



# Full wwPDB X-ray Structure Validation Report ⓘ

May 26, 2020 – 10:37 pm BST

PDB ID : 4GO3  
Title : Crystal structure of PnpE from Pseudomonas sp. WBC-3  
Authors : Su, J.; Zhang, C.; Liu, S.; Zhu, D.; Gu, L.  
Deposited on : 2012-08-18  
Resolution : 2.70 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.

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

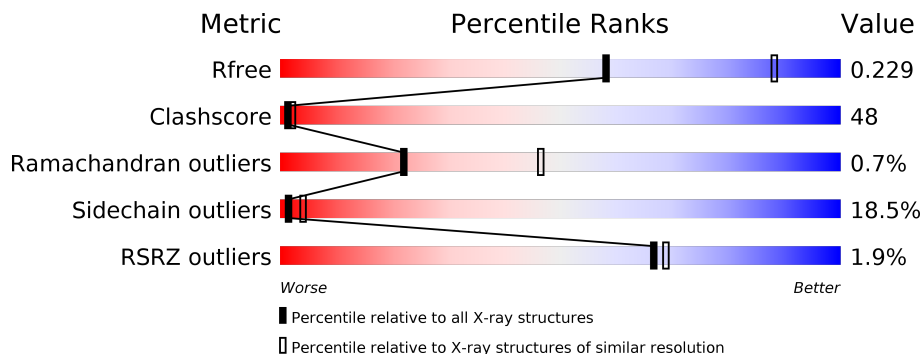
MolProbity : 4.02b-467  
Xtriage (Phenix) : 1.13  
EDS : 2.11  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.11

# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:  
*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.70 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.



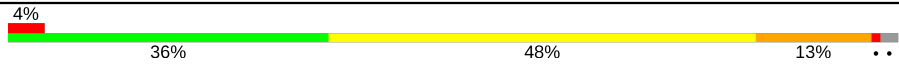

| Metric                | Whole archive<br>(#Entries) | Similar resolution<br>(#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| $R_{free}$            | 130704                      | 2808 (2.70-2.70)                                      |
| Clashscore            | 141614                      | 3122 (2.70-2.70)                                      |
| Ramachandran outliers | 138981                      | 3069 (2.70-2.70)                                      |
| Sidechain outliers    | 138945                      | 3069 (2.70-2.70)                                      |
| RSRZ outliers         | 127900                      | 2737 (2.70-2.70)                                      |

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 on 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     | 495    |                  |
| 1   | B     | 495    |                  |
| 1   | C     | 495    |                  |
| 1   | D     | 495    |                  |
| 1   | E     | 495    |                  |
| 1   | F     | 495    |                  |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 1   | G     | 495    |  |
| 1   | H     | 495    |  |

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 29686 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 Putative gamma-hydroxymuconic semialdehyde dehydrogenase.

| Mol | Chain | Residues | Atoms         |           |          |          |         | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|-----------|----------|----------|---------|---------|---------|-------|
|     |       |          | Total         | C         | N        | O        | S       |         |         |       |
| 1   | A     | 487      | Total<br>3685 | C<br>2333 | N<br>652 | O<br>684 | S<br>16 | 0       | 0       | 0     |
| 1   | B     | 487      | Total<br>3692 | C<br>2338 | N<br>654 | O<br>684 | S<br>16 | 0       | 1       | 0     |
| 1   | C     | 487      | Total<br>3691 | C<br>2337 | N<br>652 | O<br>686 | S<br>16 | 0       | 1       | 0     |
| 1   | D     | 487      | Total<br>3685 | C<br>2333 | N<br>652 | O<br>684 | S<br>16 | 0       | 0       | 0     |
| 1   | E     | 485      | Total<br>3665 | C<br>2321 | N<br>646 | O<br>682 | S<br>16 | 0       | 0       | 0     |
| 1   | F     | 487      | Total<br>3685 | C<br>2333 | N<br>652 | O<br>684 | S<br>16 | 0       | 0       | 0     |
| 1   | G     | 487      | Total<br>3685 | C<br>2333 | N<br>652 | O<br>684 | S<br>16 | 0       | 0       | 0     |
| 1   | H     | 487      | Total<br>3685 | C<br>2333 | N<br>652 | O<br>684 | S<br>16 | 0       | 0       | 0     |

There are 80 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| A     | 426     | ASN      | SER    | ENGINEERED MUTATION | UNP C1I208 |
| A     | 484     | HIS      | TYR    | ENGINEERED MUTATION | UNP C1I208 |
| A     | 488     | LEU      | -      | EXPRESSION TAG      | UNP C1I208 |
| A     | 489     | GLY      | -      | EXPRESSION TAG      | UNP C1I208 |
| A     | 490     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| A     | 491     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| A     | 492     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| A     | 493     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| A     | 494     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| A     | 495     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| B     | 426     | ASN      | SER    | ENGINEERED MUTATION | UNP C1I208 |
| B     | 484     | HIS      | TYR    | ENGINEERED MUTATION | UNP C1I208 |
| B     | 488     | LEU      | -      | EXPRESSION TAG      | UNP C1I208 |

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| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| B     | 489     | GLY      | -      | EXPRESSION TAG      | UNP C1I208 |
| B     | 490     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| B     | 491     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| B     | 492     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| B     | 493     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| B     | 494     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| B     | 495     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| C     | 426     | ASN      | SER    | ENGINEERED MUTATION | UNP C1I208 |
| C     | 484     | HIS      | TYR    | ENGINEERED MUTATION | UNP C1I208 |
| C     | 488     | LEU      | -      | EXPRESSION TAG      | UNP C1I208 |
| C     | 489     | GLY      | -      | EXPRESSION TAG      | UNP C1I208 |
| C     | 490     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| C     | 491     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| C     | 492     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| C     | 493     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| C     | 494     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| C     | 495     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| D     | 426     | ASN      | SER    | ENGINEERED MUTATION | UNP C1I208 |
| D     | 484     | HIS      | TYR    | ENGINEERED MUTATION | UNP C1I208 |
| D     | 488     | LEU      | -      | EXPRESSION TAG      | UNP C1I208 |
| D     | 489     | GLY      | -      | EXPRESSION TAG      | UNP C1I208 |
| D     | 490     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| D     | 491     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| D     | 492     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| D     | 493     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| D     | 494     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| D     | 495     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| E     | 426     | ASN      | SER    | ENGINEERED MUTATION | UNP C1I208 |
| E     | 484     | HIS      | TYR    | ENGINEERED MUTATION | UNP C1I208 |
| E     | 488     | LEU      | -      | EXPRESSION TAG      | UNP C1I208 |
| E     | 489     | GLY      | -      | EXPRESSION TAG      | UNP C1I208 |
| E     | 490     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| E     | 491     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| E     | 492     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| E     | 493     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| E     | 494     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| E     | 495     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| F     | 426     | ASN      | SER    | ENGINEERED MUTATION | UNP C1I208 |
| F     | 484     | HIS      | TYR    | ENGINEERED MUTATION | UNP C1I208 |
| F     | 488     | LEU      | -      | EXPRESSION TAG      | UNP C1I208 |
| F     | 489     | GLY      | -      | EXPRESSION TAG      | UNP C1I208 |
| F     | 490     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |

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| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| F     | 491     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| F     | 492     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| F     | 493     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| F     | 494     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| F     | 495     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| G     | 426     | ASN      | SER    | ENGINEERED MUTATION | UNP C1I208 |
| G     | 484     | HIS      | TYR    | ENGINEERED MUTATION | UNP C1I208 |
| G     | 488     | LEU      | -      | EXPRESSION TAG      | UNP C1I208 |
| G     | 489     | GLY      | -      | EXPRESSION TAG      | UNP C1I208 |
| G     | 490     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| G     | 491     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| G     | 492     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| G     | 493     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| G     | 494     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| G     | 495     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| H     | 426     | ASN      | SER    | ENGINEERED MUTATION | UNP C1I208 |
| H     | 484     | HIS      | TYR    | ENGINEERED MUTATION | UNP C1I208 |
| H     | 488     | LEU      | -      | EXPRESSION TAG      | UNP C1I208 |
| H     | 489     | GLY      | -      | EXPRESSION TAG      | UNP C1I208 |
| H     | 490     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| H     | 491     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| H     | 492     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| H     | 493     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| H     | 494     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |
| H     | 495     | HIS      | -      | EXPRESSION TAG      | UNP C1I208 |

- Molecule 2 is water.

| Mol | Chain | Residues | Atoms            | ZeroOcc | AltConf |
|-----|-------|----------|------------------|---------|---------|
| 2   | A     | 29       | Total O<br>29 29 | 0       | 0       |
| 2   | B     | 29       | Total O<br>29 29 | 0       | 0       |
| 2   | C     | 31       | Total O<br>31 31 | 0       | 0       |
| 2   | D     | 24       | Total O<br>24 24 | 0       | 0       |
| 2   | E     | 30       | Total O<br>30 30 | 0       | 0       |
| 2   | F     | 34       | Total O<br>34 34 | 0       | 0       |
| 2   | G     | 23       | Total O<br>23 23 | 0       | 0       |

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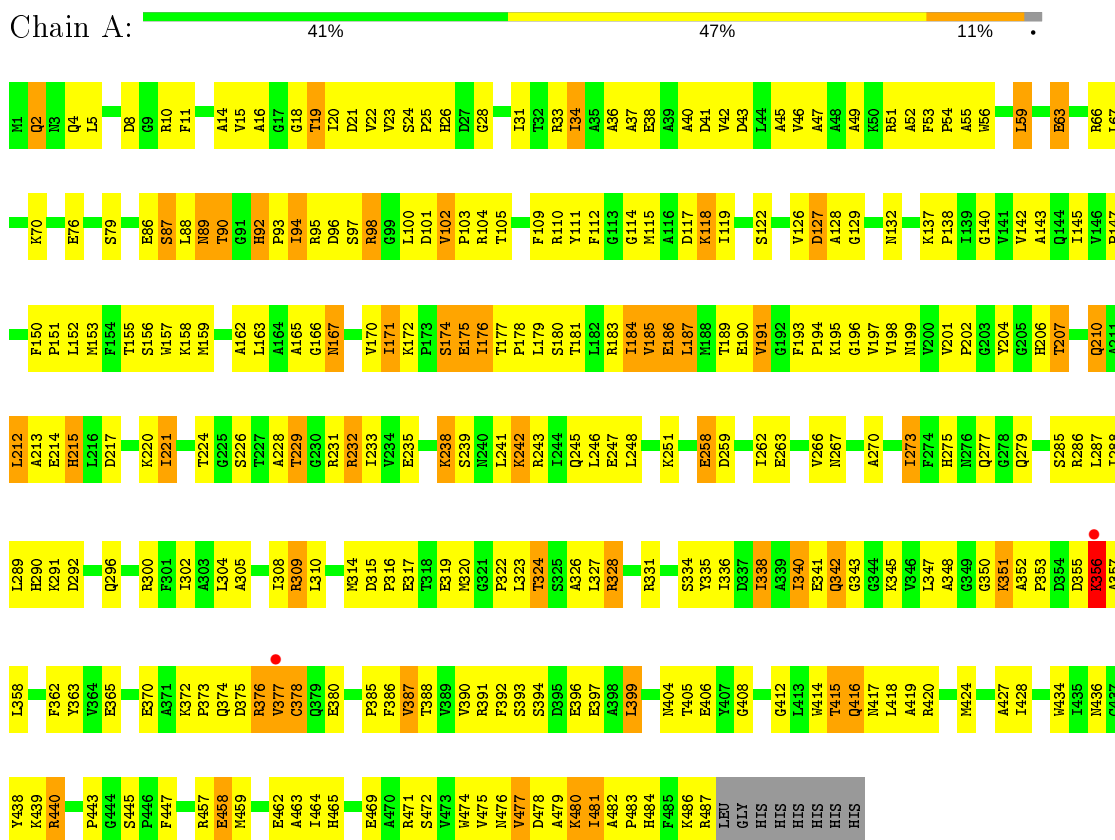
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| <b>Mol</b> | <b>Chain</b> | <b>Residues</b> | <b>Atoms</b> |    | <b>ZeroOcc</b> | <b>AltConf</b> |
|------------|--------------|-----------------|--------------|----|----------------|----------------|
| 2          | H            | 13              | Total        | O  | 0              | 0              |
|            |              |                 | 13           | 13 |                |                |

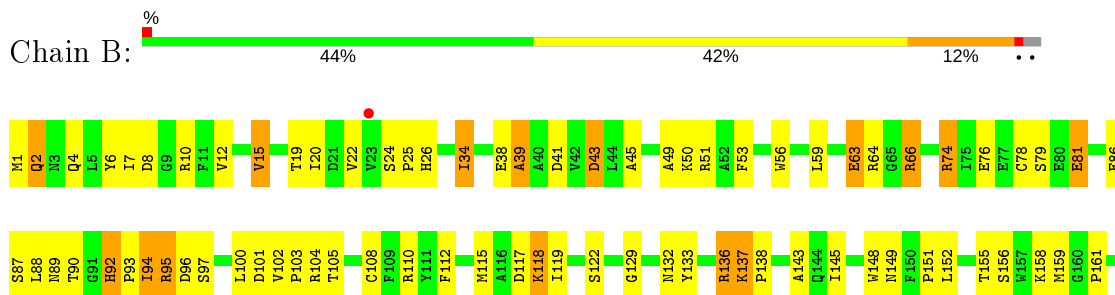
### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA 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.

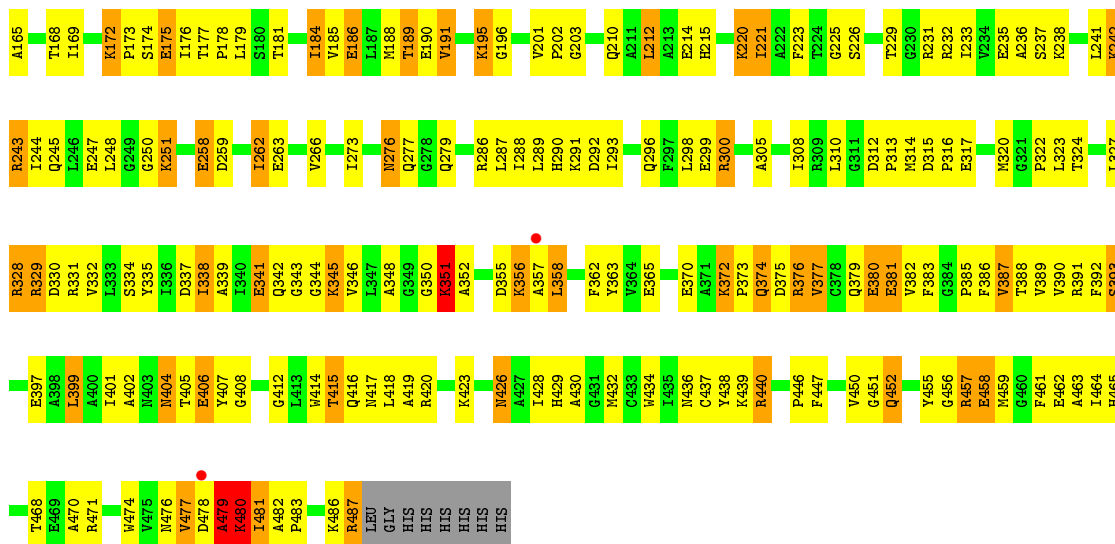
- Molecule 1: Putative gamma-hydroxymuconic semialdehyde dehydrogenase



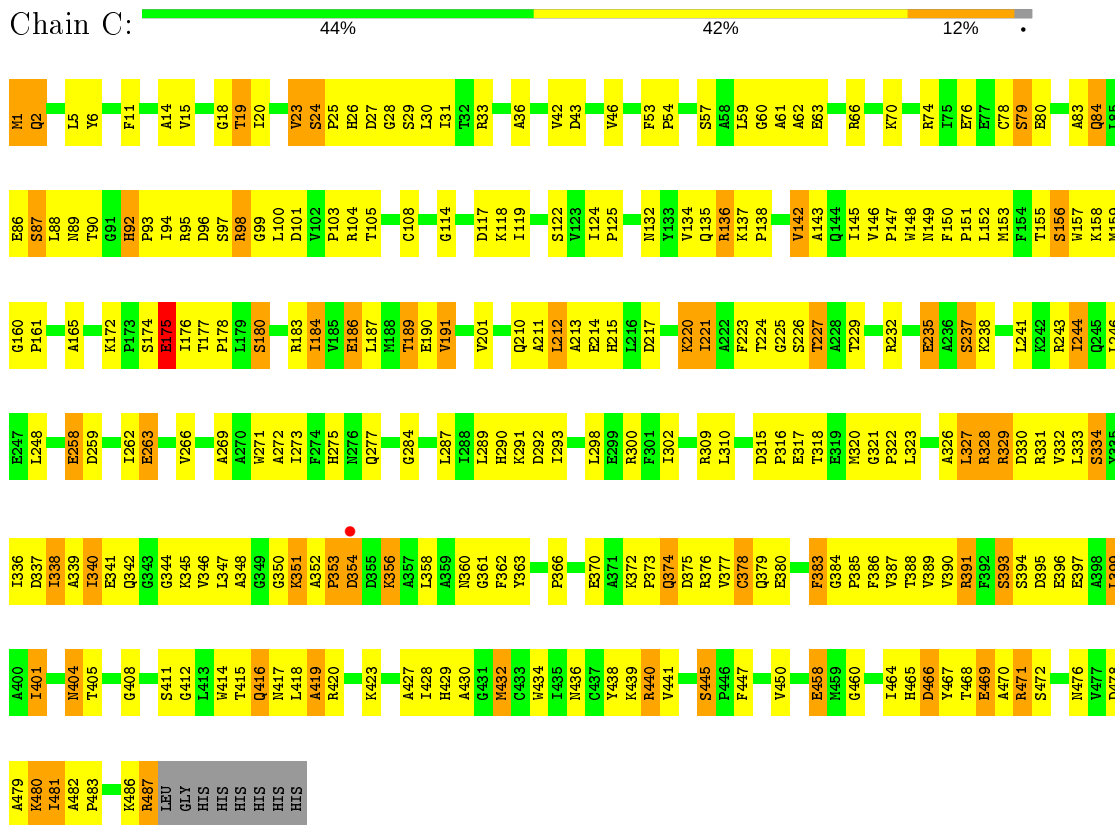
- Molecule 1: Putative gamma-hydroxymuconic semialdehyde dehydrogenase



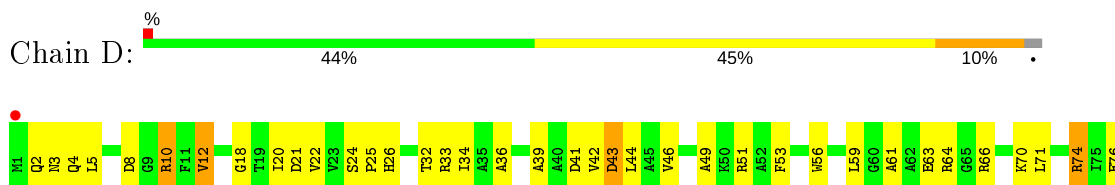


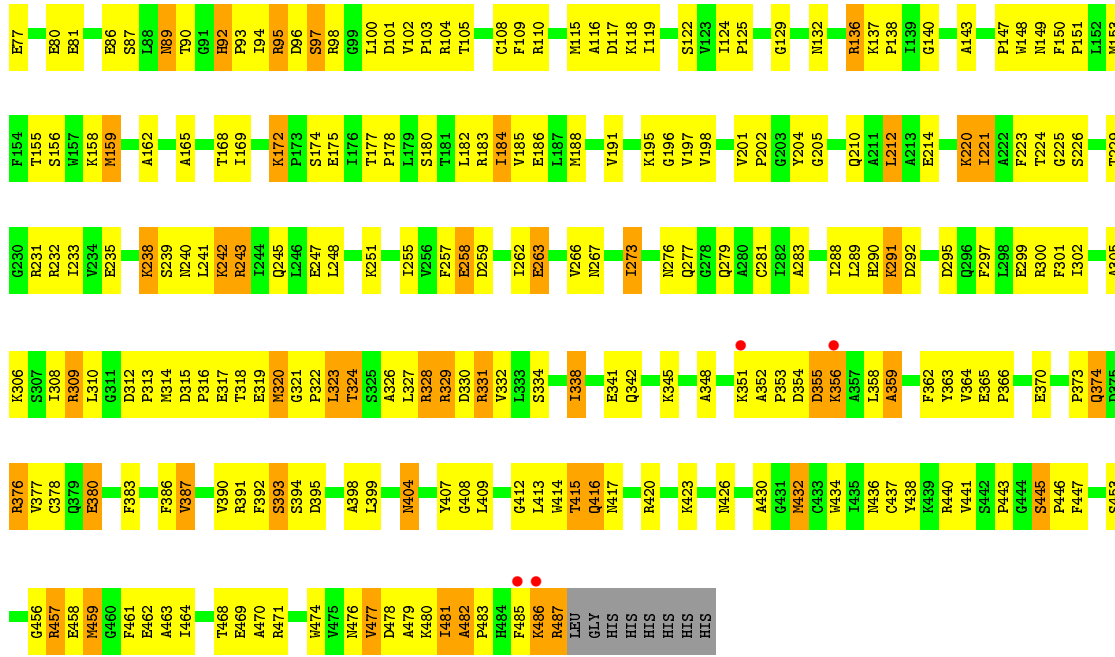


• Molecule 1: Putative gamma-hydroxymuconic semialdehyde dehydrogenase

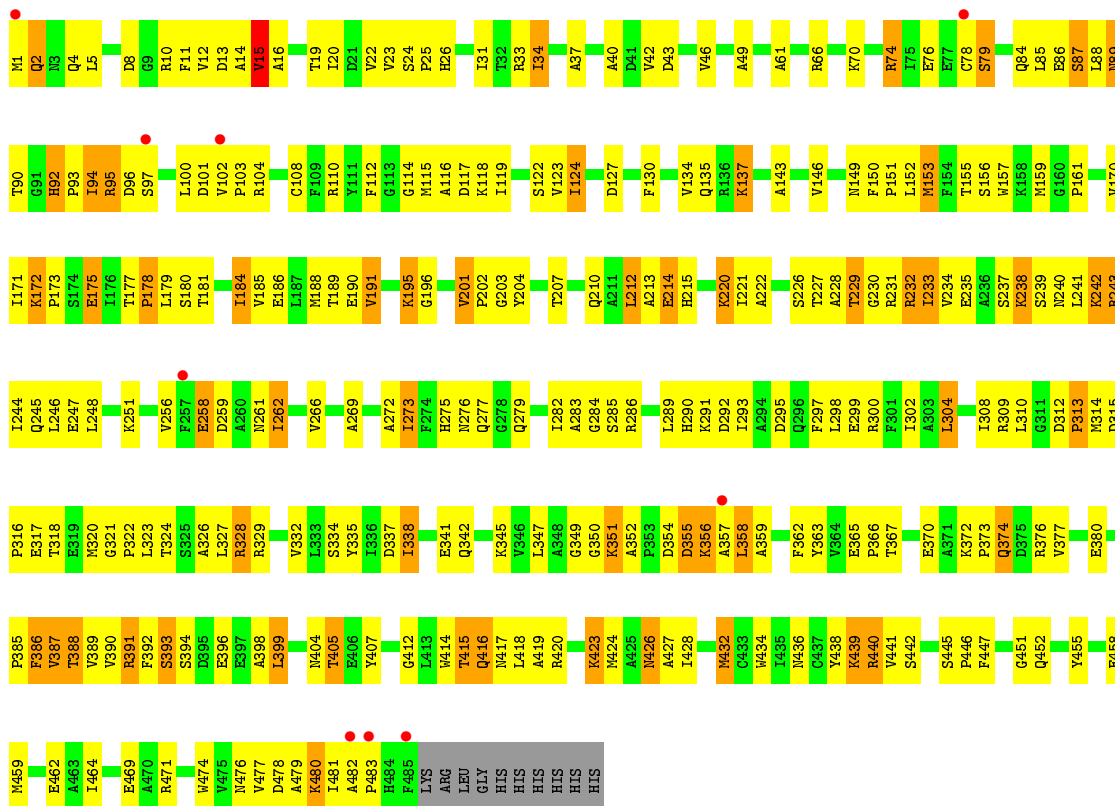


• Molecule 1: Putative gamma-hydroxymuconic semialdehyde dehydrogenase





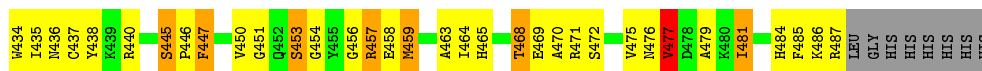
• Molecule 1: Putative gamma-hydroxymuconic semialdehyde dehydrogenase



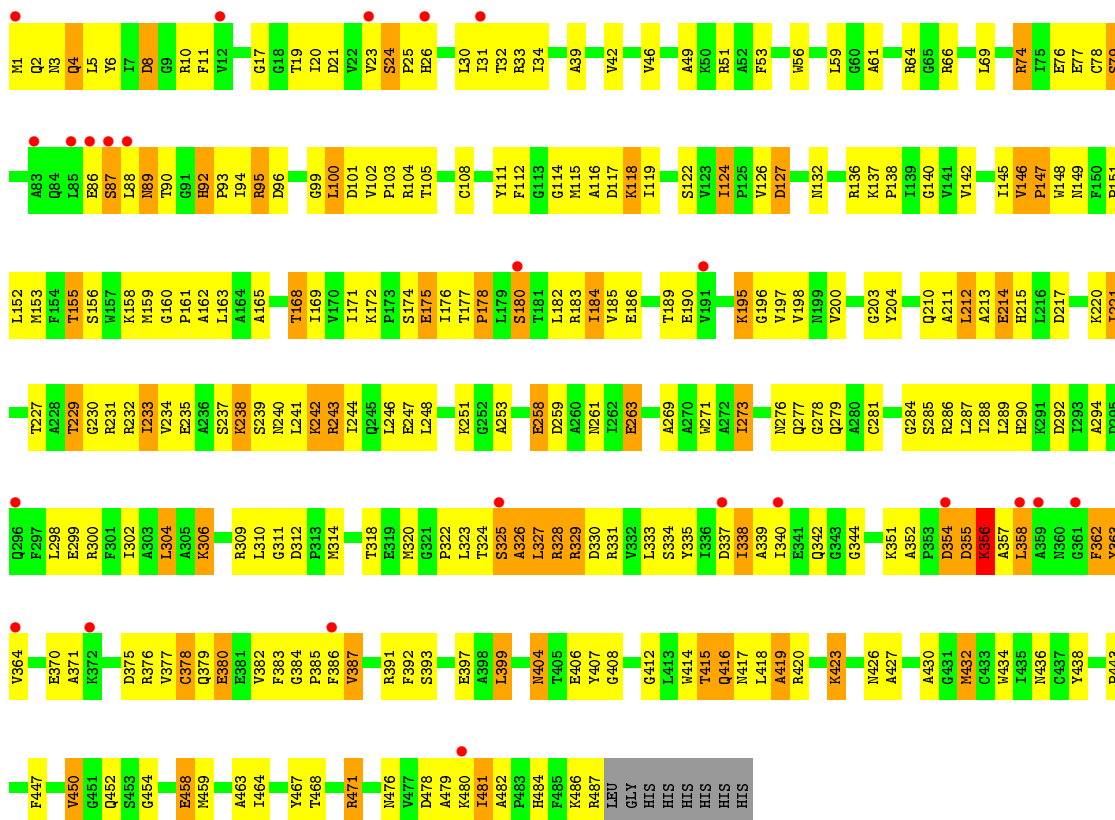
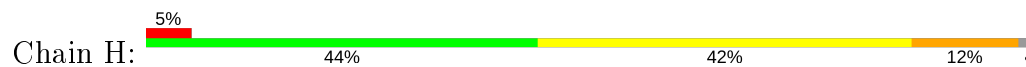
• Molecule 1: Putative gamma-hydroxymuconic semialdehyde dehydrogenase







● Molecule 1: Putative gamma-hydroxymuconic semialdehyde dehydrogenase



## 4 Data and refinement statistics

| Property  | Value   | Source           |
|---|---|------------------|
| Space group   | P 1 21 1  | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 83.53Å 144.25Å 138.29Å<br>90.00° 93.59° 90.00°              | Depositor        |
| Resolution (Å)  | 41.68 – 2.70<br>50.03 – 2.70                                | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 93.5 (41.68-2.70)<br>96.4 (50.03-2.70)                      | Depositor<br>EDS |
| $R_{merge}$   | 0.09  | Depositor        |
| $R_{sym}$   | (Not available)   | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 6.12 (at 2.69Å)   | Xtrriage         |
| Refinement program  | PHENIX (phenix.refine: 1.6.4_486)                           | Depositor        |
| R, $R_{free}$   | 0.223 , 0.237<br>0.217 , 0.229                              | Depositor<br>DCC |
| $R_{free}$ test set   | 4296 reflections (4.99%)                                    | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 38.6  | Xtrriage         |
| Anisotropy  | 0.313   | Xtrriage         |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.35 , 41.3   | EDS              |
| L-test for twinning <sup>2</sup>  | $\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.30$ | Xtrriage         |
| Estimated twinning fraction   | No twinning to report.                                      | Xtrriage         |
| $F_o, F_c$ correlation  | 0.91  | EDS              |
| Total number of atoms   | 29686   | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 42.0  | wwPDB-VP         |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.50% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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

## 5 Model quality i

### 5.1 Standard geometry i

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     | 0.97         | 2/3761 (0.1%)   | 0.68        | 1/5101 (0.0%)   |
| 1   | B     | 0.95         | 1/3772 (0.0%)   | 0.72        | 4/5116 (0.1%)   |
| 1   | C     | 1.01         | 2/3770 (0.1%)   | 0.70        | 0/5113          |
| 1   | D     | 0.98         | 1/3761 (0.0%)   | 0.74        | 5/5101 (0.1%)   |
| 1   | E     | 0.98         | 1/3741 (0.0%)   | 0.69        | 1/5076 (0.0%)   |
| 1   | F     | 0.90         | 1/3761 (0.0%)   | 0.76        | 7/5101 (0.1%)   |
| 1   | G     | 0.90         | 1/3761 (0.0%)   | 0.85        | 8/5101 (0.2%)   |
| 1   | H     | 0.92         | 3/3761 (0.1%)   | 0.69        | 1/5101 (0.0%)   |
| All | All   | 0.95         | 12/30088 (0.0%) | 0.73        | 27/40810 (0.1%) |

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   | B     | 0                   | 2                   |
| 1   | G     | 0                   | 1                   |
| All | All   | 0                   | 3                   |

All (12) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms  | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|--------|-------------|----------|
| 1   | C     | 78  | CYS  | CB-SG  | -10.06 | 1.65        | 1.82     |
| 1   | E     | 78  | CYS  | CB-SG  | -10.06 | 1.65        | 1.82     |
| 1   | H     | 78  | CYS  | CB-SG  | -10.06 | 1.65        | 1.82     |
| 1   | F     | 78  | CYS  | CB-SG  | -10.05 | 1.65        | 1.82     |
| 1   | D     | 378 | CYS  | CB-SG  | -5.91  | 1.72        | 1.81     |
| 1   | H     | 378 | CYS  | CB-SG  | -5.28  | 1.73        | 1.81     |
| 1   | A     | 378 | CYS  | CB-SG  | -5.27  | 1.73        | 1.81     |
| 1   | B     | 186 | GLU  | CD-OE2 | -5.09  | 1.20        | 1.25     |
| 1   | A     | 186 | GLU  | CD-OE2 | -5.07  | 1.20        | 1.25     |
| 1   | C     | 186 | GLU  | CD-OE2 | -5.03  | 1.20        | 1.25     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1   | H     | 204 | TYR  | CD1-CE1 | -5.01 | 1.31        | 1.39     |
| 1   | G     | 204 | TYR  | CD1-CE1 | -5.00 | 1.31        | 1.39     |

All (27) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms    | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|--------|-------------|----------|
| 1   | D     | 482 | ALA  | CB-CA-C  | 16.20  | 134.40      | 110.10   |
| 1   | B     | 479 | ALA  | CB-CA-C  | 13.03  | 129.65      | 110.10   |
| 1   | G     | 477 | VAL  | CB-CA-C  | 13.02  | 136.14      | 111.40   |
| 1   | G     | 315 | ASP  | CB-CA-C  | 11.93  | 134.27      | 110.40   |
| 1   | F     | 115 | MET  | CB-CA-C  | -10.98 | 88.44       | 110.40   |
| 1   | G     | 315 | ASP  | N-CA-C   | -9.19  | 86.18       | 111.00   |
| 1   | B     | 480 | LYS  | C-N-CA   | 8.99   | 144.19      | 121.70   |
| 1   | G     | 357 | ALA  | CB-CA-C  | 8.88   | 123.42      | 110.10   |
| 1   | F     | 462 | GLU  | CB-CA-C  | -8.28  | 93.84       | 110.40   |
| 1   | F     | 116 | ALA  | CB-CA-C  | -8.07  | 98.00       | 110.10   |
| 1   | H     | 326 | ALA  | CB-CA-C  | -8.02  | 98.08       | 110.10   |
| 1   | G     | 83  | ALA  | CB-CA-C  | -7.88  | 98.28       | 110.10   |
| 1   | D     | 355 | ASP  | CB-CA-C  | 7.35   | 125.11      | 110.40   |
| 1   | B     | 39  | ALA  | CB-CA-C  | -7.29  | 99.17       | 110.10   |
| 1   | A     | 340 | ILE  | CB-CA-C  | -6.76  | 98.08       | 111.60   |
| 1   | E     | 15  | VAL  | CB-CA-C  | -6.27  | 99.48       | 111.40   |
| 1   | D     | 359 | ALA  | CB-CA-C  | 6.26   | 119.49      | 110.10   |
| 1   | D     | 356 | LYS  | CB-CA-C  | -6.24  | 97.91       | 110.40   |
| 1   | F     | 462 | GLU  | N-CA-C   | 6.23   | 127.82      | 111.00   |
| 1   | D     | 481 | ILE  | CB-CA-C  | -6.05  | 99.49       | 111.60   |
| 1   | F     | 315 | ASP  | N-CA-C   | -5.58  | 95.93       | 111.00   |
| 1   | B     | 480 | LYS  | CB-CA-C  | 5.50   | 121.40      | 110.40   |
| 1   | G     | 224 | THR  | N-CA-C   | -5.49  | 96.18       | 111.00   |
| 1   | G     | 100 | LEU  | CB-CA-C  | -5.33  | 100.07      | 110.20   |
| 1   | F     | 246 | LEU  | CA-CB-CG | 5.16   | 127.17      | 115.30   |
| 1   | F     | 177 | THR  | C-N-CD   | -5.16  | 109.25      | 120.60   |
| 1   | G     | 295 | ASP  | CB-CA-C  | -5.10  | 100.20      | 110.40   |

There are no chirality outliers.

All (3) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 1   | B     | 479 | ALA  | Peptide |
| 1   | B     | 480 | LYS  | Peptide |
| 1   | G     | 477 | VAL  | Peptide |

## 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     | 3685  | 0        | 3676     | 346     | 4            |
| 1   | B     | 3692  | 0        | 3683     | 426     | 18           |
| 1   | C     | 3691  | 0        | 3680     | 326     | 2            |
| 1   | D     | 3685  | 0        | 3678     | 304     | 2            |
| 1   | E     | 3665  | 0        | 3651     | 373     | 2            |
| 1   | F     | 3685  | 0        | 3677     | 419     | 10           |
| 1   | G     | 3685  | 0        | 3678     | 455     | 0            |
| 1   | H     | 3685  | 0        | 3675     | 336     | 15           |
| 2   | A     | 29    | 0        | 0        | 19      | 1            |
| 2   | B     | 29    | 0        | 0        | 32      | 0            |
| 2   | C     | 31    | 0        | 0        | 34      | 0            |
| 2   | D     | 24    | 0        | 0        | 15      | 0            |
| 2   | E     | 30    | 0        | 0        | 30      | 0            |
| 2   | F     | 34    | 0        | 0        | 21      | 0            |
| 2   | G     | 23    | 0        | 0        | 28      | 0            |
| 2   | H     | 13    | 0        | 0        | 11      | 0            |
| All | All   | 29686 | 0        | 29398    | 2820    | 27           |

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 48.

