



Full wwPDB NMR Structure Validation Report ⓘ

Oct 16, 2021 – 08:03 PM EDT

PDB ID : 1RK7
Title : Solution structure of apo Cu,Zn Superoxide Dismutase: role of metal ions in protein folding
Authors : Banci, L.; Bertini, I.; Cramaro, F.; Del Conte, R.; Viezzoli, M.S.
Deposited on : 2003-11-21

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI : v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV : Wang et al. (2010)
ShiftChecker : 2.23.2
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.23.2

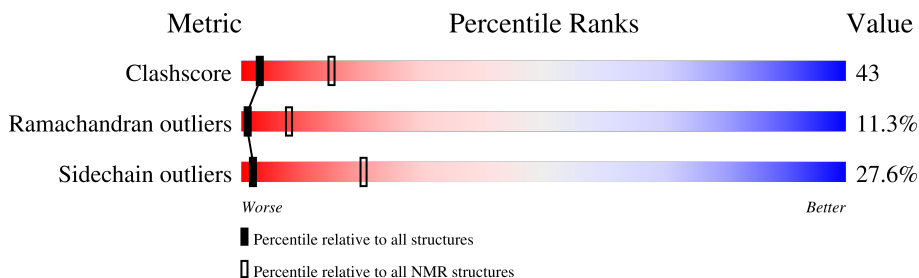
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

SOLUTION NMR

The overall completeness of chemical shifts assignment was not calculated.

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



| Metric | Whole archive (#Entries) | NMR archive (#Entries) |
|-----------------------|--------------------------|------------------------|
| Clashscore | 158937 | 12864 |
| Ramachandran outliers | 154571 | 11451 |
| Sidechain outliers | 154315 | 11428 |

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 ≥ 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 | 153 | |

2 Ensemble composition and analysis i

This entry contains 30 models. Model 25 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:2-A:48, A:82-A:153 (119) | 0.88 | 25 |

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

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

The models can be grouped into 4 clusters and 1 single-model cluster was found.

| Cluster number | Models |
|-----------------------|---|
| 1 | 6, 7, 9, 10, 11, 12, 14, 17, 22, 23, 24, 26, 29 |
| 2 | 3, 4, 5, 8, 19, 25, 30 |
| 3 | 1, 2, 15, 20, 21 |
| 4 | 16, 18, 27, 28 |
| Single-model clusters | 13 |

3 Entry composition

There is only 1 type of molecule in this entry. The entry contains 2188 atoms, of which 1077 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Superoxide dismutase [Cu-Zn].

| Mol | Chain | Residues | Atoms | | | | | | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|-------|
| | | | Total | C | H | N | O | S | |
| 1 | A | 153 | 2188 | 678 | 1077 | 204 | 227 | 2 | 0 |

There are 5 discrepancies between the modelled and reference sequences:

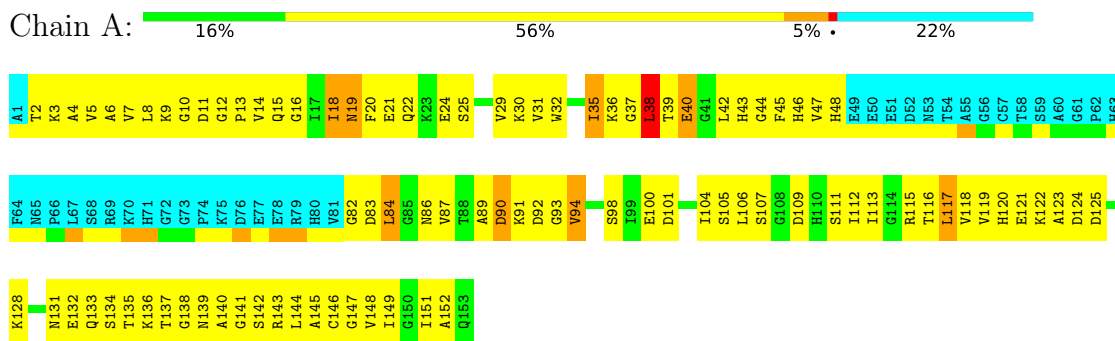
| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------------------|------------|
| A | 6 | ALA | CYS | engineered mutation | UNP P00441 |
| A | 50 | GLU | PHE | engineered mutation | UNP P00441 |
| A | 51 | GLU | GLY | engineered mutation | UNP P00441 |
| A | 111 | SER | CYS | engineered mutation | UNP P00441 |
| A | 133 | GLN | GLU | engineered mutation | UNP P00441 |

4 Residue-property plots [i](#)

4.1 Average score per residue in the NMR ensemble

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

- Molecule 1: Superoxide dismutase [Cu-Zn]

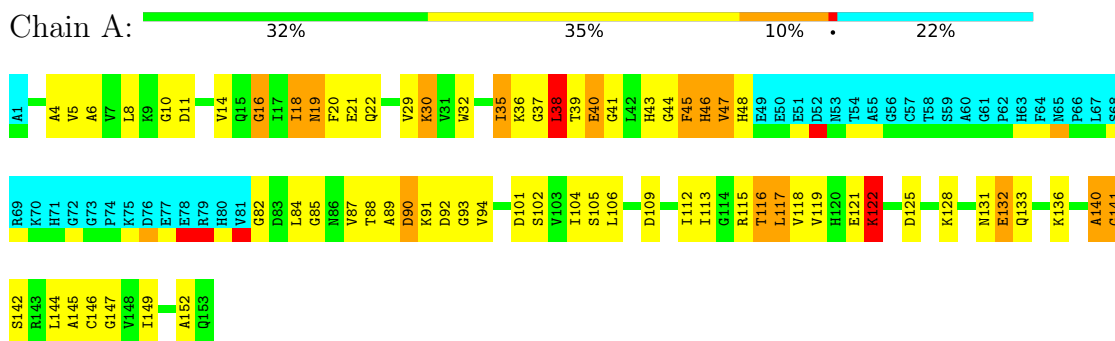


4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

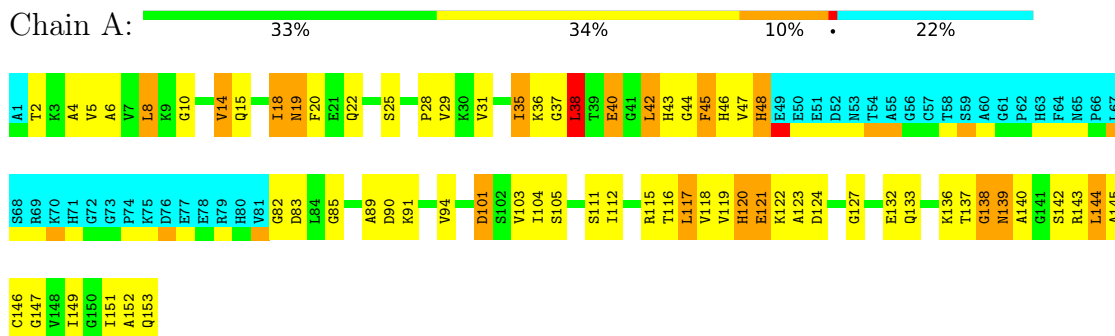
4.2.1 Score per residue for model 1

- Molecule 1: Superoxide dismutase [Cu-Zn]



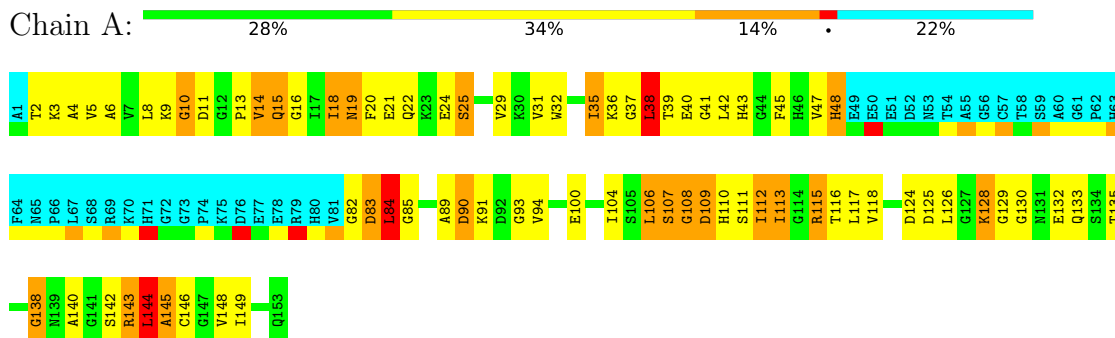
4.2.2 Score per residue for model 2

- Molecule 1: Superoxide dismutase [Cu-Zn]



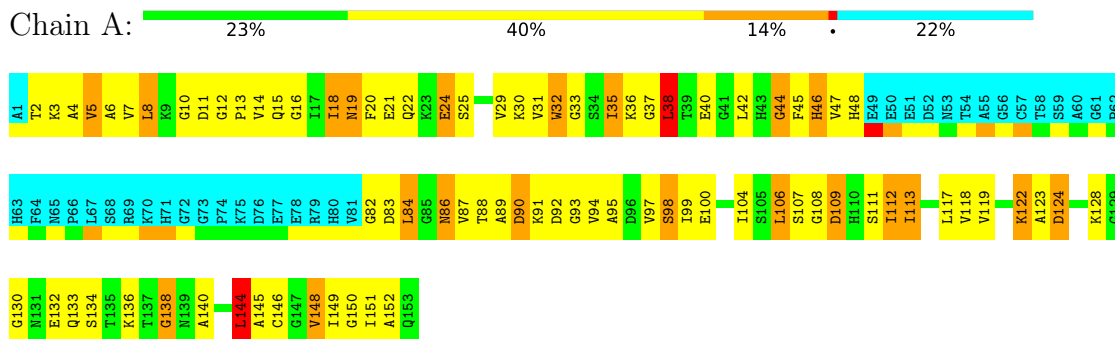
4.2.3 Score per residue for model 3

- Molecule 1: Superoxide dismutase [Cu-Zn]



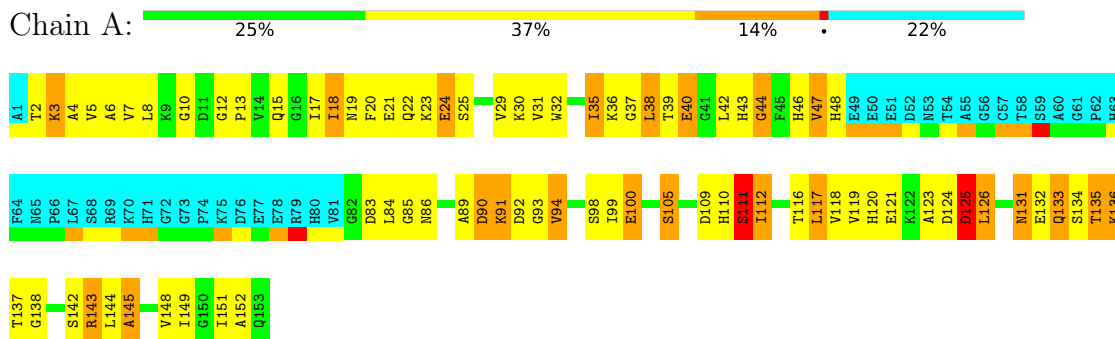
4.2.4 Score per residue for model 4

- Molecule 1: Superoxide dismutase [Cu-Zn]



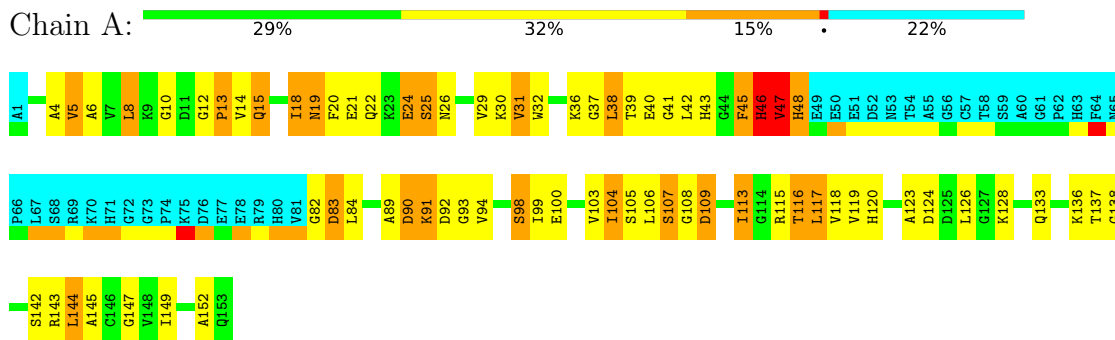
4.2.5 Score per residue for model 5

- Molecule 1: Superoxide dismutase [Cu-Zn]



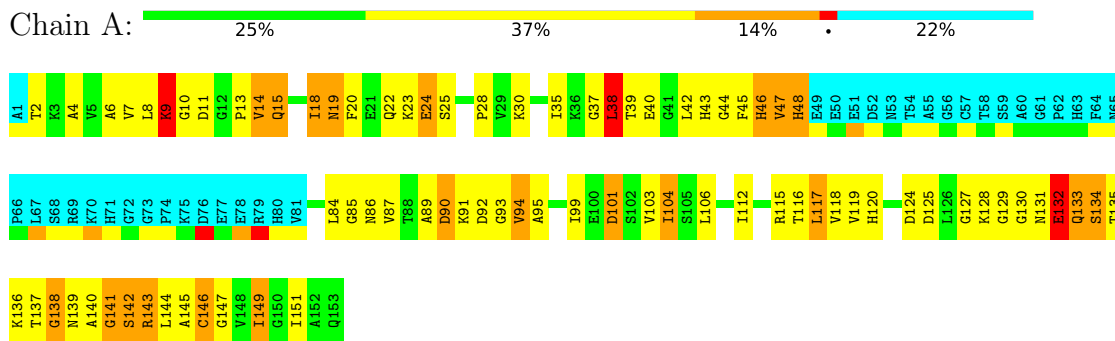
4.2.6 Score per residue for model 6

- Molecule 1: Superoxide dismutase [Cu-Zn]



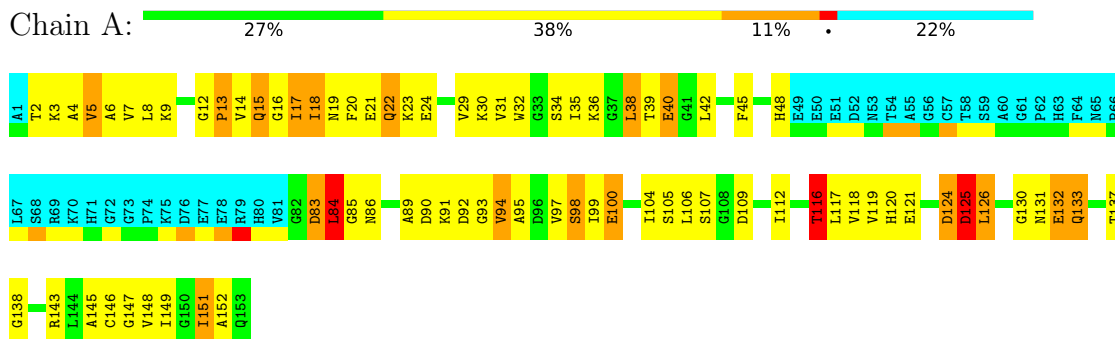
4.2.7 Score per residue for model 7

- Molecule 1: Superoxide dismutase [Cu-Zn]



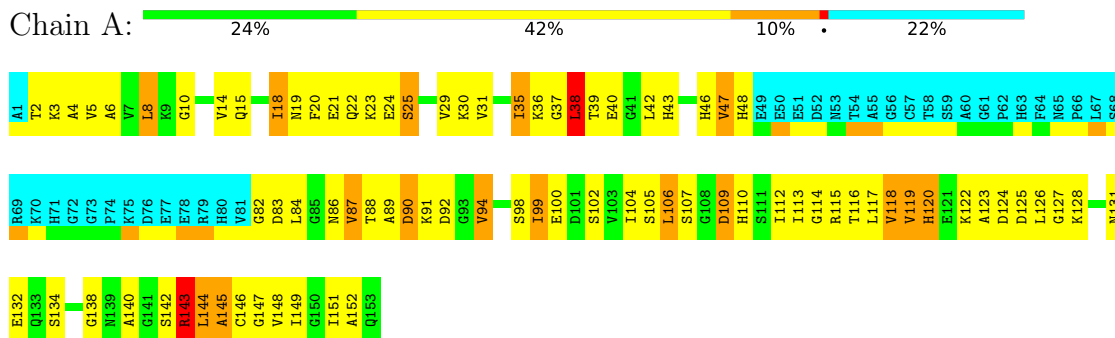
4.2.8 Score per residue for model 8

- Molecule 1: Superoxide dismutase [Cu-Zn]



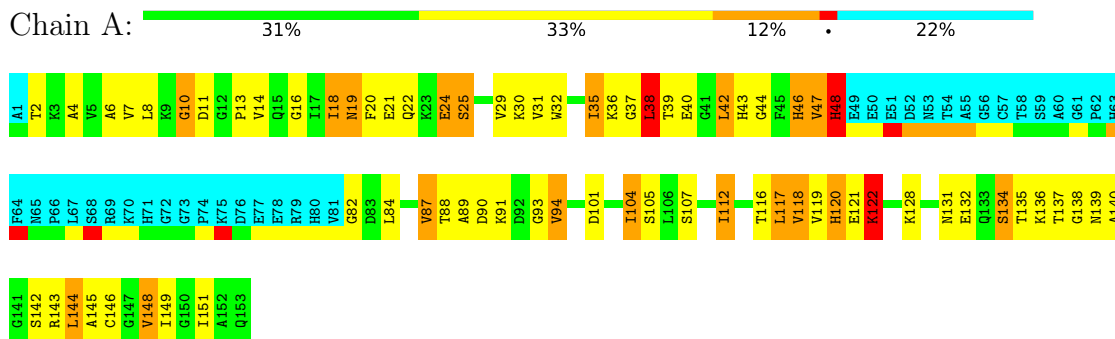
4.2.9 Score per residue for model 9

- Molecule 1: Superoxide dismutase [Cu-Zn]



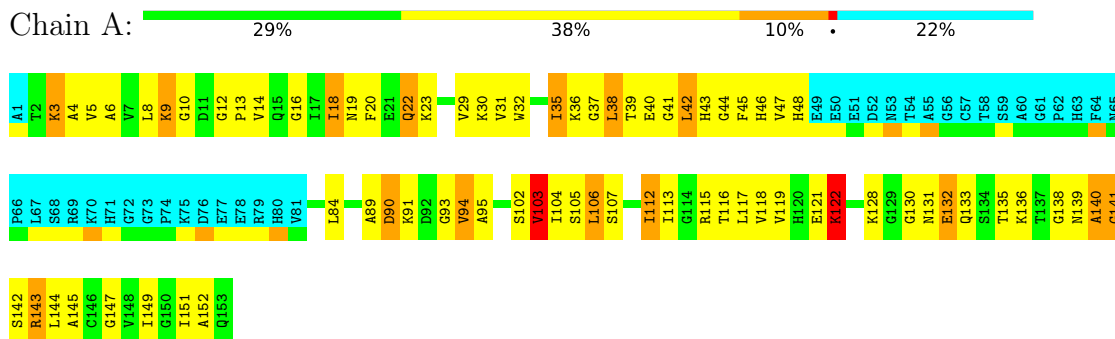
4.2.10 Score per residue for model 10

- Molecule 1: Superoxide dismutase [Cu-Zn]



