



# Full wwPDB NMR Structure Validation Report ⓘ

Dec 6, 2023 – 05:56 pm GMT

PDB ID : 7ALU  
BMRB ID : 34565  
Title : NMR structure of a DNA G-quadruplex containing two SP1 binding sites from HIV-1 promoter  
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Deposited on : 2020-10-07

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

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>.

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

Cyrange : Kirchner and Güntert (2011)  
NmrClust : Kelley et al. (1996)  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
wwPDB-RCI : v\_1n\_11\_5\_13\_A (Berjanski et al., 2005)  
PANAV : Wang et al. (2010)  
wwPDB-ShiftChecker : v1.2  
BMRB Restraints Analysis : v1.2  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36



## 2 Ensemble composition and analysis

This entry contains 10 models. This entry does not contain polypeptide chains, therefore identification of well-defined residues and clustering analysis are not possible. All residues are included in the validation scores.

### 3 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 713 atoms, of which 247 are hydrogens and 0 are deuteriums.

- Molecule 1 is a DNA chain called DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3').

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	P	
1	A	22	711	217	247	95	131	21	0

- Molecule 2 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	
			Total	K
2	A	2	2	2

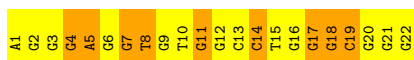
## 4 Residue-property plots

### 4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-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 outliers are shown as green connectors. Residues which are classified as ill-defined in the NMR ensemble, are shown in cyan with an underline colour-coded according to the previous scheme. Residues which were present in the experimental sample, but not modelled in the final structure are shown in grey.

- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

Chain A:  59% 41%



### 4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

#### 4.2.1 Score per residue for model 1


- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

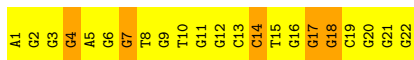
Chain A:  5% 50% 45%



#### 4.2.2 Score per residue for model 2


- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

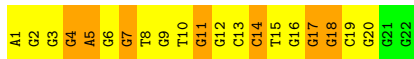
Chain A:  77% 23%



### 4.2.3 Score per residue for model 3

- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

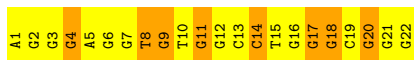
Chain A:  9% 59% 32%



### 4.2.4 Score per residue for model 4

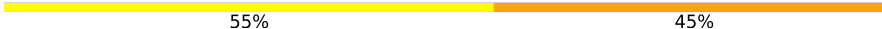
- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

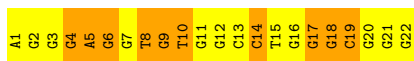
Chain A:  64% 36%



### 4.2.5 Score per residue for model 5

- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

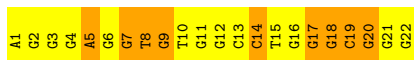
Chain A:  55% 45%



### 4.2.6 Score per residue for model 6


- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

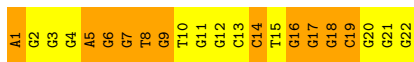
Chain A:  59% 41%



### 4.2.7 Score per residue for model 7

- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

Chain A:  50% 50%



#### 4.2.8 Score per residue for model 8


- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

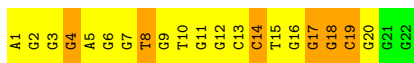
Chain A:  9% 41% 45% 5%



#### 4.2.9 Score per residue for model 9

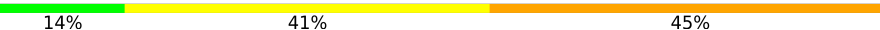
- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

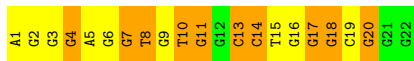
Chain A:  9% 64% 27%



#### 4.2.10 Score per residue for model 10

- Molecule 1: DNA (5'-D(\*AP\*GP\*GP\*GP\*AP\*GP\*GP\*TP\*GP\*TP\*GP\*GP\*CP\*CP\*TP\*GP\*GP\*GP\*CP\*GP\*GP\*G)-3')

Chain A:  14% 41% 45%



## 5 Refinement protocol and experimental data overview

The models were refined using the following method: *molecular dynamics*.

Of the 750 calculated structures, 10 were deposited, based on the following criterion: *structures with the lowest energy*.

The following table shows the software used for structure solution, optimisation and refinement.

Software name	Classification	Version
ARIA	structure calculation	
Amber	refinement	

The following table shows chemical shift validation statistics as aggregates over all chemical shift files. Detailed validation can be found in section 7 of this report.

Chemical shift file(s)	working_cs.cif
Number of chemical shift lists	1
Total number of shifts	316
Number of shifts mapped to atoms	316
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	68%



## 6 Model quality i

### 6.1 Standard geometry i

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

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 (average) root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#Z>5	RMSZ	#Z>5
1	A	1.61±0.01	0±0/523 ( 0.0± 0.0%)	2.79±0.06	62±5/810 ( 7.7± 0.6%)
All	All	1.61	0/5230 ( 0.0%)	2.79	620/8100 ( 7.7%)

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	Planarity
1	A	0.0±0.0	8.7±2.0
All	All	0	87

There are no bond-length outliers.

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	19	DC	O4'-C1'-N1	17.16	120.01	108.00	7	10
1	A	8	DT	O4'-C1'-N1	14.01	117.81	108.00	7	8
1	A	5	DA	N1-C6-N6	-13.31	110.62	118.60	1	10
1	A	16	DG	O4'-C1'-N9	12.50	116.75	108.00	9	9
1	A	19	DC	O4'-C1'-C2'	-11.45	96.74	105.90	7	10
1	A	1	DA	N1-C6-N6	-11.17	111.90	118.60	4	10
1	A	17	DG	O4'-C1'-N9	10.95	115.66	108.00	3	10
1	A	8	DT	N3-C2-O2	-10.55	115.97	122.30	2	10
1	A	11	DG	O4'-C1'-N9	10.48	115.34	108.00	10	8
1	A	5	DA	C5-C6-N1	9.49	122.45	117.70	8	10
1	A	6	DG	O4'-C1'-N9	9.05	114.33	108.00	5	8
1	A	7	DG	N1-C6-O6	-8.91	114.55	119.90	2	10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	6	DG	N1-C6-O6	-8.81	114.61	119.90	4	10
1	A	20	DG	P-O3'-C3'	8.50	129.90	119.70	6	9
1	A	9	DG	C2-N3-C4	7.96	115.88	111.90	6	10
1	A	7	DG	O4'-C1'-N9	7.95	113.56	108.00	2	9
1	A	19	DC	N3-C2-O2	-7.91	116.36	121.90	10	10
1	A	9	DG	P-O3'-C3'	7.90	129.18	119.70	7	10
1	A	10	DT	N3-C2-O2	-7.88	117.57	122.30	1	10
1	A	2	DG	N3-C4-C5	-7.87	124.66	128.60	8	9
1	A	20	DG	O4'-C1'-N9	7.69	113.38	108.00	5	7
1	A	1	DA	C5-C6-N1	7.58	121.49	117.70	3	10
1	A	14	DC	O4'-C1'-N1	7.54	113.28	108.00	7	9
1	A	15	DT	N3-C2-O2	-7.52	117.79	122.30	7	10
1	A	13	DC	N3-C4-C5	7.45	124.88	121.90	10	1
1	A	18	DG	P-O3'-C3'	7.28	128.44	119.70	2	10
1	A	9	DG	N1-C6-O6	-7.21	115.58	119.90	8	7
1	A	9	DG	N3-C4-C5	-7.20	125.00	128.60	2	10
1	A	13	DC	N3-C2-O2	-7.14	116.90	121.90	10	9
1	A	5	DA	C4-C5-C6	-7.10	113.45	117.00	10	9
1	A	20	DG	N3-C2-N2	-7.01	115.00	119.90	5	3
1	A	9	DG	C5-C6-N1	6.91	114.96	111.50	8	9
1	A	4	DG	O4'-C1'-N9	6.90	112.83	108.00	1	4
1	A	17	DG	C5-C6-N1	6.90	114.95	111.50	9	8
1	A	13	DC	O4'-C1'-N1	6.78	112.75	108.00	6	7
1	A	2	DG	P-O3'-C3'	6.77	127.83	119.70	3	10
1	A	2	DG	N3-C2-N2	-6.74	115.18	119.90	6	6
1	A	16	DG	N3-C4-C5	-6.72	125.24	128.60	3	9
1	A	3	DG	N1-C6-O6	-6.69	115.88	119.90	3	8
1	A	11	DG	N1-C6-O6	-6.68	115.89	119.90	10	3
1	A	19	DC	N1-C2-O2	6.68	122.91	118.90	7	9
1	A	16	DG	C5-C6-N1	6.67	114.84	111.50	10	6
1	A	22	DG	N3-C2-N2	-6.66	115.24	119.90	6	4
1	A	3	DG	C5-C6-N1	6.64	114.82	111.50	9	7
1	A	10	DT	C6-C5-C7	-6.64	118.92	122.90	2	10
1	A	20	DG	N3-C4-C5	-6.64	125.28	128.60	8	8
1	A	8	DT	C6-C5-C7	-6.63	118.92	122.90	1	10
1	A	1	DA	C4-C5-C6	-6.62	113.69	117.00	3	10
1	A	21	DG	N1-C6-O6	-6.61	115.93	119.90	5	5
1	A	12	DG	P-O3'-C3'	6.61	127.63	119.70	6	4
1	A	12	DG	N3-C2-N2	-6.56	115.31	119.90	9	2
1	A	14	DC	N3-C2-O2	-6.55	117.32	121.90	5	9
1	A	19	DC	N3-C4-C5	6.54	124.52	121.90	2	3

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	19	DC	C6-N1-C2	-6.52	117.69	120.30	8	5
1	A	14	DC	C6-N1-C2	-6.50	117.70	120.30	10	6
1	A	2	DG	C5-C6-N1	6.48	114.74	111.50	6	8
1	A	14	DC	P-O3'-C3'	6.47	127.46	119.70	4	5
1	A	16	DG	N3-C2-N2	-6.45	115.39	119.90	7	1
1	A	18	DG	N1-C6-O6	-6.41	116.05	119.90	8	6
1	A	4	DG	P-O3'-C3'	6.41	127.39	119.70	7	5
1	A	13	DC	P-O3'-C3'	6.40	127.38	119.70	10	4
1	A	11	DG	P-O3'-C3'	6.39	127.36	119.70	10	9
1	A	22	DG	N1-C6-O6	-6.24	116.16	119.90	7	1
1	A	13	DC	N1-C2-O2	6.24	122.64	118.90	10	1
1	A	20	DG	C5-C6-N1	6.23	114.61	111.50	1	6
1	A	11	DG	O4'-C1'-C2'	-6.23	100.92	105.90	3	2
1	A	2	DG	N3-C4-N9	6.17	129.70	126.00	8	2
1	A	14	DC	N1-C2-O2	6.16	122.60	118.90	4	9
1	A	3	DG	P-O3'-C3'	6.13	127.06	119.70	6	5
1	A	4	DG	N3-C4-C5	-6.08	125.56	128.60	7	5
1	A	20	DG	N1-C6-O6	-6.08	116.25	119.90	1	1
1	A	12	DG	N1-C6-O6	-6.01	116.29	119.90	7	5
1	A	20	DG	O3'-P-O5'	-5.98	92.64	104.00	7	5
1	A	11	DG	N3-C4-C5	-5.97	125.61	128.60	5	5
1	A	18	DG	C5-C6-N1	5.96	114.48	111.50	5	9
1	A	16	DG	N1-C6-O6	-5.90	116.36	119.90	3	5
1	A	15	DT	C6-C5-C7	-5.85	119.39	122.90	8	7
1	A	2	DG	C2-N3-C4	5.84	114.82	111.90	6	5
1	A	9	DG	N3-C2-N2	-5.82	115.82	119.90	2	5
1	A	12	DG	N3-C4-C5	-5.79	125.70	128.60	7	1
1	A	21	DG	N3-C2-N2	-5.75	115.88	119.90	7	1
1	A	16	DG	N3-C4-N9	5.74	129.45	126.00	3	2
1	A	17	DG	C5'-C4'-O4'	-5.72	98.44	109.30	8	7
1	A	17	DG	P-O3'-C3'	5.71	126.55	119.70	8	3
1	A	13	DC	N3-C4-N4	-5.71	114.01	118.00	8	2
1	A	22	DG	O4'-C1'-N9	5.70	111.99	108.00	1	1
1	A	7	DG	N3-C4-C5	-5.68	125.76	128.60	3	2
1	A	18	DG	N3-C4-C5	-5.60	125.80	128.60	8	3
1	A	4	DG	N1-C6-O6	-5.57	116.56	119.90	6	1
1	A	18	DG	N3-C2-N2	-5.54	116.03	119.90	1	3
1	A	2	DG	C6-N1-C2	-5.49	121.81	125.10	6	1
1	A	10	DT	O4'-C1'-N1	5.49	111.84	108.00	10	3
1	A	8	DT	O4'-C1'-C2'	-5.42	101.56	105.90	10	1
1	A	9	DG	C8-N9-C4	-5.39	104.24	106.40	7	3

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	11	DG	C5-C6-N1	5.36	114.18	111.50	6	2
1	A	11	DG	N3-C2-N2	-5.36	116.15	119.90	8	1
1	A	7	DG	C5-C6-O6	5.34	131.80	128.60	2	1
1	A	19	DC	P-O3'-C3'	5.32	126.08	119.70	5	3
1	A	9	DG	O4'-C1'-N9	-5.30	104.29	108.00	4	1
1	A	15	DT	C4-C5-C6	5.29	121.17	118.00	1	1
1	A	11	DG	C8-N9-C4	-5.27	104.29	106.40	1	4
1	A	22	DG	C5-C6-N1	5.25	114.12	111.50	7	2
1	A	12	DG	C5-C6-N1	5.25	114.12	111.50	7	1
1	A	16	DG	C4'-C3'-C2'	-5.23	98.40	103.10	4	1
1	A	21	DG	C5-C6-N1	5.21	114.10	111.50	8	1
1	A	4	DG	C5-C6-N1	5.19	114.09	111.50	3	1
1	A	7	DG	C8-N9-C4	-5.16	104.33	106.40	3	1
1	A	11	DG	N9-C4-C5	5.08	107.43	105.40	8	1
1	A	19	DC	C1'-O4'-C4'	-5.08	105.02	110.10	10	1
1	A	15	DT	C5-C6-N1	-5.08	120.65	123.70	3	1
1	A	13	DC	O4'-C4'-C3'	5.06	109.04	106.00	1	1
1	A	5	DA	C6-C5-N7	5.06	135.84	132.30	10	1
1	A	2	DG	C8-N9-C4	-5.06	104.38	106.40	6	1
1	A	3	DG	N3-C2-N2	-5.03	116.38	119.90	5	2
1	A	8	DT	C4-C5-C6	5.03	121.02	118.00	4	1
1	A	20	DG	N3-C4-N9	5.03	129.02	126.00	8	1
1	A	6	DG	C5-C6-N1	5.03	114.01	111.50	7	1
1	A	19	DC	C4'-C3'-O3'	5.01	122.31	112.30	2	1
1	A	6	DG	C5-C6-O6	5.01	131.60	128.60	4	1

There are no chirality outliers.

All unique planar outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Group	Models (Total)
1	A	14	DC	Sidechain	10
1	A	17	DG	Sidechain	10
1	A	18	DG	Sidechain	10
1	A	4	DG	Sidechain	8
1	A	7	DG	Sidechain	6
1	A	19	DC	Sidechain	6
1	A	8	DT	Sidechain	6
1	A	11	DG	Sidechain	5
1	A	5	DA	Sidechain	5
1	A	9	DG	Sidechain	4

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Mol	Chain	Res	Type	Group	Models (Total)
1	A	13	DC	Sidechain	3
1	A	20	DG	Sidechain	3
1	A	6	DG	Sidechain	3
1	A	10	DT	Sidechain	3
1	A	1	DA	Sidechain	2
1	A	2	DG	Sidechain	1
1	A	16	DG	Sidechain	1
1	A	12	DG	Sidechain	1

## 6.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in each 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 averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	464	247	247	0±0
All	All	4660	2470	2470	1

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 0.

All unique clashes are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:12:DG:H21	1:A:13:DC:N4	0.46	2.08	8	1

## 6.3 Torsion angles [i](#)

### 6.3.1 Protein backbone [i](#)

There are no protein molecules in this entry.

### 6.3.2 Protein sidechains [i](#)

There are no protein molecules in this entry.

### 6.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 6.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

### 6.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 6.6 Ligand geometry [i](#)

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

### 6.7 Other polymers [i](#)

There are no such molecules in this entry.

### 6.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 7 Chemical shift validation [i](#)

The completeness of assignment taking into account all chemical shift lists is 68% for the well-defined parts and 68% for the entire structure.

### 7.1 Chemical shift list 1

File name: working\_cs.cif

Chemical shift list name: *starch\_output*

#### 7.1.1 Bookkeeping [i](#)

The following table shows the results of parsing the chemical shift list and reports the number of nuclei with statistically unusual chemical shifts.

Total number of shifts	316
Number of shifts mapped to atoms	316
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	0

#### 7.1.2 Chemical shift referencing [i](#)

No chemical shift referencing corrections were calculated (not enough data).

#### 7.1.3 Completeness of resonance assignments [i](#)

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 68%, i.e. 304 atoms were assigned a chemical shift out of a possible 448. 0 out of 0 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	<sup>1</sup> H	<sup>13</sup> C	<sup>15</sup> N
Sugar	234/264 (89%)	153/154 (99%)	81/110 (74%)	0/0 (—%)
Base	70/184 (38%)	46/118 (39%)	24/30 (80%)	0/36 (0%)
Overall	304/448 (68%)	199/272 (73%)	105/140 (75%)	0/36 (0%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 68%, i.e. 304 atoms were assigned a chemical shift out of a possible 448. 0 out of 0 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	<b>Total</b>	<b><sup>1</sup>H</b>	<b><sup>13</sup>C</b>	<b><sup>15</sup>N</b>
Sugar	234/264 (89%)	153/154 (99%)	81/110 (74%)	0/0 (—%)
Base	70/184 (38%)	46/118 (39%)	24/30 (80%)	0/36 (0%)
Overall	304/448 (68%)	199/272 (73%)	105/140 (75%)	0/36 (0%)

#### 7.1.4 Statistically unusual chemical shifts [i](#)

There are no statistically unusual chemical shifts.

#### 7.1.5 Random Coil Index (RCI) plots [i](#)

No *random coil index*(RCI) plot could be generated from the current chemical shift list. RCI is only applicable to proteins



## 8 NMR restraints analysis

### 8.1 Conformationally restricting restraints

The following table provides the summary of experimentally observed NMR restraints in different categories. Restraints are classified into different categories based on the sequence separation of the atoms involved.

Description	Value
Total distance restraints	699
Intra-residue ( $ i-j =0$ )	452
Sequential ( $ i-j =1$ )	165
Medium range ( $ i-j >1$ and $ i-j <5$ )	39
Long range ( $ i-j \geq 5$ )	43
Inter-chain	0
Hydrogen bond restraints	0
Disulfide bond restraints	0
Total dihedral-angle restraints	0
Number of unmapped restraints	0
Number of restraints per residue	29.1
Number of long range restraints per residue <sup>1</sup>	1.8

<sup>1</sup>Long range hydrogen bonds and disulfide bonds are counted as long range restraints while calculating the number of long range restraints per residue

### 8.2 Residual restraint violations

This section provides the overview of the restraint violations analysis. The violations are binned as small, medium and large violations based on its absolute value. Average number of violations per model is calculated by dividing the total number of violations in each bin by the size of the ensemble.

