



# Full wwPDB NMR Structure Validation Report ⓘ

Dec 24, 2024 – 08:18 PM EST

PDB ID : 2M54  
BMRB ID : 16138  
Title : Refined NMR solution structure of metal-modified DNA  
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Deposited on : 2013-02-13

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:

MolProbity : 4.02b-467  
Mogul : 2022.3.0, CSD as543be (2022)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
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) : 2.40



## 2 Ensemble composition and analysis

This entry contains 20 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

There are 2 unique types of molecules in this entry. The entry contains 1053 atoms, of which 386 are hydrogens and 0 are deuteriums.

- Molecule 1 is a DNA chain called DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3').

Mol	Chain	Residues	Atoms					Trace	
			Total	C	H	N	O		P
1	A	17	Total	C	H	N	O	P	0
			525	164	193	55	97	16	
1	B	17	Total	C	H	N	O	P	0
			525	164	193	55	97	16	

- Molecule 2 is SILVER ION (three-letter code: AG) (formula: Ag).

Mol	Chain	Residues	Atoms	
			Total	Ag
2	A	3	Total	Ag
			3	3

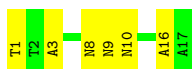
## 4 Residue-property plots

### 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(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A: 



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain B: 



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

Colouring as in section 4.1 above.

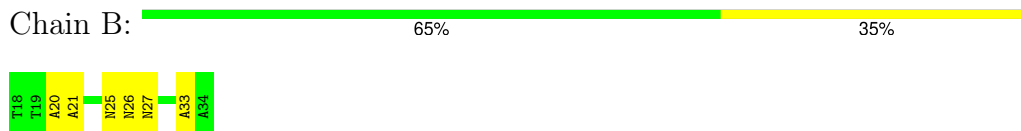
#### 4.2.1 Score per residue for model 1

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A: 

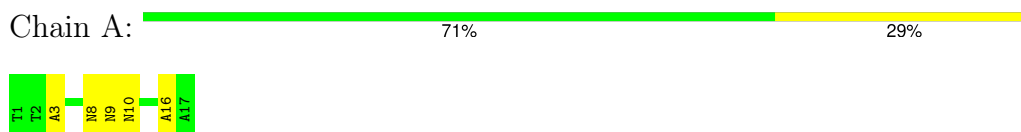


- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

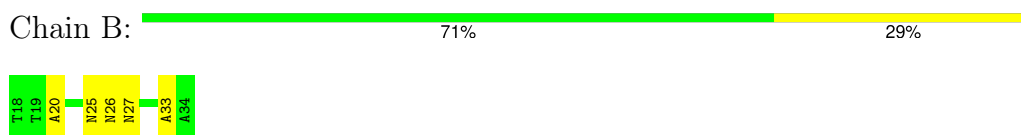


#### 4.2.2 Score per residue for model 2

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



#### 4.2.3 Score per residue for model 3

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

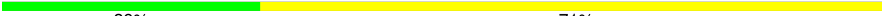


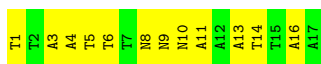
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



#### 4.2.4 Score per residue for model 4

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  29% 71%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain B:  29% 71%




#### 4.2.5 Score per residue for model 5

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  35% 65%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain B:  35% 65%



#### 4.2.6 Score per residue for model 6

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  59% 41%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

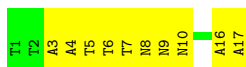
Chain B:  59% 41%



#### 4.2.7 Score per residue for model 7

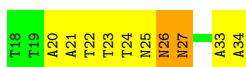
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  41% 59%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

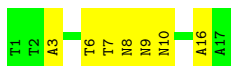
Chain B:  41% 47% 12%



#### 4.2.8 Score per residue for model 8

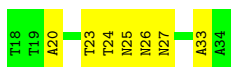
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  59% 41%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

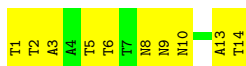
Chain B:  59% 41%



#### 4.2.9 Score per residue for model 9

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  35% 65%



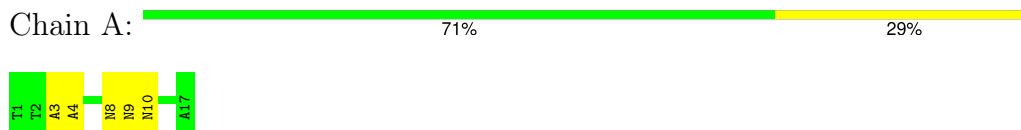
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



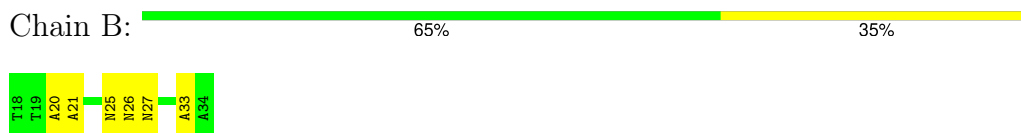


#### 4.2.10 Score per residue for model 10

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

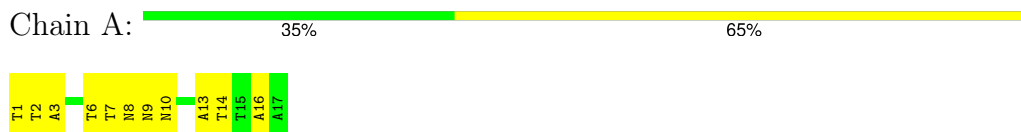


- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

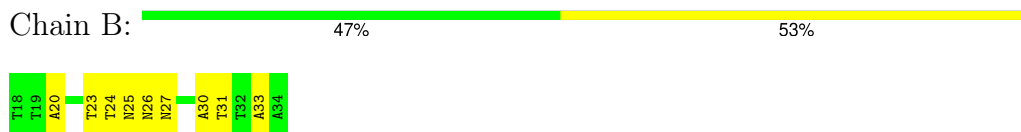


#### 4.2.11 Score per residue for model 11

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



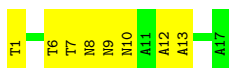
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



#### 4.2.12 Score per residue for model 12

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  53% 47%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain B:  65% 35%



#### 4.2.13 Score per residue for model 13

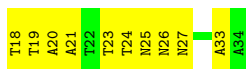
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  53% 47%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain B:  41% 59%



#### 4.2.14 Score per residue for model 14

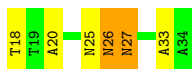
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  65% 24% 12%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain B:  65% 24% 12%



#### 4.2.15 Score per residue for model 15

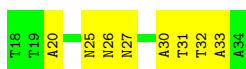
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  59% 41%



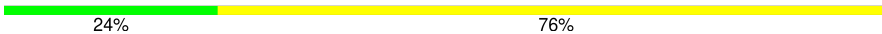
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

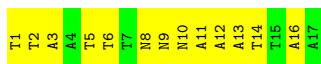
Chain B:  53% 47%



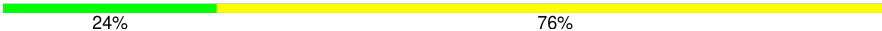
#### 4.2.16 Score per residue for model 16

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  24% 76%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

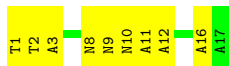
Chain B:  24% 76%



#### 4.2.17 Score per residue for model 17

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  47% 53%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



#### 4.2.18 Score per residue for model 18

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

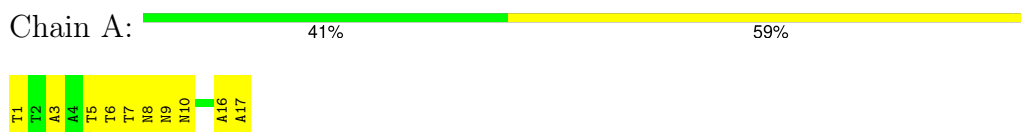


- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

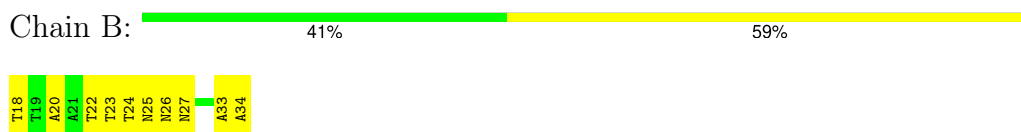


#### 4.2.19 Score per residue for model 19

- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



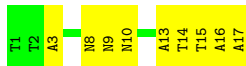
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')



#### 4.2.20 Score per residue for model 20

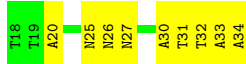
- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain A:  47% 53%



- Molecule 1: DNA (5'-D(\*TP\*TP\*AP\*AP\*TP\*TP\*TP\*(D33)P\*(D33)P\*(D33)P\*AP\*AP\*AP\*TP\*TP\*AP\*A)-3')

Chain B:  47% 53%



## 5 Refinement protocol and experimental data overview

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

Of the 200 calculated structures, 20 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
DYANA	structure solution	1.5
X-PLOR NIH	structure solution	2.15
X-PLOR NIH	refinement	2.15

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	332
Number of shifts mapped to atoms	332
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	44%

## 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: AG, D33

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	1.03±0.03	0±0/317 ( 0.0± 0.0%)	1.49±0.02	0±0/485 ( 0.0± 0.0%)
1	B	1.03±0.03	0±0/317 ( 0.0± 0.0%)	1.49±0.02	0±0/485 ( 0.0± 0.0%)
All	All	1.03	0/12680 ( 0.0%)	1.49	2/19400 ( 0.0%)

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	11	DA	N1-C2-N3	-5.13	126.73	129.30	4	1
1	B	28	DA	N1-C2-N3	-5.04	126.78	129.30	4	1

There are no chirality outliers.

There are no planarity outliers.

### 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	332	193	193	5±2
1	B	332	193	193	5±2
All	All	13340	7720	7720	151

