



# Full wwPDB NMR Structure Validation Report ⓘ

Dec 25, 2024 – 11:40 AM EST

PDB ID : 6I57  
BMRB ID : 34329  
Title : NMR structure of the third TPR domain of the human SPAG1 protein  
Authors : Chagot, M.E.; Quinternet, M.  
Deposited on : 2018-11-13

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)

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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  
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

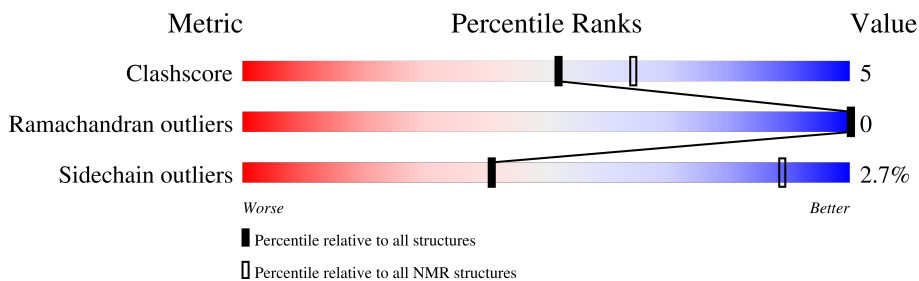
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*SOLUTION NMR*

The overall completeness of chemical shifts assignment is 93%.

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



Metric	Whole archive (#Entries)	NMR archive (#Entries)
Clashscore	210492	14027
Ramachandran outliers	207382	12486
Sidechain outliers	206894	12463

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

Mol	Chain	Length	Quality of chain
1	A	125	 80% 14% 6%

## 2 Ensemble composition and analysis

This entry contains 20 models. Model 18 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *lowest energy*.

The following residues are included in the computation of the global validation metrics.

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	A:623-A:739 (117)	0.43	18

Ill-defined regions of proteins are excluded from the global statistics.

Ligands and non-protein polymers are included in the analysis.

The models can be grouped into 4 clusters and 4 single-model clusters were found.

Cluster number	Models
1	1, 4, 5, 10, 11, 16, 18
2	3, 6, 7, 9
3	2, 8, 12
4	15, 20
Single-model clusters	13; 14; 17; 19

### 3 Entry composition

There is only 1 type of molecule in this entry. The entry contains 2032 atoms, of which 1028 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Sperm-associated antigen 1.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	125	2032	632	1028	173	191	8	0

There are 4 discrepancies between the modelled and reference sequences:

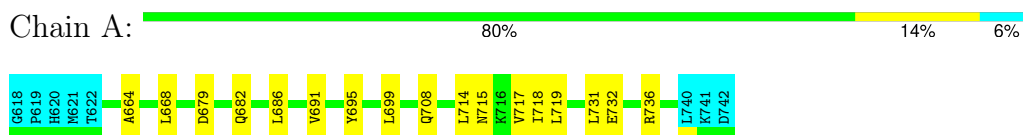
Chain	Residue	Modelled	Actual	Comment	Reference
A	618	GLY	-	expression tag	UNP Q07617
A	619	PRO	-	expression tag	UNP Q07617
A	620	HIS	-	expression tag	UNP Q07617
A	621	MET	-	expression tag	UNP Q07617

## 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: Sperm-associated antigen 1

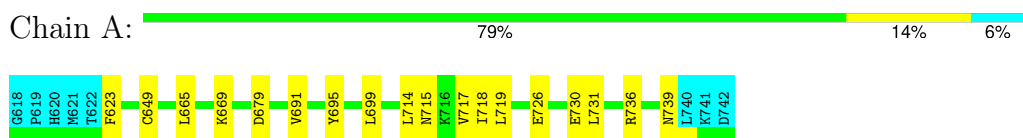


### 4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

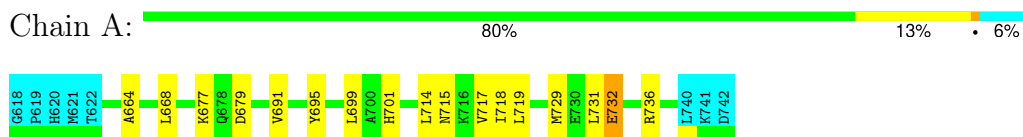
#### 4.2.1 Score per residue for model 1

- Molecule 1: Sperm-associated antigen 1



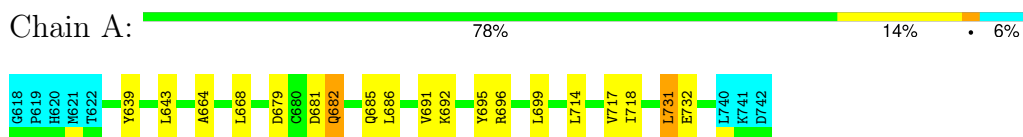
#### 4.2.2 Score per residue for model 2

- Molecule 1: Sperm-associated antigen 1



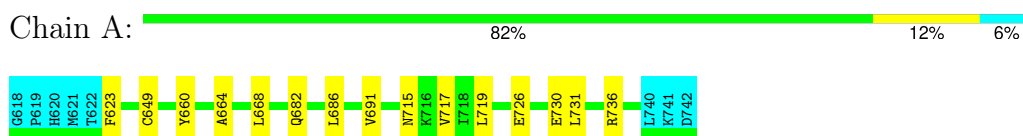
### 4.2.3 Score per residue for model 3

- Molecule 1: Sperm-associated antigen 1



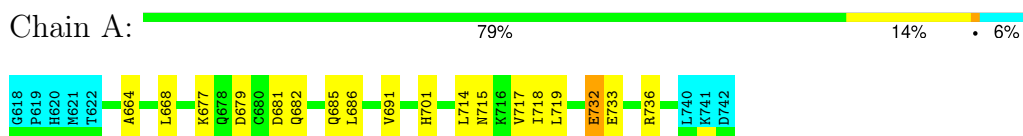
### 4.2.4 Score per residue for model 4

- Molecule 1: Sperm-associated antigen 1



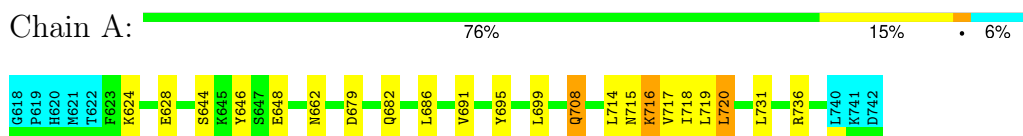
### 4.2.5 Score per residue for model 5

- Molecule 1: Sperm-associated antigen 1



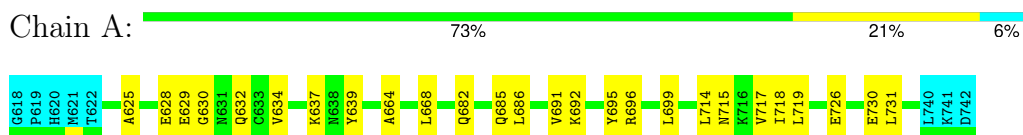
### 4.2.6 Score per residue for model 6

- Molecule 1: Sperm-associated antigen 1



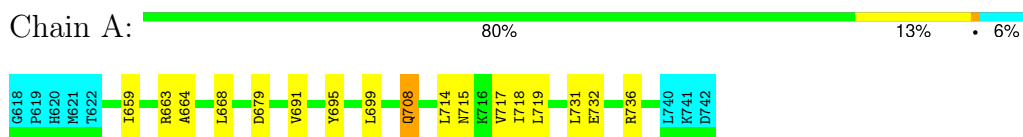
### 4.2.7 Score per residue for model 7

- Molecule 1: Sperm-associated antigen 1



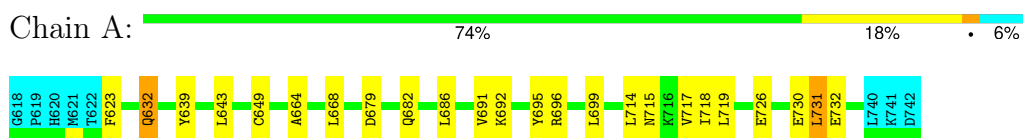
### 4.2.8 Score per residue for model 8

- Molecule 1: Sperm-associated antigen 1



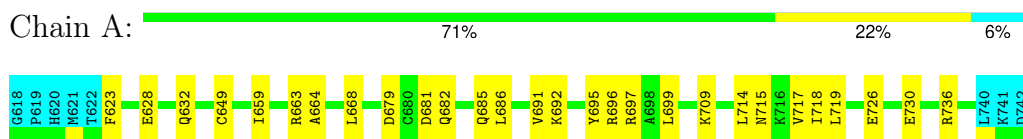
### 4.2.9 Score per residue for model 9

- Molecule 1: Sperm-associated antigen 1



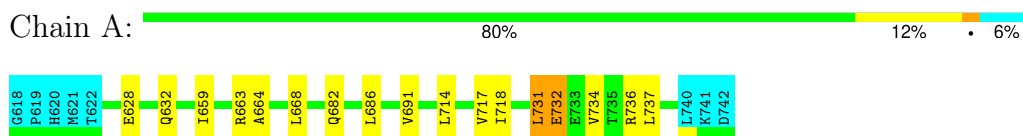
### 4.2.10 Score per residue for model 10

- Molecule 1: Sperm-associated antigen 1



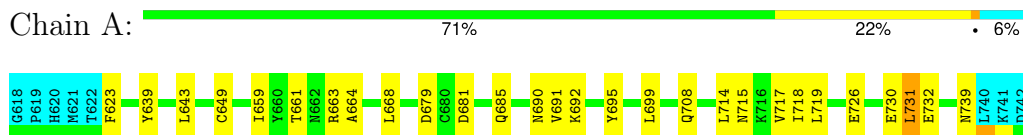
### 4.2.11 Score per residue for model 11

- Molecule 1: Sperm-associated antigen 1



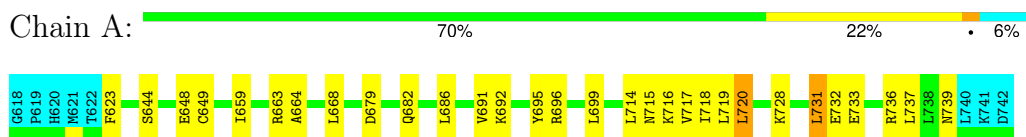
### 4.2.12 Score per residue for model 12

- Molecule 1: Sperm-associated antigen 1



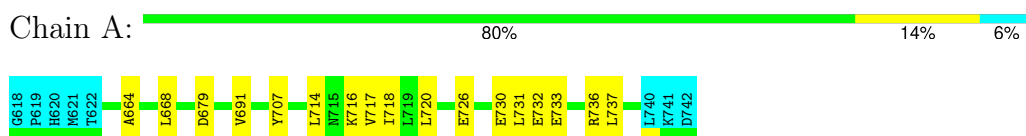
### 4.2.13 Score per residue for model 13

- Molecule 1: Sperm-associated antigen 1



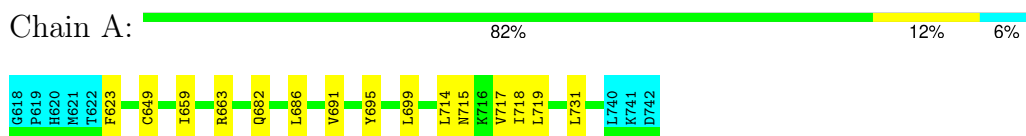
### 4.2.14 Score per residue for model 14

- Molecule 1: Sperm-associated antigen 1



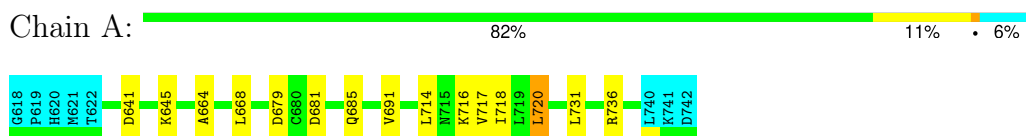
### 4.2.15 Score per residue for model 15

- Molecule 1: Sperm-associated antigen 1



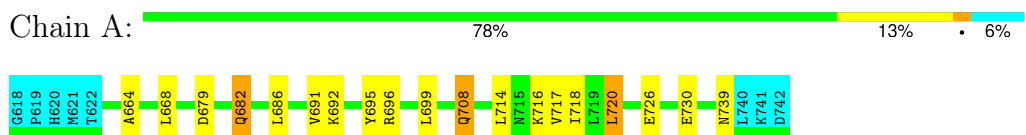
### 4.2.16 Score per residue for model 16

- Molecule 1: Sperm-associated antigen 1



### 4.2.17 Score per residue for model 17

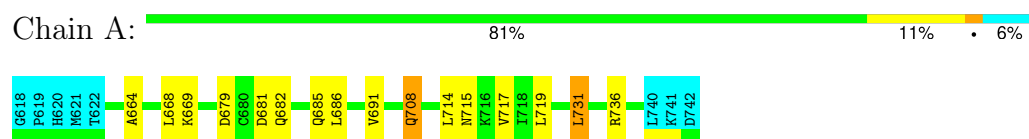
- Molecule 1: Sperm-associated antigen 1





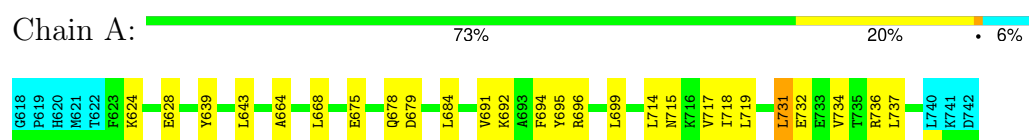
#### 4.2.18 Score per residue for model 18 (medoid)

- Molecule 1: Sperm-associated antigen 1



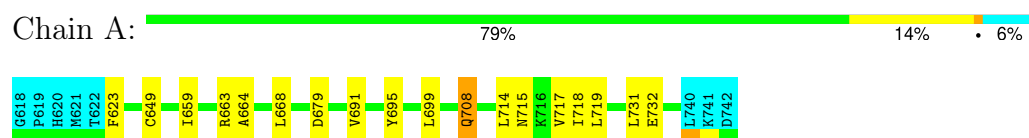
#### 4.2.19 Score per residue for model 19

- Molecule 1: Sperm-associated antigen 1



#### 4.2.20 Score per residue for model 20

- Molecule 1: Sperm-associated antigen 1



## 5 Refinement protocol and experimental data overview

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

Of the 100 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
CYANA	structure calculation	
TALOS	structure calculation	
PREDITOR	structure calculation	
CNS	refinement	

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

Chemical shift file(s)	working_cs.cif
Number of chemical shift lists	1
Total number of shifts	1638
Number of shifts mapped to atoms	1638
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	93%

## 6 Model quality i

### 6.1 Standard geometry i

There are no covalent bond-length or bond-angle outliers.

There are no bond-length outliers.

There are no bond-angle outliers.

