0.95
1:A:40:G:H5'	1:A:47:C:H5''	1.46	0.95
1:D:87:U:H3'	1:D:88:C:P	2.05	0.95
1:B:87:U:H3'	1:B:88:C:P	2.05	0.94
1:D:46:A:N1	1:E:84:U:N3	2.14	0.94
1:E:40:G:H5'	1:E:47:C:H5''	1.46	0.94
1:C:28:G:C4'	1:C:29:U:H4'	1.96	0.94
1:C:87:U:H3'	1:C:88:C:P	2.05	0.94
1:B:40:G:H5'	1:B:47:C:H5''	1.46	0.94
1:A:47:C:H2'	1:A:48:C:H6	1.33	0.94
1:A:75:G:OP1	1:A:76:U:OP2	1.78	0.94
1:B:81:U:O4'	1:B:81:U:OP1	1.86	0.94
1:C:81:U:O4'	1:C:81:U:OP1	1.86	0.94
1:D:81:U:O4'	1:D:81:U:OP1	1.86	0.94
1:B:56:A:O2'	1:B:57:G:N7	2.00	0.94
1:C:28:G:C2'	1:C:29:U:H5''	1.97	0.94
1:E:56:A:O2'	1:E:57:G:N7	2.00	0.94
1:C:56:A:O2'	1:C:57:G:N7	2.00	0.93
1:D:28:G:C2'	1:D:29:U:H5''	1.97	0.93
1:E:81:U:O4'	1:E:81:U:OP1	1.86	0.93
1:A:56:A:O2'	1:A:57:G:N7	2.00	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:65:C:O3'	1:E:66:A:P	2.23	0.93
1:B:28:G:C2'	1:B:29:U:H5''	1.97	0.93
1:E:29:U:C2	1:E:30:G:H5''	2.04	0.93
1:E:47:C:H2'	1:E:48:C:H6	1.33	0.93
1:C:75:G:H1	1:C:91:U:H3	1.00	0.93
1:C:71:C:C5'	1:C:72:U:OP2	2.17	0.93
1:D:71:C:C5'	1:D:72:U:OP2	2.17	0.93
1:A:65:C:O3'	1:A:66:A:P	2.23	0.93
1:C:65:C:O3'	1:C:66:A:P	2.23	0.92
1:D:47:C:N4	1:E:83:G:C6	2.37	0.92
1:B:29:U:C2	1:B:30:G:H5''	2.04	0.92
1:A:73:U:H4'	1:A:74:U:OP1	1.21	0.92
1:D:29:U:C2	1:D:30:G:H5''	2.04	0.92
1:D:43:U:H5'	1:D:44:A:H5'	1.52	0.92
1:E:43:U:H5'	1:E:44:A:H5'	1.52	0.92
1:A:29:U:C2	1:A:30:G:C5'	2.45	0.92
1:A:81:U:OP1	1:A:81:U:O4'	1.86	0.92
1:C:31:U:O3'	1:C:32:A:C5'	2.18	0.92
1:D:65:C:O3'	1:D:66:A:P	2.23	0.92
1:A:39:G:H2'	1:A:40:G:C1'	2.00	0.92
1:B:47:C:H2'	1:B:48:C:H6	1.33	0.92
1:B:100:A:H3'	1:B:101:A:OP2	1.70	0.92
1:D:31:U:O3'	1:D:32:A:C5'	2.18	0.92
1:B:39:G:H2'	1:B:40:G:O4'	1.70	0.92
1:B:43:U:H5'	1:B:44:A:H5'	1.52	0.92
1:E:39:G:H2'	1:E:40:G:C1'	2.00	0.92
1:A:43:U:H5'	1:A:44:A:H5'	1.52	0.92
1:A:85:U:O4	1:E:45:A:N1	2.03	0.92
1:B:49:C:O3'	1:B:50:U:C5'	2.18	0.92
1:E:49:C:O3'	1:E:50:U:C5'	2.18	0.92
1:C:39:G:H2'	1:C:40:G:O4'	1.70	0.91
1:A:39:G:H2'	1:A:40:G:O4'	1.70	0.91
1:A:50:U:O3'	1:A:51:G:H5'	1.70	0.91
1:C:28:G:C4'	1:C:29:U:O5'	2.04	0.91
1:C:49:C:O3'	1:C:50:U:C5'	2.18	0.91
1:D:39:G:H2'	1:D:40:G:C1'	2.00	0.91
1:E:39:G:H2'	1:E:40:G:O4'	1.70	0.91
1:D:39:G:H2'	1:D:40:G:O4'	1.70	0.91
1:D:50:U:O3'	1:D:51:G:H5'	1.70	0.91
1:D:56:A:O2'	1:D:57:G:N7	2.00	0.91
1:E:29:U:C2	1:E:30:G:C5'	2.45	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:39:G:H2'	1:C:40:G:C1'	2.00	0.91
1:A:42:U:H5''	1:A:43:U:OP1	1.71	0.91
1:A:49:C:O3'	1:A:50:U:C5'	2.18	0.91
1:B:31:U:H3'	1:B:32:A:P	2.11	0.91
1:D:49:C:O3'	1:D:50:U:C5'	2.18	0.91
1:A:29:U:C2	1:A:30:G:H5''	2.04	0.91
1:A:31:U:O3'	1:A:32:A:C5'	2.18	0.91
1:E:71:C:C5'	1:E:72:U:OP2	2.17	0.91
1:B:39:G:H2'	1:B:40:G:C1'	2.00	0.91
1:C:31:U:H3'	1:C:32:A:P	2.11	0.91
1:C:100:A:H3'	1:C:101:A:OP2	1.70	0.91
1:B:31:U:O3'	1:B:32:A:C5'	2.18	0.91
1:C:73:U:H4'	1:C:74:U:OP1	1.20	0.91
1:D:47:C:H2'	1:D:48:C:H6	1.32	0.91
1:E:42:U:H5''	1:E:43:U:OP1	1.71	0.91
1:B:71:C:C5'	1:B:72:U:OP2	2.17	0.91
1:A:43:U:H5'	1:A:44:A:H5''	1.16	0.90
1:D:31:U:H3'	1:D:32:A:P	2.11	0.90
1:B:50:U:O3'	1:B:51:G:H5'	1.70	0.90
1:A:71:C:C5'	1:A:72:U:OP2	2.17	0.90
1:C:50:U:O3'	1:C:51:G:H5'	1.70	0.90
1:D:42:U:H5''	1:D:43:U:OP1	1.71	0.90
1:B:49:C:O3'	1:B:50:U:P	2.30	0.90
1:E:100:A:H3'	1:E:101:A:OP2	1.70	0.90
1:C:112:C:HO3'	1:C:113:U:P	1.88	0.90
1:D:65:C:H3'	1:D:66:A:P	2.10	0.90
1:A:31:U:H3'	1:A:32:A:P	2.11	0.90
1:C:42:U:H5''	1:C:43:U:OP1	1.71	0.90
1:E:31:U:H3'	1:E:32:A:P	2.11	0.90
1:E:112:C:HO3'	1:E:113:U:P	1.92	0.90
1:C:43:U:H5'	1:C:44:A:H5'	1.52	0.90
1:E:31:U:O3'	1:E:32:A:C5'	2.18	0.90
1:B:65:C:O3'	1:B:66:A:P	2.23	0.90
1:D:100:A:H3'	1:D:101:A:OP2	1.70	0.90
1:E:50:U:O3'	1:E:51:G:H5'	1.70	0.90
1:A:100:A:H3'	1:A:101:A:OP2	1.70	0.90
1:C:49:C:O3'	1:C:50:U:P	2.30	0.90
1:A:28:G:C4'	1:A:29:U:C4'	2.47	0.90
1:E:65:C:H3'	1:E:66:A:P	2.10	0.89
1:A:49:C:O3'	1:A:50:U:P	2.30	0.89
1:A:65:C:H3'	1:A:66:A:P	2.10	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:49:C:O3'	1:D:50:U:P	2.30	0.89
1:B:42:U:H5''	1:B:43:U:OP1	1.71	0.89
1:C:65:C:H3'	1:C:66:A:P	2.10	0.89
1:B:40:G:N2	1:B:62:G:C6	2.39	0.89
1:D:73:U:H4'	1:D:74:U:OP1	1.21	0.89
1:A:112:C:HO3'	1:A:113:U:P	1.90	0.89
1:C:29:U:C2	1:C:30:G:C5'	2.45	0.89
1:E:72:U:H5'	1:E:74:U:H5	1.38	0.89
1:E:49:C:O3'	1:E:50:U:P	2.30	0.88
1:C:29:U:C2	1:C:30:G:H5''	2.04	0.88
1:C:47:C:H2'	1:C:48:C:H6	1.33	0.88
1:B:65:C:H3'	1:B:66:A:P	2.10	0.88
1:A:72:U:H5'	1:A:74:U:H5	1.38	0.88
1:A:73:U:C4'	1:A:74:U:OP1	2.16	0.87
1:E:73:U:C4'	1:E:74:U:OP1	2.16	0.87
1:A:29:U:P	1:A:30:G:C4	2.68	0.86
1:A:46:A:H2'	1:A:47:C:C6	2.10	0.86
1:B:29:U:P	1:B:30:G:C4	2.68	0.86
1:B:46:A:N6	1:C:84:U:O4	2.07	0.86
1:C:72:U:H5'	1:C:74:U:H5	1.38	0.86
1:D:40:G:N2	1:D:62:G:C6	2.39	0.86
1:E:54:U:C4	1:E:56:A:H1'	2.10	0.86
1:D:54:U:C4	1:D:56:A:H1'	2.10	0.86
1:E:29:U:P	1:E:30:G:C4	2.68	0.86
1:B:28:G:C3'	1:B:29:U:H5''	2.05	0.86
1:B:28:G:C4'	1:B:29:U:C4'	2.47	0.86
1:B:46:A:H2'	1:B:47:C:C6	2.10	0.86
1:B:54:U:C4	1:B:56:A:H1'	2.11	0.86
1:C:46:A:H2'	1:C:47:C:C6	2.10	0.86
1:D:46:A:H2'	1:D:47:C:C6	2.10	0.86
1:A:54:U:C4	1:A:56:A:H1'	2.11	0.86
1:B:56:A:HO3'	1:B:57:G:P	1.96	0.86
1:C:56:A:HO3'	1:C:57:G:P	1.97	0.86
1:C:54:U:C4	1:C:56:A:H1'	2.11	0.86
1:C:99:A:H3'	1:C:100:A:OP2	1.76	0.86
1:D:72:U:H5'	1:D:74:U:H5	1.38	0.86
1:E:46:A:H2'	1:E:47:C:C6	2.10	0.86
1:B:47:C:H42	1:C:83:G:H1	0.85	0.85
1:B:99:A:H3'	1:B:100:A:OP2	1.76	0.85
1:C:40:G:N2	1:C:62:G:C6	2.39	0.85
1:A:28:G:C3'	1:A:29:U:H5''	2.05	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:29:U:P	1:C:30:G:C4	2.68	0.85
1:D:28:G:C3'	1:D:29:U:H5''	2.05	0.85
1:D:29:U:P	1:D:30:G:C4	2.68	0.85
1:E:46:A:H2'	1:E:47:C:H6	1.42	0.85
1:B:72:U:H5'	1:B:74:U:H5	1.38	0.85
1:E:28:G:C3'	1:E:29:U:H5''	2.05	0.85
1:E:58:U:H6	1:E:58:U:H3'	1.41	0.85
1:A:40:G:N2	1:A:62:G:C6	2.39	0.85
1:A:99:A:H3'	1:A:100:A:OP2	1.76	0.85
1:B:42:U:H3'	1:B:42:U:H6	1.41	0.85
1:B:58:U:H3'	1:B:58:U:H6	1.41	0.85
1:D:42:U:H3'	1:D:42:U:H6	1.41	0.85
1:D:46:A:H2'	1:D:47:C:H6	1.42	0.85
1:C:28:G:C3'	1:C:29:U:H5''	2.05	0.85
1:C:42:U:H3'	1:C:42:U:H6	1.41	0.85
1:D:63:C:O4'	1:D:63:C:OP2	1.94	0.85
1:B:112:C:HO3'	1:B:113:U:P	1.97	0.84
1:C:63:C:O4'	1:C:63:C:OP2	1.95	0.84
1:A:58:U:H3'	1:A:58:U:H6	1.41	0.84
1:D:58:U:H3'	1:D:58:U:H6	1.41	0.84
1:C:46:A:H2'	1:C:47:C:H6	1.42	0.84
1:E:63:C:O4'	1:E:63:C:OP2	1.95	0.84
1:E:99:A:H3'	1:E:100:A:OP2	1.76	0.84
1:A:46:A:N6	1:B:81:U:C4	2.38	0.84
1:C:58:U:H3'	1:C:58:U:H6	1.41	0.84
1:B:46:A:H2'	1:B:47:C:H6	1.42	0.84
1:A:63:C:O4'	1:A:63:C:OP2	1.95	0.84
1:B:81:U:HO3'	1:B:82:G:P	2.01	0.84
1:D:99:A:H3'	1:D:100:A:OP2	1.76	0.84
1:A:46:A:N1	1:B:84:U:C4	2.34	0.84
1:A:46:A:H2'	1:A:47:C:H6	1.42	0.84
1:E:56:A:HO3'	1:E:57:G:P	1.94	0.84
1:D:53:U:H6	1:D:53:U:H3'	1.41	0.84
1:A:53:U:H3'	1:A:53:U:H6	1.41	0.84
1:B:32:A:H2'	1:B:33:U:O4'	1.78	0.84
1:C:28:G:C4'	1:C:29:U:C4'	2.47	0.84
1:C:53:U:H3'	1:C:53:U:H6	1.41	0.84
1:E:42:U:H3'	1:E:42:U:H6	1.41	0.84
1:C:32:A:H2'	1:C:33:U:O4'	1.78	0.83
1:A:32:A:H2'	1:A:33:U:O4'	1.78	0.83
1:D:32:A:H2'	1:D:33:U:O4'	1.78	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:42:U:H3'	1:A:42:U:H6	1.41	0.83
1:E:53:U:H3'	1:E:53:U:H6	1.41	0.83
1:B:63:C:O4'	1:B:63:C:OP2	1.95	0.83
1:B:73:U:H5'	1:B:74:U:OP2	1.79	0.83
1:D:28:G:C4'	1:D:29:U:C4'	2.47	0.83
1:E:32:A:H2'	1:E:33:U:O4'	1.78	0.83
1:B:53:U:H3'	1:B:53:U:H6	1.41	0.82
1:D:37:G:OP2	1:D:61:A:P	2.36	0.82
1:A:56:A:HO3'	1:A:57:G:P	2.03	0.82
1:B:41:A:P	1:B:48:C:OP2	2.37	0.82
1:C:37:G:OP2	1:C:61:A:P	2.37	0.82
1:C:41:A:P	1:C:48:C:OP2	2.37	0.82
1:A:41:A:P	1:A:48:C:OP2	2.37	0.82
1:D:41:A:P	1:D:48:C:OP2	2.37	0.82
1:D:30:G:H3'	1:D:30:G:P	2.19	0.82
1:C:29:U:O5'	1:C:30:G:N9	2.13	0.82
1:B:37:G:OP2	1:B:61:A:P	2.37	0.82
1:D:47:C:N4	1:E:83:G:O6	2.12	0.82
1:B:29:U:C2	1:B:30:G:C5'	2.45	0.82
1:D:29:U:O5'	1:D:30:G:N9	2.13	0.82
1:E:29:U:O5'	1:E:30:G:N9	2.13	0.82
1:C:73:U:H5'	1:C:74:U:OP2	1.79	0.82
1:A:37:G:OP2	1:A:61:A:P	2.37	0.81
1:A:40:G:C3'	1:A:41:A:P	2.68	0.81
1:C:53:U:HO3'	1:C:54:U:P	2.03	0.81
1:E:37:G:OP2	1:E:61:A:P	2.37	0.81
1:A:29:U:O5'	1:A:30:G:N9	2.13	0.81
1:D:29:U:C2	1:D:30:G:C5'	2.45	0.81
1:B:40:G:C3'	1:B:41:A:P	2.68	0.81
1:B:40:G:H3'	1:B:41:A:P	2.21	0.81
1:B:43:U:C5'	1:B:44:A:C5'	2.36	0.81
1:B:73:U:C4'	1:B:74:U:OP1	2.16	0.81
1:C:41:A:OP1	1:C:48:C:P	2.39	0.81
1:D:29:U:C5'	1:D:30:G:C8	2.64	0.81
1:D:40:G:C3'	1:D:41:A:P	2.68	0.81
1:E:30:G:H3'	1:E:30:G:P	2.19	0.81
1:A:46:A:N6	1:B:81:U:C5	2.47	0.81
1:B:30:G:H3'	1:B:30:G:P	2.19	0.81
1:E:43:U:C5'	1:E:44:A:C5'	2.36	0.81
1:A:40:G:H3'	1:A:41:A:P	2.20	0.81
1:A:41:A:OP1	1:A:48:C:P	2.39	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:28:G:C4'	1:E:29:U:C4'	2.47	0.81
1:A:30:G:H3'	1:A:30:G:P	2.19	0.81
1:B:29:U:O5'	1:B:30:G:N9	2.13	0.81
1:C:30:G:H3'	1:C:30:G:P	2.19	0.81
1:E:73:U:H5'	1:E:74:U:OP2	1.79	0.81
1:C:29:U:C5'	1:C:30:G:C8	2.64	0.81
1:E:40:G:C3'	1:E:41:A:P	2.68	0.81
1:D:41:A:OP1	1:D:48:C:P	2.39	0.81
1:A:38:G:H2'	1:A:39:G:H8	1.46	0.81
1:B:29:U:C5'	1:B:30:G:C8	2.64	0.81
1:E:41:A:P	1:E:48:C:OP2	2.37	0.81
1:B:49:C:HO3'	1:B:50:U:H5'	1.46	0.81
1:A:73:U:H5'	1:A:74:U:OP2	1.79	0.80
1:C:40:G:C3'	1:C:41:A:P	2.68	0.80
1:D:40:G:H3'	1:D:41:A:P	2.20	0.80
1:D:73:U:H5'	1:D:74:U:OP2	1.79	0.80
1:B:41:A:OP1	1:B:48:C:P	2.39	0.80
1:B:53:U:C3'	1:B:54:U:P	2.70	0.80
1:C:40:G:H3'	1:C:41:A:P	2.20	0.80
1:E:44:A:H2'	1:E:44:A:N3	1.97	0.80
1:E:100:A:C3'	1:E:101:A:P	2.69	0.80
1:A:100:A:C3'	1:A:101:A:P	2.69	0.80
1:B:93:A:C3'	1:B:94:U:P	2.70	0.80
1:C:30:G:H2'	1:C:31:U:H6	1.46	0.80
1:D:41:A:H2'	1:D:41:A:N3	1.97	0.80
1:E:40:G:H3'	1:E:41:A:P	2.20	0.80
1:C:53:U:C3'	1:C:54:U:P	2.69	0.80
1:E:30:G:H2'	1:E:31:U:H6	1.46	0.80
1:A:93:A:C3'	1:A:94:U:P	2.70	0.80
1:D:100:A:C3'	1:D:101:A:P	2.69	0.80
1:E:41:A:OP1	1:E:48:C:P	2.39	0.80
1:A:53:U:C3'	1:A:54:U:P	2.70	0.80
1:C:47:C:N3	1:D:83:G:N1	2.29	0.80
1:B:100:A:C3'	1:B:101:A:P	2.69	0.79
1:C:41:A:N3	1:C:41:A:H2'	1.97	0.79
1:C:93:A:C3'	1:C:94:U:P	2.70	0.79
1:D:30:G:H2'	1:D:31:U:H6	1.46	0.79
1:A:29:U:C5'	1:A:30:G:C8	2.64	0.79
1:C:100:A:C3'	1:C:101:A:P	2.69	0.79
1:D:53:U:C3'	1:D:54:U:P	2.69	0.79
1:A:56:A:N3	1:A:56:A:H2'	1.96	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:53:U:C3'	1:E:54:U:P	2.70	0.79
1:E:93:A:C3'	1:E:94:U:P	2.70	0.79
1:C:56:A:H2'	1:C:56:A:N3	1.96	0.79
1:D:73:U:C4'	1:D:74:U:OP1	2.16	0.79
1:E:38:G:H2'	1:E:39:G:H8	1.46	0.79
1:C:73:U:C4'	1:C:74:U:OP1	2.16	0.79
1:D:93:A:C3'	1:D:94:U:P	2.70	0.79
1:E:56:A:H2'	1:E:56:A:N3	1.96	0.79
1:A:30:G:H2'	1:A:31:U:H6	1.46	0.79
1:B:41:A:H2'	1:B:41:A:N3	1.97	0.79
1:D:43:U:C5'	1:D:44:A:C5'	2.36	0.79
1:B:47:C:N4	1:C:83:G:N1	2.15	0.79
1:B:57:G:C3'	1:B:58:U:P	2.71	0.79
1:D:44:A:N3	1:D:44:A:H2'	1.97	0.79
1:B:30:G:H2'	1:B:31:U:H6	1.46	0.78
1:B:56:A:H2'	1:B:56:A:N3	1.96	0.78
1:A:44:A:N3	1:A:44:A:H2'	1.96	0.78
1:B:53:U:HO3'	1:B:54:U:P	2.06	0.78
1:D:56:A:HO3'	1:D:57:G:P	2.03	0.78
1:D:57:G:P	1:D:57:G:O4'	2.41	0.78
1:A:57:G:C3'	1:A:58:U:P	2.71	0.78
1:D:53:U:HO3'	1:D:54:U:P	2.06	0.78
1:D:56:A:N3	1:D:56:A:H2'	1.96	0.78
1:C:29:U:P	1:C:30:G:N7	2.57	0.78
1:C:44:A:H2'	1:C:44:A:N3	1.97	0.78
1:B:57:G:P	1:B:57:G:O4'	2.42	0.78
1:A:41:A:H2'	1:A:41:A:N3	1.97	0.78
1:C:34:G:O3'	1:C:35:U:O5'	2.02	0.78
1:C:57:G:P	1:C:57:G:O4'	2.42	0.78
1:B:34:G:O3'	1:B:35:U:O5'	2.02	0.78
1:C:57:G:C3'	1:C:58:U:P	2.71	0.78
1:D:34:G:O3'	1:D:35:U:O5'	2.02	0.78
1:B:29:U:P	1:B:30:G:N7	2.57	0.78
1:D:29:U:P	1:D:30:G:N7	2.57	0.78
1:D:57:G:C3'	1:D:58:U:P	2.71	0.78
1:E:29:U:P	1:E:30:G:N7	2.56	0.78
1:E:57:G:C3'	1:E:58:U:P	2.71	0.78
1:A:57:G:P	1:A:57:G:O4'	2.42	0.77
1:B:38:G:H2'	1:B:39:G:H8	1.46	0.77
1:B:44:A:H2'	1:B:44:A:N3	1.96	0.77
1:D:85:U:P	1:D:86:G:N7	2.58	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:85:U:P	1:A:86:G:N7	2.58	0.77
1:C:99:A:C3'	1:C:100:A:P	2.72	0.77
1:A:49:C:H2'	1:A:50:U:O4'	1.85	0.77
1:C:85:U:P	1:C:86:G:N7	2.58	0.77
1:D:38:G:H2'	1:D:39:G:H8	1.46	0.77
1:D:99:A:C3'	1:D:100:A:P	2.72	0.77
1:A:34:G:O3'	1:A:35:U:O5'	2.02	0.77
1:A:99:A:C3'	1:A:100:A:P	2.72	0.77
1:A:54:U:HO3'	1:A:56:A:P	2.08	0.77
1:B:54:U:O3'	1:B:56:A:P	2.43	0.77
1:B:85:U:P	1:B:86:G:N7	2.57	0.77
1:E:49:C:H2'	1:E:50:U:O4'	1.85	0.77
1:E:99:A:C3'	1:E:100:A:P	2.72	0.77
1:B:99:A:C3'	1:B:100:A:P	2.72	0.77
1:D:49:C:H2'	1:D:50:U:O4'	1.85	0.77
1:E:41:A:H2'	1:E:41:A:N3	1.97	0.77
1:B:49:C:H2'	1:B:50:U:O4'	1.85	0.77
1:B:90:A:C3'	1:B:91:U:P	2.73	0.77
1:E:29:U:C5'	1:E:30:G:C8	2.64	0.77
1:B:29:U:H3'	1:B:30:G:C1'	2.15	0.77
1:E:57:G:P	1:E:57:G:O4'	2.42	0.77
1:C:49:C:H2'	1:C:50:U:O4'	1.85	0.76
1:E:40:G:N2	1:E:62:G:C6	2.39	0.76
1:E:54:U:O3'	1:E:56:A:P	2.43	0.76
1:C:54:U:O3'	1:C:56:A:P	2.43	0.76
1:D:29:U:C2	1:D:30:G:H4'	2.21	0.76
1:B:56:A:C3'	1:B:57:G:P	2.74	0.76
1:E:29:U:C2	1:E:30:G:H4'	2.21	0.76
1:E:85:U:P	1:E:86:G:N7	2.57	0.76
1:A:29:U:P	1:A:30:G:N7	2.57	0.76
1:B:98:A:H3'	1:B:99:A:OP2	1.86	0.76
1:C:90:A:C3'	1:C:91:U:P	2.73	0.76
1:A:29:U:H3'	1:A:30:G:C1'	2.15	0.76
1:C:29:U:H3'	1:C:30:G:C1'	2.15	0.76
1:C:43:U:C5'	1:C:44:A:C5'	2.36	0.76
1:D:54:U:O3'	1:D:56:A:P	2.43	0.76
