



# Full wwPDB NMR Structure Validation Report ⓘ

Mar 6, 2026 – 05:35 AM UTC

PDB ID : 6R95 / pdb\_00006r95  
BMRB ID : 34387  
Title : The solution NMR structure of cis-dicarba-brevinin-1BYa in 33% trifluoroethanol  
Authors : Timmons, P.B.; O'Flynn, D.P.; Conlon, J.M.; Hewage, C.M.  
Deposited on : 2019-04-02

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<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  
Mogul : 2022.3.0, CSD as543be (2022)  
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

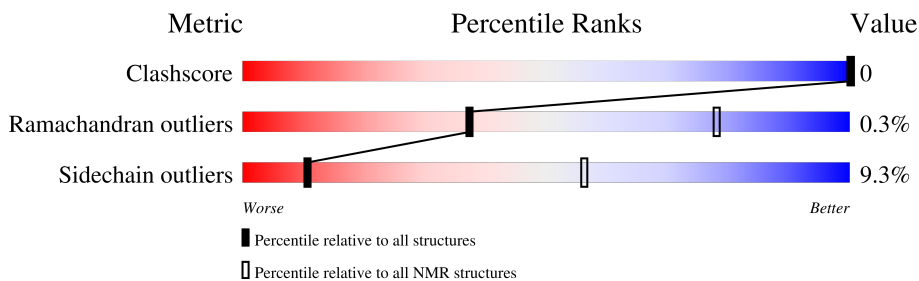
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*SOLUTION NMR*

The overall completeness of chemical shifts assignment is 49%.

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 20 models. Model 1 is the overall representative, medoid model (most similar to other models).

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:4-A:17, A:19-A:23 (19) | 0.26              | 1            |

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 5 clusters and 5 single-model clusters were found.

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

### 3 Entry composition

There is only 1 type of molecule in this entry. The entry contains 390 atoms, of which 208 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Brevinin-1BYa.

| Mol | Chain | Residues | Atoms |     |     |    |    | Trace |
|-----|-------|----------|-------|-----|-----|----|----|-------|
|     |       |          | Total | C   | H   | N  | O  |       |
| 1   | A     | 24       | 390   | 128 | 208 | 28 | 26 | 0     |

There are 2 discrepancies between the modelled and reference sequences:

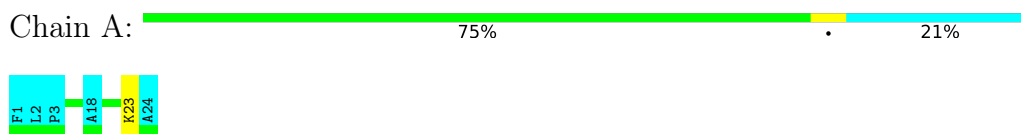
| Chain | Residue | Modelled | Actual | Comment        | Reference  |
|-------|---------|----------|--------|----------------|------------|
| A     | 18      | ABA      | CYS    | conflict       | UNP P84111 |
| A     | 24      | ABA      | -      | expression tag | UNP P84111 |

## 4 Residue-property plots

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

These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outliers are shown as green connectors. Residues which are classified as ill-defined in the NMR ensemble, are shown in cyan with an underline colour-coded according to the previous scheme. Residues which were present in the experimental sample, but not modelled in the final structure are shown in grey.

- Molecule 1: Brevinin-1BYa

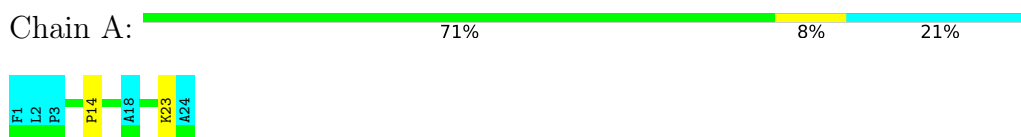


### 4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

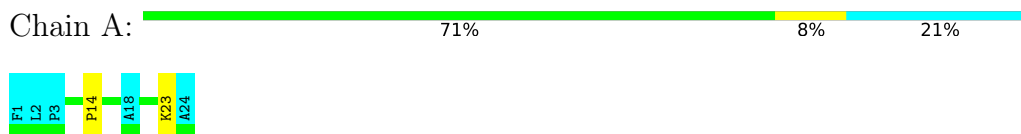
#### 4.2.1 Score per residue for model 1 (medoid)

- Molecule 1: Brevinin-1BYa



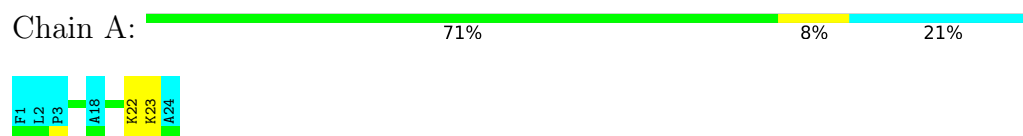
#### 4.2.2 Score per residue for model 2

- Molecule 1: Brevinin-1BYa



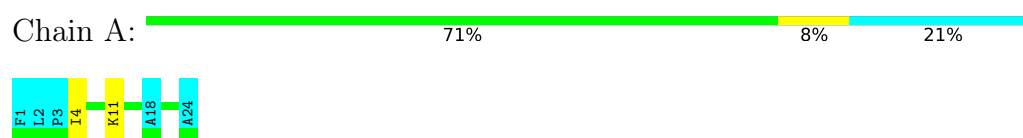
### 4.2.3 Score per residue for model 3

- Molecule 1: Brevinin-1BYa



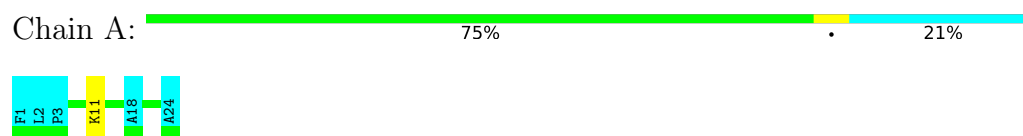
### 4.2.4 Score per residue for model 4

- Molecule 1: Brevinin-1BYa



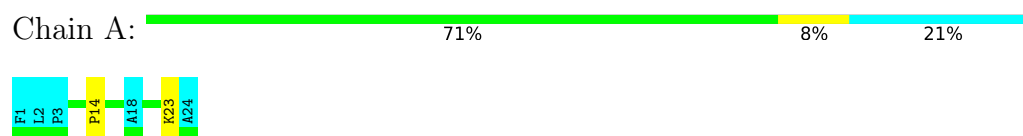
### 4.2.5 Score per residue for model 5

- Molecule 1: Brevinin-1BYa



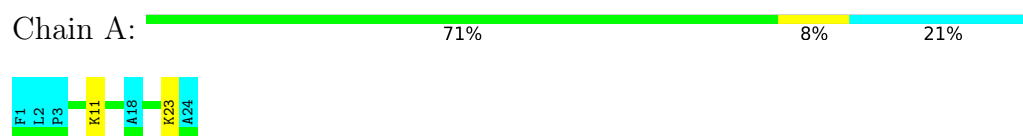
### 4.2.6 Score per residue for model 6

- Molecule 1: Brevinin-1BYa



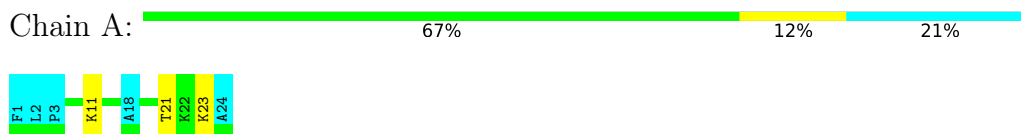
### 4.2.7 Score per residue for model 7

- Molecule 1: Brevinin-1BYa



#### 4.2.8 Score per residue for model 8

- Molecule 1: Brevinin-1BYa



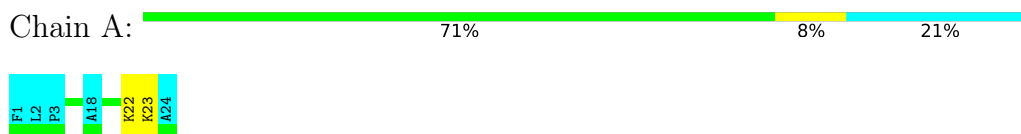
#### 4.2.9 Score per residue for model 9

- Molecule 1: Brevinin-1BYa



#### 4.2.10 Score per residue for model 10

- Molecule 1: Brevinin-1BYa



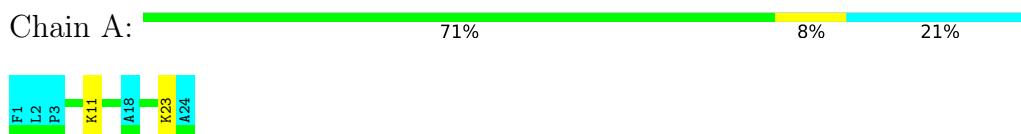
#### 4.2.11 Score per residue for model 11

- Molecule 1: Brevinin-1BYa




#### 4.2.12 Score per residue for model 12

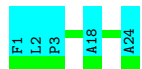
- Molecule 1: Brevinin-1BYa



#### 4.2.13 Score per residue for model 13


- Molecule 1: Brevinin-1BYa

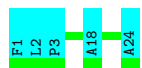
Chain A:  79% 21%



#### 4.2.14 Score per residue for model 14


- Molecule 1: Brevinin-1BYa

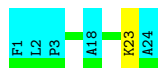
Chain A:  79% 21%



#### 4.2.15 Score per residue for model 15


- Molecule 1: Brevinin-1BYa

Chain A:  75% 21%



#### 4.2.16 Score per residue for model 16


- Molecule 1: Brevinin-1BYa

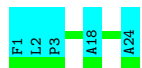
Chain A:  75% 21%



#### 4.2.17 Score per residue for model 17

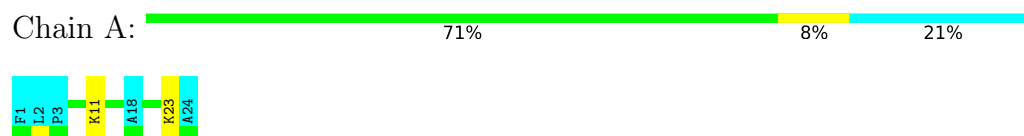
- Molecule 1: Brevinin-1BYa

Chain A:  79% 21%



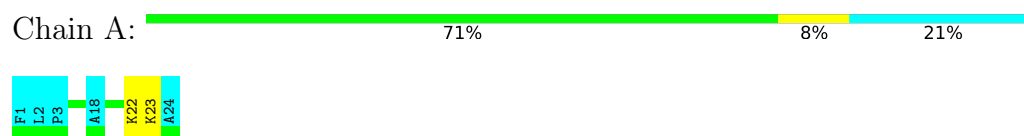
#### 4.2.18 Score per residue for model 18

- Molecule 1: Brevinin-1BYa



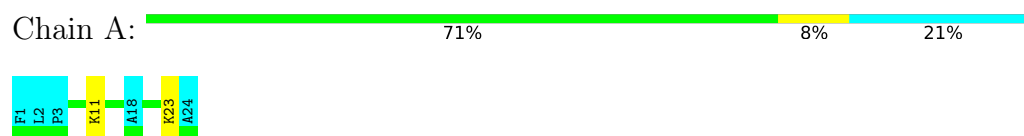
#### 4.2.19 Score per residue for model 19

- Molecule 1: Brevinin-1BYa



#### 4.2.20 Score per residue for model 20

- Molecule 1: Brevinin-1BYa



## 5 Refinement protocol and experimental data overview

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

Of the 100 calculated structures, 20 were deposited, based on the following criterion: *target function*.

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

| Software name | Classification        | Version |
|---------------|-----------------------|---------|
| CYANA         | structure calculation |         |

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                       | 166            |
| Number of shifts mapped to atoms             | 164            |
| Number of unparsed shifts                    | 0              |
| Number of shifts with mapping errors         | 2              |
| Number of shifts with mapping warnings       | 0              |
| Assignment completeness (well-defined parts) | 49%            |

## 6 Model quality i

### 6.1 Standard geometry i

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

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     | 0.77±0.03    | 0±0/145 ( 0.0± 0.0%) | 1.52±0.06   | 0±1/191 ( 0.3± 0.6%) |
| All | All   | 0.77         | 0/2900 ( 0.0%)       | 1.52        | 10/3820 ( 0.3%)      |

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     | 14  | PRO  | CA-C-N | 5.25 | 127.32      | 120.28   | 1      | 4     |
| 1   | A     | 14  | PRO  | C-N-CA | 5.25 | 127.32      | 120.28   | 1      | 4     |
| 1   | A     | 8   | LEU  | CA-C-N | 5.02 | 127.01      | 120.28   | 11     | 1     |
| 1   | A     | 8   | LEU  | C-N-CA | 5.02 | 127.01      | 120.28   | 11     | 1     |

There are no chirality outliers.

There are no planarity outliers.

### 6.2 Too-close contacts i

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in each chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes averaged over the ensemble.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes |
|-----|-------|-------|----------|----------|---------|
| All | All   | 2880  | 3420     | 3420     | -       |

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 -.

There are no clashes.

