



# Full wwPDB X-ray Structure Validation Report ⓘ

May 18, 2020 – 02:39 pm BST

PDB ID : 1SCU  
Title : THE CRYSTAL STRUCTURE OF SUCCINYL-COA SYNTHETASE FROM  
ESCHERICHIA COLI AT 2.5 ANGSTROMS RESOLUTION  
Authors : Wolodko, W.T.; Fraser, M.E.; James, M.N.G.; Bridger, W.A.  
Deposited on : 1993-11-18  
Resolution : 2.50 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  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtrriage (Phenix) : **NOT EXECUTED**  
EDS : **NOT EXECUTED**  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.11

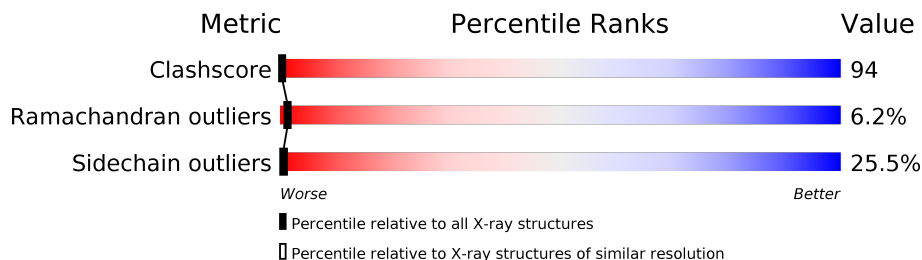
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.50 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)) |
|-----------------------|-----------------------------|---|
| Clashscore            | 141614                      | 5346 (2.50-2.50)                                      |
| Ramachandran outliers | 138981                      | 5231 (2.50-2.50)                                      |
| Sidechain outliers    | 138945                      | 5233 (2.50-2.50)                                      |

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  $\leq 5\%$ .

Note EDS was not executed.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | A     | 288    | 17% 50% 26% 7%   |
| 1   | D     | 288    | 14% 51% 28% 6%   |
| 2   | B     | 388    | 20% 49% 28% .    |
| 2   | E     | 388    | 21% 41% 31% 7%   |

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 10188 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.

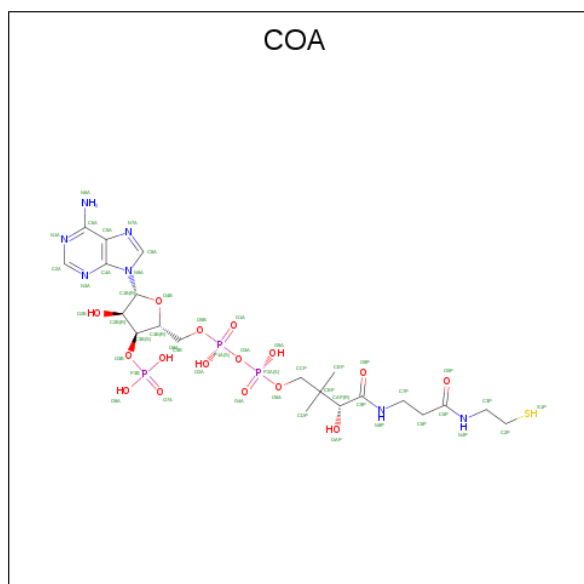
- Molecule 1 is a protein called SUCCINYL-COA SYNTHETASE, ALPHA SUBUNIT.

| Mol | Chain | Residues | Atoms         |           |          |          |        | ZeroOcc | AltConf | Trace |   |
|-----|-------|----------|---------------|-----------|----------|----------|--------|---------|---------|-------|---|
|     |       |          | Total         | C         | N        | O        | P      |         |         |       | S |
| 1   | A     | 288      | Total<br>2083 | C<br>1319 | N<br>348 | O<br>404 | P<br>1 | S<br>11 | 0       | 0     | 0 |
| 1   | D     | 288      | Total<br>2083 | C<br>1319 | N<br>348 | O<br>404 | P<br>1 | S<br>11 | 0       | 0     | 0 |

- Molecule 2 is a protein called SUCCINYL-COA SYNTHETASE, BETA SUBUNIT.

| Mol | Chain | Residues | Atoms         |           |          |          |         | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|-----------|----------|----------|---------|---------|---------|-------|
|     |       |          | Total         | C         | N        | O        | S       |         |         |       |
| 2   | B     | 388      | Total<br>2908 | C<br>1836 | N<br>509 | O<br>550 | S<br>13 | 0       | 0       | 0     |
| 2   | E     | 388      | Total<br>2908 | C<br>1836 | N<br>509 | O<br>550 | S<br>13 | 0       | 0       | 0     |

- Molecule 3 is COENZYME A (three-letter code: COA) (formula:  $C_{21}H_{36}N_7O_{16}P_3S$ ).



| Mol | Chain | Residues | Atoms |    |   |    |   | ZeroOcc | AltConf |   |
|-----|-------|----------|-------|----|---|----|---|---------|---------|---|
| 3   | A     | 1        | Total | C  | N | O  | P | S       | 0       | 0 |
|     |       |          | 48    | 21 | 7 | 16 | 3 | 1       |         |   |
| 3   | D     | 1        | Total | C  | N | O  | P | S       | 0       | 0 |
|     |       |          | 48    | 21 | 7 | 16 | 3 | 1       |         |   |

- Molecule 4 is water.

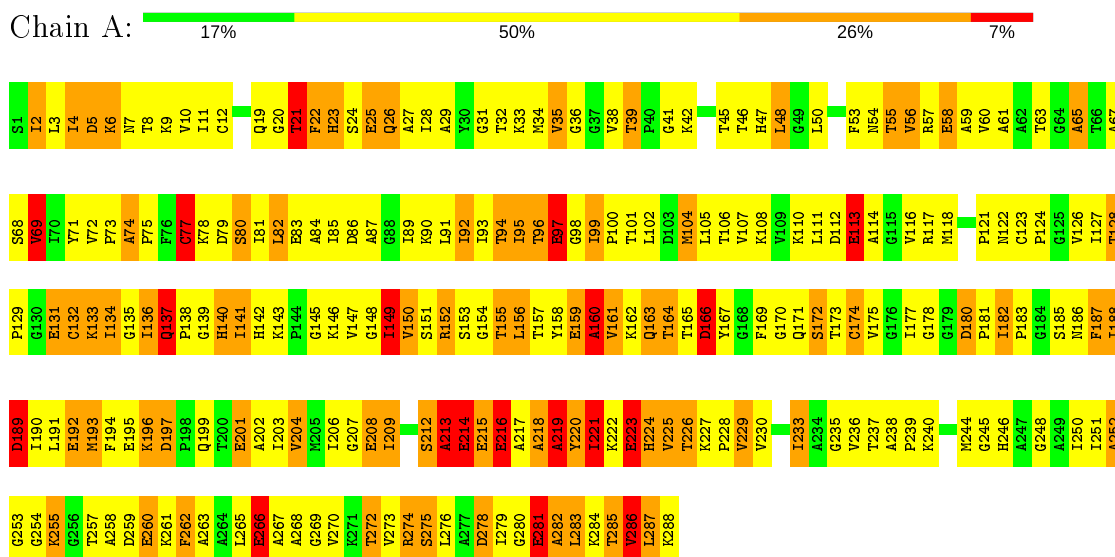
| Mol | Chain | Residues | Atoms |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 4   | A     | 22       | Total | O  | 0       | 0       |
|     |       |          | 22    | 22 |         |         |
| 4   | B     | 33       | Total | O  | 0       | 0       |
|     |       |          | 33    | 33 |         |         |
| 4   | D     | 25       | Total | O  | 0       | 0       |
|     |       |          | 25    | 25 |         |         |
| 4   | E     | 30       | Total | O  | 0       | 0       |
|     |       |          | 30    | 30 |         |         |

### 3 Residue-property plots

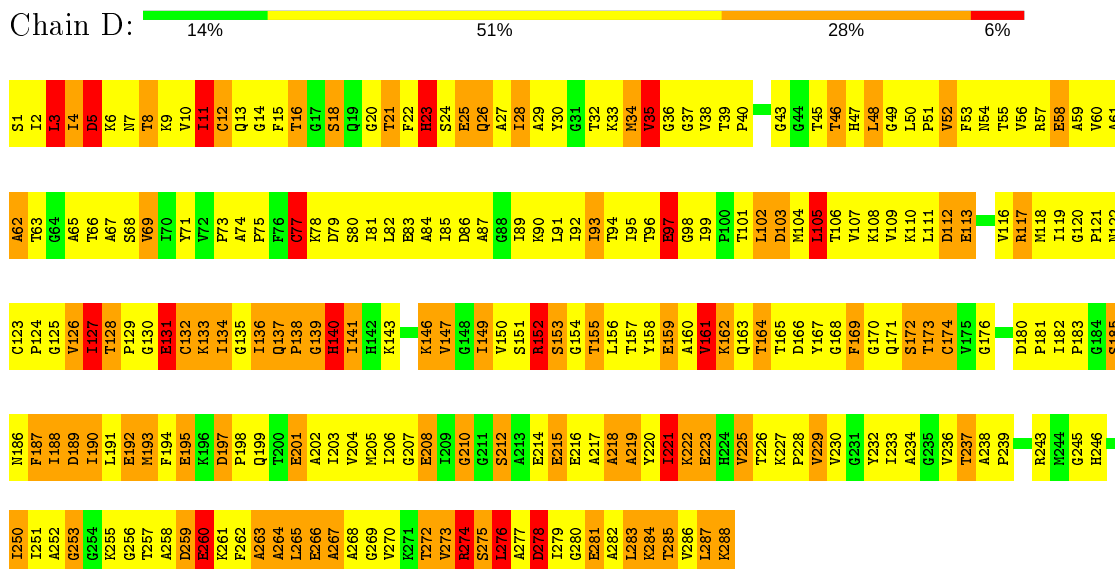
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

Note EDS was not executed.

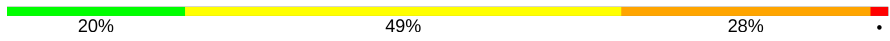
#### • Molecule 1: SUCCINYL-COA SYNTHETASE, ALPHA SUBUNIT

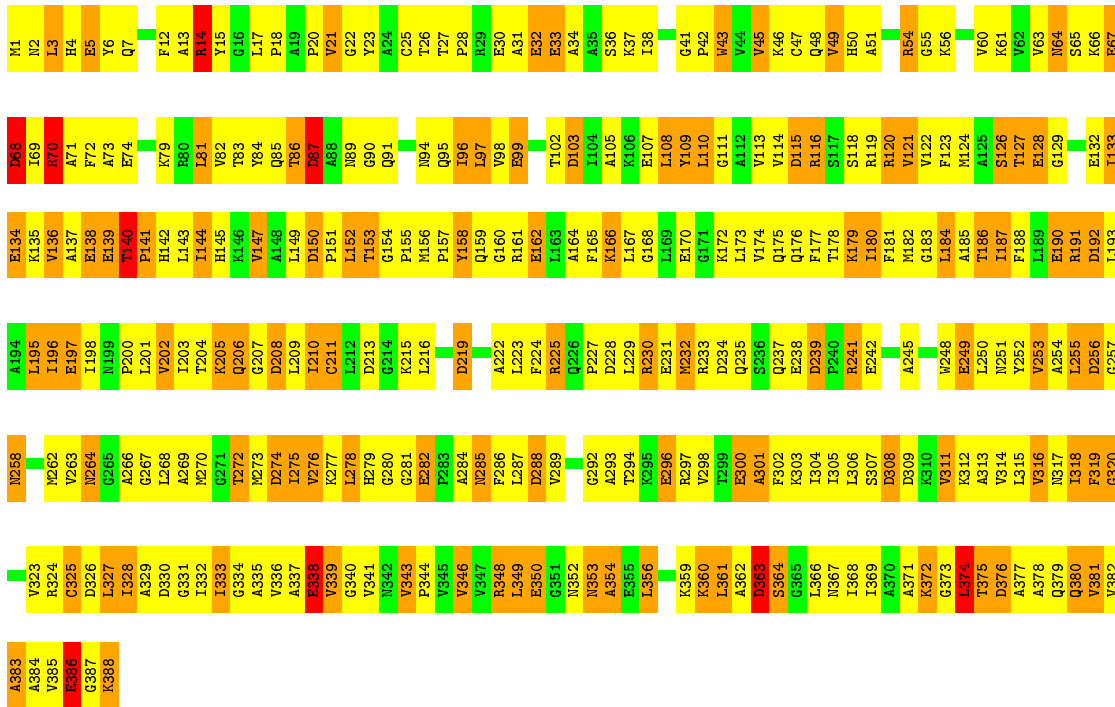


#### • Molecule 1: SUCCINYL-COA SYNTHETASE, ALPHA SUBUNIT




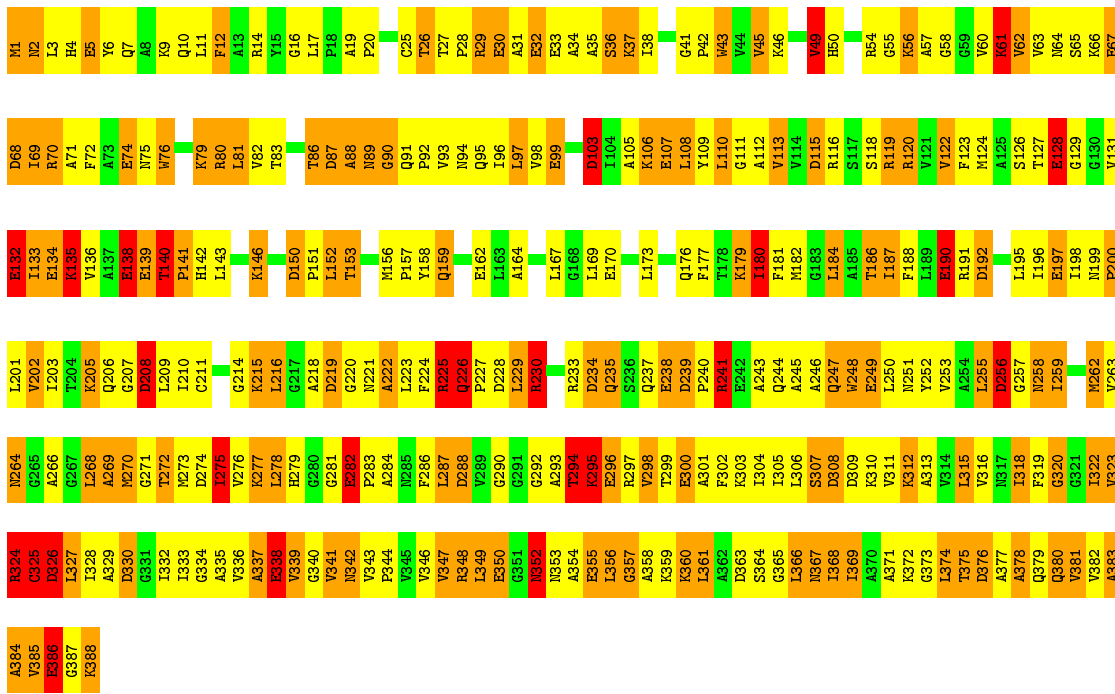
• Molecule 2: SUCCINYL-COA SYNTHETASE, BETA SUBUNIT

Chain B: 



• Molecule 2: SUCCINYL-COA SYNTHETASE, BETA SUBUNIT

Chain E: 



## 4 Data and refinement statistics

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

| Property   | Value   | Source    |
|--|---|-----------|
| Space group  | P 43 2 2                                      | Depositor |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$ | 98.47Å 98.47Å 400.60Å<br>90.00° 90.00° 90.00° | Depositor |
| Resolution (Å)   | 100.00 – 2.50                                 | Depositor |
| % Data completeness<br>(in resolution range)             | (Not available) (100.00-2.50)                 | Depositor |
| $R_{merge}$  | (Not available)                               | Depositor |
| $R_{sym}$  | (Not available)                               | Depositor |
| Refinement program                                       | TNT, X-PLOR                                   | Depositor |
| R, $R_{free}$  | 0.216 , (Not available)                       | Depositor |
| Estimated twinning fraction                              | No twinning to report.                        | Xtriage   |
| Total number of atoms                                    | 10188   | wwPDB-VP  |
| Average B, all atoms (Å <sup>2</sup> )                   | 37.0  | wwPDB-VP  |

## 5 Model quality i

### 5.1 Standard geometry i

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

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     | 1.38         | 16/2101 (0.8%)  | 1.82        | 46/2842 (1.6%)   |
| 1   | D     | 1.38         | 18/2101 (0.9%)  | 1.79        | 42/2842 (1.5%)   |
| 2   | B     | 1.42         | 26/2950 (0.9%)  | 1.79        | 55/3989 (1.4%)   |
| 2   | E     | 1.43         | 26/2950 (0.9%)  | 1.85        | 89/3989 (2.2%)   |
| All | All   | 1.41         | 86/10102 (0.9%) | 1.81        | 232/13662 (1.7%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | A     | 1                   | 0                   |
| 2   | B     | 1                   | 0                   |
| 2   | E     | 5                   | 0                   |
| All | All   | 7                   | 0                   |

All (86) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 2   | B     | 162 | GLU  | CD-OE2 | 10.37 | 1.37        | 1.25     |
| 2   | E     | 350 | GLU  | CD-OE2 | 9.76  | 1.36        | 1.25     |
| 1   | D     | 58  | GLU  | CD-OE2 | 9.60  | 1.36        | 1.25     |
| 2   | E     | 132 | GLU  | CD-OE1 | 8.90  | 1.35        | 1.25     |
| 2   | E     | 162 | GLU  | CD-OE2 | 8.88  | 1.35        | 1.25     |
| 1   | A     | 223 | GLU  | CD-OE1 | 8.18  | 1.34        | 1.25     |
| 2   | B     | 32  | GLU  | CD-OE2 | 7.91  | 1.34        | 1.25     |
| 2   | E     | 67  | GLU  | CD-OE2 | 7.84  | 1.34        | 1.25     |
| 1   | A     | 97  | GLU  | CD-OE2 | 7.80  | 1.34        | 1.25     |
| 1   | D     | 266 | GLU  | CD-OE2 | 7.75  | 1.34        | 1.25     |
| 1   | D     | 208 | GLU  | CD-OE2 | 7.75  | 1.34        | 1.25     |

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| Mol | Chain | Res | Type | Atoms  | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|------|-------------|----------|
| 1   | A     | 214 | GLU  | CD-OE2 | 7.62 | 1.34        | 1.25     |
| 2   | B     | 338 | GLU  | CD-OE2 | 7.57 | 1.33        | 1.25     |
| 1   | D     | 192 | GLU  | CD-OE2 | 7.56 | 1.33        | 1.25     |
| 1   | A     | 266 | GLU  | CD-OE2 | 7.53 | 1.33        | 1.25     |
| 2   | B     | 249 | GLU  | CD-OE2 | 7.51 | 1.33        | 1.25     |
| 2   | B     | 5   | GLU  | CD-OE2 | 7.50 | 1.33        | 1.25     |
| 2   | B     | 197 | GLU  | CD-OE2 | 7.45 | 1.33        | 1.25     |
| 2   | E     | 5   | GLU  | CD-OE2 | 7.33 | 1.33        | 1.25     |
| 2   | E     | 30  | GLU  | CD-OE2 | 7.31 | 1.33        | 1.25     |
| 2   | E     | 128 | GLU  | CD-OE2 | 7.20 | 1.33        | 1.25     |
| 2   | B     | 242 | GLU  | CD-OE2 | 7.20 | 1.33        | 1.25     |
| 2   | B     | 74  | GLU  | CD-OE2 | 7.17 | 1.33        | 1.25     |
| 2   | E     | 197 | GLU  | CD-OE1 | 7.17 | 1.33        | 1.25     |
| 2   | E     | 138 | GLU  | CD-OE2 | 7.15 | 1.33        | 1.25     |
| 1   | D     | 215 | GLU  | CD-OE2 | 7.14 | 1.33        | 1.25     |
| 2   | B     | 300 | GLU  | CD-OE2 | 7.14 | 1.33        | 1.25     |
| 1   | D     | 159 | GLU  | CD-OE2 | 7.09 | 1.33        | 1.25     |
| 2   | E     | 99  | GLU  | CD-OE2 | 7.05 | 1.33        | 1.25     |
| 1   | A     | 25  | GLU  | CD-OE2 | 6.99 | 1.33        | 1.25     |
| 2   | E     | 33  | GLU  | CD-OE2 | 6.96 | 1.33        | 1.25     |
| 2   | E     | 338 | GLU  | CD-OE2 | 6.96 | 1.33        | 1.25     |
| 1   | D     | 97  | GLU  | CD-OE1 | 6.93 | 1.33        | 1.25     |
| 2   | B     | 170 | GLU  | CD-OE2 | 6.92 | 1.33        | 1.25     |
| 2   | B     | 139 | GLU  | CD-OE2 | 6.84 | 1.33        | 1.25     |
| 2   | B     | 231 | GLU  | CD-OE2 | 6.83 | 1.33        | 1.25     |
| 2   | E     | 170 | GLU  | CD-OE2 | 6.81 | 1.33        | 1.25     |
| 2   | E     | 238 | GLU  | CD-OE2 | 6.80 | 1.33        | 1.25     |
| 1   | A     | 58  | GLU  | CD-OE2 | 6.74 | 1.33        | 1.25     |
| 2   | B     | 132 | GLU  | CD-OE2 | 6.74 | 1.33        | 1.25     |
| 1   | A     | 113 | GLU  | CD-OE2 | 6.73 | 1.33        | 1.25     |
| 1   | A     | 159 | GLU  | CD-OE2 | 6.72 | 1.33        | 1.25     |
| 1   | D     | 113 | GLU  | CD-OE2 | 6.68 | 1.32        | 1.25     |
| 2   | B     | 282 | GLU  | CD-OE2 | 6.68 | 1.32        | 1.25     |
| 2   | E     | 355 | GLU  | CD-OE2 | 6.68 | 1.32        | 1.25     |
| 2   | B     | 238 | GLU  | CD-OE2 | 6.65 | 1.32        | 1.25     |
| 2   | B     | 128 | GLU  | CD-OE1 | 6.52 | 1.32        | 1.25     |
| 2   | E     | 32  | GLU  | CD-OE2 | 6.49 | 1.32        | 1.25     |
| 1   | D     | 195 | GLU  | CD-OE2 | 6.47 | 1.32        | 1.25     |
| 2   | E     | 134 | GLU  | CD-OE2 | 6.47 | 1.32        | 1.25     |
| 1   | D     | 260 | GLU  | CD-OE2 | 6.45 | 1.32        | 1.25     |
| 2   | E     | 107 | GLU  | CD-OE2 | 6.45 | 1.32        | 1.25     |
| 1   | D     | 25  | GLU  | CD-OE2 | 6.42 | 1.32        | 1.25     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 2   | E     | 386 | GLU  | CD-OE2 | 6.38  | 1.32        | 1.25     |
| 2   | B     | 138 | GLU  | CD-OE2 | 6.35  | 1.32        | 1.25     |
| 1   | D     | 131 | GLU  | CD-OE2 | 6.32  | 1.32        | 1.25     |
| 1   | A     | 215 | GLU  | CD-OE2 | 6.30  | 1.32        | 1.25     |
| 1   | A     | 216 | GLU  | CD-OE2 | 6.30  | 1.32        | 1.25     |
| 1   | D     | 223 | GLU  | CD-OE2 | 6.28  | 1.32        | 1.25     |
| 1   | A     | 201 | GLU  | CD-OE1 | 6.27  | 1.32        | 1.25     |
| 2   | B     | 296 | GLU  | CD-OE2 | 6.24  | 1.32        | 1.25     |
| 2   | B     | 134 | GLU  | CD-OE2 | 6.24  | 1.32        | 1.25     |
| 1   | A     | 281 | GLU  | CD-OE2 | 6.21  | 1.32        | 1.25     |
| 1   | D     | 216 | GLU  | CD-OE2 | 6.19  | 1.32        | 1.25     |
| 2   | E     | 249 | GLU  | CD-OE2 | 6.18  | 1.32        | 1.25     |
| 2   | B     | 190 | GLU  | CD-OE2 | 6.17  | 1.32        | 1.25     |
| 2   | B     | 33  | GLU  | CD-OE2 | 6.16  | 1.32        | 1.25     |
| 2   | E     | 300 | GLU  | CD-OE2 | 6.16  | 1.32        | 1.25     |
| 1   | A     | 260 | GLU  | CD-OE2 | 6.14  | 1.32        | 1.25     |
| 2   | B     | 386 | GLU  | CD-OE1 | 6.08  | 1.32        | 1.25     |
| 1   | A     | 131 | GLU  | CD-OE2 | 6.02  | 1.32        | 1.25     |
| 2   | B     | 99  | GLU  | CD-OE2 | 5.96  | 1.32        | 1.25     |
| 2   | E     | 74  | GLU  | CD-OE2 | 5.95  | 1.32        | 1.25     |
| 2   | E     | 139 | GLU  | CD-OE2 | 5.90  | 1.32        | 1.25     |
| 2   | E     | 190 | GLU  | CD-OE2 | 5.76  | 1.31        | 1.25     |
| 1   | D     | 83  | GLU  | CD-OE2 | 5.69  | 1.31        | 1.25     |
| 2   | E     | 282 | GLU  | CD-OE2 | 5.67  | 1.31        | 1.25     |
| 1   | D     | 201 | GLU  | CD-OE2 | 5.64  | 1.31        | 1.25     |
| 2   | B     | 350 | GLU  | CD-OE2 | 5.64  | 1.31        | 1.25     |
| 2   | B     | 192 | ASP  | CG-OD2 | 5.52  | 1.38        | 1.25     |
| 1   | D     | 281 | GLU  | CD-OE2 | 5.40  | 1.31        | 1.25     |
| 1   | A     | 192 | GLU  | CD-OE2 | 5.40  | 1.31        | 1.25     |
| 1   | A     | 208 | GLU  | CD-OE1 | -5.33 | 1.19        | 1.25     |
| 2   | B     | 67  | GLU  | CD-OE2 | 5.27  | 1.31        | 1.25     |
| 2   | E     | 296 | GLU  | CD-OE2 | 5.14  | 1.31        | 1.25     |
| 1   | D     | 103 | ASP  | CG-OD2 | 5.03  | 1.36        | 1.25     |