1:A:30:G:H2'	1:A:31:U:C6	2.21	0.76
1:A:98:A:H3'	1:A:99:A:OP2	1.86	0.76
1:C:31:U:C3'	1:C:32:A:H5'	2.16	0.76
1:C:72:U:H5'	1:C:74:U:C5	2.21	0.76
1:C:80:U:C2	1:C:86:G:O6	2.39	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:90:A:C3'	1:A:91:U:P	2.73	0.76
1:C:98:A:H3'	1:C:99:A:OP2	1.86	0.76
1:E:75:G:O6	1:E:91:U:O4	2.04	0.76
1:B:80:U:C2	1:B:86:G:O6	2.39	0.76
1:D:72:U:H5'	1:D:74:U:C5	2.21	0.76
1:D:90:A:C3'	1:D:91:U:P	2.73	0.76
1:A:54:U:O3'	1:A:56:A:P	2.43	0.75
1:D:30:G:H2'	1:D:31:U:C6	2.21	0.75
1:D:75:G:O6	1:D:91:U:O4	2.04	0.75
1:A:80:U:C2	1:A:86:G:O6	2.39	0.75
1:B:31:U:C3'	1:B:32:A:H5'	2.16	0.75
1:B:72:U:H5'	1:B:74:U:C5	2.21	0.75
1:D:56:A:C3'	1:D:57:G:P	2.74	0.75
1:D:81:U:HO3'	1:D:82:G:P	2.06	0.75
1:A:75:G:O6	1:A:91:U:O4	2.04	0.75
1:A:81:U:HO3'	1:A:82:G:P	2.10	0.75
1:C:38:G:H2'	1:C:39:G:H8	1.46	0.75
1:E:56:A:C3'	1:E:57:G:P	2.74	0.75
1:E:90:A:C3'	1:E:91:U:P	2.73	0.75
1:E:72:U:H5'	1:E:74:U:C5	2.21	0.75
1:E:34:G:O3'	1:E:35:U:O5'	2.02	0.75
1:E:98:A:H3'	1:E:99:A:OP2	1.86	0.75
1:B:29:U:O5'	1:B:30:G:N7	2.20	0.75
1:B:29:U:C2	1:B:30:G:H4'	2.21	0.75
1:D:31:U:C3'	1:D:32:A:H5'	2.16	0.75
1:C:29:U:C2	1:C:30:G:H4'	2.21	0.75
1:D:80:U:C2	1:D:86:G:O6	2.39	0.75
1:A:29:U:C2	1:A:30:G:H4'	2.21	0.75
1:B:75:G:O6	1:B:91:U:O4	2.04	0.75
1:C:75:G:O6	1:C:91:U:O4	2.04	0.75
1:D:98:A:H3'	1:D:99:A:OP2	1.86	0.75
1:C:56:A:C3'	1:C:57:G:P	2.74	0.75
1:D:29:U:H3'	1:D:30:G:C1'	2.15	0.75
1:E:40:G:O3'	1:E:41:A:OP1	2.05	0.74
1:A:56:A:C3'	1:A:57:G:P	2.74	0.74
1:C:29:U:O5'	1:C:30:G:N7	2.20	0.74
1:D:29:U:O5'	1:D:30:G:N7	2.20	0.74
1:C:30:G:H2'	1:C:31:U:C6	2.21	0.74
1:E:29:U:C5'	1:E:30:G:O4'	2.35	0.74
1:B:30:G:H2'	1:B:31:U:C6	2.21	0.74
1:B:43:U:OP1	1:B:43:U:O4'	2.05	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:29:U:C5'	1:C:30:G:O4'	2.35	0.74
1:C:81:U:HO3'	1:C:82:G:P	2.09	0.74
1:D:29:U:C5'	1:D:30:G:O4'	2.35	0.74
1:D:30:G:C3'	1:D:30:G:P	2.76	0.74
1:E:28:G:O4'	1:E:29:U:H4'	1.88	0.74
1:E:30:G:H2'	1:E:31:U:C6	2.21	0.74
1:A:31:U:C3'	1:A:32:A:H5'	2.16	0.74
1:A:72:U:H5'	1:A:74:U:C5	2.21	0.74
1:A:81:U:O4	1:E:46:A:C5	2.40	0.74
1:B:29:U:OP1	1:B:30:G:N7	2.21	0.74
1:E:80:U:C2	1:E:86:G:O6	2.39	0.74
1:A:29:U:OP1	1:A:30:G:N7	2.21	0.74
1:B:29:U:C5'	1:B:30:G:C1'	2.66	0.74
1:B:31:U:C3'	1:B:32:A:P	2.76	0.74
1:D:31:U:C3'	1:D:32:A:P	2.76	0.74
1:E:31:U:C3'	1:E:32:A:P	2.76	0.74
1:B:29:U:C5'	1:B:30:G:O4'	2.35	0.74
1:E:31:U:C3'	1:E:32:A:H5'	2.16	0.74
1:D:40:G:C5'	1:D:47:C:H5''	2.18	0.74
1:A:40:G:O3'	1:A:41:A:OP1	2.05	0.73
1:D:28:G:O4'	1:D:29:U:H4'	1.88	0.73
1:D:29:U:OP1	1:D:30:G:N7	2.21	0.73
1:D:43:U:OP1	1:D:43:U:O4'	2.05	0.73
1:E:40:G:C5'	1:E:47:C:H5''	2.18	0.73
1:C:43:U:OP1	1:C:43:U:O4'	2.05	0.73
1:C:28:G:O4'	1:C:29:U:H4'	1.88	0.73
1:B:40:G:C5'	1:B:47:C:H5''	2.18	0.73
1:B:44:A:H5''	1:B:46:A:OP1	1.88	0.73
1:C:40:G:O3'	1:C:41:A:OP1	2.05	0.73
1:E:29:U:P	1:E:30:G:C8	2.81	0.73
1:A:43:U:C5'	1:A:44:A:C5'	2.36	0.73
1:E:43:U:OP1	1:E:43:U:O4'	2.05	0.73
1:A:29:U:C5'	1:A:30:G:O4'	2.35	0.73
1:A:43:U:OP1	1:A:43:U:O4'	2.05	0.73
1:B:28:G:O4'	1:B:29:U:H4'	1.87	0.73
1:D:40:G:O3'	1:D:41:A:OP1	2.06	0.73
1:B:30:G:C3'	1:B:30:G:P	2.76	0.73
1:C:44:A:H5''	1:C:46:A:OP1	1.88	0.73
1:C:29:U:OP1	1:C:30:G:N7	2.21	0.73
1:D:29:U:P	1:D:30:G:C8	2.81	0.73
1:A:30:G:C3'	1:A:30:G:P	2.76	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:31:U:C3'	1:C:32:A:P	2.76	0.73
1:C:31:U:HO3'	1:C:32:A:H5'	1.54	0.73
1:D:86:G:H5''	1:D:87:U:O5'	1.89	0.73
1:E:29:U:H3'	1:E:30:G:C1'	2.15	0.73
1:C:29:U:P	1:C:30:G:C8	2.81	0.73
1:D:29:U:C5'	1:D:30:G:C1'	2.66	0.73
1:A:29:U:O5'	1:A:30:G:N7	2.20	0.72
1:B:86:G:H5''	1:B:87:U:O5'	1.89	0.72
1:C:86:G:H5''	1:C:87:U:O5'	1.89	0.72
1:E:29:U:C5'	1:E:30:G:C1'	2.66	0.72
1:B:40:G:O3'	1:B:41:A:OP1	2.05	0.72
1:E:34:G:H2'	1:E:35:U:C6	2.25	0.72
1:A:31:U:C3'	1:A:32:A:P	2.76	0.72
1:A:86:G:H5''	1:A:87:U:O5'	1.89	0.72
1:E:30:G:C3'	1:E:30:G:P	2.76	0.72
1:A:98:A:C3'	1:A:99:A:P	2.77	0.72
1:C:98:A:C3'	1:C:99:A:P	2.77	0.72
1:E:81:U:HO3'	1:E:82:G:P	2.11	0.72
1:A:75:G:OP1	1:A:75:G:H3'	1.88	0.72
1:B:29:U:C6	1:B:30:G:O4'	2.43	0.72
1:C:29:U:C5'	1:C:30:G:C1'	2.66	0.72
1:E:29:U:OP1	1:E:30:G:N7	2.21	0.72
1:E:53:U:HO3'	1:E:54:U:P	2.08	0.72
1:E:98:A:C3'	1:E:99:A:P	2.77	0.72
1:A:28:G:O4'	1:A:29:U:H4'	1.88	0.72
1:A:34:G:H2'	1:A:35:U:C6	2.25	0.72
1:A:29:U:C5'	1:A:30:G:C1'	2.66	0.72
1:A:40:G:C5'	1:A:47:C:H5''	2.18	0.72
1:C:30:G:C3'	1:C:30:G:P	2.76	0.72
1:C:40:G:C5'	1:C:47:C:H5''	2.18	0.72
1:D:34:G:H2'	1:D:35:U:C6	2.24	0.72
1:D:98:A:C3'	1:D:99:A:P	2.77	0.72
1:E:29:U:O5'	1:E:30:G:N7	2.20	0.72
1:E:86:G:H5''	1:E:87:U:O5'	1.89	0.72
1:A:29:U:P	1:A:30:G:C8	2.81	0.71
1:C:29:U:C6	1:C:30:G:O4'	2.43	0.71
1:D:75:G:OP1	1:D:75:G:H3'	1.88	0.71
1:B:29:U:P	1:B:30:G:C8	2.81	0.71
1:B:98:A:C3'	1:B:99:A:P	2.77	0.71
1:D:31:U:O3'	1:D:32:A:P	2.49	0.71
1:B:31:U:O3'	1:B:32:A:P	2.49	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:34:G:H2'	1:B:35:U:C6	2.25	0.71
1:C:31:U:O3'	1:C:32:A:P	2.49	0.71
1:A:31:U:O3'	1:A:32:A:P	2.49	0.71
1:E:54:U:HO3'	1:E:56:A:P	2.13	0.71
1:E:29:U:C6	1:E:30:G:O4'	2.43	0.71
1:B:86:G:C5'	1:B:87:U:O5'	2.39	0.71
1:D:29:U:C6	1:D:30:G:O4'	2.43	0.71
1:C:34:G:H2'	1:C:35:U:C6	2.25	0.71
1:A:29:U:C6	1:A:30:G:O4'	2.43	0.71
1:E:31:U:O3'	1:E:32:A:P	2.49	0.71
1:E:86:G:C5'	1:E:87:U:O5'	2.39	0.70
1:C:75:G:OP1	1:C:75:G:H3'	1.88	0.70
1:E:75:G:OP1	1:E:75:G:H3'	1.88	0.70
1:A:53:U:HO3'	1:A:54:U:P	2.08	0.70
1:A:86:G:C5'	1:A:87:U:O5'	2.39	0.70
1:D:39:G:C2'	1:D:40:G:O4'	2.39	0.70
1:A:39:G:C2'	1:A:40:G:O4'	2.39	0.70
1:D:86:G:C5'	1:D:87:U:O5'	2.39	0.70
1:A:28:G:O2'	1:A:29:U:C5'	2.37	0.70
1:A:42:U:H3'	1:A:42:U:C6	2.26	0.70
1:B:28:G:O2'	1:B:29:U:C5'	2.37	0.70
1:A:44:A:H5''	1:A:46:A:OP1	1.88	0.70
1:B:42:U:H3'	1:B:42:U:C6	2.26	0.70
1:A:29:U:C5'	1:A:30:G:N9	2.55	0.69
1:C:39:G:C2'	1:C:40:G:O4'	2.39	0.69
1:C:86:G:C5'	1:C:87:U:O5'	2.39	0.69
1:B:29:U:C5'	1:B:30:G:N9	2.55	0.69
1:D:44:A:H5''	1:D:46:A:OP1	1.88	0.69
1:C:53:U:H3'	1:C:53:U:C6	2.27	0.69
1:B:75:G:OP1	1:B:75:G:H3'	1.88	0.69
1:D:29:U:C5'	1:D:30:G:N9	2.55	0.69
1:D:28:G:O2'	1:D:29:U:C5'	2.37	0.69
1:C:28:G:O2'	1:C:29:U:C5'	2.37	0.69
1:E:44:A:H5''	1:E:46:A:OP1	1.88	0.69
1:A:29:U:H5'	1:A:30:G:O4'	1.93	0.69
1:B:39:G:C2'	1:B:40:G:O4'	2.39	0.69
1:C:29:U:C5'	1:C:30:G:N9	2.55	0.69
1:E:64:C:H2'	1:E:65:C:C6	2.28	0.69
1:D:42:U:H3'	1:D:42:U:C6	2.26	0.69
1:D:46:A:C6	1:E:84:U:N3	2.34	0.69
1:D:54:U:HO3'	1:D:56:A:P	2.15	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:29:U:C5'	1:E:30:G:N9	2.55	0.69
1:E:63:C:O4'	1:E:63:C:OP1	1.97	0.69
1:E:28:G:O2'	1:E:29:U:C5'	2.37	0.69
1:C:64:C:H2'	1:C:65:C:C6	2.28	0.68
1:D:63:C:O4'	1:D:63:C:OP1	1.97	0.68
1:A:64:C:H2'	1:A:65:C:C6	2.28	0.68
1:A:86:G:OP1	1:A:86:G:C4'	2.41	0.68
1:C:42:U:H3'	1:C:42:U:C6	2.26	0.68
1:E:86:G:C4'	1:E:86:G:OP1	2.41	0.68
1:C:40:G:C2	1:C:62:G:C5	2.72	0.68
1:C:86:G:OP1	1:C:86:G:C4'	2.41	0.68
1:A:100:A:HO3'	1:A:101:A:P	2.15	0.68
1:B:64:C:H2'	1:B:65:C:C6	2.28	0.68
1:B:93:A:C3'	1:B:94:U:OP2	2.41	0.68
1:E:39:G:C2'	1:E:40:G:O4'	2.39	0.68
1:A:53:U:H3'	1:A:53:U:C6	2.27	0.68
1:C:58:U:H3'	1:C:58:U:C6	2.26	0.68
1:D:64:C:H2'	1:D:65:C:C6	2.28	0.68
1:C:49:C:HO3'	1:C:50:U:H5'	1.59	0.68
1:C:100:A:H3'	1:C:101:A:P	2.34	0.68
1:D:86:G:C4'	1:D:86:G:OP1	2.41	0.68
1:B:53:U:H3'	1:B:53:U:C6	2.27	0.68
1:D:58:U:H3'	1:D:58:U:C6	2.27	0.68
1:A:47:C:N3	1:B:83:G:C6	2.53	0.68
1:C:30:G:O2'	1:C:31:U:H5'	1.94	0.68
1:E:30:G:O2'	1:E:31:U:H5'	1.94	0.68
1:E:40:G:C5	1:E:49:C:N4	2.62	0.68
1:C:93:A:C3'	1:C:94:U:OP2	2.41	0.68
1:A:54:U:O3'	1:A:56:A:OP1	2.12	0.67
1:D:54:U:O3'	1:D:56:A:OP1	2.12	0.67
1:E:53:U:H3'	1:E:53:U:C6	2.27	0.67
1:A:58:U:H3'	1:A:58:U:C6	2.26	0.67
1:B:29:U:H5'	1:B:30:G:O4'	1.93	0.67
1:B:30:G:O2'	1:B:31:U:H5'	1.94	0.67
1:B:63:C:O4'	1:B:63:C:OP1	1.97	0.67
1:D:40:G:C5	1:D:49:C:N4	2.62	0.67
1:A:40:G:C5	1:A:49:C:N4	2.62	0.67
1:B:100:A:H3'	1:B:101:A:P	2.34	0.67
1:B:86:G:C4'	1:B:86:G:OP1	2.41	0.67
1:B:54:U:O3'	1:B:56:A:OP1	2.12	0.67
1:E:29:U:H5'	1:E:30:G:O4'	1.93	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:40:G:C5	1:C:49:C:N4	2.62	0.67
1:D:100:A:H3'	1:D:101:A:P	2.34	0.67
1:E:58:U:H3'	1:E:58:U:C6	2.27	0.67
1:E:100:A:H3'	1:E:101:A:P	2.34	0.67
1:A:30:G:O2'	1:A:31:U:H5'	1.94	0.67
1:B:58:U:H3'	1:B:58:U:C6	2.27	0.67
1:C:29:U:H5'	1:C:30:G:H1'	1.76	0.67
1:C:87:U:H3'	1:C:88:C:OP2	1.95	0.67
1:D:87:U:H3'	1:D:88:C:OP2	1.95	0.67
1:C:54:U:O3'	1:C:56:A:OP1	2.12	0.67
1:D:29:U:H5'	1:D:30:G:O4'	1.93	0.67
1:D:30:G:O2'	1:D:31:U:H5'	1.94	0.67
1:E:54:U:O3'	1:E:56:A:OP1	2.12	0.67
1:A:80:U:O4	1:A:84:U:H5''	1.95	0.66
1:D:45:A:C6	1:E:85:U:O4	2.47	0.66
1:D:80:U:O4	1:D:84:U:H5''	1.95	0.66
1:A:29:U:H5'	1:A:30:G:H1'	1.76	0.66
1:A:87:U:H3'	1:A:88:C:OP2	1.95	0.66
1:C:54:U:HO3'	1:C:56:A:P	2.17	0.66
1:E:42:U:H3'	1:E:42:U:C6	2.26	0.66
1:B:40:G:C5	1:B:49:C:N4	2.62	0.66
1:B:93:A:H3'	1:B:94:U:P	2.36	0.66
1:C:80:U:O4	1:C:84:U:H5''	1.95	0.66
1:C:29:U:H5'	1:C:30:G:O4'	1.93	0.66
1:A:100:A:H3'	1:A:101:A:P	2.34	0.66
1:B:80:U:O4	1:B:84:U:H5''	1.95	0.66
1:D:53:U:H3'	1:D:53:U:C6	2.27	0.66
1:E:80:U:O4	1:E:84:U:H5''	1.95	0.66
1:E:87:U:H3'	1:E:88:C:OP2	1.95	0.66
1:D:93:A:H3'	1:D:94:U:P	2.36	0.66
1:E:29:U:H5'	1:E:30:G:H1'	1.76	0.66
1:B:54:U:HO3'	1:B:56:A:P	2.19	0.66
1:C:53:U:H3'	1:C:54:U:OP2	1.96	0.65
1:E:93:A:H3'	1:E:94:U:P	2.36	0.65
1:D:45:A:N1	1:E:85:U:O4	2.28	0.65
1:B:53:U:H3'	1:B:54:U:OP2	1.97	0.65
1:C:99:A:H3'	1:C:100:A:P	2.36	0.65
1:B:87:U:H3'	1:B:88:C:OP2	1.95	0.65
1:D:99:A:H3'	1:D:100:A:P	2.36	0.65
1:D:53:U:H3'	1:D:54:U:OP2	1.96	0.65
1:A:53:U:H3'	1:A:54:U:OP2	1.97	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:93:A:C3'	1:A:94:U:OP2	2.41	0.65
1:E:53:U:H3'	1:E:54:U:OP2	1.97	0.65
1:A:29:U:OP2	1:A:30:G:C4	2.51	0.64
1:C:29:U:OP2	1:C:30:G:C4	2.51	0.64
1:C:93:A:H3'	1:C:94:U:P	2.36	0.64
1:D:29:U:H5'	1:D:30:G:H1'	1.76	0.64
1:C:33:U:C2	1:C:34:G:C8	2.86	0.64
1:E:29:U:OP2	1:E:30:G:C4	2.51	0.64
1:B:57:G:H2'	1:B:58:U:H5'	1.80	0.64
1:C:57:G:H2'	1:C:58:U:H5'	1.80	0.64
1:D:33:U:C2	1:D:34:G:C8	2.86	0.64
1:D:49:C:C3'	1:D:50:U:H5'	2.27	0.64
1:D:57:G:H2'	1:D:58:U:H5'	1.80	0.64
1:B:41:A:C1'	1:B:49:C:H1'	2.28	0.64
1:C:49:C:C3'	1:C:50:U:H5'	2.27	0.64
1:D:41:A:C1'	1:D:49:C:H1'	2.28	0.64
1:A:93:A:H3'	1:A:94:U:P	2.36	0.64
1:B:33:U:C2	1:B:34:G:C8	2.86	0.64
1:C:46:A:C6	1:D:84:U:O4	2.50	0.64
1:B:58:U:C6	1:B:58:U:C3'	2.81	0.64
1:B:71:C:H5	1:B:72:U:C5	2.16	0.64
1:B:99:A:H3'	1:B:100:A:P	2.36	0.64
1:D:71:C:H5	1:D:72:U:C5	2.16	0.64
1:E:53:U:C3'	1:E:53:U:C6	2.81	0.64
1:B:29:U:OP2	1:B:30:G:C4	2.51	0.64
1:C:71:C:H5	1:C:72:U:C5	2.16	0.64
1:D:29:U:OP2	1:D:30:G:C4	2.51	0.64
1:C:58:U:C6	1:C:58:U:C3'	2.81	0.64
1:E:41:A:C1'	1:E:49:C:H1'	2.28	0.64
1:A:71:C:H5	1:A:72:U:C5	2.16	0.64
1:A:49:C:C3'	1:A:50:U:H5'	2.27	0.63
1:A:58:U:C6	1:A:58:U:C3'	2.81	0.63
1:B:46:A:C2	1:C:85:U:C2	2.86	0.63
1:B:54:U:O2	1:B:57:G:O6	2.16	0.63
1:C:40:G:H5'	1:C:47:C:C5'	2.27	0.63
1:E:57:G:H2'	1:E:58:U:H5'	1.80	0.63
1:A:33:U:C2	1:A:34:G:C8	2.86	0.63
1:C:41:A:C1'	1:C:49:C:H1'	2.28	0.63
1:E:42:U:C6	1:E:42:U:C3'	2.81	0.63
1:E:99:A:H3'	1:E:100:A:P	2.36	0.63
1:D:42:U:C6	1:D:42:U:C3'	2.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:33:U:C2	1:E:34:G:C8	2.86	0.63
1:A:53:U:C3'	1:A:53:U:C6	2.81	0.63
1:C:54:U:O2	1:C:57:G:O6	2.16	0.63
1:D:54:U:O2	1:D:57:G:O6	2.17	0.63
1:E:54:U:O2	1:E:57:G:O6	2.17	0.63
1:A:41:A:C1'	1:A:49:C:H1'	2.28	0.63
1:A:42:U:C6	1:A:42:U:C3'	2.81	0.63
1:D:53:U:C3'	1:D:53:U:C6	2.81	0.63
1:E:58:U:C6	1:E:58:U:C3'	2.81	0.63
1:B:53:U:C3'	1:B:53:U:C6	2.81	0.63
1:B:80:U:H5''	1:B:81:U:OP2	1.99	0.63
1:D:58:U:C6	1:D:58:U:C3'	2.81	0.63
1:E:71:C:H5	1:E:72:U:C5	2.16	0.63
1:A:34:G:HO3'	1:A:35:U:H5'	1.62	0.63
1:B:29:U:H5'	1:B:30:G:H1'	1.76	0.63
1:B:49:C:C3'	1:B:50:U:H5'	2.27	0.63
1:E:49:C:C3'	1:E:50:U:H5'	2.27	0.63
1:A:54:U:N3	1:A:56:A:H1'	2.14	0.62
1:D:80:U:H5''	1:D:81:U:OP2	1.99	0.62
1:E:40:G:H5'	1:E:47:C:C5'	2.27	0.62
1:E:54:U:N3	1:E:56:A:H1'	2.14	0.62
1:A:57:G:H2'	1:A:58:U:H5'	1.80	0.62
1:E:56:A:H3'	1:E:57:G:P	2.39	0.62
1:A:54:U:O2	1:A:57:G:O6	2.17	0.62
1:A:63:C:O4'	1:A:63:C:OP1	1.97	0.62
1:B:40:G:H5'	1:B:47:C:C5'	2.27	0.62
1:C:53:U:C3'	1:C:53:U:C6	2.81	0.62
1:A:86:G:OP1	1:A:86:G:H4'	1.99	0.62
1:A:98:A:H3'	1:A:99:A:P	2.40	0.62
1:D:40:G:H5'	1:D:47:C:C5'	2.27	0.62
1:C:80:U:H5''	1:C:81:U:OP2	1.99	0.62
1:B:54:U:N3	1:B:56:A:H1'	2.14	0.62
1:D:54:U:N3	1:D:56:A:H1'	2.14	0.62
1:E:98:A:H3'	1:E:99:A:P	2.40	0.62
1:C:86:G:OP1	1:C:86:G:H4'	1.99	0.62
1:A:80:U:H5''	1:A:81:U:OP2	1.99	0.62
1:A:99:A:H3'	1:A:100:A:P	2.36	0.62
1:B:56:A:H3'	1:B:57:G:P	2.39	0.62
1:C:54:U:N3	1:C:56:A:H1'	2.14	0.62
1:C:56:A:H3'	1:C:57:G:P	2.39	0.61
1:A:32:A:H2'	1:A:33:U:C6	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:56:A:H3'	1:A:57:G:P	2.39	0.61
1:E:86:G:OP1	1:E:86:G:H4'	1.99	0.61
1:B:32:A:H2'	1:B:33:U:C6	2.35	0.61
1:B:42:U:H6	1:B:42:U:C3'	2.14	0.61
1:E:80:U:H5''	1:E:81:U:OP2	1.99	0.61
1:B:82:G:P	1:B:82:G:H3'	2.41	0.61
1:D:82:G:P	1:D:82:G:H3'	2.41	0.61
1:A:82:G:P	1:A:82:G:H3'	2.41	0.61
