



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 31, 2023 – 01:06 PM JST

PDB ID : 5ECL  
Title : Crystal Structure of FIN219-FIP1 complex with JA, Ile and Mg  
Authors : Chen, C.Y.; Cheng, Y.S.  
Deposited on : 2015-10-20  
Resolution : 1.85 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 : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.36  
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) : 2.36

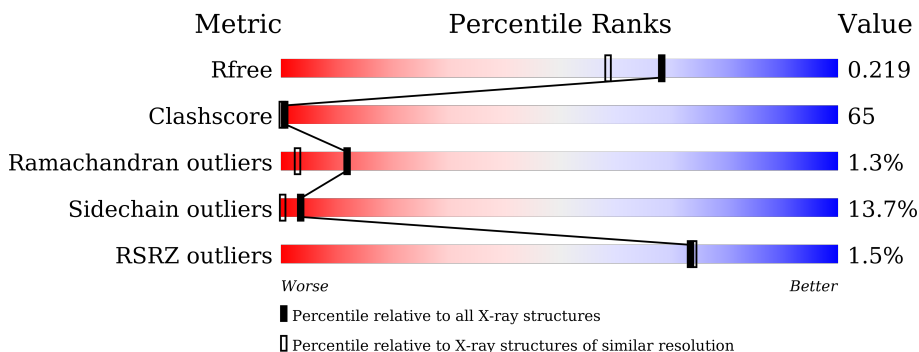
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.85 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                      | 2469 (1.86-1.86)                                      |
| Clashscore            | 141614                      | 2625 (1.86-1.86)                                      |
| Ramachandran outliers | 138981                      | 2592 (1.86-1.86)                                      |
| Sidechain outliers    | 138945                      | 2592 (1.86-1.86)                                      |
| RSRZ outliers         | 127900                      | 2436 (1.86-1.86)                                      |

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     | 575    | <br>3% 22% 62% 14% .. |
| 1   | D     | 575    | <br>2% 23% 62% 13% .. |
| 2   | B     | 223    | <br>36% 52% 7% .      |
| 2   | C     | 223    | <br>2% 31% 55% 10% .  |
| 2   | E     | 223    | <br>2% 30% 57% 9% .   |
| 2   | F     | 223    | <br>31% 52% 11% ..    |

## 2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 17172 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 Jasmonic acid-amido synthetase JAR1.

| Mol | Chain | Residues | Atoms |      |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |         |       |
| 1   | A     | 569      | 4479  | 2859 | 748 | 850 | 22 | 0       | 0       | 0     |
| 1   | D     | 569      | 4479  | 2859 | 748 | 850 | 22 | 0       | 0       | 0     |

- Molecule 2 is a protein called Glutathione S-transferase U20.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |         |       |
| 2   | B     | 214      | 1748  | 1136 | 284 | 323 | 5 | 0       | 0       | 0     |
| 2   | C     | 214      | 1748  | 1136 | 284 | 323 | 5 | 0       | 0       | 0     |
| 2   | E     | 214      | 1748  | 1136 | 284 | 323 | 5 | 0       | 0       | 0     |
| 2   | F     | 214      | 1748  | 1136 | 284 | 323 | 5 | 0       | 0       | 0     |

There are 24 discrepancies between the modelled and reference sequences:

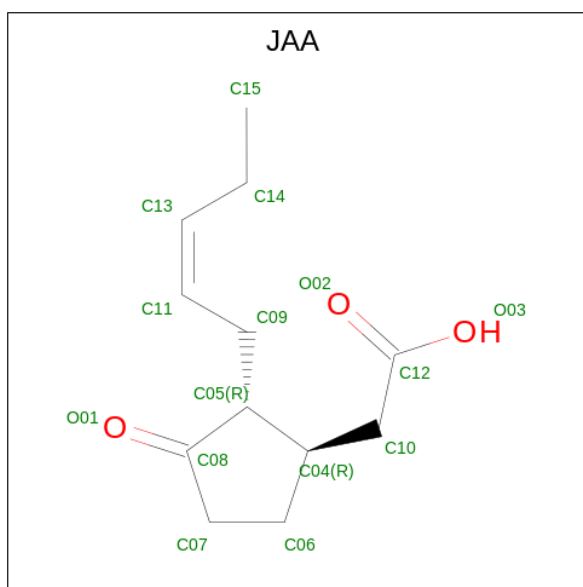
| Chain | Residue | Modelled | Actual | Comment        | Reference  |
|-------|---------|----------|--------|----------------|------------|
| B     | -5      | HIS      | -      | expression tag | UNP Q8L7C9 |
| B     | -4      | HIS      | -      | expression tag | UNP Q8L7C9 |
| B     | -3      | HIS      | -      | expression tag | UNP Q8L7C9 |
| B     | -2      | HIS      | -      | expression tag | UNP Q8L7C9 |
| B     | -1      | HIS      | -      | expression tag | UNP Q8L7C9 |
| B     | 0       | HIS      | -      | expression tag | UNP Q8L7C9 |
| C     | -5      | HIS      | -      | expression tag | UNP Q8L7C9 |
| C     | -4      | HIS      | -      | expression tag | UNP Q8L7C9 |
| C     | -3      | HIS      | -      | expression tag | UNP Q8L7C9 |
| C     | -2      | HIS      | -      | expression tag | UNP Q8L7C9 |
| C     | -1      | HIS      | -      | expression tag | UNP Q8L7C9 |
| C     | 0       | HIS      | -      | expression tag | UNP Q8L7C9 |

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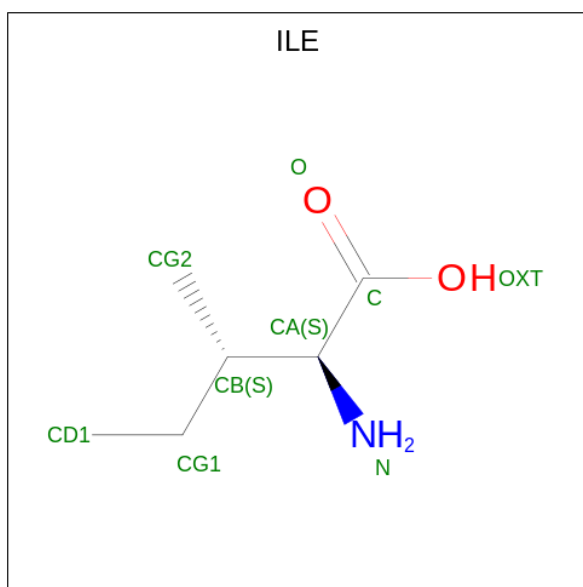
| Chain | Residue | Modelled | Actual | Comment        | Reference  |
|-------|---------|----------|--------|----------------|------------|
| E     | -5      | HIS      | -      | expression tag | UNP Q8L7C9 |
| E     | -4      | HIS      | -      | expression tag | UNP Q8L7C9 |
| E     | -3      | HIS      | -      | expression tag | UNP Q8L7C9 |
| E     | -2      | HIS      | -      | expression tag | UNP Q8L7C9 |
| E     | -1      | HIS      | -      | expression tag | UNP Q8L7C9 |
| E     | 0       | HIS      | -      | expression tag | UNP Q8L7C9 |
| F     | -5      | HIS      | -      | expression tag | UNP Q8L7C9 |
| F     | -4      | HIS      | -      | expression tag | UNP Q8L7C9 |
| F     | -3      | HIS      | -      | expression tag | UNP Q8L7C9 |
| F     | -2      | HIS      | -      | expression tag | UNP Q8L7C9 |
| F     | -1      | HIS      | -      | expression tag | UNP Q8L7C9 |
| F     | 0       | HIS      | -      | expression tag | UNP Q8L7C9 |

- Molecule 3 is {(1R,2R)-3-oxo-2-[(2Z)-pent-2-en-1-yl]cyclopentyl}acetic acid (three-letter code: JAA) (formula: C<sub>12</sub>H<sub>18</sub>O<sub>3</sub>).



| Mol | Chain | Residues | Atoms |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---------|---------|
| 3   | A     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 15    | 12 | 3 |         |         |
| 3   | D     | 1        | Total | C  | O | 0       | 0       |
|     |       |          | 15    | 12 | 3 |         |         |

- Molecule 4 is ISOLEUCINE (three-letter code: ILE) (formula: C<sub>6</sub>H<sub>13</sub>NO<sub>2</sub>).

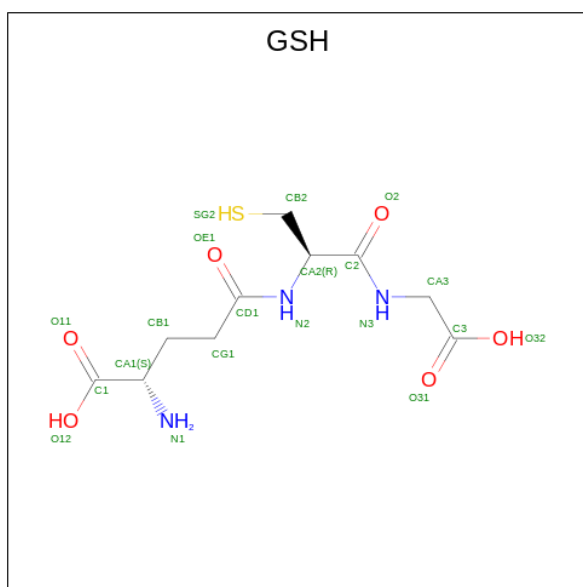


| Mol | Chain | Residues | Atoms |   |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|---|---|---|---------|---------|
| 4   | A     | 1        | Total | C | N | O | 0       | 0       |
|     |       |          | 9     | 6 | 1 | 2 |         |         |
| 4   | D     | 1        | Total | C | N | O | 0       | 0       |
|     |       |          | 9     | 6 | 1 | 2 |         |         |

- Molecule 5 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 5   | A     | 1        | Total | Mg | 0       | 0       |
|     |       |          | 1     | 1  |         |         |
| 5   | D     | 3        | Total | Mg | 0       | 0       |
|     |       |          | 3     | 3  |         |         |

- Molecule 6 is GLUTATHIONE (three-letter code: GSH) (formula: C<sub>10</sub>H<sub>17</sub>N<sub>3</sub>O<sub>6</sub>S).



| Mol | Chain | Residues | Atoms |    |   |   |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---|---|---------|---------|
|     |       |          | Total | C  | N | O | S |         |         |
| 6   | B     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 20    | 10 | 3 | 6 | 1 |         |         |
| 6   | C     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 20    | 10 | 3 | 6 | 1 |         |         |
| 6   | E     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 20    | 10 | 3 | 6 | 1 |         |         |
| 6   | F     | 1        | Total | C  | N | O | S | 0       | 0       |
|     |       |          | 20    | 10 | 3 | 6 | 1 |         |         |

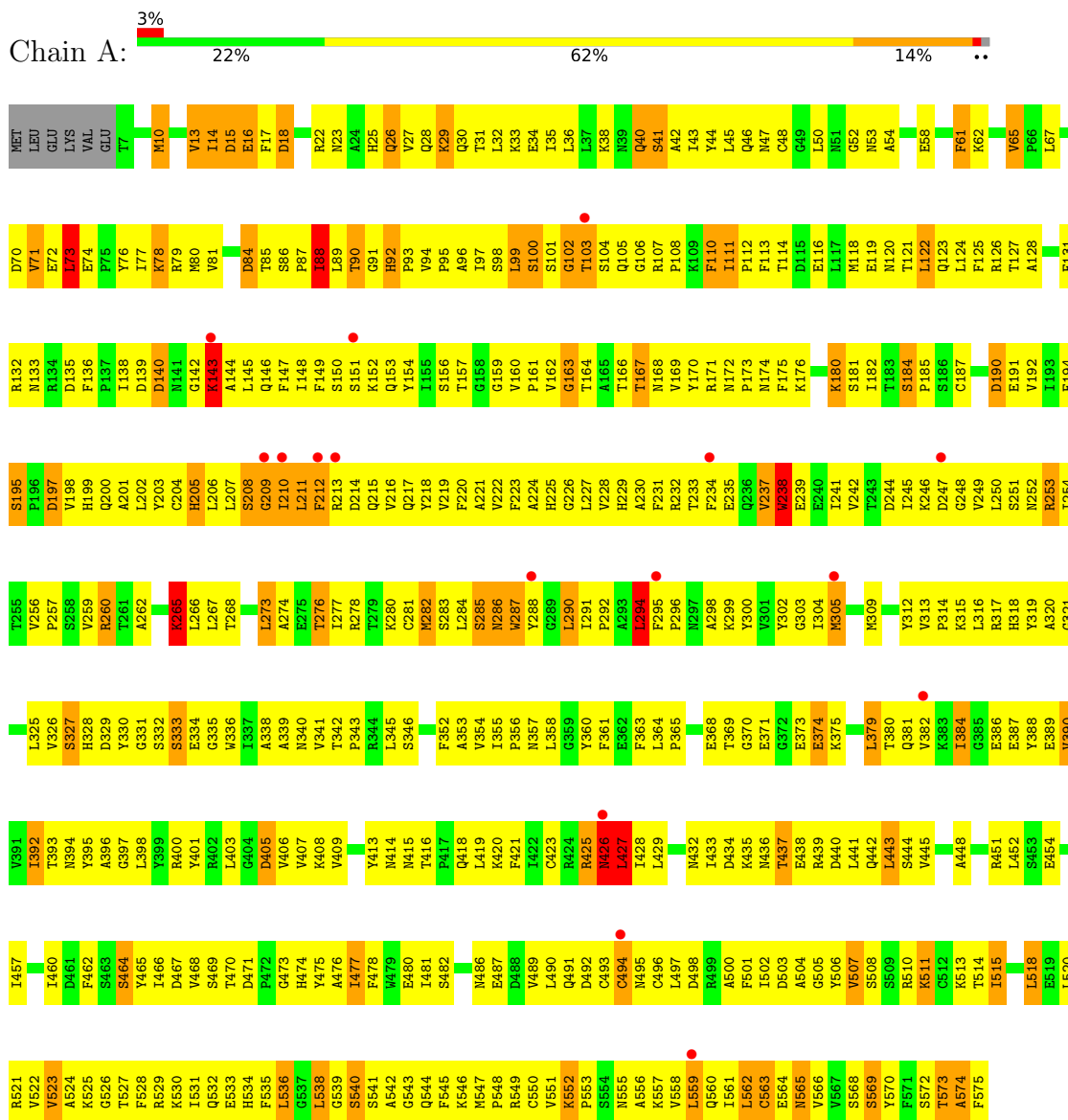
- Molecule 7 is water.

| Mol | Chain | Residues | Atoms |     | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 7   | A     | 260      | Total | O   | 0       | 0       |
|     |       |          | 260   | 260 |         |         |
| 7   | B     | 162      | Total | O   | 0       | 0       |
|     |       |          | 162   | 162 |         |         |
| 7   | C     | 130      | Total | O   | 0       | 0       |
|     |       |          | 130   | 130 |         |         |
| 7   | D     | 276      | Total | O   | 0       | 0       |
|     |       |          | 276   | 276 |         |         |
| 7   | E     | 121      | Total | O   | 0       | 0       |
|     |       |          | 121   | 121 |         |         |
| 7   | F     | 141      | Total | O   | 0       | 0       |
|     |       |          | 141   | 141 |         |         |

### 3 Residue-property plots

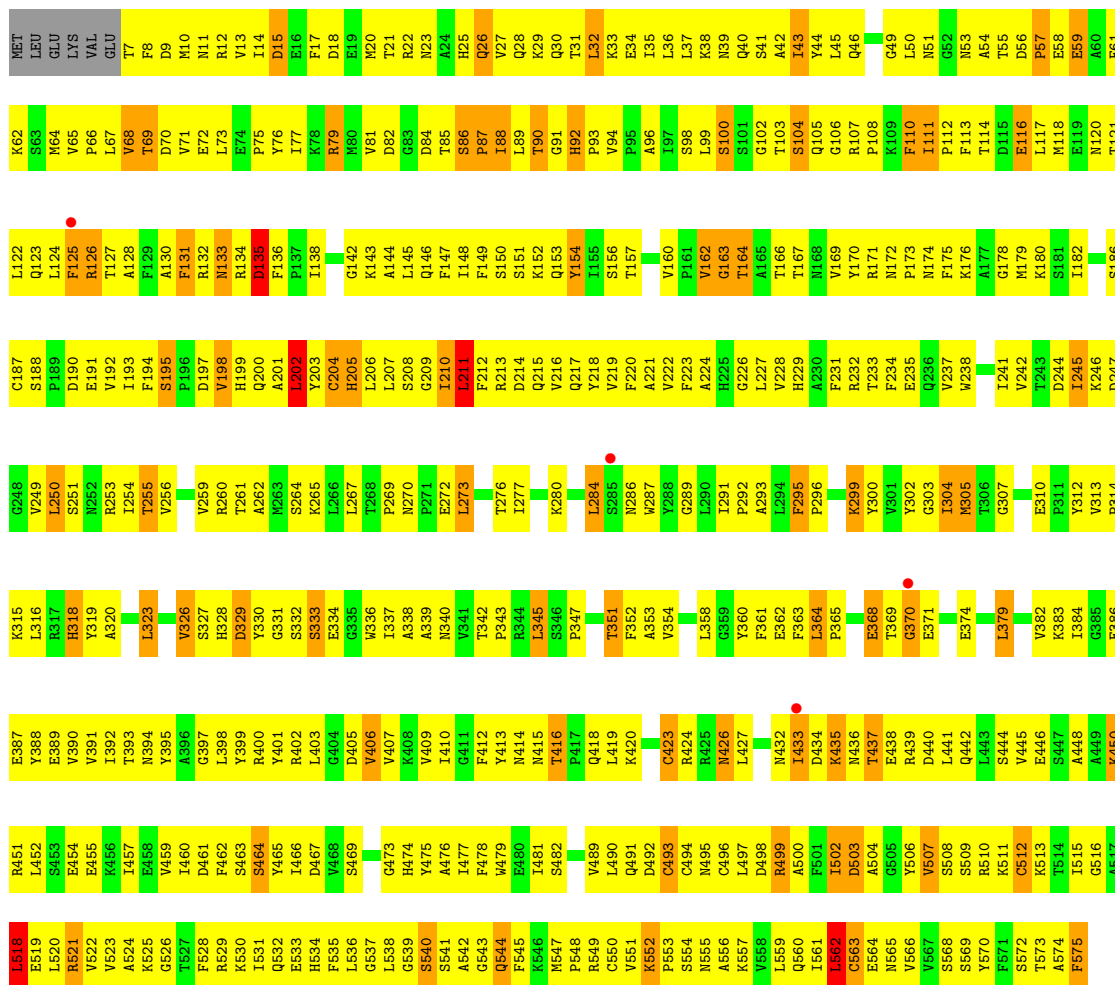
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Jasmonic acid-amido synthetase JAR1

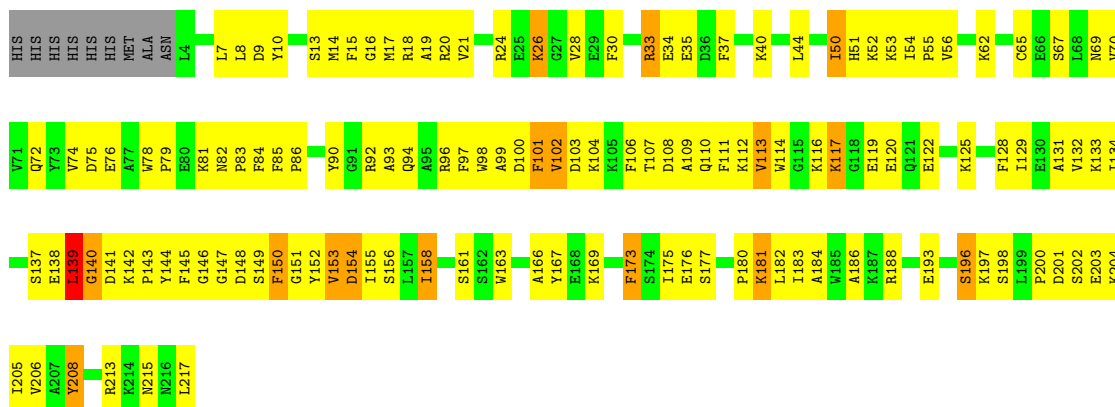


- Molecule 1: Jasmonic acid-amido synthetase JAR1





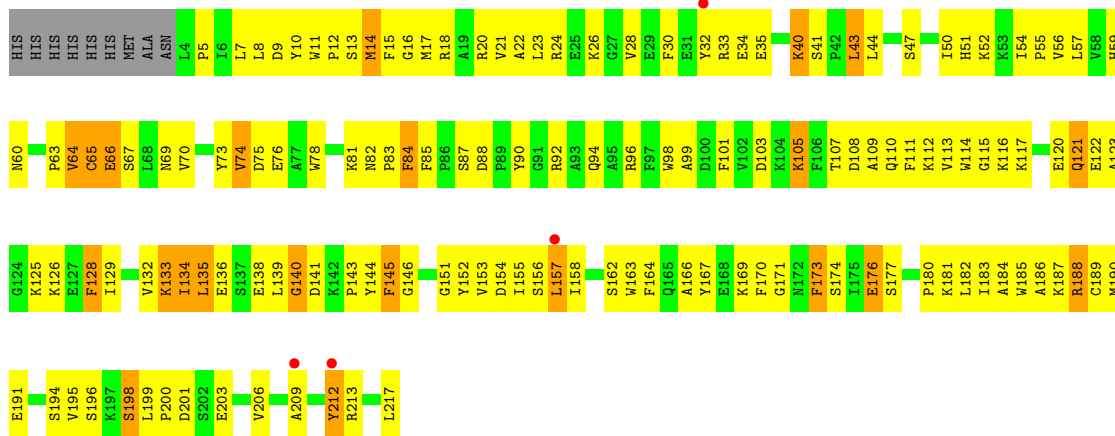
• Molecule 2: Glutathione S-transferase U20



• Molecule 2: Glutathione S-transferase U20



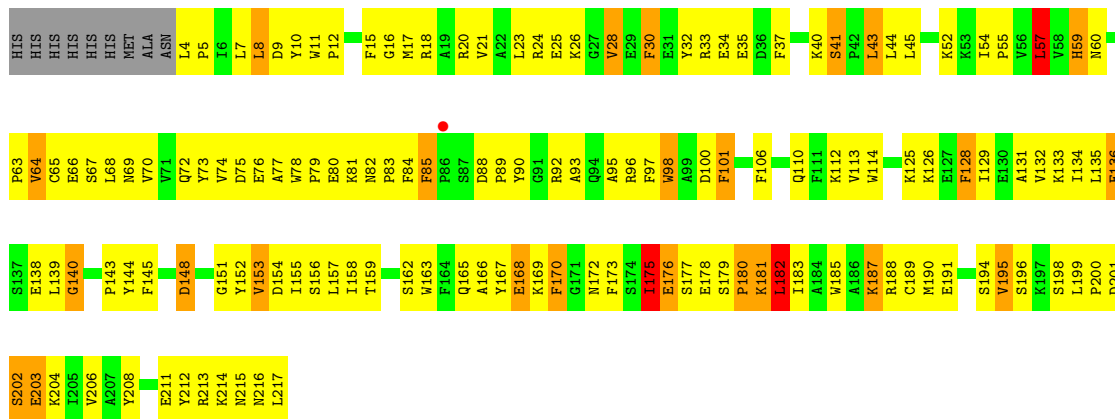
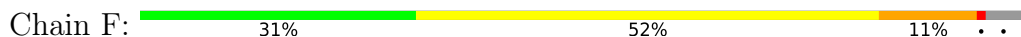




• Molecule 2: Glutathione S-transferase U20



• Molecule 2: Glutathione S-transferase U20



## 4 Data and refinement statistics i

| Property  | Value   | Source           |
|---|---|------------------|
| Space group   | P 1   | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 53.80Å 53.88Å 193.16Å<br>90.07° 90.03° 66.39°               | Depositor        |
| Resolution (Å)  | 24.15 – 1.85<br>24.15 – 1.85                                | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 97.5 (24.15-1.85)<br>97.5 (24.15-1.85)                      | Depositor<br>EDS |
| $R_{merge}$   | 0.09  | Depositor        |
| $R_{sym}$   | (Not available)   | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 2.11 (at 1.85Å)   | Xtrriage         |
| Refinement program  | PHENIX 1.9_1692   | Depositor        |
| R, $R_{free}$   | 0.208 , 0.219<br>0.208 , 0.219                              | Depositor<br>DCC |
| $R_{free}$ test set   | 16564 reflections (10.02%)                                  | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 0.6   | Xtrriage         |
| Anisotropy  | 2.777   | Xtrriage         |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.49 , 142.2  | EDS              |
| L-test for twinning <sup>2</sup>  | $\langle  L  \rangle = 0.43$ , $\langle L^2 \rangle = 0.25$ | Xtrriage         |
| Estimated twinning fraction   | 0.095 for -h,-k,l<br>0.095 for k,h,-l<br>0.088 for -k,-h,-l | Xtrriage         |
| $F_o, F_c$ correlation  | 0.86  | EDS              |
| Total number of atoms   | 17172   | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 4.0   | wwPDB-VP         |

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 27.03 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.3658e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<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: GSH, MG, JAA

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     | 0.61         | 2/4581 (0.0%)  | 1.00        | 18/6219 (0.3%)  |
| 1   | D     | 0.59         | 0/4581         | 0.96        | 16/6219 (0.3%)  |
| 2   | B     | 0.50         | 0/1799         | 0.79        | 4/2428 (0.2%)   |
| 2   | C     | 0.58         | 2/1799 (0.1%)  | 0.88        | 3/2428 (0.1%)   |
| 2   | E     | 0.51         | 0/1799         | 0.78        | 3/2428 (0.1%)   |
| 2   | F     | 0.56         | 0/1799         | 0.86        | 4/2428 (0.2%)   |
| All | All   | 0.57         | 4/16358 (0.0%) | 0.92        | 48/22150 (0.2%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | A     | 0                   | 2                   |

All (4) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 2   | C     | 212 | TYR  | CE2-CZ  | -7.85 | 1.28        | 1.38     |
| 2   | C     | 212 | TYR  | CD2-CE2 | -6.67 | 1.29        | 1.39     |
| 1   | A     | 143 | LYS  | CD-CE   | -5.22 | 1.38        | 1.51     |
| 1   | A     | 143 | LYS  | CG-CD   | -5.12 | 1.35        | 1.52     |

All (48) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms      | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|--------|-------------|----------|
| 1   | A     | 392 | ILE  | CG1-CB-CG2 | -10.95 | 87.30       | 111.40   |
| 1   | D     | 210 | ILE  | CA-CB-CG1  | 10.53  | 131.00      | 111.00   |
| 2   | C     | 212 | TYR  | CB-CG-CD2  | -10.11 | 114.94      | 121.00   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 2   | C     | 212 | TYR  | CB-CG-CD1  | 9.38  | 126.63      | 121.00   |
| 1   | D     | 211 | LEU  | CA-CB-CG   | 9.10  | 136.23      | 115.30   |
| 2   | B     | 139 | LEU  | CA-CB-CG   | -8.16 | 96.54       | 115.30   |
| 1   | A     | 265 | LYS  | CD-CE-NZ   | 8.14  | 130.42      | 111.70   |
| 1   | D     | 135 | ASP  | CB-CG-OD1  | 7.40  | 124.96      | 118.30   |
| 2   | E     | 139 | LEU  | CA-CB-CG   | -7.37 | 98.34       | 115.30   |
| 1   | A     | 290 | LEU  | CA-CB-CG   | -7.33 | 98.43       | 115.30   |
| 1   | A     | 273 | LEU  | CA-CB-CG   | -7.27 | 98.58       | 115.30   |
| 1   | A     | 282 | MET  | CG-SD-CE   | 7.22  | 111.75      | 100.20   |
| 1   | A     | 427 | LEU  | CA-CB-CG   | 6.94  | 131.26      | 115.30   |
| 1   | A     | 211 | LEU  | CA-CB-CG   | 6.86  | 131.07      | 115.30   |
| 2   | F     | 175 | ILE  | N-CA-C     | 6.76  | 129.24      | 111.00   |
| 1   | A     | 210 | ILE  | CG1-CB-CG2 | -6.75 | 96.54       | 111.40   |
| 2   | E     | 68  | LEU  | CB-CG-CD1  | -6.74 | 99.54       | 111.00   |
| 1   | D     | 86  | SER  | C-N-CD     | -6.71 | 105.83      | 120.60   |
| 2   | F     | 182 | LEU  | CA-CB-CG   | 6.65  | 130.59      | 115.30   |
| 1   | D     | 563 | CYS  | CA-CB-SG   | -6.54 | 102.23      | 114.00   |
| 1   | D     | 163 | GLY  | N-CA-C     | 6.47  | 129.28      | 113.10   |
| 2   | B     | 158 | ILE  | CB-CA-C    | -6.40 | 98.80       | 111.60   |
| 2   | B     | 140 | GLY  | N-CA-C     | -6.26 | 97.45       | 113.10   |
| 1   | D     | 563 | CYS  | N-CA-C     | 6.21  | 127.78      | 111.00   |
| 1   | A     | 563 | CYS  | N-CA-C     | 6.20  | 127.74      | 111.00   |
| 2   | C     | 157 | LEU  | CA-CB-CG   | -6.19 | 101.06      | 115.30   |
| 1   | D     | 102 | GLY  | N-CA-C     | -6.02 | 98.05       | 113.10   |
| 2   | F     | 187 | LYS  | CD-CE-NZ   | 5.93  | 125.33      | 111.70   |
| 1   | A     | 163 | GLY  | N-CA-C     | 5.88  | 127.79      | 113.10   |
| 1   | A     | 237 | VAL  | N-CA-C     | 5.85  | 126.78      | 111.00   |
| 1   | D     | 32  | LEU  | CA-CB-CG   | 5.79  | 128.61      | 115.30   |
| 1   | D     | 202 | LEU  | CA-CB-CG   | 5.75  | 128.54      | 115.30   |
| 1   | D     | 370 | GLY  | N-CA-C     | -5.70 | 98.86       | 113.10   |
| 1   | D     | 255 | THR  | N-CA-C     | 5.69  | 126.36      | 111.00   |
| 1   | A     | 238 | TRP  | CA-CB-CG   | 5.67  | 124.47      | 113.70   |
| 2   | E     | 135 | LEU  | CB-CG-CD1  | -5.58 | 101.51      | 111.00   |
| 1   | D     | 518 | LEU  | CA-CB-CG   | 5.58  | 128.13      | 115.30   |
| 1   | A     | 211 | LEU  | CB-CG-CD1  | 5.52  | 120.38      | 111.00   |
| 2   | B     | 139 | LEU  | CB-CG-CD2  | -5.35 | 101.91      | 111.00   |
| 1   | D     | 135 | ASP  | CB-CG-OD2  | -5.34 | 113.49      | 118.30   |
| 1   | D     | 379 | LEU  | CA-CB-CG   | 5.34  | 127.58      | 115.30   |
| 1   | A     | 294 | LEU  | CB-CG-CD1  | -5.31 | 101.97      | 111.00   |
| 1   | A     | 73  | LEU  | CA-CB-CG   | 5.22  | 127.32      | 115.30   |
| 1   | A     | 15  | ASP  | CB-CG-OD1  | 5.17  | 122.96      | 118.30   |
| 1   | A     | 102 | GLY  | N-CA-C     | -5.17 | 100.18      | 113.10   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 1   | D     | 562 | LEU  | CA-CB-CG | 5.15  | 127.15      | 115.30   |
| 2   | F     | 57  | LEU  | CA-CB-CG | 5.14  | 127.12      | 115.30   |
| 1   | A     | 559 | LEU  | CA-CB-CG | -5.09 | 103.60      | 115.30   |

There are no chirality outliers.

All (2) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 1   | A     | 209 | GLY  | Mainchain |
| 1   | A     | 426 | ASN  | Sidechain |

## 5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 4479  | 0        | 4434     | 654     | 2            |
| 1   | D     | 4479  | 0        | 4434     | 690     | 0            |
| 2   | B     | 1748  | 0        | 1704     | 184     | 0            |
| 2   | C     | 1748  | 0        | 1704     | 210     | 0            |
| 2   | E     | 1748  | 0        | 1704     | 227     | 1            |
| 2   | F     | 1748  | 0        | 1704     | 213     | 2            |
| 3   | A     | 15    | 0        | 0        | 1       | 0            |
| 3   | D     | 15    | 0        | 0        | 1       | 0            |
| 4   | A     | 9     | 0        | 10       | 4       | 0            |
| 4   | D     | 9     | 0        | 10       | 1       | 0            |
| 5   | A     | 1     | 0        | 0        | 0       | 0            |
| 5   | D     | 3     | 0        | 0        | 0       | 0            |
| 6   | B     | 20    | 0        | 15       | 3       | 0            |
| 6   | C     | 20    | 0        | 15       | 1       | 0            |
| 6   | E     | 20    | 0        | 15       | 2       | 0            |
| 6   | F     | 20    | 0        | 15       | 0       | 0            |
| 7   | A     | 260   | 0        | 0        | 45      | 2            |
| 7   | B     | 162   | 0        | 0        | 17      | 1            |
| 7   | C     | 130   | 0        | 0        | 22      | 1            |
| 7   | D     | 276   | 0        | 0        | 47      | 2            |
| 7   | E     | 121   | 0        | 0        | 27      | 0            |
| 7   | F     | 141   | 0        | 0        | 19      | 1            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| All | All   | 17172 | 0        | 15764    | 2059    | 8            |

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 65.