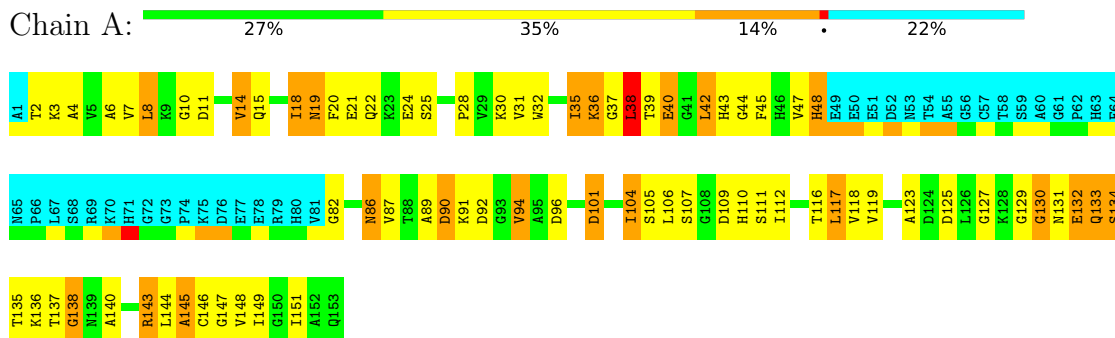
4.2.11 Score per residue for model 11

- Molecule 1: Superoxide dismutase [Cu-Zn]



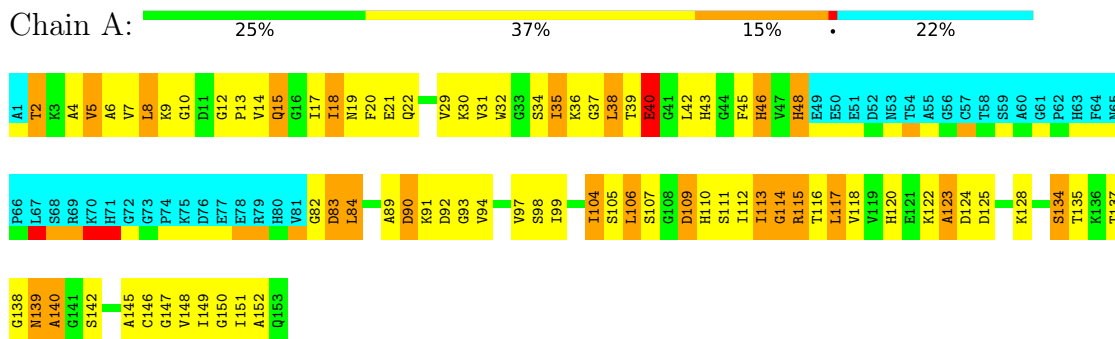
4.2.12 Score per residue for model 12

- Molecule 1: Superoxide dismutase [Cu-Zn]



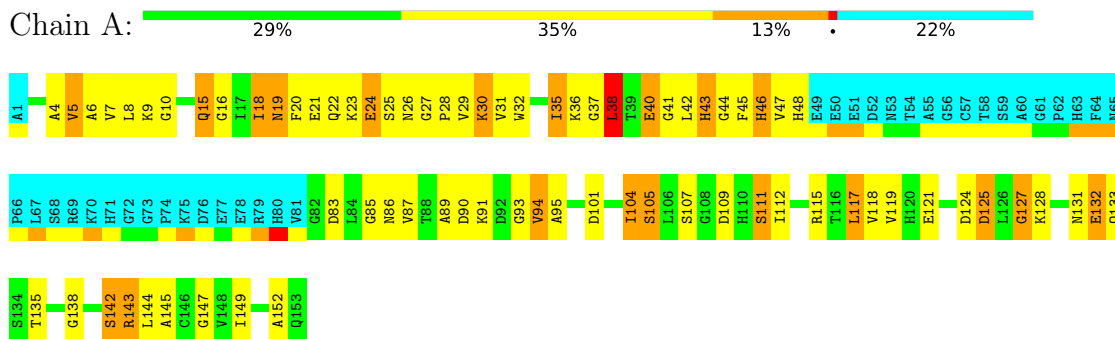
4.2.13 Score per residue for model 13

- Molecule 1: Superoxide dismutase [Cu-Zn]



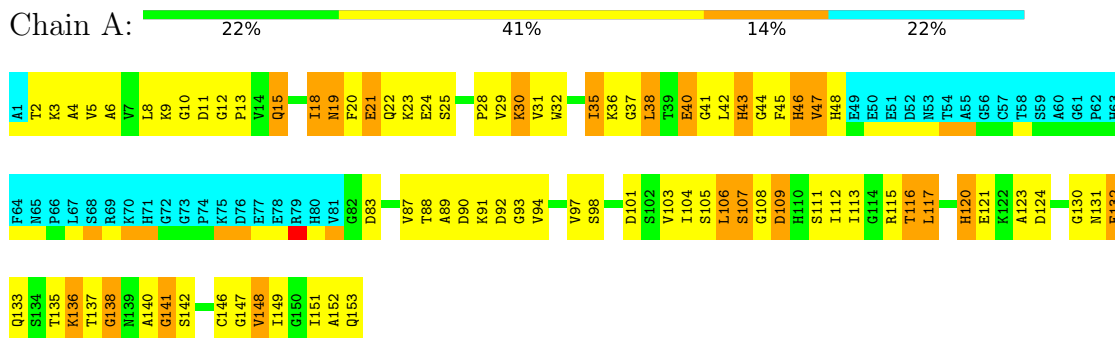
4.2.14 Score per residue for model 14

- Molecule 1: Superoxide dismutase [Cu-Zn]



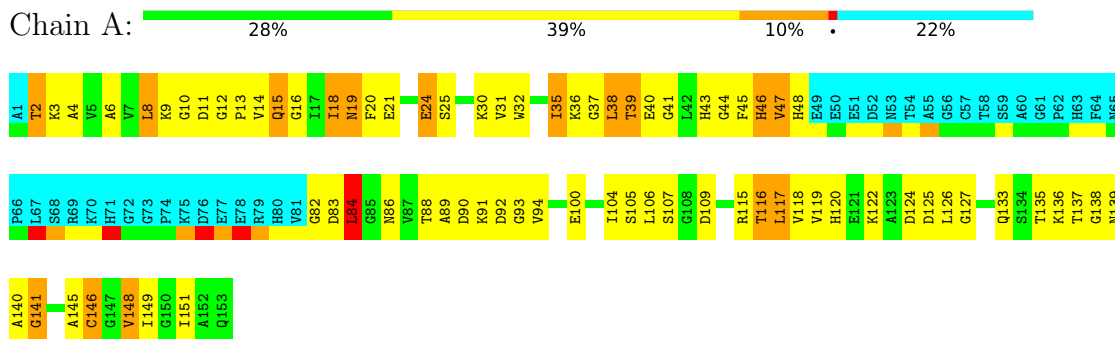
4.2.15 Score per residue for model 15

- Molecule 1: Superoxide dismutase [Cu-Zn]



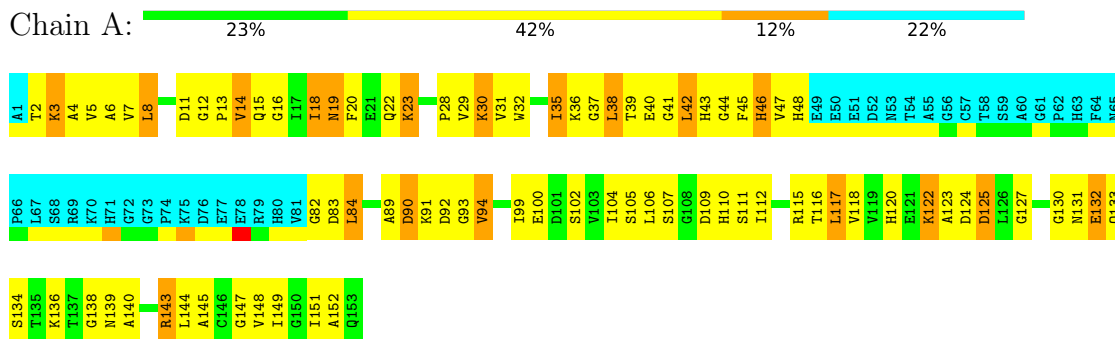
4.2.16 Score per residue for model 16

- Molecule 1: Superoxide dismutase [Cu-Zn]



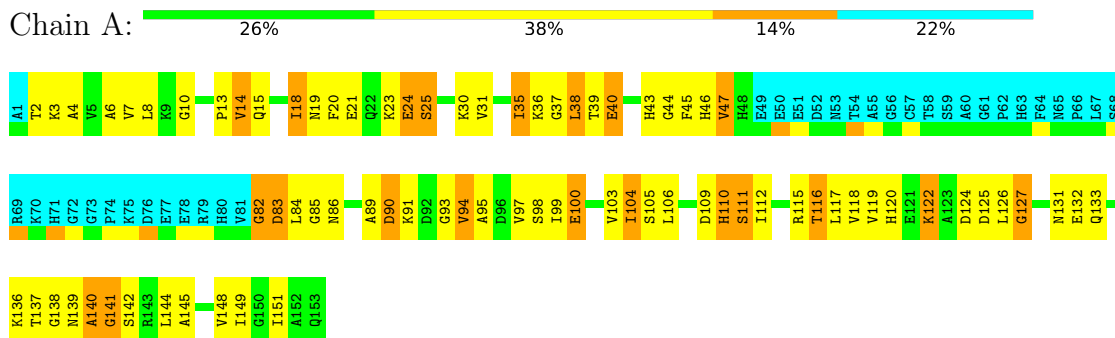
4.2.17 Score per residue for model 17

- Molecule 1: Superoxide dismutase [Cu-Zn]



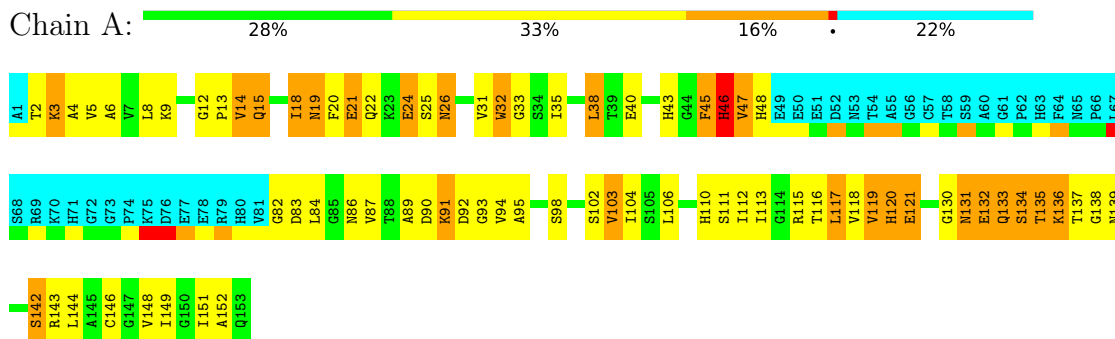
4.2.18 Score per residue for model 18

- Molecule 1: Superoxide dismutase [Cu-Zn]



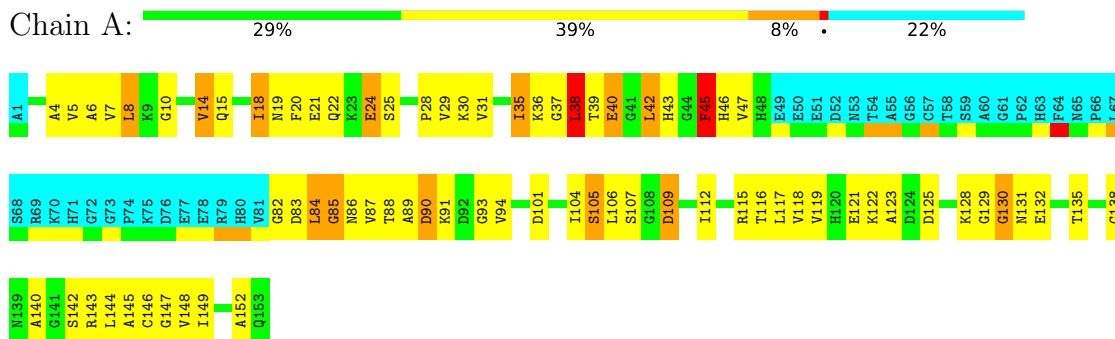
4.2.19 Score per residue for model 19

- Molecule 1: Superoxide dismutase [Cu-Zn]



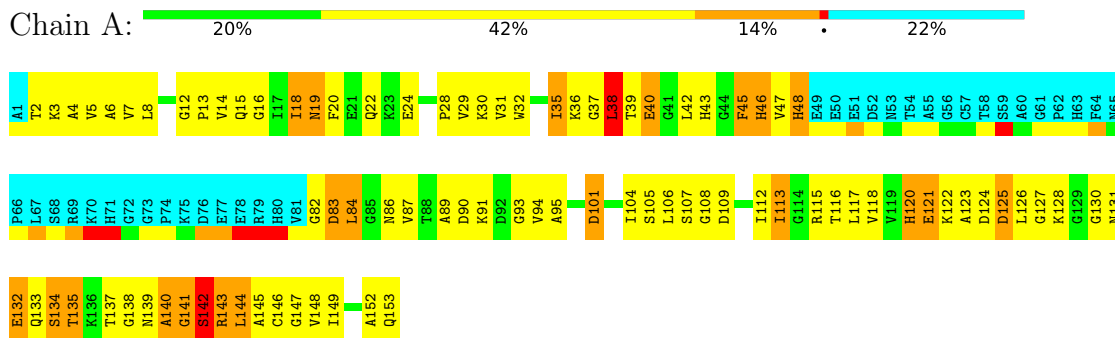
4.2.26 Score per residue for model 26

- Molecule 1: Superoxide dismutase [Cu-Zn]



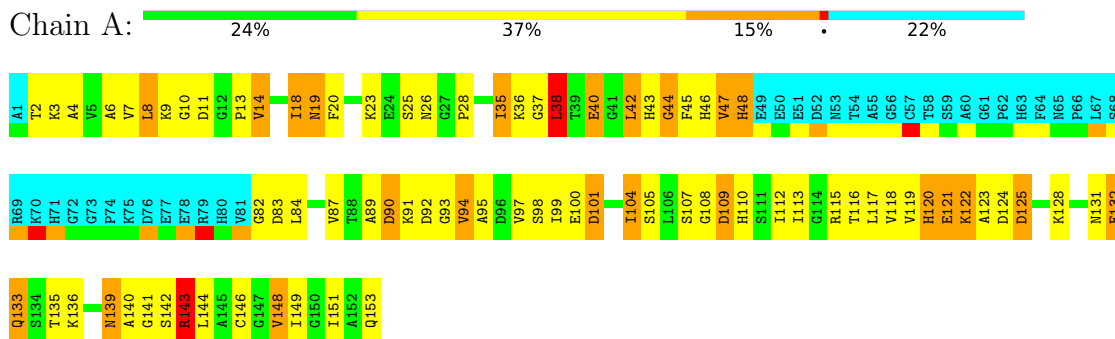
4.2.27 Score per residue for model 27

- Molecule 1: Superoxide dismutase [Cu-Zn]



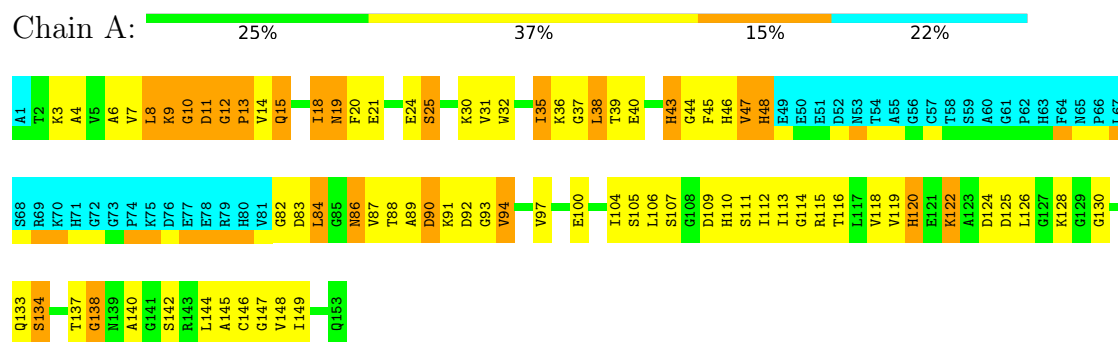
4.2.28 Score per residue for model 28

- Molecule 1: Superoxide dismutase [Cu-Zn]



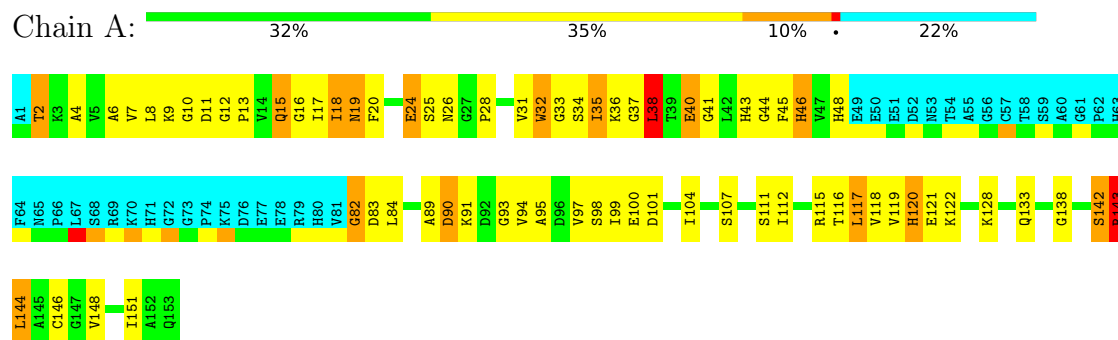
4.2.29 Score per residue for model 29

- Molecule 1: Superoxide dismutase [Cu-Zn]



4.2.30 Score per residue for model 30

- Molecule 1: Superoxide dismutase [Cu-Zn]



5 Refinement protocol and experimental data overview

The models were refined using the following method: *simulated annealing and restrained energy minimization in vacuum*.

Of the 400 calculated structures, 30 were deposited, based on the following criterion: *structures with the lowest energy, target function*.

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

| Software name | Classification | Version |
|---------------|--------------------|---------|
| CALIBA | structure solution | |
| GLOMSA | structure solution | |
| DYANA | structure solution | |
| Amber | refinement | |

No chemical shift data was provided.

6 Model quality i

6.1 Standard geometry i

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

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no planarity outliers.

6.2 Too-close contacts i

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes |
|-----|-------|-------|----------|----------|---------|
| 1 | A | 854 | 849 | 850 | 74±10 |
| All | All | 25620 | 25470 | 25482 | 2219 |

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 43.

