



# Full wwPDB X-ray Structure Validation Report ⓘ

Jun 23, 2024 – 08:38 AM EDT

PDB ID : 6I7P  
Title : Crystal structure of the full-length Zika virus NS5 protein (Human isolate Z1106033)  
Authors : Ferrero, D.S.; Ruiz-Arroyo, V.M.; Soler, N.; Uson, I.; Verdaguer, N.  
Deposited on : 2018-11-16  
Resolution : 3.98 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](mailto: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 types of validation reports are described at

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

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

MolProbity : 4.02b-467  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtrriage (Phenix) : 1.20.1  
EDS : 2.37.1  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.37.1

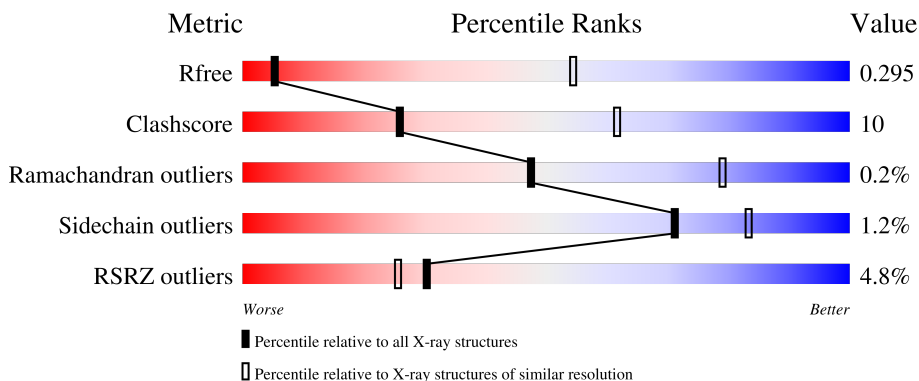
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.98 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.



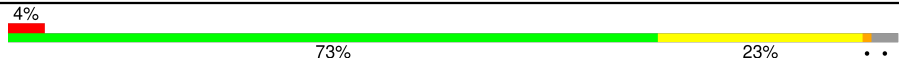
| Metric                | Whole archive<br>(#Entries) | Similar resolution<br>(#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| $R_{free}$            | 130704                      | 1039 (4.26-3.70)                                      |
| Clashscore            | 141614                      | 1099 (4.26-3.70)                                      |
| Ramachandran outliers | 138981                      | 1061 (4.26-3.70)                                      |
| Sidechain outliers    | 138945                      | 1053 (4.26-3.70)                                      |
| RSRZ outliers         | 127900                      | 1021 (4.30-3.66)                                      |

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  $\geq 3$ , 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  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 1   | A     | 914    | <br>6% 73% 24% |
| 1   | B     | 914    | <br>7% 75% 21% |
| 1   | C     | 914    | <br>7% 76% 21% |
| 1   | D     | 914    | <br>2% 72% 25% |
| 1   | E     | 914    | <br>2% 72% 24% |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 1   | F     | 914    |  |

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 |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 3   | PO4  | D     | 1003 | -         | -        | X       | -                |

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 42817 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 NS5.

| Mol | Chain | Residues | Atoms |      |      |      |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|---------|-------|
|     |       |          | Total | C    | N    | O    | S  |         |         |       |
| 1   | A     | 883      | 7097  | 4463 | 1286 | 1302 | 46 | 0       | 0       | 0     |
| 1   | B     | 882      | 7090  | 4459 | 1285 | 1300 | 46 | 0       | 0       | 0     |
| 1   | C     | 883      | 7097  | 4463 | 1286 | 1302 | 46 | 0       | 0       | 0     |
| 1   | D     | 883      | 7097  | 4463 | 1286 | 1302 | 46 | 0       | 0       | 0     |
| 1   | E     | 883      | 7097  | 4463 | 1286 | 1302 | 46 | 0       | 0       | 0     |
| 1   | F     | 883      | 7097  | 4463 | 1286 | 1302 | 46 | 0       | 0       | 0     |

There are 66 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment               | Reference      |
|-------|---------|----------|--------|-----------------------|----------------|
| A     | 0       | MET      | -      | initiating methionine | UNP A0A1B2ZC85 |
| A     | 904     | GLY      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 905     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 906     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 907     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 908     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 909     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 910     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 911     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 912     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| A     | 913     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 0       | MET      | -      | initiating methionine | UNP A0A1B2ZC85 |
| B     | 904     | GLY      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 905     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 906     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 907     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 908     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |

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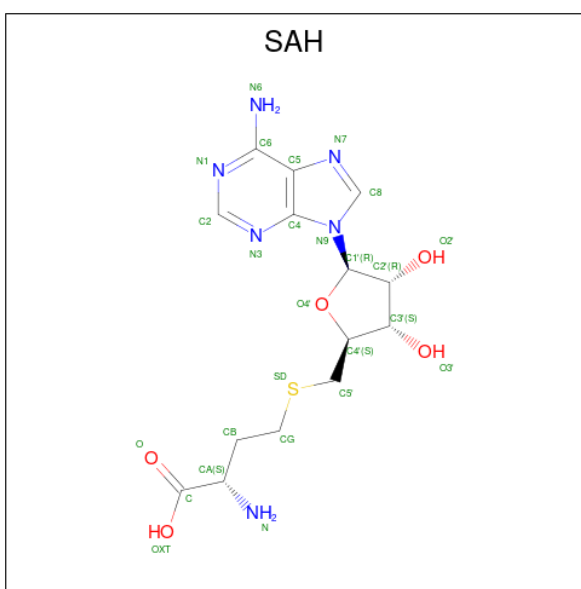
| Chain | Residue | Modelled | Actual | Comment               | Reference      |
|-------|---------|----------|--------|-----------------------|----------------|
| B     | 909     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 910     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 911     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 912     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| B     | 913     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 0       | MET      | -      | initiating methionine | UNP A0A1B2ZC85 |
| C     | 904     | GLY      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 905     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 906     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 907     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 908     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 909     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 910     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 911     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 912     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| C     | 913     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 0       | MET      | -      | initiating methionine | UNP A0A1B2ZC85 |
| D     | 904     | GLY      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 905     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 906     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 907     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 908     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 909     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 910     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 911     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 912     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| D     | 913     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 0       | MET      | -      | initiating methionine | UNP A0A1B2ZC85 |
| E     | 904     | GLY      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 905     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 906     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 907     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 908     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 909     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 910     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 911     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 912     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| E     | 913     | HIS      | -      | expression tag        | UNP A0A1B2ZC85 |
| F     | 0       | MET      | -      | initiating methionine | UNP A0A1B2ZC85 |
| F     | 904     | GLY      | -      | expression tag        | UNP A0A1B2ZC85 |
| F     | 905     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |
| F     | 906     | SER      | -      | expression tag        | UNP A0A1B2ZC85 |

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| Chain | Residue | Modelled | Actual | Comment        | Reference      |
|-------|---------|----------|--------|----------------|----------------|
| F     | 907     | SER      | -      | expression tag | UNP A0A1B2ZC85 |
| F     | 908     | HIS      | -      | expression tag | UNP A0A1B2ZC85 |
| F     | 909     | HIS      | -      | expression tag | UNP A0A1B2ZC85 |
| F     | 910     | HIS      | -      | expression tag | UNP A0A1B2ZC85 |
| F     | 911     | HIS      | -      | expression tag | UNP A0A1B2ZC85 |
| F     | 912     | HIS      | -      | expression tag | UNP A0A1B2ZC85 |
| F     | 913     | HIS      | -      | expression tag | UNP A0A1B2ZC85 |

- Molecule 2 is S-ADENOSYL-L-HOMOCYSTEINE (three-letter code: SAH) (formula:  $C_{14}H_{20}N_6O_5S$ ).



| Mol | Chain | Residues | Atoms |    |   |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---|---|---------|---------|
|     |       |          | Total | C  | N | O | S |         |         |
| 2   | A     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 26    | 14 | 6 | 5 | 1 |         |         |
| 2   | B     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 26    | 14 | 6 | 5 | 1 |         |         |
| 2   | C     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 26    | 14 | 6 | 5 | 1 |         |         |
| 2   | D     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 26    | 14 | 6 | 5 | 1 |         |         |
| 2   | E     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 26    | 14 | 6 | 5 | 1 |         |         |
| 2   | F     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 26    | 14 | 6 | 5 | 1 |         |         |

- Molecule 3 is PHOSPHATE ION (three-letter code: PO4) (formula:  $O_4P$ ).



| Mol | Chain | Residues | Atoms              | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 3   | A     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | A     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | B     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | B     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | C     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | D     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | D     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | D     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | D     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | E     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | E     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | F     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | F     | 1        | Total O P<br>5 4 1 | 0       | 0       |
| 3   | F     | 1        | Total O P<br>5 4 1 | 0       | 0       |

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| Mol | Chain | Residues | Atoms |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|---|---|---------|---------|
| 3   | F     | 1        | Total | O | P | 0       | 0       |
|     |       |          | 5     | 4 | 1 |         |         |

- Molecule 4 is ZINC ION (three-letter code: ZN) (formula: Zn).

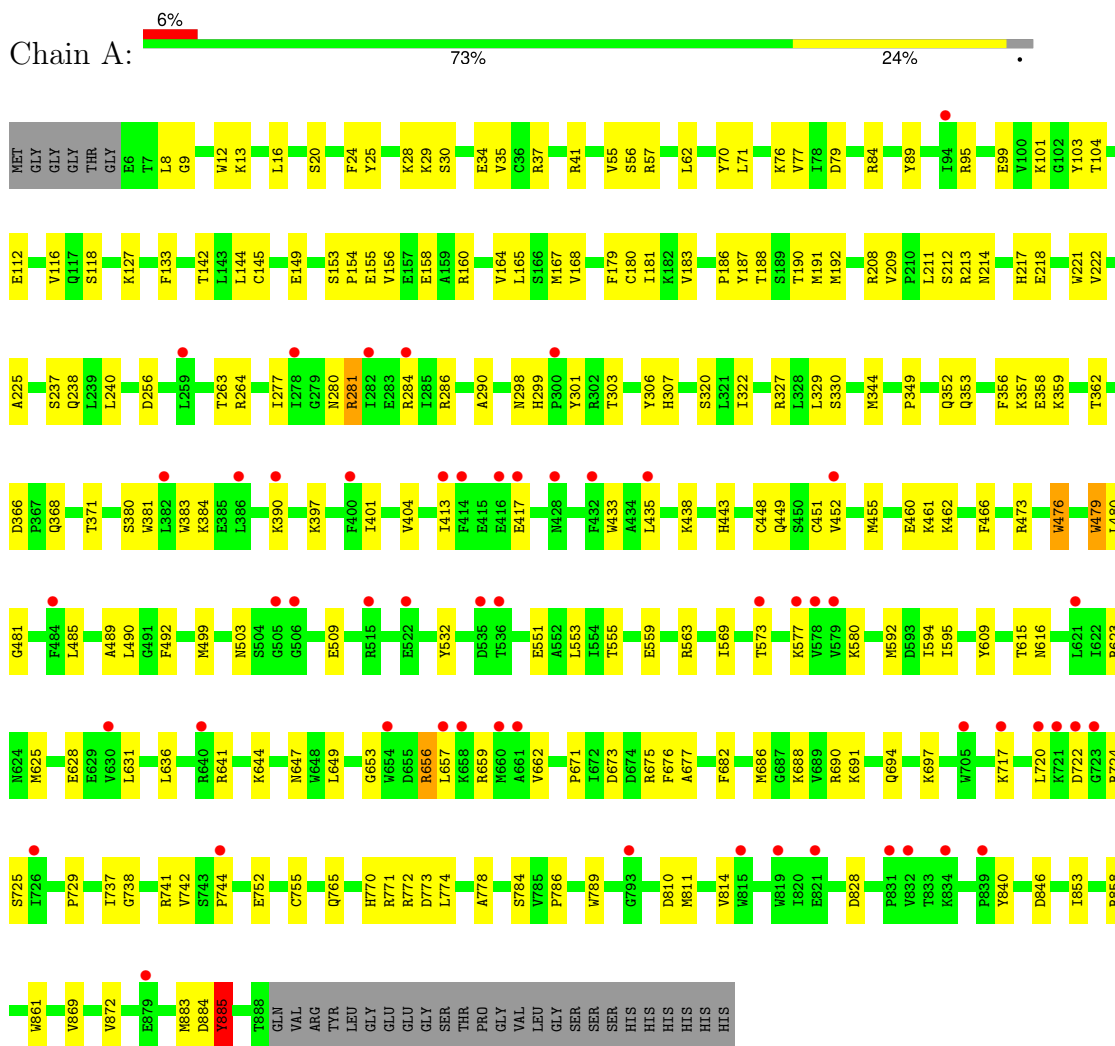
| Mol | Chain | Residues | Atoms |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 4   | A     | 2        | Total | Zn | 0       | 0       |
|     |       |          | 2     | 2  |         |         |
| 4   | B     | 1        | Total | Zn | 0       | 0       |
|     |       |          | 1     | 1  |         |         |
| 4   | C     | 2        | Total | Zn | 0       | 0       |
|     |       |          | 2     | 2  |         |         |
| 4   | D     | 2        | Total | Zn | 0       | 0       |
|     |       |          | 2     | 2  |         |         |
| 4   | E     | 2        | Total | Zn | 0       | 0       |
|     |       |          | 2     | 2  |         |         |
| 4   | F     | 2        | Total | Zn | 0       | 0       |
|     |       |          | 2     | 2  |         |         |



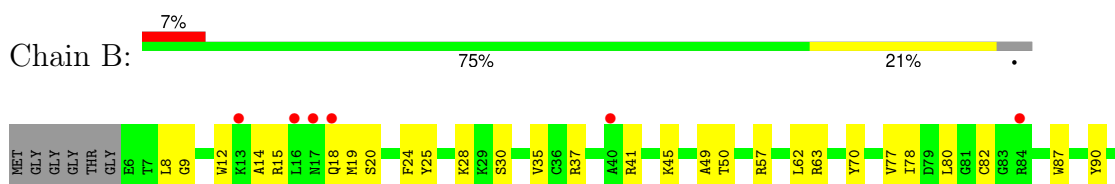
### 3 Residue-property plots i

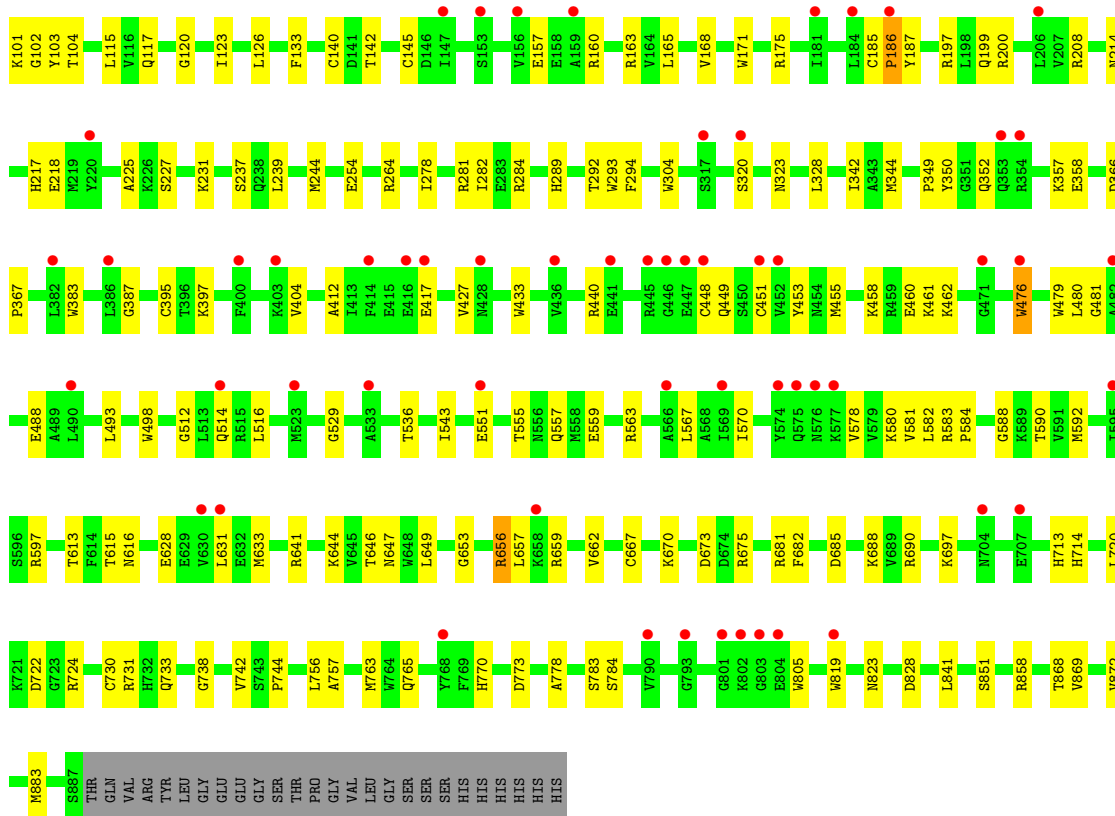
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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.

#### • Molecule 1: NS5

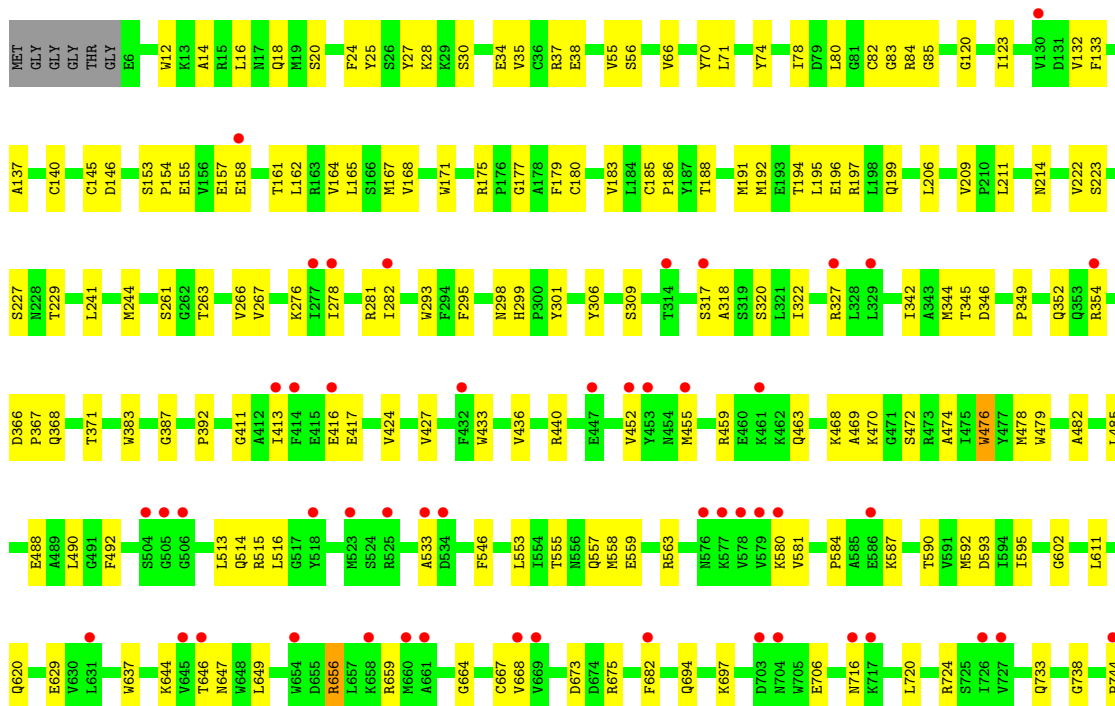
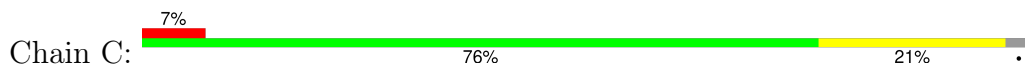