All (2059) 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:D:143:LYS:NZ   | 7:D:701:HOH:O    | 1.72                     | 1.21              |
| 1:A:163:GLY:HA3  | 1:A:560:GLN:HG3  | 1.24                     | 1.17              |
| 1:A:213:ARG:NH1  | 1:A:294:LEU:HD13 | 1.66                     | 1.10              |
| 2:B:20:ARG:HB3   | 2:B:24:ARG:HH22  | 1.23                     | 1.04              |
| 2:E:143:PRO:O    | 2:E:188:ARG:NH1  | 1.90                     | 1.04              |
| 2:C:188:ARG:HB2  | 1:D:499:ARG:NH2  | 1.76                     | 1.01              |
| 2:E:185:TRP:HD1  | 2:E:188:ARG:NH1  | 1.59                     | 1.00              |
| 2:E:145:PHE:HB3  | 2:E:153:VAL:HG13 | 1.44                     | 1.00              |
| 1:D:498:ASP:OD2  | 7:D:702:HOH:O    | 1.77                     | 1.00              |
| 1:A:42:ALA:HB3   | 1:A:45:LEU:HD12  | 1.44                     | 1.00              |
| 1:D:451:ARG:NH1  | 1:D:489:VAL:O    | 1.95                     | 0.99              |
| 1:D:143:LYS:HD2  | 1:D:212:PHE:HB2  | 1.42                     | 0.98              |
| 1:A:426:ASN:H    | 1:A:426:ASN:ND2  | 1.61                     | 0.97              |
| 2:F:176:GLU:HB2  | 2:F:183:ILE:HG12 | 1.46                     | 0.97              |
| 2:E:53:LYS:HD3   | 6:E:301:GSH:HA1  | 1.49                     | 0.95              |
| 2:C:136:GLU:HG3  | 2:C:181:LYS:HD3  | 1.46                     | 0.95              |
| 1:D:199:HIS:H    | 1:D:524:ALA:HB1  | 1.31                     | 0.95              |
| 1:A:164:THR:HG21 | 1:A:561:ILE:HG13 | 1.48                     | 0.95              |
| 1:D:534:HIS:CE1  | 1:D:557:LYS:HG2  | 2.02                     | 0.95              |
| 1:D:94:VAL:HG11  | 1:D:112:PRO:HB3  | 1.47                     | 0.95              |
| 2:B:145:PHE:N    | 2:B:154:ASP:OD2  | 2.01                     | 0.94              |
| 1:D:200:GLN:HB3  | 1:D:254:ILE:HG23 | 1.50                     | 0.93              |
| 1:D:499:ARG:NH1  | 7:D:704:HOH:O    | 1.97                     | 0.93              |
| 1:A:213:ARG:HA   | 1:A:216:VAL:HG23 | 1.48                     | 0.93              |
| 1:D:150:SER:HB2  | 1:D:167:THR:HA   | 1.51                     | 0.92              |
| 1:A:238:TRP:HZ3  | 1:A:277:ILE:HG12 | 1.32                     | 0.92              |
| 2:F:98:TRP:CD1   | 2:F:153:VAL:HG21 | 2.03                     | 0.92              |
| 1:A:157:THR:HG22 | 1:A:469:SER:HB3  | 1.49                     | 0.92              |
| 2:C:132:VAL:HG23 | 2:C:182:LEU:HD13 | 1.51                     | 0.92              |
| 1:D:206:LEU:O    | 1:D:210:ILE:HG22 | 1.70                     | 0.92              |
| 1:A:213:ARG:HH12 | 1:A:294:LEU:HD13 | 1.30                     | 0.91              |
| 1:A:211:LEU:O    | 7:A:701:HOH:O    | 1.89                     | 0.91              |
| 1:A:238:TRP:CZ3  | 1:A:277:ILE:HG12 | 2.06                     | 0.90              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:551:VAL:HB   | 1:D:555:ASN:HB2  | 1.53                     | 0.90              |
| 2:C:10:TYR:HB3   | 2:C:13:SER:HB2   | 1.55                     | 0.89              |
| 1:D:490:LEU:HD22 | 1:D:522:VAL:HG21 | 1.53                     | 0.89              |
| 2:B:18:ARG:NH1   | 2:B:103:ASP:OD2  | 2.06                     | 0.89              |
| 1:D:164:THR:HG23 | 1:D:557:LYS:HG3  | 1.55                     | 0.89              |
| 1:A:135:ASP:OD2  | 1:A:343:PRO:HD2  | 1.73                     | 0.89              |
| 2:B:51:HIS:HB3   | 2:B:53:LYS:HG2   | 1.54                     | 0.89              |
| 1:A:432:ASN:HB3  | 1:A:435:LYS:HD2  | 1.55                     | 0.88              |
| 1:A:426:ASN:HD22 | 1:A:426:ASN:N    | 1.70                     | 0.88              |
| 2:B:112:LYS:HD2  | 2:B:116:LYS:HZ1  | 1.34                     | 0.88              |
| 2:E:95:ALA:O     | 7:E:401:HOH:O    | 1.90                     | 0.88              |
| 1:D:22:ARG:NH1   | 1:D:414:ASN:OD1  | 2.07                     | 0.88              |
| 1:D:143:LYS:HD3  | 1:D:216:VAL:HG12 | 1.53                     | 0.88              |
| 1:D:198:VAL:HG23 | 1:D:524:ALA:HB3  | 1.53                     | 0.88              |
| 1:A:444:SER:HB3  | 1:A:497:LEU:HG   | 1.55                     | 0.88              |
| 1:A:41:SER:HB2   | 2:B:142:LYS:HG2  | 1.56                     | 0.87              |
| 1:A:327:SER:HB2  | 1:A:352:PHE:HZ   | 1.38                     | 0.87              |
| 1:A:99:LEU:HB3   | 1:A:557:LYS:H    | 1.38                     | 0.87              |
| 1:D:363:PHE:HD2  | 1:D:382:VAL:HG21 | 1.39                     | 0.87              |
| 1:D:405:ASP:OD2  | 7:D:703:HOH:O    | 1.92                     | 0.87              |
| 2:F:57:LEU:HG    | 2:F:64:VAL:HG22  | 1.58                     | 0.86              |
| 1:D:93:PRO:HD2   | 2:E:181:LYS:HA   | 1.58                     | 0.86              |
| 2:F:26:LYS:HG3   | 2:F:74:VAL:HG12  | 1.57                     | 0.86              |
| 1:A:454:GLU:OE2  | 7:A:702:HOH:O    | 1.93                     | 0.86              |
| 1:A:150:SER:HB2  | 1:A:167:THR:HA   | 1.56                     | 0.85              |
| 1:D:540:SER:OG   | 1:D:544:GLN:NE2  | 2.09                     | 0.85              |
| 2:F:57:LEU:HD23  | 2:F:70:VAL:HG13  | 1.58                     | 0.85              |
| 1:D:403:LEU:HD13 | 1:D:540:SER:HB3  | 1.57                     | 0.85              |
| 2:E:18:ARG:NH2   | 7:E:406:HOH:O    | 2.09                     | 0.85              |
| 2:E:17:MET:O     | 7:E:402:HOH:O    | 1.94                     | 0.85              |
| 1:A:143:LYS:HZ1  | 1:A:212:PHE:C    | 1.79                     | 0.85              |
| 1:D:247:ASP:HB2  | 1:D:249:VAL:HG12 | 1.59                     | 0.85              |
| 2:F:135:LEU:HD22 | 2:F:182:LEU:HD12 | 1.59                     | 0.85              |
| 1:D:93:PRO:HD3   | 2:E:188:ARG:HH21 | 1.42                     | 0.84              |
| 1:D:93:PRO:HG2   | 2:E:184:ALA:HB3  | 1.60                     | 0.84              |
| 1:D:147:PHE:HA   | 1:D:205:HIS:CD2  | 2.11                     | 0.84              |
| 2:F:98:TRP:HZ2   | 2:F:135:LEU:HG   | 1.40                     | 0.84              |
| 2:B:20:ARG:HB3   | 2:B:24:ARG:NH2   | 1.93                     | 0.83              |
| 2:C:176:GLU:OE2  | 1:D:573:THR:OG1  | 1.95                     | 0.83              |
| 1:A:392:ILE:HG22 | 1:A:401:TYR:CE1  | 2.14                     | 0.83              |
| 2:E:185:TRP:CD1  | 2:E:188:ARG:NH1  | 2.46                     | 0.83              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:426:ASN:H    | 1:A:426:ASN:HD22 | 0.85                     | 0.83              |
| 1:D:145:LEU:HD13 | 1:D:209:GLY:HA3  | 1.60                     | 0.83              |
| 1:D:208:SER:O    | 7:D:701:HOH:O    | 1.97                     | 0.82              |
| 2:B:20:ARG:NH2   | 2:B:198:SER:O    | 2.12                     | 0.82              |
| 1:D:133:ASN:HD21 | 1:D:138:ILE:HG13 | 1.43                     | 0.82              |
| 1:D:519:GLU:OE2  | 1:D:569:SER:OG   | 1.96                     | 0.82              |
| 1:A:238:TRP:CH2  | 1:A:281:CYS:HB2  | 2.14                     | 0.82              |
| 1:D:226:GLY:HA2  | 1:D:529:ARG:HD3  | 1.61                     | 0.82              |
| 1:A:143:LYS:NZ   | 1:A:212:PHE:O    | 2.11                     | 0.82              |
| 1:A:43:ILE:O     | 1:A:46:GLN:HG2   | 1.80                     | 0.81              |
| 1:A:405:ASP:HB2  | 1:A:541:SER:HB3  | 1.60                     | 0.81              |
| 1:A:477:ILE:HD13 | 1:A:497:LEU:HD22 | 1.62                     | 0.81              |
| 1:D:96:ALA:HB1   | 1:D:163:GLY:H    | 1.45                     | 0.81              |
| 1:A:226:GLY:O    | 1:A:229:HIS:ND1  | 2.12                     | 0.81              |
| 1:D:81:VAL:HG21  | 1:D:110:PHE:CE2  | 2.15                     | 0.81              |
| 2:C:209:ALA:HA   | 2:C:212:TYR:HE2  | 1.46                     | 0.80              |
| 1:A:242:VAL:HG22 | 1:A:277:ILE:HD13 | 1.62                     | 0.80              |
| 1:D:494:CYS:HB3  | 1:D:520:LEU:HB2  | 1.64                     | 0.80              |
| 1:D:42:ALA:HB3   | 1:D:45:LEU:HD13  | 1.62                     | 0.80              |
| 1:D:451:ARG:NH1  | 1:D:490:LEU:HA   | 1.95                     | 0.80              |
| 1:A:334:GLU:O    | 1:A:394:ASN:ND2  | 2.15                     | 0.80              |
| 1:D:99:LEU:HD11  | 1:D:548:PRO:HG3  | 1.62                     | 0.80              |
| 2:B:85:PHE:HB2   | 2:B:92:ARG:HG2   | 1.64                     | 0.80              |
| 2:F:98:TRP:CZ2   | 2:F:135:LEU:HG   | 2.17                     | 0.80              |
| 1:A:138:ILE:HB   | 1:A:217:GLN:HG3  | 1.64                     | 0.80              |
| 2:C:135:LEU:HD13 | 2:C:182:LEU:HD11 | 1.64                     | 0.80              |
| 1:A:434:ASP:HB2  | 1:A:550:CYS:HB3  | 1.61                     | 0.80              |
| 2:B:116:LYS:NZ   | 2:B:120:GLU:HB3  | 1.97                     | 0.79              |
| 1:D:384:ILE:HA   | 1:D:409:VAL:HG13 | 1.64                     | 0.79              |
| 1:A:92:HIS:O     | 7:A:703:HOH:O    | 1.99                     | 0.79              |
| 1:A:282:MET:N    | 1:A:282:MET:SD   | 2.55                     | 0.79              |
| 2:F:10:TYR:O     | 2:F:20:ARG:NH2   | 2.15                     | 0.79              |
| 1:A:238:TRP:HA   | 1:A:241:ILE:HB   | 1.65                     | 0.79              |
| 1:D:455:GLU:OE2  | 7:D:705:HOH:O    | 2.00                     | 0.79              |
| 1:D:107:ARG:HG2  | 1:D:433:ILE:HG22 | 1.63                     | 0.79              |
| 1:D:332:SER:HB2  | 1:D:538:LEU:HA   | 1.63                     | 0.78              |
| 1:D:405:ASP:HB2  | 1:D:541:SER:HB3  | 1.65                     | 0.78              |
| 2:E:96:ARG:NH1   | 2:F:72:GLN:HB2   | 1.97                     | 0.78              |
| 1:D:507:VAL:HG23 | 1:D:511:LYS:HE2  | 1.65                     | 0.78              |
| 1:A:221:ALA:HB3  | 1:A:227:LEU:HG   | 1.65                     | 0.78              |
| 1:D:451:ARG:NH1  | 1:D:493:CYS:HB3  | 1.97                     | 0.78              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:451:ARG:HH12 | 1:D:490:LEU:HA   | 1.49                     | 0.78              |
| 1:A:143:LYS:NZ   | 1:A:212:PHE:C    | 2.36                     | 0.78              |
| 1:D:76:TYR:HA    | 1:D:79:ARG:HD3   | 1.66                     | 0.78              |
| 1:D:435:LYS:HZ1  | 1:D:549:ARG:HB2  | 1.48                     | 0.78              |
| 2:C:209:ALA:HA   | 2:C:212:TYR:CE2  | 2.19                     | 0.78              |
| 1:D:22:ARG:HA    | 1:D:415:ASN:HB2  | 1.66                     | 0.78              |
| 1:D:452:LEU:HD23 | 1:D:481:ILE:HG21 | 1.66                     | 0.78              |
| 2:E:139:LEU:HD21 | 2:E:145:PHE:CE1  | 2.19                     | 0.78              |
| 1:A:489:VAL:O    | 7:A:704:HOH:O    | 2.01                     | 0.77              |
| 1:D:401:TYR:CE2  | 1:D:403:LEU:HG   | 2.18                     | 0.77              |
| 2:B:76:GLU:OE2   | 2:C:92:ARG:NH2   | 2.16                     | 0.77              |
| 1:D:143:LYS:HD2  | 1:D:212:PHE:CB   | 2.13                     | 0.77              |
| 1:A:132:ARG:O    | 1:A:136:PHE:N    | 2.18                     | 0.77              |
| 1:A:405:ASP:OD2  | 7:A:705:HOH:O    | 2.02                     | 0.77              |
| 2:B:33:ARG:NH1   | 7:B:408:HOH:O    | 2.17                     | 0.77              |
| 1:D:440:ASP:O    | 7:D:706:HOH:O    | 2.02                     | 0.77              |
| 2:C:54:ILE:HB    | 2:C:55:PRO:HA    | 1.67                     | 0.77              |
| 2:F:18:ARG:NH2   | 2:F:159:THR:OG1  | 2.18                     | 0.77              |
| 1:A:42:ALA:HA    | 2:B:143:PRO:HG3  | 1.66                     | 0.77              |
| 1:D:369:THR:OG1  | 1:D:370:GLY:N    | 2.11                     | 0.77              |
| 1:A:393:THR:O    | 7:A:706:HOH:O    | 2.03                     | 0.76              |
| 2:C:7:LEU:HD21   | 2:C:23:LEU:HD12  | 1.67                     | 0.76              |
| 1:D:38:LYS:NZ    | 2:E:138:GLU:OE1  | 2.16                     | 0.76              |
| 1:D:138:ILE:HB   | 1:D:217:GLN:HG3  | 1.68                     | 0.76              |
| 1:A:22:ARG:HA    | 1:A:415:ASN:HB2  | 1.66                     | 0.76              |
| 1:D:242:VAL:HG22 | 1:D:277:ILE:HD13 | 1.68                     | 0.76              |
| 2:E:106:PHE:CE2  | 2:E:131:ALA:HB1  | 2.20                     | 0.76              |
| 2:E:145:PHE:HD2  | 2:E:153:VAL:HG22 | 1.50                     | 0.76              |
| 2:F:85:PHE:HE1   | 2:F:95:ALA:HB3   | 1.49                     | 0.75              |
| 2:E:26:LYS:HZ1   | 2:E:81:LYS:H     | 1.33                     | 0.75              |
| 1:A:435:LYS:HE3  | 1:A:438:GLU:HG2  | 1.67                     | 0.75              |
| 1:A:197:ASP:OD2  | 1:A:200:GLN:NE2  | 2.18                     | 0.75              |
| 1:A:153:GLN:H    | 1:A:564:GLU:HB2  | 1.50                     | 0.75              |
| 1:A:563:CYS:SG   | 1:A:564:GLU:N    | 2.60                     | 0.75              |
| 1:D:223:PHE:CZ   | 1:D:536:LEU:HB2  | 2.20                     | 0.75              |
| 1:D:401:TYR:HE2  | 1:D:403:LEU:HG   | 1.50                     | 0.75              |
| 1:D:223:PHE:CE2  | 1:D:545:PHE:HZ   | 2.05                     | 0.75              |
| 1:A:199:HIS:H    | 1:A:524:ALA:HB1  | 1.52                     | 0.75              |
| 2:F:179:SER:OG   | 2:F:182:LEU:HB3  | 1.86                     | 0.75              |
| 1:A:122:LEU:O    | 1:A:126:ARG:HG3  | 1.87                     | 0.75              |
| 1:A:140:ASP:OD1  | 7:A:707:HOH:O    | 2.05                     | 0.75              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:364:LEU:HD23 | 1:D:389:GLU:OE2  | 1.87                     | 0.75              |
| 2:F:23:LEU:HA    | 2:F:74:VAL:HG11  | 1.67                     | 0.75              |
| 1:A:204:CYS:SG   | 7:A:891:HOH:O    | 2.45                     | 0.74              |
| 1:A:219:VAL:HB   | 1:A:295:PHE:CZ   | 2.21                     | 0.74              |
| 2:B:24:ARG:HD3   | 2:B:197:LYS:HZ2  | 1.52                     | 0.74              |
| 1:D:394:ASN:O    | 7:D:707:HOH:O    | 2.03                     | 0.74              |
| 2:E:26:LYS:HA    | 2:E:82:ASN:HD21  | 1.51                     | 0.74              |
| 2:E:94:GLN:HA    | 2:E:97:PHE:HD2   | 1.51                     | 0.74              |
| 2:F:168:GLU:OE2  | 2:F:175:ILE:HG12 | 1.87                     | 0.74              |
| 1:A:97:ILE:HD12  | 1:A:162:VAL:HG22 | 1.68                     | 0.74              |
| 1:A:457:ILE:HB   | 1:A:482:SER:HB3  | 1.67                     | 0.74              |
| 1:A:504:ALA:O    | 1:A:507:VAL:HG22 | 1.87                     | 0.74              |
| 1:A:152:LYS:HA   | 1:A:564:GLU:HB3  | 1.68                     | 0.74              |
| 1:A:164:THR:HG1  | 1:A:167:THR:HG1  | 1.29                     | 0.74              |
| 1:A:152:LYS:NZ   | 1:A:527:THR:HG22 | 2.03                     | 0.74              |
| 2:C:145:PHE:HB2  | 2:C:153:VAL:HG21 | 1.68                     | 0.74              |
| 1:A:41:SER:OG    | 2:B:147:GLY:O    | 2.06                     | 0.74              |
| 1:A:102:GLY:HA2  | 1:A:546:LYS:HG3  | 1.69                     | 0.74              |
| 1:D:87:PRO:HB3   | 1:D:91:GLY:O     | 1.88                     | 0.74              |
| 1:D:496:CYS:HA   | 1:D:499:ARG:NH1  | 2.02                     | 0.74              |
| 1:A:111:ILE:HD12 | 1:A:334:GLU:OE2  | 1.88                     | 0.74              |
| 1:D:521:ARG:HA   | 1:D:569:SER:HA   | 1.70                     | 0.74              |
| 2:F:37:PHE:HZ    | 2:F:54:ILE:HG12  | 1.51                     | 0.74              |
| 1:A:441:LEU:HD23 | 1:A:549:ARG:HB3  | 1.68                     | 0.74              |
| 1:D:352:PHE:O    | 7:D:708:HOH:O    | 2.05                     | 0.74              |
| 1:A:18:ASP:O     | 1:A:22:ARG:HG3   | 1.88                     | 0.73              |
| 1:A:477:ILE:HD12 | 1:A:520:LEU:HD13 | 1.67                     | 0.73              |
| 2:C:60:ASN:ND2   | 7:C:409:HOH:O    | 2.19                     | 0.73              |
| 1:A:238:TRP:O    | 1:A:242:VAL:HG23 | 1.87                     | 0.73              |
| 2:B:9:ASP:OD2    | 2:B:20:ARG:HD3   | 1.88                     | 0.73              |
| 1:D:87:PRO:HG2   | 2:E:188:ARG:NE   | 2.04                     | 0.73              |
| 1:D:138:ILE:HA   | 1:D:217:GLN:HE21 | 1.54                     | 0.73              |
| 1:A:451:ARG:NH1  | 1:A:454:GLU:OE1  | 2.21                     | 0.73              |
| 1:D:42:ALA:HA    | 2:E:143:PRO:HG3  | 1.69                     | 0.73              |
| 1:A:364:LEU:HB3  | 1:A:389:GLU:HG2  | 1.70                     | 0.73              |
| 1:D:339:ALA:N    | 1:D:353:ALA:O    | 2.19                     | 0.73              |
| 1:D:387:GLU:HG2  | 1:D:406:VAL:HB   | 1.71                     | 0.73              |
| 1:D:392:ILE:HB   | 1:D:401:TYR:CE1  | 2.23                     | 0.73              |
| 1:D:143:LYS:HE3  | 1:D:187:CYS:HA   | 1.71                     | 0.73              |
| 1:A:551:VAL:HG12 | 1:A:555:ASN:HD22 | 1.54                     | 0.73              |
| 2:F:144:TYR:OH   | 7:F:401:HOH:O    | 2.05                     | 0.73              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:460:ILE:HG22 | 1:D:461:ASP:OD2  | 1.89                     | 0.72              |
| 1:D:510:ARG:HG2  | 1:D:515:ILE:HD11 | 1.71                     | 0.72              |
| 2:B:53:LYS:HD3   | 6:B:301:GSH:HG12 | 1.68                     | 0.72              |
| 2:B:21:VAL:HG11  | 2:B:158:ILE:HD11 | 1.71                     | 0.72              |
| 1:D:99:LEU:HB3   | 1:D:557:LYS:HB2  | 1.71                     | 0.72              |
| 1:D:563:CYS:SG   | 1:D:564:GLU:N    | 2.60                     | 0.72              |
| 2:E:198:SER:HB3  | 7:E:402:HOH:O    | 1.89                     | 0.72              |
| 1:D:114:THR:H    | 1:D:117:LEU:HD23 | 1.54                     | 0.72              |
| 1:D:451:ARG:HH12 | 1:D:490:LEU:CA   | 2.03                     | 0.72              |
| 2:E:100:ASP:OD2  | 7:E:404:HOH:O    | 2.07                     | 0.72              |
| 1:D:302:TYR:HH   | 1:D:328:HIS:HD1  | 1.29                     | 0.72              |
| 1:A:108:PRO:HD2  | 1:A:552:LYS:HD2  | 1.70                     | 0.72              |
| 1:A:492:ASP:OD1  | 7:A:709:HOH:O    | 2.08                     | 0.72              |
| 2:C:16:GLY:HA2   | 2:C:55:PRO:HB3   | 1.70                     | 0.72              |
| 1:D:390:VAL:HG11 | 1:D:540:SER:HA   | 1.71                     | 0.72              |
| 1:D:498:ASP:HB3  | 1:D:510:ARG:NH2  | 2.04                     | 0.72              |
| 1:A:521:ARG:NH2  | 7:A:726:HOH:O    | 2.22                     | 0.72              |
| 1:D:152:LYS:HA   | 1:D:564:GLU:HB3  | 1.72                     | 0.71              |
| 2:E:146:GLY:H    | 2:E:151:GLY:HA3  | 1.53                     | 0.71              |
| 1:A:200:GLN:HB3  | 1:A:254:ILE:HG13 | 1.70                     | 0.71              |
| 1:A:390:VAL:O    | 7:A:708:HOH:O    | 2.08                     | 0.71              |
| 1:A:401:TYR:HE2  | 1:A:403:LEU:HD13 | 1.55                     | 0.71              |
| 2:F:98:TRP:CE2   | 2:F:138:GLU:OE2  | 2.43                     | 0.71              |
| 2:B:112:LYS:HD2  | 2:B:116:LYS:NZ   | 2.05                     | 0.71              |
| 2:C:26:LYS:NZ    | 2:C:82:ASN:O     | 2.21                     | 0.71              |
| 1:D:326:VAL:HG21 | 1:D:343:PRO:HB3  | 1.72                     | 0.71              |
| 1:D:451:ARG:CZ   | 1:D:493:CYS:HB3  | 2.19                     | 0.71              |
| 1:A:92:HIS:CG    | 2:B:181:LYS:HG2  | 2.25                     | 0.71              |
| 1:A:226:GLY:HA2  | 1:A:529:ARG:HD3  | 1.71                     | 0.71              |
| 2:F:84:PHE:CD1   | 2:F:152:TYR:HB2  | 2.26                     | 0.71              |
| 1:D:199:HIS:N    | 1:D:524:ALA:HB1  | 2.06                     | 0.71              |
| 2:F:213:ARG:NH2  | 7:F:411:HOH:O    | 2.23                     | 0.71              |
| 1:A:464:SER:OG   | 1:A:550:CYS:SG   | 2.48                     | 0.71              |
| 1:D:448:ALA:O    | 1:D:451:ARG:HG2  | 1.91                     | 0.71              |
| 1:A:552:LYS:HB2  | 1:A:553:PRO:HD2  | 1.72                     | 0.70              |
| 2:B:26:LYS:NZ    | 2:B:28:VAL:HB    | 2.06                     | 0.70              |
| 1:D:232:ARG:NH2  | 7:D:724:HOH:O    | 2.23                     | 0.70              |
| 2:E:63:PRO:O     | 7:E:405:HOH:O    | 2.08                     | 0.70              |
| 1:A:40:GLN:O     | 7:A:710:HOH:O    | 2.09                     | 0.70              |
| 1:A:94:VAL:HG11  | 1:A:112:PRO:HB3  | 1.74                     | 0.70              |
| 1:A:145:LEU:HD13 | 1:A:209:GLY:HA3  | 1.73                     | 0.70              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:534:HIS:CE1  | 1:A:557:LYS:HG2  | 2.26                     | 0.70              |
| 2:C:114:TRP:O    | 2:C:212:TYR:OH   | 2.09                     | 0.70              |
| 1:D:45:LEU:O     | 1:D:49:GLY:N     | 2.23                     | 0.70              |
| 2:E:95:ALA:HA    | 2:E:98:TRP:CE3   | 2.26                     | 0.70              |
| 1:A:465:TYR:HD1  | 1:A:551:VAL:HG23 | 1.55                     | 0.70              |
| 2:F:92:ARG:O     | 7:F:402:HOH:O    | 2.08                     | 0.70              |
| 1:A:98:SER:HB3   | 1:A:113:PHE:CZ   | 2.26                     | 0.70              |
| 1:A:126:ARG:NH1  | 7:A:728:HOH:O    | 2.23                     | 0.70              |
| 1:A:371:GLU:N    | 1:A:371:GLU:OE2  | 2.24                     | 0.70              |
| 1:A:551:VAL:HG11 | 1:A:558:VAL:HG11 | 1.72                     | 0.70              |
| 1:D:44:TYR:HB2   | 1:D:89:LEU:HD22  | 1.72                     | 0.70              |
| 1:D:253:ARG:NH2  | 7:D:726:HOH:O    | 2.24                     | 0.70              |
| 2:E:40:LYS:NZ    | 2:E:52:LYS:HD2   | 2.06                     | 0.70              |
| 1:A:551:VAL:HB   | 1:A:555:ASN:HB2  | 1.74                     | 0.70              |
| 1:D:126:ARG:HH11 | 1:D:126:ARG:HG3  | 1.56                     | 0.70              |
| 1:D:198:VAL:CG2  | 1:D:524:ALA:HB3  | 2.22                     | 0.70              |
| 2:E:94:GLN:OE1   | 7:E:407:HOH:O    | 2.10                     | 0.70              |
| 2:C:33:ARG:NH1   | 2:C:41:SER:OG    | 2.25                     | 0.70              |
| 2:C:125:LYS:NZ   | 2:C:171:GLY:HA3  | 2.06                     | 0.70              |
| 1:D:333:SER:OG   | 1:D:557:LYS:NZ   | 2.24                     | 0.70              |
| 1:D:99:LEU:HD13  | 1:D:555:ASN:OD1  | 1.92                     | 0.70              |
| 1:D:494:CYS:HB3  | 1:D:520:LEU:CB   | 2.21                     | 0.70              |
| 1:A:145:LEU:HD22 | 1:A:213:ARG:NH2  | 2.07                     | 0.70              |
| 1:A:207:LEU:HD21 | 1:A:245:ILE:HD11 | 1.73                     | 0.70              |
| 1:D:451:ARG:HE   | 1:D:452:LEU:HD13 | 1.56                     | 0.70              |
| 1:D:533:GLU:O    | 7:D:709:HOH:O    | 2.09                     | 0.70              |
| 2:E:142:LYS:NZ   | 7:E:403:HOH:O    | 2.05                     | 0.70              |
| 1:A:87:PRO:HB3   | 2:B:143:PRO:HA   | 1.74                     | 0.70              |
| 1:A:262:ALA:O    | 1:A:265:LYS:HE3  | 1.91                     | 0.70              |
| 1:D:392:ILE:HB   | 1:D:401:TYR:HE1  | 1.56                     | 0.70              |
| 1:A:84:ASP:OD1   | 1:A:84:ASP:N     | 2.23                     | 0.69              |
| 1:A:108:PRO:HD3  | 1:A:434:ASP:OD2  | 1.92                     | 0.69              |
| 2:C:26:LYS:HD2   | 2:C:74:VAL:HG13  | 1.74                     | 0.69              |
| 1:D:208:SER:HA   | 1:D:211:LEU:HG   | 1.73                     | 0.69              |
| 1:D:223:PHE:CZ   | 1:D:533:GLU:HA   | 2.27                     | 0.69              |
| 1:D:280:LYS:HE2  | 1:D:293:ALA:HB1  | 1.74                     | 0.69              |
| 1:A:81:VAL:HB    | 1:A:110:PHE:HE2  | 1.57                     | 0.69              |
| 1:A:152:LYS:HG3  | 1:A:565:ASN:HB2  | 1.72                     | 0.69              |
| 1:D:342:THR:O    | 1:D:345:LEU:HG   | 1.92                     | 0.69              |
| 2:F:8:LEU:HD22   | 2:F:43:LEU:HD13  | 1.75                     | 0.69              |
| 1:D:353:ALA:HB2  | 1:D:413:TYR:CD2  | 2.27                     | 0.69              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:165:GLN:NE2  | 7:E:414:HOH:O    | 2.20                     | 0.69              |
| 1:A:520:LEU:O    | 7:A:711:HOH:O    | 2.09                     | 0.69              |
| 2:B:169:LYS:HZ1  | 2:B:206:VAL:HG11 | 1.57                     | 0.69              |
| 1:D:23:ASN:HB3   | 1:D:27:VAL:HG23  | 1.73                     | 0.69              |
| 2:F:25:GLU:OE2   | 2:F:82:ASN:ND2   | 2.26                     | 0.69              |
| 1:A:22:ARG:HH11  | 1:A:414:ASN:HB3  | 1.55                     | 0.69              |
| 1:A:340:ASN:HB2  | 1:A:352:PHE:CD1  | 2.27                     | 0.69              |
| 2:B:100:ASP:OD2  | 7:B:401:HOH:O    | 2.09                     | 0.69              |
| 1:D:332:SER:OG   | 1:D:333:SER:N    | 2.22                     | 0.69              |
| 2:F:128:PHE:CE1  | 2:F:175:ILE:HG22 | 2.27                     | 0.69              |
| 2:F:154:ASP:HA   | 2:F:185:TRP:HZ2  | 1.57                     | 0.69              |
| 1:A:77:ILE:HG22  | 1:A:110:PHE:HD2  | 1.57                     | 0.69              |
| 1:A:154:TYR:HB2  | 1:A:563:CYS:SG   | 2.32                     | 0.69              |
| 2:B:24:ARG:HH21  | 2:B:30:PHE:HZ    | 1.39                     | 0.69              |
| 2:B:35:GLU:O     | 7:B:402:HOH:O    | 2.11                     | 0.69              |
| 2:F:11:TRP:CD1   | 2:F:12:PRO:HD3   | 2.28                     | 0.69              |
| 1:A:87:PRO:HG3   | 1:A:93:PRO:HD3   | 1.75                     | 0.69              |
| 1:A:163:GLY:CA   | 1:A:560:GLN:HG3  | 2.15                     | 0.69              |
| 2:C:121:GLN:O    | 2:C:125:LYS:HG3  | 1.93                     | 0.69              |
| 2:E:154:ASP:O    | 2:E:158:ILE:HG23 | 1.93                     | 0.69              |
| 1:A:164:THR:HG22 | 1:A:557:LYS:O    | 1.92                     | 0.69              |
| 1:D:154:TYR:HB3  | 1:D:563:CYS:SG   | 2.33                     | 0.69              |
| 1:A:152:LYS:HZ1  | 1:A:198:VAL:HG21 | 1.58                     | 0.68              |
| 2:C:184:ALA:O    | 7:D:704:HOH:O    | 2.11                     | 0.68              |
| 1:A:41:SER:HA    | 2:B:148:ASP:HA   | 1.75                     | 0.68              |
| 1:A:81:VAL:O     | 7:A:712:HOH:O    | 2.11                     | 0.68              |
| 2:B:201:ASP:O    | 7:B:403:HOH:O    | 2.12                     | 0.68              |
| 2:C:146:GLY:O    | 7:C:403:HOH:O    | 2.11                     | 0.68              |
| 2:C:163:TRP:HB3  | 2:C:167:TYR:CZ   | 2.28                     | 0.68              |
| 2:C:174:SER:O    | 7:C:402:HOH:O    | 2.09                     | 0.68              |
| 1:D:51:ASN:ND2   | 2:E:87:SER:OG    | 2.26                     | 0.68              |
| 2:F:168:GLU:OE1  | 7:F:403:HOH:O    | 2.11                     | 0.68              |
| 1:D:202:LEU:HA   | 1:D:205:HIS:HB2  | 1.74                     | 0.68              |
| 1:D:462:PHE:O    | 1:D:549:ARG:NH1  | 2.27                     | 0.68              |
| 1:D:544:GLN:NE2  | 7:D:703:HOH:O    | 2.17                     | 0.68              |
| 2:F:57:LEU:HG    | 2:F:64:VAL:CG2   | 2.23                     | 0.68              |
| 1:A:48:CYS:SG    | 1:A:65:VAL:HB    | 2.33                     | 0.68              |
| 1:A:418:GLN:N    | 7:A:730:HOH:O    | 2.26                     | 0.68              |
| 2:F:191:GLU:OE2  | 7:F:401:HOH:O    | 2.12                     | 0.68              |
| 1:A:390:VAL:HG11 | 1:A:540:SER:HA   | 1.75                     | 0.68              |
| 2:C:188:ARG:NH1  | 1:D:499:ARG:O    | 2.26                     | 0.68              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:477:ILE:HD11 | 1:D:497:LEU:HD13 | 1.76                     | 0.68              |
| 2:F:139:LEU:O    | 7:F:404:HOH:O    | 2.11                     | 0.68              |
| 1:A:180:LYS:O    | 7:A:713:HOH:O    | 2.11                     | 0.68              |
| 1:A:421:PHE:CE1  | 1:A:541:SER:HA   | 2.29                     | 0.68              |
| 2:C:187:LYS:HE3  | 1:D:493:CYS:HA   | 1.73                     | 0.68              |
| 2:C:18:ARG:HD2   | 2:C:67:SER:HB2   | 1.74                     | 0.67              |
| 2:E:182:LEU:O    | 2:E:185:TRP:HB3  | 1.94                     | 0.67              |
| 2:F:33:ARG:NH1   | 2:F:35:GLU:OE2   | 2.27                     | 0.67              |
| 2:B:75:ASP:OD2   | 2:B:85:PHE:HD1   | 1.78                     | 0.67              |
| 1:D:172:ASN:HB3  | 1:D:175:PHE:CE2  | 2.30                     | 0.67              |
| 2:E:190:MET:SD   | 7:E:471:HOH:O    | 2.51                     | 0.67              |
| 1:A:114:THR:OG1  | 2:B:141:ASP:OD2  | 2.10                     | 0.67              |
| 1:A:480:GLU:HG3  | 1:A:525:LYS:HA   | 1.74                     | 0.67              |
| 1:D:305:MET:HG3  | 1:D:347:PRO:HB3  | 1.75                     | 0.67              |
| 1:D:423:CYS:SG   | 1:D:541:SER:OG   | 2.49                     | 0.67              |
| 1:A:38:LYS:O     | 2:B:142:LYS:HB2  | 1.94                     | 0.67              |
| 1:A:143:LYS:HZ2  | 1:A:212:PHE:CA   | 2.07                     | 0.67              |
| 1:A:169:VAL:HG13 | 1:A:170:TYR:CD1  | 2.29                     | 0.67              |
| 1:A:360:TYR:N    | 7:A:706:HOH:O    | 2.27                     | 0.67              |
| 2:B:76:GLU:OE1   | 2:C:92:ARG:NE    | 2.28                     | 0.67              |
| 1:D:435:LYS:NZ   | 1:D:549:ARG:HB2  | 2.08                     | 0.67              |
| 1:A:363:PHE:HB3  | 1:A:388:TYR:HB3  | 1.74                     | 0.67              |
| 1:A:471:ASP:OD1  | 7:A:714:HOH:O    | 2.13                     | 0.67              |
| 1:D:39:ASN:HA    | 2:E:142:LYS:HE3  | 1.75                     | 0.67              |
| 1:D:110:PHE:CE1  | 1:D:556:ALA:HB2  | 2.29                     | 0.67              |
| 1:A:106:GLY:HA3  | 1:A:432:ASN:HB2  | 1.77                     | 0.67              |
| 1:A:46:GLN:HB3   | 2:B:148:ASP:HB3  | 1.75                     | 0.67              |
| 2:C:11:TRP:CD1   | 2:C:12:PRO:HD3   | 2.29                     | 0.67              |
| 1:D:25:HIS:HA    | 1:D:28:GLN:HG2   | 1.77                     | 0.67              |
| 1:D:135:ASP:OD2  | 1:D:343:PRO:HB2  | 1.94                     | 0.67              |
| 2:E:185:TRP:HD1  | 2:E:188:ARG:HH12 | 1.43                     | 0.67              |
| 2:C:98:TRP:HE1   | 2:C:145:PHE:HD2  | 1.41                     | 0.67              |
| 1:A:108:PRO:HG2  | 1:A:552:LYS:HG2  | 1.77                     | 0.67              |
| 2:C:144:TYR:HB3  | 2:C:154:ASP:OD2  | 1.95                     | 0.67              |
| 1:D:331:GLY:HA3  | 1:D:336:TRP:CE3  | 2.28                     | 0.67              |
| 1:A:166:THR:HA   | 1:A:169:VAL:HG12 | 1.77                     | 0.66              |
| 1:A:363:PHE:HD2  | 1:A:382:VAL:HG21 | 1.59                     | 0.66              |
| 1:A:409:VAL:HG13 | 7:A:730:HOH:O    | 1.95                     | 0.66              |
| 2:B:204:LYS:HB2  | 7:B:403:HOH:O    | 1.95                     | 0.66              |
| 2:F:125:LYS:HA   | 2:F:128:PHE:CD2  | 2.30                     | 0.66              |
| 1:D:96:ALA:HA    | 1:D:162:VAL:HA   | 1.75                     | 0.66              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:199:HIS:H    | 1:D:524:ALA:CB   | 2.05                     | 0.66              |
| 2:E:150:PHE:CE2  | 2:E:192:LYS:HG3  | 2.30                     | 0.66              |
| 1:A:90:THR:HG23  | 1:A:397:GLY:HA2  | 1.75                     | 0.66              |
| 1:D:99:LEU:HB3   | 1:D:557:LYS:H    | 1.60                     | 0.66              |
| 2:B:142:LYS:O    | 7:B:405:HOH:O    | 2.14                     | 0.66              |
| 2:C:40:LYS:HD3   | 2:C:52:LYS:HB3   | 1.77                     | 0.66              |
| 2:F:23:LEU:HD11  | 2:F:30:PHE:CD2   | 2.30                     | 0.66              |
| 2:B:150:PHE:HZ   | 2:B:158:ILE:HG21 | 1.60                     | 0.66              |
| 1:A:116:GLU:OE2  | 1:A:395:TYR:HB3  | 1.95                     | 0.66              |
| 2:C:201:ASP:HB3  | 1:D:454:GLU:O    | 1.96                     | 0.66              |
| 1:D:224:ALA:HA   | 1:D:316:LEU:HD22 | 1.78                     | 0.66              |
| 2:E:11:TRP:HZ2   | 2:E:204:LYS:HB3  | 1.60                     | 0.66              |
| 2:F:98:TRP:NE1   | 2:F:138:GLU:OE2  | 2.29                     | 0.66              |
| 2:F:162:SER:O    | 7:F:405:HOH:O    | 2.13                     | 0.66              |
| 1:A:143:LYS:NZ   | 1:A:212:PHE:CB   | 2.59                     | 0.66              |
| 1:D:451:ARG:NH1  | 1:D:490:LEU:CA   | 2.58                     | 0.66              |
| 1:D:534:HIS:CD2  | 1:D:557:LYS:HE2  | 2.30                     | 0.66              |
| 1:A:390:VAL:HG11 | 1:A:540:SER:CA   | 2.26                     | 0.66              |
| 2:C:17:MET:SD    | 2:C:199:LEU:HG   | 2.36                     | 0.66              |
| 2:E:136:GLU:HG3  | 2:E:181:LYS:HE2  | 1.78                     | 0.66              |
| 2:E:145:PHE:O    | 7:E:408:HOH:O    | 2.14                     | 0.66              |
| 1:A:23:ASN:HB3   | 1:A:27:VAL:HG23  | 1.77                     | 0.66              |
| 1:A:90:THR:HG22  | 2:B:141:ASP:HB3  | 1.78                     | 0.66              |
| 1:A:126:ARG:HA   | 1:A:182:ILE:HG21 | 1.77                     | 0.66              |
| 1:A:213:ARG:HH11 | 1:A:294:LEU:HD13 | 1.59                     | 0.66              |
| 1:A:223:PHE:HD2  | 1:A:225:HIS:CE1  | 2.14                     | 0.66              |
| 2:E:157:LEU:HD21 | 2:E:182:LEU:HD11 | 1.77                     | 0.66              |
| 1:A:143:LYS:HZ2  | 1:A:212:PHE:CB   | 2.09                     | 0.65              |
| 1:A:163:GLY:HA3  | 1:A:560:GLN:CG   | 2.16                     | 0.65              |
| 1:A:237:VAL:HG11 | 1:A:253:ARG:NH2  | 2.11                     | 0.65              |
| 1:A:427:LEU:O    | 7:A:715:HOH:O    | 2.13                     | 0.65              |
| 2:B:33:ARG:O     | 7:B:404:HOH:O    | 2.13                     | 0.65              |
| 2:E:99:ALA:N     | 7:E:401:HOH:O    | 2.28                     | 0.65              |
| 1:A:116:GLU:O    | 1:A:119:GLU:HG2  | 1.96                     | 0.65              |
| 2:C:60:ASN:O     | 7:C:406:HOH:O    | 2.15                     | 0.65              |
| 1:D:273:LEU:H    | 1:D:273:LEU:HD12 | 1.61                     | 0.65              |
| 2:F:98:TRP:CZ3   | 2:F:101:PHE:HB2  | 2.31                     | 0.65              |
| 2:E:13:SER:O     | 2:E:17:MET:HG3   | 1.96                     | 0.65              |
| 2:E:211:GLU:HA   | 2:E:214:LYS:HG3  | 1.78                     | 0.65              |
| 1:A:239:GLU:OE1  | 7:A:716:HOH:O    | 2.13                     | 0.65              |
| 1:A:475:TYR:O    | 1:A:518:LEU:HD23 | 1.96                     | 0.65              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:24:ARG:NH1   | 2:B:198:SER:OG   | 2.29                     | 0.65              |
| 1:D:38:LYS:C     | 2:E:142:LYS:HZ2  | 2.00                     | 0.65              |
| 2:F:215:ASN:OD1  | 7:F:406:HOH:O    | 2.14                     | 0.65              |
| 1:D:116:GLU:OE2  | 1:D:395:TYR:HB2  | 1.96                     | 0.65              |
| 1:D:478:PHE:HZ   | 1:D:562:LEU:HD12 | 1.61                     | 0.65              |
| 2:F:158:ILE:HG12 | 2:F:195:VAL:HG11 | 1.79                     | 0.65              |
| 1:A:97:ILE:HG21  | 1:A:110:PHE:CD2  | 2.32                     | 0.65              |