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 7.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:18:DT:HO5'	1:B:18:DT:H6	0.92	0.99	17	3
1:A:1:DT:H6	1:A:1:DT:HO5'	0.91	1.01	4	5
1:B:18:DT:H6	1:B:18:DT:HO5'	0.84	0.84	9	2
1:A:16:DA:C2	1:B:20:DA:C2	0.77	2.73	4	17
1:A:3:DA:C2	1:B:33:DA:C2	0.76	2.73	4	18
1:B:18:DT:H6	1:B:18:DT:O5'	0.75	1.64	12	2
1:A:1:DT:H6	1:A:1:DT:O5'	0.75	1.64	9	3
1:A:1:DT:H2'	1:A:2:DT:H72	0.58	1.76	16	7
1:B:18:DT:H2'	1:B:19:DT:H72	0.58	1.76	16	6
1:A:16:DA:C6	1:A:17:DA:C6	0.58	2.91	19	4
1:B:20:DA:C6	1:B:21:DA:C6	0.56	2.94	6	6
1:A:14:DT:H2'	1:A:15:DT:H71	0.56	1.76	20	2
1:B:31:DT:H2'	1:B:32:DT:H71	0.56	1.77	20	2
1:B:33:DA:C6	1:B:34:DA:C6	0.55	2.93	19	4
1:A:5:DT:H2'	1:A:6:DT:H72	0.55	1.77	9	2
1:A:3:DA:C6	1:A:4:DA:C6	0.55	2.93	6	6
1:B:22:DT:H2'	1:B:23:DT:H71	0.54	1.80	5	4
1:A:5:DT:H2'	1:A:6:DT:H71	0.52	1.80	5	3
1:B:30:DA:H2'	1:B:31:DT:H72	0.50	1.83	20	3
1:B:22:DT:C2'	1:B:23:DT:H71	0.50	2.36	9	2
1:A:13:DA:H2'	1:A:14:DT:H72	0.50	1.83	20	2
1:A:4:DA:C8	1:A:5:DT:H72	0.49	2.43	7	1
1:A:5:DT:C2'	1:A:6:DT:H71	0.49	2.37	5	1
1:B:23:DT:H2'	1:B:24:DT:H71	0.47	1.86	7	4
1:A:12:DA:C6	1:A:13:DA:C6	0.47	3.02	12	2
1:B:29:DA:C6	1:B:30:DA:C6	0.47	3.02	12	2
1:B:21:DA:C8	1:B:22:DT:H72	0.46	2.46	7	1
1:A:1:DT:H2'	1:A:2:DT:H71	0.46	1.88	9	1
1:A:11:DA:C6	1:A:12:DA:C6	0.46	3.04	17	1
1:B:18:DT:O5'	1:B:18:DT:H6	0.46	1.94	14	3
1:A:6:DT:H2'	1:A:7:DT:H71	0.45	1.86	7	4
1:B:30:DA:C8	1:B:31:DT:H72	0.45	2.47	11	2
1:A:16:DA:N3	1:B:20:DA:C2	0.45	2.84	16	1
1:A:16:DA:C6	1:A:17:DA:N6	0.45	2.84	19	1
1:B:18:DT:H2'	1:B:19:DT:H71	0.45	1.87	9	1
1:B:33:DA:C6	1:B:34:DA:N6	0.45	2.84	19	1
1:A:6:DT:H2'	1:A:7:DT:H72	0.45	1.88	19	1
1:B:23:DT:H2'	1:B:24:DT:H72	0.44	1.88	19	1
1:A:1:DT:O5'	1:A:1:DT:H6	0.44	1.95	19	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:3:DA:C2	1:B:33:DA:N3	0.44	2.85	16	1
1:A:13:DA:C8	1:A:14:DT:H72	0.44	2.47	11	2
1:A:5:DT:C2'	1:A:6:DT:H72	0.43	2.43	9	1
1:B:30:DA:C2'	1:B:31:DT:H72	0.42	2.44	20	2
1:B:22:DT:H2'	1:B:23:DT:H72	0.42	1.89	19	1
1:B:28:DA:C6	1:B:29:DA:C6	0.42	3.07	17	1
1:B:26:D33:H12'	1:B:27:D33:O5'	0.41	2.15	7	2
1:A:13:DA:C2'	1:A:14:DT:H71	0.41	2.46	16	1
1:A:13:DA:C2'	1:A:14:DT:H72	0.41	2.45	20	2
1:B:28:DA:H2'	1:B:29:DA:C8	0.41	2.50	16	1
1:A:11:DA:H2'	1:A:12:DA:C8	0.41	2.51	16	1
1:A:9:D33:H12'	1:A:10:D33:O5'	0.40	2.17	14	1
1:B:30:DA:C2'	1:B:31:DT:H71	0.40	2.46	16	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](#)

6 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds for which Mogul statistics could be retrieved, the number of bonds that are observed in the model and the number of bonds that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length is the number of standard deviations the observed value is removed from the expected value. A bond length with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of the bond lengths.

Mol	Type	Chain	Res	Link	Bond lengths		
					Counts	RMSZ	#Z>2
1	D33	B	27	2,1	13,17,18	0.59±0.07	0±0 (0±0%)
1	D33	A	10	2,1	13,17,18	0.58±0.08	0±0 (0±0%)
1	D33	A	9	2,1	13,17,18	0.43±0.04	0±0 (0±0%)
1	D33	B	25	2,1	13,17,18	0.58±0.07	0±0 (0±1%)
1	D33	A	8	2,1	13,17,18	0.58±0.06	0±0 (0±0%)
1	D33	B	26	2,1	13,17,18	0.43±0.04	0±0 (0±0%)

In the following table, the Counts columns list the number of angles for which Mogul statistics could be retrieved, the number of angles that are observed in the model and the number of angles that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond angle is the number of standard deviations the observed value is removed from the expected value. A bond angle with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of the bond angles.

Mol	Type	Chain	Res	Link	Bond angles		
					Counts	RMSZ	#Z>2
1	D33	B	27	2,1	14,23,26	1.32±0.06	1±0 (7±0%)
1	D33	A	10	2,1	14,23,26	1.34±0.05	1±0 (7±0%)
1	D33	A	9	2,1	14,23,26	1.15±0.05	1±0 (7±0%)
1	D33	B	25	2,1	14,23,26	1.15±0.07	1±0 (7±0%)
1	D33	A	8	2,1	14,23,26	1.16±0.05	1±0 (7±0%)
1	D33	B	26	2,1	14,23,26	1.15±0.05	1±0 (7±0%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	D33	A	9	2,1	-	0±0,3,21,22	0±0,2,2,2
1	D33	B	27	2,1	-	0±0,3,21,22	0±0,2,2,2
1	D33	B	25	2,1	-	0±0,3,21,22	0±0,2,2,2
1	D33	B	26	2,1	-	0±0,3,21,22	0±0,2,2,2
1	D33	A	10	2,1	-	0±0,3,21,22	0±0,2,2,2
1	D33	A	8	2,1	-	0±0,3,21,22	0±0,2,2,2

All unique bond outliers are listed below.

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
1	B	25	D33	C5-N1	2.09	1.39	1.37	5	1

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	B	27	D33	C5-N1-C2	4.84	105.83	108.29	7	20
1	A	10	D33	C5-N1-C2	4.65	105.92	108.29	15	20
1	A	9	D33	C5-N1-C2	4.22	106.14	108.29	2	20
1	A	8	D33	C5-N1-C2	4.20	106.15	108.29	15	20
1	B	25	D33	C5-N1-C2	4.19	106.16	108.29	18	20
1	B	26	D33	C5-N1-C2	3.97	106.27	108.29	2	20

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

## 6.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 6.6 Ligand geometry [i](#)

Of 3 ligands modelled in this entry, 3 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 44% for the well-defined parts and 44% for the entire structure.

### 7.1 Chemical shift list 1

File name: working\_cs.cif

Chemical shift list name: *assigned\_chem\_shift\_list\_1*

#### 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	332
Number of shifts mapped to atoms	332
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 44%, i.e. 234 atoms were assigned a chemical shift out of a possible 532. 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	192/336 (57%)	192/196 (98%)	0/140 (0%)	0/0 (—%)
Base	42/196 (21%)	42/112 (38%)	0/56 (0%)	0/28 (0%)
Overall	234/532 (44%)	234/308 (76%)	0/196 (0%)	0/28 (0%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 44%, i.e. 234 atoms were assigned a chemical shift out of a possible 532. 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	192/336 (57%)	192/196 (98%)	0/140 (0%)	0/0 (—%)
Base	42/196 (21%)	42/112 (38%)	0/56 (0%)	0/28 (0%)
Overall	234/532 (44%)	234/308 (76%)	0/196 (0%)	0/28 (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	923
Intra-residue ( $ i-j =0$ )	364
Sequential ( $ i-j =1$ )	442
Medium range ( $ i-j >1$ and $ i-j <5$ )	8
Long range ( $ i-j \geq 5$ )	0
Inter-chain	50
Hydrogen bond restraints	56
Disulfide bond restraints	0
Total dihedral-angle restraints	220
Number of unmapped restraints	2
Number of restraints per residue	30.9
Number of long range restraints per residue <sup>1</sup>	0.0

<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)	7.8	0.2
0.2-0.5 (Medium)	3.1	0.49
>0.5 (Large)	0.3	0.76

### 8.2.2 Average number of dihedral-angle violations per model [i](#)

Dihedral-angle violations less than 1° are not included in the calculation.

Bins (°)	Average number of violations per model	Max (°)
1.0-10.0 (Small)	2.4	3.07
10.0-20.0 (Medium)	None	None
>20.0 (Large)	None	None

## 9 Distance violation analysis

### 9.1 Summary of distance violations

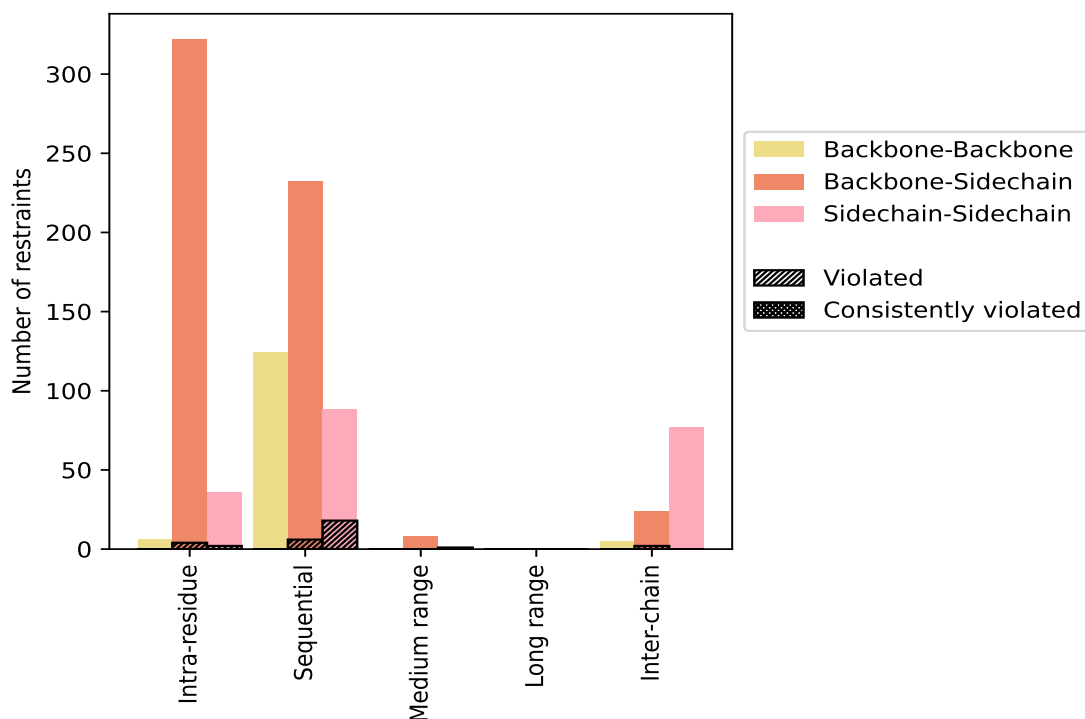
The following table shows the summary of distance violations in different restraint categories based on the sequence separation of the atoms involved. Each category is further sub-divided into three sub-categories based on the atoms involved. Violations less than 0.1 Å are not included in the statistics.