1:D:56:A:H3'	1:D:57:G:P	2.39	0.61
1:D:86:G:OP1	1:D:86:G:H4'	1.99	0.61
1:B:42:U:C6	1:B:42:U:C3'	2.81	0.61
1:C:42:U:C6	1:C:42:U:C3'	2.81	0.61
1:D:98:A:H3'	1:D:99:A:P	2.40	0.61
1:E:82:G:P	1:E:82:G:H3'	2.41	0.61
1:E:87:U:H4'	1:E:87:U:OP1	2.01	0.61
1:C:70:A:H2'	1:C:71:C:O4'	2.01	0.61
1:C:82:G:P	1:C:82:G:H3'	2.41	0.61
1:E:32:A:H2'	1:E:33:U:C6	2.35	0.61
1:B:86:G:OP1	1:B:86:G:H4'	1.99	0.60
1:C:32:A:H2'	1:C:33:U:C6	2.35	0.60
1:C:98:A:H3'	1:C:99:A:P	2.40	0.60
1:D:70:A:H2'	1:D:71:C:O4'	2.01	0.60
1:A:56:A:O3'	1:A:57:G:OP1	2.20	0.60
1:B:70:A:H2'	1:B:71:C:O4'	2.01	0.60
1:D:32:A:H2'	1:D:33:U:C6	2.35	0.60
1:D:75:G:OP1	1:D:75:G:C3'	2.47	0.60
1:B:71:C:C5	1:B:72:U:C5	2.89	0.60
1:E:81:U:C5'	1:E:81:U:P	2.90	0.60
1:A:28:G:C3'	1:A:29:U:C5'	2.73	0.60
1:A:70:A:H2'	1:A:71:C:O4'	2.01	0.60
1:A:58:U:H6	1:A:58:U:C3'	2.13	0.60
1:C:71:C:C5	1:C:72:U:C5	2.89	0.60
1:D:56:A:O3'	1:D:57:G:OP1	2.20	0.60
1:D:87:U:OP1	1:D:87:U:H4'	2.01	0.60
1:B:29:U:O4'	1:B:30:G:O4'	2.20	0.60
1:A:71:C:C5	1:A:72:U:C5	2.89	0.60
1:A:87:U:OP1	1:A:87:U:H4'	2.01	0.60
1:B:28:G:HO2'	1:B:29:U:H5''	1.65	0.60
1:C:56:A:O3'	1:C:57:G:OP1	2.20	0.60
1:D:29:U:O4'	1:D:30:G:O4'	2.20	0.60
1:D:71:C:C5	1:D:72:U:C5	2.89	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:71:C:C5	1:E:72:U:C5	2.89	0.60
1:A:75:G:OP1	1:A:75:G:C3'	2.47	0.59
1:B:98:A:H3'	1:B:99:A:P	2.40	0.59
1:D:58:U:H2'	1:D:59:U:C6	2.37	0.59
1:C:58:U:H2'	1:C:59:U:C6	2.38	0.59
1:E:70:A:H2'	1:E:71:C:O4'	2.01	0.59
1:B:87:U:OP1	1:B:87:U:H4'	2.01	0.59
1:A:31:U:H2'	1:A:32:A:O4'	2.03	0.59
1:B:31:U:H2'	1:B:32:A:O4'	2.03	0.59
1:D:31:U:H2'	1:D:32:A:O4'	2.03	0.59
1:E:29:U:C1'	1:E:30:G:O4'	2.50	0.59
1:A:29:U:O4'	1:A:30:G:O4'	2.20	0.59
1:A:53:U:C3'	1:A:54:U:OP2	2.51	0.59
1:B:53:U:H6	1:B:53:U:C3'	2.13	0.59
1:B:58:U:H2'	1:B:59:U:C6	2.37	0.59
1:C:87:U:H4'	1:C:87:U:OP1	2.01	0.59
1:C:53:U:H6	1:C:53:U:C3'	2.13	0.59
1:D:53:U:C3'	1:D:54:U:OP2	2.51	0.59
1:E:56:A:O3'	1:E:57:G:OP1	2.20	0.59
1:E:73:U:O5'	1:E:74:U:OP2	2.21	0.59
1:C:29:U:O4'	1:C:30:G:O4'	2.20	0.59
1:C:53:U:C3'	1:C:54:U:OP2	2.51	0.59
1:A:58:U:H2'	1:A:59:U:C6	2.37	0.59
1:C:74:U:O2'	1:C:76:U:OP1	2.16	0.59
1:D:29:U:C1'	1:D:30:G:O4'	2.50	0.59
1:D:73:U:O5'	1:D:74:U:OP2	2.21	0.59
1:E:53:U:C3'	1:E:54:U:OP2	2.51	0.59
1:B:81:U:C5'	1:B:81:U:P	2.90	0.58
1:A:73:U:O5'	1:A:74:U:OP2	2.21	0.58
1:C:31:U:H2'	1:C:32:A:O4'	2.03	0.58
1:E:31:U:H2'	1:E:32:A:O4'	2.03	0.58
1:E:58:U:H2'	1:E:59:U:C6	2.37	0.58
1:E:74:U:O2'	1:E:76:U:OP1	2.16	0.58
1:B:53:U:C3'	1:B:54:U:OP2	2.51	0.58
1:B:54:U:H3'	1:B:56:A:OP2	2.04	0.58
1:C:73:U:O5'	1:C:74:U:OP2	2.21	0.58
1:B:56:A:O3'	1:B:57:G:OP1	2.20	0.58
1:E:54:U:H3'	1:E:56:A:OP2	2.04	0.58
1:A:81:U:C5'	1:A:81:U:P	2.90	0.58
1:A:54:U:H3'	1:A:56:A:OP2	2.04	0.58
1:D:93:A:C3'	1:D:94:U:OP2	2.41	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:29:U:O4'	1:E:30:G:O4'	2.20	0.58
1:E:31:U:HO3'	1:E:32:A:H5'	1.64	0.58
1:D:81:U:C5'	1:D:81:U:P	2.90	0.57
1:A:40:G:H5'	1:A:47:C:C5'	2.27	0.57
1:B:65:C:H2'	1:B:66:A:O5'	2.05	0.57
1:C:54:U:H3'	1:C:56:A:OP2	2.04	0.57
1:D:65:C:H2'	1:D:66:A:O5'	2.05	0.57
1:A:74:U:O2'	1:A:76:U:OP1	2.16	0.57
1:C:65:C:H2'	1:C:66:A:O5'	2.05	0.57
1:C:81:U:C5'	1:C:81:U:P	2.90	0.57
1:D:54:U:H3'	1:D:56:A:OP2	2.04	0.57
1:D:54:U:C5	1:D:56:A:H1'	2.39	0.57
1:A:54:U:C5	1:A:56:A:H1'	2.40	0.57
1:B:73:U:O5'	1:B:74:U:OP2	2.21	0.57
1:C:42:U:H6	1:C:42:U:C3'	2.13	0.57
1:C:54:U:C5	1:C:56:A:H1'	2.40	0.57
1:B:29:U:C1'	1:B:30:G:O4'	2.50	0.57
1:E:54:U:C5	1:E:56:A:H1'	2.40	0.57
1:E:65:C:H2'	1:E:66:A:O5'	2.05	0.57
1:B:75:G:OP1	1:B:75:G:C3'	2.47	0.56
1:A:45:A:C6	1:B:85:U:O4	2.57	0.56
1:D:53:U:H6	1:D:53:U:C3'	2.13	0.56
1:E:54:U:C4	1:E:56:A:C1'	2.88	0.56
1:C:46:A:N1	1:D:84:U:O4	2.37	0.56
1:A:47:C:O2'	1:A:48:C:H5'	2.06	0.56
1:A:65:C:H2'	1:A:66:A:O5'	2.05	0.56
1:A:46:A:N6	1:B:81:U:H5	2.04	0.56
1:B:54:U:C5	1:B:56:A:H1'	2.40	0.56
1:D:47:C:H42	1:E:83:G:H1	0.59	0.56
1:B:43:U:O2	1:B:43:U:H2'	2.06	0.56
1:A:91:U:H2'	1:A:92:C:H6	1.71	0.56
1:C:43:U:O2	1:C:43:U:H2'	2.06	0.56
1:C:47:C:O2'	1:C:48:C:H5'	2.06	0.56
1:D:43:U:O2	1:D:43:U:H2'	2.06	0.55
1:E:43:U:O2	1:E:43:U:H2'	2.06	0.55
1:B:91:U:H2'	1:B:92:C:H6	1.71	0.55
1:C:29:U:C1'	1:C:30:G:O4'	2.50	0.55
1:B:47:C:O2'	1:B:48:C:H5'	2.06	0.55
1:A:43:U:H2'	1:A:43:U:O2	2.06	0.55
1:C:91:U:H2'	1:C:92:C:H6	1.72	0.55
1:A:29:U:O2	1:A:30:G:H5''	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:30:G:OP2	1:B:30:G:C2'	2.55	0.55
1:A:63:C:H2'	1:A:64:C:O4'	2.07	0.55
1:D:30:G:OP2	1:D:30:G:C2'	2.55	0.55
1:E:47:C:O2'	1:E:48:C:H5'	2.06	0.55
1:E:63:C:H2'	1:E:64:C:O4'	2.07	0.55
1:A:53:U:H6	1:A:53:U:C3'	2.13	0.55
1:D:47:C:O2'	1:D:48:C:H5'	2.06	0.55
1:D:63:C:H2'	1:D:64:C:O4'	2.07	0.55
1:D:91:U:H2'	1:D:92:C:H6	1.72	0.55
1:D:96:G:H2'	1:D:97:C:O5'	2.07	0.55
1:E:91:U:H2'	1:E:92:C:H6	1.72	0.55
1:C:30:G:OP2	1:C:30:G:C2'	2.55	0.55
1:B:29:U:O2	1:B:30:G:H5''	2.07	0.54
1:E:32:A:H2'	1:E:33:U:H6	1.72	0.54
1:B:96:G:H2'	1:B:97:C:O5'	2.07	0.54
1:C:41:A:H1'	1:C:49:C:H1'	1.90	0.54
1:D:41:A:H1'	1:D:49:C:H1'	1.90	0.54
1:D:54:U:C4	1:D:56:A:C1'	2.88	0.54
1:E:81:U:H5''	1:E:83:G:OP2	2.03	0.54
1:B:63:C:H2'	1:B:64:C:O4'	2.07	0.54
1:C:96:G:H2'	1:C:97:C:O5'	2.07	0.54
1:E:96:G:H2'	1:E:97:C:O5'	2.07	0.54
1:C:47:C:N3	1:D:83:G:C6	2.68	0.54
1:A:53:U:O3'	1:A:54:U:OP1	2.14	0.54
1:A:96:G:H2'	1:A:97:C:O5'	2.07	0.54
1:C:75:G:OP1	1:C:75:G:C3'	2.47	0.54
1:A:34:G:H2'	1:A:35:U:O4'	2.08	0.54
1:B:34:G:H2'	1:B:35:U:O4'	2.08	0.54
1:B:47:C:N4	1:C:83:G:C6	2.76	0.54
1:C:42:U:H5''	1:C:43:U:P	2.48	0.54
1:C:54:U:C4	1:C:56:A:C1'	2.88	0.54
1:C:63:C:H2'	1:C:64:C:O4'	2.07	0.54
1:D:42:U:H5''	1:D:43:U:P	2.48	0.54
1:E:34:G:H2'	1:E:35:U:O4'	2.08	0.54
1:B:54:U:C4	1:B:56:A:C1'	2.88	0.54
1:D:29:U:O2	1:D:30:G:H5''	2.07	0.54
1:E:30:G:OP2	1:E:30:G:C2'	2.55	0.54
1:A:42:U:H5''	1:A:43:U:P	2.48	0.53
1:B:42:U:H5''	1:B:43:U:P	2.48	0.53
1:E:41:A:H1'	1:E:49:C:H1'	1.90	0.53
1:A:29:U:C1'	1:A:30:G:O4'	2.50	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:75:G:OP1	1:E:75:G:C3'	2.47	0.53
1:B:46:A:C2	1:C:85:U:O2	2.61	0.53
1:C:29:U:O2	1:C:30:G:H5''	2.07	0.53
1:E:29:U:O2	1:E:30:G:H5''	2.07	0.53
1:C:34:G:H2'	1:C:35:U:O4'	2.08	0.53
1:D:34:G:H2'	1:D:35:U:O4'	2.08	0.53
1:A:37:G:OP2	1:A:61:A:OP1	2.27	0.53
1:C:49:C:C2'	1:C:50:U:H5'	2.39	0.53
1:C:84:U:H2'	1:C:85:U:C6	2.44	0.53
1:E:42:U:H5''	1:E:43:U:P	2.48	0.53
1:A:84:U:H2'	1:A:85:U:C6	2.44	0.53
1:B:84:U:H2'	1:B:85:U:C6	2.44	0.53
1:D:32:A:H2'	1:D:33:U:H6	1.72	0.53
1:A:81:U:H5'	1:A:83:G:P	2.48	0.53
1:B:41:A:H1'	1:B:49:C:H1'	1.90	0.53
1:A:32:A:H2'	1:A:33:U:H6	1.72	0.53
1:C:32:A:H2'	1:C:33:U:H6	1.72	0.53
1:C:37:G:OP2	1:C:61:A:OP1	2.27	0.53
1:D:37:G:OP2	1:D:61:A:OP1	2.27	0.53
1:B:32:A:H2'	1:B:33:U:H6	1.72	0.52
1:B:81:U:H5'	1:B:83:G:P	2.48	0.52
1:A:50:U:O3'	1:A:51:G:C5'	2.53	0.52
1:B:49:C:C2'	1:B:50:U:H5'	2.39	0.52
1:D:49:C:C2'	1:D:50:U:H5'	2.39	0.52
1:D:84:U:H2'	1:D:85:U:C6	2.44	0.52
1:E:28:G:C1'	1:E:29:U:H5''	2.39	0.52
1:C:40:G:OP2	1:C:40:G:O4'	2.28	0.52
1:C:81:U:H5'	1:C:83:G:P	2.48	0.52
1:D:28:G:C1'	1:D:29:U:H5''	2.39	0.52
1:E:49:C:C2'	1:E:50:U:H5'	2.39	0.52
1:E:83:G:H2'	1:E:84:U:C6	2.45	0.52
1:B:54:U:C2	1:B:56:A:H1'	2.45	0.52
1:D:40:G:OP2	1:D:40:G:O4'	2.28	0.52
1:E:37:G:OP2	1:E:61:A:OP1	2.27	0.52
1:A:40:G:OP2	1:A:40:G:O4'	2.28	0.52
1:A:54:U:C2	1:A:56:A:H1'	2.45	0.52
1:B:37:G:OP2	1:B:61:A:OP1	2.27	0.52
1:E:33:U:O2'	1:E:34:G:H5'	2.09	0.52
1:A:54:U:C4	1:A:56:A:C1'	2.88	0.52
1:A:83:G:H2'	1:A:84:U:C6	2.45	0.52
1:C:39:G:N3	1:C:40:G:H1'	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:83:G:H2'	1:C:84:U:C6	2.45	0.52
1:D:54:U:C2	1:D:56:A:H1'	2.45	0.52
1:E:54:U:C2	1:E:56:A:H1'	2.45	0.52
1:A:41:A:H1'	1:A:49:C:H1'	1.90	0.52
1:B:28:G:C1'	1:B:29:U:H5''	2.39	0.52
1:B:40:G:OP2	1:B:40:G:O4'	2.28	0.52
1:E:93:A:C3'	1:E:94:U:OP2	2.41	0.52
1:A:49:C:C2'	1:A:50:U:H5'	2.39	0.52
1:C:54:U:C2	1:C:56:A:H1'	2.45	0.52
1:D:39:G:N3	1:D:40:G:H1'	2.25	0.52
1:D:83:G:H2'	1:D:84:U:C6	2.45	0.52
1:B:39:G:N3	1:B:40:G:H1'	2.25	0.52
1:B:41:A:O4'	1:B:49:C:H1'	2.10	0.52
1:B:83:G:H2'	1:B:84:U:C6	2.45	0.52
1:D:41:A:O4'	1:D:49:C:H1'	2.10	0.52
1:E:81:U:H5'	1:E:83:G:P	2.48	0.52
1:E:84:U:H2'	1:E:85:U:C6	2.44	0.52
1:A:30:G:OP2	1:A:30:G:C2'	2.55	0.52
1:A:31:U:C3'	1:A:32:A:C5'	2.86	0.52
1:A:33:U:O2'	1:A:34:G:H5'	2.10	0.51
1:D:74:U:O2'	1:D:76:U:OP1	2.16	0.51
1:A:28:G:C1'	1:A:29:U:H5''	2.39	0.51
1:B:40:G:O3'	1:B:41:A:OP2	2.28	0.51
1:C:28:G:C1'	1:C:29:U:H5''	2.39	0.51
1:D:33:U:H2'	1:D:34:G:H8	1.76	0.51
1:E:39:G:N3	1:E:40:G:H1'	2.25	0.51
1:C:33:U:O2'	1:C:34:G:H5'	2.09	0.51
1:E:41:A:O4'	1:E:49:C:H1'	2.10	0.51
1:A:39:G:N3	1:A:40:G:H1'	2.25	0.51
1:A:46:A:C4	1:A:47:C:C5	2.99	0.51
1:B:46:A:C4	1:B:47:C:C5	2.99	0.51
1:B:50:U:O3'	1:B:51:G:C5'	2.53	0.51
1:D:46:A:C4	1:D:47:C:C5	2.99	0.51
1:E:32:A:C2'	1:E:33:U:O4'	2.56	0.51
1:E:50:U:O3'	1:E:51:G:C5'	2.53	0.51
1:A:28:G:O4'	1:A:29:U:C4'	2.58	0.51
1:A:33:U:H2'	1:A:34:G:H8	1.75	0.51
1:B:33:U:O2'	1:B:34:G:H5'	2.10	0.51
1:D:33:U:O2'	1:D:34:G:H5'	2.10	0.51
1:D:50:U:O3'	1:D:51:G:C5'	2.53	0.51
1:E:33:U:H2'	1:E:34:G:H8	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:40:G:OP2	1:E:40:G:O4'	2.28	0.51
1:B:58:U:H6	1:B:58:U:C3'	2.13	0.51
1:C:41:A:O4'	1:C:49:C:H1'	2.10	0.51
1:C:71:C:C5	1:C:72:U:C4	2.99	0.51
1:D:71:C:C5	1:D:72:U:C4	2.99	0.51
1:D:40:G:O3'	1:D:41:A:OP2	2.28	0.51
1:E:41:A:C5'	1:E:42:U:P	2.99	0.51
1:A:33:U:H2'	1:A:34:G:O4'	2.11	0.50
1:B:71:C:C5	1:B:72:U:C4	2.99	0.50
1:C:46:A:C4	1:C:47:C:C5	2.99	0.50
1:A:33:U:H2'	1:A:34:G:C8	2.47	0.50
1:A:41:A:O4'	1:A:49:C:H1'	2.10	0.50
1:A:71:C:C5	1:A:72:U:C4	2.99	0.50
1:A:40:G:O3'	1:A:41:A:OP2	2.28	0.50
1:E:48:C:O3'	1:E:49:C:OP1	2.29	0.50
1:B:33:U:H2'	1:B:34:G:O4'	2.11	0.50
1:B:46:A:N1	1:C:85:U:C2	2.79	0.50
1:C:31:U:C3'	1:C:32:A:C5'	2.85	0.50
1:E:33:U:H2'	1:E:34:G:O4'	2.11	0.50
1:C:100:A:HO3'	1:C:101:A:P	2.30	0.50
1:E:71:C:C5	1:E:72:U:C4	2.99	0.50
1:C:33:U:H2'	1:C:34:G:H8	1.75	0.50
1:D:48:C:O3'	1:D:49:C:OP1	2.29	0.50
1:D:81:U:H5'	1:D:83:G:P	2.48	0.50
1:E:32:A:O2'	1:E:33:U:H5'	2.12	0.50
1:E:46:A:C4	1:E:47:C:C5	2.99	0.50
1:C:15:C:H2'	1:C:16:U:H6	1.77	0.50
1:D:58:U:H6	1:D:58:U:C3'	2.13	0.50
1:E:15:C:H2'	1:E:16:U:H6	1.77	0.50
1:E:33:U:H2'	1:E:34:G:C8	2.47	0.50
1:A:83:G:N1	1:E:47:C:C4	2.53	0.50
1:B:33:U:H2'	1:B:34:G:H8	1.75	0.50
1:C:50:U:H2'	1:C:51:G:O4'	2.12	0.50
1:A:41:A:OP1	1:A:49:C:C6	2.65	0.49
1:B:41:A:OP1	1:B:49:C:C6	2.65	0.49
1:D:41:A:OP1	1:D:49:C:C6	2.65	0.49
1:D:41:A:C5'	1:D:42:U:P	2.99	0.49
1:D:53:U:O3'	1:D:54:U:OP1	2.14	0.49
1:E:40:G:O3'	1:E:41:A:OP2	2.28	0.49
1:B:31:U:C3'	1:B:32:A:C5'	2.86	0.49
1:B:41:A:C5'	1:B:42:U:P	2.99	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:33:U:H2'	1:D:34:G:O4'	2.11	0.49
1:D:33:U:H2'	1:D:34:G:C8	2.47	0.49
1:A:15:C:H2'	1:A:16:U:H6	1.77	0.49
1:B:33:U:H2'	1:B:34:G:C8	2.47	0.49
1:B:50:U:H2'	1:B:51:G:O4'	2.12	0.49
1:C:33:U:H2'	1:C:34:G:C8	2.47	0.49
1:C:48:C:O3'	1:C:49:C:OP1	2.29	0.49
1:E:58:U:H6	1:E:58:U:C3'	2.13	0.49
1:B:15:C:H2'	1:B:16:U:H6	1.77	0.49
1:B:32:A:O2'	1:B:33:U:H5'	2.12	0.49
1:C:33:U:H2'	1:C:34:G:O4'	2.11	0.49
1:E:31:U:C3'	1:E:32:A:C5'	2.86	0.49
1:A:41:A:C5'	1:A:42:U:P	2.99	0.49
1:C:41:A:OP1	1:C:49:C:C6	2.65	0.49
1:C:43:U:OP1	1:C:43:U:H6	1.96	0.49
1:D:15:C:H2'	1:D:16:U:H6	1.77	0.49
1:A:57:G:OP1	1:A:57:G:C4'	2.61	0.49
1:B:48:C:O3'	1:B:49:C:OP1	2.29	0.49
1:A:28:G:C5'	1:A:29:U:O5'	2.61	0.49
1:E:48:C:HO3'	1:E:49:C:P	2.27	0.49
1:E:50:U:H2'	1:E:51:G:O4'	2.12	0.49
1:A:54:U:C3'	1:A:56:A:P	3.01	0.49
1:C:50:U:O3'	1:C:51:G:C5'	2.53	0.49
1:D:43:U:OP1	1:D:43:U:H6	1.96	0.49
1:E:41:A:OP1	1:E:49:C:C6	2.65	0.49
1:A:32:A:O2'	1:A:33:U:H5'	2.12	0.49
1:A:50:U:H2'	1:A:51:G:O4'	2.12	0.49
1:D:12:G:H2'	1:D:13:U:H6	1.78	0.49
1:D:31:U:C3'	1:D:32:A:C5'	2.86	0.49
1:D:54:U:C3'	1:D:56:A:P	3.01	0.49
1:A:81:U:H5''	1:A:83:G:OP2	2.03	0.49
1:B:21:U:H2'	1:B:22:U:H6	1.78	0.49
1:D:50:U:H2'	1:D:51:G:O4'	2.12	0.49
1:E:26:A:H2'	1:E:27:U:H6	1.78	0.49
1:A:32:A:C2'	1:A:33:U:O4'	2.56	0.48
1:A:43:U:OP1	1:A:43:U:H6	1.96	0.48
1:A:100:A:C3'	1:A:101:A:OP2	2.51	0.48
1:C:16:U:H2'	1:C:17:U:H6	1.78	0.48
1:C:32:A:O2'	1:C:33:U:H5'	2.12	0.48
1:D:21:U:H2'	1:D:22:U:H6	1.78	0.48
1:D:32:A:O2'	1:D:33:U:H5'	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:16:U:H2'	1:E:17:U:H6	1.78	0.48
1:B:43:U:OP1	1:B:43:U:H6	1.96	0.48
1:B:54:U:C3'	1:B:56:A:P	3.01	0.48
1:B:81:U:H5''	1:B:83:G:OP2	2.03	0.48
1:C:28:G:C5'	1:C:29:U:O5'	2.60	0.48
1:C:23:G:H2'	1:C:24:U:H6	1.78	0.48
1:C:54:U:C3'	1:C:56:A:P	3.01	0.48
1:E:43:U:OP1	1:E:43:U:H6	1.96	0.48
1:B:26:A:H2'	1:B:27:U:H6	1.78	0.48
1:C:7:G:H2'	1:C:8:U:H6	1.78	0.48
1:E:12:G:H2'	1:E:13:U:H6	1.78	0.48
1:E:54:U:C3'	1:E:56:A:P	3.01	0.48
1:A:48:C:O3'	1:A:49:C:OP1	2.29	0.48
1:B:12:G:H2'	1:B:13:U:H6	1.78	0.48
1:B:16:U:H2'	1:B:17:U:H6	1.78	0.48
1:B:86:G:H5'	1:B:87:U:O5'	2.14	0.48
1:E:28:G:C5'	1:E:29:U:O5'	2.60	0.48
1:A:16:U:H2'	1:A:17:U:H6	1.78	0.48
1:A:23:G:H2'	1:A:24:U:H6	1.78	0.48
1:C:21:U:H2'	1:C:22:U:H6	1.78	0.48