#### 8.2.1 Average number of distance violations per model

Distance violations less than 0.1 Å are not included in the calculation.

Bins (Å)	Average number of violations per model	Max (Å)
0.1-0.2 (Small)	37.8	0.2
0.2-0.5 (Medium)	77.4	0.5
>0.5 (Large)	74.5	5.63

### 8.2.2 Average number of dihedral-angle violations per model

Dihedral-angle violations less than  $1^\circ$  are not included in the calculation. There are no dihedral-angle violations

## 9 Distance violation analysis i

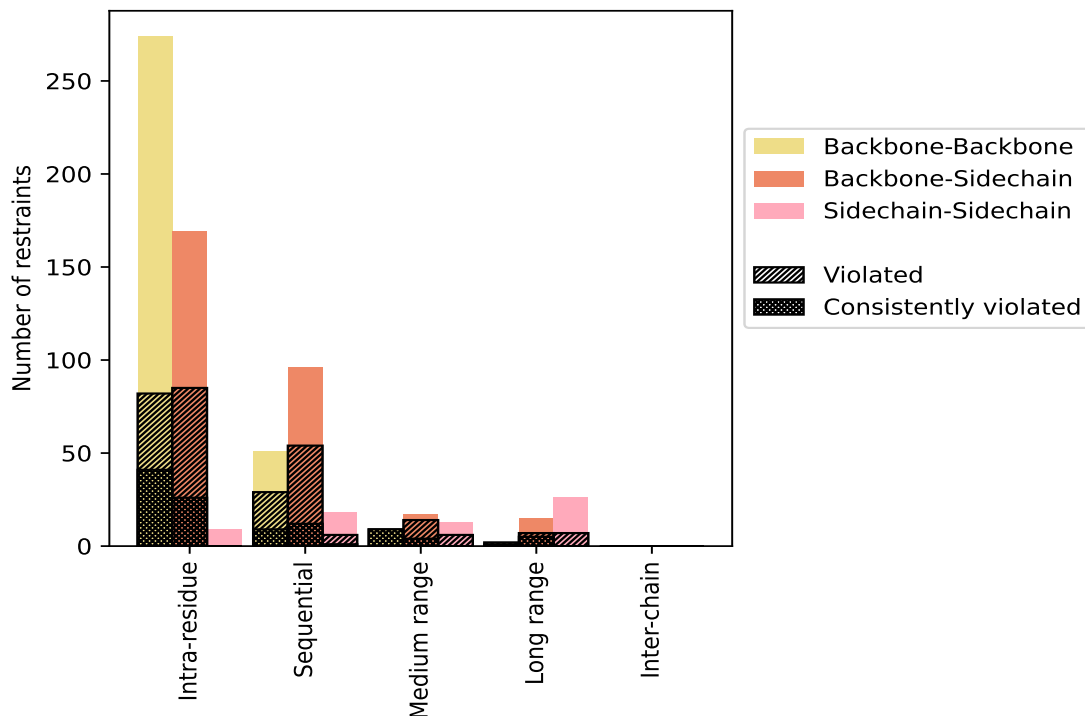
### 9.1 Summary of distance violations i

The following table shows the summary of distance violations in different restraint categories based on the sequence separation of the atoms involved. Each category is further sub-divided into three sub-categories based on the atoms involved. Violations less than 0.1 Å are not included in the statistics.

Restrains type	Count	% <sup>1</sup>	Violated <sup>3</sup>			Consistently Violated <sup>4</sup>		
			Count	% <sup>2</sup>	% <sup>1</sup>	Count	% <sup>2</sup>	% <sup>1</sup>
<b>Intra-residue (<math> i-j =0</math>)</b>	<b>452</b>	<b>64.7</b>	<b>167</b>	<b>36.9</b>	<b>23.9</b>	<b>67</b>	<b>14.8</b>	<b>9.6</b>
Backbone-Backbone	274	39.2	82	29.9	11.7	41	15.0	5.9
Backbone-Sidechain	169	24.2	85	50.3	12.2	26	15.4	3.7
Sidechain-Sidechain	9	1.3	0	0.0	0.0	0	0.0	0.0
<b>Sequential (<math> i-j =1</math>)</b>	<b>165</b>	<b>23.6</b>	<b>89</b>	<b>53.9</b>	<b>12.7</b>	<b>22</b>	<b>13.3</b>	<b>3.1</b>
Backbone-Backbone	51	7.3	29	56.9	4.1	9	17.6	1.3
Backbone-Sidechain	96	13.7	54	56.2	7.7	12	12.5	1.7
Sidechain-Sidechain	18	2.6	6	33.3	0.9	1	5.6	0.1
<b>Medium range (<math> i-j &gt;1</math> &amp; <math> i-j &lt;5</math>)</b>	<b>39</b>	<b>5.6</b>	<b>29</b>	<b>74.4</b>	<b>4.1</b>	<b>13</b>	<b>33.3</b>	<b>1.9</b>
Backbone-Backbone	9	1.3	9	100.0	1.3	9	100.0	1.3
Backbone-Sidechain	17	2.4	14	82.4	2.0	4	23.5	0.6
Sidechain-Sidechain	13	1.9	6	46.2	0.9	0	0.0	0.0
<b>Long range (<math> i-j \geq 5</math>)</b>	<b>43</b>	<b>6.2</b>	<b>16</b>	<b>37.2</b>	<b>2.3</b>	<b>6</b>	<b>14.0</b>	<b>0.9</b>
Backbone-Backbone	2	0.3	2	100.0	0.3	1	50.0	0.1
Backbone-Sidechain	15	2.1	7	46.7	1.0	5	33.3	0.7
Sidechain-Sidechain	26	3.7	7	26.9	1.0	0	0.0	0.0
<b>Inter-chain</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
Sidechain-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
<b>Hydrogen bond</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
<b>Disulfide bond</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
<b>Total</b>	<b>699</b>	<b>100.0</b>	<b>301</b>	<b>43.1</b>	<b>43.1</b>	<b>108</b>	<b>15.5</b>	<b>15.5</b>
Backbone-Backbone	336	48.1	122	36.3	17.5	60	17.9	8.6
Backbone-Sidechain	297	42.5	160	53.9	22.9	47	15.8	6.7
Sidechain-Sidechain	66	9.4	19	28.8	2.7	1	1.5	0.1

<sup>1</sup> percentage calculated with respect to the total number of distance restraints, <sup>2</sup> percentage calculated with respect to the number of restraints in a particular restraint category, <sup>3</sup> violated in at least one model, <sup>4</sup> violated in all the models

### 9.1.1 Bar chart : Distribution of distance restraints and violations [i](#)



Violated and consistently violated restraints are shown using different hatch patterns in their respective categories. The hydrogen bonds and disulfied bonds are counted in their appropriate category on the x-axis

## 9.2 Distance violation statistics for each model [i](#)

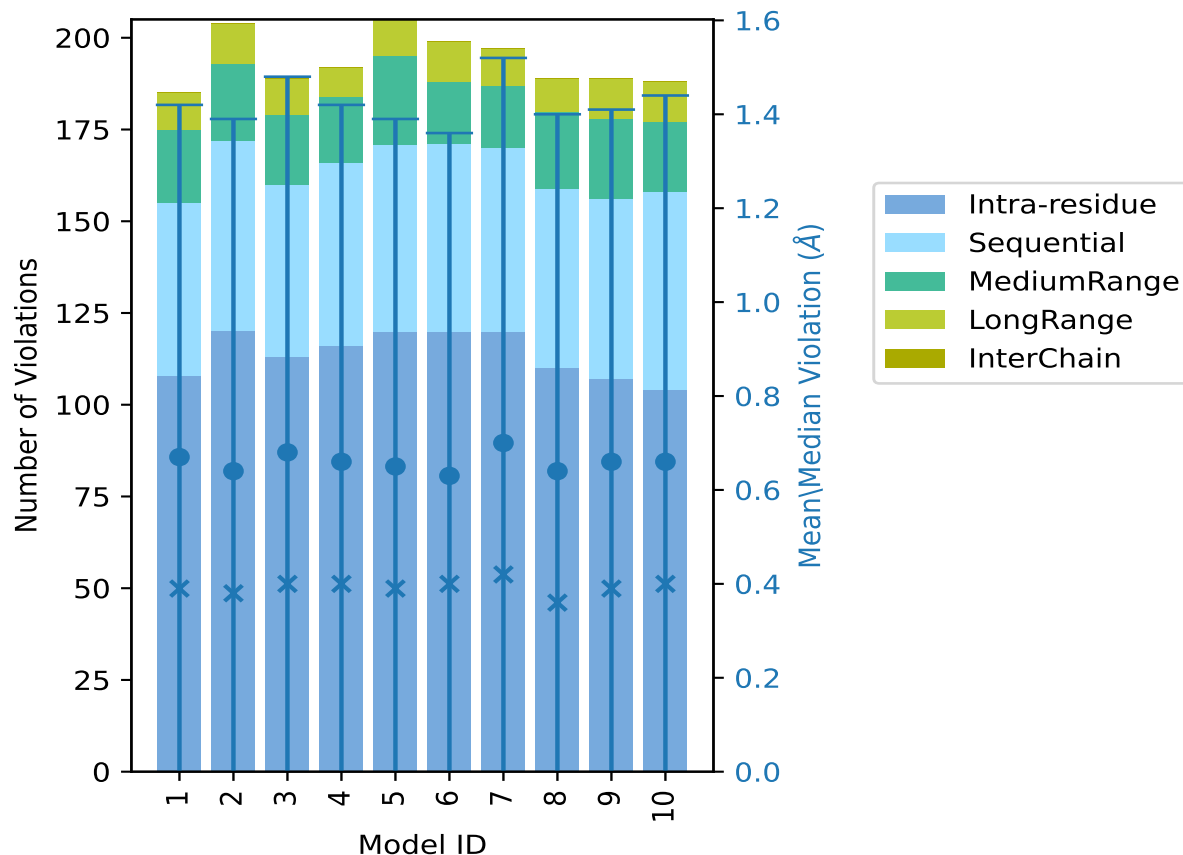
The following table provides the distance violation statistics for each model in the ensemble. Violations less than 0.1 Å are not included in the statistics.

Model ID	Number of violations					Total	Mean (Å)	Max (Å)	SD <sup>6</sup> (Å)	Median (Å)
	IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>					
1	108	47	20	10	0	185	0.67	4.49	0.75	0.39
2	120	52	21	11	0	204	0.64	4.81	0.75	0.38
3	113	47	19	10	0	189	0.68	4.96	0.8	0.4
4	116	50	18	8	0	192	0.66	4.65	0.76	0.4
5	120	51	24	10	0	205	0.65	5.01	0.74	0.39
6	120	51	17	11	0	199	0.63	4.77	0.73	0.4
7	120	50	17	10	0	197	0.7	5.63	0.82	0.42
8	110	49	21	9	0	189	0.64	5.32	0.76	0.36
9	107	49	22	11	0	189	0.66	4.91	0.75	0.39
10	104	54	19	11	0	188	0.66	5.38	0.78	0.4

<sup>1</sup>Intra-residue restraints, <sup>2</sup>Sequential restraints, <sup>3</sup>Medium range restraints, <sup>4</sup>Long range restraints,

<sup>5</sup>Inter-chain restraints, <sup>6</sup>Standard deviation

### 9.2.1 Bar graph : Distance Violation statistics for each model [i](#)



The mean(dot),median(x) and the standard deviation are shown in blue with respect to the y axis on the right

### 9.3 Distance violation statistics for the ensemble [i](#)

Violation analysis may find that some restraints are violated in few models and some are violated in most of models. The following table provides this information as number of violated restraints for a given fraction of the ensemble. In total, 398(IR:285, SQ:76, MR:10, LR:27, IC:0) restraints are not violated in the ensemble.

Number of violated restraints						Fraction of the ensemble	
IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>	Total	Count <sup>6</sup>	%
16	12	1	3	0	32	1	10.0
12	9	4	1	0	26	2	20.0
12	11	2	1	0	26	3	30.0
9	8	2	1	0	20	4	40.0

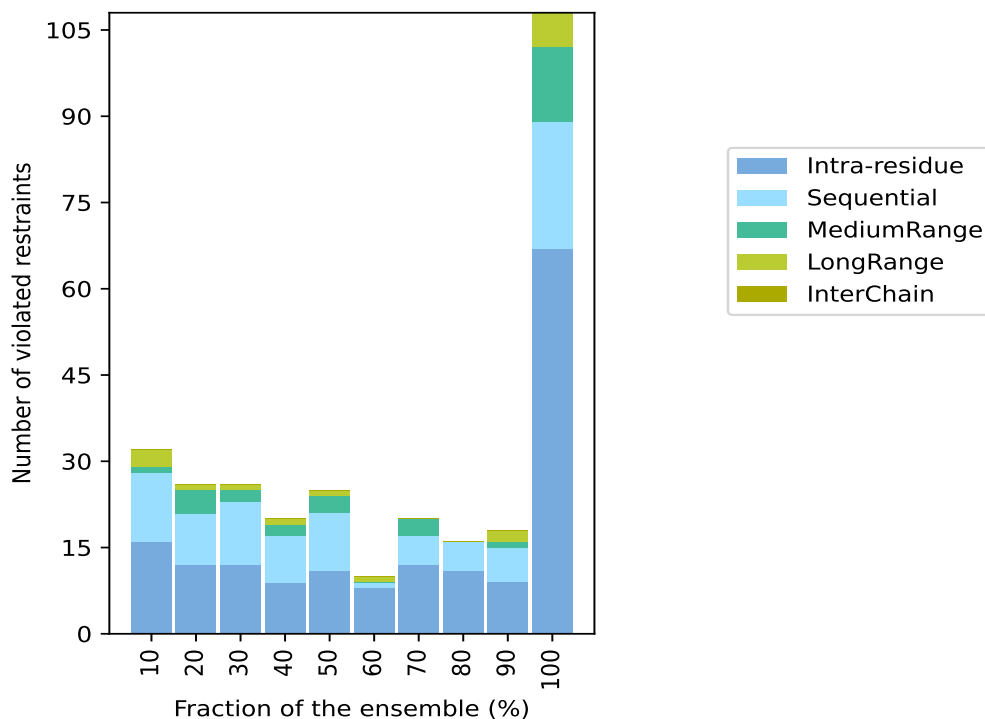
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Number of violated restraints						Fraction of the ensemble	
IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>	Total	Count <sup>6</sup>	%
11	10	3	1	0	25	5	50.0
8	1	0	1	0	10	6	60.0
12	5	3	0	0	20	7	70.0
11	5	0	0	0	16	8	80.0
9	6	1	2	0	18	9	90.0
67	22	13	6	0	108	10	100.0

<sup>1</sup>Intra-residue restraints, <sup>2</sup>Sequential restraints, <sup>3</sup>Medium range restraints, <sup>4</sup>Long range restraints, <sup>5</sup>Inter-chain restraints, <sup>6</sup> Number of models with violations

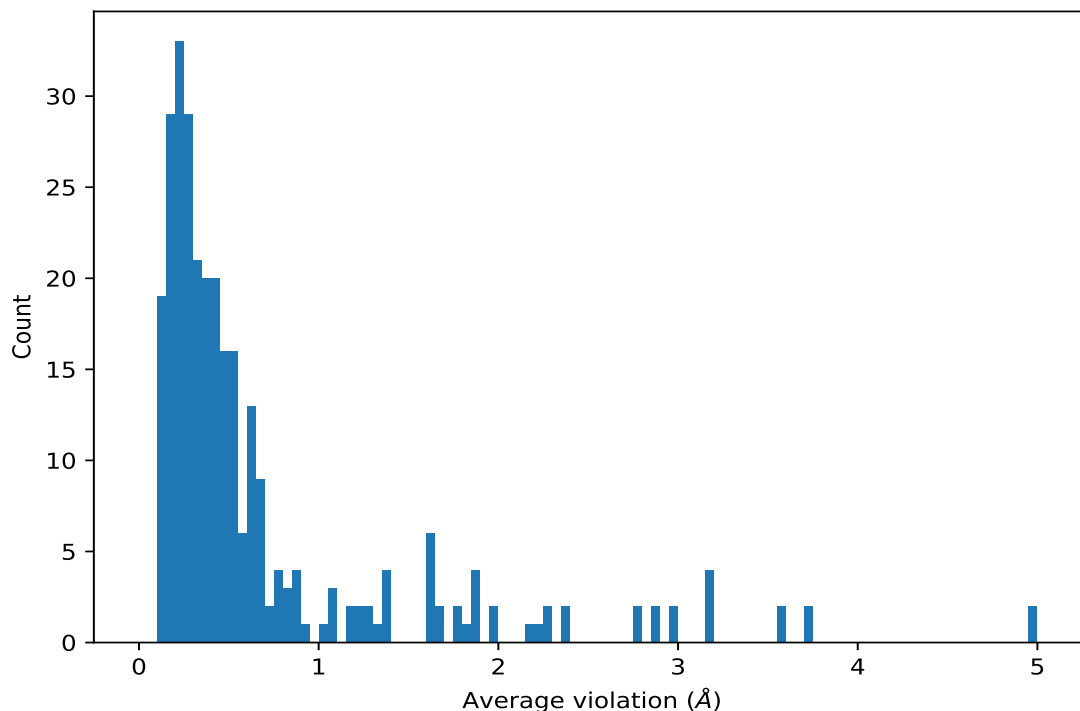
### 9.3.1 Bar graph : Distance violation statistics for the ensemble [i](#)



## 9.4 Most violated distance restraints in the ensemble [i](#)

### 9.4.1 Histogram : Distribution of mean distance violations [i](#)

The following histogram shows the distribution of the average value of the violation. The average is calculated for each restraint that is violated in more than one model over all the violated models in the ensemble



#### 9.4.2 Table: Most violated distance restraints [i](#)

The following table provides the mean and the standard deviation of the violation for each restraint sorted by number of violated models and the mean value. The Key (restraint list ID, restraint ID) is the unique identifier for a given restraint. Rows with same key represent combinatorial or ambiguous restraints and are counted as a single restraint.

Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	10	4.99	0.34	4.94
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	10	4.99	0.34	4.94
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	10	3.74	0.23	3.66
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	10	3.74	0.23	3.66
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	10	3.58	0.46	3.54
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	10	3.58	0.46	3.54
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	10	3.17	0.3	3.14
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	10	3.17	0.3	3.14
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	10	3.17	0.36	3.36
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	10	3.17	0.36	3.36
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	10	2.99	0.23	2.94
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	10	2.99	0.23	2.94
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	10	2.88	0.25	2.9
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	10	2.88	0.25	2.9
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	10	2.76	0.35	2.88
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	10	2.76	0.35	2.88

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	10	2.37	0.66	2.48
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	10	2.37	0.66	2.48
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	10	2.28	0.17	2.28
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	10	2.28	0.17	2.28
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	10	2.22	0.01	2.21
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	10	2.16	0.01	2.15
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	10	1.97	0.26	1.81
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	10	1.97	0.26	1.81
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	10	1.86	0.37	1.82
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	10	1.86	0.37	1.82
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	10	1.85	0.35	1.78
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	10	1.85	0.35	1.78
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	10	1.76	0.32	1.9
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	10	1.76	0.32	1.9
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	10	1.64	0.02	1.65
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	10	1.64	0.02	1.65
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	10	1.63	0.19	1.65
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	10	1.63	0.19	1.65
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	10	1.61	0.35	1.78
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	10	1.61	0.35	1.78
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	10	1.39	0.55	1.32
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	10	1.39	0.55	1.32
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	10	1.37	0.21	1.43
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	10	1.37	0.21	1.43
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	10	1.31	0.12	1.3
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	10	1.28	0.27	1.3
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	10	1.26	0.22	1.23
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	10	1.22	0.09	1.21
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	10	1.21	0.77	1.52
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	10	1.18	0.26	1.23
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	10	1.18	0.26	1.23
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	10	1.09	0.39	1.19
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	10	1.06	0.18	1.1
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	10	1.05	0.21	1.08
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	10	1.01	0.14	1.07
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	10	0.91	0.29	0.93
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	10	0.88	0.04	0.87
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	10	0.87	0.24	0.94
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	10	0.84	0.07	0.84
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	10	0.75	0.36	0.66
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	10	0.75	0.36	0.66
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	10	0.72	0.27	0.8

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	10	0.67	0.15	0.66
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	10	0.64	0.14	0.67
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	10	0.64	0.09	0.62
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	10	0.64	0.07	0.62
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	10	0.63	0.15	0.66
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	10	0.63	0.28	0.58
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	10	0.63	0.21	0.6
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	10	0.63	0.05	0.64
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	10	0.62	0.32	0.77
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	10	0.62	0.33	0.52
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	10	0.62	0.26	0.64
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	10	0.62	0.26	0.64
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	10	0.61	0.18	0.7
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	10	0.59	0.4	0.49
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	10	0.58	0.07	0.59
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	10	0.58	0.05	0.57
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	10	0.58	0.13	0.58
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	10	0.57	0.03	0.57
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	10	0.53	0.05	0.51
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	10	0.52	0.17	0.51
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	10	0.52	0.02	0.52
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	10	0.52	0.13	0.49
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	10	0.52	0.13	0.49
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	10	0.51	0.02	0.5
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	10	0.5	0.13	0.49
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	10	0.5	0.12	0.57
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	10	0.49	0.01	0.5
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	10	0.49	0.16	0.52
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	10	0.49	0.01	0.49
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	10	0.49	0.03	0.49
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	10	0.47	0.1	0.52
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	10	0.46	0.07	0.45
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	10	0.44	0.12	0.44
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	10	0.44	0.05	0.42
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	10	0.43	0.01	0.43
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	10	0.42	0.13	0.48
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	10	0.4	0.01	0.4
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	10	0.38	0.26	0.36
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	10	0.38	0.11	0.39
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	10	0.38	0.06	0.37
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	10	0.37	0.1	0.38
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	10	0.35	0.08	0.36

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	10	0.33	0.01	0.33
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	10	0.32	0.03	0.32
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	10	0.32	0.09	0.3
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	10	0.31	0.01	0.31
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	10	0.3	0.07	0.28
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	10	0.29	0.06	0.3
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	10	0.29	0.02	0.3
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	10	0.29	0.16	0.26
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	10	0.28	0.06	0.29
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	10	0.28	0.0	0.28
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	10	0.28	0.07	0.26
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	10	0.27	0.05	0.28
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	10	0.26	0.02	0.26
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	10	0.26	0.01	0.26
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	10	0.26	0.07	0.29
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	10	0.24	0.0	0.24
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	10	0.23	0.0	0.23
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	10	0.22	0.05	0.22
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	10	0.22	0.01	0.22
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	10	0.22	0.01	0.22
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	10	0.22	0.01	0.21
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	10	0.21	0.02	0.22
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	10	0.21	0.07	0.19
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	10	0.18	0.0	0.18
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	10	0.17	0.01	0.17
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	10	0.17	0.01	0.16
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	10	0.13	0.02	0.14
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	10	0.13	0.02	0.12
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	10	0.12	0.0	0.12
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	10	0.11	0.01	0.11
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	10	0.1	0.0	0.1
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2'	9	1.67	0.64	1.65
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2'	9	1.67	0.64	1.65
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	9	0.85	0.38	1.03
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	9	0.73	0.18	0.72
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	9	0.68	0.17	0.65
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	9	0.68	0.17	0.65
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	9	0.66	0.23	0.78
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	9	0.5	0.16	0.5
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	9	0.47	0.11	0.5
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	9	0.42	0.17	0.4
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	9	0.4	0.06	0.4

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	9	0.4	0.16	0.38
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	9	0.36	0.15	0.3
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	9	0.36	0.15	0.37
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	9	0.28	0.05	0.29
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	9	0.27	0.07	0.28
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	9	0.26	0.07	0.27
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	9	0.24	0.03	0.25
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	9	0.21	0.11	0.18
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	9	0.15	0.04	0.14
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	8	0.77	0.27	0.82
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	8	0.77	0.22	0.86
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	8	0.55	0.36	0.52
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	8	0.49	0.24	0.56
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	8	0.49	0.32	0.33
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	8	0.41	0.09	0.4
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	8	0.4	0.28	0.34
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	8	0.38	0.17	0.4
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	8	0.36	0.15	0.31
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	8	0.35	0.06	0.36
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	8	0.34	0.08	0.36
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	8	0.29	0.1	0.29
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	8	0.28	0.08	0.26
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	8	0.2	0.05	0.19
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	8	0.18	0.03	0.17
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	8	0.14	0.03	0.14
(1,285)	1:2:A:DG:H8	1:2:A:DG:H5'	7	1.82	0.27	1.89
(1,96)	1:15:A:DT:H1'	1:12:A:DG:H8	7	0.54	0.19	0.52
(1,70)	1:17:A:DG:H8	1:17:A:DG:H5''	7	0.5	0.37	0.34
(1,233)	1:5:A:DA:H8	1:4:A:DG:H2'	7	0.5	0.12	0.49
(1,454)	1:12:A:DG:H2'	1:13:A:DC:H1'	7	0.48	0.18	0.56
(1,57)	1:9:A:DG:H8	1:9:A:DG:H5''	7	0.43	0.28	0.32
(1,117)	1:4:A:DG:H8	1:4:A:DG:H2'	7	0.38	0.08	0.42
(1,115)	1:4:A:DG:H8	1:3:A:DG:H2'	7	0.37	0.17	0.47
(1,485)	1:3:A:DG:H4'	1:3:A:DG:H2''	7	0.36	0.2	0.34
(1,534)	1:7:A:DG:H8	1:5:A:DA:H1'	7	0.33	0.14	0.27
(2,156)	1:19:A:DC:H3'	1:18:A:DG:H1	7	0.33	0.16	0.25
(1,64)	1:12:A:DG:H8	1:12:A:DG:H5'	7	0.32	0.21	0.28
(1,15)	1:12:A:DG:H8	1:11:A:DG:H1'	7	0.25	0.11	0.23
(1,71)	1:16:A:DG:H8	1:16:A:DG:H4'	7	0.23	0.04	0.24
(1,224)	1:21:A:DG:H5'	1:21:A:DG:H2'	7	0.2	0.05	0.21
(1,429)	1:19:A:DC:H6	1:19:A:DC:H2''	7	0.17	0.04	0.18
(1,84)	1:20:A:DG:H8	1:20:A:DG:H4'	7	0.16	0.05	0.16

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,220)	1:4:A:DG:H2''	1:4:A:DG:H5'	7	0.16	0.01	0.16
(2,9)	1:12:A:DG:H1	1:16:A:DG:H1	7	0.13	0.03	0.13
(1,92)	1:9:A:DG:H8	1:9:A:DG:H2'	7	0.12	0.02	0.11
(1,521)	1:14:A:DC:H5	1:14:A:DC:H5''	6	0.54	0.07	0.52
(1,253)	1:1:A:DA:H8	1:1:A:DA:H5''	6	0.41	0.14	0.41
(1,286)	1:2:A:DG:H8	1:2:A:DG:H5''	6	0.39	0.16	0.39
(1,56)	1:9:A:DG:H8	1:9:A:DG:H5'	6	0.34	0.14	0.38
(1,229)	1:15:A:DT:H6	1:14:A:DC:H2''	6	0.29	0.09	0.3
(1,252)	1:1:A:DA:H8	1:1:A:DA:H5'	6	0.28	0.1	0.29
(1,375)	1:14:A:DC:H1'	1:14:A:DC:H5''	6	0.22	0.04	0.22
(2,8)	1:3:A:DG:H1	1:11:A:DG:H1	6	0.2	0.06	0.2
(1,236)	1:7:A:DG:H8	1:7:A:DG:H2''	6	0.18	0.04	0.18
(1,420)	1:19:A:DC:H6	1:19:A:DC:H3'	6	0.15	0.03	0.15
(1,89)	1:8:A:DT:H6	1:8:A:DT:H5''	5	0.89	0.33	0.78
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5'	5	0.82	0.24	0.68
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5''	5	0.82	0.24	0.68
(1,52)	1:3:A:DG:H8	1:2:A:DG:H3'	5	0.67	0.41	0.52
(1,36)	1:8:A:DT:H6	1:5:A:DA:H8	5	0.67	0.26	0.58
(2,40)	1:8:A:DT:H5'	1:8:A:DT:H2'	5	0.64	0.11	0.71
(2,66)	1:8:A:DT:H1'	1:5:A:DA:H2	5	0.5	0.38	0.32
(2,105)	1:17:A:DG:H2'	1:9:A:DG:H1	5	0.45	0.15	0.49
(1,175)	1:4:A:DG:H1'	1:4:A:DG:H4'	5	0.39	0.03	0.38
(2,130)	1:15:A:DT:H2'	1:14:A:DC:H2''	5	0.35	0.13	0.37
(1,348)	1:12:A:DG:H1'	1:11:A:DG:H8	5	0.32	0.15	0.34
(1,38)	1:8:A:DT:H6	1:8:A:DT:H4'	5	0.31	0.05	0.31
(1,302)	1:4:A:DG:H2'	1:5:A:DA:H5''	5	0.28	0.21	0.19
(1,85)	1:21:A:DG:H8	1:21:A:DG:H5'	5	0.27	0.11	0.28
(1,67)	1:17:A:DG:H8	1:16:A:DG:H3'	5	0.26	0.1	0.24
(2,90)	1:1:A:DA:H5'	1:1:A:DA:H2'	5	0.26	0.06	0.28
(1,340)	1:9:A:DG:H1'	1:10:A:DT:H4'	5	0.25	0.09	0.28
(2,80)	1:15:A:DT:H5'	1:14:A:DC:H2''	5	0.23	0.08	0.2
(2,80)	1:15:A:DT:H5''	1:14:A:DC:H2''	5	0.23	0.08	0.2
(1,176)	1:4:A:DG:H1'	1:4:A:DG:H5'	5	0.23	0.03	0.22
(1,404)	1:16:A:DG:H1'	1:17:A:DG:H5''	5	0.22	0.09	0.29
(1,65)	1:12:A:DG:H8	1:11:A:DG:H3'	5	0.19	0.05	0.17
(2,146)	1:21:A:DG:H1'	1:18:A:DG:H1	5	0.18	0.06	0.13
(1,511)	1:5:A:DA:H1'	1:5:A:DA:H2	5	0.18	0.05	0.18
(1,125)	1:18:A:DG:H8	1:17:A:DG:H2'	5	0.15	0.03	0.14
(1,62)	1:21:A:DG:H8	1:21:A:DG:H3'	5	0.13	0.01	0.13
(2,47)	1:3:A:DG:H2''	1:3:A:DG:H2'	5	0.1	0.0	0.1
(1,510)	1:8:A:DT:H5'	1:5:A:DA:H2	4	0.66	0.44	0.66
(1,510)	1:8:A:DT:H5''	1:5:A:DA:H2	4	0.66	0.44	0.66

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,350)	1:12:A:DG:H5'	1:12:A:DG:H2'	4	0.51	0.11	0.52
(1,494)	1:13:A:DC:H1'	1:14:A:DC:H5'	4	0.49	0.11	0.53
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5'	4	0.4	0.24	0.4
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5''	4	0.4	0.24	0.4
(1,528)	1:12:A:DG:H1'	1:13:A:DC:H5	4	0.38	0.15	0.45
(1,108)	1:2:A:DG:H8	1:2:A:DG:H2''	4	0.34	0.08	0.34
(1,509)	1:6:A:DG:H4'	1:5:A:DA:H2	4	0.34	0.14	0.31
(1,83)	1:21:A:DG:H8	1:21:A:DG:H5''	4	0.33	0.07	0.32
(1,397)	1:15:A:DT:H5'	1:14:A:DC:H4'	4	0.32	0.06	0.33
(1,397)	1:15:A:DT:H5''	1:14:A:DC:H4'	4	0.32	0.06	0.33
(1,399)	1:16:A:DG:H8	1:17:A:DG:H5'	4	0.27	0.1	0.27
(1,445)	1:4:A:DG:H8	1:5:A:DA:H8	4	0.26	0.11	0.26
(1,30)	1:22:A:DG:H8	1:21:A:DG:H8	4	0.26	0.13	0.22
(2,34)	1:8:A:DT:H3'	1:8:A:DT:H5'	4	0.21	0.09	0.2
(2,74)	1:8:A:DT:H5'	1:7:A:DG:H4'	4	0.21	0.06	0.2
(2,64)	1:20:A:DG:H1	1:1:A:DA:H2	4	0.18	0.06	0.18
(1,40)	1:15:A:DT:H6	1:15:A:DT:H3'	4	0.17	0.05	0.18
(1,138)	1:8:A:DT:H1'	1:8:A:DT:H2''	4	0.16	0.01	0.16
(1,204)	1:22:A:DG:H1'	1:22:A:DG:H4'	4	0.15	0.02	0.16
(1,68)	1:17:A:DG:H8	1:17:A:DG:H3'	4	0.12	0.01	0.12
(1,150)	1:9:A:DG:H1'	1:9:A:DG:H2''	4	0.11	0.0	0.11
(2,135)	1:8:A:DT:H6	1:5:A:DA:H2	3	0.48	0.18	0.52
(2,84)	1:3:A:DG:H2'	1:4:A:DG:H2''	3	0.47	0.21	0.57
(2,143)	1:4:A:DG:H1'	1:3:A:DG:H21	3	0.46	0.1	0.43
(1,219)	1:4:A:DG:H2''	1:4:A:DG:H4'	3	0.43	0.06	0.39
(2,65)	1:5:A:DA:H2	1:4:A:DG:H1	3	0.43	0.22	0.57
(2,100)	1:8:A:DT:H2'	1:9:A:DG:H1	3	0.4	0.2	0.3
(2,37)	1:8:A:DT:H5''	1:8:A:DT:H2''	3	0.38	0.15	0.44
(2,62)	1:1:A:DA:H8	1:16:A:DG:H1	3	0.38	0.15	0.44
(1,116)	1:4:A:DG:H8	1:4:A:DG:H2''	3	0.35	0.04	0.33
(1,42)	1:15:A:DT:H6	1:15:A:DT:H5''	3	0.34	0.22	0.25
(1,450)	1:4:A:DG:H8	1:5:A:DA:H5''	3	0.33	0.02	0.34
(1,19)	1:2:A:DG:H1'	1:3:A:DG:H8	3	0.29	0.14	0.32
(1,323)	1:7:A:DG:H1'	1:7:A:DG:H5'	3	0.24	0.07	0.23
(2,151)	1:16:A:DG:H2''	1:16:A:DG:H1	3	0.24	0.02	0.23
(1,122)	1:17:A:DG:H8	1:16:A:DG:H2''	3	0.22	0.02	0.23
(2,154)	1:8:A:DT:H4'	1:9:A:DG:H1	3	0.22	0.06	0.22
(2,16)	1:22:A:DG:H8	1:18:A:DG:H1	3	0.21	0.15	0.12
(1,481)	1:7:A:DG:H2'	1:7:A:DG:H5'	3	0.21	0.02	0.19
(1,307)	1:6:A:DG:H2'	1:5:A:DA:H1'	3	0.19	0.08	0.15
(1,27)	1:14:A:DC:H6	1:14:A:DC:H1'	3	0.17	0.05	0.16
(1,60)	1:11:A:DG:H8	1:11:A:DG:H5''	3	0.17	0.05	0.19

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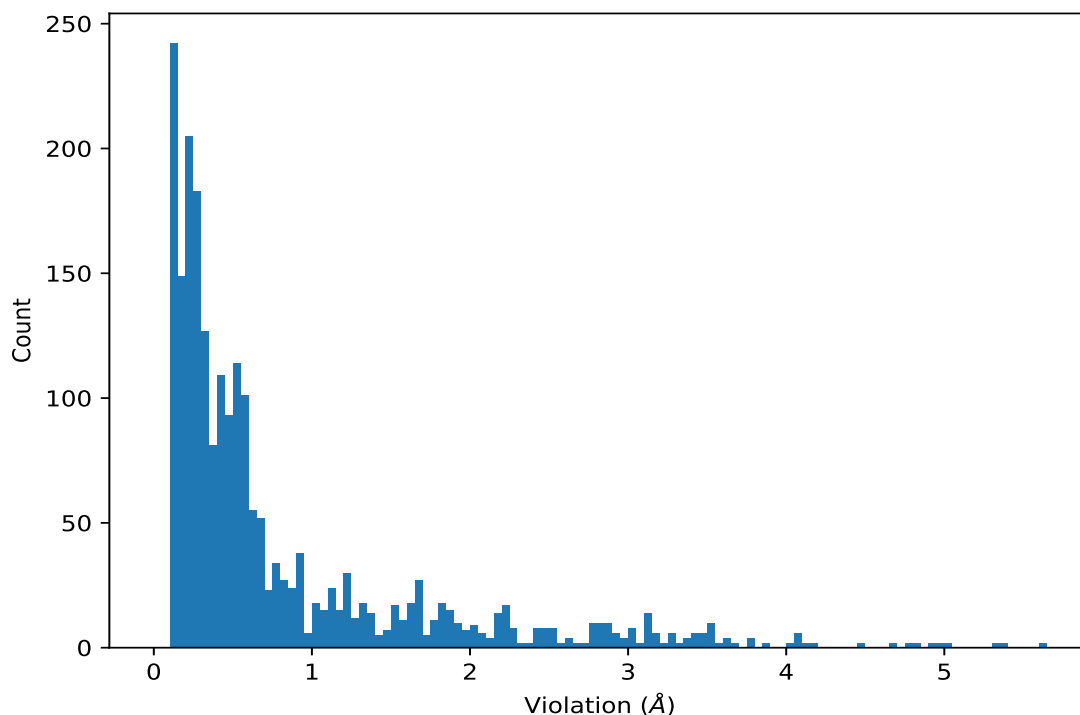
Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,113)	1:3:A:DG:H8	1:2:A:DG:H2''	3	0.17	0.03	0.18
(1,498)	1:16:A:DG:H8	1:17:A:DG:H2''	3	0.16	0.0	0.16
(2,39)	1:8:A:DT:H5'	1:8:A:DT:H2''	3	0.16	0.01	0.17
(1,351)	1:13:A:DC:H1'	1:13:A:DC:H2''	3	0.13	0.01	0.13
(2,59)	1:22:A:DG:H2''	1:22:A:DG:H2'	3	0.1	0.0	0.1
(1,91)	1:3:A:DG:H8	1:2:A:DG:H2'	2	0.67	0.1	0.67
(1,479)	1:7:A:DG:H2'	1:7:A:DG:H5''	2	0.5	0.04	0.5
(2,148)	1:8:A:DT:H6	1:9:A:DG:H1	2	0.46	0.09	0.46
(1,446)	1:9:A:DG:H8	1:5:A:DA:H8	2	0.42	0.18	0.42
(2,61)	1:1:A:DA:H8	1:12:A:DG:H1	2	0.4	0.22	0.4
(2,99)	1:8:A:DT:H2''	1:9:A:DG:H1	2	0.4	0.09	0.4
(2,136)	1:8:A:DT:H1'	1:5:A:DA:H2	2	0.32	0.05	0.32
(1,294)	1:5:A:DA:H8	1:5:A:DA:H5'	2	0.3	0.01	0.3
(1,251)	1:2:A:DG:H8	1:3:A:DG:H3'	2	0.29	0.08	0.29
(2,160)	1:9:A:DG:H1'	1:11:A:DG:H1	2	0.26	0.14	0.26
(1,47)	1:4:A:DG:H8	1:4:A:DG:H3'	2	0.24	0.12	0.24
(1,333)	1:8:A:DT:H3'	1:8:A:DT:H5''	2	0.23	0.07	0.23
(2,11)	1:18:A:DG:H1	1:21:A:DG:H1	2	0.22	0.1	0.22
(1,2)	1:22:A:DG:H8	1:21:A:DG:H1'	2	0.21	0.06	0.21
(1,6)	1:8:A:DT:H6	1:8:A:DT:H1'	2	0.2	0.02	0.2
(1,517)	1:9:A:DG:H8	1:10:A:DT:H4'	2	0.2	0.04	0.2
(1,13)	1:6:A:DG:H1'	1:7:A:DG:H8	2	0.18	0.03	0.18
(1,44)	1:10:A:DT:H6	1:10:A:DT:H4'	2	0.16	0.01	0.16
(1,371)	1:14:A:DC:H5	1:14:A:DC:H2''	2	0.15	0.01	0.15
(1,337)	1:9:A:DG:H8	1:9:A:DG:H4'	2	0.15	0.04	0.15
(2,122)	1:8:A:DT:H1'	1:9:A:DG:H1	2	0.15	0.03	0.15
(1,282)	1:2:A:DG:H8	1:3:A:DG:H2''	2	0.14	0.02	0.14
(1,427)	1:19:A:DC:H1'	1:19:A:DC:H5'	2	0.14	0.01	0.14
(1,104)	1:8:A:DT:H6	1:8:A:DT:H2'	2	0.13	0.03	0.13
(1,80)	1:20:A:DG:H8	1:20:A:DG:H5'	2	0.11	0.0	0.11
(1,265)	1:1:A:DA:H1'	1:1:A:DA:H2''	2	0.11	0.0	0.11

<sup>1</sup>Number of violated models, <sup>2</sup>Standard deviation

## 9.5 All violated distance restraints [i](#)

### 9.5.1 Histogram : Distribution of distance violations [i](#)

The following histogram shows the distribution of the absolute value of the violation for all violated restraints in the ensemble.



