



## Full wwPDB EM Validation Report ⓘ

Apr 27, 2024 – 10:52 pm BST

PDB ID : 2J9I  
EMDB ID : EMD-1290  
Title : Lengsin is a survivor of an ancient family of class I glutamine synthetases in eukaryotes that has undergone evolutionary re-engineering for a tissue-specific role in the vertebrate eye lens.  
Authors : Wyatt, K.; White, H.E.; Wang, L.; Bateman, O.A.; Slingsby, C.; Orlova, E.V.; Wistow, G.  
Deposited on : 2006-11-09  
Resolution : 17.00 Å(reported)  
Based on initial model : 1F52

This is a Full wwPDB EM 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/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev92  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36.2

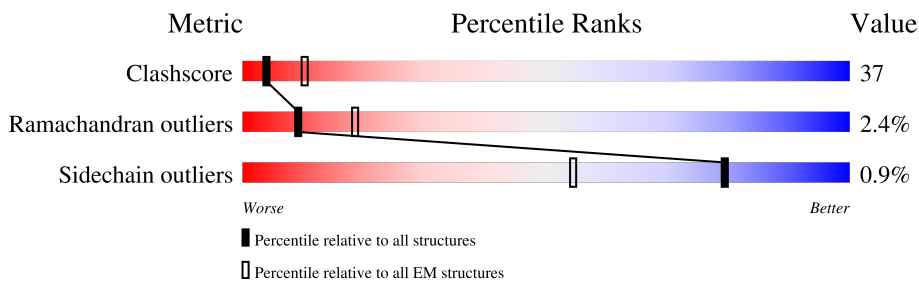
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 17.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.






| Metric                | Whole archive (#Entries) | EM structures (#Entries) |
|-----------------------|--------------------------|--------------------------|
| Clashscore            | 158937                   | 4297                     |
| Ramachandran outliers | 154571                   | 4023                     |
| Sidechain outliers    | 154315                   | 3826                     |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | A     | 421    | 68%<br>81% 18% . |
| 1   | B     | 421    | 68%<br>81% 18% . |
| 1   | C     | 421    | 67%<br>82% 17% . |
| 1   | D     | 421    | 69%<br>82% 17% . |
| 1   | E     | 421    | 69%<br>82% 17% . |
| 1   | F     | 421    | 67%<br>82% 17% . |
| 1   | G     | 421    | 68%<br>81% 18% . |
| 1   | H     | 421    | 67%<br>82% 17% . |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 1   | I     | 421    |  |
| 1   | J     | 421    |  |
| 1   | K     | 421    |  |
| 1   | L     | 421    |  |

## 2 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 33420 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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.

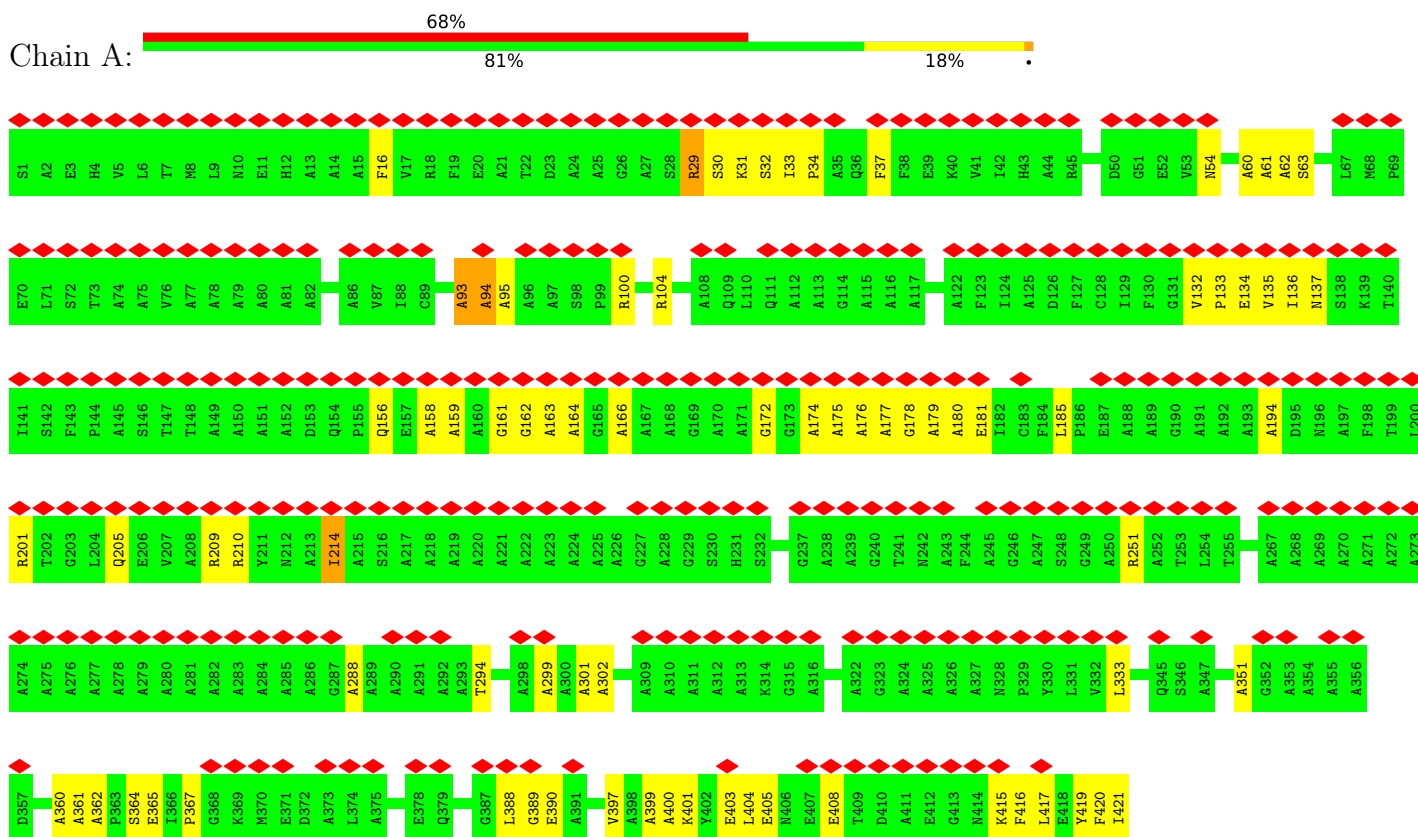
- Molecule 1 is a protein called GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 1   | A     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | B     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | C     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | D     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | E     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | F     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | G     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | H     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | I     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | J     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | K     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |
| 1   | L     | 421      | 2785  | 1731 | 492 | 554 | 8 | 0       | 0     |

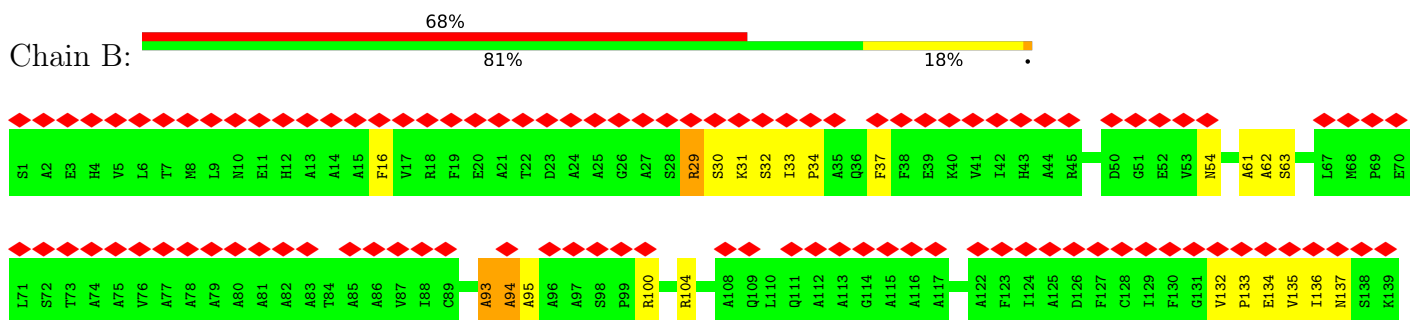
### 3 Residue-property plots

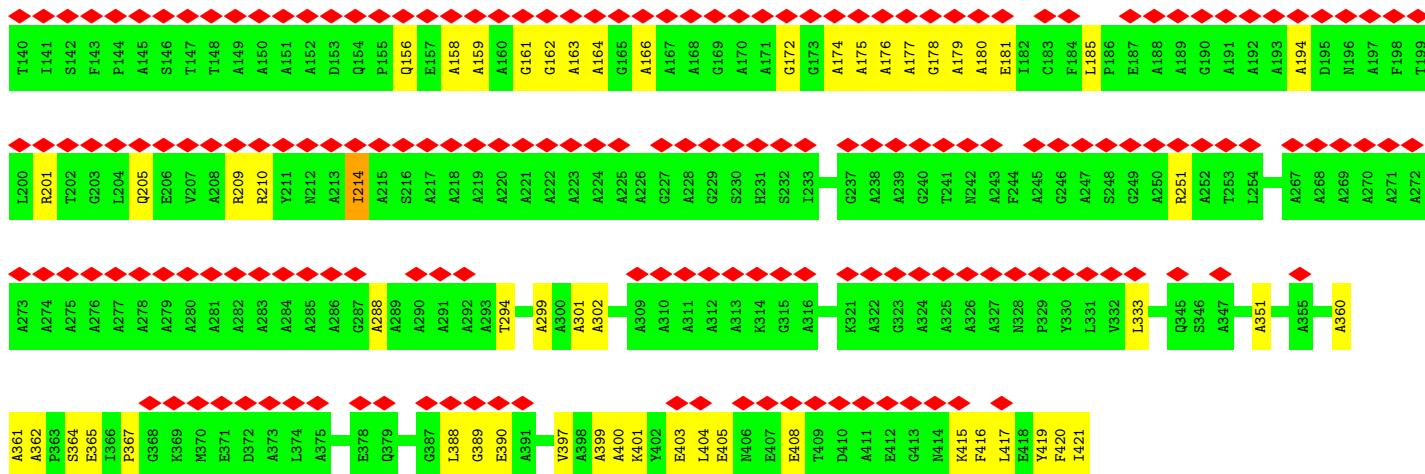
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1

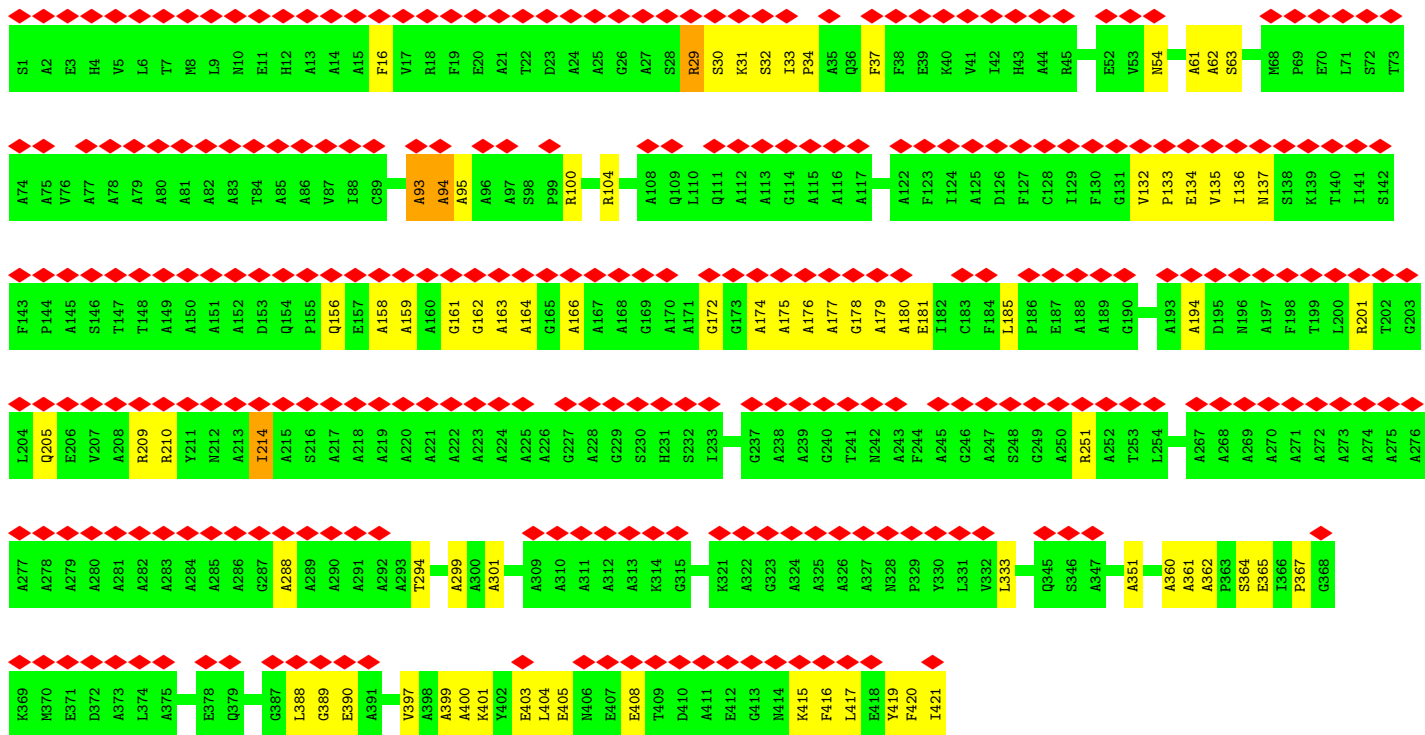
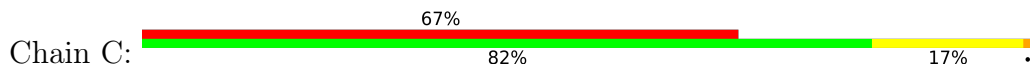


- Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1

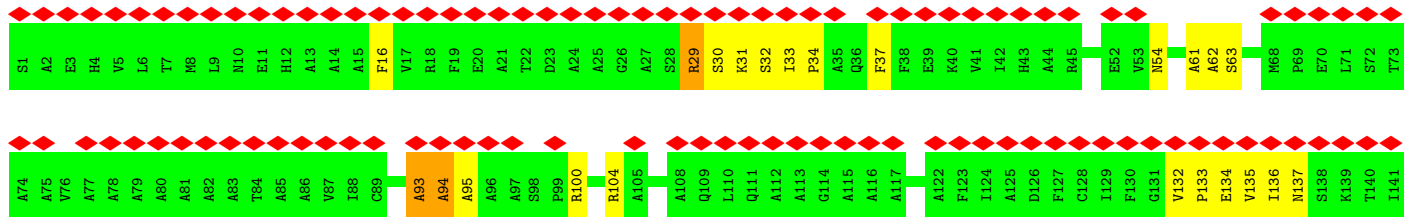
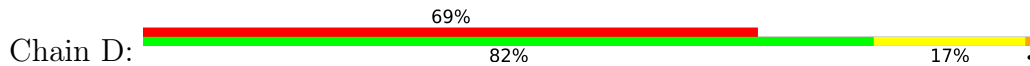


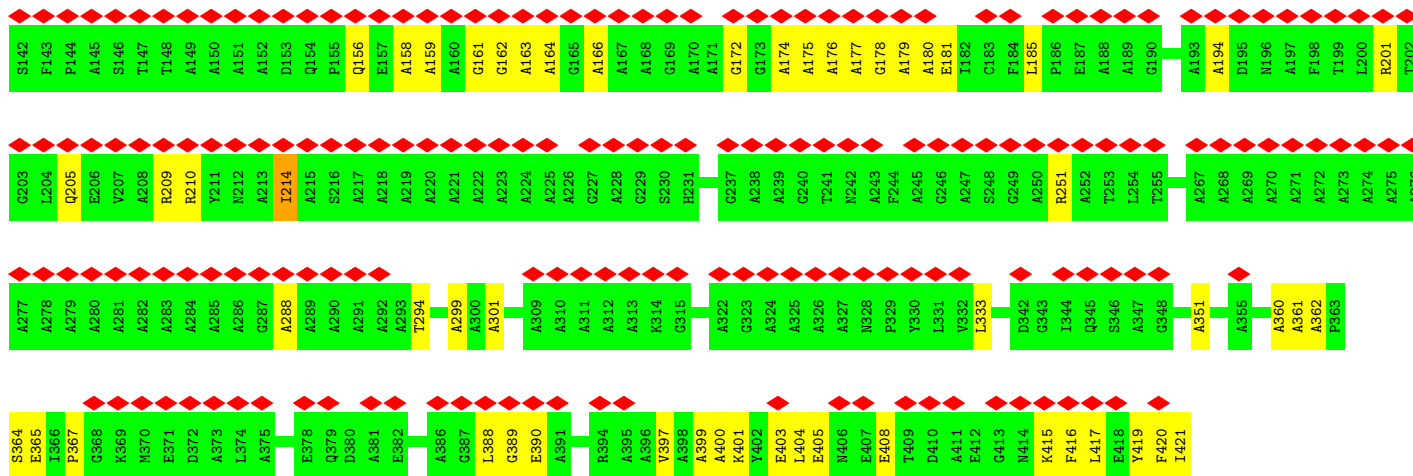


• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1

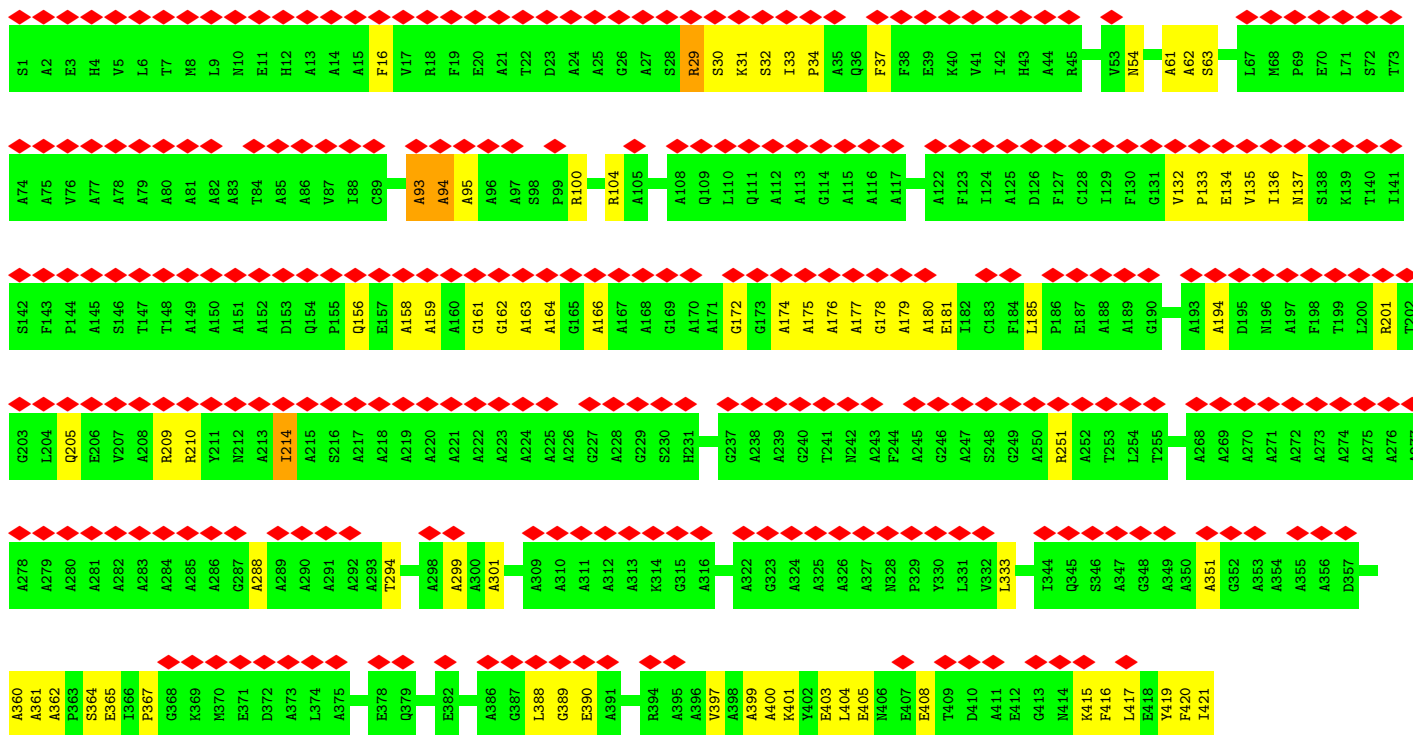
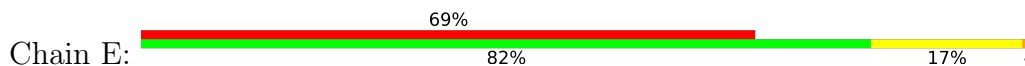


• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1

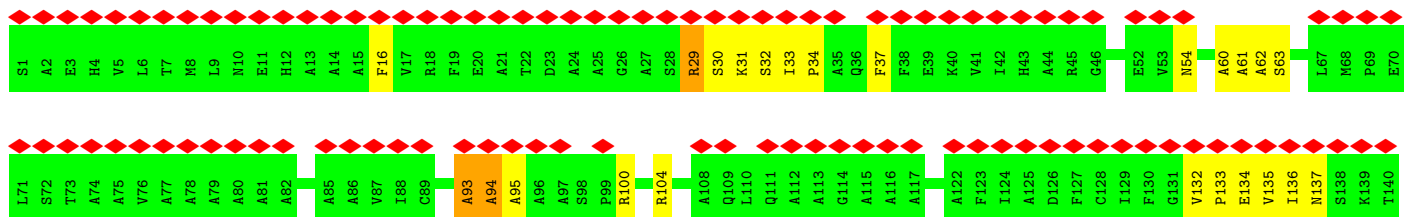
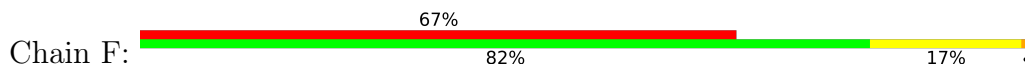


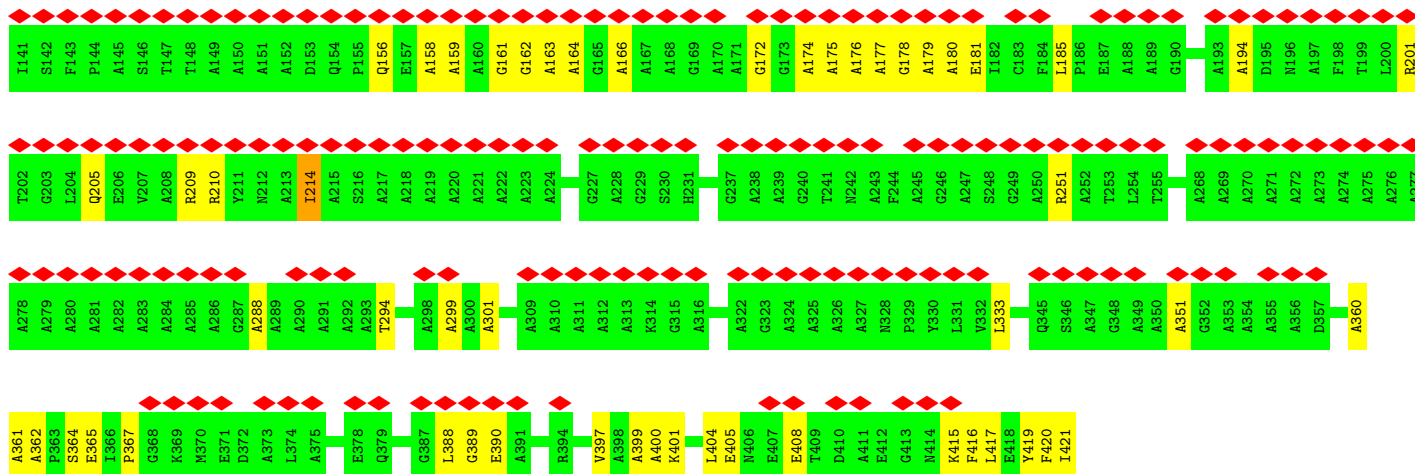


• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1

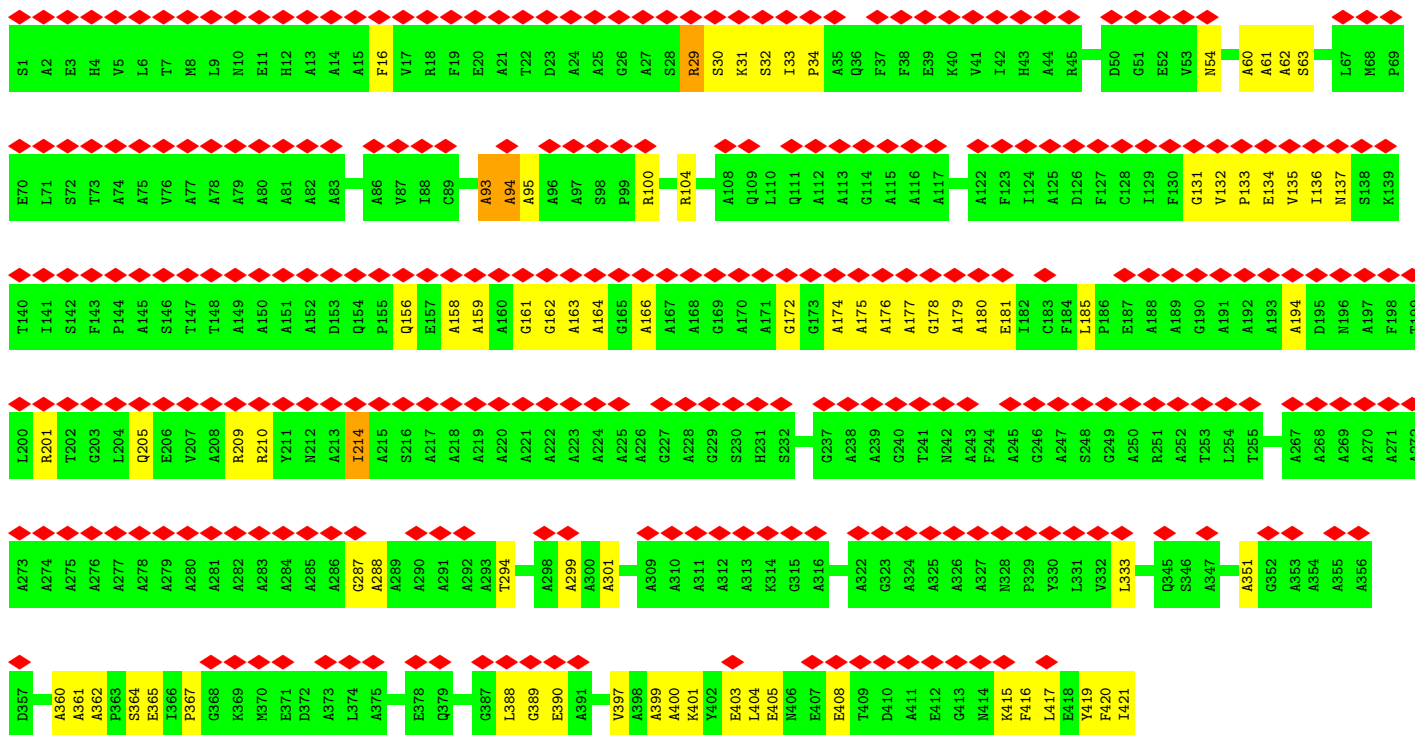
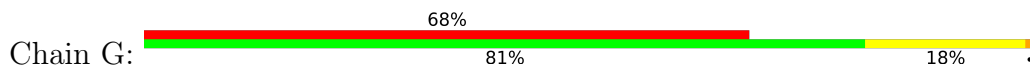


• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1

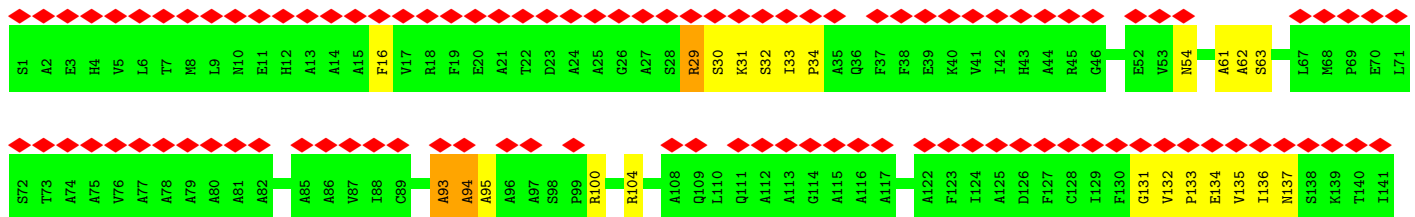
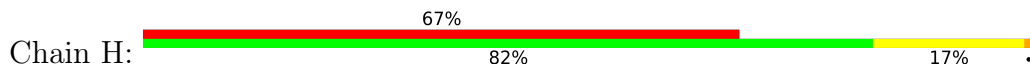




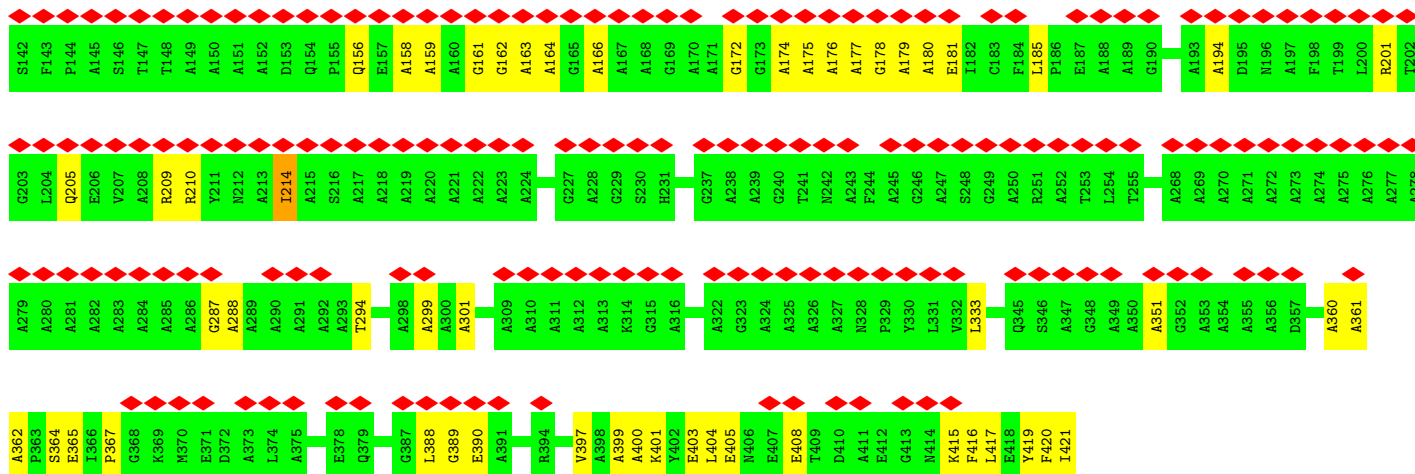
• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1



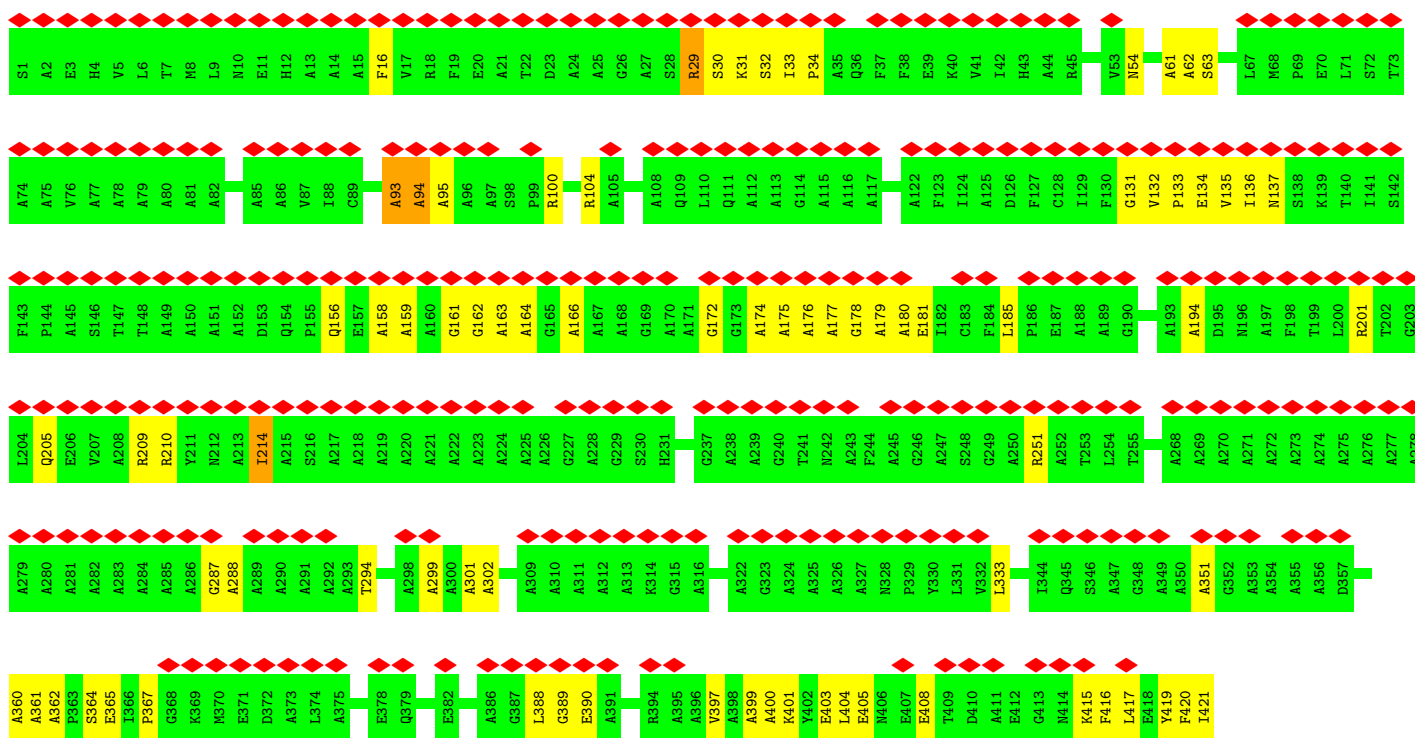
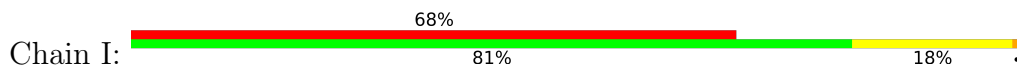
• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1



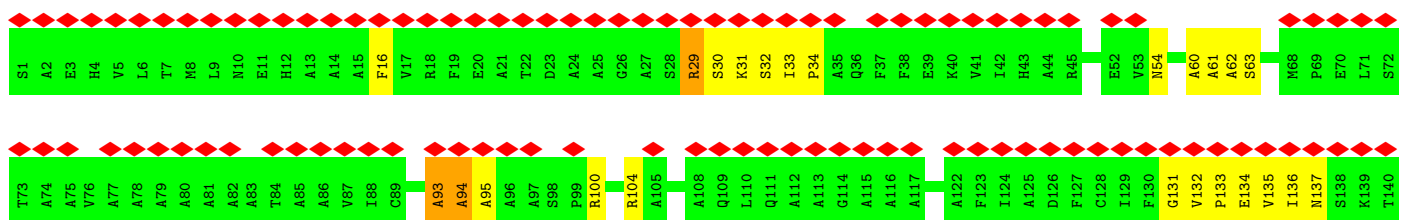
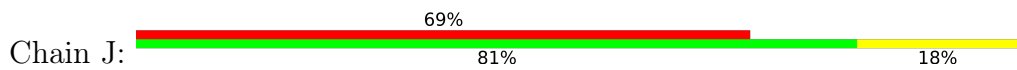


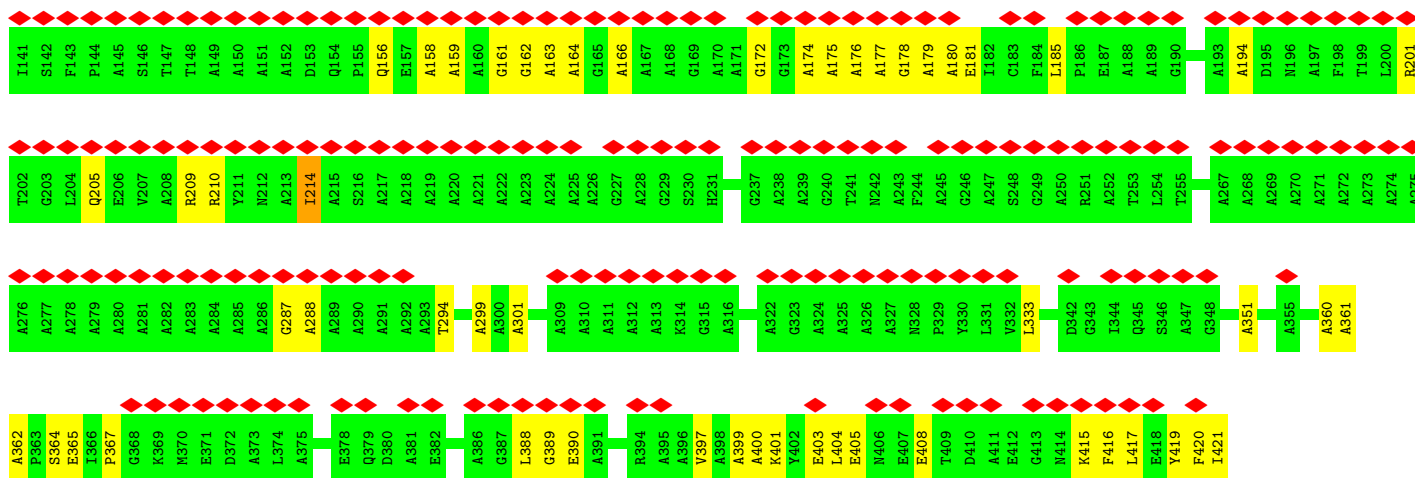


• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1

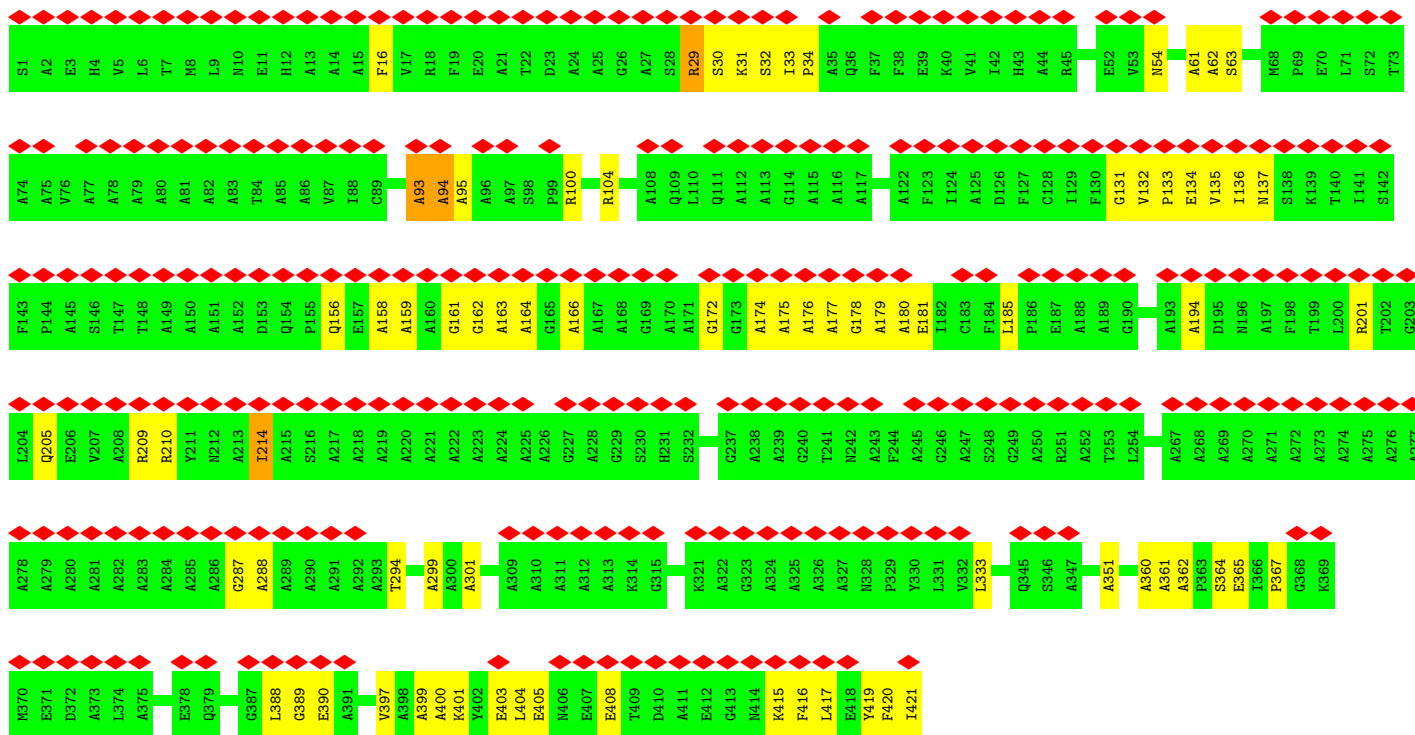
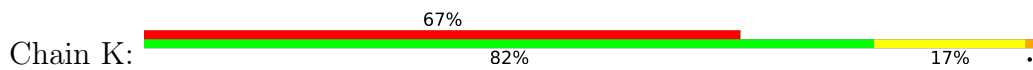


• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1

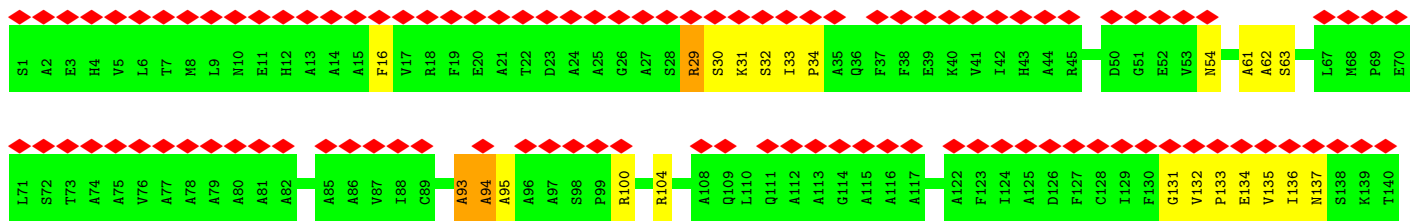
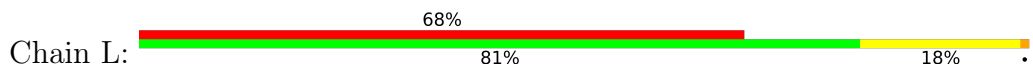




• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1



• Molecule 1: GLUTAMATE-AMMONIA LIGASE DOMAIN-CONTAINING PROTEIN 1





## 4 Experimental information

| Property                             | Value             | Source    |
|--------------------------------------|-------------------|-----------|
| EM reconstruction method             | SINGLE PARTICLE   | Depositor |
| Imposed symmetry                     | POINT, I          | Depositor |
| Number of particles used             | Not provided      |           |
| Resolution determination method      | Not provided      |           |
| CTF correction method                | PHASE FLIPPING    | Depositor |
| Microscope                           | FEI TECNAI F20    | Depositor |
| Voltage (kV)                         | 200               | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | Not provided      |           |
| Minimum defocus (nm)                 | 170               | Depositor |
| Maximum defocus (nm)                 | 320               | Depositor |
| Magnification                        | 50000             | Depositor |
| Image detector                       | KODAK SO-163 FILM | Depositor |
| Maximum map value                    | 0.901             | Depositor |
| Minimum map value                    | -0.608            | Depositor |
| Average map value                    | 0.022             | Depositor |
| Map value standard deviation         | 0.125             | Depositor |
| Recommended contour level            | 0.299             | Depositor |
| Map size ( $\text{\AA}$ )            | 174, 174, 174     | wwPDB     |
| Map dimensions                       | 120, 120, 120     | wwPDB     |
| Map angles ( $^\circ$ )              | 90, 90, 90        | wwPDB     |
| Pixel spacing ( $\text{\AA}$ )       | 1.45, 1.45, 1.45  | Depositor |

## 5 Model quality

### 5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths |         | Bond angles |                  |
|-----|-------|--------------|---------|-------------|------------------|
|     |       | RMSZ         | # Z  >5 | RMSZ        | # Z  >5          |
| 1   | A     | 0.69         | 0/2824  | 1.03        | 9/3853 (0.2%)    |
| 1   | B     | 0.69         | 0/2824  | 1.03        | 9/3853 (0.2%)    |
| 1   | C     | 0.69         | 0/2824  | 1.03        | 9/3853 (0.2%)    |
| 1   | D     | 0.69         | 0/2824  | 1.03        | 9/3853 (0.2%)    |
| 1   | E     | 0.69         | 0/2824  | 1.03        | 9/3853 (0.2%)    |
| 1   | F     | 0.69         | 0/2824  | 1.03        | 9/3853 (0.2%)    |
| 1   | G     | 0.69         | 0/2824  | 1.03        | 8/3853 (0.2%)    |
| 1   | H     | 0.69         | 0/2824  | 1.03        | 8/3853 (0.2%)    |
| 1   | I     | 0.69         | 0/2824  | 1.03        | 9/3853 (0.2%)    |
| 1   | J     | 0.69         | 0/2824  | 1.03        | 8/3853 (0.2%)    |
| 1   | K     | 0.69         | 0/2824  | 1.03        | 8/3853 (0.2%)    |
| 1   | L     | 0.69         | 0/2824  | 1.03        | 9/3853 (0.2%)    |
| All | All   | 0.69         | 0/33888 | 1.03        | 104/46236 (0.2%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | A     | 0                   | 3                   |
| 1   | B     | 0                   | 3                   |
| 1   | C     | 0                   | 3                   |
| 1   | D     | 0                   | 3                   |
| 1   | E     | 0                   | 3                   |
| 1   | F     | 0                   | 3                   |
| 1   | G     | 0                   | 3                   |
| 1   | H     | 0                   | 3                   |
| 1   | I     | 0                   | 3                   |
| 1   | J     | 0                   | 3                   |
| 1   | K     | 0                   | 3                   |
| 1   | L     | 0                   | 3                   |
| All | All   | 0                   | 36                  |

There are no bond length outliers.