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	942	964	964	10±3
All	All	18840	19280	19280	197

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 5.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:714:LEU:HB3	1:A:731:LEU:HD12	0.76	1.53	13	1
1:A:691:VAL:HG13	1:A:717:VAL:HG13	0.64	1.69	17	20
1:A:692:LYS:O	1:A:696:ARG:HG2	0.62	1.95	13	7
1:A:690:ASN:OD1	1:A:692:LYS:HG2	0.59	1.98	12	1
1:A:660:TYR:CE1	1:A:682:GLN:HG2	0.58	2.33	4	1
1:A:715:ASN:O	1:A:719:LEU:HG	0.58	1.98	8	15
1:A:664:ALA:O	1:A:668:LEU:HG	0.57	2.00	19	17
1:A:659:ILE:O	1:A:663:ARG:HB2	0.57	1.99	20	7
1:A:695:TYR:O	1:A:699:LEU:HG	0.56	2.01	17	14
1:A:681:ASP:O	1:A:685:GLN:HG2	0.55	2.02	5	6
1:A:623:PHE:CE2	1:A:649:CYS:HB3	0.55	2.36	13	6
1:A:716:LYS:O	1:A:720:LEU:HD22	0.54	2.02	13	4
1:A:714:LEU:O	1:A:718:ILE:HG12	0.53	2.04	9	18
1:A:637:LYS:HA	1:A:639:TYR:CE1	0.51	2.40	7	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:682:GLN:O	1:A:686:LEU:HG	0.50	2.07	4	12
1:A:731:LEU:HD13	1:A:732:GLU:N	0.50	2.21	19	5
1:A:729:MET:O	1:A:732:GLU:HG3	0.50	2.06	2	1
1:A:731:LEU:N	1:A:731:LEU:HD13	0.49	2.22	13	1
1:A:624:LYS:O	1:A:628:GLU:HG2	0.49	2.07	6	1
1:A:732:GLU:O	1:A:736:ARG:HG3	0.49	2.07	5	3
1:A:661:THR:HG21	1:A:692:LYS:HG3	0.48	1.86	12	1
1:A:628:GLU:O	1:A:632:GLN:HG2	0.48	2.09	10	3
1:A:625:ALA:O	1:A:629:GLU:HG2	0.47	2.09	7	1
1:A:646:TYR:CE2	1:A:662:ASN:HB3	0.46	2.45	6	1
1:A:726:GLU:O	1:A:730:GLU:HG2	0.46	2.11	12	8
1:A:644:SER:O	1:A:648:GLU:HG2	0.46	2.10	13	2
1:A:639:TYR:O	1:A:643:LEU:HG	0.46	2.10	3	4
1:A:675:GLU:HA	1:A:678:GLN:NE2	0.46	2.26	19	1
1:A:632:GLN:HE21	1:A:632:GLN:HA	0.46	1.70	9	1
1:A:728:LYS:HA	1:A:731:LEU:CD2	0.46	2.41	13	1
1:A:718:ILE:HD11	1:A:731:LEU:HD11	0.46	1.87	13	1
1:A:682:GLN:O	1:A:685:GLN:HG2	0.45	2.12	7	1
1:A:716:LYS:O	1:A:720:LEU:HD13	0.45	2.11	14	1
1:A:731:LEU:HD12	1:A:732:GLU:N	0.45	2.27	14	1
1:A:684:LEU:HD11	1:A:694:PHE:CZ	0.45	2.46	19	1
1:A:708:GLN:HE21	1:A:708:GLN:HA	0.45	1.71	8	5
1:A:733:GLU:HG3	1:A:736:ARG:NH2	0.45	2.27	5	1
1:A:734:VAL:HA	1:A:737:LEU:HD12	0.45	1.89	19	2
1:A:623:PHE:CE1	1:A:649:CYS:HB3	0.44	2.48	12	2
1:A:677:LYS:HE2	1:A:701:HIS:CE1	0.43	2.48	5	2
1:A:624:LYS:O	1:A:628:GLU:HG3	0.43	2.14	19	1
1:A:663:ARG:HB3	1:A:679:ASP:OD1	0.43	2.14	12	1
1:A:691:VAL:CG1	1:A:717:VAL:HG13	0.43	2.44	12	4
1:A:681:ASP:HB2	1:A:697:ARG:NH2	0.43	2.29	10	1
1:A:660:TYR:CZ	1:A:682:GLN:HG2	0.42	2.49	4	1
1:A:665:LEU:O	1:A:669:LYS:HG2	0.42	2.14	1	1
1:A:733:GLU:O	1:A:737:LEU:HG	0.42	2.14	13	2
1:A:728:LYS:HA	1:A:731:LEU:HD21	0.42	1.91	13	1
1:A:714:LEU:HD13	1:A:731:LEU:HA	0.41	1.92	18	1
1:A:630:GLY:O	1:A:634:VAL:HG23	0.41	2.16	7	1
1:A:641:ASP:O	1:A:645:LYS:HG2	0.40	2.16	16	1
1:A:707:TYR:CE1	1:A:737:LEU:HB3	0.40	2.51	14	1

## 6.3 Torsion angles [i](#)

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

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all NMR entries. The Analysed column shows the number of residues for which the backbone conformation was analysed and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	117/125 (94%)	114±1 (97±1%)	3±1 (3±1%)	0±0 (0±0%)	100	100
All	All	2340/2500 (94%)	2277 (97%)	63 (3%)	0 (0%)	100	100

There are no Ramachandran outliers.

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

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all NMR entries. The Analysed column shows the number of residues for which the sidechain conformation was analysed and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	103/110 (94%)	100±1 (97±1%)	3±1 (3±1%)	41	89
All	All	2060/2200 (94%)	2004 (97%)	56 (3%)	41	89

All 12 unique residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	731	LEU	16
1	A	679	ASP	15
1	A	708	GLN	6
1	A	739	ASN	4
1	A	732	GLU	4
1	A	720	LEU	4
1	A	682	GLN	2
1	A	736	ARG	1
1	A	716	LYS	1
1	A	632	GLN	1
1	A	709	LYS	1
1	A	669	LYS	1

### 6.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 6.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

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

There are no ligands in this entry.

### 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 93% for the well-defined parts and 93% for the entire structure.

### 7.1 Chemical shift list 1

File name: working\_cs.cif

Chemical shift list name: cs\_ref\_dss\_293K.str

#### 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	1638
Number of shifts mapped to atoms	1638
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	7

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

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction $\pm$ precision, ppm	Suggested action
$^{13}\text{C}_\alpha$	125	2.30 $\pm$ 0.13	Should be checked
$^{13}\text{C}_\beta$	121	3.26 $\pm$ 0.08	Should be checked
$^{13}\text{C}'$	124	2.48 $\pm$ 0.10	Should be applied
$^{15}\text{N}$	122	0.28 $\pm$ 0.30	None needed (< 0.5 ppm)

#### 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 93%, i.e. 1533 atoms were assigned a chemical shift out of a possible 1646. 0 out of 21 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	$^1\text{H}$	$^{13}\text{C}$	$^{15}\text{N}$
Backbone	586/586 (100%)	236/236 (100%)	234/234 (100%)	116/116 (100%)
Sidechain	884/969 (91%)	601/623 (96%)	264/303 (87%)	19/43 (44%)

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	Total	<sup>1</sup> H	<sup>13</sup> C	<sup>15</sup> N
Aromatic	63/91 (69%)	41/43 (95%)	22/47 (47%)	0/1 (0%)
Overall	1533/1646 (93%)	878/902 (97%)	520/584 (89%)	135/160 (84%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 93%, i.e. 1631 atoms were assigned a chemical shift out of a possible 1751. 0 out of 22 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	<sup>1</sup> H	<sup>13</sup> C	<sup>15</sup> N
Backbone	622/625 (100%)	251/252 (100%)	249/250 (100%)	122/123 (99%)
Sidechain	940/1027 (92%)	639/661 (97%)	282/322 (88%)	19/44 (43%)
Aromatic	69/99 (70%)	43/47 (91%)	24/49 (49%)	2/3 (67%)
Overall	1631/1751 (93%)	933/960 (97%)	555/621 (89%)	143/170 (84%)

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

The following table lists the statistically unusual chemical shifts. These are statistical measures, and large deviations from the mean do not necessarily imply incorrect assignments. Molecules containing paramagnetic centres or hemes are expected to give rise to anomalous chemical shifts.

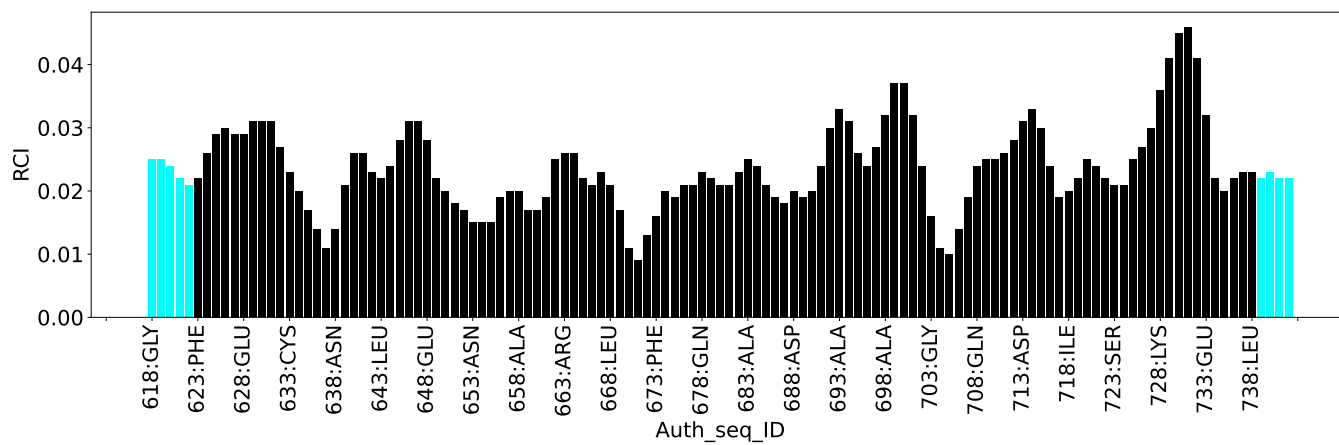
List Id	Chain	Res	Type	Atom	Shift, ppm	Expected range, ppm	Z-score
1	A	735	THR	HG1	4.98	0.08 – 2.19	18.2
1	A	675	GLU	HB2	-0.12	1.00 – 3.05	-10.4
1	A	703	GLY	HA2	1.35	2.15 – 5.77	-7.2
1	A	709	LYS	HB2	0.28	0.58 – 2.97	-6.3
1	A	663	ARG	HE	10.67	4.52 – 10.19	5.8
1	A	669	LYS	HG2	-0.06	0.13 – 2.61	-5.8
1	A	675	GLU	HB3	0.81	0.95 – 3.05	-5.6

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

The image below reports *random coil index* values for the protein chains in the structure. The height of each bar gives a probability of a given residue to be disordered, as predicted from the available chemical shifts and the amino acid sequence. A value above 0.2 is an indication of significant predicted disorder. The colour of the bar shows whether the residue is in the well-defined core (black) or in the ill-defined residue ranges (cyan), as described in section 2 on ensemble composition. If well-defined core and ill-defined regions are not identified then it is shown as gray bars.

Random coil index (RCI) for chain A:





## 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	3488
Intra-residue ( $ i-j =0$ )	869
Sequential ( $ i-j =1$ )	736
Medium range ( $ i-j >1$ and $ i-j <5$ )	943
Long range ( $ i-j \geq 5$ )	940
Inter-chain	0
Hydrogen bond restraints	0
Disulfide bond restraints	0
Total dihedral-angle restraints	239
Number of unmapped restraints	0
Number of restraints per residue	29.8
Number of long range restraints per residue <sup>1</sup>	7.5

<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)	9.6	0.2
0.2-0.5 (Medium)	3.9	0.5
>0.5 (Large)	3.5	1.66

### 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)	3.6	3.42
10.0-20.0 (Medium)	None	None
>20.0 (Large)	None	None

## 9 Distance violation analysis [i](#)

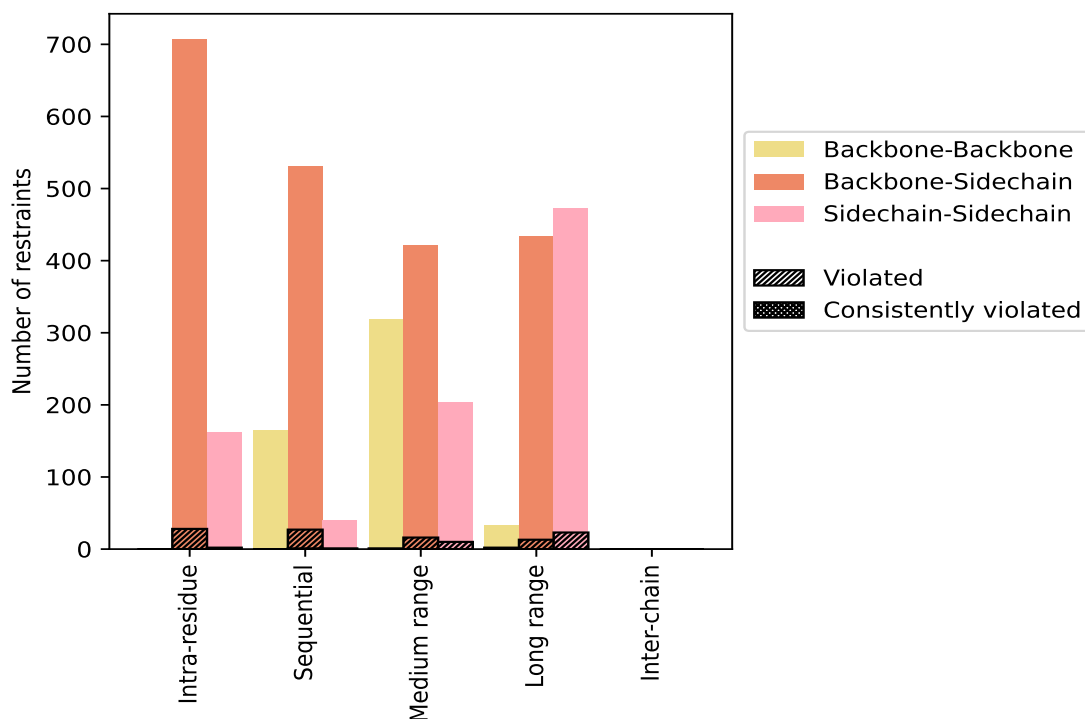
### 9.1 Summary of distance violations [i](#)