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

| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:38:LEU:HD22 | 1:A:43:HIS:CE1 | 0.99 | 1.92 | 28 | 5 |
| 1:A:35:ILE:CG2 | 1:A:38:LEU:HD21 | 0.98 | 1.87 | 22 | 1 |
| 1:A:8:LEU:HD12 | 1:A:145:ALA:HB1 | 0.96 | 1.33 | 17 | 2 |
| 1:A:18:ILE:HD12 | 1:A:19:ASN:N | 0.96 | 1.75 | 1 | 17 |
| 1:A:4:ALA:HB1 | 1:A:149:ILE:HG23 | 0.95 | 1.34 | 16 | 12 |
| 1:A:118:VAL:HG12 | 1:A:145:ALA:O | 0.94 | 1.62 | 6 | 6 |
| 1:A:116:THR:OG1 | 1:A:148:VAL:HG22 | 0.94 | 1.62 | 24 | 3 |
| 1:A:6:ALA:HB2 | 1:A:149:ILE:HD13 | 0.93 | 1.41 | 18 | 4 |
| 1:A:42:LEU:HD23 | 1:A:86:ASN:CG | 0.91 | 1.85 | 21 | 1 |
| 1:A:118:VAL:HG13 | 1:A:145:ALA:O | 0.91 | 1.65 | 2 | 8 |
| 1:A:38:LEU:HD11 | 1:A:119:VAL:HG21 | 0.90 | 1.42 | 14 | 9 |
| 1:A:118:VAL:HG22 | 1:A:145:ALA:O | 0.90 | 1.67 | 27 | 2 |
| 1:A:116:THR:HG23 | 1:A:118:VAL:HG23 | 0.90 | 1.44 | 11 | 3 |
| 1:A:117:LEU:HD22 | 1:A:117:LEU:O | 0.89 | 1.66 | 10 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:20:PHE:CE1 | 1:A:31:VAL:HG13 | 0.88 | 2.03 | 13 | 17 |
| 1:A:3:LYS:O | 1:A:152:ALA:HB3 | 0.87 | 1.69 | 5 | 5 |
| 1:A:48:HIS:CD2 | 1:A:118:VAL:HG21 | 0.87 | 2.04 | 7 | 1 |
| 1:A:2:THR:HG21 | 1:A:151:ILE:HD12 | 0.86 | 1.47 | 15 | 6 |
| 1:A:106:LEU:HD23 | 1:A:113:ILE:HD11 | 0.86 | 1.43 | 29 | 5 |
| 1:A:119:VAL:HG23 | 1:A:144:LEU:HD12 | 0.86 | 1.44 | 24 | 4 |
| 1:A:106:LEU:HD12 | 1:A:151:ILE:HD11 | 0.85 | 1.47 | 8 | 1 |
| 1:A:6:ALA:HB3 | 1:A:18:ILE:CG1 | 0.85 | 2.02 | 4 | 6 |
| 1:A:35:ILE:HG22 | 1:A:38:LEU:HD21 | 0.85 | 1.49 | 19 | 2 |
| 1:A:14:VAL:HG22 | 1:A:38:LEU:CD1 | 0.84 | 2.01 | 19 | 1 |
| 1:A:42:LEU:HD22 | 1:A:86:ASN:ND2 | 0.84 | 1.86 | 24 | 1 |
| 1:A:2:THR:CG2 | 1:A:151:ILE:HD12 | 0.84 | 2.03 | 10 | 8 |
| 1:A:35:ILE:O | 1:A:94:VAL:HG13 | 0.83 | 1.72 | 16 | 5 |
| 1:A:35:ILE:HG21 | 1:A:38:LEU:HD13 | 0.83 | 1.50 | 4 | 15 |
| 1:A:115:ARG:O | 1:A:149:ILE:HD12 | 0.83 | 1.74 | 2 | 5 |
| 1:A:143:ARG:O | 1:A:144:LEU:HD22 | 0.83 | 1.74 | 23 | 2 |
| 1:A:14:VAL:HG21 | 1:A:144:LEU:HD13 | 0.83 | 1.50 | 10 | 2 |
| 1:A:38:LEU:HD23 | 1:A:43:HIS:CG | 0.83 | 2.09 | 16 | 4 |
| 1:A:6:ALA:CB | 1:A:149:ILE:HD13 | 0.83 | 2.04 | 18 | 1 |
| 1:A:4:ALA:HB3 | 1:A:20:PHE:HB2 | 0.82 | 1.51 | 21 | 25 |
| 1:A:2:THR:HG22 | 1:A:151:ILE:HD12 | 0.81 | 1.51 | 13 | 7 |
| 1:A:104:ILE:HD13 | 1:A:112:ILE:HG21 | 0.81 | 1.52 | 17 | 5 |
| 1:A:118:VAL:HG11 | 1:A:143:ARG:HG2 | 0.81 | 1.51 | 27 | 2 |
| 1:A:143:ARG:O | 1:A:144:LEU:HD23 | 0.81 | 1.76 | 19 | 4 |
| 1:A:38:LEU:HD22 | 1:A:43:HIS:ND1 | 0.81 | 1.90 | 20 | 4 |
| 1:A:18:ILE:HD11 | 1:A:149:ILE:HD11 | 0.81 | 1.51 | 27 | 1 |
| 1:A:6:ALA:HB3 | 1:A:18:ILE:HG13 | 0.80 | 1.53 | 27 | 5 |
| 1:A:38:LEU:HD22 | 1:A:43:HIS:CD2 | 0.80 | 2.11 | 14 | 7 |
| 1:A:104:ILE:HD13 | 1:A:112:ILE:HD13 | 0.80 | 1.50 | 30 | 4 |
| 1:A:8:LEU:HD12 | 1:A:147:GLY:HA3 | 0.80 | 1.49 | 21 | 1 |
| 1:A:11:ASP:CB | 1:A:144:LEU:HD12 | 0.80 | 2.06 | 23 | 2 |
| 1:A:116:THR:HG23 | 1:A:148:VAL:HG22 | 0.80 | 1.54 | 21 | 1 |
| 1:A:116:THR:HG23 | 1:A:148:VAL:HG23 | 0.80 | 1.53 | 26 | 5 |
| 1:A:6:ALA:HB3 | 1:A:18:ILE:HG23 | 0.80 | 1.53 | 10 | 11 |
| 1:A:42:LEU:O | 1:A:123:ALA:HB2 | 0.79 | 1.75 | 26 | 5 |
| 1:A:36:LYS:CB | 1:A:94:VAL:HG22 | 0.79 | 2.07 | 8 | 1 |
| 1:A:5:VAL:HG23 | 1:A:152:ALA:CB | 0.79 | 2.07 | 17 | 7 |
| 1:A:20:PHE:CD1 | 1:A:31:VAL:HG22 | 0.79 | 2.13 | 29 | 3 |
| 1:A:35:ILE:HG21 | 1:A:119:VAL:HG11 | 0.79 | 1.55 | 8 | 1 |
| 1:A:22:GLN:CD | 1:A:29:VAL:HG22 | 0.79 | 1.98 | 14 | 2 |
| 1:A:38:LEU:N | 1:A:38:LEU:HD13 | 0.78 | 1.91 | 19 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:14:VAL:HG11 | 1:A:145:ALA:HB2 | 0.78 | 1.56 | 13 | 5 |
| 1:A:29:VAL:O | 1:A:31:VAL:HG23 | 0.78 | 1.79 | 17 | 4 |
| 1:A:42:LEU:C | 1:A:123:ALA:HB2 | 0.77 | 2.00 | 23 | 6 |
| 1:A:104:ILE:HG22 | 1:A:110:HIS:CD2 | 0.77 | 2.15 | 13 | 2 |
| 1:A:115:ARG:HB2 | 1:A:149:ILE:HD13 | 0.77 | 1.56 | 9 | 4 |
| 1:A:106:LEU:HD23 | 1:A:106:LEU:N | 0.76 | 1.95 | 9 | 4 |
| 1:A:22:GLN:CG | 1:A:29:VAL:HG22 | 0.76 | 2.10 | 11 | 5 |
| 1:A:18:ILE:HD13 | 1:A:20:PHE:CE1 | 0.76 | 2.15 | 19 | 3 |
| 1:A:36:LYS:HB3 | 1:A:94:VAL:HG22 | 0.76 | 1.57 | 8 | 1 |
| 1:A:18:ILE:C | 1:A:18:ILE:HD13 | 0.76 | 2.00 | 25 | 5 |
| 1:A:20:PHE:CE2 | 1:A:31:VAL:HG22 | 0.76 | 2.16 | 11 | 4 |
| 1:A:42:LEU:HD23 | 1:A:88:THR:OG1 | 0.76 | 1.80 | 4 | 3 |
| 1:A:20:PHE:CD1 | 1:A:149:ILE:HD12 | 0.76 | 2.16 | 5 | 1 |
| 1:A:146:CYS:O | 1:A:148:VAL:HG23 | 0.75 | 1.81 | 20 | 2 |
| 1:A:105:SER:C | 1:A:106:LEU:HD23 | 0.75 | 2.01 | 9 | 3 |
| 1:A:104:ILE:CG1 | 1:A:112:ILE:HG21 | 0.74 | 2.12 | 25 | 6 |
| 1:A:40:GLU:HA | 1:A:89:ALA:HB3 | 0.74 | 1.59 | 16 | 28 |
| 1:A:116:THR:HG23 | 1:A:148:VAL:CG2 | 0.74 | 2.13 | 21 | 4 |
| 1:A:142:SER:O | 1:A:144:LEU:HD23 | 0.73 | 1.82 | 22 | 3 |
| 1:A:20:PHE:CE1 | 1:A:149:ILE:HD11 | 0.73 | 2.18 | 24 | 3 |
| 1:A:122:LYS:HB3 | 1:A:140:ALA:HB1 | 0.73 | 1.59 | 23 | 4 |
| 1:A:105:SER:O | 1:A:112:ILE:HG23 | 0.73 | 1.83 | 11 | 6 |
| 1:A:42:LEU:HD23 | 1:A:86:ASN:ND2 | 0.73 | 1.98 | 27 | 3 |
| 1:A:35:ILE:HG21 | 1:A:38:LEU:HD12 | 0.73 | 1.60 | 15 | 2 |
| 1:A:48:HIS:CG | 1:A:116:THR:HG22 | 0.73 | 2.19 | 10 | 2 |
| 1:A:6:ALA:HB1 | 1:A:147:GLY:O | 0.72 | 1.83 | 7 | 15 |
| 1:A:116:THR:HG23 | 1:A:118:VAL:HG13 | 0.72 | 1.58 | 28 | 3 |
| 1:A:144:LEU:HD13 | 1:A:144:LEU:N | 0.72 | 1.99 | 25 | 1 |
| 1:A:11:ASP:HB2 | 1:A:144:LEU:HD12 | 0.72 | 1.59 | 7 | 2 |
| 1:A:38:LEU:N | 1:A:38:LEU:HD22 | 0.72 | 2.00 | 22 | 1 |
| 1:A:8:LEU:CD1 | 1:A:145:ALA:HB1 | 0.72 | 2.14 | 17 | 3 |
| 1:A:104:ILE:C | 1:A:104:ILE:HD12 | 0.72 | 2.05 | 1 | 18 |
| 1:A:38:LEU:HD13 | 1:A:43:HIS:CD2 | 0.72 | 2.20 | 13 | 1 |
| 1:A:11:ASP:CA | 1:A:144:LEU:HD12 | 0.72 | 2.15 | 23 | 1 |
| 1:A:18:ILE:HG21 | 1:A:117:LEU:HD13 | 0.71 | 1.62 | 8 | 1 |
| 1:A:116:THR:HG23 | 1:A:146:CYS:SG | 0.71 | 2.25 | 1 | 1 |
| 1:A:38:LEU:HD22 | 1:A:43:HIS:CG | 0.71 | 2.20 | 14 | 11 |
| 1:A:20:PHE:CZ | 1:A:31:VAL:HG11 | 0.71 | 2.20 | 6 | 3 |
| 1:A:35:ILE:CD1 | 1:A:45:PHE:CE2 | 0.71 | 2.74 | 26 | 2 |
| 1:A:6:ALA:HB2 | 1:A:149:ILE:HA | 0.71 | 1.62 | 20 | 4 |
| 1:A:83:ASP:O | 1:A:84:LEU:HD12 | 0.71 | 1.84 | 3 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:47:VAL:HG12 | 1:A:47:VAL:O | 0.71 | 1.85 | 24 | 4 |
| 1:A:35:ILE:HD13 | 1:A:45:PHE:CZ | 0.71 | 2.21 | 20 | 1 |
| 1:A:46:HIS:CE1 | 1:A:117:LEU:CD1 | 0.71 | 2.74 | 13 | 2 |
| 1:A:11:ASP:HB2 | 1:A:144:LEU:HD22 | 0.71 | 1.61 | 12 | 2 |
| 1:A:106:LEU:HD13 | 1:A:113:ILE:HD11 | 0.70 | 1.61 | 13 | 1 |
| 1:A:38:LEU:HD22 | 1:A:43:HIS:NE2 | 0.70 | 2.01 | 29 | 2 |
| 1:A:20:PHE:CE2 | 1:A:112:ILE:HD13 | 0.70 | 2.21 | 2 | 2 |
| 1:A:42:LEU:HD23 | 1:A:87:VAL:O | 0.70 | 1.85 | 24 | 2 |
| 1:A:18:ILE:CD1 | 1:A:20:PHE:CD1 | 0.70 | 2.75 | 23 | 6 |
| 1:A:20:PHE:CE1 | 1:A:149:ILE:CG1 | 0.70 | 2.74 | 24 | 3 |
| 1:A:106:LEU:HD23 | 1:A:113:ILE:HG12 | 0.70 | 1.62 | 6 | 1 |
| 1:A:35:ILE:HD13 | 1:A:119:VAL:CG1 | 0.70 | 2.17 | 8 | 1 |
| 1:A:118:VAL:O | 1:A:118:VAL:HG23 | 0.70 | 1.84 | 13 | 1 |
| 1:A:84:LEU:HD13 | 1:A:87:VAL:HG12 | 0.70 | 1.63 | 27 | 1 |
| 1:A:22:GLN:HB2 | 1:A:29:VAL:HG13 | 0.69 | 1.65 | 10 | 2 |
| 1:A:20:PHE:CE1 | 1:A:31:VAL:HG22 | 0.69 | 2.22 | 27 | 3 |
| 1:A:117:LEU:HD12 | 1:A:119:VAL:HG13 | 0.69 | 1.64 | 7 | 1 |
| 1:A:149:ILE:HD12 | 1:A:149:ILE:N | 0.69 | 2.02 | 15 | 1 |
| 1:A:46:HIS:O | 1:A:47:VAL:HG23 | 0.69 | 1.88 | 10 | 8 |
| 1:A:42:LEU:HD13 | 1:A:42:LEU:N | 0.69 | 2.01 | 11 | 2 |
| 1:A:2:THR:HG23 | 1:A:151:ILE:CD1 | 0.69 | 2.18 | 12 | 7 |
| 1:A:118:VAL:HG12 | 1:A:146:CYS:HA | 0.68 | 1.65 | 13 | 3 |
| 1:A:116:THR:O | 1:A:118:VAL:HG23 | 0.68 | 1.89 | 23 | 3 |
| 1:A:4:ALA:HB1 | 1:A:149:ILE:CG2 | 0.68 | 2.16 | 16 | 7 |
| 1:A:20:PHE:CD2 | 1:A:112:ILE:HD12 | 0.68 | 2.23 | 5 | 3 |
| 1:A:104:ILE:HG13 | 1:A:112:ILE:HG21 | 0.68 | 1.65 | 14 | 6 |
| 1:A:5:VAL:HG23 | 1:A:152:ALA:HB2 | 0.68 | 1.64 | 11 | 3 |
| 1:A:22:GLN:HG3 | 1:A:29:VAL:HG22 | 0.68 | 1.65 | 26 | 9 |
| 1:A:20:PHE:CE1 | 1:A:31:VAL:CG1 | 0.68 | 2.76 | 13 | 11 |
| 1:A:20:PHE:CD2 | 1:A:31:VAL:HG22 | 0.68 | 2.23 | 12 | 6 |
| 1:A:46:HIS:C | 1:A:47:VAL:HG23 | 0.68 | 2.10 | 7 | 7 |
| 1:A:2:THR:HG21 | 1:A:151:ILE:HG23 | 0.67 | 1.66 | 19 | 2 |
| 1:A:35:ILE:HG21 | 1:A:38:LEU:HD21 | 0.67 | 1.64 | 22 | 1 |
| 1:A:45:PHE:CZ | 1:A:84:LEU:HD22 | 0.67 | 2.24 | 11 | 1 |
| 1:A:104:ILE:CD1 | 1:A:112:ILE:HD13 | 0.67 | 2.18 | 15 | 2 |
| 1:A:38:LEU:HD13 | 1:A:43:HIS:CE1 | 0.67 | 2.24 | 29 | 1 |
| 1:A:38:LEU:HD11 | 1:A:119:VAL:HG11 | 0.67 | 1.65 | 9 | 4 |
| 1:A:122:LYS:CB | 1:A:140:ALA:HB1 | 0.67 | 2.19 | 23 | 4 |
| 1:A:118:VAL:HG21 | 1:A:143:ARG:CB | 0.67 | 2.19 | 12 | 1 |
| 1:A:2:THR:HG22 | 1:A:2:THR:O | 0.67 | 1.90 | 24 | 1 |
| 1:A:18:ILE:HD11 | 1:A:20:PHE:CE1 | 0.67 | 2.25 | 9 | 8 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:106:LEU:HD22 | 1:A:112:ILE:HD11 | 0.67 | 1.66 | 18 | 1 |
| 1:A:46:HIS:CE1 | 1:A:117:LEU:HD13 | 0.66 | 2.24 | 6 | 1 |
| 1:A:20:PHE:CE2 | 1:A:31:VAL:CG1 | 0.66 | 2.78 | 12 | 2 |
| 1:A:14:VAL:HG12 | 1:A:14:VAL:O | 0.66 | 1.90 | 3 | 5 |
| 1:A:116:THR:HG1 | 1:A:148:VAL:HG22 | 0.66 | 1.51 | 24 | 1 |
| 1:A:38:LEU:HD12 | 1:A:43:HIS:CG | 0.66 | 2.25 | 21 | 2 |
| 1:A:18:ILE:HD12 | 1:A:19:ASN:H | 0.66 | 1.51 | 17 | 6 |
| 1:A:136:LYS:HG3 | 1:A:137:THR:HG23 | 0.66 | 1.66 | 6 | 2 |
| 1:A:5:VAL:HG23 | 1:A:152:ALA:HB3 | 0.66 | 1.67 | 17 | 5 |
| 1:A:38:LEU:CD2 | 1:A:43:HIS:CG | 0.65 | 2.80 | 14 | 7 |
| 1:A:4:ALA:CB | 1:A:149:ILE:HG23 | 0.65 | 2.21 | 26 | 9 |
| 1:A:106:LEU:CD2 | 1:A:112:ILE:HD11 | 0.65 | 2.20 | 18 | 1 |
| 1:A:45:PHE:HB3 | 1:A:117:LEU:HD12 | 0.65 | 1.68 | 20 | 1 |
| 1:A:126:LEU:HD23 | 1:A:135:THR:HA | 0.65 | 1.65 | 27 | 1 |
| 1:A:45:PHE:CE1 | 1:A:46:HIS:NE2 | 0.65 | 2.65 | 16 | 1 |
| 1:A:131:ASN:N | 1:A:135:THR:HG23 | 0.65 | 2.06 | 12 | 4 |
| 1:A:20:PHE:CE2 | 1:A:31:VAL:HG11 | 0.65 | 2.27 | 12 | 1 |
| 1:A:20:PHE:CD1 | 1:A:149:ILE:CD1 | 0.65 | 2.80 | 5 | 1 |
| 1:A:20:PHE:CZ | 1:A:31:VAL:HG22 | 0.65 | 2.27 | 11 | 3 |
| 1:A:117:LEU:HD12 | 1:A:149:ILE:HD11 | 0.65 | 1.67 | 22 | 1 |
| 1:A:123:ALA:O | 1:A:140:ALA:HB2 | 0.64 | 1.91 | 13 | 1 |
| 1:A:18:ILE:HD11 | 1:A:149:ILE:CD1 | 0.64 | 2.22 | 27 | 2 |
| 1:A:45:PHE:CZ | 1:A:46:HIS:CD2 | 0.64 | 2.86 | 16 | 1 |
| 1:A:2:THR:HG22 | 1:A:151:ILE:HG23 | 0.64 | 1.69 | 20 | 2 |
| 1:A:20:PHE:CG | 1:A:31:VAL:HG22 | 0.64 | 2.27 | 29 | 1 |
| 1:A:45:PHE:CZ | 1:A:117:LEU:CB | 0.64 | 2.81 | 2 | 2 |
| 1:A:144:LEU:O | 1:A:145:ALA:HB2 | 0.64 | 1.92 | 22 | 3 |
| 1:A:110:HIS:O | 1:A:112:ILE:HG23 | 0.64 | 1.93 | 9 | 1 |
| 1:A:116:THR:CG2 | 1:A:118:VAL:HG23 | 0.64 | 2.18 | 11 | 1 |
| 1:A:46:HIS:NE2 | 1:A:120:HIS:CD2 | 0.63 | 2.66 | 24 | 3 |
| 1:A:6:ALA:HB3 | 1:A:18:ILE:HG12 | 0.63 | 1.68 | 3 | 5 |
| 1:A:18:ILE:HD13 | 1:A:18:ILE:O | 0.63 | 1.94 | 11 | 1 |
| 1:A:6:ALA:HB1 | 1:A:147:GLY:C | 0.63 | 2.14 | 25 | 12 |
| 1:A:144:LEU:O | 1:A:145:ALA:HB3 | 0.63 | 1.93 | 6 | 3 |
| 1:A:119:VAL:CG2 | 1:A:144:LEU:HD12 | 0.63 | 2.23 | 20 | 1 |
| 1:A:20:PHE:CE2 | 1:A:31:VAL:CG2 | 0.63 | 2.82 | 11 | 2 |
| 1:A:116:THR:HG23 | 1:A:118:VAL:CG2 | 0.62 | 2.24 | 7 | 5 |
| 1:A:7:VAL:HG22 | 1:A:15:GLN:OE1 | 0.62 | 1.94 | 14 | 1 |
| 1:A:7:VAL:O | 1:A:7:VAL:HG23 | 0.62 | 1.94 | 21 | 7 |
| 1:A:8:LEU:HD11 | 1:A:117:LEU:O | 0.62 | 1.94 | 17 | 4 |
| 1:A:35:ILE:HG21 | 1:A:38:LEU:CD1 | 0.62 | 2.24 | 17 | 8 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:119:VAL:HG23 | 1:A:144:LEU:HD21 | 0.61 | 1.72 | 25 | 1 |
| 1:A:115:ARG:HB3 | 1:A:149:ILE:HD13 | 0.61 | 1.72 | 3 | 1 |
| 1:A:97:VAL:CG1 | 1:A:99:ILE:HD12 | 0.61 | 2.25 | 8 | 4 |
| 1:A:41:GLY:O | 1:A:43:HIS:CE1 | 0.61 | 2.54 | 14 | 2 |
| 1:A:45:PHE:O | 1:A:48:HIS:CD2 | 0.61 | 2.53 | 14 | 1 |
| 1:A:7:VAL:O | 1:A:7:VAL:HG13 | 0.61 | 1.95 | 30 | 9 |
| 1:A:115:ARG:CB | 1:A:149:ILE:HD13 | 0.61 | 2.25 | 9 | 2 |
| 1:A:48:HIS:CE1 | 1:A:120:HIS:NE2 | 0.61 | 2.68 | 15 | 2 |
| 1:A:120:HIS:CD2 | 1:A:140:ALA:HB1 | 0.61 | 2.30 | 29 | 1 |
| 1:A:118:VAL:HG23 | 1:A:144:LEU:O | 0.61 | 1.96 | 25 | 1 |
| 1:A:48:HIS:ND1 | 1:A:116:THR:HG22 | 0.61 | 2.11 | 10 | 2 |
| 1:A:7:VAL:HG23 | 1:A:17:ILE:HG12 | 0.61 | 1.72 | 13 | 3 |
| 1:A:108:GLY:O | 1:A:109:ASP:CB | 0.61 | 2.49 | 28 | 2 |
| 1:A:29:VAL:HG21 | 1:A:106:LEU:CD1 | 0.61 | 2.26 | 27 | 1 |
| 1:A:43:HIS:NE2 | 1:A:87:VAL:HG23 | 0.61 | 2.10 | 1 | 1 |
| 1:A:20:PHE:CZ | 1:A:31:VAL:CG2 | 0.61 | 2.84 | 20 | 3 |
| 1:A:45:PHE:CD1 | 1:A:86:ASN:OD1 | 0.61 | 2.53 | 14 | 2 |
| 1:A:143:ARG:C | 1:A:144:LEU:HD23 | 0.61 | 2.16 | 19 | 1 |
| 1:A:45:PHE:CD2 | 1:A:83:ASP:O | 0.61 | 2.54 | 22 | 2 |
| 1:A:8:LEU:HD12 | 1:A:145:ALA:CB | 0.60 | 2.21 | 17 | 2 |
| 1:A:20:PHE:CE1 | 1:A:149:ILE:CD1 | 0.60 | 2.84 | 24 | 3 |
| 1:A:2:THR:CG2 | 1:A:151:ILE:CD1 | 0.60 | 2.79 | 17 | 5 |
| 1:A:20:PHE:CG | 1:A:149:ILE:HG21 | 0.60 | 2.31 | 20 | 5 |
| 1:A:120:HIS:CD2 | 1:A:122:LYS:O | 0.60 | 2.54 | 10 | 1 |
| 1:A:48:HIS:CD2 | 1:A:142:SER:O | 0.60 | 2.53 | 2 | 1 |
| 1:A:8:LEU:HD21 | 1:A:117:LEU:HD22 | 0.60 | 1.73 | 8 | 1 |
| 1:A:20:PHE:CE2 | 1:A:112:ILE:HD12 | 0.60 | 2.30 | 22 | 2 |
| 1:A:106:LEU:HD12 | 1:A:151:ILE:CD1 | 0.60 | 2.24 | 8 | 1 |
| 1:A:2:THR:HB | 1:A:106:LEU:HD22 | 0.60 | 1.73 | 3 | 1 |
| 1:A:18:ILE:HD11 | 1:A:20:PHE:CZ | 0.60 | 2.32 | 24 | 1 |
| 1:A:44:GLY:C | 1:A:45:PHE:CD1 | 0.60 | 2.74 | 12 | 2 |
| 1:A:8:LEU:N | 1:A:8:LEU:HD23 | 0.60 | 2.11 | 28 | 3 |
| 1:A:11:ASP:OD2 | 1:A:144:LEU:HD22 | 0.60 | 1.97 | 28 | 1 |
| 1:A:18:ILE:HD12 | 1:A:18:ILE:C | 0.60 | 2.15 | 1 | 6 |
| 1:A:5:VAL:HG22 | 1:A:152:ALA:HB2 | 0.60 | 1.72 | 8 | 5 |
| 1:A:45:PHE:CE2 | 1:A:86:ASN:OD1 | 0.60 | 2.54 | 7 | 2 |
