



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 27, 2021 – 09:59 PM EST

PDB ID : 1CYC
Title : THE CRYSTAL STRUCTURE OF BONITO (KATSUO) FERROCYTOCHROME C AT 2.3 ANGSTROMS RESOLUTION. II. STRUCTURE AND FUNCTION
Authors : Tanaka, N.; Yamane, T.; Tsukihara, T.; Ashida, T.; Kakudo, M.
Deposited on : 1976-08-01
Resolution : 2.30 Å(reported)

This is a Full wwPDB X-ray 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/XrayValidationReportHelp>

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
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.17.1

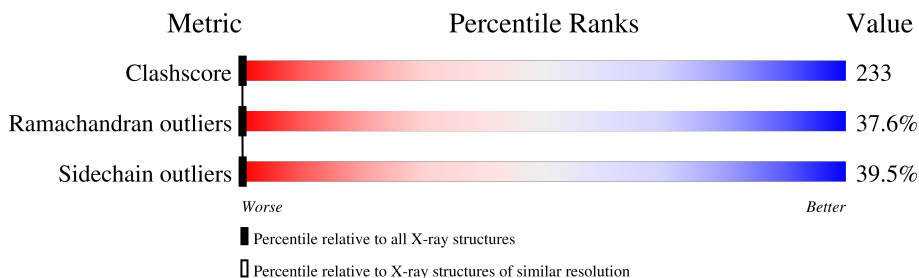
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 Å.



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) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| Clashscore | 141614 | 5643 (2.30-2.30) |
| Ramachandran outliers | 138981 | 5575 (2.30-2.30) |
| Sidechain outliers | 138945 | 5575 (2.30-2.30) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. 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 $\leq 5\%$

Note EDS was not executed.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | A | 103 |  32% 65% |
| 1 | B | 103 |  32% 65% |

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|-----|-----------|----------|---------|------------------|
| 2 | HEC | A | 104 | - | - | X | - |
| 2 | HEC | B | 104 | - | - | X | - |

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 1677 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called FERROCYTOCHROME C.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 1 | A | 103 | Total 795 | C 505 | N 139 | O 147 | S 4 | 0 | 0 | 0 |
| 1 | B | 103 | Total 795 | C 505 | N 139 | O 147 | S 4 | 0 | 0 | 0 |

- Molecule 2 is HEME C (three-letter code: HEC) (formula: $C_{34}H_{34}FeN_4O_4$).



| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------------|---------|---------|--------|--------|---------|---------|
| | | | Total | C | Fe | N | O | | |
| 2 | A | 1 | Total 43 | C 34 | Fe 1 | N 4 | O 4 | 0 | 0 |
| 2 | B | 1 | Total 43 | C 34 | Fe 1 | N 4 | O 4 | 0 | 0 |

- Molecule 3 is water.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|------------|--------------|-----------------|----------------|----------------|----------------|
| 3 | A | 1 | Total O 1 1 | 0 | 0 |

3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-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 outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

Note EDS was not executed.

- Molecule 1: FERROCYTOCHROME C

Chain A: 



- Molecule 1: FERROCYTOCHROME C

Chain B: 



4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

| Property | Value | Source |
|--|--|-----------|
| Space group | P 21 21 21 | Depositor |
| Cell constants a, b, c, α , β , γ | 57.68Å 84.58Å 37.83Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | (Not available) – 2.30 | Depositor |
| % Data completeness (in resolution range) | (Not available) ((Not available)-2.30) | Depositor |
| R_{merge} | (Not available) | Depositor |
| R_{sym} | (Not available) | Depositor |
| Refinement program | unknown | Depositor |
| R, R_{free} | (Not available) , (Not available) | Depositor |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| Total number of atoms | 1677 | wwPDB-VP |
| Average B, all atoms (Å ²) | 0.0 | wwPDB-VP |

5 Model quality i

5.1 Standard geometry i

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

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 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 | 7.94 | 366/811 (45.1%) | 6.18 | 322/1084 (29.7%) |
| 1 | B | 7.94 | 366/811 (45.1%) | 6.18 | 322/1084 (29.7%) |
| All | All | 7.94 | 732/1622 (45.1%) | 6.18 | 644/2168 (29.7%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | A | 2 | 35 |
| 1 | B | 2 | 35 |
| All | All | 4 | 70 |

