



# Full wwPDB NMR Structure Validation Report ⓘ

Mar 10, 2026 – 01:50 PM UTC

PDB ID : 6RZ1 / pdb\_00006rz1  
BMRB ID : 34412  
Title : Winter flounder 3 in SDS micelles  
Authors : Mason, A.J.; Clarke, M.  
Deposited on : 2019-06-12

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
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) : 2.49

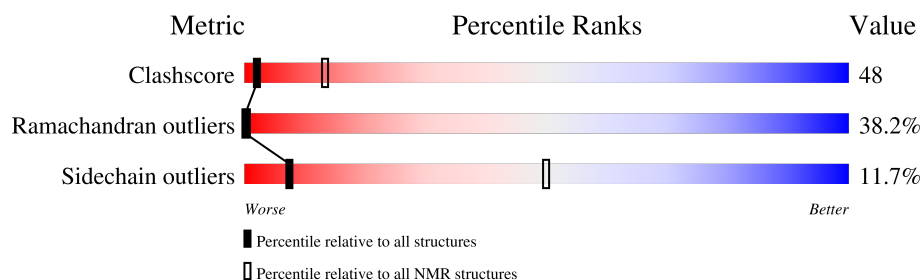
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*SOLUTION NMR*

The overall completeness of chemical shifts assignment is 33%.

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<br>(#Entries) | NMR archive<br>(#Entries) |
|-----------------------|-----------------------------|---------------------------|
| Clashscore            | 229148                      | 14424                     |
| Ramachandran outliers | 224038                      | 12848                     |
| Sidechain outliers    | 223484                      | 12823                     |

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     | 24     |                  |

## 2 Ensemble composition and analysis

This entry contains 100 models. Model 98 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:8-A:22 (15)         | 2.34              | 98           |

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 16 clusters and 4 single-model clusters were found.

| Cluster number        | Models                                                  |
|-----------------------|---------------------------------------------------------|
| 1                     | 1, 2, 5, 15, 19, 30, 38, 50, 59, 68, 69, 75, 81, 87, 89 |
| 2                     | 7, 14, 32, 41, 47, 52, 53, 63, 78, 84, 90, 93, 98       |
| 3                     | 6, 20, 22, 31, 34, 36, 43, 62, 67, 82, 91, 96           |
| 4                     | 3, 13, 33, 35, 46, 64, 74, 76, 79, 95                   |
| 5                     | 4, 8, 9, 11, 44, 49, 60, 65, 66                         |
| 6                     | 18, 23, 24, 26, 45, 80                                  |
| 7                     | 40, 51, 55, 72, 97                                      |
| 8                     | 54, 58, 83, 85, 92                                      |
| 9                     | 16, 27, 28, 94                                          |
| 10                    | 25, 70, 99                                              |
| 11                    | 21, 37, 86                                              |
| 12                    | 56, 88, 100                                             |
| 13                    | 12, 42                                                  |
| 14                    | 48, 71                                                  |
| 15                    | 29, 77                                                  |
| 16                    | 17, 39                                                  |
| Single-model clusters | 10; 57; 61; 73                                          |

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

There is only 1 type of molecule in this entry. The entry contains 373 atoms, of which 188 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Pleurocidin-like peptide WF3.

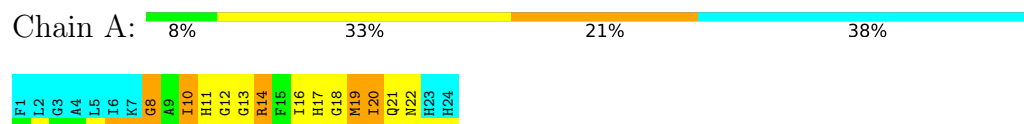
| Mol | Chain | Residues | Atoms |     |     |    |    |   | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---|-------|
| 1   | A     | 24       | Total | C   | H   | N  | O  | S | 0     |
|     |       |          | 373   | 120 | 188 | 38 | 26 | 1 |       |

## 4 Residue-property plots [i](#)

### 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: Pleurocidin-like peptide WF3

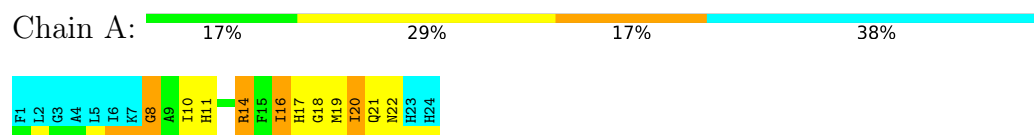


### 4.2 Scores per residue for each member of the ensemble

Colouring as in section [4.1](#) above.

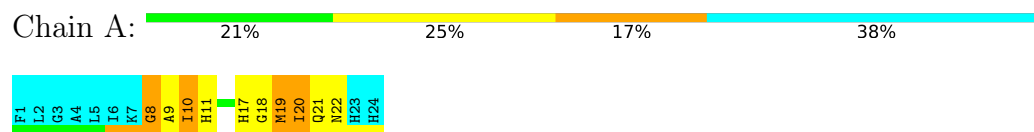
#### 4.2.1 Score per residue for model 1

- Molecule 1: Pleurocidin-like peptide WF3



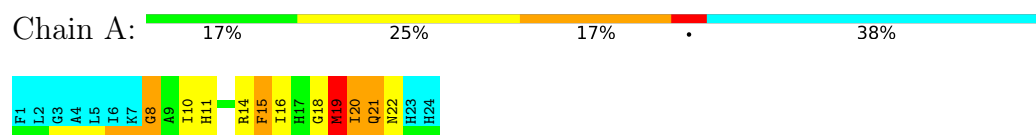
#### 4.2.2 Score per residue for model 2

- Molecule 1: Pleurocidin-like peptide WF3



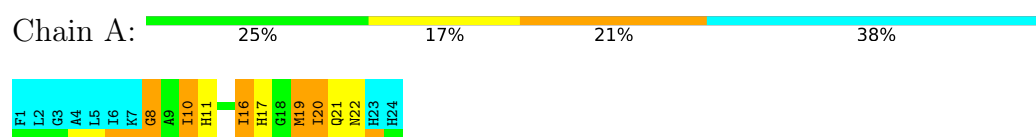
### 4.2.3 Score per residue for model 3

- Molecule 1: Pleurocidin-like peptide WF3



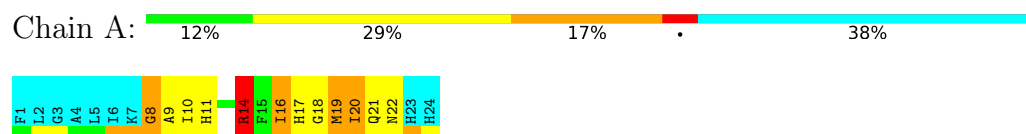
### 4.2.4 Score per residue for model 4

- Molecule 1: Pleurocidin-like peptide WF3



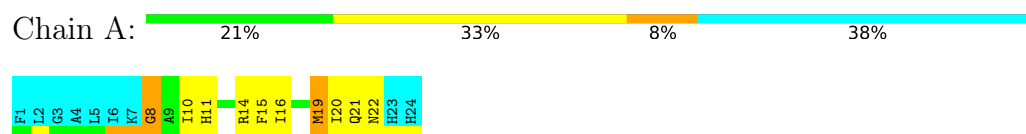
### 4.2.5 Score per residue for model 5

- Molecule 1: Pleurocidin-like peptide WF3



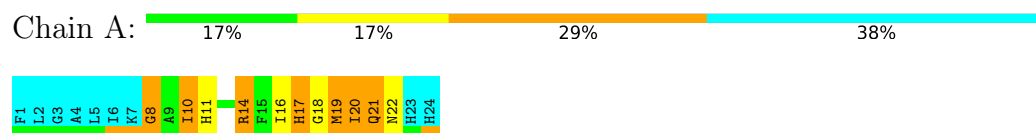
### 4.2.6 Score per residue for model 6

- Molecule 1: Pleurocidin-like peptide WF3



### 4.2.7 Score per residue for model 7

- Molecule 1: Pleurocidin-like peptide WF3



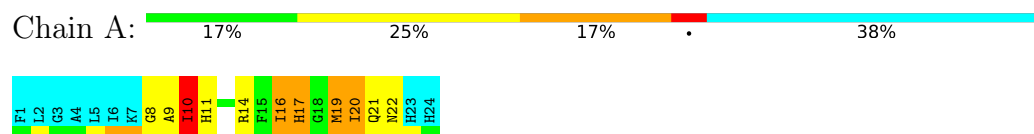
#### 4.2.8 Score per residue for model 8

- Molecule 1: Pleurocidin-like peptide WF3



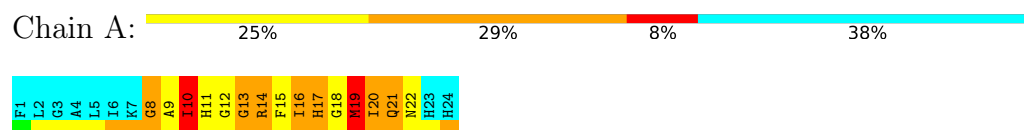
#### 4.2.9 Score per residue for model 9

- Molecule 1: Pleurocidin-like peptide WF3



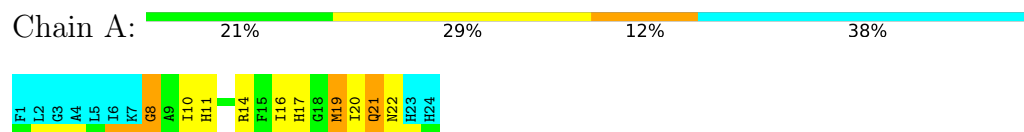
#### 4.2.10 Score per residue for model 10

- Molecule 1: Pleurocidin-like peptide WF3



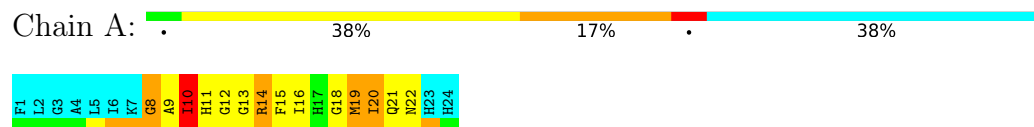
#### 4.2.11 Score per residue for model 11

- Molecule 1: Pleurocidin-like peptide WF3



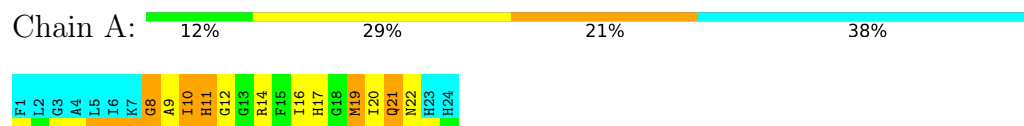
#### 4.2.12 Score per residue for model 12

- Molecule 1: Pleurocidin-like peptide WF3



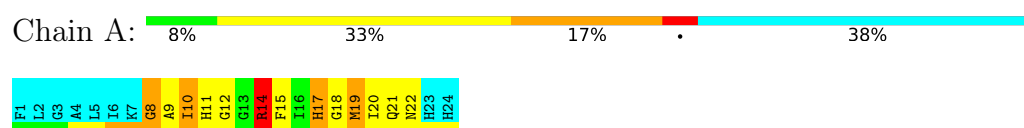
### 4.2.13 Score per residue for model 13

- Molecule 1: Pleurocidin-like peptide WF3



### 4.2.14 Score per residue for model 14

- Molecule 1: Pleurocidin-like peptide WF3



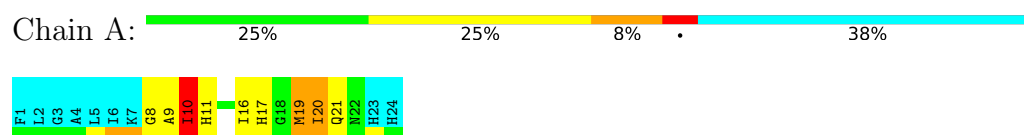
### 4.2.15 Score per residue for model 15

- Molecule 1: Pleurocidin-like peptide WF3



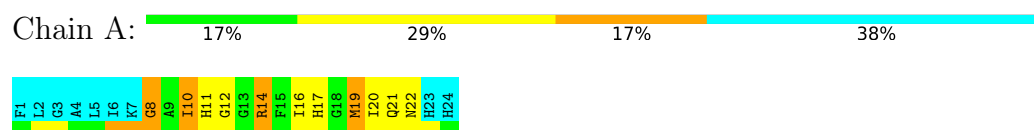
### 4.2.16 Score per residue for model 16

- Molecule 1: Pleurocidin-like peptide WF3



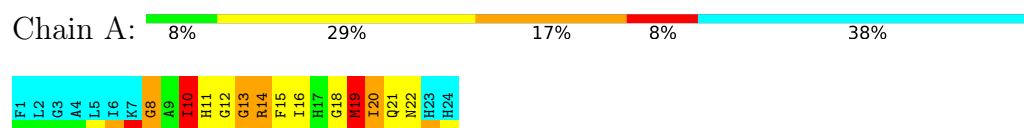
### 4.2.17 Score per residue for model 17

- Molecule 1: Pleurocidin-like peptide WF3



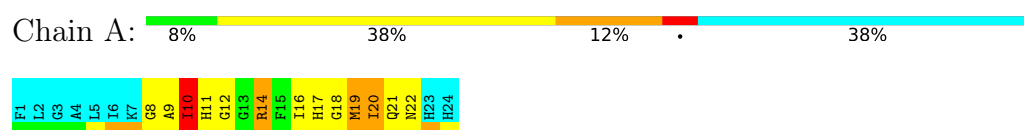
#### 4.2.18 Score per residue for model 18

- Molecule 1: Pleurocidin-like peptide WF3



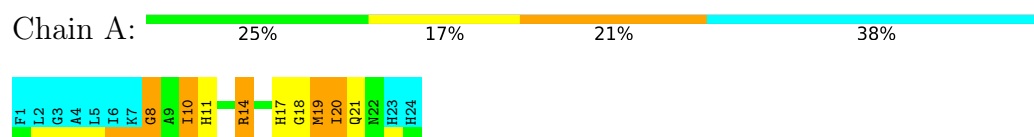
#### 4.2.19 Score per residue for model 19

- Molecule 1: Pleurocidin-like peptide WF3



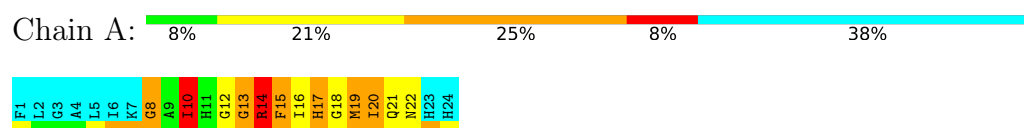
#### 4.2.20 Score per residue for model 20

- Molecule 1: Pleurocidin-like peptide WF3



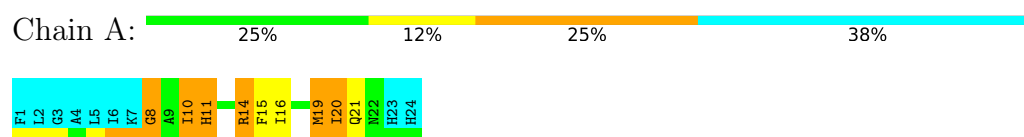
#### 4.2.21 Score per residue for model 21

- Molecule 1: Pleurocidin-like peptide WF3



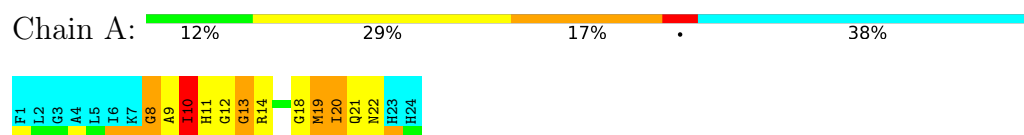
#### 4.2.22 Score per residue for model 22

- Molecule 1: Pleurocidin-like peptide WF3



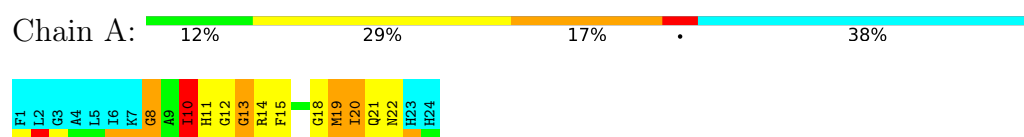
#### 4.2.23 Score per residue for model 23

- Molecule 1: Pleurocidin-like peptide WF3



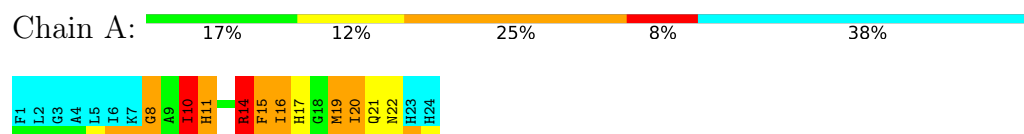
#### 4.2.24 Score per residue for model 24

- Molecule 1: Pleurocidin-like peptide WF3



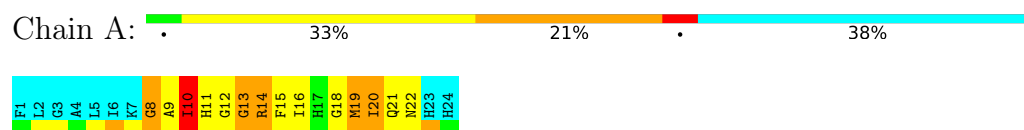
#### 4.2.25 Score per residue for model 25

- Molecule 1: Pleurocidin-like peptide WF3



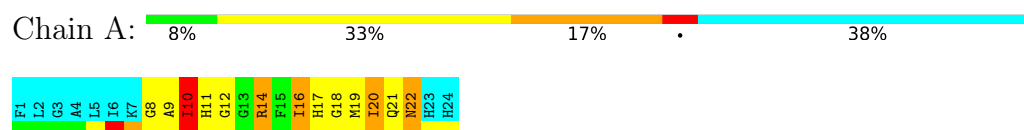
#### 4.2.26 Score per residue for model 26