## 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     | 19/24 (79%)   | 17±1 (87±4%) | 2±1 (13±4%) | 0±0 (0±1%) | 37          | 78 |
| All | All   | 380/480 (79%) | 331 (87%)    | 48 (13%)    | 1 (0%)     | 37          | 78 |

All 1 unique Ramachandran outliers are listed below.

| Mol | Chain | Res | Type | Models (Total) |
|-----|-------|-----|------|----------------|
| 1   | A     | 4   | ILE  | 1              |

### 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     | 15/18 (83%)   | 14±1 (91±6%) | 1±1 (9±6%) | 11          | 56 |
| All | All   | 300/360 (83%) | 272 (91%)    | 28 (9%)    | 11          | 56 |

All 4 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     | 23  | LYS  | 14             |
| 1   | A     | 11  | LYS  | 9              |
| 1   | A     | 22  | LYS  | 4              |
| 1   | A     | 21  | THR  | 1              |

### 6.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

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

| Mol | Type | Chain | Res | Link | Bond lengths |           |            |
|-----|------|-------|-----|------|--------------|-----------|------------|
|     |      |       |     |      | Counts       | RMSZ      | #Z>2       |
| 1   | ABA  | A     | 24  | 1    | 4,5,6        | 0.92±0.05 | 0±0 (0±0%) |
| 1   | ABA  | A     | 18  | 1    | 4,5,6        | 0.92±0.04 | 0±0 (0±0%) |

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

| Mol | Type | Chain | Res | Link | Bond angles |           |            |
|-----|------|-------|-----|------|-------------|-----------|------------|
|     |      |       |     |      | Counts      | RMSZ      | #Z>2       |
| 1   | ABA  | A     | 24  | 1    | 1,5,7       | 0.42±0.10 | 0±0 (0±0%) |
| 1   | ABA  | A     | 18  | 1    | 1,5,7       | 0.31±0.19 | 0±0 (0±0%) |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions  | Rings |
|-----|------|-------|-----|------|---------|-----------|-------|
| 1   | ABA  | A     | 18  | 1    | -       | 0±0,3,4,6 | -     |
| 1   | ABA  | A     | 24  | 1    | -       | 0±0,3,4,6 | -     |

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

## 6.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 6.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 6.7 Other polymers [i](#)

There are no such molecules in this entry.

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

There are no chain breaks in this entry.

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

The completeness of assignment taking into account all chemical shift lists is 49% for the well-defined parts and 48% for the entire structure.

### 7.1 Chemical shift list 1

File name: working\_cs.cif

Chemical shift list name: *shifts.nmrstar*

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

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

|   |     |
|---|-----|
| Total number of shifts                  | 166 |
| Number of shifts mapped to atoms        | 164 |
| Number of unparsed shifts               | 0   |
| Number of shifts with mapping errors    | 2   |
| Number of shifts with mapping warnings  | 0   |
| Number of shift outliers (ShiftChecker) | 0   |

The following assigned chemical shifts were not mapped to the molecules present in the coordinate file.

- No matching atom found in the structure. All 2 occurrences are reported below.

| List ID | Chain | Res | Type | Atom | Shift Data |             |           |
|---------|-------|-----|------|------|------------|-------------|-----------|
|         |       |     |      |      | Value      | Uncertainty | Ambiguity |
| 1       | A     | 18  | ABA  | HG3  | 5.354      | 0.002       | 1         |
| 1       | A     | 24  | ABA  | HG3  | 5.353      | 0.002       | 1         |

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

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

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

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 49%, i.e. 135 atoms were assigned a chemical shift out of a possible 277. 0 out of 5 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

|           | Total         | <sup>1</sup> H | <sup>13</sup> C | <sup>15</sup> N |
|-----------|---------------|----------------|-----------------|-----------------|
| Backbone  | 38/94 (40%)   | 38/38 (100%)   | 0/38 (0%)       | 0/18 (0%)       |
| Sidechain | 91/163 (56%)  | 91/109 (83%)   | 0/50 (0%)       | 0/4 (0%)        |
| Aromatic  | 6/20 (30%)    | 6/10 (60%)     | 0/10 (0%)       | 0/0 (—%)        |
| Overall   | 135/277 (49%) | 135/157 (86%)  | 0/98 (0%)       | 0/22 (0%)       |

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 48%, i.e. 156 atoms were assigned a chemical shift out of a possible 325. 0 out of 6 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

|           | Total         | <sup>1</sup> H | <sup>13</sup> C | <sup>15</sup> N |
|-----------|---------------|----------------|-----------------|-----------------|
| Backbone  | 42/107 (39%)  | 42/43 (98%)    | 0/44 (0%)       | 0/20 (0%)       |
| Sidechain | 108/188 (57%) | 108/126 (86%)  | 0/58 (0%)       | 0/4 (0%)        |
| Aromatic  | 6/30 (20%)    | 6/15 (40%)     | 0/15 (0%)       | 0/0 (—%)        |
| Overall   | 156/325 (48%) | 156/184 (85%)  | 0/117 (0%)      | 0/24 (0%)       |

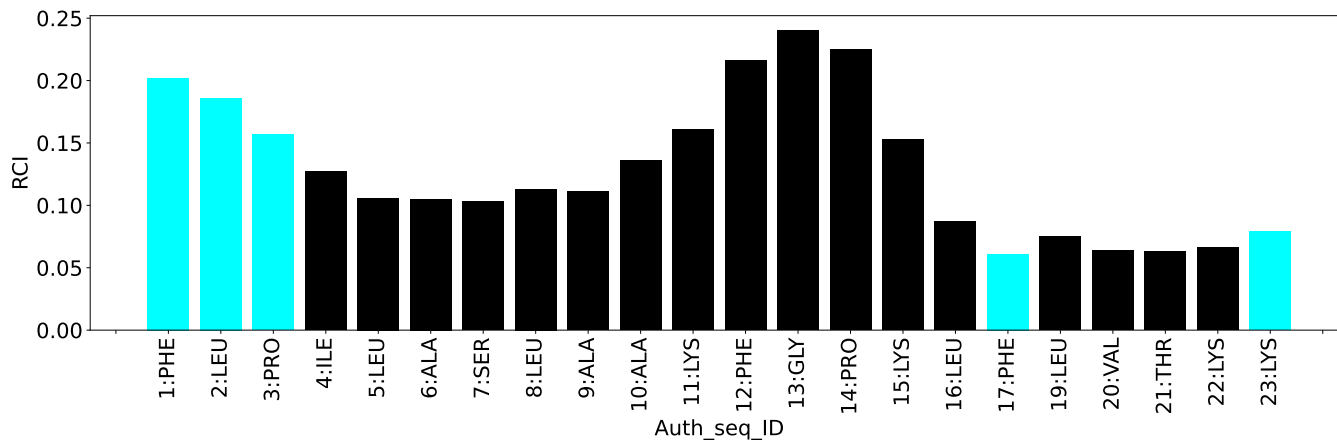
#### 7.1.4 Statistically unusual chemical shifts [i](#)

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                                | 252   |
| Intra-residue ( $ i-j =0$ )                              | 104   |
| Sequential ( $ i-j =1$ )                                 | 87    |
| Medium range ( $ i-j >1$ and $ i-j <5$ )                 | 59    |
| Long range ( $ i-j \geq 5$ )                             | 2     |
| 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                         | 10.5  |
| Number of long range restraints per residue <sup>1</sup> | 0.1   |

<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)  | 3.7                                    | 0.2     |
| 0.2-0.5 (Medium) | 15.4                                   | 0.5     |
| >0.5 (Large)     | 36.6                                   | 3.45    |

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

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

## 9 Distance violation analysis

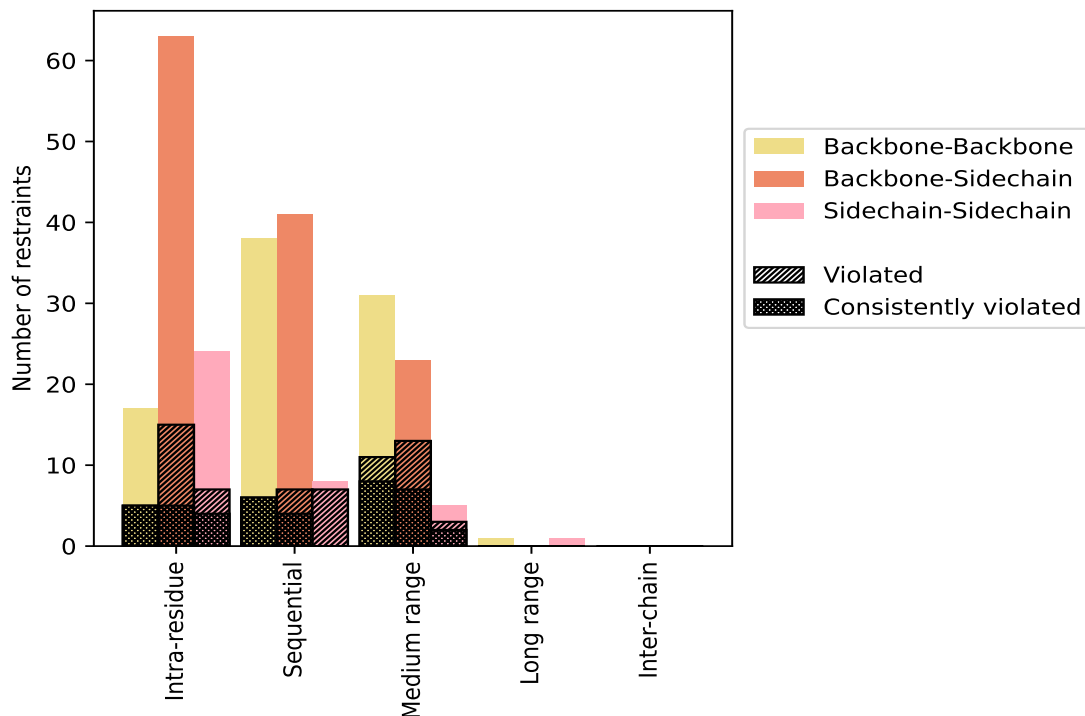
### 9.1 Summary of distance violations

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

| Restrains type  | Count      | % <sup>1</sup> | Violated <sup>3</sup> |                |                | Consistently Violated <sup>4</sup> |                |                |
|---|------------|----------------|-----------------------|----------------|----------------|------------------------------------|----------------|----------------|
|   |            |                | Count                 | % <sup>2</sup> | % <sup>1</sup> | Count                              | % <sup>2</sup> | % <sup>1</sup> |
| <b>Intra-residue (<math> i-j =0</math>)</b>                                 | <b>104</b> | <b>41.3</b>    | <b>27</b>             | <b>26.0</b>    | <b>10.7</b>    | <b>14</b>                          | <b>13.5</b>    | <b>5.6</b>     |
| Backbone-Backbone   | 17         | 6.7            | 5                     | 29.4           | 2.0            | 5                                  | 29.4           | 2.0            |
| Backbone-Sidechain  | 63         | 25.0           | 15                    | 23.8           | 6.0            | 5                                  | 7.9            | 2.0            |
| Sidechain-Sidechain   | 24         | 9.5            | 7                     | 29.2           | 2.8            | 4                                  | 16.7           | 1.6            |
| <b>Sequential (<math> i-j =1</math>)</b>                                    | <b>87</b>  | <b>34.5</b>    | <b>20</b>             | <b>23.0</b>    | <b>7.9</b>     | <b>10</b>                          | <b>11.5</b>    | <b>4.0</b>     |
| Backbone-Backbone   | 38         | 15.1           | 6                     | 15.8           | 2.4            | 6                                  | 15.8           | 2.4            |
| Backbone-Sidechain  | 41         | 16.3           | 7                     | 17.1           | 2.8            | 4                                  | 9.8            | 1.6            |
| Sidechain-Sidechain   | 8          | 3.2            | 7                     | 87.5           | 2.8            | 0                                  | 0.0            | 0.0            |
| <b>Medium range (<math> i-j &gt;1</math> &amp; <math> i-j &lt;5</math>)</b> | <b>59</b>  | <b>23.4</b>    | <b>27</b>             | <b>45.8</b>    | <b>10.7</b>    | <b>17</b>                          | <b>28.8</b>    | <b>6.7</b>     |
| Backbone-Backbone   | 31         | 12.3           | 11                    | 35.5           | 4.4            | 8                                  | 25.8           | 3.2            |
| Backbone-Sidechain  | 23         | 9.1            | 13                    | 56.5           | 5.2            | 7                                  | 30.4           | 2.8            |
| Sidechain-Sidechain   | 5          | 2.0            | 3                     | 60.0           | 1.2            | 2                                  | 40.0           | 0.8            |
| <b>Long range (<math> i-j \geq 5</math>)</b>                                | <b>2</b>   | <b>0.8</b>     | <b>0</b>              | <b>0.0</b>     | <b>0.0</b>     | <b>0</b>                           | <b>0.0</b>     | <b>0.0</b>     |
| Backbone-Backbone   | 1          | 0.4            | 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   | 1          | 0.4            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| <b>Inter-chain</b>  | <b>0</b>   | <b>0.0</b>     | <b>0</b>              | <b>0.0</b>     | <b>0.0</b>     | <b>0</b>                           | <b>0.0</b>     | <b>0.0</b>     |
| Backbone-Backbone   | 0          | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Backbone-Sidechain  | 0          | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| Sidechain-Sidechain   | 0          | 0.0            | 0                     | 0.0            | 0.0            | 0                                  | 0.0            | 0.0            |
| <b>Hydrogen bond</b>  | <b>0</b>   | <b>0.0</b>     | <b>0</b>              | <b>0.0</b>     | <b>0.0</b>     | <b>0</b>                           | <b>0.0</b>     | <b>0.0</b>     |
| <b>Disulfide bond</b>   | <b>0</b>   | <b>0.0</b>     | <b>0</b>              | <b>0.0</b>     | <b>0.0</b>     | <b>0</b>                           | <b>0.0</b>     | <b>0.0</b>     |
| <b>Total</b>  | <b>252</b> | <b>100.0</b>   | <b>74</b>             | <b>29.4</b>    | <b>29.4</b>    | <b>41</b>                          | <b>16.3</b>    | <b>16.3</b>    |
| Backbone-Backbone   | 87         | 34.5           | 22                    | 25.3           | 8.7            | 19                                 | 21.8           | 7.5            |
| Backbone-Sidechain  | 127        | 50.4           | 35                    | 27.6           | 13.9           | 16                                 | 12.6           | 6.3            |
| Sidechain-Sidechain   | 38         | 15.1           | 17                    | 44.7           | 6.7            | 6                                  | 15.8           | 2.4            |