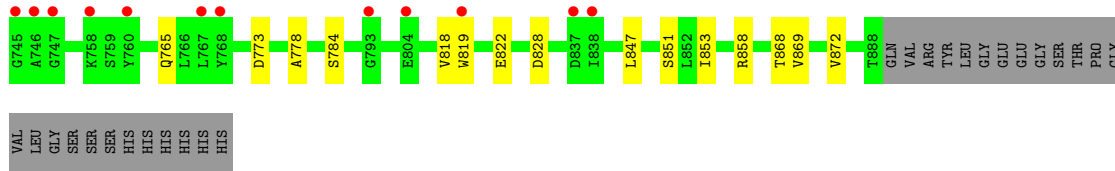
#### • Molecule 1: NS5





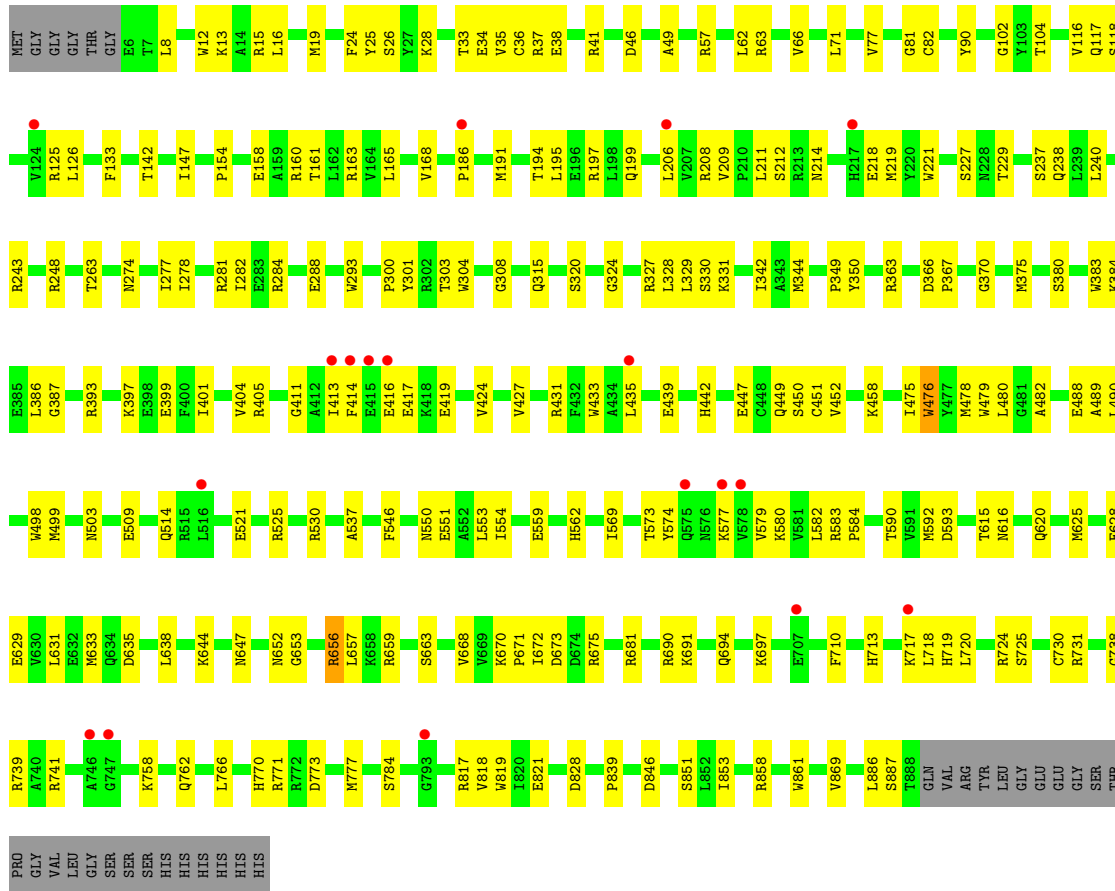
• Molecule 1: NS5





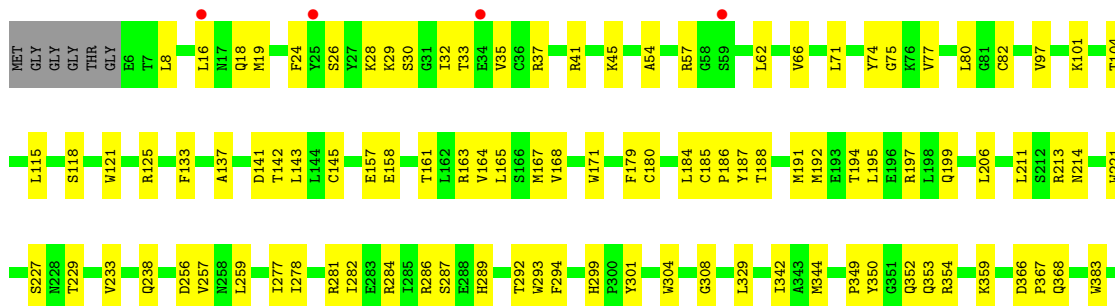
- Molecule 1: NS5

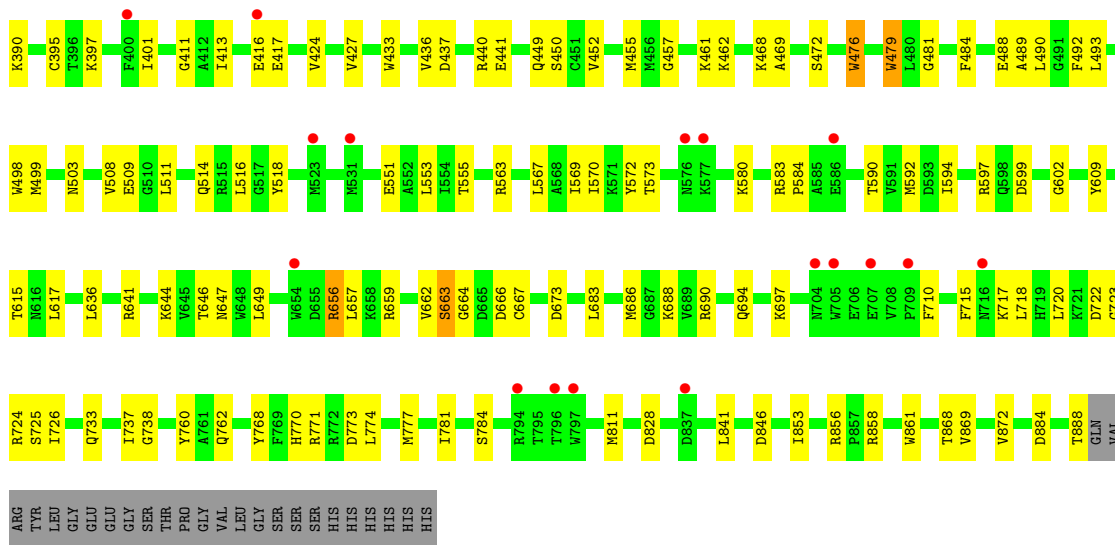
Chain D: 72% 25% 3%



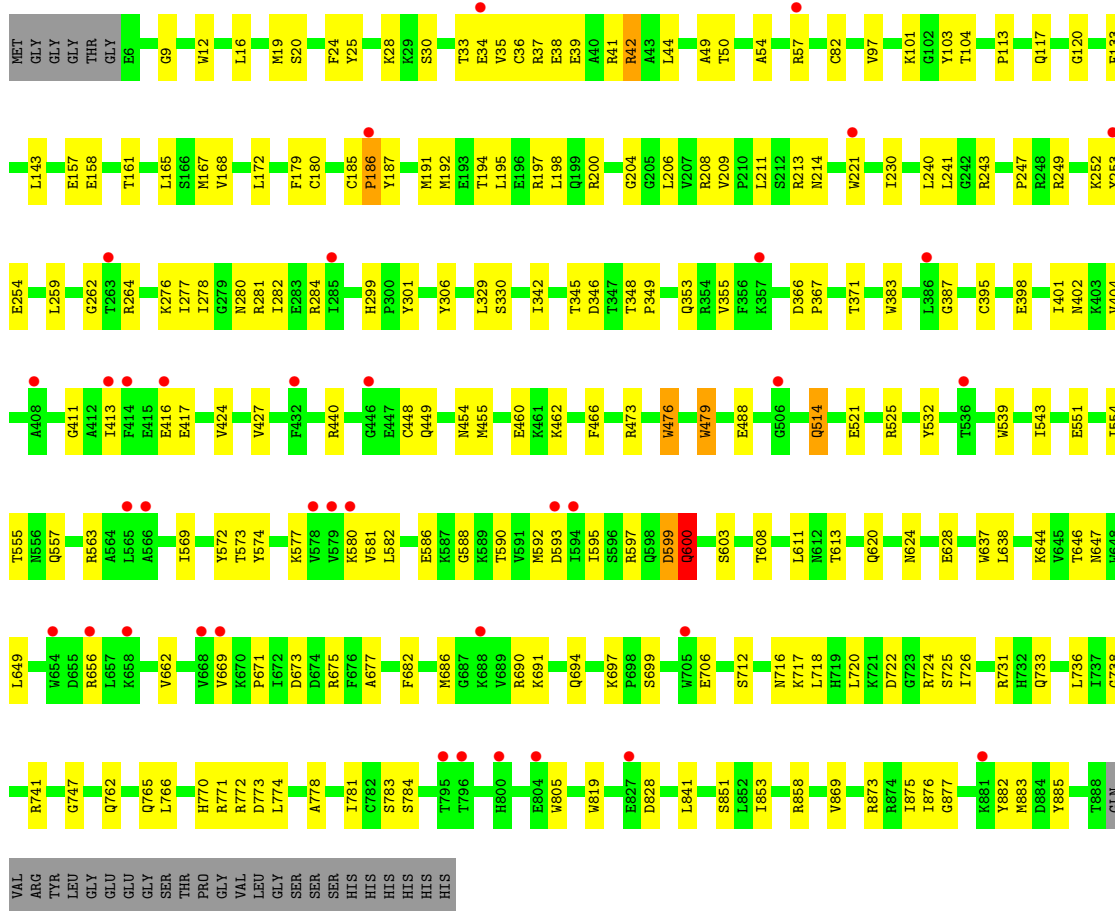
- Molecule 1: NS5

Chain E: 72% 24% 4%





● Molecule 1: NS5



## 4 Data and refinement statistics

| Property  | Value   | Source           |
|---|---|------------------|
| Space group   | P 21 21 21  | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 191.06Å 192.06Å 407.23Å<br>90.00° 90.00° 90.00°             | Depositor        |
| Resolution (Å)  | 49.52 – 3.98<br>49.52 – 3.98                                | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 99.6 (49.52-3.98)<br>98.2 (49.52-3.98)                      | Depositor<br>EDS |
| $R_{merge}$   | 0.96  | Depositor        |
| $R_{sym}$   | (Not available)   | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 1.69 (at 4.00Å)   | Xtrriage         |
| Refinement program  | PHENIX (1.14_3260: ???)                                     | Depositor        |
| R, $R_{free}$   | 0.280 , 0.280<br>0.283 , 0.295                              | Depositor<br>DCC |
| $R_{free}$ test set   | 6430 reflections (5.00%)                                    | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 77.2  | Xtrriage         |
| Anisotropy  | 0.054   | Xtrriage         |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.30 , 63.0   | EDS              |
| L-test for twinning <sup>2</sup>  | $\langle  L  \rangle = 0.28$ , $\langle L^2 \rangle = 0.11$ | Xtrriage         |
| Estimated twinning fraction   | 0.217 for k,h,-l  | Xtrriage         |
| $F_o, F_c$ correlation  | 0.77  | EDS              |
| Total number of atoms   | 42817   | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 101.0   | wwPDB-VP         |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.69% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 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: ZN, SAH, PO4

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     | 0.39         | 2/7262 (0.0%)   | 0.58        | 3/9813 (0.0%)   |
| 1   | B     | 0.36         | 0/7255          | 0.54        | 0/9803          |
| 1   | C     | 0.37         | 0/7262          | 0.55        | 0/9813          |
| 1   | D     | 0.46         | 3/7262 (0.0%)   | 0.59        | 1/9813 (0.0%)   |
| 1   | E     | 0.40         | 1/7262 (0.0%)   | 0.58        | 2/9813 (0.0%)   |
| 1   | F     | 0.42         | 4/7262 (0.1%)   | 0.61        | 5/9813 (0.1%)   |
| All | All   | 0.40         | 10/43565 (0.0%) | 0.58        | 11/58868 (0.0%) |

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     | 0                   | 1                   |
| 1   | F     | 0                   | 1                   |
| All | All   | 0                   | 2                   |

All (10) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|--------|-------------|----------|
| 1   | D     | 663 | SER  | C-N   | -14.88 | 1.06        | 1.33     |
| 1   | D     | 886 | LEU  | C-N   | 13.81  | 1.65        | 1.34     |
| 1   | F     | 875 | ILE  | C-N   | 9.58   | 1.56        | 1.34     |
| 1   | A     | 884 | ASP  | C-N   | 8.66   | 1.53        | 1.34     |
| 1   | D     | 887 | SER  | C-N   | 8.37   | 1.53        | 1.34     |
| 1   | F     | 876 | ILE  | C-N   | -8.29  | 1.18        | 1.33     |
| 1   | F     | 599 | ASP  | C-N   | -7.59  | 1.16        | 1.34     |
| 1   | E     | 662 | VAL  | C-N   | 7.29   | 1.50        | 1.34     |
| 1   | F     | 877 | GLY  | C-N   | 6.06   | 1.48        | 1.34     |
| 1   | A     | 885 | TYR  | C-N   | 5.87   | 1.47        | 1.34     |

All (11) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms    | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|--------|-------------|----------|
| 1   | F     | 599 | ASP  | O-C-N    | -13.97 | 100.35      | 122.70   |
| 1   | A     | 885 | TYR  | O-C-N    | -12.07 | 103.39      | 122.70   |
| 1   | F     | 599 | ASP  | C-N-CA   | 11.24  | 149.80      | 121.70   |
| 1   | F     | 599 | ASP  | CA-C-N   | 9.71   | 138.57      | 117.20   |
| 1   | E     | 663 | SER  | O-C-N    | 7.79   | 136.44      | 123.20   |
| 1   | E     | 663 | SER  | CA-C-N   | -7.50  | 101.20      | 116.20   |
| 1   | A     | 885 | TYR  | CA-C-N   | 6.65   | 131.83      | 117.20   |
| 1   | F     | 600 | GLN  | CA-C-N   | -6.10  | 103.78      | 117.20   |
| 1   | A     | 211 | LEU  | CA-CB-CG | 5.38   | 127.68      | 115.30   |
| 1   | F     | 600 | GLN  | C-N-CA   | -5.22  | 108.66      | 121.70   |
| 1   | D     | 887 | SER  | CA-C-N   | -5.03  | 106.14      | 117.20   |

There are no chirality outliers.

All (2) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 1   | A     | 885 | TYR  | Mainchain |
| 1   | F     | 600 | GLN  | Mainchain |

## 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in 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     | 7097  | 0        | 6997     | 179     | 0            |
| 1   | B     | 7090  | 0        | 6993     | 139     | 0            |
| 1   | C     | 7097  | 0        | 6998     | 131     | 0            |
| 1   | D     | 7097  | 0        | 6997     | 147     | 0            |
| 1   | E     | 7097  | 0        | 6998     | 147     | 0            |
| 1   | F     | 7097  | 0        | 6998     | 159     | 0            |
| 2   | A     | 26    | 0        | 19       | 1       | 0            |
| 2   | B     | 26    | 0        | 19       | 1       | 0            |
| 2   | C     | 26    | 0        | 19       | 3       | 0            |
| 2   | D     | 26    | 0        | 19       | 1       | 0            |
| 2   | E     | 26    | 0        | 19       | 1       | 0            |
| 2   | F     | 26    | 0        | 19       | 0       | 0            |
| 3   | A     | 10    | 0        | 0        | 0       | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 3   | B     | 10    | 0        | 0        | 0       | 0            |
| 3   | C     | 5     | 0        | 0        | 0       | 0            |
| 3   | D     | 20    | 0        | 0        | 3       | 0            |
| 3   | E     | 10    | 0        | 0        | 0       | 0            |
| 3   | F     | 20    | 0        | 0        | 2       | 0            |
| 4   | A     | 2     | 0        | 0        | 0       | 0            |
| 4   | B     | 1     | 0        | 0        | 0       | 0            |
| 4   | C     | 2     | 0        | 0        | 0       | 0            |
| 4   | D     | 2     | 0        | 0        | 0       | 0            |
| 4   | E     | 2     | 0        | 0        | 0       | 0            |
| 4   | F     | 2     | 0        | 0        | 0       | 0            |
| All | All   | 42817 | 0        | 42095    | 891     | 0            |

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 10.