All (2820) 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:H:263:GLU:CG  | 1:H:300:ARG:NH2  | 1.68                     | 1.51              |
| 1:G:10:ARG:NH1  | 1:G:12:VAL:CG1   | 1.73                     | 1.50              |
| 1:B:479:ALA:HB1 | 1:B:480:LYS:CB   | 1.44                     | 1.47              |
| 1:B:479:ALA:HB1 | 1:B:480:LYS:CG   | 1.43                     | 1.46              |
| 1:B:238:LYS:CE  | 1:F:235:GLU:HG2  | 1.50                     | 1.41              |
| 1:A:159:MET:CE  | 1:A:198:VAL:HG11 | 1.47                     | 1.41              |
| 1:B:238:LYS:NZ  | 1:F:235:GLU:HG2  | 1.31                     | 1.37              |
| 1:H:49:ALA:HB1  | 1:H:168:THR:CG2  | 1.55                     | 1.37              |
| 1:B:238:LYS:NZ  | 1:F:235:GLU:CG   | 1.87                     | 1.36              |
| 1:A:159:MET:CE  | 1:A:198:VAL:CG1  | 2.01                     | 1.36              |
| 1:E:74:ARG:NH2  | 1:E:190:GLU:OE1  | 1.56                     | 1.35              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:329:ARG:CD   | 1:H:330:ASP:OD1  | 1.75                     | 1.34              |
| 1:A:97:SER:O     | 1:A:102:VAL:CG2  | 1.77                     | 1.33              |
| 1:A:376:ARG:HD3  | 1:A:380:GLU:OE2  | 1.21                     | 1.31              |
| 1:A:235:GLU:HB3  | 1:C:238:LYS:CE   | 1.60                     | 1.31              |
| 1:C:440:ARG:HA   | 2:C:530:HOH:O    | 1.33                     | 1.27              |
| 1:A:94:ILE:O     | 1:A:98:ARG:HG3   | 1.33                     | 1.26              |
| 1:H:263:GLU:HG3  | 1:H:300:ARG:NH2  | 1.31                     | 1.25              |
| 1:E:376:ARG:HD2  | 1:E:380:GLU:OE2  | 1.32                     | 1.25              |
| 1:E:291:LYS:HE2  | 1:E:393:SER:OG   | 1.09                     | 1.25              |
| 1:B:238:LYS:HZ3  | 1:F:235:GLU:CG   | 1.42                     | 1.24              |
| 1:H:229:THR:HG23 | 1:H:232:ARG:NH2  | 1.51                     | 1.24              |
| 1:H:87:SER:OG    | 1:H:92:HIS:O     | 1.55                     | 1.23              |
| 1:H:329:ARG:HD2  | 1:H:330:ASP:OD1  | 1.18                     | 1.23              |
| 1:D:273:ILE:O    | 1:D:273:ILE:HD12 | 1.37                     | 1.22              |
| 1:G:338:ILE:HD12 | 1:G:338:ILE:C    | 1.54                     | 1.22              |
| 1:A:97:SER:O     | 1:A:102:VAL:HG23 | 1.06                     | 1.22              |
| 1:F:273:ILE:HG12 | 1:F:387:VAL:CG2  | 1.69                     | 1.22              |
| 1:F:326:ALA:O    | 1:F:330:ASP:OD1  | 1.57                     | 1.22              |
| 1:G:10:ARG:NH1   | 1:G:12:VAL:HG11  | 0.90                     | 1.21              |
| 1:F:181:THR:O    | 1:F:184:ILE:HG22 | 1.37                     | 1.21              |
| 1:A:183:ARG:NH1  | 1:A:186:GLU:OE1  | 1.73                     | 1.21              |
| 1:H:263:GLU:HG2  | 1:H:300:ARG:NH2  | 1.39                     | 1.21              |
| 1:D:210:GLN:O    | 1:D:214:GLU:HG2  | 1.39                     | 1.20              |
| 1:D:259:ASP:OD1  | 1:D:415:THR:CG2  | 1.88                     | 1.20              |
| 1:E:231:ARG:NH2  | 1:H:239:SER:O    | 1.75                     | 1.19              |
| 1:F:338:ILE:HD11 | 1:F:376:ARG:NE   | 1.57                     | 1.19              |
| 1:B:479:ALA:CB   | 1:B:480:LYS:HB3  | 1.70                     | 1.19              |
| 1:A:217:ASP:OD2  | 1:B:374:GLN:NE2  | 1.77                     | 1.18              |
| 1:B:238:LYS:CE   | 1:F:235:GLU:CG   | 2.21                     | 1.17              |
| 1:B:238:LYS:NZ   | 1:F:235:GLU:CD   | 1.98                     | 1.17              |
| 1:G:347:LEU:HD11 | 1:G:370:GLU:HG3  | 1.25                     | 1.16              |
| 1:E:273:ILE:HD12 | 1:E:273:ILE:O    | 1.46                     | 1.16              |
| 1:F:377:VAL:CG1  | 1:F:388:THR:HG21 | 1.76                     | 1.16              |
| 1:D:323:LEU:HD23 | 1:D:323:LEU:N    | 1.53                     | 1.15              |
| 1:G:350:GLY:O    | 1:G:351:LYS:HG2  | 1.46                     | 1.15              |
| 1:B:132:ASN:ND2  | 1:F:445:SER:OG   | 1.79                     | 1.15              |
| 1:A:210:GLN:O    | 1:A:214:GLU:HG2  | 1.44                     | 1.15              |
| 1:G:481:ILE:N    | 1:G:481:ILE:HD12 | 1.58                     | 1.14              |
| 1:G:251:LYS:HB2  | 1:G:407:TYR:CD1  | 1.81                     | 1.14              |
| 1:D:259:ASP:OD1  | 1:D:415:THR:HG22 | 0.98                     | 1.14              |
| 1:E:291:LYS:CE   | 1:E:393:SER:OG   | 1.95                     | 1.14              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:15:VAL:HG12  | 1:E:16:ALA:N     | 1.47                     | 1.13              |
| 1:B:405:THR:CG2  | 1:B:407:TYR:H    | 1.59                     | 1.13              |
| 1:C:408:GLY:O    | 1:C:430:ALA:HA   | 1.49                     | 1.13              |
| 1:G:293:ILE:HD12 | 1:G:293:ILE:C    | 1.61                     | 1.13              |
| 1:H:49:ALA:HB1   | 1:H:168:THR:HG22 | 1.21                     | 1.12              |
| 1:G:310:LEU:HD12 | 1:G:320:MET:HG2  | 1.19                     | 1.12              |
| 1:H:328:ARG:CG   | 1:H:328:ARG:HH11 | 1.59                     | 1.12              |
| 1:A:159:MET:HE1  | 1:A:198:VAL:CG1  | 1.66                     | 1.12              |
| 1:A:221:ILE:HD12 | 1:A:233:ILE:HG23 | 1.28                     | 1.12              |
| 1:A:86:GLU:O     | 1:A:90:THR:OG1   | 1.66                     | 1.12              |
| 1:B:351:LYS:HG3  | 1:B:352:ALA:H    | 1.09                     | 1.12              |
| 1:B:426:ASN:O    | 1:F:137:LYS:NZ   | 1.82                     | 1.12              |
| 1:B:405:THR:HG22 | 1:B:407:TYR:N    | 1.63                     | 1.12              |
| 1:C:2:GLN:HA     | 1:C:2:GLN:HE21   | 1.06                     | 1.12              |
| 1:A:376:ARG:CD   | 1:A:380:GLU:OE2  | 1.97                     | 1.12              |
| 1:A:21:ASP:OD1   | 1:A:33:ARG:HD3   | 1.50                     | 1.11              |
| 1:E:235:GLU:O    | 1:E:238:LYS:HD3  | 1.49                     | 1.11              |
| 1:F:183:ARG:NH1  | 1:F:186:GLU:OE1  | 1.82                     | 1.11              |
| 1:F:38:GLU:HA    | 1:F:207:THR:HG22 | 1.30                     | 1.11              |
| 1:A:132:ASN:ND2  | 1:C:445:SER:OG   | 1.84                     | 1.11              |
| 1:H:328:ARG:HG2  | 1:H:328:ARG:NH1  | 1.47                     | 1.11              |
| 1:E:110:ARG:NH2  | 2:E:517:HOH:O    | 1.84                     | 1.11              |
| 1:D:415:THR:HG21 | 1:D:420:ARG:HH11 | 1.12                     | 1.10              |
| 1:C:2:GLN:NE2    | 1:C:2:GLN:HA     | 1.57                     | 1.10              |
| 1:F:273:ILE:CG1  | 1:F:387:VAL:HG22 | 1.80                     | 1.10              |
| 1:F:61:ALA:HB1   | 1:F:116:ALA:O    | 1.52                     | 1.10              |
| 1:C:262:ILE:O    | 1:C:266:VAL:HG23 | 1.50                     | 1.10              |
| 1:H:99:GLY:C     | 1:H:100:LEU:HD23 | 1.72                     | 1.10              |
| 1:F:471:ARG:NH2  | 2:F:531:HOH:O    | 1.82                     | 1.10              |
| 1:G:3:ASN:ND2    | 1:G:33:ARG:O     | 1.83                     | 1.10              |
| 1:F:338:ILE:CD1  | 1:F:376:ARG:HE   | 1.65                     | 1.10              |
| 1:G:357:ALA:C    | 1:G:358:LEU:HD12 | 1.72                     | 1.10              |
| 1:H:338:ILE:O    | 1:H:338:ILE:HD13 | 1.50                     | 1.10              |
| 1:H:329:ARG:HG3  | 1:H:329:ARG:HH11 | 0.99                     | 1.09              |
| 1:G:363:TYR:N    | 2:G:519:HOH:O    | 1.84                     | 1.09              |
| 1:D:115:MET:HE1  | 1:D:461:PHE:CE1  | 1.87                     | 1.09              |
| 1:D:10:ARG:HG2   | 1:D:10:ARG:HH11  | 1.03                     | 1.09              |
| 1:G:87:SER:HB2   | 1:G:94:ILE:CD1   | 1.82                     | 1.09              |
| 1:D:137:LYS:NZ   | 1:G:426:ASN:ND2  | 1.99                     | 1.09              |
| 1:B:479:ALA:CB   | 1:B:480:LYS:CB   | 2.30                     | 1.08              |
| 1:F:38:GLU:HA    | 1:F:207:THR:CG2  | 1.81                     | 1.08              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:464:ILE:O    | 1:H:468:THR:HG23 | 1.52                     | 1.08              |
| 1:G:183:ARG:O    | 1:G:183:ARG:HD2  | 1.52                     | 1.08              |
| 1:B:479:ALA:CB   | 1:B:480:LYS:CG   | 2.30                     | 1.08              |
| 1:B:479:ALA:HB1  | 1:B:480:LYS:HB3  | 1.13                     | 1.08              |
| 1:E:159:MET:HE1  | 1:E:171:ILE:HD13 | 1.25                     | 1.08              |
| 1:G:338:ILE:HD12 | 1:G:338:ILE:O    | 1.53                     | 1.08              |
| 1:F:234:VAL:O    | 1:F:237:SER:OG   | 1.67                     | 1.08              |
| 1:A:484:HIS:O    | 1:C:95:ARG:NH2   | 1.87                     | 1.07              |
| 1:H:8:ASP:OD2    | 1:H:51:ARG:NH2   | 1.86                     | 1.07              |
| 1:E:239:SER:O    | 1:H:231:ARG:NH2  | 1.87                     | 1.07              |
| 1:G:327:LEU:CD2  | 1:G:331:ARG:HD2  | 1.84                     | 1.07              |
| 1:D:351:LYS:CG   | 1:D:352:ALA:H    | 1.68                     | 1.07              |
| 1:G:251:LYS:HB2  | 1:G:407:TYR:HD1  | 0.91                     | 1.07              |
| 1:B:100:LEU:O    | 1:B:104:ARG:HG3  | 1.55                     | 1.06              |
| 1:F:210:GLN:O    | 1:F:214:GLU:HG3  | 1.56                     | 1.06              |
| 1:G:335:TYR:O    | 1:G:339:ALA:HB2  | 1.55                     | 1.06              |
| 1:F:210:GLN:O    | 1:F:214:GLU:CG   | 2.03                     | 1.05              |
| 1:H:351:LYS:HG3  | 1:H:352:ALA:H    | 1.20                     | 1.05              |
| 1:G:10:ARG:HH11  | 1:G:12:VAL:CG1   | 1.47                     | 1.05              |
| 1:E:104:ARG:NE   | 1:E:153:MET:CE   | 2.20                     | 1.05              |
| 1:A:235:GLU:CB   | 1:C:238:LYS:HE3  | 1.86                     | 1.05              |
| 1:B:329:ARG:HG3  | 1:B:329:ARG:HH11 | 1.15                     | 1.04              |
| 1:B:238:LYS:HZ2  | 1:F:235:GLU:CD   | 1.57                     | 1.04              |
| 1:G:376:ARG:CG   | 1:G:376:ARG:HH11 | 1.70                     | 1.04              |
| 1:A:481:ILE:HG13 | 1:A:482:ALA:N    | 1.67                     | 1.04              |
| 1:A:235:GLU:HB3  | 1:C:238:LYS:HE3  | 1.07                     | 1.04              |
| 1:C:302:ILE:CD1  | 1:C:347:LEU:HB3  | 1.87                     | 1.04              |
| 1:G:201:VAL:O    | 1:G:201:VAL:HG13 | 1.57                     | 1.04              |
| 1:G:376:ARG:HG3  | 1:G:376:ARG:HH11 | 0.90                     | 1.04              |
| 1:A:159:MET:HE3  | 1:A:198:VAL:CG1  | 1.83                     | 1.04              |
| 1:A:43:ASP:OD1   | 1:B:374:GLN:HG2  | 1.54                     | 1.04              |
| 1:A:462:GLU:OE1  | 1:C:136:ARG:NH2  | 1.89                     | 1.04              |
| 1:A:42:VAL:O     | 1:A:46:VAL:HG23  | 1.56                     | 1.03              |
| 1:H:481:ILE:HD12 | 1:H:482:ALA:H    | 1.23                     | 1.03              |
| 1:A:221:ILE:CD1  | 1:A:233:ILE:CG2  | 2.36                     | 1.03              |
| 1:A:159:MET:CE   | 1:A:198:VAL:HG13 | 1.85                     | 1.03              |
| 1:B:136:ARG:NH2  | 2:B:514:HOH:O    | 1.89                     | 1.03              |
| 1:F:443:PRO:HA   | 1:F:459:MET:CE   | 1.88                     | 1.02              |
| 1:F:481:ILE:HD12 | 1:F:482:ALA:H    | 1.22                     | 1.02              |
| 1:G:25:PRO:HD2   | 2:G:512:HOH:O    | 1.59                     | 1.02              |
| 1:A:55:ALA:C     | 2:A:525:HOH:O    | 1.95                     | 1.02              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:302:ILE:HD11 | 1:C:347:LEU:HB3  | 1.39                     | 1.02              |
| 1:A:258:GLU:HB3  | 1:A:290:HIS:CD2  | 1.93                     | 1.02              |
| 1:A:158:LYS:HD3  | 1:A:458:GLU:OE2  | 1.60                     | 1.02              |
| 1:D:309:ARG:NH1  | 1:D:309:ARG:HG2  | 1.59                     | 1.02              |
| 1:F:94:ILE:O     | 1:F:98:ARG:HG3   | 1.58                     | 1.02              |
| 1:B:401:ILE:O    | 1:B:404:ASN:HB3  | 1.60                     | 1.02              |
| 1:H:281:CYS:SG   | 2:H:503:HOH:O    | 2.17                     | 1.02              |
| 1:A:232:ARG:HA   | 1:A:235:GLU:CG   | 1.89                     | 1.01              |
| 1:D:351:LYS:HG3  | 1:D:352:ALA:H    | 1.21                     | 1.01              |
| 1:E:15:VAL:CG1   | 1:E:16:ALA:N     | 2.16                     | 1.01              |
| 1:F:338:ILE:HD11 | 1:F:376:ARG:HE   | 0.86                     | 1.01              |
| 1:G:90:THR:O     | 1:G:324:THR:HG22 | 1.59                     | 1.01              |
| 1:D:132:ASN:ND2  | 1:G:445:SER:OG   | 1.92                     | 1.01              |
| 1:G:376:ARG:HG3  | 1:G:376:ARG:NH1  | 1.64                     | 1.01              |
| 1:F:377:VAL:HG12 | 1:F:388:THR:HG21 | 1.39                     | 1.01              |
| 1:G:481:ILE:H    | 1:G:481:ILE:CD1  | 1.69                     | 1.01              |
| 1:A:232:ARG:CA   | 1:A:235:GLU:HG2  | 1.90                     | 1.01              |
| 1:G:151:PRO:CG   | 1:G:177:THR:OG1  | 2.08                     | 1.01              |
| 1:D:137:LYS:HZ1  | 1:G:426:ASN:ND2  | 1.54                     | 1.01              |
| 1:G:10:ARG:HH12  | 1:G:12:VAL:CG1   | 1.53                     | 1.00              |
| 1:H:259:ASP:OD1  | 1:H:415:THR:HG22 | 1.58                     | 1.00              |
| 1:C:432:MET:CE   | 1:C:447:PHE:CD1  | 2.44                     | 1.00              |
| 1:H:49:ALA:CB    | 1:H:168:THR:CG2  | 2.39                     | 1.00              |
| 1:G:322:PRO:HG3  | 1:G:363:TYR:CZ   | 1.96                     | 1.00              |
| 1:B:152:LEU:CD1  | 1:B:184:ILE:CD1  | 2.39                     | 1.00              |
| 1:C:302:ILE:HD11 | 1:C:347:LEU:CB   | 1.91                     | 1.00              |
| 1:F:86:GLU:O     | 1:F:90:THR:OG1   | 1.80                     | 1.00              |
| 1:B:439:LYS:NZ   | 2:B:501:HOH:O    | 1.93                     | 0.99              |
| 1:B:479:ALA:HB1  | 1:B:480:LYS:HG2  | 1.41                     | 0.99              |
| 1:H:273:ILE:HD13 | 1:H:285:SER:HA   | 1.41                     | 0.99              |
| 1:B:2:GLN:HA     | 1:B:2:GLN:HE21   | 1.24                     | 0.99              |
| 1:F:339:ALA:HB2  | 1:F:377:VAL:HG21 | 1.39                     | 0.99              |
| 1:B:238:LYS:HE2  | 1:F:235:GLU:HG2  | 1.39                     | 0.99              |
| 1:D:309:ARG:CG   | 1:D:309:ARG:HH11 | 1.74                     | 0.99              |
| 1:G:373:PRO:HG2  | 1:G:374:GLN:OE1  | 1.60                     | 0.99              |
| 1:G:362:PHE:C    | 2:G:519:HOH:O    | 2.01                     | 0.98              |
| 1:A:221:ILE:HD12 | 1:A:233:ILE:CG2  | 1.92                     | 0.98              |
| 1:F:210:GLN:NE2  | 2:F:527:HOH:O    | 1.97                     | 0.98              |
| 1:G:293:ILE:CD1  | 1:G:293:ILE:C    | 2.30                     | 0.98              |
| 1:A:232:ARG:HA   | 1:A:235:GLU:HG2  | 0.99                     | 0.98              |
| 1:A:251:LYS:NZ   | 2:A:524:HOH:O    | 1.95                     | 0.98              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:309:ARG:NH1  | 1:G:317:GLU:HB3  | 1.77                     | 0.98              |
| 1:G:94:ILE:HD13  | 1:G:314:MET:CE   | 1.94                     | 0.98              |
| 1:C:26:HIS:O     | 1:C:361:GLY:HA3  | 1.62                     | 0.98              |
| 1:G:358:LEU:N    | 1:G:358:LEU:HD12 | 1.78                     | 0.98              |
| 1:D:188:MET:HE1  | 1:D:198:VAL:HG11 | 1.45                     | 0.98              |
| 1:D:309:ARG:HG2  | 1:D:309:ARG:HH11 | 0.82                     | 0.98              |
| 1:F:415:THR:HG21 | 1:F:420:ARG:HD2  | 1.43                     | 0.98              |
| 1:A:94:ILE:O     | 1:A:98:ARG:CG    | 2.11                     | 0.98              |
| 1:E:42:VAL:HG13  | 1:E:212:LEU:HD13 | 1.44                     | 0.98              |
| 1:D:8:ASP:OD2    | 1:D:51:ARG:NH2   | 1.95                     | 0.97              |
| 1:F:115:MET:HG3  | 1:F:115:MET:O    | 1.64                     | 0.97              |
| 1:B:405:THR:HG22 | 1:B:407:TYR:H    | 0.81                     | 0.97              |
| 1:D:328:ARG:HH11 | 1:D:383:PHE:HB3  | 1.28                     | 0.97              |
| 1:A:100:LEU:O    | 1:A:104:ARG:HG3  | 1.65                     | 0.97              |
| 1:G:481:ILE:H    | 1:G:481:ILE:HD12 | 0.81                     | 0.97              |
| 1:H:102:VAL:HG22 | 1:H:152:LEU:HD21 | 1.45                     | 0.97              |
| 1:B:74:ARG:NH2   | 2:B:525:HOH:O    | 1.97                     | 0.97              |
| 1:C:6:TYR:OH     | 1:C:189:THR:HG21 | 1.63                     | 0.97              |
| 1:G:373:PRO:HD2  | 1:G:374:GLN:OE1  | 1.63                     | 0.97              |
| 1:B:238:LYS:CD   | 1:F:235:GLU:HG3  | 1.93                     | 0.97              |
| 1:B:238:LYS:HD3  | 1:F:235:GLU:HG3  | 1.47                     | 0.97              |
| 1:E:226:SER:OG   | 1:E:229:THR:HG22 | 1.64                     | 0.97              |
| 1:F:26:HIS:O     | 1:F:361:GLY:HA3  | 1.65                     | 0.97              |
| 1:C:375:ASP:OD2  | 2:C:507:HOH:O    | 1.83                     | 0.97              |
| 1:G:408:GLY:O    | 1:G:430:ALA:HA   | 1.65                     | 0.97              |
| 1:G:322:PRO:HB3  | 2:G:519:HOH:O    | 1.65                     | 0.96              |
| 1:A:47:ALA:HB2   | 1:B:374:GLN:HB2  | 1.44                     | 0.96              |
| 1:A:159:MET:HE3  | 1:A:198:VAL:HG13 | 1.43                     | 0.96              |
| 1:C:153:MET:O    | 1:C:156:SER:OG   | 1.84                     | 0.96              |
| 1:C:23:VAL:HG12  | 1:C:29:SER:O     | 1.64                     | 0.96              |
| 1:H:328:ARG:HG2  | 1:H:328:ARG:HH11 | 0.81                     | 0.96              |
| 1:D:309:ARG:HD3  | 1:D:319:GLU:OE1  | 1.62                     | 0.96              |
| 1:D:329:ARG:NH2  | 1:D:330:ASP:OD1  | 1.99                     | 0.96              |
| 1:H:240:ASN:OD1  | 2:H:506:HOH:O    | 1.84                     | 0.96              |
| 1:E:478:ASP:N    | 2:E:514:HOH:O    | 1.97                     | 0.96              |
| 1:B:95:ARG:NH2   | 1:F:484:HIS:O    | 1.99                     | 0.96              |
| 1:C:190:GLU:OE2  | 2:C:516:HOH:O    | 1.84                     | 0.96              |
| 1:A:132:ASN:ND2  | 1:C:445:SER:HG   | 1.59                     | 0.96              |
| 1:E:476:ASN:O    | 2:E:508:HOH:O    | 1.82                     | 0.96              |
| 1:F:481:ILE:HD12 | 1:F:482:ALA:N    | 1.80                     | 0.96              |
| 1:B:381:GLU:OE1  | 2:B:527:HOH:O    | 1.81                     | 0.95              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:95:ARG:NH2   | 1:G:484:HIS:O    | 1.99                     | 0.95              |
| 1:E:479:ALA:O    | 1:E:480:LYS:HD3  | 1.66                     | 0.95              |
| 1:F:201:VAL:O    | 1:F:201:VAL:HG12 | 1.65                     | 0.95              |
| 1:G:273:ILE:HD13 | 1:G:285:SER:HA   | 1.47                     | 0.95              |
| 1:D:93:PRO:O     | 1:D:96:ASP:HB2   | 1.64                     | 0.95              |
| 1:E:97:SER:HA    | 1:E:101:ASP:HB2  | 1.46                     | 0.95              |
| 1:F:26:HIS:O     | 1:F:361:GLY:CA   | 2.13                     | 0.95              |
| 1:G:322:PRO:HG3  | 1:G:363:TYR:CE1  | 2.00                     | 0.95              |
| 1:G:278:GLY:HA3  | 1:G:384:GLY:O    | 1.65                     | 0.95              |
| 1:G:37:ALA:CB    | 1:G:201:VAL:HG22 | 1.97                     | 0.95              |
| 1:B:137:LYS:HG3  | 1:B:471:ARG:HG3  | 1.49                     | 0.95              |
| 1:B:22:VAL:CG2   | 1:B:34:ILE:CG2   | 2.44                     | 0.95              |
| 1:D:426:ASN:OD1  | 1:G:137:LYS:NZ   | 1.99                     | 0.94              |
| 1:B:152:LEU:HD11 | 1:B:184:ILE:HD11 | 1.48                     | 0.94              |
| 1:C:2:GLN:NE2    | 2:C:521:HOH:O    | 1.99                     | 0.94              |
| 1:F:335:TYR:OH   | 1:F:380:GLU:OE1  | 1.84                     | 0.94              |
| 1:G:94:ILE:HD13  | 1:G:314:MET:HE2  | 1.48                     | 0.94              |
| 1:C:480:LYS:HD3  | 1:C:480:LYS:O    | 1.67                     | 0.94              |
| 1:C:415:THR:HG22 | 1:C:416:GLN:H    | 1.28                     | 0.94              |
| 1:A:471:ARG:NH1  | 1:C:428:ILE:O    | 2.00                     | 0.94              |
| 1:B:479:ALA:CB   | 1:B:480:LYS:HG2  | 1.93                     | 0.94              |
| 1:A:226:SER:OG   | 1:A:229:THR:HG22 | 1.65                     | 0.94              |
| 1:G:241:LEU:O    | 2:G:504:HOH:O    | 1.85                     | 0.94              |
| 1:A:22:VAL:CG2   | 1:A:34:ILE:CG2   | 2.46                     | 0.93              |
| 1:E:258:GLU:OE1  | 2:E:516:HOH:O    | 1.84                     | 0.93              |
| 1:G:358:LEU:N    | 1:G:358:LEU:CD1  | 2.30                     | 0.93              |
| 1:G:87:SER:CB    | 1:G:94:ILE:CD1   | 2.46                     | 0.93              |
| 1:B:334:SER:O    | 1:B:338:ILE:HG22 | 1.68                     | 0.93              |
| 1:D:10:ARG:CG    | 1:D:10:ARG:HH11  | 1.82                     | 0.93              |
| 1:G:415:THR:HG21 | 1:G:420:ARG:HD2  | 1.46                     | 0.93              |
| 1:F:117:ASP:OD2  | 2:F:524:HOH:O    | 1.85                     | 0.93              |
| 1:D:257:PHE:HB2  | 1:D:415:THR:HG23 | 1.51                     | 0.93              |
| 1:F:273:ILE:HG21 | 1:F:387:VAL:HG21 | 1.50                     | 0.93              |
| 1:D:323:LEU:CD2  | 1:D:323:LEU:N    | 2.30                     | 0.93              |
| 1:C:24:SER:OG    | 2:C:512:HOH:O    | 1.85                     | 0.93              |
| 1:A:232:ARG:CB   | 1:A:235:GLU:OE2  | 2.16                     | 0.93              |
| 1:E:351:LYS:HE2  | 1:E:352:ALA:O    | 1.69                     | 0.93              |
| 1:G:363:TYR:CA   | 2:G:519:HOH:O    | 2.10                     | 0.93              |
| 1:E:351:LYS:O    | 1:E:365:GLU:HG3  | 1.69                     | 0.93              |
| 1:B:22:VAL:HG21  | 1:B:34:ILE:HG21  | 1.50                     | 0.92              |
| 1:F:429:HIS:O    | 2:F:516:HOH:O    | 1.87                     | 0.92              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:351:LYS:CG   | 1:D:352:ALA:N    | 2.30                     | 0.92              |
| 1:C:432:MET:HE1  | 1:C:447:PHE:CD1  | 2.03                     | 0.92              |
| 1:F:326:ALA:HB2  | 1:F:362:PHE:CZ   | 2.05                     | 0.92              |
| 1:F:377:VAL:CG1  | 1:F:388:THR:CG2  | 2.48                     | 0.92              |
| 1:F:94:ILE:HG13  | 1:F:94:ILE:O     | 1.68                     | 0.92              |
| 1:E:159:MET:HE1  | 1:E:171:ILE:CD1  | 2.00                     | 0.92              |
| 1:F:326:ALA:HB2  | 1:F:362:PHE:CE1  | 2.05                     | 0.92              |
| 1:F:404:ASN:O    | 1:F:405:THR:HG22 | 1.69                     | 0.92              |
| 1:F:458:GLU:OE1  | 2:F:511:HOH:O    | 1.88                     | 0.92              |
| 1:B:226:SER:OG   | 1:B:229:THR:HG22 | 1.70                     | 0.92              |
| 1:E:259:ASP:OD1  | 1:E:415:THR:HG22 | 1.70                     | 0.92              |
| 1:H:127:ASP:OD1  | 2:H:509:HOH:O    | 1.86                     | 0.91              |
| 1:H:229:THR:HG23 | 1:H:232:ARG:HH22 | 1.25                     | 0.91              |
| 1:A:481:ILE:HG13 | 1:A:482:ALA:H    | 1.27                     | 0.91              |
| 1:A:221:ILE:CD1  | 1:A:233:ILE:HG21 | 1.97                     | 0.91              |
| 1:H:229:THR:CG2  | 1:H:232:ARG:NH2  | 2.33                     | 0.91              |
| 1:C:2:GLN:CA     | 1:C:2:GLN:HE21   | 1.81                     | 0.91              |
| 1:D:259:ASP:CG   | 1:D:415:THR:HG22 | 1.89                     | 0.91              |
| 1:E:479:ALA:O    | 1:E:480:LYS:HE2  | 1.71                     | 0.91              |
| 1:D:226:SER:OG   | 1:D:229:THR:HG22 | 1.71                     | 0.91              |
| 1:E:201:VAL:O    | 1:E:201:VAL:HG12 | 1.68                     | 0.91              |
| 1:G:226:SER:OG   | 1:G:229:THR:HG22 | 1.71                     | 0.91              |
| 1:H:329:ARG:HG3  | 1:H:329:ARG:NH1  | 1.69                     | 0.91              |
| 1:D:462:GLU:OE1  | 1:G:136:ARG:NH2  | 2.04                     | 0.91              |
| 1:B:329:ARG:NH1  | 1:B:329:ARG:HG3  | 1.77                     | 0.91              |
| 1:B:273:ILE:HG12 | 1:B:387:VAL:HG22 | 1.53                     | 0.91              |
| 1:B:101:ASP:OD1  | 2:B:511:HOH:O    | 1.87                     | 0.90              |
| 1:F:23:VAL:HG12  | 1:F:24:SER:O     | 1.71                     | 0.90              |
| 1:G:457:ARG:HH11 | 1:G:457:ARG:HG2  | 1.36                     | 0.90              |
| 1:E:104:ARG:CZ   | 1:E:153:MET:HE1  | 2.01                     | 0.90              |
| 1:E:386:PHE:O    | 1:E:386:PHE:HD1  | 1.54                     | 0.90              |
| 1:E:477:VAL:C    | 2:E:514:HOH:O    | 2.07                     | 0.90              |
| 1:C:23:VAL:CG1   | 1:C:29:SER:O     | 2.19                     | 0.90              |
| 1:D:323:LEU:HD23 | 1:D:323:LEU:H    | 1.30                     | 0.90              |
| 1:G:289:LEU:HD11 | 1:G:389:VAL:HG13 | 1.54                     | 0.90              |
| 1:B:22:VAL:HG21  | 1:B:34:ILE:CG2   | 2.02                     | 0.90              |
| 1:D:356:LYS:HA   | 1:D:359:ALA:HB2  | 1.54                     | 0.90              |
| 1:G:293:ILE:HD12 | 1:G:294:ALA:N    | 1.85                     | 0.90              |
| 1:A:55:ALA:O     | 2:A:525:HOH:O    | 1.83                     | 0.90              |
| 1:E:152:LEU:CD1  | 1:E:184:ILE:CD1  | 2.49                     | 0.90              |
| 1:B:136:ARG:NE   | 2:B:514:HOH:O    | 1.96                     | 0.90              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:235:GLU:HB3  | 1:C:238:LYS:HE2  | 1.52                     | 0.90              |
| 1:C:26:HIS:O     | 1:C:361:GLY:CA   | 2.19                     | 0.90              |
| 1:E:404:ASN:O    | 1:E:405:THR:HG22 | 1.72                     | 0.90              |
| 1:G:97:SER:HA    | 1:G:101:ASP:HB2  | 1.51                     | 0.90              |
| 1:C:482:ALA:O    | 2:C:529:HOH:O    | 1.88                     | 0.90              |
| 1:F:351:LYS:O    | 1:F:365:GLU:HG3  | 1.71                     | 0.90              |
| 1:G:338:ILE:CD1  | 1:G:338:ILE:C    | 2.30                     | 0.90              |
| 1:C:432:MET:HE3  | 1:C:447:PHE:CD1  | 2.06                     | 0.89              |
| 1:C:439:LYS:O    | 2:C:530:HOH:O    | 1.90                     | 0.89              |
| 1:B:41:ASP:OD2   | 2:B:522:HOH:O    | 1.89                     | 0.89              |
| 1:B:63:GLU:OE1   | 1:B:66:ARG:NH1   | 2.05                     | 0.89              |
| 1:C:259:ASP:OD1  | 1:C:415:THR:HG23 | 1.72                     | 0.89              |
| 1:C:315:ASP:OD1  | 1:C:316:PRO:HD2  | 1.72                     | 0.89              |
| 1:E:15:VAL:HG12  | 1:E:16:ALA:H     | 1.30                     | 0.89              |
| 1:G:373:PRO:CD   | 1:G:374:GLN:OE1  | 2.19                     | 0.89              |
| 1:C:220:LYS:HE3  | 1:C:466:ASP:O    | 1.73                     | 0.89              |
| 1:D:2:GLN:NE2    | 2:D:506:HOH:O    | 2.04                     | 0.89              |
| 1:G:327:LEU:HD21 | 1:G:331:ARG:HD2  | 1.54                     | 0.89              |
| 1:G:373:PRO:CG   | 1:G:374:GLN:OE1  | 2.20                     | 0.89              |
| 1:F:329:ARG:NH1  | 2:F:510:HOH:O    | 1.99                     | 0.89              |
| 1:G:210:GLN:HG2  | 2:G:517:HOH:O    | 1.71                     | 0.89              |
| 1:B:101:ASP:O    | 1:B:105:THR:OG1  | 1.91                     | 0.89              |
| 1:C:432:MET:HE1  | 1:C:447:PHE:CE1  | 2.08                     | 0.88              |
| 1:E:377:VAL:HG21 | 1:E:386:PHE:CZ   | 2.08                     | 0.88              |
| 1:G:22:VAL:HG23  | 1:G:34:ILE:HG23  | 1.55                     | 0.88              |
| 1:C:440:ARG:CA   | 2:C:530:HOH:O    | 2.02                     | 0.88              |
| 1:D:115:MET:CE   | 1:D:461:PHE:CE1  | 2.55                     | 0.88              |
| 1:B:357:ALA:HB2  | 1:G:12:VAL:HG12  | 1.53                     | 0.88              |
| 1:H:329:ARG:CG   | 1:H:329:ARG:HH11 | 1.86                     | 0.88              |
| 1:E:210:GLN:O    | 1:E:214:GLU:HG2  | 1.73                     | 0.88              |
| 1:B:238:LYS:HB2  | 1:F:231:ARG:HG2  | 1.55                     | 0.88              |
| 1:E:104:ARG:NE   | 1:E:153:MET:HE3  | 1.87                     | 0.88              |
| 1:A:213:ALA:O    | 1:A:242:LYS:HE2  | 1.74                     | 0.88              |
| 1:H:148:TRP:CD1  | 1:H:176:ILE:HD12 | 2.09                     | 0.88              |
| 1:E:42:VAL:CG1   | 1:E:212:LEU:HD13 | 2.02                     | 0.88              |
| 1:G:363:TYR:CG   | 2:G:519:HOH:O    | 2.25                     | 0.88              |
| 1:H:99:GLY:O     | 1:H:100:LEU:HD23 | 1.72                     | 0.88              |
| 1:A:259:ASP:OD1  | 1:A:415:THR:HG22 | 1.74                     | 0.88              |
| 1:F:415:THR:HG21 | 1:F:420:ARG:CD   | 2.04                     | 0.88              |
| 1:B:479:ALA:HA   | 1:B:480:LYS:HB3  | 1.55                     | 0.88              |
| 1:B:479:ALA:HB1  | 1:B:480:LYS:CD   | 2.03                     | 0.88              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:338:ILE:CD1  | 1:F:376:ARG:NE   | 2.29                     | 0.88              |
| 1:G:148:TRP:HB3  | 1:G:177:THR:CG2  | 2.03                     | 0.88              |
| 1:B:351:LYS:HG3  | 1:B:352:ALA:N    | 1.87                     | 0.87              |
| 1:E:159:MET:CE   | 1:E:171:ILE:HD13 | 2.04                     | 0.87              |
| 1:H:273:ILE:HG12 | 1:H:387:VAL:HG22 | 1.54                     | 0.87              |
| 1:B:415:THR:HG21 | 1:B:420:ARG:HD2  | 1.57                     | 0.87              |
| 1:H:108:CYS:HB3  | 1:H:156:SER:HB2  | 1.54                     | 0.87              |
| 1:D:10:ARG:NH1   | 1:D:10:ARG:HG2   | 1.86                     | 0.87              |
| 1:B:329:ARG:HD2  | 1:B:330:ASP:N    | 1.89                     | 0.87              |
| 1:A:22:VAL:HG23  | 1:A:34:ILE:CG2   | 2.04                     | 0.87              |
| 1:A:377:VAL:HG13 | 1:A:388:THR:HG21 | 1.54                     | 0.87              |
| 1:D:20:ILE:HG21  | 1:D:175:GLU:HB3  | 1.55                     | 0.86              |
| 1:F:443:PRO:HA   | 1:F:459:MET:HE2  | 1.54                     | 0.86              |
| 1:B:351:LYS:CG   | 1:B:352:ALA:H    | 1.88                     | 0.86              |
| 1:D:351:LYS:O    | 1:D:365:GLU:HG3  | 1.75                     | 0.86              |
| 1:A:8:ASP:OD2    | 1:A:51:ARG:NH2   | 2.06                     | 0.86              |
| 1:B:115:MET:CE   | 1:B:461:PHE:CE1  | 2.59                     | 0.86              |
| 1:D:457:ARG:HG2  | 1:D:457:ARG:HH11 | 1.39                     | 0.86              |
| 1:H:351:LYS:HG3  | 1:H:352:ALA:N    | 1.90                     | 0.86              |
| 1:C:142:VAL:HG22 | 1:C:220:LYS:HB3  | 1.56                     | 0.86              |
| 1:D:36:ALA:O     | 2:D:524:HOH:O    | 1.91                     | 0.86              |
| 1:C:23:VAL:N     | 2:C:520:HOH:O    | 1.96                     | 0.86              |
| 1:C:2:GLN:NE2    | 1:C:2:GLN:CA     | 2.36                     | 0.86              |
| 1:G:335:TYR:O    | 1:G:339:ALA:CB   | 2.24                     | 0.86              |
| 1:C:24:SER:CB    | 2:C:512:HOH:O    | 2.22                     | 0.86              |
| 1:A:310:LEU:CD2  | 1:A:353:PRO:HG2  | 2.06                     | 0.85              |
| 1:A:56:TRP:HA    | 2:A:525:HOH:O    | 1.74                     | 0.85              |
| 1:C:467:TYR:OH   | 2:C:508:HOH:O    | 1.90                     | 0.85              |
| 1:E:370:GLU:OE2  | 2:E:518:HOH:O    | 1.94                     | 0.85              |
| 1:E:377:VAL:CG2  | 1:E:386:PHE:CZ   | 2.58                     | 0.85              |
| 1:B:417:ASN:HD22 | 1:B:420:ARG:HB2  | 1.41                     | 0.85              |
| 1:B:479:ALA:CB   | 1:B:480:LYS:CE   | 2.54                     | 0.85              |
| 1:E:87:SER:OG    | 1:E:92:HIS:O     | 1.94                     | 0.85              |
| 1:G:138:PRO:HG3  | 1:G:165:ALA:O    | 1.75                     | 0.85              |
| 1:A:415:THR:HG21 | 1:A:420:ARG:HD2  | 1.57                     | 0.85              |
| 1:E:292:ASP:OD2  | 2:E:529:HOH:O    | 1.93                     | 0.85              |
| 1:H:86:GLU:OE1   | 1:H:151:PRO:HD2  | 1.77                     | 0.85              |
| 1:G:249:GLY:O    | 1:G:453:SER:OG   | 1.94                     | 0.85              |
| 1:A:232:ARG:HB3  | 1:A:235:GLU:OE2  | 1.76                     | 0.85              |
| 1:B:416:GLN:NE2  | 2:B:503:HOH:O    | 1.98                     | 0.85              |
| 1:E:415:THR:HG21 | 1:E:420:ARG:HD2  | 1.57                     | 0.85              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:87:SER:OG    | 1:C:92:HIS:O     | 1.94                     | 0.85              |
| 1:E:318:THR:O    | 2:E:512:HOH:O    | 1.94                     | 0.85              |
| 1:E:396:GLU:OE1  | 2:E:520:HOH:O    | 1.94                     | 0.85              |
| 1:F:51:ARG:O     | 2:F:528:HOH:O    | 1.94                     | 0.85              |
| 1:A:47:ALA:HB2   | 1:B:374:GLN:CB   | 2.05                     | 0.84              |
| 1:D:10:ARG:NE    | 2:D:504:HOH:O    | 2.11                     | 0.84              |
| 1:H:49:ALA:HB1   | 1:H:168:THR:HG21 | 1.58                     | 0.84              |
| 1:D:86:GLU:O     | 1:D:90:THR:OG1   | 1.94                     | 0.84              |
| 1:A:221:ILE:HD13 | 1:A:233:ILE:HG21 | 1.57                     | 0.84              |
| 1:A:404:ASN:O    | 1:A:405:THR:CG2  | 2.25                     | 0.84              |
| 1:C:379:GLN:NE2  | 1:C:404:ASN:OD1  | 2.10                     | 0.84              |
| 1:G:327:LEU:CD2  | 1:G:331:ARG:CD   | 2.55                     | 0.84              |
| 1:G:310:LEU:CD2  | 1:G:353:PRO:HG3  | 2.06                     | 0.84              |
| 1:B:334:SER:O    | 1:B:338:ILE:CG2  | 2.24                     | 0.84              |
| 1:G:87:SER:OG    | 1:G:92:HIS:O     | 1.96                     | 0.84              |
| 1:B:81:GLU:OE1   | 2:B:518:HOH:O    | 1.93                     | 0.84              |
| 1:E:152:LEU:HD11 | 1:E:184:ILE:HD11 | 1.58                     | 0.84              |
| 1:H:355:ASP:OD1  | 1:H:357:ALA:HB3  | 1.77                     | 0.84              |
| 1:D:80:GLU:OE1   | 1:D:98:ARG:NH2   | 2.11                     | 0.84              |
| 1:F:124:ILE:O    | 2:F:514:HOH:O    | 1.95                     | 0.84              |
| 1:H:355:ASP:C    | 1:H:357:ALA:H    | 1.77                     | 0.84              |
| 1:D:458:GLU:O    | 1:D:459:MET:HB2  | 1.76                     | 0.84              |
| 1:H:377:VAL:HG21 | 1:H:386:PHE:CZ   | 2.13                     | 0.84              |
| 1:A:41:ASP:OD1   | 2:A:511:HOH:O    | 1.93                     | 0.84              |
| 1:B:238:LYS:CD   | 1:F:235:GLU:CG   | 2.52                     | 0.84              |
| 1:C:326:ALA:HB2  | 1:C:362:PHE:CE1  | 2.12                     | 0.84              |
| 1:D:481:ILE:HG22 | 1:D:482:ALA:N    | 1.93                     | 0.84              |
| 1:E:320:MET:CE   | 1:E:366:PRO:HG3  | 2.08                     | 0.84              |
| 1:F:443:PRO:HA   | 1:F:459:MET:HE3  | 1.60                     | 0.84              |
| 1:G:100:LEU:O    | 1:G:104:ARG:HG3  | 1.78                     | 0.84              |
| 1:H:237:SER:O    | 2:H:506:HOH:O    | 1.96                     | 0.84              |
| 1:H:26:HIS:ND1   | 1:H:363:TYR:OH   | 1.95                     | 0.84              |
| 1:H:408:GLY:O    | 1:H:430:ALA:HA   | 1.76                     | 0.83              |
| 1:H:415:THR:HG21 | 1:H:420:ARG:HD2  | 1.57                     | 0.83              |
| 1:B:132:ASN:ND2  | 1:F:445:SER:HG   | 1.71                     | 0.83              |
| 1:A:273:ILE:HG13 | 1:A:273:ILE:O    | 1.76                     | 0.83              |
| 1:A:4:GLN:OE1    | 2:A:518:HOH:O    | 1.96                     | 0.83              |
| 1:C:318:THR:CG2  | 1:C:320:MET:O    | 2.26                     | 0.83              |
| 1:G:22:VAL:HG21  | 1:G:34:ILE:CG2   | 2.09                     | 0.83              |
| 1:A:404:ASN:O    | 1:A:405:THR:HG22 | 1.77                     | 0.83              |
| 1:B:244:ILE:N    | 2:B:524:HOH:O    | 1.87                     | 0.83              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:287:LEU:HD22 | 1:B:289:LEU:HD21 | 1.60                     | 0.83              |
| 1:D:8:ASP:OD1    | 1:D:195:LYS:HG3  | 1.77                     | 0.83              |
| 1:E:22:VAL:CG2   | 1:E:34:ILE:CG2   | 2.57                     | 0.83              |
| 1:E:227:THR:HG23 | 1:H:241:LEU:HD11 | 1.61                     | 0.83              |
| 1:A:129:GLY:HA3  | 1:A:479:ALA:HB3  | 1.60                     | 0.83              |
| 1:C:397:GLU:O    | 1:C:401:ILE:HG13 | 1.77                     | 0.83              |
| 1:D:235:GLU:O    | 1:D:238:LYS:HG2  | 1.79                     | 0.83              |
| 1:E:386:PHE:O    | 1:E:386:PHE:CD1  | 2.30                     | 0.83              |
| 1:B:479:ALA:CA   | 1:B:480:LYS:HB3  | 2.08                     | 0.83              |
| 1:E:248:LEU:HD12 | 1:H:241:LEU:HD13 | 1.59                     | 0.83              |
| 1:A:213:ALA:O    | 1:A:242:LYS:CE   | 2.27                     | 0.82              |
| 1:B:479:ALA:HB2  | 1:B:480:LYS:NZ   | 1.93                     | 0.82              |
| 1:C:290:HIS:HD2  | 1:C:292:ASP:H    | 1.22                     | 0.82              |
| 1:G:151:PRO:HG2  | 1:G:177:THR:OG1  | 1.79                     | 0.82              |
| 1:G:87:SER:CB    | 1:G:94:ILE:HD12  | 2.09                     | 0.82              |
| 1:B:76:GLU:CD    | 1:B:110:ARG:NH1  | 2.33                     | 0.82              |
| 1:B:100:LEU:O    | 1:B:104:ARG:CG   | 2.28                     | 0.82              |
| 1:G:22:VAL:CG2   | 1:G:34:ILE:CG2   | 2.57                     | 0.82              |
| 1:H:481:ILE:HD12 | 1:H:482:ALA:N    | 1.92                     | 0.82              |
| 1:C:417:ASN:ND2  | 1:C:420:ARG:H    | 1.76                     | 0.82              |
| 1:F:257:PHE:HB2  | 1:F:415:THR:HG23 | 1.58                     | 0.82              |
| 1:B:22:VAL:CG2   | 1:B:34:ILE:HG21  | 2.08                     | 0.82              |
| 1:D:415:THR:HG21 | 1:D:420:ARG:NH1  | 1.93                     | 0.82              |
| 1:F:371:ALA:O    | 2:F:517:HOH:O    | 1.98                     | 0.82              |
| 1:B:137:LYS:NZ   | 1:F:426:ASN:OD1  | 2.12                     | 0.82              |
| 1:H:102:VAL:HG22 | 1:H:152:LEU:CD2  | 2.10                     | 0.82              |
| 1:A:20:ILE:HG13  | 1:A:36:ALA:HB2   | 1.61                     | 0.82              |
| 1:F:259:ASP:O    | 1:F:416:GLN:HG3  | 1.79                     | 0.82              |
| 1:G:289:LEU:CD1  | 1:G:389:VAL:HG13 | 2.07                     | 0.82              |
| 1:C:229:THR:OG1  | 1:C:232:ARG:NH2  | 2.13                     | 0.82              |
| 1:G:340:ILE:HG22 | 1:G:341:GLU:N    | 1.95                     | 0.82              |
| 1:B:376:ARG:NH1  | 1:B:380:GLU:OE1  | 2.13                     | 0.81              |
| 1:F:336:ILE:O    | 1:F:340:ILE:HG12 | 1.80                     | 0.81              |
| 1:H:158:LYS:HD3  | 1:H:458:GLU:OE2  | 1.80                     | 0.81              |
| 1:C:57:SER:O     | 2:C:523:HOH:O    | 1.98                     | 0.81              |
| 1:D:302:ILE:O    | 1:D:306:LYS:HG3  | 1.80                     | 0.81              |
| 1:F:258:GLU:HG3  | 1:F:290:HIS:CG   | 2.16                     | 0.81              |
| 1:H:138:PRO:HG3  | 1:H:165:ALA:O    | 1.79                     | 0.81              |
| 1:A:47:ALA:CB    | 1:B:374:GLN:HB2  | 2.10                     | 0.81              |
| 1:A:43:ASP:OD1   | 1:B:374:GLN:CG   | 2.28                     | 0.81              |
| 1:D:334:SER:O    | 1:D:338:ILE:HG23 | 1.81                     | 0.81              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:153:MET:HB2  | 2:E:510:HOH:O    | 1.79                     | 0.81              |
| 1:D:184:ILE:O    | 1:D:188:MET:HG3  | 1.80                     | 0.81              |
| 1:F:355:ASP:OD1  | 2:F:518:HOH:O    | 1.99                     | 0.81              |
| 1:G:445:SER:O    | 2:G:507:HOH:O    | 1.98                     | 0.81              |
| 1:A:221:ILE:CD1  | 1:A:233:ILE:HG23 | 1.99                     | 0.81              |
| 1:B:259:ASP:OD1  | 1:B:415:THR:HG22 | 1.81                     | 0.81              |
| 1:F:101:ASP:OD1  | 2:F:503:HOH:O    | 1.98                     | 0.81              |
| 1:F:417:ASN:HD22 | 1:F:420:ARG:H    | 1.27                     | 0.81              |
| 1:G:148:TRP:CB   | 1:G:177:THR:CG2  | 2.59                     | 0.81              |
| 1:D:328:ARG:O    | 1:D:332:VAL:HG23 | 1.81                     | 0.81              |
| 1:G:476:ASN:OD1  | 1:G:479:ALA:HB3  | 1.81                     | 0.81              |
| 1:B:136:ARG:CZ   | 2:B:514:HOH:O    | 2.19                     | 0.80              |
| 1:B:238:LYS:HZ3  | 1:F:235:GLU:CD   | 1.70                     | 0.80              |
| 1:F:291:LYS:HE2  | 1:F:393:SER:HB3  | 1.63                     | 0.80              |
| 1:C:175:GLU:OE2  | 2:C:522:HOH:O    | 1.98                     | 0.80              |
| 1:C:480:LYS:O    | 1:C:480:LYS:CD   | 2.29                     | 0.80              |
| 1:E:159:MET:CE   | 1:E:171:ILE:CD1  | 2.59                     | 0.80              |
| 1:C:93:PRO:O     | 1:C:96:ASP:HB2   | 1.81                     | 0.80              |
| 1:D:2:GLN:HE21   | 1:D:2:GLN:HA     | 1.44                     | 0.80              |
| 1:C:210:GLN:O    | 1:C:214:GLU:HG2  | 1.81                     | 0.80              |
| 1:E:376:ARG:CD   | 1:E:380:GLU:OE2  | 2.22                     | 0.80              |
| 1:G:201:VAL:CG1  | 1:G:201:VAL:O    | 2.30                     | 0.80              |
| 1:A:273:ILE:HG21 | 1:A:387:VAL:CG2  | 2.11                     | 0.80              |
| 1:B:20:ILE:HD13  | 1:B:175:GLU:HB3  | 1.61                     | 0.80              |
| 1:F:152:LEU:O    | 1:F:155:THR:OG1  | 1.99                     | 0.80              |
| 1:E:153:MET:CB   | 2:E:510:HOH:O    | 2.27                     | 0.80              |
| 1:B:2:GLN:CA     | 1:B:2:GLN:HE21   | 1.92                     | 0.80              |
| 1:D:328:ARG:HA   | 1:D:328:ARG:HE   | 1.47                     | 0.80              |
| 1:B:335:TYR:HA   | 1:B:338:ILE:HG23 | 1.62                     | 0.80              |
| 1:F:221:ILE:CG2  | 1:F:221:ILE:O    | 2.30                     | 0.80              |
| 1:G:475:VAL:HG12 | 1:G:477:VAL:HG12 | 1.63                     | 0.80              |
| 1:D:273:ILE:HG21 | 1:D:387:VAL:HG22 | 1.64                     | 0.80              |
| 1:F:53:PHE:CE1   | 1:F:140:GLY:HA2  | 2.17                     | 0.80              |
| 1:G:259:ASP:O    | 1:G:416:GLN:NE2  | 2.16                     | 0.80              |
| 1:F:27:ASP:OD1   | 1:F:29:SER:CB    | 2.30                     | 0.79              |
| 1:A:152:LEU:CD1  | 1:A:184:ILE:CD1  | 2.59                     | 0.79              |
| 1:A:210:GLN:O    | 1:A:214:GLU:CG   | 2.30                     | 0.79              |
| 1:A:338:ILE:HD13 | 1:A:376:ARG:HH21 | 1.48                     | 0.79              |
| 1:A:52:ALA:O     | 2:A:529:HOH:O    | 2.00                     | 0.79              |
| 1:B:152:LEU:HD12 | 1:B:184:ILE:CD1  | 2.12                     | 0.79              |
| 1:B:337:ASP:O    | 1:B:341:GLU:HG2  | 1.82                     | 0.79              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:226:SER:OG   | 1:E:229:THR:CG2  | 2.30                     | 0.79              |
| 1:H:327:LEU:O    | 1:H:331:ARG:HG3  | 1.83                     | 0.79              |
| 1:E:201:VAL:O    | 1:E:201:VAL:CG1  | 2.29                     | 0.79              |
| 1:G:338:ILE:CD1  | 1:G:338:ILE:O    | 2.30                     | 0.79              |
| 1:H:338:ILE:CD1  | 1:H:338:ILE:O    | 2.30                     | 0.79              |
| 1:E:22:VAL:HG21  | 1:E:34:ILE:HG21  | 1.63                     | 0.79              |
| 1:B:115:MET:HE1  | 1:B:461:PHE:CE1  | 2.17                     | 0.79              |
| 1:F:94:ILE:HG12  | 1:F:98:ARG:NH1   | 1.97                     | 0.79              |
| 1:D:338:ILE:HD11 | 1:D:376:ARG:HB3  | 1.65                     | 0.79              |
| 1:F:377:VAL:HG11 | 1:F:388:THR:HG21 | 1.63                     | 0.79              |
| 1:A:355:ASP:O    | 1:A:357:ALA:N    | 2.16                     | 0.79              |
| 1:B:6:TYR:OH     | 1:B:189:THR:HG21 | 1.82                     | 0.79              |
| 1:D:115:MET:HE2  | 1:D:461:PHE:CD1  | 2.17                     | 0.79              |
| 1:B:2:GLN:HA     | 1:B:2:GLN:NE2    | 1.97                     | 0.79              |
| 1:D:2:GLN:NE2    | 1:D:2:GLN:HA     | 1.97                     | 0.79              |
| 1:F:377:VAL:HG11 | 1:F:388:THR:CG2  | 2.13                     | 0.79              |
| 1:A:33:ARG:NH2   | 1:F:8:ASP:OD2    | 2.16                     | 0.79              |
| 1:B:74:ARG:NH1   | 1:B:78:CYS:SG    | 2.56                     | 0.79              |
| 1:D:291:LYS:HE2  | 1:D:393:SER:HB2  | 1.65                     | 0.79              |
| 1:E:235:GLU:O    | 1:E:238:LYS:CD   | 2.30                     | 0.79              |
| 1:E:291:LYS:HE2  | 1:E:393:SER:HG   | 1.47                     | 0.79              |
| 1:F:404:ASN:O    | 1:F:405:THR:CG2  | 2.30                     | 0.79              |
| 1:F:459:MET:N    | 2:F:506:HOH:O    | 2.15                     | 0.79              |
| 1:H:99:GLY:O     | 1:H:100:LEU:CD2  | 2.30                     | 0.79              |
| 1:H:333:LEU:HD22 | 1:H:351:LYS:HE2  | 1.63                     | 0.79              |
| 1:A:56:TRP:CA    | 2:A:525:HOH:O    | 2.29                     | 0.78              |
| 1:H:25:PRO:HA    | 1:H:362:PHE:CE2  | 2.18                     | 0.78              |
| 1:F:429:HIS:HB3  | 2:F:516:HOH:O    | 1.83                     | 0.78              |
| 1:G:53:PHE:CE1   | 1:G:140:GLY:HA2  | 2.17                     | 0.78              |
| 1:D:204:TYR:O    | 2:D:517:HOH:O    | 2.02                     | 0.78              |
| 1:E:479:ALA:O    | 1:E:480:LYS:CD   | 2.30                     | 0.78              |
| 1:F:227:THR:CG2  | 1:F:231:ARG:NH1  | 2.45                     | 0.78              |
| 1:G:350:GLY:O    | 1:G:351:LYS:CG   | 2.30                     | 0.78              |
| 1:H:20:ILE:HD13  | 1:H:175:GLU:HB3  | 1.63                     | 0.78              |
| 1:B:76:GLU:OE2   | 1:B:110:ARG:NH1  | 2.15                     | 0.78              |
| 1:F:259:ASP:OD1  | 1:F:415:THR:HG22 | 1.82                     | 0.78              |
| 1:F:38:GLU:HG2   | 1:F:207:THR:HG21 | 1.65                     | 0.78              |
| 1:D:351:LYS:HG2  | 1:D:352:ALA:N    | 1.97                     | 0.78              |
| 1:F:410:GLY:O    | 2:F:519:HOH:O    | 2.02                     | 0.78              |
| 1:B:428:ILE:O    | 1:F:471:ARG:NH1  | 2.16                     | 0.78              |
| 1:A:152:LEU:HD11 | 1:A:184:ILE:HD11 | 1.66                     | 0.78              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:81:GLU:CB    | 2:B:518:HOH:O    | 2.31                     | 0.78              |
| 1:E:479:ALA:O    | 1:E:480:LYS:CE   | 2.30                     | 0.78              |
| 1:F:201:VAL:CG1  | 1:F:201:VAL:O    | 2.29                     | 0.78              |
| 1:F:356:LYS:HA   | 1:F:359:ALA:HB2  | 1.66                     | 0.78              |
| 1:A:232:ARG:HB2  | 1:A:235:GLU:OE2  | 1.82                     | 0.78              |
| 1:F:273:ILE:HG12 | 1:F:387:VAL:HG22 | 0.85                     | 0.78              |
| 1:G:338:ILE:HD12 | 1:G:339:ALA:N    | 1.98                     | 0.78              |
| 1:B:312:ASP:OD1  | 1:B:313:PRO:HD2  | 1.83                     | 0.78              |
| 2:A:515:HOH:O    | 1:B:374:GLN:HG3  | 1.81                     | 0.78              |
| 1:F:210:GLN:O    | 1:F:214:GLU:HG2  | 1.82                     | 0.78              |
| 1:G:372:LYS:HB3  | 1:G:373:PRO:HD2  | 1.65                     | 0.78              |
| 1:G:76:GLU:O     | 1:G:79:SER:HB3   | 1.83                     | 0.78              |
| 1:A:34:ILE:HD11  | 1:A:202:PRO:HB2  | 1.66                     | 0.78              |
| 1:C:119:ILE:HD11 | 1:C:464:ILE:HD12 | 1.66                     | 0.78              |
| 1:F:477:VAL:HG23 | 1:F:478:ASP:HB2  | 1.64                     | 0.78              |
| 1:F:273:ILE:CG1  | 1:F:387:VAL:CG2  | 2.52                     | 0.78              |
| 1:C:275:HIS:NE2  | 2:C:524:HOH:O    | 2.00                     | 0.77              |
| 1:E:248:LEU:HD11 | 1:H:241:LEU:HD22 | 1.65                     | 0.77              |
| 1:F:335:TYR:CE2  | 1:F:376:ARG:CZ   | 2.66                     | 0.77              |
| 1:G:221:ILE:CG2  | 1:G:221:ILE:O    | 2.31                     | 0.77              |
| 1:B:172:LYS:NZ   | 1:B:203:GLY:O    | 2.17                     | 0.77              |
| 1:B:238:LYS:HZ3  | 1:F:235:GLU:HG2  | 0.94                     | 0.77              |
| 1:G:74:ARG:HG3   | 1:G:187:LEU:HD22 | 1.65                     | 0.77              |
| 1:G:95:ARG:NH1   | 1:G:319:GLU:HG2  | 1.99                     | 0.77              |
| 1:E:377:VAL:HG21 | 1:E:386:PHE:HZ   | 1.48                     | 0.77              |
| 1:G:369:VAL:HG12 | 1:G:369:VAL:O    | 1.83                     | 0.77              |
| 1:B:94:ILE:HG13  | 1:B:94:ILE:O     | 1.83                     | 0.77              |
| 1:F:227:THR:HA   | 1:F:248:LEU:HD13 | 1.67                     | 0.77              |
| 1:A:159:MET:HE1  | 1:A:198:VAL:HG11 | 0.77                     | 0.77              |
| 1:D:257:PHE:CB   | 1:D:415:THR:HG23 | 2.15                     | 0.77              |
| 1:F:22:VAL:HG21  | 1:F:34:ILE:CG2   | 2.15                     | 0.77              |
| 1:G:310:LEU:HD12 | 1:G:320:MET:CG   | 2.09                     | 0.77              |
| 1:A:102:VAL:HB   | 1:A:103:PRO:HD3  | 1.66                     | 0.77              |
| 1:B:115:MET:HE3  | 1:B:461:PHE:CE1  | 2.20                     | 0.77              |
| 1:B:451:GLY:O    | 2:B:502:HOH:O    | 2.01                     | 0.77              |
| 1:A:241:LEU:HD13 | 1:C:248:LEU:CD1  | 2.14                     | 0.77              |
| 1:E:22:VAL:CG2   | 1:E:34:ILE:HG21  | 2.14                     | 0.77              |
| 1:C:480:LYS:O    | 1:C:480:LYS:CG   | 2.30                     | 0.77              |
| 1:D:204:TYR:C    | 2:D:517:HOH:O    | 2.23                     | 0.77              |
| 1:F:2:GLN:HA     | 1:F:2:GLN:NE2    | 1.97                     | 0.77              |
| 1:C:70:LYS:HD2   | 1:C:191:VAL:HG22 | 1.67                     | 0.77              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:302:ILE:O    | 1:H:306:LYS:HG3  | 1.85                     | 0.77              |
| 1:C:302:ILE:HD13 | 1:C:347:LEU:HB3  | 1.67                     | 0.76              |
| 1:D:185:VAL:HG23 | 1:D:188:MET:HE2  | 1.66                     | 0.76              |
| 1:F:235:GLU:O    | 1:F:238:LYS:HD3  | 1.84                     | 0.76              |
| 1:B:152:LEU:CD1  | 1:B:184:ILE:HD11 | 2.05                     | 0.76              |
| 1:H:333:LEU:CD2  | 1:H:351:LYS:HE2  | 2.14                     | 0.76              |
| 1:B:328:ARG:NH1  | 1:B:331:ARG:HE   | 1.82                     | 0.76              |
| 1:F:37:ALA:CB    | 1:F:201:VAL:HG13 | 2.15                     | 0.76              |
| 1:B:235:GLU:HG2  | 1:F:238:LYS:CE   | 2.16                     | 0.76              |
| 1:G:326:ALA:N    | 1:G:362:PHE:CE2  | 2.53                     | 0.76              |
| 1:H:124:ILE:HB   | 1:H:132:ASN:ND2  | 2.01                     | 0.76              |
| 1:A:292:ASP:O    | 1:A:296:GLN:NE2  | 2.19                     | 0.76              |
| 1:B:345:LYS:CD   | 1:B:345:LYS:N    | 2.49                     | 0.76              |
| 1:H:90:THR:HG21  | 1:H:92:HIS:CE1   | 2.21                     | 0.76              |
| 1:E:102:VAL:HB   | 1:E:103:PRO:HD3  | 1.67                     | 0.76              |
| 1:A:235:GLU:CB   | 1:C:238:LYS:CE   | 2.50                     | 0.76              |
| 1:A:37:ALA:O     | 2:A:519:HOH:O    | 2.03                     | 0.76              |
| 1:C:408:GLY:O    | 1:C:430:ALA:CA   | 2.32                     | 0.76              |
| 1:E:104:ARG:CZ   | 1:E:153:MET:CE   | 2.61                     | 0.76              |
| 1:D:355:ASP:O    | 1:D:356:LYS:HB2  | 1.85                     | 0.75              |
| 1:E:258:GLU:HG3  | 1:E:290:HIS:CD2  | 2.21                     | 0.75              |
| 1:F:221:ILE:HG23 | 1:F:221:ILE:O    | 1.85                     | 0.75              |
| 1:G:21:ASP:HB3   | 1:G:30:LEU:CD1   | 2.15                     | 0.75              |
| 1:G:15:VAL:HG11  | 1:G:40:ALA:HB3   | 1.68                     | 0.75              |
| 1:A:184:ILE:O    | 1:A:187:LEU:HB2  | 1.87                     | 0.75              |
| 1:B:87:SER:OG    | 1:B:97:SER:OG    | 2.05                     | 0.75              |
| 1:G:51:ARG:O     | 2:G:520:HOH:O    | 2.04                     | 0.75              |
| 1:H:49:ALA:CA    | 1:H:168:THR:HG21 | 2.16                     | 0.75              |
| 1:C:215:HIS:HD2  | 1:C:217:ASP:H    | 1.32                     | 0.75              |
| 1:D:481:ILE:HG22 | 1:D:482:ALA:H    | 1.49                     | 0.75              |
| 1:B:132:ASN:HD21 | 1:F:445:SER:HG   | 1.25                     | 0.75              |
| 1:A:22:VAL:HG21  | 1:A:34:ILE:CG2   | 2.15                     | 0.75              |
| 1:A:22:VAL:CG2   | 1:A:34:ILE:HG21  | 2.15                     | 0.75              |
| 1:E:22:VAL:HG23  | 1:E:34:ILE:CG2   | 2.15                     | 0.75              |
| 1:G:22:VAL:CG2   | 1:G:34:ILE:HG23  | 2.16                     | 0.75              |
| 1:G:335:TYR:OH   | 2:G:523:HOH:O    | 1.81                     | 0.75              |
| 1:G:394:SER:HB2  | 1:G:396:GLU:OE2  | 1.87                     | 0.75              |
| 1:A:228:ALA:O    | 1:A:232:ARG:NE   | 2.19                     | 0.75              |
| 1:E:262:ILE:O    | 1:E:266:VAL:HG23 | 1.86                     | 0.75              |
| 1:F:281:CYS:HB3  | 1:F:409:LEU:CD2  | 2.17                     | 0.75              |
| 1:G:326:ALA:HB2  | 1:G:362:PHE:CZ   | 2.22                     | 0.75              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:A:334:SER:O     | 1:A:338:ILE:HG23 | 1.85                     | 0.75              |
| 1:D:10:ARG:CD     | 2:D:504:HOH:O    | 2.35                     | 0.75              |
| 1:G:80:GLU:OE1    | 1:G:84:GLN:NE2   | 2.19                     | 0.75              |
| 1:H:215:HIS:HD2   | 1:H:217:ASP:H    | 1.34                     | 0.75              |
| 1:H:328:ARG:NE    | 1:H:383:PHE:HB3  | 2.01                     | 0.75              |
| 1:A:34:ILE:CD1    | 1:A:202:PRO:HB2  | 2.17                     | 0.75              |
| 1:E:329:ARG:NH1   | 2:E:505:HOH:O    | 2.16                     | 0.75              |
| 1:F:22:VAL:HG21   | 1:F:34:ILE:HG21  | 1.68                     | 0.75              |
| 1:G:53:PHE:HB3    | 1:G:54:PRO:HD3   | 1.67                     | 0.75              |
| 1:A:143:ALA:HB1   | 1:A:212:LEU:HG   | 1.69                     | 0.75              |
| 1:C:404:ASN:O     | 1:C:405:THR:HG23 | 1.87                     | 0.75              |
| 1:B:258:GLU:HG2   | 1:B:290:HIS:CD2  | 2.21                     | 0.74              |
| 1:C:321:GLY:O     | 2:C:511:HOH:O    | 2.05                     | 0.74              |
| 1:C:370:GLU:OE2   | 1:C:391:ARG:HD2  | 1.87                     | 0.74              |
| 1:D:376:ARG:NH1   | 1:D:380:GLU:OE2  | 2.14                     | 0.74              |
| 1:E:277:GLN:NE2   | 1:E:321:GLY:H    | 1.85                     | 0.74              |
| 1:E:451:GLY:O     | 2:E:501:HOH:O    | 2.05                     | 0.74              |
| 1:F:415:THR:CG2   | 1:F:420:ARG:HH11 | 1.99                     | 0.74              |
| 1:C:63[A]:GLU:OE1 | 1:C:66:ARG:NE    | 2.19                     | 0.74              |
| 1:H:163:LEU:CD2   | 1:H:169:ILE:HD12 | 2.17                     | 0.74              |
| 1:A:138:PRO:HG3   | 1:A:165:ALA:O    | 1.87                     | 0.74              |
| 1:A:273:ILE:HG21  | 1:A:387:VAL:HG22 | 1.69                     | 0.74              |
| 1:B:133:TYR:OH    | 2:B:521:HOH:O    | 2.05                     | 0.74              |
| 1:G:293:ILE:O     | 1:G:293:ILE:CD1  | 2.35                     | 0.74              |
| 1:B:337:ASP:OD2   | 2:B:517:HOH:O    | 2.05                     | 0.74              |
| 1:D:376:ARG:CD    | 1:D:380:GLU:OE2  | 2.36                     | 0.74              |
| 1:E:210:GLN:O     | 1:E:214:GLU:CG   | 2.36                     | 0.74              |
| 1:G:231:ARG:O     | 1:G:235:GLU:HG3  | 1.88                     | 0.74              |
| 1:A:457:ARG:NH1   | 1:C:470:ALA:O    | 2.21                     | 0.74              |
| 1:B:22:VAL:HG23   | 1:B:34:ILE:CG2   | 2.16                     | 0.74              |
| 1:D:457:ARG:NE    | 2:D:513:HOH:O    | 1.92                     | 0.74              |
| 1:F:115:MET:O     | 1:F:119:ILE:HG13 | 1.88                     | 0.74              |
| 1:F:27:ASP:OD1    | 1:F:29:SER:HB3   | 1.86                     | 0.74              |
| 1:B:328:ARG:HH12  | 1:B:331:ARG:HE   | 1.36                     | 0.74              |
| 1:G:357:ALA:CA    | 1:G:358:LEU:HD12 | 2.17                     | 0.74              |
| 1:H:329:ARG:HD3   | 1:H:330:ASP:OD1  | 1.85                     | 0.74              |
| 1:B:320:MET:HE3   | 1:B:385:PRO:HG3  | 1.68                     | 0.73              |
| 1:C:334:SER:O     | 1:C:338:ILE:HG23 | 1.87                     | 0.73              |
| 1:B:344:GLY:C     | 1:B:345:LYS:HD3  | 2.09                     | 0.73              |
| 1:B:457:ARG:NH2   | 1:F:470:ALA:O    | 2.20                     | 0.73              |
| 1:G:148:TRP:O     | 1:G:151:PRO:HD3  | 1.87                     | 0.73              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:327:LEU:O    | 1:G:327:LEU:HD23 | 1.88                     | 0.73              |
| 1:B:379:GLN:OE1  | 2:B:506:HOH:O    | 2.05                     | 0.73              |
| 1:A:475:VAL:HG12 | 1:A:477:VAL:HG12 | 1.70                     | 0.73              |
| 1:B:479:ALA:HB3  | 1:B:480:LYS:HE2  | 1.68                     | 0.73              |
| 1:D:137:LYS:NZ   | 1:G:426:ASN:HD21 | 1.86                     | 0.73              |
| 1:H:355:ASP:C    | 1:H:357:ALA:N    | 2.39                     | 0.73              |
| 1:B:342:GLN:OE1  | 1:B:376:ARG:HB2  | 1.88                     | 0.73              |
| 1:D:273:ILE:O    | 1:D:273:ILE:CD1  | 2.30                     | 0.73              |
| 1:D:458:GLU:O    | 1:D:459:MET:CB   | 2.36                     | 0.73              |
| 1:F:246:LEU:O    | 1:F:454:GLY:HA3  | 1.87                     | 0.73              |
| 1:C:210:GLN:O    | 1:C:214:GLU:CG   | 2.36                     | 0.73              |
| 1:C:327:LEU:CD2  | 1:C:331:ARG:NH1  | 2.52                     | 0.73              |
| 1:G:148:TRP:HB3  | 1:G:177:THR:HG22 | 1.69                     | 0.73              |
| 1:E:22:VAL:HG21  | 1:E:34:ILE:CG2   | 2.19                     | 0.73              |
| 1:G:87:SER:OG    | 1:G:94:ILE:HD12  | 1.89                     | 0.73              |
| 1:H:49:ALA:C     | 1:H:168:THR:HG21 | 2.08                     | 0.73              |
| 1:A:56:TRP:N     | 2:A:525:HOH:O    | 2.14                     | 0.72              |
| 1:G:148:TRP:CB   | 1:G:177:THR:HG21 | 2.19                     | 0.72              |
| 1:G:151:PRO:HG3  | 1:G:177:THR:OG1  | 1.88                     | 0.72              |
| 1:H:175:GLU:CD   | 1:H:175:GLU:H    | 1.91                     | 0.72              |
| 1:H:333:LEU:HD22 | 1:H:351:LYS:CE   | 2.19                     | 0.72              |
| 1:C:351:LYS:HG3  | 1:C:352:ALA:H    | 1.53                     | 0.72              |
| 1:E:266:VAL:HG22 | 1:E:297:PHE:CE1  | 2.25                     | 0.72              |
| 1:E:320:MET:HE3  | 1:E:366:PRO:HG3  | 1.70                     | 0.72              |
| 1:F:338:ILE:CD1  | 1:F:376:ARG:CD   | 2.67                     | 0.72              |
| 1:G:37:ALA:HB1   | 1:G:201:VAL:HG22 | 1.70                     | 0.72              |
| 1:H:152:LEU:HD11 | 1:H:184:ILE:HD11 | 1.71                     | 0.72              |
| 1:B:320:MET:CE   | 1:B:385:PRO:HB3  | 2.19                     | 0.72              |
| 1:B:481:ILE:HB   | 2:B:515:HOH:O    | 1.88                     | 0.72              |
| 1:C:158:LYS:HD3  | 1:C:458:GLU:OE2  | 1.88                     | 0.72              |
| 1:G:305:ALA:HA   | 1:G:308:ILE:HD12 | 1.69                     | 0.72              |
| 1:B:90:THR:HG22  | 1:B:177:THR:HG21 | 1.69                     | 0.72              |
| 1:B:231:ARG:O    | 1:B:235:GLU:HG3  | 1.89                     | 0.72              |
| 1:G:457:ARG:NH1  | 1:G:457:ARG:HG2  | 2.04                     | 0.72              |
| 1:A:220:LYS:HZ1  | 1:A:245:GLN:HB2  | 1.52                     | 0.72              |
| 1:H:377:VAL:CG2  | 1:H:386:PHE:CE1  | 2.72                     | 0.72              |
| 1:A:328:ARG:HH11 | 1:A:328:ARG:HA   | 1.54                     | 0.72              |
| 1:A:424:MET:O    | 1:A:428:ILE:HG13 | 1.89                     | 0.72              |
| 1:E:213:ALA:HA   | 1:E:221:ILE:HD12 | 1.71                     | 0.72              |
| 1:B:22:VAL:HG23  | 1:B:34:ILE:HG23  | 1.71                     | 0.72              |
| 1:G:22:VAL:HG21  | 1:G:34:ILE:HG21  | 1.69                     | 0.72              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:355:ASP:C    | 1:A:357:ALA:H    | 1.92                     | 0.72              |
| 1:A:377:VAL:O    | 2:A:524:HOH:O    | 2.07                     | 0.72              |
| 1:E:266:VAL:HG22 | 1:E:297:PHE:CD1  | 2.25                     | 0.72              |
| 1:H:56:TRP:CH2   | 1:H:64:ARG:HG2   | 2.25                     | 0.72              |
| 1:C:190:GLU:CD   | 2:C:516:HOH:O    | 2.23                     | 0.72              |
| 1:C:327:LEU:HD22 | 1:C:331:ARG:NH1  | 2.04                     | 0.72              |
| 1:C:353:PRO:HG2  | 1:C:358:LEU:HD23 | 1.69                     | 0.72              |
| 1:D:148:TRP:CZ3  | 1:D:324:THR:OG1  | 2.42                     | 0.72              |
| 1:F:61:ALA:CB    | 1:F:116:ALA:O    | 2.36                     | 0.72              |
| 1:F:22:VAL:CG2   | 1:F:34:ILE:CG2   | 2.68                     | 0.72              |
| 1:G:172:LYS:HG2  | 1:G:172:LYS:O    | 1.89                     | 0.72              |
| 1:A:21:ASP:OD1   | 1:A:33:ARG:CD    | 2.34                     | 0.72              |
| 1:C:337:ASP:O    | 1:C:341:GLU:HG3  | 1.90                     | 0.72              |
| 1:C:340:ILE:HG22 | 1:C:341:GLU:N    | 2.05                     | 0.72              |
| 1:E:97:SER:O     | 1:E:102:VAL:HG23 | 1.90                     | 0.72              |
| 1:E:117:ASP:OD2  | 2:E:502:HOH:O    | 2.06                     | 0.72              |
| 1:F:335:TYR:CD2  | 1:F:376:ARG:NH2  | 2.58                     | 0.72              |
| 1:E:152:LEU:CD1  | 1:E:184:ILE:HD11 | 2.15                     | 0.71              |
| 1:E:273:ILE:HG13 | 1:E:387:VAL:HG22 | 1.71                     | 0.71              |
| 1:A:152:LEU:CD1  | 1:A:184:ILE:HD11 | 2.18                     | 0.71              |
| 1:B:56:TRP:CH2   | 1:B:64:ARG:HG2   | 2.25                     | 0.71              |
| 1:C:108:CYS:HB3  | 1:C:156:SER:HB2  | 1.73                     | 0.71              |
| 1:D:210:GLN:O    | 1:D:214:GLU:CG   | 2.29                     | 0.71              |
| 1:E:386:PHE:CD1  | 1:E:386:PHE:C    | 2.63                     | 0.71              |
| 1:F:394:SER:OG   | 1:F:397:GLU:HB2  | 1.90                     | 0.71              |
| 1:C:373:PRO:HG3  | 1:C:390:VAL:HG11 | 1.70                     | 0.71              |
| 1:H:393:SER:OG   | 1:H:397:GLU:OE1  | 2.06                     | 0.71              |
| 1:F:2:GLN:HA     | 1:F:2:GLN:HE21   | 1.55                     | 0.71              |
| 1:H:163:LEU:HD21 | 1:H:169:ILE:HD12 | 1.72                     | 0.71              |
| 1:B:377:VAL:HG13 | 1:B:388:THR:HG21 | 1.73                     | 0.71              |
| 1:D:143:ALA:HB1  | 1:D:212:LEU:HG   | 1.70                     | 0.71              |
| 1:G:273:ILE:HG13 | 1:G:273:ILE:O    | 1.91                     | 0.71              |
| 1:C:417:ASN:HD22 | 1:C:420:ARG:H    | 1.38                     | 0.71              |
| 1:H:210:GLN:O    | 1:H:214:GLU:HG3  | 1.90                     | 0.71              |
| 1:E:277:GLN:HG3  | 1:E:320:MET:CG   | 2.20                     | 0.71              |
| 1:G:5:LEU:HD21   | 1:G:35:ALA:O     | 1.91                     | 0.71              |
| 1:A:2:GLN:HA     | 1:A:2:GLN:HE21   | 1.56                     | 0.71              |
| 1:F:290:HIS:CD2  | 1:F:292:ASP:H    | 2.09                     | 0.71              |
| 1:F:375:ASP:O    | 1:F:378:CYS:HB2  | 1.89                     | 0.71              |
| 1:B:243:ARG:HB3  | 2:B:524:HOH:O    | 1.90                     | 0.71              |
| 1:E:242:LYS:O    | 2:E:507:HOH:O    | 2.08                     | 0.71              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:61:ALA:HB1   | 1:F:116:ALA:C    | 2.12                     | 0.71              |
| 1:C:190:GLU:OE1  | 2:C:516:HOH:O    | 2.08                     | 0.71              |
| 1:C:290:HIS:CD2  | 1:C:292:ASP:H    | 2.07                     | 0.71              |
| 1:E:20:ILE:HD13  | 1:E:175:GLU:HB3  | 1.73                     | 0.71              |
| 1:E:221:ILE:O    | 1:E:221:ILE:HG23 | 1.91                     | 0.71              |
| 1:B:88:LEU:HA    | 1:B:314:MET:HE3  | 1.71                     | 0.70              |
| 1:D:310:LEU:HD23 | 1:D:353:PRO:HG2  | 1.73                     | 0.70              |
| 1:E:290:HIS:HE1  | 1:E:393:SER:O    | 1.74                     | 0.70              |
| 1:F:227:THR:HG22 | 1:F:231:ARG:NH1  | 2.06                     | 0.70              |
| 1:H:90:THR:CG2   | 1:H:92:HIS:CE1   | 2.74                     | 0.70              |
| 1:D:486:LYS:O    | 1:D:487:ARG:C    | 2.30                     | 0.70              |
| 1:E:354:ASP:C    | 1:E:355:ASP:OD2  | 2.30                     | 0.70              |
| 1:A:377:VAL:HG21 | 1:A:386:PHE:CZ   | 2.27                     | 0.70              |
| 1:A:477:VAL:CG2  | 1:A:478:ASP:N    | 2.54                     | 0.70              |
| 1:E:404:ASN:O    | 1:E:405:THR:CG2  | 2.38                     | 0.70              |
| 1:F:415:THR:HG21 | 1:F:420:ARG:HH11 | 1.53                     | 0.70              |
| 1:B:320:MET:CE   | 1:B:385:PRO:CG   | 2.70                     | 0.70              |
| 1:B:417:ASN:HD22 | 1:B:420:ARG:CB   | 2.04                     | 0.70              |
| 1:F:259:ASP:OD1  | 1:F:420:ARG:NH1  | 2.24                     | 0.70              |
| 1:H:355:ASP:O    | 1:H:357:ALA:N    | 2.24                     | 0.70              |
| 1:D:21:ASP:OD1   | 1:D:33:ARG:HD3   | 1.92                     | 0.70              |
| 1:G:334:SER:O    | 1:G:338:ILE:HG23 | 1.91                     | 0.70              |
| 1:B:345:LYS:HE2  | 1:C:404:ASN:HA   | 1.73                     | 0.70              |
| 1:C:263:GLU:HG3  | 1:C:300:ARG:NH2  | 2.06                     | 0.70              |
| 1:D:2:GLN:CA     | 1:D:2:GLN:HE21   | 2.00                     | 0.70              |
| 1:D:404:ASN:CG   | 1:D:404:ASN:O    | 2.29                     | 0.70              |
| 1:F:287:LEU:HD22 | 1:F:289:LEU:HD21 | 1.72                     | 0.70              |
| 1:G:396:GLU:H    | 1:G:396:GLU:CD   | 1.95                     | 0.70              |
| 1:H:277:GLN:HG3  | 1:H:320:MET:HG3  | 1.73                     | 0.70              |
| 1:D:328:ARG:HE   | 1:D:328:ARG:CA   | 1.94                     | 0.70              |
| 1:F:281:CYS:HB3  | 1:F:409:LEU:HD23 | 1.73                     | 0.70              |
| 1:G:155:THR:O    | 1:G:159:MET:HG3  | 1.92                     | 0.70              |
| 1:G:24:SER:OG    | 2:G:512:HOH:O    | 2.10                     | 0.70              |
| 1:G:344:GLY:O    | 2:G:505:HOH:O    | 2.10                     | 0.70              |
| 1:A:92:HIS:HD2   | 1:A:101:ASP:OD2  | 1.75                     | 0.69              |
| 1:C:310:LEU:HD12 | 1:C:320:MET:HB3  | 1.72                     | 0.69              |
| 1:D:115:MET:CE   | 1:D:461:PHE:CD1  | 2.75                     | 0.69              |
| 1:E:20:ILE:HG21  | 1:E:175:GLU:HB3  | 1.74                     | 0.69              |
| 1:E:31:ILE:CD1   | 1:E:88:LEU:HG    | 2.22                     | 0.69              |
| 1:G:23:VAL:CG1   | 1:G:24:SER:N     | 2.54                     | 0.69              |
| 1:H:213:ALA:O    | 1:H:242:LYS:HE2  | 1.91                     | 0.69              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:22:VAL:HG23  | 1:A:34:ILE:HG23  | 1.71                     | 0.69              |
| 1:B:344:GLY:C    | 1:B:345:LYS:CD   | 2.60                     | 0.69              |
| 1:D:477:VAL:HG22 | 1:D:478:ASP:N    | 2.07                     | 0.69              |
| 1:F:275:HIS:ND1  | 1:F:439:LYS:NZ   | 2.39                     | 0.69              |
| 1:F:74:ARG:NH1   | 1:F:78:CYS:SG    | 2.65                     | 0.69              |
| 1:B:335:TYR:CA   | 1:B:338:ILE:HG23 | 2.21                     | 0.69              |
| 1:A:241:LEU:HD13 | 1:C:248:LEU:HD11 | 1.74                     | 0.69              |
| 1:C:415:THR:HG22 | 1:C:416:GLN:N    | 2.05                     | 0.69              |
| 1:F:38:GLU:CA    | 1:F:207:THR:CG2  | 2.65                     | 0.69              |
| 1:H:251:LYS:HB2  | 1:H:407:TYR:CD1  | 2.28                     | 0.69              |
| 1:A:310:LEU:CD2  | 1:A:353:PRO:CG   | 2.70                     | 0.69              |
| 1:C:259:ASP:OD1  | 1:C:415:THR:CG2  | 2.39                     | 0.69              |
| 1:D:309:ARG:CD   | 1:D:319:GLU:OE1  | 2.39                     | 0.69              |
| 1:H:30:LEU:HD21  | 1:H:33:ARG:HE    | 1.58                     | 0.69              |
| 1:B:250:GLY:O    | 1:B:381:GLU:HG3  | 1.93                     | 0.69              |
| 1:E:337:ASP:OD1  | 2:E:523:HOH:O    | 2.09                     | 0.69              |
| 1:E:93:PRO:O     | 1:E:96:ASP:HB2   | 1.92                     | 0.69              |
| 1:A:377:VAL:CG1  | 1:A:388:THR:HG21 | 2.23                     | 0.69              |
| 1:B:328:ARG:O    | 1:B:332:VAL:HG23 | 1.92                     | 0.69              |
| 1:E:423:LYS:HD3  | 2:E:526:HOH:O    | 1.92                     | 0.69              |
| 1:B:328:ARG:NH2  | 1:B:383:PHE:H    | 1.91                     | 0.69              |
| 1:B:329:ARG:CG   | 1:B:329:ARG:HH11 | 1.94                     | 0.69              |
| 1:C:291:LYS:HE3  | 1:C:393:SER:OG   | 1.92                     | 0.69              |
| 1:D:328:ARG:HH11 | 1:D:383:PHE:CB   | 2.03                     | 0.69              |
| 1:E:251:LYS:HB2  | 1:E:407:TYR:CD1  | 2.26                     | 0.69              |
| 1:E:377:VAL:HG22 | 1:E:386:PHE:CZ   | 2.27                     | 0.69              |
| 1:F:129:GLY:O    | 1:F:477:VAL:HG22 | 1.93                     | 0.69              |
| 1:F:404:ASN:C    | 1:F:405:THR:CG2  | 2.60                     | 0.69              |
| 1:B:320:MET:HE3  | 1:B:385:PRO:CG   | 2.23                     | 0.69              |
| 1:C:404:ASN:CG   | 1:C:404:ASN:O    | 2.29                     | 0.69              |
| 1:E:22:VAL:HG23  | 1:E:34:ILE:HG23  | 1.75                     | 0.69              |
| 1:G:304:LEU:HA   | 2:G:513:HOH:O    | 1.91                     | 0.69              |
| 1:H:152:LEU:CD1  | 1:H:184:ILE:HD11 | 2.22                     | 0.69              |
| 1:H:329:ARG:HD2  | 1:H:330:ASP:N    | 2.07                     | 0.69              |
| 1:H:351:LYS:CG   | 1:H:352:ALA:H    | 2.02                     | 0.69              |
| 1:E:370:GLU:OE1  | 1:E:391:ARG:NH1  | 2.25                     | 0.69              |
| 1:G:87:SER:CB    | 1:G:94:ILE:HD13  | 2.23                     | 0.69              |
| 1:A:417:ASN:ND2  | 1:A:420:ARG:H    | 1.90                     | 0.68              |
| 1:D:196:GLY:N    | 2:D:523:HOH:O    | 2.00                     | 0.68              |
| 1:D:4:GLN:OE1    | 2:D:506:HOH:O    | 2.11                     | 0.68              |
| 1:E:273:ILE:HG21 | 1:E:387:VAL:HG21 | 1.74                     | 0.68              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:310:LEU:HD12 | 1:B:320:MET:HG2  | 1.76                     | 0.68              |
| 1:G:19:THR:CG2   | 1:G:20:ILE:N     | 2.56                     | 0.68              |
| 1:G:458:GLU:C    | 1:G:459:MET:HG2  | 2.14                     | 0.68              |
| 1:E:273:ILE:CG1  | 1:E:387:VAL:HG22 | 2.22                     | 0.68              |
| 1:F:94:ILE:HD11  | 1:F:98:ARG:CZ    | 2.24                     | 0.68              |
| 1:G:259:ASP:OD1  | 1:G:415:THR:HG22 | 1.93                     | 0.68              |
| 1:H:415:THR:CG2  | 1:H:420:ARG:HH11 | 2.05                     | 0.68              |
| 1:A:377:VAL:HG13 | 1:A:388:THR:CG2  | 2.23                     | 0.68              |
| 1:F:43:ASP:O     | 2:F:522:HOH:O    | 2.11                     | 0.68              |
| 1:H:56:TRP:CZ2   | 1:H:64:ARG:HG2   | 2.28                     | 0.68              |
| 1:A:320:MET:HE3  | 1:A:385:PRO:HG3  | 1.75                     | 0.68              |
| 1:A:38:GLU:O     | 1:A:42:VAL:HG13  | 1.92                     | 0.68              |
| 1:C:487:ARG:HB3  | 2:C:505:HOH:O    | 1.93                     | 0.68              |
| 1:E:152:LEU:HD12 | 1:E:184:ILE:CD1  | 2.23                     | 0.68              |
| 1:A:417:ASN:HD22 | 1:A:420:ARG:H    | 1.41                     | 0.68              |
| 1:B:320:MET:CE   | 1:B:385:PRO:CB   | 2.71                     | 0.68              |
| 1:B:479:ALA:CB   | 1:B:480:LYS:NZ   | 2.55                     | 0.68              |
| 1:E:273:ILE:HG21 | 1:E:387:VAL:CG2  | 2.24                     | 0.68              |
| 1:G:485:PHE:O    | 1:G:487:ARG:N    | 2.27                     | 0.68              |
| 1:G:6:TYR:OH     | 1:G:189:THR:CG2  | 2.42                     | 0.68              |
| 1:C:397:GLU:O    | 1:C:401:ILE:CG1  | 2.42                     | 0.68              |
| 1:E:417:ASN:ND2  | 1:E:420:ARG:H    | 1.90                     | 0.68              |
| 1:G:363:TYR:HA   | 2:G:519:HOH:O    | 1.87                     | 0.68              |
| 1:H:417:ASN:ND2  | 1:H:420:ARG:H    | 1.91                     | 0.68              |
| 1:B:481:ILE:HG23 | 1:B:482:ALA:N    | 2.08                     | 0.68              |
| 1:H:136:ARG:HG3  | 1:H:468:THR:OG1  | 1.94                     | 0.68              |
| 1:D:273:ILE:HG21 | 1:D:387:VAL:CG2  | 2.24                     | 0.68              |
| 1:E:104:ARG:HE   | 1:E:153:MET:HE3  | 1.59                     | 0.68              |
| 1:F:177:THR:N    | 1:F:178:PRO:HD3  | 2.08                     | 0.68              |
| 1:B:415:THR:HB   | 1:B:417:ASN:H    | 1.59                     | 0.67              |
| 1:H:124:ILE:HB   | 1:H:132:ASN:HD22 | 1.59                     | 0.67              |
| 1:A:310:LEU:HD21 | 1:A:363:TYR:HB3  | 1.76                     | 0.67              |
| 1:B:185:VAL:O    | 1:B:189:THR:HG22 | 1.94                     | 0.67              |
| 1:C:76:GLU:O     | 1:C:79:SER:HB3   | 1.93                     | 0.67              |
| 1:D:87:SER:OG    | 1:D:97:SER:OG    | 2.11                     | 0.67              |
| 1:B:235:GLU:HG2  | 1:F:238:LYS:HE3  | 1.76                     | 0.67              |
| 1:H:329:ARG:NH1  | 1:H:329:ARG:CG   | 2.51                     | 0.67              |
| 1:B:243:ARG:CB   | 2:B:524:HOH:O    | 2.41                     | 0.67              |
| 1:E:345:LYS:HD3  | 1:E:347:LEU:HD23 | 1.77                     | 0.67              |
| 1:F:63:GLU:OE1   | 1:F:66:ARG:HD2   | 1.94                     | 0.67              |
| 1:H:152:LEU:O    | 1:H:155:THR:OG1  | 2.12                     | 0.67              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:6:TYR:OH     | 1:H:189:THR:HG21 | 1.94                     | 0.67              |
| 1:D:259:ASP:O    | 1:D:416:GLN:CG   | 2.42                     | 0.67              |
| 1:B:317:GLU:OE1  | 1:G:193:PHE:O    | 2.13                     | 0.67              |
| 1:G:357:ALA:HB3  | 1:G:358:LEU:CD1  | 2.24                     | 0.67              |
| 1:F:432:MET:CE   | 1:F:447:PHE:CD1  | 2.77                     | 0.67              |
| 1:A:22:VAL:HG21  | 1:A:34:ILE:HG21  | 1.73                     | 0.67              |
| 1:E:417:ASN:HD22 | 1:E:420:ARG:H    | 1.41                     | 0.67              |
| 1:F:338:ILE:HD11 | 1:F:376:ARG:CD   | 2.22                     | 0.67              |
| 1:C:18:GLY:HA3   | 2:C:515:HOH:O    | 1.94                     | 0.67              |
| 1:C:25:PRO:HA    | 1:C:362:PHE:CE2  | 2.30                     | 0.67              |
| 1:E:2:GLN:HA     | 1:E:2:GLN:HE21   | 1.59                     | 0.67              |
| 1:F:97:SER:HA    | 1:F:101:ASP:HB2  | 1.77                     | 0.67              |
| 1:A:20:ILE:HD12  | 1:A:175:GLU:HB3  | 1.76                     | 0.67              |
| 1:A:129:GLY:HA3  | 1:A:479:ALA:CB   | 2.24                     | 0.67              |
| 1:A:277:GLN:HE21 | 1:A:320:MET:HG3  | 1.59                     | 0.67              |
| 1:C:441:VAL:N    | 2:C:530:HOH:O    | 2.28                     | 0.67              |
| 1:E:231:ARG:HH21 | 1:H:239:SER:C    | 1.93                     | 0.67              |
| 1:F:23:VAL:C     | 1:F:31:ILE:HD11  | 2.16                     | 0.67              |
| 1:F:335:TYR:CE2  | 1:F:376:ARG:NH2  | 2.62                     | 0.67              |
| 1:G:277:GLN:HG2  | 1:G:321:GLY:O    | 1.95                     | 0.67              |
| 1:H:124:ILE:N    | 1:H:124:ILE:HD13 | 2.08                     | 0.67              |
| 1:F:323:LEU:N    | 1:F:323:LEU:HD23 | 2.08                     | 0.67              |
| 1:G:220:LYS:HG3  | 1:G:221:ILE:N    | 2.10                     | 0.67              |
| 1:B:241:LEU:HD13 | 1:F:248:LEU:HD12 | 1.77                     | 0.66              |
| 1:C:438:TYR:HD2  | 1:C:439:LYS:HG3  | 1.59                     | 0.66              |
| 1:D:76:GLU:OE1   | 1:D:110:ARG:NH1  | 2.28                     | 0.66              |
| 1:E:358:LEU:CD1  | 1:E:358:LEU:N    | 2.58                     | 0.66              |
| 1:H:371:ALA:HB1  | 1:H:375:ASP:OD2  | 1.96                     | 0.66              |
| 1:B:148:TRP:CH2  | 1:B:328:ARG:HG3  | 2.30                     | 0.66              |
| 1:D:137:LYS:NZ   | 1:G:426:ASN:HD22 | 1.89                     | 0.66              |
| 1:D:309:ARG:H    | 1:D:309:ARG:HD3  | 1.58                     | 0.66              |
| 1:D:415:THR:CG2  | 1:D:420:ARG:HH11 | 2.01                     | 0.66              |
| 1:F:458:GLU:O    | 1:F:459:MET:HB2  | 1.95                     | 0.66              |
| 1:C:417:ASN:HD22 | 1:C:420:ARG:CB   | 2.08                     | 0.66              |
| 1:C:476:ASN:OD1  | 1:C:479:ALA:HB3  | 1.96                     | 0.66              |
| 1:G:424:MET:O    | 1:G:428:ILE:HG13 | 1.96                     | 0.66              |
| 1:E:462:GLU:OE2  | 1:H:136:ARG:NH1  | 2.29                     | 0.66              |
| 1:E:377:VAL:CG2  | 1:E:386:PHE:HZ   | 2.04                     | 0.66              |
| 1:G:447:PHE:CD2  | 1:G:447:PHE:C    | 2.68                     | 0.66              |
| 1:E:426:ASN:HD22 | 1:H:137:LYS:HE2  | 1.60                     | 0.66              |
| 1:H:287:LEU:HD22 | 1:H:289:LEU:HD21 | 1.77                     | 0.66              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:323:LEU:CD1  | 1:B:332:VAL:HG21 | 2.24                     | 0.66              |
| 1:B:345:LYS:HB2  | 1:B:370:GLU:HB3  | 1.77                     | 0.66              |
| 1:B:251:LYS:NZ   | 1:B:377:VAL:O    | 2.28                     | 0.66              |
| 1:B:405:THR:HG21 | 1:B:407:TYR:HB2  | 1.78                     | 0.66              |
| 1:C:432:MET:HE3  | 1:C:447:PHE:HD1  | 1.56                     | 0.66              |
| 1:E:34:ILE:O     | 1:E:34:ILE:HG13  | 1.91                     | 0.66              |
| 1:F:143:ALA:HB1  | 1:F:212:LEU:HG   | 1.76                     | 0.66              |
| 1:A:114:GLY:O    | 1:A:118:LYS:NZ   | 2.22                     | 0.66              |
| 1:C:25:PRO:HA    | 1:C:362:PHE:CD2  | 2.30                     | 0.66              |
| 1:E:175:GLU:H    | 1:E:175:GLU:CD   | 1.96                     | 0.66              |
| 1:E:295:ASP:O    | 1:E:299:GLU:HB2  | 1.96                     | 0.66              |
| 1:F:1:MET:O      | 1:F:1:MET:CG     | 2.44                     | 0.66              |
| 1:D:312:ASP:OD1  | 1:D:313:PRO:HD2  | 1.96                     | 0.66              |
| 1:E:462:GLU:CD   | 1:H:136:ARG:HH12 | 1.99                     | 0.66              |
| 1:F:2:GLN:HE21   | 1:F:2:GLN:CA     | 2.06                     | 0.66              |
| 1:D:485:PHE:HE2  | 1:G:308:ILE:HD11 | 1.59                     | 0.66              |
| 1:G:340:ILE:O    | 1:G:342:GLN:N    | 2.29                     | 0.66              |
| 1:H:92:HIS:HD2   | 1:H:101:ASP:OD2  | 1.78                     | 0.66              |
| 1:B:210:GLN:NE2  | 1:B:214:GLU:OE2  | 2.29                     | 0.66              |
| 1:C:340:ILE:CG2  | 1:C:341:GLU:N    | 2.59                     | 0.66              |
| 1:E:258:GLU:CG   | 1:E:290:HIS:CD2  | 2.79                     | 0.66              |
| 1:G:358:LEU:HB3  | 1:G:363:TYR:CE2  | 2.31                     | 0.66              |
| 1:C:94:ILE:HG12  | 1:C:98:ARG:HD2   | 1.78                     | 0.65              |
| 1:G:175:GLU:HG3  | 1:G:203:GLY:O    | 1.96                     | 0.65              |
| 1:G:458:GLU:O    | 1:G:459:MET:CB   | 2.43                     | 0.65              |
| 1:B:137:LYS:CG   | 1:B:471:ARG:HG3  | 2.24                     | 0.65              |
| 1:B:468:THR:OG1  | 2:B:514:HOH:O    | 2.14                     | 0.65              |
| 1:E:442:SER:OG   | 2:H:509:HOH:O    | 2.14                     | 0.65              |
| 1:F:210:GLN:N    | 1:F:210:GLN:OE1  | 2.30                     | 0.65              |
| 1:G:158:LYS:HE2  | 1:G:458:GLU:OE2  | 1.95                     | 0.65              |
| 1:A:15:VAL:HG13  | 1:A:16:ALA:N     | 2.12                     | 0.65              |
| 1:B:320:MET:HE3  | 1:B:385:PRO:HB3  | 1.77                     | 0.65              |
| 1:D:457:ARG:NH1  | 1:D:457:ARG:HG2  | 2.07                     | 0.65              |
| 1:D:158:LYS:HD3  | 1:D:458:GLU:OE2  | 1.95                     | 0.65              |
| 1:E:221:ILE:CG2  | 1:E:221:ILE:O    | 2.44                     | 0.65              |
| 1:E:262:ILE:HD11 | 1:E:293:ILE:HB   | 1.78                     | 0.65              |
| 1:B:190:GLU:OE1  | 2:B:525:HOH:O    | 2.14                     | 0.65              |
| 1:B:89:ASN:ND2   | 1:B:89:ASN:O     | 2.30                     | 0.65              |
| 1:A:100:LEU:O    | 1:A:104:ARG:CG   | 2.42                     | 0.65              |
| 1:A:157:TRP:O    | 2:A:501:HOH:O    | 2.13                     | 0.65              |
| 1:A:226:SER:OG   | 1:A:229:THR:CG2  | 2.41                     | 0.65              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 1:C:36:ALA:O       | 2:C:515:HOH:O    | 2.15                     | 0.65              |
| 1:G:94:ILE:HD13    | 1:G:314:MET:HE1  | 1.75                     | 0.65              |
| 1:B:288:ILE:HG22   | 1:B:392:PHE:CD2  | 2.31                     | 0.65              |
| 1:B:429[A]:HIS:CE1 | 1:B:450:VAL:HG11 | 2.32                     | 0.65              |
| 1:B:115:MET:HE1    | 1:B:461:PHE:CD1  | 2.32                     | 0.65              |
| 1:B:88:LEU:N       | 1:B:314:MET:HE1  | 2.12                     | 0.65              |
| 1:D:188:MET:CE     | 1:D:198:VAL:HG21 | 2.27                     | 0.65              |
| 1:D:4:GLN:HB3      | 1:D:12:VAL:O     | 1.97                     | 0.65              |
| 1:H:26:HIS:HD1     | 1:H:363:TYR:HH   | 0.67                     | 0.65              |
| 1:B:329:ARG:HD2    | 1:B:329:ARG:C    | 2.17                     | 0.65              |
| 1:D:188:MET:HE1    | 1:D:198:VAL:CG1  | 2.26                     | 0.65              |
| 1:F:290:HIS:HD2    | 1:F:292:ASP:H    | 1.45                     | 0.65              |
| 1:B:474:TRP:HB2    | 1:F:434:TRP:HA   | 1.79                     | 0.65              |
| 1:F:432:MET:HE1    | 1:F:447:PHE:CD1  | 2.31                     | 0.65              |
| 1:A:228:ALA:O      | 1:A:232:ARG:CZ   | 2.45                     | 0.65              |
| 1:B:263:GLU:HG3    | 1:B:300:ARG:NH2  | 2.12                     | 0.65              |
| 1:C:201:VAL:O      | 1:C:201:VAL:CG1  | 2.45                     | 0.65              |
| 1:C:80:GLU:OE1     | 1:C:84:GLN:NE2   | 2.30                     | 0.65              |
| 1:D:183:ARG:NH1    | 1:D:186:GLU:OE1  | 2.30                     | 0.65              |
| 1:E:42:VAL:HG13    | 1:E:212:LEU:CD1  | 2.24                     | 0.65              |
| 1:E:94:ILE:HA      | 1:E:97:SER:OG    | 1.96                     | 0.65              |
| 1:G:310:LEU:CD1    | 1:G:320:MET:HG2  | 2.12                     | 0.65              |
| 1:A:201:VAL:CG1    | 1:A:201:VAL:O    | 2.45                     | 0.65              |
| 1:F:18:GLY:HA3     | 2:F:504:HOH:O    | 1.96                     | 0.65              |
| 1:F:221:ILE:HB     | 1:F:242:LYS:HD3  | 1.77                     | 0.65              |
| 1:H:25:PRO:HB2     | 1:H:322:PRO:HG2  | 1.78                     | 0.65              |
| 1:C:480:LYS:HG2    | 1:C:480:LYS:O    | 1.94                     | 0.65              |
| 1:E:104:ARG:HD2    | 1:E:153:MET:HE2  | 1.79                     | 0.65              |
| 1:G:87:SER:HB2     | 1:G:94:ILE:HD12  | 1.68                     | 0.65              |
| 1:B:201:VAL:O      | 1:B:201:VAL:CG1  | 2.45                     | 0.64              |
| 1:C:20:ILE:HD13    | 1:C:175:GLU:HB3  | 1.79                     | 0.64              |
| 1:D:201:VAL:CG1    | 1:D:201:VAL:O    | 2.45                     | 0.64              |
| 1:D:404:ASN:ND2    | 1:D:404:ASN:O    | 2.30                     | 0.64              |
| 1:H:251:LYS:HD3    | 1:H:380:GLU:O    | 1.97                     | 0.64              |
| 1:B:328:ARG:NH1    | 1:B:331:ARG:NE   | 2.45                     | 0.64              |
| 1:B:479:ALA:CB     | 1:B:480:LYS:HE2  | 2.25                     | 0.64              |
| 1:C:302:ILE:HD11   | 1:C:347:LEU:HB2  | 1.78                     | 0.64              |
| 1:E:355:ASP:OD2    | 1:E:355:ASP:N    | 2.30                     | 0.64              |
| 1:B:137:LYS:CE     | 1:F:426:ASN:OD1  | 2.45                     | 0.64              |
| 1:F:89:ASN:O       | 1:F:89:ASN:ND2   | 2.29                     | 0.64              |
| 1:G:273:ILE:HD13   | 1:G:285:SER:CA   | 2.24                     | 0.64              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:99:GLY:C     | 1:H:100:LEU:CD2  | 2.59                     | 0.64              |
| 1:A:273:ILE:HD13 | 1:A:285:SER:HA   | 1.79                     | 0.64              |
| 1:A:342:GLN:NE2  | 1:A:342:GLN:O    | 2.30                     | 0.64              |
| 1:A:112:PHE:HA   | 1:A:115:MET:HB3  | 1.77                     | 0.64              |
| 1:B:405:THR:CG2  | 1:B:406:GLU:N    | 2.60                     | 0.64              |
| 1:C:117:ASP:OD1  | 1:C:118:LYS:NZ   | 2.30                     | 0.64              |
| 1:D:238:LYS:HD3  | 1:G:235:GLU:HG2  | 1.78                     | 0.64              |
| 1:E:172:LYS:NZ   | 1:E:173:PRO:O    | 2.30                     | 0.64              |
| 1:E:345:LYS:HD3  | 1:E:347:LEU:CD2  | 2.27                     | 0.64              |
| 1:E:396:GLU:N    | 1:E:396:GLU:OE1  | 2.30                     | 0.64              |
| 1:F:74:ARG:HG3   | 1:F:187:LEU:HD22 | 1.80                     | 0.64              |
| 1:F:339:ALA:HB2  | 1:F:377:VAL:CG2  | 2.24                     | 0.64              |