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

Restrains type	Count	% <sup>1</sup>	Violated <sup>3</sup>			Consistently Violated <sup>4</sup>		
			Count	% <sup>2</sup>	% <sup>1</sup>	Count	% <sup>2</sup>	% <sup>1</sup>
<b>Intra-residue (<math> i-j =0</math>)</b>	<b>869</b>	<b>24.9</b>	<b>30</b>	<b>3.5</b>	<b>0.9</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	707	20.3	28	4.0	0.8	0	0.0	0.0
Sidechain-Sidechain	162	4.6	2	1.2	0.1	0	0.0	0.0
<b>Sequential (<math> i-j =1</math>)</b>	<b>736</b>	<b>21.1</b>	<b>28</b>	<b>3.8</b>	<b>0.8</b>	<b>1</b>	<b>0.1</b>	<b>0.0</b>
Backbone-Backbone	165	4.7	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	531	15.2	27	5.1	0.8	1	0.2	0.0
Sidechain-Sidechain	40	1.1	1	2.5	0.0	0	0.0	0.0
<b>Medium range (<math> i-j &gt;1</math> &amp; <math> i-j &lt;5</math>)</b>	<b>943</b>	<b>27.0</b>	<b>27</b>	<b>2.9</b>	<b>0.8</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	319	9.1	1	0.3	0.0	0	0.0	0.0
Backbone-Sidechain	421	12.1	16	3.8	0.5	0	0.0	0.0
Sidechain-Sidechain	203	5.8	10	4.9	0.3	0	0.0	0.0
<b>Long range (<math> i-j \geq 5</math>)</b>	<b>940</b>	<b>26.9</b>	<b>38</b>	<b>4.0</b>	<b>1.1</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	33	0.9	2	6.1	0.1	0	0.0	0.0
Backbone-Sidechain	434	12.4	13	3.0	0.4	0	0.0	0.0
Sidechain-Sidechain	473	13.6	23	4.9	0.7	0	0.0	0.0
<b>Inter-chain</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
Sidechain-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
<b>Hydrogen bond</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
<b>Disulfide bond</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>
<b>Total</b>	<b>3488</b>	<b>100.0</b>	<b>123</b>	<b>3.5</b>	<b>3.5</b>	<b>1</b>	<b>0.0</b>	<b>0.0</b>
Backbone-Backbone	517	14.8	3	0.6	0.1	0	0.0	0.0
Backbone-Sidechain	2093	60.0	84	4.0	2.4	1	0.0	0.0
Sidechain-Sidechain	878	25.2	36	4.1	1.0	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	1	1	3	5	0	10	0.13	0.2	0.03	0.12
2	1	2	3	3	0	9	0.13	0.23	0.04	0.11
3	8	4	3	5	0	20	0.15	0.3	0.06	0.12
4	6	4	5	6	0	21	0.21	0.5	0.12	0.18
5	4	3	2	3	0	12	0.15	0.33	0.06	0.12
6	6	4	6	11	0	27	0.52	1.32	0.4	0.37
7	6	4	5	4	0	19	0.17	0.39	0.08	0.11
8	2	2	1	4	0	9	0.12	0.16	0.02	0.12
9	0	3	3	3	0	9	0.13	0.2	0.03	0.12
10	2	2	5	4	0	13	0.13	0.19	0.03	0.12

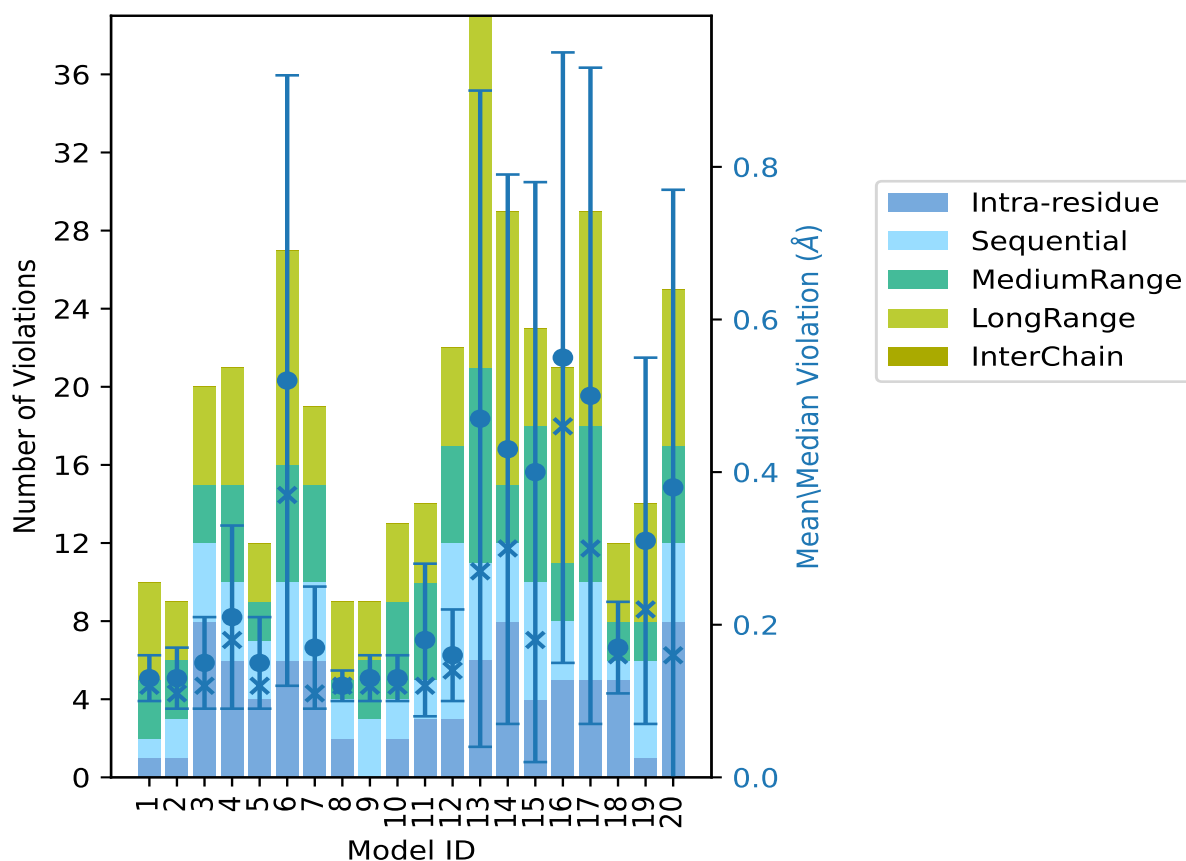
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Model ID	Number of violations					Total	Mean (Å)	Max (Å)	SD <sup>6</sup> (Å)	Median (Å)
	IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>					
11	3	2	5	4	0	14	0.18	0.49	0.1	0.12
12	3	9	5	5	0	22	0.16	0.33	0.06	0.14
13	6	5	10	18	0	39	0.47	1.66	0.43	0.27
14	8	4	3	14	0	29	0.43	1.4	0.36	0.3
15	4	6	8	5	0	23	0.4	1.31	0.38	0.18
16	5	3	3	10	0	21	0.55	1.27	0.4	0.46
17	5	5	8	11	0	29	0.5	1.37	0.43	0.3
18	5	1	2	4	0	12	0.17	0.3	0.06	0.16
19	1	5	2	6	0	14	0.31	0.85	0.24	0.22
20	8	4	5	8	0	25	0.38	1.36	0.39	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

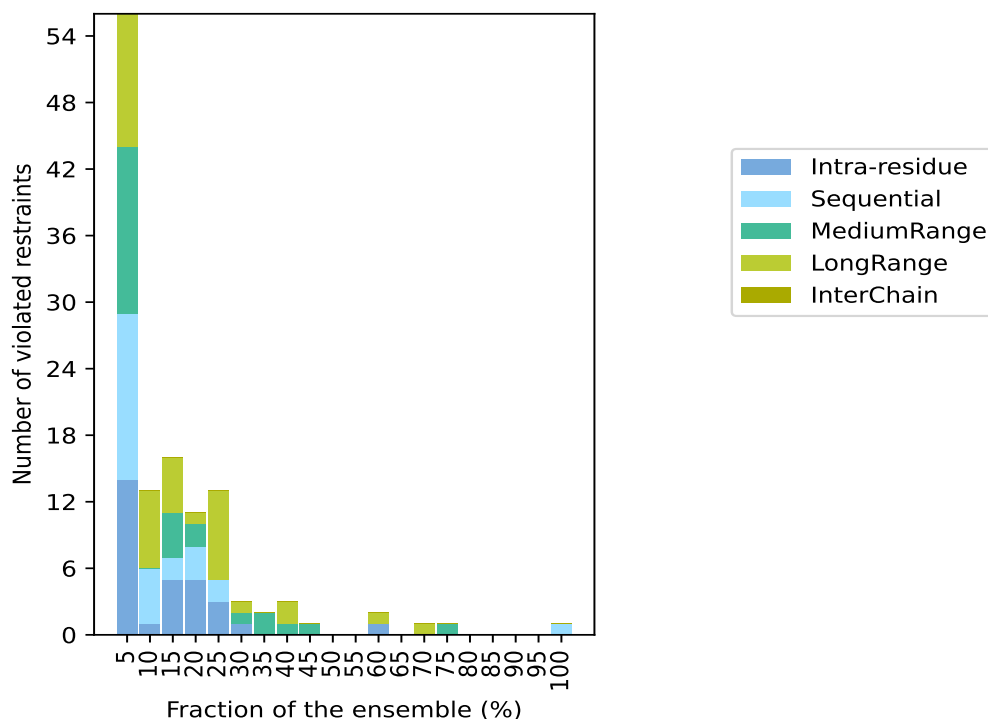
### 9.3 Distance violation statistics for the ensemble

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, 3365(IR:839, SQ:708, MR:916, LR:902, IC:0) restraints are not violated in the ensemble.

Number of violated restraints						Fraction of the ensemble	
IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>	Total	Count <sup>6</sup>	%
14	15	15	12	0	56	1	5.0
1	5	0	7	0	13	2	10.0
5	2	4	5	0	16	3	15.0
5	3	2	1	0	11	4	20.0
3	2	0	8	0	13	5	25.0
1	0	1	1	0	3	6	30.0
0	0	2	0	0	2	7	35.0
0	0	1	2	0	3	8	40.0
0	0	1	0	0	1	9	45.0
0	0	0	0	0	0	10	50.0
0	0	0	0	0	0	11	55.0
1	0	0	1	0	2	12	60.0
0	0	0	0	0	0	13	65.0
0	0	0	1	0	1	14	70.0
0	0	1	0	0	1	15	75.0
0	0	0	0	0	0	16	80.0
0	0	0	0	0	0	17	85.0
0	0	0	0	0	0	18	90.0
0	0	0	0	0	0	19	95.0
0	1	0	0	0	1	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](#)

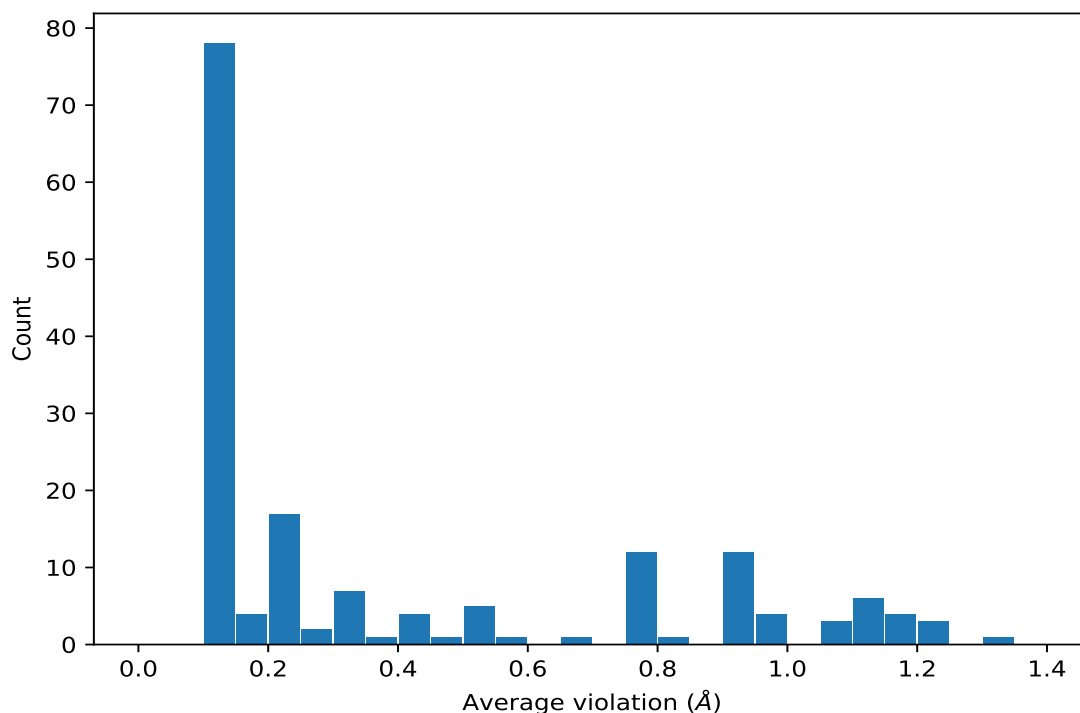


## 9.4 Most violated distance restraints in the ensemble [i](#)

### 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)
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	20	0.2	0.02	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	20	0.2	0.02	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	20	0.2	0.02	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	20	0.2	0.02	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	20	0.2	0.02	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	20	0.2	0.02	0.2
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	15	0.29	0.14	0.27
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	14	0.13	0.02	0.12
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	14	0.13	0.02	0.12
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	12	0.15	0.01	0.16
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	12	0.12	0.02	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	12	0.12	0.02	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	12	0.12	0.02	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	12	0.12	0.02	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	12	0.12	0.02	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	12	0.12	0.02	0.12

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	9	0.11	0.01	0.11
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	8	0.12	0.02	0.12
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	8	0.12	0.02	0.12
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	8	0.12	0.02	0.12
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	8	0.12	0.02	0.12
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	8	0.12	0.02	0.12
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	8	0.12	0.02	0.12
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	8	0.12	0.02	0.12
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	8	0.12	0.02	0.12
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	8	0.12	0.02	0.12
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	8	0.12	0.01	0.12
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	8	0.11	0.01	0.11
(1,860)	1:706:A:ASN:HD22	1:709:A:LYS:HG2	7	0.2	0.09	0.18
(1,2461)	1:729:A:MET:HA	1:732:A:GLU:HB3	7	0.12	0.01	0.12
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG2	6	0.12	0.01	0.12
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG3	6	0.12	0.01	0.12
(2,6)	1:657:A:CYS:H	1:686:A:LEU:H	6	0.12	0.01	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD11	6	0.12	0.01	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD12	6	0.12	0.01	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD13	6	0.12	0.01	0.12
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD11	5	1.22	0.1	1.19
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD12	5	1.22	0.1	1.19
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD13	5	1.22	0.1	1.19
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD11	5	1.15	0.31	1.28
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD12	5	1.15	0.31	1.28
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD13	5	1.15	0.31	1.28
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD11	5	1.12	0.39	1.28
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD12	5	1.12	0.39	1.28
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD13	5	1.12	0.39	1.28
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD11	5	1.12	0.39	1.28
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD12	5	1.12	0.39	1.28
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD13	5	1.12	0.39	1.28
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD21	5	1.08	0.09	1.04
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD22	5	1.08	0.09	1.04
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD23	5	1.08	0.09	1.04
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD11	5	0.92	0.05	0.94
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD12	5	0.92	0.05	0.94
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD13	5	0.92	0.05	0.94
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD11	5	0.92	0.05	0.94
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD12	5	0.92	0.05	0.94
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD13	5	0.92	0.05	0.94
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD11	5	0.92	0.05	0.94