All (232) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms     | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|--------|-------------|----------|
| 2   | B     | 140 | THR  | C-N-CD    | -13.94 | 89.94       | 120.60   |
| 2   | E     | 348 | ARG  | CD-NE-CZ  | 11.82  | 140.15      | 123.60   |
| 2   | E     | 348 | ARG  | NE-CZ-NH2 | -10.57 | 115.02      | 120.30   |
| 1   | A     | 152 | ARG  | NE-CZ-NH2 | -10.38 | 115.11      | 120.30   |
| 2   | E     | 140 | THR  | C-N-CD    | -9.88  | 98.86       | 120.60   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 2   | E     | 226 | GLN  | C-N-CD    | -9.86 | 98.90       | 120.60   |
| 1   | A     | 79  | ASP  | CB-CG-OD1 | 9.76  | 127.08      | 118.30   |
| 1   | A     | 213 | ALA  | N-CA-CB   | -9.50 | 96.80       | 110.10   |
| 2   | E     | 348 | ARG  | NE-CZ-NH1 | 9.34  | 124.97      | 120.30   |
| 1   | D     | 140 | HIS  | CA-CB-CG  | -9.33 | 97.74       | 113.60   |
| 1   | D     | 164 | THR  | CA-CB-CG2 | -9.23 | 99.48       | 112.40   |
| 2   | E     | 29  | ARG  | NE-CZ-NH2 | -9.21 | 115.69      | 120.30   |
| 2   | B     | 70  | ARG  | NE-CZ-NH1 | 9.21  | 124.90      | 120.30   |
| 2   | B     | 225 | ARG  | NE-CZ-NH1 | 9.15  | 124.87      | 120.30   |
| 1   | D     | 166 | ASP  | CB-CG-OD2 | -9.01 | 110.19      | 118.30   |
| 2   | E     | 326 | ASP  | CB-CG-OD1 | -8.93 | 110.27      | 118.30   |
| 2   | B     | 363 | ASP  | CB-CG-OD2 | -8.91 | 110.28      | 118.30   |
| 1   | D     | 5   | ASP  | CB-CG-OD1 | 8.86  | 126.28      | 118.30   |
| 2   | E     | 225 | ARG  | NE-CZ-NH1 | 8.86  | 124.73      | 120.30   |
| 1   | A     | 79  | ASP  | CB-CG-OD2 | -8.82 | 110.36      | 118.30   |
| 1   | A     | 166 | ASP  | CB-CG-OD2 | -8.77 | 110.41      | 118.30   |
| 2   | E     | 219 | ASP  | CB-CG-OD2 | -8.65 | 110.52      | 118.30   |
| 2   | E     | 363 | ASP  | CB-CG-OD1 | 8.61  | 126.05      | 118.30   |
| 2   | B     | 14  | ARG  | NE-CZ-NH1 | 8.43  | 124.52      | 120.30   |
| 1   | D     | 5   | ASP  | CB-CG-OD2 | -8.40 | 110.74      | 118.30   |
| 1   | A     | 101 | THR  | CA-CB-CG2 | -8.33 | 100.74      | 112.40   |
| 1   | A     | 23  | HIS  | CA-CB-CG  | -8.20 | 99.66       | 113.60   |
| 1   | A     | 182 | ILE  | C-N-CD    | -8.17 | 102.63      | 120.60   |
| 1   | D     | 278 | ASP  | CB-CG-OD2 | -8.05 | 111.05      | 118.30   |
| 1   | D     | 189 | ASP  | CB-CG-OD2 | -8.03 | 111.08      | 118.30   |
| 2   | B     | 288 | ASP  | CB-CG-OD2 | -7.94 | 111.15      | 118.30   |
| 2   | E     | 288 | ASP  | CB-CG-OD1 | 7.85  | 125.36      | 118.30   |
| 2   | E     | 288 | ASP  | CB-CG-OD2 | -7.82 | 111.27      | 118.30   |
| 2   | B     | 68  | ASP  | CB-CG-OD2 | -7.81 | 111.27      | 118.30   |
| 1   | D     | 197 | ASP  | CB-CG-OD1 | 7.77  | 125.30      | 118.30   |
| 2   | B     | 325 | CYS  | CB-CA-C   | 7.73  | 125.87      | 110.40   |
| 1   | A     | 152 | ARG  | NE-CZ-NH1 | 7.70  | 124.15      | 120.30   |
| 2   | E     | 308 | ASP  | CB-CG-OD2 | -7.68 | 111.39      | 118.30   |
| 1   | D     | 79  | ASP  | CB-CG-OD1 | 7.58  | 125.12      | 118.30   |
| 1   | D     | 79  | ASP  | CB-CG-OD2 | -7.56 | 111.50      | 118.30   |
| 1   | A     | 77  | CYS  | CA-CB-SG  | -7.53 | 100.44      | 114.00   |
| 1   | A     | 275 | SER  | N-CA-CB   | 7.46  | 121.69      | 110.50   |
| 1   | D     | 77  | CYS  | CA-CB-SG  | -7.45 | 100.59      | 114.00   |
| 2   | E     | 219 | ASP  | CB-CG-OD1 | 7.42  | 124.98      | 118.30   |
| 2   | E     | 76  | TRP  | N-CA-CB   | -7.41 | 97.25       | 110.60   |
| 2   | E     | 120 | ARG  | NE-CZ-NH1 | -7.41 | 116.60      | 120.30   |
| 2   | E     | 202 | VAL  | CB-CA-C   | -7.35 | 97.44       | 111.40   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1   | D     | 74  | ALA  | CB-CA-C   | 7.25  | 120.98      | 110.10   |
| 2   | E     | 234 | ASP  | CB-CG-OD2 | -7.24 | 111.78      | 118.30   |
| 1   | A     | 219 | ALA  | CB-CA-C   | -7.21 | 99.29       | 110.10   |
| 1   | A     | 137 | GLN  | N-CA-CB   | -7.20 | 97.64       | 110.60   |
| 1   | D     | 197 | ASP  | N-CA-CB   | 7.18  | 123.53      | 110.60   |
| 2   | E     | 186 | THR  | CA-CB-CG2 | -7.18 | 102.35      | 112.40   |
| 2   | E     | 330 | ASP  | CB-CG-OD1 | 7.15  | 124.73      | 118.30   |
| 2   | E     | 192 | ASP  | CB-CG-OD2 | -7.13 | 111.88      | 118.30   |
| 2   | E     | 208 | ASP  | CB-CG-OD1 | -7.13 | 111.89      | 118.30   |
| 2   | E     | 180 | ILE  | CB-CA-C   | -7.08 | 97.45       | 111.60   |
| 1   | A     | 56  | VAL  | CA-CB-CG1 | -7.07 | 100.30      | 110.90   |
| 2   | E     | 150 | ASP  | CB-CG-OD2 | -7.03 | 111.97      | 118.30   |
| 1   | D     | 274 | ARG  | NE-CZ-NH1 | 6.97  | 123.78      | 120.30   |
| 2   | B     | 308 | ASP  | CB-CG-OD2 | -6.92 | 112.08      | 118.30   |
| 2   | E     | 29  | ARG  | NE-CZ-NH1 | 6.91  | 123.75      | 120.30   |
| 2   | B     | 115 | ASP  | CB-CG-OD2 | -6.87 | 112.12      | 118.30   |
| 2   | E     | 80  | ARG  | NE-CZ-NH1 | 6.87  | 123.73      | 120.30   |
| 1   | D     | 23  | HIS  | CA-CB-CG  | -6.85 | 101.95      | 113.60   |
| 1   | A     | 5   | ASP  | CB-CG-OD1 | 6.81  | 124.43      | 118.30   |
| 2   | B     | 288 | ASP  | CB-CG-OD1 | 6.81  | 124.43      | 118.30   |
| 1   | A     | 278 | ASP  | CB-CG-OD2 | -6.79 | 112.19      | 118.30   |
| 1   | A     | 2   | ILE  | C-N-CA    | -6.75 | 104.83      | 121.70   |
| 1   | A     | 180 | ASP  | CB-CG-OD1 | 6.72  | 124.35      | 118.30   |
| 1   | D     | 259 | ASP  | CB-CG-OD2 | -6.70 | 112.27      | 118.30   |
| 2   | B     | 297 | ARG  | NE-CZ-NH2 | -6.69 | 116.96      | 120.30   |
| 2   | B     | 191 | ARG  | NE-CZ-NH1 | -6.65 | 116.97      | 120.30   |
| 2   | E     | 222 | ALA  | CB-CA-C   | -6.61 | 100.19      | 110.10   |
| 1   | A     | 69  | VAL  | CB-CA-C   | -6.57 | 98.91       | 111.40   |
| 2   | B     | 113 | VAL  | CB-CA-C   | -6.55 | 98.95       | 111.40   |
| 2   | E     | 122 | VAL  | CB-CA-C   | -6.51 | 99.03       | 111.40   |
| 1   | A     | 166 | ASP  | CB-CG-OD1 | 6.50  | 124.15      | 118.30   |
| 1   | A     | 204 | VAL  | CA-CB-CG1 | -6.48 | 101.17      | 110.90   |
| 2   | B     | 256 | ASP  | CB-CG-OD2 | -6.48 | 112.47      | 118.30   |
| 1   | A     | 189 | ASP  | CB-CG-OD2 | -6.47 | 112.48      | 118.30   |
| 2   | B     | 196 | ILE  | CB-CA-C   | -6.46 | 98.69       | 111.60   |
| 2   | B     | 153 | THR  | C-N-CA    | -6.44 | 108.78      | 122.30   |
| 2   | E     | 272 | THR  | CA-CB-CG2 | -6.40 | 103.44      | 112.40   |
| 1   | D     | 275 | SER  | N-CA-CB   | 6.38  | 120.06      | 110.50   |
| 2   | B     | 225 | ARG  | CD-NE-CZ  | 6.35  | 132.49      | 123.60   |
| 1   | A     | 278 | ASP  | CB-CG-OD1 | 6.34  | 124.01      | 118.30   |
| 2   | B     | 309 | ASP  | CB-CG-OD2 | -6.33 | 112.60      | 118.30   |
| 2   | B     | 219 | ASP  | CB-CG-OD1 | 6.33  | 124.00      | 118.30   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 2   | E     | 153 | THR  | C-N-CA    | -6.32 | 109.02      | 122.30   |
| 2   | E     | 363 | ASP  | CB-CG-OD2 | -6.32 | 112.61      | 118.30   |
| 1   | A     | 69  | VAL  | CA-CB-CG2 | -6.30 | 101.44      | 110.90   |
| 2   | E     | 239 | ASP  | CB-CG-OD1 | 6.27  | 123.94      | 118.30   |
| 2   | E     | 376 | ASP  | CB-CG-OD2 | -6.24 | 112.68      | 118.30   |
| 2   | B     | 150 | ASP  | CB-CG-OD1 | 6.23  | 123.91      | 118.30   |
| 1   | D     | 21  | THR  | CA-CB-CG2 | -6.20 | 103.72      | 112.40   |
| 2   | E     | 309 | ASP  | CB-CG-OD2 | -6.19 | 112.73      | 118.30   |
| 2   | B     | 376 | ASP  | CB-CG-OD1 | 6.19  | 123.87      | 118.30   |
| 1   | D     | 188 | ILE  | CA-CB-CG2 | -6.17 | 98.56       | 110.90   |
| 2   | B     | 213 | ASP  | CB-CG-OD2 | -6.16 | 112.76      | 118.30   |
| 1   | D     | 11  | ILE  | CA-CB-CG2 | -6.15 | 98.60       | 110.90   |
| 1   | A     | 209 | ILE  | C-N-CA    | -6.14 | 109.40      | 122.30   |
| 2   | E     | 228 | ASP  | CA-CB-CG  | -6.13 | 99.91       | 113.40   |
| 2   | B     | 363 | ASP  | CB-CG-OD1 | 6.12  | 123.81      | 118.30   |
| 1   | D     | 93  | ILE  | CB-CA-C   | -6.12 | 99.36       | 111.60   |
| 1   | D     | 11  | ILE  | N-CA-CB   | -6.11 | 96.74       | 110.80   |
| 2   | E     | 330 | ASP  | CB-CG-OD2 | -6.08 | 112.83      | 118.30   |
| 1   | D     | 276 | LEU  | CB-CA-C   | 6.06  | 121.72      | 110.20   |
| 2   | E     | 113 | VAL  | CB-CA-C   | -6.06 | 99.88       | 111.40   |
| 2   | E     | 275 | ILE  | CB-CA-C   | -6.06 | 99.48       | 111.60   |
| 2   | E     | 225 | ARG  | CB-CA-C   | -6.06 | 98.28       | 110.40   |
| 2   | B     | 297 | ARG  | NE-CZ-NH1 | 6.05  | 123.33      | 120.30   |
| 2   | E     | 324 | ARG  | NE-CZ-NH2 | -6.03 | 117.28      | 120.30   |
| 2   | B     | 230 | ARG  | NE-CZ-NH1 | 6.03  | 123.31      | 120.30   |
| 2   | E     | 184 | LEU  | CA-CB-CG  | -6.02 | 101.46      | 115.30   |
| 1   | D     | 152 | ARG  | N-CA-CB   | -6.01 | 99.77       | 110.60   |
| 2   | E     | 349 | LEU  | CB-CG-CD1 | -6.01 | 100.78      | 111.00   |
| 1   | A     | 150 | VAL  | CB-CA-C   | -6.01 | 99.98       | 111.40   |
| 2   | B     | 68  | ASP  | CB-CG-OD1 | 6.01  | 123.71      | 118.30   |
| 2   | E     | 376 | ASP  | CB-CG-OD1 | 6.01  | 123.70      | 118.30   |
| 2   | B     | 354 | ALA  | CB-CA-C   | 6.00  | 119.10      | 110.10   |
| 2   | E     | 62  | VAL  | CA-CB-CG1 | -5.98 | 101.93      | 110.90   |
| 2   | E     | 315 | LEU  | CA-CB-CG  | -5.98 | 101.55      | 115.30   |
| 2   | B     | 376 | ASP  | CB-CG-OD2 | -5.98 | 112.92      | 118.30   |
| 2   | B     | 274 | ASP  | CB-CG-OD1 | 5.98  | 123.68      | 118.30   |
| 2   | B     | 114 | VAL  | CA-CB-CG1 | -5.94 | 101.99      | 110.90   |
| 2   | E     | 103 | ASP  | CB-CG-OD2 | -5.94 | 112.95      | 118.30   |
| 1   | A     | 21  | THR  | CA-CB-CG2 | -5.93 | 104.10      | 112.40   |
| 2   | E     | 264 | ASN  | N-CA-CB   | -5.93 | 99.93       | 110.60   |
| 2   | E     | 115 | ASP  | CB-CG-OD2 | -5.91 | 112.98      | 118.30   |
| 2   | E     | 198 | ILE  | CA-CB-CG1 | -5.90 | 99.78       | 111.00   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 2   | B     | 253 | VAL  | CA-CB-CG1 | -5.89 | 102.06      | 110.90   |
| 1   | D     | 126 | VAL  | CA-CB-CG1 | -5.85 | 102.12      | 110.90   |
| 2   | E     | 49  | VAL  | N-CA-CB   | -5.85 | 98.64       | 111.50   |
| 2   | E     | 256 | ASP  | N-CA-C    | 5.84  | 126.78      | 111.00   |
| 2   | B     | 186 | THR  | CA-CB-CG2 | -5.78 | 104.31      | 112.40   |
| 2   | B     | 116 | ARG  | NE-CZ-NH2 | -5.76 | 117.42      | 120.30   |
| 1   | D     | 71  | TYR  | CB-CG-CD2 | 5.76  | 124.45      | 121.00   |
| 2   | E     | 241 | ARG  | NE-CZ-NH1 | 5.76  | 123.18      | 120.30   |
| 2   | E     | 68  | ASP  | CB-CG-OD2 | -5.75 | 113.12      | 118.30   |
| 2   | E     | 87  | ASP  | CB-CG-OD2 | -5.74 | 113.14      | 118.30   |
| 1   | D     | 221 | ILE  | CB-CA-C   | -5.73 | 100.14      | 111.60   |
| 1   | A     | 197 | ASP  | CB-CG-OD1 | 5.72  | 123.45      | 118.30   |
| 1   | A     | 29  | ALA  | CB-CA-C   | -5.72 | 101.52      | 110.10   |
| 2   | E     | 266 | ALA  | N-CA-CB   | 5.71  | 118.10      | 110.10   |
| 1   | A     | 39  | THR  | N-CA-CB   | 5.71  | 121.14      | 110.30   |
| 2   | B     | 70  | ARG  | NE-CZ-NH2 | -5.70 | 117.45      | 120.30   |
| 2   | E     | 69  | ILE  | CB-CA-C   | -5.67 | 100.26      | 111.60   |
| 1   | D     | 225 | VAL  | CB-CA-C   | 5.67  | 122.16      | 111.40   |
| 2   | B     | 119 | ARG  | NE-CZ-NH2 | -5.64 | 117.48      | 120.30   |
| 2   | B     | 328 | ILE  | CB-CA-C   | -5.61 | 100.37      | 111.60   |
| 2   | B     | 272 | THR  | CA-CB-CG2 | -5.61 | 104.55      | 112.40   |
| 1   | D     | 210 | GLY  | C-N-CA    | -5.60 | 110.53      | 122.30   |
| 2   | E     | 381 | VAL  | CA-CB-CG2 | -5.59 | 102.51      | 110.90   |
| 2   | E     | 120 | ARG  | CD-NE-CZ  | -5.58 | 115.79      | 123.60   |
| 2   | E     | 259 | ILE  | CB-CA-C   | -5.58 | 100.44      | 111.60   |
| 2   | E     | 167 | LEU  | CB-CA-C   | -5.58 | 99.61       | 110.20   |
| 2   | E     | 241 | ARG  | NE-CZ-NH2 | -5.56 | 117.52      | 120.30   |
| 2   | E     | 87  | ASP  | N-CA-CB   | -5.56 | 100.59      | 110.60   |
| 1   | A     | 229 | VAL  | CA-CB-CG2 | -5.55 | 102.57      | 110.90   |
| 1   | A     | 229 | VAL  | CB-CA-C   | -5.54 | 100.86      | 111.40   |
| 1   | A     | 97  | GLU  | CB-CA-C   | 5.54  | 121.48      | 110.40   |
| 1   | A     | 45  | THR  | CA-CB-CG2 | -5.53 | 104.65      | 112.40   |
| 2   | B     | 301 | ALA  | CB-CA-C   | -5.53 | 101.80      | 110.10   |
| 2   | E     | 108 | LEU  | CA-CB-CG  | -5.53 | 102.58      | 115.30   |
| 1   | D     | 278 | ASP  | CB-CG-OD1 | 5.53  | 123.28      | 118.30   |
| 1   | A     | 197 | ASP  | CB-CG-OD2 | -5.52 | 113.33      | 118.30   |
| 2   | E     | 349 | LEU  | N-CA-CB   | 5.52  | 121.45      | 110.40   |
| 2   | B     | 308 | ASP  | CB-CG-OD1 | 5.52  | 123.27      | 118.30   |
| 1   | D     | 138 | PRO  | N-CA-CB   | 5.52  | 109.92      | 103.30   |
| 1   | A     | 92  | ILE  | CA-CB-CG2 | -5.51 | 99.88       | 110.90   |
| 2   | E     | 68  | ASP  | CB-CG-OD1 | 5.51  | 123.25      | 118.30   |
| 2   | E     | 326 | ASP  | CB-CG-OD2 | 5.51  | 123.26      | 118.30   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 2   | E     | 19  | ALA  | N-CA-CB   | -5.48 | 102.43      | 110.10   |
| 2   | E     | 140 | THR  | N-CA-CB   | -5.46 | 99.93       | 110.30   |
| 1   | A     | 55  | THR  | CB-CA-C   | -5.45 | 96.89       | 111.60   |
| 1   | A     | 160 | ALA  | CB-CA-C   | -5.43 | 101.95      | 110.10   |
| 2   | E     | 86  | THR  | N-CA-CB   | 5.43  | 120.61      | 110.30   |
| 1   | D     | 94  | THR  | CA-CB-CG2 | -5.42 | 104.81      | 112.40   |
| 2   | E     | 1   | MET  | C-N-CA    | -5.42 | 108.14      | 121.70   |
| 1   | D     | 267 | ALA  | C-N-CA    | -5.42 | 108.16      | 121.70   |
| 1   | D     | 189 | ASP  | CB-CG-OD1 | 5.40  | 123.16      | 118.30   |
| 1   | D     | 127 | ILE  | CA-C-N    | -5.39 | 105.35      | 117.20   |
| 2   | B     | 134 | GLU  | CB-CA-C   | 5.38  | 121.16      | 110.40   |
| 1   | D     | 38  | VAL  | CB-CA-C   | -5.37 | 101.19      | 111.40   |
| 2   | E     | 103 | ASP  | CB-CG-OD1 | 5.37  | 123.13      | 118.30   |
| 2   | E     | 256 | ASP  | CB-CG-OD2 | -5.37 | 113.47      | 118.30   |
| 2   | E     | 294 | THR  | CA-CB-CG2 | -5.37 | 104.89      | 112.40   |
| 2   | B     | 96  | ILE  | CA-CB-CG2 | -5.35 | 100.20      | 110.90   |
| 2   | E     | 225 | ARG  | CD-NE-CZ  | 5.34  | 131.07      | 123.60   |
| 2   | B     | 219 | ASP  | CB-CG-OD2 | -5.33 | 113.50      | 118.30   |
| 2   | E     | 229 | LEU  | CA-CB-CG  | -5.33 | 103.04      | 115.30   |
| 2   | E     | 298 | VAL  | CA-CB-CG1 | -5.33 | 102.91      | 110.90   |
| 1   | A     | 141 | ILE  | CB-CA-C   | -5.32 | 100.96      | 111.60   |
| 2   | E     | 153 | THR  | N-CA-C    | -5.32 | 96.65       | 111.00   |
| 2   | B     | 316 | VAL  | CB-CA-C   | -5.31 | 101.31      | 111.40   |
| 1   | A     | 224 | HIS  | CA-CB-CG  | -5.29 | 104.62      | 113.60   |
| 1   | A     | 65  | ALA  | O-C-N     | -5.27 | 114.26      | 122.70   |
| 2   | B     | 103 | ASP  | CB-CG-OD2 | -5.26 | 113.56      | 118.30   |
| 2   | B     | 239 | ASP  | CB-CG-OD2 | -5.26 | 113.57      | 118.30   |
| 2   | E     | 239 | ASP  | CB-CG-OD2 | -5.25 | 113.57      | 118.30   |
| 2   | E     | 378 | ALA  | N-CA-CB   | -5.25 | 102.75      | 110.10   |
| 2   | B     | 208 | ASP  | CB-CG-OD2 | -5.25 | 113.58      | 118.30   |
| 1   | D     | 8   | THR  | CA-CB-CG2 | -5.23 | 105.08      | 112.40   |
| 1   | D     | 166 | ASP  | CB-CG-OD1 | 5.21  | 122.98      | 118.30   |
| 2   | E     | 61  | LYS  | N-CA-CB   | -5.19 | 101.25      | 110.60   |
| 2   | B     | 353 | ASN  | CA-CB-CG  | -5.18 | 101.99      | 113.40   |
| 1   | A     | 149 | ILE  | CB-CA-C   | -5.18 | 101.24      | 111.60   |
| 2   | B     | 276 | VAL  | CB-CA-C   | -5.18 | 101.55      | 111.40   |
| 2   | B     | 21  | VAL  | CA-CB-CG2 | -5.17 | 103.15      | 110.90   |
| 2   | B     | 346 | VAL  | CA-CB-CG2 | -5.14 | 103.18      | 110.90   |
| 2   | E     | 200 | PRO  | CB-CA-C   | -5.14 | 99.15       | 112.00   |
| 2   | E     | 357 | GLY  | N-CA-C    | -5.13 | 100.28      | 113.10   |
| 2   | E     | 2   | ASN  | O-C-N     | 5.12  | 130.90      | 122.70   |
| 2   | E     | 201 | LEU  | N-CA-C    | -5.12 | 97.17       | 111.00   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 2   | E     | 248 | TRP  | CA-CB-CG  | -5.12 | 103.98      | 113.70   |
| 1   | A     | 174 | CYS  | CA-CB-SG  | -5.12 | 104.79      | 114.00   |
| 1   | D     | 112 | ASP  | CB-CG-OD2 | -5.12 | 113.70      | 118.30   |
| 1   | D     | 197 | ASP  | CB-CG-OD2 | -5.10 | 113.71      | 118.30   |
| 2   | B     | 227 | PRO  | N-CA-CB   | 5.10  | 109.42      | 103.30   |
| 2   | E     | 12  | PHE  | CB-CA-C   | -5.09 | 100.22      | 110.40   |
| 1   | A     | 156 | LEU  | CB-CG-CD2 | -5.09 | 102.35      | 111.00   |
| 2   | E     | 120 | ARG  | CB-CA-C   | -5.08 | 100.24      | 110.40   |
| 1   | A     | 156 | LEU  | CA-CB-CG  | -5.08 | 103.62      | 115.30   |
| 2   | E     | 230 | ARG  | NE-CZ-NH1 | 5.07  | 122.83      | 120.30   |
| 1   | D     | 105 | LEU  | CB-CA-C   | 5.07  | 119.83      | 110.20   |
| 1   | D     | 150 | VAL  | CB-CA-C   | -5.06 | 101.79      | 111.40   |
| 2   | B     | 108 | LEU  | CA-CB-CG  | -5.06 | 103.67      | 115.30   |
| 2   | B     | 274 | ASP  | CB-CG-OD2 | -5.05 | 113.75      | 118.30   |
| 2   | B     | 1   | MET  | CG-SD-CE  | 5.01  | 108.22      | 100.20   |
| 2   | E     | 287 | LEU  | CB-CA-C   | 5.01  | 119.71      | 110.20   |
| 1   | A     | 38  | VAL  | CA-CB-CG1 | -5.00 | 103.39      | 110.90   |

All (7) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|-----|------|------|
| 1   | A     | 99  | ILE  | CB   |
| 2   | B     | 64  | ASN  | CA   |
| 2   | E     | 64  | ASN  | CA   |
| 2   | E     | 256 | ASP  | CA   |
| 2   | E     | 287 | LEU  | CA   |
| 2   | E     | 325 | CYS  | CA   |
| 2   | E     | 352 | ASN  | CA   |

There are no planarity outliers.

## 5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 2083  | 0        | 2140     | 401     | 0            |
| 1   | D     | 2083  | 0        | 2140     | 509     | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 2   | B     | 2908  | 0        | 2962     | 465     | 0            |
| 2   | E     | 2908  | 0        | 2963     | 563     | 0            |
| 3   | A     | 48    | 0        | 32       | 13      | 0            |
| 3   | D     | 48    | 0        | 32       | 17      | 0            |
| 4   | A     | 22    | 0        | 0        | 8       | 0            |
| 4   | B     | 33    | 0        | 0        | 13      | 0            |
| 4   | D     | 25    | 0        | 0        | 6       | 0            |
| 4   | E     | 30    | 0        | 0        | 9       | 0            |
| All | All   | 10188 | 0        | 10269    | 1922    | 0            |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 94.