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 ( i-j =0)</b>	<b>364</b>	<b>39.4</b>	<b>6</b>	<b>1.6</b>	<b>0.7</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	6	0.7	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	322	34.9	4	1.2	0.4	0	0.0	0.0
Sidechain-Sidechain	36	3.9	2	5.6	0.2	0	0.0	0.0
<b>Sequential ( i-j =1)</b>	<b>442</b>	<b>47.9</b>	<b>22</b>	<b>5.0</b>	<b>2.4</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	124	13.4	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	232	25.1	6	2.6	0.7	0	0.0	0.0
Sidechain-Sidechain	86	9.3	16	18.6	1.7	0	0.0	0.0
<b>Medium range ( i-j &gt;1 &amp;  i-j &lt;5)</b>	<b>8</b>	<b>0.9</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	8	0.9	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>Long range ( i-j ≥5)</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>Inter-chain</b>	<b>50</b>	<b>5.4</b>	<b>2</b>	<b>4.0</b>	<b>0.2</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	5	0.5	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	24	2.6	2	8.3	0.2	0	0.0	0.0
Sidechain-Sidechain	21	2.3	0	0.0	0.0	0	0.0	0.0
<b>Hydrogen bond</b>	<b>56</b>	<b>6.1</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>923</b>	<b>100.0</b>	<b>33</b>	<b>3.6</b>	<b>3.6</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	135	14.6	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	586	63.5	12	2.0	1.3	0	0.0	0.0
Sidechain-Sidechain	202	21.9	21	10.4	2.3	0	0.0	0.0

<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 disulfid 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						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>	Total				
1	2	10	1	0	0	13	0.25	0.65	0.19	0.15
2	0	8	1	0	2	11	0.15	0.23	0.04	0.14
3	0	12	0	0	0	12	0.25	0.76	0.23	0.14
4	0	10	1	0	2	13	0.17	0.38	0.09	0.13
5	1	12	1	0	0	14	0.2	0.39	0.12	0.12
6	2	8	1	0	0	11	0.24	0.47	0.13	0.22
7	5	11	0	0	0	16	0.2	0.51	0.13	0.14
8	4	12	0	0	0	16	0.24	0.57	0.17	0.14
9	2	10	1	0	0	13	0.11	0.14	0.01	0.11
10	0	10	0	0	0	10	0.18	0.26	0.06	0.15

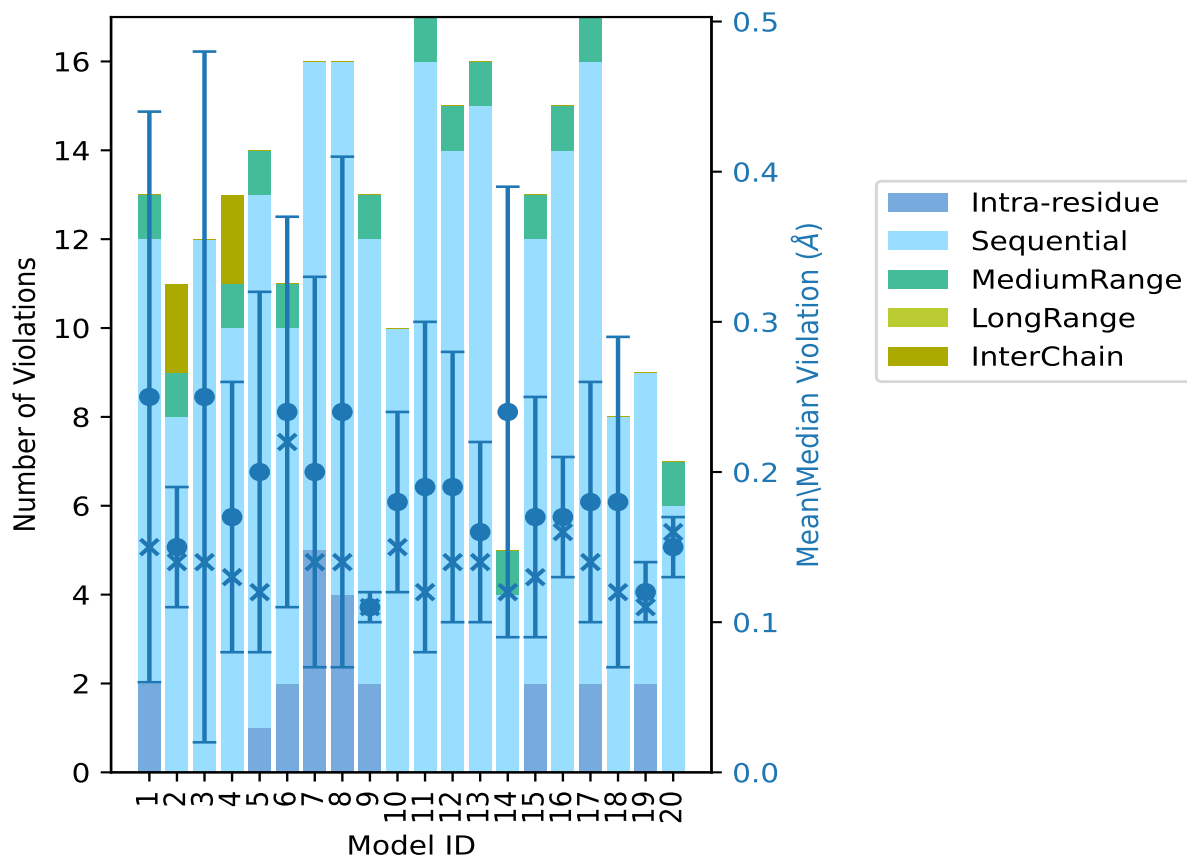
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Model ID	Number of violations					Total	Mean (Å)	Max (Å)	SD <sup>6</sup> (Å)	Median (Å)
	IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>					
11	0	16	1	0	0	17	0.19	0.43	0.11	0.12
12	0	14	1	0	0	15	0.19	0.38	0.09	0.14
13	0	15	1	0	0	16	0.16	0.27	0.06	0.14
14	0	4	1	0	0	5	0.24	0.43	0.15	0.12
15	2	10	1	0	0	13	0.17	0.31	0.08	0.13
16	0	14	1	0	0	15	0.17	0.23	0.04	0.16
17	2	14	1	0	0	17	0.18	0.35	0.08	0.14
18	0	8	0	0	0	8	0.18	0.37	0.11	0.12
19	2	7	0	0	0	9	0.12	0.16	0.02	0.11
20	0	6	1	0	0	7	0.15	0.17	0.02	0.16

<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

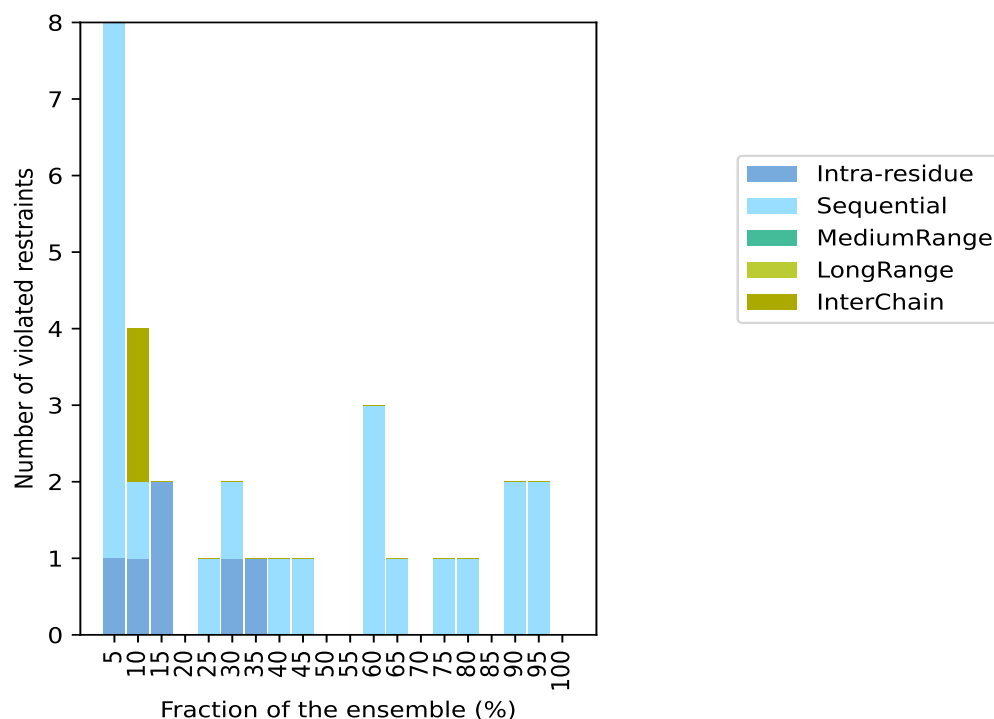
### 9.3 Distance violation statistics for the ensemble

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, 834(IR:358, SQ:420, MR:8, LR:0, IC:48) 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>	%
1	7	0	0	0	8	1	5.0
1	1	0	0	2	4	2	10.0
2	0	0	0	0	2	3	15.0
0	0	0	0	0	0	4	20.0
0	1	0	0	0	1	5	25.0
1	1	0	0	0	2	6	30.0
1	0	0	0	0	1	7	35.0
0	1	0	0	0	1	8	40.0
0	1	0	0	0	1	9	45.0
0	0	0	0	0	0	10	50.0
0	0	0	0	0	0	11	55.0
0	3	0	0	0	3	12	60.0
0	1	0	0	0	1	13	65.0
0	0	0	0	0	0	14	70.0
0	1	0	0	0	1	15	75.0
0	1	0	0	0	1	16	80.0
0	0	0	0	0	0	17	85.0
0	2	0	0	0	2	18	90.0
0	2	0	0	0	2	19	95.0
0	0	0	0	0	0	20	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

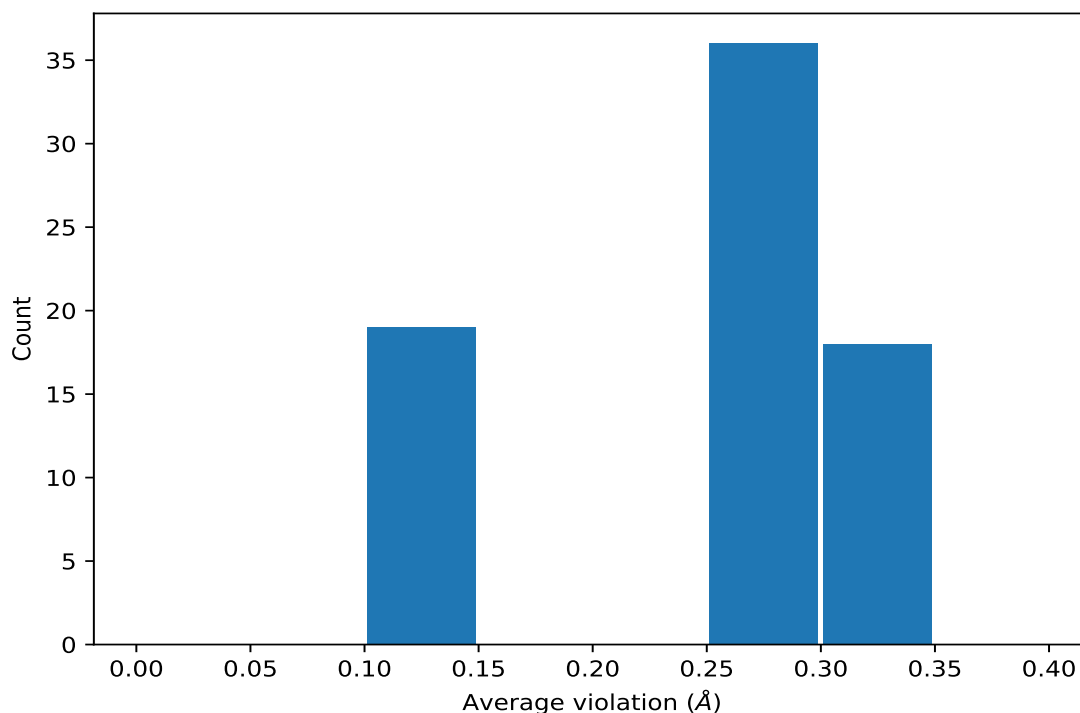
### 9.3.1 Bar graph : Distance violation statistics for the ensemble [i](#)



## 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)
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	19	0.34	0.15	0.32
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	19	0.34	0.15	0.32
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	19	0.34	0.15	0.32
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	19	0.34	0.15	0.32
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	19	0.34	0.15	0.32
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	19	0.34	0.15	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	19	0.34	0.15	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	19	0.34	0.15	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	19	0.34	0.15	0.32
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	19	0.33	0.16	0.31
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	19	0.33	0.16	0.31
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	19	0.33	0.16	0.31
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	19	0.33	0.16	0.31
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	19	0.33	0.16	0.31
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	19	0.33	0.16	0.31
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	19	0.33	0.16	0.31