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD12	5	0.92	0.05	0.94
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD13	5	0.92	0.05	0.94
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD11	5	0.78	0.28	0.86
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD12	5	0.78	0.28	0.86
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD13	5	0.78	0.28	0.86
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD11	5	0.78	0.28	0.86
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD12	5	0.78	0.28	0.86
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD13	5	0.78	0.28	0.86
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD11	5	0.78	0.28	0.86
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD12	5	0.78	0.28	0.86
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD13	5	0.78	0.28	0.86
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD11	5	0.77	0.12	0.73
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD12	5	0.77	0.12	0.73
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD13	5	0.77	0.12	0.73
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD11	5	0.53	0.23	0.54
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD12	5	0.53	0.23	0.54
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD13	5	0.53	0.23	0.54
(1,1047)	1:720:A:LEU:H	1:720:A:LEU:HG	5	0.41	0.07	0.44
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD11	5	0.34	0.17	0.32
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD12	5	0.34	0.17	0.32
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD13	5	0.34	0.17	0.32
(1,1057)	1:720:A:LEU:HG	1:721:A:ASP:H	5	0.3	0.01	0.29
(1,2871)	1:640:A:LYS:HG2	1:641:A:ASP:HA	5	0.22	0.02	0.23
(1,2871)	1:640:A:LYS:HG3	1:641:A:ASP:HA	5	0.22	0.02	0.23
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD2	5	0.11	0.0	0.11
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD3	5	0.11	0.0	0.11
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD11	4	0.96	0.02	0.96
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD12	4	0.96	0.02	0.96
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD13	4	0.96	0.02	0.96
(1,2207)	1:677:A:LYS:HE2	1:701:A:HIS:HD2	4	0.95	0.12	0.94
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD11	4	0.92	0.05	0.93
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD12	4	0.92	0.05	0.93
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD13	4	0.92	0.05	0.93
(1,535)	1:677:A:LYS:H	1:677:A:LYS:HE3	4	0.8	0.31	0.8
(1,544)	1:677:A:LYS:HE3	1:678:A:GLN:H	4	0.56	0.33	0.6
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD21	4	0.43	0.0	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD22	4	0.43	0.0	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD23	4	0.43	0.0	0.43
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG2	4	0.3	0.01	0.3
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG3	4	0.3	0.01	0.3
(1,306)	1:655:A:LYS:H	1:655:A:LYS:HG2	4	0.25	0.01	0.25
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE2	4	0.17	0.02	0.16

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE3	4	0.17	0.02	0.16
(1,1193)	1:737:A:LEU:HD21	1:738:A:LEU:H	4	0.12	0.01	0.12
(1,1193)	1:737:A:LEU:HD22	1:738:A:LEU:H	4	0.12	0.01	0.12
(1,1193)	1:737:A:LEU:HD23	1:738:A:LEU:H	4	0.12	0.01	0.12
(1,2311)	1:723:A:SER:H	1:724:A:ILE:HG12	4	0.11	0.0	0.11
(1,3105)	1:675:A:GLU:HG2	1:678:A:GLN:HE22	3	0.53	0.03	0.54
(1,3105)	1:675:A:GLU:HG3	1:678:A:GLN:HE22	3	0.53	0.03	0.54
(1,1227)	1:740:A:LEU:H	1:740:A:LEU:HG	3	0.31	0.01	0.3
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD11	3	0.24	0.04	0.26
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD12	3	0.24	0.04	0.26
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD13	3	0.24	0.04	0.26
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD11	3	0.24	0.04	0.26
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD12	3	0.24	0.04	0.26
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD13	3	0.24	0.04	0.26
(1,2605)	1:660:A:TYR:HE1	1:682:A:GLN:HA	3	0.21	0.14	0.11
(1,2605)	1:660:A:TYR:HE2	1:682:A:GLN:HA	3	0.21	0.14	0.11
(1,114)	1:635:A:ASN:H	1:635:A:ASN:HD21	3	0.15	0.01	0.16
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD21	3	0.14	0.0	0.14
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD22	3	0.14	0.0	0.14
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD23	3	0.14	0.0	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD11	3	0.13	0.01	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD12	3	0.13	0.01	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD13	3	0.13	0.01	0.14
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD21	3	0.12	0.01	0.12
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD22	3	0.12	0.01	0.12
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD23	3	0.12	0.01	0.12
(1,1892)	1:716:A:LYS:HD2	1:719:A:LEU:H	3	0.12	0.01	0.12
(1,2675)	1:694:A:PHE:HZ	1:716:A:LYS:HD2	3	0.12	0.01	0.12
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE1	3	0.12	0.01	0.11
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE2	3	0.12	0.01	0.11
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE3	3	0.12	0.01	0.11
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD11	3	0.11	0.01	0.11
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD12	3	0.11	0.01	0.11
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD13	3	0.11	0.01	0.11
(1,955)	1:710:A:SER:HB2	1:713:A:ASP:H	3	0.11	0.01	0.1
(1,1234)	1:740:A:LEU:HD11	1:741:A:LYS:H	3	0.11	0.01	0.1
(1,1234)	1:740:A:LEU:HD12	1:741:A:LYS:H	3	0.11	0.01	0.1
(1,1234)	1:740:A:LEU:HD13	1:741:A:LYS:H	3	0.11	0.01	0.1
(1,2779)	1:625:A:ALA:HA	1:628:A:GLU:HB2	3	0.11	0.01	0.1
(1,2779)	1:625:A:ALA:HA	1:628:A:GLU:HB3	3	0.11	0.01	0.1
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG21	3	0.1	0.0	0.1
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG22	3	0.1	0.0	0.1

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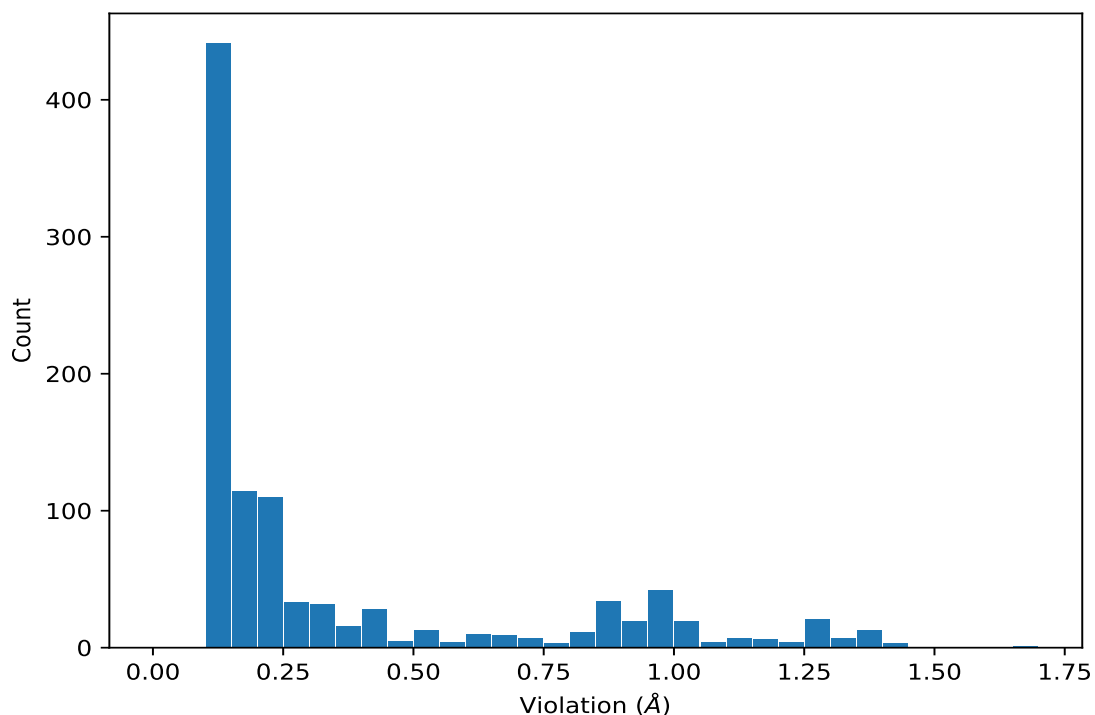
Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG23	3	0.1	0.0	0.1
(1,1769)	1:677:A:LYS:HE2	1:701:A:HIS:HA	2	1.34	0.03	1.34
(1,1588)	1:677:A:LYS:HD2	1:678:A:GLN:HA	2	1.16	0.05	1.16
(1,2666)	1:677:A:LYS:HD3	1:701:A:HIS:HE1	2	0.68	0.06	0.68
(1,1590)	1:677:A:LYS:HD2	1:678:A:GLN:H	2	0.46	0.12	0.46
(1,2624)	1:677:A:LYS:HE2	1:701:A:HIS:HE1	2	0.39	0.01	0.39
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD21	2	0.12	0.02	0.12
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD22	2	0.12	0.02	0.12
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD23	2	0.12	0.02	0.12
(1,2320)	1:740:A:LEU:HD21	1:741:A:LYS:H	2	0.12	0.01	0.12
(1,2320)	1:740:A:LEU:HD22	1:741:A:LYS:H	2	0.12	0.01	0.12
(1,2320)	1:740:A:LEU:HD23	1:741:A:LYS:H	2	0.12	0.01	0.12
(1,2019)	1:728:A:LYS:H	1:729:A:MET:HG3	2	0.12	0.0	0.12
(1,2266)	1:702:A:LYS:HD2	1:707:A:TYR:HE1	2	0.11	0.0	0.11
(1,2266)	1:702:A:LYS:HD2	1:707:A:TYR:HE2	2	0.11	0.0	0.11
(1,2266)	1:702:A:LYS:HD3	1:707:A:TYR:HE1	2	0.11	0.0	0.11
(1,2266)	1:702:A:LYS:HD3	1:707:A:TYR:HE2	2	0.11	0.0	0.11
(1,2553)	1:740:A:LEU:HB3	1:741:A:LYS:H	2	0.11	0.0	0.11
(1,2895)	1:645:A:LYS:H	1:645:A:LYS:HG2	2	0.11	0.01	0.11
(1,2895)	1:645:A:LYS:H	1:645:A:LYS:HG3	2	0.11	0.01	0.11
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD21	2	0.1	0.0	0.1
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD22	2	0.1	0.0	0.1
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD23	2	0.1	0.0	0.1
(1,2636)	1:623:A:PHE:HE1	1:649:A:CYS:HG	2	0.1	0.0	0.1
(1,2636)	1:623:A:PHE:HE2	1:649:A:CYS:HG	2	0.1	0.0	0.1

<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)
(1,985)	1:715:A:ASN:H	1:731:A:LEU:HB2	13	1.66
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD11	14	1.4
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD12	14	1.4
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD13	14	1.4
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD11	17	1.37
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD12	17	1.37
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD13	17	1.37
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD11	17	1.37
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD12	17	1.37
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD13	17	1.37
(1,1769)	1:677:A:LYS:HE2	1:701:A:HIS:HA	20	1.36
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD11	13	1.35
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD12	13	1.35
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD13	13	1.35
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD11	13	1.35
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD12	13	1.35

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD13	13	1.35
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD11	17	1.34
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD12	17	1.34
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD13	17	1.34
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD11	6	1.32
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD12	6	1.32
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD13	6	1.32
(1,1769)	1:677:A:LYS:HE2	1:701:A:HIS:HA	15	1.31
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD11	6	1.28
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD12	6	1.28
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD13	6	1.28
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD11	6	1.28
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD12	6	1.28
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD13	6	1.28
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD11	13	1.28
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD12	13	1.28
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD13	13	1.28
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD11	16	1.27
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD12	16	1.27
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD13	16	1.27
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD11	16	1.27
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD12	16	1.27
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD13	16	1.27
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD11	16	1.27
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD12	16	1.27
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD13	16	1.27
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD21	14	1.26
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD22	14	1.26
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD23	14	1.26
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD11	17	1.23
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD12	17	1.23
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD13	17	1.23
(1,1588)	1:677:A:LYS:HD2	1:678:A:GLN:HA	20	1.22
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD11	13	1.19
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD12	13	1.19
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD13	13	1.19
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD11	6	1.17
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD12	6	1.17
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD13	6	1.17
(1,535)	1:677:A:LYS:H	1:677:A:LYS:HE3	20	1.13
(1,2483)	1:728:A:LYS:HA	1:731:A:LEU:HB3	13	1.11
(1,2207)	1:677:A:LYS:HE2	1:701:A:HIS:HD2	20	1.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1588)	1:677:A:LYS:HD2	1:678:A:GLN:HA	15	1.11
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD11	16	1.1
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD12	16	1.1
(1,670)	1:691:A:VAL:H	1:720:A:LEU:HD13	16	1.1
(1,535)	1:677:A:LYS:H	1:677:A:LYS:HE3	15	1.09
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD21	17	1.08
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD22	17	1.08
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD23	17	1.08
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD21	13	1.04
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD22	13	1.04
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD23	13	1.04
(1,2207)	1:677:A:LYS:HE2	1:701:A:HIS:HD2	15	1.03
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD11	17	1.02
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD12	17	1.02
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD13	17	1.02
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD11	17	1.02
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD12	17	1.02
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD13	17	1.02
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD11	17	1.02
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD12	17	1.02
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD13	17	1.02
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD21	6	1.02
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD22	6	1.02
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD23	6	1.02
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD21	16	1.01
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD22	16	1.01
(1,1955)	1:720:A:LEU:HA	1:720:A:LEU:HD23	16	1.01
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD11	17	0.99
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD12	17	0.99
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD13	17	0.99
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD11	17	0.99
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD12	17	0.99
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD13	17	0.99
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD11	17	0.99
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD12	17	0.99
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD13	17	0.99
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD11	13	0.98
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD12	13	0.98
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD13	13	0.98
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD11	6	0.98
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD12	6	0.98
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD13	6	0.98

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD11	13	0.97
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD12	13	0.97
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD13	13	0.97
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD11	6	0.96
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD12	6	0.96
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD13	6	0.96
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD11	6	0.96
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD12	6	0.96
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD13	6	0.96
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD11	6	0.96
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD12	6	0.96
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD13	6	0.96
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD11	6	0.96
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD12	6	0.96
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD13	6	0.96
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD11	13	0.95
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD12	13	0.95
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD13	13	0.95
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD11	13	0.95
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD12	13	0.95
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD13	13	0.95
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD11	13	0.95
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD12	13	0.95
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD13	13	0.95
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD11	14	0.95
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD12	14	0.95
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD13	14	0.95
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD11	16	0.94
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD12	16	0.94
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD13	16	0.94
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD11	17	0.94
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD12	17	0.94
(1,2396)	1:717:A:VAL:H	1:720:A:LEU:HD13	17	0.94
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD11	6	0.94
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD12	6	0.94
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD13	6	0.94
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD11	6	0.94
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD12	6	0.94
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD13	6	0.94
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD11	6	0.94
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD12	6	0.94
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD13	6	0.94