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

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



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

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

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

| Model ID | Number of violations |                 |                 |                 |                 |       | Mean (Å) | Max (Å) | SD <sup>6</sup> (Å) | Median (Å) |
|----------|----------------------|-----------------|-----------------|-----------------|-----------------|-------|----------|---------|---------------------|------------|
|          | IR <sup>1</sup>      | SQ <sup>2</sup> | MR <sup>3</sup> | LR <sup>4</sup> | IC <sup>5</sup> | Total |          |         |                     |            |
| 1        | 19                   | 15              | 23              | 0               | 0               | 57    | 0.87     | 3.31    | 0.58                | 0.78       |
| 2        | 20                   | 14              | 22              | 0               | 0               | 56    | 0.89     | 3.25    | 0.61                | 0.77       |
| 3        | 19                   | 15              | 21              | 0               | 0               | 55    | 0.81     | 3.29    | 0.57                | 0.69       |
| 4        | 21                   | 15              | 19              | 0               | 0               | 55    | 0.87     | 3.45    | 0.57                | 0.85       |
| 5        | 19                   | 16              | 23              | 0               | 0               | 58    | 0.85     | 2.87    | 0.56                | 0.68       |
| 6        | 18                   | 13              | 22              | 0               | 0               | 53    | 0.87     | 2.76    | 0.57                | 0.81       |
| 7        | 18                   | 15              | 22              | 0               | 0               | 55    | 0.84     | 2.64    | 0.53                | 0.76       |
| 8        | 16                   | 12              | 24              | 0               | 0               | 52    | 0.83     | 2.7     | 0.5                 | 0.76       |
| 9        | 19                   | 15              | 20              | 0               | 0               | 54    | 0.82     | 2.54    | 0.5                 | 0.7        |
| 10       | 19                   | 14              | 20              | 0               | 0               | 53    | 0.84     | 2.28    | 0.49                | 0.81       |

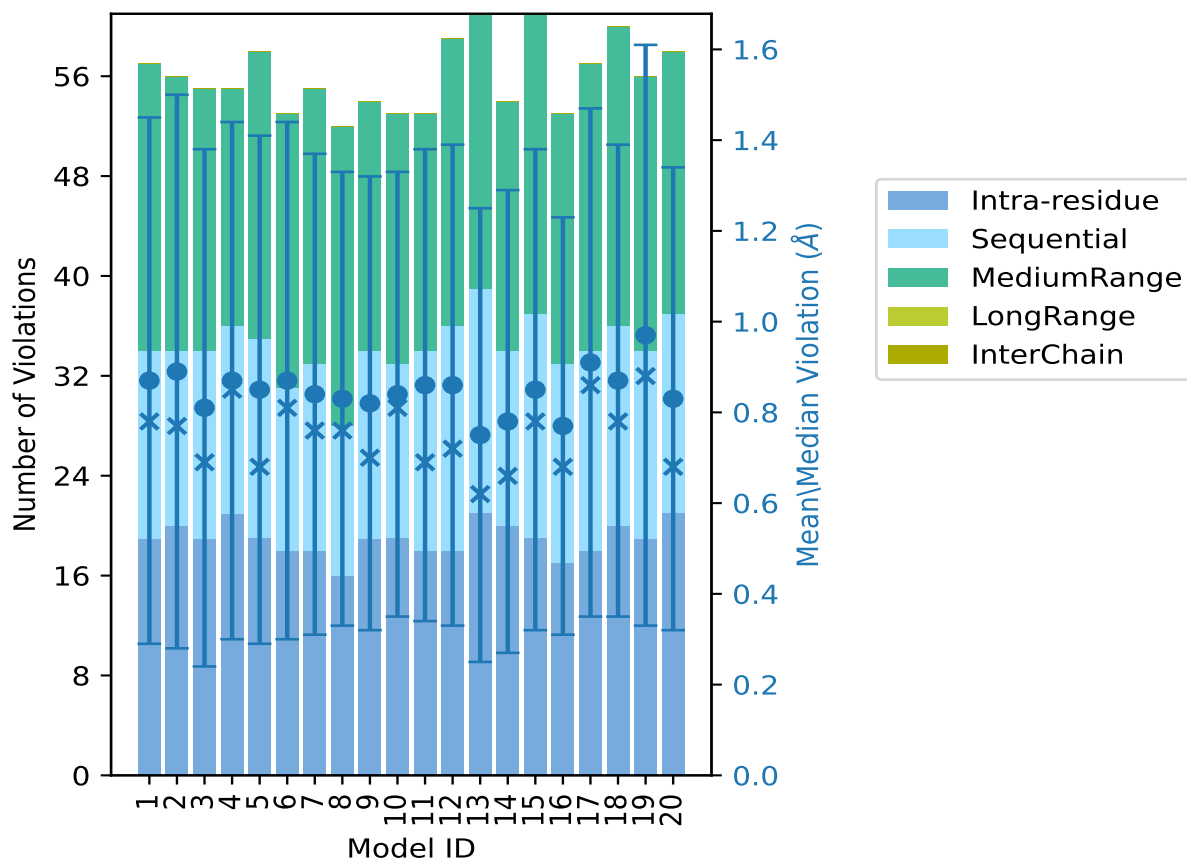
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| Model ID | Number of violations |                 |                 |                 |                 | Total | Mean (Å) | Max (Å) | SD <sup>6</sup> (Å) | Median (Å) |
|----------|----------------------|-----------------|-----------------|-----------------|-----------------|-------|----------|---------|---------------------|------------|
|          | IR <sup>1</sup>      | SQ <sup>2</sup> | MR <sup>3</sup> | LR <sup>4</sup> | IC <sup>5</sup> |       |          |         |                     |            |
| 11       | 18                   | 16              | 19              | 0               | 0               | 53    | 0.86     | 2.7     | 0.52                | 0.69       |
| 12       | 18                   | 18              | 23              | 0               | 0               | 59    | 0.86     | 2.61    | 0.53                | 0.72       |
| 13       | 21                   | 18              | 22              | 0               | 0               | 61    | 0.75     | 2.64    | 0.5                 | 0.62       |
| 14       | 20                   | 14              | 20              | 0               | 0               | 54    | 0.78     | 2.48    | 0.51                | 0.66       |
| 15       | 19                   | 18              | 24              | 0               | 0               | 61    | 0.85     | 2.77    | 0.53                | 0.78       |
| 16       | 17                   | 16              | 20              | 0               | 0               | 53    | 0.77     | 1.74    | 0.46                | 0.68       |
| 17       | 18                   | 16              | 23              | 0               | 0               | 57    | 0.91     | 2.88    | 0.56                | 0.86       |
| 18       | 20                   | 16              | 24              | 0               | 0               | 60    | 0.87     | 2.38    | 0.52                | 0.78       |
| 19       | 19                   | 15              | 22              | 0               | 0               | 56    | 0.97     | 3.35    | 0.64                | 0.88       |
| 20       | 21                   | 16              | 21              | 0               | 0               | 58    | 0.83     | 2.26    | 0.51                | 0.68       |

<sup>1</sup>Intra-residue restraints, <sup>2</sup>Sequential restraints, <sup>3</sup>Medium range restraints, <sup>4</sup>Long range restraints, <sup>5</sup>Inter-chain restraints, <sup>6</sup>Standard deviation

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



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

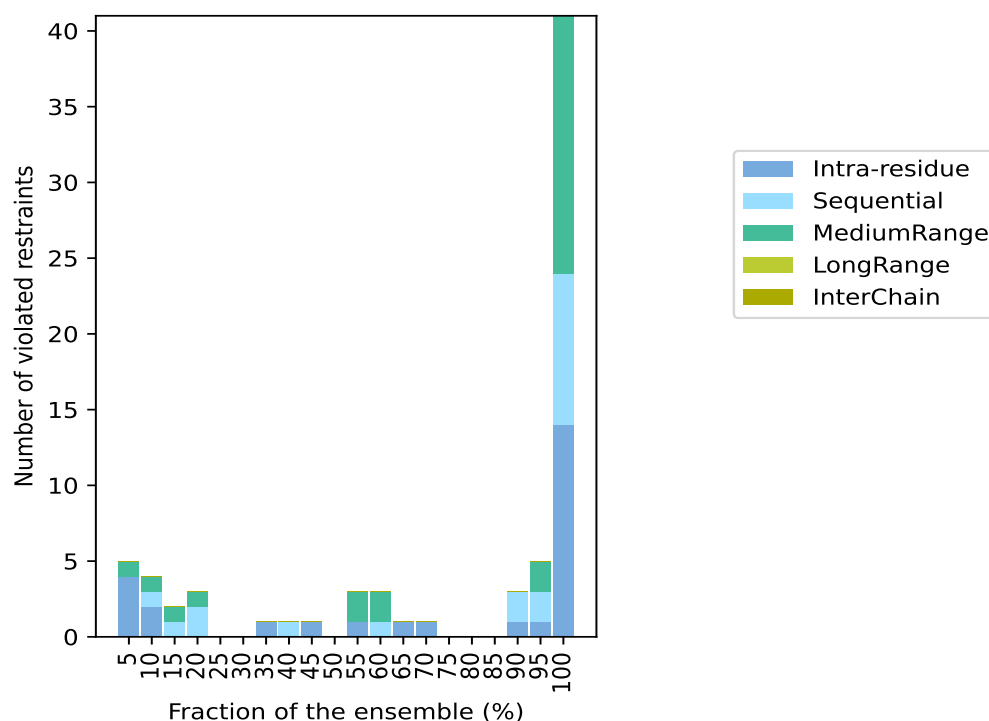
### 9.3 Distance violation statistics for the ensemble

Violation analysis may find that some restraints are violated in few models and some are violated in most of models. The following table provides this information as number of violated restraints for a given fraction of the ensemble. In total, 178(IR:77, SQ:67, MR:32, LR:2, 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>       | %     |
| 4                             | 0               | 1               | 0               | 0               | 5     | 1                        | 5.0   |
| 2                             | 1               | 1               | 0               | 0               | 4     | 2                        | 10.0  |
| 0                             | 1               | 1               | 0               | 0               | 2     | 3                        | 15.0  |
| 0                             | 2               | 1               | 0               | 0               | 3     | 4                        | 20.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 5                        | 25.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 6                        | 30.0  |
| 1                             | 0               | 0               | 0               | 0               | 1     | 7                        | 35.0  |
| 0                             | 1               | 0               | 0               | 0               | 1     | 8                        | 40.0  |
| 1                             | 0               | 0               | 0               | 0               | 1     | 9                        | 45.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 10                       | 50.0  |
| 1                             | 0               | 2               | 0               | 0               | 3     | 11                       | 55.0  |
| 0                             | 1               | 2               | 0               | 0               | 3     | 12                       | 60.0  |
| 1                             | 0               | 0               | 0               | 0               | 1     | 13                       | 65.0  |
| 1                             | 0               | 0               | 0               | 0               | 1     | 14                       | 70.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 15                       | 75.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 16                       | 80.0  |
| 0                             | 0               | 0               | 0               | 0               | 0     | 17                       | 85.0  |
| 1                             | 2               | 0               | 0               | 0               | 3     | 18                       | 90.0  |
| 1                             | 2               | 2               | 0               | 0               | 5     | 19                       | 95.0  |
| 14                            | 10              | 17              | 0               | 0               | 41    | 20                       | 100.0 |

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

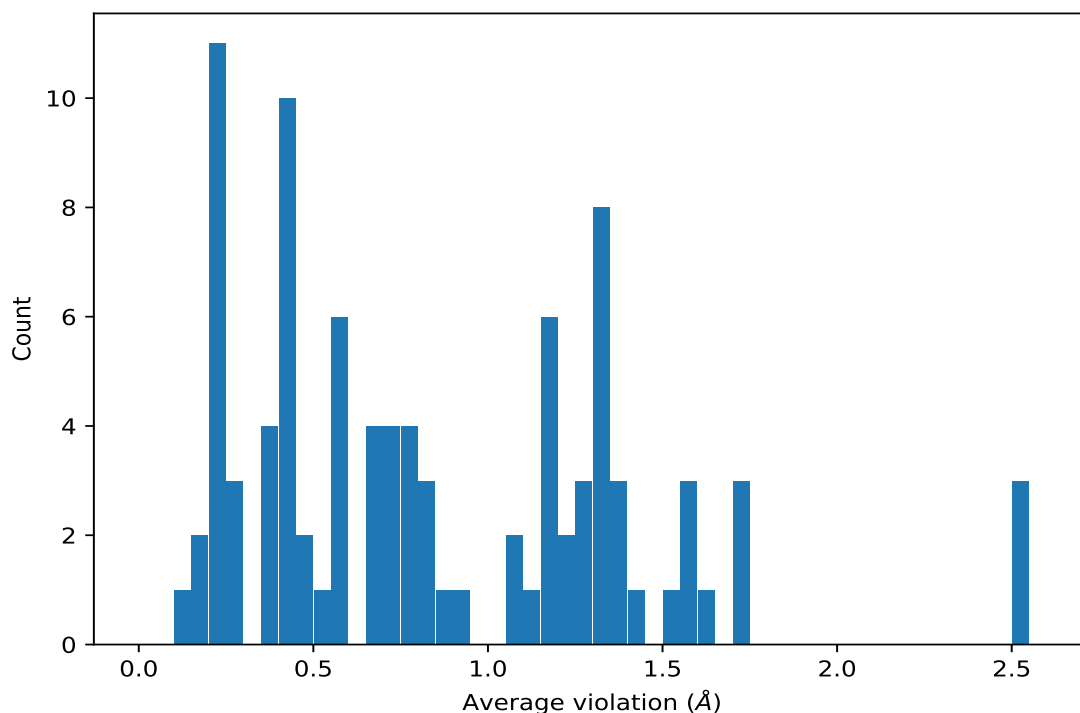
### 9.3.1 Bar graph : Distance violation statistics for the ensemble [i](#)