All (891) 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:417:GLU:HB2  | 1:A:479:TRP:CH2  | 1.45                     | 1.50              |
| 1:F:143:LEU:HD23 | 1:F:172:LEU:HD21 | 1.27                     | 1.17              |
| 1:B:412:ALA:HA   | 1:B:417:GLU:OE1  | 1.45                     | 1.16              |
| 1:A:359:LYS:NZ   | 1:A:473:ARG:CD   | 2.10                     | 1.15              |
| 1:A:417:GLU:CB   | 1:A:479:TRP:CH2  | 2.33                     | 1.11              |
| 1:A:479:TRP:HD1  | 1:A:481:GLY:N    | 1.49                     | 1.10              |
| 1:F:143:LEU:HD23 | 1:F:172:LEU:CD2  | 1.80                     | 1.10              |
| 1:A:359:LYS:NZ   | 1:A:473:ARG:HD3  | 1.67                     | 1.09              |
| 1:F:36:CYS:SG    | 1:F:253:TYR:HE2  | 1.78                     | 1.06              |
| 1:B:479:TRP:HD1  | 1:B:481:GLY:N    | 1.54                     | 1.05              |
| 1:D:35:VAL:HG23  | 1:D:37:ARG:HG2   | 1.33                     | 1.05              |
| 1:A:417:GLU:OE1  | 1:A:479:TRP:CZ2  | 2.09                     | 1.04              |
| 1:A:479:TRP:CD1  | 1:A:481:GLY:N    | 2.26                     | 0.97              |
| 1:F:36:CYS:HG    | 1:F:253:TYR:HE2  | 1.14                     | 0.95              |
| 1:F:460:GLU:OE1  | 1:F:462:LYS:HE3  | 1.64                     | 0.95              |
| 1:C:78:ILE:HD12  | 1:C:140:CYS:HB3  | 1.49                     | 0.93              |
| 1:A:417:GLU:HB2  | 1:A:479:TRP:HH2  | 1.23                     | 0.93              |
| 1:F:460:GLU:OE1  | 1:F:462:LYS:CE   | 2.17                     | 0.93              |
| 1:A:30:SER:O     | 1:A:214:ASN:ND2  | 2.05                     | 0.89              |
| 1:B:35:VAL:HG23  | 1:B:37:ARG:HG2   | 1.54                     | 0.88              |
| 1:B:724:ARG:HD3  | 1:B:828:ASP:HB3  | 1.55                     | 0.87              |
| 1:B:633:MET:HE3  | 1:B:681:ARG:HD3  | 1.54                     | 0.87              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:656:ARG:HA   | 1:D:659:ARG:HD2  | 1.54                     | 0.87              |
| 1:A:417:GLU:OE1  | 1:A:479:TRP:HZ2  | 1.58                     | 0.86              |
| 1:F:36:CYS:SG    | 1:F:253:TYR:CE2  | 2.68                     | 0.86              |
| 1:A:359:LYS:HZ2  | 1:A:473:ARG:CD   | 1.89                     | 0.85              |
| 1:D:35:VAL:HG23  | 1:D:37:ARG:CG    | 2.07                     | 0.85              |
| 1:E:609:TYR:HE1  | 1:E:663:SER:HG   | 1.20                     | 0.85              |
| 1:A:417:GLU:CD   | 1:A:479:TRP:CZ2  | 2.51                     | 0.84              |
| 1:A:359:LYS:HZ1  | 1:A:473:ARG:HD3  | 1.41                     | 0.84              |
| 1:F:460:GLU:OE1  | 1:F:462:LYS:NZ   | 2.10                     | 0.84              |
| 1:B:412:ALA:CA   | 1:B:417:GLU:OE1  | 2.25                     | 0.83              |
| 1:A:359:LYS:HZ2  | 1:A:473:ARG:NE   | 1.76                     | 0.83              |
| 1:D:633:MET:CE   | 1:D:681:ARG:CD   | 2.57                     | 0.83              |
| 1:E:666:ASP:OD1  | 1:E:667:CYS:N    | 2.10                     | 0.83              |
| 1:F:37:ARG:NH1   | 1:F:57:ARG:HD2   | 1.94                     | 0.82              |
| 1:E:609:TYR:CE1  | 1:E:663:SER:OG   | 2.30                     | 0.82              |
| 1:E:35:VAL:HG23  | 1:E:37:ARG:HG2   | 1.60                     | 0.82              |
| 1:D:633:MET:HE3  | 1:D:681:ARG:HD3  | 1.61                     | 0.81              |
| 1:E:609:TYR:HE1  | 1:E:663:SER:OG   | 1.62                     | 0.81              |
| 1:B:633:MET:CE   | 1:B:681:ARG:CD   | 2.59                     | 0.81              |
| 1:D:633:MET:HE1  | 1:D:681:ARG:NE   | 1.97                     | 0.80              |
| 1:F:214:ASN:OD1  | 1:F:243:ARG:NH2  | 2.14                     | 0.80              |
| 1:A:479:TRP:HD1  | 1:A:481:GLY:H    | 0.82                     | 0.80              |
| 1:B:479:TRP:HD1  | 1:B:481:GLY:H    | 0.83                     | 0.79              |
| 1:F:613:THR:HG23 | 1:F:662:VAL:HG12 | 1.64                     | 0.79              |
| 1:B:342:ILE:HD12 | 1:B:738:GLY:HA3  | 1.65                     | 0.78              |
| 1:F:460:GLU:CD   | 1:F:462:LYS:HE3  | 2.03                     | 0.78              |
| 1:F:143:LEU:CD2  | 1:F:172:LEU:CD2  | 2.60                     | 0.78              |
| 1:A:299:HIS:HB2  | 1:A:301:TYR:HD2  | 1.48                     | 0.77              |
| 1:B:633:MET:HE1  | 1:B:681:ARG:CD   | 2.15                     | 0.77              |
| 1:B:479:TRP:CD1  | 1:B:481:GLY:N    | 2.38                     | 0.77              |
| 1:E:694:GLN:HB3  | 1:E:697:LYS:HB2  | 1.65                     | 0.76              |
| 1:F:644:LYS:HA   | 1:F:647:ASN:HB2  | 1.68                     | 0.76              |
| 1:E:35:VAL:CG2   | 1:E:37:ARG:HD3   | 2.16                     | 0.76              |
| 1:A:359:LYS:NZ   | 1:A:473:ARG:CG   | 2.48                     | 0.76              |
| 1:A:417:GLU:HB2  | 1:A:479:TRP:CZ3  | 2.20                     | 0.75              |
| 1:E:411:GLY:HA3  | 1:E:479:TRP:HA   | 1.67                     | 0.75              |
| 1:F:784:SER:HB3  | 1:F:869:VAL:HG13 | 1.67                     | 0.75              |
| 1:B:417:GLU:HG3  | 1:B:479:TRP:CE2  | 2.08                     | 0.75              |
| 1:D:773:ASP:OD1  | 1:D:858:ARG:NE   | 2.19                     | 0.74              |
| 1:B:633:MET:CE   | 1:B:681:ARG:HD3  | 2.16                     | 0.74              |
| 1:C:35:VAL:HG23  | 1:C:37:ARG:HG2   | 1.68                     | 0.74              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:395:CYS:HB2  | 1:E:488:GLU:HA   | 1.68                     | 0.74              |
| 1:A:784:SER:HB3  | 1:A:869:VAL:HG13 | 1.68                     | 0.74              |
| 1:A:359:LYS:NZ   | 1:A:473:ARG:NE   | 2.33                     | 0.74              |
| 1:E:354:ARG:NH2  | 1:E:469:ALA:O    | 2.20                     | 0.74              |
| 1:E:437:ASP:OD1  | 1:E:440:ARG:NH1  | 2.21                     | 0.74              |
| 1:F:577:LYS:NZ   | 1:F:600:GLN:O    | 2.18                     | 0.74              |
| 1:C:784:SER:HB3  | 1:C:869:VAL:HG13 | 1.69                     | 0.73              |
| 1:B:395:CYS:HB2  | 1:B:488:GLU:HA   | 1.69                     | 0.72              |
| 1:D:633:MET:HE1  | 1:D:681:ARG:CD   | 2.19                     | 0.72              |
| 1:B:417:GLU:CD   | 1:B:417:GLU:O    | 2.27                     | 0.72              |
| 1:B:175:ARG:NH1  | 1:C:175:ARG:O    | 2.23                     | 0.72              |
| 1:E:35:VAL:HG23  | 1:E:37:ARG:CG    | 2.19                     | 0.72              |
| 1:F:30:SER:O     | 1:F:214:ASN:ND2  | 2.23                     | 0.72              |
| 1:E:194:THR:HG23 | 1:E:197:ARG:HH22 | 1.55                     | 0.71              |
| 1:E:724:ARG:HD3  | 1:E:828:ASP:HB3  | 1.72                     | 0.71              |
| 1:F:38:GLU:HA    | 1:F:41:ARG:HB2   | 1.70                     | 0.71              |
| 1:B:417:GLU:HG3  | 1:B:479:TRP:CD2  | 2.24                     | 0.71              |
| 1:B:417:GLU:HG3  | 1:B:479:TRP:CE3  | 2.16                     | 0.70              |
| 1:D:419:GLU:OE2  | 1:D:431:ARG:NH2  | 2.23                     | 0.70              |
| 1:A:299:HIS:HB2  | 1:A:301:TYR:CD2  | 2.27                     | 0.70              |
| 1:D:574:TYR:O    | 1:D:577:LYS:NZ   | 2.20                     | 0.70              |
| 1:C:165:LEU:HA   | 1:C:168:VAL:HG22 | 1.72                     | 0.70              |
| 1:A:329:LEU:O    | 1:A:861:TRP:NE1  | 2.24                     | 0.70              |
| 1:F:165:LEU:HA   | 1:F:168:VAL:HG22 | 1.74                     | 0.70              |
| 1:F:773:ASP:OD1  | 1:F:858:ARG:NE   | 2.24                     | 0.69              |
| 1:B:720:LEU:HD12 | 1:B:724:ARG:HB2  | 1.74                     | 0.69              |
| 1:D:633:MET:CE   | 1:D:681:ARG:HD3  | 2.20                     | 0.69              |
| 1:F:301:TYR:OH   | 1:F:593:ASP:OD2  | 2.10                     | 0.69              |
| 1:F:395:CYS:HB2  | 1:F:488:GLU:HA   | 1.75                     | 0.69              |
| 1:A:153:SER:HB2  | 1:A:155:GLU:OE1  | 1.92                     | 0.69              |
| 1:A:359:LYS:HZ3  | 1:A:473:ARG:CD   | 2.03                     | 0.68              |
| 1:C:694:GLN:HB3  | 1:C:697:LYS:HB2  | 1.75                     | 0.68              |
| 1:E:35:VAL:HG23  | 1:E:37:ARG:CD    | 2.23                     | 0.68              |
| 1:A:359:LYS:HZ3  | 1:A:473:ARG:HD3  | 1.53                     | 0.68              |
| 1:E:784:SER:HB3  | 1:E:869:VAL:HG13 | 1.76                     | 0.68              |
| 1:A:359:LYS:NZ   | 1:A:473:ARG:HG2  | 2.08                     | 0.68              |
| 1:C:317:SER:O    | 1:C:459:ARG:NH1  | 2.27                     | 0.68              |
| 1:A:79:ASP:HA    | 1:A:144:LEU:HB2  | 1.76                     | 0.67              |
| 1:A:644:LYS:HA   | 1:A:647:ASN:HB2  | 1.77                     | 0.67              |
| 1:F:143:LEU:CD2  | 1:F:172:LEU:HD23 | 2.24                     | 0.66              |
| 1:F:342:ILE:HD12 | 1:F:738:GLY:HA3  | 1.76                     | 0.66              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:35:VAL:HG21  | 1:E:37:ARG:HD3   | 1.77                     | 0.66              |
| 1:C:773:ASP:OD1  | 1:C:858:ARG:NE   | 2.26                     | 0.66              |
| 1:C:78:ILE:HD13  | 1:C:171:TRP:HZ3  | 1.61                     | 0.66              |
| 1:C:195:LEU:HD22 | 1:C:206:LEU:HD21 | 1.77                     | 0.66              |
| 1:D:208:ARG:NH1  | 1:D:218:GLU:O    | 2.29                     | 0.66              |
| 1:E:165:LEU:HA   | 1:E:168:VAL:HG22 | 1.78                     | 0.66              |
| 1:D:569:ILE:O    | 1:D:573:THR:HB   | 1.96                     | 0.66              |
| 1:A:720:LEU:HD12 | 1:A:724:ARG:HB2  | 1.78                     | 0.65              |
| 1:F:455:MET:HB2  | 1:F:476:TRP:HB3  | 1.79                     | 0.65              |
| 1:F:209:VAL:HG12 | 1:F:211:LEU:H    | 1.62                     | 0.65              |
| 1:A:359:LYS:HZ3  | 1:A:473:ARG:CG   | 2.08                     | 0.65              |
| 1:C:158:GLU:HG3  | 1:C:191:MET:HG2  | 1.79                     | 0.65              |
| 1:E:194:THR:HG23 | 1:E:197:ARG:NH2  | 2.10                     | 0.65              |
| 1:E:342:ILE:HD12 | 1:E:738:GLY:HA3  | 1.79                     | 0.65              |
| 1:D:329:LEU:O    | 1:D:861:TRP:NE1  | 2.30                     | 0.65              |
| 1:D:380:SER:HB3  | 1:D:384:LYS:HE2  | 1.77                     | 0.65              |
| 1:A:28:LYS:NZ    | 1:B:45:LYS:HE2   | 2.12                     | 0.65              |
| 1:D:724:ARG:HD3  | 1:D:828:ASP:HB3  | 1.78                     | 0.64              |
| 1:F:454:ASN:O    | 1:F:476:TRP:HA   | 1.97                     | 0.64              |
| 1:F:569:ILE:O    | 1:F:573:THR:HB   | 1.96                     | 0.64              |
| 1:F:34:GLU:HG2   | 1:F:35:VAL:H     | 1.63                     | 0.64              |
| 1:E:644:LYS:HA   | 1:E:647:ASN:HB2  | 1.80                     | 0.64              |
| 1:D:694:GLN:HB3  | 1:D:697:LYS:HB2  | 1.80                     | 0.64              |
| 1:A:773:ASP:OD1  | 1:A:858:ARG:NE   | 2.26                     | 0.63              |
| 1:F:440:ARG:NH2  | 1:F:488:GLU:OE1  | 2.30                     | 0.63              |
| 1:A:694:GLN:HB3  | 1:A:697:LYS:HB2  | 1.80                     | 0.63              |
| 1:C:306:TYR:HA   | 1:C:595:ILE:HG22 | 1.81                     | 0.63              |
| 1:F:720:LEU:HD12 | 1:F:724:ARG:HB2  | 1.80                     | 0.63              |
| 1:F:455:MET:HB3  | 1:F:581:VAL:HG12 | 1.78                     | 0.63              |
| 1:B:412:ALA:HA   | 1:B:417:GLU:CD   | 2.18                     | 0.63              |
| 1:D:499:MET:HB2  | 1:D:509:GLU:HG3  | 1.81                     | 0.63              |
| 1:A:641:ARG:HB2  | 1:A:644:LYS:HE3  | 1.81                     | 0.63              |
| 1:F:42:ARG:HG2   | 1:F:42:ARG:HH21  | 1.62                     | 0.63              |
| 1:F:691:LYS:NZ   | 3:F:1003:PO4:O3  | 2.32                     | 0.62              |
| 1:B:543:ILE:HD13 | 1:B:688:LYS:HE3  | 1.81                     | 0.62              |
| 1:E:30:SER:O     | 1:E:214:ASN:ND2  | 2.33                     | 0.62              |
| 1:E:286:ARG:HG3  | 1:E:293:TRP:CD1  | 2.34                     | 0.62              |
| 1:D:401:ILE:O    | 1:D:404:VAL:HG12 | 1.99                     | 0.62              |
| 1:D:713:HIS:NE2  | 1:D:731:ARG:HD2  | 2.15                     | 0.61              |
| 1:A:165:LEU:HA   | 1:A:168:VAL:HG22 | 1.83                     | 0.61              |
| 1:A:623:ARG:NH2  | 1:A:676:PHE:O    | 2.27                     | 0.61              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:603:SER:HA   | 1:F:608:THR:HG21 | 1.81                     | 0.61              |
| 1:E:690:ARG:NH2  | 1:E:697:LYS:O    | 2.30                     | 0.61              |
| 1:B:49:ALA:HB1   | 1:B:117:GLN:N    | 2.16                     | 0.61              |
| 1:F:12:TRP:HB2   | 1:F:241:LEU:HG   | 1.82                     | 0.61              |
| 1:F:42:ARG:HH21  | 1:F:42:ARG:CG    | 2.14                     | 0.60              |
| 1:F:284:ARG:HH11 | 1:F:449:GLN:HB3  | 1.65                     | 0.60              |
| 1:A:479:TRP:CD1  | 1:A:480:LEU:N    | 2.69                     | 0.60              |
| 1:C:706:GLU:OE1  | 1:C:716:ASN:ND2  | 2.31                     | 0.60              |
| 1:D:580:LYS:HG2  | 1:D:592:MET:SD   | 2.41                     | 0.60              |
| 1:E:888:THR:O    | 1:E:888:THR:OG1  | 2.16                     | 0.60              |
| 1:F:186:PRO:HD2  | 1:F:187:TYR:HD1  | 1.66                     | 0.60              |
| 1:C:327:ARG:HH22 | 1:D:160:ARG:HH22 | 1.49                     | 0.60              |
| 1:B:455:MET:HB3  | 1:B:581:VAL:HG22 | 1.84                     | 0.60              |
| 1:D:82:CYS:SG    | 1:D:104:THR:HB   | 2.41                     | 0.60              |
| 1:E:293:TRP:CZ2  | 1:E:308:GLY:HA3  | 2.37                     | 0.60              |
| 1:F:299:HIS:HB2  | 1:F:301:TYR:CD2  | 2.37                     | 0.60              |
| 1:A:417:GLU:O    | 1:A:417:GLU:HG3  | 2.02                     | 0.59              |
| 1:C:157:GLU:HB3  | 1:C:185:CYS:HB2  | 1.84                     | 0.59              |
| 1:A:417:GLU:CB   | 1:A:479:TRP:CZ3  | 2.82                     | 0.59              |
| 1:E:569:ILE:O    | 1:E:573:THR:HB   | 2.02                     | 0.59              |
| 1:A:209:VAL:O    | 1:A:212:SER:OG   | 2.20                     | 0.59              |
| 1:F:455:MET:SD   | 1:F:581:VAL:CG1  | 2.90                     | 0.59              |
| 1:A:686:MET:O    | 1:A:688:LYS:NZ   | 2.35                     | 0.59              |
| 1:D:628:GLU:HA   | 1:D:675:ARG:NH2  | 2.17                     | 0.59              |
| 1:E:180:CYS:HA   | 1:E:221:TRP:O    | 2.02                     | 0.59              |
| 1:E:720:LEU:HD12 | 1:E:724:ARG:HB2  | 1.84                     | 0.59              |
| 1:C:209:VAL:HG12 | 1:C:211:LEU:H    | 1.68                     | 0.59              |
| 1:A:417:GLU:CG   | 1:A:479:TRP:CH2  | 2.85                     | 0.59              |
| 1:D:41:ARG:HH22  | 1:D:57:ARG:NH2   | 2.00                     | 0.58              |
| 1:E:666:ASP:OD2  | 1:E:710:PHE:HA   | 2.03                     | 0.58              |
| 1:D:209:VAL:HG23 | 1:D:212:SER:OG   | 2.04                     | 0.58              |
| 1:E:33:THR:HB    | 1:E:211:LEU:HD23 | 1.84                     | 0.58              |
| 1:A:70:TYR:HB3   | 1:A:222:VAL:HG21 | 1.86                     | 0.58              |
| 1:A:417:GLU:CG   | 1:A:479:TRP:CZ2  | 2.86                     | 0.58              |
| 1:C:724:ARG:HD3  | 1:C:828:ASP:HB3  | 1.85                     | 0.58              |
| 1:F:731:ARG:HD3  | 1:F:736:LEU:HD21 | 1.85                     | 0.58              |
| 1:F:770:HIS:O    | 1:F:841:LEU:N    | 2.27                     | 0.58              |
| 1:B:633:MET:HE1  | 1:B:681:ARG:NE   | 2.19                     | 0.58              |
| 1:C:383:TRP:CD1  | 1:C:553:LEU:HB2  | 2.39                     | 0.58              |
| 1:E:455:MET:HB2  | 1:E:476:TRP:HB3  | 1.86                     | 0.58              |
| 1:F:306:TYR:HA   | 1:F:595:ILE:HG22 | 1.85                     | 0.58              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:730:CYS:HB2  | 1:B:770:HIS:HE1  | 1.68                     | 0.58              |
| 1:B:784:SER:HB3  | 1:B:869:VAL:HG13 | 1.86                     | 0.58              |
| 1:A:353:GLN:HA   | 1:A:356:PHE:HB3  | 1.85                     | 0.57              |
| 1:E:188:THR:O    | 1:E:192:MET:HG2  | 2.03                     | 0.57              |
| 1:A:352:GLN:HE22 | 1:A:455:MET:HG2  | 1.69                     | 0.57              |
| 1:E:413:ILE:HD13 | 1:E:452:VAL:HB   | 1.86                     | 0.57              |
| 1:A:70:TYR:CD1   | 1:A:225:ALA:HB2  | 2.40                     | 0.57              |
| 1:A:209:VAL:HG23 | 1:A:212:SER:OG   | 2.05                     | 0.57              |
| 1:B:529:GLY:O    | 1:B:670:LYS:NZ   | 2.28                     | 0.57              |
| 1:D:644:LYS:HA   | 1:D:647:ASN:HB2  | 1.85                     | 0.57              |
| 1:A:551:GLU:OE2  | 1:A:615:THR:OG1  | 2.23                     | 0.57              |
| 1:A:180:CYS:HA   | 1:A:221:TRP:O    | 2.04                     | 0.57              |
| 1:B:175:ARG:O    | 1:C:175:ARG:NH1  | 2.34                     | 0.57              |
| 1:A:217:HIS:NE2  | 1:A:237:SER:OG   | 2.33                     | 0.57              |
| 1:C:20:SER:O     | 1:C:24:PHE:HB2   | 2.05                     | 0.57              |
| 1:D:77:VAL:HG22  | 1:D:142:THR:HB   | 1.87                     | 0.57              |
| 1:E:476:TRP:N    | 1:E:476:TRP:CD1  | 2.72                     | 0.56              |
| 1:A:76:LYS:HE3   | 1:A:99:GLU:OE1   | 2.06                     | 0.56              |
| 1:B:82:CYS:SG    | 1:B:104:THR:HB   | 2.46                     | 0.56              |
| 1:B:157:GLU:HB3  | 1:B:185:CYS:HB2  | 1.88                     | 0.56              |
| 1:C:206:LEU:HD13 | 1:C:229:THR:HG22 | 1.86                     | 0.56              |
| 1:D:165:LEU:HA   | 1:D:168:VAL:HG22 | 1.86                     | 0.56              |
| 1:E:289:HIS:O    | 1:E:293:TRP:HB2  | 2.05                     | 0.56              |
| 1:E:551:GLU:OE2  | 1:E:615:THR:OG1  | 2.23                     | 0.56              |
| 1:C:349:PRO:HG2  | 1:C:590:THR:HG21 | 1.86                     | 0.56              |
| 1:D:690:ARG:NH2  | 1:D:697:LYS:O    | 2.33                     | 0.56              |
| 1:A:41:ARG:HH12  | 1:A:57:ARG:HH21  | 1.53                     | 0.56              |
| 1:C:555:THR:O    | 1:C:563:ARG:HD3  | 2.05                     | 0.56              |
| 1:D:161:THR:O    | 1:D:165:LEU:HG   | 2.06                     | 0.56              |
| 1:A:77:VAL:HG22  | 1:A:142:THR:HB   | 1.88                     | 0.56              |
| 1:D:439:GLU:OE1  | 1:D:449:GLN:HB2  | 2.06                     | 0.56              |
| 1:F:35:VAL:HG12  | 1:F:254:GLU:O    | 2.05                     | 0.56              |
| 1:F:353:GLN:NE2  | 1:F:582:LEU:O    | 2.38                     | 0.56              |
| 1:D:327:ARG:HH12 | 1:D:331:LYS:NZ   | 2.04                     | 0.56              |
| 1:F:383:TRP:CE3  | 1:F:554:ILE:HD13 | 2.40                     | 0.56              |
| 1:B:773:ASP:OD1  | 1:B:858:ARG:NE   | 2.37                     | 0.56              |
| 1:E:199:GLN:NE2  | 1:E:227:SER:O    | 2.39                     | 0.56              |
| 1:C:196:GLU:HG3  | 1:C:229:THR:OG1  | 2.06                     | 0.55              |
| 1:D:730:CYS:HB2  | 1:D:770:HIS:HE1  | 1.71                     | 0.55              |
| 1:E:344:MET:HE2  | 1:E:461:LYS:HG2  | 1.87                     | 0.55              |
| 1:C:161:THR:HG21 | 1:C:183:VAL:HG13 | 1.89                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:784:SER:HB3  | 1:D:869:VAL:HG13 | 1.88                     | 0.55              |
| 1:E:868:THR:O    | 1:E:872:VAL:HG23 | 2.07                     | 0.55              |
| 1:A:186:PRO:HD2  | 1:A:217:HIS:HB3  | 1.87                     | 0.55              |
| 1:A:322:ILE:HG21 | 1:A:327:ARG:HD2  | 1.88                     | 0.55              |
| 1:A:476:TRP:CD1  | 1:A:476:TRP:N    | 2.74                     | 0.55              |
| 1:A:738:GLY:O    | 1:A:742:VAL:HG23 | 2.06                     | 0.55              |
| 1:A:786:PRO:HG2  | 1:A:789:TRP:CH2  | 2.41                     | 0.55              |
| 1:C:765:GLN:HG3  | 1:C:778:ALA:HB1  | 1.87                     | 0.55              |
| 1:D:370:GLY:HA3  | 1:D:635:ASP:O    | 2.07                     | 0.55              |
| 1:A:359:LYS:HZ2  | 1:A:473:ARG:HG2  | 1.70                     | 0.55              |
| 1:B:551:GLU:OE2  | 1:B:615:THR:OG1  | 2.22                     | 0.55              |
| 1:A:724:ARG:HD3  | 1:A:828:ASP:HB3  | 1.88                     | 0.55              |
| 1:E:390:LYS:HE2  | 1:E:503:ASN:HB2  | 1.89                     | 0.55              |
| 1:B:744:PRO:HD3  | 1:B:756:LEU:HD22 | 1.89                     | 0.55              |
| 1:A:208:ARG:NH2  | 1:A:213:ARG:O    | 2.40                     | 0.55              |
| 1:D:393:ARG:NH2  | 1:D:399:GLU:OE2  | 2.39                     | 0.55              |
| 1:F:476:TRP:HZ3  | 1:F:577:LYS:HD2  | 1.71                     | 0.55              |
| 1:D:633:MET:CE   | 1:D:681:ARG:NE   | 2.69                     | 0.55              |
| 1:E:580:LYS:HE2  | 1:E:592:MET:HG2  | 1.89                     | 0.55              |
| 1:C:322:ILE:HG21 | 1:C:327:ARG:HD2  | 1.88                     | 0.55              |
| 1:C:656:ARG:HA   | 1:C:659:ARG:HD2  | 1.89                     | 0.55              |
| 1:D:278:ILE:O    | 1:D:282:ILE:HG12 | 2.07                     | 0.54              |
| 1:D:672:ILE:O    | 1:D:673:ASP:OD1  | 2.24                     | 0.54              |
| 1:A:286:ARG:O    | 1:A:290:ALA:HB2  | 2.07                     | 0.54              |
| 1:A:359:LYS:HZ2  | 1:A:473:ARG:CG   | 2.15                     | 0.54              |
| 1:C:387:GLY:HA3  | 1:C:557:GLN:OE1  | 2.07                     | 0.54              |
| 1:C:455:MET:HB3  | 1:C:581:VAL:HG12 | 1.88                     | 0.54              |
| 1:C:533:ALA:HB2  | 1:C:668:VAL:HG22 | 1.88                     | 0.54              |
| 1:D:342:ILE:HD12 | 1:D:738:GLY:HA3  | 1.89                     | 0.54              |
| 1:A:344:MET:HE2  | 1:A:461:LYS:HG2  | 1.89                     | 0.54              |
| 1:B:580:LYS:HG2  | 1:B:592:MET:SD   | 2.47                     | 0.54              |
| 1:C:515:ARG:NH2  | 1:C:822:GLU:O    | 2.41                     | 0.54              |
| 1:D:82:CYS:O     | 2:D:1001:SAH:N   | 2.41                     | 0.54              |
| 1:F:299:HIS:HB2  | 1:F:301:TYR:HD2  | 1.70                     | 0.54              |
| 1:B:412:ALA:CB   | 1:B:417:GLU:OE1  | 2.55                     | 0.54              |
| 1:D:206:LEU:HB3  | 1:D:219:MET:HE2  | 1.90                     | 0.54              |
| 1:D:771:ARG:HH21 | 1:D:851:SER:HB2  | 1.73                     | 0.54              |
| 1:E:143:LEU:O    | 1:E:179:PHE:HA   | 2.08                     | 0.54              |
| 1:B:165:LEU:HA   | 1:B:168:VAL:HG22 | 1.88                     | 0.54              |
| 1:E:75:GLY:H     | 1:E:97:VAL:HA    | 1.72                     | 0.54              |
| 1:C:263:THR:OG1  | 1:C:298:ASN:O    | 2.22                     | 0.54              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:713:HIS:NE2  | 1:B:731:ARG:HD2  | 2.22                     | 0.54              |
| 1:C:476:TRP:CD1  | 1:C:476:TRP:N    | 2.76                     | 0.54              |
| 1:A:413:ILE:HD13 | 1:A:452:VAL:HB   | 1.90                     | 0.54              |
| 1:E:66:VAL:HG22  | 1:E:71:LEU:HB3   | 1.90                     | 0.53              |
| 1:E:133:PHE:CE1  | 1:E:163:ARG:HG2  | 2.43                     | 0.53              |
| 1:D:424:VAL:HA   | 1:D:427:VAL:HG22 | 1.90                     | 0.53              |
| 1:E:41:ARG:HH21  | 1:E:57:ARG:HH11  | 1.55                     | 0.53              |
| 1:F:724:ARG:HD3  | 1:F:828:ASP:HB3  | 1.89                     | 0.53              |
| 1:C:188:THR:O    | 1:C:192:MET:HG2  | 2.09                     | 0.53              |
| 1:D:81:GLY:HA3   | 1:D:147:ILE:HG12 | 1.90                     | 0.53              |
| 1:F:771:ARG:HB2  | 1:F:774:LEU:HB2  | 1.90                     | 0.53              |
| 1:C:78:ILE:CD1   | 1:C:140:CYS:HB3  | 2.32                     | 0.53              |
| 1:E:609:TYR:OH   | 1:E:663:SER:OG   | 2.27                     | 0.53              |
| 1:B:9:GLY:HA3    | 1:B:187:TYR:HB2  | 1.91                     | 0.53              |
| 1:C:78:ILE:HD13  | 1:C:171:TRP:CZ3  | 2.42                     | 0.53              |
| 1:A:628:GLU:HA   | 1:A:675:ARG:NH2  | 2.23                     | 0.53              |
| 1:F:694:GLN:HB3  | 1:F:697:LYS:HB2  | 1.89                     | 0.53              |
| 1:E:157:GLU:HB3  | 1:E:185:CYS:HB2  | 1.90                     | 0.53              |
| 1:F:37:ARG:HH11  | 1:F:57:ARG:HD2   | 1.71                     | 0.53              |
| 1:E:299:HIS:HB2  | 1:E:301:TYR:CD2  | 2.44                     | 0.53              |
| 1:C:468:LYS:HG2  | 1:C:469:ALA:H    | 1.74                     | 0.53              |
| 1:F:346:ASP:OD1  | 1:F:348:THR:OG1  | 2.17                     | 0.53              |
| 1:B:320:SER:HB2  | 1:B:344:MET:HB2  | 1.90                     | 0.53              |
| 1:B:738:GLY:O    | 1:B:742:VAL:HG23 | 2.09                     | 0.53              |
| 1:D:274:ASN:HB2  | 1:D:277:ILE:HD12 | 1.91                     | 0.53              |
| 1:E:80:LEU:HD12  | 1:E:145:CYS:HB2  | 1.90                     | 0.53              |
| 1:E:329:LEU:O    | 1:E:861:TRP:NE1  | 2.42                     | 0.53              |
| 1:A:284:ARG:HH11 | 1:A:449:GLN:HB3  | 1.75                     | 0.52              |