| 1:H:183:ARG:NH1  | 1:H:186:GLU:OE1  | 2.30                     | 0.64              |
| 1:H:89:ASN:O     | 1:H:89:ASN:ND2   | 2.30                     | 0.64              |
| 1:A:342:GLN:NE2  | 1:A:375:ASP:OD1  | 2.31                     | 0.64              |
| 1:B:238:LYS:HD3  | 1:F:231:ARG:O    | 1.97                     | 0.64              |
| 1:E:358:LEU:HD12 | 1:E:358:LEU:N    | 2.13                     | 0.64              |
| 1:G:356:LYS:O    | 1:G:358:LEU:N    | 2.30                     | 0.64              |
| 1:C:152:LEU:CD1  | 1:C:184:ILE:CD1  | 2.75                     | 0.64              |
| 1:D:277:GLN:NE2  | 1:D:321:GLY:H    | 1.94                     | 0.64              |
| 1:F:330:ASP:OD1  | 1:F:330:ASP:N    | 2.30                     | 0.64              |
| 1:A:220:LYS:NZ   | 1:A:245:GLN:HB2  | 2.13                     | 0.64              |
| 1:A:355:ASP:C    | 1:A:357:ALA:N    | 2.46                     | 0.64              |
| 1:B:88:LEU:CA    | 1:B:314:MET:HE3  | 2.27                     | 0.64              |
| 1:B:479:ALA:CB   | 1:B:480:LYS:CD   | 2.71                     | 0.64              |
| 1:E:117:ASP:N    | 1:E:117:ASP:OD1  | 2.30                     | 0.64              |
| 1:F:311:GLY:O    | 1:F:313:PRO:HD3  | 1.98                     | 0.64              |
| 1:H:302:ILE:O    | 1:H:306:LYS:CG   | 2.46                     | 0.64              |
| 1:B:235:GLU:HG2  | 1:F:238:LYS:CD   | 2.27                     | 0.64              |
| 1:D:39:ALA:O     | 1:D:43:ASP:OD1   | 2.15                     | 0.64              |
| 1:E:417:ASN:HD22 | 1:E:420:ARG:HB2  | 1.63                     | 0.64              |
| 1:E:477:VAL:HG23 | 1:E:478:ASP:HB2  | 1.78                     | 0.64              |
| 1:G:94:ILE:O     | 1:G:98:ARG:HG3   | 1.98                     | 0.64              |
| 1:A:417:ASN:HD22 | 1:A:420:ARG:HB2  | 1.63                     | 0.64              |
| 1:C:315:ASP:OD1  | 1:C:316:PRO:CD   | 2.45                     | 0.64              |
| 1:E:220:LYS:HG3  | 1:E:221:ILE:N    | 2.12                     | 0.64              |
| 1:A:338:ILE:HD13 | 1:A:376:ARG:NH2  | 2.13                     | 0.64              |
| 1:A:89:ASN:O     | 1:A:89:ASN:ND2   | 2.30                     | 0.64              |
| 1:E:251:LYS:HG3  | 1:E:286:ARG:HD3  | 1.79                     | 0.64              |
| 1:G:404:ASN:CG   | 1:G:404:ASN:O    | 2.36                     | 0.64              |
| 1:B:320:MET:HE1  | 1:B:385:PRO:CB   | 2.28                     | 0.63              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:86:GLU:O     | 1:E:90:THR:OG1   | 2.13                     | 0.63              |
| 1:F:43:ASP:OD1   | 1:F:215:HIS:NE2  | 2.32                     | 0.63              |
| 1:G:94:ILE:O     | 1:G:98:ARG:CG    | 2.46                     | 0.63              |
| 1:H:39:ALA:O     | 1:H:42:VAL:HG22  | 1.97                     | 0.63              |
| 1:A:76:GLU:OE2   | 1:A:110:ARG:NH1  | 2.31                     | 0.63              |
| 1:C:287:LEU:HD22 | 1:C:289:LEU:HD21 | 1.80                     | 0.63              |
| 1:F:404:ASN:C    | 1:F:405:THR:HG23 | 2.17                     | 0.63              |
| 1:G:310:LEU:CD2  | 1:G:353:PRO:CG   | 2.75                     | 0.63              |
| 1:G:464:ILE:O    | 1:G:468:THR:OG1  | 2.14                     | 0.63              |
| 1:H:406:GLU:HA   | 1:H:406:GLU:OE1  | 1.97                     | 0.63              |
| 1:D:71:LEU:HD12  | 1:D:71:LEU:O     | 1.98                     | 0.63              |
| 1:F:34:ILE:O     | 1:F:34:ILE:HG13  | 1.91                     | 0.63              |
| 1:C:175:GLU:N    | 1:C:175:GLU:OE1  | 2.30                     | 0.63              |
| 1:G:8:ASP:OD1    | 1:G:48:ALA:HB1   | 1.99                     | 0.63              |
| 1:H:377:VAL:HG21 | 1:H:386:PHE:HZ   | 1.58                     | 0.63              |
| 1:C:25:PRO:HB2   | 1:C:322:PRO:HG2  | 1.79                     | 0.63              |
| 1:C:338:ILE:HD11 | 1:C:376:ARG:HB2  | 1.80                     | 0.63              |
| 1:F:458:GLU:O    | 1:F:459:MET:CB   | 2.46                     | 0.63              |
| 1:A:231:ARG:O    | 1:C:238:LYS:HE2  | 1.97                     | 0.63              |
| 1:C:23:VAL:HG13  | 1:C:29:SER:O     | 1.98                     | 0.63              |
| 1:D:374:GLN:OE1  | 1:D:374:GLN:N    | 2.30                     | 0.63              |
| 1:F:220:LYS:HE2  | 1:F:245:GLN:HG3  | 1.79                     | 0.63              |
| 1:F:320:MET:CE   | 1:F:366:PRO:HG3  | 2.29                     | 0.63              |
| 1:G:86:GLU:O     | 1:G:90:THR:OG1   | 2.09                     | 0.63              |
| 1:B:148:TRP:HH2  | 1:B:328:ARG:HG3  | 1.62                     | 0.63              |
| 1:E:104:ARG:CD   | 1:E:153:MET:CE   | 2.77                     | 0.63              |
| 1:E:334:SER:O    | 1:E:338:ILE:HG23 | 1.99                     | 0.63              |
| 1:F:18:GLY:O     | 1:F:36:ALA:N     | 2.25                     | 0.63              |
| 1:F:227:THR:HG22 | 1:F:231:ARG:HH11 | 1.63                     | 0.63              |
| 1:F:94:ILE:HG22  | 1:F:313:PRO:O    | 1.99                     | 0.63              |
| 1:G:327:LEU:HD22 | 1:G:331:ARG:CD   | 2.28                     | 0.63              |
| 1:G:92:HIS:O     | 1:G:93:PRO:C     | 2.35                     | 0.63              |
| 1:G:94:ILE:CD1   | 1:G:314:MET:HE1  | 2.29                     | 0.63              |
| 1:H:90:THR:CG2   | 1:H:92:HIS:ND1   | 2.62                     | 0.63              |
| 1:B:245:GLN:HB3  | 2:B:519:HOH:O    | 1.98                     | 0.63              |
| 1:D:408:GLY:N    | 1:D:453:SER:OG   | 2.31                     | 0.63              |
| 1:F:23:VAL:C     | 1:F:31:ILE:CD1   | 2.67                     | 0.63              |
| 1:F:396:GLU:N    | 1:F:396:GLU:OE1  | 2.30                     | 0.63              |
| 1:G:408:GLY:O    | 1:G:430:ALA:CA   | 2.45                     | 0.63              |
| 1:H:273:ILE:O    | 1:H:273:ILE:HG13 | 1.99                     | 0.63              |
| 1:H:304:LEU:HD12 | 1:H:304:LEU:O    | 1.97                     | 0.63              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:127:ASP:N    | 1:A:127:ASP:OD2  | 2.30                     | 0.63              |
| 1:B:76:GLU:CD    | 1:B:110:ARG:HH11 | 2.00                     | 0.63              |
| 1:D:61:ALA:HB1   | 1:D:116:ALA:O    | 1.99                     | 0.63              |
| 1:E:231:ARG:NE   | 1:H:238:LYS:O    | 2.30                     | 0.63              |
| 1:E:259:ASP:OD1  | 1:E:415:THR:CG2  | 2.46                     | 0.63              |
| 1:H:90:THR:O     | 1:H:324:THR:HG22 | 1.99                     | 0.63              |
| 1:H:377:VAL:CG2  | 1:H:386:PHE:CZ   | 2.82                     | 0.63              |
| 1:B:479:ALA:HB3  | 1:B:480:LYS:HG2  | 1.80                     | 0.62              |
| 1:B:56:TRP:CZ2   | 1:B:64:ARG:HG2   | 2.33                     | 0.62              |
| 1:D:376:ARG:HD2  | 1:D:380:GLU:OE2  | 1.99                     | 0.62              |
| 1:F:162:ALA:HB3  | 1:F:169:ILE:HD11 | 1.81                     | 0.62              |
| 1:G:6:TYR:OH     | 1:G:189:THR:HG21 | 1.99                     | 0.62              |
| 1:G:87:SER:HB3   | 1:G:314:MET:CE   | 2.29                     | 0.62              |
| 1:G:476:ASN:OD1  | 1:G:479:ALA:CB   | 2.46                     | 0.62              |
| 2:E:525:HOH:O    | 1:H:426:ASN:HB2  | 1.99                     | 0.62              |
| 1:C:213:ALA:HA   | 1:C:221:ILE:HG13 | 1.81                     | 0.62              |
| 1:D:188:MET:CE   | 1:D:198:VAL:HG11 | 2.26                     | 0.62              |
| 1:D:376:ARG:HD3  | 1:D:380:GLU:OE2  | 1.99                     | 0.62              |
| 1:D:481:ILE:CG2  | 1:D:482:ALA:N    | 2.62                     | 0.62              |
| 1:H:329:ARG:NE   | 1:H:330:ASP:OD1  | 2.33                     | 0.62              |
| 1:D:485:PHE:CE2  | 1:G:308:ILE:HD11 | 2.34                     | 0.62              |
| 1:G:108:CYS:HB3  | 1:G:156:SER:HB2  | 1.81                     | 0.62              |
| 1:A:15:VAL:HG11  | 1:A:40:ALA:CB    | 2.29                     | 0.62              |
| 1:A:480:LYS:N    | 2:A:528:HOH:O    | 2.30                     | 0.62              |
| 1:B:401:ILE:O    | 1:B:404:ASN:CB   | 2.41                     | 0.62              |
| 1:F:409:LEU:O    | 1:F:432:MET:HG2  | 1.99                     | 0.62              |
| 1:G:173:PRO:HG3  | 1:G:181:THR:HG21 | 1.81                     | 0.62              |
| 1:D:185:VAL:HA   | 1:D:188:MET:HG3  | 1.80                     | 0.62              |
| 1:E:153:MET:O    | 1:E:156:SER:OG   | 2.18                     | 0.62              |
| 1:A:406:GLU:OE1  | 1:A:406:GLU:HA   | 1.97                     | 0.62              |
| 1:B:486:LYS:O    | 1:B:487:ARG:C    | 2.38                     | 0.62              |
| 1:C:42:VAL:O     | 1:C:46:VAL:HG23  | 1.99                     | 0.62              |
| 1:D:53:PHE:CZ    | 1:D:140:GLY:HA2  | 2.34                     | 0.62              |
| 1:F:227:THR:HG21 | 1:F:231:ARG:HH12 | 1.64                     | 0.62              |
| 1:H:335:TYR:CG   | 1:H:382:VAL:HG22 | 2.33                     | 0.62              |
| 1:D:100:LEU:O    | 1:D:104:ARG:HG3  | 2.00                     | 0.62              |
| 1:G:20:ILE:HD11  | 1:G:204:TYR:CE2  | 2.35                     | 0.62              |
| 1:B:248:LEU:HD11 | 1:F:241:LEU:HD22 | 1.80                     | 0.62              |
| 1:B:477:VAL:HG22 | 1:B:478:ASP:N    | 2.14                     | 0.62              |
| 1:E:342:GLN:HE22 | 1:E:376:ARG:H    | 1.46                     | 0.62              |
| 1:E:282:ILE:HG21 | 1:E:432:MET:HE3  | 1.79                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:155:THR:O    | 1:H:159:MET:HB2  | 1.99                     | 0.62              |
| 1:B:88:LEU:N     | 1:B:314:MET:CE   | 2.63                     | 0.62              |
| 1:B:323:LEU:HD11 | 1:B:332:VAL:HG21 | 1.82                     | 0.62              |
| 1:C:237:SER:CB   | 1:C:244:ILE:HD11 | 2.30                     | 0.62              |
| 1:C:356:LYS:O    | 1:C:356:LYS:HG2  | 1.97                     | 0.62              |
| 1:F:424:MET:O    | 1:F:428:ILE:HG13 | 2.00                     | 0.62              |
| 1:G:31:ILE:CD1   | 1:G:88:LEU:HG    | 2.30                     | 0.62              |
| 1:G:85:LEU:HD12  | 1:G:85:LEU:O     | 2.00                     | 0.62              |
| 1:A:273:ILE:HG21 | 1:A:387:VAL:HG21 | 1.79                     | 0.62              |
| 1:B:235:GLU:HG2  | 1:F:238:LYS:HD2  | 1.82                     | 0.62              |
| 1:C:119:ILE:CD1  | 1:C:464:ILE:HD12 | 2.30                     | 0.62              |
| 1:D:414:TRP:CE3  | 1:D:436:ASN:HA   | 2.35                     | 0.62              |
| 1:G:293:ILE:O    | 1:G:293:ILE:HD12 | 1.94                     | 0.62              |
| 1:G:309:ARG:NH1  | 1:G:317:GLU:CB   | 2.60                     | 0.62              |
| 1:B:273:ILE:HG21 | 1:B:387:VAL:CG2  | 2.30                     | 0.61              |
| 1:B:481:ILE:CB   | 2:B:515:HOH:O    | 2.46                     | 0.61              |
| 1:D:239:SER:O    | 1:G:231:ARG:NH2  | 2.30                     | 0.61              |
| 1:F:27:ASP:OD1   | 1:F:29:SER:N     | 2.29                     | 0.61              |
| 1:F:8:ASP:OD2    | 1:F:51:ARG:NH2   | 2.33                     | 0.61              |
| 1:A:310:LEU:HD21 | 1:A:353:PRO:HG2  | 1.83                     | 0.61              |
| 1:F:326:ALA:CB   | 1:F:362:PHE:CE1  | 2.83                     | 0.61              |
| 1:A:262:ILE:O    | 1:A:266:VAL:HG23 | 2.00                     | 0.61              |
| 1:E:157:TRP:CZ2  | 1:E:441:VAL:HG11 | 2.35                     | 0.61              |
| 1:B:358:LEU:CD1  | 1:B:358:LEU:N    | 2.62                     | 0.61              |
| 1:B:450:VAL:CG1  | 1:B:451:GLY:N    | 2.63                     | 0.61              |
| 1:G:87:SER:HB2   | 1:G:94:ILE:HD11  | 1.80                     | 0.61              |
| 1:H:49:ALA:O     | 1:H:168:THR:HG21 | 2.01                     | 0.61              |
| 1:A:59:LEU:HG    | 1:A:63:GLU:HB3   | 1.81                     | 0.61              |
| 1:B:298:LEU:HD11 | 1:B:389:VAL:HG11 | 1.82                     | 0.61              |
| 1:D:462:GLU:OE2  | 1:G:465:HIS:NE2  | 2.16                     | 0.61              |
| 1:H:417:ASN:HD22 | 1:H:420:ARG:CB   | 2.14                     | 0.61              |
| 1:B:158:LYS:HD3  | 1:B:458:GLU:OE2  | 2.00                     | 0.61              |
| 1:B:481:ILE:N    | 2:B:515:HOH:O    | 2.33                     | 0.61              |
| 1:C:354:ASP:OD2  | 1:C:354:ASP:C    | 2.37                     | 0.61              |
| 1:B:81:GLU:HB2   | 2:B:518:HOH:O    | 1.95                     | 0.61              |
| 1:F:100:LEU:O    | 1:F:104:ARG:HG3  | 2.01                     | 0.61              |
| 1:F:417:ASN:ND2  | 1:F:420:ARG:H    | 1.98                     | 0.61              |
| 1:G:136:ARG:HH21 | 1:G:470:ALA:HB2  | 1.65                     | 0.61              |
| 1:H:142:VAL:HG11 | 1:H:467:TYR:HE2  | 1.66                     | 0.61              |
| 1:B:152:LEU:CD1  | 1:B:184:ILE:HD12 | 2.27                     | 0.61              |
| 1:D:61:ALA:HB1   | 1:D:116:ALA:C    | 2.20                     | 0.61              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:E:277:GLN:HG3   | 1:E:320:MET:HG3  | 1.81                     | 0.61              |
| 1:F:230:GLY:O     | 1:F:234:VAL:HG23 | 2.01                     | 0.61              |
| 1:F:22:VAL:CG2    | 1:F:34:ILE:HG21  | 2.30                     | 0.61              |
| 1:G:148:TRP:CA    | 1:G:177:THR:HG21 | 2.30                     | 0.61              |
| 1:B:185:VAL:O     | 1:B:189:THR:CG2  | 2.49                     | 0.61              |
| 1:F:381:GLU:O     | 1:F:381:GLU:CG   | 2.48                     | 0.61              |
| 1:H:49:ALA:CB     | 1:H:168:THR:HG21 | 2.18                     | 0.61              |
| 1:B:152:LEU:HD12  | 1:B:184:ILE:HD13 | 1.82                     | 0.61              |
| 1:E:273:ILE:C     | 1:E:273:ILE:HD12 | 2.17                     | 0.61              |
| 1:G:310:LEU:HD23  | 1:G:353:PRO:CG   | 2.31                     | 0.61              |
| 1:H:259:ASP:OD1   | 1:H:415:THR:CG2  | 2.42                     | 0.61              |
| 1:H:61:ALA:HB1    | 1:H:116:ALA:O    | 1.98                     | 0.61              |
| 1:A:477:VAL:HG22  | 1:A:478:ASP:N    | 2.15                     | 0.60              |
| 1:E:261:ASN:C     | 1:E:261:ASN:OD1  | 2.39                     | 0.60              |
| 1:F:310:LEU:HD21  | 1:F:363:TYR:HB3  | 1.81                     | 0.60              |
| 1:B:137:LYS:HE2   | 1:F:426:ASN:OD1  | 2.00                     | 0.60              |
| 1:A:213:ALA:O     | 1:A:242:LYS:HE3  | 2.01                     | 0.60              |
| 1:A:25:PRO:HB2    | 1:A:322:PRO:HG2  | 1.82                     | 0.60              |
| 1:A:481:ILE:CG1   | 1:A:482:ALA:H    | 2.09                     | 0.60              |
| 1:C:18:GLY:CA     | 2:C:515:HOH:O    | 2.48                     | 0.60              |
| 1:C:287:LEU:HD12  | 1:C:387:VAL:HG21 | 1.81                     | 0.60              |
| 1:D:370:GLU:OE2   | 1:D:391:ARG:NH1  | 2.34                     | 0.60              |
| 1:D:481:ILE:CG2   | 1:D:482:ALA:H    | 2.13                     | 0.60              |
| 1:E:290:HIS:CE1   | 1:E:393:SER:O    | 2.53                     | 0.60              |
| 1:A:228:ALA:O     | 1:A:232:ARG:NH2  | 2.34                     | 0.60              |
| 1:C:63[A]:GLU:OE1 | 1:C:66:ARG:CZ    | 2.48                     | 0.60              |
| 1:E:248:LEU:CD1   | 1:H:241:LEU:HD22 | 2.30                     | 0.60              |
| 1:G:257:PHE:HZ    | 1:G:424:MET:CE   | 2.14                     | 0.60              |
| 1:G:21:ASP:HB3    | 1:G:30:LEU:HD12  | 1.79                     | 0.60              |
| 1:G:325:SER:C     | 1:G:362:PHE:CD2  | 2.74                     | 0.60              |
| 1:H:337:ASP:HA    | 1:H:340:ILE:HD12 | 1.83                     | 0.60              |
| 1:H:417:ASN:HD22  | 1:H:420:ARG:H    | 1.46                     | 0.60              |
| 1:A:309:ARG:N     | 1:A:319:GLU:OE1  | 2.22                     | 0.60              |
| 1:F:351:LYS:O     | 1:F:365:GLU:CG   | 2.48                     | 0.60              |
| 1:G:221:ILE:HG23  | 1:G:221:ILE:O    | 2.00                     | 0.60              |
| 1:C:332:VAL:HG12  | 1:C:332:VAL:O    | 2.01                     | 0.60              |
| 1:D:485:PHE:CE2   | 1:G:308:ILE:CD1  | 2.84                     | 0.60              |
| 1:D:53:PHE:CE1    | 1:D:140:GLY:HA2  | 2.36                     | 0.60              |
| 1:D:137:LYS:HZ3   | 1:G:426:ASN:ND2  | 1.94                     | 0.60              |
| 1:B:34:ILE:O      | 1:B:34:ILE:HG13  | 1.92                     | 0.60              |
| 1:D:273:ILE:C     | 1:D:273:ILE:HD12 | 2.10                     | 0.60              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:89:ASN:OD1   | 1:E:177:THR:HA   | 2.02                     | 0.60              |
| 1:G:143:ALA:HB1  | 1:G:212:LEU:HG   | 1.83                     | 0.60              |
| 1:G:157:TRP:CD2  | 1:G:459:MET:HE2  | 2.37                     | 0.60              |
| 1:H:328:ARG:HE   | 1:H:383:PHE:HB3  | 1.63                     | 0.60              |
| 1:A:15:VAL:HG11  | 1:A:40:ALA:HB3   | 1.83                     | 0.60              |
| 1:G:380:GLU:HG2  | 2:G:523:HOH:O    | 2.00                     | 0.60              |
| 1:D:262:ILE:HG23 | 1:D:297:PHE:HD1  | 1.67                     | 0.60              |
| 1:E:43:ASP:OD1   | 1:E:215:HIS:NE2  | 2.35                     | 0.60              |
| 1:E:31:ILE:HD13  | 1:E:88:LEU:HG    | 1.83                     | 0.60              |
| 1:D:310:LEU:HD23 | 1:D:353:PRO:CG   | 2.32                     | 0.60              |
| 1:E:392:PHE:CD1  | 1:E:394:SER:O    | 2.54                     | 0.60              |
| 1:D:231:ARG:HG2  | 1:G:238:LYS:HB2  | 1.84                     | 0.60              |
| 1:A:93:PRO:O     | 1:A:96:ASP:HB2   | 2.01                     | 0.60              |
| 1:C:2:GLN:HG3    | 1:C:11:PHE:CZ    | 2.37                     | 0.60              |
| 1:C:23:VAL:HG11  | 1:C:28:GLY:O     | 2.02                     | 0.60              |
| 1:E:227:THR:HA   | 1:E:248:LEU:HB3  | 1.83                     | 0.60              |
| 1:G:221:ILE:HG22 | 1:G:221:ILE:O    | 2.02                     | 0.60              |
| 1:G:26:HIS:CB    | 2:G:512:HOH:O    | 2.50                     | 0.60              |
| 1:G:323:LEU:HD23 | 1:G:323:LEU:N    | 2.16                     | 0.60              |
| 1:G:329:ARG:NH1  | 1:G:330:ASP:OD1  | 2.30                     | 0.60              |
| 1:H:90:THR:HG22  | 1:H:92:HIS:ND1   | 2.16                     | 0.60              |
| 1:D:201:VAL:O    | 1:D:201:VAL:HG12 | 2.01                     | 0.59              |
| 1:E:184:ILE:O    | 1:E:188:MET:HG3  | 2.02                     | 0.59              |
| 1:F:310:LEU:CD2  | 1:F:353:PRO:HG3  | 2.32                     | 0.59              |
| 1:F:357:ALA:O    | 1:F:358:LEU:HD12 | 2.02                     | 0.59              |
| 1:G:335:TYR:O    | 1:G:339:ALA:N    | 2.34                     | 0.59              |
| 1:G:257:PHE:HZ   | 1:G:424:MET:HE2  | 1.67                     | 0.59              |
| 1:F:38:GLU:HA    | 1:F:207:THR:HG21 | 1.83                     | 0.59              |
| 1:D:263:GLU:O    | 1:D:267:ASN:ND2  | 2.34                     | 0.59              |
| 1:D:477:VAL:CG2  | 1:D:478:ASP:N    | 2.66                     | 0.59              |
| 1:F:298:LEU:O    | 1:F:302:ILE:HD12 | 2.02                     | 0.59              |
| 1:C:138:PRO:HG3  | 1:C:165:ALA:O    | 2.02                     | 0.59              |
| 1:E:283:ALA:O    | 2:E:527:HOH:O    | 2.15                     | 0.59              |
| 1:A:167:ASN:H    | 1:A:167:ASN:ND2  | 2.01                     | 0.59              |
| 1:B:38:GLU:O     | 1:B:41:ASP:N     | 2.32                     | 0.59              |
| 1:D:20:ILE:HD13  | 1:D:175:GLU:HB3  | 1.85                     | 0.59              |
| 1:E:143:ALA:HB1  | 1:E:212:LEU:HG   | 1.84                     | 0.59              |
| 1:E:479:ALA:C    | 1:E:480:LYS:HE2  | 2.22                     | 0.59              |
| 1:G:458:GLU:O    | 1:G:459:MET:HB2  | 2.01                     | 0.59              |
| 1:H:261:ASN:C    | 1:H:261:ASN:OD1  | 2.39                     | 0.59              |
| 1:B:201:VAL:O    | 1:B:201:VAL:HG12 | 2.01                     | 0.59              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:329:ARG:NH2  | 1:C:330:ASP:OD1  | 2.30                     | 0.59              |
| 1:E:399:LEU:HD11 | 1:E:427:ALA:HB1  | 1.84                     | 0.59              |
| 1:G:347:LEU:HD11 | 1:G:370:GLU:CG   | 2.18                     | 0.59              |
| 1:H:21:ASP:HB3   | 1:H:30:LEU:CD1   | 2.32                     | 0.59              |
| 1:A:102:VAL:CB   | 1:A:103:PRO:HD3  | 2.31                     | 0.59              |
| 1:B:243:ARG:CA   | 2:B:524:HOH:O    | 2.50                     | 0.59              |
| 1:B:320:MET:HE3  | 1:B:385:PRO:CB   | 2.32                     | 0.59              |
| 1:D:220:LYS:NZ   | 2:D:501:HOH:O    | 2.07                     | 0.59              |
| 1:D:309:ARG:HD3  | 1:D:309:ARG:N    | 2.17                     | 0.59              |
| 1:E:195:LYS:O    | 1:E:195:LYS:HG2  | 2.00                     | 0.59              |
| 1:E:76:GLU:O     | 1:E:79:SER:HB3   | 2.02                     | 0.59              |
| 1:G:99:GLY:O     | 1:G:103:PRO:HG2  | 2.02                     | 0.59              |
| 1:G:335:TYR:CZ   | 2:G:523:HOH:O    | 2.47                     | 0.59              |
| 1:B:102:VAL:HB   | 1:B:103:PRO:HD3  | 1.85                     | 0.59              |
| 1:E:417:ASN:HD22 | 1:E:420:ARG:CB   | 2.16                     | 0.59              |
| 1:G:94:ILE:CD1   | 1:G:314:MET:CE   | 2.76                     | 0.59              |
| 1:H:269:ALA:O    | 1:H:273:ILE:HG22 | 2.03                     | 0.59              |
| 1:A:251:LYS:CE   | 2:A:524:HOH:O    | 2.45                     | 0.59              |
| 1:E:74:ARG:CZ    | 1:E:190:GLU:OE1  | 2.44                     | 0.59              |
| 1:F:40:ALA:O     | 1:F:44:LEU:HD12  | 2.03                     | 0.59              |
| 1:F:486:LYS:O    | 1:F:487:ARG:C    | 2.39                     | 0.59              |
| 1:G:340:ILE:C    | 1:G:342:GLN:N    | 2.56                     | 0.59              |
| 1:A:87:SER:OG    | 1:A:92:HIS:O     | 2.10                     | 0.58              |
| 1:B:479:ALA:HB2  | 1:B:480:LYS:HZ3  | 1.67                     | 0.58              |
| 1:C:137:LYS:HG3  | 1:C:471:ARG:HG3  | 1.83                     | 0.58              |
| 1:G:380:GLU:CG   | 2:G:523:HOH:O    | 2.51                     | 0.58              |
| 1:H:30:LEU:HD21  | 1:H:33:ARG:NE    | 2.17                     | 0.58              |
| 1:A:201:VAL:HG12 | 1:A:201:VAL:O    | 2.01                     | 0.58              |
| 1:D:417:ASN:HD22 | 1:D:420:ARG:H    | 1.48                     | 0.58              |
| 1:E:153:MET:HG3  | 2:E:510:HOH:O    | 2.03                     | 0.58              |
| 1:E:31:ILE:HD11  | 1:E:88:LEU:HG    | 1.86                     | 0.58              |
| 1:E:42:VAL:O     | 1:E:46:VAL:HG23  | 2.03                     | 0.58              |
| 1:F:437:CYS:SG   | 1:F:440:ARG:HG3  | 2.43                     | 0.58              |
| 1:F:94:ILE:CG1   | 1:F:94:ILE:O     | 2.48                     | 0.58              |
| 1:H:288:ILE:HG22 | 1:H:392:PHE:CD2  | 2.39                     | 0.58              |
| 1:H:76:GLU:O     | 1:H:79:SER:HB3   | 2.02                     | 0.58              |
| 1:E:277:GLN:HG3  | 1:E:320:MET:HG2  | 1.83                     | 0.58              |
| 1:G:6:TYR:CD2    | 1:G:185:VAL:HG21 | 2.39                     | 0.58              |
| 1:G:56:TRP:CH2   | 1:G:64:ARG:HG2   | 2.39                     | 0.58              |
| 1:H:183:ARG:O    | 1:H:183:ARG:HD2  | 2.03                     | 0.58              |
| 1:A:162:ALA:O    | 1:A:167:ASN:ND2  | 2.30                     | 0.58              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:238:LYS:O    | 1:A:239:SER:C    | 2.42                     | 0.58              |
| 1:C:186:GLU:O    | 1:C:190:GLU:HG3  | 2.03                     | 0.58              |
| 1:D:137:LYS:HG3  | 1:D:471:ARG:HG3  | 1.83                     | 0.58              |
| 1:D:374:GLN:CD   | 1:D:374:GLN:H    | 2.05                     | 0.58              |
| 1:E:74:ARG:NH2   | 1:E:190:GLU:CD   | 2.50                     | 0.58              |
| 1:G:23:VAL:HG13  | 1:G:24:SER:N     | 2.17                     | 0.58              |
| 1:G:92:HIS:C     | 1:G:93:PRO:O     | 2.40                     | 0.58              |
| 1:A:23:VAL:HG12  | 1:A:24:SER:N     | 2.17                     | 0.58              |
| 1:A:305:ALA:HA   | 1:A:308:ILE:HD12 | 1.85                     | 0.58              |
| 1:B:273:ILE:CG1  | 1:B:387:VAL:HG22 | 2.32                     | 0.58              |
| 1:F:149:ASN:ND2  | 1:F:150:PHE:CD1  | 2.71                     | 0.58              |
| 1:G:459:MET:N    | 1:G:463:ALA:HB2  | 2.18                     | 0.58              |
| 1:G:31:ILE:HD13  | 1:G:88:LEU:HG    | 1.85                     | 0.58              |
| 1:H:8:ASP:OD1    | 2:H:507:HOH:O    | 2.17                     | 0.58              |
| 1:C:201:VAL:HG12 | 1:C:201:VAL:O    | 2.01                     | 0.58              |
| 1:C:339:ALA:O    | 1:C:344:GLY:HA3  | 2.03                     | 0.58              |
| 1:C:415:THR:CG2  | 1:C:416:GLN:H    | 2.09                     | 0.58              |
| 1:D:5:LEU:HB2    | 1:D:12:VAL:HG12  | 1.84                     | 0.58              |
| 1:C:151:PRO:HG2  | 1:C:177:THR:HB   | 1.86                     | 0.58              |
| 1:D:277:GLN:HE21 | 1:D:320:MET:HG2  | 1.69                     | 0.58              |
| 1:D:326:ALA:HB2  | 1:D:362:PHE:CE1  | 2.39                     | 0.58              |
| 1:E:155:THR:HG22 | 1:E:181:THR:HG23 | 1.85                     | 0.58              |
| 1:E:175:GLU:HG2  | 1:E:204:TYR:CD1  | 2.39                     | 0.58              |
| 1:G:97:SER:CA    | 1:G:101:ASP:HB2  | 2.32                     | 0.58              |
| 1:G:293:ILE:O    | 1:G:293:ILE:HD13 | 2.04                     | 0.58              |
| 1:H:100:LEU:HD23 | 1:H:100:LEU:N    | 2.09                     | 0.58              |
| 1:A:417:ASN:HD22 | 1:A:420:ARG:CB   | 2.16                     | 0.58              |
| 1:C:143:ALA:HB1  | 1:C:212:LEU:HG   | 1.84                     | 0.58              |
| 1:C:20:ILE:HG21  | 1:C:175:GLU:HB3  | 1.86                     | 0.58              |
| 1:C:19:THR:HG23  | 1:C:20:ILE:N     | 2.17                     | 0.58              |
| 1:F:313:PRO:HB2  | 1:F:314:MET:HE1  | 1.84                     | 0.58              |
| 1:E:392:PHE:CE1  | 1:E:394:SER:O    | 2.57                     | 0.58              |
| 1:G:148:TRP:CD1  | 1:G:148:TRP:N    | 2.72                     | 0.58              |
| 1:G:357:ALA:HB3  | 1:G:358:LEU:HD11 | 1.86                     | 0.58              |
| 1:G:323:LEU:O    | 1:G:362:PHE:HB2  | 2.04                     | 0.58              |
| 1:E:137:LYS:NZ   | 1:H:426:ASN:OD1  | 2.34                     | 0.58              |
| 1:E:87:SER:HB3   | 1:E:314:MET:CE   | 2.33                     | 0.58              |
| 1:H:74:ARG:NE    | 1:H:77:GLU:OE1   | 2.37                     | 0.58              |
| 1:A:309:ARG:C    | 1:A:309:ARG:HD3  | 2.24                     | 0.57              |
| 1:A:477:VAL:HG23 | 1:A:478:ASP:HB2  | 1.85                     | 0.57              |
| 1:B:258:GLU:HG2  | 1:B:290:HIS:NE2  | 2.19                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:320:MET:CE   | 1:B:385:PRO:HG3  | 2.34                     | 0.57              |
| 1:F:145:ILE:HB   | 1:F:223:PHE:HD1  | 1.68                     | 0.57              |
| 1:G:356:LYS:O    | 1:G:357:ALA:C    | 2.40                     | 0.57              |
| 1:B:159:MET:HG2  | 1:B:169:ILE:HD13 | 1.86                     | 0.57              |
| 1:B:186:GLU:HA   | 1:B:189:THR:HG23 | 1.86                     | 0.57              |
| 1:C:259:ASP:OD2  | 1:C:415:THR:HG22 | 2.04                     | 0.57              |
| 1:D:445:SER:HB2  | 1:G:132:ASN:ND2  | 2.19                     | 0.57              |
| 1:E:452:GLN:HG2  | 1:H:240:ASN:O    | 2.03                     | 0.57              |
| 1:F:163:LEU:HG   | 1:F:169:ILE:HD12 | 1.86                     | 0.57              |
| 1:F:70:LYS:HB3   | 1:F:191:VAL:CG1  | 2.33                     | 0.57              |
| 1:F:338:ILE:HD13 | 1:F:376:ARG:HD3  | 1.85                     | 0.57              |
| 1:G:136:ARG:HG3  | 1:G:468:THR:HB   | 1.86                     | 0.57              |
| 1:G:356:LYS:C    | 1:G:358:LEU:N    | 2.57                     | 0.57              |
| 1:H:153:MET:O    | 1:H:156:SER:OG   | 2.22                     | 0.57              |
| 1:B:25:PRO:HB2   | 1:B:322:PRO:HG2  | 1.85                     | 0.57              |
| 1:B:312:ASP:OD1  | 1:B:313:PRO:CD   | 2.51                     | 0.57              |
| 1:B:90:THR:HG22  | 1:B:177:THR:CG2  | 2.34                     | 0.57              |
| 1:C:384:GLY:O    | 1:C:386:PHE:N    | 2.36                     | 0.57              |
| 1:E:124:ILE:N    | 1:E:124:ILE:HD13 | 2.19                     | 0.57              |
| 1:E:175:GLU:HG3  | 1:E:203:GLY:O    | 2.05                     | 0.57              |
| 1:F:257:PHE:CB   | 1:F:415:THR:HG23 | 2.30                     | 0.57              |
| 1:G:94:ILE:HD12  | 1:G:97:SER:HG    | 1.69                     | 0.57              |
| 1:B:288:ILE:HG22 | 1:B:392:PHE:HD2  | 1.69                     | 0.57              |
| 1:E:275:HIS:ND1  | 1:E:439:LYS:NZ   | 2.52                     | 0.57              |
| 1:G:335:TYR:CE2  | 2:G:523:HOH:O    | 2.57                     | 0.57              |
| 1:H:322:PRO:HB3  | 1:H:363:TYR:CD2  | 2.40                     | 0.57              |
| 1:A:241:LEU:CD1  | 1:C:248:LEU:CD1  | 2.81                     | 0.57              |
| 1:G:70:LYS:NZ    | 1:G:191:VAL:O    | 2.38                     | 0.57              |
| 1:G:238:LYS:O    | 1:G:239:SER:C    | 2.42                     | 0.57              |
| 1:G:351:LYS:O    | 1:G:365:GLU:HB2  | 2.05                     | 0.57              |
| 1:G:369:VAL:CG1  | 1:G:369:VAL:O    | 2.53                     | 0.57              |
| 1:A:335:TYR:OH   | 1:A:380:GLU:OE1  | 2.17                     | 0.57              |
| 1:B:350:GLY:O    | 1:B:351:LYS:HB2  | 2.04                     | 0.57              |
| 1:E:277:GLN:OE1  | 2:E:509:HOH:O    | 2.18                     | 0.57              |
| 1:G:149:ASN:OD1  | 1:G:149:ASN:N    | 2.33                     | 0.57              |
| 1:H:230:GLY:O    | 1:H:234:VAL:HG23 | 2.04                     | 0.57              |
| 1:B:117:ASP:OD1  | 1:B:118:LYS:NZ   | 2.36                     | 0.57              |
| 1:C:269:ALA:O    | 1:C:273:ILE:HG22 | 2.03                     | 0.57              |
| 1:E:159:MET:HE1  | 1:E:171:ILE:HG21 | 1.86                     | 0.57              |
| 1:G:10:ARG:NH1   | 1:G:12:VAL:HG13  | 2.07                     | 0.57              |
| 1:H:377:VAL:HG22 | 1:H:386:PHE:CE1  | 2.39                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:243:ARG:HD2  | 1:F:455:TYR:HB3  | 1.87                     | 0.57              |
| 1:B:417:ASN:ND2  | 1:B:420:ARG:H    | 2.03                     | 0.57              |
| 1:C:318:THR:HG22 | 1:C:320:MET:O    | 2.04                     | 0.57              |
| 1:D:117:ASP:OD1  | 1:D:117:ASP:N    | 2.30                     | 0.57              |
| 1:E:101:ASP:O    | 2:E:510:HOH:O    | 2.18                     | 0.57              |
| 1:E:320:MET:HE1  | 1:E:366:PRO:HG3  | 1.86                     | 0.57              |
| 1:G:151:PRO:CB   | 1:G:177:THR:OG1  | 2.53                     | 0.57              |
| 1:H:152:LEU:CD1  | 1:H:184:ILE:CD1  | 2.82                     | 0.57              |
| 1:A:117:ASP:OD1  | 1:A:117:ASP:N    | 2.33                     | 0.57              |
| 1:A:376:ARG:HD2  | 1:A:380:GLU:OE2  | 2.02                     | 0.57              |
| 1:C:346:VAL:CG1  | 1:C:348:ALA:O    | 2.53                     | 0.57              |
| 1:C:486:LYS:O    | 1:C:487:ARG:C    | 2.42                     | 0.57              |
| 1:D:105:THR:OG1  | 1:D:153:MET:HA   | 2.04                     | 0.57              |
| 1:G:326:ALA:HB2  | 1:G:362:PHE:CE1  | 2.40                     | 0.57              |
| 1:A:23:VAL:CG1   | 1:A:24:SER:N     | 2.68                     | 0.56              |
| 1:A:320:MET:HE3  | 1:A:385:PRO:CG   | 2.35                     | 0.56              |
| 1:B:262:ILE:O    | 1:B:266:VAL:HG23 | 2.05                     | 0.56              |
| 1:E:426:ASN:ND2  | 1:H:137:LYS:HE2  | 2.20                     | 0.56              |
| 1:B:220:LYS:HE3  | 1:B:245:GLN:HB2  | 1.86                     | 0.56              |
| 1:B:351:LYS:CG   | 1:B:352:ALA:N    | 2.53                     | 0.56              |
| 1:B:15:VAL:HG12  | 1:B:41:ASP:CG    | 2.25                     | 0.56              |
| 1:D:188:MET:HE3  | 1:D:198:VAL:HB   | 1.88                     | 0.56              |
| 1:E:356:LYS:O    | 1:E:356:LYS:HG3  | 2.04                     | 0.56              |
| 1:F:386:PHE:O    | 1:F:387:VAL:HG22 | 2.05                     | 0.56              |
| 1:B:377:VAL:HG13 | 1:B:388:THR:CG2  | 2.35                     | 0.56              |
| 1:H:358:LEU:HB3  | 1:H:363:TYR:CD2  | 2.40                     | 0.56              |
| 1:A:404:ASN:O    | 1:A:405:THR:HG23 | 2.02                     | 0.56              |
| 1:E:177:THR:N    | 1:E:178:PRO:HD3  | 2.20                     | 0.56              |
| 1:B:483:PRO:HB3  | 1:F:267:ASN:OD1  | 2.06                     | 0.56              |
| 1:G:447:PHE:C    | 1:G:447:PHE:HD2  | 2.09                     | 0.56              |
| 1:G:157:TRP:CE2  | 1:G:459:MET:CE   | 2.88                     | 0.56              |
| 1:H:358:LEU:N    | 1:H:358:LEU:HD13 | 2.21                     | 0.56              |
| 1:B:277:GLN:HG3  | 1:B:320:MET:HG3  | 1.87                     | 0.56              |
| 1:B:335:TYR:HA   | 1:B:338:ILE:CG2  | 2.32                     | 0.56              |
| 1:C:24:SER:CA    | 2:C:512:HOH:O    | 2.50                     | 0.56              |
| 1:G:415:THR:HG21 | 1:G:420:ARG:CD   | 2.27                     | 0.56              |
| 1:H:417:ASN:HD22 | 1:H:420:ARG:HB2  | 1.71                     | 0.56              |
| 1:A:152:LEU:HD12 | 1:A:184:ILE:HD13 | 1.87                     | 0.56              |
| 1:D:10:ARG:CG    | 1:D:10:ARG:NH1   | 2.49                     | 0.56              |
| 1:D:162:ALA:HB3  | 1:D:169:ILE:HD11 | 1.88                     | 0.56              |
| 1:E:87:SER:HB3   | 1:E:314:MET:HE1  | 1.88                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:235:GLU:O    | 1:G:238:LYS:HG2  | 2.05                     | 0.56              |
| 1:G:26:HIS:N     | 2:G:512:HOH:O    | 1.89                     | 0.56              |
| 1:B:290:HIS:CD2  | 1:B:292:ASP:H    | 2.24                     | 0.56              |
| 1:C:434:TRP:CD1  | 1:C:440:ARG:HB2  | 2.40                     | 0.56              |
| 1:C:246:LEU:HB3  | 1:C:248:LEU:HD21 | 1.87                     | 0.56              |
| 1:F:94:ILE:HD11  | 1:F:98:ARG:NH2   | 2.21                     | 0.56              |
| 1:H:142:VAL:HG22 | 1:H:220:LYS:HB3  | 1.88                     | 0.56              |
| 1:H:377:VAL:HG22 | 1:H:386:PHE:HE1  | 1.69                     | 0.56              |
| 1:E:155:THR:CG2  | 1:E:181:THR:HG23 | 2.35                     | 0.56              |
| 1:F:441:VAL:HG13 | 2:F:515:HOH:O    | 2.04                     | 0.56              |
| 1:H:186:GLU:O    | 1:H:190:GLU:HG3  | 2.05                     | 0.56              |
| 1:A:394:SER:OG   | 1:A:397:GLU:HB2  | 2.06                     | 0.56              |
| 1:C:302:ILE:CD1  | 1:C:347:LEU:CB   | 2.63                     | 0.56              |
| 1:D:310:LEU:HD12 | 1:D:320:MET:HB3  | 1.88                     | 0.56              |
| 1:E:273:ILE:CD1  | 1:E:273:ILE:O    | 2.38                     | 0.56              |
| 1:E:289:LEU:HD13 | 1:E:297:PHE:HD2  | 1.71                     | 0.56              |
| 1:E:5:LEU:HD11   | 1:E:37:ALA:HB2   | 1.88                     | 0.56              |
| 1:A:290:HIS:CD2  | 1:A:292:ASP:HB2  | 2.41                     | 0.56              |
| 1:D:328:ARG:HA   | 1:D:328:ARG:NE   | 2.17                     | 0.56              |
| 1:E:159:MET:HE2  | 1:E:171:ILE:CD1  | 2.36                     | 0.56              |
| 1:H:379:GLN:NE2  | 1:H:404:ASN:OD1  | 2.39                     | 0.56              |
| 1:H:86:GLU:O     | 1:H:86:GLU:HG3   | 2.06                     | 0.56              |
| 1:A:481:ILE:CG1  | 1:A:482:ALA:N    | 2.54                     | 0.55              |
| 1:E:108:CYS:HB3  | 1:E:156:SER:HB2  | 1.88                     | 0.55              |
| 1:G:175:GLU:CG   | 1:G:203:GLY:O    | 2.54                     | 0.55              |
| 1:G:327:LEU:HD23 | 1:G:331:ARG:HD2  | 1.85                     | 0.55              |
| 1:H:335:TYR:O    | 1:H:338:ILE:HG22 | 2.06                     | 0.55              |
| 1:A:23:VAL:HG12  | 1:A:24:SER:O     | 2.07                     | 0.55              |
| 1:A:310:LEU:HD22 | 1:A:353:PRO:HG3  | 1.87                     | 0.55              |
| 1:D:377:VAL:O    | 1:D:377:VAL:HG13 | 2.06                     | 0.55              |
| 1:F:177:THR:N    | 1:F:178:PRO:CD   | 2.70                     | 0.55              |
| 1:G:177:THR:N    | 1:G:178:PRO:HD3  | 2.20                     | 0.55              |
| 1:G:340:ILE:C    | 1:G:342:GLN:H    | 2.09                     | 0.55              |
| 1:H:221:ILE:HD12 | 1:H:233:ILE:HG23 | 1.89                     | 0.55              |
| 1:C:27:ASP:OD1   | 1:C:28:GLY:N     | 2.40                     | 0.55              |
| 1:E:291:LYS:CE   | 1:E:393:SER:HG   | 2.11                     | 0.55              |
| 1:F:336:ILE:O    | 1:F:340:ILE:CG1  | 2.50                     | 0.55              |
| 1:G:290:HIS:CD2  | 1:G:292:ASP:H    | 2.24                     | 0.55              |
| 1:A:445:SER:CB   | 1:C:132:ASN:HD21 | 2.19                     | 0.55              |
| 1:C:60:GLY:O     | 1:C:61:ALA:C     | 2.45                     | 0.55              |
| 1:G:20:ILE:HD12  | 1:G:36:ALA:HB2   | 1.87                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:152:LEU:HD12 | 1:A:184:ILE:CD1  | 2.35                     | 0.55              |
| 1:B:235:GLU:CG   | 1:F:238:LYS:HD2  | 2.36                     | 0.55              |
| 1:G:394:SER:OG   | 1:G:397:GLU:HB2  | 2.05                     | 0.55              |
| 1:G:458:GLU:O    | 1:G:459:MET:HG2  | 2.06                     | 0.55              |
| 1:H:253:ALA:HB2  | 1:H:286:ARG:NH2  | 2.21                     | 0.55              |
| 1:E:312:ASP:O    | 1:E:314:MET:N    | 2.40                     | 0.55              |
| 1:F:338:ILE:HD13 | 1:F:376:ARG:CD   | 2.35                     | 0.55              |
| 1:B:337:ASP:O    | 1:B:341:GLU:CG   | 2.52                     | 0.55              |
| 1:C:372:LYS:C    | 1:C:374:GLN:H    | 2.09                     | 0.55              |
| 1:F:273:ILE:CG2  | 1:F:387:VAL:HG21 | 2.32                     | 0.55              |
| 1:F:53:PHE:HB3   | 1:F:54:PRO:HD3   | 1.88                     | 0.55              |
| 1:G:469:GLU:OE1  | 1:G:471:ARG:NE   | 2.33                     | 0.55              |
| 2:A:515:HOH:O    | 1:B:374:GLN:N    | 2.39                     | 0.55              |
| 1:D:188:MET:HE3  | 1:D:198:VAL:HG21 | 1.88                     | 0.55              |
| 1:E:23:VAL:CG1   | 1:E:24:SER:N     | 2.70                     | 0.55              |
| 1:G:413:LEU:HD11 | 1:G:435:ILE:HG12 | 1.88                     | 0.55              |
| 1:H:370:GLU:OE1  | 1:H:391:ARG:NH1  | 2.40                     | 0.55              |
| 1:A:177:THR:N    | 1:A:178:PRO:HD3  | 2.22                     | 0.55              |
| 1:A:438:TYR:HD2  | 1:A:439:LYS:HG3  | 1.72                     | 0.55              |
| 1:C:323:LEU:CD1  | 1:C:332:VAL:HG21 | 2.37                     | 0.55              |
| 1:G:376:ARG:HD2  | 1:G:376:ARG:N    | 2.22                     | 0.55              |
| 1:H:242:LYS:HG2  | 2:H:506:HOH:O    | 2.07                     | 0.55              |
| 1:B:479:ALA:CA   | 1:B:480:LYS:CB   | 2.72                     | 0.55              |
| 1:D:21:ASP:OD1   | 1:D:33:ARG:CD    | 2.55                     | 0.55              |
| 1:D:485:PHE:HE2  | 1:G:308:ILE:CD1  | 2.20                     | 0.55              |
| 1:F:231:ARG:O    | 1:F:235:GLU:HG3  | 2.07                     | 0.55              |
| 1:A:328:ARG:NH1  | 1:A:331:ARG:HD3  | 2.22                     | 0.54              |
| 1:A:355:ASP:O    | 1:A:356:LYS:C    | 2.45                     | 0.54              |
| 1:D:305:ALA:HA   | 1:D:308:ILE:HD12 | 1.90                     | 0.54              |
| 1:D:314:MET:O    | 1:D:316:PRO:HD3  | 2.07                     | 0.54              |
| 1:E:374:GLN:NE2  | 1:E:374:GLN:H    | 2.03                     | 0.54              |
| 1:F:235:GLU:O    | 1:F:238:LYS:CD   | 2.54                     | 0.54              |
| 1:G:37:ALA:HB2   | 1:G:201:VAL:HG22 | 1.84                     | 0.54              |
| 1:G:289:LEU:HD12 | 1:G:390:VAL:O    | 2.07                     | 0.54              |
| 1:H:49:ALA:CA    | 1:H:168:THR:CG2  | 2.80                     | 0.54              |
| 1:H:86:GLU:OE2   | 1:H:180:SER:OG   | 2.18                     | 0.54              |
| 1:D:151:PRO:O    | 2:D:507:HOH:O    | 2.18                     | 0.54              |
| 1:E:337:ASP:CG   | 2:E:523:HOH:O    | 2.46                     | 0.54              |
| 1:F:15:VAL:CG1   | 1:F:16:ALA:N     | 2.70                     | 0.54              |
| 1:F:15:VAL:HG13  | 1:F:16:ALA:N     | 2.20                     | 0.54              |
| 1:G:97:SER:HA    | 1:G:101:ASP:CB   | 2.30                     | 0.54              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:376:ARG:HD2  | 1:H:380:GLU:OE2  | 2.07                     | 0.54              |
| 1:A:215:HIS:HD2  | 1:A:217:ASP:H    | 1.54                     | 0.54              |
| 1:C:147:PRO:HD3  | 1:C:224:THR:HB   | 1.88                     | 0.54              |
| 1:E:42:VAL:HG22  | 1:E:201:VAL:HG11 | 1.89                     | 0.54              |
| 1:E:66:ARG:HG2   | 2:E:511:HOH:O    | 2.07                     | 0.54              |
| 1:F:386:PHE:C    | 1:F:387:VAL:CG2  | 2.76                     | 0.54              |
| 1:A:477:VAL:CG2  | 1:A:478:ASP:HB2  | 2.36                     | 0.54              |
| 1:E:123:VAL:C    | 1:E:124:ILE:HD13 | 2.28                     | 0.54              |
| 1:E:185:VAL:HA   | 1:E:188:MET:HG3  | 1.87                     | 0.54              |
| 1:E:19:THR:HG21  | 1:E:33:ARG:HD3   | 1.89                     | 0.54              |
| 1:G:15:VAL:HG11  | 1:G:40:ALA:CB    | 2.35                     | 0.54              |
| 1:E:95:ARG:NH2   | 1:H:484:HIS:O    | 2.41                     | 0.54              |
| 2:A:515:HOH:O    | 1:B:373:PRO:HD2  | 2.06                     | 0.54              |
| 1:C:370:GLU:CD   | 1:C:391:ARG:HH11 | 2.11                     | 0.54              |
| 1:D:417:ASN:ND2  | 1:D:420:ARG:H    | 2.06                     | 0.54              |
| 1:F:258:GLU:CG   | 1:F:290:HIS:CE1  | 2.91                     | 0.54              |
| 1:F:377:VAL:HG13 | 1:F:386:PHE:HE1  | 1.72                     | 0.54              |
| 1:G:326:ALA:N    | 1:G:362:PHE:CD2  | 2.75                     | 0.54              |
| 1:G:22:VAL:CG2   | 1:G:34:ILE:HG21  | 2.32                     | 0.54              |
| 1:H:290:HIS:CD2  | 1:H:292:ASP:H    | 2.26                     | 0.54              |
| 1:B:305:ALA:HA   | 1:B:308:ILE:HD12 | 1.90                     | 0.54              |
| 1:B:334:SER:O    | 1:B:337:ASP:HB2  | 2.08                     | 0.54              |
| 1:B:344:GLY:C    | 1:B:345:LYS:HD2  | 2.27                     | 0.54              |
| 1:D:188:MET:HE3  | 1:D:198:VAL:CG2  | 2.38                     | 0.54              |
| 1:D:168:THR:HG22 | 1:D:197:VAL:HA   | 1.90                     | 0.54              |
| 1:D:25:PRO:HB2   | 1:D:322:PRO:HG2  | 1.88                     | 0.54              |
| 1:E:256:VAL:HG12 | 1:E:293:ILE:HD13 | 1.89                     | 0.54              |
| 1:F:386:PHE:C    | 1:F:387:VAL:HG23 | 2.28                     | 0.54              |
| 1:G:340:ILE:O    | 1:G:343:GLY:N    | 2.36                     | 0.54              |
| 1:A:147:PRO:HG3  | 1:A:224:THR:HG22 | 1.90                     | 0.54              |
| 1:A:174:SER:C    | 1:A:176:ILE:H    | 2.11                     | 0.54              |
| 1:E:104:ARG:CD   | 1:E:153:MET:HE2  | 2.37                     | 0.54              |
| 1:G:220:LYS:HD3  | 1:G:243:ARG:HB2  | 1.90                     | 0.54              |
| 1:A:415:THR:CG2  | 1:A:420:ARG:HH11 | 2.21                     | 0.54              |
| 1:A:475:VAL:O    | 1:A:475:VAL:HG12 | 2.08                     | 0.54              |
| 1:B:345:LYS:HD3  | 1:B:345:LYS:N    | 2.19                     | 0.54              |
| 1:C:152:LEU:CD1  | 1:C:184:ILE:HD11 | 2.38                     | 0.54              |
| 1:F:22:VAL:HG23  | 1:F:34:ILE:HG23  | 1.88                     | 0.54              |
| 1:G:147:PRO:CG   | 1:G:224:THR:HG22 | 2.38                     | 0.54              |
| 1:G:363:TYR:CD2  | 2:G:519:HOH:O    | 2.51                     | 0.54              |
| 1:H:42:VAL:HB    | 1:H:212:LEU:HD13 | 1.90                     | 0.54              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:336:ILE:HG21 | 1:C:350:GLY:O    | 2.08                     | 0.54              |
| 1:C:417:ASN:HD22 | 1:C:420:ARG:HB2  | 1.72                     | 0.54              |
| 1:D:175:GLU:CD   | 1:D:175:GLU:H    | 2.10                     | 0.54              |
| 1:E:291:LYS:HE2  | 1:E:393:SER:CB   | 2.25                     | 0.54              |
| 1:G:151:PRO:O    | 1:G:155:THR:HG23 | 2.08                     | 0.54              |
| 1:G:19:THR:HA    | 1:G:34:ILE:O     | 2.08                     | 0.54              |
| 1:A:434:TRP:CD1  | 1:A:440:ARG:HB2  | 2.42                     | 0.54              |
| 1:A:475:VAL:CG1  | 1:A:477:VAL:HG12 | 2.37                     | 0.54              |
| 1:B:112:PHE:CZ   | 1:B:161:PRO:HG3  | 2.43                     | 0.54              |
| 1:B:358:LEU:N    | 1:B:358:LEU:HD13 | 2.23                     | 0.54              |
| 1:C:183:ARG:NH1  | 1:C:186:GLU:OE1  | 2.41                     | 0.54              |
| 1:C:320:MET:CE   | 1:C:385:PRO:HG3  | 2.38                     | 0.54              |
| 1:D:258:GLU:HG2  | 1:D:290:HIS:CD2  | 2.43                     | 0.54              |
| 1:F:172:LYS:CG   | 1:F:172:LYS:O    | 2.55                     | 0.54              |
| 1:F:142:VAL:HG22 | 1:F:220:LYS:HB3  | 1.90                     | 0.54              |
| 1:F:412:GLY:HA3  | 1:F:438:TYR:CE1  | 2.43                     | 0.54              |
| 1:A:215:HIS:O    | 1:A:242:LYS:NZ   | 2.40                     | 0.53              |
| 1:A:93:PRO:O     | 1:A:96:ASP:N     | 2.36                     | 0.53              |
| 1:B:334:SER:O    | 1:B:338:ILE:HG23 | 2.07                     | 0.53              |
| 1:E:292:ASP:CG   | 2:E:529:HOH:O    | 2.42                     | 0.53              |
| 1:F:372:LYS:O    | 1:F:378:CYS:SG   | 2.63                     | 0.53              |
| 1:A:18:GLY:O     | 1:A:36:ALA:N     | 2.36                     | 0.53              |
| 1:B:316:PRO:HG2  | 1:G:190:GLU:HG2  | 1.90                     | 0.53              |
| 1:B:415:THR:CG2  | 1:B:420:ARG:HH11 | 2.21                     | 0.53              |
| 1:C:27:ASP:O     | 1:C:360:ASN:HB3  | 2.08                     | 0.53              |
| 1:E:415:THR:CG2  | 1:E:420:ARG:HH11 | 2.21                     | 0.53              |
| 1:E:447:PHE:CD2  | 1:E:447:PHE:C    | 2.82                     | 0.53              |
| 1:F:172:LYS:O    | 1:F:172:LYS:HG2  | 2.08                     | 0.53              |
| 1:F:257:PHE:HB2  | 1:F:415:THR:CG2  | 2.33                     | 0.53              |
| 1:F:70:LYS:HB3   | 1:F:191:VAL:HG13 | 1.90                     | 0.53              |
| 1:G:303:ALA:C    | 2:G:513:HOH:O    | 2.46                     | 0.53              |
| 1:H:273:ILE:CD1  | 1:H:285:SER:HA   | 2.27                     | 0.53              |
| 1:D:415:THR:HB   | 1:D:417:ASN:H    | 1.74                     | 0.53              |
| 1:D:412:GLY:HA2  | 1:D:434:TRP:O    | 2.08                     | 0.53              |
| 1:E:241:LEU:HD11 | 1:H:227:THR:HG23 | 1.89                     | 0.53              |
| 1:E:338:ILE:HD11 | 1:E:376:ARG:HB2  | 1.89                     | 0.53              |
| 1:F:258:GLU:HG3  | 1:F:290:HIS:CD2  | 2.42                     | 0.53              |
| 1:G:327:LEU:HD22 | 1:G:331:ARG:HD3  | 1.89                     | 0.53              |
| 1:G:357:ALA:CB   | 1:G:358:LEU:HD12 | 2.38                     | 0.53              |
| 1:H:376:ARG:C    | 1:H:378:CYS:H    | 2.11                     | 0.53              |
| 1:B:81:GLU:CG    | 2:B:518:HOH:O    | 2.56                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:259:ASP:O    | 1:D:416:GLN:HG3  | 2.07                     | 0.53              |
| 1:F:20:ILE:HD13  | 1:F:175:GLU:HB3  | 1.91                     | 0.53              |
| 1:F:335:TYR:CD1  | 1:F:382:VAL:HG13 | 2.44                     | 0.53              |
| 1:G:152:LEU:CD1  | 1:G:184:ILE:CD1  | 2.86                     | 0.53              |
| 1:G:357:ALA:CB   | 1:G:358:LEU:CD1  | 2.86                     | 0.53              |
| 1:H:159:MET:CE   | 1:H:171:ILE:HD13 | 2.39                     | 0.53              |
| 1:H:210:GLN:O    | 1:H:214:GLU:CG   | 2.56                     | 0.53              |
| 1:H:233:ILE:HG22 | 1:H:233:ILE:O    | 2.07                     | 0.53              |
| 1:B:235:GLU:O    | 1:B:238:LYS:HG2  | 2.09                     | 0.53              |
| 1:B:338:ILE:HA   | 1:B:341:GLU:HG3  | 1.90                     | 0.53              |
| 1:B:273:ILE:HG21 | 1:B:387:VAL:HG21 | 1.89                     | 0.53              |
| 1:E:404:ASN:C    | 1:E:405:THR:CG2  | 2.76                     | 0.53              |
| 1:H:102:VAL:CG2  | 1:H:152:LEU:CD2  | 2.84                     | 0.53              |
| 1:H:288:ILE:HG22 | 1:H:392:PHE:HD2  | 1.73                     | 0.53              |
| 1:A:86:GLU:OE1   | 1:A:151:PRO:HD2  | 2.09                     | 0.53              |
| 1:E:266:VAL:CG2  | 1:E:297:PHE:CD1  | 2.91                     | 0.53              |
| 1:F:228:ALA:O    | 1:F:232:ARG:HG3  | 2.09                     | 0.53              |
| 1:F:80:GLU:OE2   | 1:F:80:GLU:HA    | 2.06                     | 0.53              |
| 1:G:182:LEU:O    | 1:G:185:VAL:HG12 | 2.08                     | 0.53              |
| 1:H:108:CYS:CB   | 1:H:156:SER:HB2  | 2.31                     | 0.53              |
| 1:A:259:ASP:O    | 1:A:416:GLN:HG2  | 2.09                     | 0.53              |
| 1:A:399:LEU:HD11 | 1:A:427:ALA:HB1  | 1.91                     | 0.53              |
| 1:D:392:PHE:CE1  | 1:D:398:ALA:HB2  | 2.44                     | 0.53              |
| 1:E:159:MET:CE   | 1:E:171:ILE:HD12 | 2.37                     | 0.53              |
| 1:E:152:LEU:HD12 | 1:E:184:ILE:HD13 | 1.90                     | 0.53              |
| 1:E:424:MET:O    | 1:E:428:ILE:HG13 | 2.09                     | 0.53              |
| 1:F:1:MET:HG3    | 1:F:1:MET:O      | 2.09                     | 0.53              |
| 1:F:386:PHE:O    | 1:F:387:VAL:CG2  | 2.57                     | 0.53              |
| 1:F:443:PRO:CA   | 1:F:459:MET:HE2  | 2.35                     | 0.53              |
| 1:G:289:LEU:H    | 1:G:289:LEU:HD12 | 1.73                     | 0.53              |
| 1:G:310:LEU:HA   | 1:G:320:MET:O    | 2.08                     | 0.53              |
| 1:H:277:GLN:HG3  | 1:H:320:MET:CG   | 2.38                     | 0.53              |
| 1:H:458:GLU:O    | 1:H:459:MET:HB2  | 2.09                     | 0.53              |
| 1:A:474:TRP:HB2  | 1:C:434:TRP:HA   | 1.91                     | 0.53              |
| 1:C:1:MET:HG2    | 1:C:1:MET:O      | 2.06                     | 0.53              |
| 1:D:290:HIS:CD2  | 1:D:292:ASP:H    | 2.27                     | 0.53              |
| 1:D:328:ARG:NE   | 1:D:328:ARG:CA   | 2.67                     | 0.53              |
| 1:D:338:ILE:HD11 | 1:D:376:ARG:CB   | 2.38                     | 0.53              |
| 1:E:61:ALA:HB1   | 1:E:116:ALA:C    | 2.28                     | 0.53              |
| 1:E:262:ILE:CD1  | 1:E:293:ILE:HB   | 2.39                     | 0.53              |
| 1:F:186:GLU:O    | 1:F:190:GLU:HG3  | 2.08                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:240:ASN:N    | 1:F:240:ASN:OD1  | 2.41                     | 0.53              |
| 1:G:179:LEU:HD23 | 1:G:179:LEU:N    | 2.24                     | 0.53              |
| 1:G:358:LEU:HD13 | 1:G:358:LEU:N    | 2.23                     | 0.53              |
| 1:A:221:ILE:HD13 | 1:A:233:ILE:CG2  | 2.23                     | 0.53              |
| 1:A:412:GLY:HA2  | 1:A:434:TRP:O    | 2.09                     | 0.53              |
| 1:B:88:LEU:CA    | 1:B:314:MET:CE   | 2.87                     | 0.53              |
| 1:F:256:VAL:HG12 | 1:F:293:ILE:HD11 | 1.90                     | 0.53              |
| 1:F:277:GLN:HG3  | 1:F:320:MET:HG2  | 1.91                     | 0.53              |
| 1:G:396:GLU:N    | 1:G:396:GLU:CD   | 2.62                     | 0.53              |
| 1:B:310:LEU:CD1  | 1:B:320:MET:HG2  | 2.38                     | 0.53              |
| 1:C:174:SER:C    | 1:C:176:ILE:N    | 2.60                     | 0.53              |
| 1:C:310:LEU:HD11 | 2:C:511:HOH:O    | 2.09                     | 0.53              |
| 1:C:399:LEU:HD11 | 1:C:427:ALA:HB1  | 1.91                     | 0.53              |
| 1:E:308:ILE:HG21 | 1:E:320:MET:HE3  | 1.91                     | 0.53              |
| 1:F:258:GLU:HG2  | 1:F:290:HIS:CE1  | 2.44                     | 0.53              |
| 1:F:399:LEU:HD11 | 1:F:427:ALA:HB1  | 1.91                     | 0.53              |
| 1:G:10:ARG:HH11  | 1:G:12:VAL:HG12  | 1.61                     | 0.53              |
| 1:G:348:ALA:HB3  | 1:G:368:VAL:HG23 | 1.90                     | 0.53              |
| 1:A:147:PRO:CG   | 1:A:224:THR:HG22 | 2.40                     | 0.52              |
| 1:A:22:VAL:CG2   | 1:A:34:ILE:HG22  | 2.39                     | 0.52              |
| 1:A:482:ALA:O    | 1:A:483:PRO:C    | 2.47                     | 0.52              |
| 1:A:86:GLU:HG3   | 1:A:86:GLU:O     | 2.08                     | 0.52              |
| 1:B:296:GLN:O    | 1:B:300:ARG:HG3  | 2.09                     | 0.52              |
| 1:C:262:ILE:O    | 1:C:266:VAL:CG2  | 2.41                     | 0.52              |
| 1:E:228:ALA:HB1  | 1:E:232:ARG:NH2  | 2.23                     | 0.52              |
| 1:E:298:LEU:HD21 | 1:E:389:VAL:HG21 | 1.91                     | 0.52              |
| 1:E:469:GLU:OE2  | 1:H:450:VAL:HG22 | 2.09                     | 0.52              |
| 1:F:22:VAL:HG23  | 1:F:34:ILE:CG2   | 2.38                     | 0.52              |
| 1:G:87:SER:HB3   | 1:G:314:MET:HE3  | 1.89                     | 0.52              |
| 1:H:339:ALA:O    | 1:H:344:GLY:N    | 2.42                     | 0.52              |
| 1:A:167:ASN:H    | 1:A:167:ASN:HD22 | 1.57                     | 0.52              |
| 1:A:217:ASP:CG   | 1:B:374:GLN:HE22 | 2.11                     | 0.52              |
| 1:C:155:THR:O    | 1:C:159:MET:HB2  | 2.09                     | 0.52              |
| 1:F:102:VAL:HB   | 1:F:103:PRO:HD3  | 1.90                     | 0.52              |
| 1:F:277:GLN:NE2  | 1:F:321:GLY:H    | 2.07                     | 0.52              |
| 1:A:2:GLN:HA     | 1:A:2:GLN:NE2    | 2.23                     | 0.52              |
| 1:B:235:GLU:CG   | 1:F:238:LYS:HE3  | 2.38                     | 0.52              |
| 1:C:226:SER:O    | 1:C:227:THR:C    | 2.47                     | 0.52              |
| 1:E:97:SER:CA    | 1:E:101:ASP:HB2  | 2.31                     | 0.52              |
| 1:E:289:LEU:HD13 | 1:E:297:PHE:CD2  | 2.44                     | 0.52              |
| 1:H:221:ILE:HG23 | 1:H:221:ILE:O    | 2.09                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:376:ARG:C    | 1:A:378:CYS:H    | 2.12                     | 0.52              |
| 1:B:214:GLU:HG3  | 1:B:236:ALA:HB1  | 1.91                     | 0.52              |
| 1:B:477:VAL:CG2  | 1:B:478:ASP:N    | 2.72                     | 0.52              |
| 1:C:86:GLU:HG3   | 1:C:86:GLU:O     | 2.08                     | 0.52              |
| 1:D:221:ILE:HG23 | 1:D:221:ILE:O    | 2.09                     | 0.52              |
| 1:E:96:ASP:O     | 1:E:100:LEU:HB2  | 2.09                     | 0.52              |
| 1:E:93:PRO:CD    | 1:E:277:GLN:HE22 | 2.23                     | 0.52              |
| 1:G:20:ILE:HD11  | 1:G:204:TYR:CZ   | 2.44                     | 0.52              |
| 1:G:434:TRP:HB3  | 1:G:437:CYS:SG   | 2.49                     | 0.52              |
| 1:G:458:GLU:O    | 1:G:459:MET:CG   | 2.57                     | 0.52              |
| 1:G:475:VAL:CG1  | 1:G:477:VAL:HG12 | 2.37                     | 0.52              |
| 1:B:221:ILE:O    | 1:B:221:ILE:HG23 | 2.09                     | 0.52              |
| 1:D:184:ILE:O    | 1:D:188:MET:CG   | 2.57                     | 0.52              |
| 1:F:185:VAL:HA   | 1:F:188:MET:HB2  | 1.92                     | 0.52              |
| 1:G:87:SER:CB    | 1:G:314:MET:CE   | 2.87                     | 0.52              |
| 1:A:310:LEU:HD22 | 1:A:353:PRO:CG   | 2.39                     | 0.52              |
| 1:B:470:ALA:HB3  | 1:F:457:ARG:HE   | 1.75                     | 0.52              |
| 1:B:92:HIS:CE1   | 1:B:276:ASN:HD21 | 2.27                     | 0.52              |
| 1:C:221:ILE:O    | 1:C:221:ILE:CG2  | 2.58                     | 0.52              |
| 1:E:25:PRO:HB2   | 1:E:322:PRO:HG2  | 1.90                     | 0.52              |
| 1:E:412:GLY:HA2  | 1:E:434:TRP:O    | 2.09                     | 0.52              |
| 1:C:151:PRO:CG   | 1:C:177:THR:HB   | 2.40                     | 0.52              |
| 1:C:386:PHE:CD1  | 1:C:386:PHE:C    | 2.82                     | 0.52              |
| 1:D:188:MET:HE3  | 1:D:198:VAL:CB   | 2.40                     | 0.52              |
| 1:F:322:PRO:HG3  | 1:F:363:TYR:CZ   | 2.44                     | 0.52              |
| 1:G:373:PRO:HG2  | 1:G:374:GLN:H    | 1.75                     | 0.52              |
| 1:A:476:ASN:ND2  | 1:A:480:LYS:HE3  | 2.24                     | 0.52              |
| 1:B:8:ASP:OD1    | 1:B:195:LYS:HG3  | 2.09                     | 0.52              |
| 1:C:105:THR:OG1  | 1:C:153:MET:HA   | 2.09                     | 0.52              |
| 1:C:263:GLU:CG   | 1:C:300:ARG:NH2  | 2.73                     | 0.52              |
| 1:D:188:MET:CE   | 1:D:198:VAL:CB   | 2.87                     | 0.52              |
| 1:D:351:LYS:HG3  | 1:D:352:ALA:N    | 2.03                     | 0.52              |
| 1:E:86:GLU:OE1   | 1:E:151:PRO:HD2  | 2.09                     | 0.52              |
| 1:E:478:ASP:CA   | 2:E:514:HOH:O    | 2.50                     | 0.52              |
| 1:F:26:HIS:O     | 1:F:361:GLY:N    | 2.42                     | 0.52              |
| 1:G:95:ARG:HH12  | 1:G:319:GLU:HG2  | 1.73                     | 0.52              |
| 1:H:124:ILE:CD1  | 1:H:124:ILE:N    | 2.73                     | 0.52              |
| 1:H:304:LEU:HD12 | 1:H:304:LEU:C    | 2.28                     | 0.52              |
| 1:A:377:VAL:CG1  | 1:A:388:THR:CG2  | 2.86                     | 0.52              |
| 1:C:404:ASN:O    | 1:C:405:THR:CG2  | 2.57                     | 0.52              |
| 1:C:415:THR:HG22 | 1:C:417:ASN:H    | 1.74                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:153:MET:O    | 1:D:153:MET:CG   | 2.57                     | 0.52              |
| 1:D:182:LEU:O    | 1:D:185:VAL:HG12 | 2.10                     | 0.52              |
| 1:H:92:HIS:CD2   | 1:H:101:ASP:OD2  | 2.62                     | 0.52              |
| 1:B:151:PRO:HG2  | 1:B:177:THR:HB   | 1.92                     | 0.52              |
| 1:B:315:ASP:O    | 1:B:317:GLU:N    | 2.42                     | 0.52              |
| 1:C:31:ILE:HD13  | 1:C:88:LEU:HG    | 1.90                     | 0.52              |
| 1:D:445:SER:HB2  | 1:G:132:ASN:HD21 | 1.74                     | 0.52              |
| 1:H:399:LEU:HD11 | 1:H:427:ALA:HB1  | 1.91                     | 0.52              |
| 1:A:155:THR:HG22 | 1:A:181:THR:HG23 | 1.91                     | 0.51              |
| 1:B:404:ASN:CG   | 1:B:404:ASN:O    | 2.48                     | 0.51              |
| 1:D:223:PHE:CZ   | 1:D:229:THR:HG23 | 2.45                     | 0.51              |
| 1:E:61:ALA:HB1   | 1:E:116:ALA:O    | 2.09                     | 0.51              |
| 1:B:357:ALA:CB   | 1:G:12:VAL:HG12  | 2.34                     | 0.51              |
| 1:G:19:THR:HG23  | 1:G:20:ILE:N     | 2.24                     | 0.51              |
| 1:H:412:GLY:HA2  | 1:H:434:TRP:O    | 2.09                     | 0.51              |
| 1:H:90:THR:HG22  | 1:H:92:HIS:CE1   | 2.45                     | 0.51              |
| 1:C:152:LEU:HD12 | 1:C:184:ILE:CD1  | 2.40                     | 0.51              |
| 1:C:411:SER:OG   | 1:C:432:MET:O    | 2.28                     | 0.51              |
| 1:E:86:GLU:HG3   | 1:E:86:GLU:O     | 2.08                     | 0.51              |
| 1:G:173:PRO:CG   | 1:G:181:THR:HG21 | 2.39                     | 0.51              |
| 1:G:94:ILE:O     | 1:G:98:ARG:HG2   | 2.11                     | 0.51              |
| 1:B:376:ARG:O    | 1:B:380:GLU:HB2  | 2.11                     | 0.51              |
| 1:B:291:LYS:HG3  | 1:B:392:PHE:O    | 2.11                     | 0.51              |
| 1:C:53:PHE:HB3   | 1:C:54:PRO:HD3   | 1.92                     | 0.51              |
| 1:F:432:MET:HE2  | 1:F:447:PHE:CD1  | 2.45                     | 0.51              |
| 1:G:330:ASP:O    | 1:G:334:SER:OG   | 2.28                     | 0.51              |
| 1:G:137:LYS:O    | 1:G:468:THR:HG22 | 2.10                     | 0.51              |
| 1:H:404:ASN:O    | 1:H:404:ASN:CG   | 2.48                     | 0.51              |
| 1:A:267:ASN:ND2  | 1:C:483:PRO:HG3  | 2.25                     | 0.51              |
| 1:B:223:PHE:CZ   | 1:B:229:THR:HG23 | 2.45                     | 0.51              |
| 1:C:27:ASP:OD1   | 1:C:27:ASP:C     | 2.46                     | 0.51              |
| 1:F:296:GLN:HE21 | 1:F:300:ARG:NH1  | 2.07                     | 0.51              |
| 1:G:262:ILE:O    | 1:G:266:VAL:HG23 | 2.11                     | 0.51              |
| 1:H:323:LEU:HD21 | 1:H:385:PRO:HD3  | 1.92                     | 0.51              |
| 1:A:404:ASN:C    | 1:A:405:THR:CG2  | 2.78                     | 0.51              |
| 1:C:174:SER:C    | 1:C:176:ILE:H    | 2.14                     | 0.51              |
| 1:D:240:ASN:O    | 1:D:241:LEU:HB2  | 2.09                     | 0.51              |
| 1:E:104:ARG:NH2  | 1:E:153:MET:HE1  | 2.24                     | 0.51              |
| 1:E:170:VAL:HG11 | 1:E:212:LEU:HD11 | 1.92                     | 0.51              |
| 1:E:338:ILE:CD1  | 1:E:376:ARG:HB2  | 2.41                     | 0.51              |
| 1:E:322:PRO:HG3  | 1:E:363:TYR:CZ   | 2.46                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:229:THR:HA   | 1:F:232:ARG:HG3  | 1.93                     | 0.51              |
| 1:A:396:GLU:OE1  | 1:A:396:GLU:N    | 2.30                     | 0.51              |
| 1:B:344:GLY:O    | 1:B:345:LYS:HD2  | 2.11                     | 0.51              |
| 1:C:191:VAL:O    | 1:C:191:VAL:HG13 | 2.11                     | 0.51              |
| 1:D:32:THR:HG23  | 1:D:33:ARG:N     | 2.25                     | 0.51              |
| 1:E:5:LEU:CD1    | 1:E:37:ALA:HB2   | 2.40                     | 0.51              |
| 1:F:377:VAL:CG1  | 1:F:377:VAL:O    | 2.55                     | 0.51              |
| 1:G:89:ASN:OD1   | 1:G:177:THR:HA   | 2.11                     | 0.51              |
| 1:G:328:ARG:O    | 1:G:332:VAL:HG23 | 2.10                     | 0.51              |
| 1:A:53:PHE:CE1   | 1:A:140:GLY:HA2  | 2.46                     | 0.51              |
| 1:B:245:GLN:NE2  | 1:B:457:ARG:O    | 2.43                     | 0.51              |
| 1:B:259:ASP:OD1  | 1:B:415:THR:CG2  | 2.55                     | 0.51              |
| 1:D:26:HIS:ND1   | 1:D:363:TYR:OH   | 2.25                     | 0.51              |
| 1:E:26:HIS:ND1   | 1:E:363:TYR:OH   | 2.25                     | 0.51              |
| 1:F:329:ARG:HD2  | 2:F:510:HOH:O    | 2.09                     | 0.51              |
| 1:G:172:LYS:O    | 1:G:172:LYS:CG   | 2.59                     | 0.51              |
| 1:H:352:ALA:HA   | 1:H:364:VAL:HA   | 1.92                     | 0.51              |
| 1:H:119:ILE:HG12 | 1:H:464:ILE:HG21 | 1.92                     | 0.51              |
| 1:A:320:MET:CE   | 1:A:385:PRO:CG   | 2.88                     | 0.51              |
| 1:C:210:GLN:O    | 1:C:214:GLU:HG3  | 2.09                     | 0.51              |
| 1:F:357:ALA:C    | 1:F:358:LEU:HD12 | 2.30                     | 0.51              |
| 1:G:102:VAL:HB   | 1:G:103:PRO:HD3  | 1.91                     | 0.51              |
| 1:E:455:TYR:HB3  | 1:H:243:ARG:HD2  | 1.91                     | 0.51              |
| 1:B:251:LYS:HG3  | 1:B:286:ARG:HD3  | 1.93                     | 0.51              |
| 1:C:100:LEU:O    | 1:C:104:ARG:HG3  | 2.11                     | 0.51              |
| 1:C:332:VAL:CG1  | 1:C:332:VAL:O    | 2.59                     | 0.51              |
| 1:C:376:ARG:NH1  | 2:C:506:HOH:O    | 2.40                     | 0.51              |
| 1:D:20:ILE:HG13  | 1:D:36:ALA:HB2   | 1.92                     | 0.51              |
| 1:E:392:PHE:CE1  | 1:E:398:ALA:HB2  | 2.45                     | 0.51              |
| 1:F:88:LEU:HA    | 1:F:314:MET:HE3  | 1.92                     | 0.51              |
| 1:F:403:ASN:O    | 1:F:405:THR:N    | 2.42                     | 0.51              |
| 1:G:298:LEU:HD21 | 1:G:389:VAL:HG21 | 1.92                     | 0.51              |
| 1:H:4:GLN:HG3    | 1:H:11:PHE:HB3   | 1.93                     | 0.51              |
| 1:A:25:PRO:HA    | 1:A:362:PHE:CE2  | 2.45                     | 0.51              |
| 1:B:4:GLN:HB3    | 1:B:12:VAL:O     | 2.11                     | 0.51              |
| 1:C:354:ASP:O    | 1:C:354:ASP:OD2  | 2.29                     | 0.51              |
| 1:C:372:LYS:C    | 1:C:374:GLN:N    | 2.65                     | 0.51              |
| 1:C:119:ILE:HG12 | 1:C:464:ILE:HG21 | 1.91                     | 0.51              |
| 1:D:328:ARG:NH1  | 1:D:383:PHE:HB3  | 2.11                     | 0.51              |
| 1:G:274:PHE:HB3  | 1:G:320:MET:HE1  | 1.92                     | 0.51              |
| 1:G:273:ILE:HD12 | 1:G:283:ALA:HB1  | 1.93                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:464:ILE:O    | 1:H:468:THR:CG2  | 2.43                     | 0.51              |
| 1:A:259:ASP:OD1  | 1:A:415:THR:CG2  | 2.55                     | 0.50              |
| 1:B:412:GLY:HA2  | 1:B:434:TRP:O    | 2.11                     | 0.50              |
| 1:B:74:ARG:HG2   | 1:B:191:VAL:HG23 | 1.92                     | 0.50              |
| 1:B:87:SER:OG    | 1:B:92:HIS:O     | 2.30                     | 0.50              |
| 1:C:327:LEU:CD2  | 1:C:331:ARG:HH12 | 2.22                     | 0.50              |
| 1:C:323:LEU:HD11 | 1:C:332:VAL:HG21 | 1.91                     | 0.50              |
| 1:C:432:MET:CE   | 1:C:447:PHE:HD1  | 2.10                     | 0.50              |
| 1:C:460:GLY:HA3  | 2:C:502:HOH:O    | 2.11                     | 0.50              |
| 1:C:92:HIS:HD2   | 1:C:101:ASP:OD2  | 1.94                     | 0.50              |
| 1:D:446:PRO:HD2  | 1:G:134:VAL:HG21 | 1.93                     | 0.50              |
| 1:D:481:ILE:HD12 | 1:G:440:ARG:HH12 | 1.76                     | 0.50              |
| 1:D:485:PHE:CE2  | 1:G:308:ILE:HG12 | 2.45                     | 0.50              |
| 1:E:241:LEU:HD13 | 1:H:248:LEU:HD12 | 1.93                     | 0.50              |
| 1:G:356:LYS:C    | 1:G:358:LEU:H    | 2.14                     | 0.50              |
| 1:A:322:PRO:HG3  | 1:A:363:TYR:CZ   | 2.46                     | 0.50              |
| 1:A:404:ASN:C    | 1:A:405:THR:HG23 | 2.31                     | 0.50              |
| 1:C:14:ALA:HB2   | 1:C:36:ALA:O     | 2.11                     | 0.50              |
| 1:D:137:LYS:HZ1  | 1:G:426:ASN:HD22 | 1.45                     | 0.50              |
| 1:D:25:PRO:HA    | 1:D:362:PHE:CE2  | 2.47                     | 0.50              |
| 1:B:455:TYR:HB3  | 1:F:243:ARG:HD2  | 1.93                     | 0.50              |
| 1:G:210:GLN:O    | 1:G:214:GLU:HG2  | 2.12                     | 0.50              |
| 1:G:377:VAL:HG21 | 1:G:386:PHE:CZ   | 2.47                     | 0.50              |
| 1:G:425:ALA:HB2  | 1:G:435:ILE:HD11 | 1.93                     | 0.50              |
| 1:C:415:THR:HG21 | 1:C:420:ARG:HD2  | 1.93                     | 0.50              |
| 1:E:20:ILE:HG21  | 1:E:175:GLU:CB   | 2.40                     | 0.50              |
| 1:F:249:GLY:HA2  | 1:F:281:CYS:SG   | 2.51                     | 0.50              |
| 1:F:53:PHE:CZ    | 1:F:140:GLY:HA2  | 2.45                     | 0.50              |
| 1:G:15:VAL:HG12  | 1:G:41:ASP:OD1   | 2.11                     | 0.50              |
| 1:H:246:LEU:O    | 1:H:454:GLY:HA3  | 2.12                     | 0.50              |
| 1:H:415:THR:HG21 | 1:H:420:ARG:HH11 | 1.76                     | 0.50              |
| 1:C:322:PRO:HG3  | 1:C:363:TYR:CZ   | 2.46                     | 0.50              |
| 1:D:377:VAL:O    | 1:D:377:VAL:CG1  | 2.59                     | 0.50              |
| 1:E:87:SER:CB    | 1:E:314:MET:HE1  | 2.41                     | 0.50              |
| 1:F:258:GLU:HG3  | 1:F:290:HIS:ND1  | 2.26                     | 0.50              |
| 1:F:335:TYR:HE2  | 1:F:376:ARG:CZ   | 2.23                     | 0.50              |
| 1:G:152:LEU:CD1  | 1:G:184:ILE:HD11 | 2.41                     | 0.50              |
| 1:G:313:PRO:HG3  | 1:G:322:PRO:CD   | 2.41                     | 0.50              |
| 1:H:182:LEU:O    | 1:H:185:VAL:HG12 | 2.11                     | 0.50              |
| 1:H:326:ALA:O    | 1:H:330:ASP:CG   | 2.50                     | 0.50              |
| 1:A:342:GLN:CD   | 1:A:375:ASP:OD1  | 2.50                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:478:ASP:OD1  | 1:B:478:ASP:O    | 2.30                     | 0.50              |
| 1:E:240:ASN:O    | 1:H:452:GLN:HG2  | 2.11                     | 0.50              |
| 1:F:205:GLY:O    | 1:F:210:GLN:OE1  | 2.30                     | 0.50              |
| 1:B:100:LEU:C    | 1:B:104:ARG:HG3  | 2.27                     | 0.50              |
| 1:B:221:ILE:HD12 | 1:B:233:ILE:HG23 | 1.92                     | 0.50              |
| 1:B:408:GLY:O    | 1:B:430:ALA:HA   | 2.12                     | 0.50              |
| 1:B:486:LYS:O    | 1:B:487:ARG:O    | 2.30                     | 0.50              |
| 1:C:320:MET:HE3  | 1:C:385:PRO:HG3  | 1.94                     | 0.50              |
| 1:C:414:TRP:CE3  | 1:C:436:ASN:HA   | 2.47                     | 0.50              |
| 1:C:412:GLY:HA2  | 1:C:434:TRP:O    | 2.11                     | 0.50              |
| 1:E:137:LYS:HG3  | 1:E:471:ARG:HG3  | 1.92                     | 0.50              |
| 1:E:291:LYS:NZ   | 1:E:393:SER:OG   | 2.43                     | 0.50              |
| 1:F:67:LEU:HB3   | 1:F:193:PHE:CE1  | 2.47                     | 0.50              |
| 1:G:311:GLY:O    | 1:G:363:TYR:OH   | 2.24                     | 0.50              |
| 1:G:309:ARG:CZ   | 1:G:317:GLU:HB3  | 2.39                     | 0.50              |
| 1:B:238:LYS:CD   | 1:F:231:ARG:O    | 2.58                     | 0.50              |
| 1:B:351:LYS:O    | 1:B:365:GLU:HG3  | 2.11                     | 0.50              |
| 1:C:14:ALA:CB    | 2:C:515:HOH:O    | 2.58                     | 0.50              |
| 1:C:404:ASN:O    | 1:C:404:ASN:OD1  | 2.29                     | 0.50              |
| 1:D:92:HIS:HD2   | 1:D:101:ASP:OD2  | 1.94                     | 0.50              |
| 1:D:115:MET:HE1  | 1:D:461:PHE:HE1  | 1.67                     | 0.50              |
| 1:D:119:ILE:HG12 | 1:D:464:ILE:HG21 | 1.93                     | 0.50              |
| 1:E:302:ILE:HD11 | 1:E:347:LEU:CD1  | 2.42                     | 0.50              |
| 1:G:92:HIS:O     | 1:G:93:PRO:O     | 2.30                     | 0.50              |
| 1:H:357:ALA:C    | 1:H:358:LEU:HD13 | 2.32                     | 0.50              |
| 1:C:27:ASP:OD1   | 1:C:29:SER:OG    | 2.30                     | 0.50              |
| 1:C:80:GLU:OE1   | 1:C:84:GLN:OE1   | 2.30                     | 0.50              |
| 1:D:42:VAL:HG13  | 1:D:212:LEU:HD13 | 1.94                     | 0.50              |
| 1:E:89:ASN:ND2   | 1:E:89:ASN:O     | 2.45                     | 0.50              |
| 1:F:229:THR:O    | 1:F:233:ILE:HG12 | 2.11                     | 0.50              |
| 1:F:15:VAL:HG11  | 1:F:40:ALA:HB3   | 1.94                     | 0.50              |
| 1:A:20:ILE:CD1   | 1:A:175:GLU:HB3  | 2.41                     | 0.50              |
| 1:B:251:LYS:CG   | 1:B:286:ARG:HD3  | 2.42                     | 0.50              |
| 1:E:351:LYS:CE   | 1:E:352:ALA:O    | 2.51                     | 0.50              |
| 1:G:148:TRP:CA   | 1:G:177:THR:CG2  | 2.89                     | 0.50              |
| 1:G:344:GLY:N    | 2:G:515:HOH:O    | 2.44                     | 0.50              |
| 1:G:89:ASN:ND2   | 1:G:89:ASN:O     | 2.45                     | 0.50              |
| 1:H:240:ASN:OD1  | 1:H:242:LYS:NZ   | 2.42                     | 0.50              |
| 1:H:294:ALA:O    | 1:H:298:LEU:HG   | 2.12                     | 0.50              |
| 1:B:258:GLU:CG   | 1:B:290:HIS:CD2  | 2.91                     | 0.49              |
| 1:C:340:ILE:HG22 | 1:C:341:GLU:H    | 1.74                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:102:VAL:HB   | 1:D:103:PRO:HD3  | 1.94                     | 0.49              |
| 1:F:158:LYS:O    | 1:F:161:PRO:HD2  | 2.12                     | 0.49              |
| 1:F:447:PHE:CD2  | 1:F:447:PHE:C    | 2.85                     | 0.49              |
| 1:G:19:THR:HG22  | 1:G:20:ILE:N     | 2.27                     | 0.49              |
| 1:H:108:CYS:HB3  | 1:H:156:SER:CB   | 2.34                     | 0.49              |
| 1:A:174:SER:C    | 1:A:176:ILE:N    | 2.63                     | 0.49              |
| 1:B:479:ALA:HB2  | 1:B:480:LYS:HZ2  | 1.73                     | 0.49              |
| 1:C:152:LEU:HD11 | 1:C:184:ILE:HD11 | 1.94                     | 0.49              |
| 1:C:315:ASP:C    | 1:C:317:GLU:H    | 2.13                     | 0.49              |
| 1:C:302:ILE:HD11 | 1:C:347:LEU:CD1  | 2.42                     | 0.49              |
| 1:D:469:GLU:CD   | 1:G:450:VAL:HG22 | 2.33                     | 0.49              |
| 1:E:315:ASP:OD2  | 1:E:317:GLU:HB2  | 2.11                     | 0.49              |
| 1:F:141:VAL:HG22 | 1:F:168:THR:OG1  | 2.11                     | 0.49              |
| 1:F:27:ASP:OD1   | 1:F:29:SER:OG    | 2.30                     | 0.49              |
| 1:F:251:LYS:CD   | 1:F:285:SER:OG   | 2.60                     | 0.49              |
| 1:E:248:LEU:CD1  | 1:H:241:LEU:HD13 | 2.36                     | 0.49              |
| 1:H:312:ASP:O    | 1:H:318:THR:OG1  | 2.17                     | 0.49              |
| 1:H:329:ARG:CD   | 1:H:330:ASP:N    | 2.75                     | 0.49              |
| 1:A:302:ILE:HD13 | 1:A:347:LEU:HB3  | 1.95                     | 0.49              |
| 1:B:129:GLY:O    | 1:B:477:VAL:HG13 | 2.12                     | 0.49              |
| 1:D:329:ARG:HG2  | 1:D:364:VAL:CG2  | 2.43                     | 0.49              |
| 1:D:80:GLU:HA    | 1:D:80:GLU:OE2   | 2.11                     | 0.49              |
| 1:E:149:ASN:HB2  | 1:E:279:GLN:O    | 2.12                     | 0.49              |
| 1:E:323:LEU:HD13 | 1:E:328:ARG:HG3  | 1.95                     | 0.49              |
| 1:E:349:GLY:N    | 2:E:503:HOH:O    | 1.87                     | 0.49              |
| 1:F:76:GLU:O     | 1:F:79:SER:HB3   | 2.13                     | 0.49              |
| 1:A:273:ILE:HD11 | 1:A:386:PHE:O    | 2.12                     | 0.49              |
| 1:A:373:PRO:HG3  | 1:A:390:VAL:HG11 | 1.94                     | 0.49              |
| 1:A:377:VAL:HG13 | 1:A:377:VAL:O    | 2.11                     | 0.49              |
| 1:B:2:GLN:CA     | 1:B:2:GLN:NE2    | 2.61                     | 0.49              |
| 1:B:320:MET:HE1  | 1:B:385:PRO:CG   | 2.41                     | 0.49              |
| 1:B:450:VAL:HG12 | 1:B:451:GLY:N    | 2.26                     | 0.49              |
| 1:C:18:GLY:N     | 2:C:515:HOH:O    | 2.46                     | 0.49              |
| 1:C:310:LEU:CD2  | 1:C:353:PRO:HG3  | 2.43                     | 0.49              |
| 1:C:481:ILE:O    | 1:C:483:PRO:HD3  | 2.13                     | 0.49              |
| 1:D:18:GLY:HA2   | 1:E:33:ARG:NH2   | 2.27                     | 0.49              |
| 1:D:289:LEU:O    | 1:D:391:ARG:HA   | 2.12                     | 0.49              |
| 1:E:373:PRO:HG3  | 1:E:390:VAL:HG11 | 1.95                     | 0.49              |
| 1:F:280:ALA:HB3  | 1:F:283:ALA:HB2  | 1.94                     | 0.49              |
| 1:F:337:ASP:HA   | 1:F:340:ILE:HG13 | 1.93                     | 0.49              |
| 1:F:42:VAL:O     | 1:F:46:VAL:HG23  | 2.12                     | 0.49              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 1:H:323:LEU:O      | 1:H:362:PHE:HD2  | 1.95                     | 0.49              |
| 1:H:95:ARG:HG2     | 1:H:95:ARG:O     | 2.12                     | 0.49              |
| 1:B:373:PRO:HG3    | 1:B:390:VAL:HG11 | 1.94                     | 0.49              |
| 1:D:315:ASP:O      | 1:D:318:THR:HB   | 2.12                     | 0.49              |
| 1:D:56:TRP:CE2     | 1:D:64:ARG:HD3   | 2.48                     | 0.49              |
| 1:E:146:VAL:HG22   | 1:E:173:PRO:HA   | 1.95                     | 0.49              |
| 1:F:37:ALA:HB1     | 1:F:201:VAL:HG13 | 1.91                     | 0.49              |
| 1:F:458:GLU:CG     | 2:F:506:HOH:O    | 2.60                     | 0.49              |
| 1:F:76:GLU:CD      | 1:F:110:ARG:HH12 | 2.16                     | 0.49              |
| 1:B:376:ARG:HH11   | 1:B:380:GLU:CD   | 2.15                     | 0.49              |
| 1:D:89:ASN:O       | 1:D:89:ASN:ND2   | 2.45                     | 0.49              |
| 1:E:23:VAL:HG12    | 1:E:24:SER:N     | 2.27                     | 0.49              |
| 1:E:447:PHE:O      | 1:E:447:PHE:HD2  | 1.95                     | 0.49              |
| 1:F:320:MET:HE1    | 1:F:366:PRO:HG3  | 1.93                     | 0.49              |
| 1:G:100:LEU:O      | 1:G:104:ARG:CG   | 2.54                     | 0.49              |
| 1:D:241:LEU:HD22   | 1:G:248:LEU:CD1  | 2.42                     | 0.49              |
| 1:H:145:ILE:HG23   | 1:H:172:LYS:HE3  | 1.94                     | 0.49              |
| 1:B:429[A]:HIS:CE1 | 1:B:450:VAL:CG1  | 2.96                     | 0.49              |
| 1:C:394:SER:O      | 1:C:395:ASP:C    | 2.49                     | 0.49              |
| 1:C:59:LEU:O       | 1:C:59:LEU:HG    | 2.12                     | 0.49              |
| 1:F:23:VAL:O       | 1:F:31:ILE:HD11  | 2.11                     | 0.49              |
| 1:F:313:PRO:HG3    | 1:F:322:PRO:HD3  | 1.93                     | 0.49              |
| 1:A:53:PHE:HB3     | 1:A:54:PRO:HD3   | 1.94                     | 0.49              |
| 1:A:89:ASN:C       | 1:A:89:ASN:ND2   | 2.66                     | 0.49              |
| 1:B:402:ALA:C      | 1:B:404:ASN:H    | 2.15                     | 0.49              |
| 1:C:19:THR:CG2     | 1:C:20:ILE:N     | 2.76                     | 0.49              |
| 1:G:412:GLY:HA2    | 1:G:434:TRP:O    | 2.13                     | 0.49              |
| 1:H:261:ASN:OD1    | 1:H:261:ASN:O    | 2.30                     | 0.49              |
| 1:A:114:GLY:O      | 1:A:118:LYS:HG3  | 2.11                     | 0.49              |
| 1:A:478:ASP:O      | 1:A:478:ASP:OD1  | 2.30                     | 0.49              |
| 1:B:343:GLY:O      | 1:B:345:LYS:HD3  | 2.12                     | 0.49              |
| 1:B:357:ALA:HB2    | 1:G:12:VAL:CG1   | 2.36                     | 0.49              |
| 1:C:277:GLN:HE21   | 1:C:320:MET:HG3  | 1.76                     | 0.49              |
| 1:D:220:LYS:HA     | 1:D:243:ARG:O    | 2.13                     | 0.49              |
| 1:F:370:GLU:HG3    | 2:F:517:HOH:O    | 2.13                     | 0.49              |
| 1:G:347:LEU:CD1    | 1:G:370:GLU:HG3  | 2.18                     | 0.49              |
| 1:H:117:ASP:OD1    | 1:H:117:ASP:N    | 2.44                     | 0.49              |
| 1:D:373:PRO:HG3    | 1:D:390:VAL:HG11 | 1.94                     | 0.49              |
| 1:F:10:ARG:HD3     | 1:F:11:PHE:O     | 2.12                     | 0.49              |
| 1:H:273:ILE:HD11   | 1:H:386:PHE:O    | 2.12                     | 0.49              |
| 1:H:458:GLU:O      | 1:H:459:MET:CB   | 2.61                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:351:LYS:O    | 1:A:365:GLU:HG3  | 2.13                     | 0.48              |
| 1:C:333:LEU:HD23 | 1:C:336:ILE:HD12 | 1.94                     | 0.48              |
| 1:C:372:LYS:O    | 1:C:374:GLN:N    | 2.46                     | 0.48              |
| 1:D:138:PRO:HG3  | 1:D:165:ALA:O    | 2.12                     | 0.48              |
| 1:E:350:GLY:N    | 1:E:367:THR:HG23 | 2.28                     | 0.48              |
| 1:F:330:ASP:CG   | 2:F:510:HOH:O    | 2.51                     | 0.48              |
| 1:A:210:GLN:NE2  | 1:A:214:GLU:OE2  | 2.46                     | 0.48              |
| 1:C:221:ILE:HG22 | 1:C:244:ILE:HG23 | 1.95                     | 0.48              |
| 1:E:235:GLU:O    | 1:E:238:LYS:CE   | 2.60                     | 0.48              |
| 1:E:312:ASP:C    | 1:E:312:ASP:OD1  | 2.51                     | 0.48              |
| 1:F:258:GLU:CD   | 1:F:258:GLU:H    | 2.16                     | 0.48              |
| 1:H:114:GLY:O    | 1:H:118:LYS:HG3  | 2.13                     | 0.48              |
| 1:C:370:GLU:OE1  | 1:C:391:ARG:NH1  | 2.47                     | 0.48              |
| 1:C:74:ARG:NH2   | 2:C:516:HOH:O    | 2.47                     | 0.48              |
| 1:D:149:ASN:HB2  | 1:D:279:GLN:O    | 2.13                     | 0.48              |
| 1:E:84:GLN:HG3   | 1:E:94:ILE:HD11  | 1.95                     | 0.48              |
| 1:F:227:THR:HG21 | 1:F:231:ARG:NH1  | 2.22                     | 0.48              |
| 1:H:112:PHE:HA   | 1:H:115:MET:HB3  | 1.95                     | 0.48              |
| 1:H:377:VAL:HG22 | 1:H:377:VAL:O    | 2.14                     | 0.48              |
| 1:H:379:GLN:NE2  | 1:H:404:ASN:O    | 2.46                     | 0.48              |
| 1:A:137:LYS:HG3  | 1:A:471:ARG:HG3  | 1.95                     | 0.48              |
| 1:B:223:PHE:HZ   | 1:B:229:THR:HG23 | 1.79                     | 0.48              |
| 1:B:248:LEU:CD1  | 1:F:241:LEU:HD13 | 2.44                     | 0.48              |
| 1:B:355:ASP:O    | 1:B:357:ALA:N    | 2.47                     | 0.48              |
| 1:B:404:ASN:OD1  | 1:B:404:ASN:O    | 2.30                     | 0.48              |
| 1:D:155:THR:O    | 1:D:159:MET:HG3  | 2.14                     | 0.48              |
| 1:D:328:ARG:NH1  | 1:D:383:PHE:CB   | 2.73                     | 0.48              |
| 1:E:350:GLY:O    | 1:E:351:LYS:HB3  | 2.13                     | 0.48              |
| 1:E:414:TRP:CE3  | 1:E:436:ASN:HA   | 2.49                     | 0.48              |
| 1:G:195:LYS:O    | 1:G:195:LYS:HG2  | 2.14                     | 0.48              |
| 1:G:337:ASP:C    | 1:G:339:ALA:N    | 2.65                     | 0.48              |
| 1:H:2:GLN:HG3    | 1:H:11:PHE:CZ    | 2.49                     | 0.48              |
| 1:H:195:LYS:O    | 2:H:510:HOH:O    | 2.19                     | 0.48              |
| 1:A:105:THR:OG1  | 1:A:153:MET:HA   | 2.12                     | 0.48              |
| 1:B:243:ARG:HD2  | 1:F:455:TYR:CB   | 2.43                     | 0.48              |
| 1:D:309:ARG:NH1  | 1:D:309:ARG:CG   | 2.45                     | 0.48              |
| 1:E:434:TRP:CD1  | 1:E:440:ARG:HB2  | 2.49                     | 0.48              |
| 1:F:150:PHE:N    | 1:F:151:PRO:HD3  | 2.28                     | 0.48              |
| 1:F:38:GLU:CB    | 1:F:207:THR:CG2  | 2.92                     | 0.48              |
| 1:F:27:ASP:O     | 1:F:360:ASN:HB3  | 2.13                     | 0.48              |
| 1:A:251:LYS:HG3  | 1:A:286:ARG:CD   | 2.43                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:445:SER:HB2  | 1:C:132:ASN:ND2  | 2.29                     | 0.48              |
| 1:B:289:LEU:O    | 1:B:391:ARG:HA   | 2.14                     | 0.48              |
| 1:B:405:THR:CG2  | 1:B:407:TYR:HD1  | 2.26                     | 0.48              |
| 1:C:83:ALA:HA    | 1:C:97:SER:HB3   | 1.96                     | 0.48              |
| 1:D:376:ARG:HD3  | 1:E:376:ARG:HD3  | 1.95                     | 0.48              |
| 1:G:399:LEU:HD11 | 1:G:427:ALA:HB1  | 1.96                     | 0.48              |
| 1:H:342:GLN:HE22 | 1:H:376:ARG:H    | 1.60                     | 0.48              |
| 1:B:229:THR:O    | 1:B:232:ARG:HB2  | 2.14                     | 0.48              |
| 1:B:414:TRP:CE3  | 1:B:436:ASN:HA   | 2.49                     | 0.48              |
| 1:C:315:ASP:OD1  | 1:C:317:GLU:HB2  | 2.13                     | 0.48              |
| 1:C:87:SER:OG    | 1:C:97:SER:OG    | 2.31                     | 0.48              |
| 1:D:302:ILE:HG23 | 1:D:348:ALA:HB2  | 1.96                     | 0.48              |
| 1:E:185:VAL:HG23 | 1:E:188:MET:HE3  | 1.96                     | 0.48              |
| 1:E:338:ILE:HD11 | 1:E:376:ARG:CB   | 2.44                     | 0.48              |
| 1:F:443:PRO:CA   | 1:F:459:MET:HE3  | 2.38                     | 0.48              |
| 1:F:7:ILE:HG23   | 1:F:45:ALA:HA    | 1.94                     | 0.48              |
| 1:G:293:ILE:HD13 | 1:G:297:PHE:HB2  | 1.96                     | 0.48              |
| 1:G:310:LEU:HD13 | 1:G:366:PRO:HD3  | 1.96                     | 0.48              |
| 1:H:195:LYS:HA   | 2:H:504:HOH:O    | 2.13                     | 0.48              |
| 1:H:414:TRP:CE3  | 1:H:436:ASN:HA   | 2.49                     | 0.48              |
| 1:A:414:TRP:CE3  | 1:A:436:ASN:HA   | 2.49                     | 0.48              |
| 1:B:143:ALA:HB1  | 1:B:212:LEU:HG   | 1.96                     | 0.48              |
| 1:B:59:LEU:HD12  | 1:B:59:LEU:HA    | 1.57                     | 0.48              |
| 1:C:293:ILE:C    | 1:C:293:ILE:HD12 | 2.34                     | 0.48              |
| 1:D:34:ILE:HD13  | 1:D:178:PRO:HG3  | 1.95                     | 0.48              |
| 1:E:153:MET:CG   | 2:E:510:HOH:O    | 2.54                     | 0.48              |
| 1:F:337:ASP:O    | 1:F:341:GLU:HG2  | 2.14                     | 0.48              |
| 1:H:10:ARG:HH22  | 1:H:195:LYS:HE3  | 1.79                     | 0.48              |
| 1:H:99:GLY:O     | 1:H:100:LEU:HD22 | 2.13                     | 0.48              |
| 1:B:263:GLU:HG3  | 1:B:300:ARG:HH22 | 1.78                     | 0.48              |
| 1:C:117:ASP:OD1  | 2:C:519:HOH:O    | 2.20                     | 0.48              |
| 1:F:414:TRP:CE3  | 1:F:436:ASN:HA   | 2.49                     | 0.48              |
| 1:F:412:GLY:HA2  | 1:F:434:TRP:O    | 2.14                     | 0.48              |
| 1:G:485:PHE:C    | 1:G:487:ARG:N    | 2.68                     | 0.48              |
| 1:H:42:VAL:HG21  | 1:H:211:ALA:HB1  | 1.95                     | 0.48              |
| 1:H:93:PRO:O     | 1:H:96:ASP:HB2   | 2.14                     | 0.48              |
| 1:A:15:VAL:CG1   | 1:A:16:ALA:N     | 2.76                     | 0.47              |
| 1:B:115:MET:O    | 1:B:115:MET:HG3  | 2.12                     | 0.47              |
| 1:B:262:ILE:HD11 | 1:B:293:ILE:HB   | 1.96                     | 0.47              |
| 1:C:289:LEU:HD12 | 1:C:389:VAL:CG1  | 2.44                     | 0.47              |
| 1:C:338:ILE:O    | 1:C:342:GLN:HG3  | 2.14                     | 0.47              |