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,544)	1:677:A:LYS:HE3	1:678:A:GLN:H	14	0.91
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD11	17	0.9
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD12	17	0.9
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD13	17	0.9
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD11	13	0.86
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD12	13	0.86
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD13	13	0.86
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD11	13	0.86
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD12	13	0.86
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD13	13	0.86
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD11	13	0.86
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD12	13	0.86
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD13	13	0.86
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD11	16	0.86
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD12	16	0.86
(1,2444)	1:717:A:VAL:HA	1:720:A:LEU:HD13	16	0.86
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD11	14	0.86
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD12	14	0.86
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD13	14	0.86
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD11	14	0.86
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD12	14	0.86
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD13	14	0.86
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD11	14	0.86
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD12	14	0.86
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD13	14	0.86
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD11	17	0.86
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD12	17	0.86
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD13	17	0.86
(1,2207)	1:677:A:LYS:HE2	1:701:A:HIS:HD2	19	0.85
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD11	16	0.85
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD12	16	0.85
(1,1704)	1:691:A:VAL:HG21	1:720:A:LEU:HD13	16	0.85
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD11	16	0.85
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD12	16	0.85
(1,1704)	1:691:A:VAL:HG22	1:720:A:LEU:HD13	16	0.85
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD11	16	0.85
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD12	16	0.85
(1,1704)	1:691:A:VAL:HG23	1:720:A:LEU:HD13	16	0.85
(1,544)	1:677:A:LYS:HE3	1:678:A:GLN:H	19	0.83
(1,2207)	1:677:A:LYS:HE2	1:701:A:HIS:HD2	14	0.82
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD11	16	0.81
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD12	16	0.81

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD13	16	0.81
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD11	16	0.81
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD12	16	0.81
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD13	16	0.81
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD11	16	0.81
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD12	16	0.81
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD13	16	0.81
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD11	6	0.77
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD12	6	0.77
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD13	6	0.77
(1,2666)	1:677:A:LYS:HD3	1:701:A:HIS:HE1	15	0.74
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD11	17	0.73
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD12	17	0.73
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD13	17	0.73
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD11	13	0.73
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD12	13	0.73
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD13	13	0.73
(1,3272)	1:711:A:LEU:HD11	1:731:A:LEU:HB2	13	0.68
(1,3272)	1:711:A:LEU:HD12	1:731:A:LEU:HB2	13	0.68
(1,3272)	1:711:A:LEU:HD13	1:731:A:LEU:HB2	13	0.68
(1,3272)	1:711:A:LEU:HD21	1:731:A:LEU:HB2	13	0.68
(1,3272)	1:711:A:LEU:HD22	1:731:A:LEU:HB2	13	0.68
(1,3272)	1:711:A:LEU:HD23	1:731:A:LEU:HB2	13	0.68
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD11	6	0.68
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD12	6	0.68
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD13	6	0.68
(1,1884)	1:716:A:LYS:HD3	1:720:A:LEU:HD21	14	0.63
(1,1884)	1:716:A:LYS:HD3	1:720:A:LEU:HD22	14	0.63
(1,1884)	1:716:A:LYS:HD3	1:720:A:LEU:HD23	14	0.63
(1,2666)	1:677:A:LYS:HD3	1:701:A:HIS:HE1	20	0.62
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD11	14	0.62
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD12	14	0.62
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD13	14	0.62
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD11	16	0.61
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD12	16	0.61
(1,660)	1:690:A:ASN:H	1:720:A:LEU:HD13	16	0.61
(1,1590)	1:677:A:LYS:HD2	1:678:A:GLN:H	20	0.59
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	15	0.56
(1,3105)	1:675:A:GLU:HG2	1:678:A:GLN:HE22	15	0.55
(1,3105)	1:675:A:GLU:HG3	1:678:A:GLN:HE22	15	0.55
(1,3105)	1:675:A:GLU:HG2	1:678:A:GLN:HE22	20	0.54
(1,3105)	1:675:A:GLU:HG3	1:678:A:GLN:HE22	20	0.54

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD11	16	0.54
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD12	16	0.54
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD13	16	0.54
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD11	14	0.53
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD12	14	0.53
(1,1679)	1:691:A:VAL:HA	1:720:A:LEU:HD13	14	0.53
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD11	13	0.51
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD12	13	0.51
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD13	13	0.51
(1,535)	1:677:A:LYS:H	1:677:A:LYS:HE3	14	0.51
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	4	0.5
(1,3105)	1:675:A:GLU:HG2	1:678:A:GLN:HE22	11	0.49
(1,3105)	1:675:A:GLU:HG3	1:678:A:GLN:HE22	11	0.49
(1,535)	1:677:A:LYS:H	1:677:A:LYS:HE3	19	0.48
(1,1047)	1:720:A:LEU:H	1:720:A:LEU:HG	6	0.46
(1,1047)	1:720:A:LEU:H	1:720:A:LEU:HG	16	0.46
(1,1047)	1:720:A:LEU:H	1:720:A:LEU:HG	13	0.44
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD21	6	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD22	6	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD23	6	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD21	13	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD22	13	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD23	13	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD21	16	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD22	16	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD23	16	0.43
(1,1047)	1:720:A:LEU:H	1:720:A:LEU:HG	17	0.43
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD21	17	0.42
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD22	17	0.42
(1,1953)	1:720:A:LEU:HB3	1:720:A:LEU:HD23	17	0.42
(1,2605)	1:660:A:TYR:HE1	1:682:A:GLN:HA	4	0.41
(1,2605)	1:660:A:TYR:HE2	1:682:A:GLN:HA	4	0.41
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD11	17	0.41
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD12	17	0.41
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD13	17	0.41
(1,3134)	1:682:A:GLN:H	1:682:A:GLN:HG2	4	0.4
(1,3134)	1:682:A:GLN:H	1:682:A:GLN:HG3	4	0.4
(1,2624)	1:677:A:LYS:HE2	1:701:A:HIS:HE1	14	0.4
(1,1895)	1:716:A:LYS:HE2	1:720:A:LEU:HD11	6	0.4
(1,1895)	1:716:A:LYS:HE2	1:720:A:LEU:HD12	6	0.4
(1,1895)	1:716:A:LYS:HE2	1:720:A:LEU:HD13	6	0.4
(1,1895)	1:716:A:LYS:HE3	1:720:A:LEU:HD11	6	0.4

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1895)	1:716:A:LYS:HE3	1:720:A:LEU:HD12	6	0.4
(1,1895)	1:716:A:LYS:HE3	1:720:A:LEU:HD13	6	0.4
(1,1935)	1:718:A:ILE:HD11	1:731:A:LEU:HB3	13	0.39
(1,1935)	1:718:A:ILE:HD12	1:731:A:LEU:HB3	13	0.39
(1,1935)	1:718:A:ILE:HD13	1:731:A:LEU:HB3	13	0.39
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	7	0.39
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	17	0.39
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	20	0.39
(1,860)	1:706:A:ASN:HD22	1:709:A:LYS:HG2	15	0.39
(1,381)	1:659:A:ILE:HD11	1:662:A:ASN:HD22	15	0.39
(1,381)	1:659:A:ILE:HD12	1:662:A:ASN:HD22	15	0.39
(1,381)	1:659:A:ILE:HD13	1:662:A:ASN:HD22	15	0.39
(1,2624)	1:677:A:LYS:HE2	1:701:A:HIS:HE1	19	0.38
(1,544)	1:677:A:LYS:HE3	1:678:A:GLN:H	20	0.38
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	6	0.37
(1,585)	1:682:A:GLN:HE21	1:686:A:LEU:HD11	4	0.35
(1,585)	1:682:A:GLN:HE21	1:686:A:LEU:HD12	4	0.35
(1,585)	1:682:A:GLN:HE21	1:686:A:LEU:HD13	4	0.35
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD11	14	0.34
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD12	14	0.34
(1,2698)	1:694:A:PHE:HD1	1:720:A:LEU:HD13	14	0.34
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD11	14	0.34
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD12	14	0.34
(1,2698)	1:694:A:PHE:HD2	1:720:A:LEU:HD13	14	0.34
(1,1590)	1:677:A:LYS:HD2	1:678:A:GLN:H	15	0.34
(1,42)	1:626:A:LEU:H	1:626:A:LEU:HG	14	0.34
(1,1609)	1:682:A:GLN:H	1:682:A:GLN:HG2	4	0.33
(1,1242)	1:741:A:LYS:HB2	1:742:A:ASP:H	12	0.33
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	5	0.33
(1,1656)	1:682:A:GLN:HE21	1:686:A:LEU:HD21	4	0.32
(1,1656)	1:682:A:GLN:HE21	1:686:A:LEU:HD22	4	0.32
(1,1656)	1:682:A:GLN:HE21	1:686:A:LEU:HD23	4	0.32
(1,1227)	1:740:A:LEU:H	1:740:A:LEU:HG	12	0.32
(1,1057)	1:720:A:LEU:HG	1:721:A:ASP:H	14	0.32
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD11	13	0.32
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD12	13	0.32
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD13	13	0.32
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG2	7	0.31
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG3	7	0.31
(1,3332)	1:730:A:GLU:HA	1:731:A:LEU:HD11	14	0.3
(1,3332)	1:730:A:GLU:HA	1:731:A:LEU:HD12	14	0.3
(1,3332)	1:730:A:GLU:HA	1:731:A:LEU:HD13	14	0.3

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3332)	1:730:A:GLU:HA	1:731:A:LEU:HD21	14	0.3
(1,3332)	1:730:A:GLU:HA	1:731:A:LEU:HD22	14	0.3
(1,3332)	1:730:A:GLU:HA	1:731:A:LEU:HD23	14	0.3
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG2	18	0.3
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG3	18	0.3
(1,1227)	1:740:A:LEU:H	1:740:A:LEU:HG	3	0.3
(1,1227)	1:740:A:LEU:H	1:740:A:LEU:HG	20	0.3
(1,1057)	1:720:A:LEU:HG	1:721:A:ASP:H	17	0.3
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG2	3	0.29
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG3	3	0.29
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG2	11	0.29
(1,2960)	1:655:A:LYS:H	1:655:A:LYS:HG3	11	0.29
(1,1057)	1:720:A:LEU:HG	1:721:A:ASP:H	6	0.29
(1,1057)	1:720:A:LEU:HG	1:721:A:ASP:H	13	0.29
(1,1057)	1:720:A:LEU:HG	1:721:A:ASP:H	16	0.29
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD11	6	0.28
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD12	6	0.28
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD13	6	0.28
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD11	6	0.28
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD12	6	0.28
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD13	6	0.28
(1,2366)	1:632:A:GLN:HE21	1:635:A:ASN:HD21	13	0.27
(1,2244)	1:731:A:LEU:HB3	1:732:A:GLU:H	13	0.27
(1,1651)	1:685:A:GLN:HB2	1:686:A:LEU:HA	7	0.27
(1,1651)	1:685:A:GLN:HB3	1:686:A:LEU:HA	7	0.27
(1,1136)	1:731:A:LEU:H	1:731:A:LEU:HB3	13	0.27
(1,1047)	1:720:A:LEU:H	1:720:A:LEU:HG	14	0.27
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	19	0.27
(1,306)	1:655:A:LYS:H	1:655:A:LYS:HG2	18	0.27
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD11	17	0.26
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD12	17	0.26
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD13	17	0.26
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD11	17	0.26
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD12	17	0.26
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD13	17	0.26
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	13	0.26
(1,860)	1:706:A:ASN:HD22	1:709:A:LYS:HG2	7	0.26
(1,306)	1:655:A:LYS:H	1:655:A:LYS:HG2	7	0.26
(1,2871)	1:640:A:LYS:HG2	1:641:A:ASP:HA	19	0.25
(1,2871)	1:640:A:LYS:HG3	1:641:A:ASP:HA	19	0.25
(1,593)	1:683:A:ALA:H	1:684:A:LEU:HG	19	0.25
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	18	0.24

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	18	0.24
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	18	0.24
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	18	0.24
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	18	0.24
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	18	0.24
(1,306)	1:655:A:LYS:H	1:655:A:LYS:HG2	3	0.24
(1,306)	1:655:A:LYS:H	1:655:A:LYS:HG2	11	0.24
(1,3391)	1:741:A:LYS:HB2	1:742:A:ASP:H	12	0.23
(1,3391)	1:741:A:LYS:HB3	1:742:A:ASP:H	12	0.23
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	2	0.23
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	2	0.23
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	2	0.23
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	2	0.23
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	2	0.23
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	2	0.23
(1,2871)	1:640:A:LYS:HG2	1:641:A:ASP:HA	3	0.23
(1,2871)	1:640:A:LYS:HG3	1:641:A:ASP:HA	3	0.23
(1,2871)	1:640:A:LYS:HG2	1:641:A:ASP:HA	17	0.23
(1,2871)	1:640:A:LYS:HG3	1:641:A:ASP:HA	17	0.23
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD11	14	0.23
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD12	14	0.23
(1,2526)	1:691:A:VAL:HG11	1:720:A:LEU:HD13	14	0.23
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD11	14	0.23
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD12	14	0.23
(1,2526)	1:691:A:VAL:HG12	1:720:A:LEU:HD13	14	0.23
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD11	14	0.23
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD12	14	0.23
(1,2526)	1:691:A:VAL:HG13	1:720:A:LEU:HD13	14	0.23
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	3	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	3	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	3	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	3	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	3	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	3	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	6	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	6	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	6	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	6	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	6	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	6	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	14	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	14	0.22

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	14	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	14	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	14	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	14	0.22
(1,1050)	1:720:A:LEU:H	1:720:A:LEU:HD21	14	0.22
(1,1050)	1:720:A:LEU:H	1:720:A:LEU:HD22	14	0.22
(1,1050)	1:720:A:LEU:H	1:720:A:LEU:HD23	14	0.22
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	16	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	16	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	16	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	16	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	16	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	16	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	20	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	20	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	20	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	20	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	20	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	20	0.21
(1,2871)	1:640:A:LYS:HG2	1:641:A:ASP:HA	12	0.21
(1,2871)	1:640:A:LYS:HG3	1:641:A:ASP:HA	12	0.21
(1,379)	1:659:A:ILE:HA	1:662:A:ASN:HD22	15	0.21
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	1	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	1	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	1	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	1	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	1	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	1	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	4	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	4	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	4	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	4	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	4	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	4	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	5	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	5	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	5	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	5	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	5	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	5	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	9	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	9	0.2

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	9	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	9	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	9	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	9	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	12	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	12	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	12	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	12	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	12	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	12	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	17	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	17	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	17	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	17	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	17	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	17	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	19	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	19	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	19	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	19	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	19	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	19	0.2
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE2	5	0.2
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE3	5	0.2
(1,860)	1:706:A:ASN:HD22	1:709:A:LYS:HG2	4	0.2
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	10	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	10	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	10	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	10	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	10	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	10	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	11	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	11	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	11	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	11	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	11	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	11	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	13	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	13	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	13	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	13	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	13	0.19