### 9.5.2 Table : All distance violations [i](#)

The following table lists the absolute value of the violation for each restraint in the ensemble sorted by its value. The Key (restraint list ID, restraint ID) is the unique identifier for a given restraint. Rows with same key represent combinatorial or ambiguous restraints and are counted as a single restraint.

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	7	5.63
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	7	5.63
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	10	5.38
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	10	5.38
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	8	5.32
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	8	5.32
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	5	5.01
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	5	5.01
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	3	4.96
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	3	4.96
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	9	4.91
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	9	4.91
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	2	4.81
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	2	4.81
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	6	4.77
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	6	4.77

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	4	4.65
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	4	4.65
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5'	1	4.49
(1,513)	1:22:A:DG:H8	1:8:A:DT:H5''	1	4.49
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	7	4.16
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	7	4.16
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	7	4.11
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	7	4.11
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	10	4.1
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	10	4.1
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	10	4.09
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	10	4.09
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	8	4.09
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	8	4.09
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	3	4.02
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	3	4.02
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	5	3.88
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	5	3.88
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	2	3.79
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	2	3.79
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	1	3.79
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	1	3.79
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	4	3.67
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	4	3.67
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	3	3.64
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	3	3.64
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	8	3.6
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	8	3.6
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	6	3.58
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	6	3.58
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	4	3.55
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	4	3.55
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	9	3.53
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	9	3.53
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	1	3.53
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	1	3.53
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	3	3.5
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	3	3.5
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	7	3.5
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	7	3.5
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	2	3.47
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	2	3.47

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	4	3.47
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	4	3.47
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	9	3.46
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	9	3.46
(2,97)	1:8:A:DT:H5'	1:18:A:DG:H1	1	3.44
(2,97)	1:8:A:DT:H5''	1:18:A:DG:H1	1	3.44
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	8	3.42
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	8	3.42
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	6	3.42
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	6	3.42
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	8	3.39
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	8	3.39
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	9	3.35
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	9	3.35
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	1	3.31
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	1	3.31
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	2	3.3
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	2	3.3
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	5	3.29
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	5	3.29
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	5	3.25
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	5	3.25
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	10	3.2
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	10	3.2
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	4	3.18
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	4	3.18
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	3	3.18
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	3	3.18
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	5	3.18
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	5	3.18
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	4	3.14
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	4	3.14
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	7	3.14
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	7	3.14
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	5	3.12
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	5	3.12
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	2	3.12
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	2	3.12
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	4	3.12
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	4	3.12
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	3	3.11
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	3	3.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	6	3.1
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	6	3.1
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	7	3.06
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	7	3.06
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	4	3.05
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	4	3.05
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	9	3.01
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	9	3.01
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	6	3.0
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	6	3.0
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	10	3.0
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	10	3.0
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	7	2.98
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	7	2.98
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	2	2.95
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	2	2.95
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	6	2.94
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	6	2.94
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	9	2.93
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	9	2.93
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	5	2.91
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	5	2.91
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	2	2.87
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	2	2.87
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	1	2.86
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	1	2.86
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	3	2.86
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	3	2.86
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	7	2.86
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	7	2.86
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	6	2.85
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5''	6	2.85
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	6	2.83
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	6	2.83
(2,95)	1:8:A:DT:H5'	1:22:A:DG:H1	2	2.81
(2,95)	1:8:A:DT:H5''	1:22:A:DG:H1	2	2.81
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	2	2.81
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	2	2.81
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	5	2.81
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	5	2.81
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	8	2.81
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	8	2.81

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	7	2.8
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	7	2.8
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	9	2.78
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	9	2.78
(1,390)	1:12:A:DG:H1'	1:15:A:DT:H5'	5	2.77
(1,390)	1:12:A:DG:H1''	1:15:A:DT:H5''	5	2.77
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	1	2.77
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	1	2.77
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	10	2.75
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	10	2.75
(2,93)	1:15:A:DT:H5'	1:12:A:DG:H1	3	2.72
(2,93)	1:15:A:DT:H5''	1:12:A:DG:H1	3	2.72
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	6	2.67
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	6	2.67
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	8	2.62
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	8	2.62
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2''	2	2.62
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2''	2	2.62
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2''	5	2.58
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2''	5	2.58
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	10	2.54
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	10	2.54
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	1	2.54
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	1	2.54
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	1	2.5
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	1	2.5
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	6	2.5
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	6	2.5
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	7	2.49
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	7	2.49
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	3	2.48
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	3	2.48
(1,389)	1:15:A:DT:H5'	1:13:A:DC:H1'	8	2.48
(1,389)	1:15:A:DT:H5''	1:13:A:DC:H1'	8	2.48
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	2	2.45
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	2	2.45
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	10	2.42
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	10	2.42
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	4	2.42
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	4	2.42
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	9	2.41
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	9	2.41

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	9	2.41
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	9	2.41
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	9	2.4
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	9	2.4
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	5	2.32
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	5	2.32
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	4	2.28
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	4	2.28
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	9	2.27
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	9	2.27
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	10	2.27
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	10	2.27
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	7	2.26
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	7	2.26
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	2	2.23
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	5	2.23
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	3	2.23
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	3	2.23
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	4	2.22
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	6	2.22
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	8	2.22
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	8	2.22
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	1	2.21
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	3	2.21
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	7	2.21
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	8	2.21
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	9	2.21
(2,131)	1:8:A:DT:H5'	1:8:A:DT:H5''	10	2.21
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	7	2.2
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5'	10	2.2
(1,452)	1:1:A:DA:H8	1:15:A:DT:H5''	10	2.2
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	10	2.18
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	10	2.18
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	2	2.17
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	5	2.17
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	4	2.16
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	6	2.16
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	1	2.15
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	3	2.15
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	7	2.15
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	8	2.15
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	9	2.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,132)	1:8:A:DT:H5''	1:8:A:DT:H5'	10	2.15
(1,490)	1:15:A:DT:H5'	1:13:A:DC:H4'	8	2.15
(1,490)	1:15:A:DT:H5''	1:13:A:DC:H4'	8	2.15
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	1	2.14
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	1	2.14
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	9	2.1
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	9	2.1
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	10	2.08
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	10	2.08
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	2	2.07
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	2	2.07
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	4	2.06
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	4	2.06
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	3	2.05
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	3	2.05
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	3	2.05
(1,285)	1:2:A:DG:H8	1:2:A:DG:H5'	7	2.05
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	7	2.02
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	7	2.02
(1,285)	1:2:A:DG:H8	1:2:A:DG:H5'	3	2.02
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	8	2.01
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	8	2.01
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	6	1.99
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	6	1.99
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5'	8	1.98
(1,386)	1:14:A:DC:H5	1:15:A:DT:H5''	8	1.98
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	3	1.97
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	3	1.97
(1,285)	1:2:A:DG:H8	1:2:A:DG:H5'	9	1.96
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	3	1.95
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	3	1.95
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	7	1.94
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	7	1.94
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	8	1.93
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	8	1.93
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	3	1.92
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	3	1.92
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2'	6	1.91
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2'	6	1.91
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	2	1.9
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	2	1.9
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	2	1.89

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	2	1.89
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	4	1.89
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	4	1.89
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	1	1.89
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	1	1.89
(1,285)	1:2:A:DG:H8	1:2:A:DG:H5'	5	1.89
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	1	1.88
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	1	1.88
(1,285)	1:2:A:DG:H8	1:2:A:DG:H5'	4	1.88
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	10	1.87
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	10	1.87
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	10	1.86
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2'	7	1.84
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2'	7	1.84
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	6	1.84
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	6	1.84
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	5	1.83
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	5	1.83
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	7	1.82
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	7	1.82
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	4	1.81
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	4	1.81
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	7	1.81
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	7	1.81
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	1	1.8
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	1	1.8
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	4	1.8
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	4	1.8
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	2	1.8
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	2	1.8
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	10	1.78
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	10	1.78
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	1	1.78
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	1	1.78
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	1	1.77
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	6	1.77
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	6	1.77
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	6	1.75
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	6	1.75
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	4	1.75
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	4	1.75
(1,285)	1:2:A:DG:H8	1:2:A:DG:H5'	2	1.73

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	9	1.72
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	9	1.72
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	5	1.72
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	5	1.72
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	1	1.7
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	1	1.7
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	3	1.7
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	3	1.7
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	3	1.7
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	3	1.7
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	1	1.69
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	7	1.69
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	7	1.69
(1,395)	1:15:A:DT:H5'	1:14:A:DC:H5''	5	1.69
(1,395)	1:15:A:DT:H5''	1:14:A:DC:H5''	5	1.69
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	9	1.68
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	3	1.68
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	3	1.68
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	4	1.67
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	4	1.67
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	3	1.67
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	2	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	2	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	3	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	3	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	4	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	4	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	7	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	7	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	10	1.66
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	10	1.66
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2'	10	1.65
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2'	10	1.65
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	3	1.65
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	3	1.65
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	6	1.64
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	6	1.64
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	9	1.64
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	9	1.64
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	6	1.63
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	6	1.63
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	5	1.63

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	5	1.63
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	3	1.62
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	1	1.62
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	1	1.62
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5'	8	1.62
(1,396)	1:15:A:DT:H4'	1:15:A:DT:H5''	8	1.62
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	10	1.61
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	8	1.59
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	1	1.59
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	1	1.59
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	3	1.58
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	3	1.58
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2'	9	1.57
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2'	9	1.57
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	9	1.56
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	9	1.56
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	2	1.55
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	2	1.55
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	6	1.54
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	6	1.54
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	4	1.53
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	2	1.53
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	2	1.53
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	5	1.53
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	10	1.52
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	10	1.52
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	6	1.51
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	6	1.51
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	1	1.51
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	1	1.51
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	7	1.51
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	7	1.51
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	10	1.51
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	10	1.51
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	1	1.5
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	4	1.49
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	9	1.48
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	5	1.48
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	5	1.48
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	7	1.47
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	10	1.46
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	10	1.46

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	4	1.44
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	9	1.44
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	9	1.44
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	5	1.44
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	10	1.42
(2,78)	1:15:A:DT:H5'	1:12:A:DG:H2''	5	1.4
(2,78)	1:15:A:DT:H5''	1:12:A:DG:H2''	5	1.4
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	5	1.39
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	5	1.39
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	9	1.39
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	9	1.39
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	10	1.38
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	10	1.38
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	8	1.36
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	3	1.36
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	4	1.35
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	4	1.35
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	7	1.35
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	4	1.35
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	2	1.34
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	8	1.34
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	9	1.34
(1,70)	1:17:A:DG:H8	1:17:A:DG:H5''	3	1.33
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2'	4	1.32
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2'	4	1.32
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	9	1.32
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	9	1.32
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	4	1.32
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	7	1.32
(2,96)	1:8:A:DT:H5'	1:4:A:DG:H1	2	1.31
(2,96)	1:8:A:DT:H5''	1:4:A:DG:H1	2	1.31
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	6	1.31
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	7	1.3
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	4	1.3
(1,398)	1:15:A:DT:H5'	1:13:A:DC:H5''	8	1.3
(1,398)	1:15:A:DT:H5''	1:13:A:DC:H5''	8	1.3
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	7	1.3
(1,89)	1:8:A:DT:H6	1:8:A:DT:H5''	5	1.29
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	1	1.28
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	3	1.28
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	6	1.28
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	1	1.28

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,52)	1:3:A:DG:H8	1:2:A:DG:H3'	1	1.27
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	6	1.26
(1,89)	1:8:A:DT:H6	1:8:A:DT:H5''	2	1.26
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	2	1.25
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	2	1.25
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	4	1.25
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	4	1.25
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	1	1.24
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	1	1.24
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	10	1.24
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	10	1.24
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	6	1.24
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	9	1.23
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	10	1.23
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	1	1.23
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	1	1.23
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	9	1.23
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	9	1.23
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	6	1.23
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	6	1.23
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	7	1.23
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	7	1.23
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	9	1.23
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	9	1.23
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	9	1.23
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5'	7	1.23
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5''	7	1.23
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	7	1.22
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	10	1.22
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	5	1.22
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	3	1.22
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	9	1.22
(2,83)	1:8:A:DT:H5'	1:18:A:DG:H2''	8	1.21
(2,83)	1:8:A:DT:H5''	1:18:A:DG:H2''	8	1.21
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	9	1.21
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	9	1.21
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	1	1.21
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	8	1.2
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	5	1.2
(1,285)	1:2:A:DG:H8	1:2:A:DG:H5'	1	1.2
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	1	1.2
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	2	1.2

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	6	1.19
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	6	1.19
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	2	1.19
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	8	1.19
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	7	1.18
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	7	1.18
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	8	1.17
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	8	1.17
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	3	1.17
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	3	1.17
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	5	1.15
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	4	1.15
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	7	1.15
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	3	1.14
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	5	1.13
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	5	1.13
(1,36)	1:8:A:DT:H6	1:5:A:DA:H8	2	1.13
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	6	1.12
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	10	1.12
(1,510)	1:8:A:DT:H5'	1:5:A:DA:H2	2	1.12
(1,510)	1:8:A:DT:H5''	1:5:A:DA:H2	2	1.12
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	5	1.12
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	10	1.12
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	8	1.12
(2,77)	1:15:A:DT:H5'	1:13:A:DC:H2'	8	1.11
(2,77)	1:15:A:DT:H5''	1:13:A:DC:H2'	8	1.11
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	4	1.11
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	6	1.11
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	10	1.11
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	1	1.11
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	3	1.11
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	7	1.11
(1,127)	1:12:A:DG:H8	1:11:A:DG:H2'	10	1.11
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	1	1.1
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	2	1.09
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	7	1.09
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	8	1.09
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	7	1.08
(1,510)	1:8:A:DT:H5'	1:5:A:DA:H2	5	1.08
(1,510)	1:8:A:DT:H5''	1:5:A:DA:H2	5	1.08
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	6	1.08
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	8	1.07

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,87)	1:16:A:DG:H2'	1:17:A:DG:H2''	5	1.06
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	2	1.06
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	7	1.05
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	5	1.05
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	9	1.05
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	2	1.05
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	6	1.05
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	7	1.04
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	4	1.03
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	4	1.03
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	10	1.03
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	7	1.03
(1,52)	1:3:A:DG:H8	1:2:A:DG:H3'	10	1.03
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	5	1.03
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	6	1.03
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	8	1.02
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	8	1.02
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	10	1.02
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	2	1.02
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	10	1.02
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	1	1.01
(2,66)	1:8:A:DT:H1'	1:5:A:DA:H2	5	1.0
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	5	1.0
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	8	1.0
(1,405)	1:17:A:DG:H8	1:16:A:DG:H5'	10	1.0
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	7	0.99
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	9	0.98
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	2	0.97
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	3	0.96
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	1	0.96
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	3	0.96
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	1	0.95
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	2	0.95
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	7	0.95
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	9	0.94
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	3	0.94
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	8	0.94
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	7	0.94
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5'	5	0.94
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5''	5	0.94
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	6	0.94
(2,79)	1:15:A:DT:H5'	1:13:A:DC:H2''	8	0.93

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,79)	1:15:A:DT:H5''	1:13:A:DC:H2''	8	0.93
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	4	0.93
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	4	0.93
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	7	0.93
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	5	0.92
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	10	0.92
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	6	0.92
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	6	0.92
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	4	0.92
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	6	0.92
(2,66)	1:8:A:DT:H1'	1:5:A:DA:H2	2	0.91
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	3	0.91
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	4	0.91
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	2	0.91
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	10	0.91
(2,165)	1:15:A:DT:H3'	1:16:A:DG:H1	3	0.9
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	1	0.9
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	1	0.9
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2'	1	0.9
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2'	1	0.9
(2,43)	1:15:A:DT:H5'	1:15:A:DT:H2'	5	0.9
(2,43)	1:15:A:DT:H5''	1:15:A:DT:H2'	5	0.9
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	9	0.9
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	8	0.9
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	8	0.9
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	5	0.9
(1,57)	1:9:A:DG:H8	1:9:A:DG:H5''	5	0.9
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	5	0.89
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	5	0.89
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	6	0.89
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	3	0.89
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	8	0.89
(1,96)	1:15:A:DT:H1'	1:12:A:DG:H8	9	0.89
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	5	0.89
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	10	0.89
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	6	0.88
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	5	0.88
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	4	0.88
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	4	0.88
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	4	0.88
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	4	0.88
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	7	0.87

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	1	0.87
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	6	0.87
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	4	0.87
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	8	0.87
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	3	0.86
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	4	0.86
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	4	0.86
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	2	0.86
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	3	0.86
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	5	0.85
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	1	0.85
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	6	0.84
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	9	0.84
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	9	0.84
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	2	0.84
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	2	0.84
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	7	0.84
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	1	0.83
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	8	0.83
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	8	0.83
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	8	0.83
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	1	0.83
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	8	0.83
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	9	0.83
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	6	0.83
(1,81)	1:20:A:DG:H8	1:20:A:DG:H3'	9	0.83
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	8	0.81
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	9	0.81
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	9	0.81
(1,64)	1:12:A:DG:H8	1:12:A:DG:H5'	7	0.81
(1,57)	1:9:A:DG:H8	1:9:A:DG:H5''	8	0.81
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	8	0.81
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	9	0.8
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	5	0.8
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	6	0.8
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	10	0.8
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	2	0.79
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	7	0.79
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	1	0.79
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	9	0.79
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	5	0.79
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	2	0.78