All (732) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|--------|-------------|----------|
| 1 | A | 3 | VAL | CA-CB | 60.22 | 2.81 | 1.54 |
| 1 | B | 3 | VAL | CA-CB | 60.22 | 2.81 | 1.54 |
| 1 | A | 44 | GLU | CG-CD | 37.82 | 2.08 | 1.51 |
| 1 | B | 44 | GLU | CG-CD | 37.82 | 2.08 | 1.51 |
| 1 | A | 46 | TYR | CG-CD1 | -37.48 | 0.90 | 1.39 |
| 1 | B | 46 | TYR | CG-CD1 | -37.48 | 0.90 | 1.39 |
| 1 | A | 10 | PHE | CG-CD2 | -30.47 | 0.93 | 1.38 |
| 1 | B | 10 | PHE | CG-CD2 | -30.47 | 0.93 | 1.38 |
| 1 | A | 44 | GLU | CB-CG | 30.30 | 2.09 | 1.52 |
| 1 | B | 44 | GLU | CB-CG | 30.30 | 2.09 | 1.52 |
| 1 | A | 46 | TYR | CE2-CZ | -28.09 | 1.02 | 1.38 |
| 1 | B | 46 | TYR | CE2-CZ | -28.09 | 1.02 | 1.38 |
| 1 | A | 30 | PRO | N-CD | -27.34 | 1.09 | 1.47 |
| 1 | B | 30 | PRO | N-CD | -27.34 | 1.09 | 1.47 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 1 | A | 61 | GLU | CD-OE2 | 26.47 | 1.54 | 1.25 |
| 1 | A | 90 | GLU | CD-OE2 | 26.47 | 1.54 | 1.25 |
| 1 | B | 61 | GLU | CD-OE2 | 26.47 | 1.54 | 1.25 |
| 1 | B | 90 | GLU | CD-OE2 | 26.47 | 1.54 | 1.25 |
| 1 | A | 24 | GLY | N-CA | 25.53 | 1.84 | 1.46 |
| 1 | B | 24 | GLY | N-CA | 25.53 | 1.84 | 1.46 |
| 1 | A | 59 | TRP | CD2-CE2 | -24.98 | 1.11 | 1.41 |
| 1 | B | 59 | TRP | CD2-CE2 | -24.98 | 1.11 | 1.41 |
| 1 | A | 21 | GLU | CD-OE1 | 24.59 | 1.52 | 1.25 |
| 1 | A | 69 | GLU | CD-OE1 | 24.59 | 1.52 | 1.25 |
| 1 | B | 21 | GLU | CD-OE1 | 24.59 | 1.52 | 1.25 |
| 1 | B | 69 | GLU | CD-OE1 | 24.59 | 1.52 | 1.25 |
| 1 | A | 21 | GLU | CD-OE2 | 24.23 | 1.52 | 1.25 |
| 1 | B | 21 | GLU | CD-OE2 | 24.23 | 1.52 | 1.25 |
| 1 | A | 33 | TRP | CE2-CZ2 | -23.23 | 1.00 | 1.39 |
| 1 | B | 33 | TRP | CE2-CZ2 | -23.23 | 1.00 | 1.39 |
| 1 | A | 38 | ARG | CZ-NH1 | -22.37 | 1.03 | 1.33 |
| 1 | B | 38 | ARG | CZ-NH1 | -22.37 | 1.03 | 1.33 |
| 1 | A | 73 | LYS | CD-CE | 21.45 | 2.04 | 1.51 |
| 1 | B | 73 | LYS | CD-CE | 21.45 | 2.04 | 1.51 |
| 1 | A | 90 | GLU | CD-OE1 | 21.23 | 1.49 | 1.25 |
| 1 | B | 90 | GLU | CD-OE1 | 21.23 | 1.49 | 1.25 |
| 1 | A | 91 | ARG | CZ-NH1 | 21.08 | 1.60 | 1.33 |
| 1 | B | 91 | ARG | CZ-NH1 | 21.08 | 1.60 | 1.33 |
| 1 | A | 47 | SER | CB-OG | 20.60 | 1.69 | 1.42 |
| 1 | B | 47 | SER | CB-OG | 20.60 | 1.69 | 1.42 |
| 1 | A | 67 | TYR | CE1-CZ | -20.49 | 1.11 | 1.38 |
| 1 | B | 67 | TYR | CE1-CZ | -20.49 | 1.11 | 1.38 |
| 1 | A | 44 | GLU | CD-OE2 | 20.25 | 1.48 | 1.25 |
| 1 | B | 44 | GLU | CD-OE2 | 20.25 | 1.48 | 1.25 |
| 1 | A | 54 | SER | CA-CB | -20.23 | 1.22 | 1.52 |
| 1 | B | 54 | SER | CA-CB | -20.23 | 1.22 | 1.52 |
| 1 | A | 91 | ARG | NE-CZ | 19.54 | 1.58 | 1.33 |
| 1 | B | 91 | ARG | NE-CZ | 19.54 | 1.58 | 1.33 |
| 1 | A | 81 | ILE | C-O | 19.46 | 1.60 | 1.23 |
| 1 | B | 81 | ILE | C-O | 19.46 | 1.60 | 1.23 |
| 1 | A | 82 | PHE | CG-CD2 | -19.45 | 1.09 | 1.38 |
| 1 | B | 82 | PHE | CG-CD2 | -19.45 | 1.09 | 1.38 |
| 1 | A | 92 | GLN | CD-OE1 | 19.03 | 1.65 | 1.24 |
| 1 | B | 92 | GLN | CD-OE1 | 19.03 | 1.65 | 1.24 |
| 1 | A | 19 | THR | CB-OG1 | -18.97 | 1.05 | 1.43 |
| 1 | B | 19 | THR | CB-OG1 | -18.97 | 1.05 | 1.43 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 1 | A | 83 | ALA | CA-CB | 18.61 | 1.91 | 1.52 |
| 1 | B | 83 | ALA | CA-CB | 18.61 | 1.91 | 1.52 |
| 1 | A | 63 | THR | CB-OG1 | -18.60 | 1.06 | 1.43 |
| 1 | B | 63 | THR | CB-OG1 | -18.60 | 1.06 | 1.43 |
| 1 | A | 12 | GLN | CG-CD | 18.59 | 1.93 | 1.51 |
| 1 | B | 12 | GLN | CG-CD | 18.59 | 1.93 | 1.51 |
| 1 | A | 33 | TRP | CZ3-CH2 | -18.48 | 1.10 | 1.40 |
| 1 | B | 33 | TRP | CZ3-CH2 | -18.48 | 1.10 | 1.40 |
| 1 | A | 48 | TYR | CG-CD2 | -18.39 | 1.15 | 1.39 |
| 1 | B | 48 | TYR | CG-CD2 | -18.39 | 1.15 | 1.39 |
| 1 | A | 45 | GLY | C-O | 18.15 | 1.52 | 1.23 |
| 1 | B | 45 | GLY | C-O | 18.15 | 1.52 | 1.23 |
| 1 | A | 12 | GLN | CD-OE1 | 17.77 | 1.63 | 1.24 |
| 1 | B | 12 | GLN | CD-OE1 | 17.77 | 1.63 | 1.24 |
| 1 | A | 46 | TYR | CZ-OH | -17.07 | 1.08 | 1.37 |
| 1 | B | 46 | TYR | CZ-OH | -17.07 | 1.08 | 1.37 |
| 1 | A | 28 | VAL | CA-CB | -16.79 | 1.19 | 1.54 |
| 1 | B | 28 | VAL | CA-CB | -16.79 | 1.19 | 1.54 |
| 1 | A | 71 | PRO | N-CA | -16.53 | 1.19 | 1.47 |
| 1 | B | 71 | PRO | N-CA | -16.53 | 1.19 | 1.47 |
| 1 | A | 64 | LEU | CA-CB | 16.43 | 1.91 | 1.53 |
| 1 | B | 64 | LEU | CA-CB | 16.43 | 1.91 | 1.53 |
| 1 | A | 64 | LEU | C-O | -15.95 | 0.93 | 1.23 |
| 1 | B | 64 | LEU | C-O | -15.95 | 0.93 | 1.23 |
| 1 | A | 26 | HIS | CB-CG | 15.95 | 1.78 | 1.50 |
| 1 | B | 26 | HIS | CB-CG | 15.95 | 1.78 | 1.50 |
| 1 | A | 2 | ASP | CG-OD1 | 15.90 | 1.61 | 1.25 |
| 1 | B | 2 | ASP | CG-OD1 | 15.90 | 1.61 | 1.25 |
| 1 | A | 2 | ASP | CG-OD2 | 15.21 | 1.60 | 1.25 |
| 1 | B | 2 | ASP | CG-OD2 | 15.21 | 1.60 | 1.25 |
| 1 | A | 92 | GLN | N-CA | 15.03 | 1.76 | 1.46 |
| 1 | B | 92 | GLN | N-CA | 15.03 | 1.76 | 1.46 |
| 1 | A | 56 | GLY | N-CA | 15.00 | 1.68 | 1.46 |
| 1 | B | 56 | GLY | N-CA | 15.00 | 1.68 | 1.46 |
| 1 | A | 66 | GLU | CD-OE1 | 14.76 | 1.41 | 1.25 |
| 1 | B | 66 | GLU | CD-OE1 | 14.76 | 1.41 | 1.25 |
| 1 | A | 61 | GLU | CD-OE1 | 14.25 | 1.41 | 1.25 |
| 1 | B | 61 | GLU | CD-OE1 | 14.25 | 1.41 | 1.25 |
| 1 | A | 48 | TYR | CE1-CZ | -14.15 | 1.20 | 1.38 |
| 1 | B | 48 | TYR | CE1-CZ | -14.15 | 1.20 | 1.38 |
| 1 | A | 88 | LYS | CD-CE | -14.13 | 1.16 | 1.51 |
| 1 | B | 88 | LYS | CD-CE | -14.13 | 1.16 | 1.51 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 1 | A | 10 | PHE | CD2-CE2 | -14.12 | 1.11 | 1.39 |
| 1 | B | 10 | PHE | CD2-CE2 | -14.12 | 1.11 | 1.39 |
| 1 | A | 98 | LEU | N-CA | 13.66 | 1.73 | 1.46 |
| 1 | B | 98 | LEU | N-CA | 13.66 | 1.73 | 1.46 |
| 1 | A | 40 | THR | C-N | -13.45 | 1.08 | 1.33 |
| 1 | B | 40 | THR | C-N | -13.45 | 1.08 | 1.33 |
| 1 | A | 20 | VAL | CB-CG1 | -13.40 | 1.24 | 1.52 |
| 1 | B | 20 | VAL | CB-CG1 | -13.40 | 1.24 | 1.52 |
| 1 | A | 30 | PRO | CA-CB | -13.24 | 1.27 | 1.53 |
| 1 | A | 93 | ASP | CG-OD1 | 13.24 | 1.55 | 1.25 |
| 1 | B | 30 | PRO | CA-CB | -13.24 | 1.27 | 1.53 |
| 1 | B | 93 | ASP | CG-OD1 | 13.24 | 1.55 | 1.25 |
| 1 | A | 103 | SER | C-O | 13.22 | 1.48 | 1.23 |
| 1 | B | 103 | SER | C-O | 13.22 | 1.48 | 1.23 |
| 1 | A | 101 | ALA | N-CA | 13.20 | 1.72 | 1.46 |
| 1 | B | 101 | ALA | N-CA | 13.20 | 1.72 | 1.46 |
| 1 | A | 62 | ASN | CG-OD1 | 13.07 | 1.52 | 1.24 |
| 1 | B | 62 | ASN | CG-OD1 | 13.07 | 1.52 | 1.24 |
| 1 | A | 57 | ILE | CA-CB | -12.90 | 1.25 | 1.54 |
| 1 | B | 57 | ILE | CA-CB | -12.90 | 1.25 | 1.54 |
| 1 | A | 70 | ASN | CG-OD1 | 12.83 | 1.52 | 1.24 |
| 1 | B | 70 | ASN | CG-OD1 | 12.83 | 1.52 | 1.24 |
| 1 | A | 16 | GLN | N-CA | 12.80 | 1.72 | 1.46 |
| 1 | B | 16 | GLN | N-CA | 12.80 | 1.72 | 1.46 |
| 1 | A | 33 | TRP | CZ2-CH2 | -12.64 | 1.13 | 1.37 |
| 1 | B | 33 | TRP | CZ2-CH2 | -12.64 | 1.13 | 1.37 |
| 1 | A | 32 | LEU | C-N | -12.50 | 1.05 | 1.34 |
| 1 | B | 32 | LEU | C-N | -12.50 | 1.05 | 1.34 |
| 1 | A | 89 | GLY | N-CA | 12.46 | 1.64 | 1.46 |
| 1 | B | 89 | GLY | N-CA | 12.46 | 1.64 | 1.46 |
| 1 | A | 82 | PHE | CE2-CZ | -12.28 | 1.14 | 1.37 |
| 1 | B | 82 | PHE | CE2-CZ | -12.28 | 1.14 | 1.37 |
| 1 | A | 13 | LYS | C-O | -12.15 | 1.00 | 1.23 |
| 1 | B | 13 | LYS | C-O | -12.15 | 1.00 | 1.23 |
| 1 | A | 62 | ASN | N-CA | 12.10 | 1.70 | 1.46 |
| 1 | B | 62 | ASN | N-CA | 12.10 | 1.70 | 1.46 |
| 1 | A | 43 | ALA | N-CA | 12.04 | 1.70 | 1.46 |
| 1 | B | 43 | ALA | N-CA | 12.04 | 1.70 | 1.46 |
| 1 | A | 37 | GLY | CA-C | -11.94 | 1.32 | 1.51 |
| 1 | B | 37 | GLY | CA-C | -11.94 | 1.32 | 1.51 |
| 1 | A | 50 | ASP | CG-OD1 | 11.89 | 1.52 | 1.25 |
| 1 | B | 50 | ASP | CG-OD1 | 11.89 | 1.52 | 1.25 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 1 | A | 33 | TRP | N-CA | 11.87 | 1.70 | 1.46 |
| 1 | A | 91 | ARG | N-CA | 11.87 | 1.70 | 1.46 |
| 1 | B | 33 | TRP | N-CA | 11.87 | 1.70 | 1.46 |
| 1 | B | 91 | ARG | N-CA | 11.87 | 1.70 | 1.46 |
| 1 | A | 82 | PHE | N-CA | 11.81 | 1.70 | 1.46 |
| 1 | B | 82 | PHE | N-CA | 11.81 | 1.70 | 1.46 |
| 1 | A | 22 | ASN | C-N | -11.74 | 1.11 | 1.33 |
| 1 | B | 22 | ASN | C-N | -11.74 | 1.11 | 1.33 |
| 1 | A | 49 | THR | CA-C | -11.67 | 1.22 | 1.52 |
| 1 | B | 49 | THR | CA-C | -11.67 | 1.22 | 1.52 |
| 1 | A | 42 | GLN | CG-CD | -11.66 | 1.24 | 1.51 |
| 1 | B | 42 | GLN | CG-CD | -11.66 | 1.24 | 1.51 |
| 1 | A | 59 | TRP | CZ3-CH2 | -11.61 | 1.21 | 1.40 |
| 1 | B | 59 | TRP | CZ3-CH2 | -11.61 | 1.21 | 1.40 |
| 1 | A | 42 | GLN | CD-NE2 | 11.48 | 1.61 | 1.32 |
| 1 | B | 42 | GLN | CD-NE2 | 11.48 | 1.61 | 1.32 |
| 1 | A | 59 | TRP | N-CA | 11.34 | 1.69 | 1.46 |
| 1 | B | 59 | TRP | N-CA | 11.34 | 1.69 | 1.46 |
| 1 | A | 36 | PHE | CD2-CE2 | -11.32 | 1.16 | 1.39 |
| 1 | B | 36 | PHE | CD2-CE2 | -11.32 | 1.16 | 1.39 |
| 1 | A | 50 | ASP | C-O | 11.22 | 1.44 | 1.23 |
| 1 | B | 50 | ASP | C-O | 11.22 | 1.44 | 1.23 |
| 1 | A | 59 | TRP | C-N | -11.20 | 1.08 | 1.34 |
| 1 | B | 59 | TRP | C-N | -11.20 | 1.08 | 1.34 |
| 1 | A | 32 | LEU | N-CA | 11.10 | 1.68 | 1.46 |
| 1 | B | 32 | LEU | N-CA | 11.10 | 1.68 | 1.46 |
| 1 | A | 100 | SER | CA-CB | 11.03 | 1.69 | 1.52 |
| 1 | B | 100 | SER | CA-CB | 11.03 | 1.69 | 1.52 |
| 1 | A | 31 | ASN | CG-OD1 | 10.96 | 1.48 | 1.24 |
| 1 | A | 93 | ASP | C-N | -10.96 | 1.08 | 1.34 |
| 1 | B | 31 | ASN | CG-OD1 | 10.96 | 1.48 | 1.24 |
| 1 | B | 93 | ASP | C-N | -10.96 | 1.08 | 1.34 |
| 1 | A | 67 | TYR | CD1-CE1 | -10.94 | 1.23 | 1.39 |
| 1 | B | 67 | TYR | CD1-CE1 | -10.94 | 1.23 | 1.39 |
| 1 | A | 100 | SER | C-O | 10.93 | 1.44 | 1.23 |
| 1 | B | 100 | SER | C-O | 10.93 | 1.44 | 1.23 |
| 1 | A | 86 | LYS | C-N | -10.88 | 1.09 | 1.34 |
| 1 | B | 86 | LYS | C-N | -10.88 | 1.09 | 1.34 |
| 1 | A | 18 | HIS | N-CA | 10.87 | 1.68 | 1.46 |
| 1 | B | 18 | HIS | N-CA | 10.87 | 1.68 | 1.46 |
| 1 | A | 53 | LYS | CD-CE | 10.82 | 1.78 | 1.51 |
| 1 | B | 53 | LYS | CD-CE | 10.82 | 1.78 | 1.51 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 1 | A | 33 | TRP | CB-CG | -10.81 | 1.30 | 1.50 |
| 1 | B | 33 | TRP | CB-CG | -10.81 | 1.30 | 1.50 |
| 1 | A | 52 | ASN | CA-C | -10.80 | 1.24 | 1.52 |
| 1 | B | 52 | ASN | CA-C | -10.80 | 1.24 | 1.52 |
| 1 | A | 16 | GLN | CD-OE1 | 10.78 | 1.47 | 1.24 |
| 1 | B | 16 | GLN | CD-OE1 | 10.78 | 1.47 | 1.24 |
| 1 | A | 60 | ASN | CG-OD1 | 10.72 | 1.47 | 1.24 |
| 1 | B | 60 | ASN | CG-OD1 | 10.72 | 1.47 | 1.24 |
| 1 | A | 50 | ASP | CB-CG | -10.57 | 1.29 | 1.51 |
| 1 | B | 50 | ASP | CB-CG | -10.57 | 1.29 | 1.51 |
| 1 | A | 30 | PRO | C-N | 10.55 | 1.58 | 1.34 |
| 1 | B | 30 | PRO | C-N | 10.55 | 1.58 | 1.34 |
| 1 | A | 42 | GLN | CD-OE1 | 10.53 | 1.47 | 1.24 |
| 1 | B | 42 | GLN | CD-OE1 | 10.53 | 1.47 | 1.24 |
| 1 | A | 86 | LYS | CD-CE | 10.42 | 1.77 | 1.51 |
| 1 | B | 86 | LYS | CD-CE | 10.42 | 1.77 | 1.51 |
| 1 | A | 23 | GLY | N-CA | 10.34 | 1.61 | 1.46 |
| 1 | B | 23 | GLY | N-CA | 10.34 | 1.61 | 1.46 |
| 1 | A | 101 | ALA | CA-CB | -10.32 | 1.30 | 1.52 |
| 1 | B | 101 | ALA | CA-CB | -10.32 | 1.30 | 1.52 |
| 1 | A | 7 | LYS | N-CA | 10.21 | 1.66 | 1.46 |
| 1 | B | 7 | LYS | N-CA | 10.21 | 1.66 | 1.46 |
| 1 | A | 8 | LYS | C-O | -10.20 | 1.03 | 1.23 |
| 1 | B | 8 | LYS | C-O | -10.20 | 1.03 | 1.23 |
| 1 | A | 41 | GLY | C-O | -10.18 | 1.07 | 1.23 |
| 1 | A | 77 | GLY | C-O | -10.18 | 1.07 | 1.23 |
| 1 | B | 41 | GLY | C-O | -10.18 | 1.07 | 1.23 |
| 1 | B | 77 | GLY | C-O | -10.18 | 1.07 | 1.23 |
| 1 | A | 67 | TYR | CE2-CZ | -10.16 | 1.25 | 1.38 |
| 1 | B | 67 | TYR | CE2-CZ | -10.16 | 1.25 | 1.38 |
| 1 | A | 46 | TYR | N-CA | 10.15 | 1.66 | 1.46 |
| 1 | B | 46 | TYR | N-CA | 10.15 | 1.66 | 1.46 |
| 1 | A | 3 | VAL | CA-C | 10.01 | 1.78 | 1.52 |
| 1 | B | 3 | VAL | CA-C | 10.01 | 1.78 | 1.52 |
| 1 | A | 33 | TRP | CD2-CE2 | -9.95 | 1.29 | 1.41 |
| 1 | B | 33 | TRP | CD2-CE2 | -9.95 | 1.29 | 1.41 |
| 1 | A | 53 | LYS | N-CA | 9.91 | 1.66 | 1.46 |
| 1 | B | 53 | LYS | N-CA | 9.91 | 1.66 | 1.46 |
| 1 | A | 73 | LYS | CE-NZ | -9.80 | 1.24 | 1.49 |
| 1 | B | 73 | LYS | CE-NZ | -9.80 | 1.24 | 1.49 |
| 1 | A | 61 | GLU | CG-CD | -9.75 | 1.37 | 1.51 |
| 1 | B | 61 | GLU | CG-CD | -9.75 | 1.37 | 1.51 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | A | 33 | TRP | CG-CD2 | -9.75 | 1.27 | 1.43 |
| 1 | B | 33 | TRP | CG-CD2 | -9.75 | 1.27 | 1.43 |
| 1 | A | 57 | ILE | C-N | 9.68 | 1.56 | 1.34 |
| 1 | B | 57 | ILE | C-N | 9.68 | 1.56 | 1.34 |
| 1 | A | 71 | PRO | CA-CB | -9.65 | 1.34 | 1.53 |
| 1 | B | 71 | PRO | CA-CB | -9.65 | 1.34 | 1.53 |
| 1 | A | 17 | CYS | CA-CB | 9.64 | 1.75 | 1.53 |
| 1 | B | 17 | CYS | CA-CB | 9.64 | 1.75 | 1.53 |
| 1 | A | 51 | ALA | C-O | -9.60 | 1.05 | 1.23 |
| 1 | B | 51 | ALA | C-O | -9.60 | 1.05 | 1.23 |
| 1 | A | 44 | GLU | CD-OE1 | 9.55 | 1.36 | 1.25 |
| 1 | B | 44 | GLU | CD-OE1 | 9.55 | 1.36 | 1.25 |
| 1 | A | 82 | PHE | CG-CD1 | -9.47 | 1.24 | 1.38 |
| 1 | B | 82 | PHE | CG-CD1 | -9.47 | 1.24 | 1.38 |
| 1 | A | 32 | LEU | C-O | 9.46 | 1.41 | 1.23 |
| 1 | B | 32 | LEU | C-O | 9.46 | 1.41 | 1.23 |
| 1 | A | 67 | TYR | CD2-CE2 | -9.44 | 1.25 | 1.39 |
| 1 | B | 67 | TYR | CD2-CE2 | -9.44 | 1.25 | 1.39 |
| 1 | A | 61 | GLU | N-CA | 9.43 | 1.65 | 1.46 |
| 1 | B | 61 | GLU | N-CA | 9.43 | 1.65 | 1.46 |
| 1 | A | 74 | TYR | CE2-CZ | -9.31 | 1.26 | 1.38 |
| 1 | B | 74 | TYR | CE2-CZ | -9.31 | 1.26 | 1.38 |
| 1 | A | 48 | TYR | CG-CD1 | -9.29 | 1.27 | 1.39 |
| 1 | B | 48 | TYR | CG-CD1 | -9.29 | 1.27 | 1.39 |
| 1 | A | 30 | PRO | CB-CG | -9.27 | 1.03 | 1.50 |
| 1 | B | 30 | PRO | CB-CG | -9.27 | 1.03 | 1.50 |
| 1 | A | 54 | SER | CB-OG | 9.23 | 1.54 | 1.42 |
| 1 | A | 100 | SER | CB-OG | 9.23 | 1.54 | 1.42 |
| 1 | B | 54 | SER | CB-OG | 9.23 | 1.54 | 1.42 |
| 1 | B | 100 | SER | CB-OG | 9.23 | 1.54 | 1.42 |
| 1 | A | 102 | THR | N-CA | 9.19 | 1.64 | 1.46 |
| 1 | B | 102 | THR | N-CA | 9.19 | 1.64 | 1.46 |
| 1 | A | 48 | TYR | CE2-CZ | -9.19 | 1.26 | 1.38 |
| 1 | B | 48 | TYR | CE2-CZ | -9.19 | 1.26 | 1.38 |
| 1 | A | 93 | ASP | CG-OD2 | 9.11 | 1.46 | 1.25 |
| 1 | B | 93 | ASP | CG-OD2 | 9.11 | 1.46 | 1.25 |
| 1 | A | 82 | PHE | C-N | -9.09 | 1.13 | 1.34 |
| 1 | B | 82 | PHE | C-N | -9.09 | 1.13 | 1.34 |
| 1 | A | 55 | LYS | C-N | -9.04 | 1.16 | 1.33 |
| 1 | B | 55 | LYS | C-N | -9.04 | 1.16 | 1.33 |
| 1 | A | 29 | GLY | C-N | 9.02 | 1.51 | 1.34 |
| 1 | B | 29 | GLY | C-N | 9.02 | 1.51 | 1.34 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | A | 29 | GLY | N-CA | -8.97 | 1.32 | 1.46 |
| 1 | B | 29 | GLY | N-CA | -8.97 | 1.32 | 1.46 |
| 1 | A | 77 | GLY | CA-C | 8.95 | 1.66 | 1.51 |
| 1 | B | 77 | GLY | CA-C | 8.95 | 1.66 | 1.51 |
| 1 | A | 16 | GLN | CD-NE2 | -8.95 | 1.10 | 1.32 |
| 1 | A | 21 | GLU | N-CA | 8.95 | 1.64 | 1.46 |
| 1 | A | 65 | MET | N-CA | 8.95 | 1.64 | 1.46 |
| 1 | A | 81 | ILE | N-CA | 8.95 | 1.64 | 1.46 |
| 1 | B | 16 | GLN | CD-NE2 | -8.95 | 1.10 | 1.32 |
| 1 | B | 21 | GLU | N-CA | 8.95 | 1.64 | 1.46 |
| 1 | B | 65 | MET | N-CA | 8.95 | 1.64 | 1.46 |
| 1 | B | 81 | ILE | N-CA | 8.95 | 1.64 | 1.46 |
| 1 | A | 66 | GLU | C-N | -8.94 | 1.13 | 1.34 |
| 1 | B | 66 | GLU | C-N | -8.94 | 1.13 | 1.34 |
| 1 | A | 46 | TYR | C-N | -8.86 | 1.13 | 1.34 |
| 1 | B | 46 | TYR | C-N | -8.86 | 1.13 | 1.34 |
| 1 | A | 98 | LEU | CA-C | 8.85 | 1.75 | 1.52 |
| 1 | B | 98 | LEU | CA-C | 8.85 | 1.75 | 1.52 |
| 1 | A | 59 | TRP | CE2-CZ2 | 8.83 | 1.54 | 1.39 |
| 1 | B | 59 | TRP | CE2-CZ2 | 8.83 | 1.54 | 1.39 |
| 1 | A | 12 | GLN | N-CA | 8.83 | 1.64 | 1.46 |
| 1 | B | 12 | GLN | N-CA | 8.83 | 1.64 | 1.46 |
| 1 | A | 24 | GLY | C-O | 8.82 | 1.37 | 1.23 |
| 1 | B | 24 | GLY | C-O | 8.82 | 1.37 | 1.23 |
| 1 | A | 26 | HIS | CG-CD2 | -8.79 | 1.20 | 1.35 |
| 1 | B | 26 | HIS | CG-CD2 | -8.79 | 1.20 | 1.35 |
| 1 | A | 89 | GLY | C-N | -8.78 | 1.13 | 1.34 |
| 1 | A | 98 | LEU | CB-CG | -8.78 | 1.27 | 1.52 |
| 1 | B | 89 | GLY | C-N | -8.78 | 1.13 | 1.34 |
| 1 | B | 98 | LEU | CB-CG | -8.78 | 1.27 | 1.52 |
| 1 | A | 62 | ASN | CA-CB | -8.78 | 1.30 | 1.53 |
| 1 | B | 62 | ASN | CA-CB | -8.78 | 1.30 | 1.53 |
| 1 | A | 59 | TRP | CD2-CE3 | -8.74 | 1.27 | 1.40 |
| 1 | B | 59 | TRP | CD2-CE3 | -8.74 | 1.27 | 1.40 |
| 1 | A | 49 | THR | N-CA | 8.71 | 1.63 | 1.46 |
| 1 | B | 49 | THR | N-CA | 8.71 | 1.63 | 1.46 |
| 1 | A | 82 | PHE | CE1-CZ | -8.71 | 1.20 | 1.37 |
| 1 | B | 82 | PHE | CE1-CZ | -8.71 | 1.20 | 1.37 |
| 1 | A | 55 | LYS | CD-CE | 8.65 | 1.72 | 1.51 |
| 1 | B | 55 | LYS | CD-CE | 8.65 | 1.72 | 1.51 |
| 1 | A | 7 | LYS | C-O | 8.64 | 1.39 | 1.23 |
| 1 | B | 7 | LYS | C-O | 8.64 | 1.39 | 1.23 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1 | A | 50 | ASP | CA-CB | -8.62 | 1.34 | 1.53 |
| 1 | B | 50 | ASP | CA-CB | -8.62 | 1.34 | 1.53 |
| 1 | A | 64 | LEU | CG-CD1 | -8.61 | 1.20 | 1.51 |
| 1 | B | 64 | LEU | CG-CD1 | -8.61 | 1.20 | 1.51 |
| 1 | A | 52 | ASN | C-O | 8.56 | 1.39 | 1.23 |
| 1 | B | 52 | ASN | C-O | 8.56 | 1.39 | 1.23 |
| 1 | A | 47 | SER | N-CA | 8.53 | 1.63 | 1.46 |
| 1 | A | 60 | ASN | N-CA | 8.53 | 1.63 | 1.46 |
| 1 | B | 47 | SER | N-CA | 8.53 | 1.63 | 1.46 |
| 1 | B | 60 | ASN | N-CA | 8.53 | 1.63 | 1.46 |
| 1 | A | 95 | VAL | CB-CG2 | -8.51 | 1.34 | 1.52 |
| 1 | B | 95 | VAL | CB-CG2 | -8.51 | 1.34 | 1.52 |
| 1 | A | 65 | MET | C-N | -8.48 | 1.14 | 1.34 |
| 1 | A | 69 | GLU | C-N | -8.48 | 1.14 | 1.34 |
| 1 | B | 65 | MET | C-N | -8.48 | 1.14 | 1.34 |
| 1 | B | 69 | GLU | C-N | -8.48 | 1.14 | 1.34 |
| 1 | A | 78 | THR | CA-C | -8.47 | 1.30 | 1.52 |
| 1 | B | 78 | THR | CA-C | -8.47 | 1.30 | 1.52 |
| 1 | A | 97 | TYR | CE2-CZ | 8.45 | 1.49 | 1.38 |
| 1 | B | 97 | TYR | CE2-CZ | 8.45 | 1.49 | 1.38 |
| 1 | A | 61 | GLU | CB-CG | -8.42 | 1.36 | 1.52 |
| 1 | B | 61 | GLU | CB-CG | -8.42 | 1.36 | 1.52 |
| 1 | A | 40 | THR | CB-OG1 | 8.35 | 1.59 | 1.43 |
| 1 | B | 40 | THR | CB-OG1 | 8.35 | 1.59 | 1.43 |
| 1 | A | 14 | CYS | N-CA | 8.34 | 1.63 | 1.46 |
| 1 | B | 14 | CYS | N-CA | 8.34 | 1.63 | 1.46 |
| 1 | A | 58 | VAL | CA-CB | -8.30 | 1.37 | 1.54 |
| 1 | B | 58 | VAL | CA-CB | -8.30 | 1.37 | 1.54 |
| 1 | A | 86 | LYS | CG-CD | 8.22 | 1.80 | 1.52 |
| 1 | B | 86 | LYS | CG-CD | 8.22 | 1.80 | 1.52 |
| 1 | A | 100 | SER | N-CA | 8.22 | 1.62 | 1.46 |
| 1 | B | 100 | SER | N-CA | 8.22 | 1.62 | 1.46 |
| 1 | A | 49 | THR | CA-CB | 8.21 | 1.74 | 1.53 |
| 1 | B | 49 | THR | CA-CB | 8.21 | 1.74 | 1.53 |
| 1 | A | 55 | LYS | CA-C | 8.19 | 1.74 | 1.52 |
| 1 | A | 91 | ARG | CZ-NH2 | 8.19 | 1.43 | 1.33 |
| 1 | B | 55 | LYS | CA-C | 8.19 | 1.74 | 1.52 |
| 1 | B | 91 | ARG | CZ-NH2 | 8.19 | 1.43 | 1.33 |
| 1 | A | 60 | ASN | C-N | -8.18 | 1.15 | 1.34 |
| 1 | A | 90 | GLU | C-N | -8.18 | 1.15 | 1.34 |
| 1 | B | 60 | ASN | C-N | -8.18 | 1.15 | 1.34 |
| 1 | B | 90 | GLU | C-N | -8.18 | 1.15 | 1.34 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 1 | A | 68 | LEU | CA-CB | -8.16 | 1.34 | 1.53 |
| 1 | B | 68 | LEU | CA-CB | -8.16 | 1.34 | 1.53 |
| 1 | A | 103 | SER | CB-OG | 8.14 | 1.52 | 1.42 |
| 1 | B | 103 | SER | CB-OG | 8.14 | 1.52 | 1.42 |
| 1 | A | 74 | TYR | CA-CB | 8.13 | 1.71 | 1.53 |
| 1 | B | 74 | TYR | CA-CB | 8.13 | 1.71 | 1.53 |
| 1 | A | 77 | GLY | C-N | 8.11 | 1.52 | 1.34 |
| 1 | B | 77 | GLY | C-N | 8.11 | 1.52 | 1.34 |
| 1 | A | 79 | LYS | CA-CB | -8.09 | 1.36 | 1.53 |
| 1 | B | 79 | LYS | CA-CB | -8.09 | 1.36 | 1.53 |
| 1 | A | 7 | LYS | CA-CB | 8.02 | 1.71 | 1.53 |
| 1 | B | 7 | LYS | CA-CB | 8.02 | 1.71 | 1.53 |
| 1 | A | 19 | THR | N-CA | 7.97 | 1.62 | 1.46 |
| 1 | B | 19 | THR | N-CA | 7.97 | 1.62 | 1.46 |
| 1 | A | 14 | CYS | CA-CB | 7.97 | 1.71 | 1.53 |
| 1 | A | 102 | THR | CA-C | 7.97 | 1.73 | 1.52 |
| 1 | B | 14 | CYS | CA-CB | 7.97 | 1.71 | 1.53 |
| 1 | B | 102 | THR | CA-C | 7.97 | 1.73 | 1.52 |
| 1 | A | 103 | SER | C-OXT | 7.96 | 1.38 | 1.23 |
| 1 | B | 103 | SER | C-OXT | 7.96 | 1.38 | 1.23 |
| 1 | A | 21 | GLU | CB-CG | 7.95 | 1.67 | 1.52 |
| 1 | B | 21 | GLU | CB-CG | 7.95 | 1.67 | 1.52 |
| 1 | A | 71 | PRO | N-CD | 7.93 | 1.58 | 1.47 |
| 1 | B | 71 | PRO | N-CD | 7.93 | 1.58 | 1.47 |
| 1 | A | 80 | MET | CG-SD | 7.92 | 2.01 | 1.81 |
| 1 | B | 80 | MET | CG-SD | 7.92 | 2.01 | 1.81 |
| 1 | A | 16 | GLN | CG-CD | 7.87 | 1.69 | 1.51 |
| 1 | B | 16 | GLN | CG-CD | 7.87 | 1.69 | 1.51 |
| 1 | A | 59 | TRP | CA-CB | -7.82 | 1.36 | 1.53 |
| 1 | A | 82 | PHE | CA-CB | -7.82 | 1.36 | 1.53 |
| 1 | B | 59 | TRP | CA-CB | -7.82 | 1.36 | 1.53 |
| 1 | B | 82 | PHE | CA-CB | -7.82 | 1.36 | 1.53 |
| 1 | A | 72 | LYS | CE-NZ | 7.80 | 1.68 | 1.49 |
| 1 | B | 72 | LYS | CE-NZ | 7.80 | 1.68 | 1.49 |
| 1 | A | 12 | GLN | C-N | -7.73 | 1.16 | 1.34 |
| 1 | B | 12 | GLN | C-N | -7.73 | 1.16 | 1.34 |
| 1 | A | 11 | VAL | CA-C | 7.66 | 1.72 | 1.52 |
| 1 | B | 11 | VAL | CA-C | 7.66 | 1.72 | 1.52 |
| 1 | A | 3 | VAL | C-O | -7.64 | 1.08 | 1.23 |
| 1 | A | 48 | TYR | C-O | -7.64 | 1.08 | 1.23 |
| 1 | A | 63 | THR | C-O | -7.64 | 1.08 | 1.23 |
| 1 | B | 3 | VAL | C-O | -7.64 | 1.08 | 1.23 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | B | 48 | TYR | C-O | -7.64 | 1.08 | 1.23 |
| 1 | B | 63 | THR | C-O | -7.64 | 1.08 | 1.23 |
| 1 | A | 9 | THR | N-CA | 7.61 | 1.61 | 1.46 |
| 1 | B | 9 | THR | N-CA | 7.61 | 1.61 | 1.46 |
| 1 | A | 27 | LYS | CG-CD | -7.60 | 1.26 | 1.52 |
| 1 | B | 27 | LYS | CG-CD | -7.60 | 1.26 | 1.52 |
| 1 | A | 82 | PHE | CB-CG | 7.59 | 1.64 | 1.51 |
| 1 | B | 82 | PHE | CB-CG | 7.59 | 1.64 | 1.51 |
| 1 | A | 38 | ARG | CA-CB | -7.56 | 1.37 | 1.53 |
| 1 | A | 69 | GLU | CA-CB | -7.56 | 1.37 | 1.53 |
| 1 | B | 38 | ARG | CA-CB | -7.56 | 1.37 | 1.53 |
| 1 | B | 69 | GLU | CA-CB | -7.56 | 1.37 | 1.53 |
| 1 | A | 81 | ILE | CA-CB | -7.56 | 1.37 | 1.54 |
| 1 | B | 81 | ILE | CA-CB | -7.56 | 1.37 | 1.54 |
| 1 | A | 79 | LYS | CE-NZ | -7.55 | 1.30 | 1.49 |
| 1 | B | 79 | LYS | CE-NZ | -7.55 | 1.30 | 1.49 |
| 1 | A | 34 | GLY | C-O | 7.54 | 1.35 | 1.23 |
| 1 | A | 91 | ARG | C-O | -7.54 | 1.09 | 1.23 |
| 1 | B | 34 | GLY | C-O | 7.54 | 1.35 | 1.23 |
| 1 | B | 91 | ARG | C-O | -7.54 | 1.09 | 1.23 |
| 1 | A | 7 | LYS | CD-CE | 7.53 | 1.70 | 1.51 |
| 1 | B | 7 | LYS | CD-CE | 7.53 | 1.70 | 1.51 |
| 1 | A | 97 | TYR | CD2-CE2 | 7.50 | 1.50 | 1.39 |
| 1 | B | 97 | TYR | CD2-CE2 | 7.50 | 1.50 | 1.39 |
| 1 | A | 36 | PHE | CA-CB | 7.49 | 1.70 | 1.53 |
| 1 | B | 36 | PHE | CA-CB | 7.49 | 1.70 | 1.53 |
| 1 | A | 25 | LYS | CD-CE | 7.49 | 1.70 | 1.51 |
| 1 | B | 25 | LYS | CD-CE | 7.49 | 1.70 | 1.51 |
| 1 | A | 75 | ILE | C-N | 7.48 | 1.48 | 1.34 |
| 1 | B | 75 | ILE | C-N | 7.48 | 1.48 | 1.34 |
| 1 | A | 5 | LYS | CE-NZ | 7.47 | 1.67 | 1.49 |
| 1 | B | 5 | LYS | CE-NZ | 7.47 | 1.67 | 1.49 |
| 1 | A | 19 | THR | C-N | -7.43 | 1.17 | 1.34 |
| 1 | B | 19 | THR | C-N | -7.43 | 1.17 | 1.34 |
| 1 | A | 18 | HIS | C-O | 7.43 | 1.37 | 1.23 |
| 1 | B | 18 | HIS | C-O | 7.43 | 1.37 | 1.23 |
| 1 | A | 98 | LEU | CA-CB | -7.40 | 1.36 | 1.53 |
| 1 | B | 98 | LEU | CA-CB | -7.40 | 1.36 | 1.53 |
| 1 | A | 42 | GLN | CB-CG | -7.39 | 1.32 | 1.52 |
| 1 | B | 42 | GLN | CB-CG | -7.39 | 1.32 | 1.52 |
| 1 | A | 47 | SER | CA-CB | -7.38 | 1.41 | 1.52 |
| 1 | B | 47 | SER | CA-CB | -7.38 | 1.41 | 1.52 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | A | 88 | LYS | C-N | 7.36 | 1.46 | 1.33 |
| 1 | B | 88 | LYS | C-N | 7.36 | 1.46 | 1.33 |
| 1 | A | 67 | TYR | CZ-OH | -7.36 | 1.25 | 1.37 |
| 1 | B | 67 | TYR | CZ-OH | -7.36 | 1.25 | 1.37 |
| 1 | A | 32 | LEU | CG-CD2 | -7.34 | 1.24 | 1.51 |
| 1 | B | 32 | LEU | CG-CD2 | -7.34 | 1.24 | 1.51 |
| 1 | A | 32 | LEU | CA-CB | -7.33 | 1.36 | 1.53 |
| 1 | B | 32 | LEU | CA-CB | -7.33 | 1.36 | 1.53 |
| 1 | A | 76 | PRO | CB-CG | -7.33 | 1.13 | 1.50 |
| 1 | B | 76 | PRO | CB-CG | -7.33 | 1.13 | 1.50 |
| 1 | A | 54 | SER | C-N | -7.28 | 1.17 | 1.34 |
| 1 | B | 54 | SER | C-N | -7.28 | 1.17 | 1.34 |
| 1 | A | 74 | TYR | CE1-CZ | -7.27 | 1.29 | 1.38 |
| 1 | A | 97 | TYR | CE1-CZ | -7.27 | 1.29 | 1.38 |
| 1 | B | 74 | TYR | CE1-CZ | -7.27 | 1.29 | 1.38 |
| 1 | B | 97 | TYR | CE1-CZ | -7.27 | 1.29 | 1.38 |
| 1 | A | 83 | ALA | C-O | -7.25 | 1.09 | 1.23 |
| 1 | B | 83 | ALA | C-O | -7.25 | 1.09 | 1.23 |
| 1 | A | 59 | TRP | CE3-CZ3 | -7.24 | 1.26 | 1.38 |
| 1 | B | 59 | TRP | CE3-CZ3 | -7.24 | 1.26 | 1.38 |
| 1 | A | 90 | GLU | N-CA | 7.24 | 1.60 | 1.46 |
| 1 | B | 90 | GLU | N-CA | 7.24 | 1.60 | 1.46 |
| 1 | A | 49 | THR | CB-CG2 | -7.23 | 1.28 | 1.52 |
| 1 | B | 49 | THR | CB-CG2 | -7.23 | 1.28 | 1.52 |
| 1 | A | 16 | GLN | CA-CB | -7.23 | 1.38 | 1.53 |
| 1 | B | 16 | GLN | CA-CB | -7.23 | 1.38 | 1.53 |
| 1 | A | 91 | ARG | CG-CD | 7.21 | 1.70 | 1.51 |
| 1 | B | 91 | ARG | CG-CD | 7.21 | 1.70 | 1.51 |
| 1 | A | 29 | GLY | C-O | 7.17 | 1.35 | 1.23 |
| 1 | B | 29 | GLY | C-O | 7.17 | 1.35 | 1.23 |
| 1 | A | 2 | ASP | CA-CB | 7.17 | 1.69 | 1.53 |
| 1 | B | 2 | ASP | CA-CB | 7.17 | 1.69 | 1.53 |
| 1 | A | 30 | PRO | CG-CD | -7.14 | 1.27 | 1.50 |
| 1 | B | 30 | PRO | CG-CD | -7.14 | 1.27 | 1.50 |
| 1 | A | 44 | GLU | C-O | 7.12 | 1.36 | 1.23 |
| 1 | B | 44 | GLU | C-O | 7.12 | 1.36 | 1.23 |
| 1 | A | 23 | GLY | CA-C | 7.07 | 1.63 | 1.51 |
| 1 | B | 23 | GLY | CA-C | 7.07 | 1.63 | 1.51 |
| 1 | A | 40 | THR | N-CA | 7.05 | 1.60 | 1.46 |
| 1 | B | 40 | THR | N-CA | 7.05 | 1.60 | 1.46 |
| 1 | A | 16 | GLN | C-O | 7.05 | 1.36 | 1.23 |
| 1 | A | 42 | GLN | C-O | 7.05 | 1.36 | 1.23 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | A | 93 | ASP | C-O | 7.05 | 1.36 | 1.23 |
| 1 | B | 16 | GLN | C-O | 7.05 | 1.36 | 1.23 |
| 1 | B | 42 | GLN | C-O | 7.05 | 1.36 | 1.23 |
| 1 | B | 93 | ASP | C-O | 7.05 | 1.36 | 1.23 |
| 1 | A | 80 | MET | N-CA | 6.99 | 1.60 | 1.46 |
| 1 | B | 80 | MET | N-CA | 6.99 | 1.60 | 1.46 |
| 1 | A | 26 | HIS | CE1-NE2 | -6.97 | 1.16 | 1.32 |
| 1 | B | 26 | HIS | CE1-NE2 | -6.97 | 1.16 | 1.32 |
| 1 | A | 66 | GLU | CG-CD | 6.90 | 1.62 | 1.51 |
| 1 | B | 66 | GLU | CG-CD | 6.90 | 1.62 | 1.51 |
| 1 | A | 89 | GLY | CA-C | 6.84 | 1.62 | 1.51 |
| 1 | B | 89 | GLY | CA-C | 6.84 | 1.62 | 1.51 |
| 1 | A | 95 | VAL | C-O | 6.82 | 1.36 | 1.23 |
| 1 | B | 95 | VAL | C-O | 6.82 | 1.36 | 1.23 |
| 1 | A | 33 | TRP | CD2-CE3 | -6.78 | 1.30 | 1.40 |
| 1 | B | 33 | TRP | CD2-CE3 | -6.78 | 1.30 | 1.40 |
| 1 | A | 91 | ARG | CA-C | 6.72 | 1.70 | 1.52 |
| 1 | A | 99 | LYS | CA-C | 6.72 | 1.70 | 1.52 |
| 1 | B | 91 | ARG | CA-C | 6.72 | 1.70 | 1.52 |
| 1 | B | 99 | LYS | CA-C | 6.72 | 1.70 | 1.52 |
| 1 | A | 5 | LYS | CG-CD | 6.68 | 1.75 | 1.52 |
| 1 | B | 5 | LYS | CG-CD | 6.68 | 1.75 | 1.52 |
| 1 | A | 6 | GLY | N-CA | 6.67 | 1.56 | 1.46 |
| 1 | B | 6 | GLY | N-CA | 6.67 | 1.56 | 1.46 |
| 1 | A | 103 | SER | CA-CB | 6.64 | 1.62 | 1.52 |
| 1 | B | 103 | SER | CA-CB | 6.64 | 1.62 | 1.52 |
| 1 | A | 8 | LYS | C-N | -6.62 | 1.18 | 1.34 |
| 1 | A | 35 | LEU | C-N | -6.62 | 1.18 | 1.34 |
| 1 | A | 78 | THR | C-N | -6.62 | 1.18 | 1.34 |
| 1 | A | 97 | TYR | C-N | -6.62 | 1.18 | 1.34 |
| 1 | B | 8 | LYS | C-N | -6.62 | 1.18 | 1.34 |
| 1 | B | 35 | LEU | C-N | -6.62 | 1.18 | 1.34 |
| 1 | B | 78 | THR | C-N | -6.62 | 1.18 | 1.34 |
| 1 | B | 97 | TYR | C-N | -6.62 | 1.18 | 1.34 |
| 1 | A | 79 | LYS | CA-C | 6.59 | 1.70 | 1.52 |
| 1 | B | 79 | LYS | CA-C | 6.59 | 1.70 | 1.52 |
| 1 | A | 3 | VAL | N-CA | 6.55 | 1.59 | 1.46 |
| 1 | B | 3 | VAL | N-CA | 6.55 | 1.59 | 1.46 |
| 1 | A | 60 | ASN | CA-C | 6.54 | 1.70 | 1.52 |
| 1 | A | 61 | GLU | CA-C | 6.54 | 1.70 | 1.52 |
| 1 | B | 60 | ASN | CA-C | 6.54 | 1.70 | 1.52 |
| 1 | B | 61 | GLU | CA-C | 6.54 | 1.70 | 1.52 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | A | 37 | GLY | C-O | 6.53 | 1.34 | 1.23 |
| 1 | B | 37 | GLY | C-O | 6.53 | 1.34 | 1.23 |
| 1 | A | 18 | HIS | CE1-NE2 | 6.53 | 1.47 | 1.32 |
| 1 | B | 18 | HIS | CE1-NE2 | 6.53 | 1.47 | 1.32 |
| 1 | A | 85 | ILE | CB-CG1 | 6.51 | 1.72 | 1.54 |
| 1 | B | 85 | ILE | CB-CG1 | 6.51 | 1.72 | 1.54 |
| 1 | A | 78 | THR | C-O | 6.51 | 1.35 | 1.23 |
| 1 | B | 78 | THR | C-O | 6.51 | 1.35 | 1.23 |
| 1 | A | 38 | ARG | C-O | -6.49 | 1.11 | 1.23 |
| 1 | B | 38 | ARG | C-O | -6.49 | 1.11 | 1.23 |
| 1 | A | 74 | TYR | CG-CD1 | -6.43 | 1.30 | 1.39 |
| 1 | B | 74 | TYR | CG-CD1 | -6.43 | 1.30 | 1.39 |
| 1 | A | 61 | GLU | C-N | -6.41 | 1.19 | 1.34 |
| 1 | A | 101 | ALA | C-N | -6.41 | 1.19 | 1.34 |
| 1 | A | 102 | THR | C-N | -6.41 | 1.19 | 1.34 |
| 1 | B | 61 | GLU | C-N | -6.41 | 1.19 | 1.34 |
| 1 | B | 101 | ALA | C-N | -6.41 | 1.19 | 1.34 |
| 1 | B | 102 | THR | C-N | -6.41 | 1.19 | 1.34 |
| 1 | A | 59 | TRP | CZ2-CH2 | -6.40 | 1.25 | 1.37 |
| 1 | B | 59 | TRP | CZ2-CH2 | -6.40 | 1.25 | 1.37 |
| 1 | A | 74 | TYR | CZ-OH | -6.34 | 1.27 | 1.37 |
| 1 | A | 97 | TYR | CZ-OH | -6.34 | 1.27 | 1.37 |
| 1 | B | 74 | TYR | CZ-OH | -6.34 | 1.27 | 1.37 |
| 1 | B | 97 | TYR | CZ-OH | -6.34 | 1.27 | 1.37 |
| 1 | A | 27 | LYS | CE-NZ | -6.28 | 1.33 | 1.49 |
| 1 | B | 27 | LYS | CE-NZ | -6.28 | 1.33 | 1.49 |
| 1 | A | 11 | VAL | CA-CB | -6.26 | 1.41 | 1.54 |
| 1 | B | 11 | VAL | CA-CB | -6.26 | 1.41 | 1.54 |
| 1 | A | 96 | ALA | N-CA | 6.24 | 1.58 | 1.46 |
| 1 | B | 96 | ALA | N-CA | 6.24 | 1.58 | 1.46 |
| 1 | A | 62 | ASN | CB-CG | -6.22 | 1.36 | 1.51 |
| 1 | B | 62 | ASN | CB-CG | -6.22 | 1.36 | 1.51 |
| 1 | A | 36 | PHE | CE1-CZ | 6.13 | 1.49 | 1.37 |
| 1 | B | 36 | PHE | CE1-CZ | 6.13 | 1.49 | 1.37 |
| 1 | A | 89 | GLY | C-O | -6.12 | 1.13 | 1.23 |
| 1 | B | 89 | GLY | C-O | -6.12 | 1.13 | 1.23 |
| 1 | A | 53 | LYS | C-O | 6.12 | 1.34 | 1.23 |
| 1 | B | 53 | LYS | C-O | 6.12 | 1.34 | 1.23 |
| 1 | A | 26 | HIS | C-N | -6.12 | 1.20 | 1.34 |
| 1 | A | 50 | ASP | C-N | -6.12 | 1.20 | 1.34 |
| 1 | A | 54 | SER | C-O | -6.12 | 1.11 | 1.23 |
| 1 | A | 97 | TYR | CB-CG | 6.12 | 1.60 | 1.51 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1 | B | 26 | HIS | C-N | -6.12 | 1.20 | 1.34 |
| 1 | B | 50 | ASP | C-N | -6.12 | 1.20 | 1.34 |
| 1 | B | 54 | SER | C-O | -6.12 | 1.11 | 1.23 |
| 1 | B | 97 | TYR | CB-CG | 6.12 | 1.60 | 1.51 |
| 1 | A | 86 | LYS | CE-NZ | 6.08 | 1.64 | 1.49 |
| 1 | B | 86 | LYS | CE-NZ | 6.08 | 1.64 | 1.49 |
| 1 | A | 20 | VAL | CA-C | 6.05 | 1.68 | 1.52 |
| 1 | B | 20 | VAL | CA-C | 6.05 | 1.68 | 1.52 |
| 1 | A | 31 | ASN | C-N | -6.04 | 1.20 | 1.34 |
| 1 | A | 80 | MET | C-N | -6.04 | 1.20 | 1.34 |
| 1 | B | 31 | ASN | C-N | -6.04 | 1.20 | 1.34 |
| 1 | B | 80 | MET | C-N | -6.04 | 1.20 | 1.34 |
| 1 | A | 76 | PRO | N-CD | 6.04 | 1.56 | 1.47 |
| 1 | B | 76 | PRO | N-CD | 6.04 | 1.56 | 1.47 |
| 1 | A | 80 | MET | C-O | -6.02 | 1.11 | 1.23 |
| 1 | B | 80 | MET | C-O | -6.02 | 1.11 | 1.23 |
| 1 | A | 17 | CYS | CB-SG | 6.01 | 1.92 | 1.82 |
| 1 | B | 17 | CYS | CB-SG | 6.01 | 1.92 | 1.82 |
| 1 | A | 31 | ASN | CB-CG | 6.00 | 1.64 | 1.51 |
| 1 | B | 31 | ASN | CB-CG | 6.00 | 1.64 | 1.51 |
| 1 | A | 80 | MET | SD-CE | -6.00 | 1.44 | 1.77 |
| 1 | B | 80 | MET | SD-CE | -6.00 | 1.44 | 1.77 |
| 1 | A | 69 | GLU | N-CA | 5.99 | 1.58 | 1.46 |
| 1 | B | 69 | GLU | N-CA | 5.99 | 1.58 | 1.46 |
| 1 | A | 10 | PHE | CE1-CZ | -5.99 | 1.25 | 1.37 |
| 1 | B | 10 | PHE | CE1-CZ | -5.99 | 1.25 | 1.37 |
| 1 | A | 24 | GLY | C-N | 5.98 | 1.47 | 1.34 |
| 1 | B | 24 | GLY | C-N | 5.98 | 1.47 | 1.34 |
| 1 | A | 27 | LYS | CD-CE | 5.97 | 1.66 | 1.51 |
| 1 | B | 27 | LYS | CD-CE | 5.97 | 1.66 | 1.51 |
| 1 | A | 13 | LYS | CE-NZ | 5.93 | 1.63 | 1.49 |
| 1 | B | 13 | LYS | CE-NZ | 5.93 | 1.63 | 1.49 |
| 1 | A | 55 | LYS | CB-CG | 5.93 | 1.68 | 1.52 |
| 1 | B | 55 | LYS | CB-CG | 5.93 | 1.68 | 1.52 |
| 1 | A | 69 | GLU | CG-CD | 5.92 | 1.60 | 1.51 |
| 1 | B | 69 | GLU | CG-CD | 5.92 | 1.60 | 1.51 |
| 1 | A | 12 | GLN | CA-C | 5.91 | 1.68 | 1.52 |
| 1 | B | 12 | GLN | CA-C | 5.91 | 1.68 | 1.52 |
| 1 | A | 36 | PHE | CB-CG | -5.90 | 1.41 | 1.51 |
| 1 | B | 36 | PHE | CB-CG | -5.90 | 1.41 | 1.51 |
| 1 | A | 92 | GLN | CG-CD | 5.84 | 1.64 | 1.51 |
| 1 | B | 92 | GLN | CG-CD | 5.84 | 1.64 | 1.51 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | A | 25 | LYS | CB-CG | 5.84 | 1.68 | 1.52 |
| 1 | B | 25 | LYS | CB-CG | 5.84 | 1.68 | 1.52 |
| 1 | A | 73 | LYS | CG-CD | -5.84 | 1.32 | 1.52 |
| 1 | B | 73 | LYS | CG-CD | -5.84 | 1.32 | 1.52 |
| 1 | A | 81 | ILE | C-N | -5.83 | 1.20 | 1.34 |
| 1 | B | 81 | ILE | C-N | -5.83 | 1.20 | 1.34 |
| 1 | A | 52 | ASN | CG-ND2 | 5.82 | 1.47 | 1.32 |
| 1 | A | 70 | ASN | CG-ND2 | 5.82 | 1.47 | 1.32 |
| 1 | B | 52 | ASN | CG-ND2 | 5.82 | 1.47 | 1.32 |
| 1 | B | 70 | ASN | CG-ND2 | 5.82 | 1.47 | 1.32 |
| 1 | A | 4 | ALA | N-CA | 5.80 | 1.57 | 1.46 |
| 1 | A | 10 | PHE | C-N | 5.80 | 1.47 | 1.34 |
| 1 | A | 67 | TYR | N-CA | 5.80 | 1.57 | 1.46 |
| 1 | B | 4 | ALA | N-CA | 5.80 | 1.57 | 1.46 |
| 1 | B | 10 | PHE | C-N | 5.80 | 1.47 | 1.34 |
| 1 | B | 67 | TYR | N-CA | 5.80 | 1.57 | 1.46 |
| 1 | A | 20 | VAL | CA-CB | -5.79 | 1.42 | 1.54 |
| 1 | B | 20 | VAL | CA-CB | -5.79 | 1.42 | 1.54 |
| 1 | A | 27 | LYS | CA-CB | 5.78 | 1.66 | 1.53 |
| 1 | B | 27 | LYS | CA-CB | 5.78 | 1.66 | 1.53 |
| 1 | A | 33 | TRP | CE3-CZ3 | -5.77 | 1.28 | 1.38 |
| 1 | B | 33 | TRP | CE3-CZ3 | -5.77 | 1.28 | 1.38 |
| 1 | A | 65 | MET | CG-SD | -5.76 | 1.66 | 1.81 |
| 1 | B | 65 | MET | CG-SD | -5.76 | 1.66 | 1.81 |
| 1 | A | 11 | VAL | C-N | -5.76 | 1.20 | 1.34 |
| 1 | B | 11 | VAL | C-N | -5.76 | 1.20 | 1.34 |
| 1 | A | 48 | TYR | CA-C | -5.73 | 1.38 | 1.52 |
| 1 | B | 48 | TYR | CA-C | -5.73 | 1.38 | 1.52 |
| 1 | A | 36 | PHE | CG-CD2 | -5.72 | 1.30 | 1.38 |
| 1 | B | 36 | PHE | CG-CD2 | -5.72 | 1.30 | 1.38 |
| 1 | A | 81 | ILE | CB-CG2 | 5.71 | 1.70 | 1.52 |
| 1 | B | 81 | ILE | CB-CG2 | 5.71 | 1.70 | 1.52 |
| 1 | A | 90 | GLU | CB-CG | -5.70 | 1.41 | 1.52 |
| 1 | B | 90 | GLU | CB-CG | -5.70 | 1.41 | 1.52 |
| 1 | A | 64 | LEU | CG-CD2 | -5.69 | 1.30 | 1.51 |
| 1 | B | 64 | LEU | CG-CD2 | -5.69 | 1.30 | 1.51 |
| 1 | A | 95 | VAL | CB-CG1 | -5.69 | 1.40 | 1.52 |
| 1 | B | 95 | VAL | CB-CG1 | -5.69 | 1.40 | 1.52 |
| 1 | A | 3 | VAL | C-N | -5.68 | 1.21 | 1.34 |
| 1 | A | 23 | GLY | C-N | 5.68 | 1.43 | 1.33 |
| 1 | A | 75 | ILE | N-CA | -5.68 | 1.34 | 1.46 |
| 1 | B | 3 | VAL | C-N | -5.68 | 1.21 | 1.34 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1 | B | 23 | GLY | C-N | 5.68 | 1.43 | 1.33 |
| 1 | B | 75 | ILE | N-CA | -5.68 | 1.34 | 1.46 |
| 1 | A | 30 | PRO | C-O | -5.67 | 1.11 | 1.23 |
| 1 | B | 30 | PRO | C-O | -5.67 | 1.11 | 1.23 |
| 1 | A | 25 | LYS | CE-NZ | -5.63 | 1.34 | 1.49 |
| 1 | B | 25 | LYS | CE-NZ | -5.63 | 1.34 | 1.49 |
| 1 | A | 38 | ARG | CD-NE | -5.63 | 1.36 | 1.46 |
| 1 | B | 38 | ARG | CD-NE | -5.63 | 1.36 | 1.46 |
| 1 | A | 28 | VAL | CB-CG1 | -5.62 | 1.41 | 1.52 |
| 1 | B | 28 | VAL | CB-CG1 | -5.62 | 1.41 | 1.52 |
| 1 | A | 59 | TRP | CB-CG | -5.59 | 1.40 | 1.50 |
| 1 | B | 59 | TRP | CB-CG | -5.59 | 1.40 | 1.50 |
| 1 | A | 90 | GLU | CG-CD | 5.58 | 1.60 | 1.51 |
| 1 | B | 90 | GLU | CG-CD | 5.58 | 1.60 | 1.51 |
| 1 | A | 95 | VAL | N-CA | 5.55 | 1.57 | 1.46 |
| 1 | B | 95 | VAL | N-CA | 5.55 | 1.57 | 1.46 |
| 1 | A | 13 | LYS | CA-CB | -5.48 | 1.41 | 1.53 |
| 1 | A | 92 | GLN | CA-CB | -5.48 | 1.41 | 1.53 |
| 1 | B | 13 | LYS | CA-CB | -5.48 | 1.41 | 1.53 |
| 1 | B | 92 | GLN | CA-CB | -5.48 | 1.41 | 1.53 |
| 1 | A | 71 | PRO | CG-CD | -5.47 | 1.32 | 1.50 |
| 1 | B | 71 | PRO | CG-CD | -5.47 | 1.32 | 1.50 |
| 1 | A | 12 | GLN | CD-NE2 | -5.41 | 1.19 | 1.32 |
| 1 | B | 12 | GLN | CD-NE2 | -5.41 | 1.19 | 1.32 |
| 1 | A | 39 | LYS | CA-CB | 5.39 | 1.65 | 1.53 |
| 1 | B | 39 | LYS | CA-CB | 5.39 | 1.65 | 1.53 |
| 1 | A | 65 | MET | C-O | -5.37 | 1.13 | 1.23 |
| 1 | B | 65 | MET | C-O | -5.37 | 1.13 | 1.23 |
| 1 | A | 53 | LYS | CE-NZ | -5.33 | 1.35 | 1.49 |
| 1 | B | 53 | LYS | CE-NZ | -5.33 | 1.35 | 1.49 |
| 1 | A | 11 | VAL | N-CA | -5.32 | 1.35 | 1.46 |
| 1 | A | 52 | ASN | N-CA | -5.32 | 1.35 | 1.46 |
| 1 | B | 11 | VAL | N-CA | -5.32 | 1.35 | 1.46 |
| 1 | B | 52 | ASN | N-CA | -5.32 | 1.35 | 1.46 |
| 1 | A | 26 | HIS | CG-ND1 | -5.30 | 1.27 | 1.38 |
| 1 | B | 26 | HIS | CG-ND1 | -5.30 | 1.27 | 1.38 |
| 1 | A | 46 | TYR | CB-CG | -5.30 | 1.43 | 1.51 |
| 1 | B | 46 | TYR | CB-CG | -5.30 | 1.43 | 1.51 |
| 1 | A | 51 | ALA | CA-CB | -5.30 | 1.41 | 1.52 |
| 1 | B | 51 | ALA | CA-CB | -5.30 | 1.41 | 1.52 |
| 1 | A | 45 | GLY | CA-C | 5.30 | 1.60 | 1.51 |
| 1 | B | 45 | GLY | CA-C | 5.30 | 1.60 | 1.51 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1 | A | 59 | TRP | CD1-NE1 | -5.30 | 1.28 | 1.38 |
| 1 | B | 59 | TRP | CD1-NE1 | -5.30 | 1.28 | 1.38 |
| 1 | A | 10 | PHE | CB-CG | 5.28 | 1.60 | 1.51 |
| 1 | A | 19 | THR | CA-CB | -5.28 | 1.39 | 1.53 |
| 1 | B | 10 | PHE | CB-CG | 5.28 | 1.60 | 1.51 |
| 1 | B | 19 | THR | CA-CB | -5.28 | 1.39 | 1.53 |
| 1 | A | 26 | HIS | C-O | 5.26 | 1.33 | 1.23 |
| 1 | B | 26 | HIS | C-O | 5.26 | 1.33 | 1.23 |
| 1 | A | 39 | LYS | C-N | -5.26 | 1.22 | 1.34 |
| 1 | A | 67 | TYR | C-N | -5.26 | 1.22 | 1.34 |
| 1 | B | 39 | LYS | C-N | -5.26 | 1.22 | 1.34 |
| 1 | B | 67 | TYR | C-N | -5.26 | 1.22 | 1.34 |
| 1 | A | 103 | SER | N-CA | 5.23 | 1.56 | 1.46 |
| 1 | B | 103 | SER | N-CA | 5.23 | 1.56 | 1.46 |
| 1 | A | 48 | TYR | CA-CB | 5.18 | 1.65 | 1.53 |
| 1 | B | 48 | TYR | CA-CB | 5.18 | 1.65 | 1.53 |
| 1 | A | 27 | LYS | CB-CG | -5.16 | 1.38 | 1.52 |
| 1 | B | 27 | LYS | CB-CG | -5.16 | 1.38 | 1.52 |
| 1 | A | 62 | ASN | CA-C | 5.13 | 1.66 | 1.52 |
| 1 | B | 62 | ASN | CA-C | 5.13 | 1.66 | 1.52 |
| 1 | A | 67 | TYR | CA-C | -5.13 | 1.39 | 1.52 |
| 1 | A | 103 | SER | CA-C | -5.13 | 1.39 | 1.52 |
| 1 | B | 67 | TYR | CA-C | -5.13 | 1.39 | 1.52 |
| 1 | B | 103 | SER | CA-C | -5.13 | 1.39 | 1.52 |
| 1 | A | 13 | LYS | C-N | -5.12 | 1.22 | 1.34 |
| 1 | A | 15 | ALA | C-N | -5.12 | 1.22 | 1.34 |
| 1 | A | 71 | PRO | C-N | -5.12 | 1.22 | 1.34 |
| 1 | B | 13 | LYS | C-N | -5.12 | 1.22 | 1.34 |
| 1 | B | 15 | ALA | C-N | -5.12 | 1.22 | 1.34 |
| 1 | B | 71 | PRO | C-N | -5.12 | 1.22 | 1.34 |
| 1 | A | 44 | GLU | N-CA | 5.10 | 1.56 | 1.46 |
| 1 | B | 44 | GLU | N-CA | 5.10 | 1.56 | 1.46 |
| 1 | A | 87 | LYS | CE-NZ | 5.10 | 1.61 | 1.49 |
| 1 | B | 87 | LYS | CE-NZ | 5.10 | 1.61 | 1.49 |
| 1 | A | 66 | GLU | N-CA | -5.10 | 1.36 | 1.46 |
| 1 | B | 66 | GLU | N-CA | -5.10 | 1.36 | 1.46 |
| 1 | A | 28 | VAL | CB-CG2 | -5.09 | 1.42 | 1.52 |
| 1 | B | 28 | VAL | CB-CG2 | -5.09 | 1.42 | 1.52 |
| 1 | A | 58 | VAL | CA-C | 5.09 | 1.66 | 1.52 |
| 1 | A | 64 | LEU | CA-C | 5.09 | 1.66 | 1.52 |
| 1 | B | 58 | VAL | CA-C | 5.09 | 1.66 | 1.52 |
| 1 | B | 64 | LEU | CA-C | 5.09 | 1.66 | 1.52 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1 | A | 4 | ALA | CA-CB | 5.04 | 1.63 | 1.52 |
| 1 | B | 4 | ALA | CA-CB | 5.04 | 1.63 | 1.52 |
| 1 | A | 74 | TYR | CG-CD2 | -5.04 | 1.32 | 1.39 |
| 1 | B | 74 | TYR | CG-CD2 | -5.04 | 1.32 | 1.39 |