All (104) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms     | Z    | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|------|-------------|----------|
| 1   | C     | 201 | ARG  | NE-CZ-NH1 | 7.22 | 123.91      | 120.30   |
| 1   | F     | 201 | ARG  | NE-CZ-NH1 | 7.22 | 123.91      | 120.30   |
| 1   | A     | 201 | ARG  | NE-CZ-NH1 | 7.19 | 123.89      | 120.30   |
| 1   | D     | 201 | ARG  | NE-CZ-NH1 | 7.19 | 123.89      | 120.30   |
| 1   | B     | 201 | ARG  | NE-CZ-NH1 | 7.15 | 123.88      | 120.30   |
| 1   | E     | 201 | ARG  | NE-CZ-NH1 | 7.15 | 123.88      | 120.30   |
| 1   | G     | 201 | ARG  | NE-CZ-NH1 | 7.02 | 123.81      | 120.30   |
| 1   | J     | 201 | ARG  | NE-CZ-NH1 | 7.02 | 123.81      | 120.30   |
| 1   | H     | 201 | ARG  | NE-CZ-NH1 | 6.98 | 123.79      | 120.30   |
| 1   | K     | 201 | ARG  | NE-CZ-NH1 | 6.98 | 123.79      | 120.30   |
| 1   | I     | 201 | ARG  | NE-CZ-NH1 | 6.97 | 123.78      | 120.30   |
| 1   | L     | 201 | ARG  | NE-CZ-NH1 | 6.97 | 123.78      | 120.30   |
| 1   | B     | 94  | ALA  | CB-CA-C   | 6.20 | 119.39      | 110.10   |
| 1   | E     | 94  | ALA  | CB-CA-C   | 6.20 | 119.39      | 110.10   |
| 1   | A     | 94  | ALA  | CB-CA-C   | 6.18 | 119.38      | 110.10   |
| 1   | D     | 94  | ALA  | CB-CA-C   | 6.18 | 119.38      | 110.10   |
| 1   | C     | 94  | ALA  | CB-CA-C   | 6.18 | 119.36      | 110.10   |
| 1   | F     | 94  | ALA  | CB-CA-C   | 6.18 | 119.36      | 110.10   |
| 1   | I     | 94  | ALA  | CB-CA-C   | 6.16 | 119.34      | 110.10   |
| 1   | L     | 94  | ALA  | CB-CA-C   | 6.16 | 119.34      | 110.10   |
| 1   | H     | 94  | ALA  | CB-CA-C   | 6.14 | 119.31      | 110.10   |
| 1   | K     | 94  | ALA  | CB-CA-C   | 6.14 | 119.31      | 110.10   |
| 1   | G     | 94  | ALA  | CB-CA-C   | 6.14 | 119.31      | 110.10   |
| 1   | J     | 94  | ALA  | CB-CA-C   | 6.14 | 119.31      | 110.10   |
| 1   | C     | 104 | ARG  | NE-CZ-NH1 | 6.06 | 123.33      | 120.30   |
| 1   | F     | 104 | ARG  | NE-CZ-NH1 | 6.06 | 123.33      | 120.30   |
| 1   | A     | 104 | ARG  | NE-CZ-NH1 | 6.03 | 123.31      | 120.30   |
| 1   | D     | 104 | ARG  | NE-CZ-NH1 | 6.03 | 123.31      | 120.30   |
| 1   | B     | 104 | ARG  | NE-CZ-NH1 | 6.00 | 123.30      | 120.30   |
| 1   | E     | 104 | ARG  | NE-CZ-NH1 | 6.00 | 123.30      | 120.30   |
| 1   | G     | 104 | ARG  | NE-CZ-NH1 | 5.98 | 123.29      | 120.30   |
| 1   | J     | 104 | ARG  | NE-CZ-NH1 | 5.98 | 123.29      | 120.30   |
| 1   | I     | 104 | ARG  | NE-CZ-NH1 | 5.96 | 123.28      | 120.30   |
| 1   | L     | 104 | ARG  | NE-CZ-NH1 | 5.96 | 123.28      | 120.30   |
| 1   | H     | 104 | ARG  | NE-CZ-NH1 | 5.95 | 123.27      | 120.30   |
| 1   | K     | 104 | ARG  | NE-CZ-NH1 | 5.95 | 123.27      | 120.30   |
| 1   | I     | 29  | ARG  | NE-CZ-NH1 | 5.73 | 123.17      | 120.30   |
| 1   | L     | 29  | ARG  | NE-CZ-NH1 | 5.73 | 123.17      | 120.30   |
| 1   | H     | 29  | ARG  | NE-CZ-NH1 | 5.73 | 123.16      | 120.30   |
| 1   | K     | 29  | ARG  | NE-CZ-NH1 | 5.73 | 123.16      | 120.30   |

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| Mol | Chain | Res | Type | Atoms     | Z    | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|------|-------------|----------|
| 1   | B     | 29  | ARG  | NE-CZ-NH1 | 5.72 | 123.16      | 120.30   |
| 1   | E     | 29  | ARG  | NE-CZ-NH1 | 5.72 | 123.16      | 120.30   |
| 1   | G     | 29  | ARG  | NE-CZ-NH1 | 5.72 | 123.16      | 120.30   |
| 1   | J     | 29  | ARG  | NE-CZ-NH1 | 5.72 | 123.16      | 120.30   |
| 1   | C     | 29  | ARG  | NE-CZ-NH1 | 5.70 | 123.15      | 120.30   |
| 1   | F     | 29  | ARG  | NE-CZ-NH1 | 5.70 | 123.15      | 120.30   |
| 1   | A     | 29  | ARG  | NE-CZ-NH1 | 5.68 | 123.14      | 120.30   |
| 1   | D     | 29  | ARG  | NE-CZ-NH1 | 5.68 | 123.14      | 120.30   |
| 1   | B     | 100 | ARG  | NE-CZ-NH2 | 5.29 | 122.94      | 120.30   |
| 1   | E     | 100 | ARG  | NE-CZ-NH2 | 5.29 | 122.94      | 120.30   |
| 1   | A     | 100 | ARG  | NE-CZ-NH2 | 5.28 | 122.94      | 120.30   |
| 1   | D     | 100 | ARG  | NE-CZ-NH2 | 5.28 | 122.94      | 120.30   |
| 1   | C     | 100 | ARG  | NE-CZ-NH2 | 5.24 | 122.92      | 120.30   |
| 1   | F     | 100 | ARG  | NE-CZ-NH2 | 5.24 | 122.92      | 120.30   |
| 1   | H     | 100 | ARG  | NE-CZ-NH2 | 5.24 | 122.92      | 120.30   |
| 1   | K     | 100 | ARG  | NE-CZ-NH2 | 5.24 | 122.92      | 120.30   |
| 1   | G     | 100 | ARG  | NE-CZ-NH2 | 5.23 | 122.92      | 120.30   |
| 1   | J     | 100 | ARG  | NE-CZ-NH2 | 5.23 | 122.92      | 120.30   |
| 1   | G     | 389 | GLY  | C-N-CA    | 5.23 | 134.77      | 121.70   |
| 1   | J     | 389 | GLY  | C-N-CA    | 5.23 | 134.77      | 121.70   |
| 1   | B     | 389 | GLY  | C-N-CA    | 5.22 | 134.75      | 121.70   |
| 1   | E     | 389 | GLY  | C-N-CA    | 5.22 | 134.75      | 121.70   |
| 1   | H     | 389 | GLY  | C-N-CA    | 5.22 | 134.74      | 121.70   |
| 1   | K     | 389 | GLY  | C-N-CA    | 5.22 | 134.74      | 121.70   |
| 1   | C     | 389 | GLY  | C-N-CA    | 5.21 | 134.74      | 121.70   |
| 1   | F     | 389 | GLY  | C-N-CA    | 5.21 | 134.74      | 121.70   |
| 1   | I     | 100 | ARG  | NE-CZ-NH2 | 5.21 | 122.91      | 120.30   |
| 1   | L     | 100 | ARG  | NE-CZ-NH2 | 5.21 | 122.91      | 120.30   |
| 1   | I     | 389 | GLY  | C-N-CA    | 5.21 | 134.73      | 121.70   |
| 1   | L     | 389 | GLY  | C-N-CA    | 5.21 | 134.73      | 121.70   |
| 1   | A     | 389 | GLY  | C-N-CA    | 5.21 | 134.72      | 121.70   |
| 1   | D     | 389 | GLY  | C-N-CA    | 5.21 | 134.72      | 121.70   |
| 1   | B     | 251 | ARG  | NE-CZ-NH1 | 5.15 | 122.88      | 120.30   |
| 1   | E     | 251 | ARG  | NE-CZ-NH1 | 5.15 | 122.88      | 120.30   |
| 1   | A     | 210 | ARG  | NE-CZ-NH2 | 5.12 | 122.86      | 120.30   |
| 1   | D     | 210 | ARG  | NE-CZ-NH2 | 5.12 | 122.86      | 120.30   |
| 1   | I     | 210 | ARG  | NE-CZ-NH2 | 5.11 | 122.85      | 120.30   |
| 1   | L     | 210 | ARG  | NE-CZ-NH2 | 5.11 | 122.85      | 120.30   |
| 1   | G     | 210 | ARG  | NE-CZ-NH2 | 5.10 | 122.85      | 120.30   |
| 1   | J     | 210 | ARG  | NE-CZ-NH2 | 5.10 | 122.85      | 120.30   |
| 1   | C     | 210 | ARG  | NE-CZ-NH2 | 5.09 | 122.84      | 120.30   |
| 1   | F     | 210 | ARG  | NE-CZ-NH2 | 5.09 | 122.84      | 120.30   |

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| Mol | Chain | Res | Type | Atoms     | Z    | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|------|-------------|----------|
| 1   | H     | 210 | ARG  | NE-CZ-NH2 | 5.09 | 122.84      | 120.30   |
| 1   | K     | 210 | ARG  | NE-CZ-NH2 | 5.09 | 122.84      | 120.30   |
| 1   | A     | 251 | ARG  | NE-CZ-NH1 | 5.08 | 122.84      | 120.30   |
| 1   | D     | 251 | ARG  | NE-CZ-NH1 | 5.08 | 122.84      | 120.30   |
| 1   | A     | 180 | ALA  | C-N-CA    | 5.04 | 134.30      | 121.70   |
| 1   | D     | 180 | ALA  | C-N-CA    | 5.04 | 134.30      | 121.70   |
| 1   | C     | 180 | ALA  | C-N-CA    | 5.02 | 134.25      | 121.70   |
| 1   | C     | 251 | ARG  | NE-CZ-NH1 | 5.02 | 122.81      | 120.30   |
| 1   | F     | 180 | ALA  | C-N-CA    | 5.02 | 134.25      | 121.70   |
| 1   | F     | 251 | ARG  | NE-CZ-NH1 | 5.02 | 122.81      | 120.30   |
| 1   | B     | 180 | ALA  | C-N-CA    | 5.02 | 134.25      | 121.70   |
| 1   | E     | 180 | ALA  | C-N-CA    | 5.02 | 134.25      | 121.70   |
| 1   | I     | 180 | ALA  | C-N-CA    | 5.02 | 134.25      | 121.70   |
| 1   | L     | 180 | ALA  | C-N-CA    | 5.02 | 134.25      | 121.70   |
| 1   | B     | 210 | ARG  | NE-CZ-NH2 | 5.02 | 122.81      | 120.30   |
| 1   | E     | 210 | ARG  | NE-CZ-NH2 | 5.02 | 122.81      | 120.30   |
| 1   | I     | 251 | ARG  | NE-CZ-NH1 | 5.01 | 122.81      | 120.30   |
| 1   | L     | 251 | ARG  | NE-CZ-NH1 | 5.01 | 122.81      | 120.30   |
| 1   | H     | 180 | ALA  | C-N-CA    | 5.00 | 134.21      | 121.70   |
| 1   | K     | 180 | ALA  | C-N-CA    | 5.00 | 134.21      | 121.70   |
| 1   | G     | 180 | ALA  | C-N-CA    | 5.00 | 134.20      | 121.70   |
| 1   | J     | 180 | ALA  | C-N-CA    | 5.00 | 134.20      | 121.70   |

There are no chirality outliers.

All (36) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 1   | A     | 362 | ALA  | Peptide |
| 1   | A     | 364 | SER  | Peptide |
| 1   | A     | 388 | LEU  | Peptide |
| 1   | B     | 362 | ALA  | Peptide |
| 1   | B     | 364 | SER  | Peptide |
| 1   | B     | 388 | LEU  | Peptide |
| 1   | C     | 362 | ALA  | Peptide |
| 1   | C     | 364 | SER  | Peptide |
| 1   | C     | 388 | LEU  | Peptide |
| 1   | D     | 362 | ALA  | Peptide |
| 1   | D     | 364 | SER  | Peptide |
| 1   | D     | 388 | LEU  | Peptide |
| 1   | E     | 362 | ALA  | Peptide |
| 1   | E     | 364 | SER  | Peptide |
| 1   | E     | 388 | LEU  | Peptide |

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| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 1   | F     | 362 | ALA  | Peptide |
| 1   | F     | 364 | SER  | Peptide |
| 1   | F     | 388 | LEU  | Peptide |
| 1   | G     | 362 | ALA  | Peptide |
| 1   | G     | 364 | SER  | Peptide |
| 1   | G     | 388 | LEU  | Peptide |
| 1   | H     | 362 | ALA  | Peptide |
| 1   | H     | 364 | SER  | Peptide |
| 1   | H     | 388 | LEU  | Peptide |
| 1   | I     | 362 | ALA  | Peptide |
| 1   | I     | 364 | SER  | Peptide |
| 1   | I     | 388 | LEU  | Peptide |
| 1   | J     | 362 | ALA  | Peptide |
| 1   | J     | 364 | SER  | Peptide |
| 1   | J     | 388 | LEU  | Peptide |
| 1   | K     | 362 | ALA  | Peptide |
| 1   | K     | 364 | SER  | Peptide |
| 1   | K     | 388 | LEU  | Peptide |
| 1   | L     | 362 | ALA  | Peptide |
| 1   | L     | 364 | SER  | Peptide |
| 1   | L     | 388 | LEU  | Peptide |

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

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 2785  | 0        | 2714     | 426     | 0            |
| 1   | B     | 2785  | 0        | 2714     | 427     | 0            |
| 1   | C     | 2785  | 0        | 2714     | 424     | 0            |
| 1   | D     | 2785  | 0        | 2714     | 427     | 0            |
| 1   | E     | 2785  | 0        | 2714     | 425     | 0            |
| 1   | F     | 2785  | 0        | 2714     | 424     | 0            |
| 1   | G     | 2785  | 0        | 2708     | 389     | 0            |
| 1   | H     | 2785  | 0        | 2708     | 386     | 0            |
| 1   | I     | 2785  | 0        | 2708     | 399     | 0            |
| 1   | J     | 2785  | 0        | 2708     | 388     | 0            |
| 1   | K     | 2785  | 0        | 2708     | 386     | 0            |
| 1   | L     | 2785  | 0        | 2708     | 397     | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| All | All   | 33420 | 0        | 32532    | 2467    | 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 37.

All (2467) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1          | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:E:133:PRO:HD2 | 1:F:162:GLY:CA  | 1.22                     | 1.66              |
| 1:E:37:PHE:HE1  | 1:F:185:LEU:CD2 | 1.02                     | 1.64              |
| 1:A:162:GLY:CA  | 1:F:133:PRO:HD2 | 1.22                     | 1.63              |
| 1:I:162:GLY:CA  | 1:J:133:PRO:HD2 | 1.17                     | 1.62              |
| 1:D:133:PRO:HD2 | 1:E:162:GLY:CA  | 1.22                     | 1.62              |
| 1:D:37:PHE:HE1  | 1:E:185:LEU:CD2 | 1.02                     | 1.62              |
| 1:H:162:GLY:CA  | 1:I:133:PRO:HD2 | 1.17                     | 1.62              |
| 1:A:185:LEU:CD2 | 1:F:37:PHE:HE1  | 1.02                     | 1.61              |
| 1:A:133:PRO:HD2 | 1:B:162:GLY:CA  | 1.22                     | 1.58              |
| 1:C:37:PHE:HE1  | 1:D:185:LEU:CD2 | 1.02                     | 1.58              |
| 1:J:162:GLY:CA  | 1:K:133:PRO:HD2 | 1.17                     | 1.58              |
| 1:C:133:PRO:HD2 | 1:D:162:GLY:CA  | 1.22                     | 1.57              |
| 1:G:162:GLY:CA  | 1:H:133:PRO:HD2 | 1.17                     | 1.57              |
| 1:A:37:PHE:HE1  | 1:B:185:LEU:CD2 | 1.02                     | 1.57              |
| 1:E:37:PHE:CE1  | 1:F:185:LEU:CD2 | 1.87                     | 1.57              |
| 1:A:37:PHE:CE1  | 1:B:185:LEU:CD2 | 1.87                     | 1.56              |
| 1:B:133:PRO:HD2 | 1:C:162:GLY:CA  | 1.22                     | 1.56              |
| 1:D:37:PHE:CE1  | 1:E:185:LEU:CD2 | 1.87                     | 1.55              |
| 1:B:37:PHE:HE1  | 1:C:185:LEU:CD2 | 1.02                     | 1.55              |
| 1:G:133:PRO:HD2 | 1:L:162:GLY:CA  | 1.17                     | 1.54              |
| 1:K:162:GLY:CA  | 1:L:133:PRO:HD2 | 1.17                     | 1.54              |
| 1:B:37:PHE:CE1  | 1:C:185:LEU:CD2 | 1.87                     | 1.54              |
| 1:A:185:LEU:CD2 | 1:F:37:PHE:CE1  | 1.87                     | 1.54              |
| 1:E:134:GLU:HG2 | 1:F:158:ALA:CB  | 1.06                     | 1.53              |
| 1:I:177:ALA:CA  | 1:J:32:SER:N    | 1.72                     | 1.52              |
| 1:H:162:GLY:HA2 | 1:I:133:PRO:CD  | 1.37                     | 1.52              |
| 1:J:162:GLY:HA2 | 1:K:133:PRO:CD  | 1.37                     | 1.52              |
| 1:K:162:GLY:HA2 | 1:L:133:PRO:CD  | 1.37                     | 1.52              |
| 1:G:177:ALA:CA  | 1:H:32:SER:N    | 1.72                     | 1.51              |
| 1:B:134:GLU:HG2 | 1:C:158:ALA:CB  | 1.06                     | 1.51              |
| 1:C:37:PHE:CE1  | 1:D:185:LEU:CD2 | 1.87                     | 1.51              |
| 1:I:162:GLY:HA2 | 1:J:133:PRO:CD  | 1.37                     | 1.50              |
| 1:A:158:ALA:CB  | 1:F:134:GLU:HG2 | 1.06                     | 1.50              |