1:D:7:G:H2'	1:D:8:U:H6	1.78	0.48
1:D:26:A:H2'	1:D:27:U:H6	1.78	0.48
1:E:17:U:H2'	1:E:21:U:H6	1.79	0.48
1:A:41:A:C8	1:A:49:C:O4'	2.67	0.48
1:B:7:G:H2'	1:B:8:U:H6	1.78	0.48
1:B:41:A:C8	1:B:49:C:O4'	2.67	0.48
1:E:41:A:C8	1:E:49:C:O4'	2.67	0.48
1:C:17:U:H2'	1:C:21:U:H6	1.79	0.48
1:D:16:U:H2'	1:D:17:U:H6	1.78	0.48
1:D:32:A:C2'	1:D:33:U:O4'	2.56	0.48
1:D:86:G:H5'	1:D:87:U:O5'	2.14	0.48
1:D:91:U:C2	1:D:92:C:C5	3.02	0.48
1:E:21:U:H2'	1:E:22:U:H6	1.78	0.48
1:B:17:U:H2'	1:B:21:U:H6	1.79	0.48
1:C:32:A:C2'	1:C:33:U:O4'	2.56	0.48
1:C:41:A:C5'	1:C:42:U:P	2.99	0.48
1:E:57:G:OP1	1:E:57:G:C4'	2.61	0.48
1:A:26:A:H2'	1:A:27:U:H6	1.78	0.48
1:B:82:G:OP1	1:B:82:G:C8	2.67	0.48
1:D:17:U:H2'	1:D:21:U:H6	1.79	0.48
1:D:82:G:C8	1:D:82:G:OP1	2.67	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:28:G:C5'	1:B:29:U:O5'	2.61	0.47
1:C:91:U:C2	1:C:92:C:C5	3.02	0.47
1:E:71:C:H5	1:E:72:U:C4	2.33	0.47
1:B:91:U:C2	1:B:92:C:C5	3.02	0.47
1:C:40:G:O3'	1:C:41:A:OP2	2.28	0.47
1:D:39:G:H2'	1:D:40:G:N9	2.29	0.47
1:E:23:G:H2'	1:E:24:U:H6	1.78	0.47
1:E:82:G:OP1	1:E:82:G:C8	2.67	0.47
1:E:112:C:C3'	1:E:113:U:OP2	2.39	0.47
1:A:7:G:H2'	1:A:8:U:H6	1.78	0.47
1:A:71:C:H5	1:A:72:U:C4	2.33	0.47
1:D:52:A:H3'	1:D:53:U:C5'	2.38	0.47
1:D:81:U:H5''	1:D:83:G:OP2	2.03	0.47
1:A:12:G:H2'	1:A:13:U:H6	1.78	0.47
1:B:57:G:OP1	1:B:57:G:C4'	2.61	0.47
1:B:71:C:H5	1:B:72:U:C4	2.33	0.47
1:C:82:G:OP1	1:C:82:G:C8	2.67	0.47
1:C:86:G:H5'	1:C:87:U:O5'	2.14	0.47
1:E:7:G:H2'	1:E:8:U:H6	1.78	0.47
1:E:53:U:H3'	1:E:54:U:P	2.53	0.47
1:E:86:G:H5'	1:E:87:U:O5'	2.14	0.47
1:A:14:A:H2'	1:A:15:C:H6	1.80	0.47
1:C:12:G:H2'	1:C:13:U:H6	1.78	0.47
1:E:91:U:C2	1:E:92:C:C5	3.02	0.47
1:A:24:U:H2'	1:A:25:C:H6	1.80	0.47
1:B:68:A:H2'	1:B:69:U:C6	2.50	0.47
1:C:26:A:H2'	1:C:27:U:H6	1.78	0.47
1:C:31:U:C2'	1:C:32:A:H5'	2.45	0.47
1:D:23:G:H2'	1:D:24:U:H6	1.78	0.47
1:D:41:A:C8	1:D:49:C:O4'	2.67	0.47
1:D:45:A:O2'	1:D:46:A:H5'	2.15	0.47
1:D:71:C:H5	1:D:72:U:C4	2.33	0.47
1:D:98:A:HO3'	1:D:99:A:P	2.30	0.47
1:E:39:G:H2'	1:E:40:G:N9	2.29	0.47
1:B:23:G:H2'	1:B:24:U:H6	1.78	0.47
1:B:28:G:O4'	1:B:29:U:C4'	2.58	0.47
1:C:39:G:H2'	1:C:40:G:N9	2.29	0.47
1:C:29:U:H5'	1:C:30:G:N9	2.23	0.47
1:D:9:A:H2'	1:D:10:C:H6	1.80	0.47
1:D:42:U:H6	1:D:42:U:C3'	2.13	0.47
1:E:34:G:HO3'	1:E:35:U:P	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:68:A:H2'	1:A:69:U:C6	2.50	0.47
1:A:82:G:OP1	1:A:82:G:C8	2.67	0.47
1:A:91:U:C2	1:A:92:C:C5	3.02	0.47
1:C:41:A:C8	1:C:49:C:O4'	2.67	0.47
1:A:21:U:H2'	1:A:22:U:H6	1.78	0.46
1:C:9:A:H2'	1:C:10:C:H6	1.80	0.46
1:C:71:C:H5	1:C:72:U:C4	2.33	0.46
1:D:31:U:C2'	1:D:32:A:H5'	2.45	0.46
1:D:99:A:HO3'	1:D:100:A:P	2.28	0.46
1:E:14:A:H2'	1:E:15:C:H6	1.80	0.46
1:E:31:U:C2'	1:E:32:A:H5'	2.45	0.46
1:A:85:U:H3'	1:A:86:G:C8	2.50	0.46
1:B:31:U:C2'	1:B:32:A:H5'	2.45	0.46
1:B:48:C:C3'	1:B:49:C:P	3.03	0.46
1:E:68:A:H2'	1:E:69:U:C6	2.50	0.46
1:A:17:U:H2'	1:A:21:U:H6	1.79	0.46
1:C:68:A:H2'	1:C:69:U:C6	2.50	0.46
1:D:28:G:C5'	1:D:29:U:O5'	2.61	0.46
1:E:24:U:H2'	1:E:25:C:H6	1.80	0.46
1:A:45:A:O2'	1:A:46:A:H5'	2.15	0.46
1:B:9:A:H2'	1:B:10:C:H6	1.80	0.46
1:B:14:A:H2'	1:B:15:C:H6	1.80	0.46
1:A:53:U:H2'	1:A:54:U:O4'	2.16	0.46
1:C:63:C:O4'	1:C:63:C:OP1	1.97	0.46
1:C:81:U:H5''	1:C:83:G:OP2	2.03	0.46
1:A:53:U:C6	1:A:54:U:OP2	2.69	0.46
1:B:39:G:H2'	1:B:40:G:N9	2.29	0.46
1:C:112:C:C3'	1:C:113:U:OP2	2.39	0.46
1:D:85:U:H3'	1:D:86:G:C8	2.50	0.46
1:E:9:A:H2'	1:E:10:C:H6	1.80	0.46
1:E:85:U:H3'	1:E:86:G:C8	2.50	0.46
1:A:39:G:H2'	1:A:40:G:N9	2.29	0.46
1:B:15:C:H2'	1:B:16:U:C6	2.51	0.46
1:C:24:U:H2'	1:C:25:C:H6	1.80	0.46
1:C:85:U:H3'	1:C:86:G:C8	2.50	0.46
1:D:15:C:H2'	1:D:16:U:C6	2.51	0.46
1:D:24:U:H2'	1:D:25:C:H6	1.80	0.46
1:E:56:A:O2'	1:E:57:G:C5	2.69	0.46
1:E:86:G:H2'	1:E:86:G:N3	2.31	0.46
1:E:99:A:HO3'	1:E:100:A:P	2.28	0.46
1:B:29:U:H5'	1:B:30:G:N9	2.23	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:32:A:C2'	1:B:33:U:O4'	2.56	0.46
1:D:14:A:H2'	1:D:15:C:H6	1.80	0.46
1:E:37:G:H5''	1:E:60:C:OP1	2.16	0.46
1:A:31:U:C2'	1:A:32:A:H5'	2.45	0.46
1:B:53:U:H2'	1:B:54:U:O4'	2.16	0.46
1:B:85:U:H3'	1:B:86:G:C8	2.50	0.46
1:C:53:U:H2'	1:C:54:U:O4'	2.16	0.46
1:B:86:G:H2'	1:B:86:G:N3	2.31	0.46
1:D:53:U:H2'	1:D:54:U:O4'	2.16	0.46
1:D:68:A:H2'	1:D:69:U:C6	2.50	0.46
1:A:9:A:H2'	1:A:10:C:H6	1.80	0.45
1:A:86:G:H5'	1:A:87:U:O5'	2.14	0.45
1:C:37:G:H5''	1:C:60:C:OP1	2.16	0.45
1:E:53:U:C6	1:E:54:U:OP2	2.69	0.45
1:A:81:U:C4'	1:A:83:G:OP2	2.64	0.45
1:A:86:G:N3	1:A:86:G:H2'	2.31	0.45
1:C:14:A:H2'	1:C:15:C:H6	1.80	0.45
1:C:15:C:H2'	1:C:16:U:C6	2.51	0.45
1:E:81:U:C4'	1:E:83:G:OP2	2.64	0.45
1:B:24:U:H2'	1:B:25:C:H6	1.80	0.45
1:C:53:U:C6	1:C:54:U:OP2	2.69	0.45
1:E:26:A:H2'	1:E:27:U:C6	2.52	0.45
1:E:45:A:O2'	1:E:46:A:H5'	2.15	0.45
1:E:54:U:C3'	1:E:56:A:OP2	2.65	0.45
1:A:23:G:H2'	1:A:24:U:C6	2.52	0.45
1:B:45:A:O2'	1:B:46:A:H5'	2.15	0.45
1:C:45:A:O2'	1:C:46:A:H5'	2.15	0.45
1:D:53:U:C6	1:D:54:U:OP2	2.69	0.45
1:A:12:G:H2'	1:A:13:U:C6	2.52	0.45
1:A:31:U:HO3'	1:A:32:A:H5'	1.71	0.45
1:A:37:G:H5''	1:A:60:C:OP1	2.16	0.45
1:B:53:U:C6	1:B:54:U:OP2	2.69	0.45
1:E:12:G:H2'	1:E:13:U:C6	2.52	0.45
1:E:16:U:H2'	1:E:17:U:C6	2.52	0.45
1:E:21:U:H2'	1:E:22:U:C6	2.52	0.45
1:A:15:C:H2'	1:A:16:U:C6	2.51	0.45
1:A:85:U:H3'	1:A:86:G:O4'	2.17	0.45
1:B:37:G:H5''	1:B:60:C:OP1	2.16	0.45
1:C:16:U:H2'	1:C:17:U:C6	2.52	0.45
1:B:7:G:H2'	1:B:8:U:C6	2.52	0.45
1:B:17:U:H2'	1:B:21:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:49:C:C3'	1:B:50:U:P	3.05	0.45
1:C:58:U:H6	1:C:58:U:C3'	2.13	0.45
1:D:37:G:H5''	1:D:60:C:OP1	2.16	0.45
1:D:57:G:OP1	1:D:57:G:C4'	2.61	0.45
1:D:85:U:H3'	1:D:86:G:O4'	2.17	0.45
1:E:17:U:H2'	1:E:21:U:C6	2.52	0.45
1:E:23:G:H2'	1:E:24:U:C6	2.52	0.45
1:E:49:C:C3'	1:E:50:U:P	3.05	0.45
1:A:7:G:H2'	1:A:8:U:C6	2.52	0.45
1:A:16:U:H2'	1:A:17:U:C6	2.52	0.45
1:A:21:U:H2'	1:A:22:U:C6	2.52	0.45
1:A:56:A:O2'	1:A:57:G:C5	2.69	0.45
1:B:21:U:H2'	1:B:22:U:C6	2.52	0.45
1:B:26:A:H2'	1:B:27:U:C6	2.52	0.45
1:B:85:U:H3'	1:B:86:G:O4'	2.17	0.45
1:C:26:A:H2'	1:C:27:U:C6	2.52	0.45
1:C:32:A:C2'	1:C:33:U:H5'	2.47	0.45
1:D:32:A:C2'	1:D:33:U:H5'	2.47	0.45
1:E:15:C:H2'	1:E:16:U:C6	2.51	0.45
1:E:32:A:C2'	1:E:33:U:H5'	2.47	0.45
1:E:53:U:H2'	1:E:54:U:O4'	2.16	0.45
1:B:12:G:H2'	1:B:13:U:C6	2.52	0.45
1:C:7:G:H2'	1:C:8:U:C6	2.52	0.45
1:C:21:U:H2'	1:C:22:U:C6	2.52	0.45
1:D:43:U:H3'	1:D:46:A:OP2	2.17	0.45
1:E:48:C:C3'	1:E:49:C:P	3.03	0.45
1:E:49:C:HO3'	1:E:50:U:H5'	1.74	0.45
1:A:43:U:H3'	1:A:46:A:OP2	2.17	0.45
1:B:32:A:C2'	1:B:33:U:H5'	2.47	0.45
1:D:26:A:H2'	1:D:27:U:C6	2.52	0.45
1:E:7:G:H2'	1:E:8:U:C6	2.52	0.45
1:A:49:C:C3'	1:A:50:U:P	3.05	0.44
1:B:23:G:H2'	1:B:24:U:C6	2.52	0.44
1:B:54:U:C3'	1:B:56:A:OP2	2.65	0.44
1:C:48:C:C3'	1:C:49:C:P	3.03	0.44
1:D:54:U:C3'	1:D:56:A:OP2	2.65	0.44
1:E:85:U:H3'	1:E:86:G:O4'	2.17	0.44
1:B:74:U:O2'	1:B:76:U:OP1	2.16	0.44
1:C:86:G:N3	1:C:86:G:H2'	2.31	0.44
1:D:56:A:O2'	1:D:57:G:C5	2.69	0.44
1:A:17:U:H2'	1:A:21:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:48:C:C2	1:D:83:G:N2	2.85	0.44
1:C:56:A:O2'	1:C:57:G:C5	2.69	0.44
1:D:16:U:H2'	1:D:17:U:C6	2.52	0.44
1:D:21:U:H2'	1:D:22:U:C6	2.52	0.44
1:A:54:U:C3'	1:A:56:A:OP2	2.65	0.44
1:C:43:U:H3'	1:C:46:A:OP2	2.17	0.44
1:D:7:G:H2'	1:D:8:U:C6	2.52	0.44
1:E:84:U:H2'	1:E:85:U:H6	1.83	0.44
1:A:26:A:H2'	1:A:27:U:C6	2.52	0.44
1:C:54:U:C3'	1:C:56:A:OP2	2.65	0.44
1:C:85:U:H3'	1:C:86:G:O4'	2.17	0.44
1:D:23:G:H2'	1:D:24:U:C6	2.52	0.44
1:B:43:U:H3'	1:B:46:A:OP2	2.17	0.44
1:C:23:G:H2'	1:C:24:U:C6	2.52	0.44
1:C:81:U:C4'	1:C:83:G:OP2	2.64	0.44
1:D:49:C:C3'	1:D:50:U:P	3.05	0.44
1:E:91:U:O2'	1:E:92:C:P	2.76	0.44
1:A:32:A:C2'	1:A:33:U:H5'	2.47	0.44
1:B:81:U:C4'	1:B:83:G:OP2	2.64	0.44
1:C:49:C:C3'	1:C:50:U:P	3.05	0.44
1:D:17:U:H2'	1:D:21:U:C6	2.52	0.44
1:A:39:G:H3'	1:A:40:G:C8	2.53	0.44
1:B:16:U:H2'	1:B:17:U:C6	2.52	0.44
1:C:17:U:H2'	1:C:21:U:C6	2.52	0.44
1:D:48:C:C3'	1:D:49:C:P	3.03	0.44
1:D:91:U:O2'	1:D:92:C:P	2.76	0.44
1:A:9:A:H2'	1:A:10:C:C6	2.53	0.44
1:A:48:C:N3	1:B:82:G:N1	2.53	0.44
1:B:46:A:N1	1:C:85:U:N3	2.66	0.44
1:B:84:U:H2'	1:B:85:U:H6	1.83	0.43
1:C:39:G:H3'	1:C:40:G:C8	2.53	0.43
1:C:91:U:O2'	1:C:92:C:P	2.76	0.43
1:E:28:G:O4'	1:E:29:U:C4'	2.58	0.43
1:A:71:C:H5''	1:A:72:U:P	2.46	0.43
1:B:14:A:H2'	1:B:15:C:C6	2.54	0.43
1:C:24:U:H2'	1:C:25:C:C6	2.53	0.43
1:D:81:U:C4'	1:D:83:G:OP2	2.64	0.43
1:D:86:G:H2'	1:D:86:G:N3	2.31	0.43
1:E:14:A:H2'	1:E:15:C:C6	2.53	0.43
1:B:86:G:O4'	1:B:86:G:P	2.76	0.43
1:C:57:G:OP1	1:C:57:G:C4'	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:39:G:H3'	1:D:40:G:C8	2.53	0.43
1:A:91:U:O2'	1:A:92:C:P	2.76	0.43
1:B:52:A:H3'	1:B:53:U:C5'	2.38	0.43
1:B:71:C:H5''	1:B:72:U:P	2.46	0.43
1:D:14:A:H2'	1:D:15:C:C6	2.53	0.43
1:D:28:G:O4'	1:D:29:U:C4'	2.58	0.43
1:D:84:U:H2'	1:D:85:U:H6	1.83	0.43
1:E:9:A:H2'	1:E:10:C:C6	2.53	0.43
1:A:29:U:H5'	1:A:30:G:N9	2.23	0.43
1:B:24:U:H2'	1:B:25:C:C6	2.53	0.43
1:B:29:U:O2	1:B:30:G:C5'	2.64	0.43
1:C:9:A:H2'	1:C:10:C:C6	2.53	0.43
1:D:29:U:H5'	1:D:30:G:N9	2.22	0.43
1:D:86:G:O4'	1:D:86:G:P	2.77	0.43
1:E:43:U:H3'	1:E:46:A:OP2	2.17	0.43
1:A:14:A:H2'	1:A:15:C:C6	2.53	0.43
1:A:24:U:H2'	1:A:25:C:C6	2.53	0.43
1:D:12:G:H2'	1:D:13:U:C6	2.52	0.43
1:D:53:U:H3'	1:D:54:U:P	2.53	0.43
1:E:52:A:H3'	1:E:53:U:C5'	2.38	0.43
1:B:39:G:H3'	1:B:40:G:C8	2.53	0.43
1:E:39:G:H3'	1:E:40:G:C8	2.53	0.43
1:E:42:U:H6	1:E:42:U:C3'	2.13	0.43
1:E:100:A:C3'	1:E:101:A:OP2	2.51	0.43
1:C:12:G:H2'	1:C:13:U:C6	2.52	0.43
1:A:52:A:H3'	1:A:53:U:C5'	2.38	0.43
1:A:86:G:O4'	1:A:86:G:P	2.77	0.43
1:C:86:G:O4'	1:C:86:G:P	2.77	0.43
1:A:81:U:C4	1:E:45:A:N7	2.87	0.43
1:B:91:U:O2'	1:B:92:C:P	2.76	0.43
1:C:53:U:H3'	1:C:54:U:P	2.53	0.43
1:E:24:U:H2'	1:E:25:C:C6	2.54	0.42
1:E:53:U:H6	1:E:54:U:OP2	2.02	0.42
1:B:91:U:H2'	1:B:92:C:C6	2.54	0.42
1:C:52:A:H3'	1:C:53:U:C5'	2.38	0.42
1:D:91:U:H2'	1:D:92:C:C6	2.54	0.42
1:B:56:A:O2'	1:B:57:G:C5	2.69	0.42
1:C:84:U:H2'	1:C:85:U:H6	1.83	0.42
1:E:29:U:O2	1:E:30:G:C5'	2.64	0.42
1:C:39:G:C2'	1:C:40:G:P	2.96	0.42
1:A:84:U:H2'	1:A:85:U:H6	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:9:A:H2'	1:B:10:C:C6	2.53	0.42
1:D:24:U:H2'	1:D:25:C:C6	2.54	0.42
1:D:53:U:H6	1:D:54:U:OP2	2.02	0.42
1:D:112:C:C3'	1:D:113:U:OP2	2.39	0.42
1:E:53:U:O3'	1:E:54:U:OP1	2.14	0.42
1:A:48:C:C3'	1:A:49:C:P	3.03	0.42
1:C:53:U:H6	1:C:54:U:OP2	2.02	0.42
1:E:86:G:O4'	1:E:86:G:P	2.77	0.42
1:A:85:U:O4	1:E:45:A:C6	2.69	0.42
1:B:53:U:H6	1:B:54:U:OP2	2.02	0.42
1:A:65:C:H3'	1:A:66:A:OP2	2.20	0.42
1:B:53:U:H3'	1:B:54:U:P	2.53	0.42
1:D:46:A:N1	1:E:84:U:C2	2.86	0.42
1:D:72:U:C5'	1:D:74:U:C5	3.00	0.42
1:A:99:A:HO3'	1:A:100:A:P	2.33	0.42
1:C:14:A:H2'	1:C:15:C:C6	2.53	0.42
1:D:39:G:H2'	1:D:40:G:C8	2.55	0.42
1:D:41:A:N3	1:D:41:A:C2'	2.78	0.41
1:E:39:G:H2'	1:E:40:G:C8	2.55	0.41
1:A:29:U:O2	1:A:30:G:C5'	2.64	0.41
1:A:53:U:H6	1:A:54:U:OP2	2.02	0.41
1:C:39:G:H2'	1:C:40:G:C8	2.55	0.41
1:C:33:U:C2'	1:C:34:G:H5'	2.51	0.41
1:A:39:G:H2'	1:A:40:G:C8	2.55	0.41
1:A:81:U:N3	1:E:45:A:C8	2.88	0.41
1:C:91:U:H2'	1:C:92:C:C6	2.54	0.41
1:C:100:A:C3'	1:C:101:A:OP2	2.51	0.41
1:D:4:A:O3'	1:D:6:G:P	2.79	0.41
1:D:9:A:H2'	1:D:10:C:C6	2.53	0.41
1:D:33:U:N3	1:D:34:G:N7	2.69	0.41
1:A:33:U:C2'	1:A:34:G:H5'	2.51	0.41
1:A:53:U:H3'	1:A:54:U:P	2.53	0.41
1:B:4:A:O3'	1:B:6:G:P	2.79	0.41
1:B:33:U:C2'	1:B:34:G:H5'	2.51	0.41
1:B:39:G:H2'	1:B:40:G:C8	2.55	0.41
1:D:80:U:O2	1:D:86:G:O6	2.39	0.41
1:E:4:A:O3'	1:E:6:G:P	2.79	0.41
1:A:33:U:N3	1:A:34:G:N7	2.69	0.41
1:B:33:U:N3	1:B:34:G:N7	2.69	0.41
1:B:80:U:O2	1:B:86:G:O6	2.39	0.41
1:E:71:C:H5''	1:E:72:U:P	2.46	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4:A:O3'	1:A:6:G:P	2.79	0.41
1:A:87:U:O3'	1:A:88:C:H5'	2.21	0.41
1:B:65:C:H3'	1:B:66:A:OP2	2.20	0.41
1:C:4:A:O3'	1:C:6:G:P	2.79	0.41
1:C:29:U:O2	1:C:30:G:C5'	2.64	0.41
1:C:80:U:O2	1:C:86:G:O6	2.39	0.41
1:D:29:U:O2	1:D:30:G:C5'	2.64	0.41
1:D:87:U:O3'	1:D:88:C:H5'	2.21	0.41
1:E:33:U:N3	1:E:34:G:N7	2.69	0.41
1:E:80:U:O2	1:E:86:G:O6	2.39	0.41
1:E:87:U:O3'	1:E:88:C:H5'	2.21	0.41
1:C:87:U:O3'	1:C:88:C:H5'	2.21	0.41
1:E:85:U:O5'	1:E:86:G:C8	2.74	0.41
1:B:87:U:O3'	1:B:88:C:H5'	2.21	0.40
1:A:83:G:C6	1:E:46:A:N6	2.89	0.40
1:D:33:U:C2'	1:D:34:G:H5'	2.51	0.40
1:D:85:U:O5'	1:D:86:G:C8	2.75	0.40
1:C:65:C:H3'	1:C:66:A:OP2	2.20	0.40
1:E:33:U:C2'	1:E:34:G:H5'	2.51	0.40
1:E:62:G:H3'	1:E:63:C:C6	2.57	0.40
1:E:90:A:HO3'	1:E:91:U:P	2.34	0.40
1:B:42:U:C5'	1:B:43:U:P	3.09	0.40
1:C:33:U:N3	1:C:34:G:N7	2.69	0.40
1:C:85:U:O5'	1:C:86:G:C8	2.74	0.40
1:D:14:A:C2	1:D:104:G:C5	3.10	0.40
1:D:43:U:O2	1:D:43:U:C2'	2.70	0.40
1:D:45:A:H2'	1:D:46:A:C8	2.57	0.40
1:E:65:C:H3'	1:E:66:A:OP2	2.20	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 ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	96/120 (80%)	49 (51%)	14 (14%)
1	B	97/120 (80%)	49 (50%)	15 (15%)
1	C	97/120 (80%)	49 (50%)	15 (15%)
1	D	96/120 (80%)	49 (51%)	14 (14%)
1	E	97/120 (80%)	49 (50%)	15 (15%)
All	All	483/600 (80%)	245 (50%)	73 (15%)