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| Atom-1             | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|------------------|--------------------------|-------------------|
| 1:F:109:PHE:CZ     | 1:F:156:SER:HA   | 2.49                     | 0.47              |
| 1:F:185:VAL:O      | 1:F:188:MET:HB2  | 2.14                     | 0.47              |
| 1:B:452:GLN:HG2    | 1:F:241:LEU:HD12 | 1.95                     | 0.47              |
| 1:H:251:LYS:CB     | 1:H:407:TYR:CD1  | 2.97                     | 0.47              |
| 1:H:330:ASP:O      | 1:H:334:SER:OG   | 2.29                     | 0.47              |
| 1:B:315:ASP:C      | 1:B:317:GLU:N    | 2.67                     | 0.47              |
| 1:C:411:SER:O      | 1:C:434:TRP:CE3  | 2.67                     | 0.47              |
| 1:E:230:GLY:O      | 1:E:233:ILE:HB   | 2.13                     | 0.47              |
| 1:G:245:GLN:HG3    | 1:G:456:GLY:HA3  | 1.96                     | 0.47              |
| 1:G:15:VAL:HG12    | 1:G:41:ASP:CG    | 2.34                     | 0.47              |
| 1:A:351:LYS:HG2    | 1:A:352:ALA:H    | 1.78                     | 0.47              |
| 1:A:273:ILE:HG12   | 1:A:387:VAL:HG22 | 1.96                     | 0.47              |
| 1:B:273:ILE:HG21   | 1:B:387:VAL:HG22 | 1.96                     | 0.47              |
| 1:D:223:PHE:HZ     | 1:D:229:THR:HG23 | 1.79                     | 0.47              |
| 1:E:127:ASP:HB2    | 1:E:130:PHE:CD1  | 2.50                     | 0.47              |
| 1:E:235:GLU:O      | 1:E:238:LYS:HE2  | 2.14                     | 0.47              |
| 1:E:19:THR:HG23    | 1:E:33:ARG:HB3   | 1.96                     | 0.47              |
| 1:F:309:ARG:HG3    | 1:F:319:GLU:HG3  | 1.95                     | 0.47              |
| 1:F:381:GLU:HG2    | 1:F:381:GLU:O    | 2.13                     | 0.47              |
| 1:F:377:VAL:CG1    | 1:F:386:PHE:HE1  | 2.26                     | 0.47              |
| 1:F:94:ILE:CD1     | 1:F:98:ARG:CZ    | 2.91                     | 0.47              |
| 1:G:278:GLY:HA3    | 1:G:384:GLY:C    | 2.32                     | 0.47              |
| 1:G:76:GLU:O       | 1:G:79:SER:CB    | 2.59                     | 0.47              |
| 1:H:42:VAL:O       | 1:H:46:VAL:HG23  | 2.14                     | 0.47              |
| 1:A:155:THR:CG2    | 1:A:181:THR:HG23 | 2.44                     | 0.47              |
| 1:A:248:LEU:HD11   | 1:C:241:LEU:HD22 | 1.96                     | 0.47              |
| 1:B:465:HIS:CE1    | 1:F:465:HIS:CE1  | 3.03                     | 0.47              |
| 1:C:223:PHE:CZ     | 1:C:229:THR:HG22 | 2.50                     | 0.47              |
| 1:C:323:LEU:HD21   | 1:C:385:PRO:HD3  | 1.96                     | 0.47              |
| 1:D:276:ASN:O      | 1:D:277:GLN:HB2  | 2.14                     | 0.47              |
| 1:D:41:ASP:HA      | 1:D:44:LEU:HD12  | 1.96                     | 0.47              |
| 1:D:93:PRO:O       | 1:D:96:ASP:CB    | 2.51                     | 0.47              |
| 1:E:159:MET:HE2    | 1:E:171:ILE:HD12 | 1.96                     | 0.47              |
| 1:F:159:MET:HG2    | 1:F:169:ILE:HD13 | 1.94                     | 0.47              |
| 1:F:374:GLN:HG3    | 1:F:374:GLN:H    | 1.49                     | 0.47              |
| 1:G:277:GLN:CG     | 1:G:321:GLY:O    | 2.60                     | 0.47              |
| 1:H:408:GLY:O      | 1:H:430:ALA:CA   | 2.57                     | 0.47              |
| 1:B:429[A]:HIS:NE2 | 1:B:450:VAL:CG1  | 2.77                     | 0.47              |
| 1:B:231:ARG:HB3    | 1:F:238:LYS:HB2  | 1.96                     | 0.47              |
| 1:B:316:PRO:HG2    | 1:G:190:GLU:CG   | 2.44                     | 0.47              |
| 1:G:25:PRO:O       | 1:G:361:GLY:CA   | 2.62                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:459:MET:H    | 1:G:463:ALA:HB2  | 1.79                     | 0.47              |
| 1:G:95:ARG:HH11  | 1:G:319:GLU:HA   | 1.79                     | 0.47              |
| 1:A:19:THR:HG23  | 1:A:20:ILE:N     | 2.29                     | 0.47              |
| 1:B:25:PRO:HA    | 1:B:362:PHE:CE2  | 2.48                     | 0.47              |
| 1:D:374:GLN:CD   | 1:D:374:GLN:N    | 2.68                     | 0.47              |
| 1:F:208:ALA:O    | 1:F:212:LEU:HB2  | 2.15                     | 0.47              |
| 1:H:126:VAL:O    | 1:H:127:ASP:C    | 2.53                     | 0.47              |
| 1:E:248:LEU:CD1  | 1:H:241:LEU:CD2  | 2.92                     | 0.47              |
| 1:A:191:VAL:HG13 | 1:A:191:VAL:O    | 2.14                     | 0.47              |
| 1:A:439:LYS:HE3  | 1:A:439:LYS:HB3  | 1.58                     | 0.47              |
| 1:B:220:LYS:HG3  | 1:B:221:ILE:N    | 2.30                     | 0.47              |
| 1:B:238:LYS:HE2  | 1:F:235:GLU:CG   | 2.15                     | 0.47              |
| 1:A:462:GLU:CD   | 1:C:136:ARG:NH2  | 2.65                     | 0.47              |
| 1:D:408:GLY:O    | 1:D:430:ALA:HA   | 2.15                     | 0.47              |
| 1:D:443:PRO:HA   | 1:D:459:MET:SD   | 2.54                     | 0.47              |
| 1:E:114:GLY:O    | 1:E:118:LYS:NZ   | 2.30                     | 0.47              |
| 1:E:157:TRP:HZ2  | 1:E:441:VAL:HG11 | 1.77                     | 0.47              |
| 1:E:40:ALA:O     | 1:E:43:ASP:HB2   | 2.15                     | 0.47              |
| 1:F:335:TYR:CD2  | 1:F:376:ARG:CZ   | 2.98                     | 0.47              |
| 1:A:38:GLU:O     | 1:A:42:VAL:CG1   | 2.60                     | 0.47              |
| 1:B:92:HIS:NE2   | 1:B:149:ASN:O    | 2.47                     | 0.47              |
| 1:D:109:PHE:CZ   | 1:D:156:SER:HA   | 2.50                     | 0.47              |
| 1:F:89:ASN:HD22  | 1:F:89:ASN:C     | 2.04                     | 0.47              |
| 1:G:206:HIS:O    | 2:G:517:HOH:O    | 2.20                     | 0.47              |
| 1:G:403:ASN:HD21 | 1:G:428:ILE:HA   | 1.79                     | 0.47              |
| 1:G:84:GLN:HA    | 1:G:94:ILE:HD11  | 1.95                     | 0.47              |
| 1:H:160:GLY:N    | 1:H:161:PRO:HD2  | 2.29                     | 0.47              |
| 1:H:289:LEU:O    | 1:H:391:ARG:HA   | 2.14                     | 0.47              |
| 1:A:195:LYS:NZ   | 2:A:512:HOH:O    | 2.44                     | 0.47              |
| 1:A:90:THR:O     | 1:A:324:THR:HB   | 2.15                     | 0.47              |
| 1:C:149:ASN:N    | 1:C:149:ASN:OD1  | 2.39                     | 0.47              |
| 1:E:328:ARG:O    | 1:E:332:VAL:HG23 | 2.14                     | 0.47              |
| 1:F:149:ASN:ND2  | 1:F:150:PHE:HD1  | 2.11                     | 0.47              |
| 1:B:455:TYR:CB   | 1:F:243:ARG:HD2  | 2.44                     | 0.47              |
| 1:F:310:LEU:HD22 | 1:F:353:PRO:HG3  | 1.97                     | 0.47              |
| 1:G:108:CYS:HB3  | 1:G:156:SER:CB   | 2.44                     | 0.47              |
| 1:H:327:LEU:HD23 | 1:H:327:LEU:HA   | 1.68                     | 0.47              |
| 1:B:351:LYS:HB2  | 1:B:351:LYS:HE3  | 1.36                     | 0.47              |
| 1:D:229:THR:HA   | 1:D:232:ARG:NH1  | 2.30                     | 0.47              |
| 1:D:56:TRP:CH2   | 1:D:64:ARG:HG2   | 2.50                     | 0.47              |
| 1:E:11:PHE:HE2   | 1:E:186:GLU:HG3  | 1.80                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:88:LEU:HB2   | 1:H:314:MET:HE1  | 1.96                     | 0.47              |
| 1:A:194:PRO:HD2  | 1:A:197:VAL:HG21 | 1.97                     | 0.47              |
| 1:D:245:GLN:HG3  | 1:D:456:GLY:HA3  | 1.97                     | 0.47              |
| 1:D:486:LYS:O    | 1:D:487:ARG:O    | 2.33                     | 0.47              |
| 1:F:38:GLU:CG    | 1:F:207:THR:HG21 | 2.40                     | 0.47              |
| 1:B:248:LEU:CD1  | 1:F:241:LEU:HD22 | 2.44                     | 0.47              |
| 2:B:502:HOH:O    | 1:F:241:LEU:O    | 2.21                     | 0.47              |
| 1:B:241:LEU:HD22 | 1:F:246:LEU:CD1  | 2.45                     | 0.47              |
| 1:F:369:VAL:O    | 1:F:388:THR:HA   | 2.14                     | 0.47              |
| 1:F:86:GLU:OE2   | 1:F:152:LEU:HB2  | 2.13                     | 0.47              |
| 1:G:409:LEU:O    | 1:G:432:MET:HE2  | 2.15                     | 0.47              |
| 1:H:10:ARG:NH2   | 1:H:195:LYS:HE3  | 2.31                     | 0.47              |
| 1:H:174:SER:OG   | 1:H:177:THR:OG1  | 2.33                     | 0.47              |
| 1:A:263:GLU:HG3  | 1:A:300:ARG:NH2  | 2.30                     | 0.46              |
| 1:A:376:ARG:C    | 1:A:378:CYS:N    | 2.67                     | 0.46              |
| 1:B:446:PRO:HB3  | 1:B:457:ARG:HG3  | 1.97                     | 0.46              |
| 1:B:235:GLU:OE2  | 1:F:238:LYS:HE3  | 2.15                     | 0.46              |
| 1:F:222:ALA:HA   | 1:F:245:GLN:HB2  | 1.95                     | 0.46              |
| 1:F:90:THR:O     | 1:F:324:THR:HB   | 2.15                     | 0.46              |
| 1:F:111:TYR:CG   | 1:F:443:PRO:HB2  | 2.49                     | 0.46              |
| 1:F:79:SER:HB2   | 1:F:102:VAL:HG11 | 1.96                     | 0.46              |
| 1:G:314:MET:O    | 1:G:316:PRO:HD3  | 2.15                     | 0.46              |
| 1:H:238:LYS:HE2  | 1:H:238:LYS:HB2  | 1.64                     | 0.46              |
| 1:A:109:PHE:CZ   | 1:A:156:SER:HA   | 2.50                     | 0.46              |
| 1:A:342:GLN:OE1  | 1:A:375:ASP:OD1  | 2.33                     | 0.46              |
| 1:C:429:HIS:CE1  | 1:C:450:VAL:HG13 | 2.51                     | 0.46              |
| 1:D:136:ARG:HD2  | 1:D:136:ARG:HA   | 1.66                     | 0.46              |
| 1:G:148:TRP:HA   | 1:G:177:THR:HG21 | 1.97                     | 0.46              |
| 1:G:251:LYS:HD2  | 1:G:251:LYS:HA   | 1.57                     | 0.46              |
| 1:H:227:THR:O    | 1:H:231:ARG:HG3  | 2.15                     | 0.46              |
| 1:A:22:VAL:HG21  | 1:A:34:ILE:HG22  | 1.94                     | 0.46              |
| 1:A:289:LEU:O    | 1:A:391:ARG:HA   | 2.14                     | 0.46              |
| 1:A:270:ALA:HB2  | 1:A:304:LEU:HD23 | 1.98                     | 0.46              |
| 1:B:415:THR:HG21 | 1:B:420:ARG:HH11 | 1.80                     | 0.46              |
| 1:C:328:ARG:O    | 1:C:332:VAL:HG23 | 2.15                     | 0.46              |
| 1:E:314:MET:CE   | 1:E:314:MET:HA   | 2.45                     | 0.46              |
| 1:F:11:PHE:O     | 1:F:12:VAL:CG1   | 2.64                     | 0.46              |
| 1:F:256:VAL:HG12 | 1:F:293:ILE:CD1  | 2.44                     | 0.46              |
| 1:G:380:GLU:CB   | 2:G:523:HOH:O    | 2.64                     | 0.46              |
| 1:H:233:ILE:O    | 1:H:233:ILE:CG2  | 2.63                     | 0.46              |
| 1:H:137:LYS:HG3  | 1:H:471:ARG:HG3  | 1.97                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:145:ILE:HG23 | 1:A:172:LYS:HE3  | 1.97                     | 0.46              |
| 1:A:246:LEU:HD13 | 1:C:241:LEU:HD22 | 1.97                     | 0.46              |
| 1:B:53:PHE:HA    | 1:B:168:THR:CG2  | 2.46                     | 0.46              |
| 1:B:26:HIS:HD1   | 1:B:363:TYR:HH   | 0.55                     | 0.46              |
| 1:C:338:ILE:HD11 | 1:C:376:ARG:CB   | 2.43                     | 0.46              |
| 1:C:351:LYS:CG   | 1:C:352:ALA:H    | 2.24                     | 0.46              |
| 1:C:447:PHE:C    | 1:C:447:PHE:CD2  | 2.88                     | 0.46              |
| 1:D:320:MET:CE   | 1:D:366:PRO:HG3  | 2.46                     | 0.46              |
| 1:E:100:LEU:O    | 1:E:101:ASP:C    | 2.52                     | 0.46              |
| 1:E:289:LEU:O    | 1:E:391:ARG:HA   | 2.16                     | 0.46              |
| 1:E:415:THR:HG21 | 1:E:420:ARG:HH11 | 1.81                     | 0.46              |
| 1:F:11:PHE:C     | 1:F:12:VAL:HG13  | 2.35                     | 0.46              |
| 1:F:23:VAL:CG1   | 1:F:24:SER:O     | 2.54                     | 0.46              |
| 1:G:148:TRP:HA   | 1:G:177:THR:CG2  | 2.45                     | 0.46              |
| 1:G:289:LEU:O    | 1:G:391:ARG:HA   | 2.15                     | 0.46              |
| 1:G:87:SER:OG    | 1:G:97:SER:OG    | 2.31                     | 0.46              |
| 1:G:94:ILE:HG23  | 1:G:98:ARG:NE    | 2.30                     | 0.46              |
| 1:H:231:ARG:O    | 1:H:235:GLU:HG3  | 2.15                     | 0.46              |
| 1:H:376:ARG:HD3  | 1:H:376:ARG:HA   | 1.79                     | 0.46              |
| 1:A:287:LEU:HD22 | 1:A:289:LEU:HD21 | 1.97                     | 0.46              |
| 1:A:486:LYS:O    | 1:A:487:ARG:HB2  | 2.14                     | 0.46              |
| 1:B:89:ASN:OD1   | 1:B:177:THR:HA   | 2.15                     | 0.46              |
| 1:B:235:GLU:CD   | 1:F:238:LYS:HE3  | 2.36                     | 0.46              |
| 1:D:185:VAL:HG23 | 1:D:188:MET:CE   | 2.40                     | 0.46              |
| 1:D:188:MET:CE   | 1:D:198:VAL:CG2  | 2.94                     | 0.46              |
| 1:F:218:VAL:O    | 1:F:242:LYS:HE3  | 2.15                     | 0.46              |
| 1:F:356:LYS:HA   | 1:F:359:ALA:CB   | 2.42                     | 0.46              |
| 1:G:157:TRP:CE2  | 1:G:459:MET:HE1  | 2.50                     | 0.46              |
| 1:H:136:ARG:HG3  | 1:H:468:THR:CB   | 2.45                     | 0.46              |
| 1:D:251:LYS:HB2  | 1:D:407:TYR:CD1  | 2.51                     | 0.46              |
| 1:E:95:ARG:HD3   | 1:E:318:THR:O    | 2.16                     | 0.46              |
| 1:F:138:PRO:HG3  | 1:F:165:ALA:O    | 2.16                     | 0.46              |
| 1:F:390:VAL:HG11 | 1:F:401:ILE:HD13 | 1.97                     | 0.46              |
| 1:G:337:ASP:O    | 1:G:339:ALA:N    | 2.49                     | 0.46              |
| 1:H:23:VAL:CG1   | 1:H:24:SER:N     | 2.78                     | 0.46              |
| 1:B:15:VAL:HG12  | 1:B:41:ASP:OD1   | 2.16                     | 0.46              |
| 1:C:329:ARG:O    | 1:C:330:ASP:C    | 2.54                     | 0.46              |
| 1:E:258:GLU:HG3  | 1:E:290:HIS:CG   | 2.51                     | 0.46              |
| 1:F:61:ALA:O     | 1:F:116:ALA:HB1  | 2.16                     | 0.46              |
| 1:G:34:ILE:HD12  | 1:G:202:PRO:HB2  | 1.98                     | 0.46              |
| 1:H:136:ARG:NE   | 1:H:468:THR:OG1  | 2.39                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:415:THR:HG21 | 1:A:420:ARG:HH11 | 1.80                     | 0.46              |
| 1:B:251:LYS:HE3  | 2:B:526:HOH:O    | 2.16                     | 0.46              |
| 1:D:220:LYS:HE2  | 1:D:243:ARG:HB2  | 1.98                     | 0.46              |
| 1:D:295:ASP:OD1  | 1:D:391:ARG:NH2  | 2.49                     | 0.46              |
| 1:E:289:LEU:CD1  | 1:E:297:PHE:CD2  | 2.99                     | 0.46              |
| 1:E:335:TYR:HE2  | 1:E:380:GLU:OE1  | 1.99                     | 0.46              |
| 1:E:480:LYS:HA   | 1:E:480:LYS:HD3  | 1.60                     | 0.46              |
| 1:B:470:ALA:HB3  | 1:F:457:ARG:NE   | 2.30                     | 0.46              |
| 1:G:112:PHE:HA   | 1:G:115:MET:HB3  | 1.98                     | 0.46              |
| 1:G:27:ASP:OD1   | 1:G:29:SER:HB2   | 2.16                     | 0.46              |
| 1:G:357:ALA:CA   | 1:G:358:LEU:CD1  | 2.91                     | 0.46              |
| 1:A:5:LEU:O      | 1:A:11:PHE:HA    | 2.15                     | 0.46              |
| 1:B:290:HIS:CD2  | 1:B:292:ASP:HB2  | 2.51                     | 0.46              |
| 1:B:328:ARG:NH1  | 1:B:331:ARG:CD   | 2.79                     | 0.46              |
| 1:B:417:ASN:HB3  | 1:B:420:ARG:HB3  | 1.96                     | 0.46              |
| 1:C:151:PRO:HG2  | 1:C:177:THR:CB   | 2.45                     | 0.46              |
| 1:E:152:LEU:CD1  | 1:E:184:ILE:HD12 | 2.40                     | 0.46              |
| 1:E:310:LEU:HD12 | 1:E:320:MET:HB3  | 1.97                     | 0.46              |
| 1:F:34:ILE:CD1   | 1:F:202:PRO:HB2  | 2.45                     | 0.46              |
| 1:F:94:ILE:HG12  | 1:F:98:ARG:CZ    | 2.46                     | 0.46              |
| 1:G:409:LEU:O    | 1:G:432:MET:CE   | 2.63                     | 0.46              |
| 1:A:31:ILE:HD13  | 1:A:88:LEU:HG    | 1.98                     | 0.46              |
| 1:D:474:TRP:CG   | 1:G:434:TRP:CD1  | 3.04                     | 0.46              |
| 1:E:304:LEU:C    | 1:E:304:LEU:HD12 | 2.36                     | 0.46              |
| 1:E:85:LEU:HD11  | 1:E:179:LEU:HB3  | 1.98                     | 0.46              |
| 1:G:400:ALA:O    | 1:G:404:ASN:HB3  | 2.16                     | 0.46              |
| 1:A:279:GLN:HE21 | 1:A:279:GLN:HB2  | 1.58                     | 0.45              |
| 1:C:289:LEU:HD12 | 1:C:389:VAL:HG13 | 1.99                     | 0.45              |
| 1:C:440:ARG:HA   | 1:C:440:ARG:HD2  | 1.42                     | 0.45              |
| 1:D:459:MET:N    | 1:D:463:ALA:HB2  | 2.32                     | 0.45              |
| 1:F:226:SER:OG   | 1:F:229:THR:CG2  | 2.64                     | 0.45              |
| 1:F:310:LEU:CD2  | 1:F:353:PRO:CG   | 2.94                     | 0.45              |
| 1:G:56:TRP:CZ2   | 1:G:64:ARG:HG2   | 2.52                     | 0.45              |
| 1:H:276:ASN:O    | 1:H:277:GLN:HB2  | 2.15                     | 0.45              |
| 1:A:336:ILE:HG21 | 1:A:350:GLY:O    | 2.16                     | 0.45              |
| 1:A:394:SER:HB2  | 1:A:396:GLU:OE1  | 2.16                     | 0.45              |
| 1:B:405:THR:CG2  | 1:B:407:TYR:HB2  | 2.45                     | 0.45              |
| 1:B:86:GLU:O     | 1:B:90:THR:OG1   | 2.29                     | 0.45              |
| 1:C:145:ILE:HD12 | 1:C:221:ILE:HD11 | 1.98                     | 0.45              |
| 1:D:188:MET:CE   | 1:D:198:VAL:HB   | 2.46                     | 0.45              |
| 1:D:312:ASP:OD1  | 1:D:313:PRO:CD   | 2.64                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:305:ALA:HA   | 1:F:308:ILE:HD12 | 1.98                     | 0.45              |
| 1:G:6:TYR:OH     | 1:G:189:THR:HG22 | 2.13                     | 0.45              |
| 1:G:392:PHE:HB2  | 1:G:397:GLU:HB3  | 1.97                     | 0.45              |
| 1:H:105:THR:OG1  | 1:H:153:MET:HA   | 2.16                     | 0.45              |
| 1:B:258:GLU:HG3  | 1:B:290:HIS:CG   | 2.50                     | 0.45              |
| 1:E:153:MET:CA   | 2:E:510:HOH:O    | 2.63                     | 0.45              |
| 1:E:234:VAL:CG2  | 1:E:246:LEU:HD11 | 2.46                     | 0.45              |
| 1:H:149:ASN:N    | 1:H:149:ASN:OD1  | 2.42                     | 0.45              |
| 1:H:162:ALA:HB3  | 1:H:169:ILE:HD11 | 1.97                     | 0.45              |
| 1:H:241:LEU:N    | 2:H:506:HOH:O    | 2.48                     | 0.45              |
| 1:H:459:MET:N    | 1:H:463:ALA:HB2  | 2.31                     | 0.45              |
| 1:A:2:GLN:HB3    | 1:A:11:PHE:CE1   | 2.51                     | 0.45              |
| 1:B:87:SER:HB3   | 1:B:314:MET:HE2  | 1.97                     | 0.45              |
| 1:E:92:HIS:HD2   | 1:E:101:ASP:OD2  | 1.99                     | 0.45              |
| 1:E:122:SER:O    | 1:E:134:VAL:N    | 2.43                     | 0.45              |
| 1:E:14:ALA:O     | 1:E:15:VAL:C     | 2.54                     | 0.45              |
| 1:E:370:GLU:CD   | 1:E:391:ARG:NH1  | 2.70                     | 0.45              |
| 1:B:315:ASP:C    | 1:B:317:GLU:H    | 2.19                     | 0.45              |
| 1:D:242:LYS:HZ2  | 1:D:242:LYS:HG2  | 1.63                     | 0.45              |
| 1:F:136:ARG:HA   | 1:F:136:ARG:HD2  | 1.62                     | 0.45              |
| 1:F:20:ILE:HG21  | 1:F:175:GLU:HB3  | 1.98                     | 0.45              |
| 1:F:239:SER:OG   | 1:F:240:ASN:OD1  | 2.35                     | 0.45              |
| 1:F:251:LYS:HD3  | 1:F:285:SER:OG   | 2.17                     | 0.45              |
| 1:G:310:LEU:HD23 | 1:G:353:PRO:HG2  | 1.98                     | 0.45              |
| 1:G:310:LEU:HD23 | 1:G:353:PRO:HG3  | 1.85                     | 0.45              |
| 1:G:6:TYR:OH     | 1:G:9:GLY:HA2    | 2.16                     | 0.45              |
| 1:H:90:THR:HG21  | 1:H:92:HIS:ND1   | 2.31                     | 0.45              |
| 1:B:335:TYR:C    | 1:B:338:ILE:HG23 | 2.36                     | 0.45              |
| 1:B:458:GLU:O    | 1:B:459:MET:HB2  | 2.16                     | 0.45              |
| 1:F:88:LEU:CA    | 1:F:314:MET:HE3  | 2.47                     | 0.45              |
| 1:F:415:THR:HG21 | 1:F:420:ARG:HD3  | 1.95                     | 0.45              |
| 1:G:95:ARG:HD3   | 1:G:318:THR:O    | 2.17                     | 0.45              |
| 1:A:251:LYS:HG3  | 1:A:286:ARG:HD3  | 1.98                     | 0.45              |
| 1:A:372:LYS:HA   | 1:A:372:LYS:HD3  | 1.79                     | 0.45              |
| 1:B:405:THR:CG2  | 1:B:407:TYR:N    | 2.44                     | 0.45              |
| 1:B:43:ASP:HA    | 1:B:215:HIS:HE2  | 1.81                     | 0.45              |
| 1:C:211:ALA:O    | 1:C:215:HIS:HB2  | 2.17                     | 0.45              |
| 1:E:220:LYS:HA   | 1:E:243:ARG:O    | 2.16                     | 0.45              |
| 1:F:415:THR:HG22 | 1:F:420:ARG:HH11 | 1.77                     | 0.45              |
| 1:F:56:TRP:O     | 1:F:59:LEU:HB2   | 2.16                     | 0.45              |
| 1:F:70:LYS:HB3   | 1:F:191:VAL:HG11 | 1.99                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:147:PRO:HG2  | 1:G:224:THR:HG22 | 1.98                     | 0.45              |
| 1:H:339:ALA:O    | 1:H:344:GLY:HA3  | 2.17                     | 0.45              |
| 1:A:184:ILE:HG22 | 1:A:185:VAL:N    | 2.31                     | 0.45              |
| 1:A:49:ALA:HA    | 1:A:196:GLY:O    | 2.16                     | 0.45              |
| 1:A:459:MET:N    | 1:A:463:ALA:HB2  | 2.32                     | 0.45              |
| 1:B:329:ARG:CG   | 1:B:329:ARG:NH1  | 2.56                     | 0.45              |
| 1:C:25:PRO:HD2   | 2:C:512:HOH:O    | 2.16                     | 0.45              |
| 1:F:159:MET:O    | 1:F:163:LEU:HB2  | 2.17                     | 0.45              |
| 1:F:413:LEU:HD12 | 1:F:413:LEU:C    | 2.37                     | 0.45              |
| 1:G:109:PHE:CZ   | 1:G:156:SER:HA   | 2.51                     | 0.45              |
| 1:H:177:THR:N    | 1:H:178:PRO:HD3  | 2.31                     | 0.45              |
| 1:H:335:TYR:CD2  | 1:H:382:VAL:HG22 | 2.51                     | 0.45              |
| 1:A:92:HIS:CD2   | 1:A:101:ASP:OD2  | 2.62                     | 0.45              |
| 1:A:370:GLU:OE1  | 1:A:391:ARG:NH1  | 2.49                     | 0.45              |
| 1:B:377:VAL:HG21 | 1:B:386:PHE:CZ   | 2.52                     | 0.45              |
| 1:E:112:PHE:CZ   | 1:E:161:PRO:HG3  | 2.52                     | 0.45              |
| 1:F:76:GLU:OE1   | 1:F:110:ARG:NH1  | 2.50                     | 0.45              |
| 1:G:205:GLY:O    | 1:G:210:GLN:N    | 2.50                     | 0.45              |
| 1:G:377:VAL:HG22 | 1:G:386:PHE:CE1  | 2.52                     | 0.45              |
| 1:G:86:GLU:O     | 1:G:86:GLU:HG3   | 2.15                     | 0.45              |
| 1:G:31:ILE:HD11  | 1:G:88:LEU:HG    | 1.98                     | 0.45              |
| 1:H:112:PHE:CE2  | 1:H:161:PRO:HD3  | 2.52                     | 0.45              |
| 1:H:306:LYS:HB3  | 1:H:306:LYS:HE3  | 1.31                     | 0.45              |
| 1:H:3:ASN:HB2    | 1:H:34:ILE:HG22  | 1.99                     | 0.45              |
| 1:A:326:ALA:HB2  | 1:A:362:PHE:CE1  | 2.52                     | 0.45              |
| 1:B:405:THR:HG23 | 1:B:406:GLU:N    | 2.31                     | 0.45              |
| 1:B:7:ILE:HG23   | 1:B:45:ALA:HA    | 1.99                     | 0.45              |
| 1:B:459:MET:N    | 1:B:463:ALA:HB2  | 2.31                     | 0.45              |
| 1:C:376:ARG:C    | 1:C:378:CYS:H    | 2.21                     | 0.45              |
| 1:C:386:PHE:O    | 1:C:386:PHE:HD1  | 2.00                     | 0.45              |
| 1:C:460:GLY:CA   | 2:C:502:HOH:O    | 2.64                     | 0.45              |
| 1:C:469:GLU:OE2  | 2:C:513:HOH:O    | 2.20                     | 0.45              |
| 1:E:248:LEU:HD11 | 1:H:241:LEU:CD2  | 2.42                     | 0.45              |
| 1:E:277:GLN:HE21 | 1:E:321:GLY:H    | 1.61                     | 0.45              |
| 1:E:49:ALA:HA    | 1:E:196:GLY:O    | 2.17                     | 0.45              |
| 1:F:18:GLY:O     | 1:F:36:ALA:HB3   | 2.17                     | 0.45              |
| 1:F:86:GLU:OE1   | 1:F:90:THR:HG21  | 2.16                     | 0.45              |
| 1:G:313:PRO:HG3  | 1:G:322:PRO:HD2  | 1.98                     | 0.45              |
| 1:H:20:ILE:HD13  | 1:H:175:GLU:CB   | 2.42                     | 0.45              |
| 1:H:273:ILE:HG21 | 1:H:387:VAL:CG2  | 2.47                     | 0.45              |
| 1:A:201:VAL:N    | 1:A:202:PRO:HD3  | 2.33                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:417:ASN:HD22 | 1:C:420:ARG:N    | 2.10                     | 0.44              |
| 1:D:49:ALA:HA    | 1:D:196:GLY:O    | 2.18                     | 0.44              |
| 1:E:328:ARG:HE   | 1:E:328:ARG:HB2  | 1.54                     | 0.44              |
| 1:F:85:LEU:HD11  | 1:F:179:LEU:HB2  | 1.98                     | 0.44              |
| 1:F:273:ILE:HG12 | 1:F:386:PHE:O    | 2.17                     | 0.44              |
| 1:G:105:THR:OG1  | 1:G:153:MET:HA   | 2.17                     | 0.44              |
| 1:G:2:GLN:NE2    | 1:G:2:GLN:HA     | 2.33                     | 0.44              |
| 1:H:258:GLU:H    | 1:H:258:GLU:HG3  | 1.15                     | 0.44              |
| 1:H:258:GLU:HG2  | 1:H:290:HIS:CD2  | 2.52                     | 0.44              |
| 1:A:150:PHE:O    | 1:A:151:PRO:C    | 2.55                     | 0.44              |
| 1:B:279:GLN:HB2  | 1:B:279:GLN:HE21 | 1.58                     | 0.44              |
| 1:C:124:ILE:HA   | 1:C:125:PRO:HD3  | 1.88                     | 0.44              |
| 1:C:134:VAL:HA   | 1:C:472:SER:HA   | 1.99                     | 0.44              |
| 1:C:329:ARG:O    | 1:C:332:VAL:N    | 2.50                     | 0.44              |
| 1:D:150:PHE:O    | 1:D:151:PRO:C    | 2.55                     | 0.44              |
| 1:D:259:ASP:O    | 1:D:416:GLN:HG2  | 2.14                     | 0.44              |
| 1:D:356:LYS:HA   | 1:D:359:ALA:CB   | 2.35                     | 0.44              |
| 1:F:105:THR:OG1  | 1:F:153:MET:HA   | 2.17                     | 0.44              |
| 1:G:195:LYS:O    | 1:G:195:LYS:CG   | 2.65                     | 0.44              |
| 1:G:338:ILE:HD12 | 1:G:339:ALA:CA   | 2.47                     | 0.44              |
| 1:H:86:GLU:OE2   | 1:H:180:SER:CB   | 2.65                     | 0.44              |
| 1:D:147:PRO:HG3  | 1:D:224:THR:O    | 2.16                     | 0.44              |
| 1:D:119:ILE:HD11 | 1:D:464:ILE:HD12 | 1.99                     | 0.44              |
| 1:E:337:ASP:O    | 1:E:341:GLU:HG3  | 2.16                     | 0.44              |
| 1:G:49:ALA:HA    | 1:G:196:GLY:O    | 2.18                     | 0.44              |
| 1:G:71:LEU:HD22  | 1:G:188:MET:HG3  | 1.99                     | 0.44              |
| 1:A:235:GLU:HB2  | 1:C:235:GLU:OE2  | 2.18                     | 0.44              |
| 1:A:258:GLU:OE2  | 1:A:420:ARG:NH1  | 2.50                     | 0.44              |
| 1:A:465:HIS:CE1  | 1:C:465:HIS:CE1  | 3.05                     | 0.44              |
| 1:A:477:VAL:HG23 | 1:A:478:ASP:N    | 2.32                     | 0.44              |
| 1:C:60:GLY:O     | 1:C:62:ALA:N     | 2.51                     | 0.44              |
| 1:D:201:VAL:N    | 1:D:202:PRO:HD3  | 2.33                     | 0.44              |
| 1:D:281:CYS:HB3  | 1:D:409:LEU:CD2  | 2.47                     | 0.44              |
| 1:D:288:ILE:HG22 | 1:D:392:PHE:CD2  | 2.52                     | 0.44              |
| 1:E:326:ALA:HB2  | 1:E:362:PHE:CE1  | 2.52                     | 0.44              |
| 1:F:328:ARG:O    | 1:F:329:ARG:C    | 2.55                     | 0.44              |
| 1:G:328:ARG:O    | 1:G:328:ARG:HD3  | 2.17                     | 0.44              |
| 1:G:446:PRO:HB3  | 1:G:457:ARG:HD2  | 1.99                     | 0.44              |
| 1:G:59:LEU:HA    | 1:G:59:LEU:HD12  | 1.56                     | 0.44              |
| 1:G:71:LEU:O     | 1:G:75:ILE:HG13  | 2.17                     | 0.44              |
| 1:H:358:LEU:CD1  | 1:H:358:LEU:N    | 2.80                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:259:ASP:O    | 1:A:416:GLN:CG   | 2.65                     | 0.44              |
| 1:A:97:SER:O     | 1:A:102:VAL:HG22 | 1.98                     | 0.44              |
| 1:B:391:ARG:HD3  | 2:B:513:HOH:O    | 2.16                     | 0.44              |
| 1:C:429:HIS:CE1  | 1:C:450:VAL:CG1  | 3.01                     | 0.44              |
| 1:E:151:PRO:CG   | 1:E:177:THR:HB   | 2.47                     | 0.44              |
| 1:E:251:LYS:HB2  | 1:E:407:TYR:HD1  | 1.80                     | 0.44              |
| 1:G:85:LEU:HD11  | 1:G:179:LEU:HB2  | 1.99                     | 0.44              |
| 1:H:10:ARG:CG    | 1:H:10:ARG:HH11  | 2.30                     | 0.44              |
| 1:A:204:TYR:HB3  | 1:A:206:HIS:CE1  | 2.53                     | 0.44              |
| 1:A:340:ILE:HG22 | 1:A:341:GLU:N    | 2.28                     | 0.44              |
| 1:B:179:LEU:HD23 | 1:B:179:LEU:HA   | 1.56                     | 0.44              |
| 1:C:156:SER:HG   | 1:C:157:TRP:H    | 1.66                     | 0.44              |
| 1:A:235:GLU:CB   | 1:C:238:LYS:HE2  | 2.32                     | 0.44              |
| 1:D:137:LYS:HB3  | 1:D:138:PRO:HD2  | 2.00                     | 0.44              |
| 1:D:331:ARG:HB2  | 1:D:331:ARG:HE   | 1.41                     | 0.44              |
| 1:D:377:VAL:HG13 | 1:D:386:PHE:HE1  | 1.83                     | 0.44              |
| 1:D:480:LYS:O    | 1:D:480:LYS:HG2  | 2.17                     | 0.44              |
| 1:E:185:VAL:O    | 1:E:188:MET:HB2  | 2.17                     | 0.44              |
| 1:F:220:LYS:HE2  | 1:F:245:GLN:CG   | 2.47                     | 0.44              |
| 1:D:241:LEU:HD22 | 1:G:248:LEU:HD11 | 1.98                     | 0.44              |
| 1:H:163:LEU:HG   | 1:H:169:ILE:CD1  | 2.47                     | 0.44              |
| 1:H:49:ALA:HA    | 1:H:196:GLY:O    | 2.18                     | 0.44              |
| 1:H:26:HIS:HA    | 1:H:363:TYR:CE2  | 2.53                     | 0.44              |
| 1:A:14:ALA:O     | 1:A:15:VAL:C     | 2.55                     | 0.44              |
| 1:B:372:LYS:O    | 1:B:375:ASP:HB2  | 2.18                     | 0.44              |
| 1:B:412:GLY:HA3  | 1:B:438:TYR:CE1  | 2.53                     | 0.44              |
| 1:C:415:THR:CG2  | 1:C:417:ASN:H    | 2.30                     | 0.44              |
| 1:D:412:GLY:HA3  | 1:D:438:TYR:CE1  | 2.53                     | 0.44              |
| 1:D:56:TRP:O     | 1:D:59:LEU:HB2   | 2.18                     | 0.44              |
| 1:E:365:GLU:O    | 1:E:367:THR:OG1  | 2.30                     | 0.44              |
| 1:F:24:SER:N     | 1:F:31:ILE:HD11  | 2.32                     | 0.44              |
| 1:F:376:ARG:C    | 1:F:378:CYS:H    | 2.20                     | 0.44              |
| 1:F:392:PHE:C    | 1:F:392:PHE:CD1  | 2.91                     | 0.44              |
| 1:G:440:ARG:HB3  | 1:G:440:ARG:HE   | 1.64                     | 0.44              |
| 1:H:31:ILE:O     | 1:H:32:THR:HB    | 2.18                     | 0.44              |
| 1:H:329:ARG:HD2  | 1:H:330:ASP:H    | 1.80                     | 0.44              |
| 1:B:201:VAL:N    | 1:B:202:PRO:HD3  | 2.33                     | 0.44              |
| 1:B:323:LEU:HD12 | 1:B:329:ARG:HA   | 1.99                     | 0.44              |
| 1:C:333:LEU:HD22 | 1:C:351:LYS:HE3  | 1.99                     | 0.44              |
| 1:E:237:SER:OG   | 1:E:244:ILE:HD11 | 2.18                     | 0.44              |
| 1:E:258:GLU:CD   | 2:E:516:HOH:O    | 2.40                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:447:PHE:CD2  | 1:E:447:PHE:O    | 2.71                     | 0.44              |
| 1:F:333:LEU:HD23 | 1:F:333:LEU:HA   | 1.72                     | 0.44              |
| 1:F:94:ILE:CG1   | 1:F:98:ARG:CZ    | 2.96                     | 0.44              |
| 1:H:221:ILE:HD11 | 1:H:233:ILE:CD1  | 2.48                     | 0.44              |
| 1:A:23:VAL:CG1   | 1:A:28:GLY:HA2   | 2.48                     | 0.44              |
| 1:B:237:SER:HA   | 1:B:242:LYS:HD2  | 1.99                     | 0.44              |
| 1:B:329:ARG:CD   | 1:B:329:ARG:C    | 2.82                     | 0.44              |
| 1:B:34:ILE:CD1   | 1:B:202:PRO:HB2  | 2.47                     | 0.44              |
| 1:B:399:LEU:O    | 1:B:399:LEU:HD22 | 2.18                     | 0.44              |
| 1:B:418:LEU:O    | 1:B:419:ALA:C    | 2.56                     | 0.44              |
| 1:C:124:ILE:HB   | 1:C:132:ASN:HD22 | 1.83                     | 0.44              |
| 1:C:291:LYS:HE3  | 1:C:393:SER:HG   | 1.81                     | 0.44              |
| 1:C:298:LEU:HD21 | 1:C:389:VAL:HG21 | 1.99                     | 0.44              |
| 1:C:272:ALA:HA   | 1:C:439:LYS:HD3  | 1.99                     | 0.44              |
| 1:D:178:PRO:O    | 1:D:182:LEU:HG   | 2.18                     | 0.44              |
| 1:D:188:MET:CE   | 1:D:198:VAL:CG1  | 2.93                     | 0.44              |
| 1:D:20:ILE:HG21  | 1:D:175:GLU:CB   | 2.35                     | 0.44              |
| 1:E:312:ASP:HA   | 1:E:313:PRO:HD3  | 1.91                     | 0.44              |
| 1:F:1:MET:O      | 1:F:1:MET:HG2    | 2.18                     | 0.44              |
| 1:F:150:PHE:CZ   | 1:F:276:ASN:ND2  | 2.85                     | 0.44              |
| 1:F:256:VAL:CG1  | 1:F:293:ILE:HD11 | 2.48                     | 0.44              |
| 1:G:327:LEU:O    | 1:G:327:LEU:CD2  | 2.62                     | 0.44              |
| 1:H:273:ILE:HB   | 1:H:284:GLY:O    | 2.18                     | 0.44              |
| 1:H:310:LEU:HA   | 1:H:320:MET:O    | 2.18                     | 0.44              |
| 1:A:171:ILE:HG13 | 1:A:172:LYS:N    | 2.32                     | 0.43              |
| 1:B:185:VAL:HA   | 1:B:188:MET:HB2  | 2.00                     | 0.43              |
| 1:B:335:TYR:CD1  | 1:B:382:VAL:HG13 | 2.53                     | 0.43              |
| 1:C:100:LEU:HA   | 1:C:100:LEU:HD23 | 1.63                     | 0.43              |
| 1:A:472:SER:O    | 1:C:432:MET:HA   | 2.18                     | 0.43              |
| 1:E:323:LEU:HD21 | 1:E:385:PRO:HD3  | 2.00                     | 0.43              |
| 1:B:248:LEU:HD12 | 1:F:241:LEU:HD13 | 2.01                     | 0.43              |
| 1:F:425:ALA:HB2  | 1:F:435:ILE:HD11 | 2.00                     | 0.43              |
| 1:F:476:ASN:OD1  | 1:F:479:ALA:HB3  | 2.18                     | 0.43              |
| 1:G:21:ASP:HB3   | 1:G:30:LEU:HD11  | 1.99                     | 0.43              |
| 1:G:274:PHE:HB3  | 1:G:320:MET:CE   | 2.48                     | 0.43              |
| 1:H:30:LEU:CD2   | 1:H:33:ARG:HE    | 2.27                     | 0.43              |
| 1:A:412:GLY:HA3  | 1:A:438:TYR:CE1  | 2.53                     | 0.43              |
| 1:B:112:PHE:HA   | 1:B:115:MET:HB3  | 2.00                     | 0.43              |
| 1:B:119:ILE:HG12 | 1:B:464:ILE:HG21 | 2.00                     | 0.43              |
| 1:D:255:ILE:O    | 1:D:414:TRP:HD1  | 2.01                     | 0.43              |
| 1:E:150:PHE:O    | 1:E:151:PRO:C    | 2.55                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:335:TYR:CE2  | 1:E:380:GLU:OE1  | 2.71                     | 0.43              |
| 1:F:181:THR:C    | 1:F:184:ILE:HG22 | 2.24                     | 0.43              |
| 1:F:49:ALA:HA    | 1:F:196:GLY:O    | 2.18                     | 0.43              |
| 1:G:159:MET:O    | 1:G:160:GLY:C    | 2.56                     | 0.43              |
| 1:G:85:LEU:HD11  | 1:G:179:LEU:CB   | 2.47                     | 0.43              |
| 1:D:432:MET:HA   | 1:G:472:SER:O    | 2.18                     | 0.43              |
| 1:H:102:VAL:HB   | 1:H:103:PRO:HD3  | 2.00                     | 0.43              |
| 1:A:231:ARG:HB2  | 1:A:232:ARG:HH21 | 1.83                     | 0.43              |
| 1:B:339:ALA:HA   | 2:B:520:HOH:O    | 2.18                     | 0.43              |
| 1:B:417:ASN:HD22 | 1:B:420:ARG:H    | 1.63                     | 0.43              |
| 1:C:237:SER:O    | 1:C:238:LYS:C    | 2.55                     | 0.43              |
| 1:D:266:VAL:HG13 | 1:D:301:PHE:HD2  | 1.83                     | 0.43              |
| 1:E:12:VAL:O     | 1:E:12:VAL:HG23  | 2.18                     | 0.43              |
| 1:E:256:VAL:HG12 | 1:E:293:ILE:CD1  | 2.48                     | 0.43              |
| 1:E:370:GLU:CD   | 1:E:391:ARG:HH11 | 2.22                     | 0.43              |
| 1:E:241:LEU:CD1  | 1:H:227:THR:HG23 | 2.49                     | 0.43              |
| 1:E:248:LEU:CD1  | 1:H:241:LEU:CD1  | 2.95                     | 0.43              |
| 1:A:119:ILE:HG12 | 1:A:464:ILE:HG21 | 2.00                     | 0.43              |
| 1:A:242:LYS:O    | 2:A:516:HOH:O    | 2.21                     | 0.43              |
| 1:A:273:ILE:CD1  | 1:A:386:PHE:O    | 2.66                     | 0.43              |
| 1:C:258:GLU:HG3  | 1:C:258:GLU:H    | 1.34                     | 0.43              |
| 1:C:14:ALA:CB    | 1:C:36:ALA:O     | 2.66                     | 0.43              |
| 1:D:394:SER:O    | 1:D:395:ASP:C    | 2.56                     | 0.43              |
| 1:D:330:ASP:O    | 1:E:232:ARG:NH2  | 2.51                     | 0.43              |
| 1:E:412:GLY:HA3  | 1:E:438:TYR:CE1  | 2.53                     | 0.43              |
| 1:F:46:VAL:HA    | 1:F:170:VAL:HG21 | 1.99                     | 0.43              |
| 1:F:330:ASP:O    | 1:F:334:SER:OG   | 2.30                     | 0.43              |
| 1:F:429:HIS:CE1  | 1:F:450:VAL:CG1  | 3.01                     | 0.43              |
| 1:F:59:LEU:HD13  | 1:F:63:GLU:HB3   | 1.99                     | 0.43              |
| 1:G:333:LEU:O    | 1:G:334:SER:C    | 2.56                     | 0.43              |
| 1:G:371:ALA:O    | 1:G:390:VAL:HG23 | 2.18                     | 0.43              |
| 1:G:246:LEU:O    | 1:G:454:GLY:HA3  | 2.18                     | 0.43              |
| 1:G:61:ALA:HB1   | 1:G:116:ALA:O    | 2.19                     | 0.43              |
| 1:G:74:ARG:O     | 1:G:75:ILE:C     | 2.56                     | 0.43              |
| 1:H:279:GLN:HE21 | 1:H:279:GLN:HB2  | 1.64                     | 0.43              |
| 1:A:418:LEU:O    | 1:A:419:ALA:C    | 2.56                     | 0.43              |
| 1:B:434:TRP:HB3  | 1:B:437:CYS:SG   | 2.59                     | 0.43              |
| 1:C:98:ARG:O     | 1:C:103:PRO:HD3  | 2.18                     | 0.43              |
| 1:C:374:GLN:H    | 1:C:374:GLN:HG2  | 1.15                     | 0.43              |
| 1:C:412:GLY:HA3  | 1:C:438:TYR:CE1  | 2.53                     | 0.43              |
| 1:E:222:ALA:HA   | 1:E:245:GLN:HB3  | 2.00                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:248:LEU:HD12 | 1:H:241:LEU:CD1  | 2.39                     | 0.43              |
| 1:G:366:PRO:HA   | 1:G:385:PRO:HB2  | 2.00                     | 0.43              |
| 1:G:7:ILE:HG23   | 1:G:45:ALA:HA    | 1.99                     | 0.43              |
| 1:H:10:ARG:HH11  | 1:H:10:ARG:HG2   | 1.82                     | 0.43              |
| 1:H:412:GLY:HA3  | 1:H:438:TYR:CE1  | 2.53                     | 0.43              |
| 1:A:15:VAL:HG13  | 1:A:16:ALA:H     | 1.79                     | 0.43              |
| 1:A:128:ALA:O    | 1:A:479:ALA:HB3  | 2.19                     | 0.43              |
| 1:B:49:ALA:HA    | 1:B:196:GLY:O    | 2.18                     | 0.43              |
| 1:B:25:PRO:HB2   | 1:B:322:PRO:CG   | 2.49                     | 0.43              |
| 1:B:310:LEU:HA   | 1:B:320:MET:O    | 2.18                     | 0.43              |
| 1:C:108:CYS:CB   | 1:C:156:SER:HB2  | 2.45                     | 0.43              |
| 1:C:220:LYS:HD2  | 1:C:243:ARG:HB2  | 2.00                     | 0.43              |
| 1:E:201:VAL:N    | 1:E:202:PRO:HD3  | 2.34                     | 0.43              |
| 1:E:19:THR:CG2   | 1:E:20:ILE:N     | 2.82                     | 0.43              |
| 1:E:445:SER:HA   | 1:E:446:PRO:HD3  | 1.93                     | 0.43              |
| 1:G:320:MET:O    | 1:G:320:MET:CG   | 2.66                     | 0.43              |
| 1:H:211:ALA:O    | 1:H:215:HIS:HB2  | 2.19                     | 0.43              |
| 1:A:163:LEU:O    | 1:A:166:GLY:N    | 2.49                     | 0.43              |
| 1:B:174:SER:C    | 1:B:176:ILE:H    | 2.21                     | 0.43              |
| 1:B:417:ASN:ND2  | 1:B:420:ARG:HB2  | 2.21                     | 0.43              |
| 1:C:59:LEU:CG    | 1:C:59:LEU:O     | 2.67                     | 0.43              |
| 1:C:80:GLU:OE1   | 1:C:84:GLN:CD    | 2.57                     | 0.43              |
| 1:E:70:LYS:HE3   | 1:E:191:VAL:O    | 2.19                     | 0.43              |
| 1:E:258:GLU:HG2  | 1:E:290:HIS:CD2  | 2.53                     | 0.43              |
| 1:F:11:PHE:CZ    | 1:F:186:GLU:HG3  | 2.54                     | 0.43              |
| 1:H:196:GLY:N    | 2:H:504:HOH:O    | 2.04                     | 0.43              |
| 1:A:179:LEU:HA   | 1:A:179:LEU:HD23 | 1.74                     | 0.43              |
| 1:B:92:HIS:HD2   | 1:B:101:ASP:OD2  | 2.00                     | 0.43              |
| 1:B:221:ILE:CD1  | 1:B:233:ILE:HG23 | 2.49                     | 0.43              |
| 1:B:355:ASP:C    | 1:B:357:ALA:N    | 2.72                     | 0.43              |
| 1:C:99:GLY:O     | 1:C:100:LEU:HD23 | 2.18                     | 0.43              |
| 1:C:150:PHE:N    | 1:C:151:PRO:HD3  | 2.34                     | 0.43              |
| 1:C:86:GLU:OE1   | 1:C:151:PRO:HD2  | 2.18                     | 0.43              |
| 1:D:312:ASP:HA   | 1:D:313:PRO:HD3  | 1.89                     | 0.43              |
| 1:E:226:SER:HG   | 1:E:229:THR:HG22 | 1.79                     | 0.43              |
| 1:G:377:VAL:HG22 | 1:G:386:PHE:HE1  | 1.83                     | 0.43              |
| 1:G:377:VAL:CG2  | 1:G:386:PHE:CE1  | 3.01                     | 0.43              |
| 1:D:474:TRP:HB2  | 1:G:434:TRP:CD1  | 2.54                     | 0.43              |
| 1:A:155:THR:O    | 1:A:159:MET:HB2  | 2.19                     | 0.43              |
| 1:B:108:CYS:HB3  | 1:B:156:SER:HB2  | 2.01                     | 0.43              |
| 1:B:212:LEU:HD12 | 1:B:212:LEU:HA   | 1.77                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:259:ASP:CG   | 1:B:415:THR:HG22 | 2.37                     | 0.43              |
| 1:C:74:ARG:HG3   | 1:C:187:LEU:HD22 | 2.01                     | 0.43              |
| 1:C:223:PHE:CZ   | 1:C:229:THR:CG2  | 3.01                     | 0.43              |
| 1:D:89:ASN:OD1   | 1:D:177:THR:HA   | 2.19                     | 0.43              |
| 1:D:188:MET:HE1  | 1:D:198:VAL:HG21 | 2.01                     | 0.43              |
| 1:D:457:ARG:NH1  | 1:D:457:ARG:CG   | 2.75                     | 0.43              |
| 1:E:259:ASP:O    | 1:E:416:GLN:CG   | 2.67                     | 0.43              |
| 1:E:93:PRO:HD3   | 1:E:277:GLN:HE22 | 1.83                     | 0.43              |
| 1:E:34:ILE:CD1   | 1:E:202:PRO:HB2  | 2.49                     | 0.43              |
| 1:F:147:PRO:HD3  | 1:F:224:THR:HB   | 2.01                     | 0.43              |
| 1:F:376:ARG:HG2  | 1:F:377:VAL:N    | 2.34                     | 0.43              |
| 1:G:257:PHE:HB2  | 1:G:415:THR:HG23 | 2.01                     | 0.43              |
| 1:G:404:ASN:OD1  | 1:G:404:ASN:O    | 2.37                     | 0.43              |
| 1:H:100:LEU:O    | 1:H:104:ARG:HG3  | 2.19                     | 0.43              |
| 1:H:102:VAL:N    | 1:H:103:PRO:CD   | 2.82                     | 0.43              |
| 1:H:171:ILE:HG23 | 1:H:200:VAL:HG13 | 2.01                     | 0.43              |
| 1:H:432:MET:HE1  | 1:H:447:PHE:CD1  | 2.54                     | 0.43              |
| 1:A:67:LEU:HD13  | 1:A:193:PHE:HA   | 1.99                     | 0.43              |
| 1:A:59:LEU:HD12  | 1:A:59:LEU:HA    | 1.56                     | 0.43              |
| 1:D:143:ALA:O    | 1:D:221:ILE:HA   | 2.18                     | 0.43              |
| 1:E:151:PRO:HG3  | 1:E:177:THR:OG1  | 2.18                     | 0.43              |
| 1:E:302:ILE:CD1  | 1:E:347:LEU:HB3  | 2.49                     | 0.43              |
| 1:E:377:VAL:HG22 | 1:E:386:PHE:CE1  | 2.54                     | 0.43              |
| 1:F:221:ILE:O    | 1:F:221:ILE:HG22 | 2.16                     | 0.43              |
| 1:G:268:GLY:O    | 1:G:272:ALA:N    | 2.51                     | 0.43              |
| 1:H:159:MET:HE1  | 1:H:171:ILE:HD13 | 2.01                     | 0.43              |
| 1:E:137:LYS:HE3  | 1:H:426:ASN:OD1  | 2.18                     | 0.43              |
| 1:A:323:LEU:HD21 | 1:A:385:PRO:HD3  | 2.00                     | 0.42              |
| 1:B:440:ARG:HD2  | 1:B:440:ARG:HA   | 1.50                     | 0.42              |
| 1:D:22:VAL:CG2   | 1:D:34:ILE:HG23  | 2.49                     | 0.42              |
| 1:D:441:VAL:HG13 | 2:D:505:HOH:O    | 2.20                     | 0.42              |
| 1:F:315:ASP:OD1  | 1:F:316:PRO:HD2  | 2.19                     | 0.42              |
| 1:F:326:ALA:HA   | 1:F:362:PHE:CD1  | 2.54                     | 0.42              |
| 1:H:146:VAL:HA   | 1:H:147:PRO:HD3  | 1.81                     | 0.42              |
| 1:H:486:LYS:O    | 1:H:487:ARG:HB2  | 2.19                     | 0.42              |
| 1:H:94:ILE:C     | 1:H:96:ASP:N     | 2.73                     | 0.42              |
| 1:A:288:ILE:HG22 | 1:A:392:PHE:CD2  | 2.54                     | 0.42              |
| 1:B:251:LYS:HG3  | 1:B:286:ARG:CD   | 2.49                     | 0.42              |
| 1:B:405:THR:HG22 | 1:B:406:GLU:N    | 2.28                     | 0.42              |
| 1:B:405:THR:HG23 | 1:B:407:TYR:HD1  | 1.83                     | 0.42              |
| 1:C:160:GLY:N    | 1:C:161:PRO:CD   | 2.82                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:251:LYS:HD2  | 1:E:251:LYS:HA   | 1.70                     | 0.42              |
| 1:E:372:LYS:HD2  | 1:E:372:LYS:HA   | 1.76                     | 0.42              |
| 1:E:259:ASP:CG   | 1:E:415:THR:HG22 | 2.37                     | 0.42              |
| 1:E:119:ILE:HG12 | 1:E:464:ILE:HG21 | 2.01                     | 0.42              |
| 1:F:23:VAL:O     | 1:F:31:ILE:CD1   | 2.67                     | 0.42              |
| 1:F:443:PRO:CA   | 1:F:459:MET:CE   | 2.78                     | 0.42              |
| 1:B:155:THR:HB   | 1:B:159:MET:CE   | 2.48                     | 0.42              |
| 1:B:357:ALA:HB3  | 1:B:358:LEU:HD13 | 2.01                     | 0.42              |
| 1:D:42:VAL:HG22  | 1:D:201:VAL:HG11 | 2.01                     | 0.42              |
| 1:D:437:CYS:HB2  | 1:D:440:ARG:HD3  | 2.01                     | 0.42              |
| 1:E:102:VAL:CB   | 1:E:103:PRO:HD3  | 2.44                     | 0.42              |
| 1:E:272:ALA:O    | 1:E:284:GLY:N    | 2.43                     | 0.42              |
| 1:F:279:GLN:OE1  | 1:F:324:THR:HG23 | 2.19                     | 0.42              |
| 1:F:376:ARG:CG   | 1:F:377:VAL:N    | 2.79                     | 0.42              |
| 1:G:226:SER:HG   | 1:G:229:THR:HG22 | 1.82                     | 0.42              |
| 1:G:340:ILE:O    | 1:G:341:GLU:C    | 2.56                     | 0.42              |
| 1:H:376:ARG:C    | 1:H:378:CYS:N    | 2.72                     | 0.42              |
| 1:H:418:LEU:O    | 1:H:419:ALA:C    | 2.56                     | 0.42              |
| 1:H:42:VAL:HG21  | 1:H:211:ALA:CB   | 2.49                     | 0.42              |
| 1:A:89:ASN:OD1   | 1:A:177:THR:HA   | 2.19                     | 0.42              |
| 1:A:119:ILE:HD11 | 1:A:464:ILE:HD12 | 2.01                     | 0.42              |
| 1:B:258:GLU:CG   | 1:B:290:HIS:CG   | 3.02                     | 0.42              |
| 1:B:338:ILE:HD11 | 1:B:376:ARG:CB   | 2.49                     | 0.42              |
| 1:D:151:PRO:HG3  | 1:D:177:THR:OG1  | 2.20                     | 0.42              |
| 1:D:474:TRP:HB2  | 1:G:434:TRP:HA   | 2.02                     | 0.42              |
| 1:E:119:ILE:HD11 | 1:E:464:ILE:HD12 | 2.01                     | 0.42              |
| 1:E:477:VAL:CG2  | 1:E:478:ASP:N    | 2.82                     | 0.42              |
| 1:G:293:ILE:HD12 | 1:G:294:ALA:CA   | 2.47                     | 0.42              |
| 1:G:412:GLY:HA3  | 1:G:438:TYR:CE1  | 2.53                     | 0.42              |
| 1:G:87:SER:HB2   | 1:G:94:ILE:HD13  | 1.79                     | 0.42              |
| 1:A:309:ARG:HB2  | 1:A:319:GLU:OE1  | 2.18                     | 0.42              |
| 1:A:302:ILE:HG23 | 1:A:348:ALA:HB2  | 2.01                     | 0.42              |
| 1:C:273:ILE:HB   | 1:C:284:GLY:O    | 2.20                     | 0.42              |
| 1:C:373:PRO:HB3  | 1:C:401:ILE:HG23 | 2.01                     | 0.42              |
| 1:C:374:GLN:O    | 1:C:375:ASP:C    | 2.58                     | 0.42              |
| 1:C:89:ASN:ND2   | 1:C:89:ASN:O     | 2.53                     | 0.42              |
| 1:E:4:GLN:NE2    | 1:E:13:ASP:OD1   | 2.46                     | 0.42              |
| 1:E:315:ASP:OD1  | 1:E:316:PRO:HD2  | 2.19                     | 0.42              |
| 1:E:350:GLY:CA   | 1:E:367:THR:HG23 | 2.50                     | 0.42              |
| 1:G:84:GLN:HA    | 1:G:314:MET:HE1  | 2.01                     | 0.42              |
| 1:H:159:MET:HE2  | 1:H:171:ILE:HD13 | 2.00                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:350:GLY:O    | 1:A:351:LYS:HB2  | 2.19                     | 0.42              |
| 1:C:31:ILE:CD1   | 1:C:88:LEU:HG    | 2.50                     | 0.42              |
| 1:C:94:ILE:O     | 1:C:98:ARG:HD2   | 2.19                     | 0.42              |
| 1:D:56:TRP:CE3   | 1:D:59:LEU:HD22  | 2.54                     | 0.42              |
| 1:F:92:HIS:HD2   | 1:F:101:ASP:OD2  | 2.02                     | 0.42              |
| 1:G:117:ASP:OD1  | 1:G:118:LYS:NZ   | 2.39                     | 0.42              |
| 1:G:327:LEU:HD21 | 1:G:331:ARG:CD   | 2.32                     | 0.42              |
| 1:G:358:LEU:HB3  | 1:G:363:TYR:CD2  | 2.53                     | 0.42              |
| 1:A:199:ASN:ND2  | 1:A:199:ASN:N    | 2.67                     | 0.42              |
| 1:B:323:LEU:HD21 | 1:B:385:PRO:HD3  | 2.00                     | 0.42              |
| 1:B:374:GLN:O    | 1:B:375:ASP:C    | 2.58                     | 0.42              |
| 1:C:151:PRO:CG   | 1:C:177:THR:CB   | 2.97                     | 0.42              |
| 1:E:418:LEU:O    | 1:E:419:ALA:C    | 2.57                     | 0.42              |
| 1:F:37:ALA:HB3   | 1:F:201:VAL:HG13 | 1.98                     | 0.42              |
| 1:G:258:GLU:HG3  | 1:G:290:HIS:CG   | 2.54                     | 0.42              |
| 1:A:102:VAL:HB   | 1:A:103:PRO:CD   | 2.43                     | 0.42              |
| 1:A:314:MET:O    | 1:A:316:PRO:HD3  | 2.19                     | 0.42              |
| 1:B:138:PRO:HG3  | 1:B:165:ALA:O    | 2.20                     | 0.42              |
| 1:B:290:HIS:HD2  | 1:B:292:ASP:HB2  | 1.83                     | 0.42              |
| 1:B:457:ARG:HA   | 1:B:457:ARG:HD2  | 1.88                     | 0.42              |
| 1:D:240:ASN:N    | 1:D:240:ASN:OD1  | 2.46                     | 0.42              |
| 1:D:95:ARG:NH1   | 1:D:319:GLU:HA   | 2.35                     | 0.42              |
| 1:D:129:GLY:HA3  | 1:D:479:ALA:HB2  | 2.01                     | 0.42              |
| 1:F:289:LEU:O    | 1:F:391:ARG:HA   | 2.20                     | 0.42              |
| 1:G:10:ARG:HH12  | 1:G:12:VAL:HG11  | 0.59                     | 0.42              |
| 1:A:45:ALA:HB1   | 1:A:170:VAL:HG13 | 2.01                     | 0.42              |
| 1:B:242:LYS:HB3  | 1:B:242:LYS:HE3  | 1.33                     | 0.42              |
| 1:C:376:ARG:O    | 1:C:379:GLN:N    | 2.48                     | 0.42              |
| 1:E:355:ASP:O    | 1:E:359:ALA:N    | 2.50                     | 0.42              |
| 1:E:482:ALA:HA   | 1:E:483:PRO:HD2  | 1.77                     | 0.42              |
| 1:F:22:VAL:HG11  | 1:F:179:LEU:HD11 | 2.02                     | 0.42              |
| 1:F:376:ARG:C    | 1:F:378:CYS:N    | 2.73                     | 0.42              |
| 1:G:186:GLU:O    | 1:G:189:THR:N    | 2.51                     | 0.42              |
| 1:G:417:ASN:HB3  | 1:G:420:ARG:HB3  | 2.01                     | 0.42              |
| 1:H:5:LEU:O      | 1:H:11:PHE:HA    | 2.20                     | 0.42              |
| 1:H:197:VAL:HG12 | 1:H:198:VAL:HG23 | 2.02                     | 0.42              |
| 1:H:221:ILE:CD1  | 1:H:233:ILE:HD12 | 2.50                     | 0.42              |
| 1:A:315:ASP:C    | 1:A:317:GLU:H    | 2.23                     | 0.42              |
| 1:B:329:ARG:HD2  | 1:B:330:ASP:CA   | 2.50                     | 0.42              |
| 1:B:346:VAL:HG13 | 1:B:348:ALA:O    | 2.20                     | 0.42              |
| 1:B:93:PRO:O     | 1:B:96:ASP:HB2   | 2.20                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:3:ASN:O      | 1:D:34:ILE:HA    | 2.20                     | 0.42              |
| 1:F:313:PRO:HB2  | 1:F:314:MET:CE   | 2.50                     | 0.42              |
| 1:F:312:ASP:HA   | 1:F:313:PRO:HD2  | 1.81                     | 0.42              |
| 1:F:340:ILE:H    | 1:F:340:ILE:HG12 | 1.62                     | 0.42              |
| 1:G:451:GLY:O    | 2:G:503:HOH:O    | 2.21                     | 0.42              |
| 1:G:90:THR:O     | 1:G:324:THR:CG2  | 2.49                     | 0.42              |
| 1:H:447:PHE:CD2  | 1:H:447:PHE:C    | 2.93                     | 0.42              |
| 1:A:343:GLY:O    | 1:A:345:LYS:HE3  | 2.20                     | 0.41              |
| 1:B:458:GLU:O    | 1:B:459:MET:CB   | 2.68                     | 0.41              |
| 1:C:146:VAL:HA   | 1:C:147:PRO:HD3  | 1.86                     | 0.41              |
| 1:C:215:HIS:CD2  | 1:C:217:ASP:H    | 2.23                     | 0.41              |
| 1:E:214:GLU:O    | 1:E:215:HIS:C    | 2.56                     | 0.41              |
| 1:G:102:VAL:CB   | 1:G:103:PRO:HD3  | 2.50                     | 0.41              |
| 1:H:111:TYR:CG   | 1:H:443:PRO:HB2  | 2.55                     | 0.41              |
| 1:A:26:HIS:HD1   | 1:A:363:TYR:HH   | 0.54                     | 0.41              |
| 1:B:8:ASP:OD2    | 1:B:51:ARG:NH2   | 2.53                     | 0.41              |
| 1:C:148:TRP:CH2  | 1:C:383:PHE:HD2  | 2.38                     | 0.41              |
| 1:C:394:SER:C    | 1:C:396:GLU:N    | 2.72                     | 0.41              |
| 1:D:172:LYS:HG2  | 1:D:172:LYS:HZ2  | 1.62                     | 0.41              |
| 1:D:262:ILE:O    | 1:D:263:GLU:C    | 2.58                     | 0.41              |
| 1:G:148:TRP:HH2  | 1:G:328:ARG:CG   | 2.33                     | 0.41              |
| 1:G:177:THR:OG1  | 1:G:177:THR:O    | 2.38                     | 0.41              |
| 1:G:34:ILE:CD1   | 1:G:202:PRO:HB2  | 2.50                     | 0.41              |
| 1:H:338:ILE:CD1  | 1:H:338:ILE:C    | 2.87                     | 0.41              |
| 1:B:119:ILE:HD11 | 1:B:464:ILE:HD12 | 2.01                     | 0.41              |
| 1:B:129:GLY:HA2  | 1:B:478:ASP:HB3  | 2.02                     | 0.41              |
| 1:C:289:LEU:CD1  | 1:C:389:VAL:HG13 | 2.50                     | 0.41              |
| 1:C:2:GLN:HG3    | 1:C:11:PHE:CE2   | 2.55                     | 0.41              |
| 1:E:25:PRO:HA    | 1:E:362:PHE:CE2  | 2.55                     | 0.41              |
| 1:F:61:ALA:CB    | 1:F:117:ASP:HA   | 2.50                     | 0.41              |
| 1:B:452:GLN:HG3  | 1:F:240:ASN:O    | 2.20                     | 0.41              |
| 1:G:114:GLY:O    | 1:G:118:LYS:HG3  | 2.20                     | 0.41              |
| 1:G:172:LYS:HE2  | 1:G:204:TYR:O    | 2.19                     | 0.41              |
| 1:G:6:TYR:CZ     | 1:G:9:GLY:HA2    | 2.55                     | 0.41              |
| 1:H:476:ASN:OD1  | 1:H:479:ALA:HB3  | 2.20                     | 0.41              |
| 1:A:151:PRO:CG   | 1:A:177:THR:HB   | 2.50                     | 0.41              |
| 1:A:38:GLU:HA    | 1:A:207:THR:HB   | 2.01                     | 0.41              |
| 1:A:15:VAL:CG1   | 1:A:40:ALA:HB3   | 2.51                     | 0.41              |
| 1:A:440:ARG:HA   | 1:A:440:ARG:HD2  | 1.43                     | 0.41              |
| 1:A:447:PHE:CD2  | 1:A:447:PHE:C    | 2.93                     | 0.41              |
| 1:B:88:LEU:HA    | 1:B:314:MET:CE   | 2.46                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:152:LEU:HB2  | 1:C:180:SER:OG   | 2.20                     | 0.41              |
| 1:C:476:ASN:ND2  | 1:C:481:ILE:HD11 | 2.35                     | 0.41              |
| 1:D:482:ALA:HA   | 1:D:483:PRO:HD2  | 1.64                     | 0.41              |
| 1:E:213:ALA:HB2  | 1:E:221:ILE:CD1  | 2.51                     | 0.41              |
| 1:B:476:ASN:CB   | 1:F:436:ASN:O    | 2.68                     | 0.41              |
| 1:D:476:ASN:HB2  | 1:G:437:CYS:HB3  | 2.02                     | 0.41              |
| 1:H:100:LEU:O    | 1:H:101:ASP:C    | 2.58                     | 0.41              |
| 1:H:221:ILE:HD11 | 1:H:233:ILE:HD12 | 2.03                     | 0.41              |
| 1:H:330:ASP:N    | 1:H:330:ASP:OD1  | 2.52                     | 0.41              |
| 1:A:310:LEU:HD23 | 1:A:353:PRO:HG2  | 1.96                     | 0.41              |
| 1:A:392:PHE:HB2  | 1:A:397:GLU:HB3  | 2.02                     | 0.41              |
| 1:B:221:ILE:O    | 1:B:221:ILE:CG2  | 2.68                     | 0.41              |
| 1:B:345:LYS:HG3  | 1:B:345:LYS:HZ3  | 1.70                     | 0.41              |
| 1:B:438:TYR:O    | 1:B:439:LYS:HB2  | 2.19                     | 0.41              |
| 1:D:74:ARG:HD3   | 1:D:77:GLU:OE1   | 2.21                     | 0.41              |
| 1:E:428:ILE:O    | 1:H:471:ARG:NH1  | 2.53                     | 0.41              |
| 1:F:124:ILE:HG22 | 1:F:125:PRO:HD2  | 2.03                     | 0.41              |
| 1:F:74:ARG:NH2   | 1:F:190:GLU:OE1  | 2.53                     | 0.41              |
| 1:G:340:ILE:HD11 | 1:G:346:VAL:CG2  | 2.51                     | 0.41              |
| 1:H:235:GLU:O    | 1:H:238:LYS:HG3  | 2.21                     | 0.41              |
| 1:H:325:SER:OG   | 1:H:328:ARG:HB2  | 2.20                     | 0.41              |
| 1:A:111:TYR:CG   | 1:A:443:PRO:HB2  | 2.56                     | 0.41              |
| 1:A:56:TRP:O     | 1:A:59:LEU:HB2   | 2.20                     | 0.41              |
| 1:B:177:THR:N    | 1:B:178:PRO:HD3  | 2.35                     | 0.41              |
| 1:B:405:THR:HG23 | 1:B:406:GLU:H    | 1.85                     | 0.41              |
| 1:B:447:PHE:CD2  | 1:B:447:PHE:C    | 2.93                     | 0.41              |
| 1:F:124:ILE:HA   | 1:F:125:PRO:HD3  | 1.73                     | 0.41              |
| 1:F:315:ASP:HA   | 1:F:316:PRO:HD3  | 1.85                     | 0.41              |
| 1:G:53:PHE:CD1   | 1:G:140:GLY:HA2  | 2.53                     | 0.41              |
| 1:G:279:GLN:HE21 | 1:G:279:GLN:HB2  | 1.52                     | 0.41              |
| 1:H:311:GLY:O    | 1:H:312:ASP:C    | 2.59                     | 0.41              |
| 1:H:416:GLN:H    | 1:H:416:GLN:HG2  | 1.60                     | 0.41              |
| 1:A:377:VAL:CG2  | 1:A:386:PHE:CE1  | 3.03                     | 0.41              |
| 1:B:152:LEU:HD11 | 1:B:184:ILE:CD1  | 2.17                     | 0.41              |
| 1:B:145:ILE:HG12 | 1:B:172:LYS:HD3  | 2.03                     | 0.41              |
| 1:B:434:TRP:CD1  | 1:B:440:ARG:HB2  | 2.55                     | 0.41              |
| 1:D:108:CYS:HB3  | 1:D:156:SER:HB2  | 2.03                     | 0.41              |
| 1:F:234:VAL:O    | 1:F:237:SER:N    | 2.51                     | 0.41              |
| 1:F:336:ILE:HG12 | 1:F:386:PHE:CE2  | 2.55                     | 0.41              |
| 1:G:157:TRP:NE1  | 1:G:459:MET:HE1  | 2.35                     | 0.41              |
| 1:C:114:GLY:O    | 1:C:118:LYS:HG3  | 2.21                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:418:LEU:O    | 1:C:419:ALA:C    | 2.58                     | 0.41              |
| 1:C:53:PHE:N     | 1:C:54:PRO:CD    | 2.84                     | 0.41              |
| 1:D:341:GLU:OE2  | 2:D:522:HOH:O    | 2.20                     | 0.41              |
| 1:D:22:VAL:HG21  | 1:D:34:ILE:CG2   | 2.50                     | 0.41              |
| 1:D:470:ALA:HB3  | 1:G:457:ARG:NE   | 2.36                     | 0.41              |
| 1:F:191:VAL:CG1  | 1:F:191:VAL:O    | 2.66                     | 0.41              |
| 1:F:23:VAL:HG12  | 1:F:24:SER:C     | 2.38                     | 0.41              |
| 1:G:295:ASP:C    | 1:G:297:PHE:N    | 2.73                     | 0.41              |
| 1:H:326:ALA:C    | 1:H:328:ARG:N    | 2.74                     | 0.41              |
| 1:A:70:LYS:HB3   | 1:A:191:VAL:HG22 | 2.03                     | 0.41              |
| 1:A:290:HIS:HD2  | 1:A:292:ASP:HB2  | 1.85                     | 0.41              |
| 1:B:173:PRO:HG3  | 1:B:181:THR:HG21 | 2.03                     | 0.41              |
| 1:B:66:ARG:HH11  | 1:B:66:ARG:CG    | 2.34                     | 0.41              |
| 1:C:225:GLY:O    | 1:C:248:LEU:HA   | 2.21                     | 0.41              |
| 1:D:221:ILE:CG2  | 1:D:221:ILE:O    | 2.68                     | 0.41              |
| 1:D:42:VAL:O     | 1:D:46:VAL:HG23  | 2.21                     | 0.41              |
| 1:E:15:VAL:HG12  | 1:E:16:ALA:CA    | 2.40                     | 0.41              |
| 1:E:275:HIS:CG   | 1:E:276:ASN:N    | 2.89                     | 0.41              |
| 1:E:314:MET:O    | 1:E:316:PRO:HD3  | 2.21                     | 0.41              |
| 1:F:18:GLY:C     | 1:F:36:ALA:HB3   | 2.40                     | 0.41              |
| 1:F:302:ILE:HD11 | 1:F:347:LEU:HD13 | 2.03                     | 0.41              |
| 1:F:61:ALA:HB1   | 1:F:117:ASP:HA   | 2.03                     | 0.41              |
| 1:G:152:LEU:HD12 | 1:G:184:ILE:CD1  | 2.50                     | 0.41              |
| 1:G:23:VAL:HG12  | 1:G:24:SER:N     | 2.29                     | 0.41              |
| 1:G:312:ASP:HA   | 1:G:313:PRO:HD3  | 1.84                     | 0.41              |
| 1:G:365:GLU:O    | 1:G:366:PRO:C    | 2.57                     | 0.41              |
| 1:G:464:ILE:HA   | 1:G:464:ILE:HD13 | 1.87                     | 0.41              |
| 1:A:238:LYS:HG3  | 1:A:238:LYS:H    | 1.64                     | 0.41              |
| 1:D:18:GLY:HA3   | 2:D:524:HOH:O    | 2.20                     | 0.41              |
| 1:D:273:ILE:HD13 | 1:D:283:ALA:HB1  | 2.02                     | 0.41              |
| 1:E:185:VAL:HA   | 1:E:188:MET:HE2  | 2.03                     | 0.41              |
| 1:G:25:PRO:O     | 1:G:361:GLY:HA2  | 2.21                     | 0.41              |
| 1:H:159:MET:HE1  | 1:H:171:ILE:HG21 | 2.03                     | 0.41              |
| 1:H:221:ILE:CG2  | 1:H:221:ILE:O    | 2.68                     | 0.41              |
| 1:E:137:LYS:CE   | 1:H:426:ASN:OD1  | 2.68                     | 0.41              |
| 1:H:69:LEU:HD23  | 1:H:69:LEU:HA    | 1.91                     | 0.41              |
| 1:H:94:ILE:C     | 1:H:96:ASP:H     | 2.23                     | 0.41              |
| 1:A:126:VAL:HG11 | 1:A:474:TRP:CH2  | 2.56                     | 0.41              |
| 1:A:20:ILE:HD13  | 1:A:204:TYR:CE1  | 2.56                     | 0.41              |
| 1:A:445:SER:CB   | 1:C:132:ASN:ND2  | 2.82                     | 0.41              |
| 1:B:174:SER:C    | 1:B:176:ILE:N    | 2.74                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:456:GLY:O    | 1:B:457:ARG:HD3  | 2.21                     | 0.41              |
| 1:B:462:GLU:OE2  | 1:F:136:ARG:NH1  | 2.54                     | 0.41              |
| 1:C:137:LYS:O    | 1:C:468:THR:HA   | 2.21                     | 0.41              |
| 1:C:352:ALA:C    | 1:C:353:PRO:O    | 2.59                     | 0.41              |
| 1:D:124:ILE:HA   | 1:D:125:PRO:HD3  | 1.95                     | 0.41              |
| 1:D:225:GLY:O    | 1:D:248:LEU:HA   | 2.21                     | 0.41              |
| 1:D:447:PHE:C    | 1:D:447:PHE:CD2  | 2.93                     | 0.41              |
| 1:E:285:SER:O    | 1:E:388:THR:HG23 | 2.21                     | 0.41              |
| 1:E:357:ALA:HB3  | 1:E:358:LEU:CD1  | 2.51                     | 0.41              |
| 1:G:431:GLY:C    | 1:G:432:MET:HG3  | 2.40                     | 0.41              |
| 1:G:42:VAL:O     | 1:G:46:VAL:HG23  | 2.21                     | 0.41              |
| 1:H:172:LYS:NZ   | 1:H:203:GLY:O    | 2.53                     | 0.41              |
| 1:B:20:ILE:HG21  | 1:B:175:GLU:HB3  | 2.03                     | 0.40              |
| 1:D:177:THR:N    | 1:D:178:PRO:HD3  | 2.36                     | 0.40              |
| 1:D:338:ILE:CD1  | 1:D:376:ARG:CB   | 2.99                     | 0.40              |
| 1:F:124:ILE:CG2  | 1:F:125:PRO:HD2  | 2.52                     | 0.40              |
| 1:H:185:VAL:HG11 | 1:H:200:VAL:HG21 | 2.04                     | 0.40              |
| 1:A:142:VAL:HG12 | 1:A:142:VAL:O    | 2.21                     | 0.40              |
| 1:A:53:PHE:N     | 1:A:54:PRO:CD    | 2.84                     | 0.40              |
| 1:B:152:LEU:HD13 | 1:B:184:ILE:HD12 | 2.00                     | 0.40              |
| 1:B:24:SER:HA    | 1:B:25:PRO:HD3   | 1.86                     | 0.40              |
| 1:C:315:ASP:C    | 1:C:317:GLU:N    | 2.75                     | 0.40              |
| 1:D:205:GLY:C    | 2:D:517:HOH:O    | 2.58                     | 0.40              |
| 1:E:151:PRO:HG2  | 1:E:177:THR:HB   | 2.03                     | 0.40              |
| 1:E:238:LYS:HB2  | 1:H:231:ARG:HB3  | 2.03                     | 0.40              |
| 1:G:304:LEU:N    | 2:G:513:HOH:O    | 2.54                     | 0.40              |
| 1:H:53:PHE:CE1   | 1:H:140:GLY:HA2  | 2.56                     | 0.40              |
| 1:E:474:TRP:HB2  | 1:H:434:TRP:HD1  | 1.86                     | 0.40              |
| 1:H:92:HIS:O     | 1:H:93:PRO:C     | 2.59                     | 0.40              |
| 1:A:258:GLU:H    | 1:A:258:GLU:CD   | 2.24                     | 0.40              |
| 1:A:275:HIS:ND1  | 1:A:439:LYS:NZ   | 2.70                     | 0.40              |
| 1:B:355:ASP:O    | 1:B:358:LEU:N    | 2.50                     | 0.40              |
| 1:C:323:LEU:HD23 | 1:C:323:LEU:N    | 2.37                     | 0.40              |
| 1:D:153:MET:O    | 1:D:153:MET:HG2  | 2.21                     | 0.40              |
| 1:E:238:LYS:O    | 1:H:231:ARG:NE   | 2.33                     | 0.40              |
| 1:E:24:SER:HA    | 1:E:25:PRO:HD3   | 1.88                     | 0.40              |
| 1:G:34:ILE:O     | 1:G:34:ILE:HG13  | 2.17                     | 0.40              |
| 1:G:362:PHE:N    | 1:G:362:PHE:CD1  | 2.88                     | 0.40              |
| 1:B:225:GLY:O    | 1:B:248:LEU:HA   | 2.21                     | 0.40              |
| 1:B:76:GLU:OE1   | 1:B:110:ARG:NH1  | 2.36                     | 0.40              |
| 1:C:25:PRO:CD    | 2:C:512:HOH:O    | 2.69                     | 0.40              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:310:LEU:HD23 | 1:C:353:PRO:HG3  | 2.03                     | 0.40              |
| 1:C:376:ARG:C    | 1:C:378:CYS:N    | 2.75                     | 0.40              |
| 1:C:5:LEU:O      | 1:C:11:PHE:HA    | 2.21                     | 0.40              |
| 1:E:269:ALA:O    | 1:E:273:ILE:HG22 | 2.22                     | 0.40              |
| 1:E:312:ASP:OD1  | 1:E:313:PRO:HD2  | 2.21                     | 0.40              |
| 1:E:314:MET:HE2  | 1:E:314:MET:HA   | 2.03                     | 0.40              |
| 1:G:225:GLY:O    | 1:G:248:LEU:HA   | 2.21                     | 0.40              |
| 1:G:373:PRO:CG   | 1:G:374:GLN:H    | 2.34                     | 0.40              |
| 1:D:469:GLU:OE1  | 1:G:450:VAL:HG22 | 2.22                     | 0.40              |
| 1:G:94:ILE:HD12  | 1:G:94:ILE:HA    | 1.95                     | 0.40              |
| 1:H:142:VAL:HG11 | 1:H:467:TYR:CE2  | 2.50                     | 0.40              |
| 1:H:24:SER:HA    | 1:H:25:PRO:HD2   | 1.91                     | 0.40              |
| 1:A:476:ASN:HD21 | 1:A:480:LYS:HE3  | 1.86                     | 0.40              |
| 1:B:15:VAL:HG13  | 2:B:522:HOH:O    | 2.21                     | 0.40              |
| 1:B:148:TRP:HB3  | 1:B:174:SER:OG   | 2.22                     | 0.40              |
| 1:D:94:ILE:HA    | 1:D:97:SER:OG    | 2.21                     | 0.40              |
| 1:E:115:MET:O    | 1:E:119:ILE:HG13 | 2.21                     | 0.40              |
| 1:F:188:MET:O    | 1:F:193:PHE:HB2  | 2.21                     | 0.40              |
| 1:G:414:TRP:CE3  | 1:G:436:ASN:HA   | 2.57                     | 0.40              |
| 1:H:278:GLY:HA3  | 1:H:384:GLY:O    | 2.21                     | 0.40              |
| 1:H:273:ILE:HG21 | 1:H:387:VAL:HG21 | 2.04                     | 0.40              |