All (644) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|--------|-------------|----------|
| 1 | A | 3 | VAL | CA-CB-CG2 | -38.56 | 53.07 | 110.90 |
| 1 | B | 3 | VAL | CA-CB-CG2 | -38.56 | 53.07 | 110.90 |
| 1 | A | 3 | VAL | CA-CB-CG1 | -33.90 | 60.05 | 110.90 |
| 1 | B | 3 | VAL | CA-CB-CG1 | -33.90 | 60.05 | 110.90 |
| 1 | A | 18 | HIS | CG-ND1-CE1 | 33.74 | 155.43 | 108.20 |
| 1 | B | 18 | HIS | CG-ND1-CE1 | 33.74 | 155.43 | 108.20 |
| 1 | A | 97 | TYR | CZ-CE2-CD2 | -31.30 | 91.63 | 119.80 |
| 1 | B | 97 | TYR | CZ-CE2-CD2 | -31.30 | 91.63 | 119.80 |
| 1 | A | 67 | TYR | CB-CG-CD1 | 30.40 | 139.24 | 121.00 |
| 1 | B | 67 | TYR | CB-CG-CD1 | 30.40 | 139.24 | 121.00 |
| 1 | A | 46 | TYR | CZ-CE2-CD2 | -27.38 | 95.15 | 119.80 |
| 1 | B | 46 | TYR | CZ-CE2-CD2 | -27.38 | 95.15 | 119.80 |
| 1 | A | 67 | TYR | CB-CG-CD2 | -26.64 | 105.01 | 121.00 |
| 1 | B | 67 | TYR | CB-CG-CD2 | -26.64 | 105.01 | 121.00 |
| 1 | A | 18 | HIS | ND1-CG-CD2 | -26.64 | 68.71 | 106.00 |
| 1 | B | 18 | HIS | ND1-CG-CD2 | -26.64 | 68.71 | 106.00 |
| 1 | A | 48 | TYR | CB-CG-CD1 | 24.73 | 135.84 | 121.00 |
| 1 | B | 48 | TYR | CB-CG-CD1 | 24.73 | 135.84 | 121.00 |
| 1 | A | 46 | TYR | CB-CG-CD2 | 22.96 | 134.78 | 121.00 |
| 1 | B | 46 | TYR | CB-CG-CD2 | 22.96 | 134.78 | 121.00 |
| 1 | A | 46 | TYR | CG-CD2-CE2 | 22.32 | 139.16 | 121.30 |
| 1 | B | 46 | TYR | CG-CD2-CE2 | 22.32 | 139.16 | 121.30 |
| 1 | A | 91 | ARG | NE-CZ-NH1 | -21.14 | 109.73 | 120.30 |
| 1 | B | 91 | ARG | NE-CZ-NH1 | -21.14 | 109.73 | 120.30 |
| 1 | A | 30 | PRO | N-CD-CG | -20.85 | 71.93 | 103.20 |
| 1 | B | 30 | PRO | N-CD-CG | -20.85 | 71.93 | 103.20 |
| 1 | A | 76 | PRO | CA-N-CD | -20.03 | 83.46 | 111.50 |
| 1 | B | 76 | PRO | CA-N-CD | -20.03 | 83.46 | 111.50 |
| 1 | A | 36 | PHE | CG-CD2-CE2 | 19.45 | 142.20 | 120.80 |
| 1 | B | 36 | PHE | CG-CD2-CE2 | 19.45 | 142.20 | 120.80 |
| 1 | A | 46 | TYR | CB-CA-C | 19.45 | 149.29 | 110.40 |
| 1 | B | 46 | TYR | CB-CA-C | 19.45 | 149.29 | 110.40 |
| 1 | A | 30 | PRO | CA-CB-CG | -19.02 | 67.86 | 104.00 |
| 1 | B | 30 | PRO | CA-CB-CG | -19.02 | 67.86 | 104.00 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|--------|-------------|----------|
| 1 | A | 10 | PHE | CB-CG-CD1 | -19.00 | 107.50 | 120.80 |
| 1 | B | 10 | PHE | CB-CG-CD1 | -19.00 | 107.50 | 120.80 |
| 1 | A | 10 | PHE | CZ-CE2-CD2 | 17.80 | 141.46 | 120.10 |
| 1 | B | 10 | PHE | CZ-CE2-CD2 | 17.80 | 141.46 | 120.10 |
| 1 | A | 33 | TRP | CG-CD2-CE3 | -17.37 | 118.27 | 133.90 |
| 1 | B | 33 | TRP | CG-CD2-CE3 | -17.37 | 118.27 | 133.90 |
| 1 | A | 50 | ASP | O-C-N | -17.14 | 95.28 | 122.70 |
| 1 | B | 50 | ASP | O-C-N | -17.14 | 95.28 | 122.70 |
| 1 | A | 44 | GLU | CB-CG-CD | -16.95 | 68.44 | 114.20 |
| 1 | B | 44 | GLU | CB-CG-CD | -16.95 | 68.44 | 114.20 |
| 1 | A | 67 | TYR | CG-CD2-CE2 | -16.79 | 107.87 | 121.30 |
| 1 | B | 67 | TYR | CG-CD2-CE2 | -16.79 | 107.87 | 121.30 |
| 1 | A | 10 | PHE | CB-CG-CD2 | 16.72 | 132.51 | 120.80 |
| 1 | B | 10 | PHE | CB-CG-CD2 | 16.72 | 132.51 | 120.80 |
| 1 | A | 61 | GLU | OE1-CD-OE2 | -16.49 | 103.52 | 123.30 |
| 1 | B | 61 | GLU | OE1-CD-OE2 | -16.49 | 103.52 | 123.30 |
| 1 | A | 92 | GLN | CG-CD-OE1 | -16.43 | 88.74 | 121.60 |
| 1 | B | 92 | GLN | CG-CD-OE1 | -16.43 | 88.74 | 121.60 |
| 1 | A | 39 | LYS | CA-CB-CG | 16.36 | 149.40 | 113.40 |
| 1 | B | 39 | LYS | CA-CB-CG | 16.36 | 149.40 | 113.40 |
| 1 | A | 33 | TRP | CE2-CD2-CG | 15.93 | 120.05 | 107.30 |
| 1 | B | 33 | TRP | CE2-CD2-CG | 15.93 | 120.05 | 107.30 |
| 1 | A | 97 | TYR | CG-CD2-CE2 | 15.86 | 133.99 | 121.30 |
| 1 | B | 97 | TYR | CG-CD2-CE2 | 15.86 | 133.99 | 121.30 |
| 1 | A | 16 | GLN | N-CA-CB | -15.47 | 82.75 | 110.60 |
| 1 | B | 16 | GLN | N-CA-CB | -15.47 | 82.75 | 110.60 |
| 1 | A | 18 | HIS | ND1-CE1-NE2 | -15.20 | 76.45 | 109.90 |
| 1 | B | 18 | HIS | ND1-CE1-NE2 | -15.20 | 76.45 | 109.90 |
| 1 | A | 67 | TYR | CZ-CE2-CD2 | 15.18 | 133.46 | 119.80 |
| 1 | B | 67 | TYR | CZ-CE2-CD2 | 15.18 | 133.46 | 119.80 |
| 1 | A | 52 | ASN | N-CA-CB | 15.07 | 137.74 | 110.60 |
| 1 | B | 52 | ASN | N-CA-CB | 15.07 | 137.74 | 110.60 |
| 1 | A | 36 | PHE | CD1-CG-CD2 | -14.76 | 99.11 | 118.30 |
| 1 | B | 36 | PHE | CD1-CG-CD2 | -14.76 | 99.11 | 118.30 |
| 1 | A | 76 | PRO | N-CD-CG | 14.75 | 125.33 | 103.20 |
| 1 | B | 76 | PRO | N-CD-CG | 14.75 | 125.33 | 103.20 |
| 1 | A | 48 | TYR | CG-CD1-CE1 | 14.73 | 133.09 | 121.30 |
| 1 | B | 48 | TYR | CG-CD1-CE1 | 14.73 | 133.09 | 121.30 |
| 1 | A | 82 | PHE | CB-CG-CD1 | 14.57 | 131.00 | 120.80 |
| 1 | B | 82 | PHE | CB-CG-CD1 | 14.57 | 131.00 | 120.80 |
| 1 | A | 83 | ALA | O-C-N | -14.21 | 99.03 | 123.20 |
| 1 | B | 83 | ALA | O-C-N | -14.21 | 99.03 | 123.20 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|--------|-------------|----------|
| 1 | A | 56 | GLY | O-C-N | -14.14 | 100.08 | 122.70 |
| 1 | B | 56 | GLY | O-C-N | -14.14 | 100.08 | 122.70 |
| 1 | A | 2 | ASP | CB-CG-OD1 | -14.11 | 105.60 | 118.30 |
| 1 | B | 2 | ASP | CB-CG-OD1 | -14.11 | 105.60 | 118.30 |
| 1 | A | 36 | PHE | CB-CG-CD2 | 14.09 | 130.66 | 120.80 |
| 1 | B | 36 | PHE | CB-CG-CD2 | 14.09 | 130.66 | 120.80 |
| 1 | A | 28 | VAL | O-C-N | -13.62 | 100.05 | 123.20 |
| 1 | B | 28 | VAL | O-C-N | -13.62 | 100.05 | 123.20 |
| 1 | A | 48 | TYR | CG-CD2-CE2 | 13.44 | 132.05 | 121.30 |
| 1 | B | 48 | TYR | CG-CD2-CE2 | 13.44 | 132.05 | 121.30 |
| 1 | A | 37 | GLY | O-C-N | -13.43 | 101.20 | 122.70 |
| 1 | B | 37 | GLY | O-C-N | -13.43 | 101.20 | 122.70 |
| 1 | A | 28 | VAL | CA-CB-CG2 | 13.42 | 131.03 | 110.90 |
| 1 | B | 28 | VAL | CA-CB-CG2 | 13.42 | 131.03 | 110.90 |
| 1 | A | 48 | TYR | CD1-CE1-CZ | -13.30 | 107.83 | 119.80 |
| 1 | B | 48 | TYR | CD1-CE1-CZ | -13.30 | 107.83 | 119.80 |
| 1 | A | 52 | ASN | CB-CG-OD1 | 12.97 | 147.53 | 121.60 |
| 1 | B | 52 | ASN | CB-CG-OD1 | 12.97 | 147.53 | 121.60 |
| 1 | A | 82 | PHE | CD1-CG-CD2 | -12.93 | 101.50 | 118.30 |
| 1 | B | 82 | PHE | CD1-CG-CD2 | -12.93 | 101.50 | 118.30 |
| 1 | A | 62 | ASN | O-C-N | -12.89 | 102.07 | 122.70 |
| 1 | B | 62 | ASN | O-C-N | -12.89 | 102.07 | 122.70 |
| 1 | A | 97 | TYR | CE1-CZ-CE2 | 12.84 | 140.34 | 119.80 |
| 1 | B | 97 | TYR | CE1-CZ-CE2 | 12.84 | 140.34 | 119.80 |
| 1 | A | 59 | TRP | CD1-NE1-CE2 | -12.75 | 97.52 | 109.00 |
| 1 | B | 59 | TRP | CD1-NE1-CE2 | -12.75 | 97.52 | 109.00 |
| 1 | A | 41 | GLY | O-C-N | -12.70 | 102.37 | 122.70 |
| 1 | B | 41 | GLY | O-C-N | -12.70 | 102.37 | 122.70 |
| 1 | A | 30 | PRO | O-C-N | -12.62 | 102.50 | 122.70 |
| 1 | B | 30 | PRO | O-C-N | -12.62 | 102.50 | 122.70 |
| 1 | A | 33 | TRP | CB-CG-CD2 | 12.60 | 142.98 | 126.60 |
| 1 | B | 33 | TRP | CB-CG-CD2 | 12.60 | 142.98 | 126.60 |
| 1 | A | 61 | GLU | CG-CD-OE1 | 12.35 | 143.00 | 118.30 |
| 1 | B | 61 | GLU | CG-CD-OE1 | 12.35 | 143.00 | 118.30 |
| 1 | A | 91 | ARG | NE-CZ-NH2 | 12.35 | 126.47 | 120.30 |
| 1 | B | 91 | ARG | NE-CZ-NH2 | 12.35 | 126.47 | 120.30 |
| 1 | A | 46 | TYR | CB-CG-CD1 | -12.34 | 113.60 | 121.00 |
| 1 | B | 46 | TYR | CB-CG-CD1 | -12.34 | 113.60 | 121.00 |
| 1 | A | 46 | TYR | CA-CB-CG | 12.28 | 136.73 | 113.40 |
| 1 | B | 46 | TYR | CA-CB-CG | 12.28 | 136.73 | 113.40 |
| 1 | A | 2 | ASP | CB-CG-OD2 | 12.26 | 129.33 | 118.30 |
| 1 | B | 2 | ASP | CB-CG-OD2 | 12.26 | 129.33 | 118.30 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|--------|-------------|----------|
| 1 | A | 48 | TYR | CD1-CG-CD2 | -12.14 | 104.55 | 117.90 |
| 1 | B | 48 | TYR | CD1-CG-CD2 | -12.14 | 104.55 | 117.90 |
| 1 | A | 12 | GLN | CG-CD-OE1 | -11.99 | 97.62 | 121.60 |
| 1 | B | 12 | GLN | CG-CD-OE1 | -11.99 | 97.62 | 121.60 |
| 1 | A | 59 | TRP | CG-CD2-CE3 | -11.87 | 123.22 | 133.90 |
| 1 | B | 59 | TRP | CG-CD2-CE3 | -11.87 | 123.22 | 133.90 |
| 1 | A | 82 | PHE | CG-CD2-CE2 | 11.81 | 133.79 | 120.80 |
| 1 | B | 82 | PHE | CG-CD2-CE2 | 11.81 | 133.79 | 120.80 |
| 1 | A | 39 | LYS | CA-C-N | 11.65 | 142.82 | 117.20 |
| 1 | B | 39 | LYS | CA-C-N | 11.65 | 142.82 | 117.20 |
| 1 | A | 26 | HIS | CA-CB-CG | -11.51 | 94.04 | 113.60 |
| 1 | A | 62 | ASN | CB-CA-C | 11.51 | 133.42 | 110.40 |
| 1 | B | 26 | HIS | CA-CB-CG | -11.51 | 94.04 | 113.60 |
| 1 | B | 62 | ASN | CB-CA-C | 11.51 | 133.42 | 110.40 |
| 1 | A | 67 | TYR | O-C-N | -11.32 | 104.59 | 122.70 |
| 1 | B | 67 | TYR | O-C-N | -11.32 | 104.59 | 122.70 |
| 1 | A | 10 | PHE | CE1-CZ-CE2 | -11.23 | 99.78 | 120.00 |
| 1 | B | 10 | PHE | CE1-CZ-CE2 | -11.23 | 99.78 | 120.00 |
| 1 | A | 66 | GLU | OE1-CD-OE2 | -11.23 | 109.82 | 123.30 |
| 1 | B | 66 | GLU | OE1-CD-OE2 | -11.23 | 109.82 | 123.30 |
| 1 | A | 41 | GLY | C-N-CA | 11.19 | 149.66 | 121.70 |
| 1 | B | 41 | GLY | C-N-CA | 11.19 | 149.66 | 121.70 |
| 1 | A | 62 | ASN | CA-C-O | -11.18 | 96.63 | 120.10 |
| 1 | B | 62 | ASN | CA-C-O | -11.18 | 96.63 | 120.10 |
| 1 | A | 18 | HIS | CG-CD2-NE2 | 11.08 | 130.25 | 109.20 |
| 1 | B | 18 | HIS | CG-CD2-NE2 | 11.08 | 130.25 | 109.20 |
| 1 | A | 40 | THR | O-C-N | 10.99 | 141.88 | 123.20 |
| 1 | B | 40 | THR | O-C-N | 10.99 | 141.88 | 123.20 |
| 1 | A | 92 | GLN | CB-CA-C | 10.96 | 132.32 | 110.40 |
| 1 | B | 92 | GLN | CB-CA-C | 10.96 | 132.32 | 110.40 |
| 1 | A | 59 | TRP | CD2-CE2-CZ2 | -10.90 | 109.22 | 122.30 |
| 1 | B | 59 | TRP | CD2-CE2-CZ2 | -10.90 | 109.22 | 122.30 |
| 1 | A | 76 | PRO | N-CA-CB | 10.88 | 116.35 | 103.30 |
| 1 | B | 76 | PRO | N-CA-CB | 10.88 | 116.35 | 103.30 |
| 1 | A | 78 | THR | O-C-N | -10.82 | 105.38 | 122.70 |
| 1 | B | 78 | THR | O-C-N | -10.82 | 105.38 | 122.70 |
| 1 | A | 62 | ASN | CA-C-N | -10.52 | 94.06 | 117.20 |
| 1 | B | 62 | ASN | CA-C-N | -10.52 | 94.06 | 117.20 |
| 1 | A | 67 | TYR | CA-C-O | 10.51 | 142.17 | 120.10 |
| 1 | B | 67 | TYR | CA-C-O | 10.51 | 142.17 | 120.10 |
| 1 | A | 57 | ILE | O-C-N | -10.46 | 105.97 | 122.70 |
| 1 | B | 57 | ILE | O-C-N | -10.46 | 105.97 | 122.70 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|--------|-------------|----------|
| 1 | A | 68 | LEU | CB-CA-C | 10.28 | 129.73 | 110.20 |
| 1 | B | 68 | LEU | CB-CA-C | 10.28 | 129.73 | 110.20 |
| 1 | A | 18 | HIS | CB-CA-C | -10.20 | 90.00 | 110.40 |
| 1 | B | 18 | HIS | CB-CA-C | -10.20 | 90.00 | 110.40 |
| 1 | A | 36 | PHE | C-N-CA | 10.15 | 143.62 | 122.30 |
| 1 | B | 36 | PHE | C-N-CA | 10.15 | 143.62 | 122.30 |
| 1 | A | 28 | VAL | N-CA-CB | 10.14 | 133.80 | 111.50 |
| 1 | B | 28 | VAL | N-CA-CB | 10.14 | 133.80 | 111.50 |
| 1 | A | 3 | VAL | O-C-N | -10.07 | 106.59 | 122.70 |
| 1 | B | 3 | VAL | O-C-N | -10.07 | 106.59 | 122.70 |
| 1 | A | 25 | LYS | N-CA-CB | -10.04 | 92.52 | 110.60 |
| 1 | B | 25 | LYS | N-CA-CB | -10.04 | 92.52 | 110.60 |
| 1 | A | 5 | LYS | O-C-N | -10.04 | 106.14 | 123.20 |
| 1 | B | 5 | LYS | O-C-N | -10.04 | 106.14 | 123.20 |
| 1 | A | 9 | THR | CA-CB-CG2 | 10.02 | 126.42 | 112.40 |
| 1 | B | 9 | THR | CA-CB-CG2 | 10.02 | 126.42 | 112.40 |
| 1 | A | 62 | ASN | CA-CB-CG | 9.87 | 135.12 | 113.40 |
| 1 | B | 62 | ASN | CA-CB-CG | 9.87 | 135.12 | 113.40 |
| 1 | A | 42 | GLN | N-CA-CB | 9.82 | 128.28 | 110.60 |
| 1 | B | 42 | GLN | N-CA-CB | 9.82 | 128.28 | 110.60 |
| 1 | A | 10 | PHE | CG-CD1-CE1 | -9.80 | 110.02 | 120.80 |
| 1 | A | 38 | ARG | CD-NE-CZ | -9.80 | 109.87 | 123.60 |
| 1 | B | 10 | PHE | CG-CD1-CE1 | -9.80 | 110.02 | 120.80 |
| 1 | B | 38 | ARG | CD-NE-CZ | -9.80 | 109.87 | 123.60 |
| 1 | A | 92 | GLN | CG-CD-NE2 | 9.79 | 140.18 | 116.70 |
| 1 | B | 92 | GLN | CG-CD-NE2 | 9.79 | 140.18 | 116.70 |
| 1 | A | 40 | THR | C-N-CA | -9.75 | 101.82 | 122.30 |
| 1 | B | 40 | THR | C-N-CA | -9.75 | 101.82 | 122.30 |
| 1 | A | 71 | PRO | N-CA-CB | 9.74 | 114.98 | 103.30 |
| 1 | B | 71 | PRO | N-CA-CB | 9.74 | 114.98 | 103.30 |
| 1 | A | 7 | LYS | O-C-N | -9.65 | 107.25 | 122.70 |
| 1 | B | 7 | LYS | O-C-N | -9.65 | 107.25 | 122.70 |
| 1 | A | 56 | GLY | CA-C-O | 9.64 | 137.95 | 120.60 |
| 1 | B | 56 | GLY | CA-C-O | 9.64 | 137.95 | 120.60 |
| 1 | A | 59 | TRP | CE2-CD2-CE3 | 9.63 | 130.26 | 118.70 |
| 1 | B | 59 | TRP | CE2-CD2-CE3 | 9.63 | 130.26 | 118.70 |
| 1 | A | 59 | TRP | NE1-CE2-CZ2 | -9.56 | 119.88 | 130.40 |
| 1 | B | 59 | TRP | NE1-CE2-CZ2 | -9.56 | 119.88 | 130.40 |
| 1 | A | 39 | LYS | CA-C-O | -9.52 | 100.11 | 120.10 |
| 1 | B | 39 | LYS | CA-C-O | -9.52 | 100.11 | 120.10 |
| 1 | A | 83 | ALA | CA-C-O | 9.48 | 140.02 | 120.10 |
| 1 | B | 83 | ALA | CA-C-O | 9.48 | 140.02 | 120.10 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 1 | A | 68 | LEU | O-C-N | -9.47 | 107.55 | 122.70 |
| 1 | B | 68 | LEU | O-C-N | -9.47 | 107.55 | 122.70 |
| 1 | A | 58 | VAL | CA-C-N | 9.44 | 137.97 | 117.20 |
| 1 | B | 58 | VAL | CA-C-N | 9.44 | 137.97 | 117.20 |
| 1 | A | 98 | LEU | CB-CA-C | 9.43 | 128.12 | 110.20 |
| 1 | B | 98 | LEU | CB-CA-C | 9.43 | 128.12 | 110.20 |
| 1 | A | 59 | TRP | NE1-CE2-CD2 | 9.41 | 116.71 | 107.30 |
| 1 | B | 59 | TRP | NE1-CE2-CD2 | 9.41 | 116.71 | 107.30 |
| 1 | A | 1 | GLY | C-N-CA | -9.38 | 98.24 | 121.70 |
| 1 | B | 1 | GLY | C-N-CA | -9.38 | 98.24 | 121.70 |
| 1 | A | 19 | THR | O-C-N | -9.36 | 107.72 | 122.70 |
| 1 | B | 19 | THR | O-C-N | -9.36 | 107.72 | 122.70 |
| 1 | A | 33 | TRP | CD1-CG-CD2 | -9.36 | 98.81 | 106.30 |
| 1 | B | 33 | TRP | CD1-CG-CD2 | -9.36 | 98.81 | 106.30 |
| 1 | A | 44 | GLU | CG-CD-OE1 | -9.30 | 99.70 | 118.30 |
| 1 | B | 44 | GLU | CG-CD-OE1 | -9.30 | 99.70 | 118.30 |
| 1 | A | 34 | GLY | O-C-N | -9.28 | 107.86 | 122.70 |
| 1 | B | 34 | GLY | O-C-N | -9.28 | 107.86 | 122.70 |
| 1 | A | 19 | THR | N-CA-CB | 9.22 | 127.82 | 110.30 |
| 1 | B | 19 | THR | N-CA-CB | 9.22 | 127.82 | 110.30 |
| 1 | A | 16 | GLN | O-C-N | -9.22 | 107.95 | 122.70 |
| 1 | B | 16 | GLN | O-C-N | -9.22 | 107.95 | 122.70 |
| 1 | A | 50 | ASP | CA-C-N | 9.21 | 137.46 | 117.20 |
| 1 | B | 50 | ASP | CA-C-N | 9.21 | 137.46 | 117.20 |
| 1 | A | 51 | ALA | CA-C-O | 9.18 | 139.38 | 120.10 |
| 1 | B | 51 | ALA | CA-C-O | 9.18 | 139.38 | 120.10 |
| 1 | A | 86 | LYS | O-C-N | -9.11 | 108.12 | 122.70 |
| 1 | B | 86 | LYS | O-C-N | -9.11 | 108.12 | 122.70 |
| 1 | A | 36 | PHE | CB-CG-CD1 | 9.09 | 127.16 | 120.80 |
| 1 | B | 36 | PHE | CB-CG-CD1 | 9.09 | 127.16 | 120.80 |
| 1 | A | 58 | VAL | CB-CA-C | 9.02 | 128.53 | 111.40 |
| 1 | B | 58 | VAL | CB-CA-C | 9.02 | 128.53 | 111.40 |
| 1 | A | 35 | LEU | N-CA-CB | 8.98 | 128.37 | 110.40 |
| 1 | B | 35 | LEU | N-CA-CB | 8.98 | 128.37 | 110.40 |
| 1 | A | 48 | TYR | CZ-CE2-CD2 | -8.89 | 111.80 | 119.80 |
| 1 | B | 48 | TYR | CZ-CE2-CD2 | -8.89 | 111.80 | 119.80 |
| 1 | A | 49 | THR | O-C-N | -8.85 | 108.55 | 122.70 |
| 1 | B | 49 | THR | O-C-N | -8.85 | 108.55 | 122.70 |
| 1 | A | 22 | ASN | O-C-N | -8.80 | 108.24 | 123.20 |
| 1 | B | 22 | ASN | O-C-N | -8.80 | 108.24 | 123.20 |
| 1 | A | 48 | TYR | N-CA-CB | -8.78 | 94.79 | 110.60 |
| 1 | B | 48 | TYR | N-CA-CB | -8.78 | 94.79 | 110.60 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 1 | A | 82 | PHE | CG-CD1-CE1 | 8.76 | 130.44 | 120.80 |
| 1 | B | 82 | PHE | CG-CD1-CE1 | 8.76 | 130.44 | 120.80 |
| 1 | A | 50 | ASP | OD1-CG-OD2 | -8.76 | 106.67 | 123.30 |
| 1 | B | 50 | ASP | OD1-CG-OD2 | -8.76 | 106.67 | 123.30 |
| 1 | A | 31 | ASN | CA-CB-CG | -8.73 | 94.20 | 113.40 |
| 1 | B | 31 | ASN | CA-CB-CG | -8.73 | 94.20 | 113.40 |
| 1 | A | 18 | HIS | CA-CB-CG | -8.68 | 98.84 | 113.60 |
| 1 | B | 18 | HIS | CA-CB-CG | -8.68 | 98.84 | 113.60 |
| 1 | A | 15 | ALA | N-CA-C | 8.66 | 134.37 | 111.00 |
| 1 | B | 15 | ALA | N-CA-C | 8.66 | 134.37 | 111.00 |
| 1 | A | 97 | TYR | OH-CZ-CE2 | -8.64 | 96.76 | 120.10 |
| 1 | B | 97 | TYR | OH-CZ-CE2 | -8.64 | 96.76 | 120.10 |
| 1 | A | 58 | VAL | CA-C-O | -8.60 | 102.04 | 120.10 |
| 1 | B | 58 | VAL | CA-C-O | -8.60 | 102.04 | 120.10 |
| 1 | A | 28 | VAL | CA-C-N | 8.58 | 133.37 | 116.20 |
| 1 | B | 28 | VAL | CA-C-N | 8.58 | 133.37 | 116.20 |
| 1 | A | 46 | TYR | CD1-CG-CD2 | -8.57 | 108.47 | 117.90 |
| 1 | B | 46 | TYR | CD1-CG-CD2 | -8.57 | 108.47 | 117.90 |
| 1 | A | 74 | TYR | CD1-CE1-CZ | -8.55 | 112.11 | 119.80 |
| 1 | B | 74 | TYR | CD1-CE1-CZ | -8.55 | 112.11 | 119.80 |
| 1 | A | 59 | TRP | CD1-CG-CD2 | -8.50 | 99.50 | 106.30 |
| 1 | B | 59 | TRP | CD1-CG-CD2 | -8.50 | 99.50 | 106.30 |
| 1 | A | 74 | TYR | CG-CD1-CE1 | 8.48 | 128.09 | 121.30 |
| 1 | B | 74 | TYR | CG-CD1-CE1 | 8.48 | 128.09 | 121.30 |
| 1 | A | 69 | GLU | OE1-CD-OE2 | -8.42 | 113.20 | 123.30 |
| 1 | B | 69 | GLU | OE1-CD-OE2 | -8.42 | 113.20 | 123.30 |
| 1 | A | 16 | GLN | CA-CB-CG | 8.41 | 131.91 | 113.40 |
| 1 | B | 16 | GLN | CA-CB-CG | 8.41 | 131.91 | 113.40 |
| 1 | A | 54 | SER | O-C-N | -8.41 | 109.25 | 122.70 |
| 1 | B | 54 | SER | O-C-N | -8.41 | 109.25 | 122.70 |
| 1 | A | 42 | GLN | CG-CD-OE1 | 8.40 | 138.39 | 121.60 |
| 1 | B | 42 | GLN | CG-CD-OE1 | 8.40 | 138.39 | 121.60 |
| 1 | A | 26 | HIS | N-CA-CB | -8.34 | 95.58 | 110.60 |
| 1 | B | 26 | HIS | N-CA-CB | -8.34 | 95.58 | 110.60 |
| 1 | A | 38 | ARG | NE-CZ-NH1 | 8.31 | 124.46 | 120.30 |
| 1 | B | 38 | ARG | NE-CZ-NH1 | 8.31 | 124.46 | 120.30 |
| 1 | A | 30 | PRO | CA-C-O | 8.30 | 140.13 | 120.20 |
| 1 | B | 30 | PRO | CA-C-O | 8.30 | 140.13 | 120.20 |
| 1 | A | 5 | LYS | CB-CA-C | -8.29 | 93.81 | 110.40 |
| 1 | B | 5 | LYS | CB-CA-C | -8.29 | 93.81 | 110.40 |
| 1 | A | 33 | TRP | CD2-CE3-CZ3 | -8.25 | 108.08 | 118.80 |
| 1 | B | 33 | TRP | CD2-CE3-CZ3 | -8.25 | 108.08 | 118.80 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | A | 39 | LYS | CB-CG-CD | 8.22 | 132.96 | 111.60 |
| 1 | B | 39 | LYS | CB-CG-CD | 8.22 | 132.96 | 111.60 |
| 1 | A | 76 | PRO | O-C-N | -8.21 | 109.25 | 123.20 |
| 1 | B | 76 | PRO | O-C-N | -8.21 | 109.25 | 123.20 |
| 1 | A | 51 | ALA | N-CA-CB | 8.20 | 121.57 | 110.10 |
| 1 | B | 51 | ALA | N-CA-CB | 8.20 | 121.57 | 110.10 |
| 1 | A | 82 | PHE | CB-CG-CD2 | 8.17 | 126.52 | 120.80 |
| 1 | B | 82 | PHE | CB-CG-CD2 | 8.17 | 126.52 | 120.80 |
| 1 | A | 36 | PHE | CG-CD1-CE1 | 8.17 | 129.78 | 120.80 |
| 1 | B | 36 | PHE | CG-CD1-CE1 | 8.17 | 129.78 | 120.80 |
| 1 | A | 93 | ASP | N-CA-CB | -8.12 | 95.97 | 110.60 |
| 1 | B | 93 | ASP | N-CA-CB | -8.12 | 95.97 | 110.60 |
| 1 | A | 63 | THR | O-C-N | -8.08 | 109.77 | 122.70 |
| 1 | B | 63 | THR | O-C-N | -8.08 | 109.77 | 122.70 |
| 1 | A | 33 | TRP | O-C-N | 8.07 | 136.93 | 123.20 |
| 1 | B | 33 | TRP | O-C-N | 8.07 | 136.93 | 123.20 |
| 1 | A | 17 | CYS | N-CA-C | -8.05 | 89.26 | 111.00 |
| 1 | B | 17 | CYS | N-CA-C | -8.05 | 89.26 | 111.00 |
| 1 | A | 90 | GLU | OE1-CD-OE2 | -8.01 | 113.68 | 123.30 |
| 1 | B | 90 | GLU | OE1-CD-OE2 | -8.01 | 113.68 | 123.30 |
| 1 | A | 36 | PHE | N-CA-CB | -8.00 | 96.19 | 110.60 |
| 1 | B | 36 | PHE | N-CA-CB | -8.00 | 96.19 | 110.60 |
| 1 | A | 6 | GLY | N-CA-C | -7.99 | 93.12 | 113.10 |
| 1 | B | 6 | GLY | N-CA-C | -7.99 | 93.12 | 113.10 |
| 1 | A | 31 | ASN | O-C-N | -7.96 | 109.97 | 122.70 |
| 1 | B | 31 | ASN | O-C-N | -7.96 | 109.97 | 122.70 |
| 1 | A | 32 | LEU | N-CA-CB | 7.94 | 126.29 | 110.40 |
| 1 | B | 32 | LEU | N-CA-CB | 7.94 | 126.29 | 110.40 |
| 1 | A | 75 | ILE | C-N-CD | 7.90 | 144.98 | 128.40 |
| 1 | B | 75 | ILE | C-N-CD | 7.90 | 144.98 | 128.40 |
| 1 | A | 33 | TRP | N-CA-CB | 7.87 | 124.76 | 110.60 |
| 1 | B | 33 | TRP | N-CA-CB | 7.87 | 124.76 | 110.60 |
| 1 | A | 88 | LYS | O-C-N | -7.86 | 109.83 | 123.20 |
| 1 | B | 88 | LYS | O-C-N | -7.86 | 109.83 | 123.20 |
| 1 | A | 40 | THR | CA-CB-CG2 | -7.85 | 101.41 | 112.40 |
| 1 | B | 40 | THR | CA-CB-CG2 | -7.85 | 101.41 | 112.40 |
| 1 | A | 86 | LYS | CA-C-O | 7.84 | 136.57 | 120.10 |
| 1 | B | 86 | LYS | CA-C-O | 7.84 | 136.57 | 120.10 |
| 1 | A | 62 | ASN | OD1-CG-ND2 | -7.81 | 103.93 | 121.90 |
| 1 | B | 62 | ASN | OD1-CG-ND2 | -7.81 | 103.93 | 121.90 |
| 1 | A | 43 | ALA | O-C-N | -7.79 | 110.24 | 122.70 |
| 1 | B | 43 | ALA | O-C-N | -7.79 | 110.24 | 122.70 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 1 | A | 97 | TYR | O-C-N | -7.74 | 110.32 | 122.70 |
| 1 | B | 97 | TYR | O-C-N | -7.74 | 110.32 | 122.70 |
| 1 | A | 44 | GLU | O-C-N | -7.74 | 110.05 | 123.20 |
| 1 | B | 44 | GLU | O-C-N | -7.74 | 110.05 | 123.20 |
| 1 | A | 97 | TYR | N-CA-CB | 7.70 | 124.46 | 110.60 |
| 1 | B | 97 | TYR | N-CA-CB | 7.70 | 124.46 | 110.60 |
| 1 | A | 79 | LYS | O-C-N | -7.69 | 110.40 | 122.70 |
| 1 | B | 79 | LYS | O-C-N | -7.69 | 110.40 | 122.70 |
| 1 | A | 33 | TRP | CH2-CZ2-CE2 | 7.65 | 125.05 | 117.40 |
| 1 | B | 33 | TRP | CH2-CZ2-CE2 | 7.65 | 125.05 | 117.40 |
| 1 | A | 77 | GLY | CA-C-O | 7.63 | 134.34 | 120.60 |
| 1 | B | 77 | GLY | CA-C-O | 7.63 | 134.34 | 120.60 |
| 1 | A | 10 | PHE | CA-C-N | 7.58 | 133.88 | 117.20 |
| 1 | B | 10 | PHE | CA-C-N | 7.58 | 133.88 | 117.20 |
| 1 | A | 99 | LYS | CD-CE-NZ | 7.54 | 129.04 | 111.70 |
| 1 | B | 99 | LYS | CD-CE-NZ | 7.54 | 129.04 | 111.70 |
| 1 | A | 33 | TRP | CA-CB-CG | 7.53 | 128.00 | 113.70 |
| 1 | B | 33 | TRP | CA-CB-CG | 7.53 | 128.00 | 113.70 |
| 1 | A | 74 | TYR | CZ-CE2-CD2 | -7.49 | 113.06 | 119.80 |
| 1 | B | 74 | TYR | CZ-CE2-CD2 | -7.49 | 113.06 | 119.80 |
| 1 | A | 38 | ARG | CA-C-N | -7.45 | 100.81 | 117.20 |
| 1 | B | 38 | ARG | CA-C-N | -7.45 | 100.81 | 117.20 |
| 1 | A | 79 | LYS | CD-CE-NZ | 7.45 | 128.82 | 111.70 |
| 1 | B | 79 | LYS | CD-CE-NZ | 7.45 | 128.82 | 111.70 |
| 1 | A | 45 | GLY | CA-C-N | 7.44 | 133.56 | 117.20 |
| 1 | B | 45 | GLY | CA-C-N | 7.44 | 133.56 | 117.20 |
| 1 | A | 74 | TYR | CG-CD2-CE2 | 7.38 | 127.20 | 121.30 |
| 1 | B | 74 | TYR | CG-CD2-CE2 | 7.38 | 127.20 | 121.30 |
| 1 | A | 58 | VAL | N-CA-C | -7.35 | 91.15 | 111.00 |
| 1 | B | 58 | VAL | N-CA-C | -7.35 | 91.15 | 111.00 |
| 1 | A | 78 | THR | CA-C-N | 7.33 | 133.32 | 117.20 |
| 1 | B | 78 | THR | CA-C-N | 7.33 | 133.32 | 117.20 |
| 1 | A | 66 | GLU | N-CA-CB | 7.33 | 123.79 | 110.60 |
| 1 | B | 66 | GLU | N-CA-CB | 7.33 | 123.79 | 110.60 |
| 1 | A | 13 | LYS | N-CA-CB | -7.33 | 97.42 | 110.60 |
| 1 | B | 13 | LYS | N-CA-CB | -7.33 | 97.42 | 110.60 |
| 1 | A | 38 | ARG | CB-CA-C | -7.31 | 95.78 | 110.40 |
| 1 | B | 38 | ARG | CB-CA-C | -7.31 | 95.78 | 110.40 |
| 1 | A | 46 | TYR | CE1-CZ-CE2 | 7.29 | 131.47 | 119.80 |
| 1 | B | 46 | TYR | CE1-CZ-CE2 | 7.29 | 131.47 | 119.80 |
| 1 | A | 90 | GLU | O-C-N | -7.28 | 111.05 | 122.70 |
| 1 | B | 90 | GLU | O-C-N | -7.28 | 111.05 | 122.70 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | A | 5 | LYS | CA-CB-CG | 7.25 | 129.35 | 113.40 |
| 1 | B | 5 | LYS | CA-CB-CG | 7.25 | 129.35 | 113.40 |
| 1 | A | 40 | THR | CA-C-O | -7.24 | 104.89 | 120.10 |
| 1 | B | 40 | THR | CA-C-O | -7.24 | 104.89 | 120.10 |
| 1 | A | 31 | ASN | OD1-CG-ND2 | -7.24 | 105.25 | 121.90 |
| 1 | A | 40 | THR | OG1-CB-CG2 | -7.24 | 93.35 | 110.00 |
| 1 | B | 31 | ASN | OD1-CG-ND2 | -7.24 | 105.25 | 121.90 |
| 1 | B | 40 | THR | OG1-CB-CG2 | -7.24 | 93.35 | 110.00 |
| 1 | A | 63 | THR | CA-C-O | 7.22 | 135.26 | 120.10 |
| 1 | B | 63 | THR | CA-C-O | 7.22 | 135.26 | 120.10 |
| 1 | A | 44 | GLU | CB-CA-C | 7.07 | 124.54 | 110.40 |
| 1 | B | 44 | GLU | CB-CA-C | 7.07 | 124.54 | 110.40 |
| 1 | A | 29 | GLY | CA-C-O | -7.02 | 107.97 | 120.60 |
| 1 | B | 29 | GLY | CA-C-O | -7.02 | 107.97 | 120.60 |
| 1 | A | 62 | ASN | CB-CG-ND2 | 6.96 | 133.42 | 116.70 |
| 1 | B | 62 | ASN | CB-CG-ND2 | 6.96 | 133.42 | 116.70 |
| 1 | A | 18 | HIS | CB-CG-ND1 | 6.95 | 140.57 | 123.20 |
| 1 | B | 18 | HIS | CB-CG-ND1 | 6.95 | 140.57 | 123.20 |
| 1 | A | 12 | GLN | CB-CG-CD | 6.95 | 129.66 | 111.60 |
| 1 | B | 12 | GLN | CB-CG-CD | 6.95 | 129.66 | 111.60 |
| 1 | A | 97 | TYR | CG-CD1-CE1 | -6.94 | 115.75 | 121.30 |
| 1 | B | 97 | TYR | CG-CD1-CE1 | -6.94 | 115.75 | 121.30 |
| 1 | A | 58 | VAL | O-C-N | -6.94 | 111.59 | 122.70 |
| 1 | B | 58 | VAL | O-C-N | -6.94 | 111.59 | 122.70 |
| 1 | A | 55 | LYS | O-C-N | 6.89 | 134.91 | 123.20 |
| 1 | B | 55 | LYS | O-C-N | 6.89 | 134.91 | 123.20 |
| 1 | A | 48 | TYR | CB-CA-C | 6.88 | 124.16 | 110.40 |
| 1 | B | 48 | TYR | CB-CA-C | 6.88 | 124.16 | 110.40 |
| 1 | A | 6 | GLY | O-C-N | -6.87 | 111.72 | 122.70 |
| 1 | B | 6 | GLY | O-C-N | -6.87 | 111.72 | 122.70 |
| 1 | A | 84 | GLY | N-CA-C | 6.86 | 130.24 | 113.10 |
| 1 | B | 84 | GLY | N-CA-C | 6.86 | 130.24 | 113.10 |
| 1 | A | 77 | GLY | O-C-N | -6.84 | 111.75 | 122.70 |
| 1 | B | 77 | GLY | O-C-N | -6.84 | 111.75 | 122.70 |
| 1 | A | 66 | GLU | CG-CD-OE2 | 6.83 | 131.96 | 118.30 |
| 1 | B | 66 | GLU | CG-CD-OE2 | 6.83 | 131.96 | 118.30 |
| 1 | A | 33 | TRP | CB-CG-CD1 | -6.76 | 118.20 | 127.00 |
| 1 | A | 83 | ALA | CB-CA-C | -6.76 | 99.95 | 110.10 |
| 1 | B | 33 | TRP | CB-CG-CD1 | -6.76 | 118.20 | 127.00 |
| 1 | B | 83 | ALA | CB-CA-C | -6.76 | 99.95 | 110.10 |
| 1 | A | 69 | GLU | C-N-CA | -6.75 | 104.81 | 121.70 |
| 1 | B | 69 | GLU | C-N-CA | -6.75 | 104.81 | 121.70 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | A | 93 | ASP | OD1-CG-OD2 | -6.73 | 110.51 | 123.30 |
| 1 | B | 93 | ASP | OD1-CG-OD2 | -6.73 | 110.51 | 123.30 |
| 1 | A | 74 | TYR | CD1-CG-CD2 | -6.72 | 110.50 | 117.90 |
| 1 | B | 74 | TYR | CD1-CG-CD2 | -6.72 | 110.50 | 117.90 |
| 1 | A | 58 | VAL | N-CA-CB | 6.72 | 126.28 | 111.50 |
| 1 | B | 58 | VAL | N-CA-CB | 6.72 | 126.28 | 111.50 |
| 1 | A | 38 | ARG | N-CA-C | -6.71 | 92.89 | 111.00 |
| 1 | B | 38 | ARG | N-CA-C | -6.71 | 92.89 | 111.00 |
| 1 | A | 15 | ALA | N-CA-CB | -6.70 | 100.72 | 110.10 |
| 1 | B | 15 | ALA | N-CA-CB | -6.70 | 100.72 | 110.10 |
| 1 | A | 93 | ASP | CA-CB-CG | 6.66 | 128.06 | 113.40 |
| 1 | B | 93 | ASP | CA-CB-CG | 6.66 | 128.06 | 113.40 |
| 1 | A | 16 | GLN | C-N-CA | -6.66 | 105.05 | 121.70 |
| 1 | B | 16 | GLN | C-N-CA | -6.66 | 105.05 | 121.70 |
| 1 | A | 81 | ILE | CB-CA-C | 6.66 | 124.92 | 111.60 |
| 1 | B | 81 | ILE | CB-CA-C | 6.66 | 124.92 | 111.60 |
| 1 | A | 45 | GLY | CA-C-O | -6.64 | 108.64 | 120.60 |
| 1 | B | 45 | GLY | CA-C-O | -6.64 | 108.64 | 120.60 |
| 1 | A | 93 | ASP | O-C-N | -6.63 | 112.09 | 122.70 |
| 1 | B | 93 | ASP | O-C-N | -6.63 | 112.09 | 122.70 |
| 1 | A | 12 | GLN | CA-C-N | 6.60 | 131.72 | 117.20 |
| 1 | B | 12 | GLN | CA-C-N | 6.60 | 131.72 | 117.20 |
| 1 | A | 16 | GLN | CB-CG-CD | -6.58 | 94.49 | 111.60 |
| 1 | B | 16 | GLN | CB-CG-CD | -6.58 | 94.49 | 111.60 |
| 1 | A | 79 | LYS | CA-C-O | 6.55 | 133.86 | 120.10 |
| 1 | B | 79 | LYS | CA-C-O | 6.55 | 133.86 | 120.10 |
| 1 | A | 37 | GLY | CA-C-O | 6.52 | 132.33 | 120.60 |
| 1 | B | 37 | GLY | CA-C-O | 6.52 | 132.33 | 120.60 |
| 1 | A | 38 | ARG | CA-C-O | 6.48 | 133.71 | 120.10 |
| 1 | B | 38 | ARG | CA-C-O | 6.48 | 133.71 | 120.10 |
| 1 | A | 2 | ASP | CA-CB-CG | 6.48 | 127.65 | 113.40 |
| 1 | B | 2 | ASP | CA-CB-CG | 6.48 | 127.65 | 113.40 |
| 1 | A | 46 | TYR | N-CA-C | -6.45 | 93.57 | 111.00 |
| 1 | B | 46 | TYR | N-CA-C | -6.45 | 93.57 | 111.00 |
| 1 | A | 79 | LYS | N-CA-CB | 6.41 | 122.14 | 110.60 |
| 1 | B | 79 | LYS | N-CA-CB | 6.41 | 122.14 | 110.60 |
| 1 | A | 51 | ALA | CB-CA-C | -6.36 | 100.56 | 110.10 |
| 1 | B | 51 | ALA | CB-CA-C | -6.36 | 100.56 | 110.10 |
| 1 | A | 55 | LYS | CB-CG-CD | -6.32 | 95.16 | 111.60 |
| 1 | B | 55 | LYS | CB-CG-CD | -6.32 | 95.16 | 111.60 |
| 1 | A | 35 | LEU | CA-C-O | 6.32 | 133.37 | 120.10 |
| 1 | B | 35 | LEU | CA-C-O | 6.32 | 133.37 | 120.10 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 1 | A | 19 | THR | OG1-CB-CG2 | 6.31 | 124.52 | 110.00 |
| 1 | B | 19 | THR | OG1-CB-CG2 | 6.31 | 124.52 | 110.00 |
| 1 | A | 33 | TRP | NE1-CE2-CZ2 | 6.31 | 137.34 | 130.40 |
| 1 | B | 33 | TRP | NE1-CE2-CZ2 | 6.31 | 137.34 | 130.40 |
| 1 | A | 36 | PHE | CD1-CE1-CZ | -6.31 | 112.53 | 120.10 |
| 1 | B | 36 | PHE | CD1-CE1-CZ | -6.31 | 112.53 | 120.10 |
| 1 | A | 36 | PHE | O-C-N | -6.30 | 112.49 | 123.20 |
| 1 | B | 36 | PHE | O-C-N | -6.30 | 112.49 | 123.20 |
| 1 | A | 10 | PHE | CA-C-O | -6.29 | 106.89 | 120.10 |
| 1 | B | 10 | PHE | CA-C-O | -6.29 | 106.89 | 120.10 |
| 1 | A | 93 | ASP | CB-CG-OD2 | 6.28 | 123.95 | 118.30 |
| 1 | B | 93 | ASP | CB-CG-OD2 | 6.28 | 123.95 | 118.30 |
| 1 | A | 57 | ILE | CA-C-O | 6.21 | 133.14 | 120.10 |
| 1 | B | 57 | ILE | CA-C-O | 6.21 | 133.14 | 120.10 |
| 1 | A | 54 | SER | CA-C-N | 6.20 | 130.83 | 117.20 |
| 1 | B | 54 | SER | CA-C-N | 6.20 | 130.83 | 117.20 |
| 1 | A | 60 | ASN | N-CA-CB | 6.19 | 121.75 | 110.60 |
| 1 | B | 60 | ASN | N-CA-CB | 6.19 | 121.75 | 110.60 |
| 1 | A | 34 | GLY | CA-C-O | 6.19 | 131.74 | 120.60 |
| 1 | B | 34 | GLY | CA-C-O | 6.19 | 131.74 | 120.60 |
| 1 | A | 59 | TRP | O-C-N | 6.18 | 132.59 | 122.70 |
| 1 | B | 59 | TRP | O-C-N | 6.18 | 132.59 | 122.70 |
| 1 | A | 94 | LEU | CB-CG-CD2 | 6.11 | 121.39 | 111.00 |
| 1 | B | 94 | LEU | CB-CG-CD2 | 6.11 | 121.39 | 111.00 |
| 1 | A | 42 | GLN | CB-CG-CD | 6.06 | 127.35 | 111.60 |
| 1 | A | 74 | TYR | CB-CG-CD2 | 6.06 | 124.63 | 121.00 |
| 1 | B | 42 | GLN | CB-CG-CD | 6.06 | 127.35 | 111.60 |
| 1 | B | 74 | TYR | CB-CG-CD2 | 6.06 | 124.63 | 121.00 |
| 1 | A | 71 | PRO | C-N-CA | 6.01 | 136.72 | 121.70 |
| 1 | B | 71 | PRO | C-N-CA | 6.01 | 136.72 | 121.70 |
| 1 | A | 47 | SER | N-CA-CB | 6.00 | 119.51 | 110.50 |
| 1 | A | 74 | TYR | CB-CG-CD1 | 6.00 | 124.60 | 121.00 |
| 1 | B | 47 | SER | N-CA-CB | 6.00 | 119.51 | 110.50 |
| 1 | B | 74 | TYR | CB-CG-CD1 | 6.00 | 124.60 | 121.00 |
| 1 | A | 63 | THR | CA-CB-CG2 | -5.99 | 104.01 | 112.40 |
| 1 | B | 63 | THR | CA-CB-CG2 | -5.99 | 104.01 | 112.40 |
| 1 | A | 79 | LYS | CA-CB-CG | -5.93 | 100.36 | 113.40 |
| 1 | B | 79 | LYS | CA-CB-CG | -5.93 | 100.36 | 113.40 |
| 1 | A | 67 | TYR | N-CA-CB | -5.92 | 99.95 | 110.60 |
| 1 | B | 67 | TYR | N-CA-CB | -5.92 | 99.95 | 110.60 |
| 1 | A | 91 | ARG | N-CA-C | -5.91 | 95.05 | 111.00 |
| 1 | B | 91 | ARG | N-CA-C | -5.91 | 95.05 | 111.00 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | A | 55 | LYS | N-CA-CB | 5.90 | 121.22 | 110.60 |
| 1 | B | 55 | LYS | N-CA-CB | 5.90 | 121.22 | 110.60 |
| 1 | A | 51 | ALA | O-C-N | -5.88 | 113.28 | 122.70 |
| 1 | A | 69 | GLU | CG-CD-OE1 | 5.88 | 130.07 | 118.30 |
| 1 | B | 51 | ALA | O-C-N | -5.88 | 113.28 | 122.70 |
| 1 | B | 69 | GLU | CG-CD-OE1 | 5.88 | 130.07 | 118.30 |
| 1 | A | 38 | ARG | NE-CZ-NH2 | -5.88 | 117.36 | 120.30 |
| 1 | A | 52 | ASN | O-C-N | -5.88 | 113.30 | 122.70 |
| 1 | B | 38 | ARG | NE-CZ-NH2 | -5.88 | 117.36 | 120.30 |
| 1 | B | 52 | ASN | O-C-N | -5.88 | 113.30 | 122.70 |
| 1 | A | 44 | GLU | CG-CD-OE2 | 5.86 | 130.01 | 118.30 |
| 1 | B | 44 | GLU | CG-CD-OE2 | 5.86 | 130.01 | 118.30 |
| 1 | A | 43 | ALA | N-CA-CB | 5.85 | 118.29 | 110.10 |
| 1 | B | 43 | ALA | N-CA-CB | 5.85 | 118.29 | 110.10 |
| 1 | A | 73 | LYS | CB-CA-C | -5.83 | 98.74 | 110.40 |
| 1 | A | 92 | GLN | O-C-N | -5.83 | 113.37 | 122.70 |
| 1 | B | 73 | LYS | CB-CA-C | -5.83 | 98.74 | 110.40 |
| 1 | B | 92 | GLN | O-C-N | -5.83 | 113.37 | 122.70 |
| 1 | A | 5 | LYS | CA-C-N | 5.83 | 127.85 | 116.20 |
| 1 | B | 5 | LYS | CA-C-N | 5.83 | 127.85 | 116.20 |
| 1 | A | 71 | PRO | O-C-N | -5.82 | 113.38 | 122.70 |
| 1 | B | 71 | PRO | O-C-N | -5.82 | 113.38 | 122.70 |
| 1 | A | 69 | GLU | CB-CA-C | 5.82 | 122.04 | 110.40 |
| 1 | B | 69 | GLU | CB-CA-C | 5.82 | 122.04 | 110.40 |
| 1 | A | 33 | TRP | C-N-CA | -5.81 | 110.09 | 122.30 |
| 1 | B | 33 | TRP | C-N-CA | -5.81 | 110.09 | 122.30 |
| 1 | A | 73 | LYS | CB-CG-CD | 5.80 | 126.68 | 111.60 |
| 1 | B | 73 | LYS | CB-CG-CD | 5.80 | 126.68 | 111.60 |
| 1 | A | 86 | LYS | N-CA-C | -5.79 | 95.35 | 111.00 |
| 1 | B | 86 | LYS | N-CA-C | -5.79 | 95.35 | 111.00 |
| 1 | A | 32 | LEU | O-C-N | -5.79 | 113.43 | 122.70 |
| 1 | B | 32 | LEU | O-C-N | -5.79 | 113.43 | 122.70 |
| 1 | A | 63 | THR | CA-CB-OG1 | -5.79 | 96.85 | 109.00 |
| 1 | B | 63 | THR | CA-CB-OG1 | -5.79 | 96.85 | 109.00 |
| 1 | A | 15 | ALA | CB-CA-C | -5.75 | 101.47 | 110.10 |
| 1 | B | 15 | ALA | CB-CA-C | -5.75 | 101.47 | 110.10 |
| 1 | A | 48 | TYR | CA-CB-CG | 5.73 | 124.29 | 113.40 |
| 1 | B | 48 | TYR | CA-CB-CG | 5.73 | 124.29 | 113.40 |
| 1 | A | 52 | ASN | CB-CG-ND2 | -5.73 | 102.95 | 116.70 |
| 1 | B | 52 | ASN | CB-CG-ND2 | -5.73 | 102.95 | 116.70 |
| 1 | A | 10 | PHE | O-C-N | -5.70 | 113.59 | 122.70 |
| 1 | B | 10 | PHE | O-C-N | -5.70 | 113.59 | 122.70 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | A | 41 | GLY | CA-C-N | 5.69 | 129.72 | 117.20 |
| 1 | A | 57 | ILE | CA-CB-CG2 | 5.69 | 122.29 | 110.90 |
| 1 | B | 41 | GLY | CA-C-N | 5.69 | 129.72 | 117.20 |
| 1 | B | 57 | ILE | CA-CB-CG2 | 5.69 | 122.29 | 110.90 |
| 1 | A | 52 | ASN | OD1-CG-ND2 | -5.65 | 108.90 | 121.90 |
| 1 | B | 52 | ASN | OD1-CG-ND2 | -5.65 | 108.90 | 121.90 |
| 1 | A | 18 | HIS | CB-CG-CD2 | 5.64 | 148.29 | 130.80 |
| 1 | B | 18 | HIS | CB-CG-CD2 | 5.64 | 148.29 | 130.80 |
| 1 | A | 5 | LYS | CD-CE-NZ | 5.64 | 124.66 | 111.70 |
| 1 | A | 55 | LYS | CD-CE-NZ | 5.64 | 124.66 | 111.70 |
| 1 | B | 5 | LYS | CD-CE-NZ | 5.64 | 124.66 | 111.70 |
| 1 | B | 55 | LYS | CD-CE-NZ | 5.64 | 124.66 | 111.70 |
| 1 | A | 74 | TYR | CE1-CZ-CE2 | 5.63 | 128.82 | 119.80 |
| 1 | B | 74 | TYR | CE1-CZ-CE2 | 5.63 | 128.82 | 119.80 |
| 1 | A | 80 | MET | CA-C-O | 5.63 | 131.93 | 120.10 |
| 1 | B | 80 | MET | CA-C-O | 5.63 | 131.93 | 120.10 |
| 1 | A | 92 | GLN | CA-C-O | 5.63 | 131.92 | 120.10 |
| 1 | B | 92 | GLN | CA-C-O | 5.63 | 131.92 | 120.10 |
| 1 | A | 101 | ALA | O-C-N | -5.61 | 113.72 | 122.70 |
| 1 | B | 101 | ALA | O-C-N | -5.61 | 113.72 | 122.70 |
| 1 | A | 66 | GLU | O-C-N | 5.61 | 131.67 | 122.70 |
| 1 | B | 66 | GLU | O-C-N | 5.61 | 131.67 | 122.70 |
| 1 | A | 79 | LYS | CB-CG-CD | 5.59 | 126.14 | 111.60 |
| 1 | B | 79 | LYS | CB-CG-CD | 5.59 | 126.14 | 111.60 |
| 1 | A | 70 | ASN | CA-C-O | 5.58 | 131.81 | 120.10 |
| 1 | B | 70 | ASN | CA-C-O | 5.58 | 131.81 | 120.10 |
| 1 | A | 99 | LYS | CA-C-N | 5.57 | 129.46 | 117.20 |
| 1 | B | 99 | LYS | CA-C-N | 5.57 | 129.46 | 117.20 |
| 1 | A | 11 | VAL | CG1-CB-CG2 | -5.57 | 101.99 | 110.90 |
| 1 | B | 11 | VAL | CG1-CB-CG2 | -5.57 | 101.99 | 110.90 |
| 1 | A | 45 | GLY | N-CA-C | 5.55 | 126.97 | 113.10 |
| 1 | B | 45 | GLY | N-CA-C | 5.55 | 126.97 | 113.10 |
| 1 | A | 55 | LYS | CA-C-N | -5.53 | 105.13 | 116.20 |
| 1 | B | 55 | LYS | CA-C-N | -5.53 | 105.13 | 116.20 |
| 1 | A | 50 | ASP | CB-CG-OD2 | 5.51 | 123.26 | 118.30 |
| 1 | B | 50 | ASP | CB-CG-OD2 | 5.51 | 123.26 | 118.30 |
| 1 | A | 82 | PHE | N-CA-CB | -5.50 | 100.69 | 110.60 |
| 1 | B | 82 | PHE | N-CA-CB | -5.50 | 100.69 | 110.60 |
| 1 | A | 61 | GLU | N-CA-C | -5.48 | 96.20 | 111.00 |
| 1 | B | 61 | GLU | N-CA-C | -5.48 | 96.20 | 111.00 |
| 1 | A | 59 | TRP | CA-C-O | -5.45 | 108.66 | 120.10 |
| 1 | B | 59 | TRP | CA-C-O | -5.45 | 108.66 | 120.10 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 1 | A | 87 | LYS | CA-CB-CG | 5.43 | 125.36 | 113.40 |
| 1 | B | 87 | LYS | CA-CB-CG | 5.43 | 125.36 | 113.40 |
| 1 | A | 84 | GLY | O-C-N | -5.42 | 114.03 | 122.70 |
| 1 | B | 84 | GLY | O-C-N | -5.42 | 114.03 | 122.70 |
| 1 | A | 102 | THR | CA-CB-CG2 | 5.41 | 119.97 | 112.40 |
| 1 | B | 102 | THR | CA-CB-CG2 | 5.41 | 119.97 | 112.40 |
| 1 | A | 95 | VAL | CA-C-N | 5.41 | 129.09 | 117.20 |
| 1 | B | 95 | VAL | CA-C-N | 5.41 | 129.09 | 117.20 |
| 1 | A | 103 | SER | CB-CA-C | 5.40 | 120.37 | 110.10 |
| 1 | B | 103 | SER | CB-CA-C | 5.40 | 120.37 | 110.10 |
| 1 | A | 68 | LEU | CD1-CG-CD2 | -5.39 | 94.34 | 110.50 |
| 1 | B | 68 | LEU | CD1-CG-CD2 | -5.39 | 94.34 | 110.50 |
| 1 | A | 59 | TRP | CE3-CZ3-CH2 | 5.34 | 127.07 | 121.20 |
| 1 | B | 59 | TRP | CE3-CZ3-CH2 | 5.34 | 127.07 | 121.20 |
| 1 | A | 32 | LEU | N-CA-C | -5.33 | 96.61 | 111.00 |
| 1 | B | 32 | LEU | N-CA-C | -5.33 | 96.61 | 111.00 |
| 1 | A | 89 | GLY | C-N-CA | 5.32 | 135.00 | 121.70 |
| 1 | B | 89 | GLY | C-N-CA | 5.32 | 135.00 | 121.70 |
| 1 | A | 47 | SER | CA-CB-OG | -5.30 | 96.88 | 111.20 |
| 1 | A | 52 | ASN | CB-CA-C | -5.30 | 99.80 | 110.40 |
| 1 | B | 47 | SER | CA-CB-OG | -5.30 | 96.88 | 111.20 |
| 1 | B | 52 | ASN | CB-CA-C | -5.30 | 99.80 | 110.40 |
| 1 | A | 42 | GLN | OE1-CD-NE2 | -5.25 | 109.83 | 121.90 |
| 1 | B | 42 | GLN | OE1-CD-NE2 | -5.25 | 109.83 | 121.90 |
| 1 | A | 36 | PHE | CZ-CE2-CD2 | -5.22 | 113.84 | 120.10 |
| 1 | B | 36 | PHE | CZ-CE2-CD2 | -5.22 | 113.84 | 120.10 |
| 1 | A | 59 | TRP | CB-CG-CD1 | 5.21 | 133.78 | 127.00 |
| 1 | B | 59 | TRP | CB-CG-CD1 | 5.21 | 133.78 | 127.00 |
| 1 | A | 93 | ASP | CA-C-N | 5.20 | 128.63 | 117.20 |
| 1 | B | 93 | ASP | CA-C-N | 5.20 | 128.63 | 117.20 |
| 1 | A | 23 | GLY | N-CA-C | -5.19 | 100.11 | 113.10 |
| 1 | B | 23 | GLY | N-CA-C | -5.19 | 100.11 | 113.10 |
| 1 | A | 73 | LYS | CG-CD-CE | 5.19 | 127.46 | 111.90 |
| 1 | A | 101 | ALA | CA-C-N | 5.19 | 128.61 | 117.20 |
| 1 | B | 73 | LYS | CG-CD-CE | 5.19 | 127.46 | 111.90 |
| 1 | B | 101 | ALA | CA-C-N | 5.19 | 128.61 | 117.20 |
| 1 | A | 70 | ASN | OD1-CG-ND2 | -5.18 | 109.99 | 121.90 |
| 1 | B | 70 | ASN | OD1-CG-ND2 | -5.18 | 109.99 | 121.90 |
| 1 | A | 97 | TYR | CA-C-O | 5.11 | 130.84 | 120.10 |
| 1 | B | 97 | TYR | CA-C-O | 5.11 | 130.84 | 120.10 |
| 1 | A | 82 | PHE | O-C-N | -5.11 | 114.53 | 122.70 |
| 1 | B | 82 | PHE | O-C-N | -5.11 | 114.53 | 122.70 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 1 | A | 69 | GLU | N-CA-CB | -5.09 | 101.44 | 110.60 |
| 1 | B | 69 | GLU | N-CA-CB | -5.09 | 101.44 | 110.60 |
| 1 | A | 69 | GLU | CA-CB-CG | 5.08 | 124.57 | 113.40 |
| 1 | B | 69 | GLU | CA-CB-CG | 5.08 | 124.57 | 113.40 |
| 1 | A | 25 | LYS | CD-CE-NZ | 5.07 | 123.36 | 111.70 |
| 1 | B | 25 | LYS | CD-CE-NZ | 5.07 | 123.36 | 111.70 |
| 1 | A | 92 | GLN | C-N-CA | -5.06 | 109.04 | 121.70 |
| 1 | B | 92 | GLN | C-N-CA | -5.06 | 109.04 | 121.70 |
| 1 | A | 74 | TYR | CB-CA-C | -5.06 | 100.28 | 110.40 |
| 1 | B | 74 | TYR | CB-CA-C | -5.06 | 100.28 | 110.40 |
| 1 | A | 10 | PHE | CB-CA-C | -5.06 | 100.28 | 110.40 |
| 1 | A | 22 | ASN | CA-C-N | 5.06 | 126.31 | 116.20 |
| 1 | B | 10 | PHE | CB-CA-C | -5.06 | 100.28 | 110.40 |
| 1 | B | 22 | ASN | CA-C-N | 5.06 | 126.31 | 116.20 |
| 1 | A | 86 | LYS | CB-CG-CD | 5.05 | 124.74 | 111.60 |
| 1 | B | 86 | LYS | CB-CG-CD | 5.05 | 124.74 | 111.60 |
| 1 | A | 36 | PHE | CB-CA-C | 5.04 | 120.48 | 110.40 |
| 1 | B | 36 | PHE | CB-CA-C | 5.04 | 120.48 | 110.40 |
| 1 | A | 21 | GLU | CA-CB-CG | 5.02 | 124.45 | 113.40 |
| 1 | B | 21 | GLU | CA-CB-CG | 5.02 | 124.45 | 113.40 |
| 1 | A | 65 | MET | C-N-CA | 5.00 | 134.21 | 121.70 |
| 1 | B | 65 | MET | C-N-CA | 5.00 | 134.21 | 121.70 |