- Molecule 1: Pleurocidin-like peptide WF3



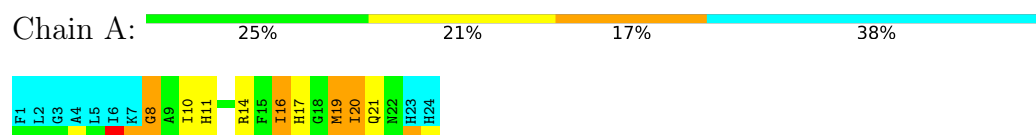
#### 4.2.27 Score per residue for model 27

- Molecule 1: Pleurocidin-like peptide WF3



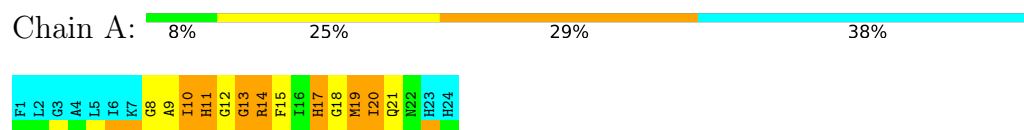
#### 4.2.28 Score per residue for model 28

- Molecule 1: Pleurocidin-like peptide WF3



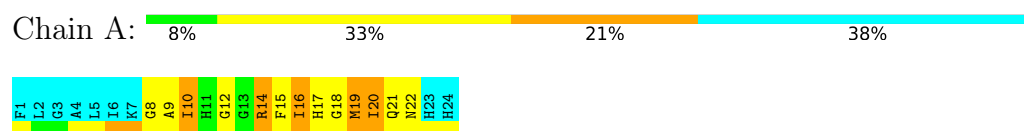
#### 4.2.29 Score per residue for model 29

- Molecule 1: Pleurocidin-like peptide WF3



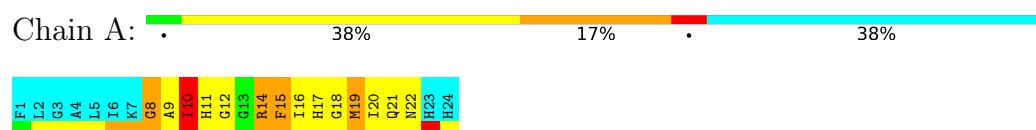
#### 4.2.30 Score per residue for model 30

- Molecule 1: Pleurocidin-like peptide WF3



#### 4.2.31 Score per residue for model 31

- Molecule 1: Pleurocidin-like peptide WF3



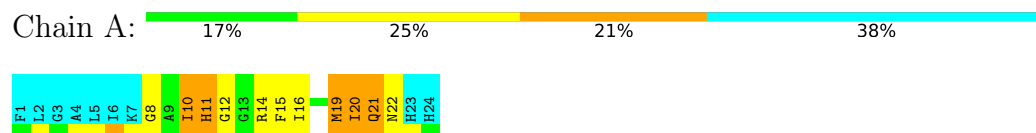
#### 4.2.32 Score per residue for model 32

- Molecule 1: Pleurocidin-like peptide WF3



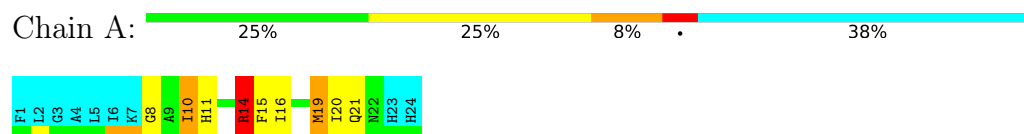
### 4.2.33 Score per residue for model 33

- Molecule 1: Pleurocidin-like peptide WF3



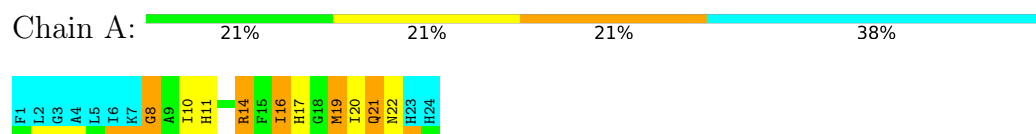
### 4.2.34 Score per residue for model 34

- Molecule 1: Pleurocidin-like peptide WF3



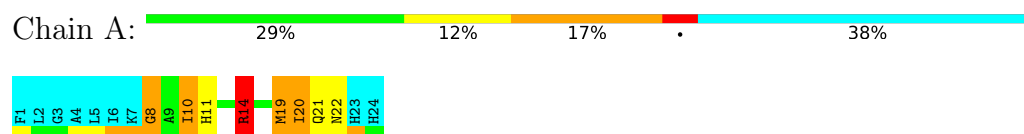
### 4.2.35 Score per residue for model 35

- Molecule 1: Pleurocidin-like peptide WF3



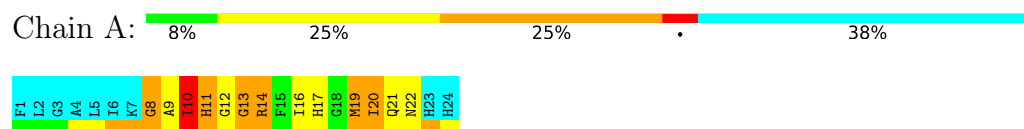
### 4.2.36 Score per residue for model 36

- Molecule 1: Pleurocidin-like peptide WF3



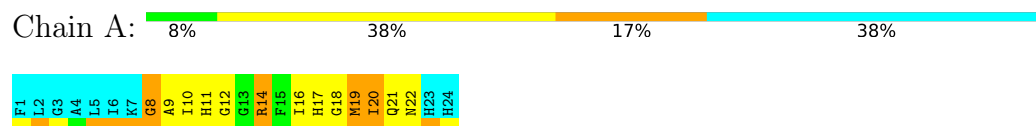
### 4.2.37 Score per residue for model 37

- Molecule 1: Pleurocidin-like peptide WF3



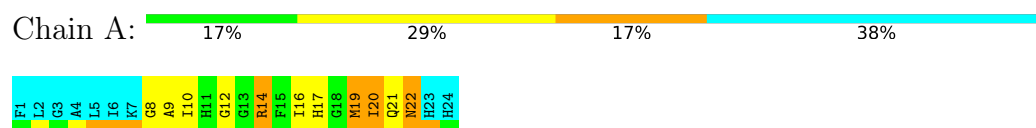
#### 4.2.38 Score per residue for model 38

- Molecule 1: Pleurocidin-like peptide WF3



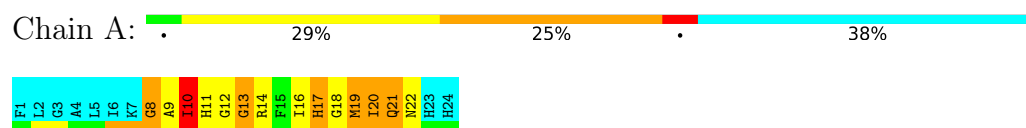
#### 4.2.39 Score per residue for model 39

- Molecule 1: Pleurocidin-like peptide WF3



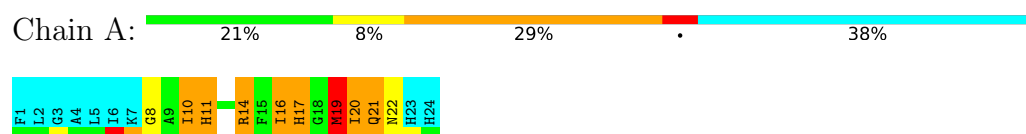
#### 4.2.40 Score per residue for model 40

- Molecule 1: Pleurocidin-like peptide WF3



#### 4.2.41 Score per residue for model 41

- Molecule 1: Pleurocidin-like peptide WF3



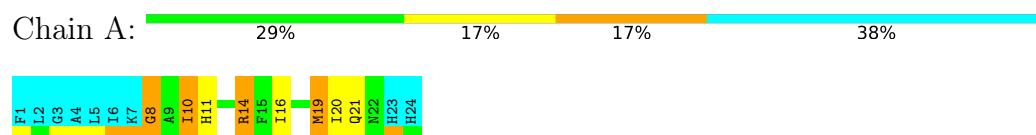
#### 4.2.42 Score per residue for model 42

- Molecule 1: Pleurocidin-like peptide WF3



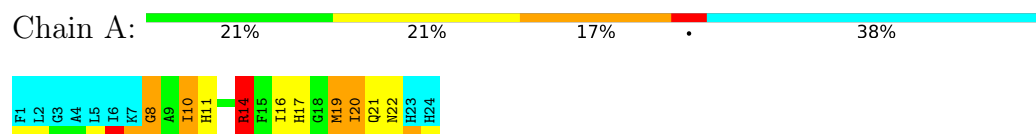
#### 4.2.43 Score per residue for model 43

- Molecule 1: Pleurocidin-like peptide WF3



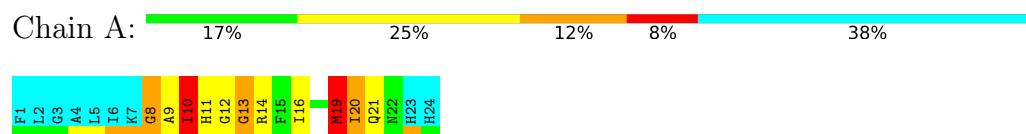
#### 4.2.44 Score per residue for model 44

- Molecule 1: Pleurocidin-like peptide WF3



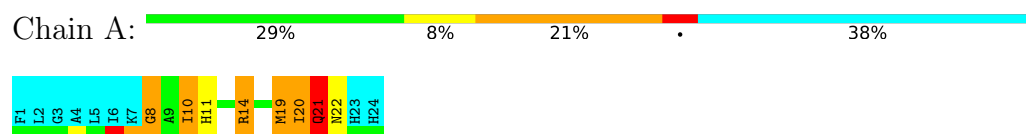
#### 4.2.45 Score per residue for model 45

- Molecule 1: Pleurocidin-like peptide WF3



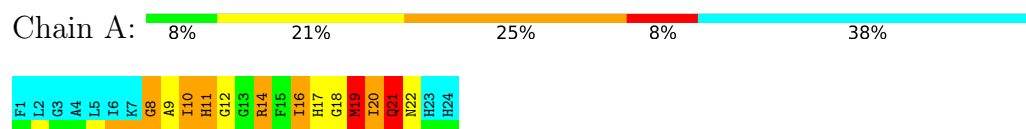
#### 4.2.46 Score per residue for model 46

- Molecule 1: Pleurocidin-like peptide WF3



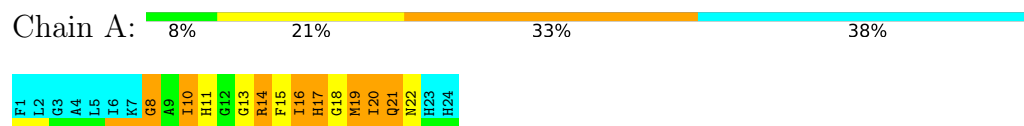
#### 4.2.47 Score per residue for model 47

- Molecule 1: Pleurocidin-like peptide WF3



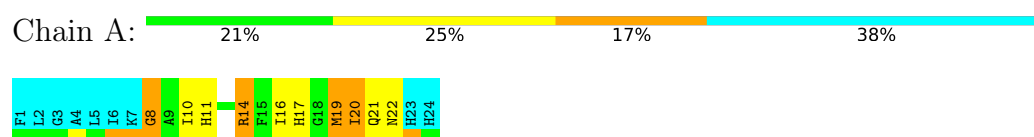
#### 4.2.48 Score per residue for model 48

- Molecule 1: Pleurocidin-like peptide WF3



#### 4.2.49 Score per residue for model 49

- Molecule 1: Pleurocidin-like peptide WF3



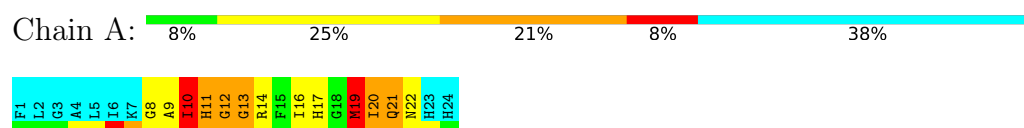
#### 4.2.50 Score per residue for model 50

- Molecule 1: Pleurocidin-like peptide WF3



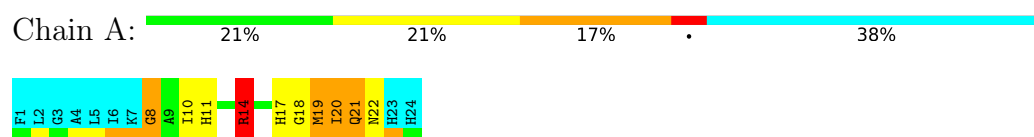
#### 4.2.51 Score per residue for model 51

- Molecule 1: Pleurocidin-like peptide WF3



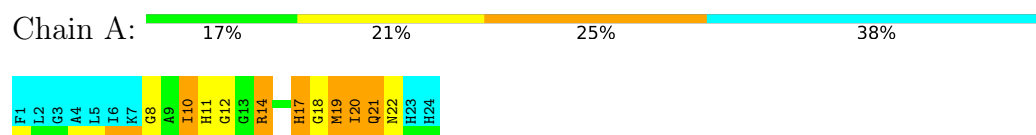
#### 4.2.52 Score per residue for model 52

- Molecule 1: Pleurocidin-like peptide WF3



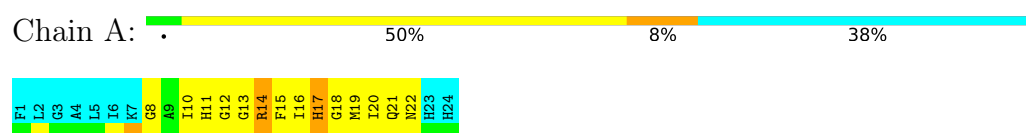
#### 4.2.53 Score per residue for model 53

- Molecule 1: Pleurocidin-like peptide WF3



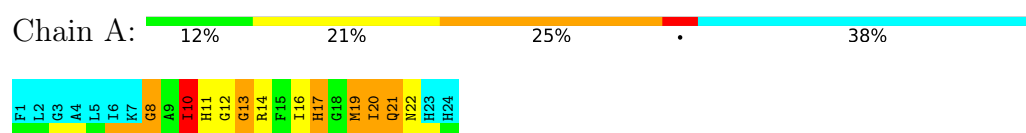
#### 4.2.54 Score per residue for model 54

- Molecule 1: Pleurocidin-like peptide WF3



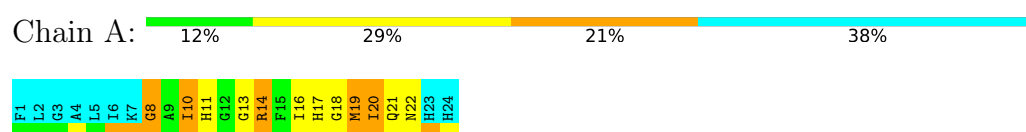
#### 4.2.55 Score per residue for model 55

- Molecule 1: Pleurocidin-like peptide WF3



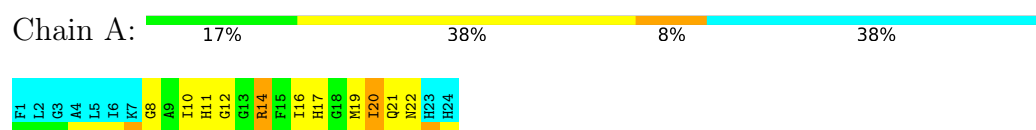
#### 4.2.56 Score per residue for model 56

- Molecule 1: Pleurocidin-like peptide WF3



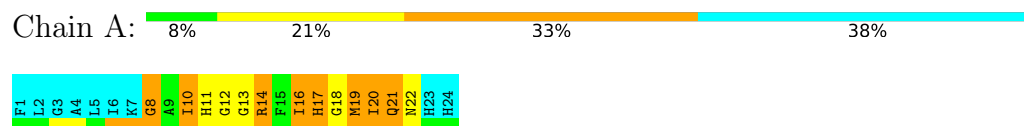
#### 4.2.57 Score per residue for model 57

- Molecule 1: Pleurocidin-like peptide WF3



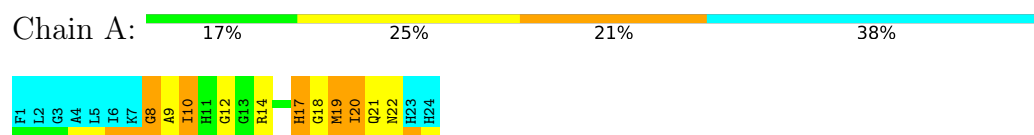
#### 4.2.58 Score per residue for model 58

- Molecule 1: Pleurocidin-like peptide WF3



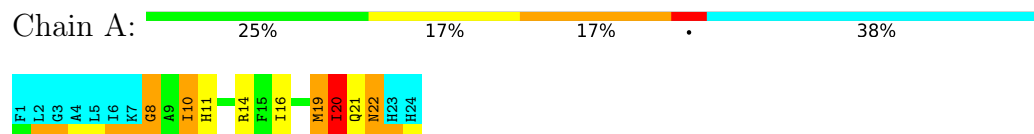
#### 4.2.59 Score per residue for model 59

- Molecule 1: Pleurocidin-like peptide WF3



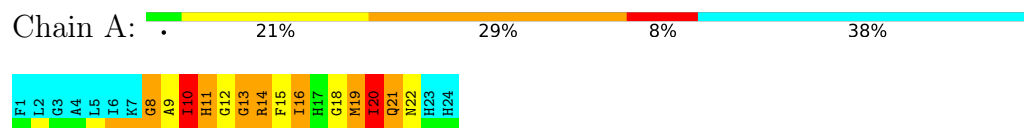
#### 4.2.60 Score per residue for model 60

- Molecule 1: Pleurocidin-like peptide WF3



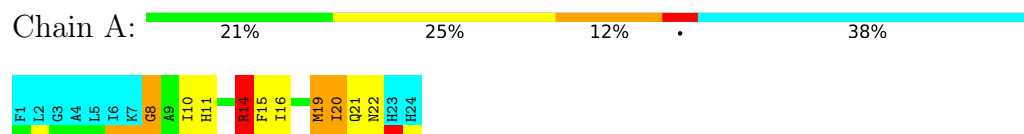
#### 4.2.61 Score per residue for model 61