| 1:A:575:PHE:O    | 7:A:718:HOH:O    | 2.14                     | 0.65              |
| 1:D:69:THR:OG1   | 1:D:72:GLU:OE2   | 2.15                     | 0.65              |
| 2:F:201:ASP:HB2  | 2:F:204:LYS:HE3  | 1.79                     | 0.65              |
| 1:A:353:ALA:HB2  | 1:A:413:TYR:CD2  | 2.31                     | 0.65              |
| 1:A:551:VAL:HB   | 1:A:555:ASN:CB   | 2.27                     | 0.65              |
| 2:C:196:SER:O    | 7:C:404:HOH:O    | 2.14                     | 0.65              |
| 2:E:21:VAL:HG11  | 2:E:158:ILE:HD11 | 1.79                     | 0.65              |
| 2:F:11:TRP:CG    | 2:F:12:PRO:HD3   | 2.31                     | 0.65              |
| 1:A:87:PRO:HD3   | 1:A:93:PRO:HG3   | 1.78                     | 0.65              |
| 1:A:152:LYS:NZ   | 1:A:198:VAL:HG21 | 2.11                     | 0.65              |
| 2:C:152:TYR:O    | 7:C:407:HOH:O    | 2.15                     | 0.65              |
| 1:A:108:PRO:HG2  | 1:A:552:LYS:H    | 1.61                     | 0.64              |
| 2:B:116:LYS:HZ2  | 2:B:120:GLU:HB3  | 1.61                     | 0.64              |
| 1:D:132:ARG:O    | 1:D:136:PHE:N    | 2.20                     | 0.64              |
| 1:A:110:PHE:CE1  | 1:A:556:ALA:HB2  | 2.32                     | 0.64              |
| 2:B:166:ALA:HA   | 2:B:169:LYS:HZ3  | 1.61                     | 0.64              |
| 2:F:63:PRO:O     | 7:F:407:HOH:O    | 2.14                     | 0.64              |
| 1:A:211:LEU:HD12 | 1:A:212:PHE:CD2  | 2.32                     | 0.64              |
| 2:B:24:ARG:HD3   | 2:B:197:LYS:NZ   | 2.12                     | 0.64              |
| 2:B:193:GLU:HA   | 2:B:196:SER:HB3  | 1.80                     | 0.64              |
| 2:B:40:LYS:NZ    | 2:B:52:LYS:HD2   | 2.13                     | 0.64              |
| 2:C:177:SER:HA   | 1:D:573:THR:HG21 | 1.78                     | 0.64              |
| 1:D:17:PHE:HA    | 1:D:20:MET:HG2   | 1.79                     | 0.64              |
| 2:F:10:TYR:CG    | 2:F:12:PRO:HD2   | 2.33                     | 0.64              |
| 1:A:149:PHE:HB2  | 1:A:530:LYS:NZ   | 2.13                     | 0.64              |
| 1:A:246:LYS:HG3  | 1:A:274:ALA:HB2  | 1.80                     | 0.64              |
| 2:C:24:ARG:HB3   | 2:C:194:SER:HA   | 1.79                     | 0.64              |
| 2:C:109:ALA:HB1  | 2:C:128:PHE:HB3  | 1.78                     | 0.64              |
| 2:C:203:GLU:OE2  | 7:C:405:HOH:O    | 2.14                     | 0.64              |
| 2:F:208:TYR:O    | 7:F:408:HOH:O    | 2.15                     | 0.64              |
| 1:A:96:ALA:O     | 1:A:113:PHE:HB2  | 1.98                     | 0.64              |
| 1:A:498:ASP:HB3  | 1:A:510:ARG:NH2  | 2.13                     | 0.64              |
| 2:B:110:GLN:O    | 2:B:113:VAL:HG12 | 1.98                     | 0.64              |
| 1:D:254:ILE:O    | 7:D:714:HOH:O    | 2.15                     | 0.64              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:492:ASP:O    | 1:D:495:ASN:HB2  | 1.98                     | 0.64              |
| 2:E:166:ALA:HB2  | 2:E:206:VAL:HG12 | 1.79                     | 0.64              |
| 1:A:92:HIS:CD2   | 2:B:181:LYS:HG2  | 2.32                     | 0.64              |
| 1:A:336:TRP:HB3  | 1:A:358:LEU:HD13 | 1.80                     | 0.64              |
| 1:A:364:LEU:HD23 | 1:A:389:GLU:OE2  | 1.97                     | 0.64              |
| 2:B:125:LYS:HB2  | 2:B:173:PHE:CE2  | 2.32                     | 0.64              |
| 1:D:18:ASP:O     | 1:D:22:ARG:HG3   | 1.96                     | 0.64              |
| 1:D:29:LYS:NZ    | 1:D:58:GLU:OE2   | 2.31                     | 0.64              |
| 1:A:81:VAL:HB    | 1:A:110:PHE:CE2  | 2.32                     | 0.64              |
| 2:C:180:PRO:HB3  | 1:D:573:THR:HG22 | 1.80                     | 0.64              |
| 1:D:40:GLN:NE2   | 1:D:51:ASN:O     | 2.31                     | 0.64              |
| 1:D:73:LEU:HD23  | 1:D:89:LEU:HD12  | 1.79                     | 0.64              |
| 2:E:142:LYS:HD3  | 2:E:143:PRO:HD2  | 1.78                     | 0.64              |
| 1:A:108:PRO:HB3  | 1:A:555:ASN:CG   | 2.18                     | 0.64              |
| 2:B:9:ASP:N      | 7:B:404:HOH:O    | 2.26                     | 0.64              |
| 2:C:125:LYS:HZ2  | 2:C:171:GLY:HA3  | 1.61                     | 0.63              |
| 2:B:9:ASP:OD1    | 2:B:10:TYR:N     | 2.30                     | 0.63              |
| 1:D:42:ALA:N     | 7:D:739:HOH:O    | 2.32                     | 0.63              |
| 1:A:392:ILE:HG22 | 1:A:401:TYR:HE1  | 1.64                     | 0.63              |
| 1:D:504:ALA:O    | 1:D:507:VAL:HG13 | 1.99                     | 0.63              |
| 2:E:145:PHE:CD2  | 2:E:153:VAL:HG22 | 2.32                     | 0.63              |
| 1:A:40:GLN:HE21  | 1:A:52:GLY:HA3   | 1.62                     | 0.63              |
| 1:A:191:GLU:O    | 1:A:195:SER:N    | 2.32                     | 0.63              |
| 1:A:407:VAL:HG21 | 1:A:419:LEU:HD23 | 1.80                     | 0.63              |
| 2:C:12:PRO:O     | 2:C:163:TRP:HZ2  | 1.81                     | 0.63              |
| 1:D:172:ASN:HB3  | 1:D:175:PHE:CZ   | 2.32                     | 0.63              |
| 1:A:197:ASP:N    | 1:A:197:ASP:OD1  | 2.30                     | 0.63              |
| 1:A:219:VAL:HB   | 1:A:295:PHE:CE2  | 2.33                     | 0.63              |
| 1:A:250:LEU:HD22 | 1:A:260:ARG:HE   | 1.63                     | 0.63              |
| 1:A:486:ASN:ND2  | 7:A:739:HOH:O    | 2.30                     | 0.63              |
| 2:E:26:LYS:NZ    | 2:E:81:LYS:H     | 1.95                     | 0.63              |
| 2:E:62:LYS:HB3   | 2:F:90:TYR:CZ    | 2.34                     | 0.63              |
| 2:E:103:ASP:OD2  | 7:E:409:HOH:O    | 2.14                     | 0.63              |
| 2:E:132:VAL:HG21 | 2:E:175:ILE:HG23 | 1.79                     | 0.63              |
| 1:A:223:PHE:HB3  | 1:A:309:MET:HE3  | 1.81                     | 0.63              |
| 1:A:252:ASN:HA   | 1:A:260:ARG:HH22 | 1.63                     | 0.63              |
| 1:A:494:CYS:SG   | 1:A:495:ASN:N    | 2.72                     | 0.63              |
| 2:B:215:ASN:O    | 7:B:407:HOH:O    | 2.16                     | 0.63              |
| 1:D:93:PRO:HD2   | 2:E:181:LYS:CA   | 2.27                     | 0.63              |
| 2:F:167:TYR:HB2  | 2:F:168:GLU:OE1  | 1.99                     | 0.63              |
| 1:A:218:TYR:HA   | 1:A:298:ALA:HB1  | 1.79                     | 0.63              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:315:LYS:HA   | 1:A:318:HIS:HB3  | 1.81                     | 0.63              |
| 1:D:145:LEU:O    | 7:D:715:HOH:O    | 2.16                     | 0.63              |
| 1:D:146:GLN:O    | 1:D:205:HIS:NE2  | 2.31                     | 0.63              |
| 2:C:14:MET:HG3   | 2:C:163:TRP:CH2  | 2.33                     | 0.63              |
| 2:C:98:TRP:CH2   | 2:C:135:LEU:HG   | 2.33                     | 0.63              |
| 1:D:87:PRO:HG2   | 2:E:188:ARG:CZ   | 2.28                     | 0.63              |
| 1:D:383:LYS:O    | 1:D:386:GLU:HG2  | 1.98                     | 0.63              |
| 2:E:6:ILE:HD12   | 2:E:6:ILE:H      | 1.63                     | 0.63              |
| 1:A:190:ASP:O    | 1:A:194:PHE:HD2  | 1.81                     | 0.62              |
| 1:D:473:GLY:O    | 1:D:516:GLY:N    | 2.29                     | 0.62              |
| 2:F:21:VAL:HG12  | 2:F:155:ILE:HG12 | 1.80                     | 0.62              |
| 1:A:503:ASP:OD1  | 1:A:504:ALA:N    | 2.32                     | 0.62              |
| 1:D:228:VAL:HG11 | 1:D:315:LYS:HD3  | 1.79                     | 0.62              |
| 2:F:4:LEU:HD12   | 2:F:5:PRO:HD2    | 1.79                     | 0.62              |
| 1:D:146:GLN:NE2  | 7:D:720:HOH:O    | 2.19                     | 0.62              |
| 1:D:371:GLU:N    | 1:D:371:GLU:OE2  | 2.32                     | 0.62              |
| 2:E:66:GLU:OE2   | 2:F:97:PHE:HD1   | 1.82                     | 0.62              |
| 1:D:20:MET:HA    | 1:D:23:ASN:HB2   | 1.80                     | 0.62              |
| 1:D:153:GLN:NE2  | 1:D:171:ARG:HG3  | 2.14                     | 0.62              |
| 1:D:212:PHE:N    | 7:D:701:HOH:O    | 2.12                     | 0.62              |
| 1:D:433:ILE:O    | 1:D:433:ILE:HG13 | 1.98                     | 0.62              |
| 2:E:143:PRO:C    | 2:E:188:ARG:NH1  | 2.52                     | 0.62              |
| 2:F:140:GLY:HA2  | 2:F:181:LYS:NZ   | 2.15                     | 0.62              |
| 1:A:152:LYS:HD3  | 1:A:561:ILE:HA   | 1.82                     | 0.62              |
| 1:A:238:TRP:CZ2  | 1:A:281:CYS:HB2  | 2.35                     | 0.62              |
| 1:A:526:GLY:O    | 1:A:530:LYS:HG2  | 2.00                     | 0.62              |
| 2:F:40:LYS:HD2   | 2:F:52:LYS:HD2   | 1.80                     | 0.62              |
| 2:C:117:LYS:HE3  | 2:C:213:ARG:HH11 | 1.65                     | 0.62              |
| 1:D:150:SER:HB2  | 1:D:167:THR:CA   | 2.28                     | 0.62              |
| 1:D:198:VAL:HG22 | 1:D:565:ASN:HD22 | 1.62                     | 0.62              |
| 2:F:35:GLU:OE2   | 2:F:41:SER:HB2   | 1.99                     | 0.62              |
| 2:F:112:LYS:O    | 7:F:409:HOH:O    | 2.16                     | 0.62              |
| 1:A:118:MET:HG2  | 1:A:174:ASN:ND2  | 2.15                     | 0.62              |
| 1:A:247:ASP:CG   | 1:A:249:VAL:HG12 | 2.20                     | 0.62              |
| 2:B:119:GLU:N    | 2:B:119:GLU:OE1  | 2.33                     | 0.62              |
| 1:D:29:LYS:HZ1   | 1:D:58:GLU:CD    | 2.03                     | 0.62              |
| 1:D:315:LYS:HA   | 1:D:318:HIS:HB3  | 1.82                     | 0.62              |
| 1:D:442:GLN:HA   | 1:D:462:PHE:CZ   | 2.34                     | 0.62              |
| 2:E:24:ARG:HG3   | 2:E:194:SER:HA   | 1.79                     | 0.62              |
| 1:A:315:LYS:O    | 1:A:318:HIS:HB3  | 2.00                     | 0.62              |
| 1:A:507:VAL:O    | 1:A:511:LYS:HB2  | 2.00                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:523:VAL:HG22 | 1:A:524:ALA:H    | 1.64                     | 0.62              |
| 2:C:194:SER:O    | 2:C:198:SER:OG   | 2.18                     | 0.62              |
| 1:A:242:VAL:O    | 1:A:246:LYS:HB2  | 2.00                     | 0.61              |
| 2:E:163:TRP:HB3  | 2:E:167:TYR:CZ   | 2.35                     | 0.61              |
| 2:C:125:LYS:HA   | 2:C:128:PHE:CE2  | 2.35                     | 0.61              |
| 2:F:166:ALA:HB2  | 2:F:206:VAL:HA   | 1.82                     | 0.61              |
| 2:B:65:CYS:SG    | 7:B:458:HOH:O    | 2.53                     | 0.61              |
| 2:B:75:ASP:OD2   | 2:B:85:PHE:CD1   | 2.53                     | 0.61              |
| 2:B:205:ILE:HA   | 2:B:208:TYR:CE2  | 2.35                     | 0.61              |
| 1:D:105:GLN:NE2  | 7:D:736:HOH:O    | 2.28                     | 0.61              |
| 1:D:566:VAL:HG21 | 1:D:569:SER:HB2  | 1.81                     | 0.61              |
| 2:F:40:LYS:NZ    | 2:F:40:LYS:H     | 1.98                     | 0.61              |
| 1:D:226:GLY:CA   | 1:D:529:ARG:HD3  | 2.29                     | 0.61              |
| 1:D:292:PRO:HB3  | 1:D:323:LEU:HD12 | 1.82                     | 0.61              |
| 1:D:463:SER:HB3  | 1:D:478:PHE:HD2  | 1.65                     | 0.61              |
| 2:E:11:TRP:HZ2   | 2:E:204:LYS:CB   | 2.13                     | 0.61              |
| 2:F:133:LYS:O    | 2:F:136:GLU:HG3  | 2.00                     | 0.61              |
| 1:A:274:ALA:O    | 1:A:278:ARG:HD2  | 2.00                     | 0.61              |
| 1:A:398:LEU:HB3  | 1:A:401:TYR:CD1  | 2.36                     | 0.61              |
| 2:B:86:PRO:HD3   | 2:B:146:GLY:O    | 2.00                     | 0.61              |
| 1:A:77:ILE:HG23  | 1:A:80:MET:HE3   | 1.83                     | 0.61              |
| 1:A:338:ALA:HA   | 1:A:354:VAL:HA   | 1.80                     | 0.61              |
| 2:B:109:ALA:HA   | 2:B:112:LYS:HG2  | 1.81                     | 0.61              |
| 2:C:98:TRP:CZ2   | 2:C:157:LEU:HD22 | 2.35                     | 0.61              |
| 1:D:108:PRO:HB2  | 1:D:554:SER:HB2  | 1.80                     | 0.61              |
| 2:E:18:ARG:HD3   | 2:E:156:SER:HA   | 1.82                     | 0.61              |
| 2:B:112:LYS:CD   | 2:B:116:LYS:HZ1  | 2.11                     | 0.61              |
| 2:C:84:PHE:HB2   | 2:C:152:TYR:N    | 2.16                     | 0.61              |
| 2:C:145:PHE:N    | 2:C:145:PHE:CD1  | 2.64                     | 0.61              |
| 1:D:93:PRO:HD3   | 2:E:188:ARG:NH2  | 2.14                     | 0.61              |
| 1:D:464:SER:HB2  | 1:D:477:ILE:HG22 | 1.83                     | 0.61              |
| 2:B:90:TYR:O     | 2:B:93:ALA:HB3   | 2.01                     | 0.61              |
| 2:C:176:GLU:OE2  | 1:D:491:GLN:HG2  | 2.01                     | 0.61              |
| 1:D:329:ASP:HB3  | 1:D:339:ALA:HA   | 1.81                     | 0.61              |
| 1:A:153:GLN:HE22 | 1:A:171:ARG:HG2  | 1.66                     | 0.61              |
| 1:D:38:LYS:HB3   | 2:E:140:GLY:HA3  | 1.82                     | 0.61              |
| 1:D:330:TYR:O    | 1:D:338:ALA:N    | 2.32                     | 0.61              |
| 1:A:38:LYS:HB3   | 2:B:140:GLY:HA3  | 1.82                     | 0.61              |
| 1:D:108:PRO:HG2  | 1:D:552:LYS:HG2  | 1.82                     | 0.61              |
| 1:D:149:PHE:CE2  | 1:D:202:LEU:HD22 | 2.35                     | 0.60              |
| 1:D:509:SER:OG   | 1:D:515:ILE:HG12 | 2.00                     | 0.60              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:F:60:ASN:ND2   | 7:F:418:HOH:O    | 2.26                     | 0.60              |
| 2:C:177:SER:HA   | 1:D:573:THR:CG2  | 2.31                     | 0.60              |
| 1:D:8:PHE:HA     | 1:D:126:ARG:CZ   | 2.31                     | 0.60              |
| 1:A:278:ARG:O    | 1:A:282:MET:HG2  | 2.00                     | 0.60              |
| 1:A:305:MET:SD   | 1:A:325:LEU:HB3  | 2.41                     | 0.60              |
| 2:B:20:ARG:HH22  | 2:B:200:PRO:HD3  | 1.67                     | 0.60              |
| 1:D:363:PHE:HE1  | 1:D:390:VAL:HG23 | 1.65                     | 0.60              |
| 1:D:394:ASN:ND2  | 7:D:744:HOH:O    | 2.33                     | 0.60              |
| 2:E:144:TYR:HB3  | 2:E:154:ASP:OD2  | 2.02                     | 0.60              |
| 1:A:209:GLY:C    | 1:A:213:ARG:HE   | 2.05                     | 0.60              |
| 2:C:98:TRP:O     | 2:C:101:PHE:HB2  | 2.01                     | 0.60              |
| 2:C:108:ASP:O    | 2:C:112:LYS:HG2  | 2.02                     | 0.60              |
| 1:D:351:THR:HG21 | 1:D:410:ILE:HG12 | 1.83                     | 0.60              |
| 1:A:274:ALA:HB1  | 1:A:278:ARG:NH2  | 2.16                     | 0.60              |
| 1:A:365:PRO:HG3  | 1:A:374:GLU:HG2  | 1.82                     | 0.60              |
| 1:D:87:PRO:HD3   | 1:D:93:PRO:HG3   | 1.82                     | 0.60              |
| 2:F:163:TRP:HB3  | 2:F:167:TYR:CZ   | 2.37                     | 0.60              |
| 1:A:312:TYR:CD2  | 1:A:315:LYS:HE2  | 2.36                     | 0.60              |
| 1:D:118:MET:HE3  | 1:D:169:VAL:HG23 | 1.84                     | 0.60              |
| 1:D:273:LEU:HD12 | 1:D:273:LEU:N    | 2.16                     | 0.60              |
| 2:C:188:ARG:HE   | 1:D:499:ARG:HH21 | 1.50                     | 0.60              |
| 1:D:435:LYS:HZ1  | 1:D:549:ARG:CB   | 2.14                     | 0.60              |
| 1:A:13:VAL:HG22  | 1:A:17:PHE:CZ    | 2.37                     | 0.60              |
| 2:B:96:ARG:HA    | 2:B:152:TYR:HE2  | 1.66                     | 0.60              |
| 1:D:526:GLY:HA2  | 1:D:529:ARG:NH1  | 2.17                     | 0.60              |
| 1:A:42:ALA:HB1   | 1:A:44:TYR:CE1   | 2.37                     | 0.60              |
| 1:A:435:LYS:HG2  | 1:A:438:GLU:OE2  | 2.01                     | 0.60              |
| 1:D:432:ASN:OD1  | 1:D:433:ILE:N    | 2.35                     | 0.60              |
| 1:D:498:ASP:HB3  | 1:D:510:ARG:HH21 | 1.67                     | 0.60              |
| 2:E:119:GLU:HA   | 2:E:122:GLU:HG2  | 1.83                     | 0.60              |
| 2:F:114:TRP:HZ3  | 2:F:212:TYR:HD2  | 1.50                     | 0.60              |
| 1:D:79:ARG:NH2   | 1:D:87:PRO:O     | 2.35                     | 0.60              |
| 1:D:93:PRO:HG2   | 2:E:184:ALA:CB   | 2.30                     | 0.60              |
| 1:A:29:LYS:HG3   | 1:A:30:GLN:H     | 1.67                     | 0.59              |
| 1:D:46:GLN:HB2   | 2:E:148:ASP:HB2  | 1.84                     | 0.59              |
| 1:D:46:GLN:HE21  | 2:E:148:ASP:HB2  | 1.66                     | 0.59              |
| 1:D:87:PRO:HG2   | 2:E:188:ARG:HE   | 1.65                     | 0.59              |
| 1:D:234:PHE:CD2  | 1:D:287:TRP:HH2  | 2.20                     | 0.59              |
| 1:A:451:ARG:NH1  | 1:A:489:VAL:HG12 | 2.17                     | 0.59              |
| 2:F:169:LYS:HG3  | 2:F:170:PHE:H    | 1.67                     | 0.59              |
| 1:A:58:GLU:O     | 1:A:61:PHE:HB2   | 2.02                     | 0.59              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:A:531:ILE:HA  | 1:A:534:HIS:CD2  | 2.37                     | 0.59              |
| 2:C:98:TRP:NE1  | 2:C:145:PHE:HD2  | 2.01                     | 0.59              |
| 1:D:104:SER:O   | 1:D:107:ARG:HB2  | 2.02                     | 0.59              |
| 2:E:65:CYS:O    | 2:E:66:GLU:HB2   | 2.02                     | 0.59              |
| 1:A:118:MET:HE3 | 1:A:169:VAL:HA   | 1.85                     | 0.59              |
| 2:B:146:GLY:HA3 | 2:B:151:GLY:HA3  | 1.84                     | 0.59              |
| 2:B:202:SER:O   | 2:B:206:VAL:HG13 | 2.01                     | 0.59              |
| 1:D:273:LEU:H   | 1:D:273:LEU:CD1  | 2.15                     | 0.59              |
| 1:D:276:THR:OG1 | 1:D:277:ILE:N    | 2.33                     | 0.59              |
| 1:A:46:GLN:OE1  | 2:B:149:SER:OG   | 2.20                     | 0.59              |
| 1:A:292:PRO:O   | 1:A:296:PRO:HA   | 2.02                     | 0.59              |
| 1:A:435:LYS:HB3 | 1:A:436:ASN:C    | 2.23                     | 0.59              |
| 1:A:506:TYR:CE1 | 1:A:510:ARG:HD3  | 2.37                     | 0.59              |
| 2:B:13:SER:O    | 2:B:17:MET:HG3   | 2.03                     | 0.59              |
| 2:C:20:ARG:HB3  | 2:C:198:SER:HB3  | 1.85                     | 0.59              |
| 1:D:87:PRO:HG2  | 2:E:188:ARG:NH2  | 2.17                     | 0.59              |
| 1:A:247:ASP:OD2 | 1:A:249:VAL:HG12 | 2.03                     | 0.59              |
| 2:B:17:MET:HG2  | 2:B:20:ARG:NH2   | 2.18                     | 0.59              |
| 1:D:92:HIS:HE1  | 2:E:185:TRP:HB2  | 1.68                     | 0.59              |
| 1:D:108:PRO:HG2 | 1:D:552:LYS:H    | 1.68                     | 0.59              |
| 1:D:152:LYS:HD3 | 1:D:561:ILE:HG23 | 1.83                     | 0.59              |
| 1:A:53:ASN:OD1  | 1:A:54:ALA:N     | 2.36                     | 0.59              |
| 1:A:225:HIS:CD2 | 1:A:529:ARG:HE   | 2.21                     | 0.59              |
| 1:A:22:ARG:NH1  | 1:A:414:ASN:HB3  | 2.18                     | 0.59              |
| 1:D:149:PHE:CZ  | 1:D:202:LEU:HD22 | 2.38                     | 0.59              |
| 1:D:229:HIS:O   | 1:D:233:THR:HG23 | 2.02                     | 0.59              |
| 1:D:328:HIS:CG  | 1:D:329:ASP:N    | 2.71                     | 0.59              |
| 1:A:99:LEU:HD11 | 1:A:548:PRO:HG2  | 1.85                     | 0.59              |
| 1:D:451:ARG:O   | 1:D:454:GLU:HG2  | 2.02                     | 0.59              |
| 2:B:116:LYS:HZ3 | 2:B:120:GLU:HB3  | 1.66                     | 0.58              |
| 1:D:92:HIS:CG   | 2:E:181:LYS:HB2  | 2.38                     | 0.58              |
| 1:A:143:LYS:HB2 | 1:A:185:PRO:O    | 2.02                     | 0.58              |
| 1:A:159:GLY:N   | 7:A:725:HOH:O    | 2.36                     | 0.58              |
| 1:A:316:LEU:O   | 1:A:320:ALA:N    | 2.24                     | 0.58              |
| 1:D:38:LYS:HE3  | 2:E:138:GLU:O    | 2.02                     | 0.58              |
| 1:D:178:GLY:O   | 7:D:713:HOH:O    | 2.15                     | 0.58              |
| 1:D:451:ARG:HG3 | 1:D:452:LEU:N    | 2.19                     | 0.58              |
| 1:D:572:SER:OG  | 7:D:702:HOH:O    | 2.09                     | 0.58              |
| 2:E:57:LEU:O    | 7:E:412:HOH:O    | 2.17                     | 0.58              |
| 2:F:98:TRP:HZ3  | 2:F:101:PHE:HB2  | 1.68                     | 0.58              |
| 2:B:176:GLU:HG3 | 2:B:180:PRO:HA   | 1.85                     | 0.58              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:153:VAL:HB   | 7:E:401:HOH:O    | 2.03                     | 0.58              |
| 2:F:54:ILE:HB    | 2:F:55:PRO:HA    | 1.84                     | 0.58              |
| 1:D:368:GLU:OE2  | 7:D:716:HOH:O    | 2.16                     | 0.58              |
| 1:D:228:VAL:HA   | 1:D:319:TYR:CE2  | 2.38                     | 0.58              |
| 2:F:203:GLU:HA   | 2:F:206:VAL:HG22 | 1.86                     | 0.58              |
| 1:A:327:SER:HB2  | 1:A:352:PHE:CZ   | 2.29                     | 0.58              |
| 1:D:146:GLN:NE2  | 7:D:738:HOH:O    | 2.31                     | 0.58              |
| 1:D:195:SER:OG   | 1:D:197:ASP:OD1  | 2.22                     | 0.58              |
| 1:D:465:TYR:HD1  | 1:D:551:VAL:HG23 | 1.69                     | 0.58              |
| 1:A:284:LEU:HD13 | 1:A:287:TRP:N    | 2.19                     | 0.58              |
| 1:A:342:THR:HB   | 1:A:345:LEU:HD13 | 1.84                     | 0.58              |
| 1:D:204:CYS:HA   | 1:D:207:LEU:HB3  | 1.85                     | 0.58              |
| 2:F:135:LEU:HD22 | 2:F:182:LEU:HB2  | 1.84                     | 0.58              |
| 1:A:207:LEU:HD11 | 1:A:245:ILE:HG13 | 1.84                     | 0.58              |
| 1:A:331:GLY:HA2  | 1:A:539:GLY:N    | 2.18                     | 0.58              |
| 1:D:114:THR:OG1  | 2:E:141:ASP:OD2  | 2.18                     | 0.58              |
| 1:D:153:GLN:HE21 | 1:D:171:ARG:HG3  | 1.68                     | 0.58              |
| 1:D:503:ASP:OD1  | 1:D:504:ALA:N    | 2.36                     | 0.58              |
| 2:C:14:MET:HB3   | 7:C:401:HOH:O    | 2.03                     | 0.58              |
| 2:C:84:PHE:HD1   | 2:C:85:PHE:N     | 2.02                     | 0.58              |
| 1:D:148:ILE:HB   | 1:D:170:TYR:CE2  | 2.39                     | 0.58              |
| 1:D:231:PHE:CZ   | 1:D:291:ILE:HG12 | 2.39                     | 0.58              |
| 1:D:445:VAL:HG21 | 1:D:462:PHE:CG   | 2.38                     | 0.58              |
| 1:A:32:LEU:HD22  | 1:A:61:PHE:CE2   | 2.39                     | 0.58              |
| 1:A:276:THR:OG1  | 1:A:277:ILE:N    | 2.35                     | 0.58              |
| 2:B:35:GLU:HG2   | 7:B:404:HOH:O    | 2.04                     | 0.58              |
| 2:B:153:VAL:O    | 2:B:156:SER:OG   | 2.19                     | 0.58              |
| 1:D:10:MET:O     | 1:D:14:ILE:HG23  | 2.04                     | 0.58              |
| 1:D:197:ASP:OD2  | 1:D:256:VAL:HB   | 2.04                     | 0.58              |
| 1:D:510:ARG:HH11 | 1:D:510:ARG:HG3  | 1.69                     | 0.58              |
| 2:E:62:LYS:HB3   | 2:F:90:TYR:CE1   | 2.39                     | 0.58              |
| 1:A:143:LYS:NZ   | 1:A:212:PHE:CG   | 2.72                     | 0.57              |
| 1:D:244:ASP:OD1  | 1:D:251:SER:HB3  | 2.03                     | 0.57              |
| 2:E:169:LYS:O    | 7:E:411:HOH:O    | 2.17                     | 0.57              |
| 2:B:122:GLU:O    | 2:B:125:LYS:HG3  | 2.04                     | 0.57              |
| 1:D:153:GLN:H    | 1:D:564:GLU:HB2  | 1.69                     | 0.57              |
| 1:D:506:TYR:CE1  | 1:D:510:ARG:HD3  | 2.39                     | 0.57              |
| 1:D:562:LEU:HD23 | 1:D:563:CYS:N    | 2.19                     | 0.57              |
| 1:A:152:LYS:HZ1  | 1:A:527:THR:HG22 | 1.69                     | 0.57              |
| 1:D:138:ILE:HA   | 1:D:217:GLN:NE2  | 2.18                     | 0.57              |
| 2:F:166:ALA:HA   | 2:F:169:LYS:HG2  | 1.85                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:81:LYS:O     | 2:B:83:PRO:HD3   | 2.03                     | 0.57              |
| 1:D:31:THR:HA    | 1:D:34:GLU:HG2   | 1.86                     | 0.57              |
| 2:B:21:VAL:HG11  | 2:B:158:ILE:CD1  | 2.33                     | 0.57              |
| 1:D:172:ASN:H    | 1:D:175:PHE:HE2  | 1.52                     | 0.57              |
| 1:D:520:LEU:HG   | 1:D:522:VAL:HG23 | 1.85                     | 0.57              |
| 2:E:169:LYS:NZ   | 2:E:206:VAL:HG21 | 2.18                     | 0.57              |
| 1:A:225:HIS:HB3  | 1:A:309:MET:SD   | 2.45                     | 0.57              |
| 2:C:110:GLN:O    | 2:C:114:TRP:HD1  | 1.87                     | 0.57              |
| 1:D:451:ARG:NE   | 1:D:452:LEU:HD13 | 2.18                     | 0.57              |
| 1:D:518:LEU:N    | 7:D:702:HOH:O    | 2.31                     | 0.57              |
| 2:E:68:LEU:HD11  | 2:E:152:TYR:CE1  | 2.40                     | 0.57              |
| 2:E:180:PRO:HD2  | 2:E:181:LYS:HG2  | 1.85                     | 0.57              |
| 7:E:404:HOH:O    | 2:F:68:LEU:HD11  | 2.04                     | 0.57              |
| 2:B:112:LYS:HD2  | 2:B:116:LYS:CE   | 2.34                     | 0.57              |
| 2:C:164:PHE:CD2  | 2:C:183:ILE:HG22 | 2.40                     | 0.57              |
| 1:D:56:ASP:O     | 1:D:59:GLU:HG2   | 2.05                     | 0.57              |
| 2:F:43:LEU:HD12  | 2:F:44:LEU:H     | 1.69                     | 0.57              |
| 1:A:95:PRO:O     | 1:A:161:PRO:HG2  | 2.04                     | 0.57              |
| 1:A:148:ILE:HB   | 1:A:170:TYR:CE2  | 2.40                     | 0.57              |
| 1:A:353:ALA:HB2  | 1:A:413:TYR:HD2  | 1.68                     | 0.57              |
| 1:A:86:SER:HB2   | 2:B:188:ARG:HH21 | 1.68                     | 0.57              |
| 1:A:361:PHE:CZ   | 1:A:379:LEU:HD13 | 2.40                     | 0.57              |
| 1:A:528:PHE:O    | 1:A:532:GLN:HG3  | 2.05                     | 0.57              |
| 4:A:602:ILE:O    | 4:A:602:ILE:HG23 | 2.04                     | 0.57              |
| 2:B:169:LYS:NZ   | 2:B:206:VAL:HG11 | 2.18                     | 0.57              |
| 1:D:77:ILE:O     | 1:D:81:VAL:HG23  | 2.05                     | 0.57              |
| 1:D:98:SER:HG    | 1:D:113:PHE:HE1  | 1.51                     | 0.57              |
| 1:D:330:TYR:HB3  | 1:D:338:ALA:HB3  | 1.87                     | 0.57              |
| 2:E:16:GLY:HA2   | 2:E:55:PRO:HB3   | 1.86                     | 0.57              |
| 2:C:112:LYS:HB3  | 7:C:421:HOH:O    | 2.03                     | 0.57              |
| 1:D:250:LEU:HD21 | 1:D:254:ILE:HB   | 1.86                     | 0.57              |
| 2:E:121:GLN:O    | 2:E:125:LYS:HG2  | 2.04                     | 0.57              |
| 2:F:70:VAL:O     | 2:F:74:VAL:HG23  | 2.05                     | 0.57              |
| 2:F:187:LYS:HA   | 2:F:190:MET:HB2  | 1.87                     | 0.57              |
| 2:F:110:GLN:O    | 2:F:114:TRP:HD1  | 1.88                     | 0.56              |
| 2:F:154:ASP:HA   | 2:F:185:TRP:CZ2  | 2.40                     | 0.56              |
| 1:A:41:SER:N     | 2:B:142:LYS:HE3  | 2.20                     | 0.56              |
| 1:A:228:VAL:HG12 | 1:A:232:ARG:NH1  | 2.20                     | 0.56              |
| 2:B:202:SER:O    | 2:B:205:ILE:HG13 | 2.06                     | 0.56              |
| 2:C:35:GLU:HB3   | 7:C:451:HOH:O    | 2.04                     | 0.56              |
| 2:C:121:GLN:HA   | 7:C:421:HOH:O    | 2.05                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:76:TYR:HB3   | 1:D:88:ILE:HB    | 1.87                     | 0.56              |
| 1:D:528:PHE:HE2  | 1:D:549:ARG:HH12 | 1.53                     | 0.56              |
| 1:A:99:LEU:HD13  | 1:A:555:ASN:OD1  | 2.04                     | 0.56              |
| 1:A:222:VAL:O    | 1:A:223:PHE:HD1  | 1.89                     | 0.56              |
| 1:A:361:PHE:CE1  | 1:A:379:LEU:HB2  | 2.41                     | 0.56              |
| 1:A:478:PHE:CE1  | 1:A:521:ARG:HB2  | 2.40                     | 0.56              |
| 2:C:64:VAL:HG13  | 2:C:73:TYR:HD2   | 1.70                     | 0.56              |
| 2:C:75:ASP:HB2   | 2:C:84:PHE:CE2   | 2.40                     | 0.56              |
| 1:D:65:VAL:HG11  | 1:D:400:ARG:NH1  | 2.20                     | 0.56              |
| 1:D:172:ASN:CG   | 1:D:173:PRO:HD2  | 2.25                     | 0.56              |
| 1:D:416:THR:N    | 7:D:722:HOH:O    | 2.37                     | 0.56              |
| 2:E:130:GLU:O    | 2:E:134:ILE:HG12 | 2.05                     | 0.56              |
| 2:F:125:LYS:NZ   | 2:F:129:ILE:HG21 | 2.21                     | 0.56              |
| 2:F:135:LEU:CD2  | 2:F:182:LEU:HD12 | 2.34                     | 0.56              |
| 2:E:68:LEU:HD11  | 2:E:152:TYR:OH   | 2.05                     | 0.56              |
| 1:A:25:HIS:HA    | 1:A:28:GLN:HG2   | 1.86                     | 0.56              |
| 1:A:112:PRO:HG2  | 1:A:397:GLY:HA3  | 1.86                     | 0.56              |
| 1:A:153:GLN:NE2  | 1:A:171:ARG:HG2  | 2.19                     | 0.56              |
| 1:A:219:VAL:HG21 | 1:A:231:PHE:CZ   | 2.41                     | 0.56              |
| 1:D:92:HIS:CE1   | 2:E:185:TRP:HB2  | 2.41                     | 0.56              |
| 2:E:85:PHE:HB2   | 2:E:92:ARG:HG2   | 1.87                     | 0.56              |
| 2:E:150:PHE:HE2  | 2:E:192:LYS:HG3  | 1.70                     | 0.56              |
| 1:A:522:VAL:HB   | 1:A:568:SER:OG   | 2.06                     | 0.56              |
| 1:D:32:LEU:HD22  | 1:D:61:PHE:CE2   | 2.41                     | 0.56              |
| 1:D:96:ALA:HB3   | 1:D:113:PHE:CD2  | 2.41                     | 0.56              |
| 1:D:203:TYR:HA   | 1:D:206:LEU:HD12 | 1.88                     | 0.56              |
| 1:D:364:LEU:HB3  | 1:D:389:GLU:HG2  | 1.87                     | 0.56              |
| 1:A:150:SER:OG   | 1:A:170:TYR:HB2  | 2.06                     | 0.56              |
| 2:B:40:LYS:HZ3   | 2:B:52:LYS:HD2   | 1.70                     | 0.56              |
| 1:D:111:ILE:HD11 | 1:D:334:GLU:OE2  | 2.06                     | 0.56              |
| 1:D:213:ARG:HA   | 1:D:216:VAL:HG13 | 1.86                     | 0.56              |
| 2:F:84:PHE:HE1   | 2:F:85:PHE:CE2   | 2.23                     | 0.56              |
| 1:A:13:VAL:HA    | 1:A:16:GLU:OE2   | 2.04                     | 0.56              |
| 1:A:143:LYS:NZ   | 1:A:212:PHE:CA   | 2.69                     | 0.56              |
| 1:A:228:VAL:HA   | 1:A:319:TYR:CE2  | 2.41                     | 0.56              |
| 2:E:26:LYS:HE2   | 2:E:78:TRP:HB3   | 1.88                     | 0.56              |
| 1:A:286:ASN:O    | 1:A:287:TRP:HB3  | 2.06                     | 0.56              |
| 2:B:203:GLU:O    | 2:B:206:VAL:HG22 | 2.06                     | 0.56              |
| 2:C:40:LYS:HA    | 7:C:451:HOH:O    | 2.05                     | 0.56              |
| 2:C:85:PHE:CD2   | 2:C:92:ARG:HG2   | 2.41                     | 0.56              |
| 1:D:90:THR:HG23  | 1:D:397:GLY:HA2  | 1.88                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:151:SER:HB2  | 1:D:194:PHE:HA   | 1.87                     | 0.56              |
| 1:D:365:PRO:HB2  | 1:D:374:GLU:HG2  | 1.88                     | 0.56              |
| 1:A:87:PRO:HD2   | 2:B:188:ARG:CB   | 2.35                     | 0.56              |
| 1:A:199:HIS:HB2  | 1:A:525:LYS:HE3  | 1.88                     | 0.56              |
| 1:D:46:GLN:HB2   | 2:E:148:ASP:CB   | 2.36                     | 0.56              |
| 1:D:150:SER:OG   | 1:D:170:TYR:HB2  | 2.06                     | 0.56              |
| 1:A:111:ILE:HG21 | 1:A:398:LEU:HD21 | 1.87                     | 0.55              |
| 1:A:152:LYS:HE3  | 1:A:565:ASN:HB2  | 1.88                     | 0.55              |
| 2:C:176:GLU:HG2  | 1:D:573:THR:HG21 | 1.88                     | 0.55              |
| 1:D:9:ASP:OD1    | 7:D:717:HOH:O    | 2.18                     | 0.55              |
| 1:D:238:TRP:O    | 1:D:242:VAL:HG23 | 2.06                     | 0.55              |
| 1:D:361:PHE:HD1  | 1:D:392:ILE:HG12 | 1.71                     | 0.55              |
| 1:A:203:TYR:CE1  | 1:A:241:ILE:HG13 | 2.42                     | 0.55              |
| 1:A:222:VAL:HA   | 1:A:328:HIS:NE2  | 2.22                     | 0.55              |
| 1:A:423:CYS:HG   | 1:A:541:SER:HG   | 1.54                     | 0.55              |
| 1:A:445:VAL:HG21 | 1:A:462:PHE:CG   | 2.41                     | 0.55              |
| 1:A:555:ASN:O    | 1:A:559:LEU:HD22 | 2.05                     | 0.55              |
| 2:C:110:GLN:O    | 2:C:114:TRP:CD1  | 2.59                     | 0.55              |
| 1:D:446:GLU:O    | 1:D:450:LYS:NZ   | 2.35                     | 0.55              |
| 1:D:574:ALA:O    | 1:D:575:PHE:HB2  | 2.06                     | 0.55              |
| 2:C:188:ARG:HB2  | 1:D:499:ARG:HH22 | 1.68                     | 0.55              |
| 2:B:62:LYS:HD3   | 2:C:90:TYR:CD2   | 2.41                     | 0.55              |
| 1:D:26:GLN:HG3   | 1:D:27:VAL:N     | 2.22                     | 0.55              |
| 1:D:228:VAL:HA   | 1:D:319:TYR:HE2  | 1.72                     | 0.55              |
| 1:D:563:CYS:O    | 1:D:566:VAL:HG12 | 2.05                     | 0.55              |
| 1:A:22:ARG:HA    | 1:A:415:ASN:CB   | 2.35                     | 0.55              |
| 1:A:29:LYS:HG3   | 1:A:30:GLN:N     | 2.21                     | 0.55              |
| 1:A:114:THR:HB   | 1:A:116:GLU:CD   | 2.27                     | 0.55              |
| 1:A:361:PHE:HZ   | 1:A:379:LEU:HD13 | 1.70                     | 0.55              |
| 2:B:116:LYS:O    | 2:B:213:ARG:NH2  | 2.40                     | 0.55              |
| 2:C:139:LEU:HG   | 2:C:145:PHE:CE1  | 2.42                     | 0.55              |
| 1:D:15:ASP:HA    | 1:D:18:ASP:OD2   | 2.06                     | 0.55              |
| 1:D:105:GLN:HB2  | 1:D:107:ARG:NH1  | 2.21                     | 0.55              |
| 1:D:368:GLU:HG3  | 1:D:369:THR:HG23 | 1.89                     | 0.55              |
| 2:E:89:PRO:HB3   | 2:F:76:GLU:HG2   | 1.87                     | 0.55              |
| 1:A:223:PHE:HZ   | 1:A:536:LEU:HB2  | 1.69                     | 0.55              |
| 2:B:150:PHE:CZ   | 2:B:158:ILE:HG21 | 2.40                     | 0.55              |
| 2:C:8:LEU:HG     | 2:C:56:VAL:HB    | 1.88                     | 0.55              |
| 2:C:28:VAL:HG21  | 2:C:78:TRP:CZ3   | 2.41                     | 0.55              |
| 1:D:128:ALA:HA   | 1:D:131:PHE:CE2  | 2.41                     | 0.55              |
| 1:D:338:ALA:HA   | 1:D:354:VAL:HA   | 1.89                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:40:LYS:HZ2   | 2:E:52:LYS:HD2   | 1.70                     | 0.55              |
| 2:F:81:LYS:HG3   | 2:F:82:ASN:H     | 1.71                     | 0.55              |
| 2:F:195:VAL:O    | 2:F:199:LEU:HG   | 2.06                     | 0.55              |
| 1:A:41:SER:H     | 2:B:142:LYS:HE3  | 1.71                     | 0.55              |
| 1:D:519:GLU:OE2  | 1:D:521:ARG:NH2  | 2.37                     | 0.55              |
| 1:D:551:VAL:HG12 | 1:D:555:ASN:HD22 | 1.71                     | 0.55              |
| 2:B:19:ALA:HB2   | 2:B:70:VAL:HG11  | 1.89                     | 0.55              |
| 1:D:451:ARG:HH12 | 1:D:490:LEU:C    | 2.09                     | 0.55              |
| 2:F:32:TYR:HD2   | 2:F:34:GLU:OE2   | 1.90                     | 0.55              |