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	19	0.33	0.16	0.31
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	19	0.33	0.16	0.31
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	18	0.12	0.01	0.12
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	18	0.12	0.01	0.12
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	16	0.26	0.13	0.22
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	16	0.26	0.13	0.22
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	16	0.26	0.13	0.22
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	16	0.26	0.13	0.22
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	16	0.26	0.13	0.22
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	16	0.26	0.13	0.22
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	16	0.26	0.13	0.22
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	16	0.26	0.13	0.22
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	16	0.26	0.13	0.22
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	15	0.26	0.13	0.23
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	15	0.26	0.13	0.23
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	15	0.26	0.13	0.23
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	15	0.26	0.13	0.23
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	15	0.26	0.13	0.23
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	15	0.26	0.13	0.23
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	15	0.26	0.13	0.23
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	15	0.26	0.13	0.23
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	15	0.26	0.13	0.23
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	14	0.14	0.03	0.13
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	13	0.13	0.02	0.13
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	12	0.28	0.09	0.27
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	12	0.28	0.09	0.27
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	12	0.28	0.09	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	12	0.28	0.09	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	12	0.28	0.09	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	12	0.28	0.09	0.27
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	12	0.28	0.09	0.27
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	12	0.28	0.09	0.27
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	12	0.28	0.09	0.27
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	12	0.27	0.1	0.26
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	12	0.27	0.1	0.26
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	12	0.27	0.1	0.26
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	12	0.27	0.1	0.26
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	12	0.27	0.1	0.26
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	12	0.27	0.1	0.26
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	12	0.27	0.1	0.26
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	12	0.27	0.1	0.26
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	12	0.27	0.1	0.26

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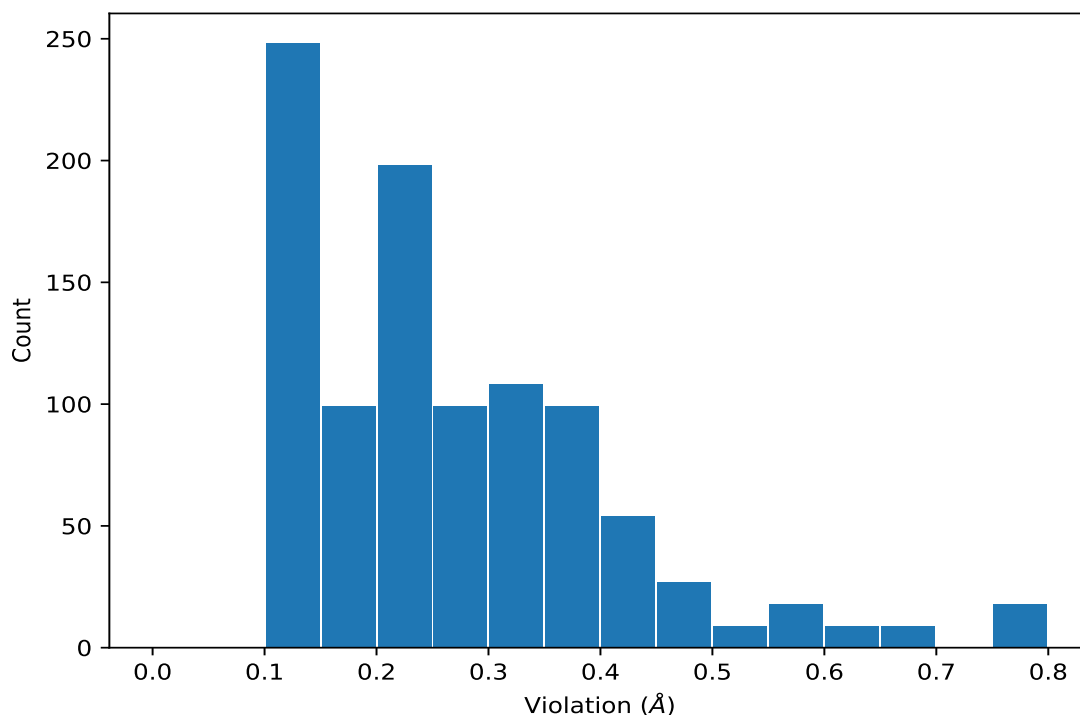
Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	12	0.13	0.02	0.12
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	11	0.12	0.01	0.11
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	9	0.12	0.01	0.12
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	9	0.12	0.02	0.11
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	8	0.12	0.01	0.12
(1,128)	1:5:A:DT:H3'	1:5:A:DT:H6	7	0.11	0.01	0.11
(1,659)	1:26:B:D33:H22'	1:27:B:D33:H55	6	0.13	0.02	0.14
(1,551)	1:22:B:DT:H3'	1:22:B:DT:H6	6	0.11	0.01	0.11
(1,236)	1:9:A:D33:H22'	1:10:A:D33:H55	5	0.14	0.02	0.14
(1,162)	1:6:A:DT:H5''	1:6:A:DT:H6	3	0.13	0.01	0.14
(1,585)	1:23:B:DT:H5''	1:23:B:DT:H6	3	0.13	0.01	0.14
(1,699)	1:27:B:D33:H55	1:28:B:DA:H2	2	0.12	0.02	0.12
(1,193)	1:8:A:D33:H1'	1:28:B:DA:H2	2	0.12	0.02	0.12
(1,616)	1:25:B:D33:H1'	1:11:A:DA:H2	2	0.12	0.0	0.12
(1,665)	1:26:B:D33:H25'	1:26:B:D33:H22	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)
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	3	0.76
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	3	0.76
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	3	0.76
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	3	0.76
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	3	0.76
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	3	0.76
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	3	0.76
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	3	0.76
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	3	0.76
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	3	0.76
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	3	0.76
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	3	0.76
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	3	0.76
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	3	0.76
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	3	0.76
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	3	0.76

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	3	0.76
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	3	0.76
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	1	0.65
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	1	0.65
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	1	0.65
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	1	0.65
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	1	0.65
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	1	0.65
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	1	0.65
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	1	0.65
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	1	0.65
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	1	0.63
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	1	0.63
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	1	0.63
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	1	0.63
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	1	0.63
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	1	0.63
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	1	0.63
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	1	0.63
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	1	0.63
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	8	0.57
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	8	0.57
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	8	0.57
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	8	0.57
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	8	0.57
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	8	0.57
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	8	0.57
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	8	0.57
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	8	0.57
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	8	0.56
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	8	0.56
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	8	0.56
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	8	0.56
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	8	0.56
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	8	0.56
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	8	0.56
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	8	0.56
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	8	0.56
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	7	0.51
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	7	0.51
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	7	0.51
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	7	0.51

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	7	0.51
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	7	0.51
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	7	0.51
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	7	0.51
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	7	0.51
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	7	0.49
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	7	0.49
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	7	0.49
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	7	0.49
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	7	0.49
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	7	0.49
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	7	0.49
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	7	0.49
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	7	0.49
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	6	0.47
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	6	0.47
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	6	0.47
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	6	0.47
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	6	0.47
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	6	0.47
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	6	0.47
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	6	0.47
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	6	0.47
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	6	0.47
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	6	0.47
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	6	0.47
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	6	0.47
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	6	0.47
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	6	0.47
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	6	0.47
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	6	0.47
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	6	0.47
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	14	0.43
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	14	0.43
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	14	0.43
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	14	0.43
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	14	0.43
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	14	0.43
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	14	0.43
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	14	0.43
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	14	0.43
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	8	0.43

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	8	0.43
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	8	0.43
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	8	0.43
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	8	0.43
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	8	0.43
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	8	0.43
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	8	0.43
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	8	0.43
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	11	0.43
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	11	0.43
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	11	0.43
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	11	0.43
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	11	0.43
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	11	0.43
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	11	0.43
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	11	0.43
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	11	0.43
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	14	0.42
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	14	0.42
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	14	0.42
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	14	0.42
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	14	0.42
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	14	0.42
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	14	0.42
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	14	0.42
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	14	0.42
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	8	0.42
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	8	0.42
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	8	0.42
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	8	0.42
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	8	0.42
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	8	0.42
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	8	0.42
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	8	0.42
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	8	0.42
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	11	0.42
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	11	0.42
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	11	0.42
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	11	0.42
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	11	0.42
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	11	0.42
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	11	0.42

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	11	0.42
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	11	0.42
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	5	0.39
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	5	0.39
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	5	0.39
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	5	0.39
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	5	0.39
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	5	0.39
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	5	0.39
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	5	0.39
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	5	0.39
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	5	0.39
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	5	0.39
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	5	0.39
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	5	0.39
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	5	0.39
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	5	0.39
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	5	0.39
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	5	0.39
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	5	0.39
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	1	0.39
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	1	0.39
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	1	0.39
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	1	0.39
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	1	0.39
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	1	0.39
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	1	0.39
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	1	0.39
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	1	0.39
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	5	0.38
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	5	0.38
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	5	0.38
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	5	0.38
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	5	0.38
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	5	0.38
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	5	0.38
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	5	0.38
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	5	0.38
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	1	0.38
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	1	0.38
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	1	0.38
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	1	0.38

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	1	0.38
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	1	0.38
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	1	0.38
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	1	0.38
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	1	0.38
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	4	0.38
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	4	0.38
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	4	0.38
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	4	0.38
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	4	0.38
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	4	0.38
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	4	0.38
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	4	0.38
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	4	0.38
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	5	0.38
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	5	0.38
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	5	0.38
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	5	0.38
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	5	0.38
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	5	0.38
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	5	0.38
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	5	0.38
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	5	0.38
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	12	0.38
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	12	0.38
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	12	0.38
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	12	0.38
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	12	0.38
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	12	0.38
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	12	0.38
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	12	0.38
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	12	0.38
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	12	0.37
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	12	0.37
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	12	0.37
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	12	0.37
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	12	0.37
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	12	0.37
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	12	0.37
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	12	0.37
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	12	0.37
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	18	0.37

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	18	0.37
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	18	0.37
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	18	0.37
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	18	0.37
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	18	0.37
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	18	0.37
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	18	0.37
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	18	0.37
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	18	0.36
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	18	0.36
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	18	0.36
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	18	0.36
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	18	0.36
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	18	0.36
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	18	0.36
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	18	0.36
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	18	0.36
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	4	0.35
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	4	0.35
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	4	0.35
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	4	0.35
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	4	0.35
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	4	0.35
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	4	0.35
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	4	0.35
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	4	0.35
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	17	0.35
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	17	0.35
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	17	0.35
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	17	0.35
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	17	0.35
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	17	0.35
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	17	0.35
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	17	0.35
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	17	0.35
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	8	0.34
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	8	0.34
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	8	0.34
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	8	0.34
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	8	0.34
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	8	0.34
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	8	0.34

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	8	0.34
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	8	0.34
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	8	0.34
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	8	0.34
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	8	0.34
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	8	0.34
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	8	0.34
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	8	0.34
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	8	0.34
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	8	0.34
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	8	0.34
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	17	0.33
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	17	0.33
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	17	0.33
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	17	0.33
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	17	0.33
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	17	0.33
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	17	0.33
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	17	0.33
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	17	0.33
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	11	0.32
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	11	0.32
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	11	0.32
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	11	0.32
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	11	0.32
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	11	0.32
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	11	0.32
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	11	0.32
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	11	0.32
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	6	0.32
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	6	0.32
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	6	0.32
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	6	0.32
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	6	0.32
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	6	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	6	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	6	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	6	0.32
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	11	0.32
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	11	0.32
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	11	0.32
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	11	0.32