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

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

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



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

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

| Key     | Atom-1         | Atom-2         | Models <sup>1</sup> | Mean (Å) | SD <sup>1</sup> (Å) | Median (Å) |
|---------|----------------|----------------|---------------------|----------|---------------------|------------|
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 20                  | 1.71     | 0.08                | 1.7        |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 20                  | 1.71     | 0.08                | 1.7        |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 20                  | 1.71     | 0.08                | 1.7        |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 20                  | 1.62     | 0.19                | 1.56       |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 20                  | 1.58     | 0.09                | 1.6        |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 20                  | 1.58     | 0.09                | 1.6        |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 20                  | 1.58     | 0.09                | 1.6        |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 20                  | 1.42     | 0.01                | 1.42       |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1 | 20                  | 1.36     | 0.06                | 1.37       |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2 | 20                  | 1.36     | 0.06                | 1.37       |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3 | 20                  | 1.36     | 0.06                | 1.37       |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3  | 20                  | 1.34     | 0.02                | 1.35       |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 20                  | 1.32     | 0.21                | 1.34       |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 20                  | 1.28     | 0.06                | 1.28       |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 20                  | 1.28     | 0.06                | 1.28       |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 20                  | 1.25     | 0.02                | 1.25       |

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| Key     | Atom-1         | Atom-2         | Models <sup>1</sup> | Mean (Å) | SD <sup>1</sup> (Å) | Median (Å) |
|---------|----------------|----------------|---------------------|----------|---------------------|------------|
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 20                  | 1.24     | 0.74                | 1.19       |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 20                  | 1.24     | 0.74                | 1.19       |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 20                  | 1.2      | 0.01                | 1.2        |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 20                  | 1.2      | 0.2                 | 1.15       |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 20                  | 1.18     | 0.13                | 1.17       |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 20                  | 1.18     | 0.02                | 1.17       |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 20                  | 1.18     | 0.02                | 1.17       |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 20                  | 1.17     | 0.02                | 1.17       |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 20                  | 1.12     | 0.05                | 1.13       |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 20                  | 1.09     | 0.02                | 1.09       |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 20                  | 1.09     | 0.05                | 1.07       |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 20                  | 0.9      | 0.53                | 0.82       |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 20                  | 0.88     | 0.01                | 0.88       |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 20                  | 0.84     | 0.09                | 0.86       |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 20                  | 0.84     | 0.46                | 0.68       |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 20                  | 0.84     | 0.46                | 0.68       |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 20                  | 0.77     | 0.07                | 0.77       |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 20                  | 0.74     | 0.13                | 0.72       |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 20                  | 0.72     | 0.18                | 0.78       |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 20                  | 0.72     | 0.18                | 0.78       |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 20                  | 0.72     | 0.18                | 0.78       |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 20                  | 0.66     | 0.12                | 0.68       |
| (1,123) | 1:4:A:ILE:HA   | 1:4:A:ILE:HB   | 20                  | 0.65     | 0.01                | 0.65       |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 20                  | 0.6      | 0.08                | 0.6        |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 20                  | 0.6      | 0.08                | 0.6        |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 20                  | 0.6      | 0.08                | 0.6        |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 20                  | 0.59     | 0.13                | 0.62       |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 20                  | 0.56     | 0.01                | 0.56       |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 20                  | 0.44     | 0.1                 | 0.46       |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 20                  | 0.43     | 0.15                | 0.44       |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 20                  | 0.43     | 0.05                | 0.41       |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 20                  | 0.43     | 0.02                | 0.42       |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 20                  | 0.42     | 0.01                | 0.42       |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 20                  | 0.4      | 0.05                | 0.41       |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 20                  | 0.39     | 0.03                | 0.4        |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 20                  | 0.36     | 0.01                | 0.35       |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 20                  | 0.27     | 0.03                | 0.28       |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 20                  | 0.13     | 0.02                | 0.12       |
| (1,65)  | 1:15:A:LYS:H   | 1:15:A:LYS:HG2 | 19                  | 0.5      | 0.03                | 0.5        |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 19                  | 0.44     | 0.11                | 0.41       |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 19                  | 0.18     | 0.05                | 0.17       |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 18                  | 0.76     | 0.44                | 0.73       |

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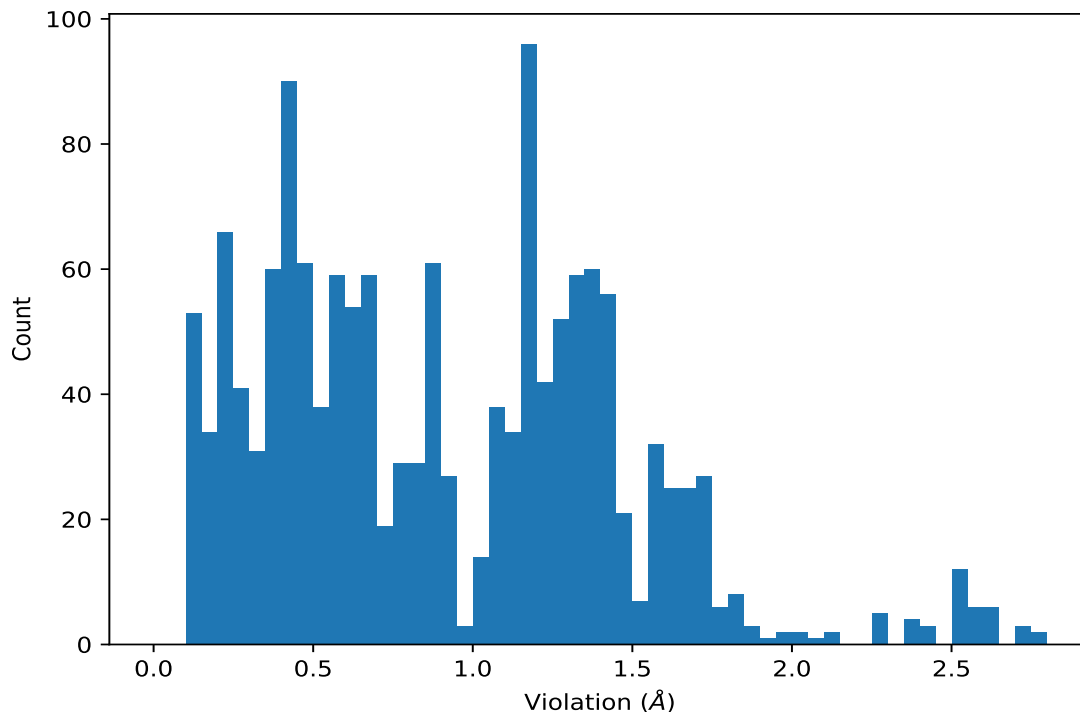
| Key     | Atom-1         | Atom-2          | Models <sup>1</sup> | Mean (Å) | SD <sup>1</sup> (Å) | Median (Å) |
|---------|----------------|-----------------|---------------------|----------|---------------------|------------|
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2   | 18                  | 0.21     | 0.04                | 0.22       |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2  | 14                  | 0.79     | 0.09                | 0.8        |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3  | 14                  | 0.79     | 0.09                | 0.8        |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2  | 13                  | 0.22     | 0.15                | 0.2        |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H     | 12                  | 0.55     | 0.27                | 0.47       |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3  | 12                  | 0.39     | 0.36                | 0.16       |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3  | 12                  | 0.39     | 0.36                | 0.16       |
| (1,224) | 1:17:A:PHE:HA  | 1:20:A:VAL:HG21 | 11                  | 2.55     | 0.09                | 2.53       |
| (1,224) | 1:17:A:PHE:HA  | 1:20:A:VAL:HG22 | 11                  | 2.55     | 0.09                | 2.53       |
| (1,224) | 1:17:A:PHE:HA  | 1:20:A:VAL:HG23 | 11                  | 2.55     | 0.09                | 2.53       |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 11                  | 1.32     | 0.07                | 1.31       |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 11                  | 1.32     | 0.07                | 1.31       |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 11                  | 1.32     | 0.07                | 1.31       |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 11                  | 1.32     | 0.07                | 1.31       |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 11                  | 1.32     | 0.07                | 1.31       |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 11                  | 1.32     | 0.07                | 1.31       |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13  | 11                  | 0.23     | 0.0                 | 0.23       |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13  | 11                  | 0.23     | 0.0                 | 0.23       |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13  | 11                  | 0.23     | 0.0                 | 0.23       |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB2  | 9                   | 0.41     | 0.12                | 0.38       |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB3  | 9                   | 0.41     | 0.12                | 0.38       |
| (1,233) | 1:2:A:LEU:HB2  | 1:3:A:PRO:HD2   | 8                   | 0.46     | 0.1                 | 0.42       |
| (1,233) | 1:2:A:LEU:HB3  | 1:3:A:PRO:HD2   | 8                   | 0.46     | 0.1                 | 0.42       |
| (1,247) | 1:23:A:LYS:HG2 | 1:23:A:LYS:HE3  | 7                   | 0.26     | 0.06                | 0.23       |
| (1,247) | 1:23:A:LYS:HG3 | 1:23:A:LYS:HE3  | 7                   | 0.26     | 0.06                | 0.23       |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB1   | 4                   | 0.23     | 0.18                | 0.13       |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB2   | 4                   | 0.23     | 0.18                | 0.13       |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB3   | 4                   | 0.23     | 0.18                | 0.13       |
| (1,244) | 1:3:A:PRO:HB2  | 1:4:A:ILE:HG12  | 3                   | 1.54     | 0.52                | 1.64       |
| (1,156) | 1:21:A:THR:HB  | 1:24:A:ABA:H    | 3                   | 0.41     | 0.12                | 0.49       |
| (1,178) | 1:5:A:LEU:HB2  | 1:9:A:ALA:H     | 2                   | 0.68     | 0.0                 | 0.68       |
| (1,221) | 1:5:A:LEU:HA   | 1:5:A:LEU:HB2   | 2                   | 0.66     | 0.01                | 0.66       |
| (1,58)  | 1:10:A:ALA:HB1 | 1:11:A:LYS:H    | 2                   | 0.2      | 0.08                | 0.2        |
| (1,58)  | 1:10:A:ALA:HB2 | 1:11:A:LYS:H    | 2                   | 0.2      | 0.08                | 0.2        |
| (1,58)  | 1:10:A:ALA:HB3 | 1:11:A:LYS:H    | 2                   | 0.2      | 0.08                | 0.2        |
| (1,63)  | 1:16:A:LEU:H   | 1:16:A:LEU:HG   | 2                   | 0.18     | 0.04                | 0.18       |

<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) |
|---------|---------------|-----------------|----------|---------------|
| (1,249) | 1:7:A:SER:HB2 | 1:11:A:LYS:HB2  | 6        | 2.76          |
| (1,249) | 1:7:A:SER:HB3 | 1:11:A:LYS:HB2  | 6        | 2.76          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 8        | 2.7           |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 8        | 2.7           |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 8        | 2.7           |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 7        | 2.64          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 7        | 2.64          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 7        | 2.64          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 6        | 2.62          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 6        | 2.62          |