| 1:A:152:LYS:CG   | 1:A:565:ASN:HB2  | 2.35                     | 0.55              |
| 1:A:478:PHE:HE1  | 1:A:521:ARG:HB2  | 1.72                     | 0.55              |
| 1:D:234:PHE:HD2  | 1:D:287:TRP:HH2  | 1.54                     | 0.55              |
| 1:D:269:PRO:O    | 1:D:270:ASN:ND2  | 2.40                     | 0.55              |
| 1:D:199:HIS:HB2  | 1:D:525:LYS:HE3  | 1.89                     | 0.55              |
| 1:D:223:PHE:CE2  | 1:D:533:GLU:HA   | 2.42                     | 0.55              |
| 2:F:37:PHE:CZ    | 2:F:54:ILE:HG12  | 2.39                     | 0.55              |
| 2:F:96:ARG:NH2   | 7:F:424:HOH:O    | 2.38                     | 0.55              |
| 2:F:151:GLY:N    | 2:F:154:ASP:OD2  | 2.40                     | 0.55              |
| 2:C:5:PRO:HG2    | 2:C:30:PHE:HB3   | 1.89                     | 0.54              |
| 1:D:22:ARG:HG2   | 1:D:414:ASN:HB3  | 1.88                     | 0.54              |
| 1:D:132:ARG:HA   | 1:D:343:PRO:HG2  | 1.88                     | 0.54              |
| 2:F:132:VAL:HG22 | 2:F:179:SER:HB3  | 1.89                     | 0.54              |
| 1:A:250:LEU:HD21 | 1:A:254:ILE:HB   | 1.89                     | 0.54              |
| 1:A:281:CYS:O    | 1:A:284:LEU:HG   | 2.06                     | 0.54              |
| 1:D:76:TYR:HB3   | 1:D:88:ILE:CG2   | 2.38                     | 0.54              |
| 1:D:223:PHE:CE1  | 1:D:536:LEU:HB2  | 2.41                     | 0.54              |
| 1:D:336:TRP:HB2  | 1:D:358:LEU:HD13 | 1.90                     | 0.54              |
| 2:E:11:TRP:HH2   | 2:E:208:TYR:CD1  | 2.25                     | 0.54              |
| 1:A:152:LYS:HZ3  | 1:A:527:THR:HG22 | 1.72                     | 0.54              |
| 1:A:224:ALA:O    | 1:A:228:VAL:HG23 | 2.07                     | 0.54              |
| 1:A:445:VAL:HG21 | 1:A:462:PHE:CD1  | 2.43                     | 0.54              |
| 2:B:108:ASP:O    | 2:B:111:PHE:HB3  | 2.06                     | 0.54              |
| 1:D:8:PHE:HE1    | 1:D:130:ALA:HB2  | 1.72                     | 0.54              |
| 1:D:164:THR:OG1  | 1:D:557:LYS:O    | 2.15                     | 0.54              |
| 1:A:120:ASN:O    | 1:A:124:LEU:HG   | 2.08                     | 0.54              |
| 1:D:34:GLU:O     | 1:D:38:LYS:HG2   | 2.05                     | 0.54              |
| 1:D:154:TYR:OH   | 1:D:162:VAL:HG22 | 2.07                     | 0.54              |
| 1:D:405:ASP:OD2  | 1:D:540:SER:HB2  | 2.08                     | 0.54              |
| 1:A:211:LEU:HD12 | 1:A:212:PHE:HD2  | 1.72                     | 0.54              |
| 2:B:139:LEU:O    | 2:B:141:ASP:N    | 2.41                     | 0.54              |
| 2:C:188:ARG:HE   | 1:D:499:ARG:NH2  | 2.04                     | 0.54              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:C:212:TYR:CZ   | 2:C:213:ARG:HG3  | 2.43                     | 0.54              |
| 1:D:8:PHE:CE1    | 1:D:130:ALA:HB2  | 2.41                     | 0.54              |
| 1:D:171:ARG:HH21 | 1:D:194:PHE:HB3  | 1.73                     | 0.54              |
| 1:D:179:MET:SD   | 7:D:811:HOH:O    | 2.58                     | 0.54              |
| 1:D:506:TYR:CZ   | 1:D:510:ARG:HD3  | 2.41                     | 0.54              |
| 2:E:122:GLU:HG3  | 2:E:123:ALA:N    | 2.23                     | 0.54              |
| 1:A:317:ARG:O    | 1:A:321:GLY:N    | 2.37                     | 0.54              |
| 2:B:176:GLU:HB2  | 2:B:183:ILE:HG21 | 1.89                     | 0.54              |
| 1:D:332:SER:CB   | 1:D:538:LEU:HA   | 2.35                     | 0.54              |
| 1:D:365:PRO:HG2  | 1:D:374:GLU:HG2  | 1.89                     | 0.54              |
| 1:D:365:PRO:HG3  | 1:D:388:TYR:CE2  | 2.42                     | 0.54              |
| 1:D:475:TYR:CE1  | 1:D:515:ILE:HD12 | 2.43                     | 0.54              |
| 2:F:66:GLU:O     | 2:F:70:VAL:HG23  | 2.08                     | 0.54              |
| 1:A:200:GLN:HE21 | 1:A:254:ILE:HG23 | 1.72                     | 0.54              |
| 1:A:444:SER:HA   | 1:A:500:ALA:HB1  | 1.90                     | 0.54              |
| 1:D:152:LYS:HB3  | 1:D:560:GLN:O    | 2.07                     | 0.54              |
| 1:D:224:ALA:O    | 1:D:228:VAL:HG23 | 2.08                     | 0.54              |
| 1:D:445:VAL:HG21 | 1:D:462:PHE:CB   | 2.37                     | 0.54              |
| 1:D:465:TYR:HB2  | 1:D:551:VAL:HG22 | 1.90                     | 0.54              |
| 2:E:75:ASP:OD2   | 2:E:85:PHE:CD2   | 2.61                     | 0.54              |
| 2:E:169:LYS:HZ1  | 2:E:206:VAL:HG21 | 1.73                     | 0.54              |
| 2:F:140:GLY:HA2  | 2:F:181:LYS:HZ1  | 1.72                     | 0.54              |
| 1:A:160:VAL:N    | 7:A:725:HOH:O    | 2.20                     | 0.54              |
| 1:D:41:SER:H     | 2:E:142:LYS:HE2  | 1.72                     | 0.54              |
| 1:D:151:SER:O    | 1:D:151:SER:OG   | 2.25                     | 0.54              |
| 2:F:125:LYS:HA   | 2:F:128:PHE:CE2  | 2.42                     | 0.54              |
| 2:B:110:GLN:HB2  | 2:B:167:TYR:CZ   | 2.43                     | 0.54              |
| 2:C:98:TRP:CE3   | 2:C:101:PHE:HB2  | 2.42                     | 0.54              |
| 1:D:504:ALA:C    | 1:D:507:VAL:HG13 | 2.27                     | 0.54              |
| 2:F:16:GLY:HA2   | 2:F:55:PRO:HG3   | 1.89                     | 0.54              |
| 1:A:265:LYS:NZ   | 1:A:266:LEU:HG   | 2.22                     | 0.54              |
| 1:A:541:SER:O    | 1:A:544:GLN:NE2  | 2.41                     | 0.54              |
| 2:C:206:VAL:O    | 2:C:209:ALA:HB3  | 2.08                     | 0.54              |
| 1:D:143:LYS:HE3  | 1:D:187:CYS:CA   | 2.38                     | 0.54              |
| 1:D:186:SER:HA   | 7:D:720:HOH:O    | 2.08                     | 0.54              |
| 1:D:477:ILE:HD13 | 1:D:497:LEU:HD22 | 1.89                     | 0.54              |
| 2:E:185:TRP:O    | 2:E:188:ARG:HG2  | 2.08                     | 0.54              |
| 2:B:133:LYS:O    | 2:B:137:SER:N    | 2.39                     | 0.53              |
| 1:D:198:VAL:HG23 | 1:D:524:ALA:CB   | 2.33                     | 0.53              |
| 1:D:213:ARG:HG3  | 1:D:214:ASP:N    | 2.23                     | 0.53              |
| 1:D:493:CYS:SG   | 1:D:520:LEU:HD22 | 2.48                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:F:125:LYS:O    | 2:F:129:ILE:HG23 | 2.07                     | 0.53              |
| 1:A:403:LEU:HD21 | 1:A:538:LEU:HD21 | 1.89                     | 0.53              |
| 2:B:150:PHE:CZ   | 2:B:158:ILE:HD13 | 2.43                     | 0.53              |
| 2:C:11:TRP:CG    | 2:C:12:PRO:HD3   | 2.43                     | 0.53              |
| 2:C:21:VAL:HG12  | 2:C:155:ILE:HG12 | 1.89                     | 0.53              |
| 1:D:200:GLN:OE1  | 1:D:255:THR:N    | 2.40                     | 0.53              |
| 1:D:221:ALA:HB2  | 1:D:227:LEU:HG   | 1.91                     | 0.53              |
| 1:A:10:MET:O     | 1:A:14:ILE:HG22  | 2.07                     | 0.53              |
| 1:A:104:SER:O    | 1:A:107:ARG:HB2  | 2.09                     | 0.53              |
| 1:A:223:PHE:CZ   | 1:A:536:LEU:HB2  | 2.43                     | 0.53              |
| 1:A:508:SER:HB2  | 7:A:831:HOH:O    | 2.07                     | 0.53              |
| 2:B:15:PHE:HB3   | 2:B:67:SER:HB3   | 1.90                     | 0.53              |
| 2:C:176:GLU:CD   | 1:D:491:GLN:HG2  | 2.28                     | 0.53              |
| 1:D:536:LEU:HG   | 1:D:545:PHE:CE1  | 2.43                     | 0.53              |
| 1:A:425:ARG:HE   | 1:A:546:LYS:HD2  | 1.73                     | 0.53              |
| 2:C:66:GLU:HB2   | 2:C:69:ASN:HB2   | 1.89                     | 0.53              |
| 1:D:198:VAL:HB   | 1:D:202:LEU:HD21 | 1.89                     | 0.53              |
| 2:E:15:PHE:HB3   | 2:E:67:SER:HB3   | 1.90                     | 0.53              |
| 1:A:31:THR:OG1   | 1:A:357:ASN:HA   | 2.08                     | 0.53              |
| 2:C:81:LYS:HG3   | 2:C:82:ASN:H     | 1.74                     | 0.53              |
| 2:C:133:LYS:O    | 2:C:136:GLU:HB3  | 2.08                     | 0.53              |
| 2:E:110:GLN:OE1  | 2:E:167:TYR:OH   | 2.26                     | 0.53              |
| 1:A:142:GLY:O    | 1:A:185:PRO:HD2  | 2.09                     | 0.53              |
| 1:A:219:VAL:HG21 | 1:A:231:PHE:HZ   | 1.72                     | 0.53              |
| 1:D:235:GLU:HG2  | 1:D:287:TRP:CD2  | 2.43                     | 0.53              |
| 1:D:496:CYS:CA   | 1:D:499:ARG:NH1  | 2.72                     | 0.53              |
| 1:A:86:SER:HA    | 2:B:188:ARG:HB2  | 1.89                     | 0.53              |
| 1:A:441:LEU:HA   | 1:A:501:PHE:HE1  | 1.72                     | 0.53              |
| 1:A:448:ALA:CB   | 1:A:496:CYS:HB3  | 2.39                     | 0.53              |
| 2:C:70:VAL:O     | 2:C:73:TYR:HB2   | 2.09                     | 0.53              |
| 2:C:84:PHE:HB2   | 2:C:151:GLY:C    | 2.28                     | 0.53              |
| 1:D:14:ILE:HG21  | 1:D:134:ARG:NH1  | 2.24                     | 0.53              |
| 1:D:233:THR:O    | 1:D:237:VAL:HG22 | 2.08                     | 0.53              |
| 1:D:329:ASP:N    | 1:D:329:ASP:OD1  | 2.42                     | 0.53              |
| 1:D:451:ARG:CZ   | 1:D:490:LEU:HA   | 2.39                     | 0.53              |
| 1:D:509:SER:O    | 1:D:513:LYS:N    | 2.42                     | 0.53              |
| 2:E:88:ASP:OD1   | 2:E:91:GLY:N     | 2.36                     | 0.53              |
| 2:E:142:LYS:HD2  | 2:E:144:TYR:O    | 2.08                     | 0.53              |
| 2:F:10:TYR:CG    | 2:F:37:PHE:HE1   | 2.27                     | 0.53              |
| 2:F:183:ILE:O    | 2:F:183:ILE:HG13 | 2.09                     | 0.53              |
| 1:A:79:ARG:HG2   | 1:A:86:SER:OG    | 2.09                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:413:TYR:CD2  | 1:A:418:GLN:HG2  | 2.44                     | 0.53              |
| 1:A:435:LYS:HE2  | 1:A:437:THR:HA   | 1.91                     | 0.53              |
| 1:A:440:ASP:HA   | 1:A:443:LEU:HB2  | 1.90                     | 0.53              |
| 1:D:37:LEU:O     | 7:E:403:HOH:O    | 2.19                     | 0.53              |
| 1:D:365:PRO:HA   | 1:D:388:TYR:CD1  | 2.42                     | 0.53              |
| 1:D:526:GLY:HA2  | 1:D:529:ARG:CZ   | 2.39                     | 0.53              |
| 1:D:538:LEU:HD23 | 1:D:544:GLN:HG2  | 1.90                     | 0.53              |
| 1:A:47:ASN:O     | 7:A:721:HOH:O    | 2.18                     | 0.53              |
| 1:A:199:HIS:N    | 1:A:524:ALA:HB1  | 2.21                     | 0.53              |
| 1:A:466:ILE:CG1  | 1:A:552:LYS:HA   | 2.38                     | 0.53              |
| 1:D:92:HIS:ND1   | 2:E:188:ARG:NH2  | 2.56                     | 0.53              |
| 1:D:110:PHE:HE1  | 1:D:556:ALA:HB2  | 1.74                     | 0.53              |
| 2:E:73:TYR:HE1   | 2:F:90:TYR:HA    | 1.73                     | 0.53              |
| 1:A:231:PHE:O    | 1:A:235:GLU:HG3  | 2.08                     | 0.53              |
| 1:A:386:GLU:N    | 7:A:733:HOH:O    | 2.42                     | 0.53              |
| 2:B:96:ARG:NH1   | 2:C:76:GLU:OE2   | 2.41                     | 0.53              |
| 1:D:152:LYS:HD3  | 1:D:561:ILE:HA   | 1.91                     | 0.53              |
| 1:D:154:TYR:HE2  | 1:D:162:VAL:O    | 1.92                     | 0.53              |
| 1:D:211:LEU:HD13 | 1:D:212:PHE:HD1  | 1.74                     | 0.53              |
| 1:D:365:PRO:HG3  | 1:D:388:TYR:CZ   | 2.44                     | 0.53              |
| 2:E:130:GLU:HA   | 2:E:133:LYS:HE3  | 1.90                     | 0.53              |
| 2:E:155:ILE:HA   | 2:E:158:ILE:HG12 | 1.91                     | 0.53              |
| 2:F:40:LYS:HB2   | 2:F:45:LEU:HD11  | 1.90                     | 0.53              |
| 2:F:128:PHE:HE1  | 2:F:175:ILE:HG22 | 1.71                     | 0.53              |
| 2:F:165:GLN:HG3  | 2:F:202:SER:OG   | 2.09                     | 0.53              |
| 1:A:143:LYS:CA   | 1:A:184:SER:HB2  | 2.40                     | 0.52              |
| 1:A:164:THR:HG23 | 1:A:560:GLN:HB2  | 1.91                     | 0.52              |
| 2:B:67:SER:O     | 2:B:70:VAL:HG12  | 2.09                     | 0.52              |
| 1:D:29:LYS:NZ    | 1:D:58:GLU:CD    | 2.61                     | 0.52              |
| 1:D:91:GLY:HA3   | 2:E:141:ASP:O    | 2.08                     | 0.52              |
| 1:D:162:VAL:HG23 | 1:D:556:ALA:HB1  | 1.90                     | 0.52              |
| 1:D:312:TYR:CD1  | 1:D:315:LYS:HD2  | 2.44                     | 0.52              |
| 2:E:20:ARG:HB2   | 7:E:402:HOH:O    | 2.08                     | 0.52              |
| 1:A:41:SER:HB2   | 2:B:142:LYS:CG   | 2.35                     | 0.52              |
| 1:A:451:ARG:O    | 1:A:454:GLU:HG2  | 2.09                     | 0.52              |
| 1:D:12:ARG:HH12  | 1:D:126:ARG:HH21 | 1.57                     | 0.52              |
| 1:A:224:ALA:HA   | 1:A:316:LEU:HD22 | 1.91                     | 0.52              |
| 1:A:437:THR:O    | 1:A:440:ASP:N    | 2.42                     | 0.52              |
| 1:A:521:ARG:HG2  | 1:A:569:SER:OG   | 2.09                     | 0.52              |
| 2:B:18:ARG:NE    | 2:B:156:SER:O    | 2.42                     | 0.52              |
| 2:C:8:LEU:HD13   | 2:C:44:LEU:HB2   | 1.91                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:199:HIS:HB3  | 1:D:525:LYS:H    | 1.74                     | 0.52              |
| 1:D:217:GLN:OE1  | 1:D:217:GLN:HA   | 2.08                     | 0.52              |
| 1:D:234:PHE:HD2  | 1:D:287:TRP:CH2  | 2.28                     | 0.52              |
| 1:D:493:CYS:O    | 1:D:497:LEU:HD12 | 2.10                     | 0.52              |
| 1:D:531:ILE:HA   | 1:D:534:HIS:ND1  | 2.25                     | 0.52              |
| 2:E:97:PHE:HE1   | 2:F:65:CYS:O     | 1.93                     | 0.52              |
| 2:E:122:GLU:HG3  | 2:E:123:ALA:H    | 1.74                     | 0.52              |
| 1:A:294:LEU:HD12 | 1:A:295:PHE:N    | 2.24                     | 0.52              |
| 1:A:303:GLY:O    | 1:A:327:SER:HA   | 2.09                     | 0.52              |
| 1:D:87:PRO:CD    | 1:D:93:PRO:HG3   | 2.40                     | 0.52              |
| 1:D:435:LYS:HA   | 1:D:436:ASN:HB2  | 1.92                     | 0.52              |
| 2:E:86:PRO:HD3   | 2:E:146:GLY:O    | 2.09                     | 0.52              |
| 1:A:86:SER:HB2   | 2:B:188:ARG:NH2  | 2.25                     | 0.52              |
| 1:A:238:TRP:HZ2  | 1:A:282:MET:CE   | 2.23                     | 0.52              |
| 1:D:442:GLN:HG2  | 1:D:462:PHE:HZ   | 1.72                     | 0.52              |
| 2:E:99:ALA:HA    | 2:E:102:VAL:HG12 | 1.92                     | 0.52              |
| 2:E:150:PHE:HE2  | 2:E:192:LYS:CG   | 2.21                     | 0.52              |
| 6:E:301:GSH:OE1  | 7:E:413:HOH:O    | 2.19                     | 0.52              |
| 1:A:26:GLN:O     | 1:A:29:LYS:HG3   | 2.10                     | 0.52              |
| 1:A:96:ALA:C     | 1:A:97:ILE:HG13  | 2.28                     | 0.52              |
| 1:A:192:VAL:HG22 | 1:A:259:VAL:HG23 | 1.91                     | 0.52              |
| 1:A:223:PHE:CZ   | 1:A:533:GLU:HA   | 2.45                     | 0.52              |
| 2:C:187:LYS:HD3  | 1:D:492:ASP:HB3  | 1.91                     | 0.52              |
| 1:D:32:LEU:HD22  | 1:D:61:PHE:HE2   | 1.74                     | 0.52              |
| 1:D:126:ARG:HG3  | 1:D:126:ARG:NH1  | 2.24                     | 0.52              |
| 1:D:149:PHE:HB2  | 1:D:530:LYS:HE3  | 1.92                     | 0.52              |
| 1:D:219:VAL:HB   | 1:D:295:PHE:CZ   | 2.45                     | 0.52              |
| 1:D:307:GLY:O    | 1:D:310:GLU:HG3  | 2.10                     | 0.52              |
| 2:F:9:ASP:OD1    | 2:F:9:ASP:N      | 2.42                     | 0.52              |
| 2:F:110:GLN:O    | 2:F:114:TRP:CD1  | 2.63                     | 0.52              |
| 1:A:71:VAL:HG23  | 1:A:107:ARG:HH22 | 1.74                     | 0.52              |
| 1:A:138:ILE:O    | 7:A:723:HOH:O    | 2.19                     | 0.52              |
| 2:C:88:ASP:HB2   | 7:C:457:HOH:O    | 2.09                     | 0.52              |
| 2:C:139:LEU:O    | 2:C:141:ASP:N    | 2.43                     | 0.52              |
| 2:C:191:GLU:HA   | 1:D:450:LYS:CE   | 2.40                     | 0.52              |
| 1:D:7:THR:OG1    | 7:D:718:HOH:O    | 2.19                     | 0.52              |
| 1:D:30:GLN:OE1   | 1:D:30:GLN:HA    | 2.09                     | 0.52              |
| 1:D:163:GLY:HA3  | 1:D:560:GLN:HB2  | 1.91                     | 0.52              |
| 1:D:213:ARG:HH21 | 1:D:296:PRO:HD3  | 1.74                     | 0.52              |
| 2:E:64:VAL:HG13  | 2:F:93:ALA:HB1   | 1.92                     | 0.52              |
| 2:E:185:TRP:HA   | 2:E:188:ARG:CZ   | 2.39                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 4:A:602:ILE:O    | 7:A:722:HOH:O    | 2.19                     | 0.52              |
| 2:B:98:TRP:CE2   | 2:B:138:GLU:HG2  | 2.45                     | 0.52              |
| 2:B:107:THR:HA   | 2:B:110:GLN:HE21 | 1.73                     | 0.52              |
| 2:C:10:TYR:CG    | 2:C:12:PRO:HD2   | 2.44                     | 0.52              |
| 2:C:111:PHE:HA   | 2:C:114:TRP:NE1  | 2.25                     | 0.52              |
| 2:C:140:GLY:O    | 2:C:181:LYS:NZ   | 2.40                     | 0.52              |
| 1:D:45:LEU:HB3   | 1:D:50:LEU:HB2   | 1.90                     | 0.52              |
| 1:D:51:ASN:N     | 1:D:51:ASN:OD1   | 2.41                     | 0.52              |
| 1:D:445:VAL:HG22 | 1:D:479:TRP:HE1  | 1.75                     | 0.52              |
| 2:E:8:LEU:HD22   | 2:E:35:GLU:OE2   | 2.09                     | 0.52              |
| 2:E:51:HIS:HB3   | 2:E:53:LYS:HE3   | 1.91                     | 0.52              |
| 2:E:67:SER:HA    | 2:E:70:VAL:HG12  | 1.92                     | 0.52              |
| 2:E:125:LYS:HB2  | 2:E:173:PHE:CE2  | 2.44                     | 0.52              |
| 1:A:143:LYS:HA   | 1:A:184:SER:HB2  | 1.91                     | 0.52              |
| 1:A:445:VAL:HG11 | 1:A:462:PHE:CD2  | 2.45                     | 0.52              |
| 2:B:106:PHE:O    | 2:B:110:GLN:HG2  | 2.10                     | 0.52              |
| 1:D:8:PHE:CD1    | 1:D:126:ARG:NH1  | 2.77                     | 0.52              |
| 1:D:57:PRO:HD2   | 1:D:58:GLU:OE2   | 2.10                     | 0.52              |
| 2:E:164:PHE:O    | 2:E:168:GLU:HG2  | 2.10                     | 0.52              |
| 2:E:201:ASP:OD2  | 2:E:204:LYS:HE2  | 2.10                     | 0.52              |
| 2:F:8:LEU:HD22   | 2:F:33:ARG:HD3   | 1.92                     | 0.52              |
| 1:A:315:LYS:O    | 1:A:319:TYR:N    | 2.40                     | 0.52              |
| 1:D:174:ASN:OD1  | 7:D:719:HOH:O    | 2.19                     | 0.52              |
| 1:D:476:ALA:HB1  | 1:D:521:ARG:HD2  | 1.92                     | 0.52              |
| 1:D:523:VAL:HG12 | 1:D:566:VAL:HA   | 1.92                     | 0.52              |
| 1:D:526:GLY:O    | 1:D:530:LYS:HG3  | 2.09                     | 0.52              |
| 1:D:559:LEU:O    | 1:D:562:LEU:HB3  | 2.09                     | 0.52              |
| 2:F:158:ILE:HG23 | 2:F:159:THR:HG23 | 1.92                     | 0.52              |
| 1:A:77:ILE:HG22  | 1:A:110:PHE:CD2  | 2.42                     | 0.51              |
| 2:B:26:LYS:HZ3   | 2:B:28:VAL:HB    | 1.74                     | 0.51              |
| 2:B:54:ILE:HB    | 2:B:55:PRO:HA    | 1.92                     | 0.51              |
| 2:C:64:VAL:HG13  | 2:C:73:TYR:CD2   | 2.45                     | 0.51              |
| 1:D:105:GLN:HB2  | 1:D:107:ARG:HH12 | 1.75                     | 0.51              |
| 1:D:478:PHE:O    | 1:D:479:TRP:HD1  | 1.93                     | 0.51              |
| 1:D:142:GLY:HA2  | 1:D:215:GLN:HB2  | 1.90                     | 0.51              |
| 1:D:506:TYR:CD2  | 1:D:510:ARG:NH1  | 2.78                     | 0.51              |
| 1:D:506:TYR:O    | 1:D:510:ARG:HG3  | 2.09                     | 0.51              |
| 1:A:229:HIS:CG   | 1:A:230:ALA:N    | 2.77                     | 0.51              |
| 1:A:406:VAL:O    | 1:A:541:SER:OG   | 2.27                     | 0.51              |
| 1:D:13:VAL:HB    | 1:D:126:ARG:CZ   | 2.41                     | 0.51              |
| 1:D:448:ALA:HB1  | 1:D:493:CYS:HB2  | 1.91                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:F:24:ARG:HB3   | 2:F:194:SER:HA   | 1.92                     | 0.51              |
| 2:F:131:ALA:HA   | 2:F:134:ILE:HG12 | 1.92                     | 0.51              |
| 2:F:163:TRP:HB3  | 2:F:167:TYR:CE1  | 2.46                     | 0.51              |
| 1:A:38:LYS:HD2   | 2:B:138:GLU:O    | 2.11                     | 0.51              |
| 1:A:168:ASN:O    | 1:A:172:ASN:HB2  | 2.10                     | 0.51              |
| 2:C:196:SER:OG   | 7:C:408:HOH:O    | 2.18                     | 0.51              |
| 1:D:147:PHE:HA   | 1:D:205:HIS:HD2  | 1.70                     | 0.51              |
| 1:D:363:PHE:HD1  | 1:D:390:VAL:HA   | 1.74                     | 0.51              |
| 2:F:33:ARG:HH12  | 2:F:35:GLU:CG    | 2.23                     | 0.51              |
| 1:A:251:SER:O    | 1:A:260:ARG:NH2  | 2.34                     | 0.51              |
| 1:D:133:ASN:HB3  | 7:D:845:HOH:O    | 2.10                     | 0.51              |
| 1:D:166:THR:O    | 1:D:169:VAL:HG12 | 2.11                     | 0.51              |
| 1:D:535:PHE:O    | 1:D:538:LEU:HB3  | 2.10                     | 0.51              |
| 2:E:69:ASN:OD1   | 2:F:96:ARG:NE    | 2.38                     | 0.51              |
| 2:F:17:MET:HE2   | 2:F:200:PRO:HD2  | 1.93                     | 0.51              |
| 1:A:219:VAL:HB   | 1:A:295:PHE:HZ   | 1.71                     | 0.51              |
| 1:A:316:LEU:HD12 | 1:A:319:TYR:HB2  | 1.92                     | 0.51              |
| 2:C:75:ASP:HB2   | 2:C:84:PHE:CZ    | 2.45                     | 0.51              |
| 1:D:92:HIS:H     | 2:E:142:LYS:N    | 2.09                     | 0.51              |
| 1:D:187:CYS:O    | 1:D:208:SER:HB3  | 2.10                     | 0.51              |
| 1:D:228:VAL:O    | 1:D:232:ARG:HG2  | 2.10                     | 0.51              |
| 2:E:94:GLN:HB3   | 2:E:98:TRP:CZ2   | 2.46                     | 0.51              |
| 1:A:156:SER:OG   | 1:A:157:THR:N    | 2.43                     | 0.51              |
| 1:A:212:PHE:HD1  | 1:A:215:GLN:HE21 | 1.58                     | 0.51              |
| 2:B:35:GLU:HG3   | 2:B:44:LEU:HD21  | 1.92                     | 0.51              |
| 1:A:116:GLU:CD   | 1:A:395:TYR:HB3  | 2.31                     | 0.51              |
| 1:A:334:GLU:HG3  | 1:A:538:LEU:HD13 | 1.92                     | 0.51              |
| 1:A:466:ILE:HG13 | 1:A:552:LYS:HA   | 1.92                     | 0.51              |
| 1:A:532:GLN:HG2  | 1:A:547:MET:HE3  | 1.93                     | 0.51              |
| 1:A:556:ALA:HA   | 1:A:559:LEU:HB2  | 1.93                     | 0.51              |
| 2:C:90:TYR:O     | 2:C:94:GLN:HG3   | 2.10                     | 0.51              |
| 1:D:77:ILE:HG21  | 1:D:110:PHE:HB3  | 1.93                     | 0.51              |
| 1:D:255:THR:HA   | 1:D:260:ARG:HD2  | 1.92                     | 0.51              |
| 2:E:183:ILE:HG13 | 2:E:187:LYS:HZ1  | 1.74                     | 0.51              |
| 2:E:210:ALA:O    | 2:E:213:ARG:HB3  | 2.11                     | 0.51              |
| 2:F:43:LEU:HD12  | 2:F:44:LEU:N     | 2.25                     | 0.51              |
| 1:D:33:LYS:O     | 1:D:37:LEU:HB2   | 2.11                     | 0.51              |
| 1:D:363:PHE:CD2  | 1:D:382:VAL:HG21 | 2.31                     | 0.51              |
| 1:A:32:LEU:HB3   | 1:A:61:PHE:HE2   | 1.76                     | 0.51              |
| 1:A:287:TRP:NE1  | 1:A:319:TYR:CD1  | 2.79                     | 0.51              |
| 1:A:448:ALA:HB2  | 1:A:496:CYS:HB3  | 1.92                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:72:GLN:O     | 2:B:76:GLU:HG3   | 2.11                     | 0.51              |
| 2:B:97:PHE:CE2   | 2:B:101:PHE:HE2  | 2.29                     | 0.51              |
| 1:D:164:THR:OG1  | 1:D:561:ILE:HG12 | 2.11                     | 0.51              |
| 2:F:7:LEU:HD22   | 2:F:30:PHE:CD1   | 2.46                     | 0.51              |
| 1:A:77:ILE:CG2   | 1:A:110:PHE:HB3  | 2.41                     | 0.50              |
| 1:A:149:PHE:HD2  | 1:A:530:LYS:HE2  | 1.77                     | 0.50              |
| 1:A:172:ASN:OD1  | 1:A:173:PRO:HD2  | 2.09                     | 0.50              |
| 2:C:8:LEU:HD22   | 2:C:33:ARG:NH2   | 2.26                     | 0.50              |
| 2:C:57:LEU:HB3   | 2:C:64:VAL:HG12  | 1.93                     | 0.50              |
| 2:C:170:PHE:HD1  | 2:C:213:ARG:HH21 | 1.59                     | 0.50              |
| 1:D:124:LEU:HD13 | 1:D:336:TRP:CE3  | 2.45                     | 0.50              |
| 2:E:54:ILE:HB    | 2:E:55:PRO:HA    | 1.93                     | 0.50              |
| 2:E:109:ALA:HB3  | 7:E:416:HOH:O    | 2.11                     | 0.50              |
| 2:E:163:TRP:HA   | 2:E:205:ILE:CD1  | 2.42                     | 0.50              |
| 2:E:185:TRP:HA   | 2:E:188:ARG:NE   | 2.26                     | 0.50              |
| 1:A:203:TYR:HD1  | 1:A:237:VAL:HG21 | 1.74                     | 0.50              |
| 2:B:24:ARG:HG2   | 2:B:197:LYS:HZ1  | 1.76                     | 0.50              |
| 1:D:70:ASP:OD1   | 1:D:71:VAL:N     | 2.44                     | 0.50              |
| 1:A:42:ALA:O     | 1:A:45:LEU:HB2   | 2.11                     | 0.50              |
| 1:A:97:ILE:HG21  | 1:A:110:PHE:CE2  | 2.46                     | 0.50              |
| 1:A:206:LEU:O    | 1:A:210:ILE:HG13 | 2.11                     | 0.50              |
| 2:C:92:ARG:O     | 2:C:96:ARG:HG3   | 2.11                     | 0.50              |
| 2:C:185:TRP:NE1  | 2:C:189:CYS:SG   | 2.85                     | 0.50              |
| 1:A:76:TYR:O     | 1:A:79:ARG:HB3   | 2.11                     | 0.50              |
| 1:D:90:THR:OG1   | 1:D:112:PRO:HG2  | 2.10                     | 0.50              |
| 1:D:328:HIS:CG   | 1:D:329:ASP:H    | 2.28                     | 0.50              |
| 2:E:75:ASP:OD2   | 2:E:85:PHE:HD2   | 1.94                     | 0.50              |
| 2:F:110:GLN:HA   | 2:F:113:VAL:HG12 | 1.93                     | 0.50              |
| 1:A:146:GLN:HB2  | 1:A:148:ILE:HG23 | 1.93                     | 0.50              |
| 1:A:341:VAL:O    | 1:A:343:PRO:HD3  | 2.11                     | 0.50              |
| 1:A:398:LEU:HD22 | 1:A:401:TYR:CZ   | 2.45                     | 0.50              |
| 2:B:117:LYS:HG3  | 2:B:213:ARG:NH1  | 2.27                     | 0.50              |
| 2:C:99:ALA:CB    | 2:C:152:TYR:HE1  | 2.24                     | 0.50              |
| 2:C:111:PHE:O    | 2:C:115:GLY:HA3  | 2.11                     | 0.50              |
| 1:D:41:SER:HB2   | 2:E:147:GLY:O    | 2.12                     | 0.50              |
| 1:D:69:THR:HB    | 1:D:71:VAL:HG12  | 1.93                     | 0.50              |
| 1:D:174:ASN:N    | 7:D:719:HOH:O    | 2.37                     | 0.50              |
| 1:D:569:SER:C    | 1:D:570:TYR:HD1  | 2.14                     | 0.50              |
| 2:F:133:LYS:HA   | 2:F:136:GLU:HG2  | 1.94                     | 0.50              |
| 2:F:135:LEU:O    | 2:F:138:GLU:HG3  | 2.11                     | 0.50              |
| 1:A:252:ASN:HA   | 1:A:260:ARG:NH2  | 2.25                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:340:ASN:HB2  | 1:A:352:PHE:CE1  | 2.46                     | 0.50              |
| 2:C:73:TYR:HD1   | 2:C:76:GLU:OE2   | 1.94                     | 0.50              |
| 1:D:12:ARG:HH12  | 1:D:126:ARG:NH2  | 2.09                     | 0.50              |
| 1:D:55:THR:C     | 1:D:57:PRO:HD3   | 2.32                     | 0.50              |
| 1:D:59:GLU:HA    | 1:D:62:LYS:NZ    | 2.26                     | 0.50              |
| 1:D:118:MET:SD   | 1:D:175:PHE:HE1  | 2.34                     | 0.50              |
| 1:D:148:ILE:HB   | 1:D:170:TYR:HE2  | 1.77                     | 0.50              |
| 1:D:227:LEU:HB3  | 1:D:316:LEU:HD11 | 1.93                     | 0.50              |
| 1:D:434:ASP:O    | 1:D:550:CYS:HB3  | 2.11                     | 0.50              |
| 2:F:17:MET:SD    | 2:F:163:TRP:HZ3  | 2.35                     | 0.50              |
| 2:F:169:LYS:HG3  | 2:F:170:PHE:N    | 2.26                     | 0.50              |
| 1:A:393:THR:HG22 | 1:A:400:ARG:H    | 1.76                     | 0.50              |
| 1:A:563:CYS:O    | 1:A:566:VAL:HG12 | 2.12                     | 0.50              |
| 1:D:94:VAL:HG21  | 1:D:112:PRO:HA   | 1.94                     | 0.50              |
| 1:D:99:LEU:HD12  | 1:D:100:SER:N    | 2.27                     | 0.50              |
| 1:D:154:TYR:OH   | 1:D:559:LEU:HD13 | 2.11                     | 0.50              |
| 1:D:541:SER:O    | 1:D:543:GLY:N    | 2.44                     | 0.50              |
| 2:E:96:ARG:NE    | 2:F:69:ASN:OD1   | 2.44                     | 0.50              |
| 1:A:114:THR:HB   | 1:A:116:GLU:OE2  | 2.10                     | 0.50              |
| 1:A:562:LEU:HD12 | 1:A:563:CYS:N    | 2.27                     | 0.50              |
| 1:D:82:ASP:OD2   | 1:D:553:PRO:HB3  | 2.12                     | 0.50              |
| 1:D:191:GLU:O    | 1:D:195:SER:N    | 2.45                     | 0.50              |
| 2:F:139:LEU:HB2  | 2:F:145:PHE:CZ   | 2.47                     | 0.50              |
| 1:A:17:PHE:CE2   | 1:A:127:THR:HG23 | 2.47                     | 0.50              |
| 1:A:352:PHE:N    | 1:A:352:PHE:CD2  | 2.80                     | 0.50              |
| 2:C:169:LYS:HG3  | 2:C:170:PHE:N    | 2.27                     | 0.50              |
| 2:C:183:ILE:HD13 | 1:D:492:ASP:OD1  | 2.12                     | 0.50              |
| 1:A:77:ILE:O     | 1:A:80:MET:HG2   | 2.11                     | 0.49              |
| 1:A:304:ILE:HG13 | 1:A:328:HIS:CD2  | 2.47                     | 0.49              |
| 2:B:18:ARG:HH12  | 2:B:103:ASP:CG   | 2.08                     | 0.49              |
| 2:B:150:PHE:CE2  | 2:B:158:ILE:HD13 | 2.47                     | 0.49              |
| 1:D:148:ILE:HG23 | 1:D:220:PHE:HE2  | 1.77                     | 0.49              |
| 1:D:313:VAL:N    | 1:D:314:PRO:HD2  | 2.27                     | 0.49              |
| 1:D:441:LEU:HD23 | 1:D:549:ARG:HB3  | 1.94                     | 0.49              |
| 2:E:106:PHE:CE2  | 2:E:135:LEU:HD11 | 2.47                     | 0.49              |
| 2:E:202:SER:O    | 2:E:206:VAL:HG13 | 2.11                     | 0.49              |
| 2:B:139:LEU:HD11 | 2:B:145:PHE:CE1  | 2.47                     | 0.49              |
| 1:D:13:VAL:HB    | 1:D:126:ARG:NH2  | 2.27                     | 0.49              |
| 1:D:135:ASP:OD1  | 1:D:136:PHE:N    | 2.44                     | 0.49              |
| 1:D:138:ILE:CB   | 1:D:217:GLN:HG3  | 2.40                     | 0.49              |
| 2:E:143:PRO:O    | 2:E:188:ARG:HD2  | 2.13                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:F:17:MET:CE    | 2:F:200:PRO:HD2  | 2.42                     | 0.49              |
| 1:A:85:THR:HB    | 2:B:184:ALA:HB1  | 1.94                     | 0.49              |
| 1:A:121:THR:HG23 | 3:A:601:JAA:C14  | 2.42                     | 0.49              |
| 1:A:534:HIS:HB3  | 4:A:602:ILE:O    | 2.12                     | 0.49              |
| 2:B:166:ALA:HB2  | 2:B:206:VAL:HG12 | 1.93                     | 0.49              |
| 1:A:176:LYS:HE3  | 1:A:190:ASP:OD2  | 2.12                     | 0.49              |
| 1:A:244:ASP:OD1  | 1:A:251:SER:HB3  | 2.11                     | 0.49              |
| 1:A:285:SER:O    | 1:A:286:ASN:CB   | 2.59                     | 0.49              |
| 1:D:56:ASP:HA    | 1:D:59:GLU:OE2   | 2.13                     | 0.49              |
| 1:A:27:VAL:HB    | 1:A:356:PRO:HB2  | 1.93                     | 0.49              |
| 1:A:294:LEU:HD12 | 1:A:295:PHE:H    | 1.76                     | 0.49              |
| 1:D:143:LYS:HG2  | 1:D:144:ALA:H    | 1.77                     | 0.49              |
| 1:D:445:VAL:HG21 | 1:D:462:PHE:HB2  | 1.95                     | 0.49              |
| 2:F:23:LEU:HD11  | 2:F:30:PHE:CE2   | 2.47                     | 0.49              |
| 2:F:125:LYS:HD2  | 2:F:128:PHE:CE2  | 2.47                     | 0.49              |
| 1:A:199:HIS:HB3  | 1:A:525:LYS:H    | 1.76                     | 0.49              |
| 1:A:309:MET:SD   | 1:A:312:TYR:HB2  | 2.53                     | 0.49              |
| 2:B:15:PHE:CD2   | 6:B:301:GSH:HB12 | 2.46                     | 0.49              |
| 2:B:145:PHE:HB2  | 2:B:153:VAL:HG13 | 1.93                     | 0.49              |
| 1:D:241:ILE:O    | 1:D:245:ILE:HG12 | 2.13                     | 0.49              |
| 1:D:312:TYR:HD1  | 1:D:315:LYS:HD2  | 1.78                     | 0.49              |
| 1:D:363:PHE:CE1  | 1:D:390:VAL:HG23 | 2.46                     | 0.49              |
| 1:D:507:VAL:O    | 1:D:511:LYS:HG3  | 2.12                     | 0.49              |
| 2:F:20:ARG:O     | 2:F:24:ARG:HB2   | 2.13                     | 0.49              |
| 2:F:33:ARG:NH2   | 7:F:428:HOH:O    | 2.43                     | 0.49              |
| 1:A:146:GLN:HA   | 1:A:220:PHE:HB3  | 1.94                     | 0.49              |
| 1:A:379:LEU:HG   | 1:A:380:THR:N    | 2.26                     | 0.49              |
| 1:A:534:HIS:HE1  | 1:A:535:PHE:CE1  | 2.30                     | 0.49              |
| 2:C:7:LEU:HA     | 2:C:56:VAL:O     | 2.13                     | 0.49              |
| 2:C:139:LEU:HD13 | 2:C:181:LYS:HE2  | 1.94                     | 0.49              |
| 1:D:126:ARG:HA   | 1:D:182:ILE:HG21 | 1.95                     | 0.49              |
| 2:E:135:LEU:HD12 | 2:E:135:LEU:N    | 2.27                     | 0.49              |
| 2:F:41:SER:HB3   | 2:F:43:LEU:CD1   | 2.43                     | 0.49              |
| 2:F:110:GLN:HB3  | 2:F:167:TYR:CZ   | 2.48                     | 0.49              |
| 1:A:104:SER:O    | 1:A:104:SER:OG   | 2.22                     | 0.49              |
| 1:A:210:ILE:HA   | 1:A:213:ARG:NE   | 2.28                     | 0.49              |
| 2:C:110:GLN:HB3  | 2:C:167:TYR:CZ   | 2.48                     | 0.49              |
| 1:D:231:PHE:HD1  | 1:D:287:TRP:HZ2  | 1.60                     | 0.49              |
| 2:E:14:MET:O     | 2:E:17:MET:HB2   | 2.12                     | 0.49              |
| 2:E:188:ARG:HG3  | 2:E:189:CYS:N    | 2.27                     | 0.49              |
| 2:F:170:PHE:CD2  | 2:F:213:ARG:HD2  | 2.48                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:126:ARG:HG2  | 1:A:182:ILE:HD12 | 1.95                     | 0.49              |
| 1:A:143:LYS:HD3  | 1:A:212:PHE:CD1  | 2.48                     | 0.49              |
| 1:A:315:LYS:HA   | 1:A:318:HIS:CB   | 2.43                     | 0.49              |
| 2:B:8:LEU:HD13   | 2:B:44:LEU:HG    | 1.95                     | 0.49              |
| 2:C:5:PRO:HB3    | 2:C:59:HIS:CE1   | 2.48                     | 0.49              |
| 2:C:136:GLU:HG3  | 2:C:181:LYS:CD   | 2.33                     | 0.49              |
| 2:C:184:ALA:HA   | 2:C:187:LYS:NZ   | 2.27                     | 0.49              |
| 1:D:212:PHE:HD2  | 1:D:215:GLN:CD   | 2.16                     | 0.49              |
| 1:A:119:GLU:O    | 1:A:123:GLN:HG2  | 2.12                     | 0.49              |
| 1:A:143:LYS:NZ   | 1:A:212:PHE:CD1  | 2.80                     | 0.49              |
| 1:A:302:TYR:HA   | 1:A:326:VAL:HG13 | 1.95                     | 0.49              |
| 1:A:420:LYS:HG2  | 1:A:421:PHE:N    | 2.28                     | 0.49              |