- Molecule 1: Pleurocidin-like peptide WF3



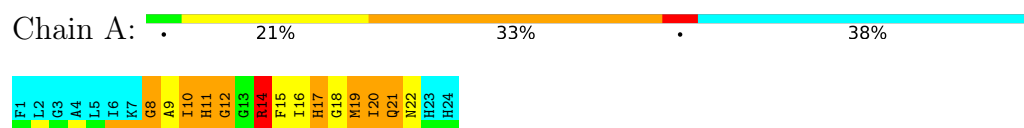
#### 4.2.62 Score per residue for model 62

- Molecule 1: Pleurocidin-like peptide WF3



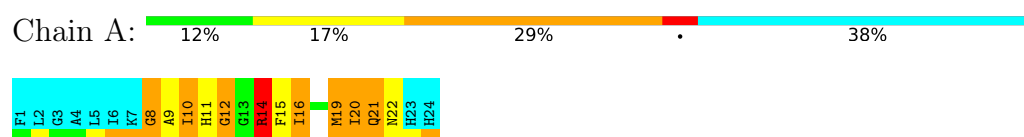
#### 4.2.63 Score per residue for model 63

- Molecule 1: Pleurocidin-like peptide WF3



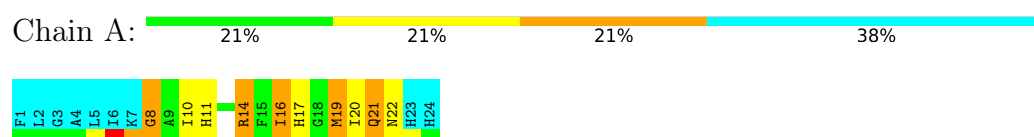
#### 4.2.64 Score per residue for model 64

- Molecule 1: Pleurocidin-like peptide WF3



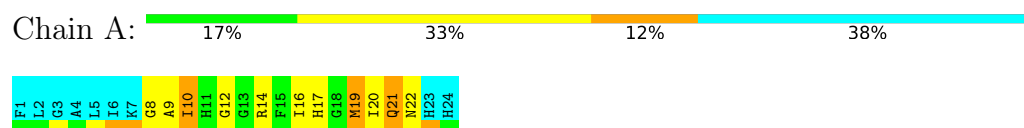
#### 4.2.65 Score per residue for model 65

- Molecule 1: Pleurocidin-like peptide WF3



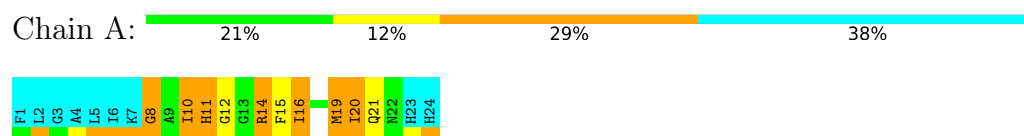
#### 4.2.66 Score per residue for model 66

- Molecule 1: Pleurocidin-like peptide WF3



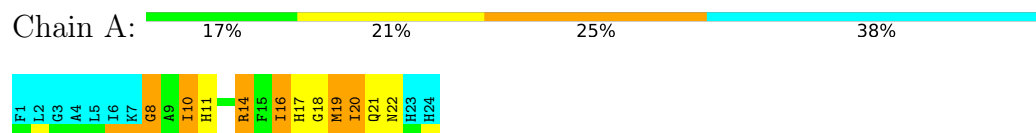
#### 4.2.67 Score per residue for model 67

- Molecule 1: Pleurocidin-like peptide WF3



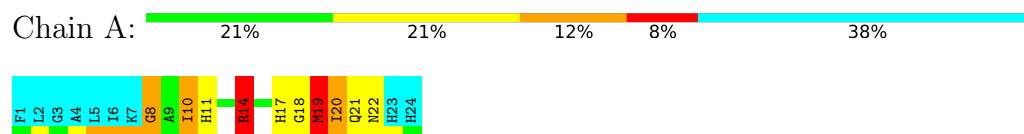
#### 4.2.68 Score per residue for model 68

- Molecule 1: Pleurocidin-like peptide WF3



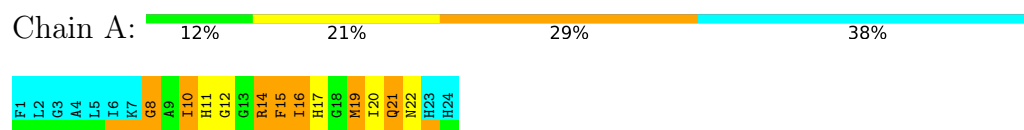
#### 4.2.69 Score per residue for model 69

- Molecule 1: Pleurocidin-like peptide WF3



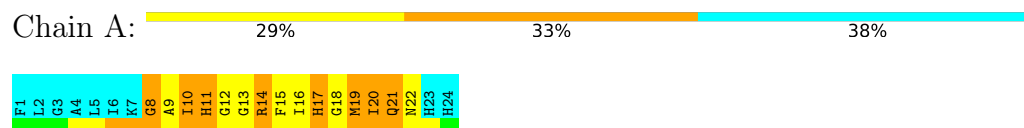
#### 4.2.70 Score per residue for model 70

- Molecule 1: Pleurocidin-like peptide WF3



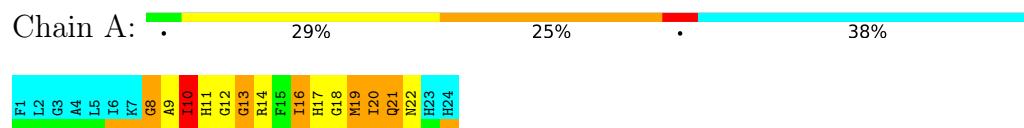
#### 4.2.71 Score per residue for model 71

- Molecule 1: Pleurocidin-like peptide WF3



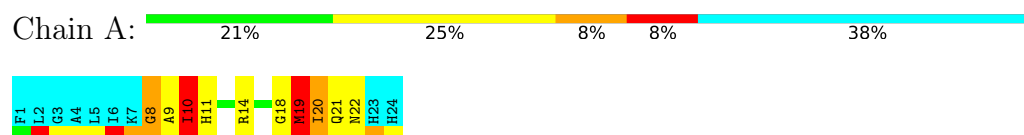
#### 4.2.72 Score per residue for model 72

- Molecule 1: Pleurocidin-like peptide WF3



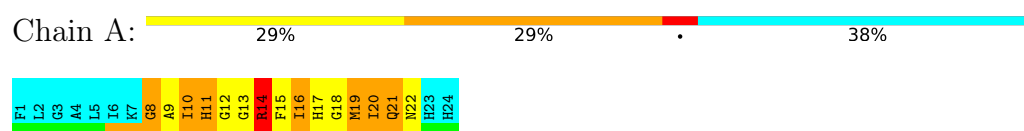
#### 4.2.73 Score per residue for model 73

- Molecule 1: Pleurocidin-like peptide WF3



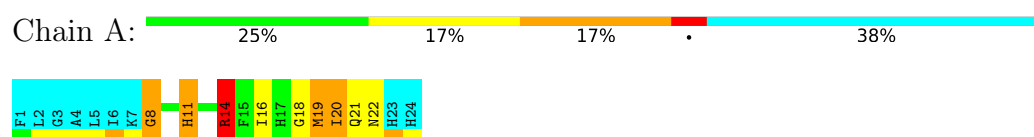
#### 4.2.74 Score per residue for model 74

- Molecule 1: Pleurocidin-like peptide WF3



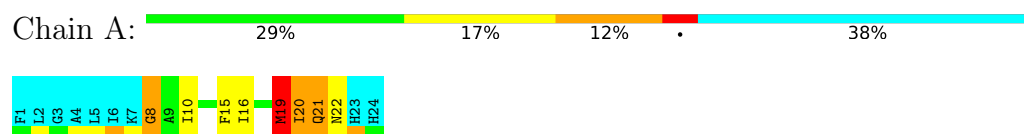
#### 4.2.75 Score per residue for model 75

- Molecule 1: Pleurocidin-like peptide WF3



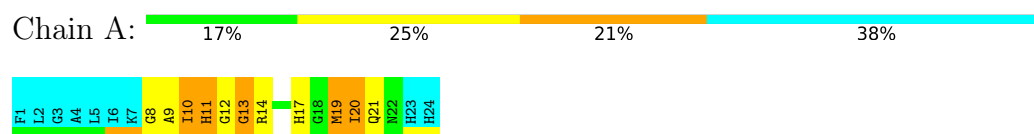
#### 4.2.76 Score per residue for model 76

- Molecule 1: Pleurocidin-like peptide WF3



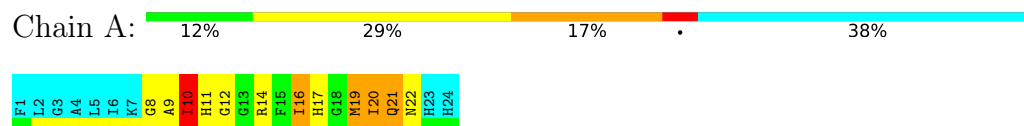
#### 4.2.77 Score per residue for model 77

- Molecule 1: Pleurocidin-like peptide WF3



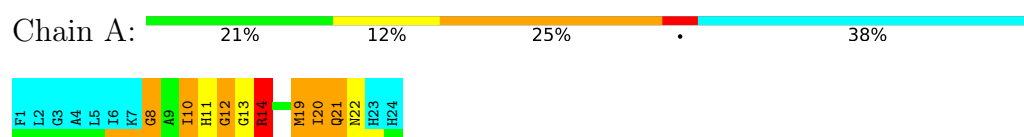
#### 4.2.78 Score per residue for model 78

- Molecule 1: Pleurocidin-like peptide WF3



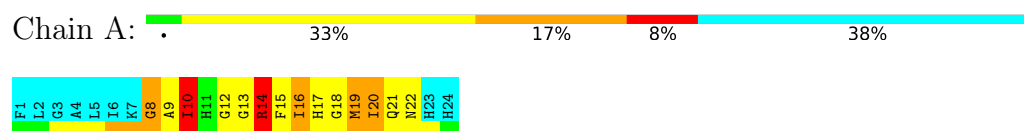
#### 4.2.79 Score per residue for model 79

- Molecule 1: Pleurocidin-like peptide WF3



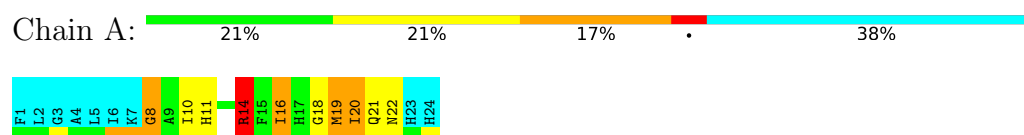
#### 4.2.80 Score per residue for model 80

- Molecule 1: Pleurocidin-like peptide WF3



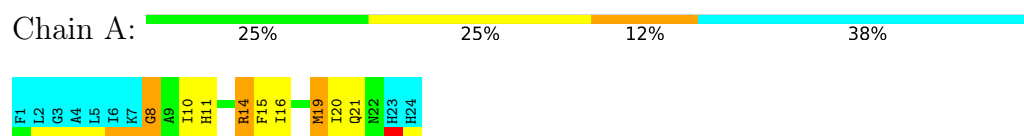
#### 4.2.81 Score per residue for model 81

- Molecule 1: Pleurocidin-like peptide WF3



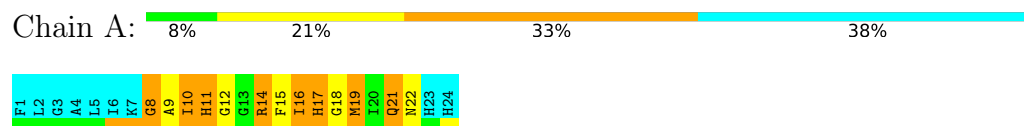
#### 4.2.82 Score per residue for model 82

- Molecule 1: Pleurocidin-like peptide WF3



#### 4.2.83 Score per residue for model 83

- Molecule 1: Pleurocidin-like peptide WF3



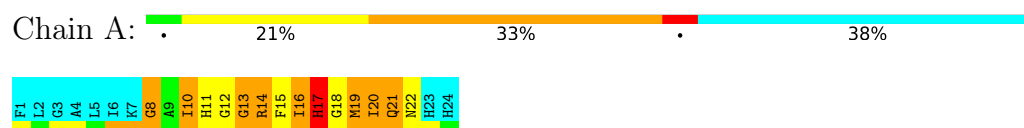
#### 4.2.84 Score per residue for model 84

- Molecule 1: Pleurocidin-like peptide WF3



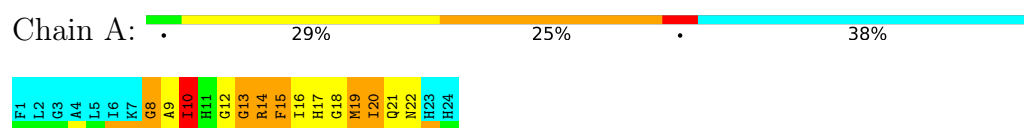
#### 4.2.85 Score per residue for model 85

- Molecule 1: Pleurocidin-like peptide WF3



#### 4.2.86 Score per residue for model 86

- Molecule 1: Pleurocidin-like peptide WF3



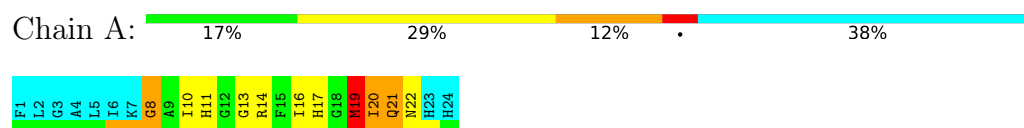
#### 4.2.87 Score per residue for model 87

- Molecule 1: Pleurocidin-like peptide WF3



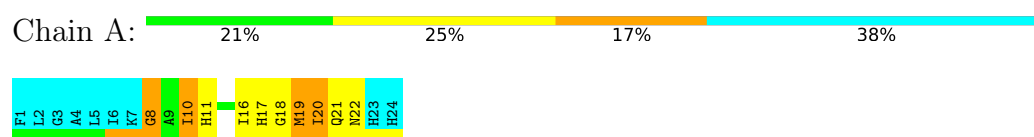
#### 4.2.88 Score per residue for model 88

- Molecule 1: Pleurocidin-like peptide WF3



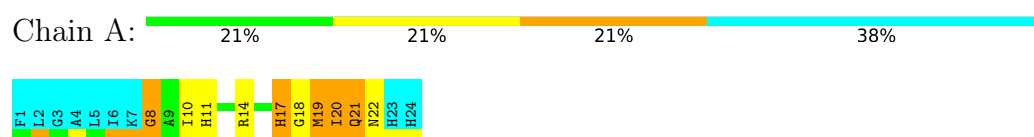
#### 4.2.89 Score per residue for model 89

- Molecule 1: Pleurocidin-like peptide WF3



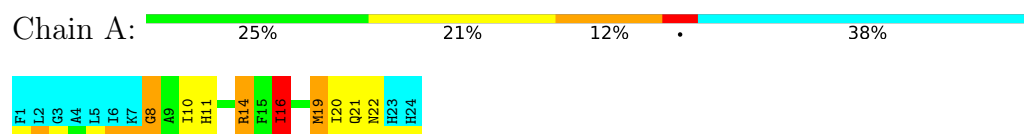
#### 4.2.90 Score per residue for model 90

- Molecule 1: Pleurocidin-like peptide WF3



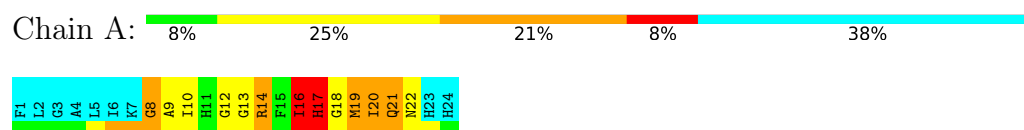
#### 4.2.91 Score per residue for model 91

- Molecule 1: Pleurocidin-like peptide WF3



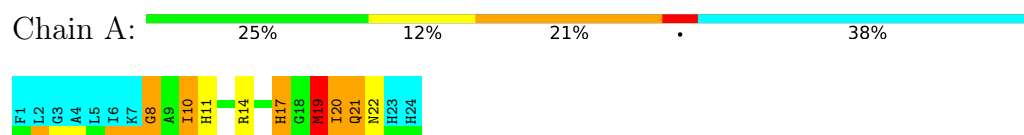
#### 4.2.92 Score per residue for model 92

- Molecule 1: Pleurocidin-like peptide WF3



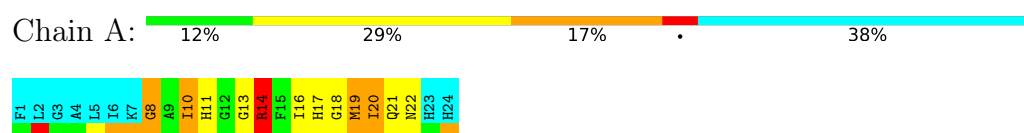
#### 4.2.93 Score per residue for model 93

- Molecule 1: Pleurocidin-like peptide WF3



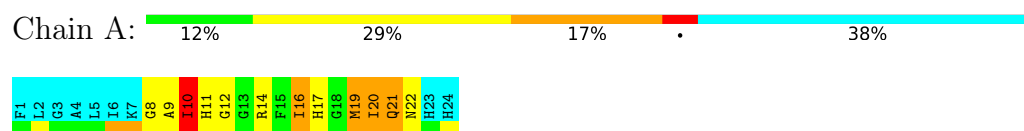
#### 4.2.94 Score per residue for model 94

- Molecule 1: Pleurocidin-like peptide WF3



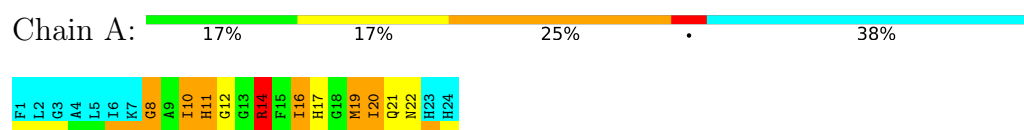
#### 4.2.95 Score per residue for model 95

- Molecule 1: Pleurocidin-like peptide WF3



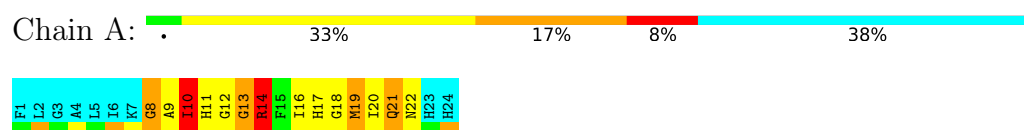
#### 4.2.96 Score per residue for model 96

- Molecule 1: Pleurocidin-like peptide WF3



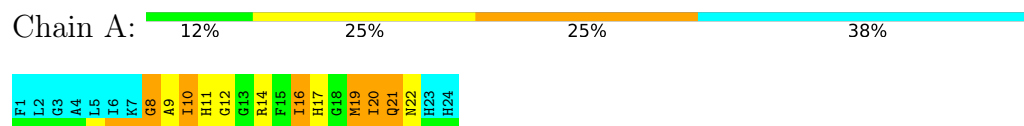
#### 4.2.97 Score per residue for model 97

- Molecule 1: Pleurocidin-like peptide WF3



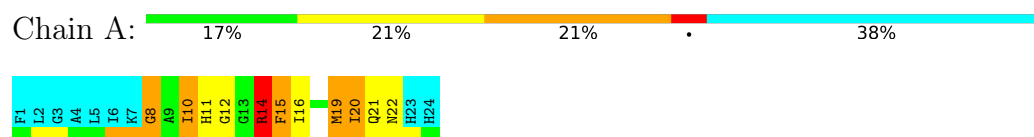
#### 4.2.98 Score per residue for model 98 (medoid)

- Molecule 1: Pleurocidin-like peptide WF3



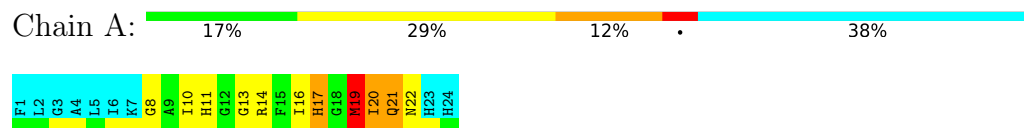
#### 4.2.99 Score per residue for model 99

- Molecule 1: Pleurocidin-like peptide WF3



#### 4.2.100 Score per residue for model 100

- Molecule 1: Pleurocidin-like peptide WF3



## 5 Refinement protocol and experimental data overview

The models were refined using the following method: *simulated annealing*.