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	3	0.78
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	3	0.78
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	5	0.78
(1,89)	1:8:A:DT:H6	1:8:A:DT:H5''	7	0.78
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	4	0.78
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	2	0.77
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	3	0.77
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	6	0.77
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	2	0.77
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	2	0.77
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	5	0.77
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	5	0.77
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	7	0.77
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	4	0.77
(1,91)	1:3:A:DG:H8	1:2:A:DG:H2'	1	0.77
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	6	0.77
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	10	0.77
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	3	0.76
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	3	0.76
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	2	0.76
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	2	0.76
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	5	0.76
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	2	0.76
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	7	0.75
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	7	0.75
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	2	0.75
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	8	0.75
(1,36)	1:8:A:DT:H6	1:5:A:DA:H8	9	0.75
(2,128)	1:4:A:DG:H1'	1:4:A:DG:H1	8	0.74
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	5	0.74
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	2	0.74
(2,40)	1:8:A:DT:H5'	1:8:A:DT:H2'	4	0.74
(2,40)	1:8:A:DT:H5'	1:8:A:DT:H2'	6	0.74
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	10	0.73
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	10	0.73
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	1	0.73
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	10	0.72
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	6	0.72
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	7	0.72
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	1	0.72
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	3	0.72
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	4	0.71

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,40)	1:8:A:DT:H5'	1:8:A:DT:H2'	5	0.71
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	6	0.71
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	9	0.71
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	6	0.71
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	6	0.71
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	6	0.71
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	6	0.71
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	8	0.71
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	4	0.71
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	5	0.7
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	2	0.7
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	10	0.7
(1,302)	1:4:A:DG:H2'	1:5:A:DA:H5''	8	0.7
(1,221)	1:9:A:DG:H5''	1:9:A:DG:H2''	2	0.7
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	7	0.7
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	7	0.7
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	7	0.69
(1,70)	1:17:A:DG:H8	1:17:A:DG:H5''	1	0.69
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	9	0.69
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	9	0.69
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	7	0.69
(2,135)	1:8:A:DT:H6	1:5:A:DA:H2	5	0.68
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	6	0.68
(2,100)	1:8:A:DT:H2'	1:9:A:DG:H1	7	0.68
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	4	0.68
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	4	0.68
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	10	0.68
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	2	0.68
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	4	0.68
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	1	0.68
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	4	0.68
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5'	4	0.68
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5''	4	0.68
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	9	0.67
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	8	0.67
(1,233)	1:5:A:DA:H8	1:4:A:DG:H2'	7	0.67
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	2	0.67
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5'	8	0.67
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5''	8	0.67
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	1	0.67
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	2	0.66
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	3	0.66

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	8	0.66
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	9	0.66
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	2	0.66
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	2	0.66
(2,84)	1:3:A:DG:H2'	1:4:A:DG:H2''	1	0.66
(1,485)	1:3:A:DG:H4'	1:3:A:DG:H2''	3	0.66
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	6	0.66
(1,346)	1:11:A:DG:H5'	1:11:A:DG:H2'	3	0.66
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	4	0.66
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	7	0.66
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	2	0.65
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	9	0.65
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	9	0.65
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	4	0.65
(1,454)	1:12:A:DG:H2'	1:13:A:DC:H1'	6	0.65
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	1	0.65
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	8	0.65
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	3	0.65
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	7	0.65
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	8	0.64
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	2	0.64
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	3	0.64
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	10	0.64
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	8	0.64
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	1	0.64
(1,96)	1:15:A:DT:H1'	1:12:A:DG:H8	8	0.64
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	7	0.64
(1,42)	1:15:A:DT:H6	1:15:A:DT:H5''	10	0.64
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	2	0.64
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	8	0.63
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	7	0.63
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	7	0.63
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	10	0.63
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	10	0.63
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	8	0.63
(1,534)	1:7:A:DG:H8	1:5:A:DA:H1'	10	0.63
(1,521)	1:14:A:DC:H5	1:14:A:DC:H5''	4	0.63
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	5	0.63
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	9	0.63
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	1	0.63
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	2	0.63
(1,350)	1:12:A:DG:H5'	1:12:A:DG:H2'	2	0.63

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	7	0.63
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5'	2	0.63
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5''	2	0.63
(1,96)	1:15:A:DT:H1'	1:12:A:DG:H8	3	0.63
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	2	0.63
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5''	6	0.63
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	7	0.63
(2,156)	1:19:A:DC:H3'	1:18:A:DG:H1	3	0.62
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	6	0.62
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	6	0.62
(2,61)	1:1:A:DA:H8	1:12:A:DG:H1	9	0.62
(1,521)	1:14:A:DC:H5	1:14:A:DC:H5''	5	0.62
(1,519)	1:9:A:DG:H8	1:10:A:DT:H5''	2	0.62
(1,485)	1:3:A:DG:H4'	1:3:A:DG:H2''	10	0.62
(1,394)	1:15:A:DT:H5'	1:14:A:DC:H5'	1	0.62
(1,394)	1:15:A:DT:H5''	1:14:A:DC:H5'	1	0.62
(1,292)	1:5:A:DA:H8	1:5:A:DA:H4'	1	0.62
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5'	6	0.62
(1,98)	1:8:A:DT:H6	1:8:A:DT:H5''	6	0.62
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	1	0.62
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	2	0.61
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	4	0.61
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	5	0.61
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	5	0.61
(2,82)	1:8:A:DT:H5'	1:18:A:DG:H2'	3	0.61
(2,82)	1:8:A:DT:H5''	1:18:A:DG:H2'	3	0.61
(1,454)	1:12:A:DG:H2'	1:13:A:DC:H1'	2	0.61
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	9	0.61
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	2	0.61
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	2	0.61
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5'	1	0.61
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5''	1	0.61
(2,143)	1:4:A:DG:H1'	1:3:A:DG:H21	5	0.6
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	9	0.6
(2,65)	1:5:A:DA:H2	1:4:A:DG:H1	10	0.6
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	5	0.6
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	8	0.6
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	3	0.6
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	9	0.6
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	5	0.6
(1,253)	1:1:A:DA:H8	1:1:A:DA:H5''	5	0.6
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	3	0.6

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	4	0.6
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	4	0.6
(1,89)	1:8:A:DT:H6	1:8:A:DT:H5''	6	0.6
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	4	0.59
(2,105)	1:17:A:DG:H2'	1:9:A:DG:H1	2	0.59
(2,105)	1:17:A:DG:H2'	1:9:A:DG:H1	8	0.59
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	6	0.59
(1,446)	1:9:A:DG:H8	1:5:A:DA:H8	8	0.59
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	7	0.59
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	6	0.59
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	9	0.59
(1,286)	1:2:A:DG:H8	1:2:A:DG:H5''	7	0.59
(1,233)	1:5:A:DA:H8	1:4:A:DG:H2'	5	0.59
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	3	0.59
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	6	0.59
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	10	0.59
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	5	0.59
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	9	0.59
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	2	0.59
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	4	0.59
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	1	0.58
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	3	0.58
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	9	0.58
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	1	0.58
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	1	0.58
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	9	0.58
(2,40)	1:8:A:DT:H5'	1:8:A:DT:H2'	2	0.58
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	4	0.58
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	8	0.58
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	3	0.58
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	2	0.58
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	2	0.58
(1,494)	1:13:A:DC:H1'	1:14:A:DC:H5'	8	0.58
(1,454)	1:12:A:DG:H2'	1:13:A:DC:H1'	3	0.58
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	4	0.58
(1,233)	1:5:A:DA:H8	1:4:A:DG:H2'	2	0.58
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	10	0.58
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	8	0.58
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	2	0.58
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	3	0.58
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	5	0.58
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	9	0.58

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	1	0.58
(1,36)	1:8:A:DT:H6	1:5:A:DA:H8	3	0.58
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	5	0.57
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	6	0.57
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	7	0.57
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	3	0.57
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	1	0.57
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	3	0.57
(2,84)	1:3:A:DG:H2'	1:4:A:DG:H2''	8	0.57
(2,65)	1:5:A:DA:H2	1:4:A:DG:H1	9	0.57
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	4	0.57
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	7	0.57
(1,521)	1:14:A:DC:H5	1:14:A:DC:H5''	2	0.57
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	5	0.57
(1,494)	1:13:A:DC:H1'	1:14:A:DC:H5'	9	0.57
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	7	0.57
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	6	0.57
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	9	0.57
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	6	0.57
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	7	0.57
(1,91)	1:3:A:DG:H8	1:2:A:DG:H2'	10	0.57
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	10	0.57
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	10	0.56
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	8	0.56
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	9	0.56
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	9	0.56
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	5	0.56
(1,454)	1:12:A:DG:H2'	1:13:A:DC:H1'	5	0.56
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	8	0.56
(1,350)	1:12:A:DG:H5'	1:12:A:DG:H2'	6	0.56
(1,348)	1:12:A:DG:H1'	1:11:A:DG:H8	4	0.56
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	3	0.56
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	6	0.56
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	7	0.56
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	5	0.56
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	9	0.55
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	3	0.55
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	4	0.55
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	3	0.55
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	5	0.55
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	4	0.55
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	5	0.55

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	6	0.55
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	10	0.55
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	8	0.55
(1,115)	1:4:A:DG:H8	1:3:A:DG:H2'	10	0.55
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	4	0.55
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	7	0.55
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	3	0.55
(2,148)	1:8:A:DT:H6	1:9:A:DG:H1	6	0.54
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	4	0.54
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	7	0.54
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	10	0.54
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	9	0.54
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	1	0.54
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	8	0.54
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	8	0.54
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	1	0.54
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	3	0.54
(1,479)	1:7:A:DG:H2'	1:7:A:DG:H5''	4	0.54
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	2	0.54
(1,336)	1:11:A:DG:H8	1:11:A:DG:H3'	5	0.54
(1,286)	1:2:A:DG:H8	1:2:A:DG:H5''	3	0.54
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	7	0.54
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	10	0.54
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	10	0.54
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	3	0.54
(1,55)	1:9:A:DG:H8	1:9:A:DG:H3'	4	0.54
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	6	0.54
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	1	0.54
(2,126)	1:18:A:DG:H1'	1:17:A:DG:H21	4	0.53
(2,81)	1:15:A:DT:H5'	1:14:A:DC:H2'	3	0.53
(2,81)	1:15:A:DT:H5''	1:14:A:DC:H2'	3	0.53
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	9	0.53
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	10	0.53
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	9	0.53
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	1	0.53
(1,509)	1:6:A:DG:H4'	1:5:A:DA:H2	1	0.53
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	6	0.53
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	3	0.53
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	10	0.53
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	3	0.53
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	3	0.53
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	8	0.53

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	4	0.53
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	5	0.53
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	10	0.53
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	2	0.53
(2,145)	1:20:A:DG:H1'	1:20:A:DG:H1	10	0.52
(2,135)	1:8:A:DT:H6	1:5:A:DA:H2	2	0.52
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	4	0.52
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	10	0.52
(2,62)	1:1:A:DA:H8	1:16:A:DG:H1	2	0.52
(2,37)	1:8:A:DT:H5''	1:8:A:DT:H2''	2	0.52
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	1	0.52
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	10	0.52
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	7	0.52
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	8	0.52
(1,454)	1:12:A:DG:H2'	1:13:A:DC:H1'	4	0.52
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	9	0.52
(1,430)	1:12:A:DG:H1'	1:13:A:DC:H2''	6	0.52
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	9	0.52
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	7	0.52
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	9	0.52
(1,219)	1:4:A:DG:H2''	1:4:A:DG:H4'	8	0.52
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	9	0.52
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	6	0.52
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	4	0.52
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	6	0.52
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	7	0.52
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	3	0.52
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	10	0.52
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	10	0.52
(1,96)	1:15:A:DT:H1'	1:12:A:DG:H8	1	0.52
(1,89)	1:8:A:DT:H6	1:8:A:DT:H5''	4	0.52
(1,52)	1:3:A:DG:H8	1:2:A:DG:H3'	8	0.52
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	7	0.52
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	10	0.51
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	1	0.51
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	1	0.51
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	7	0.51
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	10	0.51
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	4	0.51
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	2	0.51
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	4	0.51
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	10	0.51

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	10	0.51
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	10	0.51
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	3	0.51
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	4	0.51
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	1	0.51
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	3	0.51
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	8	0.51
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	1	0.5
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	5	0.5
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	6	0.5
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	6	0.5
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	9	0.5
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	9	0.5
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	9	0.5
(1,502)	1:9:A:DG:H8	1:11:A:DG:H2'	4	0.5
(1,494)	1:13:A:DC:H1'	1:14:A:DC:H5'	10	0.5
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	6	0.5
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	8	0.5
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	7	0.5
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	8	0.5
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	9	0.5
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	1	0.5
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	4	0.5
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	8	0.5
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	9	0.5
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	10	0.5
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	4	0.5
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	4	0.5
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	1	0.5
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	8	0.5
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	5	0.5
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	9	0.5
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	3	0.5
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	9	0.5
(1,115)	1:4:A:DG:H8	1:3:A:DG:H2'	1	0.5
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	8	0.5
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	4	0.5
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	4	0.49
(2,130)	1:15:A:DT:H2'	1:14:A:DC:H2''	2	0.49
(2,105)	1:17:A:DG:H2'	1:9:A:DG:H1	6	0.49
(2,99)	1:8:A:DT:H2''	1:9:A:DG:H1	3	0.49
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	4	0.49

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	2	0.49
(1,528)	1:12:A:DG:H1'	1:13:A:DC:H5	8	0.49
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	2	0.49
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	8	0.49
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	3	0.49
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	6	0.49
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	3	0.49
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	5	0.49
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	6	0.49
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	7	0.49
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	5	0.49
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	5	0.49
(1,350)	1:12:A:DG:H5'	1:12:A:DG:H2'	4	0.49
(1,253)	1:1:A:DA:H8	1:1:A:DA:H5''	6	0.49
(1,233)	1:5:A:DA:H8	1:4:A:DG:H2'	3	0.49
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	1	0.49
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	2	0.49
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	10	0.49
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	1	0.49
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	8	0.49
(1,120)	1:11:A:DG:H8	1:11:A:DG:H2'	5	0.49
(1,119)	1:11:A:DG:H8	1:11:A:DG:H2''	2	0.49
(1,56)	1:9:A:DG:H8	1:9:A:DG:H5'	2	0.49
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	6	0.48
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	1	0.48
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	5	0.48
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	10	0.48
(1,468)	1:18:A:DG:H3'	1:18:A:DG:H2'	2	0.48
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	1	0.48
(1,411)	1:18:A:DG:H8	1:18:A:DG:H2''	3	0.48
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	10	0.48
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	8	0.48
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	7	0.48
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	6	0.48
(1,208)	1:21:A:DG:H3'	1:21:A:DG:H2'	2	0.48
(1,115)	1:4:A:DG:H8	1:3:A:DG:H2'	9	0.48
(1,15)	1:12:A:DG:H8	1:11:A:DG:H1'	10	0.48
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	1	0.47
(2,144)	1:4:A:DG:H1'	1:3:A:DG:H1	8	0.47
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	8	0.47
(1,528)	1:12:A:DG:H1'	1:13:A:DC:H5	9	0.47
(1,521)	1:14:A:DC:H5	1:14:A:DC:H5''	6	0.47

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	5	0.47
(1,117)	1:4:A:DG:H8	1:4:A:DG:H2'	4	0.47
(1,115)	1:4:A:DG:H8	1:3:A:DG:H2'	3	0.47
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	9	0.47
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	6	0.47
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	2	0.46
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	2	0.46
(1,521)	1:14:A:DC:H5	1:14:A:DC:H5''	3	0.46
(1,521)	1:14:A:DC:H5	1:14:A:DC:H5''	7	0.46
(1,479)	1:7:A:DG:H2'	1:7:A:DG:H5''	7	0.46
(1,473)	1:9:A:DG:H3'	1:9:A:DG:H2'	2	0.46
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	7	0.46
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	10	0.46
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	4	0.46
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	5	0.46
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	4	0.46
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	3	0.46
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	3	0.46
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	5	0.46
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	5	0.46
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	7	0.46
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	5	0.46
(1,56)	1:9:A:DG:H8	1:9:A:DG:H5'	6	0.46
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	5	0.45
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	7	0.45
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	6	0.45
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	6	0.45
(2,40)	1:8:A:DT:H5'	1:8:A:DT:H2'	7	0.45
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	6	0.45
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	7	0.45
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	8	0.45
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	9	0.45
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	6	0.45
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	7	0.45
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	7	0.45
(1,286)	1:2:A:DG:H8	1:2:A:DG:H5''	9	0.45
(1,252)	1:1:A:DA:H8	1:1:A:DA:H5'	6	0.45
(1,189)	1:12:A:DG:H1'	1:12:A:DG:H4'	7	0.45
(1,175)	1:4:A:DG:H1'	1:4:A:DG:H4'	7	0.45
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	10	0.45
(1,108)	1:2:A:DG:H8	1:2:A:DG:H2''	10	0.45
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	5	0.45

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	8	0.45
(1,36)	1:8:A:DT:H6	1:5:A:DA:H8	1	0.45
(1,30)	1:22:A:DG:H8	1:21:A:DG:H8	7	0.45
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	8	0.45
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	8	0.44
(2,156)	1:19:A:DC:H3'	1:18:A:DG:H1	8	0.44
(2,130)	1:15:A:DT:H2'	1:14:A:DC:H2''	6	0.44
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	1	0.44
(2,62)	1:1:A:DA:H8	1:16:A:DG:H1	6	0.44
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	6	0.44
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	2	0.44
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	4	0.44
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	5	0.44
(2,37)	1:8:A:DT:H5''	1:8:A:DT:H2''	5	0.44
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	4	0.44
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	3	0.44
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	7	0.44
(1,212)	1:8:A:DT:H3'	1:8:A:DT:H2'	7	0.44
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	4	0.44
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	8	0.44
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	6	0.44
(1,36)	1:8:A:DT:H6	1:5:A:DA:H8	10	0.44
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	1	0.44
(1,19)	1:2:A:DG:H1'	1:3:A:DG:H8	10	0.44
(2,143)	1:4:A:DG:H1'	1:3:A:DG:H21	9	0.43
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	4	0.43
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	2	0.43
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	3	0.43
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	7	0.43
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	8	0.43
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	9	0.43
(1,534)	1:7:A:DG:H8	1:5:A:DA:H1'	6	0.43
(1,528)	1:12:A:DG:H1'	1:13:A:DC:H5	1	0.43
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	5	0.43
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	6	0.43
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	9	0.43
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	3	0.43
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	2	0.43
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	7	0.43
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	9	0.43
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	10	0.43
(1,233)	1:5:A:DA:H8	1:4:A:DG:H2'	4	0.43