All (27) 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:B:393:SER:CB  | 1:H:354:ASP:O[2_545]   | 0.79                     | 1.41              |
| 1:B:356:LYS:NZ  | 1:F:341:GLU:CB[2_454]  | 0.88                     | 1.32              |
| 1:B:356:LYS:NZ  | 1:F:341:GLU:CA[2_454]  | 0.92                     | 1.28              |
| 1:A:478:ASP:OD2 | 1:H:423:LYS:CE[2_445]  | 1.10                     | 1.10              |
| 1:B:393:SER:OG  | 1:H:354:ASP:O[2_545]   | 1.14                     | 1.06              |
| 1:A:478:ASP:OD2 | 1:H:423:LYS:CD[2_445]  | 1.51                     | 0.69              |
| 1:B:356:LYS:NZ  | 1:F:341:GLU:C[2_454]   | 1.58                     | 0.62              |
| 1:B:356:LYS:CE  | 1:F:341:GLU:CB[2_454]  | 1.59                     | 0.61              |
| 1:B:393:SER:OG  | 1:H:354:ASP:C[2_545]   | 1.63                     | 0.57              |
| 1:B:292:ASP:OD1 | 1:H:354:ASP:OD2[2_545] | 1.68                     | 0.52              |
| 1:B:393:SER:OG  | 1:H:356:LYS:N[2_545]   | 1.70                     | 0.50              |
| 1:B:393:SER:OG  | 1:H:355:ASP:CA[2_545]  | 1.88                     | 0.32              |
| 1:E:300:ARG:NH1 | 1:F:396:GLU:OE2[2_454] | 1.90                     | 0.30              |
| 1:D:8:ASP:O     | 1:F:1:MET:N[1_565]     | 1.92                     | 0.28              |