| 1:A:444:SER:HA   | 1:A:500:ALA:CB   | 2.42                     | 0.49              |
| 2:B:13:SER:CB    | 2:B:54:ILE:HD11  | 2.43                     | 0.49              |
| 2:B:16:GLY:O     | 2:B:20:ARG:HG3   | 2.12                     | 0.49              |
| 2:B:19:ALA:CB    | 2:B:70:VAL:HG11  | 2.43                     | 0.49              |
| 2:C:98:TRP:CE3   | 2:C:138:GLU:OE2  | 2.66                     | 0.49              |
| 1:D:445:VAL:HG13 | 1:D:479:TRP:CE2  | 2.48                     | 0.49              |
| 2:E:24:ARG:NH1   | 2:E:198:SER:OG   | 2.38                     | 0.49              |
| 2:E:148:ASP:N    | 2:E:148:ASP:OD1  | 2.43                     | 0.49              |
| 1:A:45:LEU:CD2   | 1:A:50:LEU:HD23  | 2.42                     | 0.48              |
| 2:B:18:ARG:O     | 2:B:21:VAL:HG12  | 2.13                     | 0.48              |
| 2:C:32:TYR:CD1   | 2:C:34:GLU:OE2   | 2.66                     | 0.48              |
| 2:C:184:ALA:HA   | 2:C:187:LYS:HZ1  | 1.78                     | 0.48              |
| 1:D:76:TYR:HB3   | 1:D:88:ILE:CB    | 2.43                     | 0.48              |
| 1:D:108:PRO:CG   | 1:D:552:LYS:H    | 2.26                     | 0.48              |
| 1:D:163:GLY:CA   | 1:D:560:GLN:HB2  | 2.43                     | 0.48              |
| 1:D:426:ASN:OD1  | 1:D:426:ASN:N    | 2.41                     | 0.48              |
| 1:A:152:LYS:HA   | 1:A:564:GLU:CB   | 2.41                     | 0.48              |
| 1:A:295:PHE:CD1  | 1:A:295:PHE:O    | 2.66                     | 0.48              |
| 2:C:184:ALA:O    | 1:D:499:ARG:NH1  | 2.47                     | 0.48              |
| 1:D:36:LEU:O     | 1:D:40:GLN:N     | 2.46                     | 0.48              |
| 1:A:103:THR:HB   | 1:A:106:GLY:CA   | 2.44                     | 0.48              |
| 2:C:24:ARG:NH2   | 7:C:420:HOH:O    | 2.45                     | 0.48              |
| 1:D:35:ILE:O     | 1:D:39:ASN:HB2   | 2.13                     | 0.48              |
| 1:D:331:GLY:N    | 1:D:537:GLY:O    | 2.44                     | 0.48              |
| 2:E:58:VAL:HG23  | 7:E:418:HOH:O    | 2.13                     | 0.48              |
| 2:E:66:GLU:HB2   | 2:E:69:ASN:HB3   | 1.95                     | 0.48              |
| 2:F:15:PHE:HB3   | 2:F:67:SER:HB2   | 1.95                     | 0.48              |
| 2:F:68:LEU:O     | 2:F:72:GLN:HG3   | 2.12                     | 0.48              |
| 2:F:125:LYS:HD3  | 2:F:173:PHE:CG   | 2.47                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:F:136:GLU:HB3  | 2:F:179:SER:OG   | 2.13                     | 0.48              |
| 2:F:143:PRO:HB2  | 2:F:144:TYR:CD2  | 2.48                     | 0.48              |
| 1:A:22:ARG:HH11  | 1:A:22:ARG:HG2   | 1.78                     | 0.48              |
| 1:A:192:VAL:HG12 | 1:A:205:HIS:HD2  | 1.79                     | 0.48              |
| 1:A:273:LEU:HA   | 1:A:276:THR:HG23 | 1.95                     | 0.48              |
| 1:A:335:GLY:HA3  | 1:A:394:ASN:HD22 | 1.79                     | 0.48              |
| 2:B:34:GLU:OE2   | 7:B:402:HOH:O    | 2.20                     | 0.48              |
| 1:D:121:THR:HG23 | 3:D:601:JAA:C15  | 2.43                     | 0.48              |
| 1:D:231:PHE:O    | 1:D:235:GLU:HG3  | 2.13                     | 0.48              |
| 1:D:303:GLY:O    | 1:D:327:SER:HA   | 2.13                     | 0.48              |
| 1:D:441:LEU:CD2  | 1:D:549:ARG:HB3  | 2.43                     | 0.48              |
| 1:A:213:ARG:HD3  | 1:A:216:VAL:HG21 | 1.94                     | 0.48              |
| 2:F:7:LEU:HD11   | 2:F:57:LEU:HB2   | 1.96                     | 0.48              |
| 1:A:113:PHE:HE2  | 1:A:163:GLY:O    | 1.97                     | 0.48              |
| 2:B:14:MET:O     | 2:B:17:MET:HB2   | 2.14                     | 0.48              |
| 2:B:34:GLU:HG3   | 2:B:35:GLU:N     | 2.28                     | 0.48              |
| 1:D:549:ARG:NH2  | 7:D:725:HOH:O    | 2.46                     | 0.48              |
| 2:E:17:MET:HG2   | 2:E:20:ARG:HH21  | 1.79                     | 0.48              |
| 2:E:154:ASP:HA   | 2:E:185:TRP:HZ2  | 1.78                     | 0.48              |
| 2:F:114:TRP:CZ3  | 2:F:212:TYR:HD2  | 2.29                     | 0.48              |
| 1:A:97:ILE:HD13  | 1:A:110:PHE:CE2  | 2.48                     | 0.48              |
| 1:A:211:LEU:HD12 | 1:A:212:PHE:CE2  | 2.48                     | 0.48              |
| 1:A:491:GLN:OE1  | 1:A:573:THR:N    | 2.47                     | 0.48              |
| 1:A:534:HIS:HB3  | 4:A:602:ILE:C    | 2.34                     | 0.48              |
| 2:B:15:PHE:HA    | 2:B:18:ARG:HD2   | 1.96                     | 0.48              |
| 1:D:132:ARG:HD3  | 1:D:300:TYR:CZ   | 2.49                     | 0.48              |
| 1:D:190:ASP:O    | 1:D:194:PHE:N    | 2.44                     | 0.48              |
| 1:D:191:GLU:OE1  | 1:D:191:GLU:N    | 2.47                     | 0.48              |
| 1:D:235:GLU:HG2  | 1:D:287:TRP:CE3  | 2.49                     | 0.48              |
| 1:D:365:PRO:CG   | 1:D:374:GLU:HG2  | 2.42                     | 0.48              |
| 1:A:96:ALA:HB3   | 1:A:113:PHE:HD2  | 1.78                     | 0.48              |
| 1:A:169:VAL:O    | 1:A:175:PHE:HB2  | 2.13                     | 0.48              |
| 1:A:238:TRP:CZ2  | 1:A:282:MET:SD   | 3.07                     | 0.48              |
| 1:A:510:ARG:HG2  | 1:A:515:ILE:HG13 | 1.94                     | 0.48              |
| 2:B:117:LYS:HG3  | 2:B:213:ARG:HH11 | 1.78                     | 0.48              |
| 2:B:120:GLU:HG2  | 7:B:454:HOH:O    | 2.14                     | 0.48              |
| 2:C:8:LEU:HD21   | 2:C:43:LEU:HD21  | 1.95                     | 0.48              |
| 1:D:50:LEU:HD13  | 1:D:61:PHE:HE1   | 1.77                     | 0.48              |
| 1:D:508:SER:O    | 1:D:512:CYS:HB3  | 2.13                     | 0.48              |
| 2:E:66:GLU:OE2   | 2:F:97:PHE:CD1   | 2.65                     | 0.48              |
| 2:F:211:GLU:O    | 2:F:214:LYS:HG2  | 2.14                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:332:SER:HB2  | 1:A:538:LEU:HA   | 1.96                     | 0.48              |
| 1:A:354:VAL:HG11 | 1:A:361:PHE:CZ   | 2.48                     | 0.48              |
| 1:A:432:ASN:OD1  | 1:A:433:ILE:N    | 2.46                     | 0.48              |
| 1:A:492:ASP:HB2  | 7:A:704:HOH:O    | 2.14                     | 0.48              |
| 2:C:117:LYS:HE3  | 2:C:213:ARG:NH1  | 2.28                     | 0.48              |
| 2:C:136:GLU:OE2  | 2:C:180:PRO:HD2  | 2.14                     | 0.48              |
| 1:D:131:PHE:CD1  | 1:D:132:ARG:N    | 2.81                     | 0.48              |
| 1:A:465:TYR:CE2  | 1:A:467:ASP:HB3  | 2.49                     | 0.48              |
| 2:B:97:PHE:CE1   | 2:C:65:CYS:HB2   | 2.49                     | 0.48              |
| 2:C:73:TYR:HA    | 2:C:76:GLU:HG2   | 1.96                     | 0.48              |
| 1:D:398:LEU:HB3  | 1:D:401:TYR:CD1  | 2.49                     | 0.48              |
| 1:D:441:LEU:O    | 1:D:444:SER:HB2  | 2.14                     | 0.48              |
| 2:E:98:TRP:HE3   | 2:E:153:VAL:HG11 | 1.78                     | 0.48              |
| 1:A:340:ASN:ND2  | 1:A:343:PRO:HA   | 2.29                     | 0.47              |
| 2:B:8:LEU:HB2    | 2:B:56:VAL:HB    | 1.96                     | 0.47              |
| 1:D:41:SER:H     | 2:E:142:LYS:CE   | 2.27                     | 0.47              |
| 1:D:122:LEU:HD12 | 1:D:123:GLN:N    | 2.28                     | 0.47              |
| 1:D:336:TRP:CB   | 1:D:358:LEU:HD13 | 2.44                     | 0.47              |
| 1:D:337:ILE:HG22 | 1:D:338:ALA:N    | 2.29                     | 0.47              |
| 1:D:393:THR:HG22 | 1:D:400:ARG:H    | 1.79                     | 0.47              |
| 2:F:168:GLU:CD   | 2:F:175:ILE:HG12 | 2.35                     | 0.47              |
| 1:A:331:GLY:HA2  | 1:A:539:GLY:CA   | 2.44                     | 0.47              |
| 1:A:421:PHE:CD1  | 1:A:541:SER:HA   | 2.49                     | 0.47              |
| 1:D:507:VAL:HG23 | 1:D:511:LYS:CE   | 2.40                     | 0.47              |
| 1:A:152:LYS:HG2  | 1:A:561:ILE:O    | 2.15                     | 0.47              |
| 1:A:201:ALA:O    | 1:A:205:HIS:HB2  | 2.14                     | 0.47              |
| 1:A:370:GLY:HA2  | 1:A:371:GLU:HA   | 1.69                     | 0.47              |
| 1:A:562:LEU:HD12 | 1:A:563:CYS:HB3  | 1.96                     | 0.47              |
| 1:D:117:LEU:HB2  | 7:D:793:HOH:O    | 2.14                     | 0.47              |
| 1:D:525:LYS:NZ   | 7:D:755:HOH:O    | 2.42                     | 0.47              |
| 1:D:528:PHE:O    | 1:D:532:GLN:HG2  | 2.14                     | 0.47              |
| 2:E:96:ARG:NH1   | 2:F:73:TYR:CE1   | 2.82                     | 0.47              |
| 2:F:33:ARG:HH12  | 2:F:35:GLU:CD    | 2.15                     | 0.47              |
| 2:C:187:LYS:HE2  | 2:C:187:LYS:HB2  | 1.69                     | 0.47              |
| 1:D:17:PHE:CD2   | 1:D:127:THR:HG21 | 2.50                     | 0.47              |
| 2:E:43:LEU:HD21  | 2:E:58:VAL:HG21  | 1.96                     | 0.47              |
| 1:A:118:MET:HG2  | 1:A:174:ASN:HD21 | 1.78                     | 0.47              |
| 1:A:149:PHE:HB2  | 1:A:530:LYS:HZ3  | 1.79                     | 0.47              |
| 1:A:210:ILE:O    | 1:A:210:ILE:HG22 | 2.15                     | 0.47              |
| 2:B:15:PHE:HB3   | 2:B:67:SER:CB    | 2.45                     | 0.47              |
| 2:C:10:TYR:H     | 2:C:20:ARG:NH2   | 2.12                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:223:PHE:CE2  | 1:D:545:PHE:CZ   | 2.95                     | 0.47              |
| 1:D:412:PHE:N    | 1:D:418:GLN:HE21 | 2.12                     | 0.47              |
| 2:E:7:LEU:HD13   | 2:E:9:ASP:HB2    | 1.97                     | 0.47              |
| 2:E:60:ASN:HD21  | 2:E:62:LYS:HD2   | 1.79                     | 0.47              |
| 2:F:175:ILE:HG13 | 2:F:176:GLU:N    | 2.27                     | 0.47              |
| 1:A:35:ILE:HA    | 1:A:395:TYR:CE1  | 2.50                     | 0.47              |
| 1:A:209:GLY:O    | 1:A:213:ARG:NE   | 2.34                     | 0.47              |
| 1:A:284:LEU:HD23 | 1:A:290:LEU:HD13 | 1.97                     | 0.47              |
| 1:A:546:LYS:HG3  | 1:A:546:LYS:O    | 2.15                     | 0.47              |
| 2:B:50:ILE:HD11  | 2:C:101:PHE:CZ   | 2.50                     | 0.47              |
| 1:D:329:ASP:HB3  | 1:D:338:ALA:O    | 2.15                     | 0.47              |
| 1:D:452:LEU:HD22 | 1:D:479:TRP:HZ3  | 1.79                     | 0.47              |
| 2:F:152:TYR:O    | 2:F:155:ILE:HB   | 2.14                     | 0.47              |
| 1:A:93:PRO:HG2   | 2:B:184:ALA:HB3  | 1.96                     | 0.47              |
| 1:A:97:ILE:O     | 1:A:556:ALA:HB1  | 2.15                     | 0.47              |
| 1:A:105:GLN:HG3  | 1:A:107:ARG:HH21 | 1.80                     | 0.47              |
| 1:A:120:ASN:OD1  | 1:A:121:THR:N    | 2.47                     | 0.47              |
| 1:A:154:TYR:HB2  | 1:A:563:CYS:CB   | 2.45                     | 0.47              |
| 1:A:223:PHE:HD2  | 1:A:225:HIS:ND1  | 2.12                     | 0.47              |
| 2:B:144:TYR:OH   | 2:B:188:ARG:HD2  | 2.15                     | 0.47              |
| 1:D:148:ILE:HG21 | 1:D:170:TYR:OH   | 2.15                     | 0.47              |
| 1:D:405:ASP:CG   | 1:D:540:SER:HB2  | 2.35                     | 0.47              |
| 1:D:552:LYS:HB2  | 1:D:553:PRO:HD2  | 1.95                     | 0.47              |
| 2:E:85:PHE:HB2   | 2:E:92:ARG:CG    | 2.45                     | 0.47              |
| 2:E:202:SER:O    | 2:E:205:ILE:HG13 | 2.15                     | 0.47              |
| 2:F:136:GLU:HB3  | 2:F:179:SER:HG   | 1.78                     | 0.47              |
| 2:F:148:ASP:O    | 7:F:410:HOH:O    | 2.20                     | 0.47              |
| 1:A:208:SER:HA   | 1:A:211:LEU:CD2  | 2.45                     | 0.47              |
| 1:D:340:ASN:HD21 | 1:D:345:LEU:HD11 | 1.80                     | 0.47              |
| 2:E:11:TRP:CZ2   | 2:E:204:LYS:HB3  | 2.44                     | 0.47              |
| 2:E:60:ASN:ND2   | 2:E:62:LYS:HD2   | 2.30                     | 0.47              |
| 2:E:108:ASP:O    | 2:E:112:LYS:HG2  | 2.14                     | 0.47              |
| 2:F:110:GLN:O    | 2:F:113:VAL:HG12 | 2.14                     | 0.47              |
| 2:F:180:PRO:HA   | 2:F:183:ILE:HG22 | 1.96                     | 0.47              |
| 2:F:201:ASP:O    | 2:F:204:LYS:HG2  | 2.13                     | 0.47              |
| 1:A:139:ASP:OD1  | 1:A:142:GLY:HA3  | 2.14                     | 0.47              |
| 1:A:228:VAL:HG13 | 1:A:319:TYR:HE2  | 1.79                     | 0.47              |
| 1:A:291:ILE:HB   | 1:A:320:ALA:HA   | 1.97                     | 0.47              |
| 1:D:438:GLU:HG2  | 1:D:442:GLN:OE1  | 2.15                     | 0.47              |
| 1:D:451:ARG:NH1  | 1:D:489:VAL:C    | 2.66                     | 0.47              |
| 1:A:171:ARG:O    | 1:A:171:ARG:HD3  | 2.15                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:C:33:ARG:NE    | 2:C:35:GLU:OE2   | 2.48                     | 0.47              |
| 1:D:67:LEU:HD23  | 1:D:400:ARG:HB3  | 1.97                     | 0.47              |
| 1:D:246:LYS:HE3  | 1:D:246:LYS:HB3  | 1.60                     | 0.47              |
| 1:D:326:VAL:CG2  | 1:D:343:PRO:HB3  | 2.43                     | 0.47              |
| 1:D:444:SER:HA   | 1:D:500:ALA:HB1  | 1.96                     | 0.47              |
| 2:F:23:LEU:HD21  | 2:F:30:PHE:CD1   | 2.50                     | 0.47              |
| 1:A:339:ALA:O    | 1:A:353:ALA:N    | 2.40                     | 0.46              |
| 2:B:50:ILE:HG21  | 2:C:134:ILE:HD12 | 1.97                     | 0.46              |
| 2:B:163:TRP:HB3  | 2:B:167:TYR:CZ   | 2.49                     | 0.46              |
| 2:C:47:SER:HB2   | 2:C:63:PRO:HB3   | 1.97                     | 0.46              |
| 1:D:70:ASP:OD2   | 1:D:104:SER:HA   | 2.15                     | 0.46              |
| 1:D:131:PHE:HD1  | 1:D:132:ARG:N    | 2.12                     | 0.46              |
| 1:D:394:ASN:O    | 1:D:399:TYR:HE1  | 1.96                     | 0.46              |
| 1:D:434:ASP:HB2  | 1:D:550:CYS:HB3  | 1.96                     | 0.46              |
| 2:E:70:VAL:O     | 2:E:73:TYR:HB3   | 2.15                     | 0.46              |
| 1:A:314:PRO:O    | 1:A:318:HIS:N    | 2.40                     | 0.46              |
| 1:A:434:ASP:CB   | 1:A:550:CYS:HB3  | 2.40                     | 0.46              |
| 1:A:435:LYS:HB3  | 1:A:436:ASN:O    | 2.16                     | 0.46              |
| 1:A:440:ASP:OD1  | 1:A:441:LEU:N    | 2.48                     | 0.46              |
| 1:A:503:ASP:CG   | 1:A:505:GLY:H    | 2.18                     | 0.46              |
| 2:B:92:ARG:NH1   | 7:B:412:HOH:O    | 2.27                     | 0.46              |
| 2:C:116:LYS:O    | 2:C:121:GLN:HG3  | 2.15                     | 0.46              |
| 2:C:195:VAL:HG23 | 2:C:199:LEU:HD13 | 1.96                     | 0.46              |
| 1:D:529:ARG:CZ   | 1:D:529:ARG:HB2  | 2.45                     | 0.46              |
| 1:D:534:HIS:NE2  | 1:D:557:LYS:HG2  | 2.30                     | 0.46              |
| 2:E:90:TYR:HE1   | 7:F:407:HOH:O    | 1.98                     | 0.46              |
| 2:F:64:VAL:HB    | 2:F:73:TYR:CE2   | 2.50                     | 0.46              |
| 1:A:118:MET:HG2  | 1:A:174:ASN:CG   | 2.36                     | 0.46              |
| 1:A:413:TYR:N    | 1:A:416:THR:O    | 2.48                     | 0.46              |
| 1:A:549:ARG:HD3  | 1:A:549:ARG:HA   | 1.47                     | 0.46              |
| 1:D:59:GLU:HB3   | 1:D:62:LYS:HZ1   | 1.80                     | 0.46              |
| 1:D:304:ILE:HG12 | 1:D:536:LEU:HD13 | 1.96                     | 0.46              |
| 1:D:405:ASP:CB   | 1:D:541:SER:HB3  | 2.39                     | 0.46              |
| 2:F:162:SER:O    | 2:F:165:GLN:HG3  | 2.15                     | 0.46              |
| 1:A:172:ASN:OD1  | 1:A:174:ASN:ND2  | 2.49                     | 0.46              |
| 1:D:234:PHE:HB3  | 1:D:287:TRP:CH2  | 2.50                     | 0.46              |
| 1:D:452:LEU:HG   | 1:D:457:ILE:HD11 | 1.97                     | 0.46              |
| 2:F:84:PHE:CG    | 2:F:152:TYR:HB2  | 2.50                     | 0.46              |
| 1:A:199:HIS:HA   | 1:A:525:LYS:HG2  | 1.97                     | 0.46              |
| 1:A:202:LEU:HD13 | 1:A:229:HIS:NE2  | 2.31                     | 0.46              |
| 1:A:234:PHE:C    | 1:A:234:PHE:CD2  | 2.88                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:442:GLN:HG2  | 1:A:462:PHE:HZ   | 1.81                     | 0.46              |
| 1:D:242:VAL:HG22 | 1:D:277:ILE:CD1  | 2.42                     | 0.46              |
| 1:D:254:ILE:O    | 1:D:260:ARG:HD2  | 2.15                     | 0.46              |
| 1:D:364:LEU:HB3  | 1:D:389:GLU:CG   | 2.45                     | 0.46              |
| 2:E:96:ARG:HH11  | 2:F:69:ASN:HA    | 1.80                     | 0.46              |
| 1:A:206:LEU:HD11 | 1:A:234:PHE:HD1  | 1.81                     | 0.46              |
| 1:A:330:TYR:CE2  | 1:A:352:PHE:CD2  | 3.03                     | 0.46              |
| 1:A:341:VAL:C    | 1:A:343:PRO:HD3  | 2.35                     | 0.46              |
| 1:A:436:ASN:HA   | 1:A:440:ASP:OD2  | 2.15                     | 0.46              |
| 1:D:110:PHE:CE2  | 1:D:553:PRO:O    | 2.69                     | 0.46              |
| 1:D:125:PHE:HD1  | 1:D:125:PHE:HA   | 1.63                     | 0.46              |
| 1:D:413:TYR:CD2  | 1:D:418:GLN:HG2  | 2.50                     | 0.46              |
| 1:D:552:LYS:HG3  | 1:D:553:PRO:N    | 2.30                     | 0.46              |
| 1:D:552:LYS:NZ   | 7:D:711:HOH:O    | 2.13                     | 0.46              |
| 2:E:68:LEU:HD12  | 2:E:68:LEU:HA    | 1.52                     | 0.46              |
| 1:A:27:VAL:O     | 1:A:31:THR:OG1   | 2.27                     | 0.46              |
| 1:A:143:LYS:NZ   | 1:A:212:PHE:HB2  | 2.31                     | 0.46              |
| 1:A:215:GLN:O    | 1:A:217:GLN:NE2  | 2.43                     | 0.46              |
| 1:A:295:PHE:CD1  | 1:A:298:ALA:HB3  | 2.51                     | 0.46              |
| 2:C:116:LYS:HB2  | 7:C:436:HOH:O    | 2.15                     | 0.46              |
| 1:D:43:ILE:HD11  | 1:D:76:TYR:CE2   | 2.50                     | 0.46              |
| 1:D:405:ASP:OD1  | 1:D:540:SER:HB2  | 2.15                     | 0.46              |
| 1:D:494:CYS:SG   | 1:D:572:SER:HA   | 2.56                     | 0.46              |
| 1:D:531:ILE:O    | 1:D:534:HIS:CE1  | 2.68                     | 0.46              |
| 2:E:169:LYS:HG3  | 2:E:170:PHE:CD1  | 2.50                     | 0.46              |
| 6:C:301:GSH:O32  | 7:C:410:HOH:O    | 2.20                     | 0.46              |
| 1:D:154:TYR:HD2  | 1:D:560:GLN:HA   | 1.80                     | 0.46              |
| 1:D:235:GLU:O    | 1:D:238:TRP:CD1  | 2.69                     | 0.46              |
| 2:E:9:ASP:OD1    | 2:E:10:TYR:N     | 2.49                     | 0.46              |
| 2:E:96:ARG:HH12  | 2:F:72:GLN:HB2   | 1.79                     | 0.46              |
| 1:A:30:GLN:OE1   | 1:A:30:GLN:HA    | 2.15                     | 0.46              |
| 1:A:181:SER:OG   | 1:A:182:ILE:HG13 | 2.16                     | 0.46              |
| 1:A:195:SER:O    | 1:A:565:ASN:ND2  | 2.45                     | 0.46              |
| 2:B:128:PHE:HE2  | 2:B:175:ILE:HG12 | 1.81                     | 0.46              |
| 2:C:187:LYS:O    | 7:C:411:HOH:O    | 2.21                     | 0.46              |
| 1:D:207:LEU:O    | 1:D:210:ILE:HG23 | 2.15                     | 0.46              |
| 1:D:452:LEU:HD21 | 1:D:481:ILE:HD13 | 1.97                     | 0.46              |
| 1:D:497:LEU:O    | 1:D:500:ALA:HB3  | 2.15                     | 0.46              |
| 2:F:8:LEU:HA     | 2:F:33:ARG:HG3   | 1.98                     | 0.46              |
| 2:F:135:LEU:HD13 | 2:F:182:LEU:HD12 | 1.98                     | 0.46              |
| 1:A:100:SER:HA   | 1:A:535:PHE:HE1  | 1.81                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:313:VAL:HG23 | 1:A:325:LEU:HD12 | 1.98                     | 0.46              |
| 2:C:57:LEU:O     | 2:C:64:VAL:HB    | 2.16                     | 0.46              |
| 1:D:53:ASN:OD1   | 1:D:54:ALA:N     | 2.49                     | 0.46              |
| 2:F:57:LEU:HD13  | 2:F:59:HIS:HD2   | 1.81                     | 0.46              |
| 1:A:28:GLN:HG3   | 1:A:29:LYS:N     | 2.31                     | 0.45              |
| 1:A:103:THR:HB   | 1:A:106:GLY:C    | 2.37                     | 0.45              |
| 1:A:224:ALA:HB3  | 1:A:309:MET:HG3  | 1.98                     | 0.45              |
| 1:A:248:GLY:O    | 1:A:267:LEU:HB3  | 2.16                     | 0.45              |
| 1:A:346:SER:N    | 7:A:749:HOH:O    | 2.41                     | 0.45              |
| 1:A:470:THR:OG1  | 1:A:473:GLY:HA2  | 2.17                     | 0.45              |
| 2:C:16:GLY:HA3   | 2:C:20:ARG:NH2   | 2.31                     | 0.45              |
| 2:C:50:ILE:HG13  | 2:C:51:HIS:H     | 1.81                     | 0.45              |
| 2:C:166:ALA:CA   | 2:C:206:VAL:HG22 | 2.46                     | 0.45              |
| 2:C:190:MET:C    | 1:D:450:LYS:HD2  | 2.36                     | 0.45              |
| 1:D:391:VAL:HA   | 1:D:401:TYR:O    | 2.16                     | 0.45              |
| 2:E:65:CYS:HB2   | 2:F:97:PHE:CZ    | 2.51                     | 0.45              |
| 2:E:188:ARG:N    | 7:E:419:HOH:O    | 2.49                     | 0.45              |
| 2:E:201:ASP:HB2  | 2:E:204:LYS:HG2  | 1.98                     | 0.45              |
| 1:A:46:GLN:HB3   | 2:B:148:ASP:CB   | 2.41                     | 0.45              |
| 1:A:73:LEU:HD22  | 1:A:89:LEU:HD13  | 1.97                     | 0.45              |
| 1:A:91:GLY:HA3   | 2:B:141:ASP:C    | 2.36                     | 0.45              |
| 1:A:355:ILE:HA   | 1:A:356:PRO:HD3  | 1.75                     | 0.45              |
| 1:A:500:ALA:O    | 1:A:502:ILE:HG23 | 2.15                     | 0.45              |
| 2:B:34:GLU:HG3   | 2:B:35:GLU:H     | 1.81                     | 0.45              |
| 2:B:76:GLU:O     | 2:B:79:PRO:HD3   | 2.17                     | 0.45              |
| 2:C:110:GLN:HA   | 2:C:113:VAL:HG12 | 1.98                     | 0.45              |
| 2:C:188:ARG:N    | 7:D:704:HOH:O    | 2.49                     | 0.45              |
| 1:D:41:SER:N     | 2:E:142:LYS:HE2  | 2.31                     | 0.45              |
| 1:D:273:LEU:N    | 1:D:273:LEU:CD1  | 2.78                     | 0.45              |
| 1:D:289:GLY:N    | 1:D:318:HIS:O    | 2.35                     | 0.45              |
| 1:D:334:GLU:HG3  | 1:D:538:LEU:HD13 | 1.98                     | 0.45              |
| 1:D:467:ASP:OD2  | 1:D:474:HIS:CE1  | 2.69                     | 0.45              |
| 2:F:7:LEU:HD22   | 2:F:30:PHE:CE1   | 2.52                     | 0.45              |
| 2:F:75:ASP:HB2   | 2:F:84:PHE:CE2   | 2.52                     | 0.45              |
| 1:A:491:GLN:HE22 | 1:A:570:TYR:HB3  | 1.80                     | 0.45              |
| 2:B:96:ARG:HH12  | 2:C:76:GLU:CD    | 2.20                     | 0.45              |
| 2:C:34:GLU:N     | 2:C:34:GLU:CD    | 2.69                     | 0.45              |
| 2:C:141:ASP:N    | 2:C:141:ASP:OD1  | 2.50                     | 0.45              |
| 2:F:98:TRP:CE3   | 2:F:101:PHE:HB2  | 2.51                     | 0.45              |
| 1:A:14:ILE:HG13  | 1:A:131:PHE:HE1  | 1.81                     | 0.45              |
| 1:A:145:LEU:O    | 1:A:220:PHE:N    | 2.49                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:313:VAL:HG13 | 1:A:314:PRO:HD3  | 1.97                     | 0.45              |
| 1:A:389:GLU:HA   | 1:A:405:ASP:O    | 2.17                     | 0.45              |
| 1:A:465:TYR:N    | 1:A:476:ALA:O    | 2.47                     | 0.45              |
| 2:B:177:SER:OG   | 7:B:406:HOH:O    | 2.15                     | 0.45              |
| 2:C:84:PHE:CD1   | 2:C:152:TYR:HB2  | 2.52                     | 0.45              |
| 2:C:117:LYS:HA   | 2:C:121:GLN:HB2  | 1.98                     | 0.45              |
| 1:D:452:LEU:HD22 | 1:D:479:TRP:CZ3  | 2.52                     | 0.45              |
| 2:C:125:LYS:HB3  | 2:C:125:LYS:HE3  | 1.62                     | 0.45              |
| 1:D:59:GLU:HA    | 1:D:62:LYS:HZ3   | 1.81                     | 0.45              |
| 1:D:143:LYS:O    | 1:D:216:VAL:HA   | 2.17                     | 0.45              |
| 1:D:466:ILE:HD11 | 1:D:552:LYS:HB2  | 1.99                     | 0.45              |
| 2:E:106:PHE:CE2  | 2:E:135:LEU:CD1  | 2.99                     | 0.45              |
| 2:F:18:ARG:HG3   | 2:F:67:SER:OG    | 2.16                     | 0.45              |
| 1:A:53:ASN:ND2   | 7:A:760:HOH:O    | 2.49                     | 0.45              |
| 1:A:132:ARG:NH2  | 1:A:300:TYR:OH   | 2.50                     | 0.45              |
| 1:A:143:LYS:C    | 1:A:184:SER:HB2  | 2.37                     | 0.45              |
| 1:A:329:ASP:OD2  | 7:A:724:HOH:O    | 2.20                     | 0.45              |
| 1:A:493:CYS:N    | 7:A:704:HOH:O    | 2.48                     | 0.45              |
| 1:A:552:LYS:HB2  | 1:A:553:PRO:CD   | 2.45                     | 0.45              |
| 2:B:37:PHE:CZ    | 6:B:301:GSH:HA32 | 2.52                     | 0.45              |
| 2:C:213:ARG:O    | 2:C:217:LEU:HG   | 2.16                     | 0.45              |
| 1:D:451:ARG:NH2  | 1:D:490:LEU:HD23 | 2.31                     | 0.45              |
| 2:F:135:LEU:HD11 | 2:F:157:LEU:HD13 | 1.99                     | 0.45              |
| 2:F:188:ARG:O    | 2:F:191:GLU:HG2  | 2.17                     | 0.45              |
| 1:A:452:LEU:HD13 | 1:A:493:CYS:SG   | 2.57                     | 0.45              |
| 2:C:157:LEU:CD1  | 2:C:185:TRP:CH2  | 2.99                     | 0.45              |
| 2:E:122:GLU:HA   | 2:E:125:LYS:HE3  | 1.99                     | 0.45              |
| 1:A:290:LEU:O    | 1:A:290:LEU:HG   | 2.17                     | 0.45              |
| 1:A:560:GLN:HG2  | 7:A:734:HOH:O    | 2.16                     | 0.45              |
| 1:D:29:LYS:HD3   | 7:D:813:HOH:O    | 2.17                     | 0.45              |
| 2:F:101:PHE:N    | 2:F:101:PHE:CD1  | 2.84                     | 0.45              |
| 2:F:136:GLU:OE1  | 2:F:179:SER:HA   | 2.17                     | 0.45              |
| 2:F:144:TYR:HE1  | 2:F:189:CYS:HG   | 1.63                     | 0.45              |
| 1:A:256:VAL:HA   | 1:A:257:PRO:HD3  | 1.83                     | 0.45              |
| 1:A:477:ILE:H    | 1:A:477:ILE:HG13 | 1.59                     | 0.45              |
| 1:A:538:LEU:HB3  | 1:A:544:GLN:OE1  | 2.17                     | 0.45              |
| 2:B:97:PHE:CZ    | 2:B:101:PHE:HE2  | 2.35                     | 0.45              |
| 2:C:158:ILE:HD11 | 2:C:186:ALA:O    | 2.16                     | 0.45              |
| 2:C:164:PHE:HD2  | 2:C:183:ILE:HG22 | 1.79                     | 0.45              |
| 2:C:183:ILE:HD12 | 2:C:184:ALA:N    | 2.32                     | 0.45              |
| 1:D:152:LYS:CB   | 1:D:561:ILE:HA   | 2.46                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:413:TYR:HD2  | 1:D:418:GLN:HG2  | 1.82                     | 0.45              |
| 1:D:462:PHE:C    | 1:D:528:PHE:HZ   | 2.20                     | 0.45              |
| 2:F:23:LEU:CA    | 2:F:74:VAL:HG11  | 2.43                     | 0.45              |
| 1:A:79:ARG:HG3   | 1:A:84:ASP:OD2   | 2.17                     | 0.45              |
| 1:A:104:SER:N    | 1:A:107:ARG:O    | 2.49                     | 0.45              |
| 1:A:224:ALA:HB3  | 1:A:309:MET:CG   | 2.47                     | 0.45              |
| 1:A:235:GLU:OE2  | 1:A:287:TRP:CG   | 2.70                     | 0.45              |
| 1:A:265:LYS:HZ2  | 1:A:266:LEU:HG   | 1.80                     | 0.45              |
| 2:C:16:GLY:HA3   | 2:C:20:ARG:HH21  | 1.82                     | 0.45              |
| 2:C:156:SER:OG   | 7:C:407:HOH:O    | 2.20                     | 0.45              |
| 2:C:187:LYS:CE   | 1:D:496:CYS:HB2  | 2.47                     | 0.45              |
| 1:D:29:LYS:O     | 1:D:32:LEU:HB2   | 2.17                     | 0.45              |
| 1:D:393:THR:CG2  | 1:D:400:ARG:H    | 2.30                     | 0.45              |
| 1:D:500:ALA:HB1  | 7:D:706:HOH:O    | 2.17                     | 0.45              |
| 2:F:135:LEU:HD23 | 2:F:145:PHE:HZ   | 1.82                     | 0.45              |
| 1:A:286:ASN:O    | 1:A:287:TRP:CB   | 2.63                     | 0.44              |
| 1:A:510:ARG:NH1  | 1:A:518:LEU:H    | 2.15                     | 0.44              |
| 2:B:14:MET:HG3   | 2:B:163:TRP:NE1  | 2.32                     | 0.44              |
| 2:B:21:VAL:HG21  | 2:B:158:ILE:HD12 | 1.99                     | 0.44              |
| 2:C:10:TYR:O     | 2:C:20:ARG:NH2   | 2.42                     | 0.44              |
| 1:D:198:VAL:HG13 | 1:D:565:ASN:ND2  | 2.32                     | 0.44              |
| 1:D:364:LEU:CD2  | 1:D:402:ARG:HH12 | 2.30                     | 0.44              |
| 1:D:407:VAL:HG23 | 1:D:420:LYS:O    | 2.16                     | 0.44              |
| 2:F:41:SER:HB3   | 2:F:43:LEU:HD11  | 1.98                     | 0.44              |
| 2:F:98:TRP:CE3   | 2:F:98:TRP:O     | 2.70                     | 0.44              |
| 1:A:133:ASN:HA   | 1:A:136:PHE:O    | 2.17                     | 0.44              |
| 1:A:192:VAL:HG12 | 1:A:205:HIS:CD2  | 2.53                     | 0.44              |
| 1:A:278:ARG:O    | 1:A:282:MET:SD   | 2.75                     | 0.44              |
| 1:A:507:VAL:CG2  | 1:A:508:SER:N    | 2.81                     | 0.44              |
| 2:B:161:SER:HB2  | 2:B:186:ALA:HB1  | 2.00                     | 0.44              |
| 2:C:5:PRO:HB3    | 2:C:59:HIS:NE2   | 2.32                     | 0.44              |
| 1:D:192:VAL:HG23 | 1:D:259:VAL:HG21 | 1.98                     | 0.44              |
| 1:D:360:TYR:HB3  | 1:D:393:THR:OG1  | 2.17                     | 0.44              |
| 2:F:44:LEU:HD21  | 2:F:52:LYS:C     | 2.37                     | 0.44              |
| 1:A:145:LEU:HD11 | 1:A:147:PHE:CE1  | 2.51                     | 0.44              |
| 1:A:238:TRP:HE3  | 1:A:277:ILE:HD11 | 1.82                     | 0.44              |
| 1:D:38:LYS:O     | 2:E:142:LYS:HG2  | 2.18                     | 0.44              |
| 1:D:86:SER:HA    | 1:D:87:PRO:HD2   | 1.86                     | 0.44              |
| 1:D:369:THR:HG1  | 1:D:370:GLY:H    | 1.53                     | 0.44              |
| 1:A:233:THR:O    | 1:A:237:VAL:HG22 | 2.17                     | 0.44              |
| 1:A:423:CYS:HA   | 7:A:782:HOH:O    | 2.16                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:487:GLU:O    | 1:A:490:LEU:HG   | 2.17                     | 0.44              |
| 1:A:506:TYR:CZ   | 1:A:510:ARG:HD3  | 2.53                     | 0.44              |
| 2:B:74:VAL:HA    | 2:B:78:TRP:CE3   | 2.52                     | 0.44              |
| 2:C:10:TYR:HB3   | 2:C:13:SER:CB    | 2.36                     | 0.44              |
| 2:C:14:MET:HG3   | 2:C:163:TRP:CZ2  | 2.52                     | 0.44              |
| 1:D:133:ASN:ND2  | 1:D:138:ILE:HG13 | 2.22                     | 0.44              |
| 1:D:206:LEU:HD22 | 1:D:234:PHE:HD1  | 1.82                     | 0.44              |
| 1:D:210:ILE:HD12 | 1:D:234:PHE:CZ   | 2.52                     | 0.44              |
| 1:D:407:VAL:HG21 | 1:D:419:LEU:HD23 | 2.00                     | 0.44              |
| 2:E:98:TRP:HB2   | 7:E:401:HOH:O    | 2.16                     | 0.44              |
| 2:F:136:GLU:HG2  | 2:F:179:SER:HB2  | 2.00                     | 0.44              |
| 1:A:32:LEU:HG    | 1:A:360:TYR:HB2  | 2.00                     | 0.44              |
| 1:A:90:THR:HB    | 1:A:91:GLY:H     | 1.55                     | 0.44              |
| 1:A:213:ARG:HD3  | 1:A:216:VAL:CG2  | 2.48                     | 0.44              |
| 1:A:464:SER:O    | 1:A:551:VAL:N    | 2.46                     | 0.44              |
| 1:A:534:HIS:CE1  | 1:A:535:PHE:CE1  | 3.06                     | 0.44              |
| 1:A:545:PHE:HE1  | 7:A:919:HOH:O    | 2.00                     | 0.44              |
| 2:C:128:PHE:O    | 2:C:132:VAL:HG12 | 2.16                     | 0.44              |
| 2:C:163:TRP:HB3  | 2:C:167:TYR:CE2  | 2.52                     | 0.44              |
| 2:C:209:ALA:CA   | 2:C:212:TYR:HE2  | 2.26                     | 0.44              |
| 1:D:21:THR:HB    | 1:D:416:THR:HB   | 2.00                     | 0.44              |
| 1:D:121:THR:HG1  | 1:D:336:TRP:HE1  | 1.65                     | 0.44              |
| 1:D:310:GLU:O    | 1:D:313:VAL:HG12 | 2.18                     | 0.44              |
| 2:E:145:PHE:N    | 2:E:154:ASP:OD2  | 2.39                     | 0.44              |
| 2:F:144:TYR:HB3  | 2:F:154:ASP:OD2  | 2.17                     | 0.44              |
| 2:F:190:MET:O    | 2:F:196:SER:HB2  | 2.17                     | 0.44              |
| 1:A:76:TYR:HB2   | 1:A:89:LEU:HD11  | 1.99                     | 0.44              |
| 1:A:284:LEU:HB2  | 1:A:287:TRP:H    | 1.81                     | 0.44              |
| 1:A:477:ILE:HG21 | 1:A:497:LEU:HD23 | 1.99                     | 0.44              |
| 1:A:558:VAL:HG22 | 7:A:829:HOH:O    | 2.17                     | 0.44              |
| 2:C:114:TRP:CE3  | 2:C:212:TYR:CE2  | 3.06                     | 0.44              |
| 2:C:209:ALA:HA   | 2:C:212:TYR:CD2  | 2.51                     | 0.44              |
| 1:D:242:VAL:O    | 1:D:246:LYS:HG3  | 2.17                     | 0.44              |
| 1:D:360:TYR:OH   | 1:D:362:GLU:OE2  | 2.24                     | 0.44              |
| 1:D:494:CYS:HB3  | 1:D:520:LEU:HB3  | 2.00                     | 0.44              |
| 1:A:27:VAL:CG1   | 1:A:357:ASN:HB3  | 2.48                     | 0.44              |
| 1:A:387:GLU:HG2  | 1:A:408:LYS:HB2  | 1.98                     | 0.44              |
| 2:C:57:LEU:HB3   | 2:C:64:VAL:CG1   | 2.47                     | 0.44              |
| 2:C:166:ALA:HB2  | 2:C:206:VAL:HG22 | 2.00                     | 0.44              |
| 1:D:218:TYR:CE1  | 1:D:220:PHE:HB2  | 2.52                     | 0.44              |
| 1:D:440:ASP:OD1  | 1:D:441:LEU:N    | 2.50                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:50:ILE:HD12  | 2:E:51:HIS:N     | 2.33                     | 0.44              |
| 2:F:113:VAL:HG22 | 2:F:167:TYR:O    | 2.17                     | 0.44              |
| 1:A:74:GLU:O     | 1:A:78:LYS:HB2   | 2.18                     | 0.44              |
| 1:A:151:SER:O    | 1:A:565:ASN:ND2  | 2.50                     | 0.44              |
| 1:A:280:LYS:O    | 1:A:283:SER:OG   | 2.31                     | 0.44              |
| 1:A:313:VAL:N    | 1:A:314:PRO:HD2  | 2.32                     | 0.44              |
| 2:C:98:TRP:CE2   | 2:C:157:LEU:HD22 | 2.52                     | 0.44              |
| 2:C:177:SER:HB2  | 7:C:402:HOH:O    | 2.16                     | 0.44              |
| 2:C:187:LYS:HE3  | 1:D:492:ASP:C    | 2.38                     | 0.44              |
| 2:C:187:LYS:O    | 2:C:190:MET:HB2  | 2.18                     | 0.44              |
| 1:D:76:TYR:O     | 1:D:88:ILE:HG21  | 2.17                     | 0.44              |
| 1:D:77:ILE:HG13  | 1:D:88:ILE:CD1   | 2.48                     | 0.44              |
| 1:D:475:TYR:HB2  | 1:D:518:LEU:HB2  | 2.00                     | 0.44              |
| 1:D:493:CYS:SG   | 1:D:497:LEU:HD11 | 2.58                     | 0.44              |