All (245) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	2	C
1	A	29	U
1	A	30	G
1	A	40	G
1	A	41	A
1	A	42	U
1	A	43	U
1	A	44	A
1	A	45	A
1	A	47	C
1	A	53	U
1	A	54	U
1	A	57	G
1	A	58	U
1	A	59	U
1	A	61	A
1	A	62	G
1	A	63	C
1	A	65	C
1	A	68	A
1	A	69	U
1	A	72	U
1	A	73	U
1	A	74	U
1	A	75	G
1	A	76	U
1	A	77	U
1	A	78	G
1	A	81	U
1	A	82	G
1	A	83	G

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Mol	Chain	Res	Type
1	A	84	U
1	A	85	U
1	A	86	G
1	A	87	U
1	A	91	U
1	A	92	C
1	A	96	G
1	A	97	C
1	A	98	A
1	A	102	G
1	A	103	U
1	A	104	G
1	A	108	G
1	A	112	C
1	A	113	U
1	A	114	U
1	A	115	U
1	A	116	G
1	B	2	C
1	B	29	U
1	B	30	G
1	B	40	G
1	B	41	A
1	B	42	U
1	B	43	U
1	B	44	A
1	B	45	A
1	B	47	C
1	B	53	U
1	B	54	U
1	B	57	G
1	B	58	U
1	B	59	U
1	B	61	A
1	B	62	G
1	B	63	C
1	B	65	C
1	B	68	A
1	B	69	U
1	B	72	U
1	B	73	U
1	B	74	U