| 1:A:5:VAL:CG2 | 1:A:152:ALA:HB2 | 0.60 | 2.27 | 14 | 4 |
| 1:A:30:LYS:O | 1:A:32:TRP:CE3 | 0.60 | 2.54 | 14 | 4 |
| 1:A:44:GLY:O | 1:A:119:VAL:HG12 | 0.60 | 1.97 | 10 | 1 |
| 1:A:2:THR:HG22 | 1:A:151:ILE:CD1 | 0.60 | 2.26 | 28 | 2 |
| 1:A:20:PHE:CD1 | 1:A:149:ILE:HG21 | 0.59 | 2.31 | 8 | 2 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:120:HIS:CE1 | 1:A:121:GLU:O | 0.59 | 2.55 | 28 | 1 |
| 1:A:143:ARG:C | 1:A:144:LEU:HD12 | 0.59 | 2.18 | 2 | 1 |
| 1:A:43:HIS:NE2 | 1:A:89:ALA:HB2 | 0.59 | 2.12 | 18 | 1 |
| 1:A:46:HIS:ND1 | 1:A:117:LEU:HD13 | 0.59 | 2.12 | 6 | 2 |
| 1:A:45:PHE:CE1 | 1:A:86:ASN:CG | 0.59 | 2.75 | 25 | 2 |
| 1:A:45:PHE:CE1 | 1:A:86:ASN:OD1 | 0.59 | 2.55 | 18 | 3 |
| 1:A:11:ASP:HA | 1:A:144:LEU:HD12 | 0.59 | 1.74 | 23 | 1 |
| 1:A:43:HIS:CG | 1:A:120:HIS:ND1 | 0.59 | 2.71 | 19 | 1 |
| 1:A:43:HIS:CD2 | 1:A:89:ALA:HB2 | 0.59 | 2.32 | 10 | 2 |
| 1:A:117:LEU:O | 1:A:117:LEU:HD13 | 0.59 | 1.98 | 12 | 1 |
| 1:A:128:LYS:HB2 | 1:A:135:THR:HG22 | 0.59 | 1.73 | 23 | 1 |
| 1:A:46:HIS:CE1 | 1:A:47:VAL:HG23 | 0.59 | 2.33 | 1 | 1 |
| 1:A:20:PHE:CD1 | 1:A:31:VAL:CG2 | 0.59 | 2.86 | 29 | 1 |
| 1:A:14:VAL:CG1 | 1:A:145:ALA:HB2 | 0.58 | 2.27 | 27 | 2 |
| 1:A:113:ILE:HD11 | 1:A:151:ILE:HD11 | 0.58 | 1.76 | 25 | 1 |
| 1:A:118:VAL:HG13 | 1:A:144:LEU:O | 0.58 | 1.99 | 27 | 2 |
| 1:A:45:PHE:CE1 | 1:A:117:LEU:O | 0.58 | 2.56 | 2 | 1 |
| 1:A:20:PHE:CD2 | 1:A:31:VAL:CG2 | 0.58 | 2.86 | 12 | 2 |
| 1:A:5:VAL:HG13 | 1:A:19:ASN:HD22 | 0.58 | 1.58 | 25 | 2 |
| 1:A:45:PHE:CZ | 1:A:86:ASN:OD1 | 0.58 | 2.56 | 18 | 2 |
| 1:A:120:HIS:CD2 | 1:A:140:ALA:O | 0.58 | 2.56 | 13 | 2 |
| 1:A:43:HIS:CG | 1:A:120:HIS:CE1 | 0.58 | 2.90 | 19 | 1 |
| 1:A:2:THR:HG23 | 1:A:151:ILE:HD12 | 0.58 | 1.74 | 2 | 2 |
| 1:A:87:VAL:HG23 | 1:A:88:THR:N | 0.58 | 2.14 | 10 | 2 |
| 1:A:8:LEU:HD13 | 1:A:147:GLY:H | 0.58 | 1.59 | 15 | 2 |
| 1:A:102:SER:O | 1:A:103:VAL:HG23 | 0.58 | 1.99 | 19 | 1 |
| 1:A:42:LEU:HB2 | 1:A:123:ALA:HB1 | 0.58 | 1.75 | 22 | 2 |
| 1:A:8:LEU:HD22 | 1:A:147:GLY:HA3 | 0.57 | 1.74 | 8 | 5 |
| 1:A:42:LEU:N | 1:A:42:LEU:CD1 | 0.57 | 2.67 | 11 | 2 |
| 1:A:20:PHE:HE2 | 1:A:112:ILE:HD12 | 0.57 | 1.59 | 15 | 1 |
| 1:A:45:PHE:CE1 | 1:A:46:HIS:CD2 | 0.57 | 2.92 | 16 | 1 |
| 1:A:106:LEU:HD12 | 1:A:106:LEU:N | 0.57 | 2.15 | 3 | 2 |
| 1:A:4:ALA:CB | 1:A:149:ILE:HG22 | 0.57 | 2.29 | 6 | 3 |
| 1:A:38:LEU:CD2 | 1:A:43:HIS:CB | 0.57 | 2.82 | 16 | 2 |
| 1:A:45:PHE:CE2 | 1:A:117:LEU:CB | 0.57 | 2.88 | 2 | 1 |
| 1:A:22:GLN:HB2 | 1:A:29:VAL:HG22 | 0.57 | 1.76 | 9 | 2 |
| 1:A:102:SER:O | 1:A:103:VAL:HG13 | 0.57 | 1.99 | 11 | 1 |
| 1:A:35:ILE:CD1 | 1:A:45:PHE:CZ | 0.57 | 2.88 | 26 | 2 |
| 1:A:22:GLN:OE1 | 1:A:29:VAL:HG22 | 0.57 | 2.00 | 5 | 2 |
| 1:A:104:ILE:HG22 | 1:A:110:HIS:HD2 | 0.57 | 1.58 | 13 | 1 |
| 1:A:45:PHE:CD1 | 1:A:45:PHE:N | 0.57 | 2.72 | 4 | 2 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:46:HIS:HA | 1:A:117:LEU:HD13 | 0.57 | 1.77 | 26 | 1 |
| 1:A:38:LEU:CD1 | 1:A:43:HIS:CG | 0.56 | 2.88 | 3 | 1 |
| 1:A:131:ASN:O | 1:A:135:THR:N | 0.56 | 2.37 | 19 | 5 |
| 1:A:89:ALA:HB1 | 1:A:93:GLY:CA | 0.56 | 2.30 | 5 | 23 |
| 1:A:106:LEU:HD23 | 1:A:151:ILE:HD11 | 0.56 | 1.77 | 20 | 1 |
| 1:A:122:LYS:HB2 | 1:A:140:ALA:HB1 | 0.56 | 1.76 | 25 | 2 |
| 1:A:8:LEU:HD11 | 1:A:117:LEU:CD2 | 0.56 | 2.30 | 24 | 2 |
| 1:A:29:VAL:HB | 1:A:104:ILE:HD11 | 0.56 | 1.77 | 8 | 1 |
| 1:A:20:PHE:CE1 | 1:A:149:ILE:HD12 | 0.56 | 2.34 | 28 | 1 |
| 1:A:46:HIS:CG | 1:A:117:LEU:HD22 | 0.56 | 2.35 | 5 | 1 |
| 1:A:39:THR:O | 1:A:43:HIS:CE1 | 0.56 | 2.58 | 10 | 4 |
| 1:A:146:CYS:SG | 1:A:148:VAL:HG23 | 0.56 | 2.40 | 4 | 1 |
| 1:A:30:LYS:O | 1:A:32:TRP:CZ3 | 0.56 | 2.59 | 14 | 6 |
| 1:A:19:ASN:CG | 1:A:32:TRP:CE2 | 0.56 | 2.79 | 23 | 1 |
| 1:A:35:ILE:HD13 | 1:A:45:PHE:CE2 | 0.56 | 2.36 | 26 | 1 |
| 1:A:38:LEU:HD13 | 1:A:43:HIS:HE1 | 0.56 | 1.55 | 29 | 1 |
| 1:A:47:VAL:O | 1:A:48:HIS:CG | 0.56 | 2.58 | 6 | 1 |
| 1:A:118:VAL:HG11 | 1:A:143:ARG:CD | 0.56 | 2.30 | 17 | 1 |
| 1:A:38:LEU:CD2 | 1:A:43:HIS:CD2 | 0.56 | 2.89 | 5 | 4 |
| 1:A:6:ALA:HB2 | 1:A:149:ILE:HG13 | 0.56 | 1.76 | 17 | 2 |
| 1:A:38:LEU:H | 1:A:38:LEU:HD22 | 0.56 | 1.60 | 19 | 1 |
| 1:A:45:PHE:CZ | 1:A:117:LEU:HB2 | 0.56 | 2.36 | 2 | 1 |
| 1:A:18:ILE:HD11 | 1:A:20:PHE:CD1 | 0.56 | 2.36 | 11 | 4 |
| 1:A:46:HIS:CE1 | 1:A:117:LEU:HD12 | 0.56 | 2.36 | 13 | 3 |
| 1:A:4:ALA:HB3 | 1:A:20:PHE:CB | 0.55 | 2.32 | 7 | 5 |
| 1:A:20:PHE:CE2 | 1:A:112:ILE:CD1 | 0.55 | 2.89 | 2 | 3 |
| 1:A:20:PHE:CE1 | 1:A:31:VAL:HG11 | 0.55 | 2.35 | 6 | 3 |
| 1:A:38:LEU:O | 1:A:39:THR:HG23 | 0.55 | 2.01 | 8 | 1 |
| 1:A:14:VAL:CG2 | 1:A:38:LEU:HD12 | 0.55 | 2.30 | 25 | 1 |
| 1:A:128:LYS:CG | 1:A:128:LYS:O | 0.55 | 2.54 | 13 | 1 |
| 1:A:42:LEU:CD2 | 1:A:86:ASN:ND2 | 0.55 | 2.70 | 21 | 1 |
| 1:A:18:ILE:C | 1:A:18:ILE:CD1 | 0.55 | 2.75 | 25 | 6 |
| 1:A:47:VAL:O | 1:A:48:HIS:CB | 0.55 | 2.55 | 6 | 1 |
| 1:A:118:VAL:O | 1:A:118:VAL:CG2 | 0.55 | 2.55 | 13 | 1 |
| 1:A:19:ASN:OD1 | 1:A:32:TRP:CD2 | 0.55 | 2.59 | 19 | 2 |
| 1:A:45:PHE:CG | 1:A:83:ASP:O | 0.55 | 2.59 | 23 | 1 |
| 1:A:137:THR:OG1 | 1:A:138:GLY:N | 0.55 | 2.37 | 29 | 12 |
| 1:A:20:PHE:HE1 | 1:A:31:VAL:HG13 | 0.55 | 1.56 | 27 | 2 |
| 1:A:46:HIS:CD2 | 1:A:47:VAL:HG23 | 0.55 | 2.37 | 1 | 1 |
| 1:A:48:HIS:CG | 1:A:48:HIS:O | 0.55 | 2.60 | 4 | 3 |
| 1:A:116:THR:HG22 | 1:A:116:THR:O | 0.55 | 2.02 | 8 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:11:ASP:CB | 1:A:144:LEU:HD22 | 0.55 | 2.31 | 17 | 2 |
| 1:A:48:HIS:ND1 | 1:A:118:VAL:CG1 | 0.55 | 2.70 | 30 | 1 |
| 1:A:120:HIS:CG | 1:A:124:ASP:OD2 | 0.55 | 2.59 | 8 | 1 |
| 1:A:104:ILE:C | 1:A:104:ILE:CD1 | 0.55 | 2.76 | 13 | 15 |
| 1:A:14:VAL:HG22 | 1:A:38:LEU:HD13 | 0.54 | 1.76 | 19 | 2 |
| 1:A:19:ASN:OD1 | 1:A:32:TRP:CE2 | 0.54 | 2.60 | 19 | 2 |
| 1:A:38:LEU:CD2 | 1:A:43:HIS:CE1 | 0.54 | 2.88 | 29 | 1 |
| 1:A:106:LEU:N | 1:A:106:LEU:CD2 | 0.54 | 2.70 | 11 | 3 |
| 1:A:46:HIS:NE2 | 1:A:87:VAL:CG1 | 0.54 | 2.71 | 7 | 1 |
| 1:A:106:LEU:CD2 | 1:A:151:ILE:HD11 | 0.54 | 2.32 | 20 | 1 |
| 1:A:117:LEU:N | 1:A:117:LEU:CD2 | 0.54 | 2.70 | 2 | 1 |
| 1:A:6:ALA:HB3 | 1:A:18:ILE:CG2 | 0.54 | 2.32 | 8 | 1 |
| 1:A:46:HIS:CE1 | 1:A:120:HIS:NE2 | 0.54 | 2.76 | 20 | 1 |
| 1:A:20:PHE:CE2 | 1:A:112:ILE:HD11 | 0.54 | 2.38 | 21 | 1 |
| 1:A:136:LYS:HG2 | 1:A:137:THR:HG23 | 0.54 | 1.78 | 12 | 3 |
| 1:A:120:HIS:CE1 | 1:A:122:LYS:O | 0.54 | 2.61 | 29 | 1 |
| 1:A:121:GLU:O | 1:A:122:LYS:CB | 0.54 | 2.56 | 11 | 3 |
| 1:A:46:HIS:O | 1:A:48:HIS:CE1 | 0.54 | 2.61 | 6 | 1 |
| 1:A:120:HIS:CG | 1:A:140:ALA:O | 0.54 | 2.60 | 13 | 1 |
| 1:A:38:LEU:HD23 | 1:A:43:HIS:CD2 | 0.54 | 2.37 | 26 | 1 |
| 1:A:118:VAL:HG23 | 1:A:145:ALA:O | 0.54 | 2.02 | 14 | 4 |
| 1:A:87:VAL:HG21 | 1:A:119:VAL:HG12 | 0.54 | 1.80 | 7 | 1 |
| 1:A:106:LEU:HD13 | 1:A:112:ILE:CG1 | 0.54 | 2.33 | 24 | 1 |
| 1:A:106:LEU:HG | 1:A:112:ILE:HD11 | 0.54 | 1.80 | 7 | 2 |
| 1:A:48:HIS:HB3 | 1:A:118:VAL:HG21 | 0.54 | 1.80 | 20 | 1 |
| 1:A:47:VAL:HG22 | 1:A:116:THR:C | 0.53 | 2.24 | 3 | 1 |
| 1:A:20:PHE:CZ | 1:A:149:ILE:HD11 | 0.53 | 2.38 | 12 | 1 |
| 1:A:121:GLU:CG | 1:A:142:SER:CB | 0.53 | 2.86 | 27 | 1 |
| 1:A:45:PHE:HD2 | 1:A:119:VAL:HG12 | 0.53 | 1.63 | 12 | 1 |
| 1:A:41:GLY:O | 1:A:43:HIS:CD2 | 0.53 | 2.61 | 20 | 2 |
| 1:A:46:HIS:CG | 1:A:47:VAL:HG23 | 0.53 | 2.38 | 1 | 2 |
| 1:A:22:GLN:CB | 1:A:29:VAL:HG22 | 0.53 | 2.32 | 9 | 2 |
| 1:A:116:THR:O | 1:A:118:VAL:HG13 | 0.53 | 2.02 | 12 | 1 |
| 1:A:18:ILE:HD13 | 1:A:20:PHE:CD1 | 0.53 | 2.37 | 19 | 1 |
| 1:A:14:VAL:HG13 | 1:A:14:VAL:O | 0.53 | 2.04 | 12 | 2 |
| 1:A:32:TRP:CD1 | 1:A:33:GLY:N | 0.53 | 2.77 | 19 | 4 |
| 1:A:4:ALA:HB1 | 1:A:149:ILE:HG22 | 0.53 | 1.78 | 6 | 3 |
| 1:A:118:VAL:HG21 | 1:A:143:ARG:HB2 | 0.53 | 1.79 | 12 | 2 |
| 1:A:116:THR:HB | 1:A:148:VAL:HG22 | 0.53 | 1.80 | 29 | 3 |
| 1:A:14:VAL:CG1 | 1:A:14:VAL:O | 0.53 | 2.57 | 25 | 3 |
| 1:A:120:HIS:HD2 | 1:A:140:ALA:HB1 | 0.53 | 1.63 | 29 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:120:HIS:CE1 | 1:A:141:GLY:CA | 0.53 | 2.92 | 7 | 2 |
| 1:A:45:PHE:CE1 | 1:A:119:VAL:HG12 | 0.53 | 2.39 | 20 | 1 |
| 1:A:131:ASN:O | 1:A:132:GLU:CB | 0.53 | 2.56 | 1 | 12 |
| 1:A:45:PHE:CZ | 1:A:117:LEU:HB3 | 0.53 | 2.38 | 2 | 2 |
| 1:A:104:ILE:HB | 1:A:112:ILE:HG21 | 0.53 | 1.80 | 9 | 2 |
| 1:A:38:LEU:O | 1:A:89:ALA:HB2 | 0.53 | 2.04 | 16 | 1 |
| 1:A:45:PHE:O | 1:A:120:HIS:CE1 | 0.53 | 2.62 | 18 | 1 |
| 1:A:45:PHE:CE1 | 1:A:117:LEU:HD12 | 0.53 | 2.39 | 24 | 1 |
| 1:A:45:PHE:CE2 | 1:A:117:LEU:HB3 | 0.53 | 2.39 | 2 | 1 |
| 1:A:47:VAL:O | 1:A:47:VAL:CG1 | 0.53 | 2.56 | 24 | 3 |
| 1:A:149:ILE:N | 1:A:149:ILE:CD1 | 0.53 | 2.72 | 15 | 1 |
| 1:A:8:LEU:HD11 | 1:A:117:LEU:HD21 | 0.53 | 1.81 | 24 | 1 |
| 1:A:35:ILE:HG21 | 1:A:43:HIS:CE1 | 0.53 | 2.38 | 29 | 1 |
| 1:A:20:PHE:CE1 | 1:A:149:ILE:HG12 | 0.52 | 2.38 | 26 | 9 |
| 1:A:42:LEU:HD12 | 1:A:42:LEU:N | 0.52 | 2.19 | 14 | 1 |
| 1:A:45:PHE:CZ | 1:A:84:LEU:HB2 | 0.52 | 2.39 | 16 | 1 |
| 1:A:118:VAL:HG11 | 1:A:143:ARG:CG | 0.52 | 2.35 | 19 | 3 |
| 1:A:35:ILE:O | 1:A:36:LYS:CG | 0.52 | 2.57 | 17 | 18 |
| 1:A:89:ALA:HB1 | 1:A:93:GLY:C | 0.52 | 2.24 | 17 | 10 |
| 1:A:118:VAL:HG21 | 1:A:143:ARG:HB3 | 0.52 | 1.80 | 12 | 1 |
| 1:A:37:GLY:O | 1:A:39:THR:N | 0.52 | 2.42 | 16 | 1 |
| 1:A:20:PHE:CD1 | 1:A:31:VAL:HG13 | 0.52 | 2.40 | 10 | 4 |
| 1:A:124:ASP:O | 1:A:125:ASP:CB | 0.52 | 2.57 | 21 | 2 |
| 1:A:18:ILE:CD1 | 1:A:20:PHE:CE1 | 0.52 | 2.92 | 23 | 2 |
| 1:A:43:HIS:CE1 | 1:A:87:VAL:CG2 | 0.52 | 2.92 | 1 | 1 |
| 1:A:118:VAL:CG1 | 1:A:145:ALA:O | 0.52 | 2.58 | 12 | 3 |
| 1:A:139:ASN:O | 1:A:140:ALA:HB2 | 0.52 | 2.03 | 13 | 1 |
| 1:A:43:HIS:CE1 | 1:A:89:ALA:HB2 | 0.52 | 2.40 | 20 | 1 |
| 1:A:35:ILE:CG2 | 1:A:38:LEU:HD13 | 0.52 | 2.30 | 4 | 1 |
| 1:A:47:VAL:C | 1:A:48:HIS:CG | 0.52 | 2.81 | 6 | 1 |
| 1:A:43:HIS:HB3 | 1:A:45:PHE:CZ | 0.52 | 2.40 | 12 | 1 |
| 1:A:104:ILE:CD1 | 1:A:112:ILE:HG21 | 0.52 | 2.33 | 15 | 1 |
| 1:A:38:LEU:HB3 | 1:A:43:HIS:CE1 | 0.52 | 2.40 | 20 | 2 |
| 1:A:38:LEU:HD22 | 1:A:38:LEU:H | 0.52 | 1.64 | 22 | 1 |
| 1:A:24:GLU:O | 1:A:25:SER:CB | 0.52 | 2.58 | 5 | 17 |
| 1:A:5:VAL:CG2 | 1:A:152:ALA:CB | 0.52 | 2.88 | 27 | 5 |
| 1:A:116:THR:CG2 | 1:A:148:VAL:HG22 | 0.52 | 2.32 | 21 | 1 |
| 1:A:14:VAL:HG11 | 1:A:119:VAL:CG2 | 0.52 | 2.34 | 22 | 1 |
| 1:A:45:PHE:CD1 | 1:A:85:GLY:O | 0.52 | 2.63 | 23 | 1 |
| 1:A:106:LEU:HD12 | 1:A:113:ILE:HD11 | 0.52 | 1.81 | 1 | 1 |
| 1:A:12:GLY:N | 1:A:13:PRO:CD | 0.52 | 2.72 | 15 | 14 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:38:LEU:CD1 | 1:A:119:VAL:HG11 | 0.52 | 2.35 | 28 | 3 |
| 1:A:45:PHE:CE1 | 1:A:117:LEU:CD1 | 0.52 | 2.92 | 24 | 1 |
| 1:A:131:ASN:C | 1:A:135:THR:HG23 | 0.52 | 2.24 | 7 | 2 |
| 1:A:46:HIS:CE1 | 1:A:120:HIS:CD2 | 0.52 | 2.97 | 24 | 1 |
| 1:A:104:ILE:HD13 | 1:A:112:ILE:CG2 | 0.52 | 2.34 | 8 | 2 |
| 1:A:117:LEU:O | 1:A:117:LEU:CD1 | 0.52 | 2.58 | 12 | 1 |
| 1:A:20:PHE:CD2 | 1:A:149:ILE:HG21 | 0.52 | 2.40 | 17 | 3 |
| 1:A:144:LEU:O | 1:A:145:ALA:CB | 0.51 | 2.58 | 22 | 4 |
| 1:A:116:THR:O | 1:A:116:THR:CG2 | 0.51 | 2.58 | 8 | 1 |
| 1:A:91:LYS:CG | 1:A:91:LYS:O | 0.51 | 2.57 | 3 | 4 |
| 1:A:116:THR:OG1 | 1:A:148:VAL:N | 0.51 | 2.43 | 10 | 2 |
| 1:A:38:LEU:CD2 | 1:A:93:GLY:O | 0.51 | 2.58 | 19 | 1 |
| 1:A:43:HIS:HB3 | 1:A:120:HIS:CE1 | 0.51 | 2.40 | 19 | 1 |
| 1:A:18:ILE:HD13 | 1:A:19:ASN:N | 0.51 | 2.21 | 2 | 4 |
| 1:A:115:ARG:O | 1:A:117:LEU:CD2 | 0.51 | 2.58 | 6 | 2 |
| 1:A:117:LEU:HD22 | 1:A:117:LEU:C | 0.51 | 2.26 | 10 | 1 |
| 1:A:8:LEU:HD21 | 1:A:18:ILE:CG2 | 0.51 | 2.36 | 12 | 4 |
| 1:A:38:LEU:HD23 | 1:A:43:HIS:CB | 0.51 | 2.35 | 16 | 1 |
| 1:A:116:THR:CG2 | 1:A:146:CYS:CB | 0.51 | 2.88 | 24 | 2 |
| 1:A:144:LEU:N | 1:A:144:LEU:CD1 | 0.51 | 2.71 | 25 | 1 |
| 1:A:38:LEU:HD12 | 1:A:43:HIS:CB | 0.51 | 2.35 | 3 | 1 |
| 1:A:106:LEU:HD23 | 1:A:151:ILE:CD1 | 0.51 | 2.36 | 20 | 1 |
| 1:A:38:LEU:HD21 | 1:A:119:VAL:HG21 | 0.51 | 1.81 | 21 | 1 |
| 1:A:117:LEU:O | 1:A:147:GLY:N | 0.51 | 2.43 | 22 | 2 |
| 1:A:138:GLY:O | 1:A:139:ASN:CB | 0.51 | 2.57 | 10 | 3 |
| 1:A:132:GLU:N | 1:A:135:THR:OG1 | 0.51 | 2.44 | 22 | 1 |
| 1:A:43:HIS:NE2 | 1:A:87:VAL:CG2 | 0.51 | 2.74 | 1 | 1 |
| 1:A:118:VAL:CG2 | 1:A:145:ALA:O | 0.51 | 2.58 | 4 | 3 |
| 1:A:116:THR:HG23 | 1:A:146:CYS:HB3 | 0.51 | 1.80 | 30 | 2 |
| 1:A:131:ASN:O | 1:A:135:THR:HG23 | 0.51 | 2.06 | 7 | 2 |
| 1:A:7:VAL:HG23 | 1:A:17:ILE:CG1 | 0.51 | 2.36 | 13 | 2 |
| 1:A:118:VAL:HG11 | 1:A:143:ARG:NE | 0.51 | 2.20 | 17 | 1 |
| 1:A:2:THR:HG23 | 1:A:151:ILE:HD11 | 0.51 | 1.81 | 24 | 1 |
| 1:A:89:ALA:HB1 | 1:A:93:GLY:O | 0.51 | 2.06 | 22 | 1 |
| 1:A:44:GLY:N | 1:A:120:HIS:CE1 | 0.51 | 2.78 | 29 | 1 |
| 1:A:121:GLU:O | 1:A:122:LYS:CG | 0.51 | 2.59 | 11 | 2 |
| 1:A:35:ILE:O | 1:A:94:VAL:HA | 0.50 | 2.06 | 12 | 8 |
| 1:A:116:THR:OG1 | 1:A:148:VAL:CG2 | 0.50 | 2.59 | 8 | 1 |
| 1:A:46:HIS:O | 1:A:47:VAL:CG2 | 0.50 | 2.59 | 10 | 3 |
| 1:A:117:LEU:CD1 | 1:A:119:VAL:HG13 | 0.50 | 2.35 | 7 | 1 |
| 1:A:147:GLY:O | 1:A:148:VAL:HB | 0.50 | 2.06 | 20 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:115:ARG:O | 1:A:117:LEU:HD23 | 0.50 | 2.06 | 30 | 1 |
| 1:A:46:HIS:C | 1:A:47:VAL:CG2 | 0.50 | 2.79 | 6 | 4 |
| 1:A:117:LEU:O | 1:A:117:LEU:CD2 | 0.50 | 2.51 | 10 | 1 |
| 1:A:102:SER:O | 1:A:103:VAL:CG2 | 0.50 | 2.59 | 19 | 1 |
| 1:A:45:PHE:CD2 | 1:A:119:VAL:HG12 | 0.50 | 2.41 | 12 | 1 |
| 1:A:2:THR:O | 1:A:2:THR:CG2 | 0.50 | 2.59 | 24 | 1 |
| 1:A:28:PRO:CB | 1:A:101:ASP:O | 0.50 | 2.59 | 30 | 7 |
| 1:A:20:PHE:CZ | 1:A:117:LEU:HD21 | 0.50 | 2.41 | 19 | 1 |