| 1:D:518:LEU:HD12 | 1:D:519:GLU:N    | 2.33                     | 0.44              |
| 2:E:93:ALA:HA    | 2:F:73:TYR:CE1   | 2.53                     | 0.44              |
| 2:F:10:TYR:CD1   | 2:F:12:PRO:HD2   | 2.52                     | 0.44              |
| 1:A:96:ALA:HA    | 1:A:161:PRO:O    | 2.18                     | 0.44              |
| 1:A:210:ILE:HG21 | 1:A:210:ILE:HD13 | 1.55                     | 0.44              |
| 1:A:315:LYS:CA   | 1:A:318:HIS:HB3  | 2.46                     | 0.44              |
| 1:A:332:SER:HB3  | 1:A:538:LEU:HD12 | 1.99                     | 0.44              |
| 1:A:408:LYS:HE3  | 1:A:420:LYS:NZ   | 2.33                     | 0.44              |
| 1:A:429:LEU:HD13 | 1:A:546:LYS:NZ   | 2.33                     | 0.44              |
| 2:C:21:VAL:O     | 2:C:194:SER:HB2  | 2.18                     | 0.44              |
| 1:D:79:ARG:O     | 1:D:84:ASP:HB3   | 2.17                     | 0.44              |
| 1:D:104:SER:O    | 1:D:105:GLN:HB2  | 2.18                     | 0.44              |
| 1:D:154:TYR:CD2  | 1:D:560:GLN:HA   | 2.53                     | 0.44              |
| 1:D:383:LYS:N    | 1:D:386:GLU:OE2  | 2.49                     | 0.44              |
| 2:E:165:GLN:HG3  | 2:E:168:GLU:OE2  | 2.17                     | 0.44              |
| 2:E:192:LYS:O    | 2:E:196:SER:HB2  | 2.17                     | 0.44              |
| 2:F:77:ALA:HB3   | 2:F:78:TRP:CE3   | 2.53                     | 0.44              |
| 2:F:89:PRO:O     | 2:F:92:ARG:HB3   | 2.17                     | 0.44              |
| 1:A:113:PHE:HZ   | 1:A:557:LYS:HZ2  | 1.65                     | 0.43              |
| 1:A:148:ILE:HB   | 1:A:170:TYR:HE2  | 1.83                     | 0.43              |
| 1:A:198:VAL:HA   | 1:A:201:ALA:HB3  | 2.00                     | 0.43              |
| 1:A:354:VAL:HG23 | 1:A:419:LEU:HD13 | 2.00                     | 0.43              |
| 1:A:460:ILE:HD12 | 1:A:481:ILE:C    | 2.39                     | 0.43              |
| 1:A:551:VAL:CG1  | 1:A:555:ASN:HD22 | 2.26                     | 0.43              |
| 2:B:70:VAL:O     | 2:B:74:VAL:HG23  | 2.18                     | 0.43              |
| 1:D:198:VAL:HA   | 1:D:201:ALA:HB3  | 1.99                     | 0.43              |
| 1:D:370:GLY:HA2  | 1:D:371:GLU:HA   | 1.77                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:163:TRP:HA   | 2:E:205:ILE:HD13 | 1.98                     | 0.43              |
| 2:F:40:LYS:H     | 2:F:40:LYS:HZ1   | 1.65                     | 0.43              |
| 2:F:182:LEU:HD23 | 2:F:183:ILE:N    | 2.32                     | 0.43              |
| 1:A:214:ASP:OD1  | 1:A:214:ASP:N    | 2.50                     | 0.43              |
| 1:A:329:ASP:HA   | 1:A:352:PHE:HD1  | 1.82                     | 0.43              |
| 1:A:365:PRO:HB3  | 1:A:388:TYR:CE1  | 2.53                     | 0.43              |
| 2:B:20:ARG:NH2   | 2:B:200:PRO:HD3  | 2.32                     | 0.43              |
| 1:D:56:ASP:N     | 1:D:57:PRO:HD3   | 2.33                     | 0.43              |
| 1:D:136:PHE:CD1  | 1:D:299:LYS:HD2  | 2.52                     | 0.43              |
| 1:D:273:LEU:O    | 1:D:277:ILE:HG22 | 2.18                     | 0.43              |
| 2:E:26:LYS:NZ    | 2:E:78:TRP:O     | 2.34                     | 0.43              |
| 2:E:99:ALA:HB3   | 2:E:152:TYR:OH   | 2.18                     | 0.43              |
| 1:A:87:PRO:HA    | 1:A:91:GLY:O     | 2.18                     | 0.43              |
| 1:A:232:ARG:HG3  | 1:A:233:THR:N    | 2.33                     | 0.43              |
| 1:A:295:PHE:CE1  | 1:A:298:ALA:HB3  | 2.54                     | 0.43              |
| 1:A:379:LEU:HG   | 1:A:380:THR:HG23 | 2.01                     | 0.43              |
| 1:A:408:LYS:HE3  | 1:A:420:LYS:HE2  | 2.00                     | 0.43              |
| 2:C:129:ILE:HA   | 2:C:132:VAL:HG12 | 1.99                     | 0.43              |
| 1:D:128:ALA:HA   | 1:D:131:PHE:CZ   | 2.53                     | 0.43              |
| 1:D:156:SER:OG   | 1:D:160:VAL:O    | 2.19                     | 0.43              |
| 1:A:128:ALA:HB2  | 1:A:329:ASP:OD2  | 2.18                     | 0.43              |
| 1:A:145:LEU:HD22 | 1:A:213:ARG:CZ   | 2.47                     | 0.43              |
| 1:A:152:LYS:HE3  | 1:A:565:ASN:CB   | 2.49                     | 0.43              |
| 1:A:250:LEU:HD11 | 7:A:891:HOH:O    | 2.17                     | 0.43              |
| 1:A:381:GLN:NE2  | 7:A:762:HOH:O    | 2.50                     | 0.43              |
| 2:B:94:GLN:O     | 2:B:98:TRP:HD1   | 2.01                     | 0.43              |
| 2:B:217:LEU:O    | 7:B:409:HOH:O    | 2.21                     | 0.43              |
| 2:C:103:ASP:HA   | 2:C:107:THR:HG23 | 2.00                     | 0.43              |
| 1:D:7:THR:O      | 1:D:126:ARG:NE   | 2.52                     | 0.43              |
| 2:E:102:VAL:HG13 | 7:E:406:HOH:O    | 2.18                     | 0.43              |
| 1:A:70:ASP:OD2   | 1:A:104:SER:HA   | 2.19                     | 0.43              |
| 1:A:77:ILE:HG21  | 1:A:110:PHE:HB3  | 2.00                     | 0.43              |
| 1:A:274:ALA:O    | 1:A:278:ARG:HB2  | 2.18                     | 0.43              |
| 1:A:302:TYR:CG   | 1:A:328:HIS:CE1  | 3.07                     | 0.43              |
| 2:B:96:ARG:HA    | 2:B:152:TYR:CE2  | 2.51                     | 0.43              |
| 2:B:169:LYS:NZ   | 2:B:206:VAL:CG1  | 2.82                     | 0.43              |
| 2:C:126:LYS:O    | 2:C:129:ILE:HG13 | 2.18                     | 0.43              |
| 1:D:85:THR:O     | 1:D:87:PRO:HD3   | 2.18                     | 0.43              |
| 1:D:152:LYS:CG   | 1:D:565:ASN:HB2  | 2.48                     | 0.43              |
| 1:D:444:SER:HB3  | 1:D:497:LEU:HD23 | 1.99                     | 0.43              |
| 1:D:502:ILE:H    | 1:D:502:ILE:HG13 | 1.56                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:575:PHE:CD1  | 1:D:575:PHE:N    | 2.87                     | 0.43              |
| 2:F:129:ILE:O    | 2:F:132:VAL:HG12 | 2.18                     | 0.43              |
| 2:F:170:PHE:CE2  | 2:F:213:ARG:HD2  | 2.54                     | 0.43              |
| 2:B:93:ALA:HA    | 2:B:96:ARG:HE    | 1.83                     | 0.43              |
| 2:C:105:LYS:CB   | 2:C:105:LYS:HZ2  | 2.31                     | 0.43              |
| 1:D:213:ARG:HG3  | 1:D:214:ASP:H    | 1.83                     | 0.43              |
| 1:D:457:ILE:HD12 | 1:D:481:ILE:HB   | 2.00                     | 0.43              |
| 1:A:167:THR:O    | 1:A:171:ARG:HB3  | 2.19                     | 0.43              |
| 1:A:208:SER:O    | 1:A:211:LEU:HG   | 2.19                     | 0.43              |
| 1:A:476:ALA:HB1  | 1:A:521:ARG:HD2  | 2.00                     | 0.43              |
| 1:D:187:CYS:HB2  | 1:D:209:GLY:HA2  | 2.00                     | 0.43              |
| 1:D:330:TYR:N    | 1:D:338:ALA:O    | 2.29                     | 0.43              |
| 2:E:8:LEU:HG     | 7:E:418:HOH:O    | 2.19                     | 0.43              |
| 1:A:98:SER:C     | 1:A:556:ALA:HB3  | 2.39                     | 0.43              |
| 1:A:149:PHE:CD2  | 1:A:530:LYS:HE2  | 2.53                     | 0.43              |
| 1:A:238:TRP:CE3  | 1:A:277:ILE:HG12 | 2.52                     | 0.43              |
| 1:A:384:ILE:H    | 1:A:384:ILE:HG23 | 1.58                     | 0.43              |
| 2:B:13:SER:HB3   | 2:B:54:ILE:HD11  | 2.00                     | 0.43              |
| 2:C:81:LYS:HG3   | 2:C:82:ASN:N     | 2.33                     | 0.43              |
| 1:D:87:PRO:HG2   | 2:E:188:ARG:HH21 | 1.83                     | 0.43              |
| 1:D:103:THR:HG22 | 1:D:548:PRO:HB3  | 2.00                     | 0.43              |
| 1:D:193:ILE:HG12 | 1:D:205:HIS:HE1  | 1.82                     | 0.43              |
| 1:D:207:LEU:HA   | 1:D:210:ILE:CG2  | 2.48                     | 0.43              |
| 2:E:135:LEU:O    | 2:E:139:LEU:HB2  | 2.19                     | 0.43              |
| 2:F:114:TRP:CD1  | 2:F:167:TYR:CD1  | 3.06                     | 0.43              |
| 1:A:33:LYS:O     | 1:A:36:LEU:HG    | 2.19                     | 0.43              |
| 1:A:213:ARG:HA   | 1:A:213:ARG:HD3  | 1.94                     | 0.43              |
| 1:A:423:CYS:HB2  | 1:A:542:ALA:HB3  | 2.01                     | 0.43              |
| 2:C:15:PHE:O     | 2:C:18:ARG:HB2   | 2.19                     | 0.43              |
| 2:C:65:CYS:O     | 2:C:66:GLU:HB2   | 2.18                     | 0.43              |
| 2:C:114:TRP:CD1  | 2:C:167:TYR:CE1  | 3.06                     | 0.43              |
| 2:C:187:LYS:HD3  | 1:D:492:ASP:CB   | 2.49                     | 0.43              |
| 2:C:209:ALA:O    | 2:C:212:TYR:CE2  | 2.72                     | 0.43              |
| 1:D:146:GLN:O    | 1:D:205:HIS:CD2  | 2.71                     | 0.43              |
| 1:D:170:TYR:HB3  | 1:D:194:PHE:CZ   | 2.53                     | 0.43              |
| 2:E:26:LYS:HA    | 2:E:82:ASN:ND2   | 2.28                     | 0.43              |
| 1:A:235:GLU:OE2  | 1:A:287:TRP:CD1  | 2.72                     | 0.43              |
| 1:A:448:ALA:CB   | 1:A:497:LEU:HD12 | 2.49                     | 0.43              |
| 1:D:87:PRO:CG    | 2:E:188:ARG:NE   | 2.78                     | 0.43              |
| 1:D:120:ASN:CB   | 1:D:358:LEU:HD22 | 2.49                     | 0.43              |
| 1:D:219:VAL:HB   | 1:D:295:PHE:HZ   | 1.84                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:442:GLN:HG2  | 1:D:462:PHE:CZ   | 2.52                     | 0.43              |
| 2:E:15:PHE:HB3   | 2:E:67:SER:CB    | 2.48                     | 0.43              |
| 2:F:81:LYS:O     | 2:F:83:PRO:HD3   | 2.19                     | 0.43              |
| 2:F:213:ARG:NH1  | 2:F:217:LEU:HD21 | 2.34                     | 0.43              |
| 1:A:34:GLU:O     | 1:A:38:LYS:HG2   | 2.19                     | 0.42              |
| 1:A:273:LEU:O    | 1:A:277:ILE:HG22 | 2.19                     | 0.42              |
| 1:A:336:TRP:CB   | 1:A:358:LEU:HD13 | 2.46                     | 0.42              |
| 2:B:8:LEU:HD12   | 2:B:56:VAL:HB    | 2.00                     | 0.42              |
| 1:D:151:SER:HB2  | 1:D:194:PHE:C    | 2.40                     | 0.42              |
| 1:D:538:LEU:HD12 | 1:D:539:GLY:N    | 2.34                     | 0.42              |
| 2:F:190:MET:HA   | 2:F:195:VAL:CG2  | 2.48                     | 0.42              |
| 1:A:31:THR:O     | 1:A:34:GLU:HG3   | 2.19                     | 0.42              |
| 1:A:87:PRO:HD2   | 2:B:188:ARG:HB3  | 2.00                     | 0.42              |
| 1:A:108:PRO:CG   | 1:A:552:LYS:HG2  | 2.48                     | 0.42              |
| 1:A:111:ILE:HG21 | 1:A:398:LEU:CD2  | 2.49                     | 0.42              |
| 1:A:152:LYS:O    | 1:A:167:THR:HG21 | 2.19                     | 0.42              |
| 1:A:365:PRO:CG   | 1:A:374:GLU:HG2  | 2.48                     | 0.42              |
| 1:A:466:ILE:HG13 | 1:A:466:ILE:O    | 2.19                     | 0.42              |
| 1:D:20:MET:HG3   | 1:D:21:THR:N     | 2.33                     | 0.42              |
| 1:D:157:THR:OG1  | 1:D:469:SER:HB3  | 2.19                     | 0.42              |
| 1:D:218:TYR:HE1  | 1:D:220:PHE:HB2  | 1.84                     | 0.42              |
| 1:D:222:VAL:HG21 | 4:D:602:ILE:N    | 2.34                     | 0.42              |
| 1:D:510:ARG:HG3  | 1:D:510:ARG:NH1  | 2.34                     | 0.42              |
| 1:D:531:ILE:O    | 1:D:534:HIS:ND1  | 2.52                     | 0.42              |
| 2:E:7:LEU:O      | 2:E:33:ARG:HB2   | 2.19                     | 0.42              |
| 2:E:151:GLY:O    | 2:E:154:ASP:HB2  | 2.19                     | 0.42              |
| 1:A:91:GLY:HA2   | 2:B:143:PRO:N    | 2.34                     | 0.42              |
| 1:A:108:PRO:HB3  | 1:A:555:ASN:CB   | 2.48                     | 0.42              |
| 1:A:182:ILE:O    | 1:A:182:ILE:HG22 | 2.19                     | 0.42              |
| 1:A:242:VAL:HG11 | 1:A:278:ARG:NE   | 2.34                     | 0.42              |
| 1:A:432:ASN:CB   | 1:A:435:LYS:HD2  | 2.38                     | 0.42              |
| 2:B:183:ILE:O    | 2:B:186:ALA:HB3  | 2.19                     | 0.42              |
| 1:D:77:ILE:CG2   | 1:D:110:PHE:HB3  | 2.49                     | 0.42              |
| 1:D:143:LYS:HZ1  | 1:D:187:CYS:HB2  | 1.85                     | 0.42              |
| 1:D:211:LEU:HD12 | 7:D:701:HOH:O    | 2.19                     | 0.42              |
| 1:D:365:PRO:CB   | 1:D:374:GLU:HG2  | 2.48                     | 0.42              |
| 1:D:522:VAL:O    | 1:D:566:VAL:HG23 | 2.19                     | 0.42              |
| 2:E:65:CYS:HB2   | 2:F:97:PHE:CE1   | 2.55                     | 0.42              |
| 2:E:124:GLY:HA2  | 2:E:127:GLU:OE1  | 2.19                     | 0.42              |
| 2:F:20:ARG:HB2   | 2:F:198:SER:OG   | 2.19                     | 0.42              |
| 2:F:23:LEU:HA    | 2:F:74:VAL:CG1   | 2.44                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:F:77:ALA:C     | 2:F:79:PRO:HD3   | 2.39                     | 0.42              |
| 2:F:126:LYS:O    | 2:F:129:ILE:HG13 | 2.18                     | 0.42              |
| 2:F:153:VAL:HA   | 2:F:156:SER:OG   | 2.19                     | 0.42              |
| 1:A:113:PHE:CE1  | 1:A:333:SER:HB2  | 2.55                     | 0.42              |
| 2:B:40:LYS:HB3   | 2:B:40:LYS:HE2   | 1.83                     | 0.42              |
| 2:C:17:MET:CE    | 2:C:200:PRO:HD2  | 2.48                     | 0.42              |
| 2:C:185:TRP:O    | 2:C:188:ARG:HB3  | 2.19                     | 0.42              |
| 1:D:94:VAL:HG11  | 1:D:112:PRO:CB   | 2.33                     | 0.42              |
| 1:D:199:HIS:HA   | 1:D:525:LYS:HG2  | 2.01                     | 0.42              |
| 1:D:210:ILE:HD12 | 1:D:234:PHE:HZ   | 1.85                     | 0.42              |
| 2:E:204:LYS:O    | 2:E:208:TYR:HD1  | 2.03                     | 0.42              |
| 2:F:17:MET:O     | 2:F:21:VAL:HG23  | 2.18                     | 0.42              |
| 1:A:23:ASN:O     | 1:A:27:VAL:HG23  | 2.19                     | 0.42              |
| 1:A:78:LYS:HB3   | 1:A:78:LYS:HE3   | 1.74                     | 0.42              |
| 1:A:98:SER:HB3   | 1:A:113:PHE:CE1  | 2.54                     | 0.42              |
| 1:A:245:ILE:HD13 | 1:A:267:LEU:HD21 | 2.01                     | 0.42              |
| 1:A:302:TYR:HD1  | 1:A:326:VAL:HG13 | 1.85                     | 0.42              |
| 1:A:328:HIS:O    | 1:A:352:PHE:CE1  | 2.72                     | 0.42              |
| 1:A:396:ALA:HB2  | 7:A:808:HOH:O    | 2.19                     | 0.42              |
| 2:B:67:SER:HA    | 2:B:70:VAL:HG12  | 2.02                     | 0.42              |
| 2:C:81:LYS:HB3   | 2:C:81:LYS:HE2   | 1.79                     | 0.42              |
| 2:C:122:GLU:HA   | 2:C:125:LYS:HG3  | 2.02                     | 0.42              |
| 2:C:143:PRO:HB2  | 2:C:144:TYR:CD2  | 2.54                     | 0.42              |
| 1:D:87:PRO:HD2   | 2:E:188:ARG:HE   | 1.84                     | 0.42              |
| 1:D:166:THR:HA   | 1:D:169:VAL:HG12 | 2.02                     | 0.42              |
| 1:D:227:LEU:HD23 | 1:D:227:LEU:HA   | 1.73                     | 0.42              |
| 1:D:256:VAL:O    | 1:D:260:ARG:HG3  | 2.19                     | 0.42              |
| 1:D:261:THR:HB   | 1:D:265:LYS:HZ1  | 1.83                     | 0.42              |
| 1:D:305:MET:CG   | 1:D:347:PRO:HB3  | 2.48                     | 0.42              |
| 2:E:73:TYR:CE1   | 2:F:90:TYR:HA    | 2.54                     | 0.42              |
| 2:F:98:TRP:HZ2   | 2:F:135:LEU:CG   | 2.21                     | 0.42              |
| 1:A:388:TYR:O    | 1:A:407:VAL:HG12 | 2.19                     | 0.42              |
| 1:A:408:LYS:HE3  | 1:A:420:LYS:CE   | 2.50                     | 0.42              |
| 1:D:99:LEU:HB3   | 1:D:557:LYS:CB   | 2.43                     | 0.42              |
| 1:D:152:LYS:HE3  | 1:D:530:LYS:HE2  | 2.02                     | 0.42              |
| 1:D:197:ASP:OD1  | 1:D:197:ASP:N    | 2.43                     | 0.42              |
| 1:D:261:THR:C    | 1:D:265:LYS:HZ3  | 2.23                     | 0.42              |
| 1:D:287:TRP:CD1  | 1:D:319:TYR:CD1  | 3.07                     | 0.42              |
| 1:D:402:ARG:NH2  | 7:D:731:HOH:O    | 2.53                     | 0.42              |
| 2:E:52:LYS:HE3   | 2:E:52:LYS:HB2   | 1.91                     | 0.42              |
| 2:E:152:TYR:O    | 2:E:155:ILE:HG13 | 2.20                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:161:PRO:HB2  | 7:A:755:HOH:O    | 2.20                     | 0.42              |
| 1:A:203:TYR:HE1  | 1:A:237:VAL:HB   | 1.84                     | 0.42              |
| 1:A:420:LYS:HE3  | 1:A:420:LYS:HB3  | 1.80                     | 0.42              |
| 1:A:477:ILE:HG12 | 1:A:518:LEU:HD21 | 2.01                     | 0.42              |
| 2:B:7:LEU:HG     | 7:B:418:HOH:O    | 2.20                     | 0.42              |
| 2:B:99:ALA:O     | 2:B:102:VAL:HG13 | 2.20                     | 0.42              |
| 1:D:437:THR:N    | 1:D:440:ASP:OD2  | 2.53                     | 0.42              |
| 1:D:475:TYR:N    | 1:D:475:TYR:CD1  | 2.88                     | 0.42              |
| 2:F:18:ARG:N     | 2:F:159:THR:HG21 | 2.34                     | 0.42              |
| 1:A:62:LYS:HB3   | 1:A:62:LYS:HE3   | 1.87                     | 0.42              |
| 1:D:10:MET:HG3   | 1:D:11:ASN:H     | 1.85                     | 0.42              |
| 1:D:87:PRO:CG    | 2:E:188:ARG:HE   | 2.30                     | 0.42              |
| 2:E:11:TRP:CE3   | 2:E:12:PRO:HD3   | 2.55                     | 0.42              |
| 2:F:5:PRO:HB3    | 2:F:59:HIS:NE2   | 2.35                     | 0.42              |
| 1:A:118:MET:CE   | 1:A:169:VAL:HA   | 2.49                     | 0.42              |
| 1:A:145:LEU:HD13 | 1:A:209:GLY:CA   | 2.48                     | 0.42              |
| 1:A:452:LEU:HD23 | 1:A:481:ILE:HG21 | 2.02                     | 0.42              |
| 1:D:36:LEU:C     | 1:D:39:ASN:H     | 2.23                     | 0.42              |
| 2:E:10:TYR:H     | 2:E:54:ILE:HD13  | 1.85                     | 0.42              |
| 2:E:68:LEU:HD11  | 2:E:152:TYR:CZ   | 2.55                     | 0.42              |
| 2:F:106:PHE:O    | 2:F:110:GLN:HG3  | 2.20                     | 0.42              |
| 1:A:42:ALA:HA    | 2:B:143:PRO:CG   | 2.43                     | 0.42              |
| 2:F:23:LEU:HD13  | 2:F:28:VAL:HG13  | 2.02                     | 0.42              |
| 1:A:167:THR:HG21 | 1:A:560:GLN:HB3  | 2.02                     | 0.41              |
| 1:A:227:LEU:HD13 | 1:A:316:LEU:HD21 | 2.02                     | 0.41              |
| 1:A:295:PHE:O    | 1:A:295:PHE:HD1  | 2.02                     | 0.41              |
| 1:A:527:THR:HB   | 1:A:561:ILE:HG21 | 2.02                     | 0.41              |
| 2:C:183:ILE:HD13 | 1:D:492:ASP:HA   | 2.02                     | 0.41              |
| 1:D:94:VAL:HB    | 1:D:113:PHE:H    | 1.84                     | 0.41              |
| 1:D:127:THR:O    | 1:D:130:ALA:HB3  | 2.20                     | 0.41              |
| 2:F:203:GLU:O    | 2:F:206:VAL:HG22 | 2.19                     | 0.41              |
| 1:A:29:LYS:O     | 1:A:32:LEU:HB2   | 2.20                     | 0.41              |
| 1:A:136:PHE:HD1  | 1:A:299:LYS:HE2  | 1.84                     | 0.41              |
| 1:A:339:ALA:N    | 1:A:353:ALA:O    | 2.27                     | 0.41              |
| 1:A:477:ILE:HG12 | 1:A:518:LEU:CD2  | 2.50                     | 0.41              |
| 1:A:494:CYS:SG   | 1:A:572:SER:HA   | 2.59                     | 0.41              |
| 1:A:498:ASP:OD1  | 1:A:518:LEU:HB3  | 2.20                     | 0.41              |
| 2:C:9:ASP:HB2    | 2:C:20:ARG:NH2   | 2.35                     | 0.41              |
| 2:C:98:TRP:HE3   | 2:C:101:PHE:HB2  | 1.85                     | 0.41              |
| 2:C:166:ALA:O    | 2:C:170:PHE:HD2  | 2.03                     | 0.41              |
| 2:C:188:ARG:HB2  | 2:C:188:ARG:HE   | 1.68                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:67:LEU:HB2   | 7:D:878:HOH:O    | 2.19                     | 0.41              |
| 1:D:76:TYR:HB3   | 1:D:88:ILE:HG21  | 2.02                     | 0.41              |
| 1:D:149:PHE:CD2  | 1:D:202:LEU:HD22 | 2.55                     | 0.41              |
| 1:D:151:SER:HB2  | 1:D:194:PHE:CA   | 2.50                     | 0.41              |
| 1:D:358:LEU:H    | 1:D:358:LEU:HG   | 1.59                     | 0.41              |
| 1:D:382:VAL:HG22 | 1:D:388:TYR:CD2  | 2.55                     | 0.41              |
| 1:D:451:ARG:NH1  | 1:D:493:CYS:H    | 2.18                     | 0.41              |
| 2:E:169:LYS:HE2  | 2:E:169:LYS:HB3  | 1.82                     | 0.41              |
| 2:F:211:GLU:HA   | 2:F:214:LYS:HG2  | 2.01                     | 0.41              |
| 1:A:80:MET:HE2   | 1:A:88:ILE:HD11  | 2.01                     | 0.41              |
| 1:A:210:ILE:HD12 | 7:A:847:HOH:O    | 2.20                     | 0.41              |
| 2:B:65:CYS:O     | 2:B:69:ASN:HB3   | 2.20                     | 0.41              |
| 2:C:120:GLU:HB3  | 7:C:436:HOH:O    | 2.20                     | 0.41              |
| 2:C:169:LYS:HE2  | 2:C:169:LYS:HB2  | 1.69                     | 0.41              |
| 1:D:46:GLN:NE2   | 2:E:148:ASP:OD2  | 2.54                     | 0.41              |
| 1:D:190:ASP:O    | 1:D:193:ILE:HB   | 2.20                     | 0.41              |
| 1:D:223:PHE:HZ   | 1:D:536:LEU:HB2  | 1.76                     | 0.41              |
| 2:E:183:ILE:HG13 | 2:E:184:ALA:N    | 2.34                     | 0.41              |
| 1:A:103:THR:HB   | 1:A:106:GLY:HA2  | 2.02                     | 0.41              |
| 1:A:143:LYS:HG3  | 1:A:144:ALA:N    | 2.34                     | 0.41              |
| 1:A:574:ALA:O    | 1:A:575:PHE:HB2  | 2.21                     | 0.41              |
| 2:C:123:ALA:HA   | 7:C:454:HOH:O    | 2.20                     | 0.41              |
| 1:D:46:GLN:HE21  | 2:E:148:ASP:CB   | 2.33                     | 0.41              |
| 1:D:211:LEU:HD13 | 1:D:212:PHE:CD1  | 2.55                     | 0.41              |
| 1:D:316:LEU:O    | 1:D:320:ALA:N    | 2.48                     | 0.41              |
| 2:F:125:LYS:HZ3  | 2:F:129:ILE:HG21 | 1.85                     | 0.41              |
| 2:F:176:GLU:O    | 2:F:183:ILE:HG21 | 2.19                     | 0.41              |
| 2:F:213:ARG:HH11 | 2:F:217:LEU:HD21 | 1.85                     | 0.41              |
| 1:A:303:GLY:N    | 1:A:328:HIS:CE1  | 2.89                     | 0.41              |
| 1:A:543:GLY:C    | 1:A:544:GLN:HG3  | 2.40                     | 0.41              |
| 1:D:64:MET:O     | 1:D:66:PRO:HD3   | 2.20                     | 0.41              |
| 1:D:510:ARG:HB3  | 1:D:575:PHE:CE2  | 2.55                     | 0.41              |
| 2:E:93:ALA:HA    | 2:F:73:TYR:HE1   | 1.86                     | 0.41              |
| 2:E:99:ALA:O     | 2:E:102:VAL:HG12 | 2.21                     | 0.41              |
| 2:E:125:LYS:HD2  | 2:E:173:PHE:CE2  | 2.54                     | 0.41              |
| 2:F:114:TRP:CD1  | 2:F:167:TYR:CE1  | 3.09                     | 0.41              |
| 2:F:212:TYR:HD1  | 2:F:212:TYR:HA   | 1.78                     | 0.41              |
| 1:A:110:PHE:CD1  | 1:A:556:ALA:HB2  | 2.56                     | 0.41              |
| 1:A:222:VAL:HB   | 1:A:533:GLU:HB3  | 2.02                     | 0.41              |
| 2:B:146:GLY:CA   | 2:B:151:GLY:HA3  | 2.50                     | 0.41              |
| 2:C:73:TYR:HA    | 2:C:76:GLU:CD    | 2.41                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:39:ASN:OD1   | 2:E:141:ASP:O    | 2.38                     | 0.41              |
| 1:D:75:PRO:O     | 1:D:79:ARG:HG3   | 2.20                     | 0.41              |
| 2:E:68:LEU:HD11  | 2:E:152:TYR:HE1  | 1.84                     | 0.41              |
| 2:E:76:GLU:OE2   | 2:F:92:ARG:HD3   | 2.21                     | 0.41              |
| 2:E:183:ILE:O    | 2:E:186:ALA:HB3  | 2.20                     | 0.41              |
| 1:A:77:ILE:HD12  | 1:A:112:PRO:HD3  | 2.03                     | 0.41              |
| 1:A:119:GLU:CG   | 1:A:120:ASN:N    | 2.83                     | 0.41              |
| 1:A:439:ARG:O    | 1:A:443:LEU:HB2  | 2.21                     | 0.41              |
| 1:A:467:ASP:OD1  | 1:A:474:HIS:N    | 2.46                     | 0.41              |
| 1:A:491:GLN:NE2  | 1:A:570:TYR:HB3  | 2.36                     | 0.41              |
| 2:B:151:GLY:O    | 2:B:154:ASP:HB2  | 2.20                     | 0.41              |
| 2:C:22:ALA:HB1   | 2:C:74:VAL:HG11  | 2.03                     | 0.41              |
| 2:C:84:PHE:CZ    | 2:C:152:TYR:HD2  | 2.38                     | 0.41              |
| 1:D:11:ASN:O     | 1:D:14:ILE:HG13  | 2.21                     | 0.41              |
| 1:D:13:VAL:HG22  | 1:D:127:THR:HG23 | 2.03                     | 0.41              |
| 1:D:286:ASN:O    | 1:D:287:TRP:HB3  | 2.21                     | 0.41              |
| 1:D:316:LEU:HD12 | 1:D:316:LEU:HA   | 1.71                     | 0.41              |
| 2:E:66:GLU:OE2   | 2:F:100:ASP:CB   | 2.69                     | 0.41              |
| 2:F:10:TYR:CG    | 2:F:37:PHE:CE1   | 3.09                     | 0.41              |
| 2:F:23:LEU:HD23  | 7:F:442:HOH:O    | 2.21                     | 0.41              |
| 1:A:163:GLY:HA2  | 1:A:556:ALA:O    | 2.21                     | 0.41              |
| 1:A:187:CYS:HB2  | 1:A:208:SER:O    | 2.21                     | 0.41              |
| 1:A:225:HIS:NE2  | 1:A:529:ARG:HG3  | 2.36                     | 0.41              |
| 1:A:312:TYR:HA   | 1:A:315:LYS:HZ3  | 1.86                     | 0.41              |
| 1:A:433:ILE:HG21 | 1:A:552:LYS:NZ   | 2.36                     | 0.41              |
| 2:B:114:TRP:HD1  | 2:B:167:TYR:HE1  | 1.67                     | 0.41              |
| 2:C:125:LYS:HA   | 2:C:128:PHE:CD2  | 2.56                     | 0.41              |
| 1:D:41:SER:HG    | 2:E:144:TYR:H    | 1.69                     | 0.41              |
| 1:D:99:LEU:HD12  | 1:D:100:SER:H    | 1.86                     | 0.41              |
| 1:D:111:ILE:HD12 | 7:D:815:HOH:O    | 2.20                     | 0.41              |
| 1:D:154:TYR:CZ   | 1:D:559:LEU:HB3  | 2.56                     | 0.41              |
| 1:D:227:LEU:HD22 | 1:D:231:PHE:CE2  | 2.56                     | 0.41              |
| 1:D:503:ASP:CG   | 1:D:504:ALA:N    | 2.73                     | 0.41              |
| 1:D:510:ARG:HG2  | 1:D:515:ILE:CD1  | 2.46                     | 0.41              |
| 1:D:528:PHE:O    | 1:D:531:ILE:HG12 | 2.20                     | 0.41              |
| 2:E:40:LYS:HZ1   | 2:E:52:LYS:HD2   | 1.81                     | 0.41              |
| 2:E:110:GLN:O    | 2:E:113:VAL:HG12 | 2.21                     | 0.41              |
| 2:E:180:PRO:HD2  | 2:E:181:LYS:H    | 1.85                     | 0.41              |
| 1:A:27:VAL:CG1   | 1:A:356:PRO:HB2  | 2.51                     | 0.41              |
| 1:A:33:LYS:HA    | 1:A:36:LEU:CD2   | 2.51                     | 0.41              |
| 1:A:95:PRO:HD2   | 1:A:113:PHE:O    | 2.20                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:234:PHE:CD2  | 1:A:287:TRP:CZ3  | 3.09                     | 0.41              |
| 1:A:374:GLU:HG3  | 1:A:375:LYS:N    | 2.35                     | 0.41              |
| 1:A:433:ILE:HG21 | 1:A:552:LYS:HZ1  | 1.86                     | 0.41              |
| 1:A:546:LYS:HE3  | 1:A:546:LYS:HB2  | 1.73                     | 0.41              |
| 2:B:98:TRP:CZ2   | 2:B:138:GLU:HG2  | 2.56                     | 0.41              |
| 2:B:151:GLY:O    | 2:B:155:ILE:HG13 | 2.21                     | 0.41              |
| 2:B:158:ILE:H    | 2:B:158:ILE:HG12 | 1.64                     | 0.41              |
| 2:C:14:MET:O     | 2:C:18:ARG:HG3   | 2.21                     | 0.41              |
| 2:C:125:LYS:HE2  | 2:C:173:PHE:CE2  | 2.55                     | 0.41              |
| 2:C:140:GLY:C    | 2:C:181:LYS:HZ1  | 2.23                     | 0.41              |
| 1:D:8:PHE:CD1    | 1:D:182:ILE:HG23 | 2.56                     | 0.41              |
| 1:D:68:VAL:HG12  | 1:D:401:TYR:CB   | 2.50                     | 0.41              |
| 1:D:76:TYR:C     | 1:D:88:ILE:HG21  | 2.42                     | 0.41              |
| 1:D:79:ARG:HE    | 1:D:79:ARG:HB2   | 1.65                     | 0.41              |
| 1:D:106:GLY:O    | 1:D:432:ASN:ND2  | 2.54                     | 0.41              |
| 1:D:163:GLY:HA3  | 1:D:560:GLN:OE1  | 2.20                     | 0.41              |
| 1:D:175:PHE:O    | 1:D:179:MET:HB2  | 2.21                     | 0.41              |
| 1:D:207:LEU:HD13 | 1:D:241:ILE:HG23 | 2.02                     | 0.41              |
| 1:D:272:GLU:O    | 1:D:276:THR:HG23 | 2.21                     | 0.41              |
| 1:D:333:SER:H    | 1:D:333:SER:HG   | 1.53                     | 0.41              |
| 1:D:363:PHE:HB3  | 1:D:388:TYR:HB3  | 2.03                     | 0.41              |
| 1:D:434:ASP:HB2  | 1:D:550:CYS:CB   | 2.50                     | 0.41              |
| 1:D:575:PHE:N    | 1:D:575:PHE:HD1  | 2.19                     | 0.41              |
| 2:E:15:PHE:CD1   | 2:E:15:PHE:N     | 2.88                     | 0.41              |
| 2:F:92:ARG:HG3   | 7:F:402:HOH:O    | 2.20                     | 0.41              |
| 2:F:135:LEU:HD13 | 2:F:182:LEU:CD1  | 2.51                     | 0.41              |
| 1:A:551:VAL:HG11 | 1:A:558:VAL:CG1  | 2.47                     | 0.41              |
| 2:B:24:ARG:HH11  | 2:B:24:ARG:HD2   | 1.69                     | 0.41              |
| 2:B:110:GLN:HB2  | 2:B:167:TYR:OH   | 2.20                     | 0.41              |
| 2:B:198:SER:O    | 2:B:200:PRO:HD3  | 2.21                     | 0.41              |
| 2:C:70:VAL:HA    | 2:C:73:TYR:CD2   | 2.57                     | 0.41              |
| 2:C:114:TRP:CD1  | 2:C:167:TYR:HE1  | 2.39                     | 0.41              |
| 1:D:38:LYS:HE2   | 7:D:862:HOH:O    | 2.21                     | 0.41              |
| 1:D:154:TYR:CE2  | 1:D:559:LEU:HB3  | 2.56                     | 0.41              |
| 1:D:284:LEU:HD22 | 1:D:287:TRP:HA   | 2.03                     | 0.41              |
| 1:D:390:VAL:HG11 | 1:D:540:SER:CA   | 2.46                     | 0.41              |
| 1:D:398:LEU:N    | 1:D:398:LEU:HD12 | 2.36                     | 0.41              |
| 1:D:496:CYS:CB   | 1:D:499:ARG:NH1  | 2.83                     | 0.41              |
| 2:E:62:LYS:HB3   | 2:F:90:TYR:CE2   | 2.56                     | 0.41              |
| 2:F:134:ILE:HG13 | 2:F:135:LEU:N    | 2.36                     | 0.41              |
| 2:F:187:LYS:HB3  | 2:F:187:LYS:HE3  | 1.78                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:67:LEU:HD23  | 1:A:400:ARG:HB3  | 2.02                     | 0.40              |
| 1:A:98:SER:O     | 1:A:111:ILE:HG13 | 2.21                     | 0.40              |
| 1:A:203:TYR:OH   | 1:A:241:ILE:HA   | 2.22                     | 0.40              |
| 1:A:302:TYR:CG   | 1:A:328:HIS:HE1  | 2.38                     | 0.40              |
| 2:B:24:ARG:CD    | 2:B:197:LYS:NZ   | 2.81                     | 0.40              |
| 2:B:106:PHE:CZ   | 2:B:131:ALA:HB1  | 2.57                     | 0.40              |
| 1:D:108:PRO:HG3  | 1:D:551:VAL:HA   | 2.03                     | 0.40              |
| 1:D:116:GLU:N    | 7:D:768:HOH:O    | 2.54                     | 0.40              |
| 1:D:192:VAL:HG23 | 1:D:259:VAL:CG2  | 2.52                     | 0.40              |
| 1:D:262:ALA:O    | 1:D:265:LYS:HB2  | 2.21                     | 0.40              |
| 2:E:162:SER:HB3  | 2:E:199:LEU:HD11 | 2.03                     | 0.40              |
| 2:E:173:PHE:HD1  | 2:E:173:PHE:HA   | 1.80                     | 0.40              |
| 1:A:41:SER:HB3   | 2:B:144:TYR:H    | 1.86                     | 0.40              |
| 1:A:152:LYS:HB3  | 1:A:563:CYS:SG   | 2.61                     | 0.40              |
| 1:A:169:VAL:HG13 | 1:A:170:TYR:CE1  | 2.56                     | 0.40              |
| 1:A:390:VAL:HG11 | 1:A:540:SER:C    | 2.41                     | 0.40              |
| 2:C:105:LYS:HB2  | 2:C:105:LYS:HE3  | 1.84                     | 0.40              |
| 1:D:213:ARG:HA   | 1:D:216:VAL:CG1  | 2.51                     | 0.40              |
| 2:E:120:GLU:OE1  | 7:E:415:HOH:O    | 2.21                     | 0.40              |
| 2:E:162:SER:HB3  | 2:E:199:LEU:CG   | 2.51                     | 0.40              |
| 1:A:44:TYR:CD1   | 1:A:89:LEU:HA    | 2.56                     | 0.40              |
| 1:A:86:SER:HA    | 1:A:87:PRO:HD2   | 1.94                     | 0.40              |
| 1:A:208:SER:HA   | 1:A:211:LEU:HG   | 2.04                     | 0.40              |
| 1:A:274:ALA:C    | 1:A:278:ARG:HD2  | 2.42                     | 0.40              |
| 1:A:290:LEU:HD12 | 1:A:290:LEU:HA   | 1.70                     | 0.40              |
| 1:A:299:LYS:HB2  | 1:A:299:LYS:HE3  | 1.53                     | 0.40              |
| 2:B:84:PHE:N     | 2:B:84:PHE:CD1   | 2.89                     | 0.40              |
| 1:D:87:PRO:CG    | 1:D:93:PRO:HG3   | 2.51                     | 0.40              |
| 1:D:226:GLY:HA2  | 1:D:529:ARG:CD   | 2.43                     | 0.40              |
| 1:D:264:SER:HA   | 1:D:267:LEU:HD12 | 2.03                     | 0.40              |
| 1:D:499:ARG:CZ   | 1:D:499:ARG:CB   | 2.98                     | 0.40              |
| 1:D:559:LEU:HD23 | 1:D:559:LEU:HA   | 1.69                     | 0.40              |
| 1:A:111:ILE:HA   | 1:A:112:PRO:HD3  | 1.69                     | 0.40              |
| 1:A:228:VAL:HG22 | 1:A:319:TYR:CE2  | 2.56                     | 0.40              |
| 1:A:238:TRP:HZ2  | 1:A:282:MET:SD   | 2.43                     | 0.40              |
| 1:A:375:LYS:H    | 1:A:375:LYS:HG2  | 1.53                     | 0.40              |
| 1:A:437:THR:HG21 | 1:A:439:ARG:NH1  | 2.36                     | 0.40              |
| 1:A:465:TYR:CG   | 1:A:466:ILE:N    | 2.89                     | 0.40              |
| 1:A:547:MET:HA   | 1:A:548:PRO:HD3  | 1.76                     | 0.40              |
| 2:B:167:TYR:CD1  | 2:B:167:TYR:N    | 2.83                     | 0.40              |
| 1:D:87:PRO:HD2   | 2:E:188:ARG:HB3  | 2.02                     | 0.40              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:132:ARG:HE   | 1:D:326:VAL:HG21 | 1.85                     | 0.40              |
| 1:D:228:VAL:CG1  | 1:D:315:LYS:HD3  | 2.47                     | 0.40              |
| 1:D:452:LEU:CG   | 1:D:457:ILE:HD11 | 2.52                     | 0.40              |
| 1:D:465:TYR:CD1  | 1:D:551:VAL:HG23 | 2.53                     | 0.40              |
| 2:E:101:PHE:CE2  | 2:E:135:LEU:HD11 | 2.56                     | 0.40              |
| 2:E:151:GLY:N    | 2:E:154:ASP:OD2  | 2.49                     | 0.40              |
| 1:A:164:THR:HA   | 1:A:557:LYS:HG3  | 2.04                     | 0.40              |
| 1:A:329:ASP:HA   | 1:A:352:PHE:CD1  | 2.57                     | 0.40              |
| 2:B:35:GLU:HG3   | 2:B:44:LEU:CD2   | 2.52                     | 0.40              |
| 2:B:129:ILE:HD13 | 2:B:129:ILE:HA   | 1.89                     | 0.40              |
| 2:C:33:ARG:HE    | 2:C:33:ARG:HB3   | 1.75                     | 0.40              |
| 1:D:43:ILE:H     | 1:D:43:ILE:HG23  | 1.64                     | 0.40              |
| 1:D:43:ILE:HG13  | 1:D:44:TYR:N     | 2.36                     | 0.40              |
| 1:D:81:VAL:HG21  | 1:D:110:PHE:HE2  | 1.77                     | 0.40              |
| 1:D:496:CYS:HA   | 1:D:499:ARG:CZ   | 2.50                     | 0.40              |
| 2:F:43:LEU:H     | 2:F:43:LEU:HG    | 1.45                     | 0.40              |
| 2:F:166:ALA:HB2  | 7:F:453:HOH:O    | 2.21                     | 0.40              |