| 1:E:195:LEU:HD22 | 1:E:206:LEU:HD21 | 1.91                     | 0.52              |
| 1:A:158:GLU:OE2  | 1:A:190:THR:HB   | 2.10                     | 0.52              |
| 1:F:33:THR:HB    | 1:F:211:LEU:HD23 | 1.91                     | 0.52              |
| 1:F:455:MET:SD   | 1:F:581:VAL:HG12 | 2.49                     | 0.52              |
| 1:F:762:GLN:NE2  | 1:F:805:TRP:O    | 2.42                     | 0.52              |
| 1:E:617:LEU:HD22 | 1:E:657:LEU:HD11 | 1.92                     | 0.52              |
| 1:B:581:VAL:HG12 | 1:B:582:LEU:N    | 2.25                     | 0.52              |
| 1:F:514:GLN:HB3  | 1:F:819:TRP:CH2  | 2.45                     | 0.52              |
| 1:D:125:ARG:HH22 | 3:D:1003:PO4:P   | 2.32                     | 0.52              |
| 1:B:514:GLN:HG2  | 1:B:819:TRP:CZ2  | 2.45                     | 0.52              |
| 1:E:82:CYS:SG    | 1:E:104:THR:HB   | 2.50                     | 0.52              |
| 1:D:327:ARG:HG3  | 1:D:741:ARG:NH1  | 2.25                     | 0.52              |
| 1:E:284:ARG:HH11 | 1:E:449:GLN:HB3  | 1.73                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:304:TRP:HZ3  | 1:D:579:VAL:HG21 | 1.75                     | 0.52              |
| 1:D:349:PRO:HG2  | 1:D:590:THR:HG21 | 1.91                     | 0.52              |
| 1:F:50:THR:HG21  | 1:F:588:GLY:HA2  | 1.91                     | 0.52              |
| 1:F:455:MET:SD   | 1:F:581:VAL:HG11 | 2.50                     | 0.52              |
| 1:A:555:THR:O    | 1:A:563:ARG:HD3  | 2.10                     | 0.52              |
| 1:A:559:GLU:N    | 1:A:559:GLU:OE1  | 2.43                     | 0.52              |
| 1:D:199:GLN:HA   | 1:D:221:TRP:HZ2  | 1.74                     | 0.52              |
| 1:D:387:GLY:HA2  | 1:D:498:TRP:CZ3  | 2.45                     | 0.52              |
| 1:F:460:GLU:CB   | 1:F:462:LYS:HE3  | 2.40                     | 0.52              |
| 1:A:383:TRP:CD1  | 1:A:553:LEU:HB2  | 2.45                     | 0.51              |
| 1:D:488:GLU:HG3  | 1:D:489:ALA:N    | 2.24                     | 0.51              |
| 1:E:768:TYR:HA   | 1:E:770:HIS:NE2  | 2.25                     | 0.51              |
| 1:C:55:VAL:O     | 1:C:84:ARG:HD3   | 2.10                     | 0.51              |
| 1:A:158:GLU:HG3  | 1:A:191:MET:HG2  | 1.93                     | 0.51              |
| 1:E:683:LEU:HG   | 1:E:688:LYS:O    | 2.09                     | 0.51              |
| 1:E:853:ILE:HA   | 1:E:858:ARG:HD3  | 1.92                     | 0.51              |
| 1:F:284:ARG:NH1  | 1:F:449:GLN:HB3  | 2.25                     | 0.51              |
| 1:F:349:PRO:HG2  | 1:F:590:THR:HG21 | 1.92                     | 0.51              |
| 1:A:8:LEU:HD21   | 1:A:238:GLN:HG3  | 1.92                     | 0.51              |
| 1:D:853:ILE:HG22 | 1:D:858:ARG:CZ   | 2.41                     | 0.51              |
| 1:F:120:GLY:HA2  | 1:F:264:ARG:HB2  | 1.92                     | 0.51              |
| 1:C:720:LEU:HD12 | 1:C:724:ARG:HB2  | 1.91                     | 0.51              |
| 1:D:720:LEU:HD12 | 1:D:724:ARG:HB2  | 1.92                     | 0.51              |
| 1:E:74:TYR:CE1   | 1:E:141:ASP:HB3  | 2.45                     | 0.51              |
| 1:A:145:CYS:HB3  | 1:A:181:ILE:HG13 | 1.93                     | 0.51              |
| 1:D:13:LYS:HG2   | 1:D:154:PRO:HG3  | 1.91                     | 0.51              |
| 1:D:476:TRP:N    | 1:D:476:TRP:CD1  | 2.77                     | 0.51              |
| 1:E:157:GLU:HG2  | 1:E:184:LEU:HD21 | 1.91                     | 0.51              |
| 1:A:401:ILE:HD11 | 1:A:433:TRP:HZ2  | 1.76                     | 0.51              |
| 1:B:633:MET:HE1  | 1:B:681:ARG:HD2  | 1.93                     | 0.51              |
| 1:E:773:ASP:OD1  | 1:E:858:ARG:NE   | 2.40                     | 0.51              |
| 1:B:616:ASN:HD21 | 1:B:667:CYS:HB3  | 1.76                     | 0.51              |
| 1:C:120:GLY:O    | 1:C:123:ILE:HG12 | 2.11                     | 0.51              |
| 1:C:266:VAL:HG22 | 1:C:267:VAL:H    | 1.76                     | 0.51              |
| 1:D:194:THR:HG23 | 1:D:197:ARG:HH22 | 1.76                     | 0.51              |
| 1:E:299:HIS:HB2  | 1:E:301:TYR:HD2  | 1.75                     | 0.51              |
| 1:A:479:TRP:CD1  | 1:A:479:TRP:C    | 2.84                     | 0.51              |
| 1:A:509:GLU:HG2  | 1:A:609:TYR:CE2  | 2.46                     | 0.51              |
| 1:C:476:TRP:CE2  | 1:C:602:GLY:HA2  | 2.46                     | 0.51              |
| 1:F:476:TRP:CZ3  | 1:F:577:LYS:HD2  | 2.45                     | 0.51              |
| 1:E:518:TYR:OH   | 1:E:726:ILE:HA   | 2.11                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:490:LEU:HA   | 1:A:492:PHE:CE1  | 2.46                     | 0.50              |
| 1:F:195:LEU:HD22 | 1:F:206:LEU:HD11 | 1.94                     | 0.50              |
| 1:F:539:TRP:NE1  | 1:F:543:ILE:HD11 | 2.26                     | 0.50              |
| 1:A:28:LYS:HZ1   | 1:B:45:LYS:HE2   | 1.75                     | 0.50              |
| 1:C:559:GLU:OE1  | 1:C:559:GLU:N    | 2.44                     | 0.50              |
| 1:D:102:GLY:HA3  | 1:D:126:LEU:HD23 | 1.93                     | 0.50              |
| 1:F:330:SER:O    | 1:F:741:ARG:NH2  | 2.44                     | 0.50              |
| 1:D:26:SER:HA    | 1:D:248:ARG:HD2  | 1.93                     | 0.50              |
| 1:B:819:TRP:O    | 1:B:823:ASN:ND2  | 2.44                     | 0.50              |
| 1:D:320:SER:HB2  | 1:D:344:MET:HB2  | 1.92                     | 0.50              |
| 1:B:616:ASN:HB3  | 1:B:662:VAL:HG11 | 1.94                     | 0.50              |
| 1:C:161:THR:O    | 1:C:165:LEU:HG   | 2.11                     | 0.50              |
| 1:C:299:HIS:HB2  | 1:C:301:TYR:CD2  | 2.47                     | 0.50              |
| 1:F:355:VAL:HG11 | 1:F:473:ARG:HA   | 1.94                     | 0.50              |
| 1:A:70:TYR:O     | 1:A:222:VAL:HB   | 2.12                     | 0.50              |
| 1:B:404:VAL:HG11 | 1:B:427:VAL:HG11 | 1.93                     | 0.50              |
| 1:B:633:MET:CE   | 1:B:681:ARG:HD2  | 2.42                     | 0.50              |
| 1:A:55:VAL:O     | 1:A:84:ARG:NH1   | 2.45                     | 0.50              |
| 1:C:14:ALA:O     | 1:C:18:GLN:HG3   | 2.12                     | 0.50              |
| 1:F:277:ILE:HG23 | 1:F:572:TYR:CD1  | 2.47                     | 0.50              |
| 1:C:644:LYS:HA   | 1:C:647:ASN:HB2  | 1.93                     | 0.50              |
| 1:F:186:PRO:HD2  | 1:F:187:TYR:CD1  | 2.46                     | 0.50              |
| 1:C:78:ILE:CD1   | 1:C:171:TRP:HZ3  | 2.25                     | 0.50              |
| 1:C:241:LEU:HD23 | 1:C:244:MET:SD   | 2.52                     | 0.50              |
| 1:D:25:TYR:HA    | 1:D:28:LYS:HE2   | 1.94                     | 0.50              |
| 1:D:668:VAL:HG23 | 1:D:710:PHE:CD1  | 2.47                     | 0.50              |
| 1:E:16:LEU:HD12  | 1:E:19:MET:SD    | 2.52                     | 0.50              |
| 1:E:35:VAL:CG2   | 1:E:37:ARG:CD    | 2.83                     | 0.50              |
| 1:E:718:LEU:HD21 | 1:E:841:LEU:HD12 | 1.93                     | 0.50              |
| 1:F:247:PRO:HG2  | 1:F:249:ARG:HG3  | 1.92                     | 0.50              |
| 1:C:158:GLU:HG3  | 1:C:191:MET:CG   | 2.39                     | 0.49              |
| 1:C:485:LEU:HA   | 1:C:488:GLU:HG2  | 1.93                     | 0.49              |
| 1:E:278:ILE:O    | 1:E:282:ILE:HG12 | 2.10                     | 0.49              |
| 1:A:765:GLN:HG3  | 1:A:778:ALA:HB1  | 1.95                     | 0.49              |
| 1:B:653:GLY:O    | 1:B:657:LEU:HB2  | 2.12                     | 0.49              |
| 1:C:80:LEU:HD12  | 1:C:145:CYS:SG   | 2.52                     | 0.49              |
| 1:A:149:GLU:HB3  | 1:A:160:ARG:HD3  | 1.93                     | 0.49              |
| 1:B:440:ARG:NH2  | 1:B:488:GLU:OE1  | 2.45                     | 0.49              |
| 1:E:164:VAL:O    | 1:E:168:VAL:HG13 | 2.12                     | 0.49              |
| 1:E:349:PRO:HG2  | 1:E:590:THR:HG21 | 1.95                     | 0.49              |
| 1:E:583:ARG:HG3  | 1:E:584:PRO:HD2  | 1.93                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:641:ARG:HB2  | 1:E:644:LYS:HE3  | 1.94                     | 0.49              |
| 1:B:690:ARG:NH2  | 1:B:697:LYS:O    | 2.37                     | 0.49              |
| 1:C:78:ILE:HG21  | 1:C:171:TRP:CZ3  | 2.48                     | 0.49              |
| 1:F:620:GLN:OE1  | 1:F:669:VAL:HG21 | 2.12                     | 0.49              |
| 1:B:479:TRP:CD1  | 1:B:479:TRP:C    | 2.85                     | 0.49              |
| 1:B:613:THR:HG23 | 1:B:662:VAL:HG12 | 1.94                     | 0.49              |
| 1:D:116:VAL:HG23 | 1:D:118:SER:H    | 1.77                     | 0.49              |
| 1:A:390:LYS:HE2  | 1:A:503:ASN:HB2  | 1.95                     | 0.49              |
| 1:A:499:MET:HB2  | 1:A:509:GLU:HB2  | 1.95                     | 0.49              |
| 1:C:37:ARG:NH1   | 1:C:56:SER:O     | 2.45                     | 0.49              |
| 1:F:411:GLY:HA3  | 1:F:479:TRP:HA   | 1.95                     | 0.49              |
| 1:B:30:SER:O     | 1:B:214:ASN:ND2  | 2.46                     | 0.49              |
| 1:C:164:VAL:O    | 1:C:168:VAL:HG13 | 2.12                     | 0.49              |
| 1:D:380:SER:O    | 1:D:384:LYS:HG3  | 2.12                     | 0.49              |
| 1:C:513:LEU:HD23 | 1:C:516:LEU:HD12 | 1.94                     | 0.49              |
| 1:F:42:ARG:CG    | 1:F:42:ARG:NH2   | 2.73                     | 0.49              |
| 1:F:185:CYS:O    | 1:F:191:MET:HG3  | 2.13                     | 0.49              |
| 1:F:646:THR:HA   | 1:F:649:LEU:HB2  | 1.95                     | 0.49              |
| 1:A:357:LYS:HG3  | 1:A:358:GLU:HG2  | 1.95                     | 0.49              |
| 1:A:569:ILE:O    | 1:A:573:THR:HB   | 2.13                     | 0.49              |
| 1:A:686:MET:HB3  | 1:A:688:LYS:HZ3  | 1.78                     | 0.49              |
| 1:B:20:SER:O     | 1:B:24:PHE:HB2   | 2.13                     | 0.49              |
| 1:B:644:LYS:HA   | 1:B:647:ASN:HB2  | 1.95                     | 0.49              |
| 1:C:83:GLY:HA3   | 2:C:1001:SAH:HB1 | 1.94                     | 0.49              |
| 1:C:344:MET:HE1  | 1:C:744:PRO:HA   | 1.95                     | 0.49              |
| 1:D:629:GLU:OE1  | 1:D:675:ARG:NH1  | 2.46                     | 0.49              |
| 1:E:115:LEU:HB3  | 1:E:350:TYR:OH   | 2.13                     | 0.49              |
| 1:A:25:TYR:HD1   | 1:A:28:LYS:HE2   | 1.78                     | 0.48              |
| 1:C:368:GLN:OE1  | 1:C:637:TRP:HA   | 2.12                     | 0.48              |
| 1:D:194:THR:HG23 | 1:D:197:ARG:NH2  | 2.27                     | 0.48              |
| 1:E:157:GLU:OE1  | 1:E:187:TYR:OH   | 2.15                     | 0.48              |
| 1:E:436:VAL:HG11 | 1:E:484:PHE:CE2  | 2.47                     | 0.48              |
| 1:E:609:TYR:OH   | 1:E:663:SER:CB   | 2.61                     | 0.48              |
| 1:A:104:THR:HG22 | 1:A:127:LYS:O    | 2.13                     | 0.48              |
| 1:A:479:TRP:HD1  | 1:A:480:LEU:N    | 2.12                     | 0.48              |
| 1:C:133:PHE:HA   | 1:C:167:MET:HG3  | 1.95                     | 0.48              |
| 1:C:629:GLU:OE1  | 1:C:675:ARG:NH1  | 2.46                     | 0.48              |
| 1:A:765:GLN:HE21 | 1:A:811:MET:HG3  | 1.78                     | 0.48              |
| 1:B:102:GLY:HA3  | 1:B:126:LEU:HD23 | 1.95                     | 0.48              |
| 1:B:344:MET:HE2  | 1:B:461:LYS:HG2  | 1.96                     | 0.48              |
| 1:D:818:VAL:HG23 | 1:D:819:TRP:CD1  | 2.47                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:777:MET:O    | 1:E:781:ILE:HG13 | 2.13                     | 0.48              |
| 1:F:143:LEU:HD22 | 1:F:172:LEU:HD23 | 1.95                     | 0.48              |
| 1:F:180:CYS:HA   | 1:F:221:TRP:O    | 2.14                     | 0.48              |
| 1:F:345:THR:HG21 | 1:F:462:LYS:HD2  | 1.95                     | 0.48              |
| 1:A:532:TYR:CE1  | 1:A:677:ALA:HB2  | 2.49                     | 0.48              |
| 1:B:461:LYS:HD3  | 1:B:742:VAL:HB   | 1.94                     | 0.48              |
| 1:F:690:ARG:NH1  | 1:F:699:SER:OG   | 2.47                     | 0.48              |
| 1:B:77:VAL:HG13  | 1:B:142:THR:HB   | 1.95                     | 0.48              |
| 1:B:453:TYR:HB2  | 1:B:578:VAL:O    | 2.13                     | 0.48              |
| 1:B:583:ARG:HG3  | 1:B:584:PRO:HD2  | 1.96                     | 0.48              |
| 1:F:194:THR:HG22 | 1:F:198:LEU:HD22 | 1.96                     | 0.48              |
| 1:F:766:LEU:HD23 | 1:F:805:TRP:HE3  | 1.78                     | 0.48              |
| 1:C:440:ARG:NH2  | 1:C:488:GLU:OE1  | 2.47                     | 0.48              |
| 1:D:133:PHE:CE1  | 1:D:163:ARG:HG2  | 2.49                     | 0.48              |
| 1:D:401:ILE:HD11 | 1:D:433:TRP:CZ2  | 2.48                     | 0.48              |
| 1:E:54:ALA:HA    | 1:E:259:LEU:HD11 | 1.95                     | 0.48              |
| 1:A:62:LEU:HD23  | 1:A:62:LEU:HA    | 1.62                     | 0.48              |
| 1:B:63:ARG:HA    | 1:B:90:TYR:CZ    | 2.48                     | 0.48              |
| 1:B:479:TRP:CD1  | 1:B:480:LEU:N    | 2.81                     | 0.48              |
| 1:C:644:LYS:HA   | 1:C:647:ASN:HD22 | 1.78                     | 0.48              |
| 1:F:398:GLU:O    | 1:F:402:ASN:HB2  | 2.14                     | 0.48              |
| 1:B:120:GLY:HA2  | 1:B:264:ARG:HB2  | 1.96                     | 0.48              |
| 1:D:616:ASN:O    | 1:D:620:GLN:HG2  | 2.14                     | 0.48              |
| 1:C:199:GLN:OE1  | 1:C:229:THR:HG23 | 2.14                     | 0.48              |
| 1:D:8:LEU:HD23   | 1:D:237:SER:HB2  | 1.94                     | 0.48              |
| 1:D:521:GLU:O    | 1:D:525:ARG:HG3  | 2.13                     | 0.48              |
| 1:E:284:ARG:O    | 1:E:287:SER:OG   | 2.29                     | 0.48              |
| 1:F:113:PRO:HD2  | 1:F:466:PHE:CD1  | 2.49                     | 0.48              |
| 1:D:411:GLY:O    | 1:D:413:ILE:HG13 | 2.14                     | 0.47              |
| 1:F:42:ARG:CZ    | 1:F:42:ARG:CB    | 2.92                     | 0.47              |
| 1:F:580:LYS:HE2  | 1:F:592:MET:HG2  | 1.96                     | 0.47              |
| 1:A:12:TRP:NE1   | 1:A:240:LEU:HB3  | 2.29                     | 0.47              |
| 1:A:34:GLU:HG2   | 1:A:35:VAL:H     | 1.77                     | 0.47              |
| 1:B:78:ILE:HD12  | 1:B:140:CYS:HB3  | 1.95                     | 0.47              |
| 1:C:320:SER:HB2  | 1:C:344:MET:HB2  | 1.95                     | 0.47              |
| 1:F:765:GLN:HG3  | 1:F:778:ALA:HB1  | 1.96                     | 0.47              |
| 1:A:461:LYS:CE   | 1:A:744:PRO:HG3  | 2.43                     | 0.47              |
| 1:D:330:SER:HB3  | 1:D:777:MET:SD   | 2.54                     | 0.47              |
| 1:F:853:ILE:HA   | 1:F:858:ARG:HD3  | 1.95                     | 0.47              |
| 1:A:13:LYS:HG2   | 1:A:154:PRO:HG3  | 1.96                     | 0.47              |
| 1:A:653:GLY:O    | 1:A:657:LEU:HB2  | 2.13                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:133:PHE:CE1  | 1:B:163:ARG:HG2  | 2.49                     | 0.47              |
| 1:B:458:LYS:HD3  | 1:B:460:GLU:CD   | 2.35                     | 0.47              |
| 1:E:479:TRP:CZ2  | 1:E:481:GLY:HA3  | 2.48                     | 0.47              |
| 1:E:656:ARG:HA   | 1:E:659:ARG:HD2  | 1.96                     | 0.47              |
| 1:B:41:ARG:HH22  | 1:B:57:ARG:HH21  | 1.62                     | 0.47              |
| 1:C:154:PRO:HA   | 1:C:157:GLU:HB2  | 1.96                     | 0.47              |
| 1:D:293:TRP:CZ2  | 1:D:308:GLY:HA3  | 2.49                     | 0.47              |
| 1:E:580:LYS:HG2  | 1:E:592:MET:SD   | 2.55                     | 0.47              |
| 1:F:367:PRO:HG3  | 1:F:686:MET:HA   | 1.96                     | 0.47              |
| 1:F:532:TYR:CE1  | 1:F:677:ALA:HB2  | 2.50                     | 0.47              |
| 1:F:460:GLU:CD   | 1:F:462:LYS:CE   | 2.76                     | 0.47              |
| 1:A:532:TYR:CZ   | 1:A:677:ALA:HB2  | 2.50                     | 0.47              |
| 1:A:656:ARG:HA   | 1:A:659:ARG:HD2  | 1.97                     | 0.47              |
| 1:B:199:GLN:NE2  | 1:B:227:SER:O    | 2.46                     | 0.47              |
| 1:E:368:GLN:HB2  | 1:E:636:LEU:O    | 2.13                     | 0.47              |
| 1:E:476:TRP:CE2  | 1:E:602:GLY:HA2  | 2.50                     | 0.47              |
| 1:E:489:ALA:HB2  | 1:E:569:ILE:HD12 | 1.95                     | 0.47              |
| 1:F:133:PHE:CD1  | 1:F:167:MET:HB2  | 2.50                     | 0.47              |
| 1:B:628:GLU:HA   | 1:B:675:ARG:NH2  | 2.30                     | 0.47              |
| 1:E:401:ILE:HD11 | 1:E:433:TRP:CZ2  | 2.50                     | 0.47              |
| 1:F:853:ILE:HG22 | 1:F:858:ARG:CZ   | 2.44                     | 0.47              |
| 1:B:783:SER:HA   | 1:B:883:MET:O    | 2.15                     | 0.47              |
| 1:F:25:TYR:HA    | 1:F:28:LYS:HE2   | 1.96                     | 0.47              |
| 1:F:476:TRP:N    | 1:F:476:TRP:CD1  | 2.83                     | 0.47              |
| 1:F:873:ARG:HG2  | 1:F:882:TYR:CD1  | 2.50                     | 0.47              |
| 1:C:620:GLN:NE2  | 1:C:667:CYS:SG   | 2.87                     | 0.47              |
| 1:D:383:TRP:CD1  | 1:D:553:LEU:HB2  | 2.50                     | 0.47              |
| 1:D:717:LYS:HE2  | 1:D:725:SER:HB2  | 1.97                     | 0.47              |
| 1:E:461:LYS:NZ   | 1:E:760:TYR:OH   | 2.43                     | 0.47              |
| 1:A:29:LYS:HE3   | 1:B:45:LYS:NZ    | 2.30                     | 0.46              |
| 1:A:116:VAL:HG23 | 1:A:118:SER:H    | 1.79                     | 0.46              |
| 1:B:476:TRP:CD1  | 1:B:476:TRP:N    | 2.83                     | 0.46              |
| 1:E:158:GLU:HG3  | 1:E:191:MET:HG2  | 1.97                     | 0.46              |
| 1:A:371:THR:HG23 | 1:A:682:PHE:HD2  | 1.80                     | 0.46              |
| 1:C:162:LEU:HG   | 1:C:191:MET:SD   | 2.56                     | 0.46              |
| 1:E:690:ARG:NH2  | 1:E:694:GLN:O    | 2.46                     | 0.46              |
| 1:F:783:SER:HA   | 1:F:883:MET:O    | 2.15                     | 0.46              |
| 1:E:77:VAL:HG22  | 1:E:142:THR:HB   | 1.97                     | 0.46              |
| 1:A:435:LEU:HD23 | 1:A:438:LYS:HD2  | 1.97                     | 0.46              |
| 1:B:49:ALA:HB1   | 1:B:117:GLN:H    | 1.79                     | 0.46              |
| 1:C:342:ILE:HD12 | 1:C:738:GLY:HA3  | 1.96                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:392:PRO:HB3  | 1:C:492:PHE:CZ   | 2.50                     | 0.46              |
| 1:C:733:GLN:OE1  | 1:C:851:SER:HA   | 2.14                     | 0.46              |
| 2:E:1001:SAH:H8  | 2:E:1001:SAH:H2' | 1.67                     | 0.46              |
| 1:F:12:TRP:CZ2   | 1:F:240:LEU:HD13 | 2.50                     | 0.46              |
| 1:A:784:SER:HB2  | 1:A:872:VAL:HB   | 1.98                     | 0.46              |
| 2:B:1001:SAH:H8  | 2:B:1001:SAH:H2' | 1.65                     | 0.46              |
| 1:D:195:LEU:HD22 | 1:D:206:LEU:HD21 | 1.97                     | 0.46              |
| 1:D:301:TYR:OH   | 1:D:593:ASP:OD2  | 2.22                     | 0.46              |
| 1:F:161:THR:O    | 1:F:165:LEU:HG   | 2.16                     | 0.46              |
| 1:A:183:VAL:O    | 1:A:218:GLU:HA   | 2.15                     | 0.46              |
| 1:B:656:ARG:HA   | 1:B:659:ARG:HD2  | 1.97                     | 0.46              |
| 1:C:194:THR:HG23 | 1:C:197:ARG:HH22 | 1.80                     | 0.46              |
| 1:D:125:ARG:NH2  | 3:D:1003:PO4:O1  | 2.44                     | 0.46              |
| 1:D:386:LEU:HD23 | 1:D:386:LEU:HA   | 1.75                     | 0.46              |
| 1:D:450:SER:O    | 1:D:452:VAL:N    | 2.48                     | 0.46              |
| 1:F:387:GLY:HA3  | 1:F:557:GLN:OE1  | 2.16                     | 0.46              |
| 1:F:717:LYS:HE2  | 1:F:725:SER:HB2  | 1.97                     | 0.46              |
| 1:A:209:VAL:HG23 | 1:A:212:SER:CB   | 2.46                     | 0.46              |
| 1:A:810:ASP:O    | 1:A:814:VAL:HG23 | 2.15                     | 0.46              |
| 1:B:352:GLN:HE22 | 1:B:455:MET:HG2  | 1.79                     | 0.46              |
| 1:C:199:GLN:NE2  | 1:C:227:SER:O    | 2.45                     | 0.46              |
| 1:C:416:GLU:HG3  | 1:C:417:GLU:HG3  | 1.97                     | 0.46              |
| 1:D:652:ASN:HB3  | 1:D:656:ARG:CZ   | 2.46                     | 0.46              |
| 1:E:411:GLY:O    | 1:E:413:ILE:HG13 | 2.16                     | 0.46              |
| 1:F:597:ARG:NE   | 1:F:599:ASP:OD1  | 2.49                     | 0.46              |
| 1:A:306:TYR:HA   | 1:A:595:ILE:HG22 | 1.98                     | 0.46              |
| 1:B:733:GLN:OE1  | 1:B:851:SER:HA   | 2.16                     | 0.46              |
| 1:C:476:TRP:CZ2  | 1:C:602:GLY:HA2  | 2.51                     | 0.46              |
| 1:E:762:GLN:HB3  | 1:E:811:MET:SD   | 2.56                     | 0.46              |
| 1:F:214:ASN:CG   | 1:F:243:ARG:HH21 | 2.18                     | 0.46              |
| 1:C:34:GLU:HG2   | 1:C:35:VAL:H     | 1.81                     | 0.46              |
| 1:D:401:ILE:HD11 | 1:D:433:TRP:HZ2  | 1.81                     | 0.46              |
| 1:A:853:ILE:HG22 | 1:A:858:ARG:CZ   | 2.46                     | 0.46              |
| 1:C:278:ILE:O    | 1:C:282:ILE:HG12 | 2.16                     | 0.46              |
| 1:C:853:ILE:HG22 | 1:C:858:ARG:CZ   | 2.46                     | 0.46              |
| 1:D:208:ARG:HH12 | 1:D:218:GLU:N    | 2.14                     | 0.46              |
| 1:F:42:ARG:NH2   | 1:F:42:ARG:CB    | 2.79                     | 0.46              |
| 1:F:771:ARG:HG3  | 1:F:774:LEU:HD12 | 1.96                     | 0.46              |
| 1:A:327:ARG:HH22 | 1:B:160:ARG:NH2  | 2.14                     | 0.45              |
| 1:B:25:TYR:HD1   | 1:B:28:LYS:HE2   | 1.81                     | 0.45              |
| 1:B:35:VAL:HG23  | 1:B:37:ARG:CG    | 2.37                     | 0.45              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:B:357:LYS:HG3 | 1:B:358:GLU:HG2  | 1.99                     | 0.45              |
| 1:C:853:ILE:HA  | 1:C:858:ARG:HD3  | 1.96                     | 0.45              |
| 1:E:137:ALA:HA  | 1:E:171:TRP:CE2  | 2.51                     | 0.45              |
| 1:E:367:PRO:HG3 | 1:E:686:MET:HA   | 1.97                     | 0.45              |
| 1:E:646:THR:HA  | 1:E:649:LEU:HB2  | 1.98                     | 0.45              |
| 1:E:717:LYS:HE2 | 1:E:725:SER:HB2  | 1.97                     | 0.45              |
| 1:F:101:LYS:HD3 | 1:F:103:TYR:OH   | 2.16                     | 0.45              |
| 1:C:71:LEU:HD22 | 1:C:180:CYS:HB2  | 1.98                     | 0.45              |
| 1:D:414:PHE:HZ  | 1:D:452:VAL:HG21 | 1.81                     | 0.45              |
| 1:E:133:PHE:HA  | 1:E:167:MET:HG3  | 1.98                     | 0.45              |
| 1:E:304:TRP:CZ2 | 1:E:597:ARG:HD2  | 2.50                     | 0.45              |
| 1:F:157:GLU:HB3 | 1:F:185:CYS:HB2  | 1.99                     | 0.45              |
| 1:A:359:LYS:HZ1 | 1:A:473:ARG:CD   | 2.05                     | 0.45              |
| 1:A:359:LYS:HZ3 | 1:A:473:ARG:HG2  | 1.76                     | 0.45              |
| 1:D:530:ARG:O   | 1:D:671:PRO:HD2  | 2.16                     | 0.45              |
| 1:E:8:LEU:HD21  | 1:E:238:GLN:HG3  | 1.98                     | 0.45              |
| 1:E:32:ILE:HD13 | 1:E:213:ARG:HA   | 1.99                     | 0.45              |
| 1:F:42:ARG:CZ   | 1:F:42:ARG:HB2   | 2.47                     | 0.45              |
| 1:F:278:ILE:O   | 1:F:282:ILE:HG12 | 2.16                     | 0.45              |
| 1:A:883:MET:HE2 | 1:A:885:TYR:CD2  | 2.52                     | 0.45              |
| 1:B:115:LEU:HB3 | 1:B:350:TYR:OH   | 2.16                     | 0.45              |
| 1:A:95:ARG:O    | 1:A:264:ARG:NH1  | 2.50                     | 0.45              |
| 1:A:397:LYS:HG3 | 1:A:433:TRP:CH2  | 2.51                     | 0.45              |
| 1:E:424:VAL:HA  | 1:E:427:VAL:HG22 | 1.98                     | 0.45              |
| 1:E:499:MET:HB2 | 1:E:509:GLU:HG3  | 1.98                     | 0.45              |
| 1:A:771:ARG:HB2 | 1:A:774:LEU:HB2  | 1.97                     | 0.45              |
| 1:C:276:LYS:HA  | 1:C:276:LYS:HD3  | 1.52                     | 0.45              |
| 1:C:580:LYS:HG2 | 1:C:592:MET:SD   | 2.56                     | 0.45              |
| 1:E:286:ARG:HG3 | 1:E:293:TRP:NE1  | 2.32                     | 0.45              |
| 1:F:577:LYS:CE  | 1:F:600:GLN:O    | 2.64                     | 0.45              |
| 1:A:101:LYS:HD3 | 1:A:103:TYR:OH   | 2.17                     | 0.45              |
| 1:A:158:GLU:HG3 | 1:A:191:MET:SD   | 2.57                     | 0.45              |
| 1:B:349:PRO:HG2 | 1:B:590:THR:HG21 | 1.99                     | 0.45              |
| 1:C:490:LEU:HA  | 1:C:492:PHE:CE1  | 2.51                     | 0.45              |
| 1:D:33:THR:O    | 1:D:211:LEU:HA   | 2.17                     | 0.45              |
| 1:E:118:SER:O   | 1:E:121:TRP:HD1  | 2.00                     | 0.45              |
| 1:E:516:LEU:HB2 | 1:E:715:PHE:CZ   | 2.52                     | 0.45              |
| 1:F:192:MET:HE2 | 1:F:230:ILE:HG12 | 1.99                     | 0.45              |
| 1:F:637:TRP:CZ2 | 1:F:638:LEU:HD12 | 2.52                     | 0.45              |