All (1922) 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) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:343:VAL:CG1  | 2:E:344:PRO:HD2  | 1.16                     | 1.62              |
| 1:A:104:MET:HA   | 1:A:104:MET:CE   | 1.33                     | 1.51              |
| 1:D:2:ILE:HD11   | 1:D:193:MET:CB   | 1.35                     | 1.49              |
| 2:E:343:VAL:HG13 | 2:E:344:PRO:CD   | 1.40                     | 1.49              |
| 1:A:4:ILE:HD11   | 1:A:132:CYS:SG   | 1.50                     | 1.48              |
| 1:D:237:THR:CG2  | 2:E:274:ASP:OD1  | 1.65                     | 1.43              |
| 1:D:2:ILE:CD1    | 1:D:193:MET:HB2  | 1.48                     | 1.42              |
| 2:E:315:LEU:HD12 | 2:E:316:VAL:N    | 1.35                     | 1.36              |
| 1:A:221:ILE:CG2  | 1:A:222:LYS:N    | 1.88                     | 1.34              |
| 1:D:221:ILE:HA   | 1:D:225:VAL:CG1  | 1.59                     | 1.31              |
| 1:A:104:MET:CA   | 1:A:104:MET:HE3  | 1.58                     | 1.30              |
| 1:D:203:ILE:O    | 1:D:229:VAL:HG22 | 1.19                     | 1.29              |
| 1:A:195:GLU:OE2  | 1:A:226:THR:HG23 | 1.26                     | 1.26              |
| 1:A:97:GLU:OE1   | 1:A:98:GLY:N     | 1.69                     | 1.26              |
| 2:B:380:GLN:O    | 2:B:383:ALA:HB3  | 1.36                     | 1.26              |
| 2:E:343:VAL:CG1  | 2:E:344:PRO:CD   | 2.05                     | 1.26              |
| 1:D:105:LEU:HD23 | 1:D:105:LEU:C    | 1.38                     | 1.25              |
| 2:B:133:ILE:HD12 | 2:B:133:ILE:N    | 1.39                     | 1.24              |
| 2:E:352:ASN:HD22 | 2:E:352:ASN:C    | 1.33                     | 1.24              |
| 1:A:137:GLN:CA   | 1:A:137:GLN:HE21 | 1.40                     | 1.24              |
| 2:E:136:VAL:O    | 2:E:140:THR:HG22 | 1.37                     | 1.22              |
| 2:B:270:MET:CB   | 4:B:419:HOH:O    | 1.88                     | 1.20              |
| 2:B:140:THR:OG1  | 2:B:143:LEU:HD12 | 1.39                     | 1.20              |
| 2:E:287:LEU:C    | 2:E:287:LEU:HD23 | 1.60                     | 1.20              |
| 1:D:149:ILE:CG1  | 1:D:174:CYS:HB3  | 1.73                     | 1.19              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:221:ILE:HG22 | 1:A:222:LYS:N    | 1.22                     | 1.19              |
| 1:D:285:THR:O    | 1:D:288:LYS:HG3  | 1.39                     | 1.18              |
| 1:A:4:ILE:CD1    | 1:A:132:CYS:SG   | 2.31                     | 1.18              |
| 1:D:49:GLY:O     | 1:D:50:LEU:HD23  | 1.43                     | 1.17              |
| 2:E:275:ILE:HG22 | 2:E:276:VAL:N    | 1.54                     | 1.17              |
| 1:D:221:ILE:CA   | 1:D:225:VAL:HG12 | 1.74                     | 1.17              |
| 2:E:108:LEU:N    | 2:E:108:LEU:HD23 | 1.55                     | 1.17              |
| 2:E:82:VAL:HG22  | 2:E:90:GLY:H     | 1.00                     | 1.16              |
| 1:D:203:ILE:O    | 1:D:229:VAL:CG2  | 1.95                     | 1.15              |
| 2:E:319:PHE:CD2  | 2:E:350:GLU:HG2  | 1.80                     | 1.15              |
| 1:D:97:GLU:OE1   | 1:D:98:GLY:N     | 1.79                     | 1.15              |
| 2:E:369:ILE:N    | 2:E:369:ILE:CD1  | 2.08                     | 1.15              |
| 2:E:275:ILE:CG2  | 2:E:276:VAL:N    | 2.09                     | 1.14              |
| 1:D:221:ILE:HG22 | 1:D:222:LYS:N    | 1.42                     | 1.14              |
| 2:E:82:VAL:HG22  | 2:E:90:GLY:N     | 1.63                     | 1.14              |
| 2:E:82:VAL:CG2   | 2:E:90:GLY:H     | 1.60                     | 1.13              |
| 1:A:21:THR:HG22  | 1:A:22:PHE:N     | 1.53                     | 1.13              |
| 1:D:105:LEU:CD2  | 1:D:105:LEU:C    | 2.17                     | 1.13              |
| 2:B:45:VAL:O     | 2:B:45:VAL:HG23  | 1.44                     | 1.13              |
| 2:E:157:PRO:N    | 2:E:182:MET:HE2  | 1.59                     | 1.13              |
| 1:D:6:LYS:O      | 1:D:33:LYS:HE3   | 1.45                     | 1.13              |
| 1:D:136:ILE:HD13 | 1:D:136:ILE:H    | 1.12                     | 1.13              |
| 2:E:368:ILE:C    | 2:E:369:ILE:HD12 | 1.68                     | 1.13              |
| 1:A:2:ILE:HG23   | 1:A:3:LEU:N      | 1.62                     | 1.13              |
| 1:D:257:THR:OG1  | 1:D:260:GLU:HB2  | 1.49                     | 1.13              |
| 2:E:277:LYS:HD2  | 2:E:278:LEU:N    | 1.62                     | 1.13              |
| 2:E:79:LYS:NZ    | 2:E:79:LYS:HB3   | 1.46                     | 1.12              |
| 2:E:87:ASP:O     | 2:E:89:ASN:N     | 1.82                     | 1.12              |
| 2:E:215:LYS:C    | 2:E:216:LEU:HD23 | 1.69                     | 1.12              |
| 1:A:128:THR:O    | 1:A:128:THR:HG22 | 1.44                     | 1.11              |
| 2:E:107:GLU:C    | 2:E:108:LEU:HD23 | 1.68                     | 1.11              |
| 2:B:270:MET:HB3  | 4:B:419:HOH:O    | 1.44                     | 1.11              |
| 1:D:124:PRO:HA   | 1:D:136:ILE:HD11 | 1.23                     | 1.10              |
| 1:A:104:MET:CA   | 1:A:104:MET:CE   | 2.16                     | 1.10              |
| 2:B:133:ILE:HD13 | 2:B:134:GLU:H    | 1.12                     | 1.10              |
| 1:D:237:THR:HG23 | 2:E:274:ASP:OD1  | 0.92                     | 1.10              |
| 2:B:215:LYS:O    | 2:B:216:LEU:HD23 | 1.49                     | 1.10              |
| 3:A:289:COA:C6P  | 3:A:289:COA:O9P  | 2.00                     | 1.10              |
| 1:D:203:ILE:HB   | 1:D:229:VAL:HG23 | 1.32                     | 1.09              |
| 1:D:92:ILE:CG2   | 1:D:118:MET:HG3  | 1.83                     | 1.09              |
| 2:E:339:VAL:HG12 | 2:E:341:VAL:HG12 | 1.33                     | 1.09              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:325:CYS:HB3  | 2:B:349:LEU:HD13 | 1.33                     | 1.09              |
| 2:E:356:LEU:HD22 | 2:E:357:GLY:N    | 1.66                     | 1.08              |
| 1:D:221:ILE:CA   | 1:D:225:VAL:CG1  | 2.31                     | 1.08              |
| 1:D:92:ILE:HG22  | 1:D:118:MET:HG3  | 1.16                     | 1.08              |
| 2:B:133:ILE:CD1  | 2:B:133:ILE:N    | 2.09                     | 1.08              |
| 2:E:319:PHE:HA   | 2:E:350:GLU:CB   | 1.84                     | 1.08              |
| 1:A:137:GLN:HA   | 1:A:137:GLN:NE2  | 1.57                     | 1.07              |
| 1:D:105:LEU:HD23 | 1:D:105:LEU:O    | 1.52                     | 1.07              |
| 2:E:369:ILE:N    | 2:E:369:ILE:HD12 | 1.66                     | 1.07              |
| 1:A:4:ILE:HD13   | 1:A:132:CYS:HB3  | 1.13                     | 1.07              |
| 1:A:2:ILE:CG2    | 1:A:3:LEU:N      | 2.17                     | 1.07              |
| 1:D:190:ILE:N    | 1:D:190:ILE:HD13 | 1.63                     | 1.07              |
| 2:B:45:VAL:O     | 2:B:45:VAL:CG2   | 2.02                     | 1.06              |
| 2:B:133:ILE:CD1  | 2:B:133:ILE:H    | 1.56                     | 1.06              |
| 2:B:215:LYS:C    | 2:B:216:LEU:HD23 | 1.75                     | 1.06              |
| 2:E:375:THR:O    | 2:E:378:ALA:HB3  | 1.55                     | 1.06              |
| 2:B:63:VAL:CG1   | 2:B:68:ASP:HB3   | 1.86                     | 1.05              |
| 1:D:229:VAL:HG12 | 1:D:270:VAL:CG1  | 1.86                     | 1.05              |
| 2:B:328:ILE:HG22 | 2:B:329:ALA:N    | 1.70                     | 1.05              |
| 2:B:272:THR:O    | 2:B:275:ILE:HG22 | 1.54                     | 1.05              |
| 1:A:24:SER:HA    | 4:A:297:HOH:O    | 1.57                     | 1.04              |
| 1:A:4:ILE:HD13   | 1:A:132:CYS:CB   | 1.86                     | 1.04              |
| 2:E:315:LEU:CD1  | 2:E:316:VAL:N    | 2.19                     | 1.04              |
| 1:D:2:ILE:C      | 4:D:293:HOH:O    | 1.96                     | 1.04              |
| 1:D:229:VAL:HG12 | 1:D:270:VAL:HG13 | 1.31                     | 1.04              |
| 1:D:157:THR:O    | 1:D:161:VAL:HG23 | 1.56                     | 1.03              |
| 1:D:23:HIS:CE1   | 1:D:136:ILE:HG22 | 1.94                     | 1.03              |
| 2:E:262:MET:HE1  | 2:E:301:ALA:HB3  | 1.38                     | 1.02              |
| 1:A:2:ILE:HD12   | 1:A:194:PHE:CE1  | 1.94                     | 1.02              |
| 1:A:128:THR:O    | 1:A:128:THR:CG2  | 2.08                     | 1.02              |
| 1:D:266:GLU:HG2  | 1:D:272:THR:HG21 | 1.42                     | 1.02              |
| 2:B:42:PRO:O     | 4:B:390:HOH:O    | 1.78                     | 1.01              |
| 2:E:139:GLU:O    | 2:E:140:THR:HB   | 1.60                     | 1.01              |
| 1:D:187:PHE:HE2  | 1:D:214:GLU:HG3  | 1.19                     | 1.01              |
| 1:D:223:GLU:O    | 1:D:223:GLU:HG2  | 1.58                     | 1.01              |
| 1:A:21:THR:CG2   | 1:A:22:PHE:N     | 2.21                     | 1.01              |
| 1:D:221:ILE:CG2  | 1:D:222:LYS:N    | 2.13                     | 1.01              |
| 2:E:319:PHE:HA   | 2:E:350:GLU:HB2  | 1.39                     | 1.00              |
| 2:B:229:LEU:HA   | 2:B:232:MET:HE3  | 1.43                     | 0.99              |
| 2:B:140:THR:CB   | 2:B:143:LEU:HD12 | 1.91                     | 0.99              |
| 2:B:323:VAL:HG11 | 2:B:328:ILE:HG13 | 1.43                     | 0.99              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:97:LEU:HD22  | 2:B:98:VAL:N     | 1.78                     | 0.99              |
| 2:E:287:LEU:O    | 2:E:287:LEU:HD23 | 1.62                     | 0.99              |
| 2:E:312:LYS:NZ   | 2:E:388:LYS:HE3  | 1.77                     | 0.99              |
| 2:E:81:LEU:O     | 2:E:90:GLY:HA3   | 1.61                     | 0.99              |
| 2:E:87:ASP:C     | 2:E:89:ASN:H     | 1.60                     | 0.99              |
| 1:D:10:VAL:O     | 1:D:34:MET:HE3   | 1.63                     | 0.98              |
| 1:D:149:ILE:HG13 | 1:D:174:CYS:CB   | 1.93                     | 0.98              |
| 2:E:315:LEU:CD1  | 2:E:316:VAL:H    | 1.76                     | 0.98              |
| 1:D:10:VAL:C     | 1:D:34:MET:HE3   | 1.84                     | 0.98              |
| 1:D:203:ILE:HB   | 1:D:229:VAL:CG2  | 1.91                     | 0.98              |
| 2:E:339:VAL:CG1  | 2:E:341:VAL:HG12 | 1.92                     | 0.98              |
| 2:E:315:LEU:HD12 | 2:E:316:VAL:H    | 0.87                     | 0.98              |
| 2:E:83:THR:H     | 2:E:86:THR:HG23  | 1.29                     | 0.98              |
| 2:E:352:ASN:C    | 2:E:352:ASN:ND2  | 2.12                     | 0.97              |
| 1:D:124:PRO:HA   | 1:D:136:ILE:CD1  | 1.94                     | 0.97              |
| 1:D:203:ILE:CB   | 1:D:229:VAL:HG23 | 1.93                     | 0.97              |
| 1:D:23:HIS:NE2   | 1:D:136:ILE:HG22 | 1.81                     | 0.96              |
| 1:A:124:PRO:O    | 1:A:135:GLY:HA3  | 1.65                     | 0.96              |
| 1:A:137:GLN:HA   | 1:A:137:GLN:HE21 | 0.80                     | 0.96              |
| 3:A:289:COA:H62  | 3:A:289:COA:O9P  | 1.64                     | 0.96              |
| 2:B:109:TYR:C    | 2:B:109:TYR:CD1  | 2.39                     | 0.96              |
| 2:E:277:LYS:HA   | 2:E:281:GLY:O    | 1.65                     | 0.96              |
| 1:D:149:ILE:HG13 | 1:D:174:CYS:HB3  | 0.98                     | 0.96              |
| 1:D:92:ILE:O     | 1:D:118:MET:HA   | 1.64                     | 0.96              |
| 2:B:133:ILE:HD13 | 2:B:134:GLU:N    | 1.81                     | 0.95              |
| 2:E:157:PRO:N    | 2:E:182:MET:CE   | 2.29                     | 0.95              |
| 1:A:108:LYS:HE2  | 4:A:307:HOH:O    | 1.64                     | 0.95              |
| 1:D:187:PHE:CE2  | 1:D:214:GLU:HG3  | 2.02                     | 0.95              |
| 1:A:21:THR:HG22  | 1:A:22:PHE:H     | 1.17                     | 0.95              |
| 2:E:292:GLY:O    | 2:E:294:THR:HG23 | 1.67                     | 0.95              |
| 2:B:270:MET:CA   | 4:B:419:HOH:O    | 2.13                     | 0.94              |
| 2:B:258:ASN:ND2  | 2:B:282:GLU:HB3  | 1.81                     | 0.94              |
| 1:D:259:ASP:OD1  | 1:D:274:ARG:NH2  | 2.00                     | 0.94              |
| 2:E:115:ASP:CG   | 4:E:395:HOH:O    | 2.05                     | 0.94              |
| 1:D:190:ILE:HA   | 1:D:193:MET:HG3  | 1.50                     | 0.94              |
| 1:D:28:ILE:HG22  | 1:D:29:ALA:N     | 1.81                     | 0.94              |
| 1:A:4:ILE:CD1    | 1:A:132:CYS:HB3  | 1.98                     | 0.93              |
| 1:D:123:CYS:N    | 3:D:289:COA:S1P  | 2.41                     | 0.93              |
| 2:E:108:LEU:N    | 2:E:108:LEU:CD2  | 2.28                     | 0.93              |
| 1:D:139:GLY:O    | 1:D:141:ILE:N    | 2.01                     | 0.93              |
| 1:A:9:LYS:HB3    | 1:A:35:VAL:HG11  | 1.50                     | 0.93              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:312:LYS:HZ3  | 2:E:388:LYS:HE3  | 1.34                     | 0.92              |
| 1:A:167:TYR:HB3  | 1:A:169:PHE:CE2  | 2.04                     | 0.92              |
| 2:E:346:VAL:HG21 | 2:E:381:VAL:HG22 | 1.50                     | 0.92              |
| 2:B:140:THR:N    | 2:B:141:PRO:HD3  | 1.84                     | 0.91              |
| 1:D:266:GLU:CG   | 1:D:272:THR:HG21 | 2.00                     | 0.91              |
| 2:B:63:VAL:HG13  | 2:B:68:ASP:HB3   | 1.53                     | 0.90              |
| 2:E:136:VAL:O    | 2:E:140:THR:CG2  | 2.20                     | 0.90              |
| 1:A:223:GLU:O    | 1:A:224:HIS:CD2  | 2.25                     | 0.90              |
| 2:B:82:VAL:HG22  | 2:B:86:THR:HG21  | 1.54                     | 0.90              |
| 1:A:23:HIS:CE1   | 1:A:136:ILE:HG22 | 2.07                     | 0.90              |
| 2:E:356:LEU:C    | 2:E:356:LEU:HD22 | 1.84                     | 0.90              |
| 2:E:49:VAL:HG22  | 2:E:91:GLN:HB3   | 1.54                     | 0.90              |
| 2:B:133:ILE:HD12 | 2:B:133:ILE:H    | 0.75                     | 0.89              |
| 1:D:127:ILE:O    | 1:D:173:THR:HG22 | 1.71                     | 0.89              |
| 1:D:157:THR:O    | 1:D:161:VAL:CG2  | 2.19                     | 0.89              |
| 1:D:97:GLU:HB3   | 3:D:289:COA:C7P  | 2.00                     | 0.89              |
| 2:E:357:GLY:O    | 2:E:361:LEU:HD22 | 1.72                     | 0.89              |
| 1:A:4:ILE:CD1    | 1:A:132:CYS:CB   | 2.48                     | 0.89              |
| 2:B:258:ASN:H    | 2:B:258:ASN:ND2  | 1.69                     | 0.89              |
| 1:D:6:LYS:O      | 1:D:33:LYS:CE    | 2.21                     | 0.89              |
| 2:E:156:MET:C    | 2:E:182:MET:HE2  | 1.92                     | 0.89              |
| 1:A:104:MET:CE   | 1:A:107:VAL:HB   | 2.01                     | 0.89              |
| 2:E:157:PRO:CA   | 2:E:182:MET:HE2  | 2.01                     | 0.89              |
| 2:E:326:ASP:O    | 2:E:328:ILE:N    | 2.05                     | 0.89              |
| 2:E:312:LYS:NZ   | 2:E:388:LYS:CE   | 2.35                     | 0.89              |
| 2:E:252:TYR:C    | 2:E:253:VAL:HG23 | 1.92                     | 0.89              |
| 2:E:255:LEU:O    | 2:E:256:ASP:HB3  | 1.69                     | 0.89              |
| 2:E:262:MET:CE   | 2:E:301:ALA:CB   | 2.50                     | 0.89              |
| 2:E:352:ASN:HD22 | 2:E:353:ASN:N    | 1.68                     | 0.89              |
| 1:A:72:VAL:HG13  | 1:A:73:PRO:HD2   | 1.55                     | 0.88              |
| 2:E:252:TYR:O    | 2:E:253:VAL:CG2  | 2.21                     | 0.88              |
| 2:E:346:VAL:CG2  | 2:E:381:VAL:HG22 | 2.04                     | 0.88              |
| 1:A:104:MET:HE2  | 1:A:104:MET:HA   | 1.55                     | 0.88              |
| 2:E:107:GLU:O    | 2:E:129:GLY:HA3  | 1.72                     | 0.88              |
| 1:A:55:THR:HG22  | 4:A:300:HOH:O    | 1.73                     | 0.88              |
| 2:B:292:GLY:O    | 2:B:294:THR:HG23 | 1.73                     | 0.88              |
| 2:B:97:LEU:HD22  | 2:B:98:VAL:H     | 1.39                     | 0.88              |
| 1:A:149:ILE:HG23 | 1:A:204:VAL:HB   | 1.54                     | 0.88              |
| 2:E:79:LYS:HZ3   | 2:E:79:LYS:HB3   | 1.35                     | 0.88              |
| 1:A:10:VAL:HG12  | 1:A:11:ILE:N     | 1.87                     | 0.88              |
| 1:D:116:VAL:CG1  | 1:D:117:ARG:N    | 2.37                     | 0.88              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:55:THR:CG2   | 4:A:300:HOH:O    | 2.22                     | 0.87              |
| 2:B:195:LEU:HG   | 2:B:196:ILE:N    | 1.89                     | 0.87              |
| 2:B:339:VAL:HG12 | 2:B:340:GLY:N    | 1.86                     | 0.87              |
| 1:D:91:LEU:HD12  | 1:D:117:ARG:HG2  | 1.55                     | 0.87              |
| 2:B:258:ASN:H    | 2:B:258:ASN:HD22 | 1.18                     | 0.87              |
| 2:B:304:ILE:O    | 2:B:307:SER:OG   | 1.91                     | 0.87              |
| 2:E:383:ALA:O    | 2:E:386:GLU:N    | 2.07                     | 0.87              |
| 2:E:173:LEU:HD12 | 2:E:209:LEU:HG   | 1.56                     | 0.87              |
| 1:D:203:ILE:C    | 1:D:229:VAL:HG22 | 1.95                     | 0.87              |
| 1:D:123:CYS:HB2  | 1:D:124:PRO:HD2  | 1.55                     | 0.87              |
| 2:E:257:GLY:HA3  | 2:E:282:GLU:O    | 1.75                     | 0.86              |
| 2:E:275:ILE:HG22 | 2:E:276:VAL:H    | 1.40                     | 0.86              |
| 2:E:75:ASN:O     | 2:E:79:LYS:CD    | 2.23                     | 0.86              |
| 2:E:79:LYS:CB    | 2:E:79:LYS:NZ    | 2.35                     | 0.86              |
| 2:B:385:VAL:HG12 | 2:B:386:GLU:N    | 1.87                     | 0.86              |
| 2:B:263:VAL:HG11 | 2:B:268:LEU:HB3  | 1.55                     | 0.86              |
| 2:E:79:LYS:HZ2   | 2:E:79:LYS:HB3   | 1.08                     | 0.86              |
| 2:B:110:LEU:HD22 | 2:B:111:GLY:H    | 1.40                     | 0.86              |
| 1:D:10:VAL:C     | 1:D:34:MET:CE    | 2.44                     | 0.86              |
| 2:B:324:ARG:HB2  | 2:B:327:LEU:HD12 | 1.55                     | 0.86              |
| 2:B:63:VAL:HG11  | 2:B:68:ASP:HB3   | 1.58                     | 0.86              |
| 1:D:45:THR:O     | 1:D:52:VAL:HG23  | 1.75                     | 0.86              |
| 1:A:92:ILE:HG22  | 1:A:93:ILE:N     | 1.91                     | 0.86              |
| 2:B:223:LEU:O    | 2:B:230:ARG:NH1  | 2.08                     | 0.86              |
| 2:E:62:VAL:HG13  | 2:E:63:VAL:N     | 1.90                     | 0.86              |
| 1:A:233:ILE:HD12 | 1:A:261:LYS:HB3  | 1.57                     | 0.85              |
| 2:B:248:TRP:O    | 2:B:250:LEU:HG   | 1.75                     | 0.85              |
| 2:B:257:GLY:C    | 2:B:284:ALA:HB2  | 1.96                     | 0.85              |
| 1:D:10:VAL:O     | 1:D:34:MET:CE    | 2.23                     | 0.85              |
| 2:E:156:MET:O    | 2:E:159:GLN:HG3  | 1.76                     | 0.85              |
| 2:E:343:VAL:CB   | 2:E:344:PRO:HD2  | 2.04                     | 0.85              |
| 2:E:352:ASN:ND2  | 2:E:353:ASN:N    | 2.24                     | 0.85              |
| 2:E:383:ALA:O    | 2:E:384:ALA:C    | 2.13                     | 0.85              |
| 1:D:229:VAL:CG1  | 1:D:270:VAL:CG1  | 2.55                     | 0.85              |
| 2:E:287:LEU:CD2  | 2:E:287:LEU:C    | 2.42                     | 0.85              |
| 1:D:221:ILE:HG22 | 1:D:222:LYS:H    | 1.40                     | 0.85              |
| 2:E:262:MET:CE   | 2:E:301:ALA:HB3  | 2.05                     | 0.85              |
| 2:E:326:ASP:OD1  | 2:E:327:LEU:N    | 2.09                     | 0.85              |
| 1:A:105:LEU:C    | 1:A:105:LEU:HD23 | 1.98                     | 0.84              |
| 1:A:128:THR:CG2  | 1:A:131:GLU:HB2  | 2.07                     | 0.84              |
| 2:B:239:ASP:OD1  | 2:B:241:ARG:HB2  | 1.76                     | 0.84              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:222:LYS:HB2  | 1:D:268:ALA:HB1  | 1.56                     | 0.84              |
| 2:E:75:ASN:O     | 2:E:79:LYS:HD2   | 1.76                     | 0.84              |
| 1:A:104:MET:HE2  | 1:A:104:MET:CA   | 2.08                     | 0.84              |
| 2:B:270:MET:HA   | 4:B:419:HOH:O    | 1.73                     | 0.84              |
| 2:B:140:THR:O    | 2:B:143:LEU:N    | 2.10                     | 0.84              |
| 1:A:163:GLN:O    | 1:A:165:THR:N    | 2.10                     | 0.84              |
| 1:D:2:ILE:O      | 4:D:293:HOH:O    | 1.90                     | 0.84              |
| 2:B:180:ILE:HG22 | 2:B:181:PHE:N    | 1.91                     | 0.84              |
| 1:D:203:ILE:C    | 1:D:229:VAL:CG2  | 2.45                     | 0.84              |
| 2:B:82:VAL:HG12  | 2:B:82:VAL:O     | 1.77                     | 0.83              |
| 1:D:203:ILE:CA   | 1:D:229:VAL:HG23 | 2.08                     | 0.83              |
| 1:D:136:ILE:H    | 1:D:136:ILE:CD1  | 1.90                     | 0.83              |
| 2:B:144:ILE:HD13 | 2:B:144:ILE:N    | 1.93                     | 0.83              |
| 2:E:216:LEU:HD23 | 2:E:216:LEU:N    | 1.88                     | 0.83              |
| 1:A:97:GLU:CD    | 1:A:97:GLU:C     | 2.38                     | 0.83              |
| 2:B:279:HIS:O    | 2:B:382:VAL:HG21 | 1.78                     | 0.83              |
| 2:E:49:VAL:CG2   | 2:E:91:GLN:HB3   | 2.09                     | 0.83              |
| 2:B:49:VAL:HG13  | 2:B:51:ALA:H     | 1.44                     | 0.83              |
| 2:E:277:LYS:HD2  | 2:E:278:LEU:CA   | 2.09                     | 0.83              |
| 1:D:221:ILE:HG13 | 1:D:225:VAL:HG11 | 1.60                     | 0.83              |
| 2:E:333:ILE:HG22 | 2:E:334:GLY:N    | 1.93                     | 0.82              |
| 1:D:119:ILE:CD1  | 1:D:185:SER:OG   | 2.27                     | 0.82              |
| 2:E:312:LYS:HZ3  | 2:E:388:LYS:CE   | 1.90                     | 0.82              |
| 1:A:195:GLU:OE2  | 1:A:226:THR:CG2  | 2.20                     | 0.82              |
| 2:B:139:GLU:C    | 2:B:141:PRO:HD3  | 2.00                     | 0.82              |
| 1:D:265:LEU:O    | 1:D:270:VAL:HG23 | 1.79                     | 0.82              |
| 2:E:302:PHE:O    | 2:E:306:LEU:HD12 | 1.80                     | 0.82              |
| 2:E:369:ILE:HD13 | 2:E:369:ILE:N    | 1.92                     | 0.82              |
| 1:A:97:GLU:CD    | 1:A:98:GLY:N     | 2.32                     | 0.82              |
| 2:E:272:THR:HG22 | 2:E:273:MET:N    | 1.95                     | 0.82              |
| 2:E:83:THR:H     | 2:E:86:THR:CG2   | 1.93                     | 0.82              |
| 1:D:55:THR:HG22  | 1:D:57:ARG:H     | 1.42                     | 0.82              |
| 2:E:312:LYS:NZ   | 2:E:388:LYS:NZ   | 2.28                     | 0.82              |
| 2:E:70:ARG:HG3   | 2:E:70:ARG:O     | 1.79                     | 0.82              |
| 2:E:343:VAL:HG12 | 2:E:344:PRO:CD   | 2.10                     | 0.81              |
| 1:A:181:PRO:HA   | 2:B:116:ARG:NH1  | 1.95                     | 0.81              |
| 1:D:190:ILE:CD1  | 1:D:190:ILE:N    | 2.41                     | 0.81              |
| 1:D:221:ILE:HA   | 1:D:225:VAL:HG12 | 0.84                     | 0.81              |
| 1:A:12:CYS:HA    | 1:A:69:VAL:HG23  | 1.62                     | 0.81              |
| 2:B:287:LEU:HD23 | 2:B:288:ASP:N    | 1.96                     | 0.81              |
| 1:D:21:THR:HG22  | 1:D:22:PHE:N     | 1.94                     | 0.81              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:46:THR:HG22  | 1:D:50:LEU:O     | 1.81                     | 0.81              |
| 1:A:6:LYS:HG2    | 1:A:131:GLU:O    | 1.80                     | 0.81              |
| 1:D:10:VAL:HB    | 1:D:34:MET:CE    | 2.11                     | 0.81              |
| 1:A:186:ASN:HD21 | 1:A:189:ASP:H    | 1.28                     | 0.80              |
| 2:E:126:SER:HB2  | 2:E:143:LEU:O    | 1.81                     | 0.80              |
| 1:D:218:ALA:O    | 1:D:221:ILE:HB   | 1.82                     | 0.80              |
| 1:D:78:LYS:O     | 1:D:82:LEU:HB2   | 1.81                     | 0.80              |
| 2:B:258:ASN:HD21 | 2:B:282:GLU:HB3  | 1.45                     | 0.80              |
| 1:D:165:THR:O    | 1:D:168:GLY:N    | 2.14                     | 0.80              |
| 2:E:319:PHE:HA   | 2:E:350:GLU:HB3  | 1.63                     | 0.80              |
| 1:A:97:GLU:OE1   | 1:A:97:GLU:C     | 2.20                     | 0.80              |
| 1:D:97:GLU:HB3   | 3:D:289:COA:H72  | 1.62                     | 0.80              |
| 2:E:105:ALA:HB3  | 2:E:203:ILE:O    | 1.81                     | 0.80              |
| 1:A:186:ASN:ND2  | 1:A:189:ASP:CG   | 2.35                     | 0.80              |
| 2:B:263:VAL:O    | 2:B:289:VAL:HG23 | 1.80                     | 0.80              |
| 2:B:86:THR:HG23  | 2:B:90:GLY:HA2   | 1.63                     | 0.80              |
| 1:A:221:ILE:HG22 | 1:A:222:LYS:H    | 0.81                     | 0.79              |
| 1:D:127:ILE:O    | 1:D:173:THR:CG2  | 2.30                     | 0.79              |
| 1:D:266:GLU:O    | 1:D:269:GLY:N    | 2.13                     | 0.79              |
| 2:E:251:ASN:HB2  | 2:E:288:ASP:HB3  | 1.65                     | 0.79              |
| 2:B:275:ILE:O    | 2:B:278:LEU:HB3  | 1.83                     | 0.79              |
| 2:E:326:ASP:O    | 2:E:327:LEU:C    | 2.20                     | 0.79              |
| 1:D:127:ILE:HG12 | 1:D:128:THR:N    | 1.97                     | 0.79              |
| 2:E:56:LYS:HD2   | 2:E:56:LYS:H     | 1.46                     | 0.79              |
| 2:B:258:ASN:N    | 2:B:258:ASN:HD22 | 1.81                     | 0.79              |
| 2:E:252:TYR:O    | 2:E:253:VAL:HG23 | 1.82                     | 0.79              |
| 1:A:137:GLN:CA   | 1:A:137:GLN:NE2  | 2.22                     | 0.79              |
| 2:B:188:PHE:O    | 4:B:408:HOH:O    | 1.93                     | 0.79              |
| 2:B:81:LEU:HD22  | 2:B:82:VAL:H     | 1.48                     | 0.79              |
| 1:D:136:ILE:HD13 | 1:D:136:ILE:N    | 1.94                     | 0.79              |
| 1:D:2:ILE:HD11   | 1:D:193:MET:HB3  | 1.62                     | 0.79              |
| 2:B:110:LEU:HD22 | 2:B:111:GLY:N    | 1.97                     | 0.79              |
| 1:D:203:ILE:CB   | 1:D:229:VAL:CG2  | 2.57                     | 0.79              |
| 1:D:221:ILE:HG22 | 1:D:222:LYS:CA   | 2.13                     | 0.79              |
| 1:A:104:MET:HE1  | 1:A:107:VAL:HB   | 1.64                     | 0.78              |
| 2:B:105:ALA:HB3  | 2:B:203:ILE:HG22 | 1.66                     | 0.78              |
| 2:E:262:MET:HE1  | 2:E:301:ALA:CB   | 2.13                     | 0.78              |
| 2:E:65:SER:HB2   | 2:E:67:GLU:OE1   | 1.82                     | 0.78              |
| 2:B:327:LEU:O    | 2:B:330:ASP:HB2  | 1.83                     | 0.78              |
| 1:D:10:VAL:HB    | 1:D:34:MET:HE3   | 1.63                     | 0.78              |
| 2:E:330:ASP:O    | 2:E:333:ILE:HB   | 1.82                     | 0.78              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:70:ARG:O     | 2:E:74:GLU:HG3   | 1.82                     | 0.78              |
| 1:D:123:CYS:HB2  | 1:D:124:PRO:CD   | 2.13                     | 0.78              |
| 2:B:257:GLY:O    | 2:B:284:ALA:HB2  | 1.83                     | 0.78              |
| 1:D:91:LEU:CD1   | 1:D:117:ARG:HG2  | 2.13                     | 0.78              |
| 2:E:315:LEU:C    | 2:E:315:LEU:HD12 | 1.91                     | 0.78              |
| 3:A:289:COA:O9P  | 3:A:289:COA:H61  | 1.82                     | 0.78              |
| 1:A:5:ASP:OD1    | 1:A:7:ASN:N      | 2.15                     | 0.78              |
| 1:A:186:ASN:HD22 | 1:A:189:ASP:CG   | 1.87                     | 0.78              |
| 1:D:283:LEU:O    | 1:D:286:VAL:HG12 | 1.84                     | 0.78              |
| 1:D:228:PRO:HB2  | 1:D:286:VAL:HG21 | 1.64                     | 0.78              |
| 1:A:197:ASP:O    | 1:A:227:LYS:NZ   | 2.15                     | 0.78              |
| 2:E:262:MET:HE2  | 2:E:301:ALA:HB1  | 1.65                     | 0.78              |
| 1:A:92:ILE:CG2   | 1:A:93:ILE:N     | 2.47                     | 0.78              |
| 1:D:7:ASN:HA     | 1:D:33:LYS:NZ    | 1.99                     | 0.78              |
| 2:E:296:GLU:OE1  | 2:E:296:GLU:N    | 2.12                     | 0.78              |
| 1:A:2:ILE:CG2    | 1:A:3:LEU:H      | 1.94                     | 0.77              |
| 1:D:53:PHE:CG    | 1:D:59:ALA:HB2   | 2.20                     | 0.77              |
| 2:E:152:LEU:HD22 | 2:E:152:LEU:O    | 1.85                     | 0.77              |
| 1:A:106:THR:HG22 | 1:A:106:THR:O    | 1.83                     | 0.77              |
| 2:B:141:PRO:HD2  | 2:B:142:HIS:HD2  | 1.47                     | 0.77              |
| 1:D:230:VAL:HG21 | 1:D:283:LEU:HD13 | 1.66                     | 0.77              |
| 1:D:2:ILE:HG12   | 1:D:193:MET:HE2  | 1.65                     | 0.77              |
| 2:B:126:SER:HB2  | 2:B:143:LEU:O    | 1.84                     | 0.77              |
| 2:E:119:ARG:O    | 2:E:120:ARG:HD3  | 1.85                     | 0.77              |
| 2:E:352:ASN:ND2  | 2:E:353:ASN:HB2  | 2.00                     | 0.77              |
| 2:E:81:LEU:O     | 2:E:90:GLY:CA    | 2.31                     | 0.77              |
| 1:D:116:VAL:HG13 | 1:D:117:ARG:H    | 1.46                     | 0.77              |
| 1:D:172:SER:HB3  | 1:D:199:GLN:HG2  | 1.67                     | 0.77              |
| 1:D:274:ARG:HG2  | 1:D:274:ARG:HH11 | 1.49                     | 0.77              |
| 2:E:49:VAL:HG22  | 2:E:91:GLN:CB    | 2.13                     | 0.77              |
| 1:A:123:CYS:HB2  | 1:A:124:PRO:HD2  | 1.64                     | 0.77              |
| 2:B:249:GLU:OE2  | 2:E:70:ARG:NH2   | 2.17                     | 0.77              |
| 1:A:221:ILE:CG2  | 1:A:222:LYS:H    | 1.68                     | 0.77              |
| 1:A:39:THR:HG22  | 1:A:42:LYS:HG3   | 1.65                     | 0.77              |
| 2:B:109:TYR:O    | 2:B:109:TYR:HD1  | 1.68                     | 0.77              |
| 2:B:26:THR:HB    | 2:B:30:GLU:OE1   | 1.84                     | 0.77              |
| 2:B:361:LEU:O    | 2:B:364:SER:HB3  | 1.84                     | 0.77              |
| 2:E:316:VAL:HB   | 2:E:347:VAL:HG13 | 1.66                     | 0.77              |
| 2:B:308:ASP:O    | 2:B:311:VAL:HG12 | 1.85                     | 0.76              |
| 1:D:282:ALA:O    | 1:D:285:THR:HB   | 1.85                     | 0.76              |
| 1:A:127:ILE:HD12 | 1:A:133:LYS:HG3  | 1.65                     | 0.76              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:223:GLU:C    | 1:A:224:HIS:CD2  | 2.59                     | 0.76              |
| 2:E:246:ALA:O    | 2:E:248:TRP:N    | 2.17                     | 0.76              |
| 1:A:10:VAL:CG1   | 1:A:11:ILE:N     | 2.47                     | 0.76              |
| 1:D:169:PHE:CE2  | 1:D:283:LEU:HB3  | 2.20                     | 0.76              |
| 2:B:375:THR:O    | 2:B:379:GLN:HG3  | 1.85                     | 0.76              |
| 2:E:300:GLU:O    | 2:E:304:ILE:HG12 | 1.85                     | 0.76              |
| 2:E:157:PRO:CA   | 2:E:182:MET:CE   | 2.62                     | 0.76              |
| 2:E:319:PHE:O    | 2:E:320:GLY:O    | 2.03                     | 0.76              |
| 2:B:110:LEU:CD2  | 2:B:111:GLY:H    | 1.98                     | 0.76              |
| 2:B:274:ASP:OD2  | 4:B:420:HOH:O    | 2.03                     | 0.76              |
| 3:D:289:COA:O8A  | 3:D:289:COA:O2B  | 2.02                     | 0.76              |
| 2:E:150:ASP:O    | 2:E:153:THR:O    | 2.04                     | 0.76              |
| 2:B:276:VAL:HG12 | 2:B:277:LYS:N    | 1.96                     | 0.75              |
| 2:B:86:THR:CG2   | 2:B:90:GLY:HA2   | 2.16                     | 0.75              |
| 1:D:49:GLY:C     | 1:D:50:LEU:HD23  | 2.07                     | 0.75              |
| 2:E:339:VAL:HG12 | 2:E:341:VAL:N    | 2.01                     | 0.75              |
| 1:D:221:ILE:CG1  | 1:D:225:VAL:HG11 | 2.17                     | 0.75              |
| 2:E:97:LEU:HD23  | 2:E:98:VAL:N     | 2.01                     | 0.75              |
| 1:D:252:ALA:O    | 1:D:253:GLY:C    | 2.24                     | 0.75              |
| 2:E:319:PHE:CE2  | 2:E:350:GLU:HG2  | 2.20                     | 0.75              |
| 2:B:380:GLN:O    | 2:B:383:ALA:CB   | 2.28                     | 0.75              |
| 1:A:161:VAL:O    | 1:A:162:LYS:C    | 2.24                     | 0.75              |
| 2:B:66:LYS:O     | 2:B:69:ILE:HB    | 1.85                     | 0.75              |
| 2:B:201:LEU:HD12 | 2:B:202:VAL:H    | 1.51                     | 0.75              |
| 2:E:63:VAL:HG12  | 2:E:64:ASN:N     | 2.02                     | 0.75              |
| 1:A:221:ILE:HG22 | 1:A:222:LYS:CA   | 2.16                     | 0.75              |
| 1:D:203:ILE:O    | 1:D:230:VAL:N    | 2.15                     | 0.75              |
| 1:D:23:HIS:NE2   | 1:D:136:ILE:CG2  | 2.50                     | 0.74              |
| 1:D:97:GLU:CB    | 3:D:289:COA:C7P  | 2.64                     | 0.74              |