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Mol	Chain	Res	Type
1	B	75	G
1	B	76	U
1	B	77	U
1	B	78	G
1	B	81	U
1	B	82	G
1	B	83	G
1	B	84	U
1	B	85	U
1	B	86	G
1	B	87	U
1	B	91	U
1	B	92	C
1	B	96	G
1	B	97	C
1	B	98	A
1	B	102	G
1	B	103	U
1	B	104	G
1	B	108	G
1	B	112	C
1	B	113	U
1	B	114	U
1	B	115	U
1	B	116	G
1	C	2	C
1	C	29	U
1	C	30	G
1	C	40	G
1	C	41	A
1	C	42	U
1	C	43	U
1	C	44	A
1	C	45	A
1	C	47	C
1	C	53	U
1	C	54	U
1	C	57	G
1	C	58	U
1	C	59	U
1	C	61	A
1	C	62	G

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Mol	Chain	Res	Type
1	C	63	C
1	C	65	C
1	C	68	A
1	C	69	U
1	C	72	U
1	C	73	U
1	C	74	U
1	C	75	G
1	C	76	U
1	C	77	U
1	C	78	G
1	C	81	U
1	C	82	G
1	C	83	G
1	C	84	U
1	C	85	U
1	C	86	G
1	C	87	U
1	C	91	U
1	C	92	C
1	C	96	G
1	C	97	C
1	C	98	A
1	C	102	G
1	C	103	U
1	C	104	G
1	C	108	G
1	C	112	C
1	C	113	U
1	C	114	U
1	C	115	U
1	C	116	G
1	D	2	C
1	D	29	U
1	D	30	G
1	D	40	G
1	D	41	A
1	D	42	U
1	D	43	U
1	D	44	A
1	D	45	A
1	D	47	C