| 1:F:706:GLU:OE1 | 1:F:716:ASN:ND2  | 2.47                     | 0.45              |
| 1:A:616:ASN:HB3 | 1:A:662:VAL:HG11 | 1.98                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:739:ARG:NH1  | 3:D:1005:PO4:O2  | 2.50                     | 0.45              |
| 1:E:256:ASP:OD1  | 1:E:257:VAL:N    | 2.50                     | 0.45              |
| 1:E:784:SER:HB2  | 1:E:872:VAL:CG1  | 2.47                     | 0.45              |
| 1:F:82:CYS:SG    | 1:F:104:THR:HB   | 2.57                     | 0.45              |
| 1:F:783:SER:OG   | 1:F:885:TYR:HB2  | 2.16                     | 0.45              |
| 1:B:567:LEU:HD23 | 1:B:570:ILE:HD12 | 1.98                     | 0.45              |
| 1:C:533:ALA:CB   | 1:C:668:VAL:HG22 | 2.47                     | 0.45              |
| 1:D:62:LEU:HD23  | 1:D:62:LEU:HA    | 1.69                     | 0.45              |
| 1:D:214:ASN:HD21 | 1:D:243:ARG:HH21 | 1.63                     | 0.45              |
| 1:E:599:ASP:N    | 1:E:599:ASP:OD1  | 2.50                     | 0.45              |
| 1:A:280:ASN:HB2  | 1:A:448:CYS:O    | 2.17                     | 0.45              |
| 1:A:320:SER:HB2  | 1:A:344:MET:HB2  | 1.98                     | 0.45              |
| 1:B:62:LEU:HD12  | 1:B:87:TRP:HA    | 1.98                     | 0.45              |
| 1:B:323:ASN:OD1  | 1:B:757:ALA:HB2  | 2.18                     | 0.45              |
| 1:B:559:GLU:N    | 1:B:559:GLU:OE1  | 2.49                     | 0.45              |
| 1:B:616:ASN:ND2  | 1:B:667:CYS:HB3  | 2.31                     | 0.45              |
| 1:C:293:TRP:HE1  | 1:C:295:PHE:HE1  | 1.65                     | 0.45              |
| 1:D:383:TRP:CE3  | 1:D:554:ILE:HD13 | 2.52                     | 0.45              |
| 1:E:37:ARG:NE    | 1:E:57:ARG:HG2   | 2.32                     | 0.45              |
| 1:F:411:GLY:O    | 1:F:413:ILE:HG13 | 2.17                     | 0.45              |
| 1:F:771:ARG:HH21 | 1:F:851:SER:HB2  | 1.82                     | 0.45              |
| 1:B:448:CYS:SG   | 1:B:451:CYS:HB2  | 2.58                     | 0.44              |
| 1:D:551:GLU:OE2  | 1:D:615:THR:OG1  | 2.32                     | 0.44              |
| 1:E:77:VAL:HG13  | 1:E:142:THR:HB   | 1.99                     | 0.44              |
| 1:E:416:GLU:HG3  | 1:E:417:GLU:HG3  | 1.99                     | 0.44              |
| 1:F:158:GLU:HG3  | 1:F:191:MET:HG2  | 1.99                     | 0.44              |
| 1:A:28:LYS:HZ2   | 1:B:45:LYS:HE2   | 1.80                     | 0.44              |
| 1:B:70:TYR:CD1   | 1:B:225:ALA:HB2  | 2.52                     | 0.44              |
| 1:B:555:THR:O    | 1:B:563:ARG:HD3  | 2.17                     | 0.44              |
| 1:C:66:VAL:HG22  | 1:C:71:LEU:HB3   | 1.99                     | 0.44              |
| 1:C:74:TYR:OH    | 1:C:177:GLY:HA3  | 2.16                     | 0.44              |
| 1:D:718:LEU:HD23 | 1:D:718:LEU:HA   | 1.86                     | 0.44              |
| 1:B:15:ARG:O     | 1:B:19:MET:HG3   | 2.17                     | 0.44              |
| 1:B:101:LYS:HD3  | 1:B:103:TYR:OH   | 2.18                     | 0.44              |
| 1:B:239:LEU:HD12 | 1:B:239:LEU:HA   | 1.89                     | 0.44              |
| 1:A:480:LEU:HD12 | 1:A:480:LEU:HA   | 1.78                     | 0.44              |
| 1:E:722:ASP:OD1  | 1:E:723:GLY:N    | 2.49                     | 0.44              |
| 1:B:8:LEU:HD23   | 1:B:237:SER:HB2  | 2.00                     | 0.44              |
| 1:B:292:THR:O    | 1:B:294:PHE:HD1  | 2.00                     | 0.44              |
| 1:C:70:TYR:HB3   | 1:C:222:VAL:HG21 | 2.00                     | 0.44              |
| 1:C:367:PRO:HD2  | 1:C:546:PHE:CE2  | 2.53                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:818:VAL:HG23 | 1:C:819:TRP:CD1  | 2.53                     | 0.44              |
| 1:D:117:GLN:NE2  | 1:D:350:TYR:HB2  | 2.32                     | 0.44              |
| 1:A:20:SER:O     | 1:A:24:PHE:HB2   | 2.18                     | 0.44              |
| 1:A:417:GLU:HB2  | 1:A:479:TRP:CZ2  | 2.30                     | 0.44              |
| 1:B:120:GLY:O    | 1:B:123:ILE:HG12 | 2.18                     | 0.44              |
| 1:C:345:THR:HB   | 1:C:472:SER:HB3  | 2.00                     | 0.44              |
| 1:C:352:GLN:HE22 | 1:C:474:ALA:HB2  | 1.83                     | 0.44              |
| 1:E:397:LYS:HG3  | 1:E:433:TRP:CH2  | 2.52                     | 0.44              |
| 1:E:771:ARG:HB2  | 1:E:774:LEU:HB2  | 2.00                     | 0.44              |
| 1:F:12:TRP:NE1   | 1:F:240:LEU:HB3  | 2.32                     | 0.44              |
| 1:F:371:THR:HG23 | 1:F:682:PHE:HD2  | 1.83                     | 0.44              |
| 1:F:383:TRP:CE3  | 1:F:383:TRP:HA   | 2.53                     | 0.44              |
| 1:C:179:PHE:H    | 1:C:223:SER:HB3  | 1.82                     | 0.44              |
| 1:C:354:ARG:NH2  | 1:C:469:ALA:O    | 2.50                     | 0.44              |
| 1:C:367:PRO:HD2  | 1:C:546:PHE:CD2  | 2.52                     | 0.44              |
| 1:D:416:GLU:HG3  | 1:D:417:GLU:HG3  | 2.00                     | 0.44              |
| 1:F:521:GLU:O    | 1:F:525:ARG:HG3  | 2.18                     | 0.44              |
| 1:A:729:PRO:O    | 1:A:770:HIS:NE2  | 2.50                     | 0.43              |
| 1:B:50:THR:HG21  | 1:B:588:GLY:HA2  | 2.00                     | 0.43              |
| 1:B:80:LEU:HB2   | 1:B:145:CYS:HA   | 2.00                     | 0.43              |
| 1:C:56:SER:HB3   | 1:C:84:ARG:HD2   | 2.00                     | 0.43              |
| 1:C:155:GLU:HB2  | 1:D:324:GLY:HA3  | 2.00                     | 0.43              |
| 1:C:327:ARG:HH22 | 1:D:160:ARG:NH2  | 2.13                     | 0.43              |
| 1:E:161:THR:O    | 1:E:165:LEU:HG   | 2.18                     | 0.43              |
| 1:A:16:LEU:HA    | 1:A:16:LEU:HD12  | 1.80                     | 0.43              |
| 1:A:690:ARG:NH2  | 1:A:697:LYS:O    | 2.42                     | 0.43              |
| 1:B:455:MET:HB2  | 1:B:476:TRP:HB3  | 2.01                     | 0.43              |
| 1:B:868:THR:O    | 1:B:872:VAL:HG23 | 2.18                     | 0.43              |
| 1:C:392:PRO:HB2  | 1:C:558:MET:HG2  | 2.00                     | 0.43              |
| 1:D:480:LEU:HA   | 1:D:480:LEU:HD12 | 1.67                     | 0.43              |
| 1:E:284:ARG:NH1  | 1:E:449:GLN:HB3  | 2.34                     | 0.43              |
| 1:E:352:GLN:HE21 | 1:E:457:GLY:CA   | 2.30                     | 0.43              |
| 1:A:35:VAL:CG1   | 1:A:256:ASP:HB2  | 2.48                     | 0.43              |
| 1:B:35:VAL:HA    | 1:B:254:GLU:O    | 2.18                     | 0.43              |
| 1:B:581:VAL:CG1  | 1:B:582:LEU:N    | 2.81                     | 0.43              |
| 1:C:433:TRP:HA   | 1:C:436:VAL:HB   | 2.00                     | 0.43              |
| 1:D:206:LEU:HD13 | 1:D:229:THR:HG22 | 2.00                     | 0.43              |
| 1:A:89:TYR:HD1   | 1:A:118:SER:HG   | 1.66                     | 0.43              |
| 1:A:133:PHE:HA   | 1:A:167:MET:HG3  | 2.00                     | 0.43              |
| 1:A:330:SER:O    | 1:A:741:ARG:NH2  | 2.51                     | 0.43              |
| 1:A:381:TRP:CG   | 1:A:649:LEU:HD13 | 2.54                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:737:ILE:O    | 1:A:741:ARG:HG3  | 2.18                     | 0.43              |
| 1:E:411:GLY:O    | 1:E:479:TRP:HB2  | 2.18                     | 0.43              |
| 1:A:772:ARG:HA   | 1:A:840:TYR:CE1  | 2.53                     | 0.43              |
| 1:C:847:LEU:HD23 | 1:C:851:SER:O    | 2.17                     | 0.43              |
| 1:D:758:LYS:HE2  | 1:D:762:GLN:NE2  | 2.33                     | 0.43              |
| 1:E:457:GLY:HA3  | 1:E:472:SER:OG   | 2.18                     | 0.43              |
| 1:A:89:TYR:CZ    | 1:A:116:VAL:HG22 | 2.53                     | 0.43              |
| 1:A:417:GLU:CD   | 1:A:479:TRP:CE2  | 2.92                     | 0.43              |
| 1:A:509:GLU:HG2  | 1:A:609:TYR:HE2  | 1.84                     | 0.43              |
| 1:C:155:GLU:O    | 1:D:328:LEU:HD11 | 2.19                     | 0.43              |
| 1:C:411:GLY:O    | 1:C:413:ILE:HG13 | 2.18                     | 0.43              |
| 1:C:584:PRO:HA   | 1:C:590:THR:HG23 | 2.01                     | 0.43              |
| 1:E:62:LEU:HD23  | 1:E:62:LEU:HA    | 1.55                     | 0.43              |
| 1:F:49:ALA:HB1   | 1:F:117:GLN:N    | 2.34                     | 0.43              |
| 1:F:873:ARG:HG2  | 1:F:882:TYR:CE1  | 2.52                     | 0.43              |
| 1:A:671:PRO:HG3  | 1:A:676:PHE:CB   | 2.49                     | 0.43              |
| 1:B:631:LEU:HD13 | 1:B:682:PHE:CZ   | 2.54                     | 0.43              |
| 1:D:66:VAL:HG22  | 1:D:71:LEU:HB3   | 2.01                     | 0.43              |
| 1:D:117:GLN:HG2  | 1:D:350:TYR:CE1  | 2.54                     | 0.43              |
| 1:D:766:LEU:HD11 | 1:D:818:VAL:HG21 | 1.99                     | 0.43              |
| 1:E:41:ARG:NH2   | 1:E:57:ARG:HH11  | 2.16                     | 0.43              |
| 1:A:443:HIS:CE1  | 1:A:485:LEU:HD13 | 2.54                     | 0.43              |
| 1:A:883:MET:HE1  | 1:A:885:TYR:CD1  | 2.54                     | 0.43              |
| 1:C:392:PRO:HA   | 1:C:492:PHE:CE2  | 2.54                     | 0.43              |
| 1:D:284:ARG:HH11 | 1:D:449:GLN:HB3  | 1.83                     | 0.43              |
| 1:D:350:TYR:HA   | 1:D:584:PRO:HG3  | 2.01                     | 0.43              |
| 1:D:397:LYS:HG3  | 1:D:433:TRP:CH2  | 2.54                     | 0.43              |
| 1:D:489:ALA:O    | 1:D:562:HIS:NE2  | 2.35                     | 0.43              |
| 1:F:44:LEU:HD23  | 1:F:44:LEU:HA    | 1.92                     | 0.43              |
| 1:F:54:ALA:HA    | 1:F:259:LEU:HD11 | 2.01                     | 0.43              |
| 1:F:208:ARG:NH2  | 1:F:213:ARG:O    | 2.52                     | 0.43              |
| 1:A:473:ARG:HH22 | 1:A:691:LYS:NZ   | 2.17                     | 0.43              |
| 1:A:717:LYS:HE2  | 1:A:725:SER:HB2  | 2.01                     | 0.43              |
| 1:C:30:SER:O     | 1:C:214:ASN:ND2  | 2.52                     | 0.43              |
| 1:D:8:LEU:HD21   | 1:D:238:GLN:HG3  | 2.01                     | 0.43              |
| 1:E:45:LYS:HZ2   | 1:F:213:ARG:HH22 | 1.67                     | 0.43              |
| 1:F:574:TYR:O    | 1:F:577:LYS:NZ   | 2.47                     | 0.43              |
| 1:A:37:ARG:NH1   | 1:A:56:SER:O     | 2.51                     | 0.43              |
| 1:B:289:HIS:O    | 1:B:293:TRP:HB2  | 2.19                     | 0.43              |
| 1:C:868:THR:O    | 1:C:872:VAL:HG23 | 2.19                     | 0.43              |
| 1:D:315:GLN:HB2  | 1:D:582:LEU:HD13 | 2.00                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:413:ILE:HD13 | 1:D:452:VAL:HB   | 2.01                     | 0.43              |
| 1:E:292:THR:O    | 1:E:294:PHE:HD1  | 2.02                     | 0.43              |
| 1:F:9:GLY:HA3    | 1:F:187:TYR:HB2  | 2.01                     | 0.43              |
| 1:A:9:GLY:HA3    | 1:A:187:TYR:HB2  | 2.01                     | 0.42              |
| 1:B:231:LYS:HE3  | 1:B:231:LYS:HB2  | 1.85                     | 0.42              |
| 1:B:344:MET:CE   | 1:B:744:PRO:HA   | 2.49                     | 0.42              |
| 1:B:397:LYS:HG3  | 1:B:433:TRP:CH2  | 2.55                     | 0.42              |
| 1:C:12:TRP:CZ2   | 1:C:16:LEU:HD22  | 2.54                     | 0.42              |
| 1:C:371:THR:HG23 | 1:C:682:PHE:HD2  | 1.84                     | 0.42              |
| 1:A:277:ILE:HG22 | 1:A:281:ARG:HH12 | 1.83                     | 0.42              |
| 1:A:401:ILE:HD11 | 1:A:433:TRP:CZ2  | 2.53                     | 0.42              |
| 1:B:12:TRP:NE1   | 1:B:244:MET:HE3  | 2.34                     | 0.42              |
| 1:B:14:ALA:O     | 1:B:18:GLN:HG3   | 2.18                     | 0.42              |
| 1:C:25:TYR:HD1   | 1:C:28:LYS:HE2   | 1.84                     | 0.42              |
| 1:C:463:GLN:O    | 1:C:470:LYS:HB2  | 2.18                     | 0.42              |
| 1:E:493:LEU:HA   | 1:E:498:TRP:CD1  | 2.54                     | 0.42              |
| 1:F:33:THR:HA    | 1:F:252:LYS:O    | 2.19                     | 0.42              |
| 1:A:448:CYS:SG   | 1:A:451:CYS:HB2  | 2.58                     | 0.42              |
| 1:B:304:TRP:CZ2  | 1:B:597:ARG:HD2  | 2.54                     | 0.42              |
| 1:C:82:CYS:O     | 1:C:85:GLY:N     | 2.53                     | 0.42              |
| 1:C:309:SER:OG   | 1:C:593:ASP:OD1  | 2.37                     | 0.42              |
| 1:C:318:ALA:HB2  | 1:C:346:ASP:HA   | 2.00                     | 0.42              |
| 1:C:733:GLN:NE2  | 1:C:773:ASP:HB2  | 2.34                     | 0.42              |
| 1:D:49:ALA:HB1   | 1:D:117:GLN:N    | 2.34                     | 0.42              |
| 1:D:63:ARG:HG2   | 1:D:90:TYR:OH    | 2.19                     | 0.42              |
| 1:D:635:ASP:HA   | 1:D:638:LEU:O    | 2.19                     | 0.42              |
| 1:D:817:ARG:HA   | 1:D:821:GLU:HB3  | 2.00                     | 0.42              |
| 1:E:490:LEU:HA   | 1:E:492:PHE:CE1  | 2.55                     | 0.42              |
| 1:F:20:SER:O     | 1:F:24:PHE:HB2   | 2.19                     | 0.42              |
| 1:F:416:GLU:HG3  | 1:F:417:GLU:HG3  | 2.02                     | 0.42              |
| 1:B:284:ARG:NH1  | 1:B:449:GLN:O    | 2.52                     | 0.42              |
| 1:C:56:SER:HA    | 1:C:84:ARG:HH11  | 1.84                     | 0.42              |
| 1:D:12:TRP:CZ2   | 1:D:240:LEU:HD13 | 2.55                     | 0.42              |
| 1:E:293:TRP:CZ3  | 1:E:594:ILE:HD13 | 2.55                     | 0.42              |
| 1:A:263:THR:OG1  | 1:A:298:ASN:O    | 2.31                     | 0.42              |
| 1:A:580:LYS:HG2  | 1:A:592:MET:SD   | 2.60                     | 0.42              |
| 1:C:413:ILE:HD13 | 1:C:452:VAL:HB   | 2.00                     | 0.42              |
| 1:D:158:GLU:HG3  | 1:D:191:MET:HG2  | 2.01                     | 0.42              |
| 1:D:263:THR:HG21 | 1:D:300:PRO:HG3  | 2.02                     | 0.42              |
| 1:D:530:ARG:O    | 1:D:670:LYS:HD2  | 2.19                     | 0.42              |
| 1:A:307:HIS:HB2  | 1:A:594:ILE:O    | 2.20                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:476:TRP:HZ3  | 1:A:577:LYS:HD2  | 1.84                     | 0.42              |
| 1:B:383:TRP:HA   | 1:B:383:TRP:CE3  | 2.55                     | 0.42              |
| 1:B:387:GLY:HA3  | 1:B:557:GLN:OE1  | 2.19                     | 0.42              |
| 1:B:512:GLY:O    | 1:B:516:LEU:HG   | 2.20                     | 0.42              |
| 1:B:646:THR:HA   | 1:B:649:LEU:HB2  | 2.01                     | 0.42              |
| 1:D:34:GLU:HG2   | 1:D:35:VAL:H     | 1.83                     | 0.42              |
| 1:F:280:ASN:HB2  | 1:F:448:CYS:O    | 2.19                     | 0.42              |
| 1:A:499:MET:HB2  | 1:A:509:GLU:HG3  | 2.02                     | 0.42              |
| 1:C:146:ASP:OD2  | 2:C:1001:SAH:HG1 | 2.20                     | 0.42              |
| 1:C:765:GLN:HG3  | 1:C:778:ALA:CB   | 2.49                     | 0.42              |
| 2:C:1001:SAH:H8  | 2:C:1001:SAH:H2' | 1.88                     | 0.42              |
| 1:D:719:HIS:O    | 1:D:839:PRO:HG3  | 2.20                     | 0.42              |
| 1:E:192:MET:SD   | 1:E:233:VAL:HG11 | 2.59                     | 0.42              |
| 2:A:1001:SAH:H8  | 2:A:1001:SAH:H2' | 1.85                     | 0.42              |
| 1:B:50:THR:HB    | 1:B:588:GLY:H    | 1.85                     | 0.42              |
| 1:B:197:ARG:HG3  | 1:B:200:ARG:HH22 | 1.85                     | 0.42              |
| 1:B:208:ARG:NH1  | 1:B:218:GLU:O    | 2.52                     | 0.42              |
| 1:D:16:LEU:HD12  | 1:D:19:MET:SD    | 2.60                     | 0.42              |
| 1:D:439:GLU:OE2  | 1:D:449:GLN:N    | 2.34                     | 0.42              |
| 1:D:489:ALA:HB3  | 1:D:490:LEU:HG   | 2.01                     | 0.42              |
| 1:E:771:ARG:NE   | 1:E:846:ASP:OD1  | 2.44                     | 0.42              |
| 1:F:555:THR:O    | 1:F:563:ARG:HD3  | 2.19                     | 0.42              |
| 1:A:156:VAL:HG22 | 1:B:328:LEU:HG   | 2.01                     | 0.42              |
| 1:A:641:ARG:O    | 1:A:644:LYS:HG2  | 2.19                     | 0.42              |
| 1:D:284:ARG:O    | 1:D:288:GLU:HG3  | 2.20                     | 0.42              |
| 1:D:375:MET:HB3  | 1:D:550:ASN:ND2  | 2.35                     | 0.42              |
| 1:A:71:LEU:HD12  | 1:A:71:LEU:HA    | 1.89                     | 0.41              |
| 1:D:199:GLN:NE2  | 1:D:227:SER:O    | 2.53                     | 0.41              |
| 1:E:199:GLN:OE1  | 1:E:229:THR:HG23 | 2.20                     | 0.41              |
| 1:F:197:ARG:HA   | 1:F:200:ARG:CZ   | 2.50                     | 0.41              |
| 1:F:387:GLY:HA3  | 1:F:557:GLN:HE22 | 1.85                     | 0.41              |
| 1:F:624:ASN:HD21 | 1:F:671:PRO:HB3  | 1.85                     | 0.41              |
| 1:F:712:SER:OG   | 3:F:1002:PO4:O4  | 2.39                     | 0.41              |
| 1:A:179:PHE:N    | 1:A:179:PHE:CD2  | 2.87                     | 0.41              |
| 1:A:188:THR:O    | 1:A:192:MET:HG3  | 2.21                     | 0.41              |
| 1:A:774:LEU:HD23 | 1:A:774:LEU:HA   | 1.79                     | 0.41              |
| 1:E:383:TRP:CD1  | 1:E:553:LEU:HB2  | 2.54                     | 0.41              |
| 1:A:580:LYS:HE2  | 1:A:592:MET:HG2  | 2.03                     | 0.41              |
| 1:C:646:THR:HA   | 1:C:649:LEU:HB2  | 2.03                     | 0.41              |
| 1:E:401:ILE:HD11 | 1:E:433:TRP:HZ2  | 1.84                     | 0.41              |
| 1:E:455:MET:CB   | 1:E:476:TRP:HB3  | 2.49                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:262:GLY:HA3  | 1:F:586:GLU:HB3  | 2.02                     | 0.41              |
| 1:E:353:GLN:NE2  | 1:E:583:ARG:HD3  | 2.36                     | 0.41              |
| 1:E:468:LYS:HG2  | 1:E:469:ALA:H    | 1.85                     | 0.41              |
| 1:F:34:GLU:CG    | 1:F:35:VAL:H     | 2.30                     | 0.41              |
| 1:F:383:TRP:O    | 1:F:557:GLN:NE2  | 2.54                     | 0.41              |
| 1:F:424:VAL:HA   | 1:F:427:VAL:HG22 | 2.02                     | 0.41              |
| 1:F:718:LEU:O    | 1:F:726:ILE:HG12 | 2.20                     | 0.41              |
| 1:A:489:ALA:HB2  | 1:A:569:ILE:HD12 | 2.02                     | 0.41              |
| 1:B:763:MET:HB2  | 1:B:805:TRP:CE2  | 2.55                     | 0.41              |
| 1:C:35:VAL:HG23  | 1:C:37:ARG:CG    | 2.45                     | 0.41              |
| 1:F:97:VAL:O     | 1:F:264:ARG:NH1  | 2.54                     | 0.41              |
| 1:F:733:GLN:NE2  | 1:F:773:ASP:HB2  | 2.35                     | 0.41              |
| 1:A:368:GLN:HB2  | 1:A:636:LEU:O    | 2.19                     | 0.41              |
| 1:A:752:GLU:HA   | 1:A:755:CYS:SG   | 2.61                     | 0.41              |
| 1:B:278:ILE:O    | 1:B:282:ILE:HG12 | 2.21                     | 0.41              |
| 1:B:841:LEU:HD12 | 1:B:841:LEU:HA   | 1.96                     | 0.41              |
| 1:C:261:SER:OG   | 1:C:587:LYS:HG3  | 2.21                     | 0.41              |
| 1:D:442:HIS:HB3  | 1:D:447:GLU:O    | 2.20                     | 0.41              |
| 1:F:179:PHE:HZ   | 1:F:204:GLY:HA3  | 1.86                     | 0.41              |
| 1:F:401:ILE:O    | 1:F:404:VAL:HG12 | 2.21                     | 0.41              |
| 1:A:625:MET:HE3  | 1:A:631:LEU:HD11 | 2.03                     | 0.41              |
| 1:B:344:MET:HE3  | 1:B:744:PRO:HA   | 2.02                     | 0.41              |
| 1:B:349:PRO:HG2  | 1:B:590:THR:CG2  | 2.51                     | 0.41              |
| 1:C:27:TYR:CD1   | 1:C:244:MET:HA   | 2.55                     | 0.41              |
| 1:C:80:LEU:HD22  | 1:C:132:VAL:HG11 | 2.02                     | 0.41              |
| 1:A:303:THR:HG21 | 1:A:362:THR:C    | 2.41                     | 0.41              |
| 1:A:460:GLU:HB3  | 1:A:462:LYS:HG2  | 2.02                     | 0.41              |
| 1:B:78:ILE:HG21  | 1:B:171:TRP:CZ3  | 2.56                     | 0.41              |
| 1:D:559:GLU:N    | 1:D:559:GLU:OE1  | 2.53                     | 0.41              |
| 1:E:28:LYS:HG3   | 1:E:29:LYS:HG3   | 2.02                     | 0.41              |
| 1:E:567:LEU:HD23 | 1:E:570:ILE:HD12 | 2.03                     | 0.41              |
| 1:F:276:LYS:HA   | 1:F:276:LYS:HD3  | 1.43                     | 0.41              |
| 1:A:160:ARG:O    | 1:A:164:VAL:HG23 | 2.21                     | 0.41              |
| 1:A:380:SER:O    | 1:A:384:LYS:HG3  | 2.21                     | 0.41              |
| 1:B:102:GLY:HA3  | 1:B:126:LEU:CD2  | 2.51                     | 0.41              |
| 1:B:367:PRO:HG3  | 1:B:685:ASP:O    | 2.21                     | 0.41              |
| 1:B:641:ARG:O    | 1:B:644:LYS:HG2  | 2.20                     | 0.41              |
| 1:C:137:ALA:HA   | 1:C:171:TRP:CE2  | 2.56                     | 0.41              |
| 1:C:478:MET:HB3  | 1:C:482:ALA:HB3  | 2.03                     | 0.41              |
| 1:D:458:LYS:HD2  | 1:D:475:ILE:HD11 | 2.03                     | 0.41              |
| 1:D:771:ARG:NH2  | 1:D:846:ASP:OD1  | 2.52                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:26:SER:O     | 1:E:30:SER:HB2   | 2.20                     | 0.41              |
| 1:E:41:ARG:NH2   | 1:E:57:ARG:NH1   | 2.68                     | 0.41              |
| 1:E:476:TRP:N    | 1:E:476:TRP:HD1  | 2.17                     | 0.41              |
| 1:F:12:TRP:HB2   | 1:F:241:LEU:CG   | 2.49                     | 0.41              |
| 1:F:628:GLU:HA   | 1:F:675:ARG:NH2  | 2.36                     | 0.41              |
| 1:B:765:GLN:HG3  | 1:B:778:ALA:HB1  | 2.03                     | 0.41              |
| 1:D:625:MET:HE3  | 1:D:631:LEU:HD11 | 2.03                     | 0.41              |
| 1:E:101:LYS:HE2  | 1:E:125:ARG:HH11 | 1.86                     | 0.41              |
| 1:E:277:ILE:HG23 | 1:E:572:TYR:CD1  | 2.55                     | 0.41              |
| 1:F:329:LEU:HD13 | 1:F:781:ILE:HG12 | 2.03                     | 0.41              |
| 1:F:551:GLU:OE1  | 1:F:611:LEU:HD22 | 2.21                     | 0.41              |
| 1:F:717:LYS:CE   | 1:F:725:SER:HB2  | 2.51                     | 0.41              |
| 1:A:41:ARG:NH1   | 1:A:57:ARG:HH21  | 2.19                     | 0.40              |
| 1:A:401:ILE:O    | 1:A:404:VAL:HG12 | 2.21                     | 0.40              |
| 1:B:714:HIS:CE1  | 1:B:731:ARG:HA   | 2.56                     | 0.40              |
| 1:C:153:SER:HB2  | 1:C:155:GLU:OE1  | 2.21                     | 0.40              |
| 1:C:424:VAL:HA   | 1:C:427:VAL:HG22 | 2.02                     | 0.40              |
| 1:C:611:LEU:HD23 | 1:C:611:LEU:HA   | 1.85                     | 0.40              |
| 1:D:15:ARG:O     | 1:D:19:MET:HG3   | 2.21                     | 0.40              |
| 1:D:303:THR:HG21 | 1:D:363:ARG:HB2  | 2.03                     | 0.40              |
| 1:D:416:GLU:HB2  | 1:D:435:LEU:HD11 | 2.02                     | 0.40              |
| 1:D:498:TRP:HA   | 1:D:503:ASN:HD22 | 1.86                     | 0.40              |
| 1:E:450:SER:O    | 1:E:452:VAL:N    | 2.54                     | 0.40              |
| 1:F:16:LEU:HD12  | 1:F:19:MET:SD    | 2.61                     | 0.40              |
| 1:A:89:TYR:CE1   | 1:A:116:VAL:HG22 | 2.56                     | 0.40              |
| 1:A:675:ARG:HE   | 1:A:675:ARG:HB2  | 1.58                     | 0.40              |
| 1:D:367:PRO:HD2  | 1:D:546:PHE:CD2  | 2.56                     | 0.40              |
| 1:D:537:ALA:HA   | 1:D:691:LYS:HD2  | 2.02                     | 0.40              |
| 1:D:537:ALA:HB2  | 1:D:691:LYS:HA   | 2.03                     | 0.40              |
| 1:A:349:PRO:O    | 1:A:353:GLN:HG2  | 2.21                     | 0.40              |
| 1:B:77:VAL:HG22  | 1:B:142:THR:HB   | 2.03                     | 0.40              |
| 1:B:186:PRO:HD2  | 1:B:217:HIS:HB3  | 2.03                     | 0.40              |
| 1:B:493:LEU:HA   | 1:B:498:TRP:CD1  | 2.56                     | 0.40              |
| 1:D:63:ARG:HA    | 1:D:90:TYR:CZ    | 2.56                     | 0.40              |
| 1:D:653:GLY:O    | 1:D:657:LEU:HB2  | 2.21                     | 0.40              |
| 1:E:18:GLN:HE21  | 1:F:747:GLY:HA3  | 1.87                     | 0.40              |
| 1:E:733:GLN:O    | 1:E:737:ILE:HG13 | 2.21                     | 0.40              |
| 1:F:772:ARG:HD2  | 1:F:853:ILE:HD13 | 2.04                     | 0.40              |
| 1:A:164:VAL:O    | 1:A:168:VAL:HG13 | 2.21                     | 0.40              |
| 1:A:771:ARG:NE   | 1:A:846:ASP:OD1  | 2.44                     | 0.40              |
| 1:B:536:THR:HG21 | 1:B:688:LYS:HB3  | 2.03                     | 0.40              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:E:437:ASP:O   | 1:E:441:GLU:HG3  | 2.21                     | 0.40              |
| 1:E:508:VAL:HA  | 1:E:511:LEU:HD13 | 2.02                     | 0.40              |
| 1:E:555:THR:O   | 1:E:563:ARG:HD3  | 2.21                     | 0.40              |
| 1:A:112:GLU:OE1 | 1:A:466:PHE:HA   | 2.22                     | 0.40              |
| 1:C:28:LYS:NZ   | 1:D:46:ASP:OD1   | 2.39                     | 0.40              |
| 1:D:478:MET:HB3 | 1:D:482:ALA:HB3  | 2.03                     | 0.40              |
| 1:D:583:ARG:HG3 | 1:D:584:PRO:HD2  | 2.04                     | 0.40              |
| 1:F:345:THR:CG2 | 1:F:462:LYS:HD2  | 2.51                     | 0.40              |