All (8) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

| Atom-1          | Atom-2                 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------------|--------------------------|-------------------|
| 1:A:234:PHE:O   | 2:F:177:SER:OG[1_554]  | 1.77                     | 0.43              |
| 1:A:214:ASP:OD2 | 1:A:475:TYR:OH[1_545]  | 1.90                     | 0.30              |
| 7:D:897:HOH:O   | 7:D:961:HOH:O[1_455]   | 2.06                     | 0.14              |
| 7:A:831:HOH:O   | 7:A:847:HOH:O[1_565]   | 2.15                     | 0.05              |
| 2:E:61:GLY:N    | 2:F:211:GLU:OE2[1_565] | 2.16                     | 0.04              |
| 7:A:822:HOH:O   | 7:F:486:HOH:O[1_554]   | 2.17                     | 0.03              |
| 7:B:411:HOH:O   | 7:C:456:HOH:O[1_565]   | 2.17                     | 0.03              |
| 7:D:918:HOH:O   | 7:D:930:HOH:O[1_455]   | 2.19                     | 0.01              |

## 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     | 567/575 (99%)   | 531 (94%)  | 27 (5%) | 9 (2%)   | 9           | 2  |
| 1   | D     | 567/575 (99%)   | 544 (96%)  | 16 (3%) | 7 (1%)   | 13          | 3  |
| 2   | B     | 212/223 (95%)   | 198 (93%)  | 13 (6%) | 1 (0%)   | 29          | 15 |
| 2   | C     | 212/223 (95%)   | 200 (94%)  | 9 (4%)  | 3 (1%)   | 11          | 3  |
| 2   | E     | 212/223 (95%)   | 200 (94%)  | 10 (5%) | 2 (1%)   | 17          | 6  |
| 2   | F     | 212/223 (95%)   | 198 (93%)  | 11 (5%) | 3 (1%)   | 11          | 3  |
| All | All   | 1982/2042 (97%) | 1871 (94%) | 86 (4%) | 25 (1%)  | 12          | 3  |

All (25) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 286 | ASN  |
| 1   | A     | 513 | LYS  |
| 1   | A     | 540 | SER  |
| 1   | D     | 180 | LYS  |
| 1   | D     | 540 | SER  |
| 1   | D     | 542 | ALA  |
| 2   | E     | 141 | ASP  |
| 1   | A     | 287 | TRP  |
| 2   | C     | 140 | GLY  |
| 1   | D     | 437 | THR  |
| 2   | F     | 140 | GLY  |
| 1   | A     | 552 | LYS  |
| 1   | D     | 88  | ILE  |
| 2   | F     | 80  | GLU  |
| 2   | F     | 180 | PRO  |
| 1   | A     | 88  | ILE  |
| 1   | A     | 369 | THR  |
| 2   | C     | 66  | GLU  |
| 1   | A     | 574 | ALA  |
| 1   | D     | 368 | GLU  |
| 1   | D     | 552 | LYS  |
| 2   | B     | 82  | ASN  |
| 2   | E     | 66  | GLU  |
| 2   | C     | 83  | PRO  |
| 1   | A     | 523 | VAL  |

### 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     | 499/505 (99%)   | 420 (84%)  | 79 (16%)  | 2           | 0 |
| 1   | D     | 499/505 (99%)   | 424 (85%)  | 75 (15%)  | 3           | 0 |
| 2   | B     | 187/195 (96%)   | 168 (90%)  | 19 (10%)  | 7           | 1 |
| 2   | C     | 187/195 (96%)   | 167 (89%)  | 20 (11%)  | 6           | 1 |
| 2   | E     | 187/195 (96%)   | 169 (90%)  | 18 (10%)  | 8           | 1 |
| 2   | F     | 187/195 (96%)   | 159 (85%)  | 28 (15%)  | 3           | 0 |
| All | All   | 1746/1790 (98%) | 1507 (86%) | 239 (14%) | 3           | 0 |