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| Key     | Atom-1        | Atom-2          | Model ID | Violation (Å) |
|---------|---------------|-----------------|----------|---------------|
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 6        | 2.62          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 19       | 2.59          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 19       | 2.59          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 19       | 2.59          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 12       | 2.56          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 12       | 2.56          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 12       | 2.56          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 17       | 2.53          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 17       | 2.53          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 17       | 2.53          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 1        | 2.52          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 1        | 2.52          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 1        | 2.52          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 5        | 2.52          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 5        | 2.52          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 5        | 2.52          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 15       | 2.51          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 15       | 2.51          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 15       | 2.51          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 2        | 2.43          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 2        | 2.43          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 2        | 2.43          |
| (1,251) | 1:5:A:LEU:HB2 | 1:8:A:LEU:HB3   | 19       | 2.39          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG21 | 18       | 2.38          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG22 | 18       | 2.38          |
| (1,224) | 1:17:A:PHE:HA | 1:20:A:VAL:HG23 | 18       | 2.38          |
| (1,249) | 1:7:A:SER:HB2 | 1:11:A:LYS:HB2  | 10       | 2.28          |
| (1,249) | 1:7:A:SER:HB3 | 1:11:A:LYS:HB2  | 10       | 2.28          |
| (1,251) | 1:5:A:LEU:HB2 | 1:8:A:LEU:HB3   | 20       | 2.26          |
| (1,249) | 1:7:A:SER:HB2 | 1:11:A:LYS:HB2  | 2        | 2.25          |
| (1,249) | 1:7:A:SER:HB3 | 1:11:A:LYS:HB2  | 2        | 2.25          |
| (1,196) | 1:4:A:ILE:HA  | 1:7:A:SER:H     | 18       | 2.14          |
| (1,244) | 1:3:A:PRO:HB2 | 1:4:A:ILE:HG12  | 19       | 2.12          |
| (1,34)  | 1:8:A:LEU:HA  | 1:11:A:LYS:H    | 20       | 2.05          |
| (1,249) | 1:7:A:SER:HB2 | 1:11:A:LYS:HB2  | 17       | 2.04          |
| (1,249) | 1:7:A:SER:HB3 | 1:11:A:LYS:HB2  | 17       | 2.04          |
| (1,249) | 1:7:A:SER:HB2 | 1:11:A:LYS:HB2  | 19       | 1.96          |
| (1,249) | 1:7:A:SER:HB3 | 1:11:A:LYS:HB2  | 19       | 1.96          |
| (1,196) | 1:4:A:ILE:HA  | 1:7:A:SER:H     | 3        | 1.92          |
| (1,204) | 1:9:A:ALA:HB1 | 1:12:A:PHE:H    | 20       | 1.88          |
| (1,204) | 1:9:A:ALA:HB2 | 1:12:A:PHE:H    | 20       | 1.88          |
| (1,204) | 1:9:A:ALA:HB3 | 1:12:A:PHE:H    | 20       | 1.88          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 18       | 1.84          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 18       | 1.84          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 18       | 1.84          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 13       | 1.83          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 13       | 1.82          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 13       | 1.82          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 13       | 1.82          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 14       | 1.8           |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 8        | 1.78          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 8        | 1.78          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 8        | 1.78          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 5        | 1.75          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 5        | 1.75          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 5        | 1.75          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 11       | 1.74          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 11       | 1.74          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 10       | 1.74          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 10       | 1.74          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 10       | 1.74          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 16       | 1.74          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 16       | 1.74          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 16       | 1.74          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 15       | 1.73          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 15       | 1.73          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 15       | 1.73          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 5        | 1.73          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 3        | 1.72          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 3        | 1.72          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 3        | 1.72          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 17       | 1.71          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 17       | 1.71          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 17       | 1.71          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 3        | 1.7           |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 3        | 1.7           |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 3        | 1.7           |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 7        | 1.7           |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 7        | 1.7           |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 7        | 1.7           |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 14       | 1.7           |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 14       | 1.7           |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 14       | 1.7           |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 9        | 1.69          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 9        | 1.69          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 9        | 1.69          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 11       | 1.69          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 11       | 1.69          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 11       | 1.69          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 14       | 1.69          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 14       | 1.69          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 14       | 1.69          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 11       | 1.69          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 11       | 1.69          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 11       | 1.69          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 16       | 1.69          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 1        | 1.68          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 1        | 1.68          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 1        | 1.68          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 4        | 1.68          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 4        | 1.68          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 4        | 1.68          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 15       | 1.68          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 11       | 1.68          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 8        | 1.67          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 9        | 1.66          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 9        | 1.66          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 9        | 1.66          |
| (1,244) | 1:3:A:PRO:HB2  | 1:4:A:ILE:HG12 | 16       | 1.64          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 4        | 1.64          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 4        | 1.64          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 4        | 1.64          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 6        | 1.64          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 6        | 1.64          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 6        | 1.64          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 6        | 1.63          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 6        | 1.63          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 6        | 1.63          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 20       | 1.63          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 20       | 1.63          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 1        | 1.62          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 2        | 1.6           |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 2        | 1.6           |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 2        | 1.6           |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 8        | 1.6           |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 8        | 1.6           |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 8        | 1.6           |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 16       | 1.6           |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 16       | 1.6           |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 16       | 1.6           |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 20       | 1.6           |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 20       | 1.6           |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 20       | 1.6           |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 18       | 1.59          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 18       | 1.59          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 18       | 1.59          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 4        | 1.58          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 10       | 1.58          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 5        | 1.58          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 5        | 1.58          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 5        | 1.58          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 2        | 1.58          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 2        | 1.58          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 2        | 1.58          |
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 19       | 1.58          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 19       | 1.58          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 19       | 1.58          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 9        | 1.57          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 9        | 1.57          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 18       | 1.57          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 10       | 1.57          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 12       | 1.56          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 12       | 1.56          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 12       | 1.56          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 19       | 1.56          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 19       | 1.56          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 19       | 1.56          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 7        | 1.55          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 7        | 1.55          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 7        | 1.55          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 17       | 1.55          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 17       | 1.55          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 17       | 1.55          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 11       | 1.55          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 12       | 1.55          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 10       | 1.54          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 10       | 1.54          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 10       | 1.54          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,204) | 1:9:A:ALA:HB1  | 1:12:A:PHE:H   | 12       | 1.54          |
| (1,204) | 1:9:A:ALA:HB2  | 1:12:A:PHE:H   | 12       | 1.54          |
| (1,204) | 1:9:A:ALA:HB3  | 1:12:A:PHE:H   | 12       | 1.54          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 17       | 1.53          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 2        | 1.49          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 1        | 1.48          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 1        | 1.48          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 1        | 1.48          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H    | 13       | 1.48          |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H    | 13       | 1.48          |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H    | 13       | 1.48          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 5        | 1.48          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 5        | 1.48          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1 | 11       | 1.47          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2 | 11       | 1.47          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3 | 11       | 1.47          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 4        | 1.47          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 11       | 1.47          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 7        | 1.46          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 7        | 1.46          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 4        | 1.46          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 4        | 1.46          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 2        | 1.46          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 7        | 1.45          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 19       | 1.45          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 6        | 1.44          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 20       | 1.44          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 13       | 1.44          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 4        | 1.43          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 4        | 1.43          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 2        | 1.43          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H    | 9        | 1.43          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 1        | 1.43          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 2        | 1.43          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 5        | 1.43          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 11       | 1.43          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 12       | 1.43          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 15       | 1.43          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 14       | 1.42          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 14       | 1.42          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 4        | 1.42          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2  | 6        | 1.42          |

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| Key     | Atom-1         | Atom-2          | Model ID | Violation (Å) |
|---------|----------------|-----------------|----------|---------------|
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 7        | 1.42          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 8        | 1.42          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 9        | 1.42          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 10       | 1.42          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 17       | 1.42          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 18       | 1.42          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 20       | 1.42          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H    | 3        | 1.41          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H    | 3        | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 6        | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 6        | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 6        | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 10       | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 10       | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 10       | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 17       | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 17       | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 17       | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 20       | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 20       | 1.41          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 20       | 1.41          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 3        | 1.41          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 14       | 1.41          |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 16       | 1.41          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H    | 13       | 1.41          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 7        | 1.4           |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 7        | 1.4           |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 7        | 1.4           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 7        | 1.4           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 7        | 1.4           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 7        | 1.4           |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 8        | 1.4           |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 8        | 1.4           |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 8        | 1.4           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 8        | 1.4           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 8        | 1.4           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 8        | 1.4           |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H    | 6        | 1.4           |
| (1,128) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB2   | 19       | 1.4           |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 8        | 1.39          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 8        | 1.39          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 8        | 1.39          |

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| Key     | Atom-1         | Atom-2          | Model ID | Violation (Å) |
|---------|----------------|-----------------|----------|---------------|
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 14       | 1.39          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 14       | 1.39          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 14       | 1.39          |
| (1,196) | 1:4:A:ILE:HA   | 1:7:A:SER:H     | 19       | 1.39          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H    | 9        | 1.39          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 19       | 1.38          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 19       | 1.38          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 19       | 1.38          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 19       | 1.38          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 19       | 1.38          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 19       | 1.38          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H    | 17       | 1.38          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H    | 4        | 1.38          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H    | 7        | 1.38          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 3        | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 3        | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 3        | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 9        | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 9        | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 9        | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 13       | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 13       | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 13       | 1.37          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 6        | 1.37          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 6        | 1.37          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 6        | 1.37          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 6        | 1.37          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 6        | 1.37          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 6        | 1.37          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2  | 19       | 1.37          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3  | 19       | 1.37          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H    | 19       | 1.37          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 9        | 1.37          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 14       | 1.37          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 2        | 1.36          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 2        | 1.36          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 2        | 1.36          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 7        | 1.36          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 7        | 1.36          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 7        | 1.36          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 16       | 1.36          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 16       | 1.36          |

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| Key     | Atom-1         | Atom-2          | Model ID | Violation (Å) |
|---------|----------------|-----------------|----------|---------------|
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 16       | 1.36          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H    | 12       | 1.36          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 3        | 1.36          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 6        | 1.36          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 7        | 1.36          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 10       | 1.36          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 18       | 1.36          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 4        | 1.35          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 4        | 1.35          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 4        | 1.35          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 2        | 1.35          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 4        | 1.35          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 5        | 1.35          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 8        | 1.35          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H    | 18       | 1.35          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H    | 16       | 1.34          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H    | 16       | 1.34          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 18       | 1.34          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 18       | 1.34          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 18       | 1.34          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H    | 10       | 1.34          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 1        | 1.34          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 12       | 1.34          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 13       | 1.34          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 15       | 1.34          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 20       | 1.34          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H    | 10       | 1.34          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 12       | 1.33          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 12       | 1.33          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 12       | 1.33          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 12       | 1.33          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 12       | 1.33          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 12       | 1.33          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H    | 5        | 1.33          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 11       | 1.33          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 19       | 1.33          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H    | 6        | 1.33          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H    | 5        | 1.32          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H    | 5        | 1.32          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H    | 8        | 1.31          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H    | 8        | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 1        | 1.31          |

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| Key     | Atom-1         | Atom-2          | Model ID | Violation (Å) |
|---------|----------------|-----------------|----------|---------------|
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 1        | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 1        | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 12       | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 12       | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 12       | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 15       | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 15       | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 15       | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1  | 19       | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2  | 19       | 1.31          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3  | 19       | 1.31          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 1        | 1.31          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 1        | 1.31          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 1        | 1.31          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 1        | 1.31          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 1        | 1.31          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 1        | 1.31          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 15       | 1.31          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 15       | 1.31          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 15       | 1.31          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 15       | 1.31          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 15       | 1.31          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 15       | 1.31          |
| (1,226) | 1:4:A:ILE:HG21 | 1:7:A:SER:H     | 15       | 1.3           |
| (1,226) | 1:4:A:ILE:HG22 | 1:7:A:SER:H     | 15       | 1.3           |
| (1,226) | 1:4:A:ILE:HG23 | 1:7:A:SER:H     | 15       | 1.3           |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 17       | 1.3           |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 17       | 1.3           |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 17       | 1.3           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 17       | 1.3           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 17       | 1.3           |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 17       | 1.3           |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H    | 19       | 1.29          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H    | 19       | 1.29          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 5        | 1.29          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 5        | 1.29          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 5        | 1.29          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 5        | 1.29          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 5        | 1.29          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 5        | 1.29          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 16       | 1.29          |
| (1,115) | 1:3:A:PRO:HD2  | 1:3:A:PRO:HB3   | 17       | 1.29          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 11       | 1.29          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 14       | 1.29          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 15       | 1.29          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 4        | 1.28          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 4        | 1.28          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 6        | 1.28          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 6        | 1.28          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 7        | 1.28          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 7        | 1.28          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 9        | 1.28          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 9        | 1.28          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 17       | 1.28          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 17       | 1.28          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 5        | 1.28          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 10       | 1.27          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 10       | 1.27          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 20       | 1.27          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 20       | 1.27          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 3        | 1.27          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 8        | 1.27          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 16       | 1.27          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 17       | 1.27          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 17       | 1.27          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 1        | 1.26          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 1        | 1.26          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 2        | 1.26          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 2        | 1.26          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 11       | 1.26          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 11       | 1.26          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 17       | 1.26          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 1        | 1.26          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 2        | 1.26          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 9        | 1.26          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 20       | 1.26          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 12       | 1.25          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 12       | 1.25          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 10       | 1.25          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 10       | 1.25          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 4        | 1.25          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 15       | 1.25          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 19       | 1.25          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 1        | 1.25          |

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| Key     | Atom-1         | Atom-2          | Model ID | Violation (Å) |
|---------|----------------|-----------------|----------|---------------|
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H    | 1        | 1.24          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H    | 19       | 1.24          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H    | 5        | 1.24          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H    | 6        | 1.24          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H    | 7        | 1.24          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H    | 10       | 1.24          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H    | 12       | 1.24          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H    | 18       | 1.23          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H    | 18       | 1.23          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H    | 13       | 1.23          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H    | 18       | 1.23          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2  | 12       | 1.22          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2  | 12       | 1.22          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H    | 13       | 1.22          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H    | 13       | 1.22          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 2        | 1.22          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 2        | 1.22          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 2        | 1.22          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 2        | 1.22          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 2        | 1.22          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 2        | 1.22          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 14       | 1.22          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 14       | 1.22          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 20       | 1.21          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 20       | 1.21          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 1        | 1.21          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 12       | 1.21          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 17       | 1.21          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 18       | 1.21          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3   | 15       | 1.2           |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H    | 2        | 1.2           |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 3        | 1.2           |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H     | 8        | 1.2           |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 3        | 1.2           |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 2        | 1.2           |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 4        | 1.2           |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 5        | 1.2           |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 6        | 1.2           |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 8        | 1.2           |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 11       | 1.2           |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 15       | 1.2           |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3  | 20       | 1.2           |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 7        | 1.19          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 11       | 1.19          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 5        | 1.19          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 18       | 1.19          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 2        | 1.19          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 17       | 1.19          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 19       | 1.19          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 5        | 1.19          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 6        | 1.19          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 10       | 1.19          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 17       | 1.19          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 20       | 1.19          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 5        | 1.19          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 18       | 1.19          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 3        | 1.19          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 7        | 1.19          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 9        | 1.19          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 10       | 1.19          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 14       | 1.19          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 19       | 1.19          |
| (1,238) | 1:12:A:PHE:HD1 | 1:13:A:GLY:H   | 15       | 1.18          |
| (1,238) | 1:12:A:PHE:HD2 | 1:13:A:GLY:H   | 15       | 1.18          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 15       | 1.18          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 6        | 1.18          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 8        | 1.18          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 9        | 1.18          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 15       | 1.18          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 6        | 1.18          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 20       | 1.18          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 7        | 1.18          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 9        | 1.18          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 12       | 1.18          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 6        | 1.18          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 8        | 1.18          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 9        | 1.18          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 15       | 1.18          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 15       | 1.18          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 16       | 1.18          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 13       | 1.18          |
| (1,111) | 1:16:A:LEU:H   | 1:16:A:LEU:HB3 | 16       | 1.18          |
| (1,70)  | 1:16:A:LEU:HB3 | 1:17:A:PHE:H   | 13       | 1.18          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 16       | 1.18          |