There are no symmetry-related clashes.

## 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     | 881/914 (96%)   | 836 (95%)  | 45 (5%)  | 0        | 100         | 100 |
| 1   | B     | 880/914 (96%)   | 837 (95%)  | 42 (5%)  | 1 (0%)   | 51          | 83  |
| 1   | C     | 881/914 (96%)   | 832 (94%)  | 47 (5%)  | 2 (0%)   | 47          | 79  |
| 1   | D     | 881/914 (96%)   | 829 (94%)  | 49 (6%)  | 3 (0%)   | 41          | 74  |
| 1   | E     | 881/914 (96%)   | 834 (95%)  | 45 (5%)  | 2 (0%)   | 47          | 79  |
| 1   | F     | 881/914 (96%)   | 835 (95%)  | 45 (5%)  | 1 (0%)   | 51          | 83  |
| All | All   | 5285/5484 (96%) | 5003 (95%) | 273 (5%) | 9 (0%)   | 47          | 79  |

All (9) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | D     | 36  | CYS  |
| 1   | D     | 451 | CYS  |
| 1   | B     | 186 | PRO  |
| 1   | C     | 186 | PRO  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | E     | 186 | PRO  |
| 1   | E     | 664 | GLY  |
| 1   | C     | 664 | GLY  |
| 1   | D     | 186 | PRO  |
| 1   | F     | 186 | PRO  |

### 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     | 756/779 (97%)   | 749 (99%)  | 7 (1%)   | 78 87       |
| 1   | B     | 755/779 (97%)   | 748 (99%)  | 7 (1%)   | 78 87       |
| 1   | C     | 756/779 (97%)   | 748 (99%)  | 8 (1%)   | 73 84       |
| 1   | D     | 756/779 (97%)   | 747 (99%)  | 9 (1%)   | 71 83       |
| 1   | E     | 756/779 (97%)   | 744 (98%)  | 12 (2%)  | 62 79       |
| 1   | F     | 756/779 (97%)   | 746 (99%)  | 10 (1%)  | 69 81       |
| All | All   | 4535/4674 (97%) | 4482 (99%) | 53 (1%)  | 71 83       |

All (53) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 281 | ARG  |
| 1   | A     | 366 | ASP  |
| 1   | A     | 476 | TRP  |
| 1   | A     | 479 | TRP  |
| 1   | A     | 656 | ARG  |
| 1   | A     | 673 | ASP  |
| 1   | A     | 722 | ASP  |
| 1   | B     | 281 | ARG  |
| 1   | B     | 366 | ASP  |
| 1   | B     | 462 | LYS  |
| 1   | B     | 476 | TRP  |
| 1   | B     | 656 | ARG  |
| 1   | B     | 673 | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | B     | 722 | ASP  |
| 1   | C     | 38  | GLU  |
| 1   | C     | 281 | ARG  |
| 1   | C     | 366 | ASP  |
| 1   | C     | 476 | TRP  |
| 1   | C     | 479 | TRP  |
| 1   | C     | 514 | GLN  |
| 1   | C     | 656 | ARG  |
| 1   | C     | 673 | ASP  |
| 1   | D     | 24  | PHE  |
| 1   | D     | 38  | GLU  |
| 1   | D     | 281 | ARG  |
| 1   | D     | 366 | ASP  |
| 1   | D     | 405 | ARG  |
| 1   | D     | 476 | TRP  |
| 1   | D     | 479 | TRP  |
| 1   | D     | 514 | GLN  |
| 1   | D     | 656 | ARG  |
| 1   | E     | 24  | PHE  |
| 1   | E     | 281 | ARG  |
| 1   | E     | 359 | LYS  |
| 1   | E     | 366 | ASP  |
| 1   | E     | 462 | LYS  |
| 1   | E     | 476 | TRP  |
| 1   | E     | 479 | TRP  |
| 1   | E     | 514 | GLN  |
| 1   | E     | 656 | ARG  |
| 1   | E     | 673 | ASP  |
| 1   | E     | 856 | ARG  |
| 1   | E     | 884 | ASP  |
| 1   | F     | 39  | GLU  |
| 1   | F     | 42  | ARG  |
| 1   | F     | 281 | ARG  |
| 1   | F     | 366 | ASP  |
| 1   | F     | 476 | TRP  |
| 1   | F     | 479 | TRP  |
| 1   | F     | 514 | GLN  |
| 1   | F     | 656 | ARG  |
| 1   | F     | 673 | ASP  |
| 1   | F     | 722 | ASP  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (49) such sidechains are listed below:



| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 238 | GLN  |
| 1   | A     | 274 | ASN  |
| 1   | A     | 323 | ASN  |
| 1   | A     | 352 | GLN  |
| 1   | A     | 353 | GLN  |
| 1   | A     | 428 | ASN  |
| 1   | A     | 463 | GLN  |
| 1   | A     | 576 | ASN  |
| 1   | A     | 598 | GLN  |
| 1   | A     | 652 | ASN  |
| 1   | A     | 765 | GLN  |
| 1   | A     | 864 | ASN  |
| 1   | B     | 110 | HIS  |
| 1   | B     | 428 | ASN  |
| 1   | B     | 616 | ASN  |
| 1   | B     | 762 | GLN  |
| 1   | B     | 765 | GLN  |
| 1   | B     | 864 | ASN  |
| 1   | C     | 238 | GLN  |
| 1   | C     | 274 | ASN  |
| 1   | C     | 428 | ASN  |
| 1   | C     | 576 | ASN  |
| 1   | C     | 598 | GLN  |
| 1   | C     | 620 | GLN  |
| 1   | C     | 647 | ASN  |
| 1   | D     | 238 | GLN  |
| 1   | D     | 323 | ASN  |
| 1   | D     | 463 | GLN  |
| 1   | D     | 503 | ASN  |
| 1   | D     | 576 | ASN  |
| 1   | D     | 598 | GLN  |
| 1   | D     | 733 | GLN  |
| 1   | D     | 762 | GLN  |
| 1   | D     | 770 | HIS  |
| 1   | D     | 870 | ASN  |
| 1   | E     | 18  | GLN  |
| 1   | E     | 110 | HIS  |
| 1   | E     | 323 | ASN  |
| 1   | E     | 428 | ASN  |
| 1   | E     | 864 | ASN  |
| 1   | E     | 870 | ASN  |
| 1   | F     | 238 | GLN  |
| 1   | F     | 274 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | F     | 428 | ASN  |
| 1   | F     | 442 | HIS  |
| 1   | F     | 463 | GLN  |
| 1   | F     | 494 | ASN  |
| 1   | F     | 576 | ASN  |
| 1   | F     | 624 | 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 [i](#)

Of 32 ligands modelled in this entry, 11 are monoatomic - leaving 21 for Mogul analysis.

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 | $\# Z  > 2$ |
| 3   | PO4  | B     | 1003 | -    | 4,4,4        | 0.97 | 0           | 6,6,6       | 0.45 | 0           |
| 3   | PO4  | D     | 1004 | -    | 4,4,4        | 0.92 | 0           | 6,6,6       | 0.52 | 0           |
| 2   | SAH  | F     | 1001 | -    | 23,28,28     | 1.28 | 2 (8%)      | 22,40,40    | 1.74 | 5 (22%)     |
| 2   | SAH  | D     | 1001 | -    | 23,28,28     | 1.35 | 3 (13%)     | 22,40,40    | 2.04 | 4 (18%)     |
| 3   | PO4  | F     | 1003 | -    | 4,4,4        | 0.95 | 0           | 6,6,6       | 0.37 | 0           |
| 2   | SAH  | A     | 1001 | -    | 23,28,28     | 1.20 | 3 (13%)     | 22,40,40    | 1.87 | 4 (18%)     |
| 2   | SAH  | C     | 1001 | -    | 23,28,28     | 1.25 | 3 (13%)     | 22,40,40    | 1.70 | 3 (13%)     |

| Mol | Type | Chain | Res  | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
|     |      |       |      |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 3   | PO4  | E     | 1003 | -    | 4,4,4        | 0.96 | 0        | 6,6,6       | 0.47 | 0        |
| 3   | PO4  | D     | 1003 | -    | 4,4,4        | 0.98 | 0        | 6,6,6       | 0.51 | 0        |
| 3   | PO4  | F     | 1002 | -    | 4,4,4        | 0.94 | 0        | 6,6,6       | 0.47 | 0        |
| 2   | SAH  | E     | 1001 | -    | 23,28,28     | 1.35 | 3 (13%)  | 22,40,40    | 2.02 | 4 (18%)  |
| 3   | PO4  | C     | 1002 | -    | 4,4,4        | 0.93 | 0        | 6,6,6       | 0.50 | 0        |
| 2   | SAH  | B     | 1001 | -    | 23,28,28     | 1.35 | 3 (13%)  | 22,40,40    | 1.95 | 5 (22%)  |
| 3   | PO4  | A     | 1003 | -    | 4,4,4        | 0.86 | 0        | 6,6,6       | 0.60 | 0        |
| 3   | PO4  | D     | 1002 | -    | 4,4,4        | 0.91 | 0        | 6,6,6       | 0.44 | 0        |
| 3   | PO4  | E     | 1002 | -    | 4,4,4        | 0.91 | 0        | 6,6,6       | 0.54 | 0        |
| 3   | PO4  | B     | 1002 | -    | 4,4,4        | 0.95 | 0        | 6,6,6       | 0.50 | 0        |
| 3   | PO4  | A     | 1002 | -    | 4,4,4        | 0.92 | 0        | 6,6,6       | 0.41 | 0        |
| 3   | PO4  | F     | 1005 | -    | 4,4,4        | 0.91 | 0        | 6,6,6       | 0.50 | 0        |
| 3   | PO4  | F     | 1004 | -    | 4,4,4        | 0.91 | 0        | 6,6,6       | 0.50 | 0        |
| 3   | PO4  | D     | 1005 | -    | 4,4,4        | 0.85 | 0        | 6,6,6       | 0.54 | 0        |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '2' means no outliers of that kind were identified.

| Mol | Type | Chain | Res  | Link | Chirals | Torsions   | Rings   |
|-----|------|-------|------|------|---------|------------|---------|
| 2   | SAH  | B     | 1001 | -    | -       | 7/11/31/31 | 0/3/3/3 |
| 2   | SAH  | D     | 1001 | -    | -       | 7/11/31/31 | 0/3/3/3 |
| 2   | SAH  | A     | 1001 | -    | -       | 7/11/31/31 | 0/3/3/3 |
| 2   | SAH  | C     | 1001 | -    | -       | 4/11/31/31 | 0/3/3/3 |
| 2   | SAH  | F     | 1001 | -    | -       | 0/11/31/31 | 0/3/3/3 |
| 2   | SAH  | E     | 1001 | -    | -       | 3/11/31/31 | 0/3/3/3 |

All (17) bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|------|-------------|----------|
| 2   | E     | 1001 | SAH  | C2-N3 | 4.48 | 1.39        | 1.32     |
| 2   | B     | 1001 | SAH  | C2-N3 | 4.45 | 1.39        | 1.32     |
| 2   | D     | 1001 | SAH  | C2-N3 | 4.41 | 1.38        | 1.32     |
| 2   | F     | 1001 | SAH  | C2-N3 | 4.39 | 1.38        | 1.32     |
| 2   | C     | 1001 | SAH  | C2-N3 | 4.29 | 1.38        | 1.32     |
| 2   | A     | 1001 | SAH  | C2-N3 | 4.02 | 1.38        | 1.32     |
| 2   | B     | 1001 | SAH  | C2-N1 | 2.94 | 1.39        | 1.33     |
| 2   | E     | 1001 | SAH  | C2-N1 | 2.67 | 1.38        | 1.33     |
| 2   | D     | 1001 | SAH  | C2-N1 | 2.63 | 1.38        | 1.33     |
| 2   | F     | 1001 | SAH  | C2-N1 | 2.54 | 1.38        | 1.33     |

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| Mol | Chain | Res  | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|-------|-------------|----------|
| 2   | C     | 1001 | SAH  | C2-N1 | 2.52  | 1.38        | 1.33     |
| 2   | E     | 1001 | SAH  | OXT-C | -2.21 | 1.23        | 1.30     |
| 2   | C     | 1001 | SAH  | OXT-C | -2.19 | 1.23        | 1.30     |
| 2   | D     | 1001 | SAH  | OXT-C | -2.17 | 1.23        | 1.30     |
| 2   | B     | 1001 | SAH  | OXT-C | -2.16 | 1.23        | 1.30     |
| 2   | A     | 1001 | SAH  | OXT-C | -2.14 | 1.23        | 1.30     |
| 2   | A     | 1001 | SAH  | C2-N1 | 2.09  | 1.37        | 1.33     |

All (25) bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 2   | E     | 1001 | SAH  | N3-C2-N1    | -6.13 | 120.35      | 128.67   |
| 2   | A     | 1001 | SAH  | N3-C2-N1    | -6.13 | 120.35      | 128.67   |
| 2   | D     | 1001 | SAH  | N3-C2-N1    | -6.01 | 120.52      | 128.67   |
| 2   | F     | 1001 | SAH  | N3-C2-N1    | -5.85 | 120.74      | 128.67   |
| 2   | B     | 1001 | SAH  | N3-C2-N1    | -5.67 | 120.98      | 128.67   |
| 2   | C     | 1001 | SAH  | N3-C2-N1    | -5.52 | 121.18      | 128.67   |
| 2   | D     | 1001 | SAH  | O4'-C1'-N9  | 4.50  | 114.71      | 108.75   |
| 2   | E     | 1001 | SAH  | C5'-SD-CG   | -4.36 | 89.31       | 102.26   |
| 2   | A     | 1001 | SAH  | C5'-SD-CG   | -3.97 | 90.49       | 102.26   |
| 2   | D     | 1001 | SAH  | C5'-SD-CG   | -3.53 | 91.80       | 102.26   |
| 2   | C     | 1001 | SAH  | C5'-SD-CG   | -3.45 | 92.03       | 102.26   |
| 2   | B     | 1001 | SAH  | C4'-O4'-C1' | 3.38  | 113.02      | 109.92   |
| 2   | B     | 1001 | SAH  | C5'-SD-CG   | -3.32 | 92.40       | 102.26   |
| 2   | E     | 1001 | SAH  | OXT-C-O     | -3.19 | 116.84      | 124.08   |
| 2   | D     | 1001 | SAH  | OXT-C-O     | -2.83 | 117.65      | 124.08   |
| 2   | B     | 1001 | SAH  | OXT-C-O     | -2.78 | 117.77      | 124.08   |
| 2   | B     | 1001 | SAH  | O4'-C1'-N9  | 2.77  | 112.42      | 108.75   |
| 2   | F     | 1001 | SAH  | C5'-SD-CG   | -2.72 | 94.18       | 102.26   |
| 2   | E     | 1001 | SAH  | C4'-O4'-C1' | 2.69  | 112.39      | 109.92   |
| 2   | A     | 1001 | SAH  | C4'-O4'-C1' | 2.52  | 112.24      | 109.92   |
| 2   | F     | 1001 | SAH  | OXT-C-O     | -2.38 | 118.69      | 124.08   |
| 2   | A     | 1001 | SAH  | OXT-C-O     | -2.32 | 118.81      | 124.08   |
| 2   | C     | 1001 | SAH  | OXT-C-O     | -2.26 | 118.96      | 124.08   |
| 2   | F     | 1001 | SAH  | C4'-O4'-C1' | 2.21  | 111.95      | 109.92   |
| 2   | F     | 1001 | SAH  | C2'-C3'-C4' | 2.14  | 106.74      | 102.61   |

There are no chirality outliers.