| 1:A:115:ARG:O | 1:A:117:LEU:HD22 | 0.50 | 2.07 | 23 | 2 |
| 1:A:35:ILE:CG2 | 1:A:36:LYS:N | 0.50 | 2.74 | 28 | 21 |
| 1:A:44:GLY:HA3 | 1:A:120:HIS:CD2 | 0.50 | 2.41 | 28 | 3 |
| 1:A:38:LEU:N | 1:A:38:LEU:CD2 | 0.50 | 2.71 | 22 | 1 |
| 1:A:9:LYS:N | 1:A:145:ALA:HB1 | 0.50 | 2.22 | 24 | 1 |
| 1:A:14:VAL:HG22 | 1:A:38:LEU:CD2 | 0.50 | 2.37 | 7 | 1 |
| 1:A:45:PHE:CD1 | 1:A:124:ASP:OD2 | 0.50 | 2.64 | 18 | 1 |
| 1:A:48:HIS:CD2 | 1:A:143:ARG:HG3 | 0.50 | 2.42 | 12 | 2 |
| 1:A:45:PHE:CD2 | 1:A:83:ASP:HA | 0.50 | 2.41 | 15 | 1 |
| 1:A:2:THR:CG2 | 1:A:2:THR:O | 0.50 | 2.60 | 30 | 1 |
| 1:A:8:LEU:CD2 | 1:A:18:ILE:CG2 | 0.50 | 2.90 | 27 | 2 |
| 1:A:133:GLN:CB | 1:A:139:ASN:OD1 | 0.50 | 2.60 | 28 | 1 |
| 1:A:3:LYS:O | 1:A:152:ALA:CB | 0.49 | 2.59 | 19 | 2 |
| 1:A:89:ALA:HB1 | 1:A:93:GLY:HA2 | 0.49 | 1.84 | 30 | 7 |
| 1:A:115:ARG:O | 1:A:149:ILE:CD1 | 0.49 | 2.60 | 15 | 4 |
| 1:A:112:ILE:C | 1:A:112:ILE:HD12 | 0.49 | 2.27 | 11 | 1 |
| 1:A:18:ILE:CD1 | 1:A:149:ILE:HD11 | 0.49 | 2.30 | 27 | 1 |
| 1:A:8:LEU:O | 1:A:9:LYS:CB | 0.49 | 2.59 | 7 | 1 |
| 1:A:22:GLN:HG2 | 1:A:29:VAL:HG22 | 0.49 | 1.83 | 11 | 1 |
| 1:A:35:ILE:CG2 | 1:A:38:LEU:CD1 | 0.49 | 2.89 | 17 | 1 |
| 1:A:83:ASP:O | 1:A:84:LEU:CB | 0.49 | 2.60 | 24 | 3 |
| 1:A:87:VAL:HG12 | 1:A:88:THR:H | 0.49 | 1.66 | 23 | 3 |
| 1:A:46:HIS:CE1 | 1:A:87:VAL:HG11 | 0.49 | 2.42 | 4 | 1 |
| 1:A:116:THR:OG1 | 1:A:148:VAL:HG23 | 0.49 | 2.07 | 8 | 1 |
| 1:A:2:THR:CG2 | 1:A:151:ILE:HG23 | 0.49 | 2.35 | 19 | 4 |
| 1:A:20:PHE:CD1 | 1:A:149:ILE:HG12 | 0.49 | 2.43 | 21 | 4 |
| 1:A:8:LEU:CD2 | 1:A:8:LEU:N | 0.49 | 2.75 | 9 | 5 |
| 1:A:8:LEU:CD1 | 1:A:117:LEU:O | 0.49 | 2.61 | 23 | 3 |
| 1:A:45:PHE:HB3 | 1:A:46:HIS:CD2 | 0.49 | 2.43 | 6 | 1 |
| 1:A:48:HIS:O | 1:A:48:HIS:CD2 | 0.49 | 2.65 | 11 | 2 |
| 1:A:118:VAL:HG22 | 1:A:119:VAL:N | 0.49 | 2.22 | 4 | 3 |
| 1:A:9:LYS:H | 1:A:145:ALA:HB1 | 0.49 | 1.67 | 11 | 1 |
| 1:A:116:THR:HA | 1:A:148:VAL:HG22 | 0.49 | 1.85 | 21 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:14:VAL:O | 1:A:14:VAL:CG1 | 0.49 | 2.60 | 3 | 3 |
| 1:A:48:HIS:CE1 | 1:A:143:ARG:HG2 | 0.49 | 2.43 | 2 | 1 |
| 1:A:93:GLY:O | 1:A:95:ALA:N | 0.49 | 2.46 | 19 | 10 |
| 1:A:45:PHE:CE1 | 1:A:87:VAL:CG2 | 0.49 | 2.95 | 12 | 1 |
| 1:A:10:GLY:HA2 | 1:A:145:ALA:HB2 | 0.49 | 1.84 | 21 | 1 |
| 1:A:131:ASN:O | 1:A:132:GLU:CG | 0.49 | 2.61 | 28 | 3 |
| 1:A:144:LEU:HD13 | 1:A:144:LEU:H | 0.49 | 1.63 | 25 | 1 |
| 1:A:14:VAL:HG22 | 1:A:38:LEU:HD23 | 0.49 | 1.84 | 3 | 1 |
| 1:A:47:VAL:HG12 | 1:A:48:HIS:N | 0.49 | 2.23 | 27 | 3 |
| 1:A:147:GLY:O | 1:A:148:VAL:CB | 0.49 | 2.60 | 20 | 1 |
| 1:A:99:ILE:HG22 | 1:A:100:GLU:N | 0.49 | 2.23 | 8 | 8 |
| 1:A:4:ALA:CB | 1:A:149:ILE:CG2 | 0.49 | 2.90 | 6 | 3 |
| 1:A:149:ILE:H | 1:A:149:ILE:HD12 | 0.49 | 1.68 | 6 | 1 |
| 1:A:14:VAL:CG2 | 1:A:38:LEU:CD1 | 0.49 | 2.84 | 19 | 1 |
| 1:A:29:VAL:HG21 | 1:A:106:LEU:CD2 | 0.49 | 2.37 | 24 | 2 |
| 1:A:113:ILE:O | 1:A:113:ILE:HG22 | 0.49 | 2.07 | 9 | 1 |
| 1:A:8:LEU:HD12 | 1:A:145:ALA:HB3 | 0.49 | 1.85 | 10 | 2 |
| 1:A:35:ILE:HG23 | 1:A:36:LYS:N | 0.48 | 2.22 | 4 | 22 |
| 1:A:35:ILE:CG2 | 1:A:38:LEU:HD11 | 0.48 | 2.38 | 19 | 1 |
| 1:A:20:PHE:CZ | 1:A:31:VAL:CG1 | 0.48 | 2.95 | 6 | 3 |
| 1:A:116:THR:O | 1:A:116:THR:HG23 | 0.48 | 2.08 | 23 | 1 |
| 1:A:83:ASP:OD1 | 1:A:84:LEU:N | 0.48 | 2.46 | 29 | 2 |
| 1:A:46:HIS:CG | 1:A:117:LEU:HD13 | 0.48 | 2.43 | 23 | 2 |
| 1:A:20:PHE:CD1 | 1:A:149:ILE:CG1 | 0.48 | 2.95 | 24 | 1 |
| 1:A:82:GLY:O | 1:A:83:ASP:C | 0.48 | 2.52 | 30 | 5 |
| 1:A:120:HIS:ND1 | 1:A:120:HIS:C | 0.48 | 2.67 | 28 | 1 |
| 1:A:13:PRO:O | 1:A:15:GLN:N | 0.48 | 2.47 | 16 | 6 |
| 1:A:119:VAL:HG12 | 1:A:120:HIS:N | 0.48 | 2.23 | 19 | 2 |
| 1:A:38:LEU:H | 1:A:38:LEU:HD13 | 0.48 | 1.68 | 22 | 1 |
| 1:A:6:ALA:CB | 1:A:147:GLY:O | 0.48 | 2.61 | 14 | 5 |
| 1:A:120:HIS:O | 1:A:122:LYS:N | 0.48 | 2.47 | 2 | 1 |
| 1:A:131:ASN:O | 1:A:133:GLN:N | 0.48 | 2.46 | 12 | 6 |
| 1:A:35:ILE:HB | 1:A:95:ALA:HB3 | 0.48 | 1.85 | 7 | 3 |
| 1:A:46:HIS:O | 1:A:47:VAL:CB | 0.48 | 2.61 | 7 | 3 |
| 1:A:48:HIS:O | 1:A:48:HIS:CG | 0.48 | 2.67 | 20 | 4 |
| 1:A:20:PHE:CD2 | 1:A:112:ILE:HD13 | 0.48 | 2.43 | 20 | 1 |
| 1:A:45:PHE:CD1 | 1:A:84:LEU:O | 0.48 | 2.66 | 25 | 1 |
| 1:A:45:PHE:CZ | 1:A:124:ASP:HB2 | 0.48 | 2.44 | 28 | 1 |
| 1:A:47:VAL:CG1 | 1:A:48:HIS:N | 0.48 | 2.77 | 12 | 2 |
| 1:A:86:ASN:ND2 | 1:A:124:ASP:CB | 0.48 | 2.76 | 18 | 1 |
| 1:A:42:LEU:HD12 | 1:A:42:LEU:H | 0.48 | 1.67 | 21 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:104:ILE:HD12 | 1:A:104:ILE:O | 0.48 | 2.08 | 26 | 6 |
| 1:A:16:GLY:C | 1:A:17:ILE:CG1 | 0.48 | 2.81 | 8 | 1 |
| 1:A:134:SER:HA | 1:A:138:GLY:CA | 0.48 | 2.38 | 24 | 4 |
| 1:A:8:LEU:HD12 | 1:A:147:GLY:CA | 0.48 | 2.32 | 21 | 1 |
| 1:A:6:ALA:O | 1:A:18:ILE:CG2 | 0.48 | 2.62 | 28 | 1 |
| 1:A:40:GLU:O | 1:A:40:GLU:CG | 0.48 | 2.62 | 4 | 5 |
| 1:A:43:HIS:CB | 1:A:45:PHE:CZ | 0.48 | 2.96 | 12 | 1 |
| 1:A:48:HIS:NE2 | 1:A:143:ARG:CZ | 0.48 | 2.76 | 23 | 1 |
| 1:A:45:PHE:CD2 | 1:A:117:LEU:HD12 | 0.48 | 2.44 | 2 | 1 |
| 1:A:47:VAL:HG21 | 1:A:115:ARG:HG3 | 0.48 | 1.86 | 3 | 1 |
| 1:A:45:PHE:CE2 | 1:A:85:GLY:HA2 | 0.48 | 2.44 | 14 | 2 |
| 1:A:84:LEU:HD23 | 1:A:85:GLY:H | 0.48 | 1.69 | 23 | 1 |
| 1:A:142:SER:O | 1:A:143:ARG:CG | 0.47 | 2.63 | 2 | 1 |
| 1:A:8:LEU:N | 1:A:16:GLY:O | 0.47 | 2.47 | 27 | 7 |
| 1:A:119:VAL:O | 1:A:144:LEU:N | 0.47 | 2.47 | 5 | 2 |
| 1:A:45:PHE:CE1 | 1:A:119:VAL:HG22 | 0.47 | 2.45 | 6 | 1 |
| 1:A:120:HIS:CE1 | 1:A:141:GLY:HA3 | 0.47 | 2.44 | 7 | 1 |
| 1:A:119:VAL:HG23 | 1:A:144:LEU:CD1 | 0.47 | 2.39 | 10 | 1 |
| 1:A:116:THR:O | 1:A:118:VAL:N | 0.47 | 2.47 | 12 | 1 |
| 1:A:120:HIS:CE1 | 1:A:141:GLY:HA2 | 0.47 | 2.45 | 24 | 4 |
| 1:A:108:GLY:O | 1:A:111:SER:CB | 0.47 | 2.61 | 3 | 1 |
| 1:A:43:HIS:CB | 1:A:45:PHE:CE1 | 0.47 | 2.98 | 12 | 1 |
| 1:A:89:ALA:CB | 1:A:93:GLY:O | 0.47 | 2.62 | 22 | 1 |
| 1:A:37:GLY:O | 1:A:38:LEU:O | 0.47 | 2.32 | 4 | 27 |
| 1:A:99:ILE:HG22 | 1:A:100:GLU:H | 0.47 | 1.69 | 25 | 2 |
| 1:A:48:HIS:CE1 | 1:A:120:HIS:CD2 | 0.47 | 3.03 | 16 | 1 |
| 1:A:115:ARG:O | 1:A:117:LEU:N | 0.47 | 2.48 | 22 | 7 |
| 1:A:45:PHE:CZ | 1:A:119:VAL:HG22 | 0.47 | 2.44 | 6 | 1 |
| 1:A:2:THR:HG21 | 1:A:22:GLN:OE1 | 0.47 | 2.10 | 7 | 1 |
| 1:A:7:VAL:O | 1:A:7:VAL:CG2 | 0.47 | 2.61 | 27 | 3 |
| 1:A:8:LEU:HD21 | 1:A:117:LEU:O | 0.47 | 2.09 | 21 | 1 |
| 1:A:87:VAL:HG11 | 1:A:117:LEU:HD11 | 0.47 | 1.85 | 14 | 1 |
| 1:A:5:VAL:HG13 | 1:A:19:ASN:ND2 | 0.47 | 2.24 | 25 | 1 |
| 1:A:122:LYS:CB | 1:A:140:ALA:O | 0.47 | 2.62 | 29 | 1 |
| 1:A:42:LEU:C | 1:A:43:HIS:CG | 0.47 | 2.88 | 6 | 1 |
| 1:A:117:LEU:C | 1:A:117:LEU:HD23 | 0.47 | 2.30 | 8 | 1 |
| 1:A:126:LEU:HD23 | 1:A:134:SER:O | 0.47 | 2.10 | 9 | 1 |
| 1:A:8:LEU:HD11 | 1:A:117:LEU:HB3 | 0.47 | 1.86 | 16 | 1 |
| 1:A:10:GLY:O | 1:A:12:GLY:N | 0.47 | 2.48 | 29 | 1 |
| 1:A:8:LEU:CD2 | 1:A:18:ILE:HG23 | 0.47 | 2.40 | 27 | 2 |
| 1:A:105:SER:C | 1:A:112:ILE:HG23 | 0.47 | 2.30 | 5 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:125:ASP:O | 1:A:127:GLY:N | 0.47 | 2.44 | 14 | 3 |
| 1:A:118:VAL:HG12 | 1:A:119:VAL:N | 0.47 | 2.25 | 18 | 1 |
| 1:A:47:VAL:O | 1:A:48:HIS:ND1 | 0.47 | 2.48 | 14 | 2 |
| 1:A:45:PHE:CE1 | 1:A:117:LEU:HB3 | 0.47 | 2.45 | 27 | 2 |
| 1:A:107:SER:O | 1:A:109:ASP:N | 0.47 | 2.47 | 3 | 3 |
| 1:A:8:LEU:C | 1:A:9:LYS:CG | 0.47 | 2.81 | 7 | 1 |
| 1:A:22:GLN:NE2 | 1:A:29:VAL:HG22 | 0.47 | 2.25 | 14 | 2 |
| 1:A:118:VAL:HG21 | 1:A:143:ARG:HG2 | 0.47 | 1.86 | 14 | 1 |
| 1:A:5:VAL:CG2 | 1:A:152:ALA:HB3 | 0.46 | 2.41 | 26 | 3 |
| 1:A:110:HIS:O | 1:A:111:SER:C | 0.46 | 2.52 | 3 | 2 |
| 1:A:146:CYS:SG | 1:A:146:CYS:O | 0.46 | 2.72 | 4 | 2 |
| 1:A:124:ASP:OD1 | 1:A:125:ASP:N | 0.46 | 2.47 | 17 | 1 |
| 1:A:42:LEU:CG | 1:A:86:ASN:ND2 | 0.46 | 2.78 | 21 | 1 |
| 1:A:48:HIS:NE2 | 1:A:143:ARG:NH2 | 0.46 | 2.63 | 23 | 1 |
| 1:A:46:HIS:O | 1:A:47:VAL:O | 0.46 | 2.33 | 6 | 2 |
| 1:A:131:ASN:O | 1:A:134:SER:N | 0.46 | 2.48 | 7 | 3 |
| 1:A:47:VAL:N | 1:A:82:GLY:O | 0.46 | 2.48 | 10 | 1 |
| 1:A:83:ASP:O | 1:A:84:LEU:CD2 | 0.46 | 2.63 | 16 | 1 |
| 1:A:120:HIS:C | 1:A:122:LYS:N | 0.46 | 2.68 | 2 | 1 |
| 1:A:38:LEU:CD1 | 1:A:43:HIS:CB | 0.46 | 2.94 | 3 | 1 |
| 1:A:36:LYS:HB2 | 1:A:94:VAL:HG22 | 0.46 | 1.84 | 8 | 1 |
| 1:A:97:VAL:HG12 | 1:A:99:ILE:HD12 | 0.46 | 1.88 | 8 | 1 |
| 1:A:19:ASN:N | 1:A:19:ASN:OD1 | 0.46 | 2.48 | 14 | 2 |
| 1:A:3:LYS:CG | 1:A:20:PHE:O | 0.46 | 2.64 | 17 | 3 |
| 1:A:106:LEU:HD22 | 1:A:113:ILE:HD11 | 0.46 | 1.86 | 15 | 1 |
| 1:A:45:PHE:O | 1:A:120:HIS:NE2 | 0.46 | 2.48 | 23 | 1 |
| 1:A:117:LEU:HD21 | 1:A:149:ILE:HD11 | 0.46 | 1.86 | 23 | 1 |
| 1:A:116:THR:CG2 | 1:A:146:CYS:SG | 0.46 | 3.04 | 30 | 1 |
| 1:A:39:THR:O | 1:A:41:GLY:N | 0.46 | 2.49 | 1 | 3 |
| 1:A:97:VAL:HG12 | 1:A:98:SER:N | 0.46 | 2.26 | 24 | 6 |
| 1:A:131:ASN:C | 1:A:133:GLN:N | 0.46 | 2.68 | 19 | 7 |
| 1:A:134:SER:O | 1:A:136:LYS:N | 0.46 | 2.48 | 19 | 2 |
| 1:A:46:HIS:ND1 | 1:A:118:VAL:O | 0.46 | 2.49 | 28 | 2 |
| 1:A:118:VAL:HG23 | 1:A:144:LEU:N | 0.46 | 2.25 | 25 | 1 |
| 1:A:125:ASP:CB | 1:A:128:LYS:CG | 0.46 | 2.94 | 28 | 1 |
| 1:A:46:HIS:CD2 | 1:A:117:LEU:HD13 | 0.46 | 2.46 | 30 | 1 |
| 1:A:21:GLU:O | 1:A:30:LYS:N | 0.46 | 2.49 | 6 | 10 |
| 1:A:18:ILE:HD12 | 1:A:32:TRP:O | 0.46 | 2.10 | 12 | 1 |
| 1:A:43:HIS:N | 1:A:123:ALA:HB2 | 0.46 | 2.24 | 12 | 1 |
| 1:A:117:LEU:HD13 | 1:A:117:LEU:C | 0.46 | 2.31 | 12 | 1 |
| 1:A:127:GLY:O | 1:A:130:GLY:N | 0.46 | 2.48 | 12 | 2 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:6:ALA:HB2 | 1:A:149:ILE:CA | 0.46 | 2.38 | 20 | 1 |
| 1:A:90:ASP:CG | 1:A:91:LYS:N | 0.46 | 2.69 | 27 | 30 |
| 1:A:48:HIS:O | 1:A:48:HIS:ND1 | 0.46 | 2.48 | 3 | 3 |
| 1:A:45:PHE:O | 1:A:143:ARG:NH2 | 0.46 | 2.49 | 17 | 1 |
| 1:A:122:LYS:C | 1:A:140:ALA:HB1 | 0.46 | 2.31 | 4 | 2 |
| 1:A:93:GLY:O | 1:A:94:VAL:C | 0.46 | 2.54 | 22 | 10 |
| 1:A:123:ALA:O | 1:A:140:ALA:CB | 0.46 | 2.61 | 13 | 1 |
| 1:A:147:GLY:C | 1:A:148:VAL:HG23 | 0.46 | 2.30 | 20 | 1 |
| 1:A:43:HIS:CE1 | 1:A:87:VAL:HB | 0.46 | 2.45 | 23 | 1 |
| 1:A:46:HIS:NE2 | 1:A:87:VAL:HG11 | 0.46 | 2.26 | 28 | 1 |
| 1:A:46:HIS:CE1 | 1:A:47:VAL:CG2 | 0.46 | 2.98 | 1 | 1 |
| 1:A:118:VAL:CG2 | 1:A:119:VAL:N | 0.46 | 2.79 | 1 | 1 |
| 1:A:21:GLU:CD | 1:A:22:GLN:N | 0.46 | 2.69 | 15 | 1 |
| 1:A:116:THR:HG23 | 1:A:146:CYS:HA | 0.46 | 1.88 | 19 | 1 |
| 1:A:42:LEU:O | 1:A:43:HIS:ND1 | 0.46 | 2.48 | 2 | 5 |
| 1:A:118:VAL:CB | 1:A:145:ALA:O | 0.46 | 2.63 | 12 | 2 |
| 1:A:134:SER:O | 1:A:138:GLY:N | 0.46 | 2.49 | 13 | 1 |
| 1:A:7:VAL:O | 1:A:7:VAL:CG1 | 0.46 | 2.64 | 30 | 3 |
| 1:A:13:PRO:O | 1:A:14:VAL:CG2 | 0.46 | 2.64 | 28 | 1 |
| 1:A:10:GLY:O | 1:A:11:ASP:C | 0.46 | 2.54 | 28 | 11 |
| 1:A:138:GLY:O | 1:A:140:ALA:N | 0.46 | 2.49 | 23 | 3 |
| 1:A:22:GLN:O | 1:A:22:GLN:CG | 0.46 | 2.63 | 7 | 1 |
| 1:A:117:LEU:H | 1:A:117:LEU:HD13 | 0.46 | 1.71 | 10 | 1 |
| 1:A:48:HIS:NE2 | 1:A:143:ARG:NE | 0.46 | 2.60 | 11 | 1 |
| 1:A:35:ILE:O | 1:A:94:VAL:CG1 | 0.46 | 2.57 | 16 | 1 |
| 1:A:138:GLY:O | 1:A:139:ASN:C | 0.45 | 2.54 | 23 | 3 |
| 1:A:140:ALA:O | 1:A:141:GLY:O | 0.45 | 2.34 | 27 | 3 |
| 1:A:134:SER:O | 1:A:137:THR:N | 0.45 | 2.49 | 20 | 2 |
| 1:A:116:THR:HG22 | 1:A:118:VAL:CG1 | 0.45 | 2.41 | 21 | 2 |
| 1:A:41:GLY:O | 1:A:43:HIS:NE2 | 0.45 | 2.50 | 15 | 3 |
| 1:A:83:ASP:OD1 | 1:A:85:GLY:N | 0.45 | 2.49 | 26 | 1 |
| 1:A:6:ALA:O | 1:A:18:ILE:HG22 | 0.45 | 2.11 | 28 | 1 |
| 1:A:20:PHE:CG | 1:A:149:ILE:HG12 | 0.45 | 2.47 | 1 | 1 |
| 1:A:121:GLU:HA | 1:A:144:LEU:HD11 | 0.45 | 1.88 | 2 | 1 |
| 1:A:84:LEU:HD13 | 1:A:85:GLY:N | 0.45 | 2.27 | 7 | 1 |
| 1:A:118:VAL:HG12 | 1:A:144:LEU:H | 0.45 | 1.70 | 10 | 1 |
| 1:A:8:LEU:CD2 | 1:A:18:ILE:HG22 | 0.45 | 2.42 | 11 | 4 |
| 1:A:86:ASN:N | 1:A:86:ASN:OD1 | 0.45 | 2.50 | 20 | 3 |
| 1:A:86:ASN:ND2 | 1:A:87:VAL:O | 0.45 | 2.49 | 27 | 1 |
| 1:A:120:HIS:O | 1:A:121:GLU:C | 0.45 | 2.53 | 27 | 3 |
| 1:A:7:VAL:CG2 | 1:A:15:GLN:OE1 | 0.45 | 2.65 | 14 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:42:LEU:O | 1:A:43:HIS:CD2 | 0.45 | 2.70 | 21 | 1 |
| 1:A:128:LYS:O | 1:A:130:GLY:N | 0.45 | 2.46 | 29 | 1 |
| 1:A:6:ALA:N | 1:A:18:ILE:O | 0.45 | 2.49 | 16 | 8 |
| 1:A:102:SER:C | 1:A:104:ILE:N | 0.45 | 2.70 | 9 | 1 |
| 1:A:39:THR:O | 1:A:43:HIS:NE2 | 0.45 | 2.49 | 10 | 5 |
| 1:A:113:ILE:HD11 | 1:A:151:ILE:HG12 | 0.45 | 1.87 | 11 | 2 |
| 1:A:18:ILE:CG1 | 1:A:19:ASN:N | 0.45 | 2.79 | 24 | 1 |
| 1:A:44:GLY:CA | 1:A:120:HIS:CE1 | 0.45 | 2.99 | 29 | 1 |
| 1:A:140:ALA:O | 1:A:142:SER:N | 0.45 | 2.49 | 7 | 2 |
| 1:A:118:VAL:HG11 | 1:A:143:ARG:HD3 | 0.45 | 1.87 | 17 | 1 |
| 1:A:43:HIS:CD2 | 1:A:120:HIS:CE1 | 0.45 | 3.04 | 19 | 1 |
| 1:A:20:PHE:CZ | 1:A:31:VAL:HG21 | 0.45 | 2.46 | 20 | 1 |
| 1:A:120:HIS:ND1 | 1:A:141:GLY:CA | 0.45 | 2.80 | 7 | 1 |
| 1:A:84:LEU:O | 1:A:85:GLY:O | 0.45 | 2.35 | 25 | 2 |
| 1:A:87:VAL:HG12 | 1:A:88:THR:N | 0.45 | 2.27 | 29 | 1 |
| 1:A:138:GLY:C | 1:A:140:ALA:N | 0.45 | 2.70 | 17 | 9 |
| 1:A:8:LEU:HD13 | 1:A:117:LEU:O | 0.45 | 2.12 | 4 | 1 |
| 1:A:44:GLY:HA3 | 1:A:120:HIS:CG | 0.45 | 2.47 | 28 | 2 |
| 1:A:45:PHE:CE2 | 1:A:87:VAL:CG1 | 0.45 | 3.00 | 19 | 1 |
| 1:A:13:PRO:O | 1:A:15:GLN:NE2 | 0.45 | 2.50 | 25 | 1 |
| 1:A:86:ASN:OD1 | 1:A:86:ASN:N | 0.45 | 2.50 | 4 | 1 |
| 1:A:44:GLY:C | 1:A:45:PHE:CG | 0.45 | 2.90 | 12 | 1 |
| 1:A:137:THR:CG2 | 1:A:138:GLY:N | 0.45 | 2.79 | 13 | 1 |
| 1:A:8:LEU:N | 1:A:8:LEU:CD2 | 0.45 | 2.80 | 24 | 3 |
| 1:A:46:HIS:HB2 | 1:A:117:LEU:HD13 | 0.45 | 1.88 | 4 | 1 |
| 1:A:43:HIS:O | 1:A:44:GLY:C | 0.45 | 2.54 | 16 | 4 |