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| Key     | Atom-1         | Atom-2          | Model ID | Violation (Å) |
|---------|----------------|-----------------|----------|---------------|
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2  | 1        | 1.17          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2  | 1        | 1.17          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG21 | 18       | 1.17          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG22 | 18       | 1.17          |
| (1,225) | 1:17:A:PHE:HB2 | 1:20:A:VAL:HG23 | 18       | 1.17          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG21 | 18       | 1.17          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG22 | 18       | 1.17          |
| (1,225) | 1:17:A:PHE:HB3 | 1:20:A:VAL:HG23 | 18       | 1.17          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2  | 2        | 1.17          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3  | 2        | 1.17          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2  | 3        | 1.17          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3  | 3        | 1.17          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 1        | 1.17          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 2        | 1.17          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 4        | 1.17          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 7        | 1.17          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 12       | 1.17          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 13       | 1.17          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H     | 2        | 1.17          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H     | 4        | 1.17          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H     | 16       | 1.17          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 1        | 1.17          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 2        | 1.17          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 4        | 1.17          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 7        | 1.17          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 12       | 1.17          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 13       | 1.17          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H     | 18       | 1.17          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H     | 5        | 1.17          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H     | 8        | 1.17          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H    | 4        | 1.16          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H    | 6        | 1.16          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H    | 8        | 1.16          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H    | 20       | 1.16          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2  | 1        | 1.16          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3  | 1        | 1.16          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 10       | 1.16          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 16       | 1.16          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 17       | 1.16          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H     | 19       | 1.16          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H     | 9        | 1.16          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H     | 1        | 1.16          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 3        | 1.16          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 11       | 1.16          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 13       | 1.16          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 14       | 1.16          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 15       | 1.16          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 10       | 1.16          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 16       | 1.16          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 17       | 1.16          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 19       | 1.16          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 4        | 1.15          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 3        | 1.15          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 20       | 1.15          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 2        | 1.14          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB1 | 5        | 1.14          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB2 | 5        | 1.14          |
| (1,231) | 1:9:A:ALA:H    | 1:10:A:ALA:HB3 | 5        | 1.14          |
| (1,211) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 11       | 1.14          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 7        | 1.14          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 10       | 1.14          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 16       | 1.14          |
| (1,172) | 1:6:A:ALA:HA   | 1:7:A:SER:H    | 11       | 1.14          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 6        | 1.14          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 9        | 1.13          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 18       | 1.13          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 1        | 1.13          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 17       | 1.12          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 17       | 1.12          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 11       | 1.12          |
| (1,193) | 1:7:A:SER:HA   | 1:8:A:LEU:H    | 19       | 1.12          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 3        | 1.12          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 12       | 1.12          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 14       | 1.12          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 1        | 1.11          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 12       | 1.11          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 4        | 1.11          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 5        | 1.11          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 18       | 1.11          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 20       | 1.11          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 14       | 1.11          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 1        | 1.1           |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 2        | 1.1           |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 7        | 1.1           |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 9        | 1.1           |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 12       | 1.1           |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 3        | 1.1           |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 12       | 1.1           |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 6        | 1.09          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 8        | 1.09          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 11       | 1.09          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 15       | 1.09          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 12       | 1.09          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 14       | 1.09          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 15       | 1.09          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 9        | 1.09          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 9        | 1.08          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 3        | 1.08          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 17       | 1.08          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 19       | 1.08          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 3        | 1.08          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 18       | 1.08          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 4        | 1.08          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 12       | 1.08          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 14       | 1.08          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 1        | 1.08          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 13       | 1.08          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 11       | 1.07          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 3        | 1.07          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 10       | 1.07          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 1        | 1.07          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 5        | 1.07          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 2        | 1.07          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 4        | 1.07          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 9        | 1.07          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 11       | 1.07          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 8        | 1.07          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 14       | 1.06          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 13       | 1.06          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 7        | 1.06          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 10       | 1.06          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 15       | 1.06          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 17       | 1.06          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 13       | 1.05          |
| (1,213) | 1:14:A:PRO:HB2 | 1:14:A:PRO:HD3 | 16       | 1.05          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 16       | 1.05          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 17       | 1.04          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 15       | 1.04          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 15       | 1.04          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 10       | 1.04          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 13       | 1.04          |
| (1,199) | 1:5:A:LEU:HA   | 1:6:A:ALA:H    | 8        | 1.04          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 7        | 1.04          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 18       | 1.04          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 14       | 1.03          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 19       | 1.03          |
| (1,34)  | 1:8:A:LEU:HA   | 1:11:A:LYS:H   | 5        | 1.03          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 6        | 1.02          |
| (1,229) | 1:16:A:LEU:HA  | 1:19:A:LEU:H   | 16       | 1.01          |
| (1,91)  | 1:7:A:SER:H    | 1:9:A:ALA:H    | 18       | 1.0           |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 18       | 0.99          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 4        | 0.98          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 13       | 0.96          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 12       | 0.94          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 3        | 0.94          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 15       | 0.93          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 15       | 0.93          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 17       | 0.93          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 20       | 0.93          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 20       | 0.93          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 20       | 0.93          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 18       | 0.93          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 7        | 0.92          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 18       | 0.92          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 18       | 0.92          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 18       | 0.92          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 15       | 0.92          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 5        | 0.92          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 17       | 0.92          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 17       | 0.92          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 15       | 0.91          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 12       | 0.91          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 12       | 0.91          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 12       | 0.91          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 16       | 0.91          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 20       | 0.91          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 10       | 0.9           |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 13       | 0.9           |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 13       | 0.9           |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 14       | 0.9           |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 13       | 0.89          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 13       | 0.89          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 9        | 0.89          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 9        | 0.89          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 9        | 0.89          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 19       | 0.89          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 19       | 0.89          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 19       | 0.89          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 3        | 0.89          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 12       | 0.89          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 20       | 0.89          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 8        | 0.89          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 19       | 0.88          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 7        | 0.88          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 7        | 0.88          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 7        | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 1        | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 7        | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 9        | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 10       | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 11       | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 14       | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 16       | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 17       | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 18       | 0.88          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 19       | 0.88          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 7        | 0.88          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 11       | 0.88          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 11       | 0.88          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 20       | 0.87          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 20       | 0.87          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 12       | 0.87          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 12       | 0.87          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 8        | 0.87          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 4        | 0.87          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 5        | 0.87          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 1        | 0.87          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 4        | 0.87          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 4        | 0.87          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 18       | 0.87          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 18       | 0.87          |
| (1,244) | 1:3:A:PRO:HB2  | 1:4:A:ILE:HG12 | 17       | 0.86          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 18       | 0.86          |
| (1,140) | 1:7:A:SER:HA   | 1:10:A:ALA:H   | 20       | 0.86          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 2        | 0.86          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 8        | 0.86          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 15       | 0.86          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 14       | 0.86          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 4        | 0.86          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 9        | 0.86          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 5        | 0.86          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 5        | 0.86          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 2        | 0.85          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 4        | 0.85          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 4        | 0.85          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 4        | 0.85          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 15       | 0.85          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 15       | 0.85          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 15       | 0.85          |
| (1,139) | 1:19:A:LEU:HA  | 1:20:A:VAL:H   | 6        | 0.85          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 10       | 0.85          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 16       | 0.84          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 13       | 0.84          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 14       | 0.84          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 1        | 0.84          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 1        | 0.84          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 1        | 0.84          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 17       | 0.84          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 14       | 0.84          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 14       | 0.84          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 6        | 0.83          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 19       | 0.83          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 20       | 0.82          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 14       | 0.81          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 10       | 0.81          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 6        | 0.81          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 6        | 0.81          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 3        | 0.81          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 6        | 0.81          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 8        | 0.81          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 11       | 0.81          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 12       | 0.81          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 10       | 0.8           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 10       | 0.8           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 10       | 0.8           |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 7        | 0.8           |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 3        | 0.8           |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 3        | 0.8           |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 19       | 0.8           |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 19       | 0.8           |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 8        | 0.79          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 8        | 0.79          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 18       | 0.79          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 18       | 0.79          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 17       | 0.79          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 8        | 0.79          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 8        | 0.79          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 8        | 0.79          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 13       | 0.79          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 5        | 0.78          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 1        | 0.78          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 18       | 0.78          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 9        | 0.78          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 2        | 0.78          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 2        | 0.78          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 15       | 0.78          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 15       | 0.78          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 3        | 0.77          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 6        | 0.77          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 1        | 0.77          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 1        | 0.77          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 7        | 0.76          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 2        | 0.76          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 2        | 0.76          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 2        | 0.76          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 2        | 0.76          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 11       | 0.75          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 3        | 0.75          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 15       | 0.75          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 16       | 0.73          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 2        | 0.73          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 9        | 0.73          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 8        | 0.72          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 5        | 0.72          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 11       | 0.72          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 11       | 0.72          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 11       | 0.72          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 15       | 0.72          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 17       | 0.72          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 9        | 0.71          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 12       | 0.71          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 19       | 0.71          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 18       | 0.71          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 4        | 0.7           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 1        | 0.7           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 1        | 0.7           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 1        | 0.7           |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 1        | 0.7           |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 5        | 0.69          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 5        | 0.69          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 20       | 0.69          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 3        | 0.69          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 7        | 0.69          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 8        | 0.69          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 9        | 0.69          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 10       | 0.69          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 14       | 0.69          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 17       | 0.69          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 17       | 0.69          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 17       | 0.69          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 6        | 0.69          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 6        | 0.69          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 6        | 0.69          |
| (1,178) | 1:5:A:LEU:HB2  | 1:9:A:ALA:H    | 20       | 0.69          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 11       | 0.69          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 16       | 0.69          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 16       | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 1        | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 2        | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 4        | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 5        | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 6        | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 11       | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 12       | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 13       | 0.68          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 15       | 0.68          |