| 2:B:222:ALA:O    | 2:B:225:ARG:N    | 2.14                     | 0.74              |
| 1:D:129:PRO:HD2  | 1:D:172:SER:O    | 1.86                     | 0.74              |
| 1:D:11:ILE:HA    | 1:D:36:GLY:O     | 1.86                     | 0.74              |
| 2:B:326:ASP:OD1  | 2:B:353:ASN:ND2  | 2.19                     | 0.74              |
| 1:D:233:ILE:CD1  | 1:D:261:LYS:HB3  | 2.17                     | 0.74              |
| 2:B:201:LEU:HD12 | 2:B:202:VAL:N    | 2.01                     | 0.74              |
| 1:A:163:GLN:O    | 1:A:164:THR:C    | 2.25                     | 0.74              |
| 2:B:325:CYS:HB2  | 2:B:352:ASN:O    | 1.88                     | 0.74              |
| 1:D:180:ASP:HB3  | 1:D:181:PRO:HD2  | 1.68                     | 0.74              |
| 2:E:72:PHE:CE1   | 2:E:76:TRP:CD1   | 2.76                     | 0.74              |
| 1:D:116:VAL:HG12 | 1:D:117:ARG:N    | 2.02                     | 0.74              |
| 2:E:324:ARG:NE   | 2:E:326:ASP:OD2  | 2.20                     | 0.74              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:233:ILE:CG2  | 1:D:234:ALA:N    | 2.50                     | 0.74              |
| 1:D:180:ASP:HB3  | 1:D:181:PRO:CD   | 2.18                     | 0.73              |
| 1:D:2:ILE:CD1    | 1:D:193:MET:CB   | 2.30                     | 0.73              |
| 1:D:263:ALA:O    | 1:D:266:GLU:N    | 2.21                     | 0.73              |
| 1:D:275:SER:HB3  | 1:D:278:ASP:OD2  | 1.87                     | 0.73              |
| 2:E:262:MET:HE2  | 2:E:301:ALA:CB   | 2.16                     | 0.73              |
| 2:E:322:ILE:O    | 2:E:322:ILE:HG23 | 1.87                     | 0.73              |
| 1:A:91:LEU:HD12  | 1:A:117:ARG:O    | 1.88                     | 0.73              |
| 1:D:147:VAL:HG23 | 1:D:170:GLY:O    | 1.88                     | 0.73              |
| 1:A:236:VAL:HG23 | 4:B:420:HOH:O    | 1.88                     | 0.73              |
| 1:D:285:THR:HG22 | 1:D:286:VAL:N    | 2.01                     | 0.73              |
| 1:A:265:LEU:O    | 1:A:270:VAL:HG23 | 1.88                     | 0.73              |
| 1:D:215:GLU:OE1  | 1:D:261:LYS:HG2  | 1.89                     | 0.73              |
| 2:B:109:TYR:C    | 2:B:109:TYR:HD1  | 1.91                     | 0.73              |
| 1:A:2:ILE:HG22   | 1:A:3:LEU:H      | 1.54                     | 0.73              |
| 2:B:150:ASP:OD1  | 2:B:152:LEU:N    | 2.18                     | 0.73              |
| 1:A:207:GLY:O    | 1:A:233:ILE:HA   | 1.88                     | 0.73              |
| 1:A:218:ALA:HB1  | 1:A:268:ALA:HB2  | 1.69                     | 0.73              |
| 2:E:82:VAL:HG22  | 2:E:90:GLY:CA    | 2.18                     | 0.73              |
| 1:A:195:GLU:OE1  | 1:A:225:VAL:HG23 | 1.89                     | 0.73              |
| 2:B:269:ALA:O    | 2:B:273:MET:HG3  | 1.88                     | 0.72              |
| 2:E:253:VAL:HB   | 2:E:286:PHE:HB3  | 1.70                     | 0.72              |
| 2:E:63:VAL:HG11  | 2:E:68:ASP:HB3   | 1.71                     | 0.72              |
| 1:D:233:ILE:HG22 | 1:D:234:ALA:N    | 2.03                     | 0.72              |
| 1:A:219:ALA:O    | 1:A:220:TYR:C    | 2.26                     | 0.72              |
| 1:A:97:GLU:OE1   | 1:A:97:GLU:CA    | 2.35                     | 0.72              |
| 2:E:79:LYS:CB    | 2:E:79:LYS:HZ2   | 1.96                     | 0.72              |
| 1:D:218:ALA:O    | 1:D:220:TYR:N    | 2.21                     | 0.72              |
| 1:D:97:GLU:CB    | 3:D:289:COA:H71  | 2.20                     | 0.72              |
| 2:E:215:LYS:O    | 2:E:216:LEU:HD23 | 1.88                     | 0.72              |
| 2:E:262:MET:CE   | 2:E:301:ALA:HB1  | 2.20                     | 0.72              |
| 1:D:123:CYS:CB   | 1:D:124:PRO:CD   | 2.66                     | 0.72              |
| 1:D:2:ILE:HD11   | 1:D:193:MET:CG   | 2.17                     | 0.72              |
| 2:E:252:TYR:O    | 2:E:253:VAL:HG22 | 1.89                     | 0.72              |
| 2:B:133:ILE:O    | 2:B:134:GLU:C    | 2.26                     | 0.71              |
| 2:B:296:GLU:OE1  | 2:B:296:GLU:N    | 2.18                     | 0.71              |
| 2:E:79:LYS:O     | 2:E:93:VAL:HG23  | 1.89                     | 0.71              |
| 2:B:313:ALA:HA   | 2:B:343:VAL:HG13 | 1.71                     | 0.71              |
| 2:B:352:ASN:O    | 2:B:353:ASN:CB   | 2.37                     | 0.71              |
| 1:D:151:SER:HB2  | 1:D:206:ILE:HB   | 1.71                     | 0.71              |
| 2:E:86:THR:OG1   | 2:E:87:ASP:N     | 2.15                     | 0.71              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:144:ILE:N    | 2:B:144:ILE:CD1  | 2.53                     | 0.71              |
| 1:A:263:ALA:O    | 1:A:266:GLU:HG3  | 1.91                     | 0.71              |
| 2:B:22:GLY:HA2   | 2:B:98:VAL:O     | 1.91                     | 0.71              |
| 1:D:223:GLU:O    | 1:D:223:GLU:CG   | 2.37                     | 0.71              |
| 2:E:45:VAL:HG22  | 2:E:61:LYS:O     | 1.90                     | 0.71              |
| 1:A:146:LYS:HB2  | 1:A:201:GLU:HB2  | 1.72                     | 0.71              |
| 1:A:212:SER:O    | 1:A:215:GLU:N    | 2.23                     | 0.71              |
| 2:B:142:HIS:CD2  | 2:B:142:HIS:H    | 2.08                     | 0.71              |
| 1:A:214:GLU:OE1  | 1:A:261:LYS:HE3  | 1.90                     | 0.71              |
| 1:A:136:ILE:HD13 | 1:A:136:ILE:H    | 1.56                     | 0.71              |
| 2:B:287:LEU:HD23 | 2:B:287:LEU:C    | 2.11                     | 0.71              |
| 1:D:143:LYS:O    | 1:D:171:GLN:N    | 2.22                     | 0.71              |
| 1:D:97:GLU:C     | 1:D:97:GLU:OE1   | 2.28                     | 0.71              |
| 1:A:150:VAL:HG23 | 1:A:150:VAL:O    | 1.88                     | 0.71              |
| 2:B:97:LEU:CD2   | 2:B:98:VAL:H     | 2.04                     | 0.71              |
| 2:E:150:ASP:OD1  | 2:E:151:PRO:HD2  | 1.89                     | 0.71              |
| 2:E:239:ASP:OD1  | 2:E:241:ARG:N    | 2.18                     | 0.71              |
| 2:E:364:SER:OG   | 2:E:366:LEU:HD22 | 1.91                     | 0.71              |
| 2:E:366:LEU:HD22 | 2:E:366:LEU:N    | 2.05                     | 0.71              |
| 1:A:152:ARG:HG3  | 1:A:177:ILE:HD11 | 1.73                     | 0.70              |
| 2:B:316:VAL:CG1  | 2:B:317:ASN:N    | 2.53                     | 0.70              |
| 1:D:97:GLU:HB2   | 3:D:289:COA:H71  | 1.72                     | 0.70              |
| 2:E:287:LEU:O    | 2:E:287:LEU:CD2  | 2.39                     | 0.70              |
| 2:E:326:ASP:HB3  | 2:E:356:LEU:HD13 | 1.72                     | 0.70              |
| 2:E:87:ASP:C     | 2:E:89:ASN:N     | 2.31                     | 0.70              |
| 1:A:153:SER:HB2  | 1:A:246:NEP:HE1  | 1.72                     | 0.70              |
| 1:A:182:ILE:N    | 1:A:183:PRO:HD3  | 2.05                     | 0.70              |
| 2:B:325:CYS:HB3  | 2:B:349:LEU:CD1  | 2.17                     | 0.70              |
| 2:E:269:ALA:O    | 2:E:272:THR:HB   | 1.92                     | 0.70              |
| 1:A:142:HIS:HB3  | 1:A:171:GLN:OE1  | 1.91                     | 0.70              |
| 2:B:143:LEU:C    | 2:B:144:ILE:HD13 | 2.12                     | 0.70              |
| 1:D:204:VAL:HA   | 1:D:230:VAL:O    | 1.92                     | 0.70              |
| 1:D:285:THR:O    | 1:D:288:LYS:CG   | 2.29                     | 0.70              |
| 1:A:218:ALA:O    | 1:A:219:ALA:C    | 2.29                     | 0.70              |
| 2:E:140:THR:N    | 2:E:141:PRO:HD3  | 2.05                     | 0.70              |
| 2:B:204:THR:O    | 2:B:207:GLY:N    | 2.25                     | 0.70              |
| 1:D:129:PRO:C    | 1:D:131:GLU:H    | 1.93                     | 0.70              |
| 2:E:89:ASN:O     | 2:E:90:GLY:O     | 2.10                     | 0.70              |
| 1:D:123:CYS:CB   | 1:D:124:PRO:HD2  | 2.20                     | 0.70              |
| 1:A:106:THR:O    | 1:A:106:THR:CG2  | 2.40                     | 0.70              |
| 2:E:258:ASN:H    | 2:E:258:ASN:HD22 | 1.40                     | 0.70              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:75:ASN:O     | 2:E:79:LYS:HD3   | 1.91                     | 0.70              |
| 1:D:119:ILE:HD11 | 1:D:185:SER:OG   | 1.91                     | 0.70              |
| 1:A:229:VAL:O    | 1:A:229:VAL:HG22 | 1.89                     | 0.69              |
| 2:B:377:ALA:O    | 2:B:381:VAL:HG23 | 1.91                     | 0.69              |
| 1:D:127:ILE:HG13 | 1:D:133:LYS:CB   | 2.21                     | 0.69              |
| 1:D:218:ALA:O    | 1:D:219:ALA:C    | 2.29                     | 0.69              |
| 1:A:127:ILE:HG13 | 1:A:132:CYS:O    | 1.92                     | 0.69              |
| 1:D:128:THR:HG23 | 1:D:131:GLU:HB2  | 1.73                     | 0.69              |
| 1:D:119:ILE:HD13 | 1:D:185:SER:OG   | 1.89                     | 0.69              |
| 2:E:337:ALA:O    | 2:E:338:GLU:C    | 2.27                     | 0.69              |
| 1:A:221:ILE:HA   | 1:A:225:VAL:CG1  | 2.22                     | 0.69              |
| 1:D:154:GLY:O    | 1:D:157:THR:HB   | 1.92                     | 0.69              |
| 1:D:188:ILE:O    | 1:D:189:ASP:C    | 2.25                     | 0.69              |
| 2:B:140:THR:HB   | 2:B:143:LEU:HD12 | 1.74                     | 0.69              |
| 2:B:26:THR:HG22  | 2:B:27:THR:HG23  | 1.74                     | 0.69              |
| 2:E:282:GLU:O    | 2:E:282:GLU:HG3  | 1.91                     | 0.69              |
| 2:E:278:LEU:O    | 2:E:278:LEU:HG   | 1.92                     | 0.69              |
| 1:A:116:VAL:HG12 | 1:A:117:ARG:N    | 2.08                     | 0.69              |
| 1:A:147:VAL:HG12 | 1:A:148:GLY:N    | 2.08                     | 0.69              |
| 2:B:298:VAL:O    | 2:B:298:VAL:HG12 | 1.93                     | 0.69              |
| 2:E:277:LYS:CD   | 2:E:278:LEU:N    | 2.48                     | 0.69              |
| 2:B:180:ILE:CG2  | 2:B:184:LEU:HD11 | 2.23                     | 0.69              |
| 2:B:352:ASN:O    | 2:B:353:ASN:HB2  | 1.92                     | 0.69              |
| 1:D:128:THR:CG2  | 1:D:131:GLU:HB2  | 2.23                     | 0.69              |
| 2:E:5:GLU:OE2    | 2:E:46:LYS:NZ    | 2.20                     | 0.69              |
| 2:B:140:THR:N    | 2:B:141:PRO:CD   | 2.40                     | 0.68              |
| 1:D:53:PHE:CD1   | 1:D:59:ALA:HB2   | 2.28                     | 0.68              |
| 2:E:109:TYR:CD1  | 2:E:109:TYR:C    | 2.66                     | 0.68              |
| 2:E:63:VAL:CG1   | 2:E:64:ASN:N     | 2.55                     | 0.68              |
| 2:B:180:ILE:HG23 | 2:B:184:LEU:HD11 | 1.75                     | 0.68              |
| 1:D:197:ASP:O    | 1:D:227:LYS:NZ   | 2.26                     | 0.68              |
| 2:E:246:ALA:O    | 2:E:249:GLU:N    | 2.18                     | 0.68              |
| 2:E:62:VAL:CG1   | 2:E:63:VAL:N     | 2.43                     | 0.68              |
| 1:D:160:ALA:O    | 1:D:161:VAL:C    | 2.25                     | 0.68              |
| 1:D:27:ALA:HB1   | 1:D:32:THR:HB    | 1.75                     | 0.68              |
| 2:E:128:GLU:CA   | 2:E:128:GLU:OE1  | 2.41                     | 0.68              |
| 1:A:97:GLU:HB3   | 3:A:289:COA:C7P  | 2.24                     | 0.68              |
| 2:B:276:VAL:CG1  | 2:B:281:GLY:HA3  | 2.24                     | 0.68              |
| 1:D:73:PRO:C     | 1:D:75:PRO:HD2   | 2.14                     | 0.68              |
| 2:E:202:VAL:CG1  | 2:E:203:ILE:N    | 2.51                     | 0.68              |
| 2:E:272:THR:O    | 2:E:273:MET:C    | 2.28                     | 0.68              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:2:ILE:O      | 1:D:4:ILE:N      | 2.26                     | 0.68              |
| 1:D:3:LEU:HD23   | 1:D:193:MET:CE   | 2.23                     | 0.68              |
| 1:D:250:ILE:HG12 | 1:D:251:ILE:N    | 2.06                     | 0.68              |
| 1:D:55:THR:HG22  | 1:D:57:ARG:N     | 2.08                     | 0.68              |
| 1:D:5:ASP:OD1    | 1:D:7:ASN:N      | 2.23                     | 0.68              |
| 2:E:324:ARG:HB3  | 2:E:327:LEU:HD12 | 1.74                     | 0.68              |
| 2:E:76:TRP:HA    | 2:E:79:LYS:HG3   | 1.74                     | 0.68              |
| 2:B:103:ASP:O    | 2:B:204:THR:HA   | 1.93                     | 0.68              |
| 2:B:278:LEU:O    | 2:B:278:LEU:HD12 | 1.94                     | 0.68              |
| 1:D:221:ILE:CG1  | 1:D:225:VAL:CG1  | 2.72                     | 0.68              |
| 2:E:383:ALA:O    | 2:E:385:VAL:N    | 2.26                     | 0.68              |
| 1:A:22:PHE:O     | 1:A:25:GLU:HB2   | 1.94                     | 0.67              |
| 1:A:55:THR:HG22  | 1:A:57:ARG:H     | 1.59                     | 0.67              |
| 1:D:128:THR:CA   | 1:D:173:THR:HG23 | 2.23                     | 0.67              |
| 1:A:199:GLN:HG3  | 1:A:199:GLN:O    | 1.93                     | 0.67              |
| 2:E:27:THR:OG1   | 2:E:30:GLU:HG3   | 1.94                     | 0.67              |
| 2:E:364:SER:OG   | 2:E:366:LEU:CD2  | 2.42                     | 0.67              |
| 2:E:50:HIS:CD2   | 2:E:237:GLN:HG3  | 2.29                     | 0.67              |
| 1:A:116:VAL:CG1  | 1:A:117:ARG:N    | 2.56                     | 0.67              |
| 1:D:146:LYS:HB2  | 1:D:201:GLU:HB2  | 1.75                     | 0.67              |
| 2:E:83:THR:N     | 2:E:86:THR:HG23  | 2.06                     | 0.67              |
| 2:E:292:GLY:O    | 2:E:294:THR:N    | 2.27                     | 0.67              |
| 1:A:285:THR:O    | 1:A:287:LEU:N    | 2.28                     | 0.67              |
| 1:D:2:ILE:HD11   | 1:D:193:MET:HB2  | 0.68                     | 0.67              |
| 2:B:324:ARG:O    | 2:B:327:LEU:HB2  | 1.94                     | 0.67              |
| 1:D:286:VAL:HG13 | 1:D:287:LEU:N    | 2.08                     | 0.67              |
| 2:E:34:ALA:HA    | 2:E:37:LYS:HG3   | 1.74                     | 0.67              |
| 1:A:217:ALA:O    | 1:A:218:ALA:C    | 2.31                     | 0.67              |
| 2:B:157:PRO:HG3  | 2:B:182:MET:HE2  | 1.76                     | 0.67              |
| 2:B:2:ASN:C      | 2:B:3:LEU:HD23   | 2.14                     | 0.67              |
| 2:E:339:VAL:HG12 | 2:E:340:GLY:N    | 2.10                     | 0.67              |
| 1:A:190:ILE:O    | 1:A:191:LEU:C    | 2.32                     | 0.67              |
| 1:D:147:VAL:O    | 1:D:172:SER:N    | 2.26                     | 0.67              |
| 2:B:318:ILE:CG2  | 2:B:319:PHE:N    | 2.58                     | 0.67              |
| 2:E:258:ASN:ND2  | 2:E:258:ASN:H    | 1.93                     | 0.67              |
| 2:E:263:VAL:HG12 | 2:E:264:ASN:N    | 2.08                     | 0.67              |
| 1:A:229:VAL:HG13 | 1:A:270:VAL:HG13 | 1.77                     | 0.66              |
| 2:B:63:VAL:HG13  | 2:B:68:ASP:CB    | 2.24                     | 0.66              |
| 1:D:222:LYS:HB2  | 1:D:268:ALA:CB   | 2.25                     | 0.66              |
| 2:E:197:GLU:O    | 2:E:215:LYS:HE3  | 1.94                     | 0.66              |
| 1:D:205:MET:HE1  | 1:D:217:ALA:HB3  | 1.77                     | 0.66              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:81:LEU:HD22  | 2:B:82:VAL:N     | 2.09                     | 0.66              |
| 1:A:129:PRO:HD2  | 1:A:172:SER:O    | 1.95                     | 0.66              |
| 2:B:45:VAL:HG23  | 2:B:72:PHE:CE2   | 2.30                     | 0.66              |
| 1:D:217:ALA:O    | 1:D:218:ALA:O    | 2.14                     | 0.66              |
| 2:E:152:LEU:CD2  | 2:E:152:LEU:O    | 2.43                     | 0.66              |
| 1:A:9:LYS:HB3    | 1:A:35:VAL:CG1   | 2.23                     | 0.66              |
| 1:D:251:ILE:HG22 | 1:D:251:ILE:O    | 1.95                     | 0.66              |
| 2:E:323:VAL:O    | 2:E:324:ARG:HB2  | 1.96                     | 0.66              |
| 1:A:167:TYR:CB   | 1:A:169:PHE:CE2  | 2.78                     | 0.66              |
| 2:B:68:ASP:O     | 2:B:71:ALA:HB3   | 1.95                     | 0.66              |
| 2:B:341:VAL:HG12 | 2:B:343:VAL:H    | 1.60                     | 0.66              |
| 1:D:163:GLN:OE1  | 1:D:277:ALA:O    | 2.13                     | 0.66              |
| 1:D:2:ILE:HG23   | 1:D:3:LEU:HG     | 1.77                     | 0.66              |
| 2:E:312:LYS:HZ2  | 2:E:388:LYS:HE3  | 1.61                     | 0.66              |
| 2:E:235:GLN:O    | 2:E:238:GLU:HG2  | 1.95                     | 0.66              |
| 2:E:318:ILE:HG22 | 2:E:318:ILE:O    | 1.96                     | 0.66              |
| 2:E:330:ASP:OD1  | 2:E:360:LYS:HE2  | 1.95                     | 0.66              |
| 2:E:157:PRO:CD   | 2:E:182:MET:HE1  | 2.26                     | 0.66              |
| 2:E:87:ASP:O     | 2:E:87:ASP:OD1   | 2.14                     | 0.66              |
| 2:B:184:LEU:HA   | 2:B:187:ILE:HG13 | 1.77                     | 0.65              |
| 2:B:84:TYR:CE1   | 2:B:85:GLN:HG3   | 2.30                     | 0.65              |
| 2:E:246:ALA:C    | 2:E:248:TRP:H    | 1.99                     | 0.65              |
| 1:D:275:SER:OG   | 1:D:277:ALA:HB3  | 1.97                     | 0.65              |
| 1:A:216:GLU:O    | 1:A:219:ALA:HB3  | 1.96                     | 0.65              |
| 1:A:46:THR:HA    | 1:A:50:LEU:O     | 1.97                     | 0.65              |
| 2:B:258:ASN:HD21 | 2:B:282:GLU:CB   | 2.08                     | 0.65              |
| 2:E:368:ILE:C    | 2:E:369:ILE:CD1  | 2.51                     | 0.65              |
| 2:B:372:LYS:N    | 2:B:376:ASP:OD2  | 2.28                     | 0.65              |
| 1:A:283:LEU:O    | 1:A:287:LEU:N    | 2.27                     | 0.65              |
| 1:D:23:HIS:CE1   | 1:D:136:ILE:CG2  | 2.76                     | 0.65              |
| 1:D:220:TYR:CD2  | 1:D:221:ILE:N    | 2.64                     | 0.65              |
| 2:E:27:THR:O     | 2:E:30:GLU:HB2   | 1.97                     | 0.65              |
| 2:E:295:LYS:HB3  | 2:E:296:GLU:OE1  | 1.97                     | 0.65              |
| 2:E:60:VAL:HG12  | 2:E:61:LYS:N     | 2.11                     | 0.65              |
| 2:E:70:ARG:O     | 2:E:70:ARG:CG    | 2.45                     | 0.65              |
| 2:E:258:ASN:ND2  | 2:E:258:ASN:N    | 2.42                     | 0.65              |
| 1:D:128:THR:CG2  | 1:D:131:GLU:CB   | 2.73                     | 0.65              |
| 2:E:103:ASP:HB3  | 2:E:205:LYS:HD2  | 1.79                     | 0.65              |
| 2:E:312:LYS:NZ   | 2:E:388:LYS:HZ1  | 1.92                     | 0.65              |
| 1:A:104:MET:HE2  | 1:A:104:MET:O    | 1.97                     | 0.65              |
| 2:E:255:LEU:O    | 2:E:256:ASP:CB   | 2.42                     | 0.65              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:258:ASN:HD22 | 2:E:258:ASN:C    | 1.97                     | 0.65              |
| 2:B:21:VAL:O     | 2:B:99:GLU:HB2   | 1.97                     | 0.64              |
| 2:E:258:ASN:N    | 2:E:258:ASN:HD22 | 1.93                     | 0.64              |
| 2:E:312:LYS:HZ1  | 2:E:388:LYS:NZ   | 1.95                     | 0.64              |
| 2:E:374:LEU:HD12 | 2:E:374:LEU:C    | 2.18                     | 0.64              |
| 1:D:55:THR:O     | 1:D:56:VAL:C     | 2.34                     | 0.64              |
| 1:A:212:SER:O    | 1:A:215:GLU:OE1  | 2.15                     | 0.64              |
| 2:B:188:PHE:HA   | 2:B:193:LEU:HD12 | 1.80                     | 0.64              |
| 2:E:263:VAL:HG11 | 2:E:268:LEU:HB3  | 1.79                     | 0.64              |
| 2:B:42:PRO:HA    | 2:B:64:ASN:ND2   | 2.12                     | 0.64              |
| 2:E:257:GLY:HA3  | 2:E:282:GLU:HG3  | 1.80                     | 0.64              |
| 2:B:239:ASP:OD1  | 2:B:239:ASP:C    | 2.36                     | 0.64              |
| 2:E:41:GLY:CA    | 2:E:42:PRO:C     | 2.66                     | 0.64              |
| 1:A:158:TYR:CD1  | 1:A:158:TYR:N    | 2.62                     | 0.64              |
| 2:B:140:THR:O    | 2:B:142:HIS:N    | 2.30                     | 0.64              |
| 2:B:165:PHE:O    | 2:B:167:LEU:N    | 2.31                     | 0.64              |
| 2:E:199:ASN:HB3  | 2:E:215:LYS:HZ2  | 1.63                     | 0.64              |
| 2:E:72:PHE:CE1   | 2:E:76:TRP:NE1   | 2.66                     | 0.64              |
| 2:B:165:PHE:O    | 2:B:166:LYS:C    | 2.35                     | 0.64              |
| 2:E:157:PRO:CD   | 2:E:182:MET:CE   | 2.74                     | 0.64              |
| 2:E:326:ASP:C    | 2:E:328:ILE:N    | 2.49                     | 0.64              |
| 1:A:104:MET:HE1  | 1:A:107:VAL:CB   | 2.28                     | 0.64              |
| 2:B:143:LEU:C    | 2:B:144:ILE:CD1  | 2.67                     | 0.64              |
| 2:B:296:GLU:H    | 2:B:296:GLU:CD   | 2.00                     | 0.63              |
| 1:D:127:ILE:HG13 | 1:D:133:LYS:HB3  | 1.80                     | 0.63              |
| 1:A:94:THR:OG1   | 1:A:121:PRO:HB3  | 1.98                     | 0.63              |
| 2:B:371:ALA:CB   | 2:B:377:ALA:HB2  | 2.27                     | 0.63              |
| 1:D:153:SER:HB2  | 1:D:246:NEP:HE1  | 1.78                     | 0.63              |
| 2:E:248:TRP:O    | 2:E:249:GLU:HB2  | 1.97                     | 0.63              |
| 2:E:337:ALA:O    | 2:E:340:GLY:N    | 2.31                     | 0.63              |
| 2:E:325:CYS:HB2  | 2:E:354:ALA:HA   | 1.79                     | 0.63              |
| 1:A:23:HIS:CE1   | 1:A:136:ILE:CG2  | 2.80                     | 0.63              |
| 2:B:12:PHE:HB3   | 2:B:17:LEU:HB2   | 1.80                     | 0.63              |
| 2:B:3:LEU:HD23   | 2:B:3:LEU:N      | 2.14                     | 0.63              |
| 2:E:263:VAL:CG1  | 2:E:264:ASN:N    | 2.61                     | 0.63              |
| 1:D:167:TYR:OH   | 1:D:281:GLU:HG2  | 1.97                     | 0.63              |
| 2:E:249:GLU:O    | 2:E:290:GLY:HA3  | 1.99                     | 0.63              |
| 2:B:150:ASP:OD1  | 2:B:151:PRO:N    | 2.31                     | 0.63              |
| 2:B:97:LEU:CD2   | 2:B:98:VAL:N     | 2.56                     | 0.63              |
| 1:D:159:GLU:O    | 1:D:160:ALA:C    | 2.30                     | 0.63              |
| 2:E:17:LEU:N     | 2:E:17:LEU:HD23  | 2.13                     | 0.63              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:141:PRO:HD2  | 2:B:142:HIS:CD2  | 2.32                     | 0.63              |
| 2:B:48:GLN:NE2   | 2:B:48:GLN:HA    | 2.14                     | 0.63              |
| 1:D:10:VAL:CB    | 1:D:34:MET:HE3   | 2.27                     | 0.63              |
| 2:B:196:ILE:HG22 | 2:B:197:GLU:N    | 2.12                     | 0.63              |
| 2:E:128:GLU:HA   | 2:E:128:GLU:OE1  | 1.99                     | 0.63              |
| 1:D:237:THR:HG21 | 2:E:274:ASP:OD1  | 1.90                     | 0.63              |
| 1:A:128:THR:HG21 | 1:A:131:GLU:HB2  | 1.78                     | 0.63              |
| 2:B:292:GLY:O    | 2:B:294:THR:N    | 2.31                     | 0.63              |
| 2:E:45:VAL:CG2   | 2:E:61:LYS:O     | 2.45                     | 0.63              |
| 1:A:244:MET:HE1  | 2:B:253:VAL:HG21 | 1.81                     | 0.63              |
| 1:D:22:PHE:O     | 1:D:24:SER:N     | 2.32                     | 0.63              |
| 1:A:124:PRO:HA   | 1:A:136:ILE:HD13 | 1.80                     | 0.62              |
| 2:B:109:TYR:CD1  | 2:B:110:LEU:N    | 2.66                     | 0.62              |
| 2:B:69:ILE:O     | 2:B:70:ARG:C     | 2.35                     | 0.62              |
| 2:E:258:ASN:HD22 | 2:E:259:ILE:N    | 1.96                     | 0.62              |
| 1:A:123:CYS:HB3  | 1:A:178:GLY:CA   | 2.29                     | 0.62              |
| 1:A:253:GLY:O    | 1:A:255:LYS:N    | 2.32                     | 0.62              |
| 1:A:72:VAL:HG13  | 1:A:73:PRO:CD    | 2.27                     | 0.62              |
| 2:E:246:ALA:C    | 2:E:248:TRP:N    | 2.52                     | 0.62              |
| 2:E:252:TYR:C    | 2:E:253:VAL:CG2  | 2.56                     | 0.62              |
| 1:A:158:TYR:HD1  | 1:A:158:TYR:N    | 1.96                     | 0.62              |
| 1:A:195:GLU:O    | 1:A:227:LYS:HE3  | 1.98                     | 0.62              |
| 2:B:7:GLN:NE2    | 2:B:232:MET:HG2  | 2.13                     | 0.62              |
| 1:D:57:ARG:O     | 1:D:58:GLU:C     | 2.32                     | 0.62              |
| 2:E:156:MET:HB3  | 2:E:157:PRO:HD2  | 1.80                     | 0.62              |
| 2:E:369:ILE:HD13 | 2:E:369:ILE:H    | 1.61                     | 0.62              |
| 1:A:124:PRO:O    | 1:A:135:GLY:CA   | 2.44                     | 0.62              |
| 1:D:30:TYR:OH    | 1:D:129:PRO:HA   | 1.99                     | 0.62              |
| 1:A:133:LYS:NZ   | 1:A:137:GLN:O    | 2.21                     | 0.62              |
| 1:A:6:LYS:N      | 1:A:131:GLU:OE1  | 2.30                     | 0.62              |
| 2:E:385:VAL:HG12 | 2:E:386:GLU:N    | 2.13                     | 0.62              |
| 1:A:173:THR:HG22 | 1:A:174:CYS:N    | 2.14                     | 0.62              |
| 1:D:194:PHE:HB3  | 1:D:203:ILE:HD11 | 1.80                     | 0.62              |
| 2:E:152:LEU:HD22 | 2:E:152:LEU:C    | 2.20                     | 0.62              |
| 1:A:104:MET:HA   | 1:A:104:MET:HE3  | 0.64                     | 0.62              |
| 1:A:25:GLU:O     | 1:A:28:ILE:HB    | 1.99                     | 0.62              |
| 2:B:4:HIS:HB2    | 2:B:7:GLN:HG3    | 1.81                     | 0.62              |
| 1:D:156:LEU:O    | 1:D:157:THR:C    | 2.37                     | 0.62              |
| 1:D:92:ILE:HG22  | 1:D:118:MET:CG   | 2.10                     | 0.62              |
| 1:D:128:THR:O    | 1:D:128:THR:HG22 | 1.99                     | 0.62              |
| 1:D:191:LEU:O    | 1:D:192:GLU:C    | 2.38                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:263:ALA:O    | 1:D:265:LEU:N    | 2.32                     | 0.62              |
| 2:E:109:TYR:CE2  | 2:E:197:GLU:OE1  | 2.52                     | 0.62              |
| 2:B:110:LEU:CD2  | 2:B:111:GLY:N    | 2.61                     | 0.62              |
| 1:A:248:GLY:O    | 2:B:116:ARG:NH2  | 2.33                     | 0.62              |
| 2:B:186:THR:HG23 | 2:B:190:GLU:HG3  | 1.82                     | 0.62              |
| 1:D:127:ILE:C    | 1:D:173:THR:CG2  | 2.69                     | 0.62              |
| 1:D:286:VAL:CG1  | 1:D:287:LEU:N    | 2.63                     | 0.62              |
| 1:D:23:HIS:CD2   | 1:D:136:ILE:HG22 | 2.35                     | 0.61              |
| 1:D:217:ALA:O    | 1:D:221:ILE:HD12 | 1.99                     | 0.61              |
| 1:A:221:ILE:HG23 | 1:A:222:LYS:N    | 2.03                     | 0.61              |
| 1:A:26:GLN:O     | 1:A:27:ALA:C     | 2.37                     | 0.61              |
| 2:E:184:LEU:HA   | 2:E:187:ILE:HG13 | 1.81                     | 0.61              |
| 2:E:109:TYR:HE2  | 2:E:197:GLU:OE1  | 1.83                     | 0.61              |
| 2:B:380:GLN:C    | 2:B:383:ALA:HB3  | 2.19                     | 0.61              |
| 1:D:195:GLU:HA   | 1:D:227:LYS:HE3  | 1.81                     | 0.61              |
| 2:E:72:PHE:CD1   | 2:E:76:TRP:CD1   | 2.89                     | 0.61              |
| 1:A:146:LYS:NZ   | 1:A:201:GLU:OE2  | 2.28                     | 0.61              |
| 2:B:83:THR:H     | 2:B:86:THR:HB    | 1.66                     | 0.61              |
| 2:E:126:SER:OG   | 2:E:128:GLU:N    | 2.28                     | 0.61              |
| 2:B:94:ASN:C     | 2:B:95:GLN:HG2   | 2.19                     | 0.61              |
| 1:D:7:ASN:HA     | 1:D:33:LYS:HZ2   | 1.63                     | 0.61              |
| 2:E:38:ILE:HG21  | 2:E:43:TRP:HD1   | 1.64                     | 0.61              |
| 2:B:319:PHE:O    | 2:B:320:GLY:O    | 2.18                     | 0.61              |
| 1:A:124:PRO:HA   | 1:A:136:ILE:CD1  | 2.31                     | 0.61              |
| 1:A:55:THR:HG22  | 1:A:57:ARG:N     | 2.15                     | 0.61              |
| 2:B:82:VAL:HG23  | 2:B:90:GLY:HA3   | 1.83                     | 0.61              |
| 1:D:2:ILE:CG1    | 1:D:193:MET:HE2  | 2.31                     | 0.61              |
| 1:A:80:SER:O     | 1:A:83:GLU:HB3   | 2.00                     | 0.61              |
| 2:E:343:VAL:HG13 | 2:E:344:PRO:CG   | 2.24                     | 0.61              |
| 2:E:82:VAL:CG2   | 2:E:90:GLY:N     | 2.38                     | 0.61              |
| 1:A:97:GLU:HB3   | 3:A:289:COA:H71  | 1.83                     | 0.61              |
| 2:B:186:THR:CG2  | 2:B:190:GLU:HG3  | 2.31                     | 0.61              |
| 1:D:77:CYS:HB3   | 1:D:99:ILE:HD11  | 1.83                     | 0.61              |
| 1:A:112:ASP:O    | 1:A:113:GLU:C    | 2.34                     | 0.60              |
| 1:A:172:SER:HB3  | 1:A:199:GLN:HG2  | 1.82                     | 0.60              |
| 2:B:140:THR:HG1  | 2:B:143:LEU:HD12 | 1.64                     | 0.60              |
| 2:B:239:ASP:OD2  | 2:B:241:ARG:NH2  | 2.32                     | 0.60              |
| 1:D:189:ASP:C    | 1:D:190:ILE:HD13 | 2.21                     | 0.60              |
| 2:E:152:LEU:CD2  | 2:E:152:LEU:C    | 2.69                     | 0.60              |
| 1:D:10:VAL:CB    | 1:D:34:MET:CE    | 2.80                     | 0.60              |
| 1:A:127:ILE:O    | 1:A:127:ILE:HG23 | 2.01                     | 0.60              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:141:ILE:O    | 1:A:141:ILE:HG22 | 1.99                     | 0.60              |
| 1:A:203:ILE:HG22 | 1:A:204:VAL:N    | 2.15                     | 0.60              |
| 1:D:275:SER:O    | 1:D:276:LEU:C    | 2.38                     | 0.60              |
| 1:D:89:ILE:HG22  | 1:D:91:LEU:H     | 1.65                     | 0.60              |
| 2:B:315:LEU:HD13 | 2:B:346:VAL:HB   | 1.84                     | 0.60              |
| 1:D:189:ASP:HB2  | 1:D:190:ILE:HD13 | 1.84                     | 0.60              |
| 1:A:21:THR:O     | 1:A:22:PHE:C     | 2.39                     | 0.60              |
| 1:D:250:ILE:CG1  | 1:D:251:ILE:N    | 2.63                     | 0.60              |
| 2:E:325:CYS:O    | 2:E:328:ILE:HB   | 2.02                     | 0.60              |
| 2:B:263:VAL:CG1  | 2:B:268:LEU:HB3  | 2.29                     | 0.60              |
| 2:B:343:VAL:HG22 | 2:B:344:PRO:HD2  | 1.83                     | 0.60              |
| 2:B:82:VAL:HG22  | 2:B:86:THR:CG2   | 2.28                     | 0.60              |
| 1:D:127:ILE:HB   | 1:D:133:LYS:HB2  | 1.84                     | 0.60              |
| 1:D:252:ALA:O    | 1:D:253:GLY:O    | 2.20                     | 0.60              |
| 1:D:228:PRO:HB2  | 1:D:286:VAL:CG2  | 2.32                     | 0.60              |
| 1:A:262:PHE:O    | 1:A:266:GLU:HG3  | 2.02                     | 0.60              |
| 1:A:267:ALA:C    | 1:A:269:GLY:H    | 2.02                     | 0.60              |
| 2:B:156:MET:HB3  | 2:B:157:PRO:HD2  | 1.82                     | 0.60              |
| 2:B:181:PHE:O    | 2:B:182:MET:C    | 2.37                     | 0.60              |
| 2:B:316:VAL:HG12 | 2:B:317:ASN:N    | 2.13                     | 0.60              |
| 2:E:67:GLU:CD    | 2:E:67:GLU:H     | 2.04                     | 0.60              |
| 1:A:246:NEP:CD2  | 2:B:266:ALA:HB3  | 2.32                     | 0.60              |
| 2:E:323:VAL:HG12 | 2:E:324:ARG:N    | 2.16                     | 0.60              |
| 2:E:332:ILE:O    | 2:E:336:VAL:HG23 | 2.02                     | 0.60              |
| 2:E:72:PHE:O     | 2:E:75:ASN:HB3   | 2.02                     | 0.60              |
| 1:A:148:GLY:C    | 1:A:149:ILE:HG12 | 2.22                     | 0.60              |
| 1:A:218:ALA:O    | 1:A:219:ALA:O    | 2.20                     | 0.60              |
| 1:A:74:ALA:N     | 1:A:75:PRO:HD2   | 2.17                     | 0.60              |
| 2:B:202:VAL:HG13 | 2:B:203:ILE:N    | 2.17                     | 0.60              |
| 1:D:187:PHE:HE2  | 1:D:214:GLU:CG   | 2.04                     | 0.60              |
| 2:B:140:THR:OG1  | 2:B:143:LEU:CD1  | 2.33                     | 0.59              |
| 1:D:10:VAL:C     | 1:D:11:ILE:HG22  | 1.99                     | 0.59              |
| 1:D:153:SER:HB3  | 4:D:309:HOH:O    | 2.01                     | 0.59              |
| 2:E:312:LYS:HZ3  | 2:E:388:LYS:NZ   | 1.93                     | 0.59              |
| 2:E:315:LEU:C    | 2:E:315:LEU:CD1  | 2.58                     | 0.59              |
| 1:A:35:VAL:CG2   | 1:A:65:ALA:HB2   | 2.33                     | 0.59              |
| 1:D:117:ARG:HG3  | 1:D:118:MET:N    | 2.15                     | 0.59              |
| 2:E:49:VAL:CG2   | 2:E:91:GLN:CB    | 2.76                     | 0.59              |
| 1:D:149:ILE:HD11 | 1:D:171:GLN:HG2  | 1.83                     | 0.59              |
| 1:D:195:GLU:OE1  | 1:D:226:THR:N    | 2.35                     | 0.59              |
| 1:A:218:ALA:O    | 1:A:221:ILE:HB   | 2.03                     | 0.59              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:315:LEU:HD12 | 2:B:346:VAL:O    | 2.02                     | 0.59              |
| 2:E:257:GLY:CA   | 2:E:282:GLU:HG3  | 2.32                     | 0.59              |
| 1:A:39:THR:CG2   | 1:A:42:LYS:HG3   | 2.31                     | 0.59              |