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| Atom-1          | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:H:177:ALA:CA  | 1:I:32:SER:N    | 1.72                     | 1.50              |
| 1:C:134:GLU:HG2 | 1:D:158:ALA:CB  | 1.06                     | 1.50              |
| 1:A:134:GLU:HG2 | 1:B:158:ALA:CB  | 1.06                     | 1.50              |
| 1:G:32:SER:N    | 1:L:177:ALA:CA  | 1.72                     | 1.50              |
| 1:D:134:GLU:HG2 | 1:E:158:ALA:CB  | 1.06                     | 1.49              |
| 1:G:162:GLY:HA2 | 1:H:133:PRO:CD  | 1.37                     | 1.49              |
| 1:J:177:ALA:CA  | 1:K:32:SER:N    | 1.72                     | 1.49              |
| 1:B:133:PRO:CG  | 1:C:163:ALA:H   | 1.26                     | 1.49              |
| 1:D:133:PRO:CG  | 1:E:163:ALA:H   | 1.26                     | 1.48              |
| 1:G:133:PRO:CD  | 1:L:162:GLY:HA2 | 1.37                     | 1.48              |
| 1:G:133:PRO:CG  | 1:L:163:ALA:H   | 1.27                     | 1.48              |
| 1:G:163:ALA:H   | 1:H:133:PRO:CG  | 1.27                     | 1.48              |
| 1:A:163:ALA:H   | 1:F:133:PRO:CG  | 1.26                     | 1.47              |
| 1:D:32:SER:H    | 1:E:177:ALA:CA  | 1.26                     | 1.47              |
| 1:K:177:ALA:CA  | 1:L:32:SER:N    | 1.72                     | 1.47              |
| 1:I:163:ALA:H   | 1:J:133:PRO:CG  | 1.27                     | 1.47              |
| 1:E:133:PRO:CG  | 1:F:163:ALA:H   | 1.26                     | 1.47              |
| 1:A:32:SER:H    | 1:B:177:ALA:CA  | 1.26                     | 1.46              |
| 1:E:32:SER:H    | 1:F:177:ALA:CA  | 1.26                     | 1.46              |
| 1:B:32:SER:N    | 1:C:177:ALA:CA  | 1.76                     | 1.46              |
| 1:C:32:SER:H    | 1:D:177:ALA:CA  | 1.26                     | 1.46              |
| 1:C:133:PRO:CG  | 1:D:163:ALA:H   | 1.26                     | 1.46              |
| 1:H:163:ALA:H   | 1:I:133:PRO:CG  | 1.27                     | 1.46              |
| 1:K:163:ALA:H   | 1:L:133:PRO:CG  | 1.27                     | 1.46              |
| 1:K:162:GLY:CA  | 1:L:133:PRO:CD  | 1.92                     | 1.46              |
| 1:J:163:ALA:H   | 1:K:133:PRO:CG  | 1.27                     | 1.45              |
| 1:A:162:GLY:HA2 | 1:F:133:PRO:CD  | 1.45                     | 1.45              |
| 1:C:32:SER:N    | 1:D:177:ALA:CA  | 1.76                     | 1.45              |
| 1:A:133:PRO:CG  | 1:B:163:ALA:H   | 1.26                     | 1.44              |
| 1:D:133:PRO:CD  | 1:E:162:GLY:HA2 | 1.45                     | 1.44              |
| 1:I:158:ALA:CB  | 1:J:134:GLU:HG2 | 0.98                     | 1.44              |
| 1:H:158:ALA:CB  | 1:I:134:GLU:HG2 | 0.98                     | 1.44              |
| 1:B:32:SER:H    | 1:C:177:ALA:CA  | 1.26                     | 1.44              |
| 1:K:158:ALA:CB  | 1:L:134:GLU:HG2 | 0.98                     | 1.44              |
| 1:A:177:ALA:CA  | 1:F:32:SER:N    | 1.76                     | 1.43              |
| 1:E:32:SER:N    | 1:F:177:ALA:CA  | 1.76                     | 1.43              |
| 1:D:32:SER:N    | 1:E:177:ALA:CA  | 1.76                     | 1.43              |
| 1:E:133:PRO:CD  | 1:F:162:GLY:HA2 | 1.45                     | 1.43              |
| 1:G:134:GLU:HG2 | 1:L:158:ALA:CB  | 0.98                     | 1.43              |
| 1:J:162:GLY:CA  | 1:K:133:PRO:CD  | 1.92                     | 1.43              |
| 1:A:133:PRO:CD  | 1:B:162:GLY:HA2 | 1.45                     | 1.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:177:ALA:CA   | 1:F:32:SER:H     | 1.26                     | 1.43              |
| 1:C:133:PRO:CD   | 1:D:162:GLY:HA2  | 1.45                     | 1.43              |
| 1:I:162:GLY:CA   | 1:J:133:PRO:CD   | 1.92                     | 1.42              |
| 1:B:133:PRO:CD   | 1:C:162:GLY:HA2  | 1.45                     | 1.41              |
| 1:A:162:GLY:CA   | 1:F:133:PRO:CD   | 1.99                     | 1.41              |
| 1:B:31:LYS:CB    | 1:C:176:ALA:O    | 1.69                     | 1.41              |
| 1:G:133:PRO:CD   | 1:L:162:GLY:CA   | 1.92                     | 1.41              |
| 1:C:31:LYS:CB    | 1:D:176:ALA:O    | 1.69                     | 1.40              |
| 1:A:32:SER:N     | 1:B:177:ALA:CA   | 1.76                     | 1.40              |
| 1:A:164:ALA:HB1  | 1:F:209:ARG:NH2  | 1.09                     | 1.40              |
| 1:G:214:ILE:CD1  | 1:L:161:GLY:O    | 1.69                     | 1.40              |
| 1:D:133:PRO:CD   | 1:E:162:GLY:CA   | 1.98                     | 1.40              |
| 1:G:164:ALA:HB1  | 1:H:209:ARG:NH2  | 1.07                     | 1.40              |
| 1:G:209:ARG:NH2  | 1:L:164:ALA:HB1  | 1.07                     | 1.40              |
| 1:J:161:GLY:O    | 1:K:214:ILE:CD1  | 1.69                     | 1.39              |
| 1:A:176:ALA:O    | 1:F:31:LYS:CB    | 1.69                     | 1.39              |
| 1:E:133:PRO:CD   | 1:F:162:GLY:CA   | 1.99                     | 1.39              |
| 1:E:209:ARG:NH2  | 1:F:164:ALA:HB1  | 1.09                     | 1.39              |
| 1:E:408:GLU:OE2  | 1:J:419:TYR:CZ   | 1.76                     | 1.39              |
| 1:D:419:TYR:HB3  | 1:I:401:LYS:CA   | 1.53                     | 1.38              |
| 1:E:419:TYR:HB3  | 1:J:401:LYS:CA   | 1.53                     | 1.38              |
| 1:K:161:GLY:O    | 1:L:214:ILE:CD1  | 1.69                     | 1.38              |
| 1:A:209:ARG:NH2  | 1:B:164:ALA:HB1  | 1.09                     | 1.38              |
| 1:G:161:GLY:O    | 1:H:214:ILE:CD1  | 1.69                     | 1.38              |
| 1:H:164:ALA:HB1  | 1:I:209:ARG:NH2  | 1.07                     | 1.38              |
| 1:A:31:LYS:CB    | 1:B:176:ALA:O    | 1.68                     | 1.38              |
| 1:B:209:ARG:HH21 | 1:C:164:ALA:CB   | 1.37                     | 1.38              |
| 1:G:162:GLY:CA   | 1:H:133:PRO:CD   | 1.92                     | 1.38              |
| 1:G:164:ALA:CB   | 1:H:209:ARG:HH21 | 1.36                     | 1.38              |
| 1:G:209:ARG:HH21 | 1:L:164:ALA:CB   | 1.36                     | 1.38              |
| 1:K:164:ALA:HB1  | 1:L:209:ARG:NH2  | 1.07                     | 1.38              |
| 1:D:31:LYS:CB    | 1:E:176:ALA:O    | 1.68                     | 1.38              |
| 1:H:162:GLY:CA   | 1:I:133:PRO:CD   | 1.92                     | 1.38              |
| 1:E:31:LYS:CB    | 1:F:176:ALA:O    | 1.69                     | 1.37              |
| 1:E:419:TYR:CZ   | 1:J:408:GLU:OE2  | 1.78                     | 1.37              |
| 1:F:408:GLU:OE2  | 1:K:419:TYR:CZ   | 1.76                     | 1.37              |
| 1:I:164:ALA:CB   | 1:J:209:ARG:HH21 | 1.36                     | 1.37              |
| 1:A:209:ARG:HH21 | 1:B:164:ALA:CB   | 1.37                     | 1.37              |
| 1:C:419:TYR:HB3  | 1:H:401:LYS:CA   | 1.53                     | 1.37              |
| 1:D:408:GLU:OE2  | 1:I:419:TYR:CZ   | 1.76                     | 1.37              |
| 1:A:408:GLU:OE2  | 1:L:419:TYR:CZ   | 1.76                     | 1.37              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:419:TYR:HB3  | 1:L:401:LYS:CA   | 1.53                     | 1.37              |
| 1:B:408:GLU:OE2  | 1:G:419:TYR:CZ   | 1.76                     | 1.37              |
| 1:I:164:ALA:HB1  | 1:J:209:ARG:NH2  | 1.07                     | 1.37              |
| 1:B:419:TYR:HB3  | 1:G:401:LYS:CA   | 1.53                     | 1.37              |
| 1:H:161:GLY:O    | 1:I:214:ILE:CD1  | 1.69                     | 1.37              |
| 1:H:164:ALA:CB   | 1:I:209:ARG:HH21 | 1.36                     | 1.37              |
| 1:I:161:GLY:O    | 1:J:214:ILE:CD1  | 1.69                     | 1.37              |
| 1:J:164:ALA:HB1  | 1:K:209:ARG:NH2  | 1.07                     | 1.37              |
| 1:B:419:TYR:CZ   | 1:G:408:GLU:OE2  | 1.78                     | 1.36              |
| 1:C:209:ARG:HH21 | 1:D:164:ALA:CB   | 1.37                     | 1.36              |
| 1:E:421:ILE:OXT  | 1:J:397:VAL:HG13 | 1.19                     | 1.36              |
| 1:A:133:PRO:CD   | 1:B:162:GLY:CA   | 1.98                     | 1.36              |
| 1:A:419:TYR:CZ   | 1:L:408:GLU:OE2  | 1.78                     | 1.36              |
| 1:D:31:LYS:HA    | 1:E:176:ALA:C    | 1.46                     | 1.36              |
| 1:D:419:TYR:CZ   | 1:I:408:GLU:OE2  | 1.78                     | 1.36              |
| 1:F:419:TYR:HB3  | 1:K:401:LYS:CA   | 1.53                     | 1.36              |
| 1:K:164:ALA:CB   | 1:L:209:ARG:HH21 | 1.36                     | 1.36              |
| 1:B:31:LYS:CG    | 1:C:176:ALA:O    | 1.73                     | 1.36              |
| 1:C:133:PRO:CD   | 1:D:162:GLY:CA   | 1.99                     | 1.36              |
| 1:F:419:TYR:CZ   | 1:K:408:GLU:OE2  | 1.78                     | 1.36              |
| 1:A:31:LYS:HA    | 1:B:176:ALA:C    | 1.46                     | 1.36              |
| 1:A:176:ALA:C    | 1:F:31:LYS:HA    | 1.46                     | 1.36              |
| 1:B:209:ARG:NH2  | 1:C:164:ALA:HB1  | 1.09                     | 1.36              |
| 1:C:408:GLU:OE2  | 1:H:419:TYR:CZ   | 1.76                     | 1.36              |
| 1:E:31:LYS:HA    | 1:F:176:ALA:C    | 1.46                     | 1.36              |
| 1:J:164:ALA:CB   | 1:K:209:ARG:HH21 | 1.36                     | 1.36              |
| 1:A:164:ALA:CB   | 1:F:209:ARG:HH21 | 1.37                     | 1.36              |
| 1:C:209:ARG:NH2  | 1:D:164:ALA:HB1  | 1.09                     | 1.36              |
| 1:C:214:ILE:HD13 | 1:D:161:GLY:O    | 1.18                     | 1.36              |
| 1:D:209:ARG:NH2  | 1:E:164:ALA:HB1  | 1.09                     | 1.36              |
| 1:J:177:ALA:HA   | 1:K:31:LYS:C     | 1.46                     | 1.36              |
| 1:A:31:LYS:CG    | 1:B:176:ALA:O    | 1.73                     | 1.35              |
| 1:C:419:TYR:CZ   | 1:H:408:GLU:OE2  | 1.78                     | 1.35              |
| 1:D:209:ARG:HH21 | 1:E:164:ALA:CB   | 1.37                     | 1.35              |
| 1:E:209:ARG:HH21 | 1:F:164:ALA:CB   | 1.37                     | 1.35              |
| 1:G:29:ARG:HB3   | 1:L:175:ALA:CB   | 1.55                     | 1.35              |
| 1:K:177:ALA:HA   | 1:L:32:SER:N     | 1.04                     | 1.35              |
| 1:G:32:SER:N     | 1:L:177:ALA:HA   | 1.04                     | 1.35              |
| 1:K:177:ALA:HA   | 1:L:31:LYS:C     | 1.46                     | 1.35              |
| 1:D:421:ILE:C    | 1:I:397:VAL:CG1  | 1.93                     | 1.35              |
| 1:F:421:ILE:C    | 1:K:397:VAL:CG1  | 1.93                     | 1.35              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:177:ALA:HA   | 1:J:32:SER:N     | 1.04                     | 1.35              |
| 1:B:133:PRO:CD   | 1:C:162:GLY:CA   | 1.99                     | 1.35              |
| 1:D:32:SER:N     | 1:E:177:ALA:HA   | 1.02                     | 1.35              |
| 1:H:177:ALA:HA   | 1:I:32:SER:N     | 1.04                     | 1.35              |
| 1:K:175:ALA:CB   | 1:L:29:ARG:HB3   | 1.55                     | 1.35              |
| 1:E:32:SER:N     | 1:F:177:ALA:HA   | 1.02                     | 1.35              |
| 1:H:175:ALA:CB   | 1:I:29:ARG:HB3   | 1.55                     | 1.35              |
| 1:C:31:LYS:CG    | 1:D:176:ALA:O    | 1.73                     | 1.34              |
| 1:A:176:ALA:O    | 1:F:31:LYS:CG    | 1.73                     | 1.34              |
| 1:I:175:ALA:CB   | 1:J:29:ARG:HB3   | 1.55                     | 1.34              |
| 1:J:175:ALA:CB   | 1:K:29:ARG:HB3   | 1.55                     | 1.34              |
| 1:K:161:GLY:C    | 1:L:131:GLY:O    | 1.66                     | 1.34              |
| 1:D:421:ILE:OXT  | 1:I:397:VAL:HG13 | 1.19                     | 1.34              |
| 1:G:131:GLY:O    | 1:L:161:GLY:C    | 1.66                     | 1.34              |
| 1:C:31:LYS:HA    | 1:D:176:ALA:C    | 1.46                     | 1.34              |
| 1:D:31:LYS:CG    | 1:E:176:ALA:O    | 1.73                     | 1.34              |
| 1:G:175:ALA:CB   | 1:H:29:ARG:HB3   | 1.55                     | 1.34              |
| 1:C:32:SER:N     | 1:D:177:ALA:HA   | 1.02                     | 1.34              |
| 1:A:177:ALA:HA   | 1:F:32:SER:N     | 1.02                     | 1.33              |
| 1:G:161:GLY:C    | 1:H:131:GLY:O    | 1.66                     | 1.33              |
| 1:G:177:ALA:HA   | 1:H:31:LYS:C     | 1.46                     | 1.33              |
| 1:J:177:ALA:HA   | 1:K:32:SER:N     | 1.04                     | 1.33              |
| 1:B:31:LYS:HA    | 1:C:176:ALA:C    | 1.46                     | 1.33              |
| 1:G:177:ALA:HA   | 1:H:32:SER:N     | 1.04                     | 1.33              |
| 1:I:177:ALA:HA   | 1:J:31:LYS:C     | 1.46                     | 1.33              |
| 1:D:214:ILE:HD13 | 1:E:161:GLY:O    | 1.18                     | 1.33              |
| 1:A:32:SER:N     | 1:B:177:ALA:HA   | 1.02                     | 1.32              |
| 1:B:32:SER:N     | 1:C:177:ALA:HA   | 1.02                     | 1.32              |
| 1:B:214:ILE:HD13 | 1:C:161:GLY:O    | 1.18                     | 1.32              |
| 1:E:31:LYS:CG    | 1:F:176:ALA:O    | 1.73                     | 1.32              |
| 1:G:158:ALA:HA   | 1:H:133:PRO:O    | 1.28                     | 1.32              |
| 1:A:37:PHE:CE1   | 1:B:185:LEU:HD23 | 1.57                     | 1.32              |
| 1:B:421:ILE:C    | 1:G:397:VAL:CG1  | 1.93                     | 1.32              |
| 1:G:31:LYS:C     | 1:L:177:ALA:HA   | 1.46                     | 1.32              |
| 1:B:31:LYS:C     | 1:C:177:ALA:HA   | 1.50                     | 1.31              |
| 1:C:419:TYR:CB   | 1:H:401:LYS:HA   | 1.60                     | 1.31              |
| 1:B:419:TYR:CB   | 1:G:401:LYS:HA   | 1.60                     | 1.31              |
| 1:E:421:ILE:C    | 1:J:397:VAL:CG1  | 1.93                     | 1.31              |
| 1:H:161:GLY:C    | 1:I:131:GLY:O    | 1.66                     | 1.31              |
| 1:D:419:TYR:CB   | 1:I:401:LYS:HA   | 1.60                     | 1.31              |
| 1:H:177:ALA:HA   | 1:I:31:LYS:C     | 1.46                     | 1.31              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:161:GLY:C    | 1:K:131:GLY:O    | 1.66                     | 1.31              |
| 1:F:421:ILE:OXT  | 1:K:397:VAL:HG13 | 1.19                     | 1.30              |
| 1:G:29:ARG:CB    | 1:L:175:ALA:HB2  | 1.61                     | 1.30              |
| 1:J:174:ALA:CB   | 1:K:54:ASN:HD21  | 1.44                     | 1.30              |
| 1:D:31:LYS:C     | 1:E:177:ALA:HA   | 1.50                     | 1.30              |
| 1:A:419:TYR:CB   | 1:L:401:LYS:HA   | 1.60                     | 1.30              |
| 1:K:175:ALA:HB2  | 1:L:29:ARG:CB    | 1.62                     | 1.30              |
| 1:G:54:ASN:HD21  | 1:L:174:ALA:CB   | 1.44                     | 1.30              |
| 1:G:174:ALA:CB   | 1:H:54:ASN:HD21  | 1.44                     | 1.30              |
| 1:K:174:ALA:CB   | 1:L:54:ASN:HD21  | 1.44                     | 1.30              |
| 1:A:31:LYS:C     | 1:B:177:ALA:HA   | 1.50                     | 1.30              |
| 1:A:214:ILE:HD13 | 1:B:161:GLY:O    | 1.18                     | 1.30              |
| 1:G:175:ALA:HB2  | 1:H:29:ARG:CB    | 1.61                     | 1.30              |
| 1:I:161:GLY:C    | 1:J:131:GLY:O    | 1.66                     | 1.30              |
| 1:I:174:ALA:CB   | 1:J:54:ASN:HD21  | 1.44                     | 1.30              |
| 1:E:31:LYS:C     | 1:F:177:ALA:HA   | 1.50                     | 1.29              |
| 1:H:158:ALA:HA   | 1:I:133:PRO:O    | 1.28                     | 1.29              |
| 1:A:401:LYS:CA   | 1:L:419:TYR:HB3  | 1.61                     | 1.29              |
| 1:C:31:LYS:C     | 1:D:177:ALA:HA   | 1.50                     | 1.29              |
| 1:E:214:ILE:HD13 | 1:F:161:GLY:O    | 1.18                     | 1.29              |
| 1:F:401:LYS:CA   | 1:K:419:TYR:HB3  | 1.61                     | 1.29              |
| 1:J:175:ALA:HB2  | 1:K:29:ARG:CB    | 1.61                     | 1.29              |
| 1:B:37:PHE:CE1   | 1:C:185:LEU:HD23 | 1.57                     | 1.29              |
| 1:B:401:LYS:CA   | 1:G:419:TYR:HB3  | 1.61                     | 1.29              |
| 1:B:134:GLU:CG   | 1:C:158:ALA:HB2  | 0.81                     | 1.29              |
| 1:E:401:LYS:CA   | 1:J:419:TYR:HB3  | 1.61                     | 1.29              |
| 1:H:174:ALA:CB   | 1:I:54:ASN:HD21  | 1.44                     | 1.29              |
| 1:H:175:ALA:HB2  | 1:I:29:ARG:CB    | 1.62                     | 1.29              |
| 1:A:176:ALA:O    | 1:F:31:LYS:HG2   | 1.30                     | 1.28              |
| 1:A:397:VAL:HG13 | 1:L:421:ILE:OXT  | 1.31                     | 1.28              |
| 1:B:31:LYS:CA    | 1:C:176:ALA:O    | 1.81                     | 1.28              |
| 1:D:401:LYS:CA   | 1:I:419:TYR:HB3  | 1.61                     | 1.28              |
| 1:A:158:ALA:HB2  | 1:F:134:GLU:CG   | 0.81                     | 1.28              |
| 1:C:31:LYS:CA    | 1:D:176:ALA:O    | 1.81                     | 1.28              |
| 1:C:134:GLU:CG   | 1:D:158:ALA:HB2  | 0.81                     | 1.28              |
| 1:C:401:LYS:CA   | 1:H:419:TYR:HB3  | 1.61                     | 1.28              |
| 1:E:134:GLU:CG   | 1:F:158:ALA:HB2  | 0.81                     | 1.28              |
| 1:E:419:TYR:CB   | 1:J:401:LYS:HA   | 1.60                     | 1.28              |
| 1:F:419:TYR:CB   | 1:K:401:LYS:HA   | 1.60                     | 1.28              |
| 1:G:133:PRO:O    | 1:L:158:ALA:HA   | 1.28                     | 1.28              |
| 1:I:175:ALA:HB2  | 1:J:29:ARG:CB    | 1.61                     | 1.28              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:421:ILE:C    | 1:H:397:VAL:CG1  | 1.93                     | 1.28              |
| 1:A:134:GLU:CG   | 1:B:158:ALA:HB2  | 0.81                     | 1.28              |
| 1:C:421:ILE:OXT  | 1:H:397:VAL:HG13 | 1.19                     | 1.28              |
| 1:D:134:GLU:CG   | 1:E:158:ALA:HB2  | 0.81                     | 1.28              |
| 1:H:162:GLY:CA   | 1:I:214:ILE:HD11 | 1.63                     | 1.28              |
| 1:G:134:GLU:CG   | 1:L:158:ALA:HB2  | 0.79                     | 1.27              |
| 1:I:162:GLY:N    | 1:J:131:GLY:O    | 1.67                     | 1.27              |
| 1:J:162:GLY:N    | 1:K:131:GLY:O    | 1.67                     | 1.27              |
| 1:E:31:LYS:CA    | 1:F:176:ALA:O    | 1.81                     | 1.27              |
| 1:G:214:ILE:HD11 | 1:L:162:GLY:CA   | 1.63                     | 1.27              |
| 1:F:401:LYS:HD3  | 1:K:420:PHE:CD2  | 1.29                     | 1.27              |
| 1:H:158:ALA:HB2  | 1:I:134:GLU:CG   | 0.80                     | 1.27              |
| 1:A:31:LYS:CA    | 1:B:176:ALA:O    | 1.81                     | 1.27              |
| 1:A:177:ALA:HA   | 1:F:31:LYS:C     | 1.50                     | 1.27              |
| 1:G:162:GLY:CA   | 1:H:214:ILE:HD11 | 1.63                     | 1.27              |
| 1:I:158:ALA:HB2  | 1:J:134:GLU:CG   | 0.79                     | 1.27              |
| 1:A:161:GLY:O    | 1:F:214:ILE:HD13 | 1.18                     | 1.27              |
| 1:A:175:ALA:HB2  | 1:F:29:ARG:CB    | 1.65                     | 1.27              |
| 1:C:37:PHE:CE1   | 1:D:185:LEU:HD23 | 1.57                     | 1.27              |
| 1:D:31:LYS:CA    | 1:E:176:ALA:O    | 1.81                     | 1.27              |
| 1:D:214:ILE:CD1  | 1:E:161:GLY:O    | 1.83                     | 1.27              |
| 1:A:29:ARG:CB    | 1:B:175:ALA:HB2  | 1.65                     | 1.26              |
| 1:A:161:GLY:O    | 1:F:214:ILE:CD1  | 1.83                     | 1.26              |
| 1:B:214:ILE:HD11 | 1:C:162:GLY:CA   | 1.65                     | 1.26              |
| 1:K:158:ALA:HB2  | 1:L:134:GLU:CG   | 0.80                     | 1.26              |
| 1:A:176:ALA:O    | 1:F:31:LYS:CA    | 1.81                     | 1.26              |
| 1:C:214:ILE:HD11 | 1:D:162:GLY:CA   | 1.65                     | 1.26              |
| 1:E:29:ARG:CB    | 1:F:175:ALA:HB2  | 1.65                     | 1.26              |
| 1:B:397:VAL:HG13 | 1:G:421:ILE:OXT  | 1.31                     | 1.26              |
| 1:D:133:PRO:O    | 1:E:158:ALA:HA   | 1.32                     | 1.26              |
| 1:G:162:GLY:N    | 1:H:131:GLY:O    | 1.67                     | 1.26              |
| 1:A:134:GLU:CG   | 1:B:158:ALA:CB   | 1.77                     | 1.26              |
| 1:B:401:LYS:HD3  | 1:G:420:PHE:CD2  | 1.29                     | 1.26              |
| 1:I:162:GLY:CA   | 1:J:214:ILE:HD11 | 1.63                     | 1.26              |
| 1:A:30:SER:N     | 1:B:175:ALA:HB1  | 1.51                     | 1.26              |
| 1:A:133:PRO:O    | 1:B:158:ALA:HA   | 1.32                     | 1.26              |
| 1:C:214:ILE:CD1  | 1:D:161:GLY:O    | 1.83                     | 1.26              |
| 1:B:133:PRO:O    | 1:C:158:ALA:HA   | 1.32                     | 1.25              |
| 1:D:214:ILE:HD11 | 1:E:162:GLY:CA   | 1.65                     | 1.25              |
| 1:E:29:ARG:HB3   | 1:F:175:ALA:CB   | 1.66                     | 1.25              |
| 1:E:214:ILE:CD1  | 1:F:161:GLY:O    | 1.83                     | 1.25              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:397:VAL:HG13 | 1:J:421:ILE:OXT  | 1.31                     | 1.25              |
| 1:J:158:ALA:HA   | 1:K:133:PRO:O    | 1.28                     | 1.25              |
| 1:A:175:ALA:HB1  | 1:F:30:SER:N     | 1.51                     | 1.25              |
| 1:C:401:LYS:HA   | 1:H:419:TYR:CB   | 1.65                     | 1.25              |
| 1:D:397:VAL:HG13 | 1:I:421:ILE:OXT  | 1.31                     | 1.25              |
| 1:G:131:GLY:O    | 1:L:162:GLY:N    | 1.67                     | 1.25              |
| 1:A:401:LYS:HA   | 1:L:419:TYR:CB   | 1.65                     | 1.25              |
| 1:A:185:LEU:HD23 | 1:F:37:PHE:CE1   | 1.57                     | 1.25              |
| 1:A:421:ILE:OXT  | 1:L:397:VAL:HG13 | 1.19                     | 1.25              |
| 1:B:29:ARG:CB    | 1:C:175:ALA:HB2  | 1.65                     | 1.25              |
| 1:E:421:ILE:CA   | 1:J:397:VAL:HG11 | 1.57                     | 1.25              |
| 1:E:214:ILE:HD11 | 1:F:162:GLY:CA   | 1.65                     | 1.25              |
| 1:B:214:ILE:CD1  | 1:C:161:GLY:O    | 1.83                     | 1.25              |
| 1:C:397:VAL:HG13 | 1:H:421:ILE:OXT  | 1.31                     | 1.25              |
| 1:D:29:ARG:CB    | 1:E:175:ALA:HB2  | 1.65                     | 1.25              |
| 1:D:401:LYS:HA   | 1:I:419:TYR:CB   | 1.65                     | 1.25              |
| 1:F:401:LYS:HA   | 1:K:419:TYR:CB   | 1.65                     | 1.25              |
| 1:H:162:GLY:N    | 1:I:131:GLY:O    | 1.67                     | 1.25              |
| 1:A:214:ILE:HD11 | 1:B:162:GLY:CA   | 1.65                     | 1.25              |
| 1:B:29:ARG:HB3   | 1:C:175:ALA:CB   | 1.66                     | 1.25              |
| 1:B:401:LYS:HA   | 1:G:419:TYR:CB   | 1.65                     | 1.25              |
| 1:D:29:ARG:HB3   | 1:E:175:ALA:CB   | 1.66                     | 1.25              |
| 1:J:162:GLY:CA   | 1:K:214:ILE:HD11 | 1.63                     | 1.25              |
| 1:K:162:GLY:CA   | 1:L:214:ILE:HD11 | 1.63                     | 1.25              |
| 1:A:162:GLY:CA   | 1:F:214:ILE:HD11 | 1.65                     | 1.24              |
| 1:B:30:SER:N     | 1:C:175:ALA:HB1  | 1.51                     | 1.24              |
| 1:B:62:ALA:N     | 1:C:301:ALA:HB2  | 1.52                     | 1.24              |
| 1:C:31:LYS:HG2   | 1:D:176:ALA:O    | 1.30                     | 1.24              |
| 1:C:133:PRO:O    | 1:D:158:ALA:HA   | 1.32                     | 1.24              |
| 1:I:158:ALA:HA   | 1:J:133:PRO:O    | 1.28                     | 1.24              |
| 1:A:175:ALA:CB   | 1:F:29:ARG:HB3   | 1.66                     | 1.24              |
| 1:A:301:ALA:HB2  | 1:F:62:ALA:N     | 1.53                     | 1.24              |
| 1:A:421:ILE:C    | 1:L:397:VAL:CG1  | 1.93                     | 1.24              |
| 1:C:29:ARG:HB3   | 1:D:175:ALA:CB   | 1.66                     | 1.24              |
| 1:E:397:VAL:CG1  | 1:J:421:ILE:C    | 2.06                     | 1.24              |
| 1:F:397:VAL:HG13 | 1:K:421:ILE:OXT  | 1.31                     | 1.24              |
| 1:B:397:VAL:CG1  | 1:G:421:ILE:C    | 2.06                     | 1.24              |
| 1:E:133:PRO:O    | 1:F:158:ALA:HA   | 1.32                     | 1.24              |
| 1:E:401:LYS:HA   | 1:J:419:TYR:CB   | 1.65                     | 1.24              |
| 1:A:214:ILE:CD1  | 1:B:161:GLY:O    | 1.83                     | 1.24              |
| 1:E:134:GLU:CG   | 1:F:158:ALA:CB   | 1.77                     | 1.24              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:421:ILE:CA   | 1:K:397:VAL:HG11 | 1.57                     | 1.24              |
| 1:C:29:ARG:CB    | 1:D:175:ALA:HB2  | 1.65                     | 1.24              |
| 1:D:421:ILE:CA   | 1:I:397:VAL:HG11 | 1.57                     | 1.24              |
| 1:K:162:GLY:N    | 1:L:131:GLY:O    | 1.67                     | 1.24              |
| 1:A:158:ALA:HA   | 1:F:133:PRO:O    | 1.32                     | 1.23              |
| 1:C:397:VAL:CG1  | 1:H:421:ILE:C    | 2.06                     | 1.23              |
| 1:D:37:PHE:CE1   | 1:E:185:LEU:HD23 | 1.57                     | 1.23              |
| 1:E:30:SER:N     | 1:F:175:ALA:HB1  | 1.51                     | 1.23              |
| 1:D:401:LYS:HD3  | 1:I:420:PHE:CD2  | 1.29                     | 1.23              |
| 1:H:161:GLY:O    | 1:I:214:ILE:HD13 | 1.05                     | 1.23              |
| 1:B:421:ILE:OXT  | 1:G:397:VAL:HG13 | 1.19                     | 1.23              |
| 1:A:31:LYS:HG2   | 1:B:176:ALA:O    | 1.31                     | 1.23              |
| 1:F:397:VAL:CG1  | 1:K:421:ILE:C    | 2.06                     | 1.23              |
| 1:I:161:GLY:O    | 1:J:214:ILE:HD13 | 1.05                     | 1.23              |
| 1:C:30:SER:N     | 1:D:175:ALA:HB1  | 1.51                     | 1.23              |
| 1:K:158:ALA:HA   | 1:L:133:PRO:O    | 1.28                     | 1.23              |
| 1:A:401:LYS:HD3  | 1:L:420:PHE:CD2  | 1.29                     | 1.22              |
| 1:C:62:ALA:N     | 1:D:301:ALA:HB2  | 1.53                     | 1.22              |
| 1:E:401:LYS:HD3  | 1:J:420:PHE:CD2  | 1.29                     | 1.22              |
| 1:G:161:GLY:O    | 1:H:214:ILE:HD13 | 1.05                     | 1.22              |
| 1:D:30:SER:N     | 1:E:175:ALA:HB1  | 1.51                     | 1.22              |
| 1:A:62:ALA:N     | 1:B:301:ALA:HB2  | 1.52                     | 1.22              |
| 1:A:62:ALA:H     | 1:B:301:ALA:CB   | 1.53                     | 1.22              |
| 1:A:397:VAL:CG1  | 1:L:421:ILE:C    | 2.06                     | 1.22              |
| 1:D:397:VAL:CG1  | 1:I:421:ILE:C    | 2.06                     | 1.22              |
| 1:E:62:ALA:N     | 1:F:301:ALA:HB2  | 1.52                     | 1.22              |
| 1:A:301:ALA:CB   | 1:F:62:ALA:H     | 1.53                     | 1.22              |
| 1:C:62:ALA:H     | 1:D:301:ALA:CB   | 1.53                     | 1.22              |
| 1:A:29:ARG:HB3   | 1:B:175:ALA:CB   | 1.66                     | 1.21              |
| 1:D:62:ALA:H     | 1:E:301:ALA:CB   | 1.53                     | 1.21              |
| 1:A:421:ILE:CA   | 1:L:397:VAL:HG11 | 1.57                     | 1.21              |
| 1:E:62:ALA:H     | 1:F:301:ALA:CB   | 1.53                     | 1.21              |
| 1:B:134:GLU:CG   | 1:C:158:ALA:CB   | 1.77                     | 1.21              |
| 1:J:161:GLY:O    | 1:K:214:ILE:HD13 | 1.05                     | 1.21              |
| 1:K:175:ALA:HB1  | 1:L:30:SER:N     | 1.56                     | 1.21              |
| 1:A:158:ALA:CB   | 1:F:134:GLU:CG   | 1.77                     | 1.21              |
| 1:E:420:PHE:CD2  | 1:J:401:LYS:HD3  | 1.42                     | 1.20              |
| 1:B:62:ALA:H     | 1:C:301:ALA:CB   | 1.53                     | 1.20              |
| 1:G:214:ILE:HD13 | 1:L:161:GLY:O    | 1.05                     | 1.20              |
| 1:B:31:LYS:HG2   | 1:C:176:ALA:O    | 1.30                     | 1.20              |
| 1:C:421:ILE:CA   | 1:H:397:VAL:HG11 | 1.57                     | 1.20              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:62:ALA:N     | 1:E:301:ALA:HB2  | 1.52                     | 1.20              |
| 1:I:301:ALA:CB   | 1:J:62:ALA:H     | 1.52                     | 1.20              |
| 1:J:175:ALA:HB1  | 1:K:30:SER:N     | 1.56                     | 1.20              |
| 1:G:30:SER:N     | 1:L:175:ALA:HB1  | 1.56                     | 1.20              |
| 1:C:134:GLU:CG   | 1:D:158:ALA:CB   | 1.77                     | 1.19              |
| 1:E:37:PHE:CE1   | 1:F:185:LEU:HD23 | 1.57                     | 1.19              |
| 1:K:156:GLN:NE2  | 1:L:137:ASN:ND2  | 1.91                     | 1.19              |
| 1:A:137:ASN:ND2  | 1:B:156:GLN:HE22 | 1.41                     | 1.19              |
| 1:C:421:ILE:OXT  | 1:H:397:VAL:CG1  | 1.90                     | 1.19              |
| 1:B:31:LYS:HA    | 1:C:176:ALA:O    | 1.40                     | 1.19              |
| 1:G:156:GLN:NE2  | 1:H:137:ASN:HD22 | 1.41                     | 1.19              |
| 1:H:156:GLN:NE2  | 1:I:137:ASN:HD22 | 1.41                     | 1.19              |
| 1:J:156:GLN:NE2  | 1:K:137:ASN:ND2  | 1.91                     | 1.19              |
| 1:J:301:ALA:CB   | 1:K:62:ALA:H     | 1.52                     | 1.19              |
| 1:F:421:ILE:OXT  | 1:K:397:VAL:CG1  | 1.90                     | 1.19              |
| 1:B:421:ILE:CA   | 1:G:397:VAL:HG11 | 1.57                     | 1.18              |
| 1:G:137:ASN:ND2  | 1:L:156:GLN:NE2  | 1.91                     | 1.18              |
| 1:B:137:ASN:ND2  | 1:C:156:GLN:HE22 | 1.41                     | 1.18              |
| 1:C:134:GLU:HG3  | 1:D:158:ALA:HB2  | 1.24                     | 1.18              |
| 1:D:135:VAL:HB   | 1:E:156:GLN:HA   | 1.25                     | 1.18              |
| 1:I:175:ALA:HB1  | 1:J:30:SER:N     | 1.56                     | 1.18              |
| 1:A:137:ASN:ND2  | 1:B:156:GLN:NE2  | 1.92                     | 1.18              |
| 1:D:135:VAL:N    | 1:E:156:GLN:O    | 1.76                     | 1.18              |
| 1:H:301:ALA:CB   | 1:I:62:ALA:H     | 1.52                     | 1.18              |
| 1:I:156:GLN:NE2  | 1:J:137:ASN:ND2  | 1.91                     | 1.18              |
| 1:K:161:GLY:O    | 1:L:214:ILE:HD13 | 1.05                     | 1.18              |
| 1:A:156:GLN:HE22 | 1:F:137:ASN:ND2  | 1.41                     | 1.18              |
| 1:D:420:PHE:CD2  | 1:I:401:LYS:HD3  | 1.42                     | 1.18              |
| 1:G:137:ASN:HD22 | 1:L:156:GLN:NE2  | 1.41                     | 1.18              |
| 1:G:175:ALA:HB1  | 1:H:30:SER:N     | 1.56                     | 1.18              |
| 1:C:401:LYS:HD3  | 1:H:420:PHE:CD2  | 1.29                     | 1.18              |
| 1:G:156:GLN:NE2  | 1:H:137:ASN:ND2  | 1.91                     | 1.18              |
| 1:A:156:GLN:NE2  | 1:F:137:ASN:ND2  | 1.92                     | 1.17              |
| 1:D:134:GLU:HG3  | 1:E:158:ALA:HB2  | 1.24                     | 1.17              |
| 1:H:156:GLN:NE2  | 1:I:137:ASN:ND2  | 1.91                     | 1.17              |
| 1:B:137:ASN:ND2  | 1:C:156:GLN:NE2  | 1.92                     | 1.17              |
| 1:H:175:ALA:HB1  | 1:I:30:SER:N     | 1.56                     | 1.17              |
| 1:C:137:ASN:ND2  | 1:D:156:GLN:HE22 | 1.41                     | 1.17              |
| 1:K:156:GLN:NE2  | 1:L:137:ASN:HD22 | 1.41                     | 1.17              |
| 1:A:163:ALA:N    | 1:F:133:PRO:CG   | 2.08                     | 1.17              |
| 1:H:301:ALA:HB2  | 1:I:62:ALA:N     | 1.49                     | 1.17              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:133:PRO:CG   | 1:D:163:ALA:N    | 2.08                     | 1.16              |
| 1:D:137:ASN:ND2  | 1:E:156:GLN:HE22 | 1.41                     | 1.16              |
| 1:E:137:ASN:ND2  | 1:F:156:GLN:HE22 | 1.41                     | 1.16              |
| 1:I:163:ALA:N    | 1:J:133:PRO:CG   | 2.07                     | 1.16              |
| 1:A:288:ALA:HB1  | 1:F:400:ALA:HA   | 1.26                     | 1.16              |
| 1:B:421:ILE:OXT  | 1:G:397:VAL:CG1  | 1.90                     | 1.16              |
| 1:E:135:VAL:HB   | 1:F:156:GLN:HA   | 1.25                     | 1.16              |
| 1:A:174:ALA:CB   | 1:F:54:ASN:HD21  | 1.59                     | 1.16              |
| 1:C:135:VAL:HB   | 1:D:156:GLN:HA   | 1.25                     | 1.16              |
| 1:C:419:TYR:CE1  | 1:H:404:LEU:C    | 2.19                     | 1.16              |
| 1:E:137:ASN:ND2  | 1:F:156:GLN:NE2  | 1.92                     | 1.16              |
| 1:A:135:VAL:N    | 1:B:156:GLN:O    | 1.76                     | 1.16              |
| 1:B:419:TYR:CE1  | 1:G:404:LEU:C    | 2.19                     | 1.16              |
| 1:D:419:TYR:CE1  | 1:I:404:LEU:C    | 2.19                     | 1.16              |
| 1:E:54:ASN:HD21  | 1:F:174:ALA:CB   | 1.59                     | 1.16              |
| 1:J:163:ALA:N    | 1:K:133:PRO:CG   | 2.08                     | 1.16              |
| 1:A:133:PRO:CG   | 1:B:163:ALA:N    | 2.08                     | 1.16              |
| 1:A:419:TYR:CE1  | 1:L:404:LEU:C    | 2.19                     | 1.16              |
| 1:B:134:GLU:HG3  | 1:C:158:ALA:HB2  | 1.24                     | 1.16              |
| 1:C:137:ASN:ND2  | 1:D:156:GLN:NE2  | 1.92                     | 1.16              |
| 1:D:54:ASN:HD21  | 1:E:174:ALA:CB   | 1.59                     | 1.16              |
| 1:E:31:LYS:HA    | 1:F:176:ALA:O    | 1.40                     | 1.16              |
| 1:E:133:PRO:CG   | 1:F:163:ALA:N    | 2.08                     | 1.16              |
| 1:E:419:TYR:CE1  | 1:J:404:LEU:C    | 2.19                     | 1.16              |
| 1:A:135:VAL:HB   | 1:B:156:GLN:HA   | 1.25                     | 1.15              |
| 1:K:158:ALA:CB   | 1:L:134:GLU:CG   | 1.74                     | 1.15              |
| 1:A:54:ASN:HD21  | 1:B:174:ALA:CB   | 1.59                     | 1.15              |
| 1:B:133:PRO:CG   | 1:C:163:ALA:N    | 2.08                     | 1.15              |
| 1:B:135:VAL:HB   | 1:C:156:GLN:HA   | 1.25                     | 1.15              |
| 1:C:54:ASN:HD21  | 1:D:174:ALA:CB   | 1.59                     | 1.15              |
| 1:C:420:PHE:CD2  | 1:H:401:LYS:HD3  | 1.42                     | 1.15              |
| 1:E:421:ILE:OXT  | 1:J:397:VAL:CG1  | 1.90                     | 1.15              |
| 1:J:156:GLN:HE22 | 1:K:137:ASN:ND2  | 1.44                     | 1.15              |
| 1:D:133:PRO:CG   | 1:E:163:ALA:N    | 2.08                     | 1.15              |
| 1:D:137:ASN:ND2  | 1:E:156:GLN:NE2  | 1.92                     | 1.15              |
| 1:G:163:ALA:N    | 1:H:133:PRO:CG   | 2.08                     | 1.15              |
| 1:H:163:ALA:N    | 1:I:133:PRO:CG   | 2.08                     | 1.15              |
| 1:J:156:GLN:NE2  | 1:K:137:ASN:HD22 | 1.41                     | 1.15              |
| 1:B:137:ASN:HD22 | 1:C:156:GLN:NE2  | 1.44                     | 1.15              |
| 1:I:156:GLN:HE22 | 1:J:137:ASN:ND2  | 1.44                     | 1.15              |
| 1:I:163:ALA:N    | 1:J:133:PRO:HG2  | 1.62                     | 1.15              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:163:ALA:N    | 1:K:133:PRO:HG2  | 1.62                     | 1.15              |
| 1:K:156:GLN:HE22 | 1:L:137:ASN:ND2  | 1.44                     | 1.15              |
| 1:G:209:ARG:NH2  | 1:L:164:ALA:CB   | 2.01                     | 1.15              |
| 1:H:158:ALA:HB2  | 1:I:134:GLU:HG3  | 1.27                     | 1.15              |
| 1:K:163:ALA:N    | 1:L:133:PRO:CG   | 2.08                     | 1.15              |
| 1:A:156:GLN:NE2  | 1:F:137:ASN:HD22 | 1.44                     | 1.14              |
| 1:A:176:ALA:O    | 1:F:31:LYS:HA    | 1.40                     | 1.14              |
| 1:F:419:TYR:CE1  | 1:K:404:LEU:C    | 2.19                     | 1.14              |
| 1:G:135:VAL:HB   | 1:L:156:GLN:HA   | 1.29                     | 1.14              |
| 1:D:134:GLU:CG   | 1:E:158:ALA:CB   | 1.77                     | 1.14              |
| 1:E:400:ALA:HA   | 1:F:288:ALA:HB1  | 1.26                     | 1.14              |
| 1:B:397:VAL:HG11 | 1:G:421:ILE:CA   | 1.70                     | 1.14              |
| 1:F:397:VAL:HG11 | 1:K:421:ILE:CA   | 1.70                     | 1.14              |
| 1:G:156:GLN:HE22 | 1:H:137:ASN:ND2  | 1.44                     | 1.14              |
| 1:A:137:ASN:HD22 | 1:B:156:GLN:NE2  | 1.44                     | 1.14              |
| 1:A:156:GLN:HA   | 1:F:135:VAL:HB   | 1.25                     | 1.14              |
| 1:A:400:ALA:HA   | 1:B:288:ALA:HB1  | 1.26                     | 1.14              |
| 1:B:54:ASN:HD21  | 1:C:174:ALA:CB   | 1.59                     | 1.14              |
| 1:H:163:ALA:N    | 1:I:133:PRO:HG2  | 1.62                     | 1.14              |
| 1:K:288:ALA:HB1  | 1:L:400:ALA:HA   | 1.30                     | 1.14              |
| 1:C:137:ASN:HD22 | 1:D:156:GLN:NE2  | 1.44                     | 1.14              |
| 1:D:31:LYS:HA    | 1:E:176:ALA:O    | 1.40                     | 1.14              |
| 1:D:31:LYS:HG2   | 1:E:176:ALA:O    | 1.31                     | 1.14              |
| 1:G:133:PRO:CG   | 1:L:163:ALA:N    | 2.07                     | 1.14              |
| 1:G:214:ILE:CD1  | 1:L:162:GLY:CA   | 2.26                     | 1.14              |
| 1:G:301:ALA:CB   | 1:H:62:ALA:H     | 1.52                     | 1.14              |
| 1:K:163:ALA:N    | 1:L:133:PRO:HG2  | 1.62                     | 1.14              |
| 1:K:301:ALA:CB   | 1:L:62:ALA:H     | 1.52                     | 1.14              |
| 1:E:37:PHE:CE1   | 1:F:185:LEU:HD21 | 1.66                     | 1.13              |
| 1:E:137:ASN:HD22 | 1:F:156:GLN:NE2  | 1.44                     | 1.13              |
| 1:G:164:ALA:CB   | 1:H:209:ARG:NH2  | 2.01                     | 1.13              |
| 1:H:156:GLN:HE22 | 1:I:137:ASN:ND2  | 1.44                     | 1.13              |
| 1:H:156:GLN:HA   | 1:I:135:VAL:HB   | 1.29                     | 1.13              |
| 1:I:162:GLY:CA   | 1:J:214:ILE:CD1  | 2.26                     | 1.13              |
| 1:J:288:ALA:HB1  | 1:K:400:ALA:HA   | 1.30                     | 1.13              |
| 1:F:405:GLU:HG2  | 1:K:416:PHE:HD2  | 1.12                     | 1.13              |
| 1:G:162:GLY:CA   | 1:H:214:ILE:CD1  | 2.26                     | 1.13              |
| 1:I:156:GLN:NE2  | 1:J:137:ASN:HD22 | 1.41                     | 1.13              |
| 1:I:158:ALA:HB2  | 1:J:134:GLU:HG3  | 1.27                     | 1.13              |
| 1:C:31:LYS:HA    | 1:D:176:ALA:O    | 1.40                     | 1.13              |
| 1:E:404:LEU:C    | 1:J:419:TYR:CE1  | 2.22                     | 1.13              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:404:LEU:C    | 1:H:419:TYR:CE1  | 2.22                     | 1.13              |
| 1:H:288:ALA:HB1  | 1:I:400:ALA:HA   | 1.30                     | 1.13              |
| 1:K:156:GLN:HA   | 1:L:135:VAL:HB   | 1.29                     | 1.13              |
| 1:C:416:PHE:HD2  | 1:H:405:GLU:HG2  | 1.08                     | 1.13              |
| 1:F:404:LEU:C    | 1:K:419:TYR:CE1  | 2.22                     | 1.13              |
| 1:G:133:PRO:HG2  | 1:L:163:ALA:N    | 1.62                     | 1.13              |
| 1:G:163:ALA:N    | 1:H:133:PRO:HG2  | 1.62                     | 1.13              |
| 1:B:404:LEU:C    | 1:G:419:TYR:CE1  | 2.22                     | 1.12              |
| 1:J:162:GLY:CA   | 1:K:214:ILE:CD1  | 2.26                     | 1.12              |
| 1:K:158:ALA:HB2  | 1:L:134:GLU:HG3  | 1.27                     | 1.12              |
| 1:A:404:LEU:C    | 1:L:419:TYR:CE1  | 2.22                     | 1.12              |
| 1:G:156:GLN:HA   | 1:H:135:VAL:HB   | 1.29                     | 1.12              |
| 1:E:134:GLU:HG3  | 1:F:158:ALA:HB2  | 1.24                     | 1.12              |
| 1:G:175:ALA:HB1  | 1:H:30:SER:H     | 0.99                     | 1.12              |
| 1:H:162:GLY:CA   | 1:I:214:ILE:CD1  | 2.26                     | 1.12              |
| 1:K:162:GLY:CA   | 1:L:214:ILE:CD1  | 2.26                     | 1.12              |
| 1:G:137:ASN:ND2  | 1:L:156:GLN:HE22 | 1.44                     | 1.12              |
| 1:I:164:ALA:CB   | 1:J:209:ARG:NH2  | 2.01                     | 1.12              |
| 1:I:288:ALA:HB1  | 1:J:400:ALA:HA   | 1.30                     | 1.12              |
| 1:D:404:LEU:C    | 1:I:419:TYR:CE1  | 2.22                     | 1.12              |
| 1:G:288:ALA:HB1  | 1:H:400:ALA:HA   | 1.30                     | 1.12              |
| 1:A:61:ALA:O     | 1:B:299:ALA:C    | 1.89                     | 1.11              |
| 1:A:162:GLY:CA   | 1:F:214:ILE:CD1  | 2.28                     | 1.11              |
| 1:A:421:ILE:OXT  | 1:L:397:VAL:CG1  | 1.90                     | 1.11              |
| 1:C:61:ALA:O     | 1:D:299:ALA:C    | 1.89                     | 1.11              |
| 1:D:137:ASN:HD22 | 1:E:156:GLN:NE2  | 1.44                     | 1.11              |
| 1:G:30:SER:H     | 1:L:175:ALA:HB1  | 0.99                     | 1.11              |
| 1:A:214:ILE:CD1  | 1:B:162:GLY:CA   | 2.28                     | 1.11              |
| 1:D:133:PRO:HG2  | 1:E:163:ALA:N    | 1.65                     | 1.11              |
| 1:D:421:ILE:OXT  | 1:I:397:VAL:CG1  | 1.90                     | 1.11              |
| 1:E:416:PHE:HD2  | 1:J:405:GLU:HG2  | 1.08                     | 1.11              |
| 1:K:164:ALA:CB   | 1:L:209:ARG:NH2  | 2.01                     | 1.11              |
| 1:K:301:ALA:HB2  | 1:L:62:ALA:N     | 1.49                     | 1.11              |
| 1:A:416:PHE:HD2  | 1:L:405:GLU:HG2  | 1.08                     | 1.11              |
| 1:B:37:PHE:CE1   | 1:C:185:LEU:HD21 | 1.66                     | 1.11              |
| 1:B:400:ALA:HA   | 1:C:288:ALA:HB1  | 1.26                     | 1.11              |
| 1:G:62:ALA:N     | 1:L:301:ALA:HB2  | 1.49                     | 1.11              |
| 1:H:158:ALA:CB   | 1:I:134:GLU:CG   | 1.74                     | 1.11              |
| 1:J:175:ALA:HB1  | 1:K:30:SER:H     | 0.99                     | 1.11              |
| 1:A:31:LYS:HA    | 1:B:176:ALA:O    | 1.40                     | 1.11              |
| 1:A:133:PRO:HG2  | 1:B:163:ALA:N    | 1.65                     | 1.11              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:185:LEU:HD21 | 1:F:37:PHE:CE1   | 1.66                     | 1.11              |
| 1:F:420:PHE:CD2  | 1:K:401:LYS:HD3  | 1.42                     | 1.11              |
| 1:G:62:ALA:H     | 1:L:301:ALA:CB   | 1.52                     | 1.11              |
| 1:G:400:ALA:HA   | 1:L:288:ALA:HB1  | 1.30                     | 1.11              |
| 1:A:397:VAL:HG11 | 1:L:421:ILE:CA   | 1.70                     | 1.11              |
| 1:B:420:PHE:CD2  | 1:G:401:LYS:HD3  | 1.42                     | 1.11              |
| 1:C:32:SER:H     | 1:D:177:ALA:C    | 1.54                     | 1.11              |
| 1:E:214:ILE:CD1  | 1:F:162:GLY:CA   | 2.28                     | 1.11              |
| 1:E:397:VAL:HG11 | 1:J:421:ILE:CA   | 1.70                     | 1.11              |
| 1:B:401:LYS:CD   | 1:G:420:PHE:CD2  | 2.16                     | 1.10              |
| 1:B:416:PHE:HD2  | 1:G:405:GLU:HG2  | 1.08                     | 1.10              |
| 1:C:397:VAL:HG11 | 1:H:421:ILE:CA   | 1.70                     | 1.10              |
| 1:D:404:LEU:HD22 | 1:I:419:TYR:HE2  | 1.16                     | 1.10              |
| 1:E:61:ALA:O     | 1:F:299:ALA:C    | 1.89                     | 1.10              |
| 1:D:32:SER:H     | 1:E:177:ALA:C    | 1.53                     | 1.10              |
| 1:A:37:PHE:CE1   | 1:B:185:LEU:HD21 | 1.66                     | 1.10              |
| 1:A:134:GLU:HG3  | 1:B:158:ALA:HB2  | 1.24                     | 1.10              |
| 1:A:299:ALA:C    | 1:F:61:ALA:O     | 1.89                     | 1.10              |
| 1:B:32:SER:H     | 1:C:177:ALA:C    | 1.54                     | 1.10              |
| 1:C:400:ALA:HA   | 1:D:288:ALA:CB   | 1.82                     | 1.10              |
| 1:C:401:LYS:CD   | 1:H:420:PHE:CD2  | 2.16                     | 1.10              |
| 1:I:156:GLN:HA   | 1:J:135:VAL:HB   | 1.29                     | 1.10              |
| 1:A:163:ALA:N    | 1:F:133:PRO:HG2  | 1.65                     | 1.10              |
| 1:B:61:ALA:O     | 1:C:299:ALA:C    | 1.89                     | 1.10              |
| 1:B:133:PRO:HG2  | 1:C:163:ALA:N    | 1.65                     | 1.10              |
| 1:B:214:ILE:CD1  | 1:C:162:GLY:CA   | 2.28                     | 1.10              |
| 1:D:37:PHE:CE1   | 1:E:185:LEU:HD21 | 1.66                     | 1.10              |
| 1:D:61:ALA:O     | 1:E:299:ALA:C    | 1.89                     | 1.10              |
| 1:D:416:PHE:HD2  | 1:I:405:GLU:HG2  | 1.08                     | 1.10              |
| 1:I:301:ALA:HB2  | 1:J:62:ALA:N     | 1.49                     | 1.10              |
| 1:A:177:ALA:C    | 1:F:32:SER:H     | 1.54                     | 1.10              |
| 1:C:133:PRO:HG2  | 1:D:163:ALA:N    | 1.65                     | 1.10              |
| 1:D:214:ILE:CD1  | 1:E:162:GLY:CA   | 2.28                     | 1.10              |
| 1:E:401:LYS:CD   | 1:J:420:PHE:CD2  | 2.16                     | 1.10              |
| 1:A:209:ARG:NH2  | 1:B:164:ALA:CB   | 2.04                     | 1.09              |
| 1:E:405:GLU:HG2  | 1:J:416:PHE:CD2  | 1.87                     | 1.09              |
| 1:G:134:GLU:HG3  | 1:L:158:ALA:HB2  | 1.27                     | 1.09              |
| 1:I:158:ALA:CB   | 1:J:134:GLU:CG   | 1.74                     | 1.09              |
| 1:D:405:GLU:HG2  | 1:I:416:PHE:CD2  | 1.87                     | 1.09              |
| 1:G:133:PRO:CD   | 1:L:162:GLY:HA3  | 1.83                     | 1.09              |
| 1:I:175:ALA:HB1  | 1:J:30:SER:H     | 0.99                     | 1.09              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:A:400:ALA:HA   | 1:B:288:ALA:CB  | 1.82                     | 1.09              |
| 1:C:214:ILE:CD1  | 1:D:162:GLY:CA  | 2.28                     | 1.09              |
| 1:H:164:ALA:CB   | 1:I:209:ARG:NH2 | 2.01                     | 1.09              |
| 1:H:175:ALA:HB1  | 1:I:30:SER:H    | 0.99                     | 1.09              |
| 1:A:32:SER:H     | 1:B:177:ALA:C   | 1.53                     | 1.09              |
| 1:A:405:GLU:HG2  | 1:L:416:PHE:HD2 | 1.12                     | 1.09              |
| 1:B:405:GLU:HG2  | 1:G:416:PHE:CD2 | 1.87                     | 1.09              |
| 1:C:405:GLU:HG2  | 1:H:416:PHE:CD2 | 1.87                     | 1.09              |
| 1:D:397:VAL:HG11 | 1:I:421:ILE:CA  | 1.70                     | 1.09              |
| 1:D:400:ALA:HA   | 1:E:288:ALA:CB  | 1.82                     | 1.09              |
| 1:E:32:SER:H     | 1:F:177:ALA:C   | 1.54                     | 1.09              |
| 1:E:416:PHE:CD2  | 1:J:405:GLU:HG2 | 1.88                     | 1.09              |
| 1:G:288:ALA:CB   | 1:H:400:ALA:HA  | 1.82                     | 1.09              |
| 1:H:288:ALA:CB   | 1:I:400:ALA:HA  | 1.82                     | 1.09              |
| 1:A:288:ALA:CB   | 1:F:400:ALA:HA  | 1.82                     | 1.09              |
| 1:C:214:ILE:HD12 | 1:D:162:GLY:O   | 1.53                     | 1.09              |
| 1:C:400:ALA:HA   | 1:D:288:ALA:HB1 | 1.26                     | 1.09              |
| 1:D:416:PHE:CD2  | 1:I:405:GLU:HG2 | 1.88                     | 1.09              |
| 1:E:404:LEU:HD22 | 1:J:419:TYR:HE2 | 1.16                     | 1.09              |
| 1:F:405:GLU:HG2  | 1:K:416:PHE:CD2 | 1.87                     | 1.09              |
| 1:B:400:ALA:HA   | 1:C:288:ALA:CB  | 1.82                     | 1.08              |
| 1:C:416:PHE:CD2  | 1:H:405:GLU:HG2 | 1.88                     | 1.08              |
| 1:F:404:LEU:HD22 | 1:K:419:TYR:HE2 | 1.15                     | 1.08              |
| 1:F:416:PHE:CD2  | 1:K:405:GLU:HG2 | 1.88                     | 1.08              |
| 1:G:301:ALA:HB2  | 1:H:62:ALA:N    | 1.49                     | 1.08              |
| 1:A:404:LEU:HD22 | 1:L:419:TYR:HE2 | 1.16                     | 1.08              |
| 1:E:31:LYS:HG2   | 1:F:176:ALA:O   | 1.30                     | 1.08              |
| 1:E:400:ALA:HA   | 1:F:288:ALA:CB  | 1.82                     | 1.08              |
| 1:G:134:GLU:CG   | 1:L:158:ALA:CB  | 1.74                     | 1.08              |
| 1:B:405:GLU:HG2  | 1:G:416:PHE:HD2 | 1.12                     | 1.08              |
| 1:B:416:PHE:CD2  | 1:G:405:GLU:HG2 | 1.88                     | 1.08              |
| 1:D:400:ALA:HA   | 1:E:288:ALA:HB1 | 1.26                     | 1.08              |
| 1:J:156:GLN:HA   | 1:K:135:VAL:HB  | 1.29                     | 1.08              |
| 1:J:164:ALA:CB   | 1:K:209:ARG:NH2 | 2.01                     | 1.08              |
| 1:K:175:ALA:HB1  | 1:L:30:SER:H    | 0.99                     | 1.08              |
| 1:B:419:TYR:OH   | 1:G:408:GLU:HG3 | 1.54                     | 1.08              |
| 1:C:419:TYR:OH   | 1:H:408:GLU:HG3 | 1.54                     | 1.08              |
| 1:E:419:TYR:OH   | 1:J:408:GLU:HG3 | 1.54                     | 1.08              |
| 1:G:400:ALA:HA   | 1:L:288:ALA:CB  | 1.82                     | 1.08              |
| 1:A:405:GLU:HG2  | 1:L:416:PHE:CD2 | 1.87                     | 1.08              |
| 1:A:419:TYR:OH   | 1:L:408:GLU:HG3 | 1.54                     | 1.08              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:133:PRO:HG2  | 1:F:163:ALA:N    | 1.65                     | 1.08              |
| 1:F:419:TYR:OH   | 1:K:408:GLU:HG3  | 1.54                     | 1.08              |
| 1:D:419:TYR:OH   | 1:I:408:GLU:HG3  | 1.54                     | 1.07              |
| 1:K:288:ALA:CB   | 1:L:400:ALA:HA   | 1.82                     | 1.07              |
| 1:A:416:PHE:CD2  | 1:L:405:GLU:HG2  | 1.88                     | 1.07              |
| 1:C:397:VAL:CG1  | 1:H:421:ILE:OXT  | 2.02                     | 1.07              |
| 1:D:405:GLU:HG2  | 1:I:416:PHE:HD2  | 1.12                     | 1.07              |
| 1:F:416:PHE:HD2  | 1:K:405:GLU:HG2  | 1.08                     | 1.07              |
| 1:G:162:GLY:HA3  | 1:H:133:PRO:CD   | 1.83                     | 1.07              |
| 1:A:158:ALA:HB2  | 1:F:134:GLU:HG3  | 1.24                     | 1.07              |
| 1:B:214:ILE:HD12 | 1:C:162:GLY:O    | 1.53                     | 1.07              |
| 1:F:397:VAL:CG1  | 1:K:421:ILE:OXT  | 2.02                     | 1.07              |
| 1:K:162:GLY:HA3  | 1:L:133:PRO:CD   | 1.83                     | 1.07              |
| 1:E:214:ILE:HD12 | 1:F:162:GLY:O    | 1.53                     | 1.07              |
| 1:J:301:ALA:HB2  | 1:K:62:ALA:N     | 1.49                     | 1.07              |
| 1:A:214:ILE:HD12 | 1:B:162:GLY:O    | 1.53                     | 1.07              |
| 1:A:214:ILE:HD12 | 1:B:162:GLY:C    | 1.76                     | 1.07              |
| 1:D:209:ARG:NH2  | 1:E:164:ALA:CB   | 2.04                     | 1.07              |
| 1:D:401:LYS:CD   | 1:I:420:PHE:CD2  | 2.16                     | 1.07              |
| 1:D:421:ILE:CA   | 1:I:397:VAL:CG1  | 2.32                     | 1.07              |
| 1:I:288:ALA:CB   | 1:J:400:ALA:HA   | 1.82                     | 1.07              |
| 1:A:162:GLY:C    | 1:F:214:ILE:HD12 | 1.76                     | 1.06              |
| 1:B:214:ILE:HD12 | 1:C:162:GLY:C    | 1.76                     | 1.06              |
| 1:C:37:PHE:CE1   | 1:D:185:LEU:HD21 | 1.66                     | 1.06              |
| 1:C:214:ILE:HD12 | 1:D:162:GLY:C    | 1.76                     | 1.06              |
| 1:J:288:ALA:CB   | 1:K:400:ALA:HA   | 1.82                     | 1.06              |
| 1:A:162:GLY:O    | 1:F:214:ILE:HD12 | 1.53                     | 1.06              |
| 1:A:421:ILE:CA   | 1:L:397:VAL:CG1  | 2.32                     | 1.06              |
| 1:B:404:LEU:HD22 | 1:G:419:TYR:HE2  | 1.16                     | 1.06              |
| 1:E:214:ILE:HD12 | 1:F:162:GLY:C    | 1.76                     | 1.06              |
| 1:C:209:ARG:NH2  | 1:D:164:ALA:CB   | 2.04                     | 1.06              |
| 1:D:214:ILE:HD12 | 1:E:162:GLY:C    | 1.76                     | 1.06              |
| 1:E:405:GLU:HG2  | 1:J:416:PHE:HD2  | 1.12                     | 1.06              |
| 1:D:214:ILE:HD12 | 1:E:162:GLY:O    | 1.53                     | 1.06              |
| 1:E:421:ILE:CA   | 1:J:397:VAL:CG1  | 2.32                     | 1.05              |
| 1:A:420:PHE:CD2  | 1:L:401:LYS:HD3  | 1.42                     | 1.05              |
| 1:C:404:LEU:HD22 | 1:H:419:TYR:HE2  | 1.15                     | 1.05              |
| 1:C:421:ILE:CA   | 1:H:397:VAL:CG1  | 2.32                     | 1.05              |
| 1:D:397:VAL:CG1  | 1:I:421:ILE:OXT  | 2.02                     | 1.05              |
| 1:G:162:GLY:HA3  | 1:H:214:ILE:CD1  | 1.86                     | 1.05              |
| 1:A:164:ALA:CB   | 1:F:209:ARG:NH2  | 2.04                     | 1.05              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:397:VAL:CG1  | 1:L:421:ILE:OXT  | 2.02                     | 1.05              |
| 1:A:404:LEU:HD22 | 1:L:419:TYR:CE2  | 1.90                     | 1.05              |
| 1:F:420:PHE:CD2  | 1:K:401:LYS:CD   | 2.27                     | 1.05              |
| 1:G:214:ILE:CD1  | 1:L:162:GLY:HA3  | 1.86                     | 1.05              |
| 1:H:177:ALA:HA   | 1:I:31:LYS:CA    | 1.87                     | 1.05              |
| 1:C:404:LEU:HD22 | 1:H:419:TYR:CE2  | 1.90                     | 1.04              |
| 1:E:209:ARG:NH2  | 1:F:164:ALA:CB   | 2.04                     | 1.04              |
| 1:F:419:TYR:HE2  | 1:K:404:LEU:HD22 | 1.23                     | 1.04              |
| 1:G:177:ALA:HA   | 1:H:31:LYS:CA    | 1.87                     | 1.04              |
| 1:H:162:GLY:HA3  | 1:I:214:ILE:CD1  | 1.86                     | 1.04              |
| 1:B:404:LEU:HD22 | 1:G:419:TYR:CE2  | 1.90                     | 1.04              |
| 1:F:404:LEU:HD22 | 1:K:419:TYR:CE2  | 1.90                     | 1.04              |
| 1:G:214:ILE:HD12 | 1:L:162:GLY:O    | 1.58                     | 1.04              |
| 1:H:162:GLY:HA3  | 1:I:133:PRO:CD   | 1.83                     | 1.04              |
| 1:B:133:PRO:CD   | 1:C:162:GLY:HA3  | 1.88                     | 1.04              |
| 1:B:408:GLU:HG3  | 1:G:419:TYR:OH   | 1.58                     | 1.04              |
| 1:J:162:GLY:O    | 1:K:214:ILE:HD12 | 1.58                     | 1.04              |
| 1:A:408:GLU:HG3  | 1:L:419:TYR:OH   | 1.58                     | 1.03              |
| 1:I:177:ALA:HA   | 1:J:31:LYS:CA    | 1.87                     | 1.03              |
| 1:J:162:GLY:HA3  | 1:K:133:PRO:CD   | 1.83                     | 1.03              |
| 1:E:30:SER:H     | 1:F:175:ALA:HB1  | 0.89                     | 1.03              |
| 1:K:162:GLY:HA3  | 1:L:214:ILE:CD1  | 1.86                     | 1.03              |
| 1:B:419:TYR:HE2  | 1:G:404:LEU:HD22 | 1.23                     | 1.03              |
| 1:C:405:GLU:HG2  | 1:H:416:PHE:HD2  | 1.12                     | 1.03              |
| 1:C:419:TYR:HE2  | 1:H:404:LEU:HD22 | 1.23                     | 1.03              |
| 1:D:404:LEU:HD22 | 1:I:419:TYR:CE2  | 1.90                     | 1.03              |
| 1:D:419:TYR:HE2  | 1:I:404:LEU:HD22 | 1.23                     | 1.03              |
| 1:H:162:GLY:O    | 1:I:214:ILE:HD12 | 1.58                     | 1.03              |
| 1:C:133:PRO:CD   | 1:D:162:GLY:HA3  | 1.88                     | 1.03              |
| 1:I:162:GLY:HA3  | 1:J:214:ILE:CD1  | 1.86                     | 1.03              |
| 1:B:30:SER:H     | 1:C:175:ALA:HB1  | 0.89                     | 1.03              |
| 1:C:30:SER:H     | 1:D:175:ALA:HB1  | 0.89                     | 1.03              |
| 1:A:175:ALA:HB1  | 1:F:30:SER:H     | 0.89                     | 1.02              |
| 1:C:408:GLU:OE2  | 1:H:419:TYR:CE1  | 2.12                     | 1.02              |
| 1:C:408:GLU:HG3  | 1:H:419:TYR:OH   | 1.58                     | 1.02              |
| 1:D:214:ILE:CD1  | 1:E:162:GLY:HA3  | 1.88                     | 1.02              |
| 1:E:404:LEU:HD22 | 1:J:419:TYR:CE2  | 1.90                     | 1.02              |
| 1:G:31:LYS:CA    | 1:L:177:ALA:HA   | 1.87                     | 1.02              |
| 1:A:408:GLU:OE2  | 1:L:419:TYR:CE1  | 2.12                     | 1.02              |
| 1:E:408:GLU:OE2  | 1:J:419:TYR:CE1  | 2.12                     | 1.02              |
| 1:J:162:GLY:HA3  | 1:K:214:ILE:CD1  | 1.86                     | 1.02              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:K:177:ALA:HA  | 1:L:31:LYS:CA    | 1.87                     | 1.02              |
| 1:C:214:ILE:CD1 | 1:D:162:GLY:HA3  | 1.88                     | 1.02              |
| 1:F:408:GLU:HG3 | 1:K:419:TYR:OH   | 1.58                     | 1.02              |
| 1:G:54:ASN:ND2  | 1:L:174:ALA:CB   | 2.23                     | 1.02              |
| 1:J:177:ALA:HA  | 1:K:31:LYS:CA    | 1.87                     | 1.02              |
| 1:A:133:PRO:CD  | 1:B:162:GLY:HA3  | 1.88                     | 1.02              |
| 1:B:209:ARG:NH2 | 1:C:164:ALA:CB   | 2.04                     | 1.02              |
| 1:B:397:VAL:CG1 | 1:G:421:ILE:OXT  | 2.02                     | 1.02              |
| 1:I:162:GLY:HA3 | 1:J:133:PRO:CD   | 1.83                     | 1.02              |
| 1:K:162:GLY:O   | 1:L:214:ILE:HD12 | 1.58                     | 1.02              |
| 1:A:419:TYR:HE2 | 1:L:404:LEU:HD22 | 1.23                     | 1.02              |
| 1:C:37:PHE:HE1  | 1:D:185:LEU:HD21 | 1.02                     | 1.02              |
| 1:E:397:VAL:CG1 | 1:J:421:ILE:OXT  | 2.02                     | 1.02              |
| 1:F:408:GLU:OE2 | 1:K:419:TYR:CE1  | 2.12                     | 1.02              |
| 1:B:214:ILE:CD1 | 1:C:162:GLY:HA3  | 1.88                     | 1.01              |
| 1:G:162:GLY:O   | 1:H:214:ILE:HD12 | 1.58                     | 1.01              |
| 1:B:408:GLU:OE2 | 1:G:419:TYR:CE1  | 2.12                     | 1.01              |
| 1:B:420:PHE:CD2 | 1:G:401:LYS:CD   | 2.27                     | 1.01              |
| 1:C:420:PHE:CD2 | 1:H:401:LYS:CD   | 2.27                     | 1.01              |
| 1:D:30:SER:H    | 1:E:175:ALA:HB1  | 0.89                     | 1.01              |
| 1:E:214:ILE:CD1 | 1:F:162:GLY:HA3  | 1.88                     | 1.01              |
| 1:I:162:GLY:O   | 1:J:214:ILE:HD12 | 1.58                     | 1.01              |
| 1:D:408:GLU:OE2 | 1:I:419:TYR:CE1  | 2.12                     | 1.01              |
| 1:D:408:GLU:HG3 | 1:I:419:TYR:OH   | 1.58                     | 1.01              |
| 1:J:174:ALA:CB  | 1:K:54:ASN:ND2   | 2.23                     | 1.01              |
| 1:A:158:ALA:CA  | 1:F:134:GLU:HG2  | 1.91                     | 1.01              |
| 1:E:408:GLU:HG3 | 1:J:419:TYR:OH   | 1.58                     | 1.01              |
| 1:F:401:LYS:CD  | 1:K:420:PHE:CD2  | 2.16                     | 1.01              |
| 1:I:162:GLY:C   | 1:J:214:ILE:HD12 | 1.81                     | 1.01              |
| 1:E:419:TYR:HE2 | 1:J:404:LEU:HD22 | 1.23                     | 1.01              |
| 1:G:162:GLY:HA3 | 1:H:133:PRO:HD3  | 1.43                     | 1.01              |
| 1:G:174:ALA:CB  | 1:H:54:ASN:ND2   | 2.23                     | 1.01              |
| 1:H:162:GLY:C   | 1:I:214:ILE:HD12 | 1.81                     | 1.01              |
| 1:G:133:PRO:HD3 | 1:L:162:GLY:HA3  | 1.43                     | 1.00              |
| 1:H:162:GLY:HA3 | 1:I:133:PRO:HD3  | 1.43                     | 1.00              |
| 1:I:174:ALA:CB  | 1:J:54:ASN:ND2   | 2.23                     | 1.00              |
| 1:A:299:ALA:O   | 1:F:61:ALA:C     | 2.00                     | 1.00              |
| 1:D:61:ALA:C    | 1:E:299:ALA:O    | 2.00                     | 1.00              |
| 1:D:133:PRO:CD  | 1:E:162:GLY:HA3  | 1.88                     | 1.00              |
| 1:I:162:GLY:HA3 | 1:J:133:PRO:HD3  | 1.43                     | 1.00              |
| 1:K:174:ALA:CB  | 1:L:54:ASN:ND2   | 2.23                     | 1.00              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:30:SER:H     | 1:B:175:ALA:HB1  | 0.89                     | 1.00              |
| 1:A:61:ALA:C     | 1:B:299:ALA:O    | 2.00                     | 1.00              |
| 1:A:214:ILE:CD1  | 1:B:162:GLY:HA3  | 1.88                     | 1.00              |
| 1:A:420:PHE:CD2  | 1:L:401:LYS:CD   | 2.27                     | 1.00              |
| 1:D:30:SER:H     | 1:E:175:ALA:CB   | 1.75                     | 1.00              |
| 1:E:37:PHE:HE1   | 1:F:185:LEU:HD23 | 0.85                     | 1.00              |
| 1:E:134:GLU:HG2  | 1:F:158:ALA:CA   | 1.91                     | 1.00              |
| 1:H:174:ALA:CB   | 1:I:54:ASN:ND2   | 2.23                     | 1.00              |
| 1:B:134:GLU:HG2  | 1:C:158:ALA:CA   | 1.91                     | 1.00              |
| 1:E:30:SER:H     | 1:F:175:ALA:CB   | 1.75                     | 1.00              |
| 1:A:133:PRO:HG2  | 1:B:163:ALA:H    | 0.83                     | 1.00              |
| 1:A:134:GLU:HG2  | 1:B:158:ALA:CA   | 1.91                     | 1.00              |
| 1:A:163:ALA:H    | 1:F:133:PRO:HG2  | 0.83                     | 1.00              |
| 1:C:30:SER:H     | 1:D:175:ALA:CB   | 1.75                     | 1.00              |
| 1:C:31:LYS:HA    | 1:D:177:ALA:N    | 1.76                     | 1.00              |
| 1:J:162:GLY:C    | 1:K:214:ILE:HD12 | 1.81                     | 1.00              |
| 1:A:37:PHE:HE1   | 1:B:185:LEU:HD21 | 1.01                     | 0.99              |
| 1:A:162:GLY:HA3  | 1:F:214:ILE:CD1  | 1.88                     | 0.99              |
| 1:A:175:ALA:CB   | 1:F:30:SER:H     | 1.75                     | 0.99              |
| 1:B:61:ALA:C     | 1:C:299:ALA:O    | 2.00                     | 0.99              |
| 1:C:134:GLU:HG2  | 1:D:158:ALA:CA   | 1.91                     | 0.99              |
| 1:A:162:GLY:HA3  | 1:F:133:PRO:CD   | 1.88                     | 0.99              |
| 1:C:61:ALA:C     | 1:D:299:ALA:O    | 2.00                     | 0.99              |
| 1:D:420:PHE:CD2  | 1:I:401:LYS:CD   | 2.27                     | 0.99              |
| 1:A:185:LEU:HD23 | 1:F:37:PHE:HE1   | 0.85                     | 0.99              |
| 1:B:30:SER:H     | 1:C:175:ALA:CB   | 1.75                     | 0.99              |
| 1:G:214:ILE:HD12 | 1:L:162:GLY:C    | 1.81                     | 0.99              |
| 1:D:37:PHE:HE1   | 1:E:185:LEU:HD23 | 0.85                     | 0.99              |
| 1:E:31:LYS:HA    | 1:F:177:ALA:N    | 1.76                     | 0.99              |
| 1:G:162:GLY:C    | 1:H:214:ILE:HD12 | 1.81                     | 0.99              |
| 1:A:30:SER:H     | 1:B:175:ALA:CB   | 1.75                     | 0.99              |
| 1:A:31:LYS:HA    | 1:B:177:ALA:N    | 1.76                     | 0.99              |
| 1:D:31:LYS:HA    | 1:E:177:ALA:N    | 1.76                     | 0.99              |
| 1:D:134:GLU:HG2  | 1:E:158:ALA:CA   | 1.91                     | 0.99              |
| 1:A:177:ALA:N    | 1:F:31:LYS:HA    | 1.76                     | 0.99              |
| 1:B:31:LYS:HA    | 1:C:177:ALA:N    | 1.76                     | 0.99              |
| 1:E:61:ALA:C     | 1:F:299:ALA:O    | 2.00                     | 0.99              |
| 1:E:133:PRO:HG2  | 1:F:163:ALA:H    | 0.83                     | 0.98              |
| 1:K:162:GLY:C    | 1:L:214:ILE:HD12 | 1.81                     | 0.98              |
| 1:B:37:PHE:HE1   | 1:C:185:LEU:HD21 | 1.01                     | 0.98              |
| 1:E:133:PRO:CD   | 1:F:162:GLY:HA3  | 1.88                     | 0.98              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:133:PRO:HG2  | 1:C:163:ALA:H    | 0.83                     | 0.98              |
| 1:D:133:PRO:HG2  | 1:E:163:ALA:H    | 0.83                     | 0.98              |
| 1:A:401:LYS:CD   | 1:L:420:PHE:CD2  | 2.16                     | 0.98              |
| 1:C:133:PRO:HG2  | 1:D:163:ALA:H    | 0.83                     | 0.98              |
| 1:H:177:ALA:CB   | 1:I:32:SER:N     | 2.26                     | 0.98              |
| 1:A:37:PHE:HE1   | 1:B:185:LEU:HD23 | 0.85                     | 0.98              |
| 1:K:162:GLY:HA3  | 1:L:133:PRO:HD3  | 1.43                     | 0.97              |
| 1:A:185:LEU:HD21 | 1:F:37:PHE:HE1   | 1.02                     | 0.97              |
| 1:G:177:ALA:CB   | 1:H:32:SER:N     | 2.26                     | 0.97              |
| 1:H:158:ALA:CA   | 1:I:134:GLU:HG2  | 1.94                     | 0.97              |
| 1:K:158:ALA:CA   | 1:L:134:GLU:HG2  | 1.94                     | 0.97              |
| 1:I:177:ALA:CB   | 1:J:32:SER:N     | 2.26                     | 0.97              |
| 1:E:37:PHE:HE1   | 1:F:185:LEU:HD21 | 1.01                     | 0.97              |
| 1:G:32:SER:N     | 1:L:177:ALA:CB   | 2.26                     | 0.97              |
| 1:K:177:ALA:CB   | 1:L:32:SER:N     | 2.26                     | 0.97              |
| 1:G:162:GLY:HA3  | 1:H:214:ILE:HD11 | 0.97                     | 0.97              |
| 1:C:37:PHE:HE1   | 1:D:185:LEU:HD23 | 0.85                     | 0.97              |
| 1:E:214:ILE:CD1  | 1:F:162:GLY:C    | 2.33                     | 0.97              |
| 1:G:134:GLU:HG2  | 1:L:158:ALA:CA   | 1.94                     | 0.97              |
| 1:G:214:ILE:HD11 | 1:L:162:GLY:HA3  | 0.97                     | 0.97              |
| 1:A:397:VAL:CG1  | 1:L:421:ILE:CA   | 2.42                     | 0.97              |
| 1:H:162:GLY:HA3  | 1:I:214:ILE:HD11 | 0.97                     | 0.97              |
| 1:B:397:VAL:CG1  | 1:G:421:ILE:CA   | 2.42                     | 0.97              |
| 1:E:397:VAL:CG1  | 1:J:421:ILE:CA   | 2.42                     | 0.97              |
| 1:J:162:GLY:HA3  | 1:K:133:PRO:HD3  | 1.43                     | 0.97              |
| 1:A:419:TYR:CE2  | 1:L:404:LEU:HD22 | 2.00                     | 0.96              |
| 1:I:162:GLY:HA3  | 1:J:214:ILE:HD11 | 0.97                     | 0.96              |
| 1:J:177:ALA:CB   | 1:K:32:SER:N     | 2.26                     | 0.96              |
| 1:A:162:GLY:C    | 1:F:214:ILE:CD1  | 2.33                     | 0.96              |
| 1:D:421:ILE:C    | 1:I:397:VAL:HG11 | 1.71                     | 0.96              |
| 1:K:162:GLY:HA3  | 1:L:214:ILE:HD11 | 0.97                     | 0.96              |
| 1:B:214:ILE:CD1  | 1:C:162:GLY:C    | 2.33                     | 0.96              |
| 1:I:158:ALA:CA   | 1:J:134:GLU:HG2  | 1.94                     | 0.96              |
| 1:F:401:LYS:HD3  | 1:K:420:PHE:HD2  | 1.31                     | 0.96              |
| 1:J:162:GLY:HA3  | 1:K:214:ILE:HD11 | 0.97                     | 0.96              |
| 1:B:37:PHE:HE1   | 1:C:185:LEU:HD23 | 0.85                     | 0.96              |
| 1:B:415:LYS:HD3  | 1:G:408:GLU:HG2  | 1.48                     | 0.96              |
| 1:G:163:ALA:H    | 1:H:133:PRO:HG2  | 0.80                     | 0.96              |
| 1:B:214:ILE:HD11 | 1:C:162:GLY:HA3  | 0.98                     | 0.96              |
| 1:C:214:ILE:CD1  | 1:D:162:GLY:C    | 2.33                     | 0.96              |
| 1:J:161:GLY:CA   | 1:K:131:GLY:O    | 2.14                     | 0.96              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:163:ALA:H    | 1:L:133:PRO:HG2  | 0.80                     | 0.96              |
| 1:A:214:ILE:CD1  | 1:B:162:GLY:C    | 2.33                     | 0.96              |
| 1:D:214:ILE:CD1  | 1:E:162:GLY:C    | 2.33                     | 0.96              |
| 1:C:415:LYS:HD3  | 1:H:408:GLU:HG2  | 1.48                     | 0.96              |
| 1:D:214:ILE:HD11 | 1:E:162:GLY:HA3  | 0.98                     | 0.96              |
| 1:I:163:ALA:H    | 1:J:133:PRO:HG2  | 0.80                     | 0.96              |
| 1:A:415:LYS:HD3  | 1:L:408:GLU:HG2  | 1.48                     | 0.95              |
| 1:A:421:ILE:C    | 1:L:397:VAL:HG11 | 1.71                     | 0.95              |
| 1:E:415:LYS:HD3  | 1:J:408:GLU:HG2  | 1.48                     | 0.95              |
| 1:B:419:TYR:CE2  | 1:G:404:LEU:HD22 | 2.00                     | 0.95              |
| 1:B:401:LYS:HD3  | 1:G:420:PHE:HD2  | 1.31                     | 0.95              |
| 1:C:419:TYR:CE2  | 1:H:404:LEU:HD22 | 2.00                     | 0.95              |
| 1:I:299:ALA:C    | 1:J:61:ALA:O     | 2.05                     | 0.95              |
| 1:J:163:ALA:H    | 1:K:133:PRO:HG2  | 0.80                     | 0.95              |
| 1:D:415:LYS:HD3  | 1:I:408:GLU:HG2  | 1.48                     | 0.95              |
| 1:E:214:ILE:HD11 | 1:F:162:GLY:HA3  | 0.98                     | 0.95              |
| 1:F:415:LYS:HD3  | 1:K:408:GLU:HG2  | 1.48                     | 0.95              |
| 1:F:419:TYR:CE2  | 1:K:404:LEU:HD22 | 2.00                     | 0.95              |
| 1:G:133:PRO:HG2  | 1:L:163:ALA:H    | 0.80                     | 0.95              |
| 1:J:299:ALA:C    | 1:K:61:ALA:O     | 2.05                     | 0.95              |
| 1:G:299:ALA:C    | 1:H:61:ALA:O     | 2.05                     | 0.95              |
| 1:H:163:ALA:H    | 1:I:133:PRO:HG2  | 0.80                     | 0.95              |
| 1:K:161:GLY:CA   | 1:L:131:GLY:O    | 2.14                     | 0.95              |
| 1:A:214:ILE:HD11 | 1:B:162:GLY:HA3  | 0.98                     | 0.95              |
| 1:A:31:LYS:CA    | 1:B:177:ALA:HA   | 1.97                     | 0.95              |
| 1:I:161:GLY:CA   | 1:J:131:GLY:O    | 2.14                     | 0.95              |
| 1:D:134:GLU:CD   | 1:E:158:ALA:HB2  | 1.87                     | 0.95              |
| 1:G:161:GLY:CA   | 1:H:131:GLY:O    | 2.14                     | 0.95              |
| 1:H:299:ALA:C    | 1:I:61:ALA:O     | 2.05                     | 0.95              |
| 1:A:162:GLY:HA3  | 1:F:214:ILE:HD11 | 0.98                     | 0.95              |
| 1:B:31:LYS:CA    | 1:C:177:ALA:HA   | 1.97                     | 0.95              |
| 1:E:134:GLU:CD   | 1:F:158:ALA:HB2  | 1.87                     | 0.95              |
| 1:C:214:ILE:HD11 | 1:D:162:GLY:HA3  | 0.98                     | 0.94              |
| 1:C:397:VAL:CG1  | 1:H:421:ILE:CA   | 2.42                     | 0.94              |
| 1:D:419:TYR:CE2  | 1:I:404:LEU:HD22 | 2.00                     | 0.94              |
| 1:E:404:LEU:CD2  | 1:J:419:TYR:CE2  | 2.45                     | 0.94              |
| 1:H:161:GLY:CA   | 1:I:131:GLY:O    | 2.14                     | 0.94              |
| 1:C:134:GLU:CD   | 1:D:158:ALA:HB2  | 1.87                     | 0.94              |
| 1:G:61:ALA:O     | 1:L:299:ALA:C    | 2.05                     | 0.94              |
| 1:K:299:ALA:C    | 1:L:61:ALA:O     | 2.05                     | 0.94              |
| 1:A:177:ALA:HA   | 1:F:31:LYS:CA    | 1.97                     | 0.94              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:31:LYS:CA    | 1:E:177:ALA:HA   | 1.97                     | 0.94              |
| 1:D:133:PRO:HD3  | 1:E:162:GLY:HA3  | 1.48                     | 0.94              |
| 1:G:131:GLY:O    | 1:L:161:GLY:CA   | 2.14                     | 0.94              |
| 1:A:158:ALA:HB2  | 1:F:134:GLU:CD   | 1.87                     | 0.94              |
| 1:A:419:TYR:CE1  | 1:L:408:GLU:OE2  | 2.21                     | 0.94              |
| 1:C:133:PRO:HD3  | 1:D:162:GLY:HA3  | 1.49                     | 0.94              |
| 1:B:133:PRO:HD3  | 1:C:162:GLY:HA3  | 1.48                     | 0.93              |
| 1:E:31:LYS:CA    | 1:F:177:ALA:HA   | 1.97                     | 0.93              |
| 1:C:419:TYR:CE1  | 1:H:408:GLU:OE2  | 2.21                     | 0.93              |
| 1:C:31:LYS:CA    | 1:D:177:ALA:HA   | 1.97                     | 0.93              |
| 1:C:401:LYS:HD3  | 1:H:420:PHE:HD2  | 1.31                     | 0.93              |
| 1:A:135:VAL:CA   | 1:B:156:GLN:O    | 2.00                     | 0.93              |
| 1:E:133:PRO:HD3  | 1:F:162:GLY:HA3  | 1.48                     | 0.93              |
| 1:E:419:TYR:CE2  | 1:J:404:LEU:HD22 | 2.00                     | 0.93              |
| 1:A:419:TYR:OH   | 1:L:408:GLU:OE2  | 1.86                     | 0.93              |
| 1:F:419:TYR:OH   | 1:K:408:GLU:OE2  | 1.86                     | 0.93              |
| 1:B:134:GLU:CD   | 1:C:158:ALA:HB2  | 1.87                     | 0.93              |
| 1:A:162:GLY:HA3  | 1:F:133:PRO:HD3  | 1.49                     | 0.93              |
| 1:E:419:TYR:CE1  | 1:J:408:GLU:OE2  | 2.21                     | 0.93              |
| 1:D:419:TYR:CE1  | 1:I:408:GLU:OE2  | 2.21                     | 0.93              |
| 1:D:419:TYR:OH   | 1:I:408:GLU:OE2  | 1.86                     | 0.92              |
| 1:G:54:ASN:HD21  | 1:L:174:ALA:HB1  | 1.34                     | 0.92              |
| 1:H:162:GLY:C    | 1:I:214:ILE:CD1  | 2.38                     | 0.92              |
| 1:A:134:GLU:CD   | 1:B:158:ALA:HB2  | 1.87                     | 0.92              |
| 1:A:421:ILE:C    | 1:L:397:VAL:HG13 | 1.74                     | 0.92              |
| 1:B:419:TYR:CE1  | 1:G:408:GLU:OE2  | 2.21                     | 0.92              |
| 1:A:397:VAL:HG11 | 1:L:421:ILE:C    | 1.83                     | 0.92              |
| 1:A:133:PRO:HD3  | 1:B:162:GLY:HA3  | 1.48                     | 0.92              |
| 1:F:419:TYR:CE1  | 1:K:408:GLU:OE2  | 2.21                     | 0.92              |
| 1:G:214:ILE:CD1  | 1:L:162:GLY:C    | 2.38                     | 0.92              |
| 1:I:162:GLY:C    | 1:J:214:ILE:CD1  | 2.38                     | 0.92              |
| 1:B:404:LEU:CD2  | 1:G:419:TYR:CE2  | 2.45                     | 0.91              |
| 1:K:162:GLY:C    | 1:L:214:ILE:CD1  | 2.38                     | 0.91              |
| 1:C:419:TYR:HD1  | 1:H:405:GLU:HG3  | 1.36                     | 0.91              |
| 1:F:419:TYR:CE2  | 1:K:404:LEU:CD2  | 2.52                     | 0.91              |
| 1:J:162:GLY:C    | 1:K:214:ILE:CD1  | 2.38                     | 0.91              |
| 1:K:174:ALA:HB1  | 1:L:54:ASN:HD21  | 1.34                     | 0.91              |
| 1:J:174:ALA:HB1  | 1:K:54:ASN:HD21  | 1.34                     | 0.91              |
| 1:A:404:LEU:CD2  | 1:L:419:TYR:CE2  | 2.45                     | 0.91              |
| 1:B:419:TYR:OH   | 1:G:408:GLU:OE2  | 1.86                     | 0.91              |
| 1:F:419:TYR:HD1  | 1:K:405:GLU:HG3  | 1.36                     | 0.91              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:421:ILE:C    | 1:H:397:VAL:HG11 | 1.71                     | 0.91              |
| 1:A:419:TYR:HD1  | 1:L:405:GLU:HG3  | 1.36                     | 0.91              |
| 1:I:158:ALA:HB3  | 1:J:134:GLU:HG2  | 1.49                     | 0.91              |
| 1:C:419:TYR:OH   | 1:H:408:GLU:OE2  | 1.86                     | 0.91              |
| 1:F:404:LEU:CD2  | 1:K:419:TYR:CE2  | 2.45                     | 0.91              |
| 1:A:61:ALA:O     | 1:B:299:ALA:CA   | 2.20                     | 0.90              |
| 1:B:397:VAL:HG11 | 1:G:421:ILE:C    | 1.83                     | 0.90              |
| 1:B:419:TYR:HD1  | 1:G:405:GLU:HG3  | 1.36                     | 0.90              |
| 1:E:419:TYR:OH   | 1:J:408:GLU:OE2  | 1.86                     | 0.90              |
| 1:K:158:ALA:HB3  | 1:L:134:GLU:HG2  | 1.49                     | 0.90              |
| 1:G:134:GLU:HG2  | 1:L:158:ALA:HB3  | 1.49                     | 0.90              |
| 1:B:408:GLU:HG2  | 1:G:415:LYS:HD3  | 1.54                     | 0.90              |
| 1:D:408:GLU:HG2  | 1:I:415:LYS:HD3  | 1.54                     | 0.90              |
| 1:E:420:PHE:CD2  | 1:J:401:LYS:CD   | 2.27                     | 0.90              |
| 1:A:401:LYS:HD3  | 1:L:420:PHE:HD2  | 1.31                     | 0.90              |
| 1:B:205:GLN:OE1  | 1:C:166:ALA:HB2  | 1.72                     | 0.90              |
| 1:C:61:ALA:O     | 1:D:299:ALA:CA   | 2.20                     | 0.90              |
| 1:E:408:GLU:HG2  | 1:J:415:LYS:HD3  | 1.54                     | 0.90              |
| 1:D:135:VAL:CA   | 1:E:156:GLN:O    | 2.00                     | 0.90              |
| 1:D:404:LEU:CD2  | 1:I:419:TYR:CE2  | 2.45                     | 0.90              |
| 1:E:205:GLN:OE1  | 1:F:166:ALA:HB2  | 1.72                     | 0.90              |
| 1:E:419:TYR:HD1  | 1:J:405:GLU:HG3  | 1.36                     | 0.90              |
| 1:F:408:GLU:OE2  | 1:K:419:TYR:OH   | 1.90                     | 0.90              |
| 1:G:162:GLY:C    | 1:H:214:ILE:CD1  | 2.38                     | 0.90              |
| 1:H:174:ALA:HB1  | 1:I:54:ASN:HD21  | 1.34                     | 0.90              |
| 1:H:175:ALA:CB   | 1:I:30:SER:H     | 1.85                     | 0.90              |
| 1:A:299:ALA:CA   | 1:F:61:ALA:O     | 2.20                     | 0.90              |
| 1:B:421:ILE:C    | 1:G:397:VAL:HG11 | 1.71                     | 0.90              |
| 1:E:397:VAL:HG13 | 1:J:421:ILE:C    | 1.84                     | 0.90              |
| 1:I:175:ALA:CB   | 1:J:30:SER:H     | 1.85                     | 0.90              |
| 1:A:419:TYR:CE2  | 1:L:404:LEU:CD2  | 2.52                     | 0.89              |
| 1:C:408:GLU:HG2  | 1:H:415:LYS:HD3  | 1.54                     | 0.89              |
| 1:I:174:ALA:HB1  | 1:J:54:ASN:HD21  | 1.34                     | 0.89              |
| 1:A:205:GLN:OE1  | 1:B:166:ALA:HB2  | 1.72                     | 0.89              |
| 1:A:408:GLU:HG2  | 1:L:415:LYS:HD3  | 1.54                     | 0.89              |
| 1:D:61:ALA:O     | 1:E:299:ALA:CA   | 2.20                     | 0.89              |
| 1:D:205:GLN:OE1  | 1:E:166:ALA:HB2  | 1.72                     | 0.89              |
| 1:J:175:ALA:CB   | 1:K:30:SER:H     | 1.85                     | 0.89              |
| 1:B:61:ALA:O     | 1:C:299:ALA:CA   | 2.20                     | 0.89              |
| 1:C:205:GLN:OE1  | 1:D:166:ALA:HB2  | 1.72                     | 0.89              |
| 1:G:30:SER:H     | 1:L:175:ALA:CB   | 1.85                     | 0.89              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:K:175:ALA:CB   | 1:L:30:SER:H     | 1.85                     | 0.89              |
| 1:D:419:TYR:HD1  | 1:I:405:GLU:HG3  | 1.36                     | 0.89              |
| 1:D:421:ILE:C    | 1:I:397:VAL:HG13 | 1.74                     | 0.89              |
| 1:A:166:ALA:HB2  | 1:F:205:GLN:OE1  | 1.72                     | 0.89              |
| 1:G:161:GLY:C    | 1:H:214:ILE:CD1  | 2.42                     | 0.89              |
| 1:A:299:ALA:O    | 1:F:61:ALA:CB    | 2.22                     | 0.89              |
| 1:B:408:GLU:OE2  | 1:G:419:TYR:OH   | 1.90                     | 0.89              |
| 1:C:408:GLU:OE2  | 1:H:419:TYR:OH   | 1.90                     | 0.89              |
| 1:F:408:GLU:HG2  | 1:K:415:LYS:HD3  | 1.54                     | 0.88              |
| 1:G:214:ILE:CD1  | 1:L:161:GLY:C    | 2.42                     | 0.88              |
| 1:D:408:GLU:OE2  | 1:I:419:TYR:OH   | 1.90                     | 0.88              |
| 1:E:61:ALA:CB    | 1:F:299:ALA:O    | 2.22                     | 0.88              |
| 1:C:404:LEU:CD2  | 1:H:419:TYR:CE2  | 2.45                     | 0.88              |
| 1:D:401:LYS:HD3  | 1:I:420:PHE:HD2  | 1.31                     | 0.88              |
| 1:A:408:GLU:OE2  | 1:L:419:TYR:OH   | 1.90                     | 0.88              |
| 1:B:419:TYR:OH   | 1:G:408:GLU:CG   | 2.22                     | 0.88              |
| 1:E:61:ALA:O     | 1:F:299:ALA:CA   | 2.20                     | 0.88              |
| 1:H:158:ALA:HB3  | 1:I:134:GLU:HG2  | 1.49                     | 0.88              |
| 1:E:408:GLU:OE2  | 1:J:419:TYR:OH   | 1.90                     | 0.88              |
| 1:A:61:ALA:CB    | 1:B:299:ALA:O    | 2.22                     | 0.88              |
| 1:A:419:TYR:OH   | 1:L:408:GLU:CG   | 2.22                     | 0.88              |
| 1:G:31:LYS:HA    | 1:L:177:ALA:N    | 1.67                     | 0.88              |
| 1:G:174:ALA:HB1  | 1:H:54:ASN:HD21  | 1.34                     | 0.88              |
| 1:J:161:GLY:C    | 1:K:214:ILE:CD1  | 2.42                     | 0.88              |
| 1:K:161:GLY:C    | 1:L:214:ILE:CD1  | 2.42                     | 0.88              |
| 1:C:419:TYR:OH   | 1:H:408:GLU:CG   | 2.22                     | 0.88              |
| 1:F:421:ILE:C    | 1:K:397:VAL:HG11 | 1.71                     | 0.88              |
| 1:H:161:GLY:C    | 1:I:214:ILE:CD1  | 2.42                     | 0.88              |
| 1:C:419:TYR:HH   | 1:H:408:GLU:HG3  | 1.40                     | 0.87              |
| 1:E:397:VAL:HG11 | 1:J:421:ILE:C    | 1.83                     | 0.87              |
| 1:B:415:LYS:HD3  | 1:G:408:GLU:CG   | 2.04                     | 0.87              |
| 1:B:421:ILE:CA   | 1:G:397:VAL:CG1  | 2.32                     | 0.87              |
| 1:H:158:ALA:HB2  | 1:I:134:GLU:CD   | 1.95                     | 0.87              |
| 1:F:419:TYR:OH   | 1:K:408:GLU:CG   | 2.22                     | 0.87              |
| 1:B:397:VAL:HG13 | 1:G:421:ILE:C    | 1.84                     | 0.87              |
| 1:I:161:GLY:C    | 1:J:214:ILE:CD1  | 2.42                     | 0.87              |
| 1:A:415:LYS:HD3  | 1:L:408:GLU:CG   | 2.04                     | 0.87              |
| 1:C:61:ALA:CB    | 1:D:299:ALA:O    | 2.22                     | 0.87              |
| 1:F:415:LYS:HD3  | 1:K:408:GLU:CG   | 2.04                     | 0.87              |
| 1:D:419:TYR:OH   | 1:I:408:GLU:CG   | 2.22                     | 0.87              |
| 1:G:134:GLU:CD   | 1:L:158:ALA:HB2  | 1.94                     | 0.87              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:299:ALA:O    | 1:J:61:ALA:CB    | 2.18                     | 0.87              |
| 1:B:421:ILE:C    | 1:G:397:VAL:HG13 | 1.75                     | 0.87              |
| 1:D:54:ASN:ND2   | 1:E:174:ALA:CB   | 2.38                     | 0.87              |
| 1:E:421:ILE:C    | 1:J:397:VAL:HG13 | 1.75                     | 0.87              |
| 1:E:419:TYR:OH   | 1:J:408:GLU:CG   | 2.22                     | 0.86              |
| 1:G:299:ALA:O    | 1:H:61:ALA:C     | 2.14                     | 0.86              |
| 1:K:158:ALA:HB2  | 1:L:134:GLU:CD   | 1.95                     | 0.86              |
| 1:B:61:ALA:CB    | 1:C:299:ALA:O    | 2.22                     | 0.86              |
| 1:K:299:ALA:O    | 1:L:61:ALA:C     | 2.14                     | 0.86              |
| 1:E:415:LYS:HD3  | 1:J:408:GLU:CG   | 2.04                     | 0.86              |
| 1:J:299:ALA:O    | 1:K:61:ALA:C     | 2.14                     | 0.86              |
| 1:I:299:ALA:O    | 1:J:61:ALA:C     | 2.14                     | 0.86              |
| 1:I:158:ALA:HB2  | 1:J:134:GLU:CD   | 1.94                     | 0.86              |
| 1:D:415:LYS:HD3  | 1:I:408:GLU:CG   | 2.04                     | 0.86              |
| 1:G:299:ALA:O    | 1:H:61:ALA:CB    | 2.18                     | 0.86              |
| 1:A:174:ALA:CB   | 1:F:54:ASN:ND2   | 2.38                     | 0.86              |
| 1:C:415:LYS:HD3  | 1:H:408:GLU:CG   | 2.04                     | 0.86              |
| 1:D:61:ALA:CB    | 1:E:299:ALA:O    | 2.22                     | 0.86              |
| 1:A:54:ASN:ND2   | 1:B:174:ALA:CB   | 2.38                     | 0.86              |
| 1:D:419:TYR:CE2  | 1:I:404:LEU:CD2  | 2.52                     | 0.86              |
| 1:A:37:PHE:CD1   | 1:B:185:LEU:CD2  | 2.59                     | 0.86              |
| 1:E:401:LYS:CD   | 1:J:420:PHE:HD2  | 1.85                     | 0.86              |
| 1:G:61:ALA:C     | 1:L:299:ALA:O    | 2.14                     | 0.86              |
| 1:C:37:PHE:CD1   | 1:D:185:LEU:CD2  | 2.59                     | 0.85              |
| 1:G:29:ARG:CB    | 1:L:175:ALA:CB   | 2.37                     | 0.85              |
| 1:I:177:ALA:N    | 1:J:31:LYS:HA    | 1.67                     | 0.85              |
| 1:C:54:ASN:ND2   | 1:D:174:ALA:CB   | 2.38                     | 0.85              |
| 1:C:401:LYS:CD   | 1:H:420:PHE:HD2  | 1.85                     | 0.85              |
| 1:K:163:ALA:H    | 1:L:133:PRO:HG3  | 1.41                     | 0.85              |
| 1:C:419:TYR:CE1  | 1:H:405:GLU:N    | 2.44                     | 0.85              |
| 1:D:209:ARG:CZ   | 1:E:164:ALA:HB1  | 2.06                     | 0.85              |
| 1:B:54:ASN:ND2   | 1:C:174:ALA:CB   | 2.38                     | 0.85              |
| 1:A:164:ALA:HB1  | 1:F:209:ARG:CZ   | 2.06                     | 0.85              |
| 1:B:419:TYR:CE1  | 1:G:405:GLU:N    | 2.44                     | 0.85              |
| 1:D:37:PHE:CD1   | 1:E:185:LEU:CD2  | 2.59                     | 0.85              |
| 1:D:397:VAL:HG13 | 1:I:421:ILE:C    | 1.84                     | 0.85              |
| 1:E:54:ASN:ND2   | 1:F:174:ALA:CB   | 2.38                     | 0.85              |
| 1:G:133:PRO:HG3  | 1:L:163:ALA:H    | 1.41                     | 0.85              |
| 1:A:185:LEU:CD2  | 1:F:37:PHE:CD1   | 2.59                     | 0.85              |
| 1:F:397:VAL:HG11 | 1:K:421:ILE:C    | 1.83                     | 0.85              |
| 1:F:419:TYR:CE1  | 1:K:405:GLU:N    | 2.44                     | 0.85              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:C:397:VAL:HG11 | 1:H:421:ILE:C   | 1.83                     | 0.85              |
| 1:D:419:TYR:CE1  | 1:I:405:GLU:N   | 2.44                     | 0.85              |
| 1:E:419:TYR:CE1  | 1:J:405:GLU:N   | 2.44                     | 0.85              |
| 1:H:299:ALA:O    | 1:I:61:ALA:C    | 2.14                     | 0.85              |
| 1:A:30:SER:N     | 1:B:175:ALA:CB  | 2.38                     | 0.84              |
| 1:A:419:TYR:CE1  | 1:L:405:GLU:N   | 2.44                     | 0.84              |
| 1:C:209:ARG:CZ   | 1:D:164:ALA:HB1 | 2.06                     | 0.84              |
| 1:C:419:TYR:CE2  | 1:H:404:LEU:CD2 | 2.52                     | 0.84              |
| 1:E:209:ARG:CZ   | 1:F:164:ALA:HB1 | 2.06                     | 0.84              |
| 1:E:419:TYR:CE2  | 1:J:404:LEU:CD2 | 2.52                     | 0.84              |
| 1:G:177:ALA:N    | 1:H:31:LYS:HA   | 1.67                     | 0.84              |
| 1:I:177:ALA:CA   | 1:J:31:LYS:HA   | 2.08                     | 0.84              |
| 1:J:177:ALA:CA   | 1:K:31:LYS:HA   | 2.08                     | 0.84              |
| 1:C:32:SER:N     | 1:D:177:ALA:CB  | 2.40                     | 0.84              |
| 1:G:31:LYS:HA    | 1:L:177:ALA:CA  | 2.08                     | 0.84              |
| 1:K:177:ALA:CA   | 1:L:31:LYS:HA   | 2.08                     | 0.84              |
| 1:A:209:ARG:CZ   | 1:B:164:ALA:HB1 | 2.06                     | 0.84              |
| 1:A:397:VAL:HG13 | 1:L:421:ILE:C   | 1.84                     | 0.84              |
| 1:H:299:ALA:O    | 1:I:61:ALA:CB   | 2.18                     | 0.84              |
| 1:B:32:SER:N     | 1:C:177:ALA:CB  | 2.40                     | 0.84              |
| 1:B:37:PHE:CD1   | 1:C:185:LEU:CD2 | 2.59                     | 0.84              |
| 1:B:419:TYR:HH   | 1:G:408:GLU:HG3 | 1.42                     | 0.84              |
| 1:G:400:ALA:CA   | 1:L:288:ALA:HB1 | 2.08                     | 0.84              |
| 1:K:288:ALA:HB1  | 1:L:400:ALA:CA  | 2.08                     | 0.84              |
| 1:A:32:SER:N     | 1:B:177:ALA:CB  | 2.40                     | 0.84              |
| 1:D:32:SER:N     | 1:E:177:ALA:CB  | 2.40                     | 0.84              |
| 1:C:408:GLU:CG   | 1:H:419:TYR:OH  | 2.26                     | 0.83              |
| 1:G:163:ALA:H    | 1:H:133:PRO:HG3 | 1.41                     | 0.83              |
| 1:G:175:ALA:CB   | 1:H:30:SER:H    | 1.85                     | 0.83              |
| 1:G:288:ALA:HB1  | 1:H:400:ALA:CA  | 2.08                     | 0.83              |
| 1:A:177:ALA:CB   | 1:F:32:SER:N    | 2.40                     | 0.83              |
| 1:B:408:GLU:CG   | 1:G:419:TYR:OH  | 2.26                     | 0.83              |
| 1:E:401:LYS:HD3  | 1:J:420:PHE:HD2 | 1.31                     | 0.83              |
| 1:I:162:GLY:CA   | 1:J:133:PRO:HD3 | 2.01                     | 0.83              |
| 1:A:288:ALA:HB1  | 1:F:400:ALA:CA  | 2.08                     | 0.83              |
| 1:C:408:GLU:HG3  | 1:H:419:TYR:HH  | 1.41                     | 0.83              |
| 1:D:408:GLU:CG   | 1:I:419:TYR:OH  | 2.26                     | 0.83              |
| 1:E:37:PHE:CD1   | 1:F:185:LEU:CD2 | 2.59                     | 0.83              |
| 1:E:400:ALA:CA   | 1:F:288:ALA:HB1 | 2.08                     | 0.83              |
| 1:H:177:ALA:CA   | 1:I:31:LYS:HA   | 2.08                     | 0.83              |
| 1:J:177:ALA:N    | 1:K:31:LYS:HA   | 1.67                     | 0.83              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:A:408:GLU:CG   | 1:L:419:TYR:OH  | 2.26                     | 0.83              |
| 1:D:397:VAL:CG1  | 1:I:421:ILE:CA  | 2.42                     | 0.83              |
| 1:F:420:PHE:HD2  | 1:K:401:LYS:HD3 | 1.43                     | 0.83              |
| 1:G:177:ALA:CA   | 1:H:31:LYS:HA   | 2.08                     | 0.83              |
| 1:I:163:ALA:H    | 1:J:133:PRO:HG3 | 1.41                     | 0.83              |
| 1:B:30:SER:N     | 1:C:175:ALA:CB  | 2.38                     | 0.83              |
| 1:E:32:SER:N     | 1:F:177:ALA:CB  | 2.40                     | 0.83              |
| 1:J:288:ALA:HB1  | 1:K:400:ALA:CA  | 2.08                     | 0.83              |
| 1:K:299:ALA:O    | 1:L:61:ALA:CB   | 2.18                     | 0.83              |
| 1:E:408:GLU:CG   | 1:J:419:TYR:OH  | 2.26                     | 0.83              |
| 1:F:408:GLU:CG   | 1:K:419:TYR:OH  | 2.26                     | 0.83              |
| 1:H:163:ALA:H    | 1:I:133:PRO:HG3 | 1.41                     | 0.83              |
| 1:C:30:SER:N     | 1:D:175:ALA:CB  | 2.38                     | 0.83              |
| 1:B:62:ALA:H     | 1:C:301:ALA:HB2 | 0.68                     | 0.83              |
| 1:B:209:ARG:CZ   | 1:C:164:ALA:HB1 | 2.06                     | 0.83              |
| 1:B:408:GLU:HG3  | 1:G:419:TYR:HH  | 1.43                     | 0.83              |
| 1:D:397:VAL:HG11 | 1:I:421:ILE:C   | 1.83                     | 0.83              |
| 1:H:177:ALA:CA   | 1:I:31:LYS:CA   | 2.57                     | 0.83              |
| 1:F:421:ILE:CA   | 1:K:397:VAL:CG1 | 2.32                     | 0.82              |
| 1:A:400:ALA:CA   | 1:B:288:ALA:HB1 | 2.09                     | 0.82              |
| 1:A:134:GLU:HG2  | 1:B:158:ALA:HB3 | 1.57                     | 0.82              |
| 1:H:177:ALA:N    | 1:I:31:LYS:HA   | 1.67                     | 0.82              |
| 1:A:419:TYR:CD1  | 1:L:405:GLU:N   | 2.48                     | 0.82              |
| 1:D:419:TYR:CD1  | 1:I:405:GLU:N   | 2.48                     | 0.82              |
| 1:E:419:TYR:CD1  | 1:J:405:GLU:N   | 2.48                     | 0.82              |
| 1:I:288:ALA:HB1  | 1:J:400:ALA:CA  | 2.08                     | 0.82              |
| 1:F:419:TYR:CD1  | 1:K:405:GLU:N   | 2.48                     | 0.82              |
| 1:B:419:TYR:CD1  | 1:G:405:GLU:N   | 2.48                     | 0.82              |
| 1:C:134:GLU:HG2  | 1:D:158:ALA:HB3 | 1.57                     | 0.82              |
| 1:G:177:ALA:CA   | 1:H:31:LYS:CA   | 2.57                     | 0.82              |
| 1:E:419:TYR:HH   | 1:J:408:GLU:HG3 | 1.44                     | 0.82              |
| 1:C:419:TYR:CD1  | 1:H:405:GLU:N   | 2.48                     | 0.82              |
| 1:J:163:ALA:H    | 1:K:133:PRO:HG3 | 1.41                     | 0.82              |
| 1:A:133:PRO:HG3  | 1:B:163:ALA:H   | 1.44                     | 0.81              |
| 1:A:163:ALA:H    | 1:F:133:PRO:HG3 | 1.44                     | 0.81              |
| 1:D:419:TYR:HH   | 1:I:408:GLU:HG3 | 1.46                     | 0.81              |
| 1:G:133:PRO:O    | 1:L:158:ALA:CA  | 2.22                     | 0.81              |
| 1:C:62:ALA:H     | 1:D:301:ALA:HB2 | 0.68                     | 0.81              |
| 1:A:61:ALA:C     | 1:B:299:ALA:C   | 2.39                     | 0.81              |
| 1:B:134:GLU:HG2  | 1:C:158:ALA:HB3 | 1.57                     | 0.81              |
| 1:K:177:ALA:CA   | 1:L:31:LYS:CA   | 2.57                     | 0.81              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:421:ILE:C    | 1:J:397:VAL:HG11 | 1.71                     | 0.81              |
| 1:H:158:ALA:CA   | 1:I:133:PRO:O    | 2.22                     | 0.81              |
| 1:B:31:LYS:CA    | 1:C:176:ALA:C    | 2.35                     | 0.81              |
| 1:B:400:ALA:CA   | 1:C:288:ALA:HB1  | 2.08                     | 0.81              |
| 1:C:61:ALA:C     | 1:D:299:ALA:C    | 2.39                     | 0.81              |
| 1:E:62:ALA:H     | 1:F:301:ALA:HB2  | 0.68                     | 0.81              |
| 1:H:288:ALA:HB1  | 1:I:400:ALA:CA   | 2.08                     | 0.81              |
| 1:D:62:ALA:H     | 1:E:301:ALA:HB2  | 0.67                     | 0.80              |
| 1:H:156:GLN:HE22 | 1:I:137:ASN:HD22 | 0.81                     | 0.80              |
| 1:I:156:GLN:HE22 | 1:J:137:ASN:HD22 | 0.81                     | 0.80              |
| 1:B:419:TYR:CE2  | 1:G:404:LEU:CD2  | 2.52                     | 0.80              |
| 1:G:156:GLN:HE22 | 1:H:137:ASN:HD22 | 0.81                     | 0.80              |
| 1:J:156:GLN:HE22 | 1:K:137:ASN:HD22 | 0.81                     | 0.80              |
| 1:J:177:ALA:CA   | 1:K:31:LYS:CA    | 2.57                     | 0.80              |
| 1:B:133:PRO:HG3  | 1:C:163:ALA:H    | 1.44                     | 0.80              |
| 1:G:175:ALA:CB   | 1:H:29:ARG:CB    | 2.37                     | 0.80              |
| 1:G:158:ALA:CA   | 1:H:133:PRO:O    | 2.22                     | 0.80              |
| 1:J:175:ALA:CB   | 1:K:29:ARG:CB    | 2.37                     | 0.80              |
| 1:J:299:ALA:O    | 1:K:61:ALA:CB    | 2.18                     | 0.80              |
| 1:K:301:ALA:HB2  | 1:L:62:ALA:H     | 0.67                     | 0.80              |
| 1:E:61:ALA:C     | 1:F:299:ALA:C    | 2.39                     | 0.80              |
| 1:E:133:PRO:HG3  | 1:F:163:ALA:H    | 1.44                     | 0.80              |
| 1:J:301:ALA:HB2  | 1:K:62:ALA:H     | 0.67                     | 0.80              |
| 1:C:415:LYS:HD3  | 1:H:408:GLU:CD   | 2.03                     | 0.80              |
| 1:H:166:ALA:HB2  | 1:I:205:GLN:OE1  | 1.82                     | 0.80              |
| 1:A:301:ALA:HB2  | 1:F:62:ALA:H     | 0.68                     | 0.79              |
| 1:C:400:ALA:CA   | 1:D:288:ALA:HB1  | 2.08                     | 0.79              |
| 1:D:37:PHE:HE1   | 1:E:185:LEU:HD21 | 1.01                     | 0.79              |
| 1:G:137:ASN:HD22 | 1:L:156:GLN:HE22 | 0.81                     | 0.79              |
| 1:I:166:ALA:HB2  | 1:J:205:GLN:OE1  | 1.82                     | 0.79              |
| 1:K:156:GLN:HE22 | 1:L:137:ASN:HD22 | 0.81                     | 0.79              |
| 1:C:133:PRO:HG3  | 1:D:163:ALA:H    | 1.44                     | 0.79              |
| 1:I:158:ALA:CA   | 1:J:133:PRO:O    | 2.22                     | 0.79              |
| 1:D:54:ASN:HD21  | 1:E:174:ALA:HB1  | 1.48                     | 0.79              |
| 1:F:401:LYS:CD   | 1:K:420:PHE:HD2  | 1.85                     | 0.79              |
| 1:G:166:ALA:HB2  | 1:H:205:GLN:OE1  | 1.82                     | 0.79              |
| 1:K:177:ALA:N    | 1:L:31:LYS:HA    | 1.67                     | 0.79              |
| 1:D:61:ALA:C     | 1:E:299:ALA:C    | 2.39                     | 0.79              |
| 1:E:415:LYS:HD3  | 1:J:408:GLU:CD   | 2.03                     | 0.79              |
| 1:F:415:LYS:HD3  | 1:K:408:GLU:CD   | 2.03                     | 0.79              |
| 1:I:175:ALA:CB   | 1:J:29:ARG:CB    | 2.37                     | 0.79              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:205:GLN:OE1  | 1:L:166:ALA:HB2  | 1.82                     | 0.79              |
| 1:I:177:ALA:CA   | 1:J:31:LYS:CA    | 2.57                     | 0.79              |
| 1:J:166:ALA:HB2  | 1:K:205:GLN:OE1  | 1.82                     | 0.79              |
| 1:B:401:LYS:CD   | 1:G:420:PHE:HD2  | 1.85                     | 0.79              |
| 1:F:408:GLU:CG   | 1:K:415:LYS:HD3  | 2.12                     | 0.79              |
| 1:A:174:ALA:HB1  | 1:F:54:ASN:HD21  | 1.48                     | 0.79              |
| 1:C:214:ILE:HG13 | 1:D:163:ALA:O    | 1.84                     | 0.79              |
| 1:D:408:GLU:HG3  | 1:I:419:TYR:HH   | 1.43                     | 0.79              |
| 1:K:166:ALA:HB2  | 1:L:205:GLN:OE1  | 1.82                     | 0.79              |
| 1:B:408:GLU:CG   | 1:G:415:LYS:HD3  | 2.12                     | 0.78              |
| 1:C:135:VAL:CB   | 1:D:156:GLN:HA   | 2.11                     | 0.78              |
| 1:E:420:PHE:HD2  | 1:J:401:LYS:HD3  | 1.43                     | 0.78              |
| 1:C:405:GLU:HG3  | 1:H:419:TYR:HD1  | 1.49                     | 0.78              |
| 1:C:408:GLU:CG   | 1:H:415:LYS:HD3  | 2.12                     | 0.78              |
| 1:A:163:ALA:O    | 1:F:214:ILE:HG13 | 1.84                     | 0.78              |
| 1:G:62:ALA:H     | 1:L:301:ALA:HB2  | 0.67                     | 0.78              |
| 1:G:301:ALA:HB2  | 1:H:62:ALA:H     | 0.67                     | 0.78              |
| 1:J:158:ALA:CA   | 1:K:133:PRO:O    | 2.22                     | 0.78              |
| 1:A:408:GLU:CG   | 1:L:415:LYS:HD3  | 2.12                     | 0.78              |
| 1:B:415:LYS:HD3  | 1:G:408:GLU:CD   | 2.03                     | 0.78              |
| 1:D:405:GLU:HG3  | 1:I:419:TYR:HD1  | 1.48                     | 0.78              |
| 1:E:214:ILE:HG13 | 1:F:163:ALA:O    | 1.84                     | 0.78              |
| 1:E:405:GLU:HG3  | 1:J:419:TYR:HD1  | 1.48                     | 0.78              |
| 1:F:405:GLU:HG3  | 1:K:419:TYR:HD1  | 1.49                     | 0.78              |
| 1:F:419:TYR:HH   | 1:K:408:GLU:HG3  | 1.46                     | 0.78              |
| 1:I:158:ALA:CB   | 1:J:134:GLU:HG3  | 1.95                     | 0.78              |
| 1:A:62:ALA:H     | 1:B:301:ALA:HB2  | 0.67                     | 0.78              |
| 1:H:175:ALA:CB   | 1:I:29:ARG:CB    | 2.37                     | 0.78              |
| 1:I:301:ALA:HB2  | 1:J:62:ALA:H     | 0.67                     | 0.78              |
| 1:A:214:ILE:HG13 | 1:B:163:ALA:O    | 1.84                     | 0.78              |
| 1:E:408:GLU:CG   | 1:J:415:LYS:HD3  | 2.12                     | 0.78              |
| 1:A:419:TYR:HH   | 1:L:408:GLU:HG3  | 1.46                     | 0.78              |
| 1:B:61:ALA:C     | 1:C:299:ALA:C    | 2.39                     | 0.78              |
| 1:B:135:VAL:CB   | 1:C:156:GLN:HA   | 2.11                     | 0.78              |
| 1:B:214:ILE:HG13 | 1:C:163:ALA:O    | 1.84                     | 0.78              |
| 1:D:400:ALA:CA   | 1:E:288:ALA:HB1  | 2.09                     | 0.78              |
| 1:A:299:ALA:C    | 1:F:61:ALA:C     | 2.39                     | 0.78              |
| 1:K:175:ALA:CB   | 1:L:29:ARG:CB    | 2.37                     | 0.78              |
| 1:A:134:GLU:CD   | 1:B:158:ALA:CB   | 2.50                     | 0.77              |
| 1:A:31:LYS:HB3   | 1:B:176:ALA:O    | 1.84                     | 0.77              |
| 1:D:408:GLU:CG   | 1:I:415:LYS:HD3  | 2.12                     | 0.77              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:K:299:ALA:O    | 1:L:61:ALA:HB3  | 1.85                     | 0.77              |
| 1:A:405:GLU:HG3  | 1:L:419:TYR:HD1 | 1.48                     | 0.77              |
| 1:A:415:LYS:HD3  | 1:L:408:GLU:CD  | 2.03                     | 0.77              |
| 1:D:214:ILE:HG13 | 1:E:163:ALA:O   | 1.84                     | 0.77              |
| 1:G:61:ALA:O     | 1:L:299:ALA:CA  | 2.33                     | 0.77              |
| 1:J:174:ALA:HB3  | 1:K:54:ASN:HD21 | 1.48                     | 0.77              |
| 1:K:177:ALA:C    | 1:L:32:SER:N    | 2.38                     | 0.77              |
| 1:G:61:ALA:HB3   | 1:L:299:ALA:O   | 1.85                     | 0.77              |
| 1:D:415:LYS:HD3  | 1:I:408:GLU:CD  | 2.03                     | 0.77              |
| 1:E:54:ASN:HD21  | 1:F:174:ALA:HB1 | 1.48                     | 0.77              |
| 1:I:299:ALA:CA   | 1:J:61:ALA:O    | 2.33                     | 0.77              |
| 1:J:299:ALA:O    | 1:K:61:ALA:HB3  | 1.85                     | 0.77              |
| 1:B:405:GLU:HG3  | 1:G:419:TYR:HD1 | 1.48                     | 0.77              |
| 1:E:30:SER:N     | 1:F:175:ALA:CB  | 2.38                     | 0.77              |
| 1:G:61:ALA:CB    | 1:L:299:ALA:O   | 2.18                     | 0.77              |
| 1:J:299:ALA:CA   | 1:K:61:ALA:O    | 2.33                     | 0.77              |
| 1:D:135:VAL:CB   | 1:E:156:GLN:HA  | 2.11                     | 0.77              |
| 1:H:301:ALA:HB2  | 1:I:62:ALA:H    | 0.67                     | 0.77              |
| 1:J:177:ALA:C    | 1:K:32:SER:N    | 2.38                     | 0.77              |
| 1:A:61:ALA:CB    | 1:B:299:ALA:C   | 2.24                     | 0.77              |
| 1:C:419:TYR:CZ   | 1:H:404:LEU:C   | 2.58                     | 0.77              |
| 1:H:175:ALA:CB   | 1:I:30:SER:N    | 2.45                     | 0.77              |
| 1:B:405:GLU:N    | 1:G:419:TYR:CE1 | 2.53                     | 0.77              |
| 1:D:133:PRO:HG3  | 1:E:163:ALA:H   | 1.44                     | 0.77              |
| 1:G:299:ALA:CA   | 1:H:61:ALA:O    | 2.33                     | 0.77              |
| 1:K:299:ALA:CA   | 1:L:61:ALA:O    | 2.33                     | 0.77              |
| 1:C:404:LEU:HD12 | 1:H:419:TYR:HA  | 1.68                     | 0.76              |
| 1:B:419:TYR:CZ   | 1:G:404:LEU:C   | 2.58                     | 0.76              |
| 1:C:405:GLU:N    | 1:H:419:TYR:CE1 | 2.53                     | 0.76              |
| 1:F:419:TYR:CZ   | 1:K:404:LEU:C   | 2.58                     | 0.76              |
| 1:G:299:ALA:O    | 1:H:61:ALA:HB3  | 1.85                     | 0.76              |
| 1:H:299:ALA:CA   | 1:I:61:ALA:O    | 2.33                     | 0.76              |
| 1:I:299:ALA:O    | 1:J:61:ALA:HB3  | 1.85                     | 0.76              |
| 1:A:404:LEU:HD12 | 1:L:419:TYR:HA  | 1.67                     | 0.76              |
| 1:B:32:SER:H     | 1:C:178:GLY:N   | 1.82                     | 0.76              |
| 1:E:135:VAL:CB   | 1:F:156:GLN:HA  | 2.11                     | 0.76              |
| 1:G:134:GLU:CD   | 1:L:158:ALA:CB  | 2.54                     | 0.76              |
| 1:A:54:ASN:HD21  | 1:B:174:ALA:HB1 | 1.48                     | 0.76              |
| 1:A:175:ALA:CB   | 1:F:30:SER:N    | 2.38                     | 0.76              |
| 1:B:405:GLU:N    | 1:G:419:TYR:CD1 | 2.54                     | 0.76              |
| 1:D:32:SER:H     | 1:E:178:GLY:N   | 1.82                     | 0.76              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:405:GLU:N    | 1:J:419:TYR:CE1  | 2.53                     | 0.76              |
| 1:G:32:SER:N     | 1:L:177:ALA:C    | 2.38                     | 0.76              |
| 1:I:163:ALA:N    | 1:J:133:PRO:HG3  | 1.99                     | 0.76              |
| 1:A:32:SER:H     | 1:B:178:GLY:N    | 1.82                     | 0.76              |
| 1:B:404:LEU:HD12 | 1:G:419:TYR:HA   | 1.67                     | 0.76              |
| 1:D:404:LEU:HD12 | 1:I:419:TYR:HA   | 1.67                     | 0.76              |
| 1:E:37:PHE:CE1   | 1:F:185:LEU:HD22 | 2.18                     | 0.76              |
| 1:H:299:ALA:O    | 1:I:61:ALA:HB3   | 1.85                     | 0.76              |
| 1:K:163:ALA:N    | 1:L:133:PRO:HG3  | 1.99                     | 0.76              |
| 1:C:32:SER:H     | 1:D:178:GLY:N    | 1.82                     | 0.76              |
| 1:D:214:ILE:CD1  | 1:E:161:GLY:C    | 2.54                     | 0.76              |
| 1:E:408:GLU:HG3  | 1:J:419:TYR:HH   | 1.48                     | 0.76              |
| 1:G:31:LYS:CA    | 1:L:177:ALA:CA   | 2.57                     | 0.76              |
| 1:J:175:ALA:CB   | 1:K:30:SER:N     | 2.45                     | 0.76              |
| 1:A:405:GLU:N    | 1:L:419:TYR:CD1  | 2.54                     | 0.76              |
| 1:F:405:GLU:N    | 1:K:419:TYR:CE1  | 2.53                     | 0.76              |
| 1:B:54:ASN:HD21  | 1:C:174:ALA:HB1  | 1.48                     | 0.76              |
| 1:D:61:ALA:CB    | 1:E:299:ALA:C    | 2.24                     | 0.76              |
| 1:C:214:ILE:CD1  | 1:D:161:GLY:C    | 2.54                     | 0.76              |
| 1:C:405:GLU:N    | 1:H:419:TYR:CD1  | 2.54                     | 0.76              |
| 1:D:405:GLU:N    | 1:I:419:TYR:CD1  | 2.54                     | 0.76              |
| 1:G:134:GLU:HG3  | 1:L:158:ALA:CB   | 1.95                     | 0.76              |
| 1:K:174:ALA:HB3  | 1:L:54:ASN:HD21  | 1.48                     | 0.76              |
| 1:A:135:VAL:CB   | 1:B:156:GLN:HA   | 2.11                     | 0.76              |
| 1:A:161:GLY:C    | 1:F:214:ILE:CD1  | 2.54                     | 0.76              |
| 1:D:405:GLU:N    | 1:I:419:TYR:CE1  | 2.53                     | 0.76              |
| 1:E:32:SER:H     | 1:F:178:GLY:N    | 1.82                     | 0.76              |
| 1:E:214:ILE:CD1  | 1:F:161:GLY:C    | 2.54                     | 0.76              |
| 1:C:133:PRO:O    | 1:D:158:ALA:CA   | 2.26                     | 0.75              |
| 1:D:30:SER:N     | 1:E:175:ALA:CB   | 2.38                     | 0.75              |
| 1:D:419:TYR:CZ   | 1:I:404:LEU:C    | 2.58                     | 0.75              |
| 1:E:134:GLU:CD   | 1:F:158:ALA:CB   | 2.50                     | 0.75              |
| 1:E:405:GLU:N    | 1:J:419:TYR:CD1  | 2.54                     | 0.75              |
| 1:I:162:GLY:CA   | 1:J:214:ILE:HD12 | 2.13                     | 0.75              |
| 1:I:177:ALA:C    | 1:J:32:SER:N     | 2.38                     | 0.75              |
| 1:A:419:TYR:CZ   | 1:L:404:LEU:C    | 2.58                     | 0.75              |
| 1:B:133:PRO:O    | 1:C:158:ALA:CA   | 2.26                     | 0.75              |
| 1:C:420:PHE:HD2  | 1:H:401:LYS:CD   | 1.98                     | 0.75              |
| 1:D:31:LYS:HA    | 1:E:177:ALA:CA   | 2.17                     | 0.75              |
| 1:H:177:ALA:C    | 1:I:32:SER:N     | 2.38                     | 0.75              |
| 1:I:175:ALA:CB   | 1:J:30:SER:N     | 2.45                     | 0.75              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:178:GLY:N    | 1:F:32:SER:H     | 1.82                     | 0.75              |
| 1:A:420:PHE:HD2  | 1:L:401:LYS:CD   | 1.98                     | 0.75              |
| 1:G:54:ASN:HD21  | 1:L:174:ALA:HB3  | 1.48                     | 0.75              |
| 1:K:164:ALA:HB1  | 1:L:209:ARG:CZ   | 2.10                     | 0.75              |
| 1:C:31:LYS:HA    | 1:D:177:ALA:CA   | 2.17                     | 0.75              |
| 1:C:404:LEU:CB   | 1:H:419:TYR:CE1  | 2.67                     | 0.75              |
| 1:E:419:TYR:CZ   | 1:J:404:LEU:C    | 2.58                     | 0.75              |
| 1:F:404:LEU:HD12 | 1:K:419:TYR:HA   | 1.68                     | 0.75              |
| 1:A:156:GLN:HA   | 1:F:135:VAL:CB   | 2.11                     | 0.75              |
| 1:B:31:LYS:HB3   | 1:C:176:ALA:O    | 1.84                     | 0.75              |
| 1:G:177:ALA:C    | 1:H:32:SER:N     | 2.38                     | 0.75              |
| 1:F:405:GLU:N    | 1:K:419:TYR:CD1  | 2.54                     | 0.75              |
| 1:E:31:LYS:HA    | 1:F:177:ALA:CA   | 2.17                     | 0.75              |
| 1:E:404:LEU:HD12 | 1:J:419:TYR:HA   | 1.67                     | 0.75              |
| 1:A:177:ALA:CA   | 1:F:31:LYS:HA    | 2.17                     | 0.75              |
| 1:C:54:ASN:HD21  | 1:D:174:ALA:HB1  | 1.48                     | 0.75              |
| 1:K:158:ALA:CA   | 1:L:133:PRO:O    | 2.22                     | 0.75              |
| 1:A:401:LYS:CD   | 1:L:420:PHE:HD2  | 1.85                     | 0.75              |
| 1:C:37:PHE:CE1   | 1:D:185:LEU:HD22 | 2.18                     | 0.75              |
| 1:G:156:GLN:HA   | 1:H:135:VAL:CB   | 2.15                     | 0.75              |
| 1:A:214:ILE:CD1  | 1:B:161:GLY:C    | 2.54                     | 0.74              |
| 1:F:421:ILE:C    | 1:K:397:VAL:HG13 | 1.74                     | 0.74              |
| 1:I:158:ALA:CB   | 1:J:134:GLU:CD   | 2.54                     | 0.74              |
| 1:A:31:LYS:HA    | 1:B:177:ALA:CA   | 2.17                     | 0.74              |
| 1:B:214:ILE:CD1  | 1:C:161:GLY:C    | 2.54                     | 0.74              |
| 1:H:158:ALA:CB   | 1:I:134:GLU:HG3  | 1.95                     | 0.74              |
| 1:A:405:GLU:N    | 1:L:419:TYR:CE1  | 2.53                     | 0.74              |
| 1:C:421:ILE:HA   | 1:H:397:VAL:HG11 | 1.68                     | 0.74              |
| 1:J:164:ALA:HB1  | 1:K:209:ARG:CZ   | 2.10                     | 0.74              |
| 1:B:31:LYS:HA    | 1:C:177:ALA:CA   | 2.17                     | 0.74              |
| 1:E:61:ALA:O     | 1:F:299:ALA:O    | 2.04                     | 0.74              |
| 1:A:37:PHE:CE1   | 1:B:185:LEU:HD22 | 2.18                     | 0.74              |
| 1:A:133:PRO:HD2  | 1:B:162:GLY:C    | 2.07                     | 0.74              |
| 1:G:135:VAL:CB   | 1:L:156:GLN:HA   | 2.15                     | 0.74              |
| 1:J:174:ALA:HB2  | 1:K:54:ASN:HD21  | 1.51                     | 0.74              |
| 1:D:133:PRO:HD2  | 1:E:162:GLY:C    | 2.07                     | 0.74              |
| 1:A:420:PHE:HD2  | 1:L:401:LYS:HD3  | 1.43                     | 0.74              |
| 1:G:133:PRO:HG3  | 1:L:163:ALA:N    | 1.99                     | 0.74              |
| 1:K:175:ALA:HB1  | 1:L:29:ARG:C     | 2.08                     | 0.74              |
| 1:H:175:ALA:HB1  | 1:I:29:ARG:CA    | 2.18                     | 0.74              |
| 1:I:174:ALA:HB2  | 1:J:54:ASN:ND2   | 2.03                     | 0.74              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:175:ALA:HB1  | 1:K:29:ARG:C     | 2.08                     | 0.74              |
| 1:A:162:GLY:C    | 1:F:133:PRO:HD2  | 2.07                     | 0.73              |
| 1:C:34:PRO:HD3   | 1:D:179:ALA:H    | 1.53                     | 0.73              |
| 1:C:137:ASN:HD22 | 1:D:156:GLN:HE22 | 0.77                     | 0.73              |
| 1:D:137:ASN:HD22 | 1:E:156:GLN:HE22 | 0.77                     | 0.73              |
| 1:F:397:VAL:HG13 | 1:K:421:ILE:C    | 1.84                     | 0.73              |
| 1:G:175:ALA:HB1  | 1:H:29:ARG:CA    | 2.18                     | 0.73              |
| 1:H:174:ALA:HB2  | 1:I:54:ASN:ND2   | 2.03                     | 0.73              |
| 1:K:174:ALA:HB2  | 1:L:54:ASN:HD21  | 1.51                     | 0.73              |
| 1:K:175:ALA:CB   | 1:L:30:SER:N     | 2.45                     | 0.73              |
| 1:A:179:ALA:H    | 1:F:34:PRO:HD3   | 1.53                     | 0.73              |
| 1:D:135:VAL:H    | 1:E:156:GLN:C    | 1.91                     | 0.73              |
| 1:D:401:LYS:CD   | 1:I:420:PHE:HD2  | 1.85                     | 0.73              |
| 1:H:163:ALA:N    | 1:I:133:PRO:HG3  | 1.99                     | 0.73              |
| 1:A:158:ALA:CB   | 1:F:134:GLU:CD   | 2.50                     | 0.73              |
| 1:G:209:ARG:CZ   | 1:L:164:ALA:HB1  | 2.10                     | 0.73              |
| 1:A:34:PRO:HD3   | 1:B:179:ALA:H    | 1.53                     | 0.73              |
| 1:A:135:VAL:H    | 1:B:156:GLN:C    | 1.91                     | 0.73              |
| 1:B:34:PRO:HD3   | 1:C:179:ALA:H    | 1.53                     | 0.73              |
| 1:C:421:ILE:C    | 1:H:397:VAL:HG13 | 1.74                     | 0.73              |
| 1:E:133:PRO:HG3  | 1:F:163:ALA:N    | 2.02                     | 0.73              |
| 1:G:164:ALA:HB1  | 1:H:209:ARG:CZ   | 2.10                     | 0.73              |
| 1:G:174:ALA:HB2  | 1:H:54:ASN:ND2   | 2.03                     | 0.73              |
| 1:H:156:GLN:HA   | 1:I:135:VAL:CB   | 2.15                     | 0.73              |
| 1:J:163:ALA:N    | 1:K:133:PRO:HG3  | 1.99                     | 0.73              |
| 1:A:137:ASN:HD22 | 1:B:156:GLN:HE22 | 0.77                     | 0.73              |
| 1:A:163:ALA:N    | 1:F:133:PRO:HG3  | 2.02                     | 0.73              |
| 1:A:175:ALA:HB1  | 1:F:29:ARG:C     | 2.09                     | 0.73              |
| 1:C:397:VAL:HG13 | 1:H:421:ILE:C    | 1.84                     | 0.73              |
| 1:I:175:ALA:HB1  | 1:J:29:ARG:CA    | 2.18                     | 0.73              |
| 1:B:137:ASN:HD22 | 1:C:156:GLN:HE22 | 0.77                     | 0.73              |
| 1:C:31:LYS:HB3   | 1:D:176:ALA:O    | 1.84                     | 0.73              |
| 1:G:29:ARG:C     | 1:L:175:ALA:HB1  | 2.08                     | 0.73              |
| 1:B:421:ILE:HA   | 1:G:397:VAL:HG11 | 1.68                     | 0.73              |
| 1:D:34:PRO:HD3   | 1:E:179:ALA:H    | 1.53                     | 0.73              |
| 1:E:34:PRO:HD3   | 1:F:179:ALA:H    | 1.53                     | 0.73              |
| 1:G:174:ALA:HB3  | 1:H:54:ASN:HD21  | 1.48                     | 0.73              |
| 1:H:175:ALA:HB1  | 1:I:29:ARG:C     | 2.08                     | 0.73              |
| 1:B:29:ARG:CB    | 1:C:175:ALA:CB   | 2.45                     | 0.73              |
| 1:G:29:ARG:CA    | 1:L:175:ALA:HB1  | 2.18                     | 0.73              |
| 1:B:133:PRO:HD2  | 1:C:162:GLY:C    | 2.07                     | 0.72              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:31:LYS:HB3   | 1:F:176:ALA:O    | 1.84                     | 0.72              |
| 1:E:29:ARG:C     | 1:F:175:ALA:HB1  | 2.09                     | 0.72              |
| 1:E:133:PRO:HD2  | 1:F:162:GLY:C    | 2.07                     | 0.72              |
| 1:C:31:LYS:CA    | 1:D:177:ALA:CA   | 2.68                     | 0.72              |
| 1:D:31:LYS:HB3   | 1:E:176:ALA:O    | 1.84                     | 0.72              |
| 1:F:419:TYR:CE1  | 1:K:404:LEU:O    | 2.43                     | 0.72              |
| 1:B:31:LYS:CA    | 1:C:177:ALA:CA   | 2.68                     | 0.72              |
| 1:B:61:ALA:CB    | 1:C:299:ALA:C    | 2.24                     | 0.72              |
| 1:D:419:TYR:HA   | 1:I:404:LEU:HD12 | 1.72                     | 0.72              |
| 1:E:421:ILE:HA   | 1:J:397:VAL:HG11 | 1.68                     | 0.72              |
| 1:I:172:GLY:C    | 1:J:29:ARG:NH1   | 2.43                     | 0.72              |
| 1:A:419:TYR:CE1  | 1:L:404:LEU:O    | 2.43                     | 0.72              |
| 1:C:419:TYR:HA   | 1:H:404:LEU:HD12 | 1.72                     | 0.72              |
| 1:G:172:GLY:C    | 1:H:29:ARG:NH1   | 2.43                     | 0.72              |
| 1:I:175:ALA:HB1  | 1:J:29:ARG:C     | 2.08                     | 0.72              |
| 1:D:29:ARG:CB    | 1:E:175:ALA:CB   | 2.45                     | 0.72              |
| 1:E:137:ASN:HD22 | 1:F:156:GLN:HE22 | 0.77                     | 0.72              |
| 1:G:163:ALA:N    | 1:H:133:PRO:HG3  | 1.99                     | 0.72              |
| 1:G:175:ALA:HB1  | 1:H:29:ARG:C     | 2.08                     | 0.72              |
| 1:A:29:ARG:C     | 1:B:175:ALA:HB1  | 2.09                     | 0.72              |
| 1:B:61:ALA:O     | 1:C:299:ALA:O    | 2.04                     | 0.72              |
| 1:C:61:ALA:O     | 1:D:299:ALA:O    | 2.04                     | 0.72              |
| 1:E:419:TYR:CE1  | 1:J:404:LEU:O    | 2.43                     | 0.72              |
| 1:J:175:ALA:HB1  | 1:K:29:ARG:CA    | 2.18                     | 0.72              |
| 1:C:133:PRO:HD2  | 1:D:162:GLY:C    | 2.07                     | 0.72              |
| 1:E:419:TYR:HA   | 1:J:404:LEU:HD12 | 1.72                     | 0.72              |
| 1:H:164:ALA:CA   | 1:I:209:ARG:HH21 | 2.03                     | 0.72              |
| 1:A:61:ALA:HB3   | 1:B:299:ALA:O    | 1.90                     | 0.71              |
| 1:A:185:LEU:HD22 | 1:F:37:PHE:CE1   | 2.18                     | 0.71              |
| 1:H:172:GLY:C    | 1:I:29:ARG:NH1   | 2.43                     | 0.71              |
| 1:B:61:ALA:HB3   | 1:C:299:ALA:O    | 1.90                     | 0.71              |
| 1:I:164:ALA:CA   | 1:J:209:ARG:HH21 | 2.03                     | 0.71              |
| 1:K:178:GLY:C    | 1:L:33:ILE:HG22  | 2.11                     | 0.71              |
| 1:A:133:PRO:HG3  | 1:B:163:ALA:N    | 2.02                     | 0.71              |
| 1:B:29:ARG:C     | 1:C:175:ALA:HB1  | 2.09                     | 0.71              |
| 1:B:134:GLU:CD   | 1:C:158:ALA:CB   | 2.50                     | 0.71              |
| 1:D:420:PHE:HD2  | 1:I:401:LYS:HD3  | 1.43                     | 0.71              |
| 1:G:29:ARG:NH1   | 1:L:172:GLY:C    | 2.43                     | 0.71              |
| 1:G:54:ASN:ND2   | 1:L:174:ALA:HB2  | 2.03                     | 0.71              |
| 1:H:158:ALA:CB   | 1:I:134:GLU:CD   | 2.54                     | 0.71              |
| 1:I:164:ALA:HB1  | 1:J:209:ARG:CZ   | 2.10                     | 0.71              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:J:172:GLY:C    | 1:K:29:ARG:NH1   | 2.43                     | 0.71              |
| 1:B:419:TYR:HA   | 1:G:404:LEU:HD12 | 1.72                     | 0.71              |
| 1:C:29:ARG:C     | 1:D:175:ALA:HB1  | 2.09                     | 0.71              |
| 1:D:133:PRO:HG3  | 1:E:163:ALA:N    | 2.02                     | 0.71              |
| 1:G:178:GLY:C    | 1:H:33:ILE:HG22  | 2.11                     | 0.71              |
| 1:K:175:ALA:HB1  | 1:L:29:ARG:CA    | 2.18                     | 0.71              |
| 1:C:134:GLU:CD   | 1:D:158:ALA:CB   | 2.50                     | 0.71              |
| 1:J:164:ALA:CA   | 1:K:209:ARG:HH21 | 2.03                     | 0.71              |
| 1:J:178:GLY:C    | 1:K:33:ILE:HG22  | 2.11                     | 0.71              |
| 1:D:31:LYS:CA    | 1:E:177:ALA:CA   | 2.68                     | 0.71              |
| 1:D:134:GLU:HG3  | 1:E:158:ALA:CB   | 1.95                     | 0.71              |
| 1:F:419:TYR:HA   | 1:K:404:LEU:HD12 | 1.72                     | 0.71              |
| 1:E:404:LEU:O    | 1:J:419:TYR:CE1  | 2.43                     | 0.71              |
| 1:F:420:PHE:HD2  | 1:K:401:LYS:CD   | 1.98                     | 0.71              |
| 1:K:156:GLN:HA   | 1:L:135:VAL:CB   | 2.15                     | 0.71              |
| 1:K:158:ALA:CB   | 1:L:134:GLU:CD   | 2.54                     | 0.71              |
| 1:K:164:ALA:CA   | 1:L:209:ARG:HH21 | 2.03                     | 0.71              |
| 1:K:172:GLY:C    | 1:L:29:ARG:NH1   | 2.43                     | 0.71              |
| 1:A:61:ALA:O     | 1:B:299:ALA:O    | 2.04                     | 0.71              |
| 1:A:134:GLU:HG3  | 1:B:158:ALA:CB   | 1.95                     | 0.71              |
| 1:A:419:TYR:HA   | 1:L:404:LEU:HD12 | 1.72                     | 0.71              |
| 1:D:420:PHE:HD2  | 1:I:401:LYS:CD   | 1.98                     | 0.71              |
| 1:G:164:ALA:CA   | 1:H:209:ARG:HH21 | 2.03                     | 0.71              |
| 1:A:31:LYS:CA    | 1:B:177:ALA:CA   | 2.68                     | 0.71              |
| 1:A:156:GLN:HE22 | 1:F:137:ASN:HD22 | 0.77                     | 0.71              |
| 1:C:419:TYR:CE1  | 1:H:404:LEU:O    | 2.43                     | 0.71              |
| 1:D:29:ARG:C     | 1:E:175:ALA:HB1  | 2.09                     | 0.71              |
| 1:B:419:TYR:CE1  | 1:G:404:LEU:O    | 2.43                     | 0.71              |
| 1:C:29:ARG:CA    | 1:D:175:ALA:HB1  | 2.21                     | 0.71              |
| 1:D:29:ARG:CA    | 1:E:175:ALA:HB1  | 2.21                     | 0.71              |
| 1:I:156:GLN:HA   | 1:J:135:VAL:CB   | 2.15                     | 0.71              |
| 1:K:158:ALA:CB   | 1:L:134:GLU:HG3  | 1.95                     | 0.71              |
| 1:B:29:ARG:CA    | 1:C:175:ALA:HB1  | 2.21                     | 0.70              |
| 1:F:404:LEU:O    | 1:K:419:TYR:CE1  | 2.43                     | 0.70              |
| 1:H:174:ALA:HB3  | 1:I:54:ASN:HD21  | 1.48                     | 0.70              |
| 1:D:404:LEU:O    | 1:I:419:TYR:CE1  | 2.43                     | 0.70              |
| 1:G:209:ARG:HH21 | 1:L:164:ALA:CA   | 2.03                     | 0.70              |
| 1:H:164:ALA:HB1  | 1:I:209:ARG:CZ   | 2.10                     | 0.70              |
| 1:A:299:ALA:O    | 1:F:61:ALA:HB3   | 1.90                     | 0.70              |
| 1:C:29:ARG:CB    | 1:D:175:ALA:CB   | 2.45                     | 0.70              |
| 1:G:33:ILE:HG22  | 1:L:178:GLY:C    | 2.11                     | 0.70              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:178:GLY:C    | 1:I:33:ILE:HG22  | 2.11                     | 0.70              |
| 1:D:419:TYR:CE1  | 1:I:404:LEU:O    | 2.43                     | 0.70              |
| 1:A:176:ALA:O    | 1:F:31:LYS:HB3   | 1.84                     | 0.70              |
| 1:A:176:ALA:C    | 1:F:31:LYS:CA    | 2.35                     | 0.70              |
| 1:A:299:ALA:C    | 1:F:61:ALA:CB    | 2.24                     | 0.70              |
| 1:A:421:ILE:HA   | 1:L:397:VAL:HG11 | 1.68                     | 0.70              |
| 1:B:415:LYS:CD   | 1:G:408:GLU:CD   | 2.58                     | 0.70              |
| 1:C:61:ALA:HB3   | 1:D:299:ALA:O    | 1.90                     | 0.70              |
| 1:E:134:GLU:HG2  | 1:F:158:ALA:HB3  | 1.57                     | 0.70              |
| 1:B:209:ARG:HH21 | 1:C:164:ALA:CA   | 2.05                     | 0.70              |
| 1:A:404:LEU:O    | 1:L:419:TYR:CE1  | 2.43                     | 0.70              |
| 1:A:408:GLU:CD   | 1:L:415:LYS:HD3  | 2.12                     | 0.70              |
| 1:B:37:PHE:CE1   | 1:C:185:LEU:HD22 | 2.18                     | 0.70              |
| 1:D:61:ALA:HB3   | 1:E:299:ALA:O    | 1.90                     | 0.70              |
| 1:K:174:ALA:HB2  | 1:L:54:ASN:ND2   | 2.03                     | 0.70              |
| 1:C:209:ARG:HH21 | 1:D:164:ALA:CA   | 2.05                     | 0.70              |
| 1:C:404:LEU:O    | 1:H:419:TYR:CE1  | 2.43                     | 0.70              |
| 1:G:175:ALA:CB   | 1:H:30:SER:N     | 2.45                     | 0.70              |
| 1:J:156:GLN:HA   | 1:K:135:VAL:CB   | 2.15                     | 0.70              |
| 1:D:134:GLU:CD   | 1:E:158:ALA:CB   | 2.50                     | 0.70              |
| 1:E:29:ARG:HH12  | 1:F:172:GLY:HA2  | 1.57                     | 0.70              |
| 1:E:29:ARG:CA    | 1:F:175:ALA:HB1  | 2.21                     | 0.70              |
| 1:C:408:GLU:CD   | 1:H:415:LYS:HD3  | 2.12                     | 0.70              |
| 1:E:29:ARG:CB    | 1:F:175:ALA:CB   | 2.45                     | 0.70              |
| 1:A:172:GLY:HA2  | 1:F:29:ARG:HH12  | 1.57                     | 0.69              |
| 1:A:175:ALA:CB   | 1:F:29:ARG:CB    | 2.45                     | 0.69              |
| 1:B:404:LEU:O    | 1:G:419:TYR:CE1  | 2.43                     | 0.69              |
| 1:D:61:ALA:O     | 1:E:299:ALA:O    | 2.04                     | 0.69              |
| 1:D:408:GLU:CD   | 1:I:415:LYS:HD3  | 2.12                     | 0.69              |
| 1:I:178:GLY:C    | 1:J:33:ILE:HG22  | 2.11                     | 0.69              |
| 1:A:29:ARG:CA    | 1:B:175:ALA:HB1  | 2.21                     | 0.69              |
| 1:D:29:ARG:HH12  | 1:E:172:GLY:HA2  | 1.57                     | 0.69              |
| 1:E:419:TYR:CB   | 1:J:401:LYS:CA   | 2.43                     | 0.69              |
| 1:D:133:PRO:O    | 1:E:158:ALA:CA   | 2.26                     | 0.69              |
| 1:D:209:ARG:HH21 | 1:E:164:ALA:CA   | 2.05                     | 0.69              |
| 1:A:415:LYS:CD   | 1:L:408:GLU:CD   | 2.58                     | 0.69              |
| 1:C:61:ALA:CB    | 1:D:299:ALA:C    | 2.24                     | 0.69              |
| 1:C:415:LYS:CD   | 1:H:408:GLU:CD   | 2.58                     | 0.69              |
| 1:E:61:ALA:HB3   | 1:F:299:ALA:O    | 1.90                     | 0.69              |
| 1:A:29:ARG:HH12  | 1:B:172:GLY:HA2  | 1.57                     | 0.69              |
| 1:D:421:ILE:HA   | 1:I:397:VAL:HG11 | 1.68                     | 0.69              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:133:PRO:HG3  | 1:C:163:ALA:N    | 2.02                     | 0.69              |
| 1:C:29:ARG:HH12  | 1:D:172:GLY:HA2  | 1.57                     | 0.69              |
| 1:A:158:ALA:CB   | 1:F:134:GLU:HG3  | 1.95                     | 0.69              |
| 1:A:158:ALA:HB3  | 1:F:134:GLU:HG2  | 1.57                     | 0.69              |
| 1:B:29:ARG:CA    | 1:C:175:ALA:CB   | 2.71                     | 0.69              |
| 1:B:29:ARG:HH12  | 1:C:172:GLY:HA2  | 1.57                     | 0.69              |
| 1:C:133:PRO:HG3  | 1:D:163:ALA:N    | 2.02                     | 0.69              |
| 1:E:29:ARG:CA    | 1:F:175:ALA:CB   | 2.71                     | 0.69              |
| 1:F:408:GLU:CD   | 1:K:415:LYS:HD3  | 2.12                     | 0.69              |
| 1:I:174:ALA:HB3  | 1:J:54:ASN:HD21  | 1.48                     | 0.69              |
| 1:A:175:ALA:HB1  | 1:F:29:ARG:CA    | 2.21                     | 0.69              |
| 1:E:408:GLU:CD   | 1:J:415:LYS:HD3  | 2.12                     | 0.69              |
| 1:D:29:ARG:CA    | 1:E:175:ALA:CB   | 2.71                     | 0.69              |
| 1:H:172:GLY:C    | 1:I:29:ARG:HH12  | 1.97                     | 0.68              |
| 1:A:29:ARG:CA    | 1:B:175:ALA:CB   | 2.71                     | 0.68              |
| 1:G:162:GLY:C    | 1:H:133:PRO:HD2  | 2.12                     | 0.68              |
| 1:B:134:GLU:HG3  | 1:C:158:ALA:CB   | 1.95                     | 0.68              |
| 1:D:32:SER:N     | 1:E:178:GLY:N    | 2.42                     | 0.68              |
| 1:K:172:GLY:C    | 1:L:29:ARG:HH12  | 1.97                     | 0.68              |
| 1:A:177:ALA:CA   | 1:F:31:LYS:CA    | 2.68                     | 0.68              |
| 1:B:32:SER:N     | 1:C:178:GLY:N    | 2.42                     | 0.68              |
| 1:J:174:ALA:HB2  | 1:K:54:ASN:ND2   | 2.03                     | 0.68              |
| 1:A:175:ALA:CB   | 1:F:29:ARG:CA    | 2.71                     | 0.68              |
| 1:A:299:ALA:O    | 1:F:61:ALA:O     | 2.04                     | 0.68              |
| 1:E:420:PHE:HD2  | 1:J:401:LYS:CD   | 1.98                     | 0.68              |
| 1:C:29:ARG:CA    | 1:D:175:ALA:CB   | 2.71                     | 0.68              |
| 1:C:419:TYR:CE1  | 1:H:404:LEU:CB   | 2.72                     | 0.68              |
| 1:D:37:PHE:CE1   | 1:E:185:LEU:HD22 | 2.18                     | 0.68              |
| 1:G:29:ARG:CA    | 1:L:175:ALA:CB   | 2.72                     | 0.68              |
| 1:I:172:GLY:C    | 1:J:29:ARG:HH12  | 1.97                     | 0.68              |
| 1:J:178:GLY:N    | 1:K:32:SER:N     | 2.42                     | 0.68              |
| 1:K:162:GLY:C    | 1:L:133:PRO:HD2  | 2.12                     | 0.68              |
| 1:A:29:ARG:NH1   | 1:B:172:GLY:C    | 2.48                     | 0.68              |
| 1:A:158:ALA:CA   | 1:F:133:PRO:O    | 2.26                     | 0.68              |
| 1:B:408:GLU:CD   | 1:G:415:LYS:HD3  | 2.12                     | 0.68              |
| 1:D:29:ARG:NH1   | 1:E:172:GLY:C    | 2.48                     | 0.68              |
| 1:E:209:ARG:HH21 | 1:F:164:ALA:CA   | 2.05                     | 0.68              |
| 1:G:30:SER:N     | 1:L:175:ALA:CB   | 2.45                     | 0.68              |
| 1:A:29:ARG:HB3   | 1:B:175:ALA:HB2  | 0.77                     | 0.68              |
| 1:A:419:TYR:OH   | 1:L:408:GLU:CD   | 2.32                     | 0.68              |
| 1:C:29:ARG:NH1   | 1:D:172:GLY:C    | 2.48                     | 0.68              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:175:ALA:CB   | 1:J:29:ARG:CA    | 2.72                     | 0.68              |
| 1:J:172:GLY:C    | 1:K:29:ARG:HH12  | 1.97                     | 0.68              |
| 1:B:133:PRO:CD   | 1:C:163:ALA:H    | 2.07                     | 0.67              |
| 1:D:404:LEU:C    | 1:I:419:TYR:CZ   | 2.68                     | 0.67              |
| 1:G:32:SER:N     | 1:L:178:GLY:N    | 2.42                     | 0.67              |
| 1:H:162:GLY:CA   | 1:I:214:ILE:HD12 | 2.13                     | 0.67              |
| 1:I:156:GLN:NE2  | 1:J:137:ASN:HD21 | 1.92                     | 0.67              |
| 1:K:178:GLY:N    | 1:L:32:SER:N     | 2.42                     | 0.67              |
| 1:E:29:ARG:NH1   | 1:F:172:GLY:C    | 2.48                     | 0.67              |
| 1:F:419:TYR:OH   | 1:K:408:GLU:CD   | 2.32                     | 0.67              |
| 1:H:178:GLY:C    | 1:I:33:ILE:CG2   | 2.63                     | 0.67              |
| 1:A:164:ALA:CA   | 1:F:209:ARG:HH21 | 2.05                     | 0.67              |
| 1:F:404:LEU:C    | 1:K:419:TYR:CZ   | 2.68                     | 0.67              |
| 1:F:415:LYS:CD   | 1:K:408:GLU:CD   | 2.58                     | 0.67              |
| 1:G:172:GLY:C    | 1:H:29:ARG:HH12  | 1.97                     | 0.67              |
| 1:G:178:GLY:N    | 1:H:32:SER:N     | 2.42                     | 0.67              |
| 1:H:175:ALA:CB   | 1:I:29:ARG:CA    | 2.72                     | 0.67              |
| 1:K:178:GLY:C    | 1:L:33:ILE:CG2   | 2.63                     | 0.67              |
| 1:A:404:LEU:C    | 1:L:419:TYR:CZ   | 2.68                     | 0.67              |
| 1:G:33:ILE:CG2   | 1:L:178:GLY:C    | 2.63                     | 0.67              |
| 1:I:178:GLY:C    | 1:J:33:ILE:CG2   | 2.63                     | 0.67              |
| 1:J:156:GLN:NE2  | 1:K:137:ASN:HD21 | 1.92                     | 0.67              |
| 1:G:29:ARG:HH12  | 1:L:172:GLY:C    | 1.97                     | 0.67              |
| 1:J:178:GLY:C    | 1:K:33:ILE:CG2   | 2.63                     | 0.67              |
| 1:A:214:ILE:HD12 | 1:B:162:GLY:CA   | 2.16                     | 0.67              |
| 1:B:404:LEU:CB   | 1:G:419:TYR:CE1  | 2.67                     | 0.67              |
| 1:B:419:TYR:CB   | 1:G:401:LYS:CA   | 2.43                     | 0.67              |
| 1:A:172:GLY:C    | 1:F:29:ARG:NH1   | 2.48                     | 0.67              |
| 1:D:134:GLU:HG2  | 1:E:158:ALA:HB3  | 1.57                     | 0.67              |
| 1:A:94:ALA:HB1   | 1:A:95:ALA:HA    | 1.77                     | 0.67              |
| 1:C:134:GLU:HG3  | 1:D:158:ALA:CB   | 1.95                     | 0.67              |
| 1:F:421:ILE:HA   | 1:K:397:VAL:HG11 | 1.68                     | 0.67              |
| 1:I:178:GLY:N    | 1:J:32:SER:N     | 2.42                     | 0.67              |
| 1:J:94:ALA:HB1   | 1:J:95:ALA:HA    | 1.77                     | 0.67              |
| 1:K:175:ALA:CB   | 1:L:29:ARG:CA    | 2.72                     | 0.67              |
| 1:A:32:SER:N     | 1:B:178:GLY:N    | 2.42                     | 0.67              |
| 1:C:404:LEU:C    | 1:H:419:TYR:CZ   | 2.68                     | 0.67              |
| 1:H:178:GLY:N    | 1:I:32:SER:N     | 2.42                     | 0.67              |
| 1:J:175:ALA:CB   | 1:K:29:ARG:CA    | 2.72                     | 0.67              |
| 1:A:135:VAL:HB   | 1:B:156:GLN:CA   | 2.16                     | 0.66              |
| 1:B:404:LEU:C    | 1:G:419:TYR:CZ   | 2.68                     | 0.66              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:31:LYS:CA    | 1:F:177:ALA:CA   | 2.68                     | 0.66              |
| 1:E:32:SER:N     | 1:F:178:GLY:N    | 2.42                     | 0.66              |
| 1:K:94:ALA:HB1   | 1:K:95:ALA:HA    | 1.77                     | 0.66              |
| 1:L:94:ALA:HB1   | 1:L:95:ALA:HA    | 1.77                     | 0.66              |
| 1:F:94:ALA:HB1   | 1:F:95:ALA:HA    | 1.77                     | 0.66              |
| 1:G:135:VAL:HB   | 1:L:156:GLN:CA   | 2.18                     | 0.66              |
| 1:G:178:GLY:C    | 1:H:33:ILE:CG2   | 2.63                     | 0.66              |
| 1:A:29:ARG:CB    | 1:B:175:ALA:CB   | 2.45                     | 0.66              |
| 1:C:29:ARG:HH12  | 1:D:172:GLY:CA   | 2.09                     | 0.66              |
| 1:E:133:PRO:O    | 1:F:158:ALA:CA   | 2.26                     | 0.66              |
| 1:I:94:ALA:HB1   | 1:I:95:ALA:HA    | 1.77                     | 0.66              |
| 1:J:162:GLY:N    | 1:K:131:GLY:C    | 2.49                     | 0.66              |
| 1:A:136:ILE:HA   | 1:B:156:GLN:HB3  | 1.78                     | 0.66              |
| 1:A:156:GLN:NE2  | 1:F:137:ASN:HD21 | 1.93                     | 0.66              |
| 1:B:29:ARG:NH1   | 1:C:172:GLY:C    | 2.48                     | 0.66              |
| 1:D:29:ARG:HH12  | 1:E:172:GLY:CA   | 2.09                     | 0.66              |
| 1:E:94:ALA:HB1   | 1:E:95:ALA:HA    | 1.77                     | 0.66              |
| 1:E:404:LEU:C    | 1:J:419:TYR:CZ   | 2.68                     | 0.66              |
| 1:E:419:TYR:OH   | 1:J:408:GLU:CD   | 2.32                     | 0.66              |
| 1:B:94:ALA:HB1   | 1:B:95:ALA:HA    | 1.77                     | 0.66              |
| 1:C:133:PRO:CD   | 1:D:163:ALA:H    | 2.07                     | 0.66              |
| 1:K:156:GLN:HB3  | 1:L:136:ILE:HA   | 1.78                     | 0.66              |
| 1:K:163:ALA:O    | 1:L:214:ILE:HG13 | 1.96                     | 0.66              |
| 1:A:156:GLN:HB3  | 1:F:136:ILE:HA   | 1.78                     | 0.66              |
| 1:C:419:TYR:CB   | 1:H:401:LYS:CA   | 2.43                     | 0.66              |
| 1:J:156:GLN:HB3  | 1:K:136:ILE:HA   | 1.78                     | 0.66              |
| 1:K:162:GLY:N    | 1:L:131:GLY:C    | 2.49                     | 0.66              |
| 1:A:209:ARG:HH21 | 1:B:164:ALA:CA   | 2.05                     | 0.66              |
| 1:B:29:ARG:HH12  | 1:C:172:GLY:CA   | 2.09                     | 0.66              |
| 1:D:415:LYS:CD   | 1:I:408:GLU:CD   | 2.58                     | 0.66              |
| 1:G:163:ALA:O    | 1:H:214:ILE:HG13 | 1.96                     | 0.66              |
| 1:C:419:TYR:OH   | 1:H:408:GLU:CD   | 2.32                     | 0.66              |
| 1:I:299:ALA:C    | 1:J:61:ALA:C     | 2.54                     | 0.66              |
| 1:J:162:GLY:CA   | 1:K:214:ILE:HD12 | 2.13                     | 0.66              |
| 1:J:163:ALA:O    | 1:K:214:ILE:HG13 | 1.96                     | 0.66              |
| 1:B:419:TYR:OH   | 1:G:408:GLU:CD   | 2.32                     | 0.66              |
| 1:G:299:ALA:C    | 1:H:61:ALA:C     | 2.54                     | 0.66              |
| 1:K:156:GLN:CA   | 1:L:135:VAL:HB   | 2.18                     | 0.66              |
| 1:E:61:ALA:O     | 1:F:299:ALA:HA   | 1.96                     | 0.66              |
| 1:G:94:ALA:HB1   | 1:G:95:ALA:HA    | 1.77                     | 0.66              |
| 1:G:177:ALA:CA   | 1:H:31:LYS:C     | 2.37                     | 0.66              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:214:ILE:HG13 | 1:L:163:ALA:O    | 1.96                     | 0.66              |
| 1:D:94:ALA:HB1   | 1:D:95:ALA:HA    | 1.77                     | 0.65              |
| 1:D:419:TYR:OH   | 1:I:408:GLU:CD   | 2.32                     | 0.65              |
| 1:A:29:ARG:HH12  | 1:B:172:GLY:CA   | 2.09                     | 0.65              |
| 1:A:419:TYR:CE1  | 1:L:404:LEU:CB   | 2.72                     | 0.65              |
| 1:B:136:ILE:HA   | 1:C:156:GLN:HB3  | 1.78                     | 0.65              |
| 1:D:61:ALA:O     | 1:E:299:ALA:HA   | 1.96                     | 0.65              |
| 1:E:29:ARG:HH12  | 1:F:172:GLY:CA   | 2.09                     | 0.65              |
| 1:G:133:PRO:HD2  | 1:L:162:GLY:C    | 2.12                     | 0.65              |
| 1:G:136:ILE:HA   | 1:L:156:GLN:HB3  | 1.78                     | 0.65              |
| 1:K:179:ALA:N    | 1:L:33:ILE:HG22  | 2.12                     | 0.65              |
| 1:K:299:ALA:C    | 1:L:61:ALA:C     | 2.54                     | 0.65              |
| 1:A:174:ALA:HB3  | 1:F:54:ASN:HD21  | 1.60                     | 0.65              |
| 1:A:299:ALA:HA   | 1:F:61:ALA:O     | 1.96                     | 0.65              |
| 1:D:419:TYR:CB   | 1:I:401:LYS:CA   | 2.43                     | 0.65              |
| 1:G:175:ALA:CB   | 1:H:29:ARG:CA    | 2.72                     | 0.65              |
| 1:B:29:ARG:HB3   | 1:C:175:ALA:HB2  | 0.77                     | 0.65              |
| 1:E:136:ILE:HA   | 1:F:156:GLN:HB3  | 1.78                     | 0.65              |
| 1:H:163:ALA:O    | 1:I:214:ILE:HG13 | 1.96                     | 0.65              |
| 1:I:156:GLN:HB3  | 1:J:136:ILE:HA   | 1.78                     | 0.65              |
| 1:K:156:GLN:NE2  | 1:L:137:ASN:HD21 | 1.92                     | 0.65              |
| 1:A:172:GLY:CA   | 1:F:29:ARG:HH12  | 2.09                     | 0.65              |
| 1:A:178:GLY:N    | 1:F:32:SER:N     | 2.42                     | 0.65              |
| 1:B:420:PHE:HD2  | 1:G:401:LYS:CD   | 1.98                     | 0.65              |
| 1:C:94:ALA:HB1   | 1:C:95:ALA:HA    | 1.77                     | 0.65              |
| 1:G:33:ILE:HG22  | 1:L:179:ALA:N    | 2.12                     | 0.65              |
| 1:H:94:ALA:HB1   | 1:H:95:ALA:HA    | 1.77                     | 0.65              |
| 1:I:163:ALA:O    | 1:J:214:ILE:HG13 | 1.96                     | 0.65              |
| 1:J:179:ALA:N    | 1:K:33:ILE:HG22  | 2.12                     | 0.65              |
| 1:A:419:TYR:CB   | 1:L:401:LYS:CA   | 2.43                     | 0.65              |
| 1:G:131:GLY:C    | 1:L:162:GLY:N    | 2.49                     | 0.65              |
| 1:D:133:PRO:CD   | 1:E:163:ALA:H    | 2.07                     | 0.65              |
| 1:A:61:ALA:O     | 1:B:299:ALA:HA   | 1.96                     | 0.64              |
| 1:C:136:ILE:HA   | 1:D:156:GLN:HB3  | 1.78                     | 0.64              |
| 1:A:133:PRO:O    | 1:B:158:ALA:CA   | 2.26                     | 0.64              |
| 1:D:136:ILE:HA   | 1:E:156:GLN:HB3  | 1.78                     | 0.64              |
| 1:G:156:GLN:HB3  | 1:H:136:ILE:HA   | 1.78                     | 0.64              |
| 1:G:299:ALA:O    | 1:H:61:ALA:O     | 2.15                     | 0.64              |
| 1:H:156:GLN:HB3  | 1:I:136:ILE:HA   | 1.78                     | 0.64              |
| 1:H:299:ALA:O    | 1:I:61:ALA:O     | 2.15                     | 0.64              |
| 1:C:61:ALA:O     | 1:D:299:ALA:HA   | 1.96                     | 0.64              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:172:GLY:CA   | 1:I:29:ARG:HH12  | 2.11                     | 0.64              |
| 1:I:179:ALA:N    | 1:J:33:ILE:HG22  | 2.12                     | 0.64              |
| 1:K:162:GLY:CA   | 1:L:214:ILE:HD12 | 2.13                     | 0.64              |
| 1:K:299:ALA:O    | 1:L:61:ALA:O     | 2.15                     | 0.64              |
| 1:G:172:GLY:CA   | 1:H:29:ARG:HH12  | 2.11                     | 0.64              |
| 1:J:156:GLN:CA   | 1:K:135:VAL:HB   | 2.18                     | 0.64              |
| 1:A:137:ASN:HD21 | 1:B:156:GLN:NE2  | 1.93                     | 0.64              |
| 1:A:163:ALA:N    | 1:F:133:PRO:CD   | 2.61                     | 0.64              |
| 1:E:137:ASN:HD21 | 1:F:156:GLN:NE2  | 1.93                     | 0.64              |
| 1:G:162:GLY:N    | 1:H:131:GLY:C    | 2.49                     | 0.64              |
| 1:A:175:ALA:HB2  | 1:F:29:ARG:HB3   | 0.77                     | 0.64              |
| 1:B:133:PRO:CD   | 1:C:163:ALA:N    | 2.61                     | 0.64              |
| 1:B:397:VAL:HG11 | 1:G:421:ILE:HA   | 1.77                     | 0.64              |
| 1:E:133:PRO:CD   | 1:F:163:ALA:H    | 2.07                     | 0.64              |
| 1:H:179:ALA:N    | 1:I:33:ILE:HG22  | 2.12                     | 0.64              |
| 1:G:161:GLY:C    | 1:H:131:GLY:C    | 2.55                     | 0.64              |
| 1:G:179:ALA:N    | 1:H:33:ILE:HG22  | 2.12                     | 0.64              |
| 1:K:161:GLY:C    | 1:L:131:GLY:C    | 2.55                     | 0.64              |
| 1:B:135:VAL:HB   | 1:C:156:GLN:CA   | 2.16                     | 0.64              |
| 1:G:214:ILE:HD12 | 1:L:162:GLY:CA   | 2.13                     | 0.64              |
| 1:B:61:ALA:O     | 1:C:299:ALA:HA   | 1.96                     | 0.64              |
| 1:F:404:LEU:CB   | 1:K:419:TYR:CE1  | 2.67                     | 0.64              |
| 1:C:37:PHE:CD1   | 1:D:185:LEU:HD21 | 2.31                     | 0.63              |
| 1:E:61:ALA:CB    | 1:F:299:ALA:C    | 2.24                     | 0.63              |
| 1:E:408:GLU:CD   | 1:J:419:TYR:OH   | 2.37                     | 0.63              |
| 1:F:397:VAL:HG11 | 1:K:421:ILE:HA   | 1.77                     | 0.63              |
| 1:G:137:ASN:HD21 | 1:L:156:GLN:NE2  | 1.92                     | 0.63              |
| 1:I:172:GLY:CA   | 1:J:29:ARG:HH12  | 2.11                     | 0.63              |
| 1:E:29:ARG:HB3   | 1:F:175:ALA:HB2  | 0.77                     | 0.63              |
| 1:G:29:ARG:HH12  | 1:L:172:GLY:CA   | 2.11                     | 0.63              |
| 1:A:163:ALA:H    | 1:F:133:PRO:CD   | 2.07                     | 0.63              |
| 1:D:31:LYS:HG2   | 1:E:176:ALA:C    | 2.16                     | 0.63              |
| 1:H:162:GLY:N    | 1:I:131:GLY:C    | 2.49                     | 0.63              |
| 1:F:408:GLU:CD   | 1:K:415:LYS:CD   | 2.66                     | 0.63              |
| 1:K:172:GLY:CA   | 1:L:29:ARG:HH12  | 2.11                     | 0.63              |
| 1:B:408:GLU:CD   | 1:G:415:LYS:CD   | 2.66                     | 0.63              |
| 1:H:156:GLN:NE2  | 1:I:137:ASN:HD21 | 1.92                     | 0.63              |
| 1:J:172:GLY:CA   | 1:K:29:ARG:HH12  | 2.11                     | 0.63              |
| 1:J:299:ALA:C    | 1:K:61:ALA:C     | 2.54                     | 0.63              |
| 1:A:408:GLU:CD   | 1:L:419:TYR:OH   | 2.37                     | 0.63              |
| 1:A:421:ILE:OXT  | 1:L:397:VAL:CB   | 2.39                     | 0.63              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:C:29:ARG:HB3   | 1:D:175:ALA:HB2  | 0.77                     | 0.63              |
| 1:C:62:ALA:N     | 1:D:301:ALA:CB   | 2.33                     | 0.63              |
| 1:D:62:ALA:N     | 1:E:301:ALA:CB   | 2.33                     | 0.63              |
| 1:D:419:TYR:HD1  | 1:I:405:GLU:CG   | 2.12                     | 0.63              |
| 1:E:419:TYR:HD1  | 1:J:405:GLU:CG   | 2.11                     | 0.63              |
| 1:H:162:GLY:N    | 1:I:214:ILE:CD1  | 2.62                     | 0.63              |
| 1:A:404:LEU:CB   | 1:L:419:TYR:CE1  | 2.67                     | 0.63              |
| 1:D:419:TYR:CA   | 1:I:401:LYS:HA   | 2.29                     | 0.63              |
| 1:E:54:ASN:HD21  | 1:F:174:ALA:HB3  | 1.60                     | 0.63              |
| 1:B:419:TYR:HB3  | 1:G:401:LYS:HA   | 0.71                     | 0.63              |
| 1:C:401:LYS:HA   | 1:H:419:TYR:HB3  | 0.73                     | 0.63              |
| 1:D:408:GLU:CD   | 1:I:419:TYR:OH   | 2.37                     | 0.63              |
| 1:E:31:LYS:C     | 1:F:177:ALA:CA   | 2.43                     | 0.63              |
| 1:G:156:GLN:NE2  | 1:H:137:ASN:HD21 | 1.92                     | 0.63              |
| 1:I:162:GLY:N    | 1:J:214:ILE:CD1  | 2.62                     | 0.63              |
| 1:D:54:ASN:HD21  | 1:E:174:ALA:HB2  | 1.60                     | 0.62              |
| 1:C:133:PRO:CD   | 1:D:163:ALA:N    | 2.61                     | 0.62              |
| 1:E:31:LYS:HG2   | 1:F:176:ALA:C    | 2.16                     | 0.62              |
| 1:E:419:TYR:CA   | 1:J:401:LYS:HA   | 2.29                     | 0.62              |
| 1:A:133:PRO:CD   | 1:B:163:ALA:N    | 2.61                     | 0.62              |
| 1:B:137:ASN:HD21 | 1:C:156:GLN:NE2  | 1.93                     | 0.62              |
| 1:B:419:TYR:CE1  | 1:G:404:LEU:CB   | 2.72                     | 0.62              |
| 1:G:61:ALA:C     | 1:L:299:ALA:C    | 2.54                     | 0.62              |
| 1:G:162:GLY:N    | 1:H:214:ILE:CD1  | 2.62                     | 0.62              |
| 1:H:299:ALA:C    | 1:I:61:ALA:C     | 2.54                     | 0.62              |
| 1:C:397:VAL:HG11 | 1:H:421:ILE:HA   | 1.77                     | 0.62              |
| 1:D:29:ARG:HB3   | 1:E:175:ALA:HB2  | 0.77                     | 0.62              |
| 1:K:162:GLY:N    | 1:L:214:ILE:CD1  | 2.62                     | 0.62              |
| 1:A:419:TYR:CA   | 1:L:401:LYS:HA   | 2.29                     | 0.62              |
| 1:E:134:GLU:HG3  | 1:F:158:ALA:CB   | 1.95                     | 0.62              |
| 1:F:408:GLU:CD   | 1:K:419:TYR:OH   | 2.37                     | 0.62              |
| 1:F:419:TYR:HD1  | 1:K:405:GLU:CG   | 2.12                     | 0.62              |
| 1:C:32:SER:N     | 1:D:178:GLY:N    | 2.42                     | 0.62              |
| 1:C:419:TYR:HD1  | 1:H:405:GLU:CG   | 2.12                     | 0.62              |
| 1:C:419:TYR:CA   | 1:H:401:LYS:HA   | 2.29                     | 0.62              |
| 1:E:415:LYS:CD   | 1:J:408:GLU:CD   | 2.58                     | 0.62              |
| 1:H:158:ALA:HB1  | 1:I:134:GLU:CG   | 2.17                     | 0.62              |
| 1:I:299:ALA:O    | 1:J:61:ALA:O     | 2.15                     | 0.62              |
| 1:A:397:VAL:HG11 | 1:L:421:ILE:HA   | 1.77                     | 0.62              |
| 1:B:419:TYR:CA   | 1:G:401:LYS:HA   | 2.29                     | 0.62              |
| 1:C:408:GLU:CD   | 1:H:419:TYR:OH   | 2.37                     | 0.62              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:162:GLY:N    | 1:J:131:GLY:C    | 2.49                     | 0.62              |
| 1:A:156:GLN:CA   | 1:F:135:VAL:HB   | 2.16                     | 0.62              |
| 1:A:174:ALA:HB2  | 1:F:54:ASN:HD21  | 1.60                     | 0.62              |
| 1:B:408:GLU:CD   | 1:G:419:TYR:OH   | 2.37                     | 0.62              |
| 1:F:401:LYS:HA   | 1:K:419:TYR:HB3  | 0.73                     | 0.62              |
| 1:G:61:ALA:O     | 1:L:299:ALA:O    | 2.15                     | 0.62              |
| 1:I:158:ALA:HB1  | 1:J:134:GLU:CG   | 2.17                     | 0.62              |
| 1:C:31:LYS:HG2   | 1:D:176:ALA:C    | 2.16                     | 0.62              |
| 1:E:214:ILE:HD12 | 1:F:162:GLY:CA   | 2.16                     | 0.62              |
| 1:F:419:TYR:CA   | 1:K:401:LYS:HA   | 2.29                     | 0.62              |
| 1:I:172:GLY:HA2  | 1:J:29:ARG:HH12  | 1.65                     | 0.62              |
| 1:K:161:GLY:HA2  | 1:L:131:GLY:O    | 2.00                     | 0.62              |
| 1:A:133:PRO:CD   | 1:B:163:ALA:H    | 2.07                     | 0.62              |
| 1:A:419:TYR:HB3  | 1:L:401:LYS:HA   | 0.71                     | 0.62              |
| 1:E:419:TYR:HB3  | 1:J:401:LYS:HA   | 0.71                     | 0.62              |
| 1:H:172:GLY:HA2  | 1:I:29:ARG:HH12  | 1.65                     | 0.62              |
| 1:I:161:GLY:C    | 1:J:131:GLY:C    | 2.55                     | 0.62              |
| 1:I:162:GLY:C    | 1:J:133:PRO:HD2  | 2.12                     | 0.62              |
| 1:A:176:ALA:C    | 1:F:31:LYS:HG2   | 2.16                     | 0.61              |
| 1:C:419:TYR:HB3  | 1:H:401:LYS:HA   | 0.71                     | 0.61              |
| 1:E:419:TYR:HB3  | 1:J:401:LYS:CB   | 2.28                     | 0.61              |
| 1:J:172:GLY:HA2  | 1:K:29:ARG:HH12  | 1.65                     | 0.61              |
| 1:A:419:TYR:CZ   | 1:L:404:LEU:CA   | 2.79                     | 0.61              |
| 1:C:135:VAL:HB   | 1:D:156:GLN:CA   | 2.16                     | 0.61              |
| 1:J:162:GLY:N    | 1:K:214:ILE:CD1  | 2.62                     | 0.61              |
| 1:C:31:LYS:C     | 1:D:177:ALA:CA   | 2.43                     | 0.61              |
| 1:D:133:PRO:CD   | 1:E:163:ALA:N    | 2.61                     | 0.61              |
| 1:E:133:PRO:CD   | 1:F:163:ALA:N    | 2.61                     | 0.61              |
| 1:E:401:LYS:HA   | 1:J:419:TYR:HB3  | 0.73                     | 0.61              |
| 1:E:408:GLU:CD   | 1:J:415:LYS:CD   | 2.66                     | 0.61              |
| 1:I:156:GLN:CA   | 1:J:135:VAL:HB   | 2.18                     | 0.61              |
| 1:J:299:ALA:O    | 1:K:61:ALA:O     | 2.15                     | 0.61              |
| 1:A:419:TYR:HD1  | 1:L:405:GLU:CG   | 2.12                     | 0.61              |
| 1:E:54:ASN:HD21  | 1:F:174:ALA:HB2  | 1.60                     | 0.61              |
| 1:F:419:TYR:CZ   | 1:K:404:LEU:CA   | 2.79                     | 0.61              |
| 1:B:419:TYR:HD1  | 1:G:405:GLU:CG   | 2.11                     | 0.61              |
| 1:D:37:PHE:CD1   | 1:E:185:LEU:HD21 | 2.31                     | 0.61              |
| 1:D:137:ASN:HD21 | 1:E:156:GLN:NE2  | 1.93                     | 0.61              |
| 1:G:172:GLY:HA2  | 1:H:29:ARG:HH12  | 1.65                     | 0.61              |
| 1:G:214:ILE:CD1  | 1:L:162:GLY:N    | 2.62                     | 0.61              |
| 1:H:161:GLY:C    | 1:I:131:GLY:C    | 2.55                     | 0.61              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:93:ALA:HB3   | 1:I:94:ALA:HB3   | 1.83                     | 0.61              |
| 1:J:162:GLY:C    | 1:K:133:PRO:HD2  | 2.12                     | 0.61              |
| 1:K:172:GLY:HA2  | 1:L:29:ARG:HH12  | 1.65                     | 0.61              |
| 1:B:93:ALA:HB3   | 1:B:94:ALA:HB3   | 1.83                     | 0.61              |
| 1:F:419:TYR:HB3  | 1:K:401:LYS:CB   | 2.28                     | 0.61              |
| 1:B:54:ASN:HD21  | 1:C:174:ALA:HB2  | 1.60                     | 0.61              |
| 1:D:408:GLU:CD   | 1:I:415:LYS:CD   | 2.66                     | 0.61              |
| 1:G:29:ARG:HH12  | 1:L:172:GLY:HA2  | 1.65                     | 0.61              |
| 1:I:288:ALA:HB1  | 1:J:399:ALA:O    | 2.01                     | 0.61              |
| 1:B:419:TYR:HB3  | 1:G:401:LYS:CB   | 2.28                     | 0.61              |
| 1:G:288:ALA:HB1  | 1:H:399:ALA:O    | 2.01                     | 0.61              |
| 1:H:177:ALA:CA   | 1:I:31:LYS:C     | 2.37                     | 0.61              |
| 1:H:288:ALA:HB1  | 1:I:399:ALA:O    | 2.01                     | 0.61              |
| 1:B:401:LYS:HA   | 1:G:419:TYR:HB3  | 0.73                     | 0.61              |
| 1:B:416:PHE:CD2  | 1:G:405:GLU:CG   | 2.77                     | 0.61              |
| 1:E:62:ALA:N     | 1:F:301:ALA:CB   | 2.33                     | 0.61              |
| 1:J:161:GLY:HA2  | 1:K:131:GLY:O    | 2.00                     | 0.60              |
| 1:D:404:LEU:C    | 1:I:419:TYR:CD1  | 2.75                     | 0.60              |
| 1:A:93:ALA:HB3   | 1:A:94:ALA:HB3   | 1.83                     | 0.60              |
| 1:A:419:TYR:HB3  | 1:L:401:LYS:CB   | 2.28                     | 0.60              |
| 1:E:419:TYR:CD1  | 1:J:404:LEU:C    | 2.75                     | 0.60              |
| 1:G:400:ALA:CA   | 1:L:288:ALA:CB   | 2.71                     | 0.60              |
| 1:A:162:GLY:CA   | 1:F:214:ILE:HD12 | 2.16                     | 0.60              |
| 1:A:401:LYS:HA   | 1:L:419:TYR:HB3  | 0.73                     | 0.60              |
| 1:E:419:TYR:CZ   | 1:J:404:LEU:CA   | 2.79                     | 0.60              |
| 1:H:93:ALA:HB3   | 1:H:94:ALA:HB3   | 1.83                     | 0.60              |
| 1:A:404:LEU:C    | 1:L:419:TYR:CD1  | 2.75                     | 0.60              |
| 1:B:404:LEU:C    | 1:G:419:TYR:CD1  | 2.75                     | 0.60              |
| 1:D:54:ASN:HD21  | 1:E:174:ALA:HB3  | 1.60                     | 0.60              |
| 1:D:93:ALA:HB3   | 1:D:94:ALA:HB3   | 1.83                     | 0.60              |
| 1:D:397:VAL:HG11 | 1:I:421:ILE:HA   | 1.77                     | 0.60              |
| 1:E:62:ALA:N     | 1:F:301:ALA:CA   | 2.64                     | 0.60              |
| 1:G:131:GLY:C    | 1:L:161:GLY:C    | 2.55                     | 0.60              |
| 1:G:134:GLU:CG   | 1:L:158:ALA:HB1  | 2.17                     | 0.60              |
| 1:J:93:ALA:HB3   | 1:J:94:ALA:HB3   | 1.83                     | 0.60              |
| 1:J:288:ALA:HB1  | 1:K:399:ALA:O    | 2.01                     | 0.60              |
| 1:K:175:ALA:HB2  | 1:L:29:ARG:HB3   | 0.69                     | 0.60              |
| 1:C:93:ALA:HB3   | 1:C:94:ALA:HB3   | 1.83                     | 0.60              |
| 1:G:399:ALA:O    | 1:L:288:ALA:HB1  | 2.01                     | 0.60              |
| 1:A:31:LYS:HG2   | 1:B:176:ALA:C    | 2.16                     | 0.60              |
| 1:A:54:ASN:ND2   | 1:B:174:ALA:HB2  | 2.17                     | 0.60              |