All (239) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 10  | MET  |
| 1   | A     | 13  | VAL  |
| 1   | A     | 14  | ILE  |
| 1   | A     | 15  | ASP  |
| 1   | A     | 16  | GLU  |
| 1   | A     | 18  | ASP  |
| 1   | A     | 26  | GLN  |
| 1   | A     | 29  | LYS  |
| 1   | A     | 40  | GLN  |
| 1   | A     | 41  | SER  |
| 1   | A     | 61  | PHE  |
| 1   | A     | 65  | VAL  |
| 1   | A     | 71  | VAL  |
| 1   | A     | 72  | GLU  |
| 1   | A     | 73  | LEU  |
| 1   | A     | 78  | LYS  |
| 1   | A     | 84  | ASP  |
| 1   | A     | 88  | ILE  |
| 1   | A     | 90  | THR  |
| 1   | A     | 92  | HIS  |
| 1   | A     | 99  | LEU  |
| 1   | A     | 100 | SER  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 101        | SER         |
| 1          | A            | 103        | THR         |
| 1          | A            | 110        | PHE         |
| 1          | A            | 111        | ILE         |
| 1          | A            | 122        | LEU         |
| 1          | A            | 125        | PHE         |
| 1          | A            | 140        | ASP         |
| 1          | A            | 143        | LYS         |
| 1          | A            | 167        | THR         |
| 1          | A            | 180        | LYS         |
| 1          | A            | 184        | SER         |
| 1          | A            | 190        | ASP         |
| 1          | A            | 195        | SER         |
| 1          | A            | 197        | ASP         |
| 1          | A            | 205        | HIS         |
| 1          | A            | 208        | SER         |
| 1          | A            | 212        | PHE         |
| 1          | A            | 238        | TRP         |
| 1          | A            | 253        | ARG         |
| 1          | A            | 260        | ARG         |
| 1          | A            | 265        | LYS         |
| 1          | A            | 268        | THR         |
| 1          | A            | 276        | THR         |
| 1          | A            | 285        | SER         |
| 1          | A            | 288        | TYR         |
| 1          | A            | 294        | LEU         |
| 1          | A            | 305        | MET         |
| 1          | A            | 327        | SER         |
| 1          | A            | 333        | SER         |
| 1          | A            | 368        | GLU         |
| 1          | A            | 373        | GLU         |
| 1          | A            | 374        | GLU         |
| 1          | A            | 379        | LEU         |
| 1          | A            | 384        | ILE         |
| 1          | A            | 390        | VAL         |
| 1          | A            | 405        | ASP         |
| 1          | A            | 425        | ARG         |
| 1          | A            | 426        | ASN         |
| 1          | A            | 427        | LEU         |
| 1          | A            | 428        | ILE         |
| 1          | A            | 437        | THR         |
| 1          | A            | 443        | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 464        | SER         |
| 1          | A            | 468        | VAL         |
| 1          | A            | 477        | ILE         |
| 1          | A            | 494        | CYS         |
| 1          | A            | 507        | VAL         |
| 1          | A            | 511        | LYS         |
| 1          | A            | 514        | THR         |
| 1          | A            | 515        | ILE         |
| 1          | A            | 518        | LEU         |
| 1          | A            | 536        | LEU         |
| 1          | A            | 538        | LEU         |
| 1          | A            | 562        | LEU         |
| 1          | A            | 565        | ASN         |
| 1          | A            | 569        | SER         |
| 1          | A            | 573        | THR         |
| 2          | B            | 26         | LYS         |
| 2          | B            | 33         | ARG         |
| 2          | B            | 50         | ILE         |
| 2          | B            | 101        | PHE         |
| 2          | B            | 102        | VAL         |
| 2          | B            | 104        | LYS         |
| 2          | B            | 113        | VAL         |
| 2          | B            | 117        | LYS         |
| 2          | B            | 132        | VAL         |
| 2          | B            | 134        | ILE         |
| 2          | B            | 139        | LEU         |
| 2          | B            | 150        | PHE         |
| 2          | B            | 153        | VAL         |
| 2          | B            | 154        | ASP         |
| 2          | B            | 173        | PHE         |
| 2          | B            | 181        | LYS         |
| 2          | B            | 182        | LEU         |
| 2          | B            | 196        | SER         |
| 2          | B            | 208        | TYR         |
| 2          | C            | 14         | MET         |
| 2          | C            | 40         | LYS         |
| 2          | C            | 43         | LEU         |
| 2          | C            | 64         | VAL         |
| 2          | C            | 65         | CYS         |
| 2          | C            | 74         | VAL         |
| 2          | C            | 84         | PHE         |
| 2          | C            | 87         | SER         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 2          | C            | 105        | LYS         |
| 2          | C            | 121        | GLN         |
| 2          | C            | 128        | PHE         |
| 2          | C            | 133        | LYS         |
| 2          | C            | 134        | ILE         |
| 2          | C            | 135        | LEU         |
| 2          | C            | 145        | PHE         |
| 2          | C            | 162        | SER         |
| 2          | C            | 173        | PHE         |
| 2          | C            | 176        | GLU         |
| 2          | C            | 188        | ARG         |
| 2          | C            | 198        | SER         |
| 1          | D            | 15         | ASP         |
| 1          | D            | 26         | GLN         |
| 1          | D            | 43         | ILE         |
| 1          | D            | 57         | PRO         |
| 1          | D            | 59         | GLU         |
| 1          | D            | 68         | VAL         |
| 1          | D            | 69         | THR         |
| 1          | D            | 79         | ARG         |
| 1          | D            | 87         | PRO         |
| 1          | D            | 90         | THR         |
| 1          | D            | 92         | HIS         |
| 1          | D            | 100        | SER         |
| 1          | D            | 104        | SER         |
| 1          | D            | 110        | PHE         |
| 1          | D            | 111        | ILE         |
| 1          | D            | 116        | GLU         |
| 1          | D            | 125        | PHE         |
| 1          | D            | 126        | ARG         |
| 1          | D            | 131        | PHE         |
| 1          | D            | 133        | ASN         |
| 1          | D            | 135        | ASP         |
| 1          | D            | 154        | TYR         |
| 1          | D            | 162        | VAL         |
| 1          | D            | 164        | THR         |
| 1          | D            | 176        | LYS         |
| 1          | D            | 188        | SER         |
| 1          | D            | 195        | SER         |
| 1          | D            | 198        | VAL         |
| 1          | D            | 202        | LEU         |
| 1          | D            | 204        | CYS         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | D            | 205        | HIS         |
| 1          | D            | 211        | LEU         |
| 1          | D            | 245        | ILE         |
| 1          | D            | 250        | LEU         |
| 1          | D            | 273        | LEU         |
| 1          | D            | 284        | LEU         |
| 1          | D            | 295        | PHE         |
| 1          | D            | 299        | LYS         |
| 1          | D            | 304        | ILE         |
| 1          | D            | 305        | MET         |
| 1          | D            | 318        | HIS         |
| 1          | D            | 323        | LEU         |
| 1          | D            | 326        | VAL         |
| 1          | D            | 329        | ASP         |
| 1          | D            | 333        | SER         |
| 1          | D            | 345        | LEU         |
| 1          | D            | 351        | THR         |
| 1          | D            | 364        | LEU         |
| 1          | D            | 379        | LEU         |
| 1          | D            | 406        | VAL         |
| 1          | D            | 416        | THR         |
| 1          | D            | 423        | CYS         |
| 1          | D            | 424        | ARG         |
| 1          | D            | 426        | ASN         |
| 1          | D            | 427        | LEU         |
| 1          | D            | 433        | ILE         |
| 1          | D            | 435        | LYS         |
| 1          | D            | 439        | ARG         |
| 1          | D            | 450        | LYS         |
| 1          | D            | 459        | VAL         |
| 1          | D            | 464        | SER         |
| 1          | D            | 482        | SER         |
| 1          | D            | 493        | CYS         |
| 1          | D            | 499        | ARG         |
| 1          | D            | 502        | ILE         |
| 1          | D            | 503        | ASP         |
| 1          | D            | 507        | VAL         |
| 1          | D            | 512        | CYS         |
| 1          | D            | 518        | LEU         |
| 1          | D            | 521        | ARG         |
| 1          | D            | 544        | GLN         |
| 1          | D            | 547        | MET         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | D            | 562        | LEU         |
| 1          | D            | 568        | SER         |
| 1          | D            | 575        | PHE         |
| 2          | E            | 11         | TRP         |
| 2          | E            | 47         | SER         |
| 2          | E            | 70         | VAL         |
| 2          | E            | 106        | PHE         |
| 2          | E            | 113        | VAL         |
| 2          | E            | 117        | LYS         |
| 2          | E            | 132        | VAL         |
| 2          | E            | 137        | SER         |
| 2          | E            | 142        | LYS         |
| 2          | E            | 148        | ASP         |
| 2          | E            | 150        | PHE         |
| 2          | E            | 152        | TYR         |
| 2          | E            | 153        | VAL         |
| 2          | E            | 155        | ILE         |
| 2          | E            | 173        | PHE         |
| 2          | E            | 183        | ILE         |
| 2          | E            | 187        | LYS         |
| 2          | E            | 204        | LYS         |
| 2          | F            | 8          | LEU         |
| 2          | F            | 28         | VAL         |
| 2          | F            | 30         | PHE         |
| 2          | F            | 41         | SER         |
| 2          | F            | 43         | LEU         |
| 2          | F            | 57         | LEU         |
| 2          | F            | 59         | HIS         |
| 2          | F            | 64         | VAL         |
| 2          | F            | 85         | PHE         |
| 2          | F            | 88         | ASP         |
| 2          | F            | 98         | TRP         |
| 2          | F            | 101        | PHE         |
| 2          | F            | 128        | PHE         |
| 2          | F            | 136        | GLU         |
| 2          | F            | 148        | ASP         |
| 2          | F            | 153        | VAL         |
| 2          | F            | 168        | GLU         |
| 2          | F            | 170        | PHE         |
| 2          | F            | 172        | ASN         |
| 2          | F            | 175        | ILE         |
| 2          | F            | 176        | GLU         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | F     | 178 | GLU  |
| 2   | F     | 181 | LYS  |
| 2   | F     | 182 | LEU  |
| 2   | F     | 195 | VAL  |
| 2   | F     | 202 | SER  |
| 2   | F     | 203 | GLU  |
| 2   | F     | 216 | ASN  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (22) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 39  | ASN  |
| 1   | A     | 40  | GLN  |
| 1   | A     | 92  | HIS  |
| 1   | A     | 153 | GLN  |
| 1   | A     | 200 | GLN  |
| 1   | A     | 215 | GLN  |
| 1   | A     | 426 | ASN  |
| 1   | A     | 534 | HIS  |
| 2   | B     | 110 | GLN  |
| 2   | C     | 121 | GLN  |
| 1   | D     | 46  | GLN  |
| 1   | D     | 133 | ASN  |
| 1   | D     | 153 | GLN  |
| 1   | D     | 172 | ASN  |
| 1   | D     | 217 | GLN  |
| 1   | D     | 270 | ASN  |
| 1   | D     | 418 | GLN  |
| 1   | D     | 491 | GLN  |
| 1   | D     | 544 | GLN  |
| 2   | E     | 60  | ASN  |
| 2   | E     | 82  | ASN  |
| 2   | E     | 94  | GLN  |

### 5.3.3 RNA

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 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 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 |
| 6   | GSH  | B     | 301 | -    | 18,19,19     | 1.58 | 3 (16%)  | 23,24,24    | 1.21 | 2 (8%)   |
| 6   | GSH  | E     | 301 | -    | 18,19,19     | 1.53 | 4 (22%)  | 23,24,24    | 1.70 | 2 (8%)   |
| 6   | GSH  | F     | 301 | -    | 18,19,19     | 1.48 | 2 (11%)  | 23,24,24    | 1.30 | 3 (13%)  |
| 6   | GSH  | C     | 301 | -    | 18,19,19     | 1.48 | 3 (16%)  | 23,24,24    | 1.47 | 4 (17%)  |
| 3   | JAA  | A     | 601 | -    | 15,15,15     | 4.88 | 7 (46%)  | 15,19,19    | 2.66 | 7 (46%)  |
| 3   | JAA  | D     | 601 | -    | 15,15,15     | 5.13 | 6 (40%)  | 15,19,19    | 2.58 | 9 (60%)  |
| 4   | ILE  | D     | 602 | -    | 7,8,8        | 0.93 | 1 (14%)  | 7,10,10     | 1.20 | 1 (14%)  |
| 4   | ILE  | A     | 602 | -    | 7,8,8        | 0.82 | 0        | 7,10,10     | 1.35 | 2 (28%)  |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions   | Rings |
|-----|------|-------|-----|------|---------|------------|-------|
| 6   | GSH  | B     | 301 | -    | -       | 5/24/24/24 | -     |
| 6   | GSH  | E     | 301 | -    | -       | 4/24/24/24 | -     |
| 6   | GSH  | F     | 301 | -    | -       | 2/24/24/24 | -     |
| 6   | GSH  | C     | 301 | -    | -       | 5/24/24/24 | -     |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions   | Rings   |
|-----|------|-------|-----|------|---------|------------|---------|
| 3   | JAA  | A     | 601 | -    | -       | 6/9/22/22  | 0/1/1/1 |
| 3   | JAA  | D     | 601 | -    | -       | 3/9/22/22  | 0/1/1/1 |
| 4   | ILE  | D     | 602 | -    | -       | 6/10/10/10 | -       |
| 4   | ILE  | A     | 602 | -    | -       | 1/10/10/10 | -       |

All (26) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 3   | D     | 601 | JAA  | C05-C08 | -13.70 | 1.29        | 1.52     |
| 3   | A     | 601 | JAA  | C05-C08 | -12.54 | 1.31        | 1.52     |
| 3   | A     | 601 | JAA  | C06-C04 | -10.08 | 1.27        | 1.53     |
| 3   | D     | 601 | JAA  | C06-C04 | -9.94  | 1.27        | 1.53     |
| 3   | D     | 601 | JAA  | C07-C08 | 7.35   | 1.63        | 1.51     |
| 3   | A     | 601 | JAA  | C07-C08 | 6.79   | 1.62        | 1.51     |
| 3   | A     | 601 | JAA  | C05-C04 | 5.19   | 1.67        | 1.54     |
| 3   | D     | 601 | JAA  | C05-C04 | 5.10   | 1.67        | 1.54     |
| 3   | D     | 601 | JAA  | C10-C04 | -3.64  | 1.47        | 1.53     |
| 6   | B     | 301 | GSH  | C2-N3   | 3.62   | 1.41        | 1.33     |
| 6   | B     | 301 | GSH  | CD1-N2  | 3.56   | 1.41        | 1.34     |
| 6   | F     | 301 | GSH  | C2-N3   | 3.37   | 1.41        | 1.33     |
| 6   | F     | 301 | GSH  | CD1-N2  | 3.36   | 1.41        | 1.34     |
| 6   | C     | 301 | GSH  | CD1-N2  | 3.32   | 1.41        | 1.34     |
| 3   | A     | 601 | JAA  | C10-C04 | -3.25  | 1.48        | 1.53     |
| 6   | C     | 301 | GSH  | C2-N3   | 3.24   | 1.40        | 1.33     |
| 6   | E     | 301 | GSH  | CD1-N2  | 3.18   | 1.40        | 1.34     |
| 6   | E     | 301 | GSH  | C2-N3   | 3.11   | 1.40        | 1.33     |
| 3   | A     | 601 | JAA  | C06-C07 | 2.79   | 1.59        | 1.53     |
| 3   | D     | 601 | JAA  | C06-C07 | 2.74   | 1.59        | 1.53     |
| 3   | A     | 601 | JAA  | O03-C12 | -2.22  | 1.23        | 1.30     |
| 6   | E     | 301 | GSH  | CB2-CA2 | -2.14  | 1.50        | 1.53     |
| 6   | C     | 301 | GSH  | CB2-CA2 | -2.13  | 1.50        | 1.53     |
| 4   | D     | 602 | ILE  | CG2-CB  | -2.11  | 1.47        | 1.53     |
| 6   | B     | 301 | GSH  | O12-C1  | -2.09  | 1.23        | 1.30     |
| 6   | E     | 301 | GSH  | O12-C1  | -2.05  | 1.23        | 1.30     |

All (30) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 6   | E     | 301 | GSH  | CA2-CB2-SG2 | -6.17 | 107.26      | 114.19   |
| 3   | A     | 601 | JAA  | C04-C10-C12 | -5.88 | 100.95      | 113.37   |
| 3   | A     | 601 | JAA  | C06-C04-C05 | 4.71  | 110.12      | 103.34   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 3   | D     | 601 | JAA  | C07-C06-C04 | -4.17 | 100.06      | 104.41   |
| 3   | D     | 601 | JAA  | C06-C04-C05 | 3.75  | 108.75      | 103.34   |
| 3   | D     | 601 | JAA  | C04-C10-C12 | -3.71 | 105.53      | 113.37   |
| 3   | D     | 601 | JAA  | C09-C11-C13 | -3.53 | 113.30      | 126.40   |
| 3   | A     | 601 | JAA  | C07-C06-C04 | 3.51  | 108.07      | 104.41   |
| 3   | D     | 601 | JAA  | C05-C09-C11 | 3.20  | 119.61      | 112.94   |
| 3   | D     | 601 | JAA  | O03-C12-C10 | 3.18  | 124.28      | 114.07   |
| 6   | C     | 301 | GSH  | CA2-CB2-SG2 | -3.14 | 110.67      | 114.19   |
| 6   | C     | 301 | GSH  | O2-C2-N3    | -2.90 | 116.78      | 122.99   |
| 6   | C     | 301 | GSH  | CA2-C2-N3   | 2.86  | 122.30      | 116.54   |
| 6   | B     | 301 | GSH  | CA2-CB2-SG2 | -2.83 | 111.01      | 114.19   |
| 6   | F     | 301 | GSH  | CA2-CB2-SG2 | -2.69 | 111.17      | 114.19   |
| 3   | A     | 601 | JAA  | C09-C11-C13 | -2.68 | 116.44      | 126.40   |
| 3   | A     | 601 | JAA  | C04-C05-C08 | 2.56  | 107.91      | 104.14   |
| 3   | D     | 601 | JAA  | O01-C08-C05 | 2.56  | 128.88      | 125.58   |
| 3   | A     | 601 | JAA  | O03-C12-C10 | 2.56  | 122.28      | 114.07   |
| 6   | F     | 301 | GSH  | O2-C2-N3    | -2.53 | 117.56      | 122.99   |
| 3   | D     | 601 | JAA  | O02-C12-C10 | -2.49 | 114.83      | 122.80   |
| 4   | A     | 602 | ILE  | OXT-C-O     | -2.40 | 118.63      | 124.09   |
| 6   | B     | 301 | GSH  | O2-C2-N3    | -2.36 | 117.94      | 122.99   |
| 6   | E     | 301 | GSH  | CA2-N2-CD1  | -2.32 | 115.67      | 121.65   |
| 3   | D     | 601 | JAA  | C06-C07-C08 | -2.29 | 103.12      | 105.42   |
| 6   | C     | 301 | GSH  | CA3-N3-C2   | -2.25 | 115.80      | 121.37   |
| 4   | A     | 602 | ILE  | OXT-C-CA    | 2.20  | 121.90      | 114.22   |
| 4   | D     | 602 | ILE  | OXT-C-CA    | 2.11  | 121.61      | 114.22   |
| 6   | F     | 301 | GSH  | CA2-C2-N3   | 2.07  | 120.72      | 116.54   |
| 3   | A     | 601 | JAA  | C06-C04-C10 | -2.02 | 109.66      | 113.41   |

There are no chirality outliers.

All (32) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 3   | A     | 601 | JAA  | C05-C04-C10-C12 |
| 3   | A     | 601 | JAA  | C06-C04-C10-C12 |
| 3   | A     | 601 | JAA  | C08-C05-C09-C11 |
| 4   | A     | 602 | ILE  | OXT-C-CA-N      |
| 4   | D     | 602 | ILE  | C-CA-CB-CG1     |
| 4   | D     | 602 | ILE  | C-CA-CB-CG2     |
| 6   | B     | 301 | GSH  | N1-CA1-CB1-CG1  |
| 6   | B     | 301 | GSH  | N2-CA2-CB2-SG2  |
| 6   | B     | 301 | GSH  | C2-CA2-CB2-SG2  |
| 6   | C     | 301 | GSH  | N2-CA2-CB2-SG2  |

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| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 6   | C     | 301 | GSH  | C2-CA2-CB2-SG2  |
| 6   | E     | 301 | GSH  | N1-CA1-CB1-CG1  |
| 6   | E     | 301 | GSH  | C1-CA1-CB1-CG1  |
| 6   | F     | 301 | GSH  | N2-CA2-CB2-SG2  |
| 6   | F     | 301 | GSH  | C2-CA2-CB2-SG2  |
| 4   | D     | 602 | ILE  | N-CA-CB-CG1     |
| 4   | D     | 602 | ILE  | CG2-CB-CG1-CD1  |
| 4   | D     | 602 | ILE  | CA-CB-CG1-CD1   |
| 3   | D     | 601 | JAA  | C09-C11-C13-C14 |
| 6   | C     | 301 | GSH  | O12-C1-CA1-N1   |
| 6   | C     | 301 | GSH  | O11-C1-CA1-N1   |
| 3   | A     | 601 | JAA  | C05-C09-C11-C13 |
| 6   | E     | 301 | GSH  | O32-C3-CA3-N3   |
| 6   | B     | 301 | GSH  | C1-CA1-CB1-CG1  |
| 6   | C     | 301 | GSH  | C1-CA1-CB1-CG1  |
| 6   | E     | 301 | GSH  | O31-C3-CA3-N3   |
| 4   | D     | 602 | ILE  | N-CA-CB-CG2     |
| 3   | A     | 601 | JAA  | C04-C05-C09-C11 |
| 3   | D     | 601 | JAA  | C04-C05-C09-C11 |
| 6   | B     | 301 | GSH  | C3-CA3-N3-C2    |
| 3   | D     | 601 | JAA  | C08-C05-C09-C11 |
| 3   | A     | 601 | JAA  | C04-C10-C12-O03 |

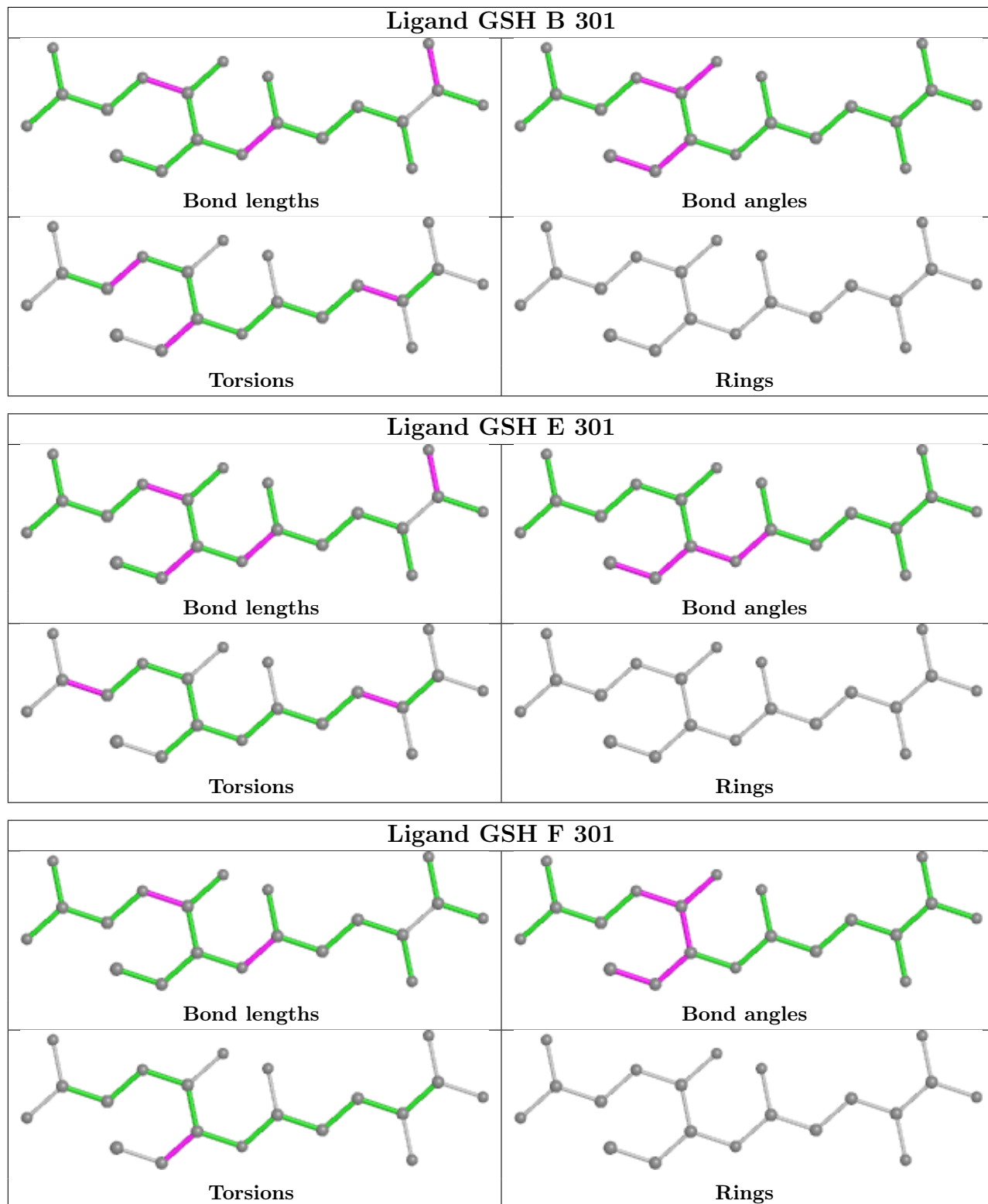
There are no ring outliers.

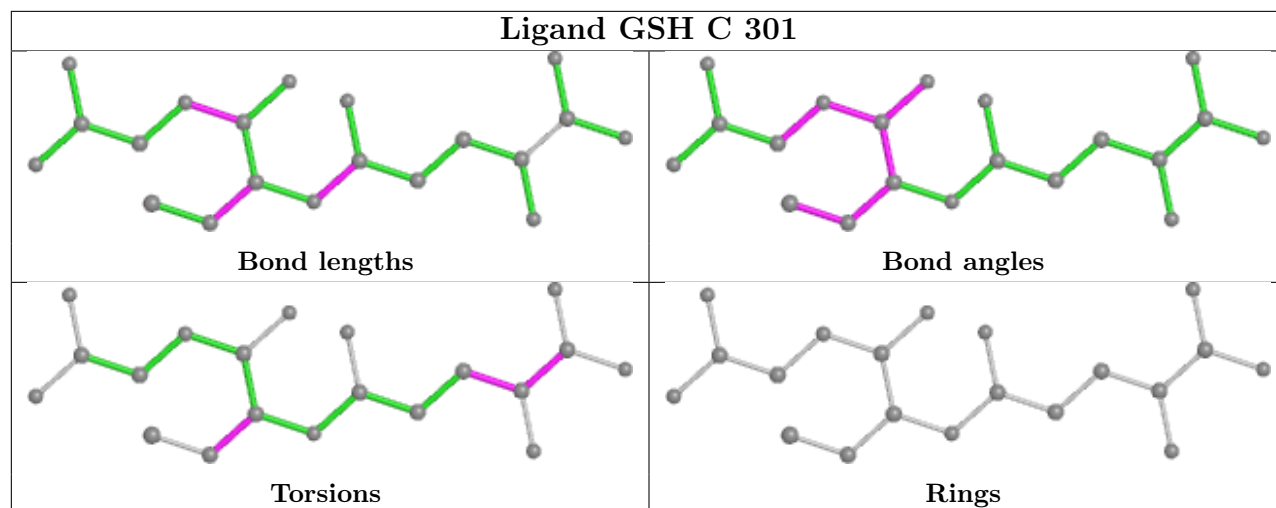
7 monomers are involved in 13 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 6   | B     | 301 | GSH  | 3       | 0            |
| 6   | E     | 301 | GSH  | 2       | 0            |
| 6   | C     | 301 | GSH  | 1       | 0            |
| 3   | A     | 601 | JAA  | 1       | 0            |
| 3   | D     | 601 | JAA  | 1       | 0            |
| 4   | D     | 602 | ILE  | 1       | 0            |
| 4   | A     | 602 | ILE  | 4       | 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](#)

There are no chain breaks in this entry.

## 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     | 569/575 (98%)   | 0.43   | 16 (2%) 53 52 | 2, 5, 9, 13           | 0     |
| 1   | D     | 569/575 (98%)   | 0.28   | 4 (0%) 87 88  | 2, 4, 7, 13           | 0     |
| 2   | B     | 214/223 (95%)   | 0.15   | 0 100 100     | 2, 3, 6, 11           | 0     |
| 2   | C     | 214/223 (95%)   | 0.16   | 4 (1%) 66 66  | 2, 3, 5, 9            | 0     |
| 2   | E     | 214/223 (95%)   | 0.26   | 4 (1%) 66 66  | 2, 5, 8, 13           | 0     |
| 2   | F     | 214/223 (95%)   | 0.19   | 1 (0%) 91 91  | 2, 4, 9, 22           | 0     |
| All | All   | 1994/2042 (97%) | 0.29   | 29 (1%) 73 74 | 2, 4, 8, 22           | 0     |

All (29) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | A     | 212 | PHE  | 7.7  |
| 1   | A     | 247 | ASP  | 4.4  |
| 2   | E     | 150 | PHE  | 4.4  |
| 1   | A     | 288 | TYR  | 4.2  |
| 1   | A     | 213 | ARG  | 3.8  |
| 1   | A     | 210 | ILE  | 3.4  |
| 2   | E     | 152 | TYR  | 3.3  |
| 1   | A     | 295 | PHE  | 3.2  |
| 2   | C     | 212 | TYR  | 3.2  |
| 2   | E     | 98  | TRP  | 3.2  |
| 1   | A     | 151 | SER  | 3.1  |
| 2   | C     | 32  | TYR  | 2.8  |
| 1   | D     | 370 | GLY  | 2.7  |
| 2   | F     | 86  | PRO  | 2.6  |
| 1   | D     | 433 | ILE  | 2.5  |
| 1   | A     | 305 | MET  | 2.5  |
| 1   | A     | 426 | ASN  | 2.4  |
| 1   | A     | 143 | LYS  | 2.4  |
| 1   | A     | 559 | LEU  | 2.3  |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | A     | 234 | PHE  | 2.3  |
| 2   | C     | 209 | ALA  | 2.3  |
| 1   | A     | 494 | CYS  | 2.2  |
| 2   | C     | 157 | LEU  | 2.2  |
| 1   | A     | 103 | THR  | 2.1  |
| 1   | A     | 209 | GLY  | 2.1  |
| 1   | D     | 125 | PHE  | 2.1  |
| 1   | D     | 285 | SER  | 2.1  |
| 1   | A     | 382 | VAL  | 2.0  |
| 2   | E     | 217 | LEU  | 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.

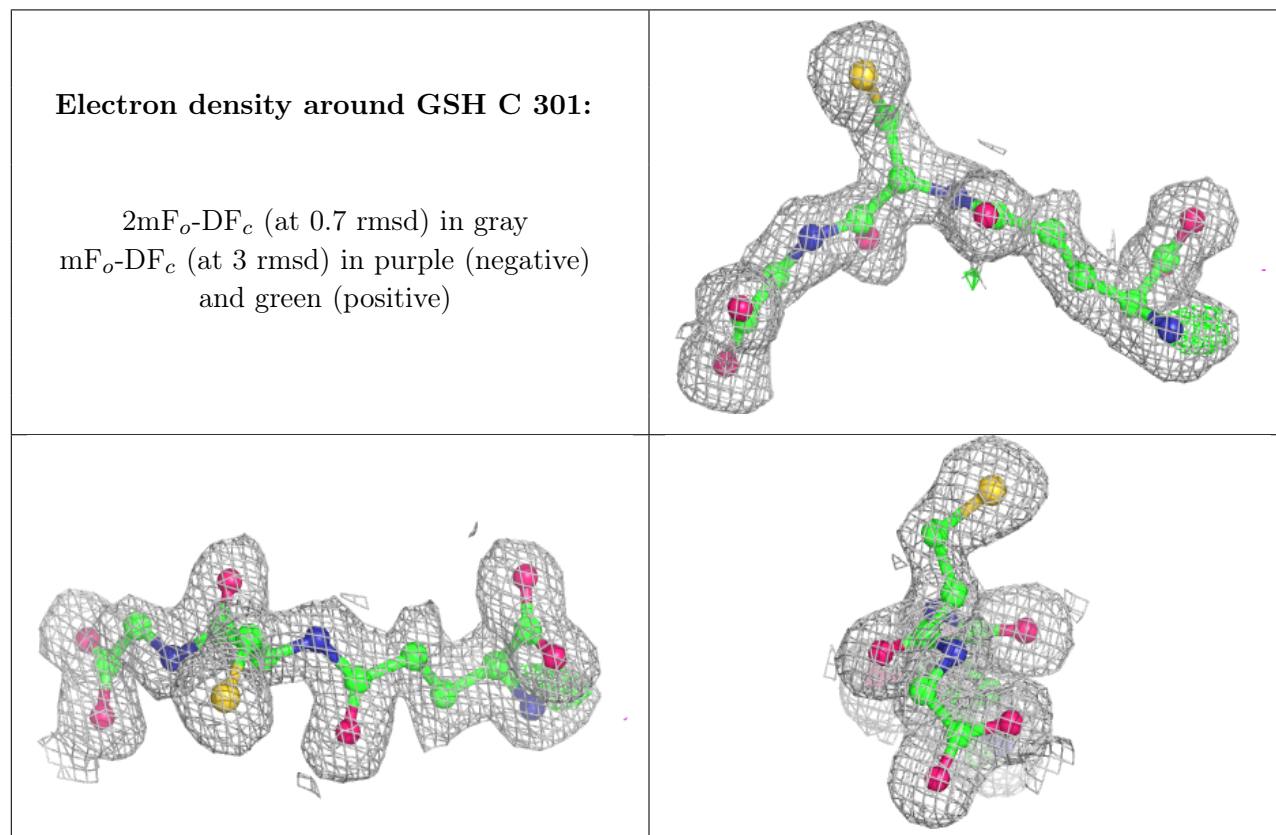
## 6.4 Ligands [i](#)

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(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|----------------------------|-------|
| 4   | ILE  | D     | 602 | 9/9   | 0.86 | 0.15 | 2,2,4,6                    | 0     |
| 4   | ILE  | A     | 602 | 9/9   | 0.91 | 0.13 | 2,2,4,5                    | 0     |
| 3   | JAA  | D     | 601 | 15/15 | 0.92 | 0.16 | 2,4,7,9                    | 0     |
| 3   | JAA  | A     | 601 | 15/15 | 0.93 | 0.14 | 2,2,6,7                    | 0     |
| 6   | GSH  | C     | 301 | 20/20 | 0.95 | 0.09 | 2,2,4,8                    | 0     |
| 5   | MG   | A     | 603 | 1/1   | 0.96 | 0.07 | 10,10,10,10                | 0     |
| 6   | GSH  | E     | 301 | 20/20 | 0.96 | 0.09 | 2,2,6,9                    | 0     |
| 6   | GSH  | B     | 301 | 20/20 | 0.97 | 0.09 | 2,2,3,5                    | 0     |
| 6   | GSH  | F     | 301 | 20/20 | 0.97 | 0.08 | 2,2,2,3                    | 0     |
| 5   | MG   | D     | 603 | 1/1   | 0.98 | 0.09 | 9,9,9,9                    | 0     |
| 5   | MG   | D     | 604 | 1/1   | 0.98 | 0.06 | 10,10,10,10                | 0     |
| 5   | MG   | D     | 605 | 1/1   | 0.99 | 0.04 | 9,9,9,9                    | 0     |

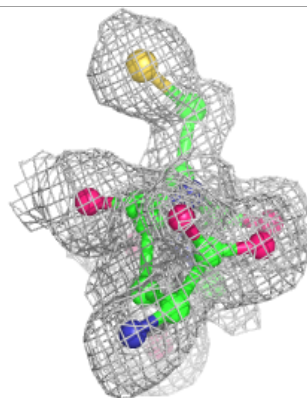
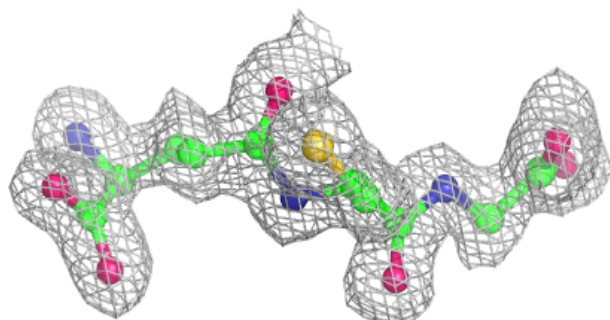
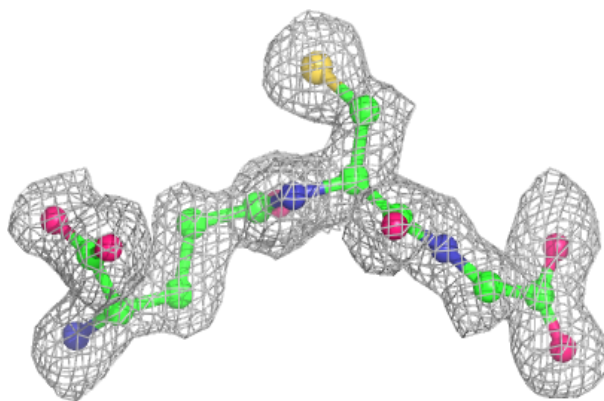


The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

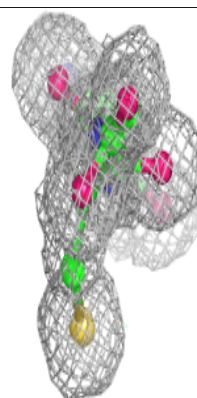
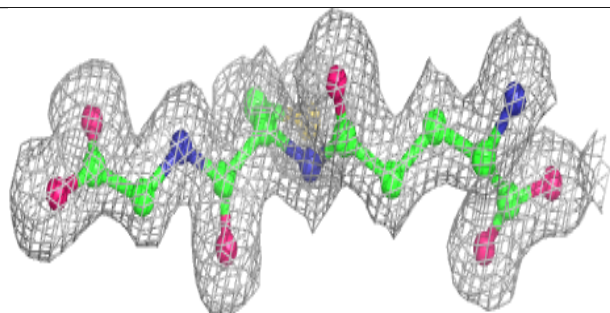
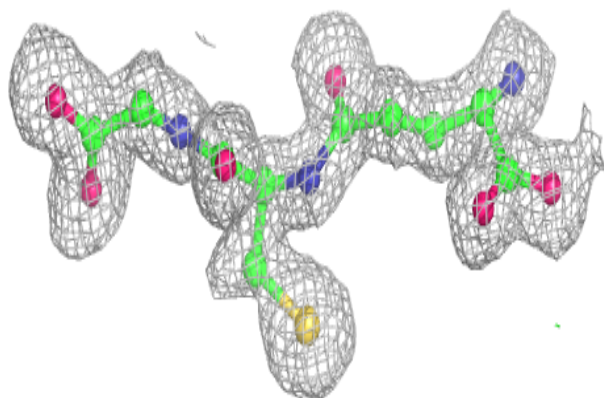


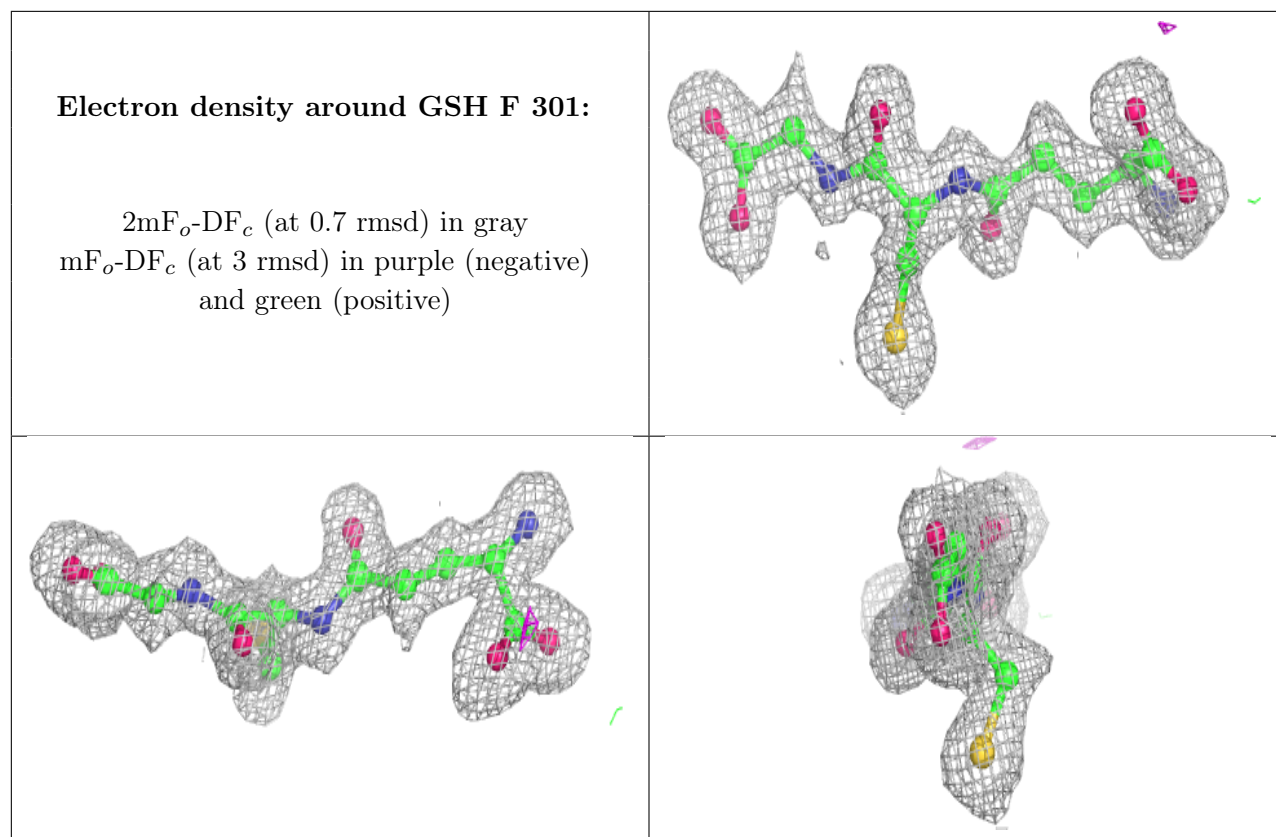
**Electron density around GSH E 301:**

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

**Electron density around GSH B 301:**

$2mF_o-DF_c$  (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.