| 1:A:86:ASP:O     | 1:A:86:ASP:OD1   | 2.21                     | 0.59              |
| 2:B:275:ILE:HG23 | 2:B:276:VAL:N    | 2.15                     | 0.59              |
| 2:B:333:ILE:HG22 | 2:B:334:GLY:N    | 2.08                     | 0.59              |
| 1:D:116:VAL:CG1  | 1:D:117:ARG:H    | 2.05                     | 0.59              |
| 2:E:158:TYR:CD1  | 2:E:158:TYR:C    | 2.76                     | 0.59              |
| 2:E:63:VAL:HG11  | 2:E:68:ASP:CB    | 2.32                     | 0.59              |
| 2:E:87:ASP:CG    | 2:E:87:ASP:O     | 2.41                     | 0.59              |
| 2:B:109:TYR:O    | 2:B:109:TYR:CD1  | 2.51                     | 0.59              |
| 2:B:135:LYS:O    | 2:B:138:GLU:N    | 2.35                     | 0.59              |
| 1:A:104:MET:C    | 1:A:104:MET:HE2  | 2.23                     | 0.59              |
| 1:A:274:ARG:HG3  | 1:A:274:ARG:HH11 | 1.68                     | 0.59              |
| 1:A:74:ALA:HB1   | 1:A:98:GLY:O     | 2.03                     | 0.59              |
| 2:B:278:LEU:C    | 2:B:278:LEU:HD12 | 2.21                     | 0.59              |
| 1:A:35:VAL:HG21  | 1:A:65:ALA:HB2   | 1.84                     | 0.59              |
| 2:E:248:TRP:O    | 2:E:249:GLU:CB   | 2.50                     | 0.59              |
| 1:A:97:GLU:HB3   | 3:A:289:COA:H72  | 1.84                     | 0.58              |
| 2:B:141:PRO:HD2  | 2:B:142:HIS:H    | 1.66                     | 0.58              |
| 2:E:106:LYS:HB3  | 2:E:203:ILE:HD12 | 1.84                     | 0.58              |
| 2:E:348:ARG:NH1  | 2:E:374:LEU:H    | 2.01                     | 0.58              |
| 1:A:156:LEU:O    | 1:A:159:GLU:N    | 2.36                     | 0.58              |
| 1:D:128:THR:HA   | 1:D:173:THR:HG23 | 1.85                     | 0.58              |
| 1:D:273:VAL:HG13 | 1:D:275:SER:H    | 1.68                     | 0.58              |
| 1:D:50:LEU:HB3   | 1:D:51:PRO:HD2   | 1.84                     | 0.58              |
| 2:E:371:ALA:CB   | 2:E:377:ALA:HA   | 2.34                     | 0.58              |
| 1:A:21:THR:OG1   | 1:A:47:HIS:NE2   | 2.37                     | 0.58              |
| 2:E:329:ALA:O    | 2:E:333:ILE:HD12 | 2.03                     | 0.58              |
| 1:A:244:MET:CE   | 2:B:253:VAL:HG21 | 2.33                     | 0.58              |
| 2:B:165:PHE:O    | 2:B:168:GLY:N    | 2.35                     | 0.58              |
| 2:B:276:VAL:HG13 | 2:B:281:GLY:HA3  | 1.86                     | 0.58              |
| 1:D:124:PRO:HG2  | 1:D:176:GLY:HA3  | 1.84                     | 0.58              |
| 1:D:20:GLY:O     | 1:D:21:THR:C     | 2.41                     | 0.58              |
| 2:E:157:PRO:CG   | 2:E:182:MET:CE   | 2.82                     | 0.58              |
| 2:E:94:ASN:HB2   | 4:E:403:HOH:O    | 2.03                     | 0.58              |
| 1:A:155:THR:O    | 1:A:156:LEU:C    | 2.40                     | 0.58              |
| 2:B:275:ILE:CG2  | 2:B:276:VAL:N    | 2.66                     | 0.58              |
| 1:D:180:ASP:CB   | 1:D:181:PRO:CD   | 2.80                     | 0.58              |
| 2:E:335:ALA:O    | 2:E:336:VAL:C    | 2.40                     | 0.58              |
| 1:A:105:LEU:HD23 | 1:A:106:THR:N    | 2.18                     | 0.58              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:123:CYS:N    | 3:A:289:COA:S1P  | 2.77                     | 0.58              |
| 2:B:158:TYR:CE1  | 2:B:159:GLN:HG2  | 2.38                     | 0.58              |
| 2:B:70:ARG:NH2   | 2:E:249:GLU:OE2  | 2.37                     | 0.58              |
| 1:D:151:SER:CB   | 1:D:206:ILE:HB   | 2.33                     | 0.58              |
| 1:D:218:ALA:O    | 1:D:221:ILE:N    | 2.37                     | 0.58              |
| 1:A:56:VAL:O     | 1:A:57:ARG:C     | 2.41                     | 0.58              |
| 2:B:381:VAL:O    | 2:B:382:VAL:C    | 2.40                     | 0.58              |
| 2:E:176:GLN:HE22 | 2:E:209:LEU:H    | 1.51                     | 0.58              |
| 1:A:229:VAL:CG2  | 1:A:230:VAL:N    | 2.56                     | 0.58              |
| 2:B:362:ALA:O    | 2:B:364:SER:N    | 2.36                     | 0.58              |
| 1:D:7:ASN:HA     | 1:D:33:LYS:HZ1   | 1.67                     | 0.58              |
| 2:E:195:LEU:HD23 | 2:E:195:LEU:C    | 2.24                     | 0.58              |
| 2:E:313:ALA:HA   | 2:E:343:VAL:HG11 | 1.86                     | 0.58              |
| 1:A:19:GLN:OE1   | 1:A:19:GLN:HA    | 2.02                     | 0.58              |
| 2:B:263:VAL:CG1  | 2:B:264:ASN:N    | 2.66                     | 0.58              |
| 1:D:280:GLY:O    | 1:D:281:GLU:C    | 2.42                     | 0.58              |
| 2:E:150:ASP:OD1  | 2:E:151:PRO:CD   | 2.51                     | 0.58              |
| 2:E:157:PRO:HA   | 2:E:182:MET:HE2  | 1.84                     | 0.58              |
| 2:E:294:THR:O    | 2:E:295:LYS:C    | 2.43                     | 0.58              |
| 2:B:13:ALA:O     | 2:B:14:ARG:C     | 2.40                     | 0.57              |
| 2:B:319:PHE:C    | 2:B:319:PHE:CD1  | 2.78                     | 0.57              |
| 2:B:373:GLY:O    | 2:B:376:ASP:HB3  | 2.04                     | 0.57              |
| 1:D:267:ALA:C    | 1:D:269:GLY:H    | 2.07                     | 0.57              |
| 1:D:55:THR:HB    | 1:D:58:GLU:H     | 1.69                     | 0.57              |
| 1:A:262:PHE:O    | 1:A:263:ALA:C    | 2.43                     | 0.57              |
| 2:B:115:ASP:OD2  | 2:B:118:SER:OG   | 2.22                     | 0.57              |
| 2:B:263:VAL:HG12 | 2:B:264:ASN:N    | 2.19                     | 0.57              |
| 1:A:155:THR:HG21 | 2:B:264:ASN:O    | 2.04                     | 0.57              |
| 2:B:4:HIS:HD2    | 4:B:404:HOH:O    | 1.87                     | 0.57              |
| 2:E:118:SER:C    | 2:E:119:ARG:HG3  | 2.24                     | 0.57              |
| 2:E:176:GLN:HE21 | 2:E:209:LEU:HB2  | 1.68                     | 0.57              |
| 2:B:13:ALA:O     | 2:B:15:TYR:N     | 2.38                     | 0.57              |
| 2:B:252:TYR:HE2  | 2:B:254:ALA:HB2  | 1.69                     | 0.57              |
| 1:D:26:GLN:O     | 1:D:27:ALA:C     | 2.43                     | 0.57              |
| 2:E:364:SER:OG   | 2:E:365:GLY:N    | 2.33                     | 0.57              |
| 1:A:265:LEU:HB3  | 1:A:270:VAL:HB   | 1.86                     | 0.57              |
| 2:B:152:LEU:CD2  | 2:B:152:LEU:O    | 2.52                     | 0.57              |
| 1:D:221:ILE:CA   | 1:D:225:VAL:HG13 | 2.30                     | 0.57              |
| 1:D:203:ILE:C    | 1:D:229:VAL:HG23 | 2.20                     | 0.57              |
| 2:E:94:ASN:C     | 2:E:95:GLN:HG2   | 2.23                     | 0.57              |
| 1:D:202:ALA:C    | 1:D:203:ILE:HG13 | 2.24                     | 0.57              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:34:MET:CE    | 1:D:34:MET:HA    | 2.34                     | 0.57              |
| 2:E:364:SER:CB   | 2:E:366:LEU:CD2  | 2.83                     | 0.57              |
| 2:B:277:LYS:HA   | 2:B:281:GLY:O    | 2.05                     | 0.57              |
| 1:D:56:VAL:CG1   | 1:D:87:ALA:HB3   | 2.34                     | 0.57              |
| 2:E:140:THR:HG23 | 2:E:140:THR:O    | 2.02                     | 0.57              |
| 2:B:84:TYR:CE1   | 2:B:85:GLN:CG    | 2.88                     | 0.57              |
| 1:D:22:PHE:O     | 1:D:23:HIS:C     | 2.39                     | 0.57              |
| 2:E:140:THR:N    | 2:E:141:PRO:CD   | 2.61                     | 0.57              |
| 2:E:356:LEU:CD2  | 2:E:357:GLY:N    | 2.56                     | 0.57              |
| 1:A:149:ILE:HG23 | 1:A:204:VAL:CB   | 2.33                     | 0.57              |
| 2:B:239:ASP:OD1  | 2:B:241:ARG:N    | 2.38                     | 0.57              |
| 1:A:237:THR:HG23 | 2:B:274:ASP:OD1  | 2.03                     | 0.57              |
| 1:D:203:ILE:HB   | 1:D:229:VAL:HG21 | 1.82                     | 0.57              |
| 1:D:22:PHE:C     | 1:D:24:SER:N     | 2.55                     | 0.57              |
| 1:D:73:PRO:HA    | 3:D:289:COA:H143 | 1.87                     | 0.57              |
| 2:E:264:ASN:HB2  | 2:E:318:ILE:HG13 | 1.86                     | 0.57              |
| 2:E:32:GLU:OE1   | 2:E:70:ARG:NH1   | 2.38                     | 0.57              |
| 1:A:145:GLY:HA3  | 1:A:170:GLY:HA3  | 1.87                     | 0.57              |
| 1:D:128:THR:HG22 | 1:D:131:GLU:CB   | 2.34                     | 0.57              |
| 1:D:89:ILE:HG22  | 1:D:91:LEU:N     | 2.20                     | 0.57              |
| 1:A:57:ARG:NH1   | 1:A:86:ASP:O     | 2.37                     | 0.56              |
| 1:A:92:ILE:O     | 1:A:118:MET:HA   | 2.04                     | 0.56              |
| 1:D:267:ALA:C    | 1:D:269:GLY:N    | 2.58                     | 0.56              |
| 1:A:55:THR:HG22  | 1:A:56:VAL:N     | 2.20                     | 0.56              |
| 2:B:43:TRP:CE3   | 2:B:43:TRP:N     | 2.73                     | 0.56              |
| 2:E:339:VAL:HG12 | 2:E:341:VAL:H    | 1.70                     | 0.56              |
| 2:E:379:GLN:O    | 2:E:382:VAL:N    | 2.38                     | 0.56              |
| 1:A:159:GLU:O    | 1:A:160:ALA:C    | 2.43                     | 0.56              |
| 2:E:132:GLU:OE1  | 2:E:134:GLU:HG3  | 2.04                     | 0.56              |
| 2:E:20:PRO:HD3   | 2:E:210:ILE:HD11 | 1.88                     | 0.56              |
| 2:E:271:GLY:O    | 2:E:272:THR:C    | 2.41                     | 0.56              |
| 2:B:250:LEU:CD2  | 2:B:289:VAL:HA   | 2.36                     | 0.56              |
| 1:A:159:GLU:OE2  | 2:B:319:PHE:HD2  | 1.87                     | 0.56              |
| 2:B:368:ILE:HG22 | 2:B:369:ILE:N    | 2.20                     | 0.56              |
| 2:E:281:GLY:H    | 2:E:382:VAL:HG21 | 1.70                     | 0.56              |
| 1:D:158:TYR:HB3  | 2:E:319:PHE:CE1  | 2.40                     | 0.56              |
| 2:E:324:ARG:HG2  | 2:E:326:ASP:OD2  | 2.04                     | 0.56              |
| 2:E:364:SER:HB2  | 2:E:366:LEU:CD2  | 2.35                     | 0.56              |
| 2:E:57:ALA:HB2   | 2:E:83:THR:HG22  | 1.87                     | 0.56              |
| 1:A:203:ILE:CG2  | 1:A:204:VAL:N    | 2.69                     | 0.56              |
| 1:A:6:LYS:HB2    | 1:A:131:GLU:OE1  | 2.06                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:348:ARG:HD3  | 2:B:348:ARG:C    | 2.26                     | 0.56              |
| 1:D:5:ASP:OD1    | 1:D:7:ASN:HB2    | 2.04                     | 0.56              |
| 2:E:127:THR:O    | 2:E:129:GLY:N    | 2.37                     | 0.56              |
| 2:E:219:ASP:O    | 2:E:220:GLY:C    | 2.42                     | 0.56              |
| 2:E:68:ASP:O     | 2:E:71:ALA:HB3   | 2.06                     | 0.56              |
| 2:E:80:ARG:HD3   | 2:E:89:ASN:HD21  | 1.71                     | 0.56              |
| 2:B:152:LEU:HD23 | 2:B:152:LEU:O    | 2.05                     | 0.56              |
| 2:E:45:VAL:HB    | 2:E:72:PHE:CD2   | 2.39                     | 0.56              |
| 2:E:79:LYS:CB    | 2:E:79:LYS:HZ3   | 2.12                     | 0.56              |
| 2:B:257:GLY:O    | 2:B:284:ALA:CB   | 2.53                     | 0.56              |
| 1:D:186:ASN:ND2  | 1:D:186:ASN:H    | 2.01                     | 0.56              |
| 1:D:89:ILE:HG22  | 1:D:90:LYS:N     | 2.19                     | 0.56              |
| 1:A:161:VAL:HG12 | 1:A:162:LYS:N    | 2.19                     | 0.56              |
| 2:B:386:GLU:O    | 2:B:388:LYS:NZ   | 2.39                     | 0.56              |
| 1:D:10:VAL:O     | 1:D:35:VAL:HG23  | 2.06                     | 0.56              |
| 2:E:313:ALA:HA   | 2:E:343:VAL:CG1  | 2.36                     | 0.56              |
| 2:E:45:VAL:HG23  | 2:E:45:VAL:O     | 2.05                     | 0.56              |
| 1:A:195:GLU:CD   | 1:A:226:THR:H    | 2.09                     | 0.56              |
| 1:D:129:PRO:C    | 1:D:131:GLU:N    | 2.59                     | 0.56              |
| 1:D:140:HIS:N    | 1:D:140:HIS:ND1  | 2.53                     | 0.56              |
| 2:E:258:ASN:ND2  | 2:E:258:ASN:C    | 2.58                     | 0.56              |
| 1:D:123:CYS:CA   | 3:D:289:COA:S1P  | 2.94                     | 0.56              |
| 1:D:2:ILE:CD1    | 1:D:193:MET:HE2  | 2.36                     | 0.56              |
| 1:D:34:MET:HE3   | 1:D:34:MET:HA    | 1.88                     | 0.56              |
| 2:E:156:MET:HB3  | 2:E:157:PRO:CD   | 2.36                     | 0.56              |
| 2:B:82:VAL:HA    | 2:B:86:THR:HG21  | 1.88                     | 0.55              |
| 2:E:343:VAL:HG12 | 2:E:344:PRO:N    | 2.20                     | 0.55              |
| 1:D:169:PHE:CE2  | 1:D:283:LEU:CB   | 2.88                     | 0.55              |
| 1:A:153:SER:OG   | 2:B:267:GLY:HA3  | 2.05                     | 0.55              |
| 2:B:210:ILE:HG23 | 2:B:210:ILE:O    | 2.06                     | 0.55              |
| 2:B:158:TYR:CD1  | 2:B:158:TYR:C    | 2.80                     | 0.55              |
| 2:E:107:GLU:O    | 2:E:108:LEU:HD23 | 2.05                     | 0.55              |
| 2:E:278:LEU:HD23 | 2:E:279:HIS:ND1  | 2.21                     | 0.55              |
| 1:D:208:GLU:OE2  | 1:D:246:NEP:ND1  | 2.39                     | 0.55              |
| 1:D:55:THR:HB    | 1:D:58:GLU:HG3   | 1.89                     | 0.55              |
| 2:E:234:ASP:OD1  | 2:E:234:ASP:C    | 2.45                     | 0.55              |
| 2:E:312:LYS:HZ3  | 2:E:388:LYS:HZ1  | 1.49                     | 0.55              |
| 2:E:332:ILE:O    | 2:E:335:ALA:HB3  | 2.07                     | 0.55              |
| 2:E:49:VAL:HG12  | 2:E:54:ARG:HD3   | 1.89                     | 0.55              |
| 1:A:128:THR:HG22 | 1:A:131:GLU:HB2  | 1.87                     | 0.55              |
| 2:B:65:SER:O     | 2:B:68:ASP:HB2   | 2.07                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:110:LYS:HZ2  | 1:D:113:GLU:HG2  | 1.72                     | 0.55              |
| 1:D:182:ILE:HB   | 4:D:302:HOH:O    | 2.07                     | 0.55              |
| 1:D:287:LEU:HD22 | 1:D:287:LEU:O    | 2.05                     | 0.55              |
| 2:E:294:THR:O    | 2:E:297:ARG:N    | 2.39                     | 0.55              |
| 1:A:190:ILE:O    | 1:A:193:MET:N    | 2.39                     | 0.55              |
| 2:B:234:ASP:OD2  | 2:B:237:GLN:HG2  | 2.06                     | 0.55              |
| 1:D:122:ASN:C    | 3:D:289:COA:S1P  | 2.84                     | 0.55              |
| 1:D:97:GLU:OE1   | 1:D:98:GLY:CA    | 2.53                     | 0.55              |
| 2:E:164:ALA:HB1  | 2:E:169:LEU:HD12 | 1.87                     | 0.55              |
| 2:E:377:ALA:O    | 2:E:381:VAL:HG23 | 2.06                     | 0.55              |
| 1:D:128:THR:CG2  | 1:D:128:THR:O    | 2.54                     | 0.55              |
| 2:E:126:SER:OG   | 2:E:127:THR:N    | 2.37                     | 0.55              |
| 2:E:271:GLY:O    | 2:E:274:ASP:N    | 2.39                     | 0.55              |
| 1:A:276:LEU:O    | 1:A:279:ILE:HG13 | 2.07                     | 0.55              |
| 1:A:48:LEU:N     | 1:A:48:LEU:HD23  | 2.21                     | 0.55              |
| 2:B:324:ARG:CB   | 2:B:327:LEU:HD12 | 2.31                     | 0.55              |
| 2:B:86:THR:HG23  | 2:B:87:ASP:N     | 2.22                     | 0.55              |
| 1:A:129:PRO:HB3  | 1:A:142:HIS:HB2  | 1.88                     | 0.54              |
| 2:B:45:VAL:HG22  | 2:B:45:VAL:O     | 2.01                     | 0.54              |
| 1:D:283:LEU:O    | 1:D:284:LYS:C    | 2.45                     | 0.54              |
| 2:E:133:ILE:HG23 | 2:E:134:GLU:N    | 2.21                     | 0.54              |
| 2:E:41:GLY:HA3   | 2:E:42:PRO:C     | 2.24                     | 0.54              |
| 2:E:66:LYS:O     | 2:E:69:ILE:HB    | 2.06                     | 0.54              |
| 2:B:165:PHE:C    | 2:B:167:LEU:N    | 2.58                     | 0.54              |
| 2:B:63:VAL:CG1   | 2:B:68:ASP:CB    | 2.74                     | 0.54              |
| 2:E:346:VAL:HG21 | 2:E:381:VAL:CG2  | 2.30                     | 0.54              |
| 2:E:60:VAL:CG1   | 2:E:61:LYS:N     | 2.69                     | 0.54              |
| 1:A:110:LYS:HG3  | 1:A:110:LYS:O    | 2.07                     | 0.54              |
| 1:A:138:PRO:HG2  | 1:A:141:ILE:HD11 | 1.89                     | 0.54              |
| 1:A:95:ILE:HG13  | 1:A:123:CYS:O    | 2.07                     | 0.54              |
| 2:B:229:LEU:HA   | 2:B:232:MET:CE   | 2.25                     | 0.54              |
| 1:D:128:THR:CG2  | 1:D:131:GLU:HB3  | 2.36                     | 0.54              |
| 1:D:181:PRO:O    | 2:E:116:ARG:HD3  | 2.06                     | 0.54              |
| 2:E:119:ARG:O    | 2:E:120:ARG:CD   | 2.55                     | 0.54              |
| 1:A:186:ASN:O    | 1:A:187:PHE:C    | 2.40                     | 0.54              |
| 2:B:152:LEU:CD2  | 2:B:152:LEU:C    | 2.75                     | 0.54              |
| 1:D:285:THR:HG22 | 1:D:286:VAL:H    | 1.68                     | 0.54              |
| 1:A:138:PRO:HD2  | 1:A:158:TYR:CZ   | 2.43                     | 0.54              |
| 1:A:167:TYR:HB3  | 1:A:169:PHE:HE2  | 1.67                     | 0.54              |
| 1:A:257:THR:OG1  | 1:A:260:GLU:HG3  | 2.06                     | 0.54              |
| 2:B:356:LEU:CD2  | 2:B:356:LEU:C    | 2.75                     | 0.54              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:352:ASN:HD21 | 2:E:353:ASN:HB2  | 1.70                     | 0.54              |
| 2:E:97:LEU:CD2   | 2:E:97:LEU:C     | 2.76                     | 0.54              |
| 1:A:11:ILE:HD11  | 1:A:68:SER:HB2   | 1.89                     | 0.54              |
| 2:B:349:LEU:O    | 2:B:350:GLU:HB2  | 2.06                     | 0.54              |
| 1:D:105:LEU:HD23 | 1:D:106:THR:N    | 2.15                     | 0.54              |
| 1:D:257:THR:OG1  | 1:D:260:GLU:CB   | 2.39                     | 0.54              |
| 1:D:66:THR:HG22  | 1:D:90:LYS:HD2   | 1.90                     | 0.54              |
| 2:E:241:ARG:HB3  | 2:E:252:TYR:CE2  | 2.43                     | 0.54              |
| 1:A:229:VAL:HG23 | 1:A:230:VAL:N    | 2.21                     | 0.54              |
| 2:B:176:GLN:O    | 2:B:179:LYS:HB3  | 2.08                     | 0.54              |
| 2:B:252:TYR:CE2  | 2:B:254:ALA:HB2  | 2.41                     | 0.54              |
| 1:D:136:ILE:N    | 1:D:136:ILE:CD1  | 2.62                     | 0.54              |
| 2:E:176:GLN:NE2  | 2:E:209:LEU:H    | 2.05                     | 0.54              |
| 1:A:173:THR:CG2  | 1:A:174:CYS:N    | 2.70                     | 0.54              |
| 1:D:195:GLU:OE2  | 1:D:226:THR:HG23 | 2.07                     | 0.54              |
| 1:D:266:GLU:HG2  | 1:D:272:THR:CG2  | 2.26                     | 0.54              |
| 1:D:287:LEU:O    | 1:D:287:LEU:CD2  | 2.55                     | 0.54              |
| 2:E:180:ILE:O    | 2:E:181:PHE:C    | 2.42                     | 0.54              |
| 2:E:323:VAL:O    | 2:E:324:ARG:CB   | 2.53                     | 0.54              |
| 1:A:285:THR:C    | 1:A:287:LEU:N    | 2.61                     | 0.54              |
| 1:D:283:LEU:HA   | 1:D:286:VAL:HG12 | 1.89                     | 0.54              |
| 1:D:67:ALA:HB2   | 1:D:91:LEU:HB3   | 1.89                     | 0.54              |
| 2:E:4:HIS:O      | 2:E:5:GLU:C      | 2.43                     | 0.54              |
| 1:A:212:SER:O    | 1:A:213:ALA:C    | 2.46                     | 0.54              |
| 1:A:214:GLU:O    | 1:A:217:ALA:N    | 2.40                     | 0.54              |
| 1:A:41:GLY:N     | 1:A:54:ASN:OD1   | 2.39                     | 0.54              |
| 2:B:315:LEU:HD12 | 2:B:316:VAL:N    | 2.23                     | 0.54              |
| 1:D:95:ILE:HD11  | 1:D:135:GLY:HA2  | 1.90                     | 0.54              |
| 2:E:32:GLU:OE2   | 2:E:70:ARG:HD2   | 2.07                     | 0.54              |
| 2:E:223:LEU:O    | 2:E:224:PHE:C    | 2.42                     | 0.53              |
| 1:D:75:PRO:HB3   | 2:E:224:PHE:CE1  | 2.43                     | 0.53              |
| 2:E:326:ASP:CG   | 2:E:327:LEU:H    | 2.09                     | 0.53              |
| 1:A:11:ILE:HG13  | 1:A:67:ALA:O     | 2.08                     | 0.53              |
| 2:B:205:LYS:C    | 2:B:207:GLY:H    | 2.10                     | 0.53              |
| 1:D:102:LEU:HD22 | 4:E:400:HOH:O    | 2.07                     | 0.53              |
| 1:D:186:ASN:HD21 | 1:D:189:ASP:CG   | 2.12                     | 0.53              |
| 1:D:221:ILE:HG13 | 1:D:225:VAL:CG1  | 2.35                     | 0.53              |
| 2:E:274:ASP:O    | 2:E:277:LYS:HG3  | 2.09                     | 0.53              |
| 1:D:159:GLU:O    | 1:D:162:LYS:HB3  | 2.08                     | 0.53              |
| 1:D:203:ILE:CG2  | 1:D:204:VAL:N    | 2.71                     | 0.53              |
| 1:A:160:ALA:O    | 1:A:161:VAL:C    | 2.45                     | 0.53              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:2:ILE:CG2    | 1:A:173:THR:HG21 | 2.38                     | 0.53              |
| 2:B:184:LEU:O    | 2:B:185:ALA:C    | 2.45                     | 0.53              |
| 2:B:319:PHE:HD1  | 2:B:319:PHE:C    | 2.10                     | 0.53              |
| 2:B:325:CYS:CB   | 2:B:349:LEU:HD13 | 2.23                     | 0.53              |
| 1:D:191:LEU:HD11 | 1:D:221:ILE:HD11 | 1.89                     | 0.53              |
| 1:D:221:ILE:O    | 1:D:222:LYS:C    | 2.41                     | 0.53              |
| 1:D:287:LEU:C    | 1:D:287:LEU:HD23 | 2.28                     | 0.53              |
| 2:E:72:PHE:CD1   | 2:E:76:TRP:HD1   | 2.26                     | 0.53              |
| 3:D:289:COA:C6P  | 3:D:289:COA:O9P  | 2.57                     | 0.53              |
| 1:D:59:ALA:O     | 1:D:60:VAL:C     | 2.44                     | 0.53              |
| 2:E:373:GLY:O    | 2:E:376:ASP:HB3  | 2.09                     | 0.53              |
| 1:A:202:ALA:HB2  | 1:A:228:PRO:HG2  | 1.90                     | 0.53              |
| 1:D:283:LEU:O    | 1:D:287:LEU:N    | 2.28                     | 0.53              |
| 2:E:105:ALA:CB   | 2:E:203:ILE:O    | 2.53                     | 0.53              |
| 2:E:346:VAL:HB   | 2:E:381:VAL:CG2  | 2.39                     | 0.53              |
| 1:A:97:GLU:HA    | 1:A:97:GLU:OE1   | 2.08                     | 0.53              |
| 2:B:108:LEU:HD22 | 2:B:127:THR:HA   | 1.90                     | 0.53              |
| 1:D:217:ALA:O    | 1:D:218:ALA:C    | 2.46                     | 0.53              |
| 1:D:169:PHE:HE2  | 1:D:283:LEU:CB   | 2.21                     | 0.53              |
| 2:E:330:ASP:HA   | 2:E:333:ILE:CD1  | 2.39                     | 0.53              |
| 1:A:48:LEU:H     | 1:A:48:LEU:HD23  | 1.74                     | 0.53              |
| 1:D:4:ILE:HG13   | 1:D:132:CYS:SG   | 2.48                     | 0.53              |
| 2:E:128:GLU:N    | 2:E:128:GLU:OE1  | 2.40                     | 0.53              |
| 2:E:346:VAL:C    | 2:E:347:VAL:CG2  | 2.72                     | 0.53              |
| 2:E:375:THR:O    | 2:E:378:ALA:CB   | 2.43                     | 0.53              |
| 1:D:139:GLY:C    | 1:D:141:ILE:H    | 2.08                     | 0.53              |
| 1:D:34:MET:O     | 1:D:35:VAL:HG13  | 2.08                     | 0.53              |
| 1:D:97:GLU:C     | 1:D:97:GLU:CD    | 2.68                     | 0.53              |
| 2:E:131:VAL:HG12 | 2:E:132:GLU:N    | 2.24                     | 0.53              |
| 2:E:16:GLY:C     | 2:E:17:LEU:HD23  | 2.29                     | 0.53              |
| 2:E:237:GLN:NE2  | 2:E:237:GLN:HA   | 2.24                     | 0.53              |
| 2:E:45:VAL:HB    | 2:E:72:PHE:CE2   | 2.44                     | 0.53              |
| 1:D:105:LEU:CD2  | 1:D:106:THR:N    | 2.71                     | 0.52              |
| 1:D:232:TYR:HD1  | 1:D:273:VAL:O    | 1.92                     | 0.52              |
| 2:E:199:ASN:HB3  | 2:E:215:LYS:NZ   | 2.24                     | 0.52              |
| 1:A:258:ALA:O    | 1:A:261:LYS:HB2  | 2.08                     | 0.52              |
| 2:B:385:VAL:CG1  | 2:B:386:GLU:N    | 2.56                     | 0.52              |
| 2:B:176:GLN:O    | 2:B:177:PHE:C    | 2.46                     | 0.52              |
| 2:B:383:ALA:O    | 2:B:386:GLU:OE1  | 2.27                     | 0.52              |
| 1:D:195:GLU:O    | 1:D:227:LYS:HE2  | 2.09                     | 0.52              |
| 2:E:348:ARG:HH11 | 2:E:374:LEU:HB2  | 1.73                     | 0.52              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:273:VAL:HG11 | 1:A:278:ASP:HB2  | 1.91                     | 0.52              |
| 2:B:121:VAL:HG22 | 2:B:149:LEU:HG   | 1.91                     | 0.52              |
| 2:B:323:VAL:CG1  | 2:B:328:ILE:HG13 | 2.28                     | 0.52              |
| 1:D:13:GLN:N     | 1:D:69:VAL:O     | 2.33                     | 0.52              |
| 2:E:259:ILE:O    | 2:E:283:PRO:HA   | 2.08                     | 0.52              |
| 2:E:76:TRP:HA    | 2:E:79:LYS:CG    | 2.39                     | 0.52              |
| 2:E:87:ASP:C     | 2:E:87:ASP:OD1   | 2.45                     | 0.52              |
| 1:A:199:GLN:CG   | 1:A:199:GLN:O    | 2.55                     | 0.52              |
| 3:A:289:COA:O9P  | 3:A:289:COA:CDP  | 2.55                     | 0.52              |
| 2:B:258:ASN:HD22 | 2:B:282:GLU:HB3  | 1.69                     | 0.52              |
| 1:D:108:LYS:HA   | 1:D:111:LEU:HD12 | 1.91                     | 0.52              |
| 1:D:12:CYS:O     | 1:D:15:PHE:HB2   | 2.09                     | 0.52              |
| 1:D:221:ILE:CB   | 1:D:225:VAL:CG1  | 2.86                     | 0.52              |
| 2:E:38:ILE:HG21  | 2:E:43:TRP:CD1   | 2.45                     | 0.52              |
| 2:E:66:LYS:O     | 2:E:67:GLU:C     | 2.48                     | 0.52              |
| 1:A:74:ALA:HB3   | 1:A:75:PRO:HD3   | 1.92                     | 0.52              |
| 2:B:144:ILE:HG22 | 2:B:145:HIS:N    | 2.25                     | 0.52              |
| 2:B:34:ALA:O     | 2:B:38:ILE:HG13  | 2.10                     | 0.52              |
| 2:E:276:VAL:HG13 | 2:E:281:GLY:HA3  | 1.91                     | 0.52              |
| 1:A:185:SER:HA   | 1:A:189:ASP:OD2  | 2.10                     | 0.52              |
| 1:A:192:GLU:O    | 1:A:196:LYS:HG3  | 2.09                     | 0.52              |
| 1:A:35:VAL:CG2   | 1:A:63:THR:HB    | 2.40                     | 0.52              |
| 2:B:105:ALA:HB3  | 2:B:203:ILE:CG2  | 2.39                     | 0.52              |
| 2:B:135:LYS:O    | 2:B:138:GLU:HB3  | 2.10                     | 0.52              |
| 2:E:376:ASP:O    | 2:E:379:GLN:HB2  | 2.10                     | 0.52              |
| 1:A:145:GLY:HA3  | 1:A:170:GLY:C    | 2.29                     | 0.52              |
| 1:A:259:ASP:O    | 1:A:260:GLU:C    | 2.48                     | 0.52              |
| 1:A:273:VAL:CG1  | 1:A:275:SER:O    | 2.58                     | 0.52              |
| 1:A:11:ILE:HA    | 1:A:36:GLY:O     | 2.09                     | 0.52              |
| 2:B:248:TRP:O    | 2:B:249:GLU:C    | 2.49                     | 0.52              |
| 2:B:285:ASN:HD22 | 2:B:286:PHE:N    | 2.07                     | 0.52              |
| 1:D:266:GLU:CG   | 1:D:272:THR:CG2  | 2.81                     | 0.52              |
| 1:D:15:PHE:CG    | 1:D:37:GLY:HA3   | 2.44                     | 0.52              |
| 1:D:4:ILE:CD1    | 1:D:126:VAL:HG22 | 2.40                     | 0.52              |
| 1:D:61:ALA:O     | 1:D:63:THR:N     | 2.43                     | 0.52              |
| 1:D:77:CYS:HB3   | 1:D:99:ILE:CD1   | 2.40                     | 0.52              |
| 2:E:202:VAL:HG13 | 2:E:203:ILE:N    | 2.23                     | 0.52              |
| 2:E:262:MET:CE   | 2:E:302:PHE:N    | 2.73                     | 0.51              |
| 2:E:346:VAL:C    | 2:E:347:VAL:HG22 | 2.29                     | 0.51              |
| 1:A:123:CYS:HB3  | 1:A:178:GLY:HA2  | 1.91                     | 0.51              |
| 1:A:195:GLU:O    | 1:A:227:LYS:CE   | 2.58                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:224:PHE:C    | 2:B:224:PHE:CD1  | 2.83                     | 0.51              |
| 2:B:51:ALA:O     | 2:B:54:ARG:HD3   | 2.10                     | 0.51              |
| 1:D:106:THR:O    | 1:D:109:VAL:HB   | 2.11                     | 0.51              |
| 2:B:17:LEU:HB3   | 2:B:18:PRO:HD2   | 1.93                     | 0.51              |
| 2:B:202:VAL:CG1  | 2:B:203:ILE:N    | 2.70                     | 0.51              |
| 2:B:205:LYS:C    | 2:B:207:GLY:N    | 2.63                     | 0.51              |
| 2:B:208:ASP:HB2  | 4:B:392:HOH:O    | 2.08                     | 0.51              |
| 2:B:270:MET:CG   | 4:B:419:HOH:O    | 2.42                     | 0.51              |
| 2:B:319:PHE:HD1  | 2:B:320:GLY:N    | 2.09                     | 0.51              |
| 2:B:23:TYR:HD2   | 2:B:34:ALA:HB1   | 1.75                     | 0.51              |
| 1:D:24:SER:O     | 1:D:25:GLU:C     | 2.48                     | 0.51              |
| 1:A:147:VAL:O    | 1:A:172:SER:N    | 2.34                     | 0.51              |
| 1:A:163:GLN:O    | 1:A:166:ASP:N    | 2.43                     | 0.51              |
| 1:A:251:ILE:O    | 1:A:252:ALA:O    | 2.28                     | 0.51              |
| 2:E:336:VAL:HA   | 2:E:341:VAL:CG1  | 2.41                     | 0.51              |
| 2:B:196:ILE:CG2  | 2:B:197:GLU:N    | 2.73                     | 0.51              |
| 1:D:110:LYS:NZ   | 1:D:113:GLU:OE2  | 2.44                     | 0.51              |
| 1:D:140:HIS:CD2  | 1:D:140:HIS:C    | 2.79                     | 0.51              |
| 1:D:127:ILE:C    | 1:D:173:THR:HG22 | 2.30                     | 0.51              |
| 2:E:192:ASP:HB2  | 4:E:405:HOH:O    | 2.10                     | 0.51              |
| 2:B:6:TYR:HB3    | 2:B:48:GLN:OE1   | 2.11                     | 0.51              |
| 1:D:283:LEU:O    | 1:D:285:THR:N    | 2.44                     | 0.51              |
| 2:E:132:GLU:O    | 2:E:135:LYS:HB3  | 2.11                     | 0.51              |
| 1:A:128:THR:HG22 | 1:A:132:CYS:H    | 1.76                     | 0.51              |
| 1:A:159:GLU:OE2  | 2:B:319:PHE:CD2  | 2.63                     | 0.51              |
| 2:B:13:ALA:C     | 2:B:15:TYR:N     | 2.63                     | 0.51              |
| 1:D:10:VAL:O     | 1:D:35:VAL:CG2   | 2.59                     | 0.51              |
| 2:E:199:ASN:CB   | 2:E:215:LYS:HZ2  | 2.23                     | 0.51              |
| 2:E:87:ASP:O     | 2:E:88:ALA:C     | 2.47                     | 0.51              |
| 1:A:147:VAL:CG1  | 1:A:148:GLY:N    | 2.73                     | 0.51              |
| 1:A:188:ILE:O    | 1:A:189:ASP:C    | 2.49                     | 0.51              |
| 1:A:5:ASP:OD1    | 1:A:5:ASP:C      | 2.48                     | 0.51              |
| 2:B:195:LEU:HD23 | 2:B:195:LEU:O    | 2.11                     | 0.51              |
| 2:B:314:VAL:HG12 | 2:B:315:LEU:N    | 2.26                     | 0.51              |
| 1:A:33:LYS:HB2   | 4:A:291:HOH:O    | 2.11                     | 0.51              |
| 2:B:250:LEU:HD23 | 2:B:289:VAL:HA   | 1.92                     | 0.51              |
| 1:D:276:LEU:HD12 | 1:D:276:LEU:C    | 2.31                     | 0.51              |
| 1:D:10:VAL:CA    | 1:D:34:MET:HE3   | 2.40                     | 0.51              |
| 2:E:224:PHE:CE1  | 2:E:225:ARG:HG2  | 2.45                     | 0.51              |
| 2:B:284:ALA:O    | 2:B:285:ASN:HB3  | 2.10                     | 0.51              |
| 2:B:329:ALA:O    | 2:B:333:ILE:HD12 | 2.11                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:263:ALA:O    | 1:D:264:ALA:C    | 2.49                     | 0.51              |
| 1:D:274:ARG:HH11 | 1:D:274:ARG:CG   | 2.22                     | 0.51              |
| 2:E:9:LYS:O      | 2:E:10:GLN:C     | 2.48                     | 0.51              |
| 2:E:139:GLU:O    | 2:E:139:GLU:HG3  | 2.10                     | 0.51              |
| 2:E:324:ARG:O    | 2:E:325:CYS:C    | 2.49                     | 0.51              |
| 2:E:56:LYS:CD    | 2:E:56:LYS:H     | 2.21                     | 0.51              |
| 2:E:97:LEU:HD23  | 2:E:97:LEU:C     | 2.29                     | 0.51              |
| 1:A:218:ALA:O    | 1:A:221:ILE:CB   | 2.59                     | 0.50              |
| 2:B:133:ILE:C    | 2:B:135:LYS:N    | 2.61                     | 0.50              |
| 2:B:223:LEU:O    | 2:B:225:ARG:N    | 2.44                     | 0.50              |
| 2:B:339:VAL:HG12 | 2:B:340:GLY:C    | 2.31                     | 0.50              |
| 1:D:104:MET:CA   | 1:D:104:MET:CE   | 2.89                     | 0.50              |
| 2:E:76:TRP:O     | 2:E:79:LYS:HG2   | 2.11                     | 0.50              |
| 1:A:127:ILE:O    | 1:A:127:ILE:CG2  | 2.58                     | 0.50              |
| 1:A:212:SER:O    | 1:A:215:GLU:HB2  | 2.11                     | 0.50              |
| 2:B:263:VAL:HG22 | 2:B:317:ASN:HB3  | 1.92                     | 0.50              |
| 1:D:124:PRO:O    | 1:D:136:ILE:HD13 | 2.10                     | 0.50              |
| 1:D:186:ASN:ND2  | 1:D:189:ASP:OD2  | 2.44                     | 0.50              |
| 1:D:48:LEU:N     | 1:D:48:LEU:HD23  | 2.24                     | 0.50              |