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	13	0.19
(1,2872)	1:640:A:LYS:HE2	1:670:A:LEU:HD11	4	0.19
(1,2872)	1:640:A:LYS:HE2	1:670:A:LEU:HD12	4	0.19
(1,2872)	1:640:A:LYS:HE2	1:670:A:LEU:HD13	4	0.19
(1,2872)	1:640:A:LYS:HE2	1:670:A:LEU:HD21	4	0.19
(1,2872)	1:640:A:LYS:HE2	1:670:A:LEU:HD22	4	0.19
(1,2872)	1:640:A:LYS:HE2	1:670:A:LEU:HD23	4	0.19
(1,2872)	1:640:A:LYS:HE3	1:670:A:LEU:HD11	4	0.19
(1,2872)	1:640:A:LYS:HE3	1:670:A:LEU:HD12	4	0.19
(1,2872)	1:640:A:LYS:HE3	1:670:A:LEU:HD13	4	0.19
(1,2872)	1:640:A:LYS:HE3	1:670:A:LEU:HD21	4	0.19
(1,2872)	1:640:A:LYS:HE3	1:670:A:LEU:HD22	4	0.19
(1,2872)	1:640:A:LYS:HE3	1:670:A:LEU:HD23	4	0.19
(1,2871)	1:640:A:LYS:HG2	1:641:A:ASP:HA	9	0.19
(1,2871)	1:640:A:LYS:HG3	1:641:A:ASP:HA	9	0.19
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD11	13	0.19
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD12	13	0.19
(1,2697)	1:694:A:PHE:HE1	1:720:A:LEU:HD13	13	0.19
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD11	13	0.19
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD12	13	0.19
(1,2697)	1:694:A:PHE:HE2	1:720:A:LEU:HD13	13	0.19
(1,1240)	1:742:A:ASP:H	1:742:A:ASP:HB2	6	0.19
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD11	6	0.19
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD12	6	0.19
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD13	6	0.19
(1,576)	1:682:A:GLN:H	1:682:A:GLN:HG3	4	0.19
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	15	0.18
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	15	0.18
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	15	0.18
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	15	0.18
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	15	0.18
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	15	0.18
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE2	20	0.18
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE3	20	0.18
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	18	0.18
(1,860)	1:706:A:ASN:HD22	1:709:A:LYS:HG2	6	0.18
(1,690)	1:692:A:LYS:HB3	1:693:A:ALA:H	12	0.18
(1,594)	1:682:A:GLN:HB2	1:683:A:ALA:H	4	0.18
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	7	0.17
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	7	0.17
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	7	0.17
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	7	0.17

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	7	0.17
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	7	0.17
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	18	0.17
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	18	0.17
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	11	0.17
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	11	0.17
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	11	0.17
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	11	0.17
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	11	0.17
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	11	0.17
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	11	0.17
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	11	0.17
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	11	0.17
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	11	0.17
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	1	0.17
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	10	0.17
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD11	8	0.16
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD12	8	0.16
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD13	8	0.16
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD21	8	0.16
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD22	8	0.16
(1,3367)	1:736:A:ARG:H	1:737:A:LEU:HD23	8	0.16
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	3	0.16
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	6	0.16
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	10	0.16
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	20	0.16
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	13	0.16
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	13	0.16
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	13	0.16
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	13	0.16
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	13	0.16
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	13	0.16
(1,2005)	1:718:A:ILE:HD11	1:727:A:ALA:HA	13	0.16
(1,2005)	1:718:A:ILE:HD12	1:727:A:ALA:HA	13	0.16
(1,2005)	1:718:A:ILE:HD13	1:727:A:ALA:HA	13	0.16
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD11	16	0.16
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD12	16	0.16
(1,650)	1:689:A:GLY:H	1:720:A:LEU:HD13	16	0.16
(1,114)	1:635:A:ASN:H	1:635:A:ASN:HD21	4	0.16
(1,114)	1:635:A:ASN:H	1:635:A:ASN:HD21	18	0.16
(1,2821)	1:632:A:GLN:HG2	1:633:A:CYS:H	6	0.15
(1,2821)	1:632:A:GLN:HG3	1:633:A:CYS:H	6	0.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE2	14	0.15
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE3	14	0.15
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE2	17	0.15
(1,2797)	1:627:A:LYS:HB2	1:627:A:LYS:HE3	17	0.15
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	14	0.15
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	14	0.15
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD21	3	0.15
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD22	3	0.15
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD23	3	0.15
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	2	0.15
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	7	0.15
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	16	0.15
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	18	0.15
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG2	12	0.14
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG3	12	0.14
(1,2754)	1:621:A:MET:HG2	1:622:A:THR:H	4	0.14
(1,2754)	1:621:A:MET:HG3	1:622:A:THR:H	4	0.14
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	4	0.14
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	4	0.14
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	12	0.14
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	12	0.14
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	19	0.14
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD21	12	0.14
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD22	12	0.14
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD23	12	0.14
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD21	20	0.14
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD22	20	0.14
(1,2459)	1:740:A:LEU:HA	1:740:A:LEU:HD23	20	0.14
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	20	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD11	12	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD12	12	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD13	12	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD11	20	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD12	20	0.14
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD13	20	0.14
(1,2203)	1:677:A:LYS:HE3	1:706:A:ASN:HD22	13	0.14
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	5	0.14
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	8	0.14
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	10	0.14
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	10	0.14
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	10	0.14
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	10	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	10	0.14
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	10	0.14
(1,1892)	1:716:A:LYS:HD2	1:719:A:LEU:H	3	0.14
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD21	19	0.14
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD22	19	0.14
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD23	19	0.14
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD21	16	0.14
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD22	16	0.14
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD23	16	0.14
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	9	0.14
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	12	0.14
(1,860)	1:706:A:ASN:HD22	1:709:A:LYS:HG2	5	0.14
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	6	0.13
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	14	0.13
(2,6)	1:657:A:CYS:H	1:686:A:LEU:H	13	0.13
(2,6)	1:657:A:CYS:H	1:686:A:LEU:H	19	0.13
(1,2985)	1:661:A:THR:HG21	1:692:A:LYS:HB2	12	0.13
(1,2985)	1:661:A:THR:HG21	1:692:A:LYS:HB3	12	0.13
(1,2985)	1:661:A:THR:HG22	1:692:A:LYS:HB2	12	0.13
(1,2985)	1:661:A:THR:HG22	1:692:A:LYS:HB3	12	0.13
(1,2985)	1:661:A:THR:HG23	1:692:A:LYS:HB2	12	0.13
(1,2985)	1:661:A:THR:HG23	1:692:A:LYS:HB3	12	0.13
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG2	20	0.13
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG3	20	0.13
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	5	0.13
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	5	0.13
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	6	0.13
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	6	0.13
(1,2675)	1:694:A:PHE:HZ	1:716:A:LYS:HD2	7	0.13
(1,2659)	1:660:A:TYR:HD1	1:682:A:GLN:HB2	4	0.13
(1,2659)	1:660:A:TYR:HD2	1:682:A:GLN:HB2	4	0.13
(1,2461)	1:729:A:MET:HA	1:732:A:GLU:HB3	13	0.13
(1,2421)	1:717:A:VAL:HA	1:720:A:LEU:HG	14	0.13
(1,2320)	1:740:A:LEU:HD21	1:741:A:LYS:H	12	0.13
(1,2320)	1:740:A:LEU:HD22	1:741:A:LYS:H	12	0.13
(1,2320)	1:740:A:LEU:HD23	1:741:A:LYS:H	12	0.13
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	8	0.13
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	8	0.13
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	8	0.13
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	8	0.13
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	8	0.13
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	8	0.13

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	14	0.13
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	14	0.13
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	14	0.13
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	14	0.13
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	14	0.13
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	14	0.13
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE1	17	0.13
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE2	17	0.13
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE3	17	0.13
(1,2011)	1:714:A:LEU:HA	1:727:A:ALA:HB1	13	0.13
(1,2011)	1:714:A:LEU:HA	1:727:A:ALA:HB2	13	0.13
(1,2011)	1:714:A:LEU:HA	1:727:A:ALA:HB3	13	0.13
(1,1881)	1:716:A:LYS:HG3	1:717:A:VAL:HG21	17	0.13
(1,1881)	1:716:A:LYS:HG3	1:717:A:VAL:HG22	17	0.13
(1,1881)	1:716:A:LYS:HG3	1:717:A:VAL:HG23	17	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	8	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	8	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	8	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	8	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	8	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	8	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	8	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	8	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	8	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	9	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	9	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	9	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	9	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	9	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	9	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	9	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	9	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	9	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	15	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	15	0.13
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	15	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	15	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	15	0.13
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	15	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	15	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	15	0.13
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	15	0.13

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD11	7	0.13
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD12	7	0.13
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD13	7	0.13
(1,1193)	1:737:A:LEU:HD21	1:738:A:LEU:H	11	0.13
(1,1193)	1:737:A:LEU:HD22	1:738:A:LEU:H	11	0.13
(1,1193)	1:737:A:LEU:HD23	1:738:A:LEU:H	11	0.13
(1,1193)	1:737:A:LEU:HD21	1:738:A:LEU:H	19	0.13
(1,1193)	1:737:A:LEU:HD22	1:738:A:LEU:H	19	0.13
(1,1193)	1:737:A:LEU:HD23	1:738:A:LEU:H	19	0.13
(1,860)	1:706:A:ASN:HD22	1:709:A:LYS:HG2	19	0.13
(1,114)	1:635:A:ASN:H	1:635:A:ASN:HD21	13	0.13
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	16	0.12
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	17	0.12
(2,35)	1:707:A:TYR:H	1:709:A:LYS:HG3	11	0.12
(2,6)	1:657:A:CYS:H	1:686:A:LEU:H	10	0.12
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG2	13	0.12
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG3	13	0.12
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG2	15	0.12
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG3	15	0.12
(1,2895)	1:645:A:LYS:H	1:645:A:LYS:HG2	14	0.12
(1,2895)	1:645:A:LYS:H	1:645:A:LYS:HG3	14	0.12
(1,2779)	1:625:A:ALA:HA	1:628:A:GLU:HB2	4	0.12
(1,2779)	1:625:A:ALA:HA	1:628:A:GLU:HB3	4	0.12
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD11	14	0.12
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD12	14	0.12
(1,2699)	1:694:A:PHE:HZ	1:720:A:LEU:HD13	14	0.12
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	1	0.12
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	1	0.12
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	3	0.12
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	3	0.12
(1,2675)	1:694:A:PHE:HZ	1:716:A:LYS:HD2	10	0.12
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	1	0.12
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	6	0.12
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	8	0.12
(1,2461)	1:729:A:MET:HA	1:732:A:GLU:HB3	9	0.12
(1,2461)	1:729:A:MET:HA	1:732:A:GLU:HB3	12	0.12
(1,2461)	1:729:A:MET:HA	1:732:A:GLU:HB3	17	0.12
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	11	0.12
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD11	3	0.12
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD12	3	0.12
(1,2327)	1:740:A:LEU:H	1:740:A:LEU:HD13	3	0.12
(1,2117)	1:739:A:ASN:HA	1:739:A:ASN:HD21	4	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	5	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	5	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	5	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	5	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	5	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	5	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	12	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	12	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	12	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	12	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	12	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	12	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	16	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	16	0.12
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	16	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	16	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	16	0.12
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	16	0.12
(1,2019)	1:728:A:LYS:H	1:729:A:MET:HG3	13	0.12
(1,1892)	1:716:A:LYS:HD2	1:719:A:LEU:H	11	0.12
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD21	4	0.12
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD22	4	0.12
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD23	4	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD11	10	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD12	10	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD13	10	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD11	15	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD12	15	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD13	15	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD11	18	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD12	18	0.12
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD13	18	0.12
(1,1234)	1:740:A:LEU:HD11	1:741:A:LYS:H	9	0.12
(1,1234)	1:740:A:LEU:HD12	1:741:A:LYS:H	9	0.12
(1,1234)	1:740:A:LEU:HD13	1:741:A:LYS:H	9	0.12
(1,955)	1:710:A:SER:HB2	1:713:A:ASP:H	13	0.12
(1,861)	1:706:A:ASN:HD22	1:709:A:LYS:HG3	2	0.12
(1,860)	1:706:A:ASN:HD22	1:709:A:LYS:HG2	17	0.12
(1,571)	1:681:A:ASP:H	1:681:A:ASP:HB3	15	0.12
(1,280)	1:651:A:LYS:HB2	1:653:A:ASN:H	1	0.12
(1,280)	1:651:A:LYS:HB3	1:653:A:ASN:H	1	0.12
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD11	2	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD12	2	0.12
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD13	2	0.12
(1,15)	1:621:A:MET:HE1	1:622:A:THR:H	10	0.12
(1,15)	1:621:A:MET:HE2	1:622:A:THR:H	10	0.12
(1,15)	1:621:A:MET:HE3	1:622:A:THR:H	10	0.12
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	2	0.11
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	7	0.11
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	9	0.11
(2,6)	1:657:A:CYS:H	1:686:A:LEU:H	1	0.11
(2,6)	1:657:A:CYS:H	1:686:A:LEU:H	7	0.11
(2,6)	1:657:A:CYS:H	1:686:A:LEU:H	11	0.11
(1,3386)	1:740:A:LEU:HA	1:740:A:LEU:HD11	3	0.11
(1,3386)	1:740:A:LEU:HA	1:740:A:LEU:HD12	3	0.11
(1,3386)	1:740:A:LEU:HA	1:740:A:LEU:HD13	3	0.11
(1,3386)	1:740:A:LEU:HA	1:740:A:LEU:HD21	3	0.11
(1,3386)	1:740:A:LEU:HA	1:740:A:LEU:HD22	3	0.11
(1,3386)	1:740:A:LEU:HA	1:740:A:LEU:HD23	3	0.11
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD2	5	0.11
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD3	5	0.11
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD2	15	0.11
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD3	15	0.11
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD2	16	0.11
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD3	16	0.11
(1,3161)	1:685:A:GLN:HA	1:685:A:GLN:HG2	7	0.11
(1,3161)	1:685:A:GLN:HA	1:685:A:GLN:HG3	7	0.11
(1,3102)	1:675:A:GLU:H	1:675:A:GLU:HG2	5	0.11
(1,3102)	1:675:A:GLU:H	1:675:A:GLU:HG3	5	0.11
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG2	11	0.11
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG3	11	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	2	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	2	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	8	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	8	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	10	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	10	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	11	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	11	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	15	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	15	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD1	20	0.11
(1,2678)	1:684:A:LEU:HG	1:694:A:PHE:HD2	20	0.11
(1,2675)	1:694:A:PHE:HZ	1:716:A:LYS:HD2	1	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2605)	1:660:A:TYR:HE1	1:682:A:GLN:HA	17	0.11
(1,2605)	1:660:A:TYR:HE2	1:682:A:GLN:HA	17	0.11
(1,2605)	1:660:A:TYR:HE1	1:682:A:GLN:HA	18	0.11
(1,2605)	1:660:A:TYR:HE2	1:682:A:GLN:HA	18	0.11
(1,2553)	1:740:A:LEU:HB3	1:741:A:LYS:H	3	0.11
(1,2553)	1:740:A:LEU:HB3	1:741:A:LYS:H	12	0.11
(1,2461)	1:729:A:MET:HA	1:732:A:GLU:HB3	3	0.11
(1,2461)	1:729:A:MET:HA	1:732:A:GLU:HB3	10	0.11
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	1	0.11
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	10	0.11
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	18	0.11
(1,2320)	1:740:A:LEU:HD21	1:741:A:LYS:H	3	0.11
(1,2320)	1:740:A:LEU:HD22	1:741:A:LYS:H	3	0.11
(1,2320)	1:740:A:LEU:HD23	1:741:A:LYS:H	3	0.11
(1,2311)	1:723:A:SER:H	1:724:A:ILE:HG12	5	0.11
(1,2311)	1:723:A:SER:H	1:724:A:ILE:HG12	12	0.11
(1,2266)	1:702:A:LYS:HD2	1:707:A:TYR:HE1	7	0.11
(1,2266)	1:702:A:LYS:HD2	1:707:A:TYR:HE2	7	0.11
(1,2266)	1:702:A:LYS:HD3	1:707:A:TYR:HE1	7	0.11
(1,2266)	1:702:A:LYS:HD3	1:707:A:TYR:HE2	7	0.11
(1,2266)	1:702:A:LYS:HD2	1:707:A:TYR:HE1	11	0.11
(1,2266)	1:702:A:LYS:HD2	1:707:A:TYR:HE2	11	0.11
(1,2266)	1:702:A:LYS:HD3	1:707:A:TYR:HE1	11	0.11
(1,2266)	1:702:A:LYS:HD3	1:707:A:TYR:HE2	11	0.11
(1,2211)	1:645:A:LYS:H	1:645:A:LYS:HE2	1	0.11
(1,2211)	1:645:A:LYS:H	1:645:A:LYS:HE3	1	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	2	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	2	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	2	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	2	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	2	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	2	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	3	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	3	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	3	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	3	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	3	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	3	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	17	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	17	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	17	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	17	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	17	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	17	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	20	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	20	0.11
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	20	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	20	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	20	0.11
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	20	0.11
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE1	7	0.11
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE2	7	0.11
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE3	7	0.11
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE1	14	0.11
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE2	14	0.11
(1,2027)	1:729:A:MET:HA	1:729:A:MET:HE3	14	0.11
(1,2019)	1:728:A:LYS:H	1:729:A:MET:HG3	5	0.11
(1,1921)	1:718:A:ILE:HG21	1:719:A:LEU:H	6	0.11
(1,1921)	1:718:A:ILE:HG22	1:719:A:LEU:H	6	0.11
(1,1921)	1:718:A:ILE:HG23	1:719:A:LEU:H	6	0.11
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG21	18	0.11
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG22	18	0.11
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG23	18	0.11
(1,1892)	1:716:A:LYS:HD2	1:719:A:LEU:H	20	0.11
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	7	0.11
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	7	0.11
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	7	0.11
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	7	0.11
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	7	0.11
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	7	0.11
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	7	0.11
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	7	0.11
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	7	0.11
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	12	0.11
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	12	0.11
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	12	0.11
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	12	0.11
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	12	0.11
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	12	0.11
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	12	0.11
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	12	0.11
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	12	0.11
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD21	18	0.11
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD22	18	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1558)	1:674:A:GLU:HG2	1:704:A:LEU:HD23	18	0.11
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD21	2	0.11
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD22	2	0.11
(1,1557)	1:674:A:GLU:HG3	1:704:A:LEU:HD23	2	0.11
(1,1193)	1:737:A:LEU:HD21	1:738:A:LEU:H	7	0.11
(1,1193)	1:737:A:LEU:HD22	1:738:A:LEU:H	7	0.11
(1,1193)	1:737:A:LEU:HD23	1:738:A:LEU:H	7	0.11
(1,1193)	1:737:A:LEU:HD21	1:738:A:LEU:H	15	0.11
(1,1193)	1:737:A:LEU:HD22	1:738:A:LEU:H	15	0.11
(1,1193)	1:737:A:LEU:HD23	1:738:A:LEU:H	15	0.11
(1,1053)	1:691:A:VAL:HG11	1:721:A:ASP:H	14	0.11
(1,1053)	1:691:A:VAL:HG12	1:721:A:ASP:H	14	0.11
(1,1053)	1:691:A:VAL:HG13	1:721:A:ASP:H	14	0.11
(1,826)	1:702:A:LYS:HD2	1:703:A:GLY:H	13	0.11
(1,826)	1:702:A:LYS:HD3	1:703:A:GLY:H	13	0.11
(1,758)	1:698:A:ALA:H	1:713:A:ASP:HA	13	0.11
(1,743)	1:697:A:ARG:H	1:697:A:ARG:HE	4	0.11
(1,588)	1:682:A:GLN:HE21	1:685:A:GLN:HB2	7	0.11
(1,588)	1:682:A:GLN:HE21	1:685:A:GLN:HB3	7	0.11
(1,544)	1:677:A:LYS:HE3	1:678:A:GLN:H	15	0.11
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD11	12	0.11
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD12	12	0.11
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD13	12	0.11
(2,45)	1:719:A:LEU:HG	1:721:A:ASP:H	13	0.1
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD2	8	0.1
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD3	8	0.1
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD2	20	0.1
(1,3195)	1:697:A:ARG:H	1:697:A:ARG:HD3	20	0.1
(1,3035)	1:667:A:TYR:HE1	1:675:A:GLU:HG2	4	0.1
(1,3035)	1:667:A:TYR:HE1	1:675:A:GLU:HG3	4	0.1
(1,3035)	1:667:A:TYR:HE2	1:675:A:GLU:HG2	4	0.1
(1,3035)	1:667:A:TYR:HE2	1:675:A:GLU:HG3	4	0.1
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG2	8	0.1
(1,2974)	1:659:A:ILE:HA	1:663:A:ARG:HG3	8	0.1
(1,2895)	1:645:A:LYS:H	1:645:A:LYS:HG2	3	0.1
(1,2895)	1:645:A:LYS:H	1:645:A:LYS:HG3	3	0.1
(1,2779)	1:625:A:ALA:HA	1:628:A:GLU:HB2	2	0.1
(1,2779)	1:625:A:ALA:HA	1:628:A:GLU:HB3	2	0.1
(1,2779)	1:625:A:ALA:HA	1:628:A:GLU:HB2	10	0.1
(1,2779)	1:625:A:ALA:HA	1:628:A:GLU:HB3	10	0.1
(1,2636)	1:623:A:PHE:HE1	1:649:A:CYS:HG	3	0.1
(1,2636)	1:623:A:PHE:HE2	1:649:A:CYS:HG	3	0.1