| 1:A:43:HIS:O | 1:A:86:ASN:ND2 | 0.45 | 2.50 | 19 | 1 |
| 1:A:29:VAL:O | 1:A:31:VAL:N | 0.44 | 2.51 | 4 | 1 |
| 1:A:45:PHE:CZ | 1:A:84:LEU:CB | 0.44 | 3.00 | 16 | 1 |
| 1:A:118:VAL:HG12 | 1:A:119:VAL:H | 0.44 | 1.72 | 18 | 1 |
| 1:A:20:PHE:CE1 | 1:A:31:VAL:CG2 | 0.44 | 2.97 | 27 | 2 |
| 1:A:128:LYS:O | 1:A:134:SER:CB | 0.44 | 2.65 | 29 | 1 |
| 1:A:22:GLN:OE1 | 1:A:105:SER:CB | 0.44 | 2.65 | 25 | 2 |
| 1:A:106:LEU:CG | 1:A:151:ILE:HD11 | 0.44 | 2.43 | 20 | 1 |
| 1:A:133:GLN:O | 1:A:136:LYS:CG | 0.44 | 2.66 | 22 | 1 |
| 1:A:127:GLY:C | 1:A:129:GLY:N | 0.44 | 2.70 | 23 | 1 |
| 1:A:47:VAL:O | 1:A:48:HIS:C | 0.44 | 2.55 | 24 | 1 |
| 1:A:134:SER:O | 1:A:135:THR:C | 0.44 | 2.56 | 7 | 2 |
| 1:A:21:GLU:HB2 | 1:A:32:TRP:CH2 | 0.44 | 2.47 | 15 | 3 |
| 1:A:120:HIS:NE2 | 1:A:143:ARG:CZ | 0.44 | 2.81 | 17 | 1 |
| 1:A:139:ASN:O | 1:A:139:ASN:ND2 | 0.44 | 2.50 | 27 | 2 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:48:HIS:ND1 | 1:A:114:GLY:O | 0.44 | 2.49 | 29 | 1 |
| 1:A:106:LEU:CD2 | 1:A:113:ILE:HD11 | 0.44 | 2.31 | 29 | 1 |
| 1:A:20:PHE:CD2 | 1:A:112:ILE:HG13 | 0.44 | 2.47 | 10 | 1 |
| 1:A:125:ASP:C | 1:A:127:GLY:N | 0.44 | 2.69 | 17 | 1 |
| 1:A:38:LEU:HD23 | 1:A:93:GLY:C | 0.44 | 2.32 | 22 | 1 |
| 1:A:22:GLN:OE1 | 1:A:106:LEU:HD13 | 0.44 | 2.13 | 6 | 2 |
| 1:A:45:PHE:CZ | 1:A:46:HIS:NE2 | 0.44 | 2.86 | 16 | 1 |
| 1:A:84:LEU:HD23 | 1:A:85:GLY:N | 0.44 | 2.27 | 23 | 1 |
| 1:A:45:PHE:CZ | 1:A:117:LEU:HG | 0.44 | 2.48 | 27 | 1 |
| 1:A:29:VAL:HG12 | 1:A:31:VAL:HG22 | 0.44 | 1.88 | 6 | 1 |
| 1:A:42:LEU:HD23 | 1:A:126:LEU:HD11 | 0.44 | 1.89 | 8 | 1 |
| 1:A:120:HIS:NE2 | 1:A:122:LYS:O | 0.44 | 2.51 | 10 | 1 |
| 1:A:148:VAL:CG1 | 1:A:149:ILE:N | 0.44 | 2.81 | 13 | 1 |
| 1:A:46:HIS:NE2 | 1:A:120:HIS:NE2 | 0.44 | 2.66 | 20 | 1 |
| 1:A:44:GLY:N | 1:A:120:HIS:NE2 | 0.44 | 2.62 | 10 | 1 |
| 1:A:10:GLY:C | 1:A:12:GLY:N | 0.44 | 2.69 | 29 | 1 |
| 1:A:22:GLN:OE1 | 1:A:22:GLN:CA | 0.44 | 2.66 | 11 | 1 |
| 1:A:104:ILE:HD12 | 1:A:105:SER:N | 0.44 | 2.28 | 15 | 1 |
| 1:A:45:PHE:O | 1:A:48:HIS:ND1 | 0.44 | 2.51 | 1 | 1 |
| 1:A:104:ILE:HD13 | 1:A:104:ILE:H | 0.44 | 1.72 | 7 | 1 |
| 1:A:46:HIS:CE1 | 1:A:120:HIS:CG | 0.44 | 3.06 | 24 | 1 |
| 1:A:38:LEU:HD11 | 1:A:119:VAL:CG2 | 0.44 | 2.34 | 25 | 1 |
| 1:A:121:GLU:HB2 | 1:A:144:LEU:HD11 | 0.43 | 1.89 | 1 | 1 |
| 1:A:39:THR:O | 1:A:40:GLU:C | 0.43 | 2.56 | 5 | 11 |
| 1:A:38:LEU:O | 1:A:39:THR:CG2 | 0.43 | 2.65 | 8 | 1 |
| 1:A:99:ILE:CG2 | 1:A:100:GLU:N | 0.43 | 2.81 | 30 | 3 |
| 1:A:118:VAL:CG2 | 1:A:143:ARG:CB | 0.43 | 2.95 | 12 | 1 |
| 1:A:14:VAL:O | 1:A:14:VAL:HG12 | 0.43 | 2.13 | 19 | 2 |
| 1:A:20:PHE:CD2 | 1:A:112:ILE:CD1 | 0.43 | 3.02 | 18 | 2 |
| 1:A:43:HIS:CB | 1:A:120:HIS:CE1 | 0.43 | 3.01 | 19 | 1 |
| 1:A:39:THR:O | 1:A:43:HIS:CD2 | 0.43 | 2.70 | 27 | 2 |
| 1:A:105:SER:C | 1:A:106:LEU:HD12 | 0.43 | 2.34 | 26 | 1 |
| 1:A:143:ARG:CD | 1:A:143:ARG:C | 0.43 | 2.86 | 27 | 1 |
| 1:A:121:GLU:O | 1:A:140:ALA:HB3 | 0.43 | 2.13 | 28 | 1 |
| 1:A:20:PHE:CZ | 1:A:112:ILE:HD13 | 0.43 | 2.48 | 2 | 1 |
| 1:A:105:SER:O | 1:A:112:ILE:N | 0.43 | 2.51 | 2 | 2 |
| 1:A:124:ASP:O | 1:A:125:ASP:CG | 0.43 | 2.56 | 17 | 1 |
| 1:A:124:ASP:OD1 | 1:A:124:ASP:C | 0.43 | 2.57 | 17 | 1 |
| 1:A:19:ASN:N | 1:A:19:ASN:ND2 | 0.43 | 2.66 | 30 | 2 |
| 1:A:118:VAL:HG11 | 1:A:143:ARG:HB3 | 0.43 | 1.90 | 24 | 1 |
| 1:A:150:GLY:O | 1:A:151:ILE:C | 0.43 | 2.56 | 13 | 5 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:134:SER:C | 1:A:136:LYS:N | 0.43 | 2.71 | 19 | 3 |
| 1:A:45:PHE:CE1 | 1:A:124:ASP:OD2 | 0.43 | 2.71 | 7 | 1 |
| 1:A:4:ALA:HB3 | 1:A:149:ILE:CG2 | 0.43 | 2.44 | 11 | 1 |
| 1:A:112:ILE:O | 1:A:114:GLY:N | 0.43 | 2.50 | 13 | 1 |
| 1:A:106:LEU:HD22 | 1:A:112:ILE:CD1 | 0.43 | 2.42 | 18 | 1 |
| 1:A:124:ASP:OD1 | 1:A:124:ASP:N | 0.43 | 2.51 | 24 | 2 |
| 1:A:125:ASP:OD1 | 1:A:134:SER:CB | 0.43 | 2.67 | 24 | 1 |
| 1:A:44:GLY:CA | 1:A:120:HIS:HB2 | 0.43 | 2.43 | 2 | 2 |
| 1:A:7:VAL:O | 1:A:8:LEU:C | 0.43 | 2.56 | 17 | 7 |
| 1:A:107:SER:O | 1:A:111:SER:N | 0.43 | 2.51 | 15 | 1 |
| 1:A:149:ILE:HG23 | 1:A:149:ILE:O | 0.43 | 2.13 | 1 | 1 |
| 1:A:121:GLU:CA | 1:A:144:LEU:HD11 | 0.43 | 2.43 | 2 | 1 |
| 1:A:7:VAL:HG12 | 1:A:17:ILE:HG23 | 0.43 | 1.89 | 5 | 1 |
| 1:A:104:ILE:HB | 1:A:112:ILE:HG22 | 0.43 | 1.90 | 8 | 1 |
| 1:A:142:SER:HB3 | 1:A:144:LEU:HD12 | 0.43 | 1.89 | 25 | 1 |
| 1:A:18:ILE:HD11 | 1:A:31:VAL:HG13 | 0.43 | 1.89 | 29 | 1 |
| 1:A:46:HIS:ND1 | 1:A:117:LEU:HD12 | 0.43 | 2.27 | 13 | 1 |
| 1:A:103:VAL:O | 1:A:110:HIS:CE1 | 0.43 | 2.71 | 19 | 1 |
| 1:A:35:ILE:CD1 | 1:A:119:VAL:HG11 | 0.43 | 2.44 | 22 | 1 |
| 1:A:8:LEU:HD12 | 1:A:35:ILE:CG1 | 0.43 | 2.42 | 28 | 1 |
| 1:A:25:SER:O | 1:A:26:ASN:CB | 0.43 | 2.65 | 19 | 1 |
| 1:A:39:THR:OG1 | 1:A:43:HIS:NE2 | 0.43 | 2.49 | 26 | 2 |
| 1:A:83:ASP:OD1 | 1:A:83:ASP:C | 0.43 | 2.57 | 26 | 1 |
| 1:A:140:ALA:O | 1:A:141:GLY:C | 0.43 | 2.57 | 1 | 6 |
| 1:A:14:VAL:HG23 | 1:A:38:LEU:HD12 | 0.43 | 1.91 | 2 | 1 |
| 1:A:146:CYS:O | 1:A:148:VAL:N | 0.43 | 2.48 | 9 | 2 |
| 1:A:104:ILE:HG21 | 1:A:115:ARG:HH22 | 0.43 | 1.74 | 21 | 1 |
| 1:A:106:LEU:HD23 | 1:A:113:ILE:CD1 | 0.43 | 2.41 | 22 | 1 |
| 1:A:13:PRO:C | 1:A:14:VAL:HG23 | 0.43 | 2.34 | 28 | 1 |
| 1:A:18:ILE:C | 1:A:19:ASN:OD1 | 0.43 | 2.57 | 28 | 1 |
| 1:A:45:PHE:CZ | 1:A:86:ASN:CG | 0.43 | 2.92 | 4 | 1 |
| 1:A:13:PRO:O | 1:A:14:VAL:C | 0.43 | 2.55 | 29 | 3 |
| 1:A:22:GLN:NE2 | 1:A:27:GLY:O | 0.43 | 2.50 | 14 | 1 |
| 1:A:29:VAL:HG11 | 1:A:106:LEU:HD11 | 0.43 | 1.90 | 21 | 1 |
| 1:A:119:VAL:HG22 | 1:A:145:ALA:HB3 | 0.43 | 1.91 | 26 | 1 |
| 1:A:128:LYS:O | 1:A:129:GLY:C | 0.43 | 2.57 | 3 | 1 |
| 1:A:11:ASP:OD1 | 1:A:11:ASP:C | 0.43 | 2.58 | 4 | 1 |
| 1:A:2:THR:HG23 | 1:A:151:ILE:HG23 | 0.43 | 1.91 | 10 | 1 |
| 1:A:112:ILE:O | 1:A:115:ARG:CG | 0.43 | 2.67 | 19 | 2 |
| 1:A:38:LEU:HD12 | 1:A:43:HIS:CD2 | 0.43 | 2.49 | 21 | 1 |
| 1:A:4:ALA:N | 1:A:20:PHE:O | 0.42 | 2.50 | 1 | 2 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:122:LYS:CB | 1:A:140:ALA:CB | 0.42 | 2.97 | 25 | 2 |
| 1:A:116:THR:CG2 | 1:A:146:CYS:HB3 | 0.42 | 2.44 | 30 | 2 |
| 1:A:131:ASN:O | 1:A:132:GLU:C | 0.42 | 2.57 | 12 | 5 |
| 1:A:41:GLY:C | 1:A:42:LEU:HD13 | 0.42 | 2.34 | 11 | 2 |
| 1:A:2:THR:O | 1:A:20:PHE:O | 0.42 | 2.37 | 12 | 1 |
| 1:A:36:LYS:HA | 1:A:94:VAL:HG22 | 0.42 | 1.90 | 12 | 1 |
| 1:A:18:ILE:HG21 | 1:A:117:LEU:CD2 | 0.42 | 2.44 | 25 | 1 |
| 1:A:38:LEU:HD22 | 1:A:43:HIS:CB | 0.42 | 2.44 | 26 | 1 |
| 1:A:125:ASP:O | 1:A:126:LEU:C | 0.42 | 2.58 | 5 | 3 |
| 1:A:116:THR:HG23 | 1:A:146:CYS:HB2 | 0.42 | 1.91 | 24 | 3 |
| 1:A:22:GLN:O | 1:A:22:GLN:NE2 | 0.42 | 2.51 | 25 | 1 |
| 1:A:97:VAL:HG13 | 1:A:99:ILE:HD12 | 0.42 | 1.90 | 28 | 1 |
| 1:A:132:GLU:CA | 1:A:135:THR:OG1 | 0.42 | 2.66 | 28 | 1 |
| 1:A:42:LEU:HD22 | 1:A:126:LEU:HD11 | 0.42 | 1.90 | 5 | 1 |
| 1:A:45:PHE:O | 1:A:46:HIS:O | 0.42 | 2.37 | 6 | 2 |
| 1:A:126:LEU:N | 1:A:126:LEU:HD13 | 0.42 | 2.29 | 8 | 1 |
| 1:A:43:HIS:O | 1:A:86:ASN:CB | 0.42 | 2.67 | 19 | 1 |
| 1:A:43:HIS:CD2 | 1:A:43:HIS:N | 0.42 | 2.86 | 1 | 1 |
| 1:A:45:PHE:CE2 | 1:A:87:VAL:HG12 | 0.42 | 2.49 | 1 | 1 |
| 1:A:83:ASP:O | 1:A:84:LEU:CD1 | 0.42 | 2.63 | 3 | 1 |
| 1:A:115:ARG:O | 1:A:149:ILE:HD11 | 0.42 | 2.14 | 6 | 1 |
| 1:A:46:HIS:CG | 1:A:117:LEU:CD1 | 0.42 | 3.02 | 23 | 1 |
| 1:A:118:VAL:HG11 | 1:A:143:ARG:CB | 0.42 | 2.44 | 24 | 1 |
| 1:A:120:HIS:ND1 | 1:A:140:ALA:O | 0.42 | 2.51 | 10 | 1 |
| 1:A:38:LEU:O | 1:A:93:GLY:HA2 | 0.42 | 2.14 | 16 | 1 |
| 1:A:116:THR:HG23 | 1:A:118:VAL:CG1 | 0.42 | 2.37 | 28 | 1 |
| 1:A:13:PRO:O | 1:A:36:LYS:O | 0.42 | 2.38 | 6 | 8 |
| 1:A:20:PHE:CD1 | 1:A:149:ILE:CG2 | 0.42 | 3.03 | 8 | 1 |
| 1:A:85:GLY:C | 1:A:86:ASN:OD1 | 0.42 | 2.58 | 8 | 1 |
| 1:A:142:SER:O | 1:A:143:ARG:C | 0.42 | 2.57 | 25 | 4 |
| 1:A:45:PHE:O | 1:A:45:PHE:CD2 | 0.42 | 2.72 | 27 | 1 |
| 1:A:146:CYS:O | 1:A:147:GLY:C | 0.42 | 2.58 | 27 | 1 |
| 1:A:106:LEU:HD23 | 1:A:106:LEU:H | 0.42 | 1.72 | 4 | 1 |
| 1:A:43:HIS:N | 1:A:87:VAL:O | 0.42 | 2.53 | 29 | 2 |
| 1:A:116:THR:OG1 | 1:A:147:GLY:C | 0.42 | 2.58 | 11 | 1 |
| 1:A:43:HIS:C | 1:A:123:ALA:HB2 | 0.42 | 2.35 | 15 | 1 |
| 1:A:116:THR:CG2 | 1:A:146:CYS:HB2 | 0.42 | 2.44 | 16 | 2 |
| 1:A:14:VAL:CG2 | 1:A:38:LEU:CD2 | 0.42 | 2.98 | 3 | 1 |
| 1:A:20:PHE:CE2 | 1:A:112:ILE:HG13 | 0.42 | 2.49 | 10 | 1 |
| 1:A:45:PHE:CD2 | 1:A:47:VAL:HG23 | 0.42 | 2.50 | 15 | 1 |
| 1:A:48:HIS:NE2 | 1:A:143:ARG:CG | 0.42 | 2.83 | 2 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:20:PHE:CE2 | 1:A:31:VAL:HG13 | 0.42 | 2.50 | 12 | 1 |
| 1:A:82:GLY:O | 1:A:83:ASP:CB | 0.42 | 2.68 | 27 | 2 |
| 1:A:43:HIS:HB3 | 1:A:120:HIS:CD2 | 0.42 | 2.49 | 19 | 1 |
| 1:A:86:ASN:ND2 | 1:A:86:ASN:C | 0.42 | 2.73 | 27 | 1 |
| 1:A:45:PHE:CD2 | 1:A:117:LEU:HB3 | 0.42 | 2.50 | 2 | 1 |
| 1:A:47:VAL:HG22 | 1:A:116:THR:O | 0.42 | 2.15 | 2 | 1 |
| 1:A:97:VAL:HG13 | 1:A:99:ILE:CD1 | 0.42 | 2.45 | 13 | 1 |
| 1:A:105:SER:O | 1:A:111:SER:N | 0.42 | 2.53 | 14 | 1 |
| 1:A:38:LEU:CD1 | 1:A:38:LEU:N | 0.42 | 2.63 | 19 | 1 |
| 1:A:116:THR:HG23 | 1:A:146:CYS:CB | 0.42 | 2.44 | 24 | 1 |
| 1:A:122:LYS:HB3 | 1:A:140:ALA:HB2 | 0.42 | 1.90 | 24 | 1 |
| 1:A:35:ILE:O | 1:A:36:LYS:HG2 | 0.41 | 2.14 | 17 | 9 |
| 1:A:124:ASP:C | 1:A:126:LEU:N | 0.41 | 2.73 | 3 | 1 |
| 1:A:144:LEU:O | 1:A:145:ALA:O | 0.41 | 2.38 | 5 | 1 |
| 1:A:119:VAL:N | 1:A:144:LEU:O | 0.41 | 2.49 | 6 | 1 |
| 1:A:42:LEU:O | 1:A:43:HIS:CG | 0.41 | 2.73 | 11 | 1 |
| 1:A:38:LEU:O | 1:A:93:GLY:O | 0.41 | 2.38 | 16 | 1 |
| 1:A:100:GLU:O | 1:A:100:GLU:CG | 0.41 | 2.68 | 16 | 1 |
| 1:A:124:ASP:O | 1:A:124:ASP:CG | 0.41 | 2.58 | 3 | 1 |
| 1:A:86:ASN:ND2 | 1:A:123:ALA:HB1 | 0.41 | 2.31 | 12 | 1 |
| 1:A:45:PHE:O | 1:A:83:ASP:CG | 0.41 | 2.58 | 24 | 1 |
| 1:A:97:VAL:CG1 | 1:A:98:SER:N | 0.41 | 2.83 | 24 | 1 |
| 1:A:105:SER:OG | 1:A:106:LEU:N | 0.41 | 2.53 | 26 | 1 |
| 1:A:29:VAL:CG2 | 1:A:106:LEU:CD1 | 0.41 | 2.96 | 27 | 1 |
| 1:A:120:HIS:ND1 | 1:A:122:LYS:O | 0.41 | 2.53 | 29 | 1 |
| 1:A:8:LEU:HB2 | 1:A:16:GLY:CA | 0.41 | 2.45 | 1 | 2 |
| 1:A:22:GLN:OE1 | 1:A:106:LEU:CD1 | 0.41 | 2.68 | 6 | 1 |
| 1:A:119:VAL:HG12 | 1:A:120:HIS:H | 0.41 | 1.75 | 19 | 2 |
| 1:A:28:PRO:HA | 1:A:101:ASP:O | 0.41 | 2.15 | 12 | 3 |
| 1:A:46:HIS:ND1 | 1:A:117:LEU:HD22 | 0.41 | 2.30 | 14 | 1 |
| 1:A:116:THR:HG22 | 1:A:146:CYS:CB | 0.41 | 2.45 | 16 | 1 |
| 1:A:35:ILE:C | 1:A:36:LYS:CG | 0.41 | 2.89 | 17 | 2 |
| 1:A:42:LEU:O | 1:A:123:ALA:CB | 0.41 | 2.59 | 26 | 1 |
| 1:A:46:HIS:CD2 | 1:A:86:ASN:OD1 | 0.41 | 2.73 | 26 | 1 |
| 1:A:109:ASP:O | 1:A:110:HIS:ND1 | 0.41 | 2.53 | 28 | 1 |
| 1:A:98:SER:C | 1:A:99:ILE:CG1 | 0.41 | 2.89 | 9 | 1 |
| 1:A:42:LEU:CD2 | 1:A:88:THR:OG1 | 0.41 | 2.62 | 15 | 1 |
| 1:A:46:HIS:ND1 | 1:A:47:VAL:HG23 | 0.41 | 2.30 | 18 | 2 |
| 1:A:82:GLY:O | 1:A:83:ASP:O | 0.41 | 2.39 | 18 | 1 |
| 1:A:6:ALA:CB | 1:A:18:ILE:HG13 | 0.41 | 2.43 | 19 | 1 |
| 1:A:121:GLU:CG | 1:A:142:SER:HB2 | 0.41 | 2.45 | 27 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|-----------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:121:GLU:HG2 | 1:A:142:SER:CB | 0.41 | 2.45 | 27 | 1 |
| 1:A:40:GLU:OE1 | 1:A:40:GLU:C | 0.41 | 2.59 | 28 | 1 |
| 1:A:119:VAL:O | 1:A:144:LEU:CD1 | 0.41 | 2.68 | 29 | 1 |
| 1:A:110:HIS:O | 1:A:111:SER:O | 0.41 | 2.39 | 18 | 2 |
| 1:A:102:SER:O | 1:A:104:ILE:N | 0.41 | 2.53 | 9 | 1 |
| 1:A:8:LEU:HB2 | 1:A:16:GLY:N | 0.41 | 2.30 | 17 | 5 |
| 1:A:22:GLN:OE1 | 1:A:28:PRO:C | 0.41 | 2.59 | 14 | 2 |
| 1:A:20:PHE:CZ | 1:A:31:VAL:HG13 | 0.41 | 2.50 | 16 | 1 |
| 1:A:38:LEU:O | 1:A:39:THR:C | 0.41 | 2.59 | 16 | 1 |
| 1:A:45:PHE:O | 1:A:83:ASP:OD1 | 0.41 | 2.39 | 29 | 1 |
| 1:A:119:VAL:O | 1:A:143:ARG:O | 0.41 | 2.39 | 9 | 1 |
| 1:A:43:HIS:O | 1:A:86:ASN:OD1 | 0.41 | 2.39 | 14 | 1 |
| 1:A:39:THR:CA | 1:A:93:GLY:CA | 0.41 | 2.98 | 17 | 1 |
| 1:A:104:ILE:HB | 1:A:112:ILE:CG2 | 0.41 | 2.45 | 23 | 2 |
| 1:A:106:LEU:HG | 1:A:151:ILE:HD11 | 0.41 | 1.93 | 20 | 1 |
| 1:A:142:SER:O | 1:A:143:ARG:O | 0.41 | 2.38 | 3 | 2 |
| 1:A:2:THR:HG22 | 1:A:3:LYS:N | 0.41 | 2.31 | 9 | 1 |
| 1:A:48:HIS:NE2 | 1:A:120:HIS:CE1 | 0.41 | 2.89 | 15 | 1 |
| 1:A:24:GLU:O | 1:A:26:ASN:N | 0.41 | 2.49 | 19 | 1 |
| 1:A:38:LEU:HD13 | 1:A:38:LEU:H | 0.41 | 1.68 | 19 | 1 |
| 1:A:131:ASN:O | 1:A:132:GLU:CD | 0.41 | 2.59 | 22 | 1 |
| 1:A:20:PHE:CE1 | 1:A:149:ILE:HG13 | 0.41 | 2.49 | 26 | 1 |
| 1:A:124:ASP:CG | 1:A:127:GLY:O | 0.41 | 2.59 | 2 | 1 |
| 1:A:112:ILE:O | 1:A:113:ILE:C | 0.41 | 2.59 | 3 | 3 |
| 1:A:14:VAL:CG2 | 1:A:144:LEU:HD13 | 0.41 | 2.35 | 10 | 1 |
| 1:A:129:GLY:O | 1:A:130:GLY:O | 0.41 | 2.39 | 12 | 2 |
| 1:A:122:LYS:HB2 | 1:A:140:ALA:CB | 0.41 | 2.46 | 18 | 1 |
| 1:A:21:GLU:OE1 | 1:A:21:GLU:C | 0.41 | 2.59 | 19 | 1 |
| 1:A:121:GLU:HB2 | 1:A:142:SER:CB | 0.41 | 2.46 | 19 | 1 |
| 1:A:46:HIS:CB | 1:A:117:LEU:HA | 0.41 | 2.46 | 5 | 1 |
| 1:A:146:CYS:O | 1:A:146:CYS:SG | 0.41 | 2.78 | 8 | 1 |
| 1:A:84:LEU:O | 1:A:84:LEU:HD23 | 0.41 | 2.15 | 10 | 1 |
| 1:A:45:PHE:CE1 | 1:A:87:VAL:HG22 | 0.41 | 2.49 | 12 | 1 |
| 1:A:105:SER:O | 1:A:110:HIS:O | 0.41 | 2.39 | 12 | 1 |
| 1:A:46:HIS:O | 1:A:116:THR:O | 0.41 | 2.39 | 13 | 1 |
| 1:A:104:ILE:H | 1:A:104:ILE:HD13 | 0.41 | 1.76 | 14 | 1 |
| 1:A:20:PHE:HD2 | 1:A:112:ILE:HD12 | 0.41 | 1.75 | 19 | 1 |
| 1:A:118:VAL:CG1 | 1:A:143:ARG:HA | 0.41 | 2.46 | 19 | 1 |
| 1:A:38:LEU:H | 1:A:38:LEU:CD2 | 0.41 | 2.27 | 22 | 1 |
| 1:A:83:ASP:O | 1:A:85:GLY:N | 0.41 | 2.54 | 23 | 1 |
| 1:A:28:PRO:CA | 1:A:101:ASP:O | 0.41 | 2.69 | 30 | 1 |