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	11	0.32
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	11	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	11	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	11	0.32
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	11	0.32
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	7	0.32
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	7	0.32
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	7	0.32
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	7	0.32
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	7	0.32
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	7	0.32
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	7	0.32
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	7	0.32
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	7	0.32
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	15	0.31
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	15	0.31
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	15	0.31
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	15	0.31
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	15	0.31
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	15	0.31
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	15	0.31
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	15	0.31
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	15	0.31
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	7	0.31
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	7	0.31
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	7	0.31
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	7	0.31
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	7	0.31
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	7	0.31
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	7	0.31
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	7	0.31
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	7	0.31
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	15	0.31
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	15	0.31
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	15	0.31
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	15	0.31
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	15	0.31
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	15	0.31
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	15	0.31
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	15	0.31
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	15	0.31
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	6	0.3

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	6	0.3
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	6	0.3
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	6	0.3
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	6	0.3
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	6	0.3
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	6	0.3
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	6	0.3
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	6	0.3
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	17	0.29
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	17	0.29
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	17	0.29
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	17	0.29
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	17	0.29
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	17	0.29
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	17	0.29
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	17	0.29
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	17	0.29
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	17	0.28
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	17	0.28
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	17	0.28
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	17	0.28
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	17	0.28
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	17	0.28
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	17	0.28
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	17	0.28
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	17	0.28
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	13	0.27
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	13	0.27
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	13	0.27
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	13	0.27
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	13	0.27
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	13	0.27
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	13	0.27
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	13	0.27
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	13	0.27
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	12	0.27
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	12	0.27
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	12	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	12	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	12	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	12	0.27
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	12	0.27

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	12	0.27
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	12	0.27
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	13	0.27
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	13	0.27
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	13	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	13	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	13	0.27
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	13	0.27
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	13	0.27
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	13	0.27
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	13	0.27
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	12	0.26
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	12	0.26
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	12	0.26
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	12	0.26
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	12	0.26
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	12	0.26
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	12	0.26
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	12	0.26
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	12	0.26
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	10	0.26
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	10	0.26
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	10	0.26
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	10	0.26
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	10	0.26
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	10	0.26
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	10	0.26
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	10	0.26
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	10	0.26
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	10	0.25
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	10	0.25
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	10	0.25
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	10	0.25
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	10	0.25
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	10	0.25
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	10	0.25
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	10	0.25
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	10	0.25
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	17	0.25
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	17	0.25
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	17	0.25
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	17	0.25

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	17	0.25
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	17	0.25
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	17	0.25
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	17	0.25
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	17	0.25
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	15	0.25
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	15	0.25
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	15	0.25
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	15	0.25
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	15	0.25
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	15	0.25
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	15	0.25
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	15	0.25
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	15	0.25
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	10	0.24
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	10	0.24
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	10	0.24
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	10	0.24
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	10	0.24
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	10	0.24
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	10	0.24
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	10	0.24
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	10	0.24
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	13	0.24
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	13	0.24
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	13	0.24
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	13	0.24
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	13	0.24
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	13	0.24
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	13	0.24
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	13	0.24
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	13	0.24
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	15	0.24
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	15	0.24
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	15	0.24
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	15	0.24
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	15	0.24
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	15	0.24
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	15	0.24
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	15	0.24
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	15	0.24
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	10	0.24

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	10	0.24
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	10	0.24
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	10	0.24
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	10	0.24
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	10	0.24
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	10	0.24
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	10	0.24
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	10	0.24
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	3	0.24
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	3	0.24
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	3	0.24
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	3	0.24
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	3	0.24
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	3	0.24
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	3	0.24
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	3	0.24
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	3	0.24
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	2	0.23
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	2	0.23
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	2	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	2	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	2	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	2	0.23
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	2	0.23
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	2	0.23
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	2	0.23
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	12	0.23
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	12	0.23
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	12	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	12	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	12	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	12	0.23
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	12	0.23
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	12	0.23
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	12	0.23
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	17	0.23
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	17	0.23
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	17	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	17	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	17	0.23
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	17	0.23
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	17	0.23

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	17	0.23
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	17	0.23
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	3	0.23
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	3	0.23
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	3	0.23
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	3	0.23
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	3	0.23
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	3	0.23
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	3	0.23
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	3	0.23
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	3	0.23
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	16	0.23
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	16	0.23
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	16	0.23
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	16	0.23
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	16	0.23
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	16	0.23
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	16	0.23
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	16	0.23
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	16	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	2	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	2	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	2	0.23
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	2	0.23
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	2	0.23
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	2	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	2	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	2	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	2	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	12	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	12	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	12	0.23
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	12	0.23
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	12	0.23
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	12	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	12	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	12	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	12	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	13	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	13	0.23
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	13	0.23
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	13	0.23

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	13	0.23
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	13	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	13	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	13	0.23
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	13	0.23
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	16	0.23
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	16	0.23
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	16	0.23
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	16	0.23
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	16	0.23
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	16	0.23
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	16	0.23
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	16	0.23
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	16	0.23
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	6	0.22
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	6	0.22
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	6	0.22
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	6	0.22
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	6	0.22
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	6	0.22
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	6	0.22
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	6	0.22
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	6	0.22
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	6	0.22
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	6	0.22
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	6	0.22
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	6	0.22
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	6	0.22
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	6	0.22
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	6	0.22
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	6	0.22
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	6	0.22
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	11	0.22
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	11	0.22
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	11	0.22
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	11	0.22
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	11	0.22
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	11	0.22
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	11	0.22
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	11	0.22
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	11	0.22
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	16	0.21

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	16	0.21
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	16	0.21
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	16	0.21
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	16	0.21
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	16	0.21
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	16	0.21
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	16	0.21
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	16	0.21
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	11	0.21
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	11	0.21
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	11	0.21
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	11	0.21
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	11	0.21
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	11	0.21
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	11	0.21
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	11	0.21
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	11	0.21
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	16	0.21
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	16	0.21
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	16	0.21
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	16	0.21
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	16	0.21
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	16	0.21
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	16	0.21
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	16	0.21
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	16	0.21
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	4	0.2
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	4	0.2
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	4	0.2
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	4	0.2
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	4	0.2
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	4	0.2
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	4	0.2
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	4	0.2
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	4	0.2
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	4	0.2
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	4	0.2
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	4	0.2
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	4	0.2
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	4	0.2
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	4	0.2
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	4	0.2

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	4	0.2
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	4	0.2
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	11	0.19
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	16	0.19
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	5	0.19
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	5	0.19
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	5	0.19
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	5	0.19
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	5	0.19
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	5	0.19
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	5	0.19
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	5	0.19
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	5	0.19
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	5	0.18
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	5	0.18
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	5	0.18
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	5	0.18
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	5	0.18
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	5	0.18
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	5	0.18
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	5	0.18
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	5	0.18
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	16	0.17
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	16	0.17
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	16	0.17
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	16	0.17
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	16	0.17
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	16	0.17
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	16	0.17
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	16	0.17
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	16	0.17
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	20	0.17
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	20	0.17
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	20	0.17
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	20	0.17
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	20	0.17
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	20	0.17
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	20	0.17
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	20	0.17
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	20	0.17
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	1	0.17
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	1	0.17

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	1	0.17
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	1	0.17
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	1	0.17
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	1	0.17
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	1	0.17
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	1	0.17
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	1	0.17
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	16	0.17
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	16	0.17
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	16	0.17
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	16	0.17
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	16	0.17
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	16	0.17
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	16	0.17
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	16	0.17
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	16	0.17
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	20	0.16
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	20	0.16
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	20	0.16
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	20	0.16
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	20	0.16
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	20	0.16
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	20	0.16
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	20	0.16
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	20	0.16
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	19	0.16
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	20	0.16
(1,659)	1:26:B:D33:H22'	1:27:B:D33:H55	13	0.16
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	1	0.16
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	1	0.16
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	1	0.16
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	1	0.16
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	1	0.16
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	1	0.16
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	1	0.16
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	1	0.16
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	1	0.16
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	3	0.16
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	3	0.16
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	3	0.16
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	3	0.16
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	3	0.16