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| Atom-1          | Atom-2                | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------------|--------------------------|-------------------|
| 1:B:393:SER:OG  | 1:H:355:ASP:N[2_545]  | 1.94                     | 0.26              |
| 1:B:393:SER:CB  | 1:H:354:ASP:C[2_545]  | 1.96                     | 0.24              |
| 1:B:393:SER:OG  | 1:H:355:ASP:C[2_545]  | 1.96                     | 0.24              |
| 1:C:486:LYS:NZ  | 1:E:195:LYS:CE[1_545] | 1.98                     | 0.22              |
| 1:C:33:ARG:CD   | 2:A:517:HOH:O[2_555]  | 2.01                     | 0.19              |
| 1:A:376:ARG:NH2 | 1:H:17:GLY:O[2_545]   | 2.02                     | 0.18              |
| 1:B:356:LYS:CE  | 1:F:341:GLU:CA[2_454] | 2.02                     | 0.18              |
| 1:B:356:LYS:CD  | 1:F:341:GLU:CB[2_454] | 2.03                     | 0.17              |
| 1:B:393:SER:O   | 1:H:355:ASP:CA[2_545] | 2.05                     | 0.15              |
| 1:A:478:ASP:CG  | 1:H:423:LYS:CE[2_445] | 2.06                     | 0.14              |
| 1:D:10:ARG:NH2  | 1:F:4:GLN:OE1[1_565]  | 2.13                     | 0.07              |
| 1:B:356:LYS:NZ  | 1:F:341:GLU:N[2_454]  | 2.15                     | 0.05              |
| 1:B:397:GLU:OE1 | 1:H:356:LYS:CG[2_545] | 2.17                     | 0.03              |