All (28) torsion outliers are listed below:

| Mol | Chain | Res  | Type | Atoms      |
|-----|-------|------|------|------------|
| 2   | B     | 1001 | SAH  | N-CA-CB-CG |

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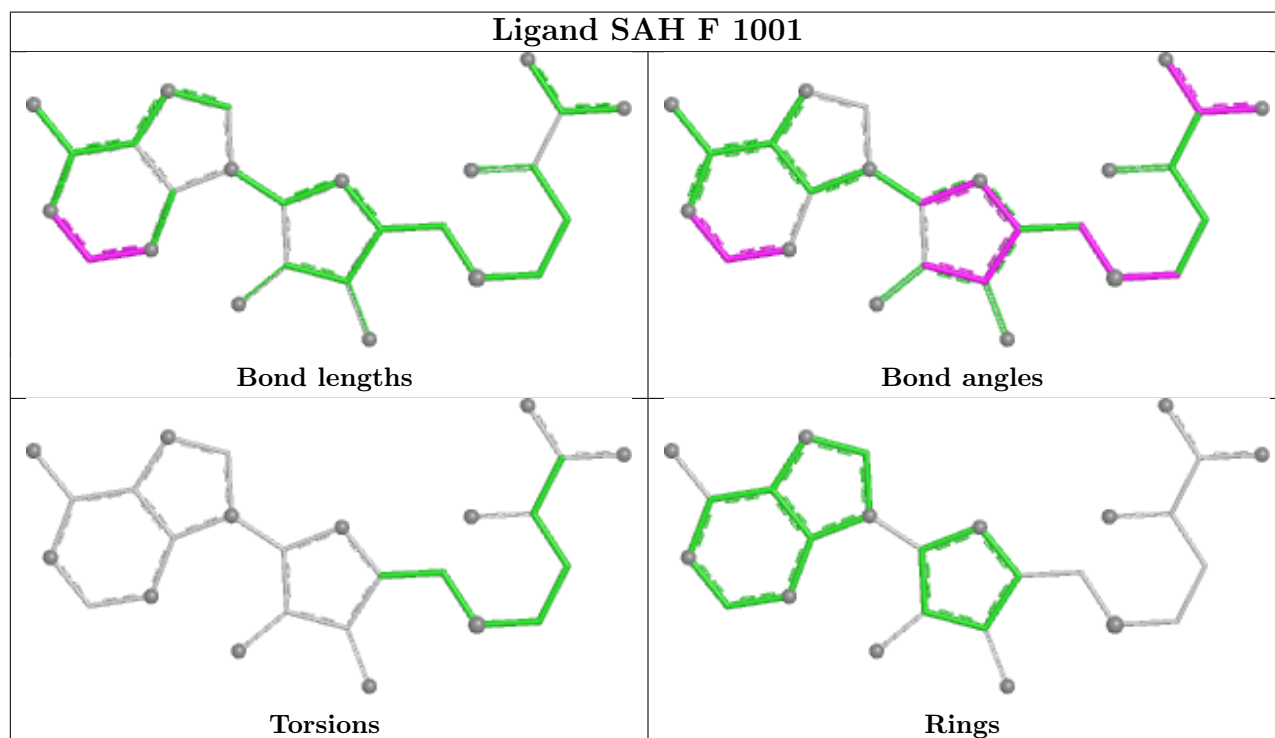
| Mol | Chain | Res  | Type | Atoms          |
|-----|-------|------|------|----------------|
| 2   | B     | 1001 | SAH  | C-CA-CB-CG     |
| 2   | B     | 1001 | SAH  | OXT-C-CA-N     |
| 2   | E     | 1001 | SAH  | CA-CB-CG-SD    |
| 2   | C     | 1001 | SAH  | CA-CB-CG-SD    |
| 2   | D     | 1001 | SAH  | OXT-C-CA-CB    |
| 2   | D     | 1001 | SAH  | OXT-C-CA-N     |
| 2   | A     | 1001 | SAH  | C-CA-CB-CG     |
| 2   | A     | 1001 | SAH  | OXT-C-CA-CB    |
| 2   | D     | 1001 | SAH  | O-C-CA-CB      |
| 2   | A     | 1001 | SAH  | O-C-CA-CB      |
| 2   | D     | 1001 | SAH  | O-C-CA-N       |
| 2   | D     | 1001 | SAH  | CB-CG-SD-C5'   |
| 2   | D     | 1001 | SAH  | C-CA-CB-CG     |
| 2   | D     | 1001 | SAH  | N-CA-CB-CG     |
| 2   | A     | 1001 | SAH  | OXT-C-CA-N     |
| 2   | A     | 1001 | SAH  | O4'-C4'-C5'-SD |
| 2   | B     | 1001 | SAH  | CB-CG-SD-C5'   |
| 2   | C     | 1001 | SAH  | C-CA-CB-CG     |
| 2   | A     | 1001 | SAH  | O-C-CA-N       |
| 2   | E     | 1001 | SAH  | OXT-C-CA-N     |
| 2   | E     | 1001 | SAH  | CB-CG-SD-C5'   |
| 2   | B     | 1001 | SAH  | O-C-CA-CB      |
| 2   | C     | 1001 | SAH  | OXT-C-CA-CB    |
| 2   | B     | 1001 | SAH  | OXT-C-CA-CB    |
| 2   | A     | 1001 | SAH  | N-CA-CB-CG     |
| 2   | C     | 1001 | SAH  | O-C-CA-CB      |
| 2   | B     | 1001 | SAH  | O-C-CA-N       |

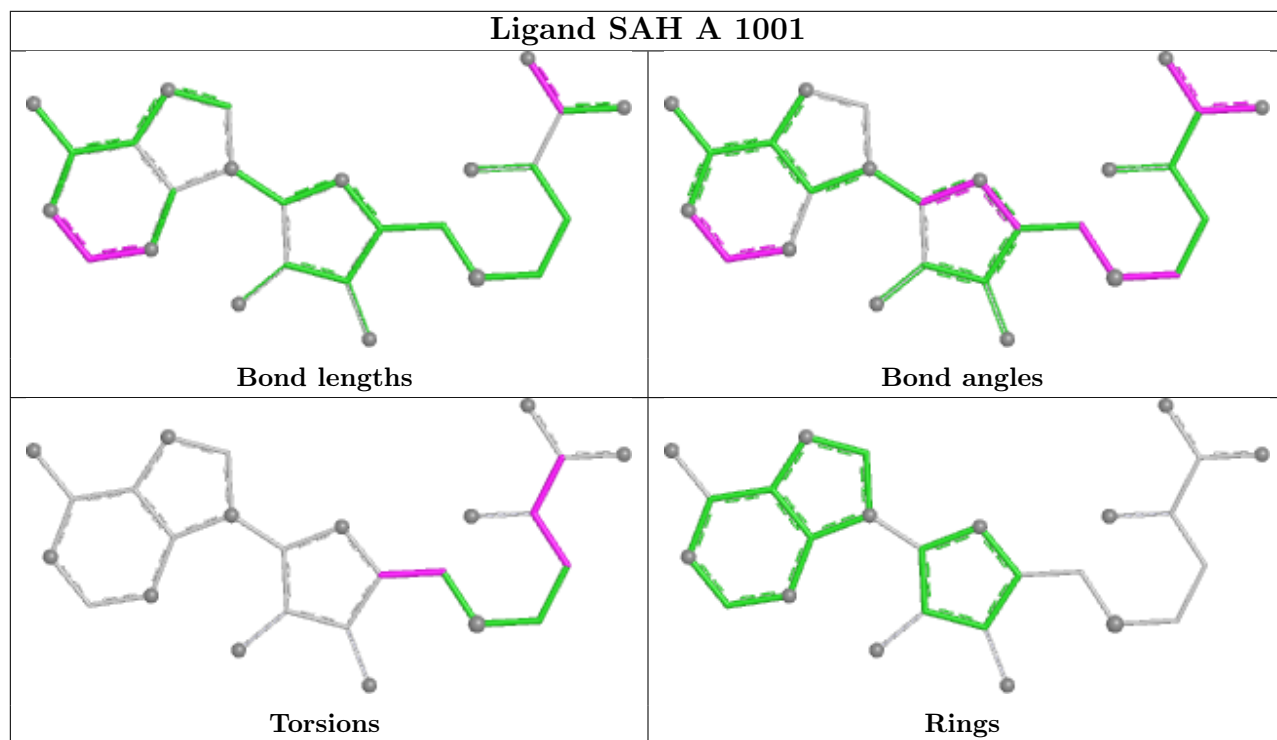
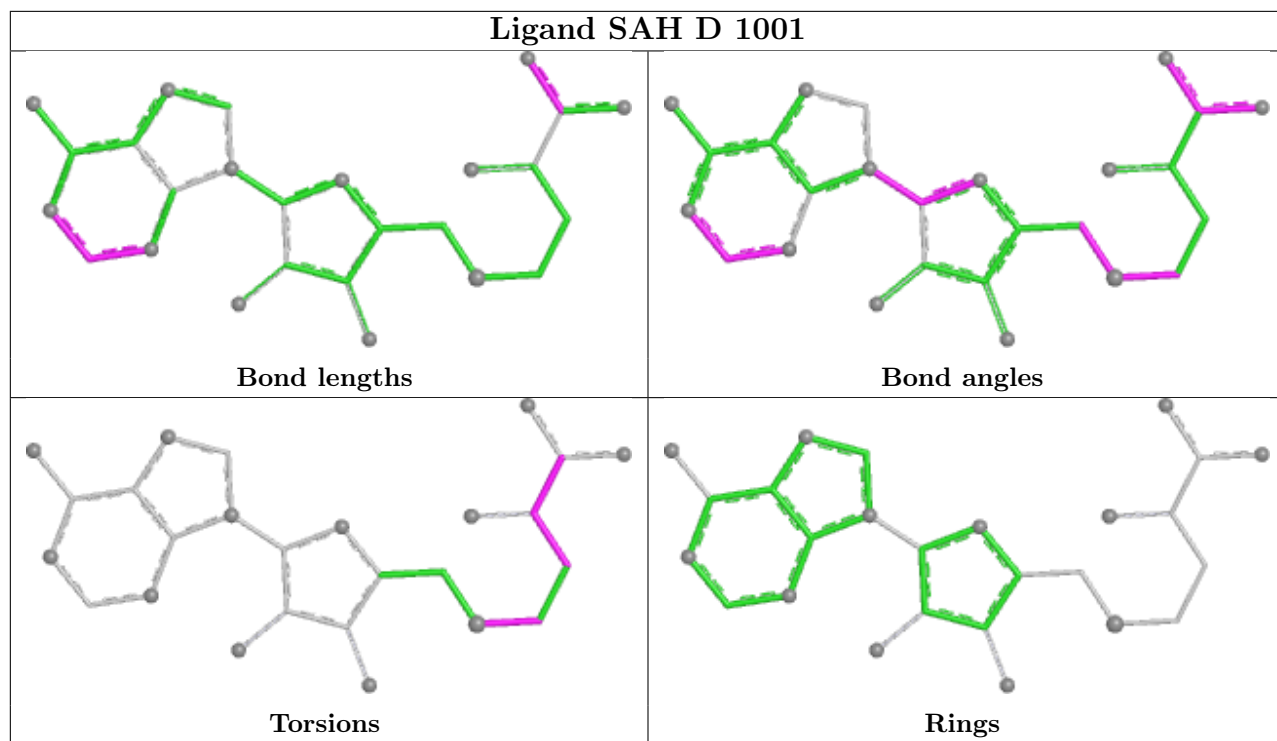
There are no ring outliers.

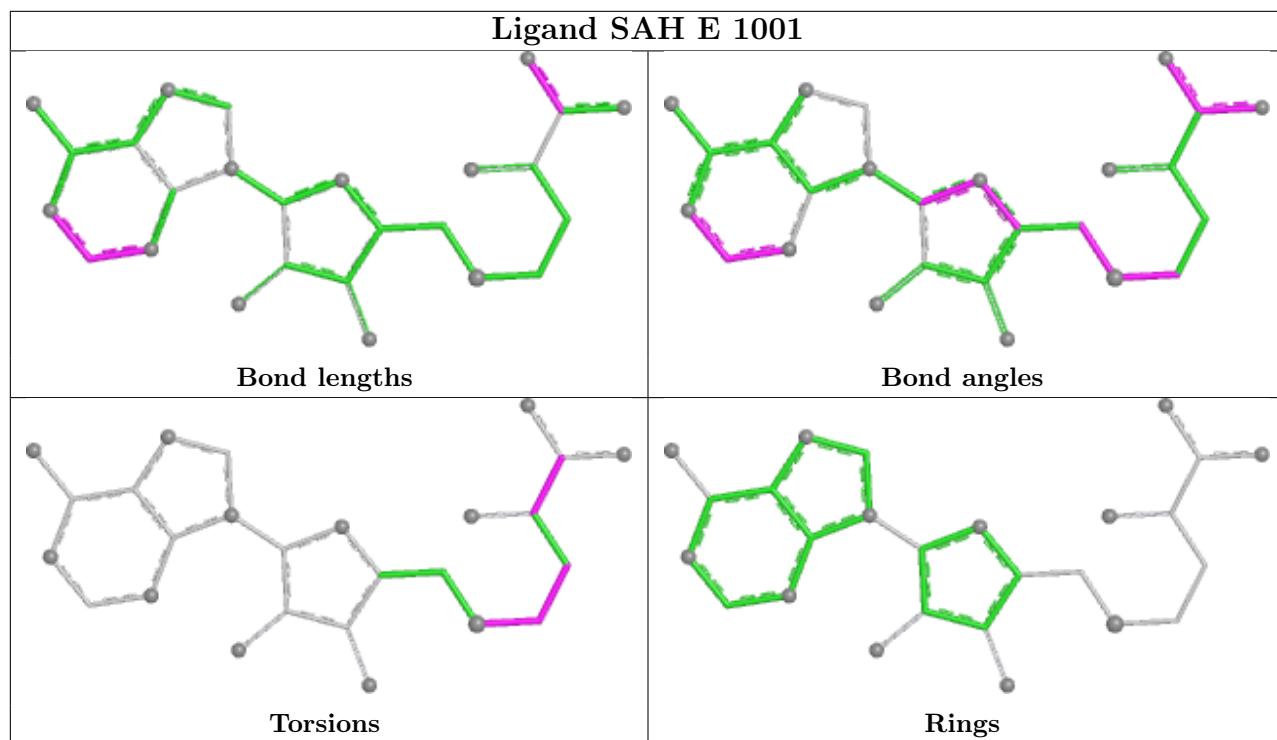
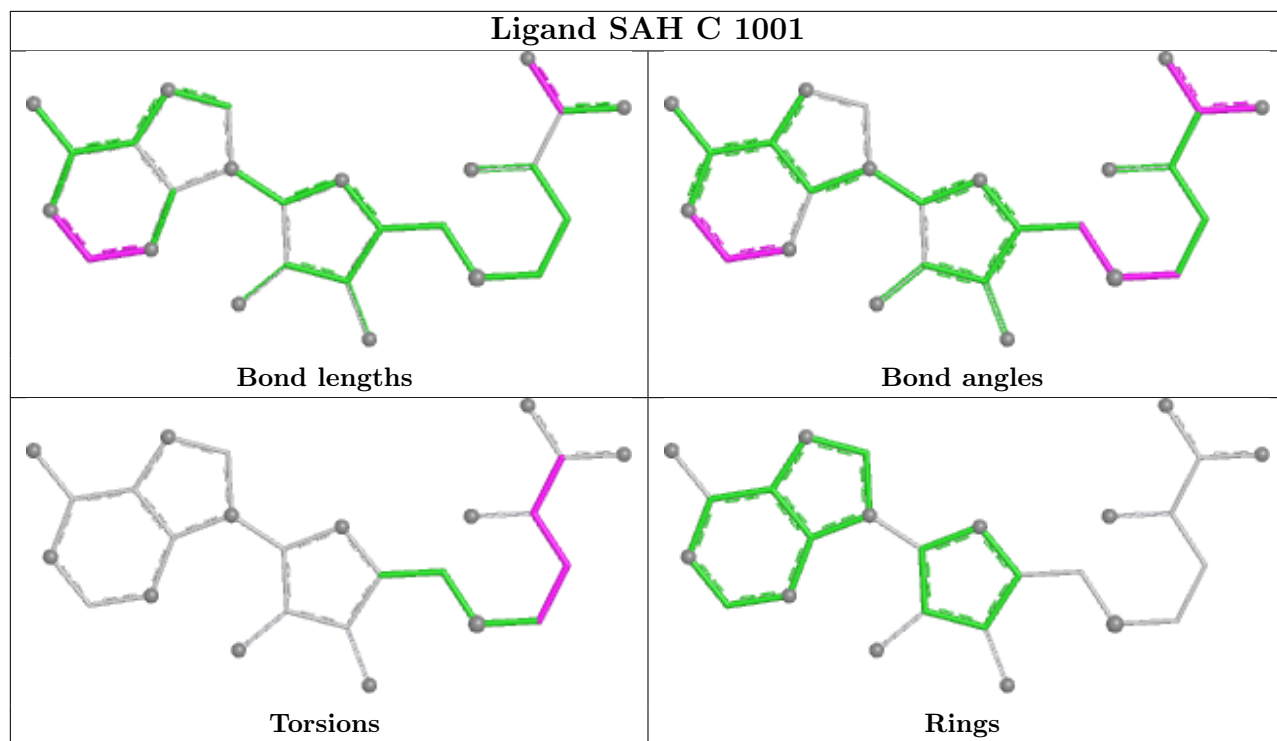
9 monomers are involved in 12 short contacts:

| Mol | Chain | Res  | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 2   | D     | 1001 | SAH  | 1       | 0            |
| 3   | F     | 1003 | PO4  | 1       | 0            |
| 2   | A     | 1001 | SAH  | 1       | 0            |
| 2   | C     | 1001 | SAH  | 3       | 0            |
| 3   | D     | 1003 | PO4  | 2       | 0            |
| 3   | F     | 1002 | PO4  | 1       | 0            |
| 2   | E     | 1001 | SAH  | 1       | 0            |
| 2   | B     | 1001 | SAH  | 1       | 0            |
| 3   | D     | 1005 | PO4  | 1       | 0            |

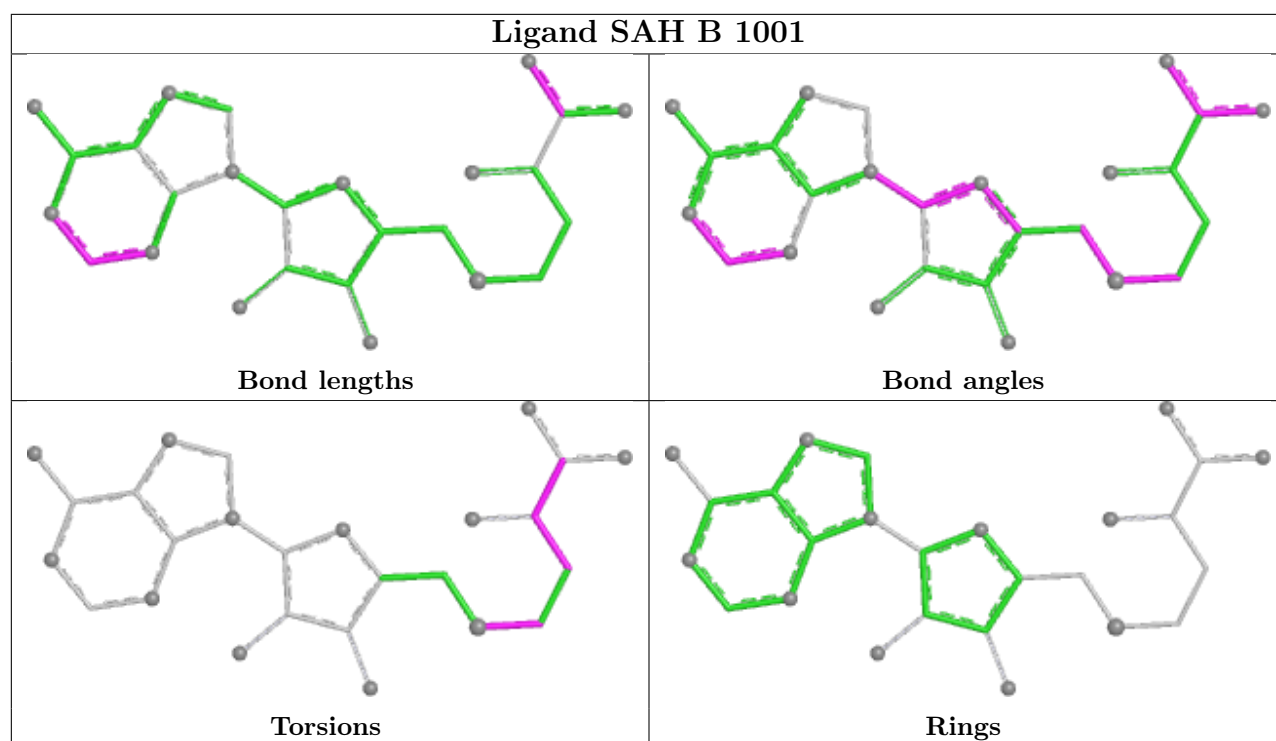
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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   | D     | 2                |
| 1   | F     | 2                |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1     | D     | 886:LEU   | C      | 887:SER   | N      | 1.65         |
| 1     | F     | 876:ILE   | C      | 877:GLY   | N      | 1.18         |
| 1     | F     | 599:ASP   | C      | 600:GLN   | N      | 1.16         |
| 1     | D     | 663:SER   | C      | 664:GLY   | N      | 1.06         |

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2        | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|----------------|-----------------------|-------|
| 1   | A     | 883/914 (96%)   | 0.47   | 54 (6%) 21 17  | 20, 104, 182, 261     | 0     |
| 1   | B     | 882/914 (96%)   | 0.56   | 63 (7%) 16 13  | 26, 111, 191, 253     | 0     |
| 1   | C     | 883/914 (96%)   | 0.54   | 62 (7%) 16 13  | 18, 108, 166, 222     | 0     |
| 1   | D     | 883/914 (96%)   | 0.35   | 18 (2%) 65 56  | 17, 77, 131, 187      | 0     |
| 1   | E     | 883/914 (96%)   | 0.36   | 21 (2%) 59 49  | 19, 86, 156, 221      | 0     |
| 1   | F     | 883/914 (96%)   | 0.40   | 37 (4%) 36 29  | 27, 91, 149, 195      | 0     |
| All | All   | 5297/5484 (96%) | 0.45   | 255 (4%) 30 25 | 17, 96, 171, 261      | 0     |