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| Atom-1          | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:B:31:LYS:HG2  | 1:C:176:ALA:C   | 2.16                     | 0.60              |
| 1:E:404:LEU:CB  | 1:J:419:TYR:CE1 | 2.67                     | 0.60              |
| 1:F:416:PHE:CD2 | 1:K:405:GLU:CG  | 2.77                     | 0.60              |
| 1:G:93:ALA:HB3  | 1:G:94:ALA:HB3  | 1.83                     | 0.60              |
| 1:E:404:LEU:C   | 1:J:419:TYR:CD1 | 2.75                     | 0.60              |
| 1:L:93:ALA:HB3  | 1:L:94:ALA:HB3  | 1.83                     | 0.60              |
| 1:C:419:TYR:CD1 | 1:H:404:LEU:C   | 2.75                     | 0.60              |
| 1:E:93:ALA:HB3  | 1:E:94:ALA:HB3  | 1.83                     | 0.60              |
| 1:F:419:TYR:HB3 | 1:K:401:LYS:HA  | 0.71                     | 0.60              |
| 1:F:419:TYR:CB  | 1:K:401:LYS:CA  | 2.43                     | 0.60              |
| 1:G:29:ARG:HB3  | 1:L:175:ALA:HB2 | 0.69                     | 0.60              |
| 1:K:288:ALA:HB2 | 1:L:400:ALA:O   | 2.02                     | 0.60              |
| 1:C:54:ASN:ND2  | 1:D:174:ALA:HB2 | 2.17                     | 0.60              |
| 1:C:408:GLU:CD  | 1:H:415:LYS:CD  | 2.66                     | 0.60              |
| 1:C:416:PHE:CD2 | 1:H:405:GLU:CG  | 2.77                     | 0.60              |
| 1:K:288:ALA:HB1 | 1:L:399:ALA:O   | 2.01                     | 0.60              |
| 1:H:162:GLY:C   | 1:I:133:PRO:HD2 | 2.12                     | 0.59              |
| 1:I:288:ALA:CB  | 1:J:400:ALA:CA  | 2.71                     | 0.59              |
| 1:K:179:ALA:H   | 1:L:34:PRO:HD3  | 1.68                     | 0.59              |
| 1:B:54:ASN:ND2  | 1:C:174:ALA:HB2 | 2.17                     | 0.59              |
| 1:F:419:TYR:CB  | 1:K:401:LYS:CB  | 2.79                     | 0.59              |
| 1:A:408:GLU:CD  | 1:L:415:LYS:CD  | 2.66                     | 0.59              |
| 1:C:29:ARG:HH12 | 1:D:172:GLY:C   | 2.06                     | 0.59              |
| 1:D:419:TYR:HB3 | 1:I:401:LYS:HA  | 0.71                     | 0.59              |
| 1:B:421:ILE:OXT | 1:G:397:VAL:CB  | 2.39                     | 0.59              |
| 1:C:404:LEU:C   | 1:H:419:TYR:CD1 | 2.75                     | 0.59              |
| 1:H:179:ALA:H   | 1:I:34:PRO:HD3  | 1.68                     | 0.59              |
| 1:I:179:ALA:H   | 1:J:34:PRO:HD3  | 1.68                     | 0.59              |
| 1:H:175:ALA:HB2 | 1:I:29:ARG:HB3  | 0.69                     | 0.59              |
| 1:J:288:ALA:HB2 | 1:K:400:ALA:O   | 2.02                     | 0.59              |
| 1:B:404:LEU:CA  | 1:G:419:TYR:CZ  | 2.83                     | 0.59              |
| 1:A:419:TYR:CZ  | 1:L:408:GLU:CD  | 2.73                     | 0.59              |
| 1:B:29:ARG:HH12 | 1:C:172:GLY:C   | 2.06                     | 0.59              |
| 1:F:93:ALA:HB3  | 1:F:94:ALA:HB3  | 1.83                     | 0.59              |
| 1:G:34:PRO:HD3  | 1:L:179:ALA:H   | 1.68                     | 0.59              |
| 1:I:288:ALA:HB2 | 1:J:400:ALA:O   | 2.02                     | 0.59              |
| 1:K:93:ALA:HB3  | 1:K:94:ALA:HB3  | 1.83                     | 0.59              |
| 1:A:301:ALA:CA  | 1:F:62:ALA:N    | 2.64                     | 0.59              |
| 1:E:405:GLU:OE2 | 1:J:420:PHE:CE2 | 2.56                     | 0.59              |
| 1:D:404:LEU:CA  | 1:I:419:TYR:CZ  | 2.83                     | 0.59              |
| 1:D:405:GLU:OE2 | 1:I:420:PHE:CE2 | 2.56                     | 0.59              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:175:ALA:HB2  | 1:H:29:ARG:HB3   | 0.69                     | 0.59              |
| 1:G:179:ALA:H    | 1:H:34:PRO:HD3   | 1.68                     | 0.59              |
| 1:D:29:ARG:HH12  | 1:E:172:GLY:C    | 2.06                     | 0.59              |
| 1:D:54:ASN:ND2   | 1:E:174:ALA:HB2  | 2.17                     | 0.59              |
| 1:D:419:TYR:CB   | 1:I:401:LYS:CB   | 2.79                     | 0.59              |
| 1:G:133:PRO:HD3  | 1:L:162:GLY:CA   | 2.01                     | 0.59              |
| 1:G:301:ALA:CB   | 1:H:62:ALA:N     | 2.30                     | 0.59              |
| 1:H:288:ALA:HB2  | 1:I:400:ALA:O    | 2.02                     | 0.59              |
| 1:C:54:ASN:HD21  | 1:D:174:ALA:HB3  | 1.60                     | 0.58              |
| 1:J:175:ALA:HB2  | 1:K:29:ARG:HB3   | 0.69                     | 0.58              |
| 1:J:179:ALA:H    | 1:K:34:PRO:HD3   | 1.68                     | 0.58              |
| 1:D:135:VAL:HB   | 1:E:156:GLN:CA   | 2.16                     | 0.58              |
| 1:E:29:ARG:HH12  | 1:F:172:GLY:C    | 2.06                     | 0.58              |
| 1:G:288:ALA:HB2  | 1:H:400:ALA:O    | 2.02                     | 0.58              |
| 1:J:161:GLY:C    | 1:K:131:GLY:C    | 2.55                     | 0.58              |
| 1:A:405:GLU:OE2  | 1:L:420:PHE:CE2  | 2.56                     | 0.58              |
| 1:B:420:PHE:CE2  | 1:G:405:GLU:OE2  | 2.57                     | 0.58              |
| 1:F:405:GLU:OE2  | 1:K:420:PHE:CE2  | 2.56                     | 0.58              |
| 1:C:405:GLU:OE2  | 1:H:420:PHE:CE2  | 2.56                     | 0.58              |
| 1:C:420:PHE:CE2  | 1:H:405:GLU:OE2  | 2.57                     | 0.58              |
| 1:D:420:PHE:CE2  | 1:I:405:GLU:OE2  | 2.57                     | 0.58              |
| 1:F:420:PHE:CE2  | 1:K:405:GLU:OE2  | 2.57                     | 0.58              |
| 1:G:131:GLY:O    | 1:L:161:GLY:HA2  | 2.00                     | 0.58              |
| 1:G:162:GLY:CA   | 1:H:214:ILE:HD12 | 2.13                     | 0.58              |
| 1:I:177:ALA:CA   | 1:J:31:LYS:C     | 2.37                     | 0.58              |
| 1:A:29:ARG:HH12  | 1:B:172:GLY:C    | 2.06                     | 0.58              |
| 1:A:416:PHE:CD2  | 1:L:405:GLU:CG   | 2.77                     | 0.58              |
| 1:B:405:GLU:OE2  | 1:G:420:PHE:CE2  | 2.56                     | 0.58              |
| 1:C:137:ASN:HD21 | 1:D:156:GLN:NE2  | 1.93                     | 0.58              |
| 1:E:420:PHE:CE2  | 1:J:405:GLU:OE2  | 2.57                     | 0.58              |
| 1:G:161:GLY:HA2  | 1:H:131:GLY:O    | 2.00                     | 0.58              |
| 1:G:400:ALA:O    | 1:L:288:ALA:HB2  | 2.02                     | 0.58              |
| 1:I:161:GLY:HA2  | 1:J:131:GLY:O    | 2.00                     | 0.58              |
| 1:A:31:LYS:CA    | 1:B:176:ALA:C    | 2.35                     | 0.58              |
| 1:A:172:GLY:C    | 1:F:29:ARG:HH12  | 2.06                     | 0.58              |
| 1:E:37:PHE:CD1   | 1:F:185:LEU:HD21 | 2.31                     | 0.58              |
| 1:C:404:LEU:CA   | 1:H:419:TYR:CZ   | 2.83                     | 0.58              |
| 1:E:404:LEU:CA   | 1:J:419:TYR:CZ   | 2.83                     | 0.58              |
| 1:D:419:TYR:CE1  | 1:I:404:LEU:CB   | 2.72                     | 0.58              |
| 1:E:401:LYS:CA   | 1:J:419:TYR:CB   | 2.50                     | 0.58              |
| 1:H:156:GLN:CA   | 1:I:135:VAL:HB   | 2.18                     | 0.58              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:420:PHE:CE2  | 1:L:405:GLU:OE2  | 2.57                     | 0.58              |
| 1:D:62:ALA:N     | 1:E:301:ALA:CA   | 2.64                     | 0.58              |
| 1:B:61:ALA:CA    | 1:C:299:ALA:O    | 2.52                     | 0.57              |
| 1:C:61:ALA:CA    | 1:D:299:ALA:O    | 2.52                     | 0.57              |
| 1:F:408:GLU:CD   | 1:K:419:TYR:CZ   | 2.74                     | 0.57              |
| 1:A:62:ALA:N     | 1:B:301:ALA:CB   | 2.33                     | 0.57              |
| 1:G:61:ALA:O     | 1:L:299:ALA:HA   | 2.04                     | 0.57              |
| 1:C:31:LYS:CA    | 1:D:176:ALA:C    | 2.35                     | 0.57              |
| 1:E:419:TYR:CZ   | 1:J:404:LEU:O    | 2.58                     | 0.57              |
| 1:K:299:ALA:HA   | 1:L:61:ALA:O     | 2.04                     | 0.57              |
| 1:A:401:LYS:CA   | 1:L:419:TYR:CB   | 2.50                     | 0.57              |
| 1:F:404:LEU:C    | 1:K:419:TYR:CD1  | 2.75                     | 0.57              |
| 1:F:419:TYR:CZ   | 1:K:404:LEU:O    | 2.58                     | 0.57              |
| 1:A:61:ALA:CA    | 1:B:299:ALA:O    | 2.52                     | 0.57              |
| 1:C:419:TYR:CB   | 1:H:401:LYS:CB   | 2.79                     | 0.57              |
| 1:C:421:ILE:OXT  | 1:H:397:VAL:CB   | 2.39                     | 0.57              |
| 1:E:397:VAL:HG11 | 1:J:421:ILE:HA   | 1.77                     | 0.57              |
| 1:E:419:TYR:CZ   | 1:J:408:GLU:CD   | 2.73                     | 0.57              |
| 1:F:419:TYR:CZ   | 1:K:408:GLU:CD   | 2.73                     | 0.57              |
| 1:G:174:ALA:HB3  | 1:H:54:ASN:ND2   | 2.13                     | 0.57              |
| 1:E:419:TYR:CD1  | 1:J:405:GLU:HG3  | 2.28                     | 0.57              |
| 1:D:419:TYR:CZ   | 1:I:404:LEU:O    | 2.58                     | 0.57              |
| 1:F:419:TYR:CD1  | 1:K:404:LEU:C    | 2.75                     | 0.57              |
| 1:F:419:TYR:CD1  | 1:K:405:GLU:HG3  | 2.28                     | 0.57              |
| 1:H:161:GLY:HA2  | 1:I:131:GLY:O    | 2.00                     | 0.57              |
| 1:B:54:ASN:HD21  | 1:C:174:ALA:HB3  | 1.60                     | 0.57              |
| 1:D:61:ALA:CA    | 1:E:299:ALA:O    | 2.52                     | 0.57              |
| 1:E:54:ASN:ND2   | 1:F:174:ALA:HB2  | 2.17                     | 0.57              |
| 1:A:299:ALA:O    | 1:F:61:ALA:CA    | 2.52                     | 0.57              |
| 1:B:31:LYS:C     | 1:C:177:ALA:CA   | 2.43                     | 0.57              |
| 1:B:419:TYR:CZ   | 1:G:404:LEU:O    | 2.58                     | 0.57              |
| 1:B:62:ALA:N     | 1:C:301:ALA:CA   | 2.64                     | 0.56              |
| 1:C:37:PHE:CD1   | 1:D:185:LEU:HD22 | 2.39                     | 0.56              |
| 1:C:62:ALA:N     | 1:D:301:ALA:CA   | 2.64                     | 0.56              |
| 1:D:31:LYS:CA    | 1:E:176:ALA:C    | 2.35                     | 0.56              |
| 1:E:33:ILE:HG22  | 1:F:178:GLY:C    | 2.25                     | 0.56              |
| 1:A:62:ALA:N     | 1:B:301:ALA:CA   | 2.64                     | 0.56              |
| 1:A:404:LEU:CA   | 1:L:419:TYR:CZ   | 2.83                     | 0.56              |
| 1:B:419:TYR:CB   | 1:G:401:LYS:CB   | 2.79                     | 0.56              |
| 1:E:61:ALA:CA    | 1:F:299:ALA:O    | 2.52                     | 0.56              |
| 1:E:133:PRO:CD   | 1:F:162:GLY:C    | 2.72                     | 0.56              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:163:ALA:N    | 1:I:133:PRO:CD   | 2.68                     | 0.56              |
| 1:H:299:ALA:HA   | 1:I:61:ALA:O     | 2.04                     | 0.56              |
| 1:A:33:ILE:HG22  | 1:B:178:GLY:C    | 2.25                     | 0.56              |
| 1:A:185:LEU:HD22 | 1:F:37:PHE:CD1   | 2.39                     | 0.56              |
| 1:D:421:ILE:OXT  | 1:I:397:VAL:CB   | 2.39                     | 0.56              |
| 1:J:288:ALA:CB   | 1:K:400:ALA:CA   | 2.71                     | 0.56              |
| 1:A:133:PRO:CD   | 1:B:162:GLY:C    | 2.72                     | 0.56              |
| 1:A:419:TYR:CD1  | 1:L:405:GLU:HG3  | 2.28                     | 0.56              |
| 1:C:33:ILE:HG22  | 1:D:178:GLY:C    | 2.25                     | 0.56              |
| 1:D:419:TYR:CD1  | 1:I:405:GLU:HG3  | 2.28                     | 0.56              |
| 1:J:174:ALA:HB3  | 1:K:54:ASN:ND2   | 2.13                     | 0.56              |
| 1:B:33:ILE:HG22  | 1:C:178:GLY:C    | 2.25                     | 0.56              |
| 1:C:419:TYR:CZ   | 1:H:404:LEU:O    | 2.58                     | 0.56              |
| 1:D:37:PHE:CD1   | 1:E:185:LEU:HD22 | 2.39                     | 0.56              |
| 1:F:404:LEU:CA   | 1:K:419:TYR:CZ   | 2.83                     | 0.56              |
| 1:K:288:ALA:CB   | 1:L:400:ALA:CA   | 2.71                     | 0.56              |
| 1:A:178:GLY:C    | 1:F:33:ILE:HG22  | 2.25                     | 0.56              |
| 1:A:301:ALA:CB   | 1:F:62:ALA:N     | 2.33                     | 0.56              |
| 1:B:401:LYS:HD2  | 1:G:420:PHE:CD2  | 2.32                     | 0.56              |
| 1:E:37:PHE:CD1   | 1:F:185:LEU:HD22 | 2.39                     | 0.56              |
| 1:G:299:ALA:HA   | 1:H:61:ALA:O     | 2.04                     | 0.56              |
| 1:C:419:TYR:CZ   | 1:H:404:LEU:CA   | 2.79                     | 0.56              |
| 1:D:404:LEU:CB   | 1:I:419:TYR:CE1  | 2.67                     | 0.56              |
| 1:E:421:ILE:OXT  | 1:J:397:VAL:CB   | 2.39                     | 0.56              |
| 1:C:416:PHE:HD2  | 1:H:405:GLU:CG   | 2.01                     | 0.56              |
| 1:I:175:ALA:HB2  | 1:J:29:ARG:HB3   | 0.69                     | 0.56              |
| 1:J:299:ALA:HA   | 1:K:61:ALA:O     | 2.04                     | 0.56              |
| 1:B:62:ALA:N     | 1:C:301:ALA:CB   | 2.33                     | 0.55              |
| 1:D:33:ILE:HG22  | 1:E:178:GLY:C    | 2.25                     | 0.55              |
| 1:G:133:PRO:CD   | 1:L:162:GLY:C    | 2.73                     | 0.55              |
| 1:G:156:GLN:CA   | 1:H:135:VAL:HB   | 2.18                     | 0.55              |
| 1:A:174:ALA:HB2  | 1:F:54:ASN:ND2   | 2.17                     | 0.55              |
| 1:A:185:LEU:HD21 | 1:F:37:PHE:CD1   | 2.31                     | 0.55              |
| 1:A:419:TYR:CZ   | 1:L:404:LEU:O    | 2.58                     | 0.55              |
| 1:D:416:PHE:HD2  | 1:I:405:GLU:CG   | 2.01                     | 0.55              |
| 1:D:419:TYR:CZ   | 1:I:404:LEU:CA   | 2.79                     | 0.55              |
| 1:E:419:TYR:CB   | 1:J:401:LYS:CB   | 2.79                     | 0.55              |
| 1:A:401:LYS:HD2  | 1:L:420:PHE:CD2  | 2.32                     | 0.55              |
| 1:E:135:VAL:HB   | 1:F:156:GLN:CA   | 2.16                     | 0.55              |
| 1:I:158:ALA:N    | 1:J:134:GLU:HA   | 2.22                     | 0.55              |
| 1:A:31:LYS:C     | 1:B:177:ALA:CA   | 2.43                     | 0.55              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:134:GLU:HA   | 1:L:158:ALA:N    | 2.22                     | 0.55              |
| 1:F:419:TYR:CE1  | 1:K:404:LEU:CB   | 2.72                     | 0.55              |
| 1:G:163:ALA:N    | 1:H:133:PRO:CD   | 2.68                     | 0.55              |
| 1:I:299:ALA:HA   | 1:J:61:ALA:O     | 2.04                     | 0.55              |
| 1:B:419:TYR:CZ   | 1:G:404:LEU:CA   | 2.79                     | 0.55              |
| 1:D:133:PRO:CD   | 1:E:162:GLY:C    | 2.72                     | 0.55              |
| 1:D:417:LEU:O    | 1:I:401:LYS:HE2  | 2.07                     | 0.55              |
| 1:E:419:TYR:CE1  | 1:J:404:LEU:CB   | 2.72                     | 0.55              |
| 1:F:417:LEU:O    | 1:K:401:LYS:HE2  | 2.07                     | 0.55              |
| 1:G:31:LYS:C     | 1:L:177:ALA:CA   | 2.37                     | 0.55              |
| 1:G:158:ALA:N    | 1:H:134:GLU:HA   | 2.22                     | 0.55              |
| 1:A:417:LEU:O    | 1:L:401:LYS:HE2  | 2.07                     | 0.55              |
| 1:B:33:ILE:CG2   | 1:C:178:GLY:C    | 2.76                     | 0.55              |
| 1:B:405:GLU:CG   | 1:G:416:PHE:CD2  | 2.78                     | 0.55              |
| 1:A:419:TYR:CB   | 1:L:401:LYS:CB   | 2.79                     | 0.55              |
| 1:B:37:PHE:CD1   | 1:C:185:LEU:HD21 | 2.31                     | 0.55              |
| 1:D:33:ILE:CG2   | 1:E:178:GLY:C    | 2.76                     | 0.55              |
| 1:H:174:ALA:HB3  | 1:I:54:ASN:ND2   | 2.13                     | 0.55              |
| 1:J:158:ALA:N    | 1:K:134:GLU:HA   | 2.22                     | 0.55              |
| 1:A:205:GLN:OE1  | 1:B:166:ALA:CB   | 2.52                     | 0.54              |
| 1:B:417:LEU:O    | 1:G:401:LYS:HE2  | 2.07                     | 0.54              |
| 1:C:33:ILE:CG2   | 1:D:178:GLY:C    | 2.76                     | 0.54              |
| 1:G:162:GLY:C    | 1:H:133:PRO:CD   | 2.73                     | 0.54              |
| 1:K:158:ALA:N    | 1:L:134:GLU:HA   | 2.22                     | 0.54              |
| 1:C:417:LEU:O    | 1:H:401:LYS:HE2  | 2.07                     | 0.54              |
| 1:A:54:ASN:HD21  | 1:B:174:ALA:HB3  | 1.60                     | 0.54              |
| 1:A:178:GLY:C    | 1:F:33:ILE:CG2   | 2.76                     | 0.54              |
| 1:E:33:ILE:CG2   | 1:F:178:GLY:C    | 2.76                     | 0.54              |
| 1:C:214:ILE:HD12 | 1:D:162:GLY:CA   | 2.16                     | 0.54              |
| 1:A:33:ILE:CG2   | 1:B:178:GLY:C    | 2.76                     | 0.54              |
| 1:E:61:ALA:CA    | 1:F:299:ALA:C    | 2.75                     | 0.54              |
| 1:A:37:PHE:CD1   | 1:B:185:LEU:HD21 | 2.31                     | 0.54              |
| 1:A:299:ALA:C    | 1:F:61:ALA:CA    | 2.76                     | 0.54              |
| 1:B:61:ALA:CA    | 1:C:299:ALA:C    | 2.75                     | 0.54              |
| 1:C:214:ILE:CD1  | 1:D:162:GLY:N    | 2.71                     | 0.54              |
| 1:F:421:ILE:OXT  | 1:K:397:VAL:CB   | 2.39                     | 0.54              |
| 1:A:214:ILE:CD1  | 1:B:162:GLY:N    | 2.71                     | 0.54              |
| 1:B:32:SER:CA    | 1:C:177:ALA:CA   | 2.82                     | 0.54              |
| 1:B:214:ILE:CD1  | 1:C:162:GLY:N    | 2.71                     | 0.54              |
| 1:D:401:LYS:CA   | 1:I:419:TYR:CB   | 2.50                     | 0.54              |
| 1:I:174:ALA:HB3  | 1:J:54:ASN:ND2   | 2.13                     | 0.54              |