Of the 1000 calculated structures, 100 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 |
|---------------|-----------------------|---------|
| DYNAMO        | structure calculation |         |
| DYNAMO        | 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                       | 104            |
| Number of shifts mapped to atoms             | 104            |
| Number of unparsed shifts                    | 0              |
| Number of shifts with mapping errors         | 0              |
| Number of shifts with mapping warnings       | 0              |
| Assignment completeness (well-defined parts) | 33%            |

## 6 Model quality [i](#)

### 6.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the (average) root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths |                      | Bond angles |                      |
|-----|-------|--------------|----------------------|-------------|----------------------|
|     |       | RMSZ         | #Z>5                 | RMSZ        | #Z>5                 |
| 1   | A     | 0.96±0.06    | 0±0/115 ( 0.0± 0.0%) | 1.35±0.07   | 0±1/153 ( 0.2± 0.4%) |
| All | All   | 0.96         | 0/11500 ( 0.0%)      | 1.35        | 26/15300 ( 0.2%)     |

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

| Mol | Chain | Chirality | Planarity |
|-----|-------|-----------|-----------|
| 1   | A     | 0.0±0.0   | 0.8±0.4   |
| All | All   | 0         | 84        |

There are no bond-length outliers.

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

| Mol | Chain | Res | Type | Atoms  | Z     | Observed(°) | Ideal(°) | Models |       |
|-----|-------|-----|------|--------|-------|-------------|----------|--------|-------|
|     |       |     |      |        |       |             |          | Worst  | Total |
| 1   | A     | 20  | ILE  | N-CA-C | -8.41 | 102.06      | 113.00   | 17     | 18    |
| 1   | A     | 17  | HIS  | N-CA-C | -6.12 | 107.64      | 114.62   | 77     | 2     |
| 1   | A     | 11  | HIS  | N-CA-C | -6.11 | 105.69      | 113.02   | 41     | 1     |
| 1   | A     | 21  | GLN  | N-CA-C | -5.48 | 107.25      | 114.04   | 11     | 5     |

There are no chirality outliers.

All unique planar outliers are listed below.

| Mol | Chain | Res | Type | Group     | Models (Total) |
|-----|-------|-----|------|-----------|----------------|
| 1   | A     | 14  | ARG  | Sidechain | 84             |

## 6.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in 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     | 112   | 109      | 109      | 11±3    |
| All | All   | 11200 | 10900    | 10900    | 1061    |

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 48.

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

| Atom-1          | Atom-2          | Clash(Å) | Distance(Å) | Models |       |
|-----------------|-----------------|----------|-------------|--------|-------|
|                 |                 |          |             | Worst  | Total |
| 1:A:19:MET:C    | 1:A:21:GLN:H    | 0.84     | 1.80        | 42     | 61    |
| 1:A:14:ARG:N    | 1:A:18:GLY:H    | 0.77     | 1.77        | 48     | 2     |
| 1:A:19:MET:C    | 1:A:21:GLN:N    | 0.75     | 2.44        | 94     | 98    |
| 1:A:19:MET:N    | 1:A:22:ASN:H    | 0.72     | 1.83        | 4      | 23    |
| 1:A:16:ILE:HG23 | 1:A:17:HIS:H    | 0.70     | 1.47        | 100    | 3     |
| 1:A:19:MET:O    | 1:A:21:GLN:N    | 0.64     | 2.31        | 69     | 43    |
| 1:A:19:MET:CA   | 1:A:22:ASN:H    | 0.64     | 2.05        | 25     | 18    |
| 1:A:18:GLY:O    | 1:A:20:ILE:N    | 0.62     | 2.33        | 68     | 19    |
| 1:A:20:ILE:N    | 1:A:20:ILE:HD12 | 0.62     | 2.10        | 68     | 18    |
| 1:A:16:ILE:HG23 | 1:A:17:HIS:N    | 0.61     | 2.10        | 84     | 3     |
| 1:A:18:GLY:O    | 1:A:22:ASN:N    | 0.61     | 2.34        | 27     | 23    |
| 1:A:20:ILE:O    | 1:A:20:ILE:HG22 | 0.61     | 1.94        | 78     | 16    |
| 1:A:20:ILE:HD12 | 1:A:20:ILE:N    | 0.60     | 2.12        | 23     | 19    |
| 1:A:20:ILE:HD12 | 1:A:21:GLN:N    | 0.60     | 2.11        | 60     | 1     |
| 1:A:16:ILE:HD12 | 1:A:16:ILE:N    | 0.59     | 2.12        | 28     | 2     |
| 1:A:11:HIS:CG   | 1:A:15:PHE:CZ   | 0.58     | 2.91        | 83     | 1     |
| 1:A:16:ILE:O    | 1:A:17:HIS:CG   | 0.58     | 2.56        | 83     | 22    |
| 1:A:14:ARG:N    | 1:A:18:GLY:N    | 0.57     | 2.51        | 48     | 2     |
| 1:A:14:ARG:O    | 1:A:16:ILE:N    | 0.56     | 2.38        | 48     | 13    |
| 1:A:18:GLY:C    | 1:A:20:ILE:N    | 0.56     | 2.62        | 5      | 20    |
| 1:A:16:ILE:CD1  | 1:A:16:ILE:N    | 0.55     | 2.69        | 91     | 1     |
| 1:A:17:HIS:CG   | 1:A:17:HIS:O    | 0.55     | 2.59        | 54     | 10    |
| 1:A:10:ILE:HG22 | 1:A:11:HIS:N    | 0.55     | 2.17        | 32     | 33    |
| 1:A:15:PHE:CD1  | 1:A:19:MET:SD   | 0.55     | 3.00        | 54     | 1     |
| 1:A:10:ILE:O    | 1:A:12:GLY:N    | 0.55     | 2.40        | 29     | 14    |
| 1:A:18:GLY:C    | 1:A:20:ILE:H    | 0.54     | 2.10        | 5      | 5     |
| 1:A:19:MET:SD   | 1:A:20:ILE:N    | 0.54     | 2.81        | 60     | 1     |

*Continued on next page...*

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| Atom-1          | Atom-2         | Clash(Å) | Distance(Å) | Models |       |
|-----------------|----------------|----------|-------------|--------|-------|
|                 |                |          |             | Worst  | Total |
| 1:A:22:ASN:ND2  | 1:A:22:ASN:N   | 0.54     | 2.54        | 60     | 1     |
| 1:A:19:MET:O    | 1:A:22:ASN:N   | 0.54     | 2.41        | 14     | 38    |
| 1:A:9:ALA:O     | 1:A:12:GLY:N   | 0.53     | 2.42        | 19     | 18    |
| 1:A:13:GLY:O    | 1:A:18:GLY:N   | 0.53     | 2.42        | 86     | 5     |
| 1:A:9:ALA:O     | 1:A:11:HIS:N   | 0.53     | 2.42        | 2      | 7     |
| 1:A:16:ILE:HG23 | 1:A:16:ILE:O   | 0.53     | 2.04        | 76     | 5     |
| 1:A:20:ILE:N    | 1:A:20:ILE:CD1 | 0.52     | 2.72        | 38     | 26    |
| 1:A:10:ILE:O    | 1:A:11:HIS:CG  | 0.52     | 2.62        | 67     | 4     |
| 1:A:14:ARG:O    | 1:A:18:GLY:N   | 0.52     | 2.42        | 58     | 3     |
| 1:A:14:ARG:NH1  | 1:A:22:ASN:ND2 | 0.52     | 2.58        | 31     | 1     |
| 1:A:14:ARG:CB   | 1:A:18:GLY:H   | 0.52     | 2.18        | 83     | 5     |
| 1:A:10:ILE:C    | 1:A:12:GLY:N   | 0.52     | 2.68        | 61     | 25    |
| 1:A:8:GLY:O     | 1:A:12:GLY:N   | 0.51     | 2.43        | 67     | 15    |
| 1:A:18:GLY:O    | 1:A:22:ASN:CB  | 0.51     | 2.58        | 1      | 3     |
| 1:A:11:HIS:C    | 1:A:13:GLY:N   | 0.51     | 2.67        | 29     | 14    |
| 1:A:14:ARG:CD   | 1:A:14:ARG:C   | 0.51     | 2.84        | 96     | 3     |
| 1:A:20:ILE:HD13 | 1:A:20:ILE:N   | 0.51     | 2.21        | 61     | 1     |
| 1:A:17:HIS:ND1  | 1:A:17:HIS:O   | 0.51     | 2.44        | 100    | 8     |
| 1:A:16:ILE:O    | 1:A:17:HIS:ND1 | 0.51     | 2.44        | 85     | 7     |
| 1:A:15:PHE:O    | 1:A:17:HIS:ND1 | 0.51     | 2.44        | 31     | 1     |
| 1:A:11:HIS:ND1  | 1:A:11:HIS:O   | 0.50     | 2.44        | 64     | 11    |
| 1:A:20:ILE:CD1  | 1:A:20:ILE:N   | 0.50     | 2.74        | 4      | 6     |
| 1:A:14:ARG:C    | 1:A:16:ILE:N   | 0.50     | 2.69        | 61     | 12    |
| 1:A:14:ARG:H    | 1:A:18:GLY:H   | 0.50     | 1.43        | 48     | 1     |
| 1:A:19:MET:O    | 1:A:19:MET:CG  | 0.50     | 2.58        | 16     | 2     |
| 1:A:18:GLY:O    | 1:A:19:MET:CB  | 0.50     | 2.60        | 54     | 22    |
| 1:A:14:ARG:NE   | 1:A:14:ARG:O   | 0.50     | 2.45        | 41     | 5     |
| 1:A:11:HIS:O    | 1:A:11:HIS:CD2 | 0.50     | 2.65        | 78     | 1     |
| 1:A:17:HIS:O    | 1:A:17:HIS:ND1 | 0.50     | 2.44        | 7      | 1     |
| 1:A:18:GLY:O    | 1:A:19:MET:SD  | 0.50     | 2.70        | 10     | 4     |
| 1:A:19:MET:O    | 1:A:19:MET:SD  | 0.50     | 2.70        | 5      | 3     |
| 1:A:19:MET:C    | 1:A:22:ASN:H   | 0.49     | 2.15        | 65     | 51    |
| 1:A:17:HIS:ND1  | 1:A:21:GLN:OE1 | 0.49     | 2.45        | 48     | 1     |
| 1:A:15:PHE:O    | 1:A:21:GLN:N   | 0.49     | 2.45        | 76     | 3     |
| 1:A:16:ILE:O    | 1:A:17:HIS:CD2 | 0.49     | 2.65        | 10     | 3     |
| 1:A:17:HIS:CG   | 1:A:21:GLN:OE1 | 0.49     | 2.66        | 40     | 1     |
| 1:A:11:HIS:N    | 1:A:11:HIS:ND1 | 0.49     | 2.60        | 38     | 2     |
| 1:A:14:ARG:NE   | 1:A:14:ARG:C   | 0.49     | 2.71        | 94     | 3     |
| 1:A:20:ILE:O    | 1:A:21:GLN:CB  | 0.49     | 2.61        | 33     | 34    |
| 1:A:10:ILE:O    | 1:A:11:HIS:CD2 | 0.49     | 2.66        | 28     | 5     |
| 1:A:17:HIS:CD2  | 1:A:21:GLN:OE1 | 0.49     | 2.66        | 40     | 1     |

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| Atom-1          | Atom-2          | Clash(Å) | Distance(Å) | Models |       |
|-----------------|-----------------|----------|-------------|--------|-------|
|                 |                 |          |             | Worst  | Total |
| 1:A:20:ILE:C    | 1:A:21:GLN:NE2  | 0.49     | 2.71        | 1      | 1     |
| 1:A:14:ARG:NE   | 1:A:19:MET:SD   | 0.48     | 2.86        | 25     | 1     |
| 1:A:11:HIS:O    | 1:A:13:GLY:N    | 0.48     | 2.46        | 51     | 3     |
| 1:A:17:HIS:O    | 1:A:17:HIS:CD2  | 0.48     | 2.66        | 51     | 1     |
| 1:A:21:GLN:C    | 1:A:22:ASN:ND2  | 0.48     | 2.71        | 93     | 1     |
| 1:A:14:ARG:NH1  | 1:A:22:ASN:OD1  | 0.48     | 2.45        | 31     | 1     |
| 1:A:18:GLY:O    | 1:A:19:MET:CG   | 0.48     | 2.61        | 29     | 6     |
| 1:A:16:ILE:N    | 1:A:16:ILE:CD1  | 0.48     | 2.76        | 28     | 2     |
| 1:A:14:ARG:NE   | 1:A:21:GLN:CD   | 0.48     | 2.71        | 64     | 1     |
| 1:A:16:ILE:O    | 1:A:17:HIS:CB   | 0.48     | 2.61        | 54     | 5     |
| 1:A:13:GLY:C    | 1:A:15:PHE:N    | 0.47     | 2.72        | 54     | 2     |
| 1:A:20:ILE:O    | 1:A:20:ILE:CG2  | 0.47     | 2.61        | 55     | 2     |
| 1:A:19:MET:N    | 1:A:22:ASN:N    | 0.47     | 2.60        | 70     | 11    |
| 1:A:22:ASN:O    | 1:A:22:ASN:ND2  | 0.47     | 2.48        | 25     | 2     |
| 1:A:11:HIS:ND1  | 1:A:11:HIS:C    | 0.47     | 2.71        | 18     | 1     |
| 1:A:10:ILE:O    | 1:A:10:ILE:CG2  | 0.47     | 2.63        | 73     | 1     |
| 1:A:14:ARG:NH1  | 1:A:21:GLN:NE2  | 0.47     | 2.63        | 64     | 1     |
| 1:A:9:ALA:C     | 1:A:10:ILE:HD13 | 0.47     | 2.35        | 50     | 2     |
| 1:A:10:ILE:O    | 1:A:11:HIS:ND1  | 0.47     | 2.48        | 33     | 1     |
| 1:A:14:ARG:NH2  | 1:A:22:ASN:OD1  | 0.47     | 2.48        | 79     | 1     |
| 1:A:9:ALA:C     | 1:A:11:HIS:N    | 0.47     | 2.71        | 73     | 1     |
| 1:A:11:HIS:O    | 1:A:11:HIS:CG   | 0.46     | 2.67        | 95     | 19    |
| 1:A:10:ILE:CD1  | 1:A:17:HIS:ND1  | 0.46     | 2.78        | 31     | 1     |
| 1:A:8:GLY:O     | 1:A:9:ALA:HB3   | 0.46     | 2.11        | 29     | 8     |
| 1:A:14:ARG:HH12 | 1:A:22:ASN:ND2  | 0.46     | 2.07        | 31     | 1     |
| 1:A:14:ARG:C    | 1:A:16:ILE:H    | 0.46     | 2.19        | 92     | 2     |
| 1:A:16:ILE:HG21 | 1:A:20:ILE:H    | 0.46     | 1.71        | 7      | 2     |
| 1:A:19:MET:C    | 1:A:19:MET:SD   | 0.46     | 2.99        | 60     | 1     |
| 1:A:17:HIS:O    | 1:A:17:HIS:CG   | 0.46     | 2.69        | 97     | 4     |
| 1:A:20:ILE:O    | 1:A:21:GLN:CG   | 0.45     | 2.65        | 3      | 2     |
| 1:A:16:ILE:HG22 | 1:A:17:HIS:CE1  | 0.45     | 2.46        | 41     | 1     |
| 1:A:15:PHE:O    | 1:A:16:ILE:C    | 0.45     | 2.60        | 64     | 14    |
| 1:A:11:HIS:CD2  | 1:A:11:HIS:O    | 0.45     | 2.70        | 31     | 1     |
| 1:A:9:ALA:C     | 1:A:11:HIS:H    | 0.45     | 2.19        | 73     | 5     |
| 1:A:16:ILE:N    | 1:A:16:ILE:HD13 | 0.45     | 2.27        | 91     | 1     |
| 1:A:10:ILE:C    | 1:A:12:GLY:H    | 0.45     | 2.20        | 37     | 16    |
| 1:A:12:GLY:C    | 1:A:14:ARG:N    | 0.45     | 2.74        | 74     | 2     |
| 1:A:16:ILE:CG2  | 1:A:17:HIS:N    | 0.45     | 2.79        | 84     | 2     |
| 1:A:14:ARG:CZ   | 1:A:22:ASN:OD1  | 0.44     | 2.65        | 79     | 1     |
| 1:A:21:GLN:C    | 1:A:22:ASN:HD22 | 0.44     | 2.20        | 8      | 2     |
| 1:A:11:HIS:C    | 1:A:13:GLY:H    | 0.44     | 2.21        | 29     | 12    |