All (4) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|-----|------|------|
| 1 | A | 40 | THR | CB |
| 1 | A | 78 | THR | CB |
| 1 | B | 40 | THR | CB |
| 1 | B | 78 | THR | CB |

All (70) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 1 | A | 10 | PHE | Mainchain |
| 1 | A | 12 | GLN | Sidechain |
| 1 | A | 16 | GLN | Sidechain |
| 1 | A | 17 | CYS | Mainchain |
| 1 | A | 18 | HIS | Sidechain |
| 1 | A | 2 | ASP | Mainchain |
| 1 | A | 21 | GLU | Mainchain |
| 1 | A | 26 | HIS | Sidechain |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|---------------------|
| 1 | A | 29 | GLY | Mainchain |
| 1 | A | 32 | LEU | Mainchain |
| 1 | A | 43 | ALA | Mainchain |
| 1 | A | 44 | GLU | Sidechain,Mainchain |
| 1 | A | 45 | GLY | Mainchain |
| 1 | A | 46 | TYR | Sidechain |
| 1 | A | 47 | SER | Mainchain |
| 1 | A | 49 | THR | Mainchain |
| 1 | A | 5 | LYS | Mainchain |
| 1 | A | 50 | ASP | Sidechain |
| 1 | A | 58 | VAL | Mainchain |
| 1 | A | 61 | GLU | Mainchain |
| 1 | A | 62 | ASN | Sidechain,Mainchain |
| 1 | A | 67 | TYR | Sidechain |
| 1 | A | 69 | GLU | Mainchain |
| 1 | A | 72 | LYS | Mainchain |
| 1 | A | 74 | TYR | Mainchain |
| 1 | A | 77 | GLY | Mainchain |
| 1 | A | 82 | PHE | Mainchain |
| 1 | A | 87 | LYS | Mainchain |
| 1 | A | 91 | ARG | Sidechain |
| 1 | A | 92 | GLN | Sidechain |
| 1 | A | 93 | ASP | Sidechain |
| 1 | A | 94 | LEU | Mainchain |
| 1 | A | 97 | TYR | Sidechain |
| 1 | B | 10 | PHE | Mainchain |
| 1 | B | 12 | GLN | Sidechain |
| 1 | B | 16 | GLN | Sidechain |
| 1 | B | 17 | CYS | Mainchain |
| 1 | B | 18 | HIS | Sidechain |
| 1 | B | 2 | ASP | Mainchain |
| 1 | B | 21 | GLU | Mainchain |
| 1 | B | 26 | HIS | Sidechain |
| 1 | B | 29 | GLY | Mainchain |
| 1 | B | 32 | LEU | Mainchain |
| 1 | B | 43 | ALA | Mainchain |
| 1 | B | 44 | GLU | Sidechain,Mainchain |
| 1 | B | 45 | GLY | Mainchain |
| 1 | B | 46 | TYR | Sidechain |
| 1 | B | 47 | SER | Mainchain |
| 1 | B | 49 | THR | Mainchain |
| 1 | B | 5 | LYS | Mainchain |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|---------------------|
| 1 | B | 50 | ASP | Sidechain |
| 1 | B | 58 | VAL | Mainchain |
| 1 | B | 61 | GLU | Mainchain |
| 1 | B | 62 | ASN | Sidechain,Mainchain |
| 1 | B | 67 | TYR | Sidechain |
| 1 | B | 69 | GLU | Mainchain |
| 1 | B | 72 | LYS | Mainchain |
| 1 | B | 74 | TYR | Mainchain |
| 1 | B | 77 | GLY | Mainchain |
| 1 | B | 82 | PHE | Mainchain |
| 1 | B | 87 | LYS | Mainchain |
| 1 | B | 91 | ARG | Sidechain |
| 1 | B | 92 | GLN | Sidechain |
| 1 | B | 93 | ASP | Sidechain |
| 1 | B | 94 | LEU | Mainchain |
| 1 | B | 97 | TYR | Sidechain |

5.2 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 the 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 within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 795 | 0 | 773 | 388 | 47 |
| 1 | B | 795 | 0 | 773 | 388 | 47 |
| 2 | A | 43 | 0 | 27 | 23 | 0 |
| 2 | B | 43 | 0 | 27 | 23 | 0 |
| 3 | A | 1 | 0 | 0 | 0 | 0 |
| All | All | 1677 | 0 | 1600 | 761 | 54 |

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 233.