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| Atom-1           | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 1:H:158:ALA:N    | 1:I:134:GLU:HA  | 2.22                     | 0.54              |
| 1:J:162:GLY:C    | 1:K:133:PRO:CD  | 2.73                     | 0.54              |
| 1:B:419:TYR:CD1  | 1:G:405:GLU:HG3 | 2.28                     | 0.54              |
| 1:C:61:ALA:CA    | 1:D:299:ALA:C   | 2.76                     | 0.54              |
| 1:C:405:GLU:CG   | 1:H:416:PHE:CD2 | 2.78                     | 0.54              |
| 1:D:61:ALA:CA    | 1:E:299:ALA:C   | 2.76                     | 0.54              |
| 1:D:401:LYS:HA   | 1:I:419:TYR:HB3 | 0.73                     | 0.54              |
| 1:E:417:LEU:O    | 1:J:401:LYS:HE2 | 2.07                     | 0.54              |
| 1:K:162:GLY:C    | 1:L:133:PRO:CD  | 2.73                     | 0.54              |
| 1:C:133:PRO:CD   | 1:D:162:GLY:C   | 2.72                     | 0.53              |
| 1:C:419:TYR:CD1  | 1:H:405:GLU:HG3 | 2.28                     | 0.53              |
| 1:D:34:PRO:CD    | 1:E:179:ALA:H   | 2.21                     | 0.53              |
| 1:D:419:TYR:HB3  | 1:I:401:LYS:CB  | 2.28                     | 0.53              |
| 1:G:174:ALA:HB2  | 1:H:54:ASN:HD21 | 1.51                     | 0.53              |
| 1:A:419:TYR:CD1  | 1:L:404:LEU:C   | 2.75                     | 0.53              |
| 1:D:205:GLN:OE1  | 1:E:166:ALA:CB  | 2.52                     | 0.53              |
| 1:D:214:ILE:CD1  | 1:E:162:GLY:N   | 2.71                     | 0.53              |
| 1:D:419:TYR:O    | 1:I:401:LYS:N   | 2.42                     | 0.53              |
| 1:J:177:ALA:CA   | 1:K:31:LYS:C    | 2.37                     | 0.53              |
| 1:A:61:ALA:CA    | 1:B:299:ALA:C   | 2.76                     | 0.53              |
| 1:A:162:GLY:N    | 1:F:214:ILE:CD1 | 2.71                     | 0.53              |
| 1:A:166:ALA:CB   | 1:F:205:GLN:OE1 | 2.52                     | 0.53              |
| 1:B:132:VAL:HA   | 1:C:162:GLY:HA2 | 1.91                     | 0.53              |
| 1:C:419:TYR:O    | 1:H:401:LYS:N   | 2.42                     | 0.53              |
| 1:E:34:PRO:CD    | 1:F:179:ALA:H   | 2.21                     | 0.53              |
| 1:E:133:PRO:HG2  | 1:F:163:ALA:CB  | 2.38                     | 0.53              |
| 1:E:205:GLN:OE1  | 1:F:166:ALA:CB  | 2.52                     | 0.53              |
| 1:A:179:ALA:H    | 1:F:34:PRO:CD   | 2.21                     | 0.53              |
| 1:A:132:VAL:HA   | 1:B:162:GLY:HA2 | 1.91                     | 0.53              |
| 1:A:405:GLU:CG   | 1:L:416:PHE:CD2 | 2.78                     | 0.53              |
| 1:B:416:PHE:HD2  | 1:G:405:GLU:CG  | 2.01                     | 0.53              |
| 1:B:419:TYR:CD1  | 1:G:404:LEU:C   | 2.75                     | 0.53              |
| 1:C:205:GLN:OE1  | 1:D:166:ALA:CB  | 2.52                     | 0.53              |
| 1:C:401:LYS:CA   | 1:H:419:TYR:CB  | 2.50                     | 0.53              |
| 1:D:133:PRO:HG2  | 1:E:163:ALA:CB  | 2.38                     | 0.53              |
| 1:D:408:GLU:CD   | 1:I:419:TYR:CZ  | 2.74                     | 0.53              |
| 1:A:133:PRO:HG2  | 1:B:163:ALA:CB  | 2.38                     | 0.53              |
| 1:C:408:GLU:CD   | 1:H:419:TYR:CZ  | 2.74                     | 0.53              |
| 1:D:214:ILE:HD12 | 1:E:162:GLY:CA  | 2.16                     | 0.53              |
| 1:E:416:PHE:CD2  | 1:J:405:GLU:CG  | 2.77                     | 0.53              |
| 1:F:401:LYS:HD2  | 1:K:420:PHE:CD2 | 2.32                     | 0.53              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:D:31:LYS:C    | 1:E:177:ALA:CA   | 2.43                     | 0.53              |
| 1:E:31:LYS:CA   | 1:F:176:ALA:C    | 2.35                     | 0.53              |
| 1:E:214:ILE:CD1 | 1:F:162:GLY:N    | 2.71                     | 0.53              |
| 1:H:162:GLY:C   | 1:I:133:PRO:CD   | 2.73                     | 0.53              |
| 1:I:162:GLY:C   | 1:J:133:PRO:CD   | 2.73                     | 0.53              |
| 1:B:419:TYR:O   | 1:G:401:LYS:N    | 2.42                     | 0.52              |
| 1:E:419:TYR:O   | 1:J:401:LYS:N    | 2.42                     | 0.52              |
| 1:K:174:ALA:HB3 | 1:L:54:ASN:ND2   | 2.13                     | 0.52              |
| 1:A:162:GLY:C   | 1:F:133:PRO:CD   | 2.72                     | 0.52              |
| 1:A:401:LYS:CB  | 1:L:419:TYR:HB3  | 2.37                     | 0.52              |
| 1:F:401:LYS:CB  | 1:K:419:TYR:HB3  | 2.37                     | 0.52              |
| 1:A:288:ALA:HB2 | 1:F:400:ALA:O    | 2.10                     | 0.52              |
| 1:B:133:PRO:HG2 | 1:C:163:ALA:CB   | 2.38                     | 0.52              |
| 1:C:400:ALA:O   | 1:D:288:ALA:HB2  | 2.10                     | 0.52              |
| 1:E:401:LYS:CB  | 1:J:419:TYR:HB3  | 2.37                     | 0.52              |
| 1:E:416:PHE:HD2 | 1:J:405:GLU:CG   | 2.01                     | 0.52              |
| 1:K:158:ALA:HB1 | 1:L:134:GLU:CG   | 2.17                     | 0.52              |
| 1:A:163:ALA:CB  | 1:F:133:PRO:HG2  | 2.38                     | 0.52              |
| 1:B:401:LYS:CA  | 1:G:419:TYR:CB   | 2.50                     | 0.52              |
| 1:G:161:GLY:O   | 1:H:214:ILE:HD12 | 1.95                     | 0.52              |
| 1:A:162:GLY:HA2 | 1:F:132:VAL:HA   | 1.90                     | 0.52              |
| 1:C:133:PRO:HG2 | 1:D:163:ALA:CB   | 2.38                     | 0.52              |
| 1:D:416:PHE:CD2 | 1:I:405:GLU:CG   | 2.77                     | 0.52              |
| 1:A:37:PHE:CD1  | 1:B:185:LEU:HD22 | 2.39                     | 0.52              |
| 1:B:37:PHE:CD1  | 1:C:185:LEU:HD22 | 2.39                     | 0.52              |
| 1:D:401:LYS:HA  | 1:I:419:TYR:CA   | 2.38                     | 0.52              |
| 1:E:132:VAL:HA  | 1:F:162:GLY:HA2  | 1.91                     | 0.52              |
| 1:A:158:ALA:N   | 1:F:134:GLU:HG2  | 2.25                     | 0.52              |
| 1:E:133:PRO:HD2 | 1:F:162:GLY:HA2  | 0.53                     | 0.52              |
| 1:E:400:ALA:O   | 1:F:288:ALA:HB2  | 2.10                     | 0.52              |
| 1:B:400:ALA:O   | 1:C:288:ALA:HB2  | 2.10                     | 0.52              |
| 1:C:134:GLU:HG2 | 1:D:158:ALA:N    | 2.25                     | 0.52              |
| 1:C:401:LYS:HD2 | 1:H:420:PHE:CD2  | 2.32                     | 0.52              |
| 1:A:404:LEU:CA  | 1:L:419:TYR:CE1  | 2.93                     | 0.51              |
| 1:D:132:VAL:HA  | 1:E:162:GLY:HA2  | 1.91                     | 0.51              |
| 1:B:133:PRO:CD  | 1:C:162:GLY:C    | 2.72                     | 0.51              |
| 1:B:134:GLU:HG2 | 1:C:158:ALA:N    | 2.25                     | 0.51              |
| 1:F:419:TYR:O   | 1:K:401:LYS:N    | 2.42                     | 0.51              |
| 1:A:162:GLY:HA2 | 1:F:133:PRO:HD2  | 0.54                     | 0.51              |
| 1:D:133:PRO:HD2 | 1:E:162:GLY:HA2  | 0.53                     | 0.51              |
| 1:D:400:ALA:O   | 1:E:288:ALA:HB2  | 2.10                     | 0.51              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:D:404:LEU:CA   | 1:I:419:TYR:CE1  | 2.93                     | 0.51              |
| 1:G:61:ALA:CA    | 1:L:299:ALA:O    | 2.59                     | 0.51              |
| 1:A:419:TYR:O    | 1:L:401:LYS:N    | 2.42                     | 0.51              |
| 1:B:205:GLN:OE1  | 1:C:166:ALA:CB   | 2.52                     | 0.51              |
| 1:B:419:TYR:CZ   | 1:G:408:GLU:CD   | 2.73                     | 0.51              |
| 1:C:132:VAL:HA   | 1:D:162:GLY:HA2  | 1.90                     | 0.51              |
| 1:E:404:LEU:CA   | 1:J:419:TYR:CE1  | 2.93                     | 0.51              |
| 1:J:299:ALA:O    | 1:K:61:ALA:CA    | 2.59                     | 0.51              |
| 1:B:214:ILE:HD12 | 1:C:162:GLY:CA   | 2.16                     | 0.51              |
| 1:A:177:ALA:CA   | 1:F:31:LYS:C     | 2.43                     | 0.51              |
| 1:E:134:GLU:HG2  | 1:F:158:ALA:N    | 2.25                     | 0.51              |
| 1:H:299:ALA:O    | 1:I:61:ALA:CA    | 2.59                     | 0.51              |
| 1:C:400:ALA:CA   | 1:D:288:ALA:CB   | 2.73                     | 0.51              |
| 1:E:33:ILE:HG22  | 1:F:179:ALA:N    | 2.26                     | 0.51              |
| 1:F:404:LEU:CA   | 1:K:419:TYR:CE1  | 2.93                     | 0.51              |
| 1:A:34:PRO:CD    | 1:B:179:ALA:H    | 2.21                     | 0.51              |
| 1:A:134:GLU:HG2  | 1:B:158:ALA:N    | 2.25                     | 0.51              |
| 1:D:134:GLU:HG2  | 1:E:158:ALA:N    | 2.25                     | 0.51              |
| 1:E:134:GLU:HA   | 1:F:158:ALA:N    | 2.26                     | 0.51              |
| 1:A:134:GLU:HA   | 1:B:158:ALA:N    | 2.26                     | 0.51              |
| 1:D:33:ILE:HG22  | 1:E:179:ALA:N    | 2.26                     | 0.51              |
| 1:B:33:ILE:HG22  | 1:C:179:ALA:N    | 2.26                     | 0.50              |
| 1:C:419:TYR:CZ   | 1:H:408:GLU:CD   | 2.73                     | 0.50              |
| 1:D:32:SER:CA    | 1:E:177:ALA:CA   | 2.82                     | 0.50              |
| 1:I:299:ALA:O    | 1:J:61:ALA:CA    | 2.59                     | 0.50              |
| 1:A:400:ALA:O    | 1:B:288:ALA:HB2  | 2.10                     | 0.50              |
| 1:C:404:LEU:CA   | 1:H:419:TYR:CE1  | 2.93                     | 0.50              |
| 1:C:419:TYR:HB3  | 1:H:401:LYS:CB   | 2.28                     | 0.50              |
| 1:I:161:GLY:O    | 1:J:214:ILE:HD11 | 1.96                     | 0.50              |
| 1:A:416:PHE:HD2  | 1:L:405:GLU:CG   | 2.01                     | 0.50              |
| 1:B:134:GLU:HA   | 1:C:158:ALA:N    | 2.26                     | 0.50              |
| 1:C:133:PRO:HD2  | 1:D:162:GLY:HA2  | 0.54                     | 0.50              |
| 1:D:134:GLU:HA   | 1:E:158:ALA:N    | 2.26                     | 0.50              |
| 1:D:408:GLU:CD   | 1:I:419:TYR:CE1  | 2.85                     | 0.50              |
| 1:I:161:GLY:O    | 1:J:214:ILE:HD12 | 1.95                     | 0.50              |
| 1:A:33:ILE:HG22  | 1:B:179:ALA:N    | 2.26                     | 0.50              |
| 1:A:158:ALA:N    | 1:F:134:GLU:HA   | 2.26                     | 0.50              |
| 1:A:133:PRO:HD2  | 1:B:162:GLY:HA2  | 0.53                     | 0.50              |
| 1:B:404:LEU:CA   | 1:G:419:TYR:CE1  | 2.93                     | 0.50              |
| 1:C:408:GLU:CD   | 1:H:419:TYR:CE1  | 2.85                     | 0.50              |
| 1:G:299:ALA:O    | 1:H:61:ALA:CA    | 2.59                     | 0.50              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:404:LEU:O    | 1:K:419:TYR:CZ   | 2.65                     | 0.50              |
| 1:F:416:PHE:HD2  | 1:K:405:GLU:CG   | 2.01                     | 0.50              |
| 1:K:161:GLY:O    | 1:L:214:ILE:HD12 | 1.95                     | 0.50              |
| 1:A:179:ALA:N    | 1:F:33:ILE:HG22  | 2.26                     | 0.50              |
| 1:K:299:ALA:O    | 1:L:61:ALA:CA    | 2.59                     | 0.50              |
| 1:A:404:LEU:O    | 1:L:419:TYR:CZ   | 2.65                     | 0.50              |
| 1:C:33:ILE:HG22  | 1:D:179:ALA:N    | 2.26                     | 0.49              |
| 1:E:408:GLU:CD   | 1:J:419:TYR:CE1  | 2.85                     | 0.49              |
| 1:F:419:TYR:CE1  | 1:K:404:LEU:CA   | 2.95                     | 0.49              |
| 1:H:161:GLY:C    | 1:I:214:ILE:HD12 | 2.32                     | 0.49              |
| 1:B:34:PRO:CD    | 1:C:179:ALA:H    | 2.21                     | 0.49              |
| 1:C:134:GLU:HA   | 1:D:158:ALA:N    | 2.26                     | 0.49              |
| 1:C:404:LEU:O    | 1:H:419:TYR:CZ   | 2.65                     | 0.49              |
| 1:D:397:VAL:CB   | 1:I:421:ILE:OXT  | 2.51                     | 0.49              |
| 1:D:405:GLU:CG   | 1:I:416:PHE:CD2  | 2.78                     | 0.49              |
| 1:E:408:GLU:CD   | 1:J:419:TYR:CZ   | 2.74                     | 0.49              |
| 1:B:133:PRO:HD2  | 1:C:162:GLY:HA2  | 0.53                     | 0.49              |
| 1:C:399:ALA:O    | 1:D:288:ALA:HB1  | 2.13                     | 0.49              |
| 1:E:135:VAL:H    | 1:F:156:GLN:C    | 1.91                     | 0.49              |
| 1:G:288:ALA:CB   | 1:H:400:ALA:CA   | 2.71                     | 0.49              |
| 1:G:400:ALA:HA   | 1:L:288:ALA:HB3  | 1.88                     | 0.49              |
| 1:H:161:GLY:O    | 1:I:214:ILE:HD11 | 1.96                     | 0.49              |
| 1:A:288:ALA:HB1  | 1:F:399:ALA:O    | 2.13                     | 0.49              |
| 1:B:408:GLU:CD   | 1:G:419:TYR:CZ   | 2.74                     | 0.49              |
| 1:C:405:GLU:CG   | 1:H:419:TYR:HD1  | 2.24                     | 0.49              |
| 1:B:399:ALA:O    | 1:C:288:ALA:HB1  | 2.13                     | 0.49              |
| 1:D:401:LYS:N    | 1:I:419:TYR:O    | 2.46                     | 0.49              |
| 1:D:404:LEU:O    | 1:I:419:TYR:CZ   | 2.65                     | 0.49              |
| 1:A:399:ALA:O    | 1:B:288:ALA:HB1  | 2.13                     | 0.49              |
| 1:C:401:LYS:N    | 1:H:419:TYR:O    | 2.46                     | 0.49              |
| 1:D:399:ALA:O    | 1:E:288:ALA:HB1  | 2.13                     | 0.49              |
| 1:D:419:TYR:CD1  | 1:I:404:LEU:C    | 2.75                     | 0.49              |
| 1:G:209:ARG:HH21 | 1:L:164:ALA:HB1  | 0.67                     | 0.49              |
| 1:A:419:TYR:CE1  | 1:L:404:LEU:CA   | 2.95                     | 0.49              |
| 1:B:408:GLU:CD   | 1:G:419:TYR:CE1  | 2.85                     | 0.49              |
| 1:F:405:GLU:CG   | 1:K:416:PHE:CD2  | 2.78                     | 0.49              |
| 1:F:401:LYS:CB   | 1:K:419:TYR:CB   | 2.89                     | 0.49              |
| 1:G:164:ALA:HB1  | 1:H:209:ARG:HH21 | 0.67                     | 0.49              |
| 1:A:401:LYS:HA   | 1:L:419:TYR:CA   | 2.38                     | 0.49              |
| 1:E:399:ALA:O    | 1:F:288:ALA:HB1  | 2.13                     | 0.49              |
| 1:H:162:GLY:N    | 1:I:214:ILE:HD11 | 2.23                     | 0.49              |