All (255) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | A     | 578 | VAL  | 7.4  |
| 1   | A     | 723 | GLY  | 6.9  |
| 1   | B     | 446 | GLY  | 6.8  |
| 1   | B     | 452 | VAL  | 6.4  |
| 1   | A     | 720 | LEU  | 5.9  |
| 1   | B     | 566 | ALA  | 5.8  |
| 1   | A     | 722 | ASP  | 5.7  |
| 1   | A     | 819 | TRP  | 5.4  |
| 1   | A     | 435 | LEU  | 5.3  |
| 1   | C     | 578 | VAL  | 4.9  |
| 1   | F     | 578 | VAL  | 4.9  |
| 1   | B     | 447 | GLU  | 4.8  |
| 1   | A     | 579 | VAL  | 4.7  |
| 1   | B     | 428 | ASN  | 4.6  |
| 1   | C     | 579 | VAL  | 4.5  |
| 1   | A     | 535 | ASP  | 4.4  |
| 1   | A     | 416 | GLU  | 4.3  |
| 1   | B     | 704 | ASN  | 4.2  |
| 1   | C     | 768 | TYR  | 4.1  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | F            | 656        | ARG         | 4.1         |
| 1          | B            | 386        | LEU         | 4.1         |
| 1          | A            | 660        | MET         | 4.1         |
| 1          | D            | 416        | GLU         | 4.0         |
| 1          | B            | 445        | ARG         | 4.0         |
| 1          | D            | 717        | LYS         | 3.9         |
| 1          | F            | 593        | ASP         | 3.9         |
| 1          | B            | 451        | CYS         | 3.9         |
| 1          | A            | 839        | PRO         | 3.9         |
| 1          | C            | 658        | LYS         | 3.8         |
| 1          | A            | 417        | GLU         | 3.8         |
| 1          | B            | 436        | VAL         | 3.8         |
| 1          | C            | 661        | ALA         | 3.7         |
| 1          | C            | 668        | VAL         | 3.7         |
| 1          | D            | 415        | GLU         | 3.7         |
| 1          | E            | 704        | ASN         | 3.6         |
| 1          | C            | 506        | GLY         | 3.6         |
| 1          | A            | 413        | ILE         | 3.6         |
| 1          | B            | 793        | GLY         | 3.6         |
| 1          | C            | 660        | MET         | 3.6         |
| 1          | F            | 804        | GLU         | 3.6         |
| 1          | C            | 804        | GLU         | 3.5         |
| 1          | B            | 400        | PHE         | 3.5         |
| 1          | A            | 400        | PHE         | 3.5         |
| 1          | A            | 831        | PRO         | 3.5         |
| 1          | A            | 879        | GLU         | 3.5         |
| 1          | A            | 661        | ALA         | 3.4         |
| 1          | C            | 745        | GLY         | 3.4         |
| 1          | C            | 505        | GLY         | 3.4         |
| 1          | F            | 800        | HIS         | 3.4         |
| 1          | A            | 717        | LYS         | 3.4         |
| 1          | E            | 416        | GLU         | 3.4         |
| 1          | A            | 657        | LEU         | 3.3         |
| 1          | C            | 746        | ALA         | 3.3         |
| 1          | B            | 206        | LEU         | 3.3         |
| 1          | B            | 574        | TYR         | 3.3         |
| 1          | C            | 278        | ILE         | 3.3         |
| 1          | E            | 796        | THR         | 3.3         |
| 1          | C            | 580        | LYS         | 3.3         |
| 1          | C            | 703        | ASP         | 3.3         |
| 1          | B            | 575        | GLN         | 3.2         |
| 1          | C            | 416        | GLU         | 3.2         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | B            | 490        | LEU         | 3.2         |
| 1          | C            | 726        | ILE         | 3.2         |
| 1          | E            | 654        | TRP         | 3.1         |
| 1          | D            | 746        | ALA         | 3.1         |
| 1          | C            | 744        | PRO         | 3.1         |
| 1          | C            | 518        | TYR         | 3.1         |
| 1          | A            | 821        | GLU         | 3.1         |
| 1          | B            | 577        | LYS         | 3.1         |
| 1          | E            | 794        | ARG         | 3.1         |
| 1          | C            | 654        | TRP         | 3.1         |
| 1          | A            | 721        | LYS         | 3.1         |
| 1          | F            | 795        | THR         | 3.1         |
| 1          | C            | 577        | LYS         | 3.1         |
| 1          | F            | 357        | LYS         | 3.1         |
| 1          | B            | 414        | PHE         | 3.1         |
| 1          | B            | 523        | MET         | 3.0         |
| 1          | B            | 16         | LEU         | 3.0         |
| 1          | A            | 428        | ASN         | 3.0         |
| 1          | A            | 577        | LYS         | 3.0         |
| 1          | C            | 354        | ARG         | 2.9         |
| 1          | D            | 413        | ILE         | 2.9         |
| 1          | C            | 576        | ASN         | 2.9         |
| 1          | C            | 727        | VAL         | 2.9         |
| 1          | D            | 206        | LEU         | 2.9         |
| 1          | E            | 400        | PHE         | 2.9         |
| 1          | B            | 448        | CYS         | 2.9         |
| 1          | F            | 594        | ILE         | 2.9         |
| 1          | D            | 414        | PHE         | 2.8         |
| 1          | B            | 416        | GLU         | 2.8         |
| 1          | F            | 580        | LYS         | 2.8         |
| 1          | D            | 516        | LEU         | 2.8         |
| 1          | F            | 669        | VAL         | 2.8         |
| 1          | B            | 631        | LEU         | 2.8         |
| 1          | E            | 797        | TRP         | 2.8         |
| 1          | A            | 278        | ILE         | 2.8         |
| 1          | C            | 631        | LEU         | 2.8         |
| 1          | B            | 514        | GLN         | 2.8         |
| 1          | E            | 705        | TRP         | 2.7         |
| 1          | A            | 793        | GLY         | 2.7         |
| 1          | C            | 525        | ARG         | 2.7         |
| 1          | C            | 717        | LYS         | 2.7         |
| 1          | F            | 579        | VAL         | 2.7         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | C            | 453        | TYR         | 2.7         |
| 1          | F            | 654        | TRP         | 2.7         |
| 1          | A            | 414        | PHE         | 2.7         |
| 1          | B            | 147        | ILE         | 2.7         |
| 1          | B            | 417        | GLU         | 2.7         |
| 1          | A            | 726        | ILE         | 2.6         |
| 1          | A            | 536        | THR         | 2.6         |
| 1          | D            | 435        | LEU         | 2.6         |
| 1          | F            | 386        | LEU         | 2.6         |
| 1          | F            | 536        | THR         | 2.6         |
| 1          | B            | 551        | GLU         | 2.6         |
| 1          | F            | 432        | PHE         | 2.6         |
| 1          | A            | 484        | PHE         | 2.6         |
| 1          | D            | 793        | GLY         | 2.6         |
| 1          | F            | 446        | GLY         | 2.6         |
| 1          | A            | 630        | VAL         | 2.6         |
| 1          | E            | 586        | GLU         | 2.6         |
| 1          | B            | 17         | ASN         | 2.6         |
| 1          | C            | 447        | GLU         | 2.6         |
| 1          | B            | 317        | SER         | 2.6         |
| 1          | F            | 668        | VAL         | 2.6         |
| 1          | F            | 565        | LEU         | 2.6         |
| 1          | E            | 709        | PRO         | 2.6         |
| 1          | A            | 834        | LYS         | 2.6         |
| 1          | C            | 716        | ASN         | 2.6         |
| 1          | F            | 416        | GLU         | 2.6         |
| 1          | B            | 159        | ALA         | 2.6         |
| 1          | B            | 320        | SER         | 2.6         |
| 1          | C            | 282        | ILE         | 2.5         |
| 1          | F            | 796        | THR         | 2.5         |
| 1          | B            | 382        | LEU         | 2.5         |
| 1          | A            | 300        | PRO         | 2.5         |
| 1          | A            | 432        | PHE         | 2.5         |
| 1          | B            | 595        | ILE         | 2.5         |
| 1          | A            | 815        | TRP         | 2.5         |
| 1          | B            | 482        | ALA         | 2.5         |
| 1          | E            | 34         | GLU         | 2.5         |
| 1          | B            | 403        | LYS         | 2.5         |
| 1          | A            | 658        | LYS         | 2.5         |
| 1          | F            | 827        | GLU         | 2.5         |
| 1          | D            | 747        | GLY         | 2.5         |
| 1          | C            | 837        | ASP         | 2.4         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | D            | 707        | GLU         | 2.4         |
| 1          | B            | 353        | GLN         | 2.4         |
| 1          | C            | 317        | SER         | 2.4         |
| 1          | C            | 645        | VAL         | 2.4         |
| 1          | E            | 576        | ASN         | 2.4         |
| 1          | F            | 34         | GLU         | 2.4         |
| 1          | C            | 767        | LEU         | 2.4         |
| 1          | D            | 578        | VAL         | 2.4         |
| 1          | F            | 414        | PHE         | 2.4         |
| 1          | A            | 832        | VAL         | 2.4         |
| 1          | E            | 531        | MET         | 2.4         |
| 1          | A            | 506        | GLY         | 2.4         |
| 1          | C            | 534        | ASP         | 2.4         |
| 1          | B            | 569        | ILE         | 2.4         |
| 1          | A            | 452        | VAL         | 2.4         |
| 1          | C            | 414        | PHE         | 2.4         |
| 1          | C            | 158        | GLU         | 2.3         |
| 1          | D            | 217        | HIS         | 2.3         |
| 1          | C            | 277        | ILE         | 2.3         |
| 1          | C            | 533        | ALA         | 2.3         |
| 1          | B            | 84         | ARG         | 2.3         |
| 1          | F            | 688        | LYS         | 2.3         |
| 1          | F            | 408        | ALA         | 2.3         |
| 1          | C            | 669        | VAL         | 2.3         |
| 1          | B            | 18         | GLN         | 2.3         |
| 1          | A            | 284        | ARG         | 2.3         |
| 1          | C            | 646        | THR         | 2.3         |
| 1          | C            | 586        | GLU         | 2.3         |
| 1          | C            | 793        | GLY         | 2.3         |
| 1          | B            | 156        | VAL         | 2.3         |
| 1          | F            | 253        | TYR         | 2.3         |
| 1          | F            | 881        | LYS         | 2.3         |
| 1          | B            | 801        | GLY         | 2.3         |
| 1          | C            | 760        | TYR         | 2.3         |
| 1          | A            | 573        | THR         | 2.3         |
| 1          | A            | 744        | PRO         | 2.3         |
| 1          | B            | 803        | GLY         | 2.3         |
| 1          | B            | 220        | TYR         | 2.3         |
| 1          | C            | 329        | LEU         | 2.2         |
| 1          | B            | 354        | ARG         | 2.2         |
| 1          | C            | 455        | MET         | 2.2         |
| 1          | F            | 186        | PRO         | 2.2         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | A            | 705        | TRP         | 2.2         |
| 1          | C            | 130        | VAL         | 2.2         |
| 1          | C            | 704        | ASN         | 2.2         |
| 1          | E            | 837        | ASP         | 2.2         |
| 1          | E            | 707        | GLU         | 2.2         |
| 1          | A            | 654        | TRP         | 2.2         |
| 1          | B            | 804        | GLU         | 2.2         |
| 1          | A            | 386        | LEU         | 2.2         |
| 1          | C            | 523        | MET         | 2.2         |
| 1          | F            | 57         | ARG         | 2.2         |
| 1          | A            | 282        | ILE         | 2.2         |
| 1          | F            | 506        | GLY         | 2.2         |
| 1          | F            | 566        | ALA         | 2.2         |
| 1          | B            | 819        | TRP         | 2.2         |
| 1          | B            | 153        | SER         | 2.2         |
| 1          | C            | 327        | ARG         | 2.1         |
| 1          | B            | 707        | GLU         | 2.1         |
| 1          | A            | 515        | ARG         | 2.1         |
| 1          | B            | 768        | TYR         | 2.1         |
| 1          | D            | 124        | VAL         | 2.1         |
| 1          | B            | 186        | PRO         | 2.1         |
| 1          | B            | 13         | LYS         | 2.1         |
| 1          | A            | 522        | GLU         | 2.1         |
| 1          | F            | 263        | THR         | 2.1         |
| 1          | A            | 259        | LEU         | 2.1         |
| 1          | A            | 390        | LYS         | 2.1         |
| 1          | E            | 523        | MET         | 2.1         |
| 1          | C            | 838        | ILE         | 2.1         |
| 1          | D            | 186        | PRO         | 2.1         |
| 1          | B            | 441        | GLU         | 2.1         |
| 1          | B            | 184        | LEU         | 2.1         |
| 1          | B            | 533        | ALA         | 2.1         |
| 1          | C            | 432        | PHE         | 2.1         |
| 1          | D            | 575        | GLN         | 2.1         |
| 1          | B            | 576        | ASN         | 2.1         |
| 1          | C            | 314        | THR         | 2.1         |
| 1          | A            | 621        | LEU         | 2.1         |
| 1          | B            | 630        | VAL         | 2.1         |
| 1          | E            | 716        | ASN         | 2.1         |
| 1          | B            | 181        | ILE         | 2.1         |
| 1          | E            | 16         | LEU         | 2.1         |
| 1          | C            | 413        | ILE         | 2.1         |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | C     | 461 | LYS  | 2.1  |
| 1   | C     | 758 | LYS  | 2.1  |
| 1   | D     | 577 | LYS  | 2.1  |
| 1   | F     | 413 | ILE  | 2.1  |
| 1   | C     | 504 | SER  | 2.1  |
| 1   | C     | 682 | PHE  | 2.1  |
| 1   | B     | 658 | LYS  | 2.1  |
| 1   | B     | 790 | VAL  | 2.1  |
| 1   | E     | 59  | SER  | 2.0  |
| 1   | E     | 577 | LYS  | 2.0  |
| 1   | F     | 658 | LYS  | 2.0  |
| 1   | C     | 819 | TRP  | 2.0  |
| 1   | F     | 705 | TRP  | 2.0  |
| 1   | A     | 382 | LEU  | 2.0  |
| 1   | A     | 94  | ILE  | 2.0  |
| 1   | B     | 40  | ALA  | 2.0  |
| 1   | F     | 285 | ILE  | 2.0  |
| 1   | E     | 25  | TYR  | 2.0  |
| 1   | B     | 471 | GLY  | 2.0  |
| 1   | C     | 747 | GLY  | 2.0  |
| 1   | B     | 476 | TRP  | 2.0  |
| 1   | C     | 452 | VAL  | 2.0  |
| 1   | A     | 505 | GLY  | 2.0  |
| 1   | A     | 640 | ARG  | 2.0  |
| 1   | F     | 221 | TRP  | 2.0  |
| 1   | B     | 802 | LYS  | 2.0  |

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

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

## 6.3 Carbohydrates [\(i\)](#)

There are no monosaccharides in this entry.

## 6.4 Ligands [\(i\)](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

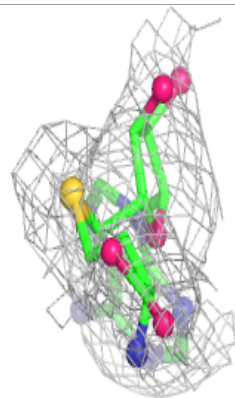
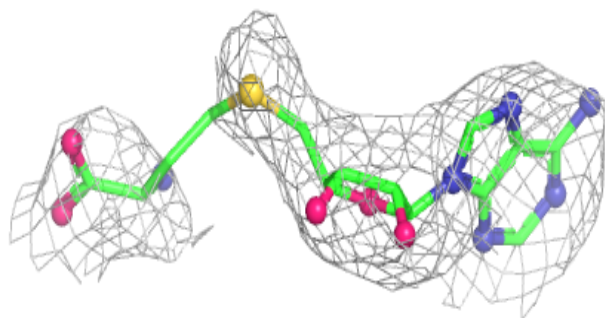
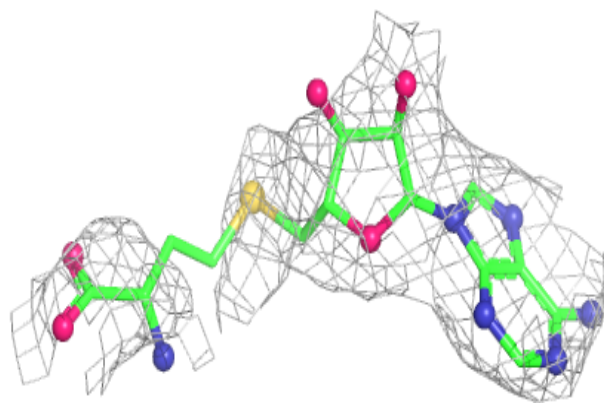


| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 3   | PO4  | E     | 1003 | 5/5   | 0.39 | 0.24 | 168,181,230,239             | 0     |
| 3   | PO4  | F     | 1005 | 5/5   | 0.39 | 0.26 | 163,195,212,227             | 0     |
| 3   | PO4  | D     | 1002 | 5/5   | 0.67 | 0.24 | 123,143,182,184             | 0     |
| 3   | PO4  | C     | 1002 | 5/5   | 0.73 | 0.23 | 110,129,154,157             | 0     |
| 3   | PO4  | D     | 1004 | 5/5   | 0.73 | 0.17 | 156,179,206,209             | 0     |
| 3   | PO4  | B     | 1003 | 5/5   | 0.74 | 0.17 | 157,184,212,213             | 0     |
| 3   | PO4  | A     | 1002 | 5/5   | 0.74 | 0.26 | 127,148,153,161             | 0     |
| 3   | PO4  | D     | 1005 | 5/5   | 0.78 | 0.24 | 119,125,139,152             | 0     |
| 3   | PO4  | F     | 1003 | 5/5   | 0.81 | 0.18 | 103,138,171,194             | 0     |
| 3   | PO4  | D     | 1003 | 5/5   | 0.82 | 0.15 | 151,169,206,225             | 0     |
| 3   | PO4  | F     | 1004 | 5/5   | 0.89 | 0.19 | 79,90,144,173               | 0     |
| 2   | SAH  | B     | 1001 | 26/26 | 0.89 | 0.52 | 68,105,131,138              | 0     |
| 2   | SAH  | C     | 1001 | 26/26 | 0.90 | 0.39 | 43,74,103,125               | 0     |
| 3   | PO4  | B     | 1002 | 5/5   | 0.90 | 0.16 | 94,109,127,135              | 0     |
| 2   | SAH  | D     | 1001 | 26/26 | 0.92 | 0.41 | 31,85,110,128               | 0     |
| 2   | SAH  | F     | 1001 | 26/26 | 0.92 | 0.38 | 43,81,100,140               | 0     |
| 2   | SAH  | A     | 1001 | 26/26 | 0.93 | 0.34 | 44,65,92,141                | 0     |
| 3   | PO4  | E     | 1002 | 5/5   | 0.94 | 0.18 | 78,104,111,113              | 0     |
| 3   | PO4  | A     | 1003 | 5/5   | 0.95 | 0.15 | 88,95,130,137               | 0     |
| 2   | SAH  | E     | 1001 | 26/26 | 0.95 | 0.43 | 38,67,106,137               | 0     |
| 3   | PO4  | F     | 1002 | 5/5   | 0.95 | 0.18 | 70,78,116,131               | 0     |
| 4   | ZN   | A     | 1005 | 1/1   | 0.97 | 0.15 | 154,154,154,154             | 0     |
| 4   | ZN   | C     | 1003 | 1/1   | 0.97 | 0.22 | 68,68,68,68                 | 0     |
| 4   | ZN   | E     | 1004 | 1/1   | 0.97 | 0.19 | 156,156,156,156             | 0     |
| 4   | ZN   | A     | 1004 | 1/1   | 0.98 | 0.20 | 73,73,73,73                 | 0     |
| 4   | ZN   | C     | 1004 | 1/1   | 0.99 | 0.16 | 142,142,142,142             | 0     |
| 4   | ZN   | D     | 1006 | 1/1   | 0.99 | 0.20 | 44,44,44,44                 | 0     |
| 4   | ZN   | B     | 1004 | 1/1   | 0.99 | 0.21 | 32,32,32,32                 | 0     |
| 4   | ZN   | E     | 1005 | 1/1   | 0.99 | 0.22 | 10,10,10,10                 | 0     |
| 4   | ZN   | F     | 1006 | 1/1   | 0.99 | 0.17 | 57,57,57,57                 | 0     |
| 4   | ZN   | F     | 1007 | 1/1   | 0.99 | 0.16 | 118,118,118,118             | 0     |
| 4   | ZN   | D     | 1007 | 1/1   | 1.00 | 0.24 | 51,51,51,51                 | 0     |

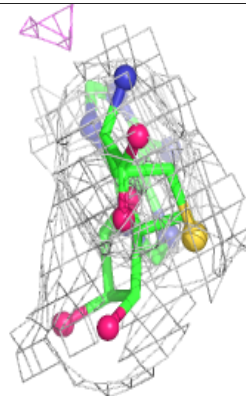
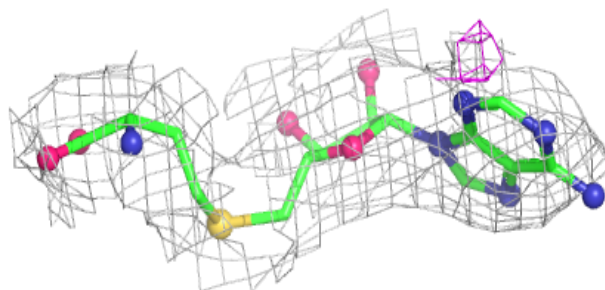
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

**Electron density around SAH B 1001:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

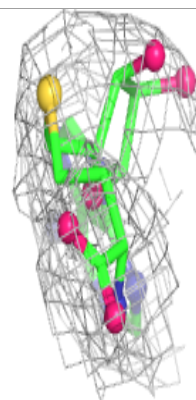
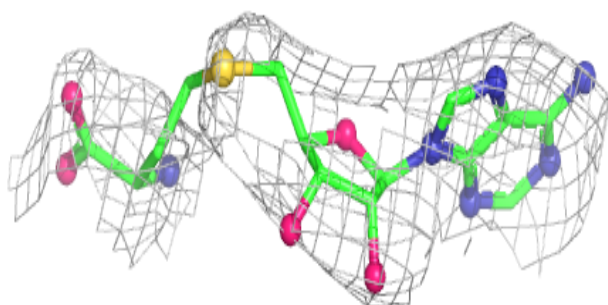
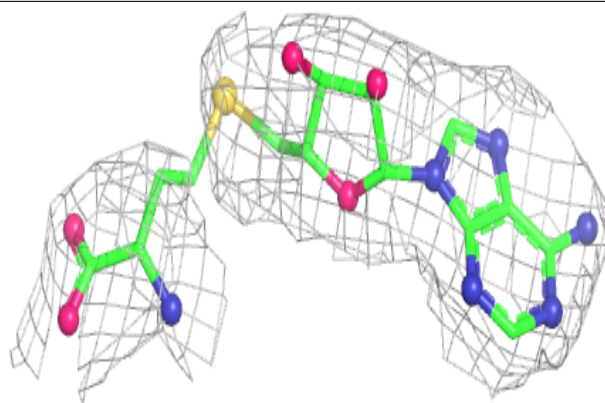
**Electron density around SAH C 1001:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

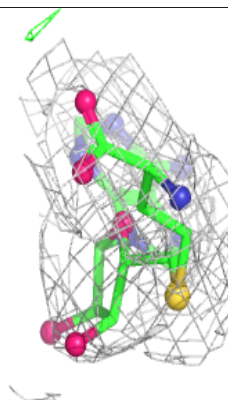
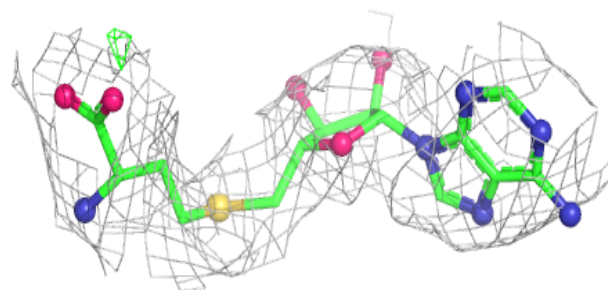
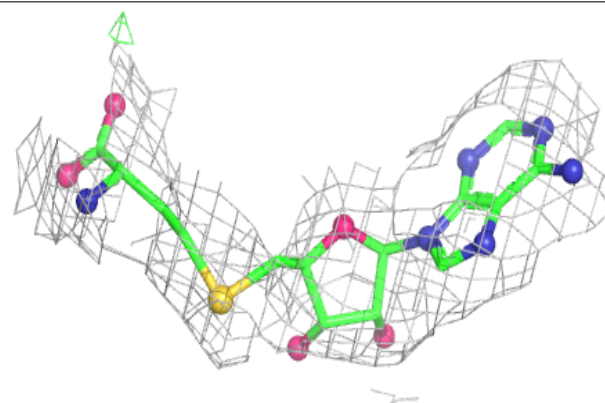


**Electron density around SAH D 1001:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

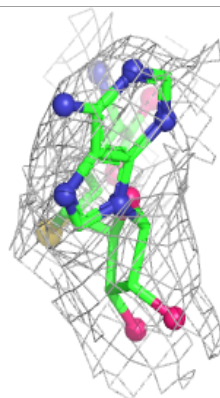
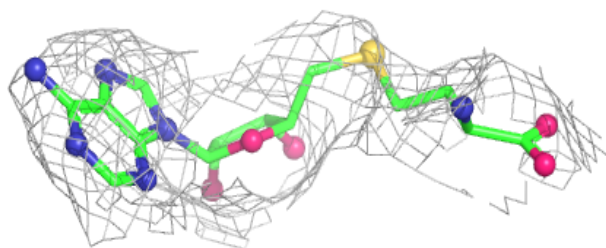
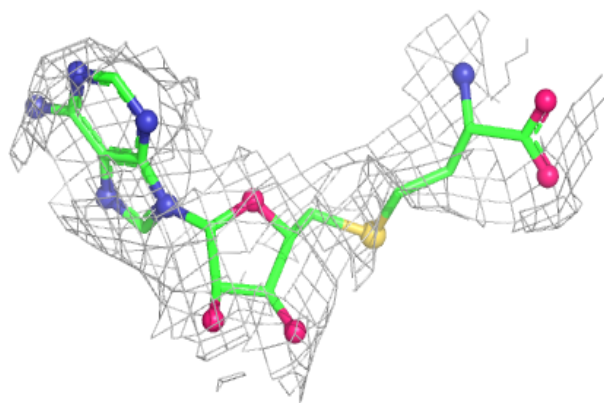
**Electron density around SAH F 1001:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

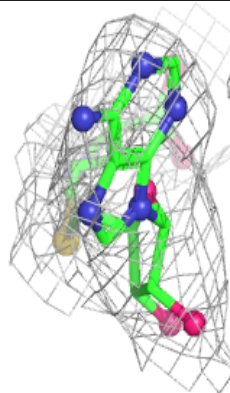
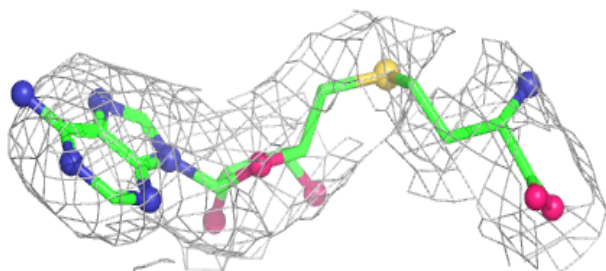
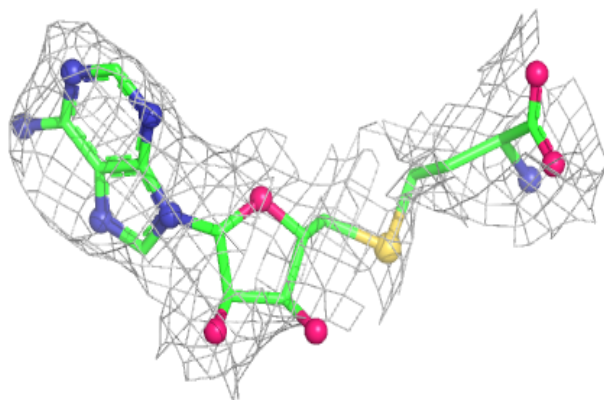


**Electron density around SAH A 1001:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

**Electron density around SAH E 1001:**

$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



## 6.5 Other polymers [i](#)

There are no such residues in this entry.