All (761) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:A:66:GLU:HB3 | 1:A:74:TYR:CE2 | 1.24 | 1.67 |
| 1:B:66:GLU:HB3 | 1:B:74:TYR:CE2 | 1.24 | 1.67 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------|----------------|--------------------------|-------------------|
| 1:A:26:HIS:CB | 1:A:26:HIS:CG | 1.78 | 1.64 |
| 1:B:26:HIS:CG | 1:B:26:HIS:CB | 1.78 | 1.64 |
| 1:A:49:THR:CA | 1:A:49:THR:CB | 1.74 | 1.63 |
| 1:B:49:THR:CB | 1:B:49:THR:CA | 1.74 | 1.63 |
| 1:A:5:LYS:CD | 1:A:5:LYS:CG | 1.75 | 1.63 |
| 1:B:5:LYS:CD | 1:B:5:LYS:CG | 1.75 | 1.63 |
| 1:A:53:LYS:CD | 1:A:53:LYS:CE | 1.78 | 1.62 |
| 1:A:86:LYS:CE | 1:A:86:LYS:CD | 1.77 | 1.62 |
| 1:B:53:LYS:CE | 1:B:53:LYS:CD | 1.78 | 1.62 |
| 1:B:86:LYS:CD | 1:B:86:LYS:CE | 1.77 | 1.62 |
| 1:A:17:CYS:CB | 1:A:17:CYS:CA | 1.75 | 1.60 |
| 1:B:17:CYS:CB | 1:B:17:CYS:CA | 1.75 | 1.60 |
| 1:A:56:GLY:N | 1:A:56:GLY:CA | 1.68 | 1.56 |
| 1:B:56:GLY:CA | 1:B:56:GLY:N | 1.68 | 1.56 |
| 1:A:91:ARG:N | 1:A:91:ARG:CA | 1.70 | 1.55 |
| 1:B:91:ARG:N | 1:B:91:ARG:CA | 1.70 | 1.55 |
| 1:A:32:LEU:N | 1:A:32:LEU:CA | 1.68 | 1.55 |
| 1:B:32:LEU:N | 1:B:32:LEU:CA | 1.68 | 1.55 |
| 1:A:86:LYS:CD | 1:A:86:LYS:CG | 1.80 | 1.54 |
| 1:A:98:LEU:C | 1:A:98:LEU:CA | 1.75 | 1.54 |
| 1:B:86:LYS:CD | 1:B:86:LYS:CG | 1.80 | 1.54 |
| 1:B:98:LEU:C | 1:B:98:LEU:CA | 1.75 | 1.54 |
| 1:A:5:LYS:CE | 1:A:5:LYS:NZ | 1.67 | 1.52 |
| 1:A:62:ASN:N | 1:A:62:ASN:CA | 1.70 | 1.52 |
| 1:B:5:LYS:CE | 1:B:5:LYS:NZ | 1.67 | 1.52 |
| 1:B:62:ASN:N | 1:B:62:ASN:CA | 1.70 | 1.52 |
| 1:A:72:LYS:NZ | 1:A:72:LYS:CE | 1.68 | 1.52 |
| 1:B:72:LYS:CE | 1:B:72:LYS:NZ | 1.68 | 1.52 |
| 1:A:43:ALA:N | 1:A:43:ALA:CA | 1.70 | 1.52 |
| 1:A:59:TRP:N | 1:A:59:TRP:CA | 1.69 | 1.52 |
| 1:B:43:ALA:N | 1:B:43:ALA:CA | 1.70 | 1.52 |
| 1:B:59:TRP:CA | 1:B:59:TRP:N | 1.69 | 1.52 |
| 1:A:82:PHE:CA | 1:A:82:PHE:N | 1.70 | 1.51 |
| 1:B:82:PHE:N | 1:B:82:PHE:CA | 1.70 | 1.51 |
| 1:A:98:LEU:CA | 1:A:98:LEU:N | 1.73 | 1.51 |
| 1:B:98:LEU:CA | 1:B:98:LEU:N | 1.73 | 1.51 |
| 1:A:33:TRP:N | 1:A:33:TRP:CA | 1.70 | 1.51 |
| 1:B:33:TRP:N | 1:B:33:TRP:CA | 1.70 | 1.51 |
| 1:A:18:HIS:N | 1:A:18:HIS:CA | 1.68 | 1.50 |
| 1:A:101:ALA:N | 1:A:101:ALA:CA | 1.72 | 1.50 |
| 1:B:18:HIS:N | 1:B:18:HIS:CA | 1.68 | 1.50 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:B:101:ALA:CA | 1:B:101:ALA:N | 1.72 | 1.50 |
| 1:A:16:GLN:CA | 1:A:16:GLN:N | 1.71 | 1.49 |
| 1:B:16:GLN:N | 1:B:16:GLN:CA | 1.71 | 1.49 |
| 1:A:3:VAL:CA | 1:A:3:VAL:C | 1.79 | 1.48 |
| 1:B:3:VAL:C | 1:B:3:VAL:CA | 1.79 | 1.48 |
| 1:A:83:ALA:CB | 1:A:83:ALA:CA | 1.91 | 1.48 |
| 1:B:83:ALA:CA | 1:B:83:ALA:CB | 1.91 | 1.48 |
| 1:A:80:MET:CG | 1:A:80:MET:SD | 2.01 | 1.47 |
| 1:B:80:MET:CG | 1:B:80:MET:SD | 2.01 | 1.47 |
| 1:A:46:TYR:CD1 | 1:A:46:TYR:CB | 1.97 | 1.46 |
| 1:B:46:TYR:CD1 | 1:B:46:TYR:CB | 1.97 | 1.46 |
| 1:A:64:LEU:CB | 1:A:64:LEU:CA | 1.91 | 1.45 |
| 1:B:64:LEU:CB | 1:B:64:LEU:CA | 1.91 | 1.45 |
| 1:A:92:GLN:N | 1:A:92:GLN:CA | 1.76 | 1.45 |
| 1:B:92:GLN:CA | 1:B:92:GLN:N | 1.76 | 1.45 |
| 2:A:104:HEC:O1D | 2:A:104:HEC:CGD | 1.66 | 1.44 |
| 2:B:104:HEC:CGD | 2:B:104:HEC:O1D | 1.66 | 1.44 |
| 1:A:47:SER:CB | 1:A:47:SER:OG | 1.69 | 1.40 |
| 1:B:47:SER:CB | 1:B:47:SER:OG | 1.69 | 1.40 |
| 1:A:24:GLY:N | 1:A:24:GLY:CA | 1.84 | 1.40 |
| 1:B:24:GLY:N | 1:B:24:GLY:CA | 1.84 | 1.40 |
| 1:A:46:TYR:CD1 | 1:A:46:TYR:CD2 | 1.93 | 1.38 |
| 1:B:46:TYR:CD1 | 1:B:46:TYR:CD2 | 1.93 | 1.38 |
| 1:A:86:LYS:CE | 1:B:103:SER:CA | 2.01 | 1.38 |
| 1:A:66:GLU:HB3 | 1:A:74:TYR:CZ | 1.57 | 1.38 |
| 1:B:66:GLU:HB3 | 1:B:74:TYR:CZ | 1.57 | 1.38 |
| 1:A:12:GLN:CG | 1:A:12:GLN:CD | 1.93 | 1.36 |
| 1:B:12:GLN:CD | 1:B:12:GLN:CG | 1.93 | 1.36 |
| 1:A:73:LYS:CE | 1:A:73:LYS:CD | 2.04 | 1.35 |
| 1:B:73:LYS:CD | 1:B:73:LYS:CE | 2.04 | 1.35 |
| 1:A:92:GLN:OE1 | 1:A:92:GLN:CD | 1.65 | 1.34 |
| 1:B:92:GLN:OE1 | 1:B:92:GLN:CD | 1.65 | 1.34 |
| 1:A:86:LYS:NZ | 1:B:103:SER:CB | 1.91 | 1.32 |
| 1:A:48:TYR:HE2 | 2:A:104:HEC:O2D | 1.09 | 1.30 |
| 1:B:48:TYR:HE2 | 2:B:104:HEC:O2D | 1.09 | 1.30 |
| 1:A:86:LYS:CD | 1:B:103:SER:HB3 | 1.61 | 1.30 |
| 1:A:44:GLU:CG | 1:A:44:GLU:CB | 2.09 | 1.29 |
| 1:B:44:GLU:CB | 1:B:44:GLU:CG | 2.09 | 1.29 |
| 1:A:46:TYR:CG | 1:A:46:TYR:CE1 | 1.96 | 1.28 |
| 1:B:46:TYR:CG | 1:B:46:TYR:CE1 | 1.96 | 1.28 |
| 1:A:66:GLU:CB | 1:A:74:TYR:CE2 | 2.17 | 1.27 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:66:GLU:CB | 1:B:74:TYR:CE2 | 2.17 | 1.27 |
| 1:A:10:PHE:CG | 1:A:10:PHE:CE2 | 1.80 | 1.26 |
| 1:B:10:PHE:CG | 1:B:10:PHE:CE2 | 1.80 | 1.26 |
| 1:A:44:GLU:CG | 1:A:44:GLU:CD | 2.08 | 1.21 |
| 1:B:44:GLU:CG | 1:B:44:GLU:CD | 2.08 | 1.21 |
| 1:A:16:GLN:N | 1:A:16:GLN:CB | 2.06 | 1.17 |
| 1:B:16:GLN:N | 1:B:16:GLN:CB | 2.06 | 1.17 |
| 1:A:24:GLY:O | 1:A:25:LYS:HG2 | 1.45 | 1.17 |
| 1:B:24:GLY:O | 1:B:25:LYS:HG2 | 1.45 | 1.17 |
| 1:A:86:LYS:HE3 | 1:B:103:SER:OG | 1.45 | 1.15 |
| 1:A:86:LYS:HE2 | 1:B:103:SER:CA | 1.67 | 1.14 |
| 1:A:16:GLN:N | 1:A:16:GLN:HB3 | 1.62 | 1.14 |
| 1:A:57:ILE:HD12 | 1:A:58:VAL:H | 1.04 | 1.14 |
| 1:B:16:GLN:N | 1:B:16:GLN:HB3 | 1.62 | 1.14 |
| 1:B:57:ILE:HD12 | 1:B:58:VAL:H | 1.04 | 1.14 |
| 1:A:10:PHE:CD2 | 1:A:10:PHE:CD1 | 2.06 | 1.13 |
| 1:B:10:PHE:CD2 | 1:B:10:PHE:CD1 | 2.06 | 1.13 |
| 1:A:3:VAL:CA | 1:A:3:VAL:CG2 | 2.25 | 1.13 |
| 1:A:59:TRP:CE3 | 1:A:63:THR:HG21 | 1.81 | 1.13 |
| 1:B:3:VAL:CA | 1:B:3:VAL:CG2 | 2.25 | 1.13 |
| 1:B:59:TRP:CE3 | 1:B:63:THR:HG21 | 1.81 | 1.13 |
| 2:A:104:HEC:HMC1 | 2:A:104:HEC:HBC3 | 1.25 | 1.13 |
| 2:B:104:HEC:HBC3 | 2:B:104:HEC:HMC1 | 1.25 | 1.13 |
| 1:A:86:LYS:CE | 1:B:103:SER:OG | 1.97 | 1.12 |
| 1:A:11:VAL:HA | 1:A:15:ALA:HB2 | 1.16 | 1.12 |
| 1:B:11:VAL:HA | 1:B:15:ALA:HB2 | 1.16 | 1.12 |
| 1:A:26:HIS:O | 1:A:27:LYS:CG | 1.98 | 1.11 |
| 1:B:26:HIS:O | 1:B:27:LYS:CG | 1.98 | 1.11 |
| 1:A:86:LYS:HZ3 | 1:B:102:THR:HG22 | 1.15 | 1.11 |
| 1:A:47:SER:O | 1:A:48:TYR:CB | 1.99 | 1.10 |
| 1:B:47:SER:O | 1:B:48:TYR:CB | 1.99 | 1.10 |
| 1:A:59:TRP:HZ3 | 1:A:63:THR:HG23 | 1.10 | 1.10 |
| 1:B:59:TRP:HZ3 | 1:B:63:THR:HG23 | 1.10 | 1.10 |
| 1:A:10:PHE:CD2 | 1:A:10:PHE:CB | 2.33 | 1.10 |
| 1:B:10:PHE:CD2 | 1:B:10:PHE:CB | 2.33 | 1.10 |
| 1:A:67:TYR:O | 1:A:68:LEU:C | 1.80 | 1.09 |
| 1:B:67:TYR:O | 1:B:68:LEU:C | 1.80 | 1.09 |
| 1:A:59:TRP:CZ3 | 1:A:63:THR:HG23 | 1.89 | 1.07 |
| 1:A:86:LYS:NZ | 1:B:102:THR:HG22 | 1.67 | 1.07 |
| 1:B:59:TRP:CZ3 | 1:B:63:THR:HG23 | 1.89 | 1.07 |
| 1:A:73:LYS:H | 1:A:76:PRO:HB3 | 1.21 | 1.06 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:73:LYS:H | 1:B:76:PRO:HB3 | 1.21 | 1.06 |
| 1:A:34:GLY:HA2 | 1:A:102:THR:HG23 | 1.32 | 1.06 |
| 1:B:34:GLY:HA2 | 1:B:102:THR:HG23 | 1.32 | 1.06 |
| 1:A:59:TRP:CZ3 | 1:A:63:THR:CG2 | 2.38 | 1.05 |
| 1:B:59:TRP:CZ3 | 1:B:63:THR:CG2 | 2.38 | 1.05 |
| 1:A:36:PHE:N | 1:A:36:PHE:HD2 | 1.55 | 1.05 |
| 1:B:36:PHE:HD2 | 1:B:36:PHE:N | 1.55 | 1.05 |
| 1:A:26:HIS:CG | 1:A:26:HIS:CA | 2.38 | 1.05 |
| 1:B:26:HIS:CG | 1:B:26:HIS:CA | 2.38 | 1.05 |
| 1:A:59:TRP:CE3 | 1:A:63:THR:CG2 | 2.40 | 1.04 |
| 1:B:59:TRP:CE3 | 1:B:63:THR:CG2 | 2.40 | 1.04 |
| 1:A:50:ASP:HB3 | 1:A:54:SER:OG | 1.59 | 1.03 |
| 1:B:50:ASP:HB3 | 1:B:54:SER:OG | 1.59 | 1.03 |
| 1:A:40:THR:CG2 | 1:A:57:ILE:HG12 | 1.88 | 1.03 |
| 1:A:57:ILE:CD1 | 1:A:58:VAL:H | 1.70 | 1.03 |
| 1:A:80:MET:HB2 | 2:A:104:HEC:CHD | 1.89 | 1.03 |
| 1:B:40:THR:CG2 | 1:B:57:ILE:HG12 | 1.88 | 1.03 |
| 1:B:57:ILE:CD1 | 1:B:58:VAL:H | 1.70 | 1.03 |
| 1:B:80:MET:HB2 | 2:B:104:HEC:CHD | 1.89 | 1.03 |
| 1:A:24:GLY:O | 1:A:25:LYS:CG | 2.08 | 1.02 |
| 1:B:24:GLY:O | 1:B:25:LYS:CG | 2.08 | 1.02 |
| 2:A:104:HEC:CMD | 2:A:104:HEC:HBD1 | 1.81 | 1.01 |
| 2:B:104:HEC:CMD | 2:B:104:HEC:HBD1 | 1.81 | 1.01 |
| 1:A:86:LYS:NZ | 1:B:103:SER:HB3 | 1.58 | 1.01 |
| 1:A:70:ASN:HD21 | 1:A:72:LYS:HB2 | 1.26 | 1.00 |
| 1:B:70:ASN:HD21 | 1:B:72:LYS:HB2 | 1.26 | 1.00 |
| 1:A:47:SER:O | 1:A:48:TYR:HB3 | 1.18 | 1.00 |
| 1:B:47:SER:O | 1:B:48:TYR:HB3 | 1.18 | 1.00 |
| 1:A:74:TYR:H | 1:A:76:PRO:HD3 | 1.26 | 0.98 |
| 1:B:74:TYR:H | 1:B:76:PRO:HD3 | 1.26 | 0.98 |
| 1:A:66:GLU:CB | 1:A:74:TYR:CZ | 2.43 | 0.98 |
| 1:A:85:ILE:HG22 | 1:A:85:ILE:O | 1.61 | 0.98 |
| 2:A:104:HEC:HMD1 | 2:A:104:HEC:CBD | 1.87 | 0.98 |
| 1:B:66:GLU:CB | 1:B:74:TYR:CZ | 2.43 | 0.98 |
| 1:B:85:ILE:HG22 | 1:B:85:ILE:O | 1.61 | 0.98 |
| 2:B:104:HEC:HMD1 | 2:B:104:HEC:CBD | 1.87 | 0.98 |
| 1:A:16:GLN:HB3 | 1:A:16:GLN:H | 1.28 | 0.98 |
| 1:B:16:GLN:HB3 | 1:B:16:GLN:H | 1.28 | 0.98 |
| 1:A:72:LYS:O | 1:A:73:LYS:HB2 | 1.61 | 0.98 |
| 1:B:72:LYS:O | 1:B:73:LYS:HB2 | 1.61 | 0.98 |
| 1:A:86:LYS:HE2 | 1:B:103:SER:HA | 1.46 | 0.98 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:80:MET:HB2 | 2:A:104:HEC:C1D | 1.94 | 0.96 |
| 1:B:80:MET:HB2 | 2:B:104:HEC:C1D | 1.94 | 0.96 |
| 1:A:3:VAL:CA | 1:A:3:VAL:CG1 | 2.43 | 0.96 |
| 1:B:3:VAL:CA | 1:B:3:VAL:CG1 | 2.43 | 0.96 |
| 1:A:48:TYR:CE1 | 1:A:51:ALA:HB3 | 2.01 | 0.96 |
| 1:B:48:TYR:CE1 | 1:B:51:ALA:HB3 | 2.01 | 0.96 |
| 1:A:68:LEU:HD21 | 1:A:94:LEU:HG | 1.44 | 0.95 |
| 1:B:68:LEU:HD21 | 1:B:94:LEU:HG | 1.44 | 0.95 |
| 1:A:11:VAL:CA | 1:A:15:ALA:HB2 | 1.97 | 0.95 |
| 1:B:11:VAL:CA | 1:B:15:ALA:HB2 | 1.97 | 0.95 |
| 2:A:104:HEC:HBD1 | 2:A:104:HEC:HMD1 | 0.97 | 0.95 |
| 2:B:104:HEC:HBD1 | 2:B:104:HEC:HMD1 | 0.97 | 0.95 |
| 1:A:56:GLY:O | 1:A:57:ILE:HG22 | 1.67 | 0.94 |
| 1:B:56:GLY:O | 1:B:57:ILE:HG22 | 1.67 | 0.94 |
| 1:A:3:VAL:CA | 1:A:3:VAL:HG22 | 1.96 | 0.94 |
| 1:B:3:VAL:CA | 1:B:3:VAL:HG22 | 1.96 | 0.94 |
| 1:A:50:ASP:O | 1:A:51:ALA:CB | 2.15 | 0.94 |
| 1:B:50:ASP:O | 1:B:51:ALA:CB | 2.15 | 0.94 |
| 1:A:3:VAL:CA | 1:A:3:VAL:HG23 | 1.96 | 0.94 |
| 1:A:44:GLU:CB | 1:A:44:GLU:CD | 2.35 | 0.94 |
| 1:A:66:GLU:HB3 | 1:A:74:TYR:HE2 | 1.18 | 0.94 |
| 1:B:3:VAL:CA | 1:B:3:VAL:HG23 | 1.96 | 0.94 |
| 1:B:44:GLU:CB | 1:B:44:GLU:CD | 2.35 | 0.94 |
| 1:B:66:GLU:HB3 | 1:B:74:TYR:HE2 | 1.18 | 0.94 |
| 1:A:46:TYR:CD1 | 1:A:46:TYR:HB2 | 2.02 | 0.93 |
| 1:B:46:TYR:CD1 | 1:B:46:TYR:HB2 | 2.02 | 0.93 |
| 1:A:35:LEU:HD12 | 1:A:64:LEU:HD21 | 1.49 | 0.93 |
| 1:B:35:LEU:HD12 | 1:B:64:LEU:HD21 | 1.49 | 0.93 |
| 1:A:10:PHE:CG | 1:A:10:PHE:CD2 | 0.93 | 0.92 |
| 1:B:10:PHE:CG | 1:B:10:PHE:CD2 | 0.93 | 0.92 |
| 1:A:11:VAL:HA | 1:A:15:ALA:CB | 1.99 | 0.92 |
| 1:B:11:VAL:HA | 1:B:15:ALA:CB | 1.99 | 0.92 |
| 1:A:26:HIS:O | 1:A:27:LYS:HG2 | 1.68 | 0.92 |
| 1:B:26:HIS:O | 1:B:27:LYS:HG2 | 1.68 | 0.92 |
| 1:A:24:GLY:C | 1:A:25:LYS:HG2 | 1.90 | 0.91 |
| 1:B:24:GLY:C | 1:B:25:LYS:HG2 | 1.90 | 0.91 |
| 1:A:28:VAL:CG1 | 1:A:29:GLY:N | 2.34 | 0.91 |
| 1:B:28:VAL:CG1 | 1:B:29:GLY:N | 2.34 | 0.91 |
| 1:A:46:TYR:CD1 | 1:A:46:TYR:CG | 0.90 | 0.90 |
| 1:A:84:GLY:O | 1:A:85:ILE:HB | 1.71 | 0.90 |
| 1:B:46:TYR:CD1 | 1:B:46:TYR:CG | 0.90 | 0.90 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:B:84:GLY:O | 1:B:85:ILE:HB | 1.71 | 0.90 |
| 1:A:57:ILE:HD12 | 1:A:58:VAL:N | 1.85 | 0.90 |
| 1:B:57:ILE:HD12 | 1:B:58:VAL:N | 1.85 | 0.90 |
| 1:A:73:LYS:O | 1:A:74:TYR:HB2 | 1.72 | 0.89 |
| 1:A:81:ILE:C | 1:A:82:PHE:CA | 2.40 | 0.89 |
| 1:B:73:LYS:O | 1:B:74:TYR:HB2 | 1.72 | 0.89 |
| 1:B:81:ILE:C | 1:B:82:PHE:CA | 2.40 | 0.89 |
| 1:A:70:ASN:ND2 | 1:A:72:LYS:HB2 | 1.87 | 0.89 |
| 1:B:70:ASN:ND2 | 1:B:72:LYS:HB2 | 1.87 | 0.89 |
| 1:A:40:THR:HG21 | 1:A:57:ILE:HG12 | 1.51 | 0.89 |
| 1:B:40:THR:HG21 | 1:B:57:ILE:HG12 | 1.51 | 0.89 |
| 1:A:28:VAL:HG12 | 1:A:29:GLY:H | 1.36 | 0.88 |
| 1:A:63:THR:HA | 1:A:66:GLU:HB2 | 1.56 | 0.88 |
| 1:B:28:VAL:HG12 | 1:B:29:GLY:H | 1.36 | 0.88 |
| 1:B:63:THR:HA | 1:B:66:GLU:HB2 | 1.56 | 0.88 |
| 1:A:24:GLY:O | 1:A:25:LYS:CB | 2.21 | 0.88 |
| 1:A:82:PHE:N | 1:A:82:PHE:CB | 2.36 | 0.88 |
| 1:B:24:GLY:O | 1:B:25:LYS:CB | 2.21 | 0.88 |
| 1:B:82:PHE:N | 1:B:82:PHE:CB | 2.36 | 0.88 |
| 1:A:15:ALA:C | 1:A:16:GLN:CA | 2.42 | 0.87 |
| 1:B:15:ALA:C | 1:B:16:GLN:CA | 2.42 | 0.87 |
| 1:A:26:HIS:O | 1:A:27:LYS:CB | 2.23 | 0.87 |
| 1:B:26:HIS:O | 1:B:27:LYS:CB | 2.23 | 0.87 |
| 1:A:32:LEU:HD11 | 2:A:104:HEC:C3A | 2.05 | 0.87 |
| 1:B:32:LEU:HD11 | 2:B:104:HEC:C3A | 2.05 | 0.87 |
| 1:A:48:TYR:OH | 1:A:78:THR:HA | 1.74 | 0.86 |
| 1:A:64:LEU:O | 1:A:68:LEU:HB2 | 1.76 | 0.86 |
| 1:B:48:TYR:OH | 1:B:78:THR:HA | 1.74 | 0.86 |
| 1:B:64:LEU:O | 1:B:68:LEU:HB2 | 1.76 | 0.86 |
| 1:A:86:LYS:NZ | 1:B:103:SER:N | 2.24 | 0.85 |
| 2:A:104:HEC:HBC3 | 2:A:104:HEC:CMC | 2.07 | 0.85 |
| 2:B:104:HEC:HBC3 | 2:B:104:HEC:CMC | 2.07 | 0.85 |
| 1:A:59:TRP:CZ3 | 1:A:63:THR:HG21 | 2.09 | 0.85 |
| 1:B:59:TRP:CZ3 | 1:B:63:THR:HG21 | 2.09 | 0.85 |
| 1:A:16:GLN:H | 1:A:16:GLN:HE21 | 1.25 | 0.84 |
| 1:B:16:GLN:H | 1:B:16:GLN:HE21 | 1.25 | 0.84 |
| 1:A:46:TYR:CG | 1:A:46:TYR:HD1 | 1.58 | 0.84 |
| 1:B:46:TYR:CG | 1:B:46:TYR:HD1 | 1.58 | 0.84 |
| 1:A:59:TRP:HE3 | 1:A:63:THR:HG21 | 1.39 | 0.84 |
| 1:A:86:LYS:NZ | 1:B:103:SER:OG | 2.04 | 0.84 |
| 1:B:59:TRP:HE3 | 1:B:63:THR:HG21 | 1.39 | 0.84 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|----------------|--------------------------|-------------------|
| 1:A:19:THR:HG23 | 1:A:27:LYS:HE3 | 1.59 | 0.83 |
| 1:B:19:THR:HG23 | 1:B:27:LYS:HE3 | 1.59 | 0.83 |
| 1:A:40:THR:CG2 | 1:A:57:ILE:CG1 | 2.55 | 0.83 |
| 1:B:40:THR:CG2 | 1:B:57:ILE:CG1 | 2.55 | 0.83 |
| 1:A:36:PHE:N | 1:A:36:PHE:CD2 | 2.36 | 0.83 |
| 1:B:36:PHE:N | 1:B:36:PHE:CD2 | 2.36 | 0.83 |
| 1:A:62:ASN:N | 1:A:62:ASN:CB | 2.41 | 0.83 |
| 1:B:62:ASN:N | 1:B:62:ASN:CB | 2.41 | 0.83 |
| 1:A:10:PHE:CG | 1:A:10:PHE:HD2 | 1.59 | 0.83 |
| 1:A:17:CYS:C | 1:A:18:HIS:CA | 2.48 | 0.83 |
| 1:B:10:PHE:CG | 1:B:10:PHE:HD2 | 1.59 | 0.83 |
| 1:B:17:CYS:C | 1:B:18:HIS:CA | 2.48 | 0.83 |
| 1:A:60:ASN:O | 1:A:61:GLU:C | 2.17 | 0.82 |
| 1:B:60:ASN:O | 1:B:61:GLU:C | 2.17 | 0.82 |
| 1:A:56:GLY:O | 1:A:57:ILE:CG2 | 2.27 | 0.82 |
| 1:B:56:GLY:O | 1:B:57:ILE:CG2 | 2.27 | 0.82 |
| 1:A:66:GLU:CG | 1:A:74:TYR:HE2 | 1.93 | 0.81 |
| 1:B:66:GLU:CG | 1:B:74:TYR:HE2 | 1.93 | 0.81 |
| 1:A:19:THR:O | 1:A:20:VAL:HB | 1.78 | 0.81 |
| 1:B:19:THR:O | 1:B:20:VAL:HB | 1.78 | 0.81 |
| 1:A:49:THR:CA | 1:A:49:THR:CG2 | 2.55 | 0.81 |
| 1:A:74:TYR:N | 1:A:76:PRO:HD3 | 1.96 | 0.81 |
| 1:B:49:THR:CA | 1:B:49:THR:CG2 | 2.55 | 0.81 |
| 1:B:74:TYR:N | 1:B:76:PRO:HD3 | 1.96 | 0.81 |
| 1:A:101:ALA:N | 1:A:101:ALA:CB | 2.44 | 0.81 |
| 1:B:101:ALA:N | 1:B:101:ALA:CB | 2.44 | 0.81 |
| 1:A:43:ALA:O | 1:A:44:GLU:CB | 2.29 | 0.80 |
| 1:B:43:ALA:O | 1:B:44:GLU:CB | 2.29 | 0.80 |
| 1:A:69:GLU:O | 1:A:70:ASN:HB3 | 1.80 | 0.80 |
| 1:B:69:GLU:O | 1:B:70:ASN:HB3 | 1.80 | 0.80 |
| 1:A:59:TRP:CE3 | 1:A:59:TRP:HA | 2.17 | 0.80 |
| 1:B:59:TRP:CE3 | 1:B:59:TRP:HA | 2.17 | 0.80 |
| 1:A:34:GLY:O | 1:A:35:LEU:C | 2.18 | 0.80 |
| 1:B:34:GLY:O | 1:B:35:LEU:C | 2.18 | 0.80 |
| 1:A:92:GLN:OE1 | 1:A:92:GLN:CG | 2.30 | 0.80 |
| 1:B:92:GLN:OE1 | 1:B:92:GLN:CG | 2.30 | 0.80 |
| 1:A:3:VAL:C | 1:A:3:VAL:HG12 | 2.03 | 0.80 |
| 1:A:48:TYR:CE1 | 1:A:51:ALA:CB | 2.65 | 0.80 |
| 1:B:3:VAL:C | 1:B:3:VAL:HG12 | 2.03 | 0.80 |
| 1:B:48:TYR:CE1 | 1:B:51:ALA:CB | 2.65 | 0.80 |
| 1:A:80:MET:CG | 1:A:80:MET:CE | 2.60 | 0.79 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:B:80:MET:CG | 1:B:80:MET:CE | 2.60 | 0.79 |
| 1:A:27:LYS:O | 1:A:28:VAL:HB | 1.75 | 0.79 |
| 1:B:27:LYS:O | 1:B:28:VAL:HB | 1.75 | 0.79 |
| 1:A:44:GLU:OE2 | 1:A:44:GLU:HB2 | 1.83 | 0.79 |
| 1:B:44:GLU:HB2 | 1:B:44:GLU:OE2 | 1.83 | 0.79 |
| 1:A:86:LYS:HE2 | 1:B:103:SER:CB | 1.27 | 0.79 |
| 1:A:24:GLY:O | 1:A:25:LYS:HB3 | 1.82 | 0.79 |
| 1:B:24:GLY:O | 1:B:25:LYS:HB3 | 1.82 | 0.79 |
| 1:A:34:GLY:HA2 | 1:A:102:THR:CG2 | 2.15 | 0.77 |
| 1:B:34:GLY:HA2 | 1:B:102:THR:CG2 | 2.15 | 0.77 |
| 1:A:28:VAL:HG12 | 1:A:29:GLY:N | 1.92 | 0.77 |
| 1:B:28:VAL:HG12 | 1:B:29:GLY:N | 1.92 | 0.77 |
| 1:A:7:LYS:HB2 | 1:A:97:TYR:CE2 | 2.20 | 0.76 |
| 1:B:7:LYS:HB2 | 1:B:97:TYR:CE2 | 2.20 | 0.76 |
| 1:A:47:SER:OG | 1:A:47:SER:CA | 2.33 | 0.76 |
| 1:B:47:SER:OG | 1:B:47:SER:CA | 2.33 | 0.76 |
| 1:A:23:GLY:O | 1:A:25:LYS:N | 2.18 | 0.76 |
| 1:B:23:GLY:O | 1:B:25:LYS:N | 2.18 | 0.76 |
| 1:A:50:ASP:CA | 1:A:54:SER:HB2 | 2.15 | 0.75 |
| 1:B:50:ASP:CA | 1:B:54:SER:HB2 | 2.15 | 0.75 |
| 1:A:50:ASP:HB3 | 1:A:54:SER:CB | 2.16 | 0.75 |
| 1:A:86:LYS:NZ | 1:B:103:SER:CA | 2.43 | 0.75 |
| 1:B:50:ASP:HB3 | 1:B:54:SER:CB | 2.16 | 0.75 |
| 1:A:84:GLY:O | 1:A:85:ILE:CB | 2.32 | 0.74 |
| 1:B:84:GLY:O | 1:B:85:ILE:CB | 2.32 | 0.74 |
| 1:A:57:ILE:CG1 | 1:A:58:VAL:N | 2.50 | 0.74 |
| 1:B:57:ILE:CG1 | 1:B:58:VAL:N | 2.50 | 0.74 |
| 1:A:16:GLN:H | 1:A:16:GLN:NE2 | 1.85 | 0.74 |
| 1:A:18:HIS:N | 1:A:18:HIS:CB | 2.50 | 0.74 |
| 1:B:16:GLN:H | 1:B:16:GLN:NE2 | 1.85 | 0.74 |
| 1:B:18:HIS:N | 1:B:18:HIS:CB | 2.50 | 0.74 |
| 1:A:3:VAL:CA | 1:A:3:VAL:HG12 | 2.17 | 0.73 |
| 1:B:3:VAL:CA | 1:B:3:VAL:HG12 | 2.17 | 0.73 |
| 1:A:68:LEU:CD2 | 1:A:94:LEU:HG | 2.18 | 0.73 |
| 1:B:68:LEU:CD2 | 1:B:94:LEU:HG | 2.18 | 0.73 |
| 1:A:20:VAL:O | 1:A:20:VAL:HG13 | 1.82 | 0.73 |
| 1:B:20:VAL:O | 1:B:20:VAL:HG13 | 1.82 | 0.73 |
| 1:A:3:VAL:CA | 1:A:3:VAL:HG13 | 2.17 | 0.73 |
| 1:B:3:VAL:CA | 1:B:3:VAL:HG13 | 2.17 | 0.73 |
| 1:A:90:GLU:C | 1:A:91:ARG:CA | 2.53 | 0.72 |
| 1:B:90:GLU:C | 1:B:91:ARG:CA | 2.53 | 0.72 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:A:19:THR:O | 1:A:20:VAL:CB | 2.33 | 0.72 |
| 1:B:19:THR:O | 1:B:20:VAL:CB | 2.33 | 0.72 |
| 1:A:86:LYS:HZ3 | 1:B:103:SER:N | 1.87 | 0.72 |
| 1:A:40:THR:HG23 | 1:A:57:ILE:CG1 | 2.19 | 0.72 |
| 1:B:40:THR:HG23 | 1:B:57:ILE:CG1 | 2.19 | 0.72 |
| 1:A:26:HIS:CE1 | 1:A:31:ASN:H | 2.06 | 0.72 |
| 1:A:32:LEU:N | 1:A:32:LEU:C | 2.42 | 0.72 |
| 1:B:26:HIS:CE1 | 1:B:31:ASN:H | 2.06 | 0.72 |
| 1:B:32:LEU:N | 1:B:32:LEU:C | 2.42 | 0.72 |
| 1:A:86:LYS:HE3 | 1:B:103:SER:HB2 | 0.72 | 0.72 |
| 1:A:66:GLU:CB | 1:A:74:TYR:OH | 2.37 | 0.72 |
| 1:B:66:GLU:CB | 1:B:74:TYR:OH | 2.37 | 0.72 |
| 1:A:79:LYS:HG3 | 1:A:79:LYS:O | 1.87 | 0.71 |
| 1:B:79:LYS:O | 1:B:79:LYS:HG3 | 1.87 | 0.71 |
| 1:A:59:TRP:HE3 | 1:A:63:THR:CG2 | 1.94 | 0.71 |
| 1:A:86:LYS:CD | 1:B:103:SER:CB | 2.39 | 0.71 |
| 1:B:59:TRP:HE3 | 1:B:63:THR:CG2 | 1.94 | 0.71 |
| 1:A:38:ARG:HH12 | 1:A:43:ALA:HB2 | 1.56 | 0.71 |
| 1:A:68:LEU:O | 1:A:69:GLU:C | 2.28 | 0.71 |
| 1:B:38:ARG:HH12 | 1:B:43:ALA:HB2 | 1.56 | 0.71 |
| 1:B:68:LEU:O | 1:B:69:GLU:C | 2.28 | 0.71 |
| 1:A:72:LYS:O | 1:A:73:LYS:CB | 2.35 | 0.71 |
| 1:B:72:LYS:O | 1:B:73:LYS:CB | 2.35 | 0.71 |
| 1:A:40:THR:HG23 | 1:A:57:ILE:HG12 | 1.72 | 0.71 |
| 1:B:40:THR:HG23 | 1:B:57:ILE:HG12 | 1.72 | 0.71 |
| 1:A:24:GLY:C | 1:A:25:LYS:CG | 2.58 | 0.70 |
| 1:B:24:GLY:C | 1:B:25:LYS:CG | 2.58 | 0.70 |
| 1:A:57:ILE:O | 1:A:58:VAL:HB | 1.91 | 0.70 |
| 1:A:87:LYS:O | 1:A:88:LYS:C | 2.30 | 0.70 |
| 1:B:57:ILE:O | 1:B:58:VAL:HB | 1.91 | 0.70 |
| 1:B:87:LYS:O | 1:B:88:LYS:C | 2.30 | 0.70 |
| 1:A:53:LYS:CD | 1:A:53:LYS:NZ | 2.50 | 0.70 |
| 1:B:53:LYS:CD | 1:B:53:LYS:NZ | 2.50 | 0.70 |
| 1:A:59:TRP:HZ3 | 1:A:63:THR:CG2 | 1.83 | 0.70 |
| 1:B:59:TRP:HZ3 | 1:B:63:THR:CG2 | 1.83 | 0.70 |
| 1:A:86:LYS:HE2 | 1:B:103:SER:HB3 | 1.04 | 0.69 |
| 1:A:57:ILE:CD1 | 1:A:58:VAL:N | 2.48 | 0.69 |
| 1:B:57:ILE:CD1 | 1:B:58:VAL:N | 2.48 | 0.69 |
| 1:A:3:VAL:HG22 | 1:A:3:VAL:HA | 1.74 | 0.69 |
| 1:B:3:VAL:HG22 | 1:B:3:VAL:HA | 1.74 | 0.69 |
| 1:A:26:HIS:O | 1:A:27:LYS:HG3 | 1.90 | 0.69 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:A:35:LEU:HB2 | 1:A:36:PHE:CE2 | 2.28 | 0.69 |
| 1:A:48:TYR:OH | 1:A:51:ALA:HB1 | 1.93 | 0.69 |
| 1:B:26:HIS:O | 1:B:27:LYS:HG3 | 1.90 | 0.69 |
| 1:B:35:LEU:HB2 | 1:B:36:PHE:CE2 | 2.28 | 0.69 |
| 1:B:48:TYR:OH | 1:B:51:ALA:HB1 | 1.93 | 0.69 |
| 1:A:3:VAL:O | 1:A:4:ALA:C | 2.29 | 0.69 |
| 1:A:50:ASP:HB3 | 1:A:54:SER:HG | 1.55 | 0.69 |