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| Atom-1          | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:B:404:LEU:O   | 1:G:419:TYR:CZ   | 2.65                     | 0.49              |
| 1:F:401:LYS:HA  | 1:K:419:TYR:CA   | 2.38                     | 0.49              |
| 1:E:405:GLU:CG  | 1:J:419:TYR:HD1  | 2.24                     | 0.48              |
| 1:H:288:ALA:CB  | 1:I:400:ALA:CA   | 2.71                     | 0.48              |
| 1:J:164:ALA:HB1 | 1:K:209:ARG:HH21 | 0.67                     | 0.48              |
| 1:B:401:LYS:N   | 1:G:419:TYR:O    | 2.46                     | 0.48              |
| 1:D:401:LYS:CB  | 1:I:419:TYR:CB   | 2.89                     | 0.48              |
| 1:F:408:GLU:CD  | 1:K:419:TYR:CE1  | 2.85                     | 0.48              |
| 1:D:405:GLU:CG  | 1:I:419:TYR:HD1  | 2.24                     | 0.48              |
| 1:E:401:LYS:N   | 1:J:419:TYR:O    | 2.46                     | 0.48              |
| 1:A:177:ALA:CA  | 1:F:32:SER:CA    | 2.82                     | 0.48              |
| 1:C:34:PRO:CD   | 1:D:179:ALA:H    | 2.21                     | 0.48              |
| 1:H:164:ALA:HB1 | 1:I:209:ARG:HH21 | 0.67                     | 0.48              |
| 1:A:408:GLU:CD  | 1:L:419:TYR:CE1  | 2.85                     | 0.48              |
| 1:E:32:SER:CA   | 1:F:177:ALA:CA   | 2.82                     | 0.48              |
| 1:E:16:PHE:HE2  | 1:F:181:GLU:HB3  | 1.79                     | 0.48              |
| 1:B:16:PHE:HE2  | 1:C:181:GLU:HB3  | 1.79                     | 0.48              |
| 1:B:401:LYS:CB  | 1:G:419:TYR:CB   | 2.89                     | 0.48              |
| 1:G:62:ALA:N    | 1:L:301:ALA:CB   | 2.30                     | 0.48              |
| 1:E:404:LEU:O   | 1:J:419:TYR:CZ   | 2.65                     | 0.48              |
| 1:D:16:PHE:HE2  | 1:E:181:GLU:HB3  | 1.79                     | 0.48              |
| 1:I:288:ALA:HB2 | 1:J:403:GLU:HB2  | 1.25                     | 0.48              |
| 1:A:181:GLU:HB3 | 1:F:16:PHE:HE2   | 1.79                     | 0.47              |
| 1:B:400:ALA:CA  | 1:C:288:ALA:CB   | 2.73                     | 0.47              |
| 1:C:135:VAL:H   | 1:D:156:GLN:C    | 1.91                     | 0.47              |
| 1:C:419:TYR:CE1 | 1:H:404:LEU:CA   | 2.95                     | 0.47              |
| 1:D:419:TYR:CE1 | 1:I:404:LEU:CA   | 2.95                     | 0.47              |
| 1:E:401:LYS:HD2 | 1:J:420:PHE:CD2  | 2.32                     | 0.47              |
| 1:I:164:ALA:HB1 | 1:J:209:ARG:HH21 | 0.67                     | 0.47              |
| 1:K:162:GLY:N   | 1:L:214:ILE:HD11 | 2.23                     | 0.47              |
| 1:K:164:ALA:HB1 | 1:L:209:ARG:HH21 | 0.67                     | 0.47              |
| 1:C:403:GLU:HB2 | 1:D:288:ALA:HB2  | 1.29                     | 0.47              |
| 1:F:93:ALA:H    | 1:F:94:ALA:C     | 2.18                     | 0.47              |
| 1:J:93:ALA:H    | 1:J:94:ALA:C     | 2.18                     | 0.47              |
| 1:K:93:ALA:H    | 1:K:94:ALA:C     | 2.18                     | 0.47              |
| 1:A:93:ALA:H    | 1:A:94:ALA:C     | 2.18                     | 0.47              |
| 1:K:161:GLY:C   | 1:L:214:ILE:HD12 | 2.32                     | 0.47              |
| 1:L:93:ALA:H    | 1:L:94:ALA:C     | 2.18                     | 0.47              |
| 1:C:397:VAL:CB  | 1:H:421:ILE:OXT  | 2.51                     | 0.47              |
| 1:D:93:ALA:H    | 1:D:94:ALA:C     | 2.18                     | 0.47              |
| 1:E:93:ALA:H    | 1:E:94:ALA:C     | 2.18                     | 0.47              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:F:401:LYS:N    | 1:K:419:TYR:O    | 2.46                     | 0.47              |
| 1:G:93:ALA:H     | 1:G:94:ALA:C     | 2.18                     | 0.47              |
| 1:A:401:LYS:N    | 1:L:419:TYR:O    | 2.46                     | 0.47              |
| 1:I:185:LEU:HD21 | 1:J:34:PRO:HD2   | 1.67                     | 0.47              |
| 1:K:288:ALA:HB2  | 1:L:403:GLU:HB2  | 1.25                     | 0.47              |
| 1:B:93:ALA:H     | 1:B:94:ALA:C     | 2.18                     | 0.47              |
| 1:C:16:PHE:HE2   | 1:D:181:GLU:HB3  | 1.79                     | 0.47              |
| 1:D:401:LYS:HD2  | 1:I:420:PHE:CD2  | 2.32                     | 0.47              |
| 1:F:401:LYS:CA   | 1:K:419:TYR:CB   | 2.50                     | 0.47              |
| 1:G:403:GLU:HB2  | 1:L:288:ALA:HB2  | 1.25                     | 0.47              |
| 1:H:185:LEU:HD21 | 1:I:34:PRO:HD2   | 1.67                     | 0.47              |
| 1:I:93:ALA:H     | 1:I:94:ALA:C     | 2.18                     | 0.47              |
| 1:A:34:PRO:HD2   | 1:B:185:LEU:HD21 | 1.60                     | 0.47              |
| 1:A:185:LEU:HD21 | 1:F:34:PRO:HD2   | 1.60                     | 0.47              |
| 1:C:93:ALA:H     | 1:C:94:ALA:C     | 2.18                     | 0.47              |
| 1:C:401:LYS:CB   | 1:H:419:TYR:CB   | 2.89                     | 0.47              |
| 1:D:400:ALA:CA   | 1:E:288:ALA:CB   | 2.73                     | 0.47              |
| 1:E:34:PRO:HB2   | 1:F:185:LEU:HD22 | 1.49                     | 0.47              |
| 1:H:93:ALA:H     | 1:H:94:ALA:C     | 2.18                     | 0.47              |
| 1:J:161:GLY:O    | 1:K:214:ILE:HD11 | 1.96                     | 0.47              |
| 1:J:161:GLY:C    | 1:K:214:ILE:HD12 | 2.32                     | 0.47              |
| 1:E:132:VAL:HG13 | 1:F:159:ALA:O    | 2.15                     | 0.47              |
| 1:G:54:ASN:ND2   | 1:L:174:ALA:HB3  | 2.13                     | 0.47              |
| 1:A:185:LEU:HD22 | 1:F:34:PRO:HB2   | 1.49                     | 0.47              |
| 1:A:159:ALA:O    | 1:F:132:VAL:HG13 | 2.15                     | 0.47              |
| 1:B:401:LYS:CB   | 1:G:419:TYR:HB3  | 2.37                     | 0.47              |
| 1:G:54:ASN:CG    | 1:L:174:ALA:CB   | 2.83                     | 0.47              |
| 1:G:161:GLY:C    | 1:H:214:ILE:HD12 | 2.32                     | 0.47              |
| 1:B:401:LYS:HA   | 1:G:419:TYR:CA   | 2.38                     | 0.46              |
| 1:C:401:LYS:HD2  | 1:H:420:PHE:HD2  | 1.76                     | 0.46              |
| 1:D:403:GLU:HB2  | 1:E:288:ALA:HB2  | 1.29                     | 0.46              |
| 1:E:405:GLU:CG   | 1:J:416:PHE:CD2  | 2.78                     | 0.46              |
| 1:G:162:GLY:N    | 1:H:214:ILE:HD11 | 2.23                     | 0.46              |
| 1:K:288:ALA:HB3  | 1:L:400:ALA:HA   | 1.88                     | 0.46              |
| 1:B:397:VAL:CB   | 1:G:421:ILE:OXT  | 2.51                     | 0.46              |
| 1:B:419:TYR:CE1  | 1:G:404:LEU:CA   | 2.95                     | 0.46              |
| 1:E:401:LYS:HA   | 1:J:419:TYR:CA   | 2.38                     | 0.46              |
| 1:A:16:PHE:HE2   | 1:B:181:GLU:HB3  | 1.79                     | 0.46              |
| 1:D:419:TYR:CZ   | 1:I:408:GLU:CD   | 2.73                     | 0.46              |
| 1:A:34:PRO:HB2   | 1:B:185:LEU:HD22 | 1.49                     | 0.46              |
| 1:B:132:VAL:HG13 | 1:C:159:ALA:O    | 2.15                     | 0.46              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:135:VAL:H    | 1:C:156:GLN:C    | 1.91                     | 0.46              |
| 1:A:132:VAL:HG13 | 1:B:159:ALA:O    | 2.15                     | 0.46              |
| 1:A:408:GLU:CD   | 1:L:419:TYR:CZ   | 2.74                     | 0.46              |
| 1:C:132:VAL:HG13 | 1:D:159:ALA:O    | 2.15                     | 0.46              |
| 1:D:132:VAL:HG13 | 1:E:159:ALA:O    | 2.15                     | 0.46              |
| 1:H:287:GLY:CA   | 1:I:403:GLU:HB3  | 2.44                     | 0.46              |
| 1:K:301:ALA:CB   | 1:L:62:ALA:N     | 2.30                     | 0.46              |
| 1:C:34:PRO:HB2   | 1:D:185:LEU:HD22 | 1.49                     | 0.46              |
| 1:J:156:GLN:HB3  | 1:K:136:ILE:CA   | 2.42                     | 0.46              |
| 1:K:174:ALA:CB   | 1:L:54:ASN:CG    | 2.83                     | 0.46              |
| 1:B:403:GLU:HB2  | 1:C:288:ALA:HB2  | 1.29                     | 0.46              |
| 1:H:159:ALA:O    | 1:I:132:VAL:HG13 | 2.16                     | 0.46              |
| 1:G:161:GLY:O    | 1:H:214:ILE:HD11 | 1.96                     | 0.45              |
| 1:I:159:ALA:O    | 1:J:132:VAL:HG13 | 2.16                     | 0.45              |
| 1:E:419:TYR:CE1  | 1:J:404:LEU:CA   | 2.95                     | 0.45              |
| 1:J:288:ALA:HB3  | 1:K:400:ALA:HA   | 1.88                     | 0.45              |
| 1:I:166:ALA:CB   | 1:J:205:GLN:OE1  | 2.60                     | 0.45              |
| 1:G:159:ALA:O    | 1:H:132:VAL:HG13 | 2.16                     | 0.45              |
| 1:A:405:GLU:OE2  | 1:L:420:PHE:HE2  | 2.00                     | 0.45              |
| 1:I:288:ALA:HB3  | 1:J:400:ALA:HA   | 1.88                     | 0.45              |
| 1:J:287:GLY:CA   | 1:K:403:GLU:HB3  | 2.44                     | 0.45              |
| 1:J:288:ALA:HB2  | 1:K:403:GLU:HB2  | 1.25                     | 0.45              |
| 1:G:156:GLN:C    | 1:H:135:VAL:H    | 2.00                     | 0.45              |
| 1:G:185:LEU:HD22 | 1:H:34:PRO:HB2   | 1.63                     | 0.45              |
| 1:G:287:GLY:CA   | 1:H:403:GLU:HB3  | 2.44                     | 0.45              |
| 1:J:185:LEU:HD21 | 1:K:34:PRO:HD2   | 1.67                     | 0.45              |
| 1:K:159:ALA:O    | 1:L:132:VAL:HG13 | 2.16                     | 0.45              |
| 1:B:133:PRO:HD2  | 1:C:163:ALA:N    | 2.31                     | 0.45              |
| 1:E:34:PRO:HD2   | 1:F:185:LEU:HD21 | 1.60                     | 0.45              |
| 1:G:185:LEU:HD21 | 1:H:34:PRO:HD2   | 1.67                     | 0.45              |
| 1:I:174:ALA:CB   | 1:J:54:ASN:CG    | 2.83                     | 0.45              |
| 1:J:159:ALA:O    | 1:K:132:VAL:HG13 | 2.16                     | 0.45              |
| 1:J:301:ALA:CB   | 1:K:62:ALA:N     | 2.30                     | 0.45              |
| 1:A:32:SER:CA    | 1:B:177:ALA:CA   | 2.82                     | 0.45              |
| 1:A:400:ALA:CA   | 1:B:288:ALA:CB   | 2.73                     | 0.45              |
| 1:I:287:GLY:CA   | 1:J:403:GLU:HB3  | 2.44                     | 0.45              |
| 1:J:174:ALA:CB   | 1:K:54:ASN:CG    | 2.83                     | 0.45              |
| 1:A:401:LYS:CB   | 1:L:419:TYR:CB   | 2.89                     | 0.44              |
| 1:K:156:GLN:HB3  | 1:L:136:ILE:CA   | 2.42                     | 0.44              |
| 1:C:405:GLU:OE2  | 1:H:420:PHE:HE2  | 2.00                     | 0.44              |
| 1:H:174:ALA:CB   | 1:I:54:ASN:CG    | 2.83                     | 0.44              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:404:LEU:CD1  | 1:J:419:TYR:HA   | 2.44                     | 0.44              |
| 1:G:132:VAL:HG13 | 1:L:159:ALA:O    | 2.16                     | 0.44              |
| 1:I:161:GLY:C    | 1:J:214:ILE:HD12 | 2.32                     | 0.44              |
| 1:B:419:TYR:CE1  | 1:G:408:GLU:CD   | 2.91                     | 0.44              |
| 1:A:136:ILE:CA   | 1:B:156:GLN:HB3  | 2.39                     | 0.44              |
| 1:B:404:LEU:CD1  | 1:G:419:TYR:HA   | 2.44                     | 0.44              |
| 1:H:179:ALA:H    | 1:I:34:PRO:CD    | 2.31                     | 0.44              |
| 1:F:397:VAL:CB   | 1:K:421:ILE:OXT  | 2.51                     | 0.44              |
| 1:I:179:ALA:H    | 1:J:34:PRO:CD    | 2.31                     | 0.44              |
| 1:G:174:ALA:CB   | 1:H:54:ASN:CG    | 2.83                     | 0.44              |
| 1:B:404:LEU:HD12 | 1:G:419:TYR:CA   | 2.44                     | 0.44              |
| 1:D:209:ARG:HH21 | 1:E:164:ALA:HB1  | 0.62                     | 0.44              |
| 1:H:301:ALA:CB   | 1:I:62:ALA:N     | 2.30                     | 0.44              |
| 1:B:32:SER:H     | 1:C:177:ALA:HA   | 0.86                     | 0.44              |
| 1:C:54:ASN:HD21  | 1:D:174:ALA:HB2  | 1.60                     | 0.44              |
| 1:G:179:ALA:H    | 1:H:34:PRO:CD    | 2.31                     | 0.44              |
| 1:G:181:GLU:HB3  | 1:H:16:PHE:HE2   | 1.83                     | 0.44              |
| 1:H:288:ALA:HB2  | 1:I:403:GLU:HB2  | 1.25                     | 0.44              |
| 1:I:181:GLU:HB3  | 1:J:16:PHE:HE2   | 1.83                     | 0.44              |
| 1:A:135:VAL:N    | 1:B:156:GLN:C    | 2.59                     | 0.43              |
| 1:C:209:ARG:HH21 | 1:D:164:ALA:HB1  | 0.62                     | 0.43              |
| 1:E:405:GLU:OE2  | 1:J:420:PHE:HE2  | 2.00                     | 0.43              |
| 1:G:403:GLU:HB3  | 1:L:287:GLY:CA   | 2.44                     | 0.43              |
| 1:C:419:TYR:CE1  | 1:H:408:GLU:CD   | 2.91                     | 0.43              |
| 1:J:166:ALA:CB   | 1:K:205:GLN:OE1  | 2.60                     | 0.43              |
| 1:J:287:GLY:HA2  | 1:K:403:GLU:HB3  | 2.00                     | 0.43              |
| 1:K:177:ALA:CA   | 1:L:31:LYS:C     | 2.37                     | 0.43              |
| 1:K:185:LEU:HD21 | 1:L:34:PRO:HD2   | 1.67                     | 0.43              |
| 1:K:287:GLY:HA2  | 1:L:403:GLU:HB3  | 2.00                     | 0.43              |
| 1:A:419:TYR:CE1  | 1:L:408:GLU:CD   | 2.91                     | 0.43              |
| 1:J:179:ALA:H    | 1:K:34:PRO:CD    | 2.31                     | 0.43              |
| 1:D:29:ARG:HA    | 1:E:175:ALA:HB1  | 2.01                     | 0.43              |
| 1:E:401:LYS:HE2  | 1:J:417:LEU:O    | 2.19                     | 0.43              |
| 1:E:420:PHE:CD2  | 1:J:401:LYS:HD2  | 2.39                     | 0.43              |
| 1:J:163:ALA:N    | 1:K:133:PRO:CD   | 2.68                     | 0.43              |
| 1:J:176:ALA:N    | 1:K:31:LYS:HG2   | 2.34                     | 0.43              |
| 1:G:34:PRO:CD    | 1:L:179:ALA:H    | 2.31                     | 0.43              |
| 1:G:164:ALA:CB   | 1:H:209:ARG:CZ   | 2.86                     | 0.43              |
| 1:A:163:ALA:N    | 1:F:133:PRO:HD2  | 2.31                     | 0.43              |
| 1:C:401:LYS:HE2  | 1:H:417:LEU:O    | 2.19                     | 0.43              |
| 1:D:401:LYS:HE2  | 1:I:417:LEU:O    | 2.19                     | 0.43              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:H:176:ALA:N    | 1:I:31:LYS:HG2   | 2.34                     | 0.43              |
| 1:J:181:GLU:HB3  | 1:K:16:PHE:HE2   | 1.83                     | 0.43              |
| 1:K:287:GLY:CA   | 1:L:403:GLU:HB3  | 2.44                     | 0.43              |
| 1:A:60:ALA:HB3   | 1:B:302:ALA:HB2  | 1.42                     | 0.43              |
| 1:E:404:LEU:HD12 | 1:J:419:TYR:CA   | 2.44                     | 0.43              |
| 1:G:16:PHE:HE2   | 1:L:181:GLU:HB3  | 1.83                     | 0.43              |
| 1:K:166:ALA:CB   | 1:L:205:GLN:OE1  | 2.60                     | 0.43              |
| 1:K:179:ALA:H    | 1:L:34:PRO:CD    | 2.31                     | 0.43              |
| 1:A:401:LYS:HE2  | 1:L:417:LEU:O    | 2.19                     | 0.43              |
| 1:B:401:LYS:HE2  | 1:G:417:LEU:O    | 2.19                     | 0.43              |
| 1:C:419:TYR:HB3  | 1:H:401:LYS:C    | 2.31                     | 0.43              |
| 1:D:404:LEU:CD1  | 1:I:419:TYR:HA   | 2.44                     | 0.43              |
| 1:F:401:LYS:HE2  | 1:K:417:LEU:O    | 2.19                     | 0.43              |
| 1:G:34:PRO:HB2   | 1:L:185:LEU:HD22 | 1.63                     | 0.43              |
| 1:A:209:ARG:HH21 | 1:B:164:ALA:HB1  | 0.62                     | 0.43              |
| 1:G:205:GLN:OE1  | 1:L:166:ALA:CB   | 2.60                     | 0.43              |
| 1:H:181:GLU:HB3  | 1:I:16:PHE:HE2   | 1.83                     | 0.43              |
| 1:K:161:GLY:O    | 1:L:214:ILE:HD11 | 1.96                     | 0.43              |
| 1:H:288:ALA:HB3  | 1:I:400:ALA:HA   | 1.88                     | 0.43              |
| 1:I:176:ALA:N    | 1:J:31:LYS:HG2   | 2.34                     | 0.43              |
| 1:A:29:ARG:HA    | 1:B:175:ALA:HB1  | 2.01                     | 0.42              |
| 1:E:401:LYS:CB   | 1:J:419:TYR:CB   | 2.89                     | 0.42              |
| 1:G:174:ALA:CB   | 1:H:54:ASN:OD1   | 2.67                     | 0.42              |
| 1:H:174:ALA:CB   | 1:I:54:ASN:OD1   | 2.67                     | 0.42              |
| 1:I:163:ALA:CB   | 1:J:133:PRO:HG2  | 2.49                     | 0.42              |
| 1:I:185:LEU:HD22 | 1:J:34:PRO:HB2   | 1.63                     | 0.42              |
| 1:K:181:GLU:HB3  | 1:L:16:PHE:HE2   | 1.83                     | 0.42              |
| 1:E:209:ARG:HH21 | 1:F:164:ALA:HB1  | 0.62                     | 0.42              |
| 1:K:174:ALA:CB   | 1:L:54:ASN:OD1   | 2.67                     | 0.42              |
| 1:D:419:TYR:CE1  | 1:I:405:GLU:CA   | 3.02                     | 0.42              |
| 1:G:133:PRO:HG2  | 1:L:163:ALA:CB   | 2.49                     | 0.42              |
| 1:G:135:VAL:H    | 1:L:156:GLN:C    | 2.00                     | 0.42              |
| 1:G:166:ALA:CB   | 1:H:205:GLN:OE1  | 2.60                     | 0.42              |
| 1:I:174:ALA:CB   | 1:J:54:ASN:OD1   | 2.67                     | 0.42              |
| 1:K:156:GLN:C    | 1:L:135:VAL:H    | 2.00                     | 0.42              |
| 1:A:404:LEU:HD12 | 1:L:419:TYR:CA   | 2.44                     | 0.42              |
| 1:F:419:TYR:CE1  | 1:K:405:GLU:CA   | 3.02                     | 0.42              |
| 1:G:54:ASN:OD1   | 1:L:174:ALA:CB   | 2.67                     | 0.42              |
| 1:H:287:GLY:HA2  | 1:I:403:GLU:HB3  | 2.00                     | 0.42              |
| 1:B:209:ARG:HH21 | 1:C:164:ALA:HB1  | 0.62                     | 0.42              |
| 1:C:29:ARG:HA    | 1:D:175:ALA:HB1  | 2.01                     | 0.42              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:E:419:TYR:CE1  | 1:J:405:GLU:CA   | 3.02                     | 0.42              |
| 1:G:176:ALA:N    | 1:H:31:LYS:HG2   | 2.34                     | 0.42              |
| 1:G:214:ILE:HD11 | 1:L:161:GLY:O    | 1.96                     | 0.42              |
| 1:G:287:GLY:HA2  | 1:H:403:GLU:HB3  | 2.00                     | 0.42              |
| 1:J:163:ALA:CB   | 1:K:133:PRO:HG2  | 2.49                     | 0.42              |
| 1:J:174:ALA:CB   | 1:K:54:ASN:OD1   | 2.67                     | 0.42              |
| 1:A:164:ALA:HB1  | 1:F:209:ARG:HH21 | 0.62                     | 0.42              |
| 1:A:419:TYR:CE1  | 1:L:405:GLU:CA   | 3.02                     | 0.42              |
| 1:C:404:LEU:HD12 | 1:H:419:TYR:CA   | 2.44                     | 0.42              |
| 1:G:31:LYS:HG2   | 1:L:176:ALA:N    | 2.34                     | 0.42              |
| 1:K:163:ALA:CB   | 1:L:133:PRO:HG2  | 2.49                     | 0.42              |
| 1:B:405:GLU:OE2  | 1:G:420:PHE:HE2  | 2.00                     | 0.42              |
| 1:B:405:GLU:CG   | 1:G:419:TYR:HD1  | 2.24                     | 0.42              |
| 1:D:132:VAL:HA   | 1:E:162:GLY:CA   | 2.50                     | 0.42              |
| 1:H:161:GLY:O    | 1:I:214:ILE:HD12 | 1.95                     | 0.42              |
| 1:H:174:ALA:HB2  | 1:I:54:ASN:CG    | 2.40                     | 0.42              |
| 1:I:163:ALA:N    | 1:J:133:PRO:CD   | 2.68                     | 0.42              |
| 1:A:132:VAL:HA   | 1:B:162:GLY:CA   | 2.50                     | 0.42              |
| 1:C:132:VAL:HA   | 1:D:162:GLY:CA   | 2.50                     | 0.42              |
| 1:C:401:LYS:HA   | 1:H:419:TYR:CA   | 2.38                     | 0.42              |
| 1:C:419:TYR:CE1  | 1:H:405:GLU:CA   | 3.02                     | 0.42              |
| 1:D:405:GLU:OE2  | 1:I:420:PHE:HE2  | 2.00                     | 0.42              |
| 1:D:419:TYR:CE1  | 1:I:408:GLU:CD   | 2.91                     | 0.42              |
| 1:G:214:ILE:HD12 | 1:L:161:GLY:C    | 2.32                     | 0.42              |
| 1:C:133:PRO:HD2  | 1:D:163:ALA:N    | 2.31                     | 0.42              |
| 1:D:34:PRO:HD2   | 1:E:185:LEU:HD21 | 1.60                     | 0.42              |
| 1:E:132:VAL:HA   | 1:F:162:GLY:CA   | 2.50                     | 0.42              |
| 1:F:419:TYR:CE1  | 1:K:408:GLU:CD   | 2.91                     | 0.42              |
| 1:H:163:ALA:CB   | 1:I:133:PRO:HG2  | 2.49                     | 0.42              |
| 1:K:176:ALA:N    | 1:L:31:LYS:HG2   | 2.34                     | 0.42              |
| 1:A:174:ALA:HB3  | 1:F:54:ASN:ND2   | 2.27                     | 0.42              |
| 1:B:34:PRO:HD2   | 1:C:185:LEU:HD21 | 1.60                     | 0.42              |
| 1:E:400:ALA:CA   | 1:F:288:ALA:CB   | 2.73                     | 0.42              |
| 1:F:405:GLU:OE2  | 1:K:420:PHE:HE2  | 2.00                     | 0.42              |
| 1:G:403:GLU:HB3  | 1:L:287:GLY:HA2  | 2.00                     | 0.42              |
| 1:I:287:GLY:HA2  | 1:J:403:GLU:HB3  | 2.00                     | 0.42              |
| 1:A:419:TYR:O    | 1:L:397:VAL:O    | 2.38                     | 0.41              |
| 1:B:419:TYR:HB3  | 1:G:401:LYS:C    | 2.31                     | 0.41              |
| 1:C:54:ASN:ND2   | 1:D:174:ALA:HB3  | 2.27                     | 0.41              |
| 1:I:174:ALA:HB2  | 1:J:54:ASN:CG    | 2.40                     | 0.41              |
| 1:A:405:GLU:CG   | 1:L:419:TYR:HD1  | 2.24                     | 0.41              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:B:419:TYR:CE1  | 1:G:405:GLU:CA   | 3.02                     | 0.41              |
| 1:G:34:PRO:HD2   | 1:L:185:LEU:HD21 | 1.67                     | 0.41              |
| 1:G:136:ILE:CA   | 1:L:156:GLN:HB3  | 2.42                     | 0.41              |
| 1:G:288:ALA:HB2  | 1:H:403:GLU:HB2  | 1.25                     | 0.41              |
| 1:F:404:LEU:CD1  | 1:K:419:TYR:HA   | 2.44                     | 0.41              |
| 1:H:162:GLY:HA2  | 1:I:132:VAL:HA   | 2.03                     | 0.41              |
| 1:I:301:ALA:CB   | 1:J:62:ALA:N     | 2.30                     | 0.41              |
| 1:E:403:GLU:HB2  | 1:F:288:ALA:HB2  | 1.29                     | 0.41              |
| 1:F:419:TYR:O    | 1:K:397:VAL:O    | 2.38                     | 0.41              |
| 1:I:162:GLY:HA2  | 1:J:132:VAL:HA   | 2.02                     | 0.41              |
| 1:B:132:VAL:HA   | 1:C:162:GLY:CA   | 2.50                     | 0.41              |
| 1:B:419:TYR:O    | 1:G:397:VAL:O    | 2.38                     | 0.41              |
| 1:J:185:LEU:HD22 | 1:K:34:PRO:HB2   | 1.63                     | 0.41              |
| 1:D:404:LEU:HD12 | 1:I:419:TYR:CA   | 2.44                     | 0.41              |
| 1:F:404:LEU:HD12 | 1:K:419:TYR:CA   | 2.44                     | 0.41              |
| 1:G:134:GLU:HG2  | 1:L:158:ALA:N    | 2.34                     | 0.41              |
| 1:I:164:ALA:CB   | 1:J:209:ARG:CZ   | 2.86                     | 0.41              |
| 1:J:161:GLY:O    | 1:K:214:ILE:HD12 | 1.95                     | 0.41              |
| 1:A:54:ASN:HD21  | 1:B:174:ALA:HB2  | 1.60                     | 0.41              |
| 1:A:162:GLY:CA   | 1:F:132:VAL:HA   | 2.50                     | 0.41              |
| 1:E:32:SER:H     | 1:F:177:ALA:HA   | 0.86                     | 0.41              |
| 1:E:419:TYR:CE1  | 1:J:408:GLU:CD   | 2.91                     | 0.41              |
| 1:G:174:ALA:HB2  | 1:H:54:ASN:CG    | 2.40                     | 0.41              |
| 1:I:302:ALA:HB2  | 1:J:60:ALA:HB3   | 1.47                     | 0.41              |
| 1:A:175:ALA:HB1  | 1:F:29:ARG:HA    | 2.01                     | 0.41              |
| 1:A:302:ALA:HB2  | 1:F:60:ALA:HB3   | 1.42                     | 0.41              |
| 1:A:403:GLU:HB2  | 1:B:288:ALA:HB2  | 1.29                     | 0.41              |
| 1:B:34:PRO:HB2   | 1:C:185:LEU:HD22 | 1.49                     | 0.41              |
| 1:C:32:SER:CA    | 1:D:177:ALA:CA   | 2.82                     | 0.41              |
| 1:D:34:PRO:HB2   | 1:E:185:LEU:HD22 | 1.49                     | 0.41              |
| 1:D:419:TYR:HE1  | 1:I:405:GLU:HA   | 1.86                     | 0.41              |
| 1:E:134:GLU:HG2  | 1:F:158:ALA:HB2  | 0.42                     | 0.41              |
| 1:E:419:TYR:HE1  | 1:J:405:GLU:HA   | 1.86                     | 0.41              |
| 1:G:60:ALA:HB3   | 1:L:302:ALA:HB2  | 1.47                     | 0.41              |
| 1:G:163:ALA:CB   | 1:H:133:PRO:HG2  | 2.49                     | 0.41              |
| 1:J:162:GLY:HA2  | 1:K:132:VAL:HA   | 2.02                     | 0.41              |
| 1:K:162:GLY:HA2  | 1:L:132:VAL:HA   | 2.03                     | 0.41              |
| 1:G:132:VAL:HA   | 1:L:162:GLY:HA2  | 2.02                     | 0.41              |
| 1:G:214:ILE:HD12 | 1:L:161:GLY:O    | 1.95                     | 0.41              |
| 1:C:419:TYR:O    | 1:H:397:VAL:O    | 2.38                     | 0.40              |
| 1:E:419:TYR:O    | 1:J:397:VAL:O    | 2.38                     | 0.40              |