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Mol	Chain	Res	Type
1	D	53	U
1	D	54	U
1	D	57	G
1	D	58	U
1	D	59	U
1	D	61	A
1	D	62	G
1	D	63	C
1	D	65	C
1	D	68	A
1	D	69	U
1	D	72	U
1	D	73	U
1	D	74	U
1	D	75	G
1	D	76	U
1	D	77	U
1	D	78	G
1	D	81	U
1	D	82	G
1	D	83	G
1	D	84	U
1	D	85	U
1	D	86	G
1	D	87	U
1	D	91	U
1	D	92	C
1	D	96	G
1	D	97	C
1	D	98	A
1	D	102	G
1	D	103	U
1	D	104	G
1	D	108	G
1	D	112	C
1	D	113	U
1	D	114	U
1	D	115	U
1	D	116	G
1	E	2	C
1	E	29	U
1	E	30	G

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Mol	Chain	Res	Type
1	E	40	G
1	E	41	A
1	E	42	U
1	E	43	U
1	E	44	A
1	E	45	A
1	E	47	C
1	E	53	U
1	E	54	U
1	E	57	G
1	E	58	U
1	E	59	U
1	E	61	A
1	E	62	G
1	E	63	C
1	E	65	C
1	E	68	A
1	E	69	U
1	E	72	U
1	E	73	U
1	E	74	U
1	E	75	G
1	E	76	U
1	E	77	U
1	E	78	G
1	E	81	U
1	E	82	G
1	E	83	G
1	E	84	U
1	E	85	U
1	E	86	G
1	E	87	U
1	E	91	U
1	E	92	C
1	E	96	G
1	E	97	C
1	E	98	A
1	E	102	G
1	E	103	U
1	E	104	G
1	E	108	G
1	E	112	C

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Mol	Chain	Res	Type
1	E	113	U
1	E	114	U
1	E	115	U
1	E	116	G