| 1:B:3:VAL:O | 1:B:4:ALA:C | 2.29 | 0.69 |
| 1:B:50:ASP:HB3 | 1:B:54:SER:HG | 1.55 | 0.69 |
| 1:A:56:GLY:C | 1:A:57:ILE:CG2 | 2.60 | 0.68 |
| 1:B:56:GLY:C | 1:B:57:ILE:CG2 | 2.60 | 0.68 |
| 1:A:98:LEU:N | 1:A:98:LEU:CB | 2.55 | 0.68 |
| 1:B:98:LEU:N | 1:B:98:LEU:CB | 2.55 | 0.68 |
| 1:A:85:ILE:O | 1:A:85:ILE:CG2 | 2.39 | 0.68 |
| 1:B:85:ILE:O | 1:B:85:ILE:CG2 | 2.39 | 0.68 |
| 1:A:32:LEU:HD13 | 1:A:35:LEU:HD21 | 1.75 | 0.68 |
| 1:A:66:GLU:HB3 | 1:A:74:TYR:OH | 1.91 | 0.68 |
| 1:B:32:LEU:HD13 | 1:B:35:LEU:HD21 | 1.75 | 0.68 |
| 1:B:66:GLU:HB3 | 1:B:74:TYR:OH | 1.91 | 0.68 |
| 1:A:33:TRP:N | 1:A:33:TRP:HA | 1.98 | 0.68 |
| 1:A:38:ARG:NH1 | 1:A:43:ALA:HB2 | 2.09 | 0.68 |
| 1:A:53:LYS:CE | 1:A:53:LYS:CG | 2.70 | 0.68 |
| 1:B:33:TRP:N | 1:B:33:TRP:HA | 1.98 | 0.68 |
| 1:B:38:ARG:NH1 | 1:B:43:ALA:HB2 | 2.09 | 0.68 |
| 1:B:53:LYS:CE | 1:B:53:LYS:CG | 2.70 | 0.68 |
| 1:A:44:GLU:CB | 1:A:44:GLU:OE2 | 2.40 | 0.67 |
| 1:B:44:GLU:CB | 1:B:44:GLU:OE2 | 2.40 | 0.67 |
| 1:A:64:LEU:CA | 1:A:64:LEU:HD12 | 2.24 | 0.67 |
| 1:B:64:LEU:CA | 1:B:64:LEU:HD12 | 2.24 | 0.67 |
| 1:A:86:LYS:HE3 | 1:B:103:SER:CB | 0.43 | 0.67 |
| 1:A:14:CYS:SG | 2:A:104:HEC:HMB1 | 2.35 | 0.67 |
| 1:B:14:CYS:SG | 2:B:104:HEC:HMB1 | 2.35 | 0.67 |
| 1:A:36:PHE:HD2 | 1:A:36:PHE:H | 1.34 | 0.67 |
| 1:A:57:ILE:HG13 | 1:A:58:VAL:N | 2.10 | 0.67 |
| 1:B:36:PHE:HD2 | 1:B:36:PHE:H | 1.34 | 0.67 |
| 1:B:57:ILE:HG13 | 1:B:58:VAL:N | 2.10 | 0.67 |
| 1:A:34:GLY:O | 1:A:36:PHE:N | 2.28 | 0.67 |
| 1:A:66:GLU:CD | 1:A:74:TYR:HE2 | 1.99 | 0.67 |
| 1:B:34:GLY:O | 1:B:36:PHE:N | 2.28 | 0.67 |
| 1:B:66:GLU:CD | 1:B:74:TYR:HE2 | 1.99 | 0.67 |
| 1:A:61:GLU:C | 1:A:62:ASN:CA | 2.57 | 0.66 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:B:61:GLU:C | 1:B:62:ASN:CA | 2.57 | 0.66 |
| 1:A:7:LYS:O | 1:A:11:VAL:N | 2.27 | 0.66 |
| 1:B:7:LYS:O | 1:B:11:VAL:N | 2.27 | 0.66 |
| 1:A:7:LYS:HB2 | 1:A:97:TYR:HE2 | 1.58 | 0.66 |
| 1:A:86:LYS:CE | 1:B:103:SER:HB2 | 1.39 | 0.66 |
| 1:B:7:LYS:HB2 | 1:B:97:TYR:HE2 | 1.58 | 0.66 |
| 1:A:86:LYS:CE | 1:B:103:SER:CB | 0.77 | 0.66 |
| 1:A:66:GLU:CB | 1:A:74:TYR:HE2 | 1.81 | 0.66 |
| 1:B:66:GLU:CB | 1:B:74:TYR:HE2 | 1.81 | 0.66 |
| 1:A:64:LEU:CA | 1:A:64:LEU:CG | 2.70 | 0.66 |
| 1:A:69:GLU:O | 1:A:70:ASN:CB | 2.37 | 0.66 |
| 1:B:64:LEU:CA | 1:B:64:LEU:CG | 2.70 | 0.66 |
| 1:B:69:GLU:O | 1:B:70:ASN:CB | 2.37 | 0.66 |
| 1:A:100:SER:C | 1:A:101:ALA:CA | 2.60 | 0.66 |
| 1:B:100:SER:C | 1:B:101:ALA:CA | 2.60 | 0.66 |
| 1:A:44:GLU:CD | 1:A:44:GLU:HB2 | 2.17 | 0.65 |
| 1:B:44:GLU:CD | 1:B:44:GLU:HB2 | 2.17 | 0.65 |
| 1:A:55:LYS:C | 1:A:56:GLY:CA | 2.54 | 0.65 |
| 1:A:86:LYS:HZ3 | 1:B:102:THR:CG2 | 2.02 | 0.65 |
| 1:B:55:LYS:C | 1:B:56:GLY:CA | 2.54 | 0.65 |
| 1:A:50:ASP:O | 1:A:51:ALA:HB2 | 1.96 | 0.65 |
| 1:A:63:THR:HG22 | 1:A:64:LEU:N | 2.11 | 0.65 |
| 1:B:50:ASP:O | 1:B:51:ALA:HB2 | 1.96 | 0.65 |
| 1:B:63:THR:HG22 | 1:B:64:LEU:N | 2.11 | 0.65 |
| 1:A:73:LYS:N | 1:A:76:PRO:HB3 | 2.04 | 0.65 |
| 1:B:73:LYS:N | 1:B:76:PRO:HB3 | 2.04 | 0.65 |
| 1:A:26:HIS:CB | 1:A:26:HIS:CD2 | 2.64 | 0.65 |
| 1:B:26:HIS:CB | 1:B:26:HIS:CD2 | 2.64 | 0.65 |
| 1:A:3:VAL:C | 1:A:3:VAL:CG1 | 2.65 | 0.65 |
| 1:A:73:LYS:O | 1:A:74:TYR:CB | 2.43 | 0.65 |
| 1:B:3:VAL:C | 1:B:3:VAL:CG1 | 2.65 | 0.65 |
| 1:B:73:LYS:O | 1:B:74:TYR:CB | 2.43 | 0.65 |
| 1:A:7:LYS:CA | 1:A:97:TYR:CE2 | 2.80 | 0.64 |
| 1:B:7:LYS:CA | 1:B:97:TYR:CE2 | 2.80 | 0.64 |
| 1:A:54:SER:O | 1:A:56:GLY:N | 2.30 | 0.64 |
| 1:A:64:LEU:HD12 | 1:A:64:LEU:HA | 1.80 | 0.64 |
| 1:B:54:SER:O | 1:B:56:GLY:N | 2.30 | 0.64 |
| 1:B:64:LEU:HD12 | 1:B:64:LEU:HA | 1.80 | 0.64 |
| 1:A:28:VAL:HG13 | 1:A:29:GLY:N | 2.13 | 0.64 |
| 1:B:28:VAL:HG13 | 1:B:29:GLY:N | 2.13 | 0.64 |
| 1:A:50:ASP:HA | 1:A:54:SER:HB2 | 1.77 | 0.64 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|----------------|--------------------------|-------------------|
| 1:B:50:ASP:HA | 1:B:54:SER:HB2 | 1.77 | 0.64 |
| 1:A:91:ARG:N | 1:A:91:ARG:C | 2.50 | 0.64 |
| 1:B:91:ARG:N | 1:B:91:ARG:C | 2.50 | 0.64 |
| 1:A:26:HIS:C | 1:A:27:LYS:HG3 | 2.18 | 0.64 |
| 1:B:26:HIS:C | 1:B:27:LYS:HG3 | 2.18 | 0.64 |
| 1:A:31:ASN:C | 1:A:32:LEU:CA | 2.57 | 0.63 |
| 1:A:67:TYR:O | 1:A:68:LEU:O | 2.15 | 0.63 |
| 1:B:31:ASN:C | 1:B:32:LEU:CA | 2.57 | 0.63 |
| 1:B:67:TYR:O | 1:B:68:LEU:O | 2.15 | 0.63 |
| 1:A:91:ARG:C | 1:A:92:GLN:CA | 2.60 | 0.63 |
| 1:B:91:ARG:C | 1:B:92:GLN:CA | 2.60 | 0.63 |
| 1:A:17:CYS:CB | 1:A:17:CYS:N | 2.59 | 0.63 |
| 1:B:17:CYS:CB | 1:B:17:CYS:N | 2.59 | 0.63 |
| 1:A:26:HIS:CG | 1:A:26:HIS:N | 2.66 | 0.63 |
| 1:B:26:HIS:CG | 1:B:26:HIS:N | 2.66 | 0.63 |
| 1:A:46:TYR:O | 1:A:47:SER:CB | 2.46 | 0.63 |
| 1:A:48:TYR:CZ | 1:A:51:ALA:CB | 2.82 | 0.63 |
| 1:B:46:TYR:O | 1:B:47:SER:CB | 2.46 | 0.63 |
| 1:B:48:TYR:CZ | 1:B:51:ALA:CB | 2.82 | 0.63 |
| 1:A:50:ASP:O | 1:A:51:ALA:HB3 | 1.99 | 0.62 |
| 1:A:102:THR:HG22 | 1:A:103:SER:N | 2.13 | 0.62 |
| 1:B:50:ASP:O | 1:B:51:ALA:HB3 | 1.99 | 0.62 |
| 1:B:102:THR:HG22 | 1:B:103:SER:N | 2.13 | 0.62 |
| 1:A:83:ALA:CB | 1:A:83:ALA:C | 2.65 | 0.62 |
| 1:B:83:ALA:CB | 1:B:83:ALA:C | 2.65 | 0.62 |
| 1:A:41:GLY:O | 1:A:42:GLN:C | 2.38 | 0.61 |
| 1:B:41:GLY:O | 1:B:42:GLN:C | 2.38 | 0.61 |
| 1:A:5:LYS:O | 1:A:6:GLY:C | 2.38 | 0.61 |
| 1:B:5:LYS:O | 1:B:6:GLY:C | 2.38 | 0.61 |
| 1:A:18:HIS:CE1 | 1:A:29:GLY:HA3 | 2.36 | 0.61 |
| 1:B:18:HIS:CE1 | 1:B:29:GLY:HA3 | 2.36 | 0.61 |
| 1:A:59:TRP:N | 1:A:59:TRP:CB | 2.56 | 0.61 |
| 1:A:81:ILE:O | 1:A:82:PHE:CA | 2.48 | 0.61 |
| 1:B:59:TRP:N | 1:B:59:TRP:CB | 2.56 | 0.61 |
| 1:B:81:ILE:O | 1:B:82:PHE:CA | 2.48 | 0.61 |
| 1:A:67:TYR:O | 1:A:69:GLU:N | 2.30 | 0.60 |
| 1:B:67:TYR:O | 1:B:69:GLU:N | 2.30 | 0.60 |
| 1:A:60:ASN:CG | 1:A:61:GLU:N | 2.54 | 0.60 |
| 1:B:60:ASN:CG | 1:B:61:GLU:N | 2.54 | 0.60 |
| 1:A:43:ALA:N | 1:A:43:ALA:C | 2.52 | 0.60 |
| 1:A:58:VAL:C | 1:A:59:TRP:CA | 2.65 | 0.60 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|----------------|--------------------------|-------------------|
| 1:B:43:ALA:N | 1:B:43:ALA:C | 2.52 | 0.60 |
| 1:B:58:VAL:C | 1:B:59:TRP:CA | 2.65 | 0.60 |
| 1:A:3:VAL:HG12 | 1:A:4:ALA:N | 2.16 | 0.59 |
| 1:A:32:LEU:C | 1:A:33:TRP:CA | 2.53 | 0.59 |
| 1:A:62:ASN:C | 1:A:64:LEU:N | 2.55 | 0.59 |
| 1:A:68:LEU:HD13 | 1:A:94:LEU:HB3 | 1.84 | 0.59 |
| 1:B:3:VAL:HG12 | 1:B:4:ALA:N | 2.16 | 0.59 |
| 1:B:32:LEU:C | 1:B:33:TRP:CA | 2.53 | 0.59 |
| 1:B:62:ASN:C | 1:B:64:LEU:N | 2.55 | 0.59 |
| 1:B:68:LEU:HD13 | 1:B:94:LEU:HB3 | 1.84 | 0.59 |
| 1:A:48:TYR:CZ | 1:A:51:ALA:HB3 | 2.33 | 0.59 |
| 1:B:48:TYR:CZ | 1:B:51:ALA:HB3 | 2.33 | 0.59 |
| 1:A:42:GLN:C | 1:A:43:ALA:CA | 2.65 | 0.59 |
| 1:A:64:LEU:CA | 1:A:64:LEU:CD1 | 2.80 | 0.59 |
| 1:B:42:GLN:C | 1:B:43:ALA:CA | 2.65 | 0.59 |
| 1:B:64:LEU:CA | 1:B:64:LEU:CD1 | 2.80 | 0.59 |
| 1:A:26:HIS:ND1 | 1:A:31:ASN:N | 2.50 | 0.59 |
| 1:B:26:HIS:ND1 | 1:B:31:ASN:N | 2.50 | 0.59 |
| 1:A:3:VAL:CA | 1:A:3:VAL:CB | 2.81 | 0.59 |
| 1:A:5:LYS:CG | 1:A:5:LYS:CE | 2.74 | 0.59 |
| 1:B:3:VAL:CA | 1:B:3:VAL:CB | 2.81 | 0.59 |
| 1:B:5:LYS:CG | 1:B:5:LYS:CE | 2.74 | 0.59 |
| 1:A:7:LYS:CB | 1:A:97:TYR:CE2 | 2.86 | 0.58 |
| 1:A:66:GLU:HB2 | 1:A:74:TYR:OH | 2.02 | 0.58 |
| 1:B:7:LYS:CB | 1:B:97:TYR:CE2 | 2.86 | 0.58 |
| 1:B:66:GLU:HB2 | 1:B:74:TYR:OH | 2.02 | 0.58 |
| 1:A:57:ILE:CG1 | 1:A:58:VAL:H | 2.13 | 0.58 |
| 1:B:57:ILE:CG1 | 1:B:58:VAL:H | 2.13 | 0.58 |
| 1:A:81:ILE:O | 1:A:82:PHE:HA | 2.03 | 0.58 |
| 1:B:81:ILE:O | 1:B:82:PHE:HA | 2.03 | 0.58 |
| 1:A:43:ALA:O | 1:A:44:GLU:HB2 | 2.03 | 0.58 |
| 1:B:43:ALA:O | 1:B:44:GLU:HB2 | 2.03 | 0.58 |
| 1:A:70:ASN:HD21 | 1:A:72:LYS:CB | 2.10 | 0.58 |
| 1:B:70:ASN:HD21 | 1:B:72:LYS:CB | 2.10 | 0.58 |
| 1:A:11:VAL:O | 1:A:15:ALA:HB3 | 2.04 | 0.58 |
| 1:A:48:TYR:OH | 1:A:78:THR:CA | 2.49 | 0.58 |
| 1:B:11:VAL:O | 1:B:15:ALA:HB3 | 2.04 | 0.58 |
| 1:B:48:TYR:OH | 1:B:78:THR:CA | 2.49 | 0.58 |
| 1:A:63:THR:CA | 1:A:66:GLU:HB2 | 2.31 | 0.57 |
| 1:B:63:THR:CA | 1:B:66:GLU:HB2 | 2.31 | 0.57 |
| 1:A:38:ARG:O | 1:A:59:TRP:N | 2.37 | 0.57 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:B:38:ARG:O | 1:B:59:TRP:N | 2.37 | 0.57 |
| 1:A:40:THR:HG23 | 1:A:57:ILE:HG13 | 1.85 | 0.57 |
| 1:A:56:GLY:C | 1:A:57:ILE:HG23 | 2.23 | 0.57 |
| 1:B:40:THR:HG23 | 1:B:57:ILE:HG13 | 1.85 | 0.57 |
| 1:B:56:GLY:C | 1:B:57:ILE:HG23 | 2.23 | 0.57 |
| 1:A:86:LYS:CD | 1:A:86:LYS:NZ | 2.67 | 0.57 |
| 1:A:92:GLN:N | 1:A:92:GLN:C | 2.56 | 0.57 |
| 1:B:86:LYS:CD | 1:B:86:LYS:NZ | 2.67 | 0.57 |
| 1:B:92:GLN:N | 1:B:92:GLN:C | 2.56 | 0.57 |
| 1:A:66:GLU:CG | 1:A:74:TYR:CE2 | 2.74 | 0.56 |
| 1:B:66:GLU:CG | 1:B:74:TYR:CE2 | 2.74 | 0.56 |
| 1:A:26:HIS:C | 1:A:27:LYS:CG | 2.67 | 0.56 |
| 1:B:26:HIS:C | 1:B:27:LYS:CG | 2.67 | 0.56 |
| 1:A:93:ASP:O | 1:A:94:LEU:C | 2.40 | 0.56 |
| 1:B:93:ASP:O | 1:B:94:LEU:C | 2.40 | 0.56 |
| 1:A:11:VAL:CA | 1:A:15:ALA:CB | 2.72 | 0.55 |
| 1:B:11:VAL:CA | 1:B:15:ALA:CB | 2.72 | 0.55 |
| 1:A:26:HIS:CA | 1:A:26:HIS:ND1 | 2.70 | 0.55 |
| 1:B:26:HIS:CA | 1:B:26:HIS:ND1 | 2.70 | 0.55 |
| 1:A:47:SER:CB | 1:A:47:SER:HG | 2.12 | 0.54 |
| 1:B:47:SER:CB | 1:B:47:SER:HG | 2.12 | 0.54 |
| 1:A:51:ALA:N | 1:A:54:SER:HB2 | 2.23 | 0.54 |
| 1:B:51:ALA:N | 1:B:54:SER:HB2 | 2.23 | 0.54 |
| 1:A:51:ALA:O | 1:A:53:LYS:N | 2.41 | 0.54 |
| 1:B:51:ALA:O | 1:B:53:LYS:N | 2.41 | 0.54 |
| 1:A:26:HIS:O | 1:A:27:LYS:HB3 | 2.04 | 0.54 |
| 1:B:26:HIS:O | 1:B:27:LYS:HB3 | 2.04 | 0.54 |
| 1:A:32:LEU:CD1 | 2:A:104:HEC:HMA3 | 2.37 | 0.54 |
| 1:B:32:LEU:CD1 | 2:B:104:HEC:HMA3 | 2.37 | 0.54 |
| 1:A:59:TRP:HE3 | 1:A:59:TRP:HA | 1.69 | 0.54 |
| 1:B:59:TRP:HE3 | 1:B:59:TRP:HA | 1.69 | 0.54 |
| 1:A:6:GLY:O | 1:A:7:LYS:C | 2.45 | 0.54 |
| 1:B:6:GLY:O | 1:B:7:LYS:C | 2.45 | 0.54 |
| 1:A:50:ASP:C | 1:A:54:SER:HB2 | 2.28 | 0.53 |
| 1:A:80:MET:CB | 2:A:104:HEC:C1D | 2.79 | 0.53 |
| 1:B:50:ASP:C | 1:B:54:SER:HB2 | 2.28 | 0.53 |
| 1:B:80:MET:CB | 2:B:104:HEC:C1D | 2.79 | 0.53 |
| 1:A:98:LEU:N | 1:A:98:LEU:CG | 2.71 | 0.53 |
| 1:B:98:LEU:N | 1:B:98:LEU:CG | 2.71 | 0.53 |
| 1:A:63:THR:CG2 | 1:A:64:LEU:N | 2.60 | 0.53 |
| 1:B:63:THR:CG2 | 1:B:64:LEU:N | 2.60 | 0.53 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:A:63:THR:OG1 | 1:A:74:TYR:OH | 2.20 | 0.53 |
| 1:A:86:LYS:CE | 1:B:103:SER:HG | 2.19 | 0.53 |
| 1:B:63:THR:OG1 | 1:B:74:TYR:OH | 2.20 | 0.53 |
| 1:A:86:LYS:HZ1 | 1:B:103:SER:H | 1.57 | 0.53 |
| 1:A:26:HIS:CG | 1:A:30:PRO:HA | 2.45 | 0.52 |
| 1:B:26:HIS:CG | 1:B:30:PRO:HA | 2.45 | 0.52 |
| 1:A:94:LEU:O | 1:A:97:TYR:N | 2.41 | 0.52 |
| 1:B:94:LEU:O | 1:B:97:TYR:N | 2.41 | 0.52 |
| 1:A:55:LYS:HZ2 | 1:A:74:TYR:HA | 1.75 | 0.52 |
| 1:B:55:LYS:HZ2 | 1:B:74:TYR:HA | 1.75 | 0.52 |
| 1:A:17:CYS:CB | 1:A:17:CYS:C | 2.72 | 0.52 |
| 1:B:17:CYS:CB | 1:B:17:CYS:C | 2.72 | 0.52 |
| 1:A:46:TYR:HB2 | 1:A:46:TYR:HD1 | 1.59 | 0.52 |
| 1:B:46:TYR:HB2 | 1:B:46:TYR:HD1 | 1.59 | 0.52 |
| 1:A:32:LEU:HD13 | 1:A:35:LEU:CD2 | 2.39 | 0.52 |
| 1:A:86:LYS:HZ1 | 1:B:103:SER:N | 2.06 | 0.52 |
| 1:B:32:LEU:HD13 | 1:B:35:LEU:CD2 | 2.39 | 0.52 |
| 1:A:91:ARG:N | 1:A:91:ARG:CB | 2.63 | 0.52 |
| 1:B:91:ARG:N | 1:B:91:ARG:CB | 2.63 | 0.52 |
| 1:A:46:TYR:O | 1:A:47:SER:HB3 | 2.10 | 0.52 |
| 1:A:86:LYS:CE | 1:A:86:LYS:CG | 2.86 | 0.52 |
| 1:B:46:TYR:O | 1:B:47:SER:HB3 | 2.10 | 0.52 |
| 1:B:86:LYS:CE | 1:B:86:LYS:CG | 2.86 | 0.52 |
| 1:A:91:ARG:O | 1:A:92:GLN:C | 2.49 | 0.51 |
| 1:B:91:ARG:O | 1:B:92:GLN:C | 2.49 | 0.51 |
| 1:A:30:PRO:O | 1:A:31:ASN:C | 2.48 | 0.51 |
| 1:A:48:TYR:OH | 1:A:51:ALA:CB | 2.59 | 0.51 |
| 1:A:50:ASP:HB3 | 1:A:54:SER:HB2 | 1.90 | 0.51 |
| 1:B:30:PRO:O | 1:B:31:ASN:C | 2.48 | 0.51 |
| 1:B:48:TYR:OH | 1:B:51:ALA:CB | 2.59 | 0.51 |
| 1:B:50:ASP:HB3 | 1:B:54:SER:HB2 | 1.90 | 0.51 |
| 1:A:54:SER:O | 1:A:55:LYS:C | 2.50 | 0.51 |
| 1:B:54:SER:O | 1:B:55:LYS:C | 2.50 | 0.51 |
| 1:A:32:LEU:CD1 | 1:A:35:LEU:HD21 | 2.40 | 0.50 |
| 1:B:32:LEU:CD1 | 1:B:35:LEU:HD21 | 2.40 | 0.50 |
| 1:A:3:VAL:HG23 | 1:A:3:VAL:N | 2.26 | 0.50 |
| 1:A:101:ALA:N | 1:A:101:ALA:C | 2.59 | 0.50 |
| 1:B:3:VAL:HG23 | 1:B:3:VAL:N | 2.26 | 0.50 |
| 1:B:101:ALA:N | 1:B:101:ALA:C | 2.59 | 0.50 |
| 1:A:70:ASN:ND2 | 1:A:72:LYS:CB | 2.70 | 0.50 |
| 1:B:70:ASN:ND2 | 1:B:72:LYS:CB | 2.70 | 0.50 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:A:49:THR:CB | 1:A:49:THR:C | 2.60 | 0.50 |
| 1:A:96:ALA:O | 1:A:97:TYR:C | 2.50 | 0.50 |
| 1:B:49:THR:CB | 1:B:49:THR:C | 2.60 | 0.50 |
| 1:B:96:ALA:O | 1:B:97:TYR:C | 2.50 | 0.50 |
| 1:A:32:LEU:HD11 | 2:A:104:HEC:CMA | 2.41 | 0.50 |
| 1:B:32:LEU:HD11 | 2:B:104:HEC:CMA | 2.41 | 0.50 |
| 1:A:10:PHE:CD2 | 1:A:14:CYS:HB2 | 2.47 | 0.49 |
| 1:B:10:PHE:CD2 | 1:B:14:CYS:HB2 | 2.47 | 0.49 |
| 1:A:3:VAL:C | 1:A:3:VAL:N | 2.61 | 0.49 |
| 1:B:3:VAL:C | 1:B:3:VAL:N | 2.61 | 0.49 |
| 1:A:19:THR:HG21 | 1:A:25:LYS:HE2 | 1.94 | 0.49 |
| 1:B:19:THR:HG21 | 1:B:25:LYS:HE2 | 1.94 | 0.49 |
| 1:A:50:ASP:CB | 1:A:54:SER:HB2 | 2.42 | 0.49 |
| 1:B:50:ASP:CB | 1:B:54:SER:HB2 | 2.42 | 0.49 |
| 1:A:17:CYS:O | 1:A:18:HIS:CA | 2.61 | 0.49 |
| 1:A:24:GLY:N | 1:A:24:GLY:C | 2.63 | 0.49 |
| 1:B:17:CYS:O | 1:B:18:HIS:CA | 2.61 | 0.49 |
| 1:B:24:GLY:N | 1:B:24:GLY:C | 2.63 | 0.49 |
| 1:A:32:LEU:HD11 | 2:A:104:HEC:C2A | 2.43 | 0.48 |
| 1:A:83:ALA:CB | 1:A:84:GLY:N | 2.75 | 0.48 |
| 1:B:32:LEU:HD11 | 2:B:104:HEC:C2A | 2.43 | 0.48 |
| 1:B:83:ALA:CB | 1:B:84:GLY:N | 2.75 | 0.48 |
| 1:A:57:ILE:O | 1:A:58:VAL:CB | 2.51 | 0.48 |
| 1:B:57:ILE:O | 1:B:58:VAL:CB | 2.51 | 0.48 |
| 1:A:70:ASN:ND2 | 1:A:70:ASN:C | 2.68 | 0.47 |
| 1:A:79:LYS:HE2 | 2:A:104:HEC:CBD | 2.45 | 0.47 |
| 1:B:70:ASN:ND2 | 1:B:70:ASN:C | 2.68 | 0.47 |
| 1:B:79:LYS:HE2 | 2:B:104:HEC:CBD | 2.45 | 0.47 |
| 1:A:49:THR:CA | 1:A:49:THR:OG1 | 2.53 | 0.47 |
| 1:B:49:THR:CA | 1:B:49:THR:OG1 | 2.53 | 0.47 |
| 1:A:48:TYR:OH | 1:A:79:LYS:N | 2.48 | 0.47 |
| 1:B:48:TYR:OH | 1:B:79:LYS:N | 2.48 | 0.47 |
| 1:A:9:THR:HG21 | 1:A:94:LEU:HD22 | 1.96 | 0.47 |
| 1:B:9:THR:HG21 | 1:B:94:LEU:HD22 | 1.96 | 0.47 |
| 1:A:94:LEU:O | 1:A:95:VAL:C | 2.53 | 0.46 |
| 1:B:94:LEU:O | 1:B:95:VAL:C | 2.53 | 0.46 |
| 1:A:39:LYS:HA | 1:A:58:VAL:HA | 1.97 | 0.46 |
| 1:B:39:LYS:HA | 1:B:58:VAL:HA | 1.97 | 0.46 |
| 1:A:10:PHE:CD2 | 1:A:14:CYS:CB | 2.98 | 0.46 |
| 1:B:10:PHE:CD2 | 1:B:14:CYS:CB | 2.98 | 0.46 |
| 1:A:44:GLU:CD | 1:A:44:GLU:HA | 2.35 | 0.46 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:A:92:GLN:O | 1:A:93:ASP:C | 2.50 | 0.46 |
| 1:B:44:GLU:CD | 1:B:44:GLU:HA | 2.35 | 0.46 |
| 1:B:92:GLN:O | 1:B:93:ASP:C | 2.50 | 0.46 |
| 1:A:86:LYS:CE | 1:B:103:SER:HB3 | 0.21 | 0.45 |
| 1:A:85:ILE:HD12 | 1:A:94:LEU:HD23 | 1.97 | 0.45 |
| 1:B:85:ILE:HD12 | 1:B:94:LEU:HD23 | 1.97 | 0.45 |
| 1:A:79:LYS:HE2 | 2:A:104:HEC:HBD1 | 1.98 | 0.45 |
| 1:B:79:LYS:HE2 | 2:B:104:HEC:HBD1 | 1.98 | 0.45 |
| 1:A:25:LYS:O | 1:A:26:HIS:O | 2.35 | 0.45 |
| 1:A:31:ASN:O | 1:A:32:LEU:CA | 2.63 | 0.45 |
| 1:B:25:LYS:O | 1:B:26:HIS:O | 2.35 | 0.45 |
| 1:B:31:ASN:O | 1:B:32:LEU:CA | 2.63 | 0.45 |
| 1:A:10:PHE:CE2 | 1:A:14:CYS:HB3 | 2.52 | 0.45 |
| 1:A:31:ASN:HB3 | 1:A:33:TRP:CD1 | 2.51 | 0.45 |
| 1:A:66:GLU:OE2 | 1:A:74:TYR:CE2 | 2.69 | 0.45 |
| 1:B:10:PHE:CE2 | 1:B:14:CYS:HB3 | 2.52 | 0.45 |
| 1:B:31:ASN:HB3 | 1:B:33:TRP:CD1 | 2.51 | 0.45 |
| 1:B:66:GLU:OE2 | 1:B:74:TYR:CE2 | 2.69 | 0.45 |
| 1:A:66:GLU:CD | 1:A:74:TYR:CE2 | 2.85 | 0.45 |
| 1:B:66:GLU:CD | 1:B:74:TYR:CE2 | 2.85 | 0.45 |
| 1:A:36:PHE:HE1 | 1:A:99:LYS:CA | 2.31 | 0.44 |
| 1:A:70:ASN:O | 1:A:72:LYS:N | 2.50 | 0.44 |
| 1:B:36:PHE:HE1 | 1:B:99:LYS:CA | 2.31 | 0.44 |
| 1:B:70:ASN:O | 1:B:72:LYS:N | 2.50 | 0.44 |
| 1:A:43:ALA:O | 1:A:44:GLU:HB3 | 2.14 | 0.44 |
| 1:A:92:GLN:HG2 | 1:A:93:ASP:N | 2.32 | 0.44 |
| 1:B:43:ALA:O | 1:B:44:GLU:HB3 | 2.14 | 0.44 |
| 1:B:92:GLN:HG2 | 1:B:93:ASP:N | 2.32 | 0.44 |
| 1:A:12:GLN:C | 1:A:13:LYS:HG2 | 2.19 | 0.44 |
| 1:A:53:LYS:O | 1:A:56:GLY:N | 2.50 | 0.44 |
| 1:B:12:GLN:C | 1:B:13:LYS:HG2 | 2.19 | 0.44 |
| 1:B:53:LYS:O | 1:B:56:GLY:N | 2.50 | 0.44 |
| 1:A:80:MET:HB2 | 2:A:104:HEC:C2D | 2.41 | 0.44 |
| 1:B:80:MET:HB2 | 2:B:104:HEC:C2D | 2.41 | 0.44 |
| 1:A:9:THR:CG2 | 1:A:94:LEU:HD22 | 2.48 | 0.43 |
| 1:A:70:ASN:HA | 1:A:71:PRO:HD3 | 1.66 | 0.43 |
| 1:B:9:THR:CG2 | 1:B:94:LEU:HD22 | 2.48 | 0.43 |
| 1:B:70:ASN:HA | 1:B:71:PRO:HD3 | 1.66 | 0.43 |
| 1:A:32:LEU:HD11 | 2:A:104:HEC:HMA3 | 2.01 | 0.43 |
| 1:A:32:LEU:CD1 | 2:A:104:HEC:CMA | 2.96 | 0.43 |
| 1:B:32:LEU:HD11 | 2:B:104:HEC:HMA3 | 2.01 | 0.43 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|------------------|--------------------------|-------------------|
| 1:B:32:LEU:CD1 | 2:B:104:HEC:CMA | 2.96 | 0.43 |
| 1:A:15:ALA:O | 1:A:16:GLN:CA | 2.63 | 0.43 |
| 1:A:44:GLU:OE2 | 1:A:44:GLU:CA | 2.66 | 0.43 |
| 1:B:15:ALA:O | 1:B:16:GLN:CA | 2.63 | 0.43 |
| 1:B:44:GLU:OE2 | 1:B:44:GLU:CA | 2.66 | 0.43 |
| 1:A:32:LEU:CD2 | 2:A:104:HEC:HBA1 | 2.49 | 0.43 |
| 1:A:94:LEU:HA | 1:A:94:LEU:HD13 | 1.54 | 0.43 |
| 1:B:32:LEU:CD2 | 2:B:104:HEC:HBA1 | 2.49 | 0.43 |
| 1:B:94:LEU:HA | 1:B:94:LEU:HD13 | 1.54 | 0.43 |
| 1:A:6:GLY:HA3 | 1:A:97:TYR:HB2 | 2.00 | 0.43 |
| 1:A:98:LEU:CA | 1:A:99:LYS:N | 2.64 | 0.43 |
| 1:B:6:GLY:HA3 | 1:B:97:TYR:HB2 | 2.00 | 0.43 |
| 1:B:98:LEU:CA | 1:B:99:LYS:N | 2.64 | 0.43 |
| 1:A:59:TRP:N | 1:A:59:TRP:HA | 2.07 | 0.43 |
| 1:B:59:TRP:N | 1:B:59:TRP:HA | 2.07 | 0.43 |
| 1:A:14:CYS:SG | 2:A:104:HEC:CMB | 3.00 | 0.43 |
| 1:B:14:CYS:SG | 2:B:104:HEC:CMB | 3.00 | 0.43 |
| 1:A:44:GLU:CD | 1:A:44:GLU:CA | 2.87 | 0.43 |
| 1:B:44:GLU:CD | 1:B:44:GLU:CA | 2.87 | 0.43 |
| 1:A:65:MET:HE3 | 1:A:92:GLN:N | 2.34 | 0.43 |
| 1:A:68:LEU:CD1 | 1:A:94:LEU:HB3 | 2.48 | 0.43 |
| 1:B:65:MET:HE3 | 1:B:92:GLN:N | 2.34 | 0.43 |
| 1:B:68:LEU:CD1 | 1:B:94:LEU:HB3 | 2.48 | 0.43 |
| 1:A:18:HIS:N | 1:A:18:HIS:CG | 2.87 | 0.42 |
| 1:B:18:HIS:N | 1:B:18:HIS:CG | 2.87 | 0.42 |
| 1:A:90:GLU:O | 1:A:91:ARG:CA | 2.66 | 0.42 |
| 1:B:90:GLU:O | 1:B:91:ARG:CA | 2.66 | 0.42 |
| 1:A:48:TYR:HH | 1:A:78:THR:HA | 1.80 | 0.42 |
| 1:A:65:MET:O | 1:A:66:GLU:C | 2.55 | 0.42 |
| 1:B:48:TYR:HH | 1:B:78:THR:HA | 1.80 | 0.42 |
| 1:B:65:MET:O | 1:B:66:GLU:C | 2.55 | 0.42 |
| 1:A:98:LEU:C | 1:A:98:LEU:N | 2.71 | 0.42 |
| 1:B:98:LEU:C | 1:B:98:LEU:N | 2.71 | 0.42 |
| 1:A:17:CYS:HB3 | 1:A:18:HIS:H | 1.84 | 0.42 |
| 1:A:86:LYS:NZ | 1:B:102:THR:CG2 | 2.59 | 0.42 |
| 1:B:17:CYS:HB3 | 1:B:18:HIS:H | 1.84 | 0.42 |
| 1:A:74:TYR:O | 1:A:75:ILE:C | 2.56 | 0.42 |
| 1:A:83:ALA:CB | 1:A:83:ALA:N | 2.71 | 0.42 |
| 1:B:74:TYR:O | 1:B:75:ILE:C | 2.56 | 0.42 |
| 1:B:83:ALA:CB | 1:B:83:ALA:N | 2.71 | 0.42 |
| 1:A:21:GLU:HB3 | 1:A:22:ASN:H | 1.72 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:B:21:GLU:HB3 | 1:B:22:ASN:H | 1.72 | 0.41 |
| 1:A:38:ARG:HH12 | 1:A:43:ALA:CB | 2.30 | 0.41 |
| 1:A:72:LYS:NZ | 1:A:72:LYS:CD | 2.72 | 0.41 |
| 1:B:38:ARG:HH12 | 1:B:43:ALA:CB | 2.30 | 0.41 |
| 1:B:72:LYS:NZ | 1:B:72:LYS:CD | 2.72 | 0.41 |
| 1:A:12:GLN:CG | 1:A:12:GLN:OE1 | 2.69 | 0.41 |
| 1:B:12:GLN:CG | 1:B:12:GLN:OE1 | 2.69 | 0.41 |
| 1:A:53:LYS:O | 1:A:54:SER:C | 2.59 | 0.41 |
| 1:B:53:LYS:O | 1:B:54:SER:C | 2.59 | 0.41 |
| 1:A:17:CYS:CB | 1:A:18:HIS:N | 2.84 | 0.40 |
| 1:A:32:LEU:HD21 | 2:A:104:HEC:HBA1 | 2.04 | 0.40 |
| 1:A:91:ARG:C | 1:A:92:GLN:C | 2.80 | 0.40 |
| 1:B:17:CYS:CB | 1:B:18:HIS:N | 2.84 | 0.40 |
| 1:B:32:LEU:HD21 | 2:B:104:HEC:HBA1 | 2.04 | 0.40 |
| 1:B:91:ARG:C | 1:B:92:GLN:C | 2.80 | 0.40 |
| 1:A:55:LYS:NZ | 1:A:74:TYR:HA | 2.37 | 0.40 |
| 1:A:64:LEU:O | 1:A:68:LEU:CB | 2.57 | 0.40 |
| 1:B:55:LYS:NZ | 1:B:74:TYR:HA | 2.37 | 0.40 |
| 1:B:64:LEU:O | 1:B:68:LEU:CB | 2.57 | 0.40 |
| 1:A:59:TRP:HA | 1:A:63:THR:HG21 | 2.04 | 0.40 |
| 1:B:59:TRP:HA | 1:B:63:THR:HG21 | 2.04 | 0.40 |