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| Atom-1          | Atom-2          | Clash(Å) | Distance(Å) | Models |       |
|-----------------|-----------------|----------|-------------|--------|-------|
|                 |                 |          |             | Worst  | Total |
| 1:A:15:PHE:O    | 1:A:16:ILE:CB   | 0.44     | 2.64        | 85     | 1     |
| 1:A:14:ARG:O    | 1:A:14:ARG:CZ   | 0.44     | 2.66        | 41     | 2     |
| 1:A:16:ILE:HD13 | 1:A:16:ILE:H    | 0.44     | 1.73        | 91     | 1     |
| 1:A:20:ILE:N    | 1:A:20:ILE:HD13 | 0.44     | 2.28        | 5      | 1     |
| 1:A:14:ARG:NH1  | 1:A:22:ASN:CG   | 0.44     | 2.76        | 31     | 1     |
| 1:A:17:HIS:ND1  | 1:A:17:HIS:C    | 0.44     | 2.74        | 54     | 2     |
| 1:A:18:GLY:O    | 1:A:21:GLN:N    | 0.43     | 2.50        | 2      | 3     |
| 1:A:11:HIS:CD2  | 1:A:15:PHE:CE2  | 0.43     | 3.06        | 83     | 1     |
| 1:A:14:ARG:CB   | 1:A:18:GLY:N    | 0.43     | 2.82        | 92     | 1     |
| 1:A:16:ILE:CG2  | 1:A:17:HIS:H    | 0.43     | 2.22        | 100    | 2     |
| 1:A:21:GLN:O    | 1:A:21:GLN:CD   | 0.43     | 2.62        | 39     | 2     |
| 1:A:11:HIS:O    | 1:A:11:HIS:ND1  | 0.43     | 2.51        | 56     | 1     |
| 1:A:14:ARG:N    | 1:A:14:ARG:CD   | 0.42     | 2.82        | 37     | 1     |
| 1:A:14:ARG:HH12 | 1:A:22:ASN:HD21 | 0.42     | 1.56        | 31     | 1     |
| 1:A:8:GLY:O     | 1:A:9:ALA:C     | 0.42     | 2.62        | 10     | 2     |
| 1:A:9:ALA:O     | 1:A:10:ILE:C    | 0.42     | 2.63        | 19     | 26    |
| 1:A:19:MET:HA   | 1:A:22:ASN:H    | 0.42     | 1.74        | 17     | 1     |
| 1:A:9:ALA:C     | 1:A:10:ILE:CG1  | 0.42     | 2.93        | 78     | 1     |
| 1:A:20:ILE:O    | 1:A:21:GLN:NE2  | 0.41     | 2.54        | 1      | 1     |
| 1:A:14:ARG:O    | 1:A:15:PHE:C    | 0.41     | 2.63        | 80     | 5     |
| 1:A:14:ARG:CD   | 1:A:15:PHE:N    | 0.41     | 2.83        | 99     | 1     |
| 1:A:20:ILE:HD12 | 1:A:20:ILE:C    | 0.41     | 2.40        | 60     | 1     |
| 1:A:12:GLY:C    | 1:A:14:ARG:H    | 0.41     | 2.24        | 27     | 2     |
| 1:A:13:GLY:O    | 1:A:17:HIS:N    | 0.41     | 2.54        | 29     | 1     |
| 1:A:22:ASN:O    | 1:A:22:ASN:CG   | 0.41     | 2.62        | 3      | 2     |
| 1:A:18:GLY:O    | 1:A:19:MET:C    | 0.41     | 2.64        | 75     | 4     |
| 1:A:15:PHE:O    | 1:A:16:ILE:HG23 | 0.41     | 2.15        | 67     | 1     |
| 1:A:17:HIS:C    | 1:A:19:MET:N    | 0.40     | 2.77        | 20     | 2     |
| 1:A:17:HIS:ND1  | 1:A:21:GLN:N    | 0.40     | 2.68        | 41     | 1     |
| 1:A:13:GLY:O    | 1:A:14:ARG:C    | 0.40     | 2.64        | 29     | 1     |
| 1:A:17:HIS:O    | 1:A:22:ASN:OD1  | 0.40     | 2.40        | 58     | 1     |
| 1:A:21:GLN:CD   | 1:A:21:GLN:C    | 0.40     | 2.89        | 80     | 1     |
| 1:A:13:GLY:O    | 1:A:17:HIS:CB   | 0.40     | 2.69        | 29     | 1     |
| 1:A:21:GLN:C    | 1:A:21:GLN:CD   | 0.40     | 2.89        | 42     | 1     |
| 1:A:16:ILE:CG2  | 1:A:20:ILE:H    | 0.40     | 2.29        | 7      | 1     |
| 1:A:14:ARG:NH1  | 1:A:22:ASN:HD21 | 0.40     | 2.14        | 31     | 1     |
| 1:A:10:ILE:CG2  | 1:A:11:HIS:N    | 0.40     | 2.85        | 32     | 1     |
| 1:A:22:ASN:OD1  | 1:A:22:ASN:N    | 0.40     | 2.51        | 39     | 1     |
| 1:A:20:ILE:O    | 1:A:21:GLN:CD   | 0.40     | 2.65        | 46     | 1     |
| 1:A:14:ARG:O    | 1:A:14:ARG:NE   | 0.40     | 2.55        | 55     | 1     |
| 1:A:16:ILE:O    | 1:A:20:ILE:CD1  | 0.40     | 2.69        | 96     | 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     | 15/24 (62%)     | 5±2 (31±11%) | 4±2 (29±13%) | 6±2 (37±12%) | 0           | 0 |
| All | All   | 1469/2400 (61%) | 471 (32%)    | 437 (30%)    | 561 (38%)    | 0           | 0 |

All 12 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

| Mol | Chain | Res | Type | Models (Total) |
|-----|-------|-----|------|----------------|
| 1   | A     | 19  | MET  | 94             |
| 1   | A     | 20  | ILE  | 80             |
| 1   | A     | 8   | GLY  | 78             |
| 1   | A     | 10  | ILE  | 60             |
| 1   | A     | 16  | ILE  | 57             |
| 1   | A     | 17  | HIS  | 41             |
| 1   | A     | 21  | GLN  | 37             |
| 1   | A     | 14  | ARG  | 35             |
| 1   | A     | 11  | HIS  | 31             |
| 1   | A     | 13  | GLY  | 30             |
| 1   | A     | 15  | PHE  | 14             |
| 1   | A     | 12  | GLY  | 4              |

### 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     | 10/17 (59%)    | 9±1 (87±12%) | 1±1 (11±8%) | 8           | 50 |
| All | All   | 986/1700 (58%) | 871 (88%)    | 115 (12%)   | 7           | 50 |

All 8 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     | 10  | ILE  | 66             |
| 1   | A     | 14  | ARG  | 17             |
| 1   | A     | 19  | MET  | 16             |
| 1   | A     | 22  | ASN  | 4              |
| 1   | A     | 17  | HIS  | 4              |
| 1   | A     | 16  | ILE  | 3              |
| 1   | A     | 20  | ILE  | 3              |
| 1   | A     | 21  | GLN  | 2              |

### 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

The completeness of assignment taking into account all chemical shift lists is 33% for the well-defined parts and 31% for the entire structure.

### 7.1 Chemical shift list 1

File name: working\_cs.cif

Chemical shift list name: *WF3-chemicalshift.php*

#### 7.1.1 Bookkeeping

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                  | 104 |
| Number of shifts mapped to atoms        | 104 |
| Number of unparsed shifts               | 0   |
| Number of shifts with mapping errors    | 0   |
| Number of shifts with mapping warnings  | 0   |
| Number of shift outliers (ShiftChecker) | 0   |

#### 7.1.2 Chemical shift referencing

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

#### 7.1.3 Completeness of resonance assignments

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 33%, i.e. 66 atoms were assigned a chemical shift out of a possible 200. 0 out of 0 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

|           | Total        | <sup>1</sup> H | <sup>13</sup> C | <sup>15</sup> N |
|-----------|--------------|----------------|-----------------|-----------------|
| Backbone  | 34/79 (43%)  | 34/34 (100%)   | 0/30 (0%)       | 0/15 (0%)       |
| Sidechain | 32/97 (33%)  | 32/64 (50%)    | 0/28 (0%)       | 0/5 (0%)        |
| Aromatic  | 0/24 (0%)    | 0/13 (0%)      | 0/9 (0%)        | 0/2 (0%)        |
| Overall   | 66/200 (33%) | 66/111 (59%)   | 0/67 (0%)       | 0/22 (0%)       |

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 31%, i.e. 104 atoms were assigned a chemical shift out of a possible 335. 0 out of 2 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

|           | Total         | <sup>1</sup> H | <sup>13</sup> C | <sup>15</sup> N |
|-----------|---------------|----------------|-----------------|-----------------|
| Backbone  | 51/125 (41%)  | 51/53 (96%)    | 0/48 (0%)       | 0/24 (0%)       |
| Sidechain | 53/162 (33%)  | 53/108 (49%)   | 0/48 (0%)       | 0/6 (0%)        |
| Aromatic  | 0/48 (0%)     | 0/26 (0%)      | 0/18 (0%)       | 0/4 (0%)        |
| Overall   | 104/335 (31%) | 104/187 (56%)  | 0/114 (0%)      | 0/34 (0%)       |

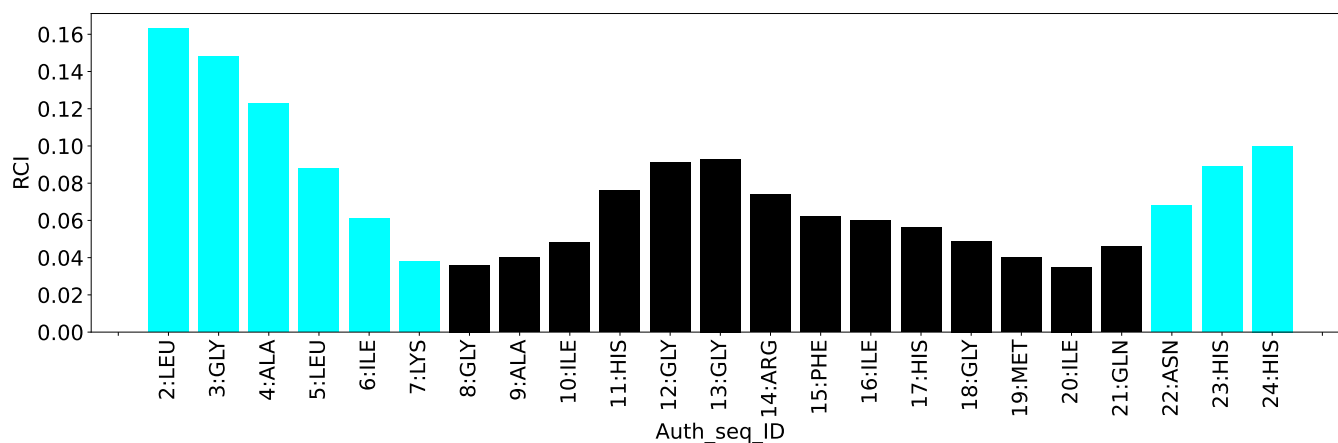
#### 7.1.4 Statistically unusual chemical shifts [i](#)

There are no statistically unusual chemical shifts.

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

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                                | 60    |
| Intra-residue ( $ i-j =0$ )                              | 0     |
| Sequential ( $ i-j =1$ )                                 | 17    |
| Medium range ( $ i-j >1$ and $ i-j <5$ )                 | 43    |
| Long range ( $ i-j \geq 5$ )                             | 0     |
| Inter-chain                                              | 0     |
| Hydrogen bond restraints                                 | 0     |
| Disulfide bond restraints                                | 0     |
| Total dihedral-angle restraints                          | 0     |
| Number of unmapped restraints                            | 0     |
| Number of restraints per residue                         | 2.5   |
| Number of long range restraints per residue <sup>1</sup> | 0.0   |

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

### 8.2 Residual restraint violations

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

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

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

| Bins (Å)         | Average number of violations per model | Max (Å) |
|------------------|----------------------------------------|---------|
| 0.1-0.2 (Small)  | 0.0                                    | 0.13    |
| 0.2-0.5 (Medium) | 0.2                                    | 0.49    |
| >0.5 (Large)     | 4.4                                    | 2.58    |

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

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

## 9 Distance violation analysis

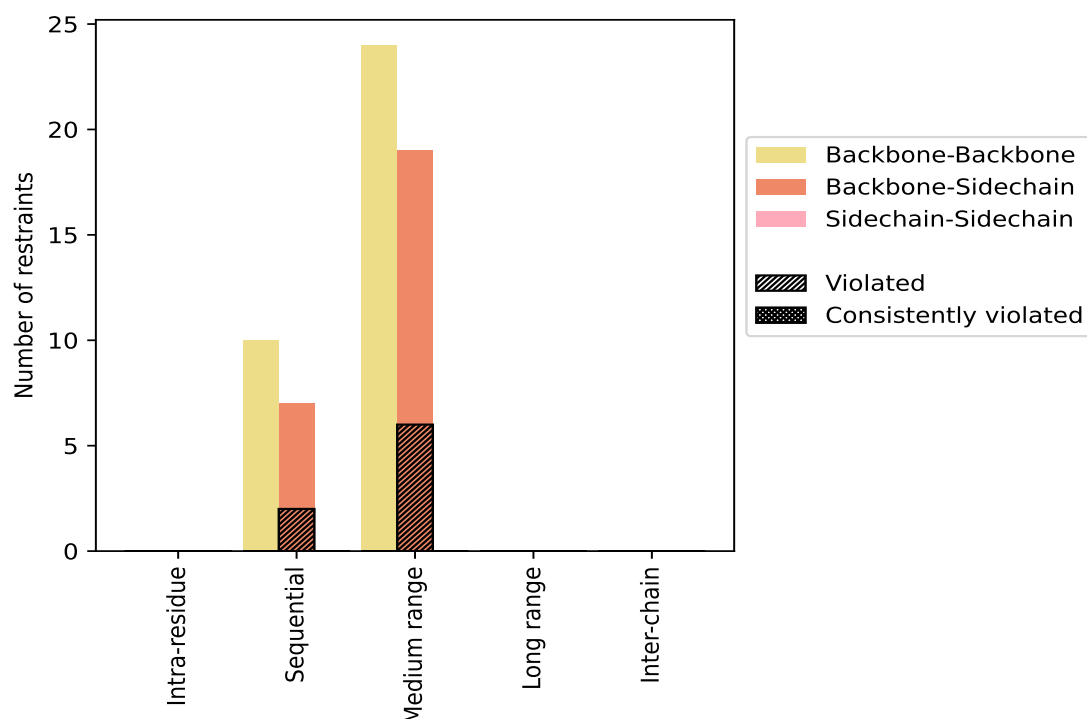
### 9.1 Summary of distance violations

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

| Restrains type                         | Count | % <sup>1</sup> | Violated <sup>3</sup> |                |                | Consistently Violated <sup>4</sup> |                |                |
|----------------------------------------|-------|----------------|-----------------------|----------------|----------------|------------------------------------|----------------|----------------|
|                                        |       |                | Count                 | % <sup>2</sup> | % <sup>1</sup> | Count                              | % <sup>2</sup> | % <sup>1</sup> |
| Intra-residue ( $ i-j =0$ )            | 0     | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| 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            |
| Sequential ( $ i-j =1$ )               | 17    | 28.3           | 2                     | 11.8           | 3.3            | 0                                  | 0.0            | 0.0            |
| Backbone-Backbone                      | 10    | 16.7           | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Backbone-Sidechain                     | 7     | 11.7           | 2                     | 28.6           | 3.3            | 0                                  | 0.0            | 0.0            |
| Sidechain-Sidechain                    | 0     | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Medium range ( $ i-j >1$ & $ i-j <5$ ) | 43    | 71.7           | 6                     | 14.0           | 10.0           | 0                                  | 0.0            | 0.0            |
| Backbone-Backbone                      | 24    | 40.0           | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Backbone-Sidechain                     | 19    | 31.7           | 6                     | 31.6           | 10.0           | 0                                  | 0.0            | 0.0            |
| Sidechain-Sidechain                    | 0     | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Long range ( $ i-j \geq 5$ )           | 0     | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| 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            |
| Inter-chain                            | 0     | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| 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            |
| Hydrogen bond                          | 0     | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Disulfide bond                         | 0     | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Total                                  | 60    | 100.0          | 8                     | 13.3           | 13.3           | 0                                  | 0.0            | 0.0            |
| Backbone-Backbone                      | 34    | 56.7           | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Backbone-Sidechain                     | 26    | 43.3           | 8                     | 30.8           | 13.3           | 0                                  | 0.0            | 0.0            |
| Sidechain-Sidechain                    | 0     | 0.0            | 0                     | 0.0            | 0.0            | 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 disulfied bonds are counted in their appropriate category on the x-axis