All (73) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	28	G
1	A	39	G
1	A	40	G
1	A	41	A
1	A	58	U
1	A	70	A
1	A	72	U
1	A	73	U
1	A	83	G
1	A	84	U
1	A	86	G
1	A	91	U
1	A	103	U
1	A	112	C
1	B	28	G
1	B	39	G
1	B	40	G
1	B	41	A
1	B	56	A
1	B	58	U
1	B	70	A
1	B	72	U
1	B	73	U
1	B	83	G
1	B	84	U
1	B	86	G
1	B	91	U
1	B	103	U
1	B	112	C
1	C	28	G
1	C	39	G
1	C	40	G
1	C	41	A
1	C	56	A

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Mol	Chain	Res	Type
1	C	58	U
1	C	70	A
1	C	72	U
1	C	73	U
1	C	83	G
1	C	84	U
1	C	86	G
1	C	91	U
1	C	103	U
1	C	112	C
1	D	28	G
1	D	39	G
1	D	40	G
1	D	41	A
1	D	58	U
1	D	70	A
1	D	72	U
1	D	73	U
1	D	83	G
1	D	84	U
1	D	86	G
1	D	91	U
1	D	103	U
1	D	112	C
1	E	28	G
1	E	39	G
1	E	40	G
1	E	41	A
1	E	56	A
1	E	58	U
1	E	70	A
1	E	72	U
1	E	73	U
1	E	83	G
1	E	84	U
1	E	86	G
1	E	91	U
1	E	103	U
1	E	112	C

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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	53
1	B	53
1	C	53
1	D	53
1	E	53

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	51:G	O3'	52:A	P	3.32
1	B	51:G	O3'	52:A	P	3.32
1	C	51:G	O3'	52:A	P	3.32
1	D	51:G	O3'	52:A	P	3.32
1	E	51:G	O3'	52:A	P	3.32
1	A	37:G	O3'	38:G	P	2.94
1	B	37:G	O3'	38:G	P	2.94
1	C	37:G	O3'	38:G	P	2.94
1	D	37:G	O3'	38:G	P	2.94
1	E	37:G	O3'	38:G	P	2.94
1	A	50:U	O3'	51:G	P	2.82
1	B	50:U	O3'	51:G	P	2.82

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	C	50:U	O3'	51:G	P	2.82
1	D	50:U	O3'	51:G	P	2.82
1	E	50:U	O3'	51:G	P	2.82
1	A	31:U	O3'	32:A	P	2.49
1	B	31:U	O3'	32:A	P	2.49
1	C	31:U	O3'	32:A	P	2.49
1	D	31:U	O3'	32:A	P	2.49
1	E	31:U	O3'	32:A	P	2.49
1	A	49:C	O3'	50:U	P	2.30
1	B	49:C	O3'	50:U	P	2.30
1	C	49:C	O3'	50:U	P	2.30
1	D	49:C	O3'	50:U	P	2.30
1	E	49:C	O3'	50:U	P	2.30
1	A	65:C	O3'	66:A	P	2.23
1	B	65:C	O3'	66:A	P	2.23
1	C	65:C	O3'	66:A	P	2.23
1	D	65:C	O3'	66:A	P	2.23
1	E	65:C	O3'	66:A	P	2.23
1	A	44:A	O3'	45:A	P	2.20
1	B	44:A	O3'	45:A	P	2.20
1	C	44:A	O3'	45:A	P	2.20
1	D	44:A	O3'	45:A	P	2.20
1	E	44:A	O3'	45:A	P	2.20
1	A	34:G	O3'	35:U	P	2.14
1	B	34:G	O3'	35:U	P	2.14
1	C	34:G	O3'	35:U	P	2.14
1	D	34:G	O3'	35:U	P	2.14
1	E	34:G	O3'	35:U	P	2.14
1	A	53:U	O3'	54:U	P	2.11
1	B	53:U	O3'	54:U	P	2.11
1	C	53:U	O3'	54:U	P	2.11
1	D	53:U	O3'	54:U	P	2.11
1	E	53:U	O3'	54:U	P	2.11
1	A	98:A	O3'	99:A	P	2.10
1	B	98:A	O3'	99:A	P	2.10
1	C	98:A	O3'	99:A	P	2.10
1	D	98:A	O3'	99:A	P	2.10
1	E	98:A	O3'	99:A	P	2.10
1	A	48:C	O3'	49:C	P	2.09
1	B	48:C	O3'	49:C	P	2.09
1	C	48:C	O3'	49:C	P	2.09
1	D	48:C	O3'	49:C	P	2.09

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	E	48:C	O3'	49:C	P	2.09
1	A	112:C	O3'	113:U	P	2.06
1	B	112:C	O3'	113:U	P	2.06
1	C	81:U	O3'	82:G	P	2.06
1	C	112:C	O3'	113:U	P	2.06
1	D	112:C	O3'	113:U	P	2.06
1	E	112:C	O3'	113:U	P	2.06
1	A	81:U	O3'	82:G	P	2.05
1	B	81:U	O3'	82:G	P	2.05
1	D	81:U	O3'	82:G	P	2.05
1	E	81:U	O3'	82:G	P	2.05
1	A	99:A	O3'	100:A	P	2.04
1	B	99:A	O3'	100:A	P	2.04
1	C	99:A	O3'	100:A	P	2.04
1	D	99:A	O3'	100:A	P	2.04
1	E	99:A	O3'	100:A	P	2.04
1	A	90:A	O3'	91:U	P	2.03
1	B	90:A	O3'	91:U	P	2.03
1	C	90:A	O3'	91:U	P	2.03
1	D	90:A	O3'	91:U	P	2.03
1	E	90:A	O3'	91:U	P	2.03
1	A	56:A	O3'	57:G	P	2.02
1	A	100:A	O3'	101:A	P	2.02
1	B	56:A	O3'	57:G	P	2.02
1	B	100:A	O3'	101:A	P	2.02
1	C	56:A	O3'	57:G	P	2.02
1	C	100:A	O3'	101:A	P	2.02
1	D	56:A	O3'	57:G	P	2.02
1	D	100:A	O3'	101:A	P	2.02
1	E	56:A	O3'	57:G	P	2.02
1	E	100:A	O3'	101:A	P	2.02
1	C	93:A	O3'	94:U	P	2.01
1	E	93:A	O3'	94:U	P	2.01
1	A	93:A	O3'	94:U	P	2.00
1	B	93:A	O3'	94:U	P	2.00
1	D	93:A	O3'	94:U	P	2.00
1	A	40:G	O3'	41:A	P	1.97
1	A	87:U	O3'	88:C	P	1.97
1	B	40:G	O3'	41:A	P	1.97
1	B	87:U	O3'	88:C	P	1.97
1	C	40:G	O3'	41:A	P	1.97
1	C	87:U	O3'	88:C	P	1.97

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	D	40:G	O3'	41:A	P	1.97
1	D	87:U	O3'	88:C	P	1.97
1	E	40:G	O3'	41:A	P	1.97
1	E	87:U	O3'	88:C	P	1.97
1	A	95:G	O3'	96:G	P	1.96
1	B	95:G	O3'	96:G	P	1.96
1	C	95:G	O3'	96:G	P	1.96
1	D	95:G	O3'	96:G	P	1.96
1	E	95:G	O3'	96:G	P	1.96
1	A	45:A	O3'	46:A	P	1.95
1	A	96:G	O3'	97:C	P	1.95
1	B	45:A	O3'	46:A	P	1.95
1	B	96:G	O3'	97:C	P	1.95
1	C	45:A	O3'	46:A	P	1.95
1	C	96:G	O3'	97:C	P	1.95
1	D	45:A	O3'	46:A	P	1.95
1	D	96:G	O3'	97:C	P	1.95
1	E	45:A	O3'	46:A	P	1.95
1	E	96:G	O3'	97:C	P	1.95
1	A	63:C	O3'	64:C	P	1.94
1	B	63:C	O3'	64:C	P	1.94
1	C	63:C	O3'	64:C	P	1.94
1	D	63:C	O3'	64:C	P	1.94
1	E	63:C	O3'	64:C	P	1.94
1	A	92:C	O3'	93:A	P	1.93
1	A	101:A	O3'	102:G	P	1.93
1	B	92:C	O3'	93:A	P	1.93
1	B	101:A	O3'	102:G	P	1.93
1	C	92:C	O3'	93:A	P	1.93
1	C	101:A	O3'	102:G	P	1.93
1	D	92:C	O3'	93:A	P	1.93
1	D	101:A	O3'	102:G	P	1.93
1	E	92:C	O3'	93:A	P	1.93
1	E	101:A	O3'	102:G	P	1.93
1	A	94:U	O3'	95:G	P	1.92
1	A	103:U	O3'	104:G	P	1.92
1	B	94:U	O3'	95:G	P	1.92
1	B	103:U	O3'	104:G	P	1.92
1	C	94:U	O3'	95:G	P	1.92
1	C	103:U	O3'	104:G	P	1.92
1	D	94:U	O3'	95:G	P	1.92
1	D	103:U	O3'	104:G	P	1.92

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	E	94:U	O3'	95:G	P	1.92
1	E	103:U	O3'	104:G	P	1.92
1	A	110:U	O3'	111:A	P	1.91
1	B	110:U	O3'	111:A	P	1.91
1	C	58:U	O3'	59:U	P	1.91
1	C	110:U	O3'	111:A	P	1.91
1	D	110:U	O3'	111:A	P	1.91
1	E	110:U	O3'	111:A	P	1.91
1	A	58:U	O3'	59:U	P	1.90
1	B	58:U	O3'	59:U	P	1.90
1	D	58:U	O3'	59:U	P	1.90
1	E	58:U	O3'	59:U	P	1.90
1	A	74:U	O3'	75:G	P	1.88
1	B	74:U	O3'	75:G	P	1.88
1	C	74:U	O3'	75:G	P	1.88
1	D	74:U	O3'	75:G	P	1.88
1	E	74:U	O3'	75:G	P	1.88
1	A	73:U	O3'	74:U	P	1.85
1	B	73:U	O3'	74:U	P	1.85
1	C	73:U	O3'	74:U	P	1.85
1	D	73:U	O3'	74:U	P	1.85
1	E	73:U	O3'	74:U	P	1.85
1	A	111:A	O3'	112:C	P	1.84
1	A	114:U	O3'	115:U	P	1.84
1	B	111:A	O3'	112:C	P	1.84
1	B	114:U	O3'	115:U	P	1.84
1	C	111:A	O3'	112:C	P	1.84
1	C	114:U	O3'	115:U	P	1.84
1	C	115:U	O3'	116:G	P	1.84
1	D	111:A	O3'	112:C	P	1.84
1	D	114:U	O3'	115:U	P	1.84
1	D	115:U	O3'	116:G	P	1.84
1	E	111:A	O3'	112:C	P	1.84
1	E	114:U	O3'	115:U	P	1.84
1	A	1:U	O3'	2:C	P	1.83
1	A	115:U	O3'	116:G	P	1.83
1	B	1:U	O3'	2:C	P	1.83
1	B	115:U	O3'	116:G	P	1.83
1	C	1:U	O3'	2:C	P	1.83
1	D	1:U	O3'	2:C	P	1.83
1	E	1:U	O3'	2:C	P	1.83
1	E	115:U	O3'	116:G	P	1.83

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	77:U	O3'	78:G	P	1.82
1	A	79:A	O3'	80:U	P	1.82
1	B	77:U	O3'	78:G	P	1.82
1	B	79:A	O3'	80:U	P	1.82
1	C	77:U	O3'	78:G	P	1.82
1	C	79:A	O3'	80:U	P	1.82
1	D	77:U	O3'	78:G	P	1.82
1	D	79:A	O3'	80:U	P	1.82
1	E	77:U	O3'	78:G	P	1.82
1	E	79:A	O3'	80:U	P	1.82
1	A	104:G	O3'	105:C	P	1.78
1	B	104:G	O3'	105:C	P	1.78
1	C	104:G	O3'	105:C	P	1.78
1	D	104:G	O3'	105:C	P	1.78
1	E	104:G	O3'	105:C	P	1.78
1	A	91:U	O3'	92:C	P	1.77
1	B	91:U	O3'	92:C	P	1.77
1	C	91:U	O3'	92:C	P	1.77
1	D	91:U	O3'	92:C	P	1.77
1	E	91:U	O3'	92:C	P	1.77
1	A	38:G	O3'	39:G	P	1.76
1	A	57:G	O3'	58:U	P	1.76
1	B	38:G	O3'	39:G	P	1.76
1	B	57:G	O3'	58:U	P	1.76
1	C	38:G	O3'	39:G	P	1.76
1	C	57:G	O3'	58:U	P	1.76
1	D	38:G	O3'	39:G	P	1.76
1	D	57:G	O3'	58:U	P	1.76
1	E	38:G	O3'	39:G	P	1.76
1	E	57:G	O3'	58:U	P	1.76
1	A	52:A	O3'	53:U	P	1.36
1	A	61:A	O3'	62:G	P	1.36
1	B	52:A	O3'	53:U	P	1.36
1	B	61:A	O3'	62:G	P	1.36
1	C	52:A	O3'	53:U	P	1.36
1	C	61:A	O3'	62:G	P	1.36
1	D	52:A	O3'	53:U	P	1.36
1	D	61:A	O3'	62:G	P	1.36
1	E	52:A	O3'	53:U	P	1.36
1	E	61:A	O3'	62:G	P	1.36
1	A	33:U	O3'	34:G	P	1.33
1	B	33:U	O3'	34:G	P	1.33

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	C	33:U	O3'	34:G	P	1.33
1	D	33:U	O3'	34:G	P	1.33
1	E	33:U	O3'	34:G	P	1.33
1	A	41:A	O3'	42:U	P	1.30
1	B	41:A	O3'	42:U	P	1.30
1	C	41:A	O3'	42:U	P	1.30
1	D	41:A	O3'	42:U	P	1.30
1	E	41:A	O3'	42:U	P	1.30
1	A	59:U	O3'	60:C	P	1.29
1	B	59:U	O3'	60:C	P	1.29
1	C	59:U	O3'	60:C	P	1.29
1	D	59:U	O3'	60:C	P	1.29
1	E	59:U	O3'	60:C	P	1.29
1	A	84:U	O3'	85:U	P	1.28
1	B	84:U	O3'	85:U	P	1.28
1	C	84:U	O3'	85:U	P	1.28
1	D	84:U	O3'	85:U	P	1.28
1	E	84:U	O3'	85:U	P	1.28
1	A	64:C	O3'	65:C	P	1.26
1	B	64:C	O3'	65:C	P	1.26
1	C	64:C	O3'	65:C	P	1.26
1	D	64:C	O3'	65:C	P	1.26
1	E	64:C	O3'	65:C	P	1.26
1	A	67:C	O3'	68:A	P	1.25
1	B	67:C	O3'	68:A	P	1.25
1	C	67:C	O3'	68:A	P	1.25
1	D	67:C	O3'	68:A	P	1.25
1	E	67:C	O3'	68:A	P	1.25
1	A	60:C	O3'	61:A	P	1.23
1	B	60:C	O3'	61:A	P	1.23
1	C	60:C	O3'	61:A	P	1.23
1	D	60:C	O3'	61:A	P	1.23
1	E	60:C	O3'	61:A	P	1.23
1	A	70:A	O3'	71:C	P	1.20
1	B	70:A	O3'	71:C	P	1.20
1	C	70:A	O3'	71:C	P	1.20
1	D	70:A	O3'	71:C	P	1.20
1	E	70:A	O3'	71:C	P	1.20
1	A	39:G	O3'	40:G	P	1.12
1	B	39:G	O3'	40:G	P	1.12
1	C	39:G	O3'	40:G	P	1.12
1	D	39:G	O3'	40:G	P	1.12

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	E	39:G	O3'	40:G	P	1.12