All (54) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------------|--------------------------|-------------------|
| 1:A:88:LYS:CE | 1:B:88:LYS:CD[4_455] | 0.41 | 1.79 |
| 1:A:88:LYS:CD | 1:B:88:LYS:CE[4_455] | 0.41 | 1.79 |
| 1:A:16:GLN:OE1 | 1:A:47:SER:OG[2_454] | 0.69 | 1.51 |
| 1:B:16:GLN:OE1 | 1:B:47:SER:OG[2_554] | 0.69 | 1.51 |
| 1:A:103:SER:CB | 1:B:86:LYS:CE[1_455] | 0.77 | 1.43 |
| 1:A:55:LYS:O | 1:B:62:ASN:CG[4_456] | 0.79 | 1.41 |
| 1:A:62:ASN:CG | 1:B:55:LYS:O[4_456] | 0.79 | 1.41 |
| 1:A:88:LYS:CG | 1:B:88:LYS:NZ[4_455] | 0.90 | 1.30 |
| 1:A:88:LYS:NZ | 1:B:88:LYS:CG[4_455] | 0.90 | 1.30 |
| 1:A:55:LYS:O | 1:B:62:ASN:ND2[4_456] | 0.91 | 1.29 |
| 1:A:62:ASN:ND2 | 1:B:55:LYS:O[4_456] | 0.91 | 1.29 |
| 1:A:55:LYS:C | 1:B:62:ASN:ND2[4_456] | 0.98 | 1.22 |
| 1:A:62:ASN:ND2 | 1:B:55:LYS:C[4_456] | 0.98 | 1.22 |
| 1:A:88:LYS:CE | 1:B:88:LYS:CE[4_455] | 1.11 | 1.09 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------------|--------------------------|-------------------|
| 1:A:88:LYS:CD | 1:B:88:LYS:NZ[4_455] | 1.18 | 1.02 |
| 1:A:88:LYS:NZ | 1:B:88:LYS:CD[4_455] | 1.18 | 1.02 |
| 1:A:88:LYS:CD | 1:B:88:LYS:CD[4_455] | 1.24 | 0.96 |
| 1:A:92:GLN:CB | 1:B:92:GLN:NE2[4_455] | 1.27 | 0.93 |
| 1:A:92:GLN:NE2 | 1:B:92:GLN:CB[4_455] | 1.27 | 0.93 |
| 1:A:73:LYS:CE | 1:B:73:LYS:NZ[4_456] | 1.38 | 0.82 |
| 1:A:73:LYS:NZ | 1:B:73:LYS:CE[4_456] | 1.38 | 0.82 |
| 1:A:16:GLN:OE1 | 1:A:47:SER:CB[2_454] | 1.43 | 0.77 |
| 1:B:16:GLN:OE1 | 1:B:47:SER:CB[2_554] | 1.43 | 0.77 |
| 1:A:73:LYS:CE | 1:B:73:LYS:CE[4_456] | 1.53 | 0.67 |
| 1:A:55:LYS:O | 1:B:62:ASN:CB[4_456] | 1.67 | 0.53 |
| 1:A:62:ASN:CB | 1:B:55:LYS:O[4_456] | 1.67 | 0.53 |
| 1:A:55:LYS:C | 1:B:62:ASN:CG[4_456] | 1.68 | 0.52 |
| 1:A:62:ASN:CG | 1:B:55:LYS:C[4_456] | 1.68 | 0.52 |
| 1:A:16:GLN:CD | 1:A:47:SER:OG[2_454] | 1.70 | 0.50 |
| 1:B:16:GLN:CD | 1:B:47:SER:OG[2_554] | 1.70 | 0.50 |
| 1:A:73:LYS:NZ | 1:B:73:LYS:NZ[4_456] | 1.72 | 0.48 |
| 1:A:88:LYS:CG | 1:B:88:LYS:CE[4_455] | 1.72 | 0.48 |
| 1:A:88:LYS:CE | 1:B:88:LYS:CG[4_455] | 1.72 | 0.48 |
| 1:A:58:VAL:CG1 | 1:B:58:VAL:CG1[4_456] | 1.79 | 0.41 |
| 1:A:11:VAL:O | 1:A:79:LYS:NZ[2_454] | 1.86 | 0.34 |
| 1:B:11:VAL:O | 1:B:79:LYS:NZ[2_554] | 1.86 | 0.34 |
| 1:A:16:GLN:CG | 1:A:47:SER:C[2_454] | 1.89 | 0.31 |
| 1:B:16:GLN:CG | 1:B:47:SER:C[2_554] | 1.89 | 0.31 |
| 1:A:103:SER:CB | 1:B:86:LYS:NZ[1_455] | 1.91 | 0.29 |
| 1:A:56:GLY:N | 1:B:62:ASN:ND2[4_456] | 1.94 | 0.26 |
| 1:A:62:ASN:ND2 | 1:B:56:GLY:N[4_456] | 1.94 | 0.26 |
| 1:A:103:SER:OG | 1:B:86:LYS:CE[1_455] | 1.97 | 0.23 |
| 1:A:103:SER:CA | 1:B:86:LYS:CE[1_455] | 2.01 | 0.19 |
| 1:A:55:LYS:CA | 1:B:62:ASN:ND2[4_456] | 2.03 | 0.17 |
| 1:A:62:ASN:ND2 | 1:B:55:LYS:CA[4_456] | 2.03 | 0.17 |
| 1:A:92:GLN:CG | 1:B:92:GLN:NE2[4_455] | 2.04 | 0.16 |
| 1:A:92:GLN:NE2 | 1:B:92:GLN:CG[4_455] | 2.04 | 0.16 |
| 1:A:103:SER:OG | 1:B:86:LYS:NZ[1_455] | 2.04 | 0.16 |
| 1:A:16:GLN:CG | 1:A:48:TYR:CB[2_454] | 2.06 | 0.14 |
| 1:B:16:GLN:CG | 1:B:48:TYR:CB[2_554] | 2.06 | 0.14 |
| 1:A:88:LYS:CE | 1:B:88:LYS:NZ[4_455] | 2.10 | 0.10 |
| 1:A:88:LYS:NZ | 1:B:88:LYS:CE[4_455] | 2.10 | 0.10 |
| 1:A:16:GLN:CB | 1:A:48:TYR:CB[2_454] | 2.15 | 0.05 |
| 1:B:16:GLN:CB | 1:B:48:TYR:CB[2_554] | 2.15 | 0.05 |