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,233)	1:5:A:DA:H8	1:4:A:DG:H2'	6	0.43
(1,117)	1:4:A:DG:H8	1:4:A:DG:H2'	6	0.43
(1,117)	1:4:A:DG:H8	1:4:A:DG:H2'	7	0.43
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	1	0.43
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	1	0.43
(1,83)	1:21:A:DG:H8	1:21:A:DG:H5''	8	0.43
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	8	0.43
(2,156)	1:19:A:DC:H3'	1:18:A:DG:H1	7	0.42
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	7	0.42
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	2	0.42
(2,75)	1:16:A:DG:H5''	1:16:A:DG:H2'	3	0.42
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	7	0.42
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	10	0.42
(2,16)	1:22:A:DG:H8	1:18:A:DG:H1	7	0.42
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	5	0.42
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	4	0.42
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	5	0.42
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	10	0.42
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	1	0.42
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	8	0.42
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	1	0.42
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	5	0.42
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	9	0.42
(1,117)	1:4:A:DG:H8	1:4:A:DG:H2'	5	0.42
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	2	0.42
(1,70)	1:17:A:DG:H8	1:17:A:DG:H5''	6	0.42
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	4	0.42
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	2	0.41
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	4	0.41
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	6	0.41
(2,48)	1:2:A:DG:H2'	1:2:A:DG:H2''	1	0.41
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	2	0.41
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	9	0.41
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5'	5	0.41
(1,504)	1:5:A:DA:H8	1:8:A:DT:H5''	5	0.41
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	3	0.41
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	7	0.41
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	9	0.41
(1,399)	1:16:A:DG:H8	1:17:A:DG:H5'	1	0.41
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	3	0.41
(1,253)	1:1:A:DA:H8	1:1:A:DA:H5''	2	0.41
(1,253)	1:1:A:DA:H8	1:1:A:DA:H5''	4	0.41

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,229)	1:15:A:DT:H6	1:14:A:DC:H2''	5	0.41
(1,116)	1:4:A:DG:H8	1:4:A:DG:H2''	1	0.41
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	9	0.41
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	9	0.41
(1,96)	1:15:A:DT:H1'	1:12:A:DG:H8	5	0.41
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	6	0.41
(1,72)	1:16:A:DG:H8	1:16:A:DG:H5'	10	0.41
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	10	0.41
(2,160)	1:9:A:DG:H1'	1:11:A:DG:H1	5	0.4
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	3	0.4
(2,105)	1:17:A:DG:H2'	1:9:A:DG:H1	5	0.4
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	5	0.4
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	10	0.4
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	5	0.4
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	10	0.4
(1,509)	1:6:A:DG:H4'	1:5:A:DA:H2	3	0.4
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	2	0.4
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	7	0.4
(1,175)	1:4:A:DG:H1'	1:4:A:DG:H4'	6	0.4
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	4	0.4
(1,117)	1:4:A:DG:H8	1:4:A:DG:H2'	2	0.4
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	8	0.4
(1,85)	1:21:A:DG:H8	1:21:A:DG:H5'	7	0.4
(1,85)	1:21:A:DG:H8	1:21:A:DG:H5'	10	0.4
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	6	0.4
(1,67)	1:17:A:DG:H8	1:16:A:DG:H3'	3	0.4
(1,57)	1:9:A:DG:H8	1:9:A:DG:H5''	1	0.4
(1,56)	1:9:A:DG:H8	1:9:A:DG:H5'	5	0.4
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	2	0.4
(2,80)	1:15:A:DT:H5'	1:14:A:DC:H2''	5	0.39
(2,80)	1:15:A:DT:H5''	1:14:A:DC:H2''	5	0.39
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	7	0.39
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	7	0.39
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	1	0.39
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	8	0.39
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	9	0.39
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	9	0.39
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	6	0.39
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	7	0.39
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	6	0.39
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	4	0.39
(1,485)	1:3:A:DG:H4'	1:3:A:DG:H2''	9	0.39

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	6	0.39
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	10	0.39
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	1	0.39
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	4	0.39
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	5	0.39
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	6	0.39
(1,219)	1:4:A:DG:H2''	1:4:A:DG:H4'	1	0.39
(1,219)	1:4:A:DG:H2''	1:4:A:DG:H4'	3	0.39
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	1	0.39
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	1	0.39
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	1	0.39
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	6	0.39
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	9	0.39
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	7	0.38
(2,52)	1:16:A:DG:H2'	1:16:A:DG:H2''	3	0.38
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	10	0.38
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	2	0.38
(1,445)	1:4:A:DG:H8	1:5:A:DA:H8	1	0.38
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	6	0.38
(1,397)	1:15:A:DT:H5'	1:14:A:DC:H4'	3	0.38
(1,397)	1:15:A:DT:H5''	1:14:A:DC:H4'	3	0.38
(1,366)	1:13:A:DC:H2''	1:13:A:DC:H5'	2	0.38
(1,348)	1:12:A:DG:H1'	1:11:A:DG:H8	5	0.38
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	9	0.38
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	5	0.38
(1,253)	1:1:A:DA:H8	1:1:A:DA:H5''	10	0.38
(1,175)	1:4:A:DG:H1'	1:4:A:DG:H4'	4	0.38
(1,175)	1:4:A:DG:H1'	1:4:A:DG:H4'	5	0.38
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	10	0.38
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	6	0.38
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	7	0.38
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	9	0.38
(2,148)	1:8:A:DT:H6	1:9:A:DG:H1	4	0.37
(2,136)	1:8:A:DT:H1'	1:5:A:DA:H2	5	0.37
(2,130)	1:15:A:DT:H2'	1:14:A:DC:H2''	7	0.37
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	4	0.37
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	9	0.37
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	10	0.37
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	7	0.37
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	10	0.37
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	4	0.37
(1,251)	1:2:A:DG:H8	1:3:A:DG:H3'	7	0.37

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,230)	1:6:A:DG:H8	1:5:A:DA:H2'	9	0.37
(1,229)	1:15:A:DT:H6	1:14:A:DC:H2''	2	0.37
(1,108)	1:2:A:DG:H8	1:2:A:DG:H2''	1	0.37
(1,83)	1:21:A:DG:H8	1:21:A:DG:H5''	2	0.37
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	1	0.37
(1,38)	1:8:A:DT:H6	1:8:A:DT:H4'	5	0.37
(2,143)	1:4:A:DG:H1'	1:3:A:DG:H21	10	0.36
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	2	0.36
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	5	0.36
(2,76)	1:15:A:DT:H5'	1:12:A:DG:H2'	5	0.36
(2,76)	1:15:A:DT:H5''	1:12:A:DG:H2'	5	0.36
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	3	0.36
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	8	0.36
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	1	0.36
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	10	0.36
(1,445)	1:4:A:DG:H8	1:5:A:DA:H8	9	0.36
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	6	0.36
(1,340)	1:9:A:DG:H1'	1:10:A:DT:H4'	4	0.36
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	1	0.36
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	8	0.36
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	8	0.36
(1,175)	1:4:A:DG:H1'	1:4:A:DG:H4'	2	0.36
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	5	0.36
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	8	0.36
(1,47)	1:4:A:DG:H8	1:4:A:DG:H3'	8	0.36
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	3	0.36
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	2	0.35
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	8	0.35
(2,34)	1:8:A:DT:H3'	1:8:A:DT:H5'	9	0.35
(1,477)	1:15:A:DT:H4'	1:14:A:DC:H2'	1	0.35
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	6	0.35
(1,397)	1:15:A:DT:H5'	1:14:A:DC:H4'	9	0.35
(1,397)	1:15:A:DT:H5''	1:14:A:DC:H4'	9	0.35
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	3	0.35
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	4	0.35
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	1	0.35
(1,252)	1:1:A:DA:H8	1:1:A:DA:H5'	10	0.35
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	8	0.35
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	9	0.35
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	3	0.35
(1,67)	1:17:A:DG:H8	1:16:A:DG:H3'	4	0.35
(1,66)	1:16:A:DG:H8	1:16:A:DG:H3'	9	0.35

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,56)	1:9:A:DG:H8	1:9:A:DG:H5'	8	0.35
(1,52)	1:3:A:DG:H8	1:2:A:DG:H3'	6	0.35
(1,38)	1:8:A:DT:H6	1:8:A:DT:H4'	2	0.35
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	4	0.34
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	5	0.34
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	4	0.34
(1,485)	1:3:A:DG:H4'	1:3:A:DG:H2''	1	0.34
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	5	0.34
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	5	0.34
(1,450)	1:4:A:DG:H8	1:5:A:DA:H5''	3	0.34
(1,450)	1:4:A:DG:H8	1:5:A:DA:H5''	10	0.34
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	8	0.34
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	8	0.34
(1,399)	1:16:A:DG:H8	1:17:A:DG:H5'	9	0.34
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	10	0.34
(1,350)	1:12:A:DG:H5'	1:12:A:DG:H2'	5	0.34
(1,348)	1:12:A:DG:H1'	1:11:A:DG:H8	6	0.34
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	6	0.34
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	5	0.34
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	7	0.34
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	7	0.34
(1,215)	1:15:A:DT:H5''	1:15:A:DT:H2'	5	0.34
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	1	0.34
(1,96)	1:15:A:DT:H1'	1:12:A:DG:H8	4	0.34
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	7	0.34
(1,70)	1:17:A:DG:H8	1:17:A:DG:H5''	5	0.34
(1,37)	1:2:A:DG:H8	1:1:A:DA:H8	5	0.34
(1,15)	1:12:A:DG:H8	1:11:A:DG:H1'	8	0.34
(2,130)	1:15:A:DT:H2'	1:14:A:DC:H2''	4	0.33
(2,94)	1:15:A:DT:H5'	1:16:A:DG:H1	10	0.33
(2,94)	1:15:A:DT:H5''	1:16:A:DG:H1	10	0.33
(2,90)	1:1:A:DA:H5'	1:1:A:DA:H2'	7	0.33
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	1	0.33
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	4	0.33
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	6	0.33
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	7	0.33
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	9	0.33
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	10	0.33
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	9	0.33
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	8	0.33
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	2	0.33
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	6	0.33

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	3	0.33
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	4	0.33
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	10	0.33
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	3	0.33
(1,323)	1:7:A:DG:H1'	1:7:A:DG:H5'	4	0.33
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	10	0.33
(1,286)	1:2:A:DG:H8	1:2:A:DG:H5''	5	0.33
(1,252)	1:1:A:DA:H8	1:1:A:DA:H5'	2	0.33
(1,229)	1:15:A:DT:H6	1:14:A:DC:H2''	4	0.33
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	1	0.33
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	4	0.33
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	5	0.33
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	7	0.33
(1,116)	1:4:A:DG:H8	1:4:A:DG:H2''	3	0.33
(1,115)	1:4:A:DG:H8	1:3:A:DG:H2'	8	0.33
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	2	0.33
(1,64)	1:12:A:DG:H8	1:12:A:DG:H5'	9	0.33
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	10	0.32
(2,66)	1:8:A:DT:H1'	1:5:A:DA:H2	8	0.32
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	2	0.32
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	3	0.32
(2,58)	1:20:A:DG:H2'	1:20:A:DG:H2''	8	0.32
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	9	0.32
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	10	0.32
(2,11)	1:18:A:DG:H1	1:21:A:DG:H1	5	0.32
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	7	0.32
(1,523)	1:21:A:DG:H1'	1:22:A:DG:H5''	2	0.32
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	4	0.32
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	9	0.32
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	4	0.32
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	10	0.32
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	7	0.32
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	9	0.32
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	5	0.32
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	9	0.32
(1,286)	1:2:A:DG:H8	1:2:A:DG:H5''	4	0.32
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	5	0.32
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	5	0.32
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	6	0.32
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	6	0.32
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	5	0.32
(1,116)	1:4:A:DG:H8	1:4:A:DG:H2''	8	0.32

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,96)	1:15:A:DT:H1'	1:12:A:DG:H8	10	0.32
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	1	0.32
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	5	0.32
(1,70)	1:17:A:DG:H8	1:17:A:DG:H5''	10	0.32
(1,57)	1:9:A:DG:H8	1:9:A:DG:H5''	7	0.32
(1,19)	1:2:A:DG:H1'	1:3:A:DG:H8	6	0.32
(2,99)	1:8:A:DT:H2''	1:9:A:DG:H1	1	0.31
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	1	0.31
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	3	0.31
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	4	0.31
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	6	0.31
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	7	0.31
(1,494)	1:13:A:DC:H1'	1:14:A:DC:H5'	1	0.31
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	8	0.31
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	9	0.31
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	9	0.31
(1,447)	1:22:A:DG:H8	1:22:A:DG:H5''	4	0.31
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	10	0.31
(1,397)	1:15:A:DT:H5'	1:14:A:DC:H4'	10	0.31
(1,397)	1:15:A:DT:H5''	1:14:A:DC:H4'	10	0.31
(1,307)	1:6:A:DG:H2'	1:5:A:DA:H1'	3	0.31
(1,294)	1:5:A:DA:H8	1:5:A:DA:H5'	3	0.31
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	2	0.31
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	9	0.31
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	10	0.31
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	2	0.31
(1,38)	1:8:A:DT:H6	1:8:A:DT:H4'	6	0.31
(2,154)	1:8:A:DT:H4'	1:9:A:DG:H1	7	0.3
(2,108)	1:3:A:DG:H2''	1:22:A:DG:H1	10	0.3
(2,100)	1:8:A:DT:H2'	1:9:A:DG:H1	5	0.3
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	2	0.3
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	5	0.3
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	9	0.3
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	7	0.3
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	2	0.3
(1,450)	1:4:A:DG:H8	1:5:A:DA:H5''	9	0.3
(1,448)	1:22:A:DG:H8	1:22:A:DG:H4'	4	0.3
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	4	0.3
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	2	0.3
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	9	0.3
(1,404)	1:16:A:DG:H1'	1:17:A:DG:H5''	3	0.3
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	8	0.3

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,340)	1:9:A:DG:H1'	1:10:A:DT:H4'	10	0.3
(1,333)	1:8:A:DT:H3'	1:8:A:DT:H5''	8	0.3
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	5	0.3
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	3	0.3
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	4	0.3
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	5	0.3
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	2	0.3
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	6	0.3
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	10	0.3
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	7	0.3
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	4	0.3
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	10	0.3
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	3	0.3
(1,108)	1:2:A:DG:H8	1:2:A:DG:H2''	6	0.3
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	3	0.3
(1,70)	1:17:A:DG:H8	1:17:A:DG:H5''	9	0.3
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	9	0.3
(2,90)	1:1:A:DA:H5'	1:1:A:DA:H2'	5	0.29
(2,74)	1:8:A:DT:H5'	1:7:A:DG:H4'	4	0.29
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	5	0.29
(2,50)	1:9:A:DG:H2'	1:9:A:DG:H2''	8	0.29
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	1	0.29
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	8	0.29
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	2	0.29
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	3	0.29
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	1	0.29
(1,404)	1:16:A:DG:H1'	1:17:A:DG:H5''	4	0.29
(1,404)	1:16:A:DG:H1'	1:17:A:DG:H5''	7	0.29
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	9	0.29
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	7	0.29
(1,294)	1:5:A:DA:H8	1:5:A:DA:H5'	8	0.29
(1,233)	1:5:A:DA:H8	1:4:A:DG:H2'	1	0.29
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	2	0.29
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	5	0.29
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	1	0.29
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	3	0.29
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	9	0.29
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	1	0.29
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	10	0.29
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	5	0.29
(1,64)	1:12:A:DG:H8	1:12:A:DG:H5'	3	0.29
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	8	0.29

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	10	0.29
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	5	0.28
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	6	0.28
(2,90)	1:1:A:DA:H5'	1:1:A:DA:H2'	4	0.28
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	1	0.28
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	2	0.28
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	3	0.28
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	4	0.28
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	5	0.28
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	6	0.28
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	8	0.28
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	10	0.28
(1,534)	1:7:A:DG:H8	1:5:A:DA:H1'	5	0.28
(1,533)	1:17:A:DG:H5'	1:16:A:DG:H2''	1	0.28
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	7	0.28
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	5	0.28
(1,375)	1:14:A:DC:H1'	1:14:A:DC:H5''	5	0.28
(1,340)	1:9:A:DG:H1'	1:10:A:DT:H4'	9	0.28
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	5	0.28
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	1	0.28
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	2	0.28
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	6	0.28
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	6	0.28
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	2	0.28
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	8	0.28
(1,176)	1:4:A:DG:H1'	1:4:A:DG:H5'	8	0.28
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	2	0.28
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	7	0.28
(1,117)	1:4:A:DG:H8	1:4:A:DG:H2'	10	0.28
(1,85)	1:21:A:DG:H8	1:21:A:DG:H5'	3	0.28
(1,71)	1:16:A:DG:H8	1:16:A:DG:H4'	5	0.28
(1,64)	1:12:A:DG:H8	1:12:A:DG:H5'	1	0.28
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	1	0.28
(1,38)	1:8:A:DT:H6	1:8:A:DT:H4'	4	0.28
(1,30)	1:22:A:DG:H8	1:21:A:DG:H8	4	0.28
(2,151)	1:16:A:DG:H2''	1:16:A:DG:H1	3	0.27
(2,136)	1:8:A:DT:H1'	1:5:A:DA:H2	2	0.27
(2,110)	1:15:A:DT:H2'	1:16:A:DG:H1	9	0.27
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	7	0.27
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	7	0.27
(2,68)	1:1:A:DA:H2''	1:1:A:DA:H2'	9	0.27
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	7	0.27

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,8)	1:3:A:DG:H1	1:11:A:DG:H1	7	0.27
(2,8)	1:3:A:DG:H1	1:11:A:DG:H1	10	0.27
(1,534)	1:7:A:DG:H8	1:5:A:DA:H1'	8	0.27
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	1	0.27
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	4	0.27
(1,485)	1:3:A:DG:H4'	1:3:A:DG:H2''	8	0.27
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	1	0.27
(1,484)	1:4:A:DG:H2'	1:4:A:DG:H4'	3	0.27
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	10	0.27
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	1	0.27
(1,454)	1:12:A:DG:H2'	1:13:A:DC:H1'	7	0.27
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	2	0.27
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	1	0.27
(1,341)	1:9:A:DG:H1'	1:10:A:DT:H5'	5	0.27
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	3	0.27
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	3	0.27
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	4	0.27
(1,229)	1:15:A:DT:H6	1:14:A:DC:H2''	7	0.27
(1,224)	1:21:A:DG:H5'	1:21:A:DG:H2'	8	0.27
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	4	0.27
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	8	0.27
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	9	0.27
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5'	8	0.27
(1,102)	1:14:A:DC:H6	1:15:A:DT:H5''	8	0.27
(1,83)	1:21:A:DG:H8	1:21:A:DG:H5''	4	0.27
(1,74)	1:17:A:DG:H8	1:16:A:DG:H5''	7	0.27
(1,65)	1:12:A:DG:H8	1:11:A:DG:H3'	5	0.27
(1,2)	1:22:A:DG:H8	1:21:A:DG:H1'	7	0.27
(2,146)	1:21:A:DG:H1'	1:18:A:DG:H1	10	0.26
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	1	0.26
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	3	0.26
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	4	0.26
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	6	0.26
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	8	0.26
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	9	0.26
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	10	0.26
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	4	0.26
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	5	0.26
(1,511)	1:5:A:DA:H1'	1:5:A:DA:H2	7	0.26
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	5	0.26
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	2	0.26
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	6	0.26

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	3	0.26
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	9	0.26
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	8	0.26
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	9	0.26
(1,335)	1:9:A:DG:H8	1:11:A:DG:H3'	2	0.26
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	1	0.26
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	9	0.26
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	2	0.26
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	1	0.26
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	9	0.26
(1,106)	1:10:A:DT:H6	1:10:A:DT:H2''	7	0.26
(1,71)	1:16:A:DG:H8	1:16:A:DG:H4'	7	0.26
(1,71)	1:16:A:DG:H8	1:16:A:DG:H4'	10	0.26
(2,156)	1:19:A:DC:H3'	1:18:A:DG:H1	9	0.25
(2,135)	1:8:A:DT:H6	1:5:A:DA:H2	8	0.25
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	2	0.25
(2,71)	1:14:A:DC:H2''	1:14:A:DC:H2'	5	0.25
(2,54)	1:17:A:DG:H5'	1:16:A:DG:H2'	3	0.25
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	4	0.25
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	5	0.25
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	9	0.25
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	5	0.25
(1,534)	1:7:A:DG:H8	1:5:A:DA:H1'	7	0.25
(1,451)	1:14:A:DC:H6	1:13:A:DC:H2''	5	0.25
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	3	0.25
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	7	0.25
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	10	0.25
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	5	0.25
(1,326)	1:7:A:DG:H8	1:7:A:DG:H5'	9	0.25
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	7	0.25
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	9	0.25
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	6	0.25
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	8	0.25
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	10	0.25
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	7	0.25
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	8	0.25
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	10	0.25
(1,117)	1:4:A:DG:H8	1:4:A:DG:H2'	9	0.25
(1,83)	1:21:A:DG:H8	1:21:A:DG:H5''	5	0.25
(1,42)	1:15:A:DT:H6	1:15:A:DT:H5''	3	0.25
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	4	0.25
(1,15)	1:12:A:DG:H8	1:11:A:DG:H1'	9	0.25