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| Key     | Atom-1        | Atom-2         | Model ID | Violation (Å) |
|---------|---------------|----------------|----------|---------------|
| (1,216) | 1:15:A:LYS:HA | 1:15:A:LYS:HB3 | 17       | 0.68          |
| (1,216) | 1:15:A:LYS:HA | 1:15:A:LYS:HB3 | 18       | 0.68          |
| (1,216) | 1:15:A:LYS:HA | 1:15:A:LYS:HB3 | 19       | 0.68          |
| (1,216) | 1:15:A:LYS:HA | 1:15:A:LYS:HB3 | 20       | 0.68          |
| (1,178) | 1:5:A:LEU:HB2 | 1:9:A:ALA:H    | 19       | 0.68          |
| (1,84)  | 1:23:A:LYS:HA | 1:24:A:ABA:H   | 10       | 0.68          |
| (1,222) | 1:4:A:ILE:HB  | 1:6:A:ALA:H    | 11       | 0.67          |
| (1,221) | 1:5:A:LEU:HA  | 1:5:A:LEU:HB2  | 20       | 0.67          |
| (1,84)  | 1:23:A:LYS:HA | 1:24:A:ABA:H   | 20       | 0.67          |
| (1,68)  | 1:23:A:LYS:H  | 1:23:A:LYS:HD2 | 9        | 0.67          |
| (1,68)  | 1:23:A:LYS:H  | 1:23:A:LYS:HD3 | 9        | 0.67          |
| (1,68)  | 1:23:A:LYS:H  | 1:23:A:LYS:HD2 | 12       | 0.67          |
| (1,68)  | 1:23:A:LYS:H  | 1:23:A:LYS:HD3 | 12       | 0.67          |
| (1,25)  | 1:5:A:LEU:HA  | 1:8:A:LEU:H    | 14       | 0.67          |
| (1,221) | 1:5:A:LEU:HA  | 1:5:A:LEU:HB2  | 19       | 0.66          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 16       | 0.66          |
| (1,25)  | 1:5:A:LEU:HA  | 1:8:A:LEU:H    | 6        | 0.66          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 3        | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 5        | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 6        | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 9        | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 11       | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 12       | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 14       | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 15       | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 17       | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 18       | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 19       | 0.65          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 20       | 0.65          |
| (1,84)  | 1:23:A:LYS:HA | 1:24:A:ABA:H   | 2        | 0.65          |
| (1,25)  | 1:5:A:LEU:HA  | 1:8:A:LEU:H    | 4        | 0.65          |
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD21 | 18       | 0.64          |
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD22 | 18       | 0.64          |
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD23 | 18       | 0.64          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 1        | 0.64          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 2        | 0.64          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 7        | 0.64          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 8        | 0.64          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 10       | 0.64          |
| (1,123) | 1:4:A:ILE:HA  | 1:4:A:ILE:HB   | 13       | 0.64          |
| (1,84)  | 1:23:A:LYS:HA | 1:24:A:ABA:H   | 19       | 0.64          |
| (1,233) | 1:2:A:LEU:HB2 | 1:3:A:PRO:HD2  | 17       | 0.63          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,233) | 1:2:A:LEU:HB3  | 1:3:A:PRO:HD2  | 17       | 0.63          |
| (1,222) | 1:4:A:ILE:HB   | 1:6:A:ALA:H    | 8        | 0.63          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 16       | 0.63          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 16       | 0.63          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 16       | 0.63          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 17       | 0.63          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 17       | 0.63          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 17       | 0.63          |
| (1,123) | 1:4:A:ILE:HA   | 1:4:A:ILE:HB   | 4        | 0.63          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 10       | 0.63          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 16       | 0.63          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 2        | 0.62          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 2        | 0.62          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 2        | 0.62          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 8        | 0.62          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 8        | 0.62          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 8        | 0.62          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 13       | 0.62          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 13       | 0.62          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 13       | 0.62          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 14       | 0.62          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 3        | 0.61          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 4        | 0.61          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 4        | 0.61          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 4        | 0.61          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 6        | 0.61          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 6        | 0.61          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 6        | 0.61          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 18       | 0.61          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 7        | 0.61          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 5        | 0.6           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 5        | 0.6           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 5        | 0.6           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 7        | 0.6           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 7        | 0.6           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 7        | 0.6           |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB2 | 4        | 0.6           |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB3 | 4        | 0.6           |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 10       | 0.6           |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 10       | 0.6           |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 10       | 0.6           |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 15       | 0.6           |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 20       | 0.6           |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 12       | 0.59          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 12       | 0.59          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 12       | 0.59          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 14       | 0.59          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 14       | 0.59          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 14       | 0.59          |
| (1,233) | 1:2:A:LEU:HB2  | 1:3:A:PRO:HD2  | 16       | 0.58          |
| (1,233) | 1:2:A:LEU:HB3  | 1:3:A:PRO:HD2  | 16       | 0.58          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 15       | 0.58          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 15       | 0.58          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 15       | 0.58          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 16       | 0.58          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 16       | 0.58          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 16       | 0.58          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 2        | 0.58          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 3        | 0.58          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 5        | 0.57          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 18       | 0.57          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 8        | 0.57          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 5        | 0.57          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 17       | 0.57          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD2 | 13       | 0.57          |
| (1,68)  | 1:23:A:LYS:H   | 1:23:A:LYS:HD3 | 13       | 0.57          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 1        | 0.57          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 7        | 0.57          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 9        | 0.57          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 10       | 0.57          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 11       | 0.57          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 14       | 0.57          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 19       | 0.57          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 20       | 0.57          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 4        | 0.56          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB2 | 5        | 0.56          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB3 | 5        | 0.56          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 11       | 0.56          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 11       | 0.56          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 11       | 0.56          |
| (1,77)  | 1:8:A:LEU:HG   | 1:9:A:ALA:H    | 13       | 0.56          |
| (1,65)  | 1:15:A:LYS:H   | 1:15:A:LYS:HG2 | 13       | 0.56          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 20       | 0.56          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 6        | 0.56          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 16       | 0.56          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 17       | 0.56          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 15       | 0.55          |
| (1,233) | 1:2:A:LEU:HB2  | 1:3:A:PRO:HD2  | 15       | 0.55          |
| (1,233) | 1:2:A:LEU:HB3  | 1:3:A:PRO:HD2  | 15       | 0.55          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 18       | 0.55          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 18       | 0.55          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 3        | 0.55          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 3        | 0.55          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 3        | 0.55          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 3        | 0.55          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 3        | 0.55          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 3        | 0.55          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 17       | 0.55          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 18       | 0.55          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 4        | 0.55          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 12       | 0.55          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 13       | 0.55          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 1        | 0.54          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 12       | 0.54          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 9        | 0.54          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 9        | 0.54          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 9        | 0.54          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB1  | 5        | 0.54          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB2  | 5        | 0.54          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB3  | 5        | 0.54          |
| (1,65)  | 1:15:A:LYS:H   | 1:15:A:LYS:HG2 | 17       | 0.54          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 5        | 0.54          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 8        | 0.54          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 15       | 0.54          |
| (1,27)  | 1:23:A:LYS:H   | 1:23:A:LYS:HA  | 18       | 0.54          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD21 | 20       | 0.53          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD22 | 20       | 0.53          |
| (1,203) | 1:5:A:LEU:HA   | 1:8:A:LEU:HD23 | 20       | 0.53          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 4        | 0.53          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 11       | 0.53          |
| (1,84)  | 1:23:A:LYS:HA  | 1:24:A:ABA:H   | 4        | 0.53          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 18       | 0.52          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 2        | 0.52          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 14       | 0.52          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 14       | 0.52          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 14       | 0.52          |

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| Key     | Atom-1        | Atom-2         | Model ID | Violation (Å) |
|---------|---------------|----------------|----------|---------------|
| (1,180) | 1:5:A:LEU:HA  | 1:9:A:ALA:H    | 18       | 0.52          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 9        | 0.52          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 14       | 0.52          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 19       | 0.52          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 20       | 0.51          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 12       | 0.51          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 18       | 0.51          |
| (1,25)  | 1:5:A:LEU:HA  | 1:8:A:LEU:H    | 8        | 0.51          |
| (1,217) | 1:16:A:LEU:HA | 1:19:A:LEU:HB2 | 19       | 0.5           |
| (1,156) | 1:21:A:THR:HB | 1:24:A:ABA:H   | 6        | 0.5           |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 7        | 0.5           |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 8        | 0.5           |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 9        | 0.5           |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 15       | 0.5           |
| (1,251) | 1:5:A:LEU:HB2 | 1:8:A:LEU:HB3  | 3        | 0.49          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB2 | 16       | 0.49          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB3 | 16       | 0.49          |
| (1,195) | 1:23:A:LYS:H  | 1:23:A:LYS:HB2 | 19       | 0.49          |
| (1,195) | 1:23:A:LYS:H  | 1:23:A:LYS:HB3 | 19       | 0.49          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 12       | 0.49          |
| (1,156) | 1:21:A:THR:HB | 1:24:A:ABA:H   | 8        | 0.49          |
| (1,109) | 1:10:A:ALA:H  | 1:10:A:ALA:HA  | 4        | 0.49          |
| (1,96)  | 1:4:A:ILE:H   | 1:7:A:SER:H    | 5        | 0.49          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 10       | 0.49          |
| (1,25)  | 1:5:A:LEU:HA  | 1:8:A:LEU:H    | 13       | 0.49          |
| (1,249) | 1:7:A:SER:HB2 | 1:11:A:LYS:HB2 | 18       | 0.48          |
| (1,249) | 1:7:A:SER:HB3 | 1:11:A:LYS:HB2 | 18       | 0.48          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB2 | 12       | 0.48          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB3 | 12       | 0.48          |
| (1,217) | 1:16:A:LEU:HA | 1:19:A:LEU:HB2 | 1        | 0.48          |
| (1,217) | 1:16:A:LEU:HA | 1:19:A:LEU:HB2 | 6        | 0.48          |
| (1,217) | 1:16:A:LEU:HA | 1:19:A:LEU:HB2 | 17       | 0.48          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 3        | 0.48          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 5        | 0.48          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 13       | 0.48          |
| (1,109) | 1:10:A:ALA:H  | 1:10:A:ALA:HA  | 7        | 0.48          |
| (1,109) | 1:10:A:ALA:H  | 1:10:A:ALA:HA  | 18       | 0.48          |
| (1,109) | 1:10:A:ALA:H  | 1:10:A:ALA:HA  | 20       | 0.48          |
| (1,84)  | 1:23:A:LYS:HA | 1:24:A:ABA:H   | 5        | 0.48          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 3        | 0.48          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 11       | 0.48          |
| (1,251) | 1:5:A:LEU:HB2 | 1:8:A:LEU:HB3  | 12       | 0.47          |