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	3	0.16
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	3	0.16
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	3	0.16
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	3	0.16
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	16	0.16
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	19	0.16
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	20	0.16
(1,236)	1:9:A:D33:H22'	1:10:A:D33:H55	13	0.16
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	3	0.16
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	3	0.16
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	3	0.16
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	3	0.16
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	3	0.16
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	3	0.16
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	3	0.16
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	3	0.16
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	3	0.16
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	1	0.15
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	2	0.15
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	13	0.15
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	10	0.15
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	16	0.15
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	17	0.15
(1,659)	1:26:B:D33:H22'	1:27:B:D33:H55	8	0.15
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	2	0.15
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	2	0.15
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	2	0.15
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	2	0.15
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	2	0.15
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	2	0.15
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	2	0.15
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	2	0.15
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	2	0.15
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	10	0.15
(1,236)	1:9:A:D33:H22'	1:10:A:D33:H55	8	0.15
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	2	0.15
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	2	0.15
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	2	0.15
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	2	0.15
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	2	0.15
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	2	0.15
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	2	0.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	2	0.15
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	2	0.15
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	17	0.14
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	2	0.14
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	15	0.14
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	16	0.14
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	2	0.14
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	16	0.14
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	17	0.14
(1,699)	1:27:B:D33:H55	1:28:B:DA:H2	7	0.14
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	13	0.14
(1,659)	1:26:B:D33:H22'	1:27:B:D33:H55	12	0.14
(1,585)	1:23:B:DT:H5''	1:23:B:DT:H6	1	0.14
(1,585)	1:23:B:DT:H5''	1:23:B:DT:H6	7	0.14
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	7	0.14
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	7	0.14
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	7	0.14
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	7	0.14
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	7	0.14
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	7	0.14
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	7	0.14
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	7	0.14
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	7	0.14
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	20	0.14
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	13	0.14
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	17	0.14
(1,236)	1:9:A:D33:H22'	1:10:A:D33:H55	12	0.14
(1,165)	1:6:A:DT:H71	1:7:A:DT:H71	9	0.14
(1,165)	1:6:A:DT:H71	1:7:A:DT:H72	9	0.14
(1,165)	1:6:A:DT:H71	1:7:A:DT:H73	9	0.14
(1,165)	1:6:A:DT:H72	1:7:A:DT:H71	9	0.14
(1,165)	1:6:A:DT:H72	1:7:A:DT:H72	9	0.14
(1,165)	1:6:A:DT:H72	1:7:A:DT:H73	9	0.14
(1,165)	1:6:A:DT:H73	1:7:A:DT:H71	9	0.14
(1,165)	1:6:A:DT:H73	1:7:A:DT:H72	9	0.14
(1,165)	1:6:A:DT:H73	1:7:A:DT:H73	9	0.14
(1,162)	1:6:A:DT:H5''	1:6:A:DT:H6	1	0.14
(1,162)	1:6:A:DT:H5''	1:6:A:DT:H6	7	0.14
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	6	0.14
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	10	0.14
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	15	0.14
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	20	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	5	0.13
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	6	0.13
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	12	0.13
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	10	0.13
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	15	0.13
(1,694)	1:27:B:D33:H22'	1:28:B:DA:H8	17	0.13
(1,692)	1:27:B:D33:H22'	1:28:B:DA:H4'	12	0.13
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	12	0.13
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	16	0.13
(1,659)	1:26:B:D33:H22'	1:27:B:D33:H55	4	0.13
(1,588)	1:23:B:DT:H71	1:24:B:DT:H71	9	0.13
(1,588)	1:23:B:DT:H71	1:24:B:DT:H72	9	0.13
(1,588)	1:23:B:DT:H71	1:24:B:DT:H73	9	0.13
(1,588)	1:23:B:DT:H72	1:24:B:DT:H71	9	0.13
(1,588)	1:23:B:DT:H72	1:24:B:DT:H72	9	0.13
(1,588)	1:23:B:DT:H72	1:24:B:DT:H73	9	0.13
(1,588)	1:23:B:DT:H73	1:24:B:DT:H71	9	0.13
(1,588)	1:23:B:DT:H73	1:24:B:DT:H72	9	0.13
(1,588)	1:23:B:DT:H73	1:24:B:DT:H73	9	0.13
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	2	0.13
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	6	0.13
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	11	0.13
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	17	0.13
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	18	0.13
(1,276)	1:10:A:D33:H55	1:11:A:DA:H2	7	0.13
(1,269)	1:10:A:D33:H22'	1:11:A:DA:H4'	12	0.13
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	12	0.13
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	16	0.13
(1,236)	1:9:A:D33:H22'	1:10:A:D33:H55	4	0.13
(1,193)	1:8:A:D33:H1'	1:28:B:DA:H2	4	0.13
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	2	0.13
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	7	0.13
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	14	0.12
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	15	0.12
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	3	0.12
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	10	0.12
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	18	0.12
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	5	0.12
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	11	0.12
(1,616)	1:25:B:D33:H1'	1:11:A:DA:H2	4	0.12
(1,551)	1:22:B:DT:H3'	1:22:B:DT:H6	7	0.12
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	1	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	7	0.12
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	9	0.12
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	10	0.12
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	13	0.12
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	15	0.12
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	16	0.12
(1,371)	1:14:A:DT:H71	1:15:A:DT:H71	9	0.12
(1,371)	1:14:A:DT:H71	1:15:A:DT:H72	9	0.12
(1,371)	1:14:A:DT:H71	1:15:A:DT:H73	9	0.12
(1,371)	1:14:A:DT:H72	1:15:A:DT:H71	9	0.12
(1,371)	1:14:A:DT:H72	1:15:A:DT:H72	9	0.12
(1,371)	1:14:A:DT:H72	1:15:A:DT:H73	9	0.12
(1,371)	1:14:A:DT:H73	1:15:A:DT:H71	9	0.12
(1,371)	1:14:A:DT:H73	1:15:A:DT:H72	9	0.12
(1,371)	1:14:A:DT:H73	1:15:A:DT:H73	9	0.12
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	5	0.12
(1,271)	1:10:A:D33:H22'	1:11:A:DA:H8	17	0.12
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	7	0.12
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	7	0.12
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	7	0.12
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	7	0.12
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	7	0.12
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	7	0.12
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	7	0.12
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	7	0.12
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	7	0.12
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	19	0.12
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	19	0.12
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	19	0.12
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	19	0.12
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	19	0.12
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	19	0.12
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	19	0.12
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	19	0.12
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	19	0.12
(1,128)	1:5:A:DT:H3'	1:5:A:DT:H6	15	0.12
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	1	0.12
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	8	0.12
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	13	0.12
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	16	0.12
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	18	0.12
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	9	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	1	0.11
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	11	0.11
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	18	0.11
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	3	0.11
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	11	0.11
(1,794)	1:31:B:DT:H71	1:32:B:DT:H71	9	0.11
(1,794)	1:31:B:DT:H71	1:32:B:DT:H72	9	0.11
(1,794)	1:31:B:DT:H71	1:32:B:DT:H73	9	0.11
(1,794)	1:31:B:DT:H72	1:32:B:DT:H71	9	0.11
(1,794)	1:31:B:DT:H72	1:32:B:DT:H72	9	0.11
(1,794)	1:31:B:DT:H72	1:32:B:DT:H73	9	0.11
(1,794)	1:31:B:DT:H73	1:32:B:DT:H71	9	0.11
(1,794)	1:31:B:DT:H73	1:32:B:DT:H72	9	0.11
(1,794)	1:31:B:DT:H73	1:32:B:DT:H73	9	0.11
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	8	0.11
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	9	0.11
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	12	0.11
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	13	0.11
(1,791)	1:31:B:DT:H6	1:32:B:DT:H6	18	0.11
(1,699)	1:27:B:D33:H55	1:28:B:DA:H2	11	0.11
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	3	0.11
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	4	0.11
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	11	0.11
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	14	0.11
(1,665)	1:26:B:D33:H25'	1:26:B:D33:H22	9	0.11
(1,659)	1:26:B:D33:H22'	1:27:B:D33:H55	11	0.11
(1,616)	1:25:B:D33:H1'	1:11:A:DA:H2	2	0.11
(1,585)	1:23:B:DT:H5''	1:23:B:DT:H6	8	0.11
(1,551)	1:22:B:DT:H3'	1:22:B:DT:H6	8	0.11
(1,551)	1:22:B:DT:H3'	1:22:B:DT:H6	15	0.11
(1,551)	1:22:B:DT:H3'	1:22:B:DT:H6	17	0.11
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	3	0.11
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	4	0.11
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	8	0.11
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	18	0.11
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	19	0.11
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	8	0.11
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	9	0.11
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	12	0.11
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	3	0.11
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	4	0.11
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	14	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,242)	1:9:A:D33:H25'	1:9:A:D33:H22	9	0.11
(1,162)	1:6:A:DT:H5''	1:6:A:DT:H6	8	0.11
(1,128)	1:5:A:DT:H3'	1:5:A:DT:H6	5	0.11
(1,128)	1:5:A:DT:H3'	1:5:A:DT:H6	7	0.11
(1,128)	1:5:A:DT:H3'	1:5:A:DT:H6	8	0.11
(1,128)	1:5:A:DT:H3'	1:5:A:DT:H6	17	0.11
(1,128)	1:5:A:DT:H3'	1:5:A:DT:H6	19	0.11
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	3	0.11
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	4	0.11
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	5	0.11
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	9	0.11
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	11	0.11
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	17	0.11
(1,34)	1:1:A:DT:H6	1:2:A:DT:H5''	19	0.11
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	4	0.1
(6,1)	2:101:A:AG:AG	2:103:A:AG:AG	20	0.1
(5,2)	2:102:A:AG:AG	2:103:A:AG:AG	5	0.1
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	1	0.1
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	5	0.1
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	7	0.1
(5,1)	2:101:A:AG:AG	2:102:A:AG:AG	19	0.1
(1,693)	1:27:B:D33:H22'	1:28:B:DA:H5''	13	0.1
(1,673)	1:26:B:D33:H55	1:27:B:D33:H25'	15	0.1
(1,665)	1:26:B:D33:H25'	1:26:B:D33:H22	7	0.1
(1,659)	1:26:B:D33:H22'	1:27:B:D33:H55	9	0.1
(1,563)	1:22:B:DT:H71	1:23:B:DT:H71	19	0.1
(1,563)	1:22:B:DT:H71	1:23:B:DT:H72	19	0.1
(1,563)	1:22:B:DT:H71	1:23:B:DT:H73	19	0.1
(1,563)	1:22:B:DT:H72	1:23:B:DT:H71	19	0.1
(1,563)	1:22:B:DT:H72	1:23:B:DT:H72	19	0.1
(1,563)	1:22:B:DT:H72	1:23:B:DT:H73	19	0.1
(1,563)	1:22:B:DT:H73	1:23:B:DT:H71	19	0.1
(1,563)	1:22:B:DT:H73	1:23:B:DT:H72	19	0.1
(1,563)	1:22:B:DT:H73	1:23:B:DT:H73	19	0.1
(1,551)	1:22:B:DT:H3'	1:22:B:DT:H6	6	0.1
(1,551)	1:22:B:DT:H3'	1:22:B:DT:H6	19	0.1
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	5	0.1
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	11	0.1
(1,457)	1:18:B:DT:H6	1:19:B:DT:H5''	17	0.1
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	13	0.1
(1,368)	1:14:A:DT:H6	1:15:A:DT:H6	15	0.1
(1,270)	1:10:A:D33:H22'	1:11:A:DA:H5''	13	0.1

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,250)	1:9:A:D33:H55	1:10:A:D33:H25'	11	0.1
(1,236)	1:9:A:D33:H22'	1:10:A:D33:H55	9	0.1
(1,193)	1:8:A:D33:H1'	1:28:B:DA:H2	2	0.1
(1,140)	1:5:A:DT:H71	1:6:A:DT:H71	13	0.1
(1,140)	1:5:A:DT:H71	1:6:A:DT:H72	13	0.1
(1,140)	1:5:A:DT:H71	1:6:A:DT:H73	13	0.1
(1,140)	1:5:A:DT:H72	1:6:A:DT:H71	13	0.1
(1,140)	1:5:A:DT:H72	1:6:A:DT:H72	13	0.1
(1,140)	1:5:A:DT:H72	1:6:A:DT:H73	13	0.1
(1,140)	1:5:A:DT:H73	1:6:A:DT:H71	13	0.1
(1,140)	1:5:A:DT:H73	1:6:A:DT:H72	13	0.1
(1,140)	1:5:A:DT:H73	1:6:A:DT:H73	13	0.1
(1,128)	1:5:A:DT:H3'	1:5:A:DT:H6	6	0.1



## 10 Dihedral-angle violation analysis [i](#)

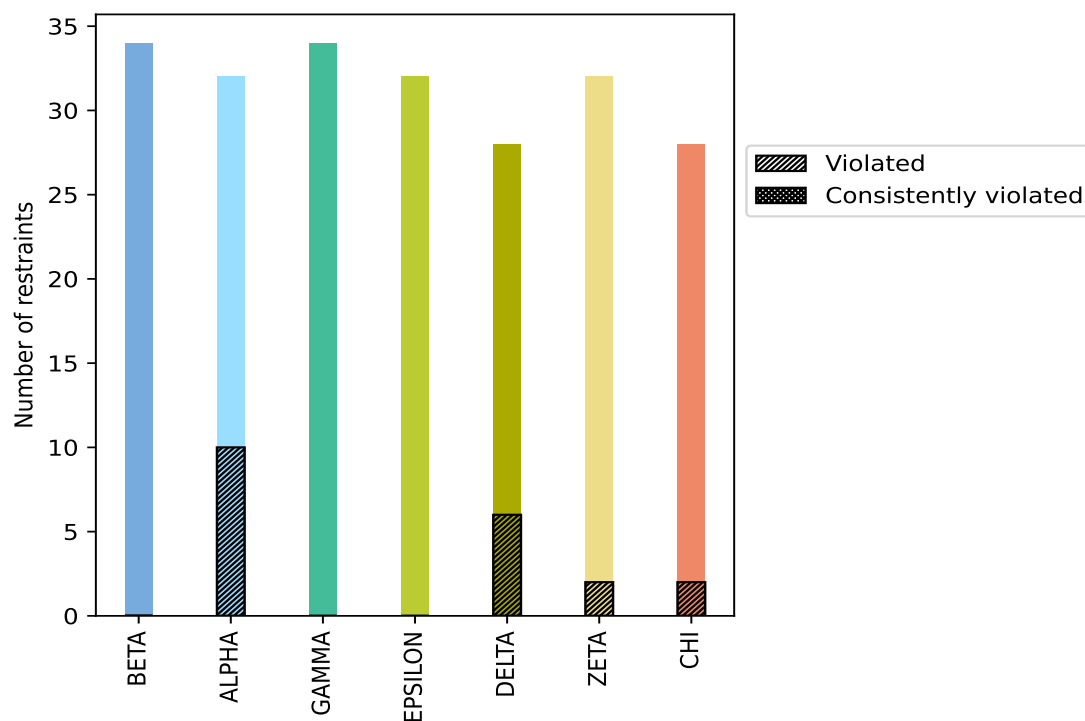
### 10.1 Summary of dihedral-angle violations [i](#)

The following table provides the summary of dihedral-angle violations in different dihedral-angle types. Violations less than 1° are not included in the calculation.