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,146)	1:21:A:DG:H1'	1:18:A:DG:H1	9	0.24
(2,125)	1:2:A:DG:H2''	1:12:A:DG:H1	10	0.24
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	8	0.24
(2,64)	1:20:A:DG:H1	1:1:A:DA:H2	6	0.24
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	1	0.24
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	2	0.24
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	3	0.24
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	6	0.24
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	7	0.24
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	8	0.24
(2,49)	1:4:A:DG:H2''	1:4:A:DG:H2'	10	0.24
(1,534)	1:7:A:DG:H8	1:5:A:DA:H1'	4	0.24
(1,517)	1:9:A:DG:H8	1:10:A:DT:H4'	2	0.24
(1,510)	1:8:A:DT:H5'	1:5:A:DA:H2	8	0.24
(1,510)	1:8:A:DT:H5''	1:5:A:DA:H2	8	0.24
(1,481)	1:7:A:DG:H2'	1:7:A:DG:H5'	7	0.24
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	8	0.24
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	9	0.24
(1,446)	1:9:A:DG:H8	1:5:A:DA:H8	3	0.24
(1,429)	1:19:A:DC:H6	1:19:A:DC:H2''	8	0.24
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	8	0.24
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	7	0.24
(1,306)	1:5:A:DA:H2'	1:5:A:DA:H5'	1	0.24
(1,304)	1:5:A:DA:H2'	1:5:A:DA:H4'	8	0.24
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	6	0.24
(1,252)	1:1:A:DA:H8	1:1:A:DA:H5'	4	0.24
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	4	0.24
(1,224)	1:21:A:DG:H5'	1:21:A:DG:H2'	2	0.24
(1,224)	1:21:A:DG:H5'	1:21:A:DG:H2'	4	0.24
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	9	0.24
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	6	0.24
(1,130)	1:20:A:DG:H8	1:20:A:DG:H2''	2	0.24
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	2	0.24
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	8	0.24
(1,122)	1:17:A:DG:H8	1:16:A:DG:H2''	7	0.24
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	1	0.24
(1,108)	1:2:A:DG:H8	1:2:A:DG:H2''	8	0.24
(1,84)	1:20:A:DG:H8	1:20:A:DG:H4'	2	0.24
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	3	0.24
(1,71)	1:16:A:DG:H8	1:16:A:DG:H4'	8	0.24
(1,67)	1:17:A:DG:H8	1:16:A:DG:H3'	1	0.24
(1,64)	1:12:A:DG:H8	1:12:A:DG:H5'	10	0.24

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,151)	1:16:A:DG:H2''	1:16:A:DG:H1	5	0.23
(2,151)	1:16:A:DG:H2''	1:16:A:DG:H1	8	0.23
(2,111)	1:20:A:DG:H2''	1:20:A:DG:H1	10	0.23
(2,74)	1:8:A:DT:H5'	1:7:A:DG:H4'	9	0.23
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	1	0.23
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	3	0.23
(2,64)	1:20:A:DG:H1	1:1:A:DA:H2	10	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	1	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	3	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	4	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	5	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	6	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	7	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	8	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	9	0.23
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	10	0.23
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	1	0.23
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	4	0.23
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	6	0.23
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	8	0.23
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	2	0.23
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	5	0.23
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	2	0.23
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	6	0.23
(1,514)	1:9:A:DG:H5''	1:9:A:DG:H4'	2	0.23
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	10	0.23
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	4	0.23
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	1	0.23
(1,397)	1:15:A:DT:H5'	1:14:A:DC:H4'	8	0.23
(1,397)	1:15:A:DT:H5''	1:14:A:DC:H4'	8	0.23
(1,375)	1:14:A:DC:H1'	1:14:A:DC:H5''	3	0.23
(1,375)	1:14:A:DC:H1'	1:14:A:DC:H5''	4	0.23
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	8	0.23
(1,323)	1:7:A:DG:H1'	1:7:A:DG:H5'	2	0.23
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	6	0.23
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	10	0.23
(1,258)	1:7:A:DG:H8	1:7:A:DG:H3'	7	0.23
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	5	0.23
(1,236)	1:7:A:DG:H8	1:7:A:DG:H2''	10	0.23
(1,213)	1:8:A:DT:H4'	1:8:A:DT:H2'	3	0.23
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	1	0.23
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	4	0.23

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	1	0.23
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	2	0.23
(1,122)	1:17:A:DG:H8	1:16:A:DG:H2''	8	0.23
(1,114)	1:4:A:DG:H8	1:3:A:DG:H2''	5	0.23
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	5	0.23
(1,71)	1:16:A:DG:H8	1:16:A:DG:H4'	6	0.23
(1,65)	1:12:A:DG:H8	1:11:A:DG:H3'	6	0.23
(1,27)	1:14:A:DC:H6	1:14:A:DC:H1'	1	0.23
(1,15)	1:12:A:DG:H8	1:11:A:DG:H1'	3	0.23
(2,163)	1:18:A:DG:H1	1:17:A:DG:H21	6	0.22
(2,156)	1:19:A:DC:H3'	1:18:A:DG:H1	10	0.22
(2,154)	1:8:A:DT:H4'	1:9:A:DG:H1	4	0.22
(2,119)	1:12:A:DG:H5'	1:16:A:DG:H1	2	0.22
(2,100)	1:8:A:DT:H2'	1:9:A:DG:H1	2	0.22
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	2	0.22
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	4	0.22
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	5	0.22
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	6	0.22
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	7	0.22
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	8	0.22
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	9	0.22
(2,51)	1:11:A:DG:H2''	1:11:A:DG:H2'	2	0.22
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	2	0.22
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	3	0.22
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	5	0.22
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	9	0.22
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	4	0.22
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	6	0.22
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	4	0.22
(1,510)	1:8:A:DT:H5'	1:5:A:DA:H2	6	0.22
(1,510)	1:8:A:DT:H5''	1:5:A:DA:H2	6	0.22
(1,509)	1:6:A:DG:H4'	1:5:A:DA:H2	7	0.22
(1,436)	1:14:A:DC:H6	1:14:A:DC:H5''	8	0.22
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	9	0.22
(1,302)	1:4:A:DG:H2'	1:5:A:DA:H5''	6	0.22
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	2	0.22
(1,276)	1:1:A:DA:H8	1:1:A:DA:H2''	7	0.22
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	6	0.22
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	5	0.22
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	9	0.22
(1,176)	1:4:A:DG:H1'	1:4:A:DG:H5'	1	0.22
(1,176)	1:4:A:DG:H1'	1:4:A:DG:H5'	3	0.22

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,176)	1:4:A:DG:H1'	1:4:A:DG:H5'	10	0.22
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	8	0.22
(1,125)	1:18:A:DG:H8	1:17:A:DG:H2'	5	0.22
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	6	0.22
(1,77)	1:18:A:DG:H8	1:18:A:DG:H3'	4	0.22
(1,60)	1:11:A:DG:H8	1:11:A:DG:H5''	3	0.22
(1,50)	1:2:A:DG:H8	1:2:A:DG:H3'	10	0.22
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	5	0.22
(1,40)	1:15:A:DT:H6	1:15:A:DT:H3'	2	0.22
(1,40)	1:15:A:DT:H6	1:15:A:DT:H3'	6	0.22
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	10	0.22
(1,38)	1:8:A:DT:H6	1:8:A:DT:H4'	7	0.22
(1,6)	1:8:A:DT:H6	1:8:A:DT:H1'	7	0.22
(2,90)	1:1:A:DA:H5'	1:1:A:DA:H2'	6	0.21
(2,80)	1:15:A:DT:H5'	1:14:A:DC:H2''	4	0.21
(2,80)	1:15:A:DT:H5''	1:14:A:DC:H2''	4	0.21
(2,67)	1:1:A:DA:H5'	1:1:A:DA:H5''	10	0.21
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	10	0.21
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	10	0.21
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	7	0.21
(2,41)	1:8:A:DT:H2''	1:8:A:DT:H2'	10	0.21
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	1	0.21
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	3	0.21
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	7	0.21
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	8	0.21
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	9	0.21
(2,36)	1:8:A:DT:H5'	1:8:A:DT:H5''	10	0.21
(2,34)	1:8:A:DT:H3'	1:8:A:DT:H5'	7	0.21
(1,534)	1:7:A:DG:H8	1:5:A:DA:H1'	9	0.21
(1,525)	1:12:A:DG:H1'	1:13:A:DC:H5'	2	0.21
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	9	0.21
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	5	0.21
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	10	0.21
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	5	0.21
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	9	0.21
(1,375)	1:14:A:DC:H1'	1:14:A:DC:H5''	2	0.21
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	4	0.21
(1,229)	1:15:A:DT:H6	1:14:A:DC:H2''	6	0.21
(1,224)	1:21:A:DG:H5'	1:21:A:DG:H2'	5	0.21
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	2	0.21
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	10	0.21
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	7	0.21

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	9	0.21
(1,57)	1:9:A:DG:H8	1:9:A:DG:H5''	6	0.21
(1,15)	1:12:A:DG:H8	1:11:A:DG:H1'	1	0.21
(1,13)	1:6:A:DG:H1'	1:7:A:DG:H8	6	0.21
(2,105)	1:17:A:DG:H2'	1:9:A:DG:H1	9	0.2
(2,80)	1:15:A:DT:H5'	1:14:A:DC:H2''	6	0.2
(2,80)	1:15:A:DT:H5''	1:14:A:DC:H2''	6	0.2
(2,45)	1:8:A:DT:H5'	1:8:A:DT:H2'	3	0.2
(2,45)	1:8:A:DT:H5''	1:8:A:DT:H2'	3	0.2
(2,8)	1:3:A:DG:H1	1:11:A:DG:H1	8	0.2
(2,7)	1:2:A:DG:H1	1:12:A:DG:H1	6	0.2
(2,6)	1:3:A:DG:H1	1:12:A:DG:H1	1	0.2
(1,531)	1:17:A:DG:H5'	1:17:A:DG:H2'	1	0.2
(1,509)	1:6:A:DG:H4'	1:5:A:DA:H2	8	0.2
(1,464)	1:17:A:DG:H5'	1:18:A:DG:H3'	6	0.2
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	2	0.2
(1,429)	1:19:A:DC:H6	1:19:A:DC:H2''	5	0.2
(1,399)	1:16:A:DG:H8	1:17:A:DG:H5'	10	0.2
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	2	0.2
(1,375)	1:14:A:DC:H1'	1:14:A:DC:H5''	6	0.2
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	6	0.2
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	9	0.2
(1,257)	1:6:A:DG:H8	1:6:A:DG:H3'	2	0.2
(1,252)	1:1:A:DA:H8	1:1:A:DA:H5'	1	0.2
(1,251)	1:2:A:DG:H8	1:3:A:DG:H3'	1	0.2
(1,236)	1:7:A:DG:H8	1:7:A:DG:H2''	1	0.2
(1,236)	1:7:A:DG:H8	1:7:A:DG:H2''	7	0.2
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	1	0.2
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	6	0.2
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	8	0.2
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	9	0.2
(1,122)	1:17:A:DG:H8	1:16:A:DG:H2''	2	0.2
(1,84)	1:20:A:DG:H8	1:20:A:DG:H4'	5	0.2
(1,84)	1:20:A:DG:H8	1:20:A:DG:H4'	8	0.2
(1,71)	1:16:A:DG:H8	1:16:A:DG:H4'	2	0.2
(1,64)	1:12:A:DG:H8	1:12:A:DG:H5'	8	0.2
(1,45)	1:10:A:DT:H6	1:10:A:DT:H3'	3	0.2
(2,80)	1:15:A:DT:H5'	1:14:A:DC:H2''	2	0.19
(2,80)	1:15:A:DT:H5''	1:14:A:DC:H2''	2	0.19
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	4	0.19
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	5	0.19
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	8	0.19

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	10	0.19
(2,8)	1:3:A:DG:H1	1:11:A:DG:H1	3	0.19
(1,524)	1:20:A:DG:H1'	1:19:A:DC:H5'	6	0.19
(1,511)	1:5:A:DA:H1'	1:5:A:DA:H2	4	0.19
(1,487)	1:21:A:DG:H5''	1:21:A:DG:H2'	10	0.19
(1,481)	1:7:A:DG:H2'	1:7:A:DG:H5'	5	0.19
(1,481)	1:7:A:DG:H2'	1:7:A:DG:H5'	8	0.19
(1,429)	1:19:A:DC:H6	1:19:A:DC:H2''	7	0.19
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	3	0.19
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	6	0.19
(1,340)	1:9:A:DG:H1'	1:10:A:DT:H4'	2	0.19
(1,337)	1:9:A:DG:H8	1:9:A:DG:H4'	8	0.19
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	2	0.19
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	7	0.19
(1,302)	1:4:A:DG:H2'	1:5:A:DA:H5''	2	0.19
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	9	0.19
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	3	0.19
(1,207)	1:12:A:DG:H3'	1:12:A:DG:H2'	3	0.19
(1,176)	1:4:A:DG:H1'	1:4:A:DG:H5'	9	0.19
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	1	0.19
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	8	0.19
(1,113)	1:3:A:DG:H8	1:2:A:DG:H2''	4	0.19
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	2	0.19
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	7	0.19
(1,67)	1:17:A:DG:H8	1:16:A:DG:H3'	9	0.19
(1,60)	1:11:A:DG:H8	1:11:A:DG:H5''	2	0.19
(2,156)	1:19:A:DC:H3'	1:18:A:DG:H1	6	0.18
(2,122)	1:8:A:DT:H1'	1:9:A:DG:H1	5	0.18
(2,84)	1:3:A:DG:H2'	1:4:A:DG:H2''	3	0.18
(2,74)	1:8:A:DT:H5'	1:7:A:DG:H4'	6	0.18
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	1	0.18
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	10	0.18
(2,61)	1:1:A:DA:H8	1:12:A:DG:H1	5	0.18
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	1	0.18
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	2	0.18
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	3	0.18
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	6	0.18
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	7	0.18
(2,53)	1:17:A:DG:H2'	1:17:A:DG:H2''	9	0.18
(2,34)	1:8:A:DT:H3'	1:8:A:DT:H5'	1	0.18
(2,9)	1:12:A:DG:H1	1:16:A:DG:H1	9	0.18
(1,511)	1:5:A:DA:H1'	1:5:A:DA:H2	5	0.18

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,435)	1:14:A:DC:H6	1:14:A:DC:H4'	8	0.18
(1,429)	1:19:A:DC:H6	1:19:A:DC:H2''	4	0.18
(1,429)	1:19:A:DC:H6	1:19:A:DC:H2''	9	0.18
(1,425)	1:19:A:DC:H6	1:19:A:DC:H4'	7	0.18
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	4	0.18
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	8	0.18
(1,420)	1:19:A:DC:H6	1:19:A:DC:H3'	5	0.18
(1,420)	1:19:A:DC:H6	1:19:A:DC:H3'	7	0.18
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	2	0.18
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	8	0.18
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	1	0.18
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	1	0.18
(1,303)	1:5:A:DA:H2''	1:5:A:DA:H4'	3	0.18
(1,284)	1:3:A:DG:H8	1:2:A:DG:H5''	4	0.18
(1,211)	1:8:A:DT:H3'	1:8:A:DT:H2''	10	0.18
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	8	0.18
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	7	0.18
(1,113)	1:3:A:DG:H8	1:2:A:DG:H2''	2	0.18
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5'	4	0.18
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5''	4	0.18
(1,56)	1:9:A:DG:H8	1:9:A:DG:H5'	9	0.18
(1,52)	1:3:A:DG:H8	1:2:A:DG:H3'	9	0.18
(1,6)	1:8:A:DT:H6	1:8:A:DT:H1'	5	0.18
(2,123)	1:2:A:DG:H1'	1:2:A:DG:H1	6	0.17
(2,90)	1:1:A:DA:H5'	1:1:A:DA:H2'	2	0.17
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	7	0.17
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	8	0.17
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	9	0.17
(2,66)	1:8:A:DT:H1'	1:5:A:DA:H2	9	0.17
(2,62)	1:1:A:DA:H8	1:16:A:DG:H1	10	0.17
(2,39)	1:8:A:DT:H5'	1:8:A:DT:H2''	3	0.17
(2,39)	1:8:A:DT:H5'	1:8:A:DT:H2''	8	0.17
(2,37)	1:8:A:DT:H5''	1:8:A:DT:H2''	6	0.17
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	7	0.17
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	7	0.17
(1,445)	1:4:A:DG:H8	1:5:A:DA:H8	10	0.17
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	1	0.17
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	3	0.17
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	5	0.17
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	6	0.17
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	9	0.17
(1,381)	1:14:A:DC:H2''	1:14:A:DC:H5''	1	0.17

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	5	0.17
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	1	0.17
(1,323)	1:7:A:DG:H1'	1:7:A:DG:H5'	7	0.17
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	3	0.17
(1,236)	1:7:A:DG:H8	1:7:A:DG:H2''	8	0.17
(1,229)	1:15:A:DT:H6	1:14:A:DC:H2''	3	0.17
(1,220)	1:4:A:DG:H2''	1:4:A:DG:H5'	4	0.17
(1,220)	1:4:A:DG:H2''	1:4:A:DG:H5'	6	0.17
(1,204)	1:22:A:DG:H1'	1:22:A:DG:H4'	3	0.17
(1,204)	1:22:A:DG:H1'	1:22:A:DG:H4'	6	0.17
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	2	0.17
(1,138)	1:8:A:DT:H1'	1:8:A:DT:H2''	2	0.17
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	4	0.17
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	6	0.17
(1,92)	1:9:A:DG:H8	1:9:A:DG:H2'	4	0.17
(1,65)	1:12:A:DG:H8	1:11:A:DG:H3'	2	0.17
(1,57)	1:9:A:DG:H8	1:9:A:DG:H5''	3	0.17
(1,57)	1:9:A:DG:H8	1:9:A:DG:H5''	9	0.17
(1,44)	1:10:A:DT:H6	1:10:A:DT:H4'	6	0.17
(2,80)	1:15:A:DT:H5'	1:14:A:DC:H2''	7	0.16
(2,80)	1:15:A:DT:H5''	1:14:A:DC:H2''	7	0.16
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	2	0.16
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	3	0.16
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	4	0.16
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	5	0.16
(2,70)	1:13:A:DC:H2''	1:13:A:DC:H2'	6	0.16
(2,9)	1:12:A:DG:H1	1:16:A:DG:H1	1	0.16
(1,498)	1:16:A:DG:H8	1:17:A:DG:H2''	2	0.16
(1,498)	1:16:A:DG:H8	1:17:A:DG:H2''	6	0.16
(1,498)	1:16:A:DG:H8	1:17:A:DG:H2''	7	0.16
(1,493)	1:13:A:DC:H1'	1:14:A:DC:H5''	5	0.16
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	2	0.16
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	7	0.16
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	4	0.16
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	7	0.16
(1,416)	1:10:A:DT:H5'	1:10:A:DT:H5''	10	0.16
(1,371)	1:14:A:DC:H5	1:14:A:DC:H2''	7	0.16
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	8	0.16
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	4	0.16
(1,348)	1:12:A:DG:H1'	1:11:A:DG:H8	2	0.16
(1,348)	1:12:A:DG:H1'	1:11:A:DG:H8	8	0.16
(1,333)	1:8:A:DT:H3'	1:8:A:DT:H5''	3	0.16