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| Atom-1 | Atom-2 | Clash(Å) | Distance(Å) | Models | |
|------------------|------------------|----------|-------------|--------|-------|
| | | | | Worst | Total |
| 1:A:46:HIS:CD2 | 1:A:117:LEU:CD1 | 0.41 | 3.04 | 30 | 1 |
| 1:A:118:VAL:HG23 | 1:A:145:ALA:N | 0.41 | 2.31 | 22 | 2 |
| 1:A:85:GLY:O | 1:A:86:ASN:OD1 | 0.41 | 2.39 | 5 | 1 |
| 1:A:86:ASN:ND2 | 1:A:124:ASP:OD2 | 0.41 | 2.54 | 16 | 1 |
| 1:A:118:VAL:HG13 | 1:A:118:VAL:O | 0.41 | 2.16 | 16 | 1 |
| 1:A:141:GLY:O | 1:A:142:SER:CB | 0.41 | 2.68 | 24 | 1 |
| 1:A:109:ASP:O | 1:A:110:HIS:CG | 0.41 | 2.74 | 28 | 1 |
| 1:A:48:HIS:ND1 | 1:A:118:VAL:HG11 | 0.41 | 2.30 | 30 | 1 |
| 1:A:8:LEU:HD23 | 1:A:18:ILE:HG22 | 0.40 | 1.92 | 1 | 1 |
| 1:A:118:VAL:O | 1:A:119:VAL:O | 0.40 | 2.39 | 9 | 1 |
| 1:A:143:ARG:O | 1:A:144:LEU:O | 0.40 | 2.39 | 9 | 1 |
| 1:A:46:HIS:ND1 | 1:A:117:LEU:CD1 | 0.40 | 2.83 | 13 | 1 |
| 1:A:36:LYS:HG2 | 1:A:94:VAL:HG22 | 0.40 | 1.91 | 16 | 1 |
| 1:A:103:VAL:O | 1:A:110:HIS:NE2 | 0.40 | 2.54 | 19 | 1 |
| 1:A:45:PHE:CE2 | 1:A:46:HIS:CD2 | 0.40 | 3.08 | 22 | 1 |
| 1:A:124:ASP:OD1 | 1:A:126:LEU:CA | 0.40 | 2.69 | 25 | 1 |
| 1:A:117:LEU:N | 1:A:117:LEU:HD22 | 0.40 | 2.31 | 2 | 1 |
| 1:A:117:LEU:CD2 | 1:A:117:LEU:N | 0.40 | 2.85 | 6 | 1 |
| 1:A:12:GLY:N | 1:A:13:PRO:HD2 | 0.40 | 2.30 | 15 | 1 |
| 1:A:46:HIS:H | 1:A:46:HIS:CD2 | 0.40 | 2.35 | 15 | 1 |
| 1:A:35:ILE:CG2 | 1:A:38:LEU:CD2 | 0.40 | 2.80 | 22 | 1 |
| 1:A:47:VAL:CG2 | 1:A:115:ARG:HD3 | 0.40 | 2.47 | 26 | 1 |
| 1:A:124:ASP:CG | 1:A:124:ASP:O | 0.40 | 2.59 | 15 | 1 |
| 1:A:45:PHE:CE2 | 1:A:46:HIS:O | 0.40 | 2.75 | 17 | 1 |
| 1:A:117:LEU:CD1 | 1:A:149:ILE:HD11 | 0.40 | 2.43 | 22 | 1 |
| 1:A:127:GLY:O | 1:A:129:GLY:N | 0.40 | 2.54 | 23 | 1 |
| 1:A:123:ALA:O | 1:A:138:GLY:O | 0.40 | 2.40 | 25 | 1 |
| 1:A:22:GLN:O | 1:A:22:GLN:OE1 | 0.40 | 2.40 | 8 | 1 |
| 1:A:40:GLU:CG | 1:A:40:GLU:O | 0.40 | 2.70 | 8 | 1 |
| 1:A:43:HIS:O | 1:A:87:VAL:N | 0.40 | 2.52 | 10 | 1 |
| 1:A:106:LEU:CD2 | 1:A:151:ILE:CD1 | 0.40 | 3.00 | 20 | 1 |
| 1:A:120:HIS:O | 1:A:122:LYS:O | 0.40 | 2.39 | 28 | 1 |
| 1:A:130:GLY:O | 1:A:135:THR:HG23 | 0.40 | 2.17 | 3 | 1 |
| 1:A:118:VAL:HG22 | 1:A:119:VAL:H | 0.40 | 1.76 | 4 | 1 |
| 1:A:115:ARG:O | 1:A:116:THR:C | 0.40 | 2.59 | 6 | 1 |
| 1:A:8:LEU:O | 1:A:9:LYS:CG | 0.40 | 2.69 | 7 | 1 |
| 1:A:139:ASN:O | 1:A:140:ALA:CB | 0.40 | 2.69 | 13 | 1 |
| 1:A:5:VAL:HG12 | 1:A:6:ALA:N | 0.40 | 2.32 | 17 | 1 |
| 1:A:143:ARG:O | 1:A:144:LEU:CD2 | 0.40 | 2.60 | 23 | 1 |
| 1:A:124:ASP:OD1 | 1:A:126:LEU:N | 0.40 | 2.55 | 25 | 1 |
| 1:A:9:LYS:O | 1:A:10:GLY:O | 0.40 | 2.39 | 29 | 1 |