| 2:E:176:GLN:O    | 2:E:179:LYS:HB3  | 2.11                     | 0.50              |
| 2:E:26:THR:O     | 2:E:27:THR:HG23  | 2.11                     | 0.50              |
| 2:E:302:PHE:C    | 2:E:306:LEU:HD12 | 2.31                     | 0.50              |
| 1:A:240:LYS:HD3  | 1:A:251:ILE:HG21 | 1.94                     | 0.50              |
| 2:B:140:THR:HB   | 2:B:143:LEU:CD1  | 2.40                     | 0.50              |
| 2:B:318:ILE:HG23 | 2:B:319:PHE:N    | 2.25                     | 0.50              |
| 2:B:356:LEU:O    | 2:B:360:LYS:CG   | 2.58                     | 0.50              |
| 1:D:203:ILE:HG22 | 1:D:204:VAL:N    | 2.27                     | 0.50              |
| 1:D:3:LEU:C      | 1:D:4:ILE:CG2    | 2.80                     | 0.50              |
| 2:E:328:ILE:O    | 2:E:329:ALA:C    | 2.49                     | 0.50              |
| 1:A:21:THR:OG1   | 1:A:47:HIS:CE1   | 2.64                     | 0.50              |
| 2:B:206:GLN:CD   | 2:B:206:GLN:H    | 2.14                     | 0.50              |
| 2:B:337:ALA:O    | 2:B:338:GLU:C    | 2.49                     | 0.50              |
| 2:B:326:ASP:H    | 2:B:353:ASN:HB3  | 1.77                     | 0.50              |
| 2:B:38:ILE:CD1   | 2:B:98:VAL:HG12  | 2.41                     | 0.50              |
| 2:E:142:HIS:CD2  | 2:E:142:HIS:H    | 2.29                     | 0.50              |
| 2:E:210:ILE:HG12 | 2:E:211:CYS:N    | 2.26                     | 0.50              |
| 1:D:124:PRO:CD   | 1:D:125:GLY:H    | 2.24                     | 0.50              |
| 2:E:371:ALA:CB   | 2:E:377:ALA:HB2  | 2.41                     | 0.50              |
| 2:E:63:VAL:CG1   | 2:E:64:ASN:H     | 2.22                     | 0.50              |
| 2:E:80:ARG:HD3   | 2:E:89:ASN:ND2   | 2.25                     | 0.50              |
| 1:A:209:ILE:HG23 | 1:A:235:GLY:HA3  | 1.93                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:233:ILE:HD13 | 1:D:261:LYS:HB3  | 1.91                     | 0.50              |
| 2:E:140:THR:HG23 | 2:E:143:LEU:HD12 | 1.94                     | 0.50              |
| 2:E:150:ASP:OD1  | 2:E:151:PRO:N    | 2.44                     | 0.50              |
| 2:E:243:ALA:O    | 2:E:244:GLN:C    | 2.49                     | 0.50              |
| 2:E:330:ASP:HA   | 2:E:333:ILE:HD12 | 1.94                     | 0.50              |
| 2:E:82:VAL:CG2   | 2:E:90:GLY:CA    | 2.87                     | 0.50              |
| 1:A:141:ILE:HG22 | 1:A:161:VAL:HG12 | 1.93                     | 0.50              |
| 1:A:145:GLY:HA3  | 1:A:170:GLY:CA   | 2.42                     | 0.50              |
| 1:A:80:SER:O     | 1:A:81:ILE:C     | 2.50                     | 0.50              |
| 2:B:228:ASP:O    | 2:B:232:MET:HE2  | 2.12                     | 0.50              |
| 2:B:301:ALA:O    | 2:B:305:ILE:HG13 | 2.11                     | 0.50              |
| 2:B:388:LYS:NZ   | 2:B:388:LYS:HB2  | 2.27                     | 0.50              |
| 2:B:82:VAL:CG2   | 2:B:86:THR:HG21  | 2.36                     | 0.50              |
| 1:D:30:TYR:OH    | 1:D:130:GLY:N    | 2.35                     | 0.50              |
| 1:D:50:LEU:HB3   | 1:D:51:PRO:CD    | 2.42                     | 0.50              |
| 2:E:319:PHE:CG   | 2:E:350:GLU:HG2  | 2.40                     | 0.50              |
| 2:B:248:TRP:CE2  | 2:B:300:GLU:HG3  | 2.47                     | 0.50              |
| 2:B:45:VAL:CG2   | 2:B:72:PHE:CE2   | 2.94                     | 0.50              |
| 1:D:128:THR:HG22 | 1:D:131:GLU:HB3  | 1.92                     | 0.50              |
| 1:D:84:ALA:O     | 1:D:85:ILE:C     | 2.43                     | 0.50              |
| 2:E:352:ASN:ND2  | 2:E:353:ASN:CB   | 2.71                     | 0.50              |
| 1:A:188:ILE:O    | 1:A:190:ILE:N    | 2.45                     | 0.50              |
| 2:B:156:MET:HB3  | 2:B:157:PRO:CD   | 2.41                     | 0.50              |
| 2:B:308:ASP:OD1  | 2:B:308:ASP:C    | 2.50                     | 0.50              |
| 2:B:82:VAL:CG2   | 2:B:90:GLY:HA3   | 2.40                     | 0.50              |
| 1:D:104:MET:CA   | 1:D:104:MET:HE3  | 2.42                     | 0.50              |
| 1:D:160:ALA:O    | 1:D:161:VAL:O    | 2.29                     | 0.50              |
| 1:D:277:ALA:O    | 1:D:279:ILE:N    | 2.44                     | 0.50              |
| 1:D:287:LEU:C    | 1:D:287:LEU:CD2  | 2.80                     | 0.50              |
| 2:E:277:LYS:HD2  | 2:E:277:LYS:C    | 2.28                     | 0.50              |
| 2:E:339:VAL:HG11 | 2:E:341:VAL:HG12 | 1.87                     | 0.50              |
| 2:E:43:TRP:HB3   | 2:E:99:GLU:O     | 2.12                     | 0.50              |
| 1:A:150:VAL:O    | 1:A:150:VAL:CG2  | 2.59                     | 0.49              |
| 1:A:180:ASP:HB3  | 1:A:181:PRO:HD2  | 1.93                     | 0.49              |
| 1:A:220:TYR:O    | 1:A:221:ILE:C    | 2.48                     | 0.49              |
| 2:B:332:ILE:O    | 2:B:333:ILE:C    | 2.47                     | 0.49              |
| 2:B:356:LEU:O    | 2:B:360:LYS:HG3  | 2.12                     | 0.49              |
| 2:B:86:THR:CG2   | 2:B:87:ASP:N     | 2.75                     | 0.49              |
| 2:E:357:GLY:O    | 2:E:361:LEU:N    | 2.45                     | 0.49              |
| 1:A:19:GLN:HB2   | 3:A:289:COA:O4A  | 2.12                     | 0.49              |
| 2:B:72:PHE:O     | 2:B:73:ALA:C     | 2.46                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:96:ILE:HG22  | 2:B:97:LEU:N     | 2.22                     | 0.49              |
| 1:D:195:GLU:OE1  | 1:D:225:VAL:HG23 | 2.12                     | 0.49              |
| 1:D:11:ILE:CA    | 1:D:36:GLY:O     | 2.58                     | 0.49              |
| 1:D:9:LYS:HB2    | 1:D:65:ALA:HA    | 1.94                     | 0.49              |
| 1:A:2:ILE:HG22   | 1:A:3:LEU:N      | 2.08                     | 0.49              |
| 2:B:108:LEU:CD2  | 2:B:127:THR:HA   | 2.42                     | 0.49              |
| 2:B:228:ASP:O    | 2:B:232:MET:CE   | 2.60                     | 0.49              |
| 2:B:48:GLN:CA    | 2:B:48:GLN:NE2   | 2.75                     | 0.49              |
| 1:D:226:THR:OG1  | 1:D:227:LYS:N    | 2.46                     | 0.49              |
| 2:E:241:ARG:HB3  | 2:E:252:TYR:CD2  | 2.47                     | 0.49              |
| 2:E:300:GLU:O    | 2:E:301:ALA:C    | 2.47                     | 0.49              |
| 1:A:193:MET:O    | 1:A:194:PHE:C    | 2.47                     | 0.49              |
| 2:B:223:LEU:C    | 2:B:225:ARG:N    | 2.65                     | 0.49              |
| 2:B:335:ALA:O    | 2:B:336:VAL:C    | 2.51                     | 0.49              |
| 1:D:46:THR:HA    | 1:D:50:LEU:O     | 2.12                     | 0.49              |
| 2:E:156:MET:CB   | 2:E:157:PRO:CD   | 2.86                     | 0.49              |
| 2:E:103:ASP:HB2  | 2:E:205:LYS:HB2  | 1.94                     | 0.49              |
| 2:E:342:ASN:N    | 2:E:342:ASN:OD1  | 2.33                     | 0.49              |
| 2:E:34:ALA:O     | 2:E:35:ALA:C     | 2.50                     | 0.49              |
| 1:A:267:ALA:C    | 1:A:269:GLY:N    | 2.65                     | 0.49              |
| 1:A:280:GLY:O    | 1:A:281:GLU:C    | 2.51                     | 0.49              |
| 1:A:35:VAL:HG21  | 1:A:63:THR:HB    | 1.95                     | 0.49              |
| 2:B:50:HIS:CG    | 2:B:237:GLN:HG3  | 2.47                     | 0.49              |
| 2:B:285:ASN:ND2  | 2:B:286:PHE:N    | 2.60                     | 0.49              |
| 1:D:238:ALA:HB1  | 1:D:239:PRO:HD2  | 1.94                     | 0.49              |
| 2:E:195:LEU:HD23 | 2:E:196:ILE:N    | 2.27                     | 0.49              |
| 2:E:275:ILE:HG23 | 2:E:276:VAL:N    | 2.02                     | 0.49              |
| 2:E:296:GLU:CD   | 2:E:296:GLU:H    | 2.01                     | 0.49              |
| 1:A:6:LYS:HE2    | 1:A:31:GLY:O     | 2.12                     | 0.49              |
| 2:B:133:ILE:O    | 2:B:135:LYS:N    | 2.46                     | 0.49              |
| 1:D:152:ARG:NH2  | 1:D:208:GLU:O    | 2.46                     | 0.49              |
| 1:D:203:ILE:CA   | 1:D:229:VAL:CG2  | 2.81                     | 0.49              |
| 1:A:157:THR:O    | 1:A:158:TYR:C    | 2.49                     | 0.49              |
| 1:A:236:VAL:HG22 | 1:A:258:ALA:HB1  | 1.95                     | 0.49              |
| 2:B:107:GLU:HG2  | 2:B:200:PRO:CB   | 2.43                     | 0.49              |
| 1:D:104:MET:HA   | 1:D:104:MET:HE3  | 1.95                     | 0.49              |
| 2:E:219:ASP:OD1  | 2:E:221:ASN:HB2  | 2.13                     | 0.49              |
| 2:E:65:SER:O     | 2:E:66:LYS:C     | 2.51                     | 0.49              |
| 2:E:157:PRO:CG   | 2:E:182:MET:HE1  | 2.42                     | 0.49              |
| 2:B:83:THR:N     | 2:B:86:THR:HB    | 2.28                     | 0.49              |
| 1:D:97:GLU:CB    | 3:D:289:COA:H72  | 2.33                     | 0.49              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:2:ILE:HG12   | 1:D:193:MET:CE   | 2.39                     | 0.49              |
| 1:D:66:THR:CG2   | 1:D:90:LYS:HD2   | 2.42                     | 0.49              |
| 1:D:67:ALA:HA    | 1:D:91:LEU:O     | 2.13                     | 0.49              |
| 1:D:92:ILE:O     | 1:D:118:MET:CA   | 2.49                     | 0.49              |
| 2:E:269:ALA:O    | 2:E:272:THR:N    | 2.46                     | 0.49              |
| 2:B:140:THR:C    | 2:B:142:HIS:N    | 2.62                     | 0.49              |
| 1:D:12:CYS:SG    | 1:D:15:PHE:HA    | 2.53                     | 0.49              |
| 1:D:230:VAL:HG21 | 1:D:283:LEU:CD1  | 2.41                     | 0.49              |
| 1:D:77:CYS:O     | 1:D:81:ILE:HD12  | 2.13                     | 0.49              |
| 2:B:205:LYS:O    | 2:B:207:GLY:N    | 2.47                     | 0.48              |
| 2:B:285:ASN:HD21 | 2:B:287:LEU:HB2  | 1.78                     | 0.48              |
| 2:B:49:VAL:HG13  | 2:B:51:ALA:N     | 2.22                     | 0.48              |
| 2:E:135:LYS:O    | 2:E:136:VAL:C    | 2.49                     | 0.48              |
| 2:E:339:VAL:CG1  | 2:E:341:VAL:CG1  | 2.80                     | 0.48              |
| 1:A:154:GLY:O    | 1:A:155:THR:C    | 2.51                     | 0.48              |
| 2:B:45:VAL:HA    | 2:B:97:LEU:O     | 2.14                     | 0.48              |
| 1:D:277:ALA:C    | 1:D:279:ILE:H    | 2.16                     | 0.48              |
| 1:D:46:THR:HG22  | 1:D:50:LEU:C     | 2.33                     | 0.48              |
| 2:E:56:LYS:HD2   | 2:E:56:LYS:N     | 2.22                     | 0.48              |
| 1:A:151:SER:HA   | 1:A:206:ILE:O    | 2.14                     | 0.48              |
| 1:A:194:PHE:O    | 1:A:195:GLU:C    | 2.52                     | 0.48              |
| 1:A:92:ILE:CG2   | 1:A:118:MET:HG3  | 2.43                     | 0.48              |
| 2:B:153:THR:C    | 2:B:154:GLY:O    | 2.50                     | 0.48              |
| 2:B:216:LEU:N    | 2:B:216:LEU:HD23 | 2.11                     | 0.48              |
| 1:D:3:LEU:O      | 1:D:4:ILE:HG22   | 2.12                     | 0.48              |
| 1:A:150:VAL:HA   | 1:A:175:VAL:O    | 2.13                     | 0.48              |
| 1:A:219:ALA:O    | 1:A:220:TYR:O    | 2.32                     | 0.48              |
| 2:B:362:ALA:O    | 2:B:363:ASP:C    | 2.49                     | 0.48              |
| 2:B:50:HIS:CE1   | 4:B:406:HOH:O    | 2.65                     | 0.48              |
| 1:D:129:PRO:HG2  | 1:D:171:GLN:O    | 2.12                     | 0.48              |
| 1:D:214:GLU:OE1  | 1:D:261:LYS:NZ   | 2.36                     | 0.48              |
| 1:A:105:LEU:C    | 1:A:105:LEU:CD2  | 2.74                     | 0.48              |
| 1:A:108:LYS:O    | 1:A:111:LEU:HB2  | 2.14                     | 0.48              |
| 1:A:195:GLU:OE1  | 1:A:226:THR:N    | 2.46                     | 0.48              |
| 2:B:174:VAL:O    | 2:B:175:GLN:C    | 2.52                     | 0.48              |
| 1:D:11:ILE:HG21  | 1:D:65:ALA:HB1   | 1.96                     | 0.48              |
| 2:B:224:PHE:HA   | 2:B:230:ARG:NH1  | 2.28                     | 0.48              |
| 1:D:127:ILE:C    | 1:D:173:THR:HG23 | 2.32                     | 0.48              |
| 1:A:143:LYS:O    | 1:A:171:GLN:N    | 2.40                     | 0.48              |
| 2:B:386:GLU:HA   | 2:B:388:LYS:HZ1  | 1.79                     | 0.48              |
| 2:B:43:TRP:H     | 2:B:43:TRP:HE3   | 1.62                     | 0.48              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:94:ASN:O     | 2:B:95:GLN:HG2   | 2.14                     | 0.48              |
| 1:D:190:ILE:HD13 | 1:D:190:ILE:H    | 1.70                     | 0.48              |
| 1:D:195:GLU:CA   | 1:D:227:LYS:HE3  | 2.43                     | 0.48              |
| 1:D:22:PHE:CD1   | 1:D:23:HIS:N     | 2.82                     | 0.48              |
| 1:D:55:THR:HG22  | 1:D:56:VAL:N     | 2.28                     | 0.48              |
| 2:E:229:LEU:O    | 2:E:230:ARG:C    | 2.49                     | 0.48              |
| 2:E:371:ALA:HB1  | 2:E:377:ALA:CA   | 2.43                     | 0.48              |
| 1:A:104:MET:HE1  | 1:A:107:VAL:CG1  | 2.43                     | 0.48              |
| 1:A:154:GLY:O    | 1:A:157:THR:HB   | 2.14                     | 0.48              |
| 2:B:210:ILE:O    | 2:B:210:ILE:CG2  | 2.61                     | 0.48              |
| 2:B:255:LEU:HD12 | 2:B:255:LEU:HA   | 1.58                     | 0.48              |
| 1:D:186:ASN:C    | 1:D:186:ASN:OD1  | 2.52                     | 0.48              |
| 1:D:191:LEU:HD13 | 1:D:221:ILE:HG13 | 1.95                     | 0.48              |
| 1:D:6:LYS:O      | 1:D:6:LYS:HG2    | 2.12                     | 0.48              |
| 2:E:322:ILE:O    | 2:E:322:ILE:CG2  | 2.57                     | 0.48              |
| 2:E:343:VAL:HG13 | 2:E:344:PRO:HD2  | 0.50                     | 0.48              |
| 1:A:167:TYR:CB   | 1:A:169:PHE:HE2  | 2.26                     | 0.48              |
| 1:A:74:ALA:CB    | 1:A:98:GLY:O     | 2.62                     | 0.48              |
| 1:D:127:ILE:HG12 | 1:D:128:THR:H    | 1.74                     | 0.48              |
| 1:D:219:ALA:O    | 1:D:220:TYR:C    | 2.52                     | 0.48              |
| 1:A:127:ILE:CD1  | 1:A:133:LYS:HG3  | 2.38                     | 0.48              |
| 1:A:191:LEU:O    | 1:A:192:GLU:C    | 2.52                     | 0.48              |
| 1:A:22:PHE:O     | 1:A:23:HIS:C     | 2.51                     | 0.48              |
| 1:A:23:HIS:NE2   | 1:A:136:ILE:HG22 | 2.28                     | 0.48              |
| 1:A:253:GLY:C    | 1:A:255:LYS:H    | 2.16                     | 0.48              |
| 1:A:281:GLU:O    | 1:A:284:LYS:HB2  | 2.14                     | 0.48              |
| 2:B:362:ALA:C    | 2:B:364:SER:N    | 2.66                     | 0.48              |
| 2:B:33:GLU:OE2   | 3:D:289:COA:H10  | 2.13                     | 0.48              |
| 2:E:139:GLU:O    | 2:E:140:THR:CB   | 2.31                     | 0.48              |
| 2:E:312:LYS:C    | 2:E:343:VAL:HG11 | 2.34                     | 0.48              |
| 2:E:367:ASN:HD22 | 2:E:367:ASN:HA   | 1.40                     | 0.48              |
| 1:A:186:ASN:ND2  | 1:A:189:ASP:H    | 2.05                     | 0.47              |
| 1:A:281:GLU:O    | 1:A:284:LYS:N    | 2.47                     | 0.47              |
| 2:B:318:ILE:N    | 2:B:348:ARG:O    | 2.47                     | 0.47              |
| 2:B:373:GLY:O    | 2:B:374:LEU:C    | 2.51                     | 0.47              |
| 2:B:65:SER:O     | 2:B:66:LYS:C     | 2.52                     | 0.47              |
| 1:D:126:VAL:CG2  | 1:D:127:ILE:N    | 2.77                     | 0.47              |
| 1:D:189:ASP:CB   | 1:D:190:ILE:HD13 | 2.43                     | 0.47              |
| 2:E:245:ALA:O    | 2:E:250:LEU:HB2  | 2.14                     | 0.47              |
| 2:E:157:PRO:HD3  | 2:E:182:MET:HE1  | 1.96                     | 0.47              |
| 2:E:186:THR:O    | 2:E:190:GLU:HB2  | 2.14                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:214:GLY:C    | 2:E:215:LYS:HG3  | 2.35                     | 0.47              |
| 2:E:94:ASN:O     | 2:E:95:GLN:HG2   | 2.13                     | 0.47              |
| 1:A:77:CYS:O     | 1:A:78:LYS:C     | 2.51                     | 0.47              |
| 2:B:268:LEU:HD23 | 2:B:268:LEU:HA   | 1.44                     | 0.47              |
| 2:B:46:LYS:HG2   | 2:B:60:VAL:HG13  | 1.96                     | 0.47              |
| 2:B:4:HIS:CB     | 2:B:7:GLN:HG3    | 2.44                     | 0.47              |
| 1:D:118:MET:HG2  | 1:D:119:ILE:N    | 2.30                     | 0.47              |
| 1:D:3:LEU:HD23   | 1:D:193:MET:HE1  | 1.95                     | 0.47              |
| 1:D:89:ILE:CG2   | 1:D:90:LYS:N     | 2.76                     | 0.47              |
| 1:D:164:THR:H    | 1:D:164:THR:HG23 | 1.21                     | 0.47              |
| 2:E:115:ASP:O    | 2:E:119:ARG:N    | 2.46                     | 0.47              |
| 1:D:155:THR:HG21 | 2:E:264:ASN:O    | 2.14                     | 0.47              |
| 2:E:57:ALA:CB    | 2:E:83:THR:HG22  | 2.45                     | 0.47              |
| 1:A:11:ILE:O     | 1:A:69:VAL:CG2   | 2.62                     | 0.47              |
| 1:A:287:LEU:HD22 | 1:A:287:LEU:O    | 2.14                     | 0.47              |
| 2:B:172:LYS:HA   | 2:B:175:GLN:HG2  | 1.97                     | 0.47              |
| 1:D:127:ILE:HG23 | 1:D:127:ILE:O    | 2.13                     | 0.47              |
| 1:A:156:LEU:HA   | 1:A:156:LEU:HD23 | 1.54                     | 0.47              |
| 1:A:163:GLN:C    | 1:A:165:THR:N    | 2.64                     | 0.47              |
| 2:E:110:LEU:HD22 | 2:E:111:GLY:N    | 2.28                     | 0.47              |
| 1:A:153:SER:CB   | 1:A:246:NEP:HE1  | 2.41                     | 0.47              |
| 1:A:84:ALA:O     | 1:A:85:ILE:C     | 2.51                     | 0.47              |
| 1:D:124:PRO:HD2  | 1:D:125:GLY:H    | 1.80                     | 0.47              |
| 2:E:197:GLU:HG2  | 2:E:215:LYS:HD2  | 1.97                     | 0.47              |
| 2:E:277:LYS:HD2  | 2:E:278:LEU:H    | 1.70                     | 0.47              |
| 2:E:29:ARG:O     | 2:E:32:GLU:HB3   | 2.14                     | 0.47              |
| 2:E:72:PHE:HE1   | 2:E:76:TRP:NE1   | 2.13                     | 0.47              |
| 1:A:215:GLU:O    | 1:A:216:GLU:C    | 2.52                     | 0.47              |
| 2:B:133:ILE:HA   | 2:B:136:VAL:HB   | 1.97                     | 0.47              |
| 2:B:257:GLY:HA3  | 2:B:282:GLU:O    | 2.15                     | 0.47              |
| 1:D:189:ASP:O    | 1:D:193:MET:HG2  | 2.15                     | 0.47              |
| 1:D:228:PRO:CB   | 1:D:286:VAL:CG2  | 2.92                     | 0.47              |
| 2:E:346:VAL:CB   | 2:E:381:VAL:HG22 | 2.45                     | 0.47              |
| 1:A:73:PRO:C     | 1:A:75:PRO:HD2   | 2.36                     | 0.47              |
| 2:B:136:VAL:O    | 2:B:140:THR:N    | 2.41                     | 0.47              |
| 2:B:140:THR:O    | 2:B:141:PRO:C    | 2.53                     | 0.47              |
| 2:B:278:LEU:HA   | 2:B:278:LEU:HD13 | 1.74                     | 0.47              |
| 2:B:333:ILE:O    | 2:B:334:GLY:C    | 2.53                     | 0.47              |
| 1:D:10:VAL:HG12  | 1:D:11:ILE:N     | 2.30                     | 0.47              |
| 1:D:129:PRO:CD   | 1:D:172:SER:O    | 2.59                     | 0.47              |
| 1:D:98:GLY:N     | 4:D:311:HOH:O    | 2.34                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:11:ILE:HD12  | 1:A:68:SER:OG    | 2.15                     | 0.47              |
| 1:A:4:ILE:HG12   | 1:A:8:THR:OG1    | 2.15                     | 0.47              |
| 2:B:172:LYS:O    | 2:B:176:GLN:HG3  | 2.14                     | 0.47              |
| 2:B:232:MET:HE3  | 2:B:232:MET:HB2  | 1.78                     | 0.47              |
| 2:B:65:SER:OG    | 2:B:68:ASP:HB2   | 2.15                     | 0.47              |
| 1:D:127:ILE:HG13 | 1:D:132:CYS:O    | 2.15                     | 0.47              |
| 1:D:156:LEU:HA   | 1:D:156:LEU:HD23 | 1.49                     | 0.47              |
| 1:D:190:ILE:HA   | 1:D:193:MET:CG   | 2.32                     | 0.47              |
| 1:D:18:SER:HB2   | 3:D:289:COA:O4A  | 2.15                     | 0.47              |
| 2:E:157:PRO:O    | 2:E:158:TYR:C    | 2.52                     | 0.47              |
| 2:E:287:LEU:HD23 | 2:E:288:ASP:N    | 2.24                     | 0.47              |
| 1:A:174:CYS:C    | 1:A:175:VAL:CG2  | 2.84                     | 0.47              |
| 1:A:253:GLY:C    | 1:A:255:LYS:N    | 2.67                     | 0.47              |
| 1:A:262:PHE:O    | 1:A:266:GLU:CG   | 2.63                     | 0.47              |
| 1:D:156:LEU:O    | 1:D:159:GLU:N    | 2.45                     | 0.47              |
| 1:D:191:LEU:O    | 1:D:194:PHE:N    | 2.42                     | 0.47              |
| 2:E:188:PHE:HD2  | 2:E:196:ILE:HD12 | 1.80                     | 0.47              |
| 2:E:202:VAL:HG12 | 2:E:203:ILE:N    | 2.18                     | 0.47              |
| 1:A:123:CYS:SG   | 1:A:123:CYS:O    | 2.73                     | 0.46              |
| 1:A:190:ILE:HA   | 1:A:193:MET:HG3  | 1.97                     | 0.46              |
| 1:D:158:TYR:HA   | 1:D:161:VAL:CG2  | 2.44                     | 0.46              |
| 1:D:43:GLY:N     | 1:D:54:ASN:OD1   | 2.47                     | 0.46              |
| 2:E:176:GLN:HE22 | 2:E:208:ASP:HB3  | 1.80                     | 0.46              |
| 2:E:371:ALA:HB2  | 2:E:377:ALA:HA   | 1.97                     | 0.46              |
| 2:B:27:THR:HB    | 2:B:28:PRO:HD2   | 1.98                     | 0.46              |
| 1:D:198:PRO:O    | 1:D:199:GLN:C    | 2.54                     | 0.46              |
| 1:D:16:THR:OG1   | 1:D:39:THR:HG21  | 2.15                     | 0.46              |
| 2:E:277:LYS:HD2  | 2:E:278:LEU:HA   | 1.95                     | 0.46              |
| 1:D:187:PHE:CE2  | 1:D:214:GLU:CG   | 2.88                     | 0.46              |
| 1:D:152:ARG:NH2  | 1:D:210:GLY:O    | 2.45                     | 0.46              |
| 3:D:289:COA:P3B  | 3:D:289:COA:O2B  | 2.73                     | 0.46              |
| 2:E:150:ASP:C    | 2:E:150:ASP:OD1  | 2.51                     | 0.46              |
| 2:E:191:ARG:NE   | 4:E:409:HOH:O    | 2.49                     | 0.46              |
| 2:E:199:ASN:HA   | 2:E:200:PRO:HA   | 1.47                     | 0.46              |
| 2:E:371:ALA:HB3  | 2:E:377:ALA:HB2  | 1.97                     | 0.46              |
| 2:E:69:ILE:C     | 2:E:71:ALA:N     | 2.68                     | 0.46              |
| 2:B:180:ILE:CG2  | 2:B:184:LEU:CD1  | 2.93                     | 0.46              |
| 2:B:203:ILE:O    | 2:B:203:ILE:HG22 | 2.07                     | 0.46              |
| 1:D:233:ILE:CG2  | 1:D:234:ALA:H    | 2.25                     | 0.46              |
| 1:D:233:ILE:HG23 | 1:D:234:ALA:H    | 1.79                     | 0.46              |
| 1:D:218:ALA:HB2  | 1:D:265:LEU:CD2  | 2.45                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:10:GLN:O     | 2:E:11:LEU:C     | 2.54                     | 0.46              |
| 2:E:371:ALA:CB   | 2:E:377:ALA:CA   | 2.92                     | 0.46              |
| 2:B:348:ARG:CD   | 2:B:348:ARG:C    | 2.84                     | 0.46              |
| 2:B:71:ALA:O     | 2:B:72:PHE:C     | 2.54                     | 0.46              |
| 1:D:126:VAL:HG22 | 1:D:127:ILE:N    | 2.30                     | 0.46              |
| 1:D:53:PHE:CE2   | 1:D:59:ALA:HA    | 2.50                     | 0.46              |
| 2:E:304:ILE:O    | 2:E:305:ILE:C    | 2.49                     | 0.46              |
| 1:A:186:ASN:OD1  | 1:A:188:ILE:N    | 2.48                     | 0.46              |
| 2:B:180:ILE:HG23 | 2:B:184:LEU:CD1  | 2.45                     | 0.46              |
| 2:B:276:VAL:O    | 2:B:277:LYS:C    | 2.47                     | 0.46              |
| 2:B:331:GLY:O    | 2:B:332:ILE:C    | 2.52                     | 0.46              |
| 2:B:34:ALA:O     | 2:B:37:LYS:HB2   | 2.15                     | 0.46              |
| 1:D:146:LYS:HE2  | 1:D:287:LEU:HD11 | 1.97                     | 0.46              |
| 3:D:289:COA:H61  | 3:D:289:COA:O9P  | 2.15                     | 0.46              |
| 2:E:122:VAL:CG1  | 2:E:146:LYS:HB3  | 2.46                     | 0.46              |
| 2:B:107:GLU:HB3  | 2:B:129:GLY:HA3  | 1.97                     | 0.46              |
| 2:B:135:LYS:HB3  | 2:B:136:VAL:H    | 1.35                     | 0.46              |
| 1:D:285:THR:HA   | 1:D:288:LYS:HD3  | 1.98                     | 0.46              |
| 1:D:56:VAL:HG12  | 1:D:87:ALA:HB3   | 1.97                     | 0.46              |
| 2:E:97:LEU:CD2   | 2:E:98:VAL:N     | 2.76                     | 0.46              |
| 2:B:255:LEU:HD23 | 2:B:273:MET:CE   | 2.46                     | 0.46              |
| 2:B:331:GLY:O    | 2:B:335:ALA:N    | 2.40                     | 0.46              |
| 2:B:23:TYR:CD2   | 2:B:34:ALA:HB1   | 2.50                     | 0.46              |
| 1:D:107:VAL:O    | 1:D:108:LYS:C    | 2.51                     | 0.46              |
| 1:D:195:GLU:OE2  | 1:D:226:THR:CG2  | 2.62                     | 0.46              |
| 1:D:195:GLU:CD   | 1:D:226:THR:H    | 2.20                     | 0.46              |
| 2:E:195:LEU:HG   | 2:E:196:ILE:N    | 2.31                     | 0.46              |
| 1:D:236:VAL:N    | 2:E:274:ASP:OD2  | 2.48                     | 0.46              |
| 2:B:287:LEU:CD2  | 2:B:287:LEU:C    | 2.84                     | 0.46              |
| 2:E:110:LEU:CD2  | 2:E:111:GLY:N    | 2.79                     | 0.46              |
| 2:E:120:ARG:HD3  | 2:E:120:ARG:HA   | 1.51                     | 0.46              |
| 2:E:241:ARG:HE   | 2:E:241:ARG:HB2  | 1.41                     | 0.46              |
| 2:E:252:TYR:CG   | 2:E:253:VAL:N    | 2.84                     | 0.46              |
| 2:E:257:GLY:C    | 2:E:284:ALA:HB2  | 2.35                     | 0.46              |
| 1:A:283:LEU:O    | 1:A:284:LYS:C    | 2.54                     | 0.46              |
| 1:A:285:THR:O    | 1:A:286:VAL:C    | 2.53                     | 0.46              |
| 1:A:2:ILE:HG21   | 1:A:173:THR:HG21 | 1.98                     | 0.46              |
| 1:A:55:THR:O     | 1:A:58:GLU:HB2   | 2.16                     | 0.46              |
| 2:B:308:ASP:HB3  | 4:B:410:HOH:O    | 2.16                     | 0.46              |
| 2:E:209:LEU:HA   | 2:E:209:LEU:HD23 | 1.53                     | 0.46              |
| 2:E:329:ALA:HB1  | 2:E:361:LEU:CD1  | 2.46                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:312:LYS:O    | 2:E:385:VAL:HG23 | 2.16                     | 0.46              |
| 2:E:63:VAL:CG1   | 2:E:68:ASP:CB    | 2.94                     | 0.46              |
| 1:A:22:PHE:CD1   | 1:A:23:HIS:N     | 2.85                     | 0.45              |
| 2:B:81:LEU:N     | 2:B:91:GLN:O     | 2.49                     | 0.45              |
| 1:D:212:SER:HB3  | 1:D:255:LYS:NZ   | 2.31                     | 0.45              |
| 2:E:187:ILE:O    | 2:E:188:PHE:C    | 2.54                     | 0.45              |
| 2:E:239:ASP:OD1  | 2:E:241:ARG:HB2  | 2.16                     | 0.45              |
| 2:B:204:THR:O    | 2:B:207:GLY:CA   | 2.64                     | 0.45              |
| 2:E:50:HIS:NE2   | 2:E:237:GLN:HG3  | 2.31                     | 0.45              |
| 1:A:108:LYS:CE   | 4:A:307:HOH:O    | 2.40                     | 0.45              |
| 1:A:136:ILE:O    | 1:A:137:GLN:C    | 2.54                     | 0.45              |
| 2:B:47:CYS:O     | 2:B:54:ARG:NH1   | 2.49                     | 0.45              |
| 1:D:22:PHE:C     | 1:D:24:SER:H     | 2.19                     | 0.45              |
| 1:D:273:VAL:HG12 | 1:D:273:VAL:O    | 2.15                     | 0.45              |
| 1:D:283:LEU:C    | 1:D:285:THR:N    | 2.70                     | 0.45              |
| 1:A:212:SER:O    | 1:A:214:GLU:N    | 2.49                     | 0.45              |
| 1:A:69:VAL:O     | 1:A:69:VAL:HG23  | 2.16                     | 0.45              |
| 1:D:129:PRO:O    | 1:D:131:GLU:N    | 2.49                     | 0.45              |
| 2:E:192:ASP:CB   | 4:E:405:HOH:O    | 2.64                     | 0.45              |
| 2:E:25:CYS:SG    | 2:E:31:ALA:HA    | 2.56                     | 0.45              |
| 2:E:28:PRO:O     | 2:E:29:ARG:C     | 2.53                     | 0.45              |
| 2:E:69:ILE:HG22  | 2:E:70:ARG:N     | 2.28                     | 0.45              |
| 1:A:174:CYS:C    | 1:A:175:VAL:HG23 | 2.37                     | 0.45              |
| 1:A:283:LEU:HD12 | 1:A:283:LEU:HA   | 1.26                     | 0.45              |
| 2:B:224:PHE:C    | 2:B:230:ARG:HH12 | 2.19                     | 0.45              |
| 2:B:277:LYS:O    | 2:B:280:GLY:N    | 2.49                     | 0.45              |
| 2:B:302:PHE:O    | 2:B:306:LEU:HB2  | 2.17                     | 0.45              |
| 2:B:371:ALA:HB1  | 2:B:377:ALA:HB2  | 1.95                     | 0.45              |
| 1:D:118:MET:O    | 1:D:119:ILE:HD13 | 2.16                     | 0.45              |
| 1:D:174:CYS:HB2  | 4:D:301:HOH:O    | 2.17                     | 0.45              |
| 2:E:135:LYS:O    | 2:E:138:GLU:N    | 2.50                     | 0.45              |
| 2:E:191:ARG:HD2  | 2:E:226:GLN:NE2  | 2.32                     | 0.45              |
| 2:E:275:ILE:O    | 2:E:275:ILE:HG23 | 2.01                     | 0.45              |
| 1:A:244:MET:O    | 1:A:246:NEP:N    | 2.49                     | 0.45              |
| 2:B:123:PHE:CZ   | 2:B:185:ALA:HA   | 2.52                     | 0.45              |
| 2:B:263:VAL:CG1  | 2:B:264:ASN:H    | 2.29                     | 0.45              |
| 1:D:186:ASN:ND2  | 1:D:189:ASP:CG   | 2.70                     | 0.45              |
| 1:D:53:PHE:CD1   | 1:D:53:PHE:N     | 2.85                     | 0.45              |
| 2:E:300:GLU:HA   | 2:E:303:LYS:HG3  | 1.97                     | 0.45              |
| 2:E:346:VAL:CB   | 2:E:381:VAL:CG2  | 2.95                     | 0.45              |
| 2:E:348:ARG:HH11 | 2:E:374:LEU:CB   | 2.29                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:63:VAL:CG1   | 2:E:68:ASP:HB3   | 2.41                     | 0.45              |
| 1:A:60:VAL:O     | 1:A:61:ALA:C     | 2.51                     | 0.45              |
| 2:B:182:MET:O    | 2:B:183:GLY:C    | 2.54                     | 0.45              |
| 2:B:49:VAL:HG13  | 2:B:50:HIS:N     | 2.30                     | 0.45              |
| 1:D:14:GLY:O     | 1:D:15:PHE:C     | 2.55                     | 0.45              |
| 1:D:229:VAL:CG1  | 1:D:270:VAL:HG11 | 2.46                     | 0.45              |
| 1:D:283:LEU:CA   | 1:D:286:VAL:HG12 | 2.47                     | 0.45              |
| 2:E:315:LEU:CD1  | 2:E:346:VAL:O    | 2.65                     | 0.45              |
| 1:A:20:GLY:HA2   | 1:A:71:TYR:CD2   | 2.52                     | 0.45              |
| 1:A:5:ASP:CG     | 1:A:7:ASN:H      | 2.16                     | 0.45              |
| 2:B:161:ARG:O    | 2:B:162:GLU:C    | 2.53                     | 0.45              |
| 1:A:235:GLY:N    | 2:B:274:ASP:OD2  | 2.43                     | 0.45              |
| 2:B:251:ASN:HB2  | 2:B:288:ASP:HB3  | 1.99                     | 0.45              |
| 2:B:22:GLY:CA    | 2:B:98:VAL:O     | 2.64                     | 0.45              |
| 1:D:10:VAL:HG12  | 1:D:34:MET:HE1   | 1.99                     | 0.45              |
| 1:D:4:ILE:HD13   | 1:D:126:VAL:CG2  | 2.47                     | 0.45              |
| 1:A:154:GLY:O    | 1:A:157:THR:CB   | 2.65                     | 0.45              |
| 1:A:143:LYS:O    | 1:A:170:GLY:CA   | 2.65                     | 0.45              |
| 1:A:186:ASN:O    | 1:A:189:ASP:HB2  | 2.16                     | 0.45              |
| 1:A:19:GLN:HG3   | 3:A:289:COA:H132 | 1.98                     | 0.45              |
| 1:A:272:THR:HG22 | 1:A:272:THR:O    | 2.17                     | 0.45              |
| 2:B:25:CYS:HB3   | 2:B:30:GLU:HB2   | 1.99                     | 0.45              |
| 2:B:331:GLY:O    | 2:B:335:ALA:CB   | 2.65                     | 0.45              |
| 2:B:38:ILE:HG21  | 2:B:43:TRP:HD1   | 1.82                     | 0.45              |
| 2:E:36:SER:C     | 2:E:38:ILE:N     | 2.67                     | 0.45              |
| 2:E:79:LYS:H     | 2:E:79:LYS:HG2   | 1.51                     | 0.45              |
| 1:A:99:ILE:HA    | 1:A:100:PRO:HD3  | 1.59                     | 0.45              |
| 1:A:127:ILE:HG22 | 1:A:174:CYS:HB2  | 1.98                     | 0.45              |
| 2:B:136:VAL:HG12 | 2:B:144:ILE:HD11 | 1.98                     | 0.45              |
| 2:B:2:ASN:O      | 2:B:3:LEU:HD23   | 2.16                     | 0.45              |
| 2:B:332:ILE:O    | 2:B:335:ALA:HB3  | 2.17                     | 0.45              |
| 1:D:11:ILE:N     | 1:D:34:MET:CE    | 2.80                     | 0.45              |
| 2:E:1:MET:HB3    | 2:E:218:ALA:HB3  | 1.99                     | 0.45              |
| 2:E:346:VAL:HB   | 2:E:381:VAL:HG21 | 1.98                     | 0.45              |
| 1:A:181:PRO:C    | 1:A:183:PRO:HD3  | 2.38                     | 0.44              |