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	8	0.16
(1,247)	1:12:A:DG:H1'	1:13:A:DC:H6	9	0.16
(1,224)	1:21:A:DG:H5'	1:21:A:DG:H2'	1	0.16
(1,224)	1:21:A:DG:H5'	1:21:A:DG:H2'	9	0.16
(1,220)	1:4:A:DG:H2''	1:4:A:DG:H5'	2	0.16
(1,220)	1:4:A:DG:H2''	1:4:A:DG:H5'	5	0.16
(1,220)	1:4:A:DG:H2''	1:4:A:DG:H5'	7	0.16
(1,220)	1:4:A:DG:H2''	1:4:A:DG:H5'	9	0.16
(1,138)	1:8:A:DT:H1'	1:8:A:DT:H2''	5	0.16
(1,138)	1:8:A:DT:H1'	1:8:A:DT:H2''	6	0.16
(1,123)	1:17:A:DG:H8	1:17:A:DG:H2'	3	0.16
(1,104)	1:8:A:DT:H6	1:8:A:DT:H2'	9	0.16
(1,95)	1:15:A:DT:H6	1:14:A:DC:H1'	1	0.16
(1,84)	1:20:A:DG:H8	1:20:A:DG:H4'	10	0.16
(1,79)	1:10:A:DT:H6	1:10:A:DT:H5'	8	0.16
(1,71)	1:16:A:DG:H8	1:16:A:DG:H4'	4	0.16
(1,51)	1:2:A:DG:H8	1:2:A:DG:H4'	7	0.16
(1,27)	1:14:A:DC:H6	1:14:A:DC:H1'	8	0.16
(2,156)	1:19:A:DC:H3'	1:18:A:DG:H1	4	0.15
(2,154)	1:8:A:DT:H4'	1:9:A:DG:H1	8	0.15
(2,121)	1:8:A:DT:H3'	1:9:A:DG:H1	2	0.15
(2,8)	1:3:A:DG:H1	1:11:A:DG:H1	1	0.15
(1,517)	1:9:A:DG:H8	1:10:A:DT:H4'	10	0.15
(1,457)	1:2:A:DG:H1'	1:3:A:DG:H3'	8	0.15
(1,454)	1:12:A:DG:H2'	1:13:A:DC:H1'	10	0.15
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	3	0.15
(1,420)	1:19:A:DC:H6	1:19:A:DC:H3'	9	0.15
(1,408)	1:18:A:DG:H8	1:17:A:DG:H2''	5	0.15
(1,399)	1:16:A:DG:H8	1:17:A:DG:H5'	5	0.15
(1,385)	1:14:A:DC:H2'	1:14:A:DC:H5'	4	0.15
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	6	0.15
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	7	0.15
(1,307)	1:6:A:DG:H2'	1:5:A:DA:H1'	8	0.15
(1,282)	1:2:A:DG:H8	1:3:A:DG:H2''	6	0.15
(1,253)	1:1:A:DA:H8	1:1:A:DA:H5''	7	0.15
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	9	0.15
(1,125)	1:18:A:DG:H8	1:17:A:DG:H2'	1	0.15
(1,85)	1:21:A:DG:H8	1:21:A:DG:H5'	6	0.15
(1,65)	1:12:A:DG:H8	1:11:A:DG:H3'	3	0.15
(1,44)	1:10:A:DT:H6	1:10:A:DT:H4'	1	0.15
(1,30)	1:22:A:DG:H8	1:21:A:DG:H8	3	0.15
(1,2)	1:22:A:DG:H8	1:21:A:DG:H1'	10	0.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,74)	1:8:A:DT:H5'	1:7:A:DG:H4'	8	0.14
(2,64)	1:20:A:DG:H1	1:1:A:DA:H2	2	0.14
(2,39)	1:8:A:DT:H5'	1:8:A:DT:H2''	10	0.14
(1,511)	1:5:A:DA:H1'	1:5:A:DA:H2	8	0.14
(1,508)	1:6:A:DG:H2'	1:5:A:DA:H4'	1	0.14
(1,506)	1:6:A:DG:H8	1:7:A:DG:H5''	7	0.14
(1,485)	1:3:A:DG:H4'	1:3:A:DG:H2''	5	0.14
(1,427)	1:19:A:DC:H1'	1:19:A:DC:H5'	1	0.14
(1,421)	1:19:A:DC:H1'	1:19:A:DC:H4'	5	0.14
(1,420)	1:19:A:DC:H6	1:19:A:DC:H3'	1	0.14
(1,420)	1:19:A:DC:H6	1:19:A:DC:H3'	8	0.14
(1,375)	1:14:A:DC:H1'	1:14:A:DC:H5''	7	0.14
(1,371)	1:14:A:DC:H5	1:14:A:DC:H2''	6	0.14
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	2	0.14
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	4	0.14
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	5	0.14
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	10	0.14
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	10	0.14
(1,351)	1:13:A:DC:H1'	1:13:A:DC:H2''	1	0.14
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	10	0.14
(1,302)	1:4:A:DG:H2'	1:5:A:DA:H5''	4	0.14
(1,252)	1:1:A:DA:H8	1:1:A:DA:H5'	5	0.14
(1,224)	1:21:A:DG:H5'	1:21:A:DG:H2'	6	0.14
(1,220)	1:4:A:DG:H2''	1:4:A:DG:H5'	10	0.14
(1,204)	1:22:A:DG:H1'	1:22:A:DG:H4'	2	0.14
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	5	0.14
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	5	0.14
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	7	0.14
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	10	0.14
(1,138)	1:8:A:DT:H1'	1:8:A:DT:H2''	4	0.14
(1,125)	1:18:A:DG:H8	1:17:A:DG:H2'	6	0.14
(1,125)	1:18:A:DG:H8	1:17:A:DG:H2'	10	0.14
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	4	0.14
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5'	9	0.14
(1,101)	1:12:A:DG:H8	1:15:A:DT:H5''	9	0.14
(1,92)	1:9:A:DG:H8	1:9:A:DG:H2'	9	0.14
(1,85)	1:21:A:DG:H8	1:21:A:DG:H5'	1	0.14
(1,68)	1:17:A:DG:H8	1:17:A:DG:H3'	4	0.14
(1,62)	1:21:A:DG:H8	1:21:A:DG:H3'	1	0.14
(1,62)	1:21:A:DG:H8	1:21:A:DG:H3'	2	0.14
(1,43)	1:15:A:DT:H6	1:15:A:DT:H5'	5	0.14
(1,30)	1:22:A:DG:H8	1:21:A:DG:H8	10	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,13)	1:6:A:DG:H1'	1:7:A:DG:H8	7	0.14
(2,146)	1:21:A:DG:H1'	1:18:A:DG:H1	1	0.13
(2,146)	1:21:A:DG:H1'	1:18:A:DG:H1	3	0.13
(2,146)	1:21:A:DG:H1'	1:18:A:DG:H1	5	0.13
(2,11)	1:18:A:DG:H1	1:21:A:DG:H1	2	0.13
(2,9)	1:12:A:DG:H1	1:16:A:DG:H1	4	0.13
(2,9)	1:12:A:DG:H1	1:16:A:DG:H1	7	0.13
(1,528)	1:12:A:DG:H1'	1:13:A:DC:H5	10	0.13
(1,500)	1:9:A:DG:H8	1:10:A:DT:H2''	6	0.13
(1,485)	1:3:A:DG:H4'	1:3:A:DG:H2''	2	0.13
(1,445)	1:4:A:DG:H8	1:5:A:DA:H8	2	0.13
(1,427)	1:19:A:DC:H1'	1:19:A:DC:H5'	6	0.13
(1,403)	1:16:A:DG:H8	1:17:A:DG:H5''	2	0.13
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	4	0.13
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	9	0.13
(1,351)	1:13:A:DC:H1'	1:13:A:DC:H2''	8	0.13
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	4	0.13
(1,302)	1:4:A:DG:H2'	1:5:A:DA:H5''	10	0.13
(1,236)	1:7:A:DG:H8	1:7:A:DG:H2''	2	0.13
(1,232)	1:5:A:DA:H8	1:5:A:DA:H2'	10	0.13
(1,227)	1:14:A:DC:H6	1:14:A:DC:H2'	3	0.13
(1,196)	1:10:A:DT:H1'	1:10:A:DT:H5'	3	0.13
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	2	0.13
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	6	0.13
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	4	0.13
(1,118)	1:9:A:DG:H8	1:9:A:DG:H2''	5	0.13
(1,115)	1:4:A:DG:H8	1:3:A:DG:H2'	5	0.13
(1,113)	1:3:A:DG:H8	1:2:A:DG:H2''	3	0.13
(1,92)	1:9:A:DG:H8	1:9:A:DG:H2'	7	0.13
(1,76)	1:18:A:DG:H8	1:17:A:DG:H3'	3	0.13
(1,75)	1:17:A:DG:H8	1:17:A:DG:H5'	7	0.13
(1,68)	1:17:A:DG:H8	1:17:A:DG:H3'	6	0.13
(1,67)	1:17:A:DG:H8	1:16:A:DG:H3'	10	0.13
(1,65)	1:12:A:DG:H8	1:11:A:DG:H3'	7	0.13
(1,62)	1:21:A:DG:H8	1:21:A:DG:H3'	3	0.13
(1,56)	1:9:A:DG:H8	1:9:A:DG:H5'	7	0.13
(1,47)	1:4:A:DG:H8	1:4:A:DG:H3'	3	0.13
(1,40)	1:15:A:DT:H6	1:15:A:DT:H3'	7	0.13
(1,15)	1:12:A:DG:H8	1:11:A:DG:H1'	4	0.13
(1,15)	1:12:A:DG:H8	1:11:A:DG:H1'	6	0.13
(2,160)	1:9:A:DG:H1'	1:11:A:DG:H1	1	0.12
(2,122)	1:8:A:DT:H1'	1:9:A:DG:H1	2	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,65)	1:5:A:DA:H2	1:4:A:DG:H1	5	0.12
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	1	0.12
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	2	0.12
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	5	0.12
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	7	0.12
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	8	0.12
(2,16)	1:22:A:DG:H8	1:18:A:DG:H1	9	0.12
(2,8)	1:3:A:DG:H1	1:11:A:DG:H1	9	0.12
(1,429)	1:19:A:DC:H6	1:19:A:DC:H2''	1	0.12
(1,428)	1:19:A:DC:H6	1:19:A:DC:H2'	3	0.12
(1,409)	1:18:A:DG:H1'	1:18:A:DG:H4'	4	0.12
(1,404)	1:16:A:DG:H1'	1:17:A:DG:H5''	2	0.12
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	1	0.12
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	9	0.12
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	2	0.12
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	5	0.12
(1,356)	1:13:A:DC:H6	1:13:A:DC:H2''	2	0.12
(1,351)	1:13:A:DC:H1'	1:13:A:DC:H2''	9	0.12
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	1	0.12
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	2	0.12
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	8	0.12
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	4	0.12
(1,307)	1:6:A:DG:H2'	1:5:A:DA:H1'	5	0.12
(1,293)	1:5:A:DA:H8	1:5:A:DA:H5''	1	0.12
(1,286)	1:2:A:DG:H8	1:2:A:DG:H5''	2	0.12
(1,282)	1:2:A:DG:H8	1:3:A:DG:H2''	7	0.12
(1,236)	1:7:A:DG:H8	1:7:A:DG:H2''	4	0.12
(1,163)	1:8:A:DT:H1'	1:8:A:DT:H5''	2	0.12
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	10	0.12
(1,133)	1:21:A:DG:H8	1:20:A:DG:H2''	6	0.12
(1,125)	1:18:A:DG:H8	1:17:A:DG:H2'	8	0.12
(1,103)	1:8:A:DT:H6	1:8:A:DT:H2''	3	0.12
(1,84)	1:20:A:DG:H8	1:20:A:DG:H4'	4	0.12
(1,68)	1:17:A:DG:H8	1:17:A:DG:H3'	3	0.12
(1,62)	1:21:A:DG:H8	1:21:A:DG:H3'	9	0.12
(1,48)	1:3:A:DG:H8	1:3:A:DG:H3'	3	0.12
(1,42)	1:15:A:DT:H6	1:15:A:DT:H5''	9	0.12
(1,40)	1:15:A:DT:H6	1:15:A:DT:H3'	4	0.12
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	1	0.12
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	8	0.12
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	9	0.12
(1,27)	1:14:A:DC:H6	1:14:A:DC:H1'	5	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,23)	1:17:A:DG:H1'	1:18:A:DG:H8	3	0.12
(2,66)	1:8:A:DT:H1'	1:5:A:DA:H2	6	0.11
(2,64)	1:20:A:DG:H1	1:1:A:DA:H2	3	0.11
(2,56)	1:16:A:DG:H5'	1:16:A:DG:H2'	10	0.11
(2,55)	1:17:A:DG:H5''	1:16:A:DG:H2'	4	0.11
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	3	0.11
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	4	0.11
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	6	0.11
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	9	0.11
(2,42)	1:19:A:DC:H2''	1:19:A:DC:H2'	10	0.11
(2,34)	1:8:A:DT:H3'	1:8:A:DT:H5'	10	0.11
(2,30)	1:2:A:DG:H8	1:12:A:DG:H1	7	0.11
(2,9)	1:12:A:DG:H1	1:16:A:DG:H1	2	0.11
(1,532)	1:17:A:DG:H5''	1:16:A:DG:H2''	3	0.11
(1,512)	1:11:A:DG:H1'	1:9:A:DG:H2'	8	0.11
(1,511)	1:5:A:DA:H1'	1:5:A:DA:H2	6	0.11
(1,429)	1:19:A:DC:H6	1:19:A:DC:H2''	2	0.11
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	1	0.11
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	2	0.11
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	3	0.11
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	8	0.11
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	3	0.11
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	3	0.11
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	7	0.11
(1,337)	1:9:A:DG:H8	1:9:A:DG:H4'	5	0.11
(1,332)	1:8:A:DT:H4'	1:8:A:DT:H3'	2	0.11
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	4	0.11
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	5	0.11
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	6	0.11
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	7	0.11
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	9	0.11
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	10	0.11
(1,309)	1:6:A:DG:H8	1:6:A:DG:H4'	8	0.11
(1,265)	1:1:A:DA:H1'	1:1:A:DA:H2''	10	0.11
(1,204)	1:22:A:DG:H1'	1:22:A:DG:H4'	8	0.11
(1,193)	1:17:A:DG:H1'	1:17:A:DG:H4'	3	0.11
(1,170)	1:18:A:DG:H1'	1:18:A:DG:H5'	4	0.11
(1,150)	1:9:A:DG:H1'	1:9:A:DG:H2''	1	0.11
(1,150)	1:9:A:DG:H1'	1:9:A:DG:H2''	3	0.11
(1,146)	1:3:A:DG:H1'	1:3:A:DG:H2''	3	0.11
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	3	0.11
(1,115)	1:4:A:DG:H8	1:3:A:DG:H2'	2	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	6	0.11
(1,92)	1:9:A:DG:H8	1:9:A:DG:H2'	6	0.11
(1,88)	1:8:A:DT:H6	1:8:A:DT:H5'	4	0.11
(1,84)	1:20:A:DG:H8	1:20:A:DG:H4'	1	0.11
(1,80)	1:20:A:DG:H8	1:20:A:DG:H5'	8	0.11
(1,70)	1:17:A:DG:H8	1:17:A:DG:H5''	2	0.11
(1,64)	1:12:A:DG:H8	1:12:A:DG:H5'	6	0.11
(1,62)	1:21:A:DG:H8	1:21:A:DG:H3'	6	0.11
(1,39)	1:8:A:DT:H6	1:8:A:DT:H3'	3	0.11
(1,19)	1:2:A:DG:H1'	1:3:A:DG:H8	8	0.11
(2,130)	1:15:A:DT:H2'	1:14:A:DC:H2''	5	0.1
(2,59)	1:22:A:DG:H2''	1:22:A:DG:H2'	1	0.1
(2,59)	1:22:A:DG:H2''	1:22:A:DG:H2'	4	0.1
(2,59)	1:22:A:DG:H2''	1:22:A:DG:H2'	7	0.1
(2,47)	1:3:A:DG:H2''	1:3:A:DG:H2'	2	0.1
(2,47)	1:3:A:DG:H2''	1:3:A:DG:H2'	5	0.1
(2,47)	1:3:A:DG:H2''	1:3:A:DG:H2'	6	0.1
(2,47)	1:3:A:DG:H2''	1:3:A:DG:H2'	7	0.1
(2,47)	1:3:A:DG:H2''	1:3:A:DG:H2'	10	0.1
(2,16)	1:22:A:DG:H8	1:18:A:DG:H1	10	0.1
(2,9)	1:12:A:DG:H1	1:16:A:DG:H1	3	0.1
(2,9)	1:12:A:DG:H1	1:16:A:DG:H1	5	0.1
(1,458)	1:19:A:DC:H1'	1:19:A:DC:H5	8	0.1
(1,420)	1:19:A:DC:H6	1:19:A:DC:H3'	6	0.1
(1,404)	1:16:A:DG:H1'	1:17:A:DG:H5''	6	0.1
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	4	0.1
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	5	0.1
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	6	0.1
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	7	0.1
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	9	0.1
(1,379)	1:14:A:DC:H5''	1:14:A:DC:H5'	10	0.1
(1,370)	1:14:A:DC:H1'	1:14:A:DC:H2''	8	0.1
(1,361)	1:13:A:DC:H1'	1:13:A:DC:H5''	6	0.1
(1,340)	1:9:A:DG:H1'	1:10:A:DT:H4'	6	0.1
(1,324)	1:7:A:DG:H8	1:7:A:DG:H4'	10	0.1
(1,315)	1:6:A:DG:H5'	1:6:A:DG:H5''	3	0.1
(1,265)	1:1:A:DA:H1'	1:1:A:DA:H2''	6	0.1
(1,150)	1:9:A:DG:H1'	1:9:A:DG:H2''	2	0.1
(1,150)	1:9:A:DG:H1'	1:9:A:DG:H2''	10	0.1
(1,148)	1:4:A:DG:H1'	1:4:A:DG:H2''	1	0.1
(1,143)	1:2:A:DG:H1'	1:2:A:DG:H2''	9	0.1
(1,111)	1:3:A:DG:H8	1:3:A:DG:H2''	5	0.1

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,104)	1:8:A:DT:H6	1:8:A:DT:H2'	1	0.1
(1,92)	1:9:A:DG:H8	1:9:A:DG:H2'	2	0.1
(1,92)	1:9:A:DG:H8	1:9:A:DG:H2'	3	0.1
(1,92)	1:9:A:DG:H8	1:9:A:DG:H2'	10	0.1
(1,84)	1:20:A:DG:H8	1:20:A:DG:H4'	6	0.1
(1,80)	1:20:A:DG:H8	1:20:A:DG:H5'	2	0.1
(1,68)	1:17:A:DG:H8	1:17:A:DG:H3'	9	0.1
(1,60)	1:11:A:DG:H8	1:11:A:DG:H5''	1	0.1

## 10 Dihedral-angle violation analysis

No dihedral-angle restraints found