5.3 Torsion angles [i](#)

5.3.1 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 X-ray entries followed by that with respect to entries of similar resolution.

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 | 101/103 (98%) | 42 (42%) | 21 (21%) | 38 (38%) | 0 | 0 |
| 1 | B | 101/103 (98%) | 42 (42%) | 21 (21%) | 38 (38%) | 0 | 0 |
| All | All | 202/206 (98%) | 84 (42%) | 42 (21%) | 76 (38%) | 0 | 0 |

All (76) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 15 | ALA |
| 1 | A | 18 | HIS |
| 1 | A | 20 | VAL |
| 1 | A | 24 | GLY |
| 1 | A | 25 | LYS |
| 1 | A | 27 | LYS |
| 1 | A | 28 | VAL |
| 1 | A | 30 | PRO |
| 1 | A | 33 | TRP |
| 1 | A | 42 | GLN |
| 1 | A | 44 | GLU |
| 1 | A | 47 | SER |
| 1 | A | 48 | TYR |
| 1 | A | 53 | LYS |
| 1 | A | 55 | LYS |
| 1 | A | 56 | GLY |
| 1 | A | 57 | ILE |
| 1 | A | 62 | ASN |
| 1 | A | 63 | THR |
| 1 | A | 69 | GLU |
| 1 | A | 74 | TYR |
| 1 | B | 15 | ALA |
| 1 | B | 18 | HIS |
| 1 | B | 20 | VAL |
| 1 | B | 24 | GLY |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | B | 25 | LYS |
| 1 | B | 27 | LYS |
| 1 | B | 28 | VAL |
| 1 | B | 30 | PRO |
| 1 | B | 33 | TRP |
| 1 | B | 42 | GLN |
| 1 | B | 44 | GLU |
| 1 | B | 47 | SER |
| 1 | B | 48 | TYR |
| 1 | B | 53 | LYS |
| 1 | B | 55 | LYS |
| 1 | B | 56 | GLY |
| 1 | B | 57 | ILE |
| 1 | B | 62 | ASN |
| 1 | B | 63 | THR |
| 1 | B | 69 | GLU |
| 1 | B | 74 | TYR |
| 1 | A | 35 | LEU |
| 1 | A | 36 | PHE |
| 1 | A | 51 | ALA |
| 1 | A | 52 | ASN |
| 1 | A | 54 | SER |
| 1 | A | 73 | LYS |
| 1 | A | 85 | ILE |
| 1 | B | 35 | LEU |
| 1 | B | 36 | PHE |
| 1 | B | 51 | ALA |
| 1 | B | 52 | ASN |
| 1 | B | 54 | SER |
| 1 | B | 73 | LYS |
| 1 | B | 85 | ILE |
| 1 | A | 26 | HIS |
| 1 | A | 89 | GLY |
| 1 | B | 26 | HIS |
| 1 | B | 89 | GLY |
| 1 | A | 61 | GLU |
| 1 | A | 88 | LYS |
| 1 | B | 61 | GLU |
| 1 | B | 88 | LYS |
| 1 | A | 83 | ALA |
| 1 | A | 92 | GLN |
| 1 | B | 83 | ALA |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | B | 92 | GLN |
| 1 | A | 81 | ILE |
| 1 | A | 94 | LEU |
| 1 | B | 81 | ILE |
| 1 | B | 94 | LEU |
| 1 | A | 58 | VAL |
| 1 | B | 58 | VAL |
| 1 | A | 75 | ILE |
| 1 | B | 75 | ILE |

5.3.2 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 X-ray entries followed by that with respect to entries of similar resolution.

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 | 81/83 (98%) | 49 (60%) | 32 (40%) | 0 0 |
| 1 | B | 81/83 (98%) | 49 (60%) | 32 (40%) | 0 0 |
| All | All | 162/166 (98%) | 98 (60%) | 64 (40%) | 0 0 |

All (64) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 9 | THR |
| 1 | A | 11 | VAL |
| 1 | A | 13 | LYS |
| 1 | A | 16 | GLN |
| 1 | A | 17 | CYS |
| 1 | A | 20 | VAL |
| 1 | A | 21 | GLU |
| 1 | A | 27 | LYS |
| 1 | A | 28 | VAL |
| 1 | A | 32 | LEU |
| 1 | A | 33 | TRP |
| 1 | A | 38 | ARG |
| 1 | A | 40 | THR |
| 1 | A | 42 | GLN |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 46 | TYR |
| 1 | A | 50 | ASP |
| 1 | A | 57 | ILE |
| 1 | A | 61 | GLU |
| 1 | A | 63 | THR |
| 1 | A | 64 | LEU |
| 1 | A | 65 | MET |
| 1 | A | 70 | ASN |
| 1 | A | 75 | ILE |
| 1 | A | 78 | THR |
| 1 | A | 80 | MET |
| 1 | A | 81 | ILE |
| 1 | A | 85 | ILE |
| 1 | A | 86 | LYS |
| 1 | A | 88 | LYS |
| 1 | A | 92 | GLN |
| 1 | A | 94 | LEU |
| 1 | A | 102 | THR |
| 1 | B | 9 | THR |
| 1 | B | 11 | VAL |
| 1 | B | 13 | LYS |
| 1 | B | 16 | GLN |
| 1 | B | 17 | CYS |
| 1 | B | 20 | VAL |
| 1 | B | 21 | GLU |
| 1 | B | 27 | LYS |
| 1 | B | 28 | VAL |
| 1 | B | 32 | LEU |
| 1 | B | 33 | TRP |
| 1 | B | 38 | ARG |
| 1 | B | 40 | THR |
| 1 | B | 42 | GLN |
| 1 | B | 46 | TYR |
| 1 | B | 50 | ASP |
| 1 | B | 57 | ILE |
| 1 | B | 61 | GLU |
| 1 | B | 63 | THR |
| 1 | B | 64 | LEU |
| 1 | B | 65 | MET |
| 1 | B | 70 | ASN |
| 1 | B | 75 | ILE |
| 1 | B | 78 | THR |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | B | 80 | MET |
| 1 | B | 81 | ILE |
| 1 | B | 85 | ILE |
| 1 | B | 86 | LYS |
| 1 | B | 88 | LYS |
| 1 | B | 92 | GLN |
| 1 | B | 94 | LEU |
| 1 | B | 102 | THR |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 12 | GLN |
| 1 | A | 16 | GLN |
| 1 | A | 31 | ASN |
| 1 | A | 42 | GLN |
| 1 | A | 52 | ASN |
| 1 | A | 70 | ASN |
| 1 | B | 12 | GLN |
| 1 | B | 16 | GLN |
| 1 | B | 31 | ASN |
| 1 | B | 42 | GLN |
| 1 | B | 52 | ASN |
| 1 | B | 70 | ASN |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry

2 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or 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 length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 2 | HEC | B | 104 | 1 | 26,50,50 | 7.07 | 19 (73%) | 18,82,82 | 5.79 | 10 (55%) |
| 2 | HEC | A | 104 | 1 | 26,50,50 | 7.07 | 19 (73%) | 18,82,82 | 5.79 | 10 (55%) |

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 |
|-----|------|-------|-----|------|---------|-----------|-------|
| 2 | HEC | B | 104 | 1 | - | 4/6/54/54 | - |
| 2 | HEC | A | 104 | 1 | - | 4/6/54/54 | - |

All (38) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 2 | A | 104 | HEC | C3C-C2C | -18.47 | 1.21 | 1.40 |
| 2 | B | 104 | HEC | C3C-C2C | -18.47 | 1.21 | 1.40 |
| 2 | A | 104 | HEC | C3B-C4B | -14.84 | 1.16 | 1.43 |
| 2 | B | 104 | HEC | C3B-C4B | -14.84 | 1.16 | 1.43 |
| 2 | A | 104 | HEC | CAA-C2A | -14.70 | 1.26 | 1.52 |
| 2 | B | 104 | HEC | CAA-C2A | -14.70 | 1.26 | 1.52 |
| 2 | A | 104 | HEC | CMD-C2D | -9.44 | 1.32 | 1.51 |
| 2 | B | 104 | HEC | CMD-C2D | -9.44 | 1.32 | 1.51 |
| 2 | A | 104 | HEC | C1B-NB | -9.41 | 1.16 | 1.36 |
| 2 | B | 104 | HEC | C1B-NB | -9.41 | 1.16 | 1.36 |
| 2 | A | 104 | HEC | C1C-CHC | -8.52 | 1.17 | 1.41 |
| 2 | B | 104 | HEC | C1C-CHC | -8.52 | 1.17 | 1.41 |
| 2 | A | 104 | HEC | C4A-C3A | -7.57 | 1.25 | 1.42 |
| 2 | B | 104 | HEC | C4A-C3A | -7.57 | 1.25 | 1.42 |
| 2 | A | 104 | HEC | C1A-C2A | -6.84 | 1.27 | 1.42 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 2 | B | 104 | HEC | C1A-C2A | -6.84 | 1.27 | 1.42 |
| 2 | A | 104 | HEC | C1C-NC | 5.97 | 1.48 | 1.36 |
| 2 | B | 104 | HEC | C1C-NC | 5.97 | 1.48 | 1.36 |
| 2 | A | 104 | HEC | C2A-C3A | 5.25 | 1.53 | 1.37 |
| 2 | B | 104 | HEC | C2A-C3A | 5.25 | 1.53 | 1.37 |
| 2 | A | 104 | HEC | CBC-CAC | -5.10 | 1.30 | 1.49 |
| 2 | B | 104 | HEC | CBC-CAC | -5.10 | 1.30 | 1.49 |
| 2 | A | 104 | HEC | CBB-CAB | -3.40 | 1.36 | 1.49 |
| 2 | B | 104 | HEC | CBB-CAB | -3.40 | 1.36 | 1.49 |
| 2 | A | 104 | HEC | C3B-C2B | 3.35 | 1.44 | 1.40 |
| 2 | B | 104 | HEC | C3B-C2B | 3.35 | 1.44 | 1.40 |
| 2 | A | 104 | HEC | CMB-C2B | -3.30 | 1.43 | 1.51 |
| 2 | B | 104 | HEC | CMB-C2B | -3.30 | 1.43 | 1.51 |
| 2 | A | 104 | HEC | CBD-CAD | -3.08 | 1.32 | 1.53 |
| 2 | B | 104 | HEC | CBD-CAD | -3.08 | 1.32 | 1.53 |
| 2 | A | 104 | HEC | C1D-ND | 2.85 | 1.42 | 1.36 |
| 2 | B | 104 | HEC | C1D-ND | 2.85 | 1.42 | 1.36 |
| 2 | A | 104 | HEC | C3C-C4C | 2.39 | 1.47 | 1.43 |
| 2 | B | 104 | HEC | C3C-C4C | 2.39 | 1.47 | 1.43 |
| 2 | A | 104 | HEC | C1D-CHD | -2.16 | 1.35 | 1.41 |
| 2 | B | 104 | HEC | C1D-CHD | -2.16 | 1.35 | 1.41 |
| 2 | A | 104 | HEC | C4D-CHA | -2.06 | 1.35 | 1.41 |
| 2 | B | 104 | HEC | C4D-CHA | -2.06 | 1.35 | 1.41 |

All (20) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 2 | A | 104 | HEC | C4C-C3C-C2C | 16.56 | 124.23 | 106.35 |
| 2 | B | 104 | HEC | C4C-C3C-C2C | 16.56 | 124.23 | 106.35 |
| 2 | A | 104 | HEC | CAD-CBD-CGD | 8.82 | 127.47 | 112.67 |
| 2 | B | 104 | HEC | CAD-CBD-CGD | 8.82 | 127.47 | 112.67 |
| 2 | A | 104 | HEC | C3C-C4C-NC | -8.03 | 95.79 | 110.94 |
| 2 | B | 104 | HEC | C3C-C4C-NC | -8.03 | 95.79 | 110.94 |
| 2 | A | 104 | HEC | C4B-C3B-C2B | -7.90 | 97.82 | 106.35 |
| 2 | B | 104 | HEC | C4B-C3B-C2B | -7.90 | 97.82 | 106.35 |
| 2 | A | 104 | HEC | C3B-C4B-NB | 6.86 | 123.90 | 110.94 |
| 2 | B | 104 | HEC | C3B-C4B-NB | 6.86 | 123.90 | 110.94 |
| 2 | A | 104 | HEC | CAA-C2A-C3A | 4.73 | 140.83 | 127.25 |
| 2 | B | 104 | HEC | CAA-C2A-C3A | 4.73 | 140.83 | 127.25 |
| 2 | A | 104 | HEC | CAD-C3D-C2D | -4.13 | 115.37 | 127.25 |
| 2 | B | 104 | HEC | CAD-C3D-C2D | -4.13 | 115.37 | 127.25 |
| 2 | A | 104 | HEC | CBA-CAA-C2A | 3.81 | 119.50 | 112.48 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|------|-------------|----------|
| 2 | B | 104 | HEC | CBA-CAA-C2A | 3.81 | 119.50 | 112.48 |
| 2 | A | 104 | HEC | CMB-C2B-C3B | 3.36 | 129.77 | 125.82 |
| 2 | B | 104 | HEC | CMB-C2B-C3B | 3.36 | 129.77 | 125.82 |
| 2 | A | 104 | HEC | CMA-C3A-C2A | 2.27 | 129.23 | 124.94 |
| 2 | B | 104 | HEC | CMA-C3A-C2A | 2.27 | 129.23 | 124.94 |

There are no chirality outliers.

All (8) torsion outliers are listed below:

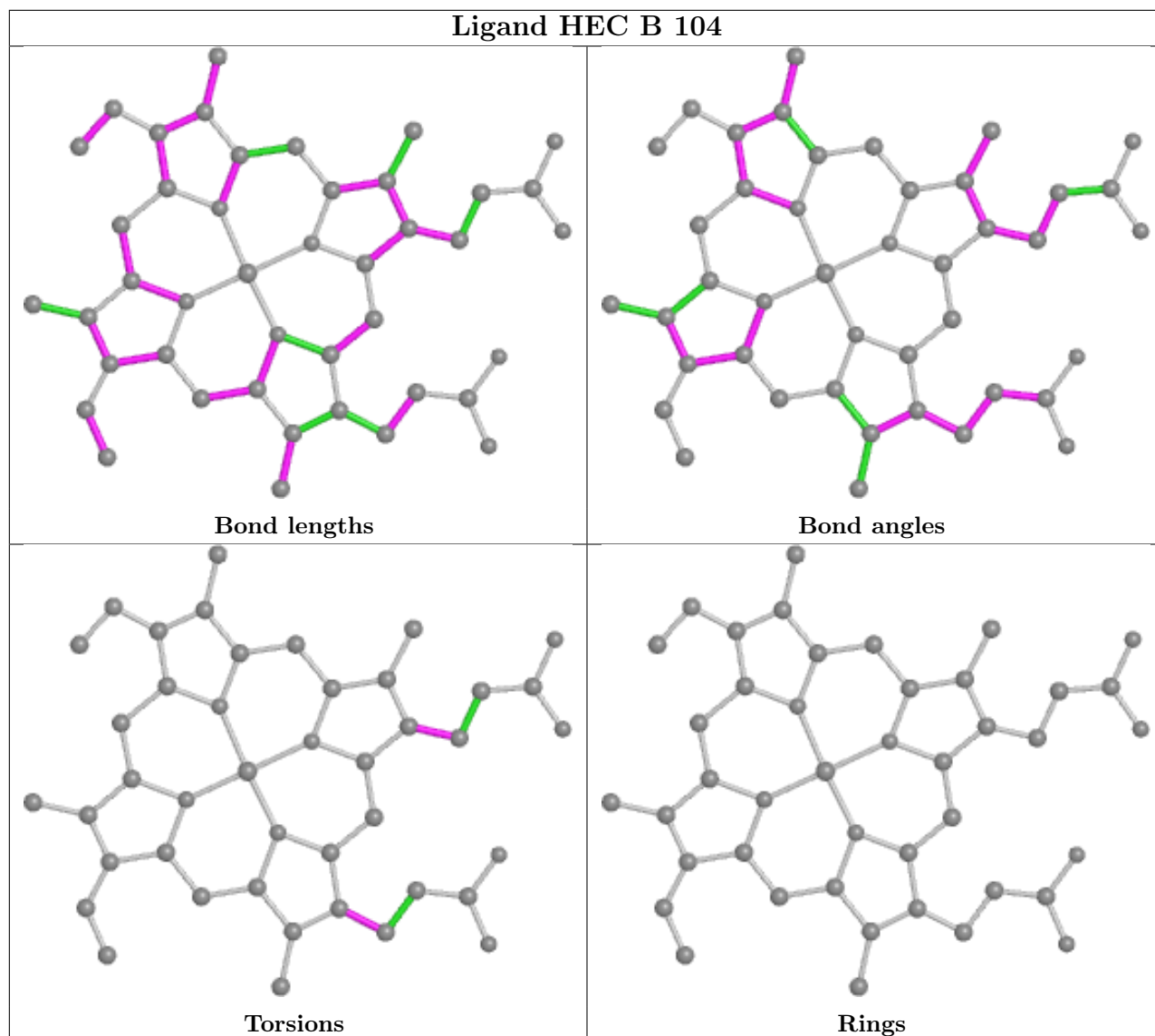
| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-----------------|
| 2 | A | 104 | HEC | C1A-C2A-CAA-CBA |
| 2 | A | 104 | HEC | C3A-C2A-CAA-CBA |
| 2 | A | 104 | HEC | C2D-C3D-CAD-CBD |
| 2 | A | 104 | HEC | C4D-C3D-CAD-CBD |
| 2 | B | 104 | HEC | C1A-C2A-CAA-CBA |
| 2 | B | 104 | HEC | C3A-C2A-CAA-CBA |
| 2 | B | 104 | HEC | C2D-C3D-CAD-CBD |
| 2 | B | 104 | HEC | C4D-C3D-CAD-CBD |

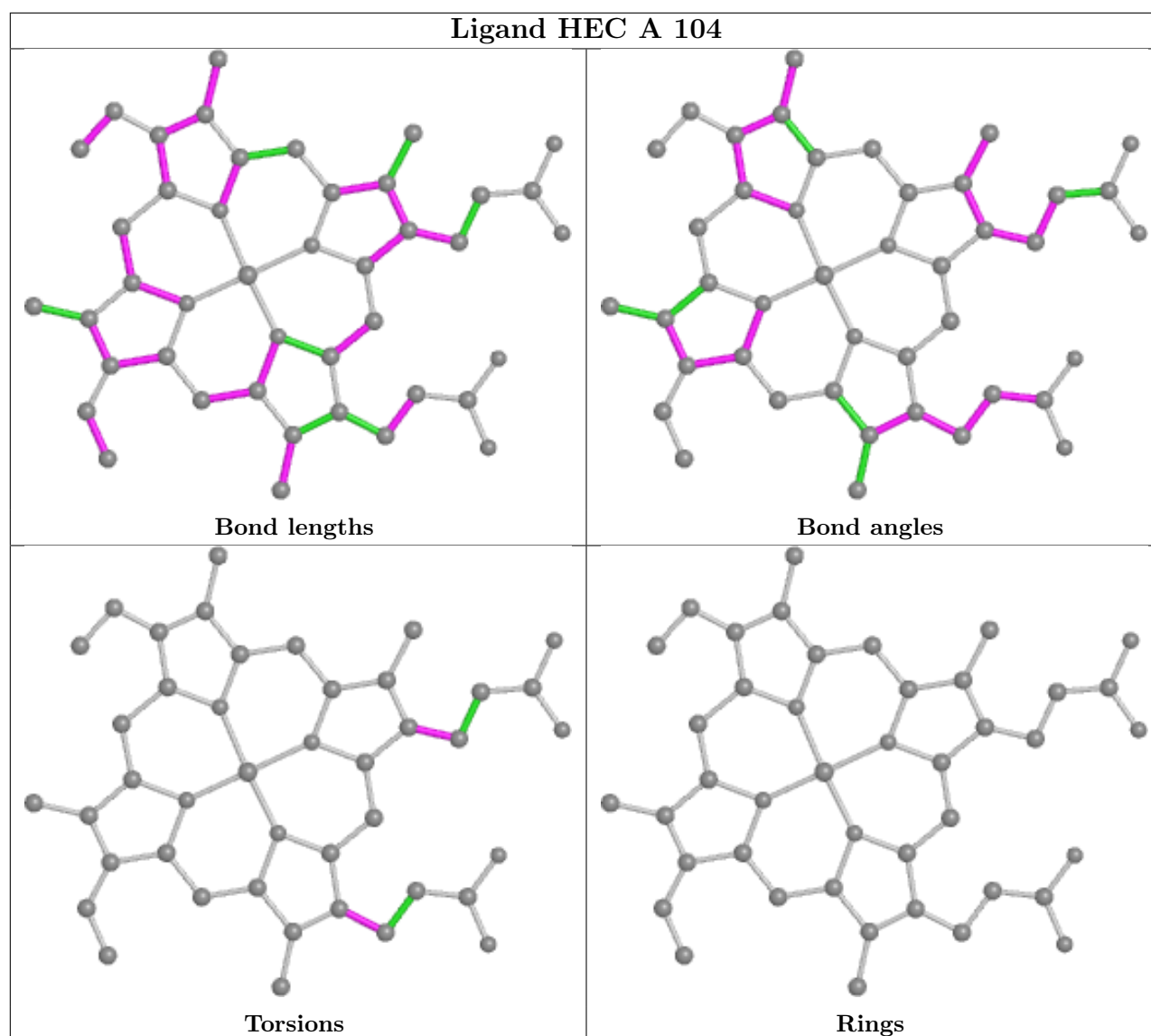
There are no ring outliers.

2 monomers are involved in 46 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 2 | B | 104 | HEC | 23 | 0 |
| 2 | A | 104 | HEC | 23 | 0 |

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [\(i\)](#)

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 1 | A | 29 |
| 1 | B | 29 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | A | 26:HIS | C | 27:LYS | N | 1.20 |
| 1 | A | 31:ASN | C | 32:LEU | N | 1.20 |
| 1 | A | 50:ASP | C | 51:ALA | N | 1.20 |
| 1 | A | 80:MET | C | 81:ILE | N | 1.20 |
| 1 | B | 26:HIS | C | 27:LYS | N | 1.20 |
| 1 | B | 31:ASN | C | 32:LEU | N | 1.20 |
| 1 | B | 50:ASP | C | 51:ALA | N | 1.20 |
| 1 | B | 80:MET | C | 81:ILE | N | 1.20 |
| 1 | A | 61:GLU | C | 62:ASN | N | 1.19 |
| 1 | A | 101:ALA | C | 102:THR | N | 1.19 |
| 1 | A | 102:THR | C | 103:SER | N | 1.19 |
| 1 | B | 61:GLU | C | 62:ASN | N | 1.19 |
| 1 | B | 101:ALA | C | 102:THR | N | 1.19 |
| 1 | B | 102:THR | C | 103:SER | N | 1.19 |
| 1 | A | 8:LYS | C | 9:THR | N | 1.18 |
| 1 | A | 35:LEU | C | 36:PHE | N | 1.18 |
| 1 | A | 78:THR | C | 79:LYS | N | 1.18 |
| 1 | A | 97:TYR | C | 98:LEU | N | 1.18 |
| 1 | B | 8:LYS | C | 9:THR | N | 1.18 |
| 1 | B | 35:LEU | C | 36:PHE | N | 1.18 |
| 1 | B | 78:THR | C | 79:LYS | N | 1.18 |
| 1 | B | 97:TYR | C | 98:LEU | N | 1.18 |
| 1 | A | 19:THR | C | 20:VAL | N | 1.17 |
| 1 | A | 54:SER | C | 55:LYS | N | 1.17 |
| 1 | B | 19:THR | C | 20:VAL | N | 1.17 |
| 1 | B | 54:SER | C | 55:LYS | N | 1.17 |
| 1 | A | 12:GLN | C | 13:LYS | N | 1.16 |
| 1 | A | 55:LYS | C | 56:GLY | N | 1.16 |
| 1 | B | 12:GLN | C | 13:LYS | N | 1.16 |
| 1 | B | 55:LYS | C | 56:GLY | N | 1.16 |
| 1 | A | 60:ASN | C | 61:GLU | N | 1.15 |
| 1 | A | 90:GLU | C | 91:ARG | N | 1.15 |
| 1 | B | 60:ASN | C | 61:GLU | N | 1.15 |
| 1 | B | 90:GLU | C | 91:ARG | N | 1.15 |
| 1 | A | 65:MET | C | 66:GLU | N | 1.14 |
| 1 | A | 69:GLU | C | 70:ASN | N | 1.14 |
| 1 | B | 65:MET | C | 66:GLU | N | 1.14 |
| 1 | B | 69:GLU | C | 70:ASN | N | 1.14 |
| 1 | A | 46:TYR | C | 47:SER | N | 1.13 |
| 1 | A | 66:GLU | C | 67:TYR | N | 1.13 |
| 1 | A | 82:PHE | C | 83:ALA | N | 1.13 |
| 1 | A | 89:GLY | C | 90:GLU | N | 1.13 |
| 1 | B | 46:TYR | C | 47:SER | N | 1.13 |

Continued on next page...

Continued from previous page...

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | B | 66:GLU | C | 67:TYR | N | 1.13 |
| 1 | B | 82:PHE | C | 83:ALA | N | 1.13 |
| 1 | B | 89:GLY | C | 90:GLU | N | 1.13 |
| 1 | A | 22:ASN | C | 23:GLY | N | 1.11 |
| 1 | B | 22:ASN | C | 23:GLY | N | 1.11 |
| 1 | A | 86:LYS | C | 87:LYS | N | 1.09 |
| 1 | B | 86:LYS | C | 87:LYS | N | 1.09 |
| 1 | A | 40:THR | C | 41:GLY | N | 1.08 |
| 1 | A | 59:TRP | C | 60:ASN | N | 1.08 |
| 1 | A | 93:ASP | C | 94:LEU | N | 1.08 |
| 1 | B | 40:THR | C | 41:GLY | N | 1.08 |
| 1 | B | 59:TRP | C | 60:ASN | N | 1.08 |
| 1 | B | 93:ASP | C | 94:LEU | N | 1.08 |
| 1 | A | 32:LEU | C | 33:TRP | N | 1.05 |
| 1 | B | 32:LEU | C | 33:TRP | N | 1.05 |

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.