6.3 Torsion angles [i](#)

6.3.1 Protein backbone [i](#)

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|--------------|--------------|--------------|-------------|---|
| 1 | A | 118/153 (77%) | 70±4 (60±3%) | 34±4 (29±3%) | 13±3 (11±3%) | 1 | 8 |
| All | All | 3540/4590 (77%) | 2109 (60%) | 1032 (29%) | 399 (11%) | 1 | 8 |

All 58 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

| Mol | Chain | Res | Type | Models (Total) |
|-----|-------|-----|------|----------------|
| 1 | A | 38 | LEU | 29 |
| 1 | A | 94 | VAL | 27 |
| 1 | A | 90 | ASP | 20 |
| 1 | A | 47 | VAL | 19 |
| 1 | A | 10 | GLY | 18 |
| 1 | A | 138 | GLY | 17 |
| 1 | A | 148 | VAL | 14 |
| 1 | A | 132 | GLU | 13 |
| 1 | A | 111 | SER | 13 |
| 1 | A | 14 | VAL | 12 |
| 1 | A | 44 | GLY | 12 |
| 1 | A | 84 | LEU | 11 |
| 1 | A | 98 | SER | 10 |
| 1 | A | 109 | ASP | 10 |
| 1 | A | 143 | ARG | 9 |
| 1 | A | 130 | GLY | 9 |
| 1 | A | 116 | THR | 8 |
| 1 | A | 141 | GLY | 7 |
| 1 | A | 82 | GLY | 7 |
| 1 | A | 40 | GLU | 6 |
| 1 | A | 140 | ALA | 6 |
| 1 | A | 144 | LEU | 6 |
| 1 | A | 113 | ILE | 6 |
| 1 | A | 30 | LYS | 6 |
| 1 | A | 103 | VAL | 6 |
| 1 | A | 15 | GLN | 6 |
| 1 | A | 85 | GLY | 5 |

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| Mol | Chain | Res | Type | Models (Total) |
|-----|-------|-----|------|----------------|
| 1 | A | 123 | ALA | 5 |
| 1 | A | 83 | ASP | 5 |
| 1 | A | 145 | ALA | 5 |
| 1 | A | 125 | ASP | 5 |
| 1 | A | 127 | GLY | 5 |
| 1 | A | 139 | ASN | 4 |
| 1 | A | 108 | GLY | 4 |
| 1 | A | 13 | PRO | 4 |
| 1 | A | 46 | HIS | 4 |
| 1 | A | 48 | HIS | 4 |
| 1 | A | 122 | LYS | 3 |
| 1 | A | 124 | ASP | 3 |
| 1 | A | 104 | ILE | 3 |
| 1 | A | 9 | LYS | 3 |
| 1 | A | 12 | GLY | 3 |
| 1 | A | 117 | LEU | 3 |
| 1 | A | 16 | GLY | 2 |
| 1 | A | 87 | VAL | 2 |
| 1 | A | 114 | GLY | 2 |
| 1 | A | 119 | VAL | 2 |
| 1 | A | 8 | LEU | 2 |
| 1 | A | 133 | GLN | 2 |
| 1 | A | 26 | ASN | 2 |
| 1 | A | 142 | SER | 2 |
| 1 | A | 45 | PHE | 2 |
| 1 | A | 121 | GLU | 1 |
| 1 | A | 129 | GLY | 1 |
| 1 | A | 151 | ILE | 1 |
| 1 | A | 39 | THR | 1 |
| 1 | A | 135 | THR | 1 |
| 1 | A | 11 | ASP | 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 | 91/118 (77%) | 66±3 (72±4%) | 25±3 (28±4%) | 2 20 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|-----|-------|-----------------|------------|-----------|--------------------|
| All | All | 2730/3540 (77%) | 1977 (72%) | 753 (28%) | 2 20 |

All 79 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 | 18 | ILE | 30 |
| 1 | A | 19 | ASN | 29 |
| 1 | A | 35 | ILE | 26 |
| 1 | A | 15 | GLN | 24 |
| 1 | A | 133 | GLN | 23 |
| 1 | A | 107 | SER | 22 |
| 1 | A | 84 | LEU | 20 |
| 1 | A | 92 | ASP | 20 |
| 1 | A | 142 | SER | 19 |
| 1 | A | 38 | LEU | 18 |
| 1 | A | 117 | LEU | 18 |
| 1 | A | 24 | GLU | 18 |
| 1 | A | 143 | ARG | 17 |
| 1 | A | 122 | LYS | 16 |
| 1 | A | 125 | ASP | 16 |
| 1 | A | 121 | GLU | 15 |
| 1 | A | 46 | HIS | 14 |
| 1 | A | 105 | SER | 14 |
| 1 | A | 109 | ASP | 14 |
| 1 | A | 128 | LYS | 14 |
| 1 | A | 8 | LEU | 14 |
| 1 | A | 40 | GLU | 14 |
| 1 | A | 48 | HIS | 14 |
| 1 | A | 3 | LYS | 14 |
| 1 | A | 32 | TRP | 14 |
| 1 | A | 136 | LYS | 12 |
| 1 | A | 25 | SER | 12 |
| 1 | A | 42 | LEU | 12 |
| 1 | A | 104 | ILE | 12 |
| 1 | A | 120 | HIS | 12 |
| 1 | A | 9 | LYS | 12 |
| 1 | A | 124 | ASP | 12 |
| 1 | A | 132 | GLU | 10 |
| 1 | A | 134 | SER | 10 |
| 1 | A | 83 | ASP | 10 |
| 1 | A | 101 | ASP | 9 |

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| Mol | Chain | Res | Type | Models (Total) |
|-----|-------|-----|------|----------------|
| 1 | A | 5 | VAL | 9 |
| 1 | A | 106 | LEU | 9 |
| 1 | A | 144 | LEU | 9 |
| 1 | A | 23 | LYS | 9 |
| 1 | A | 146 | CYS | 8 |
| 1 | A | 100 | GLU | 8 |
| 1 | A | 21 | GLU | 7 |
| 1 | A | 112 | ILE | 7 |
| 1 | A | 115 | ARG | 7 |
| 1 | A | 45 | PHE | 6 |
| 1 | A | 153 | GLN | 6 |
| 1 | A | 26 | ASN | 6 |
| 1 | A | 2 | THR | 6 |
| 1 | A | 86 | ASN | 5 |
| 1 | A | 135 | THR | 5 |
| 1 | A | 139 | ASN | 5 |
| 1 | A | 102 | SER | 4 |
| 1 | A | 131 | ASN | 4 |
| 1 | A | 116 | THR | 4 |
| 1 | A | 118 | VAL | 4 |
| 1 | A | 14 | VAL | 4 |
| 1 | A | 103 | VAL | 3 |
| 1 | A | 91 | LYS | 3 |
| 1 | A | 111 | SER | 3 |
| 1 | A | 34 | SER | 3 |
| 1 | A | 43 | HIS | 3 |
| 1 | A | 30 | LYS | 2 |
| 1 | A | 88 | THR | 2 |
| 1 | A | 126 | LEU | 2 |
| 1 | A | 99 | ILE | 2 |
| 1 | A | 149 | ILE | 2 |
| 1 | A | 22 | GLN | 2 |
| 1 | A | 36 | LYS | 2 |
| 1 | A | 96 | ASP | 2 |
| 1 | A | 11 | ASP | 2 |
| 1 | A | 31 | VAL | 1 |
| 1 | A | 47 | VAL | 1 |
| 1 | A | 98 | SER | 1 |
| 1 | A | 17 | ILE | 1 |
| 1 | A | 119 | VAL | 1 |
| 1 | A | 87 | VAL | 1 |
| 1 | A | 110 | HIS | 1 |

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| Mol | Chain | Res | Type | Models (Total) |
|-----|-------|-----|------|----------------|
| 1 | A | 97 | VAL | 1 |

6.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

6.5 Carbohydrates [i](#)

There are no monosaccharides 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

No chemical shift data were provided