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| Atom-1          | Atom-2          | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:F:420:PHE:CD2 | 1:K:401:LYS:HD2 | 2.39                     | 0.40              |
| 1:H:164:ALA:CB  | 1:I:209:ARG:CZ  | 2.86                     | 0.40              |
| 1:H:166:ALA:CB  | 1:I:205:GLN:OE1 | 2.60                     | 0.40              |
| 1:A:288:ALA:CB  | 1:F:400:ALA:CA  | 2.73                     | 0.40              |
| 1:D:420:PHE:HE2 | 1:I:405:GLU:OE2 | 2.04                     | 0.40              |
| 1:F:405:GLU:CG  | 1:K:419:TYR:HD1 | 2.24                     | 0.40              |
| 1:F:419:TYR:HE1 | 1:K:405:GLU:HA  | 1.86                     | 0.40              |
| 1:D:420:PHE:CD2 | 1:I:401:LYS:HD2 | 2.39                     | 0.40              |
| 1:A:156:GLN:C   | 1:F:135:VAL:H   | 1.91                     | 0.40              |
| 1:A:419:TYR:HE1 | 1:L:405:GLU:HA  | 1.86                     | 0.40              |
| 1:D:419:TYR:O   | 1:I:397:VAL:O   | 2.38                     | 0.40              |
| 1:C:209:ARG:CZ  | 1:D:164:ALA:CB  | 2.85                     | 0.40              |
| 1:C:419:TYR:HE1 | 1:H:405:GLU:HA  | 1.86                     | 0.40              |
| 1:G:54:ASN:CG   | 1:L:174:ALA:HB2 | 2.40                     | 0.40              |
| 1:K:162:GLY:HA2 | 1:L:133:PRO:HD2 | 0.42                     | 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 PDB entries followed by that with respect to all EM entries.