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| Key     | Atom-1        | Atom-2         | Model ID | Violation (Å) |
|---------|---------------|----------------|----------|---------------|
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD21 | 19       | 0.47          |
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD22 | 19       | 0.47          |
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD23 | 19       | 0.47          |
| (1,195) | 1:23:A:LYS:H  | 1:23:A:LYS:HB2 | 20       | 0.47          |
| (1,195) | 1:23:A:LYS:H  | 1:23:A:LYS:HB3 | 20       | 0.47          |
| (1,109) | 1:10:A:ALA:H  | 1:10:A:ALA:HA  | 9        | 0.47          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 2        | 0.47          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 4        | 0.47          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 5        | 0.47          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 6        | 0.47          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 20       | 0.47          |
| (1,26)  | 1:8:A:LEU:H   | 1:8:A:LEU:HA   | 11       | 0.47          |
| (1,25)  | 1:5:A:LEU:HA  | 1:8:A:LEU:H    | 3        | 0.47          |
| (1,25)  | 1:5:A:LEU:HA  | 1:8:A:LEU:H    | 11       | 0.47          |
| (1,180) | 1:5:A:LEU:HA  | 1:9:A:ALA:H    | 10       | 0.46          |
| (1,142) | 1:10:A:ALA:H  | 1:12:A:PHE:H   | 9        | 0.46          |
| (1,65)  | 1:15:A:LYS:H  | 1:15:A:LYS:HG2 | 1        | 0.46          |
| (1,19)  | 1:6:A:ALA:H   | 1:6:A:ALA:HA   | 8        | 0.46          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB2 | 8        | 0.45          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB3 | 8        | 0.45          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB2 | 13       | 0.45          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB3 | 13       | 0.45          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB2 | 15       | 0.45          |
| (1,218) | 1:21:A:THR:HA | 1:23:A:LYS:HB3 | 15       | 0.45          |
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD21 | 13       | 0.45          |
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD22 | 13       | 0.45          |
| (1,203) | 1:5:A:LEU:HA  | 1:8:A:LEU:HD23 | 13       | 0.45          |
| (1,180) | 1:5:A:LEU:HA  | 1:9:A:ALA:H    | 2        | 0.45          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 14       | 0.45          |
| (1,142) | 1:10:A:ALA:H  | 1:12:A:PHE:H   | 19       | 0.45          |
| (1,96)  | 1:4:A:ILE:H   | 1:7:A:SER:H    | 8        | 0.45          |
| (1,26)  | 1:8:A:LEU:H   | 1:8:A:LEU:HA   | 10       | 0.45          |
| (1,26)  | 1:8:A:LEU:H   | 1:8:A:LEU:HA   | 19       | 0.45          |
| (1,233) | 1:2:A:LEU:HB2 | 1:3:A:PRO:HD2  | 13       | 0.44          |
| (1,233) | 1:2:A:LEU:HB3 | 1:3:A:PRO:HD2  | 13       | 0.44          |
| (1,217) | 1:16:A:LEU:HA | 1:19:A:LEU:HB2 | 7        | 0.44          |
| (1,217) | 1:16:A:LEU:HA | 1:19:A:LEU:HB2 | 8        | 0.44          |
| (1,180) | 1:5:A:LEU:HA  | 1:9:A:ALA:H    | 20       | 0.44          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 1        | 0.44          |
| (1,157) | 1:16:A:LEU:HA | 1:20:A:VAL:H   | 10       | 0.44          |
| (1,142) | 1:10:A:ALA:H  | 1:12:A:PHE:H   | 1        | 0.44          |
| (1,142) | 1:10:A:ALA:H  | 1:12:A:PHE:H   | 7        | 0.44          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 2        | 0.44          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 17       | 0.44          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 9        | 0.43          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 18       | 0.43          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 8        | 0.43          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 1        | 0.43          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 13       | 0.43          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 15       | 0.43          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 3        | 0.43          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 12       | 0.43          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 16       | 0.43          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 19       | 0.43          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 9        | 0.42          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 9        | 0.42          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 11       | 0.42          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 11       | 0.42          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 7        | 0.42          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 15       | 0.42          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 19       | 0.42          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 4        | 0.42          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 15       | 0.42          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 4        | 0.42          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 5        | 0.42          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 12       | 0.42          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 20       | 0.42          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 12       | 0.42          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 15       | 0.42          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 16       | 0.42          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 3        | 0.42          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 6        | 0.42          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 7        | 0.42          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 12       | 0.42          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 14       | 0.42          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 16       | 0.42          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 20       | 0.42          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 1        | 0.42          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 4        | 0.42          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 7        | 0.42          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 11       | 0.42          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 14       | 0.42          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 17       | 0.42          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 4        | 0.41          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 6        | 0.41          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 9        | 0.41          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 13       | 0.41          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 11       | 0.41          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 17       | 0.41          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 1        | 0.41          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 9        | 0.41          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 1        | 0.41          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 2        | 0.41          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 3        | 0.41          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 14       | 0.41          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 16       | 0.41          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 4        | 0.41          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 5        | 0.41          |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 9        | 0.41          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 1        | 0.41          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 5        | 0.41          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 6        | 0.41          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 9        | 0.41          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 10       | 0.41          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 13       | 0.41          |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 20       | 0.41          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 14       | 0.4           |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 2        | 0.4           |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 10       | 0.4           |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 16       | 0.4           |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 2        | 0.4           |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 7        | 0.4           |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 15       | 0.4           |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 11       | 0.4           |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 13       | 0.4           |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 17       | 0.4           |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 19       | 0.4           |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 1        | 0.4           |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 8        | 0.4           |
| (1,26)  | 1:8:A:LEU:H    | 1:8:A:LEU:HA   | 18       | 0.4           |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 2        | 0.4           |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 15       | 0.4           |
| (1,19)  | 1:6:A:ALA:H    | 1:6:A:ALA:HA   | 18       | 0.4           |
| (1,233) | 1:2:A:LEU:HB2  | 1:3:A:PRO:HD2  | 1        | 0.39          |
| (1,233) | 1:2:A:LEU:HB3  | 1:3:A:PRO:HD2  | 1        | 0.39          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 9        | 0.39          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 17       | 0.39          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 7        | 0.39          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 8        | 0.39          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 6        | 0.39          |
| (1,109) | 1:10:A:ALA:H   | 1:10:A:ALA:HA  | 10       | 0.39          |
| (1,233) | 1:2:A:LEU:HB2  | 1:3:A:PRO:HD2  | 11       | 0.38          |
| (1,233) | 1:2:A:LEU:HB3  | 1:3:A:PRO:HD2  | 11       | 0.38          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB2 | 2        | 0.38          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB3 | 2        | 0.38          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 1        | 0.38          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 11       | 0.38          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 16       | 0.38          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 16       | 0.38          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 6        | 0.38          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 11       | 0.38          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 17       | 0.38          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 19       | 0.38          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 12       | 0.38          |
| (1,247) | 1:23:A:LYS:HG2 | 1:23:A:LYS:HE3 | 4        | 0.37          |
| (1,247) | 1:23:A:LYS:HG3 | 1:23:A:LYS:HE3 | 4        | 0.37          |
| (1,233) | 1:2:A:LEU:HB2  | 1:3:A:PRO:HD2  | 12       | 0.37          |
| (1,233) | 1:2:A:LEU:HB3  | 1:3:A:PRO:HD2  | 12       | 0.37          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 11       | 0.37          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 3        | 0.37          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 13       | 0.37          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 3        | 0.37          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 3        | 0.37          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 8        | 0.37          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 13       | 0.37          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 14       | 0.37          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 16       | 0.37          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 19       | 0.37          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 10       | 0.36          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 15       | 0.36          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 2        | 0.36          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 14       | 0.36          |
| (1,25)  | 1:5:A:LEU:HA   | 1:8:A:LEU:H    | 5        | 0.36          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 10       | 0.36          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 17       | 0.36          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 20       | 0.36          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 13       | 0.35          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 16       | 0.35          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 16       | 0.35          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 20       | 0.35          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 5        | 0.35          |
| (1,154) | 1:15:A:LYS:HA  | 1:18:A:ABA:HB3 | 15       | 0.35          |
| (1,154) | 1:15:A:LYS:HA  | 1:18:A:ABA:HB3 | 15       | 0.35          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 6        | 0.35          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 10       | 0.35          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 14       | 0.35          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 1        | 0.35          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 2        | 0.35          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 4        | 0.35          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 6        | 0.35          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 7        | 0.35          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 9        | 0.35          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 11       | 0.35          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 7        | 0.34          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 19       | 0.34          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 14       | 0.34          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 8        | 0.34          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 15       | 0.34          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 5        | 0.34          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 12       | 0.34          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 15       | 0.34          |
| (1,17)  | 1:17:A:PHE:H   | 1:17:A:PHE:HA  | 18       | 0.34          |
| (1,251) | 1:5:A:LEU:HB2  | 1:8:A:LEU:HB3  | 5        | 0.33          |
| (1,247) | 1:23:A:LYS:HG2 | 1:23:A:LYS:HE3 | 20       | 0.33          |
| (1,247) | 1:23:A:LYS:HG3 | 1:23:A:LYS:HE3 | 20       | 0.33          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 8        | 0.33          |
| (1,233) | 1:2:A:LEU:HB2  | 1:3:A:PRO:HD2  | 5        | 0.33          |
| (1,233) | 1:2:A:LEU:HB3  | 1:3:A:PRO:HD2  | 5        | 0.33          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB2 | 17       | 0.33          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB3 | 17       | 0.33          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 16       | 0.33          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 3        | 0.32          |
| (1,180) | 1:5:A:LEU:HA   | 1:9:A:ALA:H    | 12       | 0.32          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 19       | 0.32          |
| (1,116) | 1:14:A:PRO:HD3 | 1:14:A:PRO:HB3 | 13       | 0.31          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 8        | 0.31          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 13       | 0.3           |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 13       | 0.3           |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 3        | 0.3           |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB2 | 1        | 0.3           |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB3 | 1        | 0.3           |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 6        | 0.3           |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 3        | 0.3           |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 20       | 0.3           |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB2 | 3        | 0.29          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB3 | 3        | 0.29          |
| (1,142) | 1:10:A:ALA:H   | 1:12:A:PHE:H   | 12       | 0.29          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 10       | 0.29          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 5        | 0.29          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 12       | 0.29          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 5        | 0.29          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB2 | 10       | 0.28          |
| (1,195) | 1:23:A:LYS:H   | 1:23:A:LYS:HB3 | 10       | 0.28          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 1        | 0.28          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 4        | 0.28          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 6        | 0.28          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 7        | 0.28          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 10       | 0.28          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 14       | 0.28          |
| (1,58)  | 1:10:A:ALA:HB1 | 1:11:A:LYS:H   | 20       | 0.28          |
| (1,58)  | 1:10:A:ALA:HB2 | 1:11:A:LYS:H   | 20       | 0.28          |
| (1,58)  | 1:10:A:ALA:HB3 | 1:11:A:LYS:H   | 20       | 0.28          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 9        | 0.27          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 16       | 0.27          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 17       | 0.27          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 18       | 0.27          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 13       | 0.27          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 11       | 0.27          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 14       | 0.26          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 20       | 0.26          |
| (1,220) | 1:23:A:LYS:HA  | 1:23:A:LYS:HD2 | 4        | 0.26          |
| (1,220) | 1:23:A:LYS:HA  | 1:23:A:LYS:HD3 | 4        | 0.26          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 14       | 0.26          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 14       | 0.26          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 12       | 0.26          |
| (1,29)  | 1:7:A:SER:H    | 1:7:A:SER:HB2  | 18       | 0.26          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 14       | 0.25          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 14       | 0.25          |
| (1,156) | 1:21:A:THR:HB  | 1:24:A:ABA:H   | 18       | 0.25          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 11       | 0.25          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 15       | 0.25          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 15       | 0.25          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 5        | 0.25          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 9        | 0.25          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 12       | 0.25          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 1        | 0.24          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 6        | 0.24          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 14       | 0.24          |
| (1,247) | 1:23:A:LYS:HG2 | 1:23:A:LYS:HE3 | 11       | 0.23          |
| (1,247) | 1:23:A:LYS:HG3 | 1:23:A:LYS:HE3 | 11       | 0.23          |
| (1,247) | 1:23:A:LYS:HG2 | 1:23:A:LYS:HE3 | 15       | 0.23          |
| (1,247) | 1:23:A:LYS:HG3 | 1:23:A:LYS:HE3 | 15       | 0.23          |
| (1,247) | 1:23:A:LYS:HG2 | 1:23:A:LYS:HE3 | 18       | 0.23          |
| (1,247) | 1:23:A:LYS:HG3 | 1:23:A:LYS:HE3 | 18       | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 1        | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 1        | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 1        | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 2        | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 2        | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 2        | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 5        | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 5        | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 5        | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 6        | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 6        | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 6        | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 7        | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 7        | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 7        | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 9        | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 9        | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 9        | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 10       | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 10       | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 10       | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 13       | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 13       | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 13       | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 14       | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 14       | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 14       | 0.23          |
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 16       | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 16       | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 16       | 0.23          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,246) | 1:4:A:ILE:HG21 | 1:4:A:ILE:HG13 | 20       | 0.23          |
| (1,246) | 1:4:A:ILE:HG22 | 1:4:A:ILE:HG13 | 20       | 0.23          |
| (1,246) | 1:4:A:ILE:HG23 | 1:4:A:ILE:HG13 | 20       | 0.23          |
| (1,96)  | 1:4:A:ILE:H    | 1:7:A:SER:H    | 17       | 0.23          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 2        | 0.23          |
| (1,63)  | 1:16:A:LEU:H   | 1:16:A:LEU:HG  | 13       | 0.23          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 8        | 0.23          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 4        | 0.23          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 13       | 0.23          |
| (1,249) | 1:7:A:SER:HB2  | 1:11:A:LYS:HB2 | 3        | 0.22          |
| (1,249) | 1:7:A:SER:HB3  | 1:11:A:LYS:HB2 | 3        | 0.22          |
| (1,247) | 1:23:A:LYS:HG2 | 1:23:A:LYS:HE3 | 12       | 0.22          |
| (1,247) | 1:23:A:LYS:HG3 | 1:23:A:LYS:HE3 | 12       | 0.22          |
| (1,247) | 1:23:A:LYS:HG2 | 1:23:A:LYS:HE3 | 13       | 0.22          |
| (1,247) | 1:23:A:LYS:HG3 | 1:23:A:LYS:HE3 | 13       | 0.22          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 19       | 0.22          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 3        | 0.22          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 2        | 0.22          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 7        | 0.22          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 10       | 0.22          |
| (1,67)  | 1:8:A:LEU:H    | 1:8:A:LEU:HG   | 13       | 0.21          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 3        | 0.21          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 4        | 0.21          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 14       | 0.21          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 7        | 0.2           |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 9        | 0.2           |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 14       | 0.2           |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 13       | 0.19          |
| (1,181) | 1:10:A:ALA:HB1 | 1:13:A:GLY:H   | 5        | 0.19          |
| (1,181) | 1:10:A:ALA:HB2 | 1:13:A:GLY:H   | 5        | 0.19          |
| (1,181) | 1:10:A:ALA:HB3 | 1:13:A:GLY:H   | 5        | 0.19          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB2 | 7        | 0.18          |
| (1,218) | 1:21:A:THR:HA  | 1:23:A:LYS:HB3 | 7        | 0.18          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 13       | 0.18          |
| (1,157) | 1:16:A:LEU:HA  | 1:20:A:VAL:H   | 8        | 0.18          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 6        | 0.18          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 12       | 0.18          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 3        | 0.18          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 8        | 0.18          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 11       | 0.17          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 11       | 0.17          |
| (1,217) | 1:16:A:LEU:HA  | 1:19:A:LEU:HB2 | 16       | 0.17          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 1        | 0.17          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 16       | 0.17          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 16       | 0.17          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 2        | 0.16          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 2        | 0.16          |
| (1,234) | 1:2:A:LEU:HG   | 1:3:A:PRO:HD3  | 6        | 0.16          |
| (1,166) | 1:11:A:LYS:H   | 1:11:A:LYS:HG2 | 20       | 0.16          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 4        | 0.16          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 9        | 0.16          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 18       | 0.16          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 17       | 0.16          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 9        | 0.15          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 9        | 0.15          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 20       | 0.15          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 20       | 0.15          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 15       | 0.15          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 7        | 0.15          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 20       | 0.15          |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 15       | 0.15          |
| (1,242) | 1:15:A:LYS:HG2 | 1:15:A:LYS:HE2 | 14       | 0.14          |
| (1,242) | 1:15:A:LYS:HG2 | 1:15:A:LYS:HE3 | 14       | 0.14          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 3        | 0.14          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 3        | 0.14          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB1  | 13       | 0.14          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB2  | 13       | 0.14          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB3  | 13       | 0.14          |
| (1,63)  | 1:16:A:LEU:H   | 1:16:A:LEU:HG  | 15       | 0.14          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 6        | 0.14          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 10       | 0.14          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 4        | 0.13          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 4        | 0.13          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 5        | 0.13          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 5        | 0.13          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 1        | 0.13          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 3        | 0.13          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 7        | 0.13          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 10       | 0.13          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 12       | 0.13          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 14       | 0.13          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 20       | 0.13          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 13       | 0.13          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 2        | 0.12          |

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| Key     | Atom-1         | Atom-2         | Model ID | Violation (Å) |
|---------|----------------|----------------|----------|---------------|
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 4        | 0.12          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 5        | 0.12          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 6        | 0.12          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 8        | 0.12          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 9        | 0.12          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 16       | 0.12          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 17       | 0.12          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 18       | 0.12          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 19       | 0.12          |
| (1,216) | 1:15:A:LYS:HA  | 1:15:A:LYS:HB3 | 16       | 0.12          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB1  | 3        | 0.12          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB2  | 3        | 0.12          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB3  | 3        | 0.12          |
| (1,58)  | 1:10:A:ALA:HB1 | 1:11:A:LYS:H   | 18       | 0.12          |
| (1,58)  | 1:10:A:ALA:HB2 | 1:11:A:LYS:H   | 18       | 0.12          |
| (1,58)  | 1:10:A:ALA:HB3 | 1:11:A:LYS:H   | 18       | 0.12          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 16       | 0.12          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 10       | 0.12          |
| (1,240) | 1:17:A:PHE:HB2 | 1:18:A:ABA:HB3 | 7        | 0.11          |
| (1,240) | 1:17:A:PHE:HB3 | 1:18:A:ABA:HB3 | 7        | 0.11          |
| (1,236) | 1:16:A:LEU:HA  | 1:16:A:LEU:HB3 | 11       | 0.11          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB1  | 8        | 0.11          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB2  | 8        | 0.11          |
| (1,113) | 1:6:A:ALA:HA   | 1:9:A:ALA:HB3  | 8        | 0.11          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 2        | 0.11          |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 19       | 0.11          |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 2        | 0.1           |
| (1,57)  | 1:11:A:LYS:H   | 1:11:A:LYS:HB2 | 19       | 0.1           |
| (1,47)  | 1:6:A:ALA:HA   | 1:9:A:ALA:H    | 17       | 0.1           |
| (1,8)   | 1:5:A:LEU:H    | 1:5:A:LEU:HB2  | 18       | 0.1           |

## 10 Dihedral-angle violation analysis

No dihedral-angle restraints found