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

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

| Model ID | Number of violations |                 |                 |                 |                 |       | 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        | 0                    | 1               | 3               | 0               | 0               | 4     | 1.32     | 2.08    | 0.53                | 1.22       |
| 2        | 0                    | 1               | 3               | 0               | 0               | 4     | 1.44     | 2.09    | 0.53                | 1.44       |
| 3        | 0                    | 1               | 3               | 0               | 0               | 4     | 1.64     | 2.11    | 0.51                | 1.8        |
| 4        | 0                    | 1               | 3               | 0               | 0               | 4     | 1.69     | 1.97    | 0.21                | 1.66       |
| 5        | 0                    | 1               | 3               | 0               | 0               | 4     | 1.35     | 2.1     | 0.52                | 1.25       |
| 6        | 0                    | 1               | 3               | 0               | 0               | 4     | 1.49     | 2.03    | 0.56                | 1.68       |
| 7        | 0                    | 1               | 4               | 0               | 0               | 5     | 1.42     | 2.02    | 0.36                | 1.39       |
| 8        | 0                    | 1               | 3               | 0               | 0               | 4     | 1.34     | 1.7     | 0.28                | 1.36       |
| 9        | 0                    | 1               | 4               | 0               | 0               | 5     | 1.14     | 1.8     | 0.53                | 1.28       |
| 10       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.11     | 2.01    | 0.59                | 0.87       |

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| 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 |          |         |                     |            |
| 11       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.72     | 2.36    | 0.54                | 1.84       |
| 12       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.07     | 1.81    | 0.53                | 0.9        |
| 13       | 0                    | 2               | 2               | 0               | 0               | 4     | 1.66     | 1.8     | 0.1                 | 1.65       |
| 14       | 0                    | 2               | 3               | 0               | 0               | 5     | 1.36     | 1.81    | 0.62                | 1.64       |
| 15       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.59     | 2.03    | 0.39                | 1.67       |
| 16       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.25     | 1.67    | 0.27                | 1.31       |
| 17       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.7      | 2.18    | 0.4                 | 1.78       |
| 18       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.1      | 2.06    | 0.62                | 0.89       |
| 19       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.11     | 1.67    | 0.39                | 1.14       |
| 20       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.5      | 2.31    | 0.51                | 1.28       |
| 21       | 0                    | 1               | 5               | 0               | 0               | 6     | 0.98     | 1.55    | 0.41                | 1.04       |
| 22       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.56     | 2.36    | 0.58                | 1.57       |
| 23       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.05     | 1.82    | 0.55                | 0.91       |
| 24       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.04     | 1.81    | 0.56                | 0.91       |
| 25       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.56     | 2.27    | 0.4                 | 1.34       |
| 26       | 0                    | 1               | 5               | 0               | 0               | 6     | 1.1      | 2.12    | 0.59                | 1.0        |
| 27       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.4      | 1.99    | 0.45                | 1.34       |
| 28       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.73     | 2.09    | 0.34                | 1.76       |
| 29       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.09     | 1.83    | 0.57                | 0.84       |
| 30       | 0                    | 1               | 3               | 0               | 0               | 4     | 0.98     | 1.64    | 0.38                | 0.77       |
| 31       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.3      | 2.06    | 0.4                 | 1.15       |
| 32       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.39     | 2.12    | 0.49                | 1.34       |
| 33       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.23     | 2.22    | 0.72                | 1.18       |
| 34       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.69     | 2.09    | 0.35                | 1.72       |
| 35       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.44     | 2.25    | 0.52                | 1.32       |
| 36       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.42     | 2.03    | 0.35                | 1.35       |
| 37       | 0                    | 1               | 5               | 0               | 0               | 6     | 1.01     | 1.54    | 0.38                | 1.02       |
| 38       | 0                    | 2               | 3               | 0               | 0               | 5     | 1.21     | 1.66    | 0.51                | 1.57       |
| 39       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.17     | 1.7     | 0.34                | 1.15       |
| 40       | 0                    | 1               | 4               | 0               | 0               | 5     | 0.87     | 1.53    | 0.36                | 0.76       |
| 41       | 0                    | 1               | 5               | 0               | 0               | 6     | 0.94     | 2.07    | 0.66                | 0.8        |
| 42       | 0                    | 1               | 5               | 0               | 0               | 6     | 0.98     | 1.58    | 0.39                | 1.01       |
| 43       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.61     | 1.95    | 0.3                 | 1.66       |
| 44       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.6      | 2.07    | 0.45                | 1.73       |
| 45       | 0                    | 1               | 5               | 0               | 0               | 6     | 1.0      | 1.53    | 0.37                | 1.04       |
| 46       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.82     | 2.4     | 0.57                | 1.99       |
| 47       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.54     | 2.37    | 0.65                | 1.52       |
| 48       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.42     | 2.03    | 0.36                | 1.32       |
| 49       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.58     | 2.05    | 0.43                | 1.68       |
| 50       | 0                    | 1               | 3               | 0               | 0               | 4     | 0.94     | 1.63    | 0.41                | 0.78       |
| 51       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.12     | 1.87    | 0.54                | 0.85       |

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| 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 |          |         |                     |            |
| 52       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.29     | 2.09    | 0.57                | 1.16       |
| 53       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.27     | 1.68    | 0.28                | 1.31       |
| 54       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.65     | 2.43    | 0.67                | 1.79       |
| 55       | 0                    | 1               | 5               | 0               | 0               | 6     | 0.97     | 1.55    | 0.39                | 1.01       |
| 56       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.49     | 2.05    | 0.31                | 1.39       |
| 57       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.62     | 2.01    | 0.32                | 1.66       |
| 58       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.73     | 2.38    | 0.51                | 1.78       |
| 59       | 0                    | 2               | 3               | 0               | 0               | 5     | 1.58     | 2.05    | 0.3                 | 1.56       |
| 60       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.65     | 2.01    | 0.29                | 1.66       |
| 61       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.09     | 1.84    | 0.54                | 0.91       |
| 62       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.41     | 2.11    | 0.42                | 1.34       |
| 63       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.62     | 2.33    | 0.57                | 1.7        |
| 64       | 0                    | 2               | 3               | 0               | 0               | 5     | 1.29     | 1.67    | 0.39                | 1.56       |
| 65       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.6      | 2.06    | 0.54                | 1.79       |
| 66       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.3      | 1.82    | 0.47                | 1.27       |
| 67       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.38     | 2.24    | 0.63                | 1.29       |
| 68       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.41     | 2.07    | 0.38                | 1.31       |
| 69       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.46     | 2.24    | 0.51                | 1.31       |
| 70       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.74     | 2.28    | 0.39                | 1.76       |
| 71       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.66     | 2.37    | 0.43                | 1.6        |
| 72       | 0                    | 1               | 5               | 0               | 0               | 6     | 0.98     | 1.54    | 0.4                 | 1.02       |
| 73       | 0                    | 2               | 3               | 0               | 0               | 5     | 1.47     | 2.12    | 0.68                | 1.86       |
| 74       | 0                    | 2               | 3               | 0               | 0               | 5     | 1.49     | 1.8     | 0.34                | 1.61       |
| 75       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.52     | 2.36    | 0.51                | 1.36       |
| 76       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.6      | 2.4     | 0.46                | 1.37       |
| 77       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.12     | 2.05    | 0.63                | 0.83       |
| 78       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.3      | 1.85    | 0.33                | 1.29       |
| 79       | 0                    | 2               | 3               | 0               | 0               | 5     | 1.44     | 1.79    | 0.43                | 1.62       |
| 80       | 0                    | 1               | 4               | 0               | 0               | 5     | 0.84     | 1.57    | 0.4                 | 0.75       |
| 81       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.32     | 2.13    | 0.57                | 1.22       |
| 82       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.43     | 2.09    | 0.37                | 1.32       |
| 83       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.74     | 2.58    | 0.7                 | 1.88       |
| 84       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.12     | 1.6     | 0.32                | 1.12       |
| 85       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.74     | 2.44    | 0.53                | 1.8        |
| 86       | 0                    | 1               | 5               | 0               | 0               | 6     | 0.99     | 1.55    | 0.4                 | 1.03       |
| 87       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.71     | 1.98    | 0.2                 | 1.68       |
| 88       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.61     | 2.06    | 0.4                 | 1.68       |
| 89       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.52     | 1.99    | 0.28                | 1.52       |
| 90       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.46     | 1.89    | 0.43                | 1.59       |
| 91       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.43     | 2.07    | 0.37                | 1.31       |
| 92       | 0                    | 2               | 2               | 0               | 0               | 4     | 1.42     | 1.8     | 0.38                | 1.56       |

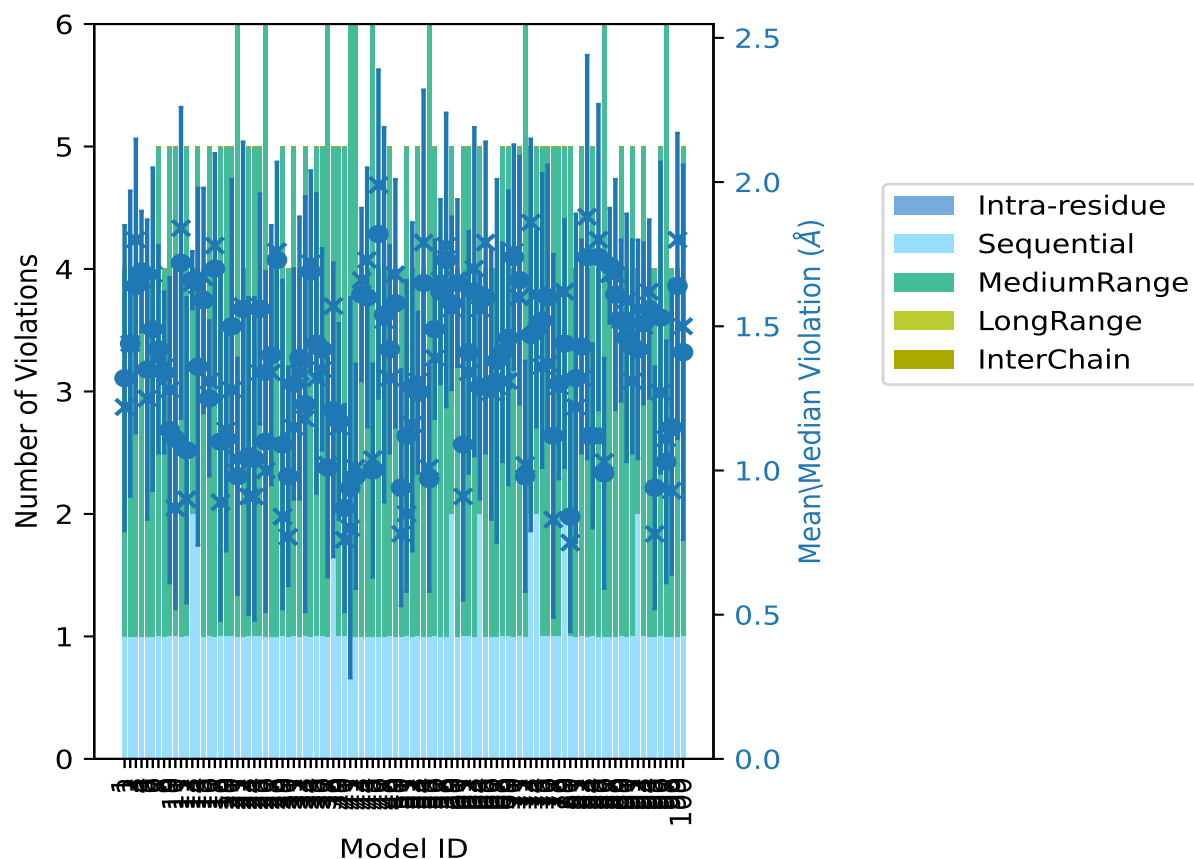
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| Model ID | Number of violations |                 |                 |                 |                 |       | Mean (Å) | Max (Å) | SD <sup>6</sup> (Å) | Median (Å) |
|----------|----------------------|-----------------|-----------------|-----------------|-----------------|-------|----------|---------|---------------------|------------|
|          | IR <sup>1</sup>      | SQ <sup>2</sup> | MR <sup>3</sup> | LR <sup>4</sup> | IC <sup>5</sup> | Total |          |         |                     |            |
| 93       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.51     | 2.01    | 0.28                | 1.5        |
| 94       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.56     | 1.89    | 0.31                | 1.62       |
| 95       | 0                    | 1               | 3               | 0               | 0               | 4     | 0.94     | 1.65    | 0.42                | 0.78       |
| 96       | 0                    | 1               | 4               | 0               | 0               | 5     | 1.53     | 2.39    | 0.54                | 1.27       |
| 97       | 0                    | 1               | 5               | 0               | 0               | 6     | 1.03     | 1.55    | 0.42                | 1.11       |
| 98       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.15     | 2.02    | 0.51                | 0.93       |
| 99       | 0                    | 1               | 3               | 0               | 0               | 4     | 1.64     | 2.2     | 0.53                | 1.8        |
| 100      | 0                    | 1               | 4               | 0               | 0               | 5     | 1.41     | 2.12    | 0.65                | 1.5        |

<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 ⓘ



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, 52(IR:0, SQ:15, MR:37, LR:0, 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>       | %    |
| 0                             | 0               | 0               | 0               | 0               | 0     | 1                        | 1.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 2                        | 2.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 3                        | 3.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 4                        | 4.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 5                        | 5.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 6                        | 6.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 7                        | 7.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 8                        | 8.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 9                        | 9.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 10                       | 10.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 11                       | 11.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 12                       | 12.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 13                       | 13.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 14                       | 14.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 15                       | 15.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 16                       | 16.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 17                       | 17.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 18                       | 18.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 19                       | 19.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 20                       | 20.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 21                       | 21.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 22                       | 22.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 23                       | 23.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 24                       | 24.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 25                       | 25.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 26                       | 26.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 27                       | 27.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 28                       | 28.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 29                       | 29.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 30                       | 30.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 31                       | 31.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 32                       | 32.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 33                       | 33.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 34                       | 34.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 35                       | 35.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 36                       | 36.0 |

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| Number of violated restraints |                 |                 |                 |                 |       | Fraction of the ensemble |      |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|-------|--------------------------|------|
| IR <sup>1</sup>               | SQ <sup>2</sup> | MR <sup>3</sup> | LR <sup>4</sup> | IC <sup>5</sup> | Total | Count <sup>6</sup>       | %    |
| 0                             | 0               | 0               | 0               | 0               | 0     | 37                       | 37.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 38                       | 38.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 39                       | 39.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 40                       | 40.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 41                       | 41.0 |
| 0                             | 0               | 1               | 0               | 0               | 1     | 42                       | 42.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 43                       | 43.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 44                       | 44.0 |
| 0                             | 1               | 1               | 0               | 0               | 2     | 45                       | 45.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 46                       | 46.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 47                       | 47.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 48                       | 48.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 49                       | 49.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 50                       | 50.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 51                       | 51.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 52                       | 52.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 53                       | 53.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 54                       | 54.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 55                       | 55.0 |
| 0                             | 0               | 1               | 0               | 0               | 1     | 56                       | 56.0 |
| 0                             | 0               | 1               | 0               | 0               | 1     | 57                       | 57.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 58                       | 58.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 59                       | 59.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 60                       | 60.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 61                       | 61.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 62                       | 62.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 63                       | 63.0 |
| 0                             | 1               | 0               | 0               | 0               | 1     | 64                       | 64.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 65                       | 65.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 66                       | 66.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 67                       | 67.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 68                       | 68.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 69                       | 69.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 70                       | 70.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 71                       | 71.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 72                       | 72.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 73                       | 73.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 74                       | 74.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 75                       | 75.0 |
| 0                             | 0               | 1               | 0               | 0               | 1     | 76                       | 76.0 |
| 0                             | 0               | 0               | 0               | 0               | 0     | 77                       | 77.0 |

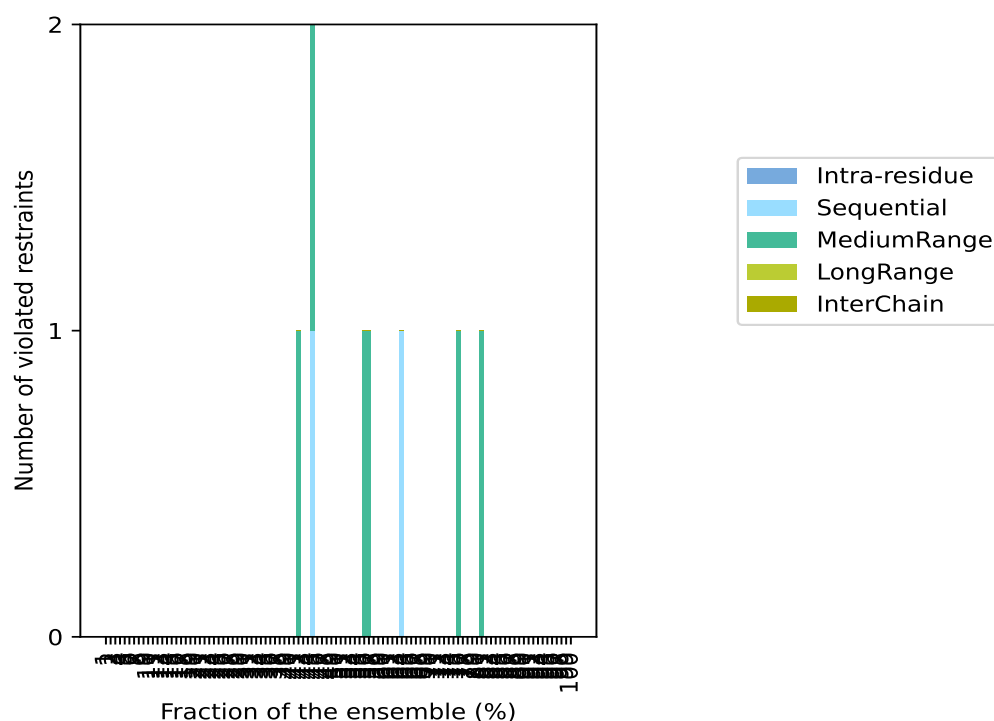
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| Number of violated restraints |                 |                 |                 |                 |       | Fraction of the ensemble |       |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|-------|--------------------------|-------|
| IR <sup>1</sup>               | SQ <sup>2</sup> | MR <sup>3</sup> | LR <sup>4</sup> | IC <sup>5</sup> | Total | Count <sup>6</sup>       | %     |
| 0                             | 0               | 0               | 0               | 0               | 0     | 78                       | 78.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 79                       | 79.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 80                       | 80.0  |
| 0                             | 0               | 1               | 0               | 0               | 1     | 81                       | 81.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 82                       | 82.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 83                       | 83.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 84                       | 84.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 85                       | 85.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 86                       | 86.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 87                       | 87.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 88                       | 88.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 89                       | 89.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 90                       | 90.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 91                       | 91.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 92                       | 92.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 93                       | 93.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 94                       | 94.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 95                       | 95.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 96                       | 96.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 97                       | 97.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 98                       | 98.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 99                       | 99.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 100                      | 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