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     | 419/421 (100%) | 373 (89%) | 36 (9%) | 10 (2%)  | 6           | 33 |
| 1   | B     | 419/421 (100%) | 373 (89%) | 36 (9%) | 10 (2%)  | 6           | 33 |
| 1   | C     | 419/421 (100%) | 373 (89%) | 36 (9%) | 10 (2%)  | 6           | 33 |
| 1   | D     | 419/421 (100%) | 373 (89%) | 36 (9%) | 10 (2%)  | 6           | 33 |
| 1   | E     | 419/421 (100%) | 373 (89%) | 36 (9%) | 10 (2%)  | 6           | 33 |
| 1   | F     | 419/421 (100%) | 373 (89%) | 36 (9%) | 10 (2%)  | 6           | 33 |
| 1   | G     | 419/421 (100%) | 372 (89%) | 37 (9%) | 10 (2%)  | 6           | 33 |
| 1   | H     | 419/421 (100%) | 372 (89%) | 37 (9%) | 10 (2%)  | 6           | 33 |

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| Mol | Chain | Analysed         | Favoured   | Allowed  | Outliers | Percentiles |    |
|-----|-------|------------------|------------|----------|----------|-------------|----|
| 1   | I     | 419/421 (100%)   | 372 (89%)  | 37 (9%)  | 10 (2%)  | 6           | 33 |
| 1   | J     | 419/421 (100%)   | 372 (89%)  | 37 (9%)  | 10 (2%)  | 6           | 33 |
| 1   | K     | 419/421 (100%)   | 372 (89%)  | 37 (9%)  | 10 (2%)  | 6           | 33 |
| 1   | L     | 419/421 (100%)   | 372 (89%)  | 37 (9%)  | 10 (2%)  | 6           | 33 |
| All | All   | 5028/5052 (100%) | 4470 (89%) | 438 (9%) | 120 (2%) | 9           | 33 |

All (120) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 360 | ALA  |
| 1   | B     | 360 | ALA  |
| 1   | C     | 360 | ALA  |
| 1   | D     | 360 | ALA  |
| 1   | E     | 360 | ALA  |
| 1   | F     | 360 | ALA  |
| 1   | G     | 360 | ALA  |
| 1   | H     | 360 | ALA  |
| 1   | I     | 360 | ALA  |
| 1   | J     | 360 | ALA  |
| 1   | K     | 360 | ALA  |
| 1   | L     | 360 | ALA  |
| 1   | A     | 93  | ALA  |
| 1   | B     | 93  | ALA  |
| 1   | C     | 93  | ALA  |
| 1   | D     | 93  | ALA  |
| 1   | E     | 93  | ALA  |
| 1   | F     | 93  | ALA  |
| 1   | G     | 93  | ALA  |
| 1   | H     | 93  | ALA  |
| 1   | I     | 93  | ALA  |
| 1   | J     | 93  | ALA  |
| 1   | K     | 93  | ALA  |
| 1   | L     | 93  | ALA  |
| 1   | A     | 194 | ALA  |
| 1   | A     | 294 | THR  |
| 1   | A     | 365 | GLU  |
| 1   | B     | 194 | ALA  |
| 1   | B     | 294 | THR  |
| 1   | B     | 365 | GLU  |
| 1   | C     | 194 | ALA  |
| 1   | C     | 294 | THR  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | C            | 365        | GLU         |
| 1          | D            | 194        | ALA         |
| 1          | D            | 294        | THR         |
| 1          | D            | 365        | GLU         |
| 1          | E            | 194        | ALA         |
| 1          | E            | 294        | THR         |
| 1          | E            | 365        | GLU         |
| 1          | F            | 194        | ALA         |
| 1          | F            | 294        | THR         |
| 1          | F            | 365        | GLU         |
| 1          | G            | 194        | ALA         |
| 1          | G            | 294        | THR         |
| 1          | G            | 365        | GLU         |
| 1          | H            | 194        | ALA         |
| 1          | H            | 294        | THR         |
| 1          | H            | 365        | GLU         |
| 1          | I            | 194        | ALA         |
| 1          | I            | 294        | THR         |
| 1          | I            | 365        | GLU         |
| 1          | J            | 194        | ALA         |
| 1          | J            | 294        | THR         |
| 1          | J            | 365        | GLU         |
| 1          | K            | 194        | ALA         |
| 1          | K            | 294        | THR         |
| 1          | K            | 365        | GLU         |
| 1          | L            | 194        | ALA         |
| 1          | L            | 294        | THR         |
| 1          | L            | 365        | GLU         |
| 1          | A            | 63         | SER         |
| 1          | A            | 351        | ALA         |
| 1          | A            | 390        | GLU         |
| 1          | B            | 63         | SER         |
| 1          | B            | 351        | ALA         |
| 1          | B            | 390        | GLU         |
| 1          | C            | 63         | SER         |
| 1          | C            | 351        | ALA         |
| 1          | C            | 390        | GLU         |
| 1          | D            | 63         | SER         |
| 1          | D            | 351        | ALA         |
| 1          | D            | 390        | GLU         |
| 1          | E            | 63         | SER         |
| 1          | E            | 351        | ALA         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | E            | 390        | GLU         |
| 1          | F            | 63         | SER         |
| 1          | F            | 351        | ALA         |
| 1          | F            | 390        | GLU         |
| 1          | G            | 63         | SER         |
| 1          | G            | 351        | ALA         |
| 1          | G            | 390        | GLU         |
| 1          | H            | 63         | SER         |
| 1          | H            | 351        | ALA         |
| 1          | H            | 390        | GLU         |
| 1          | I            | 63         | SER         |
| 1          | I            | 351        | ALA         |
| 1          | I            | 390        | GLU         |
| 1          | J            | 63         | SER         |
| 1          | J            | 351        | ALA         |
| 1          | J            | 390        | GLU         |
| 1          | K            | 63         | SER         |
| 1          | K            | 351        | ALA         |
| 1          | K            | 390        | GLU         |
| 1          | L            | 63         | SER         |
| 1          | L            | 351        | ALA         |
| 1          | L            | 390        | GLU         |
| 1          | A            | 361        | ALA         |
| 1          | A            | 367        | PRO         |
| 1          | B            | 361        | ALA         |
| 1          | B            | 367        | PRO         |
| 1          | C            | 361        | ALA         |
| 1          | C            | 367        | PRO         |
| 1          | D            | 361        | ALA         |
| 1          | D            | 367        | PRO         |
| 1          | E            | 361        | ALA         |
| 1          | E            | 367        | PRO         |
| 1          | F            | 361        | ALA         |
| 1          | F            | 367        | PRO         |
| 1          | G            | 361        | ALA         |
| 1          | G            | 367        | PRO         |
| 1          | H            | 361        | ALA         |
| 1          | H            | 367        | PRO         |
| 1          | I            | 361        | ALA         |
| 1          | I            | 367        | PRO         |
| 1          | J            | 361        | ALA         |
| 1          | J            | 367        | PRO         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | K     | 361 | ALA  |
| 1   | K     | 367 | PRO  |
| 1   | L     | 361 | ALA  |
| 1   | L     | 367 | PRO  |

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

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | B     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | C     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | D     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | E     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | F     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | G     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | H     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | I     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | J     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | K     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| 1   | L     | 212/212 (100%)   | 210 (99%)  | 2 (1%)   | 78          | 87 |
| All | All   | 2544/2544 (100%) | 2520 (99%) | 24 (1%)  | 79          | 87 |

All (24) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 214 | ILE  |
| 1   | A     | 333 | LEU  |
| 1   | B     | 214 | ILE  |
| 1   | B     | 333 | LEU  |
| 1   | C     | 214 | ILE  |
| 1   | C     | 333 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | D     | 214 | ILE  |
| 1   | D     | 333 | LEU  |
| 1   | E     | 214 | ILE  |
| 1   | E     | 333 | LEU  |
| 1   | F     | 214 | ILE  |
| 1   | F     | 333 | LEU  |
| 1   | G     | 214 | ILE  |
| 1   | G     | 333 | LEU  |
| 1   | H     | 214 | ILE  |
| 1   | H     | 333 | LEU  |
| 1   | I     | 214 | ILE  |
| 1   | I     | 333 | LEU  |
| 1   | J     | 214 | ILE  |
| 1   | J     | 333 | LEU  |
| 1   | K     | 214 | ILE  |
| 1   | K     | 333 | LEU  |
| 1   | L     | 214 | ILE  |
| 1   | L     | 333 | LEU  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 54  | ASN  |
| 1   | A     | 156 | GLN  |
| 1   | B     | 54  | ASN  |
| 1   | B     | 156 | GLN  |
| 1   | C     | 54  | ASN  |
| 1   | C     | 156 | GLN  |
| 1   | D     | 54  | ASN  |
| 1   | D     | 156 | GLN  |
| 1   | E     | 54  | ASN  |
| 1   | E     | 156 | GLN  |
| 1   | F     | 54  | ASN  |
| 1   | F     | 156 | GLN  |
| 1   | G     | 54  | ASN  |
| 1   | G     | 156 | GLN  |
| 1   | H     | 54  | ASN  |
| 1   | H     | 156 | GLN  |
| 1   | I     | 54  | ASN  |
| 1   | I     | 156 | GLN  |
| 1   | J     | 54  | ASN  |
| 1   | J     | 156 | GLN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | K     | 54  | ASN  |
| 1   | K     | 156 | GLN  |
| 1   | L     | 54  | ASN  |
| 1   | L     | 156 | GLN  |

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

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

There are no ligands in this entry.

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

There are no such residues in this entry.

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

There are no chain breaks in this entry.

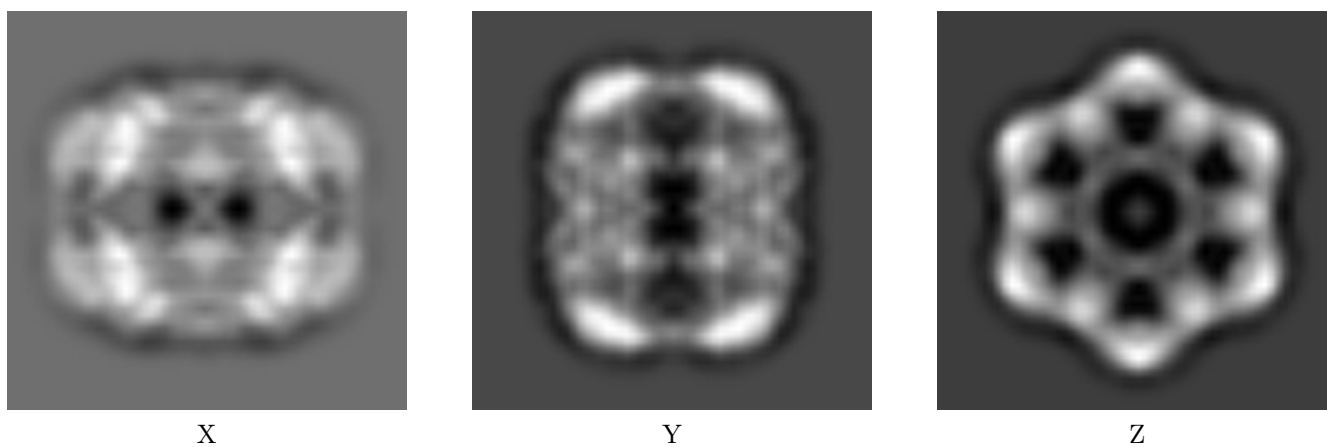
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-1290. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

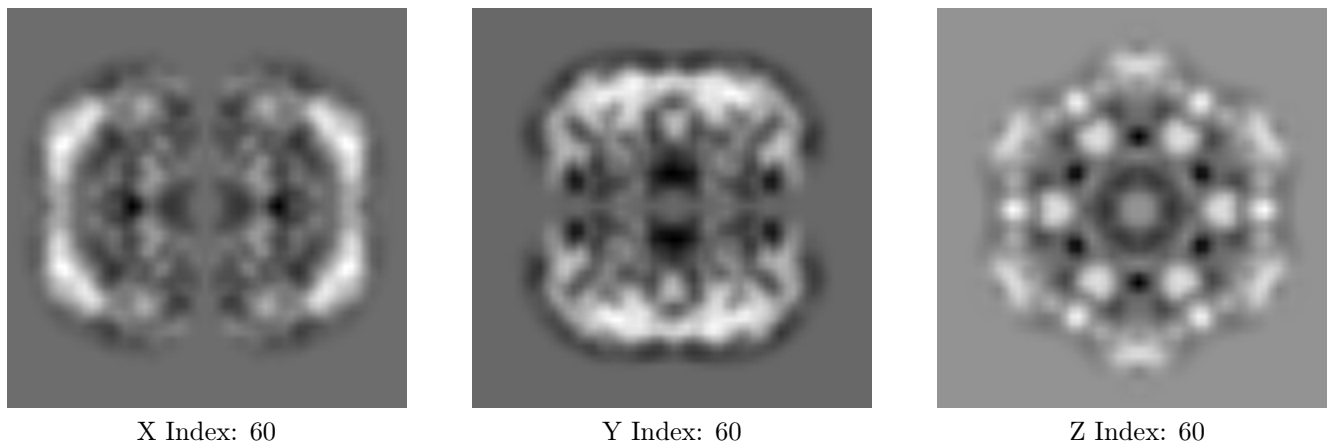
#### 6.1.1 Primary map



The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

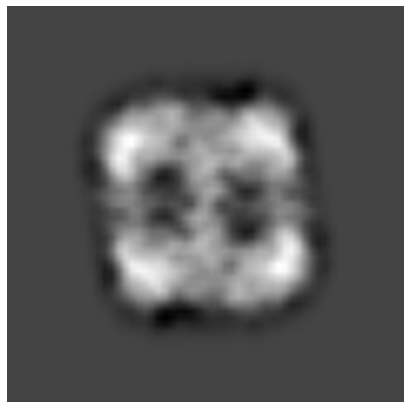
#### 6.2.1 Primary map



The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

### 6.3.1 Primary map



X Index: 24



Y Index: 35

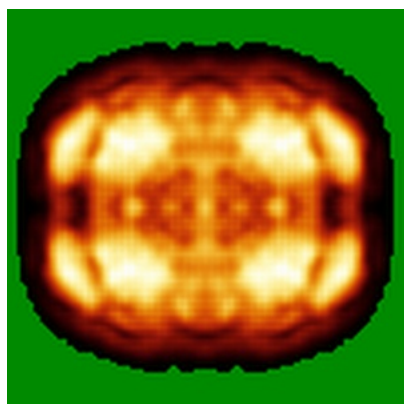


Z Index: 40

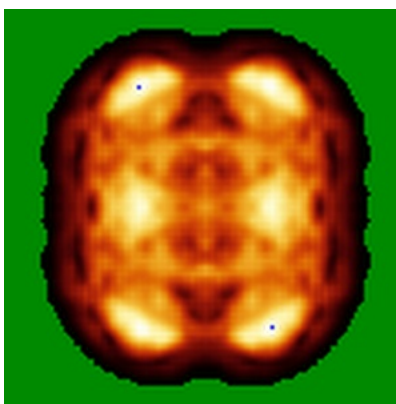
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

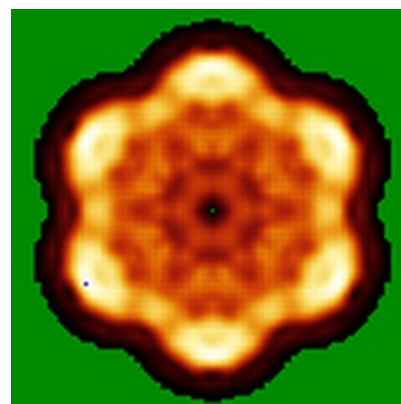
### 6.4.1 Primary map



X



Y

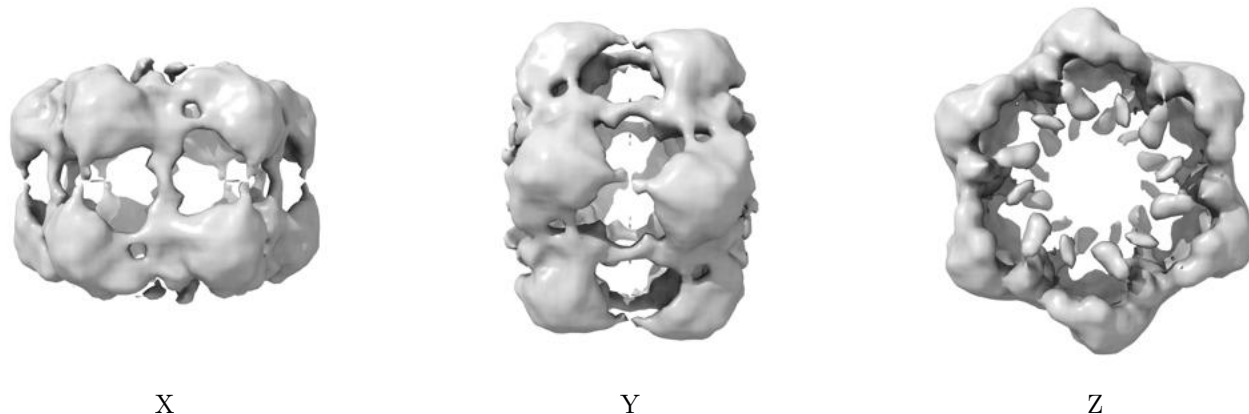


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.299. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

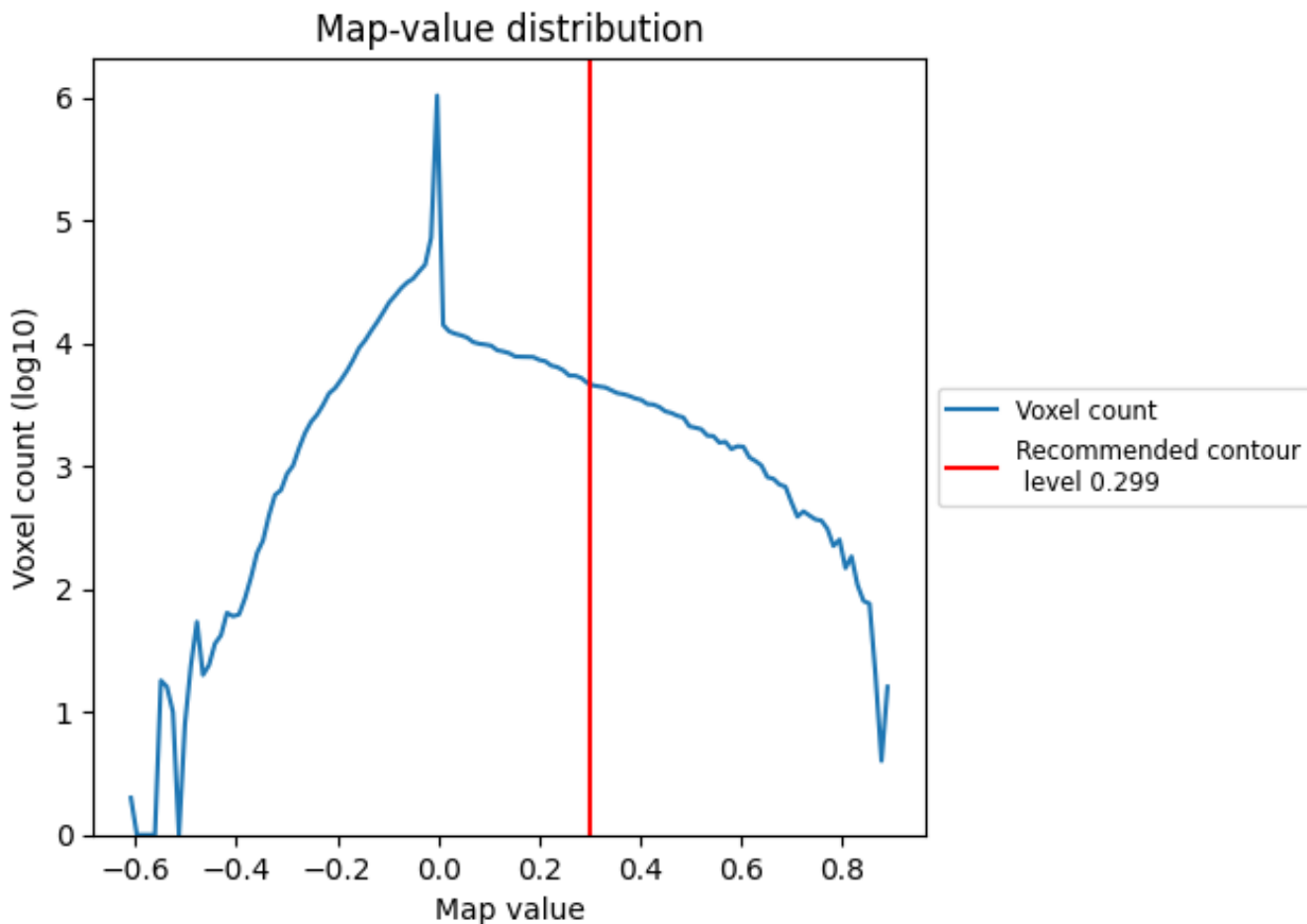
## 6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

## 7 Map analysis [i](#)

This section contains the results of statistical analysis of the map.

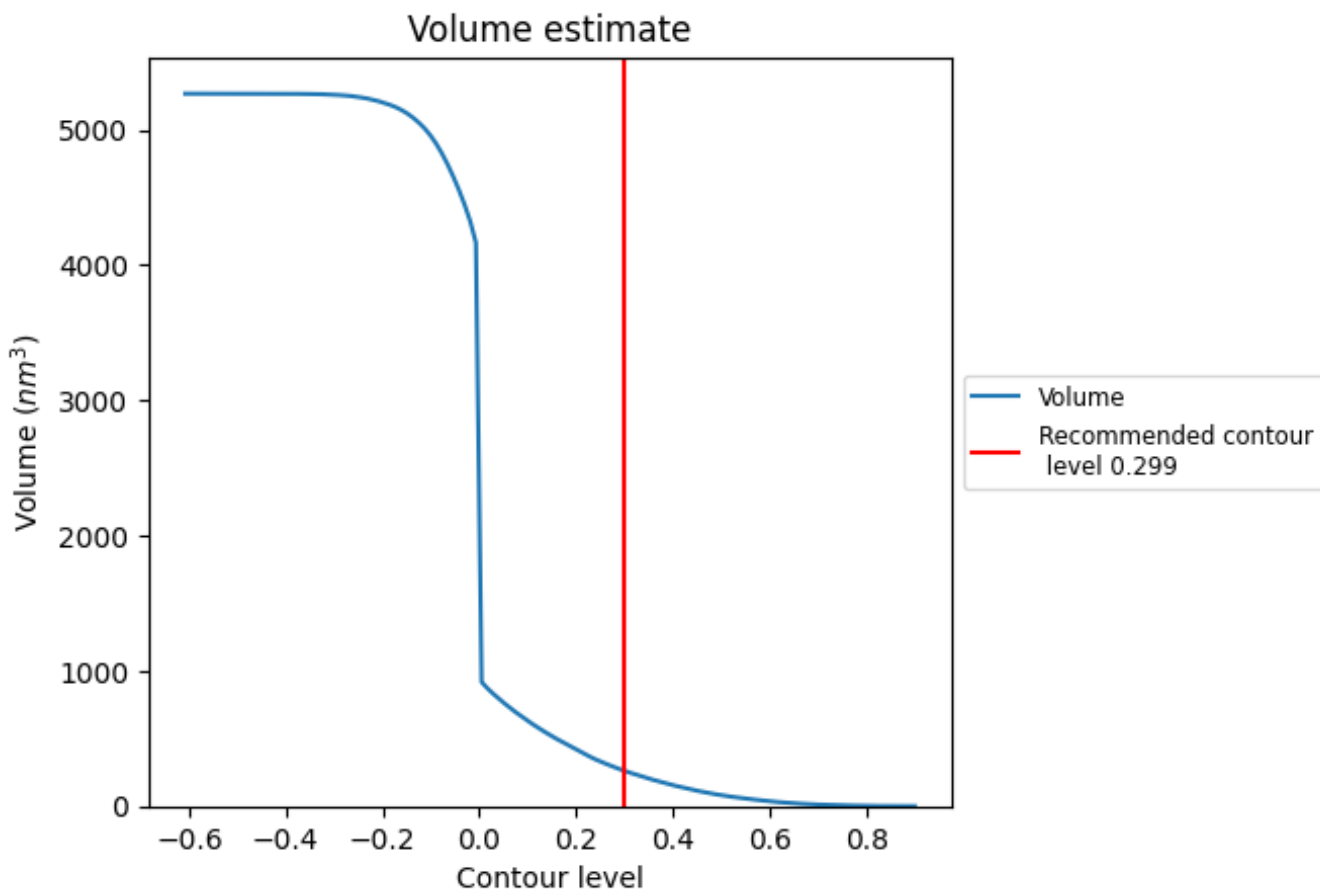
### 7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.



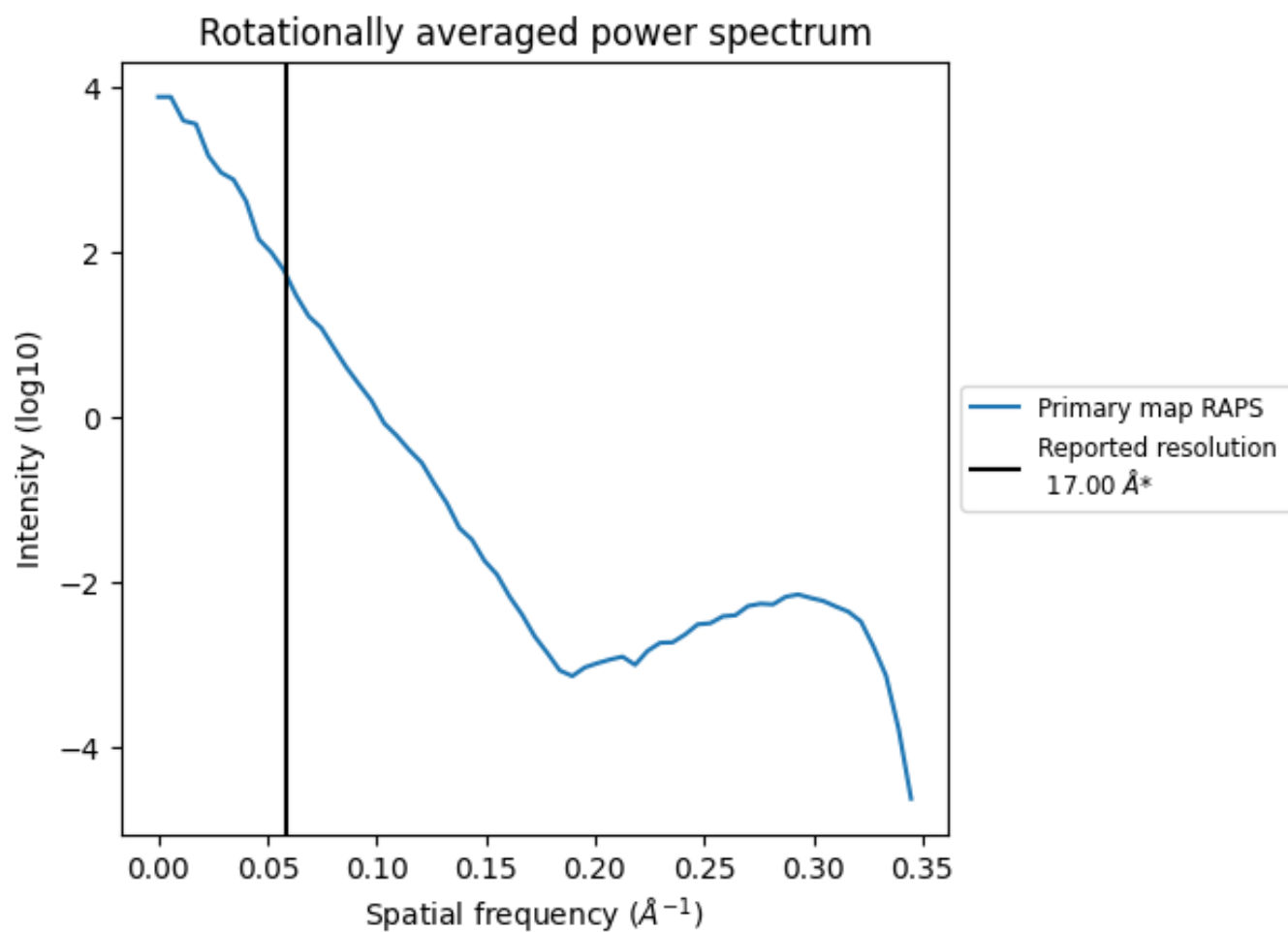
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is  $263 \text{ nm}^3$ ; this corresponds to an approximate mass of 237 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

### 7.3 Rotationally averaged power spectrum [i](#)



\*Reported resolution corresponds to spatial frequency of 0.059 Å<sup>-1</sup>

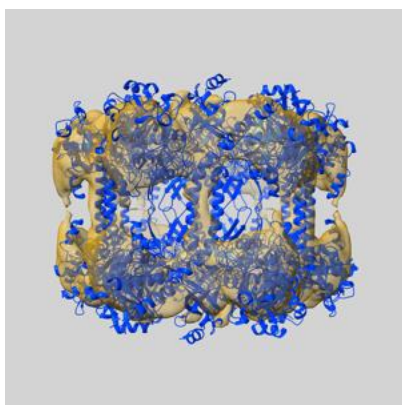
## 8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

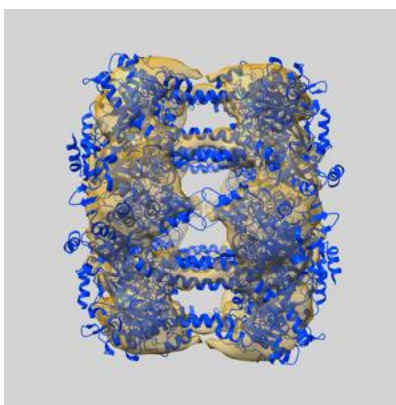
## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-1290 and PDB model 2J9I. Per-residue inclusion information can be found in section [3](#) on page [5](#).

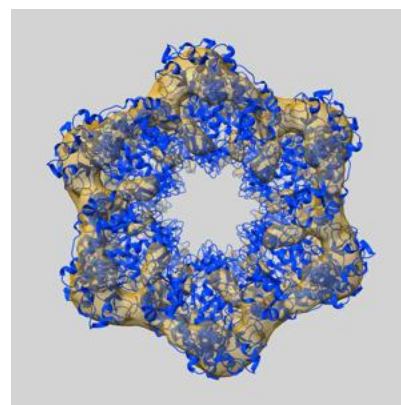
### 9.1 Map-model overlay [i](#)



X



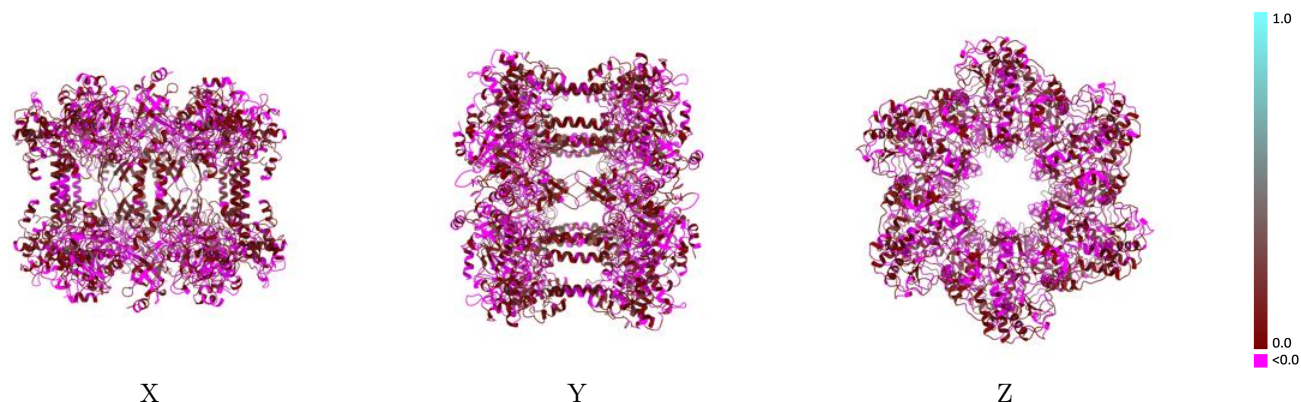
Y



Z

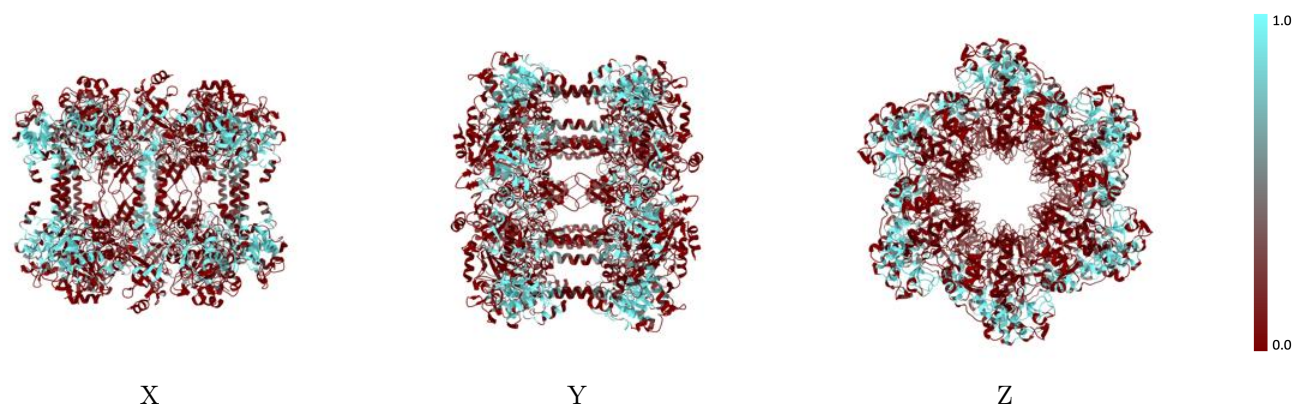
The images above show the 3D surface view of the map at the recommended contour level 0.299 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [\(i\)](#)



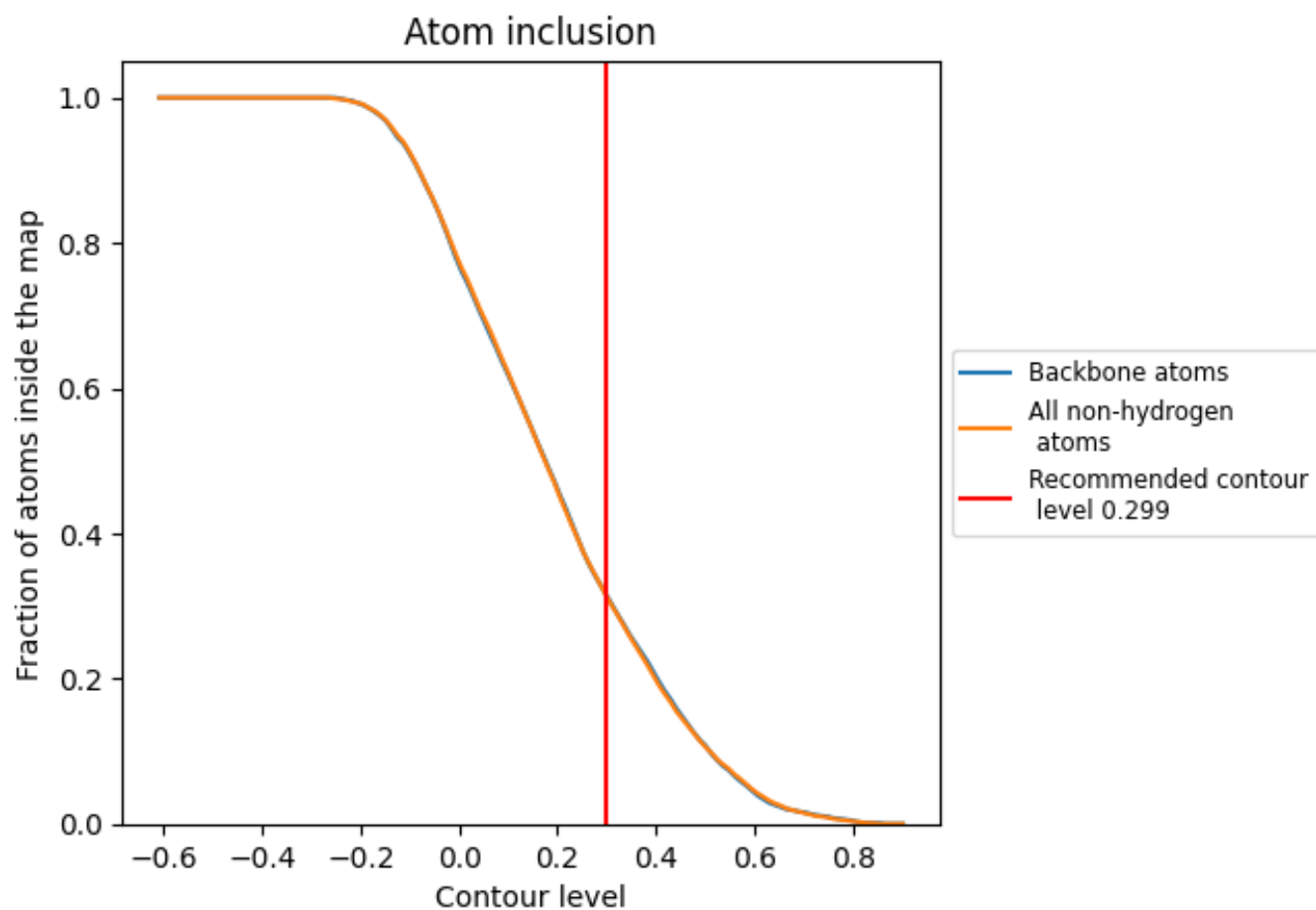
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model [\(i\)](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.299).



























## 9.4 Atom inclusion [i](#)



At the recommended contour level, 32% of all backbone atoms, 31% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.299) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| All   |  0.3140 |  0.0330 |
| A     |  0.3200 |  0.0330 |
| B     |  0.3180 |  0.0330 |
| C     |  0.3140 |  0.0320 |
| D     |  0.3010 |  0.0350 |
| E     |  0.3060 |  0.0310 |
| F     |  0.3210 |  0.0320 |
| G     |  0.3190 |  0.0330 |
| H     |  0.3220 |  0.0300 |
| I     |  0.3080 |  0.0300 |
| J     |  0.3010 |  0.0360 |
| K     |  0.3150 |  0.0340 |
| L     |  0.3190 |  0.0330 |