## 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     | 485/495 (98%)   | 452 (93%)  | 31 (6%)  | 2 (0%)   | 34 60       |
| 1   | B     | 486/495 (98%)   | 452 (93%)  | 30 (6%)  | 4 (1%)   | 19 43       |
| 1   | C     | 486/495 (98%)   | 440 (90%)  | 41 (8%)  | 5 (1%)   | 15 37       |
| 1   | D     | 485/495 (98%)   | 453 (93%)  | 31 (6%)  | 1 (0%)   | 47 73       |
| 1   | E     | 483/495 (98%)   | 446 (92%)  | 35 (7%)  | 2 (0%)   | 34 60       |
| 1   | F     | 485/495 (98%)   | 443 (91%)  | 40 (8%)  | 2 (0%)   | 34 60       |
| 1   | G     | 485/495 (98%)   | 432 (89%)  | 45 (9%)  | 8 (2%)   | 9 24        |
| 1   | H     | 485/495 (98%)   | 453 (93%)  | 29 (6%)  | 3 (1%)   | 25 50       |
| All | All   | 3880/3960 (98%) | 3571 (92%) | 282 (7%) | 27 (1%)  | 22 46       |

All (27) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | G     | 178 | PRO  |
| 1   | A     | 356 | LYS  |
| 1   | C     | 178 | PRO  |
| 1   | G     | 341 | GLU  |
| 1   | G     | 357 | ALA  |
| 1   | F     | 178 | PRO  |
| 1   | G     | 296 | GLN  |
| 1   | G     | 459 | MET  |
| 1   | B     | 39  | ALA  |
| 1   | B     | 356 | LYS  |
| 1   | B     | 404 | ASN  |
| 1   | C     | 175 | GLU  |
| 1   | E     | 313 | PRO  |
| 1   | E     | 459 | MET  |
| 1   | B     | 351 | LYS  |
| 1   | C     | 353 | PRO  |
| 1   | C     | 366 | PRO  |
| 1   | C     | 419 | ALA  |
| 1   | F     | 235 | GLU  |
| 1   | H     | 356 | LYS  |
| 1   | H     | 419 | ALA  |
| 1   | D     | 459 | MET  |
| 1   | A     | 408 | GLY  |
| 1   | G     | 366 | PRO  |
| 1   | G     | 338 | ILE  |
| 1   | G     | 293 | ILE  |
| 1   | H     | 178 | PRO  |