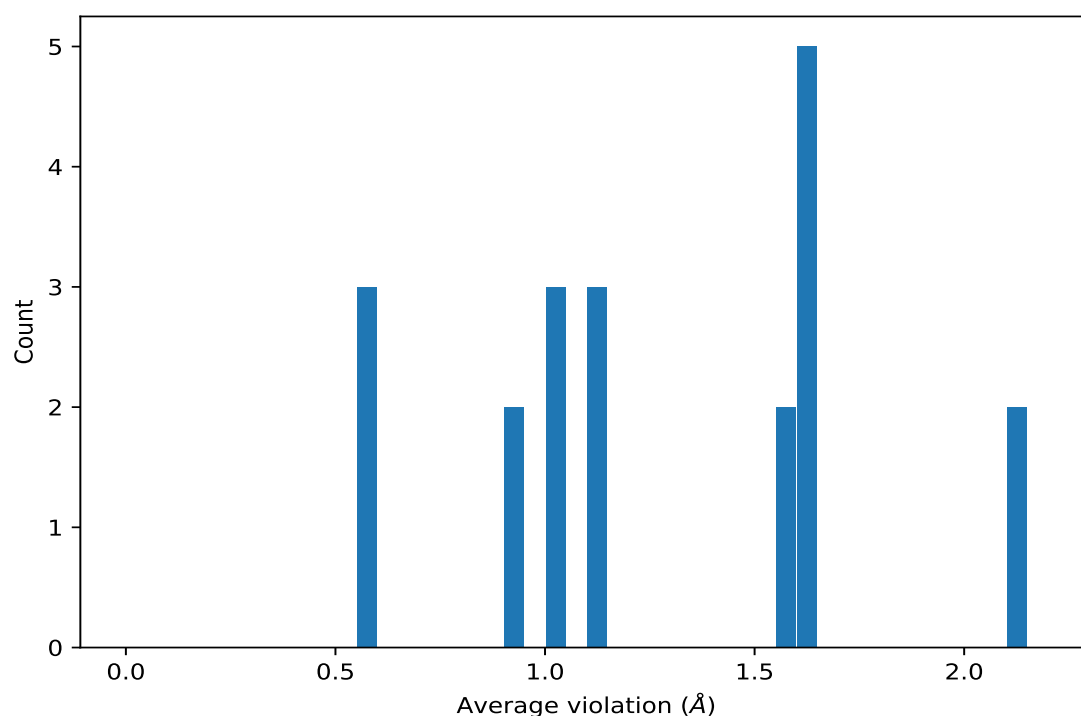
### 9.3.1 Bar graph : Distance violation statistics for the ensemble [i](#)



## 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) |
|--------|-----------------|--------------|---------------------|----------|---------------------|------------|
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 81                  | 1.56     | 0.39                | 1.79       |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 81                  | 1.56     | 0.39                | 1.79       |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 76                  | 0.93     | 0.32                | 0.89       |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 76                  | 0.93     | 0.32                | 0.89       |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 64                  | 1.64     | 0.16                | 1.58       |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 64                  | 1.64     | 0.16                | 1.58       |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 57                  | 1.12     | 0.29                | 1.29       |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 57                  | 1.12     | 0.29                | 1.29       |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 57                  | 1.12     | 0.29                | 1.29       |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 56                  | 2.12     | 0.27                | 2.09       |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 56                  | 2.12     | 0.27                | 2.09       |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 45                  | 1.62     | 0.24                | 1.63       |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 45                  | 1.62     | 0.24                | 1.63       |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 45                  | 1.62     | 0.24                | 1.63       |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 45                  | 1.01     | 0.26                | 0.91       |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 45                  | 1.01     | 0.26                | 0.91       |

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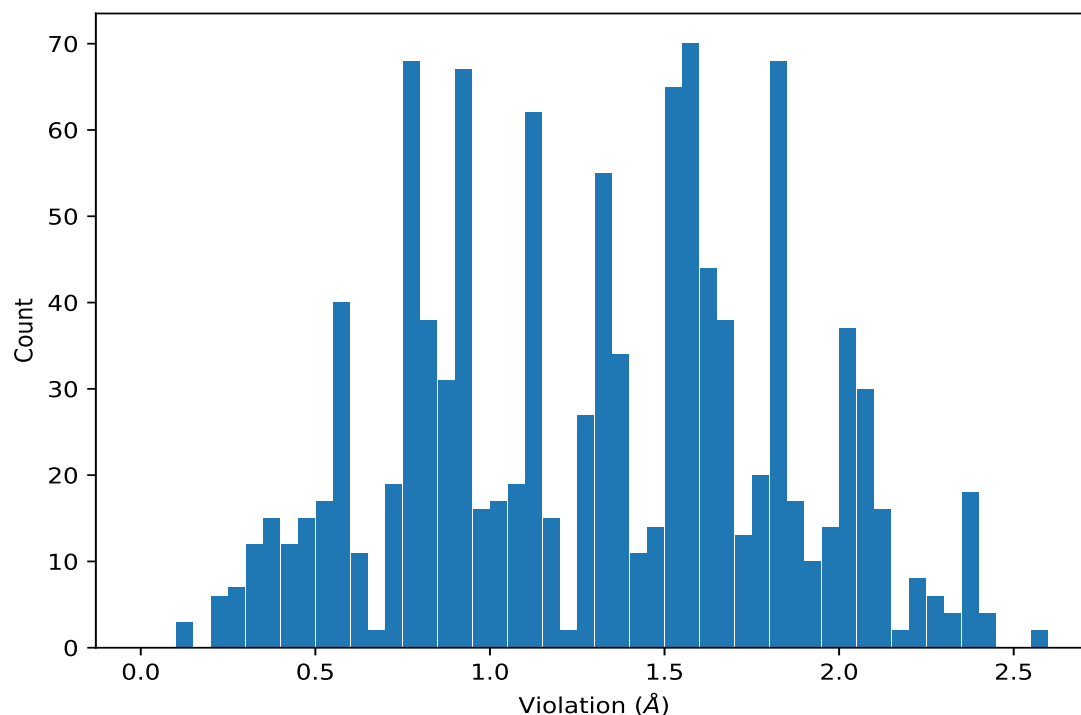
| Key    | Atom-1          | Atom-2       | Models <sup>1</sup> | Mean (Å) | SD <sup>1</sup> (Å) | Median (Å) |
|--------|-----------------|--------------|---------------------|----------|---------------------|------------|
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 45                  | 1.01     | 0.26                | 0.91       |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 42                  | 0.59     | 0.26                | 0.53       |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 42                  | 0.59     | 0.26                | 0.53       |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 42                  | 0.59     | 0.26                | 0.53       |