Angle 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>
BETA	34	15.5	0	0.0	0.0	0	0.0	0.0
ALPHA	32	14.5	10	31.2	4.5	0	0.0	0.0
GAMMA	34	15.5	0	0.0	0.0	0	0.0	0.0
EPSILON	32	14.5	0	0.0	0.0	0	0.0	0.0
DELTA	28	12.7	6	21.4	2.7	0	0.0	0.0
ZETA	32	14.5	2	6.2	0.9	0	0.0	0.0
CHI	28	12.7	2	7.1	0.9	0	0.0	0.0
Total	220	100.0	20	9.1	9.1	0	0.0	0.0

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

#### 10.1.1 Bar chart : Distribution of dihedral-angles and violations [i](#)



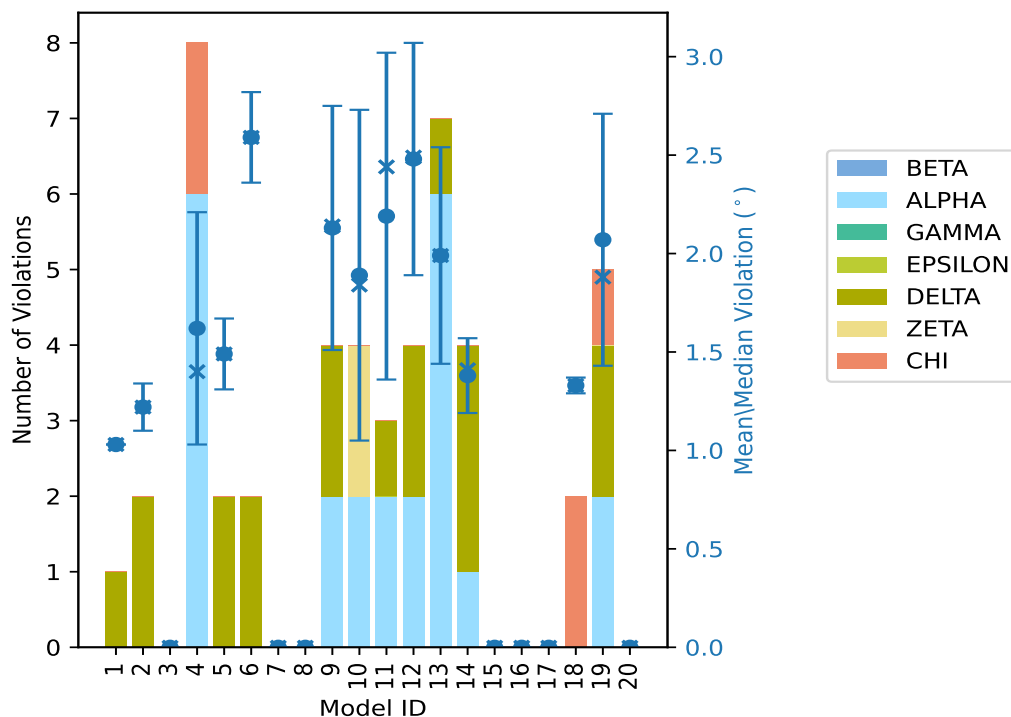
Violated and consistently violated restraints are shown using different hatch patterns in their respective categories

## 10.2 Dihedral-angle violation statistics for each model [i](#)

The following table provides the dihedral-angle violation statistics for each model in the ensemble. Violations less than 1° are not included in the statistics.

Model ID	Number of violations							Total	Mean (°)	Max (°)	SD (°)	Median (°)
	BETA	ALPHA	GAMMA	EPSILON	DELTA	ZETA	CHI					
1	0	0	0	0	1	0	0	1	1.03	1.03	0.0	1.03
2	0	0	0	0	2	0	0	2	1.22	1.34	0.12	1.22
3	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
4	0	6	0	0	0	0	2	8	1.62	2.73	0.59	1.4
5	0	0	0	0	2	0	0	2	1.49	1.67	0.18	1.49
6	0	0	0	0	2	0	0	2	2.59	2.82	0.23	2.59
7	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
8	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
9	0	2	0	0	2	0	0	4	2.13	2.81	0.62	2.14
10	0	2	0	0	0	2	0	4	1.89	2.88	0.84	1.84
11	0	2	0	0	1	0	0	3	2.19	3.06	0.83	2.44
12	0	2	0	0	2	0	0	4	2.48	3.07	0.59	2.49
13	0	6	0	0	1	0	0	7	1.99	2.89	0.55	1.99
14	0	1	0	0	3	0	0	4	1.38	1.61	0.19	1.41
15	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
16	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
17	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
18	0	0	0	0	0	0	2	2	1.33	1.37	0.04	1.33
19	0	2	0	0	2	0	1	5	2.07	2.9	0.64	1.88
20	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0

### 10.2.1 Bar graph : Dihedral 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

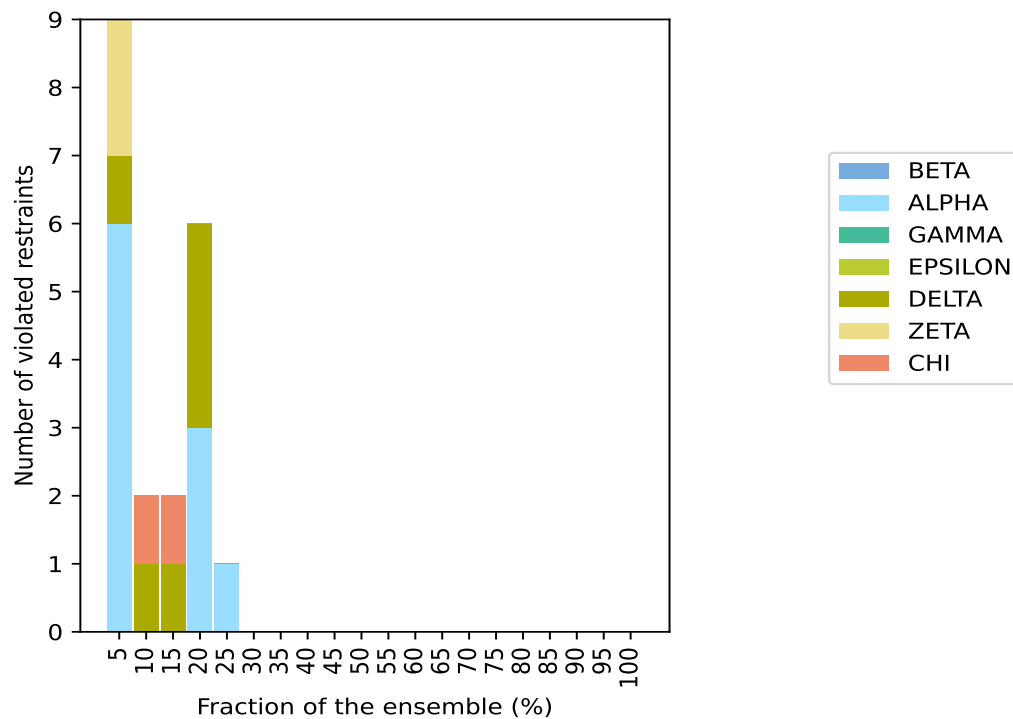
### 10.3 Dihedral-angle violation statistics for the ensemble i

Violation analysis may find that some restraints are violated in very 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 ensemble.

BETA	ALPHA	Number of violated restraints						Total	Fraction of the ensemble	
		GAMMA	EPSILON	DELTA	ZETA	CHI	Count <sup>1</sup>		%	
0	6	0	0	1	2	0	9	1	5.0	
0	0	0	0	1	0	1	2	2	10.0	
0	0	0	0	1	0	1	2	3	15.0	
0	3	0	0	3	0	0	6	4	20.0	
0	1	0	0	0	0	0	1	5	25.0	
0	0	0	0	0	0	0	0	6	30.0	
0	0	0	0	0	0	0	0	7	35.0	
0	0	0	0	0	0	0	0	8	40.0	
0	0	0	0	0	0	0	0	9	45.0	
0	0	0	0	0	0	0	0	10	50.0	
0	0	0	0	0	0	0	0	11	55.0	
0	0	0	0	0	0	0	0	12	60.0	
0	0	0	0	0	0	0	0	13	65.0	
0	0	0	0	0	0	0	0	14	70.0	
0	0	0	0	0	0	0	0	15	75.0	
0	0	0	0	0	0	0	0	16	80.0	
0	0	0	0	0	0	0	0	17	85.0	
0	0	0	0	0	0	0	0	18	90.0	
0	0	0	0	0	0	0	0	19	95.0	
0	0	0	0	0	0	0	0	20	100.0	

<sup>1</sup> Number of models with violations

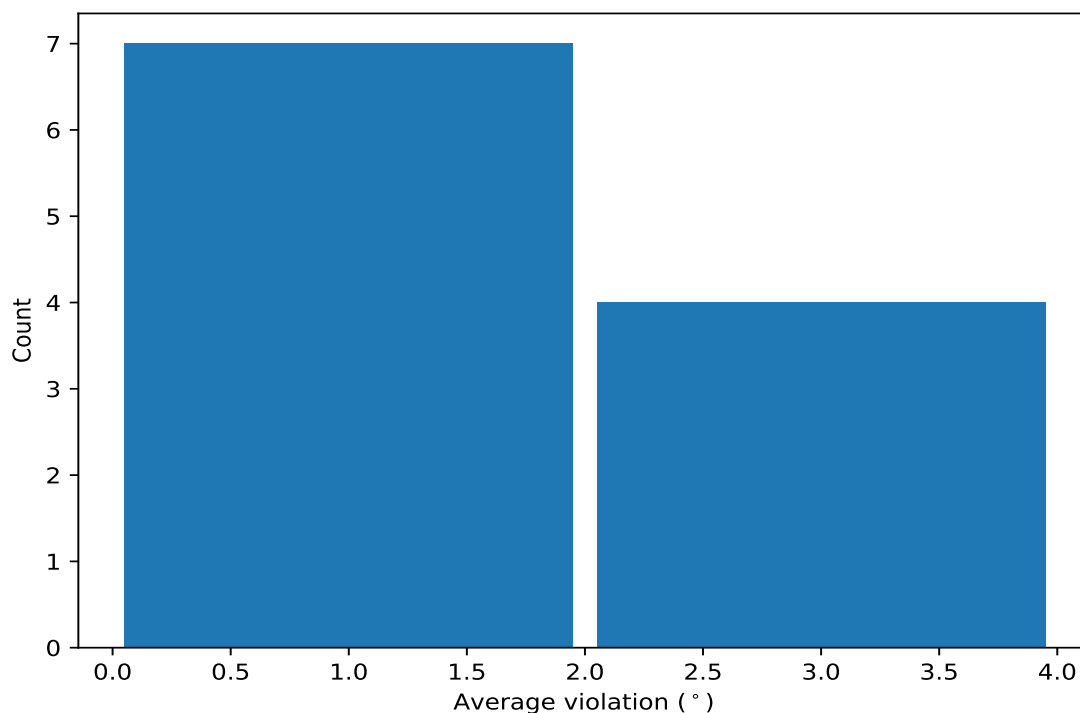
### 10.3.1 Bar graph : Dihedral-angle Violation statistics for the ensemble [i](#)