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2636)	1:623:A:PHE:HE1	1:649:A:CYS:HG	9	0.1
(1,2636)	1:623:A:PHE:HE2	1:649:A:CYS:HG	9	0.1
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	5	0.1
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	12	0.1
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	14	0.1
(1,2543)	1:698:A:ALA:HA	1:710:A:SER:HB3	20	0.1
(1,2461)	1:729:A:MET:HA	1:732:A:GLU:HB3	7	0.1
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	12	0.1
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	13	0.1
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	15	0.1
(1,2381)	1:651:A:LYS:H	1:654:A:ASN:HD22	17	0.1
(1,2311)	1:723:A:SER:H	1:724:A:ILE:HG12	7	0.1
(1,2311)	1:723:A:SER:H	1:724:A:ILE:HG12	8	0.1
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD21	1	0.1
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD22	1	0.1
(1,2099)	1:707:A:TYR:HE1	1:737:A:LEU:HD23	1	0.1
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD21	1	0.1
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD22	1	0.1
(1,2099)	1:707:A:TYR:HE2	1:737:A:LEU:HD23	1	0.1
(1,2097)	1:734:A:VAL:HA	1:737:A:LEU:HD21	15	0.1
(1,2097)	1:734:A:VAL:HA	1:737:A:LEU:HD22	15	0.1
(1,2097)	1:734:A:VAL:HA	1:737:A:LEU:HD23	15	0.1
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG21	3	0.1
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG22	3	0.1
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG23	3	0.1
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG21	20	0.1
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG22	20	0.1
(1,1905)	1:694:A:PHE:H	1:717:A:VAL:HG23	20	0.1
(1,1888)	1:716:A:LYS:HD3	1:719:A:LEU:H	10	0.1
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	3	0.1
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	3	0.1
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	3	0.1
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	3	0.1
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	3	0.1
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	3	0.1
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	3	0.1
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	3	0.1
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	3	0.1
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG11	20	0.1
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG12	20	0.1
(1,1703)	1:691:A:VAL:HG21	1:717:A:VAL:HG13	20	0.1
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG11	20	0.1

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG12	20	0.1
(1,1703)	1:691:A:VAL:HG22	1:717:A:VAL:HG13	20	0.1
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG11	20	0.1
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG12	20	0.1
(1,1703)	1:691:A:VAL:HG23	1:717:A:VAL:HG13	20	0.1
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD11	6	0.1
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD12	6	0.1
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD13	6	0.1
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD11	20	0.1
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD12	20	0.1
(1,1413)	1:652:A:ILE:H	1:652:A:ILE:HD13	20	0.1
(1,1251)	1:621:A:MET:HA	1:622:A:THR:HG21	4	0.1
(1,1251)	1:621:A:MET:HA	1:622:A:THR:HG22	4	0.1
(1,1251)	1:621:A:MET:HA	1:622:A:THR:HG23	4	0.1
(1,1234)	1:740:A:LEU:HD11	1:741:A:LYS:H	15	0.1
(1,1234)	1:740:A:LEU:HD12	1:741:A:LYS:H	15	0.1
(1,1234)	1:740:A:LEU:HD13	1:741:A:LYS:H	15	0.1
(1,1234)	1:740:A:LEU:HD11	1:741:A:LYS:H	16	0.1
(1,1234)	1:740:A:LEU:HD12	1:741:A:LYS:H	16	0.1
(1,1234)	1:740:A:LEU:HD13	1:741:A:LYS:H	16	0.1
(1,955)	1:710:A:SER:HB2	1:713:A:ASP:H	3	0.1
(1,955)	1:710:A:SER:HB2	1:713:A:ASP:H	17	0.1
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD21	9	0.1
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD22	9	0.1
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD23	9	0.1
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD21	19	0.1
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD22	19	0.1
(1,747)	1:698:A:ALA:H	1:714:A:LEU:HD23	19	0.1
(1,683)	1:692:A:LYS:H	1:692:A:LYS:HE2	13	0.1
(1,683)	1:692:A:LYS:H	1:692:A:LYS:HE3	13	0.1
(1,665)	1:690:A:ASN:H	1:693:A:ALA:H	12	0.1
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD11	17	0.1
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD12	17	0.1
(1,265)	1:651:A:LYS:H	1:652:A:ILE:HD13	17	0.1

## 10 Dihedral-angle violation analysis (i)

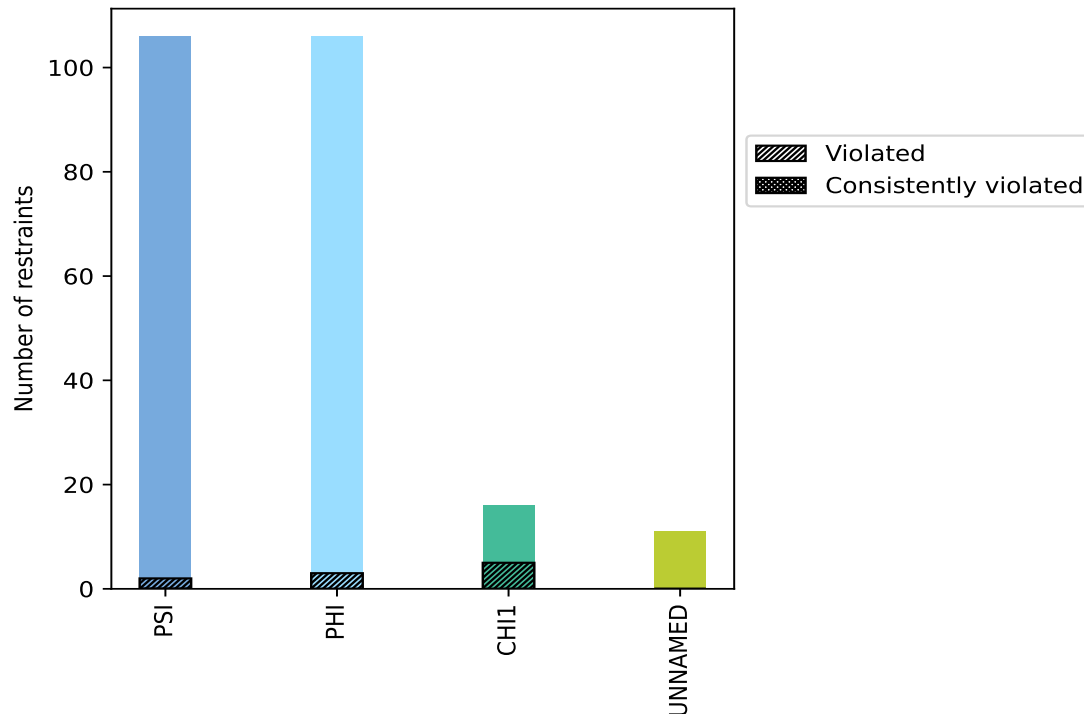
### 10.1 Summary of dihedral-angle violations (i)

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>
PSI	106	44.4	2	1.9	0.8	0	0.0	0.0
PHI	106	44.4	3	2.8	1.3	0	0.0	0.0
CHI1	16	6.7	5	31.2	2.1	0	0.0	0.0
UNNAMED	11	4.6	0	0.0	0.0	0	0.0	0.0
Total	239	100.0	10	4.2	4.2	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

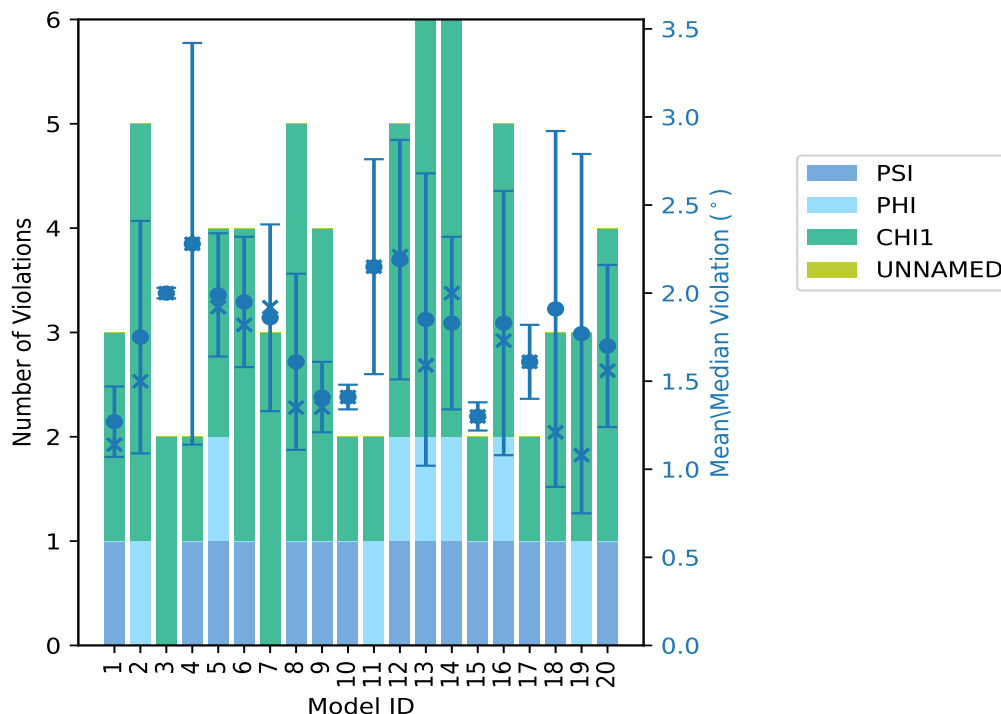
## 10.2 Dihedral-angle violation statistics for each model [i](#)