| 2:B:187:ILE:HD12 | 2:B:187:ILE:HG21 | 1.65                     | 0.44              |
| 2:B:301:ALA:O    | 2:B:302:PHE:C    | 2.55                     | 0.44              |
| 1:D:124:PRO:O    | 1:D:135:GLY:HA3  | 2.17                     | 0.44              |
| 2:E:341:VAL:HG22 | 2:E:341:VAL:O    | 2.17                     | 0.44              |
| 1:A:98:GLY:O     | 1:A:100:PRO:HD3  | 2.17                     | 0.44              |
| 1:A:2:ILE:HG22   | 1:A:173:THR:HG21 | 1.99                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:239:PRO:HG3  | 2:B:255:LEU:HD11 | 1.98                     | 0.44              |
| 1:A:55:THR:HB    | 1:A:58:GLU:HB2   | 1.99                     | 0.44              |
| 1:A:72:VAL:O     | 1:A:96:THR:CG2   | 2.65                     | 0.44              |
| 2:B:115:ASP:OD2  | 2:B:118:SER:CB   | 2.64                     | 0.44              |
| 2:B:352:ASN:C    | 2:B:354:ALA:N    | 2.71                     | 0.44              |
| 2:B:362:ALA:C    | 2:B:364:SER:H    | 2.20                     | 0.44              |
| 1:D:101:THR:O    | 1:D:105:LEU:N    | 2.47                     | 0.44              |
| 1:D:229:VAL:HG22 | 1:D:230:VAL:H    | 1.79                     | 0.44              |
| 1:D:3:LEU:HD23   | 1:D:193:MET:HE2  | 1.99                     | 0.44              |
| 2:E:50:HIS:CG    | 2:E:237:GLN:HG3  | 2.52                     | 0.44              |
| 2:E:276:VAL:CG1  | 2:E:281:GLY:HA3  | 2.47                     | 0.44              |
| 2:E:49:VAL:HG22  | 2:E:91:GLN:HB2   | 1.97                     | 0.44              |
| 2:E:4:HIS:O      | 2:E:7:GLN:N      | 2.49                     | 0.44              |
| 2:E:81:LEU:HA    | 2:E:81:LEU:HD23  | 1.63                     | 0.44              |
| 1:A:150:VAL:CG1  | 1:A:190:ILE:HG21 | 2.47                     | 0.44              |
| 1:A:19:GLN:CA    | 1:A:19:GLN:OE1   | 2.65                     | 0.44              |
| 1:A:238:ALA:HA   | 1:A:239:PRO:HD2  | 1.80                     | 0.44              |
| 1:A:92:ILE:HB    | 1:A:118:MET:HG3  | 1.99                     | 0.44              |
| 1:A:77:CYS:HB3   | 1:A:99:ILE:HD11  | 1.99                     | 0.44              |
| 2:B:107:GLU:O    | 2:B:129:GLY:HA3  | 2.17                     | 0.44              |
| 2:B:43:TRP:HB3   | 2:B:99:GLU:O     | 2.17                     | 0.44              |
| 1:D:104:MET:O    | 1:D:105:LEU:C    | 2.54                     | 0.44              |
| 1:D:78:LYS:C     | 1:D:80:SER:H     | 2.20                     | 0.44              |
| 2:E:257:GLY:O    | 2:E:284:ALA:HB2  | 2.18                     | 0.44              |
| 1:A:273:VAL:CG1  | 1:A:278:ASP:HB2  | 2.48                     | 0.44              |
| 1:A:11:ILE:HD11  | 1:A:68:SER:CB    | 2.47                     | 0.44              |
| 2:B:20:PRO:HD3   | 2:B:210:ILE:HD11 | 1.99                     | 0.44              |
| 2:B:255:LEU:CD2  | 2:B:273:MET:CE   | 2.96                     | 0.44              |
| 2:B:368:ILE:CG2  | 2:B:369:ILE:N    | 2.81                     | 0.44              |
| 1:D:136:ILE:C    | 1:D:137:GLN:O    | 2.54                     | 0.44              |
| 1:D:202:ALA:CB   | 1:D:228:PRO:HG2  | 2.47                     | 0.44              |
| 2:E:12:PHE:CD1   | 2:E:12:PHE:N     | 2.83                     | 0.44              |
| 2:E:255:LEU:HB3  | 2:E:256:ASP:H    | 1.48                     | 0.44              |
| 1:A:10:VAL:CG1   | 1:A:11:ILE:H     | 2.26                     | 0.44              |
| 1:A:253:GLY:O    | 1:A:255:LYS:HB2  | 2.17                     | 0.44              |
| 1:A:281:GLU:O    | 1:A:282:ALA:C    | 2.56                     | 0.44              |
| 1:A:19:GLN:HG2   | 3:A:289:COA:P2A  | 2.57                     | 0.44              |
| 2:B:153:THR:O    | 2:B:154:GLY:O    | 2.36                     | 0.44              |
| 2:B:386:GLU:O    | 2:B:387:GLY:C    | 2.55                     | 0.44              |
| 1:D:21:THR:CG2   | 1:D:22:PHE:N     | 2.63                     | 0.44              |
| 2:E:191:ARG:HA   | 2:E:191:ARG:HD2  | 1.71                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:143:LYS:O    | 1:A:170:GLY:HA2  | 2.18                     | 0.44              |
| 1:A:217:ALA:O    | 1:A:220:TYR:HB3  | 2.18                     | 0.44              |
| 1:A:11:ILE:CD1   | 1:A:68:SER:OG    | 2.65                     | 0.44              |
| 2:B:316:VAL:HG13 | 2:B:317:ASN:N    | 2.30                     | 0.44              |
| 2:B:386:GLU:C    | 2:B:388:LYS:HZ2  | 2.21                     | 0.44              |
| 2:E:133:ILE:CG2  | 2:E:134:GLU:N    | 2.81                     | 0.44              |
| 2:E:205:LYS:O    | 2:E:207:GLY:N    | 2.51                     | 0.44              |
| 2:E:269:ALA:O    | 2:E:270:MET:C    | 2.53                     | 0.44              |
| 2:E:299:THR:HG22 | 2:E:300:GLU:N    | 2.33                     | 0.44              |
| 2:E:336:VAL:HG13 | 2:E:341:VAL:HG13 | 1.99                     | 0.44              |
| 2:B:147:VAL:HG22 | 2:B:159:GLN:HE21 | 1.82                     | 0.44              |
| 2:B:150:ASP:OD1  | 2:B:150:ASP:C    | 2.56                     | 0.44              |
| 1:D:27:ALA:HB1   | 1:D:32:THR:CB    | 2.44                     | 0.44              |
| 1:A:24:SER:O     | 1:A:25:GLU:C     | 2.53                     | 0.44              |
| 1:A:280:GLY:O    | 1:A:283:LEU:HB2  | 2.18                     | 0.44              |
| 1:A:285:THR:C    | 1:A:287:LEU:H    | 2.21                     | 0.44              |
| 1:A:2:ILE:HD12   | 1:A:194:PHE:CD1  | 2.50                     | 0.44              |
| 2:B:346:VAL:HG21 | 2:B:381:VAL:HG22 | 1.98                     | 0.44              |
| 2:B:6:TYR:CE1    | 2:B:7:GLN:HG2    | 2.52                     | 0.44              |
| 1:D:158:TYR:HA   | 1:D:161:VAL:HG21 | 1.99                     | 0.44              |
| 2:E:122:VAL:HG12 | 2:E:123:PHE:N    | 2.32                     | 0.44              |
| 2:E:141:PRO:HD2  | 2:E:142:HIS:HD2  | 1.83                     | 0.44              |
| 2:E:157:PRO:HG3  | 2:E:182:MET:HE1  | 2.00                     | 0.44              |
| 2:E:239:ASP:OD1  | 2:E:240:PRO:HD2  | 2.18                     | 0.44              |
| 1:A:181:PRO:HA   | 2:B:116:ARG:HH11 | 1.81                     | 0.44              |
| 2:B:239:ASP:OD2  | 2:B:241:ARG:NE   | 2.50                     | 0.44              |
| 1:D:149:ILE:HG12 | 1:D:174:CYS:HB3  | 1.82                     | 0.44              |
| 2:E:263:VAL:HG21 | 2:E:269:ALA:HA   | 1.99                     | 0.44              |
| 2:E:277:LYS:CD   | 2:E:277:LYS:C    | 2.84                     | 0.44              |
| 2:B:138:GLU:O    | 2:B:138:GLU:HG2  | 2.18                     | 0.43              |
| 2:B:158:TYR:CD1  | 2:B:159:GLN:N    | 2.85                     | 0.43              |
| 1:D:259:ASP:O    | 1:D:260:GLU:C    | 2.56                     | 0.43              |
| 1:D:283:LEU:HA   | 1:D:286:VAL:CG1  | 2.48                     | 0.43              |
| 2:E:62:VAL:O     | 2:E:63:VAL:CG2   | 2.66                     | 0.43              |
| 2:E:94:ASN:C     | 2:E:95:GLN:CG    | 2.86                     | 0.43              |
| 1:A:136:ILE:O    | 1:A:138:PRO:HD3  | 2.18                     | 0.43              |
| 1:A:278:ASP:O    | 1:A:281:GLU:HB2  | 2.18                     | 0.43              |
| 2:B:139:GLU:O    | 2:B:141:PRO:HD3  | 2.16                     | 0.43              |
| 2:B:173:LEU:HA   | 2:B:173:LEU:HD23 | 1.65                     | 0.43              |
| 2:B:241:ARG:NH2  | 2:B:254:ALA:CB   | 2.81                     | 0.43              |
| 2:B:325:CYS:CB   | 2:B:352:ASN:O    | 2.62                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:361:LEU:HG   | 2:B:368:ILE:HG21 | 2.00                     | 0.43              |
| 1:D:103:ASP:O    | 1:D:107:VAL:HG23 | 2.18                     | 0.43              |
| 1:D:127:ILE:O    | 1:D:173:THR:HG23 | 2.14                     | 0.43              |
| 1:D:229:VAL:HG13 | 1:D:230:VAL:N    | 2.29                     | 0.43              |
| 1:D:11:ILE:CG2   | 1:D:65:ALA:HB1   | 2.48                     | 0.43              |
| 2:E:246:ALA:O    | 2:E:247:GLN:C    | 2.52                     | 0.43              |
| 2:B:315:LEU:HD12 | 2:B:315:LEU:HA   | 1.66                     | 0.43              |
| 2:B:86:THR:HG21  | 2:B:90:GLY:HA2   | 1.98                     | 0.43              |
| 1:D:162:LYS:O    | 1:D:163:GLN:C    | 2.56                     | 0.43              |
| 1:D:81:ILE:HG21  | 1:D:107:VAL:CG1  | 2.48                     | 0.43              |
| 2:E:105:ALA:N    | 2:E:203:ILE:O    | 2.46                     | 0.43              |
| 2:E:298:VAL:O    | 2:E:301:ALA:HB3  | 2.18                     | 0.43              |
| 2:E:5:GLU:O      | 2:E:6:TYR:C      | 2.56                     | 0.43              |
| 2:E:9:LYS:O      | 2:E:12:PHE:HB2   | 2.18                     | 0.43              |
| 1:A:100:PRO:HA   | 2:B:219:ASP:OD2  | 2.18                     | 0.43              |
| 1:A:123:CYS:HB2  | 1:A:124:PRO:CD   | 2.41                     | 0.43              |
| 1:A:19:GLN:O     | 1:A:23:HIS:HB2   | 2.17                     | 0.43              |
| 1:D:77:CYS:CB    | 1:D:99:ILE:HD11  | 2.46                     | 0.43              |
| 2:E:191:ARG:CD   | 4:E:409:HOH:O    | 2.65                     | 0.43              |
| 2:E:304:ILE:O    | 2:E:307:SER:OG   | 2.35                     | 0.43              |
| 2:E:308:ASP:C    | 2:E:308:ASP:OD1  | 2.55                     | 0.43              |
| 1:A:58:GLU:O     | 1:A:59:ALA:C     | 2.53                     | 0.43              |
| 1:D:205:MET:CE   | 1:D:217:ALA:CB   | 2.96                     | 0.43              |
| 1:D:30:TYR:OH    | 1:D:127:ILE:HD11 | 2.18                     | 0.43              |
| 1:A:81:ILE:HD11  | 1:A:94:THR:HG21  | 2.00                     | 0.43              |
| 2:B:177:PHE:O    | 2:B:178:THR:C    | 2.57                     | 0.43              |
| 2:B:215:LYS:O    | 2:B:216:LEU:CD2  | 2.42                     | 0.43              |
| 2:B:223:LEU:C    | 2:B:230:ARG:HH11 | 2.22                     | 0.43              |
| 2:B:87:ASP:OD2   | 2:B:89:ASN:OD1   | 2.37                     | 0.43              |
| 1:D:256:GLY:O    | 1:D:261:LYS:HE2  | 2.18                     | 0.43              |
| 2:E:205:LYS:C    | 2:E:207:GLY:H    | 2.22                     | 0.43              |
| 1:A:162:LYS:O    | 1:A:163:GLN:O    | 2.37                     | 0.43              |
| 1:A:213:ALA:O    | 1:A:214:GLU:C    | 2.54                     | 0.43              |
| 1:D:126:VAL:O    | 1:D:126:VAL:HG13 | 2.18                     | 0.43              |
| 1:D:2:ILE:HD12   | 1:D:193:MET:HB2  | 1.74                     | 0.43              |
| 1:D:205:MET:CE   | 1:D:217:ALA:HB3  | 2.46                     | 0.43              |
| 1:D:217:ALA:O    | 1:D:221:ILE:HB   | 2.18                     | 0.43              |
| 2:E:226:GLN:HA   | 2:E:227:PRO:HD2  | 1.55                     | 0.43              |
| 2:E:371:ALA:CB   | 2:E:377:ALA:CB   | 2.97                     | 0.43              |
| 2:B:255:LEU:HB3  | 2:B:256:ASP:H    | 1.61                     | 0.43              |
| 2:B:326:ASP:HB3  | 2:B:356:LEU:HD13 | 2.01                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:15:PHE:CE2   | 1:D:47:HIS:HB3   | 2.54                     | 0.43              |
| 1:D:233:ILE:HD13 | 1:D:261:LYS:CB   | 2.49                     | 0.43              |
| 1:D:73:PRO:CA    | 3:D:289:COA:H143 | 2.49                     | 0.43              |
| 2:B:152:LEU:HD22 | 2:B:152:LEU:O    | 2.19                     | 0.43              |
| 1:D:11:ILE:HG23  | 1:D:11:ILE:HD13  | 1.65                     | 0.43              |
| 1:D:188:ILE:HA   | 1:D:191:LEU:HB2  | 2.01                     | 0.43              |
| 1:D:214:GLU:O    | 1:D:215:GLU:C    | 2.55                     | 0.43              |
| 1:D:220:TYR:HD2  | 1:D:221:ILE:N    | 2.15                     | 0.43              |
| 1:D:288:LYS:HB2  | 1:D:288:LYS:HE3  | 1.68                     | 0.43              |
| 1:D:45:THR:C     | 1:D:52:VAL:HG23  | 2.37                     | 0.43              |
| 2:E:107:GLU:O    | 2:E:129:GLY:CA   | 2.56                     | 0.43              |
| 2:E:379:GLN:O    | 2:E:380:GLN:C    | 2.57                     | 0.43              |
| 1:A:123:CYS:C    | 3:A:289:COA:S1P  | 2.97                     | 0.43              |
| 1:A:221:ILE:HA   | 1:A:225:VAL:HG12 | 1.99                     | 0.43              |
| 2:B:110:LEU:HD23 | 2:B:110:LEU:HA   | 1.35                     | 0.43              |
| 2:B:254:ALA:O    | 2:B:255:LEU:HD13 | 2.19                     | 0.43              |
| 1:D:236:VAL:HA   | 1:D:258:ALA:HB3  | 2.01                     | 0.43              |
| 1:D:266:GLU:O    | 1:D:269:GLY:CA   | 2.66                     | 0.43              |
| 1:D:78:LYS:C     | 1:D:80:SER:N     | 2.72                     | 0.43              |
| 2:E:184:LEU:C    | 2:E:186:THR:N    | 2.72                     | 0.43              |
| 2:E:371:ALA:HB1  | 2:E:377:ALA:HA   | 2.01                     | 0.43              |
| 2:E:5:GLU:HG2    | 2:E:9:LYS:HD2    | 2.01                     | 0.43              |
| 2:E:72:PHE:HE1   | 2:E:76:TRP:HE1   | 1.67                     | 0.43              |
| 1:A:116:VAL:CG1  | 1:A:117:ARG:H    | 2.31                     | 0.42              |
| 1:A:150:VAL:HG12 | 1:A:190:ILE:HG21 | 2.00                     | 0.42              |
| 1:A:226:THR:O    | 1:A:227:LYS:C    | 2.57                     | 0.42              |
| 1:A:55:THR:CG2   | 1:A:56:VAL:N     | 2.82                     | 0.42              |
| 1:A:72:VAL:HA    | 1:A:73:PRO:HD3   | 1.64                     | 0.42              |
| 2:B:120:ARG:HA   | 2:B:120:ARG:HD3  | 1.62                     | 0.42              |
| 2:B:317:ASN:C    | 2:B:317:ASN:OD1  | 2.54                     | 0.42              |
| 2:B:356:LEU:HD22 | 2:B:356:LEU:C    | 2.39                     | 0.42              |
| 2:B:55:GLY:O     | 2:B:56:LYS:C     | 2.58                     | 0.42              |
| 2:B:65:SER:O     | 2:B:68:ASP:N     | 2.52                     | 0.42              |
| 1:D:22:PHE:HD1   | 1:D:23:HIS:N     | 2.16                     | 0.42              |
| 1:D:276:LEU:O    | 1:D:279:ILE:HD12 | 2.18                     | 0.42              |
| 2:E:140:THR:CG2  | 2:E:143:LEU:HD12 | 2.48                     | 0.42              |
| 2:E:157:PRO:CB   | 2:E:182:MET:CE   | 2.97                     | 0.42              |
| 2:E:245:ALA:HB1  | 2:E:250:LEU:HB2  | 2.00                     | 0.42              |
| 2:E:55:GLY:O     | 2:E:56:LYS:C     | 2.56                     | 0.42              |
| 1:A:182:ILE:HA   | 1:A:183:PRO:HD2  | 1.76                     | 0.42              |
| 2:B:156:MET:HA   | 2:B:157:PRO:HD3  | 1.39                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:139:GLY:C    | 1:D:141:ILE:N    | 2.65                     | 0.42              |
| 1:D:80:SER:O     | 1:D:81:ILE:C     | 2.54                     | 0.42              |
| 2:E:205:LYS:C    | 2:E:207:GLY:N    | 2.72                     | 0.42              |
| 2:E:263:VAL:CG1  | 2:E:268:LEU:HB3  | 2.47                     | 0.42              |
| 1:A:252:ALA:CB   | 4:A:308:HOH:O    | 2.67                     | 0.42              |
| 1:A:4:ILE:HD12   | 1:A:4:ILE:HG21   | 1.78                     | 0.42              |
| 2:B:165:PHE:C    | 2:B:167:LEU:H    | 2.22                     | 0.42              |
| 2:B:204:THR:O    | 2:B:207:GLY:HA2  | 2.20                     | 0.42              |
| 2:B:254:ALA:C    | 2:B:255:LEU:HD13 | 2.40                     | 0.42              |
| 1:D:120:GLY:HA3  | 1:D:121:PRO:HA   | 1.77                     | 0.42              |
| 1:D:160:ALA:O    | 1:D:164:THR:HG23 | 2.20                     | 0.42              |
| 1:D:283:LEU:HD12 | 1:D:286:VAL:HG11 | 2.01                     | 0.42              |
| 1:D:32:THR:O     | 1:D:34:MET:N     | 2.47                     | 0.42              |
| 2:E:219:ASP:OD1  | 2:E:219:ASP:C    | 2.57                     | 0.42              |
| 2:E:241:ARG:HD2  | 2:E:307:SER:OG   | 2.17                     | 0.42              |
| 2:E:329:ALA:C    | 2:E:333:ILE:HD12 | 2.40                     | 0.42              |
| 2:B:184:LEU:H    | 2:B:184:LEU:HG   | 1.50                     | 0.42              |
| 2:B:25:CYS:SG    | 2:B:31:ALA:HA    | 2.59                     | 0.42              |
| 1:D:117:ARG:HH21 | 1:D:185:SER:HB3  | 1.83                     | 0.42              |
| 1:D:218:ALA:HB2  | 1:D:265:LEU:HD23 | 2.00                     | 0.42              |
| 1:D:275:SER:OG   | 1:D:277:ALA:CB   | 2.64                     | 0.42              |
| 1:D:285:THR:CG2  | 1:D:286:VAL:N    | 2.69                     | 0.42              |
| 1:D:81:ILE:HG22  | 1:D:85:ILE:CD1   | 2.49                     | 0.42              |
| 2:E:177:PHE:C    | 2:E:177:PHE:CD2  | 2.92                     | 0.42              |
| 2:E:206:GLN:N    | 2:E:206:GLN:OE1  | 2.47                     | 0.42              |
| 1:A:140:HIS:N    | 1:A:140:HIS:ND1  | 2.65                     | 0.42              |
| 1:A:206:ILE:HG22 | 1:A:207:GLY:N    | 2.34                     | 0.42              |
| 2:B:160:GLY:O    | 2:B:161:ARG:C    | 2.56                     | 0.42              |
| 2:B:316:VAL:HG13 | 2:B:318:ILE:HD12 | 2.01                     | 0.42              |
| 2:B:359:LYS:O    | 2:B:360:LYS:C    | 2.57                     | 0.42              |
| 2:B:375:THR:O    | 2:B:378:ALA:HB3  | 2.19                     | 0.42              |
| 1:D:4:ILE:HD13   | 1:D:126:VAL:HG22 | 2.01                     | 0.42              |
| 2:B:133:ILE:CD1  | 2:B:134:GLU:N    | 2.67                     | 0.42              |
| 2:B:298:VAL:O    | 2:B:298:VAL:CG1  | 2.63                     | 0.42              |
| 1:D:161:VAL:O    | 1:D:162:LYS:C    | 2.57                     | 0.42              |
| 1:D:3:LEU:HG     | 1:D:3:LEU:H      | 1.66                     | 0.42              |
| 2:E:157:PRO:HG3  | 2:E:182:MET:CE   | 2.49                     | 0.42              |
| 2:E:276:VAL:HG12 | 2:E:277:LYS:N    | 2.32                     | 0.42              |
| 2:E:41:GLY:HA3   | 2:E:42:PRO:HA    | 1.82                     | 0.42              |
| 1:A:112:ASP:O    | 1:A:114:ALA:N    | 2.53                     | 0.42              |
| 1:A:186:ASN:O    | 1:A:187:PHE:O    | 2.38                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:27:ALA:CB    | 1:A:34:MET:HE1   | 2.49                     | 0.42              |
| 2:B:300:GLU:O    | 2:B:301:ALA:C    | 2.58                     | 0.42              |
| 2:B:312:LYS:O    | 2:B:343:VAL:HG22 | 2.19                     | 0.42              |
| 2:B:359:LYS:HE3  | 2:B:363:ASP:OD2  | 2.20                     | 0.42              |
| 2:B:356:LEU:O    | 2:B:360:LYS:HG2  | 2.19                     | 0.42              |
| 1:D:112:ASP:O    | 1:D:113:GLU:C    | 2.54                     | 0.42              |
| 2:E:330:ASP:CA   | 2:E:333:ILE:HD12 | 2.48                     | 0.42              |
| 2:E:328:ILE:HG21 | 2:E:349:LEU:CD2  | 2.49                     | 0.42              |
| 2:E:356:LEU:HD22 | 2:E:357:GLY:H    | 1.72                     | 0.42              |
| 2:E:376:ASP:O    | 2:E:377:ALA:C    | 2.56                     | 0.42              |
| 2:E:69:ILE:C     | 2:E:71:ALA:H     | 2.23                     | 0.42              |
| 1:A:220:TYR:HB3  | 1:A:221:ILE:H    | 1.46                     | 0.42              |
| 1:A:78:LYS:HG3   | 1:A:82:LEU:HD22  | 2.01                     | 0.42              |
| 2:B:172:LYS:HA   | 2:B:175:GLN:CG   | 2.50                     | 0.42              |
| 1:D:151:SER:C    | 1:D:153:SER:H    | 2.23                     | 0.42              |
| 1:D:35:VAL:C     | 1:D:50:LEU:HD13  | 2.40                     | 0.42              |
| 2:E:157:PRO:HA   | 2:E:182:MET:CE   | 2.42                     | 0.42              |
| 2:E:358:ALA:O    | 2:E:359:LYS:C    | 2.55                     | 0.42              |
| 2:E:377:ALA:O    | 2:E:378:ALA:C    | 2.58                     | 0.42              |
| 2:B:17:LEU:HD23  | 2:B:17:LEU:N     | 2.35                     | 0.42              |
| 2:B:356:LEU:CD2  | 2:B:356:LEU:O    | 2.68                     | 0.42              |
| 2:B:4:HIS:HB2    | 2:B:7:GLN:CG     | 2.48                     | 0.42              |
| 1:D:104:MET:HE2  | 1:D:104:MET:HB3  | 1.57                     | 0.42              |
| 1:D:207:GLY:O    | 1:D:208:GLU:HB3  | 2.19                     | 0.42              |
| 1:D:5:ASP:O      | 1:D:8:THR:HB     | 2.20                     | 0.42              |
| 2:E:248:TRP:C    | 2:E:249:GLU:CG   | 2.86                     | 0.42              |
| 1:A:133:LYS:C    | 1:A:134:ILE:HG12 | 2.39                     | 0.42              |
| 1:A:22:PHE:HD1   | 1:A:23:HIS:N     | 2.17                     | 0.42              |
| 2:B:198:ILE:HG23 | 2:B:211:CYS:HB3  | 2.02                     | 0.42              |
| 2:B:277:LYS:O    | 2:B:278:LEU:C    | 2.58                     | 0.42              |
| 1:D:57:ARG:NH2   | 1:D:86:ASP:HB3   | 2.35                     | 0.42              |
| 2:E:311:VAL:HG12 | 2:E:313:ALA:H    | 1.85                     | 0.42              |
| 1:A:145:GLY:O    | 1:A:199:GLN:NE2  | 2.43                     | 0.41              |
| 2:B:142:HIS:CD2  | 2:B:142:HIS:N    | 2.79                     | 0.41              |
| 2:B:81:LEU:HA    | 2:B:81:LEU:HD23  | 1.65                     | 0.41              |
| 2:E:196:ILE:HA   | 2:E:216:LEU:HD22 | 2.02                     | 0.41              |
| 2:E:76:TRP:O     | 2:E:79:LYS:CG    | 2.67                     | 0.41              |
| 1:A:223:GLU:O    | 1:A:224:HIS:CG   | 2.72                     | 0.41              |
| 1:A:273:VAL:HG12 | 1:A:275:SER:O    | 2.19                     | 0.41              |
| 1:A:84:ALA:O     | 1:A:87:ALA:N     | 2.54                     | 0.41              |
| 2:B:97:LEU:HD23  | 2:B:97:LEU:HA    | 1.33                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:96:ILE:CG2   | 2:B:97:LEU:N     | 2.79                     | 0.41              |
| 1:D:220:TYR:O    | 1:D:221:ILE:C    | 2.58                     | 0.41              |
| 1:D:236:VAL:O    | 1:D:236:VAL:HG12 | 2.19                     | 0.41              |
| 1:D:25:GLU:O     | 1:D:28:ILE:HB    | 2.19                     | 0.41              |
| 1:D:208:GLU:O    | 1:D:261:LYS:HE3  | 2.20                     | 0.41              |
| 1:D:103:ASP:CG   | 2:E:225:ARG:HH12 | 2.24                     | 0.41              |
| 2:E:233:ARG:HD3  | 2:E:235:GLN:HE21 | 1.84                     | 0.41              |
| 2:E:315:LEU:HD12 | 2:E:346:VAL:O    | 2.20                     | 0.41              |
| 1:A:214:GLU:OE1  | 1:A:261:LYS:CE   | 2.63                     | 0.41              |
| 1:A:281:GLU:O    | 1:A:283:LEU:N    | 2.53                     | 0.41              |
| 1:A:285:THR:O    | 1:A:288:LYS:N    | 2.49                     | 0.41              |
| 2:B:374:LEU:C    | 2:B:374:LEU:HD12 | 2.41                     | 0.41              |
| 1:D:117:ARG:HH11 | 1:D:117:ARG:HD2  | 1.75                     | 0.41              |
| 2:E:268:LEU:HA   | 2:E:268:LEU:HD23 | 1.70                     | 0.41              |
| 2:E:26:THR:O     | 2:E:27:THR:CG2   | 2.68                     | 0.41              |
| 2:E:326:ASP:O    | 2:E:329:ALA:N    | 2.54                     | 0.41              |
| 2:E:343:VAL:HG12 | 2:E:344:PRO:O    | 2.20                     | 0.41              |
| 2:E:80:ARG:NH2   | 2:E:92:PRO:HD3   | 2.35                     | 0.41              |
| 1:A:288:LYS:HB2  | 1:A:288:LYS:NZ   | 2.36                     | 0.41              |
| 2:B:224:PHE:CA   | 2:B:230:ARG:NH1  | 2.84                     | 0.41              |
| 1:D:128:THR:HA   | 1:D:129:PRO:HD3  | 1.72                     | 0.41              |
| 1:D:146:LYS:HB2  | 1:D:201:GLU:CB   | 2.49                     | 0.41              |
| 1:D:259:ASP:C    | 1:D:261:LYS:N    | 2.72                     | 0.41              |
| 2:E:191:ARG:HD3  | 4:E:409:HOH:O    | 2.20                     | 0.41              |
| 2:E:386:GLU:O    | 2:E:388:LYS:N    | 2.53                     | 0.41              |
| 1:A:104:MET:HE2  | 1:A:107:VAL:HB   | 1.94                     | 0.41              |
| 1:A:160:ALA:HB3  | 1:A:161:VAL:H    | 1.64                     | 0.41              |
| 1:A:229:VAL:O    | 1:A:229:VAL:HG13 | 2.20                     | 0.41              |
| 1:A:279:ILE:O    | 1:A:280:GLY:C    | 2.58                     | 0.41              |
| 2:B:20:PRO:HD3   | 2:B:210:ILE:CD1  | 2.51                     | 0.41              |
| 2:B:215:LYS:C    | 2:B:216:LEU:CD2  | 2.68                     | 0.41              |
| 2:B:245:ALA:HB1  | 2:B:250:LEU:HB2  | 2.03                     | 0.41              |
| 2:B:279:HIS:O    | 2:B:382:VAL:CG2  | 2.60                     | 0.41              |
| 1:D:4:ILE:HD11   | 1:D:126:VAL:HG22 | 2.01                     | 0.41              |
| 1:D:141:ILE:HG13 | 1:D:141:ILE:H    | 1.63                     | 0.41              |
| 2:E:157:PRO:CB   | 2:E:182:MET:HE3  | 2.50                     | 0.41              |
| 2:E:295:LYS:O    | 2:E:296:GLU:C    | 2.59                     | 0.41              |
| 2:E:55:GLY:O     | 2:E:58:GLY:N     | 2.32                     | 0.41              |
| 1:A:32:THR:HG23  | 1:A:132:CYS:SG   | 2.60                     | 0.41              |
| 1:A:54:ASN:N     | 1:A:58:GLU:OE1   | 2.54                     | 0.41              |
| 2:B:150:ASP:O    | 2:B:153:THR:O    | 2.38                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:186:THR:O    | 2:B:187:ILE:C    | 2.59                     | 0.41              |
| 2:B:241:ARG:NH2  | 2:B:254:ALA:HB2  | 2.35                     | 0.41              |
| 1:D:109:VAL:H    | 1:D:109:VAL:HG23 | 1.63                     | 0.41              |
| 1:D:136:ILE:O    | 1:D:137:GLN:O    | 2.39                     | 0.41              |
| 1:D:158:TYR:C    | 1:D:161:VAL:HG23 | 2.40                     | 0.41              |
| 1:D:26:GLN:H     | 1:D:26:GLN:HG2   | 1.35                     | 0.41              |
| 1:D:39:THR:O     | 1:D:40:PRO:C     | 2.56                     | 0.41              |
| 2:E:216:LEU:HD22 | 2:E:216:LEU:HA   | 1.85                     | 0.41              |
| 1:A:112:ASP:C    | 1:A:114:ALA:N    | 2.71                     | 0.41              |
| 2:B:137:ALA:C    | 2:B:139:GLU:N    | 2.74                     | 0.41              |
| 2:B:141:PRO:CD   | 2:B:142:HIS:H    | 2.33                     | 0.41              |
| 2:B:84:TYR:CZ    | 2:B:85:GLN:HG3   | 2.56                     | 0.41              |
| 2:B:82:VAL:CG2   | 2:B:90:GLY:CA    | 2.99                     | 0.41              |
| 1:D:133:LYS:C    | 1:D:134:ILE:HG12 | 2.34                     | 0.41              |
| 1:D:158:TYR:CD1  | 1:D:158:TYR:N    | 2.89                     | 0.41              |
| 1:D:257:THR:HG1  | 1:D:260:GLU:HB2  | 1.71                     | 0.41              |
| 2:E:324:ARG:CG   | 2:E:326:ASP:OD2  | 2.68                     | 0.41              |
| 2:B:155:PRO:C    | 2:B:156:MET:HG2  | 2.40                     | 0.41              |
| 2:B:4:HIS:O      | 2:B:5:GLU:C      | 2.59                     | 0.41              |
| 1:D:218:ALA:C    | 1:D:220:TYR:N    | 2.69                     | 0.41              |
| 1:D:53:PHE:CE2   | 1:D:62:ALA:HB3   | 2.55                     | 0.41              |
| 2:E:28:PRO:O     | 2:E:32:GLU:CB    | 2.69                     | 0.41              |
| 2:E:325:CYS:HB2  | 2:E:354:ALA:CA   | 2.47                     | 0.41              |
| 1:A:208:GLU:H    | 1:A:208:GLU:HG2  | 1.77                     | 0.41              |
| 1:A:53:PHE:CD2   | 1:A:59:ALA:HA    | 2.56                     | 0.41              |
| 1:A:95:ILE:O     | 1:A:122:ASN:HA   | 2.21                     | 0.41              |
| 1:D:147:VAL:O    | 1:D:171:GLN:HA   | 2.21                     | 0.41              |
| 2:E:182:MET:O    | 2:E:186:THR:OG1  | 2.29                     | 0.41              |
| 2:E:324:ARG:HD3  | 2:E:327:LEU:HD12 | 2.01                     | 0.41              |
| 1:A:104:MET:O    | 1:A:107:VAL:N    | 2.52                     | 0.41              |
| 1:A:133:LYS:O    | 1:A:134:ILE:HG23 | 2.21                     | 0.41              |
| 1:A:172:SER:HA   | 1:A:199:GLN:NE2  | 2.36                     | 0.41              |
| 1:A:27:ALA:HB1   | 1:A:32:THR:HB    | 2.02                     | 0.41              |
| 1:A:89:ILE:HD12  | 1:A:89:ILE:HG23  | 1.73                     | 0.41              |
| 2:B:313:ALA:HA   | 2:B:343:VAL:CG1  | 2.45                     | 0.41              |
| 2:B:318:ILE:HG22 | 2:B:319:PHE:N    | 2.28                     | 0.41              |
| 1:D:13:GLN:HG3   | 1:D:68:SER:OG    | 2.21                     | 0.41              |
| 2:E:195:LEU:CD2  | 2:E:195:LEU:C    | 2.88                     | 0.41              |
| 2:E:20:PRO:CD    | 2:E:210:ILE:HD11 | 2.51                     | 0.41              |
| 2:E:249:GLU:O    | 2:E:250:LEU:HD23 | 2.21                     | 0.41              |
| 1:A:72:VAL:CG1   | 1:A:73:PRO:CD    | 2.98                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:B:191:ARG:O    | 2:B:192:ASP:C    | 2.60                     | 0.41              |
| 1:D:119:ILE:HD13 | 1:D:119:ILE:HA   | 1.68                     | 0.41              |
| 1:D:89:ILE:HA    | 1:D:89:ILE:HD13  | 1.86                     | 0.41              |
| 1:D:69:VAL:HA    | 1:D:93:ILE:O     | 2.21                     | 0.41              |
| 2:E:229:LEU:HD23 | 2:E:229:LEU:HA   | 1.45                     | 0.41              |
| 2:E:72:PHE:O     | 2:E:75:ASN:CB    | 2.69                     | 0.41              |
| 1:A:92:ILE:CB    | 1:A:118:MET:HG3  | 2.51                     | 0.40              |
| 1:A:123:CYS:CB   | 1:A:124:PRO:CD   | 2.96                     | 0.40              |
| 2:B:41:GLY:HA2   | 2:B:43:TRP:CE2   | 2.56                     | 0.40              |
| 1:D:155:THR:O    | 1:D:158:TYR:N    | 2.54                     | 0.40              |
| 1:D:283:LEU:O    | 1:D:286:VAL:CG1  | 2.63                     | 0.40              |
| 2:E:112:ALA:HB2  | 2:E:123:PHE:CD2  | 2.55                     | 0.40              |
| 2:E:248:TRP:C    | 2:E:249:GLU:HG3  | 2.41                     | 0.40              |
| 2:E:3:LEU:HA     | 2:E:3:LEU:HD23   | 1.81                     | 0.40              |
| 1:A:265:LEU:O    | 1:A:268:ALA:N    | 2.54                     | 0.40              |
| 2:B:143:LEU:C    | 2:B:144:ILE:HD12 | 2.40                     | 0.40              |
| 2:B:145:HIS:ND1  | 2:B:166:LYS:HD2  | 2.36                     | 0.40              |
| 2:B:164:ALA:HA   | 2:B:167:LEU:HD12 | 2.03                     | 0.40              |
| 2:B:328:ILE:CG2  | 2:B:329:ALA:N    | 2.46                     | 0.40              |
| 2:B:382:VAL:O    | 2:B:383:ALA:O    | 2.40                     | 0.40              |
| 1:D:203:ILE:O    | 1:D:229:VAL:HG23 | 2.05                     | 0.40              |
| 1:D:217:ALA:O    | 1:D:220:TYR:HB3  | 2.21                     | 0.40              |
| 1:D:267:ALA:O    | 1:D:269:GLY:N    | 2.53                     | 0.40              |
| 1:D:278:ASP:HB3  | 1:D:281:GLU:HB2  | 2.03                     | 0.40              |
| 1:D:283:LEU:HA   | 1:D:283:LEU:HD12 | 1.70                     | 0.40              |
| 2:E:196:ILE:CG2  | 2:E:197:GLU:N    | 2.84                     | 0.40              |
| 2:E:299:THR:O    | 2:E:302:PHE:HB2  | 2.20                     | 0.40              |
| 2:E:343:VAL:CG1  | 2:E:344:PRO:CG   | 2.92                     | 0.40              |
| 1:A:257:THR:O    | 1:A:258:ALA:C    | 2.60                     | 0.40              |
| 2:B:328:ILE:O    | 2:B:332:ILE:HG13 | 2.22                     | 0.40              |
| 2:B:386:GLU:HA   | 2:B:388:LYS:NZ   | 2.36                     | 0.40              |
| 1:D:274:ARG:HG2  | 1:D:274:ARG:NH1  | 2.27                     | 0.40              |
| 2:E:164:ALA:CB   | 2:E:169:LEU:HD12 | 2.50                     | 0.40              |
| 2:E:222:ALA:HB3  | 4:E:405:HOH:O    | 2.20                     | 0.40              |
| 2:E:298:VAL:O    | 2:E:299:THR:C    | 2.59                     | 0.40              |
| 1:A:187:PHE:O    | 1:A:188:ILE:C    | 2.58                     | 0.40              |
| 1:A:24:SER:CA    | 4:A:297:HOH:O    | 2.34                     | 0.40              |
| 1:D:195:GLU:O    | 1:D:227:LYS:CE   | 2.69                     | 0.40              |
| 1:D:220:TYR:C    | 1:D:220:TYR:CD2  | 2.95                     | 0.40              |
| 2:E:275:ILE:CG2  | 2:E:276:VAL:CA   | 2.96                     | 0.40              |
| 2:E:257:GLY:HA2  | 2:E:282:GLU:HG3  | 2.04                     | 0.40              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:E:262:MET:HE2  | 2:E:301:ALA:C    | 2.41                     | 0.40              |
| 2:E:372:LYS:HB3  | 2:E:376:ASP:OD2  | 2.21                     | 0.40              |
| 2:E:381:VAL:HG23 | 2:E:381:VAL:H    | 1.60                     | 0.40              |
| 2:E:38:ILE:HD13  | 2:E:38:ILE:HG21  | 1.81                     | 0.40              |
| 2:E:63:VAL:HG13  | 2:E:64:ASN:H     | 1.87                     | 0.40              |
| 1:A:273:VAL:HG11 | 1:A:275:SER:O    | 2.22                     | 0.40              |
| 3:A:289:COA:O9P  | 3:A:289:COA:H131 | 2.18                     | 0.40              |
| 2:B:103:ASP:HB3  | 2:B:205:LYS:HB2  | 2.04                     | 0.40              |
| 2:B:209:LEU:HA   | 2:B:209:LEU:HD23 | 1.68                     | 0.40              |
| 1:D:50:LEU:CB    | 1:D:51:PRO:CD    | 2.97                     | 0.40              |
| 2:E:11:LEU:HA    | 2:E:11:LEU:HD23  | 1.77                     | 0.40              |