## 10.4 Most violated dihedral-angle restraints in the ensemble [i](#)

### 10.4.1 Histogram : Distribution of mean dihedral-angle 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



#### 10.4.2 Table: Most violated dihedral-angle 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.

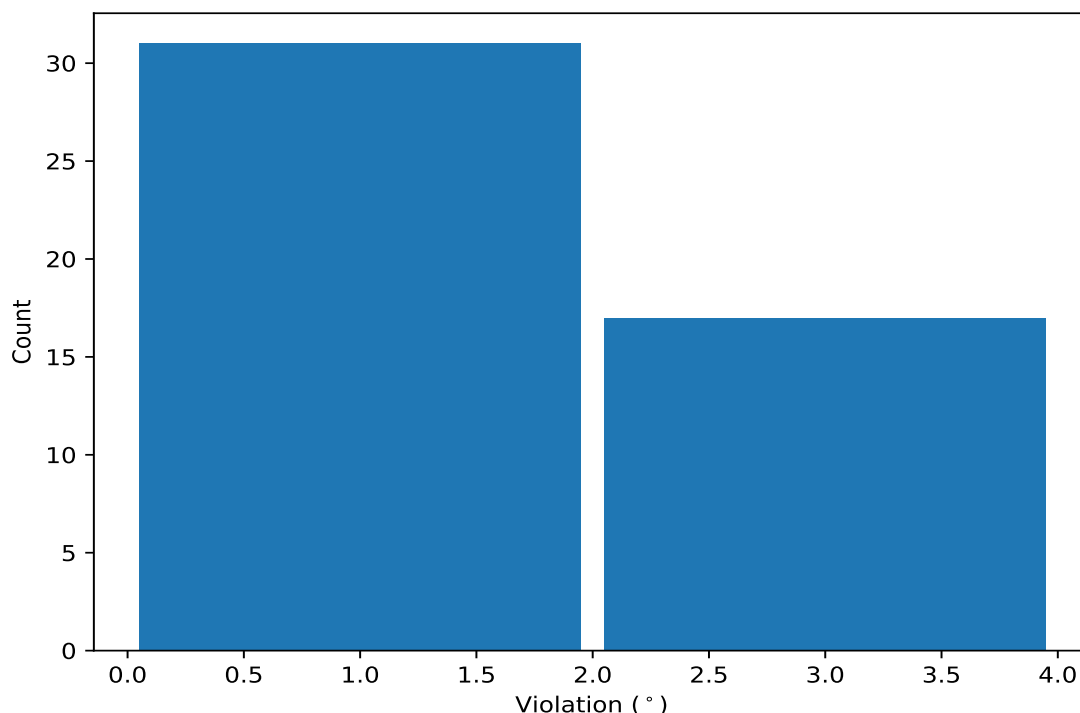
Key	Atom-1	Atom-2	Atom-3	Atom-4	Models <sup>1</sup>	Mean	SD <sup>2</sup>	Median
(1,163)	1:7:A:DT:O3'	1:8:A:D33:P	1:8:A:D33:O5'	1:8:A:D33:C5'	5	1.86	0.74	1.42
(1,168)	1:26:B:D33:O3'	1:27:B:D33:P	1:27:B:D33:O5'	1:27:B:D33:C5'	4	2.52	0.69	2.82
(1,165)	1:9:A:D33:O3'	1:10:A:D33:P	1:10:A:D33:O5'	1:10:A:D33:C5'	4	2.45	0.64	2.66
(1,110)	1:34:B:DA:C5'	1:34:B:DA:C4'	1:34:B:DA:C3'	1:34:B:DA:O3'	4	2.0	0.49	1.78
(1,166)	1:24:B:DT:O3'	1:25:B:D33:P	1:25:B:D33:O5'	1:25:B:D33:C5'	4	1.97	0.84	1.98
(1,96)	1:17:A:DA:C5'	1:17:A:DA:C4'	1:17:A:DA:C3'	1:17:A:DA:O3'	4	1.78	0.4	1.72
(1,103)	1:24:B:DT:C5'	1:24:B:DT:C4'	1:24:B:DT:C3'	1:24:B:DT:O3'	4	1.28	0.21	1.23
(1,195)	1:11:A:DA:O4'	1:11:A:DA:C1'	1:11:A:DA:N9	1:11:A:DA:C4	3	1.66	0.59	1.29
(1,91)	1:12:A:DA:C5'	1:12:A:DA:C4'	1:12:A:DA:C3'	1:12:A:DA:O3'	3	1.34	0.38	1.11
(1,202)	1:28:B:DA:O4'	1:28:B:DA:C1'	1:28:B:DA:N9	1:28:B:DA:C4	2	2.05	0.68	2.05
(1,89)	1:7:A:DT:C5'	1:7:A:DT:C4'	1:7:A:DT:C3'	1:7:A:DT:O3'	2	1.27	0.16	1.27

<sup>1</sup> Number of violated models, <sup>2</sup>Standard deviation, All angle values are in degree (°)

## 10.5 All violated dihedral-angle restraints [i](#)

### 10.5.1 Histogram : Distribution of violations [i](#)

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



### 10.5.2 Table: All violated dihedral-angle restraints [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.

Key	Atom-1	Atom-2	Atom-3	Atom-4	Model ID	Violation (°)
(1,168)	1:26:B:D33:O3'	1:27:B:D33:P	1:27:B:D33:O5'	1:27:B:D33:C5'	12	3.07
(1,165)	1:9:A:D33:O3'	1:10:A:D33:P	1:10:A:D33:O5'	1:10:A:D33:C5'	12	3.07
(1,168)	1:26:B:D33:O3'	1:27:B:D33:P	1:27:B:D33:O5'	1:27:B:D33:C5'	11	3.06
(1,166)	1:24:B:DT:O3'	1:25:B:D33:P	1:25:B:D33:O5'	1:25:B:D33:C5'	19	2.9
(1,165)	1:9:A:D33:O3'	1:10:A:D33:P	1:10:A:D33:O5'	1:10:A:D33:C5'	13	2.89
(1,156)	1:24:B:DT:C3'	1:24:B:DT:O3'	1:25:B:D33:P	1:25:B:D33:O5'	10	2.88
(1,110)	1:34:B:DA:C5'	1:34:B:DA:C4'	1:34:B:DA:C3'	1:34:B:DA:O3'	6	2.82
(1,163)	1:7:A:DT:O3'	1:8:A:D33:P	1:8:A:D33:O5'	1:8:A:D33:C5'	9	2.81
(1,202)	1:28:B:DA:O4'	1:28:B:DA:C1'	1:28:B:DA:N9	1:28:B:DA:C4	4	2.73
(1,163)	1:7:A:DT:O3'	1:8:A:D33:P	1:8:A:D33:O5'	1:8:A:D33:C5'	19	2.7
(1,166)	1:24:B:DT:O3'	1:25:B:D33:P	1:25:B:D33:O5'	1:25:B:D33:C5'	9	2.69
(1,143)	1:7:A:DT:C3'	1:7:A:DT:O3'	1:8:A:D33:P	1:8:A:D33:O5'	10	2.58
(1,168)	1:26:B:D33:O3'	1:27:B:D33:P	1:27:B:D33:O5'	1:27:B:D33:C5'	13	2.57
(1,195)	1:11:A:DA:O4'	1:11:A:DA:C1'	1:11:A:DA:N9	1:11:A:DA:C4	4	2.49

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Key	Atom-1	Atom-2	Atom-3	Atom-4	Model ID	Violation (°)
(1,165)	1:9:A:D33:O3'	1:10:A:D33:P	1:10:A:D33:O5'	1:10:A:D33:C5'	11	2.44
(1,96)	1:17:A:DA:C5'	1:17:A:DA:C4'	1:17:A:DA:C3'	1:17:A:DA:O3'	6	2.36
(1,167)	1:25:B:D33:O3'	1:26:B:D33:P	1:26:B:D33:O5'	1:26:B:D33:C5'	13	2.01
(1,164)	1:8:A:D33:O3'	1:9:A:D33:P	1:9:A:D33:O5'	1:9:A:D33:C5'	13	1.99
(1,96)	1:17:A:DA:C5'	1:17:A:DA:C4'	1:17:A:DA:C3'	1:17:A:DA:O3'	12	1.91
(1,110)	1:34:B:DA:C5'	1:34:B:DA:C4'	1:34:B:DA:C3'	1:34:B:DA:O3'	12	1.89
(1,91)	1:12:A:DA:C5'	1:12:A:DA:C4'	1:12:A:DA:C3'	1:12:A:DA:O3'	19	1.88
(1,14)	1:18:B:DT:O3'	1:19:B:DT:P	1:19:B:DT:O5'	1:19:B:DT:C5'	13	1.82
(1,110)	1:34:B:DA:C5'	1:34:B:DA:C4'	1:34:B:DA:C3'	1:34:B:DA:O3'	5	1.67
(1,105)	1:29:B:DA:C5'	1:29:B:DA:C4'	1:29:B:DA:C3'	1:29:B:DA:O3'	19	1.64
(1,110)	1:34:B:DA:C5'	1:34:B:DA:C4'	1:34:B:DA:C3'	1:34:B:DA:O3'	14	1.61
(1,103)	1:24:B:DT:C5'	1:24:B:DT:C4'	1:24:B:DT:C3'	1:24:B:DT:O3'	9	1.6
(1,1)	1:1:A:DT:O3'	1:2:A:DT:P	1:2:A:DT:O5'	1:2:A:DT:C5'	13	1.54
(1,96)	1:17:A:DA:C5'	1:17:A:DA:C4'	1:17:A:DA:C3'	1:17:A:DA:O3'	14	1.52
(1,89)	1:7:A:DT:C5'	1:7:A:DT:C4'	1:7:A:DT:C3'	1:7:A:DT:O3'	9	1.43
(1,163)	1:7:A:DT:O3'	1:8:A:D33:P	1:8:A:D33:O5'	1:8:A:D33:C5'	4	1.42
(1,165)	1:9:A:D33:O3'	1:10:A:D33:P	1:10:A:D33:O5'	1:10:A:D33:C5'	4	1.41
(1,168)	1:26:B:D33:O3'	1:27:B:D33:P	1:27:B:D33:O5'	1:27:B:D33:C5'	4	1.38
(1,202)	1:28:B:DA:O4'	1:28:B:DA:C1'	1:28:B:DA:N9	1:28:B:DA:C4	18	1.37
(1,103)	1:24:B:DT:C5'	1:24:B:DT:C4'	1:24:B:DT:C3'	1:24:B:DT:O3'	2	1.34
(1,96)	1:17:A:DA:C5'	1:17:A:DA:C4'	1:17:A:DA:C3'	1:17:A:DA:O3'	5	1.31
(1,163)	1:7:A:DT:O3'	1:8:A:D33:P	1:8:A:D33:O5'	1:8:A:D33:C5'	14	1.3
(1,195)	1:11:A:DA:O4'	1:11:A:DA:C1'	1:11:A:DA:N9	1:11:A:DA:C4	18	1.29
(1,166)	1:24:B:DT:O3'	1:25:B:D33:P	1:25:B:D33:O5'	1:25:B:D33:C5'	4	1.26
(1,25)	1:32:B:DT:O3'	1:33:B:DA:P	1:33:B:DA:O5'	1:33:B:DA:C5'	4	1.25
(1,195)	1:11:A:DA:O4'	1:11:A:DA:C1'	1:11:A:DA:N9	1:11:A:DA:C4	19	1.21
(1,103)	1:24:B:DT:C5'	1:24:B:DT:C4'	1:24:B:DT:C3'	1:24:B:DT:O3'	13	1.12
(1,91)	1:12:A:DA:C5'	1:12:A:DA:C4'	1:12:A:DA:C3'	1:12:A:DA:O3'	14	1.11
(1,89)	1:7:A:DT:C5'	1:7:A:DT:C4'	1:7:A:DT:C3'	1:7:A:DT:O3'	2	1.1
(1,163)	1:7:A:DT:O3'	1:8:A:D33:P	1:8:A:D33:O5'	1:8:A:D33:C5'	10	1.09
(1,103)	1:24:B:DT:C5'	1:24:B:DT:C4'	1:24:B:DT:C3'	1:24:B:DT:O3'	11	1.07
(1,91)	1:12:A:DA:C5'	1:12:A:DA:C4'	1:12:A:DA:C3'	1:12:A:DA:O3'	1	1.03
(1,166)	1:24:B:DT:O3'	1:25:B:D33:P	1:25:B:D33:O5'	1:25:B:D33:C5'	10	1.02
(1,12)	1:15:A:DT:O3'	1:16:A:DA:P	1:16:A:DA:O5'	1:16:A:DA:C5'	4	1.01