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					Mean (°)	Max (°)	SD (°)	Median (°)
	PSI	PHI	CHI1	UNNAMED	Total				
1	1	0	2	0	3	1.27	1.55	0.2	1.14
2	0	1	4	0	5	1.75	3.03	0.66	1.5
3	0	0	2	0	2	2.0	2.03	0.03	2.0
4	1	0	1	0	2	2.28	3.42	1.14	2.28
5	1	1	2	0	4	1.99	2.49	0.35	1.92
6	1	0	3	0	4	1.95	2.56	0.37	1.82
7	0	0	3	0	3	1.86	2.48	0.53	1.92
8	1	0	4	0	5	1.61	2.42	0.5	1.35
9	1	0	3	0	4	1.41	1.75	0.2	1.35
10	1	0	1	0	2	1.41	1.48	0.07	1.41
11	0	1	1	0	2	2.15	2.76	0.61	2.15
12	1	1	3	0	5	2.19	3.31	0.68	2.21
13	1	1	4	0	6	1.85	3.39	0.83	1.59
14	1	1	4	0	6	1.83	2.37	0.49	2.0
15	1	0	1	0	2	1.3	1.38	0.08	1.3
16	1	1	3	0	5	1.83	3.21	0.75	1.73
17	1	0	1	0	2	1.61	1.82	0.21	1.61
18	1	0	2	0	3	1.91	3.34	1.01	1.21
19	0	1	2	0	3	1.77	3.21	1.02	1.08
20	1	0	3	0	4	1.7	2.39	0.46	1.56



### 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.

Number of violated restraints					Fraction of the ensemble	
PSI	PHI	CHI1	UNNAMED	Total	Count <sup>1</sup>	%
0	2	1	0	3	1	5.0
0	0	0	0	0	2	10.0
0	0	0	0	0	3	15.0
1	0	0	0	1	4	20.0
0	0	0	0	0	5	25.0
0	1	1	0	2	6	30.0
0	0	0	0	0	7	35.0
0	0	0	0	0	8	40.0
0	0	0	0	0	9	45.0
0	0	0	0	0	10	50.0
1	0	0	0	1	11	55.0

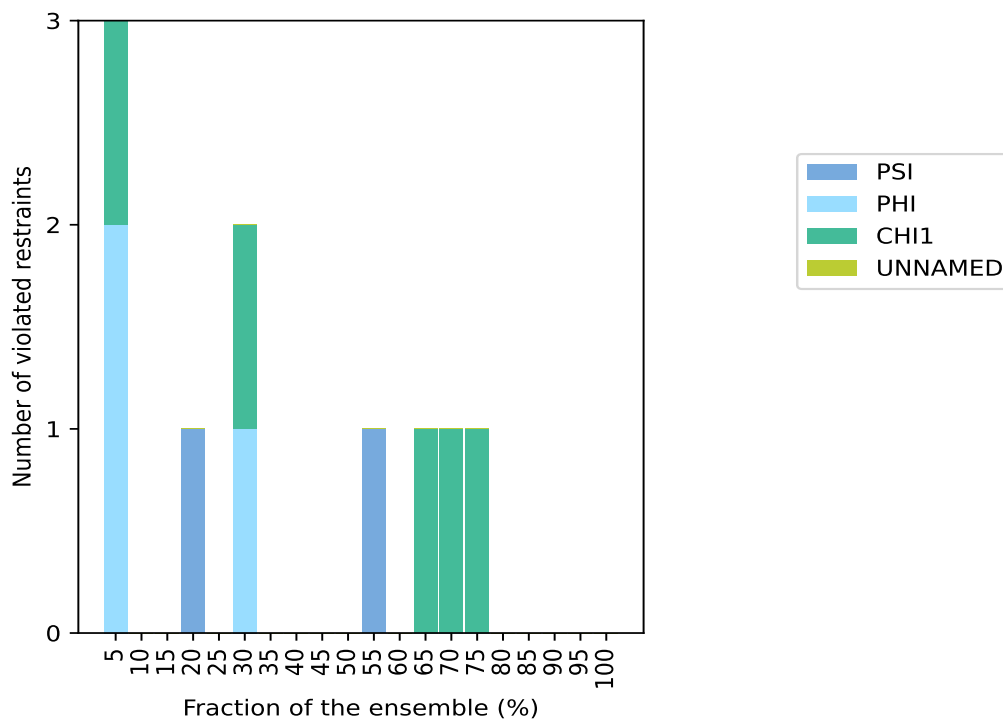
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Number of violated restraints					Fraction of the ensemble	
PSI	PHI	CHI1	UNNAMED	Total	Count <sup>1</sup>	%
0	0	0	0	0	12	60.0
0	0	1	0	1	13	65.0
0	0	1	0	1	14	70.0
0	0	1	0	1	15	75.0
0	0	0	0	0	16	80.0
0	0	0	0	0	17	85.0
0	0	0	0	0	18	90.0
0	0	0	0	0	19	95.0
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](#)

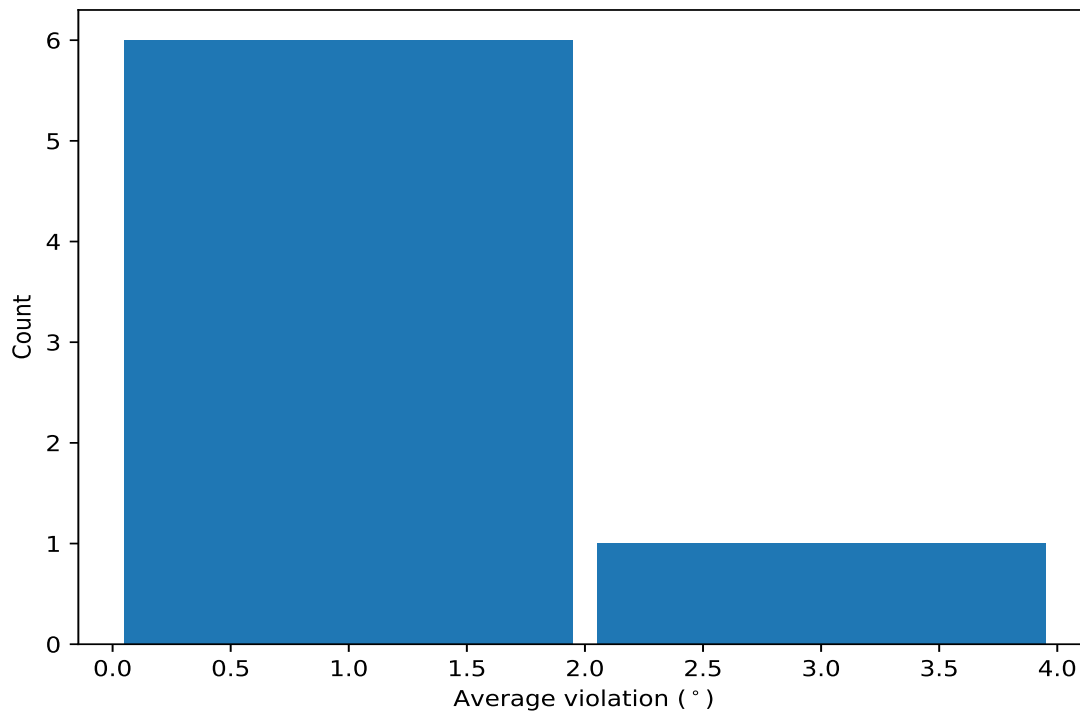


## 10.4 Most violated dihedral-angle restraints in the ensemble [i](#)

### 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.

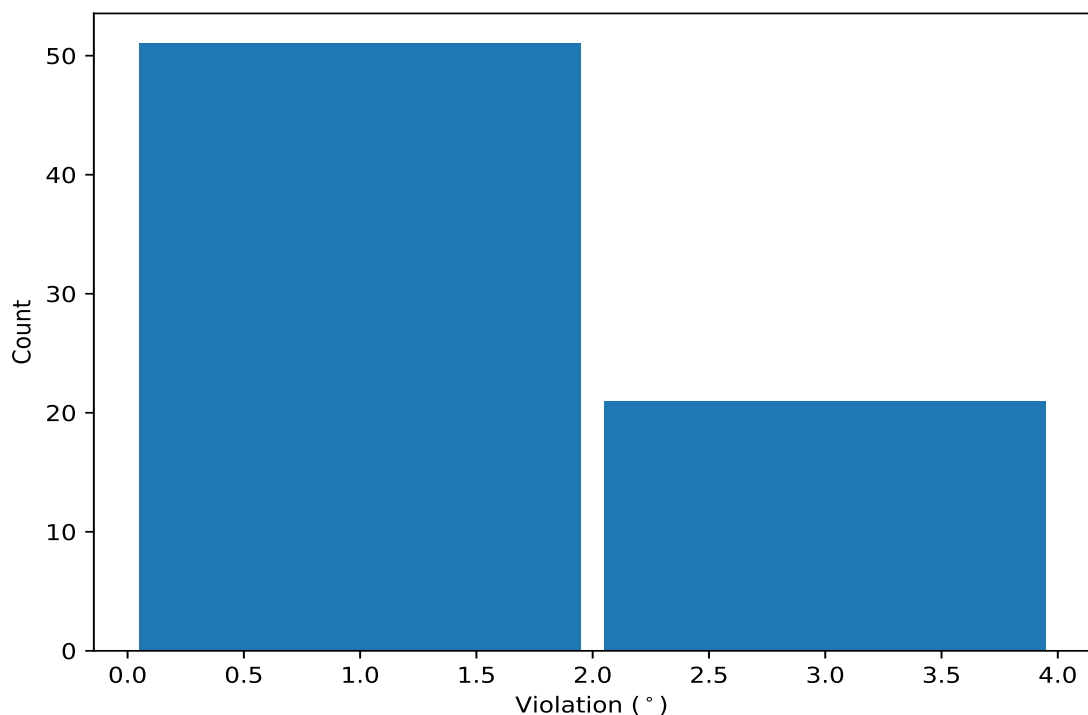
Key	Atom-1	Atom-2	Atom-3	Atom-4	Models <sup>1</sup>	Mean	SD <sup>2</sup>	Median
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	15	2.76	0.43	2.56
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	14	1.59	0.33	1.6
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	13	1.5	0.33	1.4
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	11	1.49	0.38	1.34
(1,219)	1:718:A:ILE:N	1:718:A:ILE:CA	1:718:A:ILE:CB	1:718:A:ILE:CG1	6	1.83	0.76	1.64
(1,187)	1:728:A:LYS:C	1:729:A:MET:N	1:729:A:MET:CA	1:729:A:MET:C	6	1.53	0.4	1.6
(1,172)	1:720:A:LEU:N	1:720:A:LEU:CA	1:720:A:LEU:C	1:721:A:ASP:N	4	1.46	0.39	1.36

<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 (°)
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	4	3.42
(1,219)	1:718:A:ILE:N	1:718:A:ILE:CA	1:718:A:ILE:CB	1:718:A:ILE:CG1	13	3.39
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	18	3.34
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	12	3.31
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	16	3.21
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	19	3.21
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	2	3.03
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	11	2.76
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	6	2.56
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	5	2.49
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	7	2.48
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	8	2.42
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	12	2.42
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	20	2.39
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	13	2.38
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	14	2.37
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	14	2.27
(1,187)	1:728:A:LYS:C	1:729:A:MET:N	1:729:A:MET:CA	1:729:A:MET:C	12	2.21
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	5	2.14
(1,172)	1:720:A:LEU:N	1:720:A:LEU:CA	1:720:A:LEU:C	1:721:A:ASP:N	14	2.09
(1,226)	1:670:A:LEU:N	1:670:A:LEU:CA	1:670:A:LEU:CB	1:670:A:LEU:CG	3	2.03

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Key	Atom-1	Atom-2	Atom-3	Atom-4	Model ID	Violation (°)
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	3	1.96
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	8	1.96
(1,219)	1:718:A:ILE:N	1:718:A:ILE:CA	1:718:A:ILE:CB	1:718:A:ILE:CG1	6	1.94
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	7	1.92
(1,219)	1:718:A:ILE:N	1:718:A:ILE:CA	1:718:A:ILE:CB	1:718:A:ILE:CG1	14	1.91
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	16	1.86
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	13	1.82
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	17	1.82
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	20	1.82
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	9	1.75
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	16	1.73
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	12	1.7
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	6	1.69
(1,187)	1:728:A:LYS:C	1:729:A:MET:N	1:729:A:MET:CA	1:729:A:MET:C	5	1.69
(1,187)	1:728:A:LYS:C	1:729:A:MET:N	1:729:A:MET:CA	1:729:A:MET:C	2	1.66
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	5	1.65
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	6	1.61
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	1	1.55
(1,187)	1:728:A:LYS:C	1:729:A:MET:N	1:729:A:MET:CA	1:729:A:MET:C	11	1.54
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	2	1.5
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	10	1.48
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	2	1.4
(1,172)	1:720:A:LEU:N	1:720:A:LEU:CA	1:720:A:LEU:C	1:721:A:ASP:N	17	1.4
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	15	1.38
(1,219)	1:718:A:ILE:N	1:718:A:ILE:CA	1:718:A:ILE:CB	1:718:A:ILE:CG1	9	1.37
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	13	1.36
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	8	1.35
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	10	1.34
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	9	1.33
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	12	1.33
(1,172)	1:720:A:LEU:N	1:720:A:LEU:CA	1:720:A:LEU:C	1:721:A:ASP:N	16	1.32
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	20	1.29
(1,222)	1:622:A:THR:N	1:622:A:THR:CA	1:622:A:THR:CB	1:622:A:THR:OG1	20	1.28
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	15	1.22
(1,219)	1:718:A:ILE:N	1:718:A:ILE:CA	1:718:A:ILE:CB	1:718:A:ILE:CG1	8	1.21
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	18	1.21
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	9	1.2
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	18	1.19
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	7	1.19
(1,171)	1:719:A:LEU:C	1:720:A:LEU:N	1:720:A:LEU:CA	1:720:A:LEU:C	14	1.19
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	14	1.16
(1,219)	1:718:A:ILE:N	1:718:A:ILE:CA	1:718:A:ILE:CB	1:718:A:ILE:CG1	2	1.15
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	4	1.15
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	1	1.14
(1,238)	1:724:A:ILE:N	1:724:A:ILE:CA	1:724:A:ILE:CB	1:724:A:ILE:CG1	1	1.12
(1,210)	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	1:688:A:ASP:N	8	1.12
(1,209)	1:686:A:LEU:C	1:687:A:ALA:N	1:687:A:ALA:CA	1:687:A:ALA:C	13	1.11
(1,187)	1:728:A:LYS:C	1:729:A:MET:N	1:729:A:MET:CA	1:729:A:MET:C	19	1.08
(1,172)	1:720:A:LEU:N	1:720:A:LEU:CA	1:720:A:LEU:C	1:721:A:ASP:N	13	1.02
(1,216)	1:717:A:VAL:N	1:717:A:VAL:CA	1:717:A:VAL:CB	1:717:A:VAL:CG1	19	1.01
(1,187)	1:728:A:LYS:C	1:729:A:MET:N	1:729:A:MET:CA	1:729:A:MET:C	16	1.01