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

| Mol | Chain | Analysed        | Favoured   | Allowed   | Outliers | Percentiles |   |
|-----|-------|-----------------|------------|-----------|----------|-------------|---|
| 1   | A     | 285/288 (99%)   | 209 (73%)  | 52 (18%)  | 24 (8%)  | 1           | 1 |
| 1   | D     | 285/288 (99%)   | 207 (73%)  | 53 (19%)  | 25 (9%)  | 1           | 0 |
| 2   | B     | 386/388 (100%)  | 315 (82%)  | 59 (15%)  | 12 (3%)  | 4           | 5 |
| 2   | E     | 386/388 (100%)  | 307 (80%)  | 57 (15%)  | 22 (6%)  | 1           | 1 |
| All | All   | 1342/1352 (99%) | 1038 (77%) | 221 (16%) | 83 (6%)  | 1           | 1 |

All (83) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 163 | GLN  |
| 1   | A     | 164 | THR  |
| 1   | A     | 213 | ALA  |
| 1   | A     | 219 | ALA  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 221        | ILE         |
| 1          | A            | 252        | ALA         |
| 1          | A            | 281        | GLU         |
| 1          | A            | 285        | THR         |
| 2          | B            | 87         | ASP         |
| 2          | B            | 293        | ALA         |
| 2          | B            | 383        | ALA         |
| 1          | D            | 3          | LEU         |
| 1          | D            | 96         | THR         |
| 1          | D            | 140        | HIS         |
| 1          | D            | 161        | VAL         |
| 1          | D            | 218        | ALA         |
| 1          | D            | 219        | ALA         |
| 2          | E            | 88         | ALA         |
| 2          | E            | 90         | GLY         |
| 2          | E            | 140        | THR         |
| 2          | E            | 320        | GLY         |
| 2          | E            | 324        | ARG         |
| 2          | E            | 327        | LEU         |
| 2          | E            | 384        | ALA         |
| 1          | A            | 139        | GLY         |
| 1          | A            | 140        | HIS         |
| 1          | A            | 161        | VAL         |
| 1          | A            | 188        | ILE         |
| 1          | A            | 189        | ASP         |
| 1          | A            | 220        | TYR         |
| 1          | A            | 245        | GLY         |
| 1          | A            | 254        | GLY         |
| 1          | A            | 286        | VAL         |
| 2          | B            | 136        | VAL         |
| 2          | B            | 141        | PRO         |
| 2          | B            | 320        | GLY         |
| 2          | B            | 372        | LYS         |
| 2          | B            | 374        | LEU         |
| 1          | D            | 139        | GLY         |
| 1          | D            | 169        | PHE         |
| 1          | D            | 245        | GLY         |
| 1          | D            | 253        | GLY         |
| 1          | D            | 264        | ALA         |
| 1          | D            | 285        | THR         |
| 2          | E            | 247        | GLN         |
| 2          | E            | 269        | ALA         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | E     | 295 | LYS  |
| 2   | E     | 325 | CYS  |
| 2   | E     | 337 | ALA  |
| 2   | E     | 387 | GLY  |
| 1   | A     | 282 | ALA  |
| 2   | B     | 384 | ALA  |
| 1   | D     | 62  | ALA  |
| 1   | D     | 263 | ALA  |
| 1   | D     | 278 | ASP  |
| 1   | D     | 284 | LYS  |
| 2   | E     | 293 | ALA  |
| 2   | E     | 352 | ASN  |
| 1   | A     | 22  | PHE  |
| 1   | A     | 160 | ALA  |
| 2   | B     | 363 | ASP  |
| 1   | D     | 18  | SER  |
| 2   | E     | 132 | GLU  |
| 2   | E     | 135 | LYS  |
| 2   | E     | 141 | PRO  |
| 2   | E     | 326 | ASP  |
| 2   | E     | 338 | GLU  |
| 2   | E     | 383 | ALA  |
| 2   | B     | 206 | GLN  |
| 1   | D     | 23  | HIS  |
| 1   | D     | 138 | PRO  |
| 1   | D     | 187 | PHE  |
| 1   | D     | 212 | SER  |
| 1   | D     | 260 | GLU  |
| 1   | A     | 74  | ALA  |
| 1   | A     | 187 | PHE  |
| 1   | A     | 214 | GLU  |
| 1   | A     | 218 | ALA  |
| 2   | B     | 166 | LYS  |
| 1   | D     | 162 | LYS  |
| 1   | D     | 183 | PRO  |
| 1   | D     | 35  | VAL  |
| 2   | E     | 323 | VAL  |

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

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

resolution.

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

| Mol | Chain | Analysed         | Rotameric | Outliers  | Percentiles |   |
|-----|-------|------------------|-----------|-----------|-------------|---|
| 1   | A     | 217/217 (100%)   | 169 (78%) | 48 (22%)  | 1           | 1 |
| 1   | D     | 217/217 (100%)   | 159 (73%) | 58 (27%)  | 0           | 0 |
| 2   | B     | 298/298 (100%)   | 221 (74%) | 77 (26%)  | 0           | 1 |
| 2   | E     | 298/298 (100%)   | 218 (73%) | 80 (27%)  | 0           | 0 |
| All | All   | 1030/1030 (100%) | 767 (74%) | 263 (26%) | 0           | 1 |

All (263) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 4   | ILE  |
| 1   | A     | 6   | LYS  |
| 1   | A     | 21  | THR  |
| 1   | A     | 26  | GLN  |
| 1   | A     | 35  | VAL  |
| 1   | A     | 48  | LEU  |
| 1   | A     | 69  | VAL  |
| 1   | A     | 77  | CYS  |
| 1   | A     | 80  | SER  |
| 1   | A     | 82  | LEU  |
| 1   | A     | 90  | LYS  |
| 1   | A     | 94  | THR  |
| 1   | A     | 95  | ILE  |
| 1   | A     | 96  | THR  |
| 1   | A     | 97  | GLU  |
| 1   | A     | 99  | ILE  |
| 1   | A     | 102 | LEU  |
| 1   | A     | 104 | MET  |
| 1   | A     | 113 | GLU  |
| 1   | A     | 126 | VAL  |
| 1   | A     | 128 | THR  |
| 1   | A     | 132 | CYS  |
| 1   | A     | 133 | LYS  |
| 1   | A     | 134 | ILE  |
| 1   | A     | 136 | ILE  |
| 1   | A     | 137 | GLN  |
| 1   | A     | 149 | ILE  |
| 1   | A     | 155 | THR  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 166        | ASP         |
| 1          | A            | 172        | SER         |
| 1          | A            | 193        | MET         |
| 1          | A            | 196        | LYS         |
| 1          | A            | 212        | SER         |
| 1          | A            | 216        | GLU         |
| 1          | A            | 221        | ILE         |
| 1          | A            | 223        | GLU         |
| 1          | A            | 225        | VAL         |
| 1          | A            | 226        | THR         |
| 1          | A            | 233        | ILE         |
| 1          | A            | 250        | ILE         |
| 1          | A            | 255        | LYS         |
| 1          | A            | 262        | PHE         |
| 1          | A            | 266        | GLU         |
| 1          | A            | 272        | THR         |
| 1          | A            | 274        | ARG         |
| 1          | A            | 283        | LEU         |
| 1          | A            | 286        | VAL         |
| 1          | A            | 287        | LEU         |
| 2          | B            | 3          | LEU         |
| 2          | B            | 14         | ARG         |
| 2          | B            | 32         | GLU         |
| 2          | B            | 36         | SER         |
| 2          | B            | 43         | TRP         |
| 2          | B            | 45         | VAL         |
| 2          | B            | 49         | VAL         |
| 2          | B            | 54         | ARG         |
| 2          | B            | 61         | LYS         |
| 2          | B            | 64         | ASN         |
| 2          | B            | 67         | GLU         |
| 2          | B            | 68         | ASP         |
| 2          | B            | 70         | ARG         |
| 2          | B            | 79         | LYS         |
| 2          | B            | 81         | LEU         |
| 2          | B            | 86         | THR         |
| 2          | B            | 87         | ASP         |
| 2          | B            | 97         | LEU         |
| 2          | B            | 102        | THR         |
| 2          | B            | 109        | TYR         |
| 2          | B            | 110        | LEU         |
| 2          | B            | 120        | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 2          | B            | 121        | VAL         |
| 2          | B            | 122        | VAL         |
| 2          | B            | 124        | MET         |
| 2          | B            | 126        | SER         |
| 2          | B            | 127        | THR         |
| 2          | B            | 128        | GLU         |
| 2          | B            | 133        | ILE         |
| 2          | B            | 140        | THR         |
| 2          | B            | 144        | ILE         |
| 2          | B            | 147        | VAL         |
| 2          | B            | 152        | LEU         |
| 2          | B            | 158        | TYR         |
| 2          | B            | 179        | LYS         |
| 2          | B            | 180        | ILE         |
| 2          | B            | 184        | LEU         |
| 2          | B            | 187        | ILE         |
| 2          | B            | 195        | LEU         |
| 2          | B            | 202        | VAL         |
| 2          | B            | 205        | LYS         |
| 2          | B            | 210        | ILE         |
| 2          | B            | 211        | CYS         |
| 2          | B            | 232        | MET         |
| 2          | B            | 233        | ARG         |
| 2          | B            | 235        | GLN         |
| 2          | B            | 241        | ARG         |
| 2          | B            | 255        | LEU         |
| 2          | B            | 258        | ASN         |
| 2          | B            | 262        | MET         |
| 2          | B            | 264        | ASN         |
| 2          | B            | 275        | ILE         |
| 2          | B            | 278        | LEU         |
| 2          | B            | 285        | ASN         |
| 2          | B            | 303        | LYS         |
| 2          | B            | 311        | VAL         |
| 2          | B            | 318        | ILE         |
| 2          | B            | 319        | PHE         |
| 2          | B            | 327        | LEU         |
| 2          | B            | 333        | ILE         |
| 2          | B            | 338        | GLU         |
| 2          | B            | 339        | VAL         |
| 2          | B            | 343        | VAL         |
| 2          | B            | 348        | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 2          | B            | 349        | LEU         |
| 2          | B            | 356        | LEU         |
| 2          | B            | 360        | LYS         |
| 2          | B            | 361        | LEU         |
| 2          | B            | 364        | SER         |
| 2          | B            | 366        | LEU         |
| 2          | B            | 367        | ASN         |
| 2          | B            | 374        | LEU         |
| 2          | B            | 375        | THR         |
| 2          | B            | 380        | GLN         |
| 2          | B            | 381        | VAL         |
| 2          | B            | 386        | GLU         |
| 2          | B            | 388        | LYS         |
| 1          | D            | 1          | SER         |
| 1          | D            | 3          | LEU         |
| 1          | D            | 4          | ILE         |
| 1          | D            | 5          | ASP         |
| 1          | D            | 11         | ILE         |
| 1          | D            | 12         | CYS         |
| 1          | D            | 16         | THR         |
| 1          | D            | 26         | GLN         |
| 1          | D            | 28         | ILE         |
| 1          | D            | 34         | MET         |
| 1          | D            | 35         | VAL         |
| 1          | D            | 46         | THR         |
| 1          | D            | 48         | LEU         |
| 1          | D            | 52         | VAL         |
| 1          | D            | 69         | VAL         |
| 1          | D            | 77         | CYS         |
| 1          | D            | 97         | GLU         |
| 1          | D            | 102        | LEU         |
| 1          | D            | 105        | LEU         |
| 1          | D            | 117        | ARG         |
| 1          | D            | 127        | ILE         |
| 1          | D            | 128        | THR         |
| 1          | D            | 131        | GLU         |
| 1          | D            | 132        | CYS         |
| 1          | D            | 133        | LYS         |
| 1          | D            | 134        | ILE         |
| 1          | D            | 136        | ILE         |
| 1          | D            | 137        | GLN         |
| 1          | D            | 141        | ILE         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | D            | 146        | LYS         |
| 1          | D            | 147        | VAL         |
| 1          | D            | 149        | ILE         |
| 1          | D            | 152        | ARG         |
| 1          | D            | 153        | SER         |
| 1          | D            | 155        | THR         |
| 1          | D            | 161        | VAL         |
| 1          | D            | 172        | SER         |
| 1          | D            | 173        | THR         |
| 1          | D            | 174        | CYS         |
| 1          | D            | 185        | SER         |
| 1          | D            | 190        | ILE         |
| 1          | D            | 193        | MET         |
| 1          | D            | 221        | ILE         |
| 1          | D            | 222        | LYS         |
| 1          | D            | 229        | VAL         |
| 1          | D            | 237        | THR         |
| 1          | D            | 243        | ARG         |
| 1          | D            | 250        | ILE         |
| 1          | D            | 262        | PHE         |
| 1          | D            | 265        | LEU         |
| 1          | D            | 272        | THR         |
| 1          | D            | 273        | VAL         |
| 1          | D            | 274        | ARG         |
| 1          | D            | 276        | LEU         |
| 1          | D            | 278        | ASP         |
| 1          | D            | 283        | LEU         |
| 1          | D            | 287        | LEU         |
| 1          | D            | 288        | LYS         |
| 2          | E            | 2          | ASN         |
| 2          | E            | 14         | ARG         |
| 2          | E            | 26         | THR         |
| 2          | E            | 36         | SER         |
| 2          | E            | 37         | LYS         |
| 2          | E            | 43         | TRP         |
| 2          | E            | 45         | VAL         |
| 2          | E            | 49         | VAL         |
| 2          | E            | 56         | LYS         |
| 2          | E            | 61         | LYS         |
| 2          | E            | 70         | ARG         |
| 2          | E            | 79         | LYS         |
| 2          | E            | 81         | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 2          | E            | 89         | ASN         |
| 2          | E            | 96         | ILE         |
| 2          | E            | 97         | LEU         |
| 2          | E            | 103        | ASP         |
| 2          | E            | 106        | LYS         |
| 2          | E            | 110        | LEU         |
| 2          | E            | 113        | VAL         |
| 2          | E            | 119        | ARG         |
| 2          | E            | 124        | MET         |
| 2          | E            | 128        | GLU         |
| 2          | E            | 132        | GLU         |
| 2          | E            | 133        | ILE         |
| 2          | E            | 135        | LYS         |
| 2          | E            | 138        | GLU         |
| 2          | E            | 146        | LYS         |
| 2          | E            | 152        | LEU         |
| 2          | E            | 159        | GLN         |
| 2          | E            | 179        | LYS         |
| 2          | E            | 180        | ILE         |
| 2          | E            | 187        | ILE         |
| 2          | E            | 190        | GLU         |
| 2          | E            | 205        | LYS         |
| 2          | E            | 208        | ASP         |
| 2          | E            | 215        | LYS         |
| 2          | E            | 216        | LEU         |
| 2          | E            | 225        | ARG         |
| 2          | E            | 226        | GLN         |
| 2          | E            | 230        | ARG         |
| 2          | E            | 235        | GLN         |
| 2          | E            | 241        | ARG         |
| 2          | E            | 255        | LEU         |
| 2          | E            | 256        | ASP         |
| 2          | E            | 258        | ASN         |
| 2          | E            | 262        | MET         |
| 2          | E            | 268        | LEU         |
| 2          | E            | 270        | MET         |
| 2          | E            | 275        | ILE         |
| 2          | E            | 277        | LYS         |
| 2          | E            | 278        | LEU         |
| 2          | E            | 282        | GLU         |
| 2          | E            | 294        | THR         |
| 2          | E            | 295        | LYS         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 2          | E            | 307        | SER         |
| 2          | E            | 310        | LYS         |
| 2          | E            | 312        | LYS         |
| 2          | E            | 318        | ILE         |
| 2          | E            | 322        | ILE         |
| 2          | E            | 325        | CYS         |
| 2          | E            | 339        | VAL         |
| 2          | E            | 341        | VAL         |
| 2          | E            | 342        | ASN         |
| 2          | E            | 347        | VAL         |
| 2          | E            | 352        | ASN         |
| 2          | E            | 355        | GLU         |
| 2          | E            | 356        | LEU         |
| 2          | E            | 360        | LYS         |
| 2          | E            | 361        | LEU         |
| 2          | E            | 366        | LEU         |
| 2          | E            | 367        | ASN         |
| 2          | E            | 368        | ILE         |
| 2          | E            | 369        | ILE         |
| 2          | E            | 374        | LEU         |
| 2          | E            | 375        | THR         |
| 2          | E            | 380        | GLN         |
| 2          | E            | 385        | VAL         |
| 2          | E            | 386        | GLU         |
| 2          | E            | 388        | LYS         |

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 23         | HIS         |
| 1          | A            | 137        | GLN         |
| 1          | A            | 224        | HIS         |
| 2          | B            | 4          | HIS         |
| 2          | B            | 64         | ASN         |
| 2          | B            | 95         | GLN         |
| 2          | B            | 142        | HIS         |
| 2          | B            | 159        | GLN         |
| 2          | B            | 235        | GLN         |
| 2          | B            | 258        | ASN         |
| 2          | B            | 285        | ASN         |
| 2          | B            | 367        | ASN         |
| 2          | B            | 380        | GLN         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | D     | 137 | GLN  |
| 2   | E     | 4   | HIS  |
| 2   | E     | 10  | GLN  |
| 2   | E     | 50  | HIS  |
| 2   | E     | 89  | ASN  |
| 2   | E     | 142 | HIS  |
| 2   | E     | 176 | GLN  |
| 2   | E     | 226 | GLN  |
| 2   | E     | 235 | GLN  |
| 2   | E     | 258 | ASN  |
| 2   | E     | 264 | ASN  |
| 2   | E     | 352 | ASN  |
| 2   | E     | 367 | ASN  |

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

2 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 1   | NEP  | A     | 246 | 1    | 10,14,15     | 1.51 | 2 (20%)  | 5,20,22     | 2.50 | 3 (60%)  |
| 1   | NEP  | D     | 246 | 1    | 10,14,15     | 1.70 | 2 (20%)  | 5,20,22     | 1.96 | 2 (40%)  |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions  | Rings   |
|-----|------|-------|-----|------|---------|-----------|---------|
| 1   | NEP  | A     | 246 | 1    | -       | 0/5/12/14 | 0/1/1/1 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions  | Rings   |
|-----|------|-------|-----|------|---------|-----------|---------|
| 1   | NEP  | D     | 246 | 1    | -       | 3/5/12/14 | 0/1/1/1 |

All (4) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1   | D     | 246 | NEP  | P-O2P  | -4.09 | 1.46        | 1.54     |
| 1   | A     | 246 | NEP  | P-O2P  | -2.93 | 1.48        | 1.54     |
| 1   | D     | 246 | NEP  | P-O1P  | -2.51 | 1.49        | 1.54     |
| 1   | A     | 246 | NEP  | CD2-CG | 2.30  | 1.39        | 1.36     |

All (5) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1   | A     | 246 | NEP  | CB-CG-CD2 | 3.15  | 134.44      | 127.95   |
| 1   | A     | 246 | NEP  | CB-CA-C   | -3.02 | 105.81      | 111.47   |
| 1   | D     | 246 | NEP  | O2P-P-O3P | -2.66 | 107.70      | 113.44   |
| 1   | A     | 246 | NEP  | O1P-P-O3P | -2.59 | 107.84      | 113.44   |
| 1   | D     | 246 | NEP  | CB-CG-CD2 | 2.54  | 133.18      | 127.95   |

There are no chirality outliers.

All (3) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms        |
|-----|-------|-----|------|--------------|
| 1   | D     | 246 | NEP  | O-C-CA-CB    |
| 1   | D     | 246 | NEP  | CA-CB-CG-ND1 |
| 1   | D     | 246 | NEP  | CA-CB-CG-CD2 |

There are no ring outliers.

2 monomers are involved in 6 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 1   | A     | 246 | NEP  | 4       | 0            |
| 1   | D     | 246 | NEP  | 2       | 0            |

## 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry

2 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 3   | COA  | A     | 289 | -    | 41,50,50     | 0.94 | 1 (2%)   | 52,75,75    | 2.30 | 9 (17%)  |
| 3   | COA  | D     | 289 | -    | 41,50,50     | 0.91 | 1 (2%)   | 52,75,75    | 1.26 | 5 (9%)   |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions    | Rings   |
|-----|------|-------|-----|------|---------|-------------|---------|
| 3   | COA  | A     | 289 | -    | -       | 15/44/64/64 | 0/3/3/3 |
| 3   | COA  | D     | 289 | -    | -       | 17/44/64/64 | 0/3/3/3 |

All (2) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 3   | D     | 289 | COA  | C6P-C5P | 2.59  | 1.56        | 1.51     |
| 3   | A     | 289 | COA  | C4A-N3A | -2.26 | 1.32        | 1.35     |

All (14) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 3   | A     | 289 | COA  | O9A-P3B-O7A | 9.84  | 149.20      | 110.68   |
| 3   | A     | 289 | COA  | O8A-P3B-O7A | -8.91 | 75.80       | 110.68   |
| 3   | D     | 289 | COA  | P2A-O3A-P1A | -4.92 | 115.93      | 132.83   |
| 3   | A     | 289 | COA  | C7P-N8P-C9P | -4.59 | 114.41      | 122.59   |
| 3   | A     | 289 | COA  | O4B-C1B-C2B | -3.73 | 101.47      | 106.93   |
| 3   | A     | 289 | COA  | C5A-C6A-N6A | 3.55  | 125.75      | 120.35   |
| 3   | A     | 289 | COA  | OAP-CAP-CBP | 3.34  | 118.11      | 110.25   |
| 3   | D     | 289 | COA  | C5A-C6A-N6A | 2.86  | 124.69      | 120.35   |
| 3   | D     | 289 | COA  | O6A-CCP-CBP | 2.78  | 115.01      | 110.55   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 3   | A     | 289 | COA  | O2B-C2B-C3B | 2.49  | 118.25      | 111.17   |
| 3   | A     | 289 | COA  | CEP-CBP-CCP | 2.43  | 112.19      | 108.23   |
| 3   | A     | 289 | COA  | CDP-CBP-CCP | -2.25 | 104.56      | 108.23   |
| 3   | D     | 289 | COA  | O8A-P3B-O7A | 2.23  | 119.42      | 110.68   |
| 3   | D     | 289 | COA  | C6P-C7P-N8P | 2.14  | 116.22      | 111.90   |

There are no chirality outliers.

All (32) torsion outliers are listed below:

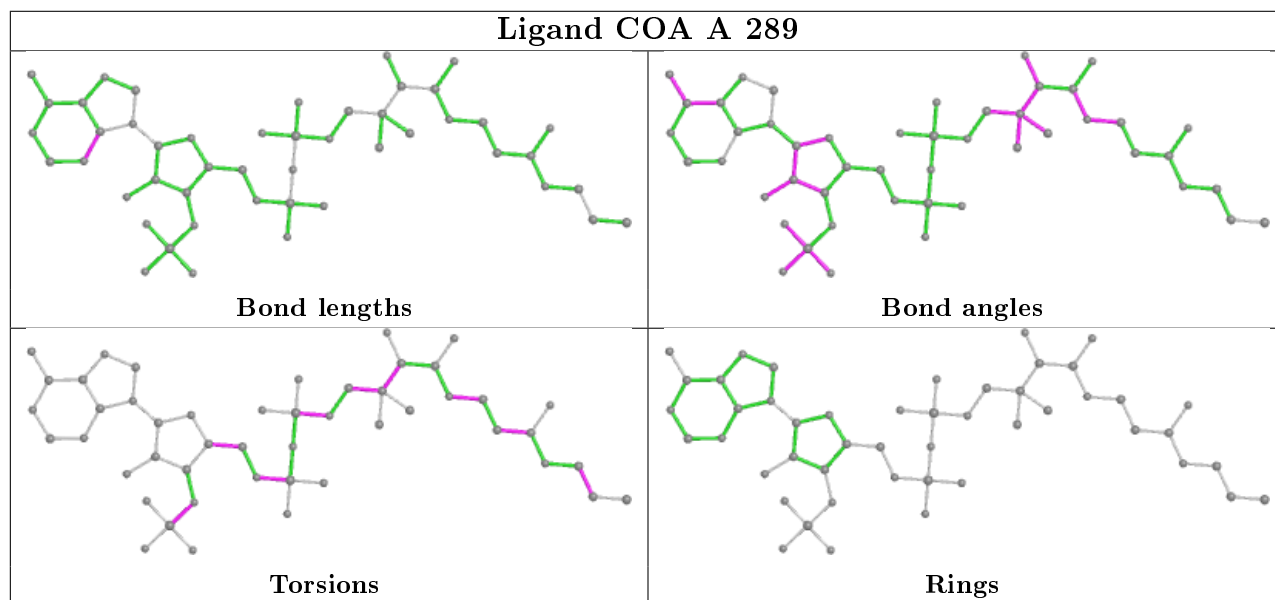
| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 3   | A     | 289 | COA  | C3B-O3B-P3B-O7A |
| 3   | A     | 289 | COA  | OAP-CAP-CBP-CCP |
| 3   | A     | 289 | COA  | C9P-CAP-CBP-CCP |
| 3   | A     | 289 | COA  | C9P-CAP-CBP-CDP |
| 3   | A     | 289 | COA  | OAP-CAP-CBP-CEP |
| 3   | A     | 289 | COA  | C9P-CAP-CBP-CEP |
| 3   | A     | 289 | COA  | S1P-C2P-C3P-N4P |
| 3   | D     | 289 | COA  | CCP-O6A-P2A-O3A |
| 3   | D     | 289 | COA  | CCP-O6A-P2A-O4A |
| 3   | D     | 289 | COA  | CCP-O6A-P2A-O5A |
| 3   | D     | 289 | COA  | CEP-CBP-CCP-O6A |
| 3   | D     | 289 | COA  | CAP-CBP-CCP-O6A |
| 3   | D     | 289 | COA  | OAP-CAP-CBP-CCP |
| 3   | D     | 289 | COA  | C9P-CAP-CBP-CCP |
| 3   | D     | 289 | COA  | OAP-CAP-CBP-CDP |
| 3   | D     | 289 | COA  | C9P-CAP-CBP-CDP |
| 3   | D     | 289 | COA  | OAP-CAP-CBP-CEP |
| 3   | D     | 289 | COA  | C9P-CAP-CBP-CEP |
| 3   | A     | 289 | COA  | C6P-C7P-N8P-C9P |
| 3   | D     | 289 | COA  | C6P-C7P-N8P-C9P |
| 3   | D     | 289 | COA  | C2B-C3B-O3B-P3B |
| 3   | D     | 289 | COA  | CDP-CBP-CCP-O6A |
| 3   | D     | 289 | COA  | C4B-C3B-O3B-P3B |
| 3   | A     | 289 | COA  | OAP-CAP-CBP-CDP |
| 3   | A     | 289 | COA  | O4B-C4B-C5B-O5B |
| 3   | D     | 289 | COA  | C3B-O3B-P3B-O7A |
| 3   | A     | 289 | COA  | C5B-O5B-P1A-O1A |
| 3   | A     | 289 | COA  | CDP-CBP-CCP-O6A |
| 3   | A     | 289 | COA  | CEP-CBP-CCP-O6A |
| 3   | A     | 289 | COA  | O5P-C5P-C6P-C7P |
| 3   | D     | 289 | COA  | O4B-C4B-C5B-O5B |
| 3   | A     | 289 | COA  | CCP-O6A-P2A-O4A |

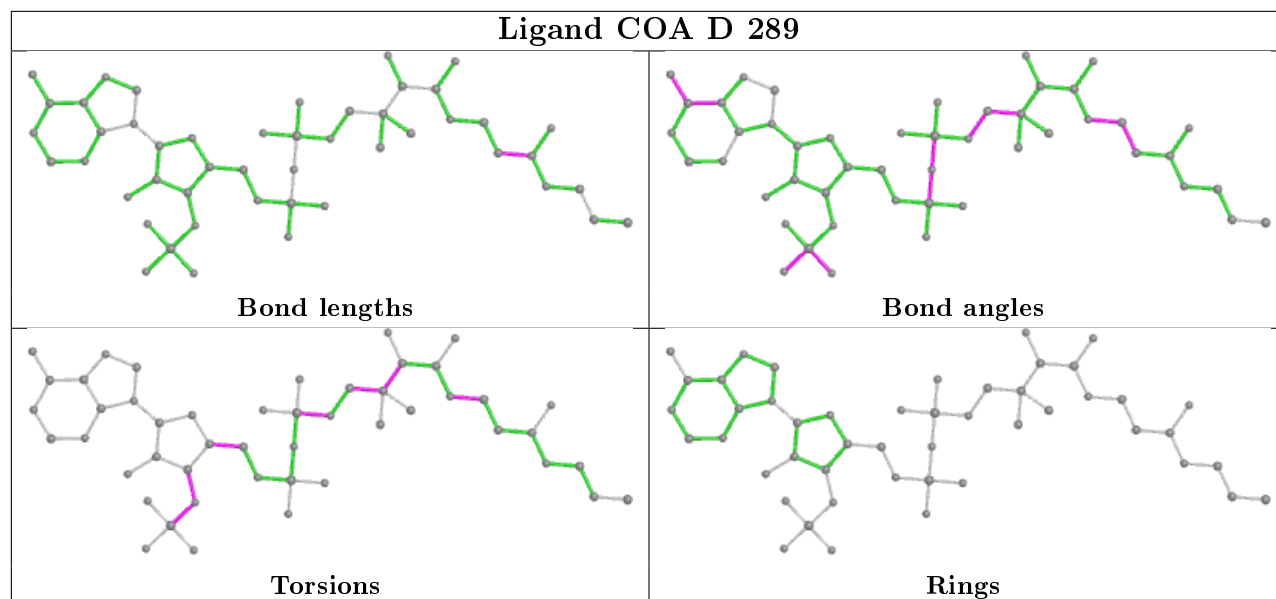
There are no ring outliers.

2 monomers are involved in 30 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 3   | A     | 289 | COA  | 13      | 0            |
| 3   | D     | 289 | COA  | 17      | 0            |

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





## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

### 6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

### 6.4 Ligands

EDS was not executed - this section is therefore empty.

### 6.5 Other polymers

EDS was not executed - this section is therefore empty.