<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) |
|--------|-----------------|--------------|----------|---------------|
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 83       | 2.58          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 83       | 2.58          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 85       | 2.44          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 85       | 2.44          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 54       | 2.43          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 54       | 2.43          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 46       | 2.4           |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 46       | 2.4           |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 76       | 2.4           |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 76       | 2.4           |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 96       | 2.39          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 96       | 2.39          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 58       | 2.38          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 58       | 2.38          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 47       | 2.37          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 47       | 2.37          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 71       | 2.37          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 71       | 2.37          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 11       | 2.36          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 11       | 2.36          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 22       | 2.36          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 22       | 2.36          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 75       | 2.36          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 75       | 2.36          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 63       | 2.33          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 63       | 2.33          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 20       | 2.31          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 20       | 2.31          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 70       | 2.28          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 70       | 2.28          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 25       | 2.27          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 25       | 2.27          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 35       | 2.25          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 35       | 2.25          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 67       | 2.24          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 67       | 2.24          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 69       | 2.24          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 69       | 2.24          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 33       | 2.22          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 33       | 2.22          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 99       | 2.2           |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 99       | 2.2           |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 17       | 2.18          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 17       | 2.18          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 81       | 2.13          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 81       | 2.13          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 32       | 2.12          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 32       | 2.12          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 26       | 2.12          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 26       | 2.12          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 73       | 2.12          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 73       | 2.12          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 100      | 2.12          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 100      | 2.12          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 3        | 2.11          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 3        | 2.11          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 62       | 2.11          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 62       | 2.11          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 5        | 2.1           |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 5        | 2.1           |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 2        | 2.09          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 2        | 2.09          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 2        | 2.09          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 52       | 2.09          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 52       | 2.09          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 82       | 2.09          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 82       | 2.09          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 28       | 2.09          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 28       | 2.09          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 34       | 2.09          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 34       | 2.09          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 1        | 2.08          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 1        | 2.08          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 44       | 2.07          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 44       | 2.07          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 68       | 2.07          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 68       | 2.07          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 91       | 2.07          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 91       | 2.07          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 41       | 2.07          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 41       | 2.07          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 31       | 2.06          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 31       | 2.06          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 31       | 2.06          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 88       | 2.06          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 88       | 2.06          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 18       | 2.06          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 18       | 2.06          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 65       | 2.06          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 65       | 2.06          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 49       | 2.05          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 49       | 2.05          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 56       | 2.05          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 56       | 2.05          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 65       | 2.05          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 65       | 2.05          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 3        | 2.05          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 3        | 2.05          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 59       | 2.05          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 59       | 2.05          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 77       | 2.05          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 77       | 2.05          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 6        | 2.03          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 6        | 2.03          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 15       | 2.03          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 15       | 2.03          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 36       | 2.03          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 36       | 2.03          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 48       | 2.03          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 48       | 2.03          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 98       | 2.02          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 98       | 2.02          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 98       | 2.02          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 7        | 2.02          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 7        | 2.02          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 28       | 2.02          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 28       | 2.02          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 46       | 2.02          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 46       | 2.02          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 57       | 2.01          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 57       | 2.01          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 60       | 2.01          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 60       | 2.01          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 93       | 2.01          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 93       | 2.01          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 10       | 2.01          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 10       | 2.01          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 89       | 1.99          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 89       | 1.99          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 100      | 1.99          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 100      | 1.99          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 27       | 1.99          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 27       | 1.99          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 87       | 1.98          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 87       | 1.98          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 4        | 1.97          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 4        | 1.97          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 73       | 1.97          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 73       | 1.97          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 46       | 1.96          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 46       | 1.96          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 34       | 1.95          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 34       | 1.95          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 43       | 1.95          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 43       | 1.95          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 47       | 1.95          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 47       | 1.95          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 83       | 1.95          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 83       | 1.95          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 96       | 1.92          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 96       | 1.92          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 90       | 1.89          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 90       | 1.89          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 94       | 1.89          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 94       | 1.89          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 44       | 1.87          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 44       | 1.87          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 51       | 1.87          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 51       | 1.87          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 11       | 1.87          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 11       | 1.87          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 73       | 1.86          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 73       | 1.86          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 78       | 1.85          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 78       | 1.85          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 78       | 1.85          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 71       | 1.85          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 71       | 1.85          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 61       | 1.84          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 61       | 1.84          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 20       | 1.84          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 20       | 1.84          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 63       | 1.84          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 63       | 1.84          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 2        | 1.83          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 2        | 1.83          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 29       | 1.83          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 29       | 1.83          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 49       | 1.83          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 49       | 1.83          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 87       | 1.83          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 87       | 1.83          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 88       | 1.83          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 88       | 1.83          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 33       | 1.83          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 33       | 1.83          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 4        | 1.82          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 4        | 1.82          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 17       | 1.82          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 17       | 1.82          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 23       | 1.82          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 23       | 1.82          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 66       | 1.82          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 66       | 1.82          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 85       | 1.82          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 85       | 1.82          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 76       | 1.82          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 76       | 1.82          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 6        | 1.81          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 6        | 1.81          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 12       | 1.81          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 12       | 1.81          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 14       | 1.81          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 14       | 1.81          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 24       | 1.81          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 24       | 1.81          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 58       | 1.81          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 58       | 1.81          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 60       | 1.81          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 60       | 1.81          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 83       | 1.81          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 83       | 1.81          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 69       | 1.81          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 69       | 1.81          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 75       | 1.81          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 75       | 1.81          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 9        | 1.8           |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 9        | 1.8           |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 9        | 1.8           |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 92       | 1.8           |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 92       | 1.8           |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 92       | 1.8           |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 11       | 1.8           |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 11       | 1.8           |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 13       | 1.8           |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 13       | 1.8           |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 15       | 1.8           |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 15       | 1.8           |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 43       | 1.8           |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 43       | 1.8           |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 54       | 1.8           |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 54       | 1.8           |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 74       | 1.8           |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 74       | 1.8           |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 99       | 1.8           |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 99       | 1.8           |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 57       | 1.79          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 57       | 1.79          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 70       | 1.79          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 70       | 1.79          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 79       | 1.79          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 79       | 1.79          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 99       | 1.79          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 99       | 1.79          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 35       | 1.78          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 35       | 1.78          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 54       | 1.78          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 54       | 1.78          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 94       | 1.77          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 94       | 1.77          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 85       | 1.77          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 85       | 1.77          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 22       | 1.76          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 22       | 1.76          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 58       | 1.76          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 58       | 1.76          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 67       | 1.74          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 67       | 1.74          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 70       | 1.74          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 70       | 1.74          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 17       | 1.73          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 17       | 1.73          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 25       | 1.73          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 25       | 1.73          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 66       | 1.71          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 66       | 1.71          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 66       | 1.71          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 90       | 1.71          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 90       | 1.71          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 8        | 1.7           |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 8        | 1.7           |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 8        | 1.7           |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 39       | 1.7           |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 39       | 1.7           |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 39       | 1.7           |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 59       | 1.69          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 59       | 1.69          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 74       | 1.69          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 74       | 1.69          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 27       | 1.68          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 27       | 1.68          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 27       | 1.68          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 53       | 1.68          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 53       | 1.68          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 53       | 1.68          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 79       | 1.68          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 79       | 1.68          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 16       | 1.67          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 16       | 1.67          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 16       | 1.67          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 19       | 1.67          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 19       | 1.67          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 19       | 1.67          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 51       | 1.67          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 51       | 1.67          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 51       | 1.67          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 64       | 1.67          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 64       | 1.67          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 64       | 1.67          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 29       | 1.66          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 29       | 1.66          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 29       | 1.66          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 38       | 1.66          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 38       | 1.66          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 38       | 1.66          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 13       | 1.66          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 13       | 1.66          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 13       | 1.65          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 13       | 1.65          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 13       | 1.65          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 77       | 1.65          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 77       | 1.65          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 77       | 1.65          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 95       | 1.65          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 95       | 1.65          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 95       | 1.65          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 14       | 1.64          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 14       | 1.64          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 14       | 1.64          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 30       | 1.64          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 30       | 1.64          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 30       | 1.64          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 92       | 1.64          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 92       | 1.64          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 92       | 1.64          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 14       | 1.64          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 14       | 1.64          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 50       | 1.63          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 50       | 1.63          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 50       | 1.63          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 79       | 1.62          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 79       | 1.62          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 79       | 1.62          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 10       | 1.61          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 10       | 1.61          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 10       | 1.61          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 74       | 1.61          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 74       | 1.61          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 74       | 1.61          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 64       | 1.61          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 64       | 1.61          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 84       | 1.6           |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 84       | 1.6           |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 84       | 1.6           |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 38       | 1.6           |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 38       | 1.6           |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 38       | 1.6           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 71       | 1.6           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 71       | 1.6           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 89       | 1.6           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 89       | 1.6           |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 44       | 1.59          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 44       | 1.59          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 81       | 1.59          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 81       | 1.59          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 12       | 1.58          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 12       | 1.58          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 12       | 1.58          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 42       | 1.58          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 42       | 1.58          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 42       | 1.58          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 48       | 1.58          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 48       | 1.58          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 62       | 1.58          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 62       | 1.58          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 68       | 1.58          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 68       | 1.58          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 91       | 1.58          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 91       | 1.58          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 80       | 1.57          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 80       | 1.57          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 80       | 1.57          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 1        | 1.57          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 1        | 1.57          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 38       | 1.57          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 38       | 1.57          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 18       | 1.56          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 18       | 1.56          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 18       | 1.56          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 59       | 1.56          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 59       | 1.56          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 59       | 1.56          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 14       | 1.56          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 14       | 1.56          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 14       | 1.56          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 64       | 1.56          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 64       | 1.56          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 64       | 1.56          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 3        | 1.56          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 3        | 1.56          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 7        | 1.56          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 7        | 1.56          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 63       | 1.56          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 63       | 1.56          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 21       | 1.55          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 21       | 1.55          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 21       | 1.55          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 23       | 1.55          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 23       | 1.55          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 23       | 1.55          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 24       | 1.55          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 24       | 1.55          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 24       | 1.55          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 55       | 1.55          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 55       | 1.55          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 55       | 1.55          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 61       | 1.55          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 61       | 1.55          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 61       | 1.55          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 86       | 1.55          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 86       | 1.55          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 86       | 1.55          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 97       | 1.55          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 97       | 1.55          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 97       | 1.55          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 36       | 1.55          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 36       | 1.55          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 52       | 1.55          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 52       | 1.55          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 82       | 1.55          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 82       | 1.55          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 26       | 1.54          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 26       | 1.54          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 26       | 1.54          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 37       | 1.54          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 37       | 1.54          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 37       | 1.54          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 72       | 1.54          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 72       | 1.54          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 72       | 1.54          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 5        | 1.54          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 5        | 1.54          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 6        | 1.54          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 6        | 1.54          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 15       | 1.54          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 15       | 1.54          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 49       | 1.54          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 49       | 1.54          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 56       | 1.54          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 56       | 1.54          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 88       | 1.54          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 88       | 1.54          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 40       | 1.53          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 40       | 1.53          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 40       | 1.53          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 45       | 1.53          |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 45       | 1.53          |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 45       | 1.53          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 13       | 1.53          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 13       | 1.53          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 13       | 1.53          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 43       | 1.53          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 43       | 1.53          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 57       | 1.53          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 57       | 1.53          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 65       | 1.53          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 65       | 1.53          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 87       | 1.53          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 87       | 1.53          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 60       | 1.52          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 60       | 1.52          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 89       | 1.52          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 89       | 1.52          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 93       | 1.52          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 93       | 1.52          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 74       | 1.51          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 74       | 1.51          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 74       | 1.51          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 79       | 1.51          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 79       | 1.51          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 79       | 1.51          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 87       | 1.51          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 87       | 1.51          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 59       | 1.5           |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 59       | 1.5           |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 59       | 1.5           |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 4        | 1.5           |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 4        | 1.5           |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 28       | 1.5           |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 28       | 1.5           |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 32       | 1.5           |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 32       | 1.5           |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 100      | 1.5           |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 100      | 1.5           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 93       | 1.5           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 93       | 1.5           |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 34       | 1.49          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 34       | 1.49          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 4        | 1.48          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 4        | 1.48          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 90       | 1.47          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 90       | 1.47          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 92       | 1.47          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 92       | 1.47          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 94       | 1.47          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 94       | 1.47          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 41       | 1.47          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 41       | 1.47          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 9        | 1.46          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 9        | 1.46          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 53       | 1.44          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 53       | 1.44          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 53       | 1.44          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 8        | 1.44          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 8        | 1.44          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 78       | 1.41          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 78       | 1.41          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 78       | 1.41          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 97       | 1.41          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 97       | 1.41          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 97       | 1.41          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 7        | 1.39          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 7        | 1.39          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 7        | 1.39          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 37       | 1.39          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 37       | 1.39          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 37       | 1.39          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 56       | 1.39          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 56       | 1.39          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 56       | 1.39          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 93       | 1.38          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 93       | 1.38          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 93       | 1.38          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 22       | 1.38          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 22       | 1.38          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 39       | 1.37          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 39       | 1.37          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 39       | 1.37          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 76       | 1.37          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 76       | 1.37          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 76       | 1.37          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 19       | 1.36          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 19       | 1.36          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 19       | 1.36          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 75       | 1.36          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 75       | 1.36          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 75       | 1.36          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 89       | 1.36          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 89       | 1.36          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 89       | 1.36          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 36       | 1.35          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 36       | 1.35          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 36       | 1.35          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 16       | 1.35          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 16       | 1.35          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 25       | 1.34          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 25       | 1.34          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 25       | 1.34          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 62       | 1.34          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 62       | 1.34          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 62       | 1.34          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 71       | 1.34          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 71       | 1.34          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 71       | 1.34          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 86       | 1.34          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 86       | 1.34          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 86       | 1.34          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 25       | 1.33          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 25       | 1.33          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 35       | 1.32          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 35       | 1.32          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 35       | 1.32          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 48       | 1.32          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 48       | 1.32          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 48       | 1.32          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 82       | 1.32          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 82       | 1.32          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 82       | 1.32          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 84       | 1.32          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 84       | 1.32          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 84       | 1.32          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 16       | 1.31          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 16       | 1.31          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 16       | 1.31          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 31       | 1.31          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 31       | 1.31          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 31       | 1.31          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 68       | 1.31          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 68       | 1.31          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 68       | 1.31          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 69       | 1.31          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 69       | 1.31          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 69       | 1.31          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 72       | 1.31          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 72       | 1.31          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 72       | 1.31          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 91       | 1.31          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 91       | 1.31          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 91       | 1.31          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 53       | 1.31          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 53       | 1.31          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 21       | 1.3           |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 21       | 1.3           |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 21       | 1.3           |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 97       | 1.3           |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 97       | 1.3           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 28       | 1.3           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 28       | 1.3           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 56       | 1.3           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 56       | 1.3           |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 8        | 1.29          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 8        | 1.29          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 8        | 1.29          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 78       | 1.29          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 78       | 1.29          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 9        | 1.28          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 9        | 1.28          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 9        | 1.28          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 20       | 1.28          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 20       | 1.28          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 20       | 1.28          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 45       | 1.28          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 45       | 1.28          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 45       | 1.28          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 55       | 1.27          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 55       | 1.27          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 55       | 1.27          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 96       | 1.27          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 96       | 1.27          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 96       | 1.27          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 42       | 1.26          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 42       | 1.26          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 42       | 1.26          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 76       | 1.26          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 76       | 1.26          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 60       | 1.25          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 60       | 1.25          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 34       | 1.22          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 34       | 1.22          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 33       | 1.18          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 33       | 1.18          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 33       | 1.18          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 21       | 1.17          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 21       | 1.17          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 32       | 1.17          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 32       | 1.17          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 70       | 1.17          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 70       | 1.17          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 7        | 1.16          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 7        | 1.16          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 37       | 1.16          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 37       | 1.16          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 56       | 1.16          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 56       | 1.16          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 31       | 1.15          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 31       | 1.15          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 39       | 1.15          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 39       | 1.15          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 62       | 1.15          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 62       | 1.15          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 76       | 1.15          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 76       | 1.15          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 43       | 1.15          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 43       | 1.15          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 19       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 19       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 20       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 20       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 25       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 25       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 36       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 36       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 42       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 42       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 45       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 45       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 68       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 68       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 75       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 75       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 86       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 86       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 89       | 1.14          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 89       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 91       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 91       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 93       | 1.14          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 93       | 1.14          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 57       | 1.14          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 57       | 1.14          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 35       | 1.13          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 35       | 1.13          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 48       | 1.13          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 48       | 1.13          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 55       | 1.13          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 55       | 1.13          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 69       | 1.13          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 69       | 1.13          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 71       | 1.13          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 71       | 1.13          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 72       | 1.13          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 72       | 1.13          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 96       | 1.13          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 96       | 1.13          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 73       | 1.13          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 73       | 1.13          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 73       | 1.13          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 82       | 1.12          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 82       | 1.12          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 84       | 1.12          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 84       | 1.12          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 59       | 1.11          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 59       | 1.11          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 59       | 1.11          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 94       | 1.1           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 94       | 1.1           |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 78       | 1.09          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 78       | 1.09          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 78       | 1.09          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 47       | 1.09          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 47       | 1.09          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 17       | 1.07          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 17       | 1.07          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 82       | 1.07          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 82       | 1.07          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 100      | 1.07          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 100      | 1.07          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 26       | 1.06          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 26       | 1.06          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 26       | 1.06          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 2        | 1.05          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 2        | 1.05          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 2        | 1.05          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 91       | 1.05          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 91       | 1.05          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 31       | 1.03          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 31       | 1.03          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 31       | 1.03          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 36       | 1.03          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 36       | 1.03          |
| (1,31) | 1:10:A:ILE:HG13 | 1:11:A:HIS:H | 41       | 1.02          |
| (1,31) | 1:10:A:ILE:HG12 | 1:11:A:HIS:H | 41       | 1.02          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 48       | 1.02          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 48       | 1.02          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 16       | 1.01          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 16       | 1.01          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 16       | 1.01          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 27       | 1.0           |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 27       | 1.0           |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 27       | 1.0           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 88       | 1.0           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 88       | 1.0           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 7        | 0.99          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 7        | 0.99          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 15       | 0.99          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 15       | 0.99          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 53       | 0.98          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 53       | 0.98          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 53       | 0.98          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 31       | 0.97          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 31       | 0.97          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 31       | 0.97          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 68       | 0.97          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 68       | 0.97          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 58       | 0.96          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 58       | 0.96          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 96       | 0.96          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 96       | 0.96          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 45       | 0.95          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 45       | 0.95          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 45       | 0.95          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 98       | 0.95          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 98       | 0.95          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 98       | 0.95          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 5        | 0.95          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 5        | 0.95          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 85       | 0.95          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 85       | 0.95          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 40       | 0.94          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 40       | 0.94          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 40       | 0.94          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 9        | 0.93          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 9        | 0.93          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 9        | 0.93          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 26       | 0.93          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 26       | 0.93          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 26       | 0.93          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 53       | 0.93          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 53       | 0.93          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 53       | 0.93          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 75       | 0.93          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 75       | 0.93          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 8        | 0.92          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 8        | 0.92          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 8        | 0.92          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 72       | 0.92          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 72       | 0.92          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 72       | 0.92          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 86       | 0.92          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 86       | 0.92          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 86       | 0.92          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 97       | 0.92          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 97       | 0.92          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 97       | 0.92          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 20       | 0.92          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 20       | 0.92          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 21       | 0.91          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 21       | 0.91          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 21       | 0.91          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 23       | 0.91          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 23       | 0.91          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 23       | 0.91          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 24       | 0.91          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 24       | 0.91          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 24       | 0.91          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 27       | 0.91          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 27       | 0.91          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 27       | 0.91          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 61       | 0.91          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 61       | 0.91          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 61       | 0.91          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 98       | 0.91          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 98       | 0.91          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 98       | 0.91          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 12       | 0.9           |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 12       | 0.9           |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 12       | 0.9           |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 16       | 0.9           |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 16       | 0.9           |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 16       | 0.9           |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 55       | 0.9           |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 55       | 0.9           |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 55       | 0.9           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 49       | 0.9           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 49       | 0.9           |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 18       | 0.89          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 18       | 0.89          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 18       | 0.89          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 37       | 0.89          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 37       | 0.89          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 37       | 0.89          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 42       | 0.89          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 42       | 0.89          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 42       | 0.89          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 80       | 0.89          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 80       | 0.89          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 80       | 0.89          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 64       | 0.88          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 64       | 0.88          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 64       | 0.88          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 46       | 0.88          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 46       | 0.88          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 10       | 0.87          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 10       | 0.87          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 10       | 0.87          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 78       | 0.87          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 78       | 0.87          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 78       | 0.87          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 11       | 0.87          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 11       | 0.87          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 44       | 0.87          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 44       | 0.87          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 1        | 0.86          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 1        | 0.86          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 62       | 0.86          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 62       | 0.86          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 51       | 0.85          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 51       | 0.85          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 51       | 0.85          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 29       | 0.84          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 29       | 0.84          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 29       | 0.84          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 67       | 0.84          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 67       | 0.84          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 81       | 0.84          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 81       | 0.84          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 66       | 0.83          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 66       | 0.83          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 66       | 0.83          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 77       | 0.83          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 77       | 0.83          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 77       | 0.83          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 39       | 0.83          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 39       | 0.83          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 39       | 0.83          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 74       | 0.83          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 74       | 0.83          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 74       | 0.83          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 3        | 0.83          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 3        | 0.83          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 66       | 0.82          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 66       | 0.82          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 66       | 0.82          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 2        | 0.81          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 2        | 0.81          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 2        | 0.81          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 69       | 0.81          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 69       | 0.81          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 5        | 0.8           |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 5        | 0.8           |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 5        | 0.8           |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 39       | 0.8           |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 39       | 0.8           |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 39       | 0.8           |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 92       | 0.79          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 92       | 0.79          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 92       | 0.79          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 19       | 0.79          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 19       | 0.79          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 19       | 0.79          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 84       | 0.79          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 84       | 0.79          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 84       | 0.79          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 95       | 0.79          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 95       | 0.79          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 95       | 0.79          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 29       | 0.79          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 29       | 0.79          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 61       | 0.79          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 61       | 0.79          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 1        | 0.78          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 1        | 0.78          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 1        | 0.78          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 30       | 0.78          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 30       | 0.78          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 30       | 0.78          |
| (1,32) | 1:10:A:ILE:HG21 | 1:11:A:HIS:H | 50       | 0.78          |
| (1,32) | 1:10:A:ILE:HG22 | 1:11:A:HIS:H | 50       | 0.78          |
| (1,32) | 1:10:A:ILE:HG23 | 1:11:A:HIS:H | 50       | 0.78          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 32       | 0.77          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 32       | 0.77          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 32       | 0.77          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 38       | 0.77          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 38       | 0.77          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 38       | 0.77          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 50       | 0.77          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 50       | 0.77          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 50       | 0.77          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 95       | 0.77          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 95       | 0.77          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 95       | 0.77          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 22       | 0.76          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 22       | 0.76          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 22       | 0.76          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 30       | 0.76          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 30       | 0.76          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 30       | 0.76          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 40       | 0.76          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 40       | 0.76          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 40       | 0.76          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 90       | 0.76          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 90       | 0.76          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 90       | 0.76          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 84       | 0.76          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 84       | 0.76          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 84       | 0.76          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 52       | 0.76          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 52       | 0.76          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 99       | 0.76          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 99       | 0.76          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 52       | 0.75          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 52       | 0.75          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 52       | 0.75          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 63       | 0.75          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 63       | 0.75          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 63       | 0.75          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 64       | 0.75          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 64       | 0.75          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 64       | 0.75          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 80       | 0.75          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 80       | 0.75          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 80       | 0.75          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 47       | 0.74          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 47       | 0.74          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 47       | 0.74          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 81       | 0.74          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 81       | 0.74          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 81       | 0.74          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 35       | 0.74          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 35       | 0.74          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 65       | 0.74          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 65       | 0.74          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 98       | 0.73          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 98       | 0.73          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 98       | 0.73          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 30       | 0.73          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 30       | 0.73          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 30       | 0.73          |
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 67       | 0.71          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 67       | 0.71          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 67       | 0.71          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 77       | 0.69          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 77       | 0.69          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 33       | 0.64          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 33       | 0.64          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 83       | 0.63          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 83       | 0.63          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 51       | 0.62          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 51       | 0.62          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 51       | 0.62          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 45       | 0.61          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 45       | 0.61          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 97       | 0.61          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 97       | 0.61          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 79       | 0.6           |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 79       | 0.6           |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 79       | 0.6           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 26       | 0.6           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 26       | 0.6           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 72       | 0.6           |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 72       | 0.6           |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 19       | 0.59          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 19       | 0.59          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 19       | 0.59          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 40       | 0.59          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 40       | 0.59          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 54       | 0.59          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 54       | 0.59          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 21       | 0.58          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 21       | 0.58          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 23       | 0.58          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 23       | 0.58          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 51       | 0.58          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 51       | 0.58          |
| (1,35) | 1:10:A:ILE:HG13 | 1:12:A:GLY:H | 41       | 0.57          |
| (1,35) | 1:10:A:ILE:HG12 | 1:12:A:GLY:H | 41       | 0.57          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 50       | 0.57          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 50       | 0.57          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 50       | 0.57          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 95       | 0.57          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 95       | 0.57          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 95       | 0.57          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 6        | 0.57          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 6        | 0.57          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 12       | 0.57          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 12       | 0.57          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 10       | 0.56          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 10       | 0.56          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 37       | 0.56          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 37       | 0.56          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 42       | 0.56          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 42       | 0.56          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 86       | 0.56          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 86       | 0.56          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 37       | 0.54          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 37       | 0.54          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 37       | 0.54          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 40       | 0.54          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 40       | 0.54          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 40       | 0.54          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 24       | 0.54          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 24       | 0.54          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 80       | 0.54          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 80       | 0.54          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 10       | 0.52          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 10       | 0.52          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 10       | 0.52          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 55       | 0.52          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 55       | 0.52          |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 18       | 0.51          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 18       | 0.51          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 12       | 0.49          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 12       | 0.49          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 12       | 0.49          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 45       | 0.48          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 45       | 0.48          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 45       | 0.48          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 18       | 0.47          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 18       | 0.47          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 18       | 0.47          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 42       | 0.47          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 42       | 0.47          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 42       | 0.47          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 55       | 0.45          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 55       | 0.45          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 55       | 0.45          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 80       | 0.44          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 80       | 0.44          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 80       | 0.44          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 38       | 0.43          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 38       | 0.43          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 38       | 0.43          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 86       | 0.43          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 86       | 0.43          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 86       | 0.43          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 97       | 0.41          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 97       | 0.41          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 97       | 0.41          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 23       | 0.39          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 23       | 0.39          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 23       | 0.39          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 24       | 0.38          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 24       | 0.38          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 24       | 0.38          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 72       | 0.38          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 72       | 0.38          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 72       | 0.38          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 21       | 0.37          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 21       | 0.37          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 21       | 0.37          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 77       | 0.37          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 77       | 0.37          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 77       | 0.37          |

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| Key    | Atom-1          | Atom-2       | Model ID | Violation (Å) |
|--------|-----------------|--------------|----------|---------------|
| (1,34) | 1:6:A:ILE:HG21  | 1:8:A:GLY:H  | 100      | 0.35          |
| (1,34) | 1:6:A:ILE:HG22  | 1:8:A:GLY:H  | 100      | 0.35          |
| (1,34) | 1:6:A:ILE:HG23  | 1:8:A:GLY:H  | 100      | 0.35          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 61       | 0.34          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 61       | 0.34          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 61       | 0.34          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 29       | 0.33          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 29       | 0.33          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 29       | 0.33          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 26       | 0.32          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 26       | 0.32          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 26       | 0.32          |
| (1,36) | 1:10:A:ILE:HG21 | 1:12:A:GLY:H | 41       | 0.3           |
| (1,36) | 1:10:A:ILE:HG22 | 1:12:A:GLY:H | 41       | 0.3           |
| (1,36) | 1:10:A:ILE:HG23 | 1:12:A:GLY:H | 41       | 0.3           |
| (1,29) | 1:10:A:ILE:HG13 | 1:14:A:ARG:H | 73       | 0.29          |
| (1,29) | 1:10:A:ILE:HG12 | 1:14:A:ARG:H | 73       | 0.29          |
| (1,33) | 1:6:A:ILE:HG13  | 1:8:A:GLY:H  | 33       | 0.28          |
| (1,33) | 1:6:A:ILE:HG12  | 1:8:A:GLY:H  | 33       | 0.28          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 9        | 0.24          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 9        | 0.24          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 9        | 0.24          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 41       | 0.21          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 41       | 0.21          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 41       | 0.21          |
| (1,30) | 1:10:A:ILE:HG21 | 1:14:A:ARG:H | 14       | 0.13          |
| (1,30) | 1:10:A:ILE:HG22 | 1:14:A:ARG:H | 14       | 0.13          |
| (1,30) | 1:10:A:ILE:HG23 | 1:14:A:ARG:H | 14       | 0.13          |

## 10 Dihedral-angle violation analysis ⓘ

No dihedral-angle restraints found