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed      | Rotameric | Outliers | Percentiles |
|-----|-------|---------------|-----------|----------|-------------|
| 1   | A     | 376/383 (98%) | 308 (82%) | 68 (18%) | 1 4         |
| 1   | B     | 377/383 (98%) | 308 (82%) | 69 (18%) | 1 4         |
| 1   | C     | 377/383 (98%) | 307 (81%) | 70 (19%) | 1 4         |
| 1   | D     | 376/383 (98%) | 308 (82%) | 68 (18%) | 1 4         |

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| Mol | Chain | Analysed        | Rotameric  | Outliers  | Percentiles |   |
|-----|-------|-----------------|------------|-----------|-------------|---|
| 1   | E     | 374/383 (98%)   | 306 (82%)  | 68 (18%)  | 1           | 4 |
| 1   | F     | 376/383 (98%)   | 304 (81%)  | 72 (19%)  | 1           | 4 |
| 1   | G     | 376/383 (98%)   | 303 (81%)  | 73 (19%)  | 1           | 3 |
| 1   | H     | 376/383 (98%)   | 307 (82%)  | 69 (18%)  | 1           | 4 |
| All | All   | 3008/3064 (98%) | 2451 (82%) | 557 (18%) | 1           | 4 |

All (557) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 2   | GLN  |
| 1   | A     | 10  | ARG  |
| 1   | A     | 19  | THR  |
| 1   | A     | 34  | ILE  |
| 1   | A     | 59  | LEU  |
| 1   | A     | 63  | GLU  |
| 1   | A     | 66  | ARG  |
| 1   | A     | 79  | SER  |
| 1   | A     | 87  | SER  |
| 1   | A     | 89  | ASN  |
| 1   | A     | 90  | THR  |
| 1   | A     | 92  | HIS  |
| 1   | A     | 94  | ILE  |
| 1   | A     | 95  | ARG  |
| 1   | A     | 98  | ARG  |
| 1   | A     | 102 | VAL  |
| 1   | A     | 118 | LYS  |
| 1   | A     | 122 | SER  |
| 1   | A     | 127 | ASP  |
| 1   | A     | 167 | ASN  |
| 1   | A     | 171 | ILE  |
| 1   | A     | 174 | SER  |
| 1   | A     | 175 | GLU  |
| 1   | A     | 176 | ILE  |
| 1   | A     | 180 | SER  |
| 1   | A     | 184 | ILE  |
| 1   | A     | 185 | VAL  |
| 1   | A     | 187 | LEU  |
| 1   | A     | 189 | THR  |
| 1   | A     | 190 | GLU  |
| 1   | A     | 191 | VAL  |
| 1   | A     | 207 | THR  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 210        | GLN         |
| 1          | A            | 212        | LEU         |
| 1          | A            | 215        | HIS         |
| 1          | A            | 221        | ILE         |
| 1          | A            | 229        | THR         |
| 1          | A            | 232        | ARG         |
| 1          | A            | 238        | LYS         |
| 1          | A            | 242        | LYS         |
| 1          | A            | 243        | ARG         |
| 1          | A            | 247        | GLU         |
| 1          | A            | 258        | GLU         |
| 1          | A            | 273        | ILE         |
| 1          | A            | 291        | LYS         |
| 1          | A            | 309        | ARG         |
| 1          | A            | 324        | THR         |
| 1          | A            | 327        | LEU         |
| 1          | A            | 328        | ARG         |
| 1          | A            | 338        | ILE         |
| 1          | A            | 342        | GLN         |
| 1          | A            | 351        | LYS         |
| 1          | A            | 356        | LYS         |
| 1          | A            | 358        | LEU         |
| 1          | A            | 374        | GLN         |
| 1          | A            | 376        | ARG         |
| 1          | A            | 377        | VAL         |
| 1          | A            | 387        | VAL         |
| 1          | A            | 393        | SER         |
| 1          | A            | 399        | LEU         |
| 1          | A            | 415        | THR         |
| 1          | A            | 416        | GLN         |
| 1          | A            | 440        | ARG         |
| 1          | A            | 458        | GLU         |
| 1          | A            | 469        | GLU         |
| 1          | A            | 477        | VAL         |
| 1          | A            | 480        | LYS         |
| 1          | A            | 481        | ILE         |
| 1          | B            | 1          | MET         |
| 1          | B            | 2          | GLN         |
| 1          | B            | 10         | ARG         |
| 1          | B            | 15         | VAL         |
| 1          | B            | 19         | THR         |
| 1          | B            | 34         | ILE         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | B            | 43         | ASP         |
| 1          | B            | 50         | LYS         |
| 1          | B            | 63         | GLU         |
| 1          | B            | 66         | ARG         |
| 1          | B            | 74         | ARG         |
| 1          | B            | 79         | SER         |
| 1          | B            | 81         | GLU         |
| 1          | B            | 92         | HIS         |
| 1          | B            | 94         | ILE         |
| 1          | B            | 95         | ARG         |
| 1          | B            | 118        | LYS         |
| 1          | B            | 122        | SER         |
| 1          | B            | 136        | ARG         |
| 1          | B            | 137        | LYS         |
| 1          | B            | 172        | LYS         |
| 1          | B            | 175        | GLU         |
| 1          | B            | 184        | ILE         |
| 1          | B            | 189        | THR         |
| 1          | B            | 191        | VAL         |
| 1          | B            | 195        | LYS         |
| 1          | B            | 212        | LEU         |
| 1          | B            | 220        | LYS         |
| 1          | B            | 221        | ILE         |
| 1          | B            | 242        | LYS         |
| 1          | B            | 243        | ARG         |
| 1          | B            | 247        | GLU         |
| 1          | B            | 251        | LYS         |
| 1          | B            | 258        | GLU         |
| 1          | B            | 262        | ILE         |
| 1          | B            | 276        | ASN         |
| 1          | B            | 299        | GLU         |
| 1          | B            | 300        | ARG         |
| 1          | B            | 324        | THR         |
| 1          | B            | 327        | LEU         |
| 1          | B            | 328        | ARG         |
| 1          | B            | 329        | ARG         |
| 1          | B            | 338        | ILE         |
| 1          | B            | 341        | GLU         |
| 1          | B            | 345        | LYS         |
| 1          | B            | 351        | LYS         |
| 1          | B            | 358        | LEU         |
| 1          | B            | 372        | LYS         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | B            | 374        | GLN         |
| 1          | B            | 376        | ARG         |
| 1          | B            | 377        | VAL         |
| 1          | B            | 380        | GLU         |
| 1          | B            | 381        | GLU         |
| 1          | B            | 387        | VAL         |
| 1          | B            | 393        | SER         |
| 1          | B            | 399        | LEU         |
| 1          | B            | 406        | GLU         |
| 1          | B            | 415        | THR         |
| 1          | B            | 423        | LYS         |
| 1          | B            | 426        | ASN         |
| 1          | B            | 432        | MET         |
| 1          | B            | 440        | ARG         |
| 1          | B            | 452        | GLN         |
| 1          | B            | 457        | ARG         |
| 1          | B            | 458        | GLU         |
| 1          | B            | 477        | VAL         |
| 1          | B            | 480        | LYS         |
| 1          | B            | 481        | ILE         |
| 1          | B            | 487        | ARG         |
| 1          | C            | 1          | MET         |
| 1          | C            | 2          | GLN         |
| 1          | C            | 15         | VAL         |
| 1          | C            | 19         | THR         |
| 1          | C            | 23         | VAL         |
| 1          | C            | 24         | SER         |
| 1          | C            | 30         | LEU         |
| 1          | C            | 43         | ASP         |
| 1          | C            | 79         | SER         |
| 1          | C            | 84         | GLN         |
| 1          | C            | 87         | SER         |
| 1          | C            | 90         | THR         |
| 1          | C            | 92         | HIS         |
| 1          | C            | 98         | ARG         |
| 1          | C            | 122        | SER         |
| 1          | C            | 135        | GLN         |
| 1          | C            | 136        | ARG         |
| 1          | C            | 142        | VAL         |
| 1          | C            | 156        | SER         |
| 1          | C            | 172        | LYS         |
| 1          | C            | 175        | GLU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | C            | 180        | SER         |
| 1          | C            | 184        | ILE         |
| 1          | C            | 189        | THR         |
| 1          | C            | 191        | VAL         |
| 1          | C            | 212        | LEU         |
| 1          | C            | 220        | LYS         |
| 1          | C            | 221        | ILE         |
| 1          | C            | 227        | THR         |
| 1          | C            | 235        | GLU         |
| 1          | C            | 237        | SER         |
| 1          | C            | 244        | ILE         |
| 1          | C            | 258        | GLU         |
| 1          | C            | 263        | GLU         |
| 1          | C            | 271        | TRP         |
| 1          | C            | 309        | ARG         |
| 1          | C            | 327        | LEU         |
| 1          | C            | 328        | ARG         |
| 1          | C            | 329        | ARG         |
| 1          | C            | 334        | SER         |
| 1          | C            | 338        | ILE         |
| 1          | C            | 340        | ILE         |
| 1          | C            | 345        | LYS         |
| 1          | C            | 351        | LYS         |
| 1          | C            | 354        | ASP         |
| 1          | C            | 356        | LYS         |
| 1          | C            | 374        | GLN         |
| 1          | C            | 377        | VAL         |
| 1          | C            | 378        | CYS         |
| 1          | C            | 380        | GLU         |
| 1          | C            | 383        | PHE         |
| 1          | C            | 388        | THR         |
| 1          | C            | 391        | ARG         |
| 1          | C            | 393        | SER         |
| 1          | C            | 399        | LEU         |
| 1          | C            | 401        | ILE         |
| 1          | C            | 404        | ASN         |
| 1          | C            | 416        | GLN         |
| 1          | C            | 423        | LYS         |
| 1          | C            | 432        | MET         |
| 1          | C            | 440        | ARG         |
| 1          | C            | 445        | SER         |
| 1          | C            | 458        | GLU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | C            | 466        | ASP         |
| 1          | C            | 469        | GLU         |
| 1          | C            | 471        | ARG         |
| 1          | C            | 478        | ASP         |
| 1          | C            | 480        | LYS         |
| 1          | C            | 481        | ILE         |
| 1          | C            | 487        | ARG         |
| 1          | D            | 10         | ARG         |
| 1          | D            | 12         | VAL         |
| 1          | D            | 24         | SER         |
| 1          | D            | 43         | ASP         |
| 1          | D            | 63         | GLU         |
| 1          | D            | 66         | ARG         |
| 1          | D            | 70         | LYS         |
| 1          | D            | 74         | ARG         |
| 1          | D            | 81         | GLU         |
| 1          | D            | 89         | ASN         |
| 1          | D            | 92         | HIS         |
| 1          | D            | 95         | ARG         |
| 1          | D            | 97         | SER         |
| 1          | D            | 118        | LYS         |
| 1          | D            | 122        | SER         |
| 1          | D            | 136        | ARG         |
| 1          | D            | 159        | MET         |
| 1          | D            | 172        | LYS         |
| 1          | D            | 174        | SER         |
| 1          | D            | 180        | SER         |
| 1          | D            | 184        | ILE         |
| 1          | D            | 191        | VAL         |
| 1          | D            | 212        | LEU         |
| 1          | D            | 220        | LYS         |
| 1          | D            | 221        | ILE         |
| 1          | D            | 233        | ILE         |
| 1          | D            | 238        | LYS         |
| 1          | D            | 242        | LYS         |
| 1          | D            | 243        | ARG         |
| 1          | D            | 247        | GLU         |
| 1          | D            | 258        | GLU         |
| 1          | D            | 263        | GLU         |
| 1          | D            | 273        | ILE         |
| 1          | D            | 291        | LYS         |
| 1          | D            | 299        | GLU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | D            | 300        | ARG         |
| 1          | D            | 309        | ARG         |
| 1          | D            | 317        | GLU         |
| 1          | D            | 320        | MET         |
| 1          | D            | 323        | LEU         |
| 1          | D            | 324        | THR         |
| 1          | D            | 327        | LEU         |
| 1          | D            | 328        | ARG         |
| 1          | D            | 329        | ARG         |
| 1          | D            | 331        | ARG         |
| 1          | D            | 338        | ILE         |
| 1          | D            | 342        | GLN         |
| 1          | D            | 345        | LYS         |
| 1          | D            | 354        | ASP         |
| 1          | D            | 358        | LEU         |
| 1          | D            | 374        | GLN         |
| 1          | D            | 376        | ARG         |
| 1          | D            | 380        | GLU         |
| 1          | D            | 387        | VAL         |
| 1          | D            | 393        | SER         |
| 1          | D            | 399        | LEU         |
| 1          | D            | 404        | ASN         |
| 1          | D            | 413        | LEU         |
| 1          | D            | 415        | THR         |
| 1          | D            | 416        | GLN         |
| 1          | D            | 423        | LYS         |
| 1          | D            | 432        | MET         |
| 1          | D            | 445        | SER         |
| 1          | D            | 457        | ARG         |
| 1          | D            | 468        | THR         |
| 1          | D            | 477        | VAL         |
| 1          | D            | 486        | LYS         |
| 1          | D            | 487        | ARG         |
| 1          | E            | 1          | MET         |
| 1          | E            | 2          | GLN         |
| 1          | E            | 8          | ASP         |
| 1          | E            | 10         | ARG         |
| 1          | E            | 15         | VAL         |
| 1          | E            | 34         | ILE         |
| 1          | E            | 74         | ARG         |
| 1          | E            | 79         | SER         |
| 1          | E            | 87         | SER         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | E            | 89         | ASN         |
| 1          | E            | 92         | HIS         |
| 1          | E            | 94         | ILE         |
| 1          | E            | 95         | ARG         |
| 1          | E            | 124        | ILE         |
| 1          | E            | 135        | GLN         |
| 1          | E            | 137        | LYS         |
| 1          | E            | 153        | MET         |
| 1          | E            | 172        | LYS         |
| 1          | E            | 175        | GLU         |
| 1          | E            | 178        | PRO         |
| 1          | E            | 180        | SER         |
| 1          | E            | 184        | ILE         |
| 1          | E            | 189        | THR         |
| 1          | E            | 191        | VAL         |
| 1          | E            | 195        | LYS         |
| 1          | E            | 201        | VAL         |
| 1          | E            | 207        | THR         |
| 1          | E            | 212        | LEU         |
| 1          | E            | 214        | GLU         |
| 1          | E            | 220        | LYS         |
| 1          | E            | 229        | THR         |
| 1          | E            | 232        | ARG         |
| 1          | E            | 233        | ILE         |
| 1          | E            | 238        | LYS         |
| 1          | E            | 242        | LYS         |
| 1          | E            | 243        | ARG         |
| 1          | E            | 247        | GLU         |
| 1          | E            | 258        | GLU         |
| 1          | E            | 262        | ILE         |
| 1          | E            | 273        | ILE         |
| 1          | E            | 304        | LEU         |
| 1          | E            | 309        | ARG         |
| 1          | E            | 324        | THR         |
| 1          | E            | 327        | LEU         |
| 1          | E            | 328        | ARG         |
| 1          | E            | 338        | ILE         |
| 1          | E            | 351        | LYS         |
| 1          | E            | 355        | ASP         |
| 1          | E            | 356        | LYS         |
| 1          | E            | 358        | LEU         |
| 1          | E            | 374        | GLN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | E            | 386        | PHE         |
| 1          | E            | 387        | VAL         |
| 1          | E            | 388        | THR         |
| 1          | E            | 391        | ARG         |
| 1          | E            | 393        | SER         |
| 1          | E            | 399        | LEU         |
| 1          | E            | 405        | THR         |
| 1          | E            | 415        | THR         |
| 1          | E            | 416        | GLN         |
| 1          | E            | 423        | LYS         |
| 1          | E            | 426        | ASN         |
| 1          | E            | 432        | MET         |
| 1          | E            | 439        | LYS         |
| 1          | E            | 440        | ARG         |
| 1          | E            | 458        | GLU         |
| 1          | E            | 480        | LYS         |
| 1          | E            | 481        | ILE         |
| 1          | F            | 1          | MET         |
| 1          | F            | 10         | ARG         |
| 1          | F            | 19         | THR         |
| 1          | F            | 30         | LEU         |
| 1          | F            | 34         | ILE         |
| 1          | F            | 44         | LEU         |
| 1          | F            | 51         | ARG         |
| 1          | F            | 59         | LEU         |
| 1          | F            | 66         | ARG         |
| 1          | F            | 70         | LYS         |
| 1          | F            | 77         | GLU         |
| 1          | F            | 79         | SER         |
| 1          | F            | 80         | GLU         |
| 1          | F            | 84         | GLN         |
| 1          | F            | 87         | SER         |
| 1          | F            | 89         | ASN         |
| 1          | F            | 94         | ILE         |
| 1          | F            | 95         | ARG         |
| 1          | F            | 122        | SER         |
| 1          | F            | 127        | ASP         |
| 1          | F            | 136        | ARG         |
| 1          | F            | 172        | LYS         |
| 1          | F            | 174        | SER         |
| 1          | F            | 175        | GLU         |
| 1          | F            | 176        | ILE         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | F            | 186        | GLU         |
| 1          | F            | 195        | LYS         |
| 1          | F            | 201        | VAL         |
| 1          | F            | 212        | LEU         |
| 1          | F            | 214        | GLU         |
| 1          | F            | 221        | ILE         |
| 1          | F            | 226        | SER         |
| 1          | F            | 229        | THR         |
| 1          | F            | 238        | LYS         |
| 1          | F            | 243        | ARG         |
| 1          | F            | 245        | GLN         |
| 1          | F            | 247        | GLU         |
| 1          | F            | 251        | LYS         |
| 1          | F            | 258        | GLU         |
| 1          | F            | 263        | GLU         |
| 1          | F            | 289        | LEU         |
| 1          | F            | 291        | LYS         |
| 1          | F            | 293        | ILE         |
| 1          | F            | 299        | GLU         |
| 1          | F            | 309        | ARG         |
| 1          | F            | 323        | LEU         |
| 1          | F            | 324        | THR         |
| 1          | F            | 327        | LEU         |
| 1          | F            | 328        | ARG         |
| 1          | F            | 329        | ARG         |
| 1          | F            | 330        | ASP         |
| 1          | F            | 340        | ILE         |
| 1          | F            | 345        | LYS         |
| 1          | F            | 351        | LYS         |
| 1          | F            | 354        | ASP         |
| 1          | F            | 374        | GLN         |
| 1          | F            | 376        | ARG         |
| 1          | F            | 379        | GLN         |
| 1          | F            | 381        | GLU         |
| 1          | F            | 390        | VAL         |
| 1          | F            | 393        | SER         |
| 1          | F            | 399        | LEU         |
| 1          | F            | 415        | THR         |
| 1          | F            | 432        | MET         |
| 1          | F            | 445        | SER         |
| 1          | F            | 458        | GLU         |
| 1          | F            | 468        | THR         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | F            | 471        | ARG         |
| 1          | F            | 478        | ASP         |
| 1          | F            | 480        | LYS         |
| 1          | F            | 481        | ILE         |
| 1          | F            | 487        | ARG         |
| 1          | G            | 8          | ASP         |
| 1          | G            | 10         | ARG         |
| 1          | G            | 15         | VAL         |
| 1          | G            | 19         | THR         |
| 1          | G            | 20         | ILE         |
| 1          | G            | 21         | ASP         |
| 1          | G            | 30         | LEU         |
| 1          | G            | 34         | ILE         |
| 1          | G            | 43         | ASP         |
| 1          | G            | 66         | ARG         |
| 1          | G            | 70         | LYS         |
| 1          | G            | 74         | ARG         |
| 1          | G            | 75         | ILE         |
| 1          | G            | 79         | SER         |
| 1          | G            | 87         | SER         |
| 1          | G            | 89         | ASN         |
| 1          | G            | 98         | ARG         |
| 1          | G            | 118        | LYS         |
| 1          | G            | 122        | SER         |
| 1          | G            | 136        | ARG         |
| 1          | G            | 148        | TRP         |
| 1          | G            | 149        | ASN         |
| 1          | G            | 159        | MET         |
| 1          | G            | 174        | SER         |
| 1          | G            | 175        | GLU         |
| 1          | G            | 177        | THR         |
| 1          | G            | 183        | ARG         |
| 1          | G            | 184        | ILE         |
| 1          | G            | 195        | LYS         |
| 1          | G            | 201        | VAL         |
| 1          | G            | 214        | GLU         |
| 1          | G            | 221        | ILE         |
| 1          | G            | 238        | LYS         |
| 1          | G            | 243        | ARG         |
| 1          | G            | 247        | GLU         |
| 1          | G            | 251        | LYS         |
| 1          | G            | 258        | GLU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | G            | 271        | TRP         |
| 1          | G            | 289        | LEU         |
| 1          | G            | 293        | ILE         |
| 1          | G            | 299        | GLU         |
| 1          | G            | 300        | ARG         |
| 1          | G            | 320        | MET         |
| 1          | G            | 323        | LEU         |
| 1          | G            | 328        | ARG         |
| 1          | G            | 331        | ARG         |
| 1          | G            | 334        | SER         |
| 1          | G            | 337        | ASP         |
| 1          | G            | 338        | ILE         |
| 1          | G            | 340        | ILE         |
| 1          | G            | 345        | LYS         |
| 1          | G            | 351        | LYS         |
| 1          | G            | 355        | ASP         |
| 1          | G            | 358        | LEU         |
| 1          | G            | 376        | ARG         |
| 1          | G            | 377        | VAL         |
| 1          | G            | 380        | GLU         |
| 1          | G            | 387        | VAL         |
| 1          | G            | 388        | THR         |
| 1          | G            | 390        | VAL         |
| 1          | G            | 393        | SER         |
| 1          | G            | 399        | LEU         |
| 1          | G            | 404        | ASN         |
| 1          | G            | 415        | THR         |
| 1          | G            | 416        | GLN         |
| 1          | G            | 432        | MET         |
| 1          | G            | 445        | SER         |
| 1          | G            | 447        | PHE         |
| 1          | G            | 453        | SER         |
| 1          | G            | 457        | ARG         |
| 1          | G            | 468        | THR         |
| 1          | G            | 481        | ILE         |
| 1          | G            | 486        | LYS         |
| 1          | H            | 1          | MET         |
| 1          | H            | 4          | GLN         |
| 1          | H            | 8          | ASP         |
| 1          | H            | 19         | THR         |
| 1          | H            | 24         | SER         |
| 1          | H            | 59         | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | H            | 66         | ARG         |
| 1          | H            | 74         | ARG         |
| 1          | H            | 79         | SER         |
| 1          | H            | 87         | SER         |
| 1          | H            | 89         | ASN         |
| 1          | H            | 92         | HIS         |
| 1          | H            | 95         | ARG         |
| 1          | H            | 100        | LEU         |
| 1          | H            | 118        | LYS         |
| 1          | H            | 122        | SER         |
| 1          | H            | 124        | ILE         |
| 1          | H            | 127        | ASP         |
| 1          | H            | 146        | VAL         |
| 1          | H            | 147        | PRO         |
| 1          | H            | 155        | THR         |
| 1          | H            | 168        | THR         |
| 1          | H            | 175        | GLU         |
| 1          | H            | 180        | SER         |
| 1          | H            | 184        | ILE         |
| 1          | H            | 195        | LYS         |
| 1          | H            | 212        | LEU         |
| 1          | H            | 214        | GLU         |
| 1          | H            | 221        | ILE         |
| 1          | H            | 229        | THR         |
| 1          | H            | 233        | ILE         |
| 1          | H            | 238        | LYS         |
| 1          | H            | 242        | LYS         |
| 1          | H            | 243        | ARG         |
| 1          | H            | 244        | ILE         |
| 1          | H            | 247        | GLU         |
| 1          | H            | 258        | GLU         |
| 1          | H            | 263        | GLU         |
| 1          | H            | 271        | TRP         |
| 1          | H            | 273        | ILE         |
| 1          | H            | 299        | GLU         |
| 1          | H            | 304        | LEU         |
| 1          | H            | 306        | LYS         |
| 1          | H            | 309        | ARG         |
| 1          | H            | 325        | SER         |
| 1          | H            | 327        | LEU         |
| 1          | H            | 328        | ARG         |
| 1          | H            | 329        | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | H            | 338        | ILE         |
| 1          | H            | 354        | ASP         |
| 1          | H            | 355        | ASP         |
| 1          | H            | 356        | LYS         |
| 1          | H            | 358        | LEU         |
| 1          | H            | 362        | PHE         |
| 1          | H            | 363        | TYR         |
| 1          | H            | 380        | GLU         |
| 1          | H            | 387        | VAL         |
| 1          | H            | 399        | LEU         |
| 1          | H            | 404        | ASN         |
| 1          | H            | 415        | THR         |
| 1          | H            | 416        | GLN         |
| 1          | H            | 423        | LYS         |
| 1          | H            | 432        | MET         |
| 1          | H            | 450        | VAL         |
| 1          | H            | 458        | GLU         |
| 1          | H            | 471        | ARG         |
| 1          | H            | 478        | ASP         |
| 1          | H            | 480        | LYS         |
| 1          | H            | 481        | ILE         |

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (74) such sidechains are listed below:

| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 2          | GLN         |
| 1          | A            | 92         | HIS         |
| 1          | A            | 132        | ASN         |
| 1          | A            | 167        | ASN         |
| 1          | A            | 215        | HIS         |
| 1          | A            | 277        | GLN         |
| 1          | A            | 290        | HIS         |
| 1          | A            | 342        | GLN         |
| 1          | A            | 404        | ASN         |
| 1          | A            | 417        | ASN         |
| 1          | B            | 2          | GLN         |
| 1          | B            | 4          | GLN         |
| 1          | B            | 84         | GLN         |
| 1          | B            | 132        | ASN         |
| 1          | B            | 277        | GLN         |
| 1          | B            | 290        | HIS         |
| 1          | B            | 417        | ASN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | B            | 465        | HIS         |
| 1          | C            | 2          | GLN         |
| 1          | C            | 132        | ASN         |
| 1          | C            | 135        | GLN         |
| 1          | C            | 215        | HIS         |
| 1          | C            | 277        | GLN         |
| 1          | C            | 290        | HIS         |
| 1          | C            | 416        | GLN         |
| 1          | C            | 417        | ASN         |
| 1          | C            | 429        | HIS         |
| 1          | D            | 2          | GLN         |
| 1          | D            | 84         | GLN         |
| 1          | D            | 132        | ASN         |
| 1          | D            | 206        | HIS         |
| 1          | D            | 276        | ASN         |
| 1          | D            | 277        | GLN         |
| 1          | D            | 290        | HIS         |
| 1          | D            | 404        | ASN         |
| 1          | D            | 416        | GLN         |
| 1          | D            | 417        | ASN         |
| 1          | D            | 429        | HIS         |
| 1          | E            | 2          | GLN         |
| 1          | E            | 84         | GLN         |
| 1          | E            | 132        | ASN         |
| 1          | E            | 277        | GLN         |
| 1          | E            | 290        | HIS         |
| 1          | E            | 342        | GLN         |
| 1          | E            | 374        | GLN         |
| 1          | E            | 417        | ASN         |
| 1          | E            | 426        | ASN         |
| 1          | F            | 2          | GLN         |
| 1          | F            | 144        | GLN         |
| 1          | F            | 277        | GLN         |
| 1          | F            | 290        | HIS         |
| 1          | F            | 296        | GLN         |
| 1          | F            | 417        | ASN         |
| 1          | F            | 429        | HIS         |
| 1          | F            | 465        | HIS         |
| 1          | G            | 2          | GLN         |
| 1          | G            | 132        | ASN         |
| 1          | G            | 144        | GLN         |
| 1          | G            | 290        | HIS         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | G     | 379 | GLN  |
| 1   | G     | 426 | ASN  |
| 1   | H     | 2   | GLN  |
| 1   | H     | 4   | GLN  |
| 1   | H     | 84  | GLN  |
| 1   | H     | 89  | ASN  |
| 1   | H     | 92  | HIS  |
| 1   | H     | 132 | ASN  |
| 1   | H     | 144 | GLN  |
| 1   | H     | 215 | HIS  |
| 1   | H     | 277 | GLN  |
| 1   | H     | 290 | HIS  |
| 1   | H     | 342 | GLN  |
| 1   | H     | 379 | GLN  |
| 1   | H     | 417 | ASN  |

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 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     | 487/495 (98%)   | -0.10  | 2 (0%) 92 93  | 14, 34, 61, 93        | 0     |
| 1   | B     | 487/495 (98%)   | -0.08  | 3 (0%) 89 91  | 16, 36, 61, 102       | 0     |
| 1   | C     | 487/495 (98%)   | -0.13  | 1 (0%) 95 96  | 12, 37, 62, 145       | 0     |
| 1   | D     | 487/495 (98%)   | 0.04   | 5 (1%) 82 83  | 14, 35, 59, 165       | 0     |
| 1   | E     | 485/495 (97%)   | 0.06   | 9 (1%) 66 69  | 16, 37, 61, 113       | 0     |
| 1   | F     | 487/495 (98%)   | 0.17   | 8 (1%) 72 74  | 11, 44, 76, 131       | 0     |
| 1   | G     | 487/495 (98%)   | 0.24   | 21 (4%) 35 33 | 18, 47, 94, 137       | 0     |
| 1   | H     | 487/495 (98%)   | 0.39   | 24 (4%) 29 28 | 16, 45, 79, 148       | 0     |
| All | All   | 3894/3960 (98%) | 0.07   | 73 (1%) 66 69 | 11, 39, 73, 165       | 0     |

All (73) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | F     | 376 | ARG  | 5.3  |
| 1   | H     | 358 | LEU  | 5.0  |
| 1   | G     | 341 | GLU  | 4.2  |
| 1   | E     | 482 | ALA  | 4.2  |
| 1   | F     | 382 | VAL  | 4.0  |
| 1   | C     | 354 | ASP  | 3.8  |
| 1   | D     | 356 | LYS  | 3.7  |
| 1   | G     | 309 | ARG  | 3.6  |
| 1   | F     | 1   | MET  | 3.6  |
| 1   | E     | 357 | ALA  | 3.5  |
| 1   | H     | 31  | ILE  | 3.4  |
| 1   | G     | 83  | ALA  | 3.4  |
| 1   | E     | 485 | PHE  | 3.3  |
| 1   | E     | 483 | PRO  | 3.2  |
| 1   | H     | 359 | ALA  | 3.1  |
| 1   | E     | 1   | MET  | 3.1  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 1          | H            | 325        | SER         | 3.1         |
| 1          | H            | 361        | GLY         | 3.1         |
| 1          | H            | 340        | ILE         | 3.0         |
| 1          | H            | 23         | VAL         | 3.0         |
| 1          | G            | 311        | GLY         | 3.0         |
| 1          | H            | 354        | ASP         | 3.0         |
| 1          | H            | 88         | LEU         | 2.9         |
| 1          | H            | 480        | LYS         | 2.9         |
| 1          | H            | 1          | MET         | 2.8         |
| 1          | F            | 377        | VAL         | 2.8         |
| 1          | G            | 331        | ARG         | 2.8         |
| 1          | G            | 377        | VAL         | 2.7         |
| 1          | G            | 328        | ARG         | 2.7         |
| 1          | H            | 87         | SER         | 2.7         |
| 1          | D            | 486        | LYS         | 2.7         |
| 1          | E            | 257        | PHE         | 2.6         |
| 1          | F            | 36         | ALA         | 2.6         |
| 1          | A            | 377        | VAL         | 2.6         |
| 1          | H            | 12         | VAL         | 2.6         |
| 1          | B            | 23         | VAL         | 2.6         |
| 1          | H            | 337        | ASP         | 2.5         |
| 1          | F            | 378        | CYS         | 2.4         |
| 1          | H            | 180        | SER         | 2.4         |
| 1          | G            | 384        | GLY         | 2.3         |
| 1          | A            | 356        | LYS         | 2.3         |
| 1          | G            | 334        | SER         | 2.3         |
| 1          | F            | 369        | VAL         | 2.3         |
| 1          | E            | 78         | CYS         | 2.3         |
| 1          | F            | 299        | GLU         | 2.3         |
| 1          | E            | 97         | SER         | 2.3         |
| 1          | H            | 26         | HIS         | 2.3         |
| 1          | G            | 323        | LEU         | 2.3         |
| 1          | G            | 93         | PRO         | 2.2         |
| 1          | H            | 83         | ALA         | 2.2         |
| 1          | B            | 357        | ALA         | 2.2         |
| 1          | E            | 102        | VAL         | 2.2         |
| 1          | H            | 191        | VAL         | 2.2         |
| 1          | G            | 317        | GLU         | 2.2         |
| 1          | D            | 485        | PHE         | 2.2         |
| 1          | H            | 364        | VAL         | 2.2         |
| 1          | G            | 326        | ALA         | 2.2         |
| 1          | B            | 478        | ASP         | 2.2         |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1   | H     | 296 | GLN  | 2.2  |
| 1   | H     | 386 | PHE  | 2.2  |
| 1   | G     | 362 | PHE  | 2.2  |
| 1   | G     | 279 | GLN  | 2.1  |
| 1   | G     | 374 | GLN  | 2.1  |
| 1   | G     | 36  | ALA  | 2.1  |
| 1   | H     | 372 | LYS  | 2.1  |
| 1   | G     | 310 | LEU  | 2.1  |
| 1   | D     | 1   | MET  | 2.1  |
| 1   | G     | 386 | PHE  | 2.1  |
| 1   | H     | 86  | GLU  | 2.1  |
| 1   | G     | 316 | PRO  | 2.1  |
| 1   | G     | 327 | LEU  | 2.0  |
| 1   | H     | 85  | LEU  | 2.0  |
| 1   | D     | 351 | LYS  | 2.0  |

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

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

## 6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 6.4 Ligands [i](#)

There are no ligands in this entry.

## 6.5 Other polymers [i](#)

There are no such residues in this entry.